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SITE ASSESSMENT REPORT

OF

THE LOWER NIKEL AREA
KEFLAVIK, ICELAND

January 1999

Job Number EA-9885

Prepared By:
DELISLE ASSOCIATES LTD, USA
AND
KEFLAVIK CONTRACTORS, ICELAND

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1.0 INTRODUCTION

The 'Project Site' known as the Lower Nikel Area, is located in Keflavik, on the Reykjanes Peninsula in southwest Iceland. The Project Site is approximately 141.6 hectares (350 acres) in size and is bordered to the west/southwest by Reykjanes Road. The Project Site has been historically utilized by the U.S. Naval Air Station for bulk storage of petroleum products. Provided as Figure 1 is a Site Location Map.

Five (5) aboveground storage tanks (ASTs), assorted piping (above and below ground), and various support buildings including pumphouses are located within the Project Site. The ASTs and piping were used to store and transport JP-5 Jet Fuel, Mogas, and Diesel Oil. Various historical fuel spills have been documented to have occurred on site. Previous environmental investigations and reports have indicated the presence of contamination in the soils at the Project Site.

The United States of America (USA) and Iceland are currently making arrangements to return ownership of the Project Site over to Iceland. Future plans are to utilize the land for commercial and residential development. Therefore, to assure the Project Site has been investigated for soil contamination, DeLisle Associates LTD (DA) of Portage, Michigan, USA., was contracted to perform a site assessment of this property. Prior to beginning the soil investigation at the Project Site, a Work Plan was generated by DA which planned for a site inspection, field testing, and soil sample collection for laboratory analysis.

The Work Plan for conducting this site assessment was followed as a guideline. Once the initial site inspection of the Project Site was conducted, the sampling activities were tailored for optimum data collection. Based on the terrain and visual observations, the amount of sampling was reduced from the original Work Plan. The field work conducted by DeLisle Associates LTD (DA) was in accordance with Standard Operating Procedures (S.O.P) provided in Appendix A.

1.1 Objectives

The purpose of this Report is to document the soil conditions at the Project Site. A "Final Site Assessment Report of the Nickel Area Fuel Farm" was conducted by Baker Environmental, Inc. (Baker), of Coraopolis, Pennsylvania, USA in 1992 for the U.S. Naval Air Station located in Keflavik, Iceland. The Baker objectives were to determine the extent and severity of potential petroleum hydrocarbon contamination in surficial soils, to perform a qualitative risk assessment of available analytical data, and evaluate potential remediation alternatives based on the investigation results.

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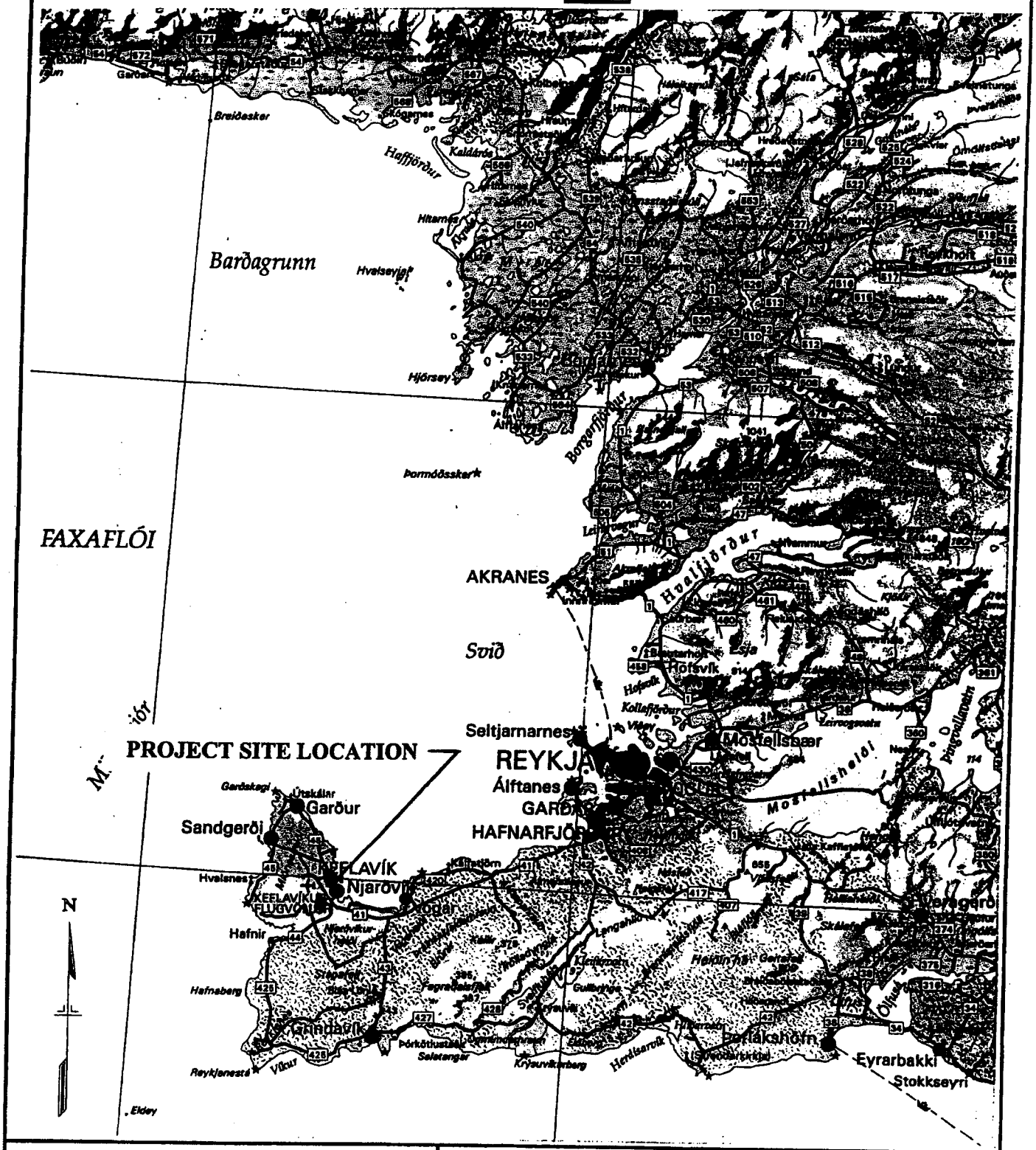

Lower Nikel Area Keflavik, Iceland	Figure 1 - Site Location Map	
	EA-9885	January 1999

At the request of the Iceland Government, DA developed a Work Plan to assess the soils at the Project Site. The proposed field work was designed to duplicate soi3l sampling in locations identified in the Baker Report as containing both petroleum constituents, and Lead. In addition, the Work Plan allowed for the entire Project Site to be investigated including other areas suspected to be contaminated that were not previously investigated.

The main focus of this Report is to determine current Project Site conditions, compare the data to historical site assessments, evaluate the severity of contamination at the Project Site, and provide a direction towards preparing this area for commercial and residential development.

2.0 ON-SITE ACTIVITIES

An initial site visit, consisting of a general Project Site walk-through and identification of soil sampling locations was conducted on October 9 and 12, 1998. A field office was established on-site in Building 1381 for storage of sampling materials, documenting field activities, and conducting field screening of soils. Soil sample collection began on October 13, 1998 and extended through October 14, 1998.

Various areas of concern (see Figure 2) were identified during the initial Project Site visit. The areas of concern were based on visual observations of the surficial soils, such as discoloration and/or the presence of petroleum odors. Soil samples were collected from these areas for both field analysis, using an organic vapor analyzer (OVA), and laboratory analysis. Provided in Figure 3 are the locations of soil samples submitted for laboratory analysis. Specific sampling location measurements were provided by Keflavik Contractors, located in Keflavik, Iceland, and are presented in Appendix B.

The surficial soil was removed using a Case Extendahoe excavator. Following the surficial soil removal, a shovel, when applicable, was utilized to access the soil for sampling. On numerous occasions, the soil designated for sampling was easily collected by hand. Disposable powder free vinyl sampling gloves were utilized by all personnel collecting samples.

2.1 Field Screening of Soils

At each designated sampling point, a representative sample of the soil was collected and placed into a Ziploc plastic bag which was sealed and labeled. Samples were labeled with the time, sample depth, and location.

Samples were placed in the field office and allowed to reach room temperature. Once the sample obtained room temperature, a Foxboro Century 128 Organic Vapor Analyzer (OVA)

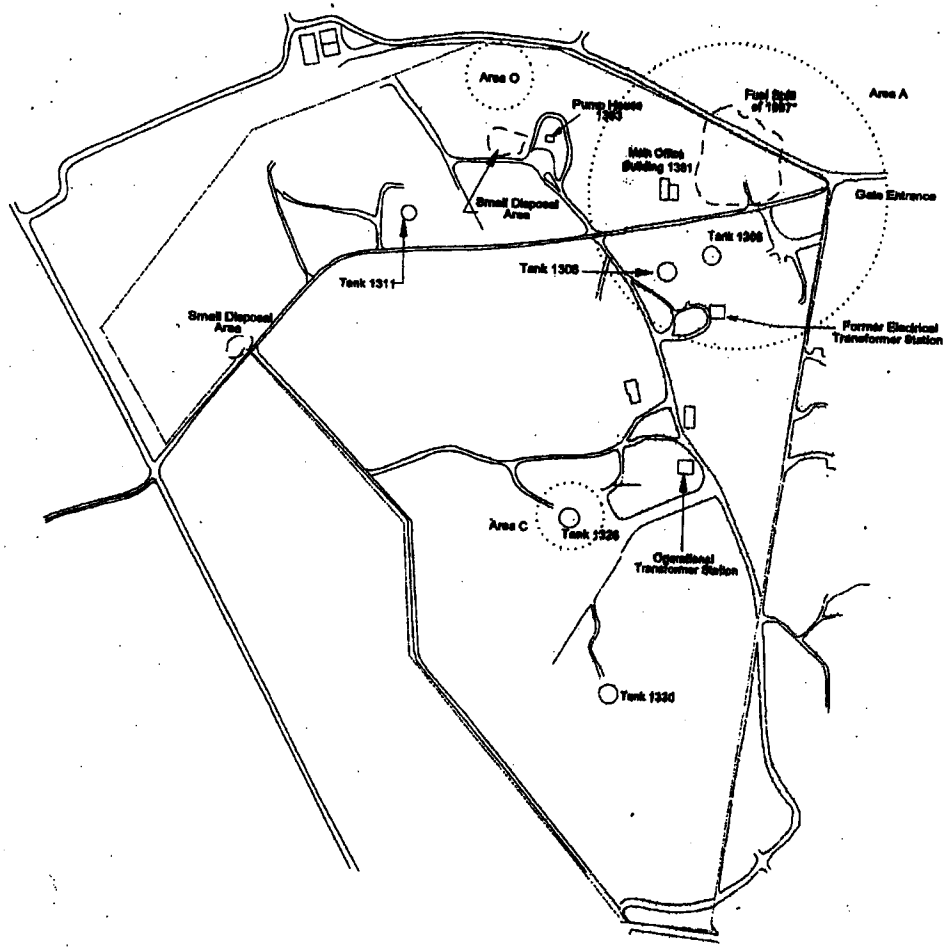

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Figure 2
Areas of Concern
Lower Nikel Area
Iceland

LEGEND

Scale

N

1 " = 150 Metres

0 150 300

1" = 500 feet

0 500 1000

Areas A, C and O from Baker Environmental Inc., Final Site Assessment Report, 1992

From Baker Environmental Inc., Final Site Assessment Report, 1992

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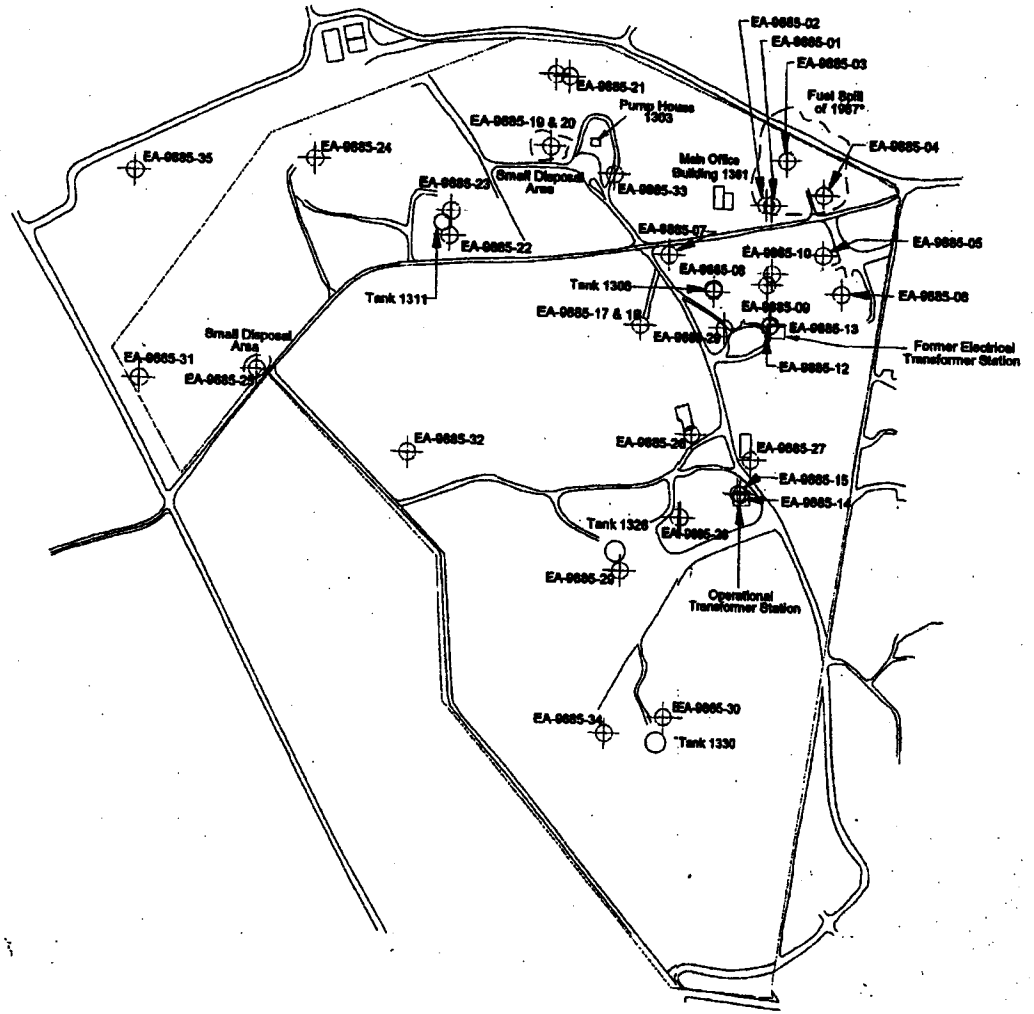
Figure 3
Sampling Locations
Lower Nikel Area
Iceland



LEGEND

Soil Sample Locations

Scale

N

1 " = 150 Metres

0 150 300

1" = 500 feet

0 500 1000

Base map from Baker Environmental Inc., Final Site Assessment Report, 1992

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was used to analyze the samples. Results of each OVA analysis were recorded onto a Vapor Field Analysis Record. Appendix C contains the Vapor Field Analysis Records and included in Appendix A is the Standard Operating Procedure (S.O.P) for this field activity.

2.2 Laboratory Sample Collection

Concurrent with field screening operations, soil samples were collected for laboratory analysis. The soil was handled using disposable powder free vinyl gloves, and placed into containers supplied by the laboratory. Each sample container was labeled and recorded on a Chain of Custody form. Soil samples for laboratory analysis were properly stored on-site in a refrigerator, until transported to the laboratory in a cooler with ice.

2.3 Decontamination Procedures

In order to prevent cross contamination, all sampling equipment, including the excavator bucket and shovels, were decontaminated between sampling points. Decontamination procedures included using a brush and Liqunox detergent, then rinsed with tap water on-site. A designated decontamination station was set up at the main office area on the Project Site. The Project Site water supply was used for the cleaning and rising process. Included in Appendix A is the S.O.P for decontaminating sampling equipment.

3.0 LABORATORY ANALYSIS PARAMETERS

The soil samples collected were submitted to two (2) Icelandic Laboratories for analysis. IceTec-Technological Institute of Iceland analyzed soil samples for pH (EPA Method 9045c), percent moisture content (PMC), and Total Lead (EPA Method 7421 with GF-AAS and Flame -AAS). The University of Iceland, Department of Pharmacology analyzed soil samples for Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethlybenzene, Xylenes (BTEX), Polychlorinated Biphenyls (PCBs), and Volatile Organic Hydrocarbons (VOCs).

Samples analyzed by the University of Iceland were conducted using the Nordtest Methods, Nordtest Technical Report 329: Nordic Guidelines for chemical analysis of contaminated soil.

4.0 LABORATORY ANALYTICAL RESULTS

The laboratory analytical reports are provided in Appendix D. A summary of the analytical results are presented in tabular form in the following sections to which they apply.

4.1 Lead

A total of 35 soil samples were submitted for Total Lead analysis. Five (5) of the 35 samples were collected from areas unlikely to be contaminated, for the purpose of determining a background Lead level for the Project Site. A statistical analysis was conducted using the five (5) sample analytical results in an attempt to determine a natural occurring background level for Lead in the soils. The established background level was then compared to the remaining soil sample analytical results to determine if impairment existed at each location. The calculated background level was obtained using samples numbered EA-9885-31 through EA-9885-35. The calculated background level for Lead was determined to be 6.5 parts per million (mg/kg).

Sample EA-9885-35 had a Lead level of 15.5 ppm and was determined to be an outlier and not included in the background calculation. This sample was collected outside of the fenced area that surrounds the Project Site. DA believes this sample could be used as an indicator for elevated Lead in the soil. Therefore, based upon the analytical results, any Lead levels exceeding 15.5 ppm were considered elevated.

Provided in Table 1 are the elevated Lead sample results.

Table 1- Lead Sample Results

DA Sample No.	EA-9885-08	EA-9885-11	EA-9885-23	EA-9885-25	EA-9885-29
Analytical result, mg/kg or ppm	128.0	292.0	37.7	118.0	459.0

4.2 Total Petroleum Hydrocarbons (TPH) and BTEX

TPH analysis is designed to measure mid-range to heavier petroleum products such as diesel, fuel oil, and motor oils in soil samples. Prior knowledge that Diesel Oil, Mogas, Jet and Fuel Oils were stored on-site, prompted the collection and submittal of 29 soil samples for analysis. The submitted samples were collected in known and suspected areas of impairment, in order to determine the concentration and presence of TPH and BTEX.

Presented in the following Table 2, is a summary of the eight (8) samples which indicated petroleum constituents. All other samples not presented in this table were below analytical method detection.

Table 2 -Laboratory Results of Petroleum Hydrocarbon Analysis

DA Sample Number	Analytical Results Reported as mg/kg or ppm of Diesel Oil	Laboratory Comments
EA-9885-01	5,600.0	Diesel Oil
EA-9885-02	570.0	Diesel Oil/very decomposed
EA-9885-03	480.0	Diesel Oil/very decomposed
EA-9885-04	2,400.0	Diesel Oil/very decomposed
EA-9885-17	25.0	Diesel Oil/very decomposed
EA-9885-19	)30,000.0	Diesel Oil/very decomposed/ heavier oils.
EA-9885-20	170.0	Diesel Oil/very decomposed
EA-9885-23	4,700.0	Diesel Oil/very decomposed

4.3 Polychlorinated Biphenyls (PCBs)

Two (2) electrical transformer stations were identified at the Project Site. One (1) appeared to be operational, and the other station had been dismantled and did not contain transformers.

Two (2) soil samples were collected from each station and the results are presented in Table 3. Soil samples EA-9885-12 and -13 were collected from the dismantled transformer station. Soil samples EA-9885-14 and -15 were collected from the operating electric transformer station.

Samples EA-9885-09 and -10, were also analyzed for PCB analysis at the recommendation of the laboratory. These two (2) samples were originally submitted for only TPH and BTEX analysis, however, during laboratory procedures, additional analytical peaks were detected. The laboratory indicated the samples appeared to contain a heavily degraded tar like substance. Based on the additional analysis, PCBs were not detected in samples EA-9885-09 or -10.

Presented in the following Table are the results of all samples submitted for PCB analysis.

Table 3 - PCB Results

DA Sample Number	Analytical Results, Reported as total PCBs as Aroclor 1260 in ppm
EA-9885-09	⟨ 0.01
EA-9885-10	⟨ 0.01
EA -9885-12	1.64
EA-9885-13	4.54
EA-9885-14	0.022
EA-9885-15	0.012

4.4 Volatile Organic Compounds

Three (3) soil samples were collected and submitted for Volatile Organic Compound (VOC) analysis. Soil samples were collected at various locations in order to determine the presence of VOCs. The laboratory analysis did not indicate any compounds above 1.0 ppm for any of the VOCs presented below. Sample EA-9885-25 did not exhibit any VOC detection. Samples EA-9885-26 and EA-9885-27 exhibited very low levels.

Table 4 provides a summary of the VOC data.

Table 4- VOC Soil Sample Results

PARAMETER	DA Sample Number		
	EA-9885-25	EA-9885-26	EA-9885-27
1,2-Dichlorpropane	ND	0.012	0.009
Dibromomethane	ND	0.002	0.001
Tetrachloroethene	ND	0.002	0.001
Bromoform	ND	0.005	0.004
1,1,2,2-Tetrachloroethane	ND	0.033	ND

ND= Non-Detect * Results in ppm or parts per million.

5.0 INTERPRETATION OF ANALYTICAL RESULTS

The soil samples collected by DA in areas of impairment will be compared to the sample results that were presented in the 1992 Baker Environmental Report in the following sections. Sampling activities and locations were attempted to be duplicated in order to compare data sets. Figure 2 depicts the areas of concern where elevated levels of petroleum constituents and Lead have been identified.

5.1 Total Lead

The Lead contamination found in five (5) of the 30 soil samples collected by DA appear to be related to Lead containing paint which is suspected to be on the exterior of the ASTs. The appearance of the ASTs, the presence of paint chips on the ground, and sporadic elevated Lead results suggest this type of impairment.

The comparison of DA samples to Baker samples are as follows:

Table 5 - Comparison of Samples Collected for Lead Analysis

Near Tank # 1306	EA-9885-08 / 128.0 ppm	Area A 19098-10 / 25.04ppm
Near Tank # 1326	EA-9885-11 / 292.0 ppm	Area C, Test Pits 2 & 3 19098 -78 / 79.07ppm 19098 -26 / 187.10ppm
Near Tank # 1311	EA-9885-23 / 35.7 ppm	Area N 19098 -45 / 1.09ppm
Small Disposal Area, north of gate to Upper Nikel Area	EA -9885-25 / 118.0 ppm	No Baker samples collected from this area
South side of Concrete Pad	EA-9885-29 / 459.0 ppm	No Baker samples collected from this area

5.2 Total Petroleum Hydrocarbons (TPH) and BTEX

The laboratory analysis determined the major contaminant to be Diesel Oil. The laboratory achieved this determination by matching the sample analytical analysis peaks to known standards of Diesel Oil and BTEX.

The following sections present the samples submitted by DA which indicated the presence of Diesel Oil. Where applicable, DA samples are compared to Baker samples collected from similar areas.

In the parking lot of Main Office (Building 1381) adjacent to a former fueling station
Elevated levels of Diesel Oil were detected in DA sample numbers EA-9885-01 and 02 which were collected from two excavations (TP-1 & 2).. During the excavations, visual and olfactory observations indicated the presence of petroleum contamination.

No Baker samples were collected from this area

Near northeast corner, by east gate entrance
Remnants of two (2) ASTs were observed in this area. Furthermore, a historical spill of Diesel Oil had occurred in 1987 in this area. Several monitoring wells are present in the area and a considerable amount of contaminated soil has been reported to have been removed. Two (2) samples were collected by DA from beneath the former ASTs.

The results of DA samples, EA-9885-03 and 04, indicated Diesel Oil levels of 480 ppm and 2,400 ppm, respectfully. The laboratory indicted the presence of very decomposed Diesel Oil. Due to the degradation of the Diesel Oil, OVA sample analysis was not very sensitive. Visual and olfactory observations of the soils in the area did not appear to be obviously contaminated.

The Baker samples form this area, Area A, 19098-1/2/3 and 19098-58 indicated TPH levels of 3.72 ppm and 5.78 ppm, respectfully.

Sample collection west of Pump House 1303
Analysis of DA soil sample EA-9885-19, collected west of Pump House 1313, indicated analytical results at levels exceeding 30,000 ppm of Diesel Oil. This sample, collected at one (1) foot (0.3 metres) below grade, was inspected in the field and was observed to have a strong petroleum odor and visual discoloration. The laboratory comments indicated this sample was heavily degraded and contained heavier oils not identified during the requested analysis.

DA soil sample EA-9885-20, collected at five (5) feet below grade from the same excavation as sample EA-9885-19, indicated a level of 170 ppm of Diesel Oil. Based on the two (2) soil samples collected by DA, soil impairment exists in this area.

Further inspection of this area indicated dumping activities had occurred. Items observed included slate pieces from a pool table, various material, broken glass and wooden boards.

No Baker samples were collected from this area.

Near a former AST Location, Baker ID - Area O

Located along the northern property line is an area formerly containing an AST. DA sample EA-9885-21, collected from beneath the former AST, did not exhibited any petroleum hydrocarbons. The Baker sample, 19098-56, collected from the same area indicated a TPH level of 336.98 ppm. This comparison appears to suggest natural degradation of the Diesel Oil between the two (2) sampling events.

Near AST #1311, Baker ID Area N

DA sample EA-9885-23 was collected near AST number 1311. The sample indicated 4,700 ppm of Diesel Oil. The Baker sample, 19098-43, for this area indicated a TPH level of 115.58 ppm. Soil impairment has been confirmed to exist in this area.

5.3 PCBs

The operational electric transformer station visibly appears to be in good condition. Laboratory analytical results from the soil samples collected from this station indicated PCBs at very low levels.

The two (2) soil samples collected from the dismantled transformer station contained PCBs (as total PCB Aroclor 1260) in excess of 1.0 ppm. The elevated PCB levels of these samples appear to indicate the presence of contamination.

A preliminary remediation goal of 1.0 ppm has been set for PCBs based on U.S. Environmental Protection Agency (U.S.EPA) -Toxic Substance Control Act, Subpart G - PCB Spill Cleanup Policy Standards. A value of 1.0 ppm can also be used as the direct contact value for soils. Due to its physicochemical properties PCBs are not expected to leach through soils to groundwater, nor migrate extensively through soils.

5.4 VOCs

VOC's do not appear to be present at levels of concern. The low levels detected are at trace amounts and do not require remediation.

6.0 RECOMMENDATIONS

The recommendations presented in this section take into consideration the protection of human health and safety, the environment, and the practical and cost effective measures for remediation. The American Society for Testing and Materials (ASTM) standard for Risk-Based Corrective Action Applied at Petroleum Release Sites (ASTM Standard E-1739-95) has been applied to this Project Site and provided the basis for the following recommendations.

The information presented in this Site Assessment Report has identified several areas of concern containing elevated levels of Diesel Oil and Lead in the soils. DA is recommending that the contaminated areas identified by this investigation be restricted from direct contact and human exposure. This recommendation can be pursued in different ways. Presented are approaches that will achieve the goal of protection of human health and safety in a cost effective manner. The procedures described below are in general accordance with United States Environmental Protection Agency (U.S.EPA) Superfund Field Operations Methods.

6.1 Soil Remediation

The most cost effective method to eliminate contaminates from each identified location is to excavate those soils and create a stock pile in an area suitable for storage. The stock piled soils would have to be restricted from direct human contact and exposure.

The comparison of recent samples collected to historical samples from the same areas have indicated a reduction in contaminates, therefore, indicating biological activity breaking down contaminate concentrations. Storage of contaminated soils for a period of time should allow degradation and may in fact reduce contaminate levels to levels suitable for handling without personal protective equipment.

The exact location and method of excavating soils would be best determined by DA in cooperation with Icelandic authorities who will be planning the development and future uses of the Project Site. Future uses of the stockpiled soil could be as fill or base soils under roadways and parking lots. This remediation method, commonly referred to as capping, restricts direct contact and human exposure.

6.2 ASTs, Piping and Buildings

In addition to the identified contaminated soil areas, above ground storage tanks and associated piping and buildings remain as potential sources of contamination. Prior to any development on-site, it is recommended that all tanks, piping and buildings be properly removed. Also, any contaminated soil beneath or surrounding these structures be throughly evaluated and removed. It has been indicated to DA by on-site sources that these tanks and

associated piping contain sludge, product, and Lead paint. If the dismantling and removal of the tanks and piping is not conducted appropriately, the Project Site may become contaminated beyond the point of cost-effective clean up measures for its proposed use.

7.0 CLOSE

The contaminated soils encountered on-site are manageable. The type of contaminants and concentration would not negate this clean up approach, provided it is understood that contaminated soil is present and direct contact and exposure has been eliminated. Furthermore, as time progresses, the level of the petroleum contaminates will naturally degrade, however, the Lead will remain.

The accuracy and completeness of this Site Assessment depends on the integrity of the available records, interview information, analytical data, and on-site surveillance data. As testing was conducted in areas known and suspect impairment, DeLisle Associates LTD cannot guarantee the Project Site does not contain other areas with impairment. In the professional opinion of DA, all appropriate inquiry has been made consistent with good commercial and customary practices into this Site Assessment. DA is unable to express an opinion as to any other environmental issues beyond those investigated stated in this report.

This report is intended for use by the Iceland Ministry for Foreign Affairs, Keflavik Contractors of Iceland, and Sudurnes Public Health Authority. The scope of services performed in this Site Assessment may not be appropriate to satisfy the needs of other users, and any use or reuse of this document or findings, conclusions, or recommendations herein is at the sole risk of said user. Duplication or transfer of this report is at the discretion of the aforementioned users.

Thank you for the opportunity to provide our environmental services. Please contact DA if there are questions or comments concerning this report.

This Report Prepared by:

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This Report Reviewed by:

Mark A. DeLisle
CEO

8.0 REFERENCES

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STANDARD OPERATING PROCEDURES

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EXCAVATION SOIL SAMPLING
Standard Operating Procedure No. 2

1.0 GENERAL

Excavation samples are collected using the following procedures:

- Excavation activities are accomplished with the use of a backhoe or similar equipment.
- Soil samples are extracted from the walls and floor of the excavation utilizing a portable hand auger, core sampler shovel, or from the bucket of the excavating equipment.
- Proper number of soil samples collected from the side walls and floor is in general accordance with current regulatory agency protocol (i.e. MDNR draft document "Verification of Soil Remediation" dated October 25, 1990).
- All sampling equipment is decontaminated in accordance to procedures outlined in SOP No. 3.
- Visual observations of soil type, discoloration, characteristic odors and Photoionization Detector (PID) or Organic Vapor Analyzer (OVA) readings, are noted and logged.
- Photo documentation (where applicable, i.e. special conditions)

Due to the amount of disturbance induced in excavating, samples obtained through excavation operations cannot be considered to be representative of undisturbed conditions. Additionally, special safety precautions related to heavy equipment operations, trench/pile stability, air monitoring, etc. must be followed. These procedures are outlined in the Site Specific Health and Safety Plan.

Prior to operations, the proposed excavation location is inspected and cleared as necessary to allow access by the equipment and crew. Public utilities (Miss Dig) are advised of the operations and locations beforehand to minimize interference with subsurface communications or utility lines. The DA Project Supervisor will approve all final locations before operations commence.

A DA Geologist or Environmental/Specialist is present at the excavation to log samples, monitor excavation operations, and describe soils.

2.0 PROCEDURES

2.1 Prior to initiation of excavation activities, The DA Project Supervisor shall specify the excavation location and inform the equipment operator of anticipated excavation depth.

2.2 Unless cave in occurs, the walls of the excavation shall be cut as near vertical as safety permits.

2.3 During excavation, visual observations are made for soil consistency, color changes, layering, and, if it occurs, the depth at which water enters the excavation. All observations and sampling is conducted from an upwind direction.

2.4 To prevent possible hazards from sidewall collapse, excavation mapping and photographing is performed from an observation position at the end of the excavation. Excavation depths are determined with a drop tape or similar method.

2.5 Excavated soil is deposited on plastic sheeting so that any liquids present will flow back into the excavation. If there is a definite visual distinction between contaminated and non-contaminated soil, a separate pile for each material will be created (provisions for separate stockpiles are arranged prior to excavation activities).

2.6 If the excavation can be entered safely, soil samples are collected using a hand auger, core sampler or shovel as prescribed in SOP No. 1.

2.7 If the excavation is unsafe for entry, excavating equipment may be used to obtain a representative portion of undisturbed, underlying soil where the on-site geologist or environmental specialist can collect the soil sample.

2.8 Sample from the backhoe bucket is obtained from the interior of the soil mass so as to eliminate possible contamination from the backhoe.

2.9 A portion of each sample is transferred to appropriate laboratory precleaned sample containers and the containers are then sealed, identified and preserved for possible laboratory analysis. The other portion, if conditions warrant, is placed into a container, labeled with the sample ID and allowed to reach temperature equilibrium (temperature minimum 70° F). The headspace within the container is checked with an OVA or PID and the results recorded. Sample collection log forms are completed for each sample collected for laboratory analysis.

2.10 The excavation is backfilled with clean backfill materials (sand or gravel).

3.0 EXCAVATION/PROJECT LOGS

Soil samples and lithologic descriptions acquired during the excavation are recorded in a data log book along with photographic documentation. The following information will be entered in the log or attached to it:

- Project name and number
- Excavation location and number
- Name and initials of on-site geologist or environmental specialist
- Description of excavating equipment
- Safety equipment used
- Special problems encountered and their resolution
- Distinct boundaries between soil types and/or lithologies and depths of occurrences
- Depth of first encountered groundwater or hydrocarbons (if observed) along with method of hydrocarbon determination.
- Estimated depth interval for each sample taken or classified.

SAMPLING EQUIPMENT DECONTAMINATION
Standard Operating Procedure No. 3

1.0 GENERAL

Proper decontamination of field sampling equipment is critical in obtaining samples free from interference due to cross-contamination.

2.0 FIELD DECONTAMINATION OF SOIL SAMPLING EQUIPMENT AND DRILL RIGS/HEAVY EQUIPMENT

Areas of equipment which will come in close proximity to materials being sampled should be thoroughly steam cleaned or manually scrubbed with a detergent solution and then rinsed upon initial arrival on site and between drilling or excavation locations. This equipment will include:

- Backhoe buckets and extension arm
- Down-hole drilling rig equipment

When augers or core samplers are used to collect samples that will not undergo laboratory analysis, they should also be steam cleaned or scrubbed between each sample point.

3.0 FIELD DECONTAMINATION OF SAMPLING EQUIPMENT

Hand sampling equipment (bailers, sampling spoons, shovels, picks, hand augers, etc.) used to collect samples for chemical analysis are decontaminated prior to each use. The following procedure is used.

- Liqunox detergent wash/scrub
- Distilled/deionized water rinse

4.0 DECONTAMINATION AREA LOCATION

Decontamination of heavy equipment (i.e. backhoe, drill rig) is accomplished at a designated equipment decontamination area.

Decontamination of hand sampling equipment is accomplished upwind at or near the actual sample location.

HEAD SPACE SOIL VAPOR MONITORING/ORGANIC VAPOR ANALYZER
Standard Operating Procedure No. 4

I. PROCEDURES

1.0 Once soil has been collected from the designated sampling area and prior to collecting an optimum sample for laboratory analysis, part of the soil collected may be used to monitor contaminant vapor levels from the soil at depth. Field screening or monitoring of soils is conducted as follows:

1.1 Using clean disposable vinyl gloves, plastic spoon, popcicle stick, etc., portions of the boring soil is placed into a glass jar or Ziploc bag. The jar (bag) is filled about half way with broken up soil (free of clumps). Aluminum foil is immediately crimped over the mouth of the jar for a tight seal; if using a Ziploc bag, just seal the baggie. Do not screw the jar lid over the aluminum foil because this causes the foil to tear, thus allowing vapors to escape.

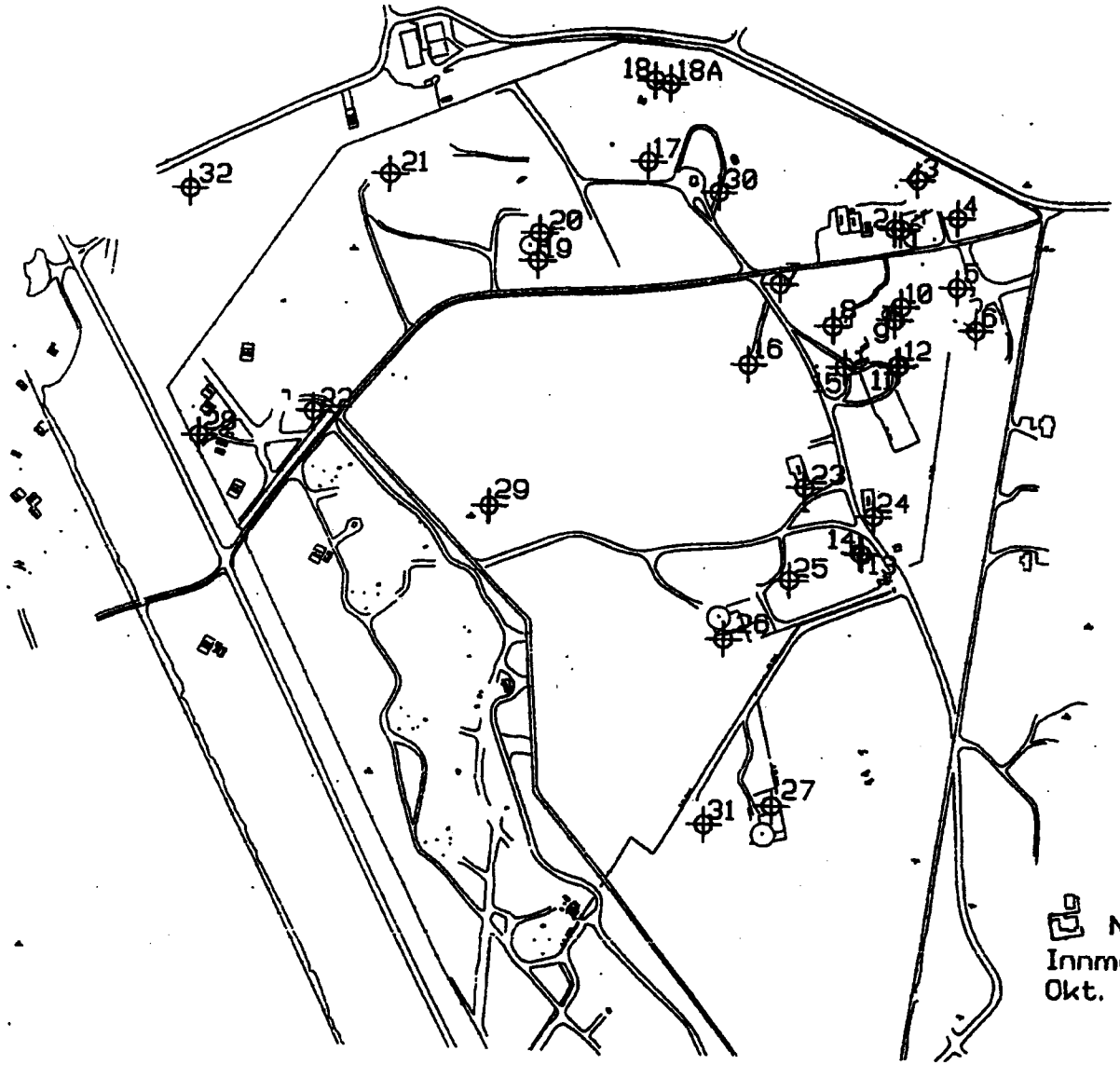
1.2 The prepared field screening jar (bag) is then labeled and set aside for a length of time to allow the vapors in the soil (if any) to fill the void space (upper half) of the container. The amount of time should be sufficient to allow the sample to warm up to approximately 70° F.

1.3 Head space analysis is performed on the container when the length of time has expired. This is done by puncturing the aluminum foil with the tip of the field instrument probe (OVA, HNU, PID, etc) or inserting the probe through the seal on the baggie. Once the foil (seal) is broken the probe is inserted slowly into the upper half of the jar and the soil vapors measured. Never allow the instrument probe to touch the soil, this can damage the pump of the instrument and contaminate the probe.

1.4 When recording the headspace results (on an OVA Log form), always indicate the minutes used to equilibrate the soil inside the container prior to reading (i.e. minutes the prepared container sets before head space measurements). Temperature conditions to which all measurements are made should be approximately the same during the course of the day. Changes in temperature conditions are to be annotated in the comments section of the field sheet.

1.5 During winter projects, the prepared container can be warmed for a predetermined amount of time prior to headspace readings. Caution should be used when using an automobile heater. The engine and or exhaust fumes can contaminate your samples.

2.0 Start-up of the OVA, PID or HN-U is accomplished utilizing the procedures included with each instrument.

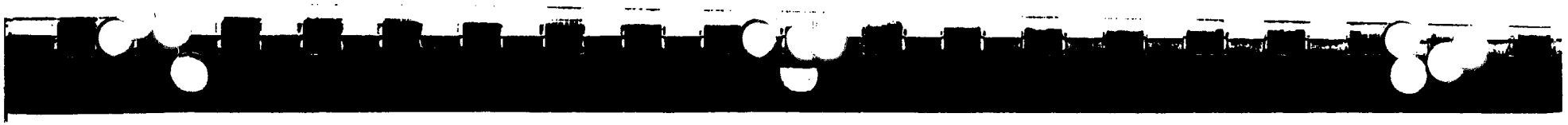


HNITASKRÁ:

Punktur	x - hnit	y - hnit
1	723180.035	395956.973
2	723186.890	395957.311
3	723161.792	396014.552
4	723114.211	395971.552
5	723113.811	395891.182
6	723091.145	395842.458
7	723316.305	395890.134
8	723256.048	395843.833
9	723185.831	395852.502
10	723178.948	395867.844
11	723183.202	395798.893
12	723180.194	395801.052
13	723220.240	395577.791
14	723223.155	395579.748
15	723242.483	395796.715
16	723351.399	395797.154
17	723470.147	396027.635
18	723462.866	396119.990
18A	723445.667	396117.143
19	723396.008	395909.824
20	723594.342	395941.905
21	723767.145	396005.821
22	723850.994	395730.792
23	723285.626	395655.510
24	723207.777	395623.201
25	723301.343	395545.400
26	723375.083	395475.088
27	723317.846	395284.992
28	723982.689	395700.143
29	723646.647	395624.768
30	723387.813	395994.040
31	723395.248	395262.398
32	723997.611	395984.692

Nickelsvæði, Keflavíkurflugvelli
Innmæling á holum vegna jarðvegssýna
Okt. 1998

VERKFRÆÐISTOFA
NJARÐVÍKUR ehf



SOIL VAPOR FIELD ANALYSIS RECORD

Project Name/Number: Lower Nikel Area/EA-9885 **Date of Analysis:** October 13, 1998
Project Location: Keflavik, Iceland **Analyzer Type:** Century 128 OVA

SITE NUMBER	SAMPLE TYPE	SAMPLE DEPTH	PEAK READING	TIME	LOCATION/SOIL CONDITIONS
BG	AA	--	6.5	1155	AA - zero - Iceland OVA
TP-1	Grab/HS	12"	>100	1100/1200	Black rocky sand
		5'	200.0	1120/1205	Silty/clayey sand
		6'	110.0	1127/1210	End of excavation
TP-2	Grab/HS	5'	1.8	1135/1118	Brown silty/clayey sand
		2.5'	>100	1150/1215	Extend trench - Brown silty/clayey sand
BG	AA	--	6.6	1445	AA - zero -USA OVA
TP-3	Grab/HS	20"	0	1325/1450	Black rocky sand
		3.5'	4.2	1335/1452	Dark brown sandy silt
TP-4	Grab/HS	12"	1.6	1345/1454	Dark brown silty / clayey sand
		3'	14.0	1350/1456	Dark brown silty / clayey sand
		3.5'	5.6	1352/1457	Dark brown silty / clayey sand
TP-5	Grab/HS	2'	0	1405/1456	Dark brown sand with trace silt
TP-6	Grab/HS	12"	0.2	1430/1501	Black sandy silt with rocks
		36"	0.2	1433/1502	Black sandy silt with rocks
		46"	2.0	1440/1503	Dark brown silty sandy clay with rocks
		2.5'	0	1415/1500	Dark brown sand with trace silt and rock

AA - Ambient Air; HS = Hand Auger; TP = Test Pit

DELISLE ASSOCIATES LTD

SOIL VAPOR FIELD ANALYSIS RECORD

Project Name/Number: Lower Nikel Area/EA-9885
Project Location: Keflavik, Iceland

Date of Analysis: October 13, 1998
Analyzer Type: Century 128 OVA

SOIL BORING NUMBER	SAMPLE TYPE	SAMPLE DEPTH	PEAK READING (ppm)	TIME (Collection Interval)	LOCATION / COMMENTS
TP-7	Grab/HS	20"	0.7	1515/1605	Dark brown silty sand
		4'	1.4	1516/1607	Dark brown silty sand
		67"	0.3	1520/1608	Grey hard silty clay
TP-8	Grab/HS	22"	7.4	1550/1610	Dark brown silty sand
TP-9	Grab/HS	12"	2.3	1625/1720	Black silty sand with rocks
		3'	3.0	1630/1722	Dark brown silty sand
TP-10	Grab/HS	2'	0.5	1645/1725	Black silty sand
		3'	0.1	1650/1726	Dark brown silty sand

AA - Ambient Air; HS = Hand Auger; TP = Test Pit

SOIL VAPOR FIELD ANALYSIS RECORD

Project Name/Number: Lower Nikel Area/EA-9885
Project Location: Keflavik, Iceland

Date of Analysis: October 14, 1998
Analyzer Type: Century 128 OVA

SITE NUMBER	SAMPLE TYPE	SAMPLE DEPTH	PEAK READING	TIME (military) / DATE	LOCATION / COMMENTS
BG	AA	--	5.6		AA - zero - USA OVA
TP-15	Grab/HS	12"	0.2	0925/1130	Black gravelly sand
		2.9'	1.8	0927/1132	Brown silty sand/clay
		4'	1.0	0930/1133	Dark brown gravelly sand
		5.8'	2.2	0932/1134	Brown sand with rocks
TP-16	Grab/HS	12"	3.7	1005/1230	Black gravelly sand /rocks
		2'	0	1006/1232	Black gravelly sand with rocks
		3' 3"	0	1008/1233	Dark brown find grained sand
TP-17	Grab/HS	12"	10.2	1030/1234	Black clayey silty sand with petroleum odor
		1' 9"	0.8	1035/1236	Black gravelly sand
TP-18	Grab/HS	12"	1.3	1100/1238	Black gravelly sand / rocks
		2'	0.8	1101/1239	Brown silty sand
		3'	2.1	1102/1242	Black gravelly sand with large rocks
TP-18A	Grab/HS	12"	0	1105/1244	Black gravelly sand with rocks
		1' 8"	0.2	1106/1245	Black gravelly sand with rocks
		2'	0	1107/1246	Brown silty sand
		6.5'	3.1	0933/1136	Brown silty sand & rocks

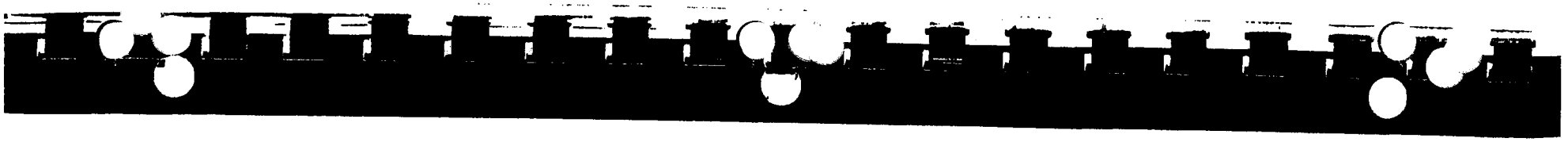
AA - Ambient Air; HS = Hand Auger; TP = Test Pit

SOIL VAPOR FIELD ANALYSIS RECORD

Project Name/Number: Lower Nikel Area/EA-9885
Project Location: Keflavik, Iceland
Date of Analysis: October 14, 1998
Analyzer Type: Century 128 OVA

SITE NUMBER	SAMPLE TYPE	SAMPLE DEPTH	PEAK READING	TIME collection/arrival	LOCATION COMMENTS
TP-19	Grab/HS	12"	0.1	1130/1625	Dark brown silty clay with rocks
TP-20	Grab/HS	10"	4.0	1345/1626	Dark brown silty clay with rocks
TP-21	Grab/HS	12"	2.0	1400/1627	Black fine grained dry sand with rocks
		3'	0	1410/1628	Black fine grained dry sand with rocks
		4'	0	1410/1629	Brown silty clay with rocks
TP-22	Grab/HS	10"	0	1430/1630	Brown silty clay with rocks
TP-23	Grab/HS	12"	0	1455/1631	Black sand with rocks
		2'	0.4	1500/1632	Black sand with rocks
TP-24	Grab/HS	10"	0	1517/1633	
TP-25	Grab/HS	2' 6"	0	1540/1638	Dark brown silty sand with rocks
		6' 6"	0	1545/1640	Dark brown sand with rocks
TP-26	Grab/HS	6"	0.2	1605/1644	Dark brown silty sand/clayey with rocks
TP-27	Grab/HS	16"	0	1620/1645	Black sand with rocks (gravelly)

AA - Ambient Air; HS = Hand Auger; TP = Test Pit



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Telefax 354-570 7111

UEC - 1

Keflavík Contractors
Ragnar J. Gunnarsson
Box 16
235 Keflavík Airport

Assignment no.: 5EE8181 Date.: 24.11.1998

Description: Possible soil contamination

Supervisor: Guðmundur Hreinn Sveinsson Copy to:

Samples: 35 soil samples Procedure no.:

Customer representative: Ragnar Gunnarsson No. of pages: 6

Received: 02.10.1998 Invoice no.:

Following are the results of analysis of the soil samples, made at IceTec:

Sample ID	PMC	pH	Pb* (mg/kg)
EA-9885-01	16,3	6,56	1,51 ± 0,09
EA-9885-02	35,3	7,63	1,15 ± 0,06
EA-9885-03	18,8	6,27	2,34 ± 0,05
EA-9885-04	26,8	6,36	1,2 ± 0,1
EA-9885-05	9,60	7,00	1,6 ± 0,1
EA-9885-06	15,1	6,52	0,90 ± 0,03
EA-9885-07	31,8	7,44	0,71 ± 0,02
EA-9885-08	15,1	6,41	128 ± 4
EA-9885-09	13,0	7,02	9,98 ± 0,04
EA-9885-10	13,5	6,95	6,2 ± 0,2
EA-9885-11	18,5	6,56	292 ± 9
EA-9885-12	-	-	-
EA-9885-13	-	-	-
EA-9885-14	-	-	-
EA-9885-15	-	-	-
EA-9885-16	8,90	7,15	1,24 ± 0,08
EA-9885-17	6,50	7,14	1,8 ± 0,2
EA-9885-18	9,40	7,16	0,701 ± 0,2
EA-9885-19	23,7	6,32	10,4 ± 0,2
EA-9885-20	22,4	6,98	0,35 ± 0,06

* The Pb values are on dryweight basis.

continued on next page

Sample ID	PMC	pH	Pb* (mg/kg)
EA-9885-21	7,80	7,32	3,1 ± 0,2
EA-9885-22	21,2	7,30	2,40 ± 0,02
EA-9885-23	21,6	6,68	35,7 ± 0,9
EA-9885-24	12,2	7,32	1,23 ± 0,05
EA-9885-25	28,3	7,64	118 ± 3
EA-9885-26	6,50	7,45	4,2 ± 0,3
EA-9885-27	20,6	6,91	11,1 ± 0,1
EA-9885-28	12,1	7,11	0,37 ± 0,08
EA-9885-29	15,1	7,01	459 ± 14
EA-9885-30	12,1	7,24	22,5 ± 0,1
EA-9885-31	9,00	6,67	15,5 ± 0,8
EA-9885-32	14,0	6,97	4,3 ± 0,4
EA-9885-33	13,6	7,20	5,34 ± 0,09
EA-9885-34	18,3	7,01	4,5 ± 0,1
EA-9885-35	21,1	6,47	3,9 ± 0,1

* The Pb values are on dryweight basis.

Methods of determinations:

PMC (Percent Moisture) were determined by weighing the samples and dry them at 60 °C, untill no change were in weighing. The ratio between the weight after and before drying x 100 is the PMC.

pH (Acidity) were determined according to EPA Method 9045c

Pb (Lead) were determined according to EPA Method 7421 with GF-AAS (Inverse Zeeman), except samples EA-9885-08, -11, -23, -25 and -29, which were determined with Flame-AAS.
Limit of detection (LOD) for Pb, based on 3 times standard deviation of the blank is for the:

a) GF-AAS measurements: 0,0009 mg/kg
b) FL-AAS measurements: 0,06 mg/kg

Rannsóknastofa í lyfjafræði
Háskóli Islands
University of Iceland

Reykjavík, November 13th. 1998

Guðmundur Hreinn Sveinsson
Iðntæknistofnun
Keldnaholt
112 Reykjavík

The analysis of 29 soil samples from DeLisle Associates LTD. (5EE8181).

Twenty-nine soil samples were received on October 14th. and 15th. 1998. The samples were kept refrigerated until they were subsampled. The samples were analysed for TPH and BTEX on October 14-15th., and for VOCs on October 16th. The samples arrived in filled glass jars with screwed lids (previously cleaned in this laboratory), marked as indicated on the chain of custody form (photocopy attached). All results are reported per dry weight, which was determined by letting 5 g of soil stand at room temp. for about 24 hours in a fume hood. The soil was heated for 5 minutes on a hot plate towards the end of the drying time.

1. Total Petroleum Hydrocarbons and BTEX.

The samples were analyzed according to the Nordtest method (Nordtest Technical Report 329). For extraction, 5 g of each sample were suspended in a 0.5 M sodium pyrophosphate solution and extracted with pentane p.a. (from Merck, Germany) by shaking for 2 hrs. Bromobenzene was used as an internal standard. A sample of similar type soil, that had previously been determined to be free of volatile organics was used as a blank. Different concentrations of jet fuel, diesel oil, crude oil and BTEX (Solution AS-M027 from Accustandard Inc., USA) were added to the blank soil and extracted in the same way as the samples. The phases were separated by spinning and 1 μl of the pentane extract was injected into the gas chromatograph (HP5890 with HP7673 autosampler, HP ChemStation, FID and column DB-1, 15 m, 0.25 mm i.d., 1μm film). The detection limit of the method is about 5 mg/kg (ppm) for gasoline, jet fuel and diesel oil, 25 mg/kg for fuel oil and about 0.1 mg/kg for benzene, toluene, ethylbenzene and xylene. The measurement uncertainties are approx. ± 10 %, but could be considerably higher when the samples contain very decomposed oil.

Rannsóknastofa í lyfjafræði | Ármúli 30 | P.O. Box 8216 | (354)568 0866
Telefax (354)568 0872

The results were as follows in ppm dry weight:

Sample ID	% dry weight	
EA-9885-01	83	5600 ppm diesel oil
EA-9885-02	61	570 ppm diesel oil, very decomposed
EA-9885-03	77	480 ppm diesel oil, very decomposed
EA-9885-04	75	2400 ppm diesel oil, very decomposed
EA-9885-05	90	no petroleum hydrocarbons detected
EA-9885-06	86	"
EA-9885-07	70	"
EA-9885-08	66	"
EA-9885-09	88	" *
EA-9885-10	81	" *
EA-9885-16	93	"
EA-9885-17	93	25 ppm diesel oil, very decomposed
EA-9885-18	91	no petroleum hydrocarbons detected
EA-9885-19	82	>30000** ppm very decomposed diesel oil and some heavier oils.
EA-9885-20	85	170 ppm diesel oil, very decomposed
EA-9885-21	96	no petroleum hydrocarbos detected
EA-9885-22	78	"
EA-9885-23	80	4700 ppm diesel oil, very decomposed
EA-9885-24	86	no petroleum hydrocarbos detected
EA-9885-26	91	"
EA-9885-27	80	"
EA-9885-28	89	"
EA-9885-29	89	"
EA-9885-30	93	"

* Samples # EA-9885-09 and EA-9885-10 contained unidentified peaks late in the chromatogram (between C_{18} and C_{22}).

** Sample # EA-9885-19 contained also tar-like cemicals that were not extractable with pentane.

Benzene, toluene, ethylbenzene or xylenes were not detected in any of the samples.

2. VOCs (8240B-R) in soil.

Three samples were analyzed by gas chromatography with an ECD and FID-detector. Prior to the analysis, 2 g the samples were weighed into airtight, rubber sealed vials. The samples were then heated at 100°C and 1 ml of the headspace was injected into the gas chromatograph (HP5890 Series II; column DB 624, 60 m, i.d. 0.25 mm, film 1.4 µm). Quantification was done by standard addition to a similar type soil by adding of solution M-8240B-R (from Accustandard Inc., USA) containing 42 volatile components of 0.2 mg/ml each. The attached table lists the chemicals detected by this method, their detection limits and the amount detected in the samples. The uncertainty in the amount of each chemical is estimated to be ±10%.

EPA list 8240B-R. Results and detection limits for samples analyzed by GC-FID* and GC-ECD in mg/kg (ppm) dry weight.

chemical	det. limits	EA-9885-25	EA-9885-26	EA-9885-27
carbon disulfide*	1			
ethanol + acrolein *	0.5			
1,1-dichloroethene	0.0002			
Aceton*	0.1			
Iodomethane	0.001			
methylene-chloride	0.005			
acrylonitrile*	0.1			
1,2-dichloroethene	0.01			
1,1-dichloroethane	0.01			
vinylacetate*	0.5			
2-butanone*	0.1			
chloroform	0.001			
1,1,1-trichloroethane	0.0005			
CCL4	0.0002			
benzene*	0.05			
1,2-dichloroethane	0.01			
trichloroethene	0.0005			
1,2-dichloropropane	0.005		0.012	0.009
dibromomethane	0.0005		0.002	0.001
bromodichloromethane	0.0005			
2-chloroethyl vinyl ether*	0.2			
cis-1,3-dichloropropene	0.002			
4-methyl-2-pentanone*	0.1			
toluene*	0.05			
trans-1,3-dichloropropene	0.002			
etylmetacrylate*	0.1			
1,1,2-trichloroethane	0.002			
tetrachloroethene	0.001		0.002	0.001
2-hexanone*	0.1			
chlorodibromomethane	0.0005			
chlorobenzene*	0.05			
ethylbenzene*	0.05			
m-xylene + p-xylene*	0.05			
o-xylene*	0.05			
styrene*	0.05			
bromoform	0.0005		0.005	0.004
1,1,2,2-tetrachloroethane	0.002		0.033	
1,2,3-trichloropropane	0.005			
trans/cis-1,4-dichloro-2-butene	0.005			

Emty spaces indicate not detected.

3. PCBs in soil.

The samples were analyzed according to the Nordtest method (Nordtest Technical Report 329). Because of the unidentified peaks in samples # EA-9885-09 and EA-9885-10, they were also taken for the PCB analysis. For extraction, about 5 g of the samples as well as two blank soil samples that contained no PCBs were accurately weighed into glass containers. To one of the blank samples a mixture of 50 ppm Aroclor 1260 was added, so that the final concentration was 0.02 ppm PCB. Recovery standards (PCB #112 and #198) were added to all samples. The samples were extracted by sonication for 5 min and were then shaken for 60 min, first in acetone and then in an acetone/hexane mixture (1:3). After filtration the combined extracts were extracted with 0.9% NaCl/ 0.1M orthophosphoric acid (aq) and then evaporated to near dryness. The remaining samples were dissolved in 1 g of isooctane with internal standard added (tetrachloronaphtalene), cleaned with sulfuric acid and then analysed.

The analysis was performed by gas chromatography (HP 5890 Series II, column DB1701, 60 m, 0.25 mm i.d., 0.25 μm film) with an ECD-detector, which is selective for halogens. For identification, standards of 0.02 - 4.5 mg/kg (ppm) of Aroclor 1260 (supplied by Supelco, Switzerland as 50 and 500 ppm solutions in transformer oil) diluted in isooctane, were used, as well as different concentrations of individual standards for PCBs # 28, 52, 101, 138, 153 and 180. The method detection limit was 0.01 ppm of total PCBs (as Aroclor 1260) and 0.0002 ppm for each congener and the measurement uncertainties are about ±10%. The recovery was 84-100%.

The results for total PCBs were as follows in ppm dry weight:

Sample ID	% dry weight	total PCBs as Aroclor1260
EA-9885-09	88	< 0.01
EA-9885-10	81	< 0.01
EA-9885-12	88	1.64
EA-9885-13	89	4.54
EA-9885-14	76	0.022
EA-9885-15	73	0.012

The results for individual PCBs were as follows in ppm dry weight:

	#28	#52	#101	#138	#153	#180
EA-9885-09	0.00038	<dl	0.00035	<dl	0.00043	0.00035
EA-9885-10	<dl	-	<dl	-	<dl	<dl
EA-9885-12	-	-	0.0084	0.086	0.14	0.18
EA-9885-13	-	-	0.026	0.22	0.37	0.50
EA-9885-14	-	-	0.00039	0.0020	0.0017	0.0025
EA-9885-15	-	-	<dl	0.0017	0.00112	0.00103

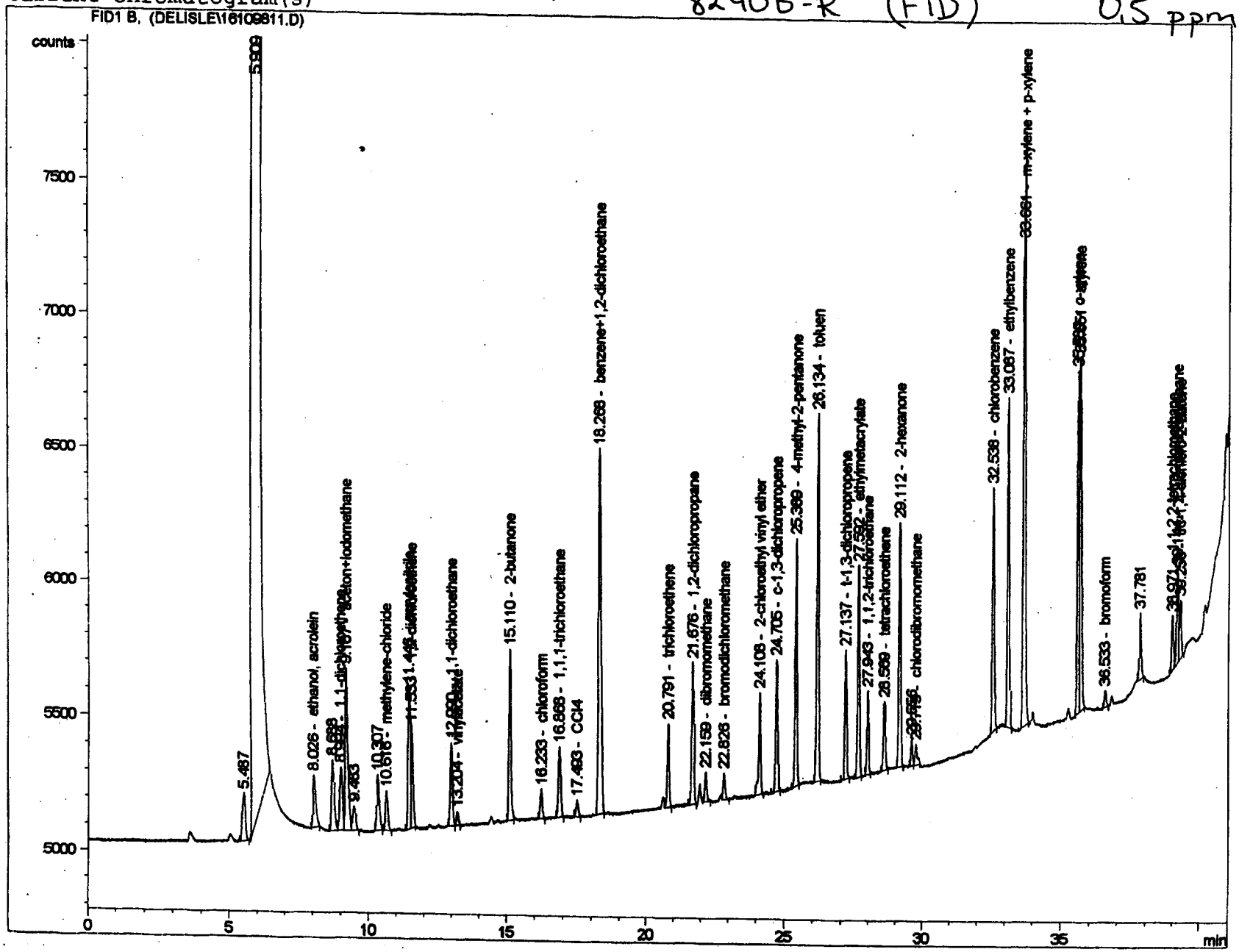
Elín V. Magnúsd

Elín V. Magnúsdóttir

nt of window 38: Current Chromatogram(s)

Current Chromatogram(s)

8240B-R (FID) 0.5 ppm



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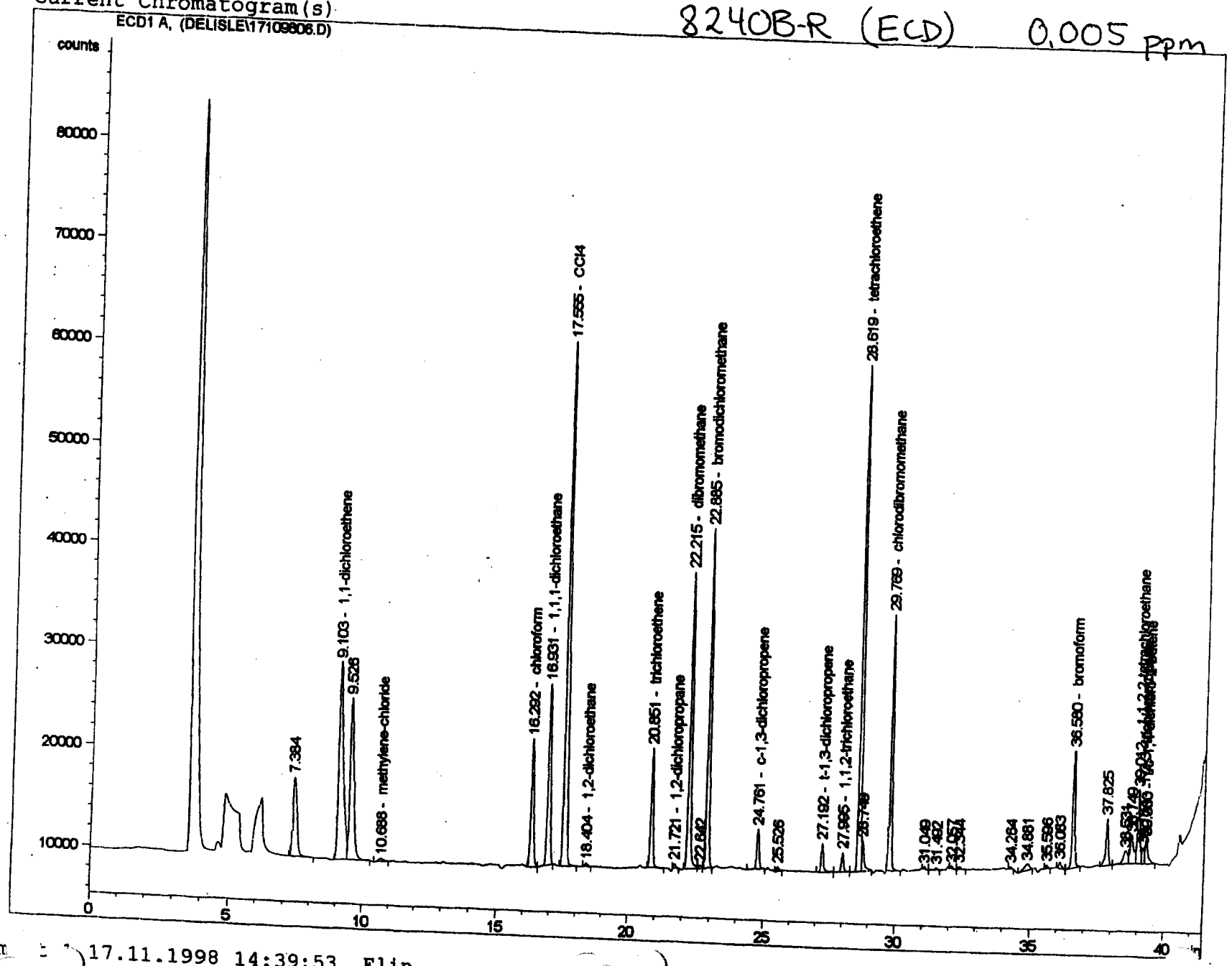
Current Chromatogram(s)

8240B-R (ECD) 0.005 ppm



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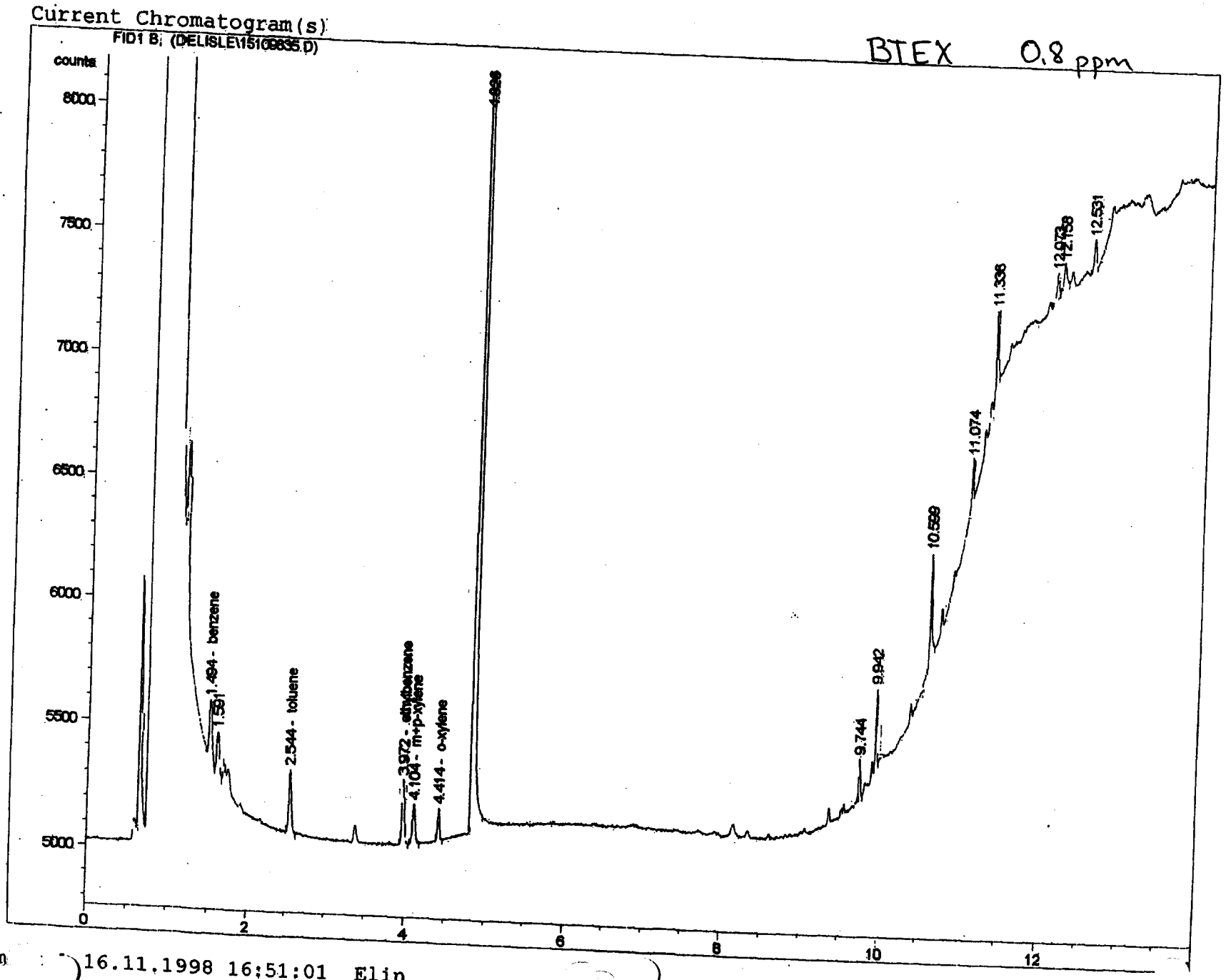

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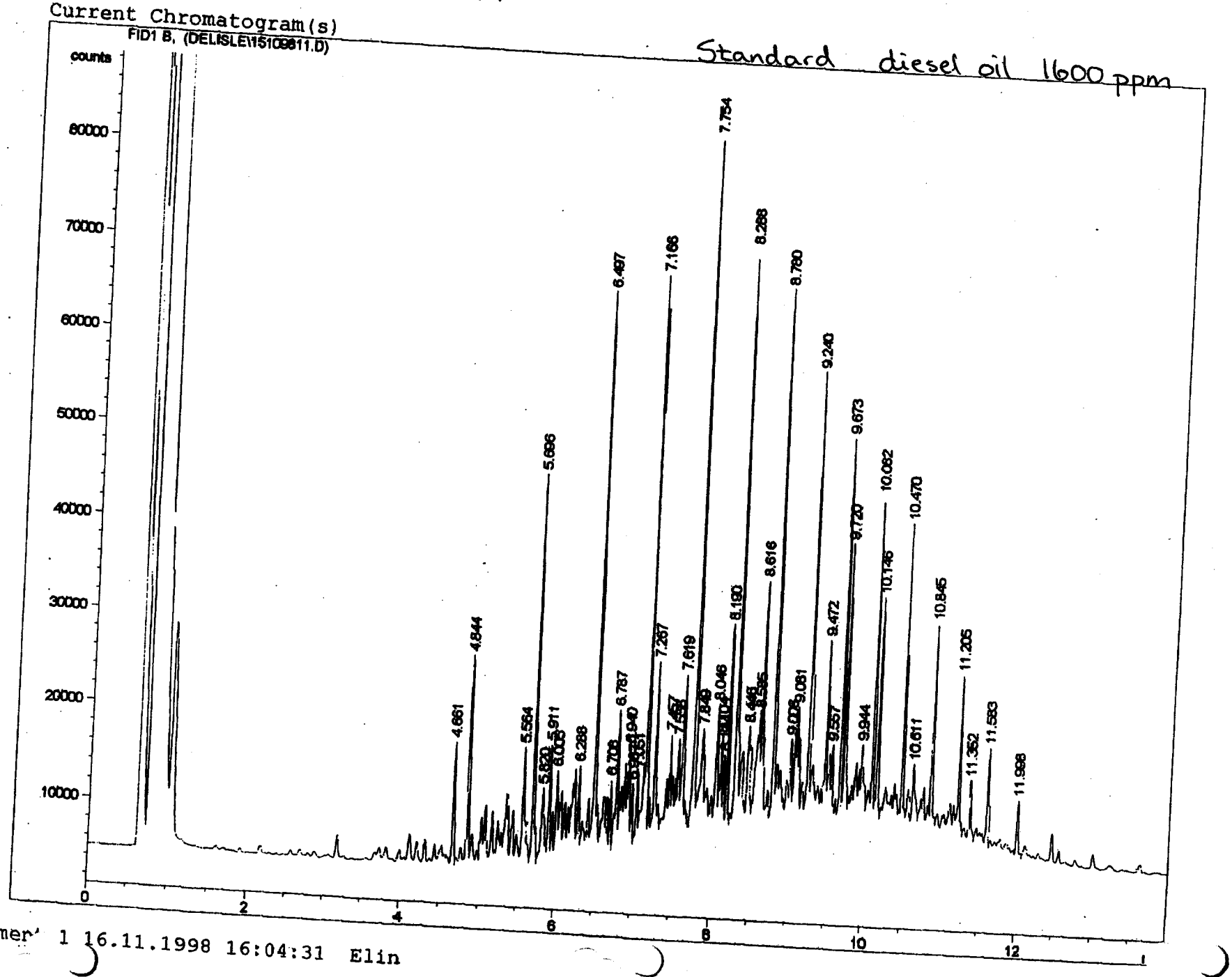

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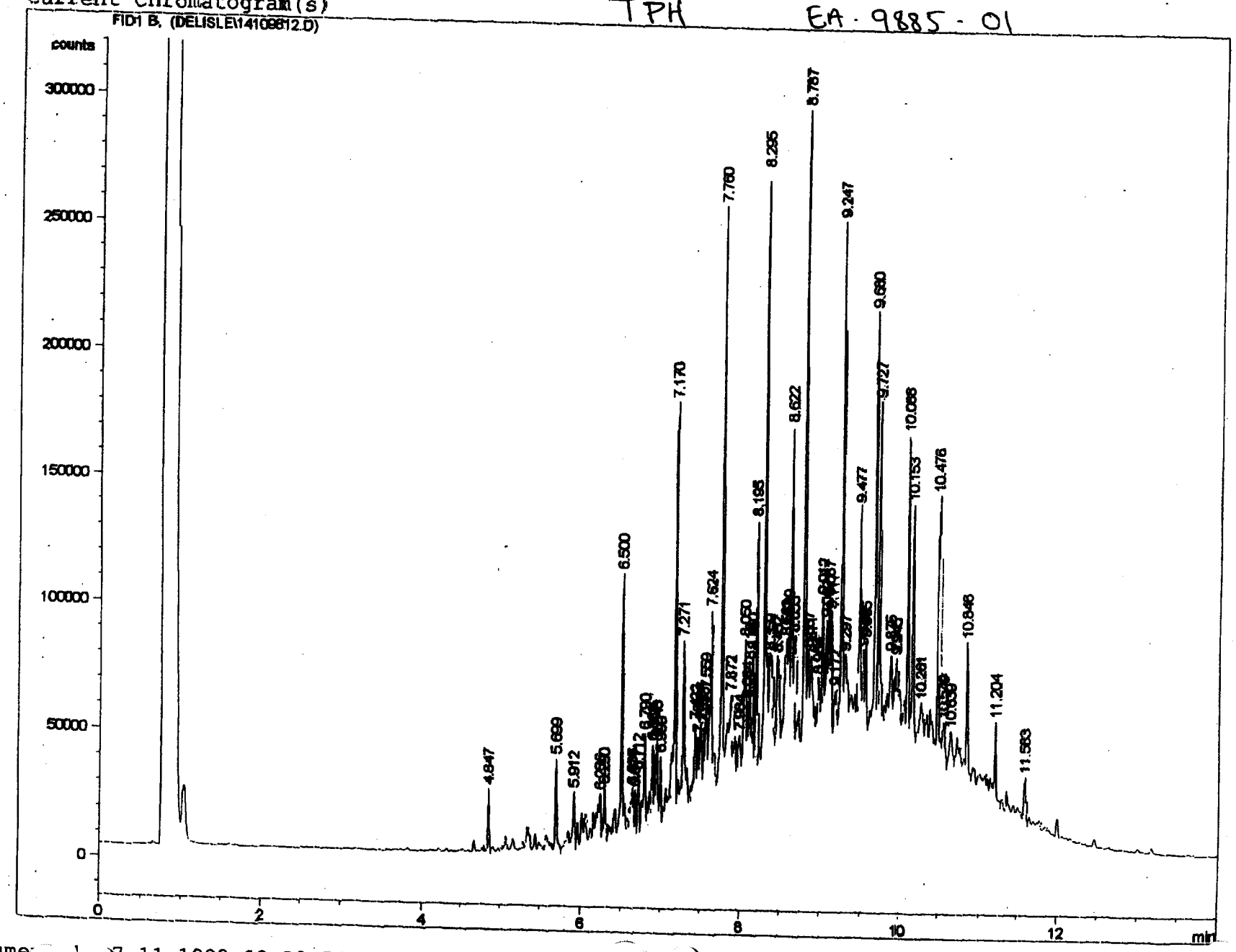
Current Chromatogram(s)

TPH EA-9885-01



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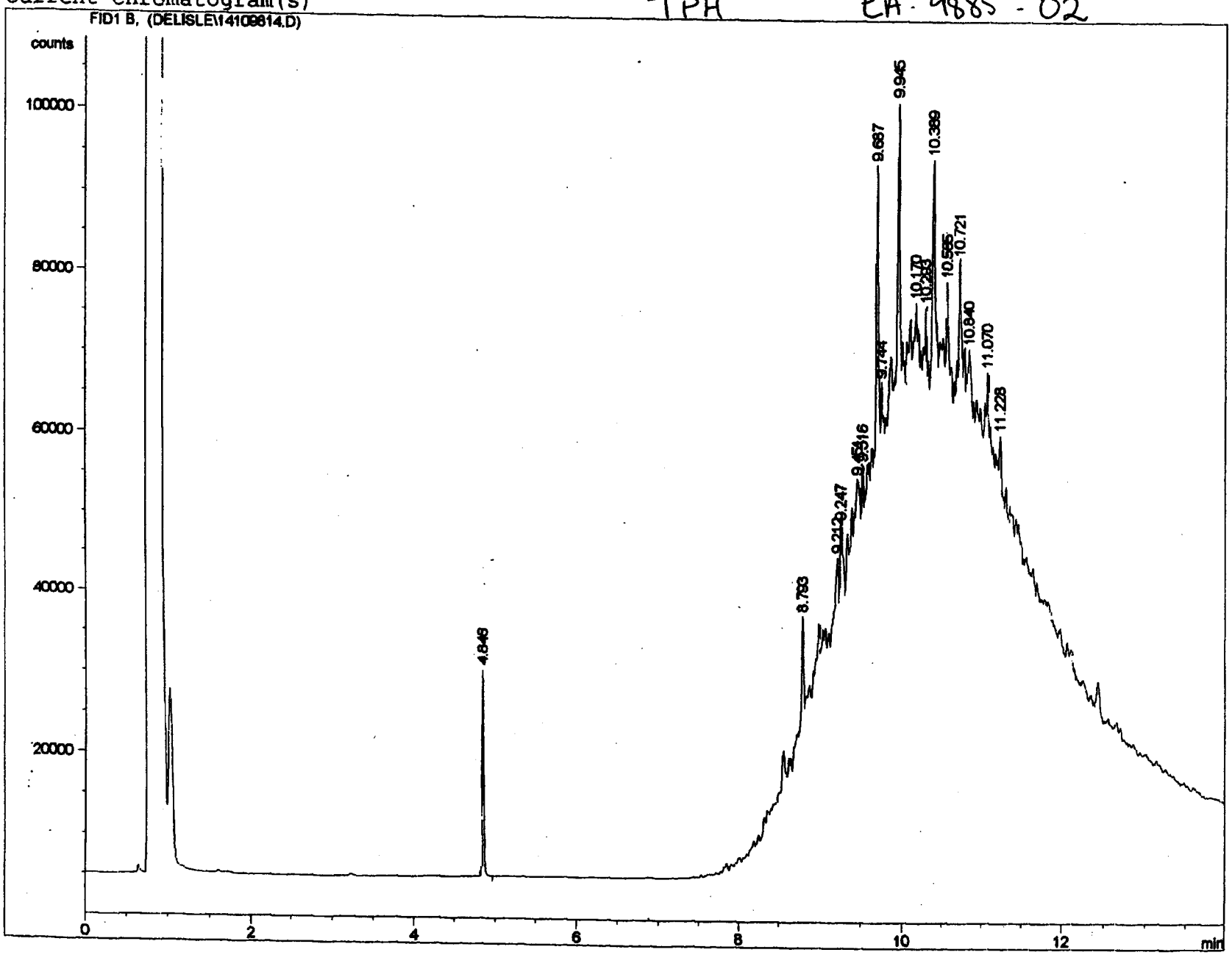
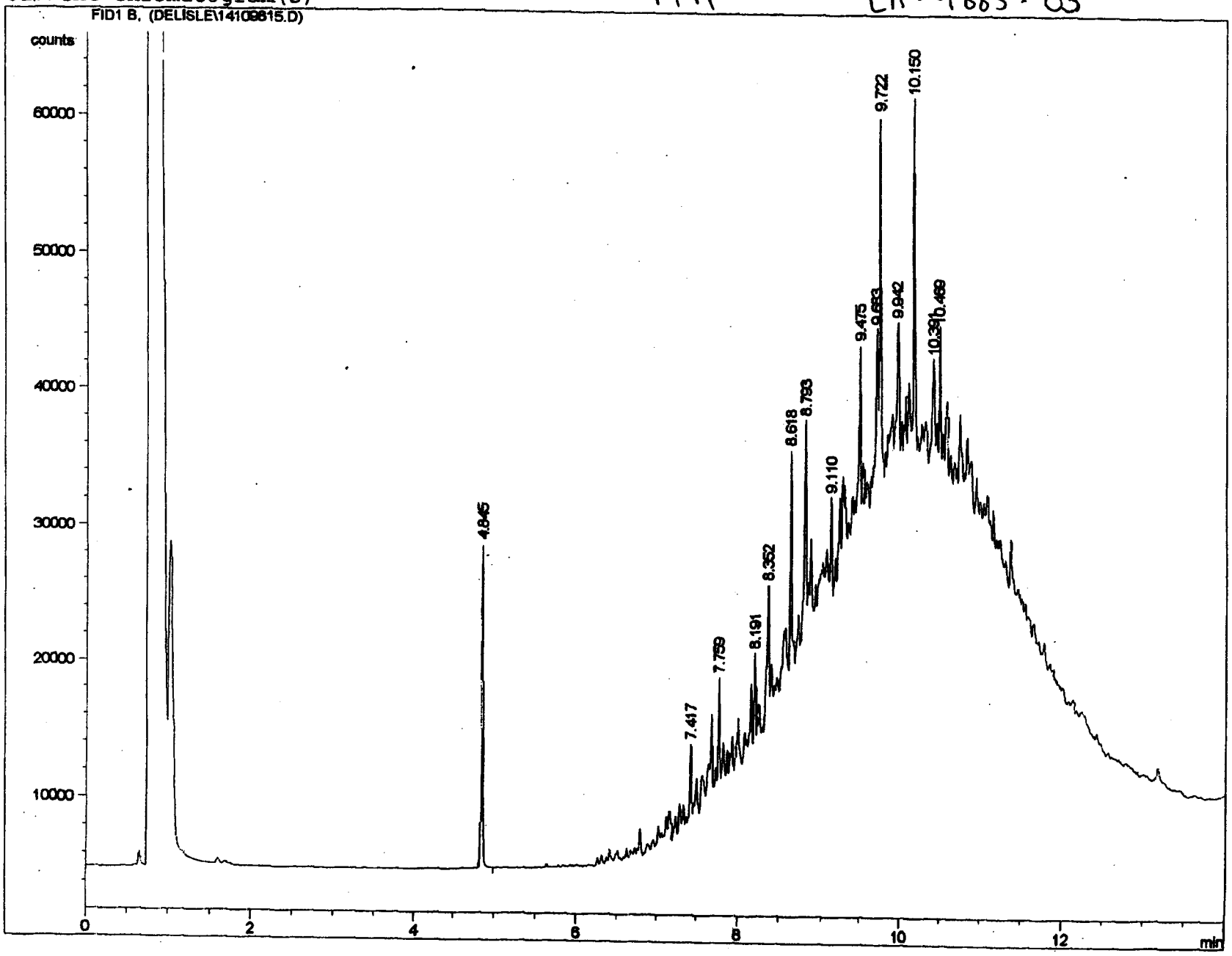
Current Chromatogram(s) TPH EA-9885-02

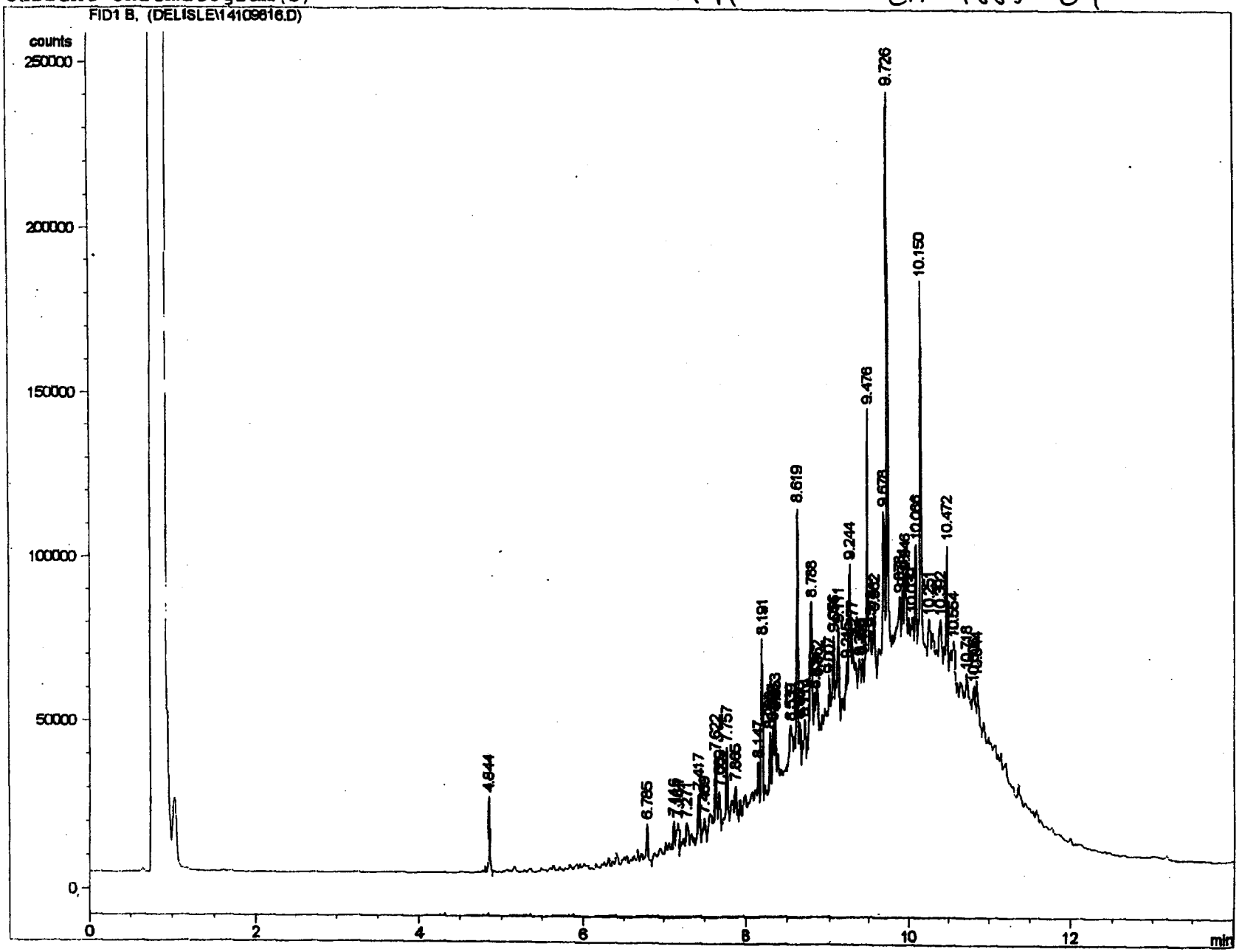


istru 1 16.11.1998 15:41:26 Elin

Current Chromatogram(s) TPH EA-9885-03

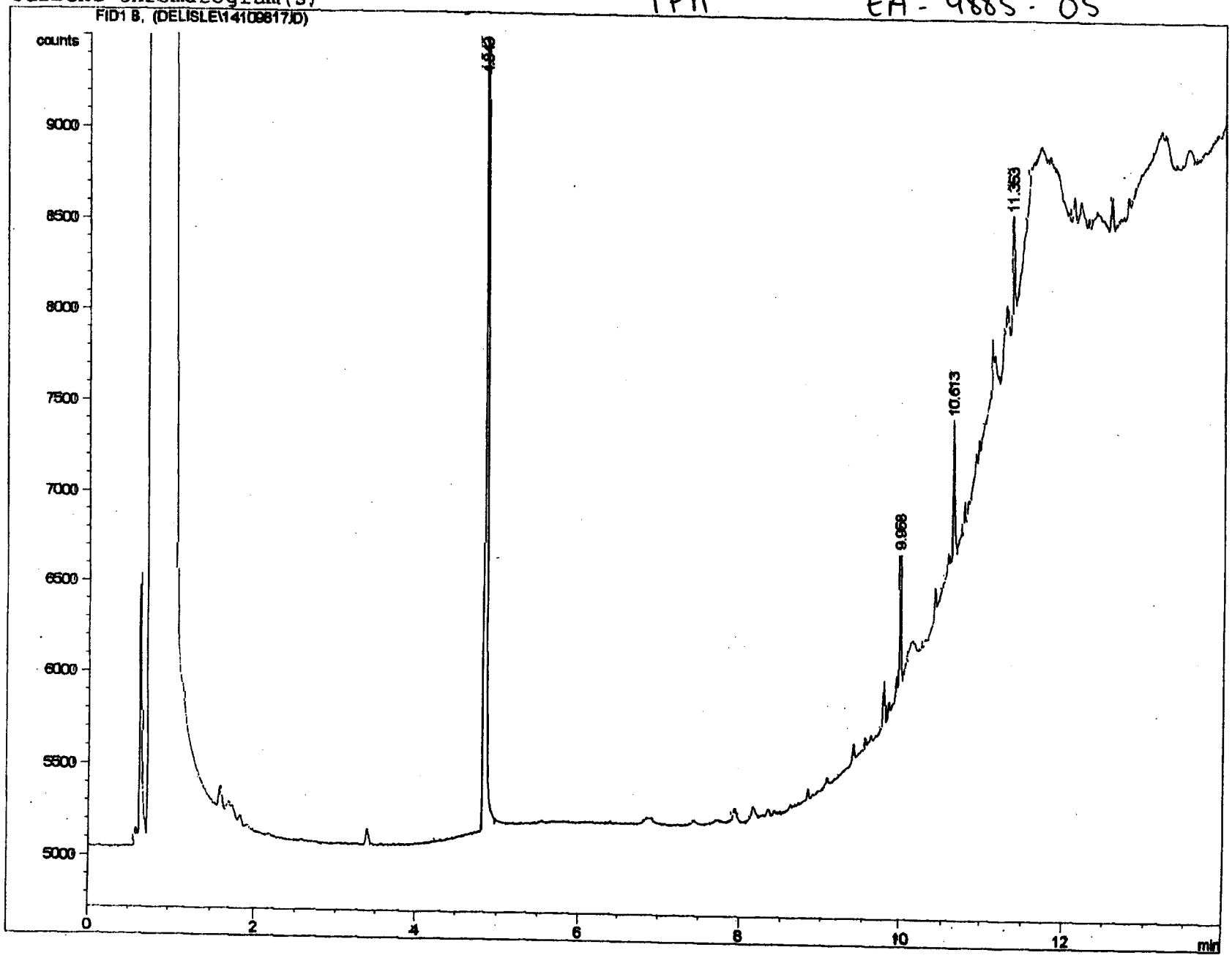


Current Chromatogram(s) TPH EA-9885-04



int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-05

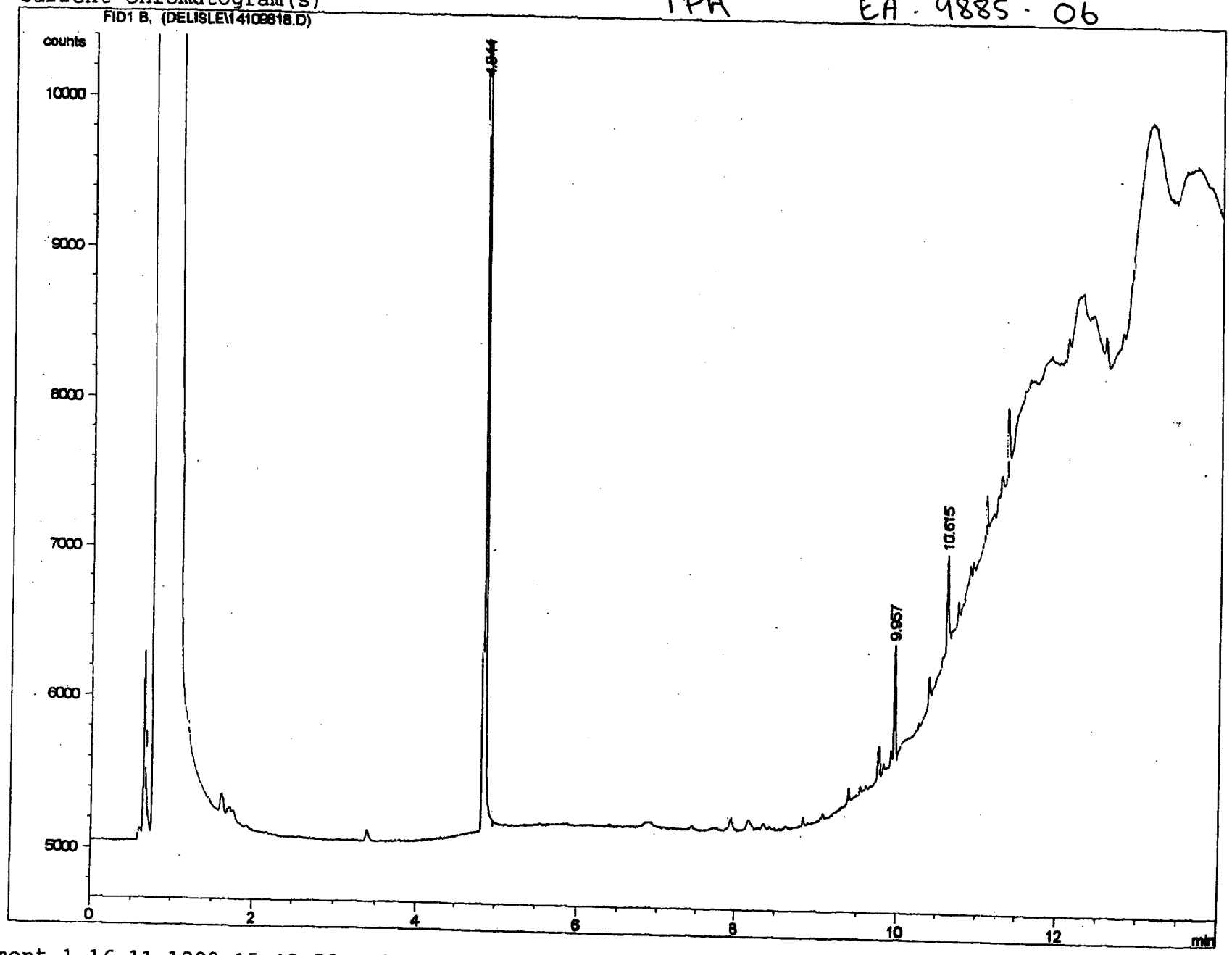


Instrument 1, 16.11.1998 15:48:56 Elin

[redacted]

.nt of window 38: Current Chromatogram(s)

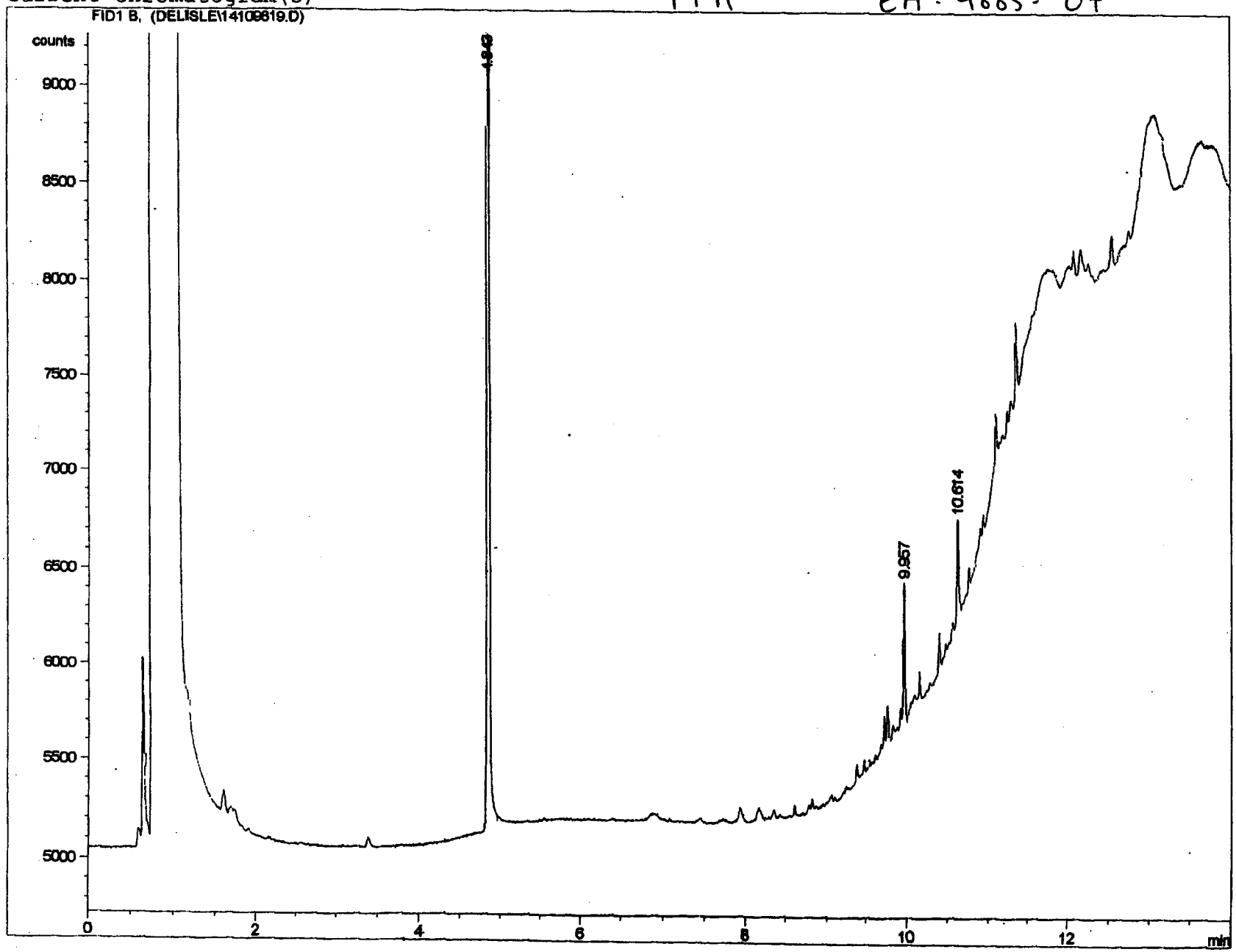
Current Chromatogram(s) TPH EA-9885-06



ıstrument 1, 16.11.1998 15:49:53 Elin

nt of window 38: Current Chromatogram(s)

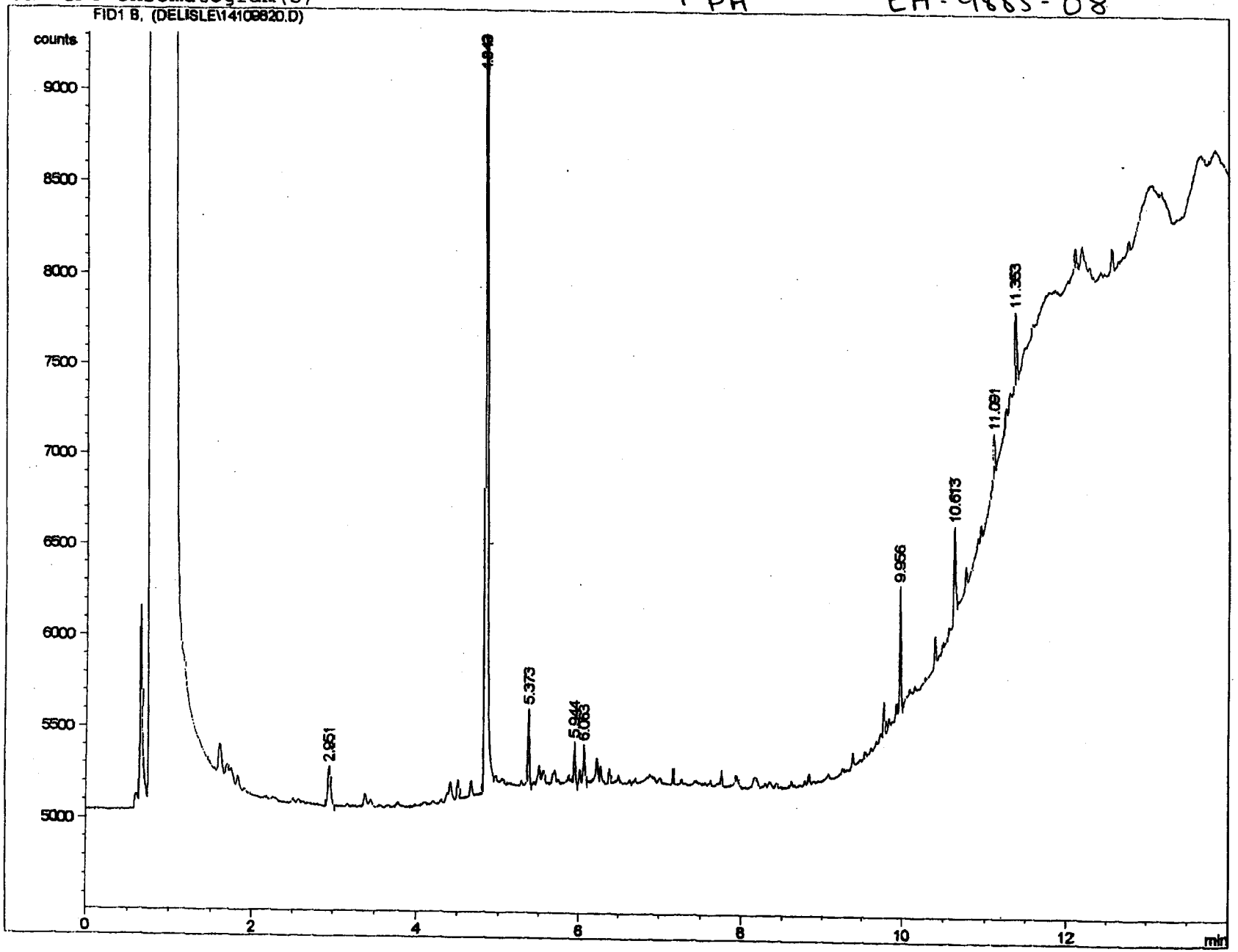
Current Chromatogram(s) TPH EA-9885-07



Instrument 1, 16.11.1998 15:50:12 Elin

int of window 38: Current Chromatogram(s)

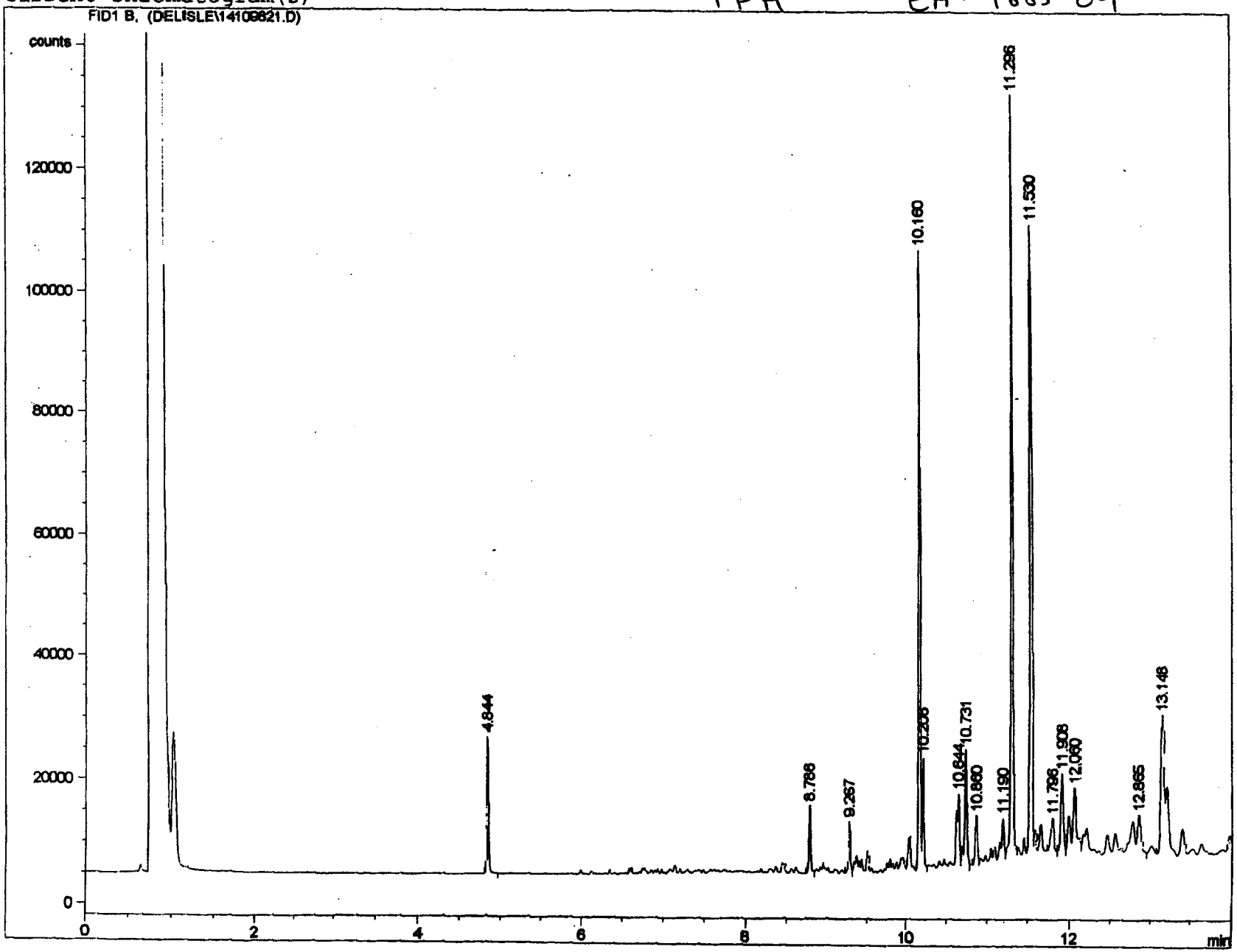
Current Chromatogram(s) TPH EA-9885-08



Instrument 1 16.11.1998 15:52:15 Elin

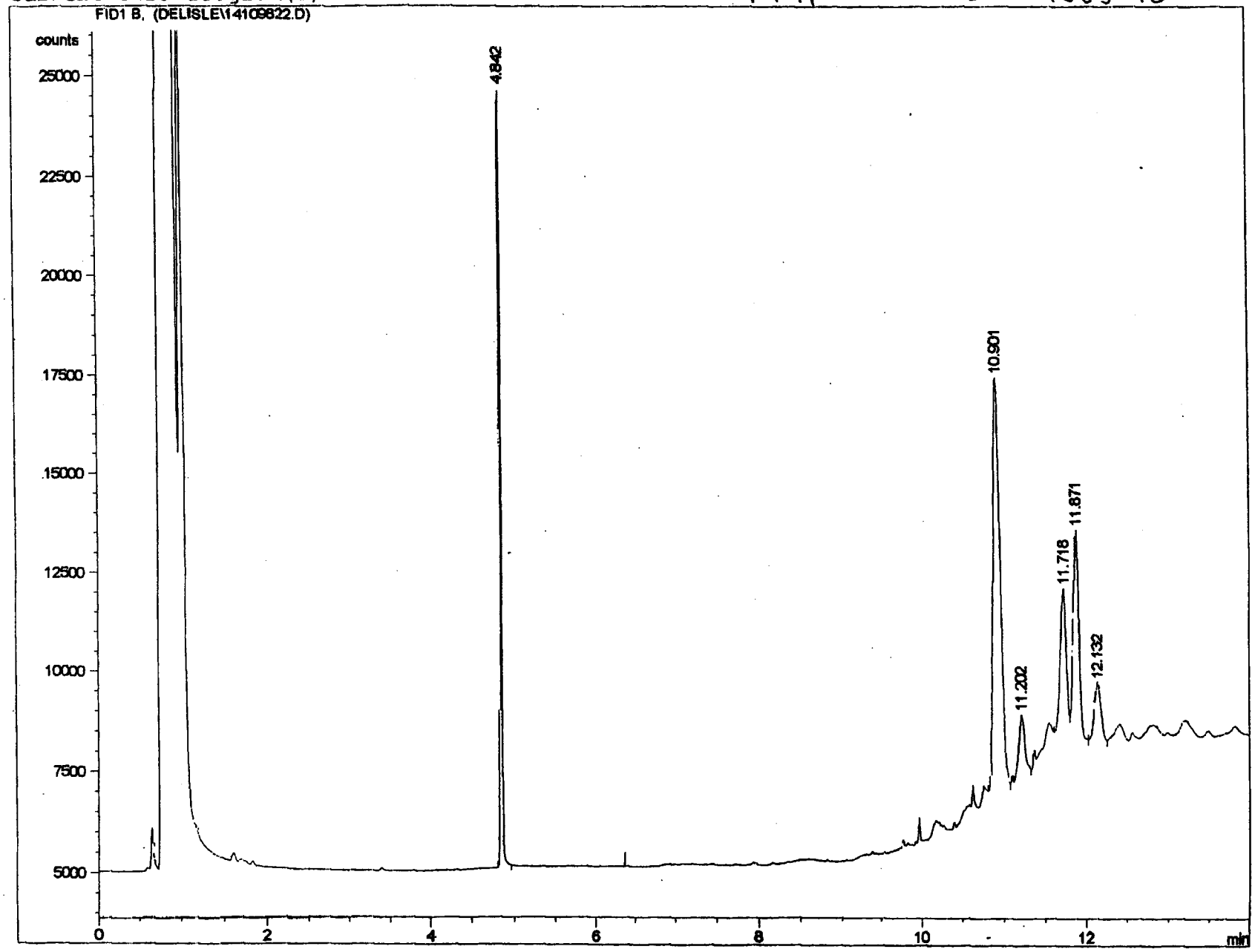
int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-09



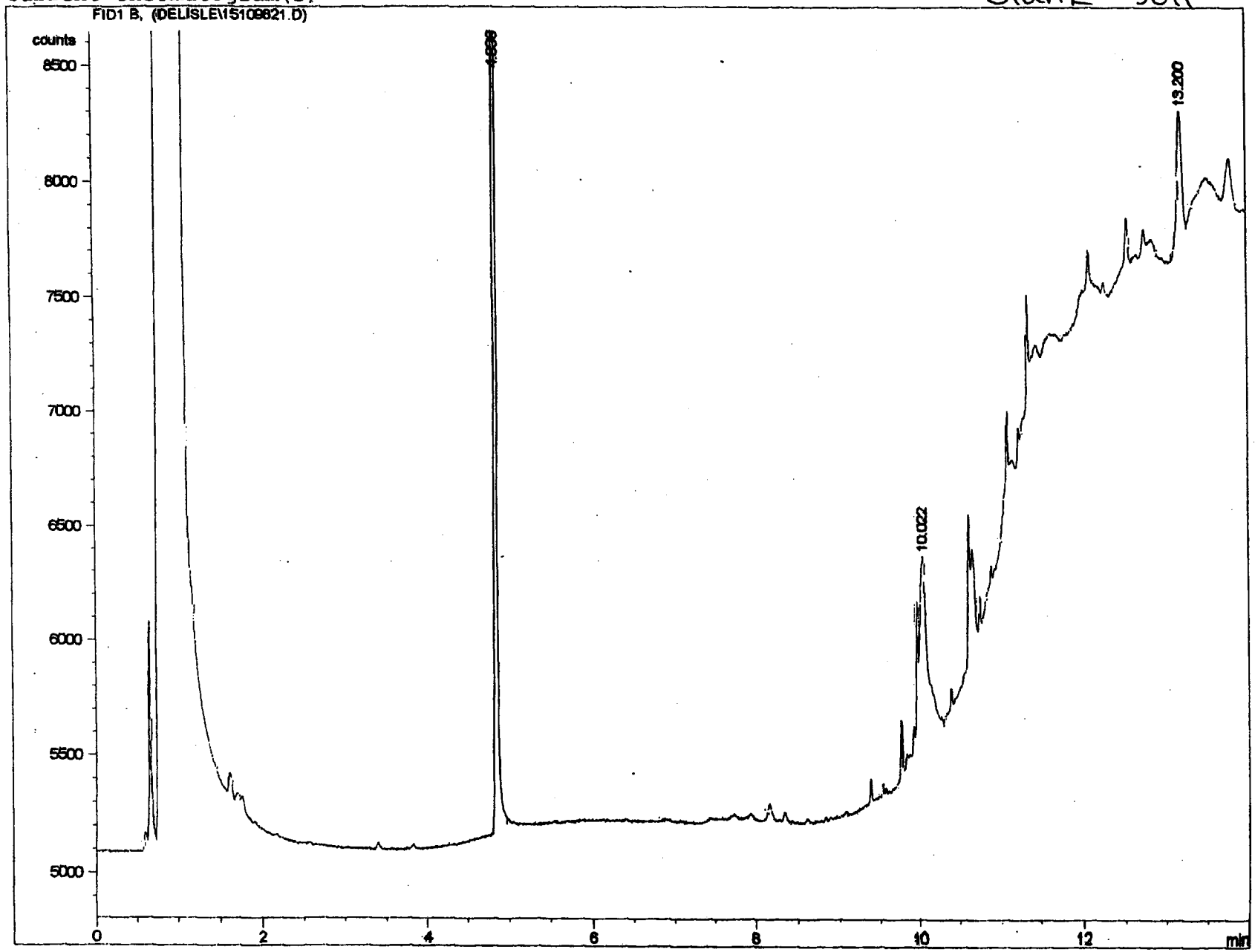
Instrument 1, 16.11.1998 15:56:21 Elin

Current Chromatogram(s) TPH EA-9885-10



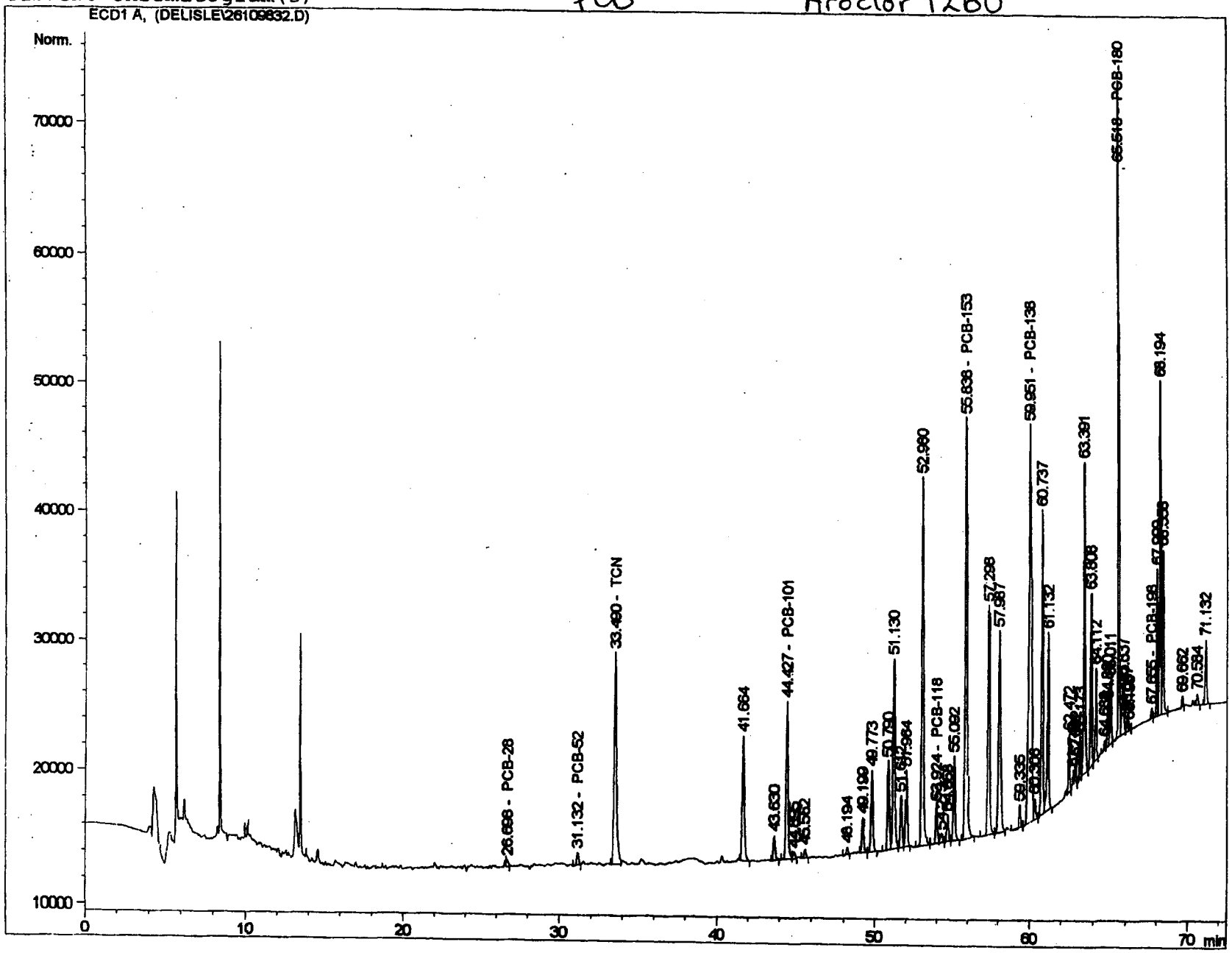
Current Chromatogram(s)

Blank soil



int of window 38: Current Chromatogram(s)

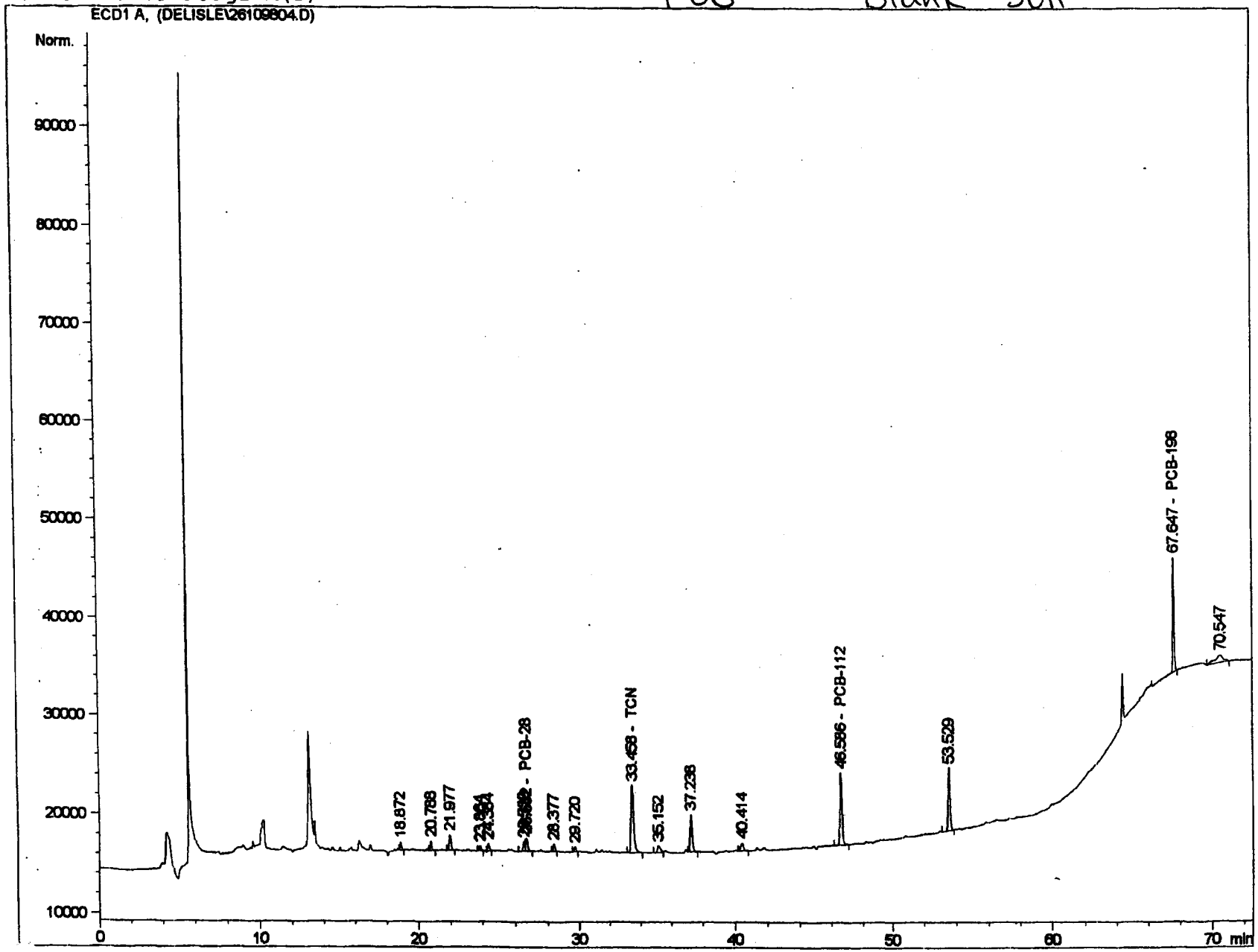
Current Chromatogram(s) PCB Aroclor 1260



Instrument 1, 17.11.1998 11:51:11 Elin

nt of window 38: Current Chromatogram(s)

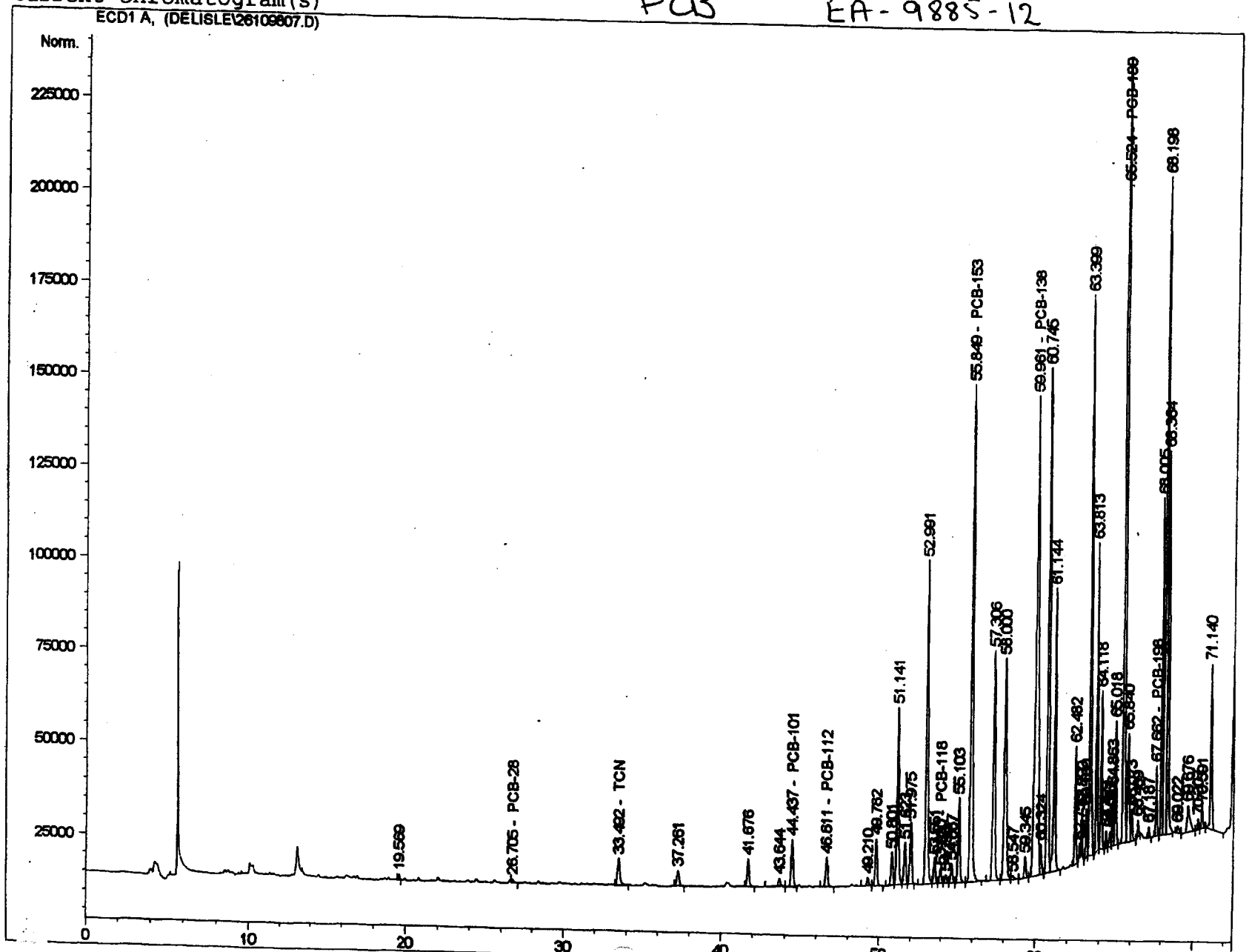
Current Chromatogram(s) PCB Blank soil



int of window 38: Current Chromatogram(s)

Current Chromatogram(s)

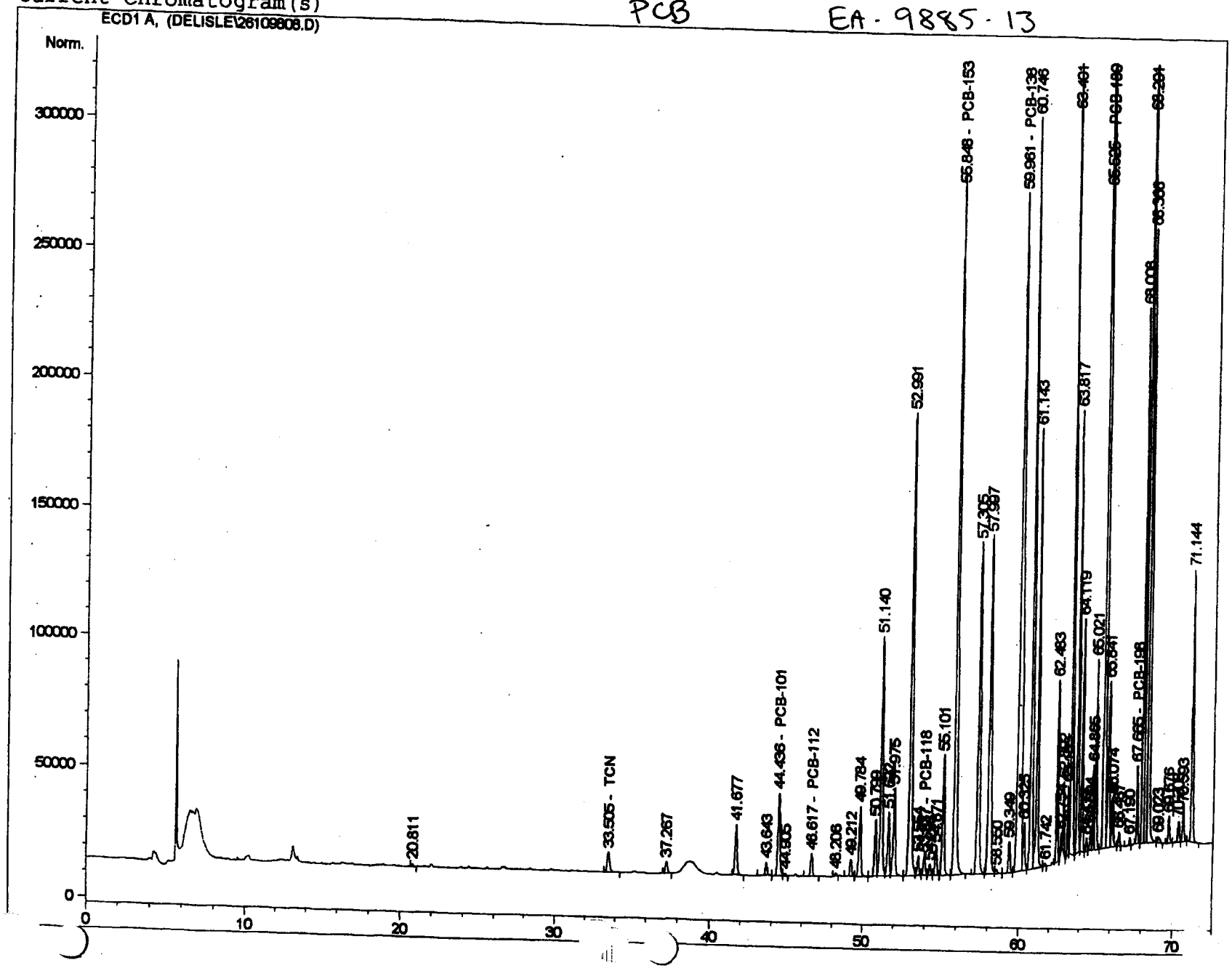
PCB EA-9885-12



int of window 38: Current Chromatogram(s)

Current Chromatogram(s)

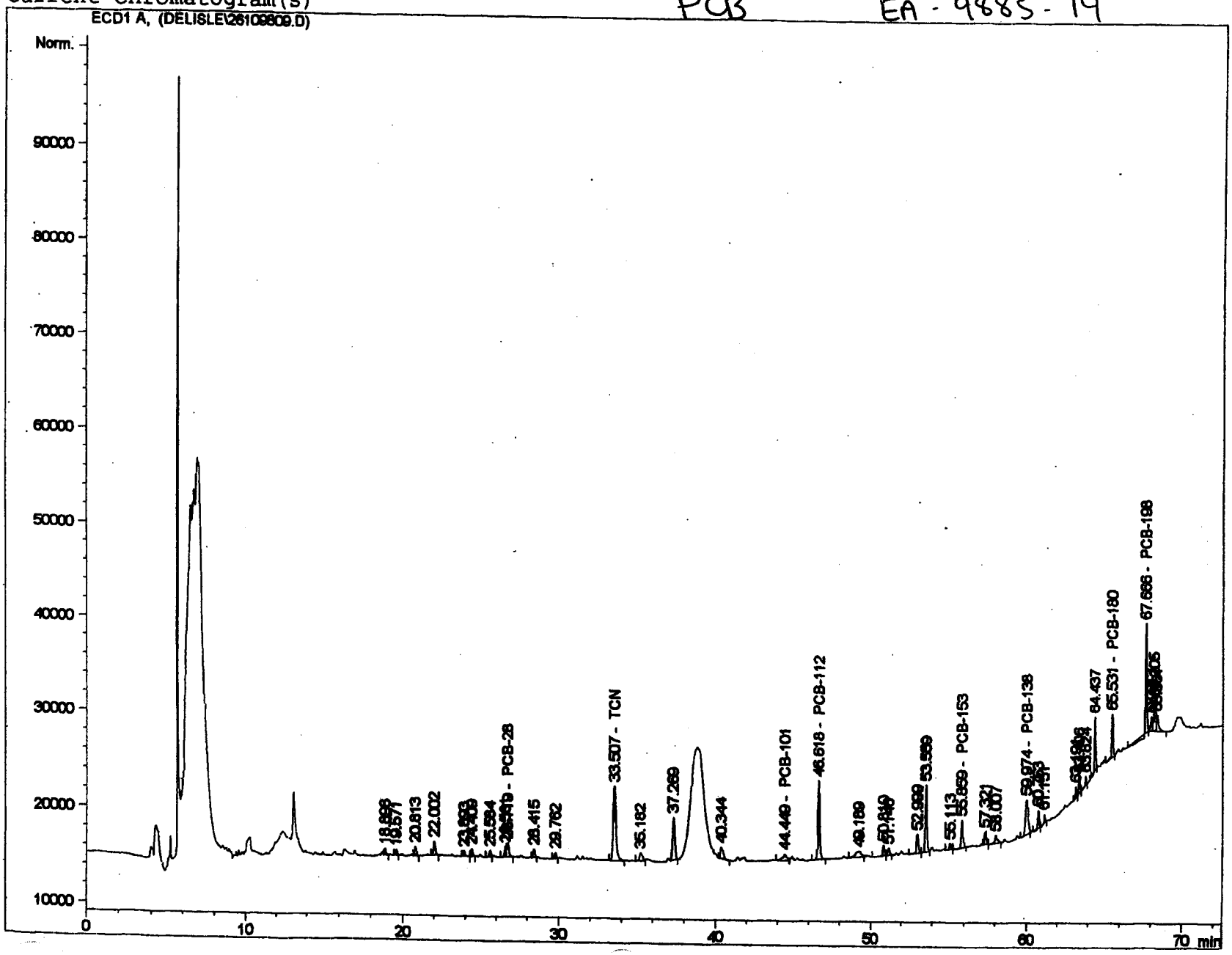
PCB EA-9885-13



.nt of window 38: Current Chromatogram(s)

Current Chromatogram(s)

PCB EA-9885-14

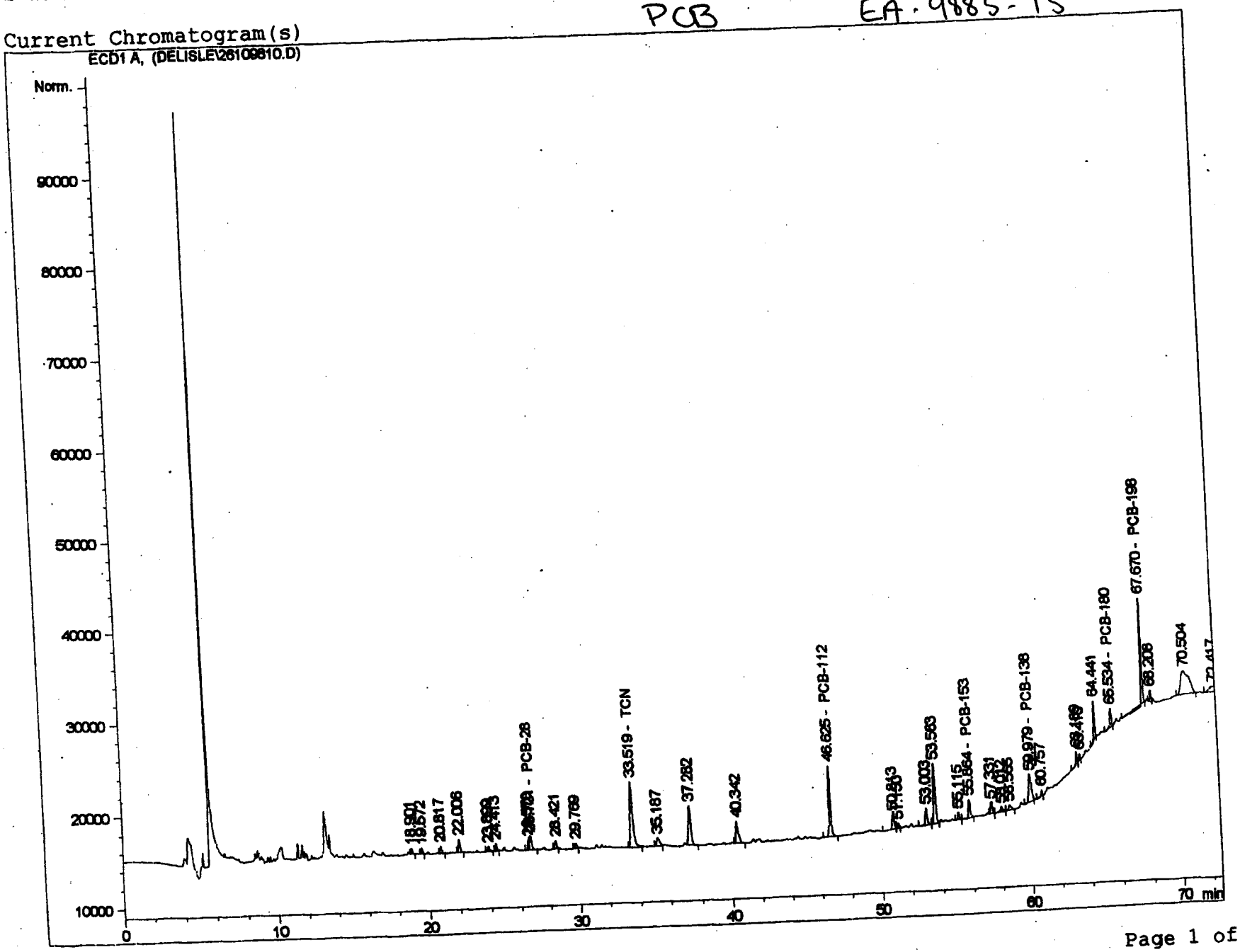


strume - 1 .11.1998 11:45:28 Elin

f window 38: Current Chromatogram(s)

PCB EA-9885-15

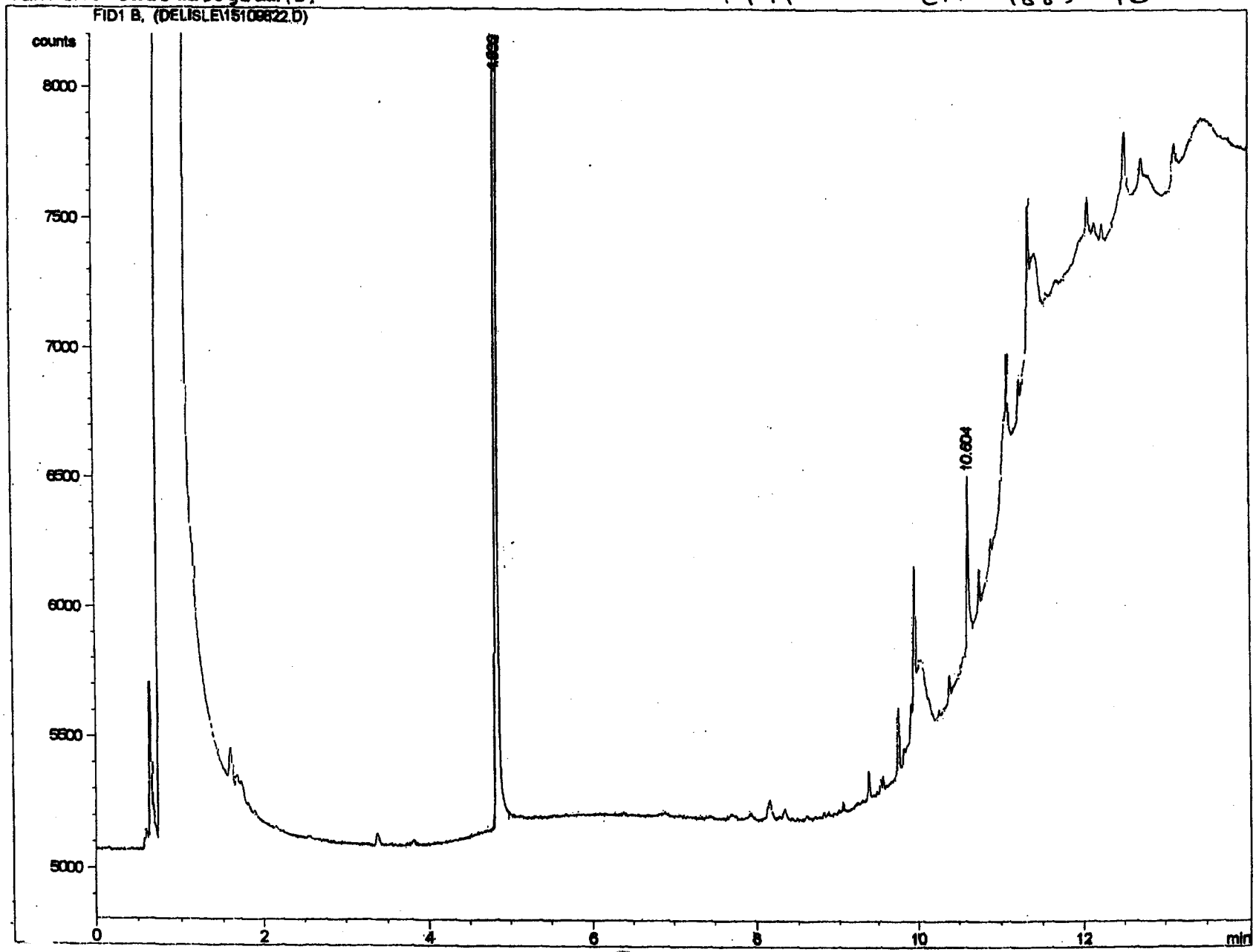
Current Chromatogram(s)



strume. - 1).11.1998 11:47:41 Elin

int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-16

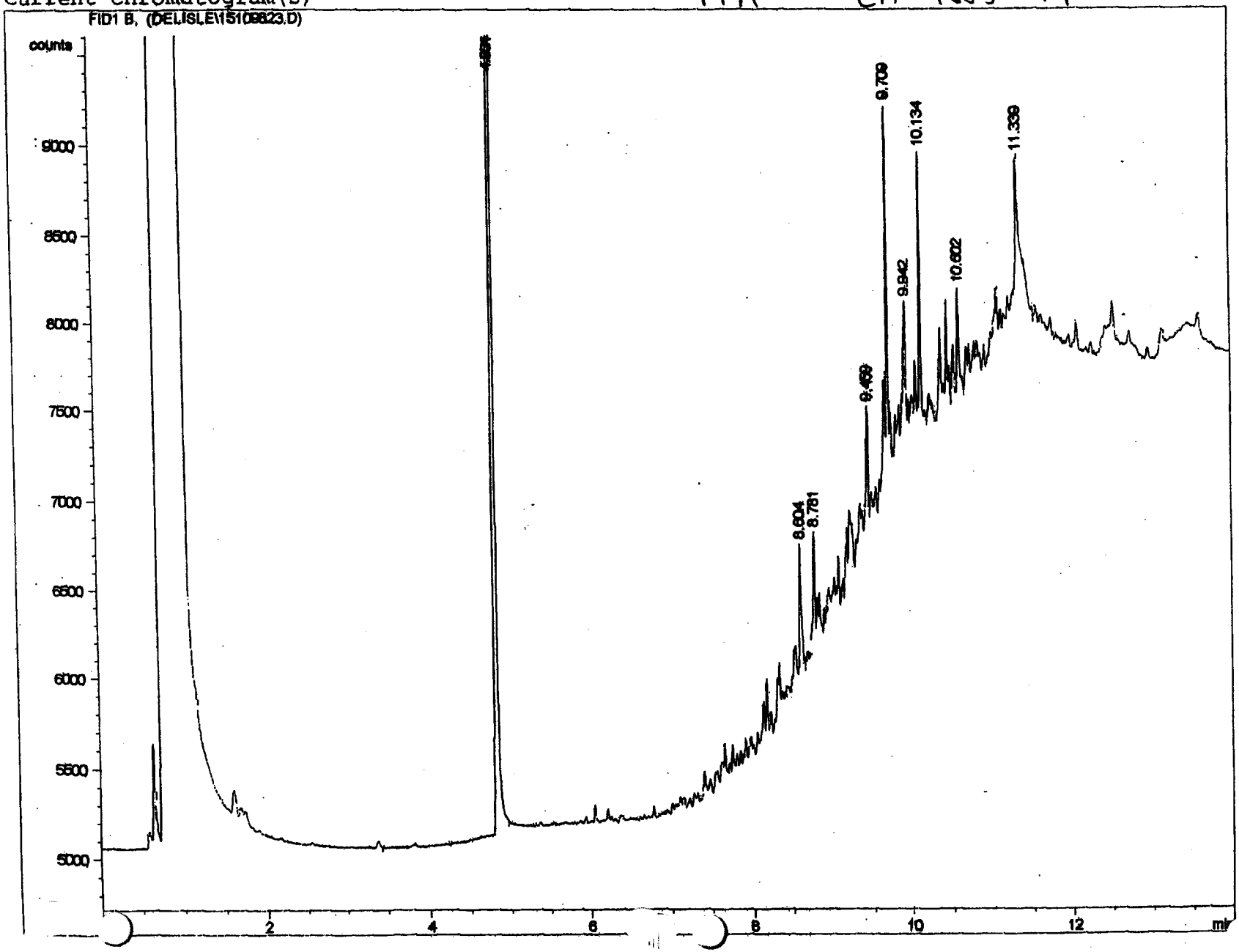


6 11 1998 16:13:47 Elin

t of window 38: Current Chromatogram(s)

Current Chromatogram(s)

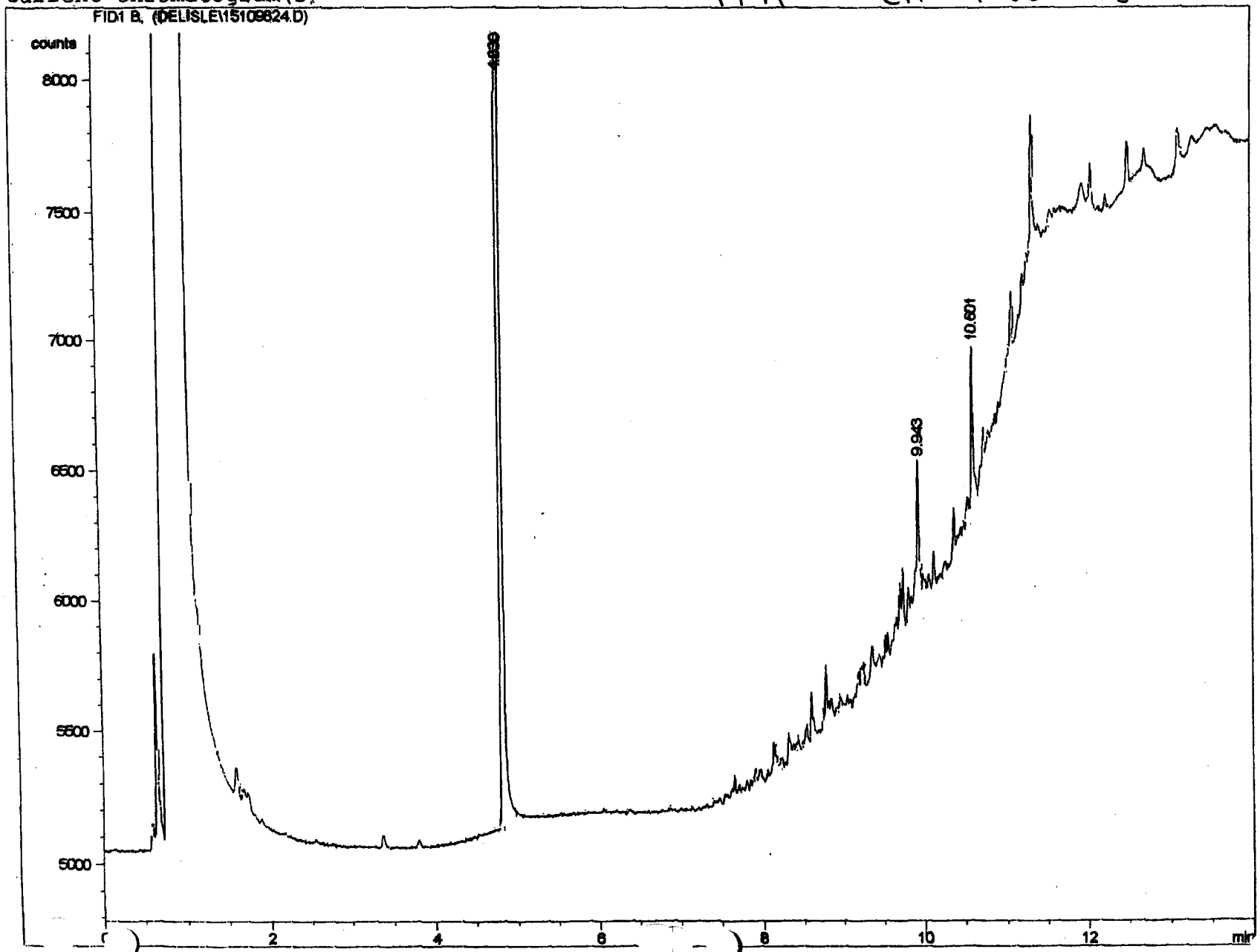
TPH EA-9885-17



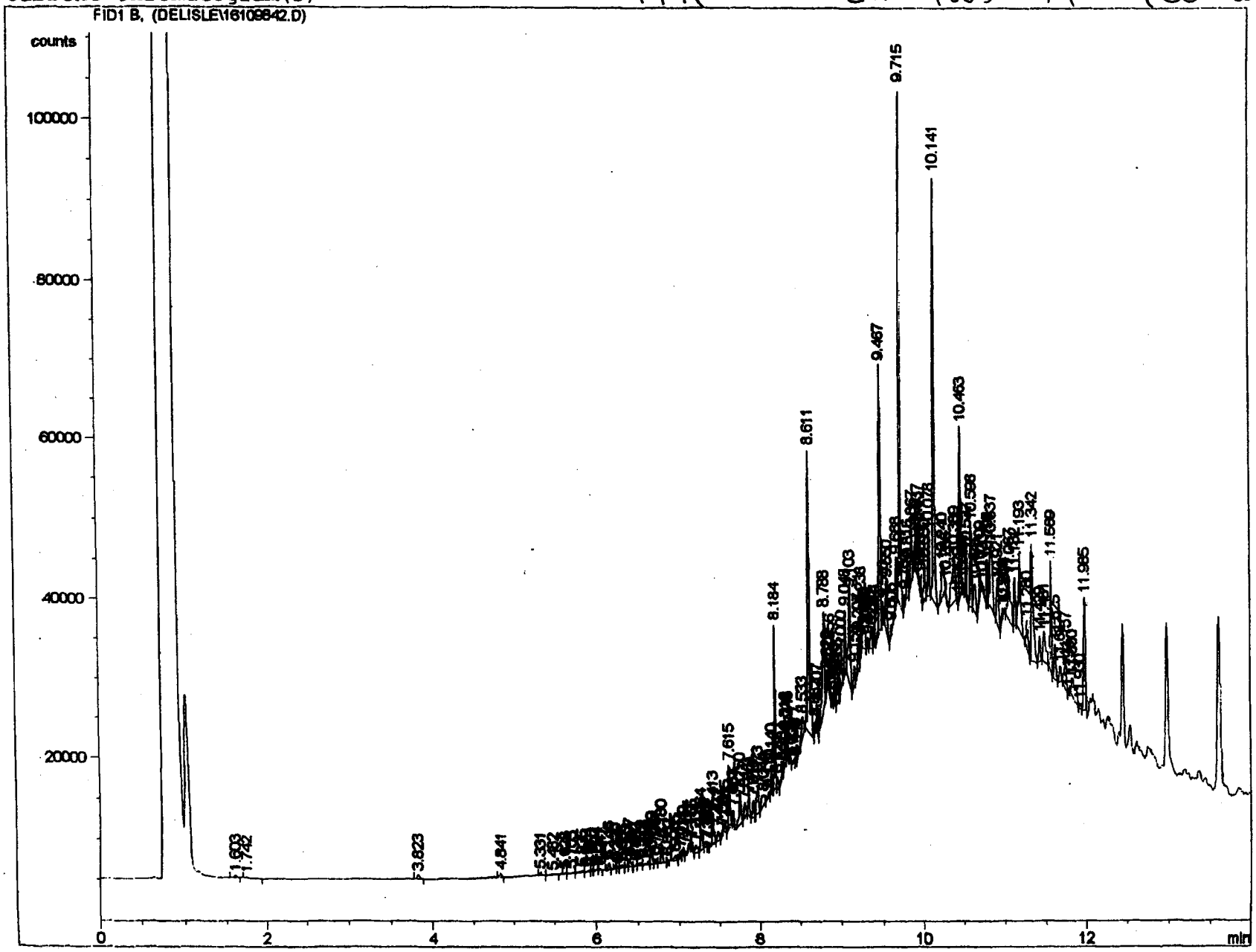
t of window 38: Current Chromatogram(s)

Current Chromatogram(s)

TPH EA-9885-18

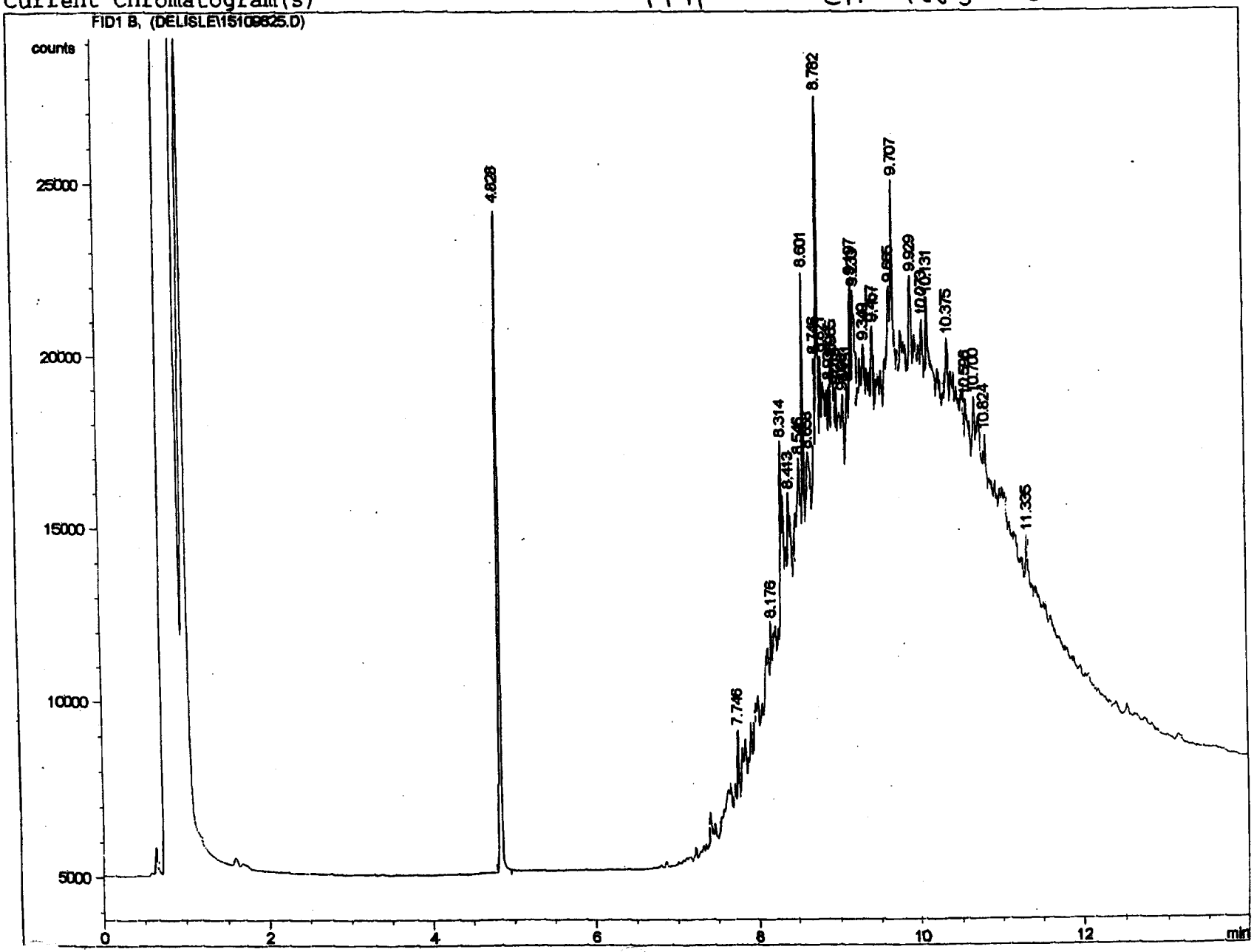


Current Chromatogram(s) TPH EA-9885-19 (30 x dil.)



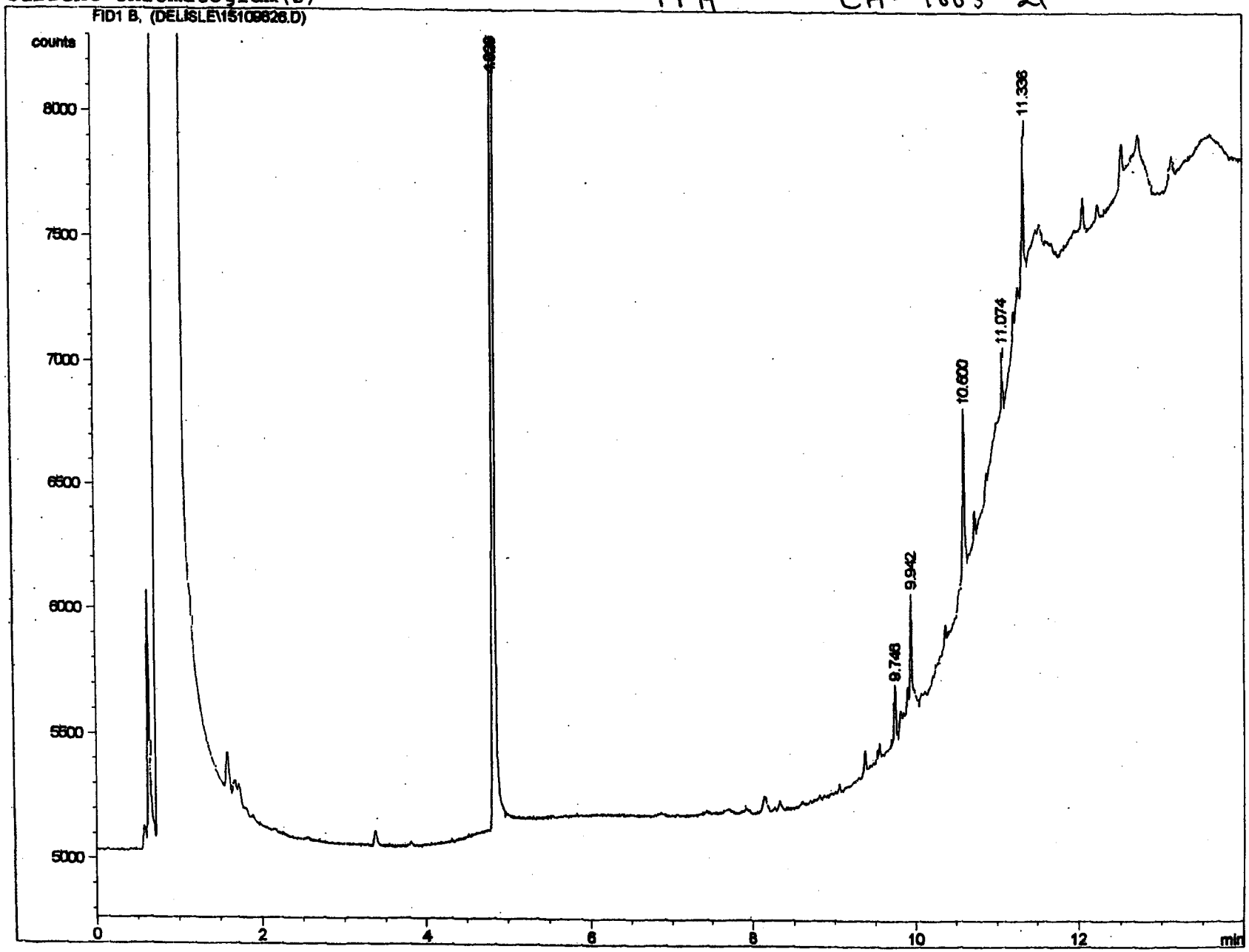
nt of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-20



int of window 38: Current Chromatogram(s)

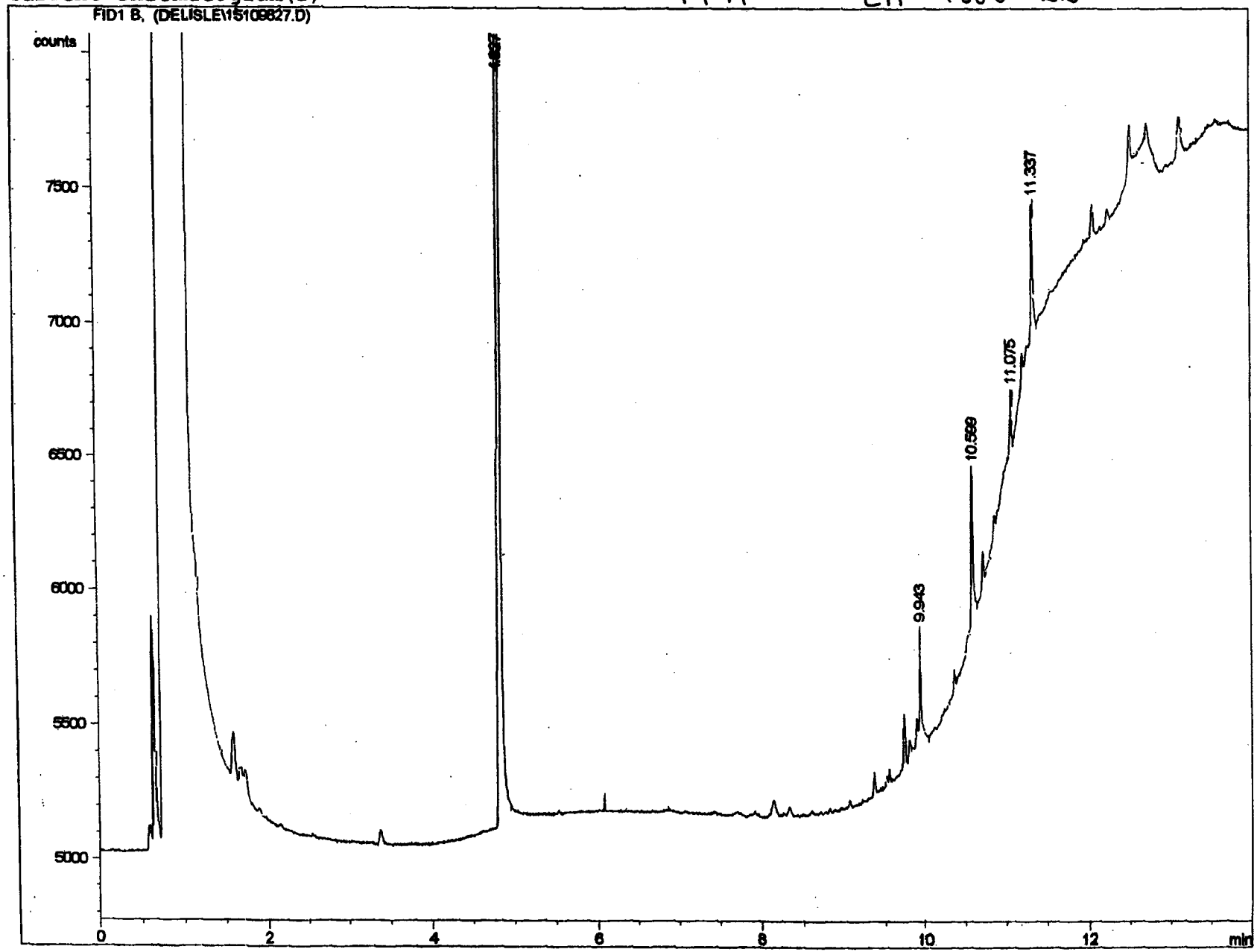
Current Chromatogram(s) TPH EA-9885-21



istrum : 16.11.1998 16:17:36 Elin

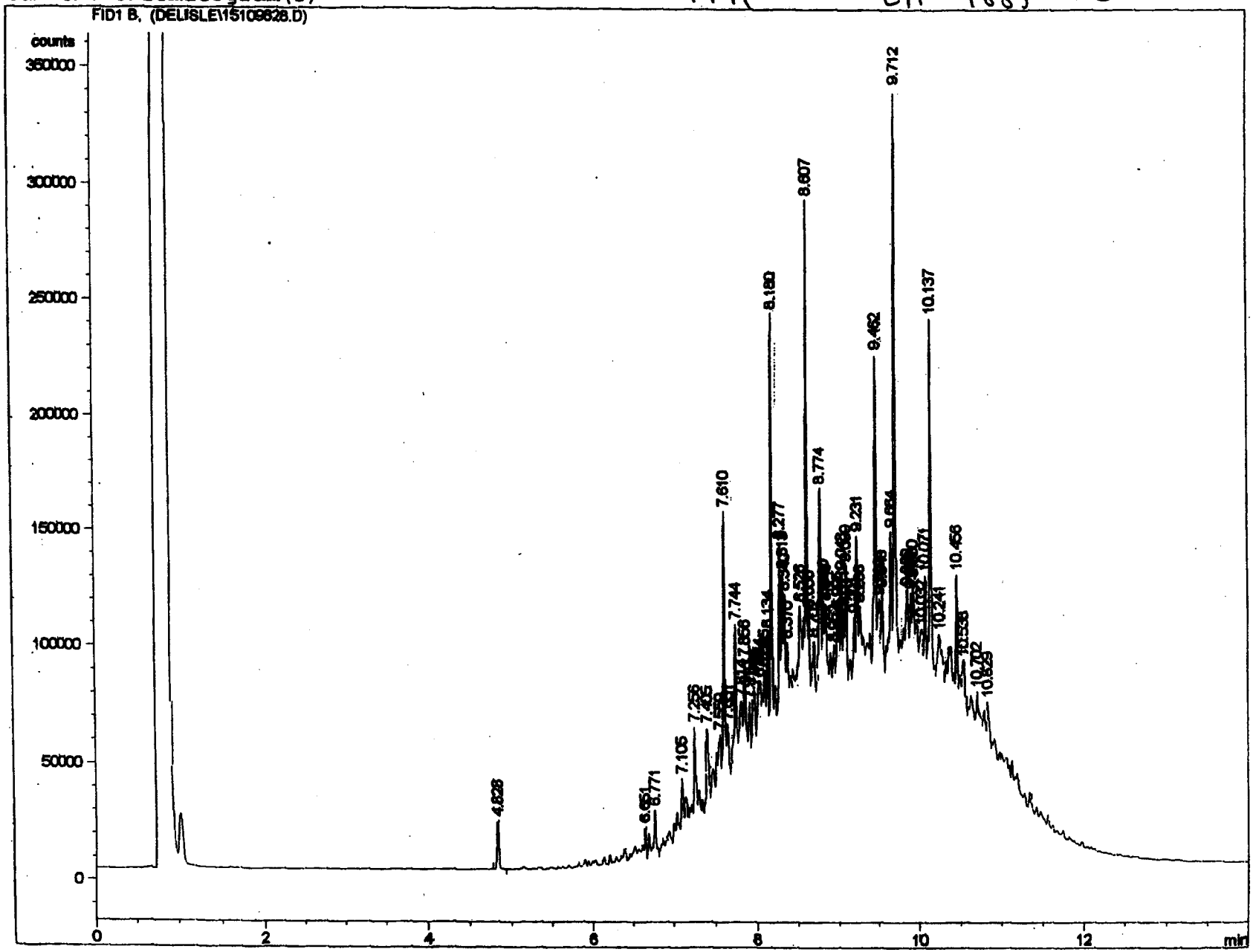
int of window 38: Current Chromatogram(s).

Current Chromatogram(s) TPH EA-9885-22



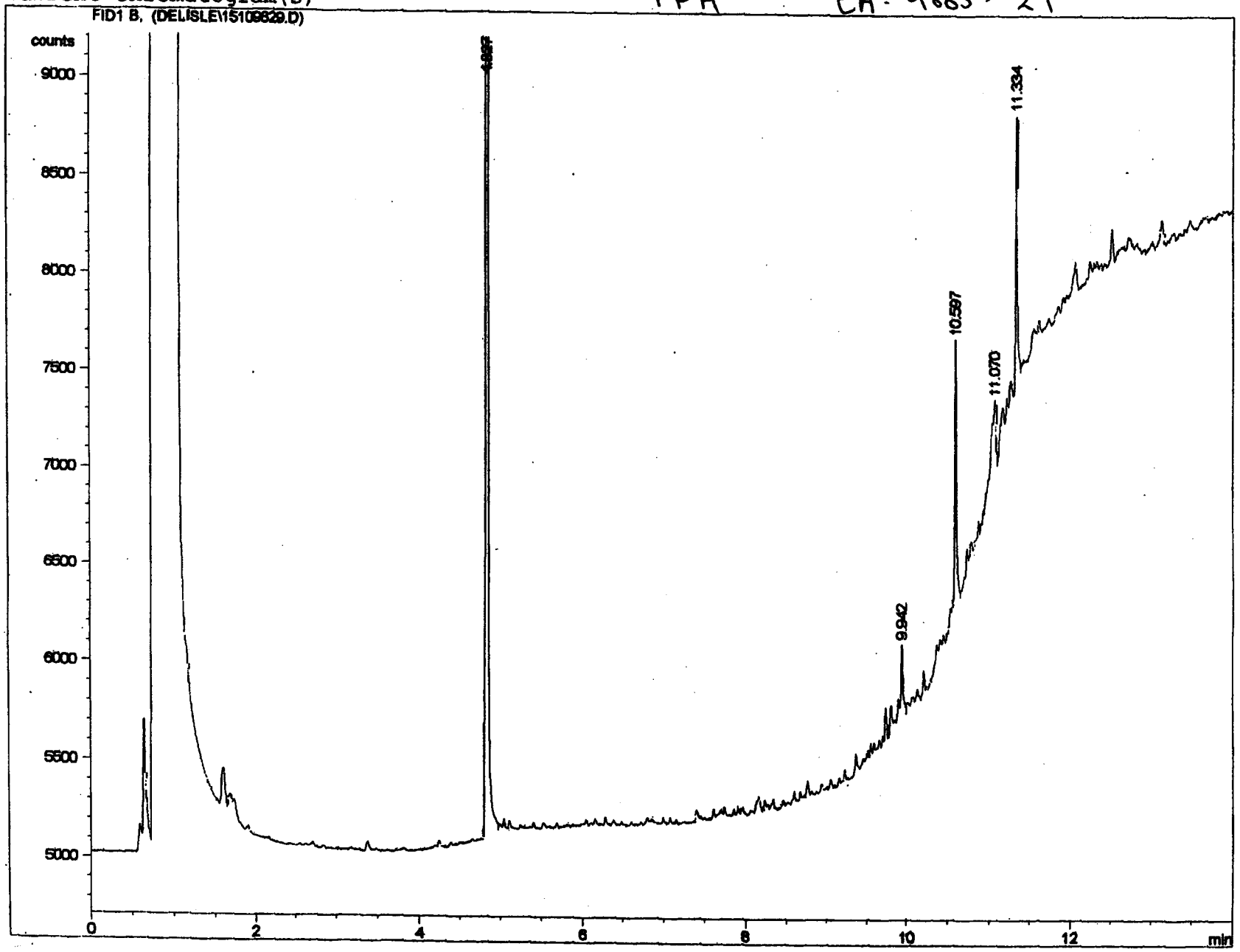
nt of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-23



int of window 38: Current Chromatogram(s)

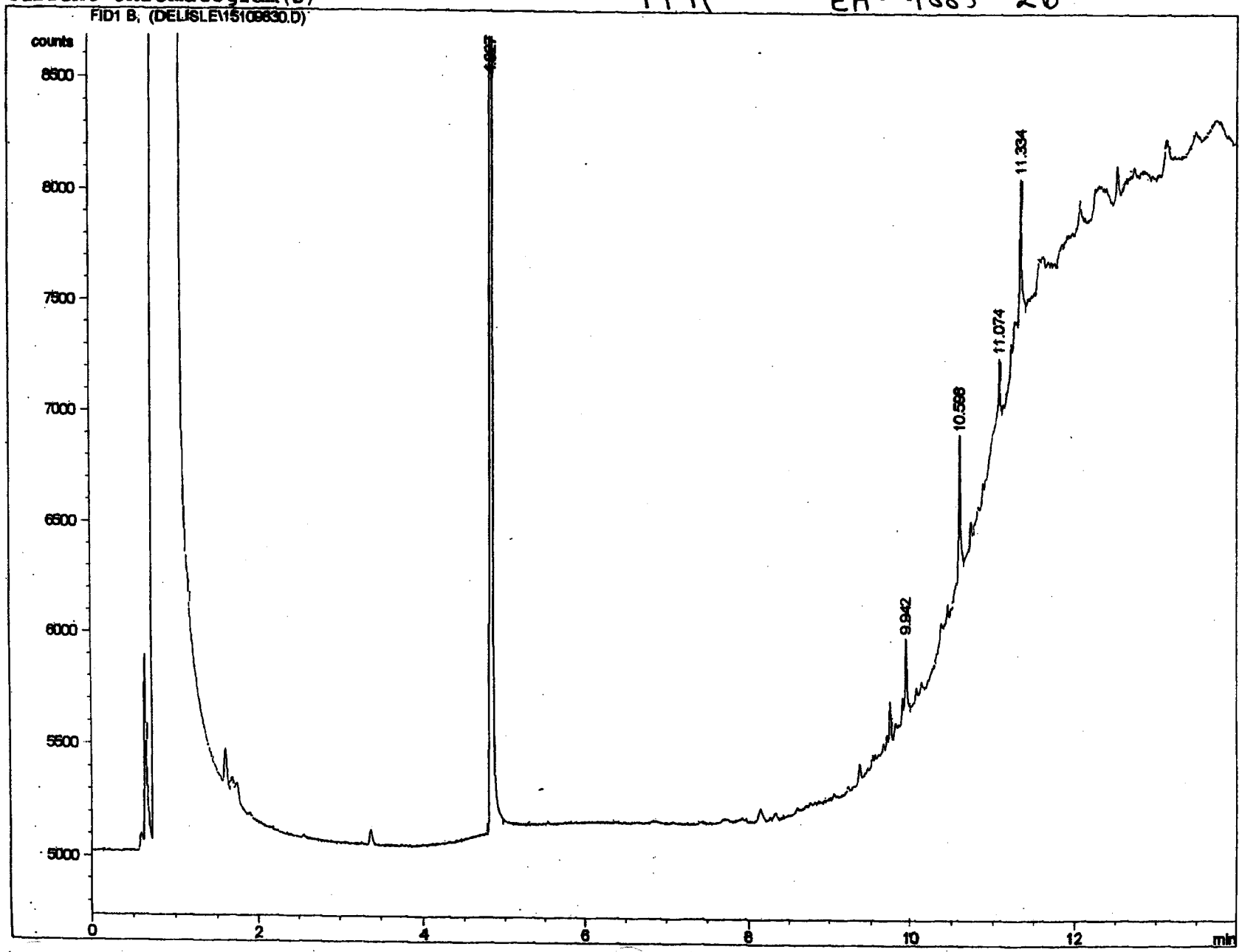
Current Chromatogram(s) TPH EA-9885-24



istrun : 16.11.1998 16:19:53 Elin

int of window 38: Current Chromatogram(s)

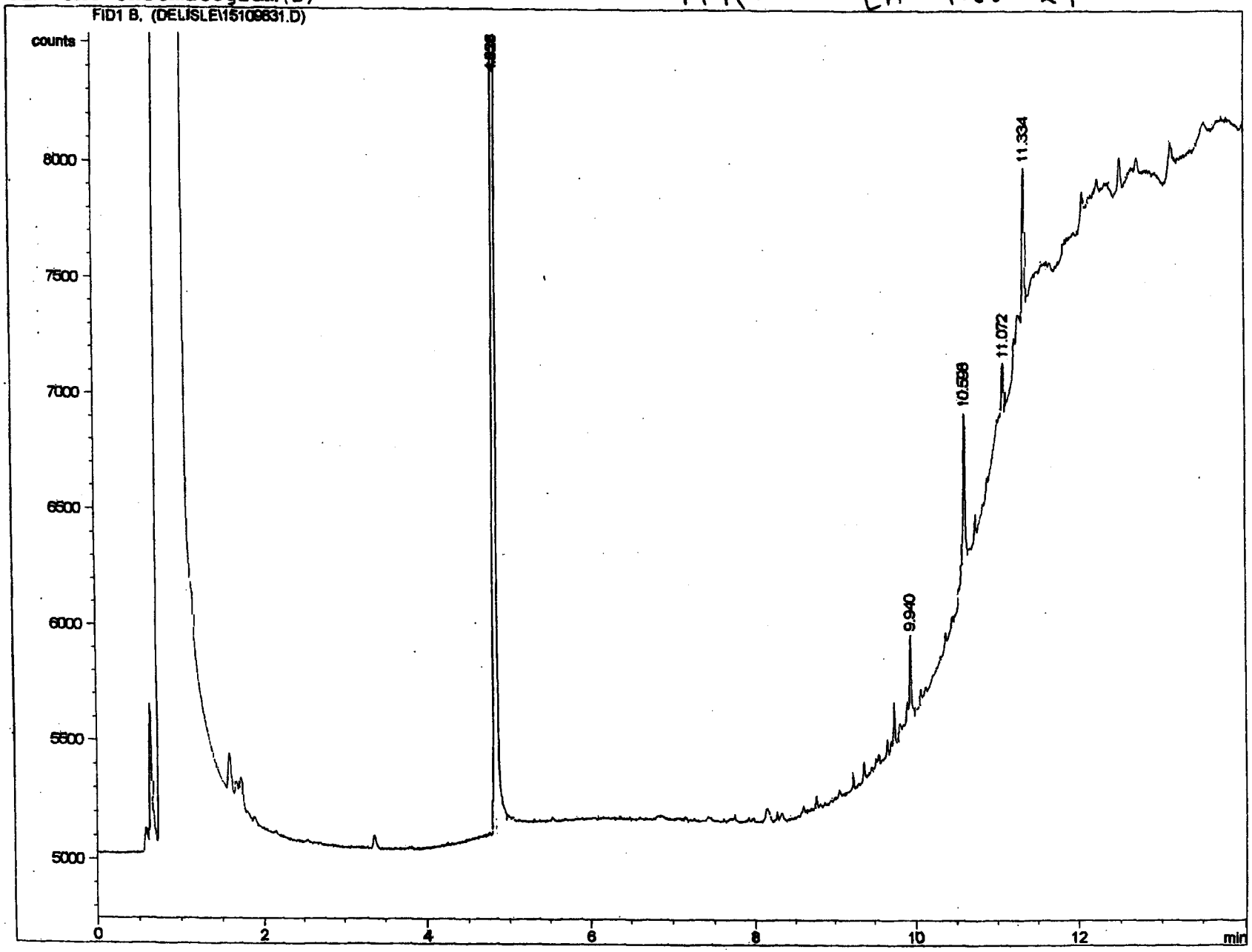
Current Chromatogram(s) TPH EA-9885-26



6-11-1998 16:20:41 Elin

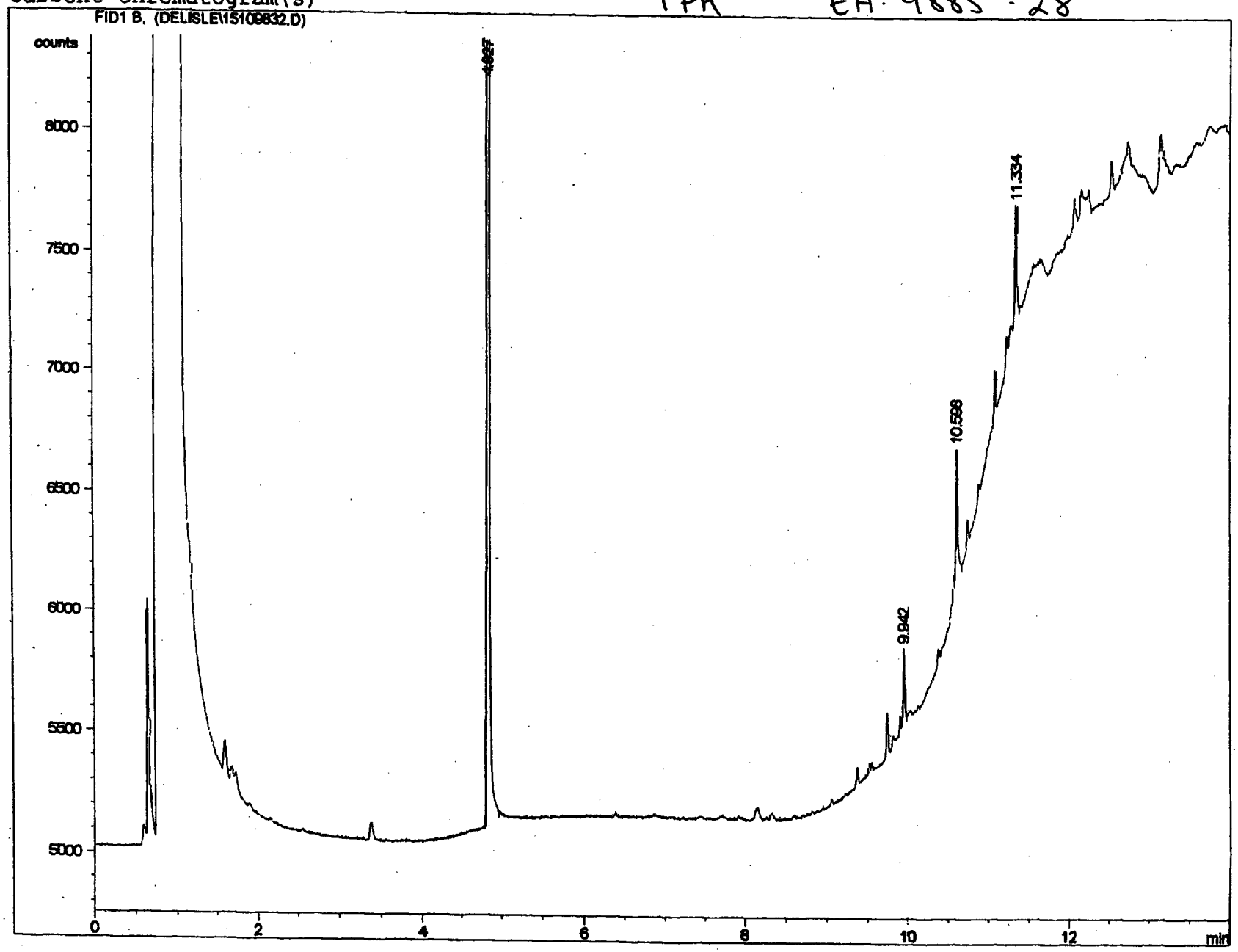
int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH - EA-9885-27



int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA-9885-28

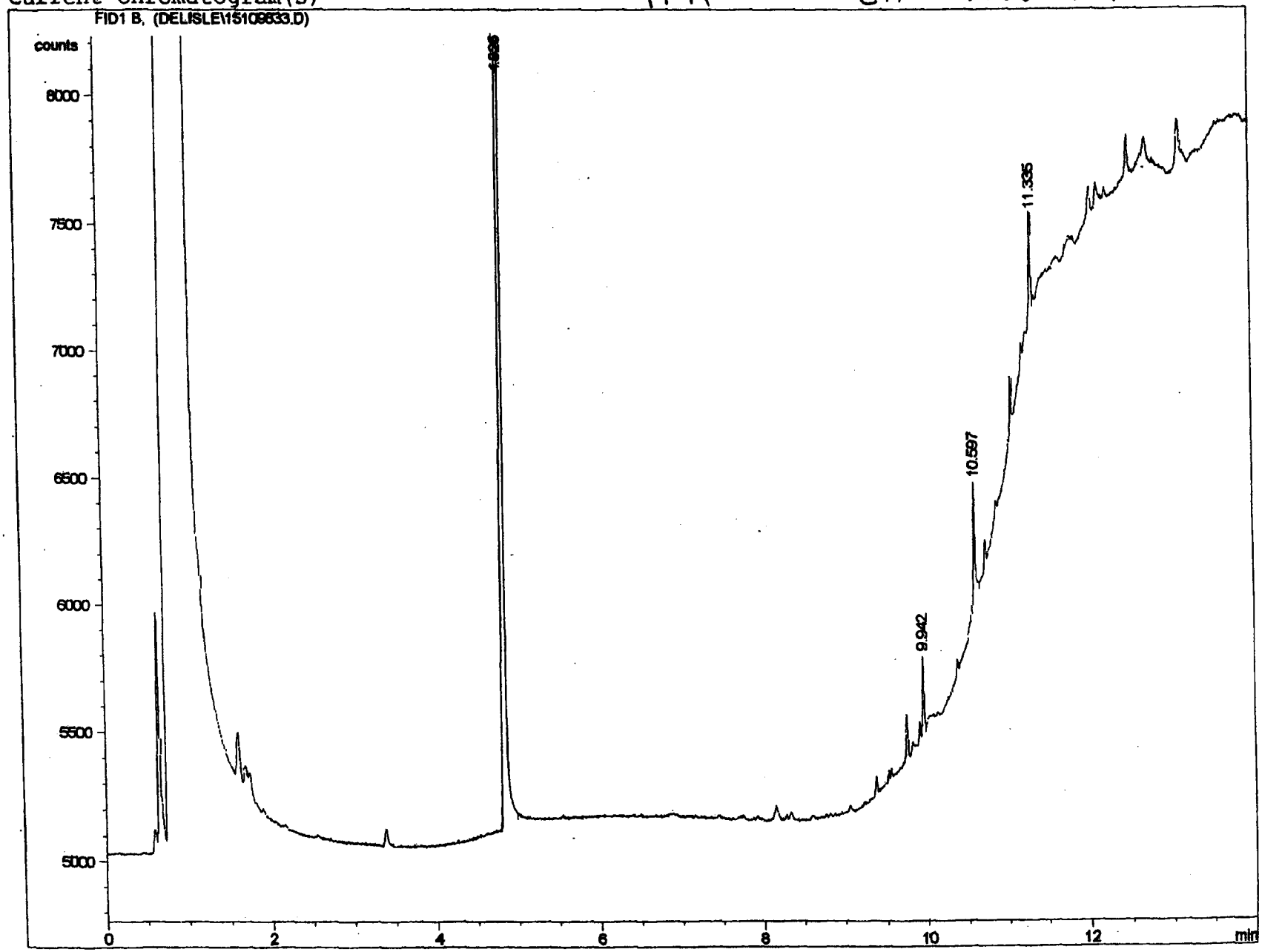


strum c 16.11.1998 16:21:33 Elin

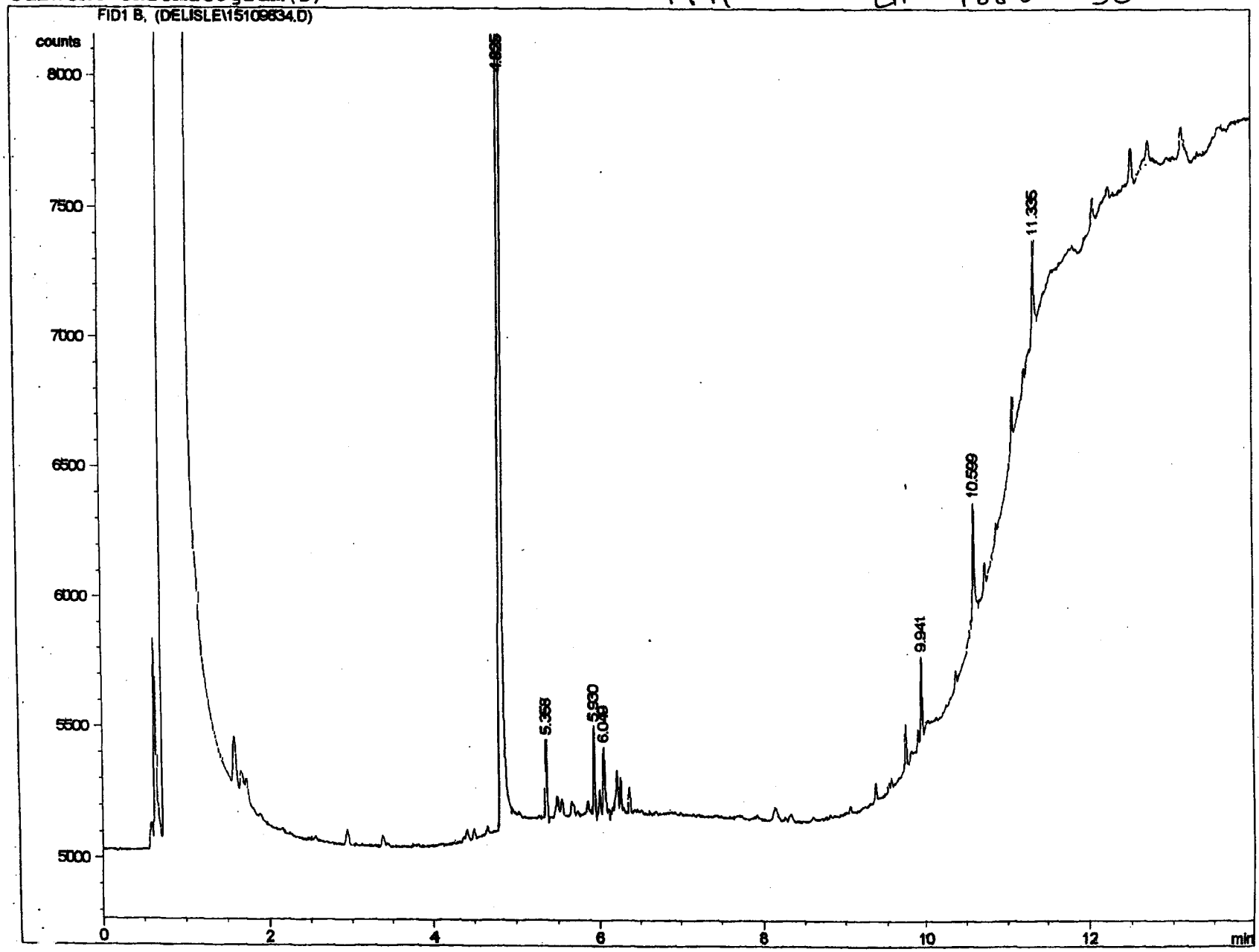
[redacted]

int of window 38: Current Chromatogram(s)

Current Chromatogram(s) TPH EA - 9885 · 29



Current Chromatogram(s) TPH EA-9885-30



CHAIN-OF-CUSTODY

DeLisle Associates
ph # 699-1770
(Iceland)

Company	DeLisle Associates LTD
Street/Box	5050 Sprinkle Rd
City/State	Portage, MI
Phone	(616) 373-4500
Contact:	Andy Graham Fax: 373-1044
Job No.	EA-9885 P.O. No.

Laboratory:	IceTec / Dept. of Pharmacology, University of Iceland
Street	IS-112 Keldnaholt
City	Reykjavik, Iceland
Phone/Fax	354-570-7100 / 354-570-7111
POC	

ANALYSIS REQUESTED

Sample ID	Date/Time	Sampled by	Matrix	Sample Type	Field Notes	pH PMC Lead	BTEX	TPH	PCBs	Log Number	Containers submitted
EA-9885-01	10/13/98 / 1127	AG	soil	Grab	TP-1 at 6ft	X	X	X			2
EA-9885-02	" / 1150				TP-2 at 2.3ft	X	X	X			2
EA-9885-03	" / 1335				TP-3 at 3.5 ft	X	X	X			2
EA-9885-04	" / 1356				TP-4 at 3.5 ft	X	X	X			2
EA-9885-05	" / 1415				TP-5 at 2.5 ft	X	X	X			2
EA-9885-06	" / 1440				TP-6 at 3 ft	X	X	X			2
EA-9885-07	" / 1520				TP-7 at 6 ft	X	X	X			2
EA-9885-08	" / 1550				TP-8 at 2 ft	X	X	X			2
EA-9885-09	" / 1630				TP-9 at 3 ft	X	X	X			2
EA-9885-10	" / 1650				TP-10 at 3 ft	X	X	X			2

Comments: Univ. of Iceland to analyze BTEX, TPH and PCBs Hord Test Method.

Due Date

Express Date

Express Service Appr.

Possible Hazards: Samples 01 and 02 strong odors - BTEX or TPH

Relinquished by	Signature Andy Graham	Company DeLisle	Date/Time 10-14-98 / 9:10	Work Order No.	
Received by	Signature [illegible]	Company KC	Date/Time 10-14-98 9:12	Delivery Order	
Relinquished by	Signature [illegible]	Company KC	Date/Time 10-14-98 10:02	Coolers Shipped	
Received by	Signature [illegible]	Company ICETEC	Date/Time 10-14-98 10:[illegible]	Delivery Order Complete Yes No	
Relinquished by	Signature [illegible]	Company Ice Tec	Date/Time 10/14 1542	Shipping/Delivery, Charges $	
Received by	Signature [illegible]	Company R.L.	Date/Time 10/14 [illegible]	Composite Start	Composite Stop

CHAIN-OF-CUSTODY

Company	DeLisle Associates LTD
Street/Box	5050 Sprinkle Rd
City/State	Portage, MI
Phone	(46) 373-4500
Contact:	Andy Graham Fax: 373-1044
Job No.	EA-9885 P.O. No.

Laboratory: IceTec / Dept. Pharmacology - Univ. of Iceland
Street: IS-112 Keldnaholt
City: Reykjavik, Iceland
Phone/Fax: 354-570-7100 / 354-570-7111
POC:

ANALYSIS REQUESTED

Sample ID	Date/Time	Sampled by	Matrix	Sample Type	Field Notes	pH PNC Lead	BTEX	TPH	PCBs	Log Number	Containers Submitted
EA-9885-11	10/13/98 / 1545	AG	Soil	Grab	TP-8 at 1ft	X					1
EA-9885-12	/ 1705				TP-11 at 1ft.				X		1
EA-9885-13	/ 1710				TP-12 at 1ft				X		1
EA-9885-14	/ 1717				TP-13 at 1ft				X		1
EA-9885-15	/ 1719				TP-14 at 1ft				X		1

Comments: Univ. of Iceland to analyze for PCBs

Due Date:
Express Date:
Express Service Appr.:

Possible Hazards:

Relinquished by	Signature Andy Graham	Company DeLisle	Date/Time 10/14/98 / 910	Work Order No.
Received by	Signature R.J. Gunnarsson	Company KC	Date/Time 10/14/98 910	Delivery Order
Relinquished by	Signature R.J. Gunnarsson	Company KC	Date/Time 10/14/98 1025	Coolers Shipped
Received by	Signature [illegible]	Company Icetec	Date/Time 10/14/98 1025	Delivery Order Complete Yes No
Relinquished by	Signature [illegible]	Company Icetec	Date/Time 10/14 1340	Shipping/Delivery, Charges $
Received by	Signature [illegible]	Company R.L.	Date/Time 10/14 1345	Composite Start / Composite Stop

CHAIN-OF-CUSTODY

Company	DeLisle Associates LTD
Street/Box	5050 Sprinkle Rd
City/State	Portage, Michigan
Phone	(616) 373-4500
Contact: Andy Graham	Fax: 373-1044
Job No.	P.O. No.

DeLisle Associates
Iceland ph. #
699-1770

Laboratory:	ICETEC / University of Iceland
Street	IS-112 Keldnaholt
City	Reykjavik, Iceland
Phone/Fax	354-570-7100 / 570-7111
POC	

ANALYSIS REQUESTED

Sample ID	Date/Time	Sampled by	Matrix	Sample Type	Field Notes	pH PMC Lead	BTEX	TPH	VOC EPA 8240B-R	Log Number	Containers Submitted
EA-9885-16	10/14/98 / 9:35	AG	Soil	Grab	TP-15 at 4.5'	X	X	X			2
EA-9885-17	/ 10:05				TP-16 at 12"	X	X	X			2
EA-9885-18	/ 10:07				TP-16 at 3'3"	X	X	X			2
EA-9885-19	/ 10:30				TP-17 at 12"	X	X	X			2
EA-9885-20	/ 10:35				TP-17 at 5ft	X	X	X			2
EA-9885-21	/ 11:05				TP-18A at 1'8"	X	X	X			2
EA-9885-22	/ 1330				TP-19 at 1'8"	X	X	X			2
EA-9885-23	/ 1345				TP-20 at 10"	X	X	X			2
EA-9885-24	/ 1410				TP-21 at 3 ft	X	X	X			2
EA-9885-25	/ 1430				TP-22 at 10"	X			X		2

Comments: University of Iceland to analyze for BTEX, TPH (Weck Test)

Possible Hazards: sample # 19 petroleum odor

Due Date	
Express Date	
Express Service Appr.	

Relinquished by	Signature Andy Graham	Company DeLisle	Date/Time 10/15/98 / 1200	Work Order No.
Received by	Signature [illegible]	Company ICETEC	Date/Time 10/15/98 1200	Delivery Order
Relinquished by	Signature Fridrik Birgisson	Company IceTec	Date/Time 10/15/98 1350	Coolers Shipped
Received by	Signature Johanna	Company R.L.	Date/Time 10/15/98 1350	Delivery Order Complete Yes No
Relinquished by	Signature	Company	Date/Time	Shipping/Delivery, Charges $
Received by	Signature	Company	Date/Time	Composite Start / Composite Stop

CHAIN-OF-CUSTODY

Company	DeLisle Associates LTD
Street/Box	5050 Sprinkle Rd
City/State	Portage, Michigan 49002
Phone	616 373-4500
Contact: Andy Graham	Fax: 373-1044
Job No.	P.O. No.

Laboratory:	ICETEC / Univ. of Iceland
Street	IS-112 Keldnaholt
City	Reykjavik, Iceland
Phone/Fax	354-570-7100 / 570-7111
POC	

ANALYSIS REQUESTED

Sample ID	Date/Time	Sampled by	Matrix	Sample Type	Field Notes	pH PMC Lead	BTEX	TPH	VOC EPA 8240 OA-R	Log Number	Containers Submitted
EA-9885-26	10/14/98 1500	AG	Soil	Grab	TP-23 at 12"	X	X	X	X		3
EA-9885-27	/ 1517				TP-24 at 10"	X	X	X	X		3
EA-9885-28	/ 1540				TP-25 at 2.5 ft	X	X	X			2
EA-9885-29	/ 1605				TP-26 at 6 ft	X	X	X			2
EA-9885-30	↓ 1620	↓	↓	↓	TP-27 at 16"	X	X	X			2

Comments: University of Iceland to analyze for BTEX, TPH

Due Date

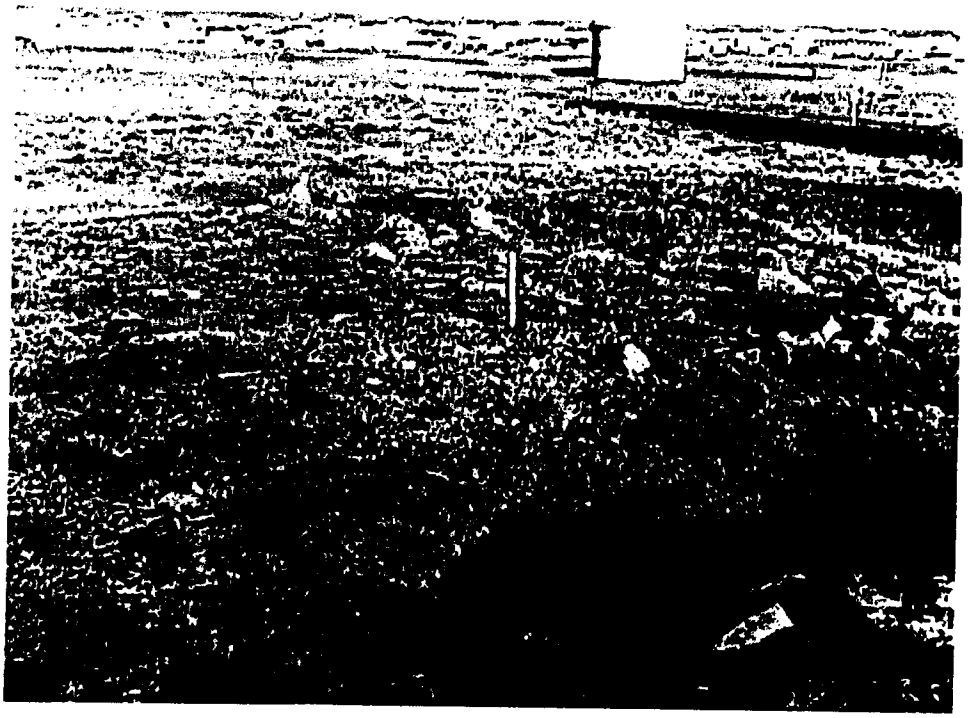
Express Date

Express Service Appr.

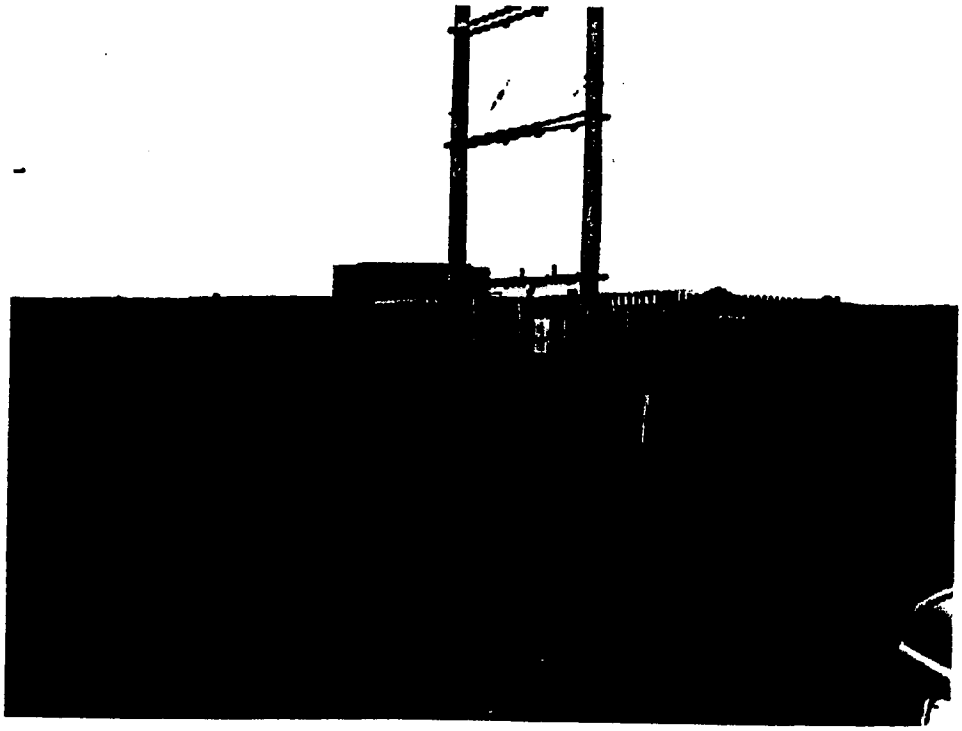
Possible Hazards

Relinquished by	Signature Andy Graham	Company DeLisle	Date/Time 10/15/98 1200
Received by	Signature EHS	Company ICETEC	Date/Time 10/15/98 1200
Relinquished by	Signature Halldór Björnsson	Company IceTec	Date/Time 10/16/98 1345
Received by	Signature Johanna	Company R.L.	Date/Time 10/13/98 1350
Relinquished by	Signature	Company	Date/Time
Received by	Signature	Company	Date/Time

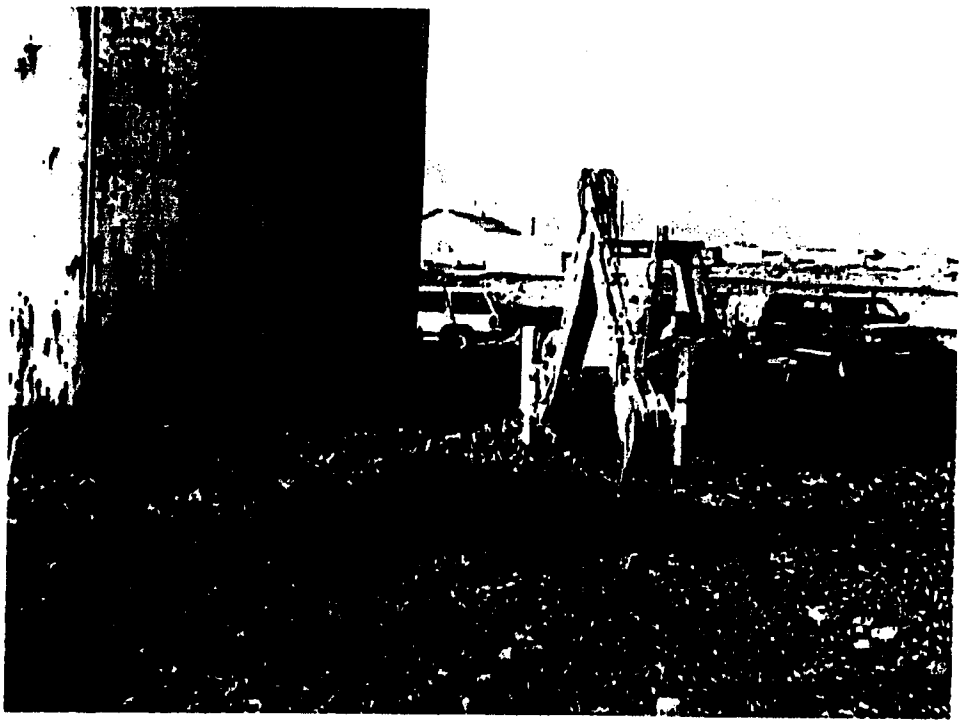
Work Order No.	
Delivery Order	
Coolers Shipped	
Delivery Order Complete	Yes No
Shipping/Delivery, Charges $	
Composite Start	Composite Stop



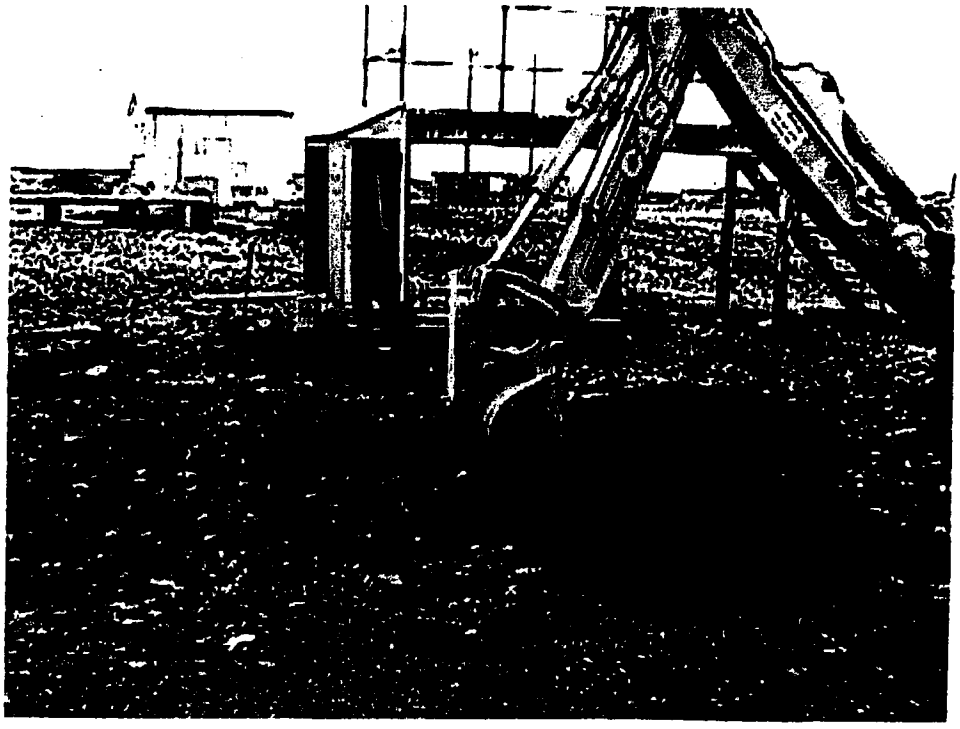
Photograph 3 Small disposal area north of gate to Upper Nikel Area. Soil Sample EA-9885-25.



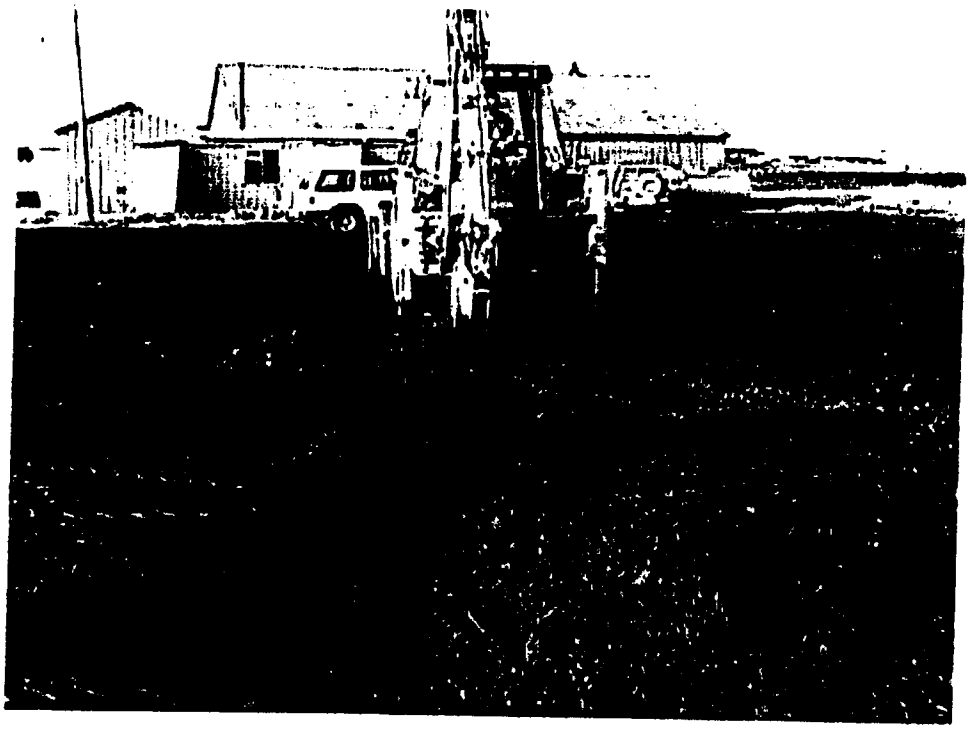
Photograph 4 Electric Transformer Station.



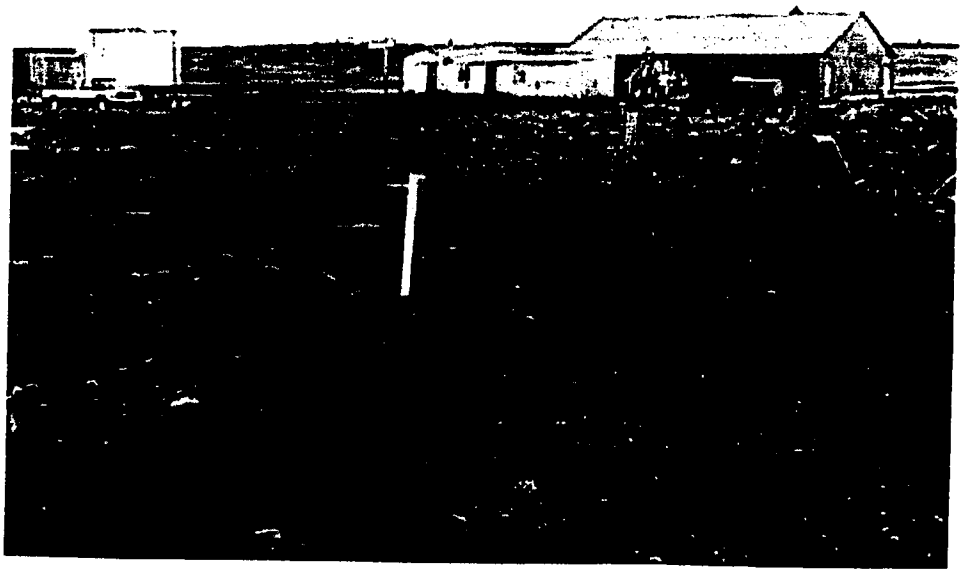
Photograph 5 Sampling near Tank 1306. Soil Sample EA-9885-08



Photograph 6 Sampling near former fueling station near Building 1369. Soil Sample EA-9885-29.



Photograph 1 Parking lot of main office, Building 1381 - Location of Test Pits 1 and 2, Soil Samples EA-9885-01 and EA-9885-02.



Photograph 2 Sampling at the northeast corner of the Project Site. Soil Sample EA-9885-03