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March 30, 2005

IOL Site: 860265/ 88001943

Manitoba Conservation
Environmental Operations
Suite 160 - 123 Main Street
Winnipeg, Manitoba
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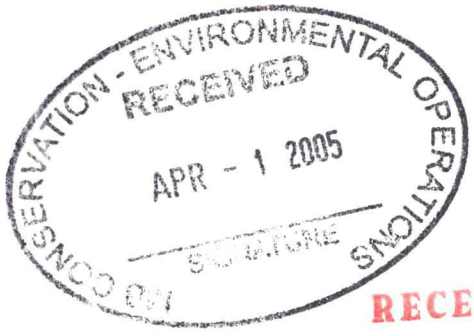

RECEIVED APR 0 6 2005

Att: Mr. Randy Webber

Re: Former Imperial Oil Limited Service Station Red River Esso
287 Main Street, Selkirk, Manitoba
Underground Storage Tank Removal and Intrusive Assessment Report

Enclosed is one copy of the following report regarding the environmental investigation completed at the above noted property by Imperial Oil Limited's (IOL) consultant AMEC Earth & Environmental:

- *Environmental Assessment Program, Former IOL Automotive Retail Station, 287 Main Street, Selkirk, Manitoba by* AMEC Earth & Environmental dated October 22, 2004.

An excerpt report pertaining to the City of Selkirk property has been prepared for the above noted report. A copy of the off site excerpt report is not enclosed as all information is contained in the above noted report. Manitoba Conservation will be copied on the correspondence to the City of Selkirk c/o Steve Fedak.

Also included is one copy of following reports from previous environmental investigations and remedial excavations that were completed on the site:

- *Phase II Environmental Assessment, Red River Esso Service Station, Site #860265, 287 Main Street, Selkirk, Manitoba* by Aqua Terre Solutions Inc. dated October 15, 2003
- Intrusive Investigation report by O'Connor Associates Environmental Inc. dated January 3, 1989
- Intrusive Investigation report by O'Connor Associates Environmental Inc. dated December 22, 1988

The site soil has been characterized as fine-grained for surface and subsoils for risk assessment purposes. The apparent direction of groundwater flow is to the south. The site is considered a commercial location. The vapour inhalation and eco-contact pathways have been selected for reference purposes at this site.

Laboratory analyses of soil samples taken from boreholes, test pits and monitoring wells installed on-site indicate some residual hydrocarbon constituents exist in the soil at concentrations exceeding the reference criteria for the site. This condition appears to be contained to site.

Laboratory analyses of shallow groundwater samples taken from boreholes installed on-site did not identify residual hydrocarbon constituents at concentrations exceeding the reference criteria for the site. Liquid hydrocarbon product was not observed in any of the monitoring wells.

This site will now be placed into long term management.

If you have any further questions please call me at (403) 237-2852.

Yours truly,

Andrew Hodgetts

CC (w/o enclosures):

- Salem Rizvi - Devon Estates Ltd. Calgary Alberta

FINAL
ENVIRONMENTAL ASSESSMENT PROGRAM

FORMER IOL AUTOMOTIVE RETAIL STATION
287 MAIN STREET
SELKIRK, MANITOBA
860265/88001943

Submitted to:
IMPERIAL OIL LIMITED
237 Fourth Avenue SW
PO Box 2480, Station 'M'
Calgary, Alberta
T2P 0H6

Attention: Mr. Andrew Hodgetts
Site Remediation Specialist

Submitted by:

AMEC Earth & Environmental,
a division of AMEC Americas Limited
440 Dovercourt Drive
Winnipeg, Manitoba
R3Y 1N4

Prepared by: Michael Bertram, P. Eng.
Reviewed by: Mark Humbert, P. Eng.

22 October 2004

AMEC File no. WX05876

Dist: (3) Addressee
(1) AMEC, Winnipeg

EXECUTIVE SUMMARY

Former IOL Automotive Retail Station, 287 Main Street (860265/88001943), Selkirk, Manitoba

Type of Facility	Vacant – former retail fuel and car wash, with propane tank and dispenser
Date of preliminary monitoring	30 June 2004
Date of UST pull observance and excavation sampling	12 – 13 July 2004
Date of test pitting	16 July 2004
Date of intrusive investigation soil sampling	04 – 06 August 2004
Date of monitoring	30 August 2004
Number of test holes drilled	10
Number of wells installed in boreholes	10
Number of test pits excavated	6
Type of OVM meter	Gastech 1238 ME
Land use adjacent to Site	West: Public lane followed by residences; North: Rosser Avenue followed by partially occupied strip mall; South: Pacific Avenue followed by Co-op Gas Bar; and East: Main Street followed by mixed commercial / multi-family residential.
Aquifer usage within 100 m radius	No current use – potential for use unlikely due to water quality and presence of municipal water supply system.

IOL Former Automotive Retail Station, 287 Main Street (860265/88001943), Selkirk, Manitoba

	04-01	04-02	04-03	04-04	04-05	04-06	04-07	04-08	04-09	04-10	Comments
Well Installed	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Depth of Test Hole	7.6 m	6.1 m	6.1 m	6.9 m	6.1 m	7.6 m	5.5 m	6.1 m	6.1 m	6.1 m	
Soil type from grade to between 0.9 and 1.5 m	granular fill	clay fill	clay fill	granular fill	granular fill	granular fill	granular fill	granular fill	granular fill	clay fill	Asphalt and/or concrete on grade at 04-03, 04-05, and 04-09
Soil type to between 3.4 and 5.2 m	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	
Soil type up to 7.6 m	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	Clay Till	
Refusal/ Bedrock	7.6 m	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Dominant soil type	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	Clay	
Homogeneous	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	
Depth to water	1.78	1.36	1.71	0.64	2.68	2.42	1.18	3.51	2.76	1.34	Water levels measured on 30 August 2004
Screen interval of well	6.7-7.6 m	3.1-6.1 m	3.1-6.1 m	6.0-6.9 m	3.1-6.1 m	6.7-7.6 m	4.5-5.5 m	3.1-6.1 m	3.1-6.1 m	3.1-6.1 m	
Exceeds referenced soil guideline	No	No	No	No	No	No	No	No	No	No	
Exceeds referenced water criteria	No	No	No	No	No	No	No	No	No	No	
Vapours in adjacent manholes/sewers	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Maximum depth of soil hydrocarbon impact in excess of applicable guideline	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Vertical soil delineation achieved	No	NA	NA	NA	NA	NA	NA	NA	NA	NA	

IOL Former Automotive Retail Station, 287 Main Street (860265/88001943), Selkirk, Manitoba

	TP01	TP02	TP03	TP04	TP05	TP06	Comments
Well Installed	No	No	No	No	No	No	
Depth of Test Pit	3.1 m	3.7 m	3.4 m	3.1 m	3.1 m	3.7 m	
Soil type from grade to between 0.6 and 2.4 m	Granular Fill	Granular, clay, and silt fill	Granular, clay, and silt fill	Granular, clay, and silt fill	Granular and clay fill	Granular and clay fill	Asphalt on grade at TP06
Soil type up to 3.7 m	Clay	Clay	Clay	Clay	Clay	Clay	
Refusal/ bedrock	NA	NA	NA	NA	NA	NA	
Dominant soil type	Clay	Clay	Clay	Clay	Clay	Clay	
Homogeneous	Yes	Yes	Yes	Yes	Yes	Yes	
Depth to water	NA	NA	NA	NA	NA	NA	
Screen interval of well	NA	NA	NA	NA	NA	NA	
Exceeds referenced soil guideline	No	Yes	No	No	No	Yes	
Exceeds referenced water criteria	NA	NA	NA	NA	NA	NA	
Vapours in adjacent manholes/sewers	NA	NA	NA	NA	NA	NA	
Maximum depth of soil hydrocarbon impact in excess of applicable guideline	NA	3.7 m	NA	NA	NA	>3.7 m	
Vertical soil delineation achieved	NA	Yes	NA	NA	NA	No	

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1.0 INTRODUCTION

AMEC Earth & Environmental, a division of AMEC Americas Limited (AMEC) of Winnipeg, Manitoba was retained by Mr. Andrew Hodgetts of Imperial Oil Limited (IOL) to conduct an environmental assessment of a former automotive retail property located at 287 Main Street in Selkirk, Manitoba. The IOL property is subsequently referred to as the 'Site' in this report. A topographic representation of Selkirk and Surrounding area is shown on Figure 1. The location of the Site within the City of Selkirk is shown on Figure 2. The Site and adjacent land use properties are shown on Figure 3.

This report summarizes the results of the assessment conducted at the Site by AMEC from June to August 2004.

2.0 SCOPE

The scope of work included the supervision and project coordination of the environmental assessment conducted at the Site, and included the following tasks:

- Confirm the Site boundaries by legal survey and develop a Site plan that shows the property boundary and location of structures.
- Conduct a preliminary monitoring of existing groundwater wells to aid in refining the assessment program. Submit groundwater samples for petroleum hydrocarbon (PHC) analysis
- Observe and photograph removal and record ultimate disposal of underground storage tanks (USTs). Obtain soil samples from sidewalls and base of the UST excavations; submit soil samples for PHC analysis.
- Complete test pitting with backhoe in areas of suspected impact and submit soil samples for PHC analysis.
- Conduct an intrusive assessment to delineate on-site impacted areas identified during previous phases of work. Complete site sensitivity assessment. Collect soil and groundwater samples and submit for analysis of PHC, metals, glycol, and/or PAH's based on potential impact sources.
    - Complete assessment report summarizing the findings of the field programs, site sensitivity assessment, laboratory analysis and the soil and groundwater analytical data in comparison to the applicable hydrocarbon guideline.

There were no significant derivations from the scope of work during this project.

3.0 SITE DESCRIPTION AND BACKGROUND

3.1 GENERAL DESCRIPTION

Note that all directions stated in this report are in relation to "Report North" as shown on Figure 4. Report North is parallel to Main Street, approximately 45° clockwise from True North.

The Site is located on the western side of Main Street in the City of Selkirk, as shown on Figure 2. The Site was developed with a kiosk/convenience store and carwash buildings, pump islands and canopy, a propane dispensing unit and tank, and USTs. The Site ground surface consisted of asphalt paving. Concrete aprons were present around the pump islands and above the UST nest.

The four fibreglass (FRP) USTs were located south of the pump islands, which were located east of the kiosk. Each of the USTs stored gasoline, however diesel fuel may also have been historically dispensed at the Site. The vents for the USTs were located adjacent to the kiosk on the western portion of the Site.

At the time of the UST removal all utilities to the Site had been disconnected.

3.2 BACKGROUND

The earliest information regarding the Site obtained by AMEC was an air photo for 1966, in which the property appeared to house two single-family residential developments. The Site has been occupied by a service station with retail petroleum facilities since approximately 1972. IOL's purchase of the Site appears to have been conducted in approximately 1976. Based on drawings and reports obtained from IOL, the Site configuration in 1988 consisted of:

- a three bay service station (historical service station) centralized near the western boundary of the Site;
- five 5000 gallon (22750 L) steel USTs (historical UST nest) centralized in the southern portion, and
- two pump islands (historical pump islands) in the central portion of the Site.

A 500 gallon (2275 L) waste oil tank was also reported to be immediately north of the historical service station's footprint. The location of the historical structures and facilities are shown on Figure 4.

In May 1989, the five steel USTs were removed and the four 5000 gallon (22750 L) fibreglass USTs were installed immediately northeast of the previous USTs. On or about 1994, the service station was removed and the kiosk/convenience store was erected within the footprints of the former structure. As well, the newer pump islands and canopy were installed, the carwash was erected on the southern portion of the Site, and the residential property west of the car wash

location was purchased and redeveloped into the car wash entrance. The configuration of the newer developments, prior to demolition, are shown on Figure 4.

During the course of the assessment and decommissioning activities in 2004, all structures at the Site were decommissioned and removed. All of the former retail petroleum handling and storage facilities were likewise removed.

3.3 SITE TOPOGRAPHY AND DRAINAGE

The Site was relatively flat lying with drainage expected to be directed towards catch basins located onsite and the outlying streets.

3.4 SURFACE WATER

The nearest surface water body is the Red River, located approximately 340 m northeast of the Site.

3.5 DRINKING WATER SUPPLY

According to the City of Selkirk, water in the Selkirk area is provided by the treated municipal system that draws its water from four municipal wells located approximately 1 km north and east of the Site. According to the water well records, the municipal well depths range from 26 m to 83 m below grade and draw water from the Carbonate Aquifer located in the limestone bedrock.

Provincial well records indicate that there are approximately 20 domestic groundwater wells located within the City of Selkirk. The nearest well identified appears to be approximately 350 m upgradient of the Site, based on the shallow groundwater flow direction. The City of Selkirk is not aware of any properties within city limits that are not connected to the municipal supply. Given that the City has a domestic water supply, it is doubtful that the groundwater wells identified are presently in use for domestic purposes.

3.6 SITE PREVIOUS INVESTIGATIONS

Previous investigations at the Site have been reported in the following:

- 1988, August through October – O'Connor Associates Environmental Inc. (O'Connor) monitoring of UST nest piezometers and VES.
- 1988, November – O'Connor intrusive assessment, included eleven (11) boreholes with monitor wells (BH1 to BH11).
- 1989, January - O'Connor eastern remedial trench installation, included six (6) piezometer (PZ12 to PZ17) and one (1) recovery well (RW1).
- 1989, February - O'Connor western remedial trench installation, included five (5) piezometer (PZ18 to PZ22) and one (1) recovery well (RW2).

- 1989, March through April – O'Connor monitoring of boreholes, trench and tank nest piezometers and multiple VES.
- 1989, May - O'Connor tank removal assessment, included eight (8) piezometer (PZ23 to PZ26, PZ28 to PZ31) installed in excavations (new and old tank nests) and at pump islands. VES headers attached to all piezometers.
- 1989, July through 1998, May – O'Connor monitoring of boreholes, trench and tank nest piezometers and multiple VES.
- 2003 – Aqua Terre Solutions Inc. (Aqua Terre) intrusive assessment, included seven (7) boreholes with monitor wells (MW32 to MW38).

The O'Connor monitoring reports indicate that 243 L of free product were manually bailed from various boreholes or piezometers between 1988 and 1998. In addition, the equivalent of 3573 L of free product were removed through vapour extraction. The groundwater gradient measured over the monitoring period was generally to the east or southeast.

4.0 INVESTIGATIVE METHODOLOGY

4.1 SURROUNDING LAND USE

A visual survey of the surrounding land uses was conducted during the course of AMEC's Site investigation. The purpose of the survey was to identify specific land uses (i.e. agricultural, residential, commercial or industrial) adjacent to the Site in order to assess potential sensitivities to soil and groundwater impacts. The surrounding land uses are detailed in Section 6.1 and are shown on Figure 3.

4.2 CONTAMINANTS OF CONCERN SELECTION

Based on past operations and storage practices conducted at the Site and adjoining properties, the following potential impact originating sources were identified and the respective contaminants of concern were selected for the assessment program.

- Historical and former USTs and pumps – The main operation of these facilities was the storage and dispensing of gasoline (and possibly diesel). The potential contaminants of concern associated with these facilities are PHCs (BTEX, F1 – F4) and lead (as the storage and handling of gasoline was conducted prior to 1989).
- Service station and waste oil UST - The main operation of these facilities was the servicing of automobiles and storage of waste fluids, including oil and coolant handling. The potential contaminants of concern associated with these facilities are PHCs (BTEX, F1 – F4), PAH's (indicator PAH's benzo(a)pyrene and naphthalene have been selected as a preliminary screen), glycol, and metals (arsenic, barium, chromium, copper, lead, and zinc selected based on content concentration in motor oil and toxicological properties).

- Car Wash - The main operation of this facility was the cleaning of automobiles, which may have resulted in the release of oil residue or sludge into the wash sump. The potential contaminants of concern associated with this facility are PHCs (BTEX, F1 – F4) and metals (arsenic, barium, chromium, copper, lead, and zinc selected based on content concentration in motor oil and toxicological properties).

4.3 HAZARD ASSESSMENT AND SERVICE LOCATIONS

AMEC was present for the safety kick-off meeting initiating the UST removal program (which included the test pitting), which was conducted by HAZCO Environmental Services Ltd (HAZCO) on 12 July 2004. As well, AMEC signed-off on the daily safe work permit for each day AMEC was present at the Site.

In accordance with IOL's Safety Program for Contractors, prior to the start of the intrusive investigation program, AMEC completed a hazard assessment, prepared an emergency action plan, and held a safety kick-off meeting. The IOL project manager, AMEC field staff and the drilling subcontractor were in attendance at the kick-off meeting, conducted 04 August 2004.

As part of the hazard assessment for the intrusive investigation, AMEC contacted the local utility service providers to identify and mark their respective underground utility locations. Manitoba Telecommunications System (MTS), Manitoba Hydro / Centra Gas, Shaw Cable and the City of Selkirk were contacted and conducted underground line locates prior to the start of the drilling program.

To discuss and identify project risks during the intrusive investigation, tailgate meetings were held, daily safe work permits were issued and planned job observations and last minute risk assessments were conducted.

4.4 LEGAL SITE SURVEY

AMEC contracted Pollock & Wright Land Surveyors (Pollock and Wright) to conduct a legal survey of the Site. The survey was conducted on 5 August 2004. A copy of the legal survey plan is included in Appendix A.

4.5 PRELIMINARY SITE MONITORING

On 30 June 2004, AMEC monitored and sampled each of the accessible monitoring wells previously installed at or near the Site. The monitoring program included the following (in order):

- Measurement of monitor well vapour concentration;
- Determination of presence and thickness of free product;
- Determination of groundwater level;
- Development and purging of the well;

- Measurement of groundwater vapour concentration; and
- Collection of groundwater samples for laboratory analysis.

Vapour concentrations were measured with a GasTech combustible vapour analyzer set in the no methane response mode and liquid levels were measured with an electronic interface probe. Sampling was conducted with a dedicated PVC bailer in accordance with standard monitoring and sampling procedures.

Groundwater samples were placed in clean certified bottles provided by the laboratory and stored in an insulated cooler while on Site and during transport to the laboratory. The field protocols and QA/QC procedures utilized by AMEC during the preliminary Site monitoring were in accordance with IOL standards and industry protocols.

4.6 UST REMOVAL PROGRAM

AMEC's involvement in the UST removal program occurred between 13 to 16 July 2004. AMEC conducted Site visits to witness the excavation and extraction of each UST in order to photograph and document the condition of the USTs. The excavation was conducted by HAZCO. Ms. Andrea Hachkowski, E.I.T. of AMEC conducted the Site visits.

Following removal of the USTs from the Site, soil samples were collected from the excavated soils, the final excavation walls and from the base for field screening. Soil samples were classified according to the Modified Unified Soil Classification system and observed for visual evidence of hydrocarbon impacts. Soil samples were field screened for volatile hydrocarbon vapours using ambient temperature headspace (ATH) techniques and a hexane calibrated, GasTech combustible vapour analyzer set in the no methane response mode. Vapours were measured in parts per million (up to 500 ppm_v) and percent lower explosive limit (%LEL) above 500 ppm_v. The ATH test results provide an indication of the presence of volatile hydrocarbons in the soil samples, and aid in the selection of appropriate samples for laboratory analysis. The field protocols and QA/QC procedures utilized by AMEC were in accordance with standard industry and IOL protocols.

Duplicate soil samples, for possible submission for laboratory analysis, were placed in labelled glass jars with teflon-lined lids and stored in a cooler at the Site. Based on the ATH test results, selected samples were transported in iced coolers to the laboratory. The sample shipment was accompanied by an appropriately completed chain-of-custody form.

The extent of the UST removal excavation is shown on Figure 5 and the location of soil samples obtained from the final limits of the excavation and the associated ATH vapour concentrations are shown on Figure 6. Samples submitted for laboratory analysis are also identified on Figure 6.

4.7 TEST PITTING PROGRAM

Following the UST removal program, test pitting was conducted in locations of potential impact sources; including at the pump bases, carwash drain, and UST nest. A total of six test pits (TP01 to TP06) were advanced at the Site. The backhoe was supplied and operated by HAZCO. Ms. Andrea Hachkowski, E.I.T., of AMEC supervised the test pitting program on 16 July 2004. The location and orientation of the test pits are shown on Figure 7.

Soil samples were obtained from the backhoe bucket at 0.7 m depth intervals as well as zones of visual impacts and/or at each stratigraphic change. As with the UST removal sampling program, soil samples were classified according to the Modified Unified Soil Classification system and observed for visual evidence of hydrocarbon impacts. Soil samples were field screened for volatile hydrocarbon vapours using ambient temperature headspace (ATH) techniques and a hexane calibrated, GasTech combustible vapour analyzer set in the no methane response mode. Vapours were measured in parts per million (up to 500 ppm_v) and percent lower explosive limit (%LEL) above 500 ppm_v. The ATH test results provide an indication of the presence of volatile hydrocarbons in the soil samples, and aid in the selection of appropriate samples for laboratory analysis. The field protocols and QA/QC procedures utilized by AMEC were in accordance with standard industry and IOL protocols.

Soil samples were placed in labelled glass jars with teflon lined lids and stored in a cooler at the site and during transport to the laboratory. The sample shipment was accompanied by an appropriately completed chain-of-custody form.

The test pits were backfilled with the excavated materials and were horizontally located in relation to a fixed benchmark. Test pit logs are provided in Appendix B.

4.8 INTRUSIVE ASSESSMENT PROGRAM

4.8.1 Drilling and Soil Sampling Program

The test hole drilling program was conducted on 4 to 6 August 2004 and consisted of a total of ten (10) test holes (04-01 to 04-10) advanced at the Site. The drill rig was supplied and operated by Maple Leaf Drilling Ltd. Ms. Andrea Hachkowski, E.I.T., of AMEC supervised the drilling program on a full time basis. Test hole locations, as shown on Figure 7, were selected based on the results of the UST removal and test pit sampling programs, previous environmental investigations, and field conditions encountered. Test hole logs are provided in Appendix B.

At each of the test holes locations, soil samples were recovered from augers as grab samples or from split spoon samplers on a continuous basis up to a depth of 6.1 m below grade. Grab samples were generally collected only to a depth of 1.5 m but extended to up to 6.1 m in test holes 04-1, 04-6, 04-8 due to the presence of large rocks or concrete in the test holes. Disturbed soils from the outside of the grab and spoon samples were removed to minimize potential cross contamination. Soil samples were also obtained in zones of visual impacts

and/or at each stratigraphic change. Augers were cleaned between holes and split spoons were cleaned between sample locations.

As with the previous assessment tasks, soil samples were classified according to the Modified Unified Soil Classification system and observed for visual evidence of hydrocarbon impacts. Soil samples were field screened for volatile hydrocarbon vapours using ambient temperature headspace (ATH) techniques and a hexane calibrated, GasTech combustible vapour analyzer set in the no methane response mode. Vapours were measured in parts per million (up to 500 ppm_v) and percent lower explosive limit (%LEL) above 500 ppm_v. The ATH test results provide an indication of the presence of volatile hydrocarbons in the soil samples, and aid in the selection of appropriate samples for laboratory analysis. The field protocols and QA/QC procedures utilized by AMEC were in accordance with standard industry protocols.

Soil samples were placed in labelled glass jars with teflon-lined lids and stored in a cooler at the site and during transport to the laboratory. The sample shipment was accompanied by an appropriately completed chain-of-custody form.

The test holes and monitor wells were horizontally and vertically located in relation to a fixed benchmark. Ground surface and monitor well elevations were referenced to the top of nut of a fire hydrant located near the southeast corner of the property, with an assumed elevation of 100.00 m.

Drill cuttings were placed into mega bags and have been scheduled for collection and disposal.

4.8.2 Monitoring Well Installation and Return Groundwater Sampling Program

As part of the intrusive assessment, monitoring wells were installed at each test hole locations. Each well was installed in order to monitor subsurface vapour concentrations, establish the groundwater conditions and to allow for groundwater sampling. The monitoring wells were constructed with 50 mm diameter Schedule 40 PVC, number 10 slot well screen and 50 mm diameter Schedule 40 PVC solid riser pipe to the surface. The monitor well construction details are shown on the applicable test hole logs (Appendix B).

On 30 August 2004, AMEC monitored and sampled each of the newly installed wells. The monitoring program included the following (in order):

- Measurement of monitoring well vapour concentrations;
- Determination of presence and thickness of free product;
- Determination of groundwater levels;
- Development and purging of the wells;
- Determination of groundwater vapour concentrations; and
- Collection of groundwater samples for laboratory analysis; and
- Measurement of hydraulic conductivities on two of the monitoring wells

Groundwater samples were obtained from the new wells and from those wells that were not sampled during the preliminary monitoring program, as well as from one well (BH10) sampled from the preliminary monitoring program to provide correlation between the two events.

Vapour concentrations were measured with a GasTech combustible vapour analyzer set in the no methane response mode and liquid levels were measured with an electronic interface probe. Due to the slow recharge rate, monitoring wells were not purged prior to sampling. Sampling was conducted with a dedicated PVC bailer in accordance with standard monitoring and sampling procedures.

Groundwater samples were placed in clean certified bottles provided by the laboratory and stored in an insulated cooler while on Site and during transport to the laboratory. As with the previous soil sampling programs, the field protocols and QA/QC procedures utilized by AMEC during Site monitoring were in accordance with standard industry protocols.

4.8.3 LABORATORY ANALYSIS

Soil and groundwater samples were submitted for laboratory analysis at PSC Analytical Services in Burnaby, BC. In total 32 soil samples, including QA/QC samples, were submitted for analysis of BTEX, fractional petroleum hydrocarbons (F1-F4) and lead based on an evaluation of the field observations, headspace vapour concentrations, location, depth and soil type. In addition, two soil samples were analyzed for the metals arsenic, barium, chromium, copper, lead, and zinc, as well as glycol (ethylene, diethylene, and propylene), and two soil samples were analyzed for PAH's benzo(a)pyrene and naphthalene. Two additional soil samples were selected for grain size analysis. In total 26 groundwater samples from the existing and newly installed monitoring wells, including QA/QC samples, were submitted for analysis of BTEX, volatile hydrocarbons (F1), semi-volatile hydrocarbons (F2), and lead.

A summary of the laboratory analysis level of effort is included in Table 1, appended to this report. The laboratory Certificates of Analysis and AMEC's Data Quality Review Checklists are provided in Appendix C.

5.0 REFERENCED GUIDELINE CRITERIA

AMEC completed a detailed assessment of the applicable guidelines and criteria typically utilized within the Province of Manitoba, to assess guideline values for comparison of analytical data. These criteria include:

- 1999 CCME Environmental Quality Guidelines (EQG) for soil (Updated 2003);
- 2001 CCME Canada Wide Standards for Hydrocarbons in Soil (CWS PHC); and
- 1997 Ontario Ministry of Environment (MOE) Guideline for Use at Contaminated Sites

The above documents were considered relative to the Site's potential commercial land use, as well as the adjacent commercial and residential land uses. An evaluation of potential receptors and pathways was undertaken as part of the assessment programs. The assessment of the applicable exposure pathways is summarized in Tables D1 to D5, Appendix D. The referenced guideline criteria for the Site and adjacent property to the north are summarized as follows:

5.1 EXPOSURE PATHWAYS

Groundwater

Groundwater Ingestion: The sensitivity ranking for groundwater was non-potable for the following reasons:

1) The City of Selkirk has a municipal water supply to the Site and surrounding properties. The source of the municipal system is approximately 0.6 km from the Site.
2) The hydraulic conductivity of the near surface groundwater was measured to be 3.2×10^{-6} cm/sec, which is less than the 10^{-4} cm/sec minimum value specified by CCME in CWS PHC for the aquifer to be considered a potential drinking water pathway. The CWS indicates that a drinking water pathway is assumed to be applicable only if groundwater is available at sufficient yield.
3) A potential domestic use aquifer (DUA) would appear to be present in the area at depths below 25 m below the ground surface. Shallow groundwater impacts appear to be separated from the underlying DUA by greater than 5 m of soil with bulk hydraulic conductivities ranging from 3.2×10^{-6} cm/sec to 2.6×10^{-7} cm/sec.
4) According to a search of the water well records for the City of Selkirk, there appears to be no known potable wells within 500 m downgradient of the Site.

In summary, the groundwater at the Site is considered to be non-potable. Given that neither Manitoba Conservation nor CCME have developed non-potable groundwater guidelines, AMEC has referenced the non-potable groundwater guidelines established by MOE.

Freshwater Aquatic Life Pathway: When a surface water body is located within 10 m from a property designated as fine-grained under CCME definition, protection against the discharge of impacted groundwater to the water body has to be considered in the selection of guideline criteria. Since there are no surface water bodies located within a 10 m radius of the Site, the protection of groundwater for aquatic life pathway is not applicable.

Irrigation and Livestock Watering: There are no sources of irrigation or livestock watering within 500 m of the Site. As such, the protection of groundwater for irrigation or livestock watering is not applicable.

Soil

Tables D1 through D4, Appendix D summarize potential exposure pathways (Site and off-Site) and indicate the limiting pathways above and below 1.5 m. AMEC has determined that the following exposure scenarios are applicable:

At and above 1.5 m:

- vapour inhalation (slab-on-grade) and ecological soil contact as the prevailing exposure pathways.

Below 1.5 m:

- vapour inhalation (slab-on-grade) as the prevailing exposure pathway.

5.2 LAND USE DESIGNATION

Residential properties are present approximately 10 m west of the Site property boundary. However, the CCME model for vapour inhalation assumes that the impacts are present below or have the potential to migrate below the structure being assessed. Under the current Site scenario, the potential for the existing impacts to migrate to below the residential properties is considered negligible, based on the following:

- The source of impacts, comprising of four USTs, associated pumps and piping, and waste oil UST, has been removed from the Site, negating further impact origination;
- The existing impacts have been delineated on-site or immediately off-site to the east during AMEC's Intrusive Environmental Assessment; and
- Site monitoring data from 1988 to present indicates that the residential areas are upgradient of the shallow groundwater flow direction.

The zoning designations for the Site and surrounding properties are shown in Figure 2. Information regarding the land usage associated with the individual residential and commercial zoning designations is summarized in excerpts of the City of Selkirk Zoning By-Law 4968, included in Appendix E. The future use of the Site, based on the land zoning, will most likely be utilized as a commercial establishment. However, the Strip Commercial land zoning designation may also allow the development of Multi-Family Dwellings. Based on conversations with the City of Selkirk, the current vacancy rate for apartments is, and historically has been, high. A total of five apartments complexes have been developed in Selkirk since 1996, and all have been on previously undeveloped properties. As such, the probability of the Site converting to residential use is low. Therefore, guideline values were adopted employing the default parameters for commercial land use as put forward in CCME documentation.

5.3 GRAIN-SIZE DESIGNATION

Two soil samples from the environmental assessment program were submitted for grain size analysis. The results of the grain size analysis indicated that the soils were fine grained (70.0% and 60.2% passing the 75 µm sieve, respectively). As such, the Site would considered to be fine-grained as per the CCME definition.

As well, the samples had approximately 58% and 51%, respectively, passing the 0.050 mm sieve, which equates to 42% and 49% of particles equal to or larger than 0.050 mm. Under MOE designation, a fine to medium grained material is classified as having <70% of the particles equal to or larger than 0.050 mm. Therefore, the samples are classified as fine to medium grained according to the MOE guidelines.

Details regarding the grain size analysis are discussed in Section 11.2 of this report

5.4 SUMMARY

The associated assessment guideline values based on the exposure scenarios, land use designations and soil grain size have been adopted for assessment purposes only:

Soil:

- The Tier 1 CCME commercial soil quality guidelines for surface soils (≤ 1.5 m depth) based on fine grained soils and non-potable groundwater conditions, with vapour inhalation (slab-on-grade) and ecological soil contact as the prevailing exposure pathways.

- The Tier 1 or generic CCME commercial soil quality guidelines for subsurface soil (> 1.5 m depth) based on fine-grained soils and non-potable groundwater conditions, with vapour inhalation (slab-on-grade) as the prevailing exposure pathway.

Groundwater:

- Non-potable groundwater criteria for fine to medium grained soils.

The referenced assessment guidelines are summarized in Table 2, appended to this report.

6.0 SITE AND AREA DESCRIPTION

6.1 SITE AND SURROUNDING LAND USE

The Site and the neighbouring properties to the north (across Rosser Avenue), south (across Pacific Avenue), and east (across Main Street) were zoned for commercial use with properties to the west zoned for residential use.

The surrounding land uses observed at the time of the test drilling program are summarized in Table 3, appended to this report, and are shown on Figure 4.

6.2 SERVICE LOCATIONS

On-site utilities servicing the kiosk/convenience store and car wash were located and disconnected by the excavation contractor in preparation of the UST removal and site structure demolition, with exception of the onsite storm water collection system. All on-site utilities; including water, sanitary sewer, MTS, and natural gas; were removed and capped by Hazco at the property boundaries. The respective utility representatives cleared each disconnection. The Manitoba Hydro overhead power line was disconnected at the hydro pole off-site to the west of the former kiosk location. Electrical, water, sewer (sanitary and storm) and natural gas main lines run parallel to the property boundary east of the Site. Sewer and water also run parallel to the property boundaries north and south of the Site and natural gas also runs parallel to the property boundaries north and south of the Site. Aboveground power and MTS lines run along the north side of the public lane (perpendicular to the west side of the Site). The locations of the remaining utilities, following decommissioning, are shown on Figure 4.

6.3 SOIL CONDITIONS

6.3.1 Local Geology

The City of Selkirk is located in the Red River floodplain, which is the historic basin of glacial Lake Agassiz in east-central Manitoba. Locally, the landform is relatively flat, with a more regional gradient towards the Red River. Based on available geological maps and water well records provided by the Water Resources Branch of Manitoba Conservation, the surficial soils in this area of Manitoba normally consist of glacio-lacustrine (Lake Agassiz) deposits consisting of clay and silt underlain by silty clay or silt till deposits. The well logs for the area of the Site also indicate that there are discontinuous sand and silt seams located immediately above the bedrock. Bedrock was not encountered during the intrusive environmental assessment. Available maps indicate that the underlying bedrock in this area of the province is of the Red River Formation and largely consists of dolomite and limestone with minor shale interbeds. Bedrock is estimated to occur at depths greater than 25 m below grade.

6.3.2 Stratigraphy

General soil conditions observed at the UST nest excavation sidewalls and test hole locations consisted of granular or clay fill up to depths of 1.5 m below grade. The fill materials were underlain by high plastic clay that extended to depths of between 3.4 m to 5.2 m below grade. Glacial till was present below the high plastic clay to the termination depth of the test holes. Exceptions to the general stratigraphy were observed in test pit locations conducted at the pump islands and historical UST nest locations, in which fill materials extended up to 2.4 m.

Seepage and sloughing was not encountered in any of the test holes, at the completion of drilling and prior to monitoring well installation.

The subsurface soil stratigraphy encountered at the test pit and test hole locations is summarized in detail on the logs in Appendix B.

6.4 GROUNDWATER CONDITIONS

6.4.1 Regional Hydrogeology

The Site was relatively flat lying and slightly elevated as compared to the adjacent streets. Surface drainage appeared to be directed to municipal catchbasins located on the Site and along the adjacent roadways. The general topography of the area surrounding the Site appeared to be slightly sloped towards the Red River located to the east.

Fractured zones in the bedrock comprise the major aquifer, which is employed mainly for industrial purposes in the Selkirk area. While there are zones of perched groundwater located in the silts and clays overlying the bedrock, these groundwater zones are discontinuous and not of usable quality.

As a result of the low to moderately permeable soils overlying the bedrock aquifer in the Selkirk area, the area of the Site has not been identified as a groundwater pollution hazard area as per the Department of Mines, Resources and Environmental Management's Ground Water Pollution Hazard Map (Province of Manitoba, 1978).

7.0 LEGAL SITE SURVEY

Prior to conducting the legal survey, Pollock and Wright conducted a search of the Certificate of Title to determine the legal boundaries of the Site. During the legal survey on 25 August 2004, Pollock and Wright located the corner property pins and marked the Site property boundaries. A copy of the legal site survey plan is included in Appendix A.

8.0 PRELIMINARY SITE MONITORING PROGRAM

The results of the Preliminary Site Monitoring, conducted on 30 June 2004, are summarized in Table 4. Monitoring wells installed at the Site from previous investigations and not reported as destroyed in past monitoring events by others included:

- BH1, BH4, BH9, BH10, BH11
- PZ12, PZ13, PZ15, PZ16, PZ22, PZ27, PZ28, PZ29, PZ30, PZ31
- RW1, RW2
- MW32, MW33, MW34, MW35, MW36, MW37, MW38

Of these wells, only BH1, BH9 through BH11, PZ28 through PZ31, and MW32 through MW38 could be located. PZ15 was located but observed to be infilled with gravel.

A maximum well headspace vapour concentration of 80 ppm_v was measured in MW32 and a maximum groundwater headspace vapour concentration of 5 %LEL was measured in MW36. No free product was apparent on the groundwater surface.

8.1 LABORATORY RESULTS - GROUNDWATER

The results of the groundwater laboratory analyses are summarized in Table 5 and shown on Figure 11. Copies of the detailed analytical reports are provided in Appendix C.

The dissolved PHC concentrations of the groundwater samples submitted for analysis during the preliminary monitoring were below the non-potable assessment criteria.

9.0 UST REMOVAL PROGRAM

9.1 UST CONDITIONS AND EXCAVATION LIMITS

AMEC's field personnel arrived at the Site on 12 July 2004, to witness the removal of the four 22750 L USTs from the Site. Prior to removal, the USTs were air purged. AMEC observed the air purging for one UST. All the USTs were extracted from the UST nest on 12 July 2004. The USTs were observed to be in good condition with no visible perforations aside from damage incurred during removal.

After removal from the UST nest, each UST was then destroyed onsite and the debris transported offsite for disposal. A copy of the contractor's certificate of assurance regarding the destruction of the USTs is included in Appendix F.

The UST nest excavation had dimensions of approximately 12.4 m by 12.6 m at grade and was approximately 3.2 m deep. The excavation was backfilled with the excavated material and imported pit run gravel and topped with crushed limestone. The boundary between the excavated material fill and imported clean fill was demarked by the placement of snow fence sections. The final extent of the excavation is shown on Figure 5.

Photographs taken at the time of the UST removal are appended to this submission.

9.2 SOIL MONITORING AND SAMPLING

The backfill material covering and surrounding the USTs consisted of pea gravel.

Soil monitoring and sampling activities were conducted on 13 July 2004 following the removal of the USTs. The general profile along the excavation sidewalls consisted of asphalt pavement and up to 1.2 m of granular and clay fill followed by high plastic native clay, which extended to the base of the excavation. The southeast portion of the UST nest excavation overlapped the historical UST nest. As such, the sidewalls in the southeastern corner did not extend to native soils. Native clay was present at the base of the excavation.

Soil vapours concentrations ranging from 5 ppm_v to >100% LEL were detected and PHC staining was observed on all four sidewalls and at the base of the UST excavation. The measured soil vapour concentrations in the UST backfill material ranged from 5 to 120 ppm_v. ATH vapour concentrations measured during the UST removal activities are shown on Figure 6.

9.3 LABORATORY RESULTS

After reviewing the ATH vapour test results, a total of ten soil samples were submitted for laboratory analysis of BTEX, F1-F4, and lead. Samples representative of each of the excavation sidewalls and base were submitted for analysis. The results of the analytical testing are presented in Table 6 and summarized in Figure 6, along with the applicable guidelines for comparison. The laboratory certificates of analysis are included in Appendix C.

The following soil samples had concentrations of PHC constituents above the current CCME (1999, updated 2003) referenced guidelines:

- S3 (2.1 m) –xylenes (21 µg/g);
- E20 (2.8 m) - ethylbenzene (27 µg/g), xylenes (160 µg/g);
- WF2 (3.2 m) –xylenes (18 µg/g);
- WF3 (3.2 m) –xylenes (23 µg/g).

There were no exceedances of the CCME PHC (2001) referenced guidelines.

10.0 TEST PITTING PROGRAM

Test pitting was conducted on 16 July 2004. The locations of the test pits were chosen based on probable impacts origination; including below the four pump vaults, in the vicinity of the car wash sump, and in the area of the historical UST nest.

10.1 FIELD OBSERVATIONS AND TEST PIT SOIL VAPOUR CONCENTRATIONS

Soil vapour concentrations and field observations made during the test pit program are summarized on the test hole logs in Appendix B. The locations of the test holes are shown in Figure 7.

Staining was observed in TP06, within the historical UST nest, at depths ranging between 1.2 m and 3.2 m below grade, and at TP02, beneath the northwestern pump, at depths ranging between 1.5 and 2.4 m. A maximum soil vapour concentration of greater than 100% LEL (>12000 ppm_v) was identified in TP06 at a depth of 2.4 m below grade. Vapour concentrations in excess of 500 ppm_v were measured at TP06 (1.5 m to 3.1 m) and TP02 (2.4 – 3.1 m). The soil vapour concentrations at the remaining test pit locations were at or below 25 ppm_v.

10.2 LABORATORY RESULTS

The results of the PHC laboratory analysis conducted on the selected soil samples are presented in Table 7 and are summarized in comparison to the applicable guideline on Figure 8. Copies of the detailed analytical reports are provided in Appendix C.

The following soil samples had concentrations of PHC constituents above the current CCME (1999, updated 2003) referenced guidelines:

- TP02 at 2.4 m – xylenes (18 µg/g);
- TP06 at 2.4 m – ethylbenzene (21 µg/g) and xylenes (150 µg/g);
- TP06 at 3.7 m – benzene (8.5 µg/g) and xylenes (30 µg/g).

There were no exceedances of the CCME PHC (2001) referenced guidelines.

11.0 INTRUSIVE ASSESSMENT PROGRAM

The test hole drilling program was conducted from 4 to 6 August 2004. A total of 10 test holes, were completed as monitoring wells.

Photographs taken at the time of the intrusive assessment are appended to this submission.

11.1 FIELD OBSERVATIONS AND TEST HOLE SOIL VAPOUR CONCENTRATIONS

Soil vapour concentrations and field observations made during the test hole drilling program are summarized on the test hole logs in Appendix B. The locations of the test holes are shown in Figure 7.

Staining was observed in 04-01 at depths between 2.9 and 3.2 m as well as 3.7 and 4.3 m below grade. A maximum soil vapour concentration of 500 ppm_v was identified in 04-01 at depths of

3.1 – 3.8 m below grade. The soil vapour concentrations at the remaining test hole locations were at or below 150 ppm_v.

11.2 GRAIN SIZE ANALYSIS

Soil samples from TH4 at 1.5 m depth (clay) and 6.9 m depth (till) were submitted for grain size analysis. The resulting analysis indicates that the samples had 70.0% and 60.2%, respectively, passing the 0.075 sieve. Given that the median grain sizes were both less than 75 μm, the samples are considered to be fine grained as per the CCME definition. In addition, >30% of the material had a particle size less than 0.050 mm, classifying the samples as fine to medium grained according to the MOE guidelines. A coarse grained material is classified by MOE as one having <70% of the particles equal to or larger than 0.050 mm.

The results of the grain size analysis are included in Appendix G.

11.3 LABORATORY RESULTS - SOIL

The results of the laboratory analysis conducted on the selected soil samples are presented in Table 8 and 9 and the PHC concentrations are summarized in comparison to the applicable guideline on Figure 9. Copies of the detailed analytical reports are provided in Appendix C.

There were no exceedances of the current CCME (1999, updated 2003) or CCME PHC (2001) referenced guideline for PHCs, metals, PAH's and glycol in the soil samples submitted for analysis.

11.4 RETURN MONITORING

The results of the Site monitoring, conducted on 30 August 2004, are summarized in Table 4.

A maximum well headspace vapour concentration within all monitoring wells and within just the newly installed monitoring wells was 80 ppm_v measured in MW36 and 50 ppm_v measured in 04-05, respectively. Groundwater vapour concentrations did not exceed 170 ppm_v in any monitoring well. The groundwater gradient and flow direction was towards the southeast (equating to "True South") based on the Site monitoring conducted on 30 August 2004. Free product was not observed at the monitoring well locations. The groundwater elevations in all of the monitoring wells at the time of the monitoring event, as well as the flow direction are shown on Figure 10, appended to this report.

11.5 LABORATORY RESULTS - GROUNDWATER

The results of the PHC laboratory analysis conducted on the groundwater samples are summarized in Table 5 and on Figure 12. Copies of the detailed analytical reports are provided in Appendix C.

All groundwater samples submitted for PHC analysis had concentrations below the MOE non-potable referenced guidelines.

11.6 HYDRAULIC CONDUCTIVITY

Hydraulic conductivity testing, employing the falling head (slug) technique and interpreting the results with the Hvorslev method, was conducted at 04-03 (well completed in clay) and 04-06 (well completed in till). The calculated results of the tests indicated hydraulic conductivities are 3.2×10^{-6} cm/sec and 2.6×10^{-7} cm/sec, respectively. A geometric average hydraulic conductivity was not calculated as two separate stratiographic units were tested. As such, a default value for near surface groundwater bulk hydraulic conductivity is assumed to be the clay calculated value of 3.2×10^{-6} cm/sec.

The calculated bulk hydraulic conductivity at the Site is less than the 10^{-4} cm/s defined by the CCME as indicating a sustainable yield for a potable drinking water source.

Copies of the hydraulic conductivity test results and interpretation are included in Appendix H.

12.0 FIELD AND LABORATORY QA/QC

Laboratory and field duplicates as well as field and travel blanks were analyzed during this project. The results were compared to IOL's acceptance criteria and are summarized in the following sections.

Soil

One blind field duplicate sample was analyzed and the relative percent difference (RPD) between the respective original samples was within IOL's acceptance criteria for BTEX, and F1 to F4.

The field blank analytical results from the drilling program detected benzene (0.005 µg/g) at 5 x detection limit and is just below IOL's alert limit. Ethylbenzene (0.008 µg/g) was also detected in the field blank, but at <5 x detection limit. Based on PSC's reported QA/QC results, it is AMEC's opinion that the soil laboratory data is reliable.

Groundwater

Travel and field blank analytical results for BTEX and PHC were in accordance with IOL's acceptance criteria. Field duplicates were analyzed and found to have a relative percent difference within IOL's acceptance criteria. Based on PSC's reported QA/QC results, it is AMEC's opinion that the groundwater laboratory data is reliable.

Laboratory

The soil matrix spike sample recovery from TP06 at 3.7 m depth for benzene and toluene were reported as 200 %, exceeding the IOL acceptance criteria. A DQW was issued citing high

concentration of BTEX as the reason for deviation. A laboratory control soil sample (spiked blank sample) percent recovery for ethylbenzene from the 4 to 6 August 2004 drilling program was reported as 47 %, outside the IOL acceptance criteria. A DQW has been requested for this sample. A second laboratory control soil sample (spiked blank sample) percent recovery for toluene from the 13 July 2004 UST removal program was reported as 41 %, however, the spike concentration (0.043 µg/g) was <2 x the blank concentration (0.026 µg/g). The matrix duplicate soil sample for TP04 at 1.8 m depth had a RPD of 52.17 %, however, the sample and duplicate concentrations were <5 x detection limit.

Method blank analysis on soil blanks detected benzene (0.002 µg/g), toluene (0.026 µg/g), and ethylbenzene (0.006 µg/g) during the UST removal program; benzene (0.002 µg/g), toluene (0.026 µg/g), ethylbenzene (0.006 µg/g), and F1 (11 µg/g) during the test pitting program; and benzene (0.003 µg/g) and ethylbenzene (0.007 µg/g) during the drilling program. All concentrations were within IOL's acceptance criteria (<5 x detection limit).

All groundwater blank and matrix spikes, lab duplicates and their surrogates were within IOL's acceptance criteria. AMEC considers all laboratory data to be reliable.

13.0 SUMMARY AND CONCLUSIONS

AMEC was retained by Mr. Andrew Hodgetts, P.Eng. of IOL to conduct an environmental assessment of a former automotive retail station located at 287 Main Street in Selkirk, Manitoba.

A legal survey to determine the Site legal property limits was subcontracted to Pollock & Wright Land Surveyors and was conducted on 25 August 2004.

A preliminary monitoring of accessible existing monitoring wells was conducted on 30 July 2004. Sixteen of the 24 monitoring wells not previously reported as destroyed were located and monitored as part of the preliminary program. A maximum well headspace vapour concentration of 80 ppm_v was measured in MW32 and a maximum groundwater headspace vapour concentration of 5 %LEL was measured in MW36. No free product was apparent on the groundwater surface.

A UST removal program, in which AMEC's involvement occurred on 12 and 13 July 2004 was conducted as part of the Site facility and structure decommissioning. Following removal of the USTs from the Site, soil samples were collected from the excavated soils, from the final excavation walls and from the base for field testing. Soil vapours concentrations ranging from 5 ppm_v to >100% LEL were detected and petroleum hydrocarbon (PHC) staining was observed on all four sidewalls and at the base of the UST excavation. The measured soil vapour concentrations in the UST backfill material ranged from 5 to 120 ppm_v. Ten soil samples were selected for laboratory analysis, in which the concentration of select BTEX constituents in soil samples obtained from the southern and eastern sidewalls and base of the UST nest (S3, E20, WF2, and WF3) were in excess of referenced criteria.

A test pitting program was conducted on 16 July 2004. Six test pits were advanced at probable impacts origination locations. Staining was observed in TP06, within the historical UST nest, at depths ranging between 1.2 and 3.2 m below grade, and at TP02, beneath the northwestern pump, at depths ranging between 1.5 and 2.4 m. A maximum soil vapour concentration of greater than 100% LEL (>12000 ppm_v) was identified in TP06 at a depth of 2.4 m below grade. Vapour concentrations in excess of 500 ppm_v were measured at TP06 (1.5 to 3.1 m) and TP02 (2.4 to 3.1 m). The soil vapour concentrations at the remaining test pit locations were at or below 25 ppm_v. A total of eight soil samples were selected for laboratory analysis, in which the concentration of select BTEX constituents in soil samples obtained from TP02 (2.4 m depth) and TP06 (2.4 and 3.7 m depth) were in excess of referenced criteria.

A test hole drilling program was conducted from 4 to 6 August 2004 and consisted of a total of 10 test holes (04-01 to 04-10), with the installation of monitoring wells in each test hole. General soil conditions at the test hole locations consisted of granular or clay fill up to depths of 1.5 m below grade. The fill materials were underlain by high plastic clay that extended to depths between 3.4 and 5.2 m below grade. Glacial till was present below the high plastic clay to the termination depth of the test holes.

Staining was observed in 04-01 at depths between 2.9 and 3.2 m as well as 3.7 and 4.3 m below grade. A maximum soil vapour concentration of 500 ppm_v was identified in 04-01 at depths of 3.1 – 3.8 m below grade. The soil vapour concentrations at the remaining test hole locations were at or below 150 ppm_v.

Eighteen soil samples (including one duplicate and field blank) obtained during the intrusive assessment were submitted for analysis of BTEX, F1 to F4, select metals, select PAH's, and/or glycols. An additional two samples were submitted for grain size analysis. All samples submitted for analysis did not contain the above constituents in excess of the referenced guideline. Grain size analysis confirmed that the soils are classified as fine-grained by both the CCME and MOE definitions.

Groundwater levels were measured approximately three weeks following installation of the new monitor wells. A maximum well headspace vapour concentration of 80 ppm_v was measured in MW36 and 50 ppm_v. The highest well headspace vapour concentration in the wells installed during the August 2004 intrusive investigation was 50 ppm_v, measured in 04-05. Groundwater vapour concentrations did not exceed 170 ppm_v in any monitoring wells. The groundwater flow direction based on the Site monitoring conducted on 30 August 2004 was to the southeast.

Groundwater samples were obtained from the new wells and from those wells that were not sampled during the preliminary monitoring program, as well as from one well (BH10) sampled from the preliminary monitoring program to provide correlation between the two events. All groundwater samples submitted for PHC analysis had concentrations below the MOE non-potable referenced guidelines. Hydraulic conductivity testing performed during the return

monitoring indicate that the clay and clay till at the Site have conductivity values of 3.2×10^{-6} cm/sec and 2.6×10^{-7} cm/sec, respectively.

14.0 REFERENCES

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15.0 LIMITATION OF LIABILITY, SCOPE OF REPORT AND THIRD PARTY RELIANCE

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The investigation undertaken by AMEC Earth & Environmental with respect to this report and any conclusions or recommendations made in this report reflect AMEC Earth & Environmental's judgment based on the site conditions observed at the time of the site inspection on the date(s) set out in the report and on information available at the time of preparation of this report. This report has been prepared for specific application to this site and it is based, in part, upon visual observation of the site, subsurface investigation at discrete locations and depths and specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future site conditions, portions of the site which were unavailable for direct investigation, subsurface locations which were not investigated directly, or chemical parameters, materials or analysis which were not addressed. Substances other than those addressed by the investigation described in this report may exist within the site, substances addressed by the investigation may exist in areas of the site not investigated and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If site conditions or applicable standards change or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

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Manager, Saskatoon Operations

TABLES

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Table 1: Summary of Laboratory Analysis

Matrix	Number of Samples[1]	Type of analysis
Soil (UST removal)	10	BTEX, F1-F4, Lead
Soil (test pitting)	8	BTEX, F1-F4, Lead
Soil (intrusive assessment)	14	BTEX, F1-F4, Lead
	2	Grain Size Analysis
	2	Metals, Glycol
	2	PAH's
Groundwater (preliminary)	10	BTEX, F1-F2, Lead
Groundwater (return)	16	BTEX, F1-F2, Lead

Notes:
[1] – including all QA/QC samples

Table 2: Referenced Soil Tier I and Generic Guidelines and Non-Potable Groundwater Guidelines for Fine Grained Soil, Commercial Land Use

Analytical Parameters	Surface soil[1] 0-1.5 m below grade mg/kg	Subsoil[2] >1.5 m below grade mg/kg	Groundwater µg/L
Benzene	5	5	12000
Toluene	14	14	37000
Ethylbenzene	20	20	50000
Xylenes	17	17	35000
Lead	260	260	NG
PHC-F1	660	4800	NG
PHC-F2	1500	26000	NG
PHC-F3	2500	NG	NA
PHC-F4	6600	NG	NA
Arsenic	12	12	NA
Barium	2000	2000	NA
Chromium	87	87	NA
Copper	91	91	NA
Lead	260	260	NA
Zinc	360	360	NA
Benzo(a)pyrene	1.4	1.4	NA
Naphthalene	22	22	NA
Ethylene Glycol	1800	1800	NA
Diethylene Glycol	NG	NG	NA
Propylene Glycol	NG	NG	NA

Notes:
NA – not analyzed
NG - no guideline available for reference
[1] Applicable pathway: Ecological soil contact
[2] Applicable pathway: Vapour inhalation
PHC – F1: fractional petroleum hydrocarbon C_6-C_{10}; corrected for BTEX
PHC – F2: fractional petroleum hydrocarbon C_{10}-C_{16}
PHC – F3: fractional petroleum hydrocarbon C_{16}-C_{34}
PHC – F4: fractional petroleum hydrocarbon C_{34}-C_{50+}

Table 3: Surrounding Land Use

Direction	Land Use	Approx. Distance (m)
Site	Vacant (at the time of intrusive assessment)	--
West	Public lane followed by single family residences	Adjacent/5 m
North	Rosser Avenue followed by partially occupied strip mall	Adjacent/20 m
South	Pacific Avenue followed by Co-op Gas Bar	Adjacent/20 m
East	Main Street followed by mixed commercial/multi-family residential	Adjacent/60 m

Table 4: Summary Of Groundwater Monitoring

Monitor No.	Ground Elevation (m)	Top of Pipe Elevation (m)	Depth to Water (m B.TOP)	Free Product Thickness (mm)	Ground Water Elevation (m)	Combustible Vapours Well Headspace	Combustible Vapours Ground-water Headspace
30 JUNE 2004							
BH1	99.32	99.40	1.64	ND	97.68	NM	<5 ppm_v
BH9	98.98	98.92	1.31	ND	98.67	35 ppm_v	<5 ppm_v
BH10	99.02	98.90	1.24	ND	97.78	20 ppm_v	100 ppm_v
BH11	99.02	98.94	1.23	ND	97.79	75 ppm_v	<5 ppm_v
MW32	99.57	99.51	1.84	ND	97.73	80 ppm_v	10 ppm_v
MW33	99.60	99.53	1.92	ND	97.68	25 ppm_v	10 ppm_v
MW34	99.32	99.24	1.43	ND	97.89	30 ppm_v	350 ppm_v
MW35	99.53	99.46	1.88	ND	97.65	50 ppm_v	150 ppm_v
MW36	99.42	99.32	1.99	ND	97.43	<5 ppm_v	5% LEL
MW37	99.72	99.62	2.07	ND	97.65	75 ppm_v	240 ppm_v
MW38	NM	NM	1.63	ND	NM	25 ppm_v	<5 ppm_v
PZ28	99.45	99.30	1.73	ND	97.72	<5 ppm_v	25 ppm_v
PZ29	99.51	99.38	1.80	ND	97.71	25 ppm_v	25 ppm_v
PZ30	Inaccessible						
PZ31	99.66	99.46	1.88	ND	97.78	<5 ppm_v	10 ppm_v
30 AUGUST 2004							
04-1	99.22	99.15	1.78	ND	97.37	<5 ppm_v	<5 ppm_v
04-2	99.48	99.56	1.36	ND	98.13	20 ppm_v	<5 ppm_v
04-3	99.55	99.89	1.71	ND	97.84	5 ppm_v	<5 ppm_v
04-4	99.60	99.65	0.64	ND	98.96	5 ppm_v	<5 ppm_v
04-5	98.85	98.98	2.68	ND	96.17	50 ppm_v	25 ppm_v
04-6	99.67	99.97	2.42	ND	97.25	<5 ppm_v	<5 ppm_v
04-7	99.52	99.70	1.18	ND	98.35	<5 ppm_v	<5 ppm_v
04-8	99.61	99.73	3.51	ND	96.10	5 ppm_v	<5 ppm_v
04-9	98.83	98.97	2.76	ND	96.07	25 ppm_v	30 ppm_v
04-10	99.31	99.41	1.34	ND	97.97	<5 ppm_v	<5 ppm_v
BH1	99.32	99.40	1.52	ND	97.88	NM	<5 ppm_v
BH9	98.98	98.92	1.05	ND	97.87	35 ppm_v	25 ppm_v
BH10	99.02	98.90	1.26	ND	97.64	50 ppm_v	170 ppm_v
BH11	99.02	98.94	1.00	ND	97.94	15 ppm_v	45 ppm_v
MW32	99.57	99.51	1.81	ND	97.70	50 ppm_v	<5 ppm_v
MW33	99.60	99.53	2.27	ND	97.26	55 ppm_v	<5 ppm_v
MW35	99.53	99.46	2.08	ND	97.38	<5 ppm_v	<5 ppm_v
MW36	99.42	99.32	1.99	ND	97.33	80 ppm_v	<5 ppm_v
MW37	99.72	99.62	2.54	ND	97.08	75 ppm_v	5 ppm_v
MW38	NM	NM	1.51	ND	NM	<5 ppm_v	<5 ppm_v

Notes:

- m B.TOP - metres below top of well pipe
- ppm_v / %LEL - parts per million / percent lower explosive limit
- ND – not detected
- NM – not monitored
- Elevations based on relative elevation established for a benchmark (top nut of fire hydrant near SE corner of Site) of 100.00 m.

Table 5: Summary Of Laboratory Testing - Groundwater Samples

Sample Location	Groundwater Vapour Concentration	Benzene	Toluene	Ethyl-Benzene	Xylenes	PHC F1 mg/L	PHC F2 mg/L	Lead[1] mg/L
JUNE 2004								
MW32	10 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
MW33	10 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
MW34	350 ppm_v	6000	3500	370	2600	3.6	0.3	<0.0005
MW36	5% LEL	4200	52	250	270	1.0	0.2	<0.0005
MW37	240 ppm_v	1100	37	290	380	1.2	0.3	<0.0005
MW38	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
BH10	100 ppm_v	490	4.4	57	31	1.6	0.3	<0.0005
Duplicate (MW34)	--	4600	2500	220	1700	<0.1	NA	NA
Field Blank	--	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	NA
Travel Blank	--	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	NA
AUGUST 2004								
04-1	<5 ppm_v	510	<5.0[1]	29	36	<0.1	0.1	0.0033
04-2	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
04-3	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
04-4	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	0.0016
04-5	25 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
04-6	<5 ppm_v	<0.5	<0.5	<0.5	0.5	<0.1	<0.1	<0.0005
04-7	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
04-8	<5 ppm_v	59	<0.5	7.8	6.4	0.1	<0.1	<0.0005
04-9	30 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
04-10	<5 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	0.0010
BH9	25 ppm_v	<0.5	<0.5	<0.5	<0.5	<0.1	<0.1	<0.0005
BH10	170 ppm_v	370	8.4	82	46	1.3	0.6	<0.0005
BH11	45 ppm_v	8.6	<0.5	<0.5	<0.5	<0.1	<0.1	0.0011
Duplicate (04-2)	--	<0.5	<0.5	<0.5	<0.5	<0.1	NA	NA
Field Blank	--	<0.5	<0.5	<0.5	<0.5	<0.1	NA	NA
Travel Blank	--	<0.5	<0.5	<0.5	<0.5	<0.1	NA	NA
MOE Criteria for a Non-potable groundwater situation for fine grained soils		12000	37000	50000	35000	NA	NA	NA[3]

Notes:

- Groundwater sample headspace vapour concentration measured with a Gastech Model 1238ME vapour analyzer, calibrated to hexane with methane exclusion.
- all concentrations in micrograms per litre (µg/L) except where noted
- TPH - refers to Total Petroleum Hydrocarbons (C5-C30) and is the summation of Light Hydrocarbons (C5-C10) and Total Extractable Hydrocarbons (C10-C30).
- < - less than the analytical detection limit
- NA – not applicable/no guideline criteria established
- [1] - Lead concentrations are reported as dissolved concentration
- [2] – MDL raised due to sample dilution
- [3] – Not applicable as the guideline value is based on potential environmental impacts of impacted groundwater to surface water. Since this pathway is not applicable the guideline value is also not applicable.
- -- Not tested.
- **Bold and underlined** - indicates constituent concentration exceeds the applicable criteria.
- MOE Criteria– Non-potable groundwater criteria for fine-grained soils as outlined in the 1997 (reissued in 1999). Ontario Ministry of the Environment publication; Guideline for Use at Contaminated Sites in Ontario.
- See laboratory report for detection limits, testing protocols and QA/QC procedures. Laboratory analysis was performed by Philip Analytical Services.

Table 6: Summary of Laboratory Testing – Soil Samples (UST Removal Program)

Sample Location (Depth in m)	Soil Vapour Conc.	Benzene	Toluene	Ethyl Benzene	Xylenes	Lead	PHC F1	PHC F2	PHC F3	PHC F4
E17	250 ppm_v	0.002	0.018	0.004	<0.1	2.0	<10	<50	<50	<50
E20	>100% LEL	0.32	3.1	**27**	**160**	2.3	2400	970	130	<50
N7	>100% LEL	1.1	0.32	5.0	11	13.0	120	100	<50	<50
N20	>100% LEL	0.31	1.1	2.8	13	15.9	93	<50	<50	<50
S3	>100% LEL	1.4	0.72	8.2	**21**	14.1	290	110	<50	<50
W12	55% LEL	0.062	0.037	1.4	1.5	15.1	51	<50	<50	<50
EF1	10% LEL	0.037	0.055	0.52	1.8	11.0	41	<50	<50	<50
EF4	100 ppm_v	0.077	0.12	0.40	2.1	15.4	33	<50	<50	<50
WF2	150 ppm_v	1.6	3.3	6.2	**18**	14.5	380	170	<50	<50
WF3	350 ppm_v	0.40	0.28	4.3	**23**	14.4	160	<50	<50	<50
CCME Commercial EQG		**5**	**14[1]**	**20**	**17**	**260[2]**	**NA**			
CCME Commercial CWS PHC – fine grained subsoils[3] (>1.5m depth below grade)							**4800**	**26000**	**NA**	**NA**

Notes:

- Soil sample headspace vapour concentration measured with a Gastech Model 1238ME vapour analyzer, calibrated to hexane with methane exclusion
  - ppm_v - parts per million
  - all concentrations in micrograms per gram (ug/g)
  - VPH (F1) - volatile petroleum hydrocarbons (C6 – C10); corrected for BTEX concentrations
  - EPH (F2) - extractable petroleum hydrocarbons (C10 – C16)
  - EPH (F3) - extractable petroleum hydrocarbons (C16 – C34)
  - EPH (F4) - extractable petroleum hydrocarbons (C34 – C50)
  - F2, F3, F4 concentrations reported have not been corrected for inclusion of PAH. Based on AMEC's understanding of the site history, PAH concentrations are expected to be insignificant compared to the extractable petroleum hydrocarbon concentration as a whole and therefore have not been analyzed separately.
  - [1] – Toluene guideline revised to reflect lack of groundwater as domestic consumption pathway.
  - [2] – Tier I guideline based on soil ingestion
  - [3] – Generic guideline for vapour inhalation (slab-on grade) pathway at a commercial land use
  - < - less than the analytical detection limit
  - NA - not applicable
  - **Bold and underlined** - indicates constituent concentration exceeds the applicable guideline.
  - CCME EQG Guideline – commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canadian Environmental Quality Guidelines*", 1999.
  - CCME CWS PHC Guideline - commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canada-Wide Standards for Hydrocarbons in Soil*", 2000.
  - See laboratory report for detection limits, testing protocols and QA/QC procedures. Laboratory analysis was performed by Philip Analytical Services.

Table 7: Summary of Laboratory Testing – Soil Samples (Test Pitting Program)

Sample Location (Depth in m)	Soil Vapour Conc.	Benzene	Toluene	Ethyl Benzene	Xylenes	Lead	PHC F1	PHC F2	PHC F3	PHC F4
TP1 @ 3.1m	10 ppm_v	0.005	0.039	0.024	<0.1	NA	<10	<50	<50	<50
TP2 @ 2.4m	33% LEL	0.18	<0.10[1]	5.0	**18**	NA	540	190	<50	<50
TP2 @ 3.7m	60 ppm_v	0.50	0.026	0.57	<0.1	NA	34	<50	<50	<50
TP3 @ 3.4m	10 ppm_v	0.005	0.030	0.008	<0.1	NA	<10	<50	<50	<50
TP4 @ 1.8m	25 ppm_v	0.002	0.029	<0.003	<0.1	NA	<10	<50	<50	<50
TP5 @ 3.1m	5 ppm_v	0.008	0.049	0.014	<0.1	NA	<10	<50	<50	<50
TP6 @ 2.4m	>100% LEL	1.4	12	**21**	**150**	NA	1800	1200	<50	<50
TP6 @ 3.7m	275 ppm_v	**8.5**	**18**	4.9	**30**	NA	190	<50	<50	<50
CCME Commercial EQG		**5**	**14[1]**	**20**	**17**	**260[2]**	**NA**			
CCME Commercial CWS PHC – fine grained subsoils[3] (>1.5m depth below grade)							**4800**	**26000**	**NA**	**NA**

Notes:

- Soil sample headspace vapour concentration measured with a Gastech Model 1238ME vapour analyzer, calibrated to hexane with methane exclusion
- ppm_v - parts per million
- all concentrations in micrograms per gram (ug/g)
- VPH (F1) - volatile petroleum hydrocarbons (C6 – C10); corrected for BTEX concentrations
- EPH (F2) - extractable petroleum hydrocarbons (C10 – C16)
- EPH (F3) - extractable petroleum hydrocarbons (C16 – C34)
- EPH (F4) - extractable petroleum hydrocarbons (C34 – C50)
- F2, F3, F4 concentrations reported have not been corrected for inclusion of PAH. Based on AMEC's understanding of the site history, PAH concentrations are expected to be insignificant compared to the extractable petroleum hydrocarbon concentration as a whole and therefore have not been analyzed separately.
- [1] – Toluene guideline revised to reflect lack of groundwater as domestic consumption pathway.
- [2] – Tier I guideline based on soil ingestion
- [3] – Generic guideline for vapour inhalation (slab-on grade) pathway at a commercial land use
- < - less than the analytical detection limit
- NA not applicable
- **Bold and underlined** - indicates constituent concentration exceeds the applicable guideline.
- CCME EQG Guideline – commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canadian Environmental Quality Guidelines*", 1999.
- CCME CWS PHC Guideline - commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canada-Wide Standards for Hydrocarbons in Soil*", 2000.
- See laboratory report for detection limits, testing protocols and QA/QC procedures. Laboratory analysis was performed by Philip Analytical Services.

Table 8: Summary of Laboratory Testing – Soil Samples (Intrusive Investigation Program)

Sample Location (Depth in m)	Soil Vapour Conc.	Benzene	Toluene	Ethyl Benzene	Xylenes	Lead	PHC F1	PHC F2	PHC F3	PHC F4
04-9 (1.5)	30 ppm_v	0.004	<0.010	0.007	<0.1	9.8	<10	<50	<50	<50
04-10 (0.8)	50 ppm_v	0.004	<0.010	0.006	<0.1	18.3	<10	<50	<50	<50
CCME Commercial EQG		**5**	**14[1]**	**20**	**17**	**260[2]**	**NA**			
CCME Commercial CWS PHC – fine grained surface soils[3] (≤1.5m depth below grade)							**660**	**1500**	**2500**	**6600**
04-1 (3.8)	500 ppm_v	1.4	0.094	2.5	2.3	11.8	65	<50	<50	<50
04-1(4.6)	40 ppm_v	0.12	<0.010	0.037	<0.1	4.5	<10	<50	<50	<50
04-2(1.5-2.3)	30 ppm_v	0.006	<0.010	0.009	<0.1	12.4	<10	<50	<50	<50
04-3 (3.1-3.8)	25 ppm_v	0.006	<0.010	0.008	<0.1	13.2	<10	<50	<50	<50
04-4 (2.3-3.1)	40 ppm_v	0.005	<0.010	0.008	<0.1	12.1	<10	<50	<50	<50
04-5 (3.1-3.8)	40 ppm_v	0.008	<0.010	0.008	<0.1	10.1	<10	<50	<50	<50
04-6 (6.9)	75 ppm_v	0.003	<0.010	0.005	<0.1	3.5	<10	<50	<50	<50
04-7 (2.3-3.1)	30 ppm_v	0.006	<0.010	0.007	<0.1	12.2	<10	<50	<50	<50
04-8 (4.6)	150 ppm_v	1.3	0.094	0.34	1.1	12.9	77	<50	<50	<50
04-8 (5.3)	50 ppm_v	0.25	<0.010	0.13	<0.1	7.7	<10	<50	<50	<50
Duplicate 3 (04-1 at 3.8)	--	1.6	0.024	2.3	2.1	12.0	64	<50	<50	<50
Field Blank	--	0.005	<0.010	0.008	<0.1	1.8	<10	<50	<50	<50
CCME Commercial EQG		**5**	**14[1]**	**20**	**17**	**260[2]**	**NA**			
CCME Commercial CWS PHC – fine grained subsoils[4] (>1.5m depth below grade)							**4800**	**26000**	**NA**	**NA**

Notes:

- Soil sample headspace vapour concentration measured with a Gastech Model 1238ME vapour analyzer, calibrated to hexane with methane exclusion
- ppm_v - parts per million
- % LEL – percent lower explosive limit
- all concentrations in micrograms per gram (ug/g)
- VPH (F1) - volatile petroleum hydrocarbons (C6 – C10); corrected for BTEX concentrations
- EPH (F2) - extractable petroleum hydrocarbons (C10 – C16)
- EPH (F3) - extractable petroleum hydrocarbons (C16 – C34)
- EPH (F4) - extractable petroleum hydrocarbons (C34 – C50)
- F2, F3, F4 concentrations reported have not been corrected for inclusion of PAH. Based on AMEC's understanding of the site history, PAH concentrations are expected to be insignificant compared to the extractable petroleum hydrocarbon concentration as a whole and therefore have not been analyzed separately.
- [1] – Toluene guideline revised to reflect lack of groundwater as domestic consumption pathway.
- [2] – Tier I guideline based on soil ingestion
- [3] – Tier I guideline for ecological soil contact pathway at a commercial land use
- [4] – Generic guideline for vapour inhalation (slab-on grade) pathway at a commercial land use
- < - less than the analytical detection limit
- NA not applicable
- **Bold and underlined** - indicates constituent concentration exceeds the applicable guideline.
- CCME EQG Guideline – commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canadian Environmental Quality Guidelines*", 1999.
- CCME CWS PHC Guideline - commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canada-Wide Standards for Hydrocarbons in Soil*", 2000.
- See laboratory report for detection limits, testing protocols and QA/QC procedures. Laboratory analysis was performed by Philip Analytical Services.

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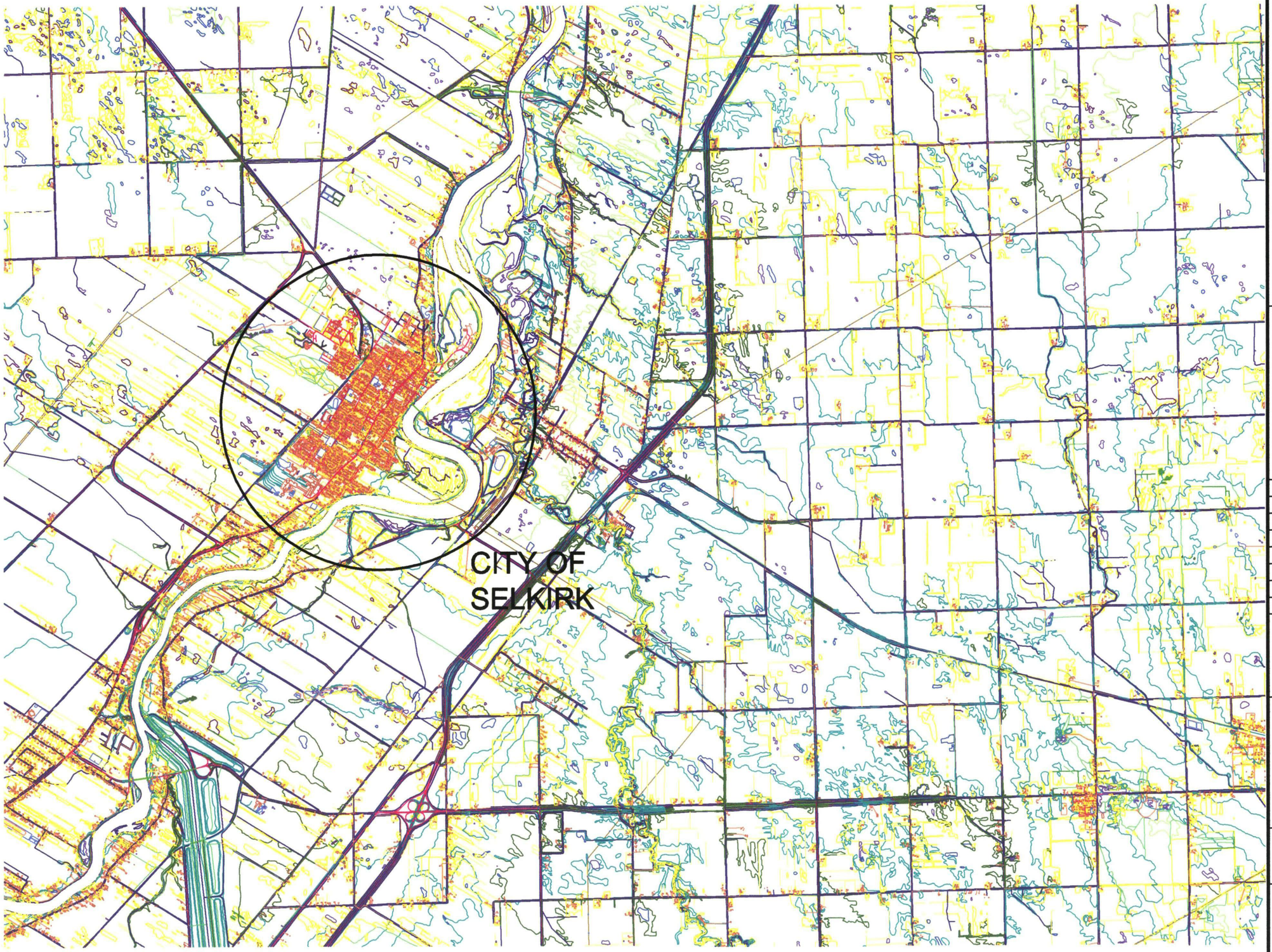
Table 9: Summary of Laboratory Testing – Metals, PAH's, Glycol in Soil

Parameter	04-4 (0.8m)	04-4(3.8m-4.6m)	04-8 (0.8m)	04-8 (4.6m)	CCME Guidelines
Trace Metals					
Arsenic	<0.2	NA	0.7	NA	12
Barium	9.9	NA	17.7	NA	2000
Chromium	3	NA	4	NA	87
Copper	3.5	NA	4.3	NA	91
Lead	2.4	NA	3.1	12.9	260
Zinc	7	NA	10	NA	360
PAHs					
Benzo(a)pyrene	NA	<0.01	NA	<0.01	1.4[1]
Naphthalene	NA	<0.01	NA	0.65	22
Glycols					
Ethylene Glycol	<5	NA	581	NA	1800
Diethylene Glycol	<5	NA	1630	NA	NG
Propylene Glycol	<5	NA	66.7	NA	NG

Notes:

- All concentrations in micrograms per gram (ug/g) unless otherwise stated
- NG – no guideline
- < - less than the analytical detection limit
- CCME – Canadian Council of Ministers of the Environment
- CCME EQG Guideline – commercial land use guideline as outlined in the Canadian Council of the Ministers of the Environment (CCME) "*Canadian Environmental Quality Guidelines*", 1999.
- [1] – Benzo(a)pyrene guideline revised to reflect lack of groundwater as domestic consumption pathway.
- See laboratory report for detection limits, testing protocols and QA/QC procedures. Laboratory analysis was performed by AMEC's Edmonton Laboratory.

FIGURES



N

NO.	REVISION	DATE	BY

amec

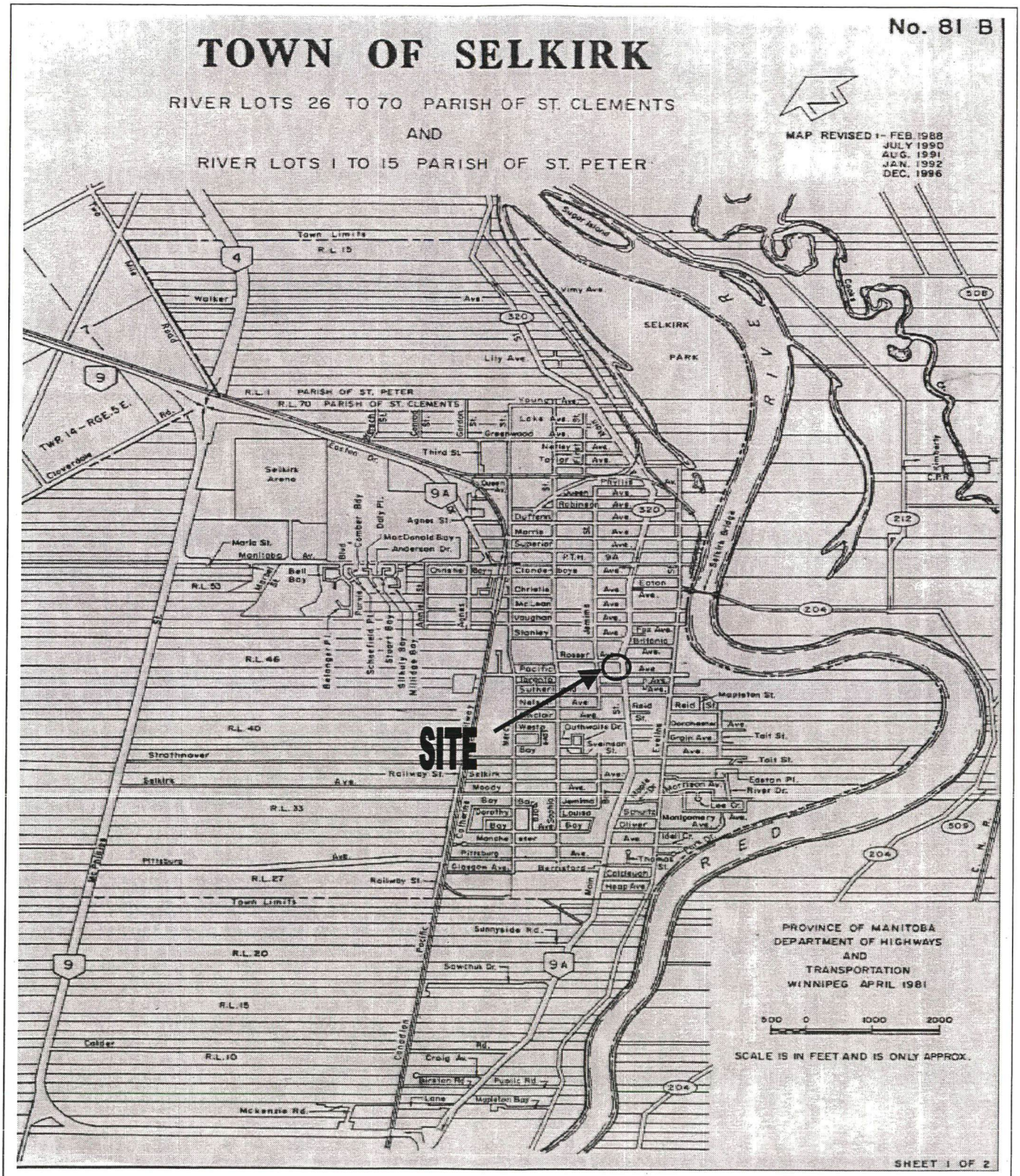
ENVIRONMENTAL ASSESSMENT PROGRAM

IMPERIAL OIL LIMITED
287 MAIN STREET
SELKIRK, MANITOBA
860265/88001943

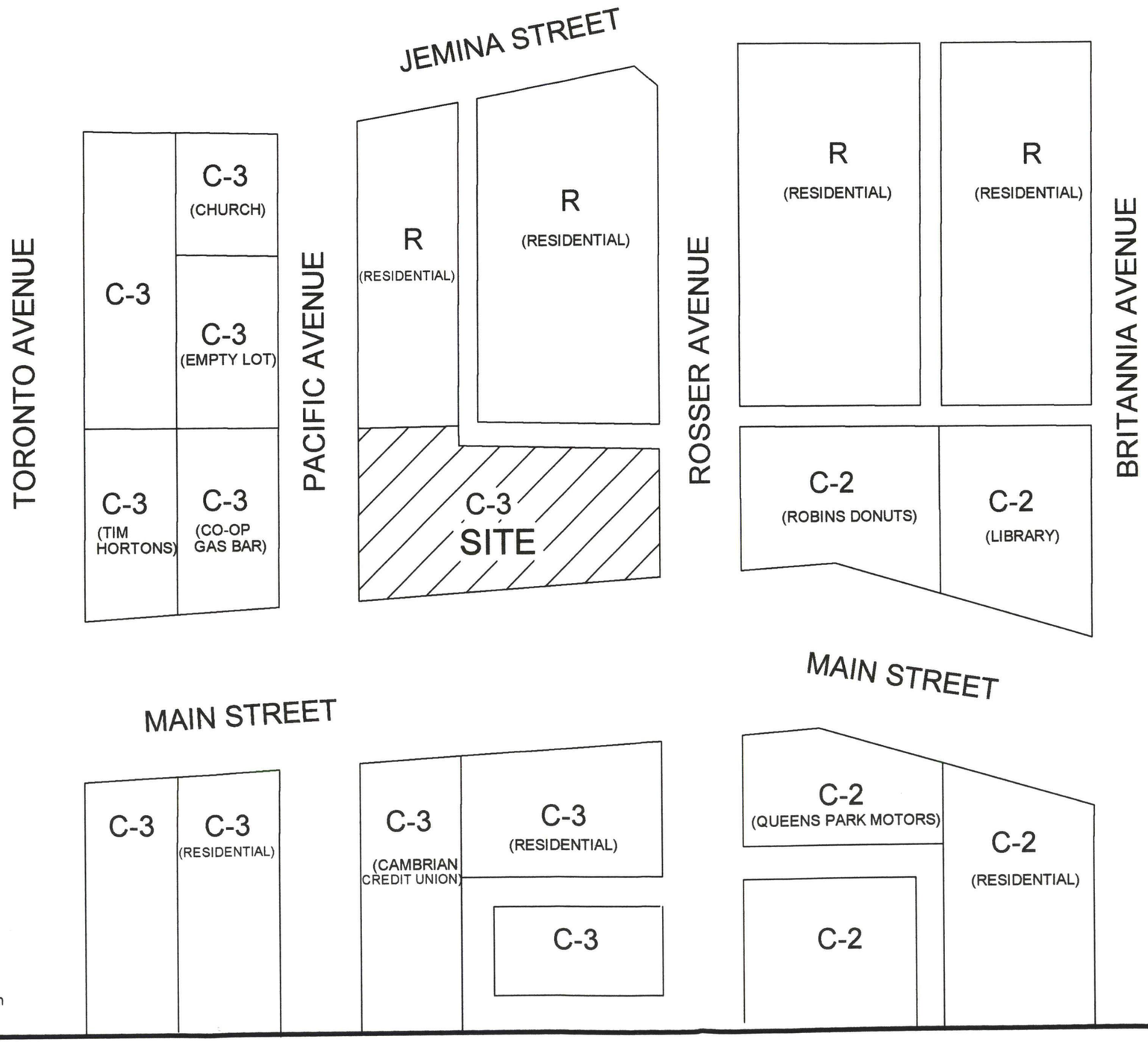
TOPOGRAPHIC MAP OF SELKIRK AND AREA

SCALE: N.T.S.
DATE: OCTOBER 2004
DRAWN BY: MB
PROJECT NO.: WX05876

FIGURE 1



amec Earth & Environmental IMPERIAL OIL LIMITED		KEY MAP ENVIRONMENTAL ASSESSMENT PROGRAM 860265 / 88001943 287 MAIN STREET SELKIRK, MANITOBA		
Drawn: N/A	Scale: As Shown	Date: OCT/04	Project No.: WX-05876	Figure: 2



TRUE NORTH

REPORT NORTH

LEGEND

C-3 ZONING DESIGNATION (STRIP COMMERCIAL)

C-2 ZONING DESIGNATION (CENTRAL COMMERCIAL)

R ZONING DESIGNATION (RESIDENTIAL)

NO.	REVISION	DATE	BY

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Earth & Environmental

A division of AMEC Americas Limited

ENVIRONMENTAL ASSESSMENT PROGRAM

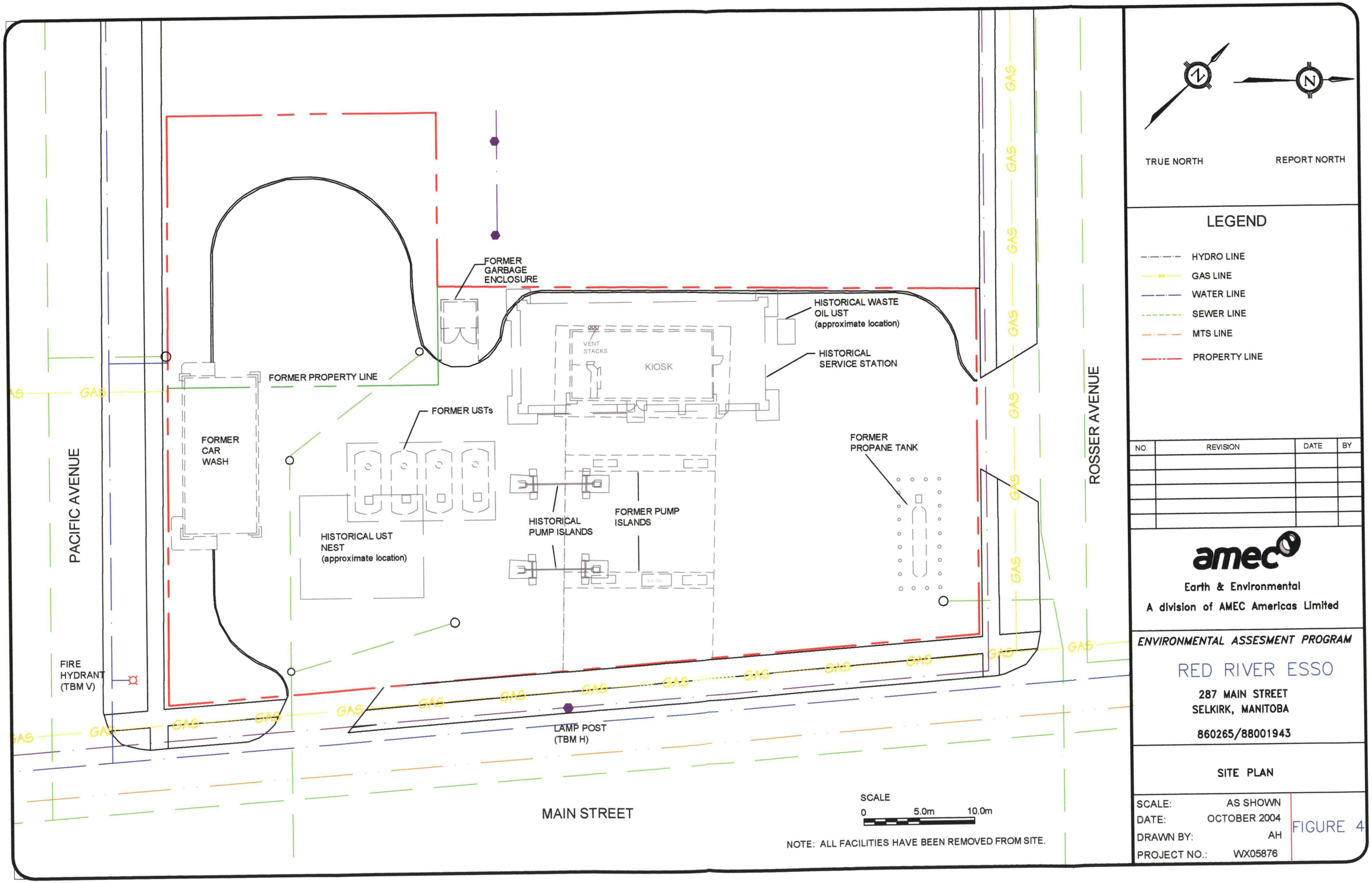
IMPERIAL OIL LIMITED

287 MAIN STREET
SELKIRK, MB
860265/88001943

SURROUNDING LAND USE PLAN

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	MR
PROJECT NO.:	WX05876

FIGURE 3



TRUE NORTH

REPORT NORTH

LEGEND

- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE

NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

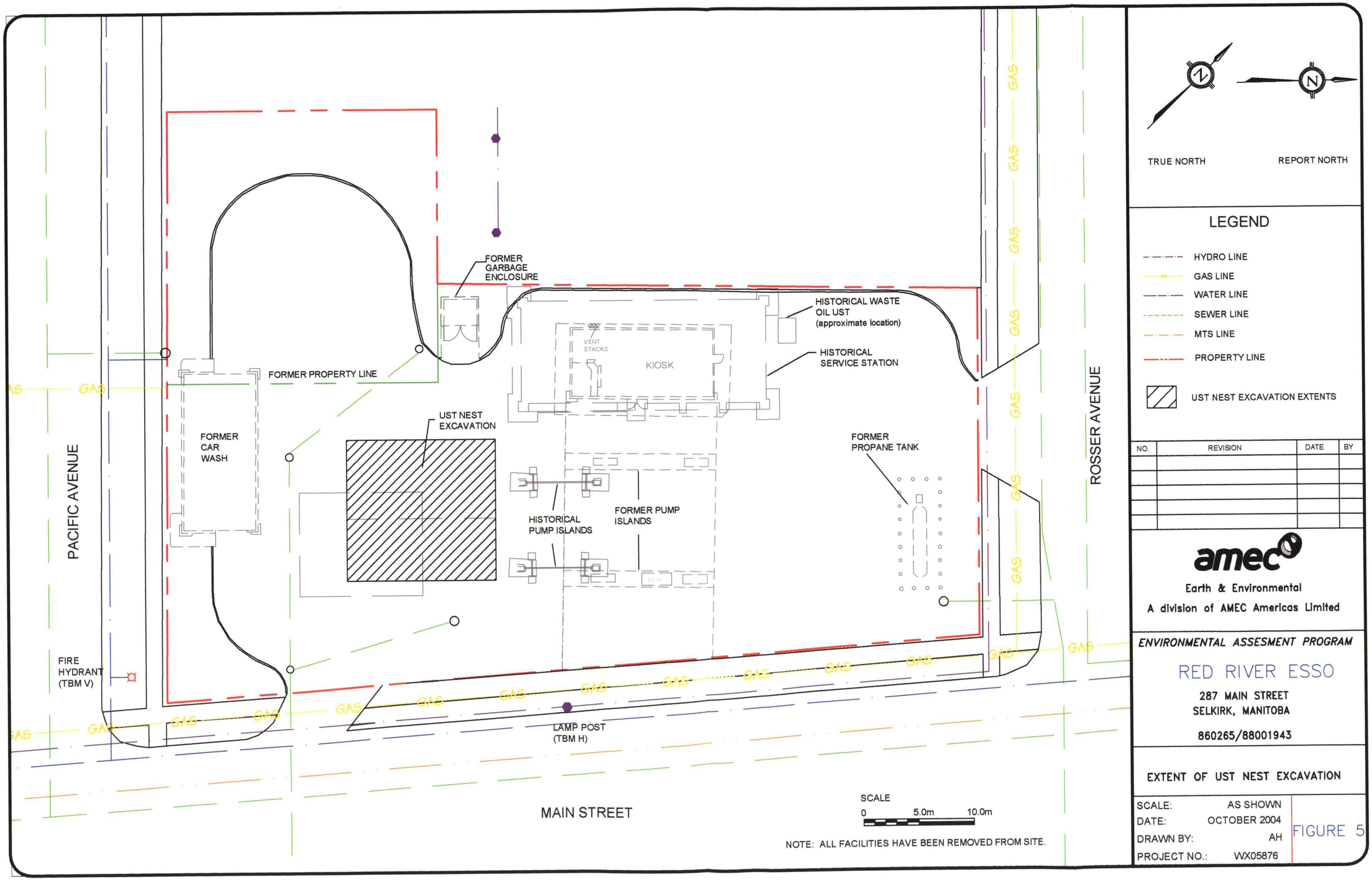
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

SITE PLAN

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 4



TRUE NORTH

REPORT NORTH

LEGEND

- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE
- UST NEST EXCAVATION EXTENTS

NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

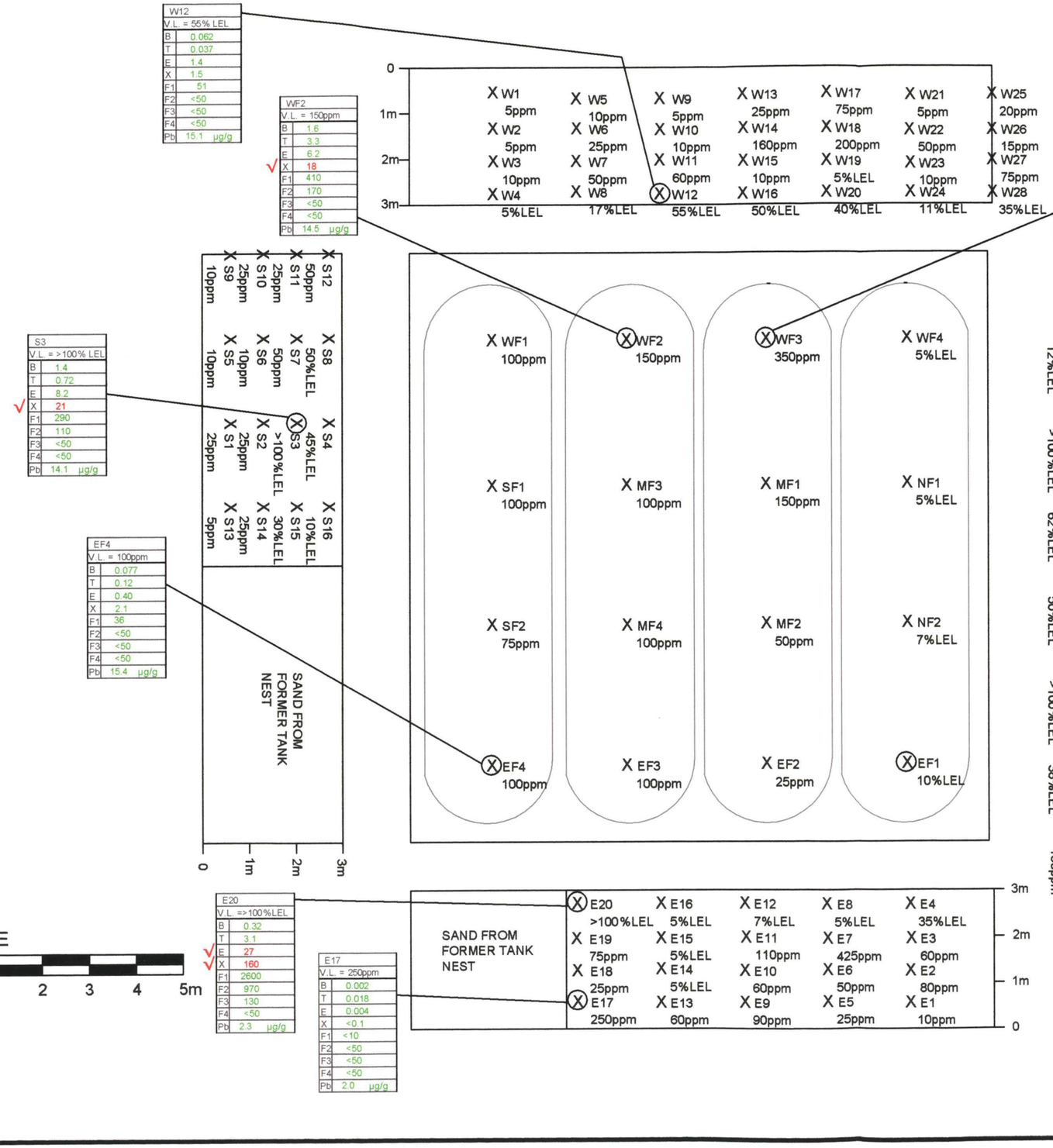
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

EXTENT OF UST NEST EXCAVATION

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 5



TRUE NORTH

REPORT NORTH

LEGEND

E3
X SAMPLE LOCATION & VAPOUR LEVEL
60ppm

(X) LABORATORY SAMPLE

NOTES:
1. SAMPLE DESIGNATIONS INCREASE WITH DEPTH
2. CONCENTRATIONS GREATER THAN 500ppm WERE MEASURED IN %LEL & CONVERTED SUBSEQUENTLY

REFERENCE CRITERIA FOR FINE GRAINED SOIL ≤ 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	660	1500	2500	6600	260

REFERENCE CRITERIA FOR FINE GRAINED SOIL > 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	4800	26000	NG	NG	260

√ ABOVE CRITERIA

NO.	REVISION	DATE	BY

amec

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

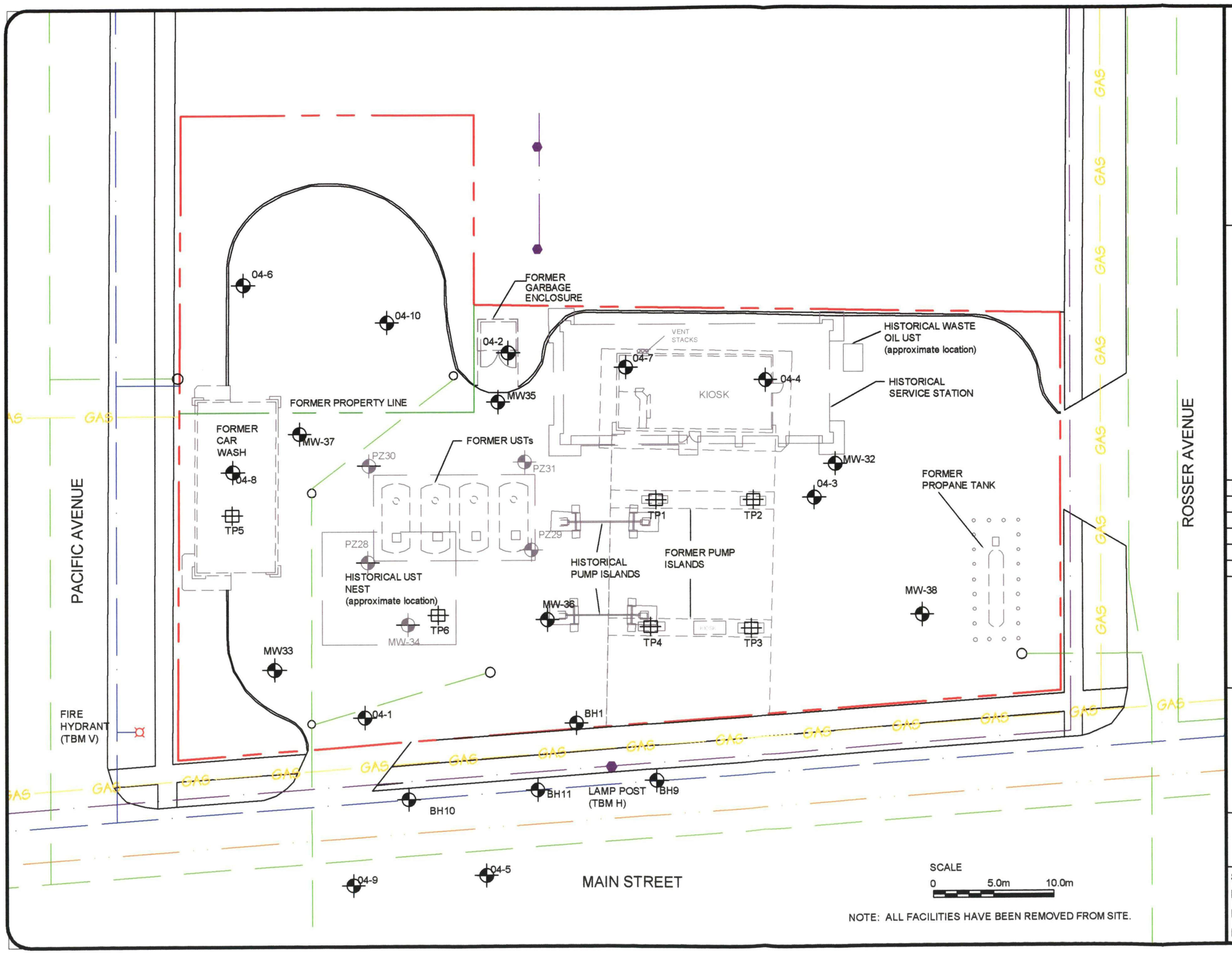
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

UST NEST EXCAVATION PLAN

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 6



TRUE NORTH

REPORT NORTH

LEGEND

- MONITORING WELL
- DESTROYED MONITORING WELL
- TEST PIT
- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE

NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

TEST HOLE/TEST PIT LOCATION PLAN

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 7

PACIFIC AVENUE

ROSSER AVENUE

GAS

04-6

04-10

04-2

FORMER GARBAGE ENCLOSURE

FORMER PROPERTY LINE

MW35

04-7

VENT STACKS

KIOSK

04-4

HISTORICAL WASTE OIL UST (approximate location)

HISTORICAL SERVICE STATION

MW-37

FORMER CAR WASH

04-8

PZ30

FORMER USTs

PZ31

MW-32

04-3

TP1

TP2

FORMER PROPANE TANK

PZ28

PZ29

HISTORICAL PUMP ISLANDS

FORMER PUMP ISLANDS

HISTORICAL UST NEST (approximate location)

TP6

MW-34

MW-36

TP4

TP3

MW-38

TP5

MW33

FIRE HYDRANT (TBM V)

04-1

BH1

BH10

BH11

LAMP POST (TBM H)

BH9

04-9

04-5

MAIN STREET

TP1 @ 3.1m	
V.L. = 10ppm	
B	0.005
T	0.039
E	0.024
X	<0.1
F1	<10
F2	<50
F3	<50
F4	<50 µg/g

TP2 @ 2.4m		TP2 @ 3.7m	
V.L. = 33% LEL		V.L. = 60ppm	
B	0.18	B	0.50
T	<0.10	T	0.026
E	5.0	E	0.57
X	18 √	X	<0.1
F1	560	F1	35
F2	190	F2	<50
F3	<50	F3	<50
F4	<50 µg/g	F4	<50 µg/g

TP5 @ 3.1m	
V.L. = 5ppm	
B	0.008
T	0.049
E	0.014
X	<0.1
F1	<10
F2	<50
F3	<50
F4	<50 µg/g

TP6 @ 2.4m		TP6 @ 3.7m	
V.L. = >100% LEL		V.L. = 275ppm	
B	1.4	B	8.5 √
T	12	T	18 √
E	21 √	E	4.9
X	150 √	X	30 √
F1	2000	F1	250
F2	1200	F2	<50
F3	<50	F3	<50
F4	<50 µg/g	F4	<50 µg/g

TP4 @ 1.8m	
V.L. = 25ppm	
B	0.002
T	0.029
E	<0.003
X	<0.1
F1	<10
F2	<50
F3	<50
F4	<50 µg/g

TP3 @ 3.4m	
V.L. = 10ppm	
B	0.005
T	0.030
E	0.008
X	<0.1
F1	<10
F2	<50
F3	<50
F4	<50 µg/g

NOTE: ALL FACILITIES HAVE BEEN REMOVED FROM SITE.

SCALE
0 5.0m 10.0m

SAMPLING DATE:
16 JULY 2004

TRUE NORTH

REPORT NORTH

LEGEND

- MONITORING WELL
- DESTROYED MONITORING WELL
- TEST PIT
- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE

REFERENCE CRITERIA FOR FINE GRAINED SOIL ≤ 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	660	1500	2500	6600	260

REFERENCE CRITERIA FOR FINE GRAINED SOIL > 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	4800	26000	NG	NG	260

√ ABOVE CRITERIA

NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

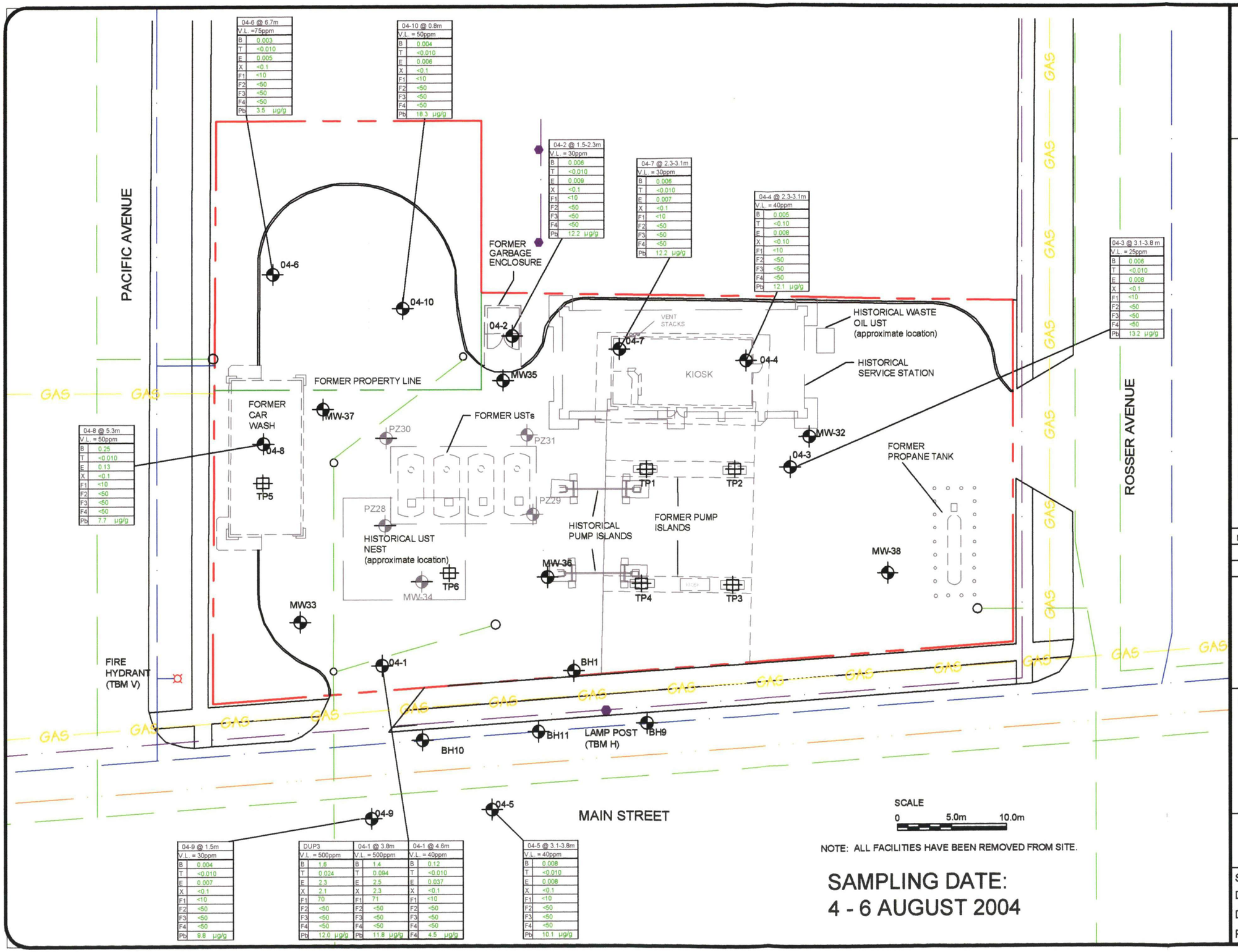
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

SOIL ANALYTICAL RESULTS
TEST PIT PROGRAM

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 8



TRUE NORTH

REPORT NORTH

LEGEND

- MONITORING WELL
- DESTROYED MONITORING WELL
- TEST PIT
- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE

REFERENCE CRITERIA FOR FINE GRAINED SOIL ≤ 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	660	1500	2500	6600	260

REFERENCE CRITERIA FOR FINE GRAINED SOIL > 1.5m

B	T	E	X	F1	F2	F3	F4	Pb
5	14	20	17	4800	26000	NG	NG	260

√ ABOVE CRITERIA

NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

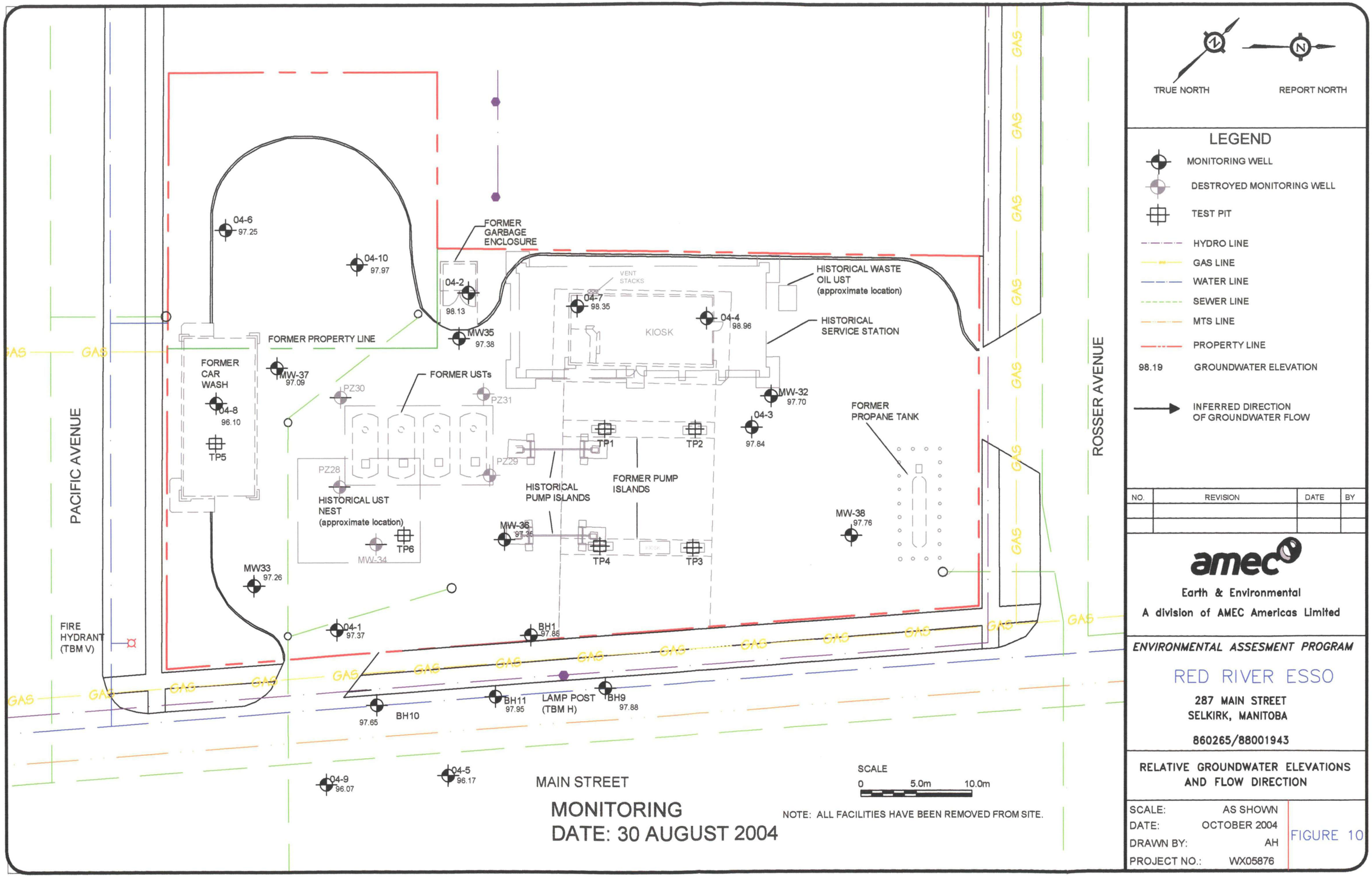
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

SOIL ANALYTICAL RESULTS
INTRUSIVE ASSESSMENT PROGRAM

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 9



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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

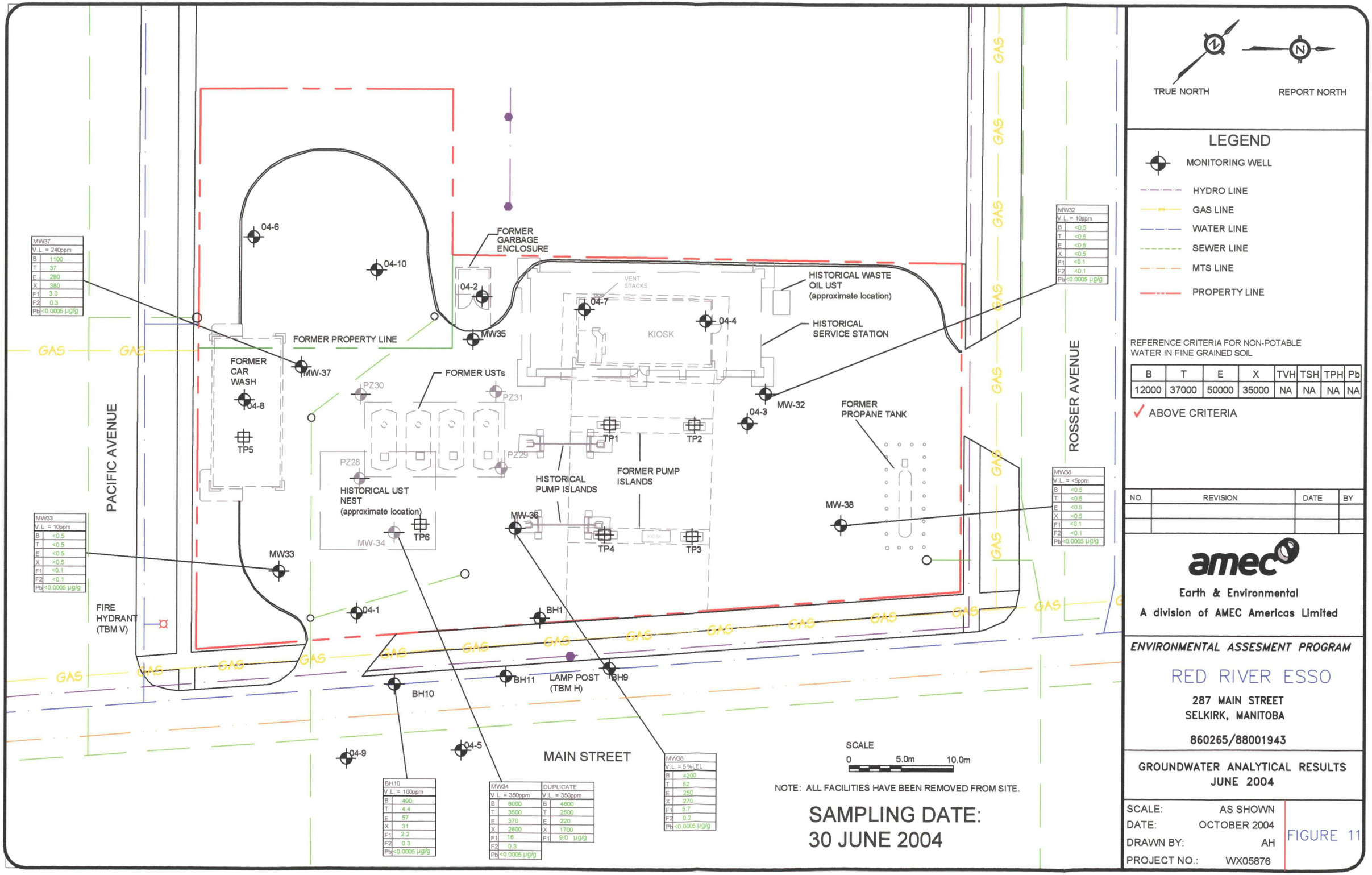
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

RELATIVE GROUNDWATER ELEVATIONS AND FLOW DIRECTION

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 10



NO.	REVISION	DATE	BY

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

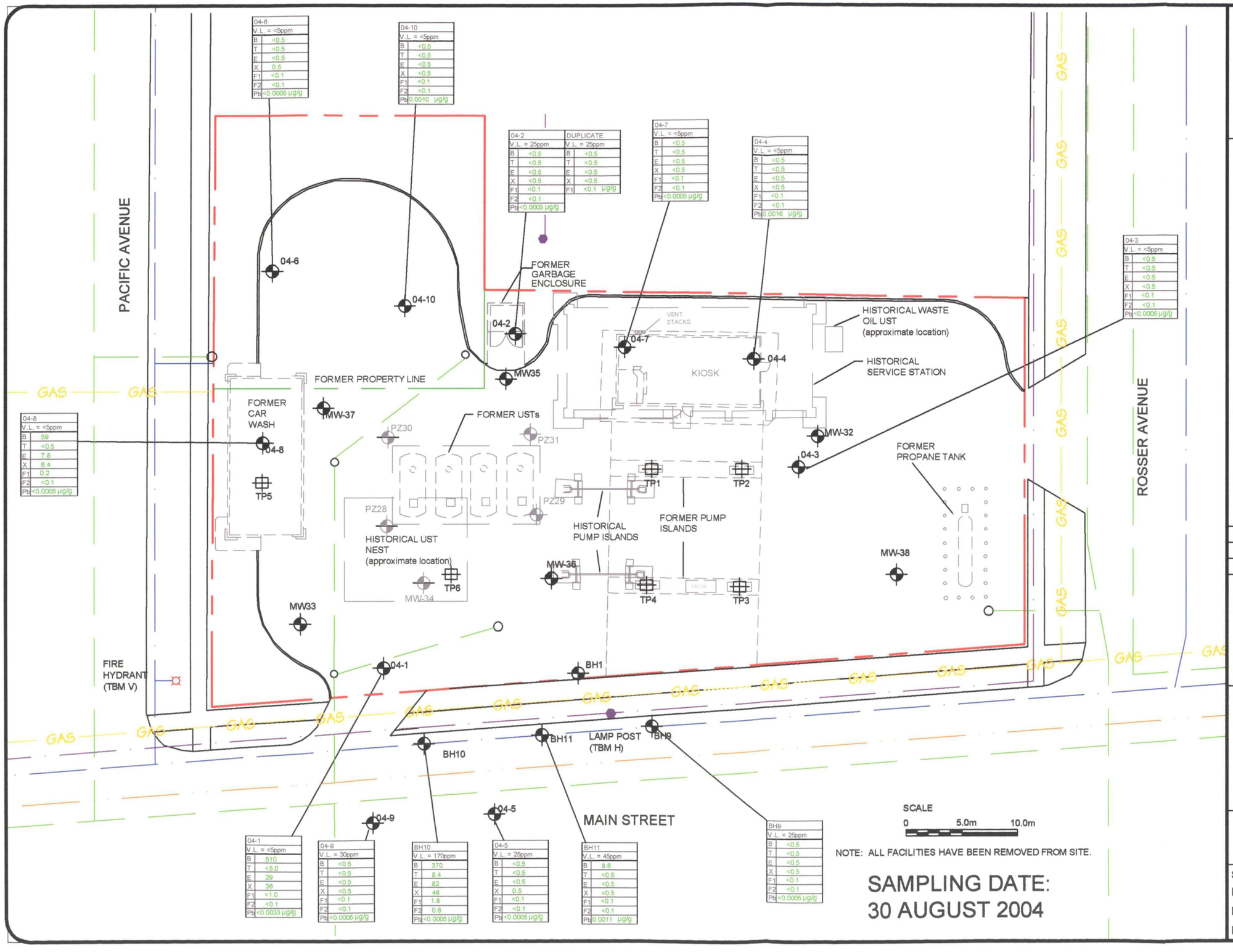
287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

GROUNDWATER ANALYTICAL RESULTS JUNE 2004

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 11



TRUE NORTH

REPORT NORTH

LEGEND

- MONITORING WELL
- DESTROYED MONITORING WELL
- TEST PIT
- HYDRO LINE
- GAS LINE
- WATER LINE
- SEWER LINE
- MTS LINE
- PROPERTY LINE

REFERENCE CRITERIA FOR NON-POTABLE WATER IN FINE GRAINED SOIL

B	T	E	X	TVH	TSH	TPH	Pb
12000	37000	50000	35000	NA	NA	NA	NA

✓ ABOVE CRITERIA

NO.	REVISION	DATE	BY

amec

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ENVIRONMENTAL ASSESMENT PROGRAM

RED RIVER ESSO

287 MAIN STREET
SELKIRK, MANITOBA

860265/88001943

GROUNDWATER ANALYTICAL RESULTS SEPTEMBER 2004

SCALE:	AS SHOWN
DATE:	OCTOBER 2004
DRAWN BY:	AH
PROJECT NO.:	WX05876

FIGURE 12

PHOTOGRAPHS

PHOTOGRAPH 1: Exposing USTs.

PHOTOGRAPH 2: Storage of UST on Site before destruction and removal from Site.

amec Earth & Environmental **IMPERIAL OIL LIMITED**		**SITE PHOTOGRAPHS** **ENVIRONMENTAL ASSESSMENT PROGRAM** **FORMER IOL GAS BAR** **287 MAIN STREET** **SELKIRK, MANITOBA**		
Drawn: N/A	Scale: N/A	Date: SEPT/04	Project No.: WX-05876	Figure: P1

PHOTOGRAPH 3: Destruction of UST prior to loading into waste bin for transport.

PHOTOGRAPH 4: General overview of Site (as viewed from the north) during UST removal.

amec Earth & Environmental		**SITE PHOTOGRAPHS ENVIRONMENTAL ASSESSMENT PROGRAM FORMER IOL GAS BAR 287 MAIN STREET SELKIRK, MANITOBA**		
IMPERIAL OIL LIMITED				
Drawn: N/A	Scale: N/A	Date: OCT/04	Project No.: WX-05876	Figure: P2

PHOTOGRAPH 5: Looking north on southern property limits. Former UST nest in foreground of photograph. Former Robin's Donuts and Library across Rosser Avenue in background.

PHOTOGRAPH 6: Looking south on northern property limits. Co-op Service Station across Pacific Avenue in background.

amec Earth & Environmental **IMPERIAL OIL LIMITED**		**SITE PHOTOGRAPHS ENVIRONMENTAL ASSESSMENT PROGRAM FORMER IOL GAS BAR 287 MAIN STREET SELKIRK, MANITOBA**		
Drawn: N/A	Scale: N/A	Date: OCT/04	Project No.: WX-05876	Figure: P3

PHOTOGRAPH 7: Looking southwest from the northeast corner of the property. Vacant commercial lot and residential properties visible in the background.

PHOTOGRAPH 8: Looking across the Site to the east. Cambrian Credit Union and residential properties visible in the background of photograph across Main Street.

amec Earth & Environmental		**SITE PHOTOGRAPHS** **ENVIRONMENTAL ASSESSMENT PROGRAM** **FORMER IOL GAS BAR** **287 MAIN STREET** **SELKIRK, MANITOBA**		
IMPERIAL OIL LIMITED				
Drawn: N/A	Scale: N/A	Date: OCT/04	Project No.: WX-05876	Figure: P4

APPENDIX A

LEGAL SITE SURVEY DRAWING

Pollock & Wright

LAND SURVEYING • GEOMATICS
117 Fort Street, Winnipeg, MB R3C 1C6
T: (204) 947-1557 F: (204) 943-8024
Toll Free: 1-800-563-8656

Wednesday: 9 am - 5 pm
Civic Centre, Rm 305, Winkler, MB R6W 4B7
T: (204) 325-4615

Our File No.:0407343
Date: August 11, 2004

Albert G. Degner
M.L.S., C.L.S.

Leslie McLaughlin
M.L.S., C.L.S.

Donald N. Bourgeois
M.L.S., C.L.S.

Jim G. Watling
P.Eng., B.Sc. S.E., M.L.S., C.L.S.

K.M. (Ken) Yerex
M.L.S., C.L.S., B.Sc.

SURVEYOR'S STAKING CERTIFICATE

PREPARED FOR:
AMEC Earth & Environmental Ltd.
440 Dovercourt Drive
Winnipeg, MB
R3Y 1N4

CIVIC ADDRESS:
287 Main Street - City of Selkirk

CERTIFICATES OF TITLE:
B57019 (Pcls. 1-3) and 1325272 (Pcl. 4)
(Searched: 30/07/2004)

REGISTERED OWNER:
IMPERIAL OIL LIMITED

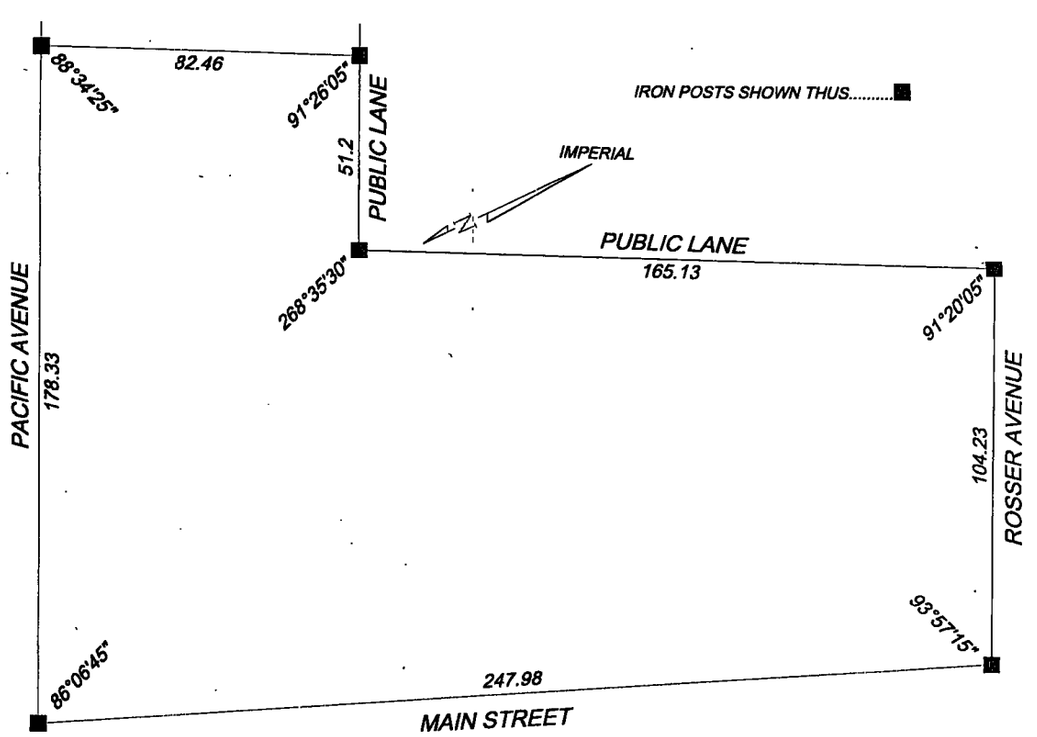
LEGAL DESCRIPTION:
PARCEL ONE: THE N 1/2 OF LOT 69 AND ALL OF LOTS 70, 71, 72 AND 73 PLAN 9328 WLTO (LISGAR DIV) EXC OUT OF ALL SAID LOTS ALL THAT PORTION TAKEN FOR PUBLIC LANE PLAN 10518 WLTO IN LOT 46 PARISH OF ST CLEMENTS
PARCEL TWO: ALL THAT PORTION OF LOT 69 PLAN 9328 WLTO (LISGAR DIV) TAKEN FOR PUBLIC LANE PLAN 5570 WLTO, NOW CLOSED, WHICH LIES TO THE EAST OF A LINE DRAWN EAST OF, PARALLEL WITH AND PERP DISTANT 20 FEET FROM THE WESTERN LIMIT OF SAID LOT 69, EXC OUT OF PARCEL TWO MINES AND MINERALS IN LOT 46 PARISH OF ST CLEMENTS
PARCEL THREE: LOTS 20 AND 21 PLAN 22 WLTO (LISGAR DIV) IN LOT 45 PARISH OF ST CLEMENTS
PARCEL FOUR: LOTS 22 AND 23 PLAN 22 WLTO (L DIV) IN RL 45 PARISH OF ST CLEMENTS

INSTRUMENT NO'S:
J 65348 and 199900 are registered against the property.

DATE OF SURVEY:
August 5, 2004

There are no encroachments above ground level onto the above described land by buildings from adjoining properties except as shown on the sketch below.

M.L.S.



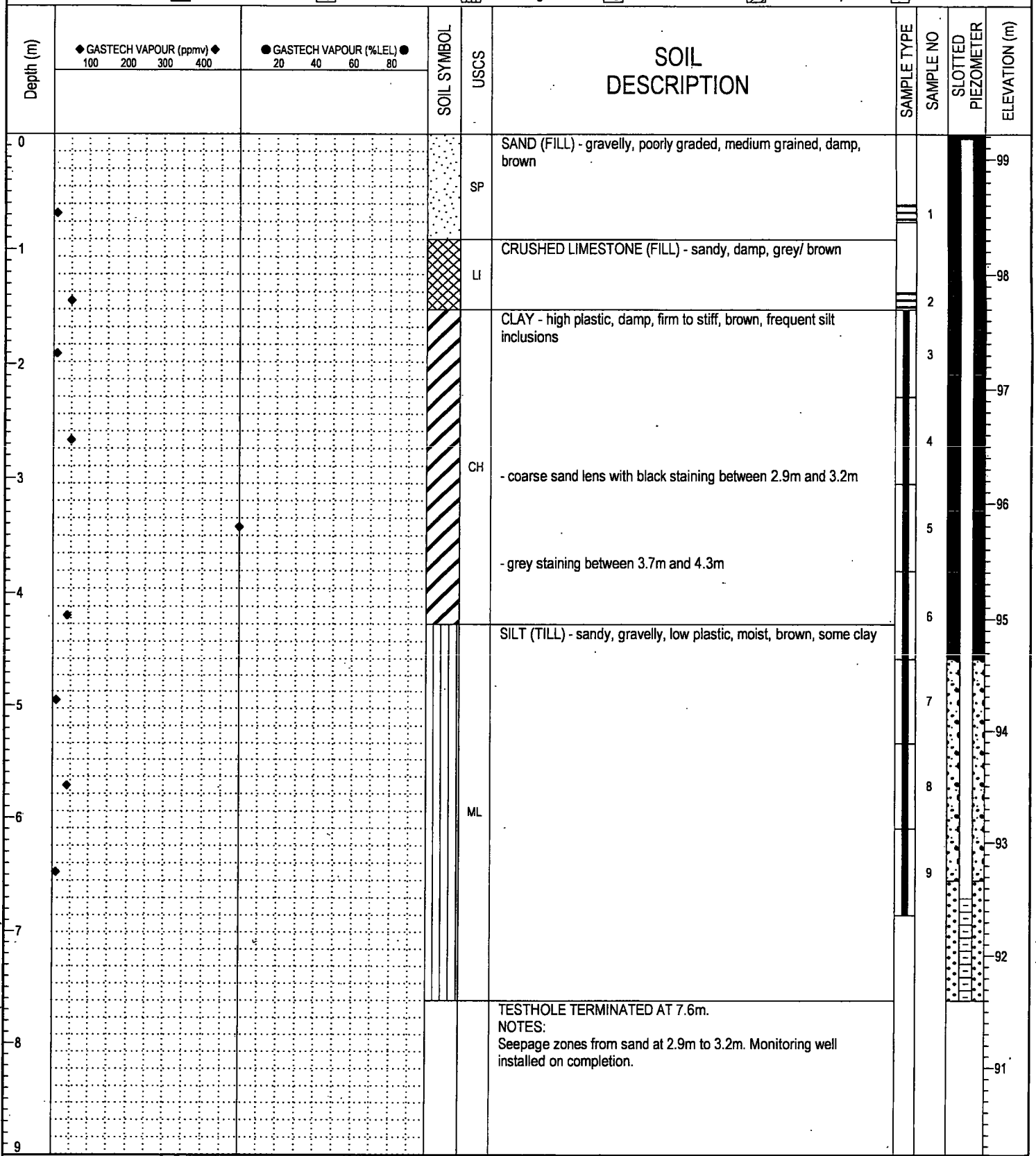
APPENDIX B

TEST HOLE AND TEST PIT LOGS

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-01**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.22 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



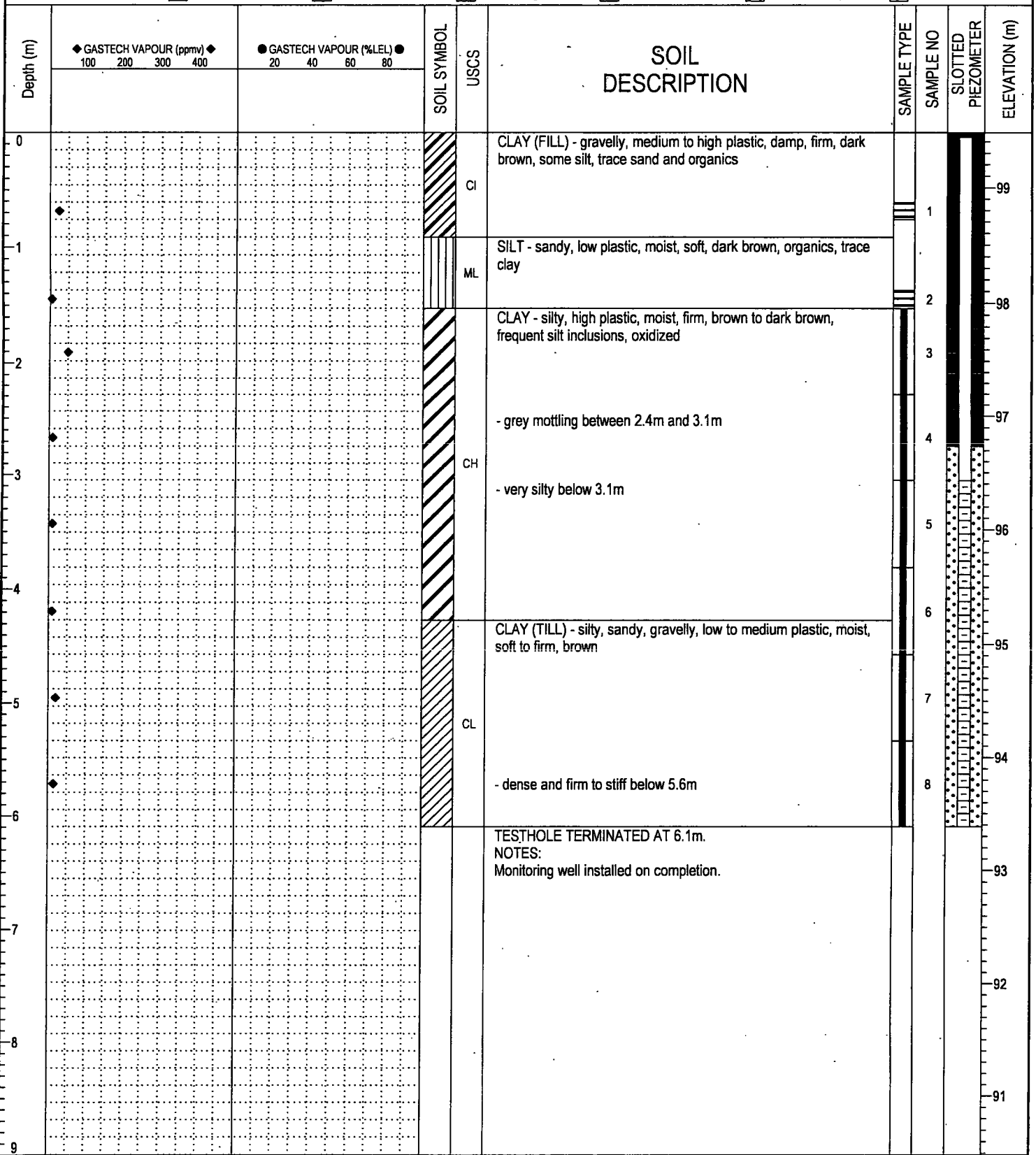
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 7.6 m
		REVIEWED BY: AD	COMPLETION DATE: 5 August 2004
		Fig. No: 2	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:21 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-02**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.48 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



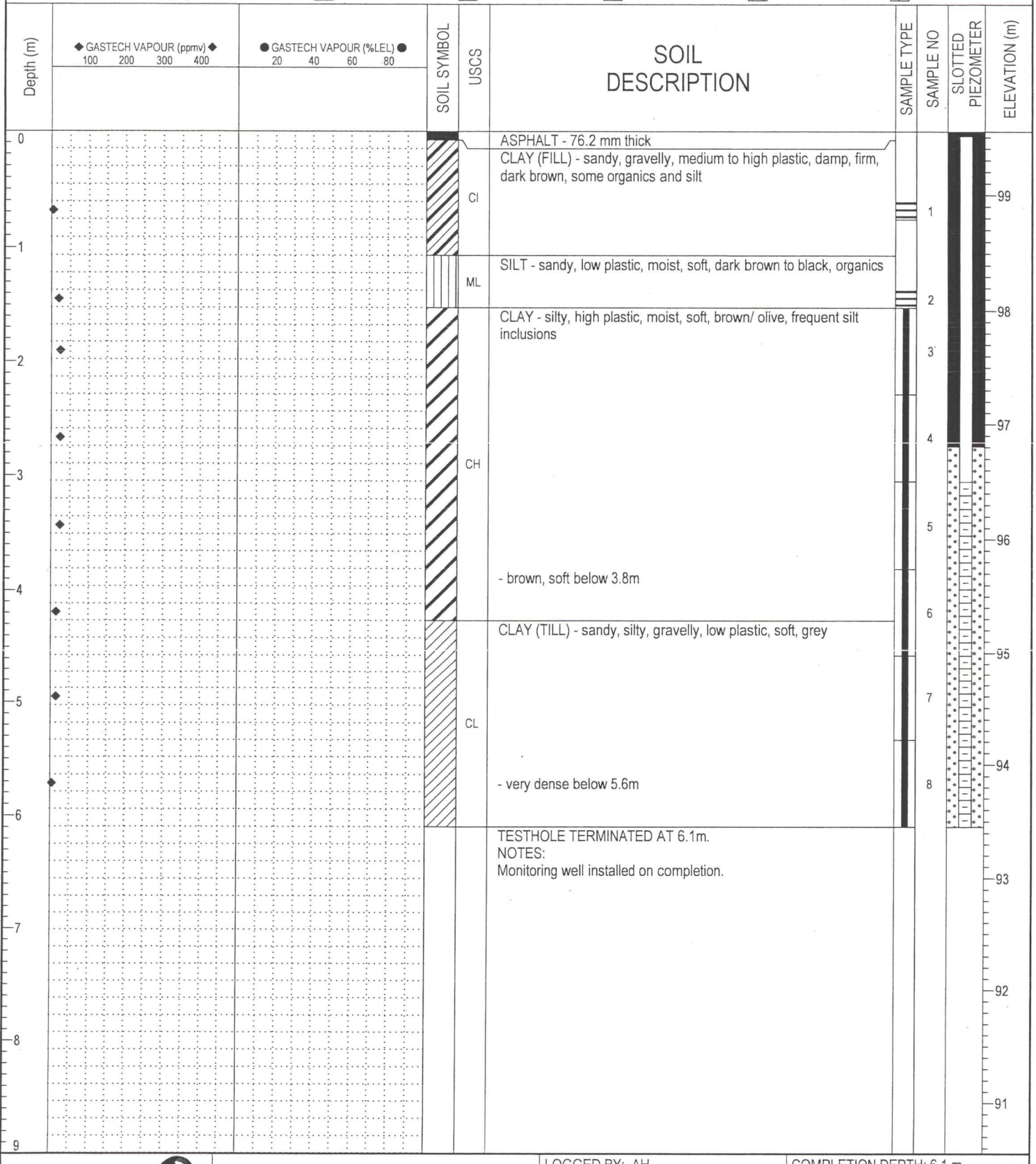
amec	**AMEC Earth & Environmental Winnipeg, Manitoba**	LOGGED BY: AH; REVIEWED BY: AD; Fig. No: 3
		COMPLETION DEPTH: 6.1 m; COMPLETION DATE: 5 August 2004; Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:21 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-03**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.55 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



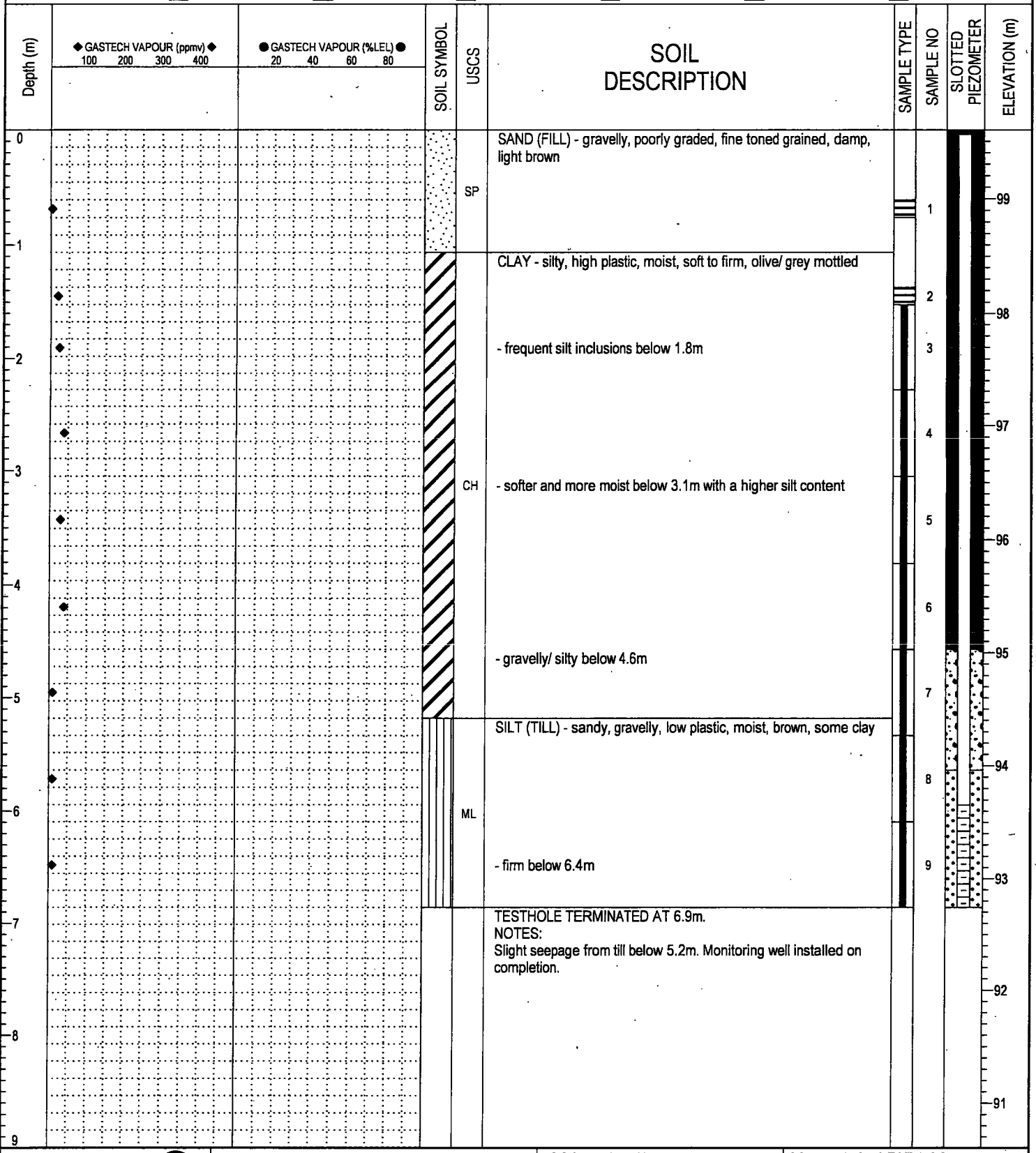
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 6.1 m
		REVIEWED BY: AD	COMPLETION DATE: 4 August 2004
		Fig. No: 4	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:21 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-04**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.6 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



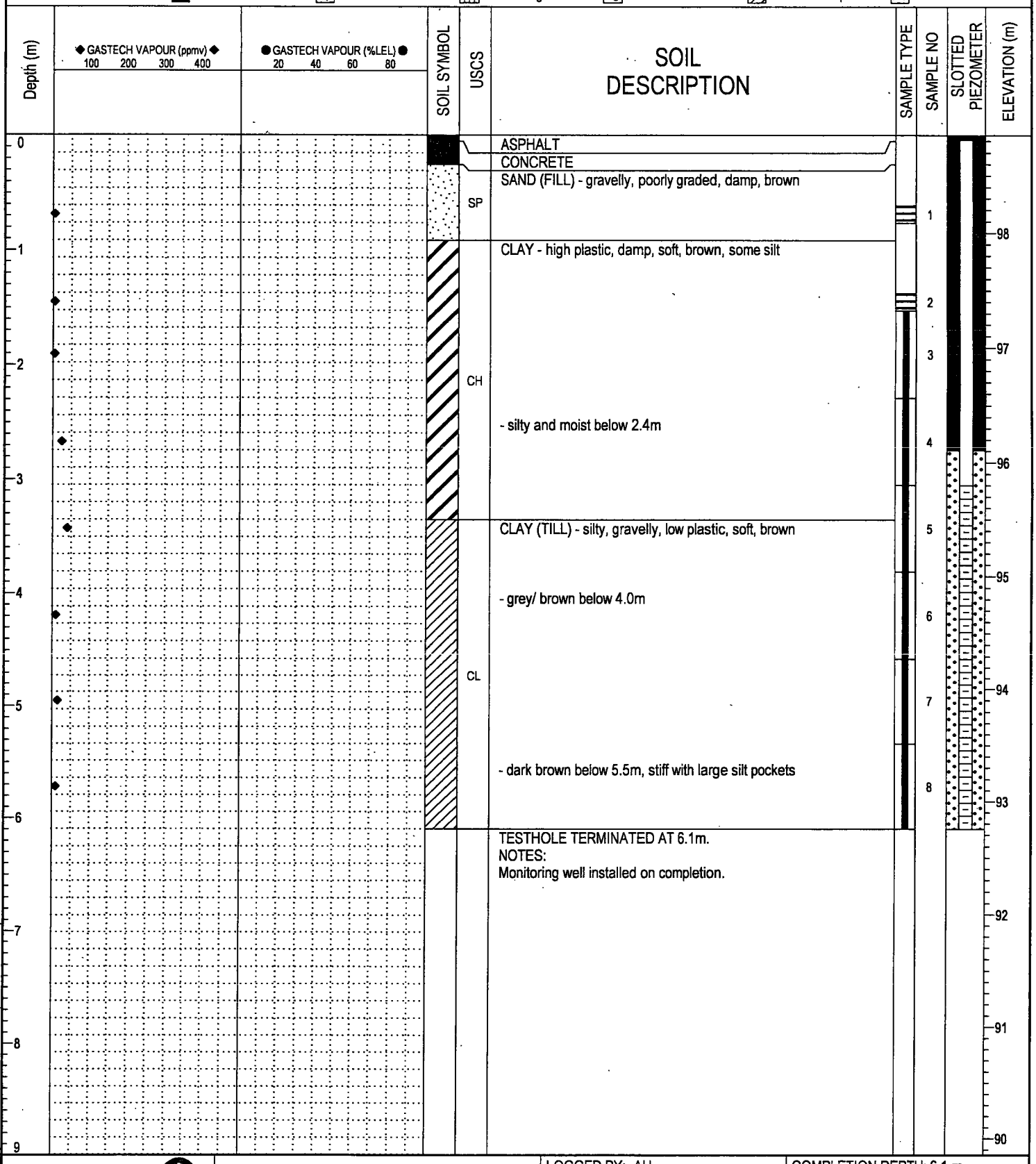
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 6.9 m
		REVIEWED BY: AD	COMPLETION DATE: 4 August 2004
		Fig. No: 5	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-05**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 98.85 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



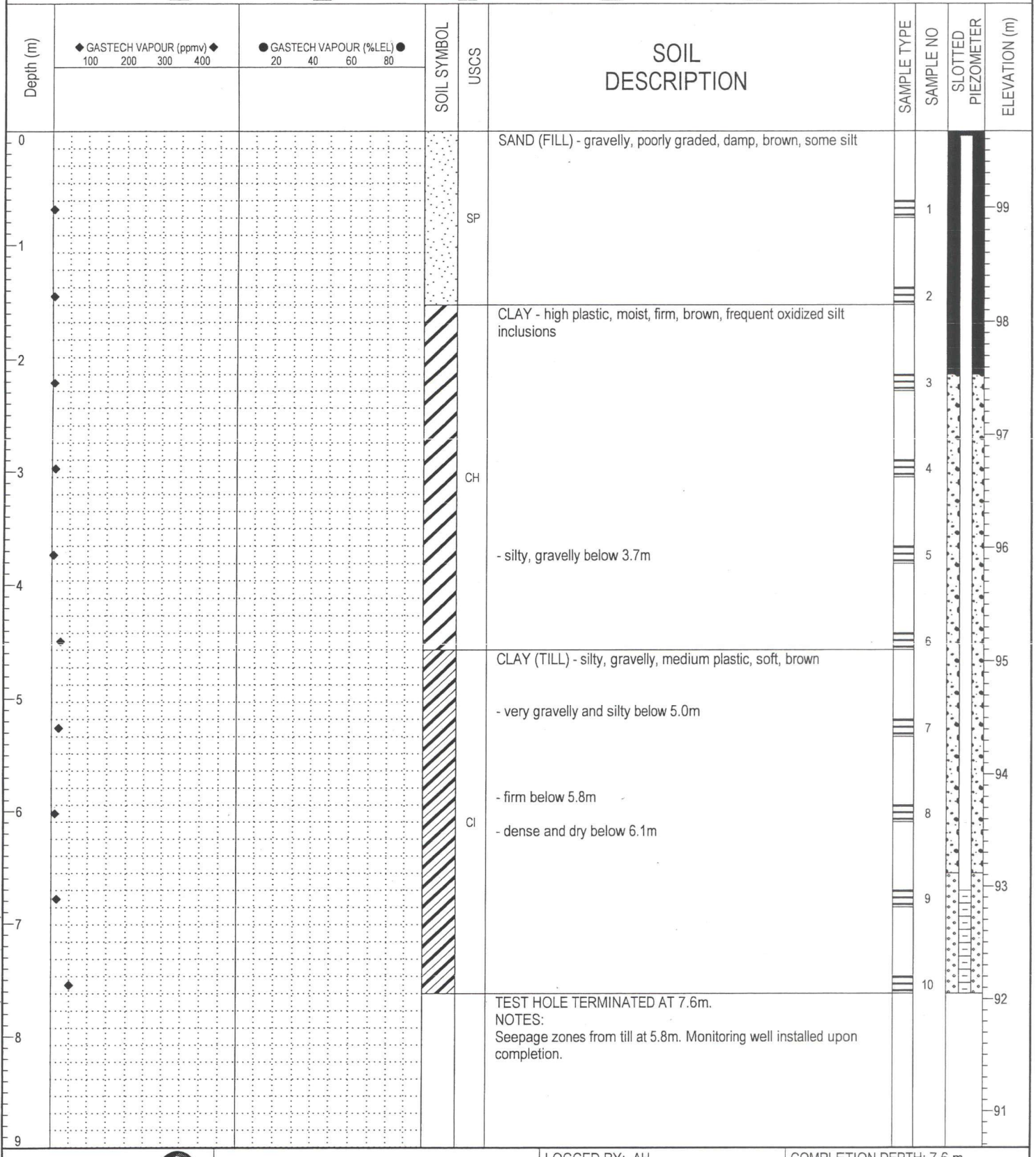
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 6.1 m
		REVIEWED BY: AD	COMPLETION DATE: 6 August 2004
		Fig. No: 6	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-06**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.67 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



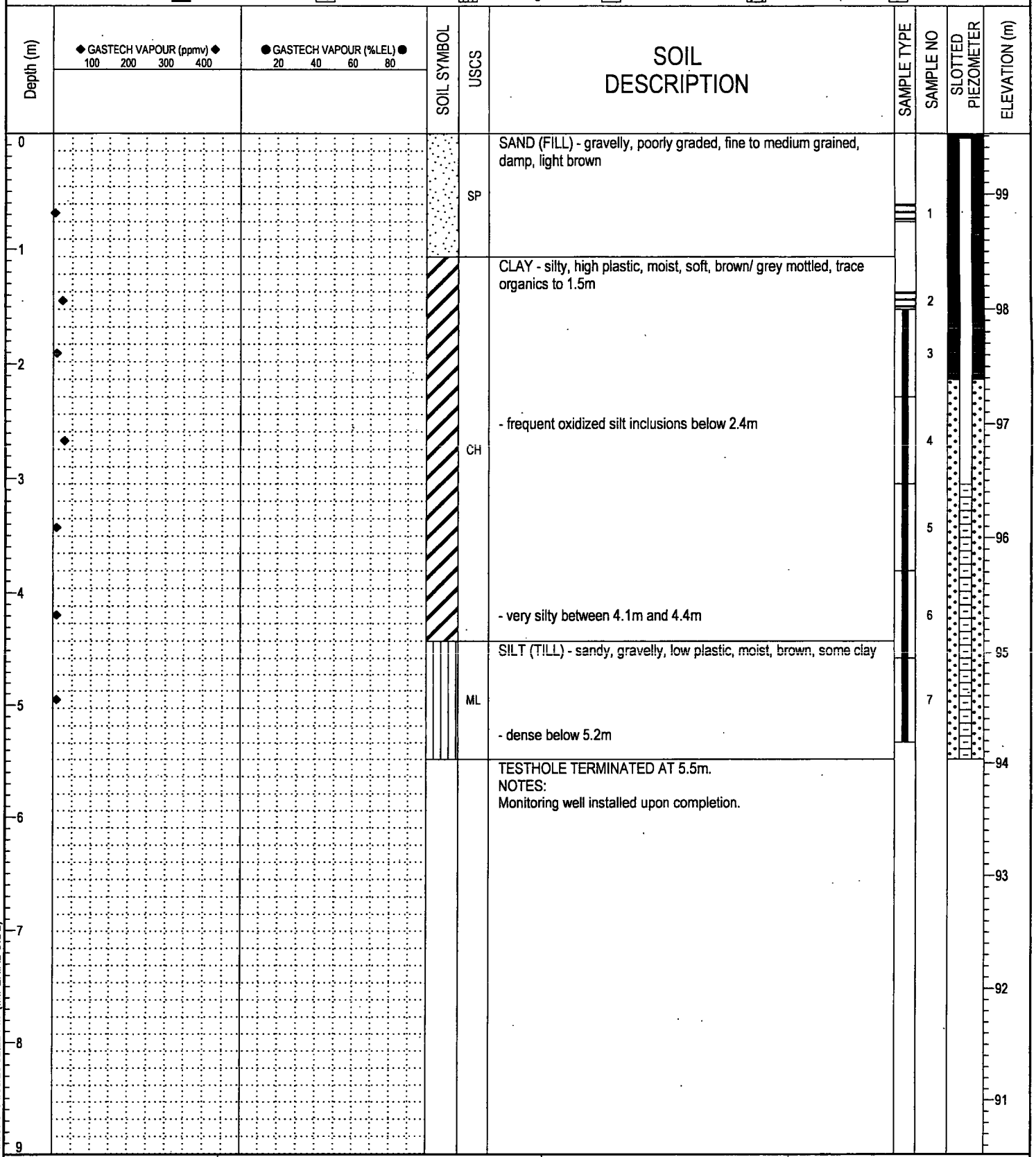
amec	**AMEC Earth & Environmental Winnipeg, Manitoba**	LOGGED BY: AH; REVIEWED BY: AD; Fig. No: 7
		COMPLETION DEPTH: 7.6 m; COMPLETION DATE: 5 August 2004
		Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-07**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.52 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



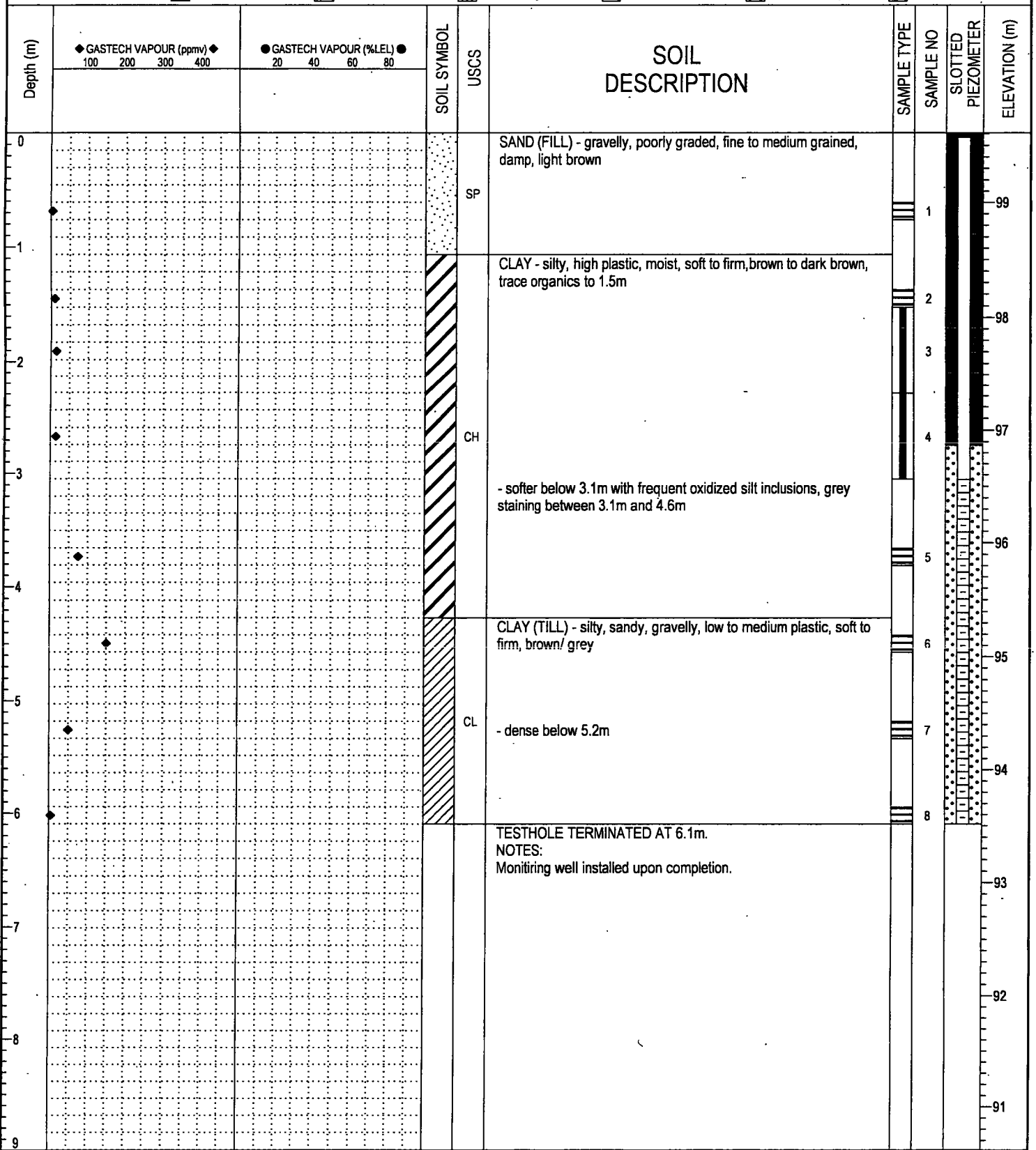
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 5.5 m
		REVIEWED BY: AD	COMPLETION DATE: 4 August 2004
		Fig. No: 8	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-08**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.61 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



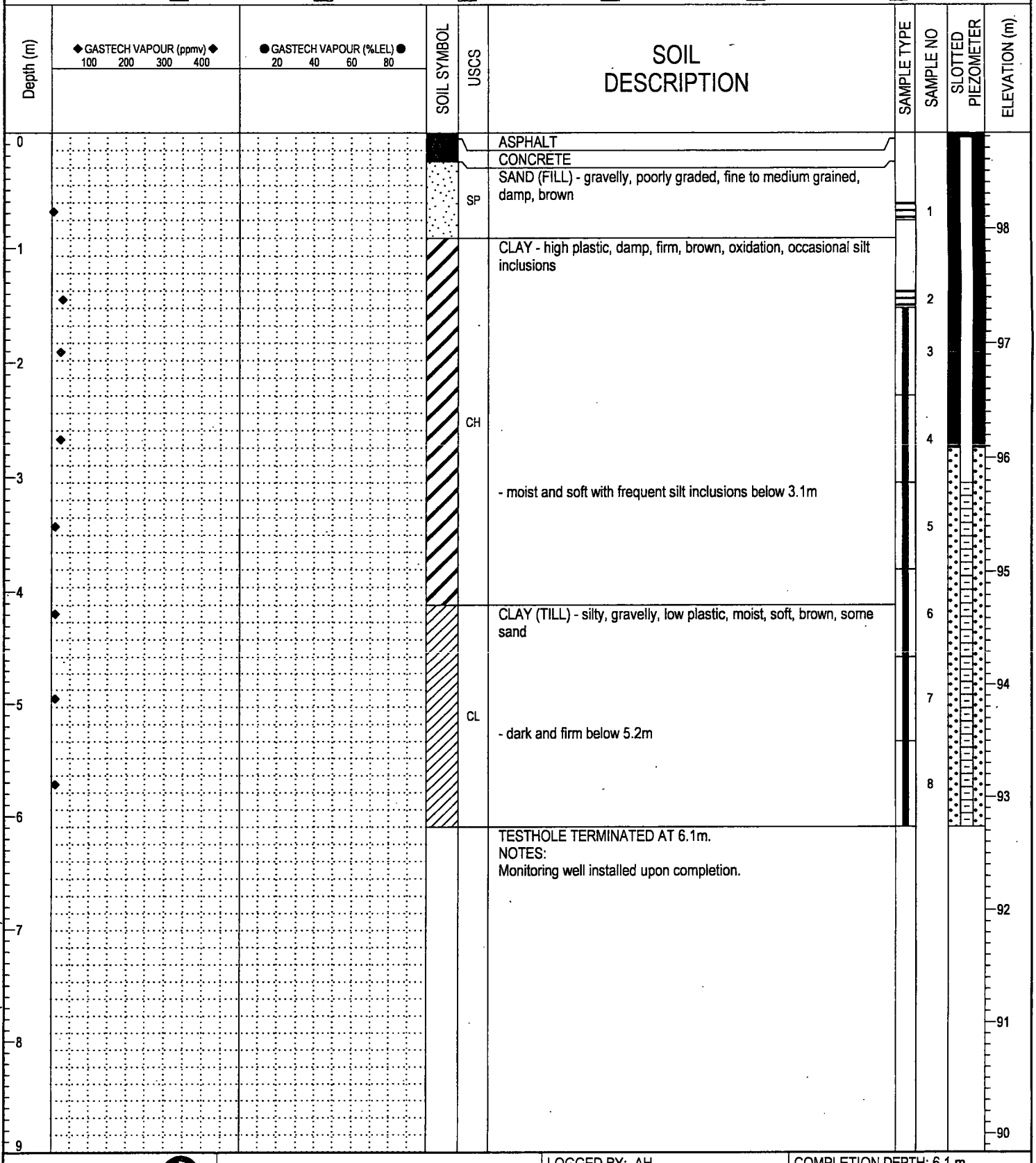
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH; REVIEWED BY: AD; Fig. No: 9
		COMPLETION DEPTH: 6.1 m; COMPLETION DATE: 4 August 2004
		Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-09**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 98.83 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



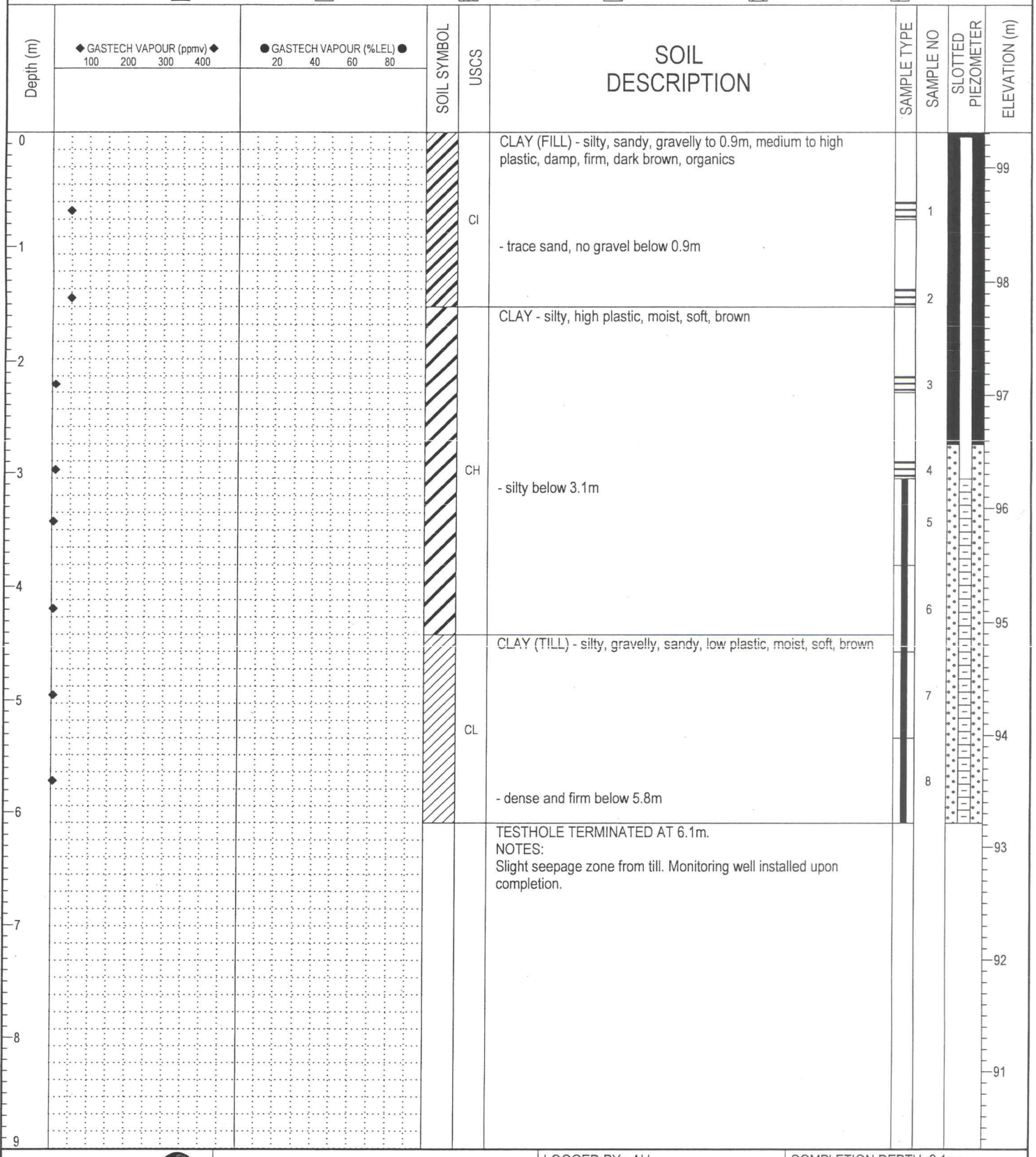
amec	**AMEC Earth & Environmental Winnipeg, Manitoba**	LOGGED BY: AH	COMPLETION DEPTH: 6.1 m
		REVIEWED BY: AD	COMPLETION DATE: 6 August 2004
		Fig. No: 10	Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Intrusive Assessment	BOREHOLE NO: **04-10**
DRILLER: Maple Leaf	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: HSA		ELEVATION: 99.31 m

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



CLAY (FILL) - silty, sandy, gravelly to 0.9m, medium to high plastic, damp, firm, dark brown, organics

- trace sand, no gravel below 0.9m

CLAY - silty, high plastic, moist, soft, brown

- silty below 3.1m

CLAY (TILL) - silty, gravelly, sandy, low plastic, moist, soft, brown

- dense and firm below 5.8m

TESTHOLE TERMINATED AT 6.1m.

NOTES:
Slight seepage zone from till. Monitoring well installed upon completion.

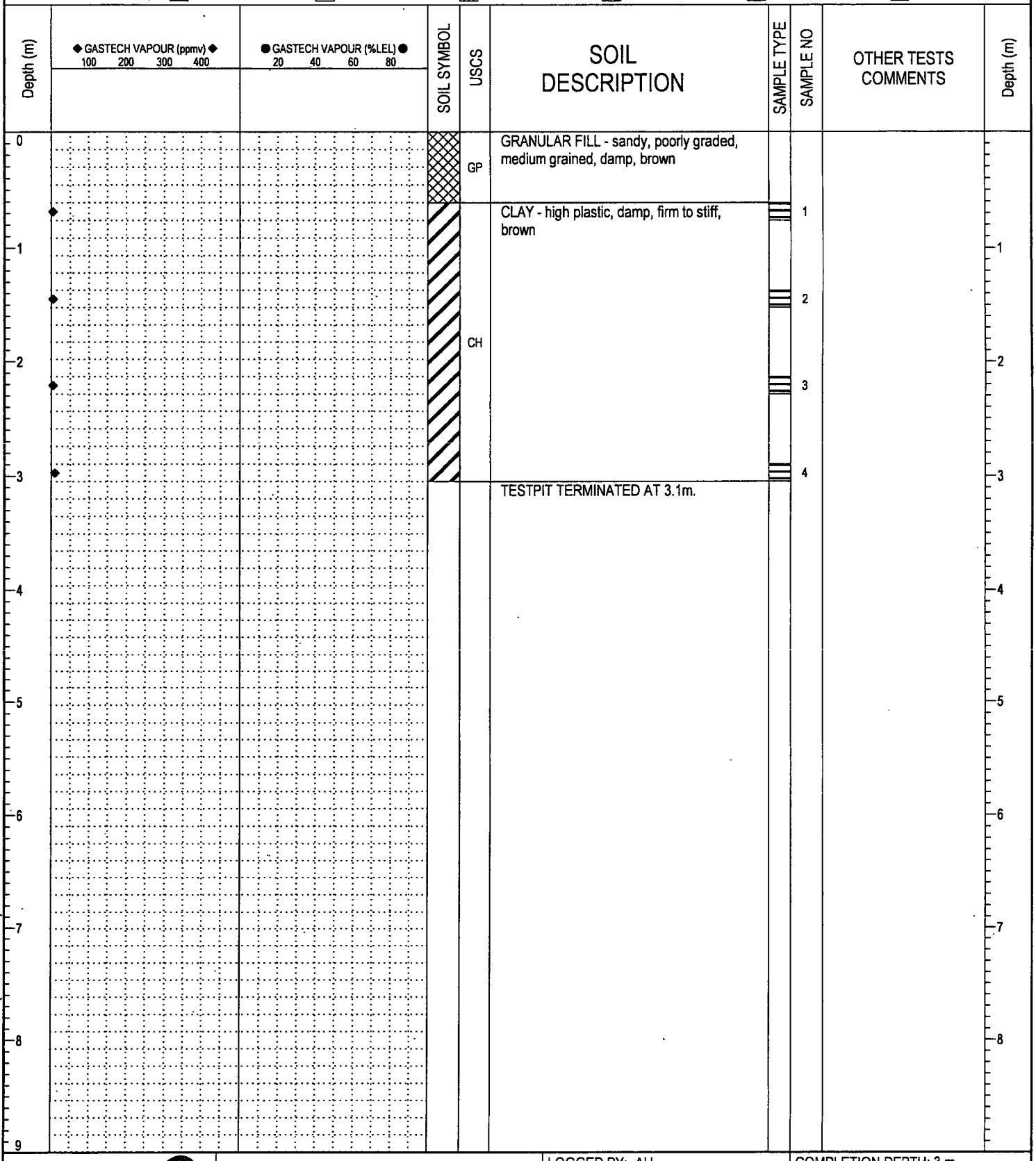
amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH; REVIEWED BY: AD; Fig. No: 11
		COMPLETION DEPTH: 6.1 m; COMPLETION DATE: 5 August 2004
		Page 1 of 1

5876- SELKIRK.GPJ 04/09/29 02:22 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP1**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



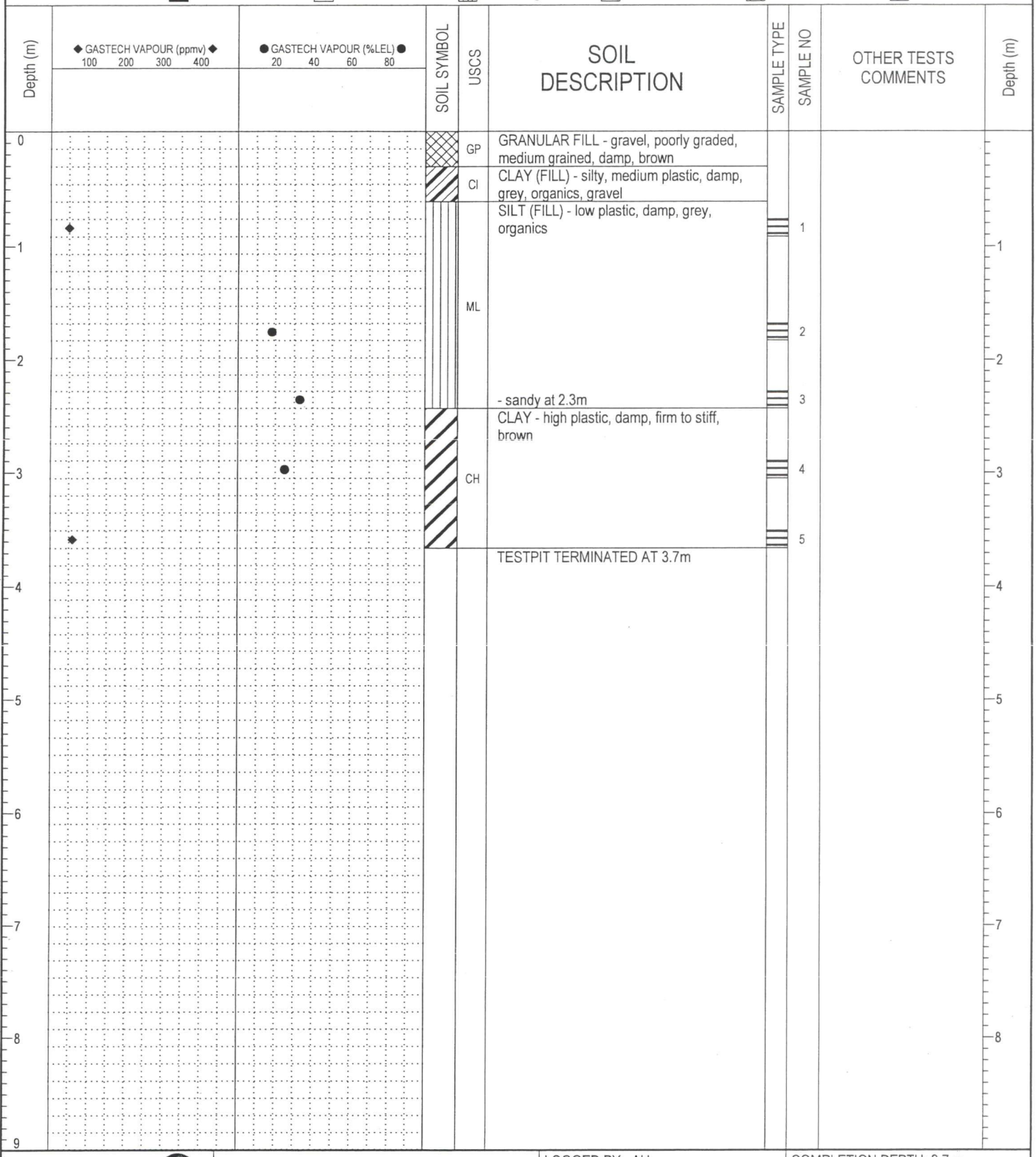
amec	**AMEC Earth & Environmental Winnipeg, Manitoba**	LOGGED BY: AH	COMPLETION DEPTH: 3 m
		REVIEWED BY: AD	COMPLETION DATE: 16 July 2004
		Fig. No: 2	Page 1 of 1

5876- TESTPITS.GPJ 04/09/29 02:24 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP2**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



LOGGED BY: AH	COMPLETION DEPTH: 3.7 m
REVIEWED BY: AD	COMPLETION DATE: 16 July 2004
Fig. No: 3	Page 1 of 1

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Winnipeg, Manitoba

5876- TESTPITS.GPJ 04/09/29 02:24 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP3**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand

Depth (m)	◆GASTECH VAPOUR (ppmv)◆ 100 200 300 400	●GASTECH VAPOUR (%LEL)● 20 40 60 80	SOIL SYMBOL	USCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	OTHER TESTS COMMENTS	Depth (m)
0				GP	GRANULAR FILL - gravel, poorly graded, medium grained, damp, brown				0
	◆			CH	CLAY (FILL) - high plastic, damp, firm to stiff, brown		1		
1				ML	SILT (FILL) - sandy, low plastic, damp, soft, grey/ black				1
	◆						2		
2				CH	CLAY - high plastic, damp, firm to stiff, brown		3		2
	◆								
3									3
	◆						4		
4					TESTPIT TERMINATED AT 3.3m.				4
5									5
6									6
7									7
8									8
9									

amec	AMEC Earth & Environmental Winnipeg, Manitoba	LOGGED BY: AH	COMPLETION DEPTH: 3.3 m
		REVIEWED BY: AD	COMPLETION DATE: 16 July 2004
		Fig. No: 4	Page 1 of 1

5876- TESTPITS.GPJ 04/09/29 02:24 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP4**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand

Depth (m)	◆ GASTECH VAPOUR (ppmv) ◆ 100 200 300 400	● GASTECH VAPOUR (%LEL) ● 20 40 60 80	SOIL SYMBOL	USCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	OTHER TESTS COMMENTS	Depth (m)
0				GP	GRANULAR FILL - gravel, poorly graded, medium grained, damp, brown				0
	◆			CH	CLAY (FILL) - gravelly, high plastic, damp, stiff, grey, organics		1		
1	◆			SP	SAND (FILL) - gravelly, poorly graded, medium grained, moist, brown		2		1
	◆			ML	SILT (FILL) - low plastic, damp, soft, brown		3		
2	◆			CH	CLAY - high plastic, damp, firm to stiff, brown		4		2
3	◆				TESTPIT TERMINATED AT 3.0m.		5		3
4									4
5									5
6									6
7									7
8									8
9									

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LOGGED BY: AH	COMPLETION DEPTH: 3 m
REVIEWED BY: AD	COMPLETION DATE: 16 July 2004
Fig. No: 5	Page 1 of 1

5876- TESTPITS.GPJ 04/09/29 02:24 PM (IMPERIAL OIL 2)

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP5**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand

Depth (m)	◆ GASTECH VAPOUR (ppmv) ◆ 100 200 300 400	● GASTECH VAPOUR (%LEL) ● 20 40 60 80	SOIL SYMBOL	USCS	SOIL DESCRIPTION	SAMPLE TYPE	SAMPLE NO	OTHER TESTS COMMENTS	Depth (m)
0	◆			SP	SAND (FILL) - gravelly, poorly graded, medium grained, damp, brown		1		0
1				CI	CLAY (FILL) - silty, medium to high plastic, moist, grey/ black, some sand		2		1
2	◆			SP	SAND (FILL) - poorly graded, fine grained, moist, brown, some silt		3		2
3	◆			CH	CLAY - high plastic, moist, brown, sulphate inclusions		4		3
					TESTPIT TERMINATED AT 3.0m				4
4									5
5									6
6									7
7									8
8									
9									

5876- TESTPITS.GPJ 04/09/29 02:25 PM (IMPERIAL OIL 2)

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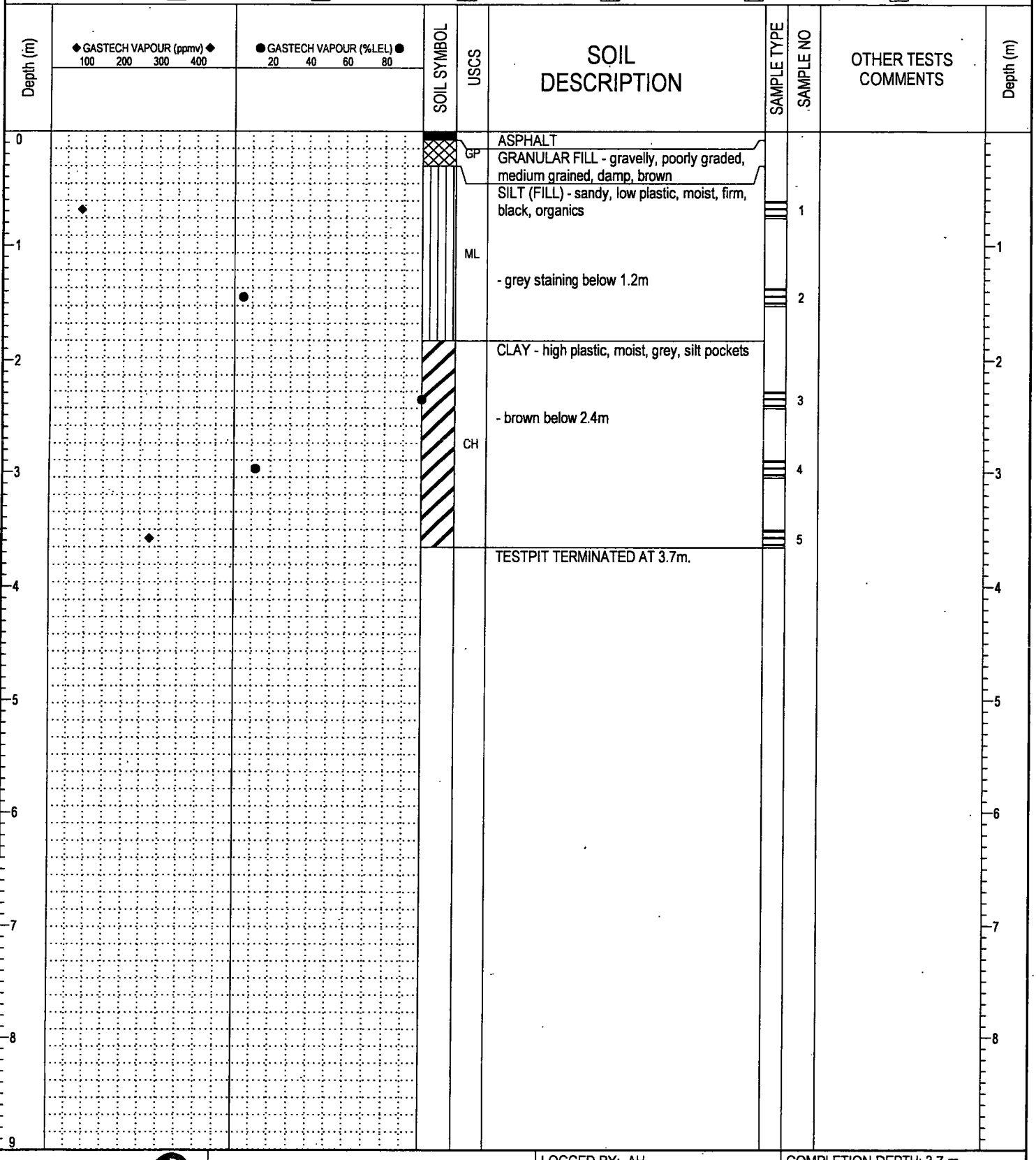
LOGGED BY: AH	COMPLETION DEPTH: 3 m
REVIEWED BY: AD	COMPLETION DATE: 16 July 2004
Fig. No: 6	Page 1 of 1

CLIENT: Imperial Oil Limited	PROJECT: Testpit Program	BOREHOLE NO: **TP6**
DRILLER: Hazco	LOCATION: 287 Main Street Selkirk, MB	PROJECT NO: WX05876
DRILL/METHOD: Backhoe		ELEVATION:

SAMPLE TYPE: Shelby Tube; No Recovery; SPT Test (N); Grab Sample; Split-Pen; Core

BACKFILL TYPE: Bentonite; Pea Gravel; Drill Cuttings; Grout; Bentonite Chips; Sand



amec	**AMEC Earth & Environmental Winnipeg, Manitoba**	LOGGED BY: AH
		REVIEWED BY: AD
		Fig. No: 7
		COMPLETION DEPTH: 3.7 m
		COMPLETION DATE: 16 July 2004
		Page 1 of 1

5876- TESTPITS.GPJ 04/09/29 02:25 PM (IMPERIAL OIL 2)

APPENDIX C

LAB CERTIFICATES OF ANALYSIS AND DATA QUALITY WAIVER

Data Quality Review Checklist – Imperial Oil Projects (Prelim Monitoring)

Consultant:	AMEC Earth & Environmental	**Sampling Date:**	30 June 2004
Location:	287 Main Street Selkirk, MB	**Laboratory:**	PSC Burnaby
Consultant Project Number:	WX-05876	**Sample Submission Number:**	08151223

Are all laboratory QC samples within acceptance criteria?

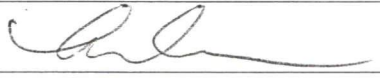
	Yes	No	Comments
Instrument surrogate recovery	**Yes**		
Extraction surrogate recovery	**Yes**		
Method Blank Concentration	**Yes**		
Matrix Duplicate RPD	**Yes**		
Matrix Spike Recovery	**Yes**		
Lab Control Sample Recovery	**Yes**		

Are all field QC samples within alert limits?

	Yes	No	Comments
Field Blank Concentration	**Yes**		
Trip Blank Concentration	**Yes**		
Field Duplicate RPD	**Yes**		

	Yes/No
Has CoA been signed off?	Yes
Has lab warranted all tests were in statistical control in CoA?	Yes
Has lab warranted all tests were analyzed following SOP's in CoA?	Yes
Were all samples analyzed within hold times?	Yes
Were all volatiles samples methanol extracted within 48 hours from receipt?	NA
Is Chain of Custody completed and signed?	Yes
Were sample temperatures acceptable when they reached lab?	Yes

Was a Data Quality Waiver (DQW) issued? (**Yes/No**)			No
Date Issued:		Date of Response:	

Is data considered to be reliable? (**Yes/No**)			Yes
If answer is "No", describe and provide rationale:			
Data Reviewed by:	Michael Bertram, P. Eng.	Date Reviewed:	20 September 2004
Signature:			

Date samples submitted:	03 July 2004	Date Preliminary results received:	12 July 2004
Date Final C of A received:	17 August 2004	Delivery times in accordance with contract guidelines	No

Data Quality Review Checklist – Imperial Oil Projects (UST Removal Program)

Consultant:	AMEC Earth & Environmental	**Sampling Date:**	13 July 2004
Location:	287 Main Street Selkirk, MB	**Laboratory:**	PSC Burnaby
Consultant Project Number:	WX-05876	**Sample Submission Number:**	08132668

Are all laboratory QC samples within acceptance criteria?

	Yes	No	Comments
Instrument surrogate recovery	**Yes**		
Extraction surrogate recovery	**Yes**		
Method Blank Concentration	**Yes**		B,T,E detected but <5x MDL
Matrix Duplicate RPD	**Yes**		
Matrix Spike Recovery	**Yes**		
Lab Control Sample Recovery	**Yes**		41% toluene recovery but spike <2x blank concentration

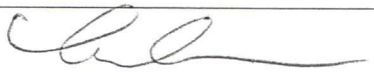
Are all field QC samples within alert limits?

	Yes	No	Comments
Field Blank Concentration	**NA**		
Trip Blank Concentration	**NA**		
Field Duplicate RPD	**NA**		

	Yes/No
Has CoA been signed off?	Yes
Has lab warranted all tests were in statistical control in CoA?	Yes
Has lab warranted all tests were analyzed following SOP's in CoA?	Yes
Were all samples analyzed within hold times?	Yes
Were all volatiles samples methanol extracted within 48 hours from receipt?	No
Is Chain of Custody completed and signed?	Yes
Were sample temperatures acceptable when they reached lab?	Yes

Was a Data Quality Waiver (DQW) issued? (**Yes/No**)			No
Date Issued:		Date of Response:	

Is data considered to be reliable? (**Yes/No**)	Yes
If answer is "No", describe and provide rationale:	

Data Reviewed by:	Michael Bertram, P. Eng.	Date Reviewed:	20 September 2004
Signature:			

Date samples submitted:	13 July 2004	Date Preliminary results received:	22 July 2004
Date Final C of A received:	23 August 2004	Delivery times in accordance with contract guidelines?	No

Data Quality Review Checklist – Imperial Oil Projects (Test Pit Program)

Consultant:	AMEC Earth & Environmental	**Sampling Date:**	16 July 2004
Location:	287 Main Street Selkirk, MB	**Laboratory:**	PSC Burnaby
Consultant Project Number:	WX-05876	**Sample Submission Number:**	08132671

Are all laboratory QC samples within acceptance criteria?

	Yes	No	Comments
Instrument surrogate recovery	**Yes**		
Extraction surrogate recovery	**Yes**		
Method Blank Concentration	**Yes**		B,T,E, F1 detected but <5x MDL
Matrix Duplicate RPD	**Yes**		Toluene RPD 52.17%, duplicate and original concentrations not >5x MDL
Matrix Spike Recovery		**No**	**TP6@12' B,T recovery ~200%**
Lab Control Sample Recovery	**Yes**		41% toluene recovery but spike <2x blank concentration

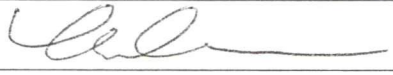
Are all field QC samples within alert limits?

	Yes	No	Comments
Field Blank Concentration	**n.a.**		
Trip Blank Concentration	**n.a.**		
Field Duplicate RPD	**n.a.**		

	Yes/No
Has CoA been signed off?	Yes
Has lab warranted all tests were in statistical control in CoA?	Yes
Has lab warranted all tests were analyzed following SOP's in CoA?	Yes
Were all samples analyzed within hold times?	Yes
Were all volatiles samples methanol extracted within 48 hours from receipt?	Yes
Is Chain of Custody completed and signed?	Yes
Were sample temperatures acceptable when they reached lab?	Yes

Was a Data Quality Waiver (DQW) issued? (**Yes/No**)			Yes
Date Issued:	29 July 2004	Date of Response:	29 July 2004

Is data considered to be reliable? (**Yes/No**) Yes
If answer is "No", describe and provide rationale:

Data Reviewed by:	Michael Bertram, P. Eng.	Date Reviewed:	20 September 2004
Signature:			

Date samples submitted:	17 July 2004	Date Preliminary results received:	23 July 2004
Date Final C of A received:	8 September 2004	Delivery times in accordance with contract guidelines?	No

Data Quality Review Checklist – Imperial Oil Projects (Intrusive Investigation Program)

Consultant:	AMEC Earth & Environmental	**Sampling Date:**	4-6 August 2004
Location:	287 Main Street Selkirk, MB	**Laboratory:**	PSC Burnaby
Consultant Project Number:	WX-05876	**Sample Submission Number:**	81514512, 81514521

Are all laboratory QC samples within acceptance criteria?

	Yes	No	Comments
Instrument surrogate recovery	**Yes**		
Extraction surrogate recovery	**Yes**		
Method Blank Concentration	**Yes**		B,T detected but <5x MDL
Matrix Duplicate RPD	**Yes**		
Matrix Spike Recovery	**Yes**		
Lab Control Sample Recovery		**No**	**47% ethylbenzene recovery**

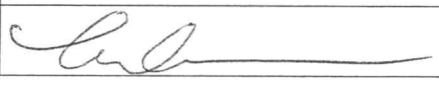
Are all field QC samples within alert limits?

	Yes	No	Comments
Field Blank Concentration		**No**	**Benzene detected at 5x MDL**
Trip Blank Concentration	**n.a.**		
Field Duplicate RPD	**Yes**		

	Yes/No
Has CoA been signed off?	Yes
Has lab warranted all tests were in statistical control in CoA?	Yes
Has lab warranted all tests were analyzed following SOP's in CoA?	Yes
Were all samples analyzed within hold times?	Yes
Were all volatiles samples methanol extracted within 48 hours from receipt?	n.a.
Is Chain of Custody completed and signed?	Yes
Were sample temperatures acceptable when they reached lab?	Yes

Was a Data Quality Waiver (DQW) issued? (**Yes/No**)			Yes
Date Issued:	21 October 2004	Date of Response:	21 October 2004

Is data considered to be reliable? (**Yes/No**) Yes
If answer is "No", describe and provide rationale:

Data Reviewed by:	Michael Bertram, P. Eng.	Date Reviewed:	20 September 2004
Signature:			

Date samples submitted:	07 August 2004	Date Preliminary results received:	16 August 2004
Date Final C of A received:	21 September 2004	Delivery times in accordance with contract guidelines?	No

Data Quality Review Checklist – Imperial Oil Projects (Return Monitoring)

Consultant:	AMEC Earth & Environmental	**Sampling Date:**	30 August 2004
Location:	287 Main Street Selkirk, MB	**Laboratory:**	PSC Burnaby
Consultant Project Number:	WX-05876	**Sample Submission Number:**	08111246, 08111247

Are all laboratory QC samples within acceptance criteria?

	Yes	No	Comments
Instrument surrogate recovery	**Yes**		
Extraction surrogate recovery	**Yes**		
Method Blank Concentration	**Yes**		
Matrix Duplicate RPD	**Yes**		
Matrix Spike Recovery	**Yes**		
Lab Control Sample Recovery	**Yes**		

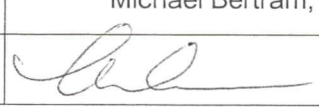
Are all field QC samples within alert limits?

	Yes	No	Comments
Field Blank Concentration	**Yes**		
Trip Blank Concentration	**Yes**		
Field Duplicate RPD	**Yes**		

	Yes/No
Has CoA been signed off?	Yes
Has lab warranted all tests were in statistical control in CoA?	Yes
Has lab warranted all tests were analyzed following SOP's in CoA?	Yes
Were all samples analyzed within hold times?	Yes
Were all volatiles samples methanol extracted within 48 hours from receipt?	n.a.
Is Chain of Custody completed and signed?	Yes
Were sample temperatures acceptable when they reached lab?	Yes

Was a Data Quality Waiver (DQW) issued? (**Yes/No**)			No
Date Issued:		Date of Response:	

Is data considered to be reliable? (**Yes/No**)	Yes
If answer is "No", describe and provide rationale:	

Data Reviewed by:	Michael Bertram, P. Eng.	Date Reviewed:	20 September 2004
Signature:			

Date samples submitted:	30 August 2004	Date Preliminary results received:	9 September 2004
Date Final Cof A received:	15 October 2004	Delivery times in accordance with contract guidelines?	No

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL — Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

Requisition Forms :

Form 08132668 shipped on 14-Jul-04 received on 15-Jul-04 logged on 16-Jul-04 completed on 23-Jul-04

Remarks :

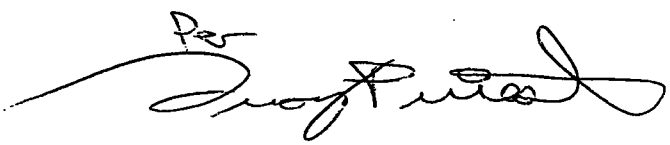
+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '—' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report. All data on final reports are validated by technical personnel. Signature on file at laboratory. Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and IOL criteria for spike recoveries, reference material recoveries, method blank data and duplicate precision were met unless otherwise stated
+ This report shall not be reproduced except in full, without the written approval of the laboratory

Methods used by PSC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC for a period of 30 days from receipt of data or as per contract.

PSC Project Manager: Clifton Samoiloff

Per



ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14035709 Client ID : E17	14035710 N7
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	3.7	31.3
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	2.0	13.0
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/16	04/07/16
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	140
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	120
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	100
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.002	1.1
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.004	5.0
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.018	0.32
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	11
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	8.4
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	2.6
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	84	107
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	104	100
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	99	110
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	83	89
				Matrix :	Soil	Soil
				Sampled on:	04/07/13 15:30	04/07/13 14:30

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14035711	14035712
					Client ID :	S3	W12
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		32.4	33.1
METALS TOTAL							
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		14.1	15.1
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		04/07/16	04/07/16
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		320	54
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		290	51
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		110	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		Yes	Yes
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		1.4	0.062
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		8.2	1.4
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		0.72	0.037
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		21	1.5
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		12	1.5
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		9.2	< 0.10
VOC SURROGATE RECOVERY							
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM		104	102
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM		98	97
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM		105	105
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM		114	103
					Matrix :	Soil	Soil
					Sampled on:	04/07/13 13:00	04/07/13 13:30

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14035713 Client ID : E20	14035714 EF1
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	10.8	30.8
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	2.3	11.0
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/16	04/07/16
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	2600	43
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	2400	41
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	970	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	130	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.32	0.037
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	27	0.52
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	3.1	0.055
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	160	1.8
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	120	1.5
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	40	0.29
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	117	106
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	120	94
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	103	107
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	128	103
				Matrix :	Soil	Soil
				Sampled on:	04/07/13 15:45	04/07/13 16:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14035715	Lab ID : 14035716
					Client ID : WF3	Client ID : WF2
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	28.9	35.0
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	14.4	14.5
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/16	04/07/16
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	190	410
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	160	380
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	170
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.40	1.6
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	4.3	6.2
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.28	3.3
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	23	18
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	16	15
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	6.7	3.4
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	102	99
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	95	102
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	105	102
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	108	84
				Matrix :	Soil	Soil
				Sampled on:	04/07/13 16:30	04/07/13 16:45

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14035717 Client ID : EF4	Lab ID : 14035718 Client ID : N20
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	33.0	32.9
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	15.4	15.9
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/16	04/07/16
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	36	110
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	33	93
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.077	0.31
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.40	2.8
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.12	1.1
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	2.1	13
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	1.6	10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	0.46	3.0
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	98	105
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	97	94
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	100	103
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	108	80
				Matrix :	Soil	Soil
				Sampled on:	04/07/13 16:15	04/07/13 15:00

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DUPLICATE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Duplicate Conc.	MDL	Unit	Relative % Diff.
CCME PHC F2 C10-16	E17	14035709	< 50	< 50	50	ug/g	0.00
CCME PHC F3 C16-34	E17	14035709	< 50	< 50	50	ug/g	0.00
CCME PHC F4 C34-50+	E17	14035709	< 50	< 50	50	ug/g	0.00
Moisture	WF3	14035715	28.9	34.1	0.1	%(W/W)	-16.51

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SPIKE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
CCME PHC F2 C10-16	E17	14035709	< 50	530	467	ug/g	113
CCME PHC F2 C10-16	Blank Spike. Batch :	45700846	< 50	530	450	ug/g	118
CCME PHC F3 C16-34	E17	14035709	< 50	1600	1510	ug/g	106
CCME PHC F3 C16-34	Blank Spike. Batch :	45700846	< 50	1600	1450	ug/g	113
CCME PHC F4 C34-50+	E17	14035709	< 50	120	104	ug/g	116
CCME PHC F4 C34-50+	Blank Spike. Batch :	45700846	< 50	110	100	ug/g	107
Lead	Blank Spike. Batch :	44201865	< 0.1	55.7	50	ug/g	111
Benzene	Blank Spike. Batch :	45202249	0.002	0.041	.043	ug/g	89
Toluene	Blank Spike. Batch :	45202249	0.026	0.044	.043	ug/g	41
Ethylbenzene	Blank Spike. Batch :	45202249	0.006	0.036	.043	ug/g	69
Benzene	Blank Spike. Batch :	45202271	< 0.001	4.2	4.3	ug/g	98
Toluene	Blank Spike. Batch :	45202271	< 0.010	4.4	4.3	ug/g	103
Ethylbenzene	Blank Spike. Batch :	45202271	< 0.003	4.3	4.3	ug/g	100
m,p - Xylene	Blank Spike. Batch :	45202271	< 0.10	8.6	8.6	ug/g	100
o - Xylene	Blank Spike. Batch :	45202271	< 0.10	4.4	4.3	ug/g	102

ANALYSIS DATES

	Lab ID :	14035709	14035710	14035711	14035712
	Client ID:	E17	N7	S3	W12
00250760	Moisture	19-JUL-2004	19-JUL-2004	19-JUL-2004	19-JUL-2004
Pb-TMS20	Lead	22-JUL-2004	22-JUL-2004	22-JUL-2004	22-JUL-2004
CCMEHCHT	CCME F2-F4 HC'S	19-JUL-2004	19-JUL-2004	19-JUL-2004	19-JUL-2004
PKG-BT35	BTEX SOIL by GCMS SIM	21-JUL-2004	21-JUL-2004	21-JUL-2004	21-JUL-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004	13-JUL-2004	13-JUL-2004

	Lab ID :	14035713	14035714	14035715	14035716
	Client ID:	E20	EF1	WF3	WF2
00250760	Moisture	19-JUL-2004	19-JUL-2004	19-JUL-2004	19-JUL-2004
Pb-TMS20	Lead	22-JUL-2004	22-JUL-2004	22-JUL-2004	22-JUL-2004
CCMEHCHT	CCME F2-F4 HC'S	19-JUL-2004	19-JUL-2004	19-JUL-2004	19-JUL-2004
PKG-BT35	BTEX SOIL by GCMS SIM	21-JUL-2004	21-JUL-2004	21-JUL-2004	21-JUL-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004	13-JUL-2004	13-JUL-2004

	Lab ID :	14035717	14035718
	Client ID:	EF4	N20
00250760	Moisture	19-JUL-2004	19-JUL-2004
Pb-TMS20	Lead	22-JUL-2004	22-JUL-2004
CCMEHCHT	CCME F2-F4 HC'S	19-JUL-2004	19-JUL-2004
PKG-BT35	BTEX SOIL by GCMS SIM	21-JUL-2004	21-JUL-2004
	Matrix:	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004

BATCH NUMBERS

	Lab ID :	14035709	14035710	14035711	14035712
	Client ID:	E17	N7	S3	W12
00250760	Moisture	44402755	44402755	44402755	44402755
Pb-TMS20	Lead	44201865	44201865	44201865	44201865
CCMEHCHT	CCME F2-F4 HC'S	45700846	45700846	45700846	45700846
PKG-BT35	BTEX SOIL by GCMS SIM	45202249	45202249	45202249	45202249
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004	13-JUL-2004	13-JUL-2004

	Lab ID :	14035713	14035714	14035715	14035716
	Client ID:	E20	EF1	WF3	WF2
00250760	Moisture	44402755	44402755	44402755	44402755
Pb-TMS20	Lead	44201865	44201865	44201865	44201865
CCMEHCHT	CCME F2-F4 HC'S	45700846	45700846	45700846	45700846
PKG-BT35	BTEX SOIL by GCMS SIM	45202271	45202249	45202249	45202271
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004	13-JUL-2004	13-JUL-2004

	Lab ID :	14035717	14035718
	Client ID:	EF4	N20
00250760	Moisture	44402755	44402755
Pb-TMS20	Lead	44201865	44201865
CCMEHCHT	CCME F2-F4 HC'S	45700846	45700846
PKG-BT35	BTEX SOIL by GCMS SIM	45202249	45202249
	Matrix:	Soil	Soil
	Sampled on:	13-JUL-2004	13-JUL-2004

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BLANK SUMMARY

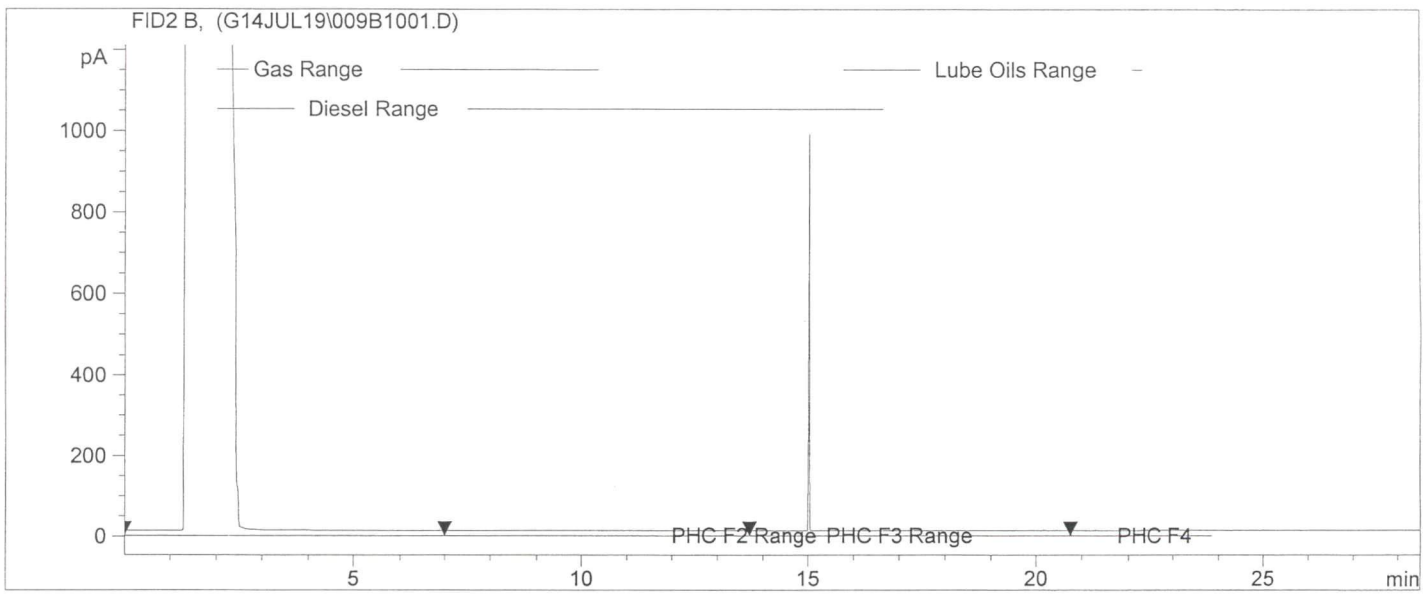
All method blanks were less than MDL, except the following:

Parameter	Batch	Sparcode	Blank Conc.	MDL	Unit
Benzene	45202249	B020PT20	0.002	0.001	ug/g
Toluene	45202249	T001PT20	0.026	0.010	ug/g
Ethylbenzene	45202249	B021PT20	0.006	0.003	ug/g

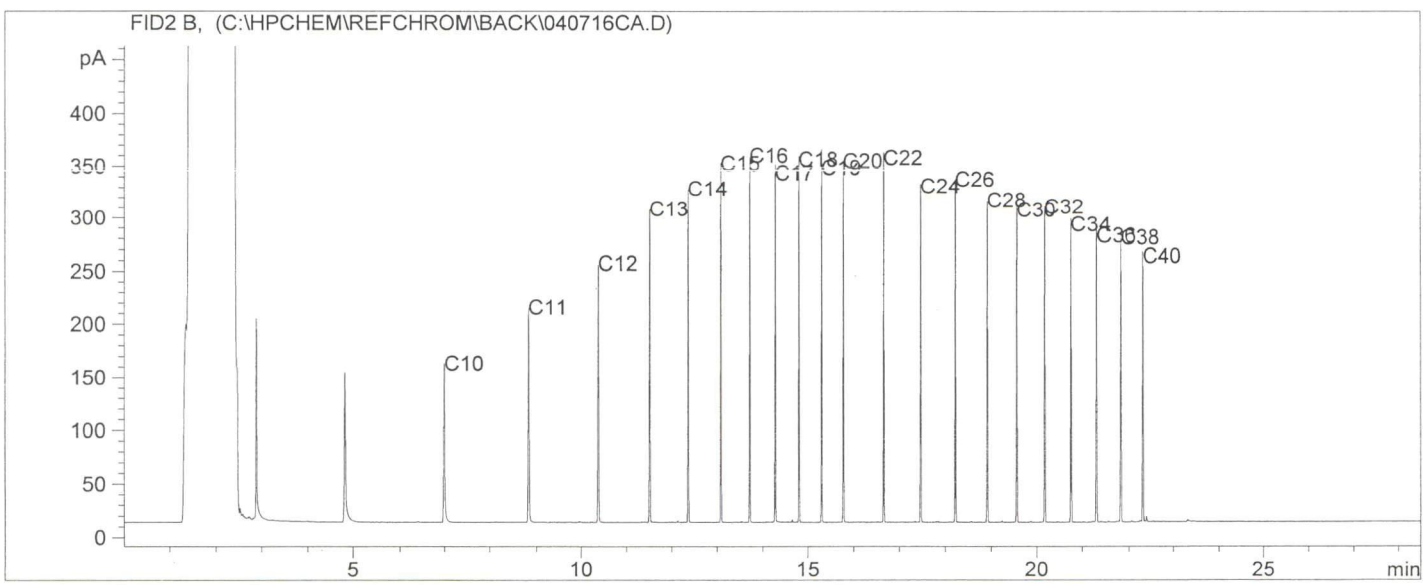
E17

Sample ID: 35709
Method File: CCMEWW.M
Date & Time Analyzed: 7/19/2004 11:19:27 PM
Multiplier: 1

Operator: IT
Vial: 9
Sequence line#: 10



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

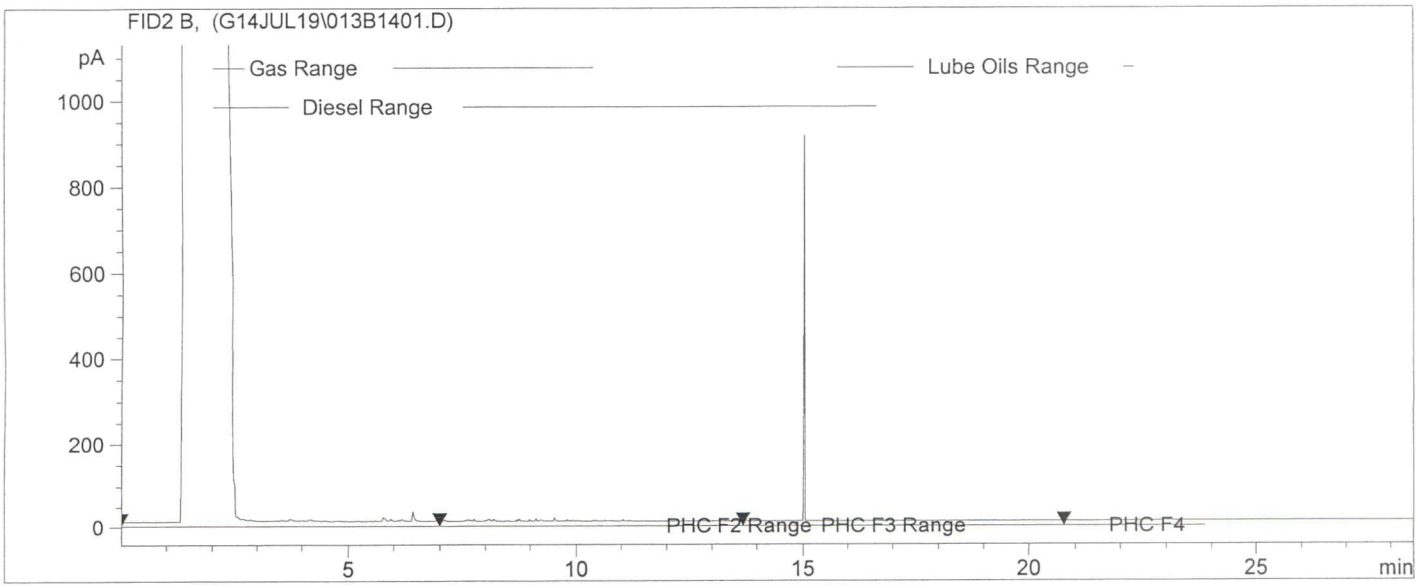
PSC

ANALYTICAL SERVICES

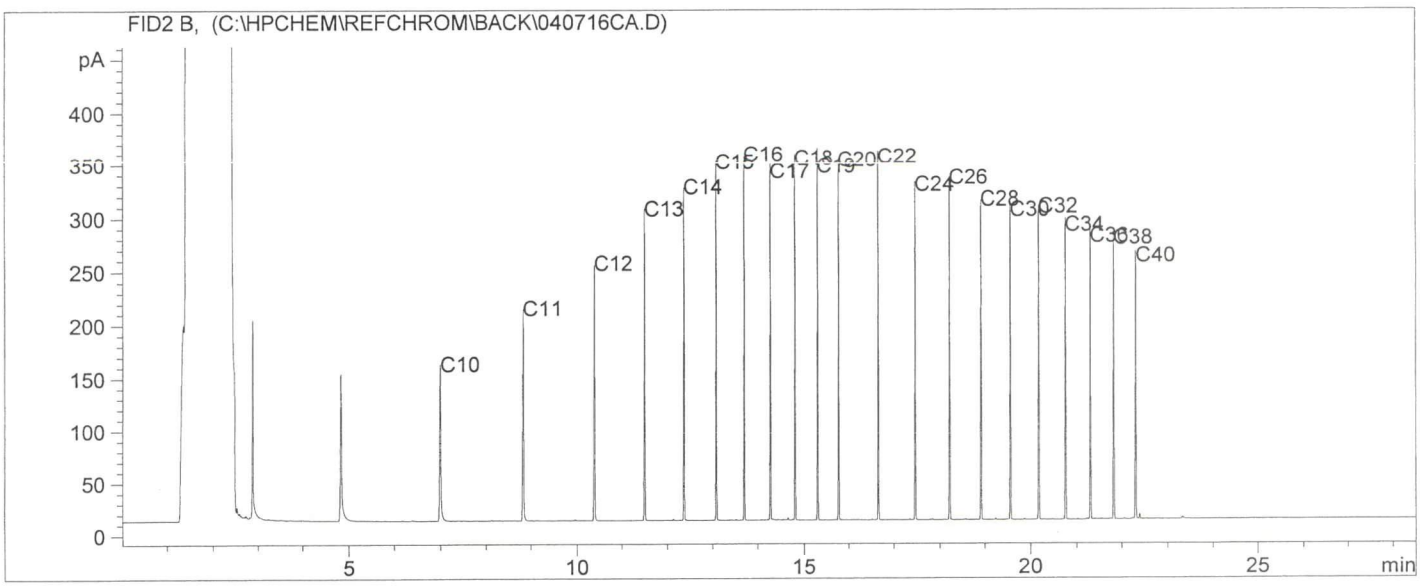
N7

Sample ID: 35710
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 2:06:10 AM
Multiplier: 1

Operator: IT
Vial: 13
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



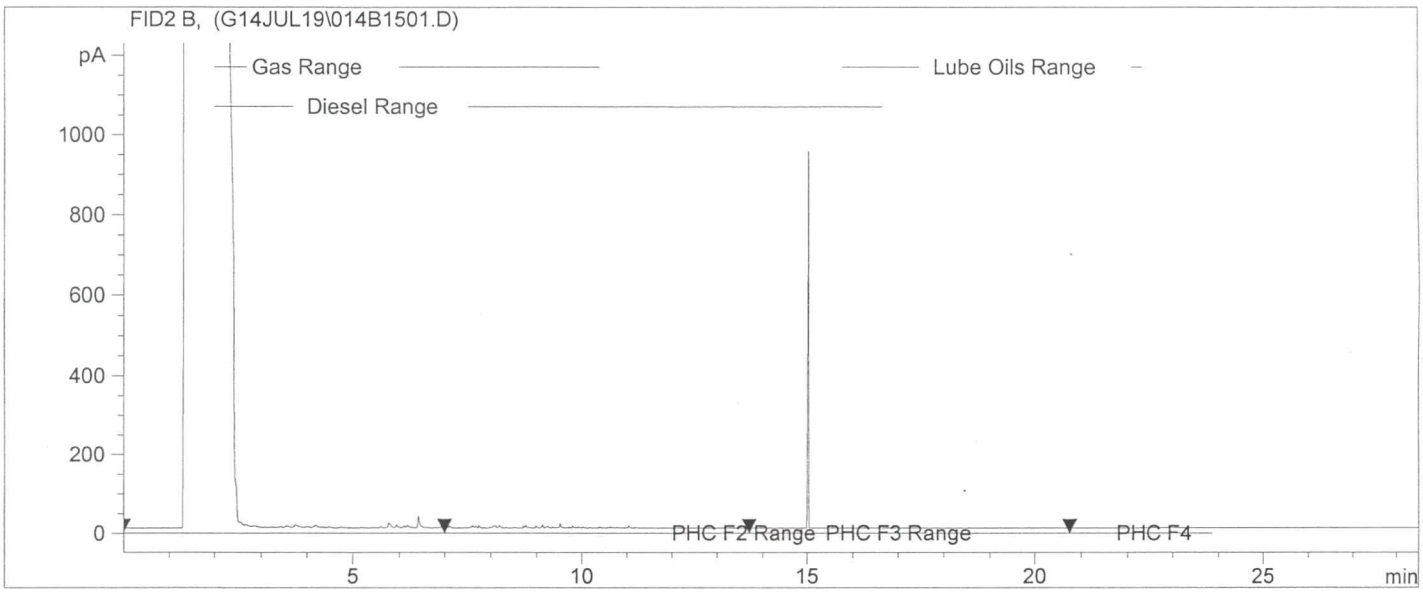
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

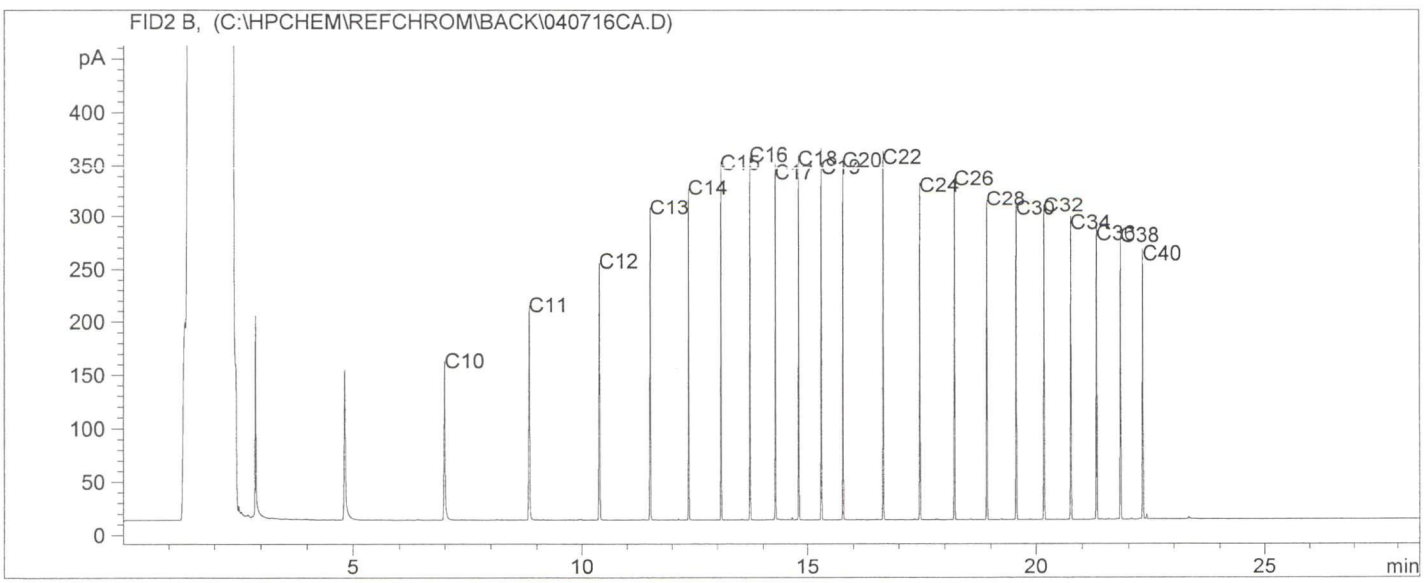
53

Sample ID: 35711
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 2:47:14 AM
Multiplier: 1

Operator: IT
Vial: 14
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

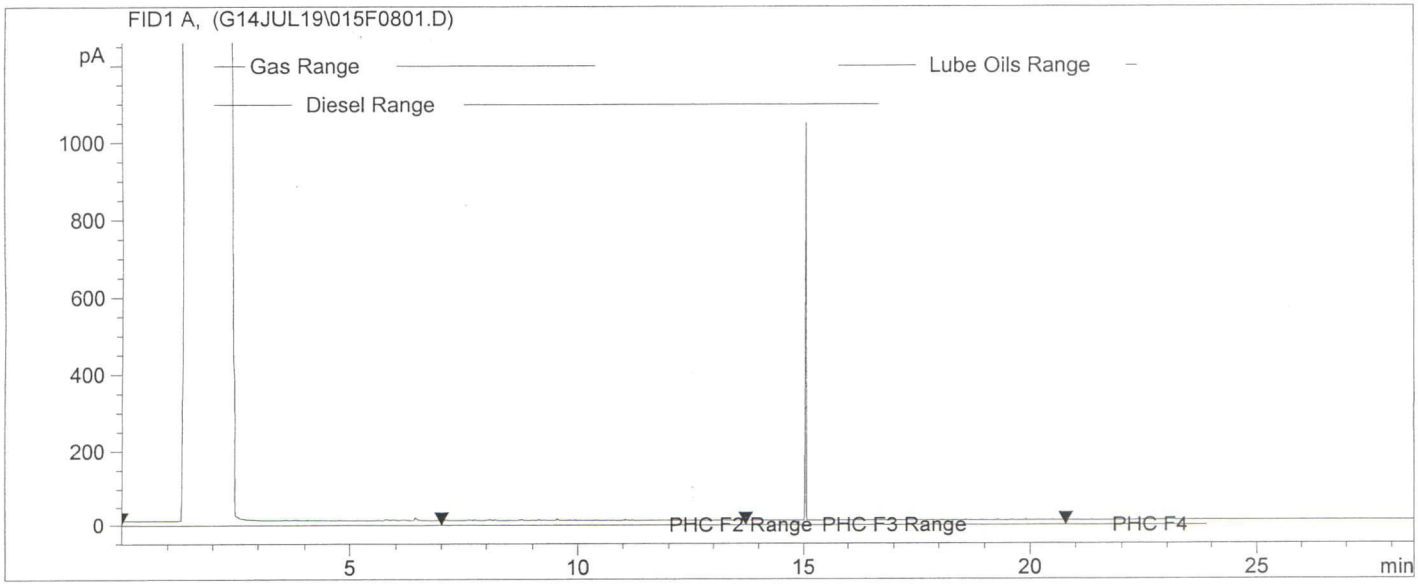
PSC

ANALYTICAL SERVICES

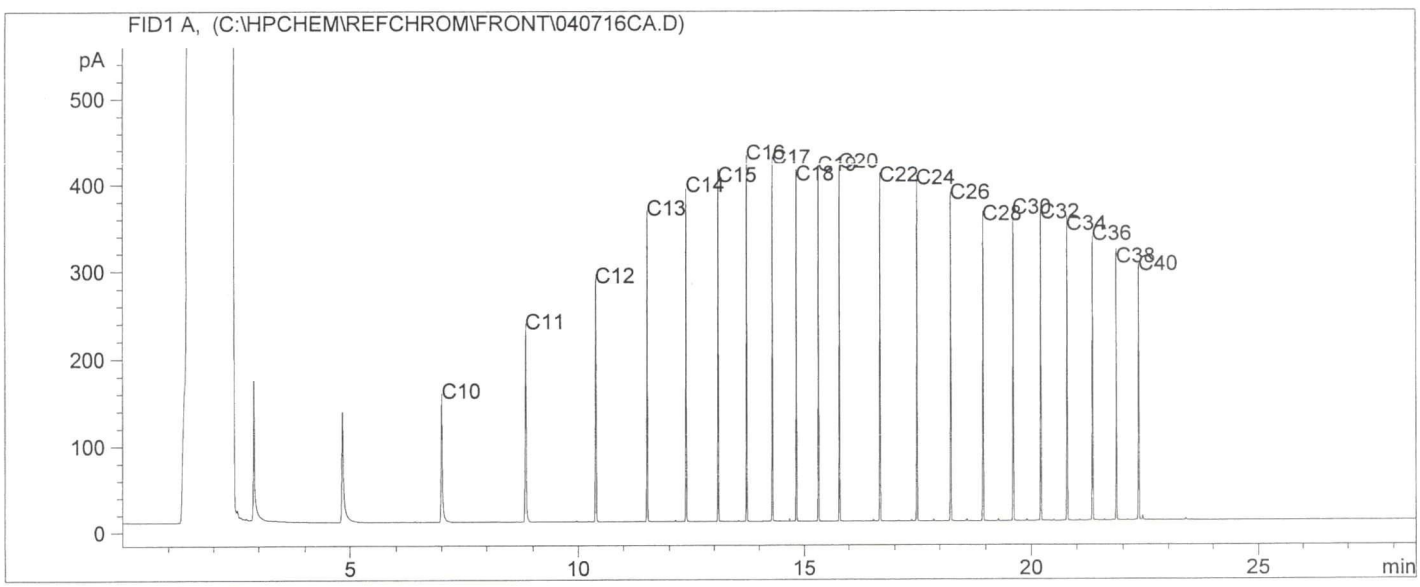
W12

Sample ID: 35712
Method File: CCMEWW.M
Date & Time Analyzed: 7/19/2004 9:55:06 PM
Multiplier: 1

Operator: IT
Vial: 15
Sequence line#: 8



Carbon Range Reference Chromatogram at approx. 25ppm



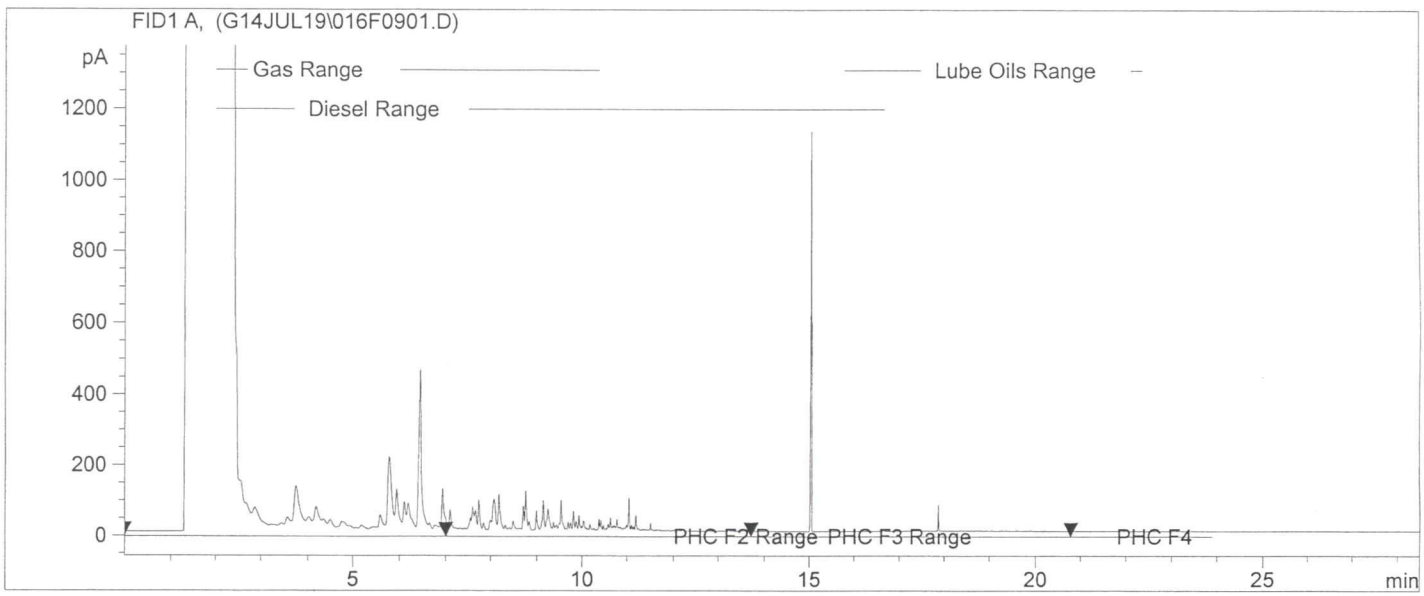
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

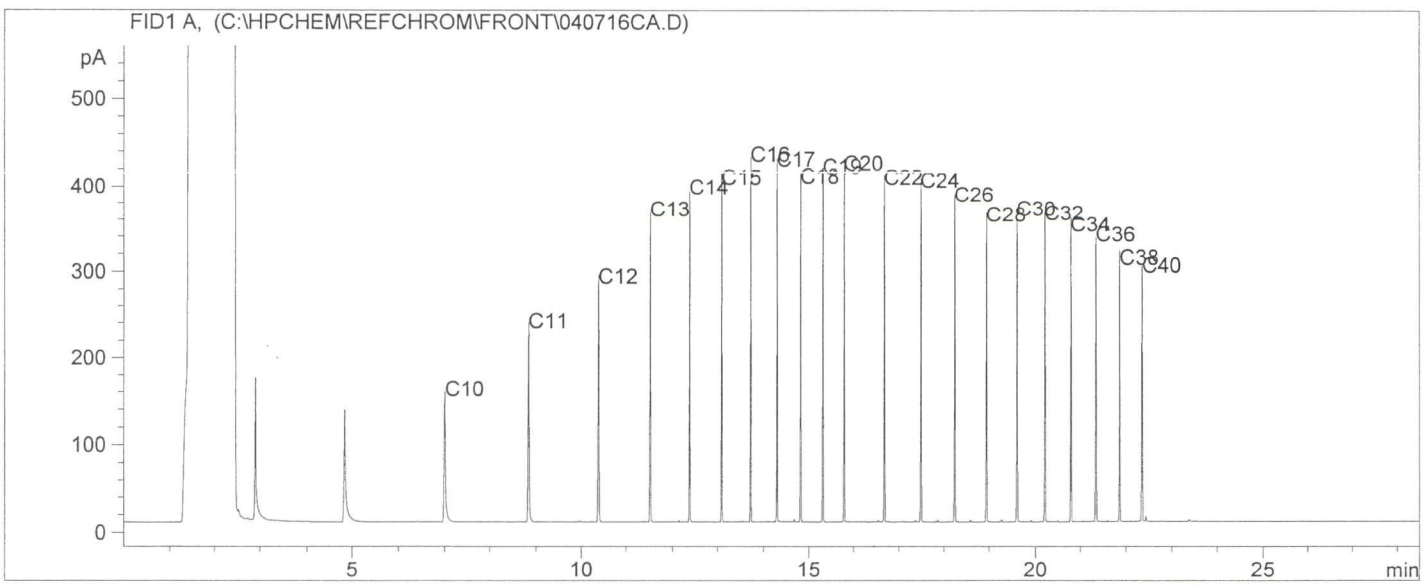
E20

Sample ID: 35713
Method File: CCMEWW.M
Date & Time Analyzed: 7/19/2004 10:37:33 PM
Multiplier: 1

Operator: IT
Vial: 16
Sequence line#: 9



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

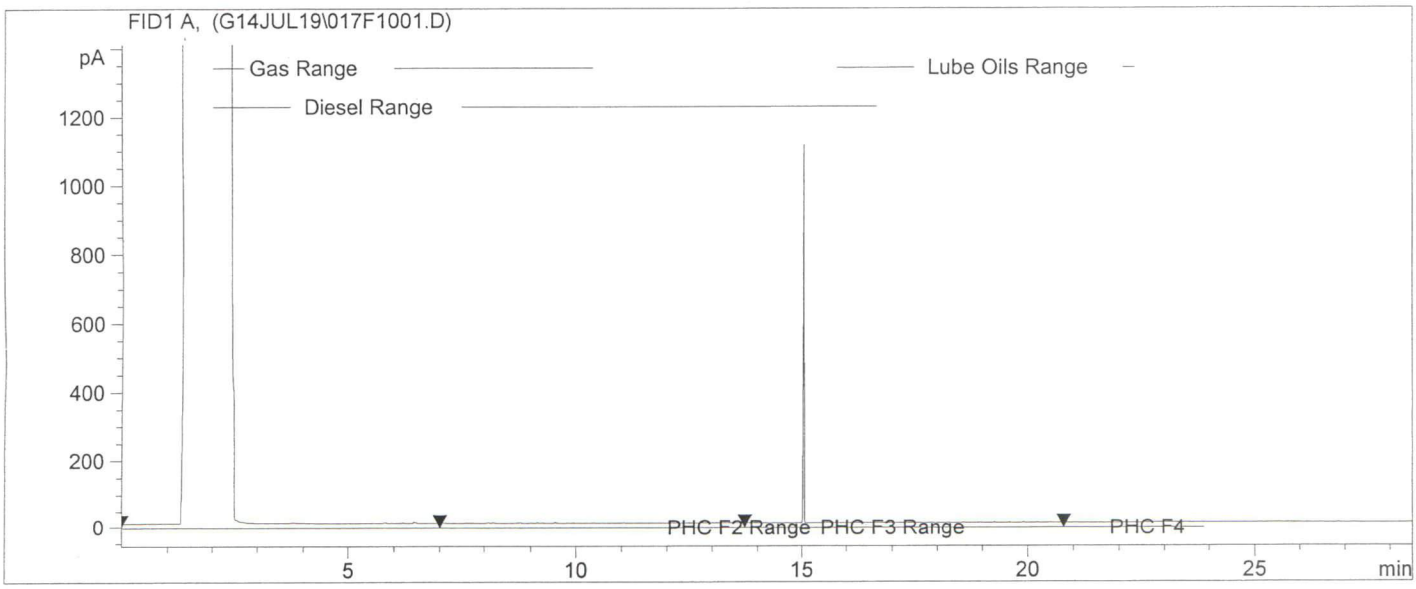
PSC

ANALYTICAL SERVICES

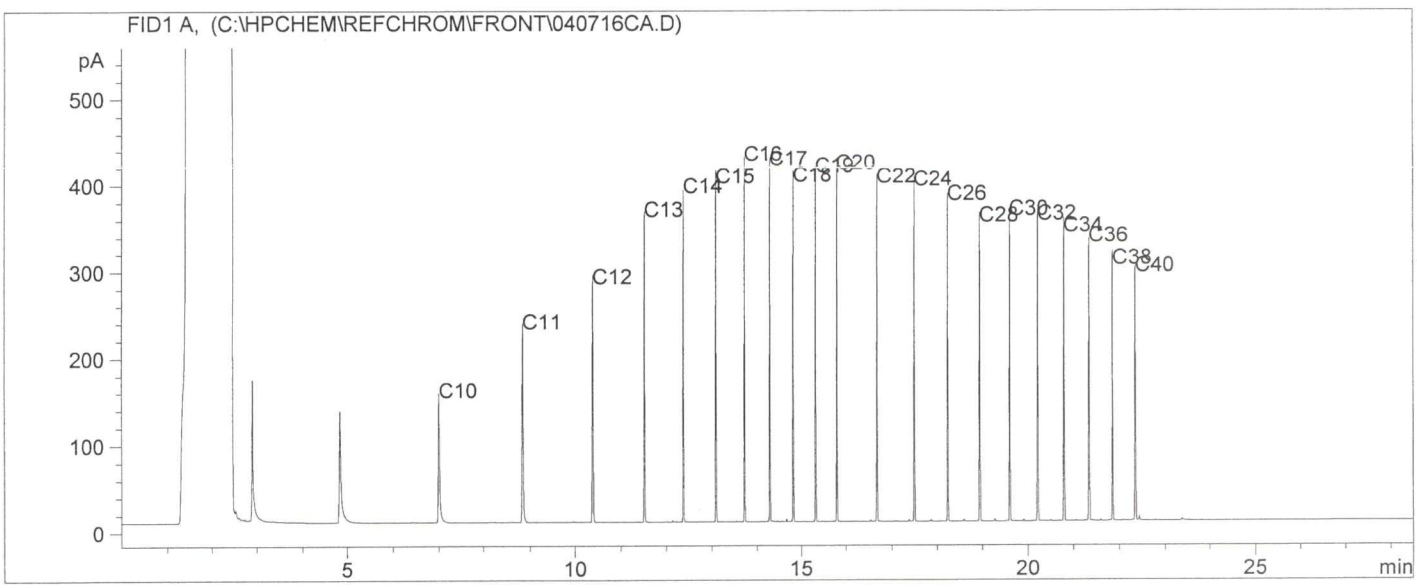
EF1

Sample ID: 35714
Method File: CCMEWW.M
Date & Time Analyzed: 7/19/2004 11:19:27 PM
Multiplier: 1

Operator: IT
Vial: 17
Sequence line#: 10



Carbon Range Reference Chromatogram at approx. 25ppm



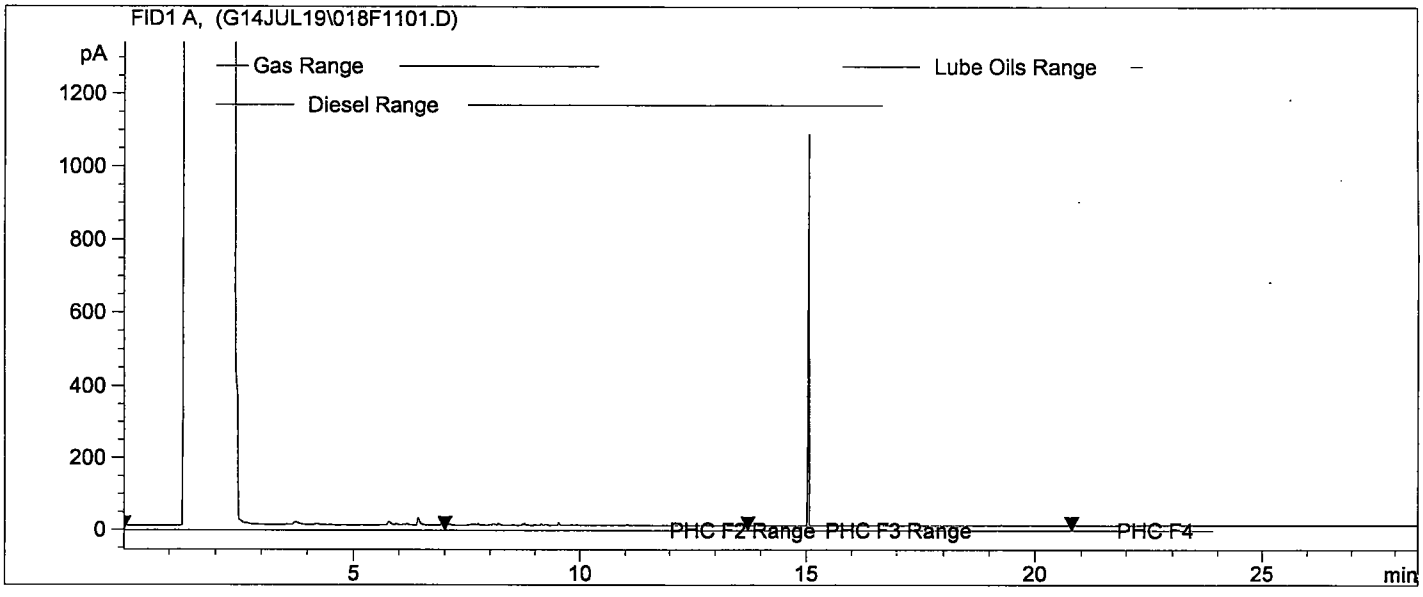
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

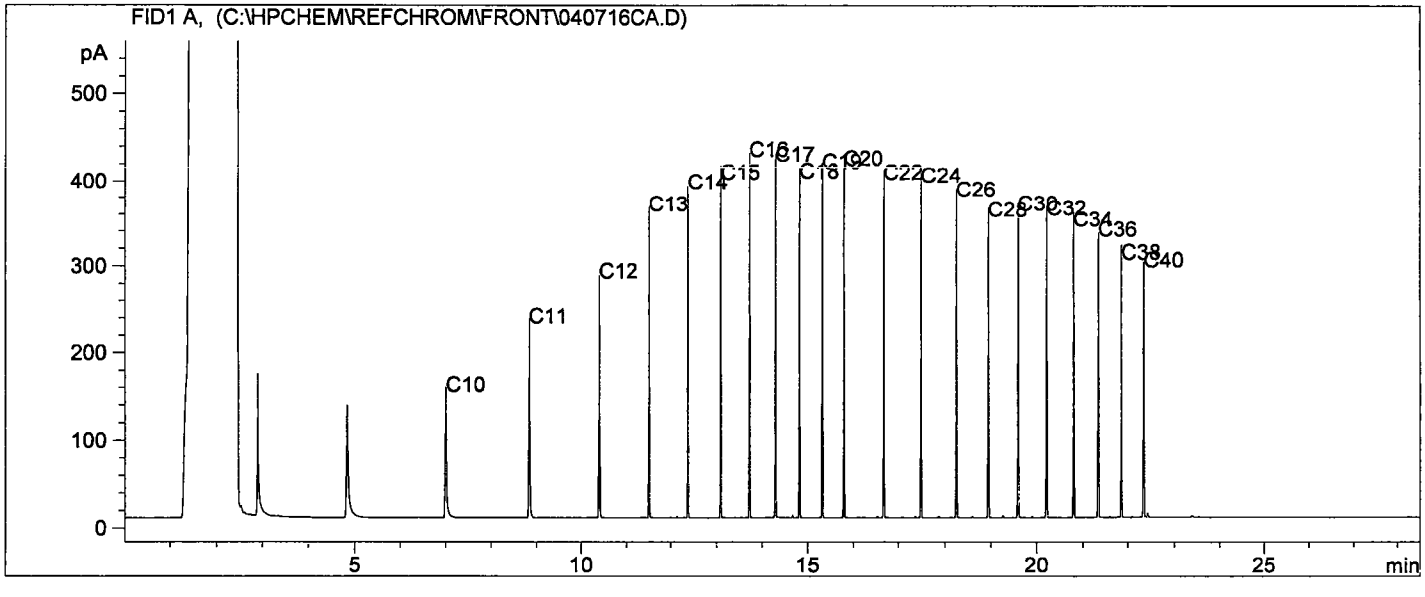
WF3

Sample ID: 35715
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 12:01:50 AM
Multiplier: 1

Operator: IT
Vial: 18
Sequence line#: 11



Carbon Range Reference Chromatogram at approx. 25ppm



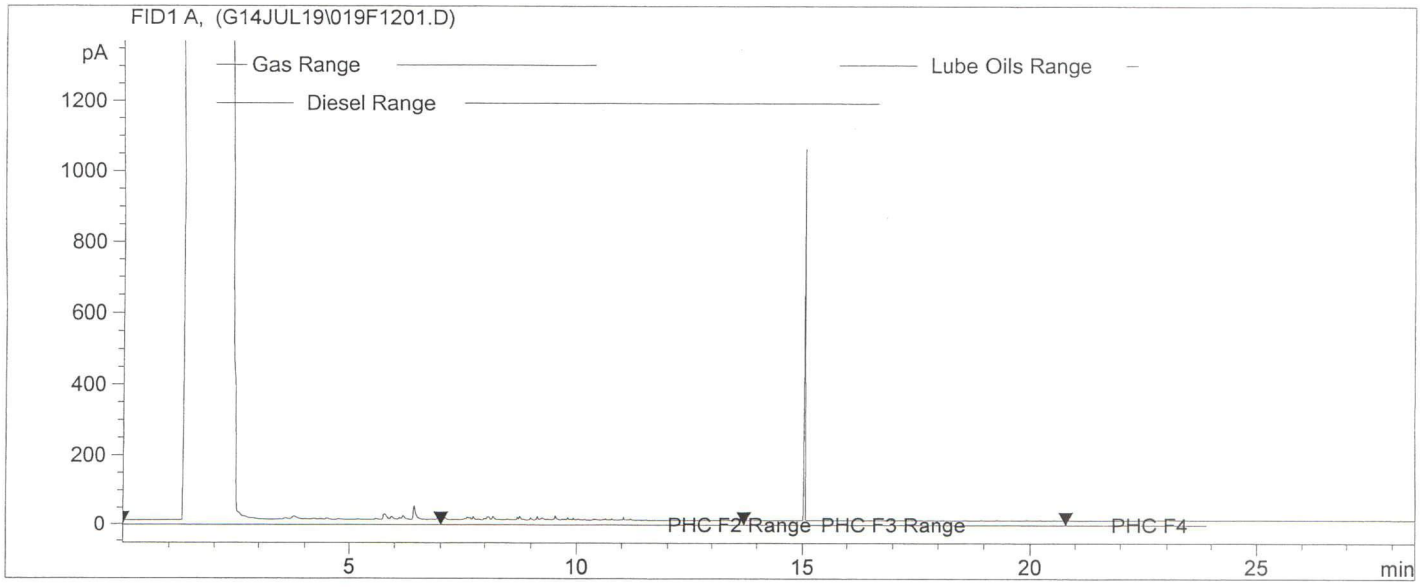
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

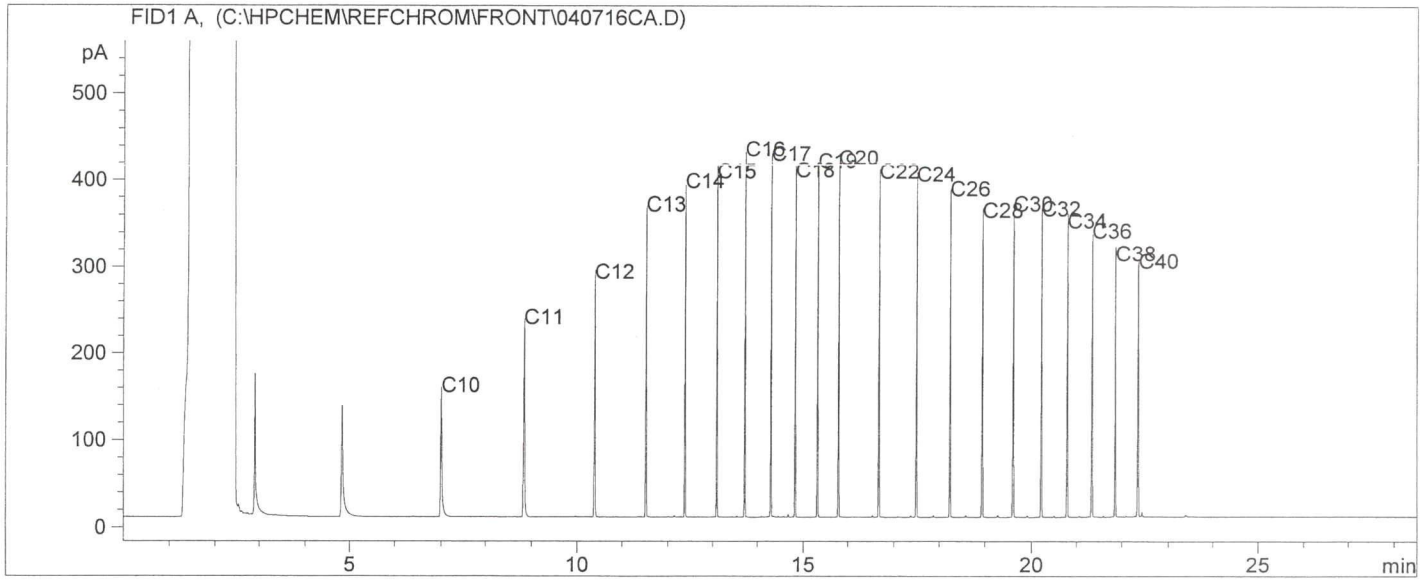
WF2

Sample ID: 35716
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 12:43:23 AM
Multiplier: 1

Operator: IT
Vial: 19
Sequence line#: 12



Carbon Range Reference Chromatogram at approx. 25ppm



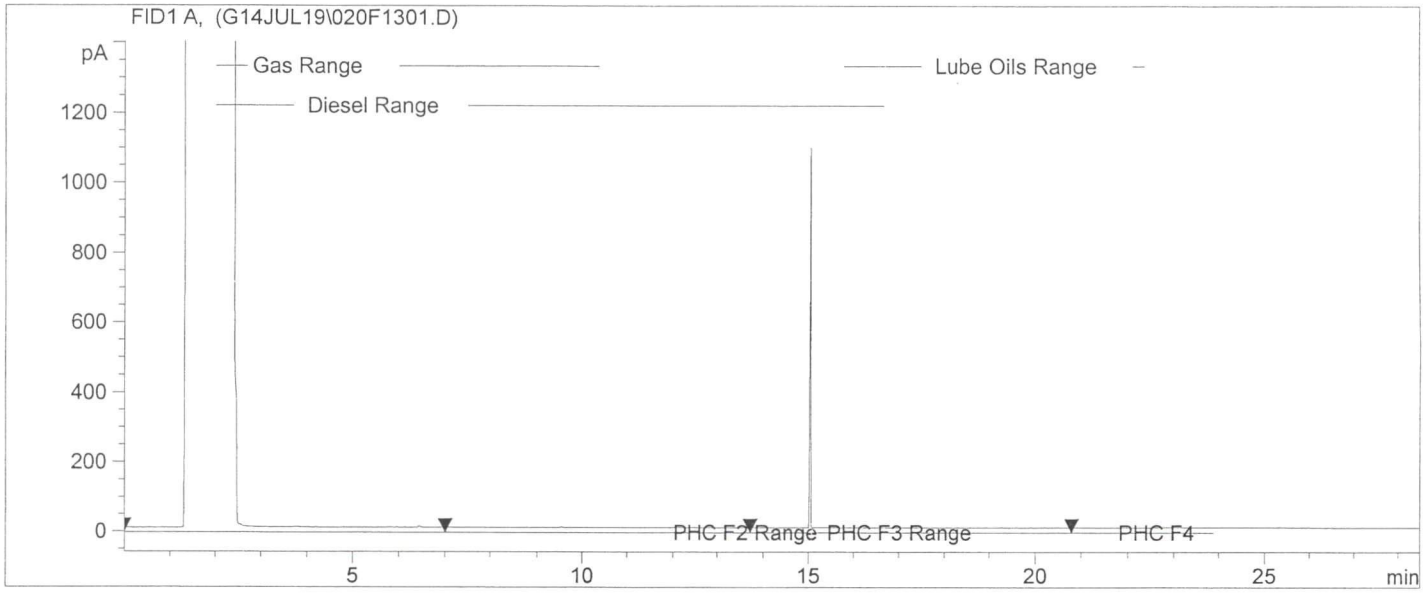
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

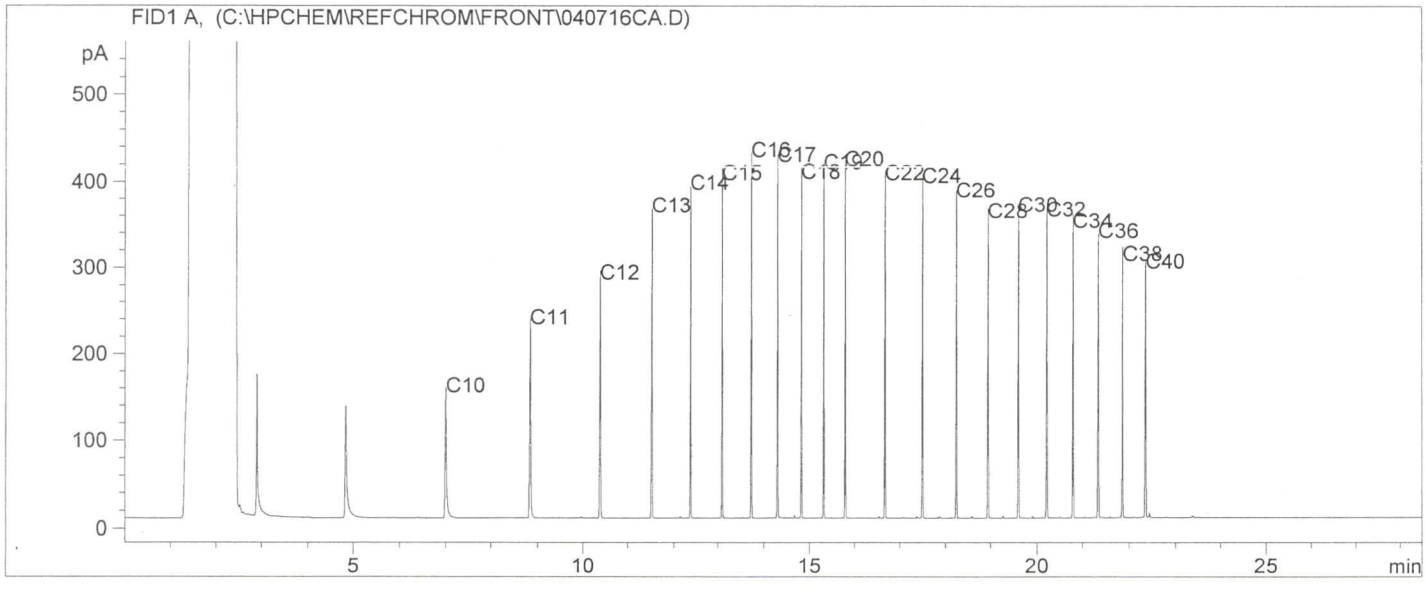
EF4

Sample ID: 35717
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 1:24:52 AM
Multiplier: 1

Operator: IT
Vial: 20
Sequence line#: 13



Carbon Range Reference Chromatogram at approx. 25ppm



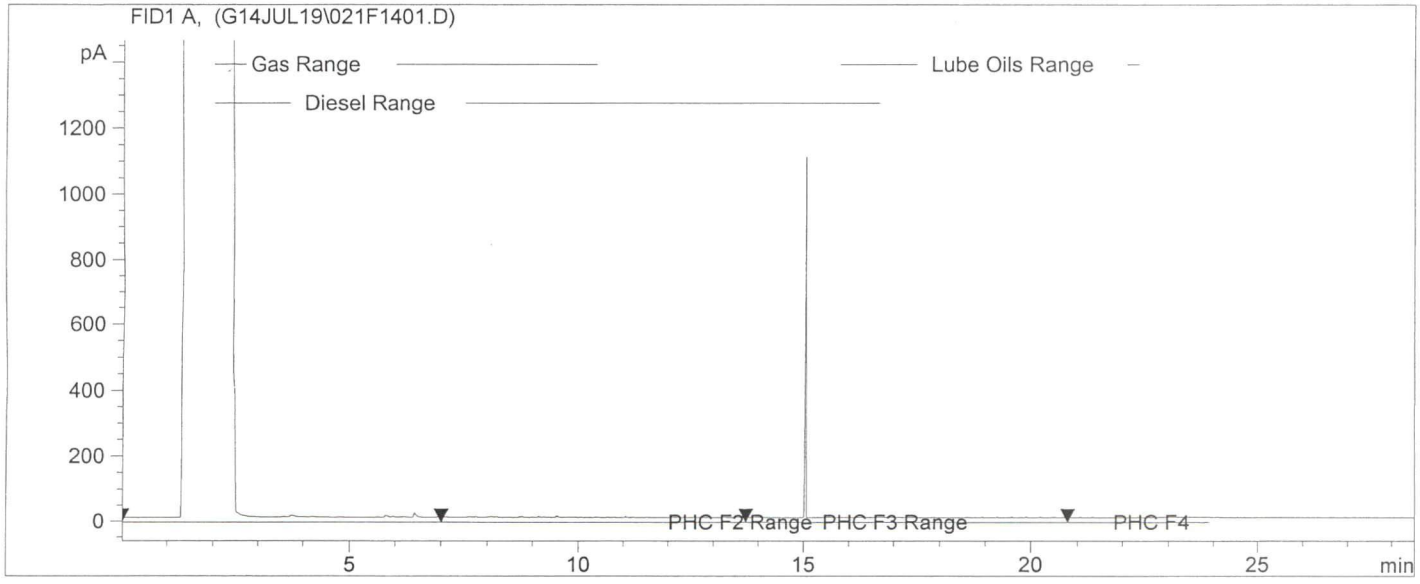
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

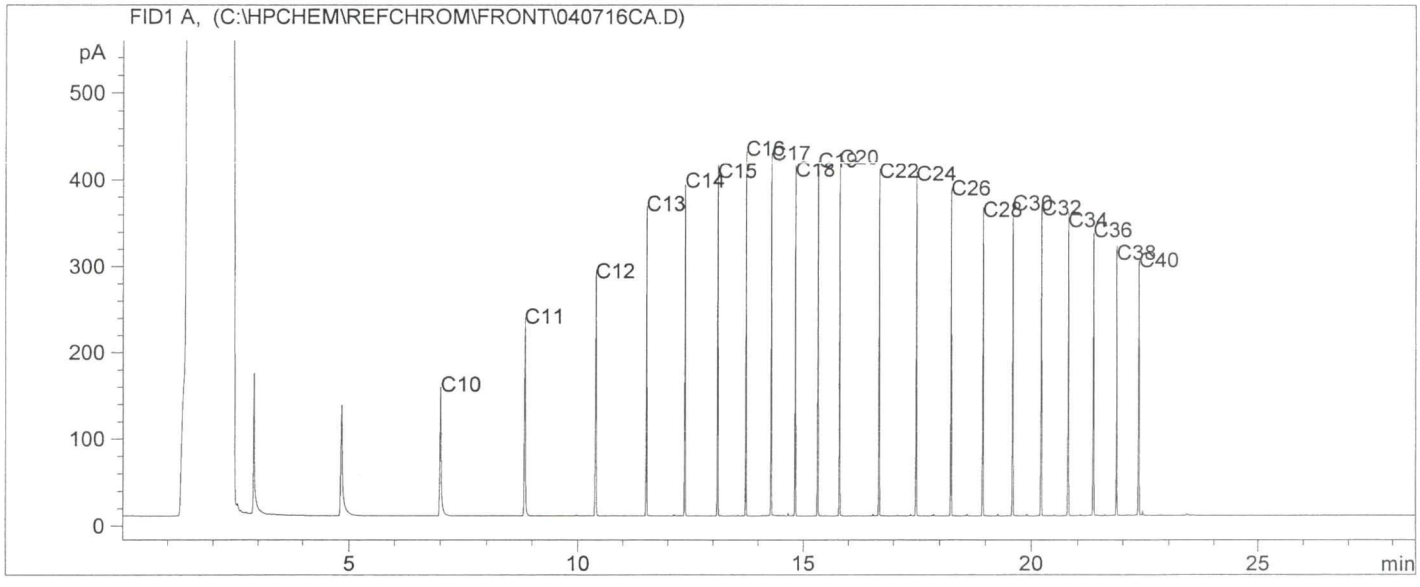
N20

Sample ID: 35718
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 2:06:10 AM
Multiplier: 1

Operator: IT
Vial: 21
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: AMEC Date: July 19/04 Initial: AR C of C #: 8132671

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER: ____	PRESERVATIVE CHECK
1	/																							
2	/																							
3	/																							
4	/																							
5	/																							
6	/																							
7	/																							
8	/																							
9																								
10																								
11																								
12																								

Item #

1. ☐ Custody Seal not Intact
2. ☐ Temp > 10 degrees C
3. ☐ Broken Bottle in Transit
4. ☐ No C of C
5. ☐ C of C information Incomplete
6. ☐ C of C not signed/dated by consultant
7. ☐ Non-current C of C
8. ☐ Bottles listed on C of C, but not in shipment
9. ☐ Bottles in shipment, but not on C of C
10. ☐ Analysis Requirements absent/not clear
11. ☐ Labelling Issue (missing/and/or incorrect)
12. ☐ Samples received >5 days after sampling
13. ☐ Samples received after hold time
14. ☐ Wrong Bottle(s) used
15. ☐ Incorrect Preservation or Headspace present
16. ☐ Insufficient # of bottles (no flag by consultant if insufficient sample available in field)
17. ☐ Incorrect Task Order # provided to lab

☐ Anomalies _____

☐ Insufficient Sample (lab use only)

- Poured off anions

Comments: _____

	Temperature			Average
Cooler #1	2	2	2	2
Cooler #2				
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs: _____

JOB STATUS REPORT

TIME : 07/23/2004 17:05
NAME : PSC ANALYTICAL SERV
FAX# : 604-444-4511
TEL# : 604-444-4808
SER.# : 000004012544

DATE,TIME	07/23 17:04
FAX NO./NAME	12044898261
DURATION	00:01:24
PAGE(S)	12
RESULT	OK
MODE	STANDARD ECM

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

23-Jul-04

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

All tests complete
Subject to QA/QC

Requisition Forms :

Form 08132671 shipped on 16-Jul-04 received on 17-Jul-04 logged on 19-Jul-04 completed on 23-Jul-04

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report. All data on final reports are validated by technical personnel. Signature on file at laboratory. Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and

PSC ANALYTICAL SERVICES
8577 Commerce Court
Burnaby, B.C. V5A 4N5
Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

8132671

COMPANY NAME:	PH. #: 204 488 2997
AMEC	FAX #: 204 489 8261
COMPANY ADDRESS: 440 Dovercourt WPG, MB	CLIENT PROJECT ID: (#) WX05876
SAMPLER NAME (PRINT): Andrea Hachkowski	PROJECT MANAGER: A. Desgroseilliers

FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	TIME	HEADSPACE VAPOUR	BTEX / LH ____ BTEX / VPH ____	VOC's (VOLATILE ORGANICS)	TEH ____ EPH ____	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP ____ PHENOLS BY GCMS ____	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL ___ DISSOLVED ___	TOTALS METALS LEVEL ___	DISSOLVED METALS LEVEL ___	NITRATE ____ NITRITE ____ AMMONIA ____	CHLORIDE ____ FLUORIDE ____ SULPHATE ____	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD ____ WAD ____	LEACHABLE LEAD (AA) ____ (TCLP) ____	LEACHABLE BTEX (AA) ____ (TCLP) ____
1 TP1@10'	36685			X		1	16/07/04	11 am	10 ppm					X																	
2 TP2@8'	36686			X		1		12:30 pm	33% LEL					X																	
3 TP2@12'	36687			X		1		12:40 pm	60 ppm					X																	
4 TP3@11'	36688			X		1		1:30 pm	10 ppm					X																	
5 TP4@6'	36689			X		1		1:45 pm	25 ppm					X																	
6 TP5@10'	36690			X		1		9 am	5 ppm					X																	
7 TP6@8'	36691			X		1		10 am	>100% LEL					X																	
8 TP6@12'	36692			X		1		10:15 am	275 ppm					X																	
9																															
10																															
11																															
12																															

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS ____

CUSTODY RECORD

ESSO SITE LOCATION: 860265/ 287 Main St Selkirk, MB R8001943

PSC SAP: 11045177

ESSO CONTACT: Andrew Hodgetts

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE

☒ CCME ☐ CSR ☐ ALBERTA TIER 1 ☐ OTHER

SPECIAL REPORTING OR BILLING INSTRUCTIONS: CS intact

JARS USED: 15

LAB USE ONLY

ARRIVAL TEMPERATURE °C: 2.2 2 20C

DUE DATE: Jul 22/04 mf

LOG IN CHECK: OL

RELINQUISHED BY SAMPLER: Andrea Hachkowski	DATE DD/MM/YY 16/07/04	TIME 4pm	RECEIVED BY: Fed-Ex
RELINQUISHED BY:	DATE DD/MM/YY	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE DD/MM/YY 17/07/04	TIME 1125	RECEIVED BY LABORATORY: MF

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: AMEC Date: July 05/04 Initial: MF C of C #: 8151223

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER:	PRESERVATIVE CHECK
1						1			1										3					
2						1			1										3					
3						1			1										3					
4						1			1										3					
5						1			1										3					
6						1			1										3					
7						1			1										3					
8																			1					
9																			1					
10																			1					
11																								
12																								

Item #

1.		Custody Seal not Intact
2.		Temp > 10 degrees C
3.		Broken Bottle in Transit
4.		No C of C
5.		C of C information Incomplete
6.		C of C not signed/dated by consultant
7.		Non-current C of C
8.		Bottles listed on C of C, but not in shipment
9.		Bottles in shipment, but not on C of C
10.		Analysis Requirements absent/not clear
11.		Labelling Issue (missing/and/or incorrect)
12.		Samples received >5 days after sampling
13.		Samples received after hold time
14.		Wrong Bottle(s) used
15.		Incorrect Preservation or Headspace present
16.		Insufficient # of bottles (no flag by consultant if insufficient sample available in field)
17.		Incorrect Task Order # provided to lab

	Anomalies _____
	Insufficient Sample (lab use only)

- Poured off anions

Comments: _____

	Temperature			Average
Cooler #1	2	3	1	2
Cooler #2				
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs: _____

PSC ANALYTICAL SERVICES
8577 Commerce Court
Burnaby, B.C. V5A 4N5
Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

PAGE 1 OF 1

ANALYSIS REQUEST

8151223

COMPANY NAME: AMEC	PH. #: 204 488 2997
COMPANY ADDRESS: 440 Dovercourt Winnipeg, MB R3H 1N4	FAX #: 204 489 8261
SAMPLER NAME (PRINT): Mark Roddy A. Desgroseilliers	CLIENT PROJECT ID: (#) WX05876
	PROJECT MANAGER: A. Desgroseilliers

	FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	TIME	HEADSPACE VAPOUR	BTEX / VPH	VOC's (VOLATILE ORGANICS)	F2	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP	PHENOLS BY GCMS	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL	DISSOLVED	TOTALS METALS LEVEL	DISSOLVED METALS LEVEL	NITRATE	NITRITE	AMMONIA	CHLORIDE	FLUORIDE	SULPHATE	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD	WAD	LEACHABLE LEAD (AA)	(TCLP)	LEACHABLE BTEX (AA)	(TCLP)
1	MW37	32734	X				5	June 30 2004	11:00	240 ppm	X		X					X																						
2	MW34	32735	X				5		11:15	350 ppm	X		X					X																						
3	MW33	32736	X				5		11:30	10 ppm	X		X					X																						
4	MW36	32737	X				5		12:00	5% LEL	X		X					X																						
5	MW32	32738	X				5		11:45	10 ppm	X		X					X																						
6	MW38	32739	X				5		12:15	<5 ppm	X		X					X																						
7	B+10	32740	X				5		12:30	120 ppm	X		X					X																						
8	Duplicate	32741	X				1		—	—	X																												
9	Field Blank	32742				X	1		12:05	—	X																												
10	Trip Blank	32743				X	1	23/6/04	—	—	X																														
11																																								
12																																								

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS: _____

CUSTODY RECORD

ESSO SITE LOCATION: 289 Main St Selkirk, MB — 860265 / 88001943

PSC SAP: 11045177

ESSO CONTACT: Andrew Hodgetts.

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE

SPECIAL REPORTING OR BILLING INSTRUCTIONS

- ☒ CCME
- ☐ CSR
- ☐ ALBERTA TIER 1
- ☐ OTHER

JARS USED: 3 ~~8~~

LAB USE ONLY

ARRIVAL TEMPERATURE °C	DUE DATE	LOG IN CHECK
(2, 3, 1) 2	July 12/04 MF	AB CL

RELINQUISHED BY SAMPLER: A. Desgroseilliers for M Roddy	DATE DD/MM/YY: 2 July/04	TIME: 4pm.	RECEIVED BY: Fed-Ex
RELINQUISHED BY:	DATE DD/MM/YY:	TIME:	RECEIVED BY:
RELINQUISHED BY:	DATE DD/MM/YY: 6/3/04	TIME: 1035	RECEIVED BY LABORATORY:

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: AMEC Date: 4/16/04 Initial: 1 C of C #: 8132668

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER:	PRESERVATIVE CHECK
1	1																						
2	1																						
3	1																						
4	1																						
5	1																						
6	1																						
7	1																						
8	1																						
9	1																						
10	1																						
11																							
12																							

Item #

1. ☐ Custody Seal not Intact
2. ☐ Temp > 10 degrees C
3. ☐ Broken Bottle in Transit
4. ☐ No C of C
5. ☐ C of C information Incomplete
6. ☐ C of C not signed/dated by consultant
7. ☐ Non-current C of C
8. ☐ Bottles listed on C of C, but not in shipment
9. ☐ Bottles in shipment, but not on C of C
10. ☐ Analysis Requirements absent/not clear
11. ☐ Labelling Issue (missing/and/or incorrect)
12. ☐ Samples received >5 days after sampling
13. ☐ Samples received after hold time
14. ☐ Wrong Bottle(s) used
15. ☐ Incorrect Preservation or Headspace present
16. ☐ Insufficient # of bottles (no flag by consultant if insufficient sample available in field)
17. ☐ Incorrect Task Order # provided to lab

☐ Anomalies _____

☐ Insufficient Sample (lab use only)

- Poured off anions

Comments: _____

	Temperature			Average
Cooler #1	1	1	1	1
Cooler #2				
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs: _____

JOB STATUS REPORT

TIME : 07/22/2004 16:56
NAME : PSC ANALYTICAL SERV
FAX# : 604-444-4511
TEL# : 604-444-4808
SER.# : 000004012544

DATE,TIME	07/22 16:54
FAX NO./NAME	12044898261
DURATION	00:01:36
PAGE(S)	13
RESULT	OK
MODE	STANDARD ECM

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

22-Jul-04

Interim Report

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

Requisition Forms :

Form 08132668 shipped on 14-Jul-04 received on 15-Jul-04 logged on 16-Jul-04

All test complete.
Subject to QA/QC

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '—' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report.
All data on final reports are validated by technical personnel. Signature on file at laboratory.
Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and

PSC ANALYTICAL SERVICES
8577 Commerce Court
Burnaby, B.C. V5A 4N5
Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

ANALYSIS REQUEST 8132668

COMPANY NAME: AMEC	PH. #: 2044882997
COMPANY ADDRESS: 440 Dovercourt Wpg. MB	FAX #: 204 489 8261
SAMPLER NAME (PRINT): Andrea Hachkowski	CLIENT PROJECT ID: (#) WX05876
	PROJECT MANAGER: A. Desgroseilliers

	FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	TIME	HEADSPACE VAPOUR	BTEX / LH ____ BTEX / VPH ____	VOC's (VOLATILE ORGANICS)	TEH ____ EPH ____	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP ____ PHENOLS BY GCMS ____	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL ___ DISSOLVED ___	TOTALS METALS LEVEL ___	DISSOLVED METALS LEVEL ___	NITRATE ____ NITRITE ____ AMMONIA ___	CHLORIDE ____ FLUORIDE ____ SULPHATE ___	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD ____ WAD ____	LEACHABLE LEAD (AA) ____ (TCLP) ___	LEACHABLE BTEX (AA) ____ (TCLP) ___
1	E17	35709			X		1	13/7/04	3:30 pm	250 ppm					X			X														
2	N7	35710			X		1	↑	2:30pm	5/100 LEL					X			X														
3	S3	35711			X		1		1:00pm	>100 LEL					X			X														
4	W12	35712			X		1		1:30pm	55% LEL					X			X														
5	E20	35713			X		1		3:45pm	>100 LEL					X			X														
6	EF1	35714			X		1		4:00pm	10% LEL					X			X														
7	WF3	35715			X		1		4:30pm	350 ppm					X			X														
8	WF2	35716			X		1		4:45pm	150 ppm					X			X														
9	EF4	35717			X		1	↓	4:15pm	100 ppm					X			X														
10	N20	35718			X		1	13/7/04	3:00 pm	5/100 LEL					X			X														
11																			J													
12																																

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS _____

CUSTODY RECORD

ESSO SITE LOCATION: 860265/ 287 Main St Selkirk, MB 88001943

PSC SAP: 11045177

ESSO CONTACT: Andrew Hodgetts.

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE:

SPECIAL REPORTING OR BILLING INSTRUCTIONS: CS Intact

☒ CCME ☐ CSR ☐ ALBERTA TIER 1 ☐ OTHER

JARS USED: 46

LAB USE ONLY

ARRIVAL TEMPERATURE °C	DUE DATE	LOG IN CHECK
1, 1, 1	Jul 22/04	CC
	1	CL

RELINQUISHED BY SAMPLER: Aldergroseilliers for A. Hachkowski	DATE DD/MM/YY 14/07/04	TIME 4pm	RECEIVED BY: Fed-Ex
RELINQUISHED BY:	DATE DD/MM/YY	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE DD/MM/YY 15/07/04	TIME 835	RECEIVED BY LABORATORY: AR

PSC

ANALYTICAL SERVICES

PSC Analytical Services Inc.
8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

INVOICE BC092090

Invoice date 31-JUL-04
Page 1 of 1
Consultant's Copy

Forms included : 08132671 08151223 08132668

Imperial Oil Ltd
237-4TH Avenue S.W.
P.O. Box 2480, Stn M
Calgary, Alberta
T2P 3M9

Attention of Andrew Hodgetts

Client type : I Client code : L9
Sampler : ANDREA HACHKOWSKI
Client project ID : WX05876
IOL Contract No : 20493
IOL Commitment No : 11045177

Client account # : 6517

No.	Description of work	Factor	Basis for factor	Quantity	Referenc Code	SAP #
1	BTEX-CCME F1 WATER			10	FPKG-BT32 FW	
2	Filtering & PresHNO3			7	SFTPSSPFP FW	
3	Hydrocarbons C5-C10			10	SH104PT11 FW	
4	CCME PHC F2 C10-16			7	SPHC2PHCW FW	
5	Lead Dissolved			7	SPb-DMS31 FW	
6	BTEX SOIL by GCMS SIM			10	FPKG-BT35 SO	
7	CCME-PHC			10	GCCME-PHC SO	
8	Moisture			18	S00250760 SO	
9	Lead			10	SPb-TMS20 SO	
10	CCME F2-F4 HC'S			8	FCCMEHCHT SO	
11	BTEX SOIL by GCMS SIM			8	FPKG-BT35 SO	

Received Between : 05-JUL-2004 and 19-JUL-2004
Reported Between : 12-JUL-2004 and 23-JUL-2004

Consultant : AMEC EARTH & ENVIRONMENTAL
Consultant Contact : A. DESGROSEILLIERS
Consultant Project No.: WX05876
Site Location : 287 MAIN ST 8602651 SELKIRK MB 88001943

TERMS
Net 30 days after date of invoice
2% per month interest charged on
all overdue accounts.

Please remit payment to:
PSC Analytical Services Inc.
5555 North Service Road, Burlington, ON, L7L 5H7

PSC ANALYTICAL SERVICES

IMPERIAL OIL LIMITED / EXXONMOBIL CANADA
PSC ANALYTICAL SERVICES CONTRACT

PSC Burnaby **Data Quality Waiver Request #** **100**

If this waiver is not returned, or the undersigned PSC Analytical representative not contacted within 14 days of issuance, the laboratory will deem the associated data as acceptable to the recipient, as reported by the laboratory. Please note: If no response has been received within 14 days of issuance, this Data Quality Waiver will be considered incomplete by the laboratory and reported as such to Imperial Oil/ExxonMobil Canada in quarterly stewardship reports.

Client: AMEC Earth & Environmental
Project: WX05876
Consultant: AMEC Earth & Environmental
Consultant PM: A. Desgroseilliers

Form #: 08132671
# of Samples: 1
IOL PM: Mike Curtin

IOL Site Location: 88001943

Customer Samples Affected: TP6@12 (PSC ID: 36692)

Date of Deviation: 7/22/2004 **Test Affected:** BTEX

DQW Type: 5 - Matrix Spike values outside of acceptance limits

Reason for Deviation: Benzene and toluene spikes exceed acceptance criteria due to high concentrations of BTEX compounds in the sample.

Waiver Issued By:
Clifton Samolloff

Comments:

Data Quality Waiver Reviewed and Accepted By:
Print Name: Allyson Desgroseilliers **Title:** Project Manager
Signature: A. Desgroseilliers **Date:** 29 July 2004
Samples DQW Accepted For: All samples ☒

☐ **Some samples (#'s/reason):** _____

☐ **No samples (reason):** _____

PSC ANALYTICAL SERVICES

IMPERIAL OIL LIMITED / EXXONMOBIL CANADA
PSC ANALYTICAL SERVICES CONTRACT

PSC Burnaby **Data Quality Waiver Request #** **100**

If this waiver is not returned, or the undersigned PSC Analytical representative not contacted within 14 days of issuance, the laboratory will deem the associated data as acceptable to the recipient, as reported by the laboratory. Please note: If no response has been received within 14 days of issuance, this Data Quality Waiver will be considered incomplete by the laboratory and reported as such to Imperial Oil/ExxonMobil Canada in quarterly stewardship reports.

Client:	AMEC Earth & Environmental	**Form #:**	08132671
Project:	WX05876	**# of Samples:**	1
Consultant:	AMEC Earth & Environmental	**IOL PM:**	Mike Curtin
Consultant PM:	A. Desgroseilliers		

IOL Site Location: 88001943

Customer Samples Affected: TP6@12 (PSC ID: 36692)

Date of Deviation: 7/22/2004 **Test Affected:** BTEX

DQW Type: 5 - Matrix Spike values outside of acceptance limits

Reason for Deviation: Benzene and toluene spikes exceed acceptance criteria due to high concentratiosn of BTEX compounds in the sample.

Waiver Issued By:

Clifton Samoiloff

Comments:

Data Quality Waiver Reviewed and Accepted By:

Print Name: **Title:**

Signature: **Date:**

Samples DQW Accepted For: **All samples** ☐

☐ **Some samples (#'s/reason):** _____

☐ **No samples (reason):** _____

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

28-Jul-04

Revision No.: 1

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

Requisition Forms :

Form 08132671 shipped on 16-Jul-04 received on 17-Jul-04 logged on 19-Jul-04 completed on 24-Jul-04

Remarks :

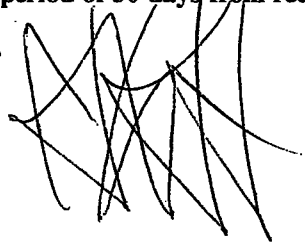
+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report. All data on final reports are validated by technical personnel. Signature on file at laboratory. Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and IOL criteria for spike recoveries, reference material recoveries, method blank data and duplicate precision were met unless otherwise stated
+ This report shall not be reproduced except in full, without the written approval of the laboratory

Methods used by PSC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC for a period of 30 days from receipt of data or as per contract.

PSC Project Manager: Clifton Samoiloff

Data Quality Waiver (DQW) Provided.



28-Jul-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14036685 Client ID : TP1@10'	Lab ID : 14036686 Client ID : TP2@8'
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	30.6	24.5
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/20	04/07/20
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	560
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	540
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	190
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.005	0.18
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.024	5.0
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.039	< 0.10 (1)
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	18
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	13
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	4.7
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	93	104
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	95	100
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	103	98
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	88	88
				Matrix :	Soil	Soil
				Sampled on:	04/07/16 11:00	04/07/16 11:00

Result comments and/or text results :

(1) MDL raised due to sample dilution.

28-Jul-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14036687	14036688
					Client ID :	TP2@12'	TP3@11'
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		2	2
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		31.2	29.0
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		04/07/20	04/07/20
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		35	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		34	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		Yes	Yes
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		0.50	0.005
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		0.57	0.008
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		0.026	0.030
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
VOC SURROGATE RECOVERY							
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM		94	90
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM		96	98
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM		104	103
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM		73	88
					Matrix :	Soil	Soil
					Sampled on:	04/07/16 11:00	04/07/16 11:00

28-Jul-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute		
				Lab ID :	14036689	14036690
				Client ID :	TP4@6'	TP5@10'
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	21.2	30.6
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/20	04/07/20
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.002	0.008
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	< 0.003	0.014
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.029	0.049
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	91	93
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	100	97
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	103	103
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	103	122
				Matrix :	Soil	Soil
				Sampled on:	04/07/16 11:00	04/07/16 11:00

28-Jul-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14036691 Client ID : TP6@8'	Lab ID : 14036692 Client ID : TP6@12
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	24.2	31.0
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/07/20	04/07/20
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	2000	250
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	1800	190
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	1200	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/07/20	04/07/20
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	1.4	8.5 (1)
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	21	4.9
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	12	18 (1)
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	150	30
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	110	21
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	42	8.9
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	103	96
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	103	98
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	99	99
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	80	84
				Matrix :	Soil	Soil
				Sampled on:	04/07/16 11:00	04/07/16 11:00

Result comments and/or text results :

(1) Spike invalid due to high sample concentration.

28-Jul-04

DUPLICATE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Duplicate Conc.	MDL	Unit	Relative % Diff.
CCME PHC F2 C10-16	TP1@10'	14036685	< 50	< 50	50	ug/g	0.00
CCME PHC F3 C16-34	TP1@10'	14036685	< 50	< 50	50	ug/g	0.00
CCME PHC F4 C34-50+	TP1@10'	14036685	< 50	< 50	50	ug/g	0.00
Benzene	TP4@6'	14036689	0.002	0.002	0.001	ug/g	0.00
Toluene	TP4@6'	14036689	0.029	0.017	0.010	ug/g	52.17
Ethylbenzene	TP4@6'	14036689	< 0.003	< 0.003	0.003	ug/g	0.00
m,p - Xylene	TP4@6'	14036689	< 0.10	< 0.10	0.10	ug/g	0.00
o - Xylene	TP4@6'	14036689	< 0.10	< 0.10	0.10	ug/g	0.00
CCME PHC F1 C6-10	TP4@6'	14036689	< 10	< 10	10	ug/g	0.00

28-Jul-04

SPIKE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
CCME PHC F2 C10-16	TP1@10'	14036685	< 50	690	649	ug/g	106
CCME PHC F2 C10-16	Blank Spike. Batch :	45700853	< 50	460	450	ug/g	101
CCME PHC F3 C16-34	TP1@10'	14036685	< 50	2100	2090	ug/g	101
CCME PHC F3 C16-34	Blank Spike. Batch :	45700853	< 50	1400	1450	ug/g	97
CCME PHC F4 C34-50+	TP1@10'	14036685	< 50	160	144	ug/g	114
CCME PHC F4 C34-50+	Blank Spike. Batch :	45700853	< 50	110	100	ug/g	107
Benzene	Blank Spike. Batch :	45202249	0.002	0.041	.043	ug/g	89
Toluene	Blank Spike. Batch :	45202249	0.026	0.044	.043	ug/g	41
Ethylbenzene	Blank Spike. Batch :	45202249	0.006	0.036	.043	ug/g	69
Benzene	TP6@12	14036692	8.5	7.8	.334	ug/g	%-200
Toluene	TP6@12	14036692	18	18	.334	ug/g	%-200
Ethylbenzene	TP6@12	14036692	4.9	5.3	.334	ug/g	105
m,p - Xylene	TP6@12	14036692	21	22	.669	ug/g	100
o - Xylene	TP6@12	14036692	8.9	9.3	.334	ug/g	105

28-Jul-04

ANALYSIS DATES

	Lab ID :	14036685	14036686	14036687	14036688
	Client ID:	TP1@10'	TP2@8'	TP2@12'	TP3@11'
00250760	Moisture	22-JUL-2004	22-JUL-2004	22-JUL-2004	22-JUL-2004
CCMEHCHT	CCME F2-F4 HC'S	20-JUL-2004	20-JUL-2004	20-JUL-2004	20-JUL-2004
PKG-BT35	BTEX SOIL by GCMS SIM	21-JUL-2004	22-JUL-2004	21-JUL-2004	21-JUL-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	16-JUL-2004	16-JUL-2004	16-JUL-2004	16-JUL-2004

	Lab ID :	14036689	14036690	14036691	14036692
	Client ID:	TP4@6'	TP5@10'	TP6@8'	TP6@12
00250760	Moisture	22-JUL-2004	22-JUL-2004	22-JUL-2004	22-JUL-2004
CCMEHCHT	CCME F2-F4 HC'S	20-JUL-2004	20-JUL-2004	20-JUL-2004	20-JUL-2004
PKG-BT35	BTEX SOIL by GCMS SIM	21-JUL-2004	22-JUL-2004	22-JUL-2004	22-JUL-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	16-JUL-2004	16-JUL-2004	16-JUL-2004	16-JUL-2004

28-Jul-04
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BATCH NUMBERS

	Lab ID :	14036685	14036686	14036687	14036688
	Client ID:	TP1@10'	TP2@8'	TP2@12'	TP3@11'
00250760	Moisture	44402849	44402849	44402849	44402849
CCMEHCHT	CCME F2-F4 HC'S	45700853	45700853	45700853	45700853
PKG-BT35	BTEX SOIL by GCMS SIM	45202249	45202272	45202249	45202249
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	16-JUL-2004	16-JUL-2004	16-JUL-2004	16-JUL-2004

	Lab ID :	14036689	14036690	14036691	14036692
	Client ID:	TP4@6'	TP5@10'	TP6@8'	TP6@12
00250760	Moisture	44402849	44402849	44402849	44402849
CCMEHCHT	CCME F2-F4 HC'S	45700853	45700853	45700853	45700853
PKG-BT35	BTEX SOIL by GCMS SIM	45202249	45202272	45202272	45202272
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	16-JUL-2004	16-JUL-2004	16-JUL-2004	16-JUL-2004

28-Jul-04

BLANK SUMMARY

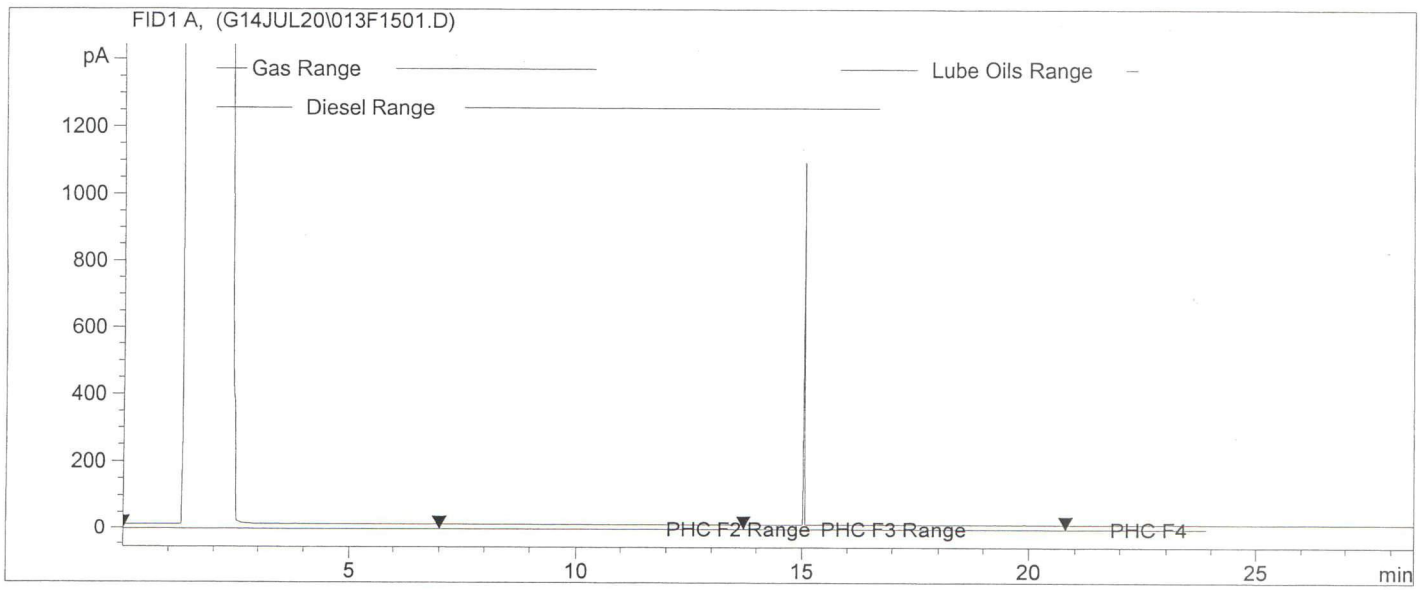
All method blanks were less than MDL, except the following:

Parameter	Batch	Sparcode	Blank Conc.	MDL	Unit
Benzene	45202249	B020PT20	0.002	0.001	ug/g
Toluene	45202249	T001PT20	0.026	0.010	ug/g
Ethylbenzene	45202249	B021PT20	0.006	0.003	ug/g
CCME PHC F1 C6-10	45202272	PHC1PT18	11	10	ug/g

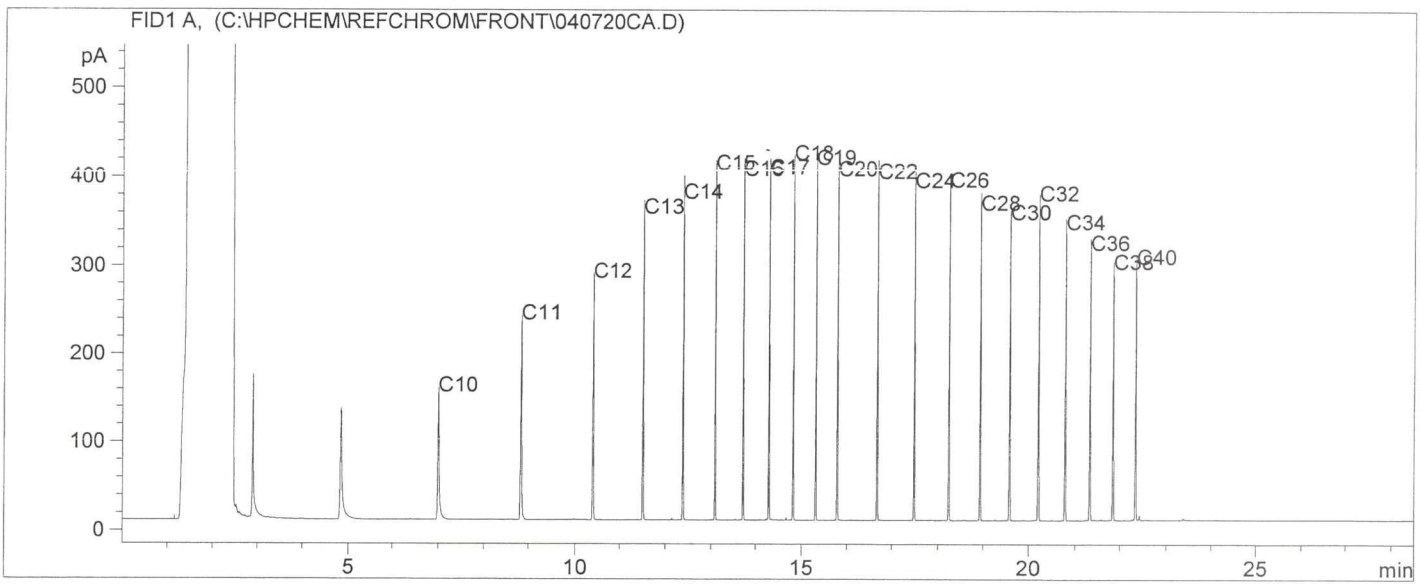
TP1 @ 10'

Sample ID: 36685
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 11:06:36 PM
Multiplier: 1

Operator: IT
Vial: 13
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

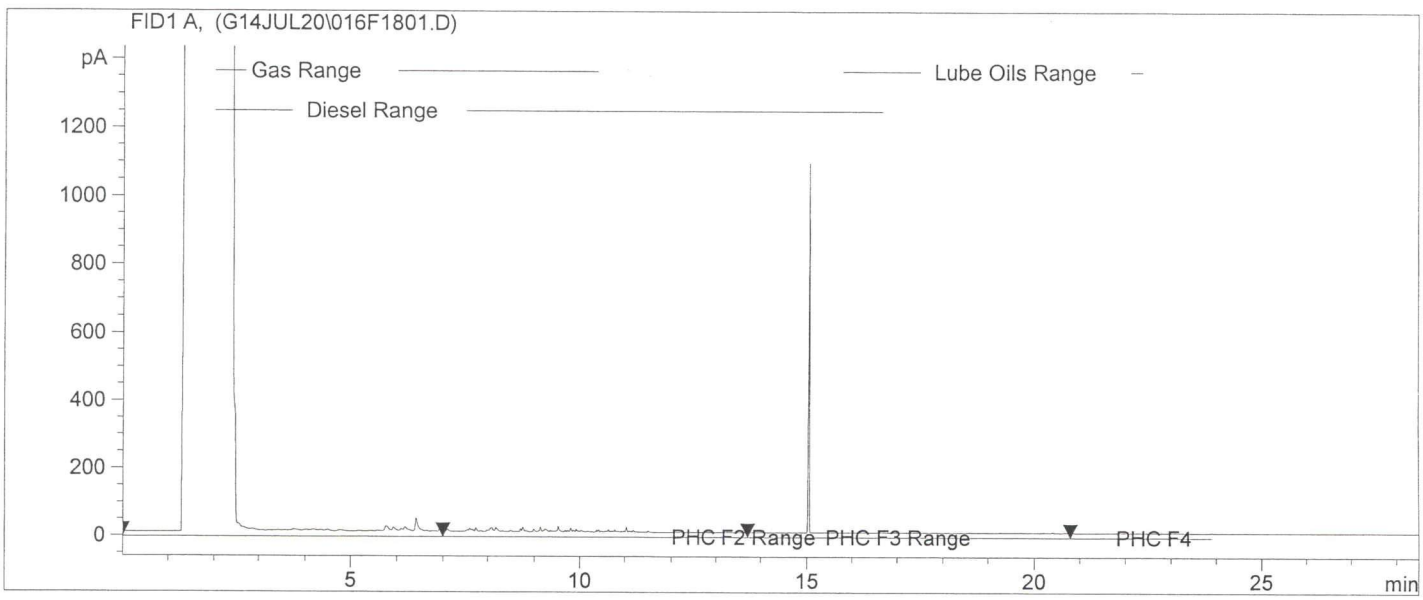
PSC

ANALYTICAL SERVICES

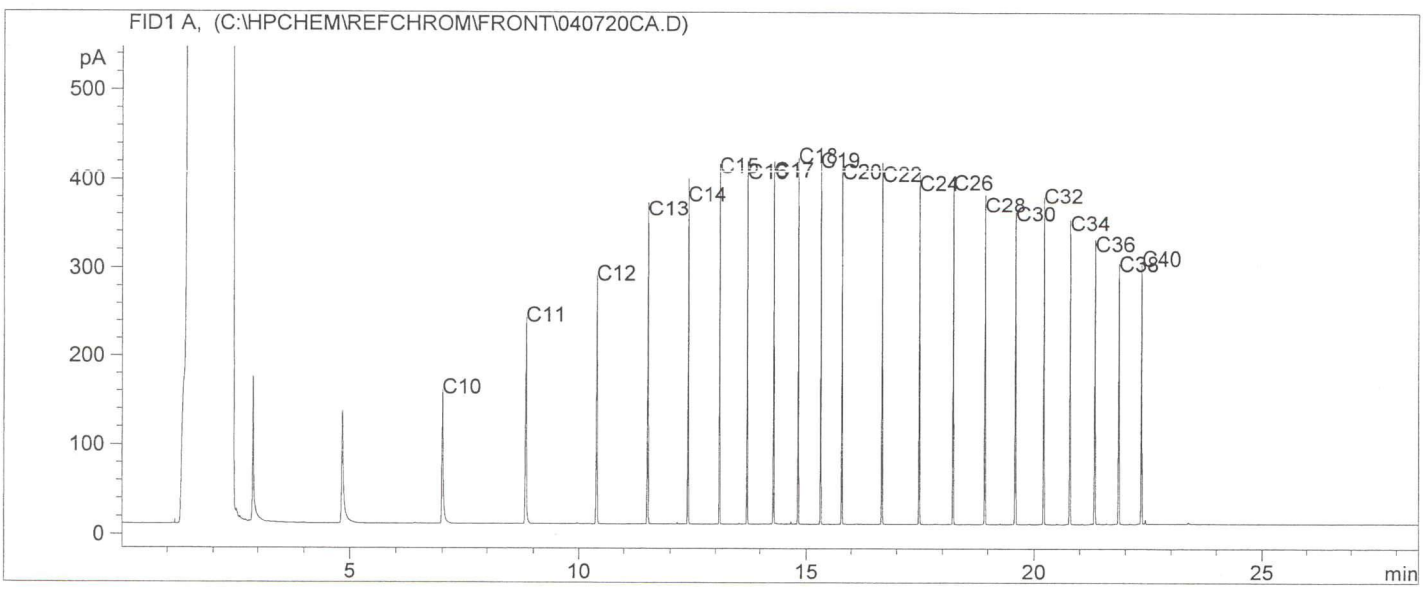
TP2 @ 8'

Sample ID: 36686
Method File: CCMEWW.M
Date & Time Analyzed: 7/21/2004 1:09:21 AM
Multiplier: 1

Operator: IT
Vial: 16
Sequence line#: 18



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

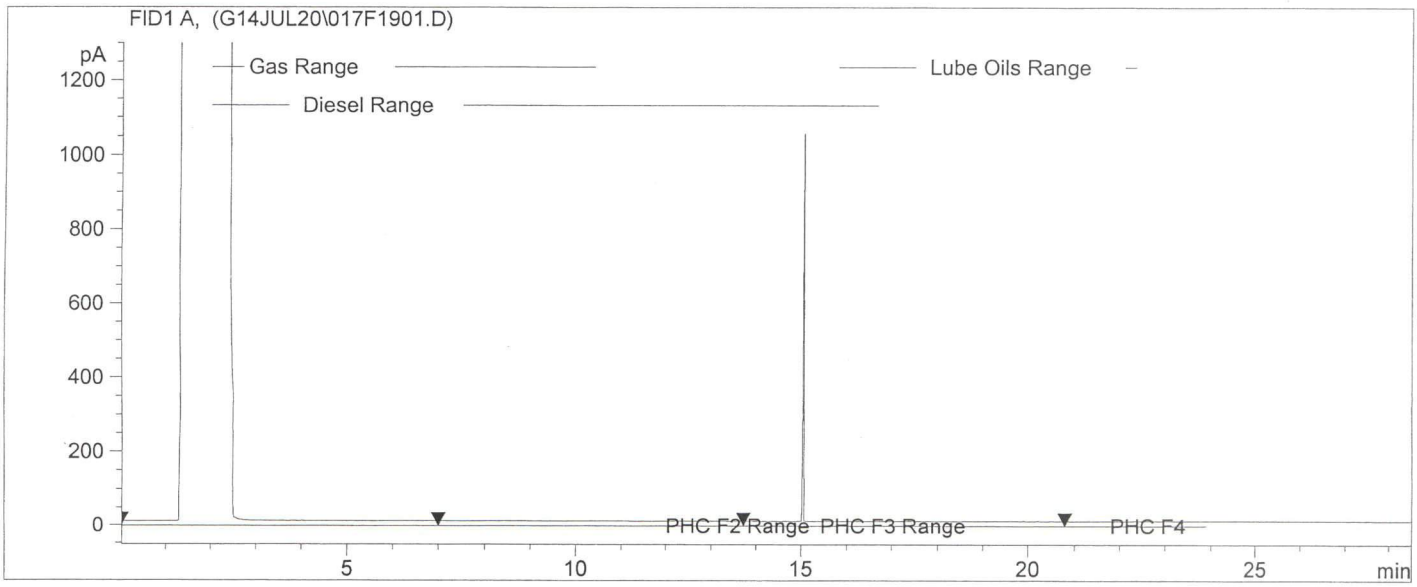
PSC

ANALYTICAL SERVICES

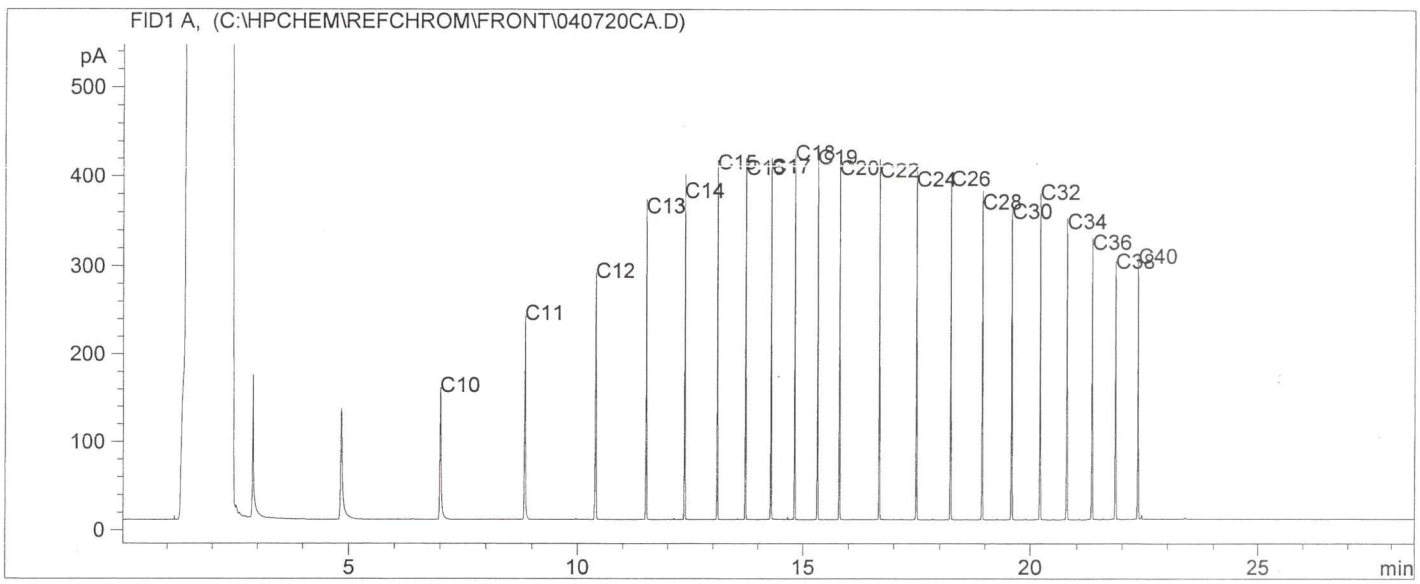
TP2 @ 12'

Sample ID: 36687
Method File: CCMEWW.M
Date & Time Analyzed: 7/21/2004 1:49:56 AM
Multiplier: 1

Operator: IT
Vial: 17
Sequence line#: 19



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

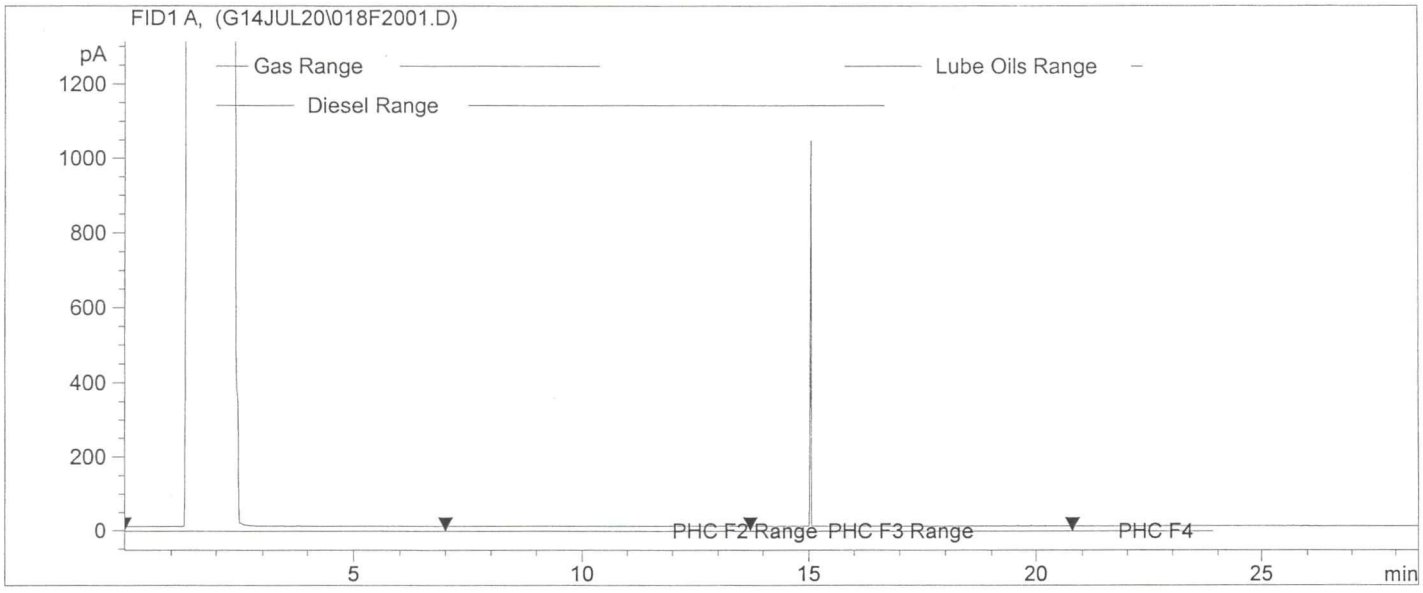
PSC

ANALYTICAL SERVICES

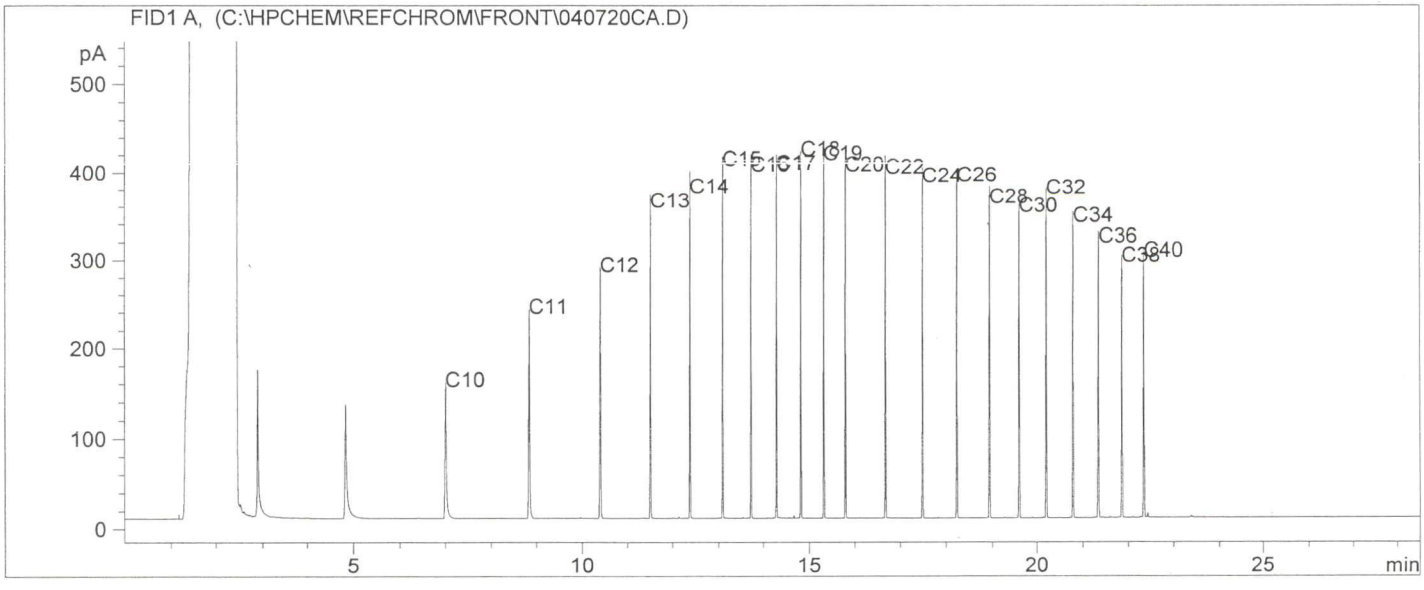
TP3@11'

Sample ID: 36688
Method File: CCMEWW.M
Date & Time Analyzed: 7/21/2004 2:30:20 AM
Multiplier: 1

Operator: IT
Vial: 18
Sequence line#: 20



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

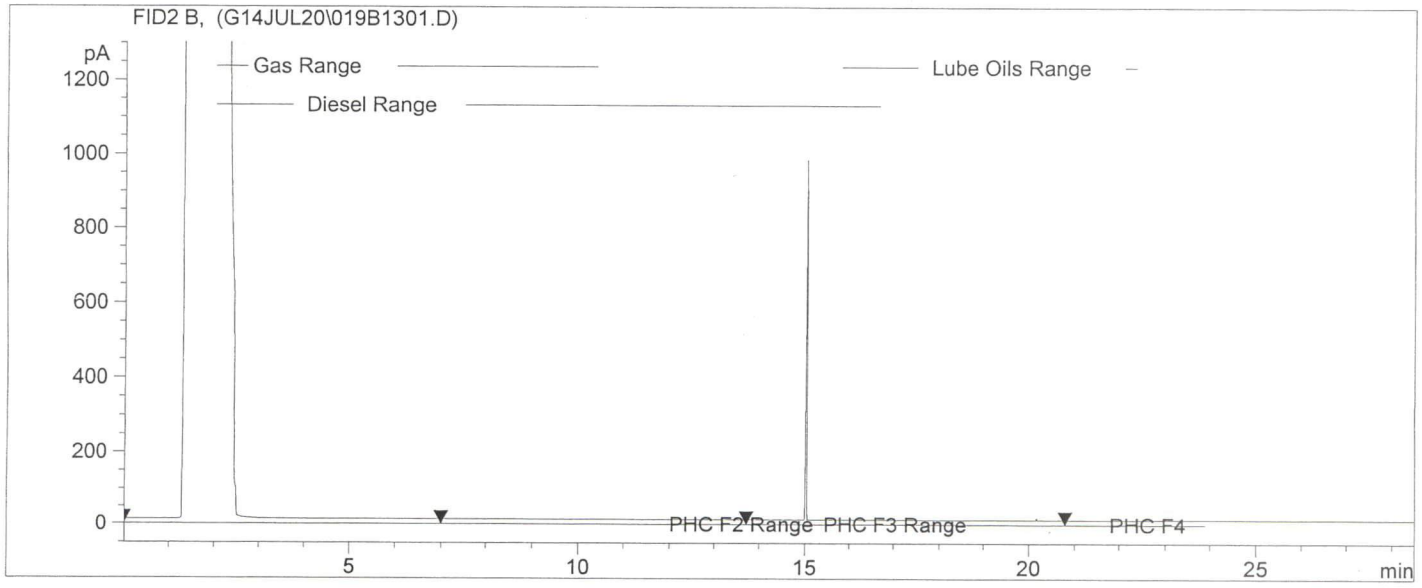
Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

TP4@6'

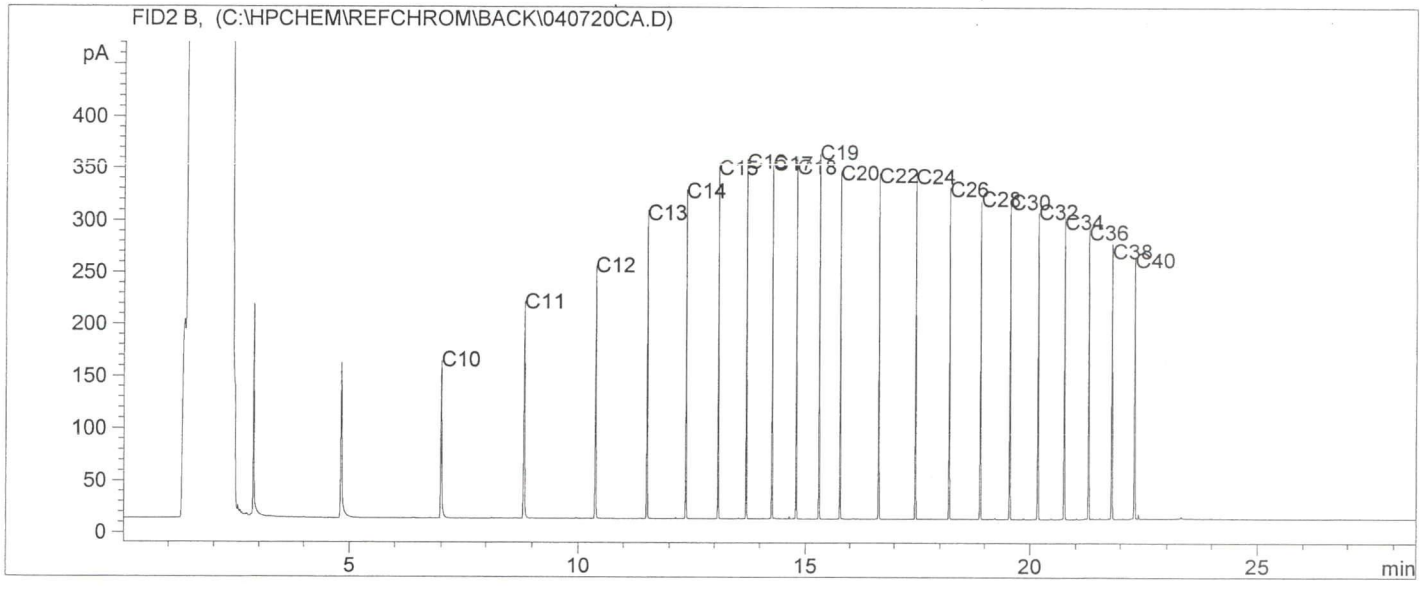
ANALYTICAL SERVICES

Sample ID: 36689
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 10:25:11 PM
Multiplier: 1

Operator: IT
Vial: 19
Sequence line#: 13



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

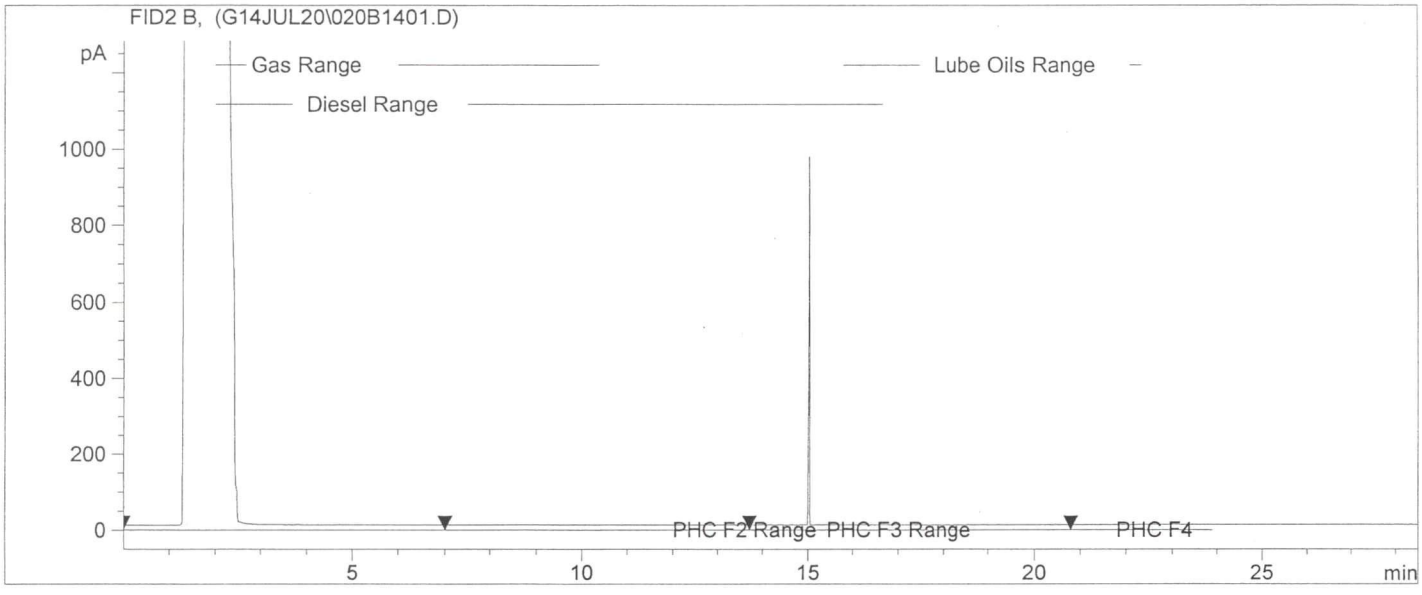
PSC

ANALYTICAL SERVICES

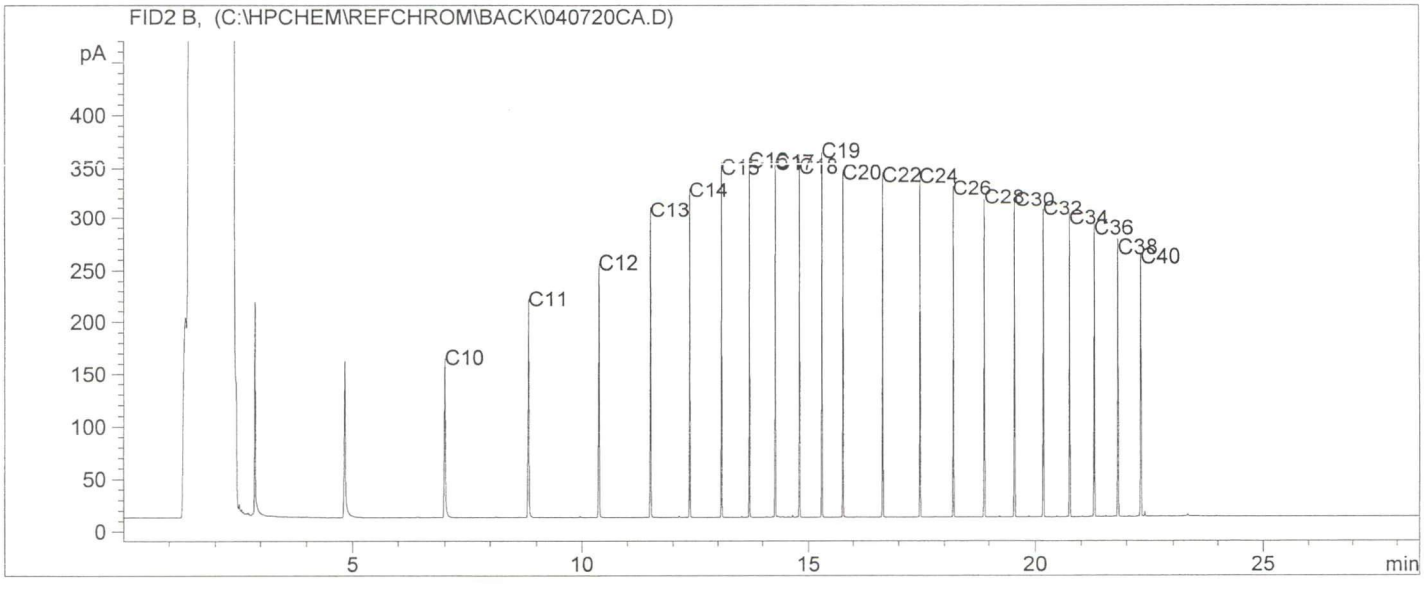
TP5 @10'

Sample ID: 36690
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 11:06:36 PM
Multiplier: 1

Operator: IT
Vial: 20
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

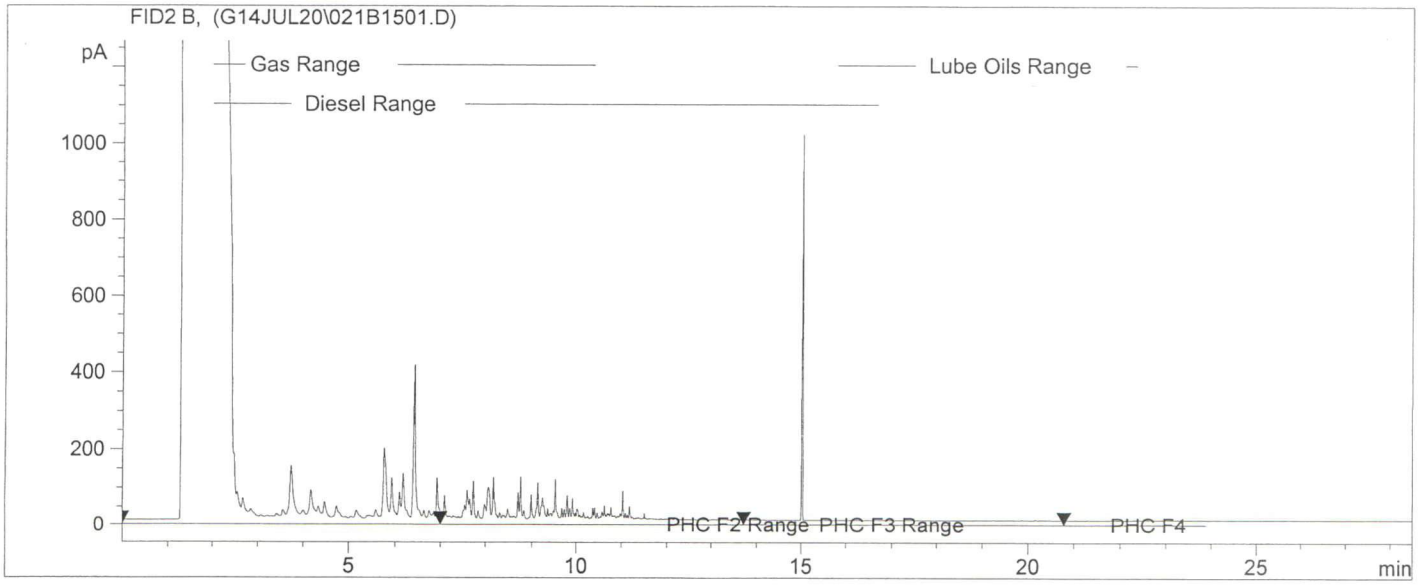
PSC

ANALYTICAL SERVICES

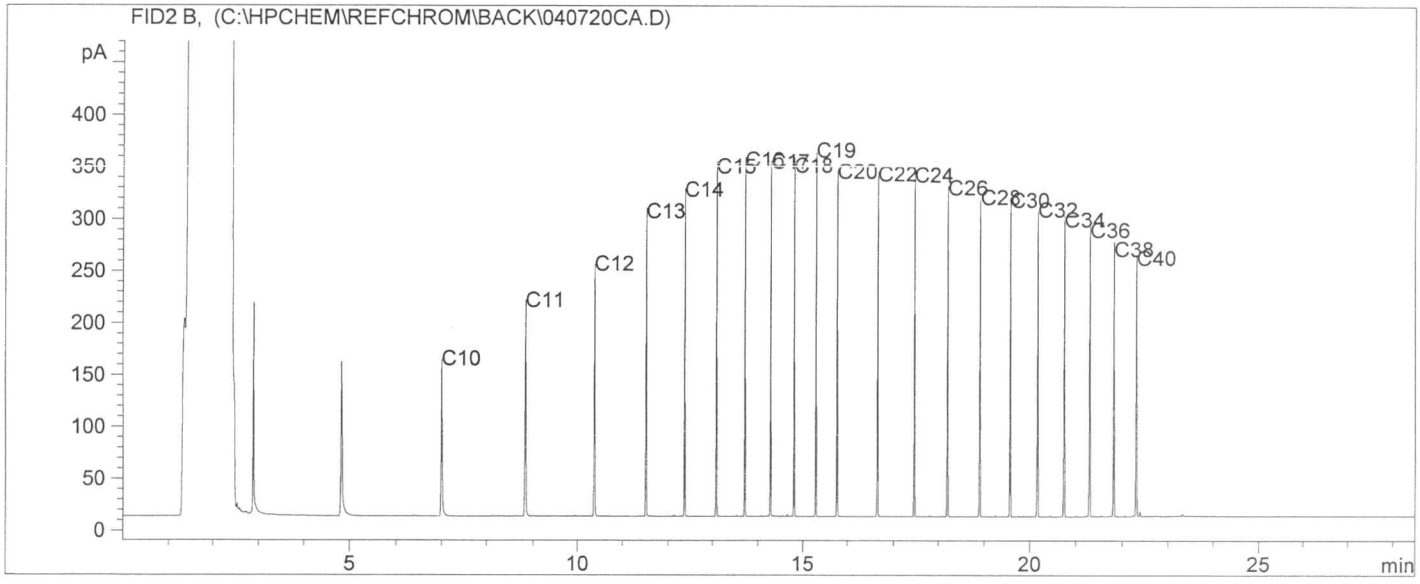
TP6@8'

Sample ID: 36691
Method File: CCMEWW.M
Date & Time Analyzed: 7/20/2004 11:47:42 PM
Multiplier: 1

Operator: IT
Vial: 21
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

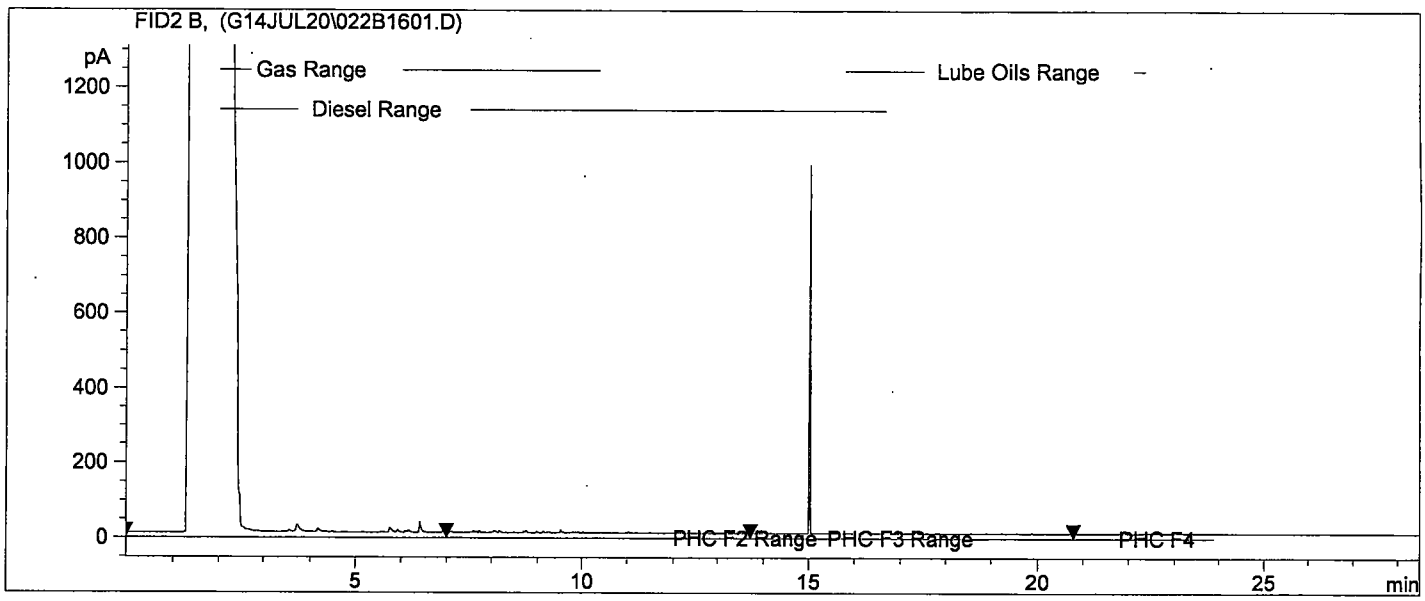
Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

TP6 @ 12'

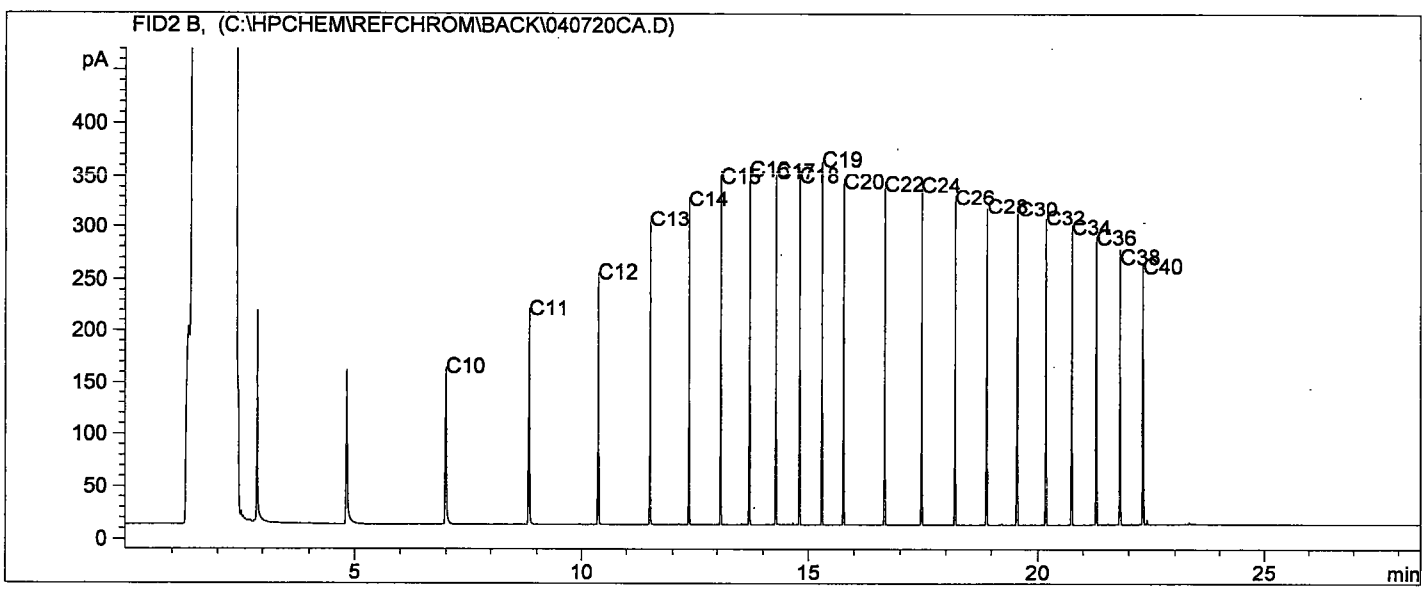
ANALYTICAL SERVICES

Sample ID: 36692
Method File: CCMEWW.M
Date & Time Analyzed: 7/21/2004 12:28:41 AM
Multiplier: 1

Operator: IT
Vial: 22
Sequence line#: 16



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

12-Jul-04

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: MARK RODDY

Requisition Forms :

Form 08151223 shipped on 02-Jul-04 received on 03-Jul-04 logged on 5-Jul-04 completed on 12-Jul-04

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report. All data on final reports are validated by technical personnel. Signature on file at laboratory. Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and IOL criteria for spike recoveries, reference material recoveries, method blank data and duplicate precision were met unless otherwise stated
+ This report shall not be reproduced except in full, without the written approval of the laboratory

Methods used by Philip are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied.
Your samples will be retained at Philip for a period of 30 days from receipt of data or as per contract.

PHILIP Project Manager: Clifton Samoiloff

Per:

12-Jul-04

ANALYTICAL REPORT
Form 08151223

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14032734 Client ID : MW37	Lab ID : 14032735 Client ID : MW34
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
METALS DISSOLVED						
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	< 0.0005
HYDROCARBONS						
H104PT11	Hydrocarbons C5-C10	mg/L	0.10	BTEX by GC/MS 8260	4.8	23
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/07/07	04/07/07
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	3.0	16
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	1.2	3.6
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	0.3	0.3
VOLATILE ORGANICS-MAH						
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/07/06	04/07/06
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	1100	6000
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	290	370
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	37	3500
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	380	2600
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	350	1700
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	31	880
VOC SURROGATE RECOVERY						
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	98	98
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	96	97
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	99	98
				Matrix :	Water	Water
				Sampled on:	04/06/30 11:00	04/06/30 11:15

12-Jul-04
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ANALYTICAL REPORT
Form 08151223

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14032736 Client ID : MW33	Lab ID : 14032737 Client ID : MW36
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
METALS DISSOLVED						
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	< 0.0005
HYDROCARBONS						
H104PT11	Hydrocarbons C5-C10	mg/L	0.10	BTEX by GC/MS 8260	< 0.10	8.5
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/07/07	04/07/07
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	5.7
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	1.0
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	< 0.1	0.2
VOLATILE ORGANICS-MAH						
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/07/06	04/07/06
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	4200
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	250
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	52
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	270
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	270
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 25 (1)
VOC SURROGATE RECOVERY						
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	91	93
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	105	93
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	96	97
				Matrix :	Water	Water
				Sampled on:	04/06/30 11:30	04/06/30 12:00

Result comments and/or text results :

(1) MDL raised due to sample dilution.

12-Jul-04

ANALYTICAL REPORT
Form 08151223

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14032738 Client ID : MW32	Lab ID : 14032739 Client ID : MW38
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
METALS DISSOLVED						
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	< 0.0005
HYDROCARBONS						
H104PT11	Hydrocarbons C5-C10	mg/L	0.10	BTEX by GC/MS 8260	< 0.10	< 0.10
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/07/07	04/07/07
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	< 0.1	< 0.1
VOLATILE ORGANICS-MAH						
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/07/06	04/07/06
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
VOC SURROGATE RECOVERY						
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	90	88
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	101	99
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	97	96
				Matrix :	Water	Water
				Sampled on:	04/06/30 11:45	04/06/30 12:15

12-Jul-04

ANALYTICAL REPORT
Form 08151223

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14032740 Client ID : BH10	14032741 DUPLICATE
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
METALS DISSOLVED						
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	---
HYDROCARBONS						
H104PT11	Hydrocarbons C5-C10	mg/L	0.10	BTEX by GC/MS 8260	3.8	16
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/07/07	---
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	2.2	9.0
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	1.6	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	0.3	---
VOLATILE ORGANICS-MAH						
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/07/06	04/07/06
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	490	4600
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	57	220
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	4.4	2500
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	31	1700
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	31	1100
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	600
VOC SURROGATE RECOVERY						
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	108	95
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	94	92
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	94

Matrix :	Water	Water
Sampled on:	04/06/30 12:30	04/06/30 12:05

12-Jul-04

ANALYTICAL REPORT
Form 08151223

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14032742 Client ID : FIELD BLANK	Lab ID : 14032743 Client ID : TRIP BLANK
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	2	2
HYDROCARBONS						
H104PT11	Hydrocarbons C5-C10	mg/L	0.10	BTEX by GC/MS 8260	< 0.10	< 0.10
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	< 0.1
VOLATILE ORGANICS-MAH						
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/07/06	04/07/06
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5
VOC SURROGATE RECOVERY						
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	88	89
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	93	104
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	94
				Matrix :	Water	Water
				Sampled on:	04/06/30 12:05	04/07/05 16:00

12-Jul-04
Page 7 of 11

DUPLICATE SUMMARY
Form 08151223

Parameter	Client ID	Lab ID	Sample Conc.	Duplicate Conc.	MDL	Unit	Relative % Diff.
Benzene	MW32	14032738	< 0.5	< 0.5	0.5	ug/L	0.00
Toluene	MW32	14032738	< 0.5	< 0.5	0.5	ug/L	0.00
Ethylbenzene	MW32	14032738	< 0.5	< 0.5	0.5	ug/L	0.00
m,p - Xylene	MW32	14032738	< 0.5	< 0.5	0.5	ug/L	0.00
o - Xylene	MW32	14032738	< 0.5	< 0.5	0.5	ug/L	0.00
CCME PHC F1 C6-10	MW32	14032738	< 0.1	< 0.1	0.1	mg/L	0.00
Hydrocarbons C5-C10	MW32	14032738	< 0.10	< 0.10	0.10	mg/L	0.00
Lead Dissolved	BH10	14032740	< 0.0005	< 0.0005	0.0005	mg/L	0.00

12-Jul-04

SPIKE SUMMARY
Form 08151223

Parameter	Client ID	Lab ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
Benzene	Blank Spike. Batch :	45202063	< 0.5	9.7	10	ug/L	97
Toluene	Blank Spike. Batch :	45202063	< 0.5	9.7	10	ug/L	97
Ethylbenzene	Blank Spike. Batch :	45202063	< 0.5	9.2	10	ug/L	92
m,p - Xylene	Blank Spike. Batch :	45202063	< 0.5	18	20	ug/L	91
o - Xylene	Blank Spike. Batch :	45202063	< 0.5	9.6	10	ug/L	96
Lead Dissolved	Blank Spike. Batch :	44201710	< 0.0005	0.0217	.02	mg/L	108
CCME PHC F2 C10-16	Blank Spike. Batch :	45700801	< 0.1	3.3	4.24	mg/L	78
Benzene	MW38	14032739	< 0.5	10	10	ug/L	102
Toluene	MW38	14032739	< 0.5	9.8	10	ug/L	98
Ethylbenzene	MW38	14032739	< 0.5	8.9	10	ug/L	89
m,p - Xylene	MW38	14032739	< 0.5	18	20	ug/L	90
o - Xylene	MW38	14032739	< 0.5	9.6	10	ug/L	96
Benzene	Blank Spike. Batch :	45202084	< 0.5	10	10	ug/L	104
Lead Dissolved	BH10	14032740	< 0.0005	0.0741	.074	mg/L	100
Toluene	Blank Spike. Batch :	45202084	< 0.5	11	10	ug/L	106
Ethylbenzene	Blank Spike. Batch :	45202084	< 0.5	10	10	ug/L	102
m,p - Xylene	Blank Spike. Batch :	45202084	< 0.5	21	20	ug/L	104
o - Xylene	Blank Spike. Batch :	45202084	< 0.5	11	10	ug/L	109

ANALYSIS DATES
Form 08151223

	Lab ID :	14032734	14032735	14032736	14032737
	Client ID:	MW37	MW34	MW33	MW36
Pb-DMS31	Lead Dissolved	06-JUL-2004	06-JUL-2004	06-JUL-2004	06-JUL-2004
H104PT11	Hydrocarbons C5-C10	08-JUL-2004	08-JUL-2004	08-JUL-2004	08-JUL-2004
PHC2PHCW	CCME PHC F2 C10-16	08-JUL-2004	08-JUL-2004	08-JUL-2004	08-JUL-2004
PKG-BT32	BTEX-CCME F1 WATER	08-JUL-2004	08-JUL-2004	08-JUL-2004	08-JUL-2004
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-JUN-2004	30-JUN-2004	30-JUN-2004	30-JUN-2004

	Lab ID :	14032738	14032739	14032740	14032741
	Client ID:	MW32	MW38	BH10	DUPLICATE
Pb-DMS31	Lead Dissolved	06-JUL-2004	06-JUL-2004	06-JUL-2004	---
H104PT11	Hydrocarbons C5-C10	08-JUL-2004	08-JUL-2004	08-JUL-2004	09-JUL-2004
PHC2PHCW	CCME PHC F2 C10-16	08-JUL-2004	08-JUL-2004	08-JUL-2004	---
PKG-BT32	BTEX-CCME F1 WATER	08-JUL-2004	08-JUL-2004	09-JUL-2004	09-JUL-2004
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-JUN-2004	30-JUN-2004	30-JUN-2004	30-JUN-2004

	Lab ID :	14032742	14032743
	Client ID:	FIELD BLANK	TRIP BLANK
H104PT11	Hydrocarbons C5-C10	08-JUL-2004	08-JUL-2004
PKG-BT32	BTEX-CCME F1 WATER	08-JUL-2004	08-JUL-2004
	Matrix:	Water	Water
	Sampled on:	30-JUN-2004	5-JUL-2004

BATCH NUMBERS
Form 08151223

	Lab ID :	14032734	14032735	14032736	14032737
	Client ID:	MW37	MW34	MW33	MW36
Pb-DMS31	Lead Dissolved	44201710	44201710	44201710	44201710
H104PT11	Hydrocarbons C5-C10	45202063	45202063	45202063	45202063
PHC2PHCW	CCME PHC F2 C10-16	45700801	45700801	45700801	45700801
PKG-BT32	BTEX-CCME F1 WATER	45202063	45202063	45202063	45202063
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-JUN-2004	30-JUN-2004	30-JUN-2004	30-JUN-2004

	Lab ID :	14032738	14032739	14032740	14032741
	Client ID:	MW32	MW38	BH10	DUPLICATE
Pb-DMS31	Lead Dissolved	44201710	44201710	44201710	---
H104PT11	Hydrocarbons C5-C10	45202063	45202063	45202063	45202084
PHC2PHCW	CCME PHC F2 C10-16	45700801	45700801	45700801	---
PKG-BT32	BTEX-CCME F1 WATER	45202063	45202063	45202084	45202084
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-JUN-2004	30-JUN-2004	30-JUN-2004	30-JUN-2004

	Lab ID :	14032742	14032743
	Client ID:	FIELD BLANK	TRIP BLANK
H104PT11	Hydrocarbons C5-C10	45202063	45202063
PKG-BT32	BTEX-CCME F1 WATER	45202063	45202063
	Matrix:	Water	Water
	Sampled on:	30-JUN-2004	5-JUL-2004

BLANK SUMMARY
Form 08151223

All method blanks were less than MDL

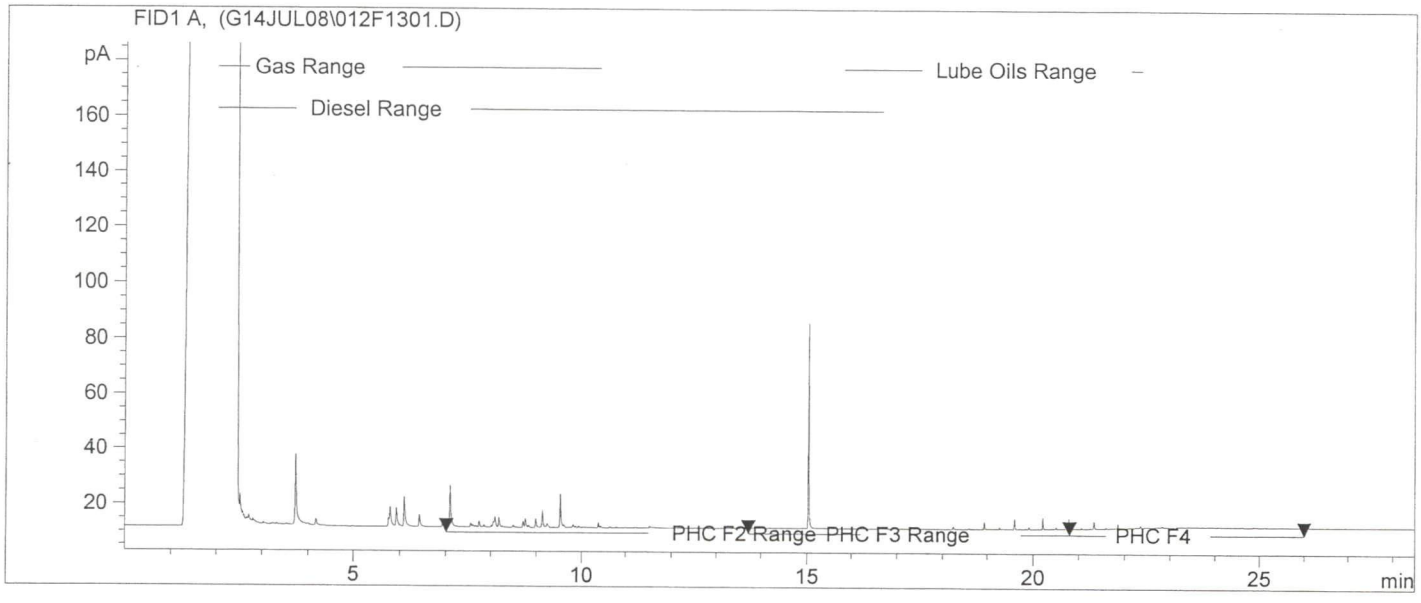
PSC

ANALYTICAL SERVICES

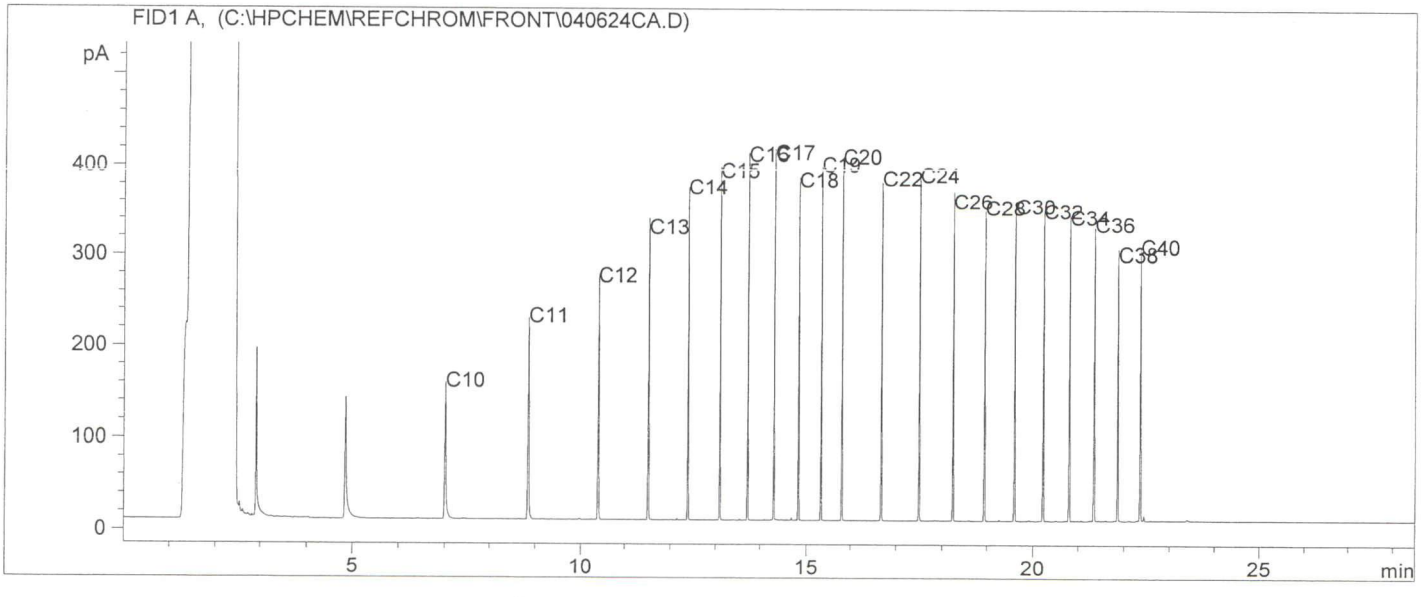
MW37

Sample ID: 32734
Method File: CCMEWW.M
Date & Time Analyzed: 7/8/2004 11:16:03 PM
Multiplier: 1

Operator: sks
Vial: 12
Sequence line#: 13



Carbon Range Reference Chromatogram at approx. 25ppm



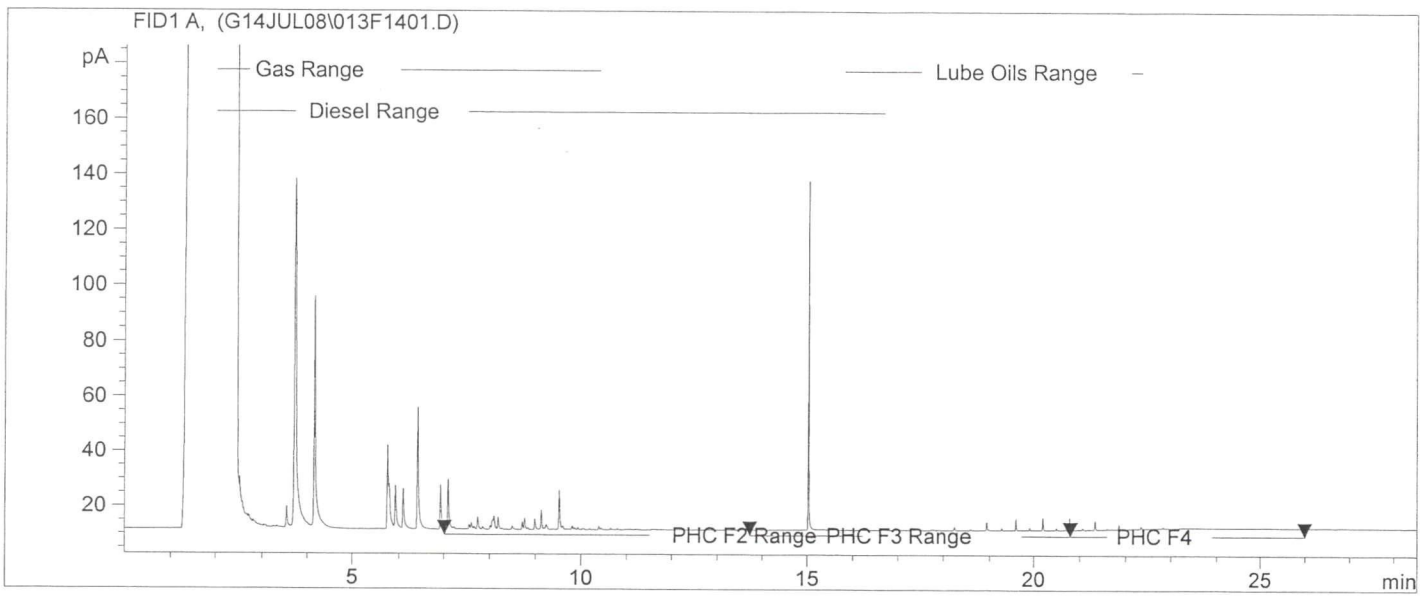
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

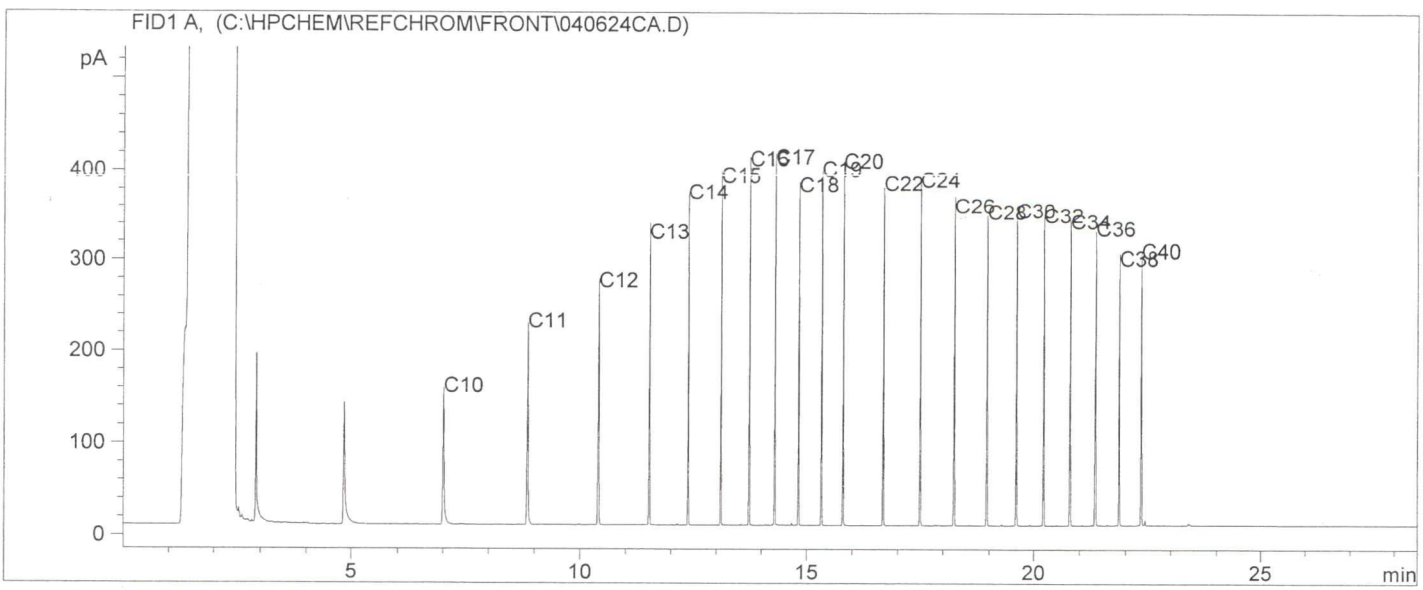
MW34

Sample ID: 32735
Method File: CCMEWW.M
Date & Time Analyzed: 7/8/2004 11:55:54 PM
Multiplier: 1

Operator: sks
Vial: 13
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

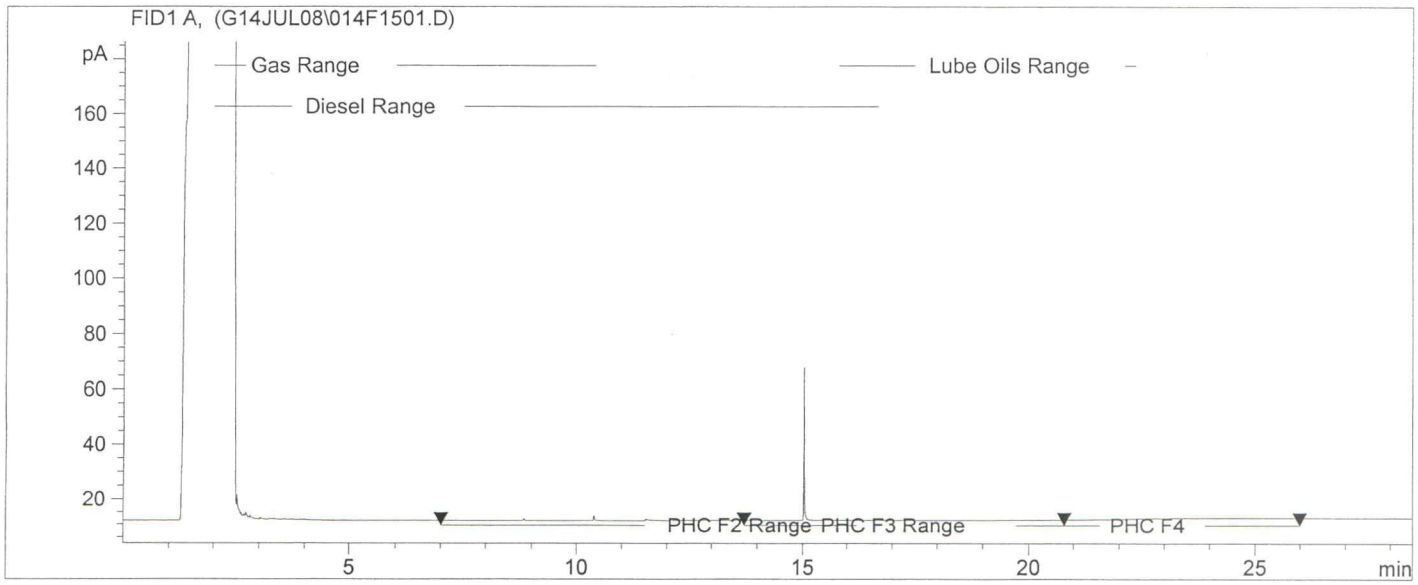
PSC

ANALYTICAL SERVICES

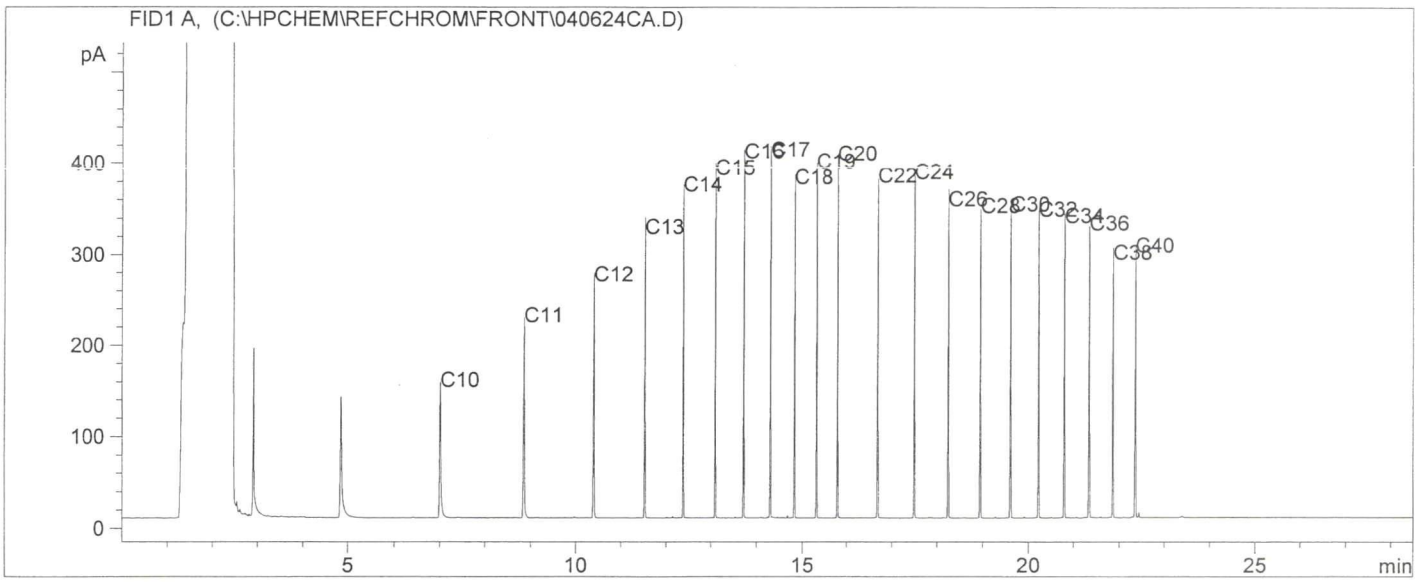
MW33

Sample ID: 32736
Method File: CCMEWW.M
Date & Time Analyzed: 7/9/2004 12:35:29 AM
Multiplier: 1

Operator: sks
Vial: 14
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



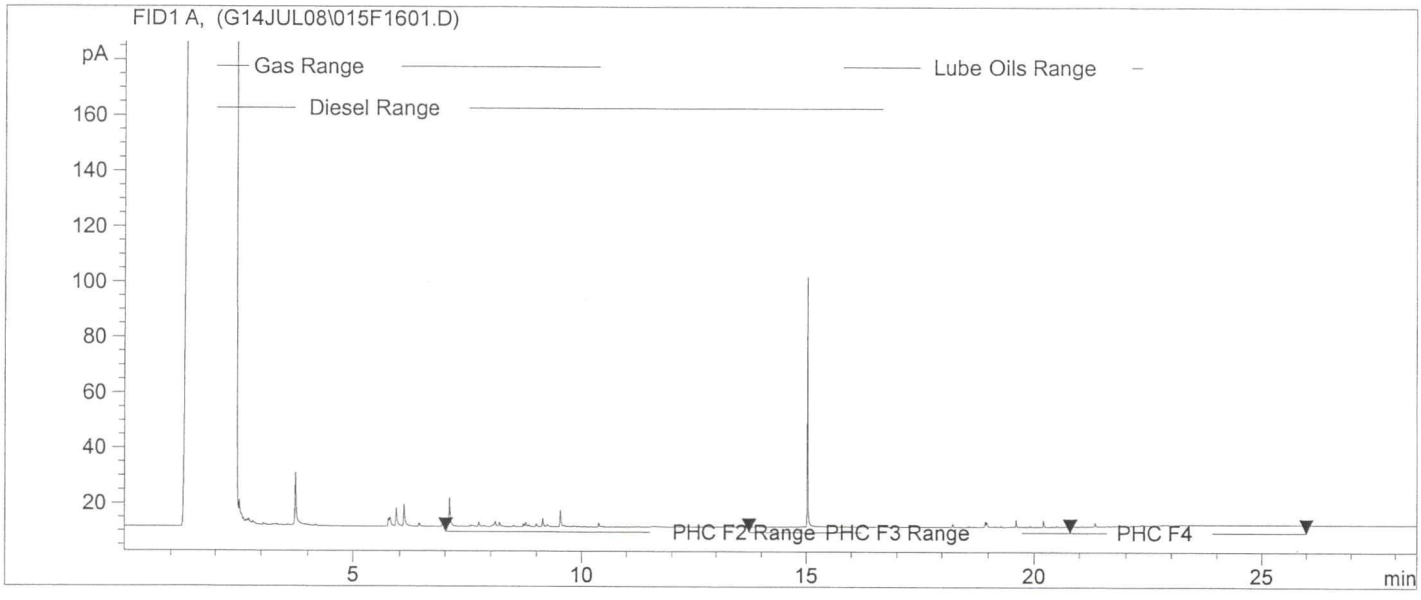
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

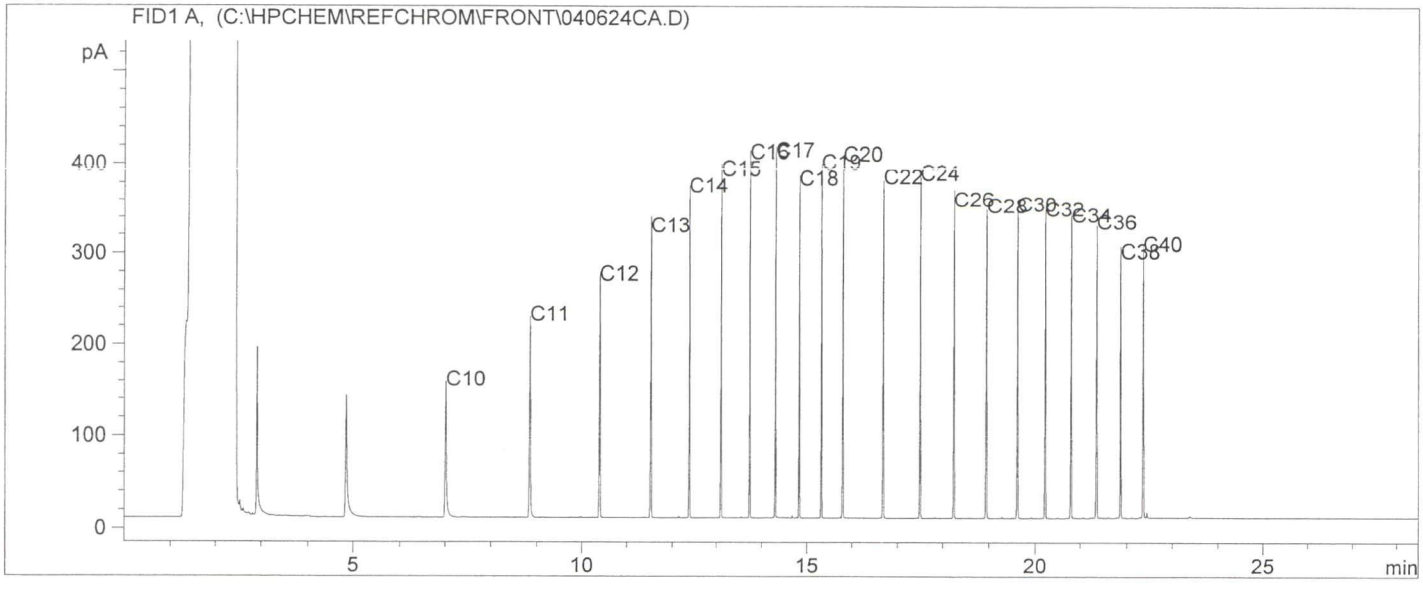
MW36

Sample ID: 32737
Method File: CCMEWW.M
Date & Time Analyzed: 7/9/2004 1:15:01 AM
Multiplier: 1

Operator: sks
Vial: 15
Sequence line#: 16



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

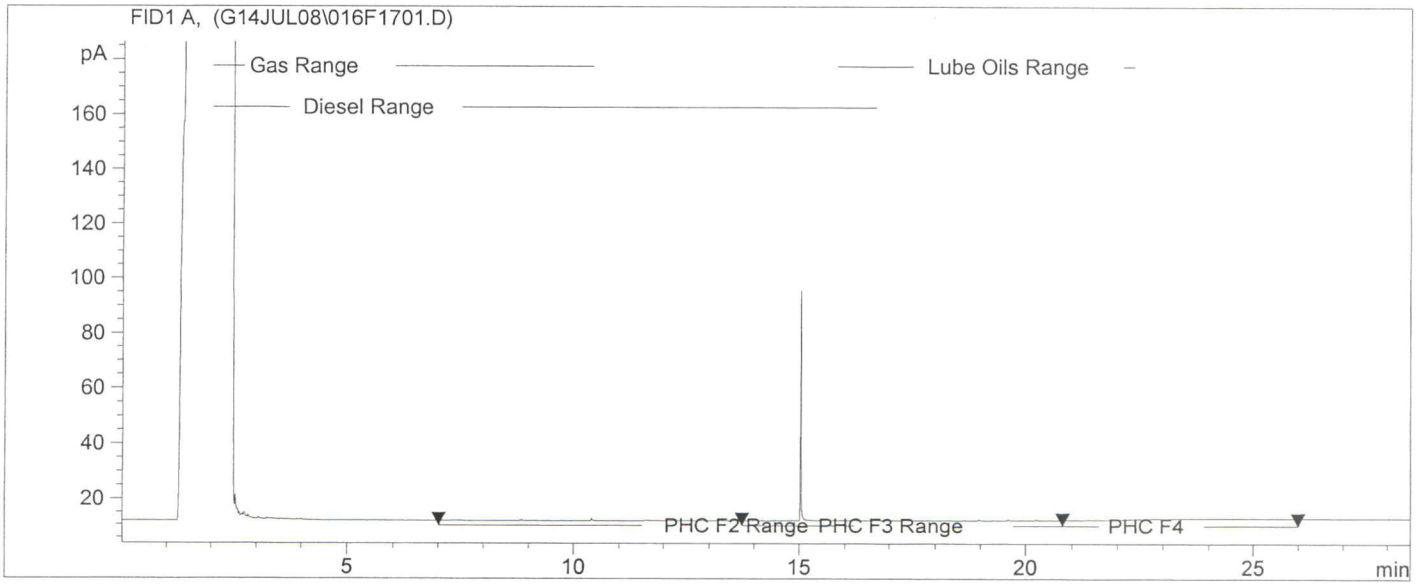
PSC

ANALYTICAL SERVICES

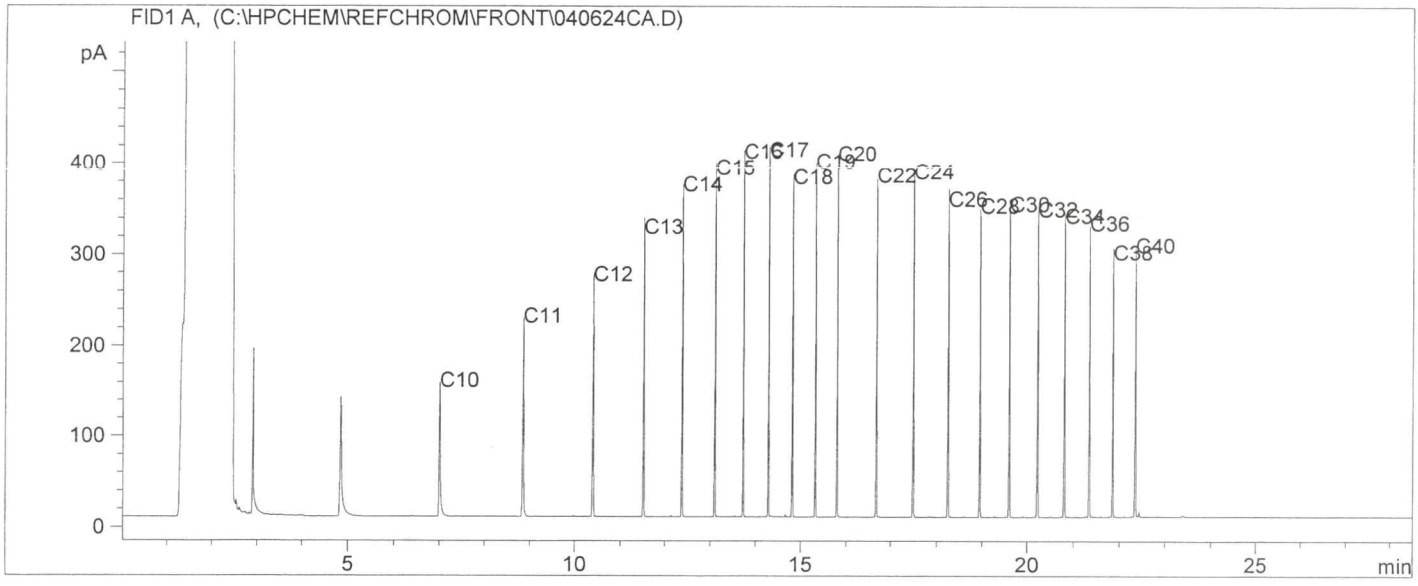
MW32

Sample ID: 32738
Method File: CCMEWW.M
Date & Time Analyzed: 7/9/2004 1:54:26 AM
Multiplier: 1

Operator: sks
Vial: 16
Sequence line#: 17



Carbon Range Reference Chromatogram at approx. 25ppm



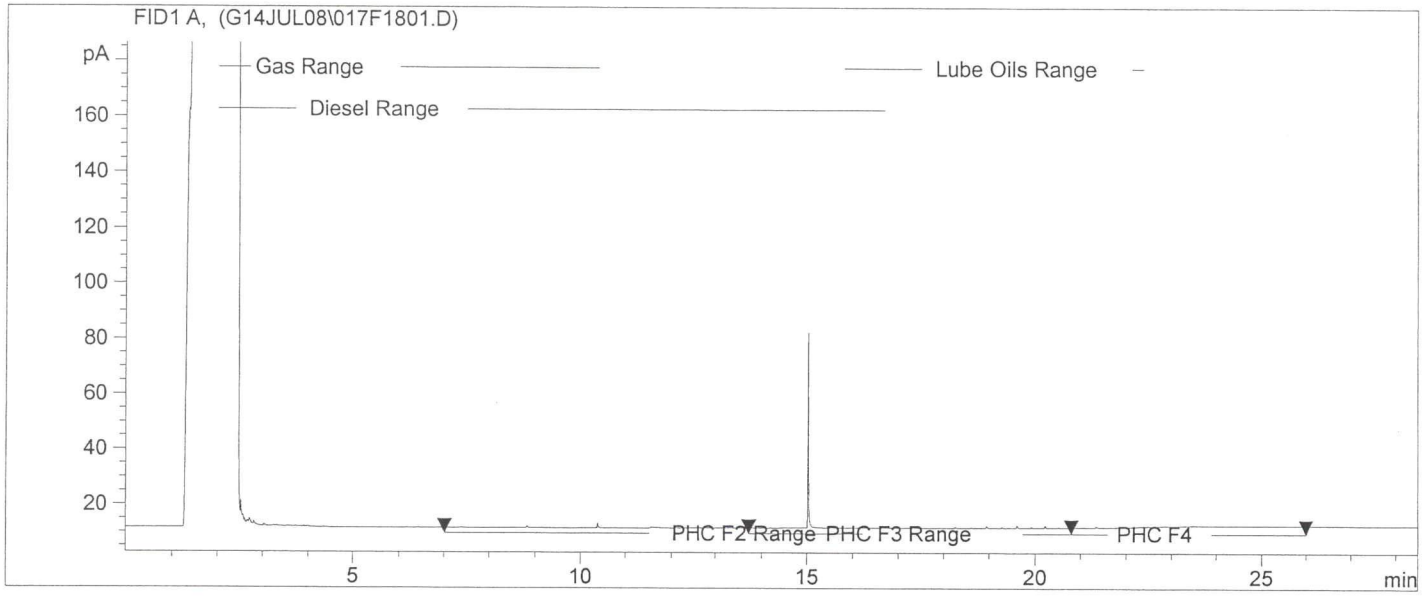
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

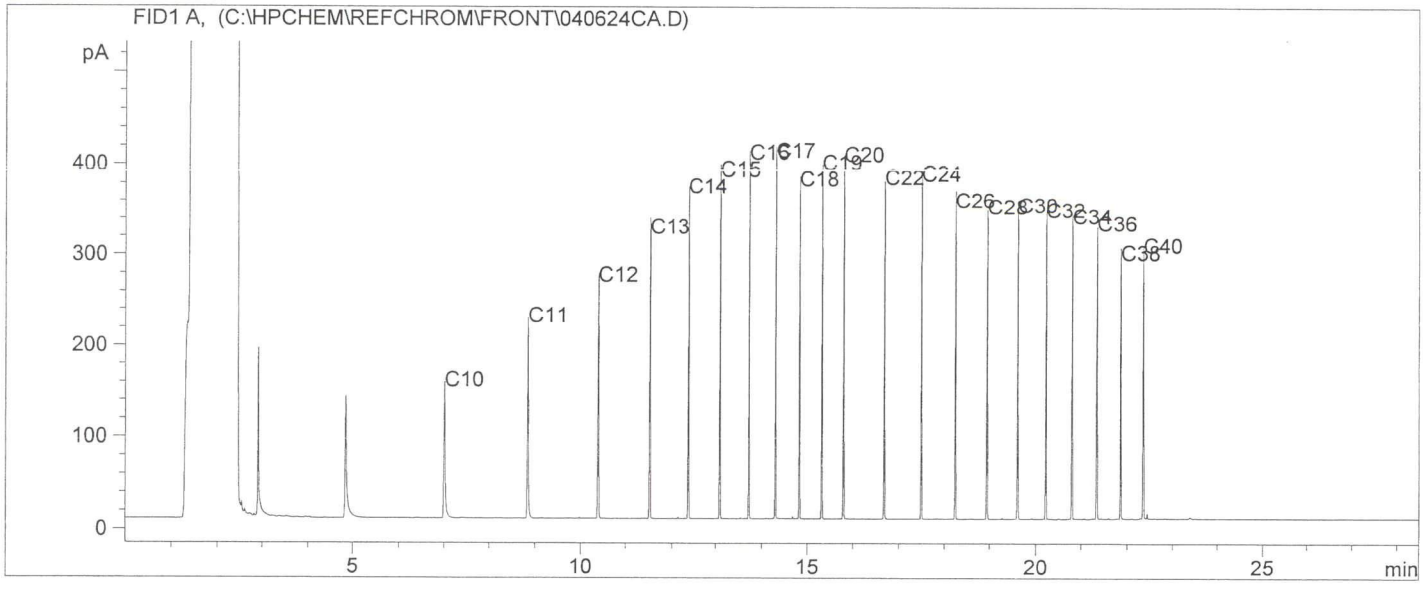
MW38

Sample ID: 32739
Method File: CCMEWW.M
Date & Time Analyzed: 7/9/2004 2:33:47 AM
Multiplier: 1

Operator: sks
Vial: 17
Sequence line#: 18



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

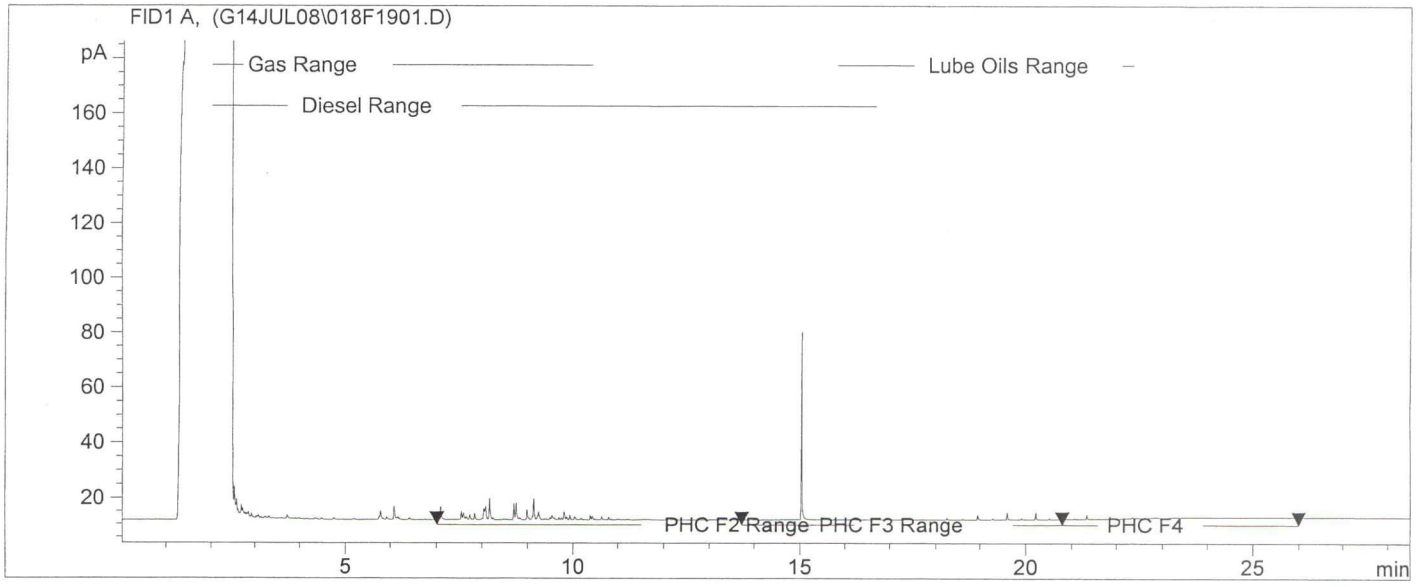
PSC

ANALYTICAL SERVICES

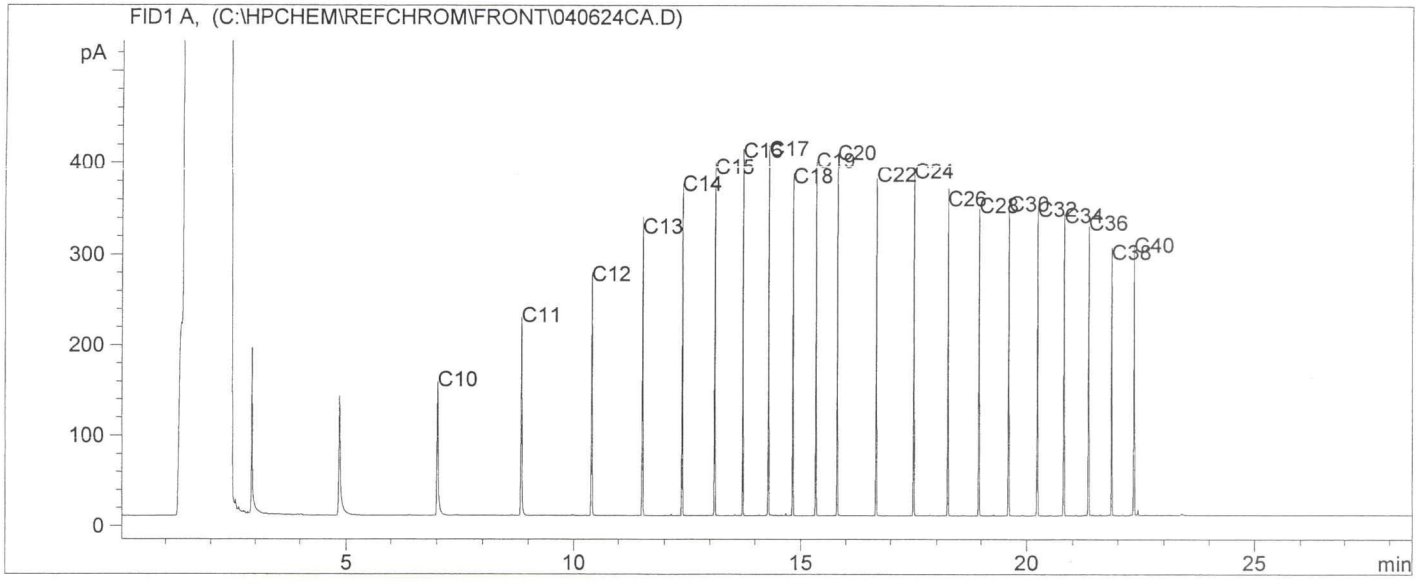
BH10

Sample ID: 32740
Method File: CCMEWW.M
Date & Time Analyzed: 7/9/2004 3:12:56 AM
Multiplier: 1

Operator: sks
Vial: 18
Sequence line#: 19



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

Requisition Forms :

Form 81514512 shipped on 06-Aug-04 received on 07-Aug-04 logged on 7-Aug-04 completed on 17-Aug-04
Form 81514521 shipped on 06-Aug-04 received on 07-Aug-04 logged on 7-Aug-04 completed on 17-Aug-04

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report.
  All data on final reports are validated by technical personnel. Signature on file at laboratory.
  Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and IOL criteria for spike recoveries, reference material recoveries, method blank data and duplicate precision were met unless otherwise stated
+ This report shall not be reproduced except in full, without the written approval of the laboratory

Methods used by PSC are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied. Your samples will be retained at PSC for a period of 30 days from receipt of data or as per contract.

PSC Project Manager: Clifton Samoiloff

GHH results added

25-Aug-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	**Lab ID :** 14041307 **Client ID :** 04-8 @ 17.5	14041308 04-4 @ 7.5-10'
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	19.2	32.1
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	7.7	12.1
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/08/10	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/08/07	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.25	0.005
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.13	0.008
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	< 0.010	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	92	96
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	96	97
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	100	101
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	99	103
				Matrix :	Soil	Soil
				Sampled on:	04/08/04 15:20	04/08/04 10:30

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	**Lab ID :** 14041309 **Client ID :** 04-1 @ 15'	14041310 04-4 @ 12.5'-15'
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	15.1	31.0
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	4.5	---
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/08/10	---
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	---
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	---
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	---
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	---
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	---
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	---
POLYCYCLIC AROMATIC HYDROCARBONS						
EX9946Z2	Soil prep for PAH	date		PAH by GC/MS 8270	---	04/08/11
PA05OS12	Benzo(a)pyrene	ug/g	0.01	PAH by GC/MS 8270	---	< 0.01
PA14OS12	Naphthalene	ug/g	0.01	PAH by GC/MS 8270	---	< 0.01
SURROGATE RECOVERY						
PeryOS12	d12-Perylene	%	0	PAH by GC/MS 8270	---	80
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/08/07	---
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.12	---
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.037	---
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	< 0.010	---
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	---
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	---
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	---
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	96	---
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	97	---
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	103	---
					Matrix : Soil	Soil
					Sampled on: 04/08/05 14:40	04/08/04 11:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute		
				Lab ID :	14041309	14041310
				Client ID :	04-1 @ 15'	04-4 @ 12.5'-15'
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	103	---
				Matrix :	Soil	Soil
				Sampled on:	04/08/05 14:40	04/08/04 11:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14041311	14041312
					Client ID :	04-9 @ 5'	04-5 @ 10'-12.5'
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		22.6	23.6
METALS TOTAL							
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		9.8	10.1
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		04/08/10	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		< 10	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		< 10	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		Yes	Yes
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		04/08/07	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		0.004	0.008
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		0.007	0.008
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		< 0.010	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
VOC SURROGATE RECOVERY							
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM		98	97
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM		96	100
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM		98	102
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM		103	96
					Matrix :	Soil	Soil
					Sampled on:	04/08/06 14:00	04/08/06 11:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14041313	14041314
					Client ID :	04-4 @ 2.5'	04-10 @ 2.5'
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		4.8	17.2
METALS TOTAL							
As-TMS20	Arsenic	ug/g	0.2	D&G:HNO3/HCl Dig:ICP-MS		< 0.2	---
Ba-TMS20	Barium	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		9.9	---
Cr-TMS20	Chromium	ug/g	1	D&G:HNO3/HCl Dig:ICP-MS		3	---
Cu-TMS20	Copper	ug/g	0.5	D&G:HNO3/HCl Dig:ICP-MS		3.5	---
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		2.4	18.3
Zn-TMS20	Zinc	ug/g	1	D&G:HNO3/HCl Dig:ICP-MS		7	---
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		---	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		---	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		---	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		---	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		---	480
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		---	920
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		---	No
GHH--TOT	PHC GHH	ug/g	100	SOLID/HEX-ACET/GRAV/CCME		--	1000
GHHS-MIN	PHC GHH SILICAGEL	ug/g	100	DCM-HEX/Silicagel/Grav		---	500
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		---	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		---	0.004
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		---	0.006
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		---	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		---	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		---	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		---	< 0.10
VOC SURROGATE RECOVERY							
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM		---	97
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM		---	99
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM		---	102
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM		---	110
					Matrix :	Soil	Soil
					Sampled on:	04/08/04 10:00	04/08/05 12:15

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

	Lab ID :	14041313	14041314
	Client ID :	04-4 @ 2.5'	04-10 @ 2.5'

Sparcode	Parameter	Unit	MDL	Workroute		
GLYCOLS						
GL03GLY2	Diethylene Glycol	ug/g	5	Glycols in Soils	< 5	---
GL02GLY2	Ethylene Glycol	ug/g	5	Glycols in Soils	< 5	---
GL01GLY2	Propylene Glycol	ug/g	5	Glycols in Soils	< 5 (1)	---
				Matrix :	Soil	Soil
				Sampled on:	04/08/04 10:00	04/08/05 12:15

Result comments and/or text results :

(1) Sample subcontracted to PSC Edmonton

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14041315	14041316
					Client ID :	04-8 @ 2.5	04-8 @ 15'
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		---	35.4
METALS TOTAL							
As-TMS20	Arsenic	ug/g	0.2	D&G:HNO3/HCl Dig:ICP-MS		0.7	---
Ba-TMS20	Barium	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		17.7	---
Cr-TMS20	Chromium	ug/g	1	D&G:HNO3/HCl Dig:ICP-MS		4	---
Cu-TMS20	Copper	ug/g	0.5	D&G:HNO3/HCl Dig:ICP-MS		4.3	---
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		3.1	12.9
Zn-TMS20	Zinc	ug/g	1	D&G:HNO3/HCl Dig:ICP-MS		10	---
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		---	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		---	80
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		---	77
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		---	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		---	< 50
HCF2CALC	PHC F2 C10-16 - PAH	ug/g		Calculated Result		---	< 10
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		---	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		---	Yes
POLYCYCLIC AROMATIC HYDROCARBONS							
EX9946Z2	Soil prep for PAH	date		PAH by GC/MS 8270		---	04/08/11
PA05OS12	Benzo(a)pyrene	ug/g	0.01	PAH by GC/MS 8270		---	< 0.01
PA14OS12	Naphthalene	ug/g	0.01	PAH by GC/MS 8270		---	0.65
SURROGATE RECOVERY							
PeryOS12	d12-Perylene	%	0	PAH by GC/MS 8270		---	83
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		---	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		---	1.3
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		---	0.34
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		---	0.094
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		---	1.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		---	1.1
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		---	< 0.10
					Matrix :	Soil	Soil
					Sampled on:	04/08/04 14:45	04/08/04 15:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14041315 Client ID : 04-8 @ 2.5	Lab ID : 14041316 Client ID : 04-8 @ 15'
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	---	98
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	---	92
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	---	101
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	---	83
				Matrix :	Soil	Soil
				Sampled on:	04/08/04 14:45	04/08/04 15:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14041317 Client ID : 04-7 @ 7.5'-10'	Lab ID : 14041318 Client ID : 04-6 @ 22.5'
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	34.3	10.3
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	12.2	3.5
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/08/10	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/08/07	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.006	0.003
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.007	0.005
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	< 0.010	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	98	98
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	97	101
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	98	102
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	115	107
				Matrix :	Soil	Soil
				Sampled on:	04/08/04 13:30	04/08/05 11:30

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

					Lab ID :	14041319	14041320
					Client ID :	04-3 @ 10'-12.5'	04-2 @ 5'-7.5'
Sparcode	**Parameter**	**Unit**	**MDL**	**Workroute**			
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival		1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C		29.7	32.1
METALS TOTAL							
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS		13.2	12.4
HYDROCARBONS							
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp		04/08/10	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID		< 10	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result		< 10	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp		< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID		Yes	Yes
VOLATILE ORGANICS-MAH							
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM		04/08/07	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM		0.006	0.006
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM		0.008	0.009
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM		< 0.010	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM		< 0.1	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM		< 0.10	< 0.10
VOC SURROGATE RECOVERY							
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM		99	98
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM		95	102
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM		98	101
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM		113	110
					Matrix :	Soil	Soil
					Sampled on:	04/08/04 14:00	04/08/05 09:45

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	**Lab ID :** 14041321 **Client ID :** 04-1 @ 12.5'	14041322 DUP 3
PHYSICAL						
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	33.2	32.4
METALS TOTAL						
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	11.8	12.0
HYDROCARBONS						
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/08/10	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	71	70
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	65	64
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes	Yes
VOLATILE ORGANICS-MAH						
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/08/07	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	1.4	1.6
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	2.5	2.3
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	0.094	0.024
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	2.3	2.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	2.3	2.1
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10	< 0.10
VOC SURROGATE RECOVERY						
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	100	105
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	92	91
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	101	104
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	83	115
				Matrix :	Soil	Soil
				Sampled on:	04/08/05 14:30	04/08/05 16:00

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Lab ID : 14041323
Client ID : FIELD BLANK

Sparcode	Parameter	Unit	MDL	Workroute	
PHYSICAL					
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1
00250760	Moisture	%(W/W)	0.1	Hom; Gravimetric 105C	< 0.1
METALS TOTAL					
Pb-TMS20	Lead	ug/g	0.1	D&G:HNO3/HCl Dig:ICP-MS	1.8
HYDROCARBONS					
EX995649	PHC EXT F2 - 4	date		CCME F2-F4 High Temp	04/08/10
PHC1PT18	CCME PHC F1 C6-10	ug/g	10	CCME F1 by P&T GC/FID	< 10
HC1-CALC	CCME PHC F1-BTEX	ug/g		Calculated Result	< 10
PHC2HCHT	CCME PHC F2 C10-16	ug/g	50	CCME F2-F4 High Temp	< 50
PHC3HCHT	CCME PHC F3 C16-34	ug/g	50	CCME F2-F4 High Temp	< 50
PHC4HCHT	CCME PHC F4 C34-50+	ug/g	50	CCME F2-F4 High Temp	< 50
BASEPHCS	PHC F2-4 BASELINE 0	Y/N	Yes	Hydrocarbons by GC/FID	Yes
VOLATILE ORGANICS-MAH					
EX995170	Volat. Soil Extract.	date		BTEX SOIL by GCMS SIM	04/08/07
B020PT20	Benzene	ug/g	0.001	BTEX SOIL by GCMS SIM	0.005
B021PT20	Ethylbenzene	ug/g	0.003	BTEX SOIL by GCMS SIM	0.008
T001PT20	Toluene	ug/g	0.010	BTEX SOIL by GCMS SIM	< 0.010
X_882_10	Xylenes	ug/g	0.1	BTEX SOIL by GCMS SIM	< 0.1
X003PT20	m,p - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10
X002PT20	o - Xylene	ug/g	0.10	BTEX SOIL by GCMS SIM	< 0.10
VOC SURROGATE RECOVERY					
VS01PT20	Bromofluorobenzene	%	0	BTEX SOIL by GCMS SIM	99
VS02PT20	d4-1,2-dichloroethane	%	0	BTEX SOIL by GCMS SIM	93
VS03PT20	d8-Toluene	%	0	BTEX SOIL by GCMS SIM	96
Ed10PT20	Ethylbenzene-d10	%	60	BTEX SOIL by GCMS SIM	96

Matrix : Soil
Sampled on: 04/08/05 14:45

25-Aug-04

DUPLICATE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Duplicate Conc.	MDL	Unit	Relative % Diff.
Moisture	04-8 @ 17.5	14041307	19.2	20.4	0.1	%(W/W)	-6.06
Lead	04-10 @ 2.5'	14041314	18.3	19.0	0.1	ug/g	-3.75
PHC GHH SILICAGEL	04-10 @ 2.5'	14041314	500	670	100	ug/g	-29.06
PHC GHH	04-10 @ 2.5'	14041314	1000	1400	100	ug/g	-33.33
CCME PHC F2 C10-16	04-6 @ 22.5'	14041318	< 50	< 50	50	ug/g	0.00
CCME PHC F3 C16-34	04-6 @ 22.5'	14041318	< 50	< 50	50	ug/g	0.00
CCME PHC F4 C34-50+	04-6 @ 22.5'	14041318	< 50	< 50	50	ug/g	0.00
Benzene	04-6 @ 22.5'	14041318	0.003	0.003	0.001	ug/g	0.00
Toluene	04-6 @ 22.5'	14041318	< 0.010	< 0.010	0.010	ug/g	0.00
Ethylbenzene	04-6 @ 22.5'	14041318	0.005	0.005	0.003	ug/g	0.00
m,p - Xylene	04-6 @ 22.5'	14041318	< 0.10	< 0.10	0.10	ug/g	0.00
o - Xylene	04-6 @ 22.5'	14041318	< 0.10	< 0.10	0.10	ug/g	0.00
CCME PHC F1 C6-10	04-6 @ 22.5'	14041318	< 10	< 10	10	ug/g	0.00

25-Aug-04

SPIKE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
CCME PHC F2 C10-16	Blank Spike. Batch :	45700958	< 50	370	450	ug/g	82
CCME PHC F3 C16-34	Blank Spike. Batch :	45700958	< 50	1100	1450	ug/g	75
CCME PHC F4 C34-50+	Blank Spike. Batch :	45700958	< 50	77	100	ug/g	77
Benzene	Blank Spike. Batch :	45202524	0.003	0.033	.043	ug/g	69
Toluene	Blank Spike. Batch :	45202524	< 0.010	0.031	.043	ug/g	71
Ethylbenzene	Blank Spike. Batch :	45202524	0.007	0.026	.043	ug/g	47
Lead	Blank Spike. Batch :	44202050	< 0.1	52.3	50	ug/g	105
Benzo(a)pyrene	Blank Spike. Batch :	44500830	< 0.01	1.6	1.94	ug/g	83
Naphthalene	Blank Spike. Batch :	44500830	< 0.01	1.6	1.94	ug/g	84
Arsenic	Blank Spike. Batch :	44202050	< 0.2	53.9	50	ug/g	108
Chromium	Blank Spike. Batch :	44202050	< 1	49	50	ug/g	97
Copper	Blank Spike. Batch :	44202050	< 0.5	53.6	50	ug/g	107
Zinc	Blank Spike. Batch :	44202050	< 1	54	50	ug/g	108
Lead	04-10 @ 2.5'	14041314	18.3	68.2	50	ug/g	100
CCME PHC F2 C10-16	04-6 @ 22.5'	14041318	< 50	520	501	ug/g	103
CCME PHC F3 C16-34	04-6 @ 22.5'	14041318	< 50	1500	1620	ug/g	94
CCME PHC F4 C34-50+	04-6 @ 22.5'	14041318	< 50	110	111	ug/g	100
Benzene	FIELD BLANK	14041323	0.005	0.20	.205	ug/g	93
Toluene	FIELD BLANK	14041323	< 0.010	0.19	.205	ug/g	90
Ethylbenzene	FIELD BLANK	14041323	0.008	0.25	.205	ug/g	116
m,p - Xylene	FIELD BLANK	14041323	< 0.10	0.43	.411	ug/g	104
o - Xylene	FIELD BLANK	14041323	< 0.10	0.21	.205	ug/g	101

25-Aug-04

ANALYSIS DATES

	Lab ID :	14041307	14041308	14041309	14041310
	Client ID:	04-8 @ 17.5	04-4 @ 7.5-10'	04-1 @ 15'	04-4 @ 12.5'-15'
00250760	Moisture	10-AUG-2004	10-AUG-2004	10-AUG-2004	10-AUG-2004
Pb-TMS20	Lead	11-AUG-2004	11-AUG-2004	11-AUG-2004	---
CCMEHCHT	CCME F2-F4 HC'S	11-AUG-2004	11-AUG-2004	11-AUG-2004	---
PA05OS12	Benzo(a)pyrene	---	---	---	12-AUG-2004
PA14OS12	Naphthalene	---	---	---	12-AUG-2004
PeryOS12	d12-Perylene	---	---	---	12-AUG-2004
PKG-BT35	BTEX SOIL by GCMS SIM	13-AUG-2004	13-AUG-2004	13-AUG-2004	---
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	4-AUG-2004	5-AUG-2004	4-AUG-2004

	Lab ID :	14041311	14041312	14041313	14041314
	Client ID:	04-9 @ 5'	04-5 @ 10'-12.5'	04-4 @ 2.5'	04-10 @ 2.5'
00250760	Moisture	10-AUG-2004	10-AUG-2004	10-AUG-2004	10-AUG-2004
As-TMS20	Arsenic	---	---	11-AUG-2004	---
Ba-TMS20	Barium	---	---	11-AUG-2004	---
Cr-TMS20	Chromium	---	---	11-AUG-2004	---
Cu-TMS20	Copper	---	---	11-AUG-2004	---
Pb-TMS20	Lead	11-AUG-2004	11-AUG-2004	11-AUG-2004	11-AUG-2004
Zn-TMS20	Zinc	---	---	11-AUG-2004	---
CCMEHCHT	CCME F2-F4 HC'S	11-AUG-2004	11-AUG-2004	---	11-AUG-2004
GHH--TOT	PHC GHH	---	---	---	20-AUG-2004
GHHS-MIN	PHC GHH SILICAGEL	---	---	---	20-AUG-2004
PKG-BT35	BTEX SOIL by GCMS SIM	13-AUG-2004	13-AUG-2004	---	13-AUG-2004
PKG-GL02	Glycols in Soils	---	---	16-AUG-2004	---
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	6-AUG-2004	6-AUG-2004	4-AUG-2004	5-AUG-2004

25-Aug-04

ANALYSIS DATES

	Lab ID :	14041315	14041316	14041317	14041318
	Client ID:	04-8 @ 2.5	04-8 @ 15'	04-7 @ 7.5'-10'	04-6 @ 22.5'
00250760	Moisture	---	10-AUG-2004	10-AUG-2004	10-AUG-2004
As-TMS20	Arsenic	11-AUG-2004	---	---	---
Ba-TMS20	Barium	11-AUG-2004	---	---	---
Cr-TMS20	Chromium	11-AUG-2004	---	---	---
Cu-TMS20	Copper	11-AUG-2004	---	---	---
Pb-TMS20	Lead	11-AUG-2004	11-AUG-2004	11-AUG-2004	11-AUG-2004
Zn-TMS20	Zinc	11-AUG-2004	---	---	---
CCMEHCHT	CCME F2-F4 HC'S	---	11-AUG-2004	11-AUG-2004	11-AUG-2004
PA05OS12	Benzo(a)pyrene	---	12-AUG-2004	---	---
PA14OS12	Naphthalene	---	12-AUG-2004	---	---
PeryOS12	d12-Perylene	---	12-AUG-2004	---	---
PKG-BT35	BTEX SOIL by GCMS SIM	---	13-AUG-2004	13-AUG-2004	13-AUG-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	4-AUG-2004	4-AUG-2004	5-AUG-2004

	Lab ID :	14041319	14041320	14041321	14041322
	Client ID:	04-3 @ 10'-12.5'	04-2 @ 5'-7.5'	04-1 @ 12.5'	DUP 3
00250760	Moisture	10-AUG-2004	10-AUG-2004	10-AUG-2004	10-AUG-2004
Pb-TMS20	Lead	11-AUG-2004	11-AUG-2004	11-AUG-2004	11-AUG-2004
CCMEHCHT	CCME F2-F4 HC'S	11-AUG-2004	11-AUG-2004	11-AUG-2004	11-AUG-2004
PKG-BT35	BTEX SOIL by GCMS SIM	13-AUG-2004	13-AUG-2004	13-AUG-2004	13-AUG-2004
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	5-AUG-2004	5-AUG-2004	5-AUG-2004

	Lab ID :	14041323
	Client ID:	FIELD BLANK
00250760	Moisture	10-AUG-2004
Pb-TMS20	Lead	11-AUG-2004
CCMEHCHT	CCME F2-F4 HC'S	11-AUG-2004
PKG-BT35	BTEX SOIL by GCMS SIM	13-AUG-2004
	Matrix:	Soil
	Sampled on:	5-AUG-2004

25-Aug-04

BATCH NUMBERS

	Lab ID :	14041307	14041308	14041309	14041310
	Client ID:	04-8 @ 17.5	04-4 @ 7.5-10'	04-1 @ 15'	04-4 @ 12.5'-15'
00250760	Moisture	44403163	44403168	44403168	44403168
Pb-TMS20	Lead	44202050	44202050	44202050	---
CCMEHCHT	CCME F2-F4 HC'S	45700958	45700958	45700958	---
PA05OS12	Benzo(a)pyrene	---	---	---	44500830
PA14OS12	Naphthalene	---	---	---	44500830
PeryOS12	d12-Perylene	---	---	---	44500830
PKG-BT35	BTEX SOIL by GCMS SIM	45202524	45202524	45202524	---
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	4-AUG-2004	5-AUG-2004	4-AUG-2004

	Lab ID :	14041311	14041312	14041313	14041314
	Client ID:	04-9 @ 5'	04-5 @ 10'-12.5'	04-4 @ 2.5'	04-10 @ 2.5'
00250760	Moisture	44403168	44403168	44403168	44403168
As-TMS20	Arsenic	---	---	44202050	---
Ba-TMS20	Barium	---	---	44202050	---
Cr-TMS20	Chromium	---	---	44202050	---
Cu-TMS20	Copper	---	---	44202050	---
Pb-TMS20	Lead	44202050	44202050	44202050	44202050
Zn-TMS20	Zinc	---	---	44202050	---
CCMEHCHT	CCME F2-F4 HC'S	45700958	45700958	---	45700958
GHH--TOT	PHC GHH	---	---	---	44403370
GHHS-MIN	PHC GHH SILICAGEL	---	---	---	44403377
PKG-BT35	BTEX SOIL by GCMS SIM	45202524	45202524	---	45202524
PKG-GL02	Glycols in Soils	---	---	45502365	---
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	6-AUG-2004	6-AUG-2004	4-AUG-2004	5-AUG-2004

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BATCH NUMBERS

	Lab ID :	14041315	14041316	14041317	14041318
	Client ID:	04-8 @ 2.5	04-8 @ 15'	04-7 @ 7.5'-10'	04-6 @ 22.5'
00250760	Moisture	---	44403168	44403168	44403168
As-TMS20	Arsenic	44202050	---	---	---
Ba-TMS20	Barium	44202050	---	---	---
Cr-TMS20	Chromium	44202050	---	---	---
Cu-TMS20	Copper	44202050	---	---	---
Pb-TMS20	Lead	44202050	44202050	44202050	44202050
Zn-TMS20	Zinc	44202050	---	---	---
CCMEHCHT	CCME F2-F4 HC'S	---	45700958	45700958	45700958
PA05OS12	Benzo(a)pyrene	---	44500830	---	---
PA14OS12	Naphthalene	---	44500830	---	---
PeryOS12	d12-Perylene	---	44500830	---	---
PKG-BT35	BTEX SOIL by GCMS SIM	---	45202524	45202524	45202524
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	4-AUG-2004	4-AUG-2004	5-AUG-2004

	Lab ID :	14041319	14041320	14041321	14041322
	Client ID:	04-3 @ 10'-12.5'	04-2 @ 5'-7.5'	04-1 @ 12.5'	DUP 3
00250760	Moisture	44403168	44403168	44403168	44403168
Pb-TMS20	Lead	44202050	44202050	44202050	44202050
CCMEHCHT	CCME F2-F4 HC'S	45700958	45700958	45700958	45700958
PKG-BT35	BTEX SOIL by GCMS SIM	45202524	45202524	45202524	45202524
	Matrix:	Soil	Soil	Soil	Soil
	Sampled on:	4-AUG-2004	5-AUG-2004	5-AUG-2004	5-AUG-2004

	Lab ID :	14041323
	Client ID:	FIELD BLANK
00250760	Moisture	44403168
Pb-TMS20	Lead	44202050
CCMEHCHT	CCME F2-F4 HC'S	45700958
PKG-BT35	BTEX SOIL by GCMS SIM	45202524
	Matrix:	Soil
	Sampled on:	5-AUG-2004

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BLANK SUMMARY

All method blanks were less than MDL, except the following:

Parameter	Batch	Sparcode	Blank Conc.	MDL	Unit
Benzene	45202524	B020PT20	0.003	0.001	ug/g
Ethylbenzene	45202524	B021PT20	0.007	0.003	ug/g

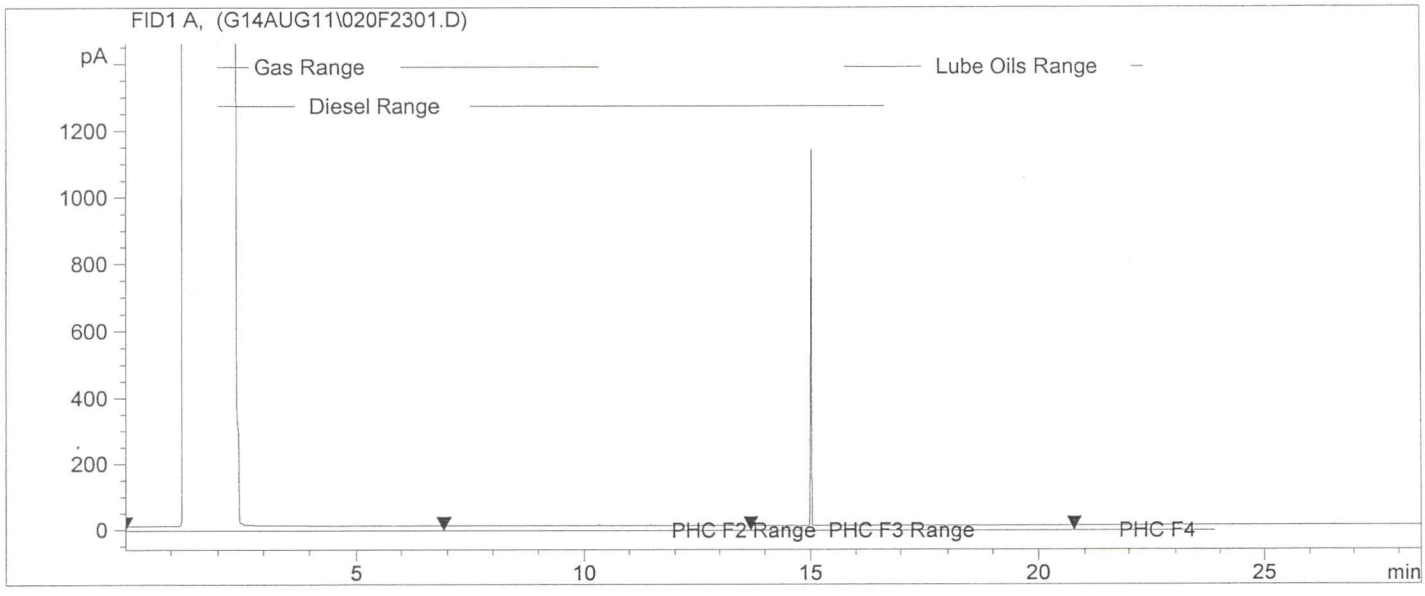
PSC

ANALYTICAL SERVICES

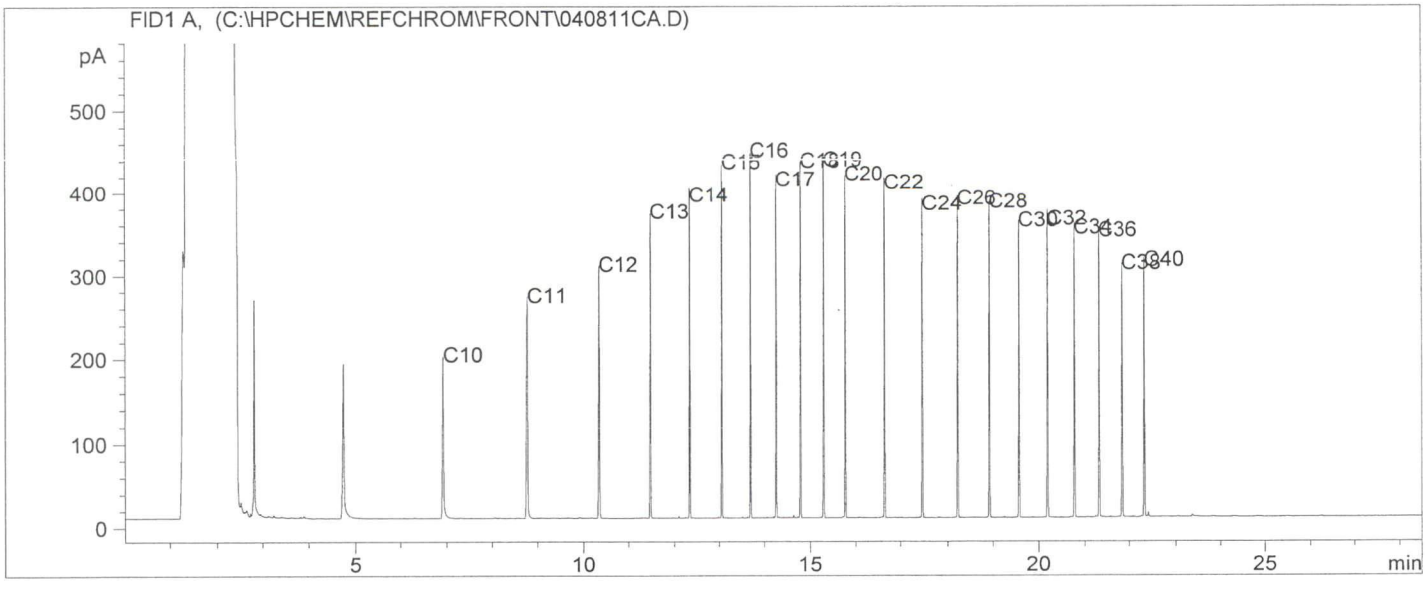
04-8 @17.5

Sample ID: 41307
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 4:01:08 AM
Multiplier: 1

Operator: IT
Vial: 20
Sequence line#: 23



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

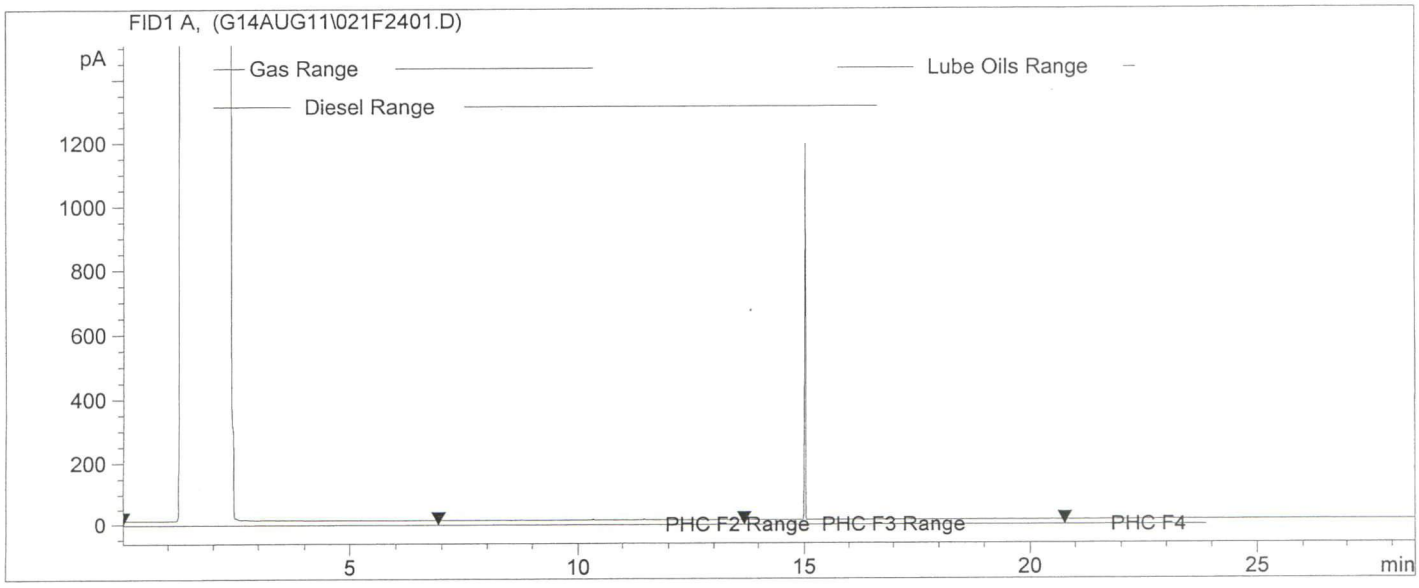
PSC

ANALYTICAL SERVICES

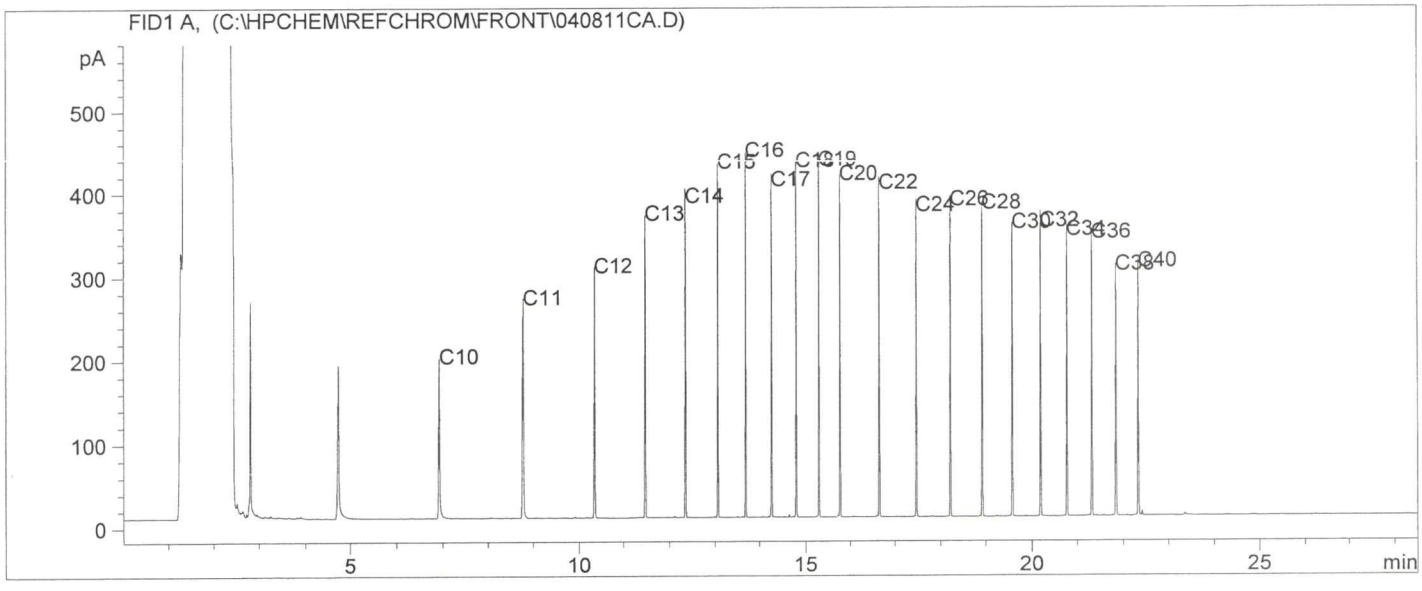
04-4 @ 7.5'-10'

Sample ID: 41308
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 4:41:56 AM
Multiplier: 1

Operator: IT
Vial: 21
Sequence line#: 24



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

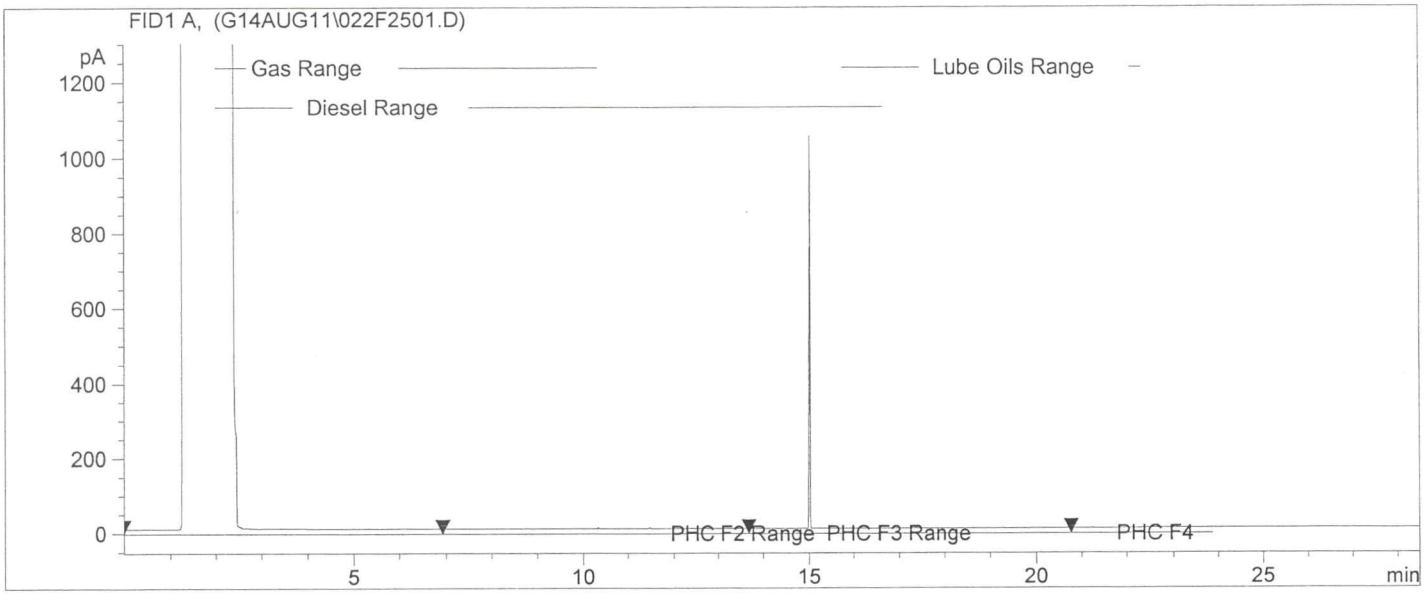
PSC

ANALYTICAL SERVICES

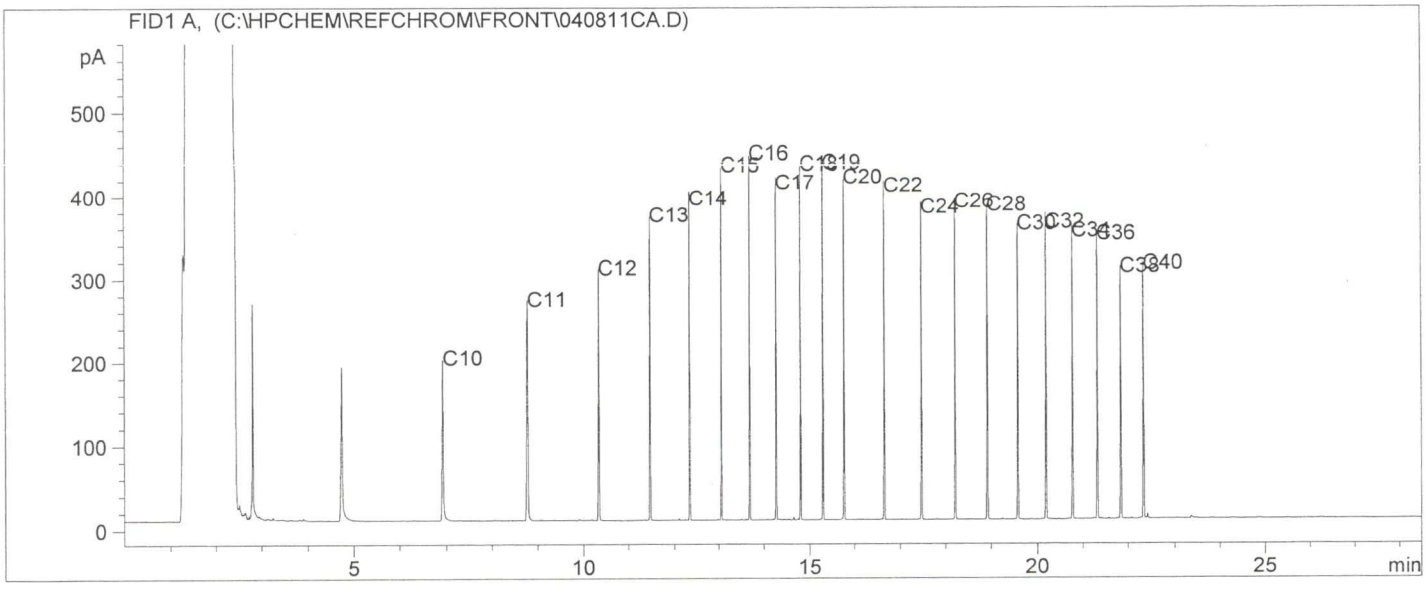
04-1@15'

Sample ID: 41309
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 5:23:28 AM
Multiplier: 1

Operator: IT
Vial: 22
Sequence line#: 25



Carbon Range Reference Chromatogram at approx. 25ppm



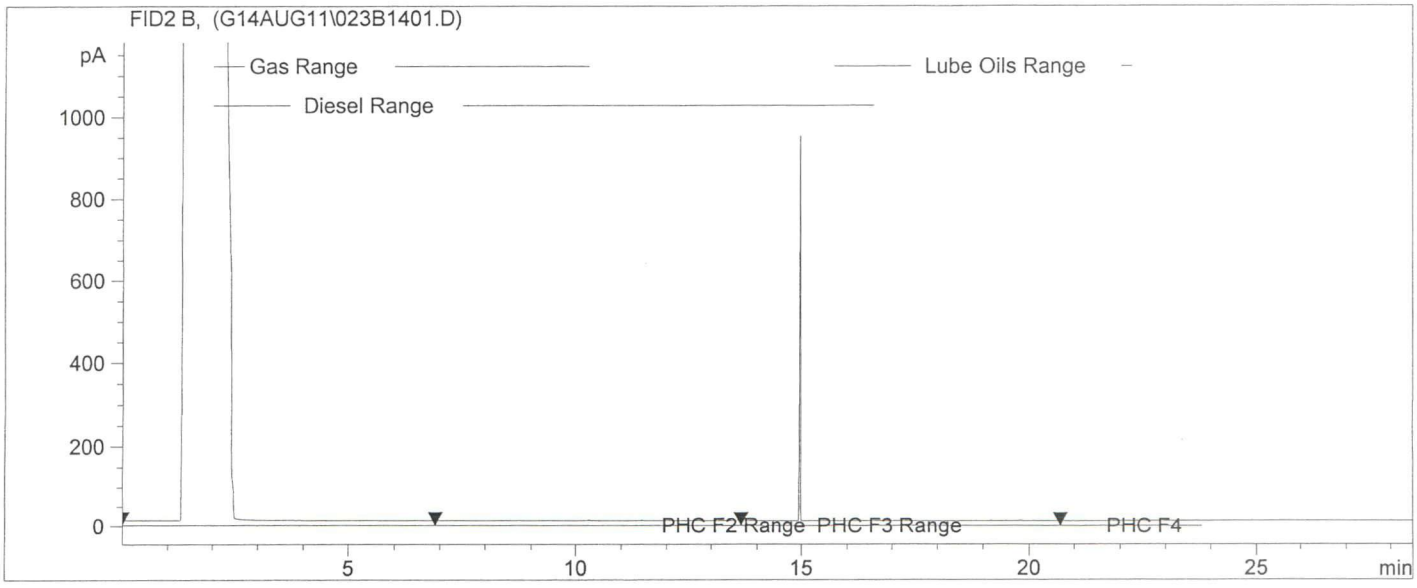
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

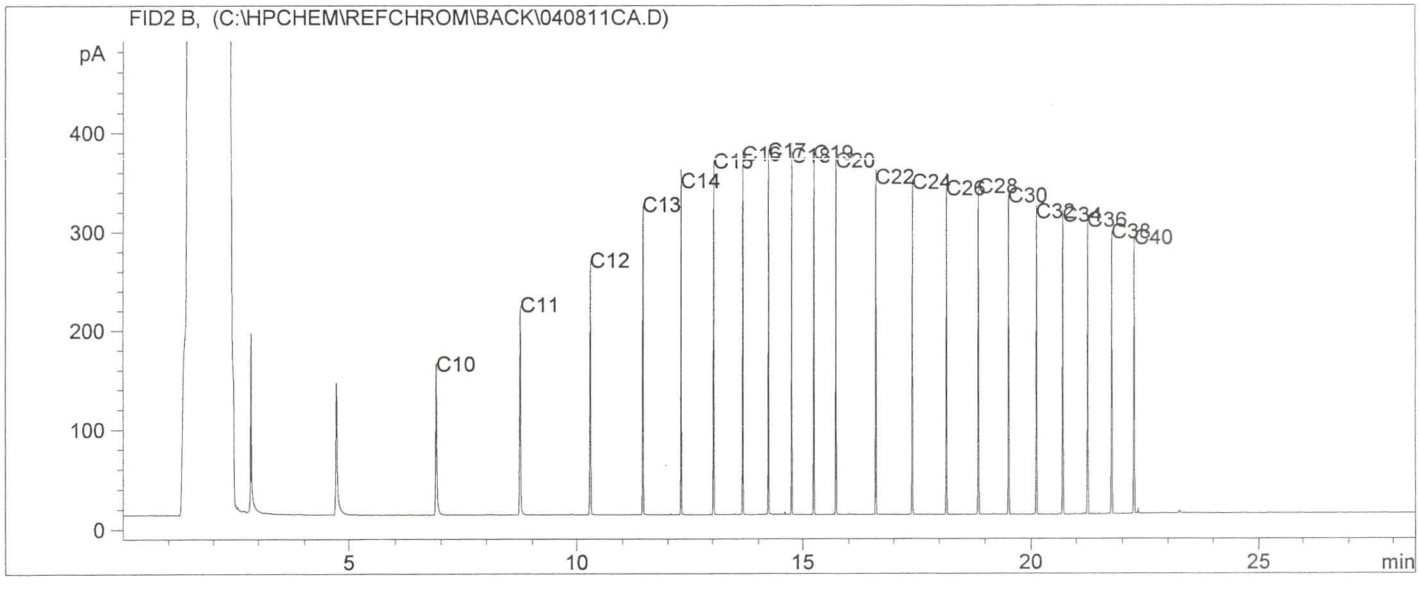
04-9 @ 51

Sample ID: 41311
Method File: CCMEWW.M
Date & Time Analyzed: 8/11/2004 9:41:17 PM
Multiplier: 1

Operator: IT
Vial: 23
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

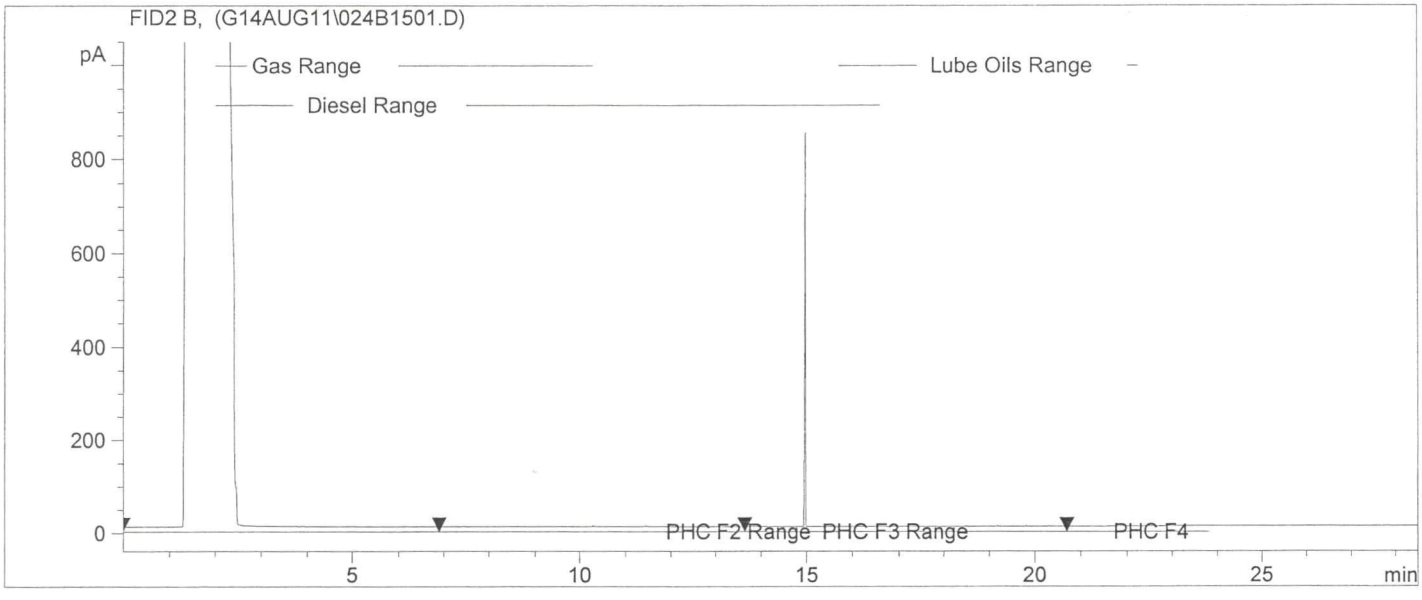
PSC

ANALYTICAL SERVICES

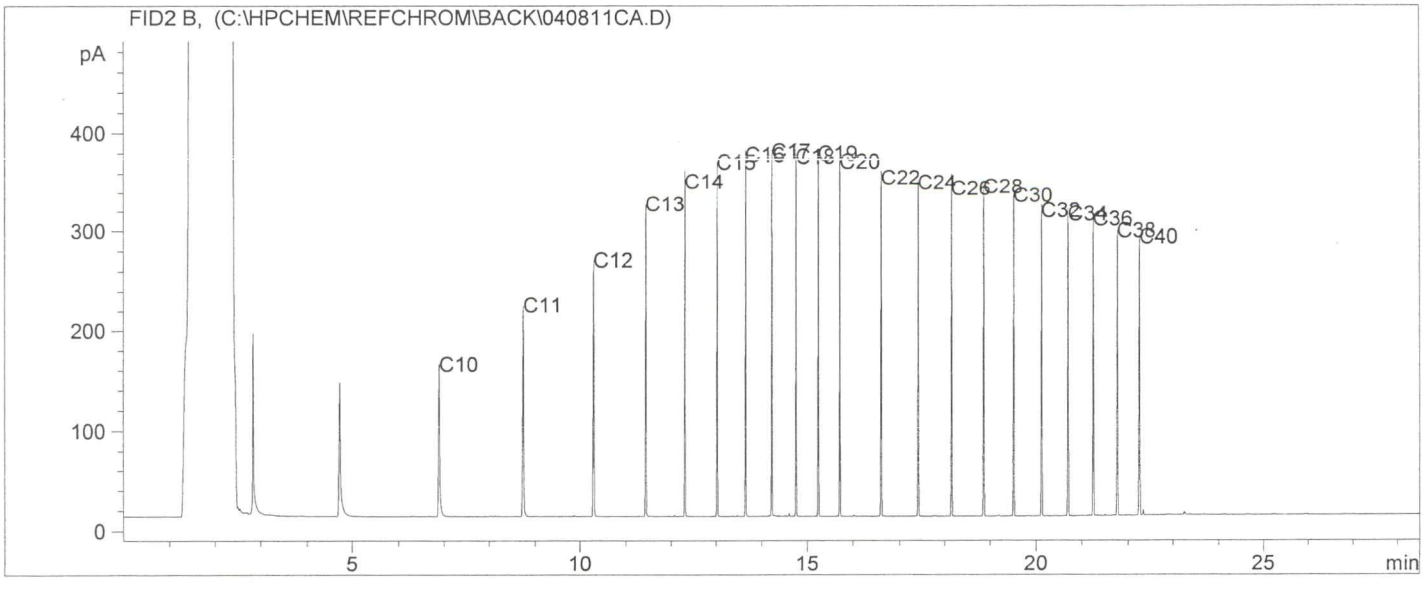
04-5 @ 10'-12.5'

Sample ID: 41312
Method File: CCMEWW.M
Date & Time Analyzed: 8/11/2004 10:24:35 PM
Multiplier: 1

Operator: IT
Vial: 24
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

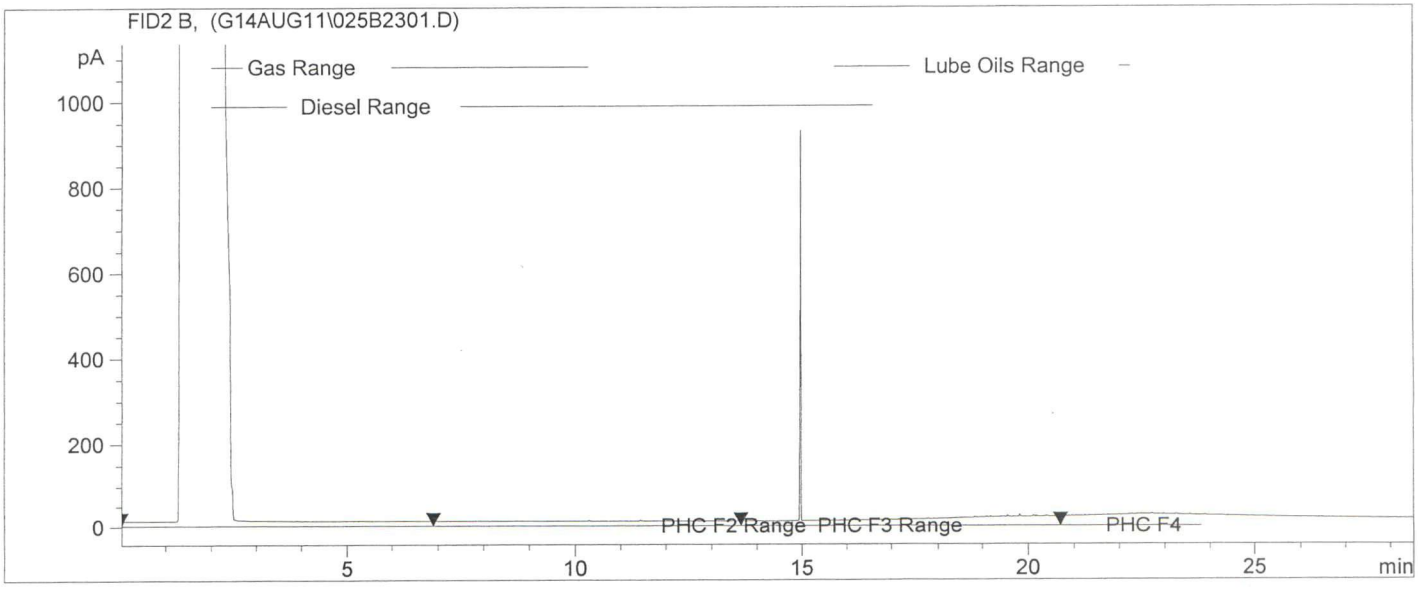
PSC

ANALYTICAL SERVICES

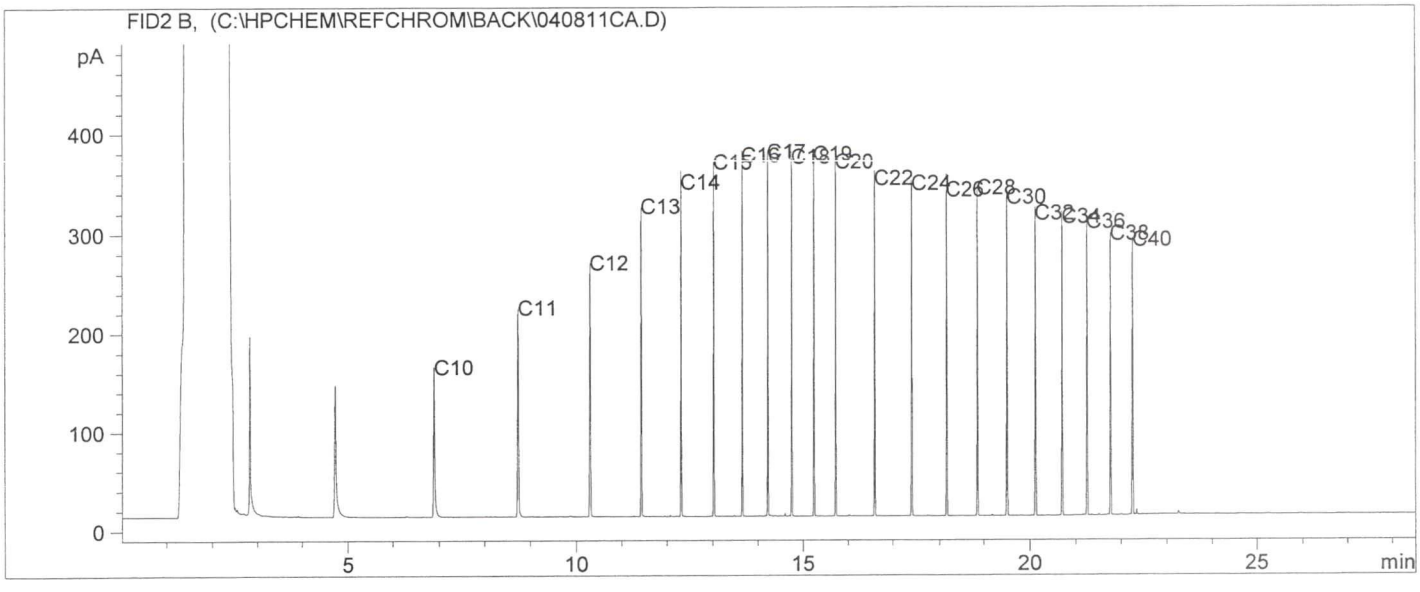
04-10@2.5'

Sample ID: 41314
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 4:01:09 AM
Multiplier: 1

Operator: IT
Vial: 25
Sequence line#: 23



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

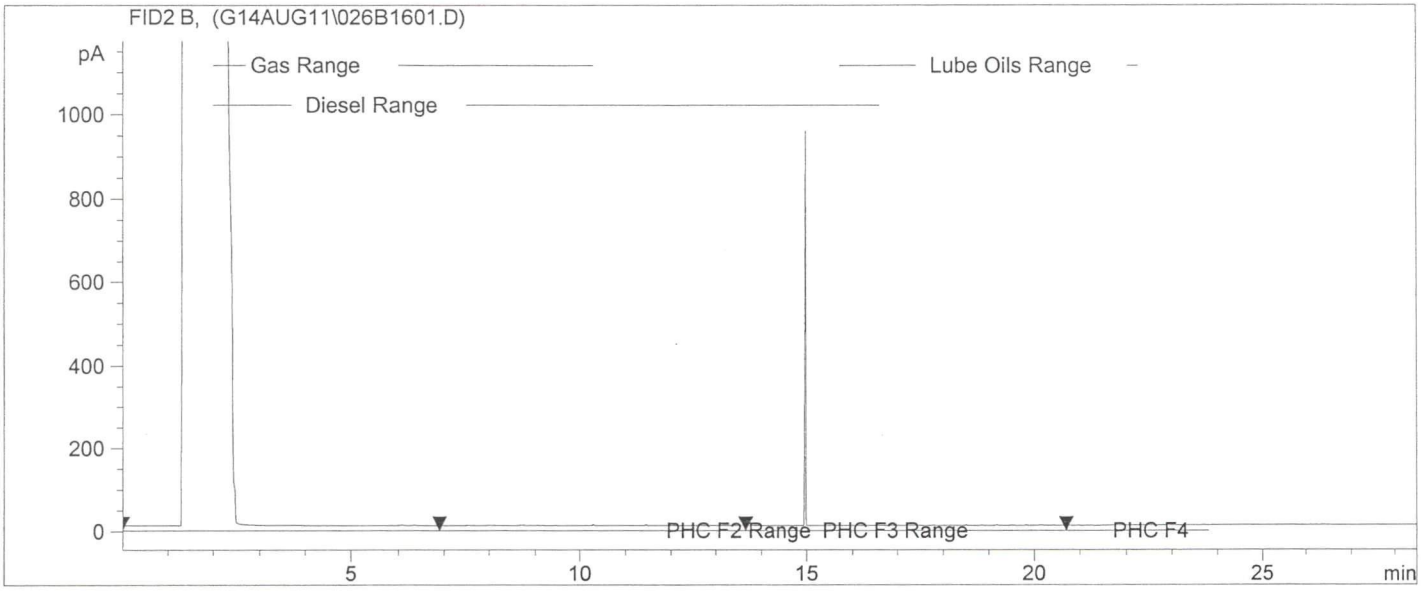
PSC

ANALYTICAL SERVICES

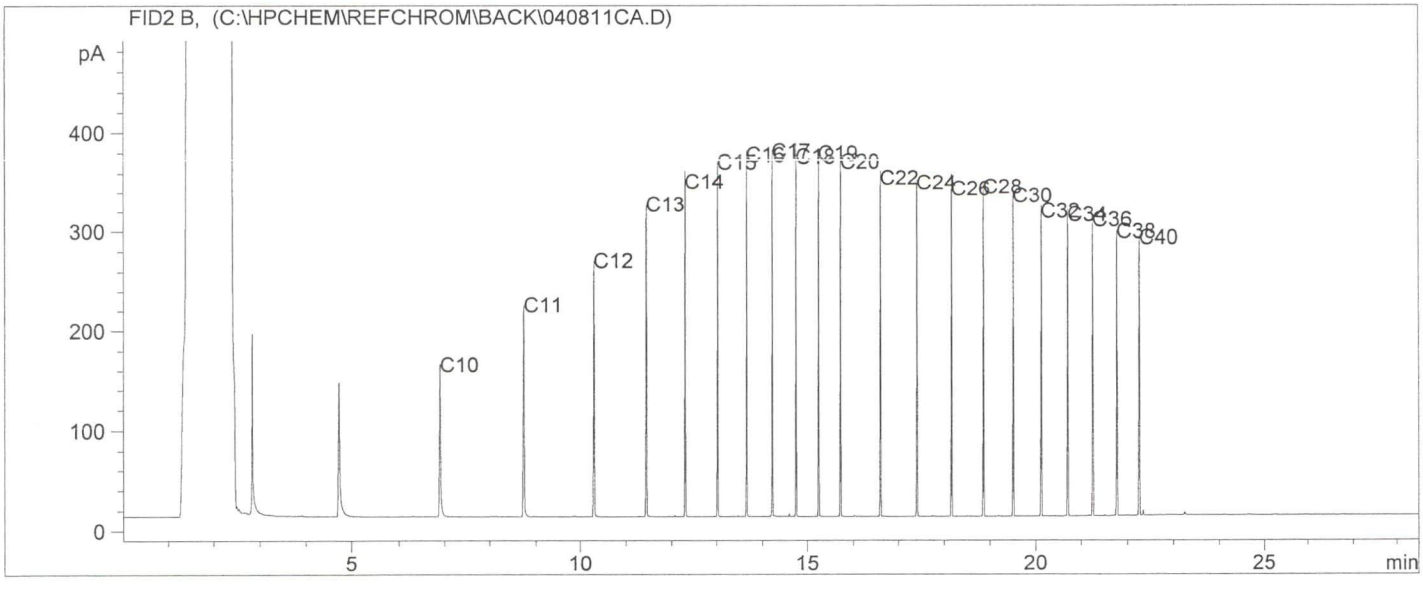
04-8 @ 15'

Sample ID: 41316
Method File: CCMEWW.M
Date & Time Analyzed: 8/11/2004 11:07:29 PM
Multiplier: 1

Operator: IT
Vial: 26
Sequence line#: 16



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

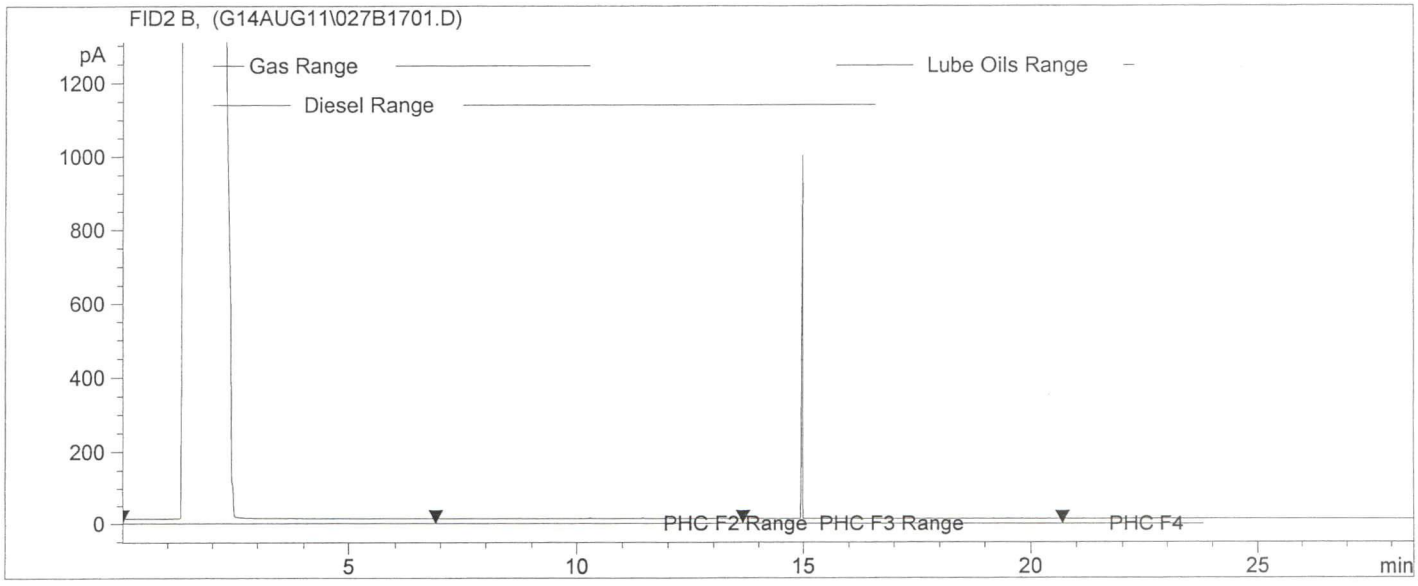
PSC

ANALYTICAL SERVICES

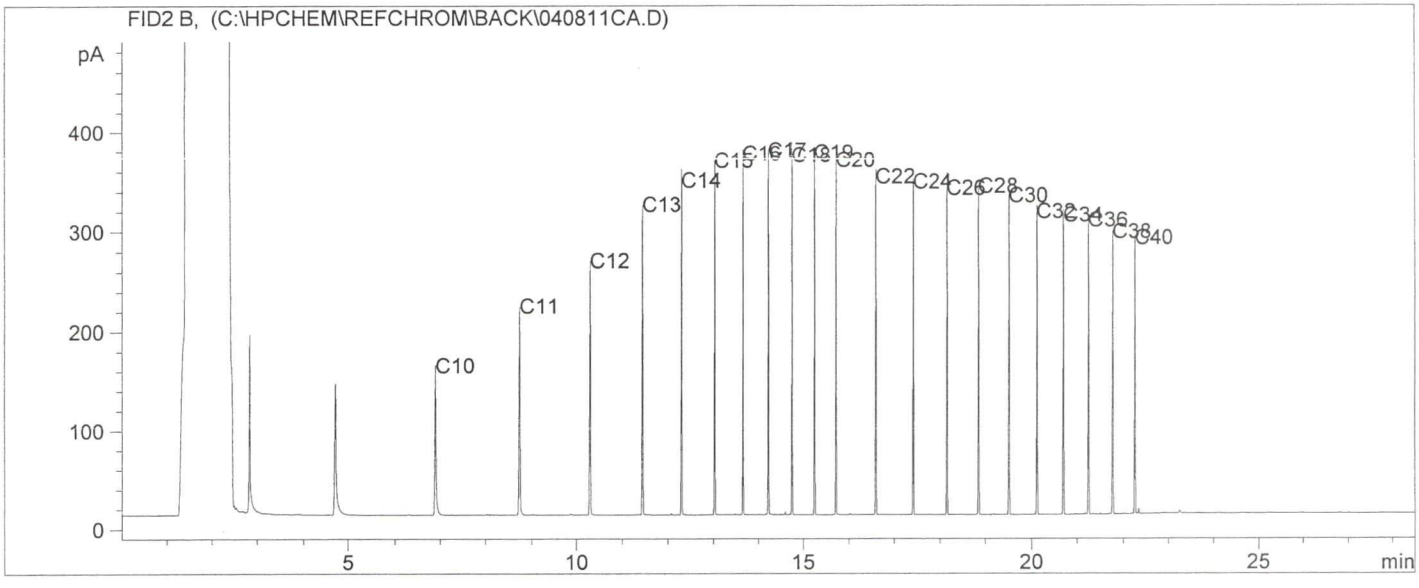
04-7 @ 7.5'-10'

Sample ID: 41317
Method File: CCMEWW.M
Date & Time Analyzed: 8/11/2004 11:50:26 PM
Multiplier: 1

Operator: IT
Vial: 27
Sequence line#: 17



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

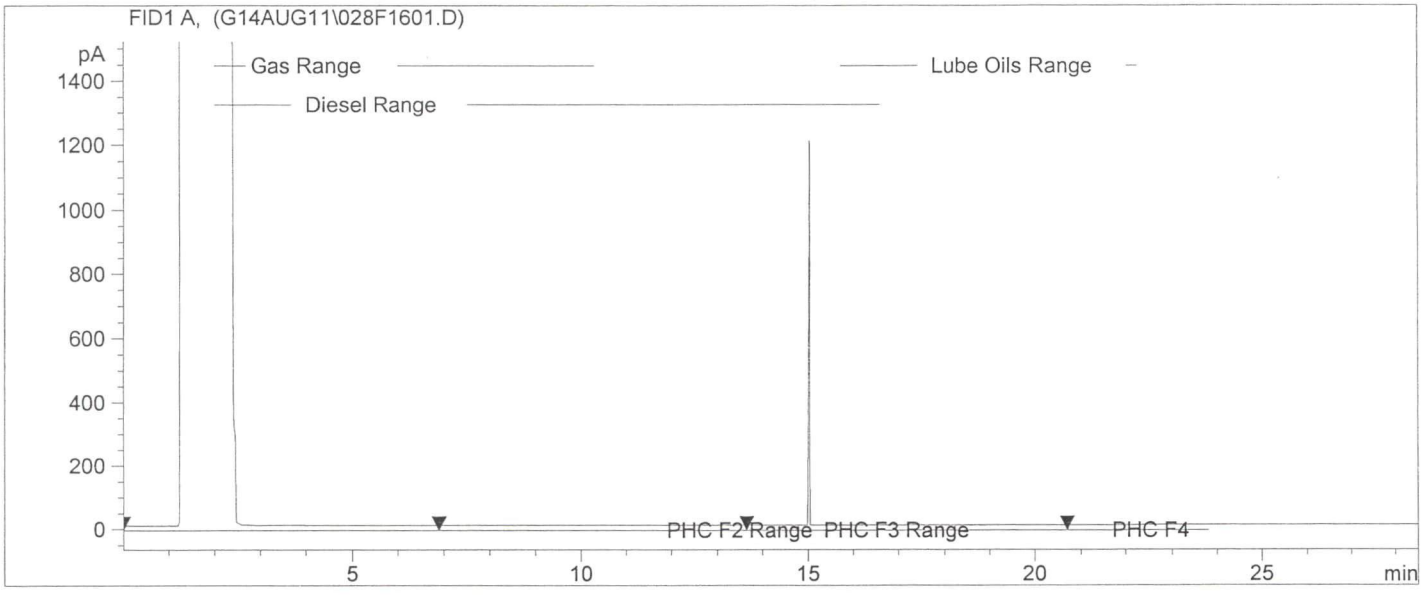
PSC

ANALYTICAL SERVICES

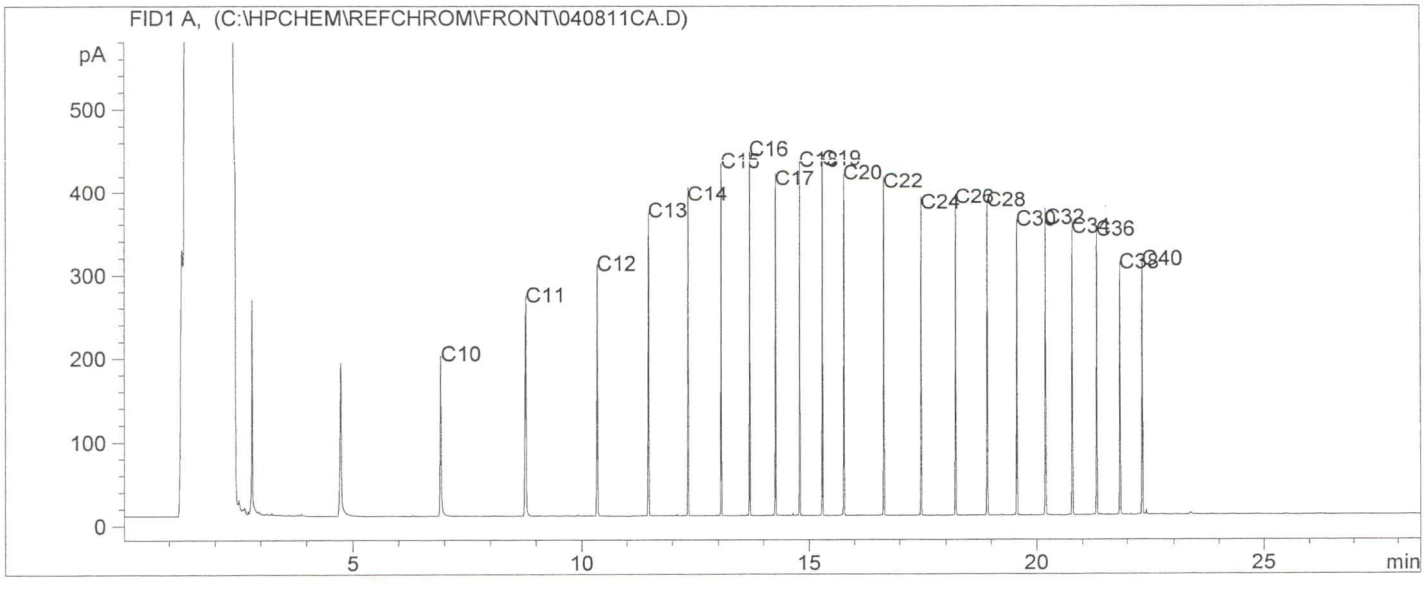
04-6 @ 22.5'

Sample ID: 41318
Method File: CCMEWW.M
Date & Time Analyzed: 8/11/2004 11:07:29 PM
Multiplier: 1

Operator: IT
Vial: 28
Sequence line#: 16



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

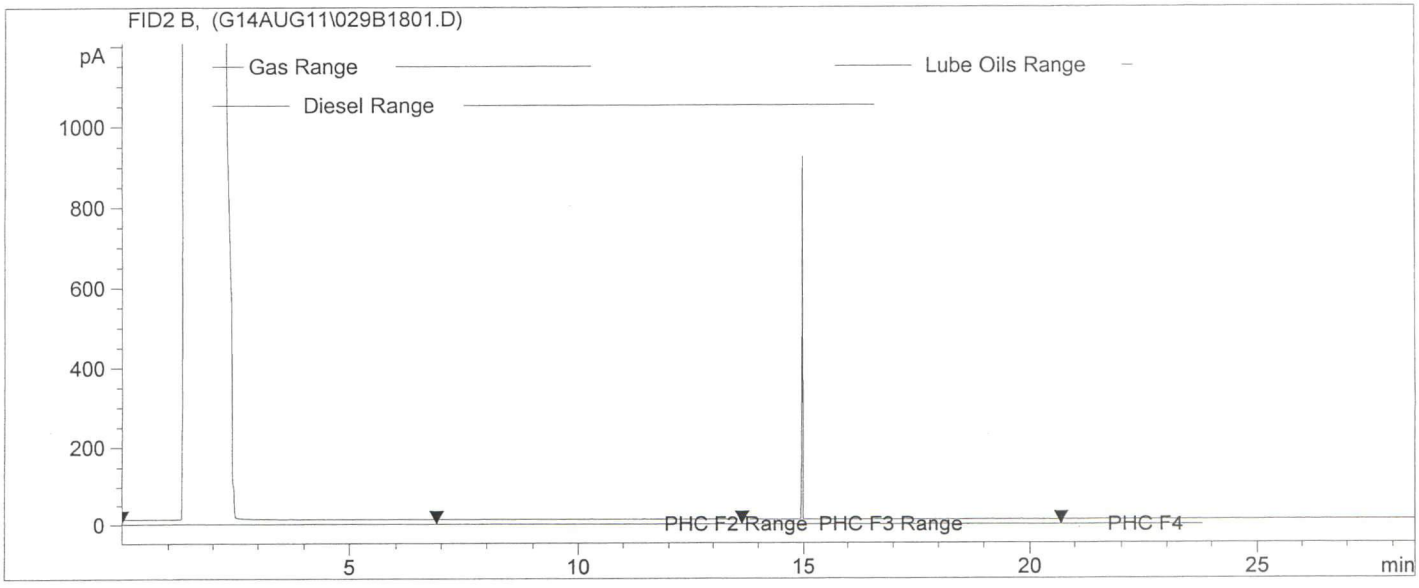
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

04-3 @ 10'-12.5'

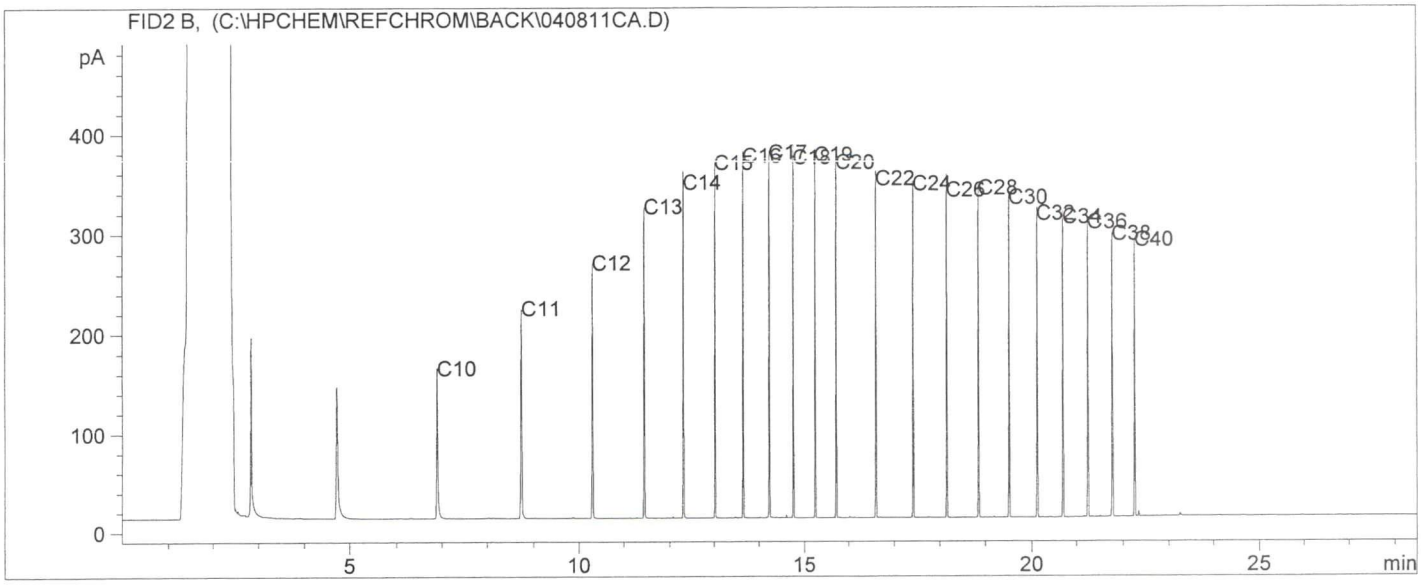
ANALYTICAL SERVICES

Sample ID: 41319
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 12:32:19 AM
Multiplier: 1

Operator: IT
Vial: 29
Sequence line#: 18



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

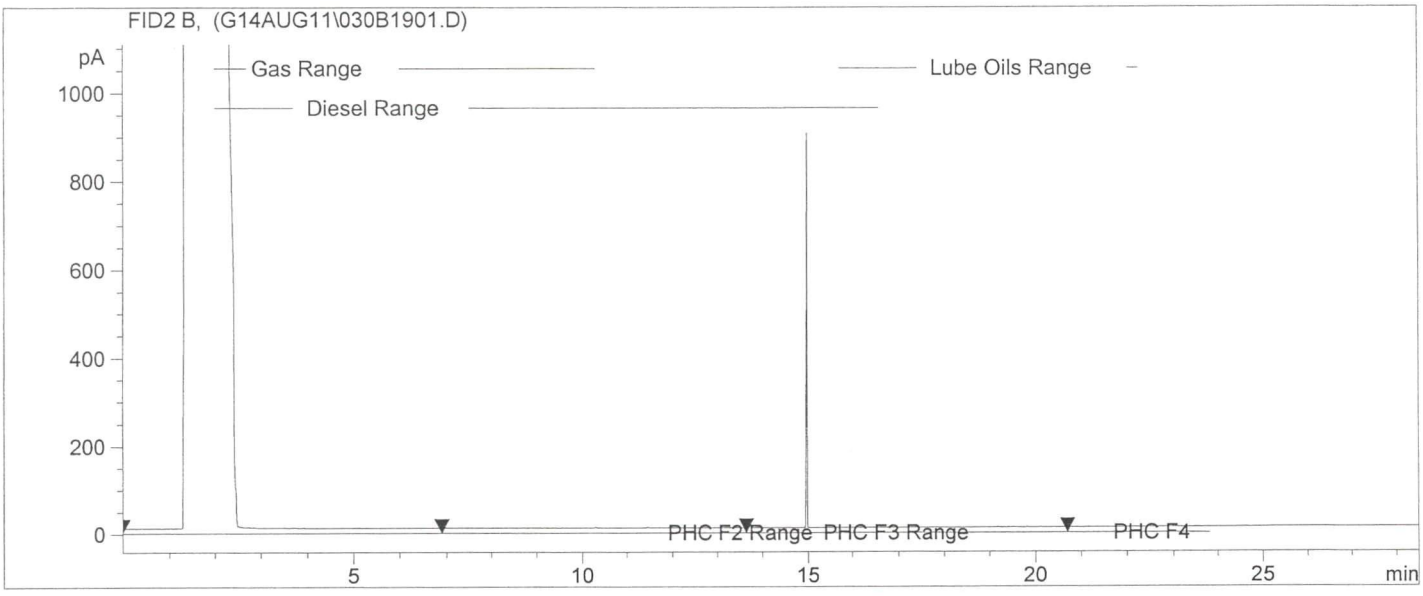
PSC

ANALYTICAL SERVICES

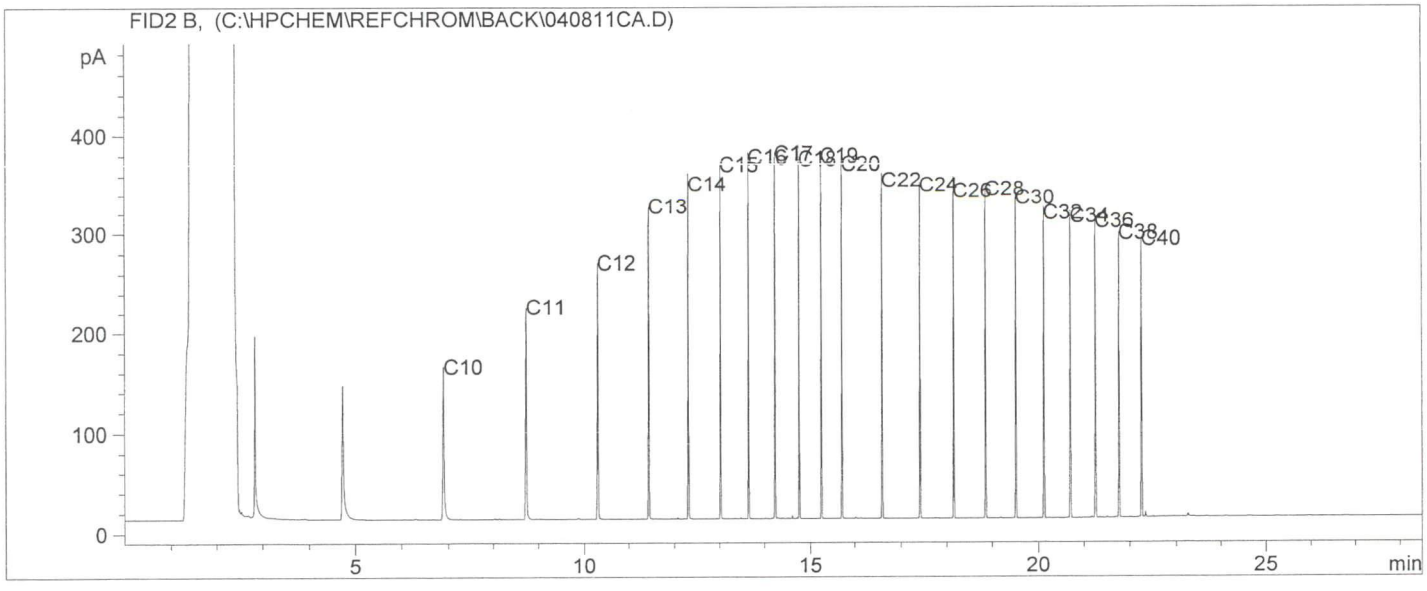
04-2@5'-7.5'

Sample ID: 41320
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 1:14:55 AM
Multiplier: 1

Operator: IT
Vial: 30
Sequence line#: 19



Carbon Range Reference Chromatogram at approx. 25ppm



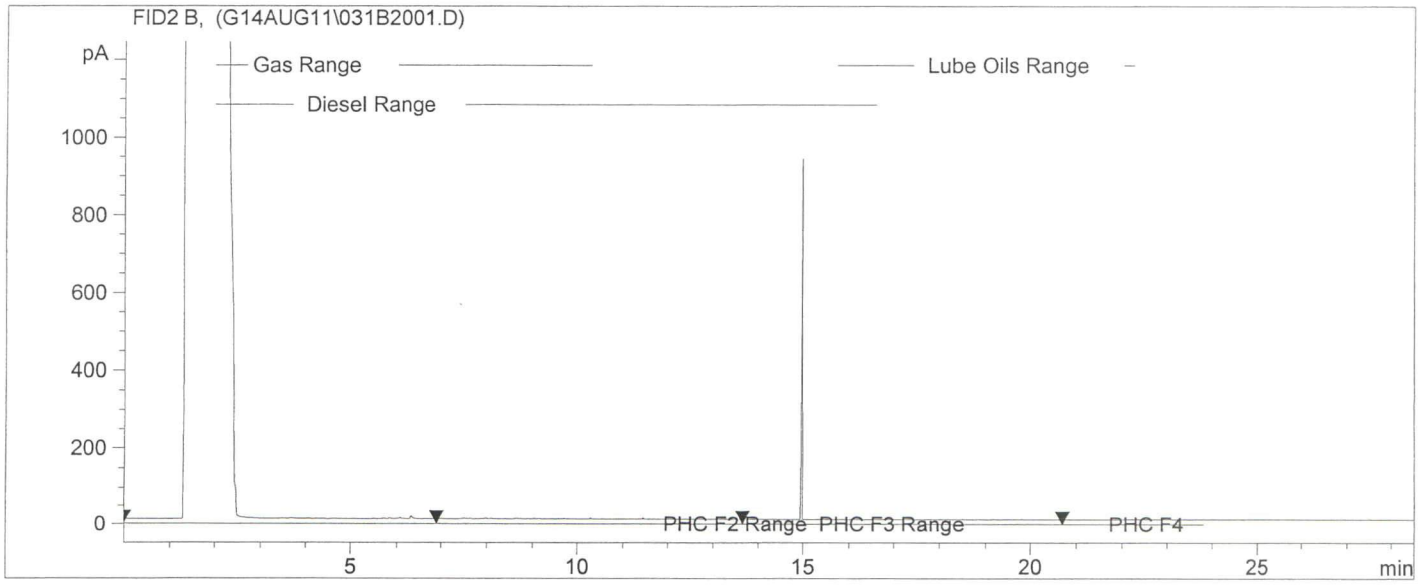
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

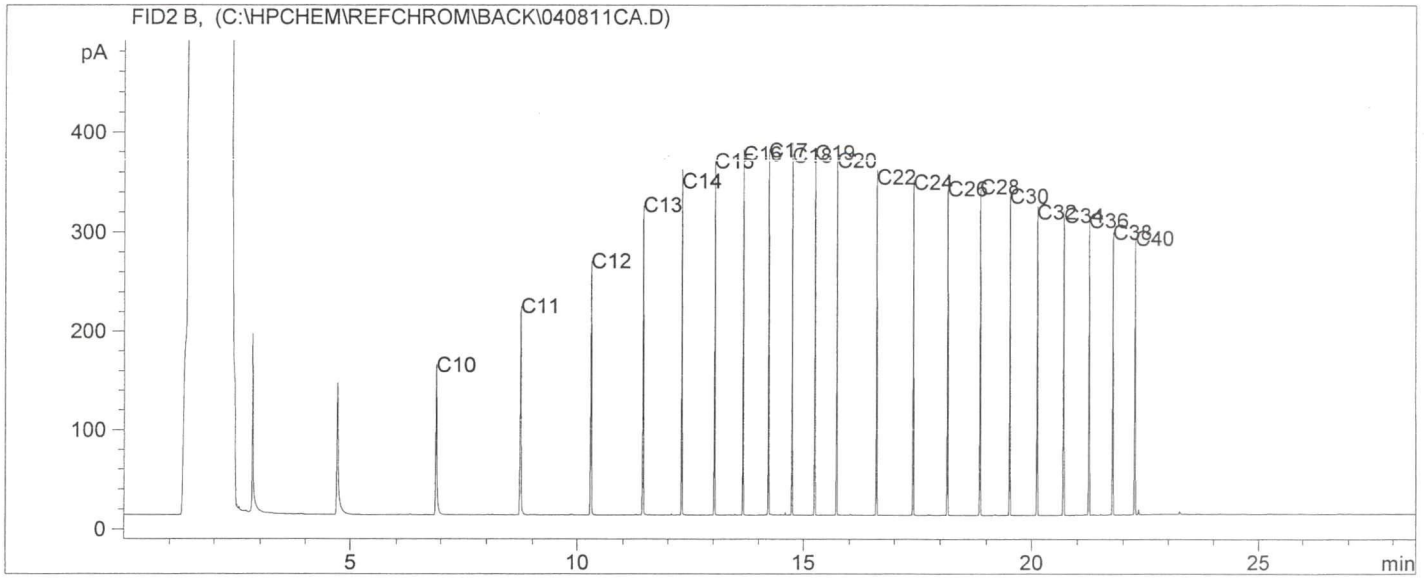
04-1@12.5'

Sample ID: 41321
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 1:56:18 AM
Multiplier: 1

Operator: IT
Vial: 31
Sequence line#: 20



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

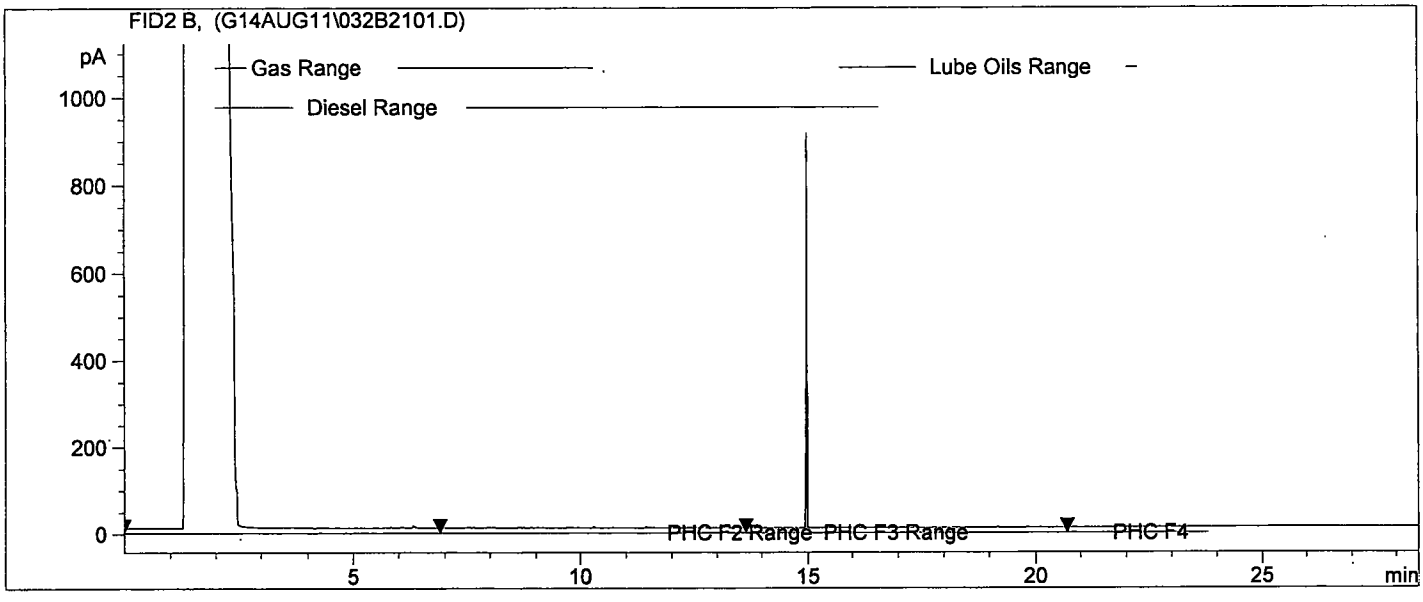
PSC

ANALYTICAL SERVICES

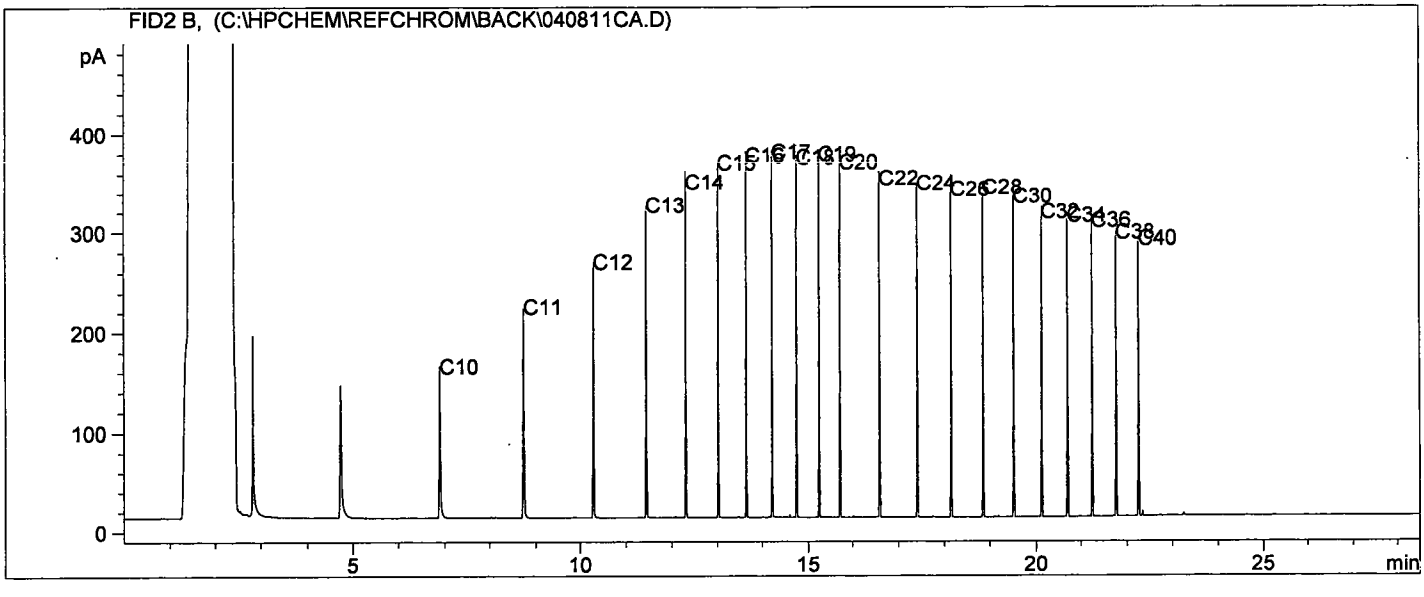
Dup 3

Sample ID: 41322
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 2:38:26 AM
Multiplier: 1

Operator: IT
Vial: 32
Sequence line#: 21



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

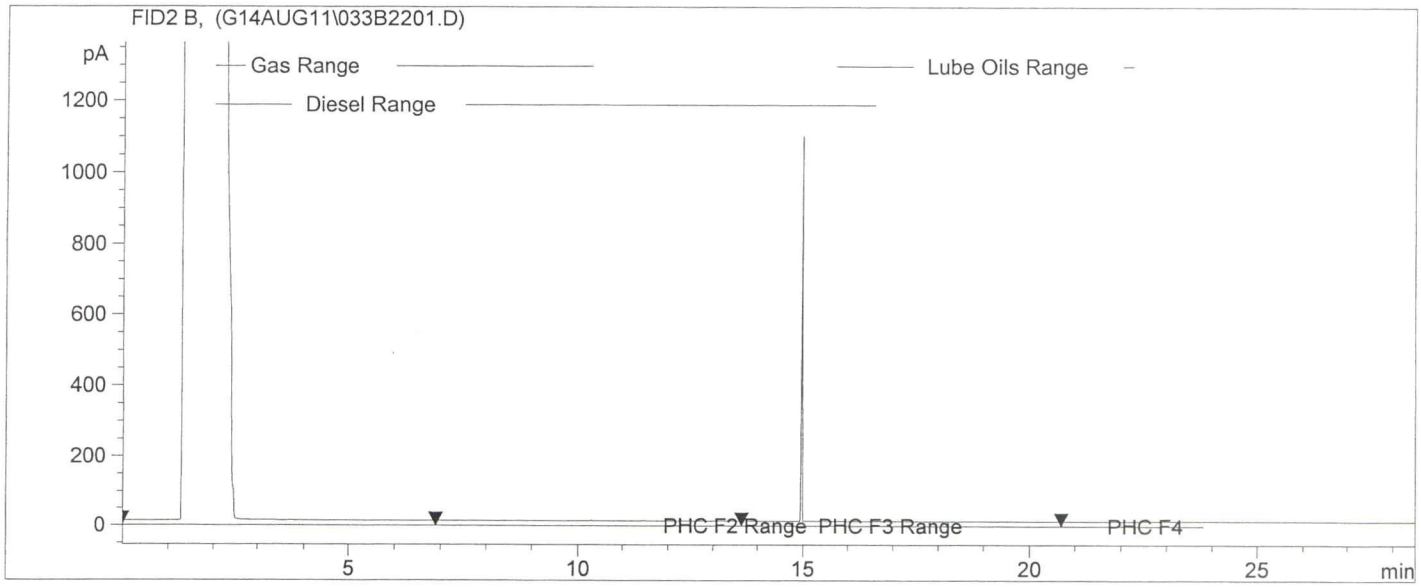
PSC

ANALYTICAL SERVICES

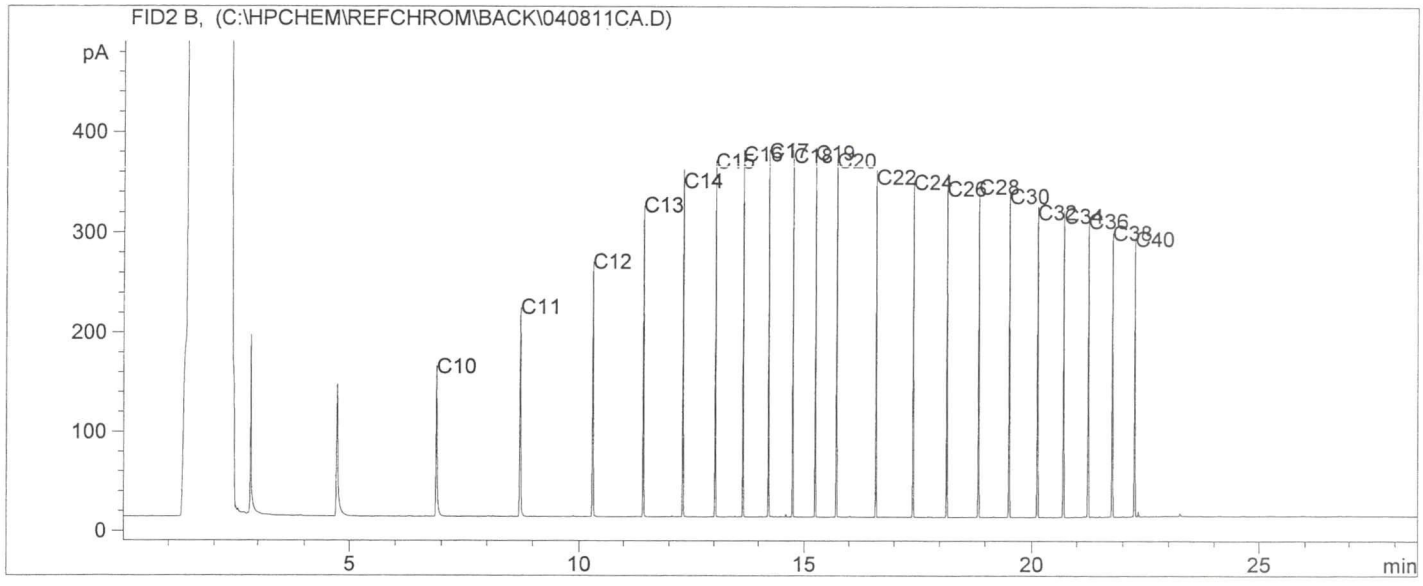
Field Blank

Sample ID: 41323
Method File: CCMEWW.M
Date & Time Analyzed: 8/12/2004 3:19:20 AM
Multiplier: 1

Operator: IT
Vial: 33
Sequence line#: 22



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: Amec WPG Date: Aug 07/04 Initial: MF C of C #: 8151451

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER: ____	PRESERVATIVE CHECK
1	1																						
2	1																						
3	1																						
4	1																						
5	1																						
6	1																						
7	1																						
8	1																						
9	1																						
10	1																						
11	1																						
12	1																						

Item #

1. ☐ Custody Seal not Intact
2. ☐ Temp > 10 degrees C
3. ☐ Broken Bottle in Transit
4. ☐ No C of C
5. ☐ C of C information Incomplete
6. ☐ C of C not signed/dated by consultant
7. ☐ Non-current C of C
8. ☐ Bottles listed on C of C, but not in shipment
9. ☐ Bottles in shipment, but not on C of C
10. ☐ Analysis Requirements absent/not clear
11. ☐ Labelling Issue (missing/and/or incorrect)
12. ☐ Samples received >5 days after sampling
13. ☐ Samples received after hold time
14. ☐ Wrong Bottle(s) used
15. ☐ Incorrect Preservation or Headspace present
16. ☐ Insufficient # of bottles (no flag by consultant i insufficient sample available in field)
17. ☐ Incorrect Task Order # provided to lab

☐ Anomalies _____

☐ Insufficient Sample (lab use only)

o Poured off anions

Comments: _____

	Temperature			Average
Cooler #1	1	1	1	1
Cooler #2				
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs: _____

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: Amec WPG Date: aug 07/09 Initial: MP C of C #: 815-1452

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER:	PRESERVATIVE CHECK
1	1																						
2	1																						
3	1																						
4	1																						
5	1																						
6																							
7																							
8																							
9																							
10																							
11																							
12																							

Item #

1. ☐ Custody Seal not Intact
2. ☐ Temp > 10 degrees C
3. ☐ Broken Bottle in Transit
4. ☐ No C of C
5. ☐ C of C information Incomplete
6. ☐ C of C not signed/dated by consultant
7. ☐ Non-current C of C
8. ☐ Bottles listed on C of C, but not in shipment
9. ☐ Bottles in shipment, but not on C of C
10. ☐ Analysis Requirements absent/not clear
11. ☐ Labelling Issue (missing/and/or incorrect)
12. ☐ Samples received >5 days after sampling
13. ☐ Samples received after hold time
14. ☐ Wrong Bottle(s) used
15. ☐ Incorrect Preservation or Headspace present
16. ☐ Insufficient # of bottles (no flag by consultant i insufficient sample available in field)
17. ☐ Incorrect Task Order # provided to lab

☐ Anomalies _____

☐ Insufficient Sample (lab use only)

○ Poured off anions

Comments: _____

	Temperature			Average
Cooler #1	1	1	1	1
Cooler #2				
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs: _____

JOB STATUS REPORT

TIME : 08/16/2004 17:33
NAME : PSC ANALYTICAL SERV
FAX# : 604-444-4511
TEL# : 604-444-4808
SER.# : 000004012544

DATE,TIME	08/16 17:30
FAX NO./NAME	12044898261
DURATION	00:02:54
PAGE(S)	25
RESULT	OK
MODE	STANDARD ECM

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

16-Aug-04

Interim Report

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A. DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: ANDREA HACHKOWSKI

Requisition Forms :

Form 81514512 shipped on 06-Aug-04 received on 07-Aug-04 logged on 7-Aug-04
Form 81514521 shipped on 06-Aug-04 received on 07-Aug-04 logged on 7-Aug-04

1 glycol proj to follow. Subject to QA/QC.

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report. All data on final reports are validated by technical personnel. Signature on file at laboratory. Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior

PSC ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C. V5A 4N5

Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

81514512

COMPANY NAME: AMEC	PH. #: (204) 488-2997
	FAX #: (204) 489-8261
COMPANY ADDRESS: 440 DOVERCOURT DR. WPG, MB R3H 1N4	CLIENT PROJECT ID: (#) WX05876
SAMPLER NAME (PRINT): ANDREA HACHKOWSKI	PROJECT MANAGER: A. DESCHROSEILLIERS

ANALYSIS REQUEST

FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	TIME	HEADSPACE VAPOUR	BTEX / LH ____	BTEX / VPH ____	VOC's (VOLATILE ORGANICS)	TEH ____	EPH ____	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP ____	PHENOLS BY GCMS ____	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL ____	DISSOLVED ____	TOTALS METALS LEVEL ____	DISSOLVED METALS LEVEL ____	NITRATE ____	NITRITE ____	AMMONIA ____	CHLORIDE ____	FLUORIDE ____	SULPHATE ____	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD ____	WAD ____	LEACHABLE LEAD (AA) ____	(TCLP) ____	LEACHABLE BTEX (AA) ____	(TCLP) ____	NAPHTHALENE, BENZO(A)PYRENE	As, Ba, Cr, Cu, Pb, Zn	ETHYLENE GLYCOL	1,2 PROPYLENE GLYCOL
1 04-8 @ 17.5	41307			X		1	04/08/04	3:20	50 ppm							X			X																											
2 04-4 @ 7.5-10'	41308			X		1	04/08/04	10:30	40 ppm							X			X																											
3 04-1 @ 15'	41309			X		1	05/08/04	2:40	40 ppm							X			X																											
4 04-4 @ 12.5'-15'	41310			X		1	04/08/04	11:00	40 ppm																																	X				
5 04-9 @ 5'	41311			X		1	06/08/04	2:00	30 ppm							X			X																											
6 04-5 @ 10'-12.5'	41312			X		1	06/08/04	11:00	40 ppm							X			X																											
7 04-4 @ 2.5'	41313			X		1	04/08/04	10:00	5 ppm							*																											X	X	X	
8 04-10 @ 2.5'	41314			X		1	05/08/04	12:15	50 ppm							X			X																											
9 04-8 @ 2.5	41315			X		1	04/08/04	2:45	5 ppm																																		X			
10 04-8 @ 15'	41316			X		1	04/08/04	3:00	150 ppm							X			X																									X			
11 04-7 @ 7.5-10'	41317			X		1	04/08/04	1:30	30 ppm							X			X																											
12 04-6 @ 22.5'	41318			X		1	05/08/04	11:30	75 ppm							X			X																											

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS ____

CUSTODY RECORD

ESSO SITE LOCATION: 207 Main St. Selkirk, MB — 860265/ 88001943

PSC SAP: 1104517 7

ESSO CONTACT: Andrew Hodgetts

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE: CS intact

- ☒ CCME
- ☐ CSR
- ☐ ALBERTA TIER 1
- ☐ OTHER

SPECIAL REPORTING OR BILLING INSTRUCTIONS

JARS USED: 88

LAB USE ONLY

ARRIVAL TEMPERATURE °C: 1, 1, 1 — 1°C

DUE DATE: aug 16/04 MF

LOG IN CHECK

RELINQUISHED BY SAMPLER: Andrea Hachkowski	DATE DD/MM/YY 06/08/04	TIME 9pm	RECEIVED BY: Purolator
RELINQUISHED BY:	DATE DD/MM/YY	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE DD/MM/YY 07/08/04	TIME 1110	RECEIVED BY LABORATORY: MF

ORIGINAL YE PSC K - CL

PSC ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C. V5A 4N5

Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ANALYSIS REQUEST

8151452

COMPANY NAME: AMEC

PH. #: (204) 488-2997
FAX #: (204) 489-8261

COMPANY ADDRESS: 440 DOVERCOURT DR. WPG. MB R3Y 1N4

CLIENT PROJECT ID: (#) WX05876

SAMPLER NAME (PRINT): A. HACHKOWSKI

PROJECT MANAGER: A. DESGROSEILLIERS

FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE DD/MM/YY	TIME	HEADSPACE VAPOUR	BTEX / LH ____ BTEX / VPH ____	VOC's (VOLATILE ORGANICS)	TEH ____ EPH ____	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP ____ PHENOLS BY GCMS ____	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL ___ DISSOLVED ___	TOTALS METALS LEVEL ___	DISSOLVED METALS LEVEL ___	NITRATE ____ NITRITE ____ AMMONIA ____	CHLORIDE ____ FLUORIDE ____ SULPHATE ____	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD ____ WAD ____	LEACHABLE LEAD (AA) ____ (TCLP) ____	LEACHABLE BTEX (AA) ____ (TCLP) ____
04-3 @ 10'-12.5'	41319			X		1	04/05/04	2:00	25 ppm					X			X														
04-2 @ 5'-7.5'	41320			X		1	05/05/04	9:45	30 ppm					X			X														
04-1 @ 12.5'	41321			X		1	05/05/04	2:30	500 ppm					X			X														
DUP 3	41322			X		1	05/05/04	—	—					X			X														
FIELD BLANK	41323			X		1	05/05/04	2:45	—					X			X			INSUFFICIENT SAMPLE TO FILL JAR												

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

* some exceptions apply please contact lab

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐
- OTHER BUSINESS DAYS ____

CUSTODY RECORD

ESSO SITE LOCATION: 287 MAIN ST BEAUSIRK, MB
860265/88001943

PSC SAP: 11045177

ESSO CONTACT: A. HODGETTS

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE

- ☒ CCME
- ☐ CSR
- ☐ ALBERTA TIER 1
- ☐ OTHER

SPECIAL REPORTING OR BILLING INSTRUCTIONS: CS contact

JARS USED: 8

LAB USE ONLY

ARRIVAL TEMPERATURE °C	DUE DATE	LOG IN CHECK
1, 1, 1 °C	Aug 16/04 MF	

	DATE DD/MM/YY	TIME	
RELINQUISHED BY SAMPLER:	06/08/04	9pm	RECEIVED BY: Purolator
RELINQUISHED BY:			RECEIVED BY:
RELINQUISHED BY:	07/08/04	1110	RECEIVED BY LABORATORY: MF

ORIGINAL - PSC YELLOW - PSC PINK - CLIENT

PSC

ANALYTICAL SERVICES

PSC Analytical Services Inc.
8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

INVOICE BC093310

Invoice date 26-AUG-04
Page 1 of 1
Consultant's Copy

Forms included : 81514512 81514521

Imperial Oil Ltd
237-4TH Avenue S.W.
P.O. Box 2480, Stn M
Calgary, Alberta
T2P 3M9

Attention of Andrew Hodgetts

Client type : I Client code : L9
Sampler : ANDREA HACHKOWSKI
Client project ID : WX05876
IOL Contract No : 20493
IOL Commitment No : 11045177

Client account # : 6517

No.	Description of work	Factor	Basis for factor	Quantity	Referenc Code	SAP #
1	Glycols in Soils			1	FPKG-GL02	SO
2	Moisture			16	S00250760	SO
3	Metals ICP-MS Water Dissolved	1.000		2		
4	Lead			14	SPb-TMS20	SO
5	CCME F2-F4 HC'S			14	FCCMEHCHT	SO
6	BTEX SOIL by GCMS SIM			14	FPKG-BT35	SO
7	PHC GHH			1	SGHH--TOT	SO
8	PHC GHH SILICAGEL			1	SGHHS-MIN	SO
9						

Date Received : 07-AUG-2004
Date Reported : 16-AUG-2004

Consultant : AMEC EARTH & ENVIRONMENTAL
Consultant Contact : A. DESGROSEILLIERS
Consultant Project No.: WX05876
Site Location : 287 MAIN ST. 860265/SELKIRK,MB 88001943

TERMS
Net 30 days after date of invoice
2% per month interest charged on
all overdue accounts.

Please remit payment to:
PSC Analytical Services Inc.
5555 North Service Road, Burlington, ON, L7L 5H7

PSC ANALYTICAL SERVICES

IMPERIAL OIL LIMITED / EXXONMOBIL CANADA
PSC ANALYTICAL SERVICES CONTRACT

PSC Burnaby **Data Quality Waiver Request #** **145**

If this waiver is not returned, or the undersigned PSC Analytical representative not contacted within 14 days of issuance, the laboratory will deem the associated data as acceptable to the recipient, as reported by the laboratory. Please note: If no response has been received within 14 days of issuance, this Data Quality Waiver will be considered incomplete by the laboratory and reported as such to Imperial Oil/ExxonMobil Canada in quarterly stewardship reports.

Client:	AMEC Earth & Environmental	**Form #:**	81514521 et al
Project:	WX05876	**# of Samples:**	17
Consultant:	AMEC Earth & Environmental	**IOL PM:**	Andrew Hodgetts
Consultant PM:	Allyson Desgroseilliers		

IOL Site Location: 88001943

Customer Samples Affected: See COC 81514521 and 81514512

Date of Deviation: 8/13/2004 **Test Affected:** BTEX

DQW Type: 4 - Laboratory Control Samples outside of acceptance limits

Reason for Deviation: Ethylbenzene blank spiked failed (RPD 47%). Reason unknown. Potential Effect on Data: Minimal. Bias low analytical result for ethylbenzene.

Waiver Issued By:

Clifton Samoiloff

Comments:

Data Quality Waiver Reviewed and Accepted By:

Print Name: MICHAEL BERMAN **Title:** SENIOR ENVIRONMENTAL ENGINEER

Signature: **Date:** 21 OCTOBER 2004

Samples DQW Accepted For: **All samples** ☑

☐ **Some samples (#'s/reason):** _____

☐ **No samples (reason):** _____

PSC
ANALYTICAL SERVICES

8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

09-Sep-04

Certificate of Analysis

Reported To :

AMEC EARTH & ENVIRONMENTAL

Client Code L9

440 DOVERCOURT DRIVE
WINNIPEG, MB
R3Y 1N4

Attention : A.DESGROSEILLIERS
Phone : (204) 488-2997
FAX : (204) 489-8261

Project Information :

Project ID : WX05876
Submitted By: M.MCGREGOR

Requisition Forms :

Form 08111246 shipped on 31-Aug-04 received on 01-Sep-04 logged on 2-Sep-04 completed on 09-Sep-04
Form 08111247 shipped on 31-Aug-04 received on 01-Sep-04 logged on 2-Sep-04 completed on 09-Sep-04

Remarks :

+ All blank values are reported. Associated data are not blank corrected.
+ 'MDL' = Method Detection Limit, '<' = Less than MDL, '---' = Not analyzed
+ Solids results are based on dry weight except Biota Analyses & Special Waste Oil & Grease
+ Organic analyses are not corrected for extraction recovery standards except for Isotope Dilution methods, (i.e. CARB 429 PAH, all PCDD/F and DBD/DBF analyses)
+ All CCME and/or BC CSR results met required criteria unless otherwise stated in the report.
All data on final reports are validated by technical personnel. Signature on file at laboratory.
Deviations from Reference Method for the Canadian-wide Standard for Petroleum Hydrocarbons in Soil - Tier 1 Method:
  - F1 data - None
  - F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction
+ All Groundwater samples except BTEX/VOC's or Purgeable Hydrocarbons are decanted and/or filtered prior to analysis unless otherwise mandated by regulatory agency
+ All analysis data reported was generated when the analytical methods were in statistical control and IOL criteria for spike recoveries, reference material recoveries, method blank data and duplicate precision were met unless otherwise stated
+ This report shall not be reproduced except in full, without the written approval of the laboratory

Methods used by Philip are based upon those found in 'Standard Methods for the Examination of Water and Wastewater', 20th Edition, published by the American Public Health Association, or on US EPA protocols found in the 'Test Methods For Evaluating Solid Waste, Physical/Chemical Method, SW846', 3rd Edition. Other procedures are based on methodologies accepted by the appropriate regulatory agency. Methodology briefs are available by written request.

All work recorded herein has been done in accordance with normal professional standards using accepted testing methodologies, quality assurance and quality control procedures except where otherwise agreed to by the client and testing company in writing. Liability for any and all use of these test results shall be limited to the actual cost of the pertinent analysis done. There is no other warranty expressed or implied.
Your samples will be retained at Philip for a period of 30 days from receipt of data or as per contract.

PHILIP Project Manager: Clifton Samoiloff

P25 :

09-Sep-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14046292 / Client ID : 04-1	14046293 / 04-2	14046294 / 04-3
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1	1
METALS DISSOLVED							
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	0.0033	< 0.0005	< 0.0005
HYDROCARBONS							
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/09/09	04/09/09	04/09/09
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 1.0 (1)	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	< 0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	0.1	< 0.1	< 0.1
VOLATILE ORGANICS-MAH							
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05	04/09/05	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	510	< 0.5	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	29	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 5.0 (1)	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	36	< 0.5	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	36	< 0.5	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 5.0 (1)	< 0.5	< 0.5
VOC SURROGATE RECOVERY							
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	102	101	101
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	116	118	115
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	98	97
				Matrix :	Water	Water	Water
				Sampled on:	04/08/30 15:25	04/08/30 15:10	04/08/30 15:00

Result comments and/or text results :

(1) MDL raised due to sample dilution.

09-Sep-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute			
				Lab ID :	14046295	14046296	14046297
				Client ID :	04-4	04-5	04-6
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1	1
METALS DISSOLVED							
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	0.0016	< 0.0005	< 0.0005
HYDROCARBONS							
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/09/09	04/09/09	04/09/09
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	< 0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	< 0.1	< 0.1	< 0.1
VOLATILE ORGANICS-MAH							
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05	04/09/05	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	< 0.5	0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
VOC SURROGATE RECOVERY							
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	102	101	100
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	116	109	112
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	99	98
				Matrix :	Water	Water	Water
				Sampled on:	04/08/30 16:10	04/08/30 18:15	04/08/30 15:15

09-Sep-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute			
				Lab ID :	14046298	14046299	14046300
				Client ID :	04-7	04-8	04-9
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1	1
METALS DISSOLVED							
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	< 0.0005	< 0.0005
HYDROCARBONS							
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/09/09	04/09/09	04/09/09
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	0.2	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	< 0.1	< 0.1	< 0.1
VOLATILE ORGANICS-MAH							
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05	04/09/05	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	59	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	7.8	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	6.4	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	6.4	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
VOC SURROGATE RECOVERY							
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	100	101	100
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	112	112	107
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	96	97	96
				Matrix :	Water	Water	Water
				Sampled on:	04/08/30 16:00	04/08/30 16:45	04/08/30 16:35

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute			
				Lab ID :	14046301	14046302	14046303
				Client ID :	04-10	DUPLICATE	BH9
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1	1
METALS DISSOLVED							
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	0.0010	---	< 0.0005
HYDROCARBONS							
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/09/09	---	04/09/09
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1	< 0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	< 0.1	---	< 0.1
VOLATILE ORGANICS-MAH							
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05	04/09/05	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5	< 0.5	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5	< 0.5	< 0.5
VOC SURROGATE RECOVERY							
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	97	99	98
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	113	112	115
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	99	98
				Matrix :	Water	Water	Water
				Sampled on:	04/08/30 15:30	04/08/30 15:10	04/08/30 17:10

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ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Sparcode	Parameter	Unit	MDL	Workroute	Lab ID : 14046307 Client ID : BH10	14046308 BH11	14046309 TRIP BLANK
PHYSICAL							
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1	1	1
METALS DISSOLVED							
Pb-DMS31	Lead Dissolved	mg/L	0.0005	Dissolved Waters:ICP/MS	< 0.0005	0.0011	---
HYDROCARBONS							
EX995641	TEH Extraction-Water	date		Hydrocarbons by GC/FID	04/09/09	04/09/09	---
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	1.8	< 0.1	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	1.3	< 0.1	< 0.1
PHC2PHCW	CCME PHC F2 C10-16	mg/L	0.1	Hydrocarbons by GC/FID	0.6	< 0.1	---
VOLATILE ORGANICS-MAH							
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05	04/09/05	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	370	8.6	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	82	< 0.5	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	8.4	< 0.5	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	46	< 0.5	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	40	< 0.5	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	5.8	< 0.5	< 0.5
VOC SURROGATE RECOVERY							
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	101	99	94
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	111	112	115
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98	98	97
				Matrix :	Water	Water	Water
				Sampled on:	04/08/30 17:50	04/08/30 17:30	04/09/02 14:45

09-Sep-04

ANALYTICAL REPORT

Client : AMEC EARTH & ENVIRONMENTAL
Project : WX05876

Lab ID : 14046310
Client ID : FIELD BLANK

Sparcode	Parameter	Unit	MDL	Workroute	
PHYSICAL					
TEMPARRI	Temperature Arrival	Celsius	0	Temperature on arrival	1
HYDROCARBONS					
PHC1PT17	CCME PHC F1 C6-10	mg/L	0.1	CCME F1 by P&T GC/FID	< 0.1
HC1-CAL1	CCME PHC F1-BTEX	mg/L		Calculated Result	< 0.1
VOLATILE ORGANICS-MAH					
EX995172	Volat. Wat. Pre-Scr.	date		BTEX by GC/MS 8260	04/09/05
B020PT11	Benzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5
B021PT11	Ethylbenzene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5
T001PT11	Toluene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5
X_8842_5	Xylenes	ug/L	0.5	Calculated Result	< 0.5
X003PT11	m,p - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5
X002PT11	o - Xylene	ug/L	0.5	BTEX by GC/MS 8260	< 0.5
VOC SURROGATE RECOVERY					
VS01PT11	Bromofluorobenzene	%	0	BTEX by GC/MS 8260	99
VS02PT11	d4-1,2-dichloroethane	%	0	BTEX by GC/MS 8260	111
VS03PT11	d8-Toluene	%	0	BTEX by GC/MS 8260	98

Matrix : Water
Sampled on: 04/08/30 10:30

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DUPLICATE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Duplicate Conc.	MDL	Unit	Relative % Diff.
Benzene	04-5	14046296	< 0.5	< 0.5	0.5	ug/L	0.00
Toluene	04-5	14046296	< 0.5	< 0.5	0.5	ug/L	0.00
Ethylbenzene	04-5	14046296	< 0.5	< 0.5	0.5	ug/L	0.00
m,p - Xylene	04-5	14046296	< 0.5	< 0.5	0.5	ug/L	0.00
o - Xylene	04-5	14046296	< 0.5	< 0.5	0.5	ug/L	0.00
CCME PHC F1 C6-10	04-5	14046296	< 0.1	< 0.1	0.1	mg/L	0.00

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SPIKE SUMMARY

Parameter	Client ID	Lab ID	Sample Conc.	Sample & Spike Conc.	Spike Amount	Unit	Percent Recovery
Benzene	Blank Spike. Batch :	45202788	< 0.5	10	10	ug/L	102
Toluene	Blank Spike. Batch :	45202788	< 0.5	9.8	10	ug/L	98
Ethylbenzene	Blank Spike. Batch :	45202788	< 0.5	10	10	ug/L	100
m,p - Xylene	Blank Spike. Batch :	45202788	< 0.5	19	20	ug/L	96
o - Xylene	Blank Spike. Batch :	45202788	< 0.5	10	10	ug/L	100
CCME PHC F2 C10-16	Blank Spike. Batch :	45701064	< 0.1	3.8	4.24	mg/L	90
Lead Dissolved	Blank Spike. Batch :	44202291	< 0.0005	0.0201	.02	mg/L	100
Benzene	04-9	14046300	< 0.5	9.9	10	ug/L	98
Toluene	04-9	14046300	< 0.5	9.4	10	ug/L	94
Ethylbenzene	04-9	14046300	< 0.5	9.6	10	ug/L	96
m,p - Xylene	04-9	14046300	< 0.5	19	20	ug/L	93
o - Xylene	04-9	14046300	< 0.5	9.6	10	ug/L	96

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ANALYSIS DATES

	Lab ID :	14046292	14046293	14046294	14046295
	Client ID:	04-1	04-2	04-3	04-4
Pb-DMS31	Lead Dissolved	03-SEP-2004	03-SEP-2004	03-SEP-2004	03-SEP-2004
PHC2PHCW	CCME PHC F2 C10-16	08-SEP-2004	08-SEP-2004	08-SEP-2004	08-SEP-2004
PKG-BT32	BTEX-CCME F1 WATER	05-SEP-2004	05-SEP-2004	05-SEP-2004	05-SEP-2004
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

	Lab ID :	14046296	14046297	14046298	14046299
	Client ID:	04-5	04-6	04-7	04-8
Pb-DMS31	Lead Dissolved	03-SEP-2004	03-SEP-2004	03-SEP-2004	03-SEP-2004
PHC2PHCW	CCME PHC F2 C10-16	08-SEP-2004	08-SEP-2004	08-SEP-2004	08-SEP-2004
PKG-BT32	BTEX-CCME F1 WATER	05-SEP-2004	05-SEP-2004	05-SEP-2004	05-SEP-2004
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

	Lab ID :	14046300	14046301	14046302	14046303
	Client ID:	04-9	04-10	DUPLICATE	BH9
Pb-DMS31	Lead Dissolved	03-SEP-2004	03-SEP-2004	---	03-SEP-2004
PHC2PHCW	CCME PHC F2 C10-16	08-SEP-2004	08-SEP-2004	---	08-SEP-2004
PKG-BT32	BTEX-CCME F1 WATER	05-SEP-2004	05-SEP-2004	05-SEP-2004	05-SEP-2004
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

09-Sep-04

ANALYSIS DATES

	Lab ID : Client ID:	14046307 BH10	14046308 BH11	14046309 TRIP BLANK	14046310 FIELD BLANK
Pb-DMS31	Lead Dissolved	03-SEP-2004	03-SEP-2004	---	---
PHC2PHCW	CCME PHC F2 C10-16	08-SEP-2004	08-SEP-2004	---	---
PKG-BT32	BTEX-CCME F1 WATER	05-SEP-2004	05-SEP-2004	05-SEP-2004	05-SEP-2004
	Matrix: Sampled on:	Water 30-AUG-2004	Water 30-AUG-2004	Water 2-SEP-2004	Water 30-AUG-2004

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BATCH NUMBERS

	Lab ID :	14046292	14046293	14046294	14046295
	Client ID:	04-1	04-2	04-3	04-4
Pb-DMS31	Lead Dissolved	44202291	44202291	44202291	44202291
PHC2PHCW	CCME PHC F2 C10-16	45701064	45701064	45701064	45701064
PKG-BT32	BTEX-CCME F1 WATER	45202788	45202788	45202788	45202788
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

	Lab ID :	14046296	14046297	14046298	14046299
	Client ID:	04-5	04-6	04-7	04-8
Pb-DMS31	Lead Dissolved	44202291	44202291	44202291	44202291
PHC2PHCW	CCME PHC F2 C10-16	45701064	45701064	45701064	45701064
PKG-BT32	BTEX-CCME F1 WATER	45202788	45202788	45202788	45202788
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

	Lab ID :	14046300	14046301	14046302	14046303
	Client ID:	04-9	04-10	DUPLICATE	BH9
Pb-DMS31	Lead Dissolved	44202291	44202291	---	44202291
PHC2PHCW	CCME PHC F2 C10-16	45701064	45701064	---	45701064
PKG-BT32	BTEX-CCME F1 WATER	45202788	45202788	45202788	45202788
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	30-AUG-2004	30-AUG-2004

	Lab ID :	14046307	14046308	14046309	14046310
	Client ID:	BH10	BH11	TRIP BLANK	FIELD BLANK
Pb-DMS31	Lead Dissolved	44202291	44202291	---	---
PHC2PHCW	CCME PHC F2 C10-16	45701064	45701064	---	---
PKG-BT32	BTEX-CCME F1 WATER	45202788	45202788	45202788	45202788
	Matrix:	Water	Water	Water	Water
	Sampled on:	30-AUG-2004	30-AUG-2004	2-SEP-2004	30-AUG-2004

09-Sep-04
Page 13 of 13

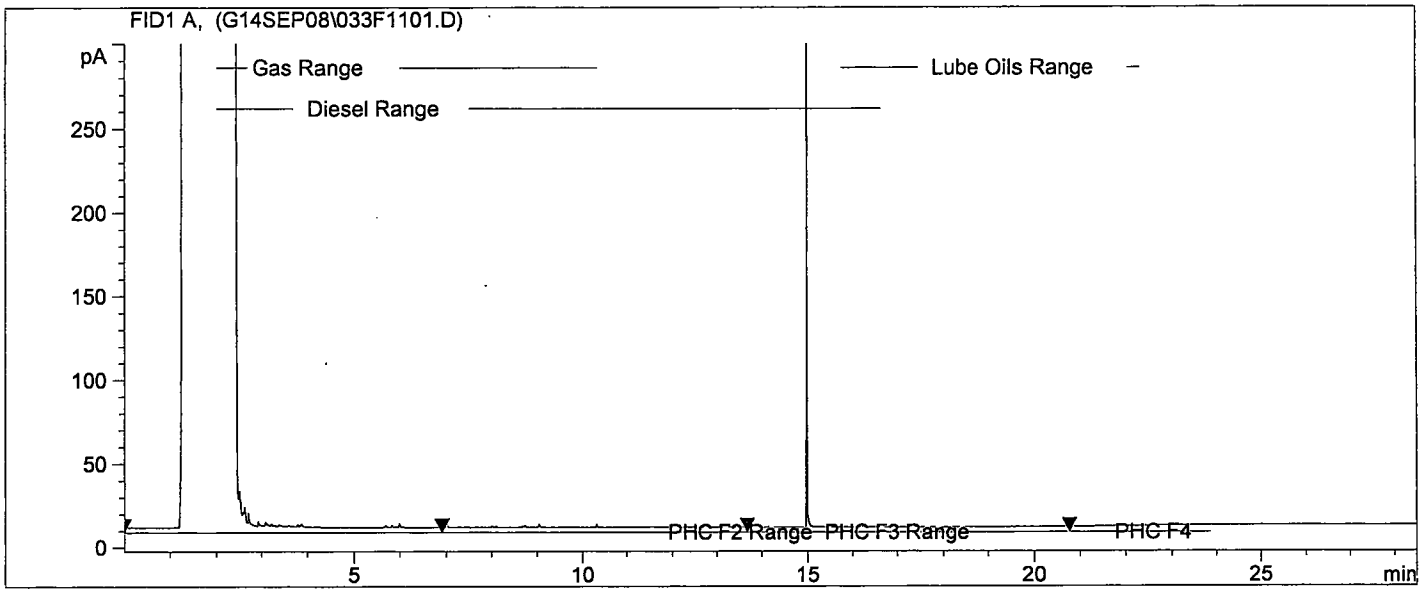
BLANK SUMMARY

All method blanks were less than MDL

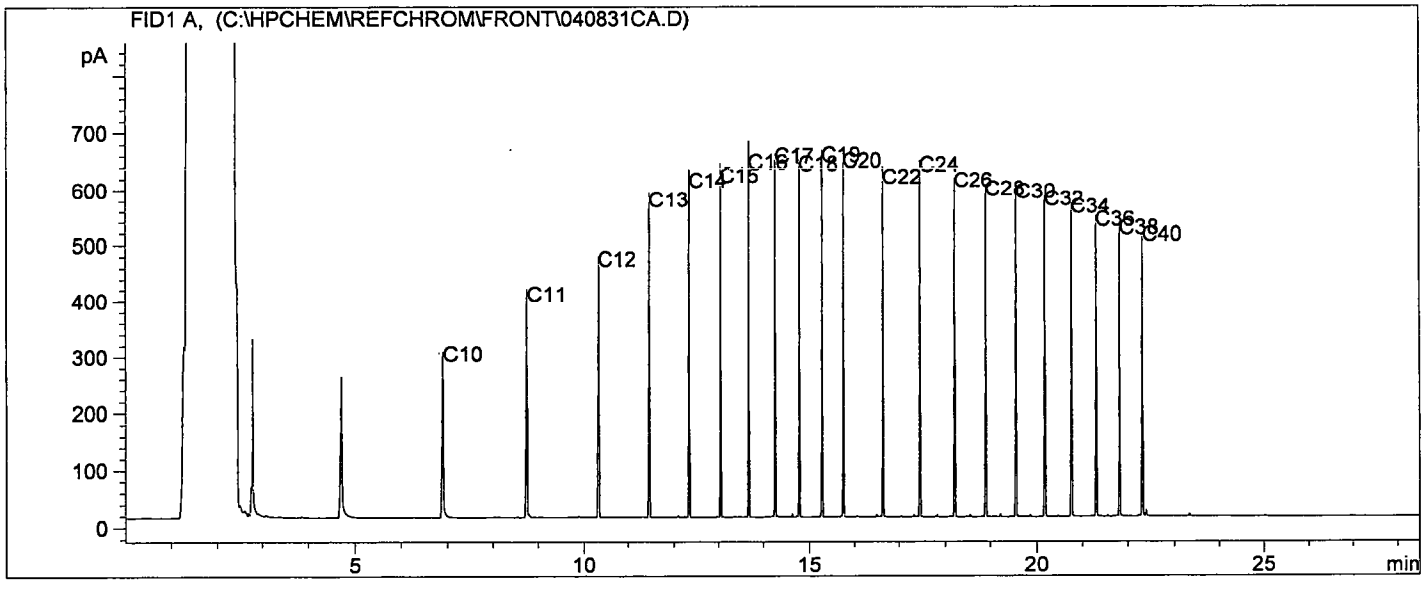
Sample ID: 46292
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 6:48:24 PM
Multiplier: 1

04-1

Operator: IT
Vial: 33
Sequence line#: 11



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

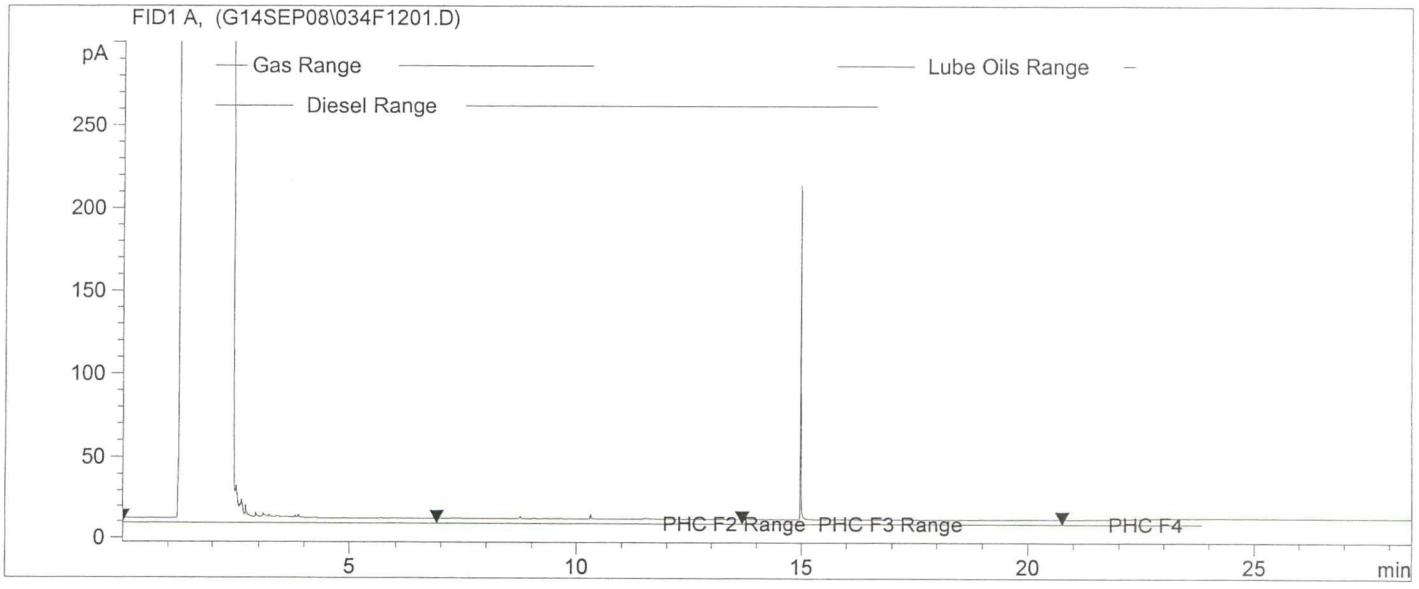
PSC

ANALYTICAL SERVICES

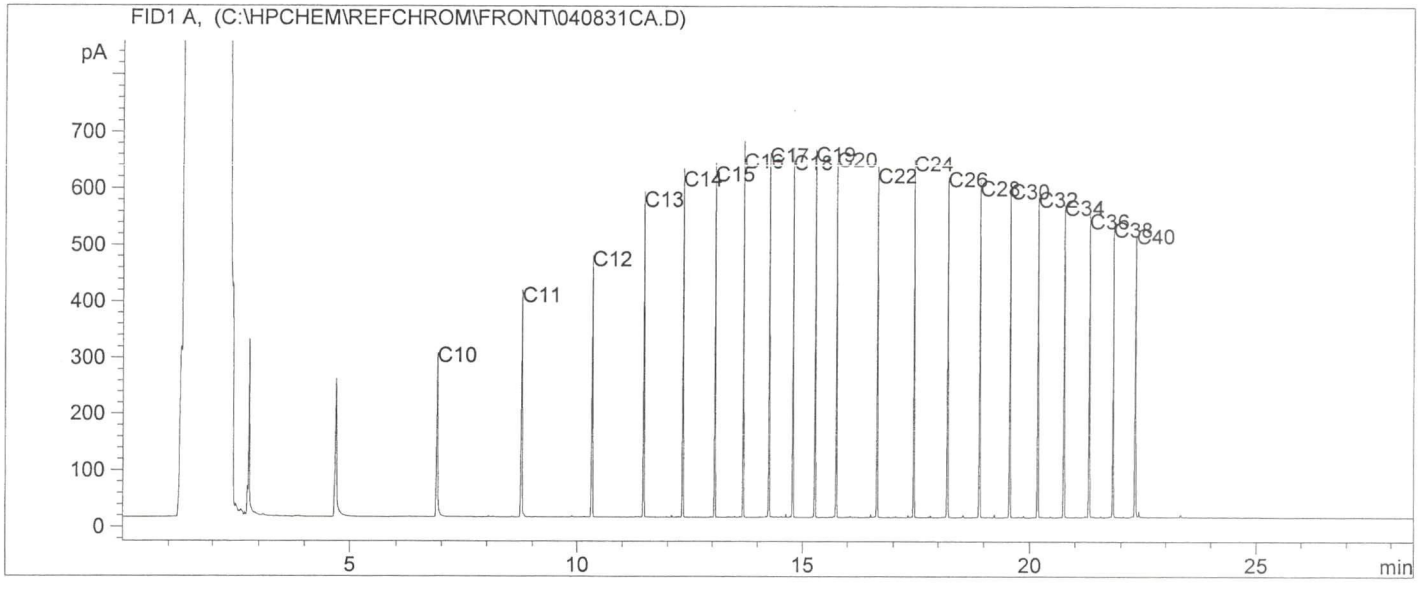
Sample ID: 46293
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 7:29:04 PM
Multiplier: 1

04-2

Operator: IT
Vial: 34
Sequence line#: 12



Carbon Range Reference Chromatogram at approx. 25ppm

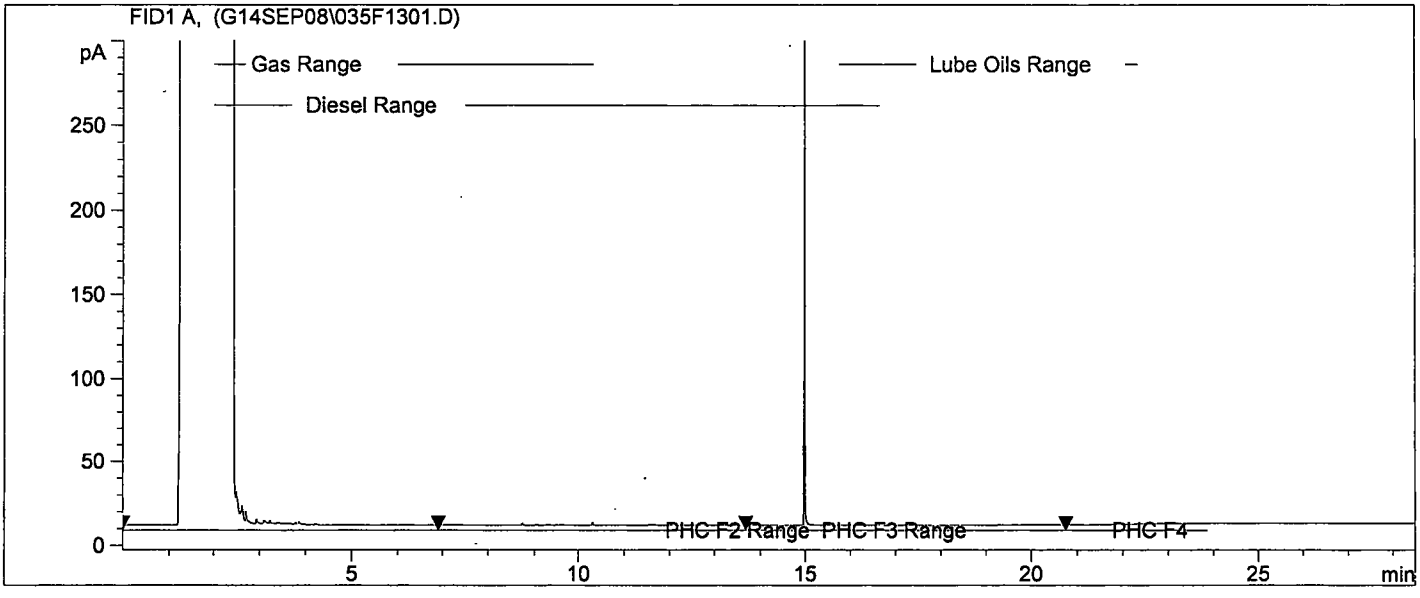


TYPICAL PRODUCT CARBON NUMBER RANGES

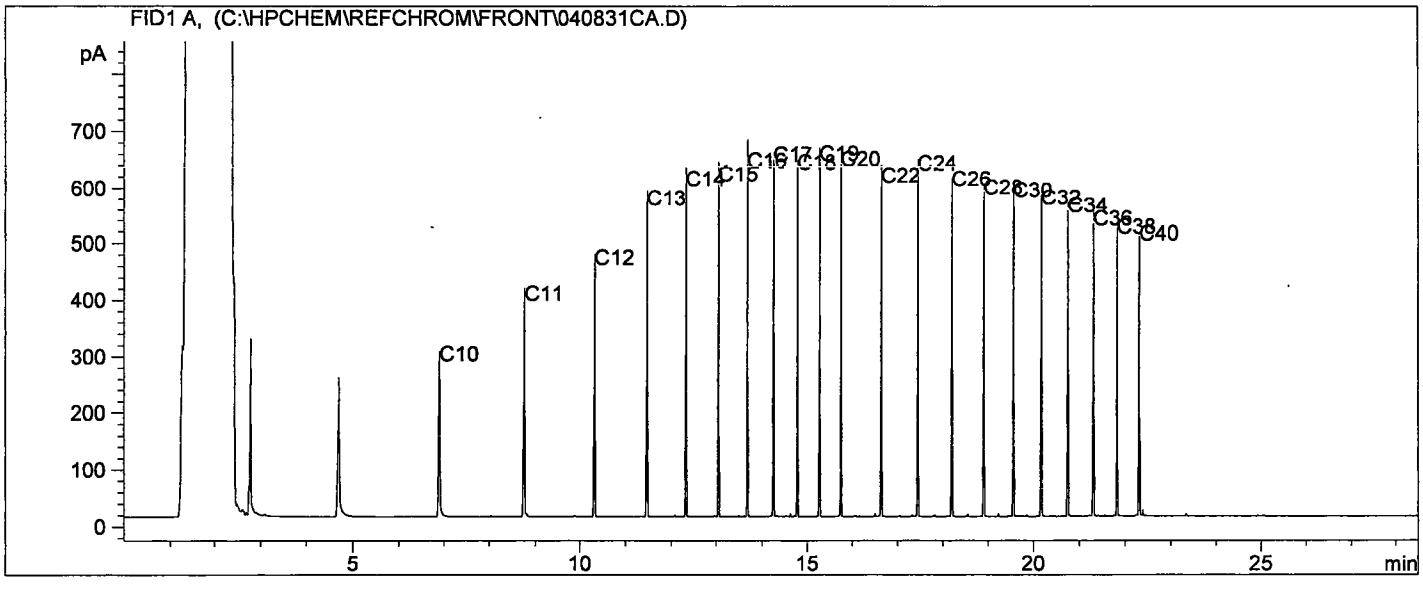
Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

Sample ID: 46294 04-3
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 8:09:29 PM
Multiplier: 1

Operator: IT
Vial: 35
Sequence line#: 13



Carbon Range Reference Chromatogram at approx. 25ppm



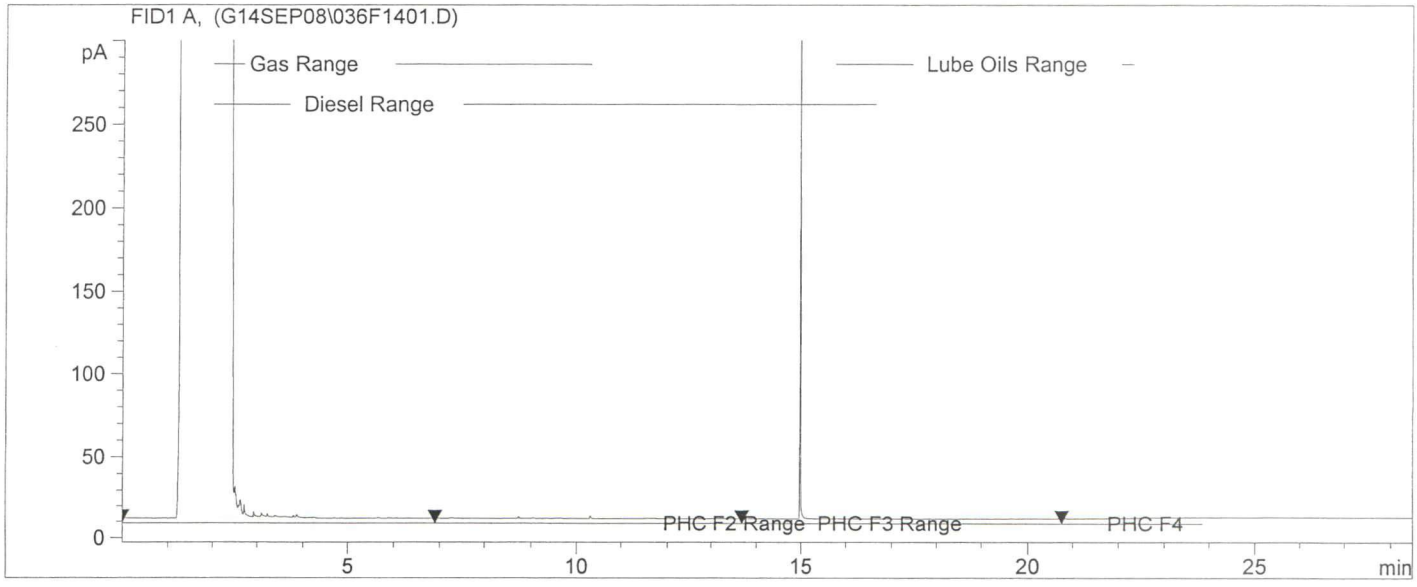
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12		Diesel:	C8 - C22
Varsol:	C8 - C12		Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16		Crude Oils:	C3 - C60+

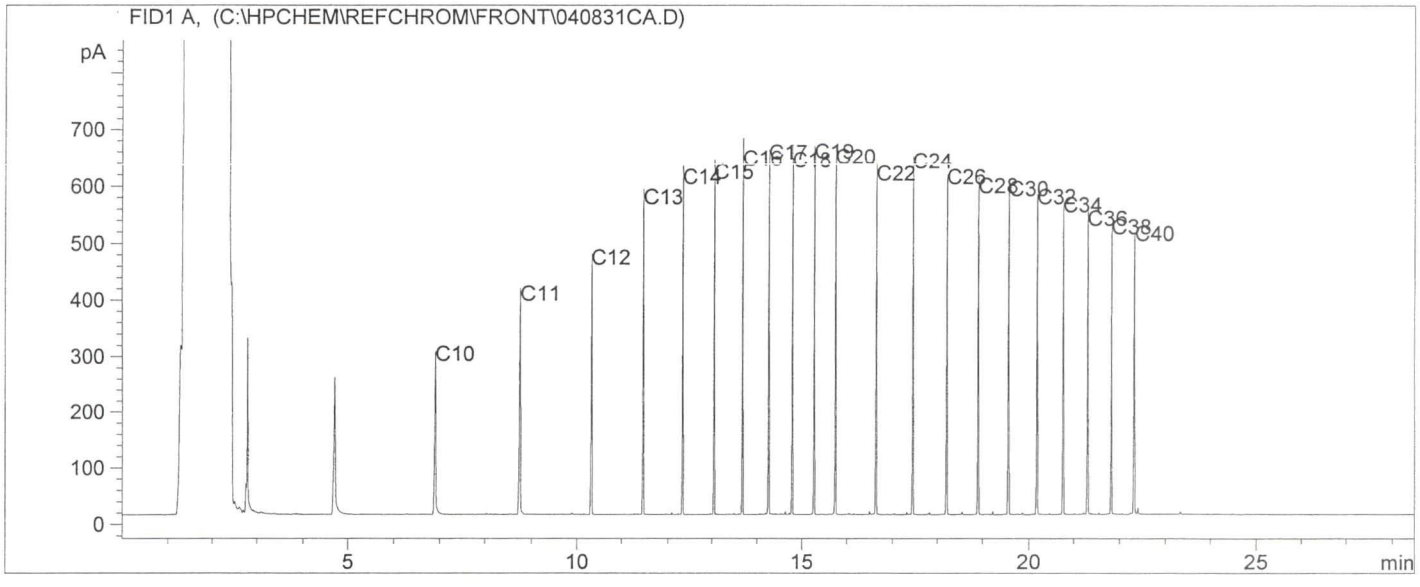
04-4

Sample ID: 46295
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 8:50:03 PM
Multiplier: 1

Operator: IT
Vial: 36
Sequence line#: 14



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

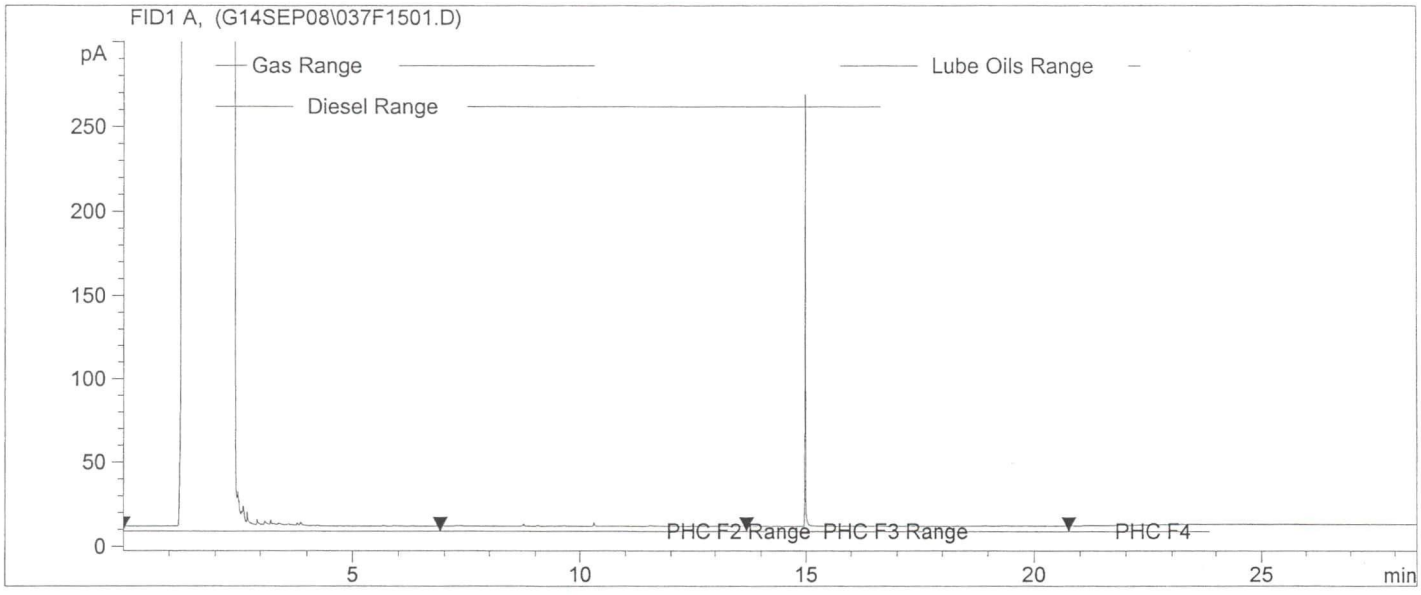
PSC

ANALYTICAL SERVICES

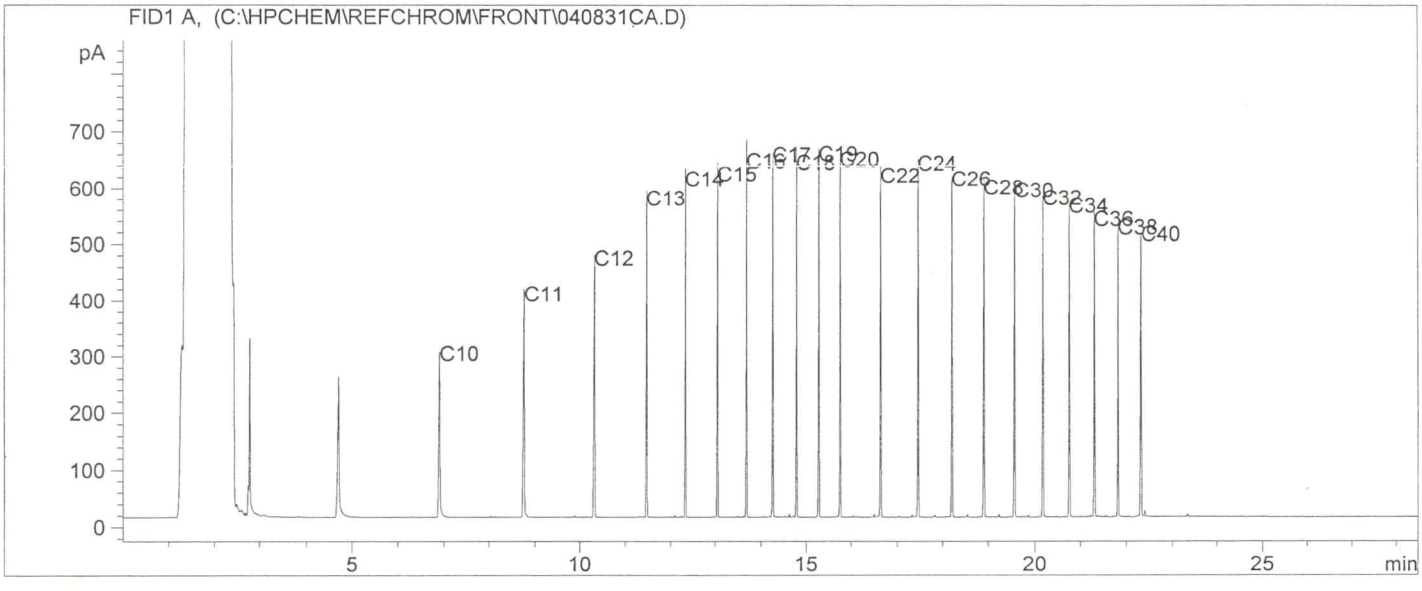
04-5

Sample ID: 46296
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 9:30:08 PM
Multiplier: 1

Operator: IT
Vial: 37
Sequence line#: 15



Carbon Range Reference Chromatogram at approx. 25ppm



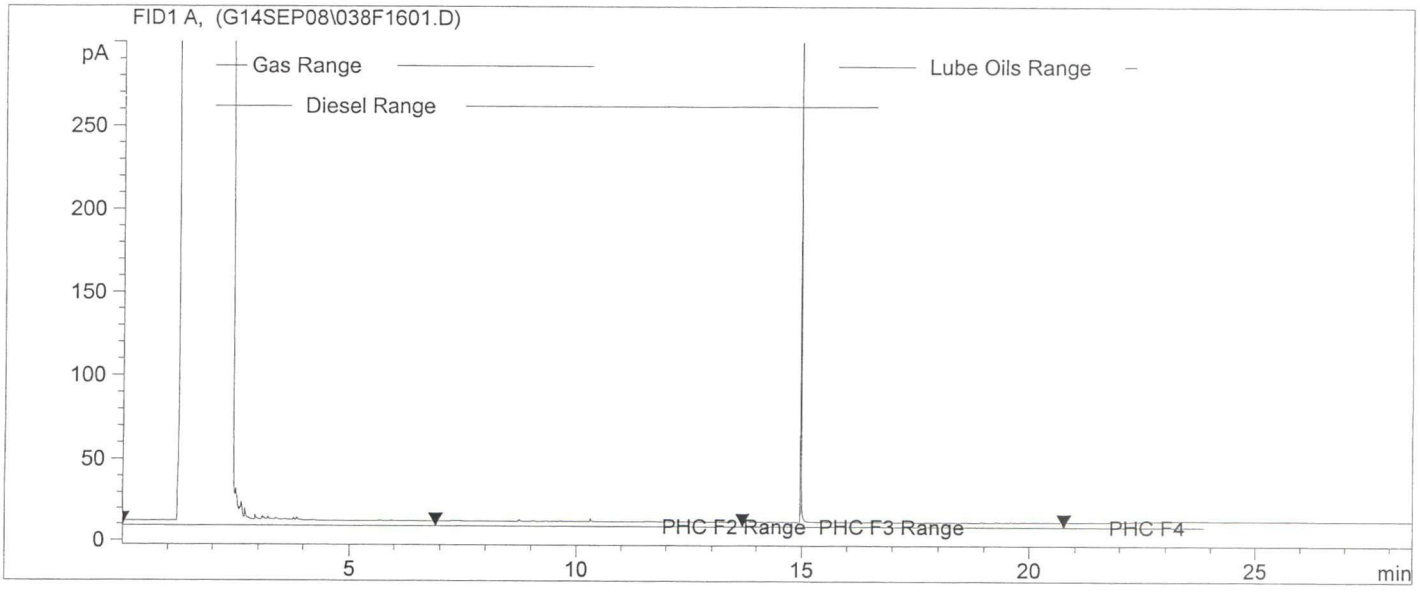
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

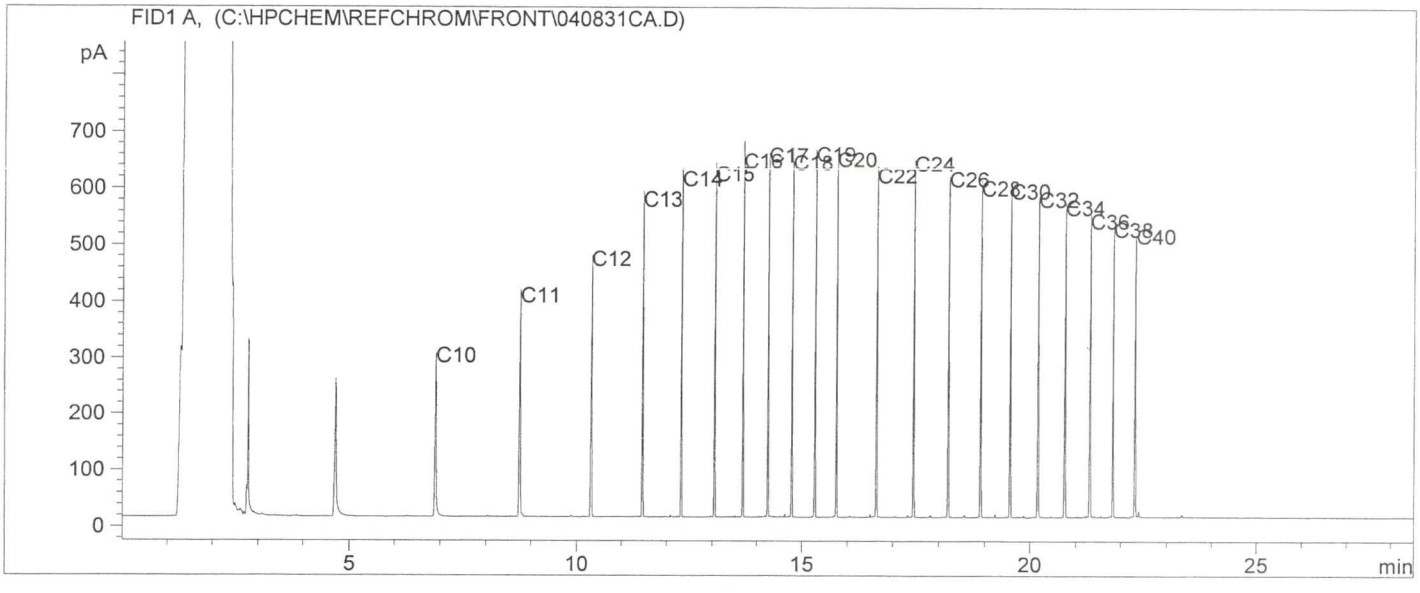
04-6

Sample ID: 46297
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 10:10:32 PM
Multiplier: 1

Operator: IT
Vial: 38
Sequence line#: 16



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

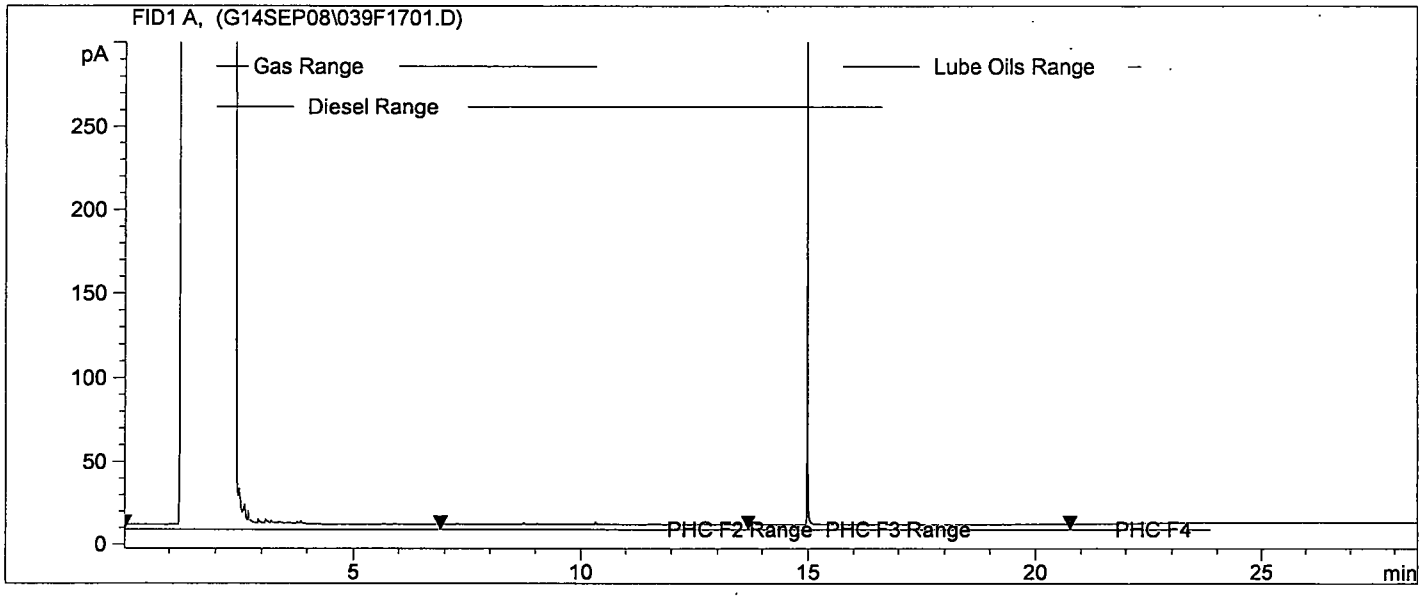
Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

PSC

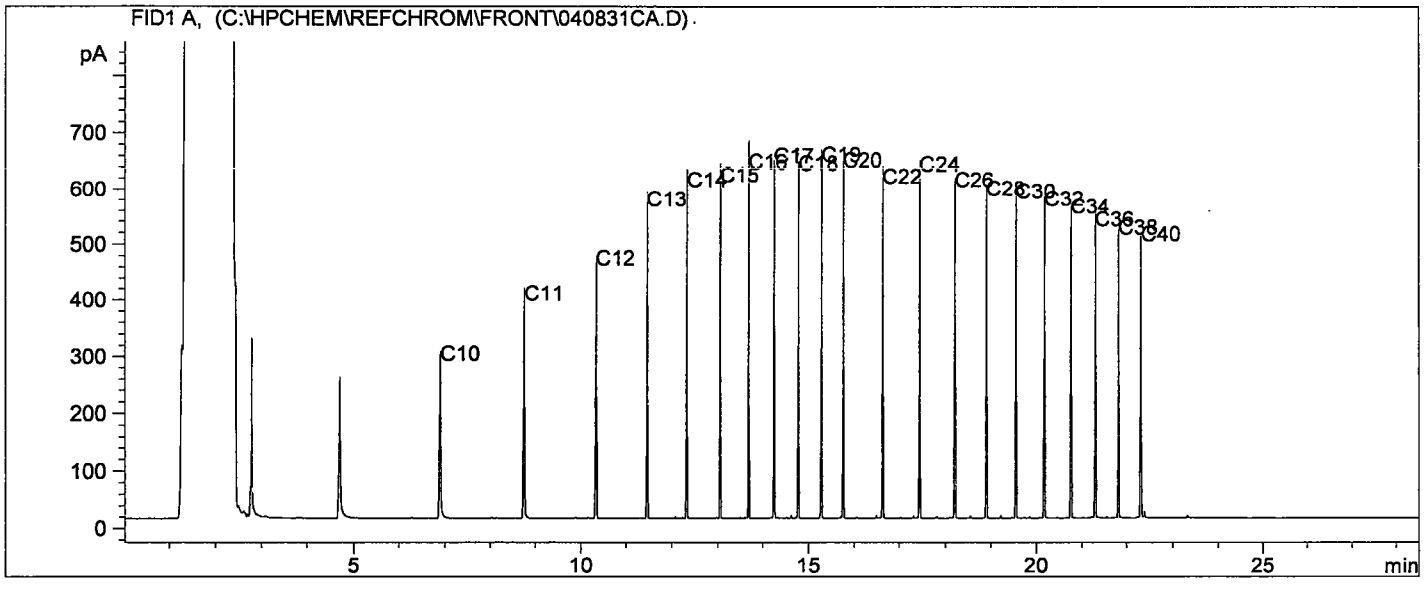
ANALYTICAL SERVICES

Sample ID: 46298 04-7
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 10:50:24 PM
Multiplier: 1

Operator: IT
Vial: 39
Sequence line#: 17



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12		Diesel:	C8 - C22	
Varsol:	C8 - C12		Lubricating Oils:	C20 - C40	
Kerosene:	C7 - C16		Crude Oils:	C3 - C60+	

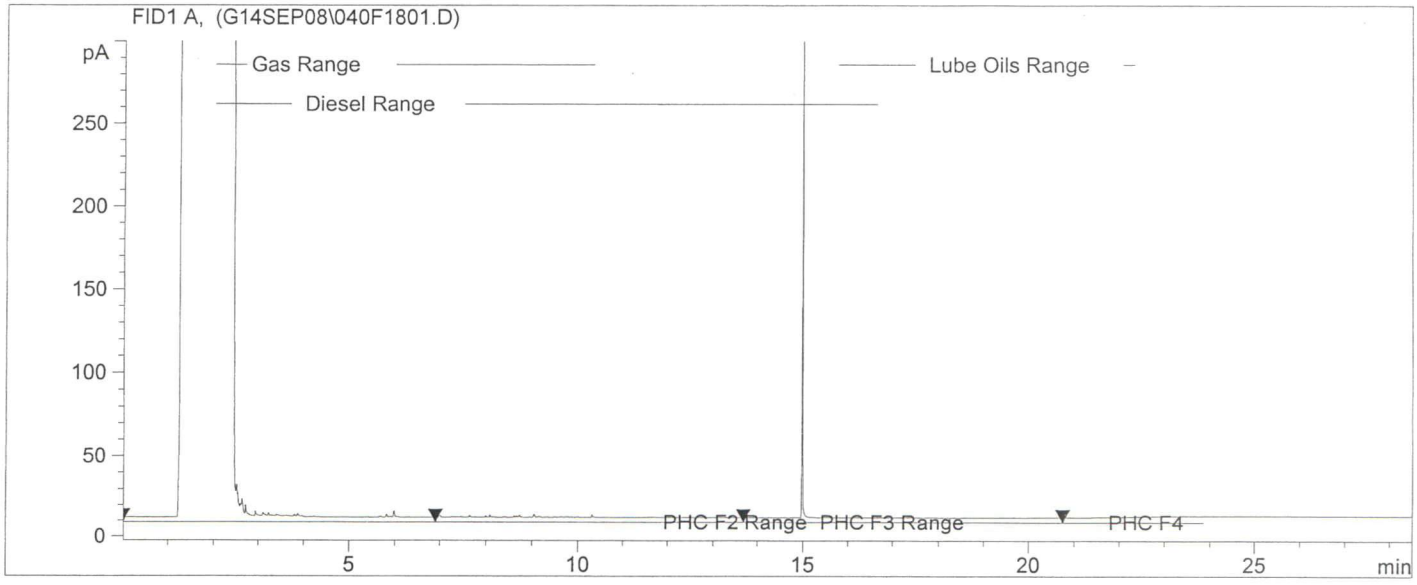
PSC

ANALYTICAL SERVICES

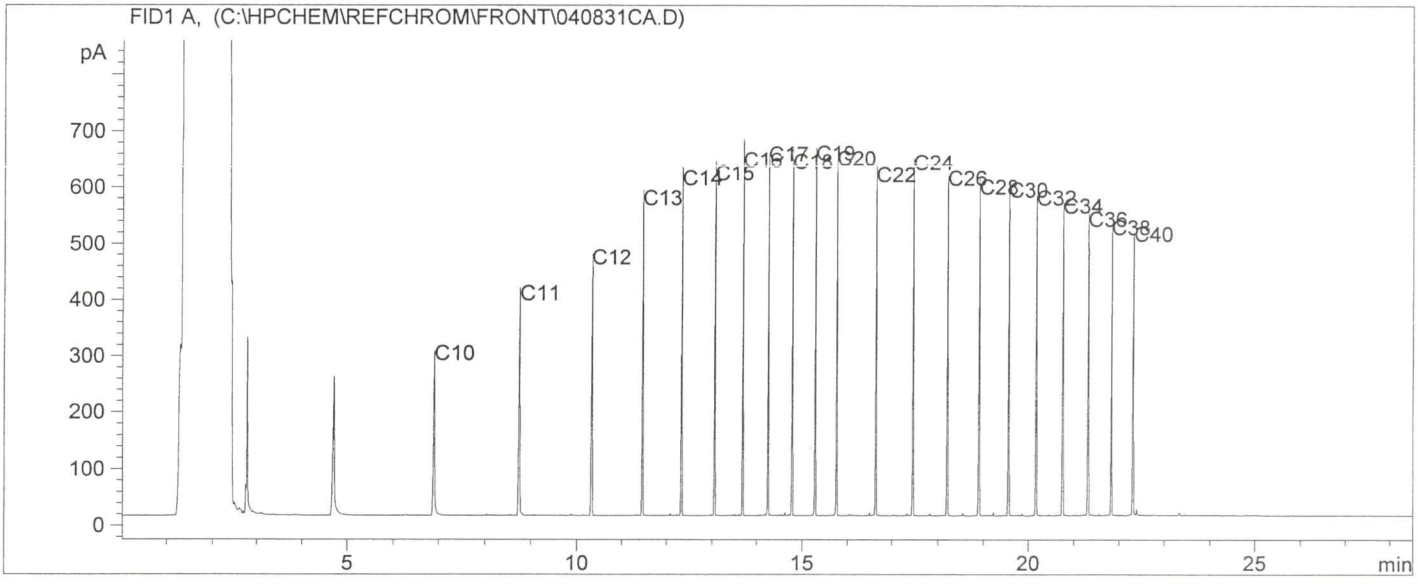
04-8

Sample ID: 46299
Method File: CCMEWW.M
Date & Time Analyzed: 9/8/2004 11:30:42 PM
Multiplier: 1

Operator: IT
Vial: 40
Sequence line#: 18



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

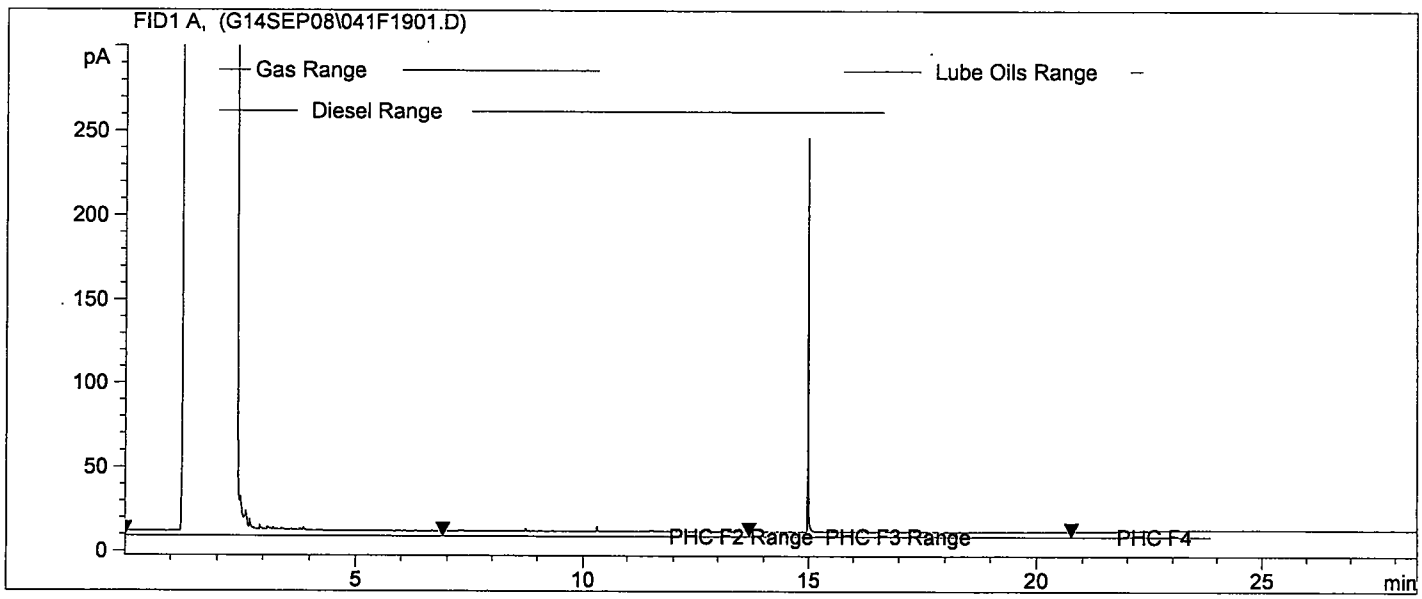
PSC

ANALYTICAL SERVICES

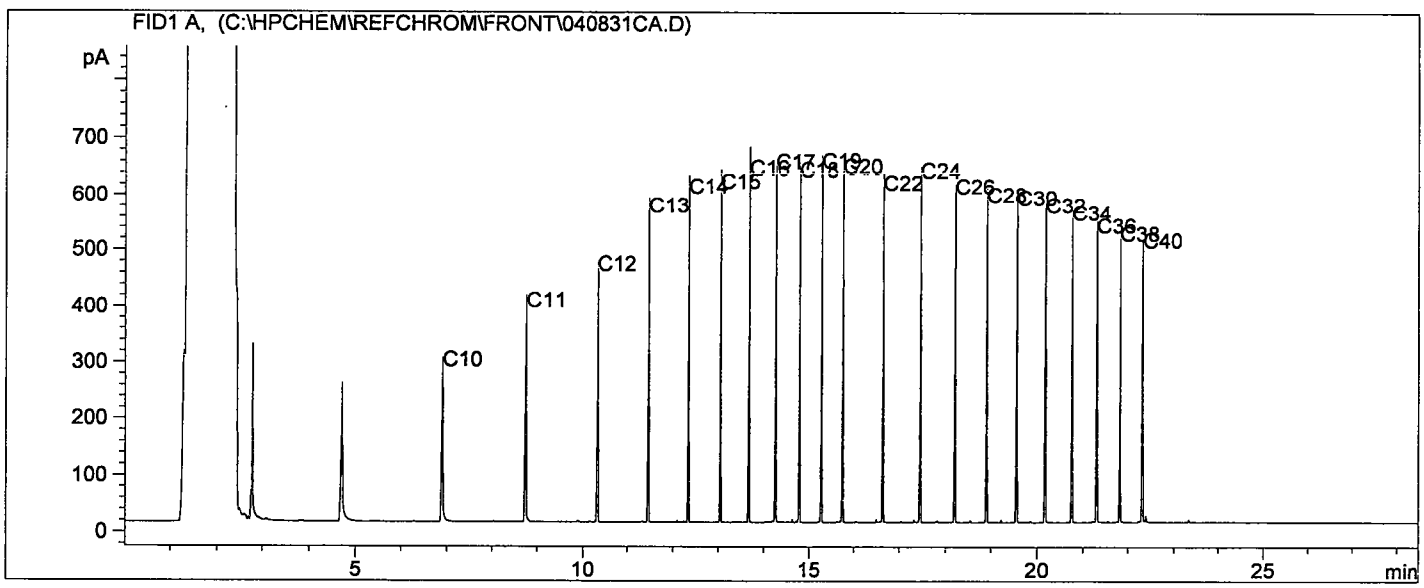
04-9

Sample ID: 46300
Method File: CCMEWW.M
Date & Time Analyzed: 9/9/2004 12:10:17 AM
Multiplier: 1

Operator: IT
Vial: 41
Sequence line#: 19



Carbon Range Reference Chromatogram at approx. 25ppm



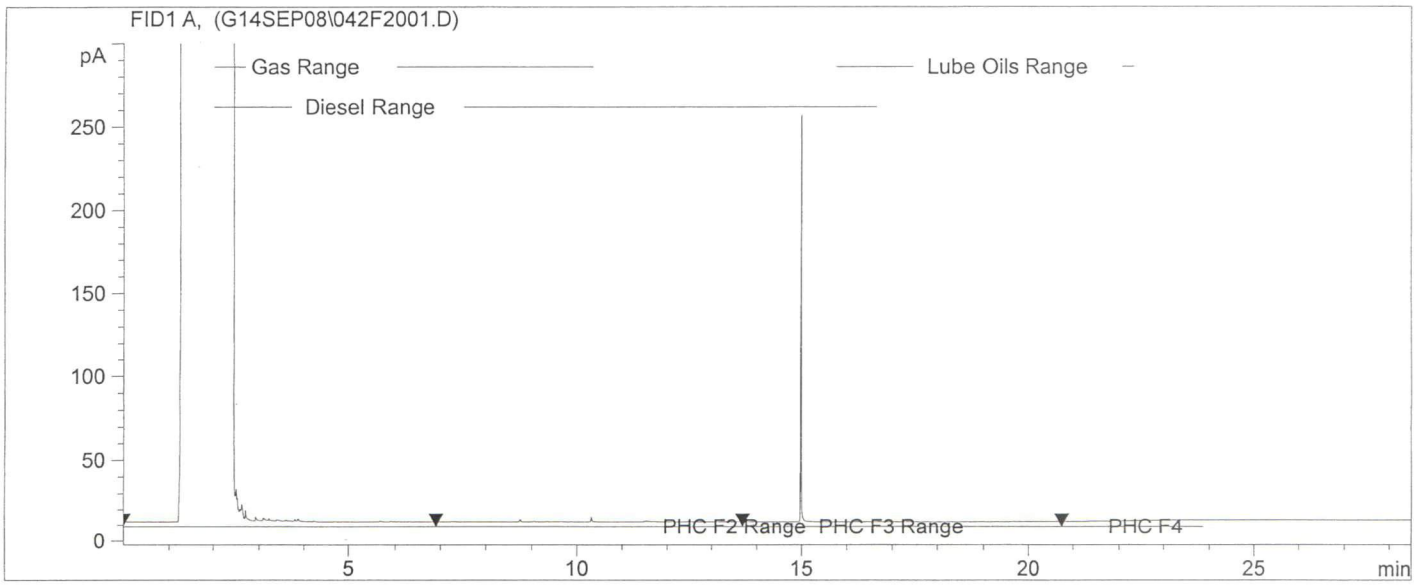
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

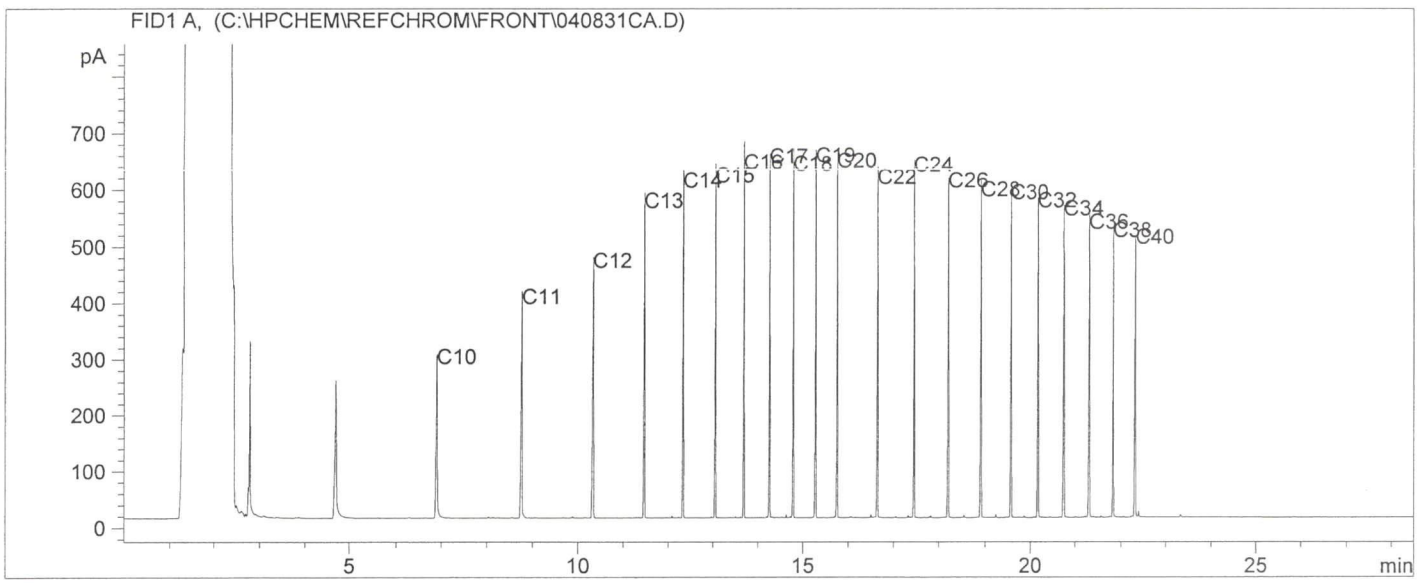
04-10

Sample ID: 46301
Method File: CCMEWW.M
Date & Time Analyzed: 9/9/2004 12:50:23 AM
Multiplier: 1

Operator: IT
Vial: 42
Sequence line#: 20



Carbon Range Reference Chromatogram at approx. 25ppm



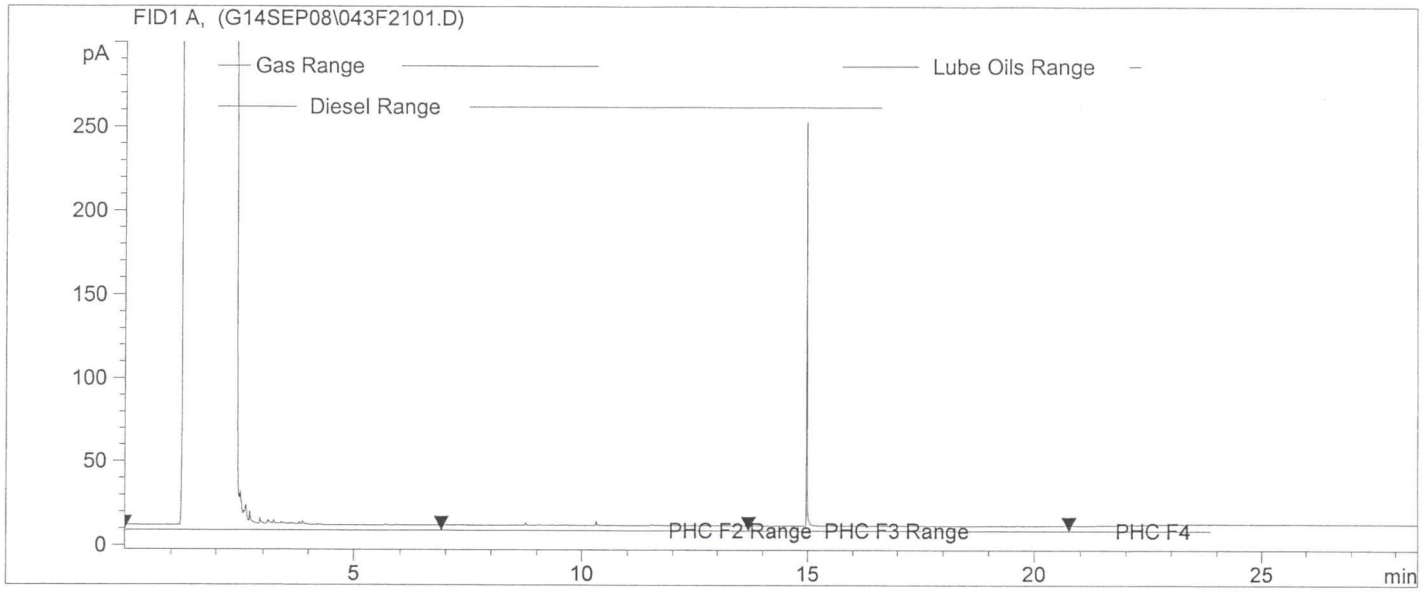
TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

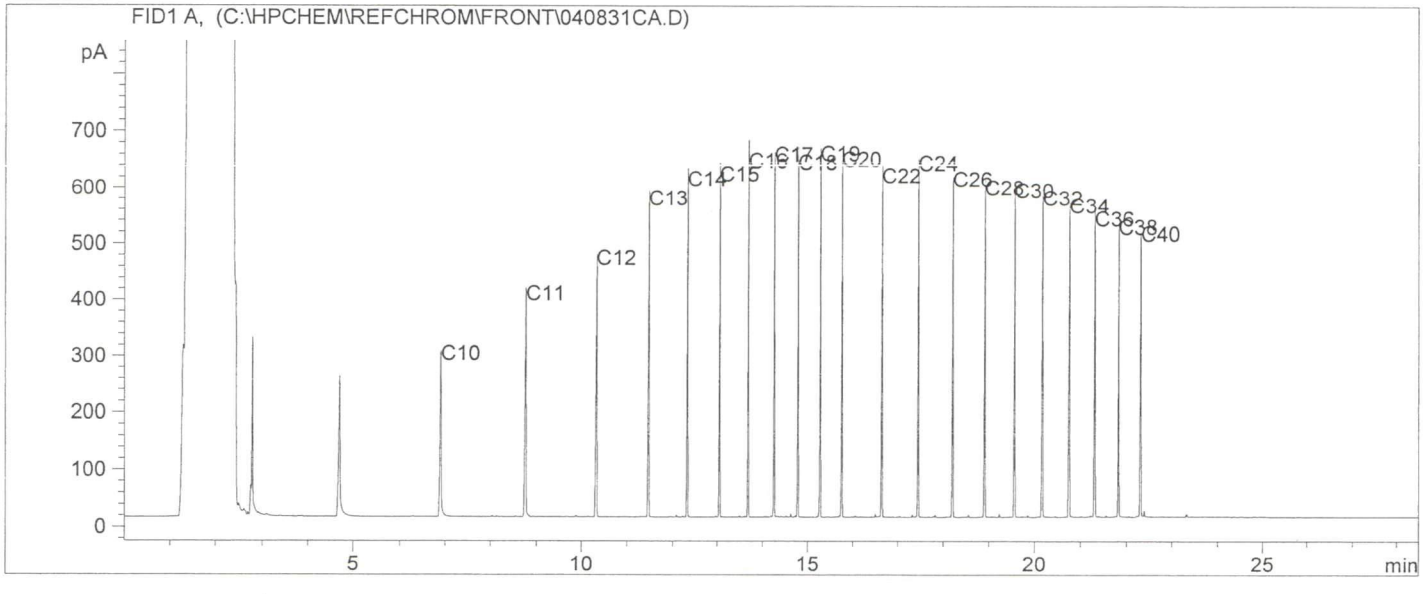
BH9

Sample ID: 46303
Method File: CCMEWW.M
Date & Time Analyzed: 9/9/2004 1:29:55 AM
Multiplier: 1

Operator: IT
Vial: 43
Sequence line#: 21



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

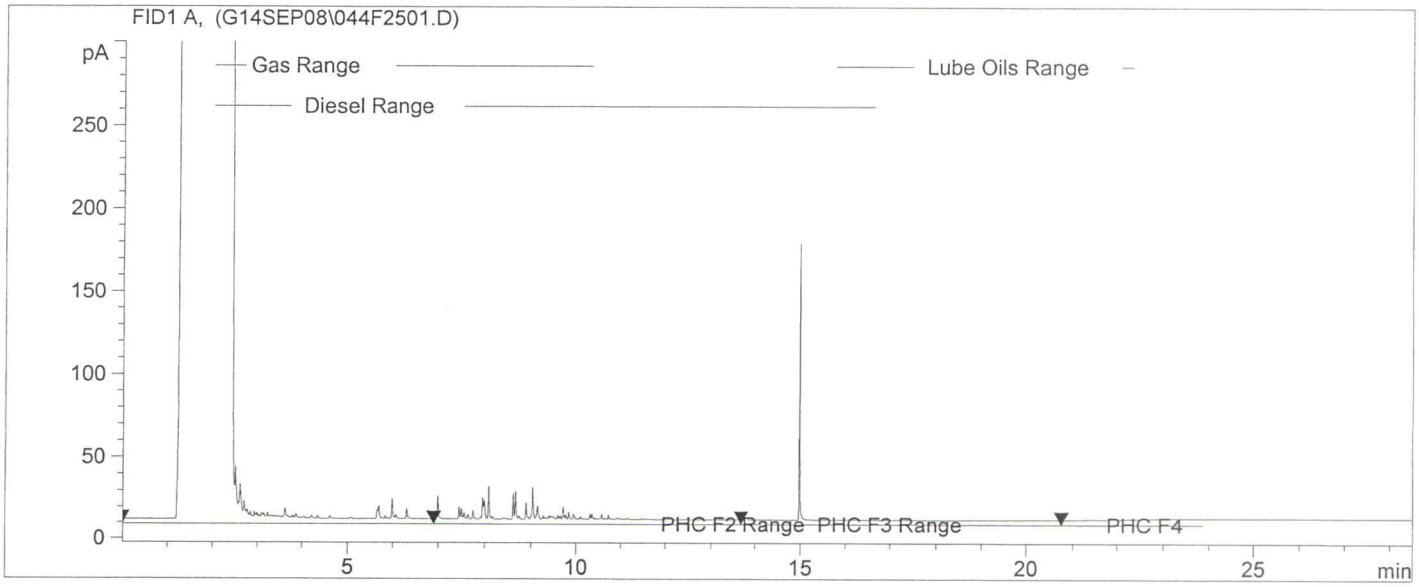
PSC

ANALYTICAL SERVICES

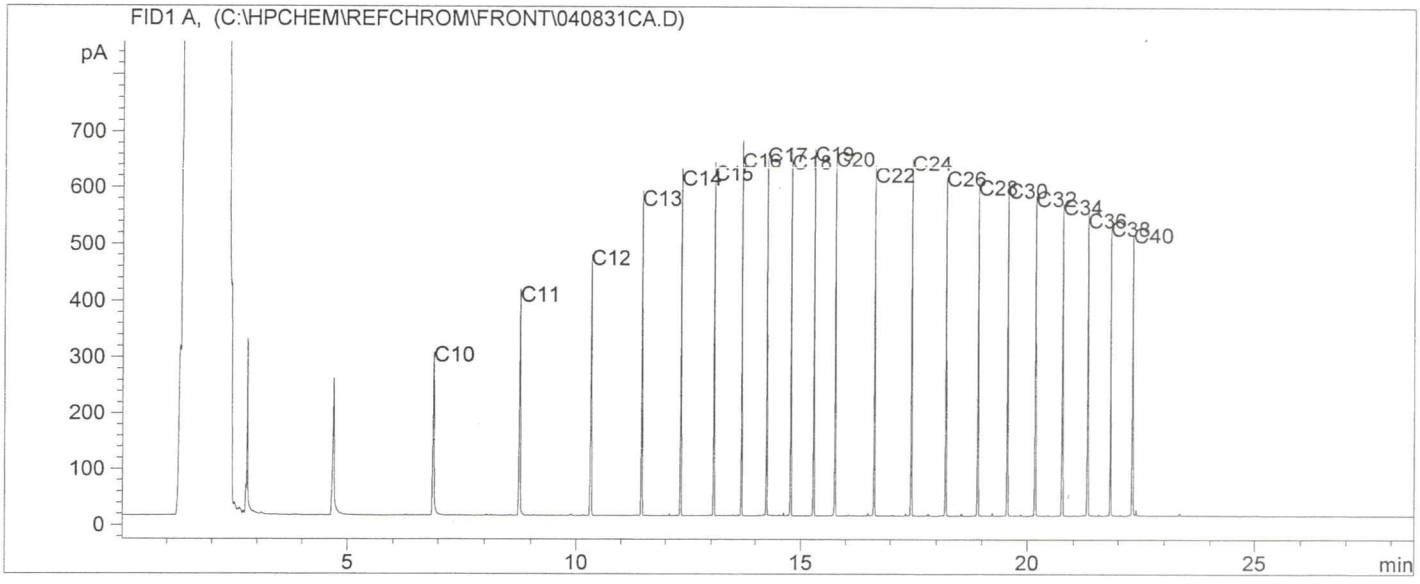
BH10

Sample ID: 46307
Method File: CCMEWW.M
Date & Time Analyzed: 9/9/2004 4:09:37 AM
Multiplier: 1

Operator: IT
Vial: 44
Sequence line#: 25



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

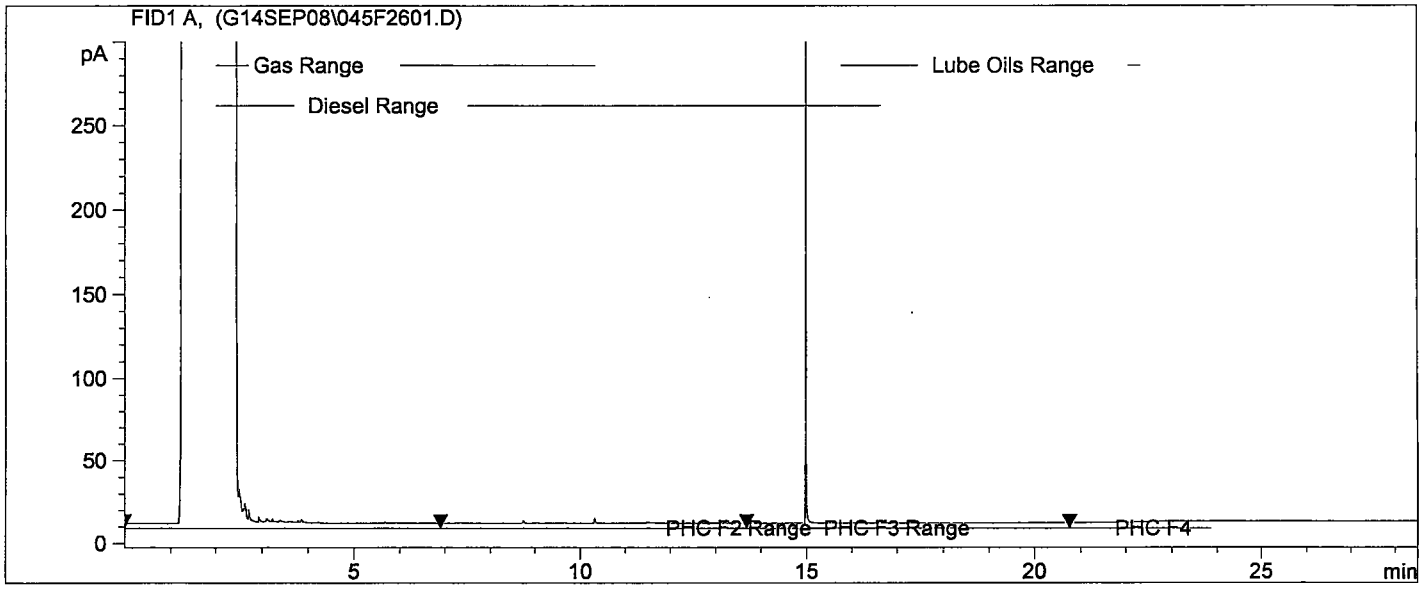
Gasoline:	C4	- C12	Diesel:	C8	- C22
Varsol:	C8	- C12	Lubricating Oils:	C20	- C40
Kerosene:	C7	- C16	Crude Oils:	C3	- C60+

PSC

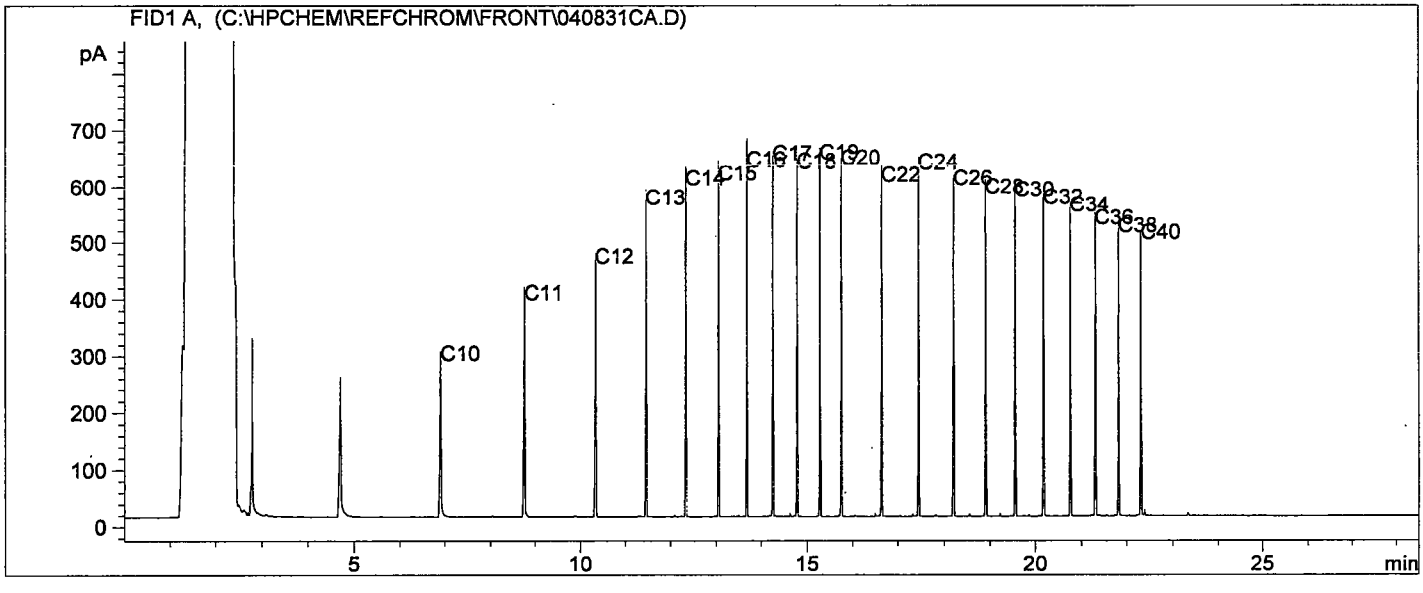
ANALYTICAL SERVICES

Sample ID: 46308 BH 11
Method File: CCMEWW.M
Date & Time Analyzed: 9/9/2004 4:49:19 AM
Multiplier: 1

Operator: IT
Vial: 45
Sequence line#: 26



Carbon Range Reference Chromatogram at approx. 25ppm



TYPICAL PRODUCT CARBON NUMBER RANGES

Gasoline:	C4 - C12	Diesel:	C8 - C22
Varsol:	C8 - C12	Lubricating Oils:	C20 - C40
Kerosene:	C7 - C16	Crude Oils:	C3 - C60+

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: AMEC Date: Sep 02 04 Initial: MF C of C #: 8111246

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER:	PRESERVATIVE CHECK
1						1			1										3					
2						1			1										3					
3						1			1										3					
4						1			1										3					
5						1			1										3					
6						1			1										3					
7						1			1										3					
8						1			1										3					
9						1			1										3					
10						1			1										3					
11																			3					
12						1			1										3					

Item #

1.		Custody Seal not Intact
2.		Temp > 10 degrees C
3.		Broken Bottle in Transit
4.		No C of C
5.		C of C information Incomplete
6.		C of C not signed/dated by consultant
7.		Non-current C of C
8.		Bottles listed on C of C, but not in shipment
9.		Bottles in shipment, but not on C of C
10.		Analysis Requirements absent/not clear
11.	X	Labelling Issue (missing/and/or incorrect)
12.		Samples received >5 days after sampling
13.		Samples received after hold time
14.		Wrong Bottle(s) used
15.		Incorrect Preservation or Headspace present
16.		Insufficient # of bottles (no flag by consultant if insufficient sample available in field)
17.		Incorrect Task Order # provided to lab

	Anomalies
	Insufficient Sample (lab use only)

o Poured off anions

Comments: Labels on the WI don't match labels on ~~the~~ Bottle
SR taken the labels

	Temperature			Average
Cooler #1	1	1	1	1
Cooler #2	1	1	1	1
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs:

PSC ANALYTICAL SERVICES SAMPLE INTEGRITY RECORD – The following bottles were received for the below project:

Client: AMEC Date: Sep 02/04 Initial: HF C of C #: 8111247

Sample#	125ML CLEAR GLASS	250ML CLEAR GLASS	1L AMBER GLASS	1L CLEAR GLASS	1L PLASTIC	500ML AMBER GLASS	250 ML AMBER GLASS	500ML PLASTIC	250ML PLASTIC	250ML PLASTIC FILTERED	250ML PLASTIC HNO3	250ML PLASTIC FILTER/HNO3	250ML PLASTIC H2SO4	250ML PLASTIC FILT/H2SO4	250 ML PLASTIC NaOH	250ML PLASTIC NaOH/ZnAc	Microbiology Bottle	100ml AMBER GLASS H2SO4	40ML AMBER VIALS	40 ml CLEAR VIALS	PLASTIC BAG	AIR SAMPLE	OTHER:	PRESERVATIVE CHECK
1						1			1										3					
2						1			1										3					
3																			1					
4																			1					
5																								
6																								
7																								
8																								
9																								
10																								
11																								
12																								

Item #

1.		Custody Seal not Intact
2.		Temp > 10 degrees C
3.		Broken Bottle in Transit
4.		No C of C
5.		C of C information Incomplete
6.		C of C not signed/dated by consultant
7.		Non-current C of C
8.		Bottles listed on C of C, but not in shipment
9.		Bottles in shipment, but not on C of C
10.		Analysis Requirements absent/not clear
11.		Labelling Issue (missing/and/or incorrect)
12.		Samples received >5 days after sampling
13.		Samples received after hold time
14.		Wrong Bottle(s) used
15.		Incorrect Preservation or Headspace present
16.		Insufficient # of bottles (no flag by consultant if insufficient sample available in field)
17.		Incorrect Task Order # provided to lab

	Anomalies
	Insufficient Sample (lab use only)

o Poured off anions

Comments:

	Temperature			Average
Cooler #1	1	1	1	1
Cooler #2	1	1	1	1
Cooler #3				
Cooler #4				
Cooler #5				

Condition of ice/ice packs:

PSC ANALYTICAL SERVICES
8577 Commerce Court
Burnaby, B.C. V5A 4N5
Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

8111246

COMPANY NAME:	PH. #: 204 488 2997
AMEC	FAX #: 204 489 8261
COMPANY ADDRESS:	CLIENT PROJECT ID: (#)
440 Dovercourt Dr Wpg, MB R3H 1N4	WX05876
SAMPLER NAME (PRINT):	PROJECT MANAGER:
M. McGregor	A. Desgroseilliers

	FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE	TIME	HEADSPACE VAPOUR (ppm)	BTEX / LH ✓	BTEX / VPH	VOC's (VOLATILE ORGANICS)	TEH	EPH	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP	PHENOLS BY GCMS	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL	DISSOLVED	TOTALS METALS LEVEL	DISSOLVED METALS LEVEL	NITRATE	NITRITE	AMMONIA	CHLORIDE	FLUORIDE	SULPHATE	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD	WAD	LEACHABLE LEAD (AA)	(TCLP)	LEACHABLE BTEX (AA)	(TCLP)	
1	04-1	46292	X				5	30 Aug 2004	3:25 pm	<5 ppm.										X																				X	BTEX, F, F2, BTEX, F1
2	04-2	46293	X				5		3:40 pm	25										X																				X	
3	04-3	46294	X				5		3:00 pm.	<5										X																				X	
4	04-4	46295	X				5		4:10 pm	<5										X																				X	
5	04-5	46296	X				5		6:15 pm	25										X																				X	
6	04-6	46297	X				5		3:15 pm	<5										X																				X	
7	04-7	46298	X				5		4pm	<5										X																				X	
8	04-8	46299	X				5		4:45 pm	<5										X																				X	
9	04-9	46300	X				5		6:35 pm	30										X																				X	
10	04-10	46301	X				5		3:30 pm.	<5										X																				X	
11	Duplicate	46302	X				3		3:10 pm	—										.																				X	X
12	BH9	46303	X				5		5:10 pm	25										X																				X	

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS _____

CUSTODY RECORD

ESSO SITE LOCATION: 8602657
287 Main St Selkirk, MB 88001943

PSC SAP: 11045177

ESSO CONTACT: Andrew Hodgetts.

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE

SPECIAL REPORTING OR BILLING INSTRUCTIONS: Pb needs to be filtered + preserved

☒ CCME ☐ CSR ☐ ALBERTA TIER 1 ☐ OTHER

JARS USED

LAB USE ONLY

ARRIVAL TEMPERATURE °C: See SIR — CS Intact

LAB INFORMATION: Sep 09/04 ME CL

RELINQUISHED BY SAMPLER: A. Desgroseilliers for M McGregor	DATE: 31 August	TIME: 4pm	RECEIVED BY: Fed-Ex
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE: 1 Sept 1/04	TIME: 845	RECEIVED BY LABORATORY: AR

ORIGINAL - PSC YELLOW - PSC PINK - CLIENT

PSC ANALYTICAL SERVICES
8577 Commerce Court
Burnaby, B.C. V5A 4N5
Phone: (604) 444-4808
Fax: (604) 444-4511
Toll Free: 1-800-440-4808

ESSO / PSC CHAIN-OF-CUSTODY RECORD AND ANALYSIS REQUEST

8111247

COMPANY NAME: AMEC	PH. #: 2044882997 FAX #:
COMPANY ADDRESS: 440 Dovercourt Dr. Wpg, MB R3Y 1N4	CLIENT PROJECT ID: (#) WX05876
SAMPLER NAME (PRINT): M. McGregor	PROJECT MANAGER: A. Desgroseilliers

FIELD SAMPLE ID	PSC LAB # (Lab Use Only)	MATRIX: GROUND WATER	SURFACE WATER	SOIL	OTHER	# CONTAINERS	SAMPLING: DATE	TIME	HEADSPACE VAPOUR ppm	BTEX / LH	BTEX / VPH	VOC's (VOLATILE ORGANICS)	TEH	EPH	PAH	CCME-PHC (FRACTIONS 1-4 PLUS BTEX)	CCME-PHCS (FRACTIONS 2-4)	CCME BTEX (FRACTION 1 PLUS BTEX)	LEAD	FLASHPOINT	PCB's	PHENOLS BY 4AAP	PHENOLS BY GCMS	TOTAL OIL & GREASE	MINERAL OIL & GREASE	MERCURY TOTAL	DISSOLVED	TOTALS METALS LEVEL	DISSOLVED METALS LEVEL	NITRATE	NITRITE	AMMONIA	CHLORIDE	FLUORIDE	SULPHATE	TOTAL SUSPENDED SOLIDS (NFR)	CYANIDE SAD	WAD	LEACHABLE LEAD (AA)	(TCLP)	LEACHABLE BTEX (AA)	(TCLP)	
1 BH10	46307	X				5	30 Aug 2004	5:50 pm	170									X																						X	BTEX, F1, F2
2 BH11	46308	X				5	30 Aug 2004	5:30 pm	45									X																						X	BTEX, F1
3 Trip blank	46309				X	1	~~30/Aug 2004~~ 30/Aug/04	2:45	/																																
4 Field blank	46310				X	1	30/Aug 2004	10:30	/																															X	
5																																										
6																																										
7																																										
8																																										
9																																										
10																																										
11																																										
12																																										

TAT (Turnaround Time)

<5 DAY TAT MUST HAVE PRIOR APPROVAL

** some exceptions apply please contact lab*

- STANDARD 10 BUSINESS DAYS ☐
- STANDARD 5 BUSINESS DAYS ☒
- RUSH 2 BUSINESS DAYS ☐
- URGENT 1 BUSINESS DAY ☐

OTHER BUSINESS DAYS _____

CUSTODY RECORD

ESSO SITE LOCATION: 8602651 / 8800194 3
287 Main St
Selkirk, MB

PSC SAP: 11045177

ESSO CONTACT: Andrew Hodgetts.

SPECIAL DETECTION LIMITS / CONTAMINANT TYPE

SPECIAL REPORTING OR BILLING INSTRUCTIONS: Pb need's to be filtered + preserved.

☒ CCME ☐ CSR ☐ ALBERTA TIER 1 ☐ OTHER

JARS USED

LAB USE ONLY

ARRIVAL TEMPERATURE °C: Sep 09/04 nil

LAB INFORMATION

CL

RELINQUISHED BY SAMPLER: A. Desgroseilliers for M. McGregor	DATE: 31 Aug 04	TIME: 4pm	RECEIVED BY: Fed-EX
RELINQUISHED BY:	DATE	TIME	RECEIVED BY:
RELINQUISHED BY:	DATE	TIME	RECEIVED BY LABORATORY:

[redacted] - PSC [redacted] ELLOW [redacted] PI[redacted]ENT

PSC

ANALYTICAL SERVICES

PSC Analytical Services Inc.
8577 Commerce Court
Burnaby, B.C.
Canada V5A 4N5
Tel 604 444 4808
Fax 604 444 4511

INVOICE BC094841

Invoice date 30-SEP-04
Page 1 of 1
Consultant's Copy

Forms included : 08111246 08111247

Imperial Oil Ltd
237-4TH Avenue S.W.
P.O. Box 2480, Stn M
Calgary, Alberta
T2P 3M9

Attention of Andrew Hodgetts

Client type : I Client code : L9
Sampler : M.MCGREGOR
Client project ID : WX05876
IOL Contract No : 20493
IOL Commitment No : 11045177

Client account # : 6517

No.	Description of work	Factor	Basis for factor	Quantity	Reference Code	SAP #
1	BTEX-CCME F1 WATER			16	FPKG-BT32 FW	
2	Filtering & PresHNO3			12	SFTPSSPFP FW	
3	CCME PHC F2 C10-16			13	SPHC2PHCW FW	
4	Lead Dissolved			13	SPb-DMS31 FW	

Date Received : 02-SEP-2004
Date Reported : 09-SEP-2004

Consultant : AMEC EARTH & ENVIRONMENTAL
Consultant Contact : A.DESGROSEILLIERS
Consultant Project No.: WX05876
Site Location : 287 MAIN ST SELKIRK, MB 8602651 88001943

TERMS
Net 30 days after date of invoice
2% per month interest charged on
all overdue accounts.

Please remit payment to:
PSC Analytical Services Inc.
5555 North Service Road, Burlington, ON, L7L 5H7

APPENDIX D

SITE SENSITIVITY ANALYSIS

Table D1: On-Site (Commercial) Land-uses, key receptors and exposure pathways (CCME, 2001) (Surface soils < 1.5 m below grade)								
	On-Site Land Use Classification (applicable land use in black)							
Exposure Pathway	**Agriculture**		**Residential/Parkland**		**Commercial**		**Industrial**	
Soil Contact	Nutrient cycling Soil invertebrates Crops (plants) Human (child)		Nutrient cycling Invertebrates Plants Human (child)		Nutrient cycling Invertebrates Plants Human (child)	PR PR 1 1	Nutrient cycling Invertebrates Plants Human (adult)	
Soil Ingestion	Herbivores Human (child)		(wildlife) Human (child)		(wildlife) Human (child)	1 1	(wildlife) Human (adult)	
Soil Particulate Inhalation	Human (child)		Human (child)		Human (child)	1	Human (adult)	
Groundwater/ Surface Water	Aquatic life/Livestock Watering Human (child)		Aquatic Life Human (child)		Aquatic Life Human (child)	2 2	Aquatic Life Human (adult)	
Vapour Inhalation (humans only)	Child, outdoor		Child, indoor		Child, indoor	PR	Adult, indoor	
Produce, meat and milk produced on site (humans only)	Child		Child (produce only)					
Off-site migration of Soil/dust							Human/Eco	

- 1 Does not apply at this site. Surface is covered with asphalt pavement.
- 2 Does not apply at this site. Shallow near surface groundwater at site is not in use and has no potential use. Domestic water is from obtained from municipal source. No surface water is present at or adjacent to the site.
- PR Potential Receptor.

Table D2: On-Site Land-uses (Commercial), key receptors and exposure pathways (CCME, 2001) (Sub-Surface soils >1.5 m below grade)								
	On-Site Land Use Classification (applicable land use in black)							
Exposure Pathway	**Agriculture**		**Residential/Parkland**		**Commercial**		**Industrial**	
Soil Contact	Nutrient cycling Soil invertebrates Crops (plants) Human (child)		Nutrient cycling Invertebrates Plants Human (child)		Nutrient cycling Invertebrates Plants Human (child)	1 1 1 1	Nutrient cycling Invertebrates Plants Human (adult)	
Soil Ingestion	Herbivores Human (child)		(wildlife) Human (child)		(wildlife) Human (child)	1 1	(wildlife) Human (adult)	
Soil Particulate Inhalation	Human (child)		Human (child)		Human (child)	1	Human (adult)	
Groundwater/ Surface Water	Aquatic life/Livestock Watering Human (child)		Aquatic Life Human (child)		Aquatic Life Human (child)	2 2	Aquatic Life Human (adult)	
Vapour Inhalation (humans only)	Child, outdoor		Child, indoor		Child, indoor	PR	Adult, indoor	
Produce, meat and milk produced on site (humans only)	Child		Child (produce only)					
Off-site migration of Soil/dust							Human/Eco	

- 1 Does not apply below 1.5 m as roots and invertebrates are not expected at this depth. Soil contact and soil ingestion/uptake by plants or humans are not practical at this depth.
- 2 Does not apply at this site. Near surface groundwater at site is not in use and has no potential use. Domestic water is from obtained from municipal source. No surface water is present at or adjacent to the site.
- PR Potential receptor. Site is zoned for commercial use. Potential exists for construction of commercial building on property (likely with a slab on grade foundation).

Table D3: Off-Site (Residential) Land-uses, key receptors and exposure pathways (CCME, 2001) (Surface soils < 1.5 m below grade)								
	On-Site Land Use Classification (applicable land use in black)							
Exposure Pathway	**Agriculture**		**Residential/Parkland**		**Commercial**		**Industrial**	
Soil Contact	Nutrient cycling Soil invertebrates Crops (plants) Human (child)		Nutrient cycling Invertebrates Plants Human (child)	PR PR PR PR	Nutrient cycling Invertebrates Plants Human (child)		Nutrient cycling Invertebrates Plants Human (adult)	
Soil Ingestion	Herbivores Human (child)		(wildlife) Human (child)	PR PR	(wildlife) Human (child)		(wildlife) Human (adult)	
Soil Particulate Inhalation	Human (child)		Human (child)	PR	Human (child)		Human (adult)	
Groundwater/ Surface Water	Aquatic life/Livestock Watering Human (child)		Aquatic Life Human (child)	1 1	Aquatic Life Human (child)		Aquatic Life Human (adult)	
Vapour Inhalation (humans only)	Child, outdoor		Child, indoor	PR	Child, indoor		Adult, indoor	
Produce, meat and milk produced on site (humans only)	Child		Child (produce only)	PR				
Off-site migration of Soil/dust							Human/Eco	

- 1 Does not apply at this site. Shallow near surface groundwater at site is not in use and has no potential use. Domestic water is from obtained from municipal supply. No surface water is present at or adjacent to the site.
- PR Potential Receptor.

Table D4: Off-Site (Commercial) Land-uses, key receptors and exposure pathways (CCME, 2001) (Surface soils > 1.5 m below grade)								
	On-Site Land Use Classification (applicable land use in black)							
Exposure Pathway	Agriculture		Residential/Parkland		Commercial		Industrial	
Soil Contact	Nutrient cycling Soil invertebrates Crops (plants) Human (child)		Nutrient cycling Invertebrates Plants Human (child)	1 1 1 1	Nutrient cycling Invertebrates Plants Human (child)		Nutrient cycling Invertebrates Plants Human (adult)	
Soil Ingestion	Herbivores Human (child)		(wildlife) Human (child)	1 1	(wildlife) Human (child)		(wildlife) Human (adult)	
Soil Particulate Inhalation	Human (child)		Human (child)	1	Human (child)		Human (adult)	
Groundwater/ Surface Water	Aquatic life/Livestock Watering Human (child)		Aquatic Life Human (child)	2 2	Aquatic Life Human (child)		Aquatic Life Human (adult)	
Vapour Inhalation (humans only)	Child, outdoor		Child, indoor	PR	Child, indoor		Adult, indoor	
Produce, meat and milk produced on site (humans only)	Child		Child (produce only)	1				
Off-site migration of Soil/dust							Human/Eco	

- 1 Does not apply below 1.5 m as roots and invertebrates are not expected at this depth. Soil contact and soil ingestion/uptake by plants or humans are not practical at this depth.
- 2 Does not apply at this site. Near surface groundwater at site is not in use and has no potential use. Domestic water is from obtained from municipal supply. No surface water is present at or adjacent to the site.
- PR Potential receptor.

Table D5: Site Sensitivity Assessment

Receptor	Receptor Sensitivity	Likelihood of Impact	Sensitivity Ranking
1. Water Usage			
Groundwater which is or may be used for domestic supply - none	NA	NA	--
Surface water used for domestic supply – none	NA	NA	--
Surface water used for recreation, irrigation or supporting aquatic life – none	NA	NA	--
Groundwater used for irrigation, cooling, etc. – none	NA	NA	--
Water with no current or potential usage – shallow groundwater	Low	High	Site specific clean-up can be considered
Domestic water supply – Municipal services	High	Low	Site specific clean-up can be considered
2. Inhalation Risk (vapours from soil and groundwater)			
On-site future use – commercial	Medium	Medium	Moderate
West –Residential (5 m)	High	Low	Moderate
North – Commercial (20 m)	Medium	Medium	Moderate
South – Commercial (20 m)	Medium	Medium	Moderate
East – Residential (60 m)	High	Medium	Moderate
3. Ecological and Other Human Considerations			
On-site ecological soil contact – surface soils (≤ 1.5 m below grade)	Medium	High	Moderate
On-site ecological soil contact – subsurface soils (> 1.5 m below grade)	Low	Medium	Low

Site sensitivity ranking for water usage – Site specific clean up may be considered, however, is not likely necessary as the likelihood of impacting groundwater receptors of medium to high sensitivity are considered low.

Site sensitivity ranking for inhalation risk – Moderate

Residential properties to west are upgradient of groundwater flow measured since 1988.

Site sensitivity ranking for ecological and other human considerations – moderate.

4. Governing Risk Management Criteria

Groundwater: As there is no potential usage for the shallow groundwater at the site, and the site and surrounding developed properties are supplied with a municipal water system, the MOE non-potable groundwater criteria for fine to medium grained soils applies to the site.

Soil: Based on the moderate sensitivity of the site in sections 2 and 3 above and guidelines provided by Manitoba Conservation and the exposure pathways identified in Tables D1 through D4, AMEC has chosen the following CCME guideline for assessment purposes only:

- the Tier 1 commercial guidelines established by CCME EQG (1999, updated 2003) for BTEX (toluene guideline reflecting a non-potable groundwater area), lead, metals, PAH's , and glycol;
- the Tier 1 values as indicated in the 2001 CWS PHCs for the volatile and extractable petroleum hydrocarbons in the F1 to F4 range for fine grained surface (at and above 1.5 m depth) soils governed by the ecological soil contact exposure pathway; and
- the generic values as indicated in the 2001 CWS PHCs for the volatile and extractable petroleum hydrocarbons in the F1 to F4 range for fine-grained subsurface (below 1.5 m depth) soils governed by the vapour inhalation (slab-on grade) exposure pathway.

Notes:

[1] – Sensitivity assessment based on Section 5 of the 1993 Manitoba Environment publication 'Petroleum Storage Sites: On-site Risk Management.

APPENDIX E

CITY OF SELKIRK ZONING BY-LAW 4968 EXCERPTS

6. RESIDENTIAL ZONES

6.1. INTENT AND PURPOSE

The Residential Zones are intended to provide sufficient land for various types of residential development within the residential designations of the Development Plan.

6.2. ZONES

6.2.1. R Residential General

The "R" Residential General Zone provides for the establishment of single family dwellings and related compatible uses. Conditional approval may also be given for semi-detached or duplex buildings designed for and used by not more than two (2) families, each having exclusive residential occupancy of a dwelling unit. Each unit may have separate title.

6.2.2. R3 Residential Multiple-Family Dwelling

The "R3" Multiple-Family Dwelling Zone provides for the development of medium to high density multiple family housing developments such as duplexes, triplexes, fourplexes, town or row housing, lowrise and highrise apartments.

6.2.3. RR Rural Residential

The "RR" Rural Residential Zone has been established to provide land use guidelines for those areas having existing large lot residential development. While these areas will eventually evolve into more dense residential development, they currently lack necessary City services. Current uses, in addition to the residential component, also include part-time farming, hobby farming, equestrian uses and home occupations.

6.2.4. RM Residential Mobile Home

The "RM" Residential Mobile Home Zone provides for areas for the placement of mobile homes on spaces within a mobile home park, which are leased to the mobile home owner, or on individual registered lots which may be individually owned. Also includes associated service buildings. For more detailed regulations, refer to the City of Selkirk Mobile Home Park By-law and amendments thereto.

TABLE 12
Residential Use Table

P = Permitted C = Conditional P/C = see table 1 - = Not Permitted

Use	R	R3	RR	RM	Parking Group See Table 4
A					
Accessory uses, buildings or structures (as per Table 1)	P/C	P/C	P/C	P/C	N/A
E					
Education facilities	P	P	P	-	3
F					
Farm Activities – Livestock *(see 3.17.)*	-	-	C	-	N/A
H					
Halls: *-public or private*	C	P	P	P	6
Home Occupations *(see 3.14.)*	P	C	P	C	*(see 3.14.2)*
Hospitals or similar treatment centres	C	C	C	-	4
M					
Mobile Home Park *(see 3.19.)*	-	-	-	P	N/A
N					
Neighbourhood Commercial	C	C	-	C	11
P					
Planned Unit Development	-	C	-	C	1,11
Public:					
- *facility*	P	P	P	C	8,9
- *utility (no outside storage)*	P	P	P	P	8,9
- *utility (with outside storage)*	C	C	C	C	8,9
R					
Recreation Facilities:					
- *public*	C	C	C	C	6, 10
- *commercial*	C	C	C	C	6, 10
- *parks and outdoor recreation areas*	P	P	P	P	N/A
Religious Facility	C	P	P	P	2
Residential:					
- *Care home; Family day care home; Private day care home*	P	P	P	P	4
- *Day care centre; Group day care home*	C	C	C	C	4
- *Neighbourhood Care home; Neighbourhood Rehabilitation home*	C	C	C	C	4
- *dwellings:*					
-single family	P	-	P	P	1
-two family	C	P	C	-	1
-multiple-family	-	P	-	-	1

Use	R	R3	RR	RM	Parking Group See Table 4
T					
Temporary Uses *(see 3.29.)*	-	C	P	P	N/A
Any other Residential use not listed in this table	C	C	C	C	see table 4

6.3. BULK REGULATIONS

All lots, buildings or structures in the residential zones must comply with the yard requirements as outlined in Table 13.

Table 13
Residential Bulk Table

Zone & Building Type	Front Yard Ft.	Side Yd Interior Ft.	Side Yd Corner Ft.	Rear Yard Ft.	Height (Max.) Ft.	Max. Site Coverage %	Site Width Ft.	Site Area Ft^2	Unit Area Ft^2
Zone: R, R3									
-single family	20	5	10	25	30	40	55	5,500	800
-two family	20	5	10	25	30	60	55	6,600	1,200
-multi-family	25	5	15	25	45	60	75	10,000	480 per unit
-non-residential	20	5	10	25	30	60	100	10,000	*N/A*
-accessory & temporary	Same as Principal Use	2	Same as Principal Use	2	15	10	N/A	N/A	1,000 Max
Zone: RR									
-single family	100	15	25	15	20	10	198	4 ac.	1,000
-accessory	Same as the Principal Use			15	20	10	N/A	N/A	1,200 Max
Zone: RM	Refer to City of Selkirk Mobile Home By-law.								

7. COMMERCIAL ZONES

7.1. INTENT AND PURPOSE

The Commercial Zones are intended to provide sufficient land for various types of commercial development within the commercial designations of the Development Plan.

7.2. ZONES

7.2.1 "C2" Central Commercial

This zone provides for appropriate land in the central business area for multi-functional uses such as retail business, multi-family residential, recreational, social, cultural and administrative land uses.

7.2.2 "C3" Strip Commercial

This zone provides sites for linear single or multi-tenant sites for multi-functional uses such as retail business, multi-family residential, recreational, social, cultural and administrative land uses along major collector or arterial streets. Uses primarily serve local clientele.

7.2.3 "C4" Highway Commercial

This zone provides for appropriate land to accommodate those businesses requiring large site areas and to provide retail and personal services adjacent to major transportation routes or arterial streets to serve the needs of the travelling public. Uses generally serve a broad regional clientele.

7.3. USE REGULATIONS

All proposed uses in the commercial zones must comply with the use requirements as outlined in Table 14. Uses identified as "conditional" must undertake a conditional use process before approval can be given.

Table 14
Commercial Use Table

P = Permitted C = Conditional P/C = see table 1 - = Not Permitted

Use	C2	C3	C4	Parking Group See Table 4
A				
Accessory uses, buildings or structures *(as per Table 1)*	P/C	P/C	P/C	N/A
Agricultural Commercial	-	-	P	11
Amusement enterprise				
- *outdoor*	-	-	P	N/A
- *within enclosed building*	C	C	C	6
Animal shelter	-	-	P	N/A
Automobile:				
- *body shop*	C	P	P	11
- *sales & service*	P	P	P	11
- *service station*	P	P	P	11
- *storage compounds*	C	C	C	N/A
- *supplies*	P	P	P	11
C				
Cabarets and cocktail lounges	P	P	P	6
Child and family care services:				
- *family and group day care homes*	P	P	-	4
- *day care centres and nurseries*	P	P	-	4
Contractor's establishment:				
- *enclosed within a building*	P	P	P	12
- *outdoor storage*	-	C	C	N/A
D				
Dispatch services:				
- *cleaning, couriers, taxi and similar services*	P	P	P	9
E				
Education:				
- educational facilities	P	P	P	3
- public or private schools	P	P	P	3
F				
Funeral chapel, parlour	P	P	P	2

USE	C2	C3	C4	Parking Group See Table 4
H				
Hall – *Public or Private*	P	P	P	6
Health services	P	P	P	11
Home Occupations	P	P	P	N/A
Hotels and motels	P	P	P	7
L				
Landscape:				
- *contractors establishments*	-	C	C	12
- *landscaping or garden centres*	P	P	P	12
Lumber & building supply:				
- *enclosed within building*	P	P	P	11
- *outdoor storage*	-	C	P	N/A
M				
Manufacture and sales:				
- *carpentry or cabinetry*	-	-	C	11
- *monument and memorial products*	-	-	C	11
Marina	C	-	-	11
P				
Personal service establishment	P	P	P	11
Professional Offices & support services	P	P	P	8,9
Planned Unit Development	-	P	P	N/A
Pool Hall / Billiard Parlour	C	C	C	6
Public:				
- *facility*	P	P	P	8,9
- *utility (no outside storage)*	P	P	P	8,9
- *utility (with outside storage)*	C	C	C	8,9
R				
Recreation vehicles:				
- *sales & service*	-	P	P	12
Religious facility	P	P	P	2
Residential:				
- *Care home; Day care centre; Family day care home; Neighbourhood rehabilitation home*	P	P	P	4
- *within rear ½ or second storey*	P	P	P	1
- *single family dwelling*	P	P	P	1
- *multi family*	P	P	P	1
Restaurants:				
- *concessions*	P	P	P	-
- *eat-in*	P	P	-	6
- *drive through*	C	C	C	11
Retail Business	P	P	P	11
T				
Temporary Uses (see 3.29)	P	P	P	N/A

USE	C2	C3	C4	Parking Group See Table 4
V				
Veterinary clinics (no compounds)	-	P	P	11
Other Commercial Use not listed in this table	C	C	C	Table 4

7.4. BULK REGULATIONS

All lots, buildings or structures in the commercial zones must comply with the yard requirements as outlined in Table 15.

Table 15
Commercial Bulk Table

Zone	Front Yard Ft.	Side Yd Interior Ft.	Side Yd Corner Ft.	Rear Yard Ft.	Height (Max.) Ft.	Max. Site Coverage (%)	Site Width Ft.	Site Area Ft^2
	Principal Uses							
C2	0	0	0	2	75	100	17	1800
C3	40	0	0	10	30	60	50	5,000
C4	50	15	20	25	30	50	100	20,000
	Other Uses							
Fuel Pumps and related storage facilities	25	5	10	2	30	N/A	N/A	N/A
Accessory Other than fuel	40	5	10	2	30	N/A	N/A	N/A

7.5. COMMERCIAL DEVELOPMENTS ADJACENT TO RESIDENTIAL USES

For commercial uses that have interior side lot lines adjoining residential uses, the City may require development agreements to ensure compatibility with the residential uses. The development agreement may address, but is not limited to, such matters as:

- Landscaping
- Parking locations
- Fencing
- Outside storage
- Lighting
- Noise
- Dust

7.6. DEVELOPMEMENT STANDARDS

Development standards may be addressed through development agreements between the City and the developer. See 3.8. - Development Standards, and any development containing outside storage shall be in accordance with 3.10. Exterior Storage.

APPENDIX F

UST DESTRUCTION CERTIFICATE

Manitoba Conservation

WORK-COMPLETION CERTIFICATE

INTERIM FORM

Certification of Work Completion Respecting the Construction/Alteration of Underground and Aboveground Petroleum Product and Allied Product Storage Tanks

Site Code # 11390 N.I. File # ✓

I, REGAN OLAFSON (Petroleum Technician) being a duly authorized signing officer of

HAZCO (Company Name) do hereby certify that I have completed the

Construction/Alteration located at 287 MAIN ST. SELKIRK as detailed in the

"Application for Permit form to construct and alter dated JUNE 28,

20 04, in accordance with accepted Industry and Department of Conservation

standards and requirements.

DAVE SIMPSON FOR REGAN OLAFSON
(Contractor Signing Officer)

Please submit this Certificate immediately upon project completion to:
Manitoba Conservation
Suite 160, 123 Main St.
Winnipeg MB R3C 1A5

Manitoba

Conservation

Environmental Operations
Red River Region

123 Main Street, Suite 160
Winnipeg MB R3C 1A5
CANADA

UNDERGROUND & ABOVEGROUND PETROLEUM STORAGE TANK SYSTEM REMOVAL REPORT

This form is to be completed by the licensed petroleum technician and submitted to Manitoba Conservation after completion of the project.

Site Information:

Business Name: IMPERIAL OIL LIMITED

Legal Description: Lot(s) _____ Block _____ Plan _____

Address/City: _____

or _____ 1/4 Sec. _____ Twp. _____ Rge. _____

R.M. of _____

Owner: _____ Phone #. _____

Address: 287 MAIN, SELKIRK MB Postal Code R1A 1S6

Licensed Petroleum Technician: REGAN OLAFSON Phone #. 204.832.4561

Mailing Address: 1-325 PARKDALE, ST. ANDREWS MB Postal Code ~~R1A 3R1~~ R1A 3N9

Tank Information:

1. Date Tank(s) Removed: JULY 13/04

2. Condition of Tank(s):

	Perforated	No Perforations	Good Shape	Tank Size
Tank # 1.		✓	✓	22,500 L
2.		✓	✓	22,500 L
3.		✓	✓	22,500 L
4.		✓	✓	22,500 L
5.				
6.				
7.				
8.				

...2

3. Associated Piping Removed: (✓) Yes ( ) No Condition: GOOD

4. Tanks Destroyed: (✓) Yes ( ) No If **No**, indicate what was done with the tanks. DESTROYED ON-SITE IN DEMO BIN

Site Assessment:

5. Environmental Consultant Hired: AMEC Phone #. 204.488.2997

6. Petroleum Odour noticeable in excavation: (✓) Yes ( ) No

7. On site testing carried out: (✓) Yes ( ) No

8. Soil Samples Submitted for Analysis: (✓) Yes (attach results) ( ) No BY CONSULTANT

9. Soil Removed from Site: ( ) Yes- Volume _____ (✓) No

Soil Disposed at: ~~_____~~

Aug 16/04
Date

DAVE SIMPSON FOR REGAN OLAFSON
Signature of Licensed Petroleum Technician

APPENDIX G

GRAIN SIZE ANALYSIS RESULTS

PARTICLE-SIZE ANALYSIS REPORT
ASTM D422

ATTENTION: **Andrew Hodgetts**

Imperial Oil Limited
P.O. Box 2480 Stn 'M'
Calgary, Alberta
T2P 0H6

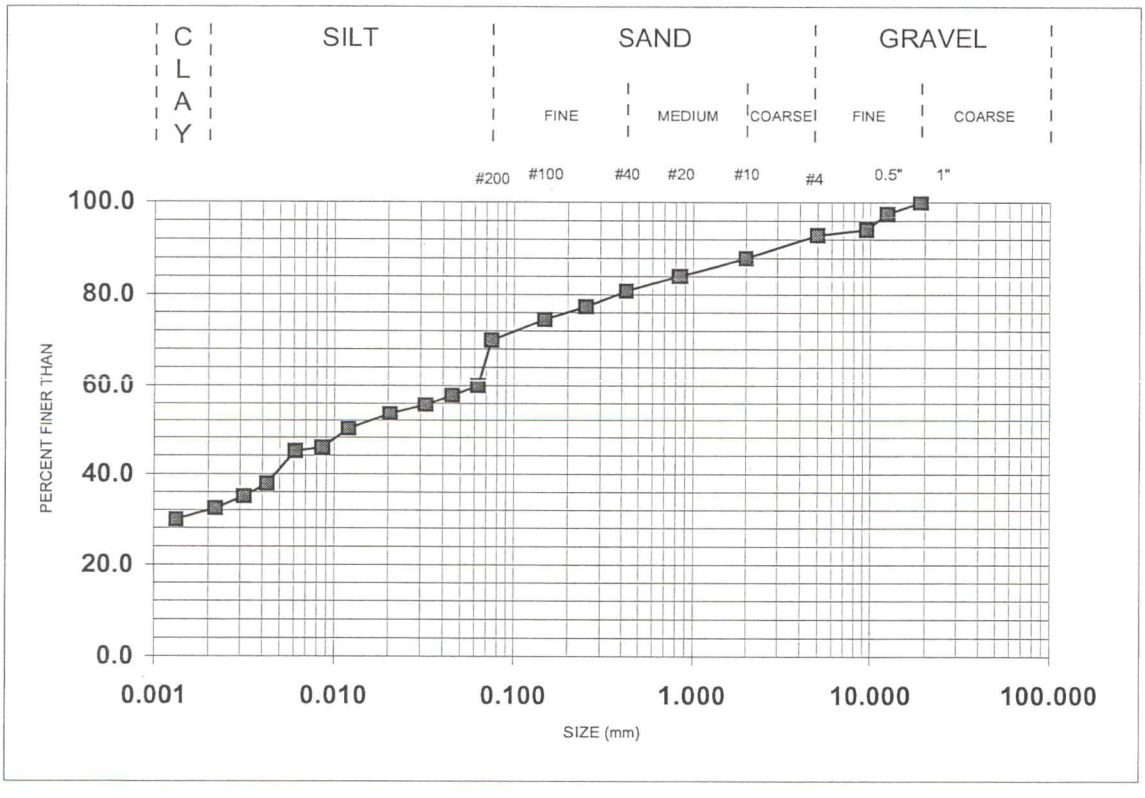
OFFICE: **WINNIPEG**
PROJECT NO: **WX05876**
SAMPLED BY: **AH**

PROJECT: **Selkirk IOL**

COPIES TO: **Imperial Oil Limited**

DATE SAMPLED: **04-Aug-04**
DATE RECEIVED: **17-Sep-04**
DATE TESTED: **22-Sep-04**

SOURCE / TEST HOLE: **4**
SAMPLE NO.: **8**
SAMPLE DEPTH: **5'**



SIEVE SIZE (mm)	PERCENT PASSING
19.0	100.0
12.5	97.5
9.5	94.1
5.0	93.0
2.0	88.0
0.9	84.0
0.4	80.8
0.250	77.4
0.150	74.5
0.075	70.0
0.063	60.0
0.045	57.9
0.0321	55.7
0.0206	53.6
0.0120	50.0
0.0086	45.7
0.0061	45.0
0.0043	37.9
0.0032	35.1
0.0022	32.4
0.0013	29.9

CLASSIFICATION: Silt, Clayey, Sandy, fine grained, brown, some gravel

TECHNICIAN: KH

COMMENTS: Hydrometer

AMEC
Per

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided only on written request.

PARTICLE-SIZE ANALYSIS REPORT
ASTM D422

ATTENTION: **Andrew Hodgetts**

Imperial Oil Limited
P.O. Box 2480 Stn 'M'
Calgary, Alberta
T2P 0H6

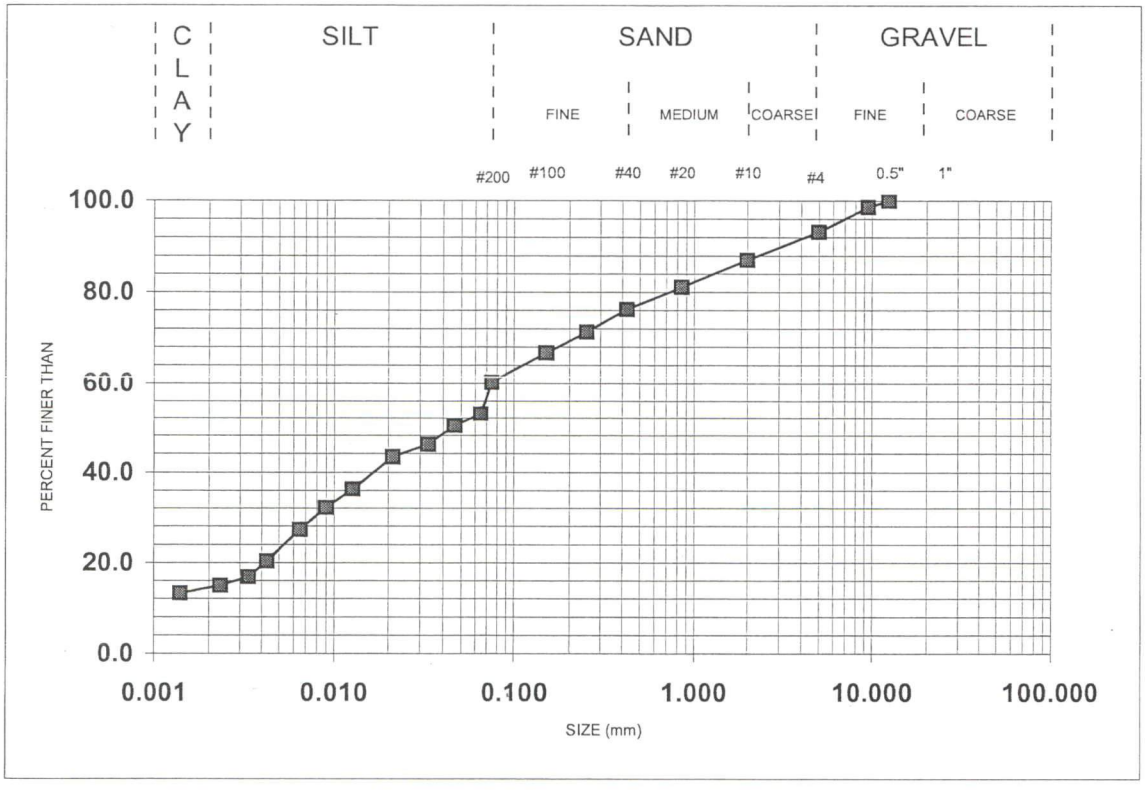
OFFICE: **WINNIPEG**
PROJECT NO: **WX05876**
SAMPLED BY: **AH**

PROJECT: **Selkirk IOL**

COPIES TO: **Imperial Oil Limited**

DATE SAMPLED: **04-Aug-04**
DATE RECEIVED: **19-Sep-04**
DATE TESTED: **22-Sep-04**

SOURCE / TEST HOLE: **4**
SAMPLE NO.: **4**
SAMPLE DEPTH: **22.5'**



SIEVE SIZE (mm)	PERCENT PASSING
12.5	100.0
9.5	98.6
5.0	93.2
2.0	87.1
0.9	81.1
0.4	76.2
0.3	71.3
0.150	66.7
0.075	60.2
0.065	53.0
0.046	50.3
0.033	46.1
0.0213	43.3
0.0126	36.3
0.0090	32.2
0.0065	27.3
0.0043	20.3
0.0034	16.8
0.0023	15.0
0.0014	13.2

CLASSIFICATION: Silt, Sandy, poorly graded fine grained, brown, some clay and gravel present

TECHNICIAN: KH

COMMENTS: Hydrometer

AMEC
Per

Reporting of these test results constitutes a testing service only. Engineering interpretation or evaluation of the test results is provided only on written request.

APPENDIX H

HYDRAULIC CONDUCTIVITY TESTING RESULTS

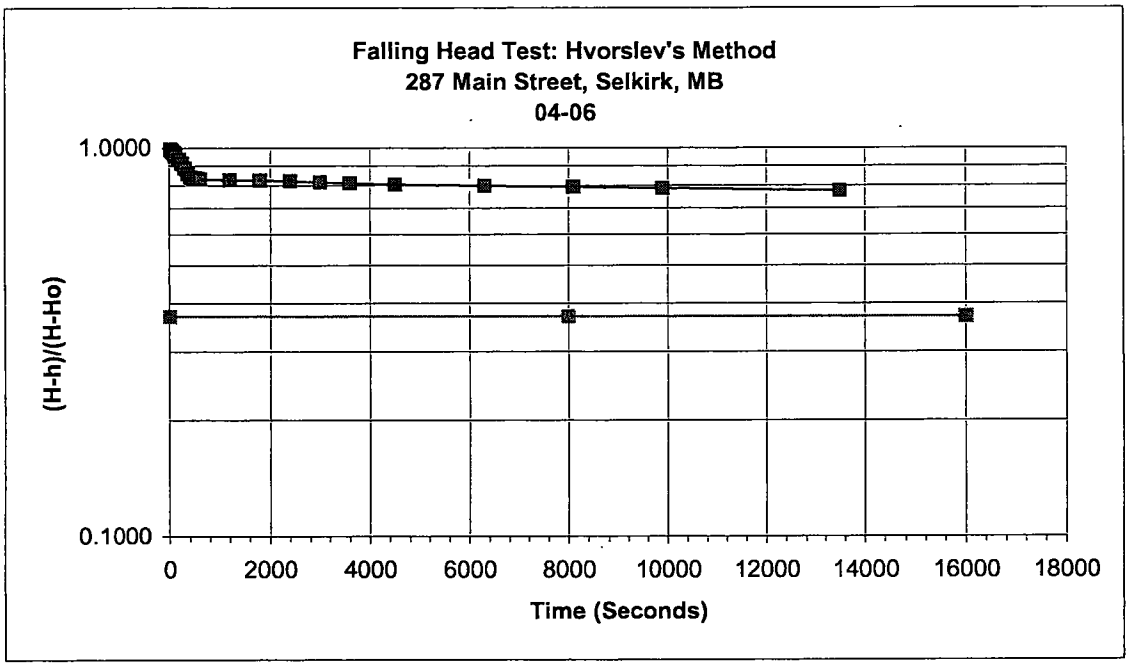
HYDRAULIC CONDUCTIVITY TESTS
FALLING HEAD TEST USING HVORSLEV'S METHOD

PROJECT: Inactive Esso Service Station
287 Main Street, Selkirk, MB

PIEZOMETER DETAILS

Identification:	04-06
Top of Screen (m)	6.7
Bottom of Screen (m)	7.6
Length of Screen (m):	0.9
Radius of Pipe (m):	0.0254
Radius of Sand Pack (m):	0.127
Static Water Level (m):	2.415
Water Level After Slugging (m):	0.265

Elapsed Time		Calculated Elapsed Time (seconds)	Measured h (m)	(H-h)/(H-Ho)
Hours	Minutes			
	0	0	0.265	1.0000
	0.25	15	0.272	0.9967
	0.5	30	0.285	0.9907
	0.75	45	0.3	0.9837
	1	60	0.31	0.9791
	1.25	75	0.32	0.9744
	1.5	90	0.33	0.9698
	1.75	105	0.342	0.9642
	2	120	0.365	0.9535
	3	180	0.41	0.9326
	4	240	0.455	0.9116
	5	300	0.51	0.8860
	6	360	0.57	0.8581
	7	420	0.605	0.8419
	8	480	0.615	0.8372
	9	540	0.62	0.8349
	10	600	0.625	0.8326
	20	1200	0.635	0.8279
	30	1800	0.64	0.8256
	40	2400	0.648	0.8219
	50	3000	0.66	0.8163
	60	3600	0.67	0.8116
	75	4500	0.683	0.8056
	105	6300	0.698	0.7986
	135	8100	0.71	0.7930
	165	9900	0.723	0.7870
	225	13500	0.75	0.7744
		0		0.37
		8000		0.37
		16000		0.37
	Predicted "To" by Extrapolation	89635		



CALCULATION OF HYDRAULIC CONDUCTIVITY

L	5.185 m	L=	screen length below initial
To	89635 s		groundwater level

k **2.57E-09 m/s**

k **2.57E-07 cm/s**

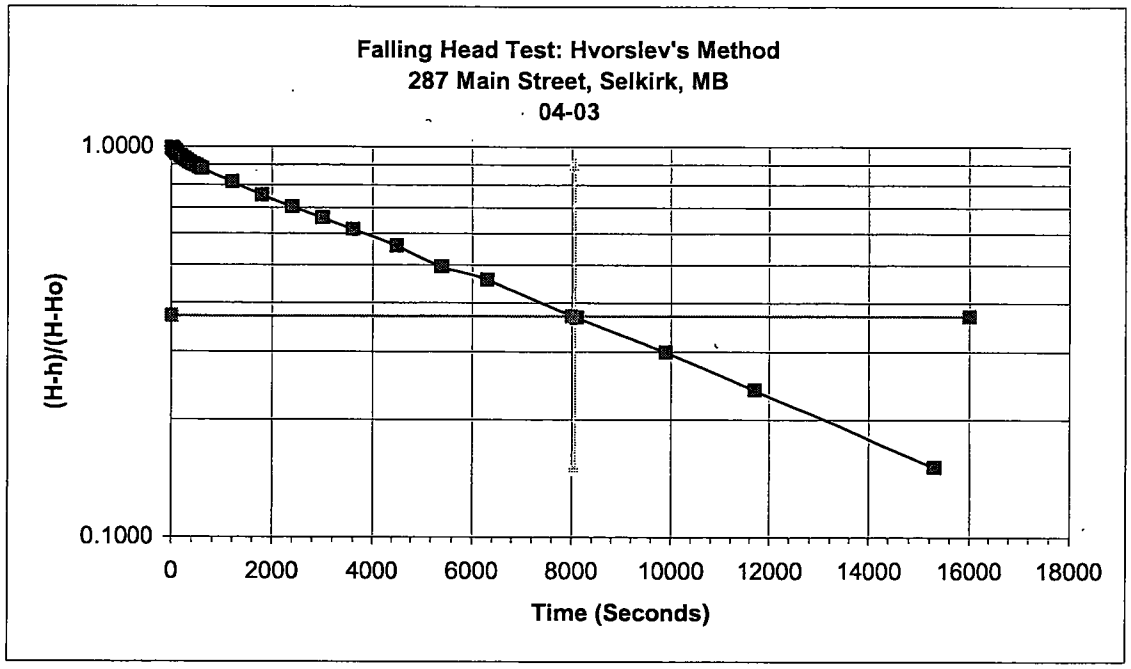
HYDRAULIC CONDUCTIVITY TESTS
FALLING HEAD TEST USING HVORSLEV'S METHOD

PROJECT: Inactive Esso Service Station
287 Main Street, Selkirk, MB

PIEZOMETER DETAILS

Identification:	04-03
Top of Screen (m)	3.1
Bottom of Screen (m)	6.1
Length of Screen (m):	3
Radius of Pipe (m):	0.0254
Radius of Sand Pack (m):	0.127
Static Water Level (m):	1.71
Water Level After Slugging (m):	0.225

Elapsed Time		Calculated Elapsed Time	Measured h	(H-h)/(H-Ho)
Hours	Minutes	(seconds)	(m)	
0		0	0.225	1.0000
0.25		15	0.235	0.9933
0.5		30	0.245	0.9865
0.75		45	0.25	0.9832
1		60	0.26	0.9764
1.25		75	0.265	0.9731
1.5		90	0.27	0.9697
1.75		105	0.28	0.9630
2		120	0.285	0.9596
3		180	0.305	0.9461
4		240	0.325	0.9327
5		300	0.34	0.9226
6		360	0.355	0.9125
7		420	0.37	0.9024
8		480	0.38	0.8956
9		540	0.395	0.8855
10		600	0.405	0.8788
20		1200	0.5	0.8148
30		1800	0.59	0.7542
40		2400	0.665	0.7037
50		3000	0.73	0.6599
60		3600	0.795	0.6162
75		4500	0.88	0.5589
90		5400	0.975	0.4949
105		6300	1.03	0.4579
135		8100	1.165	0.3670
165		9900	1.265	0.2997
195		11700	1.355	0.2391
255		15300	1.485	0.1515
		0		0.37
		8000		0.37
		16000		0.37
		8045		0.9
		8045		0.15



CALCULATION OF HYDRAULIC CONDUCTIVITY

L	4.39 m	L=	screen length below initial
To	8045 s		groundwater level

k **3.24E-08 m/s**

k **3.24E-06 cm/s**