

**2011
Periodic Review Report
Former Davis-Howland Oil
Corporation Site
NYSDEC Site No. 8-28-088**

**City of Rochester
Monroe County, New York**

April 2012

Prepared for:

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List of Abbreviations and Acronyms

AS/SVE	air sparge/soil vapor extraction
BGS	below ground surface
BTEX	benzene, toluene, ethyl benzene, and xylene
CAS	Columbia Analytical Services, Inc.
cVOC	chlorinated volatile organic compound
DHOC	Former Davis-Howland Oil Corporation Site
DCA	1,1-dichloroethane
EEEPC	Ecology and Environment Engineering, P.C.
FS	feasibility study
µg/L	micrograms per liter
NYSDEC	New York State Department of Environmental Conservation
OM&M	operations, maintenance, and monitoring
PCE	perchloroethylene or tetrachloroethene
PRR	Periodic Review Report
Popli	Popli Consulting Engineers and Surveyors, P.C.
RI	remedial investigation
SMP	Site Management Plan
TCE	trichloroethylene
VOC	volatile organic compound

1

Introduction and Background

This Periodic Review Report (PRR) provides information on the operations, maintenance, monitoring, compliance, and operating costs for the Former Davis Howland Oil Corporation (DHOC) site during calendar year 2011. This PRR also provides information concerning the engineering and institutional controls facilitating the remedial cleanup of the site.

The chlorinated volatile organic compound (cVOC) contaminant plume extends beyond the immediate DHOC treatment system facility. Therefore, this PRR includes information on the following systems and locations in the city of Rochester, Monroe County, New York, which are collectively operated, maintained, and monitored under the overall DHOC Work Assignment:

- The DHOC remedial treatment system located at 200 Anderson Avenue (see Figure 1-1);
- The adjacent parcels at 190 through 220 Anderson Avenue;
- The parcel at 176 Anderson Avenue; and
- The groundwater pumping, treating, and monitoring network.

1.1 Site Description

The DHOC site is located at 200 Anderson Avenue, in Rochester, New York. The work assignment encompasses adjacent parcels described as 190 through 220 Anderson Avenue and the portion of 176 Anderson Avenue immediately north and west of 190 through 220 Anderson Avenue. The site is bounded on the south by Anderson Avenue, on the west by light industrial/commercial/retail buildings, and on the north and east by a CSX Transportation right-of-way with active tracks. Figure 1-1 indicates the general location of the site.

The approximately 1-acre site is located in an area that combines residential, commercial, and industrial facilities. No significant surface water is located in the immediate vicinity of the site. Figure 1-2 presents the general site layout, and a more detailed site layout map is provided as Appendix A.

1.2 Air Sparge/Soil Vapor Extraction (AS/SVE) System

The vapor phase treatment system includes both an air injection system (air sparge, or AS) and air removal system (soil vapor extraction, or SVE) to remove volatile organic compounds (VOCs) from shallow soils and from beneath building slabs at the site. The AS components of the system utilize a low-pressure compressor designed to operate on a continuous basis to inject temperature-controlled air into the soil via sparge points located around the site. Forty-seven air sparging points were installed at approximately 12 feet below ground surface (BGS) outside the facility and inside the buildings located at 200 Anderson Avenue.

The SVE system extracts soil vapor under negative pressure from the air-sparging treatment zone via a network of outdoor and indoor underground collection piping. Depending on the location, the collection piping is either lateral collection slot-drain (outdoor) or collection points (indoor). The soil vapors are collected at a central location (treatment trailer) and discharged to the atmosphere without treatment.

1.3 Groundwater Remediation System

The groundwater treatment system is composed of five pumping wells capable of processing up to 30 gallons of water per minute on a continuous basis. Groundwater wells PW-1 and PW-2 were installed as deep bedrock groundwater pumping wells to extract contaminated groundwater and deliver it to the treatment trailer for processing. Overburden pumping wells P-1, P-2, and P-3 were installed to keep the upper or shallow aquifer groundwater levels below the remedial action or treatment zone for the AS/SVE system. These pumping wells pump contaminated groundwater from the treatment area to the treatment trailer for processing. All groundwater wells are operated on a batch basis, turning on and off at preset water levels within the well.

The groundwater VOC treatment system in the treatment trailer consists of influent meters, a 500-gallon holding tank, sequestering agent feed, groundwater feed pump, a five-tray low-profile air stripper, air blower, effluent pump, effluent meter, and an effluent gravity discharge line to the main trunk sewer under Anderson Avenue.

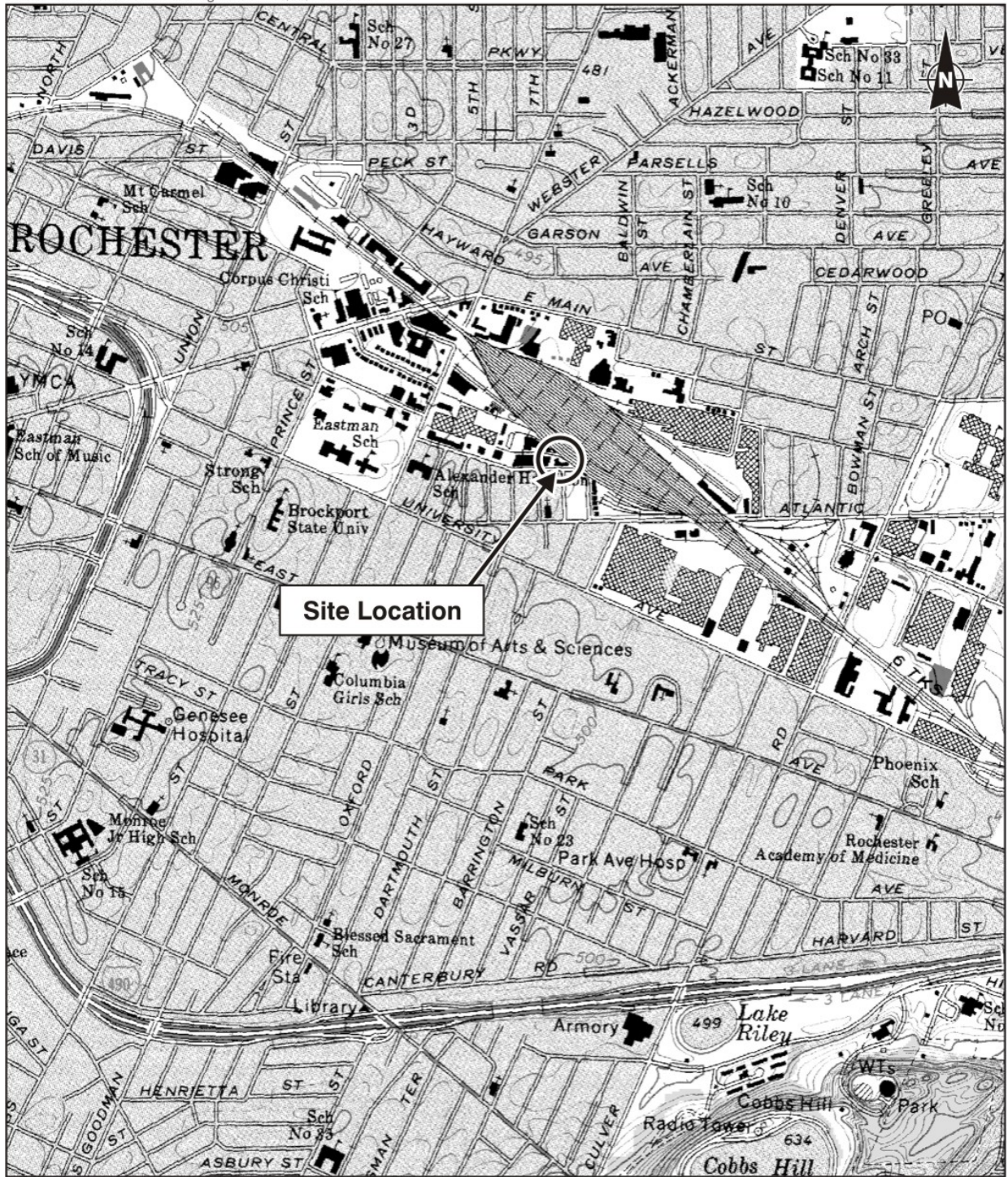
Groundwater is pumped from the shallow and bedrock-level extraction wells to the equalization tank, where it is then pumped to the air stripper on a continuous basis. Contaminated water from the top of the air stripper tower drains down over a series of five stacked orifice trays in the column. A fan forces air countercurrent to the water flow and volatilizes the cVOCs in the groundwater. The air discharge from the air stripper is discharged to the atmosphere without treatment. A sump at the bottom of the tower collects the decontaminated water, which is discharged in batches to the County of Monroe combined storm and sanitary sewer system.

Six piezometers (PZ-1 through PZ-6) associated with the groundwater pumping wells (P-1 through P-3) are used to monitor the depth of groundwater under the paved AS/SVE area on a weekly basis.

1.4 Groundwater Monitoring Activities

Ecology and Environment Engineering, P.C. (EEEPC) performed a groundwater sampling, field investigation, and analysis event from October 17 through 21, 2011. A report was prepared that provides a summary of the groundwater sampling and well inspections performed, physical characteristics of the study area, a discussion of the new analytical data obtained and a comparison with previous historical analytical data. The report is attached to this PRR as Appendix B.

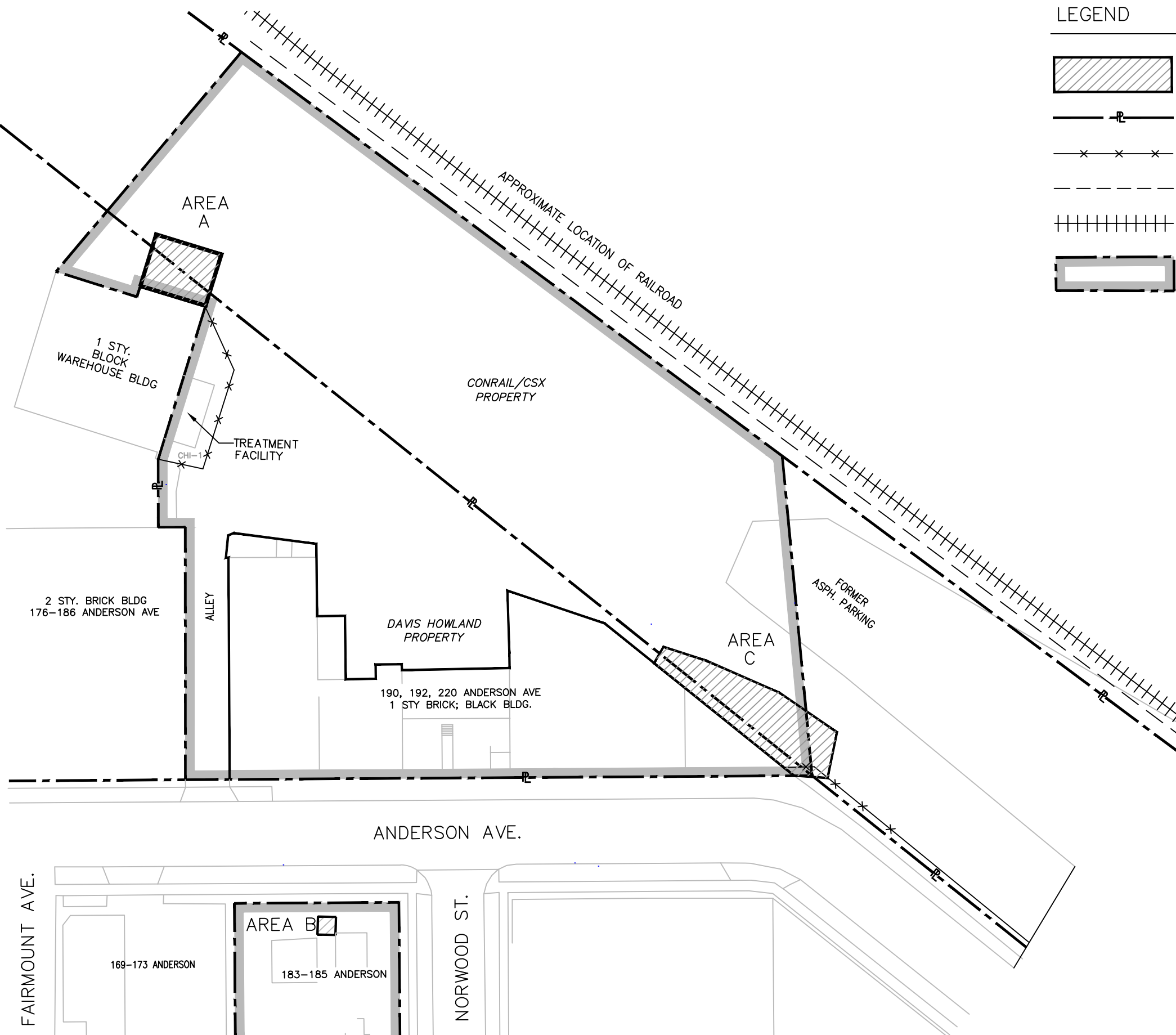
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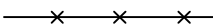
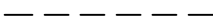


MAP SOURCE: USGS Topographic 7.5 Minute Series, Rochester East Quadrangle, Monroe County, New York

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Figure 1-1 General Site Location Map, Former Davis-Howland Oil Corporation Site, Rochester, New York



LEGEND

-  EXCAVATION AREAS
-  PROPERTY LINE OR RIGHT-OF-WAY (ROW)
-  FENCING
-  GUARD RAIL
-  RAILROAD TRACKS
-  AS/SVE TREATMENT ZONE

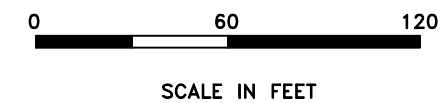


FIGURE 1-2

SITE LAYOUT MAP
 FORMER DAVIS-HOWLAND CORPORATION SITE
 MONROE COUNTY, ROCHESTER, NY

2

Remedial Systems Compliance



2.1 Groundwater Treatment

Table 2-1 presents the permit criteria currently used for the discharge of treated groundwater at the DHOC site to the County of Monroe sanitary sewer system. In 2011, all treatment and effluent discharge parameters were in compliance for the treated groundwater. Analytical data for the treated groundwater is provided in Sections 4.3 and 4.4.

Table 2-1 Effluent Discharge Criteria, DHOC Site

Parameter	Analytical Methods	Permit Limits
Flow (average discharge); based on effluent meter	–	Not to exceed 28 gpm
pH (s.u.)	MCAWW 150.1	5.0 to 12.0
Polychlorinated biphenyls	40 CFR 136 - 608	bdl (0.3 ppb)
Total petroleum hydrocarbons	NYSDOH 75 310-13	100 ppm
Purgeable halocarbons	40 CFR 136 - 601	The analytical summation of this group of contaminants shall not exceed 2.13 ppm in the effluent discharge.
Purgeable aromatics	40 CFR 136 - 602	
Acid extractables	40 CFR 136 - 625	
Base neutrals		
Pesticides	40 CFR 136 - 608	
Total monthly discharge	–	NA

Key:

-  = Polychlorinated biphenyls removed from the permit analyte list on October 28, 2006.
-  = Pesticide analysis performed on a semiannual basis.
- bdl = Below detection limit.
- CFR = Code of Federal Regulations.
- gpm = Gallons per minute.
- MCAWW = (U.S. Environmental Protection Agency) Methods for Chemical Analysis of Water and Wastes.
- NA = Not applicable.
- NYSDOH = New York State Department of Health.
- ppm = Parts per million.
- ppb = Parts per billion.
- s.u. = Standard units.

2.2 Air Sparge/Soil Vapor Extraction

Following an evaluation of the potential ambient air impacts from operation of the air stripper and soil vapor extraction system (EEPC 2006), the catalytic oxidizer was removed, and current operations vent the soil vapor through a stack to the atmosphere. There are no other requirements for AS/SVE treatment in place.

3

Evaluation of Site Institutional and Engineering Controls

Both site institutional and engineering controls are employed on the DHOC site to support remedial operations.

3.1 Institutional Controls

A permanent easement that provides access to the adjacent CSX Transportation property has been obtained to facilitate operation of the DHOC site remedial treatment system. The existing permanent easement is adequate at this time, but if additional wells are installed as part of improvements to the groundwater monitoring well system, additional permanent easements with CSX Transportation may be required. In addition, access to the 200 Anderson Avenue property has been obtained under a Consent Order with the owner (Mr. R. Klepper). This access will facilitate the continued operation of the remedial treatment system and underground equipment. A permanent environmental easement and/or deed restriction is also recommended for the remedial site to reduce the potential for direct human contact with the site's contaminated soils. The buildings and property north of Anderson Avenue and the parcel to the south of Anderson Avenue should be included in this easement and/or deed restriction. Some occupants in the buildings have restricted the access needed by EEEPC and its operation, maintenance, and monitoring (OM&M) subcontractor, Popli Consulting Engineers and Surveyors, P.C. (Popli), to inspect the remedial equipment. This issue must be resolved with either the building manager or the property owner, as unrestricted access to these areas is needed to maintain the remedial equipment.

There are 18 operable monitoring wells in the groundwater monitoring well network around the DHOC site. Four of the 18 monitoring wells are located on the DHOC property (CHI-1, MW-1S, MW-5R, and MW-9S), two are in the public highway right-of-way (MW-10R and MW-15R), and nine are located on the CSX Transportation property easement (CHI-6, MW-2S, MW-12S, MW-13S, MW-14S, MW-2R, MW-8R, MW-12R, and MW-14R). The three remaining monitoring wells (MW-3S, MW-3R, and MW-16R) are located in the parking lot south of Anderson Avenue. It is unknown whether access agreements to facilitate the future maintenance and monitoring of these wells were previously obtained as part of the remedial investigation/feasibility study (RI/FS) for this parcel south of Anderson Avenue. Accordingly, EEEPC recommends that an environmental easement be obtained for the parcel south of Anderson Avenue to facilitate access

3 Evaluation of Site Institutional and Engineering Controls

for performance of OM&M. The locations of these monitoring wells are identified in the *2011 Groundwater Sampling Draft Data Summary Report* (see Appendix B).

3.2 Engineering Controls

The engineering controls that support remedial operations at the site are consistent with the Site Management Plan (SMP) (EEEEPC 2008) regarding OM&M of the site. There have been no changes to engineering controls at the site since the previous PRR.

4

Evaluation of Remedial Treatment Operations

4.1 System Operational Uptime in 2011

The uptime operations percentages are calculated based on actual monthly hours of treatment system operations in the reporting period divided by the potential hours of operation in the reporting period.

Local power outages or equipment failure do affect operation of the remedial treatment system. To minimize these downtimes, the system has an auto-dialer that sends an alarm to the OM&M subcontractor and EEEPC if an equipment failure occurs. In addition, the treatment facility can be called at any time at (585) 241-3431, unless phone service is down, to check on the status of the various operating equipment in the building.

In 2011, based on information from the weekly OM&M reports from the subcontractor, the remedial treatment system operated 7,624 hours out of a possible 8,760 hours, for an uptime operation of approximately 87%. Major downtime incidents included the following:

- The groundwater system was not operable from February 17, 2011, to April 4, 2011, due to a failure of one of the high-water alarm switches, which subsequently caused damage to the air stripper blower. Freezing conditions prevented complete repairs until ambient air temperatures moderated sufficiently to thaw residual water in the piping system and complete repairs. The air sparge and SVE system was placed back into service on March 11, 2011, and the groundwater pumping system was placed back into service on April 4, 2011. The system was shut down for approximately 1,128 hours.
- In October, the system was shut down for approximately six hours for minor maintenance to the system.
- In November, the system was shut down for approximately two hours for minor maintenance to the system.

Table 4-1 provides details on the monthly operation of the treatment system.

4 Evaluation of Remedial Treatment Operations

Table 4-1 DHOC Site Remedial Treatment System Uptime in 2011

Reporting Period	Reporting Hours/ Maximum Hours	Operational Uptime (%)
December 30, 2010 to January 28, 2011	696/696	100
January 28, 2011 to February 28, 2011	456/744	61
February 28, 2011 to April 4, 2011	0/840	0
April 4, 2011 to April 29, 2011	600/600	100
April 29, 2011 to May 27, 2011	672/672	100
May 27, 2011 to June 24, 2011	672/672	100
June 24, 2011 to July 29, 2011	840/840	100
July 29, 2011 to August 26, 2011	672/672	100
August 26, 2011 to September 30, 2011	840/840	100
September 30, 2011 to October 28, 2011	666/672	99
October 28, 2011 to November 23, 2011	622/624	99.7
November 23, 2011 to December 30, 2011	888/888	100
Total Hours of Operation in 2011	7,624/8,760	87%
Average Percentage of Operational Uptime in 2011		87%

Additional details can be found in the monthly OM&M reports (EEPC 2011a through 2011l).

4.2 Groundwater Processed and Discharged through the Remedial Treatment System in 2011

The amount of groundwater processed and discharged is read directly from the effluent discharge meter located after the air-stripper unit. Readings are taken weekly at the master discharge meter and then calculated for each monthly reporting period.

Based on information obtained from the weekly monitoring reports from the OM&M subcontractor, the remedial treatment system processed and discharged 691,000 gallons of treated groundwater to the Monroe County sanitary sewer system from December 30, 2010, to December 30, 2011 (see Table 4-2). The decrease in total discharge flow in 2011 over that of 2010 was due to the system being down in February and March due to equipment malfunction and the corresponding repairs. Variability in the number of gallons of groundwater treated on a monthly basis is due to several factors, including the number of weeks reported for that month (four or five), seasonal changes in groundwater elevations, and equipment efficiency and maintenance requirements.

Table 4-2 Groundwater Processed and Discharged by the Remedial Treatment System in 2011

Month	Actual Period	Gallons Treated
January 2011	12/30/10 to 01/28/11	26,000
February 2011	1/28/11 to 02/28/11	10,000
March 2011	02/28/11 to 04/04/11	---
April 2011	04/04/11 to 04/29/11	84,000
May 2011	04/29/11 to 05/27/11	93,000

4 Evaluation of Remedial Treatment Operations

Table 4-2 Groundwater Processed and Discharged by the Remedial Treatment System in 2011

Month	Actual Period	Gallons Treated
June 2011	05/27/11 to 06/24/11	74,000
July 2011	06/24/11 to 07/29/11	55,000
August 2011	07/29/11 to 08/26/11	55,000
September 2011	08/26/11 to 09/30/11	80,000
October 2011	09/30/11 to 10/28/11	79,000
November 2011	10/28/11 to 11/23/11	52,000
December 2011	11/23/11 to 12/30/11	83,000
Total Gallons Treated in 2011		691,000

The average flow rate while the system was in operation was approximately 1.5 gallons per minute.

4.3 Chlorinated Volatile Organic Compounds (cVOCs) Removed from Groundwater in 2011 (Air Stripping Operations)

The amount of cVOCs removed from the groundwater is estimated based on the influent and effluent analytical results and the amount of groundwater processed through the treatment system. Based on calculations prepared by EEEPC on the operation of the remedial treatment unit from January 2011 to December 2011, approximately 3.97 pounds of cVOCs were removed from the groundwater by the remedial treatment system in 2011 (see Table 4-3 Additional cVOC results can be found in the monthly OM&M reports (EEEPC 2011a through 2011i)).

Table 4-3 cVOCs Removed from Groundwater by the DHOC Site Remedial Treatment System in 2011

Month	Actual Period	Influent cVOCs (µg/L)	Effluent cVOCs (µg/L)	Removal Efficiency (%)	cVOCs Removed (pounds)
January 2011	12/30/10 to 01/28/11	372	214	42.6	0.03
February 2011	01/28/11 to 02/28/11	530	366	30.9	0.01
March 2011	02/28/11 to 04/04/11	---	---	---	---
April 2011	04/04/11 to 04/29/11	165	46	72	0.08
May 2011	04/29/11 to 05/27/11	4,037	52	99.0	3.09
June 2011	05/27/11 to 06/24/11	225	11	95	0.13
July 2011	06/24/11 to 07/29/11	270	7.7	97	0.12
August 2011	07/29/11 to 08/26/11	271	32	88	0.11
September 2011	08/26/11 to 09/30/11	187	51	73	0.09
October 2011	09/30/11 to 10/28/11	199	36	82	0.11
November 2011	10/28/11 to 11/23/11	192	20	90	0.08
December 2011	11/23/11 to 12/30/11	224	49	78	0.12
Total					3.97

Key:

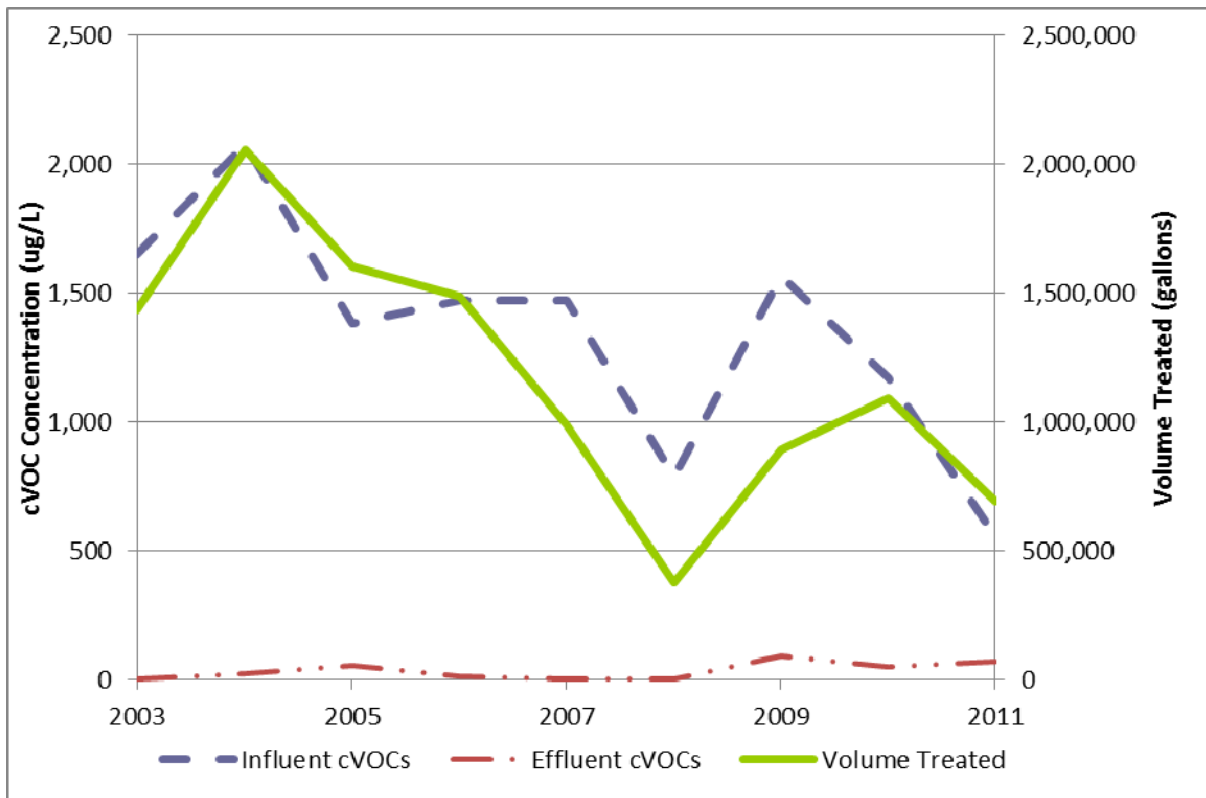
cVOC = Chlorinated volatile organic compound.

µg/L = Micrograms per liter.

4 Evaluation of Remedial Treatment Operations

Figure 4-1 shows the historical treatment trend for the DHOC site from 2003 through 2011. Since 2003, the average total cVOC concentration in the influent of the system has generally decreased, indicating the contaminant concentration in the extracted groundwater is decreasing. The increase in flow between 2009 and 2010 was due to the pump rehabilitation/replacement effort which occurred in August 2009 and resulted in an increased the volume of groundwater that was being processed. The decrease in flow between 2010 and 2011 was due to the decrease in production from pumping well PW-1, which developed an obstruction in the transfer line from the well head to the treatment system trailer. This obstruction is expected to be cleared in spring 2012.

The annual average cVOC concentration presented below is estimated by summing the monthly influent concentrations during each year and dividing this sum by 12. Because the system was offline between March 7, 2008, and September 18, 2008, the average 2008 cVOC concentration was calculated only for the approximate six-month period of active operation (from January to March and from September to December 2008) is 788 micrograms per liter ($\mu\text{g/L}$).



Notes:

1. Deactivation of the catalytic oxidation unit occurred in March 2008, requiring the treatment system to be shut down for five months.
2. Pump rehabilitation/replacement occurred in August 2009.
3. The system was shut down in March 2011 due to damage caused by overflow of the system.

Figure 4-1 Historical Treatment Trends, 2003 through 2011

4.4 Groundwater Treatment - 2011

The effluent from the remedial treatment system met the discharge permit requirements (see Appendix C) for each month of 2011. Table 4-4 presents a summary of the monthly analytical results for the treated effluent and compares them to the Monroe County discharge permit limits.

Table 4-4 2011 Monthly Compliance Results for Treated Groundwater Effluent, DHOC Site

Month	Average Effluent (gpm)	pH (s.u.)	Total Petroleum Hydrocarbons (ppm)	Purgeable Halocarbons, Purgeable Aromatics, Acid Extractables, Base Neutrals, and Pesticides (ppm)	Permit Compliance
Discharge Permit Limits	28	5.0-12.0	100	2.13	
January	0.62	7.48	ND	0.214	Yes
February	0.37	7.45	ND	0.366	Yes
March	---	---	---	---	---
April	2.33	8.11	ND	0.046	Yes
May	2.31	8.28	ND	0.052	Yes
June	1.84	8.05	ND	0.011	Yes
July	1.09	8.19	ND	0.008	Yes
August	1.36	8.53	ND	0.032	Yes
September	1.59	8.17	ND	0.051	Yes
October	1.96	8.27	ND	0.036	Yes
November	1.39	8.26	ND	0.020	Yes
December	1.56	8.17	ND	0.049	Yes

Notes:

1. PCBs were removed from the Permit analyte list on October 28, 2008 – refer to the SMP (EEEEPC 2008), Appendix G.
2. System was shut down in March 2011 due to damage caused by overflow of system.

Key:

- gpm = Gallons per minute.
- ND = Not detected.
- ppm = Parts per million.
- s.u. = Standard units.

4.5 Groundwater Monitoring Well Sampling Results in 2011

In 2011, the following seven cVOCs were detected in overburden groundwater samples at levels that exceed the New York State Department of Environmental Conservation (NYSDEC) Class GA groundwater standards (see Appendix B):

- 1,1,1-TCA;
- 1,1-dichloroethane (DCA);
- 1,2-dichlorobenzene;
- cis-1,2-dichloroethene;
- perchloroethylene (PCE);
- trichloroethylene (TCE); and
- vinyl chloride.

4 Evaluation of Remedial Treatment Operations

Similarly, the following six cVOCs were detected in bedrock groundwater samples at levels that exceed the NYSDEC Class GA groundwater standards:

- DCA;
- 1,1-DCE;
- benzene;
- cis-1,2-DCE;
- TCE; and
- vinyl chloride.

The cVOCs and benzene, toluene, ethyl benzene, and xylene (BTEX) continue to be detected at higher concentrations in the bedrock groundwater relative to the overburden groundwater. However, BTEX concentrations have declined significantly in the bedrock groundwater and are no longer detected in some wells where they were previously present. Only MW-5R contained concentrations of BTEX compounds above detection limits in 2011.

5

General Status of Remedial Treatment Equipment Oversight Activities

In 2011, OM&M of the DHOC site remedial treatment system was performed on a weekly basis by EEEPC's OM&M subcontractor, Popli. In the event of a major component malfunction at the site, an auto-dialer primary contact alarm alerts the OM&M subcontractor of the problem and a secondary alarm alerts EEEPC.

Monthly compliance reporting on the OM&M work performed on the remedial treatment system is performed by EEEPC. When equipment repairs are required, the OM&M subcontractor reports the needed repairs to EEEPC, and EEEPC reports them to NYSDEC. Information regarding repairs performed on the remedial treatment system components is provided in the weekly OM&M report submitted to EEEPC and in a monthly report submitted to NYSDEC.

All equipment issues are handled on a case-by-case basis. Major equipment issues are discussed with the NYSDEC project manager, and a corrective action approach is developed. Upon acceptance, the corrective action is initiated. Minor equipment and electronic maintenance, repair, and replacement costs are funded through the contingency task established when the project was initiated.

Analytical services for the DHOC site are provided by Columbia Analytical Services, Inc. (CAS). The analytical frequency matrix is provided in Table 5-1.

Table 5-1 Analytical Frequency Matrix, DHOC Site

	Groundwater	Air	Schedule
Treatment System (Influent and Effluent)	X	NA	Monthly
Groundwater Monitoring Wells Network	X	NA	Yearly

Key:

NA = Not applicable.

5.1 Remedial Treatment Condition, Replacement, and Repairs in 2011

Major components of the remedial treatment operations, including the chemical sequestering system, equalization tank, bag filters, blowers, air-stripping unit, and

5 General Status of Remedial Treatment Equipment Oversight Activities

groundwater pumping system, continue to operate at a high rate of efficiency as a result of the weekly monitoring and maintenance program.

The groundwater pumping network remains in working condition. Items that have had higher maintenance requirements over the last few years have been the pumps and the level transducers for the groundwater pumping system. These two active components have been in operation for over five years and are subject to harsh conditions. The groundwater pumps and transducers have an anticipated life expectancy of approximately two to three years. Replacement pumps and replacement transducers are, therefore, kept on hand for quick replacement after failure or even pre-emptive replacement.

The groundwater system was not operable from February 17, 2011, to April 4, 2011, due to a failure of one of the high-water alarm switches, which subsequently caused damage to the air stripper blower. Freezing conditions prevented complete repairs until ambient air temperatures moderated sufficiently to thaw residual water in the piping system and complete repairs. The air sparge and SVE system was placed back into service on March 11, 2011, and the groundwater pumping system was placed back into service on April 4, 2011. The following actions were taken in order to restore system operation, which was completed on April 4, 2011:

- The filter and timing belt on the SVE blower was replaced, and the oil was changed;
- The tee-piping above the air stripper blower was sealed with epoxy putty;
- The lovejoy connector between the air sparge motor and compressor was replaced;
- The contactor/switch in the control panel that controls the air stripper effluent pump was replaced;
- The ice buildup that occurred within the effluent piping from the SVE blower to the exhaust was cleared;
- A space heater was purchased to assist in warming the system trailer so that additional ice buildup in the groundwater pumping system could be cleared;
- The air stripper effluent pump was removed, the pump shaft was repaired, and the pump was replaced;
- Malfunctioning light bulbs on the main control panel were replaced.
- A chlorinated polyvinyl chloride check valve that was cracked due to ice expansion was replaced.

5 General Status of Remedial Treatment Equipment Oversight Activities

In August 2011, the following non-regular maintenance activities were performed:

- The relief valve on the air sparge compressor was replaced;
- The integral assembly for pump PW-2 was replaced;
- New flow meter sensors for pumps PW-1 and P-1 were installed;
- New pressure gages at AS-37, AS-38, and AS-39 were installed;
- New air flow meters at AS-39 and AS-41 were installed; and
- A new pressure valve at AS-41 was installed.

In September 2011, the following non-regular maintenance activities were performed:

- A valve on AS-39 was replaced;
- Valve, vacuum gauge, and pressure differential gauge on SVE-03, SVE-04, and SVE-L13 were replaced;
- Vacuum gauge on SVE-P6 was replaced;
- Pressure differential gauge on SVE-L10 was replaced;
- Air flow meter was removed and piping was connected at AS-44;
- Pump PW-1 was cleaned and $\frac{3}{4}$ -inch chlorinated polyvinyl chloride tubing was replaced from the pump to the manhole pipe intake;
- The contactor assembly for pump PW-1 was replaced; and
- The auto-dialer was reset and reprogrammed.

In October 2011, the following non-regular maintenance activities were performed:

- AS-44 was repaired;
- Pressure gauge on equalization tank transfer pump was replaced;
- Pressure gauge on air sparge compressor was replaced;
- Vacuum gauge at bottom inlet on SVE blower inlet filter was replaced;

5 General Status of Remedial Treatment Equipment Oversight Activities

- Frontier Tech repaired the phone line and installed a new splitter for phone and auto-dialer;
- A thermostat for XP heater was installed;
- The air stripper was cleaned;
- The underground PW-1 was pipeline cleaned; and
- Pump PW-1 from well was removed and the screen was cleaned. One foot of tubing was removed to suspend pump above mud and keep the screen clean.

In December 2011, the following non-regular maintenance activities were performed:

- The mechanical parts of the T-10 discharge meter were replaced.

5.2 Groundwater Monitoring Well Network

Long-term groundwater sampling was performed in October 2011. EEEPC conducted an inspection of all shallow and bedrock groundwater monitoring wells. The purpose of these inspections was to determine and document the physical condition of the wells and to identify maintenance actions required to keep the groundwater monitoring well network operational. Based on the inspection, it was determined that the groundwater monitoring wells were in good condition, but some of the shallow wells were dry (see Table 5-2).

5 General Status of Remedial Treatment Equipment Oversight Activities

Table 5-2 Summary of October 2011 Well Inspection, DHOC Site

Well No.	Date Inspected	PVC Well Casing ID (inches)	Inspection Observations
CHI-1	10/17/2011	2	Dry
CHI-6	10/17/2011	2	Dry
MW-1S	10/17/2011	2	OK
MW-2S	10/17/2011	2	OK
MW-3S	10/17/2011	2	Needs new pad and cap
MW-9S	10/17/2011	2	OK
MW-12S	10/17/2011	2	OK
MW-13S	10/17/2011	2	Needs new bolts
MW-14S	10/17/2011	2	Needs new bolts
MW-2R	10/17/2011	4	OK
MW-3R	10/17/2011	2	Needs cap and bolts
MW-5R	10/17/2011	4	OK
MW-8R	10/17/2011	4	OK
MW-10R	10/17/2011	4	OK
MW-12R	10/17/2011	4	OK
MW-14R	10/17/2011	4	Needs new bolts
MW-15R	10/17/2011	4	OK
MW-16R	10/17/2011	4	OK

Key:

- CHI = Clean Harbors, Inc.
- ID = Inner diameter.
- MW = Monitoring well.
- PVC = Polyvinyl chloride.

6

Actions to Support Eventual Site Closure

The overall project goals are to reduce the concentrations of cVOCs in the soils beneath the capped or paved area north of the DHOC buildings on Anderson Avenue and reduce the concentrations of cVOCs in the contaminated groundwater plume to below the groundwater standards established by NYSDEC. Attaining these goals will allow for the eventual closure of the bedrock groundwater recovery system and overall remedial treatment system. Suggested future actions or modifications that would improve individual operations and shorten the time required to attain the target cVOC concentrations are presented below.

6.1 Efforts to Support Site Closure

When in operation in 2011, the groundwater treatment system operated efficiently. Based on a review of the reported analytical data for the long-term groundwater monitoring program from January 1997, September 1998, May 2004, August 2007, May 2009, May 2010, and October 2011, cVOC concentrations have decreased with time. The next evaluation of the site groundwater will be performed in 2012.

More specifically, polycyclic aromatic hydrocarbons are no longer present at concentrations exceeding NYSDEC's groundwater standards. BTEX concentrations have declined significantly in the bedrock groundwater and are no longer detected in some wells where they were previously present. Only MW-5R contained concentrations of BTEX compounds above detection limits in 2011.

Based on the observed changes in the distribution of the BTEX and cVOC contaminations beneath the site, the groundwater treatment system, in conjunction with natural processes, appears to be effective at reducing overall contaminant concentrations.

The results of the long-term monitoring program indicate that the contaminant plume continues to extend to the northeast of the DHOC site, toward the CSX Transportation property. Continued monitoring of the groundwater well network and rehabilitation of groundwater and/or pumping wells on a regular basis is recommended to maintain a high pumping rate for treatment.

6.2 Effluent Discharge Permit Contaminant Parameter Relief

Based on the monthly sampling results, the sampling frequency for pesticides was changed from analysis on a monthly basis to a semiannual basis (see Appendix C, County of Monroe Discharge Permit – 2010-2013). EEEPC feels that discharge permit contaminant parameter relief should be given for total petroleum hydrocarbons as well. Total petroleum hydrocarbon analytes have not been detected in the influent or effluent samples for the past three years.

7

Annual Remedial Action Costs

The approximate 2011 costs of OM&M of the remedial treatment system at the DHOC site, including equipment in the treatment trailer, the groundwater pumping system, long-term groundwater monitoring network, EEEPC oversight, sub-contracted services, replacement equipment, and utilities, are presented in Table 7-1.

The total 2011 cost for operating the remedial treatment system at the DHOC site was \$163,636.05

Table 7-1 2011 Remedial Action Costs, DHOC Site

Description	Work Assignment DC14 Total (\$)
Sub – OM&M Services	\$26,816.37
Sub – Analytical Services	\$14,248.90
Utilities – Electric	\$10,118.93
Utilities – Gas ¹	\$0.00
Utilities – Telephone	\$337.02
Replacement Equipment	\$1,873.45
Long-term Monitoring Program	\$33,350.23
EEEEPC Admin, Management, and Reporting	\$76,891.15
2011 Grand Total	\$163,636.05

Note:

¹ No future gas use anticipated; the catalytic oxidation unit was removed from the site in March 2009.

Key:

NYSDEC = New York State Department of Environmental Conservation.

OM&M = Operations, maintenance, and monitoring.

8

Department or Local Public Reporting

8.1 NYSDEC Fact Sheet

The most recent NYSDEC Fact Sheet was issued by NYSDEC in December 2009 and can be found in Appendix D.

8.2 Local Public Reporting

No local public reporting of the site or remedial site operations was noted in 2011. The local reporting newspaper in Rochester, New York, is the *Democrat and Chronicle*.

9

References

Ecology and Environment Engineering, P.C. (EEEEPC). 2006. *Air Quality Analysis, Davis-Howland Oil Corporation Site, NYSDEC Site No. 8-28-088*. November 2006.

_____. 2008. *Draft Site Management Plan, Former Davis-Howland Oil Corporation Site, NYSDEC Site No. 8-28-088, City of Rochester, Monroe County, New York*.

_____. 2011a. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, January 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011b. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, February 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011c. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, March 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011d. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, April 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011e. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, May 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011f. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, June 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011g. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, July 2011 Operations, Maintenance, and Monitoring Report*.

_____. 2011h. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, August 2011 Operations, Maintenance, and Monitoring Report.*

_____. 2011i. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, September 2011 Operations, Maintenance, and Monitoring Report.*

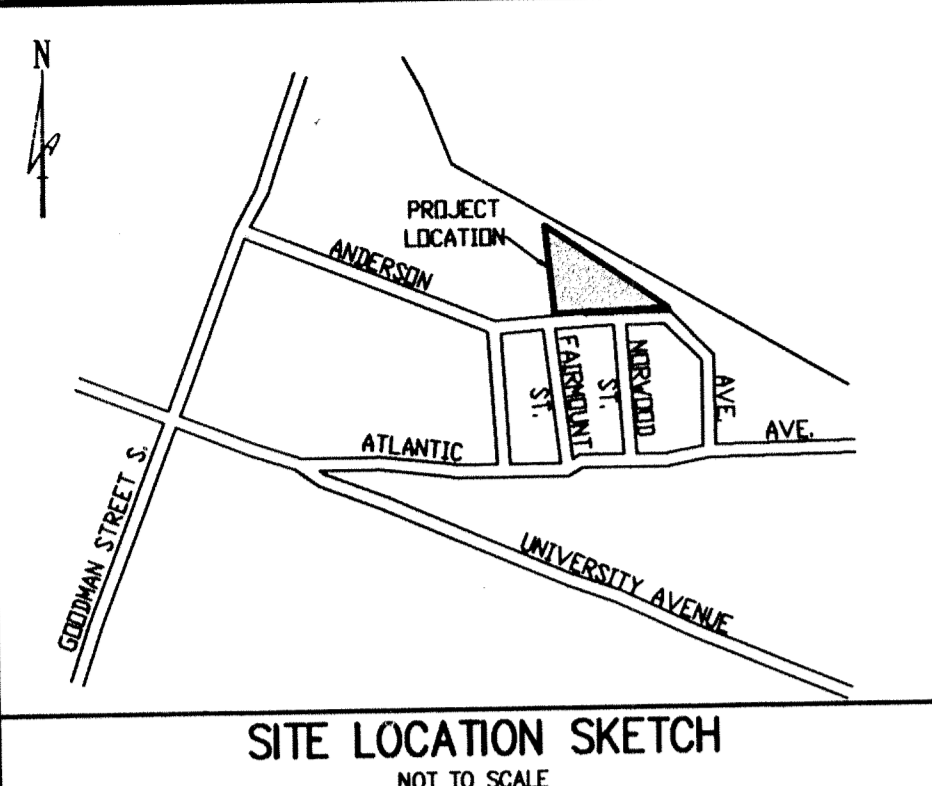
_____. 2011j. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, October 2011 Operations, Maintenance, and Monitoring Report.*

_____. 2011k. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, November 2011 Operations, Maintenance, and Monitoring Report.*

_____. 2011l. *Davis-Howland Oil Company Site, EEEPC Contract No. D004442, Site No. 8-28-088, December 2011 Operations, Maintenance, and Monitoring Report.*

A

Detailed Site Map



* LATERAL RISER CONNECTION - FIG. 8A
 * 4" OR 6" CLEANOUT DETAIL FOR LATERAL CONNECTION - FIG. 9D (5/26 C-64)

b. DRAWING C-1:
 The invert of the manhole at the intersection of Anderson Avenue and Norwood Street based on the drawing's relative datum is 86.85; the rim elevation is 97.43. (From the Record Drawings for the Anderson Avenue Street Improvement Project dated 5/5/87, the elevations are: invert 489.81, rim 500.39, manhole station 9+79.5.) The invert elevations match those shown on the MCPW Mile Square Map 96.)

The invert of the manhole at the intersection of Anderson Avenue and Fairmount Street based on the drawing's relative datum is 85.97; the rim elevation is 98.80. (From the Record Drawings for the Anderson Avenue Street Improvement Project dated 5/5/87, the elevations are: invert 488.93, rim 501.76, manhole station 9+79.5.) The invert elevations match those shown on the MCPW Mile Square Map 96.)

The Norwood Street manhole is connected to the Fairmount Street manhole with 250-feet of 12" V.T. Pipe installed at a 3.92% slope.

Treated discharge from the treatment unit to the storm sewer tie in must be in accordance with the contract documents and with Chapter 40, City of Rochester Plumbing Code. The Contractor will be responsible for obtaining and paying all fees associated with a plumbing permit from the City of Rochester. The City of Rochester Plumbing Department Contact is:

Mr. Bob Thomas, Lead Plumbing Inspector
 City of Rochester, Department of Commercial Development
 City Hall, Room 122B
 30 Church Street
 Rochester, NY 14614
 Tel: (716) 428-6576

Mr. Michael Kirchgessner
 444 E. Henrietta Rd.
 Rochester, NY 14620
 Tel: (716) 760-7578

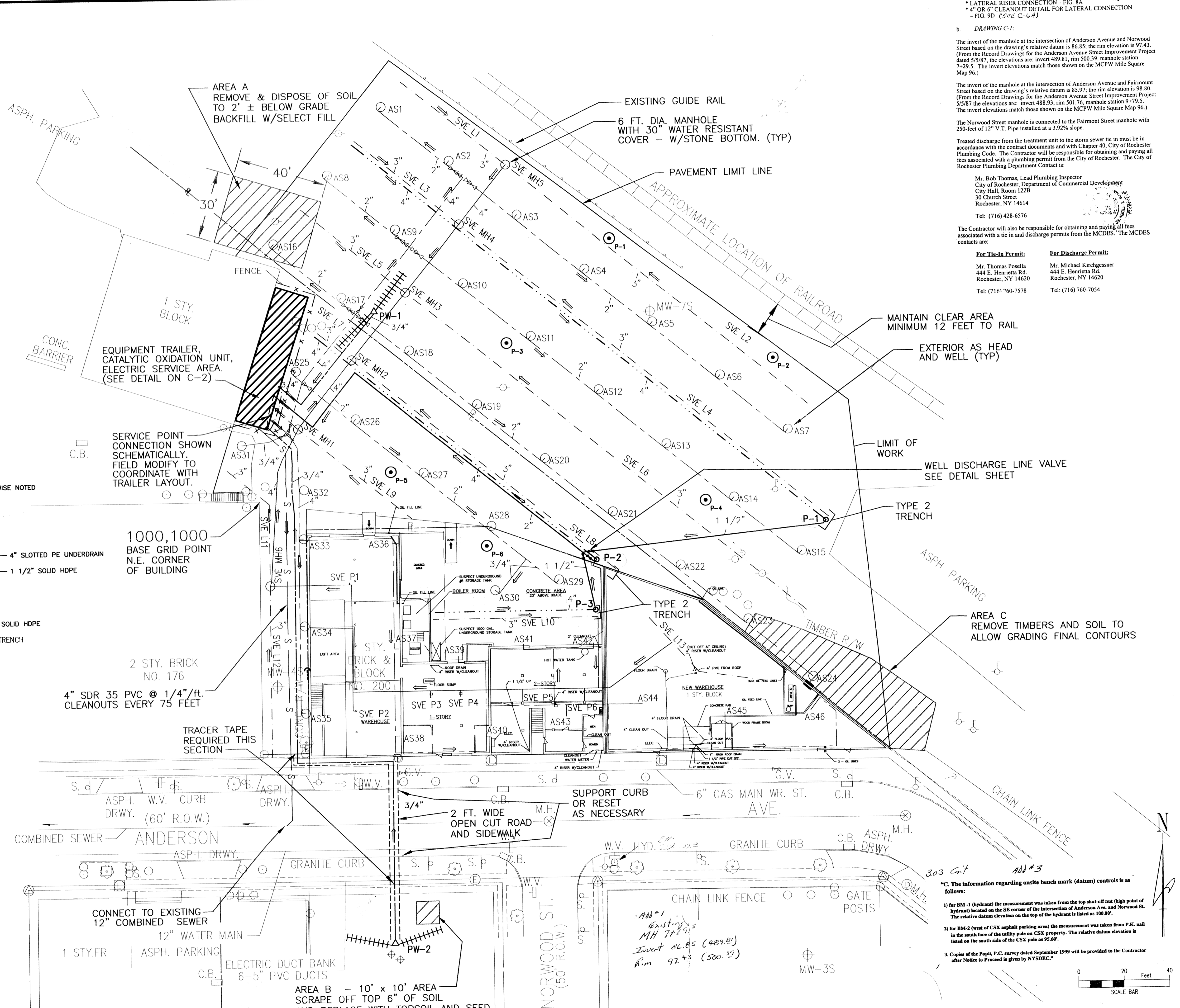
Mr. Thomas Posella
 444 E. Henrietta Rd.
 Rochester, NY 14620
 Tel: (716) 760-7054

For Tie-In Permit: Mr. Thomas Posella
 444 E. Henrietta Rd.
 Rochester, NY 14620
 Tel: (716) 760-7578

For Discharge Permit: Mr. Michael Kirchgessner
 444 E. Henrietta Rd.
 Rochester, NY 14620
 Tel: (716) 760-7054

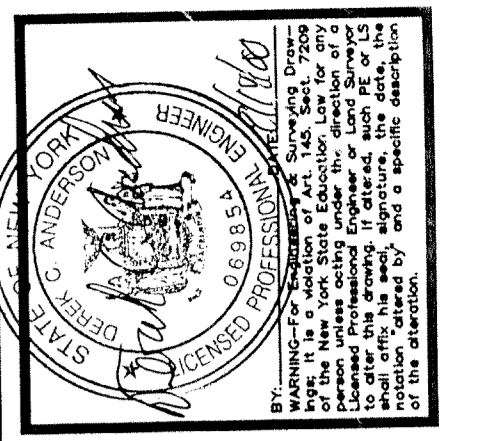
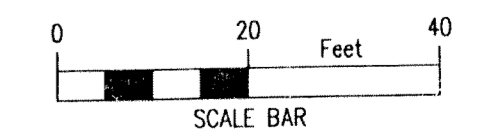
- LEGEND**
- ⊙ ROCHESTER CITY SURVEY MONUMENT
 - ⊕ MONITORING WELL
 - ⊕ HYDRANT
 - ⊕ LIGHT POLE
 - ⊕ GUY WIRE
 - RCS MONUMENTATION LINE
 - PROPERTY LINE
 - CONTOUR LINE
 - BUILDING LINE
 - ⊕ S. SIGN
 - ⊕ C.B. CATCH BASIN
 - ⊕ G.V. GAS VALVE
 - ⊕ W.V. WATER VALVE
 - SVE HEADER PIPE — SOLID HDPE
 - SVE PIPING SYSTEM — TYPE 1 TRENCH UNLESS OTHERWISE NOTED
 - SVE PIPING SYSTEM — SOLID HDPE
 - AS PIPING SYSTEM — SOLID HDPE
 - AS7 AIR SPARGE POINT
 - OU-1 GROUNDWATER PIPING SYSTEM — 4" SLOTTED PE UNDERDRAIN
 - OU-1 GROUNDWATER PIPING SYSTEM — 1 1/2" SOLID HDPE
 - P-3 OU-1 GROUNDWATER EXTRACTION WELL
 - ⊕ P-3 PROPOSED PIEZOMETER
 - OU-2 PUMP WELL PIPING SYSTEM — SOLID HDPE
 - OU-2 PUMPWELL WITH BLASTED ROCK TRENCH
 - INTERM REMEDIAL MEASURE AREA TO BE EXCAVATED TO A DEPTH OF 2 FT. BELOW GRADE
 - ASPHALT COVER
 - S TREATED WATER DISCHARGE LINE

- NOTES:**
- SVE LINES INSTALLED IN TYPE 1 TRENCH UNLESS NOTED.
 - CONTRACTOR REQUIRED TO OBTAIN CITY OF ROCHESTER AND MONROE COUNTY PERMITS FOR STREET CROSSING AND SEWER CONNECTION.
 - SEE SHEET C-6 FOR COORDINATES OF SYSTEM COMPONENTS AND EXCAVATION AREAS.



"C. The information regarding onsite bench mark (datum) controls is as follows:

- for BM-1 (Hydrant) the measurement was taken from the top shut-off nut (high point of hydrant) located on the SE corner of the intersection of Anderson Ave. and Norwood St. The relative datum elevation on the top of the hydrant is listed as 100.00'.
- for BM-2 (west of CSX asphalt parking area) the measurement was taken from P.K. nail in the south face of the utility pole on CSX property. The relative datum elevation is listed on the south side of the CSX pole as 95.60'.
- Copies of the Populi, P.C. survey dated September 1999 will be provided to the Contractor after Notice to Proceed is given by NYSDEC."



NO.	DESCRIPTION	DESIGNED BY:	CHECKED BY:	DATE:
		DCA	DSS	

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ENSR
 ENGINEERING NEW YORK
 CONSULTING ENGINEERING REMEDIATION
 1000 S. WALKER ST. ROCHESTER, NEW YORK 14620
 PHONE: (716) 381-2213 FAX: (716) 381-5392

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
 CONTRACT NO. D004181

AS / SVE SITE PLAN
 DAVIS-HOWLAND OIL CORP.
 REMEDIATION PROJECT
 200 ANDERSON AVENUE
 ROCHESTER, NEW YORK

SCALE: 1" = 20'
 DATE: 8/2000
 PROJECT NUMBER: 986265C1

DRAWING NUMBER:
C-1
 SHEET NUMBER:
 986265C1.DWG

B

**2011 Groundwater Sampling Draft
Data Summary Report**

**Former Davis-Howland Oil
Corporation Site
2011 Groundwater Sampling
Draft Data Summary Report
Rochester, New York**

Site Number: 8-28-088

April 2012

Prepared for:

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DEPARTMENT OF ENVIRONMENTAL REMEDIATION
625 Broadway, 12th Floor
Albany, New York 12233**

Prepared by:

**ECOLOGY AND ENVIRONMENT ENGINEERING, P.C.
368 Pleasant View Drive
Lancaster, New York 14086**

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List of Abbreviations and Acronyms

bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and xylenes
CATOX	catalytic oxidizer
CHI	Clean Harbors of Kingston, Inc.
cm/s	centimeters per second
COC	chemical of concern
Davis-Howland	Former Davis-Howland Oil Corporation site
DCA	dichloroethane
DCB	dichlorobenzene
DCE	dichloroethylene
DGC	Dunn Geoscience Corporation
DUSR	Data Usability Summary Report
EEEP	Ecology and Environment Engineering, P.C.
EPA	United States Environmental Protection Agency
FS	feasibility study
ft/ft	feet per foot
IDW	investigation-derived waste
µg/L	micrograms per liter
MS/MSD	matrix spike/matrix spike duplicate
NTU	nephelometric turbidity unit
NYSDEC	New York State Department of Environmental Conservation
OM&M	operation, maintenance, and monitoring

List of Abbreviations and Acronyms (Cont.)

OU	operable unit
PAH	polycyclic aromatic hydrocarbon
PCB	polychlorinated biphenyl
PCE	tetrachloroethene
PPE	personal protective equipment
QA/QC	quality assurance/quality control
RI	remedial investigation
ROD	Record of Decision
SMP	Site Management Plan
SVE	soil vapor extraction
SVOC	semivolatile organic compound
TCA	1,1,1-trichloroethane
TCE	trichloroethene
TOGS	Technical Operational Guidance Series
TPH	total petroleum hydrocarbons
USGS	United States Geological Survey
VOC	volatile organic compound

1

Introduction

Ecology and Environment Engineering, P.C. (EEEP), under contract to the New York State Department of Environmental Conservation (NYSDEC) (Work Assignment Number D004422-14) was tasked to perform groundwater sampling and analysis at the former Davis-Howland Oil Corporation (Davis-Howland) site (NYSDEC Site No. 8-28-088), located in the city of Rochester in Monroe County, New York (see Figure 1-1).

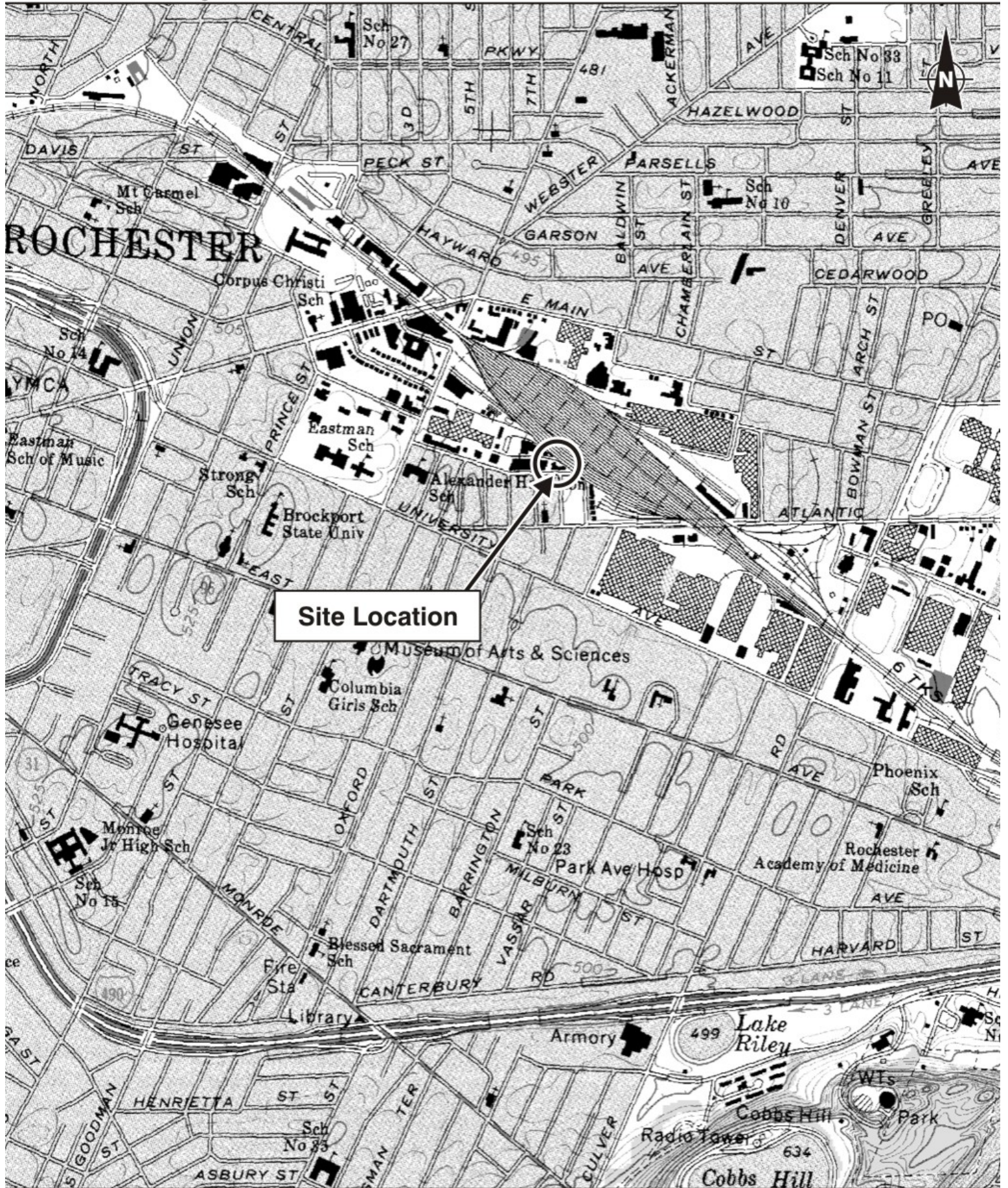
Field investigations were performed by EEEPC personnel on October 17 through 21, 2011. This report provides a summary of the groundwater sampling, groundwater elevation measurements, and well inspections performed as described in the Groundwater Monitoring and Long-term Well Sampling Procedures prepared by EEEPC in 2004 (EEEP 2004a) and revised for the Site Management Plan in 2008 (EEEP 2008). Descriptions of the October 2011 groundwater monitoring well sampling field activities are presented in Section 2. Physical characteristics of the study area are presented in Section 3. A discussion of the new analytical data obtained and a comparison with previous historical analytical data is presented in Section 4. A data summary and conclusions are presented in Section 5.

1.1 Site Location and Description

The former Davis-Howland site is located at 190-220 Anderson Avenue and a portion of 176 Anderson Avenue in the city of Rochester in Monroe County, New York on an approximately 1-acre parcel (see Figure 1-1). The parcel is located in a mixed-use area of residential, municipal, and industrial properties and bordered by railroad tracks to the north and east, Anderson Avenue to the south, and operational commercial and retail buildings to the west (see Figure 1-2). The site consists of four buildings of various sizes and an open area adjacent to the railroad tracks.

1.2 General Site History and Background

The site was used to produce industrial chemicals, oils, greases and other lubricants from 1942 to 1972. From 1972 until sometime in 1994 it was operated by the Davis-Howland Oil Company. Davis-Howland Oil Company ceased operations sometime in 1994.



MAP SOURCE: USGS Topographic 7.5 Minute Series,
Rochester East Quadrangle, Monroe County, New York



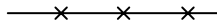
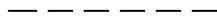
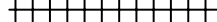

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Figure 1-1
Former Davis-Howland Oil Corporation Site Location Map

DUPE FOR MIKE ALOI



LEGEND

-  EXCAVATION AREAS
-  PROPERTY LINE OR RIGHT-OF-WAY (ROW)
-  FENCING
-  GUARD RAIL
-  RAILROAD TRACKS
-  AS/SVE TREATMENT ZONE

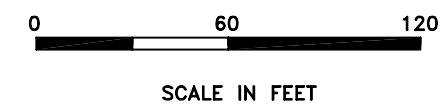
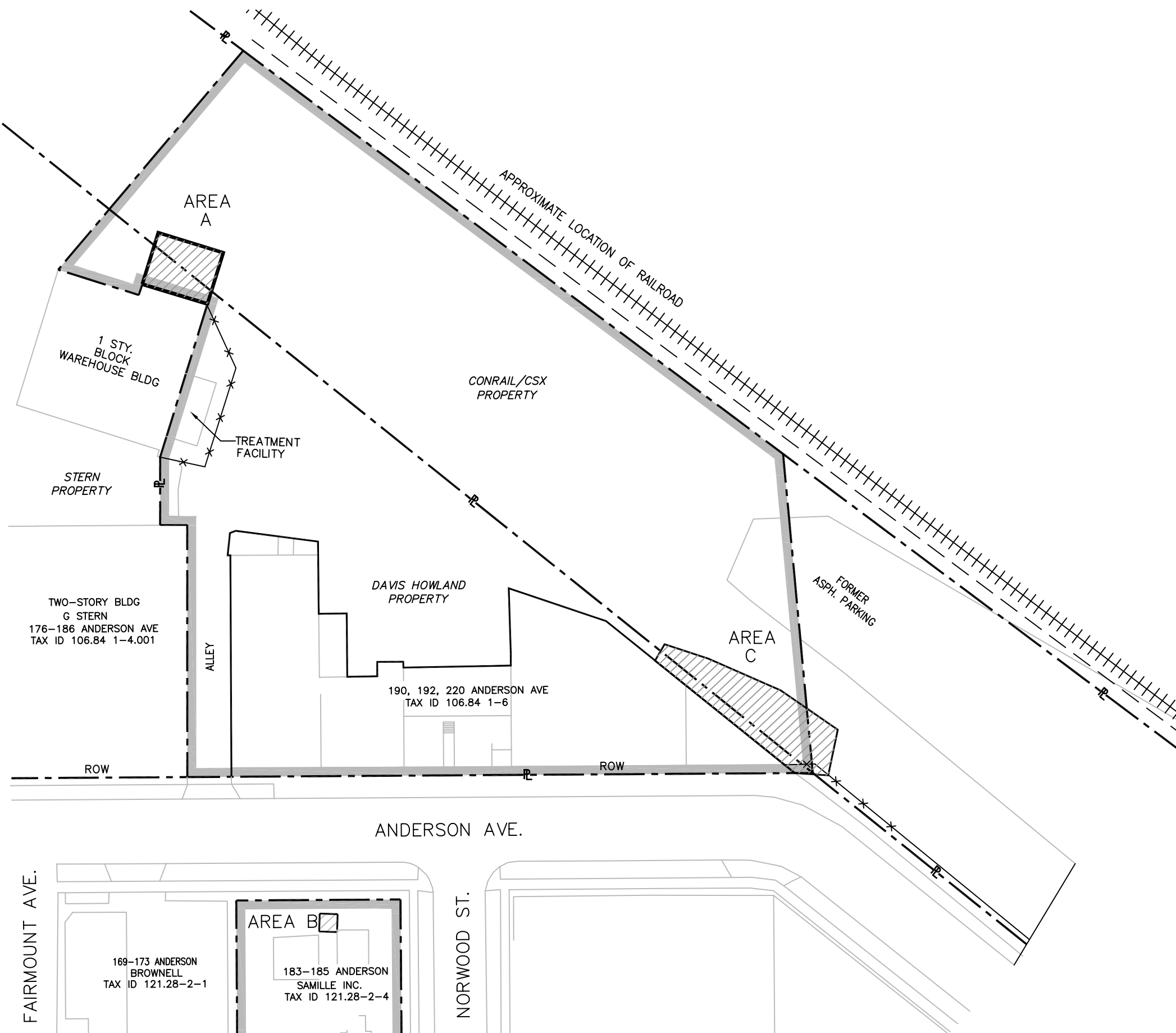


FIGURE 1-2

SITE LAYOUT MAP
 FORMER DAVIS-HOWLAND
 CORPORATION SITE

Several reports of spills and releases of materials on the site—including waste oil, mineral oil, hydrochloric acid, and sulfuric acid—were reported to NYSDEC during Davis-Howland Oil Company’s operational period. NYSDEC inspected the site in June 1991 and found several hundred drums of oils, solvents, and other materials, some of which were leaking, as well as several areas of stained surficial soil. A subsequent soil investigation and work effort by NYSDEC included soil sampling, a waste inventory and characterization, and over-packing and containerizing of leaking drums for off-site disposal at a later time. Analytical results showed the surface soils were contaminated with petroleum and solvents.

In October 1991 the owners of the Davis-Howland Oil Company contracted with Dunn Geosciences Corporation (DGC), Amherst, New York, to conduct a remedial soil investigation. The investigation included test pits and soil gas probing in order to evaluate the distribution of contaminated soils behind (north of) the Davis-Howland buildings on Anderson Avenue. The DGC remedial investigation (RI) report of November 26, 1991, noted that the following contaminants were found on the site:

- Visibly stained soils 6 to 7 feet below ground surface (bgs) north of the building;
- Chlorinated and non-chlorinated solvents 6 to 7 feet bgs that exceeded the NYSDEC Part 375 soil standards; and
- Lead levels exceeding the NYSDEC Part 375 soil standard at depths of 3 to 3.5 feet bgs.

As recommended by DGC’s November 1991 RI report, all containerized liquid drummed wastes and the uppermost 1 to 2 feet of visibly contaminated surficial soils needed to be removed before remediation of deeper soils could be attempted.

From April to June 1992, Clean Harbors of Kingston, Inc. (CHI), Kingston, New York, removed the inventory of drummed waste and removed visibly affected surficial soils. NYSDEC’s inspection during the CHI cleanup indicated that additional visually contaminated soils remained after the surficial soils excavation work but further removal would have been impractical at that time. NYSDEC decided that additional soil contamination would be addressed in later investigations. CHI submitted a draft report (1992) summarizing the three-month soil and drummed waste remediation. The report was deemed “inadequate” by NYSDEC because no field monitoring or residual soil sampling had been conducted to confirm that the surficial soil removal was adequate.

In conjunction with the drum and soil removal work (April to June 1992), CHI performed additional site investigations by sampling soils and installing and sampling six shallow groundwater monitoring wells. In September 1992, Davis-Howland submitted the CHI groundwater report to NYSDEC. The analytical re-

sults indicated that the groundwater was contaminated with chlorinated and non-chlorinated solvents and metals.

In December 1994, NYSDEC sampled the site's overburden groundwater monitoring wells to assist in the development of the Remedial Investigation/Feasibility Study (RI/FS) Work Plan. The results were consistent with the September 1992 CHI groundwater report.

In April 1995, NYSDEC made the following conclusions, based on the report results:

- All overburden monitoring well analytical results from the site exceeded the NYSDEC Class GA groundwater standards for volatile organic compounds (VOCs), semivolatile organic compounds (SVOCs), and metals.
- Additional deep bedrock and shallow monitoring wells were needed to characterize the site.
- The designated groundwater chemicals of concern (COCs) included VOCs, SVOCs, pesticides/polychlorinated biphenyls (PCBs), and metals.

In April 1995, based on the review of previous technical studies, the site was listed on the New York State Registry of Inactive Hazardous Waste Sites (Site No. 8-28-088), indicating that it posed a significant threat to human health and the environment.

The first of a two-phase RI/FS work assignment from NYSDEC was completed in October 1996 (Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers 1996). The investigation and study focused on operable unit (OU)-1, which encompasses the shallow groundwater, surficial soil, and subsurface soil on the site. Eight shallow and 15 bedrock monitoring wells were installed for the Phase I investigation.

Based upon the results of the Phase I RI/FS prepared for the Davis-Howland Oil Corporation Inactive Hazardous Waste Site OU-1 (upper aquifer and soils) and the criteria identified for the evaluation of alternatives in that document (Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers 1997a), NYSDEC selected Alternative 3 (air sparging, soil vapor extraction [SVE], and soil excavation and removal) as the site remedy in the Record of Decision (ROD). The ROD for the selected remedial alternative OU-1 was signed in March 1997.

A Phase II RI/FS was completed in October 1997 by Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers (1997b). The investigation and study focused on further defining the nature and extent of soil and deep groundwater contamination on the site. Additional soil samples were collected at the surface and near-surface to confirm the results from Phase I of the first RI. In ad-

dition, bedrock monitoring wells were installed and sampled. Finally, air sparging and soil vapor extraction pilot tests were performed to evaluate the remedial technologies for use at the site.

Based upon the results of the Phase II remedial investigation for OU-2 (the bedrock aquifer) and the criteria identified for the evaluation of alternatives in that document, NYSDEC selected No Further Action (plus monitoring) as the site remedy. The second ROD for the selected remedial alternative for OU-2 was signed in March 1998.

Contract documents for remedial construction at the site were prepared by ENSR Engineering New York and issued for bidding in September 2000.

The current groundwater treatment system is a trailer-mounted remediation system using 46 sparge points, six SVE points, 1,300 feet of horizontal SVE lines, three groundwater extraction wells, six observation piezometers, and two blasted bedrock trench recovery systems. Treatment-system start-up occurred on July 22, 2002. On August 27, 2002, the continuous 24-hour operation of the treatment system began the operation, maintenance, and monitoring (OM&M) phase, which continues to the present.

Based on air quality modeling performed by EEEPC for the site, the catalytic oxidizer (CATOX) system was decommissioned and removed from the treatment system in July 2003 (EEEPC 2006). The remedial treatment system continues to pump and treat contaminated groundwater and air sparge and vapor extraction of the overburden zone also continues at the site.

2

Davis-Howland Oil Corporation Site 2011 Field Activities

This section discusses the 2011 groundwater monitoring well field activities performed at the Davis-Howland site in October 2011. All field activities were conducted according to EEEPC's Groundwater Monitoring and Long-term Well Sampling Procedures (Groundwater Sampling Procedures) prepared by EEEPC in 2004 (revised in 2008) and included as Appendix N of the draft Site Management Plan (SMP) (EEEPC 2008). Sample locations are indicated on Figure 2-1. In addition to the revised 2008 Groundwater Sampling Procedures, an addendum to the existing EEEPC site-specific health and safety plan was prepared and included as Appendix I of the SMP.

2.1 Monitoring Well Sampling

Eighteen monitoring wells, six piezometers, and five pumping wells were identified as potential sampling locations for this monitoring event. Groundwater samples were collected from 15 wells at the Davis-Howland site. Sampling could not be conducted at two monitoring wells that were dry and one monitoring well that was purged dry with no recovery. All monitoring wells were purged prior to sampling. Monitoring well purging was completed using a submersible pump with new polyethylene tubing or using disposable polyethylene bailers on new polypropylene line. Non-dedicated sampling equipment was decontaminated in accordance with the Groundwater Sampling Procedures. In addition, samples from four pumping wells were collected from sampling ports located within the on-site treatment trailer. Pumps were turned on manually and allowed to pump approximately 1 gallon of groundwater prior to collection of the sample. Groundwater from PW-2 could not be sampled due to a broken sample port. Fluids generated during decontamination were handled according to procedures outlined in Section 2.3.

Prior to purging, static water levels were measured to within ± 0.01 foot in each monitoring well using an electronic water-level indicator. The water level and total depth of each well were recorded (see Table 2-1). Note that the suffix "R" in a monitoring well designation (for example, MW-12R) denotes a bedrock well. The suffix "S" denotes a monitoring well that is screened in the shallow overburden groundwater zone.

All monitoring wells were purged of at least three volumes of water standing in the well except for the following: MW-13S was purged dry and was sampled af-

2 Davis-Howland Oil Corporation Site 2011 Field Activities

ter sufficient recharge occurred; MW-16R was purged dry after approximately one well volume and was sampled after sufficient recharge occurred; Well MW-2R was purged of 2.5 gallons but never recharged, so it was not sampled; MW-8R was purged dry at 27.5 gallons and was sampled after sufficient recharge occurred; and MW-9S was purged dry at 3.5 gallons and sampled after sufficient recharge had occurred.

Table 2-1 October 2011 Groundwater Elevations, Former Davis-Howland Oil Corporation Site, Rochester, New York

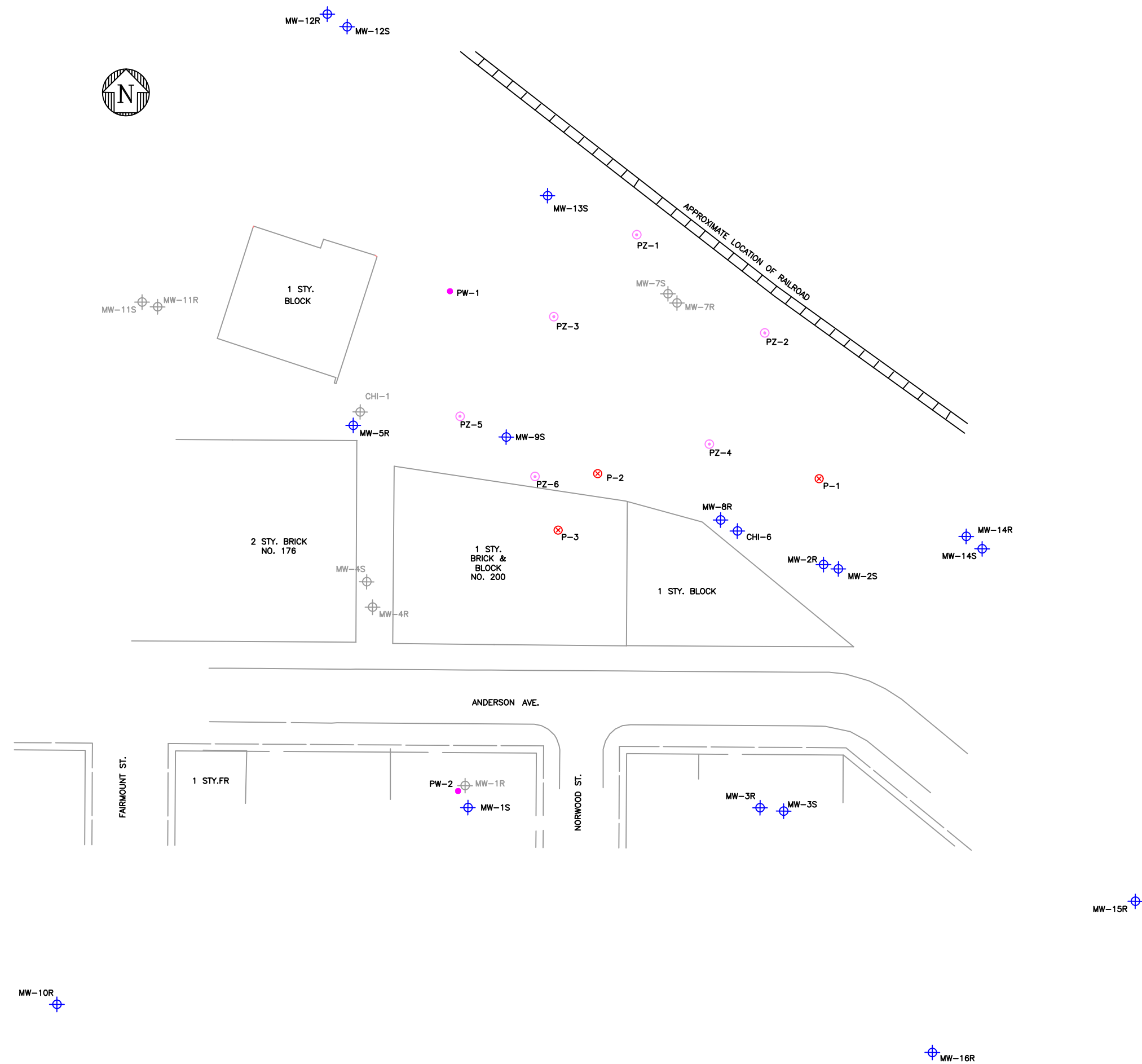
Well Type	Well ID	Measurement Date	Measured Total Depth (feet TOIC)	TOIC			
				Ground Elevation (feet amsl)	Casing Elevation (feet amsl)	Water Level (feet TOIC)	Groundwater Elevation (feet amsl)
Shallow Overburden	CHI-1	10/17/2011	4.10	--	--	DRY	--
	CHI-6	10/17/2011	7.50	496.61	498.77	DRY	--
	MW-1S	10/17/2011	17.45	500.41	500.23	12.15	488.08
	MW-2S	10/17/2011	13.45	496.23	496.03	6.25	489.78
	MW-3S	10/17/2011	16.57	498.27	497.97	7.17	490.80
	MW-9S	10/17/2011	15.45	498.57	497.94	8.00	489.94
	MW-12S	10/17/2011	14.42	496.24	495.78	3.35	492.43
	MW-13S	10/17/2011	13.20	496.58	496.24	5.10	491.14
Bedrock	MW-14S	10/17/2011	12.40	495.93	495.48	2.15	493.33
	MW-2R	10/17/2011	25.45	496.43	496.14	20.40	475.74
	MW-3R	10/17/2011	37.55	498.43	498.16	17.70	480.46
	MW-5R	10/17/2011	34.25	499.11	501.32	11.55	489.77
	MW-8R	10/17/2011	35.10	497.10	499.63	15.60	484.03
	MW-10R	10/17/2011	35.00	498.35	497.89	17.55	480.34
	MW-12R	10/17/2011	31.45	496.26	496.86	19.75	477.11
	MW-14R	10/17/2011	23.30	495.97	495.60	5.21	490.39
MW-15R	10/17/2011	29.85	494.96	494.68	13.90	480.78	
MW-16R	10/17/2011	30.80	493.89	493.48	16.85	476.63	

Key:

amsl = Above mean sea level.

MW = Monitoring well.

TOIC = Top of inner casing.



LEGEND

	MW-12R	EXISTING MONITORING WELL
	MW-12R	EXISTING MONITORING WELL (DECOMMISSIONED)
	P-1	GROUNDWATER PUMPING WELLS
	PW-1	DEEP PUMPING WELLS
	PZ-4	PIEZOMETERS

NOTE
 R DENOTES BEDROCK MONITORING WELLS
 S DENOTES SHALLOW (OVERBURDEN) MONITORING WELLS



FIGURE 2-1
 MONITORING WELL LOCATIONS
 FORMER DAVIS-HOWLAND CORPORATION SITE
 MONROE COUNTY, ROCHESTER, NY

2 Davis-Howland Oil Corporation Site 2011 Field Activities

Wells CHI-6 and CHI-1 were measured dry and not sampled. Purged water was handled in accordance with the Groundwater Sampling Procedures (see Section 2.3 of this report). Monitoring equipment was calibrated on-site using standards provided with the equipment. Temperature, pH, specific conductance, and turbidity were measured and recorded at specified intervals during and after purging. Purging was performed until pH, specific conductance, and temperature had stabilized and turbidity was 50 nephelometric turbidity units (NTUs) or less. The water quality parameters measured at the time of sampling are noted in Table 2-2. Appendix A contains copies of the well purge and sample records obtained during the October 2011 sampling event.

Table 2-2 Summary of Groundwater Quality Field Measurements, Former Davis-Howland Oil Corporation Site, Rochester, New York

Sample Identification	Sample Date	pH (s.u.)	Temperature (°C)	Conductivity (µS/cm)	Unfiltered Turbidity (NTUs)
Overburden Wells					
MW-1S	10/21/2011	7.75	14.6	1254	0.00
MW-2S	10/18/2011	7.65	18.7	1587	2.26
MW-3S	10/20/2011	7.31	18.6	327.4	0.00
MW-9S	10/19/2011	7.60	16.1	1841	9.00
MW-12S	10/17/2011	7.11	13.6	1083	20.0
MW-13S	10/18/2011	7.52	15.3	130.5	26.8
MW-14S	10/18/2011	7.32	18.4	665.2	0.40
Bedrock Wells					
MW-2R	10/18/2011	7.66	15.8	788.6	8.19
MW-3R	10/20/2011	7.44	14.6	1382	0.00
MW-5R	10/19/2011	8.06	14.0	1059	0.00
MW-8R	10/18/2011	7.42	14.3	2230	9.01
MW-10R	10/21/2011	8.06	13.4	1146	0.00
MW-12R	10/17/2011	7.05	13.4	952.3	3.80
MW-14R	10/18/2011	7.71	16.7	1416	0.27
MW-15R	10/20/2011	7.56	13.0	1113	0.00
MW-16R	10/20/2011	7.50	15.0	1652	140

Key:

°F = Degrees Fahrenheit.

µS/cm = MicroSiemens per centimeter.

NTU = Nephelometric turbidity unit.

s.u. = Standard units.

All groundwater samples were submitted to Columbia Analytical Services for VOC analysis by Method 601, SVOCs by Method 625, pH by Method 150-1, and petroleum products (total petroleum hydrocarbons [TPH]) by Method 310-13 analyses.

Per the procedures outlined in the Groundwater Sampling Procedures, vials for VOC analysis were filled, leaving no headspace. Upon collection, all samples were labeled and immediately placed in a cooler maintained with ice at 4°C. The

2 Davis-Howland Oil Corporation Site 2011 Field Activities

samples were then packaged and the cooler was driven to the laboratory with chain-of-custody documents prepared in accordance with the Groundwater Sampling Procedures.

In addition to the environmental samples, quality assurance/quality control (QA/QC) samples were collected. Trip blanks accompanied every shipment for VOC analysis to check for the possible introduction of VOCs from the time the samples were collected to the time they were analyzed. All sample portions for VOCs collected on a single day were transported in the same cooler. To check consistency in both sample collection and sample analysis, duplicate samples were collected. Duplicate samples were collected at a rate of approximately one per 20 field samples. The duplicate sample (MW-15RQ) consisted of aliquots of sample media placed in separate sample containers and labeled as separate samples. Additionally, a matrix spike/matrix spike duplicate (MS/MSD) sample (MW-14R) was collected to simulate the background effect and interferences found in the actual samples. The calculated percent recovery of the spike is used as a measure of the accuracy of the total analytical method. MS/MSD samples were also collected at a rate of one per 20 field samples. QA/QC data were reviewed by an EEEPC chemist and a Data Usability Summary Report (DUSR) was prepared (see Appendix C). Data qualifiers were applied as described in the DUSR and incorporated into the data summary tables in Section 4.

2.2 Monitoring Well Inspections

On October 17, 2011, EEEPC conducted brief inspections of the groundwater monitoring wells. The purpose of these inspections was to determine and document the physical condition of the wells and to identify maintenance actions required to keep the wells operational. The inspections indicated that the wells were (for the most part) in good condition. One well pad needs to be repaired, and one well cover was found to be missing. In addition, numerous bolts were found to be missing on many of the well covers. In some cases, the bolt holes need to be re-tapped in order to accept a bolt, while in other cases, the bolts were simply missing. The results of the inspections are documented on Table 2-3.

Table 2-3 Well Inspection Summary, Former Davis-Howland Oil Corporation Site, Rochester, New York

Well No.	Date Inspected	Well Casing Inner Diameter (inches)	Inspection Observations
CHI-1	10/17/2011	2	Dry
CHI-6	10/17/2011	2	Dry
MW-1S	10/17/2011	2	OK
MW-2S	10/17/2011	2	OK
MW-3S	10/17/2011	2	Needs new pad and cap
MW-9S	10/17/2011	2	OK
MW-12S	10/17/2011	2	OK
MW-13S	10/17/2011	2	Needs new bolts
MW-14S	10/17/2011	2	Needs new bolts

Table 2-3 Well Inspection Summary, Former Davis-Howland Oil Corporation Site, Rochester, New York

Well No.	Date Inspected	Well Casing Inner Diameter (inches)	Inspection Observations
MW-2R	10/17/2011	4	OK
MW-3R	10/17/2011	2	Needs cap and bolts
MW-5R	10/17/2011	4	OK
MW-8R	10/17/2011	4	OK
MW-10R	10/17/2011	4	OK
MW-12R	10/17/2011	4	OK
MW-14R	10/17/2011	4	Needs new bolts
MW-15R	10/17/2011	4	OK
MW-16R	10/17/2011	4	OK

2.3 Investigation-Derived Waste Management

All investigation-derived waste (IDW) generated during this investigation was handled according to procedures outlined in the Groundwater Sampling Procedures. Two types of IDW were generated: purged groundwater and expendable materials, including personal protective equipment (PPE). Waste streams were segregated and not mixed.

Purged water was filtered or left undisturbed to allow the solids to settle out of suspension. The water or the water with the fines removed was placed into the equalization tank of the on-site groundwater treatment system.

All expendable PPE generated during the investigation (including gloves and plastic sheeting) was double-bagged and placed in an industrial dumpster for off-site disposal in a licensed landfill.

3

Physical Characteristics of the Study Area

3.1 Physiography and Topography

The site is located in the city of Rochester, New York. The area surrounding the site is a mixture of residential, commercial, and industrial uses with generally flat topography. The Genesee River gorge is located approximately 1.6 miles west of the site and the Pinnacle Hills are located approximately 1.4 mile south of the site. East of the Davis-Howland building there is a meadow dominated by forbs and grasses (Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers 1997a).

3.2 Geology

The soils at the site and in the vicinity are classified as Urban Land (areas altered or obscured by urban works and structures). The site is situated on alluvial organic silt and sand overlaying glacial till deposits and lacustrine sand and silt of varying thickness.

Bedrock in Monroe County dips gently to the south-southwest at approximately 55 feet per mile (Kappel and Young 1989). Bedrock beneath the site is the Penfield Dolostone of the Middle Silurian Lockport Group and was encountered at 26.6 to 27 feet bgs during the RI (Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers 1998). The upper surface bedrock slopes to the south at gradients ranging between 0.008 feet per foot (ft/ft) to 0.02 ft/ft.

3.3 Hydrogeology

Four overburden aquifers have been identified by the United States Geological Survey (USGS) in the Rochester, New York area east of the Genesee River. These aquifers include an unconfined aquifer existing in the sand and gravel beach deposits at the north end of Irondequoit Bay; a confined aquifer in the sediments in the base of the Irondequoit Creek Valley; a sand and gravel aquifer present beneath Route 104; and a system of thin, scattered confined aquifers within the Pinnacle Hills kame-moraine complex. None of these aquifers are listed as United States Environmental Protection Agency (EPA) sole-source aquifers (Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers 1998).

General groundwater flow patterns within the overburden in the region are to the east toward the Irondequoit Creek Valley and to the north toward Lake Ontario. In general, outwash sand and gravel deposits are relatively highly permeable, whereas glacial till and lacustrine silt and clay deposits have low permeability and

3 Physical Characteristics of the Study Area

may behave as aquitards. The 1998 RI indicated that wells screened partially within the outwash and partially in the glacial till have a mean hydraulic conductivity of 7.77×10^{-4} centimeters per second (cm/s) and wells screened only in the outwash have a mean hydraulic conductivity of 4.27×10^{-4} cm/s.

There are two water-bearing zones beneath the Davis-Howland site: the shallow overburden and upper bedrock zones. A summary of each water-bearing zone is provided below.

3.3.1 Overburden Water-bearing Zone

The shallow overburden aquifer consists of 1 to 2 feet of topsoil (at one well location) underlain by average thicknesses of 3 feet of fill material (sand and gravel with some cobbles, brick, concrete, wood, and coal fragments); 10 feet of glacial outwash deposits; and 10 feet of glacial till. Bedrock, consisting of Penfield dolostone, occurs at depths of 15 to 27 feet below grade, with an average depth of 22.5 feet.

Groundwater flow direction has been variable in the past. In 1997, groundwater flow was to the south in the southern portion of the site with a flow divide near the railroad tracks resulting in flow to the northeast, southeast, southwest, and south. In 2004, flow was observed to the northeast across the site (EEEEPC 2004b). Groundwater flow in the overburden zone in August 2007 was to the southwest from a high area along the railroad tracks (EEEEPC 2007). The overburden groundwater flow in 2009 and 2010 was primarily to the south and west (EEEEPC 2009, 2010). As shown in Figure 3-1, overburden groundwater flow in October 2011 was again primarily to the south and west. On the west side of the site, groundwater flow was to the south at a gradient of 0.013 ft/ft (between MW-9S and MW-1S), and on the east side of the site, flow was to the west, toward low areas in the vicinity of MW-2S and MW-1S. In this area, the horizontal gradient was higher (0.031 ft/ft between MW-14S and MW-2S).

3.3.2 Bedrock Water-bearing Zone

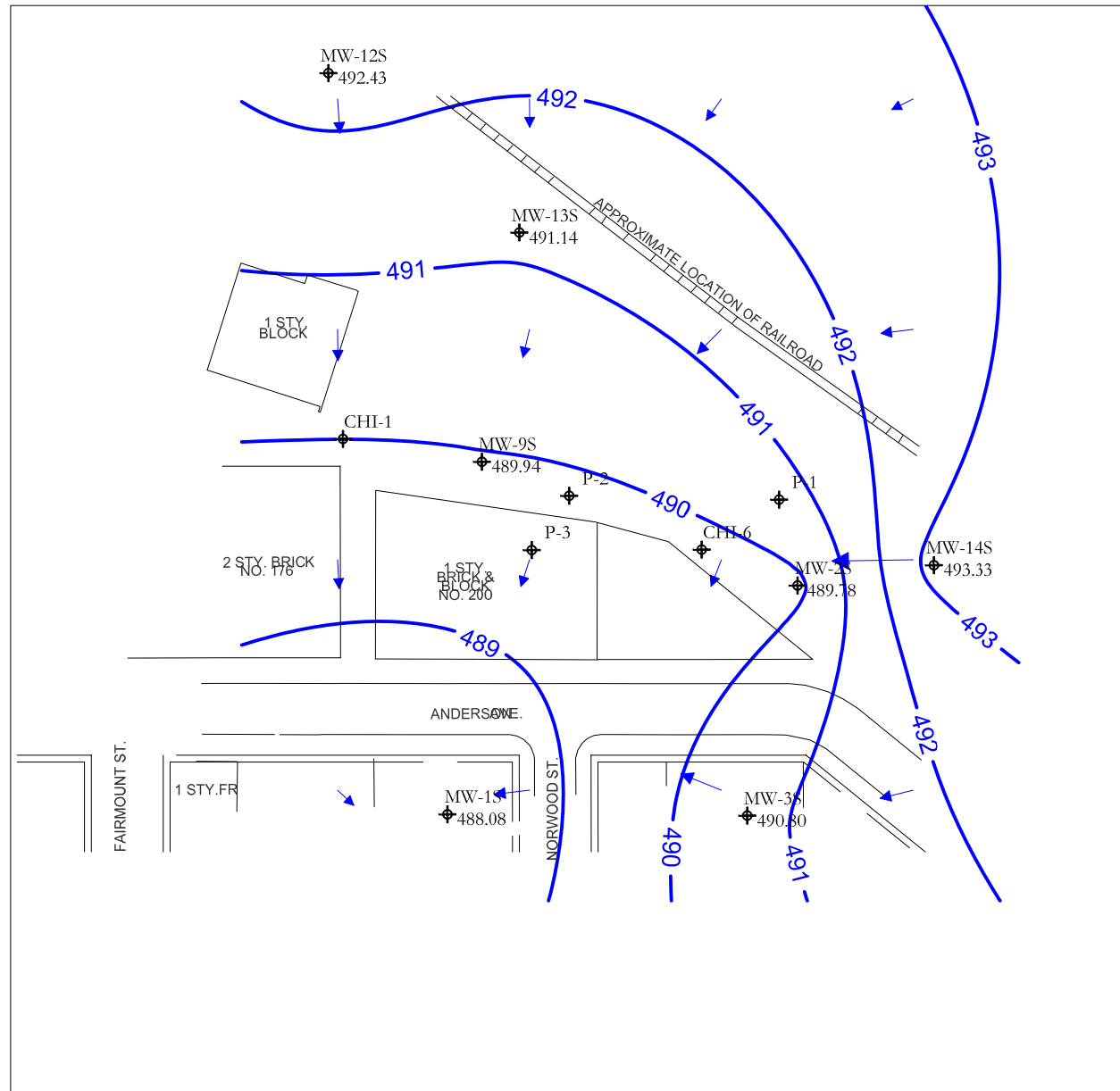
Bedrock groundwater flow has historically been more consistent than that in the overburden. In 1997 and 2004 groundwater flowed radially outward from a mound beneath the site, primarily in the northeast and southeast directions (EEEEPC 2004b). In August 2007, groundwater flow in the bedrock zone was variable, flowing radially from high areas on the west (near MW-5R) and east (MW-14R) sides of the site, with a sink, or low area, near MW-2R (EEEEPC 2007). A similar flow pattern was observed in bedrock groundwater in 2009 and 2010 (EEEEPC 2009, 2010): there was radial flow away from groundwater mounds near MW-5R and MW-15R and a sink near MW-2R. As shown in Figure 3-1, bedrock groundwater flow in October 2011 was similar to that measured in 2010 (groundwater flows radially from MW-5R and MW-14R). To the north of MW-5R, the horizontal gradient was approximately 0.044 ft/ft to the north-northwest. South of MW-5R, the gradient was approximately 0.017 ft/ft to the southeast. In the area

3 Physical Characteristics of the Study Area

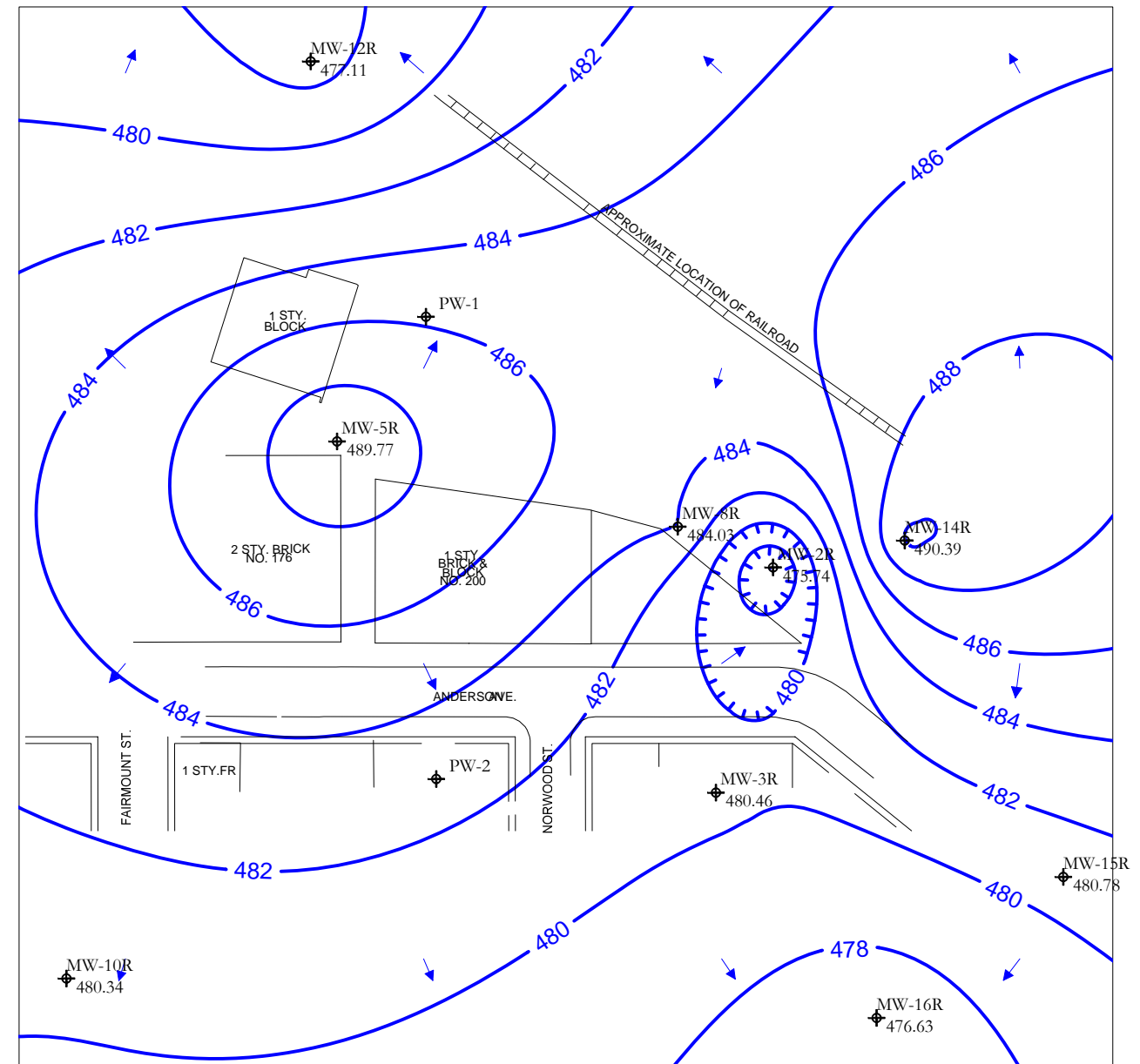
between the mound at MW-14R and the sink at MW-2R, the gradient increased to 0.18 ft/ft to the southwest.



**Groundwater Elevation Isopleths
 Overburden Monitoring Wells**



**Groundwater Elevation Isopleths
 Bedrock Monitoring Wells**



Notes:

- 1) Groundwater levels measured October 17, 2011.
- 2) Overburden pumping wells, P-1, P-2, and P-3, were left in automatic mode during the measurement period.
- 3) Deep pumping wells PW-1 and PW-2 were left in automatic mode during the measurement period.

Groundwater Flow Direction
 and Relative Magnitude of Gradient



FIGURE 3-1
 Groundwater Elevation Isopleths
 Overburden and Bedrock Monitoring Wells
 October 2011
 Former Davis-Howland Oil Corporation Site
 Rochester, NY

4

Nature and Extent of Contamination

The analytical results for the October 2011 groundwater samples for the former Davis-Howland Oil Corporation site and the comparison with historical results are discussed in this section. A summary of the current and historical results for each monitoring well is provided on Figure 4-1. The October 2011 laboratory results of detected contaminants in overburden monitoring wells and pumping wells are presented in Table 4-1. The October 2011 laboratory results of detected contaminants in the bedrock monitoring wells and pumping wells are presented in Table 4-2. The complete laboratory report for the October 2011 sampling event are provided in Appendix B.

During the October 2011 field activities, groundwater samples were collected from 15 monitoring wells (seven overburden wells and eight bedrock wells) and four pumping wells (three overburden wells and one bedrock well) (see Section 2.1). Groundwater samples were compared to the NYSDEC Technical and Operational Guidance Series (TOGS) 1.1.1, Class GA Drinking Water Standards and Guidance Values (NYSDEC 1998).

4.1 Overburden Groundwater Results

Ten different VOCs were detected in one or more groundwater samples from overburden wells (including pumping wells P-1, P-2 and P-3), including chlorinated solvents (tetrachloroethylene [PCE], trichloroethylene [TCE], 1,1,1-trichloroethane [TCA] and their degradation byproducts, dichlorobenzene [DCB] isomers).

Seven VOCs were detected at levels that exceed NYSDEC Class GA groundwater standards. These chemicals and their maximum concentrations in overburden groundwater samples included:

- 1,1,1-TCA (25 micrograms per liter [$\mu\text{g/L}$]);
- 1,1-dichloroethane (DCA) (23 $\mu\text{g/L}$);
- 1,2-dichlorobenzene (34 $\mu\text{g/L}$);
- cis-1,2-dichloroethylene (DCE) (53 $\mu\text{g/L}$);
- PCE (16 $\mu\text{g/L}$); TCE (27 $\mu\text{g/L}$); and
- vinyl chloride (15 $\mu\text{g/L}$).

Table 4-1 Summary of Positive Analytical Results for Overburden Groundwater Samples, Former Davis-Howland Oil Corporation Site, Rochester, New York

Analyte	Screening Criteria ⁽¹⁾	Sample ID and Date						
		MW-1S	MW-2S	MW-3S	MW-9S	MW-12S	MW-13S	MW-14S
		10/21/11	10/18/11	10/20/11	10/19/11	10/18/11	10/19/11	10/18/11
VOCs by Method E601.2 (µg/L)								
1,1,1-TRICHLOROETHANE	5	3.5	0.14 U	0.14 UJ	5.0	0.14 U	0.14 U	0.14 U
1,1-DICHLOROETHANE	5	0.13 UJ	1.9	0.13 UJ	23	0.13 U	0.13 U	0.13 U
1,1-DICHLOROETHENE	5	0.11 UJ	0.11 U	0.11 UJ	0.11 U	0.11 U	0.11 U	0.11 U
1,2-DICHLOROBENZENE	3	0.27 UJ	0.27 U	0.27 UJ	34	0.27 U	0.27 U	0.27 U
1,4-DICHLOROBENZENE	3	0.28 UJ	0.28 U	0.28 UJ	2.5	0.28 U	0.28 U	0.28 U
BENZENE	1	0.08 UJ	0.08 U	0.08 UJ	0.08 U	0.08 U	0.08 U	0.08 U
CIS-1,2-DICHLOROETHYLENE	5	32 J	0.13 U	0.13 UJ	53	0.13 U	0.13 U	0.13 U
ETHYLBENZENE	5	0.07 UJ	0.07 U	0.07 UJ	0.07 U	0.07 U	0.07 U	0.07 U
TETRACHLOROETHYLENE(PCE)	5	4.1 J	0.12 U	0.12 UJ	16	0.12 U	0.12 U	0.12 U
TRANS-1,2-DICHLOROETHENE	5	0.11 UJ	0.11 U	0.11 UJ	3.3	0.11 U	0.11 U	0.11 U
TRICHLOROETHYLENE (TCE)	5	27 J	0.1 U	0.1 UJ	24	0.1 U	0.1 U	0.1 U
VINYL CHLORIDE	2	0.17 UJ	0.17 U	0.17 UJ	15	0.17 U	0.17 U	0.17 U
SVOCs by Method E625 (µg/L)								
FLUORANTHENE	50	1 UJ	1 U	1.1 UJ	1 U	1 U	1 U	1 U
pH by Method SM 4500-H (SU)								
PH	NA	7.08 J	6.93 J	7.06 J	7.14 J	7.02 J	7.26 J	7.16 J
Temperature by Method SM 4500-H (°C)								
TEMPERATURE	NA	18	19	21	19	19	20	19

4-2

**Table 4-1 Summary of Positive Analytical Results for Overburden Groundwater Samples
Former Davis-Howland Oil Corporation Site, Rochester, New York**

Analyte	Screening Criteria ⁽¹⁾	Sample ID and Date		
		P-1	P-2	P-3
		10/19/11	10/19/11	10/19/11
VOCs by Method E601.2 (µg/L)				
1,1,1-TRICHLOROETHANE	5	3.5	25	22
1,1-DICHLOROETHANE	5	12	32	11
1,1-DICHLOROETHENE	5	2.8	0.28 U	3.2
1,2-DICHLOROBENZENE	3	0.27 U	0.68 U	0.54 U
1,4-DICHLOROBENZENE	3	0.28 U	0.71 U	0.56 U
BENZENE	1	0.08 U	0.2 U	0.16 U
CIS-1,2-DICHLOROETHYLENE	5	130	150	160
ETHYLBENZENE	5	0.07 U	0.18 U	0.14 U
TETRACHLOROETHYLENE(PCE)	5	19	94	270
TRANS-1,2-DICHLOROETHENE	5	0.11 U	2.8	0.22 U
TRICHLOROETHYLENE (TCE)	5	47	49	84
VINYL CHLORIDE	2	0.17 U	0.43 U	0.34 U
SVOCs by Method E625 (µg/L)				
FLUORANTHENE	50	NA	NA	NA
pH by Method SM 4500-H (SU)				
PH	NA	NA	NA	NA
Temperature by Method SM 4500-H (*C)				
TEMPERATURE	NA	NA	NA	NA

Notes:

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.
2. Shaded cells exceed the screening value.
3. Bold values denote positive hits.

Key:

- J = Estimated value.
- U = Not detected (lab reporting limit shown).
- UJ = Not detected/Estimated Value.
- µg/L = Micrograms per liter.
- SU = Standard Units.
- *C = Degrees Centigrade.
- VOCs = Volatile organic compounds.

**Table 4-2 Summary of Positive Analytical Results for Bedrock Groundwater Samples
Former Davis-Howland Oil Corporation Site, Rochester, New York**

Analyte	Screening Criteria ⁽¹⁾	Sample ID and Date						
		MW-2R 10/18/11	MW-3R 10/20/11	MW-5R 10/19/11	MW-8R 10/19/11	MW-10R 10/21/11	MW-12R 10/18/11	MW-14R 10/18/11
VOCs by Method E601.2 (µg/L)								
1,1,1-TRICHLOROETHANE	5	0.36 U	0.71 UJ	0.28 U	15 U	2.9 UJ	0.14 U	0.14 U
1,1-DICHLOROETHANE	5	35	36 J	4.0	150	2.6 UJ	0.13 U	0.13 U
1,1-DICHLOROETHENE	5	11	12 J	2.1	11 U	22 J	0.11 U	0.11 U
1,2-DICHLOROBENZENE	3	0.68 U	1.4 UJ	0.54 U	27 U	5.4 UJ	0.27 U	0.27 U
1,4-DICHLOROBENZENE	3	0.71 U	1.5 UJ	0.56 U	29 U	5.7 UJ	0.28 U	0.28 U
BENZENE	1	0.2 U	0.4 UJ	0.16 U	8 U	1.6 UJ	0.08 U	0.08 U
CIS-1,2-DICHLOROETHYLENE	5	890	720 J	120	4800	57 J	22	5.8
ETHYLBENZENE	5	4.7	0.36 UJ	0.14 U	7.1 U	1.5 UJ	0.07 U	0.07 U
TETRACHLOROETHYLENE(PCE)	5	0.3 U	0.6 UJ	0.24 U	12 U	2.4 UJ	0.12 U	0.12 U
TRANS-1,2-DICHLOROETHENE	5	4.0	5.7 J	0.22 U	11 U	2.2 UJ	0.11 U	3.3
TRICHLOROETHYLENE (TCE)	5	2.6	8.3 J	18	10 U	1300 J	23	52
VINYL CHLORIDE	2	250	180 J	14	730	3.5 UJ	0.17 U	0.17 U
SVOCs by Method E625 (µg/L)								
FLUORANTHENE	50	5.7	1 UJ	1 U	1 U	1 UJ	1 U	1 U
pH by Method SM 4500-H (SU)								
PH	NA	7.23 J	7.31 J	7.41 J	7.14 J	7.3 J	7.41 J	7.54 J
Temperature by Method SM 4500-H (*C)								
TEMPERATURE	NA	19	20	20	19	7.3 J	7.41 J	7.54 J

4-4

**Table 4-2 Summary of Positive Analytical Results for Bedrock Groundwater Samples
Former Davis-Howland Oil Corporation Site, Rochester, New York**

Analyte	Screening Criteria ⁽¹⁾	Sample ID and Date			
		MW-15R	MW-15RQ	MW-16R	PW-1
		10/20/11	10/20/11	10/20/11	10/19/11
VOCs by Method E601.2 (µg/L)					
1,1,1-TRICHLOROETHANE	5	0.14 UJ	0.14 UJ	0.14 UJ	2.6
1,1-DICHLOROETHANE	5	0.13 UJ	0.13 UJ	10 J	30
1,1-DICHLOROETHENE	5	0.11 UJ	0.11 UJ	2 J	7.7
1,2-DICHLOROBENZENE	3	0.27 UJ	0.27 UJ	0.27 UJ	0.27 U
1,4-DICHLOROBENZENE	3	0.28 UJ	0.28 UJ	0.28 UJ	0.28 U
BENZENE	1	0.08 UJ	0.08 UJ	0.08 UJ	1.2
CIS-1,2-DICHLOROETHYLENE	5	7.3 J	6.7 J	150 J	470
ETHYLBENZENE	5	0.07 UJ	0.07 UJ	0.07 UJ	0.07 U
TETRACHLOROETHYLENE(PCE)	5	0.12 UJ	0.12 UJ	0.12 UJ	3.1
TRANS-1,2-DICHLOROETHENE	5	0.11 UJ	0.11 UJ	1.4 J	6.6
TRICHLOROETHYLENE (TCE)	5	2.2 J	1.9 J	2.1 J	43
VINYL CHLORIDE	2	1.8 J	1.9 J	56 J	130
SVOCs by Method E625 (µg/L)					
FLUORANTHENE	50	1 UJ	1 UJ	1 UJ	NA
pH by Method SM 4500-H (SU)					
PH	NA	7.03 J	7.05 J	7.16 J	NA
Temperature by Method SM 4500-H (*C)					
TEMPERATURE	NA	20	20	22	NA

Notes:

1. New York State Department of Environmental Conservation, Technical and Operational Guidance Series Memorandum #1.1.1: *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*, 1998 (with updates), Class GA Groundwater Standards and Guidance Values.
2. Shaded cells exceed the screening value.
3. Bold values denote positive hits.

Key:

- J = Estimated value.
- U = Not detected (lab reporting limit shown).
- UJ = Not detected/Estimated Value.
- µg/L = Micrograms per liter.
- SU = Standard Units.
- *C = Degrees Centigrade.
- VOCs = Volatile organic compounds.
- Q Designates field duplicate sample.

The maximum total chlorinated VOC (cVOC) concentration detected in overburden groundwater samples was in P-3 at 550 µg/L.

4.1.1 Semivolatile Organic Compounds

No SVOCs were detected in the overburden groundwater samples.

4.1.2 Petroleum Products

No petroleum hydrocarbons, such as benzene, toluene, ethylbenzene, or xylenes (BTEX), were detected in the overburden groundwater samples.

4.2 Bedrock Groundwater Results

Ten different VOCs were detected in one or more groundwater samples from bedrock wells (including pumping well PW-1), including chlorinated solvents (TCE and its degradation byproducts, and DCB isomers), benzene, and ethylbenzene.

Seven VOCs were detected at levels that exceed NYSDEC Class GA groundwater standards. These chemicals and their maximum concentrations in bedrock groundwater samples included:

- 1,1-DCA (150 µg/L);
- 1,1-DCE (22 µg/L);
- benzene (1.2 µg/L);
- cis-1,2-DCE (4,800 µg/L);
- trans-1,2-DCE (6.6 µg/L);
- TCE (1,300 µg/L); and
- vinyl chloride (730 µg/L).

The maximum cVOC concentration detected in bedrock groundwater samples was 5,680 µg/L in MW-8R, primarily due to 4,800 µg/L of cis-1,2-DCE. The maximum TCE concentration detected was 1,300 µg/L in MW10-R.

4.2.1 Semivolatile Organic Compounds

Fluoranthene was detected in the groundwater sample collected from MW-2R at a concentration of 5.7 µg/L. No other SVOCs were detected in the bedrock groundwater samples.

4.2.2 Petroleum Products

Benzene was detected in the groundwater sample collected from PW-1 at a concentration of 1.2 µg/L, and ethylbenzene was detected in the groundwater sample collected from MW-2R at a concentration of 4.7 µg/L. No other petroleum hydrocarbons were detected in the bedrock groundwater samples.

4.3 Summary of 2011 Results

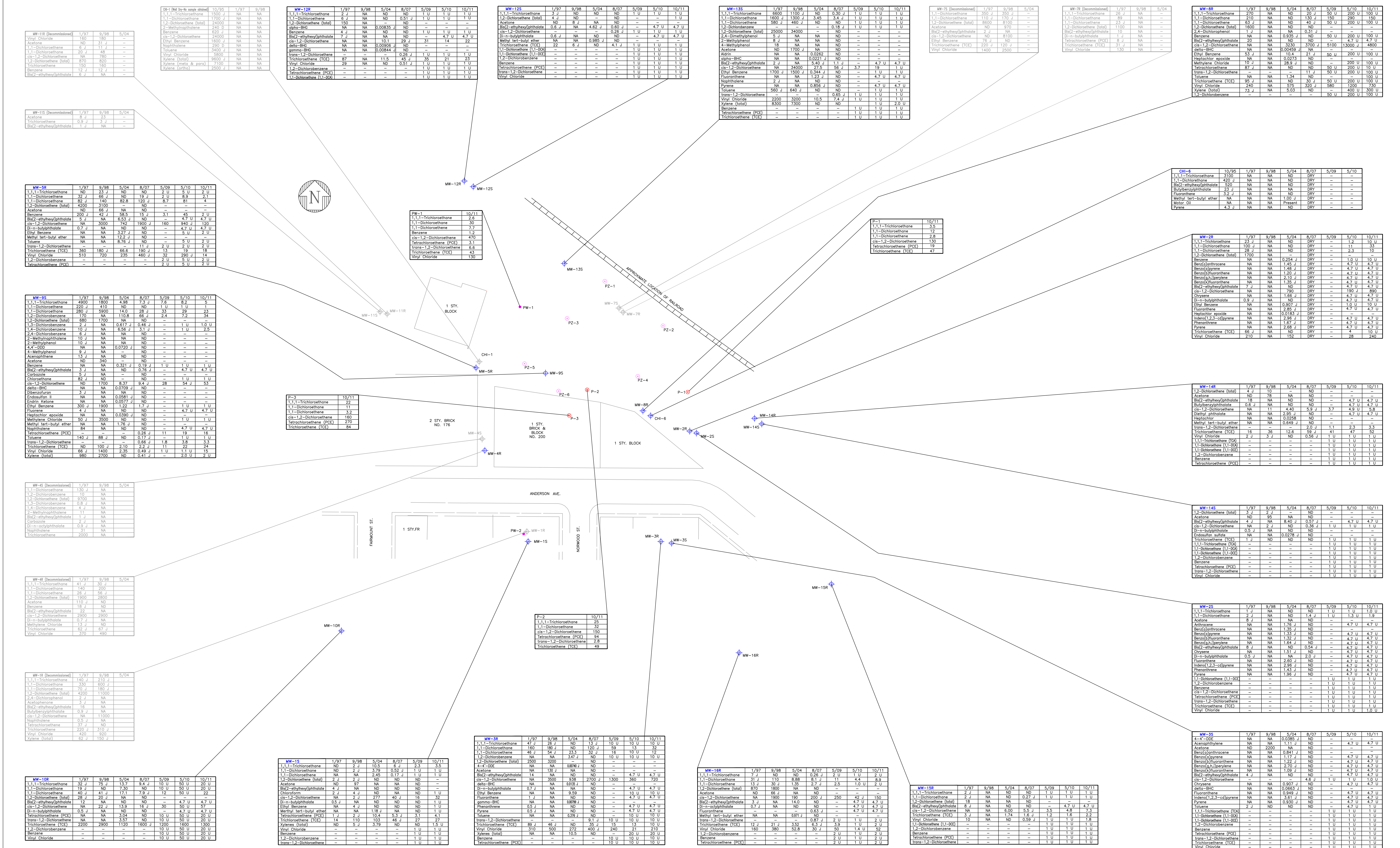
Groundwater beneath the Davis-Howland site is contaminated primarily with chlorinated solvents and their associated degradation products. Aromatic hydrocarbon contamination is not as widespread as previously observed and is present

at much lower concentrations than the chlorinated solvents. The frequency of detection of these chlorinated solvent compounds was higher in the overburden wells; however, the magnitude of the concentrations was generally historically higher in the bedrock wells. The highest contaminant concentration was detected in well MW-8R on the east side of the site (5,680 µg/L), and the highest TCE concentration in an individual well was detected in MW10-R, southwest of the site in the residential neighborhood (1,300 J µg/L).

4.4 Comparison with Historical Data

The October 2011 concentration isopleths of BTEX and cVOCs in the overburden and bedrock groundwater samples are presented in Figures 4-2 and 4-3, respectively. Historical data were compared with the data from samples collected in October 2011. The following is a summary of the findings:

- Overall, BTEX levels in the overburden have decreased significantly since 1998 and were not detected in 2011. Previously, the highest concentration of total BTEX in the overburden groundwater was detected in well MW-13S. BTEX concentrations in this well decreased from 10,560 µg/L in 1997 to 9,440 µg/L in 1998, below 1 µg/L in 2004, and have since been non-detect.
- BTEX levels in the bedrock groundwater have also generally decreased since 1997. Previously, the highest level of total BTEX in the bedrock groundwater was in MW-5R, where the concentration decreased from 200 µg/L in 1997 to 42 µg/L in 1998, rose to 70.5 µg/L in 2004, decreased again to 15 µg/L in 2007 and decreased further to 3.1 µg/L in 2009. In 2010 the BTEX concentration in MW-5R increased to 45 µg/L, and was not detected in 2011. In 2007, MW-8R contained the highest BTEX concentration, at 21 µg/L. MW-8R was at non-detect levels in the 2009, 2010, and 2011 analytical results. In 2011, benzene was detected in PW-1 at 1.2 µg/L, and ethylbenzene was detected in MW-2R at 4.7 µg/L.
- cVOC levels in overburden wells such as MW-9S and MW-13S are now significantly less than those in 1997/1998. For example, the TCA concentration in MW-9S was 1,800 µg/L in 1998 and is now 5.0 µg/L. Previously, the highest total cVOC level in the overburden groundwater was in MW-13S (>40,000 µg/L in 1998). cVOCs were not detected in this well in 2011. In MW-3S, low-concentration polycyclic aromatic hydrocarbons (PAHs) that were present in 2004 were not detected in 2007, 2009, 2010, or 2011.
- cVOC levels in the bedrock groundwater for 2011 are generally equivalent to those detected in 2010, with a few exceptions. MW-8R currently exhibits the highest cVOC concentration (5,680 µg/L) and contains primarily cis-1,2-DCE. However, the concentrations of most other cVOCs have decreased since 1997 in MW-8R (see Figure 4-1).



LEGEND

- MW-1R EXISTING MONITORING WELL
- P-1 GROUNDWATER PUMPING WELLS
- PW-1 DEEP PUMPING WELLS
- PZ-4 PIEZOMETERS
- MW-1R EXISTING MONITORING WELL (DECOMMISSIONED)

NOTES

- ONLY DETECTED COMPOUNDS ARE PRESENTED.
- ALL VALUES ARE IN µg/L.
- 10/85 DATA TAKEN FROM FINAL ORBIT REMEDIAL INVESTIGATION REPORT (OCTOBER 1995).
- 1/97 DATA TAKEN FROM PHASE 2 REMEDIAL INVESTIGATION (OCTOBER 1997).
- 9/97 SAMPLES WERE ONLY ANALYZED FOR TARGET COMPOUNDS 10/85 AND 9/98.
- 9/98 DATA FROM PRE-REMEDIATION DESIGN INVESTIGATION REPORT (NOVEMBER 1998).
- IDENTIFIES COMPOUNDS WHOSE CONCENTRATIONS EXCEEDED THE CALIBRATION RANGE OF THE INSTRUMENTS.
- INDICATES AN ESTIMATED QUANTITATION VALUE BELOW REPORTING LIMIT.
- NA INDICATES THAT DATA IS NOT AVAILABLE.
- ND INDICATES THAT THE COMPOUND WAS NOT DETECTED ABOVE THE QUANTITATION LIMIT.
- 9/98 DATA FROM PRE-REMEDIATION DESIGN INVESTIGATION REPORT (NOVEMBER 1998).

ANALYTICAL ABBREVIATIONS

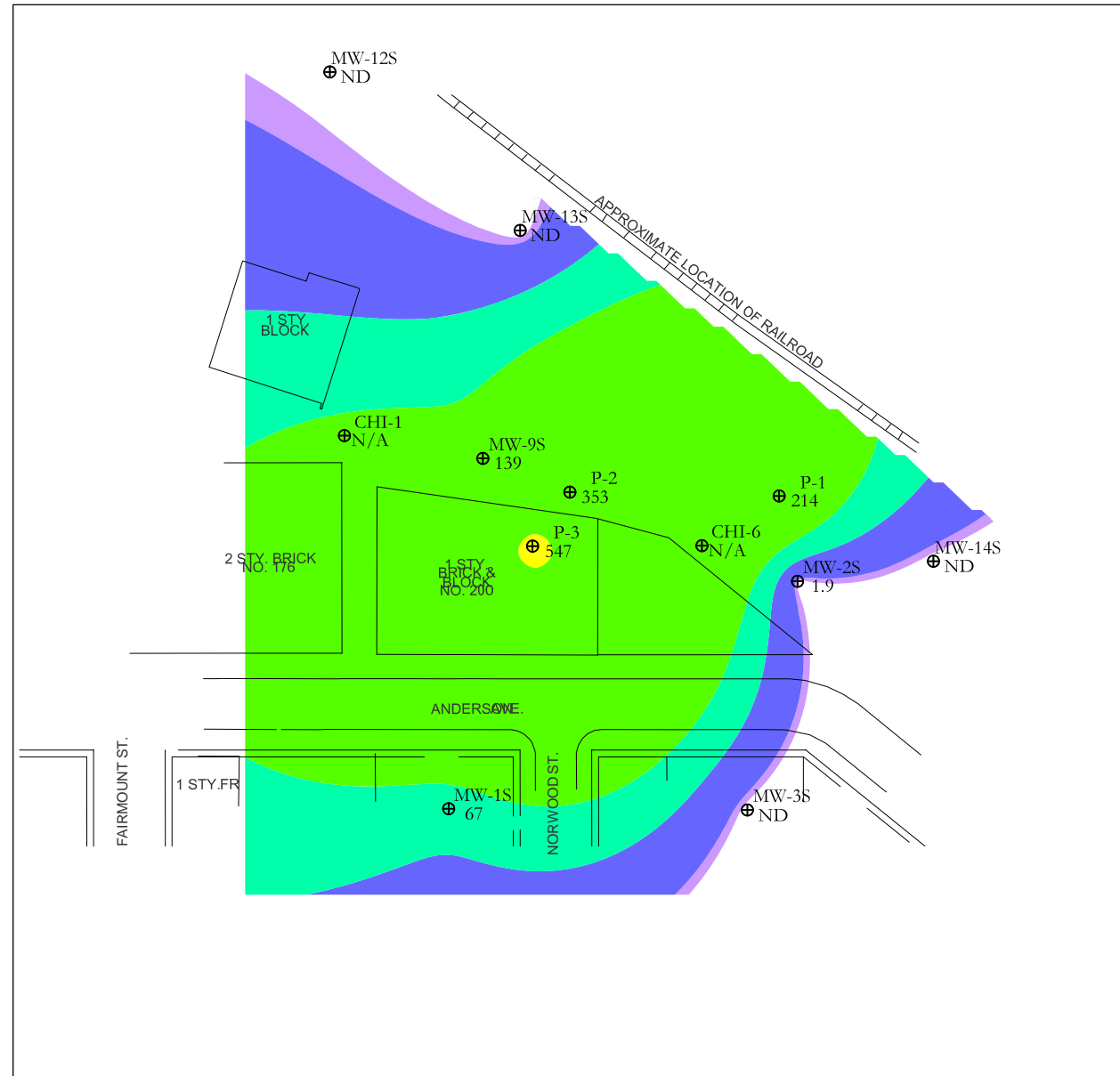
ND NOT DETECTED
 NA NOT ANALYZED
 - NOT ANALYZED OR NOT DETECTED
 (J) ESTIMATED VALUE
 (V) ANALYZED FOR BUT NOT DETECTED AT THE DETECTION LIMIT INDICATED

E	D	2/13/12	KMK	MGS	UPDATED PER OCTOBER 2011 SAMPLE EVENT
C	8/2/10	VJO	VJO	MGS	UPDATED PER MAY 2010 SAMPLE EVENT
D	6/24/09	KMK	MGS	UPDATED PER MAY 2009 SAMPLE EVENT	
B	12/21/07	KMK	RW	UPDATED PER AUGUST 2007 SAMPLE EVENT	
NO.	DATE	DWN	APP'D	DESCRIPTION	

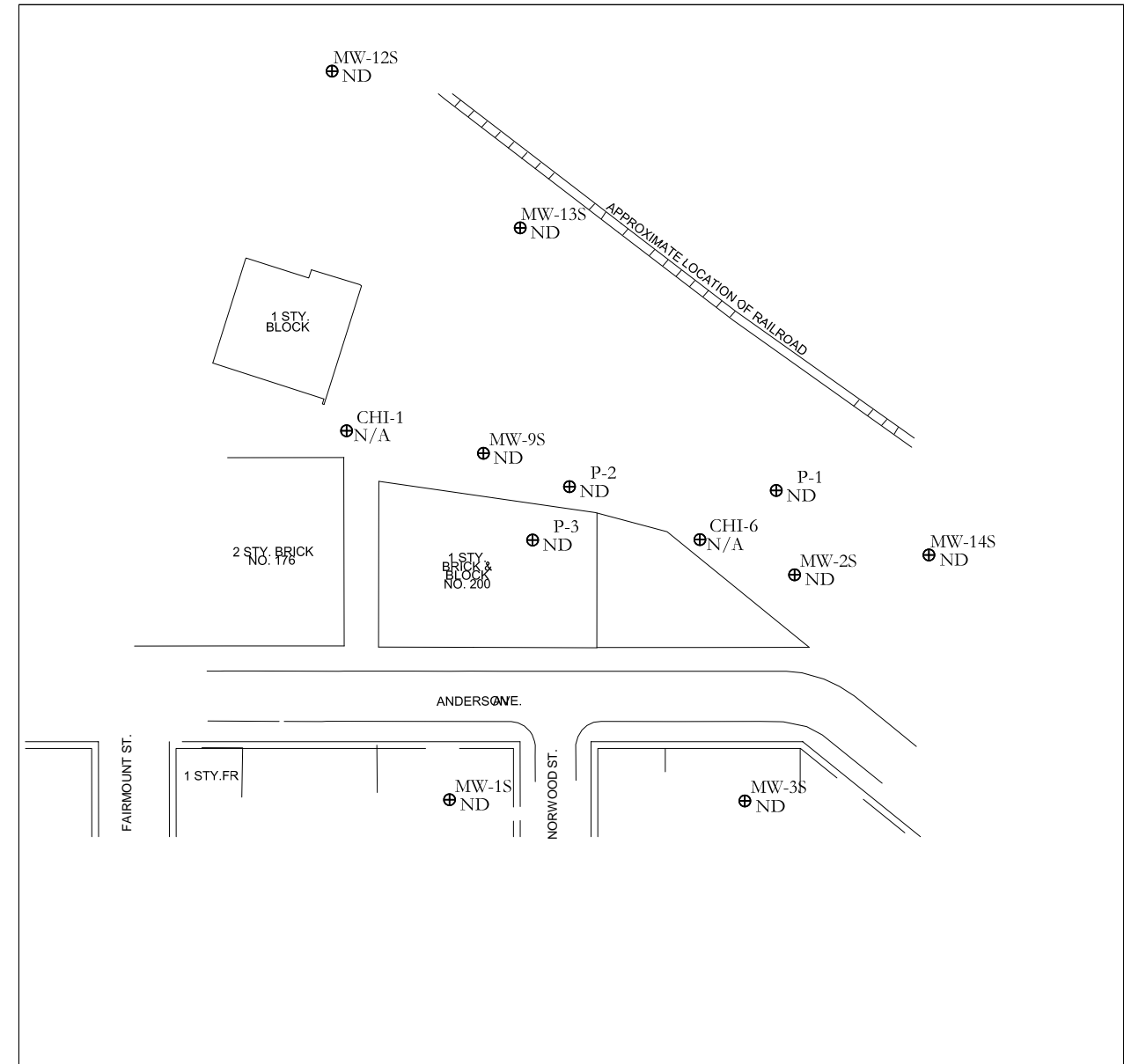
FIGURE 4-1
 MONITORING WELL ANALYTICAL DATA
 FORMER DAVIS-HOWLAND OIL CORPORATION SITE
 MONROE COUNTY, ROCHESTER, NY



Total Chlorinated VOC Concentrations (µg/L)



Total BTEX Concentrations (µg/L)



- Notes:
- 1) BTEX = sum of benzene, toluene, ethylbenzene, and xylene isomers.
 - 2) VOC = volatile organic compound.
 - 3) Chlorinated VOCs include all chlorinated aliphatic hydrocarbons detected. Other VOCs detected but not presented on this figure include chlorinated aromatics (e.g., dichlorobenzenes) in MW-9S only.

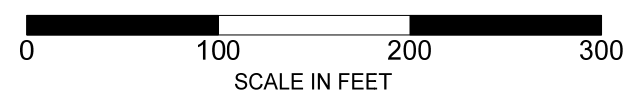
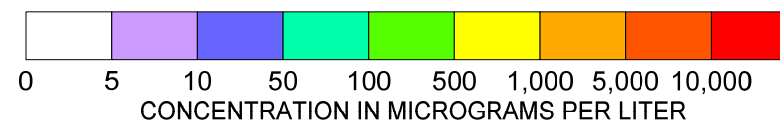
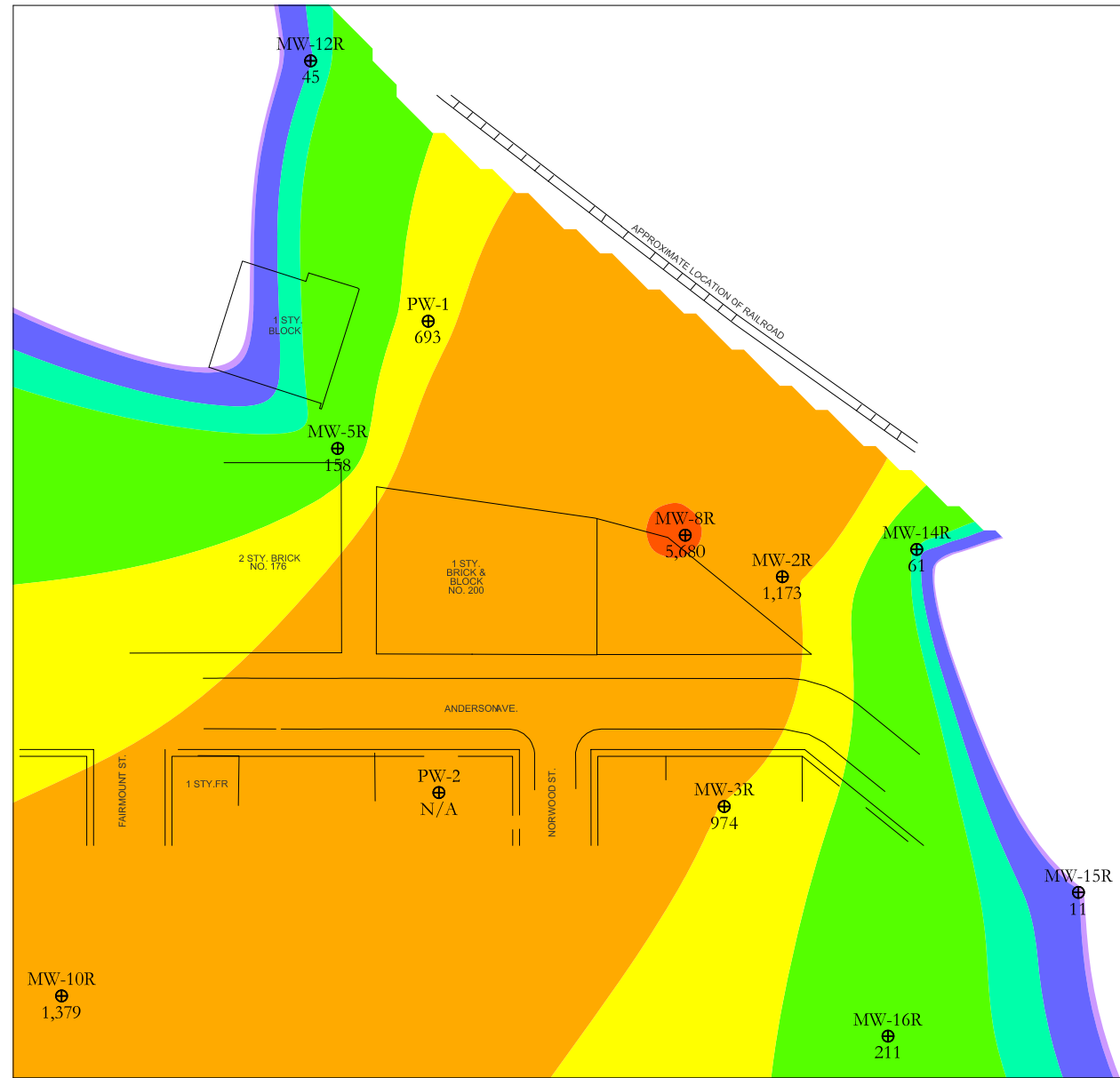


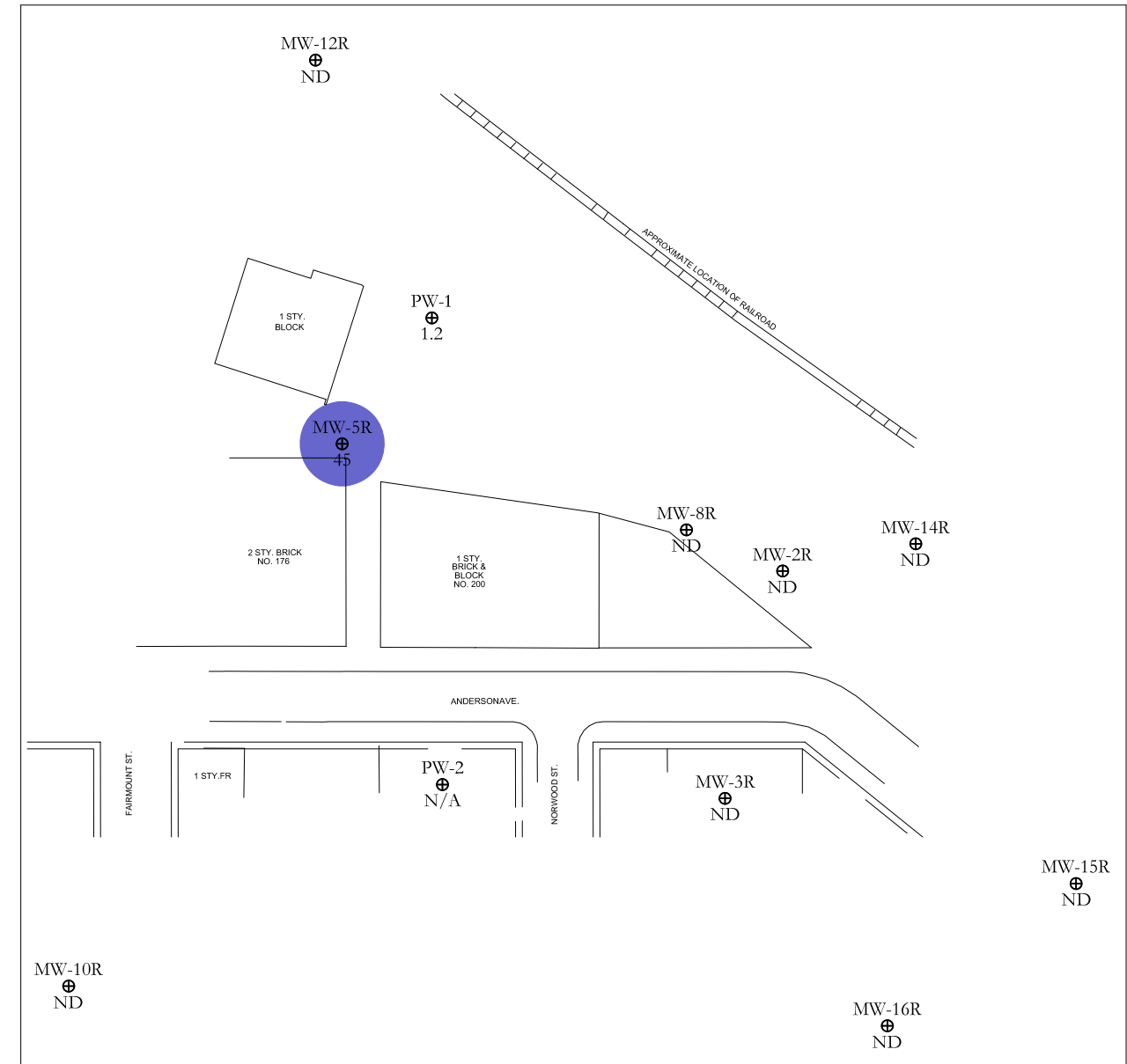
FIGURE 4-2
 Total BTEX and Chlorinated VOCs
 in Overburden Groundwater, October 2011
 Former Davis-Howland Oil Corporation Site
 Rochester, New York



Total Chlorinated VOC Concentrations (µg/L)



Total BTEX Concentrations (µg/L)



Notes:

- 1) BTEX = sum of benzene, toluene, ethylbenzene, and xylene isomers (only benzene was detected in MW-5R and PW-1, and only ethylbenzene was detected in MW-2R in 2011).
- 2) VOC = volatile organic compound.
- 3) Chlorinated VOCs include all chlorinated aliphatic hydrocarbons detected. No other VOCs were detected, including chlorinated aromatics (e.g., dichlorobenzenes).

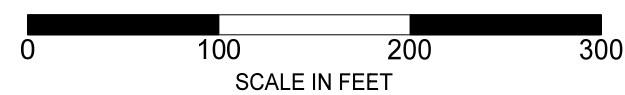
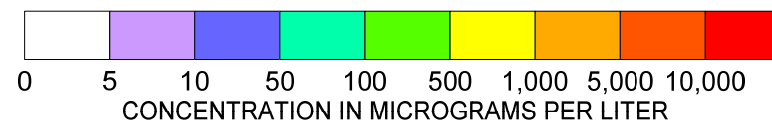


FIGURE 4-3
 Total BTEX and Total Chlorinated VOCs
 in Bedrock Groundwater, October 2011
 Former Davis-Howland Oil Corporation Site
 Rochester, New York

5

Summary and Conclusions

Groundwater samples were collected from seven overburden and eight bedrock monitoring wells, and four pumping wells at the site in October 2011.

Groundwater beneath Davis-Howland historically contained chlorinated solvents, their degradation products, aromatic hydrocarbons (BTEX), and PAHs. In general, concentrations of these organic compounds have decreased with time. More specifically, PAHs are no longer present at concentrations exceeding groundwater standards in the overburden and bedrock aquifers. BTEX concentrations have declined significantly and are no longer detected in some wells where they were previously present. No BTEX compounds were present at concentrations exceeding groundwater standards in overburden monitoring wells in October 2011. Benzene was detected in bedrock pumping well PW-1 at concentrations above groundwater standards. In October 2011, seven VOCs were detected in overburden groundwater samples at levels that exceed the NYSDEC Class GA groundwater standards: TCA, 1,1-DCA, 1,2-dichlorobenzene, cis-1,2-DCE, PCE, TCE, and vinyl chloride. Seven VOCs were detected in bedrock groundwater samples at levels that exceed the NYSDEC Class GA groundwater standards: 1,1-DCA, 1,1-DCE, cis-1,2-DCE, trans-1,2-DCE, TCE, vinyl chloride, and benzene. The highest concentrations of chlorinated VOCs and BTEX continue to be detected in the bedrock groundwater.

Based on the observed changes in the distribution of the VOC contamination on-site, the groundwater treatment system, in conjunction with natural processes, appears to be effective at reducing overall contaminant concentrations. The following repairs to the groundwater monitoring system and pumping/treatment system are recommended:

- Continue the addition of the individual pumping wells to the annual groundwater monitoring events. Information regarding these wells is useful when identifying potential modifications and improvements to the OM&M activities performed at the site.
- Repair the sample port on PW-2 so that regular monitoring of the well can be performed during the next scheduled sampling event. Existing OM&M activities include collection of a monthly composite groundwater from the pumping wells. The composite samples do not identify the areas of highest VOC concentrations. An accurate measure of the VOC concentrations in the individual

pumping wells would allow an adjustment of the pumping volumes to maximize the mass of VOCs extracted from the groundwater.

- Redevelop pumping well PW-1 so that the groundwater mound apparent near MW-5R can be captured by the treatment system. The production from this well has decreased over time, and increased water production from this well would not only help in capturing more of the VOC plumes present at the site, but also increase the mass of VOCs removed by the treatment system.
- Perform a site-wide survey of existing monitoring wells, pumping wells, and piezometers so that the piezometers can be used in modeling the overburden groundwater elevation isopleths.

6

References

- Clean Harbors of Kingston, Inc. (CHI). June 1992. *Draft Preliminary Site Investigation, Davis Howland Oil Corporation Site*. Glenmont, New York.
- Dunn GeoScience Corporation. 1991. *Soil Investigation Report for Remedial Investigation: Davis Howland Corporation*. November 26, 1991.
- Ecology and Environment Engineering, P.C. 2004a. *Groundwater Sampling Procedures, Davis-Howland Oil Corporation, Rochester, New York*. May 2004. Prepared for New York State Department of Environmental Conservation, Albany, New York.
- _____. 2004b. *Davis-Howland Oil Corporation Site, Groundwater Sampling Draft Data Summary Report 2004, Rochester, New York*. Prepared for New York State Department of Environmental Conservation, Albany, New York.
- _____. 2006. *Air Quality Analysis, Davis Howland Corporation Site, NYSDEC Site No. 8-28-088*. November 2006.
- _____. 2007. *Groundwater Sampling and Data Summary Report, Davis-Howland Oil Corporation Site*.
- _____. 2008. *Groundwater Sampling Procedures, Appendix N to the Draft Site Management Plan, Davis-Howland Oil Corporation, Rochester, New York*. May 2008. Prepared for New York State Department of Environmental Conservation, Albany, New York.
- _____. 2009. *Former Davis-Howland Oil Corporation Site 2009 Groundwater Sampling Draft Data Summary Report, Rochester, New York*. July 2009. Prepared for New York State Department of Environmental Conservation, Albany, New York.
- _____. 2010. *Former Davis-Howland Oil Corporation Site 2010 Groundwater Sampling Draft Data Summary Report, Rochester, New York*. July 2010. Prepared for New York State Department of Environmental Conservation, Albany, New York.

- Kappel, W. M. and R.A. Young. 1989. *Glacial History and Geohydrology of the Irondequoit Creek Valley, Monroe County, New York: United States Department of Interior Geological Survey, Water Resources Investigations Report 88-4145*, pp. 1-34, 3 plates.
- Lawler, Matusky & Skelly Engineers, LLP and Galson/Lozier Engineers. October 1996. *New York State Superfund Contract Remedial Investigation Report*, Davis-Howland Oil Corporation, Volume 1.
- _____. March 1997a. *New York State Superfund Contract Focused Feasibility Study Report, Operable Unit 1 Shallow Groundwater and Soil, Davis-Howland Oil Corporation*. March 1997.
- _____. October 1997b. *New York State Phase II Remedial Investigation Report, Davis-Howland Oil Corporation*. October 1997.
- _____. 1998. *Pre-Remedial Design Investigation, Davis-Howland Oil Corporation Site*.
- New York State Department of Environmental Conservation (NYSDEC). 1998. Division of Water Technical and Operational Guidance Series (1.1.1): *Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations*. Albany, New York: Division of Water.

A

Well Purge and Sample Records

Daily Field Activity Summary

EEEEPC Project No.:	NYSDEC WA No.:
Project Name: <i>Davis Holmlund</i>	Project Location: <i>002700 DC 14.02</i>
Date: <i>October 17, 2011</i>	Weather: <i>Partly Cloudy High 55°</i>

Summary of Activities		
Equipment Used	Task	Activities Performed
<i>Myron p 6</i>		<i>To measurement of parameters during purging and sampling</i>
<i>Turbidity meter</i>		<i>" " " "</i>
<i>Mini Pump</i>		<i>To Screen purge interval used during opening of monitoring wells.</i>
<i>Interlevel Meter</i>		<i>To measure the water Depth</i>

Field Tests Performed (Samples, Field Screening, Chemical Testing, etc.)
<i>pH, ocp, temp, interlevel, cond, Turbidity during purging and sampling</i>

IDW Generated and Stored Onsite
<i>none</i>

Planned Activities for Next Work Day
<i>Sample monitoring wells on Davis Holmlund site</i>

Remarks: (Visitors, Completion of Fieldwork, etc.)
<i>Property Owner.</i>

[Signature] _____ *10/17/11* _____
 Site Manager Signature Date

Daily Field Activity Summary

EEPC Project No.: <i>002200, DC 14.02</i>	NYSDEC WA No.:
Project Name: <i>Davis Hazard</i>	Project Location: <i>Rochester NY</i>
Date: <i>October 18, 2011</i>	Weather: <i>partly cloudy 48°</i>

Personnel On Site	Affiliation	Hours	Level of PPE
<i>Larry Reed</i>	<i>EEPC</i>	<i>13</i>	<i>D</i>
<i>Brandon Chigsera</i>	<i>EEPC</i>	<i>13</i>	<i>D</i>
<i>Max Martin</i>	<i>EEPC</i>	<i>13</i>	<i>D</i>

Summary of Today's Activities

Sampled project well from 10/17/11 purged and sampled MW 12R and 12S, MW 14R and MW 14S, MW 2R and MW 2S, purged MW 13S and MW 8R to be sampled on 10/19/11

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions)

none

Problems Encountered And Deviations From Work Plan

none

Written And Verbal Instruction By NYSDEC (Include name of NYSDEC representative)

none

New Safety Issues

none

Site Manager Signature: *Liam Reed* Date: *10/18/11*

Daily Field Activity Summary

EEEPCC Project No.: <i>2700.DC14.07</i>	NYSDEC WA No.:
Project Name: <i>Davis Household</i>	Project Location: <i>Rochester NY</i>
Date: <i>October 14, 2011</i>	Weather: <i>partly cloudy 48°</i>

Summary of Activities		
Equipment Used	Task	Activities Performed
<i>Mylor 6p</i>		<i>To measure the parameters, doing purging</i>
<i>Turbidity meter</i>		<i>" " "</i>
<i>mini Ruc</i>		<i>is when opening the well and screen purge water</i>

Field Tests Performed (Samples, Field Screening, Chemical Testing, etc.)
<i>pH, TPH, ORP, Cond, Turbidity</i>

IDW Generated and Stored Onsite
<i>None</i>

Planned Activities for Next Work Day
<i>Sample purged well east end of 4 foot inside Treatment Bldg. PW-1 p1, p2, p3.</i>

Remarks: (Visitors, Completion of Fieldwork, etc.)
<i>Doc Rep will be there</i>

<i>[Signature]</i>	<i>10/14/11</i>
Site Manager Signature	Date

Daily Field Activity Summary

EEEEPC Project No.: 2706.DC14.02	NYSDEC WA No.:
Project Name: Davis Howard	Project Location: Rochester NY
Date: October 19, 2011	Weather: Rain Cloudy 55

Personnel On Site	Affiliation	Hours	Level of PPE
Larry Reedell	EEEEPC	12	D
Brandon Chigera	↓	12	D
Max Martin	↓	12	D

Summary of Today's Activities
<p>Sampled wells mw 8R and mw 13S that were purged on 10/18/11</p> <p>Sampled the ports inside the treatment Bldg pw-1, p-1, p-2, p-3.</p> <p>purged and sampled mw 9S and mw 5R</p>

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions)
none

Problems Encountered And Deviations From Work Plan
none

Written And Verbal Instruction By NYSDEC (Include name of NYSDEC representative)
none

New Safety Issues
none

Site Manager Signature: <i>[Signature]</i>	Date: 10/19/11
---	-----------------------

Daily Field Activity Summary

EEPC Project No.: <i>002900, DC14.02</i>	NYSDEC WA No.:
Project Name: <i>Davis Meadow</i>	Project Location: <i>Rochester</i>
Date: <i>October 19, 2011</i>	Weather: <i>Rain, cloudy 55</i>

Summary of Activities		
Equipment Used	Task	Activities Performed
<i>mypon sp</i>		Take Take Measurements of parameters during the program and Sampling
<i>Turbidity Meter</i>		" " " " "
<i>mini flow</i>		To take Reading of the Monitor well during the process of opening them, also to check that they are Reading out to Screen pump water.
<i>Water level meter</i>		to Measure water depth.

Field Tests Performed (Samples, Field Screening, Chemical Testing, etc.)
<i>pH, ORP, Cond, Temp, Turbidity</i>

IDW Generated and Stored Onsite
<i>none</i>

Planned Activities for Next Work Day
<i>to continue to sample monitor well, on the front of the Building.</i>

Remarks: (Visitors, Completion of Fieldwork, etc.)
<i>will writing DEC Rep.</i>

[Signature] Site Manager Signature *10/19/11* Date

Daily Field Activity Summary

EEPC Project No.: 002700-DC14.02	NYSDEC WA No.:
Project Name: Davis Highway	Project Location: Rochester 104
Date: 10/20/11	Weather: Cloudy 54°

Personnel On Site	Affiliation	Hours	Level of PPE
Larry Reedl	EEPC	12	D
Brandon Chasera	EEPC	12	D
Max Martin	EEPC	12	D

Summary of Today's Activities

Drugs and Sample Mws 3 R, Mws 3 S, Mws 15 R, Mws 16 R

Work Delays (Due To Weather, Maintenance, Breakdowns, Waiting For Decisions)

none

Problems Encountered And Deviations From Work Plan

none

Written And Verbal Instruction By NYSDEC (Include name of NYSDEC representative)

none

New Safety Issues

none

Site Manager Signature: [Signature] Date: 10/20/11

Daily Field Activity Summary

EEPC Project No.: <i>002700.DC14.02</i>	NYSDEC WA No.:
Project Name: <i>Davis Hillland</i>	Project Location: <i>Pacheco NY</i>
Date: <i>10/20/11</i>	Weather: <i>cloudy 54</i>

Summary of Activities		
Equipment Used	Task	Activities Performed
<i>myra ep</i>		<i>Take measurement of parameters during the purging and sampling.</i>
<i>Turbidimeter</i>		<i>" " " " "</i>
<i>water level meter</i>		<i>To take water meter measurement.</i>
<i>mini Pce</i>		<i>To take readings before and between the monitor well, screen purge water.</i>

Field Tests Performed (Samples, Field Screening, Chemical Testing, etc.)
<i>pH, ORP, Conduct, Turbidity Temp</i>

IDW Generated and Stored Onsite
<i>none</i>

Planned Activities for Next Work Day
<i>purge and sample MW 18, MW 10R</i>

Remarks: (Visitors, Completion of Fieldwork, etc.)
<i>None observed from area</i>

[Signature] 10/20/11
 Site Manager Signature Date



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Highway

Well ID: MW-15

EEEPCC Project No.: 002760-DC14.02

Date: 10/21/11

Initial Depth to Water: 12.15 feet TOIC

Start Time: 0840

Total Well Depth: 17.45 feet TOIC

End Time: 0906

Depth to Pump: _____ feet TOIC

Bailer Pump

Initial Pump Rate: 0.6 (Lpm) gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 2 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 0.163 gallons $\times 3 = 2.5$

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
<u>0840</u>	<u>0</u>	<u>7.7</u>	<u>14.2</u>	<u>112</u>	<u>1235</u>	<u>-</u>	<u>6.12</u>	<u>11.67</u>
<u>0846</u>	<u>1.0</u>	<u>7.83</u>	<u>14.5</u>	<u>112</u>	<u>1243</u>	<u>-</u>	<u>2.49</u>	<u>12.6</u>
<u>0854</u>	<u>2.0</u>	<u>7.78</u>	<u>14.6</u>	<u>117</u>	<u>1249</u>	<u>-</u>	<u>0.95</u>	<u>12.7</u>
<u>0906</u>	<u>3.0</u>	<u>7.75</u>	<u>14.6</u>	<u>115</u>	<u>1254</u>	<u>-</u>	<u>0.0</u>	<u>12.65</u>
Final Sample Data:		<u>7.75</u>	<u>14.6</u>	<u>115</u>	<u>1254</u>	<u>-</u>	<u>0.0</u>	<u>12.65</u>

Sample ID: MW-15

Duplicate?

Dupe Samp ID: _____

Sample Time: 09:10

MS/MSD?

Analyses: _____ Methods: _____ Comments: _____

- VOCs CLP
- SVOCs SW846
- PCBs Drink. Wtr.
- Metals _____
- PH 7.75 _____

Sampler(s): M Martin



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Tel: 716/684-8060, Fax: 716/684-0844

WELL PURGE & SAMPLE RECORD

Site Name/Location: DAVIS Howland

Well ID: MW-3R

EEEPC Project No.: 002700-DC14-02

Date: 10/20/11

Initial Depth to Water: 17.70 feet TOIC

Start Time: _____

Total Well Depth: 37.55 feet TOIC

End Time: _____

Depth to Pump: _____ feet TOIC

Bailer Pump

Initial Pump Rate: 1 (lpm) / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 12.9 gallons x 3 38.8

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0853	0	6.67	14.6	18	1382	-	3.46	17.1
0905	3.0	7.16	14.9	31	1381	-	2.16	18.65
0910	4.25	7.14	14.9	19	1381	-	1.48	18.65
0920	6.5	7.17	14.8	-3	1380	-	0.00	18.95
0930	8.5	7.33	14.7	26	1382	-	0.00	19.05
0940	11.0	7.4	14.6	-19	1381	-	0.00	19.05
0950	12.75	7.4	14.8	5	1380	-	0	18.8
1000	15.0	7.4	14.7	-17	1376	-	0	19.35
1010	17.5	7.35	14.8	-33	1379	-	1.6	19.81
1020	20.0	7.39	14.6	-74	1377	-	0.99	19.2
1030	22.0	7.50	14.6	-37	1381	-	0.00	19.0
1040	24.0	7.51	14.7	-79	1376	-	0	19.2
1050	26.5	7.60	14.6	-39	1383	-	0	19.48
1100	29	7.51	14.7	-34	1382	-	0	19.5
1110	31.5	7.54	14.6	-37	1383	-	2.49	19.6
Final Sample Data:								

Sample ID: MW-3R

Duplicate?

Dupe Samp ID: _____

Sample Time: 11:43

MS/MSD?

Analyses:

Methods:

Comments: _____

VOCs

CLP

SVOCs

SW846

PCBs

Drink. Wtr.

Metals

H₂O₂

Sampler(s): P, Chasora, M Markit

1/2



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland

Well ID: MW-3R

EEEPC Project No.: 002700.DC14.02

Date: 10/20/11

Initial Depth to Water: 17.7 feet TOIC

Start Time: 0853

Total Well Depth: 37.55 feet TOIC

End Time: 11:42

Depth to Pump: 36.55 feet TOIC

Bailer Pump

Initial Pump Rate: 1 (Lpm) / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: _____ inches

adjusted to: _____ at _____ minutes

1x Well Volume: 12.9 gallons vs 35.8

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1120	34	7.44	14.8	-59	1377	-	0	19.71
1130	36	7.62	14.6	-34	1381	-	0	19.45
1140	38.5	7.35	14.9	-19	1383	-	0	19.45
1142	39	7.54	14.7	-43	1382	-	0	19.45
Final Sample Data:		7.44	14.6	-42	1382	-	0	19.45

Sample ID: MW-3R

Duplicate?

Dupe Samp ID: _____

Sample Time: 11:43

MS/MSD?

Analyses: Methods:

Comments: _____

VOCs CLP

SVOCs SW846

PCBs Drink. Wtr.

Metals _____

TAPP _____

Sampler(s): B. Chasera, M. Martin



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland

Well ID: MW 5 R

EEEPC Project No.: 002700, DC 14.02

Date: 10/19/11

Initial Depth to Water: 11.55 feet TOIC

Start Time: 12:43

Total Well Depth: 34.25 feet TOIC

End Time: 15:36

Depth to Pump: 33.25 feet TOIC

Bailer Pump

Initial Pump Rate: 1 Lpm / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4" inches

adjusted to: _____ at _____ minutes

1x Well Volume: 14.8 gallons $\times 344.49 \text{ lbs/gal}$

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1243	0	7.74	14.0	7	1376	-	4.1	11.05
1250	2.0	7.89	14.1	6	1203	-	2.8	11.5
1300	4.0	7.99	14.2	63	1085	-	0.85	11.6
1310	6.5	7.99	14.2	62	1058	-	0.50	11.7
1320	8.5	7.96	14.2	66	1055	-	0.35	11.75
1330	11	8.02	14.2	72	1055	-	0.90	11.85
1340	13	8.05	14.3	73	1055	-	0.35	11.9
1350	15.5	8.06	14.3	66	1055	-	0.30	11.95
1400	18.5	8.07	14.2	78	1056	-	0.45	11.95
1410	21.0	8.01	14.2	81	1055	-	0.20	12.00
1420	23.5	8.09	14.3	75	1054	-	0.00	12.15
1430	27	8.02	14.3	78	1053	-	0.00	12.00
1440	29	8.06	14.3	77	1055	-	0.00	12.00
1450	31	8.08	14.3	79	1057	-	0.00	12.05
1500	34	8.08	14.2	83	1057	-	0.00	12.05
Final Sample Data:		-	-	-	-	-	0.00	

Sample ID: MW 5 R

Duplicate?

Dupe Samp ID: _____

Sample Time: 15:40

MS/MSD?

Analyses: _____ Methods: _____ Comments: _____

- VOCs CLP
- SVOCs SW846
- PCBs Drink. Wtr.
- Metals _____
- pH, T/Al _____

Sampler(s): M. Martin, L. Reed



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland

Well ID: MW5R

EEEP Project No.: 002700.DC14.02

Date: 10/19/11

Initial Depth to Water: 11.55 feet TOIC

Start Time: 12:43

Total Well Depth: 34.25 feet TOIC

End Time: 15:36

Depth to Pump: 33.25 feet TOIC

Bailer Pump

Initial Pump Rate: 1 (Lpm) /gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 14.8 gallons 1344.4 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1513	37	8.14	14.1	79	1057	-	0.0	12.2
1520	39.5	8.11	14.1	87	1057	-	0.0	12.3
1530	43	8.13	14.1	86	1058	-	0.0	12.3
1536	45.5	8.07	14.1	85	1059	-	0.0	12.3
Final Sample Data:		8.06	14.0	85	1059	-	0.0	12.3

Sample ID: MW5R

Duplicate?

Dupe Samp ID: _____

Sample Time: 15:40

MS/MSD?

Analyses: _____ Methods: _____ Comments: _____

- VOCs CLP
- SVOCs SW846
- PCBs Drink. Wtr.
- Metals _____
- pH, TPT _____

Sampler(s): M. Martin, L. Reed



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Howland

Well ID: MW 95

EEEP Project No.: 002700.DC14.02

Date: 10/19/11

Initial Depth to Water: 8.0 feet TOIC

Start Time: 10:44

Total Well Depth: 15.45 feet TOIC

End Time: 10:58

Depth to Pump: _____ feet TOIC

Bailer Pump

Initial Pump Rate: 1.5 Lpm / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: _____ inches

adjusted to: _____ at _____ minutes

1x Well Volume: 1.2 gallons x 3 = 3.6 gal

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
10:44	0	7.51	18.3	87	1167	-	80	7.7
10:51	1.5	7.61	18.5	78	1279	-	60	12.5
10:55	2.5	7.53	17.8	83	1699	-	12	13.35
10:58	3.5	Dry						15.45
Final Sample Data:		7.6	16.1	95	1841	-	90	11.15

Sample ID: MW 95

Duplicate?

Dupe Samp ID: _____

Sample Time: 11:35

MS/MSD?

Analyses: Methods:

Comments: Waited for monitoring well to recharge, then

VOCs CLP

Sampled

SVOCs SW846

PCBs Drink. Wtr.

Metals _____

pH/TpH _____

Sampler(s): M. Manton, B. Chisera



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Davis Hazardous

Well ID: MW10R

EEEPCC Project No.: 002700-17C14.02

Date: 10/21/11

Initial Depth to Water: 17.55 feet TOIC

Start Time: 0930

Total Well Depth: 35.0 feet TOIC

End Time: 1141

Depth to Pump: _____ feet TOIC

Bailer Pump

Initial Pump Rate: 1 (Lpm) / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 11.3 gallons x 3 = 34.1

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0930	0	8.09	13.1	98	1100	-	2.83	17.2
0940	2.0	7.97	13.2	101	1067	-	1.64	17.95
0950	4.0	8.07	13.2	105	1034	-	0.67	18.4
1000	7.0	8.01	13.1	100	1069	-	0.09	18.7
1010	10.0	8.0	13.2	101	1110	-	0.04	18.95
1020	12.50	8.06	13.0	100	1126	-	0.0	19.2
1030	15.50	8.34	13.0	99	1135	-	0.0	19.4
1040	17.75	8.30	13.3	99	1145	-	0.0	19.55
1050	20.5	8.03	13.3	97	1155	-	0.0	19.55
1100	22.0	8.09	13.3	96	1146	-	0.0	19.68
1110	25.0	8.06	13.3	91	1135	-	0.0	19.72
1120	27.25	8.25	13.3	88	1145	-	0.0	19.8
1130	30	8.12	13.4	89	1128	-	0.0	20.1
1140	34	8.07	13.3	87	1148	-	0.0	20.4
1141	35	8.06	13.4	89	1146	-	0.0	20.4
Final Sample Data:		8.06	13.4	89	1146	-	0.0	20.4

Sample ID: MW10R

Duplicate?

Dupe Samp ID: _____

Sample Time: 1142

MS/MSD?

Analyses: _____ Methods: _____ Comments: _____

VOCs CLP

SVOCs SW846

PCBs Drink. Wtr.

Metals _____

pH, T, P _____

Sampler(s): M. Mountain



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WELL PURGE & SAMPLE RECORD

Site Name/Location: Paris Houlard

Well ID: MW 12R

EEEPCC Project No.: 00 2700-DC/14.02

Date: 10/17/11

Initial Depth to Water: 19.75 feet TOIC

Start Time: 13:17

Total Well Depth: 31.45 feet TOIC

End Time: 14:16

Depth to Pump: 30.45 feet TOIC

Bailer Pump

Initial Pump Rate: 2.0 Lpm / gpm

Pump Type: Typhoon

adjusted to: 1.5 at 1 minutes

Well Diameter: 4" inches

adjusted to: _____ at _____ minutes

1x Well Volume: 7.8 gallons *28.52*

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
13:17	0	9.01	14.6	102	991.5	-	26.0	21.25
13:22	2.5	7.27	14.5	124	946.2	-	6.43	21.43
13:26	5.0	7.36	14.4	118	945.1	-	3.7	21.47
13:30	7.5	7.31	14.5	121	941.5	=	.86	21.46
13:46	9.0	7.36	14.9	130	946.7	-	0.0	21.46
14:06	11.5	7.38	14.4	120	947.7	-	0.0	21.44
14:14:10	14.0	7.37 7.37	14.1	118	948.3	-	0.0	21.46
14:28	16.5	7.38	14.2	119	946.5	-	0.0	21.46
14:36	18.0	7.39	14.3	120	946.7	-	0.0	21.48
14:44	20.5	7.36	14.1	121	946.7	-	0.0	21.46
14:58	22.5	7.34	14.0	118	946.7	-	0.0	21.46
15:06	24.5	7.34	14.1	119	946.8	-	0.0	21.46
								21.46 <i>ice</i>
Final Sample Data:		7.05	13.4	184	952.3	-	3.8	19.74

Sample ID: MW-12R

Duplicate?

Dupe Samp ID: _____

Sample Time: 0854

MS/MSD?

Analyses: Methods:

Comments: This well will be sampled on 10/18/11, before 1400 hrs

- VOCs CLP
- SVOCs SW846
- PCBs Drink. Wtr.
- Metals _____
- _____ _____

Sampler(s): Cooper



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Page 1

WELL PURGE & SAMPLE RECORD

Site Name/Location: Davos Hillland

Well ID: MW-14 R

EEEPCC Project No.: 002700-0114.02

Date: 10/18/11

Initial Depth to Water: ^{SC} 27.3 ^{5.21} feet TOIC

Start Time: 0935

Total Well Depth: ^{SC} 52.1 ^{25.3} feet TOIC

End Time: 1300

Depth to Pump: 22.3 feet TOIC

Bailer Pump

Initial Pump Rate: 1 (Lpm) / gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 11.8 gallons x 3 = 35.4

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
0935	0	7.91	15.5	204	87.97	5	17	5.2
0945	1.5	7.66	15.8	215	96.05		12	6.1
0955	3.5	7.33	15.7	139	1058		2.3	6.45
1005	5.5	7.48	15.6	113	1240		0.7	6.6
1015	8.0	7.57	15.7	102	1303		0.05	6.8
1025	9.8	7.62	15.7	94	1345		0.40	6.8
1035	12.0	7.58	15.8	95	1367		0.0	6.9
1045	14.0	7.68	15.8	89	1380		0.0	6.95
1055	16.0	7.58	15.9	87	1378		0.0	6.975
1105	17.5	7.65	16.1	101	1382		0.0	6.975
1115	20.0	7.57	16.0	89	1386		"	"
1125	21.5	7.6	16.1	101	1383		0.8	"
1135	23.5	7.68	16.1	98	1392		0.51	"
1145	25	7.73	16.1	120	1400		0.49	"
1155	26.5	7.73	16.3	99	1405		0.35	"
Final Sample Data:								

Continued on Page 2 →

Sample ID: _____

Duplicate?

Dupe Samp ID: _____

Sample Time: _____

MS/MSD?

Analyses: _____ Methods: _____ Comments: _____

VOCs CLP

SVOCs SW846

PCBs Drink. Wtr.

Metals _____

_____ _____

Sampler(s): M. Martin, B. Chiasera, D. ...



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WELL PURGE & SAMPLE RECORD

Site Name/Location: DAVIS Hudson et

Well ID: MW15R

EEEPC Project No.: 002700.DC14.02

Date: 10/20/11

Initial Depth to Water: 13.9 feet TOIC

Start Time: 1410

Total Well Depth: 29.85 feet TOIC

End Time: 16:23

Depth to Pump: 28.85 feet TOIC

Bailer Pump

Initial Pump Rate: 1 (Lpm) gpm

Pump Type: Typhoon

adjusted to: _____ at _____ minutes

Well Diameter: 4 inches

adjusted to: _____ at _____ minutes

1x Well Volume: 10.41 gallons \approx 31.2

Time	Purge Volume (gallons/liters)	pH (s.u.)	Temp. (°C/°F)	ORP (mV)	Conductivity (µS/cm mS/cm)	DO (mg/L)	Turbidity (NTU)	Water Level (feet)
1410	0	7.47	13.0	-10	1196	—	0.30	13.5
1420	2.0	7.61	13.2	6	1184	—	0.56	14.95
1430	3.75	7.66	13.4	17	1124	—	0.24	15.5
1440	5	7.73	13.4	30	999.7	—	0.0	16.05
1450	7	7.63	13.2	36	999.9	—	0.0	16.4
1500	9	7.59	13.2	42	1014	—	0.0	17.15
1510	12	7.66	13.3	47	998.4	—	0.0	17.86
1520	13.5	7.67	13.3	49	1006	—	0.0	17.95
1530	16	7.78	13.2	47	1100	—	0.0	19.47
1540	18	7.6	13.3	54	1188	—	0.0	19.06
1550	21.5	7.49	13.1	60	1061	—	0.0	20.1
1600	24	7.75	13.2	55	1030	—	0.0	20.07
1610	27.5	7.70	13.2	56	1163	—	0.0	20.55
1620	31.0	7.74	13.1	52	1101	—	0.0	20.87
1623	32.0	7.56	13.2	57	1113	—	0.0	20.93
Final Sample Data:		7.56	13.	57	1113	—	0.0	20.93

Sample ID: MW15R

Duplicate?

Dupe Samp ID: MW-15RQ

Sample Time: 1625

MS/MSD?

16:30

Analyses: _____ Methods: _____ Comments: _____

- VOCs CLP
- SVOCs SW846
- PCBs Drink. Wtr.
- Metals _____
- _____ _____

Sampler(s): M. Martini

B

2011 Analytical Results

November 07, 2011

Service Request No: R1105804

Mr. Michael Aloï
Ecology And Environment, Incorporated
368 Pleasantview Drive
Lancaster, NY 14086

Laboratory Results for: Davis Howland Oil Company Site - Semiannual Water/002700.DCI

Dear Mr. Aloï:

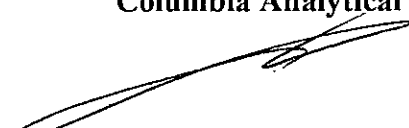
Enclosed are the results of the sample(s) submitted to our laboratory between October 19, 2011 and October 21, 2011. For your reference, these analyses have been assigned our service request number **R1105804**.

All analyses were performed according to our laboratory's quality assurance program. The test results meet requirements of the NELAP standards except as noted in the case narrative report. All results are intended to be considered in their entirety, and Columbia Analytical Services, Inc. (CAS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report. The measurement uncertainty of the results included in this report is within that expected when using the prescribed method(s) for analysis of these samples, and represented by Laboratory Control Sample control limits. Any events, such as QC failures, which may add to the uncertainty are explained in the report narrative.

Please contact me if you have any questions. My extension is 7470. You may also contact me via email at CBeechler@caslab.com.

Respectfully submitted,

Columbia Analytical Services, Inc.


Carlton Beechler
Project Manager

Page 1 of 210

Client:	Ecology & Environment	Service Request No.:	R1105804
Project:	Davis Howland Oil Co Site Semiannual GW	Date Received:	10/19,20,21/11
Sample Matrix:	Water		

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of Columbia Analytical Services, Inc. (CAS). This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD).

Sample Receipt

Twenty-seven water samples were received for analysis at Columbia Analytical Services on 10/19,20,21/11. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator between 1°C and 6°C upon receipt at the laboratory.

General Chemistry Parameters

pH was not performed in the field as recommended by EPA to meet a holding time of "immediate." An "H" flag indicates the problem. pH is a temperature dependent analysis, so the pH and temperature analysis were conducted by the laboratory as soon as possible upon receipt.

No other analytical or quality control problems were encountered during analysis.

Total Petroleum Hydrocarbons by DOH Method 310-13

No analytical or quality control problems were encountered during analysis.

Volatile Organic Compounds by EPA Method 601/602

2-Chloroethylvinyl ether is degraded by samples preserved to pH<2. The recoveries of this compound may be biased low.

The Duplicate Matrix Spike (DMS) recovery of Bromomethane for sample MW-14R was outside control criteria high. A Matrix Spike (MS) was also analyzed, producing acceptable results. The data is not significantly affected. The Relative Percent Difference (RPD) for the replicate MS/MSD analysis was within the normal CAS control limits. Outliers are "*" flagged on the appropriate QC form.

Sample MW-12S was found to have significant residual chlorine present at the time of sample analysis.


No other analytical or quality control problems were encountered during analysis.

Semivolatile Organic Compounds by EPA Method 625

The Matrix Spike (MS/DMS) recoveries of Benzidine for sample MW-14R were outside control criteria low. Sample data may be biased low. The Relative Percent Difference (RPD) for the replicate MS/MSD analysis was outside the normal CAS control limits for Benzidine. This target was not detected in any samples; therefore the data is not significantly affected. The Matrix Spike (MS/DMS) recoveries of Hexachlorocyclopentadiene for sample MW-14R were outside control criteria high and the Relative Percent Difference (RPD) for the replicate MS/MSD analysis was outside the normal CAS control limits. This target was not detected in any samples; therefore the data is not significantly affected. Outliers are "*" flagged on the appropriate QC form.

The lower control criterion was exceeded for Benzidine in the Laboratory Control Sample (LCS)/Laboratory Control Sample Duplicate (LCSD) analysis on 10/24/11, 10/26/11 and 10/28/11. The analyte in question was not detected in the associated field samples. However, the error associated with low recovery equates to a possible low bias, therefore the sample data may be biased low for Benzidine. The lower control criterion was exceeded for Hexachloroethane in the 10/28/11 DLCS. The LCS was acceptable; therefore the data is not significantly affected. There was insufficient volume of sample remaining to re-extract and analyze. No further corrective action was possible. The Relative Percent Difference (RPD) for the replicate LCS analyses was within control criteria, with the exception of the 10/26/11 and 10/28/11 analyses. The analyte in question was not detected in the associated field samples; therefore the sample data is not significantly affected. QC outliers are "*" flagged on the appropriate form.

No other analytical or quality control problems were encountered during analysis.

Approved by 

Date

11/2/11

00002

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual
Water/002700.DC14.02.01.02

Service Request: R1105804

SAMPLE CROSS-REFERENCE

<u>SAMPLE #</u>	<u>CLIENT SAMPLE ID</u>	<u>DATE</u>	<u>TIME</u>
R1105804-001	MW-12R	10/18/11	08:54
R1105804-002	MW-12S	10/18/11	09:08
R1105804-003	MW-14S	10/18/11	12:05
R1105804-004	MW-14R	10/18/11	13:05
R1105804-005	MW-2R	10/18/11	15:15
R1105804-006	MW-2S	10/18/11	15:05
R1105804-009	TB-10-18-11-001	10/18/11	
R1105804-010	PW-1	10/19/11	09:20
R1105804-011	P-3	10/19/11	09:25
R1105804-012	P-2	10/19/11	09:30
R1105804-013	P-1	10/19/11	09:35
R1105804-014	MW-8R	10/19/11	09:40
R1105804-015	MW-13S	10/19/11	10:05
R1105804-016	MW-9S	10/19/11	11:35
R1105804-017	MW-5R	10/19/11	15:40
R1105804-018	TB-101911-002	10/19/11	
R1105804-019	MW-3R	10/20/11	11:43
R1105804-020	MW-3S	10/20/11	12:25
R1105804-021	MW-16R	10/20/11	15:15
R1105804-022	MW-15R	10/20/11	16:25
R1105804-023	MW-15RQ	10/20/11	16:30
R1105804-024	TB102011003	10/20/11	
R1105804-025	MW-1S	10/21/11	09:10
R1105804-026	MW-10R	10/21/11	11:42
R1105804-027	TB102111004	10/21/11	

REPORT QUALIFIERS

- U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
- J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Aroclors).
- B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
- E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
- E Organics- Concentration has exceeded the calibration range for that specific analysis.
- D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
- * Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
- H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
- # Spike was diluted out.
- + Correlation coefficient for MSA is <0.995.
- N Inorganics- Matrix spike recovery was outside laboratory limits.
- N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
- S Concentration has been determined using Method of Standard Additions (MSA).
- W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
- P Concentration >40% (25% for CLP) difference between the two GC columns.
- C Confirmed by GC/MS
- Q DoD reports: indicates a pesticide/Aroclor is not confirmed ($\geq 100\%$ Difference between two GC columns).
- X See Case Narrative for discussion.



CAS/Rochester Lab ID # for State Certifications¹

NELAP Accredited	Nebraska Accredited
Connecticut ID # PH0556	Nevada ID # NY-00032
Delaware Accredited	New Jersey ID # NY004
DoD ELAP #65817	New York ID # 10145
Florida ID # E87674	New Hampshire ID # 294100 A/B
Illinois ID #200047	Pennsylvania ID# 68-786
Maine ID #NY0032	Rhode Island ID # 158

¹ Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state requirements. The test results meet requirements of the current NELAP standards or state requirements, where applicable, except as noted in the laboratory case narrative provided. For a specific list of accredited analytes, refer to the certifications section at www.caslab.com.

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-12R
Lab Code: R1105804-001

Service Request: R1105804
Date Collected: 10/18/11 0854
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.41		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	19.1		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0854
Date Received: 10/19/11
Date Analyzed: 10/20/11 18:10

Sample Name: MW-12R
Lab Code: R1105804-001

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1012.run

Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	23		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	22		1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0854
Date Received: 10/19/11
Date Analyzed: 10/20/11 18:10

Sample Name: MW-12R
Lab Code: R1105804-001

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1012.run

Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	128	38-150	10/20/11 18:10	
Bromochloromethane	85	43-120	10/20/11 18:10	
3-Fluorochlorobenzene (PID)	107	77-119	10/20/11 18:10	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/18/11 0854
 Date Received: 10/19/11
 Date Extracted: 10/20/11
 Date Analyzed: 10/25/11 00:49

Sample Name: MW-12R
 Lab Code: R1105804-001

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CH125.D\

Analysis Lot: 266640
 Extraction Lot: 144615
 Instrument Name: R-MS-51
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzydine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0854
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 00:49

Sample Name: MW-12R
Lab Code: R1105804-001

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CH125.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	96	28-157	10/25/11 00:49	
2-Fluorobiphenyl	76	39-119	10/25/11 00:49	
2-Fluorophenol	42	10-105	10/25/11 00:49	
Nitrobenzene-d5	76	37-117	10/25/11 00:49	
Phenol-d6	28	10-107	10/25/11 00:49	
p-Terphenyl-d14	119	40-133	10/25/11 00:49	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0854
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 16:37

Sample Name: MW-12R
Lab Code: R1105804-001

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM408.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-12R
Lab Code: R1105804-001
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11
Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-12S
Lab Code: R1105804-002

Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.02		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	19.2		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11
Date Analyzed: 10/20/11 19:01

Sample Name: MW-12S
Lab Code: R1105804-002

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1013.run

Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11
Date Analyzed: 10/20/11 19:01
Sample Name: MW-12S
Lab Code: R1105804-002
Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1013.run
Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	134	38-150	10/20/11 19:01	
Bromochloromethane	82	43-120	10/20/11 19:01	
3-Fluorochlorobenzene (PID)	107	77-119	10/20/11 19:01	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 01:26

Sample Name: MW-12S
Lab Code: R1105804-002

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI126.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 01:26

Sample Name: MW-12S
Lab Code: R1105804-002

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI126.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	101	28-157	10/25/11 01:26	
2-Fluorobiphenyl	89	39-119	10/25/11 01:26	
2-Fluorophenol	45	10-105	10/25/11 01:26	
Nitrobenzene-d5	88	37-117	10/25/11 01:26	
Phenol-d6	30	10-107	10/25/11 01:26	
p-Terphenyl-d14	122	40-133	10/25/11 01:26	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 0908
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 17:04

Sample Name: MW-12S
Lab Code: R1105804-002

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM409.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-12S
Lab Code: R1105804-002
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-14S
Lab Code: R1105804-003

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.16		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	18.9		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11
Date Analyzed: 10/21/11 18:34

Sample Name: MW-14S
Lab Code: R1105804-003

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1009.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11
Date Analyzed: 10/21/11 18:34

Sample Name: MW-14S
Lab Code: R1105804-003

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1009.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/21/11 18:34	
Bromochloromethane	72	43-120	10/21/11 18:34	
3-Fluorochlorobenzene (PID)	110	77-119	10/21/11 18:34	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 02:03

Sample Name: MW-14S
Lab Code: R1105804-003

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973\ADATA\102411\CI127.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	47	U	47	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47	U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	47	U	47	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzydine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 02:03

Sample Name: MW-14S
Lab Code: R1105804-003

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI127.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	96	28-157	10/25/11 02:03	
2-Fluorobiphenyl	76	39-119	10/25/11 02:03	
2-Fluorophenol	40	10-105	10/25/11 02:03	
Nitrobenzene-d5	77	37-117	10/25/11 02:03	
Phenol-d6	27	10-107	10/25/11 02:03	
p-Terphenyl-d14	108	40-133	10/25/11 02:03	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1205
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 17:30

Sample Name: MW-14S
Lab Code: R1105804-003

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM410.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-14S
Lab Code: R1105804-003
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-14R
Lab Code: R1105804-004

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.54		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	18.8		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11
Date Analyzed: 10/21/11 19:24

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1010.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	52		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	5.8		1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	3.3		1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11
Date Analyzed: 10/21/11 19:24

Sample Name: MW-14R
Lab Code: R1105804-004

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1010.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	114	38-150	10/21/11 19:24	
Bromochloromethane	69	43-120	10/21/11 19:24	
3-Fluorochlorobenzene (PID)	109	77-119	10/21/11 19:24	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 02:40

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CH128.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	47	U	47	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47	U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	47	U	47	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 02:40

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI128.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	107	28-157	10/25/11 02:40	
2-Fluorobiphenyl	83	39-119	10/25/11 02:40	
2-Fluorophenol	46	10-105	10/25/11 02:40	
Nitrobenzene-d5	83	37-117	10/25/11 02:40	
Phenol-d6	31	10-107	10/25/11 02:40	
p-Terphenyl-d14	115	40-133	10/25/11 02:40	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1305
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 17:57

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQUADATA\6890\DATA\102011\AM411.DA

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-14R
Lab Code: R1105804-004
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-2R
Lab Code: R1105804-005

Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.23		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	19.0		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/18/11 1515
 Date Received: 10/19/11
 Date Analyzed: 10/22/11 02:03

Sample Name: MW-2R
 Lab Code: R1105804-005

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1018.run

Analysis Lot: 266370
 Instrument Name: R-GC-03
 Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.5	U	2.5	
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	2.5	
79-00-5	1,1,2-Trichloroethane	2.5	U	2.5	
75-34-3	1,1-Dichloroethane (1,1-DCA)	35		2.5	
75-35-4	1,1-Dichloroethene (1,1-DCE)	11		2.5	
95-50-1	1,2-Dichlorobenzene	2.5	U	2.5	
107-06-2	1,2-Dichloroethane	2.5	U	2.5	
78-87-5	1,2-Dichloropropane	2.5	U	2.5	
541-73-1	1,3-Dichlorobenzene	2.5	U	2.5	
106-46-7	1,4-Dichlorobenzene	2.5	U	2.5	
110-75-8	2-Chloroethyl Vinyl Ether	2.5	U	2.5	
71-43-2	Benzene	2.5	U	2.5	
75-27-4	Bromodichloromethane	2.5	U	2.5	
75-25-2	Bromoform	2.5	U	2.5	
74-83-9	Bromomethane	2.5	U	2.5	
56-23-5	Carbon Tetrachloride	2.5	U	2.5	
108-90-7	Chlorobenzene	2.5	U	2.5	
75-00-3	Chloroethane	2.5	U	2.5	
67-66-3	Chloroform	2.5	U	2.5	
74-87-3	Chloromethane	2.5	U	2.5	
124-48-1	Dibromochloromethane	2.5	U	2.5	
75-09-2	Methylene Chloride	2.5	U	2.5	
100-41-4	Ethylbenzene	4.7		2.5	
127-18-4	Tetrachloroethene (PCE)	2.5	U	2.5	
108-88-3	Toluene	2.5	U	2.5	
79-01-6	Trichloroethene (TCE)	2.6		2.5	
75-69-4	Trichlorofluoromethane (CFC 11)	2.5	U	2.5	
75-01-4	Vinyl Chloride	250		2.5	
156-59-2	cis-1,2-Dichloroethene	820	E	2.5	
10061-01-5	cis-1,3-Dichloropropene	2.5	U	2.5	
179601-23-1	m,p-Xylenes	5.0	U	5.0	
95-47-6	o-Xylene	2.5	U	2.5	
156-60-5	trans-1,2-Dichloroethene	4.0		2.5	
10061-02-6	trans-1,3-Dichloropropene	2.5	U	2.5	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11
Date Analyzed: 10/22/11 02:03
Sample Name: MW-2R
Lab Code: R1105804-005
Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1018.run
Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 2.5

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	108	38-150	10/22/11 02:03	
Bromochloromethane	80	43-120	10/22/11 02:03	
3-Fluorochlorobenzene (PID)	111	77-119	10/22/11 02:03	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/18/11 1515
 Date Received: 10/19/11
 Date Analyzed: 10/24/11 19:00

Sample Name: MW-2R
 Lab Code: R1105804-005
 Run Type: Dilution

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1012.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	33	D	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	10	D	10	
95-50-1	1,2-Dichlorobenzene	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
541-73-1	1,3-Dichlorobenzene	10	U	10	
106-46-7	1,4-Dichlorobenzene	10	U	10	
110-75-8	2-Chloroethyl Vinyl Ether	10	U	10	
71-43-2	Benzene	10	U	10	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
100-41-4	Ethylbenzene	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
108-88-3	Toluene	10	U	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	240	D	10	
156-59-2	cis-1,2-Dichloroethene	890	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
179601-23-1	m,p-Xylenes	20	U	20	
95-47-6	o-Xylene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11
Date Analyzed: 10/24/11 19:00

Sample Name: MW-2R
Lab Code: R1105804-005
Run Type: Dilution

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1012.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 10

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	110	38-150	10/24/11 19:00	
Bromochloromethane	77	43-120	10/24/11 19:00	
3-Fluorochlorobenzene (PID)	108	77-119	10/24/11 19:00	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 10:50

Sample Name: MW-2R
Lab Code: R1105804-005

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI137.D

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 10:50

Sample Name: MW-2R
Lab Code: R1105804-005

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI137.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	5.7		4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	115	28-157	10/25/11 10:50	
2-Fluorobiphenyl	90	39-119	10/25/11 10:50	
2-Fluorophenol	48	10-105	10/25/11 10:50	
Nitrobenzene-d5	92	37-117	10/25/11 10:50	
Phenol-d6	33	10-107	10/25/11 10:50	
p-Terphenyl-d14	112	40-133	10/25/11 10:50	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1515
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 19:18

Sample Name: MW-2R
Lab Code: R1105804-005

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQUADATA\6890\DATA\102011\AM414.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-2R
Lab Code: R1105804-005
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-2S
Lab Code: R1105804-006

Service Request: R1105804
Date Collected: 10/18/11 1505
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	6.93		pH Units		1	NA	10/19/11 15:08	H
Temperature of pH Analysis	SM 4500-H+ B	19.1		deg C		1	NA	10/19/11 15:08	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1505
Date Received: 10/19/11
Date Analyzed: 10/21/11 21:55

Sample Name: MW-2S
Lab Code: R1105804-006

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1013.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.9		1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1505
Date Received: 10/19/11
Date Analyzed: 10/21/11 21:55

Sample Name: MW-2S
Lab Code: R1105804-006

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1013.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	111	38-150	10/21/11 21:55	
Bromochloromethane	68	43-120	10/21/11 21:55	
3-Fluorochlorobenzene (PID)	109	77-119	10/21/11 21:55	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/18/11 1505
 Date Received: 10/19/11
 Date Extracted: 10/20/11
 Date Analyzed: 10/25/11 05:08

Sample Name: MW-2S
 Lab Code: R1105804-006

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI132.D\

Analysis Lot: 266640
 Extraction Lot: 144615
 Instrument Name: R-MS-51
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.8	U	4.8	
122-66-7	1,2-Diphenylhydrazine	4.8	U	4.8	
88-06-2	2,4,6-Trichlorophenol	4.8	U	4.8	
120-83-2	2,4-Dichlorophenol	4.8	U	4.8	
105-67-9	2,4-Dimethylphenol	4.8	U	4.8	
51-28-5	2,4-Dinitrophenol	48	U	48	
121-14-2	2,4-Dinitrotoluene	4.8	U	4.8	
606-20-2	2,6-Dinitrotoluene	4.8	U	4.8	
91-58-7	2-Chloronaphthalene	4.8	U	4.8	
95-57-8	2-Chlorophenol	4.8	U	4.8	
88-75-5	2-Nitrophenol	4.8	U	4.8	
91-94-1	3,3'-Dichlorobenzidine	4.8	U	4.8	
534-52-1	4,6-Dinitro-o-cresol	48	U	48	
101-55-3	4-Bromophenyl Phenyl Ether	4.8	U	4.8	
59-50-7	4-Chloro-m-cresol	4.8	U	4.8	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.8	U	4.8	
100-02-7	4-Nitrophenol	48	U	48	
83-32-9	Acenaphthene	4.8	U	4.8	
208-96-8	Acenaphthylene	4.8	U	4.8	
120-12-7	Anthracene	4.8	U	4.8	
56-55-3	Benz(a)anthracene	4.8	U	4.8	
92-87-5	Benzidine	95	U	95	
50-32-8	Benzo(a)pyrene	4.8	U	4.8	
205-99-2	3,4-Benzofluoranthene	4.8	U	4.8	
191-24-2	Benzo(g,h,i)perylene	4.8	U	4.8	
207-08-9	Benzo(k)fluoranthene	4.8	U	4.8	
108-60-1	Bis(1-chloroisopropyl) Ether	4.8	U	4.8	
111-91-1	Bis(2-chloroethoxy)methane	4.8	U	4.8	
111-44-4	Bis(2-chloroethyl) Ether	4.8	U	4.8	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.8	U	4.8	
85-68-7	Butyl Benzyl Phthalate	4.8	U	4.8	
218-01-9	Chrysene	4.8	U	4.8	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1505
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 05:08

Sample Name: MW-2S
Lab Code: R1105804-006

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI132.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.8	U	4.8	
117-84-0	Di-n-octyl Phthalate	4.8	U	4.8	
53-70-3	Dibenz(a,h)anthracene	4.8	U	4.8	
84-66-2	Diethyl Phthalate	4.8	U	4.8	
131-11-3	Dimethyl Phthalate	4.8	U	4.8	
206-44-0	Fluoranthene	4.8	U	4.8	
86-73-7	Fluorene	4.8	U	4.8	
118-74-1	Hexachlorobenzene	4.8	U	4.8	
87-68-3	Hexachlorobutadiene	4.8	U	4.8	
77-47-4	Hexachlorocyclopentadiene	4.8	U	4.8	
67-72-1	Hexachloroethane	4.8	U	4.8	
193-39-5	Indeno(1,2,3-cd)pyrene	4.8	U	4.8	
78-59-1	Isophorone	4.8	U	4.8	
621-64-7	N-Nitrosodi-n-propylamine	4.8	U	4.8	
62-75-9	N-Nitrosodimethylamine	4.8	U	4.8	
86-30-6	N-Nitrosodiphenylamine	4.8	U	4.8	
91-20-3	Naphthalene	4.8	U	4.8	
98-95-3	Nitrobenzene	4.8	U	4.8	
87-86-5	Pentachlorophenol (PCP)	48	U	48	
85-01-8	Phenanthrene	4.8	U	4.8	
108-95-2	Phenol	4.8	U	4.8	
129-00-0	Pyrene	4.8	U	4.8	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	115	28-157	10/25/11 05:08	
2-Fluorobiphenyl	84	39-119	10/25/11 05:08	
2-Fluorophenol	42	10-105	10/25/11 05:08	
Nitrobenzene-d5	80	37-117	10/25/11 05:08	
Phenol-d6	29	10-107	10/25/11 05:08	
p-Terphenyl-d14	111	40-133	10/25/11 05:08	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11 1505
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 20:12

Sample Name: MW-2S
Lab Code: R1105804-006

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM416.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	950	U	950	
68476-31-3	Fuel Oil No. 4	950	U	950	
68476-33-5	Fuel Oil No. 6	950	U	950	
8006-61-9	Gasoline	950	U	950	
8008-20-6	Kerosene	950	U	950	
	Lube Oil	950	U	950	
112-40-3	n-Dodecane	950	U	950	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-2S
Lab Code: R1105804-006
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/21/11 22:45

Sample Name: TB-10-18-11-001
Lab Code: R1105804-009

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1014.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/21/11 22:45

Sample Name: TB-10-18-11-001
Lab Code: R1105804-009

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1014.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	108	38-150	10/21/11 22:45	
Bromochloromethane	73	43-120	10/21/11 22:45	
3-Fluorochlorobenzene (PID)	110	77-119	10/21/11 22:45	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: TB-10-18-11-001
Lab Code: R1105804-009
Matrix: Water

Service Request: R1105804

Date Collected: 10/18/11
Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0920
Date Received: 10/19/11
Date Analyzed: 10/24/11 13:05

Sample Name: PW-1
Lab Code: R1105804-010

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.6		1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	30		1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	7.7		1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.2		1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	3.1		1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	43		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	150	E	1.0	
156-59-2	cis-1,2-Dichloroethene	410	E	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	6.6		1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0920
Date Received: 10/19/11
Date Analyzed: 10/24/11 13:05

Sample Name: PW-1
Lab Code: R1105804-010

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	113	38-150	10/24/11 13:05	
Bromochloromethane	74	43-120	10/24/11 13:05	
3-Fluorochlorobenzene (PID)	106	77-119	10/24/11 13:05	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0920
Date Received: 10/19/11
Date Analyzed: 10/24/11 13:54

Sample Name: PW-1
Lab Code: R1105804-010
Run Type: Dilution

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1006.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	28	D	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	6.8	D	5.0	
95-50-1	1,2-Dichlorobenzene	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
541-73-1	1,3-Dichlorobenzene	5.0	U	5.0	
106-46-7	1,4-Dichlorobenzene	5.0	U	5.0	
110-75-8	2-Chloroethyl Vinyl Ether	5.0	U	5.0	
71-43-2	Benzene	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
100-41-4	Ethylbenzene	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
108-88-3	Toluene	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	42	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	130	D	5.0	
156-59-2	cis-1,2-Dichloroethene	470	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
179601-23-1	m,p-Xylenes	10	U	10	
95-47-6	o-Xylene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Sample Name: PW-1
Lab Code: R1105804-010
Run Type: Dilution

Service Request: R1105804
Date Collected: 10/19/11 0920
Date Received: 10/19/11
Date Analyzed: 10/24/11 13:54

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1006.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 5

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	111	38-150	10/24/11 13:54	
Bromochloromethane	77	43-120	10/24/11 13:54	
3-Fluorochlorobenzene (PID)	107	77-119	10/24/11 13:54	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: PW-1
Lab Code: R1105804-010
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0925
Date Received: 10/19/11
Date Analyzed: 10/27/11 12:36

Sample Name: P-3
Lab Code: R1105804-011

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1004.run

Analysis Lot: 267152
Instrument Name: R-GC-03
Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	22		2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	11		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	3.2		2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
110-75-8	2-Chloroethyl Vinyl Ether	2.0	U	2.0	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	320	E	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	84		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	160		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	4.0	U	4.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0925
Date Received: 10/19/11
Date Analyzed: 10/27/11 12:36

Sample Name: P-3
Lab Code: R1105804-011

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1004.run

Analysis Lot: 267152
Instrument Name: R-GC-03
Dilution Factor: 2

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	116	38-150	10/27/11 12:36	
Bromochloromethane	67	43-120	10/27/11 12:36	
3-Fluorochlorobenzene (PID)	105	77-119	10/27/11 12:36	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 0925
 Date Received: 10/19/11
 Date Analyzed: 10/27/11 13:41

Sample Name: P-3
 Lab Code: R1105804-011
 Run Type: Dilution

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1005.run

Analysis Lot: 267152
 Instrument Name: R-GC-03
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	18	D	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	9.0	D	5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	5.0	U	5.0	
95-50-1	1,2-Dichlorobenzene	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
541-73-1	1,3-Dichlorobenzene	5.0	U	5.0	
106-46-7	1,4-Dichlorobenzene	5.0	U	5.0	
110-75-8	2-Chloroethyl Vinyl Ether	5.0	U	5.0	
71-43-2	Benzene	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
100-41-4	Ethylbenzene	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	270	D	5.0	
108-88-3	Toluene	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	73	D	5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	5.0	U	5.0	
156-59-2	cis-1,2-Dichloroethene	140	D	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
179601-23-1	m,p-Xylenes	10	U	10	
95-47-6	o-Xylene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.0	U	5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0925
Date Received: 10/19/11
Date Analyzed: 10/27/11 13:41

Sample Name: P-3
Lab Code: R1105804-011
Run Type: Dilution

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 267152
Instrument Name: R-GC-03
Dilution Factor: 5

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	118	38-150	10/27/11 13:41	
Bromochloromethane	71	43-120	10/27/11 13:41	
3-Fluorochlorobenzene (PID)	107	77-119	10/27/11 13:41	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: P-3
Lab Code: R1105804-011
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0930
Date Received: 10/19/11
Date Analyzed: 10/24/11 15:39

Sample Name: P-2
Lab Code: R1105804-012

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1008.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 2.5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	25		2.5	
79-34-5	1,1,2,2-Tetrachloroethane	2.5	U	2.5	
79-00-5	1,1,2-Trichloroethane	2.5	U	2.5	
75-34-3	1,1-Dichloroethane (1,1-DCA)	32		2.5	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.5	U	2.5	
95-50-1	1,2-Dichlorobenzene	2.5	U	2.5	
107-06-2	1,2-Dichloroethane	2.5	U	2.5	
78-87-5	1,2-Dichloropropane	2.5	U	2.5	
541-73-1	1,3-Dichlorobenzene	2.5	U	2.5	
106-46-7	1,4-Dichlorobenzene	2.5	U	2.5	
110-75-8	2-Chloroethyl Vinyl Ether	2.5	U	2.5	
71-43-2	Benzene	2.5	U	2.5	
75-27-4	Bromodichloromethane	2.5	U	2.5	
75-25-2	Bromoform	2.5	U	2.5	
74-83-9	Bromomethane	2.5	U	2.5	
56-23-5	Carbon Tetrachloride	2.5	U	2.5	
108-90-7	Chlorobenzene	2.5	U	2.5	
75-00-3	Chloroethane	2.5	U	2.5	
67-66-3	Chloroform	2.5	U	2.5	
74-87-3	Chloromethane	2.5	U	2.5	
124-48-1	Dibromochloromethane	2.5	U	2.5	
75-09-2	Methylene Chloride	2.5	U	2.5	
100-41-4	Ethylbenzene	2.5	U	2.5	
127-18-4	Tetrachloroethene (PCE)	94		2.5	
108-88-3	Toluene	2.5	U	2.5	
79-01-6	Trichloroethene (TCE)	49		2.5	
75-69-4	Trichlorofluoromethane (CFC 11)	2.5	U	2.5	
75-01-4	Vinyl Chloride	2.5	U	2.5	
156-59-2	cis-1,2-Dichloroethene	150		2.5	
I0061-01-5	cis-1,3-Dichloropropene	2.5	U	2.5	
179601-23-1	m,p-Xylenes	5.0	U	5.0	
95-47-6	o-Xylene	2.5	U	2.5	
156-60-5	trans-1,2-Dichloroethene	2.8		2.5	
I0061-02-6	trans-1,3-Dichloropropene	2.5	U	2.5	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0930
Date Received: 10/19/11
Date Analyzed: 10/24/11 15:39

Sample Name: P-2
Lab Code: R1105804-012

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1008.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 2.5

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	109	38-150	10/24/11 15:39	
Bromochloromethane	71	43-120	10/24/11 15:39	
3-Fluorochlorobenzene (PID)	105	77-119	10/24/11 15:39	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: P-2
Lab Code: R1105804-012
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

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COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0935
Date Received: 10/19/11
Date Analyzed: 10/24/11 16:31

Sample Name: P-1
Lab Code: R1105804-013

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1009.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	3.5		1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	12		1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.8		1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	19		1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	47		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	140	E	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0935
Date Received: 10/19/11
Date Analyzed: 10/24/11 16:31

Sample Name: P-1
Lab Code: R1105804-013

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1009.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	111	38-150	10/24/11 16:31	
Bromochloromethane	73	43-120	10/24/11 16:31	
3-Fluorochlorobenzene (PID)	107	77-119	10/24/11 16:31	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0935
Date Received: 10/19/11
Date Analyzed: 10/26/11 14:22

Sample Name: P-1
Lab Code: R1105804-013
Run Type: Dilution

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1007.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	3.3	D	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	9.6	D	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.4	D	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
110-75-8	2-Chloroethyl Vinyl Ether	2.0	U	2.0	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	18	D	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	40	D	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	2.0	U	2.0	
156-59-2	cis-1,2-Dichloroethene	130	D	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	4.0	U	4.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0935
Date Received: 10/19/11
Date Analyzed: 10/26/11 14:22

Sample Name: P-1
Lab Code: R1105804-013
Run Type: Dilution

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1007.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 2

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	103	38-150	10/26/11 14:22	
Bromochloromethane	63	43-120	10/26/11 14:22	
3-Fluorochlorobenzene (PID)	107	77-119	10/26/11 14:22	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: P-1
Lab Code: R1105804-013
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-8R
Lab Code: R1105804-014

Service Request: R1105804
Date Collected: 10/19/11 0940
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.14		pH Units		1	NA	10/19/11 17:14	H
Temperature of pH Analysis	SM 4500-H+ B	18.8		deg C		1	NA	10/19/11 17:14	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0940
Date Received: 10/19/11
Date Analyzed: 10/25/11 01:39

Sample Name: MW-8R
Lab Code: R1105804-014

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1020.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 100

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	100	U	100	
79-34-5	1,1,2,2-Tetrachloroethane	100	U	100	
79-00-5	1,1,2-Trichloroethane	100	U	100	
75-34-3	1,1-Dichloroethane (1,1-DCA)	150		100	
75-35-4	1,1-Dichloroethene (1,1-DCE)	100	U	100	
95-50-1	1,2-Dichlorobenzene	100	U	100	
107-06-2	1,2-Dichloroethane	100	U	100	
78-87-5	1,2-Dichloropropane	100	U	100	
541-73-1	1,3-Dichlorobenzene	100	U	100	
106-46-7	1,4-Dichlorobenzene	100	U	100	
110-75-8	2-Chloroethyl Vinyl Ether	100	U	100	
71-43-2	Benzene	100	U	100	
75-27-4	Bromodichloromethane	100	U	100	
75-25-2	Bromoform	100	U	100	
74-83-9	Bromomethane	100	U	100	
56-23-5	Carbon Tetrachloride	100	U	100	
108-90-7	Chlorobenzene	100	U	100	
75-00-3	Chloroethane	100	U	100	
67-66-3	Chloroform	100	U	100	
74-87-3	Chloromethane	100	U	100	
124-48-1	Dibromochloromethane	100	U	100	
75-09-2	Methylene Chloride	100	U	100	
100-41-4	Ethylbenzene	100	U	100	
127-18-4	Tetrachloroethene (PCE)	100	U	100	
108-88-3	Toluene	100	U	100	
79-01-6	Trichloroethene (TCE)	100	U	100	
75-69-4	Trichlorofluoromethane (CFC 11)	100	U	100	
75-01-4	Vinyl Chloride	730		100	
156-59-2	cis-1,2-Dichloroethene	4800		100	
10061-01-5	cis-1,3-Dichloropropene	100	U	100	
179601-23-1	m,p-Xylenes	200	U	200	
95-47-6	o-Xylene	100	U	100	
156-60-5	trans-1,2-Dichloroethene	100	U	100	
10061-02-6	trans-1,3-Dichloropropene	100	U	100	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Service Request: R1105804
Date Collected: 10/19/11 0940
Date Received: 10/19/11
Date Analyzed: 10/25/11 01:39
Sample Name: MW-8R
Lab Code: R1105804-014
Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1020.run
Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 100

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	108	38-150	10/25/11 01:39	
Bromochloromethane	72	43-120	10/25/11 01:39	
3-Fluorochlorobenzene (PID)	109	77-119	10/25/11 01:39	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 0940
 Date Received: 10/19/11
 Date Extracted: 10/20/11
 Date Analyzed: 10/25/11 05:45

Sample Name: MW-8R
 Lab Code: R1105804-014

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973A\DATA\102411\CH133.DV

Analysis Lot: 266640
 Extraction Lot: 144615
 Instrument Name: R-MS-51
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0940
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 05:45

Sample Name: MW-8R
Lab Code: R1105804-014

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI133.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	104	28-157	10/25/11 05:45	
2-Fluorobiphenyl	80	39-119	10/25/11 05:45	
2-Fluorophenol	42	10-105	10/25/11 05:45	
Nitrobenzene-d5	83	37-117	10/25/11 05:45	
Phenol-d6	28	10-107	10/25/11 05:45	
p-Terphenyl-d14	101	40-133	10/25/11 05:45	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 0940
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 20:39

Sample Name: MW-8R
Lab Code: R1105804-014

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM417.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-8R
Lab Code: R1105804-014
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-13S
Lab Code: R1105804-015

Service Request: R1105804
Date Collected: 10/19/11 1005
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.26	pH Units		1	NA	10/19/11 17:14	H
Temperature of pH Analysis	SM 4500-H+ B	19.9	deg C		1	NA	10/19/11 17:14	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 1005
 Date Received: 10/19/11
 Date Analyzed: 10/21/11 23:34

Sample Name: MW-13S
 Lab Code: R1105804-015

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1015.run

Analysis Lot: 266370
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0 U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0 U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0 U	1.0	
107-06-2	1,2-Dichloroethane	1.0 U	1.0	
78-87-5	1,2-Dichloropropane	1.0 U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0 U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0 U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0 U	1.0	
71-43-2	Benzene	1.0 U	1.0	
75-27-4	Bromodichloromethane	1.0 U	1.0	
75-25-2	Bromoform	1.0 U	1.0	
74-83-9	Bromomethane	1.0 U	1.0	
56-23-5	Carbon Tetrachloride	1.0 U	1.0	
108-90-7	Chlorobenzene	1.0 U	1.0	
75-00-3	Chloroethane	1.0 U	1.0	
67-66-3	Chloroform	1.0 U	1.0	
74-87-3	Chloromethane	1.0 U	1.0	
124-48-1	Dibromochloromethane	1.0 U	1.0	
75-09-2	Methylene Chloride	1.0 U	1.0	
100-41-4	Ethylbenzene	1.0 U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0 U	1.0	
108-88-3	Toluene	1.0 U	1.0	
79-01-6	Trichloroethene (TCE)	1.0 U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0 U	1.0	
75-01-4	Vinyl Chloride	1.0 U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0 U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0 U	1.0	
179601-23-1	m,p-Xylenes	2.0 U	2.0	
95-47-6	o-Xylene	1.0 U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0 U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0 U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1005
Date Received: 10/19/11
Date Analyzed: 10/21/11 23:34

Sample Name: MW-13S
Lab Code: R1105804-015

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1015.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/21/11 23:34	
Bromochloromethane	67	43-120	10/21/11 23:34	
3-Fluorochlorobenzene (PID)	109	77-119	10/21/11 23:34	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 1005
 Date Received: 10/19/11
 Date Extracted: 10/20/11
 Date Analyzed: 10/25/11 11:28

Sample Name: MW-13S
 Lab Code: R1105804-015

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI138.D\

Analysis Lot: 266640
 Extraction Lot: 144615
 Instrument Name: R-MS-51
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7 U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7 U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7 U	4.7	
120-83-2	2,4-Dichlorophenol	4.7 U	4.7	
105-67-9	2,4-Dimethylphenol	4.7 U	4.7	
51-28-5	2,4-Dinitrophenol	47 U	47	
121-14-2	2,4-Dinitrotoluene	4.7 U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7 U	4.7	
91-58-7	2-Chloronaphthalene	4.7 U	4.7	
95-57-8	2-Chlorophenol	4.7 U	4.7	
88-75-5	2-Nitrophenol	4.7 U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7 U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47 U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7 U	4.7	
59-50-7	4-Chloro-m-cresol	4.7 U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7 U	4.7	
100-02-7	4-Nitrophenol	47 U	47	
83-32-9	Acenaphthene	4.7 U	4.7	
208-96-8	Acenaphthylene	4.7 U	4.7	
120-12-7	Anthracene	4.7 U	4.7	
56-55-3	Benz(a)anthracene	4.7 U	4.7	
92-87-5	Benzidine	94 U	94	
50-32-8	Benzo(a)pyrene	4.7 U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7 U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7 U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7 U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7 U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7 U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7 U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7 U	4.7	
218-01-9	Chrysene	4.7 U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1005
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 11:28

Sample Name: MW-13S
Lab Code: R1105804-015

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\10241\CH138.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	104	28-157	10/25/11 11:28	
2-Fluorobiphenyl	81	39-119	10/25/11 11:28	
2-Fluorophenol	44	10-105	10/25/11 11:28	
Nitrobenzene-d5	84	37-117	10/25/11 11:28	
Phenol-d6	29	10-107	10/25/11 11:28	
p-Terphenyl-d14	96	40-133	10/25/11 11:28	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1005
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 21:06

Sample Name: MW-13S
Lab Code: R1105804-015

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM418.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-13S
Lab Code: R1105804-015
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11
Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-9S
Lab Code: R1105804-016

Service Request: R1105804
Date Collected: 10/19/11 1135
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.14	pH Units		1	NA	10/19/11 17:14	H
Temperature of pH Analysis	SM 4500-H+ B	18.6	deg C		1	NA	10/19/11 17:14	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 1135
 Date Received: 10/19/11
 Date Analyzed: 10/22/11 00:24

Sample Name: MW-9S
 Lab Code: R1105804-016

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1016.run

Analysis Lot: 266370
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0		1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	23		1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	34		1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	2.5		1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	16		1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	24		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	15		1.0	
156-59-2	cis-1,2-Dichloroethene	53		1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	3.3		1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1135
Date Received: 10/19/11
Date Analyzed: 10/22/11 00:24

Sample Name: MW-9S
Lab Code: R1105804-016

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1016.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	109	38-150	10/22/11 00:24	
Bromochloromethane	73	43-120	10/22/11 00:24	
3-Fluorochlorobenzene (PID)	111	77-119	10/22/11 00:24	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11 1135
 Date Received: 10/19/11
 Date Extracted: 10/20/11
 Date Analyzed: 10/25/11 07:02

Sample Name: MW-9S
 Lab Code: R1105804-016

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI135.D\

Analysis Lot: 266640
 Extraction Lot: 144615
 Instrument Name: R-MS-51
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	47	U	47	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47	U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	47	U	47	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1135
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 07:02

Sample Name: MW-9S
Lab Code: R1105804-016

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI135.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	99	28-157	10/25/11 07:02	
2-Fluorobiphenyl	81	39-119	10/25/11 07:02	
2-Fluorophenol	45	10-105	10/25/11 07:02	
Nitrobenzene-d5	82	37-117	10/25/11 07:02	
Phenol-d6	29	10-107	10/25/11 07:02	
p-Terphenyl-d14	94	40-133	10/25/11 07:02	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1135
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 21:33

Sample Name: MW-9S
Lab Code: R1105804-016

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM419.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-9S
Lab Code: R1105804-016
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-5R
Lab Code: R1105804-017

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.41	pH Units		1	NA	10/19/11 17:14	H
Temperature of pH Analysis	SM 4500-H+ B	20.2	deg C		1	NA	10/19/11 17:14	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11
Date Analyzed: 10/25/11 00:49

Sample Name: MW-5R
Lab Code: R1105804-017

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1019.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	4.0		2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.1		2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
110-75-8	2-Chloroethyl Vinyl Ether	2.0	U	2.0	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	18		2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	14		2.0	
156-59-2	cis-1,2-Dichloroethene	120		2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	4.0	U	4.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11
Date Analyzed: 10/25/11 00:49

Sample Name: MW-5R
Lab Code: R1105804-017

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1019.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 2

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	115	38-150	10/25/11 00:49	
Bromochloromethane	73	43-120	10/25/11 00:49	
3-Fluorochlorobenzene (PID)	108	77-119	10/25/11 00:49	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 07:41

Sample Name: MW-5R
Lab Code: R1105804-017

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\10241\NCI136.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7 U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7 U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7 U	4.7	
120-83-2	2,4-Dichlorophenol	4.7 U	4.7	
105-67-9	2,4-Dimethylphenol	4.7 U	4.7	
51-28-5	2,4-Dinitrophenol	47 U	47	
121-14-2	2,4-Dinitrotoluene	4.7 U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7 U	4.7	
91-58-7	2-Chloronaphthalene	4.7 U	4.7	
95-57-8	2-Chlorophenol	4.7 U	4.7	
88-75-5	2-Nitrophenol	4.7 U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7 U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47 U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7 U	4.7	
59-50-7	4-Chloro-m-cresol	4.7 U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7 U	4.7	
100-02-7	4-Nitrophenol	47 U	47	
83-32-9	Acenaphthene	4.7 U	4.7	
208-96-8	Acenaphthylene	4.7 U	4.7	
120-12-7	Anthracene	4.7 U	4.7	
56-55-3	Benz(a)anthracene	4.7 U	4.7	
92-87-5	Benzidine	94 U	94	
50-32-8	Benzo(a)pyrene	4.7 U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7 U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7 U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7 U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7 U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7 U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7 U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7 U	4.7	
218-01-9	Chrysene	4.7 U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/25/11 07:41

Sample Name: MW-5R
Lab Code: R1105804-017

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI136.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	4.7	U	4.7	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	106	28-157	10/25/11 07:41	
2-Fluorobiphenyl	84	39-119	10/25/11 07:41	
2-Fluorophenol	47	10-105	10/25/11 07:41	
Nitrobenzene-d5	88	37-117	10/25/11 07:41	
Phenol-d6	31	10-107	10/25/11 07:41	
p-Terphenyl-d14	107	40-133	10/25/11 07:41	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11 1540
Date Received: 10/19/11
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 22:00

Sample Name: MW-5R
Lab Code: R1105804-017

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM420.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-5R
Lab Code: R1105804-017
Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11
Date Received: 10/19/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MCYMBAL
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/19/11
 Date Received: 10/19/11
 Date Analyzed: 10/22/11 01:13

Sample Name: TB-101911-002
 Lab Code: R1105804-018

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1017.run

Analysis Lot: 266370
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/19/11
Date Received: 10/19/11
Date Analyzed: 10/22/11 01:13

Sample Name: TB-101911-002
Lab Code: R1105804-018

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1017.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	115	38-150	10/22/11 01:13	
Bromochloromethane	69	43-120	10/22/11 01:13	
3-Fluorochlorobenzene (PID)	109	77-119	10/22/11 01:13	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: TB-101911-002
Lab Code: R1105804-018
Matrix: Water

Service Request: R1105804

Date Collected: 10/19/11

Date Received: 10/19/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-3R
Lab Code: R1105804-019

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.31	pH Units		1	NA	10/20/11 17:39	H
Temperature of pH Analysis	SM 4500-H+ B	20.4	deg C		1	NA	10/20/11 17:39	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1143
 Date Received: 10/20/11
 Date Analyzed: 10/25/11 02:28

Sample Name: MW-3R
 Lab Code: R1105804-019

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1021.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 5

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	5.0	U	5.0	
79-34-5	1,1,2,2-Tetrachloroethane	5.0	U	5.0	
79-00-5	1,1,2-Trichloroethane	5.0	U	5.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	36		5.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	12		5.0	
95-50-1	1,2-Dichlorobenzene	5.0	U	5.0	
107-06-2	1,2-Dichloroethane	5.0	U	5.0	
78-87-5	1,2-Dichloropropane	5.0	U	5.0	
541-73-1	1,3-Dichlorobenzene	5.0	U	5.0	
106-46-7	1,4-Dichlorobenzene	5.0	U	5.0	
110-75-8	2-Chloroethyl Vinyl Ether	5.0	U	5.0	
71-43-2	Benzene	5.0	U	5.0	
75-27-4	Bromodichloromethane	5.0	U	5.0	
75-25-2	Bromoform	5.0	U	5.0	
74-83-9	Bromomethane	5.0	U	5.0	
56-23-5	Carbon Tetrachloride	5.0	U	5.0	
108-90-7	Chlorobenzene	5.0	U	5.0	
75-00-3	Chloroethane	5.0	U	5.0	
67-66-3	Chloroform	5.0	U	5.0	
74-87-3	Chloromethane	5.0	U	5.0	
124-48-1	Dibromochloromethane	5.0	U	5.0	
75-09-2	Methylene Chloride	5.0	U	5.0	
100-41-4	Ethylbenzene	5.0	U	5.0	
127-18-4	Tetrachloroethene (PCE)	5.0	U	5.0	
108-88-3	Toluene	5.0	U	5.0	
79-01-6	Trichloroethene (TCE)	8.3		5.0	
75-69-4	Trichlorofluoromethane (CFC 11)	5.0	U	5.0	
75-01-4	Vinyl Chloride	180		5.0	
156-59-2	cis-1,2-Dichloroethene	730	E	5.0	
10061-01-5	cis-1,3-Dichloropropene	5.0	U	5.0	
179601-23-1	m,p-Xylenes	10	U	10	
95-47-6	o-Xylene	5.0	U	5.0	
156-60-5	trans-1,2-Dichloroethene	5.7		5.0	
10061-02-6	trans-1,3-Dichloropropene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11
Date Analyzed: 10/25/11 02:28

Sample Name: MW-3R
Lab Code: R1105804-019

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1021.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 5

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	119	38-150	10/25/11 02:28	
Bromochloromethane	80	43-120	10/25/11 02:28	
3-Fluorochlorobenzene (PID)	107	77-119	10/25/11 02:28	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11
Date Analyzed: 10/26/11 15:12

Sample Name: MW-3R
Lab Code: R1105804-019
Run Type: Dilution

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1008.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 10

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	10	U	10	
79-34-5	1,1,2,2-Tetrachloroethane	10	U	10	
79-00-5	1,1,2-Trichloroethane	10	U	10	
75-34-3	1,1-Dichloroethane (1,1-DCA)	32	D	10	
75-35-4	1,1-Dichloroethene (1,1-DCE)	12	D	10	
95-50-1	1,2-Dichlorobenzene	10	U	10	
107-06-2	1,2-Dichloroethane	10	U	10	
78-87-5	1,2-Dichloropropane	10	U	10	
541-73-1	1,3-Dichlorobenzene	10	U	10	
106-46-7	1,4-Dichlorobenzene	10	U	10	
110-75-8	2-Chloroethyl Vinyl Ether	10	U	10	
71-43-2	Benzene	10	U	10	
75-27-4	Bromodichloromethane	10	U	10	
75-25-2	Bromoform	10	U	10	
74-83-9	Bromomethane	10	U	10	
56-23-5	Carbon Tetrachloride	10	U	10	
108-90-7	Chlorobenzene	10	U	10	
75-00-3	Chloroethane	10	U	10	
67-66-3	Chloroform	10	U	10	
74-87-3	Chloromethane	10	U	10	
124-48-1	Dibromochloromethane	10	U	10	
75-09-2	Methylene Chloride	10	U	10	
100-41-4	Ethylbenzene	10	U	10	
127-18-4	Tetrachloroethene (PCE)	10	U	10	
108-88-3	Toluene	10	U	10	
79-01-6	Trichloroethene (TCE)	10	U	10	
75-69-4	Trichlorofluoromethane (CFC 11)	10	U	10	
75-01-4	Vinyl Chloride	210	D	10	
156-59-2	cis-1,2-Dichloroethene	720	D	10	
10061-01-5	cis-1,3-Dichloropropene	10	U	10	
179601-23-1	m,p-Xylenes	20	U	20	
95-47-6	o-Xylene	10	U	10	
156-60-5	trans-1,2-Dichloroethene	10	U	10	
10061-02-6	trans-1,3-Dichloropropene	10	U	10	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Sample Name: MW-3R
Lab Code: R1105804-019
Run Type: Dilution

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11
Date Analyzed: 10/26/11 15:12

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1008.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 10

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	102	38-150	10/26/11 15:12	
Bromochloromethane	64	43-120	10/26/11 15:12	
3-Fluorochlorobenzene (PID)	107	77-119	10/26/11 15:12	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1143
 Date Received: 10/20/11
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 18:41

Sample Name: MW-3R
 Lab Code: R1105804-019

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH436.D\

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.9 U	4.9	
122-66-7	1,2-Diphenylhydrazine	4.9 U	4.9	
88-06-2	2,4,6-Trichlorophenol	4.9 U	4.9	
120-83-2	2,4-Dichlorophenol	4.9 U	4.9	
105-67-9	2,4-Dimethylphenol	4.9 U	4.9	
51-28-5	2,4-Dinitrophenol	4.9 U	4.9	
121-14-2	2,4-Dinitrotoluene	4.9 U	4.9	
606-20-2	2,6-Dinitrotoluene	4.9 U	4.9	
91-58-7	2-Chloronaphthalene	4.9 U	4.9	
95-57-8	2-Chlorophenol	4.9 U	4.9	
88-75-5	2-Nitrophenol	4.9 U	4.9	
91-94-1	3,3'-Dichlorobenzidine	4.9 U	4.9	
534-52-1	4,6-Dinitro-o-cresol	4.9 U	4.9	
101-55-3	4-Bromophenyl Phenyl Ether	4.9 U	4.9	
59-50-7	4-Chloro-m-cresol	4.9 U	4.9	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.9 U	4.9	
100-02-7	4-Nitrophenol	4.9 U	4.9	
83-32-9	Acenaphthene	4.9 U	4.9	
208-96-8	Acenaphthylene	4.9 U	4.9	
120-12-7	Anthracene	4.9 U	4.9	
56-55-3	Benz(a)anthracene	4.9 U	4.9	
92-87-5	Benzidine	98 U	98	
50-32-8	Benzo(a)pyrene	4.9 U	4.9	
205-99-2	3,4-Benzofluoranthene	4.9 U	4.9	
191-24-2	Benzo(g,h,i)perylene	4.9 U	4.9	
207-08-9	Benzo(k)fluoranthene	4.9 U	4.9	
108-60-1	Bis(1-chloroisopropyl) Ether	4.9 U	4.9	
111-91-1	Bis(2-chloroethoxy)methane	4.9 U	4.9	
111-44-4	Bis(2-chloroethyl) Ether	4.9 U	4.9	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.9 U	4.9	
85-68-7	Butyl Benzyl Phthalate	4.9 U	4.9	
218-01-9	Chrysene	4.9 U	4.9	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 18:41

Sample Name: MW-3R
Lab Code: R1105804-019

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973D\DATA\102611\AH436.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.9	U	4.9	
117-84-0	Di-n-octyl Phthalate	4.9	U	4.9	
53-70-3	Dibenz(a,h)anthracene	4.9	U	4.9	
84-66-2	Diethyl Phthalate	4.9	U	4.9	
131-11-3	Dimethyl Phthalate	4.9	U	4.9	
206-44-0	Fluoranthene	4.9	U	4.9	
86-73-7	Fluorene	4.9	U	4.9	
118-74-1	Hexachlorobenzene	4.9	U	4.9	
87-68-3	Hexachlorobutadiene	4.9	U	4.9	
77-47-4	Hexachlorocyclopentadiene	4.9	U	4.9	
67-72-1	Hexachloroethane	4.9	U	4.9	
193-39-5	Indeno(1,2,3-cd)pyrene	4.9	U	4.9	
78-59-1	Isophorone	4.9	U	4.9	
621-64-7	N-Nitrosodi-n-propylamine	4.9	U	4.9	
62-75-9	N-Nitrosodimethylamine	4.9	U	4.9	
86-30-6	N-Nitrosodiphenylamine	4.9	U	4.9	
91-20-3	Naphthalene	4.9	U	4.9	
98-95-3	Nitrobenzene	4.9	U	4.9	
87-86-5	Pentachlorophenol (PCP)	49	U	49	
85-01-8	Phenanthrene	4.9	U	4.9	
108-95-2	Phenol	4.9	U	4.9	
129-00-0	Pyrene	4.9	U	4.9	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	108	28-157	10/26/11 18:41	
2-Fluorobiphenyl	84	39-119	10/26/11 18:41	
2-Fluorophenol	51	10-105	10/26/11 18:41	
Nitrobenzene-d5	82	37-117	10/26/11 18:41	
Phenol-d6	34	10-107	10/26/11 18:41	
p-Terphenyl-d14	113	40-133	10/26/11 18:41	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1143
Date Received: 10/20/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 09:46

Sample Name: MW-3R
Lab Code: R1105804-019

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM455.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-3R
Lab Code: R1105804-019
Matrix: Water

Service Request: R1105804

Date Collected: 10/20/11

Date Received: 10/20/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-3S
Lab Code: R1105804-020

Service Request: R1105804
Date Collected: 10/20/11 1225
Date Received: 10/20/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.06	pH Units		1	NA	10/20/11 17:39	H
Temperature of pH Analysis	SM 4500-H+ B	21.2	deg C		1	NA	10/20/11 17:39	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1225
 Date Received: 10/20/11
 Date Analyzed: 10/24/11 17:21

Sample Name: MW-3S
 Lab Code: R1105804-020

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1010.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 12:25
Date Received: 10/20/11
Date Analyzed: 10/24/11 17:21

Sample Name: MW-3S
Lab Code: R1105804-020

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1010.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	107	38-150	10/24/11 17:21	
Bromochloromethane	71	43-120	10/24/11 17:21	
3-Fluorochlorobenzene (PID)	106	77-119	10/24/11 17:21	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1225
 Date Received: 10/20/11
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 19:17

Sample Name: MW-3S
 Lab Code: R1105804-020

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH437.D

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	5.1	U	5.1	
122-66-7	1,2-Diphenylhydrazine	5.1	U	5.1	
88-06-2	2,4,6-Trichlorophenol	5.1	U	5.1	
120-83-2	2,4-Dichlorophenol	5.1	U	5.1	
105-67-9	2,4-Dimethylphenol	5.1	U	5.1	
51-28-5	2,4-Dinitrophenol	5.1	U	5.1	
121-14-2	2,4-Dinitrotoluene	5.1	U	5.1	
606-20-2	2,6-Dinitrotoluene	5.1	U	5.1	
91-58-7	2-Chloronaphthalene	5.1	U	5.1	
95-57-8	2-Chlorophenol	5.1	U	5.1	
88-75-5	2-Nitrophenol	5.1	U	5.1	
91-94-1	3,3'-Dichlorobenzidine	5.1	U	5.1	
534-52-1	4,6-Dinitro-o-cresol	5.1	U	5.1	
101-55-3	4-Bromophenyl Phenyl Ether	5.1	U	5.1	
59-50-7	4-Chloro-m-cresol	5.1	U	5.1	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.1	U	5.1	
100-02-7	4-Nitrophenol	5.1	U	5.1	
83-32-9	Acenaphthene	5.1	U	5.1	
208-96-8	Acenaphthylene	5.1	U	5.1	
120-12-7	Anthracene	5.1	U	5.1	
56-55-3	Benz(a)anthracene	5.1	U	5.1	
92-87-5	Benzidine	100	U	100	
50-32-8	Benzo(a)pyrene	5.1	U	5.1	
205-99-2	3,4-Benzofluoranthene	5.1	U	5.1	
191-24-2	Benzo(g,h,i)perylene	5.1	U	5.1	
207-08-9	Benzo(k)fluoranthene	5.1	U	5.1	
108-60-1	Bis(1-chloroisopropyl) Ether	5.1	U	5.1	
111-91-1	Bis(2-chloroethoxy)methane	5.1	U	5.1	
111-44-4	Bis(2-chloroethyl) Ether	5.1	U	5.1	
117-81-7	Bis(2-ethylhexyl) Phthalate	5.1	U	5.1	
85-68-7	Butyl Benzyl Phthalate	5.1	U	5.1	
218-01-9	Chrysene	5.1	U	5.1	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1225
Date Received: 10/20/11
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 19:17

Sample Name: MW-3S
Lab Code: R1105804-020

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH437.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	5.1	U	5.1	
117-84-0	Di-n-octyl Phthalate	5.1	U	5.1	
53-70-3	Dibenz(a,h)anthracene	5.1	U	5.1	
84-66-2	Diethyl Phthalate	5.1	U	5.1	
131-11-3	Dimethyl Phthalate	5.1	U	5.1	
206-44-0	Fluoranthene	5.1	U	5.1	
86-73-7	Fluorene	5.1	U	5.1	
118-74-1	Hexachlorobenzene	5.1	U	5.1	
87-68-3	Hexachlorobutadiene	5.1	U	5.1	
77-47-4	Hexachlorocyclopentadiene	5.1	U	5.1	
67-72-1	Hexachloroethane	5.1	U	5.1	
193-39-5	Indeno(1,2,3-cd)pyrene	5.1	U	5.1	
78-59-1	Isophorone	5.1	U	5.1	
621-64-7	N-Nitrosodi-n-propylamine	5.1	U	5.1	
62-75-9	N-Nitrosodimethylamine	5.1	U	5.1	
86-30-6	N-Nitrosodiphenylamine	5.1	U	5.1	
91-20-3	Naphthalene	5.1	U	5.1	
98-95-3	Nitrobenzene	5.1	U	5.1	
87-86-5	Pentachlorophenol (PCP)	5.1	U	5.1	
85-01-8	Phenanthrene	5.1	U	5.1	
108-95-2	Phenol	5.1	U	5.1	
129-00-0	Pyrene	5.1	U	5.1	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	104	28-157	10/26/11 19:17	
2-Fluorobiphenyl	79	39-119	10/26/11 19:17	
2-Fluorophenol	48	10-105	10/26/11 19:17	
Nitrobenzene-d5	79	37-117	10/26/11 19:17	
Phenol-d6	33	10-107	10/26/11 19:17	
p-Terphenyl-d14	112	40-133	10/26/11 19:17	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1225
Date Received: 10/20/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 10:13

Sample Name: MW-3S
Lab Code: R1105804-020

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM456.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-3S
Lab Code: R1105804-020
Matrix: Water

Service Request: R1105804

Date Collected: 10/20/11
Date Received: 10/20/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-16R
Lab Code: R1105804-021

Service Request: R1105804
Date Collected: 10/20/11 1515
Date Received: 10/20/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.16	pH Units		1	NA	10/20/11 17:39	H
Temperature of pH Analysis	SM 4500-H+ B	22.1	deg C		1	NA	10/20/11 17:39	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1515
Date Received: 10/20/11
Date Analyzed: 10/24/11 18:11

Sample Name: MW-16R
Lab Code: R1105804-021

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1011.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	10		1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0		1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	2.1		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	56		1.0	
156-59-2	cis-1,2-Dichloroethene	150	E	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.4		1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 15:15
Date Received: 10/20/11
Date Analyzed: 10/24/11 18:11

Sample Name: MW-16R
Lab Code: R1105804-021

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1011.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/24/11 18:11	
Bromochloromethane	68	43-120	10/24/11 18:11	
3-Fluorochlorobenzene (PID)	106	77-119	10/24/11 18:11	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 15:15
 Date Received: 10/20/11
 Date Analyzed: 10/26/11 16:01

Sample Name: MW-16R
 Lab Code: R1105804-021
 Run Type: Dilution

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1009.run

Analysis Lot: 266983
 Instrument Name: R-GC-03
 Dilution Factor: 2

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	2.0	U	2.0	
79-34-5	1,1,2,2-Tetrachloroethane	2.0	U	2.0	
79-00-5	1,1,2-Trichloroethane	2.0	U	2.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	8.9	D	2.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	2.0	U	2.0	
95-50-1	1,2-Dichlorobenzene	2.0	U	2.0	
107-06-2	1,2-Dichloroethane	2.0	U	2.0	
78-87-5	1,2-Dichloropropane	2.0	U	2.0	
541-73-1	1,3-Dichlorobenzene	2.0	U	2.0	
106-46-7	1,4-Dichlorobenzene	2.0	U	2.0	
110-75-8	2-Chloroethyl Vinyl Ether	2.0	U	2.0	
71-43-2	Benzene	2.0	U	2.0	
75-27-4	Bromodichloromethane	2.0	U	2.0	
75-25-2	Bromoform	2.0	U	2.0	
74-83-9	Bromomethane	2.0	U	2.0	
56-23-5	Carbon Tetrachloride	2.0	U	2.0	
108-90-7	Chlorobenzene	2.0	U	2.0	
75-00-3	Chloroethane	2.0	U	2.0	
67-66-3	Chloroform	2.0	U	2.0	
74-87-3	Chloromethane	2.0	U	2.0	
124-48-1	Dibromochloromethane	2.0	U	2.0	
75-09-2	Methylene Chloride	2.0	U	2.0	
100-41-4	Ethylbenzene	2.0	U	2.0	
127-18-4	Tetrachloroethene (PCE)	2.0	U	2.0	
108-88-3	Toluene	2.0	U	2.0	
79-01-6	Trichloroethene (TCE)	2.0	U	2.0	
75-69-4	Trichlorofluoromethane (CFC 11)	2.0	U	2.0	
75-01-4	Vinyl Chloride	52	D	2.0	
156-59-2	cis-1,2-Dichloroethene	150	D	2.0	
10061-01-5	cis-1,3-Dichloropropene	2.0	U	2.0	
179601-23-1	m,p-Xylenes	4.0	U	4.0	
95-47-6	o-Xylene	2.0	U	2.0	
156-60-5	trans-1,2-Dichloroethene	2.0	U	2.0	
10061-02-6	trans-1,3-Dichloropropene	2.0	U	2.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1515
Date Received: 10/20/11
Date Analyzed: 10/26/11 16:01

Sample Name: MW-16R
Lab Code: R1105804-021
Run Type: Dilution

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1009.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 2

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	100	38-150	10/26/11 16:01	
Bromochloromethane	66	43-120	10/26/11 16:01	
3-Fluorochlorobenzene (PID)	107	77-119	10/26/11 16:01	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1515
 Date Received: 10/20/11
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 19:54

Sample Name: MW-16R
 Lab Code: R1105804-021

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQU\DATA\5973D\DATA\102611\AH438.D\

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7 U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7 U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7 U	4.7	
120-83-2	2,4-Dichlorophenol	4.7 U	4.7	
105-67-9	2,4-Dimethylphenol	4.7 U	4.7	
51-28-5	2,4-Dinitrophenol	4.7 U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7 U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7 U	4.7	
91-58-7	2-Chloronaphthalene	4.7 U	4.7	
95-57-8	2-Chlorophenol	4.7 U	4.7	
88-75-5	2-Nitrophenol	4.7 U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7 U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7 U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7 U	4.7	
59-50-7	4-Chloro-m-cresol	4.7 U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7 U	4.7	
100-02-7	4-Nitrophenol	4.7 U	4.7	
83-32-9	Acenaphthene	4.7 U	4.7	
208-96-8	Acenaphthylene	4.7 U	4.7	
120-12-7	Anthracene	4.7 U	4.7	
56-55-3	Benz(a)anthracene	4.7 U	4.7	
92-87-5	Benzidine	94 U	94	
50-32-8	Benzo(a)pyrene	4.7 U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7 U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7 U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7 U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7 U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7 U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7 U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7 U	4.7	
218-01-9	Chrysene	4.7 U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 15:15
Date Received: 10/20/11
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 19:54

Sample Name: MW-16R
Lab Code: R1105804-021

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH438.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	90	28-157	10/26/11 19:54	
2-Fluorobiphenyl	74	39-119	10/26/11 19:54	
2-Fluorophenol	42	10-105	10/26/11 19:54	
Nitrobenzene-d5	72	37-117	10/26/11 19:54	
Phenol-d6	28	10-107	10/26/11 19:54	
p-Terphenyl-d14	85	40-133	10/26/11 19:54	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1515
Date Received: 10/20/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 10:40

Sample Name: MW-16R
Lab Code: R1105804-021

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQUDATA\6890\DATA\102511\AM457.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940 U	940	
68476-31-3	Fuel Oil No. 4	940 U	940	
68476-33-5	Fuel Oil No. 6	940 U	940	
8006-61-9	Gasoline	940 U	940	
8008-20-6	Kerosene	940 U	940	
	Lube Oil	940 U	940	
112-40-3	n-Dodecane	940 U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-16R
Lab Code: R1105804-021
Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11
Date Received: 10/20/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-15R
Lab Code: R1105804-022

Service Request: R1105804
Date Collected: 10/20/11 1625
Date Received: 10/20/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.03	pH Units		1	NA	10/20/11 17:39	H
Temperature of pH Analysis	SM 4500-H+ B	20.2	deg C		1	NA	10/20/11 17:39	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1625
Date Received: 10/20/11
Date Analyzed: 10/24/11 21:29

Sample Name: MW-15R
Lab Code: R1105804-022

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1015.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0 U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0 U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0 U	1.0	
107-06-2	1,2-Dichloroethane	1.0 U	1.0	
78-87-5	1,2-Dichloropropane	1.0 U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0 U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0 U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0 U	1.0	
71-43-2	Benzene	1.0 U	1.0	
75-27-4	Bromodichloromethane	1.0 U	1.0	
75-25-2	Bromoform	1.0 U	1.0	
74-83-9	Bromomethane	1.0 U	1.0	
56-23-5	Carbon Tetrachloride	1.0 U	1.0	
108-90-7	Chlorobenzene	1.0 U	1.0	
75-00-3	Chloroethane	1.0 U	1.0	
67-66-3	Chloroform	1.0 U	1.0	
74-87-3	Chloromethane	1.0 U	1.0	
124-48-1	Dibromochloromethane	1.0 U	1.0	
75-09-2	Methylene Chloride	1.0 U	1.0	
100-41-4	Ethylbenzene	1.0 U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0 U	1.0	
108-88-3	Toluene	1.0 U	1.0	
79-01-6	Trichloroethene (TCE)	2.2	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0 U	1.0	
75-01-4	Vinyl Chloride	1.8	1.0	
156-59-2	cis-1,2-Dichloroethene	7.3	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0 U	1.0	
179601-23-1	m,p-Xylenes	2.0 U	2.0	
95-47-6	o-Xylene	1.0 U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0 U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0 U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1625
Date Received: 10/20/11
Date Analyzed: 10/24/11 21:29

Sample Name: MW-15R
Lab Code: R1105804-022

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1015.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/24/11 21:29	
Bromochloromethane	70	43-120	10/24/11 21:29	
3-Fluorochlorobenzene (PID)	107	77-119	10/24/11 21:29	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1625
 Date Received: 10/20/11
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 20:31

Sample Name: MW-15R
 Lab Code: R1105804-022

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH439.D\

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7 U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7 U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7 U	4.7	
120-83-2	2,4-Dichlorophenol	4.7 U	4.7	
105-67-9	2,4-Dimethylphenol	4.7 U	4.7	
51-28-5	2,4-Dinitrophenol	4.7 U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7 U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7 U	4.7	
91-58-7	2-Chloronaphthalene	4.7 U	4.7	
95-57-8	2-Chlorophenol	4.7 U	4.7	
88-75-5	2-Nitrophenol	4.7 U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7 U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7 U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7 U	4.7	
59-50-7	4-Chloro-m-cresol	4.7 U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7 U	4.7	
100-02-7	4-Nitrophenol	4.7 U	4.7	
83-32-9	Acenaphthene	4.7 U	4.7	
208-96-8	Acenaphthylene	4.7 U	4.7	
120-12-7	Anthracene	4.7 U	4.7	
56-55-3	Benz(a)anthracene	4.7 U	4.7	
92-87-5	Benzidine	94 U	94	
50-32-8	Benzo(a)pyrene	4.7 U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7 U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7 U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7 U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7 U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7 U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7 U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7 U	4.7	
218-01-9	Chrysene	4.7 U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1625
Date Received: 10/20/11
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 20:31

Sample Name: MW-15R
Lab Code: R1105804-022

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDDATA\5973D\DATA\102611\AH439.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	4.7	U	4.7	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	104	28-157	10/26/11 20:31	
2-Fluorobiphenyl	74	39-119	10/26/11 20:31	
2-Fluorophenol	42	10-105	10/26/11 20:31	
Nitrobenzene-d5	71	37-117	10/26/11 20:31	
Phenol-d6	28	10-107	10/26/11 20:31	
p-Terphenyl-d14	112	40-133	10/26/11 20:31	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1625
Date Received: 10/20/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 11:07

Sample Name: MW-15R
Lab Code: R1105804-022

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM458.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-15R
Lab Code: R1105804-022
Matrix: Water

Service Request: R1105804

Date Collected: 10/20/11

Date Received: 10/20/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-15RQ
Lab Code: R1105804-023

Service Request: R1105804
Date Collected: 10/20/11 1630
Date Received: 10/20/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.05	pH Units		1	NA	10/20/11 17:39	H
Temperature of pH Analysis	SM 4500-H+ B	20.0	deg C		1	NA	10/20/11 17:39	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1630
 Date Received: 10/20/11
 Date Analyzed: 10/26/11 12:37

Sample Name: MW-15RQ
 Lab Code: R1105804-023

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1005.run

Analysis Lot: 266983
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.9		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.9		1.0	
156-59-2	cis-1,2-Dichloroethene	6.7		1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1630
Date Received: 10/20/11
Date Analyzed: 10/26/11 12:37

Sample Name: MW-15RQ
Lab Code: R1105804-023

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	103	38-150	10/26/11 12:37	
Bromochloromethane	62	43-120	10/26/11 12:37	
3-Fluorochlorobenzene (PID)	107	77-119	10/26/11 12:37	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/20/11 1630
 Date Received: 10/20/11
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 21:08

Sample Name: MW-15RQ
 Lab Code: R1105804-023

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH440.D\

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1630
Date Received: 10/20/11
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 21:08

Sample Name: MW-15RQ
Lab Code: R1105804-023

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH440.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7 U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7 U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7 U	4.7	
84-66-2	Diethyl Phthalate	4.7 U	4.7	
131-11-3	Dimethyl Phthalate	4.7 U	4.7	
206-44-0	Fluoranthene	4.7 U	4.7	
86-73-7	Fluorene	4.7 U	4.7	
118-74-1	Hexachlorobenzene	4.7 U	4.7	
87-68-3	Hexachlorobutadiene	4.7 U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7 U	4.7	
67-72-1	Hexachloroethane	4.7 U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7 U	4.7	
78-59-1	Isophorone	4.7 U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7 U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7 U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7 U	4.7	
91-20-3	Naphthalene	4.7 U	4.7	
98-95-3	Nitrobenzene	4.7 U	4.7	
87-86-5	Pentachlorophenol (PCP)	4.7 U	4.7	
85-01-8	Phenanthrene	4.7 U	4.7	
108-95-2	Phenol	4.7 U	4.7	
129-00-0	Pyrene	4.7 U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	108	28-157	10/26/11 21:08	
2-Fluorobiphenyl	84	39-119	10/26/11 21:08	
2-Fluorophenol	48	10-105	10/26/11 21:08	
Nitrobenzene-d5	81	37-117	10/26/11 21:08	
Phenol-d6	32	10-107	10/26/11 21:08	
p-Terphenyl-d14	115	40-133	10/26/11 21:08	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11 1630
Date Received: 10/20/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 11:34

Sample Name: MW-15RQ
Lab Code: R1105804-023

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM459.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-15RQ
Lab Code: R1105804-023
Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11
Date Received: 10/20/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11
Date Received: 10/20/11
Date Analyzed: 10/24/11 22:20

Sample Name: TB102011003
Lab Code: R1105804-024

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1016.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/20/11
Date Received: 10/20/11
Date Analyzed: 10/24/11 22:20

Sample Name: TB102011003
Lab Code: R1105804-024

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1016.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	113	38-150	10/24/11 22:20	
Bromochloromethane	69	43-120	10/24/11 22:20	
3-Fluorochlorobenzene (PID)	106	77-119	10/24/11 22:20	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: TB102011003
Lab Code: R1105804-024
Matrix: Water

Service Request: R1105804

Date Collected: 10/20/11

Date Received: 10/20/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-1S
Lab Code: R1105804-025

Service Request: R1105804
Date Collected: 10/21/11 0910
Date Received: 10/21/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result	Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.08		pH Units		1	NA	10/21/11 15:20	H
Temperature of pH Analysis	SM 4500-H+ B	18.3		deg C		1	NA	10/21/11 15:20	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/21/11 09:10
 Date Received: 10/21/11
 Date Analyzed: 10/24/11 23:10

Sample Name: MW-1S
 Lab Code: R1105804-025

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1017.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	3.5		1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	4.1		1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	27		1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	32		1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 0910
Date Received: 10/21/11
Date Analyzed: 10/24/11 23:10

Sample Name: MW-1S
Lab Code: R1105804-025

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1017.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/24/11 23:10	
Bromochloromethane	71	43-120	10/24/11 23:10	
3-Fluorochlorobenzene (PID)	107	77-119	10/24/11 23:10	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/21/11 0910
 Date Received: 10/21/11
 Date Extracted: 10/24/11
 Date Analyzed: 10/29/11 00:13

Sample Name: MW-1S
 Lab Code: R1105804-025

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102811\AH484.D\

Analysis Lot: 267511
 Extraction Lot: 144817
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7 U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7 U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7 U	4.7	
120-83-2	2,4-Dichlorophenol	4.7 U	4.7	
105-67-9	2,4-Dimethylphenol	4.7 U	4.7	
51-28-5	2,4-Dinitrophenol	47 U	47	
121-14-2	2,4-Dinitrotoluene	4.7 U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7 U	4.7	
91-58-7	2-Chloronaphthalene	4.7 U	4.7	
95-57-8	2-Chlorophenol	4.7 U	4.7	
88-75-5	2-Nitrophenol	4.7 U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7 U	4.7	
534-52-1	4,6-Dinitro-o-cresol	47 U	47	
101-55-3	4-Bromophenyl Phenyl Ether	4.7 U	4.7	
59-50-7	4-Chloro-m-cresol	4.7 U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7 U	4.7	
100-02-7	4-Nitrophenol	47 U	47	
83-32-9	Acenaphthene	4.7 U	4.7	
208-96-8	Acenaphthylene	4.7 U	4.7	
120-12-7	Anthracene	4.7 U	4.7	
56-55-3	Benz(a)anthracene	4.7 U	4.7	
92-87-5	Benzidine	94 U	94	
50-32-8	Benzo(a)pyrene	4.7 U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7 U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7 U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7 U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7 U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7 U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7 U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7 U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7 U	4.7	
218-01-9	Chrysene	4.7 U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 0910
Date Received: 10/21/11
Date Extracted: 10/24/11
Date Analyzed: 10/29/11 00:13

Sample Name: MW-1S
Lab Code: R1105804-025

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102811\AH484.D\

Analysis Lot: 267511
Extraction Lot: 144817
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	93	28-157	10/29/11 00:13	
2-Fluorobiphenyl	67	39-119	10/29/11 00:13	
2-Fluorophenol	42	10-105	10/29/11 00:13	
Nitrobenzene-d5	69	37-117	10/29/11 00:13	
Phenol-d6	28	10-107	10/29/11 00:13	
p-Terphenyl-d14	87	40-133	10/29/11 00:13	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 0910
Date Received: 10/21/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 12:00

Sample Name: MW-1S
Lab Code: R1105804-025

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQUDATA\6890\DATA\102511\AM460.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-1S
Lab Code: R1105804-025
Matrix: Water

Service Request: R1105804

Date Collected: 10/21/11

Date Received: 10/21/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water
Sample Name: MW-10R
Lab Code: R1105804-026

Service Request: R1105804
Date Collected: 10/21/11 1142
Date Received: 10/21/11

Basis: NA

General Chemistry Parameters

Analyte Name	Method	Result Q	Units	MRL	Dilution Factor	Date Extracted	Date Analyzed	Note
pH	SM 4500-H+ B	7.30	pH Units		1	NA	10/21/11 15:20	H
Temperature of pH Analysis	SM 4500-H+ B	18.2	deg C		1	NA	10/21/11 15:20	H

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: 10/21/11 1142
 Date Received: 10/21/11
 Date Analyzed: 10/25/11 03:17

Sample Name: MW-10R
 Lab Code: R1105804-026

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1022.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 20

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	20	U	20	
79-34-5	1,1,2,2-Tetrachloroethane	20	U	20	
79-00-5	1,1,2-Trichloroethane	20	U	20	
75-34-3	1,1-Dichloroethane (1,1-DCA)	20	U	20	
75-35-4	1,1-Dichloroethene (1,1-DCE)	22		20	
95-50-1	1,2-Dichlorobenzene	20	U	20	
107-06-2	1,2-Dichloroethane	20	U	20	
78-87-5	1,2-Dichloropropane	20	U	20	
541-73-1	1,3-Dichlorobenzene	20	U	20	
106-46-7	1,4-Dichlorobenzene	20	U	20	
110-75-8	2-Chloroethyl Vinyl Ether	20	U	20	
71-43-2	Benzene	20	U	20	
75-27-4	Bromodichloromethane	20	U	20	
75-25-2	Bromoform	20	U	20	
74-83-9	Bromomethane	20	U	20	
56-23-5	Carbon Tetrachloride	20	U	20	
108-90-7	Chlorobenzene	20	U	20	
75-00-3	Chloroethane	20	U	20	
67-66-3	Chloroform	20	U	20	
74-87-3	Chloromethane	20	U	20	
124-48-1	Dibromochloromethane	20	U	20	
75-09-2	Methylene Chloride	20	U	20	
100-41-4	Ethylbenzene	20	U	20	
127-18-4	Tetrachloroethene (PCE)	20	U	20	
108-88-3	Toluene	20	U	20	
79-01-6	Trichloroethene (TCE)	1300		20	
75-69-4	Trichlorofluoromethane (CFC 11)	20	U	20	
75-01-4	Vinyl Chloride	20	U	20	
156-59-2	cis-1,2-Dichloroethene	57		20	
10061-01-5	cis-1,3-Dichloropropene	20	U	20	
179601-23-1	m,p-Xylenes	40	U	40	
95-47-6	o-Xylene	20	U	20	
156-60-5	trans-1,2-Dichloroethene	20	U	20	
10061-02-6	trans-1,3-Dichloropropene	20	U	20	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 1142
Date Received: 10/21/11
Date Analyzed: 10/25/11 03:17

Sample Name: MW-10R
Lab Code: R1105804-026

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1022.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 20

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	111	38-150	10/25/11 03:17	
Bromochloromethane	74	43-120	10/25/11 03:17	
3-Fluorochlorobenzene (PID)	109	77-119	10/25/11 03:17	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 1142
Date Received: 10/21/11
Date Extracted: 10/24/11
Date Analyzed: 10/29/11 00:50

Sample Name: MW-10R
Lab Code: R1105804-026

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973D\DATA\102811\AH485.D\

Analysis Lot: 267511
Extraction Lot: 144817
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	4.7	U	4.7	
122-66-7	1,2-Diphenylhydrazine	4.7	U	4.7	
88-06-2	2,4,6-Trichlorophenol	4.7	U	4.7	
120-83-2	2,4-Dichlorophenol	4.7	U	4.7	
105-67-9	2,4-Dimethylphenol	4.7	U	4.7	
51-28-5	2,4-Dinitrophenol	4.7	U	4.7	
121-14-2	2,4-Dinitrotoluene	4.7	U	4.7	
606-20-2	2,6-Dinitrotoluene	4.7	U	4.7	
91-58-7	2-Chloronaphthalene	4.7	U	4.7	
95-57-8	2-Chlorophenol	4.7	U	4.7	
88-75-5	2-Nitrophenol	4.7	U	4.7	
91-94-1	3,3'-Dichlorobenzidine	4.7	U	4.7	
534-52-1	4,6-Dinitro-o-cresol	4.7	U	4.7	
101-55-3	4-Bromophenyl Phenyl Ether	4.7	U	4.7	
59-50-7	4-Chloro-m-cresol	4.7	U	4.7	
7005-72-3	4-Chlorophenyl Phenyl Ether	4.7	U	4.7	
100-02-7	4-Nitrophenol	4.7	U	4.7	
83-32-9	Acenaphthene	4.7	U	4.7	
208-96-8	Acenaphthylene	4.7	U	4.7	
120-12-7	Anthracene	4.7	U	4.7	
56-55-3	Benz(a)anthracene	4.7	U	4.7	
92-87-5	Benzidine	94	U	94	
50-32-8	Benzo(a)pyrene	4.7	U	4.7	
205-99-2	3,4-Benzofluoranthene	4.7	U	4.7	
191-24-2	Benzo(g,h,i)perylene	4.7	U	4.7	
207-08-9	Benzo(k)fluoranthene	4.7	U	4.7	
108-60-1	Bis(1-chloroisopropyl) Ether	4.7	U	4.7	
111-91-1	Bis(2-chloroethoxy)methane	4.7	U	4.7	
111-44-4	Bis(2-chloroethyl) Ether	4.7	U	4.7	
117-81-7	Bis(2-ethylhexyl) Phthalate	4.7	U	4.7	
85-68-7	Butyl Benzyl Phthalate	4.7	U	4.7	
218-01-9	Chrysene	4.7	U	4.7	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 1142
Date Received: 10/21/11
Date Extracted: 10/24/11
Date Analyzed: 10/29/11 00:50

Sample Name: MW-10R
Lab Code: R1105804-026

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102811\AH485.D\

Analysis Lot: 267511
Extraction Lot: 144817
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	4.7	U	4.7	
117-84-0	Di-n-octyl Phthalate	4.7	U	4.7	
53-70-3	Dibenz(a,h)anthracene	4.7	U	4.7	
84-66-2	Diethyl Phthalate	4.7	U	4.7	
131-11-3	Dimethyl Phthalate	4.7	U	4.7	
206-44-0	Fluoranthene	4.7	U	4.7	
86-73-7	Fluorene	4.7	U	4.7	
118-74-1	Hexachlorobenzene	4.7	U	4.7	
87-68-3	Hexachlorobutadiene	4.7	U	4.7	
77-47-4	Hexachlorocyclopentadiene	4.7	U	4.7	
67-72-1	Hexachloroethane	4.7	U	4.7	
193-39-5	Indeno(1,2,3-cd)pyrene	4.7	U	4.7	
78-59-1	Isophorone	4.7	U	4.7	
621-64-7	N-Nitrosodi-n-propylamine	4.7	U	4.7	
62-75-9	N-Nitrosodimethylamine	4.7	U	4.7	
86-30-6	N-Nitrosodiphenylamine	4.7	U	4.7	
91-20-3	Naphthalene	4.7	U	4.7	
98-95-3	Nitrobenzene	4.7	U	4.7	
87-86-5	Pentachlorophenol (PCP)	47	U	47	
85-01-8	Phenanthrene	4.7	U	4.7	
108-95-2	Phenol	4.7	U	4.7	
129-00-0	Pyrene	4.7	U	4.7	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	92	28-157	10/29/11 00:50	
2-Fluorobiphenyl	68	39-119	10/29/11 00:50	
2-Fluorophenol	43	10-105	10/29/11 00:50	
Nitrobenzene-d5	65	37-117	10/29/11 00:50	
Phenol-d6	28	10-107	10/29/11 00:50	
p-Terphenyl-d14	86	40-133	10/29/11 00:50	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11 1142
Date Received: 10/21/11
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 12:27

Sample Name: MW-10R
Lab Code: R1105804-026

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM461.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	940	U	940	
68476-31-3	Fuel Oil No. 4	940	U	940	
68476-33-5	Fuel Oil No. 6	940	U	940	
8006-61-9	Gasoline	940	U	940	
8008-20-6	Kerosene	940	U	940	
	Lube Oil	940	U	940	
112-40-3	n-Dodecane	940	U	940	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: MW-10R
Lab Code: R1105804-026
Matrix: Water

Service Request: R1105804

Date Collected: 10/21/11
Date Received: 10/21/11

Analysis Method	Extracted/Digested By	Analyzed By
601/602		BWOJTASIEWICZ
625	DMURPHY	ZMIAO
NY 310-13	DMURPHY	MPEDRO
SM 4500-H+ B		DWARD

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11
Date Received: 10/21/11
Date Analyzed: 10/25/11 00:00

Sample Name: TB102111004
Lab Code: R1105804-027

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1018.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/21/11
Date Received: 10/21/11
Date Analyzed: 10/25/11 00:00

Sample Name: TB102111004
Lab Code: R1105804-027

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1018.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	108	38-150	10/25/11 00:00	
Bromochloromethane	74	43-120	10/25/11 00:00	
3-Fluorochlorobenzene (PID)	107	77-119	10/25/11 00:00	

COLUMBIA ANALYTICAL SERVICES, INC.

Analyst Summary Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14
Sample Name: TB102111004
Lab Code: R1105804-027
Matrix: Water

Service Request: R1105804

Date Collected: 10/21/11

Date Received: 10/21/11

Analysis Method

Extracted/Digested By

Analyzed By

601/602

BWOJTASIEWICZ

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/20/11 12:07

Sample Name: Method Blank
Lab Code: RQ1110609-01

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0 U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0 U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0 U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0 U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0 U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0 U	1.0	
107-06-2	1,2-Dichloroethane	1.0 U	1.0	
78-87-5	1,2-Dichloropropane	1.0 U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0 U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0 U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0 U	1.0	
71-43-2	Benzene	1.0 U	1.0	
75-27-4	Bromodichloromethane	1.0 U	1.0	
75-25-2	Bromoform	1.0 U	1.0	
74-83-9	Bromomethane	1.0 U	1.0	
56-23-5	Carbon Tetrachloride	1.0 U	1.0	
108-90-7	Chlorobenzene	1.0 U	1.0	
75-00-3	Chloroethane	1.0 U	1.0	
67-66-3	Chloroform	1.0 U	1.0	
74-87-3	Chloromethane	1.0 U	1.0	
124-48-1	Dibromochloromethane	1.0 U	1.0	
75-09-2	Methylene Chloride	1.0 U	1.0	
100-41-4	Ethylbenzene	1.0 U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0 U	1.0	
108-88-3	Toluene	1.0 U	1.0	
79-01-6	Trichloroethene (TCE)	1.0 U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0 U	1.0	
75-01-4	Vinyl Chloride	1.0 U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0 U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0 U	1.0	
179601-23-1	m,p-Xylenes	2.0 U	2.0	
95-47-6	o-Xylene	1.0 U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0 U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0 U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/20/11 12:07

Sample Name: Method Blank
Lab Code: RQ1110609-01

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1005.run

Analysis Lot: 266367
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	130	38-150	10/20/11 12:07	
Bromochloromethane	79	43-120	10/20/11 12:07	
3-Fluorochlorobenzene (PID)	106	77-119	10/20/11 12:07	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/21/11 10:46

Sample Name: Method Blank
Lab Code: RQ1110610-01

Units: µg/L
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1001.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/21/11 10:46

Sample Name: Method Blank
Lab Code: RQ1110610-01

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1001.run

Analysis Lot: 266370
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	110	38-150	10/21/11 10:46	
Bromochloromethane	69	43-120	10/21/11 10:46	
3-Fluorochlorobenzene (PID)	110	77-119	10/21/11 10:46	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/24/11 10:56

Sample Name: Method Blank
 Lab Code: RQ1110807-01

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1003.run

Analysis Lot: 266977
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/24/11 10:56

Sample Name: Method Blank
Lab Code: RQ1110807-01

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1003.run

Analysis Lot: 266977
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	112	38-150	10/24/11 10:56	
Bromochloromethane	72	43-120	10/24/11 10:56	
3-Fluorochlorobenzene (PID)	108	77-119	10/24/11 10:56	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/26/11 10:03

Sample Name: Method Blank
 Lab Code: RQ1110884-01

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1003.run

Analysis Lot: 266983
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/26/11 10:03

Sample Name: Method Blank
Lab Code: RQ1110884-01

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1003.run

Analysis Lot: 266983
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	104	38-150	10/26/11 10:03	
Bromochloromethane	65	43-120	10/26/11 10:03	
3-Fluorochlorobenzene (PID)	108	77-119	10/26/11 10:03	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: NA
 Date Received: NA
 Date Analyzed: 10/27/11 09:16

Sample Name: Method Blank
 Lab Code: RQ1110855-01

Units: µg/L
 Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
 Data File Name: 1002.run

Analysis Lot: 267152
 Instrument Name: R-GC-03
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
71-55-6	1,1,1-Trichloroethane (TCA)	1.0	U	1.0	
79-34-5	1,1,2,2-Tetrachloroethane	1.0	U	1.0	
79-00-5	1,1,2-Trichloroethane	1.0	U	1.0	
75-34-3	1,1-Dichloroethane (1,1-DCA)	1.0	U	1.0	
75-35-4	1,1-Dichloroethene (1,1-DCE)	1.0	U	1.0	
95-50-1	1,2-Dichlorobenzene	1.0	U	1.0	
107-06-2	1,2-Dichloroethane	1.0	U	1.0	
78-87-5	1,2-Dichloropropane	1.0	U	1.0	
541-73-1	1,3-Dichlorobenzene	1.0	U	1.0	
106-46-7	1,4-Dichlorobenzene	1.0	U	1.0	
110-75-8	2-Chloroethyl Vinyl Ether	1.0	U	1.0	
71-43-2	Benzene	1.0	U	1.0	
75-27-4	Bromodichloromethane	1.0	U	1.0	
75-25-2	Bromoform	1.0	U	1.0	
74-83-9	Bromomethane	1.0	U	1.0	
56-23-5	Carbon Tetrachloride	1.0	U	1.0	
108-90-7	Chlorobenzene	1.0	U	1.0	
75-00-3	Chloroethane	1.0	U	1.0	
67-66-3	Chloroform	1.0	U	1.0	
74-87-3	Chloromethane	1.0	U	1.0	
124-48-1	Dibromochloromethane	1.0	U	1.0	
75-09-2	Methylene Chloride	1.0	U	1.0	
100-41-4	Ethylbenzene	1.0	U	1.0	
127-18-4	Tetrachloroethene (PCE)	1.0	U	1.0	
108-88-3	Toluene	1.0	U	1.0	
79-01-6	Trichloroethene (TCE)	1.0	U	1.0	
75-69-4	Trichlorofluoromethane (CFC 11)	1.0	U	1.0	
75-01-4	Vinyl Chloride	1.0	U	1.0	
156-59-2	cis-1,2-Dichloroethene	1.0	U	1.0	
10061-01-5	cis-1,3-Dichloropropene	1.0	U	1.0	
179601-23-1	m,p-Xylenes	2.0	U	2.0	
95-47-6	o-Xylene	1.0	U	1.0	
156-60-5	trans-1,2-Dichloroethene	1.0	U	1.0	
10061-02-6	trans-1,3-Dichloropropene	1.0	U	1.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Analyzed: 10/27/11 09:16

Sample Name: Method Blank
Lab Code: RQ1110855-01

Units: Percent
Basis: NA

Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602
Data File Name: 1002.run

Analysis Lot: 267152
Instrument Name: R-GC-03
Dilution Factor: 1

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
3-Fluorochlorobenzene	100	38-150	10/27/11 09:16	
Bromochloromethane	59	43-120	10/27/11 09:16	
3-Fluorochlorobenzene (PID)	106	77-119	10/27/11 09:16	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/20/11
Date Analyzed: 10/24/11 21:05

Sample Name: Method Blank
Lab Code: RQ1110476-01

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973A\DATA\102411\CI119.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	5.0	U	5.0	
122-66-7	1,2-Diphenylhydrazine	5.0	U	5.0	
88-06-2	2,4,6-Trichlorophenol	5.0	U	5.0	
120-83-2	2,4-Dichlorophenol	5.0	U	5.0	
105-67-9	2,4-Dimethylphenol	5.0	U	5.0	
51-28-5	2,4-Dinitrophenol	50	U	50	
121-14-2	2,4-Dinitrotoluene	5.0	U	5.0	
606-20-2	2,6-Dinitrotoluene	5.0	U	5.0	
91-58-7	2-Chloronaphthalene	5.0	U	5.0	
95-57-8	2-Chlorophenol	5.0	U	5.0	
88-75-5	2-Nitrophenol	5.0	U	5.0	
91-94-1	3,3'-Dichlorobenzidine	5.0	U	5.0	
534-52-1	4,6-Dinitro-o-cresol	50	U	50	
101-55-3	4-Bromophenyl Phenyl Ether	5.0	U	5.0	
59-50-7	4-Chloro-m-cresol	5.0	U	5.0	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.0	U	5.0	
100-02-7	4-Nitrophenol	50	U	50	
83-32-9	Acenaphthene	5.0	U	5.0	
208-96-8	Acenaphthylene	5.0	U	5.0	
120-12-7	Anthracene	5.0	U	5.0	
56-55-3	Benz(a)anthracene	5.0	U	5.0	
92-87-5	Benzidine	100	U	100	
50-32-8	Benzo(a)pyrene	5.0	U	5.0	
205-99-2	3,4-Benzofluoranthene	5.0	U	5.0	
191-24-2	Benzo(g,h,i)perylene	5.0	U	5.0	
207-08-9	Benzo(k)fluoranthene	5.0	U	5.0	
108-60-1	Bis(1-chloroisopropyl) Ether	5.0	U	5.0	
111-91-1	Bis(2-chloroethoxy)methane	5.0	U	5.0	
111-44-4	Bis(2-chloroethyl) Ether	5.0	U	5.0	
117-81-7	Bis(2-ethylhexyl) Phthalate	5.0	U	5.0	
85-68-7	Butyl Benzyl Phthalate	5.0	U	5.0	
218-01-9	Chrysene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/20/11
Date Analyzed: 10/24/11 21:05

Sample Name: Method Blank
Lab Code: RQ1110476-01

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQU\DATA\5973A\DATA\102411\CI119.D\

Analysis Lot: 266640
Extraction Lot: 144615
Instrument Name: R-MS-51
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	5.0	U	5.0	
117-84-0	Di-n-octyl Phthalate	5.0	U	5.0	
53-70-3	Dibenz(a,h)anthracene	5.0	U	5.0	
84-66-2	Diethyl Phthalate	5.0	U	5.0	
131-11-3	Dimethyl Phthalate	5.0	U	5.0	
206-44-0	Fluoranthene	5.0	U	5.0	
86-73-7	Fluorene	5.0	U	5.0	
118-74-1	Hexachlorobenzene	5.0	U	5.0	
87-68-3	Hexachlorobutadiene	5.0	U	5.0	
77-47-4	Hexachlorocyclopentadiene	5.0	U	5.0	
67-72-1	Hexachloroethane	5.0	U	5.0	
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U	5.0	
78-59-1	Isophorone	5.0	U	5.0	
621-64-7	N-Nitrosodi-n-propylamine	5.0	U	5.0	
62-75-9	N-Nitrosodimethylamine	5.0	U	5.0	
86-30-6	N-Nitrosodiphenylamine	5.0	U	5.0	
91-20-3	Naphthalene	5.0	U	5.0	
98-95-3	Nitrobenzene	5.0	U	5.0	
87-86-5	Pentachlorophenol (PCP)	50	U	50	
85-01-8	Phenanthrene	5.0	U	5.0	
108-95-2	Phenol	5.0	U	5.0	
129-00-0	Pyrene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	93	28-157	10/24/11 21:05	
2-Fluorobiphenyl	76	39-119	10/24/11 21:05	
2-Fluorophenol	45	10-105	10/24/11 21:05	
Nitrobenzene-d5	77	37-117	10/24/11 21:05	
Phenol-d6	31	10-107	10/24/11 21:05	
p-Terphenyl-d14	126	40-133	10/24/11 21:05	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: NA
 Date Received: NA
 Date Extracted: 10/21/11
 Date Analyzed: 10/26/11 11:21

Sample Name: Method Blank
 Lab Code: RQ1110539-01

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH424.D\

Analysis Lot: 267025
 Extraction Lot: 144714
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	5.0	U	5.0	
122-66-7	1,2-Diphenylhydrazine	5.0	U	5.0	
88-06-2	2,4,6-Trichlorophenol	5.0	U	5.0	
120-83-2	2,4-Dichlorophenol	5.0	U	5.0	
105-67-9	2,4-Dimethylphenol	5.0	U	5.0	
51-28-5	2,4-Dinitrophenol	50	U	50	
121-14-2	2,4-Dinitrotoluene	5.0	U	5.0	
606-20-2	2,6-Dinitrotoluene	5.0	U	5.0	
91-58-7	2-Chloronaphthalene	5.0	U	5.0	
95-57-8	2-Chlorophenol	5.0	U	5.0	
88-75-5	2-Nitrophenol	5.0	U	5.0	
91-94-1	3,3'-Dichlorobenzidine	5.0	U	5.0	
534-52-1	4,6-Dinitro-o-cresol	50	U	50	
101-55-3	4-Bromophenyl Phenyl Ether	5.0	U	5.0	
59-50-7	4-Chloro-m-cresol	5.0	U	5.0	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.0	U	5.0	
100-02-7	4-Nitrophenol	50	U	50	
83-32-9	Acenaphthene	5.0	U	5.0	
208-96-8	Acenaphthylene	5.0	U	5.0	
120-12-7	Anthracene	5.0	U	5.0	
56-55-3	Benz(a)anthracene	5.0	U	5.0	
92-87-5	Benzidine	100	U	100	
50-32-8	Benzo(a)pyrene	5.0	U	5.0	
205-99-2	3,4-Benzofluoranthene	5.0	U	5.0	
191-24-2	Benzo(g,h,i)perylene	5.0	U	5.0	
207-08-9	Benzo(k)fluoranthene	5.0	U	5.0	
108-60-1	Bis(1-chloroisopropyl) Ether	5.0	U	5.0	
111-91-1	Bis(2-chloroethoxy)methane	5.0	U	5.0	
111-44-4	Bis(2-chloroethyl) Ether	5.0	U	5.0	
117-81-7	Bis(2-ethylhexyl) Phthalate	5.0	U	5.0	
85-68-7	Butyl Benzyl Phthalate	5.0	U	5.0	
218-01-9	Chrysene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/21/11
Date Analyzed: 10/26/11 11:21

Sample Name: Method Blank
Lab Code: RQ1110539-01

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUDATA\5973D\DATA\102611\AH424.D\

Analysis Lot: 267025
Extraction Lot: 144714
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	5.0	U	5.0	
117-84-0	Di-n-octyl Phthalate	5.0	U	5.0	
53-70-3	Dibenz(a,h)anthracene	5.0	U	5.0	
84-66-2	Diethyl Phthalate	5.0	U	5.0	
131-11-3	Dimethyl Phthalate	5.0	U	5.0	
206-44-0	Fluoranthene	5.0	U	5.0	
86-73-7	Fluorene	5.0	U	5.0	
118-74-1	Hexachlorobenzene	5.0	U	5.0	
87-68-3	Hexachlorobutadiene	5.0	U	5.0	
77-47-4	Hexachlorocyclopentadiene	5.0	U	5.0	
67-72-1	Hexachloroethane	5.0	U	5.0	
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U	5.0	
78-59-1	Isophorone	5.0	U	5.0	
621-64-7	N-Nitrosodi-n-propylamine	5.0	U	5.0	
62-75-9	N-Nitrosodimethylamine	5.0	U	5.0	
86-30-6	N-Nitrosodiphenylamine	5.0	U	5.0	
91-20-3	Naphthalene	5.0	U	5.0	
98-95-3	Nitrobenzene	5.0	U	5.0	
87-86-5	Pentachlorophenol (PCP)	50	U	50	
85-01-8	Phenanthrene	5.0	U	5.0	
108-95-2	Phenol	5.0	U	5.0	
129-00-0	Pyrene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	91	28-157	10/26/11 11:21	
2-Fluorobiphenyl	73	39-119	10/26/11 11:21	
2-Fluorophenol	52	10-105	10/26/11 11:21	
Nitrobenzene-d5	72	37-117	10/26/11 11:21	
Phenol-d6	38	10-107	10/26/11 11:21	
p-Terphenyl-d14	80	40-133	10/26/11 11:21	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Collected: NA
 Date Received: NA
 Date Extracted: 10/24/11
 Date Analyzed: 10/28/11 16:51

Sample Name: Method Blank
 Lab Code: RQ1110621-01

Units: µg/L
 Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C
 Data File Name: J:\ACQU\DATA\5973D\DATA\102811\AH472.D

Analysis Lot: 267511
 Extraction Lot: 144817
 Instrument Name: R-MS-54
 Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
120-82-1	1,2,4-Trichlorobenzene	5.0	U	5.0	
122-66-7	1,2-Diphenylhydrazine	5.0	U	5.0	
88-06-2	2,4,6-Trichlorophenol	5.0	U	5.0	
120-83-2	2,4-Dichlorophenol	5.0	U	5.0	
105-67-9	2,4-Dimethylphenol	5.0	U	5.0	
51-28-5	2,4-Dinitrophenol	50	U	50	
121-14-2	2,4-Dinitrotoluene	5.0	U	5.0	
606-20-2	2,6-Dinitrotoluene	5.0	U	5.0	
91-58-7	2-Chloronaphthalene	5.0	U	5.0	
95-57-8	2-Chlorophenol	5.0	U	5.0	
88-75-5	2-Nitrophenol	5.0	U	5.0	
91-94-1	3,3'-Dichlorobenzidine	5.0	U	5.0	
534-52-1	4,6-Dinitro-o-cresol	50	U	50	
101-55-3	4-Bromophenyl Phenyl Ether	5.0	U	5.0	
59-50-7	4-Chloro-m-cresol	5.0	U	5.0	
7005-72-3	4-Chlorophenyl Phenyl Ether	5.0	U	5.0	
100-02-7	4-Nitrophenol	50	U	50	
83-32-9	Acenaphthene	5.0	U	5.0	
208-96-8	Acenaphthylene	5.0	U	5.0	
120-12-7	Anthracene	5.0	U	5.0	
56-55-3	Benz(a)anthracene	5.0	U	5.0	
92-87-5	Benzidine	100	U	100	
50-32-8	Benzo(a)pyrene	5.0	U	5.0	
205-99-2	3,4-Benzofluoranthene	5.0	U	5.0	
191-24-2	Benzo(g,h,i)perylene	5.0	U	5.0	
207-08-9	Benzo(k)fluoranthene	5.0	U	5.0	
108-60-1	Bis(1-chloroisopropyl) Ether	5.0	U	5.0	
111-91-1	Bis(2-chloroethoxy)methane	5.0	U	5.0	
111-44-4	Bis(2-chloroethyl) Ether	5.0	U	5.0	
117-81-7	Bis(2-ethylhexyl) Phthalate	5.0	U	5.0	
85-68-7	Butyl Benzyl Phthalate	5.0	U	5.0	
218-01-9	Chrysene	5.0	U	5.0	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/24/11
Date Analyzed: 10/28/11 16:51

Sample Name: Method Blank
Lab Code: RQ1110621-01

Units: µg/L
Basis: NA

Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
Prep Method: EPA 3510C
Data File Name: J:\ACQUADATA\5973D\DATA\102811\AH472.D\

Analysis Lot: 267511
Extraction Lot: 144817
Instrument Name: R-MS-54
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
84-74-2	Di-n-butyl Phthalate	5.0	U	5.0	
117-84-0	Di-n-octyl Phthalate	5.0	U	5.0	
53-70-3	Dibenz(a,h)anthracene	5.0	U	5.0	
84-66-2	Diethyl Phthalate	5.0	U	5.0	
131-11-3	Dimethyl Phthalate	5.0	U	5.0	
206-44-0	Fluoranthene	5.0	U	5.0	
86-73-7	Fluorene	5.0	U	5.0	
118-74-1	Hexachlorobenzene	5.0	U	5.0	
87-68-3	Hexachlorobutadiene	5.0	U	5.0	
77-47-4	Hexachlorocyclopentadiene	5.0	U	5.0	
67-72-1	Hexachloroethane	5.0	U	5.0	
193-39-5	Indeno(1,2,3-cd)pyrene	5.0	U	5.0	
78-59-1	Isophorone	5.0	U	5.0	
621-64-7	N-Nitrosodi-n-propylamine	5.0	U	5.0	
62-75-9	N-Nitrosodimethylamine	5.0	U	5.0	
86-30-6	N-Nitrosodiphenylamine	5.0	U	5.0	
91-20-3	Naphthalene	5.0	U	5.0	
98-95-3	Nitrobenzene	5.0	U	5.0	
87-86-5	Pentachlorophenol (PCP)	50	U	50	
85-01-8	Phenanthrene	5.0	U	5.0	
108-95-2	Phenol	5.0	U	5.0	
129-00-0	Pyrene	5.0	U	5.0	

Surrogate Name	%Rec	Control Limits	Date Analyzed	Q
2,4,6-Tribromophenol	86	28-157	10/28/11 16:51	
2-Fluorobiphenyl	66	39-119	10/28/11 16:51	
2-Fluorophenol	40	10-105	10/28/11 16:51	
Nitrobenzene-d5	64	37-117	10/28/11 16:51	
Phenol-d6	27	10-107	10/28/11 16:51	
p-Terphenyl-d14	81	40-133	10/28/11 16:51	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/20/11
Date Analyzed: 10/20/11 15:17

Sample Name: Method Blank
Lab Code: RQ1110504-01

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102011\AM405.D\

Analysis Lot: 266161
Extraction Lot: 144639
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	1000	U	1000	
68476-31-3	Fuel Oil No. 4	1000	U	1000	
68476-33-5	Fuel Oil No. 6	1000	U	1000	
8006-61-9	Gasoline	1000	U	1000	
8008-20-6	Kerosene	1000	U	1000	
	Lube Oil	1000	U	1000	
112-40-3	n-Dodecane	1000	U	1000	

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: NA
Date Received: NA
Date Extracted: 10/24/11
Date Analyzed: 10/25/11 08:25

Sample Name: Method Blank
Lab Code: RQ1110622-01

Units: µg/L
Basis: NA

Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method
Data File Name: J:\ACQU\DATA\6890\DATA\102511\AM452.D\

Analysis Lot: 266631
Extraction Lot: 144818
Instrument Name: R-GC-59
Dilution Factor: 1

CAS No.	Analyte Name	Result	Q	MRL	Note
68476-30-2	Fuel Oil No. 2	1000	U	1000	
68476-31-3	Fuel Oil No. 4	1000	U	1000	
68476-33-5	Fuel Oil No. 6	1000	U	1000	
8006-61-9	Gasoline	1000	U	1000	
8008-20-6	Kerosene	1000	U	1000	
	Lube Oil	1000	U	1000	
112-40-3	n-Dodecane	1000	U	1000	

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/19/11

Replicate Sample Summary
General Chemistry Parameters

Sample Name: MW-14R
Lab Code: R1105804-004

Units: pH Units
Basis: NA

Analyte Name	Method	MRL	Sample Result	MW-14RDUP Duplicate Sample R1105804-004DUP1		RPD	RPD Limit
				Result	Average		
pH	SM 4500-H+ B	-	7.54	7.52	7.53	<1	0.10

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/20/11

Matrix Spike Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: 601/602

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110609-03			MW-14RDMS Duplicate Matrix Spike RQ1110609-04			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,1,1-Trichloroethane (TCA)	ND	24.2	20.0	121	25.3	20.0	126	41 - 138	4	30
1,1,2,2-Tetrachloroethane	ND	22.9	20.0	114	23.9	20.0	119	8 - 184	4	30
1,1,2-Trichloroethane	ND	22.0	20.0	110	22.4	20.0	112	39 - 136	2	30
1,1-Dichloroethane (1,1-DCA)	ND	23.6	20.0	118	24.6	20.0	123	47 - 132	4	30
1,1-Dichloroethene (1,1-DCE)	ND	25.6	20.0	128	26.9	20.0	134	28 - 167	5	30
1,2-Dichlorobenzene	ND	23.4	20.0	117	25.2	20.0	126	0 - 208	7	30
1,2-Dichloroethane	ND	22.2	20.0	111	22.6	20.0	113	51 - 147	2	30
1,2-Dichloropropane	ND	25.0	20.0	125	25.4	20.0	127	44 - 156	2	30
1,3-Dichlorobenzene	ND	24.7	20.0	123	26.6	20.0	133	7 - 187	8	30
1,4-Dichlorobenzene	ND	23.7	20.0	118	25.4	20.0	127	42 - 143	7	30
2-Chloroethyl Vinyl Ether	ND	ND	20.0	0 *	ND	20.0	0 *	14 - 186	<1	30
Benzene	ND	20.1	20.0	101	20.7	20.0	104	39 - 150	3	30
Bromodichloromethane	ND	22.9	20.0	115	22.4	20.0	112	42 - 172	2	30
Bromoform	ND	20.9	20.0	105	20.7	20.0	104	13 - 159	<1	30
Bromomethane	ND	26.3	20.0	131	30.5	20.0	153 *	0 - 144	15	30
Carbon Tetrachloride	ND	23.3	20.0	117	23.8	20.0	119	43 - 143	2	30
Chlorobenzene	ND	26.0	20.0	130	26.8	20.0	134	38 - 150	3	30
Chloroethane	ND	26.4	20.0	132	27.0	20.0	135	46 - 137	2	30
Chloroform	ND	24.6	20.0	123	25.6	20.0	128	49 - 133	4	30
Chloromethane	ND	22.4	20.0	112	24.5	20.0	123	0 - 193	9	30
Dibromochloromethane	ND	20.7	20.0	103	20.2	20.0	101	24 - 191	2	30
Methylene Chloride	ND	22.2	20.0	111	24.1	20.0	120	25 - 162	8	30
Ethylbenzene	ND	19.7	20.0	99	20.3	20.0	101	32 - 160	3	30
Tetrachloroethene (PCE)	ND	24.1	20.0	120	24.6	20.0	123	26 - 162	2	30
Toluene	ND	20.2	20.0	101	20.8	20.0	104	46 - 148	3	30
Trichloroethene (TCE)	52	78.5	20.0	132	79.3	20.0	136	35 - 146	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/20/11

Matrix Spike Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: 601/602

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110609-03			MW-14RDMS Duplicate Matrix Spike RQ1110609-04			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Trichlorofluoromethane (CFC 11)	ND	25.3	20.0	127	26.3	20.0	131	21 - 156	4	30
Vinyl Chloride	ND	25.0	20.0	125	26.3	20.0	132	28 - 163	5	30
cis-1,2-Dichloroethene	5.8	30.1	20.0	122	31.0	20.0	126	24 - 191	3	30
cis-1,3-Dichloropropene	ND	24.1	20.0	121	23.2	20.0	116	22 - 178	4	30
m,p-Xylenes	ND	38.5	40.0	96	39.6	40.0	99	68 - 111	3	30
o-Xylene	ND	19.6	20.0	98	20.1	20.0	100	70 - 113	3	30
trans-1,2-Dichloroethene	3.3	27.2	20.0	119	29.0	20.0	129	38 - 155	7	30
trans-1,3-Dichloropropene	ND	24.3	20.0	121	24.7	20.0	124	22 - 178	2	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/25/11

Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: 625
Prep Method: EPA 3510C

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110476-04			MW-14RDMS Duplicate Matrix Spike RQ1110476-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4-Trichlorobenzene	ND	68.8	95.2	72	72.6	95.2	76	29 - 85	5	30
1,2-Diphenylhydrazine	ND	84.7	95.2	89	80.9	95.2	85	64 - 114	5	30
2,4,6-Trichlorophenol	ND	98.1	95.2	103	97.1	95.2	102	37 - 144	1	30
2,4-Dichlorophenol	ND	94.1	95.2	99	92.7	95.2	97	39 - 135	1	30
2,4-Dimethylphenol	ND	83.6	95.2	88	83.8	95.2	88	32 - 119	<1	30
2,4-Dinitrophenol	ND	119	95.2	125	122	95.2	128	0 - 191	2	30
2,4-Dinitrotoluene	ND	104	95.2	109	103	95.2	108	39 - 139	<1	30
2,6-Dinitrotoluene	ND	102	95.2	107	102	95.2	108	50 - 158	<1	30
2-Chloronaphthalene	ND	84.2	95.2	88	82.5	95.2	87	60 - 118	2	30
2-Chlorophenol	ND	78.6	95.2	82	79.1	95.2	83	23 - 134	<1	30
2-Nitrophenol	ND	102	95.2	107	105	95.2	110	29 - 182	2	30
3,3'-Dichlorobenzidine	ND	69.2	95.2	73	72.4	95.2	76	0 - 262	5	30
4,6-Dinitro-o-cresol	ND	114	95.2	120	117	95.2	123	0 - 181	3	30
4-Bromophenyl Phenyl Ether	ND	97.1	95.2	102	94.1	95.2	99	53 - 127	3	30
4-Chloro-m-cresol	ND	96.5	95.2	101	94.6	95.2	99	22 - 147	2	30
4-Chlorophenyl Phenyl Ether	ND	95.7	95.2	100	93.6	95.2	98	25 - 158	2	30
4-Nitrophenol	ND	ND	95.2	0	ND	95.2	0	0 - 132	<1	30
Acenaphthene	ND	97.6	95.2	102	92.5	95.2	97	47 - 145	5	30
Acenaphthylene	ND	95.1	95.2	100	91.6	95.2	96	33 - 145	4	30
Anthracene	ND	98.1	95.2	103	95.3	95.2	100	27 - 133	3	30
Benz(a)anthracene	ND	96.5	95.2	101	96.7	95.2	102	33 - 143	<1	30
Benzidine	ND	ND	95.6	0 *	ND	95.6	0 *	10 - 78	111 *	30
Benzo(a)pyrene	ND	93.4	95.2	98	92.6	95.2	97	17 - 163	<1	30
3,4-Benzofluoranthene	ND	100	95.2	105	95.0	95.2	100	24 - 159	5	30
Benzo(g,h,i)perylene	ND	105	95.2	110	102	95.2	107	0 - 219	3	30
Benzo(k)fluoranthene	ND	104	95.2	109	99.6	95.2	105	11 - 162	4	30

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Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/25/11

**Matrix Spike Summary
Semivolatile Organic Compounds by GC/MS**

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: 625
Prep Method: EPA 3510C

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110476-04			MW-14RDMS Duplicate Matrix Spike RQ1110476-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Bis(1-chloroisopropyl) Ether	ND	83.8	95.2	88	82.5	95.2	87	36 - 166	2	30
Bis(2-chloroethoxy)methane	ND	84.7	95.2	89	84.2	95.2	88	33 - 184	<1	30
Bis(2-chloroethyl) Ether	ND	78.6	95.2	83	78.0	95.2	82	12 - 158	<1	30
Bis(2-ethylhexyl) Phthalate	ND	94.4	95.2	99	95.1	95.2	100	8 - 158	<1	30
Butyl Benzyl Phthalate	ND	92.0	95.2	97	92.3	95.2	97	0 - 152	<1	30
Chrysene	ND	98.2	95.2	103	99.0	95.2	104	17 - 168	<1	30
Di-n-butyl Phthalate	ND	93.2	95.2	98	91.4	95.2	96	1 - 118	2	30
Di-n-octyl Phthalate	ND	97.9	95.2	103	96.5	95.2	101	4 - 146	1	30
Dibenz(a,h)anthracene	ND	103	95.2	109	100	95.2	105	0 - 227	3	30
Diethyl Phthalate	ND	96.6	95.2	101	93.1	95.2	98	0 - 114	4	30
Dimethyl Phthalate	ND	93.8	95.2	99	90.7	95.2	95	0 - 112	3	30
Fluoranthene	ND	102	95.2	107	99.6	95.2	105	26 - 137	2	30
Fluorene	ND	101	95.2	106	96.5	95.2	101	59 - 121	4	30
Hexachlorobenzene	ND	97.3	95.2	102	94.6	95.2	99	0 - 152	3	30
Hexachlorobutadiene	ND	62.1	95.2	65	66.7	95.2	70	24 - 116	7	30
Hexachlorocyclopentadiene	ND	78.0	95.2	82 *	80.6	95.2	85 *	10 - 79	3	30
Hexachloroethane	ND	54.3	95.2	57	56.1	95.2	59	40 - 113	3	30
Indeno(1,2,3-cd)pyrene	ND	98.5	95.2	103	94.8	95.2	100	0 - 171	4	30
Isophorone	ND	85.1	95.2	89	84.0	95.2	88	21 - 196	1	30
N-Nitrosodi-n-propylamine	ND	83.2	95.2	87	79.5	95.2	83	0 - 230	5	30
N-Nitrosodimethylamine	ND	49.7	95.2	52	50.5	95.2	53	34 - 130	2	30
N-Nitrosodiphenylamine	ND	97.7	95.2	103	94.0	95.2	99	50 - 117	4	30
Naphthalene	ND	78.9	95.2	83	80.6	95.2	85	21 - 133	2	30
Nitrobenzene	ND	87.0	95.2	91	86.2	95.2	91	35 - 180	<1	30
Pentachlorophenol (PCP)	ND	108	95.2	114	107	95.2	112	14 - 176	1	30
Phenanthrene	ND	101	95.2	106	98.3	95.2	103	54 - 120	2	30

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/25/11

**Matrix Spike Summary
 Semivolatile Organic Compounds by GC/MS**

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: 625
Prep Method: EPA 3510C

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110476-04			MW-14RDMS Duplicate Matrix Spike RQ1110476-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Phenol	ND	35.5	95.2	37	35.2	95.2	37	5 - 112	<1	30
Pyrene	ND	96.8	95.2	102	98.2	95.2	103	52 - 115	2	30

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Collected: 10/18/11
Date Received: 10/19/11
Date Analyzed: 10/20/11

Matrix Spike Summary
Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Sample Name: MW-14R
Lab Code: R1105804-004

Units: µg/L
Basis: NA

Analytical Method: NY 310-13
Prep Method: Method

Analyte Name	Sample Result	MW-14RMS Matrix Spike RQ1110504-04			MW-14RDMS Duplicate Matrix Spike RQ1110504-05			% Rec Limits	RPD	RPD Limit
		Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Fuel Oil No. 2	ND	6140	4800	128	6420	4800	134	46 - 150	4	30

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COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/20/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L
Basis: NA

Analysis Lot: 266367

Lab Control Sample
RQ1110609-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	20.3	20.0	101	41 - 138
1,1,2,2-Tetrachloroethane	21.4	20.0	107	8 - 184
1,1,2-Trichloroethane	20.4	20.0	102	39 - 136
1,1-Dichloroethane (1,1-DCA)	21.0	20.0	105	47 - 132
1,1-Dichloroethene (1,1-DCE)	21.7	20.0	109	28 - 167
1,2-Dichlorobenzene	21.7	20.0	109	0 - 208
1,2-Dichloroethane	20.1	20.0	101	51 - 147
1,2-Dichloropropane	22.0	20.0	110	44 - 156
1,3-Dichlorobenzene	22.5	20.0	113	7 - 187
1,4-Dichlorobenzene	21.7	20.0	108	42 - 143
2-Chloroethyl Vinyl Ether	22.1	20.0	110	14 - 186
Benzene	16.7	20.0	83	39 - 150
Bromodichloromethane	20.9	20.0	104	42 - 172
Bromoform	23.3	20.0	116	13 - 159
Bromomethane	22.1	20.0	111	0 - 144
Carbon Tetrachloride	19.3	20.0	96	43 - 143
Chlorobenzene	21.0	20.0	105	38 - 150
Chloroethane	22.1	20.0	111	46 - 137
Chloroform	22.5	20.0	113	49 - 133
Chloromethane	22.6	20.0	113	0 - 193
Dibromochloromethane	19.2	20.0	96	24 - 191
Methylene Chloride	22.1	20.0	111	25 - 162
Ethylbenzene	16.7	20.0	83	32 - 160
Tetrachloroethene (PCE)	18.9	20.0	94	26 - 162
Toluene	16.9	20.0	85	46 - 148
Trichloroethene (TCE)	20.1	20.0	100	35 - 146
Trichlorofluoromethane (CFC 11)	20.9	20.0	105	21 - 156
Vinyl Chloride	20.9	20.0	105	28 - 163
cis-1,2-Dichloroethene	21.8	20.0	109	24 - 191
cis-1,3-Dichloropropene	21.2	20.0	106	22 - 178
m,p-Xylenes	33.0	40.0	82	68 - 111
o-Xylene	17.2	20.0	86	70 - 113

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/20/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L

Basis: NA

Analysis Lot: 266367

Lab Control Sample
RQ1110609-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	20.2	20.0	101	38 - 155
trans-1,3-Dichloropropene	23.3	20.0	116	22 - 178

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/21/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L
Basis: NA

Analysis Lot: 266370

Lab Control Sample
RQ1110610-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	15.1	20.0	76	41 - 138
1,1,2,2-Tetrachloroethane	19.6	20.0	98	8 - 184
1,1,2-Trichloroethane	18.0	20.0	90	39 - 136
1,1-Dichloroethane (1,1-DCA)	16.0	20.0	80	47 - 132
1,1-Dichloroethene (1,1-DCE)	16.1	20.0	81	28 - 167
1,2-Dichlorobenzene	18.8	20.0	94	0 - 208
1,2-Dichloroethane	16.9	20.0	84	51 - 147
1,2-Dichloropropane	18.2	20.0	91	44 - 156
1,3-Dichlorobenzene	19.5	20.0	98	7 - 187
1,4-Dichlorobenzene	18.6	20.0	93	42 - 143
2-Chloroethyl Vinyl Ether	18.8	20.0	94	14 - 186
Benzene	17.0	20.0	85	39 - 150
Bromodichloromethane	17.8	20.0	89	42 - 172
Bromoform	20.8	20.0	104	13 - 159
Bromomethane	18.5	20.0	92	0 - 144
Carbon Tetrachloride	14.7	20.0	73	43 - 143
Chlorobenzene	18.8	20.0	94	38 - 150
Chloroethane	17.0	20.0	85	46 - 137
Chloroform	17.7	20.0	89	49 - 133
Chloromethane	19.0	20.0	95	0 - 193
Dibromochloromethane	18.6	20.0	93	24 - 191
Methylene Chloride	17.7	20.0	88	25 - 162
Ethylbenzene	16.6	20.0	83	32 - 160
Tetrachloroethene (PCE)	16.0	20.0	80	26 - 162
Toluene	17.0	20.0	85	46 - 148
Trichloroethene (TCE)	16.0	20.0	80	35 - 146
Trichlorofluoromethane (CFC 11)	15.1	20.0	76	21 - 156
Vinyl Chloride	17.8	20.0	89	28 - 163
cis-1,2-Dichloroethene	17.3	20.0	86	24 - 191
cis-1,3-Dichloropropene	18.4	20.0	92	22 - 178
m,p-Xylenes	32.9	40.0	82	68 - 111
o-Xylene	17.3	20.0	87	70 - 113

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/21/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L
Basis: NA

Analysis Lot: 266370

Lab Control Sample
RQ1110610-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	15.5	20.0	78	38 - 155
trans-1,3-Dichloropropene	20.3	20.0	101	22 - 178

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/24/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L
Basis: NA

Analysis Lot: 266977

Lab Control Sample
RQ1110807-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	15.5	20.0	77	41 - 138
1,1,2,2-Tetrachloroethane	18.4	20.0	92	8 - 184
1,1,2-Trichloroethane	17.3	20.0	87	39 - 136
1,1-Dichloroethane (1,1-DCA)	16.6	20.0	83	47 - 132
1,1-Dichloroethene (1,1-DCE)	16.2	20.0	81	28 - 167
1,2-Dichlorobenzene	18.5	20.0	92	0 - 208
1,2-Dichloroethane	17.4	20.0	87	51 - 147
1,2-Dichloropropane	18.6	20.0	93	44 - 156
1,3-Dichlorobenzene	18.8	20.0	94	7 - 187
1,4-Dichlorobenzene	17.8	20.0	89	42 - 143
2-Chloroethyl Vinyl Ether	17.8	20.0	89	14 - 186
Benzene	15.9	20.0	80	39 - 150
Bromodichloromethane	18.0	20.0	90	42 - 172
Bromoform	20.8	20.0	104	13 - 159
Bromomethane	18.9	20.0	94	0 - 144
Carbon Tetrachloride	14.8	20.0	74	43 - 143
Chlorobenzene	18.0	20.0	90	38 - 150
Chloroethane	16.9	20.0	84	46 - 137
Chloroform	18.4	20.0	92	49 - 133
Chloromethane	14.8	20.0	74	0 - 193
Dibromochloromethane	18.4	20.0	92	24 - 191
Methylene Chloride	18.4	20.0	92	25 - 162
Ethylbenzene	15.5	20.0	78	32 - 160
Tetrachloroethene (PCE)	15.2	20.0	76	26 - 162
Toluene	16.1	20.0	80	46 - 148
Trichloroethene (TCE)	16.1	20.0	80	35 - 146
Trichlorofluoromethane (CFC 11)	14.9	20.0	75	21 - 156
Vinyl Chloride	17.5	20.0	87	28 - 163
cis-1,2-Dichloroethene	17.8	20.0	89	24 - 191
cis-1,3-Dichloropropene	18.3	20.0	92	22 - 178
m,p-Xylenes	30.8	40.0	77	68 - 111
o-Xylene	16.4	20.0	82	70 - 113

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/24/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L

Basis: NA

Analysis Lot: 266977

Lab Control Sample
RQ1110807-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	16.0	20.0	80	38 - 155
trans-1,3-Dichloropropene	20.1	20.0	100	22 - 178

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Analyzed: 10/26/11

Lab Control Sample Summary
 Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L

Basis: NA

Analysis Lot: 266983

Lab Control Sample
 RQ1110884-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	15.1	20.0	76	41 - 138
1,1,2,2-Tetrachloroethane	17.7	20.0	88	8 - 184
1,1,2-Trichloroethane	17.9	20.0	90	39 - 136
1,1-Dichloroethane (1,1-DCA)	16.3	20.0	81	47 - 132
1,1-Dichloroethene (1,1-DCE)	15.1	20.0	76	28 - 167
1,2-Dichlorobenzene	17.5	20.0	87	0 - 208
1,2-Dichloroethane	18.0	20.0	90	51 - 147
1,2-Dichloropropane	18.9	20.0	95	44 - 156
1,3-Dichlorobenzene	17.7	20.0	89	7 - 187
1,4-Dichlorobenzene	17.3	20.0	87	42 - 143
2-Chloroethyl Vinyl Ether	18.1	20.0	91	14 - 186
Benzene	17.0	20.0	85	39 - 150
Bromodichloromethane	18.3	20.0	91	42 - 172
Bromoform	20.0	20.0	100	13 - 159
Bromomethane	16.9	20.0	85	0 - 144
Carbon Tetrachloride	14.7	20.0	73	43 - 143
Chlorobenzene	17.8	20.0	89	38 - 150
Chloroethane	15.4	20.0	77	46 - 137
Chloroform	18.0	20.0	90	49 - 133
Chloromethane	13.8	20.0	69	0 - 193
Dibromochloromethane	18.0	20.0	90	24 - 191
Methylene Chloride	17.5	20.0	87	25 - 162
Ethylbenzene	16.8	20.0	84	32 - 160
Tetrachloroethene (PCE)	15.2	20.0	76	26 - 162
Toluene	17.2	20.0	86	46 - 148
Trichloroethene (TCE)	16.2	20.0	81	35 - 146
Trichlorofluoromethane (CFC 11)	13.9	20.0	69	21 - 156
Vinyl Chloride	18.6	20.0	93	28 - 163
cis-1,2-Dichloroethene	17.4	20.0	87	24 - 191
cis-1,3-Dichloropropene	18.8	20.0	94	22 - 178
m,p-Xylenes	33.3	40.0	83	68 - 111
o-Xylene	17.7	20.0	89	70 - 113

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/26/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L

Basis: NA

Analysis Lot: 266983

Lab Control Sample
RQ1110884-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	15.3	20.0	76	38 - 155
trans-1,3-Dichloropropene	20.1	20.0	101	22 - 178

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/27/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L

Basis: NA

Analysis Lot: 267152

Lab Control Sample
RQ1110855-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
1,1,1-Trichloroethane (TCA)	17.4	20.0	87	41 - 138
1,1,2,2-Tetrachloroethane	16.3	20.0	82	8 - 184
1,1,2-Trichloroethane	18.0	20.0	90	39 - 136
1,1-Dichloroethane (1,1-DCA)	17.5	20.0	88	47 - 132
1,1-Dichloroethene (1,1-DCE)	18.0	20.0	90	28 - 167
1,2-Dichlorobenzene	17.3	20.0	86	0 - 208
1,2-Dichloroethane	17.9	20.0	89	51 - 147
1,2-Dichloropropane	19.8	20.0	99	44 - 156
1,3-Dichlorobenzene	17.6	20.0	88	7 - 187
1,4-Dichlorobenzene	17.0	20.0	85	42 - 143
2-Chloroethyl Vinyl Ether	18.0	20.0	90	14 - 186
Benzene	17.4	20.0	87	39 - 150
Bromodichloromethane	18.2	20.0	91	42 - 172
Bromoform	16.9	20.0	84	13 - 159
Bromomethane	16.9	20.0	85	0 - 144
Carbon Tetrachloride	17.2	20.0	86	43 - 143
Chlorobenzene	18.4	20.0	92	38 - 150
Chloroethane	17.4	20.0	87	46 - 137
Chloroform	19.2	20.0	96	49 - 133
Chloromethane	15.6	20.0	78	0 - 193
Dibromochloromethane	17.0	20.0	85	24 - 191
Methylene Chloride	18.4	20.0	92	25 - 162
Ethylbenzene	17.4	20.0	87	32 - 160
Tetrachloroethene (PCE)	17.2	20.0	86	26 - 162
Toluene	17.7	20.0	89	46 - 148
Trichloroethene (TCE)	18.0	20.0	90	35 - 146
Trichlorofluoromethane (CFC 11)	16.9	20.0	84	21 - 156
Vinyl Chloride	20.5	20.0	103	28 - 163
cis-1,2-Dichloroethene	19.0	20.0	95	24 - 191
cis-1,3-Dichloropropene	19.5	20.0	98	22 - 178
m,p-Xylenes	34.4	40.0	86	68 - 111
o-Xylene	18.0	20.0	90	70 - 113

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/27/11

Lab Control Sample Summary
Purgeable Halocarbons and Purgeable Aromatics by GC/PID/ELCD - Field Preserved

Analytical Method: 601/602

Units: µg/L
Basis: NA

Analysis Lot: 267152

Lab Control Sample
RQ1110855-02

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
trans-1,2-Dichloroethene	17.2	20.0	86	38 - 155
trans-1,3-Dichloropropene	20.3	20.0	102	22 - 178

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
 Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
 Sample Matrix: Water

Service Request: R1105804
 Date Analyzed: 10/24/11

Lab Control Sample Summary
 Semivolatile Organic Compounds by GC/MS

Analytical Method: 625
 Prep Method: EPA 3510C

Units: µg/L
 Basis: NA

Extraction Lot: 144615

Analyte Name	Lab Control Sample RQ1110476-02			Duplicate Lab Control Sample RQ1110476-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4-Trichlorobenzene	64.1	100	64	64.2	100	64	29 - 85	<1	30
1,2-Diphenylhydrazine	89.1	100	89	87.0	100	87	64 - 114	2	30
2,4,6-Trichlorophenol	99.4	100	99	98.0	100	98	37 - 144	1	30
2,4-Dichlorophenol	91.2	100	91	92.9	100	93	39 - 135	2	30
2,4-Dimethylphenol	88.1	100	88	86.3	100	86	32 - 119	2	30
2,4-Dinitrophenol	106	100	106	107	100	107	0 - 191	1	30
2,4-Dinitrotoluene	105	100	105	103	100	103	39 - 139	2	30
2,6-Dinitrotoluene	104	100	104	103	100	103	50 - 158	1	30
2-Chloronaphthalene	80.7	100	81	78.4	100	78	60 - 118	3	30
2-Chlorophenol	83.1	100	83	81.2	100	81	23 - 134	2	30
2-Nitrophenol	98.2	100	98	102	100	102	29 - 182	4	30
3,3'-Dichlorobenzidine	83.0	100	83	83.7	100	84	0 - 262	<1	30
4,6-Dinitro-o-cresol	108	100	108	111	100	111	0 - 181	3	30
4-Bromophenyl Phenyl Ether	96.0	100	96	97.4	100	97	53 - 127	1	30
4-Chloro-m-cresol	95.9	100	96	94.6	100	95	22 - 147	1	30
4-Chlorophenyl Phenyl Ether	94.9	100	95	93.1	100	93	25 - 158	2	30
4-Nitrophenol	50 U	100	0	50 U	100	0	0 - 132	1	30
Acenaphthene	95.6	100	96	92.6	100	93	47 - 145	3	30
Acenaphthylene	93.8	100	94	91.5	100	92	33 - 145	2	30
Anthracene	102	100	102	98.7	100	99	27 - 133	3	30
Benz(a)anthracene	100	100	100	97.5	100	98	33 - 143	3	30
Benzidine	100 U	100	0 *	100 U	100	0 *	10 - 78	13	30
Benzo(a)pyrene	95.8	100	96	92.6	100	93	17 - 163	3	30
3,4-Benzofluoranthene	102	100	102	98.0	100	98	24 - 159	4	30
Benzo(g,h,i)perylene	104	100	104	101	100	101	0 - 219	3	30
Benzo(k)fluoranthene	105	100	105	104	100	104	11 - 162	2	30
Bis(1-chloroisopropyl) Ether	90.9	100	91	87.6	100	88	36 - 166	4	30
Bis(2-chloroethoxy)methane	87.3	100	87	86.0	100	86	33 - 184	1	30
Bis(2-chloroethyl) Ether	85.4	100	85	80.8	100	81	12 - 158	5	30
Bis(2-ethylhexyl) Phthalate	97.4	100	97	95.1	100	95	8 - 158	2	30
Butyl Benzyl Phthalate	94.0	100	94	91.6	100	92	0 - 152	3	30
Chrysene	102	100	102	99.4	100	99	17 - 168	3	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/24/11

**Lab Control Sample Summary
 Semivolatile Organic Compounds by GC/MS**

Analytical Method: 625
Prep Method: EPA 3510C

Units: µg/L
Basis: NA

Extraction Lot: 144615

Analyte Name	Lab Control Sample RQ1110476-02			Duplicate Lab Control Sample RQ1110476-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Di-n-butyl Phthalate	97.7	100	98	94.4	100	94	1 - 118	3	30
Di-n-octyl Phthalate	101	100	101	95.3	100	95	4 - 146	6	30
Dibenz(a,h)anthracene	104	100	104	99.4	100	99	0 - 227	4	30
Diethyl Phthalate	99.6	100	100	96.0	100	96	0 - 114	4	30
Dimethyl Phthalate	96.9	100	97	94.7	100	95	0 - 112	2	30
Fluoranthene	107	100	107	101	100	101	26 - 137	6	30
Fluorene	104	100	104	99.1	100	99	59 - 121	5	30
Hexachlorobenzene	98.0	100	98	97.6	100	98	0 - 152	<1	30
Hexachlorobutadiene	62.8	100	63	63.1	100	63	24 - 116	<1	30
Hexachlorocyclopentadiene	65.9	100	66	67.7	100	68	10 - 79	3	30
Hexachloroethane	58.2	100	58	54.2	100	54	40 - 113	7	30
Indeno(1,2,3-cd)pyrene	98.5	100	99	94.9	100	95	0 - 171	4	30
Isophorone	88.6	100	89	87.0	100	87	21 - 196	2	30
N-Nitrosodi-n-propylamine	88.9	100	89	86.2	100	86	0 - 230	3	30
N-Nitrosodimethylamine	55.5	100	55	51.0	100	51	34 - 130	8	30
N-Nitrosodiphenylamine	97.9	100	98	98.0	100	98	50 - 117	<1	30
Naphthalene	76.1	100	76	74.5	100	75	21 - 133	2	30
Nitrobenzene	88.1	100	88	88.8	100	89	35 - 180	<1	30
Pentachlorophenol (PCP)	105	100	105	104	100	104	14 - 176	1	30
Phenanthrene	104	100	104	102	100	102	54 - 120	2	30
Phenol	40.1	100	40	39.1	100	39	5 - 112	2	30
Pyrene	99.2	100	99	98.2	100	98	52 - 115	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/26/11

**Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS**

Analytical Method: 625
Prep Method: EPA 3510C

Units: µg/L
Basis: NA

Extraction Lot: 144714

Analyte Name	Lab Control Sample RQ1110539-02			Duplicate Lab Control Sample RQ1110539-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4-Trichlorobenzene	55.1	100	55	53.4	100	53	29 - 85	3	30
1,2-Diphenylhydrazine	90.2	100	90	83.5	100	84	64 - 114	8	30
2,4,6-Trichlorophenol	91.0	100	91	86.3	100	86	37 - 144	5	30
2,4-Dichlorophenol	84.9	100	85	81.6	100	82	39 - 135	4	30
2,4-Dimethylphenol	82.1	100	82	77.2	100	77	32 - 119	6	30
2,4-Dinitrophenol	92.9	100	93	92.5	100	92	0 - 191	<1	30
2,4-Dinitrotoluene	101	100	101	95.4	100	95	39 - 139	5	30
2,6-Dinitrotoluene	98.7	100	99	93.5	100	93	50 - 158	5	30
2-Chloronaphthalene	75.2	100	75	73.0	100	73	60 - 118	3	30
2-Chlorophenol	76.3	100	76	74.7	100	75	23 - 134	2	30
2-Nitrophenol	83.6	100	84	81.4	100	81	29 - 182	3	30
3,3'-Dichlorobenzidine	84.8	100	85	77.9	100	78	0 - 262	9	30
4,6-Dinitro-o-cresol	100	100	100	92.4	100	92	0 - 181	8	30
4-Bromophenyl Phenyl Ether	95.2	100	95	87.4	100	87	53 - 127	9	30
4-Chloro-m-cresol	89.2	100	89	84.1	100	84	22 - 147	6	30
4-Chlorophenyl Phenyl Ether	88.8	100	89	84.7	100	85	25 - 158	5	30
4-Nitrophenol	50 U	100	0	50 U	100	0	0 - 132	5	30
Acenaphthene	89.8	100	90	84.6	100	85	47 - 145	6	30
Acenaphthylene	88.8	100	89	84.8	100	85	33 - 145	5	30
Anthracene	97.6	100	98	89.7	100	90	27 - 133	8	30
Benz(a)anthracene	97.1	100	97	90.9	100	91	33 - 143	7	30
Benzidine	100 U	100	0 *	100 U	100	0 *	10 - 78	121 *	30
Benzo(a)pyrene	93.4	100	93	85.7	100	86	17 - 163	9	30
3,4-Benzofluoranthene	99.6	100	100	92.5	100	92	24 - 159	7	30
Benzo(g,h,i)perylene	99.4	100	99	92.3	100	92	0 - 219	7	30
Benzo(k)fluoranthene	97.6	100	98	95.7	100	96	11 - 162	2	30
Bis(1-chloroisopropyl) Ether	84.8	100	85	82.9	100	83	36 - 166	2	30
Bis(2-chloroethoxy)methane	82.1	100	82	79.3	100	79	33 - 184	3	30
Bis(2-chloroethyl) Ether	79.9	100	80	73.8	100	74	12 - 158	8	30
Bis(2-ethylhexyl) Phthalate	97.1	100	97	90.8	100	91	8 - 158	7	30
Butyl Benzyl Phthalate	92.4	100	92	85.7	100	86	0 - 152	7	30
Chrysene	98.1	100	98	91.0	100	91	17 - 168	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/26/11

**Lab Control Sample Summary
 Semivolatile Organic Compounds by GC/MS**

Analytical Method: 625
Prep Method: EPA 3510C

Units: µg/L
Basis: NA

Extraction Lot: 144714

Analyte Name	Lab Control Sample RQ1110539-02			Duplicate Lab Control Sample RQ1110539-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Di-n-butyl Phthalate	98.6	100	99	90.5	100	91	1 - 118	9	30
Di-n-octyl Phthalate	100	100	100	90.6	100	91	4 - 146	10	30
Dibenz(a,h)anthracene	101	100	101	93.7	100	94	0 - 227	7	30
Diethyl Phthalate	92.9	100	93	87.7	100	88	0 - 114	6	30
Dimethyl Phthalate	92.1	100	92	87.4	100	87	0 - 112	5	30
Fluoranthene	103	100	103	95.5	100	95	26 - 137	7	30
Fluorene	93.6	100	94	88.1	100	88	59 - 121	6	30
Hexachlorobenzene	90.6	100	91	84.0	100	84	0 - 152	8	30
Hexachlorobutadiene	52.7	100	53	51.8	100	52	24 - 116	2	30
Hexachlorocyclopentadiene	60.3	100	60	58.0	100	58	10 - 79	4	30
Hexachloroethane	46.4	100	46	45.7	100	46	40 - 113	1	30
Indeno(1,2,3-cd)pyrene	96.9	100	97	90.1	100	90	0 - 171	7	30
Isophorone	85.2	100	85	81.5	100	82	21 - 196	4	30
N-Nitrosodi-n-propylamine	82.2	100	82	78.9	100	79	0 - 230	4	30
N-Nitrosodimethylamine	54.3	100	54	53.6	100	54	34 - 130	1	30
N-Nitrosodiphenylamine	94.1	100	94	87.2	100	87	50 - 117	8	30
Naphthalene	64.8	100	65	64.2	100	64	21 - 133	1	30
Nitrobenzene	77.5	100	78	75.6	100	76	35 - 180	2	30
Pentachlorophenol (PCP)	94.7	100	95	88.1	100	88	14 - 176	7	30
Phenanthrene	101	100	101	92.8	100	93	54 - 120	8	30
Phenol	37.1	100	37	36.1	100	36	5 - 112	3	30
Pyrene	98.3	100	98	91.0	100	91	52 - 115	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/28/11

**Lab Control Sample Summary
 Semivolatile Organic Compounds by GC/MS**

Analytical Method: 625
Prep Method: EPA 3510C

Units: µg/L
Basis: NA

Extraction Lot: 144817

Analyte Name	Lab Control Sample RQ1110621-02			Duplicate Lab Control Sample RQ1110621-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
1,2,4-Trichlorobenzene	54.2	100	54	50.9	100	51	29 - 85	6	30
1,2-Diphenylhydrazine	77.4	100	77	83.6	100	84	64 - 114	8	30
2,4,6-Trichlorophenol	87.5	100	87	94.7	100	95	37 - 144	8	30
2,4-Dichlorophenol	81.8	100	82	87.3	100	87	39 - 135	6	30
2,4-Dimethylphenol	80.2	100	80	86.0	100	86	32 - 119	7	30
2,4-Dinitrophenol	103	100	103	119	100	119	0 - 191	15	30
2,4-Dinitrotoluene	93.7	100	94	103	100	103	39 - 139	9	30
2,6-Dinitrotoluene	92.3	100	92	101	100	101	50 - 158	9	30
2-Chloronaphthalene	74.0	100	74	77.4	100	77	60 - 118	4	30
2-Chlorophenol	75.2	100	75	78.4	100	78	23 - 134	4	30
2-Nitrophenol	83.4	100	83	87.8	100	88	29 - 182	5	30
3,3'-Dichlorobenzidine	86.0	100	86	95.9	100	96	0 - 262	11	30
4,6-Dinitro-o-cresol	99.6	100	100	110	100	110	0 - 181	10	30
4-Bromophenyl Phenyl Ether	87.2	100	87	95.9	100	96	53 - 127	9	30
4-Chloro-m-cresol	85.1	100	85	91.9	100	92	22 - 147	8	30
4-Chlorophenyl Phenyl Ether	87.5	100	88	95.3	100	95	25 - 158	9	30
4-Nitrophenol	50 U	100	0	50 U	100	0	0 - 132	16	30
Acenaphthene	84.0	100	84	90.2	100	90	47 - 145	7	30
Acenaphthylene	84.9	100	85	90.5	100	91	33 - 145	6	30
Anthracene	86.7	100	87	95.5	100	95	27 - 133	10	30
Benz(a)anthracene	88.3	100	88	96.3	100	96	33 - 143	9	30
Benzidine	100 U	100	0 *	100 U	100	0 *	10 - 78	35 *	30
Benzo(a)pyrene	82.9	100	83	92.2	100	92	17 - 163	11	30
3,4-Benzofluoranthene	97.2	100	97	106	100	106	24 - 159	8	30
Benzo(g,h,i)perylene	95.5	100	95	107	100	107	0 - 219	12	30
Benzo(k)fluoranthene	84.2	100	84	95.0	100	95	11 - 162	12	30
Bis(1-chloroisopropyl) Ether	84.3	100	84	84.9	100	85	36 - 166	<1	30
Bis(2-chloroethoxy)methane	99.5	100	99	106	100	106	33 - 184	6	30
Bis(2-chloroethyl) Ether	76.4	100	76	74.9	100	75	12 - 158	2	30
Bis(2-ethylhexyl) Phthalate	84.7	100	85	92.6	100	93	8 - 158	9	30
Butyl Benzyl Phthalate	80.9	100	81	89.0	100	89	0 - 152	9	30
Chrysene	88.5	100	88	96.2	100	96	17 - 168	8	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/28/11

**Lab Control Sample Summary
 Semivolatile Organic Compounds by GC/MS**

Analytical Method: 625
Prep Method: EPA 3510C

Units: µg/L
Basis: NA

Extraction Lot: 144817

Analyte Name	Lab Control Sample RQ1110621-02			Duplicate Lab Control Sample RQ1110621-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Di-n-butyl Phthalate	83.7	100	84	92.1	100	92	1 - 118	10	30
Di-n-octyl Phthalate	83.2	100	83	92.5	100	92	4 - 146	11	30
Dibenz(a,h)anthracene	96.7	100	97	110	100	110	0 - 227	13	30
Diethyl Phthalate	84.2	100	84	91.7	100	92	0 - 114	9	30
Dimethyl Phthalate	84.8	100	85	92.4	100	92	0 - 112	9	30
Fluoranthene	90.3	100	90	99.1	100	99	26 - 137	9	30
Fluorene	88.5	100	88	95.9	100	96	59 - 121	8	30
Hexachlorobenzene	87.1	100	87	95.9	100	96	0 - 152	10	30
Hexachlorobutadiene	50.6	100	51	47.1	100	47	24 - 116	7	30
Hexachlorocyclopentadiene	64.8	100	65	63.7	100	64	10 - 79	2	30
Hexachloroethane	41.8	100	42	38.3	100	38 *	40 - 113	9	30
Indeno(1,2,3-cd)pyrene	91.6	100	92	104	100	104	0 - 171	12	30
Isophorone	80.6	100	81	86.1	100	86	21 - 196	7	30
N-Nitrosodi-n-propylamine	80.9	100	81	84.9	100	85	0 - 230	5	30
N-Nitrosodimethylamine	52.1	100	52	52.8	100	53	34 - 130	2	30
N-Nitrosodiphenylamine	83.9	100	84	92.6	100	93	50 - 117	10	30
Naphthalene	63.8	100	64	63.1	100	63	21 - 133	1	30
Nitrobenzene	74.0	100	74	76.9	100	77	35 - 180	4	30
Pentachlorophenol (PCP)	91.2	100	91	104	100	104	14 - 176	13	30
Phenanthrene	89.2	100	89	98.1	100	98	54 - 120	9	30
Phenol	36.7	100	37	39.0	100	39	5 - 112	6	30
Pyrene	87.3	100	87	96.2	100	96	52 - 115	10	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/20/11

**Lab Control Sample Summary
 Petroleum Products in Water (Hydrocarbon Scan) for State of New York**

Analytical Method: NY 310-13
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 144639

Analyte Name	Lab Control Sample RQ1110504-02			Duplicate Lab Control Sample RQ1110504-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Fuel Oil No. 2	6480	5040	129	6040	5040	120	43 - 195	7	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

COLUMBIA ANALYTICAL SERVICES, INC.

QA/QC Report

Client: Ecology And Environment, Incorporated
Project: Davis Howland Oil Company Site - Semiannual Water/002700.DC14.02.01
Sample Matrix: Water

Service Request: R1105804
Date Analyzed: 10/25/11

Lab Control Sample Summary
Petroleum Products in Water (Hydrocarbon Scan) for State of New York

Analytical Method: NY 310-13
Prep Method: Method

Units: µg/L
Basis: NA

Extraction Lot: 144818

Analyte Name	Lab Control Sample RQ1110622-02			Duplicate Lab Control Sample RQ1110622-03			% Rec Limits	RPD	RPD Limit
	Result	Spike Amount	% Rec	Result	Spike Amount	% Rec			
Fuel Oil No. 2	6210	5040	123	6140	5040	122	43 - 195	1	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Project Name Du's Howland		Project Number 002700.DC14.02		ANALYSIS REQUESTED (Include Method Number and Container Preservative)	
Project Manager MIKE ALOI		Report CC		PRESERVATIVE D I	
Company/Address Ecology Environment inc 368 Pleasantview Dr Lancaster NY 14086		E-mail 716 684-0844		PRELIMINARY RESULTS PH	
Phone # 716 684-8060		Sampler's Printed Name Lawrence Poedel		METALS, TOTAL (List in comments below)	
FOR OFFICE USE ONLY		LAB ID		METALS, DISSOLVED (List in comments below)	
CLIENT SAMPLE ID	SAMPLING DATE	SAMPLING TIME	MATRIX	PESTICIDES GC VOAS <input type="checkbox"/> 821 <input type="checkbox"/> 601/602 GC VOAS <input type="checkbox"/> 824 <input type="checkbox"/> CLP GCMS SVOAS <input type="checkbox"/> 825 GCMS VOAS <input type="checkbox"/> 826 <input type="checkbox"/> 625	
MW-12R	10/18/11	0854	GW	PCBS <input type="checkbox"/> 8082 <input type="checkbox"/> 608	
MW-12S	10/18/11	0908	GW	PCBS <input type="checkbox"/> 8081 <input type="checkbox"/> 608	
MW-14S	10/18/11	1205	GW	GC VOAS <input type="checkbox"/> 8081 <input type="checkbox"/> 608	
MW-14R	10/18/11	1305	GW	GC VOAS <input type="checkbox"/> 8021 <input type="checkbox"/> 601/602	
MW-14R-MS	10/18/11	1305	GW	GCMS SVOAS <input type="checkbox"/> 824 <input type="checkbox"/> CLP	
MW-14R-MSD	10/18/11	1305	GW	GCMS VOAS <input type="checkbox"/> 826 <input type="checkbox"/> 625	
MW-2R	10/18/11	1515	GW	GCMS SVOAS <input type="checkbox"/> 824 <input type="checkbox"/> CLP	
MW-2S	10/18/11	1505	GW	GCMS VOAS <input type="checkbox"/> 826 <input type="checkbox"/> 625	
TB-10-18-11-001	10/18/11	0800	GW	GCMS SVOAS <input type="checkbox"/> 824 <input type="checkbox"/> CLP	
SPECIAL INSTRUCTIONS/COMMENTS Metals			REMARKS/ ALTERNATE DESCRIPTION		
TURNAROUND REQUIREMENTS <input type="checkbox"/> RUSH (SURCHARGES APPLY) <input type="checkbox"/> 1 day <input type="checkbox"/> 2 day <input type="checkbox"/> 3 day <input type="checkbox"/> 4 day <input type="checkbox"/> 5 day <input checked="" type="checkbox"/> Standard			REPORT REQUIREMENTS <input type="checkbox"/> I. Results Only <input type="checkbox"/> II. Results + QC Summaries (LCS, DUP, MS/MSD as required) <input checked="" type="checkbox"/> III. Results + QC and Calibration Summaries <input type="checkbox"/> IV. Data Validation Report with Raw Data		
REQUESTED REPORT DATE			RELINQUISHED BY		
RECEIVED BY			RECEIVED BY		
STATE WHERE SAMPLES WERE COLLECTED:			RELINQUISHED BY		
RELINQUISHED BY Signature: <i>Lawrence Poedel</i> Printed Name: Lawrence Poedel Firm: E+E Date/Time: 10/18/11 07:54			RELINQUISHED BY Signature: <i>Greedy O. Esmerian</i> Printed Name: Greedy O. Esmerian Firm: CAS Date/Time: 10-19-11 07:54		
See QAPP <input type="checkbox"/>			RELINQUISHED BY		
R1105804 Ecology And Environment, Incorporated Du's Howland Oil Company Site - Semiannual Wa			RELINQUISHED BY		
Barcode			RELINQUISHED BY		
INVOICE INFORMATION PO #: BILL TO:			RELINQUISHED BY		
Edata <input type="checkbox"/> Yes <input type="checkbox"/> No			RELINQUISHED BY		
Signature			RELINQUISHED BY		
Printed Name			RELINQUISHED BY		
Firm			RELINQUISHED BY		
Date/Time			RELINQUISHED BY		

Cooler Receipt And Preservation C

R1105804

Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa



Project/Client E+C Folder Number _____

Cooler received on 10/19/11 by: RD COURIER: CAS UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES NO
 - Were custody papers properly filled out (ink, signed, etc.)? YES NO
 - Did all bottles arrive in good condition (unbroken)? YES NO
 - Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles? YES NO N/A
 - Were Ice or Ice packs present? YES NO
 - Where did the bottles originate? CAS/ROC CLIENT
 - Temperature of cooler(s) upon receipt: 2.0° 4.3° 3.9° _____
- Is the temperature within 0° - 6° C?: Yes Yes Yes Yes Yes
- If No, Explain Below No No No No No
- Date/Time Temperatures Taken: 10/19/11 0802
- Thermometer ID: IR GUN#3 IR GUN#4 Reading From: Temp Blank Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: _____
PC Secondary Review: C 10/19/11

Cooler Breakdown: Date: 10/19/11 Time: 1105 by: RD

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
 - Did all bottle labels and tags agree with custody papers? YES NO
 - Were correct containers used for the tests indicated? YES NO
 - Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A
- Explain any discrepancies: _____

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
Residual Chlorine (-)	For TCN and Phenol			If present, contact PM to add ascorbic acid					
	Na ₂ S ₂ O ₃	-	-			*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet			
	Zn Aceta	-	-						
	HCl	*	*	<u>4111010</u>	<u>9/12</u>				

Yes = All samples OK
No = Samples were preserved at lab as listed
PM OK to Adjust: _____

Bottle lot numbers: 082911-1ET, 090511-1JT, chist covered, BDB26114A
Other Comments: _____

PC Secondary Review: C 10/20/11 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter
H:\SMODOCS\Cooler Receipt 3.doc

Cooler Receipt And Preservat

R1105804

Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa



Project/Client Davis Howland - E+E Folder Number _____

Cooler received on 10/19/11 by: DLW **COURIER:** CAS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles? YES NO N/A
5. Were ~~ice~~ or Ice packs present? YES NO
6. Where did the bottles originate? CAS/ROC, CLIENT
7. Temperature of cooler(s) upon receipt: 2.4 1.5^c _____

Is the temperature within 0° - 6° C?: Yes Yes Yes Yes Yes

If No, Explain Below No No No No No

Date/Time Temperatures Taken: 10/19/11/1648

Thermometer ID: IR GUN#3 / IR GUN#4 Reading From: Temp Blank / Sample Bottle ^{DLW} _{10/19/11}

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: _____

PC Secondary Review: [Signature]

Cooler Breakdown: Date: 10/20/11 Time: 1105 by: AKH

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated (N/A)

Explain any discrepancies: _____

pH	Reagent	YES NO		Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na ₂ S ₂ O ₃	-	-			*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet			
	Zn Aceta	-	-						
	HCl	*	*	4111010	9/12				

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: covered by label, BDB26114A, 090511-1JJ,
Other Comments: _____

PC Secondary Review: [Signature]

*significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter



CHAIN OF CUSTODY/LABORATORY ANALYSIS REQUEST FORM

1565 Jefferson Rd., Bldg. 300, Rochester, NY 14623 | 585.288.5380 | 800.695.7222 | 585.288.8475 (fax) PAGE 1 OF 1

Project Name: **Davis Howland**
Project Number: **002700-PC14-02**
Report CC

Project Manager: **Mike Alois**
Company/Address: **Ecology & Environment, Inc.**
368 Pleasantview Dr.
Canastota NY

Phone #: **716 684-8060**
E-mail: **716 684-8044**

Sampler's Signature: *[Signature]*
Sampler's Printed Name: **Lawrence Reed**

CLIENT SAMPLE ID	FOR OFFICE USE ONLY LAB ID	SAMPLING DATE	SAMPLING TIME	MATRIX
MW-3R		10/20/11	11:43	G-W
MW-2R 3S		10/20/11	12:25	G-W
MW-16R		10/20/11	15:15	G-W
MW-15R		10/20/11	16:25	G-W
MW-15RQ		10/20/11	16:30	G-W
TB102011003		mb11/11	-	G-W

PRESERVATIVE	NUMBER OF CONTAINERS	GCMS VOAS		GCMS SVOAS		PESTICIDES		PCBS		METALS, TOTAL		METALS, DISSOLVED		REMARKS/ ALTERNATE DESCRIPTION
		8260	624	8270	625	8081	608	8021	601/602	8082	608	(List in comments below)	(List in comments below)	
D	1			3										
				3										
				3										
				3										
				3										
				3										

Special Instructions/Comments: **Metals**

TURNAROUND REQUIREMENTS (SURCHARGES APPLY)
 1 day 2 day 3 day
 4 day 5 day
 Standard

REQUESTED REPORT DATE

RECEIVED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 5:00**

RECEIVED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 17:00**

ANALYSIS REQUESTED (Include Method Number and Container Preservative)

PO #:
 BILL TO:
 INVOICE INFORMATION

REPORT REQUIREMENTS
 I. Results Only
 II. Results + QC Summaries (LCS, DUP, MS/MSD as required)
 III. Results + QC and Calibration Summaries
 IV. Data Validation Report with Raw Data

Edata Yes

RELINQUISHED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 5:00**

RECEIVED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 17:00**

See QAPP

STATE WHERE SAMPLES WERE COLLECTED:

RELINQUISHED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 5:00**

RECEIVED BY: *[Signature]*
 Signature: *[Signature]*
 Printed Name: **Lawrence Reed**
 Firm: **Ecology & Environment, Inc.**
 Date/Time: **10/20/11 17:00**

R1105804

Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa



Cooler Receipt And Preservat

R1105804

Ecology And Environment, Incorporated
Davis Howland Oil Company Site - Semiannual Wa

Project/Client E+E - Dav's Howland Folder Number



Cooler received on 10/20/11 by: DW COURIER: CAS UPS FEDEX VELOCITY CLIENT

- Were custody seals on outside of cooler? YES NO
 - Were custody papers properly filled out (ink, signed, etc.)? YES NO
 - Did all bottles arrive in good condition (unbroken)? YES NO
 - Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles? YES NO N/A
 - Were ~~ice~~ or Ice packs present? YES NO
 - Where did the bottles originate? CAS/ROC, CLIENT
 - Temperature of cooler(s) upon receipt: 6.9° 7.8°
- Is the temperature within 0° - 6° C?: Yes Yes Yes Yes Yes
- If No, Explain Below No No No No No

Date/Time Temperatures Taken: 10/20/11 / 1715

Thermometer ID: IR GUN#3 / IR ~~GUN#4~~ Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: C 10/21/11
PC Secondary Review: C

Cooler Breakdown: Date: 10/21/11 Time: 1157 by: JH

- Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
- Did all bottle labels and tags agree with custody papers? YES NO
- Were correct containers used for the tests indicated? YES NO
- Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies: _____

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na ₂ S ₂ O ₃	-	-			*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet			
	Zn Aceta	-	-						
	HCl	*	*	<u>411010</u>	<u>9/12</u>				

Yes = All samples OK

No = Samples were preserved at lab as listed

PM OK to Adjust: _____

Bottle lot numbers: BDBZ414A / 090511-1J

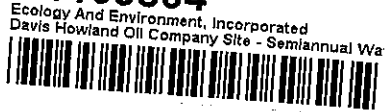
Other Comments:

*No samples for location MW-2R but there is samples for MW-3S which isn't on the chain PC called Client, bottles are right not the COC.

PC Secondary Review: C 10/24/11 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

Cooler Receipt And Preservation

R1105804



Project/Client E+E Folder Number _____

Cooler received on 10/21/11 by: DLW COURIER: CAS UPS FEDEX VELOCITY CLIENT

1. Were custody seals on outside of cooler? YES NO
2. Were custody papers properly filled out (ink, signed, etc.)? YES NO
3. Did all bottles arrive in good condition (unbroken)? YES NO
4. Did VOA vials, Alkalinity, or Sulfide have significant* air bubbles? YES NO N/A
5. Were ~~Ice~~ or Ice packs present? YES NO
6. Where did the bottles originate? CAS/ROC, CLIENT
7. Temperature of cooler(s) upon receipt: 6.1° _____

Is the temperature within 0° - 6° C?: Yes Yes Yes Yes Yes

If No, Explain Below NO No No No No

Date/Time Temperatures Taken: 10/21/11/1239

Thermometer ID: IR GUN#3 / ~~IR GUN#4~~ Reading From: Temp Blank / Sample Bottle

If out of Temperature, note packing/ice condition, Client Approval to Run Samples: OK for historical client request 4 hr rule

PC Secondary Review: C/W 10/21/11

Cooler Breakdown: Date: 10/21/11 Time: 1340 by: BP

1. Were all bottle labels complete (i.e. analysis, preservation, etc.)? YES NO
2. Did all bottle labels and tags agree with custody papers? YES NO
3. Were correct containers used for the tests indicated? YES NO
4. Air Samples: Cassettes / Tubes Intact Canisters Pressurized Tedlar® Bags Inflated N/A

Explain any discrepancies: _____

pH	Reagent			Lot Received	Exp	Sample ID	Vol. Added	Lot Added	Final pH
		YES	NO						
≥12	NaOH								
≤2	HNO ₃								
≤2	H ₂ SO ₄								
<4	NaHSO ₄								
Residual Chlorine (-)	For TCN Phenol and 522			If present, contact PM to add ascorbic acid Or sodium sulfite (522)					
	Na ₂ S ₂ O ₃	-	-						
	Zn Aceta	-	-						
	HCl	*	*	<u>4110</u>	<u>9/12</u>				

Yes = All samples OK
 No = Samples were preserved at lab as listed
 PM OK to Adjust: _____

*Not to be tested before analysis - pH tested and recorded by VOAs or GenChem on a separate worksheet

Bottle lot numbers: B26114A, 090511-1JJ, 1-132-001
 Other Comments: _____

PC Secondary Review: C/W 10/21/11 *significant air bubbles: VOA > 5-6 mm : WC > 1 in. diameter

C

Data Usability Summary Report

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

The analytical data provided by the laboratory were reviewed for precision, accuracy, and completeness per NYSDEC Division of Environmental Remediation Guidance for the Development of DUSRs (June 1999). Specific criteria for QC limits were obtained from the project QAPP. Compliance with the project QA program is indicated on the in the checklist and tables. Any major or minor concerns affected data usability are summarized listed below. The checklist and tables also indicate whether data qualification is required and/or the type of qualifier assigned.

Reference:

ProjectID	Lab Work Order
Davis Howland Oil	1105804

Table 1 Sample Summary Tables from Electronic Data Deliverable

Work Order	Matrix	Sample ID	Lab ID	Sample Date	MS/MSD	ID Corrections
R1105804	Water	MW-12R	R1105804-001	10/18/2011		
R1105804	Water	MW-12S	R1105804-002	10/18/2011		
R1105804	Water	MW-14S	R1105804-003	10/18/2011		
R1105804	Water	MW-14R	R1105804-004	10/18/2011	Yes	
R1105804	Water	MW-2R	R1105804-005	10/18/2011		
R1105804	Water	MW-2S	R1105804-006	10/18/2011		
R1105804	Water	TB-10-18-11-001	R1105804-009	10/18/2011		
R1105804	Water	PW-1	R1105804-010	10/19/2011		
R1105804	Water	P-3	R1105804-011	10/19/2011		
R1105804	Water	P-2	R1105804-012	10/19/2011		
R1105804	Water	P-1	R1105804-013	10/19/2011		
R1105804	Water	MW-8R	R1105804-014	10/19/2011		
R1105804	Water	MW-13S	R1105804-015	10/19/2011		
R1105804	Water	MW-9S	R1105804-016	10/19/2011		
R1105804	Water	MW-5R	R1105804-017	10/19/2011		
R1105804	Water	TB-101911-002	R1105804-018	10/19/2011		
R1105804	Water	MW-3R	R1105804-019	10/19/2011		
R1105804	Water	MW-3S	R1105804-020	10/19/2011		
R1105804	Water	MW-16R	R1105804-021	10/19/2011		

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

R1105804	Water	MW-15R	R1105804-022	10/19/2011		
R1105804	Water	MW-15RQ	R1105804-023	10/19/2011		
R1105804	Water	TB102011003	R1105804-024	10/19/2011		
R1105804	Water	MW-1S	R1105804-025	10/21/2011		
R1105804	Water	MW-10R	R1105804-026	10/21/2011		
R1105804	Water	TB1024111004	R1105804-027	10/21/2011		

General Sample Information

Do Samples and Analyses on COC check against Lab Sample Tracking Form?	Yes
Did coolers arrive at lab between 2 and 6°C and in good condition as indicated on COC and Cooler Receipt Form?	No, the coolers associated with samples MW-3R, MW-3S, MW-16R, MW-15R, MW-15RQ, TB102011003, MW-1S, MW-10R, and TB102111004 were received with temperatures between 6.9 °C and 7.8 °C. The associated sample results were qualified as estimated quantities (J or UJ).
Frequency of Field QC Samples Correct? Field Duplicate - 1/20 samples Trip Blank - Every cooler with VOCs waters only Equipment Blank - 1/ set of samples per day?	Yes for trip blanks and field duplicates. No equipment blanks were collected.
All ASP Forms complete?	Yes
Case narrative present and complete?	Yes
Any holding time violations (See table below)?	Yes, all pH analyses exceeded holding times; all pH results were qualified as estimated quantities (J).

The following tables are presented at the end of this DUSR and provided summaries of results outside QC criteria.

- Method Blanks Results (Table 2)
- Surrogates Outside Limits (Table 3)
- MS/MSD Outside Limits (Table 4)
- LCS Outside Limits (Table 5)
- Re-analysis Results (Table 6)
- Field Duplicate Results (Table 7)

Go to [Tables List](#)

Volatile Organics and Semi-volatile Organics by GCMS

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

Description	Notes and Qualifiers
Any compounds present in method, trip and field blanks (see Table 2)?	No
For samples, if results are <5 times the blank or < 10 times blank for common laboratory contaminants then "U" flag data. Qualification also applies to TICs.	Not applicable
Surrogate for method blanks and LCS within limits?	Yes
Surrogate for samples and MS/MSD within limits? (See Table 3). All samples should be re-analyzed for VOCs? Samples should re-analyzed if >1 BN and/or > AP for BNAs is out. Matrix effects should be established.	Yes
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes
MS/MSD within QC criteria (see Table 4)? If out and LCS is compliant, then J flag positive data in original sample due to matrix?	No, 2-chloroethylvinylether had a 0% recovery in the MS and MSD and bromomethane had a high recovery in the MSD for sample MW-14R (VOC analysis) and benzidine had a 0% recovery in the MS and MSD and hexachlorocyclopentadiene had high recoveries in the MS and MSD for sample MW-14R (SVOC analysis).
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	No, benzidine had a 0% recovery in the LCS and LCSD for SVOC analysis on 10-24-2011, 10-26-2011, and 10-28-2011 and hexachloroethane had a low recovery in the LCSD on 10-28-11.
Do internal standards areas and retention time meet criteria? If not was sample re-analyzed to establish matrix (see Table 6)?	Internal standard information was not provided.
Is initial calibration for target compounds <15 %RSD or curve fit?	Initial calibration information was not provided.
Is continuing calibration for target compounds < 20.5%D.	Continuing calibration information was not provided.
Were any samples re-analyzed or diluted (see Table 6)? For any sample re-analysis and dilutions is only one reportable result flagged?	Yes, some dilutions were performed. Only one reportable result is provided.
For TICs are there any system related compounds that should not be reported?	TIC information was not provided.
Do field duplicate results show good precision for all compounds except TICs (see Table 7)?	Yes

Total Petroleum Hydrocarbons by GC	
Description	Notes and Qualifiers
Any compounds present in method and field blanks as noted on Table 2?	No.
For samples, if results are <5 times the blank then "U" flag data.	Not applicable.
Surrogate for method blanks and LCS within limits?	Not provided.
Surrogate for samples and MS/MSD within limits? (See Table 3). Matrix effects should be established.	Not provided.
Laboratory QC frequency one blank and LCS with each batch and one set of MS/MSD per 20 samples?	Yes

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

Total Petroleum Hydrocarbons by GC	
Description	Notes and Qualifiers
MS/MSD within QC criteria (see Table 4)? If out and LCS is compliant, then J flag positive data in original sample due to matrix?	Yes
LCS within QC criteria (see Table 5)? If out, and the recovery high with no positive values, then no data qualification is required.	Yes
Is initial calibration for target compounds <15 %RSD or curve fit?	Initial calibration information was not provided.
Is continuing calibration for target compounds < 15.5%D.	Continuing calibration information was not provided.
Were any samples re-analyzed or diluted (see Table 6)? For any sample re-analysis and dilutions is only one reportable result by flagged?	No
Spot check retention time windows.	Retention time information was not provided.
Do field duplicate results show good precision for all compounds (see Table 7)?	Yes

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

General Analytical Methods - pH	
Description	Notes and Qualifiers
All laboratory replicate results within QC limits?	Yes.
Do field duplicate results show good precision for all compounds (see Table 7)?	Yes.

Summary of Potential Impacts on Data Usability
Major Concerns
None
Minor Concerns
<p>The coolers associated with samples MW-3R, MW-3S, MW-16R, MW-15R, MW-15RQ, TB102011003, MW-1S, MW-10R, and TB102111004 were received above QC limits with temperatures between 6.9 °C and 7.8 °C. The associated sample results were qualified as estimated quantities (J or UJ).</p> <p>2-chloroethylvinylether had a 0% recovery in the VOC MS and MSD for sample MW-14R (the associated 2-chloroethylvinylether sample quantitation limit was qualified as estimated [UJ]) and bromomethane had a high recovery in the SVOC MSD for sample MW-14R (153% vs limits of 0% - 144%; no action was taken as bromomethane was not detected in this sample). Benzidine had a 0% recovery in the MS and MSD for sample MW-14R (the associated benzidine sample quantitation limit was qualified as an estimated quantity [UJ]) and hexachlorocyclopentadiene had high recoveries in the MS and MSD for sample MW-14R (82% and 85% vs the QA limits of 10% to 79%; no action was taken as hexachlorocyclopentadiene was not detected in sample MW-14R).</p> <p>Benzidine had a 0% recovery in the LCS and LCSD for SVOC analysis on 10-24-2011, 10-26-11, and 10-28-2011 (all benzidine sample quantitation limits were rejected [R]) and hexachloroethane had a low recovery in the LCSD on 10-28-11 (associated hexachloroethane sample quantitation limits were qualified as estimated [UJ]).</p>

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

Table 2 - List of Positive Results for Blank Samples

Method	Sample ID	Samp Type	Analyte	Result	Qual	Anal. Type	Units	MDL	PQL
N/A									

Table 2A - List of Samples Qualified for Method Blank Contamination

None

Table 2B - List of Samples Qualified for Field Blank Contamination

None

Table 3 - List of Samples with Surrogates outside Control Limits

None

Table 4 - List MS/MSD Recoveries and RPDs outside Control Limits

Sample ID	Analyte	Method	Rec.	Low Limit	High Limit	No. of Affected Samples	Samp Qual
MW-14R MS and MSD	2-Chloroethylvinylether	VOC	0% & 0%	14%	186%	1	UJ
MW-14R MSD	Bromomethane	SVOC	153%	0%	144%	1	None
MW-14R MS and MSD	Benzidine	SVOC	0% & 0%	10%	78%	1	R
MW-14R MS and MSD	Hexachlorocyclopentadiene	SVOC	82% & 85%	10%	79%	1	None

Table 5 - List LCS Recoveries outside Control Limits

Sample ID	Analyte	Method	Rec.	Low Limit	High Limit	No. of Affected Samples	Samp Qual
LCS and LCSD (10-24, 10-26, and 10-28-2011)	Benzidine	SVOC	0% & 0%	10%	78%	All	R
LCSD (10-28-11)	Hexachloroethane	SVOC	38%	40%	113%	MW-15, MW-10R	UJ

Data Usability Summary Report	Project: Davis Howland Oil Company
Date Completed: 02/13/2012	Completed by: Mark Woodke

Table 6 –Samples that were Reanalyzed

None

Table 7 – Summary of Field Duplicate Results

Sample IDs	Positive Analyte	Method	Results	RPD	Samp Qual
MW-15R and MW-15RQ	pH	SM4500	7.03 & 7.05	0.28%	None
MW-15R and MW-15RQ	Trichloroethene	601/602	2.2 & 1.9	14.6%	None
MW-15R and MW-15RQ	Vinyl Chloride	601/602	1.8 & 1.9	5.4%	None
MW-15R and MW-15RQ	cis-1,2-Dichloroethene	601/602	7.3 & 6.7	8.6%	None
MW-15R and MW-15RQ	None	625	NA	NA	NA
MW-15R and MW-15RQ	None	NY 310-13	NA	NA	NA

Key:

A = Analyte

NC = Not Calculated

ND = Not Detected

PQL = Practical Quantitation Limit

RPD = Relative Percent Difference

T = Tentatively Identified Compound

C

**County of Monroe Discharge
Permit 2010 – 2013**



ecology and environment engineering, p.c.

BUFFALO CORPORATE CENTER
368 Pleasant View Drive, Lancaster, New York 14086
Tel: 716/684-8060, Fax: 716/684-0844

April 21, 2010

Mr. Harry Rieter, Pretreatment Coordinator
County of Monroe
Department of Environmental Services - Industrial Waste Section
444 East Henrietta Road
Rochester, New York 14620

Re: Davis Howland Oil Company Site, 200 Anderson Avenue, Rochester, New York
NYSDEC Contract # D004181, Site # 8-28-088, Sewer Use Permit Renewal, 2010-2013

Dear Mr. Reiter:

Enclosed is the Sewer Use Permit Renewal application package (Sewer Permit # 864) prepared for the Davis Howland Oil Company Site, Site #8-28-088, 200 Anderson Avenue, Rochester, NY for the New York State Department of Environmental Conservation (NYSDEC). Ecology and Environment Engineering, P. C. (EEEEPC) will be performing the operations and maintenance (O&M) of the remedial treatment system for the next 36 months (May 2010 to April 2013). This renewal permit package intends to replace the current renewal permit obtained in 2007 by the New York State Department of Environmental Conservation approved for operation by the County of Monroe. Attached to this letter is the permit renewal application signed by Mr. William Welling, Project Manager for NYSDEC. Check #151612 from EEEPC for \$75 is also attached to cover the permit renewal fees for the period 2010-2013.

Also, as a part of the renewal permit package request, EEEPC has provided a copy of our current insurance coverages required by contract to NYSDEC to oversee the O&M per the renewal request. If you have any questions regarding the renewal package, please call me at 716-684-8060.

Very Truly Yours,

Michael A. Alois
Project Manager

cc: W. Welling, NYSDEC - Albany, NY w/attachments
M. Crawford, Popli Engineers - w/attachments
CTF- 002700.DC14.02.01.01

COUNTY OF MONROE
SEWER USE PERMIT RENEWAL

Firm Name: NYSDEC Div. of Env. Remed.
200 Anderson Avenue

Permit Number: 864
Fee: \$ 75.00
Expires: May 30, 2013

Mailing Addr: 625 Broadway, 12th Floor
Albany, NY 12233-7013

W/C Expire:
District No: 8575

Business Type: Groundwater Remediation

Has there been any revision to the plant sewer system or any change in industrial wastes discharged to the public sewer in the past twelve months

Yes: No: If yes, please explain in a separate letter.

Average monthly consumption for the past twelve (12) months:

Water Account No.(s) N/A (cu ft/gal) N/A

In consideration of the granting of this renewal permit the undersigned agrees to comply with all the requirements in the Initial Permit as listed under II.

Name of person to be contacted for inspection & sampling purposes:

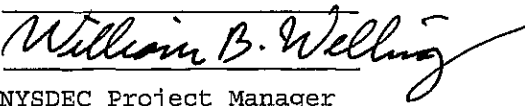
Type or Print: Michael Steffan Phone No: 716-684-8060
Ecology and Environment, Inc.

YOUR PERMIT MUST BE SIGNED AS FOLLOWS:

1. For a corporation: by a responsible corporate officer. A corporate officer means:
 - (a) A president, secretary, treasurer or vice - president of the corporation in charge of a principal business function, or any other person who performs similar policy - or decision - making functions for the corporation; or
 - (b) The manager of one or more manufacturing, production, or operation facilities employing more than 250 persons or having gross annual sales or expenditures exceeding \$25 million (in second - quarter 1980 dollars), if authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.
2. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively; or
3. By a duly authorized representative of the individual designated in items (1) or (2) above if:
 - (a) The authorization is made in writing by the individual described in items (1) or (2);
 - (b) The authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the Industrial Discharge originates such as the position of plant manager, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company; (A duly authorized representative may thus be either a named individual or any individual occupying named position); and
 - (c) The written authorization is submitted to this Department.

Print or Type: William B. Welling

Phone No: 518-402-9638

Signature: 
Title: NYSDEC Project Manager

Date: April 13, 2010

Renewal Approved by: _____

Issued this ___ day of _____ 20__.

Michael J. Garland, P.E.
Director of Environmental Services-PureWaters
Monroe County

OUR REF. NO.	YOUR INVOICE NO.	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	NET CHECK AMOUNT
307960	PERMIT RENEW	04/13/2010	\$75.00	\$75.00	\$0.00	\$75.00
TOTALS			\$75.00	\$75.00	\$0.00	\$75.00



ecology and environment, inc.

368 PLEASANTVIEW DRIVE
LANCASTER, NY 14086

M&T BANK
BUFFALO COMMERCIAL BANKING
10-4-220

DATE	CONTROL NO.	AMOUNT
04/16/2010	000151612	\$75.00

PAY
TO THE
ORDER OF

Seventy Five And 00/100 Dollars

COUNTY OF MONROE
PERMIT SECTION
DIRECTOR OF FINANCE
444 EAST HENRIETTA ROAD
ROCHESTER, NY 14620

Maria J. Kenney
AUTHORIZED SIGNATURE

⑈ 151612⑈ ⑆ 022000046⑆ 8891583224⑈

Security features. Details on back.

COUNTY OF MONROE
PERMIT SECTION
DIRECTOR OF FINANCE
444 EAST HENRIETTA ROAD
ROCHESTER, NY 14620

ACORD™ CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
07/31/09

PRODUCER Willis of New York, Inc. 344 Delaware Avenue Buffalo, NY 14202 716 856-1100	THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.												
INSURED Ecology and Environment Engineering, P.C. 368 Pleasant View Drive Lancaster, NY 14086	<table border="1" style="width: 100%;"> <tr> <th style="width: 70%;">INSURERS AFFORDING COVERAGE</th> <th style="width: 30%;">NAIC #</th> </tr> <tr> <td>INSURER A: Zurich American Insurance Co.</td> <td>16535</td> </tr> <tr> <td>INSURER B:</td> <td></td> </tr> <tr> <td>INSURER C:</td> <td></td> </tr> <tr> <td>INSURER D:</td> <td></td> </tr> <tr> <td>INSURER E:</td> <td></td> </tr> </table>	INSURERS AFFORDING COVERAGE	NAIC #	INSURER A: Zurich American Insurance Co.	16535	INSURER B:		INSURER C:		INSURER D:		INSURER E:	
INSURERS AFFORDING COVERAGE	NAIC #												
INSURER A: Zurich American Insurance Co.	16535												
INSURER B:													
INSURER C:													
INSURER D:													
INSURER E:													

COVERAGES

THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES, AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

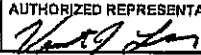
INSR ADD'L LTR	INSRD	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS
A		GENERAL LIABILITY <input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY <input type="checkbox"/> CLAIMS MADE <input checked="" type="checkbox"/> OCCUR GEN'L AGGREGATE LIMIT APPLIES PER: <input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input checked="" type="checkbox"/> LOC	GLO9324707	08/01/09	08/01/10	EACH OCCURRENCE \$3,000,000 DAMAGE TO RENTED PREMISES (EA OCCURRENCE) \$500,000 MED EXP (Any one person) \$50,000 PERSONAL & ADV INJURY \$3,000,000 GENERAL AGGREGATE \$3,000,000 PRODUCTS - COMP/OP AGG \$3,000,000
A	A	AUTOMOBILE LIABILITY <input checked="" type="checkbox"/> ANY AUTO <input type="checkbox"/> ALL OWNED AUTOS <input type="checkbox"/> SCHEDULED AUTOS <input checked="" type="checkbox"/> HIRED AUTOS <input checked="" type="checkbox"/> NON-OWNED AUTOS	BAP9324708 BAP9326373	08/01/09 08/01/09	08/01/10 08/01/10	COMBINED SINGLE LIMIT (Ea accident) \$2,000,000 BODILY INJURY (Per person) \$ BODILY INJURY (Per accident) \$ PROPERTY DAMAGE (Per accident) \$ GARAGE LIABILITY <input type="checkbox"/> ANY AUTO AUTO ONLY - EA ACCIDENT \$ OTHER THAN AUTO ONLY: EA ACC \$ AGG \$
A		EXCESS/UMBRELLA LIABILITY <input checked="" type="checkbox"/> OCCUR <input type="checkbox"/> CLAIMS MADE DEDUCTIBLE <input checked="" type="checkbox"/> RETENTION \$10000	SUO9549370	08/01/09	08/01/10	EACH OCCURRENCE \$15,000,000 AGGREGATE \$15,000,000 \$ \$ \$
A		WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? If yes, describe under SPECIAL PROVISIONS below	WC9324709	08/01/09	08/01/10	<input checked="" type="checkbox"/> WC STATU-TORY LIMITS <input type="checkbox"/> OTH-ER E.L. EACH ACCIDENT \$1,000,000 E.L. DISEASE - EA EMPLOYEE \$1,000,000 E.L. DISEASE - POLICY LIMIT \$1,000,000
A		OTHER Professional & Pollution Legal Liability	PEC654929800	08/01/09	08/01/10	\$10,000,000 Each Claim \$10,000,000 Aggregate

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES / EXCLUSIONS ADDED BY ENDORSEMENT / SPECIAL PROVISIONS

RE: NYSDEC Contract #D004442, Davis Howland Oil Company site, NYSDEC Site #8-28-088

CERTIFICATE HOLDER

CANCELLATION

County of Monroe: Department of Environmental Services 444 East Henrietta Road Rochester, NY 14620	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING INSURER WILL ENDEAVOR TO MAIL <u>30</u> DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT, BUT FAILURE TO DO SO SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE INSURER, ITS AGENTS OR REPRESENTATIVES. AUTHORIZED REPRESENTATIVE 
--	--

IMPORTANT

If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

DISCLAIMER

The Certificate of Insurance on the reverse side of this form does not constitute a contract between the issuing insurer(s), authorized representative or producer, and the certificate holder, nor does it affirmatively or negatively amend, extend or alter the coverage afforded by the policies listed thereon.



Department of Environmental Services

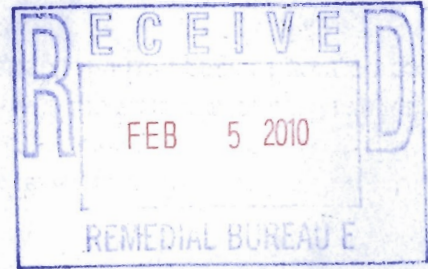
Monroe County, New York

Maggie Brooks
County Executive

Michael J. Garland, P.E.
Director

February 01, 2010

Mr. William Welling
NYSDEC Div. of Env. Remed.
625 Broadway, 12th Floor
Albany, NY 12233-7013



Re: Revised Sewer Use Permit Enclosure

Dear Mr. William Welling:

Enclosed is an updated copy of your Sewer Use Permit enclosure. The *Terms and Conditions* section of the permit has been revised for all industrial users. The subsections *Surcharge Concentrations* and *Discharge Limitations* have been added. This updated permit enclosure explains all of the wastewater limits covered by the Monroe County Sewer Use Law. Please review these updates and attach the first page of your current permit to this new enclosure. The old permit enclosure can be destroyed.

If you have any questions regarding the permit, please call Sean Keenan at (585) 753-7658 or Ken Smith at (585) 753-7666.

Sincerely,

Harry M. Reiter
Pretreatment Coordinator

COUNTY OF MONROE
SEWER USE PERMIT ENCLOSURE

NYSDEC Division of Environmental Remediation
625 Broadway, 12th Floor
Albany, NY 12233-7013

PERMIT NUMBER: 864
DISTRICT NUMBER: 8575

TYPE OF BUSINESS: Groundwater Remediation
LOCATION: Davis Howland Oil Co. Site – 200 Anderson Ave.
Rochester, NY

SAMPLE POINT: IWC-864.1 - Sample Port – Air Stripper

REQUIRED MONITORING & EFFLUENT LIMITS

SAMPLE POINT: IWC-864.1 - Sample Port – Air Stripper

SELF-MONITORING FREQUENCY: **Monthly**

SAMPLING PROTOCOL: Sampling and analysis shall be performed in accordance with the techniques prescribed in 40CFR part 136 and amendments thereto. In the absence of 40 CFR Part 136 testing methodology, a New York State Department of Health, approved method is acceptable. A grab sample, collected from the above noted sample point shall be analyzed for the following:

- Purgeable Halocarbons
- Purgeable Aromatics
- Acid Extractables
- Base Neutrals
- Total Petroleum Hydrocarbons
- pH
- Acetone (Monitor Only)

DISCHARGE LIMITATIONS: The summation of purgeable aromatics, purgeable halocarbons, acid extractables, and base neutrals greater than 10 µg/l shall not exceed 2.13 mg/l. Total petroleum hydrocarbons shall not exceed 100 mg/l. The pH shall be within 5.0-12.0 su.

**REQUIRED MONITORING & EFFLUENT LIMITS
(CONTINUED)**

SAMPLE POINT: IWC-864.1 - Sample Port – Air Stripper

SELF-MONITORING FREQUENCY: **Semi-Annual**

SAMPLING PROTOCOL: Sampling and analysis shall be performed in accordance with the techniques prescribed in 40CFR part 136 and amendments thereto. In the absence of 40 CFR Part 136 testing methodology, a New York State Department of Health, approved method is acceptable. A grab sample, collected from the above noted sample point shall be analyzed for the following:

Pesticides

DISCHARGE LIMITATIONS: The summation of pesticides, purgeable aromatics, purgeable halocarbons, acid extractables, and base neutrals greater than 10 µg/l shall not exceed 2.13 mg/l.

SPECIAL CONDITIONS:

1. All groundwater must be treated regardless of the influent concentrations.
2. Monthly flow summaries shall be submitted for billing purposes. It is imperative these summaries are submitted in a timely manner. If there is no discharge for a given month, then a letter must be submitted stating so.

1-19-2010

TERMS AND CONDITIONS

GENERAL REQUIREMENTS:

- A.** The permittee agrees to accept and abide by all provisions of the Sewer Use Law of Monroe County(MCSUL) and of all pertinent rules or regulations now in force or shall be adopted in the future.
- B.1** In addition to the parameters/limits outlined, the total facility discharge shall meet all other concentration values as described in Article II, Section 10e of the Monroe County Pure Waters Districts, Rules and Regulations-Sewer Use Law of the County of Monroe.
- B.2** Included in Article II, Section 10e, is the definition of “Normal Sewage”. “Normal Sewage” may be discharged to the sewer system in excess of the concentrations outlined in the Joint Rules and Regulations, however, the facility will be subject to the imposition of a sewer surcharge and possible self monitoring requirements as a result. Surcharging procedures are outlined in Article X of the MCSUL.
- B.3** Regulatory sampling for analytes not specified under “required monitoring” shall be conducted by the Industrial Waste Section at a minimum frequency of once every three (3) years.
- C.** This permit is not assignable or transferable. The permit is issued to a specific user and location.
- D.** Per Article VIII, Section 8.11 of the MCSUL, a violation by the permittee of the permit conditions may be cause for revocation or suspension of the permit after a Hearing by the Administrative Board, or if the violation is found to be within the emergency powers of the Director under Sections 4.5 or 5.5. The revocation is immediate upon receipt of notice to the Industrial User, however a Hearing shall be held as soon as possible.
- E.** As provided under Article VIII, Section 8.1, the Director and his duly authorized representatives shall gain entry on to private lands by permission or duly issued warrant for the purpose of inspection, observation, measurement sampling and testing in accordance with the provisions of this law and its implementing Rules and Regulations. The Director or his representatives shall not have authority to inquire into any processes used in any industrial operation beyond that information having a direct bearing on the kind and source of discharge to the sewers or the on-site facilities for waste treatment. While performing the necessary work on private lands, referred to above, the Director or his duly authorized representative shall observe all safety rules applicable to the premises as established by the owner and/or occupant.

SPECIAL CONDITION:

- A.** All required monitoring shall be analyzed by a New York State Department of Health certified laboratory. All sampling and analysis must be performed in accordance with Title 40 Code of Federal Regulations Part 136.
- B.** The pH range for this permit is 5.0 – 12.0 su. This range is specifically permitted by the Director as allowed under Article IV, Section 4.2 of the Monroe County Sewer Use Law. PH must be analyzed immediately.
- C.** The summation of all Total Toxic Organics(TTO) Compounds as defined in the Code of Federal Regulations (40 CFR part 433.11(e)) with detection levels above 10 ug/l shall not exceed 2.13 mg/l as imposed by the Director under Article IV, Section 4.3 of the Monroe County Sewer Use Law unless Federal limits are more stringent under which the Federal limits will apply.
- D.** Petroleum Oil and Grease shall not exceed 100 mg/l as imposed by the Director under Article IV, Section 4.3 of the Monroe County Sewer Use Law.
- E.** Discharges containing Phenolic compounds shall not exceed 2.13 mg/l as imposed by the Director under Article IV, Section 4.3 of the Monroe County Sewer Use Law unless otherwise specified in the permit. These limits are applicable unless Federal limits are more stringent under which Federal limits will apply.

SURCHARGE CONCENTRATIONS:

Concentration and/or characteristics of normal sewage:

“Normal Sewage” shall mean sewage, industrial wastes or other wastes, which when analyzed, show concentration values with the following characteristics based on daily maximum limits:

- a. B. O. D. 300 mg/l
- b. Total Suspended Solids 300 mg/l
- c. Total Phosphorus, as P 10 mg/l

Annual average concentrations above normal sewage are subject to surcharge as defined in Article X of the sewer use law.

DISCHARGE LIMITATIONS (SEWER USE LIMITS)

Permissible concentrations of toxic substances and/or substances the Department wishes to control:

The concentration in sewage of any of the following toxic substances and/or substances the Department wishes to control shall not exceed the concentration limits specified when discharged into the County Sewer System; metal pollutants are expressed as total metals in mg/l (ppm): the following pollutant limits are based on daily maximum values:

- a. Antimony (Sb) 1.0 mg/l
- b. Arsenic (As) 0.5 mg/l
- c. Barium (Ba) 2.0 mg/l
- d. Beryllium (Be) 5.0 mg/l
- e. Cadmium (Cd) 1.0 mg/l
- f. Chromium (Cr) 3.0 mg/l
- g. Copper (Cu) 3.0 mg/l
- h. Cyanide (CN) 1.0 mg/l
- i. Iron (Fe) 5.0 mg/l
- j. Lead (Pb) 1.0 mg/l
- k. Manganese (Mn) 5.0 mg/l
- l. Mercury (Hg) 0.05 mg/l
- m. Nickel (Ni) 3.0 mg/l
- n. Selenium (Se) 2.0 mg/l
- o. Silver (Ag) 2.0 mg/l
- p. Thallium (Tl) 1.0 mg/l
- q. Zinc (Zn) 5.0 mg/l

REPORTING REQUIREMENTS:

- A. Per the requirements of 40 CFR, Part 403.5, Significant Industrial Users must submit Periodic Reports on Continued Compliance to the Control Authority on a biannual (2/yr) basis. Deadline dates of submission for these reports will be August 15 and February 15, respectively.
- B. Discharge monitoring reports shall be submitted to the Control Authority upon receipt from the permittee’s testing laboratory.
- C. Any Industrial User subject to the reporting requirements of the General Pretreatment Regulations shall maintain records of all information resulting from any monitoring activities required by 403.12 for a minimum of three (3) years. These records shall be available for inspection and copying by the Control Authority. This period of retention shall be extended during the course of any unresolved litigation regarding the discharge of pollutants by the Industrial User or the operation of the POTW Pretreatment Program or when requested by the Director or the Regional Administrator.

NOTIFICATION REQUIREMENTS:

- A.** Pursuant to Article VIII, Section 8.4K, the permittee shall notify the Department within 24 hours of becoming aware that discharge monitoring is in violation of any permit limit. This notification shall be directed to the Industrial Waste Section at 585-753-7600 Option 4. The User shall also repeat sampling and analysis for the analyte in non-compliance and submit the results of the repeat analysis to Monroe County within 30 days after becoming aware of the violation.
- B.** Notify the Director in writing when considering a revision to the plant sewer system or any change in industrial waste discharges to the public sewers. The later encompasses either an increase or decrease in average daily volume or strength of waste or new wastes.
- C.** Notify the Director immediately of any accident, negligence, breakdown of pretreatment equipment or other occurrence that occasions discharge to the public sewer of any waste or process waters not covered by this permit.

SLUG CONTROL

An Industrial User shall be required to report any/all slug discharges to the Monroe County sewer system by calling 585-753-7600 option 4. For the purpose of this permit enclosure, a slug discharge shall be identified as any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge. Following a review process, the Control Authority (Monroe County) shall determine the applicability of a facility slug control plan. If the Control Authority decides that a slug control plan is needed, the plan shall contain, at a minimum, the following elements:

- 1. Description of discharge practices, including non-routine batch discharges.
- 2. Description of stored chemicals.
- 3. Procedures for immediately notifying the Control Authority of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5 (b), with procedures for follow up written notification within five (5) days.
- 4. If necessary, procedures to prevent adverse impact from accidental spills, including, but not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents) and/or measures and equipment for emergency purposes.

SNC DEFINITION:

In accordance with 40 CFR 403.8 (f) (vii), an Industrial User is in significant noncompliance (SNC) if its violations meet one or more of the following criteria:

- A.** Chronic violations of wastewater discharge limits – defined as those which 66% or more of all the measurements taken during a six-month period exceed (by any magnitude) the daily maximum limit or the average limit for the same pollutant parameter. This criteria does NOT apply to the following Monroe County surchargeable parameters: Biochemical Oxygen Demand, Total Suspended Solids, Chlorine Demand and Total Phosphorus (ref. Article X – Monroe County Sewer Use Law).
- B.** Technical review criteria (TRC) violations – defined as those in which 33% or more of all the measurements for each pollutant parameter taken during a six month period equal or exceed the product of the daily maximum limit or the average limit times the applicable TRC. This criteria does NOT apply to the following Monroe County surchargeable parameters: Biochemical Oxygen Demand, Total Suspended Solids, Chlorine Demand and Total Phosphorus (ref. Article X – Monroe County Sewer Use Law).
- C.** Any other violation of a pretreatment effluent limit (daily maximum or longer-term average) that the Control Authority determines has caused, alone or in combination with other discharges, interference or pass-through (including endangering the health or POTW personnel or the general public).
- D.** Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or the environment or has resulted in the POTW's exercise of its emergency authority under paragraph (t)(1)(vi)(8) of 40 CFR part 403 to prevent such a discharge.
- E.** Failure to meet, within 90 days after the scheduled date, a compliance schedule milestone contained in a local control mechanism or enforcement order, for starting construction, completing construction or attaining final compliance.
- F.** Failure to provide, within 30 days after the due date, required reports such as BMRs, 90 day compliance reports, period reports on continued compliance.
- G.** Failure to accurately report noncompliance.
- H.** Any other violation or group of violations that the Control Authority determines will adversely affect the operation and implementation of the local Pretreatment Program.

PENALTIES

Should the facility be considered in Significant Non-Compliance (SNC), based on the above mentioned criteria, the minimum enforcement response by Monroe County will be the publication of the company name in the Gannett Rochester newspaper. The company will be published as an Industrial User in Significant Non-Compliance (SNC). Fines and criminal penalties may follow this publication (ref. Article XII – Monroe County Sewer Use Law).

Nothing in this permit shall be construed to relieve the permittees from civil/criminal penalties for noncompliance under Article XII, Section 12.1(D) of the Sewer Use Law of the County of Monroe. Article XII, Section 12.1(D) provides that any person who violates a permit condition is subject to a civil penalty not to exceed \$10,000 for any one case and an additional penalty not to exceed \$10,000 for each day of continued violation.

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2009 Fact Sheet

FACT SHEET

DAVIS HOWLAND OIL CORPORATION

Update of Cleanup Activities at the
Davis Howland Oil Corporation Site
200 Anderson Avenue, Rochester, NY

December 2009

NEW YORK STATE DEPARTMENT OF



ENVIRONMENTAL CONSERVATION

Dear Interested Citizen:

This Fact Sheet is to inform you about the ongoing activities at the Davis Howland site. If you have any questions or would like more information, please do not hesitate to contact:

Mr. William Welling
NYSDEC Project Manager
625 Broadway, 12th Floor
Albany, N.Y. 12233-7013
(518) 402-9638

or

Lisa Silvestri
Citizen Participation Specialist
NYSDEC - Region 8 Avon
6274 East Avon-Lima Road
Avon, NY 14414-9519
(585) 226-5326

For site related health questions, please contact the following New York State Department of Health (NYSDOH) representative:

Mr. Joseph Crua
Public Health Specialist
NYSDOH
Flanigan Square, 547 River Street
Troy, NY 12180
(518) 402-7860 or
(800) 458-1158, ext. 27860

Introduction:

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) want to update you on the cleanup at the Davis Howland Oil Corporation (Davis Howland) inactive hazardous waste disposal site. The NYSDEC is cleaning up this site as part of its State Superfund Program to investigate and remediate inactive hazardous waste disposal sites throughout New York State. The State implemented the cleanup plan using money from the 1986 Environmental Quality Bond Act.

The Davis Howland Site (site) is located at 200 Anderson Avenue in the City of Rochester (see map below). The cleanup was necessary to address groundwater and soils beneath the site that has been contaminated with chemicals known as volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs). VOCs are chemicals that can evaporate easily and contain carbon, such as ingredients in paint thinners and some solvents. SVOCs are less volatile than VOCs, and include some of the chemicals found in petroleum fuels, coal products, and tar. The highest contaminant concentrations in soil and groundwater were in the immediate vicinity of the building. Although residents in the area are served with municipal water, cleanup is proceeding to prevent the potential exposure to chemicals in the soil and groundwater.



Davis Howland Site Location Map
200 Anderson Avenue, City of Rochester, County of Monroe

Operation and Maintenance:

As part of current activities at the site, NYSDEC representatives continue to operate and maintain a combined groundwater and soil treatment system that collects and treats contaminated groundwater and soil vapors (air trapped in soil and rock fractures) below the former spill area. The treatment system consists of 47 air injection points (to inject clean air into the ground), 6 soil vapor extraction points (to collect/remove contaminated air from underground), 3 groundwater extraction wells (to collect/remove contaminated groundwater), and 2 bedrock groundwater trench recovery wells (to collect/remove contaminated groundwater).

The remedial treatment system became operational in August 2002 and was monitored and maintained through February 2003 by a remedial construction contractor, the Tyree Organization (Tyree), under NYSDEC supervision. During this time, the treatment system was determined to be satisfactorily removing contamination from the groundwater and soil. In April 2003, the construction contract between the NYSDEC and Tyree was determined to be substantially complete. NYSDEC then contracted the engineering services of Ecology & Environment Engineers (E&E) from Buffalo to restart and operate the treatment system. E&E subsequently subcontracted Niagara Environmental Dynamics, Inc. (NEDI), to restart the treatment system in May 2003 and perform future operation, monitoring, and maintenance responsibilities. Currently, treated water is being sampled, monitored and discharged under permit to the existing Monroe County Department of Environmental Services sewer line along Anderson Avenue. Treated air is being sampled, monitored and discharged in accordance with NYS guidelines. Operation, monitoring, and maintenance will be performed on the system until such time it is determined that continued operation would not result in further significant groundwater and soil contaminant removal.

What Happens Next:

E&E and NEDI are currently under contract to operate and maintain the treatment system until April 2004. Groundwater contaminant levels will continue to be monitored and reported to the NYSDEC and NYSDOH during that time frame. Groundwater samples will be collected periodically to determine contaminant level trends, which are anticipated to decrease over time. Once all of the data have been collected and reviewed, the NYSDEC will evaluate the feasibility to continue operating the treatment system.

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For More Information:

The Rochester Public Library (Rundell Branch) has been designated as the local document repository in order to provide you with access to project information. Documents regarding past site investigations, construction, and O&M activities at the Davis Howland site are available for review at:

Rochester Public Library
Rundell Branch
115 South Avenue
Rochester, NY 14604-1896
Hours: Monday 9am-9pm
Tuesday & Wednesday 9am-6pm
Thursday 9am-9pm
Friday 9am-6pm
(585) 428-7300

and at:

NYSDEC's Region 8 Avon Office
6274 East Avon-Lima Road
Avon, NY 14414
Hours: Monday - Friday 8:30am - 4:45pm
For an appointment, contact Lisa Silvestri at
(585) 226-5326.

The NYSDEC and the NYSDOH will keep you informed throughout the remedial program. Your understanding and involvement in this project will help to ensure an effective remedial program. You are encouraged to contact the people listed on the front of this fact sheet at any time with questions, comments or concerns. Because our mailing list includes property owners of businesses and apartments, we encourage you and the building owners to share this fact sheet with your neighbors and tenants, and/or post this fact sheet in a prominent area of your building for tenants, employees, or visitors to view.