Report to:

GOVERNMENT OF NUNAVUT
DEPARTMENT OF PUBLIC WORKS AND SERVICES

Former Tank Farm Site Remediation
Kugaaruk, Nunavut

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GOVERNMENT OF NUNAVUT DEPARTMENT OF PUBLIC WORKS AND SERVICES

FORMER TANK FARM SITE REMEDIATION KUGAARUK, NUNAVUT

AUGUST 2008

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REVISION HISTORY

REV. NO	ISSUE DATE	PREPARED BY AND DATE	REVIEWED BY AND DATE	APPROVED BY AND DATE	DESCRIPTION OF REVISION
1	August 18, 2008	Shauna Zahariuk	Dave Ediger	Lorne Stone	Report Resealed by Steven Sebastian

EXECUTIVE SUMMARY

The Department of Public Works and Services, Petroleum Products Division (PPD) of the Government of Nunavut, retained Wardrop Engineering Inc. (Wardrop) to conduct a soil excavation program at the site of former bulk fuel storage facility in Kugaaruk, Nunavut.

Previous environmental investigations completed by Wardrop identified four areas requiring excavation:

- northwest of the Recreation Complex (Recreation Complex Excavation)
- former fuel cabinet (Cabinet Excavation)
- former vertical tank area (Vertical Tank Excavation)
- fuel resupply area (Fuel Re-Supply Excavation)

The excavation of these areas was completed simultaneously to ensure timeliness of the project, and full utilization of remediation equipment.

Between July 16 to July 21, 2007, soil excavation activities took place. Impacted soils were excavated from the four noted areas and placed within the Landfarm Facility constructed in 2005 for this purpose.

The significant results of the excavation are as follows:

- Approximately 1271 m^3 of petroleum hydrocarbon impacted soil was excavated from the Recreation Complex Excavation, and later placed in the Landfarm facility.
- Approximately 542 m^3 of petroleum hydrocarbon impacted soil was excavated from the Cabinet Excavation, and later placed in the Landfarm facility.
- Approximately 113 m^3 of petroleum hydrocarbon impacted soil was excavated from the Vertical Tank Excavation, and later placed in the Landfarm facility.
- Approximately 246 m^3 of petroleum hydrocarbon impacted soil was excavated from the Fuel Re-Supply Excavation, and later placed in the Landfarm facility.
- Large boulders and cobbles were set aside during the excavations, as they could not be placed within the Landfarm Facility as per the Landfarm Licence. The boulders and cobbles were later used to backfill the excavations. Granular fill was transported to the site from a local source for backfill of the excavations.

All impacts could not be removed at the base of the excavation due to the limitations of the equipment in frozen soils and the close proximity of the recreation complex foundation.

Laboratory analytical results and on-site analyses indicated that impacts remain within the permafrost zone at the excavation base limits as follows:

- Recreation Complex Excavation: south, west and central;
- Cabinet Excavation: west
- Vertical Tank Excavation: southwest
- Fuel Re-Supply Excavation: west, south

Walls of the excavations were advanced to the limits of apparent impacts. However, the southern wall of the Recreation Complex Excavation was not extended to ensure that the northern foundation of the Recreation Complex was not disturbed. To prevent possible contaminant migration into the excavated area, a 60-mil Geotechnical HDPE Liner was installed along the western portion of the Recreation Complex excavation's southern wall from base to grade.

Additionally, Wardrop was unable to fully remediate the Fuel Re-Supply area, due to the presence of underground offloading gas and diesel lines and buried electrical cables (see photos 6, 7, and 8 presented in Appendix A). A test pit was excavated southeast of the buried electrical cables to ensure that impacts were fully delineated and removed. Soil headspace results from the test pit revealed soil was below the applicable guidelines.

Excavated soil was placed in the Landfarm treatment cell constructed for this purpose. Wardrop personnel ensured that the soil placement complied with the terms of licence issued by the Nunavut Water Board. Soil samples were collected following soil placement in the treatment cell, in order to establish the baseline petroleum hydrocarbon concentrations.

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1.0 BACKGROUND

The Department of Public Works and Services, Petroleum Products Division (PPD) of the Government of Nunavut, retained Wardrop Engineering Inc. to conduct a soil remediation program in the vicinity of a former bulk fuel storage facility in Kugaaruk, Nunavut. The on-site activities took place from July 14, 2007 to July 21, 2007.

The Nunavut Department of Public Works and Services operates a bulk fuel storage facility in the Hamlet of Kugaaruk. In 1999, the Department engaged Dillon Consulting to undertake an Environmental Site Assessment (ESA) of the facility to identify any environmental impacts. The initial report confirmed the presence of soil impacts above applicable criteria. In 2000, Dillon completed a Phase III ESA which identified, and partially delineated, five areas where soil had been impacted by hydrocarbon contamination.

In September 2006, Wardrop conducted an additional Phase III ESA to determine if there had been any significant changes in the contaminant plume dimensions since Dillon's 2000 study. On September 20 and 21, 2006, a rubber-tired backhoe was utilized to complete the shallow test pits. The field program consisted of the excavating of 27 test pits. Soil headspace vapour screening, soil and groundwater sample collection, on-site PetroFLAG® analysis, and laboratory analyses were also completed. The findings of the ESA were documented in Wardrop's July 2007 report titled, *Soil Sampling – Former Tank Farm Site Kugaaruk, Nunavut July 2007.*

1.1 SITE INFORMATION

1.1.1 COMMUNITY LOCATION

Kugaaruk, Nunavut is located in the central northern portion of Nunavut on St. Peter's Bay on the Arctic Ocean, in UTM Zone 16, N 7,604,600 and E 384,200. The Hamlet of Kugaaruk has a population of approximately 600 people.

1.1.2 SITE SETTING

The former petroleum storage and handling property measures approximately 0.5 ha and is located within the southeast corner of the Hamlet of Kugaaruk, Nunavut. The property comprises an earthen berm where numerous vehicles are stored. A short length of pipeline connected the former tank farm to a resupply station at the edge of the airstrip, east of the former Tank Farm.

The current surrounding property development is as follows:

- North: Nunavut Power Corporation Building across the road
- South: Community Recreation Complex, followed by the airstrip
- East: Fuel resupply pump house and maintenance garages, followed by the airstrip.
- West: RCMP Building and Health Center and Residential Buildings

A general site plan of the subject property is shown on Figure 1 in Appendix B.

1.1.3 *Public and Private Utilities*

Overhead utility lines are located west and north of the site, across the road. There are no underground utility lines present on-site.

1.1.4 *Site History*

The former Tank Farm site consisted of two above ground storage tanks (ASTs); one 1 381 000-L P-50 tank and one 461 000-L gasoline tank. Additional fuel storage facilities included two vertical storage tanks, with a total capacity of 154 000 L for Turbo A aviation fuel, located east of the Tank Farm, and two horizontal double-walled Turbo A aviation tanks located south of the re-supply pump house.

In 2004, the P-50 and gasoline tanks were removed from the original Tank Farm area and relocated to the new Tank Farm site. The horizontal Turbo A aviation tanks were relocated to the airport terminal building area. The original site was then decommissioned and the pumping infrastructure removed. An earthen berm and liner remain at the former tank site.

1.2 Geological Setting

1.2.1 *Regional Geology*

Kugaaruk lies within the Barren Lands of the Arctic tundra within the zone of continuous permafrost. The topography is generally low-lying, undulose terrain, marked by hills of granitic rock and eskers and scattered boulder fields. Till cover varies from a few centimetres to tens of meters in thickness overlying bedrock.

Published records indicate that the region is underlain by Archean granitic gneiss, Archean Prince Albert Group metasedimentary rocks, Aphebian age metadiabase dikes, Neohelikian age Mackenzie diabase dikes and Archean to Proterozoic granites. The area is extensively covered by Quaternary glacial sediment. The area lies within the Archean age Vommittee supracrustal belt of the Rae Province. The region is underlain by Neoarchaen granitic intrusives.

1.2.2 SITE HYDROGEOLOGY

Groundwater at the site appears to collect in the low-lying areas east of the former tank farm. Groundwater movement is generally confined to the permafrost table, the layer between the permafrost and active layer above the permafrost.

1.2.3 SITE STRATIGRAPHY

The soil beneath the subject site consists of a course gravel fill, overlying deposits of a sandy silt till to the depth of the test pit refused in frozen soil. Most test pits likely refused within the frozen active layer as on-site activities began after temperatures dropped below zero degrees Celsius. The thickness of the active layer is unknown at the site, and could be variable.

2.0 REGULATORY GUIDELINES

2.1 SITE REMEDIATION GUIDELINES

The site remediation guidelines are based on the vapour inhalation pathway for slab on grade foundation, for BTEX and Fraction 1 and 2 petroleum hydrocarbon constituents. Fraction 3 and 4 petroleum hydrocarbon constituent guidelines are based on the eco soil contact pathway, as there are currently no guidelines available for Fraction 3 and 4 under the vapour inhalation pathway.

SITE REMEDIATION SOIL CRITERIA[1,2] (mg/kg)		
Parameter	≤1.5 m	>1.5 m
BTEX:		
Benzene	0.030	0.030
Toluene	1400	1500
Ethylbenzene	630	670
Xylenes[3]	160	170
Fraction 1 (nC_6 to nC_{10})	310	340
Fraction 2 (>nC_{10} to nC_{16})	1700	1800
Fraction 3 (>nC_{16} to nC_{34})	1700	3500
Fraction 4 (>nC_{34})	3300	10 000

Notes: [1]Canadian Council of Ministers of the Environment (CCME), Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil, May 2001 (for Fraction 1 to 4 values for coarse-grained soils).

[2]CCME, Canadian Environmental Quality Guidelines, 2004 (for BTEX values for fine- and coarse-grained soils within the inhalation of indoor air (slab on grade) and eco-soil contact pathway).

[3]Summation of m-, p-, and o-Xylene concentrations.

3.0 SITE REMEDIATION ACTIVITIES

3.1 PRELIMINARY ACTIVITIES

On July 16, 2007, prior to the commencement of on-site activities, a health and safety toolbox meeting was conducted with the excavation contractor (Kudlik Construction Ltd.), and an outline of the day's activities was outlined. All excavation activities were executed under the direction of on-site Wardrop personnel.

3.2 SITE REMEDIATION

Previous environmental investigations completed by Wardrop identified four areas requiring excavation:

- northwest of the Recreation Complex (Recreation Complex Excavation)
- former fuel cabinet (Cabinet Excavation)
- former vertical tank area (Vertical Tank Excavation)
- fuel resupply area (Fuel Re-Supply Excavation)

The excavation of these areas was completed simultaneously to ensure timeliness of the project, and full utilization of remediation equipment.

Between July 16 to July 21, 2007, soil excavation activities took place. Impacted soils were excavated from the four noted areas and placed with the Landfarm Facility constructed in 2005 for this purpose. Large boulders were kept aside during the excavation, and used as backfill at the conclusion of the excavation activities as per the Landfarm Facility Licence issued by the Government of Nunavut. There was no visible petroleum hydrocarbon staining or other evidence of petroleum contamination on the boulders that were placed back into the excavation.

The final extents of the excavations are shown on Figures 3, 4, 5, and 6, in Appendix B.

3.3 SOIL SAMPLING

3.3.1 SOIL HEADSPACE VAPOUR MEASUREMENTS

To obtain a preliminary indication of the presence of PHC constituents, soil samples were obtained for headspace vapour concentration measurements. These measurements were recorded using a portable Gastech 1238ME combustible gas indicator calibrated to hexane (a standard used for gasoline or diesel fuel) and set on methane elimination mode (to discount naturally occurring combustible methane).

Vapour concentrations exceeding 500 parts per million (ppm) on the 1238ME were reported as a percentage of the Lower Explosive Limit (LEL) (for hexane, 110 ppm = 1% LEL). The headspace vapour concentrations are presented in Table 1.

3.3.2 EXCAVATION WALL AND BASE SAMPLING AND LABORATORY ANALYSES

Upon attaining the apparent limits of the petroleum hydrocarbon impact, soil samples were collected from the wall of the excavation at sampling locations spaced at approximately 5-m intervals, and at 0.5-m depth intervals. Soil samples were collected from the base of the excavation in a 5-m by 5-m grid. All soil samples were analyzed for soil headspace vapour measurements, and selected soil samples were analyzed for petroleum hydrocarbon concentrations (diesel range) with the PetroFlag® analyzer.

Based on the soil headspace vapour measurements, PetroFlag® results, and field observations, the following soil samples were submitted to ALS Laboratory Group's laboratory located in Winnipeg, Manitoba, for BTEX and Fraction 1 to Fraction 4 petroleum hydrocarbon parameter analyses.

RECREATION COMPLEX EXCAVATION

Four samples were sent to the Laboratory:

- West Wall (S81)
- West Base (S112)
- South Wall (S196)
- South Base (S212)

CABINET EXCAVATION

One sample was sent to the Laboratory for analyses:

- North Wall (A35)

VERTICAL TANK EXCAVATION

Two samples were sent to the Laboratory for analyses:

- Southeast Wall (B33)
- Central Base (B39)

FUEL RE-SUPPLY EXCAVATION

Two samples were sent to the Laboratory for analyses:

- North Wall (C29)
- Central Base (C34)

Soil samples were collected in accordance with industry standard practices and quality control measures and were maintained in ice pack-equipped coolers prior to submission to the analytical laboratory.

The sampling locations are provided on Table 1, in Appendix B.

3.3.3 *PETROFLAG® ON-SITE ANALYSIS*

During the 2006 on-site activities Wardrop advanced test pits within the excavation areas, and analyzed selected samples on-site using the PetroFlag® hydrocarbon analyzer and subsequently submitted the samples to ALS Laboratory for confirmatory analyses. Wardrop then correlated the 2006 PetroFlag® results to the 2006 laboratory analytical results to use as a guide in 2007 for advancement of the excavation and for selecting samples for analyses.

A PetroFlag® analyzer set to the diesel fuel response factor, was used to analyze petroleum hydrocarbon concentrations on-site along with the Gastech vapour meter. The analyzer was used as a means of selecting the appropriate samples to submit to the laboratory, or to advance the excavation limits to remove impacted soils. To ensure accurate and repeatable results the PetroFLAG® hydrocarbon analyzer was recalibrated to diesel fuel with every batch of ten samples, and clean scopulas were used to measure each sample.

It should be noted that although it is standard practice to use Gastech vapour meter to analyse samples in the field, it is difficult to correlate diesel impacted soil vapours to analytical measurements, including the PetroFlag® analyzer results.

Results of the PetroFLAG® analysis are presented in Table 1, in Appendix C.

3.4 INSTALLATION OF GEOTEXTILE

The southern wall of the Recreation Complex Excavation was not extended to ensure that the northern foundation of the Recreation Complex was not disturbed. To prevent possible contaminant migration into the excavated area, a 60 mil Geotechnical HDPE Liner was installed along the western portion of the Recreation Complex excavation's southern wall from base to grade.

3.5 EXCAVATION BACKFILLING AND COMPACTION ACTIVITIES

Granular backfill was provided from a local borrow site located north of the Landfarm Facility. The backfill consisted of gravel and sand, and is used for various community projects within Kugaaruk, NU. Additionally, material from the P-50 perimeter berm was used as backfill, after soil headspace readings, and PetroFlag® results determined the soil to be below guidelines.

Backfill was placed within the excavations once the PetroFlag® soil analytical results indicated the walls of the excavation were below the established site criteria. Backfill was placed in lifts of no more than 200 mm in thickness, and compacted with a mechanical loader provided by Kudlik Construction. Backfilled excavations were restored to just above original grade to allow for soil settling and further compaction.

4.0 LANDFARM FACILITY

4.1 PREINSPECTION OF LANDFARM FACILITY

Prior to excavation activities, the Landfarm Facility was inspected for visible deterioration. The following items were inspected:

- Settling of berms
- Loss of cover material over the liner
- Culverts
- Sump area

Inspection of the Facility revealed no obvious signs of visible deterioration.

4.2 PLACEMENT OF SOIL

Impacted soils were placed within the Landfarm Facility as per section 3.8, Division 2 – Section 02224 of the Government of Nunavut's April 2000 Construction Tender titled, *Fuel Storage Facility Expansion/Relocation, Kugaaruk, Nunavut – GN Project #01-4109.*

Immediately following the excavation of impacted material, the impacted soils were transported to the Landfarm Facility. A dedicated rubber-tired loader at the Facility spread the soils evenly, and ensured that a one meter perimeter buffer strip was maintained between the toe of the soil and the interior berm. The resulting soil pile was approximately 0.9 m in height. Care was taken to prevent compaction of the soils and damage of the underlying HPDE liner membrane during soil placement.

4.3 BASELINE SOIL SAMPLING AT LANDFARM FACILITY

Initial soil sampling at the Landfarm Facility took place immediately following the placement of the impacted soil into the treatment area. A total of six composite samples (LF1-2, LF2-2, LF3-2, LF4-2, LF5-2 and LF6-2), were required to confirm the soil quality for the volume of material. To ensure that samples were representative of the material, the Landfarm was divided into six longitudinal segments by dividing the northwest exterior berm into six equal lengths, and then extending a perpendicular line to the opposite side of the cell. For segment lengths

of 50 m or less, four discrete samples were collected from equidistant points along the centre line of the segment. For segments over 50 m in length, an additional discrete sample was taken for every 10 m or less. Samples were collected from approximately 0.3 m below grade. Laboratory analytical results are presented in Table 3, Appendix C.

5.0 REMEDIATION ACTIVITY RESULTS

5.1 SOIL EXCAVATION

The excavation activities are summarized below:

- Approximately 1271 m^3 of petroleum hydrocarbon impacted soil was excavated from the Recreation Complex Excavation, and later placed in the Landfarm Facility.
- Approximately 542 m^3 of petroleum hydrocarbon impacted soil was excavated from the Cabinet Excavation, and later placed in the Landfarm Facility.
- Approximately 113 m^3 of petroleum hydrocarbon impacted soil was excavated from the Vertical Tank Excavation, and later placed in the Landfarm Facility.
- Approximately 246 m^3 of petroleum hydrocarbon impacted soil was excavated from the Fuel Re-Supply Excavation, and later placed in the Landfarm Facility.
- Large boulders and cobbles were set aside during the excavations, as they could not be placed within the landfarm facility as per the Landfarm Licence. The boulders and cobbles were later used to backfill the excavations.
- Granular fill was transported to the site from a local source for backfill of the excavations.

5.2 AMBIENT AIR MONITORING RESULTS

Wardrop's monitoring of the ambient air during excavation activities revealed that ambient vapours did not exceed 5 ppm.

5.3 FINAL EXCAVATION SOIL SAMPLE ANALYTICAL RESULTS

5.3.1 RECREATION COMPLEX EXCAVATION

Soil headspace results did not exceed 500 ppm in the final excavation walls, with the exception of the south wall of the Recreation Complex excavation; a hydrocarbon resistant liner was installed in this area of the site. Some base samples within the southwest portion of the Recreation Complex excavation exceeded 500 ppm, where impacts were in the permafrost horizon. There are remaining impacts along the

central south portion of the excavation base. Attempts were made to excavate the impacted permafrost in this area, however it was deemed that undermining the permafrost close to the Recreation Complex could do harm. Samples with the highest soil headspace readings were submitted to the laboratory for petroleum hydrocarbon analyses.

LABORATORY ANALYSES

Sample S212 (south base) exceeded the remediation guidelines for PHC F1 and F2; the sample is considered to be representative of impacts that remain in the permafrost horizon at the southwest base of the excavation. All impacts could not be removed at the base of the excavation due to the limitations of the equipment in frozen soils and the close proximity of the recreation complex foundation.

Sample S81 from the west wall of the excavation exceed the remediation criteria for benzene, xylenes, and PHC F1 and F2. It is thought that impacts in this area are limited as impacts to the east and south have been removed; additionally, the 2006 test pit program revealed that there are no impacts further west of this area.

5.3.2 CABINET EXCAVATION

Soil headspace results did not exceed 250 ppm in the final excavation walls. Some base samples within the south and west portions of the Cabinet Excavation exceeded 500 ppm, these impacts where within the permafrost horizon, and were unable to be excavated.

LABORATORY ANALYSES

The wall sample with the highest soil headspace reading (A35) was submitted to the laboratory for petroleum hydrocarbon analyses. Analytical results revealed that the soil sample was below the applicable guidelines.

5.3.3 VERTICAL TANK EXCAVATION

Soil headspace results did not exceed 500 ppm in the final excavation walls. Soil headspace results exceeded 500 ppm periodically for base samples; however, these samples were analysed on-site with the PetroFlag® analyser, and found to be below the applicable guidelines.

LABORATORY ANALYSES

A sample from the northeast wall with the highest soil headspace reading (B33) was submitted to the laboratory for petroleum hydrocarbon analyses. Analytical results revealed that the soil sample was below the applicable guidelines. A sample from the central base of the excavation submitted to the laboratory for analyses revealed that the sample was below the applicable guidelines.

5.3.4 *Fuel Re-Supply Excavation*

Soil headspace results from the southern wall and base exceeded 500 ppm; PetroFlag® results revealed that samples were in excess of remediation guidelines. Wardrop was unable to fully remediate this area, due to the presence of underground offloading gas and diesel lines, and buried electrical cables (see photos 6, 7, and 8 presented in Appendix A). A test pit was excavated southeast of the buried electrical cables to ensure that impacts were fully delineated and removed. Soil headspace results from the test pit revealed soil vapours of 40 ppm, and were subsequently considered clean.

Laboratory Analyses

Two samples, C29 from the north wall and C34 from the central base of the excavation, were submitted to the laboratory for petroleum hydrocarbon analyses. Analytical results revealed that C34 exceed benzene and PHC F2 remediation guidelines. Sample C29, was below the applicable remediation guidelines.

5.4 Landfarm Facility Laboratory Analyses

Six composite samples were collected from the Landfarm Facility, as described in section 4.3, and subsequently submitted to the laboratory for petroleum hydrocarbon analyses. Analytical results revealed that five of the six composite soil samples exceeded the applicable guidelines for PHC Fraction 2; one sample exceeded the guidelines for PHC F1.

6.0 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

Each laboratory report provided by ALS Laboratory Group includes a Quality Assurance Report, which has been reviewed by Wardrop. Each laboratory report was analyzed using a Wardrop Engineering Inc. laboratory quality checklist which ensures that both laboratory and field quality control measures are within acceptable parameters.

All laboratory's calibration checks, quality control standard recoveries, spikes, RPDs, and blanks were within the laboratory's quality control limits. The laboratory certificates are included in the Appendix D.

7.0 SUMMARY

The excavation activities are summarized below:

- Approximately 1271 m^3 of petroleum hydrocarbon impacted soil was excavated from the Recreation Complex Excavation, and later placed in the Landfarm Facility.
- Approximately 542 m^3 of petroleum hydrocarbon impacted soil was excavated from the Cabinet Excavation, and later placed in the Landfarm Facility.
- Approximately 113 m^3 of petroleum hydrocarbon impacted soil was excavated from the Vertical Tank Excavation, and later placed in the Landfarm Facility.
- Approximately 246 m^3 of petroleum hydrocarbon impacted soil was excavated from the Fuel Re-Supply Excavation, and later placed in the Landfarm Facility.
- Large boulders and cobbles were set aside during the excavations, as they could not be placed within the Landfarm Facility as per the Landfarm Licence. The boulders and cobbles were later used to backfill the excavations.
- Granular fill was transported to the site from a local source for backfill of the excavations.

The southern wall of the Recreation Complex Excavation was not extended to ensure that the northern foundation of the Recreation Complex was not disturbed. To prevent possible contaminate migration into the excavated area, a 60-mil Geotechnical HDPE Liner was installed along the western portion of the Recreation Complex excavation's southern wall from base to grade.

The soil sampling and laboratory analytical results are summarized below:

- Between July 16 and July 21, 2007, Wardrop completed four separate excavations at the former bulk fuel station in Kugaaruk, Nunavut. Selected samples from the walls and/or base of each excavation were submitted for BTEX and F1-F4 petroleum hydrocarbon analysis. Of the nine samples submitted, three samples were above the CCME guidelines. The remaining samples were below the guidelines.

- Additionally, Wardrop was unable to fully remediate the Fuel Re-Supply area, due to the presence of underground offloading gas and diesel lines and buried electrical cables (see photos 6, 7, and 8 presented in Appendix A). A test pit was excavated southeast of the buried electrical cables to ensure that impacts were fully delineated and removed. Soil headspace results from the test pit revealed soil was below the applicable guidelines.

- Excavated soil was placed in the Landfarm treatment cell constructed for this purpose. Wardrop personnel ensured that the soil placement complied with the terms of licence issued by the Nunavut Water Board. Soil samples were collected following soil placement in the treatment cell, in order to establish the baseline petroleum hydrocarbon concentrations.

- On July 21, 2007, Wardrop collected baseline samples from the Landfarm Facility. Six samples were submitted for BTEX and F1-F4 petroleum hydrocarbon analysis. Of the six samples submitted five samples were above the CCME guidelines.

8.0 RECOMMENDATIONS

8.1 FORMER TANK FARM SITE

The Recreation Complex Excavation could not be advanced further south due to the presence of the Complex, and it is suspected that the soil impacts have migrated under the northwest corner of the Complex. This portion of the building is above grade and appears to have adequate ventilation. No further remedial action is recommended at this time.

8.2 REMOVAL OF UNDERGROUND PIPING

Wardrop recommends that the underground offloading gas and diesel lines near the fuel re-supply building be removed to ensure that the adjacent excavation and clean fill are not impacted due to contaminant migration.

8.3 LANDFARM FACILITY

According to the Nunavut Water Board Licence 8BR-KRK0609, issued to the Government of Nunavut, the Government of Nunavut is required to sample the soil at a minimum frequency of once every four months, during the period of active land treatment. Monitoring and sampling of soil is required until the Petroleum Hydrocarbon concentrations are below the CCME Canadian Soil Quality Guidelines.

Compliance with the Nunavut Water Licence also requires the installation of monitoring wells. Wardrop recommends that five downgradient groundwater monitoring wells be installed to confirm that there is no subsurface migration of contaminants from the Landfarm. Wells will be a standard sandpoint design with the screened section extending from near surface to refusal. Groundwater will be sampled twice per year, and analysed for BTEX and Fraction 1 to Fraction 4 Petroleum Hydrocarbon constituents. A water sample should also be collected from the landfarm sump pit.

A splash pad is to be constructed at the location of the sump pit water disposal, as per the Nunavut Water Licence.

9.0 REFERENCES

Alberta Environment, ***Risk Management Guidelines for Petroleum Storage Tank Sites - Draft***, 2001.

Canadian Council of Ministers of the Environment, ***Canadian Environmental Quality Guidelines***, 2004.

Canadian Council of Ministers of the Environment, ***Canada-Wide Standards for Petroleum Hydrocarbons (PHCs) in Soil***, 2001.

Dillon Consulting Limited, ***Phase III Environmental Site Assessment – Bulk Fuel Storage Facility, Kugaaruk, Nunavut***, February 9, 2001

EBA Engineering Consultants Limited, ***Fuel Storage Facility Expansion, Pelly Bay, N.W.T.***, August 1995.

Nunavut Water Board, ***Licence Number 8BR-KRK0609 – Type "B"***, October 13, 2006.

Manitoba Conservation, ***Guideline for Environmental Site Investigations in Manitoba***, June 1998.

Ontario Ministry of Environment, ***Soil, Ground Water and Sediment Standards for Use Under Part XV.1 of the Environmental Protection Act***, March 9, 2004.

Wardrop Engineering Inc., ***Soil Sampling – Former Tank Farm Site, Kugaaruk, Nunavut***, July 2007

10.0 LIMITATIONS

The scope of this report is limited to the matters expressly covered and is intended solely for the client to whom it is addressed. Wardrop Engineering Inc. (Wardrop) makes no warranties, expressed or implied, including without limitation, as to the marketability of the site, or fitness for a particular use. The assessment was conducted using standard engineering and scientific judgment, principles and practices, within a practical scope and budget. It is partially based on the observations of the assessor during the site visit, in conjunction with archival information obtained from a number of sources, which is assumed to be correct. Except as provided, Wardrop has made no independent investigations to verify the accuracy or completeness of the information obtained from secondary sources or personal interviews. Generally, the findings, conclusions, and recommendations are based on a limited amount of data (e.g., the number of boreholes drilled, and the number of water samples submitted for laboratory analyses) interpolated between sampling points and the actual conditions (e.g., the type, level, and extent of impacted media) on the property may vary from that described above. Any findings regarding site conditions different from those described above upon which this report is based, will consequently change Wardrop's conclusions and recommendations.

APPENDIX A

SITE PHOTOGRAPHS

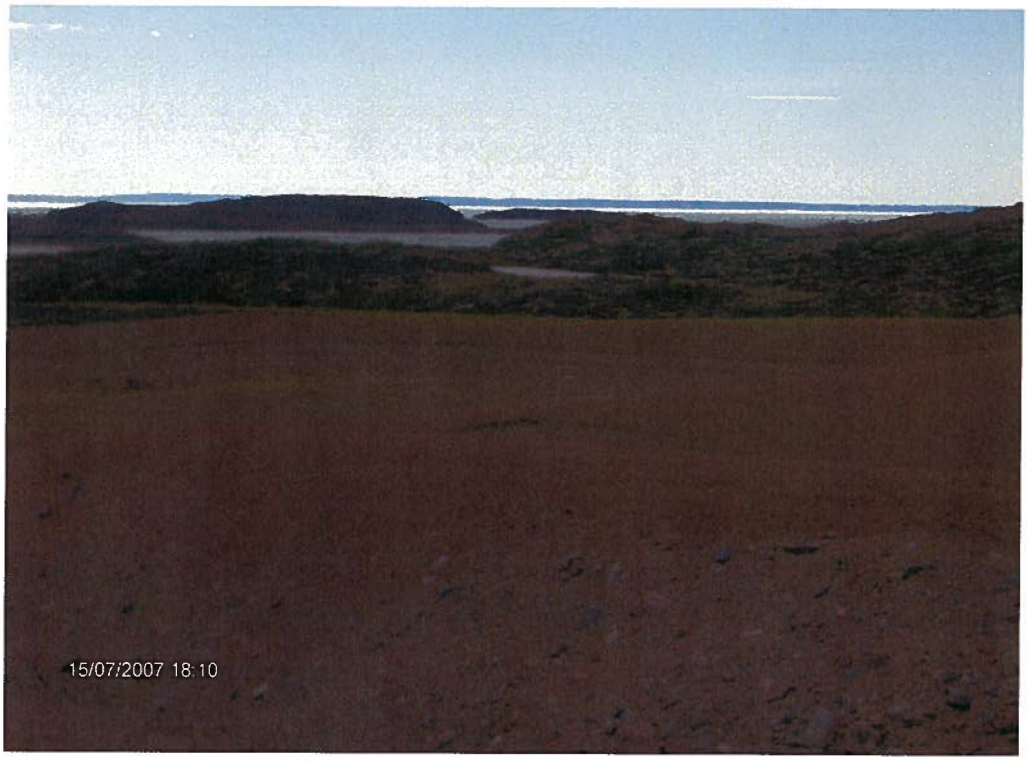


Photo 1: View of Landfarm Facility prior to use. Note sump pit on the left hand side.

Photo 2: View of the northwestern portion of the Recreation Complex Excavation.

Photo 3: View of the southern portion of the Recreation Complex excavation. Note geomembrane liner along the south wall.

Photo 4: View of the Cabinet excavation. Photo taken facing east.

Photo 5: View of the Vertical Tank excavation. Photo taken facing west.

Photo 6: View of Fuel Re-Supply excavation. Note fuel re-supply station. Photo taken facing west.

Photo 7: View of Fuel Re-Supply excavation. Photo taken facing east. Note runway in the distance.

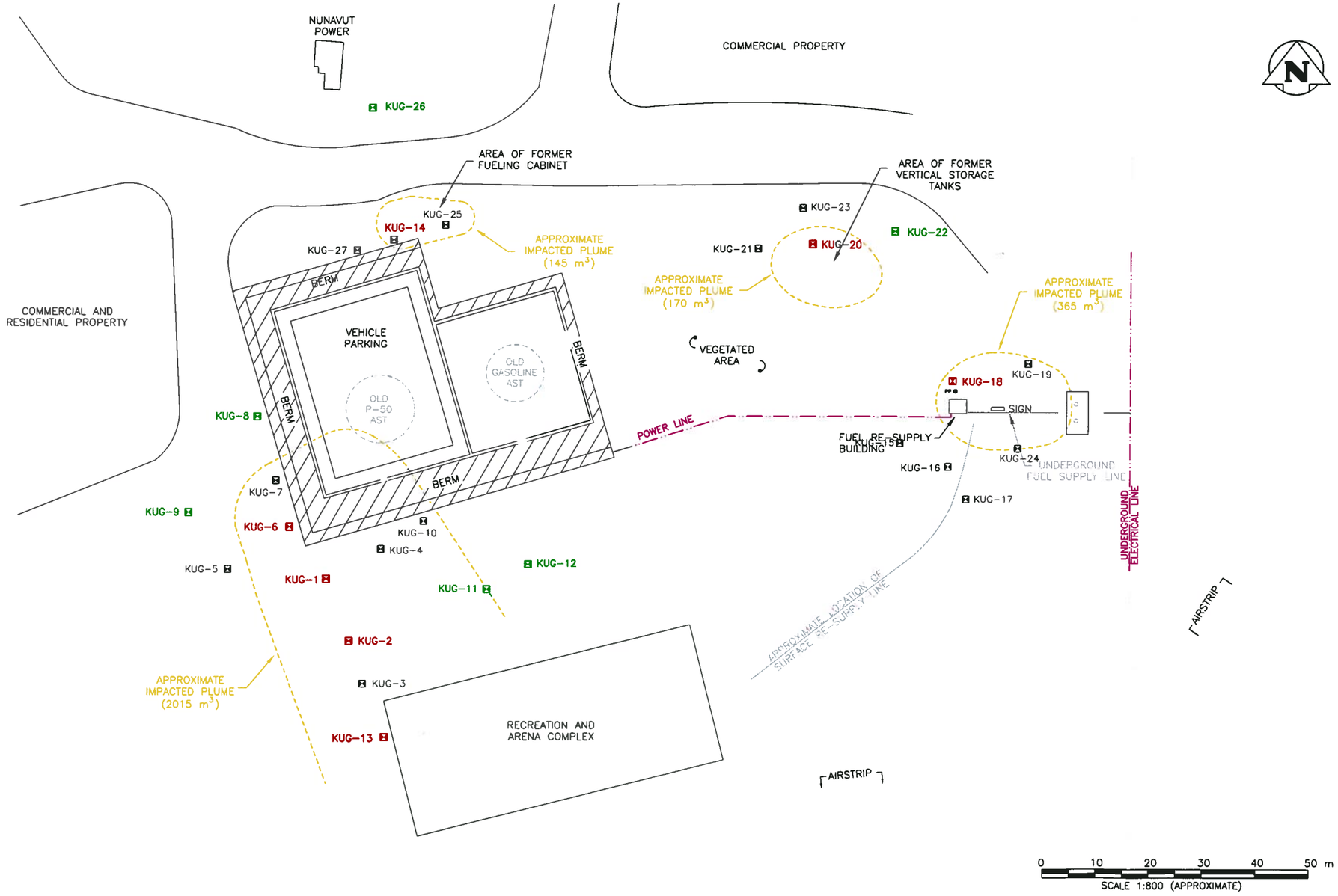
Photo 8: View of underground offloading gas and diesel lines near the fuel re-supply station. Lines run west toward the supply station. Photo taken facing east.

Photo 9: View of backfilling and compacting the Cabinet excavation. Photo taken facing northeast.

Photo 10: View of the Landfarm Facility with impacted soils. Note drainage areas along the perimeter of the cell.

APPENDIX B

FIGURES



LEGEND

■	2006 SOIL SAMPLE LOCATION
GREEN	2006 SOIL ANALYTICAL < CRITERIA
RED	2006 SOIL ANALYTICAL > CRITERIA
BLACK	NOT SUBMITTED TO LABORATORY FOR ANALYSES IN 2006
AST	ABOVE GROUND STORAGE TANK
- - - -	APPROXIMATE EXTENT OF IMPACTED PLUME

NO.	DESCRIPTION	DATE	ISSUED BY

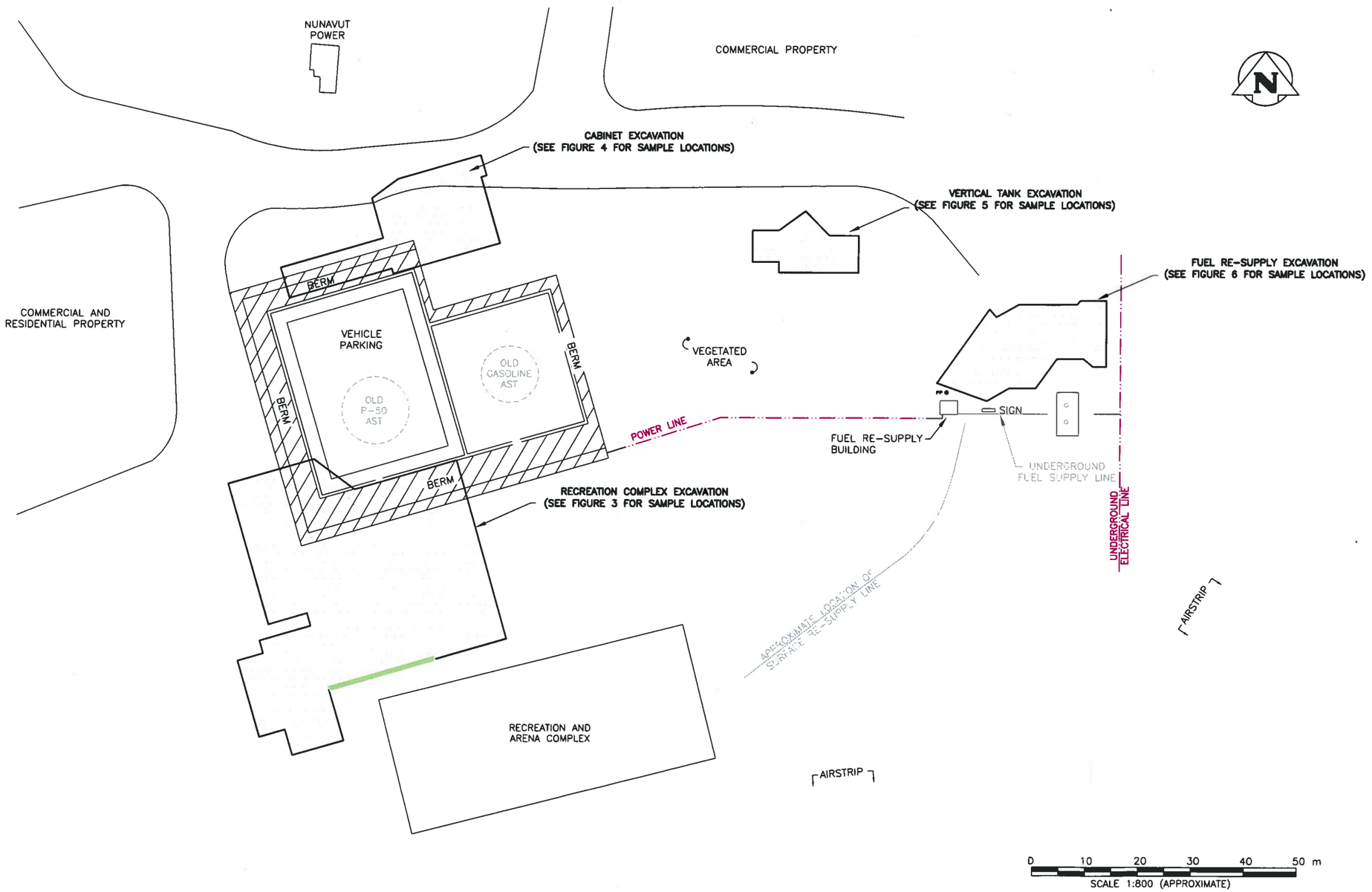
REVISIONS/ISSUE

WARDROP | Engineering Inc.

CLIENT: GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION:
FIGURE 1:
FORMER BULK TANK AREA SITE PLAN
KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.01.23	0222880801-SKT-V0001	A3



LEGEND
- APPROXIMATE EXTENT OF EXCAVATION
- STORAGE TANKS AND PIPING
- APPROXIMATE LOCATION OF LINER

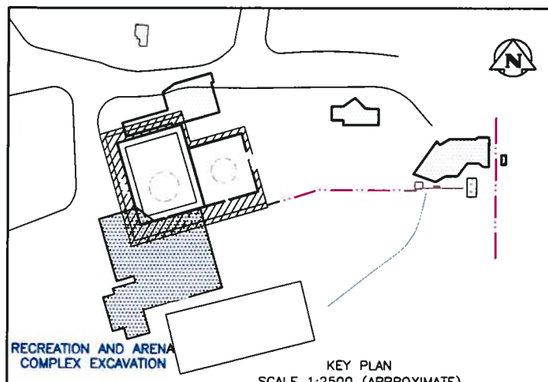
NO.	DESCRIPTION	DATE	ISSUED BY
	REVISIONS/ISSUE		

WARDROP | Engineering Inc.

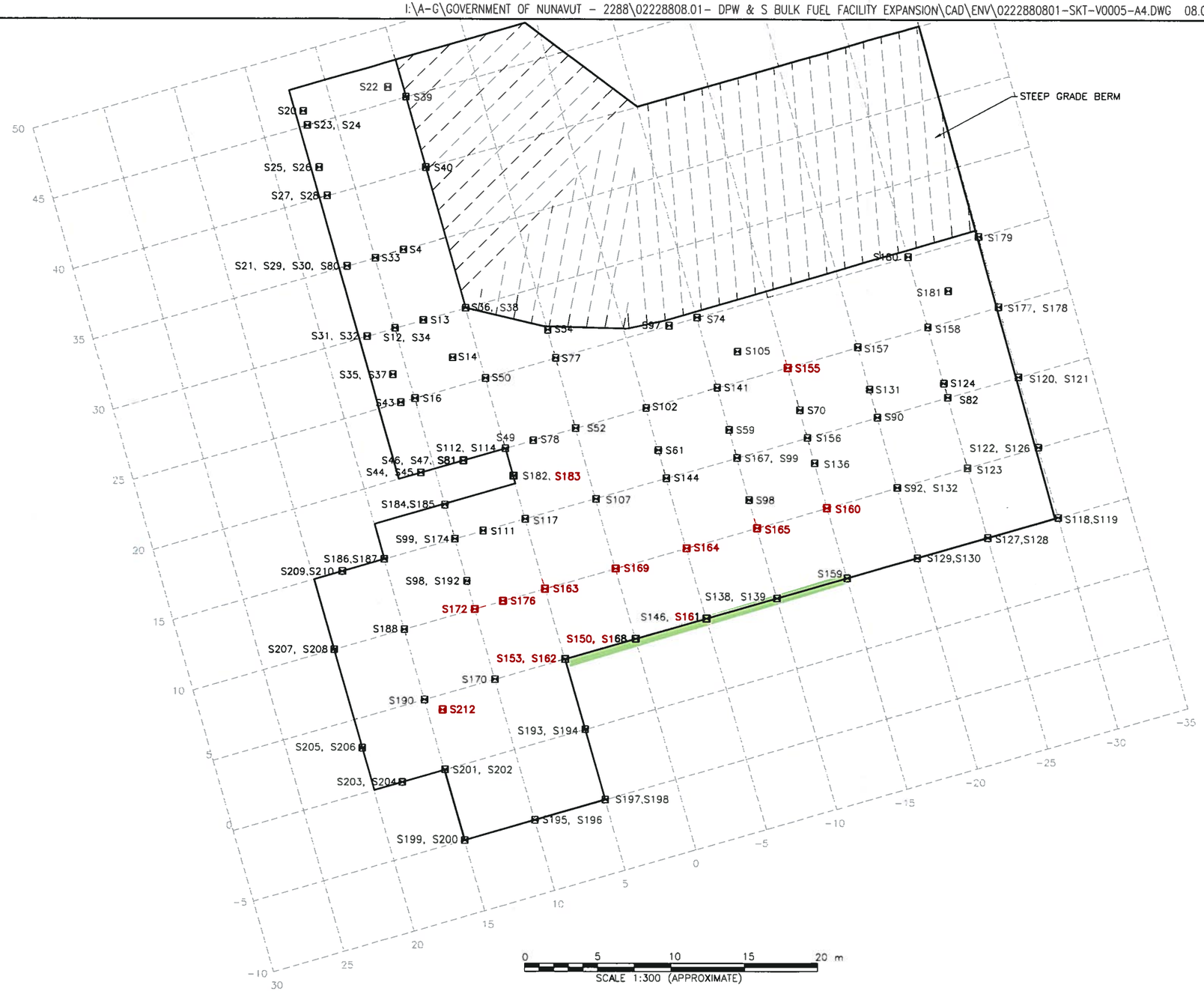
CLIENT: GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION:
FIGURE 2:
APPROXIMATE EXTENT OF 2007 EXCAVATIONS
KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.01.23	0222880801-SKT-V0002	A5



KEY PLAN
SCALE 1:2500 (APPROXIMATE)



SCALE 1:300 (APPROXIMATE)

LEGEND
- • 2007 SOIL SAMPLE LOCATION
- RED SOIL ANALYTICAL CONSIDERED TO BE IN EXCESS OF REMEDIATION GUIDELINES
- APPROXIMATE EXTENT OF EXCAVATION
- STORAGE TANKS AND PIPING
- SOIL SAMPLING GRID LINE
- LINER INSTALLED

NO.	DESCRIPTION	DATE	ISSUED BY

REVISIONS/ISSUE

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CLIENT
GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION
FIGURE 3: APPROXIMATE SOIL SAMPLE LOCATIONS – RECREATION COMPLEX EXCAVATION KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.02.13	0222880801-SKT-V0005	A4

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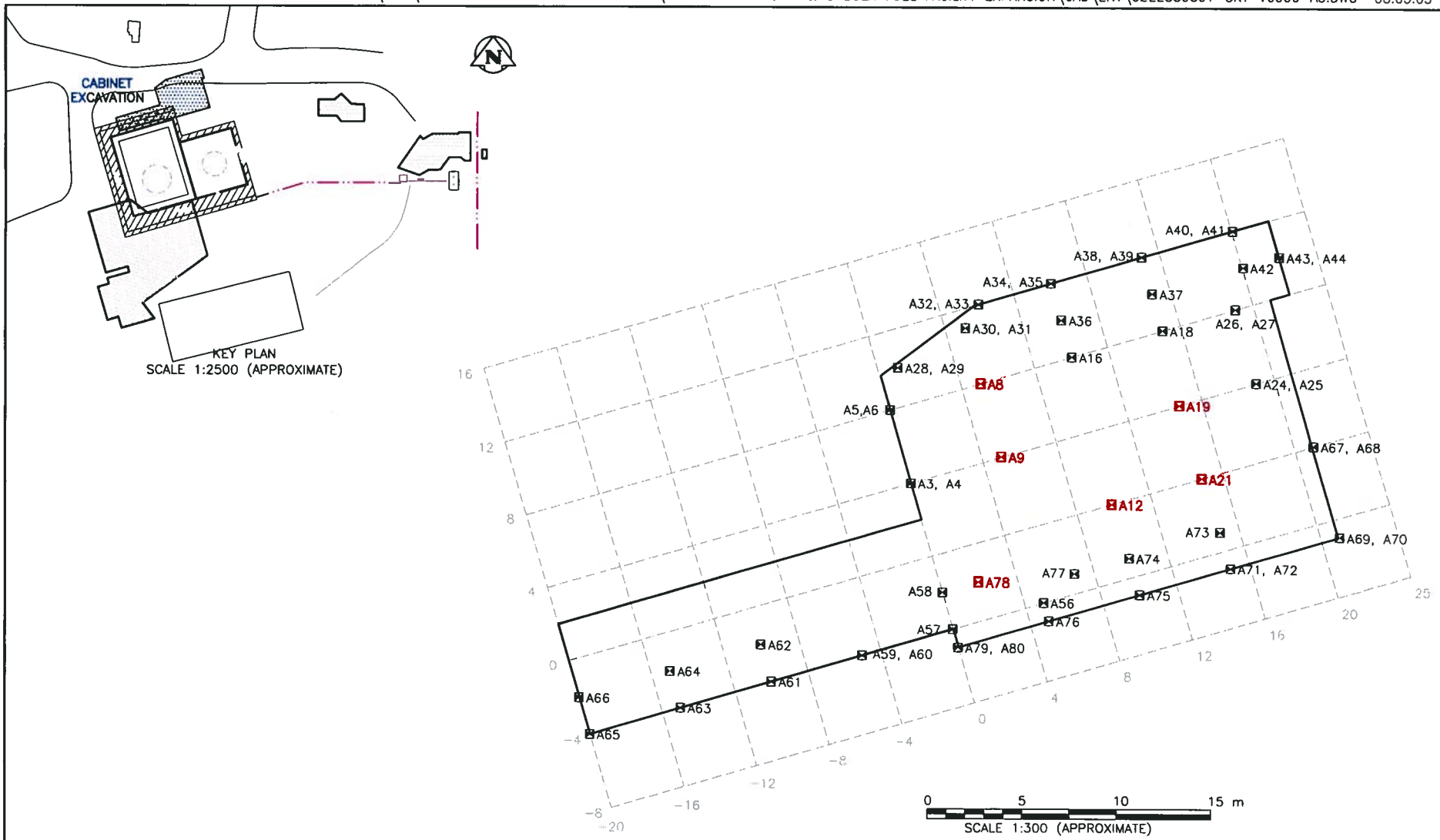

LEGEND

- 2007 SOIL SAMPLE LOCATION
- RED SOIL ANALYTICAL CONSIDERED TO BE IN EXCESS OF REMEDIATION GUIDELINES
- APPROXIMATE EXTENT OF EXCAVATION
- STORAGE TANKS AND PIPING
- SOIL SAMPLING GRID LINE

NO.	DESCRIPTION	DATE	ISSUED BY
REVISIONS/ISSUE			

WARDROP | Engineering Inc.

CLIENT
GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION
FIGURE 4: APPROXIMATE SOIL SAMPLE LOCATIONS – CABINET EXCAVATION
KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.02.13	0222880801-SKT-V0006	A3

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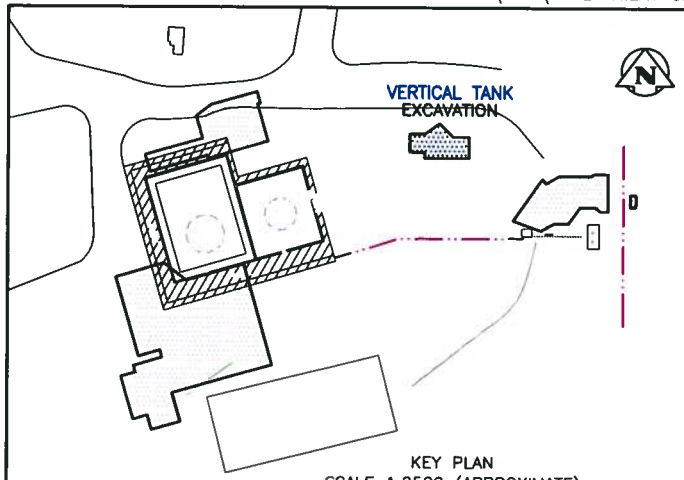
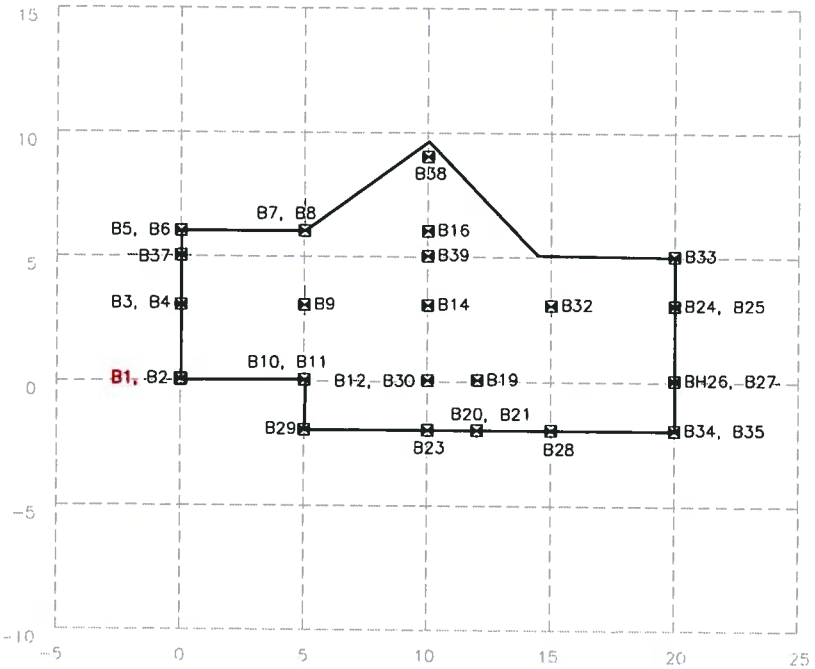


KEY PLAN
SCALE 1:2500 (APPROXIMATE)



SCALE 1:300 (APPROXIMATE)

LEGEND

- 2007 SOIL SAMPLE LOCATION
- RED SOIL ANALYTICAL CONSIDERED TO BE IN EXCESS OF REMEDIATION GUIDELINES
- APPROXIMATE EXTENT OF EXCAVATION
- STORAGE TANKS AND PIPING
- SOIL SAMPLING GRID LINE

NO.	DESCRIPTION	DATE	ISSUED BY
REVISIONS/ISSUE			

WARDROP | Engineering Inc.

CLIENT
GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION
FIGURE 5: APPROXIMATE SOIL SAMPLE LOCATIONS - VERTICAL TANK EXCAVATION
KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.02.13	0222880801-SKT-V0007	A4

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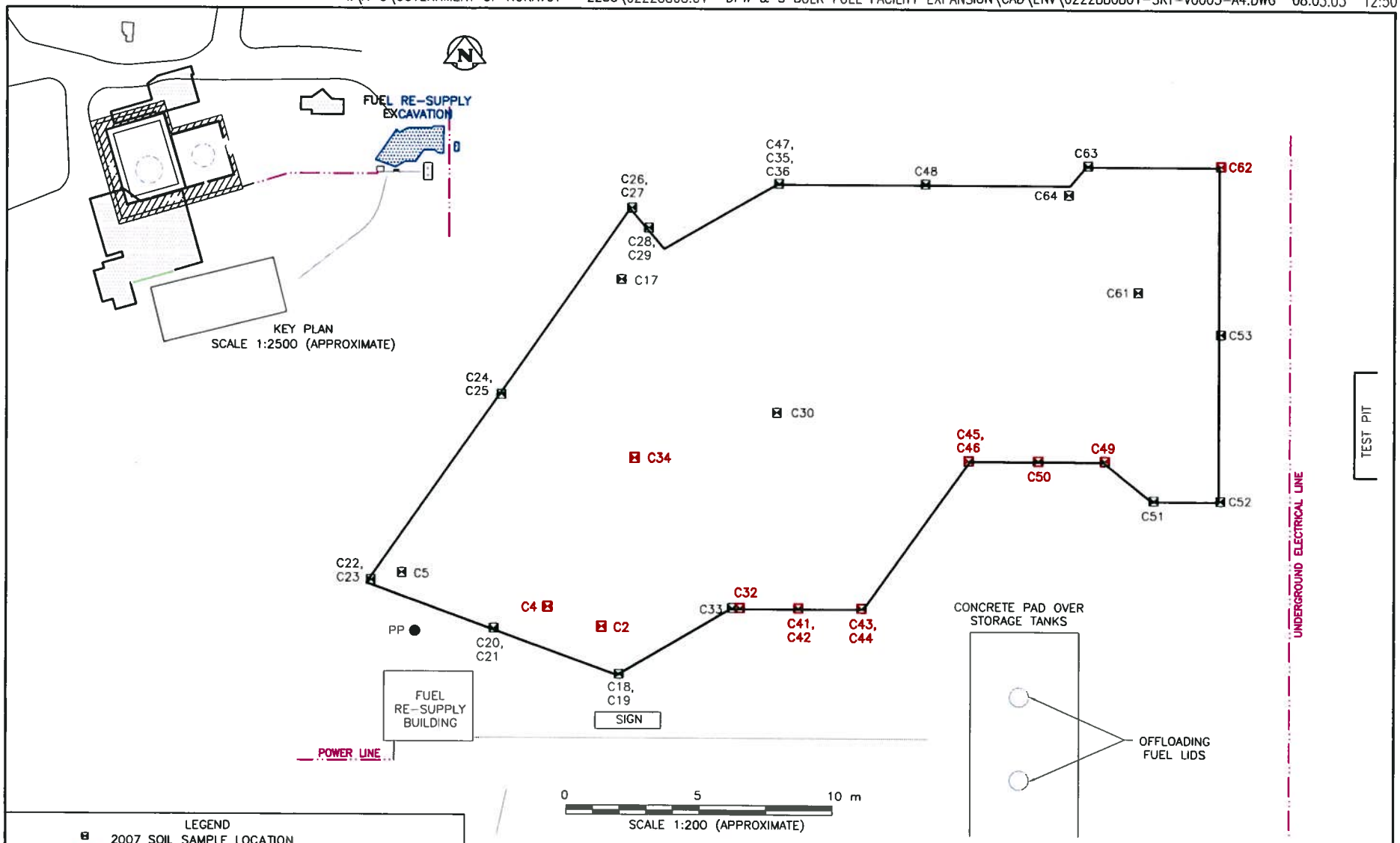


LEGEND

- 2007 SOIL SAMPLE LOCATION
- RED SOIL ANALYTICAL CONSIDERED TO BE IN EXCESS OF REMEDIATION GUIDELINES
- APPROXIMATE EXTENT OF EXCAVATION
- STORAGE TANKS AND PIPING

NO.	DESCRIPTION	DATE	ISSUED BY
REVISIONS/ISSUE			

WARDROP | Engineering Inc.

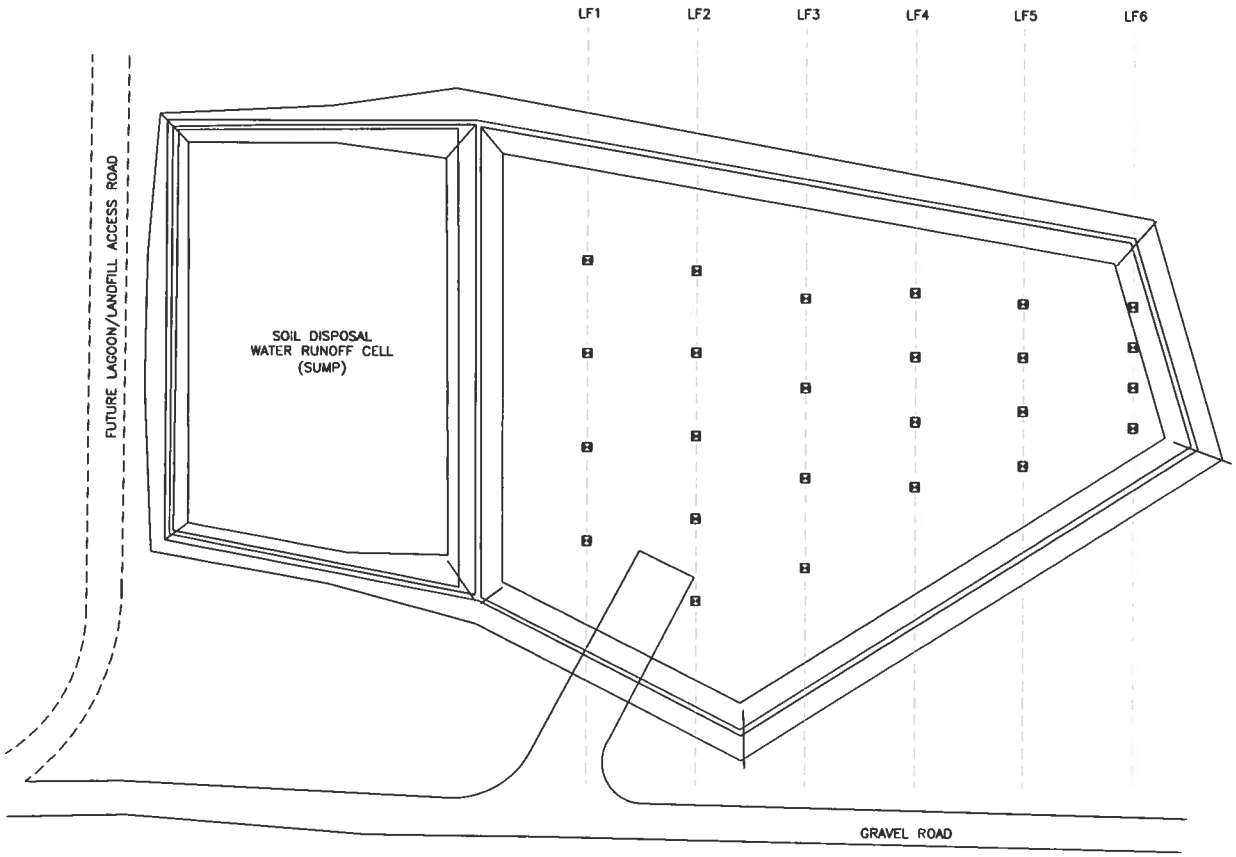
CLIENT
GOVERNMENT OF NUNAVUT

DRAWING DESCRIPTION
FIGURE 6: APPROXIMATE SOIL SAMPLE LOCATIONS - FUEL RE-SUPPLY EXCAVATION KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.01.23	0222880801-SKT-V0003	A4

AL (11" x 8.5")

I:\A-G\GOVERNMENT OF NUNAVUT - 2288\02228808.01- DPW & S BULK FUEL FACILITY EXPANSION\CAD\ENV\0222880801-SKT-V0004-A4.DWG 08.03.03 13:04



SAMPLE IDENTIFICATION	
LF1-2	COMPOSITE SAMPLE FROM LF-1
LF2-2	COMPOSITE SAMPLE FROM LF-2
LF3-2	COMPOSITE SAMPLE FROM LF-3
LF4-2	COMPOSITE SAMPLE FROM LF-4
LF5-2	COMPOSITE SAMPLE FROM LF-5
LF6-2	COMPOSITE SAMPLE FROM LF-6

PLEASE REFER TO TABLE 3, APPENDIX C

LEGEND
SOIL SAMPLE LOCATION
SOIL SAMPLING LINE

0 10 20 30 40 50 m
SCALE 1:800 (APPROXIMATE)

CLIENT
GOVERNMENT OF NUNAVUT

NO.	DESCRIPTION	DATE	ISSUED BY

REVISIONS/ISSUE

WARDROP | Engineering Inc.

DRAWING DESCRIPTION
FIGURE 7:
LANDFARM SOIL SAMPLING LOCATIONS
KUGAARUK, NUNAVUT

DESIGNED BY: SZ	DRAWN BY: VG	DRAWING NO.	REV.
CHECKED BY:	DATE: 08.01.23	0222880801-SKT-V0004	A4

AL (11" x 8.5")

APPENDIX C

TABLES

TABLE 1

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Recreation Complex Excavation					
S2	N.A.	Berm material	N.A.	<5 ppm	N.A.
S3	N.A.	Berm material	N.A.	<5 ppm	N.A.
S4	8,35,1.2	Northwest Base	1.2	275 ppm	N.A.
S5	N.A.	Berm material	N.A.	<5 ppm	N.A.
S6	N.A.	Berm material	N.A.	<5 ppm	N.A.
S7	N.A.	Berm material	N.A.	<5 ppm	N.A.
S12	10,30,1.2	Northwest Base	1.2	325 ppm	N.A.
S13	8,30,1.2	Northwest Base	1.2	7% LEL	N.A.
S14	8,25,1.0	Northwest Base	1.0	7% LEL	N.A.
S16	10,25,1.0	Northwest Base	1.0	7% LEL	N.A.
S20	12,46,1.2	Northwest Base	1.2	10 ppm	N.A.
S21	12,35,1.2	Northwest Base	1.2	450 ppm	2387
S22	6,46,1.4	Northwest Base	1.4	75 ppm	N.A.
S23	12,45,1.3	Northwest Base	1.3	<5 ppm	N.A.
S24	12,45,0.6	Northwest Wall	0.6	25 ppm	N.A.
S25	12,42,1.3	Northwest Base	1.3	35 ppm	N.A.
S26	12,42,0.8	Northwest Wall	0.8	25 ppm	N.A.
S27	12,40,0.6	Northwest Wall	0.6	100 ppm	N.A.
S28	12,40,1.3	Northwest Base	1.3	5% LEL	2342
S29	12,35,1.2	Northwest Base	1.2	150 ppm	N.A.
S30	12,35,1.2	Northwest Base	1.2	100 ppm	N.A.
S31	12,30,1.2	West Base	1.2	50 ppm	N.A.
S32	12,30,0.6	West Wall	0.6	35 ppm	N.A.
S33	10,35,1.2	Northwest Base	1.2	110 ppm	N.A.
S34	10,30,1.2	Northwest Base	1.2	210 ppm	2532
S35	11,27,1.1	West Base	1.1	50 ppm	N.A.
S36	5,30,1.0	Northwest Base	1.0	170 ppm	N.A.
S37	11,27,0.5	West Base	0.5	50 ppm	N.A.
S38	5,30,1.0	Northwest Base	1.0	205 ppm	2449
S39	5,45,1.2	Northwest Base	1.2	50 ppm	N.A.
S40	5,40,1.2	Northwest Base	1.2	250 ppm	2625
S43	11,25,1.2	West Base	1.2	5 ppm	N.A.
S44	11,20,1.3	West Base	1.3	55 ppm	N.A.
S45	11,20,0.6	West Wall	0.6	20 ppm	N.A.
S46	8,20,0.6	West Wall	0.6	80 ppm	N.A.
S47	8,20,1.3	Northwest Base	1.3	75 ppm	N.A.
S49	5,20,1.2	Northwest Base	1.2	5% LEL	2503
S50	5,25,1.3	Northwest Base	1.3	6% LEL	N.A.
S52	0,20,1.3	North Base	1.3	250 ppm	1221
S54	0,27,1.2	North Base	1.2	200 ppm	2167

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Recreation Complex Excavation (Cont'd)					
S59	-10,17,1.1	Central Base	1.1	140 ppm	N.A.
S61	-5,17,1.0	Central Base	1.0	500 ppm	2142
S70	-15,17,1.0	Central Base	1.0	190 ppmp	N.A.
S74	-10,25,1.2	North Base	1.2	280 ppm	N.A.
S77	0,25,1.0	North Base	1.0	150 ppm	N.A.
S78	3,20,1.0	North Base	1.0	350 ppm	N.A.
S80	12,35,0.5	West Wall	0.5	15 ppm	N.A.
S81	**8,20,0.5**	**West Wall**	**0.5**	**125 ppm**	**N.A.**
S82	-25,15,1.0	East Base	1.0	110 ppm	N.A.
S90	-20,15,1.0	East Base	1.0	350 ppm	N.A.
S92	-20,10,1.0	East Base	1.0	5% LEL	N.A.
S97	-8,25,1.3	North Base	1.3	25 ppm	N.A.
S98	-10,12,1.0	Central Base	1.0	8% LEL	N.A.
S99	-10,15,1.0	Central Base	1.0	6% LEL	N.A.
S102	-5,20,1.5	North Base	1.5	110 ppm	N.A.
S105	-12,22,1.0	North Base	1.0	90 ppm	N.A.
S107	0,15,1.3	Central Base	1.3	350 ppm	N.A.
S111	8,15,1.3	West Base	1.3	500 ppm	N.A.
S112	5,20,1.2	West Base	1.2	170 ppm	N.A.
S114	5,20,0.5	West Wall	0.5	500 ppm	N.A.
S117	5,15,1.3	West Base	1.3	325 ppm	N.A.
S118	-30,5,0.5	Southeast Wall	0.5	<5 ppm	N.A.
S119	-30,5,1.0	Southeast Base	1.0	<5 ppm	N.A.
S120	-30,15,1.0	East Base	1.0	220 ppm	N.A.
S121	-30,15,0.5	East Wall	0.5	20 ppm	N.A.
S122	-30,10,1.0	East Base	1.0	<5 ppm	N.A.
S123	-25,10,1.0	East Base	1.0	75 ppm	N.A.
S124	-25,16,1.0	East Base	1.0	60 ppm	N.A.
S126	-30,10,0.5	East Wall	0.5	<5 ppm	N.A.
S127	-25,5,0.5	South Wall	0.5	10 ppm	N.A.
S128	-25,5,1.0	South Base	1.0	5% LEL	752
S129	-20,5,0.5	South Wall	0.5	25 ppm	N.A.
S130	-20,5,1.0	South Base	1.0	20 ppm	N.A.
S131	-20,17,1.0	East Base	1.0	175 ppm	N.A.
S132	-20,10,1.0	East Base	1.0	5% LEL	5310
S136	-15,13,1.3	Central Base	0.5	5% LEL	6900
S138	-10,5,0.5	South Wall	1.0	<5 ppm	N.A.
S139	-10,5,1.0	South Base	1.0	50 ppm	N.A.
S141	-10,20,1.3	Central Base	1.3	190 ppm	N.A.
S144	-5,15,1.5	Central Base	1.5	7% LEL	6650

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Recreation Complex Excavation (Cont'd)					
S146	-5,5,0.5	South Wall	0.5	145 ppm	N.A.
S150	0,5,0.5	South Wall	0.5	5% LEL	6968
S153	5,5,0.5	South Wall	0.5	5% LEL	5196
S155	-15,20,2	North Base	2.0	300 ppm	5580
S156	-15,15,2	Central Base	2.0	350 ppm	N.A.
S157	-20,20,2	North Base	2.0	120 ppm	N.A.
S158	-25,20,2	Northeast Base	2.0	200 ppm	N.A.
S159	-15,5,2	South Base	2.0	170 ppm	N.A.
S160	-15,10,1.3	South Base	1.3	325 ppm	5572
S161	-5,5,1.5	South Base	1.5	350 ppm	4386
S162	5,5,1.5	South Base	1.5	320 ppm	3778
S163	5,10,2	Central Base	2.0	450 ppm	2048
S164	-5,10,2	Central Base	2.0	320 ppm	5802
S165	-10,10,2	Central Base	2.0	360 ppm	3468
S167	-10,15,2	Central Base	2.0	350 ppm	1116
S168	0,5,2	South Base	2.0	400 ppm	4292
S169	0,10,2	South Base	2.0	5% LEL	4524
S170	10,5,1.2	South Base	1.2	495 ppm	N.A.
S172	10,10,1.0	West Base	1.0	5% LEL	N.A.
S174	10,15,1.0	West Base	1.0	250 ppm	N.A.
S176	8,10,1.0	West Base	1.0	5% LEL	N.A.
S177	-30,20,0.5	East Wall	0.5	<5 ppm	N.A.
S178	-30,20,1.0	East Base	1.0	50 ppm	N.A.
S179	-30,25,0.6	North Wall	0.6	<5 ppm	N.A.
S180	-25,25,0.6	North Wall	0.6	10 ppm	N.A.
S181	-27,22,1.0	North Base	1.0	10 ppm	N.A.
S182	5,18,1.3	West Base	1.3	275 ppm	N.A.
S183	5,18,0.5	West Wall	0.5	5% LEL	N.A.
S184	10,18,1.3	West Base	1.3	300 ppm	N.A.
S185	10,18,0.5	West Wall	0.5	325 ppm	N.A.
S186	15,15,1.3	West Base	1.3	<5 ppm	N.A.
S187	15,15,0.5	West Wall	0.5	<5 ppm	N.A.
S188	15,10,1.3	West Base	1.3	425 ppm	N.A.
S190	15,5,1.3	West Base	1.3	500 ppm	N.A.
S192	10,12,1.3	West Base	1.3	410 ppm	N.A.
S193	5,0,1.0	South Base	1.0	400 ppm	N.A.
S194	5,0,0.5	South Wall	0.5	150 ppm	N.A.
S195	10,-5,0.5	South Wall	0.5	10 ppm	N.A.
S196	10,-5,1.0	South Base	1.0	15 ppm	N.A.

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Recreation Complex Excavation (Cont'd)					
S197	5,-5,0.5	South Wall	0.5	20 ppm	N.A.
S198	5,-5,1.0	South Base	1.0	15 ppm	N.A.
S199	15,-5,0.5	South Wall	0.5	15 ppm	N.A.
S200	15,-5,1.5	South Base	1.5	10 ppm	N.A.
S201	15,0,1.5	South Base	1.5	60 ppm	N.A.
S202	15,0,0.5	South Wall	0.5	40 ppm	N.A.
S203	18,0,1.3	South Base	1.3	<5 ppm	N.A.
S204	18,0,0.5	South Wall	0.5	25 ppm	N.A.
S205	20,3,1.4	West Base	1.4	20 ppm	N.A.
S206	20,3,0.5	West Wall	0.5	25 ppm	N.A.
S207	20,10,1.4	West Base	1.4	10 ppm	N.A.
S208	20,10,1.5	West Base	1.5	10 ppm	N.A.
S209	18,15,1.4	West Base	1.4	10 ppm	N.A.
S210	18,15,0.5	West Wall	0.5	10 ppm	N.A.
S212	**14,4,1.4**	**Southwest Base**	**1.4**	**N.A.**	**N.A.**
Cabinet Excavation					
A3	0,4,1.0	West Base	1.0	45 ppm	N.A.
A4	0,4,0.5	West Wall	0.5	<5 ppm	N.A.
A5	0,8,1.0	West Base	1.0	240 ppm	734
A6	0,8,0.5	West Wall	0.5	20 ppm	N.A.
A8	5,8,1.0	West Base	1.0	16% LEL	N.A.
A9	5,4,1.0	West Base	1.0	275 ppm	2655
A12	10,0,1.0	South Base	1.0	8% LEL	N.A.
A16	10,8,1.0	Central Base	1.0	140 ppm	N.A.
A18	15,8,1.0	Northeast Base	1.0	60 ppm	N.A.
A19	15,4,1.0	South Base	1.0	30% LEL	N.A.
A21	15,0,1.0	South Base	1.0	30% LEL	N.A.
A24	19,4,0.5	East Wall	0.5	25 ppm	N.A.
A25	19,4,1.0	East Base	1.0	30 ppm	N.A.
A26	19,8,0.5	East Wall	0.5	<5 ppm	N.A.
A27	19,8,1.0	East Base	1.0	10 ppm	N.A.
A28	1,10,1.0	Northwest Base	1.0	155 ppm	N.A.
A29	1,10,0.5	Northwest Wall	0.5	5 ppm	N.A.
A30	5,11,1.0	North Base	1.0	70 ppm	N.A.
A31	5,11,0.5	North Wall	0.5	110 ppm	N.A.
A32	6,12,1.0	North Base	1.0	10 ppm	N.A.
A33	6,12,0.5	North Wall	0.5	10 ppm	N.A.
A34	10,12,1.0	North Base	1.0	45 ppm	N.A.
A35	10,12,0.5	North Wall	0.5	250 ppm	N.A.
A36	10,10,1.0	North Base	1.0	40 ppm	N.A.

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Cabinet Excavation (Cont'd)					
A37	15,10,1.0	North Base	1.0	40 ppm	N.A.
A38	15,12,1.0	North Base	1.0	20 ppm	N.A.
A39	15,12,0.5	North Wall	0.5	25 ppm	N.A.
A40	20,12,1.0	Northeast Base	1.0	25 ppm	N.A.
A41	20,12,0.5	Northeast Wall	0.5	<5 ppm	N.A.
A42	20,10,1.0	Northeast Base	1.0	20 ppm	N.A.
A43	22,10,1.0	Northeast Base	1.0	100 ppm	N.A.
A44	22,10,0.5	Northeast Wall	0.5	10 ppm	N.A.
A56	5,-4,0.4	Southwest Base	0.4	5 ppm	N.A.
A57	0,-4,0.4	Southwest Base	0.4	<5 ppm	N.A.
A58	0,-2,0.6	Southwest Base	0.6	20 ppm	N.A.
A59	-5,-4,0.4	South Wall	0.4	20 ppm	N.A.
A60	-5,-4,0.8	South Base	0.8	<5 ppm	N.A.
A61	-10,-4,0.4	South Wall	0.4	<5 ppm	N.A.
A62	-10,-2,0.8	West Base	0.8	<5 ppm	N.A.
A63	-15,-4,0.5	South Wall	0.5	<5 ppm	N.A.
A64	-15,-2,0.8	West Base	0.8	<5 ppm	N.A.
A65	-20,-4,0.3	Southwest Wall	0.3	<5 ppm	N.A.
A66	-20,-2,0.4	West Wall	0.4	10 ppm	N.A.
A67	21,0,1.0	East Base	1.0	100 ppm	N.A.
A68	21,0,0.5	East Wall	0.5	50 ppm	N.A.
A69	21,-5,1.0	Southeast Base	1.0	110 ppm	N.A.
A70	21,-5,0.5	Southeast Wall	0.5	115 ppm	N.A.
A71	15,-5,1.0	South Base	1.0	35% LEL	676
A72	15,-5,0.5	South Wall	0.5	90 ppm	N.A.
A73	15,-3,1.0	South Base	1.0	38% LEL	1590
A74	10,-3,1.0	South Base	1.0	<5 ppm	190
A75	10,-5,0.3	South Wall	0.3	<5 ppm	N.A.
A76	5,-5,0.3	South Wall	0.3	<5 ppm	N.A.
A77	7,-3,0.4	South Base	0.4	<5 ppm	N.A.
A78	2,-2,0.7	South Base	0.7	10% LEL	2088
A79	0,-5,1.0	South Base	1.0	500 ppm	1132
A80	0,-5,0.5	South Wall	0.5	<5 ppm	N.A.
Vertical Tank Excavation					
B1	0,0,1.3	Southwest Base	1.3	9% LEL	3006
B2	0,0,0.6	Southwest Wall	0.6	170 ppm	1617
B3	0,3,1.3	West Base	1.3	25 ppm	N.A.
B4	0,3,0.6	West Wall	0.6	40 ppm	N.A.
B5	0,6,1.3	West Base	1.3	<5 ppm	N.A.

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Vertical Tank Excavation (Cont'd)					
B6	0,6,0.6	West Wall	0.6	20 ppm	N.A.
B7	5,6,1.3	North Base	1.3	<5 ppm	N.A.
B8	5,6,0.6	North Wall	0.6	40 ppm	N.A.
B9	5,3,1.3	West Base	1.3	50 ppm	N.A.
B10	5,0,1.2	South Base	1.2	30 ppm	N.A.
B11	5,0,0.6	South Wall	0.6	50 ppm	N.A.
B12	10,0,1.2	South Base	1.2	90 ppm	N.A.
B14	10,3,1.3	Central Base	1.3	150 ppm	N.A.
B16	10,6,1.3	Central Base	1.3	250 ppm	145
B19	12,0,1.3	South Base	1.3	175 ppm	N.A.
B20	12,-2,0.5	South Wall	0.5	150 ppm	N.A.
B21	12,-2,0.5	South Base	1.3	370 ppm	N.A.
B23	10,-2,1.3	South Base	1.3	370 ppm	410
B24	20,3,1.2	East Base	1.2	25 ppm	N.A.
B25	20,3,0.5	East Wall	0.5	5% LEL	1676
B26	20,0,1.3	East Base	1.3	50 ppm	N.A.
B27	20,0,0.5	East Wall	0.5	20% LEL	370
B28	15,-2,1.3	South Base	1.3	50 ppm	N.A.
B29	5,-2,0.5	South Wall	0.5	25 ppm	N.A.
B30	10,0,1.3	South Base	1.3	25 ppm	N.A.
B32	15,3,1.3	Central Base	1.3	25 ppm	N.A.
B33	20,5,0.5	Northeast Wall	0.5	500 ppm	N.A.
B34	20,-2,1.5	East Base	1.5	<5 ppm	N.A.
B35	20,-2,0.5	East Wall	0.5	500 ppm	N.A.
B37	0,5,0.5	West Wall	0.5	<5 ppm	N.A.
B38	10,9,0.5	North Wall	0.5	<5 ppm	N.A.
B39	10,5,1.5	Central Base	1.5	150 ppm	N.A.
Fuel Re-Supply Excavation					
C2	N.A.	Southwest Base	1.0	15% LEL	2082
C4	N.A.	West Base	1.0	>100 % LEL	2735
C5	N.A.	West Wall	0.5	100 ppm	N.A.
C17	N.A.	Northwest Base	1.0	25 ppm	N.A.
C18	N.A.	Southwest Base	1.0	40 ppm	N.A.
C19	N.A.	Southwest Wall	0.5	<5 ppm	N.A.
C20	N.A.	West Base	1.0	225 ppm	165
C21	N.A.	West Wall	0.5	10 ppm	N.A.
C22	N.A.	Northwest Base	1.0	80 ppm	N.A.

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

WARDROP

TABLE 1 (Cont'd)

Excavation Limits - Field Hydrocarbon Vapour and PetroFLAG ® Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification				Field Measurements	
Sample Identification	Location		Depth (m)	Hydrocarbon Vapour	PetroFLAG® Results (ppm)
	Coordinates (x,y,depth) (m)	Section			
Fuel Re-Supply Excavation (Cont'd)					
C23	N.A.	Northwest Wall	0.5	30 ppm	751
C24	N.A.	Northwest Wall	0.5	25 ppm	749
C25	N.A.	Northwest Base	1.0	20 ppm	N.A.
C26	N.A.	North Base	1.0	10 ppm	N.A.
C27	N.A.	North Wall	0.5	215 ppm	117
C28	N.A.	North Base	1.0	400 ppm	153
C29	N.A.	North Wall	0.5	340 ppm	107
C30	N.A.	Central Base	1.0	9% LEL	141
C32	N.A.	South Base	1.0	60 ppm	1721
C33	N.A.	South Wall	0.5	50 ppm	N.A.
C34	**N.A.**	**West Central Base**	**1.0**	**40 ppm**	**N.A.**
C35	N.A.	North Base	1.3	10 ppm	N.A.
C36	N.A.	North Wall	0.5	50 ppm	N.A.
C41	N.A.	South Wall	0.5	10% LEL	N.A.
C42	N.A.	South Base	1.3	15% LEL	N.A.
C43	N.A.	South Wall	0.5	6% LEL	N.A.
C44	N.A.	South Base	1.3	5% LEL	N.A.
C45	N.A.	South Wall	0.5	500 ppm	N.A.
C46	N.A.	South Base	1.3	10% LEL	N.A.
C47	N.A.	North Wall	0.5	<5 ppm	N.A.
C48	N.A.	North Wall	0.6	40 ppm	N.A.
C49	N.A.	Southeast Wall	0.6	8% LEL	N.A.
C50	N.A.	South Wall	0.6	38% LEL	N.A.
C51	N.A.	Southeast Wall	0.6	360 ppm	N.A.
C52	N.A.	Southeast Wall	0.6	10 ppm	N.A.
C53	N.A.	East Wall	0.6	<5 ppm	N.A.
C61	N.A.	East Central Base	1.3	20 ppm	N.A.
C62	N.A.	Northeast Wall	0.6	20% LEL	N.A.
C63	N.A.	North Wall	0.6	150 ppm	N.A.
C64	N.A.	North Wall	0.6	40 ppm	N.A.
Test Pit	N.A.	East Test Pit Base	0.6	40 ppm	N.A.

Notes: ppm = Parts per million
LEL = Lower Explosive Limit (1% LEL = 110 ppm)
PetroFlag results over 1700 mg/kg were considered to be over the remediation criteria.
Sample is expected to exceed remediation criteria
Results in **Bold** font exceeded the applicable guidelines.

TABLE 2

Excavation Limits - Soil Petroleum Hydrocarbon Laboratory Analytical Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification	Location	Depth	Field Measurements	Laboratory Analytical Results (mg/kg)							
			Hydrocarbon Vapour	Benzene	Toluene	Ethylbenzene	Xylenes[2]	F1 ($>nC_6$-nC_{10})	F2 ($>nC_{10}$ - nC_{16})	F3 ($>nC_{16}$ - nC_{34})	F4 ($>nC_{34}$)
Recreation Complex Excavation											
S196	South Wall	1.0 m	15 ppm	<0.005	<0.01	<0.01	<0.03	<5	<5	<5	<5
S112	West Base	1.2	170 ppm	0.016	0.07	2.3	12	260	1100	96	<5
S81	West Wall	0.5 m	125 ppm	**1.9**	78	9.9	**170**	**450**	**6400**	170	31
S212	South Base	1.4 m	N.A.	<0.005	0.89	4.5	39	**630**	**3200**	620	<5
Cabinet Excavation											
A35	North Wall	0.5 m	250 ppm	<0.005	<0.01	<0.01	0.04	<5	250	25	8
Vertical Tank Excavation											
B33	Southeast Wall	0.5 m	500 ppm	<0.005	0.03	0.17	1.5	62	900	240	17
B39	Central Base	1.5 m	150 ppm	<0.005	0.72	1.1	11	320	840	98	11
Fuel Re-Supply Excavation											
C29	North Wall	0.5 m	340 ppm	<0.005	<0.01	<0.01	0.09	16	530	130	26
C34	Central Base	1.0 m	40 ppm	**0.079**	4.2	2.9	37	120	**13000**	1500	52
CCME Commercial Guidelines[3,4,5]			**Coarse-Grained Soil[1]**	**0.030**	**1400**	**630**	**160**	**310**	**1700**	**1700**	**3300**
				0.030	**1500**	**670**	**170**	**340**	**1800**	**3500**	**10000**

Notes:

[1]Soils were classified in the field, by visual inspection. All soils were determined to be coarse-grained.
[2]Summation of m, p, and o-Xylene concentrations.
[3]Canadian Council of Ministers of the Environment (CCME),*Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*, May 2001 (for Fraction 1 to 4 values for coarse-grained soils).
[4]CCME, *Canadian Environmental Quality Guidelines*, 2004 (for BTEX values for coarse-grained soils within the inhalation of indoor air (slab-on-grade) and eco-soil contact pathway).
ppm = Parts per million

TABLE 3

Landfarm Soil Sampling - Soil Petroleum Hydrocarbon Laboratory Analytical Results
Former Tank Farm Site - Kugaaruk, Nunavut

Sample Identification	Laboratory Analytical Results (mg/kg)							
	Benzene	Toluene	Ethylbenzene	Xylenes[2]	F1 (>nC_6-nC_{10})	F2 (>nC_{10} - nC_{16})	F3 (>nC_{16} - nC_{34})	F4 (>nC_{34})
LF1-2	<0.005	0.04	0.20	1.9	70	**3500**	420	46
LF2-2	<0.005	0.01	0.15	0.92	53	1300	120	22
LF3-2	<0.005	0.14	1.5	18	**350**	**4200**	570	17
LF4-2	<0.005	<0.01	<0.01	0.34	24	**2300**	490	30
LF5-2	<0.005	0.02	0.28	2.3	72	**3500**	620	26
LF6-2	<0.005	0.02	0.33	3.7	96	**6500**	1100	31
CCME Commercial Guidelines[3,4,5]	**0.030**	**1400**	**630**	**160**	**310**	**1700**	**1700**	**3300**

Notes: [1]Soils were classified in the field, by visual inspection. All soils were determined to be coarse-grained.

[2]Summation of m, p, and o-Xylene concentrations.

[3]Canadian Council of Ministers of the Environment (CCME), *Canada-Wide Standards for Petroleum Hydrocarbons (PHC) in Soil*, May 2001 (for Fraction 1 to 4 values for coarse-grained soils).

[4]CCME, *Canadian Environmental Quality Guidelines*, 2004 (for BTEX values for fine- and coarse-grained soils within the inhalation of indoor air (slab-on-grade) and eco-soil contact pathway).

APPENDIX D

LABORATORY CERTIFICATES AND ANALYTICAL RESULTS

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

ANALYTICAL REPORT

WARDROP ENGINEERING
ATTN: SHAUNA ZAHARIUK
400 386 BROADWAY AVENUE
WINNIPEG MB R3C 4M8

Reported On: 08-AUG-07 08:38 AM

Lab Work Order #: L535000 **Date Received:** 26-JUL-07

Project P.O. #: KUGAARUK, NU
Job Reference: 022288-08-01
Legal Site Desc:
CofC Numbers:

Other Information:

Comments:

APPROVED BY:
GERRY VERA
Project Manager

Manitoba Technology Centre Ltd.
Part of the **ALS Laboratory Group**
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A Campbell Brothers Limited Company

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-1 S196								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	<0.02		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	<0.03		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		03-AUG-07		
F1-BTEX	<5		5	mg/kg		03-AUG-07		
F2 (C10-C16)	<5		5	mg/kg		03-AUG-07		
F3 (C16-C34)	<5		5	mg/kg		03-AUG-07		
F4 (C34-C50)	<5		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	<5		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	12		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-2 S 212								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.89		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	4.5		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	12		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	27		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	39		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	670		5	mg/kg		03-AUG-07		
F1-BTEX	630		5	mg/kg		03-AUG-07		
F2 (C10-C16)	3200		5	mg/kg		03-AUG-07		
F3 (C16-C34)	620		5	mg/kg		03-AUG-07		
F4 (C34-C50)	<5		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	4500		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	18		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-3 S112								
Sampled By: SHAUNA ZAHARIUK on 19-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	0.016		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.07		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	2.3		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	6.3		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-3 S112								
Sampled By: SHAUNA ZAHARIUK on 19-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Xylenes, m+p	5.4		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	12		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	270		5	mg/kg		03-AUG-07		
F1-BTEX	260		5	mg/kg		03-AUG-07		
F2 (C10-C16)	1100		5	mg/kg		03-AUG-07		
F3 (C16-C34)	96		5	mg/kg		03-AUG-07		
F4 (C34-C50)	<5		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	1500		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	21		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-4 B33								
Sampled By: SHAUNA ZAHARIUK on 19-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.03		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	0.17		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	0.85		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	0.64		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	1.5		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	64		5	mg/kg		03-AUG-07		
F1-BTEX	62		5	mg/kg		03-AUG-07		
F2 (C10-C16)	900		5	mg/kg		03-AUG-07		
F3 (C16-C34)	240		5	mg/kg		03-AUG-07		
F4 (C34-C50)	17		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	1200		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	5.3		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-5 B39								
Sampled By: SHAUNA ZAHARIUK on 19-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.72		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	1.1		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	4.7		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	6.6		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	11		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-5 B39								
Sampled By: SHAUNA ZAHARIUK on 19-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F1 (C6-C10)	330		5	mg/kg		03-AUG-07		
F1-BTEX	320		5	mg/kg		03-AUG-07		
F2 (C10-C16)	840		5	mg/kg		03-AUG-07		
F3 (C16-C34)	98		5	mg/kg		03-AUG-07		
F4 (C34-C50)	11		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	1300		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	25		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-6 A81								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	1.9		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	78		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	9.9		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	52		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	120		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	170		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	710		5	mg/kg		03-AUG-07		
F1-BTEX	450		5	mg/kg		03-AUG-07		
F2 (C10-C16)	6400		5	mg/kg		03-AUG-07		
F3 (C16-C34)	170		5	mg/kg		03-AUG-07		
F4 (C34-C50)	31		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	7300		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	70		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-7 A35								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	0.04		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	0.04		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	<5		5	mg/kg		03-AUG-07		
F1-BTEX	<5		5	mg/kg		03-AUG-07		
F2 (C10-C16)	250		5	mg/kg		03-AUG-07		
F3 (C16-C34)	25		5	mg/kg		03-AUG-07		

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-7 A35								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME Total Hydrocarbons								
F4 (C34-C50)	8		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	280		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	20		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-8 C29								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	<0.01		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	0.03		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	0.06		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	0.09		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	16		5	mg/kg		03-AUG-07		
F1-BTEX	16		5	mg/kg		03-AUG-07		
F2 (C10-C16)	530		5	mg/kg		03-AUG-07		
F3 (C16-C34)	130		5	mg/kg		03-AUG-07		
F4 (C34-C50)	26		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	700		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	19		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-9 C 34								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	0.079		0.005	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Toluene	4.2		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	2.9		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	11		0.01	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	26		0.02	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
Xylenes	37		0.03	mg/kg	27-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	160		5	mg/kg		03-AUG-07		
F1-BTEX	120		5	mg/kg		03-AUG-07		
F2 (C10-C16)	13000		5	mg/kg		03-AUG-07		
F3 (C16-C34)	1500		5	mg/kg		03-AUG-07		
F4 (C34-C50)	52		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	15000		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-9 C 34								
Sampled By: SHAUNA ZAHARIUK on 20-JUL-07								
Matrix: SOIL								
% Moisture	45		0.1	%	30-JUL-07	30-JUL-07	LCR	R554664
L535000-10 LF1-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.04		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	0.20		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	0.86		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	1.1		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	1.9		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	72		5	mg/kg		03-AUG-07		
F1-BTEX	70		5	mg/kg		03-AUG-07		
F2 (C10-C16)	3500		5	mg/kg		03-AUG-07		
F3 (C16-C34)	420		5	mg/kg		03-AUG-07		
F4 (C34-C50)	46		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	4000		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	9.9		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295
L535000-11 LF2-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.01		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	0.15		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	0.31		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	0.60		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	0.92		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	54		5	mg/kg		03-AUG-07		
F1-BTEX	53		5	mg/kg		03-AUG-07		
F2 (C10-C16)	1300		5	mg/kg		03-AUG-07		
F3 (C16-C34)	120		5	mg/kg		03-AUG-07		
F4 (C34-C50)	22		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	1500		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	12		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295
L535000-12 LF3-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-12 LF3-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.14		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	1.5		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	6.0		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	12		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	18		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	370		5	mg/kg		03-AUG-07		
F1-BTEX	350		5	mg/kg		03-AUG-07		
F2 (C10-C16)	4200		5	mg/kg		03-AUG-07		
F3 (C16-C34)	570		5	mg/kg		03-AUG-07		
F4 (C34-C50)	17		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	5200		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	17		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295
L535000-13 LF4-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	<0.01		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	<0.01		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	0.10		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	0.24		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	0.34		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	24		5	mg/kg		03-AUG-07		
F1-BTEX	24		5	mg/kg		03-AUG-07		
F2 (C10-C16)	2300		5	mg/kg		03-AUG-07		
F3 (C16-C34)	490		5	mg/kg		03-AUG-07		
F4 (C34-C50)	30		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	2800		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	6.3		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295
L535000-14 LF5-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.02		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	0.28		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	1.0		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892

ALS LABORATORY GROUP ANALYTICAL REPORT

Sample Details/Parameters	Result	Qualifier*	D.L.	Units	Extracted	Analyzed	By	Batch
L535000-14 LF5-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Xylenes, m+p	1.3		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	2.3		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	75		5	mg/kg		03-AUG-07		
F1-BTEX	72		5	mg/kg		03-AUG-07		
F2 (C10-C16)	3500		5	mg/kg		03-AUG-07		
F3 (C16-C34)	620		5	mg/kg		03-AUG-07		
F4 (C34-C50)	26		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	4200		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	17		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295
L535000-15 LF6-2								
Sampled By: SHAUNA ZAHARIUK on 21-JUL-07								
Matrix: SOIL								
CCME BTEX + F1-F4								
CCME BTEX								
Benzene	<0.005		0.005	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Toluene	0.02		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Ethylbenzene	0.33		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
o-Xylene	1.7		0.01	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes, m+p	2.1		0.02	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
Xylenes	3.7		0.03	mg/kg	30-JUL-07	01-AUG-07	GEV	R556892
CCME Total Extractable Hydrocarbons								
Prep/Analysis Dates					31-JUL-07	03-AUG-07	THT	R556896
CCME Total Hydrocarbons								
F1 (C6-C10)	100		5	mg/kg		03-AUG-07		
F1-BTEX	96		5	mg/kg		03-AUG-07		
F2 (C10-C16)	6500		5	mg/kg		03-AUG-07		
F3 (C16-C34)	1100		5	mg/kg		03-AUG-07		
F4 (C34-C50)	31		5	mg/kg		03-AUG-07		
Total Hydrocarbons (C6-C50)	7700		5	mg/kg		03-AUG-07		
Chromatogram to baseline at nC50	YES					03-AUG-07		
% Moisture	7.5		0.1	%	31-JUL-07	31-JUL-07	LCR	R555295

* Refer to Referenced Information for Qualifiers (if any) and Methodology.

Reference Information

Methods Listed (If applicable):

ALS Test Code	Matrix	Test Description	Preparation Method Reference(Based On)	Analytical Method Reference(Based On)
ETL-BTX,TVH-CCME-WP	Soil	CCME BTEX		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TEH-CCME-WP	Soil	CCME Total Extractable Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310
ETL-TVH,TEH-CCME-WP	Soil	CCME Total Hydrocarbons		CCME CWS-PHC Dec-2000 - Pub# 1310

Analytical methods used for analysis of CCME Petroleum Hydrocarbons have been validated and comply with the Reference Method for the CWS PHC.

Hydrocarbon results are expressed on a dry weight basis.

In cases where results for both F4 and F4G are reported, the greater of the two results must be used in any application of the CWS PHC guidelines and the gravimetric heavy hydrocarbons cannot be added to the C6 to C50 hydrocarbons.
In samples where BTEX and F1 were analyzed , F1-BTEX represents a value where the sum of Benzene, Toluene, Ethylbenzene and total Xylenes has been subtracted from F1.

In samples where PAHs, F2 and F3 were analyzed, F2-Naphth represents the result where Naphthalene has been subtracted from F2. F3-PAH represents a result where the sum of Benzo(a)anthracene, Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Dibenzo(a,h)anthracene, Fluoranthene, Indeno(1,2,3-cd)pyrene, Phenanthrene, and Pyrene has been subtracted from F3.

Unless otherwise qualified, the following quality control criteria have been met for the F1 hydrocarbon range:
1. All extraction and analysis holding times were met.
2. Instrument performance showing response factors for C6 and C10 within 30% of the response factor for toluene.
3. Linearity of gasoline response within 15% throughout the calibration range.

Unless otherwise qualified, the following quality control criteria have been met for the F2-F4 hydrocarbon ranges:
1. All extraction and analysis holding times were met.
2. Instrument performance showing C10, C16 and C34 response factors within 10% of their average.
3. Instrument performance showing the C50 response factor within 30% of the average of the C10, C16 and C34 response factors.
4. Linearity of diesel or motor oil response within 15% throughout the calibration range.

** Laboratory Methods employed follow in-house procedures, which are generally based on nationally or internationally accepted methodologies.

Chain of Custody numbers:

The last two letters of the above test code(s) indicate the laboratory that performed analytical analysis for that test. Refer to the list below:

Laboratory Definition Code	Laboratory Location	Laboratory Definition Code	Laboratory Location
WP	ALS LABORATORY GROUP - WINNIPEG, MANITOBA, CANADA		

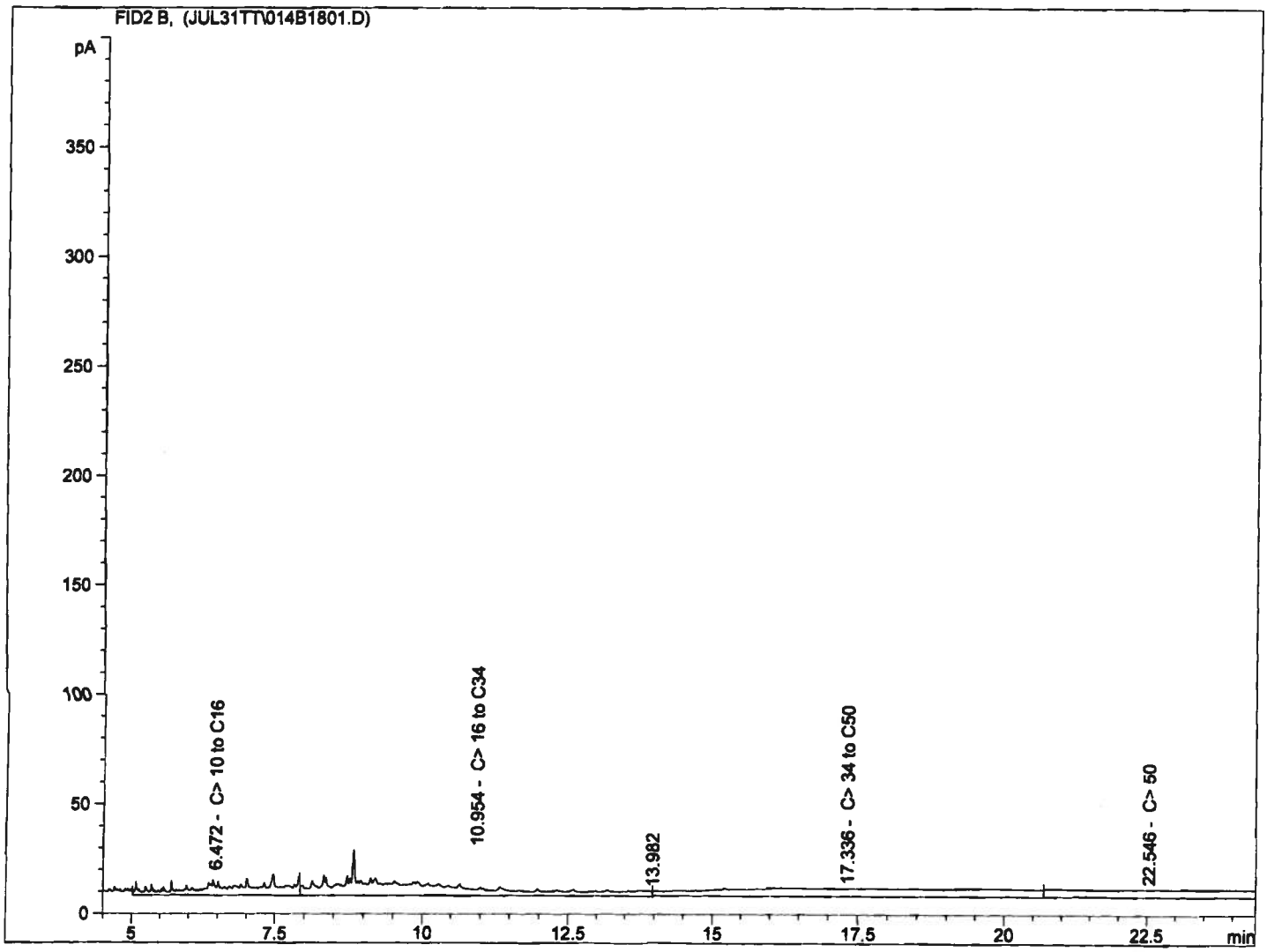
GLOSSARY OF REPORT TERMS
Surr - A surrogate is an organic compound that is similar to the target analyte(s) in chemical composition and behavior but not normally detected in environmental samples. Prior to sample processing, samples are fortified with one or more surrogate compounds. The reported surrogate recovery value provides a measure of method efficiency. The Laboratory control limits are determined under column heading D.L.
mg/kg (units) - unit of concentration based on mass, parts per million.
mg/L (units) - unit of concentration based on volume, parts per million.
< - Less than.
D.L. - The reporting limit.
N/A - Result not available. Refer to qualifier code and definition for explanation.

Test results reported relate only to the samples as received by the laboratory.
UNLESS OTHERWISE STATED, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.
UNLESS OTHERWISE STATED, SAMPLES ARE NOT CORRECTED FOR CLIENT FIELD BLANKS.
Although test results are generated under strict QA/QC protocols, any unsigned test reports, faxes, or emails are considered preliminary.

ALS Laboratory Group has an extensive QA/QC program where all analytical data reported is analyzed using approved referenced procedures followed by checks and reviews by senior managers and quality assurance personnel. However, since the results are obtained from chemical measurements and thus cannot be guaranteed, ALS Laboratory Group assumes no liability for the use or interpretation of the results.

Data File C:\CHEM32\1\DATA\JUL31TT\014B1801.D
Sample Name: L535000-1

Acq. Operator	: T. Truong	Seq. Line	: 18
Acq. Instrument	: GC4	Location	: Vial 14
Injection Date	: 7/31/2007 8:47:48 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:30:05 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



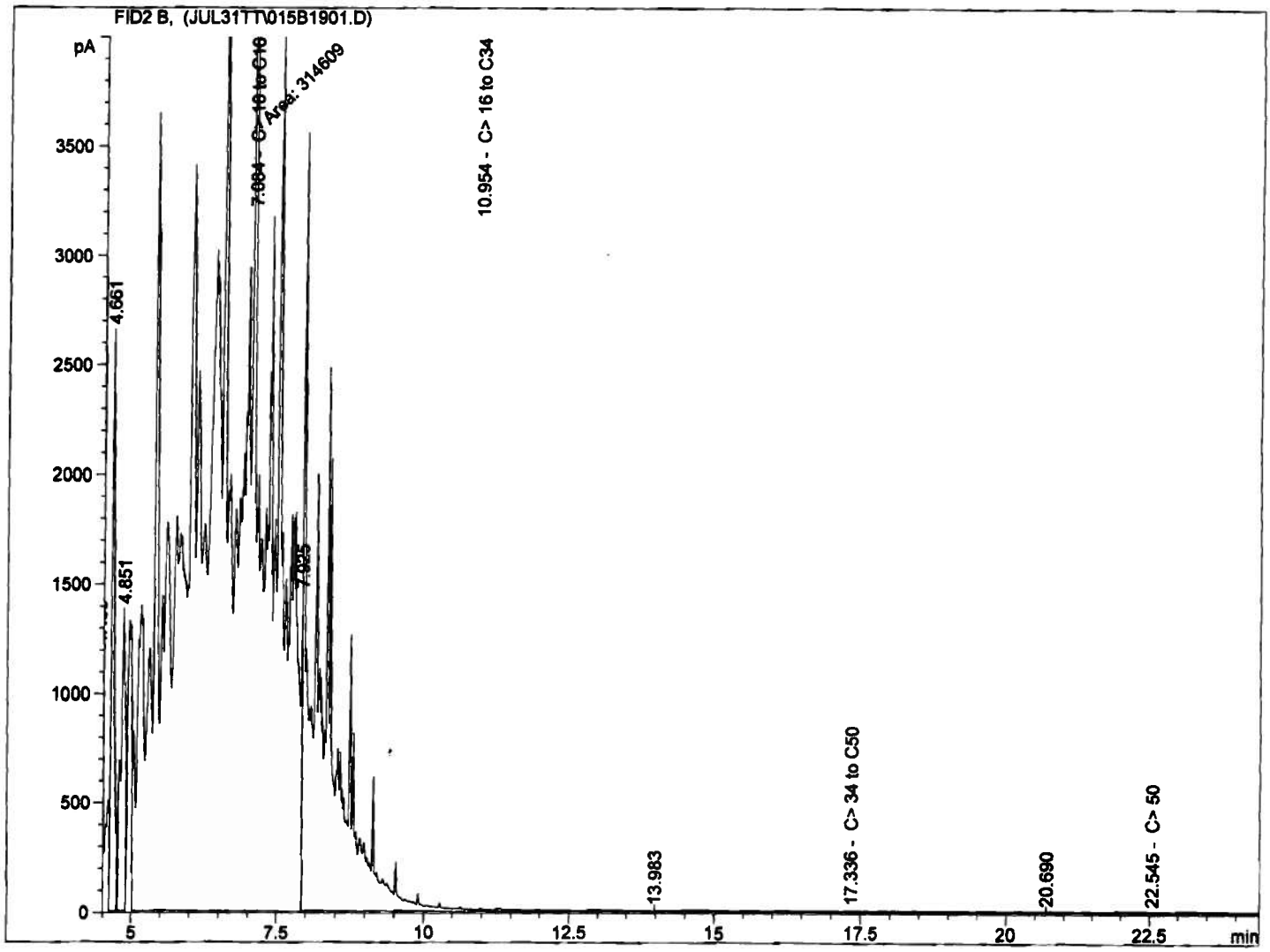
External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 7/19/2007 10:49:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\015B1901.D
Sample Name: L535000-2

Acq. Operator	: T. Truong	Seq. Line	: 19
Acq. Instrument	: GC4	Location	: Vial 15
Injection Date	: 7/31/2007 9:21:22 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:37:50 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

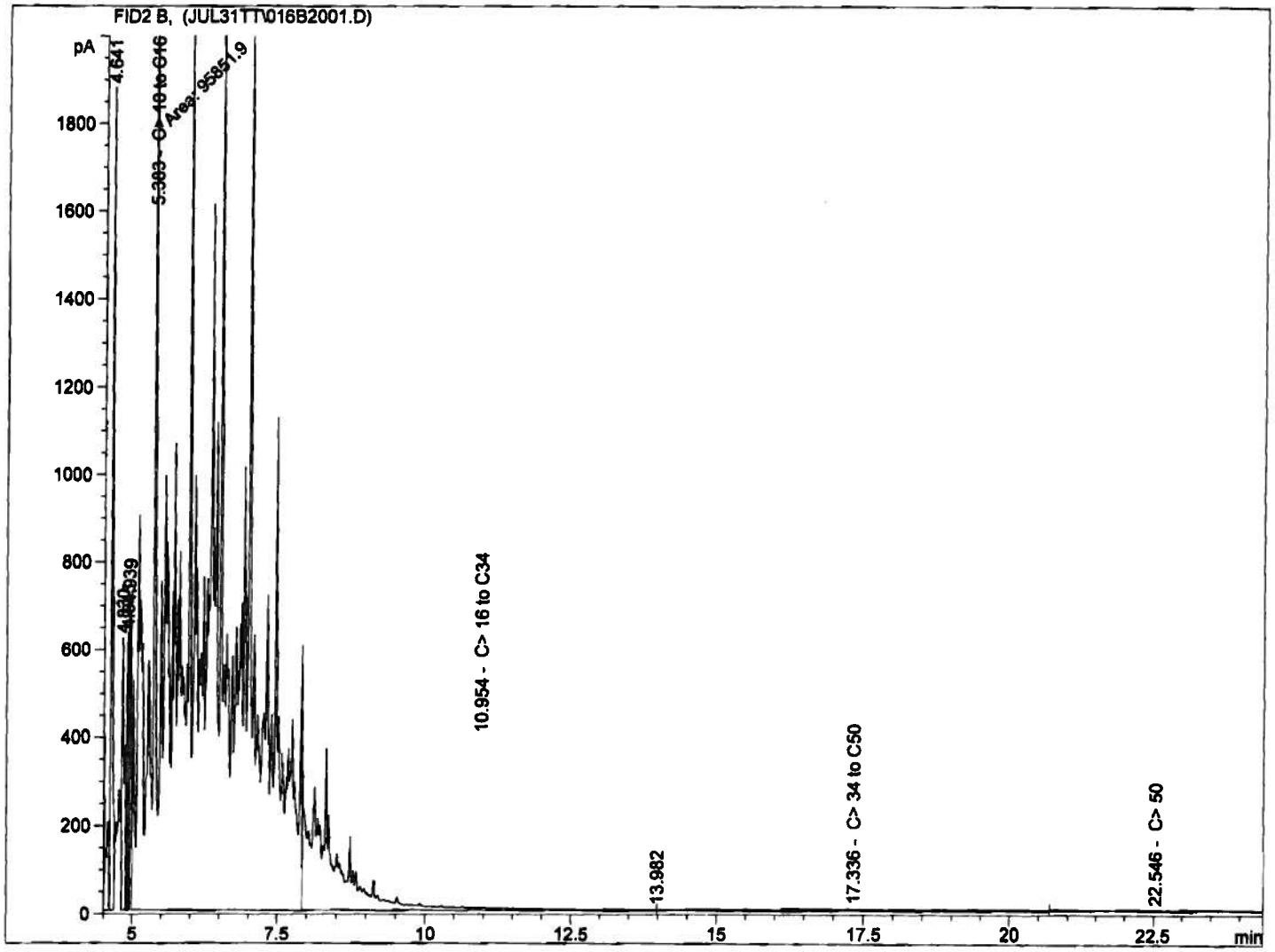
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\016B2001.D
Sample Name: L535000-3

Acq. Operator	: T. Truong	Seq. Line	: 20
Acq. Instrument	: GC4	Location	: Vial 16
Injection Date	: 7/31/2007 9:54:36 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:38:20 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

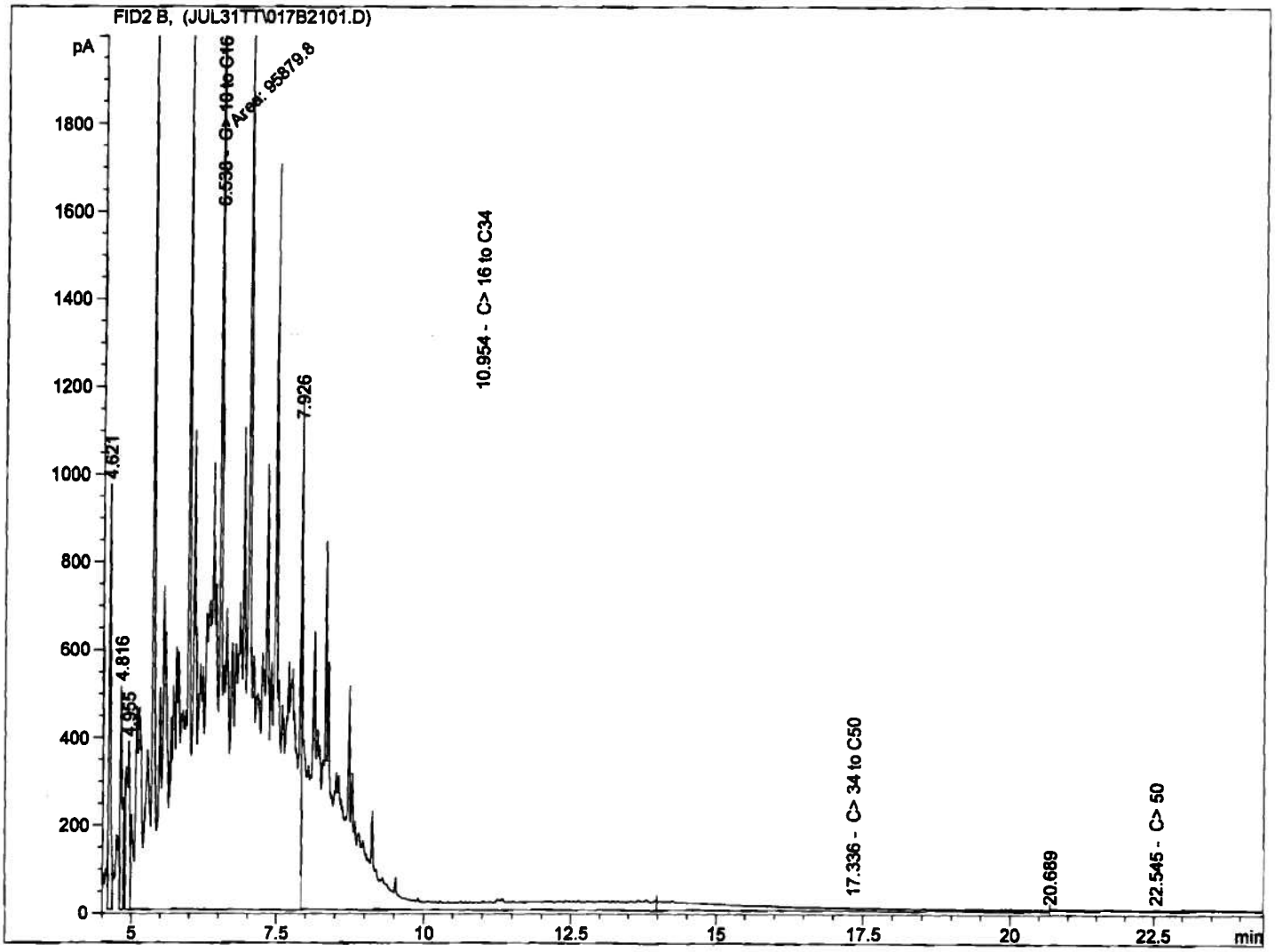
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\017B2101.D
Sample Name: L535000-4

Acq. Operator	: T. Truong	Seq. Line	: 21
Acq. Instrument	: GC4	Location	: Vial 17
Injection Date	: 7/31/2007 10:27:57 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:38:20 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

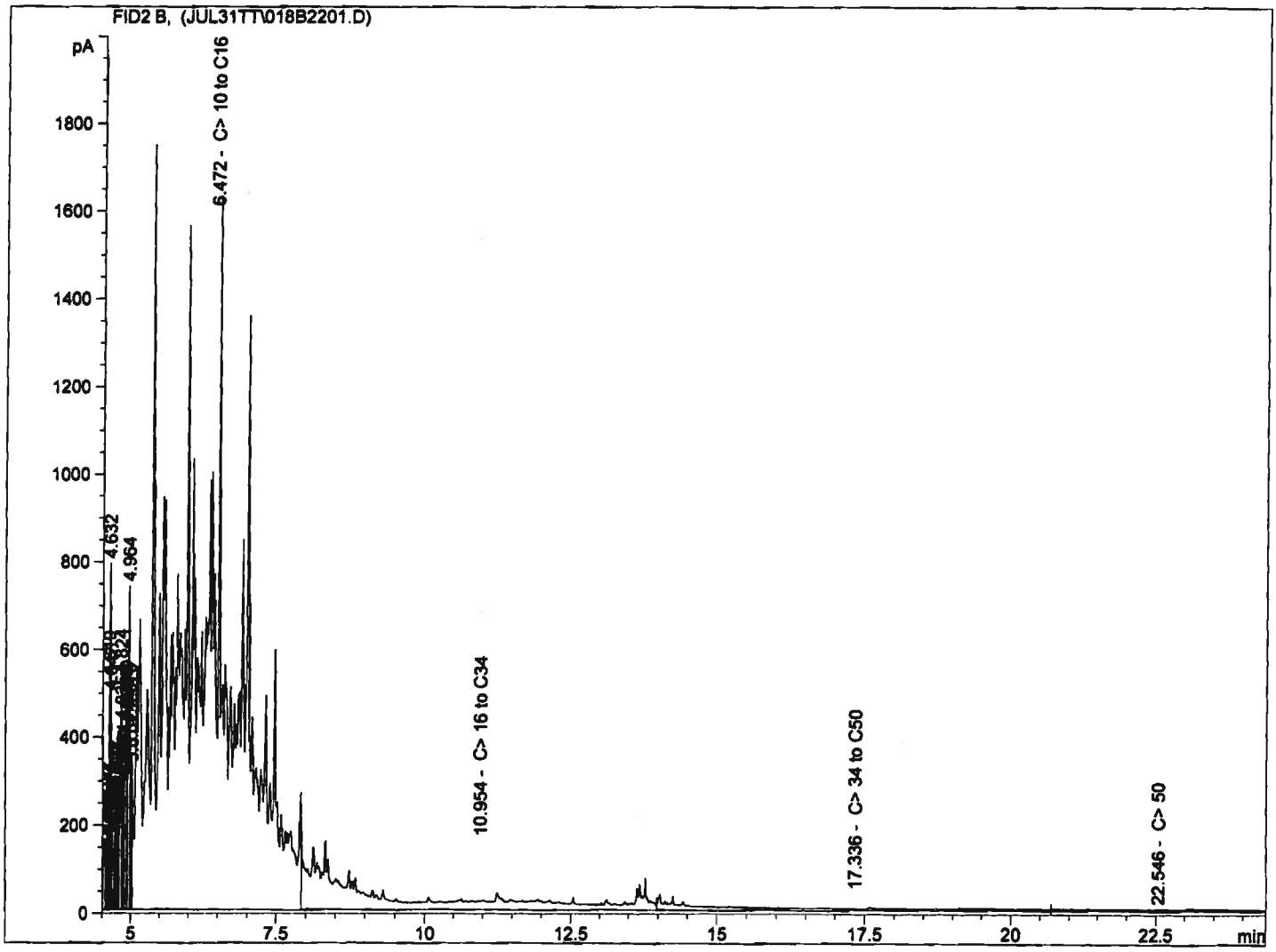
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\018B2201.D
Sample Name: L535000-5

Acq. Operator	: T. Truong	Seq. Line	: 22
Acq. Instrument	: GC4	Location	: Vial 18
Injection Date	: 7/31/2007 11:01:01 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:40:23 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

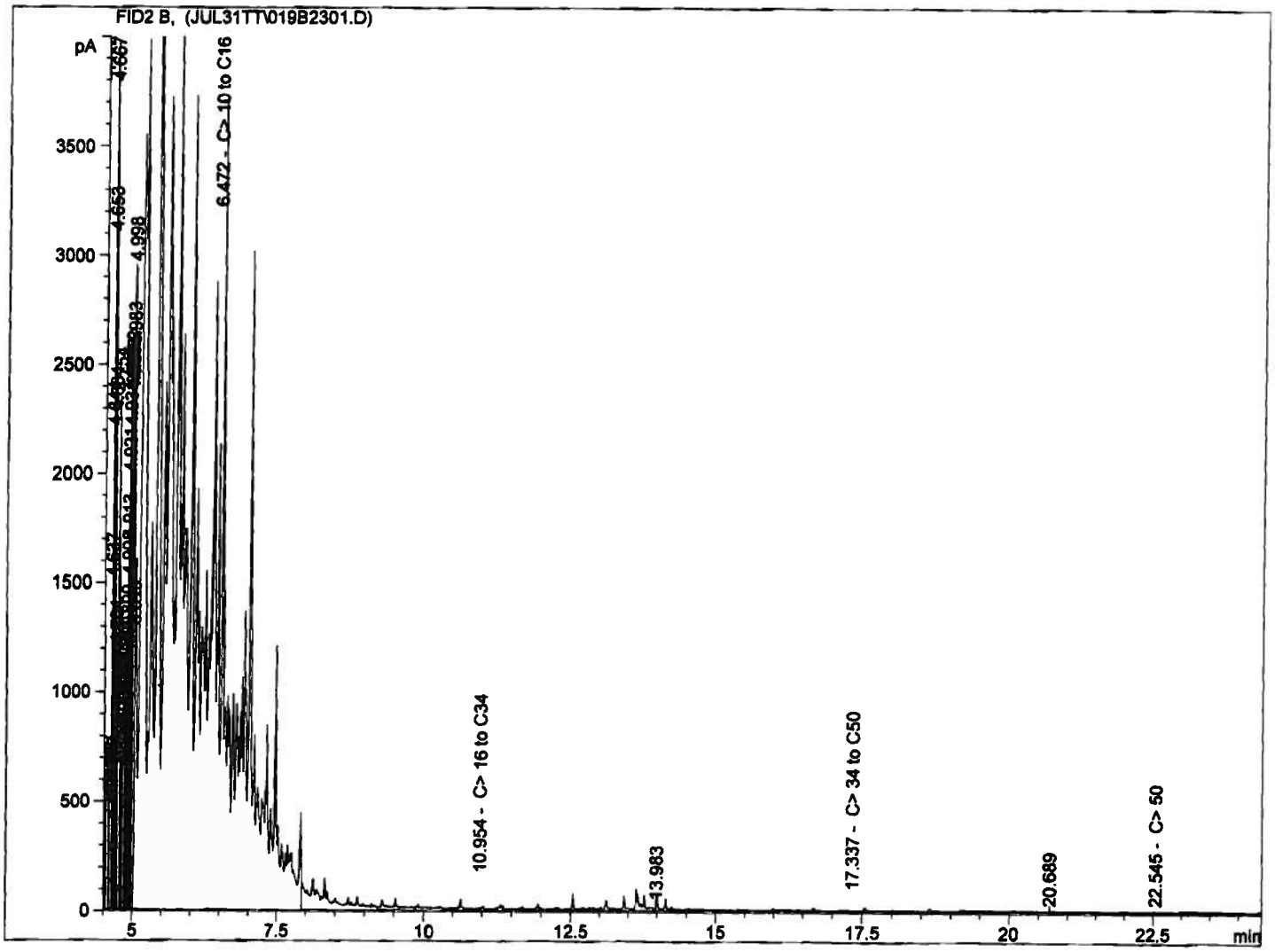
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\019B2301.D
Sample Name: L535000-6

Acq. Operator	: T. Truong	Seq. Line	: 23
Acq. Instrument	: GC4	Location	: Vial 19
Injection Date	: 7/31/2007 11:33:59 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:40:45 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

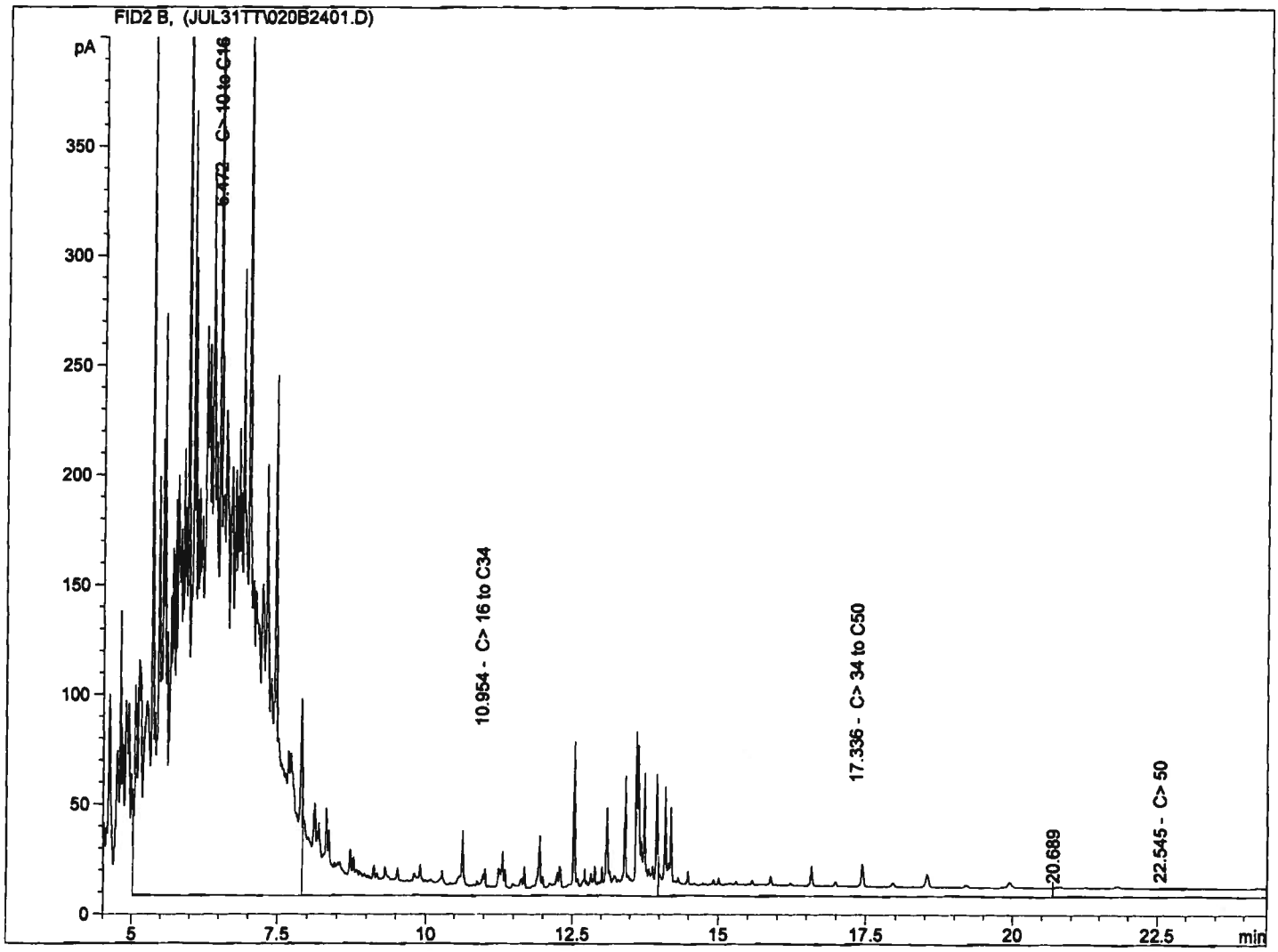
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\020B2401.D
Sample Name: L535000-7

Acq. Operator	: T. Truong	Seq. Line	: 24
Acq. Instrument	: GC4	Location	: Vial 20
Injection Date	: 8/1/2007 12:06:56 AM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:41:16 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



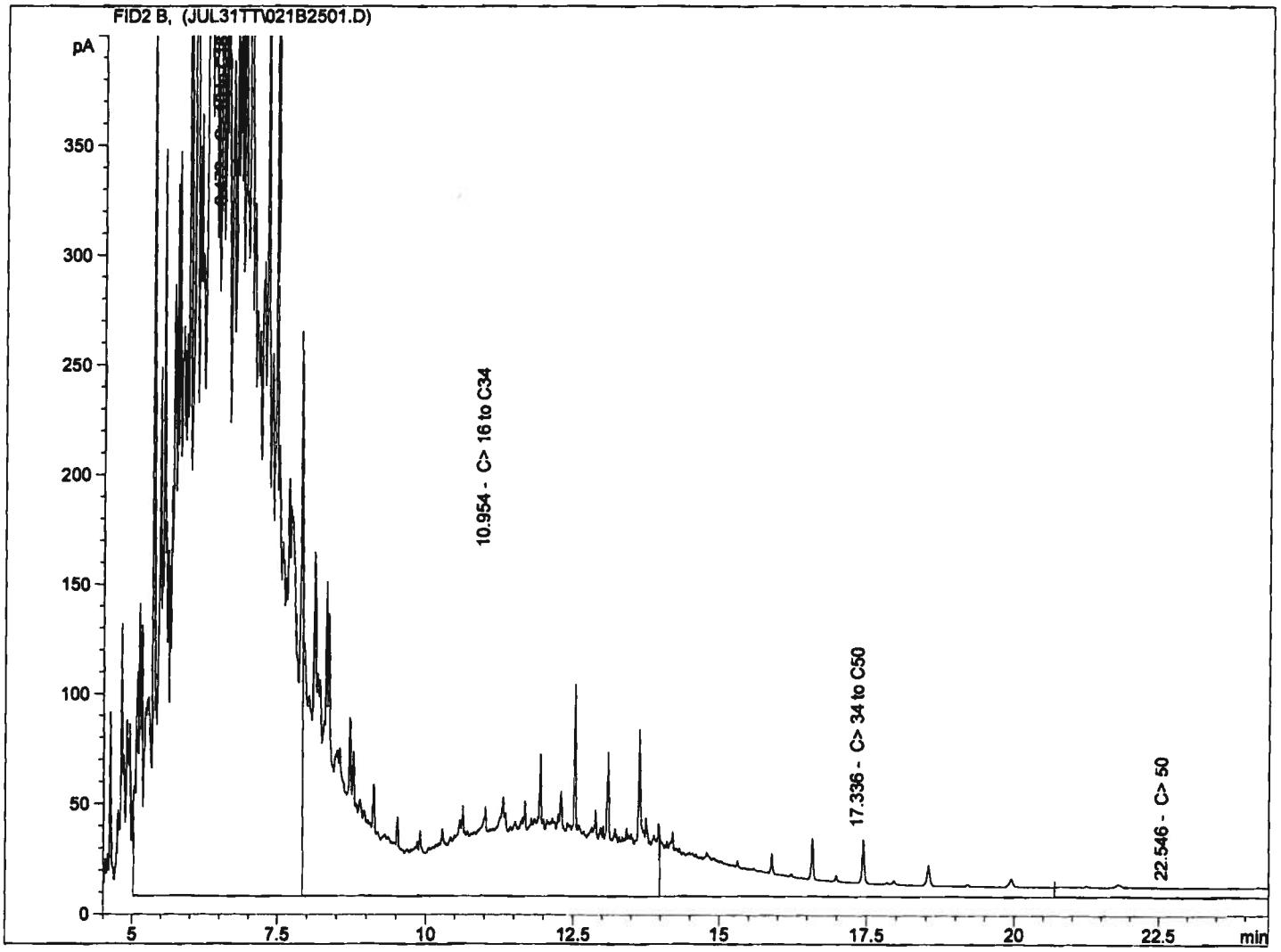
External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 7/19/2007 10:49:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\021B2501.D
Sample Name: L535000-8

Acq. Operator	: T. Truong	Seq. Line	: 25
Acq. Instrument	: GC4	Location	: Vial 21
Injection Date	: 8/1/2007 12:40:03 AM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:41:16 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

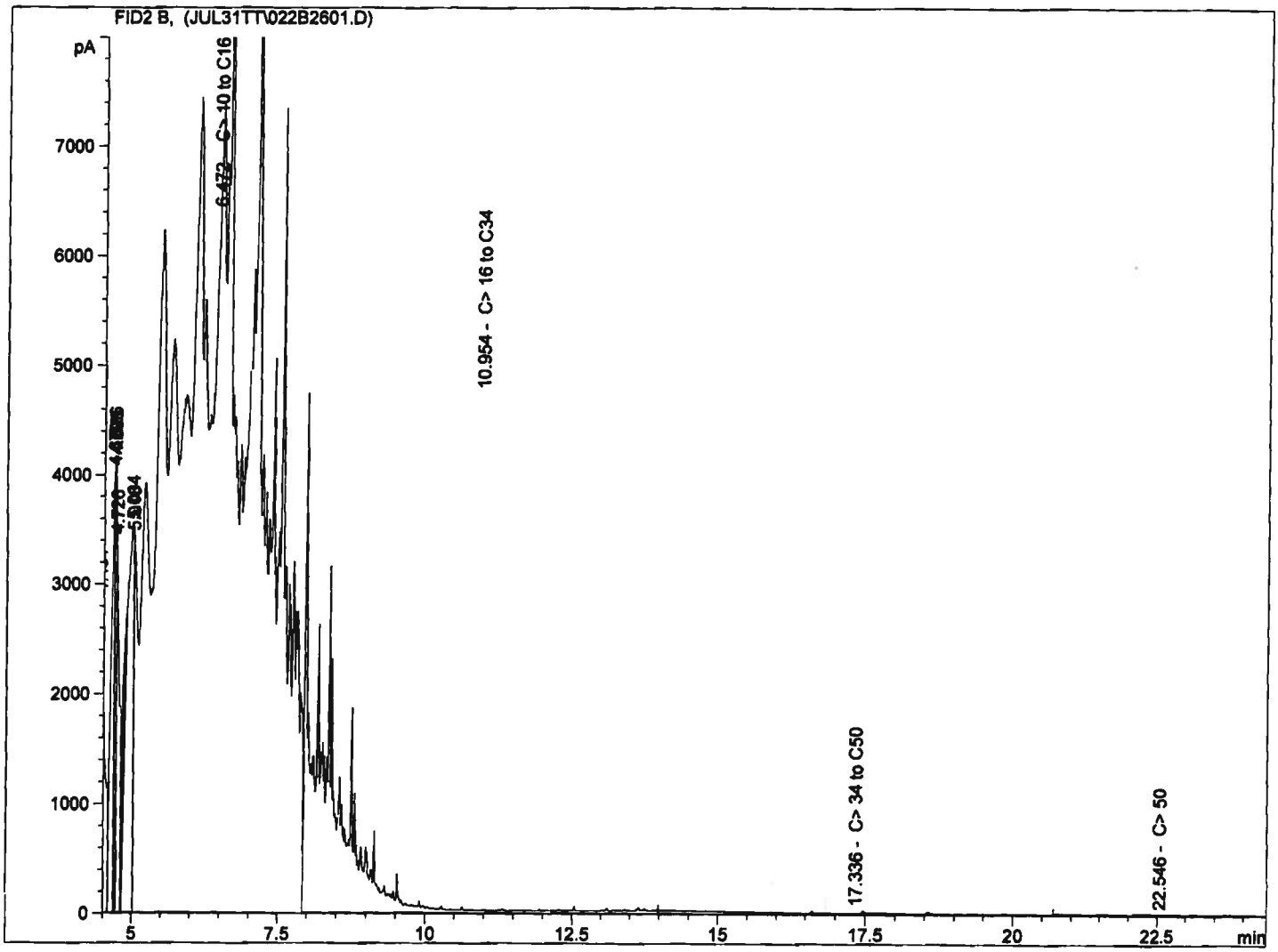
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\022B2601.D
Sample Name: L535000-9

Acq. Operator	: T. Truong	Seq. Line	: 26
Acq. Instrument	: GC4	Location	: Vial 22
Injection Date	: 8/1/2007 1:13:09 AM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:41:50 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

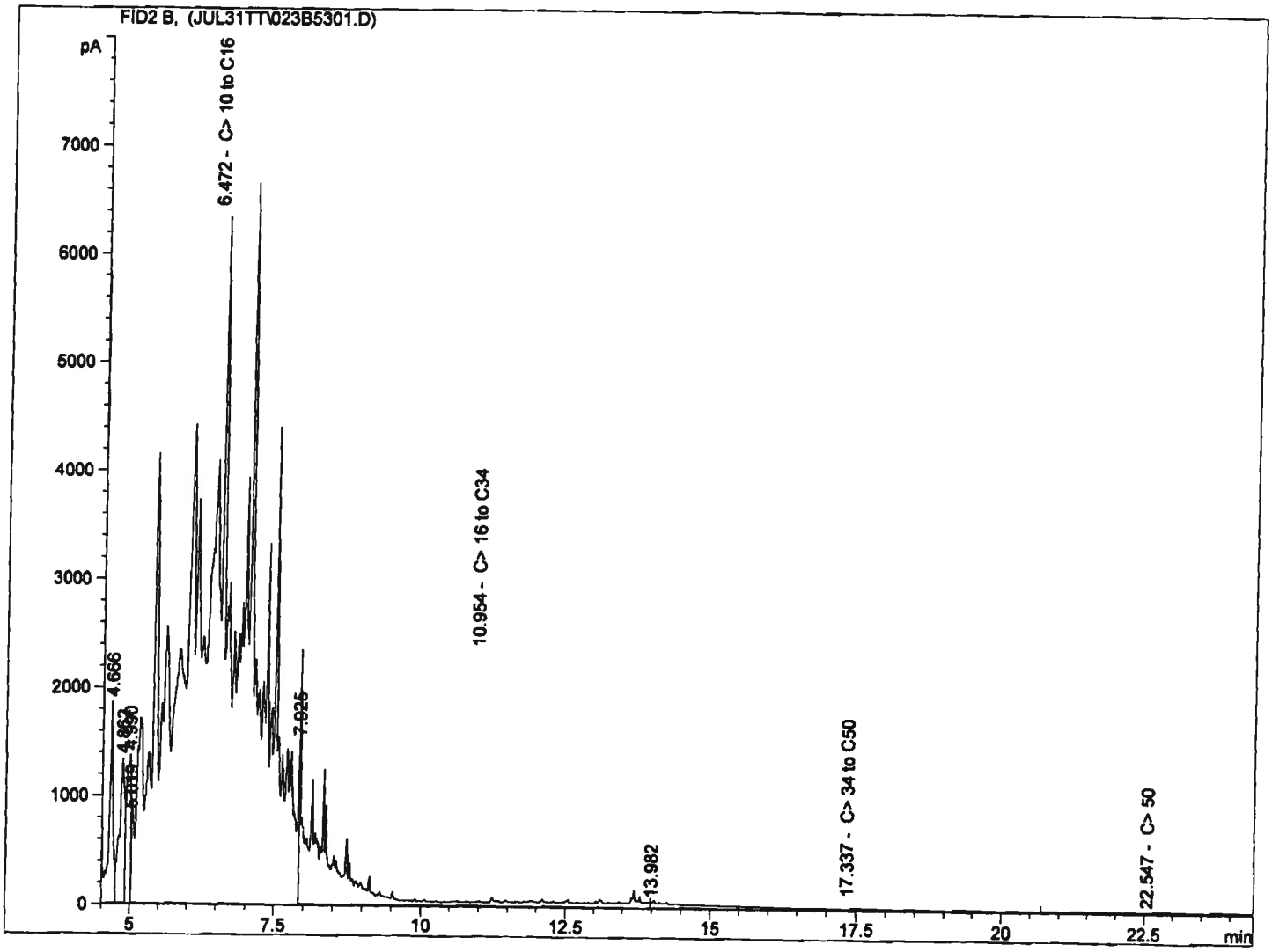
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\023B5301.D
Sample Name: L535000-10

Acq. Operator	: T. Truong	Seq. Line	: 53
Acq. Instrument	: GC4	Location	: Vial 23
Injection Date	: 8/1/2007 4:09:05 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:41:50 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

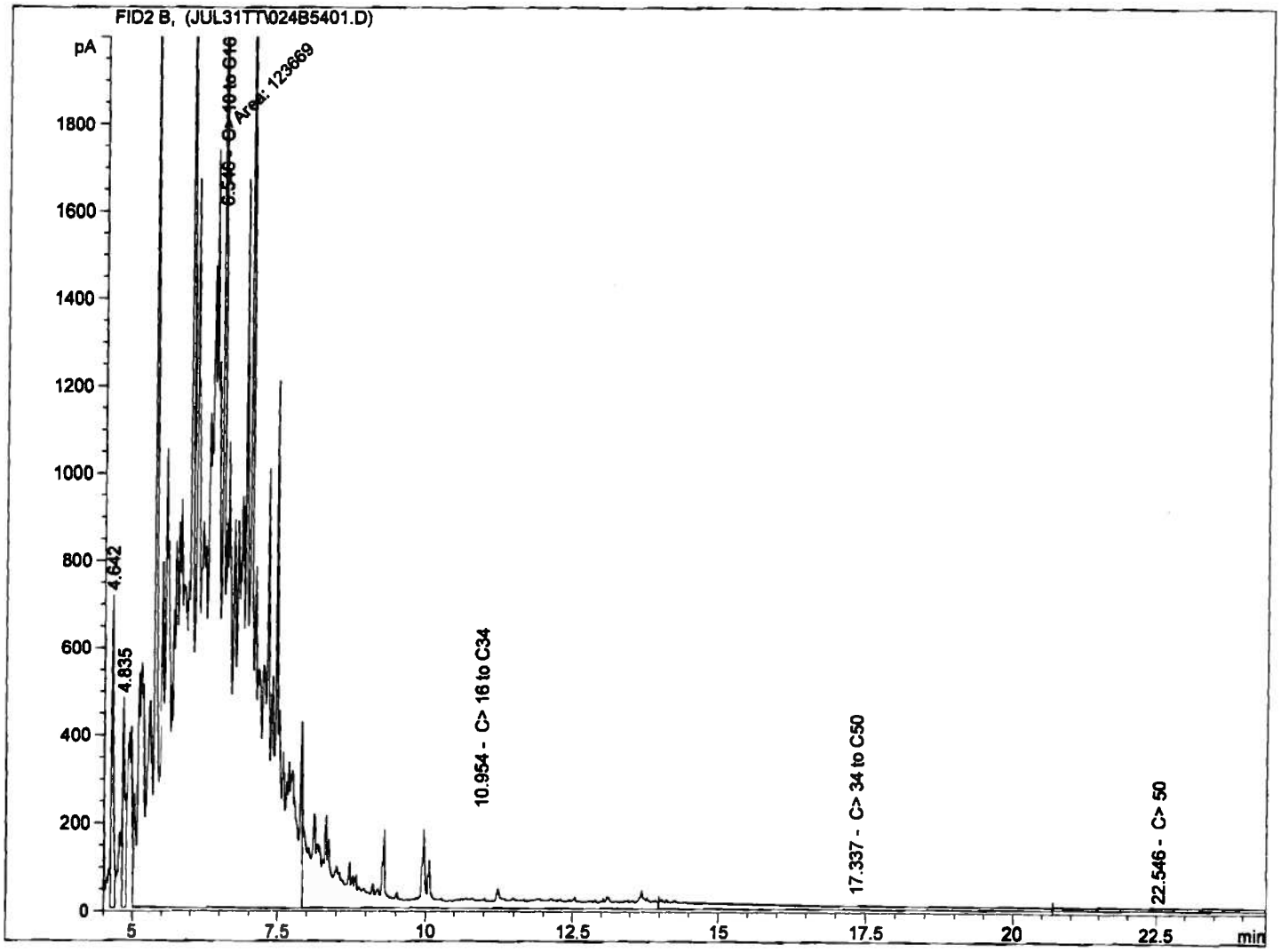
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\024B5401.D
Sample Name: L535000-11

Acq. Operator	: T. Truong	Seq. Line	: 54
Acq. Instrument	: GC4	Location	: Vial 24
Injection Date	: 8/1/2007 4:41:36 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:42:46 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



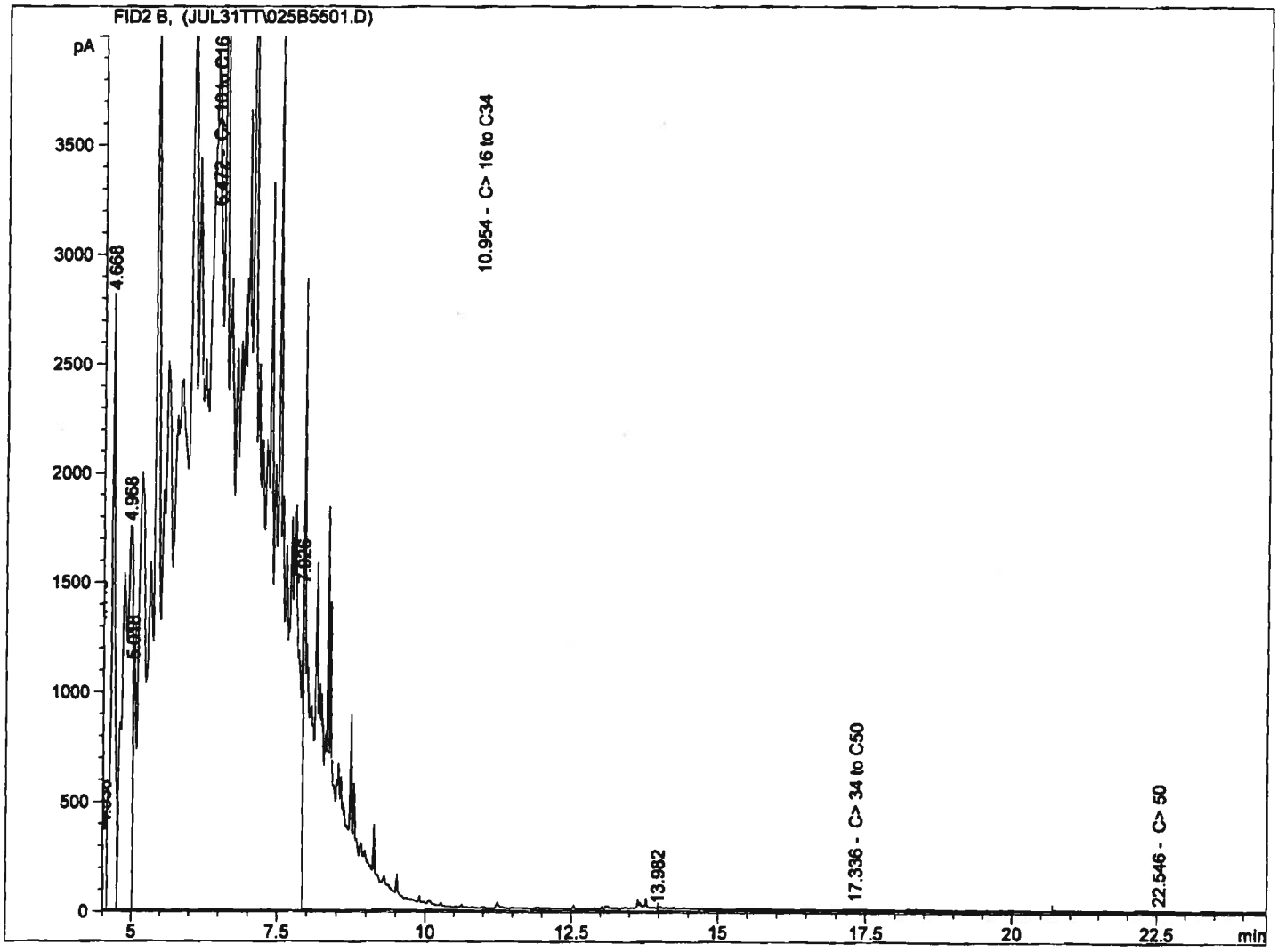
External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 7/19/2007 10:49:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\025B5501.D
Sample Name: L535000-12

Acq. Operator	: T. Truong	Seq. Line	: 55
Acq. Instrument	: GC4	Location	: Vial 25
Injection Date	: 8/1/2007 5:14:48 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:43:14 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



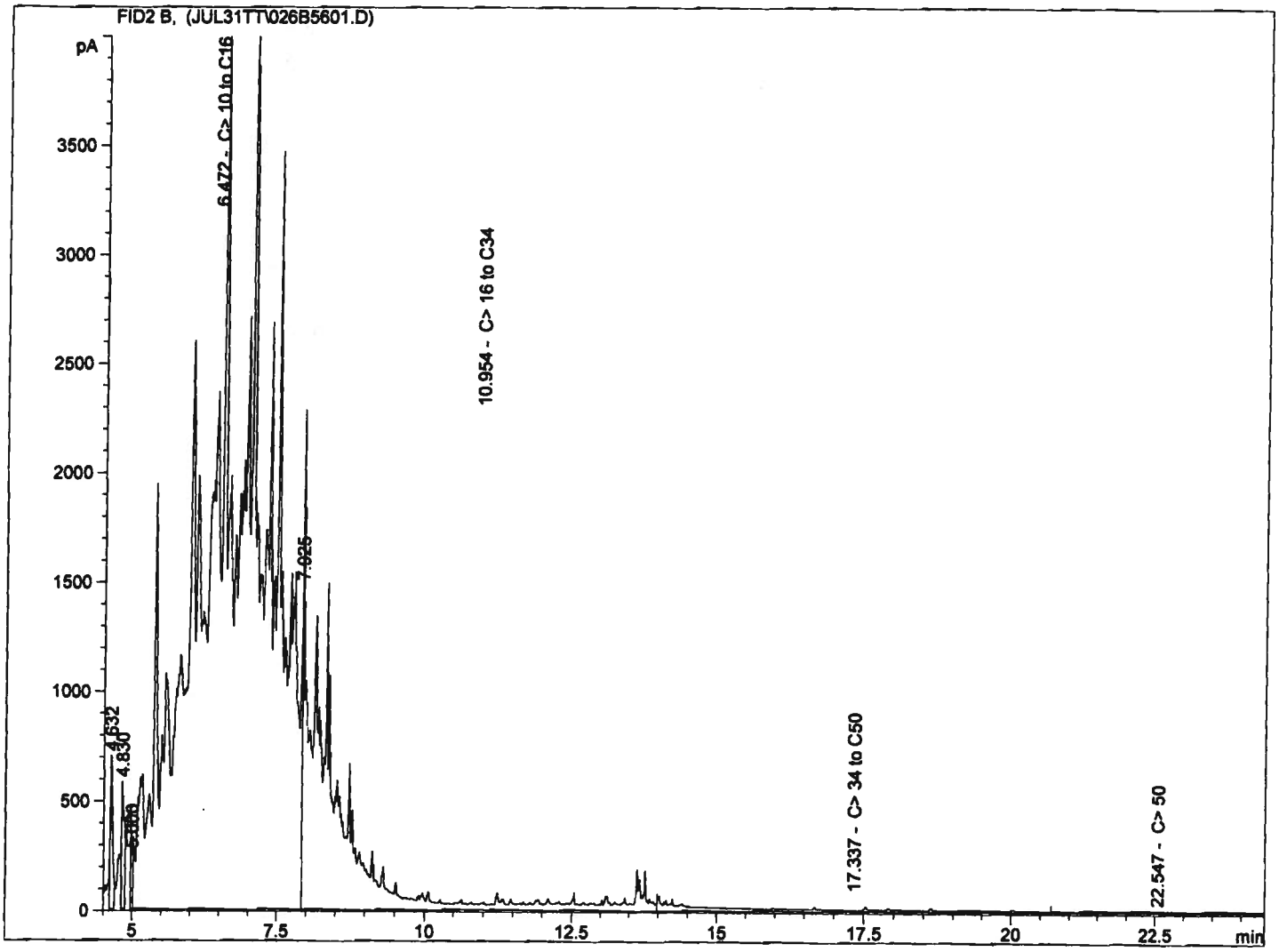
External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 7/19/2007 10:49:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\026B5601.D
Sample Name: L535000-13

Acq. Operator	: T. Truong	Seq. Line	: 56
Acq. Instrument	: GC4	Location	: Vial 26
Injection Date	: 8/1/2007 5:47:47 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:43:14 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



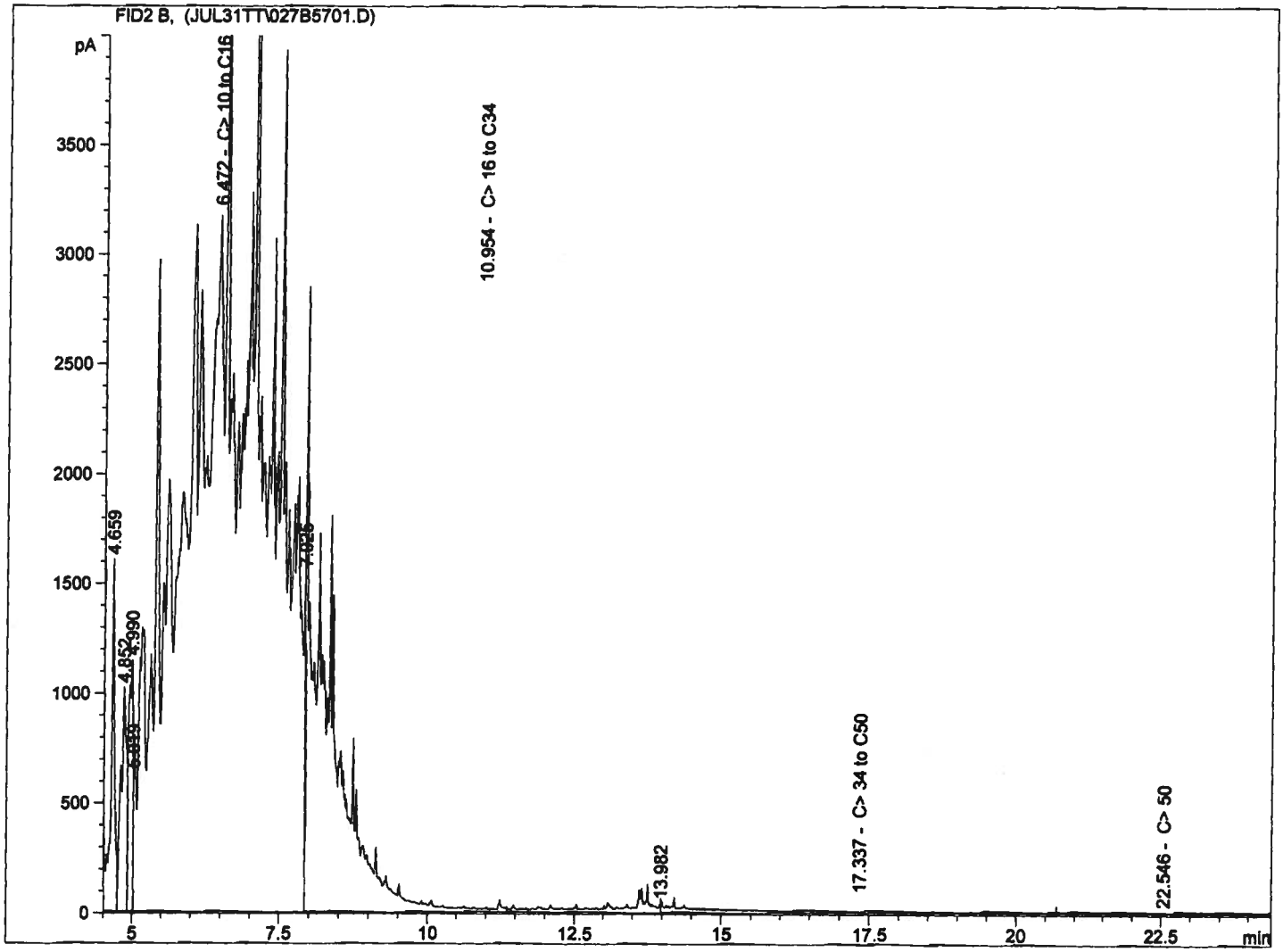
External Standard Report

Sorted By : Retention Time
Calib. Data Modified : 7/19/2007 10:49:46 AM
Multiplier : 1.0000
Dilution : 1.0000
Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\027B5701.D
Sample Name: L535000-14

Acq. Operator	: T. Truong	Seq. Line	: 57
Acq. Instrument	: GC4	Location	: Vial 27
Injection Date	: 8/1/2007 6:20:40 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:43:14 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

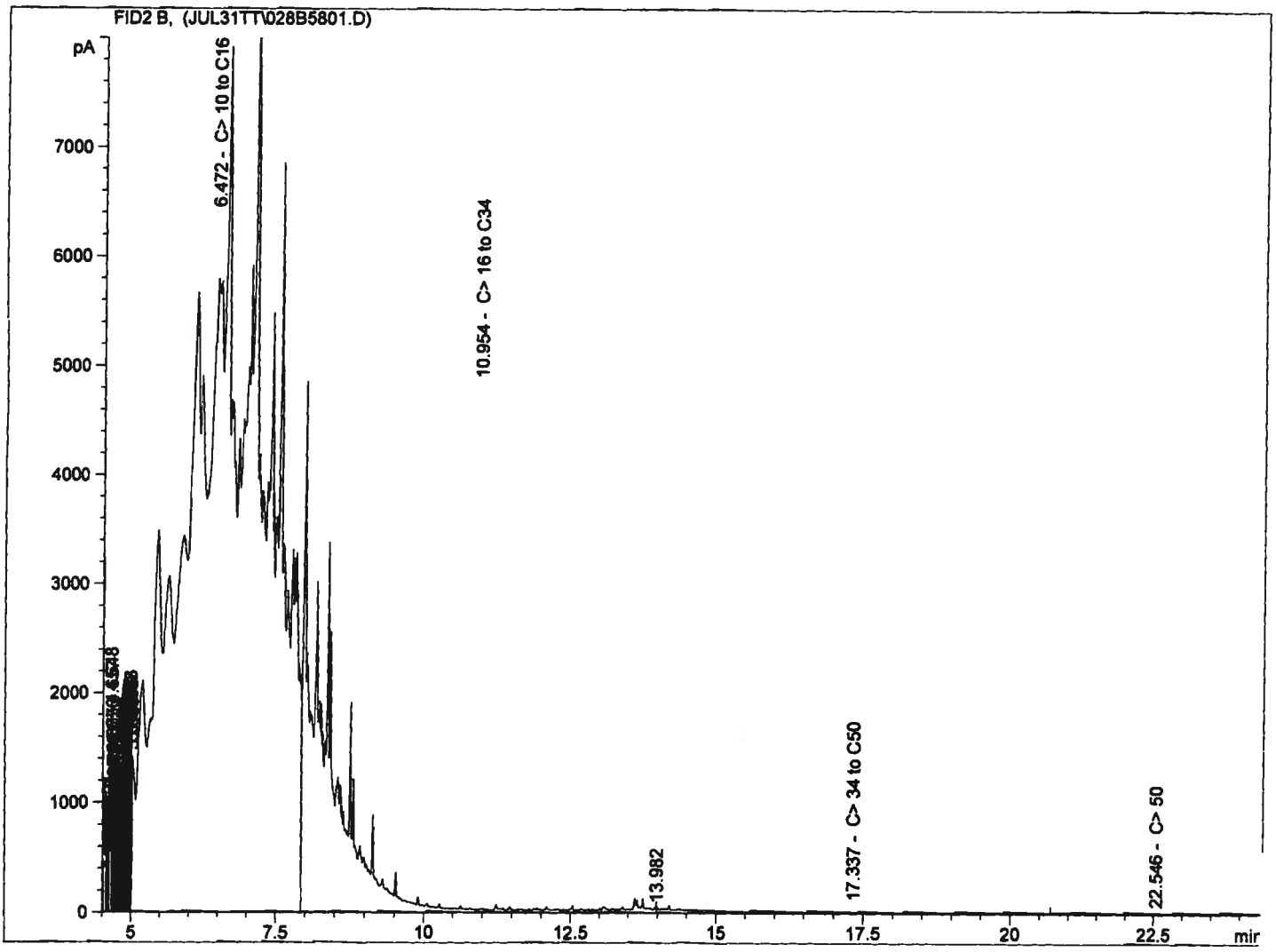
Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

Data File C:\CHEM32\1\DATA\JUL31TT\028B5801.D
Sample Name: L535000-15

Acq. Operator	: T. Truong	Seq. Line	: 58
Acq. Instrument	: GC4	Location	: Vial 28
Injection Date	: 8/1/2007 6:54:34 PM	Inj	: 1
		Inj Volume	: 1 µl
Acq. Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 7/19/2007 10:50:01 AM by T. Truong		
Analysis Method	: C:\CHEM32\1\METHODS\CCMEFRAC.M		
Last changed	: 8/3/2007 10:44:05 AM by T. Truong (modified after loading)		
Method Info	: Extractable Hydrocarbons Method for aquiring data from FID.		



External Standard Report

Sorted By	:	Retention Time
Calib. Data Modified	:	7/19/2007 10:49:46 AM
Multiplier	:	1.0000
Dilution	:	1.0000

Use Multiplier & Dilution Factor with ISTDs

Signal 1: FID2 B,

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COC # A052278

W107 L535000

Page 1 of 4

REPORT TO: WARDROP ENGINEERING	REPORT FORMAT / DISTRIBUTION
COMPANY: WARDROP ENGINEERING	STANDARD ✓ OTHER
CONTACT: SHAUNA ZAHARIUK	PDF EXCEL CUSTOM FAX
ADDRESS: 400-386 BROADWAY	EMAIL 1: Shauna.Zahariuk@wardrop.com
WPG. MB R3C 4M8	EMAIL 2: dave.ediger@wardrop.com
PHONE: 2049560980 FAX:	labresultsMB@wardrop.com
INVOICE TO: SAME AS REPORT ? (YES) / NO	INDICATE BOTTLES: FILTERED / PRESERVED (F/P)
COMPANY:	CLIENT / PROJECT INFORMATION:
CONTACT:	JOB #: 02228-08-01
ADDRESS:	PO /AFE: Kugaaruk, NU
	Legal Site Description:
PHONE: FAX:	QUOTE #:
Lab Work Order # (lab use only):	SAMPLER (Initials):

SERVICE REQUESTED

- REGULAR SERVICE (DEFAULT) ✓
- RUSH SERVICE (2-3 DAYS)
- PRIORITY SERVICE (1 DAY or ASAP)
- EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS

ANALYSIS REQUEST

Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	BTEX	F1-F4	HAZARDOUS ?	HIGHLY CONTAMINATED ?	NUMBER OF CONTAINERS
1	S196	July 20/07		Grab	✓	✓			1
2	S213	July 20/07			✓	✓			
3	S112	July 19/07			✓	✓			
4	B33	July 19/07			✓	✓			
5	B39	July 19/07			✓				
6	A81	July 20/07			✓	✓			
7	A35				✓	✓			
8	C29				✓	✓			
9	C34				✓	✓			
10	LF1-1	July 21/07			✓	✓			

HOLD

GUIDELINES / REGULATIONS

SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS

Failure to complete all portions of this form may delay analysis. Please fill in this form *LEGIBLY*.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the reverse page of the white report copy.

RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:
	July 20/07 @ 1500	MM 1550 20/07	
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:

SAMPLE CONDITION (lab use only)

TEMPERATURE | SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO (If no provide details)

NC

REFER TO BACK PAGE FOR REGIONAL LOCATIONS AND SAMPLING INFORMATION

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COC # A052279

W107 L535000 Page 2 of 4

REPORT TO:	REPORT FORMAT / DISTRIBUTION	SERVICE REQUESTED
COMPANY: Wardrop Engineering	STANDARD ___ OTHER ___	REGULAR SERVICE (DEFAULT) ✓
CONTACT: Shauna Zaharuk	PDF ___ EXCEL ___ CUSTOM ___ FAX ___	RUSH SERVICE (2-3 DAYS)
ADDRESS: 400-386 Broadway Wpg, MB R3C 4M8	EMAIL 1: shauna.zaharuk@wardrop.com	PRIORITY SERVICE (1 DAY or ASAP)
PHONE: (204) 956-0980 FAX:	EMAIL 2: dave.edger@wardrop.com labresultsMB@wardrop.com	EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS
INVOICE TO: SAME AS REPORT ? (YES) NO	INDICATE BOTTLES: FILTERED / PRESERVED (F/P) → → →	ANALYSIS REQUEST
COMPANY:	CLIENT / PROJECT INFORMATION:	
CONTACT:	JOB #: 022288-08-01	
ADDRESS:	PO /AFE: Kugaaruk, NV	
	Legal Site Description:	
PHONE: FAX:	QUOTE #:	
Lab Work Order # (lab use only):	SAMPLER (Initials): SZ	

Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	BTEX F1-F4	HAZARDOUS ?	HIGHLY CONTAMINATED ?	NUMBER OF CONTAINERS
11	LF1-2	July 21/07		Grab	✓ ✓			
12	LF1-3				✓ ✓			
13	LF1-4				✓ ✓			
14	LF2-1				✓ ✓			
15	LF2-2				✓ ✓			
16	LF2-3				✓ ✓			
17	LF2-4				✓ ✓			
18	LF2-5				✓ ✓			
19	LF3-1				✓ ✓			
20	LF3-2	↓		↓	✓ ✓			

HOLD

GUIDELINES / REGULATIONS	SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS

Failure to complete all portions of this form may delay analysis. Please fill in this form *LEGIBLY*.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the reverse page of the white report copy.

RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)	
	July 26/07 @ 3:00	1550 26/07	1107	TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO (If no provide details)
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:		

REFER TO BACK PAGE FOR REGIONAL LOCATIONS AND SAMPLING INFORMATION

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W107 L535000

REPORT TO:	REPORT FORMAT / DISTRIBUTION	SERVICE REQUESTED
COMPANY: Wardrop Engineering	~~STANDARD~~ ✓ ~~OTHER~~	~~REGULAR SERVICE (DEFAULT)~~ ✓
CONTACT: Shauna-Zahaniuk	PDF ✓ EXCEL ___ CUSTOM ___ FAX ___	RUSH SERVICE (2-3 DAYS)
ADDRESS: 400-386 Broadway Wpg, MB R3C 4M8	EMAIL 1: Shauna-Zahaniuk@wardrop.com	PRIORITY SERVICE (1 DAY or ASAP)
PHONE: (204) 958-0958 FAX:	EMAIL 2: dave-edie@wardrop.com labresultsMB@wardrop.com	EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS
INVOICE TO: SAME AS REPORT ? (YES) NO	INDICATE BOTTLES: FILTERED / PRESERVED (F/P) → → →	ANALYSIS REQUEST
COMPANY:	CLIENT / PROJECT INFORMATION:	
CONTACT:	JOB #: 0222808-01	
ADDRESS:	PO /AFE: Kugaaruk, NU	
	Legal Site Description:	
PHONE: FAX:	QUOTE #:	
Lab Work Order # (lab use only)	SAMPLER (Initials): SZ	

Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	BTEX	F1-F4	HAZARDOUS ?	HIGHLY CONTAMINATED ?	NUMBER OF CONTAINERS
21	LF3-3	July 21/07		Grab	✓	✓			
22	LF3-4				✓	✓			
23	LF4-1				✓	✓			
24	LF4-2				✓	✓			
25	LF4-3				✓	✓			
26	LF4-4				✓	✓			
27	LF5-1				✓	✓			
28	LF5-2				✓	✓			
29	LF5-3				✓	✓			
30	LF5-4				✓	✓			

Hold

GUIDELINES / REGULATIONS

SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS

*LF4-3, LF5-2, LF5-3, LF5-4 have one jar only

Failure to complete all portions of this form may delay analysis. Please fill in this form *LEGIBLY*.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the reverse page of the white report copy.

RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)	
	July 26/07 @ 13:00	JM	26 Jul 07 1550	TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO (If no provide details)
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:		

ALS Laboratory Group
ANALYTICAL CHEMISTRY & TESTING SERVICES

Environmental Division

CHAIN OF CUSTODY / ANALYTICAL REQUEST FORM

CANADA TOLL FREE 1-800-668-9878

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W107 L535000

REPORT TO:	REPORT FORMAT / DISTRIBUTION	SERVICE REQUESTED
COMPANY: Wardrop Engineering	STANDARD ✓ OTHER	REGULAR SERVICE (DEFAULT) ✓
CONTACT: Shauna Zahaniuk	PDF ✓ EXCEL CUSTOM FAX	RUSH SERVICE (2-3 DAYS)
ADDRESS: 400-386 Broadway Wpg, MB R3C 4M8	EMAIL 1: Shauna-Zahaniuk@wardrop.com	PRIORITY SERVICE (1 DAY or ASAP)
PHONE: 204 956 0950 FAX:	EMAIL 2: dave-edgar@wardrop.com labresultsMB@wardrop.com	EMERGENCY SERVICE (<1 DAY / WEEKEND) - CONTACT ALS
INVOICE TO: SAME AS REPORT ? YES NO	INDICATE BOTTLES: FILTERED / PRESERVED (F/P) → → →	ANALYSIS REQUEST
COMPANY:	CLIENT / PROJECT INFORMATION:	
CONTACT:	JOB #: 02288-08-01	
ADDRESS:	PO /AFE: Kugaaruk, NU	
	Legal Site Description:	
PHONE: FAX:	QUOTE #:	
Lab Work Order # (lab use only)	SAMPLER (Initials):	

Sample #	SAMPLE IDENTIFICATION (This description will appear on the report)	DATE	TIME	SAMPLE TYPE	BTEX	F1-F4	HAZARDOUS ?	HIGHLY CONTAMINATED ?	NUMBER OF CONTAINERS
31	LF6-1	July 21/07		Grab	✓	✓			
32	LF6-2	↓		↓	✓	✓			
33	LF6-3				✓	✓			
34	LF6-4				✓	✓			

Hold

GUIDELINES / REGULATIONS

SPECIAL INSTRUCTIONS / HAZARDOUS DETAILS

* LF6-3 only one jar

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY.

By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the reverse page of the white report copy.

RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:	SAMPLE CONDITION (lab use only)	
	July 26/07 @1500	JM 26 Jul 07	1550	TEMPERATURE	SAMPLES RECEIVED IN GOOD CONDITION ? YES / NO (If no provide details)
RELINQUISHED BY:	DATE & TIME:	RECEIVED BY:	DATE & TIME:		

REFER TO BACK PAGE FOR REGIONAL LOCATIONS AND SAMPLING INFORMATION

WHITE - REPORT COPY, PINK - FILE COPY, YELLOW - CLIENT COPY

GEN 4.00