Human Health Risk Assessment for the Consumption of Country Foods in the Town of Hopedale, NL

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1.0 INTRODUCTION

Aivek Stantec Limited Partnership (Stantec) has been retained by the Newfoundland and Labrador Department of Environment and Conservation (NLDEC) to conduct a Human Health Risk Assessment (HHRA) for the Consumption of Country Foods in the Town of Hopedale, NL. The HHRA was carried out as part of the Implementation of the Remedial Action Plan – Years 1-3 and Marine Study at the Former United States (US) Military Base and Residential Subdivision Area in Hopedale, NL. The HHRA is being conducted in response to a Preliminary Human Health Risk Assessment Evaluation conducted by Stantec in July 2012 which indicated potentially unacceptable risks associated with the consumption of bottom-dwelling fish from Hopedale Harbour.

The following report describes the human health risk assessment for the consumption of country foods in the Town of Hopedale, NL and was prepared specifically and solely for the above project. The report presents all of the factual findings of the HHRA and presents our comments on the environmental status of the overall site.

1.1 Site Description and Historical Land Use

The Inuit Community of Hopedale is located on the Labrador coast, 148 air miles to the north of Goose Bay, Newfoundland and Labrador (NL) (Drawing No. 121411777.310-EE-01, Appendix A). Hopedale has no outside road access but a seasonal coastal boat service is available and the community has an airport. Between 1957 and 1969, a military and radar site was operated in Hopedale, Labrador by the United States government. The Hopedale radar site was a station on the United States Air Force Pinetree Line and was the most easterly site on the Mid-Canada Line of antennae stations which had extended across Canada. The Pinetree station was set up to identify enemy aircraft penetrating the northeastern approaches to the continent and information was communicated to the United States. The Hopedale site was also one of a series of sites that functioned as a Ballistic Missile Early Warning System (BMEWS) where enemy ballistic missiles, if deployed, would be identified and a warning would be communicated to both the Canadian and United States military. It has been reported that at its peak, the radar site housed 300 personnel.

The base was closed down in 1969 and the radome and radar antennae were removed. Portions of the remaining base were operated by Canadian Marconi as a telecommunications site until 1972 and by ITT as a telecommunications site until 1975. The complex was finally closed in 1975. Most of the remaining aboveground structures were demolished and buried in several locations around the site in the mid-1980s. At that time, limited clean-up efforts were carried out and included the removal and disposal of transformers containing polychlorinated biphenyls (PCBs). With the exception of infrastructure at the Mid-Canada Line portion of the radar site, only the foundations and floor slabs of buildings and the foundations and bases of antennae currently remain on the Former US Military Site. Two antennae and an associated operations building are currently being operated by Bell Aliant at the Mid-Canada Line site.

During the operation of the former military base, freight access to the radar site was largely via sea. Therefore, the wharf located south of the Former US Military site, in Hopedale Harbour, was likely used to load, unload and dock boats at that time. Fuel was also transferred from boats to an aboveground pipeline located near the wharf. The wharf remains in use and various structures including the community garage, a gas station, and the Newfoundland and Labrador Hydro Diesel Generating Plant are present near the wharf approach.

Based on previous environmental reports, and field work completed as part of the current investigation, the Former US Military Radar Site was divided into 20 smaller study sites for the purpose of the Phase II/III Environmental Site Assessment (ESA) investigation. These sites are summarized in Table 1.1 and shown on Drawing No. 121411777.310-EE-02, Appendix A.

Table 1.1 Study Sites

Area	Site Name
Former Radar Site	BMEWS
	Old Base 1
	Main Base (includes TACAN, Radome, Old Base 2a, 2b and 2c)
	Sewage Outfall
	Roadway
	Valley Drainage Ponds
	Mid Canada Line
	Pallet Line
	Pit No. 1/ Helipad
	Pit No. 2
	Pit No. 3
	Small Pond Bog
	POL Compound
	Old Dump Pond
	Pipeline
	Wharf Area
	Old Dam
	Reservoir
	Second Reservoir
	Clean Background Area

1.2 Background

Several environmental assessment reports have been produced (mainly since 1996) relating to potential and actual contamination at and in the vicinity of the Former Radar Site and Residential Subdivision in Hopedale, NL. Since 2009, Stantec has completed the following reports at the Hopedale radar site on behalf of the Newfoundland and Labrador Department of Environment and Conservation:

- *Phase II/III Environmental Site Assessment, Human Health and Ecological Risk Assessments, Remedial Action/Risk Management Plan for the Former U.S. Military Radar Site and Residential Subdivision at Hopedale, Labrador.* Stantec Project No. 121410103. May 17, 2010.
- *Marine Sediment and Biota Sampling, Hopedale Harbour, NL.* Stantec Project No. 121411170. February 28, 2011.
- *Additional Delineation and Risk Assessment Re-evaluation, Former U.S. Military Site and Residential Subdivision, Hopedale, NL.* Stantec Project No. 121411170. February 28, 2011.
- *Temporary Storage of PCB Impacted Soil and Metal, Former U.S. Military Site, Hopedale, NL.* Stantec Project No. 121411777.200. November 23, 2011.
- *Implementation of Remedial Action Plan – Year 1, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador.* Stantec Project No. 121411777.200. April 30, 2012.
- *Marine Study, Hopedale Harbour, Hopedale, NL.* Stantec Project No. 121411777. May 10, 2012.
- Freshwater and Marine Sampling in Support of the Marine Study – Years 2 and 3 for U.S. Military Site, Hopedale, NL. Stantec Project No. 121411777.610. April 16, 2014.
- *Preliminary Human Health Risk Assessment Evaluation, Hopedale Harbour, Hopedale, NL.* Stantec Project No. 121411777. July 6, 2012.
- *Metal Disposal Options, Former U.S. Military Site, Hopedale, NL.* Stantec Project No. 121411777.200. July 16, 2012.
- *Implementation of Remedial Action Plan – Year 2, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador.* Stantec Project No. 121411777.300. February 4, 2014.
- *Implementation of Remedial Action Plan – Year 3, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador.* Stantec Project No. 121411777.200. April 15, 2014.
- *Summary Report on Loadings, Sediment Inventory, and Present and Future Outlook for PCB Impacts in Hopedale Harbour. Stantec Project No. 121411777. July 10, 2014.*
- *Hydrodynamic and Sediment Transport Modeling Study, Hopedale Harbour, Labrador. Stantec Project No. 121411777. July 10, 2014.*
- *Additional Delineation and Updated Remedial Action Plan, Former U.S.* Military Site, Hopedale, Labrador. Stantec Project No. 121411777.610. July 18, 2014.

A brief summary of the main activities considered relevant to the human health risk assessment follows.

In 2009 and 2010, Stantec conducted a Phase II/III ESA and HHERA and prepared a Remedial Action/Risk Management Plan for the Former US Military Site and Residential Subdivision in

Hopedale, NL on behalf of NLDEC. Stantec also supervised limited remediation of PCB-impacted tar in three areas of the former military and radar site and the removal of three tandem dump truck loads of debris from the stream in the Residential Subdivision (surficial and partially buried debris) and from test pits excavated in the residential subdivision (buried debris) at that time.

The 2010 HHRA assessed the potential risks to human receptors that may be present at the site. For the purpose of the HHRA, the site was divided into two areas based on receptor categories: the Residential Area (*i.e.*, residents) and the Former Radar Site (*i.e.*, recreational site users). The Residential Area and the Former Radar Site were assessed separately based on the expected human exposure time (*i.e.*, human receptors would be expected to spend less time on the Former Radar Site than in the Residential Area) and activities (*e.g.*, hunting is expected to be limited to the Former Radar Site).

The 2010 ecological risk assessment (ERA) assessed potential risks to aquatic and terrestrial receptors at the site. As part of the aquatic ERA, eight potential freshwater habitats (Subdivision Stream, Old Dump Pond, Small Pond Bog, Old Dam, Valley Drainage Ponds, Reservoir, Second Reservoir, and Big Lake) and one marine habitat (the Wharf Area, including the coastline and Hopedale Harbour) were identified. As part of the ERA, four terrestrial mammals (meadow vole, masked shrew, Arctic hare, and red fox), two terrestrial birds (American robin and short-eared owl) and two semi-aquatic birds (common merganser and herring gull) were assessed.

The results of the HHERA indicated the potential for adverse risks to human and ecological receptors from exposure to total petroleum hydrocarbons (TPH), PCBs and/or metals impacts at the Former Radar Site and the Residential Area. Precautionary actions, remedial activities and risk management strategies were therefore recommended to control the exposure to the hazards identified at the site. Priorities were assigned to different areas requiring remediation, with the highest priority assigned to PCB-impacted areas near residential areas and the PCB-impacted area located up-gradient of the community water supply source (the BMEWS site). It was recommended that the SSTLs generated in the HHERA (Table 1.2) be used as remediation criteria at the site. Note that based on subsequent discussions between Stakeholder Committee members, an SSTL of 9 mg/kg for PCBs was considered applicable for the entire site (*i.e.*, including the Hopedale Radar Site).

Table 1.2 Summary of SSTLs recommended for the Former Radar Site and Residential Area

Chemical	SSTL (mg/kg)	Source	Areas Requiring Remediation
Residential Area			
PCBs	9	HHRA	Old Dump Pond Wharf Area
Antimony	30	HHRA	Old Dump Pond
Former Radar Site			
PCBs	22	HHRA	BMEWS Old Base1 Main Base
TPH	1,700	ERA	BMEWS Main Base Pit No. 3 POL Compound
Metals	Lead: 75 Antimony: 5 Chromium: 20 Cadmium: 1.3	ERA	BMEWS Main Base Mid Canada Line POL Compound

Subsequent to the HHERA, the Government of Newfoundland and Labrador committed funds for three years (2010 to 2013) to support ongoing remediation efforts in Hopedale and for the completion of a Marine Study. Each year of site remediation and investigative work was to be conducted in accordance with NLDEC budget allowances. A Stakeholder Scientific Advisory Working Group (referred to as the "Stakeholder Committee") consisting of representatives from the Inuit Community Government of Hopedale, the Nunatsiavut Government, Labrador Grenfell Health, the Department of Labrador and Aboriginal Affairs, NLDEC and technical advisors was established in 2011 to advise on go-forward work plans at the site. The remediation at the Former Radar Site of PCB, petroleum hydrocarbon, and metals impacted soil was carried out during Year 1 (2011), Year 2 (2012), and Year 3 (2013) of the Implementation of the Remedial Action Plan program.

In 2010-2011, Stantec conducted additional soil and sediment delineation and a preliminary marine sampling program at the site to address data gaps and/or actions recommended in the 2010 Phase II/III ESA and HHERA report, and recommendations provided through consultation with the Nunatsiavut Government (refer to Stantec Report No. 121411170, dated February 28, 2011). Volume estimates of contaminated soil were also refined for areas requiring soil remediation. Elevated concentrations of PCBs were detected in sediment and fish samples collected from Hopedale Harbour. Therefore, a comprehensive marine study and human health risk assessment was further recommended.

In 2012, Stantec conducted a Preliminary Human Health Risk Assessment Evaluation based on concentrations of PCBs in rock cod (*Gadus ogac*) and shorthorn sculpin (*Myoxocephalus scorpius*) collected from Hopedale Harbour during the 2010-2011 preliminary marine sampling program. Based on the preliminary risk calculations, residents from Hopedale were advised to limit their consumption of sculpin, rock cod, and other bottom-dwelling fish from Hopedale Harbour if they wished to control their exposure to PCBs. Areas such as Tooktoosner Bay and Black Head Tickle were identified as suitable alternate locations for obtaining fish for human consumption. The fish consumption recommendations and advice were formulated and presented to the Town of Hopedale in close consultation with the Nunatsiavut Government, as discussed and agreed upon during the previous Stakeholder meetings in St. John's, NL.

In 2014, the Government of Newfoundland and Labrador committed funds for three more years of continuing remediation efforts in Hopedale and to further assess the marine environment. Again, each year of site remediation and investigative work was to be conducted in accordance with NLDEC budget allowances. Remedial efforts are continuing in Hopedale.

The data collected to date was most recently discussed by a Stakeholder Committee in August, 2014.

2.0 SITE SPECIFIC DATA SOURCES FOR HUMAN HEALTH RISK ASSESSMENT OF COUNTRY FOODS

2.1 Analytical Data - Country Foods

The analytical data for country food items used in this human health risk assessment for country foods consumption in the Town of Hopedale, NL are presented in Table B.1, Appendix B. Analytical reports from Maxxam Analytics are presented in Appendix C. These data were compiled from the following sources:

1. A series of biota sampling programs carried out by Stantec as part of the initial environmental site assessment and human health and ecological risk assessment conducted in 2010 as well as during subsequent investigations designed to support the on-going remediation efforts in Hopedale and the completion of the marine study.
2. A country food sampling program conducted in Hopedale and the surrounding area by the Environmental Sciences Group (ESG; Kingston, ON) and the Hopedale Inuit Community Government (HICG) with assistance from community members in 2012.

Details of the biota sampling programs have been reported under separate cover but will be briefly discussed below.

2.1.1 Biota Sampling Program – Stantec (2009-2013)

As part of the initial ESA and HHERA conducted by Stantec (2009) and site investigations carried out as part of the subsequent three year remediation program and marine study, Stantec conducted terrestrial biota sampling at the former radar site, marine biota sampling at Hopedale Harbour, Black Head Tickle, and Tooktoosner Bay, and freshwater biota sampling at Big Lake and Ussiranniak Lake.

Details of the sampling programs can be found in the following reports submitted to NLDEC by Stantec:

- *Phase II/III Environmental Site Assessment, Human Health and Ecological Risk Assessments, and Remedial Action/Risk Management Plan for the Former U.S. Military Site and Residential Subdivision at Hopedale, Labrador.* Stantec Project No. 121410103. May 17, 2010.
- *Marine Sediment and Biota Sampling, Hopedale Harbour, NL.* Stantec Project No. 121411170. February 28, 2011.
- *Additional Delineation and Risk Assessment Re-evaluation, Former U.S. Military Site and Residential Subdivision, Hopedale, NL.* Stantec Project No. 121411170. February 28, 2011.
- *Marine Study, Hopedale Harbour, Hopedale, NL.* Stantec Project No. 121411777. May 10, 2012.
- Freshwater and Marine Sampling in Support of the Marine Study – Years 2 and 3 for U.S. Military Site, Hopedale, NL. Stantec Project No. 121411777.610. April 16, 2014.

A list of species collected, sample sizes, sample locations, and other relevant information is summarized in Table 2.1. A designation as "Background" identifies samples collected from any area that was considered to be outside of Hopedale and beyond contact with or influence by the PCB contamination in the Hopedale area (refer to Section 3.1). All data are presented in Table B.1, Appendix B.

Note that a small number of berry samples were collected by Stantec during the initial ESA (2010) and the subsequent remediation program. Concentrations of PCBs were not detected in the berry samples; however, a detection limit of 0.05 mg/kg was used. Because of the elevated detection limit, these samples were not considered in this HHRA. Berry samples collected as part of the country food sampling program by ESG (2012) (Table 2.2) were used to represent concentrations of PCBs in berries.

Table 2.1 Summary of Biota Samples Collected by Stantec (2009-2013)

Common Name	Species Name	Number of organisms	Number of tissue samples	Location	Background or Hopedale	Notes
Mammals						
Snowshoe Hare/ Okalik	*Lepus americanus*	1	1 liver 1 muscle	Former Hopedale Radar site	Hopedale	Stantec (2010)
Fish and shellfish						
Brook trout	*Salvelinus fontinalis*	45	14 whole 31 muscle 2 liver	Big Lake	Hopedale	Stantec (2010) Stantec (2013) Stantec (2014)
		10	10 muscle 3 liver	Ussiranniak Lake	Background	Stantec (2014)
Shorthorn sculpin	*Myoxocephalus scorpius*	27	27 muscle 6 liver	Hopedale Harbour	Hopedale	Stantec (2011) Stantec (2014)
		10	10 muscle 3 liver	Black Head Tickle	Background	Stantec (2012)
		16	16 muscle 3 liver	Tooktoosner Bay	Background	Stantec (2011) Stantec (2012)
Rock cod	*Gadus ogac*	39	39 muscle 6 liver	Hopedale Harbour	Hopedale	Stantec (2011) Stantec (2012)
		10	10 muscle 3 liver	Black Head Tickle	Background	Stantec (2012)
		10	10 muscle 3 liver	Tooktoosner Bay	Background	Stantec (2012)
Atlantic salmon	*Salmo salar*	3	3 muscle 3 liver	Tooktoosner Bay	Background	Stantec (2012)
Arctic char	*Salvelinus alpinus*	3	3 muscle	Big Lake	Hopedale	Stantec (2013) Stantec (2014)
		10	10 muscle 3 liver	Ussiranniak Lake	Background	Stantec (2014)
Mussels	-	6	6 muscle	Southwest Bays	Hopedale	Stantec (2012); Composite samples
		1	1 muscle	Black Head Tickle	Background	
		1	1 muscle	Tooktoosner Bay	Background	
Clams	-	6	6 muscle	Southwest Bays	Hopedale	
		1	1 muscle	Tooktoosner Bay	Background	

Notes:
Based on mapping and field notes provided by ESG, Big Lake may also be referred to as NCO Pond.
Shellfish were soaked in water from the sampling area overnight and boiled for approximately 15 minutes the next day before removing the shells and preparing composite samples.
Composite samples were collected from the same area.

The general locations where biota samples were collected by Stantec are shown on Drawing Nos. 121411777.310-EE-03 and EE-04, Appendix A.

2.1.2 Country Food Sampling Program – ESG (2012)

ESG conducted a country food sampling program in and around the Town of Hopedale in 2012. According to information provided by ESG, country food samples were collected by local Hopedale residents, identified hunters in the community, and ESG staff when possible. Hunted/harvested samples of country foods by local residents were provided to the Hopedale Inuit Community Government (HICG) staff with the samples submitted being at the discretion of the harvester. In addition, three to four respected hunters within the community were also tasked with providing specific types of country food from specific locations. The details of the country food sampling program as provided by ESG are included in Appendix D. Samples were shipped from the ESG lab in Kingston, Ontario to Maxxam Analytics in Bedford, NS for analysis of PCBs and lipids. Additional processing of certain samples was conducted by ESG as detailed in the report entitled "Hopedale Country Food Sampling Program Information' prepared by ESG and provided in Appendix D and discussed in Section 4 of this report.

Sample locations were recorded by hunters or the HICG staff as either a specific place name or as "outside Hopedale" where the local name was unknown and the sample came from outside of Hopedale. A list of country food items collected, sample sizes, locations, and other relevant information as reported by ESG is summarized in Table 2.2 below. A designation as "Background" identifies samples collected from any area that was considered to be outside of Hopedale and beyond contact with or influence by the PCB contamination in the Hopedale area (refer to Section 3.1). All data are presented in Table B.1, Appendix B.

Note that five snowshoe hare/okalik were also previously collected by ESG (2008) from Hopedale and were used in the HHERA (2010) by Stantec. These samples are also included in Table 2.2.

Table 2.2 Summary of Biota Samples Collected by ESG (2012)

Common Name Species Name	Number of organisms	Number of tissues	Location	Background or Hopedale	Notes
Mammals					
Snowshoe Hare/Okalik	2	1 muscle	Former Radar Site	Hopedale	ESG (2008)
		2 liver			
	3	3 muscle	Background	Background	
Moose	1	1 muscle	Udjutok Bay	Background	ESG (2012)
Caribou	1	1 brain	Udjutok Bay	Background	ESG (2012)

Common Name Species Name	Number of organisms	Number of tissues	Location	Background or Hopedale	Notes
Mammals					
Porpoise	1	1 muscle	Manuels Island	Background	ESG (2012)
		1 muttak			
	6	3 muscle	Paradise	Background	
		3 muttak			
	7	4 muscle	Zackarias	Background	
		4 muttak			
	5	2 muscle	Hopedale Run	Background	
		1 muttak			
		3 fat			
Jumper	2	2 muscle	Hopedale Run	Background	ESG (2012)
		2 fat			
Snowshoe Hare/Okalik	1	1 liver	Harbour Deep	Background	ESG (2012)
		1 muscle			
Seal	3	3 muscle	Big Bay	Background	ESG (2012)
		1 liver			
		3 fat			
	6	2 muscle	Outside Hopedale	Background	ESG (2012)
		2 liver			
		2 fat			
	1	1 muscle	Zackarias	Background	ESG (2012)
		1 liver			
		1 fat			
		1 heart			
Birds					
Duck	7	6 muscle	Outside Hopedale	Background	ESG (2012)
		4 liver			
Eider Duck	2	2 muscle	Outside Hopedale	Background	ESG (2012)
		2 liver			
	3	3 liver	Ummiattugiak	Background	
	2	2 muscle	Hopedale Point	Background	
		2 liver			
Goose	2	2 muscle	Outside Hopedale	Background	ESG (2012)
		1 liver			
Shellbird	2	2 muscle	Big Lake	Hopedale	ESG (2012)
		1 liver			
	2	2 muscle	Outside Hopedale	Background	
		2 liver			
Partridge	3	3 muscle	Outside Hopedale	Background	ESG (2012)
		3 liver			

Common Name Species Name	Number of organisms	Number of tissues	Location	Background or Hopedale	Notes
Birds					
Turr	2	2 muscle 2 liver	Outside Hopedale	Background	ESG (2012)
Pigeon	1	1 muscle 1 liver	Okalik Island	Background	ESG (2012)
	4	2 muscle 2 liver	Barge Island	Background	
	2	2 muscle 2 liver	Outside Hopedale	Background	
	2	5 muscle** 2 liver	Black Heads	Background	
Duck eggs	3	-	Gull Island	Background	ESG (2012)
Gull eggs	3	-	Gull Island	Background	ESG (2012)
Fish and Shellfish					
Rock cod	11	1 muscle 8 pitsik 2 siva	Hopedale Harbour	Hopedale	ESG (2012)
	5	5 pitsik	Outside Hopedale	Background	
	2	2 siva	Railroads	Background	
Salmon	10	5 muscle 5 liver	Hopedale Point	Background	ESG (2012)
	2	2 muscle	Neksoarsak Cove	Background	
Brook trout	12	10 whole 2 pitsik	Big Lake	Hopedale	ESG (2012)
Herring	2	1 muscle 1 liver	Hopedale Point	Background	ESG (2012)
Capelin	2	2 muscle	Black Heads	Background	ESG (2012)
Trout	2	2 muscle	Big Bay Neck	Background	ESG (2012)
Smelt	1	1 muscle	Udjutok	Background	ESG(2012)
Char	1	1 muscle	Kegetgauyak	Background	ESG (2012)
	3	3 muscle 3 pitsik	Hopedale Harbour	Hopedale	ESG (2012); Composite samples
Flatfish	2	2 liver***	Hopedale Harbour	Hopedale	
Clams	5	5 muscle	Hopedale Harbour	Hopedale	ESG (2012); Composite samples
	4	4 muscle	Airstrip Cove	Hopedale	
	5	5 muscle	Black Heads	Background	
Wrinkles	4	4 muscle	Hopedale Harbour	Hopedale	
	2	2 muscle	Hebron side	Background	
	2	2 muscle	Black Heads	Background	

Common Name Species Name	Number of organisms	Number of tissues	Location	Background or Hopedale	Notes
Fish and Shellfish					
Urchin	2	2 muscle	Hebron Side	Background	
	4	4 muscle	Hopedale Harbour	Hopedale	
	2	2 muscle	Black Heads	Background	
Plants and Berries					
Bakeapples	2	-	Outside Hopedale	Background	ESG (2012): Only the edible parts of plants or berries were analyzed.
	6	-	Former military site	Hopedale	
Black berries	1	-	Black Heads	Background	
	4	-	Former military site	Hopedale	
Blueberries	1	-	Black Heads	Background	
	4	-	Former military site	Hopedale	
Red berries	1	-	Black Heads	Background	
	3	-	Former military site	Hopedale	
Tullegunnak	1	-	Black Heads	Background	

Notes:
Based on mapping and field notes provided by ESG, Big Lake may also be referred to as NCO Pond.
Composites were of samples from the same area
Shellfish were soaked for 20 minutes to 1 hour with continuous rinsing with water to removed sediment, then boiled whole for 10-15 minutes. Sea urchins were boiled for 2-5 minutes.
**5 muscle samples but 4 were from same organism
***13 liver samples but 2 were from first organism and 9 were from second organism

The general locations where country food samples were collected as reported by ESG are shown on Drawing Nos. 121411777.310-EE-03 and EE-04, Appendix A. It should be noted that Hebron Side is located further north of Hopedale and could not be indicated on the sample location plan. In addition, one sample each of moose, caribou, and smelt were reportedly collected in Udjutok/Udjutok Bay and one sample of char was reportedly collected in Kegetgauyak. Stantec was unable to locate Udjutok/Udjutok Bay and Kegetgauyak on any map and this location has not been indicated on Drawing Nos. 121411777.310-EE-03 and EE-04, Appendix A. Based on the mapping and field notes provided by ESG, Udjutok and Kegetgauyak were reported by the harvester to be outside Hopedale; therefore, Stantec has considered these samples to be Background samples.

2.1.3 Analytical Methods

Maxxam Analytics in Bedford, NS conducted all of the PCB and lipid analyses for the biota sampling programs conducted by Stantec (2009-2013) and for the country food sampling program conducted by ESG (2012). Analytical results for all country food samples from the programs by Stantec and ESG are summarized in Table B.1, Appendix B. Analytical reports from Maxxam Analytics Inc. are presented in Appendix C. The methodologies used by Maxxam are presented on the analytical reports in Appendix C.

A detection limit of 0.01 mg/kg was requested for analysis of all country foods collected as part of the country food sample collection program (ESG, 2012). In some cases, an elevated detection limit of 0.2 mg/kg was necessary due to matrix/co-extractive interference. The standard detection limit of 0.05 mg/kg was used for biota samples collected and submitted by Stantec in 2009/2010 and subsequent years.

2.1.4 Laboratory Quality Assurance/Quality Control Program

A quality assurance/quality control (QA/QC) program was followed during all aspects of the laboratory programs to ensure that the sampling and analysis provided consistent, representative data of high quality. A summary of the specifics of the QA/QC program is provided below:

Maxxam Analytics Inc. maintained a detailed QA/QC program for this analytical program including the following:

- Duplicate analysis was conducted on 10% of the samples submitted to Maxxam Analytics Inc.
- Spiked matrices were prepared to evaluate sample matrix interference.
- Method blanks were prepared to identify laboratory contamination.
- QC standards and spiked blanks were prepared to evaluate analyte recovery.
- Surrogates were used to evaluate extraction efficiency.

2.2 Country Food Ingestion Rates - Food Survey

A food survey was conducted in the Town of Hopedale by ESG in 2011. The Hopedale food survey included the interviewing of 198 participants. Each respondent was provided with a list of country food items and asked whether or not they had consumed the food item in the past twelve months and if so, the frequency and serving sizes that they usually consumed. The respondents were also permitted to add food items that were not provided in the list. This information was requested for both the in season (*i.e.*, fresh) and off-season (*i.e.*, stored) food items. A blank copy of the food survey as provided to NLDEC by ESG is presented in Appendix E, along with the complete anonymized results for the 198 study participants.

Respondents provided three different frequencies for country food consumption (*i.e.*, weekly, monthly, and yearly) and two time frames (*i.e.*, in-season and off-season). Calculations for food ingestion rates are further discussed in Section 3.5.1.2.

3.0 HUMAN HEALTH RISK ASSESSMENT

3.1 Areas Assessed for Human Health Risk Assessment

As part of the biota sampling program conducted by Stantec (2009-2013) and the country food sampling program conducted by ESG (2012), country food samples were collected from areas in the vicinity of the former Hopedale military site and Hopedale Harbour (*i.e.*, samples considered to be associated with the PCB contamination identified at the former Hopedale radar site). Samples were also collected from "background" areas outside Hopedale (*i.e.*, samples considered not to be associated with PCB contamination identified at the former Hopedale radar site). It should be noted that while background samples are not expected to be impacted by PCBs associated with the former Hopedale radar site, some PCBs would be expected to be present in many of the samples due to the ubiquitous distribution of PCBs in Northern Canada. Levels of PCBs in background samples would be expected to be in the same range as PCBs in similar samples from other areas across Northern Canada (*i.e.*, background). A discussion of background concentrations is provided in Section 5.

For the purpose of this human health risk assessment, the country food samples collected (as listed in Tables 2.1 and 2.2) were separated into local "Hopedale" samples and "Background" samples. Hopedale samples are considered to be associated with local contamination originating from the former radar site while background samples are considered representative of background concentrations unassociated with PCBs originating from the former military site. Table 3.1 classifies all the sampling locations where country food samples were collected as part of the biota sampling program by Stantec (2009-2013) and the country food sampling program as presented in Tables 2.1 and 2.2 as Hopedale or Background areas. All sampling locations (with the exception of Hebron Side, Kegetgauyak, and Udjutok as discussed in Section 2.1.2) are shown on Drawing Nos. 121411777.310-EE-03 and 04, Appendix A.

Table 3.1 Background and Hopedale Sampling Locations

Background	Hopedale
Black Head Tickle	Former Radar Site
Tooktoosner Bay	Big Lake/NCO Pond
Background	Hopedale Harbour
Udjutok Bay	Airstrip Cove/Southwest Bays
Manuels Island	Former Military/Radar Site
Paradise	
Zacharias	
Hopedale Run	
Harbour Deep	

Background	Hopedale
Big Bay	
Outside Hopedale	
Ummiattugiak	
Hopedale Point	
Okalik Island	
Barge Island	
Black Heads	
Railroads	
Neksoarsak Cove	
Big Bay Neck	
Udjutok	
Kegetgauyak	
Hebron Side	

3.2 Risk Assessment Methodology

The general methods employed for this HHRA follow the guidance published by Health Canada (2010a, 2010b, 2010c). The risk assessment framework used in this HHRA follows the standard paradigm shown below and as described in subsequent sections of this report.

- Problem formulation.
- Exposure assessment.
- Toxicity assessment.
- Risk characterization.

The risk framework is depicted in Figure 3-1. In order to make the HHRA most relevant to the residents of Hopedale, exposure and risk calculations were performed individually for each of the 198 participants of the 2012 ESG food consumption survey (See Section 2.2).

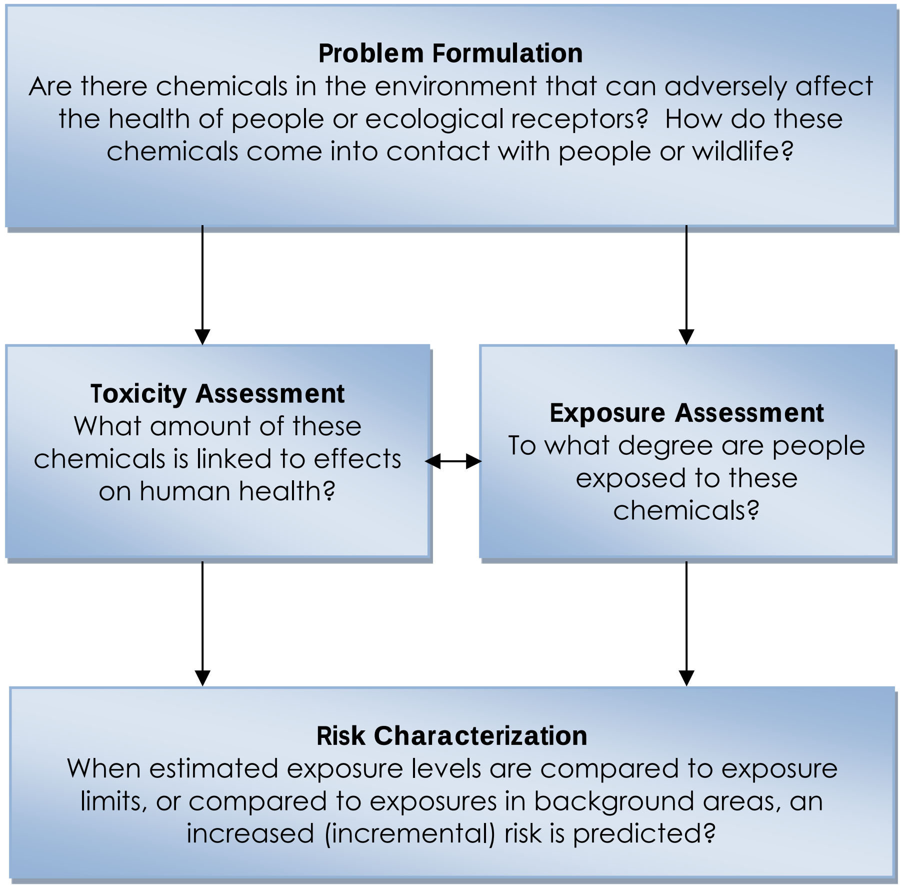

Figure 3-1 Risk Assessment Framework

3.3 Problem Formulation

The problem formulation stage is an information gathering and interpretation stage that focuses the study on the primary areas associated with the assessment. Problem formulation defines the nature and scope of the risk assessment, permits practical boundaries to be placed on the overall scope of work, and ensures that the risk assessment is directed at the key areas and issues of concern. The gathered data provide information regarding species of concern within the geographic area, possible exposure pathways, identifying the potential human receptors, chemicals of potential concern being evaluated in the assessment, and any other specific areas or issues to be addressed.

For this human health risk assessment, the key tasks in the problem formulation phase included:

- Identifying the chemicals of concern for country foods (hazard identification);
- Identifying and characterizing the key receptors (receptor identification); and,
- Characterizing the exposure pathways (exposure pathway characterization).

3.3.1 Hazard Identification

Based on previous investigations, elevated concentrations of PCBs have been detected in soil, sediment, and certain biota associated with the former military site in Hopedale. The focus of this HHRA is PCBs in country foods that residents of the Town of Hopedale may be consuming. As discussed in Section 2.1, the analytical data used for country foods in this human health risk assessment were compiled from biota sampling conducted by Stantec (2009 to 2013) and by ESG (2012).

3.3.2 Receptor Identification

The human receptors considered in this human health risk assessment include Hopedale residents that may consume country foods from the Hopedale area.

Health Canada (2010a; 2010b) has divided human receptors into five life stages (infant (0-6 months), toddler (7 months to 4 years), child (5 years to 11 years), teen (12 years to 19 years), adult (20 years and older)) with total average life expectancy (exposure duration) of 80 years. Residents of Hopedale may be exposed to PCBs during each of these different life stages throughout their lifetime. Participants in the food consumption survey conducted by ESG (2012) ranged in age from 12 to >50 years. Thirty four (34) participants were in the age range 12-18 years while the remaining 164 participants were 19 years or over. For participants in the age range 12 to 18 years, a body weight of 59.7 kg (Health Canada, 2010a) was used. For participants >18 year, a body weight of 70.7 kg (Health Canada, 2010a) was assumed.

3.3.3 Exposure Pathway Characterization

Exposure to PCBs through the consumption of country foods was the only pathway considered in this human health risk assessment. The fish species selected for sampling by Stantec (2009-2013) (*e.g.*, rock cod and sculpin) during site investigations were identified on the basis of anticipated high PCB concentration, given their habitat, home ranges, feeding habits, and other life history characteristics. Other fish species that were considered likely to be consumed by local residents (*e.g.*, Atlantic salmon, Arctic char) were also collected. The species selected by ESG in their country food sampling program represented those plants and biota identified in the earlier food consumption survey as being commonly consumed and readily available to the community. In most cases, several edible parts of the biota collected by Stantec and ESG were analysed for PCBs (*e.g.*, fat, muttak, liver, muscle). In addition, several samples were cooked or processed in the same manner as by local residents. All food items for which consumption rates were provided were included in the HHRA. For example, consumption rates were provided for seal meat and flipper, seal fat and blubber, and seal liver. Concentrations of PCBs in each of these food items (refer to Tables 3.2 and 3.3) were determined and included in the HHRA.

3.4 Conceptual Site Model

For the purposes of this human health risk assessment, the conceptual model developed for evaluating the quantitative exposure of the human receptors identified the following possible exposure pathway.

- Residents of Hopedale may be exposed to PCBs through the ingestion of country foods (*e.g.*, fish, birds, mammals, plants, berries) that may be gathered and hunted in the area.

The conceptual site model developed for this human health risk assessment is presented in Figure F-1, Appendix F. The figure schematically represents the interactions between the receptors and the chemicals of potential concern via the exposure pathway identified in Section 3.3.3.

3.5 Exposure Assessment

This exposure assessment is limited to consumption of PCBs through the ingestion of the country food items for which ingestion rate data were collected during the food consumption study (ESG, 2011). The exposure assessment predicts the rate of exposure (*i.e.*, the quantity and rate of intake) of PCBs by Hopedale residents via the ingestion pathway alone as identified in the problem formulation step. The rate of exposure to the PCBs is usually expressed as the amount of PCBs or chemical taken in per unit body weight per unit time (*e.g.*, microgram (µg) chemical per kilogram (kg) body weight per day).

The magnitude of the exposure of receptors to PCBs through country food ingestion depends on the interaction of a number of variables, specifically related to

- the concentration of the PCBs in the country foods; and,
- physiological and behavioural characteristics of the receptors (*e.g.*, consumption rate; body weight).

Exposure estimation for the risk assessment was facilitated through the use of consumption risk assessment equations. Equations to predict or calculate exposure developed by various regulatory agencies (*e.g.*, US EPA, CCME, Health Canada) and published academic and scientific literature sources.

Daily intakes are calculated in the form of chronic daily intakes (CDIs) (to assess non-carcinogenic endpoints) and Incremental Lifetime Cancer Risk (ILCR) (to assess carcinogenic endpoints), using the equations presented below:

$$CDIi = \frac{Cifood * IRfood * Days\ eaten}{BW * 365\ days\ in\ a\ year}$$

Where:

CDIi = chronic daily intake of chemical (i) by the consumption pathway (mg/kg -day)
Ci food= concentration of chemical i in food (mg COPC/kg food)
IRfood = ingestion rate of specific food type (kg food/day)
Days eaten/year = number of days per year the food is consumed
BW = body weight (kg)

3.5.1 Data Analysis

3.5.1.1 Exposure Point Concentrations

Statistical analysis of the data on concentrations of PCBs in the various country food items was completed to generate a representative concentration that reflects reasonable maximum exposure for PCBs for each food item. The primary purpose of the statistical analysis is to determine representative exposure point concentrations (EPCs) for estimating potential risks associated with COPCs in the various media. The EPC is an estimate of a reasonable upper limit value for the average chemical concentration in the medium, determined for each exposure unit (USEPA, 1989).

For food items where less than ten samples were available or for food items that did not have enough detected values to calculate an EPC, the maximum PCB concentration was used as the EPC. For food items where all samples had non-detectable PCB concentrations, the detection limit was used in the risk assessment calculations to represent the EPC. For food items with adequate sample size and analytical results, the software ProUCL 5.0 was used to calculate the EPC. Where data permit, the USEPA (2002) recommends using upper confidence limits (UCLs) for assessing EPCs at contaminated sites. ProUCL 5.0 provides upper confidence limit computational methods, and is considered appropriate for both small and large datasets, and datasets with a large number of non-detects (USEPA, 2010). The software recommends the most appropriate EPC statistic for use. In cases where two statistics were recommended, the higher concentration was used in the human health risk assessment.

The EPCs are given as a wet weight concentration for all food items/species. The difference between wet and dry weight is the moisture content. Wet weight is the weight of the meat or fish prior to cooking or the wet weight of the vegetation at the time of picking. Dry weight is the weight of the sample after the moisture has been removed. It is understood that in some cases meat and fish are dried at the time of harvest for consumption later in the season; however, as the exact drying techniques could not be reproduced by the lab, the analysis of the tissues were conducted only on a wet weight basis. The exceptions are the cases of pitsik and siva (see Table 2.2) where ESG prepared these foods prior to submission to Maxxam for PCBs and lipid analysis.

Tables 3.2 and 3.3 summarize the EPCS used for each food item assessed in this human health risk assessment for the Background and Hopedale areas.

Table 3.2 Exposure Point Concentrations – Background

Food Item	Sample Size (n)	Maximum Detected Value	Number of Non-Detects	EPC (mg/kg)	Reference
Mammals					
Moose Muscle	1	<0.01	1	0.01	Detection Limit
Caribou Brain	1	<0.01	1	0.01	Detection Limit
Porpoise	22	5.3	2	1.92	95% KM (Chebyshev UCL)
Jumper/Dolphin Blubber	2	0.59	0	0.59	Maximum
Jumper/Dolphin Meat	2	0.068	0	0.068	Maximum
Snowshoe Hare/Okalik	5	0.15	2	0.15	Maximum
Seal Fat	6	0.49	1	0.49	Maximum
Seal Liver	4	0.064	0	0.064	Maximum
Seal Meat	6	0.035	2	0.035	Maximum
Birds					
Duck/Turre/Teal/Piedbirds/ Shellbirds	18	0.76	1	0.36	97.5% KM (Chebyshev) UCL
Duck Eggs	3	0.027	0	0.027	Maximum
Eider Duck	11	0.075	2	0.042	95% KM (t) UCL
Seagull Eggs	3	0.67	0	0.67	Maximum
Goose	3	<0.01	3	0.01	Detection Limit
Partridge	6	0.012	5	0.012	Maximum
Pigeon/Guillemot	17	0.061	1	0.038	95% KM (t) UCL
Fish					
Rock Cod Meat	20	<0.05	20	0.05	Detection Limit
Rock Cod Liver	6	0.2	2	0.2	Maximum
Rock Cod Pitsik	5	0.026	2	0.026	Maximum
Rock Cod Siva	2	0.3	0	0.3	Maximum
Sculpin Meat	26	0.89	25	0.89	Maximum
Sculpin Liver	6	0.2	2	0.2	Maximum
Flatfish	3	0.39	1	0.39	Maximum
Salmon Meat	18	0.036	11	0.02	95% KM (t) UCL
Trout	15	0.11	12	0.11	Maximum
Trout Pitsik	-	-	-	-	-

Food Item	Sample Size (n)	Maximum Detected Value	Number of Non-Detects	EPC (mg/kg)	Reference
Herring	2	0.013	1	0.013	Maximum
Capelin	2	<0.01	2	0.01	Detection Limit
Smelt	1	<0.01	1	0.01	Detection Limit
Char	14	<0.05	14	0.05	Detection Limit
Clams	6	0.014	5	0.014	Maximum
Mussels	2	<0.1	2	0.1	Detection Limit
Wrinkles	4	0.069	2	0.069	Maximum
Itiks/ Sea Urchins	4	0.026	2	0.026	Maximum
Plants/Berries					
Bakeapples	2	<0.01	2	0.01	Detection Limit
Black berries	1	<0.01	1	0.01	Detection Limit
Blue berries	1	<0.01	1	0.01	Detection Limit
Red berries	1	<0.01	1	0.01	Detection Limit
Tullegunnak	1	<0.01	1	0.01	Detection Limit

Notes:
Where a concentration was not detected in all samples, the detection limit was used.
In cases, where all data were less than the detection limits and multiple detection limits were applied, the maximum detection limit was used as the EPC.
Note that while moose, herring, and smelt samples were collected and analyzed for PCBs, no consumption rates were recorded for these food items in the food consumption study.

Table 3.3 Exposure Point Concentrations – Hopedale

Food Item	Sample Size (n)	Maximum Detected Value	Number of Non-Detects	EPC (mg/kg)	Reference
Mammals					
Moose	-	-	-	-	-
Caribou	-	-	-	-	-
Porpoise	-	-	-	-	-
Jumper/Dolphin Blubber	-	-	-	-	-
Jumper/Dolphin Meat	-	-	-	-	-
Snowshoe Hare/Okalik	5	0.22	0	0.22	Maximum
Seal Fat	-	-	-	-	-
Seal Liver	-	-	-	-	-
Seal Meat	-	-	-	-	-
Birds					
Duck/Turre/Teal/Piedbirds /Shellbirds	3	0.57	0	0.57	Maximum
Duck Eggs	-	-	-	-	-
Eider Duck	-	-	-	-	-

Food Item	Sample Size (n)	Maximum Detected Value	Number of Non-Detects	EPC (mg/kg)	Reference
Seagull Eggs	-	-	-	-	-
Goose	-	-	-	-	-
Partridge	-	-	-	-	-
Pigeon/Guillemot	-	-	-	-	-
Fish					
Rock Cod Meat	40	2.9	3	1.1	95% KM (Chebyshev) UCL
Rock Cod Liver	6	34	0	34	Maximum
Rock Cod Pitsik	8	3.6	0	3.6	Maximum
Rock Cod Siva	2	23	0	23	Maximum
Sculpin Meat	27	0.99	13	0.31	95% KM (t) UCL
Sculpin Liver	6	8.1	0	8.1	Maximum
Flatfish	10	8.1	0	4.5	95% Chebyshev (mean, sd) UCL
Salmon Meat	-	-	-	-	-
Trout	57	1.9	24	0.19	95% KM (Bootstrap) UCL
Trout Pitsik	2	0.078	0	0.078	Maximum
Herring	-	-	-	-	-
Capelin	-	-	-	-	-
Smelt	-	-	-	-	-
Char	9	0.3	0	0.3	Maximum
Clams	15	0.28	2	0.18	95% KM (Chebyshev) UCL
Mussels	6	0.25	0	0.25	Maximum
Wrinkles	4	1.6	0	1.6	Maximum
Itiks/ Sea Urchins	4	0.45	0	0.45	Maximum
Plants/Berries					
Bakeapples	6	0.14	5	0.14	Maximum
Black berries	4	<0.01	4	0.01	Detection Limit
Blue berries	4	<0.01	4	0.01	Detection Limit
Red berries	3	<0.01	3	0.01	Detection Limit
Tullegunnak	-	-	-	-	-

Notes:
"-" = no analytical data
Where no analytical data was available for Hopedale, background EPCs were used.
Where a concentration was not detected in all samples, the detection limit was used.
In cases, where all data were less than the detection limits and multiple detection limits were applied, the maximum detection limit was used as the EPC.

3.5.1.2 Country Food Consumption Rates

As discussed in Section 2.2, a food consumption survey was conducted in the Town of Hopedale by ESG in 2011. The Hopedale food survey included the interviewing of 198 participants.

Each respondent provided three different frequencies for country food consumption (*i.e.*, weekly, monthly, and yearly) and two time frames (*i.e.*, in-season and off-season). Therefore, in order to determine the ingestion rates for the various food items. Stantec converted the frequency to a yearly consumption rate (g/year) for each food item for each of the 198 respondents using the assumptions in Table 3.4 below. Consumption rates for each country food item, for each of the 198 survey participants (results anonymized) are presented in Appendix E.

Table 3.4 Assumptions of Food Survey Conversions

	Unit	In Season	Off Season
Weekly	Weeks	13	39
Monthly	Months	3	9
Yearly	Years	0.25	0.75

A sample calculation for the food consumption rate is provided in Appendix G.

3.6 Toxicity Assessment and Bioavailability

The toxicity assessment (also known as a hazard assessment) involves the selection of toxicity reference values (TRVs), also referred to as exposure limits, for each COPC. Toxicity is the potential for a chemical to produce any type of damage, permanent or temporary, to the structure or functioning of any part of the receptor's body. The toxicity of chemicals depends on the toxic potency of the chemical, the amount taken into the body (referred to as the "dose"), and the duration of exposure (*i.e.*, the length of time the receptor is exposed to the chemical). For each chemical, there is a specific dose and duration of exposure necessary to produce a toxic effect in a given receptor. This is referred to as the "dose-response relationship" of a chemical. The toxic potency of a chemical or metal is dependent on the inherent properties of the chemical itself (*i.e.*, its ability to cause a biochemical or physiological response at the site of action), as well as the ability of the chemical to reach the site of action. This dose-response principle is central to the risk assessment methodology.

3.6.1 Toxicity Reference Values

The definition or derivation of Toxicity Reference Values (TRVs) is the purview of national and international environmental regulatory agencies (*e.g.*, Health Canada, USEPA). The objective of the toxicity assessment is to identify the potential adverse health effects associated with each COPC as a consequence of chronic exposure. Using this knowledge, a Toxicity Reference Value (TRV) is generated, which defines the chronic daily dose of a COPC at or below which unacceptable adverse effects are not expected to occur. TRVs are specific to each COPC evaluated in the assessment and may also be route-specific (*e.g.*, ingestion versus inhalation).

TRVs used in this risk assessment were determined from studies where endpoints were derived from the administered or consumed dose, rather than the absorbed dose (*i.e.*, absorbed / retained concentration of contaminant in the organ or body). This is a conservative approach because compounds are often administered in a more available form than would be found in the environment and via an exposure route that may overestimate a real-world exposure scenario (*e.g.*, direct dosage vs. incidental ingestion).

Two distinct patterns of dose-response relationships have been observed: threshold behaviour and non-threshold behaviour. In the first pattern, threshold behaviour, a specific dose level can be identified, at or below which no adverse effects are observed. This dose, known as a No Observed Adverse Effects Level (NOAEL), adjusted by uncertainty factors, serves as the basis for many TRVs. Alternatively, if a NOAEL cannot be identified, a lowest observed adverse effects level (LOAEL), being the minimum dose at which (usually minor) adverse effects are observed, may be used to derive a TRV instead; the application of an extra uncertainty factor to a LOAEL is warranted when deriving a TRV, since the "safe" dose level below that LOAEL may not have been identified.

Many dose-response relationships, however, do not show threshold behaviour, and no NOAEL or LOAEL can be clearly identified. Such cases arise when studying carcinogenic effects of chemicals, and for these effects, it is not practical to propose a TRV based on the NOAEL/LOAEL approach, since no dose can be designated as having zero risk. For chemicals that induce cancer, a slope factor or unit risk factor is used as a TRV; usually based on statistical measures of incidence of, or mortality due to, cancer in cohorts of individuals exposed to the chemicals in question.

Health Canada has concluded that the toxic action of PCBs is best assessed with respect to non-cancer (*i.e.*, threshold) effects. The TRV selected for characterization of risks posed by consumption of country foods in the Hopedale community is termed a tolerable daily intake (TDI). The TDI is presented in Table 3.5.

Table 3.5 Selected Toxicity Value for PCBs

Substance	Route of Exposure	Tolerable Daily Intake (TDI) (mg/kg-day)	Toxicological Basis	Source Agency
PCBs	Ingestion	0.00013	No observed adverse effect level (NOAEL)for neurobehavioral effects due to fetal exposure in offspring of female rhesus monkeys in chronic feeding study	Health Canada (2010d)

3.6.2 Bioavailability

Bioavailability refers to the fraction of the total amount of material in contact with a body portal-of-entry (lung, gut, skin) that enters the blood. Relative bioavailability is the amount of a substance entering the blood via a particular route of exposure (*e.g.*, gastrointestinal) relative to the study used to derive the TRV. For instance, a relative bioavailability factor of 0.5 indicates that 50% of the administered (*e.g.*, ingested) COPC is absorbed into the bloodstream compared to the absorption in the study upon which the TRV is based. Relative bioavailabilities via ingestion and inhalation routes of exposure are conservatively assumed to be a factor of 1.0 (100%; Health Canada, 2010a). Therefore, this value was used in the calculations for this human health risk assessment.

3.7 Risk Characterization

Risk characterization is the final step in a risk assessment. The purpose of the risk characterization is to combine the results from the exposure assessment (Section 3.5) and the information of the toxicity assessment (Section 3.6) to estimate the potential risks to human health from the COPC evaluated. This section briefly summarizes the general approach to the risk characterization for PCBs. Limitations and conservative assumptions used in the assessment are also identified and discussed in order to provide perspective on the assessment results.

3.7.1 Approach

Risk characterization is essentially a comparison of the predicted human intake of a COPC to the TRV for that COPC. Chronic risk is assessed for the ingestion pathway of exposure.

In accordance with Health Canada guidance, non-carcinogenic and carcinogenic COPC are evaluated differently. Non-carcinogenic COPCs are assumed to act via a threshold mechanism.

The concept of hazard quotients is used to determine non-carcinogenic risk. The hazard quotient (HQ) represents the relationship (ratio) between the magnitude of exposure to the contaminant and the toxicity reference value (TRV). For risk characterization of non-carcinogenic COPCs, hazard quotients (HQs) are calculated for each chemical by deriving the chronic daily intakes (CDIs) of exposed receptors and weighing these against (dividing by) the respective TRVs, in this case the tolerable daiy intake (TDI). The calculation to determine a hazard quotient is shown.

Hazard Quotient Derivation

$$HQ = \frac{CDI}{TDI}$$

Where:

HQ = hazard quotient
CDI = chronic daily intake (mg/kg body weight-day)
TDI = tolerable daily intake (mg/kg body weight-day)

3.7.2 Risk Assessment Results

As mentioned in Section 3.1 and as will be further discussed in Section 4, a certain level of background exposure to PCBs is expected in the Hopedale area due to background concentrations of PCBs generally found across Northern Canada. For the purposes of this HHRA, hazard quotients were calculated from ingestion of food items collected within the vicinity of Hopedale (*i.e.*, food items containing PCBs considered to be associated with the former radar site). Hazard quotients were also calculated for foods collected from background areas outside Hopedale (*i.e.*, food items not considered to be associated with the Hopedale radar site and believed to represent background exposure).

Hazard quotients for Hopedale exposure and Background exposure were calculated for each individual in the food survey (*i.e.*, for each of the 198 participants) based on each exposure point concentration for that food item (Tables 3.2 and 3.3) and based on the individual's food consumption rate for that food item. Table 3.6 presents the maximum and the average hazard quotients for each food item from the food survey for the Hopedale and Background areas. The HQs for each food type have been provided for information purposes only. The purpose of presenting the HQs per food item is to help identify food items that contribute most significantly to exposure, and therefore, those foods that might best be the subject of short term avoidance.

Table 3.6 Summary of Average HQs Calculated For Each Food Item From the Background Area and Hopedale Area.

Food Item	Maximum HQ		Average HQ	
	Background	Hopedale	Background	Hopedale
Mammals				
Caribou Brain	0.07	0.07*	0.0006	0.0006*
Porpoise	7.7	7.7*	0.4	0.4*
Jumper/Dolphin Blubber	2.6	2.6*	0.06	0.06*
Jumper/Dolphin Meat	0.2	0.2*	0.01	0.01*
Snowshoe Hare/Okalik	4.0	5.9	0.05	0.08
Seal Fat	4.3	4.3*	0.08	0.08*
Seal Liver	0.3	0.3*	0.01	0.01*
Seal Meat	1.4	1.4*	0.03	0.03*

Food Item	Maximum HQ		Average HQ	
	Background	Hopedale	Background	Hopedale
Birds				
Duck/Turre/Teal/ Piedbirds/Shellbirds	6.8	11	0.2	0.3
Duck Eggs	0.9	0.9*	0.02	0.02*
Eider Duck	0.3	0.3*	0.01	0.01*
Seagull Eggs	21	21*	0.5	0.5*
Goose	0.2	0.2*	0.007	0.007*
Partridge	0.3	0.3*	0.01	0.01*
Pigeon/Guillemot	0.1	0.1*	0.002	0.002*
Fish				
Rock Cod Meat	0.3	7.7	0.03	0.7
Rock Cod Liver	1.0	164	0.02	3.2
Rock Cod Pitsik	0.09	13	0.0005	0.07
Rock Cod Siva	12	888	0.08	6.1
Sculpin Meat	4.1	1.4	0.04	0.01
Sculpin Liver	0.8	31	0.007	0.3
Flatfish	0.3	3.6	0.003	0.04
Salmon Meat	0.1	0.1	0.003	0.004
Trout	0.3	0.4	0.001	0.002
Trout Pitsik	-	0.3	-	0.001
Capelin	0.2	0.2*	0.003	0.003*
Char	0.8	4.7	0.05	0.3
Clams	0.5	6.2	0.006	0.08
Mussels	3.5	8.6	0.08	0.2
Winkles	0.5	13	0.02	0.5
Itiks/Sea Urchins	0.1	1.7	0.001	0.02
Plants/Berries				
Bakeapples	0.3	4.8	0.008	0.1
Black berries	0.2	0.2*	0.004	0.004*
Blue berries	0.08	0.08*	0.003	0.003*
Red berries	0.07	0.07*	0.004	0.004*
Tullegunnak	0.005	0.005*	0.0001	0.0001*

Notes:
Where no analytical data was available from Hopedale, the background EPC was used.
* - No concentrations were available for these biota in Hopedale Harbour. Therefore, the background concentration was used. It is noted that in certain cases, this may underestimate the actual concentration in certain biota in Hopedale Habour.

Note that the Maximum HQs in Table 3.6 are based on one individual who reported the greatest consumption of the specific food item. The Average HQ values better represent the overall exposures and risks posed to the Hopedale community as a whole. However, maximum values can prove valuable in helping to define risk management measures such as limiting intake of certain foods in order to exercise personal control of PCB exposures.

As shown in Table 3.6, the food items producing the highest average hazard quotients at the Background area include seagull eggs (HQ = 0.5), porpoise meat (HQ = 0.4), duck/turre/teal/pied birds/shell birds (HQ=0.2), seal fat (HQ = 0.08), and rock cod siva (HQ = 0.08). The food items producing the highest average hazard quotients at Hopedale include rock cod siva (HQ = 6.1), rock cod liver (HQ = 3.2), rock cod meat (HQ = 0.7), seagull eggs (HQ = 0.5), and wrinkles (HQ = 0.5).

Table 3.7 presents the average total HQ (*i.e.*, combining intakes of all food items) for the Background and Hopedale areas.

Table 3.7 Summary of Average Total HQs for the Background and Hopedale Areas

Range of Total HQs	Total number of respondents	Average Total HQ
Background		
<0.001 to 36	198	1.8
Hopedale		
<0.01 to 1106	198	13
Hopedale (omitting short horn sculpin and rock cod from Hopedale Harbour from diet)		
<0.01 to 61	198	3.0

As shown, the average total HQ is seven times higher when local food from Hopedale is consumed compared to when only background food is consumed.

Based on the HQs calculated in Table 3.7 as well as the consumption rates and concentrations detected in the food items, the hazard quotients for Hopedale were re-calculated omitting all shorthorn sculpin and rock cod food items (*i.e.*, muscle, liver, siva) collected in Hopedale Harbour from the diets of Hopedale residents. EPCs for background locations were substituted into these revised dose and HQ calculations. Table 3.7 compares the total HQs for the Background food consumption and the revised Hopedale food consumption (omitting rock cod and sculpin from Hopedale Harbour from the diet). Therefore, if residents of Hopedale wish to control their exposure to PCBs, they should be advised to limit their consumption of bottom-dwelling fish, particularly rock cod and sculpin, from Hopedale Harbour. Areas such as Tooktoosner Bay and Black Head Tickle, as well as other areas identified in Table 3.1 as background, are suitable alternate locations for obtaining these and other fish for human consumption.

As shown in Table 3.7, the average HQ for Hopedale decreases more than four-fold declining to near background levels, when rock cod and sculpin from Hopedale Harbour are excluded from the diet of Hopedale residents.

4.0 TRADITIONAL PREPARED FOODS

Based on correspondence with ESG, there was concern within the community that the preparation of certain country foods could concentrate PCBs thus causing increased exposure. ESG therefore processed certain samples collected in 2012 according to traditional food preparation methods. ESG reported the following methods of sample preparation to Stantec:

- Pitsik (dried fish): ESG prepared two types of pitsik, these being char pitsik and trout pitsik. ESG noted in their correspondence that the weather was not optimal when the pitsik was made so the fillets were still slightly wet when analyzed.
- Smoked char: ESG obtained fresh char from Nain, a community located approximately 150 km north of Hopedale, divided the fish into three sections and smoked two pieces using 1) berry bushes/sod obtained from BMEWS and Main Base, and 2) berry bushes/sod obtained from Nain. The third section was kept fresh to obtain the initial concentration of PCBs in these samples.
- Siva: Rock cod liver samples from Hopedale Harbour and Railroads (an area outside Hopedale) were mushed and fried to create a paste like substance called siva.

4.1 Pitsik

Table 4.1 compares the average concentration of PCBs in rock cod, trout, and Arctic char fresh muscle samples to the PCB concentrations in pitsik as prepared by ESG.

Table 4.1 Comparison of PCB concentrations in fresh muscle to pitsik.

	Fresh muscle (mg/kg)	Pitsik (mg/kg)
Rock cod (Hopedale Harbour)	0.6 (<005 to 2.9, n=40)	1.3 (0.18 to 3.6, n=8)
Trout (Big Lake)	0.1 (<0.01 to 1.9, n=57)	0.06 (0.051 to 0.078, n=2)
Arctic char (Hopedale Harbour)	0.02 (0.01 to 0.038, n=3)	0.05 (0.029 to 0.064, n=3)
Rock cod (Background)	<0.05 (<0.05, n=20)	0.02 (<0.01 to 0.026, n=5)

As shown, the average concentration of PCBs in rock cod pitsik from Hopedale Harbour is greater than the average concentration of PCBs in fresh rock cod muscle. For trout; however, the average concentration of PCBs is higher in fresh muscle than in pitsik. With these data sets, it is difficult to make conclusions as to whether drying the fish for pitsik caused an increase in concentrations of PCBs. Sample sizes for pitsik analysis are low and, based on information from ESG, the pitsik sample analysed was not from the same individual fish as the fresh muscle sample analysed. Given the variation in PCB concentrations in fish from the area, a direct comparison of fresh muscle and pitsik is difficult. Concentrations of PCBs were not detected in background rock cod muscle samples. The detection limit (0.05 mg/kg) for rock cod fresh muscle from Background (0.05 mg/kg), however, was higher than the average PCB concentration detected in rock cod pitsik (0.02 mg/kg) (*i.e*., a lower detection limit of 0.01 mg/kg was used for analysis of pitsik).

Based on information from ESG, the samples of Arctic char pitsik and fresh muscle were from the same fish. Therefore, a direct comparison of these samples can be conducted as shown in Table 4.2.

Table 4.2 Comparison of PCB concentrations in Arctic char fresh muscle and pitsik samples from Hopedale Harbour.

Sample	Fresh muscle concentration	Pitsik concentration
12-01777 (muscle) 12-01-778 (pitsik)	0.01	0.029
12-01779 (muscle) 12-01-780 (pitsik)	0.038	0.064
12-01781 (muscle) 12-01-782 (pitsik)	0.019	0.062

This data indicates that concentrations of PCBs increase in fish when dried as pitsik. A larger sample size of samples from the same organism would be required to confirm this.

Ingestion frequency information for trout pitsik and rock cod pitsik were provided to Stantec by ESG and were therefore evaluated in the HHRA with exposure point concentrations calculated for trout pitsik and rock cod pitsik as per Tables 3.2 and 3.3. No ingestion information was provided for Arctic char pitsik, so the pitsik was included in the Arctic char meat ingestion category (Tables 3.2 and 3.3).

4.2 Smoked Char

ESG obtained fresh char from Nain, a community located approximately 150 km north of Hopedale, split the fish into three sections and smoked two pieces using 1) berry bushes/sod obtained from BMEWS and Main Base, and 2) berry bushes/sod obtained from near the dump.

The third section was kept fresh to obtain the initial concentration of PCBs in these samples. Table 4.3 presents a comparison of PCB concentrations in the fresh char, the char smoked with berry bushes/sod from Nain, and char smoked with berry bushes/sod from the site (BMEWS and Main Base).

Table 4.3 PCB concentrations in fresh char and smoked char samples

Sample	PCB Concentration
Fresh char	0.026 (0.021 to 0.031, n=5)
Smoked char using Nain berry bushes/sod	0.019 (0.016 to 0.024, n=5)
Smoked char using site berry bushes/sod	2.6 (1.9 to 3.5, n=5)

As shown, the average concentration of PCBs in the char smoked with berry bushes/sod from the site was 100 times higher than the average concentration in the fresh char. Smoked char was discussed at the most recent Stakeholder Committee meeting on August 12, 2014. At the meeting, Stantec provided a map of Hopedale to Wayne Piercy, the mayor of Hopedale at that time, and requested that he indicate where residents were likely to collect berry bushes/sod for smoking. Stantec in consultation with ESG and NLDEC will provide feedback on areas that were safe for collection of berry bushes/sod to use for smoking fish once this map has been received from the Town of Hopedale.

4.3 Siva

Rock cod samples were collected from Hopedale Harbour and Railroads (an area outside of Hopedale). The livers were removed, mushed and fried to create a paste like substance called siva. Two siva samples were analysed for PCBs. Table 4.4 presents the PCB concentrations in the siva samples.

Table 4.4 Rock Cod Siva and Liver Samples

Area	PCB Concentration - Siva	PCB Concentration - Liver
Background	0.22 (0.14 to 0.3, n=2)	0.12 (<0.05 to 0.2, n=6)
Hopedale Harbour	18 (14 to 23, n=2)	20 (5.8 to 34, n=6)

Concentrations of PCBs in siva are similar to the concentrations in liver. Concentrations of PCBs are particularly elevated in liver and siva from rock cod in Hopedale Harbour. Ingestion frequency information for rock cod liver and siva were provided to Stantec by ESG and were therefore evaluated in the HHRA using the EPCs provided in Tables 3.2 and 3.3.

5.0 BACKGROUND PCBS

The primary source of PCBs in Northern Canada is transport from industrialized areas of the world via long range atmospheric transport and to a lesser degree via ocean currents and rivers (Muir *et al*., 1992; 1999; Van Oostdam *et al*., 1999; Macdonald *et al*., 2000; Braune *et al*., 2005). For this reason, PCBs may be found in areas of Northern Canada where they have never been used or released. It is therefore not surprising that PCBs were detected in country food samples collected from the Background areas outside of Hopedale as presented in Tables 3.2 and 3.3 as well as Table B.1 in Appendix B.

Because PCBs are lipophilic and resistant to biodegradation, they bioaccumulate and biomagnify in food chains. The highest concentrations are usually found in the adipose tissue of long-lived animals at higher trophic levels of the food chain. In Northern Canada, the highest accumulation of PCBs is in the fat tissues of marine mammals such as ringed seal and narwhal. Because a substantial portion of the diet of Aboriginal communities consists of country food, the exposure of residents of Northern communities consuming large amounts of traditional foods from the aquatic and marine environments is generally much higher than their Southern counterparts (Ayotte *et al*., 1997; Van Oostdam *et al*., 1999). The current adult TDI for PCBs is 0.13 µg/kg body wt./day (Health Canada, 2010a). The average total intake for PCBs in Hopedale was 1.7 µg/kg body wt./day while for Background, the average total intake was 0.23 µg/kg body wt./day. For comparison, the average dietary intake of PCBs for St. John's, NL was 0.00251 µg/kg body wt./day (Health Canada, 2001).

It has also been shown that Inuit women in some Canadian Arctic communities ingest quantities of PCBs and other organochlorine compounds from food that are greater than the TDI of 0.13 µg/kg body wt./day (Kuhnlein *et al*., 1995). Approximate intakes of PCBs for Baffin Inuit women (age 20-40, 41-60, and >60 years) were 0.71 mg/kg body wt./day, 0.76 mg/kg body wt./day, and 0.84 mg/kg body wt./day, respectively (assuming an average body weight of 63.1 kg (Richardson, 1997)). PCB concentrations in the breast milk of mothers from Northern regions have also been shown to be higher than that of non-Aboriginal mothers living in southern areas (Dewailly *et al*., 1989). Based on the 1989 data, the Inuit infant intake of total PCBs (as Aroclor1260) would be 13 µg/kg body wt./day. The developing fetus and breast-fed infants are likely the most sensitive to the effects of PCBs and are likely the human receptors at greatest risk in the Arctic (Van Oostdam *et al*., 1999)

5.1 Concentrations of PCBs in Labrador

The purpose of this section is to provide some data for comparison and context for the PCBs detected in background samples of biota and vegetation collected from areas outside of the immediate influence or impact by Hopedale PCB contamination. This brief review is not an exhaustive literature review of PCBs concentrations in the biota from Northern Canada, since such an undertaking was beyond the scope of work for the current project. This is a brief overview only, of selected studies that report PCB concentrations from various areas of Labrador

While long range transport of PCBs from industrialized areas is the primary source of PCBs in Northern areas, local sources do exist. PCBs were used in Northern Canada during the operation of military facilities such as DEW-Line, Pinetree-Line, and Polevault stations. As is the case with Hopedale and Saglek, the use of PCBs in transformers at these sites and the subsequent releases to the local environment has resulted in elevated concentrations of PCBs in soil, sediment, and biota in their immediate vicinity. Local sources are relatively small in the context of regionally distributed contamination (Macdonald *et al.*, 2000; Stow *et al.*, 2005). PCBs originating from local sources such as former military installations (*e.g.*, Distant Early Warning (DEW)-line stations, Polevault line stations), however, have been shown to create a halo of contamination around the site caused by short range transport (Macdonald *et al.*, 2000; Pier *et al.*, 2003; Stow *et al.*, 2005).

One particular site which has been extensively studied is Saglek, Labrador. Saglek is a former Polevault Line military station on the northeast coast of Labrador (approximately 225 km north of Nain and 600 km north of Happy Valley-Goose Bay) at the southern boundary of the Torngat Mountains National Park. Elevated concentrations of PCBs in soil were initially discovered in 1996 during an environmental site assessment (ESG, 1997). PCB contamination was believed to be a result of the abandonment and subsequent demolition of the facility. Since the initial discovery of PCBs at Saglek, several studies have been conducted to study the concentrations in marine and terrestrial biota from the area.

Because of the similarities between the Saglek area and the Hopedale area, Table 5.1 presents the Saglek data on concentrations of PCBs detected in sea urchins, clams, mussels, short horn sculpin, Arctic char, black guillemot, gull eggs, and ringed seals as reported by Kuzyk *et al.*, (2003; 2005) as well as the concentrations in shorthorn sculpin and black guillemot as reported by Brown *et al.*, (2009) and Johnson (2011).

Table 5.1 Concentrations of PCBs in Biota from Labrador

Biota	Concentrations of PCBs			Reference
Sea urchins	Saglek Zone 1	1999	5190 (1)	Kuzyk *et al.*, (2005)
	Saglek Zone 2		30 (5)	
	Saglek Zone 3		21 (1)	
	Saglek Zone 4		3.3 (1)	
	Hopedale	2009-2012	140 (4, 36-450)	Stantec (2009-2012) ESG (2012)
	Background	2009-2012	14 (5, 10-26)	Stantec (2009-2012) ESG (2012)

Biota	Concentrations of PCBs			Reference
Clams	Saglek Zone 1	1999	285 (1)	Kuzyk *et al.*, (2005)
	Saglek Zone 2		126 (11)	
	Saglek Zone 3		30 (2)	
	Hopedale	2009-2012	77 (14, 36-280)	Stantec (2009-2012) ESG (2012)
	Background	2009-2012	10 (6, 10-14)	Stantec (2009-2012) ESG (2012)
Mussels	Saglek Zone 3	1999	9 (2)	Kuzyk *et al.*, (2005)
	Hopedale	2009-2012	170 (6, 120-250)	Stantec (2009-2012) ESG (2012)
	Background	2009-2012	- (2, <50 - <100)	
Shorthorn sculpin liver	Saglek Beach/ Zone 1	1999	23900 (13)	Kuzyk *et al.*, (2005)
		2006	2940 (19)	Brown *et al.*, (2009)
	Zone 2	1999	536 (2)	Kuzyk *et al.*, (2005)
	Saglek Big Island/Zone 3	1999	188 (4)	Kuzyk *et al.*, (2005)
		2006	530 (8)	Brown *et al.*, (2009)
	Saglek Rose Island/Zone 4	1999	45 (7)	Kuzyk *et al.*, (2005)
		2007	17 (9)	Johnson (2011)
	Okak, Labrador	2009-2012	17 (4)	Kuzyk *et al.*, (2005)
	Hopedale, Labrador	2009-2012	1260 (6, 240-8100)	Stantec (2009-2012)
	Background Hopedale, Labrador	2009-2012	110 (6, <100-200)	Stantec (2009-2012) ESG (2012)

Notes:
All data are in ng/g wet weight
Date are geometric mean with sample size and range in parentheses.
At Saglek Zones 1, 2, 3 represent four concentric zones with radii of 1.5 km, 4.5 km, and 7.5 km which are centered on the contaminated beach which was the former PCB source. Zone 4 is outside the 7.5 km radius.
At Saglek, the Beach represents the most contaminated zone with the Islands and Big Island being the intermediate zones. Rose Island was considered the reference site.
∑PCBs from Kuzyk *et al.*, (2003) represent sum of 45 congeners
∑PCBs from Kuzyk *et al.*, (2005) represent 55 congeners
∑PCBs from Johnson (2011) represent 91 congeners
PCBs from Stantec (2009-2012) and ESG (2012) represent total PCBs

As shown, the concentrations of PCBs in sea urchins, clams, and sculpin at Hopedale Harbour are less than the 1999 and 2006 (available for sculpin) concentrations at the most contaminated area of Saglek (*i.e.*, Saglek Beach – Zone 1). For sculpin liver in Hopedale, the values in Table 5.1 are based on the Inner Harbour (PCBs = 3700 ng/g, 3300 ng/g, 8100 ng/g) and Outer Harbour (PCBs = 540 ng/g, 320 ng/g, 240 ng/g) (refer to Table B.1, Appendix B). The concentrations in sculpin livers from the Inner Harbour are comparable to the most recent concentrations detected in sculpin from Saglek (*i.e.*, 2006 - post remediation). Concentrations of PCBs in black guillemot from background areas in the vicinity of Hopedale are comparable to the reference area used for the Saglek study (Kuzyk *et al.*, 2003).

Concentrations of PCBs in Arctic char liver from Hopedale were lower than that detected at Okak, Labrador in 1999. Concentrations of PCBs in ringed seal, gull eggs, and black guillemot livers were also lower than detected at other sites in Labrador from Table 5.1. It should be noted that in the case of the Saglek study, concentrations of PCBs were measured in black guillemot nestlings and therefore may be higher than would be detected in adult guillemots due to the limited foraging range of the mother guillemot at that time.

6.0 BENEFITS OF TRADITIONAL FOOD CONSUMPTION

Although consumption of traditional foods in the North has been identified as the primary exposure pathway to contaminants such as PCBs, these foods are also nutritionally vital in the total diet of many rural indigenous peoples (Kuhnlein, 1995) and have been shown to result in increased intake of minerals such as iron and zinc and vitamins such as vitamins A and E (Van Oostdam *et al.*, 1999).

The non-nutritive benefits of traditional food consumption and sharing are also important considerations. The harvesting, sharing, and consumption of traditional foods are important for social, nutritional, spiritual, psychological, economic, and cultural reasons (Van Oostdam *et al.*, 2005: Donaldson *et al.*, 2010). Traditional food harvesting is therefore an integral component to good health among Aboriginal people which in turn, influences physical and social well-being (Van Oostdam *et al.*, 1999). Traditional foods are also an economic necessity for some individuals and communities (Van Oostdam *et al.*, 1999).

Weighing the benefits of country food consumption against the risk of contamination creates a challenging scenario for indigenous peoples as well as environmental health professionals. The benefit-risk management process involves the community and considers such factors as benefits and type and amounts of food consumed with the ultimate goal being to arrive at the most protective and least detrimental decision (Muir *et al.*, 2005). Generally, in the Arctic, the benefits of country food harvesting and consumption outweigh the risks associated with contaminants (Muir *et al.*, 2005).

7.0 CONCLUSIONS AND RECOMMENDATIONS

PCBs are found in areas of Northern Canada where they have never been used or released due primarily to long range atmospheric transport and to a lesser degree via ocean currents and rivers. Intakes of PCBs by Arctic residents, particularly those who consume large amounts of traditional foods from the aquatic and marine environments, may be considerably higher than intakes in the south.

Stantec has completed a human health risk assessment for consumption of country foods in the Town of Hopedale, NL. Based on the results of the human health risk assessment for country foods conducted herein, the average intake of PCBs from consuming local country foods from the Hopedale area is seven times greater than when only background foods collected outside of Hopedale are consumed. As discussed, a majority of the resulting potential risk stems from the consumption of bottom-dwelling fish, particularly rock cod and sculpin, from Hopedale Harbour. By eliminating the harvesting and consumption of these species from the Hopedale Harbour area, as was recommended in 2012 (Stantec, 2012) and communicated to the community in July 2012 (***e.g.***, stakeholder and public meetings), residents can decrease their PCB exposure more than four-fold (average HQ = 3.0).

Based on the HHRA conducted herein and as observed in other parts of Arctic Canada, elevated exposure to PCBs occurs in Hopedale through the consumption of country foods. That exposure is exacerbated with consumption of bottom fish, particularly rock cod and sculpin, from Hopedale Harbour. Avoidance of harbour foods and plants and berries growing within town limits should reduce PCB exposure in Hopedale residents to levels more consistent with intakes elsewhere across Canada's North.

7.1 Recommendations

Stantec provides the following conditions and recommendations:

- If residents of Hopedale wish to control their exposure to PCBs, they should be advised to limit their consumption of bottom-dwelling fish, particularly rock cod and sculpin, from Hopedale Harbour.
- An outright ban on fishing from Hopedale Harbour is not recommended, as this may adversely affect food security and nutrition for the community.
- Areas such as Tooktoosner Bay and Black Head Tickle as well as other areas identified in Table 3.1 as Background are suitable alternate locations for obtaining fish for human consumption.
- All final fish consumption recommendations and advice proposed for the Hopedale community should be formulated in close consultation with the Nunatsiavut Government.
- To ensure an ongoing cooperative association between Nunatsiavut Government, NLDEC and Stantec, every effort should be made to engage and incorporate Nunatsiavut Government participation in the delivery of recommendations to the Hopedale community.
- Fish and meats should not be smoked with wood, bushes, or other vegetation collected in areas known to be contaminated with PCBs.

8.0 CLOSURE

This report documents work that was performed in accordance with generally accepted professional standards at the time and location in which the services were provided. No other representations, warranties or guarantees are made concerning the accuracy or completeness of the data or conclusions contained within this report, including no assurance that this work has uncovered all potential liabilities associated with the identified property.

This report provides an evaluation of selected environmental conditions associated with the identified portion of the property that was assessed at the time the work was conducted and is based on information obtained by and/or provided to Stantec at that time. There are no assurances regarding the accuracy and completeness of this information. All information received from the client or third parties in the preparation of this report has been assumed by Stantec to be correct. Stantec assumes no responsibility for any deficiency or inaccuracy in information received from others.

The opinions in this report can only be relied upon as they relate to the condition of the portion of the identified property that was assessed at the time the work was conducted. Activities at the property subsequent to Stantec's assessment may have significantly altered the property's condition. Stantec cannot comment on other areas of the property that were not assessed.

Conclusions made within this report consist of Stantec's professional opinion as of the time of the writing of this report, and are based solely on the scope of work described in the report, the limited data available and the results of the work. They are not a certification of the property's environmental condition. This report should not be construed as legal advice.

This report has been prepared for the exclusive use of the client identified herein and any use by any third party is prohibited. Stantec assumes no responsibility for losses, damages, liabilities or claims, howsoever arising, from third party use of this report.

The locations of any utilities, buildings and structures, and property boundaries illustrated in or described within this report, if any, including pole lines, conduits, water mains, sewers and other surface or sub-surface utilities and structures are not guaranteed. Before starting work, the exact location of all such utilities and structures should be confirmed and Stantec assumes no liability for damage to them.

The conclusions are based on the site conditions encountered by Stantec at the time the work was performed at the specific testing and/or sampling locations, and conditions may vary among sampling locations. Factors such as areas of potential concern identified in previous studies, site conditions (*e.g.*, utilities) and cost may have constrained the sampling locations used in this assessment. In addition, analysis has been carried out for only a limited number of chemical parameters, and it should not be inferred that other chemical species are not present. Due to the nature of the investigation and the limited data available, Stantec does not warrant against undiscovered environmental liabilities nor that the sampling results are indicative of the condition of the entire site. As the purpose of this report is to identify site conditions which may pose an environmental risk; the identification of non-environmental risks to structures or people on the site is beyond the scope of this assessment.

Should additional information become available which differs significantly from our understanding of conditions presented in this report, Stantec specifically disclaims any responsibility to update the conclusions in this report.

This report was prepared by Kelly Johnson, Ph.D. and reviewed by Mark Richardson, Ph.D.

Respectfully submitted,

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9.0 REFERENCES

Ayotte, P., Dewailly, E., Ryan, J.J., Bruneau, S., and Lebel, G. 1997. PCBs and dioxin-like compounds in plasma of adult Inuit living in Nunavik (Arctic Quebec). Chemosphere 34: 5-7.

Braune, B.M., Outridge, P.M., Fisk, A.T., Muir, D.C.G., Helm, P.A., Hobbs, K., Hoekstra, P.F., Kuzyk. Z.A., Kwan, M., Letcher, R.J., Lockhart, W.L., Nortstrom, R.J., Stern, G.A., Stirlng, I. 2005. Persistent organic pollutants and mercury in marine biota of the Canadian Arctic: An overview of spatial and temporal trends. Science of the Total Environment 351-352: 4-56.

Brown, T.M., Sheldon, T.A., Burgess, N.M., Reimer, K.J. 2009. Reduction of PCB contamination in an Artic coastal environment: a first step in assessing ecosystem recovery after the removal of a point source. Environmental Science and Technology 43: 7635-7642.

Dewailly, E., Nantel, A., Weber, J.P., Meyer, F. 1989. High Levels of PCBs in Breast Milk of Inuit Women from Arctic Quebec. Bulletin of Environmental Contamination and Toxicology 43: 641-646.

Donaldson, S.G., Van Oostdam, J., Tikhonov, C., Feeley, M., Armstrong, B., Ayotte, P., Boucher, O., Bowers, W., Chan, L., Dallaire, F., Dallaire, R., Dewailly, E., Edwards, J., Egeland, G.M., Fontaine, J., Furgal, C., Leech, T., Loring, E., Muckle, G., Nancarrow, T., Pereg, D., Plusquellec, P., Potyrala, M., Receveur, O., and Shearer, R.G. 2010. Environmental Contaminant and human health in the Canadian Arctic. Science of the Total Environment 408: 5165-5234.

Environmental Sciences Group (ESG). 1997. Environmental Assessment of Saglek, Labrador (LAB-2). Royal Military College of Canada: Kingston ESG. 2012. Hopedale Country Food Sampling Program Information. Dated January 2013.

Health Canada. 2001. Canada Total Diet Study: St. John's, NL. http://hc-sc.gc.ca/fn-an/surveill/total-diet/intake-apport/index-eng.php Last accessed on October 30, 2014.

Health Canada. 2010a. Federal Contaminated Site Risk Assessment in Canada Part I: Guidance on Human Health Preliminary Quantitative Risk Assessment (PQRA), Version 2.0. Revised 2012. Health Canada, Ottawa.

Health Canada. 2010b. Federal Contaminated Site Risk Assessment in Canada Part V: Guidance on Human Health Detailed Quantitative Risk Assessment for Chemicals (DQRAChem). Health Canada, Ottawa.

Health Canada. 2010c. Federal Contaminated Site Risk Assessment in Canada: Supplemental Guidance on Human Health Risk Assessment for Country Foods (HHRAFoods). Health Canada, Ottawa.

Health Canada. 2010d. Federal Contaminated Site Risk Assessment in Canada Part II: Health Canada Toxicological Reference Values (TRVs) and Chemical-Specific Factors, Version 2.0. Health Canada, Ottawa.

Johnson, K.E. 2011. From Hazard Quotients to a Biomarker Based Weight of Evidence: Enhancing the Science in Ecological Risk Assessment. PhD Thesis. Memorial University of Newfoundland: St. John's, NL

Kuhnlein, H.V. Benefits and risks of traditional food for Indigenous Peoples: focus on dietary intakes of Arctic men. Canadian Journal of Physiology and Pharmacology 73: 765-771

Kuhnlein, H.V., Receveur, O., Muir, D.C.G., Chan, H.M., and Soueida, R. 1995. Arctic Indigenous Women consume greater than acceptable levels of organochlorines. The Journal of Nutrition 125:2501-2510.

Kuzyk, Z.A., Burgess, N.M., Stow, J.P., Fox, G.A. 2003. Biological effects of marine PCB contamination on black guillemot nestlings at Saglek, Labrador: liver biomarkers. Ecotoxicology 12: 183-197.

Kuzyk, Z.A., Stow, J.P., Burgess, N.M., Soloman, S.M., Reimer, K.J. 2005a. PCBs in sediments and the coastal food web near a local contaminant source in Saglek Bay, Labrador. Science of the Total Environment 351-352: 264-284.

Macdonald, R.W., Barrie, L.A., Bidleman, T.F., Diamond, M.L., Gregor, D.J., Semkin, R.G., Strachan, W.M.J., Li, Y.F., Wania, F., Alaee,.M., Alexeeva, L.B., Backus, S.M., Bailey, R., Bewers, J.M., Gobeil, C., Halsall, C.J., Harner, T., Hoff, J.T., Jantunen, L.M.M., Lockhart, W.L., Mackay, D., Muir, D.C.G., Pudykiewicz, J., Reimer, K.J., Smith, J.N., Stern, G.A., Shroeder, W.H., Wagemann, R., Yunker, M.B. 2000. Contaminants in the Canadian Arctic: 5 years of progress in understanding sources, occurrence and pathways. Science of the Total Environment 254: 93-234.Muir, D., Kwan, M., Lampe, J. 2000. Spatial trends and pathways of persistent organic pollutants and metals in fish, shellfish, and marine mammals of northern Labrador and Nunavik. In: Synopsis of research conducted under the 1999-2000 northern contaminants program. (Kalhok, S. ed.), Indian and Northern Affairs Canada: Ottawa. Pp. 191-201.

Muir, D.C.G, Wagemann, R., Hargrave, B.T., Thomas, D.J., Peakall, D.B., Norstrom, R.J. 1992. Arctic marine ecosystem contamination. Science of the Total Environment 122: 75-134.

Muir, D., Braune, B., DeMarch, B., Norstrom, R., Wageman, R., Lockhart, L. 1999. Spatial and temporal trends and effects of contaminants in the Canadian Arctic marine ecosystem: a review. Science of the Total Environment 230: 83-144.

Muir, D.C., Shearer, R.G., Van Oostdam, J., Donaldson, S.G., and Furgal, C. 2005. Contaminants in Canadain arctic biota and implications for human health: Conclusions and knowledge gaps. Science of the Total Environment 351-352: 539 – 546.

Pier, M.D., Betts-Piper, A.A., Knowlton, C.C., Zeeb, B.A., Reimer. K.J. 2003. Redistribution of polychlorinated biphenyls from a local point source: terrestrial soil, freshwater sediment, and vascular plants as indicators of the halo effect. Arctic, Antarctic, and Alpine Research 35: 349-360.

Richardson, G.M. 1997. Compendium of Canadian Human Exposure Factors for Risk Assessment. Published by O'Connor Associates Environmental Inc., Ottawa, Ontario.

Stantec. 2010. Phase II/III Environmental Site Assessment, Human Health and Ecological Risk Assessments, and Remedial Action/Risk Management Plan for the Former US Military Site and Residential Subdivision at Hopedale, Labrador. Stantec Report No. 121410103. Dated May 17, 2010.

Stantec. 2011. Marine Sediment and Biota Sampling, Hopedale, NL. Stantec Letter Report No. 121411170. Dated February 28, 2011.

Stantec. 2011. Additional Delineation and Risk Assessment Re-evaluation, Former U.S. Military Site and Residential Subdivision, Hopedale, NL. Stantec Project No. 121411170. February 28, 2011.

Stantec. 2011. Temporary Storage of PCB Impacted Soil and Metal, Former U.S. Military Site, Hopedale, NL. Stantec Project No. 121411777.200. November 23, 2011.

Stantec. 2012. Implementation of Remedial Action Plan – Year 1, Former U.S. Military Site and Residential Subdivision, Hopedale, Labrador. Stantec Project No. 121411777.200. April 30, 2012.

Stantec. 2012. Preliminary Human Health Risk Assessment Evaluation, Hopedale Harbour, Hopedale, NL. Stantec Letter Report No. 121411777. Dated July 6, 2012.

Stantec. 2012. Metal Disposal Options, Former U.S. Military Site, Hopedale, NL. Stantec Project No. 121411777.200. July 16, 2012.

Stantec. 2014. Freshwater and Marine Sampling in Support of the Marine Study – Years 2 and 3 for U.S. Military Site, Hopedale, NL. Stantec Project No. 121411777.610. April 16, 2014.

Stow, J.P., Stova, J., Reimer, K.J. 2005. The relative influence of distant and local (DEW-Line) PCB sources in the Arctic. Science of the Total Environment 342: 107-118.

United States Environmental Protection Agency (USEPA). 1989. Risk assessment guidance for superfund, Volume I. Human Health Evaluation Manual (Part A); EPA/540/1-89/002; US Environmental Protection Agency, Office of Emergency and Remedial Response; Washington, DC.

United States Environmental Protection Agency (USEPA). 2002. Calculating Upper Confidence Limits for Exposure Point Concentrations at Hazardous Waste Sites. Office of Emergency and Remedial Response. Washington, D.C. December 2002.

United States Environmental Protection Agency (USEPA). 2010. ProUCL Version 4.1. Users Guide (Draft). Statistical Software for Environmental Applications for Data Sets With and Without Nondetect Observations. Prepared by A. Singh, R. Maichle, and N. Armbya. May 2010.

Van Oostdam, J., Gilman, A., Dewailly, E., Usher, P., Wheatley, B., Kuhnlein, H., Neve, S., Walker, J., Tracy, B., Feeley, M., Jerome, V., and Kwavnick, B. 1999. Human health implications of environmental contaminants in Artic Canada: a review. The Science of the Total Environment 230: 1-82.

Van Oostdam, J., Donaldson, S.G., Feeley, M., Arnold, D., Ayotte, P., Bondy, G., Chan, L., Dewaily, E., Furgal, C.M., Kuhnlein, H., Loring, E., Muckle, G., Myles, E., Receveur, O., Tracy, B., Gill, U., and Kalhok, S. 2005. Human health implications of environmental contaminants in Arctic Canada: A review. Science of the Total Environment 351-352: 165-246.

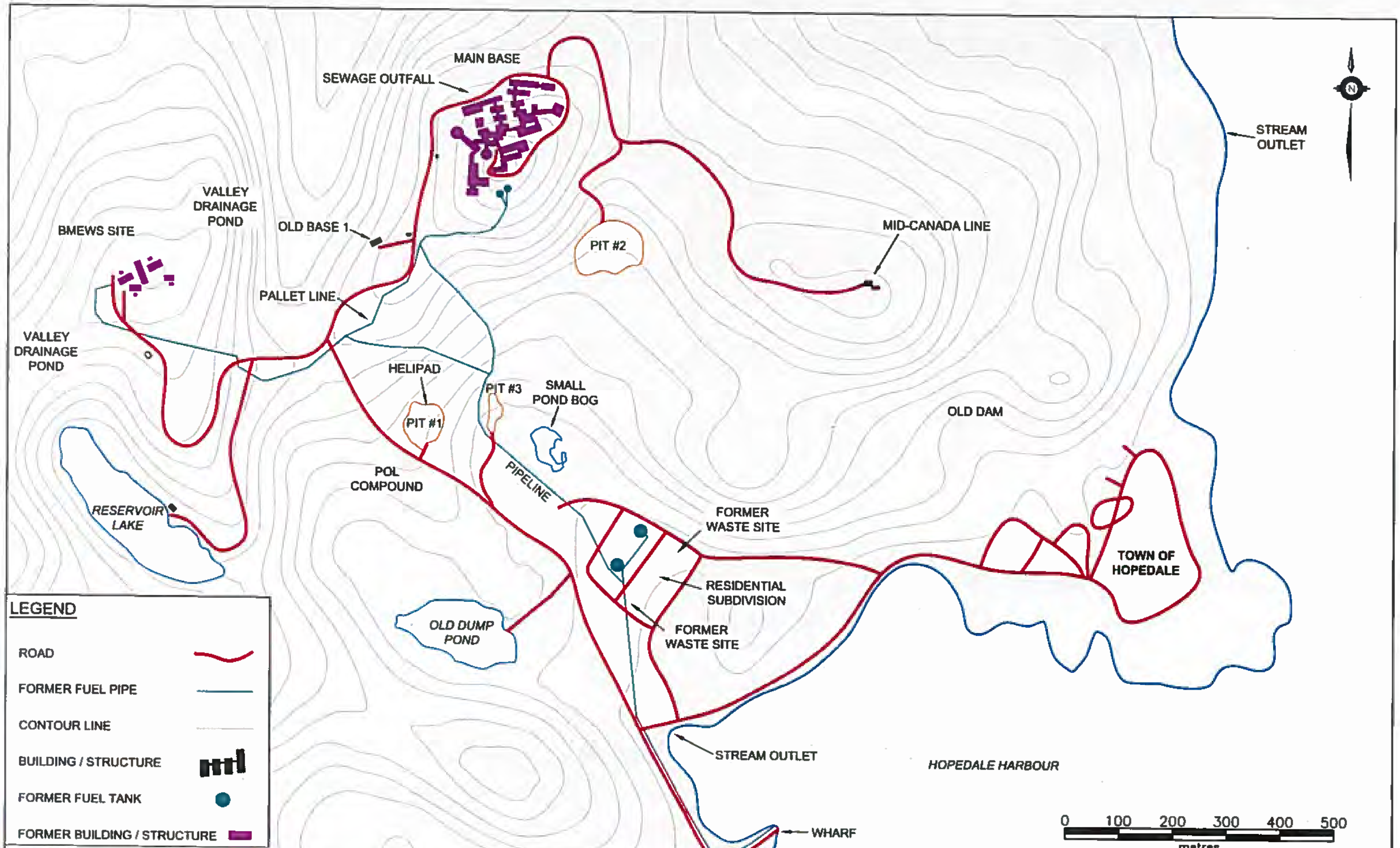
APPENDIX A

Drawings

NOTE: THIS DRAWING ILLUSTRATES SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LTD. REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

CLIENT: NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION	SCALE: 1:50,000	DATE: OCT. 27, 2014	REV. No. 0
	DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: K.J.
PROJECT TITLE: HUMAN HEALTH RISK ASSESSMENT FOR THE CONSUMPTION OF COUNTRY FOODS IN THE TOWN OF HOPEDALE, NL	DRAWING No: 121411777.310-EE-01	CAD FILE: 121413099_300-EE-01.DWG	
DRAWING TITLE: SITE LOCATION PLAN	Stantec		

27OCT14 3:00PM



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CLIENT:

NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:

HUMAN HEALTH RISK ASSESSMENT FOR THE CONSUMPTION OF COUNTRY FOODS IN THE TOWN OF HOPEDALE, NL

DRAWING TITLE:

SITE PLAN - FORMER HOPEDALE RADAR SITE

SCALE:	DATE:	REV. No.
1:10,000	OCT. 27, 2014	0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: K.J.
DRAWING No: 121411777.310-EE-02	CAD FILE: 121413099_300-EE-02.DWG	

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LEGEND

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NEWFOUNDLAND AND LABRADOR DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:

HUMAN HEALTH RISK ASSESSMENT FOR THE CONSUMPTION OF COUNTRY FOODS IN THE TOWN OF HOPEDALE, NL

DRAWING TITLE:

COUNTRY FOOD SAMPLE LOCATIONS

Stantec Consulting Ltd.

SCALE: 1:200,000	DATE: OCT. 27, 2014	REV No. 0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: K.J.
DRAWING No: 121411777.310-EE-03	CAD FILE: 121413099_300-EE-01.DWG	

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CLIENT:
NEWFOUNDLAND AND LABRADOR
DEPARTMENT OF ENVIRONMENT AND CONSERVATION

PROJECT TITLE:
HUMAN HEALTH RISK ASSESSMENT FOR THE CONSUMPTION OF COUNTRY FOODS IN THE TOWN OF HOPEDALE, NL

DRAWING TITLE:
COUNTRY FOOD SAMPLE LOCATIONS

SCALE:	DATE:	REV. No.
1:50,000	OCT. 27, 2014	0
DRAWN BY: N.M.	EDITED BY: -	CHECKED BY: K.J.
DRAWING No: 121411777.310-EE-04	CAD FILE: 121413099_300-EE-04.DWG	

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APPENDIX B

Analytical Summary Table

Table B.1 Results of Laboratory Analysis of PCBs in Mammals
Human Health Risk Assessment for the Consumption of Country Foods in the Town of Hopedale
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment
12-01-206	01/07/2012	Udjutok Bay Outside Hopedale	Moose	Muscle	N/A	0.80	0.50	<0.010	0.01	-
12-01-388	01/07/2012	Outside Hopedale (Utjutook Bay)	Caribou	Brain	N/A	18.00	0.50	<0.010	0.01	-
12-01-365	01/07/2012	Monuels Island	Porpoise	Muttak	12-01 366	54.00	0.5	1.2	0.01	Aroclor 1260
12-01-366	01/07/2012	Monuels Island	Porpoise	Muscle	12-01 365	5.60	0.5	0.047	0.01	Aroclor 1260
12-01 369	01/11/2012	Paradise	Porpoise	Muttak	Unknown	-	-	0.72	0.01	Aroclor 1260
12-01-370	01/07/2012	Paradise	Porpoise	Muscle	Unknown	0.80	0.50	<0.010	0.01	-
12-01-371	01/07/2012	Paradise	Porpoise	Muscle	Unknown	1.30	0.5	0.036	0.01	Aroclor 1260
12-01-372	01/07/2012	Paradise	Porpoise	Muttak	Unknown	77.00	0.5	1.2	0.01	Aroclor 1260
12-01-373	01/07/2012	Paradise	Porpoise	Muscle	Unknown	0.70	0.50	0.021	0.01	Aroclor 1260
12-01-373 Lab-Dup	01/07/2012	Paradise	Porpoise	Muscle	Unknown	-	-	0.022	0.01	-
12-01-374	01/07/2012	Paradise	Porpoise	Muttak	Unknown	68.00	0.5	<0.20	0.2	Elevated PCB RDL due to matrix / co-extractive interference.
12-01-401	01/07/2012	Zackarias	Porpoise	Muttak	Unknown	53.00	0.5	5.3	0.01	Aroclor 1254, 1260
12-01-402	01/07/2012	Zackarias	Porpoise	Muttak	Unknown	77.00	1.2	2.9	0.01	Aroclor 1254, 1260
12-01-403	01/07/2012	Zackarias	Porpoise	Muttak	Unknown	83.00	1.2	1.3	0.01	Aroclor 1254, 1260
12-01-363	01/07/2012	Zackarias	Porpoise	Muscle	12-01 364	1.20	0.6	0.11	0.01	Aroclor 1260
12-01-364	01/07/2012	Zackarias	Porpoise	Muttak	12-01 363	-	-	1.0	0.01	Aroclor 1260
12-01-404	01/07/2012	Zackarias	Porpoise	Muscle	Unknown	0.90	0.50	0.11	0.01	Aroclor 1260
12-01-405	01/07/2012	Zackarias	Porpoise	Muscle	Unknown	1.10	0.5	0.043	0.01	Aroclor 1260
12-01-406	01/07/2012	Zackarias	Porpoise	Muscle	Unknown	3.30	0.5	0.085	0.01	Aroclor 1260
12-01-379	01/07/2012	Hopedale Run	Porpoise	Muscle	12-01 380	0.70	0.50	0.098	0.01	Aroclor 1260
12-01-380	01/07/2012	Hopedale Run	Porpoise	Muttak	12-01 379	89.00	0.9	0.88	0.01	Aroclor 1260
12-01 810	01/10/2012	Hopedale Run	Porpoise	Fat	Unknown	-	-	0.46	0.01	Aroclor 1260
12-01 729	01/10/2012	Hopedale Run	Porpoise	Fat	Unknown	-	-	0.84	0.01	Aroclor 1260
12-01 706	01/10/2012	Hopedale Run	Porpoise	Muscle	Unknown	-	-	0.018	0.01	Aroclor 1260
12-01 707	01/10/2012	Hopedale Run	Porpoise	Fat	Unknown	-	-	0.64	0.01	Aroclor 1260
12-01 730	01/09/2012	Hopedale Run	Jumper	Fat	12-01 322	-	-	0.59	0.01	Aroclor 1260
12-01 320	01/10/2012	Hopedale Run	Jumper	Muscle	12-01 705	-	-	0.068	0.01	Aroclor 1260
12-01 705	01/10/2012	Hopedale Run	Jumper	Fat	12-01 320	-	-	0.54	0.01	Aroclor 1260
12-01 322	01/10/2012	Hopedale Run	Jumper	Muscle	12-01 730	-	-	0.060	0.01	Aroclor 1260
12-01 731	01/10/2012	Harbour Deep	Okalik	Liver	12-01 732	-	-	<0.010	0.01	-
12-01 731 Lab-Dup	01/10/2012	Harbour Deep	Okalik	Liver	12-01 732	-	-	<0.010	0.01	-
12-01 732	01/10/2012	Harbour Deep	Okalik	Muscle	12-01 731	-	-	<0.010	0.01	-
Exposure Hare#1	2009	Hopedale Site	Okalik	Liver		3.31	0.5	0.216	-	
Exposure Hare#2	2009	Hopedale Site	Okalik	Muscle		2.90	0.5	0.0028	-	
Exposure Hare #2	2009	Hopedale Site	Okalik	Liver		4.26	0.5	0.00493	-	
Backgound Hare#3	2009	Background	Okalik	Muscle		35.80	0.5	0.00493	-	
Background Hare#4	2009	Background	Okalik	Muscle		5.12	0.5	0.146	-	
Background Hare#5	2009	Background	Okalik	Muscle		2.40	0.5	0.00993	-	
Rabbit-1	2009	Hopedale Site	Okalik	Muscle		1.30	0.5	0.09	0.05	
Rabbit-1	2009	Hopedale Site	Okalik	Liver		2.30	0.5	0.16	0.05	
12-01-394	01/07/2012	Big Bay	Jar Seal	Liver	12-01 395	1.40	0.5	0.041	0.01	Aroclor 1260
12-01-394 Lab-Dup	01/07/2012	Big Bay	Jar Seal	Liver	12-01 395	1.50	0.5	0.042	0.01	-
12-01-395	01/07/2012	Big Bay	Jar Seal	Muscle	12-01 394	<0.50	0.5	<0.010	0.01	-
12-01-396	01/07/2012	Big Bay	Jar Seal	Fat	12-01 395	90.00	1.1	0.29	0.01	Aroclor 1260
12-01 327	01/10/2012	Outside Hopedale	Seal	Liver	Unknown	-	-	0.016	0.01	Aroclor 1260
12-01 323	01/10/2012	Outside Hopedale	Seal	Fat	Unknown	-	-	0.085	0.01	Aroclor 1260
12-01 325	01/09/2012	Outside Hopedale	Seal	Muscle	Unknown	-	-	<0.010	0.01	-
12-01 328	01/10/2012	Outside Hopedale	Seal	Liver	Unknown	-	-	0.019	0.01	Aroclor 1260
12-01 324	01/10/2012	Outside Hopedale	Seal	Fat	Unknown	-	-	0.066	0.01	Aroclor 1260
12-01 326	01/09/2012	Outside Hopedale	Seal	Muscle	Unknown	-	-	0.017	0.01	Aroclor 1260
12-01-397	01/07/2012	Big Bay	Ranger Seal	Fat	12-01 398	85.00	1	<0.20	0.2	PCB surrogate not within acceptance limits. Analysis was repeated with similar results. Elevated PCB RDL due to matrix / co-extractive interference.
12-01-398	01/07/2012	Big Bay	Ranger Seal	Muscle	12-01 397	3.60	0.6	0.035	0.01	Aroclor 1260
12-01-398 Lab-Dup	01/07/2012	Big Bay	Ranger Seal	Muscle	12-01 397	-	-	0.034	0.01	-
12-01-399	01/07/2012	Big Bay	Ranger Seal	Fat	12-01 400	94.00	1.1	0.079	0.01	Aroclor 1260
12-01-399 Lab-Dup	01/07/2012	Big Bay	Ranger Seal	Fat	12-01 400	94.00	1.1	-	-	-
12-01-400	01/07/2012	Big Bay	Ranger Seal	Muscle	12-01 399	2.40	0.5	0.023	0.01	Aroclor 1260
12-01-407	01/07/2012	Zackarias	Ranger Seal	Heart	12-01 409	0.70	0.50	0.041	0.01	Aroclor 1260
12-01-408	01/07/2012	Zackarias	Ranger Seal	Liver	12-01 409	0.80	0.60	0.064	0.01	Aroclor 1260
12-01-409	01/07/2012	Zackarias	Ranger Seal	Muscle	12-01 408	0.90	0.50	0.019	0.01	Aroclor 1260
12-01-410	01/07/2012	Zackarias	Ranger Seal	Fat	12-01 409	81.00	1	0.49	0.01	Aroclor 1260
12-01-410 Lab-Dup	01/07/2012	Zackarias	Ranger Seal	Fat	12-01 409	64.00	1	-	-	-

Notes:
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not applicable

Table B.2 Results of Laboratory Analysis of PCBs in Birds
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
12-01-354	01/07/2012	Gull Island	Duck Egg	Whole	-	14.00	0.50	0.027	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-354 Lab-Dup	01/07/2012	Gull Island	Duck Egg	Whole	-	12.00	2.5	-	-	-	Boiled for ten-fiteen minutes, shell removed	-
12-01-355	01/07/2012	Gull Island	Duck Egg	Whole	-	20.00	0.5	0.025	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-356	01/07/2012	Gull Island	Duck Egg	Whole	-	7.90	0.5	0.023	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-357	01/07/2012	Gull Island	Gull Egg	Whole	-	3.40	0.5	0.43	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-358	01/07/2012	Gull Island	Gull Egg	Whole	-	3.60	0.5	0.15	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-359	01/07/2012	Gull Island	Gull Egg	Whole	-	5.40	0.5	0.67	0.01	Aroclor 1260	Boiled for ten-fiteen minutes, shell removed	-
12-01-127	01/07/2012	Outside Hopedale	Duck	Muscle	N/A	1.30	0.5	0.026	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-128	01/07/2012	Outside Hopedale	Duck	Muscle	12-01 129	1.50	0.5	0.019	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-129	01/07/2012	Outside Hopedale	Duck	Liver	12-01 128	1.70	0.5	0.021	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-245	01/07/2012	Outside Hopedale	Duck	Muscle	12-01 246	4.80	0.5	0.07	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-246	01/07/2012	Outside Hopedale	Duck	Liver	12-01 245	2.90	0.5	0.020	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-247	01/07/2012	Outside Hopedale	Duck	Muscle	12-01 248	1.80	0.5	0.057	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-248	01/07/2012	Outside Hopedale	Duck	Liver	12-01 247	2.60	0.5	0.062	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-263	01/07/2012	Outside Hopedale	Duck	Muscle	N/A	2.50	0.5	0.25	0.01	Aroclor 1260	Leg muscle	Type of duck unknowr
12-01-264	01/07/2012	Outside Hopedale	Duck	Muscle	N/A	2.90	0.5	0.064	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-299	01/07/2012	Outside Hopedale	Duck	Liver	N/A	3.30	1.90	0.021	0.01	Aroclor 1260	-	Type of duck unknowr
12-01-384	01/07/2012	Outside Hopedale	Eider Duck	Liver	12-01 385	3.50	0.80	<0.010	0.01	-	-	-
12-01-385	01/07/2012	Outside Hopedale	Eider Duck	Muscle	12-01 384	1.30	0.5	<0.010	0.01	-	-	-
12-01-386	01/07/2012	Outside Hopedale	Eider Duck	Liver	12-01 387	1.80	0.5	0.019	0.01	Aroclor 1260	-	-
12-01-387	01/07/2012	Outside Hopedale	Eider Duck	Muscle	12-01 386	0.80	0.5	0.054	0.01	Aroclor 1260	-	-
12-01 715	01/10/2012	Umiattugiak	Eider Duck	Liver	-	-	-	0.035	0.01	Aroclor 1260	-	Muscle samples not sent to lab in error
12-01 716	01/10/2012	Umiattugiak	Eider Duck	Liver	-	-	-	0.020	0.01	Aroclor 1260	-	Muscle samples not sent to lab in error
12-01 717	01/10/2012	Umiattugiak	Eider Duck	Liver	-	-	-	0.048	0.01	Aroclor 1260	-	Muscle samples not sent to lab in error
12-01 701	01/10/2012	Hopedale Point	Eider Duck	Muscle	12-01 702	-	-	0.034	0.01	Aroclor 1260	-	-
12-01 702	01/10/2012	Hopedale Point	Eider Duck	Liver	12-01 701	-	-	0.013	0.01	Aroclor 1260	-	-
12-01 703	01/10/2012	Hopedale Point	Eider Duck	Muscle	12-01 704	-	-	0.075	0.01	Aroclor 1260	-	-
12-01 704	01/10/2012	Hopedale Point	Eider Duck	Liver	12-01 703	-	-	0.022	0.01	Aroclor 1260	-	-
12-01-153	01/07/2012	Outside Hopedale	Goose	Muscle	N/A	12.00	0.50	<0.010	0.01	-	Leg Bone	-
12-01-153 Lab-Dup	01/07/2012	Outside Hopedale	Goose	Muscle	N/A	-	-	<0.010	0.01	-	Leg Bone	-
12-01-249	01/07/2012	Outside Hopedale	Goose	Muscle	12-01 265	4.10	0.50	<0.010	0.01	-	Leg muscle	-
12-01-265	01/07/2012	Outside Hopedale	Goose	Liver	12-01 249	2.10	0.50	<0.010	0.01	-	-	-
12-01-114	01/07/2012	NCO Pond	Shellbird	Muscle	12-01 115	0.80	0.60	0.57	0.01	Aroclor 1260	-	-
12-01-115	01/07/2012	NCO Pond	Shellbird	Liver	12-01 114	3.60	1.3	0.15	0.01	Aroclor 1260	-	-
12-01-200	01/07/2012	Outside Hopedale	Shellbird	Muscle	12-01 201	3.60	0.5	0.020	0.01	Aroclor 1260	-	-
12-01-201	01/07/2012	Outside Hopedale	Shellbird	Liver	12-01 200	3.40	0.5	0.016	0.01	Aroclor 1260	-	-
12-01-202	01/07/2012	Outside Hopedale	Shellbird	Liver	12-01 203	1.00	0.60	<0.010	0.01	-	-	-
12-01-203	01/07/2012	Outside Hopedale	Shellbird	Muscle	12-01 202	1.30	0.7	0.029	0.01	Aroclor 1260	-	-
12-01-290	01/07/2012	NCO Pond	Shellbird	Muscle	N/A	1.20	0.50	0.54	0.01	Aroclor 1260	-	-

Table B.2 Results of Laboratory Analysis of PCBs in Birds
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
12-01-290 Lab-Dup	01/07/2012	NCO Pond	Shellbird	Muscle	N/A	-	-	0.25	0.05	Duplicate: results are outside acceptance limit. Analysis was repeated with similar results.	-	-
12-01-204	01/07/2012	Outside Hopedale	White Partridge	Muscle	12-01 205	1.40	0.5	<0.010	0.01	-	-	-
12-01-205	01/07/2012	Outside Hopedale	White Partridge	Liver	12-01 204	4.80	4	<0.010	0.01	-	-	-
12-01-208	01/07/2012	Outside Hopedale	Spruce Partridge	Muscle	12-01 210	0.50	0.50	<0.010	0.01	-	-	-
12-01-208 Lab-Dup	01/07/2012	Outside Hopedale	Spruce Partridge	Muscle	12-01 210	0.60	0.50	-	-	-	-	-
12-01-210	01/07/2012	Outside Hopedale	Spruce Partridge	Liver	12- 01208	-	-	<0.010	0.01	-	-	-
12-01-213	01/07/2012	Outside Hopedale	Spruce Partridge	Liver	12-01 214	1.70	0.5	0.012	0.01	Aroclor 1260	-	-
12-01-214	01/07/2012	Outside Hopedale	Spruce Partridge	Muscle	12-01 213	1.00	0.5	<0.010	0.01	-	-	-
12-01-211	01/07/2012	Outside Hopedale	Turr	Muscle	12-01 211	1.60	0.5	0.037	0.01	Aroclor 1260	-	-
12-01-212	01/07/2012	Outside Hopedale	Turr	Liver	12-01 212	4.50	1	0.16	0.01	Aroclor 1260	-	-
12-01-212 Lab-Dup	01/07/2012	Outside Hopedale	Turr	Liver	12-01 212	3.50	0.8	-	-	-	-	-
12-01-389	01/07/2012	Outside Hopedale	Turr	Liver	12-01 390	4.10	0.6	0.20	0.01	Aroclor 1260	-	-
12-01-390	01/07/2012	Outside Hopedale	Turr	Muscle	12-01 389	9.50	0.5	0.76	0.01	Aroclor 1260	-	-
12-01 720	01/10/2012	Barge Island	Young Pigeon	Muscle	Unknown	-	-	<0.010	0.01	-	-	-
12-01 721	01/10/2012	Barge Island	Young Pigeon	Muscle	Unknown	-	-	0.021	0.01	Aroclor 1260	-	-
12-01 718	01/10/2012	Barge Island	Young Pigeon	Liver	Unknown	-	-	0.031	0.01	Aroclor 1260	-	-
12-01 719	01/10/2012	Barge Island	Young Pigeon	Liver	Unknown	-	-	0.013	0.01	Aroclor 1260	-	-
12-01-207	01/07/2012	Outside Hopedale	Pigeon	Muscle	12-01 209	5.00	0.7	0.061	0.01	Aroclor 1260	-	-
12-01-209	01/07/2012	Outside Hopedale	Pigeon	Liver	12-01 207	2.70	0.5	0.023	0.01	Aroclor 1260	-	-
12-01-216	01/07/2012	Outside Hopedale	Pigeon	Liver	12-01 217	1.00	0.50	0.012	0.01	Aroclor 1260	-	-
12-01-217	01/07/2012	Outside Hopedale	Pigeon	Muscle	12-01 216	12.00	0.9	0.057	0.01	Aroclor 1260	-	-
12-01-467	01/07/2012	Black Heads	Pigeon	Liver	12-01 482	3.10	0.90	0.040	0.01	Aroclor 1260	-	-
12-01-482	01/07/2012	Black Heads	Pigeon	Muscle	12-01 467	3.20	0.5	0.033	0.01	Aroclor 1260	-	-
12-01-487	01/07/2012	Okalik Island	Pigeon	Liver	12-01 494	4.20	0.5	0.017	0.01	Aroclor 1260	Composite	-
12-01-494	01/07/2012	Okalik Island	Pigeon	Muscle	12-01 487	4.90	0.5	0.034	0.01	Aroclor 1260	Composite	-
12-01 490	01/10/2012	South Tip of Black Heads	Pigeon	Liver	-	-	-	0.019	0.01	Aroclor 1260	Composite (01 490- 01 493)	-
12-01 490 Lab-Dup	01/10/2012	South Tip of Black Heads	Pigeon	Liver	-	-	-	0.018	0.01	-	Composite (01 490- 01 493)	-
12-01 497	01/10/2012	South Tip of Black Heads	Pigeon	Muscle	12-01 490	-	-	0.029	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 490
12-01 498	01/10/2012	South Tip of Black Heads	Pigeon	Muscle	12-01 490	-	-	0.035	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 490
12-01 498 Lab-Dup	01/09/2012	South Tip of Black Heads	Pigeon	Muscle	12-01 490	-	-	0.038	0.01	-	-	Livers consolidated in sample 12-01 490
12-01 499	01/10/2012	South Tip of Black Heads	Pigeon	Muscle	12-01 490	-	-	0.055	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 490
12-01 500	01/11/2012	South Tip of Black Heads	Pigeon	Muscle	12-01 490	-	-	0.036	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 490

Notes:
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not applicable

Table B.3 Results of Laboratory Analysis of PCBs in Berries
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
12-BA 1	01/09/2012	Outside Hopedale	Bakeapples	Whole	-	-	-	<0.010	0.01	Aroclor 1260	-	-
12-BA 2	01/10/2012	Outside Hopedals	Bakeapples	Whole	-	-	-	<0.010	0.01	Aroclor 1260	-	-
12-01-138	01/07/2012	Basehill Gulch	Bakeapples	Whole	-	<0.50	0.5	<0.010	0.01	-	-	-
12-01-274	01/07/2012	BMEWS Hill North Side	Bakeapples	Whole	-	<0.50	0.5	<0.010	0.01	-	-	-
12-01-275	01/07/2012	BMEWS Hill North Side	Bakeapples	Whole	-	0.70	0.5	0.14	0.01	Aroclor 1260	-	-
12-01-276	01/07/2012	BMEWS Hill North Side	Bakeapples	Whole	-	<0.50	0.5	<0.010	0.01	-	-	-
12-01-277	01/07/2012	BMEWS Hill North Side	Bakeapples	Whole	-	<0.90	0.9	<0.010	0.01	-	-	-
12-01-289	01/07/2012	NCO Pond Island	Bakeapples	Whole	-	0.90	0.50	<0.010	0.01	-	-	-
12-01-289 Lab-Dup	01/07/2012	NCO Pond Island	Bakeapples	Whole	-	0.60	0.50	<0.010	0.01	-	-	-
12-01 501	01/10/2012	Black Heads Cove (upstream by the pond)	Blackberries	Whole	-	-	-	<0.010	0.01	-	Not washed	GPS Location: 675115, 6151317
12-01 486	01/10/2012	Base (back hill of main base)	Blackberries	Whole	-	-	-	<0.010	0.01	-	Not Washed	-
12-01 479	01/10/2012	Base (back hill of main base)	Blackberries	Whole	-	-	-	<0.010	0.01	-	Not washed	-
12-01 502	01/10/2012	Black Heads Cove (upstream by the pond)	Blueberries	Whole	-	-	-	<0.010	0.01	-	Not Washed	GPS Location: 675115, 6151317
12-01-140	01/07/2012	Basehill North Side	Blackberries	Whole	-	<0.50	0.50	<0.010	0.01	-	-	-
12-01-281	01/07/2012	BMEWS Hill North side	Blackberries	Whole	-	-	-	<0.010	0.01	-	Composite	-
12-01-139	01/07/2012	Basehill North Side	Blueberries	Whole	-	<0.50	0.50	<0.010	0.01	-	-	-
12-01-278	01/07/2012	BMEWS Hill North Side	Blueberries	Whole	-	0.50	0.50	<0.010	0.01	-	Composite	-
12-01 480	01/10/2012	Base (back hill of main base)	Blueberries	Whole	-	-	-	<0.010	0.01	-	Not Washed	-
12-01-484	01/10/2012	Base (back hill of main base)	Blueberries	Whole	-	-	-	<0.010	0.01	-	Not washed	-
12-01 503	01/10/2012	Black Heads Cove (upstream by the pond)	Red Berries	Whole	-	-	-	<0.010	0.01	Aroclor 1260	Not Washed	GPS Location: 675115, 6151317
12-01 485	01/10/2012	Base (back hill of main base)	Red Berries	Whole	-	-	-	<0.010	0.01	Aroclor 1260	Not Washed	-
12-01 481	01/09/2012	Base (back hill of main base)	Red Berries	Whole	-	-	-	<0.010	0.01	Aroclor 1260	Not Washed	-
12-01-141	01/07/2012	Basehill North Side	Red Berries	Whole	-	<0.50	0.50	<0.010	0.01	-	-	-
12-01-360	01/07/2012	South Side of Black Heads	Tullignak	Leaves		1.50	0.6	<0.010	0.01	-	-	-

Notes:
RDL = Reportable Detection Limit
Lab-Dup = Laboratory Initiated Duplicate
N/A = Not applicable

Table B.4 Results of Laboratory Analysis of PCBs in Fish
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
12-01-101	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	1.90	0.6	3.6	0.01	Aroclor 1260	Skin on - dried meat	White spots seen in the flesh of the muschle
12-01-102	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	0.90	0.60	0.60	0.01	Aroclor 1260	Skin on - dried meat	White spots seen in the flesh of the muschle
12-01-103	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	0.70	0.50	0.97	0.01	Aroclor 1260	Skin on - dried meat	White spots seen in the flesh of the muschle
12-01-103 Lab-Dup	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	-	-	1.0	0.01	-	Skin on - dried meat	White spots seen in the flesh of the muschle
12-01-104	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	<0.50	0.5	0.68	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-105	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	1.90	0.5	0.18	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-106	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	0.60	0.50	2.2	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-107	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	<0.50	0.5	1.3	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-108	01/07/2012	Hopedale Harbour	Rock Cod	Pitsik	-	1.20	0.5	0.70	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-109	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	1.60	0.5	<0.010	0.01	-	Skin on - dried meat	-
12-01-110	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	1.80	0.6	0.026	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-111	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	1.30	0.6	0.012	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-111 Lab-Dup	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	-	-	0.013	0.01	-	Skin on - dried meat	-
12-01-112	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	1.20	0.5	<0.010	0.01	-	Skin on - dried meat	-
12-01-113	01/07/2012	Outside Hopedale	Rock Cod	Pitsik	-	0.70	0.50	0.026	0.01	Aroclor 1260	Skin on - dried meat	-
12-01-285	01/07/2012	Hopedale Harbour	Rock Cod	Siva	-	24.00	0.9	23	0.01	Aroclor 1260	-	-
12-01-286	01/07/2012	Hopedale Harbour	Rock Cod	Siva	-	25.00	0.7	14	0.01	Aroclor 1260	-	-
12-01 344	01/10/2012	Inner Harbour Hopedale	Rock Cod	Muscle	N/A	-	-	0.22	0.01	Aroclor 1260	White spots in flesh of meat	-
12-01-287	01/07/2012	Railroads	Rock Cod	Siva	-	41.00	0.5	0.30	0.01	Aroclor 1260	-	-
12-01-288	01/07/2012	Railroads	Rock Cod	Siva	-	33.00	0.7	0.14	0.01	Aroclor 1260	-	-
AREA 2 FISH 4	2010	Inner Hopedale Harbour	Rock cod	muscle		1.50		1.6	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 4 Lab-Dup	2010	Inner Hopedale Harbour	Rock cod	muscle		-		1.9	0.05	-		Stantec Sample
AREA 2 FISH 5	2010	Inner Hopedale Harbour	Rock cod	muscle		2.10		1	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 6	2010	Inner Hopedale Harbour	Rock cod	muscle		1.00		1.4	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 7	2010	Inner Hopedale Harbour	Rock cod	muscle		1.60		0.81	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 8	2010	Inner Hopedale Harbour	Rock cod	muscle		2.30		0.92	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 9	2010	Inner Hopedale Harbour	Rock cod	muscle		1.40		2.1	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 10	2010	Inner Hopedale Harbour	Rock cod	muscle		1.60		0.09	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 11	2010	Inner Hopedale Harbour	Rock cod	muscle		3.30		0.11	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 12	2010	Inner Hopedale Harbour	Rock cod	muscle		1.30		1.5	0.05	Aroclor 1260		Stantec Sample
AREA 2 FISH 13	2010	Inner Hopedale Harbour	Rock cod	muscle		2.70		2.9	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 8	2010	Inner Hopedale Harbour	Rock cod	muscle		nd		0.29	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 8 Lab-Dup	2010	Inner Hopedale Harbour	Rock cod	muscle		nd		-	0.05	-		Stantec Sample
AREA 3 FISH 9	2010	Inner Hopedale Harbour	Rock cod	muscle		0.60		0.48	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 10	2010	Inner Hopedale Harbour	Rock cod	muscle		0.80		1.7	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 11	2010	Inner Hopedale Harbour	Rock cod	muscle		nd		0.22	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 12	2010	Inner Hopedale Harbour	Rock cod	muscle		0.60		0.4	0.3	Aroclor 1260		Stantec Sample
AREA 3 FISH 13	2010	Inner Hopedale Harbour	Rock cod	muscle		0.50		0.16	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 13 Lab-Dup	2010	Inner Hopedale Harbour	Rock cod	muscle		-		0.21	0.05	-		Stantec Sample
AREA 4 FISH 1	2010	Inner Hopedale Harbour	Rock cod	muscle		2.30		0.27	0.05	Aroclor 1260		Stantec Sample
AREA 4 FISH 2	2010	Inner Hopedale Harbour	Rock cod	muscle		0.70		nd	0.05	-		Stantec Sample
AREA 4 FISH 3	2010	Inner Hopedale Harbour	Rock cod	muscle		2.70		1.5	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH1	2011	Inner Hopedale Harbour	Rock cod	muscle		1.10		nd	0.05	-		Stantec Sample
11-ROCKCOD-IH2	2011	Inner Hopedale Harbour	Rock cod	muscle		nd		0.1	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH3	2011	Inner Hopedale Harbour	Rock cod	muscle		0.50		0.32	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH4	2011	Inner Hopedale Harbour	Rock cod	muscle		0.60		0.72	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH5	2011	Inner Hopedale Harbour	Rock cod	muscle		0.50		0.1	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH6	2011	Inner Hopedale Harbour	Rock cod	muscle		0.70		0.19	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH7	2011	Inner Hopedale Harbour	Rock cod	muscle		nd		0.11	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH7 Lab-Dup	2011	Inner Hopedale Harbour	Rock cod	muscle		0.50		-	0.05	-		Stantec Sample
11-ROCKCOD-IH8	2011	Inner Hopedale Harbour	Rock cod	muscle		nd		0.45	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH9	2011	Inner Hopedale Harbour	Rock cod	muscle		nd		0.27	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH10	2011	Inner Hopedale Harbour	Rock cod	muscle		0.60		0.37	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-IH10 Lab-Dup	2011	Inner Hopedale Harbour	Rock cod	muscle		-		0.29	0.05	-		Stantec Sample
11-ROCKCOD LIVER-IH1	2011	Inner Hopedale Harbour	Rock cod	liver		43.00		20	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-IH2	2011	Inner Hopedale Harbour	Rock cod	liver		37.00		34	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-IH3	2011	Inner Hopedale Harbour	Rock cod	liver		35.00		26	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-IH3 Lab-Dup	2011	Inner Hopedale Harbour	Rock cod	liver		33.00		26	0.05	-		Stantec Sample
11-ROCKCOD-OH1	2011	Outer Hopedale Harbour	Rock cod	muscle		0.50		0.2	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH1 Lab-Dup	2011	Outer Hopedale Harbour	Rock cod	muscle		-		0.21	0.05	-		Stantec Sample
11-ROCKCOD-OH2	2011	Outer Hopedale Harbour	Rock cod	muscle		0.60		0.15	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH3	2011	Outer Hopedale Harbour	Rock cod	muscle		0.70		1.1	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH4	2011	Outer Hopedale Harbour	Rock cod	muscle		0.70		0.51	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH5	2011	Outer Hopedale Harbour	Rock cod	muscle		nd		0.11	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH6	2011	Outer Hopedale Harbour	Rock cod	muscle		0.60		0.88	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH7	2011	Outer Hopedale Harbour	Rock cod	muscle		nd		0.06	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH8	2011	Outer Hopedale Harbour	Rock cod	muscle		0.70		0.09	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-OH9	2011	Outer Hopedale Harbour	Rock cod	muscle		0.60		nd	0.05	-		Stantec Sample
11-ROCKCOD-OH10	2011	Outer Hopedale Harbour	Rock cod	muscle		0.80		0.08	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-OH1	2011	Outer Hopedale Harbour	Rock cod	liver		22.00		16	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-OH2	2011	Outer Hopedale Harbour	Rock cod	liver		35.00		21	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-OH3	2011	Outer Hopedale Harbour	Rock cod	liver		32.00		5.8	0.05	Aroclor 1260		Stantec Sample
11-ROCKCOD-BHT1	2011	Blackhead Tickle	Rock cod	muscle		0.50		nd	0.05			Stantec Sample
11-ROCKCOD-BHT2	2011	Blackhead Tickle	Rock cod	muscle		0.50		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT2 Lab-Dup	2011	Blackhead Tickle	Rock cod	muscle		-		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT3	2011	Blackhead Tickle	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT4	2011	Blackhead Tickle	Rock cod	muscle		0.50		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT5	2011	Blackhead Tickle	Rock cod	muscle		0.60		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT6	2011	Blackhead Tickle	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT7	2011	Blackhead Tickle	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT8	2011	Blackhead Tickle	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT9	2011	Blackhead Tickle	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-BHT10	2011	Blackhead Tickle	Rock cod	muscle		0.50		nd	0.05	-		Stantec Sample
11-ROCKCOD LIVER-BHT1	2011	Blackhead Tickle	Rock cod	liver		35.00		0.1	0.1	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-BHT2	2011	Blackhead Tickle	Rock cod	liver		32.00		nd	0.1	-		Stantec Sample
11-ROCKCOD LIVER-BHT3	2011	Blackhead Tickle	Rock cod	liver		29.00		nd	0.1	-		Stantec Sample
11-ROCKCOD LIVER-BHT3 Lab-Dup	2011	Blackhead Tickle	Rock cod	liver		35.00		-	0.05	-		Stantec Sample
11-ROCKCOD-TB1	2011	Tooktoosner Bay	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB2	2011	Tooktoosner Bay	Rock cod	muscle		1.60		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB2 Lab-Dup	2011	Tooktoosner Bay	Rock cod	muscle		-		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB3	2011	Tooktoosner Bay	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB4	2011	Tooktoosner Bay	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB5	2011	Tooktoosner Bay	Rock cod	muscle		1.00		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB6	2011	Tooktoosner Bay	Rock cod	muscle		0.50		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB7	2011	Tooktoosner Bay	Rock cod	muscle		1.50		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB8	2011	Tooktoosner Bay	Rock cod	muscle		0.50		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB9	2011	Tooktoosner Bay	Rock cod	muscle		nd		nd	0.05	-		Stantec Sample
11-ROCKCOD-TB10	2011	Tooktoosner Bay	Rock cod	muscle		1.10		nd	0.05	-		Stantec Sample
11-ROCKCOD LIVER-TB1	2011	Tooktoosner Bay	Rock cod	liver		42.00		0.2	0.1	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-TB2	2011	Tooktoosner Bay	Rock cod	liver		41.00		0.1	0.1	Aroclor 1260		Stantec Sample
11-ROCKCOD LIVER-TB2 Lab-Dup	2011	Tooktoosner Bay	Rock cod	liver		40.00		-		-		Stantec Sample
11-ROCKCOD LIVER-TB3	2011	Tooktoosner Bay	Rock cod	liver		39.00		0.2	0.1	Aroclor 1260		Stantec Sample
12-01-219	01/07/2012	Hopedale Point	Flatfish	Muscle	12-01 220	1.10	0.6	<0.010	0.01	-	-	-
12-01-220	01/07/2012	Hopedale Point	Flatfish	Liver	12-01 219, 12-01 21	-	-	0.21	0.01	Aroclor 1260	Composite	Composite (12-01 220, 222)
12-01-221	01/07/2012	Hopedale Point	Flatfish	Muscle	12-01 220	1.10	0.7	0.39	0.01	Aroclor 1260	-	-
12-01-223	01/07/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	1.10	0.8	0.59	0.01	Aroclor 1260	-	-
12-01-224	01/07/2012	Hopedale Harbour	Flatfish	Liver	12-01 223, 12-01 231-237, 272	15.00	1	8.1	0.01	Aroclor 1260	Composite	Composite (12-01 224 - 230, 273)
12-01-231	01/07/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	0.70	0.5	0.16	0.01	Aroclor 1260	-	-
12-01-233	01/07/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	1.30	0.5	0.13	0.01	Aroclor 1260	-	-
12-01-234	01/07/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	0.70	0.5	0.18	0.01	Aroclor 1260	-	-
12-01-272	01/07/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	1.00	0.5	0.2	0.01	Aroclor 1260	-	-
12-01 232	01/10/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	-	-	0.38	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 224
12-01 236	01/10/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	-	-	0.12	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 224
12-01 237	01/10/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	-	-	0.52	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 224
12-01 235	01/10/2012	Hopedale Harbour	Flatfish	Muscle	12-01 224	-	-	0.29	0.01	Aroclor 1260	-	Livers consolidated in sample 12-01 224
12-01-330	01/07/2012	Hopedale Point	Salmon	Muscle	Unknown	6.50	0.5	<0.010	0.01	-	-	-
12-01-331	01/07/2012	Hopedale Point	Salmon	Muscle	Unknown	7.60	0.5	0.015	0.01	Aroclor 1260	-	-
12-01-332	01/07/2012	Hopedale Point	Salmon	Muscle	Unknown	4.30	0.5	0.036	0.01	Aroclor 1260	-	-
12-01-333	01/07/2012	Hopedale Point	Salmon	Muscle	Unknown	7.10	0.5	0.022	0.01	Aroclor 1260	-	-
12-01-334	01/07/2012	Hopedale Point	Salmon	Muscle	Unknown	2.40	0.5	0.014	0.01	Aroclor 1260	-	-
12-01-450	01/07/2012	Hopedale Point	Salmon	Liver	Unknown	4.70	0.6	0.020	0.01	Aroclor 1260	-	-
12-01-451	01/07/2012	Hopedale Point	Salmon	Liver	Unknown	1.30	0.5	<0.010	0.01	-	-	-
12-01-452	01/07/2012	Hopedale Point	Salmon	Liver	Unknown	2.50	0.5	<0.010	0.01	-	-	-
12-01-453	01/07/2012	Hopedale Point	Salmon	Liver	Unknown	2.00	0.5	<0.010	0.01	-	-	-
12-01-454	01/07/2012	Hopedale Point	Salmon	Liver	Unknown	5.30	0.5	<0.010	0.01	-	-	-
12-01 300	01/10/2012	Neksarsoak Cove	Salmon	Muscle	N/A	-	-	0.019	0.01	Aroclor 1260	-	-
12-01 300 Lab-Dup	01/10/2012	Neksarsoak Cove	Salmon	Muscle	N/A	-	-	0.015	0.01	-	-	-
12-01 828	01/10/2012	Neksarsoak Cove	Salmon	Muscle	N/A	-	-	0.016	0.01	Aroclor 1260	-	-
12-01-116	01/07/2012	NCO Pond	Brook Trout	Whole	-	3.00	0.5	0.039	0.01	Aroclor 1260	Whole - bones in	-
12-01-117	01/07/2012	NCO Pond	Brook Trout	Whole	-	1.10	0.5	0.038	0.01	Aroclor 1260	Whole - bones in	-
12-01-118	01/07/2012	NCO Pond	Brook Trout	Whole	-	0.90	0.5	0.046	0.01	Aroclor 1260	Whole - bones in	-
12-01-119	01/07/2012	NCO Pond	Brook Trout	Whole	-	2.90	0.5	0.035	0.01	Aroclor 1260	Whole - bones in	-
12-01-120	01/07/2012	NCO Pond	Brook Trout	Whole	-	1.50	0.5	0.054	0.01	Aroclor 1260	Whole - bones in	-
12-01-121	01/07/2012	NCO Pond	Brook Trout	Whole	-	1.50	0.5	0.043	0.01	Aroclor 1260	Whole - bones in	-
12-01-122	01/07/2012	NCO Pond	Brook Trout	Whole	-	2.00	0.5	0.034	0.01	Aroclor 1260	Whole - bones in	-
12-01-123	01/07/2012	NCO Pond	Brook Trout	Whole	-	1.30	0.5	<0.010	0.01	-	Whole - bones in	-
12-01-124	01/07/2012	NCO Pond	Brook Trout	Whole	-	1.10	0.5	0.038	0.01	Aroclor 1260	Whole - bones in	-
12-01-284	01/07/2012	NCO Pond	Brook Trout	Whole	-	3.30		0.058	0.01	Aroclor 1260	Whole - bones in	-
12-01-291	01/07/2012	NCO Pond	Brook Trout	Pitsik	-	2.40	0.5	0.078	0.01	Aroclor 1260	Dried meat	-
12-01-292	01/07/2012	NCO Pond	Brook Trout	Pitsik	-	2.10	0.5	0.051	0.01	Aroclor 1260	Dried meat	-
FISH-10	2009	Big Lake	Brook Trout	Whole		5.50	0.5	0.06	0.05			Stantec Sample
FISH-10 Lab-Dup	2009	Big Lake	Brook Trout	Whole		-	0.5	0.06	0.05			Stantec Sample
FISH-11	2009	Big Lake	Brook Trout	Whole		5.40	0.5	<0.050	0.05			Stantec Sample
Big Lake - Fish1	2010	Big Lake	Brook Trout	Whole		7.50	0.5	<0.3	0.3			Stantec Sample
Big Lake - Fish2	2010	Big Lake	Brook Trout	Whole		4.90	0.5	0.4	0.05			Stantec Sample
Big Lake - Fish3	2010	Big Lake	Brook Trout	Whole		8.00	0.5	0.6	0.05			Stantec Sample
Big Lake - Fish4	2010	Big Lake	Brook Trout	Whole		2.60	0.5	1.9	0.05			Stantec Sample
20120923NET1A	2012	Big Lake	Brook Trout	Muscle				0.11	0.05	Aroclor 1260		Stantec Sample
20120923NET1B	2012	Big Lake	Brook Trout	Muscle				0.088	0.05	Aroclor 1260		Stantec Sample
20120924NET1A	2012	Big Lake	Brook Trout	Muscle				0.12	0.05	Aroclor 1260		Stantec Sample
20120923NET2A	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120923NET2B	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120923NET2C	2012	Big Lake	Brook Trout	Muscle				0.056	0.05	Aroclor 1260		Stantec Sample
20120923NET2D	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120923NET2E	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120924NET2A	2012	Big Lake	Brook Trout	Muscle				0.088	0.05	Aroclor 1260		Stantec Sample
20120924NET2B	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120923NET3A	2012	Big Lake	Brook Trout	Muscle				0.056	0.05	Aroclor 1260		Stantec Sample
20120923NET3B	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120923NET3C	2012	Big Lake	Brook Trout	Muscle				0.19	0.05	Aroclor 1260		Stantec Sample
20120924NET3A	2012	Big Lake	Brook Trout	Muscle				0.35	0.05	Aroclor 1260		Stantec Sample
20120924NET3B	2012	Big Lake	Brook Trout	Muscle				0.18	0.05	Aroclor 1260		Stantec Sample

Table B.4 Results of Laboratory Analysis of PCBs in Fish
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
20120924NET3C	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120924NET3D	2012	Big Lake	Brook Trout	Muscle				0.067	0.05	Aroclor 1260		Stantec Sample
20120924NET3E	2012	Big Lake	Brook Trout	Muscle				0.071	0.05	Aroclor 1260		Stantec Sample
20120924NET3F	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120924NET3F Lab-Dup	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120924NET3G	2012	Big Lake	Brook Trout	Muscle				<0.050	0.05			Stantec Sample
20120924NET3H	2012	Big Lake	Brook Trout	Muscle				0.061	0.05	Aroclor 1260		Stantec Sample
2012092424NET3LIVERBIG	2012	Big Lake	Brook Trout	Liver				0.17	0.05	Aroclor 1260		Stantec Sample
2012092424NET123LIVER	2012	Big Lake	Brook Trout	Liver				<0.050	0.05			Stantec Sample
20130922BROOKA-WHOLE	2013	Big Lake	Brook Trout	Whole		2.50		<0.050	0.05			Stantec Sample
20130922BROOKA-WHOLE Lab-Dup	2013	Big Lake	Brook Trout	Whole		2.40		-	-			Stantec Sample
20130922BROOKB-WHOLE	2013	Big Lake	Brook Trout	Whole		2.00		<0.050	0.05			Stantec Sample
20130922BROOKC-WHOLE	2013	Big Lake	Brook Trout	Whole		4.40		<0.050	0.05			Stantec Sample
20130922BROOKC-WHOLE Lab-Dup	2013	Big Lake	Brook Trout	Whole		3.90		<0.050	0.05			Stantec Sample
20130922NET4A-WHOLE	2013	Big Lake	Brook Trout	Whole		2.80		<0.050	0.05			Stantec Sample
20130922NET4B-WHOLE	2013	Big Lake	Brook Trout	Whole		3.60		<0.050	0.05			Stantec Sample
20130923NET4E-WHOLE	2013	Big Lake	Brook Trout	Whole		2.00		<0.050	0.05			Stantec Sample
20130923NET4F-WHOLE	2013	Big Lake	Brook Trout	Whole		3.30		<0.050	0.05			Stantec Sample
20130923NET5B-WHOLE	2013	Big Lake	Brook Trout	Whole		8.40		<0.050	0.05			Stantec Sample
20130922NET4C-FILLET	2013	Big Lake	Brook Trout	Muscle		7.40		0.12	0.05	Aroclor 1260.		Stantec Sample
20130923NET4E-FILLET	2013	Big Lake	Brook Trout	Muscle		3.30		0.18	0.05	Aroclor 1260.		Stantec Sample
20130922NET5A-FILLET	2013	Big Lake	Brook Trout	Muscle		2.70		<0.050	0.05			Stantec Sample
20130923NET5C-FILLET	2013	Big Lake	Brook Trout	Muscle		6.20		0.08	0.05	Aroclor 1260.		Stantec Sample
20130923NET5E-FILLET	2013	Big Lake	Brook Trout	Muscle		1.90		0.33	0.05	Aroclor 1260.		Stantec Sample
20130922NET6A-FILLET	2013	Big Lake	Brook Trout	Muscle		5.20		0.24	0.05	Aroclor 1260.		Stantec Sample
20130922NET6B-FILLET	2013	Big Lake	Brook Trout	Muscle		5.30		0.12	0.05	Aroclor 1260.		Stantec Sample
20130923NET6C-FILLET	2013	Big Lake	Brook Trout	Muscle		3.80		<0.050	0.05			Stantec Sample
20130923NET6D-FILLET	2013	Big Lake	Brook Trout	Muscle		2.90		<0.050	0.05			Stantec Sample
20130923NET6F-FILLET	2013	Big Lake	Brook Trout	Muscle		3.30		0.062	0.05	Aroclor 1260.		Stantec Sample
20130924NET7A-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		11.00		<0.050	0.05			Stantec Sample
20130924NET7A-FILLET Lab-Dup	2013	Ussiranniak Lake	Brook Trout	Muscle		-		<0.050	0.05			Stantec Sample
20130924NET7B-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		5.10		<0.050	0.05			Stantec Sample
20130924NET7C-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		6.60		<0.050	0.05			Stantec Sample
20130924NET7D-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		6.20		<0.050	0.05			Stantec Sample
20130924NET8A-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		9.80		0.11	0.05	Aroclor 1260.		Stantec Sample
20130924NET8B-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		4.40		<0.050	0.05			Stantec Sample
20130924NET8B-FILLET Lab-Dup	2013	Ussiranniak Lake	Brook Trout	Muscle		5.10		<0.050	0.05			Stantec Sample
20130924NET8C-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		2.90		<0.050	0.05			Stantec Sample
20130924NET9A-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		9.60		<0.050	0.05			Stantec Sample
20130924NET9B-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		2.40		<0.050	0.05			Stantec Sample
20130924NET9C-FILLET	2013	Ussiranniak Lake	Brook Trout	Muscle		3.00		<0.050	0.05			Stantec Sample
20130924NET7I-LIVER	2013	Ussiranniak Lake	Brook Trout	Liver		6.90		<0.050	0.05			Stantec Sample
20130924NET8G-LIVER	2013	Ussiranniak Lake	Brook Trout	Liver		8.30		0.071	0.05	Aroclor 1260.		Stantec Sample
20130924NET9G-LIVER	2013	Ussiranniak Lake	Brook Trout	Liver		-		<0.050	0.05			Stantec Sample
12-01-243	01/07/2012	Hopedale Point	Herring	Liver	-	2.50	0.9	<0.010	0.01	-	-	Recorded as liver - but actually whole sample
12-01-244	01/07/2012	Hopedale Point	Herring	Muscle	-	12.00	0.5	0.013	0.01	Aroclor 1260	-	Recorded as muscle - but actually whole sample
12-01-375	01/07/2012	Black Heads	Capelin	Muscle	-	1.20	0.5	<0.010	0.01	-	-	-
12-01-376	01/07/2012	Black Heads	Capelin	Muscle	-	2.20	0.5	<0.010	0.01	-	-	-
12-01-367	01/07/2012	Big Bay Neck	Trout	Muscle	N/A	6.20	0.5	<0.010	0.01	-	-	-
12-01-368	01/07/2012	Big Bay Neck	Trout	Muscle	N/A	8.50	0.5	0.032	0.01	Aroclor 1260	-	-
12-01-215	01/07/2012	Udjutok Outside Hopedale	Smelts	Muscle	-	2.70	0.5	<0.010	0.01	-	Gutted	Recorded as muscle - but actually whole sample
20120923NET3D	2012	Big Lake	Arctic Char	Muscle				0.072	0.05	Aroclor 1260		Stantec Sample
20120923NET3D Lab-Dup	2012	Big Lake	Arctic Char	Muscle				0.066	0.05			Stantec Sample
20130922NET4D-FILLET	2012	Big Lake	Arctic Char	Muscle		11.00		0.3	0.05	Aroclor 1260.		Stantec Sample
20130923NET5D-FILLET	2012	Big Lake	Arctic Char	Muscle		11.00		0.13	0.05	Aroclor 1260.		Stantec Sample
20130924NET7E-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		11.00		<0.050	0.05			Stantec Sample
20130924NET7F-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		11.00		<0.050	0.05			Stantec Sample
20130924NET7G-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		4.20		<0.050	0.05			Stantec Sample
20130924NET7H-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		1.40		<0.050	0.05			Stantec Sample
20130924NET8D-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		11.00		<0.050	0.05			Stantec Sample
20130924NET8E-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		6.70		<0.050	0.05			Stantec Sample
20130924NET8F-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		2.30		<0.050	0.05			Stantec Sample
20130924NET9D-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		12.00		<0.050	0.05			Stantec Sample
20130924NET9E-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		12.00		<0.050	0.05			Stantec Sample
20130924NET9F-FILLET	2013	Ussiranniak Lake	Arctic Char	Muscle		4.60		<0.050	0.05			Stantec Sample
20130924NET8H-LIVER	2013	Ussiranniak Lake	Arctic Char	Liver		16.00		<0.050	0.05			Stantec Sample
20130924NET9H-LIVER	2013	Ussiranniak Lake	Arctic Char	Liver		11.00		<0.050	0.05			Stantec Sample
20130924NET7J-LIVER	2013	Ussiranniak Lake	Arctic Char	Liver		13.00		<0.050	0.05			Stantec Sample
12-01 762	01/11/2012	Char from Nain - Site Bushes	Smoked Char	Muscle	12-01 764	-	-	3.0	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 763	01/11/2012	Char from Nain - Background Bushes	Smoked Char	Muscle	12-01 764	-	-	0.019	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 764	01/11/2012	Nain	Smoked Char	Muscle	-	-	-	0.031	0.01	Aroclor 1260	Skin on - flat muscle - not smoked	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 765	01/11/2012	Char from Nain - Site Bushes	Smoked Char	Muscle	12-01 767	-	-	2.4	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 766	01/11/2012	ar from Nain - Background Bush	Smoked Char	Muscle	12-01 767	-	-	0.020	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 767	01/11/2012	Nain	Smoked Char	Muscle	-	-	-	0.027	0.01	Aroclor 1260	Skin on - flat muscle - not smoked	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 768	01/11/2012	Char from Nain - Site Bushes	Smoked Char	Muscle	12-01 770	-	-	2.0	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 769	01/11/2012	Char from Nain - Background Bushes	Smoked Char	Muscle	12-01 770	-	-	0.024	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 770	01/11/2012	Nain	Smoked Char	Muscle	-	-	-	0.027	0.01	Aroclor 1260	Skin on - flat muscle - not smoked	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 771	01/11/2012	Char from Nain - Site Bushes	Smoked Char	Muscle	12-01 773	-	-	1.9	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 772	01/11/2012	Char from Nain - Background Bushes	Smoked Char	Muscle	12-01 773	-	-	0.018	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 773	01/11/2012	Nain	Smoked Char	Muscle	-	-	-	0.021	0.01	Aroclor 1260	Skin on - flat muscle - not smoked	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 774	01/11/2012	Char from Nain - Site Bushes	Smoked Char	Muscle	12-01 776	-	-	3.5	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results

Table B.4 Results of Laboratory Analysis of PCBs in Fish
Marine Study and Human Health Risk Assessment Re-evaluation
Former U.S. Military Site, Hopedale, Labrador
Stantec Project No. 121411777.310

Sample ID	Sample Date	Location	Sample Type	Sub-type	Same Animal As	Crude (%)	RDL	PCB (ug/g)	RDL	Comment	Features	Notes
12-01 775	01/11/2012	Char from Nain - Background Bushes	Smoked Char	Muscle	12-01 776	-	-	0.016	0.01	Aroclor 1260	Skin on - flat muscle	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01 776	01/11/2012	Nain	Smoked Char	Muscle	-	-	-	0.023	0.01	Aroclor 1260	Skin on - flat muscle - not smoked	Filets from same fish were used to make two different smoked char types. One filet was cut in half and smoked by 1) using berry bushes from around the base 2) using berry bushes from areas away from the base (collected towards the dump area). A fresh filet sample was kept separate for comparison of results
12-01-381	01/07/2012	Kegetgauyak	Char	Muscle	N/A	6.60	0.6	<0.010	0.01	-	-	-
12-01 777	01/11/2012	Hopedale Harbour	Char	Muscle	12-01 778	-	-	0.010	0.01	Aroclor 1260	Fresh muscle	No skin - muscle only (Filets from same used to make pitsik)
12-01 778	01/11/2012	Hopedale Harbour	Char	Pitsik	12-01 777	-	-	0.029	0.01	Aroclor 1260	Dried meat	No skin - muscle only (Filets from same used to make pitsik)
12-01 779	01/11/2012	Hopedale Harbour	Char	Muscle	12-01 780	-	-	0.038	0.01	Aroclor 1260	Fresh muscle	No skin - muscle only (Filets from same used to make pitsik)
12-01 780	01/11/2012	Hopedale Harbour	Char	Pitsik	12-01 779	-	-	0.064	0.01	Aroclor 1260	Dried meat	No skin - muscle only (Filets from same used to make pitsik)
12-01 781	01/11/2012	Hopedale Harbour	Char	Muscle	12-01 782	-	-	0.019	0.01	Aroclor 1260	Fresh muscle	No skin - muscle only (Filets from same used to make pitsik)
12-01 782	01/11/2012	Hopedale Harbour	Char	Pitsik	12-01 781	-	-	0.062	0.01	Aroclor 1260	Dried meat	No skin - muscle only (Filets from same used to make pitsik)
12-01-254		Hopedale Harbour	Clams	Muscle	-	0.80	0.5	0.27	0.01	Aroclor 1260	-	-
12-01-254 Lab-Dup	01/07/2012	Hopedale Harbour	Clams	Muscle	-	-	-	0.28	0.01	-	-	-
12-01-255	01/07/2012	Hopedale Harbour	Clams	Muscle	-	0.70	0.5	0.21	0.01	Aroclor 1260	-	-
12-01-256	01/07/2012	Hopedale Harbour	Clams	Muscle	-	0.90	0.5	0.16	0.01	Aroclor 1260	-	-
12-01-257	01/07/2012	Hopedale Harbour	Clams	Muscle	-	1.10	0.8	0.15	0.01	Aroclor 1260	-	-
12-01-257 Lab-Dup	01/07/2012	Hopedale Harbour	Clams	Muscle	-	1.00	0.8	-	-	-	-	-
12-01-258	01/07/2012	Hopedale Harbour	Clams	Muscle	-	0.60	0.5	0.13	0.01	Aroclor 1260	-	-
12-01-266	01/07/2012	Airstrip Cove	Clams	Muscle	-	0.80	0.5	0.053	0.01	Aroclor 1260	-	-
12-01-267	01/07/2012	Blackheads Cove	Clams	Muscle	-	0.90	0.7	<0.010	0.01	-	-	-
12-01-269	01/07/2012	Blackheads Cove	Clams	Muscle	-	0.80	0.7	<0.010	0.01	-	-	-
12-01-270	01/07/2012	Airstrip Cove	Clams	Muscle	-	<1.8	1.8	0.036	0.01	Aroclor 1260	-	-
12-01-271	01/07/2012	Airstrip Cove	Clams	Muscle	-	0.90	0.8	0.051	0.01	Aroclor 1260	-	-
12-01-296	01/07/2012	Airstrip Cove	Clams	Muscle	-	0.70	0.5	0.042	0.01	Aroclor 1260	-	-
12-01-351	01/07/2012	South Side of Black Heads	Clams	Muscle	-	1.30	0.5	0.014	0.01	Aroclor 1260	-	-
12-01-352	01/07/2012	South Side of Black Heads	Clams	Muscle	-	1.30	1	<0.010	0.01	-	-	-
12-01-352 Lab-Dup	01/07/2012	South Side of Black Heads	Clams	Muscle	-	1.30	0.7	-	-	-	-	-
12-01-362	01/07/2012	South Side of Black Heads	Clams	Muscle	-	1.10	0.5	<0.010	0.01	-	-	-
11-CLAMS-SBA(I)1	2011	Southwest Bays Area 1	Clams	Muscle	-	nd	0.5	nd	0.05	-		Stantec Sample
11-CLAMS-SBA(I)2	2011	Southwest Bays Area 1	Clams	Muscle	-	0.70	0.5	0.07	0.05	Aroclor 1260		Stantec Sample
11-CLAMS-SBA(I)2 Lab-Dup	2011	Southwest Bays Area 1	Clams	Muscle	-	0.90	0.5	-	0.05	-		Stantec Sample
11-CLAMS-SBA(I)3	2011	Southwest Bays Area 1	Clams	Muscle	-	0.80	0.5	0.05	0.05	Aroclor 1260		Stantec Sample
11-CLAMS-SBA(II)1	2011	Southwest Bays Area 2	Clams	Muscle	-	1.10	0.5	0.05	0.05	Aroclor 1260		Stantec Sample
11-CLAMS-SBA(II)2	2011	Southwest Bays Area 2	Clams	Muscle	-	1.30	0.5	0.06	0.05	Aroclor 1260		Stantec Sample
11-CLAMS-SBA(II)3	2011	Southwest Bays Area 2	Clams	Muscle	-	1.00	0.5	nd	0.05	-		Stantec Sample
11-CLAMS-TB1	2011	Tooktoosner Bay	Clams	Muscle	-	1.20	0.5	nd	0.01	-		Stantec Sample
11-MUSSELS-SBA(I)1	2011	Southwest Bays Area 1	Mussels	Muscle	-	1.50	0.5	0.23	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-SBA(I)2	2011	Southwest Bays Area 1	Mussels	Muscle	-	1.50	0.5	0.21	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-SBA(I)3	2011	Southwest Bays Area 1	Mussels	Muscle	-	1.30	0.5	0.25	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-SBA(II)1	2011	Southwest Bays Area 2	Mussels	Muscle	-	2.00	0.5	0.12	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-SBA(II)2	2011	Southwest Bays Area 2	Mussels	Muscle	-	1.60	0.5	0.16	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-SBA(II)3	2011	Southwest Bays Area 2	Mussels	Muscle	-	2.10	0.5	0.12	0.05	Aroclor 1260		Stantec Sample
11-MUSSELS-BHT1	2011	Black Head Tickle	Mussels	Muscle	-	1.90	0.5	nd	0.1	-		Stantec Sample
11-MUSSELS TB1	2011	Tooktoosner Bay	Mussels	Muscle	-	1.70	0.5	nd	0.05	-		Stantec Sample
12-01-180	01/07/2012	Hopedale Harbour	Wrinkles	Muscle	-	0.90	0.8	0.089	0.01	Aroclor 1260	-	-
12-01-181	01/07/2012	Hopedale Harbour	Wrinkles	Muscle	-	1.40	1.3	0.085	0.01	Aroclor 1260	-	-
12-01-198	01/07/2012	Hebron Side	Wrinkles	Muscle	-	0.60	0.5	0.059	0.01	Aroclor 1260	-	-
12-01-329	01/07/2012	Hopedale Harbour	Wrinkles	Muscle	-	1.20	0.5	1.6	0.01	Aroclor 1260	-	-
12-01-353	01/07/2012	South Side of Black Heads	Wrinkles	Muscle	-	0.80	0.5	<0.010	0.01	-	-	-
12-01 468	01/10/2012	Hopedale Harbour	Wrinkles	Muscle	-	-	-	0.66	0.01	Aroclor 1260	Composite	Rinsed and Boiled for 10-15 minutes
12-01 700	01/10/2012	Black Heads	Wrinkles	Muscle	-	-	-	<0.010	0.01	-	Composite	Rinsed and Boiled for 10-15 minutes
12-01 195	01/10/2012	Hebron Side	Wrinkles	Muscle	-	-	-	0.069	0.01	Aroclor 1260	Composite (01 195-01 197)	Rinsed and Boiled for 10-15 minutes
12-01-134	01/07/2012	Hebron Side	Sea Urchin	Muscle	-	4.10	0.5	0.026	0.01	Aroclor 1260	Composite	-
12-01-170	01/07/2012	Hopedale Harbour	Sea Urchin	Muscle	-	3.70	0.5	0.036	0.01	Aroclor 1260	Composite	-
12-01-185	01/07/2012	Hebron Side	Sea Urchin	Muscle	-	3.80	0.6	0.015	0.01	Aroclor 1260	Composite	-
12-01-238	01/07/2012	Hopedale Harbour	Sea Urchin	Muscle	-	4.60	0.5	0.15	0.01	Aroclor 1260	Composite	-
12-01-240	01/07/2012	Hopedale Harbour	Sea Urchin	Muscle	-	2.00	0.5	0.14	0.01	Aroclor 1260	Composite	-
12-01 483	01/10/2012	Hopedale Harbour	Sea Urchin	Muscle	-	-	-	0.45	0.01	Aroclor 1260	Composite	Rinsed and Boiled for 5-10 minutes
12-01 708	01/10/2012	Black Heads	Sea Urchin	Muscle	-	-	-	<0.010	0.01	-	Composite	Rinsed and Boiled for 5-10 minutes
12-01 709	01/10/2012	Black Heads	Sea Urchin	Muscle	-	-	-	<0.010	0.01	-	Composite	Rinsed and Boiled for 5-10 minutes
11-SALMON-TB1	2011	Tooktoosner Bay	Atlantic Salmon	muscle		19.00		nd	0.05	-		Stantec Sample
11-SALMON-TB2	2011	Tooktoosner Bay	Atlantic Salmon	muscle		17.00		nd	0.05	-		Stantec Sample
11-SALMON-TB3	2011	Tooktoosner Bay	Atlantic Salmon	muscle		3.10		nd	0.05	-		Stantec Sample
11-SALMON LIVER-TB1	2011	Tooktoosner Bay	Atlantic Salmon	liver		8.10		nd	0.05	-		Stantec Sample
11-SALMON LIVER-TB2	2011	Tooktoosner Bay	Atlantic Salmon	liver		5.60		nd	0.05	-		Stantec Sample
11-SALMON LIVER-TB2 Lab-Dup	2011	Tooktoosner Bay	Atlantic Salmon	liver		5.60		-	0.05	-		Stantec Sample
11-SALMON LIVER-TB3	2011	Tooktoosner Bay	Atlantic Salmon	liver		11.00		nd	0.05	-		Stantec Sample
AREA 2 FISH 1	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		2.50		nd	0.05	-		Stantec Sample
AREA 3 FISH 1	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		nd		nd	0.05	-		Stantec Sample
AREA 3 FISH 14	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		0.70		nd	0.05	-		Stantec Sample
AREA 3 FISH 15	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		5.20		0.08	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 16	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		0.60		0.46	0.05	Aroclor 1260		Stantec Sample
AREA 3 FISH 17	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		0.70		nd	0.05	-		Stantec Sample
AREA 4 FISH 5	2010	Inner Hopedale Harbour	Shorthorn sculpin	muscle		0.80		0.05	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH1	2011	Inner Hopedale Harbour	Sculpin	muscle		1.80		nd	0.05	-		Stantec Sample
11-SCULPIN-IH2	2011	Inner Hopedale Harbour	Sculpin	muscle		0.60		0.23	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH3	2011	Inner Hopedale Harbour	Sculpin	muscle		1.40		0.25	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH4	2011	Inner Hopedale Harbour	Sculpin	muscle		1.90		0.77	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH5	2011	Inner Hopedale Harbour	Sculpin	muscle		2.10		0.99	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH6	2011	Inner Hopedale Harbour	Sculpin	muscle		1.60		0.67	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH7	2011	Inner Hopedale Harbour	Sculpin	muscle		0.70		0.05	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH8	2011	Inner Hopedale Harbour	Sculpin	muscle		0.90		0.82	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-IH9	2011	Inner Hopedale Harbour	Sculpin	muscle		1.40		nd	0.05	-		Stantec Sample
11-SCULPIN-IH10	2011	Inner Hopedale Harbour	Sculpin	muscle		0.80		0.44	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-IH1	2011	Inner Hopedale Harbour	Sculpin	liver		12.00		8.1	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-IH2	2011	Inner Hopedale Harbour	Sculpin	liver		ins.		3.3	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-IH3	2011	Inner Hopedale Harbour	Sculpin	liver		15.00		3.7	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-0H1	2011	Outer Hopedale Harbour	Sculpin	muscle		ins.		nd	0.05	-		Stantec Sample
11-SCULPIN-0H2	2011	Outer Hopedale Harbour	Sculpin	muscle		0.90		nd	0.05	-		Stantec Sample
11-SCULPIN-0H3	2011	Outer Hopedale Harbour	Sculpin	muscle		ins.		0.08	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-0H4	2011	Outer Hopedale Harbour	Sculpin	muscle		ins.		nd	0.05	-		Stantec Sample
11-SCULPIN-0H5	2011	Outer Hopedale Harbour	Sculpin	muscle		0.70		nd	0.05	-		Stantec Sample
11-SCULPIN-0H6	2011	Outer Hopedale Harbour	Sculpin	muscle		1.00		nd	0.05	-		Stantec Sample
11-SCULPIN-0H7	2011	Outer Hopedale Harbour	Sculpin	muscle		0.90		0.05	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-0H8	2011	Outer Hopedale Harbour	Sculpin	muscle		0.80		nd	0.05	-		Stantec Sample
11-SCULPIN-0H9	2011	Outer Hopedale Harbour	Sculpin	muscle		0.50		nd	0.05	-		Stantec Sample
11-SCULPIN-0H10	2011	Outer Hopedale Harbour	Sculpin	muscle		0.70		0.23	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-OH1	2011	Outer Hopedale Harbour	Sculpin	liver		9.00		0.54	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-OH2	2011	Outer Hopedale Harbour	Sculpin	liver		5.40		0.32	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-OH3	2011	Outer Hopedale Harbour	Sculpin	liver		7.00		0.24	0.05	Aroclor 1260		Stantec Sample
11-SCULPIN-BHT1	2011	Blackhead Tickle	Sculpin	muscle		0.60		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT1 Lab-Dup	2011	Blackhead Tickle	Sculpin	muscle		-		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT2	2011	Blackhead Tickle	Sculpin	muscle		1.40		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT3	2011	Blackhead Tickle	Sculpin	muscle		1.20		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT4	2011	Blackhead Tickle	Sculpin	muscle		0.80		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT5	2011	Blackhead Tickle	Sculpin	muscle		0.80		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT6	2011	Blackhead Tickle	Sculpin	muscle		0.90		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT7	2011	Blackhead Tickle	Sculpin	muscle		0.70		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT8	2011	Blackhead Tickle	Sculpin	muscle		1.20		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT9	2011	Blackhead Tickle	Sculpin	muscle		3.90		nd	0.05	-		Stantec Sample
11-SCULPIN-BHT10	2011	Blackhead Tickle	Sculpin	muscle		1.80		nd	0.05	-		Stantec Sample
11-SCULPIN LIVER-BHT1	2011	Blackhead Tickle	Sculpin	liver		11.00		0.1	0.1	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-BHT2	2011	Blackhead Tickle	Sculpin	liver		17.00		0.2	0.1	-		Stantec Sample
11-SCULPIN LIVER-BHT3	2011	Blackhead Tickle	Sculpin	liver		9.00		nd	0.1	-		Stantec Sample
AREA 1 FISH 1	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		0.90		nd	0.05	-		Stantec Sample
AREA 1 FISH 2	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		1.40		nd	0.05	-		Stantec Sample
AREA 1 FISH 3	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		2.30		nd	0.05	-		Stantec Sample
AREA 1 FISH 3 Lab-Dup	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		1.60		-	0.05	-		Stantec Sample
AREA 1 FISH 4	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		1.70		0.89	0.05	Aroclor 1260		Stantec Sample
AREA 1 FISH 5	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		6.00		nd	0.05	-		Stantec Sample
AREA 1 FISH 6	2010	Tooktoosner Bay	Shorthorn sculpin	muscle		1.10		nd	0.05	-		Stantec Sample
11-SCULPIN-TB1	2011	Tooktoosner Bay	Sculpin	muscle		1.80		nd	0.05	-		Stantec Sample
11-SCULPIN-TB2	2011	Tooktoosner Bay	Sculpin	muscle		0.80		nd	0.05	-		Stantec Sample
11-SCULPIN-TB3	2011	Tooktoosner Bay	Sculpin	muscle		2.00		nd	0.05	-		Stantec Sample
11-SCULPIN-TB4	2011	Tooktoosner Bay	Sculpin	muscle		0.90		nd	0.05	-		Stantec Sample
11-SCULPIN-TB5	2011	Tooktoosner Bay	Sculpin	muscle		0.80		nd	0.05	-		Stantec Sample
11-SCULPIN-TB6	2011	Tooktoosner Bay	Sculpin	muscle		1.00		nd	0.05	-		Stantec Sample
11-SCULPIN-TB7	2011	Tooktoosner Bay	Sculpin	muscle		2.00		nd	0.05	-		Stantec Sample
11-SCULPIN-TB8	2011	Tooktoosner Bay	Sculpin	muscle		nd	1	nd	0.05	-		Stantec Sample
11-SCULPIN-TB9	2011	Tooktoosner Bay	Sculpin	muscle		1.30		nd	0.05	-		Stantec Sample
11-SCULPIN-TB10	2011	Tooktoosner Bay	Sculpin	muscle		0.70		nd	0.05	-		Stantec Sample
11-SCULPIN LIVER-TB1	2011	Tooktoosner Bay	Sculpin	liver		8.20		0.1	0.1	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-TB1 Lab-Dup	2011	Tooktoosner Bay	Sculpin	liver		-		0.1	0.1	-		Stantec Sample
11-SCULPIN LIVER-TB2	2011	Tooktoosner Bay	Sculpin	liver		6.10		0.1	0.1	Aroclor 1260		Stantec Sample
11-SCULPIN LIVER-TB3	2011	Tooktoosner Bay	Sculpin	liver		9.00		nd	0.1	Aroclor 1260		Stantec Sample

APPENDIX C

Maxxam Analytics Inc. Reports

Your P.O. #: 16400NR
Your Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your C.O.C. #: N/A

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2012/12/11

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2G1304
Received: 2012/10/17, 12:42

Sample Matrix: Soil
Samples Received: 3

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture	3	N/A	2012/10/18	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD	3	2012/10/25	2012/10/26	ATL SOP 00106	Based EPA8082

Sample Matrix: TISSUE
Samples Received: 170

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Lipids (Crude Fat)	20	2012/10/24	2012/10/31		AOAC 948.16
Lipids (Crude Fat)	20	2012/10/29	2012/11/01		AOAC 948.16
Lipids (Crude Fat)	20	2012/10/31	2012/11/02		AOAC 948.16
Lipids (Crude Fat)	20	2012/11/02	2012/11/07		AOAC 948.16
Lipids (Crude Fat)	20	2012/11/06	2012/11/08		AOAC 948.16
Lipids (Crude Fat)	18	2012/11/13	2012/11/14		AOAC 948.16
Lipids (Crude Fat)	20	2012/11/13	2012/11/15		AOAC 948.16
Lipids (Crude Fat)	19	2012/11/16	2012/11/21		AOAC 948.16
Lipids (Crude Fat)	9	2012/11/19	2012/11/21		AOAC 948.16
PCBs in tissue by GC/ECD (1)	20	2012/10/22	2012/11/02	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	20	2012/10/23	2012/11/27	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	19	2012/10/24	2012/11/26	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	1	2012/10/24	2012/11/27	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	21	2012/10/25	2012/12/05	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	12	2012/10/26	2012/11/15	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	8	2012/10/26	2012/11/23	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	1	2012/10/30	2012/11/26	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	20	2012/10/31	2012/11/22	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	16	2012/10/31	2012/11/27	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	1	2012/10/31	2012/12/05	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	18	2012/11/01	2012/12/05	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	6	2012/11/08	2012/11/28	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	7	2012/11/08	2012/11/29	ATL SOP 00110	Based on EPA8082

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) Results are reported on an as received basis unless otherwise indicated.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902) 420-0203 Ext:289

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		PF9752	PF9753	PF9754		
Sampling Date		2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-391**	**12-01-392**	**12-01-393**	**RDL**	**QC Batch**
Inorganics						
Moisture	%	24	23	18	1	3005886

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		PF9752	PF9752	PF9753	PF9754		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-391**	**12-01-391 Lab-Dup**	**12-01-392**	**12-01-393**	**RDL**	**QC Batch**
PCBs							
Total PCB	mg/kg	<0.010	<0.010	<0.010	<0.010	0.010	3013967
Surrogate Recovery (%)							
Decachlorobiphenyl	%	87 (1)	98 (1)	91 (1)	88 (1)		3013967

RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9741		PF9742		PF9743		PF9744			PF9745		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01			2012/07/01		
	Units	**12-01-138**	**QC Batch**	**12-01-274**	**QC Batch**	**12-01-275**	**QC Batch**	**12-01-276**	**RDL**	**QC Batch**	**12-01-277**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	<0.50	3027077	<0.50	3034090	0.70	3027077	<0.50	0.50	3034090	<0.90	0.90	3027077

Maxxam ID		PF9746	PF9746		PF9747	PF9749		PF9750	PF9751		PF9755		
Sampling Date		2012/07/01	2012/07/01		2012/07/01	2012/07/01		2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-289**	**12-01-289 Lab-Dup**	**QC Batch**	**12-01-140**	**12-01-139**	**QC Batch**	**12-01-278**	**12-01-141**	**QC Batch**	**12-01-206**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	0.90	0.60	3027077	<0.50	<0.50	3027083	0.50	<0.50	3038479	0.80	0.50	3020430

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB sample analysed past recommended hold time as per client request.

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9756		PF9757		PF9757		PF9758	PF9759		PF9760		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-388**	**QC Batch**	**12-01-354**	**RDL**	**12-01-354 Lab-Dup**	**RDL**	**12-01-355**	**12-01-356**	**QC Batch**	**12-01-357**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	18	3020408	14	0.50	12	2.5	20	7.9	3020430	3.4	0.50	3034090

Maxxam ID		PF9761	PF9762	PF9763	PF9764		PF9765		PF9766	PF9767	PF9768		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-358**	**12-01-359**	**12-01-127**	**12-01-128**	**QC Batch**	**12-01-129**	**QC Batch**	**12-01-245**	**12-01-246**	**12-01-247**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	3.6	5.4	1.3	1.5	3020430	1.7	3034090	4.8	2.9	1.8	0.50	3020430

Maxxam ID		PF9769		PF9770		PF9771		PF9772		PF9773	PF9774	PF9775		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-248**	**QC Batch**	**12-01-263**	**QC Batch**	**12-01-264**	**RDL**	**12-01-299**	**RDL**	**12-01-153**	**12-01-249**	**12-01-265**	**RDL**	**QC Batch**
Inorganics														
Crude Fat	%	2.6	3020430	2.5	3034090	2.9	0.50	3.3	1.9	12	4.1	2.1	0.50	3020430

Maxxam ID		PF9776		PF9777		PF9778		PF9779			PF9780		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01			2012/07/01		
	Units	**12-01-384**	**RDL**	**12-01-385**	**QC Batch**	**12-01-386**	**QC Batch**	**12-01-387**	**RDL**	**QC Batch**	**12-01-207**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	3.5	0.80	1.3	3020408	1.8	3020430	0.80	0.50	3038479	5.0	0.70	3020430

Maxxam ID		PF9781		PF9782		PF9783	PF9784		PF9785		PF9786		
Sampling Date		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-209**	**QC Batch**	**12-01-216**	**RDL**	**12-01-217**	**12-01-467**	**RDL**	**12-01-482**	**QC Batch**	**12-01-487**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	2.7	3020442	1.0	0.50	12	3.1	0.90	3.2	3027083	4.2	0.50	3020442

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9787			PF9788			PF9789		PF9790		
Sampling Date		2012/07/01			2012/07/01			2012/07/01		2012/07/01		
	Units	**12-01-494**	**RDL**	**QC Batch**	**12-01-114**	**RDL**	**QC Batch**	**12-01-115**	**RDL**	**12-01-200**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	4.9	0.50	3020408	0.80	0.60	3027083	3.6	1.3	3.6	0.50	3020442

Maxxam ID		PF9791			PF9792			PF9793			PF9794		
Sampling Date		2012/07/01			2012/07/01			2012/07/01			2012/07/01		
	Units	**12-01-201**	**RDL**	**QC Batch**	**12-01-202**	**RDL**	**QC Batch**	**12-01-203**	**RDL**	**QC Batch**	**12-01-290**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	3.4	0.50	3020430	1.0	0.60	3020442	1.3	0.70	3020408	1.2	0.50	3020442

Maxxam ID		PF9795	PF9795	PF9797	PF9798		PF9799			PF9800		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01			2012/07/01		
	Units	**12-01-208**	**12-01-208 Lab-Dup**	**12-01-213**	**12-01-214**	**RDL**	**12-01-360**	**RDL**	**QC Batch**	**12-01-211**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	0.50	0.60	1.7	1.0	0.50	1.5	0.60	3020408	1.6	0.50	3034090

Maxxam ID		PF9801		PF9801		PF9802		PF9803		PF9804		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-212**	**RDL**	**12-01-212 Lab-Dup**	**RDL**	**12-01-389**	**RDL**	**12-01-390**	**QC Batch**	**12-01-204**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	4.5	1.0	3.5	0.80	4.1	0.60	9.5	3034118	1.4	0.50	3027083

Maxxam ID		PF9805		PF9806	PF9806	PF9807			PF9808		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-205**	**RDL**	**12-01-394**	**12-01-394 Lab-Dup**	**12-01-395**	**RDL**	**QC Batch**	**12-01-396**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	4.8	4.0	1.4	1.5	<0.50	0.50	3034090	90	1.1	3027077

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9809			PF9811		PF9812	PF9813		PF9814	PF9815		
Sampling Date		2012/07/01			2012/07/01		2012/07/01	2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-363**	**RDL**	**QC Batch**	**12-01-365**	**QC Batch**	**12-01-366**	**12-01-370**	**QC Batch**	**12-01-371**	**12-01-372**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	1.2	0.60	3034118	54	3020408	5.6	0.80	3020442	1.3	77	0.50	3020408

Maxxam ID		PF9816		PF9817		PF9818			PF9819	PF9820		
Sampling Date		2012/07/01		2012/07/01		2012/07/01			2012/07/01	2012/07/01		
	Units	**12-01-373**	**QC Batch**	**12-01-374**	**QC Batch**	**12-01-401**	**RDL**	**QC Batch**	**12-01-402**	**12-01-403**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	0.70	3020442	68	3020408	53	0.50	3034090	77	83	1.2	3027077

Maxxam ID		PF9821		PF9822		PF9823		PF9824		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-404**	**QC Batch**	**12-01-405**	**QC Batch**	**12-01-406**	**QC Batch**	**12-01-379**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	0.90	3034090	1.1	3027077	3.3	3034090	0.70	0.50	3034118

Maxxam ID		PF9825			PF9826			PF9827		
Sampling Date		2012/07/01			2012/07/01			2012/07/01		
	Units	**12-01-380**	**RDL**	**QC Batch**	**12-01-397**	**RDL**	**QC Batch**	**12-01-398**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	89	0.90	3020408	85	1.0	3020442	3.6	0.60	3027083

Maxxam ID		PF9828	PF9828		PF9829	PF9830			PF9831		
Sampling Date		2012/07/01	2012/07/01		2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-399**	**12-01-399 Lab-Dup**	**RDL**	**12-01-400**	**12-01-407**	**RDL**	**QC Batch**	**12-01-408**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	94	94	1.1	2.4	0.70	0.50	3020442	0.80	0.60	3020408

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2G1304
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Stantec Consulting Ltd
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Sampler Initials: KH

RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9832			PF9833	PF9833			PF9834		
Sampling Date		2012/07/01			2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-409**	**RDL**	**QC Batch**	**12-01-410**	**12-01-410 Lab-Dup**	**RDL**	**QC Batch**	**12-01-101**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	0.90	0.50	3020442	81	64	1.0	3027083	1.9	0.60	3020442

Maxxam ID		PF9835			PF9836	PF9837		PF9838		
Sampling Date		2012/07/01			2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-102**	**RDL**	**QC Batch**	**12-01-103**	**12-01-104**	**QC Batch**	**12-01-105**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	0.90	0.60	3027083	0.70	<0.50	3038479	1.9	0.50	3027077

Maxxam ID		PF9839		PF9840	PF9841	PF9842			PF9843		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-106**	**QC Batch**	**12-01-107**	**12-01-108**	**12-01-109**	**RDL**	**QC Batch**	**12-01-110**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	0.60	3038479	<0.50	1.2	1.6	0.50	3027083	1.8	0.60	3027077

Maxxam ID		PF9844		PF9845	PF9846			PF9847		
Sampling Date		2012/07/01		2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-111**	**RDL**	**12-01-112**	**12-01-113**	**RDL**	**QC Batch**	**12-01-285**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	1.3	0.60	1.2	0.70	0.50	3027077	24	0.90	3038479

Maxxam ID		PF9848		PF9849			PF9850		
Sampling Date		2012/07/01		2012/07/01			2012/07/01		
	Units	**12-01-286**	**RDL**	**12-01-287**	**RDL**	**QC Batch**	**12-01-288**	**RDL**	**QC Batch**
Inorganics									
Crude Fat	%	25	0.70	41	0.50	3027077	33	0.70	3027083

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

Maxxam Job #: B2G1304
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Stantec Consulting Ltd
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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9851		PF9853		PF9854		PF9855		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-219**	**RDL**	**12-01-221**	**RDL**	**12-01-223**	**RDL**	**12-01-224**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	1.1	0.60	1.1	0.70	1.1	0.80	15	1.0	3038479

Maxxam ID		PF9856		PF9857		PF9858		PF9859		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-330**	**QC Batch**	**12-01-331**	**QC Batch**	**12-01-332**	**QC Batch**	**12-01-333**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	6.5	3034090	7.6	3027077	4.3	3034118	7.1	0.50	3027077

Maxxam ID		PF9860		PF9861		PF9862	PF9863		PF9864		
Sampling Date		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-334**	**RDL**	**12-01-450**	**RDL**	**12-01-451**	**12-01-452**	**QC Batch**	**12-01-453**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	2.4	0.50	4.7	0.60	1.3	2.5	3034118	2.0	0.50	3034090

Maxxam ID		PF9865		PF9866		PF9867		PF9868		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-454**	**QC Batch**	**12-01-116**	**QC Batch**	**12-01-117**	**QC Batch**	**12-01-118**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	5.3	3034090	3.0	3034118	1.1	3034090	0.90	0.50	3034118

Maxxam ID		PF9869		PF9870	PF9871	PF9872	PF9873		PF9874		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-119**	**QC Batch**	**12-01-120**	**12-01-121**	**12-01-122**	**12-01-123**	**QC Batch**	**12-01-124**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	2.9	3034090	1.5	1.5	2.0	1.3	3034118	1.1	0.50	3038479

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9875			PF9876		PF9877	PF9878		
Sampling Date		2012/07/01			2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-284**	**RDL**	**QC Batch**	**12-01-291**	**QC Batch**	**12-01-292**	**12-01-375**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	3.3	0.60	3038479	2.4	3027077	2.1	1.2	0.50	3038479

Maxxam ID		PF9879			PF9880			PF9881		
Sampling Date		2012/07/01			2012/07/01			2012/07/01		
	Units	**12-01-376**	**RDL**	**QC Batch**	**12-01-381**	**RDL**	**QC Batch**	**12-01-367**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	2.2	0.50	3027083	6.6	0.60	3038479	6.2	0.50	3034090

Maxxam ID		PF9882		PF9883	PF9884	PF9885	PF9886			PF9887		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01	2012/07/01			2012/07/01		
	Units	**12-01-368**	**QC Batch**	**12-01-215**	**12-01-254**	**12-01-255**	**12-01-256**	**RDL**	**QC Batch**	**12-01-257**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	8.5	3027077	2.7	0.80	0.70	0.90	0.50	3034118	1.1	0.80	3038479

Maxxam ID		PF9887		PF9888	PF9889			PF9890	PF9891		
Sampling Date		2012/07/01		2012/07/01	2012/07/01			2012/07/01	2012/07/01		
	Units	**12-01-257 Lab-Dup**	**RDL**	**12-01-258**	**12-01-266**	**RDL**	**QC Batch**	**12-01-267**	**12-01-269**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	1.0	0.80	0.60	0.80	0.50	3038479	0.90	0.80	0.70	3040774

Maxxam ID		PF9892		PF9893		PF9894		PF9895		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-270**	**RDL**	**12-01-271**	**RDL**	**12-01-296**	**QC Batch**	**12-01-351**	**RDL**	**QC Batch**
Inorganics										
Crude Fat	%	<1.8	1.8	0.90	0.80	0.70	3040774	1.3	0.50	3027077

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		PF9896		PF9896			PF9897		
Sampling Date		2012/07/01		2012/07/01			2012/07/01		
	Units	**12-01-352**	**RDL**	**12-01-352 Lab-Dup**	**RDL**	**QC Batch**	**12-01-362**	**RDL**	**QC Batch**
Inorganics									
Crude Fat	%	1.3	1.0	1.3	0.70	3040774	1.1	0.50	3027083

Maxxam ID		PF9898		PF9899		PF9900		PF9901	PF9902		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-180**	**RDL**	**12-01-181**	**RDL**	**12-01-198**	**QC Batch**	**12-01-329**	**12-01-353**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	0.90	0.80	1.4	1.3	0.60	3040774	1.2	0.80	0.50	3027083

Maxxam ID		PF9903	PF9904			PF9905			PF9906		
Sampling Date		2012/07/01	2012/07/01			2012/07/01			2012/07/01		
	Units	**12-01-134**	**12-01-170**	**RDL**	**QC Batch**	**12-01-185**	**RDL**	**QC Batch**	**12-01-238**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	4.1	3.7	0.50	3020442	3.8	0.60	3027083	4.6	0.50	3020442

Maxxam ID		PF9907		PG5660		PG5692		PG5693	PG5694		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-240**	**QC Batch**	**12-01-231**	**QC Batch**	**12-01-233**	**QC Batch**	**12-01-234**	**12-01-272**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	2.0	3020442	0.70	3020408	1.3	3020442	0.70	1.0	0.50	3020408

Maxxam ID		PG5695		PG5696		
Sampling Date		2012/07/01		2012/07/01		
	Units	**12-01-243**	**RDL**	**12-01-244**	**RDL**	**QC Batch**
Inorganics						
Crude Fat	%	2.5	0.90	12	0.50	3020408

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9741	PF9742	PF9743	PF9744	PF9745	PF9746	PF9746	PF9747		PF9748		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-138**	**12-01-274**	**12-01-275**	**12-01-276**	**12-01-277**	**12-01-289**	**12-01-289 Lab-Dup**	**12-01-140**	**QC Batch**	**12-01-281**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	<0.010	0.14	<0.010	<0.010	<0.010	<0.010	<0.010	3022653	<0.010	0.010	3014261
Surrogate Recovery (%)													
Decachlorobiphenyl	%	37 (1)	34 (1)	14 (2)	27 (1)	37 (1)	31 (3)	29 (3)	83	3022653	65 (3)		3014261

Maxxam ID		PF9749		PF9750	PF9751		PF9755		PF9756		PF9757		
Sampling Date		2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-139**	**QC Batch**	**12-01-278**	**12-01-141**	**QC Batch**	**12-01-206**	**QC Batch**	**12-01-388**	**QC Batch**	**12-01-354**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	3022653	<0.010	<0.010	3021250	<0.010	3009962	<0.010	3012902	0.027	0.010	3009962
Surrogate Recovery (%)													
Decachlorobiphenyl	%	44 (3)	3022653	129	78	3021250	88	3009962	51 (3)	3012902	92 (4)		3009962

Maxxam ID		PF9758	PF9759	PF9760	PF9761	PF9762	PF9763	PF9764	PF9765	PF9766	PF9767		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-355**	**12-01-356**	**12-01-357**	**12-01-358**	**12-01-359**	**12-01-127**	**12-01-128**	**12-01-129**	**12-01-245**	**12-01-246**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.025	0.023	0.43	0.15	0.67	0.026	0.019	0.021	0.073	0.020	0.010	3009962
Surrogate Recovery (%)													
Decachlorobiphenyl	%	74 (4)	116 (4)	100 (4)	87 (4)	96 (4)	84 (4)	78 (4)	56 (2)	79 (4)	64 (2)		3009962

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) - Aroclor 1260.

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Maxxam

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9768	PF9769	PF9770	PF9771	PF9772	PF9773	PF9773	PF9774	PF9775		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-247**	**12-01-248**	**12-01-263**	**12-01-264**	**12-01-299**	**12-01-153**	**12-01-153 Lab-Dup**	**12-01-249**	**12-01-265**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.057	0.062	0.25	0.064	0.021	<0.010	<0.010	<0.010	<0.010	0.010	3009962
Surrogate Recovery (%)												
Decachlorobiphenyl	%	82(1)	64(2)	99(1)	73(1)	37(2)	84	87	86	49(3)		3009962

Maxxam ID		PF9776	PF9777		PF9778		PF9779		PF9780		PF9781		
Sampling Date		2012/07/01	2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-384**	**12-01-385**	**QC Batch**	**12-01-386**	**QC Batch**	**12-01-387**	**QC Batch**	**12-01-207**	**QC Batch**	**12-01-209**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	<0.010	3012902	0.019	3011651	0.054	3021250	0.061	3011651	0.023	0.010	3014261
Surrogate Recovery (%)													
Decachlorobiphenyl	%	87	72	3012902	39(4)	3011651	89(1)	3021250	41(4)	3011651	72(1)		3014261

Maxxam ID		PF9782		PF9783	PF9784	PF9785		PF9786		PF9787		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-216**	**QC Batch**	**12-01-217**	**12-01-467**	**12-01-482**	**QC Batch**	**12-01-487**	**QC Batch**	**12-01-494**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.012	3011651	0.057	0.040	0.033	3030702	0.017	3014261	0.034	0.010	3012902
Surrogate Recovery (%)												
Decachlorobiphenyl	%	87(1)	3011651	64(4)	76(1)	82(1)	3030702	78(1)	3014261	64(2)		3012902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) - Aroclor 1260. PCB surrogate not within acceptance limits. Insufficient sample to repeat.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9788		PF9789	PF9790		PF9791		PF9792		PF9793		
Sampling Date		2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-114**	**QC Batch**	**12-01-115**	**12-01-200**	**QC Batch**	**12-01-201**	**QC Batch**	**12-01-202**	**QC Batch**	**12-01-203**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.57	3011651	0.15	0.020	3014261	0.016	3011651	<0.010	3014261	0.029	0.010	3011651
Surrogate Recovery (%)													
Decachlorobiphenyl	%	59(1)	3011651	37(1)	76(2)	3014261	57(1)	3011651	40(3)	3014261	60(1)		3011651

Maxxam ID		PF9794		PF9794		PF9795		PF9796		PF9797		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-290**	**RDL**	**12-01-290 Lab-Dup**	**RDL**	**12-01-208**	**QC Batch**	**12-01-210**	**QC Batch**	**12-01-213**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.54	0.010	0.25(4)	0.050	<0.010	3012902	<0.010	3011651	0.012	0.010	3030702
Surrogate Recovery (%)												
Decachlorobiphenyl	%	72(2)		59(5)		49(3)	3012902	41(3)	3011651	54(1)		3030702

Maxxam ID		PF9798	PF9799		PF9800	PF9801	PF9802	PF9803		PF9804		
Sampling Date		2012/07/01	2012/07/01		2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-214**	**12-01-360**	**QC Batch**	**12-01-211**	**12-01-212**	**12-01-389**	**12-01-390**	**QC Batch**	**12-01-204**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	<0.010	3012902	0.037	0.16	0.20	0.76	3016187	<0.010	0.010	3011651
Surrogate Recovery (%)												
Decachlorobiphenyl	%	115	70	3012902	72(2)	87(2)	100(2)	91(2)	3016187	60(5)		3011651

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260. PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(2) - Aroclor 1260.
(3) - PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(4) - Duplicate: results are outside acceptance limit. Analysis was repeated with similar results.
(5) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: B2G1304
Report Date: 2012/12/11

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9805		PF9806	PF9806	PF9807		PF9808		PF9809		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-205**	**QC Batch**	**12-01-394**	**12-01-394 Lab-Dup**	**12-01-395**	**QC Batch**	**12-01-396**	**QC Batch**	**12-01-363**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	3030702	0.041	0.042	<0.010	3016187	0.29	3022653	0.11	0.010	3016187
Surrogate Recovery (%)												
Decachlorobiphenyl	%	47 (1)	3030702	70 (2)	88	76	3016187	294 (3)	3022653	74 (2)		3016187

Maxxam ID		PF9810		PF9811		PF9812	PF9813		PF9814	PF9815		
Sampling Date		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-364**	**QC Batch**	**12-01-365**	**QC Batch**	**12-01-366**	**12-01-370**	**QC Batch**	**12-01-371**	**12-01-372**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	1.0	3014261	1.2	3012902	0.047	<0.010	3014261	0.036	1.2	0.010	3012902
Surrogate Recovery (%)												
Decachlorobiphenyl	%	27 (3)	3014261	123 (4)	3012902	21 (3)	28 (5)	3014261	72 (2)	255 (6)		3012902

Maxxam ID		PF9816	PF9816			PF9817			PF9818	PF9819		
Sampling Date		2012/07/01	2012/07/01			2012/07/01			2012/07/01	2012/07/01		
	Units	**12-01-373**	**12-01-373 Lab-Dup**	**RDL**	**QC Batch**	**12-01-374**	**RDL**	**QC Batch**	**12-01-401**	**12-01-402**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.021	0.022	0.010	3014261	<0.20 (7)	0.20	3012902	5.3	2.9	0.010	3022653
Surrogate Recovery (%)												
Decachlorobiphenyl	%	71 (2)	56 (5)		3014261	101		3012902	220 (8)	119 (9)		3022653

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(2) - Aroclor 1260.
(3) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) - Aroclor 1260. PCB:Unidentified (possibly halogenated) compounds detected.
(5) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(6) - Aroclor 1260. PCB:Unidentified (possibly halogenated) compounds detected. PCB surrogate(s) not within acceptance limits due to sample dilution / product interference.
(7) - Elevated PCB RDL due to matrix / co-extractive interference.
(8) - Aroclor 1254, 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(9) - Aroclor 1254, 1260.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9820		PF9821		PF9822	PF9823		PF9824		
Sampling Date		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-403**	**QC Batch**	**12-01-404**	**QC Batch**	**12-01-405**	**12-01-406**	**QC Batch**	**12-01-379**	**RDL**	**QC Batch**
PCBs											
Total PCB	ug/g	1.3	3022653	0.11	3016187	0.043	0.085	3022653	0.098	0.010	3021250
Surrogate Recovery (%)											
Decachlorobiphenyl	%	50 (1)	3022653	127 (2)	3016187	32 (3)	72 (2)	3022653	98 (2)		3021250

Maxxam ID		PF9825			PF9826			PF9827	PF9827		PF9828		
Sampling Date		2012/07/01			2012/07/01			2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-380**	**RDL**	**QC Batch**	**12-01-397**	**RDL**	**QC Batch**	**12-01-398**	**12-01-398 Lab-Dup**	**QC Batch**	**12-01-399**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.88	0.010	3012902	<0.20	0.20	3014261	0.035	0.034	3011651	0.079	0.010	3014261
Surrogate Recovery (%)													
Decachlorobiphenyl	%	85 (2)		3012902	66 (4)		3014261	76 (2)	96	3011651	20 (3)		3014261

Maxxam ID		PF9829	PF9830		PF9831		PF9832		PF9833		PF9834		
Sampling Date		2012/07/01	2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-400**	**12-01-407**	**QC Batch**	**12-01-408**	**QC Batch**	**12-01-409**	**QC Batch**	**12-01-410**	**QC Batch**	**12-01-101**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.023	0.041	3014261	0.064	3012902	0.019	3014261	0.49	3011651	3.6	0.010	3014261
Surrogate Recovery (%)													
Decachlorobiphenyl	%	70 (2)	52 (3)	3014261	72 (2)	3012902	55 (3)	3014261	56 (3)	3011651	88 (2)		3014261

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1254, 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) - Aroclor 1260.
(3) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results. Elevated PCB RDL due to matrix / co-extractive interference.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9835		PF9836	PF9836	PF9837		PF9838		PF9839		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-102**	**QC Batch**	**12-01-103**	**12-01-103 Lab-Dup**	**12-01-104**	**QC Batch**	**12-01-105**	**QC Batch**	**12-01-106**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.60	3011651	0.97	1.0	0.68	3021250	0.18	3022653	2.2	0.010	3021250
Surrogate Recovery (%)												
Decachlorobiphenyl	%	37 (1)	3011651	97 (2)	97	95 (2)	3021250	76 (2)	3022653	98 (2)		3021250

Maxxam ID		PF9840	PF9841	PF9842		PF9843		PF9844	PF9844		PF9845		
Sampling Date		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		
	Units	**12-01-107**	**12-01-108**	**12-01-109**	**QC Batch**	**12-01-110**	**QC Batch**	**12-01-111**	**12-01-111 Lab-Dup**	**QC Batch**	**12-01-112**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	1.3	0.70	<0.010	3011651	0.026	3022653	0.012	0.013	3030702	<0.010	0.010	3022653
Surrogate Recovery (%)													
Decachlorobiphenyl	%	122 (2)	125 (2)	114	3011651	66 (1)	3022653	93 (2)	93	3030702	52 (3)		3022653

Maxxam ID		PF9846		PF9847		PF9848	PF9849		PF9850		PF9851		
Sampling Date		2012/07/01		2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-113**	**QC Batch**	**12-01-285**	**QC Batch**	**12-01-286**	**12-01-287**	**QC Batch**	**12-01-288**	**QC Batch**	**12-01-219**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.026	3030702	23	3021250	14	0.30	3022653	0.14	3011651	<0.010	0.010	3021250
Surrogate Recovery (%)													
Decachlorobiphenyl	%	93 (2)	3030702	54 (1)	3021250	33 (1)	137 (1)	3022653	68 (1)	3011651	88		3021250

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) - Aroclor 1260.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Job #: B2G1304
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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9852		PF9853	PF9854	PF9855		PF9856		PF9857		
Sampling Date		2012/07/01		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-220**	**QC Batch**	**12-01-221**	**12-01-223**	**12-01-224**	**QC Batch**	**12-01-330**	**QC Batch**	**12-01-331**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.21	3030702	0.39	0.59	8.1	3021250	<0.010	3022653	0.015	0.010	3030702
Surrogate Recovery (%)												
Decachlorobiphenyl	%	37(1)	3030702	98(2)	102(2)	90(2)	3021250	106	3022653	100(2)		3030702

Maxxam ID		PF9858		PF9859		PF9860		PF9861		PF9862	PF9863		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-332**	**QC Batch**	**12-01-333**	**QC Batch**	**12-01-334**	**QC Batch**	**12-01-450**	**QC Batch**	**12-01-451**	**12-01-452**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.036	3021250	0.022	3030702	0.014	3021250	0.020	3016187	<0.010	<0.010	0.010	3021255
Surrogate Recovery (%)													
Decachlorobiphenyl	%	107(2)	3021250	102(2)	3030702	91(2)	3021250	102(2)	3016187	91	74		3021255

Maxxam ID		PF9864	PF9865	PF9866	PF9867	PF9868	PF9869	PF9870		PF9871	PF9872		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-453**	**12-01-454**	**12-01-116**	**12-01-117**	**12-01-118**	**12-01-119**	**12-01-120**	**QC Batch**	**12-01-121**	**12-01-122**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	<0.010	0.039	0.038	0.046	0.035	0.054	3016187	0.043	0.034	0.010	3021255
Surrogate Recovery (%)													
Decachlorobiphenyl	%	89	90	87(2)	102(2)	108(2)	80(2)	72(2)	3016187	85(2)	79(2)		3021255

Maxxam ID		PF9873	PF9874	PF9875		PF9876		PF9877		PF9878		
Sampling Date		2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-123**	**12-01-124**	**12-01-284**	**QC Batch**	**12-01-291**	**QC Batch**	**12-01-292**	**QC Batch**	**12-01-375**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	0.038	0.058	3021255	0.078	3030702	0.051	3021250	<0.010	0.010	3021255
Surrogate Recovery (%)												
Decachlorobiphenyl	%	73	81(2)	73(2)	3021255	92(2)	3030702	111(2)	3021250	91		3021255

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260. PCB surrogate not within acceptance limits. Insufficient sample to repeat.
(2) - Aroclor 1260.

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Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9879		PF9880		PF9881		PF9882		PF9883		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-376**	**QC Batch**	**12-01-381**	**QC Batch**	**12-01-367**	**QC Batch**	**12-01-368**	**QC Batch**	**12-01-215**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	3011651	<0.010	3021255	<0.010	3016187	0.032	3030702	<0.010	0.010	3016187
Surrogate Recovery (%)												
Decachlorobiphenyl	%	58(1)	3011651	76	3021255	80	3016187	98(2)	3030702	70		3016187

Maxxam ID		PF9884	PF9884		PF9885	PF9886		PF9887		PF9888	PF9889		
Sampling Date		2012/07/01	2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-254**	**12-01-254 Lab-Dup**	**QC Batch**	**12-01-255**	**12-01-256**	**QC Batch**	**12-01-257**	**QC Batch**	**12-01-258**	**12-01-266**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.27	0.28	3021255	0.21	0.16	3016187	0.15	3021250	0.13	0.053	0.010	3021255
Surrogate Recovery (%)													
Decachlorobiphenyl	%	101(2)	101	3021255	127(2)	70(2)	3016187	96(2)	3021250	94(2)	87(2)		3021255

Maxxam ID		PF9890	PF9891	PF9892	PF9893	PF9894		PF9895		PF9896		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-267**	**12-01-269**	**12-01-270**	**12-01-271**	**12-01-296**	**QC Batch**	**12-01-351**	**QC Batch**	**12-01-352**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	<0.010	0.036	0.051	0.042	3021255	0.014	3030702	<0.010	0.010	3021255
Surrogate Recovery (%)												
Decachlorobiphenyl	%	85	103	91(2)	92(2)	80(2)	3021255	99(2)	3030702	81		3021255

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) - Aroclor 1260.

Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		PF9897		PF9898		PF9899		PF9900		PF9901		
Sampling Date		2012/07/01		2012/07/01		2012/07/01		2012/07/01		2012/07/01		
	Units	**12-01-362**	**QC Batch**	**12-01-180**	**QC Batch**	**12-01-181**	**QC Batch**	**12-01-198**	**QC Batch**	**12-01-329**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	3011651	0.089	3021255	0.085	3021250	0.059	3021255	1.6	0.010	3011651
Surrogate Recovery (%)												
Decachlorobiphenyl	%	93	3011651	75(1)	3021255	93(1)	3021250	82(1)	3021255	112(1)		3011651

Maxxam ID		PF9902		PF9903	PF9904		PF9905		PF9906	PF9907		
Sampling Date		2012/07/01		2012/07/01	2012/07/01		2012/07/01		2012/07/01	2012/07/01		
	Units	**12-01-353**	**QC Batch**	**12-01-134**	**12-01-170**	**QC Batch**	**12-01-185**	**QC Batch**	**12-01-238**	**12-01-240**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	<0.010	3011651	0.026	0.036	3014261	0.015	3011651	0.15	0.14	0.010	3014261
Surrogate Recovery (%)												
Decachlorobiphenyl	%	123	3011651	43(2)	38(2)	3014261	98(1)	3011651	86(1)	82(1)		3014261

Maxxam ID		PG5660	PG5692	PG5693	PG5694	PG5695	PG5696		
Sampling Date		2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01	2012/07/01		
	Units	**12-01-231**	**12-01-233**	**12-01-234**	**12-01-272**	**12-01-243**	**12-01-244**	**RDL**	**QC Batch**
PCBs									
Total PCB	ug/g	0.16	0.13	0.18	0.20	<0.010	0.013	0.010	3012902
Surrogate Recovery (%)									
Decachlorobiphenyl	%	97(1)	97(1)	92(1)	81(1)	106	116(1)		3012902

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Insufficient sample to repeat.

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Package 1	2.3°C
Package 2	2.7°C
Package 3	4.7°C
Package 4	3.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

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Maxxam Job #: B2G1304
Report Date: 2012/12/11

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3009962	Decachlorobiphenyl	2012/11/02	83	30 - 130	72	30 - 130	70	%				
3009962	Total PCB	2012/11/02	88	30 - 130	85	30 - 130	<0.010	ug/g	NC	50		
3011651	Decachlorobiphenyl	2012/11/27	70	30 - 130	80	30 - 130	75	%				
3011651	Total PCB	2012/11/27	78	30 - 130	91	30 - 130	<0.010	ug/g	NC	50		
3012902	Decachlorobiphenyl	2012/11/26	88	30 - 130	88	30 - 130	73	%				
3012902	Total PCB	2012/11/26	NC	30 - 130	111	30 - 130	<0.010	ug/g	72.4(1, 2)	50		
3013967	Decachlorobiphenyl	2012/10/26	91	70 - 130	103	70 - 130	92	%				
3013967	Total PCB	2012/10/26	100	70 - 130	108	70 - 130	<0.010	mg/kg	NC	50		
3014261	Decachlorobiphenyl	2012/12/05	69(3)	30 - 130	104	30 - 130	71	%				
3014261	Total PCB	2012/12/05	103	30 - 130	104	30 - 130	<0.010	ug/g	NC	50		
3016187	Decachlorobiphenyl	2012/11/15	77	30 - 130	82	30 - 130	70	%				
3016187	Total PCB	2012/11/15	97	30 - 130	93	30 - 130	0.019, RDL=0.010	ug/g	NC	50		
3020408	Crude Fat	2012/11/01					<0.50	%	NC	25	102	80 - 120
3020430	Crude Fat	2012/10/31					<0.50	%	NC	25	106	80 - 120
3020442	Crude Fat	2012/11/02					<0.50	%	0.7	25	97	80 - 120
3021250	Decachlorobiphenyl	2012/11/27	98	30 - 130	96	30 - 130	101	%				
3021250	Total PCB	2012/11/27	NC	30 - 130	77	30 - 130	<0.010	ug/g	4.4	50		
3021255	Decachlorobiphenyl	2012/11/22	114	30 - 130	93	30 - 130	83	%				
3021255	Total PCB	2012/11/22	NC	30 - 130	80	30 - 130	<0.010	ug/g	3.5	50		
3022653	Decachlorobiphenyl	2012/12/05	32(3)	30 - 130	89	30 - 130	99	%				
3022653	Total PCB	2012/12/05	29(1, 4)	30 - 130	85	30 - 130	<0.010	ug/g	NC	50		
3027077	Crude Fat	2012/11/07					<0.50	%	NC	25	100	80 - 120
3027083	Crude Fat	2012/11/08					<0.50	%	23.1	25	105	80 - 120
3030702	Decachlorobiphenyl	2012/11/28	84	30 - 130	87	30 - 130	92	%				
3030702	Total PCB	2012/11/28	94	30 - 130	93	30 - 130	<0.010	ug/g	NC	50		
3034090	Crude Fat	2012/11/14					<0.50	%	NC	25	93	80 - 120
3034118	Crude Fat	2012/11/15					<0.50	%	NC	25	93	80 - 120
3038479	Crude Fat	2012/11/21					<0.50	%	NC	25	94	80 - 120
3040774	Crude Fat	2012/11/21					<0.50	%	NC	25	97	80 - 120

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QUALITY ASSURANCE REPORT

			Reagent Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits
3009962	Decachlorobiphenyl	2012/11/02	78	30 - 130
3009962	Total PCB	2012/11/02	<0.010	N/A
3011651	Decachlorobiphenyl	2012/11/27	77	30 - 130
3011651	Total PCB	2012/11/27	<0.010	N/A
3012902	Decachlorobiphenyl	2012/11/26	119	30 - 130
3012902	Total PCB	2012/11/26	<0.010	N/A
3014261	Decachlorobiphenyl	2012/12/05	80	30 - 130
3014261	Total PCB	2012/12/05	<0.010	N/A
3016187	Decachlorobiphenyl	2012/11/15	83	30 - 130
3016187	Total PCB	2012/11/15	0.018	N/A
3021250	Decachlorobiphenyl	2012/11/27	99	30 - 130
3021250	Total PCB	2012/11/27	<0.010	N/A
3021255	Decachlorobiphenyl	2012/11/22	91	30 - 130
3021255	Total PCB	2012/11/22	<0.010	N/A
3022653	Decachlorobiphenyl	2012/12/05	94	30 - 130
3022653	Total PCB	2012/12/05	<0.010	N/A
3030702	Decachlorobiphenyl	2012/11/28	90	30 - 130
3030702	Total PCB	2012/11/28	<0.010	N/A

N/A = Not Applicable
RDL = Reportable Detection Limit
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.
(1) - Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.
(2) - Duplicate: results are outside acceptance limit. Analysis was repeated with similar results.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(4) - Matrix Spike: results are outside acceptance limit. Analysis was repeated with similar results.

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Validation Signature Page

Maxxam Job #: B2G1304

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Alan Stewart, Scientific Specialist (Organics)

Colleen Acker, Supervisor, General Chemistry

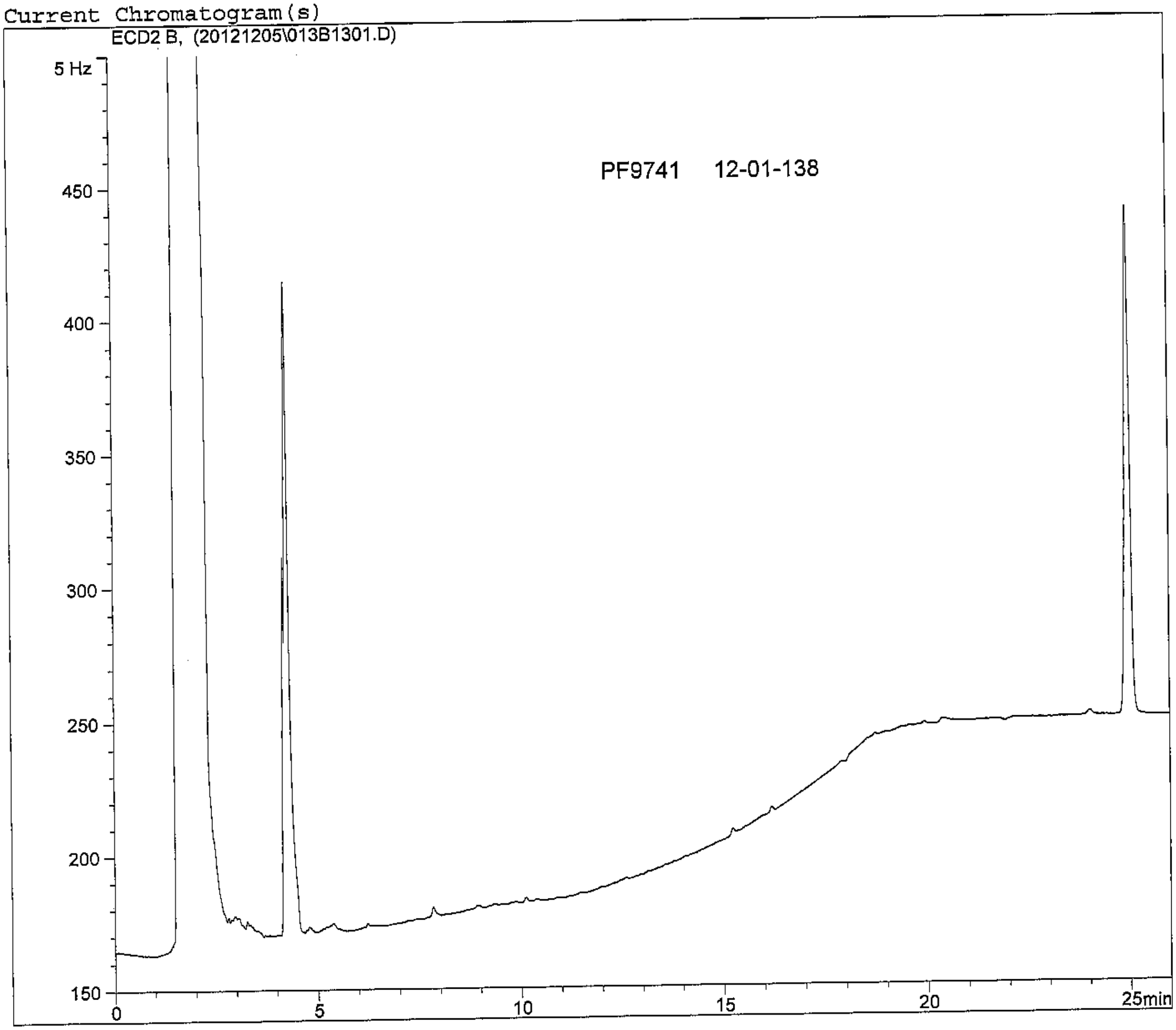
Robin Smith-Armstrong, Bedford SemiVol Spvsr

==

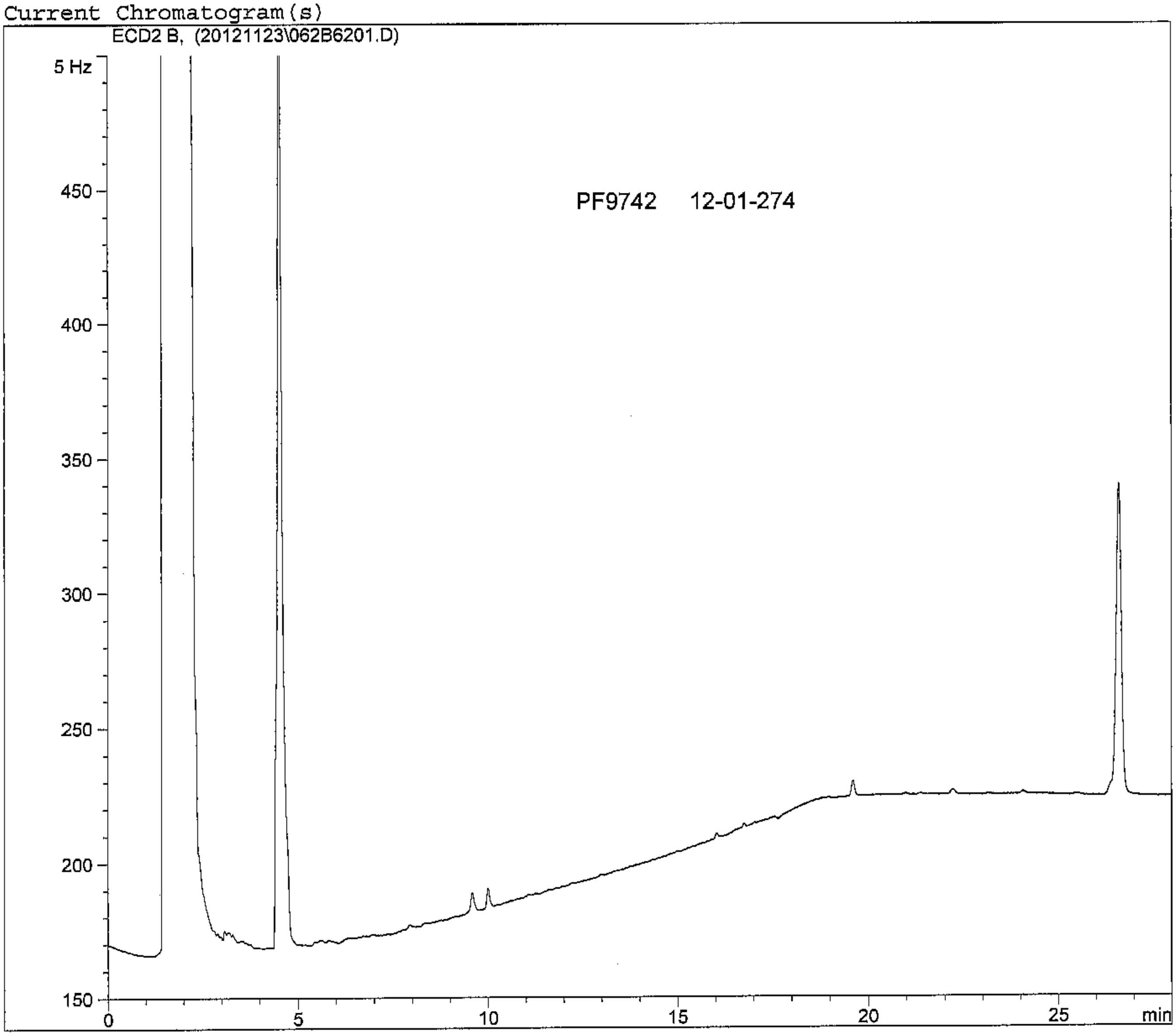
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Print of all graphic windows

Current Chromatogram(s)



Current Chromatogram(s)



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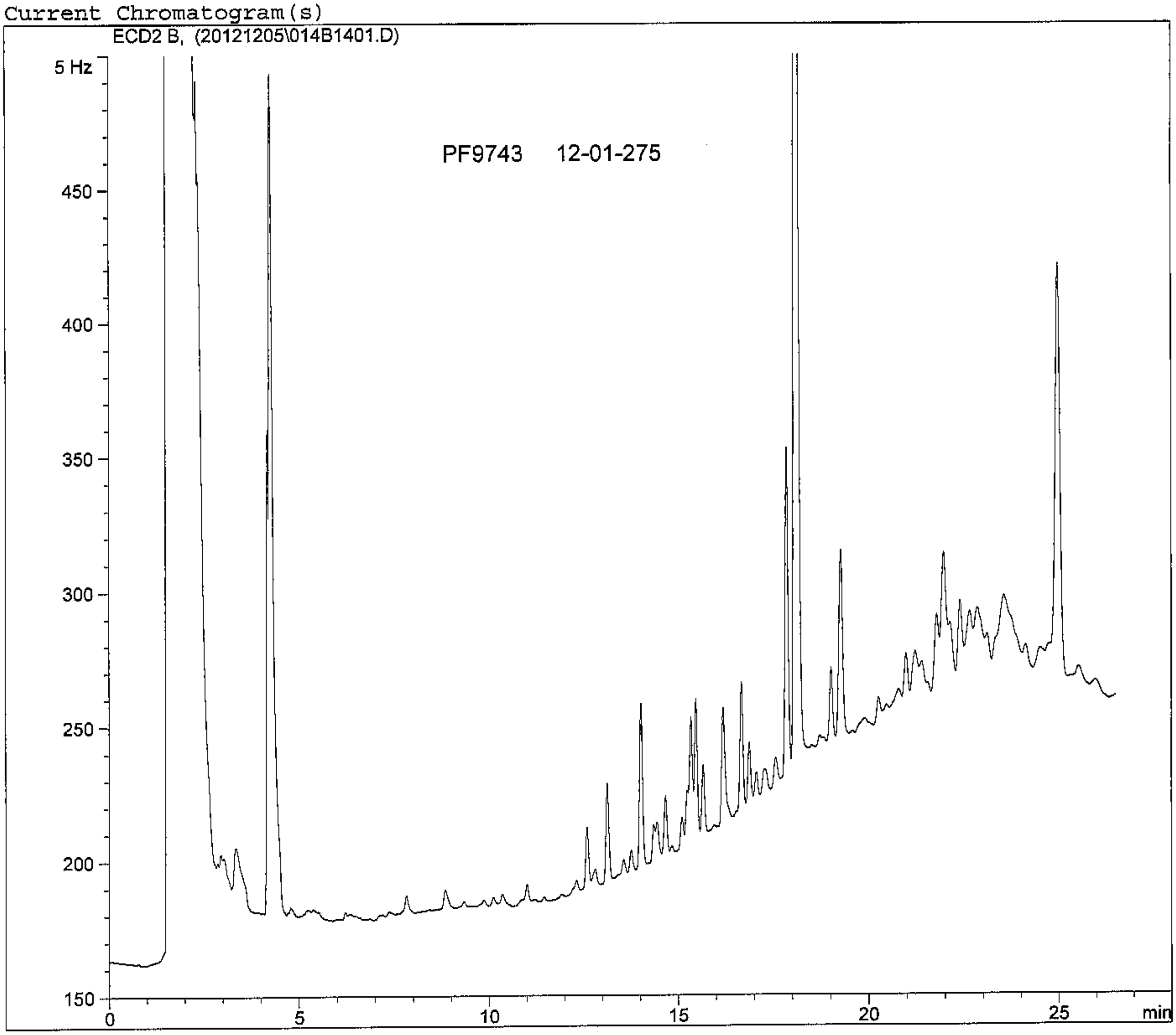

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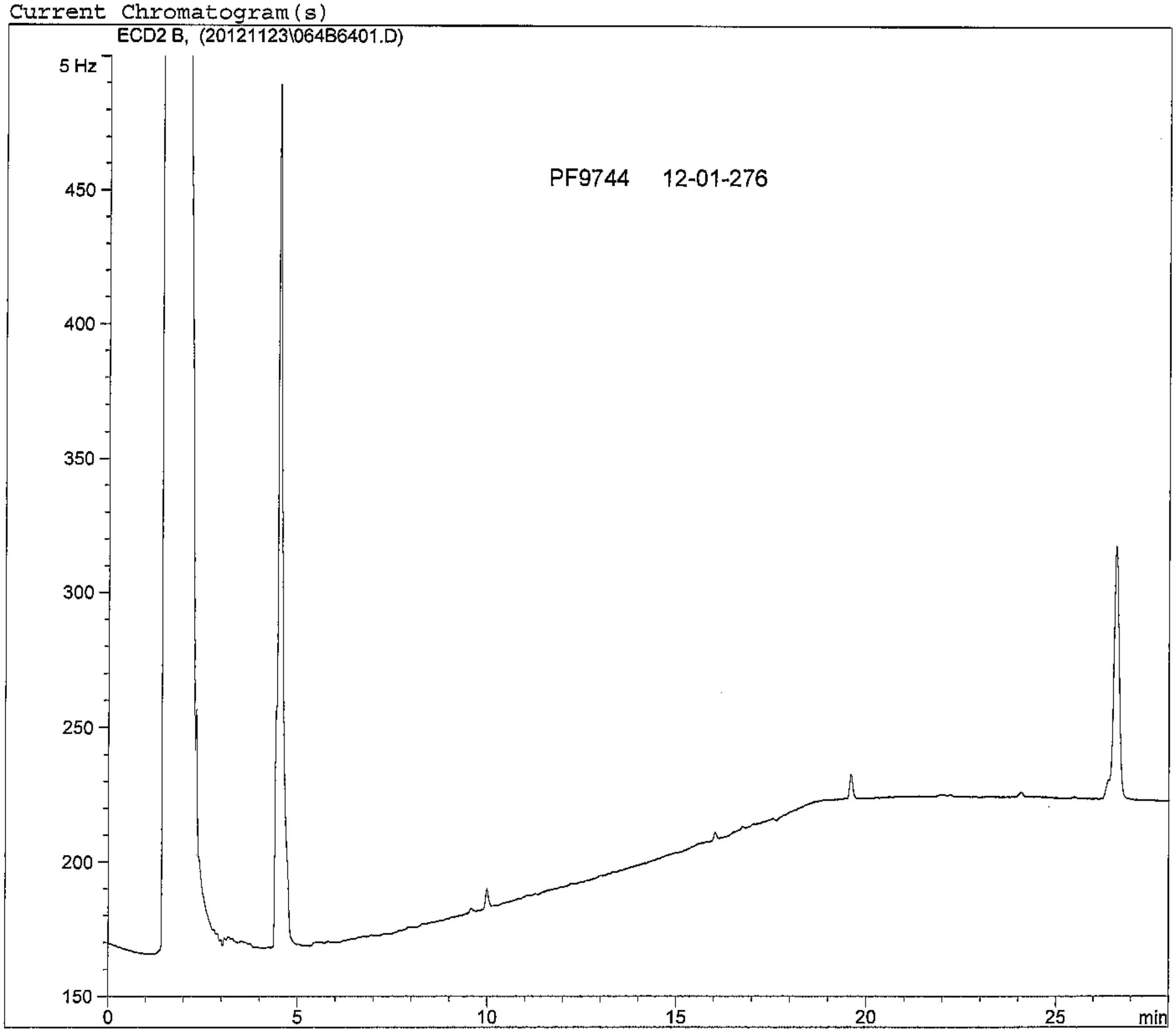

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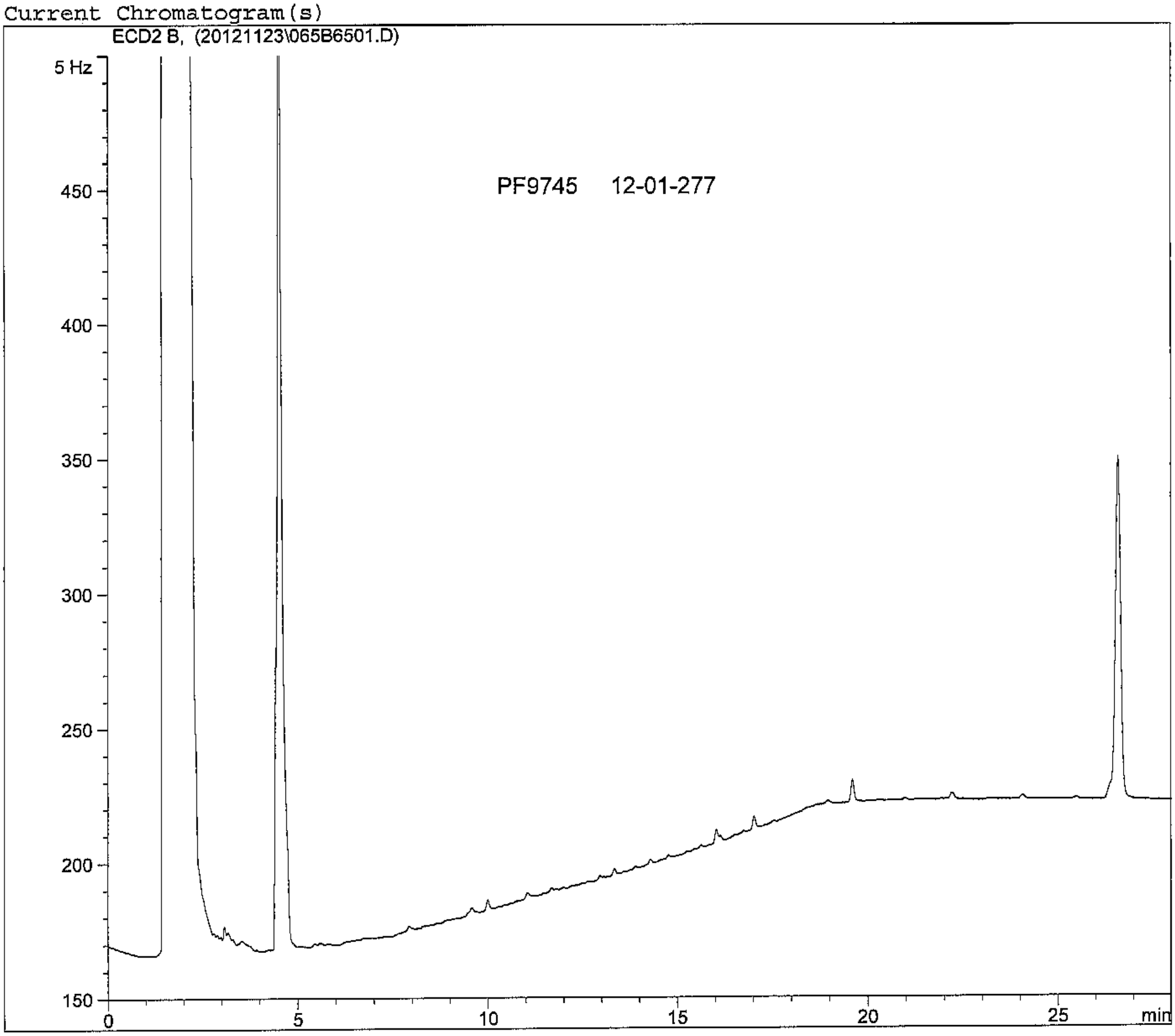

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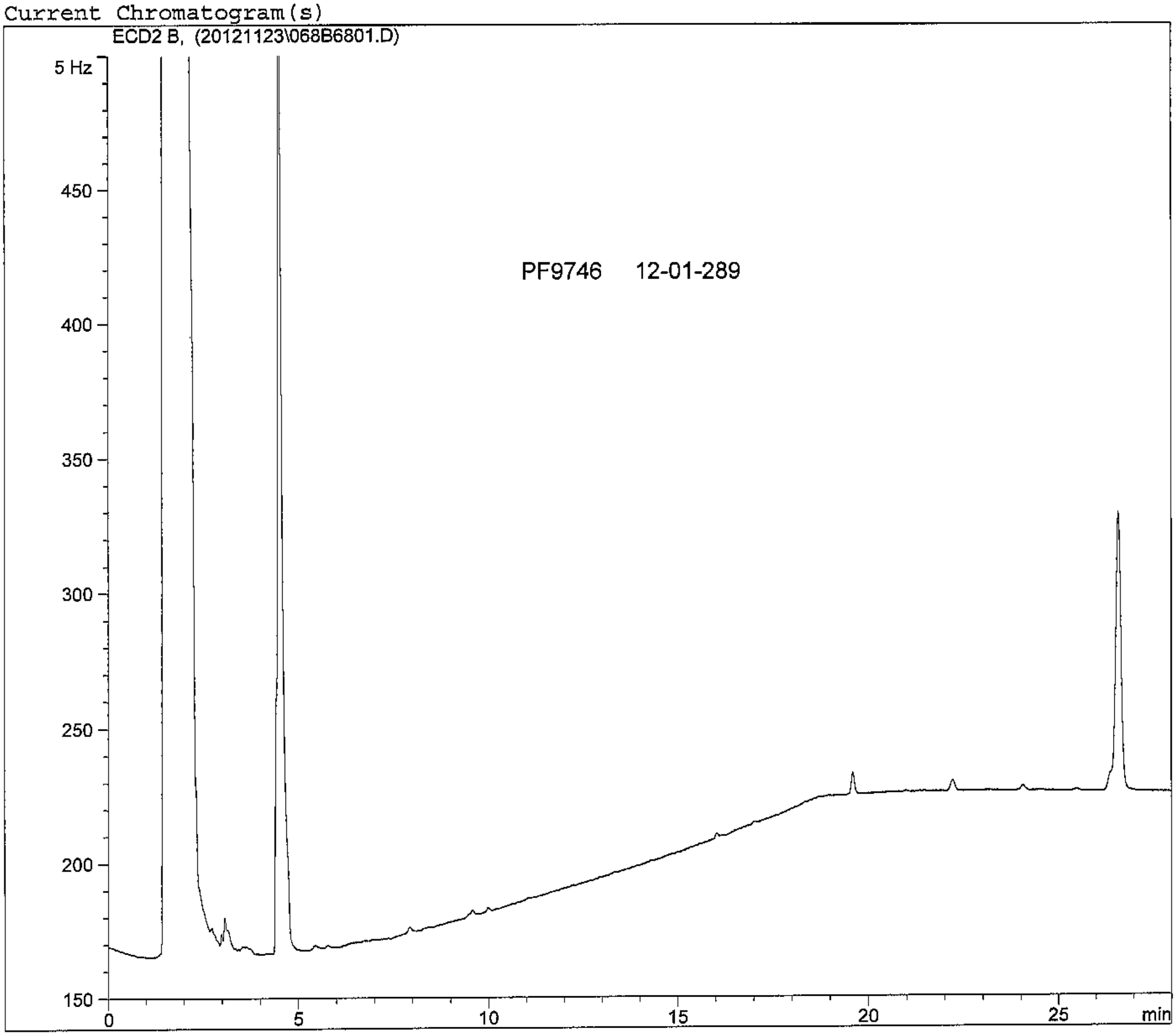

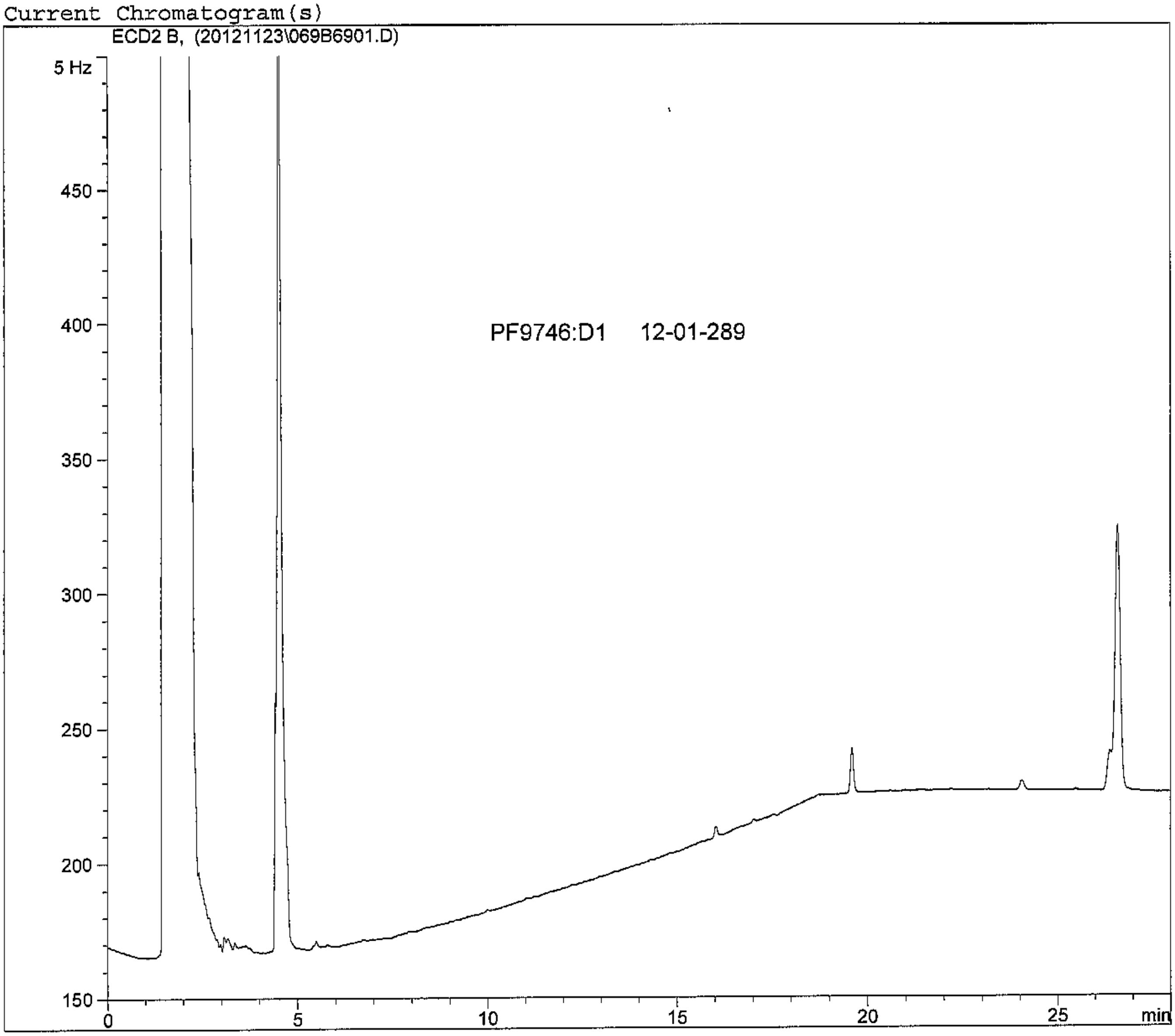
Current Chromatogram(s)
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10
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20
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min
PF9746:D1 12-01-289

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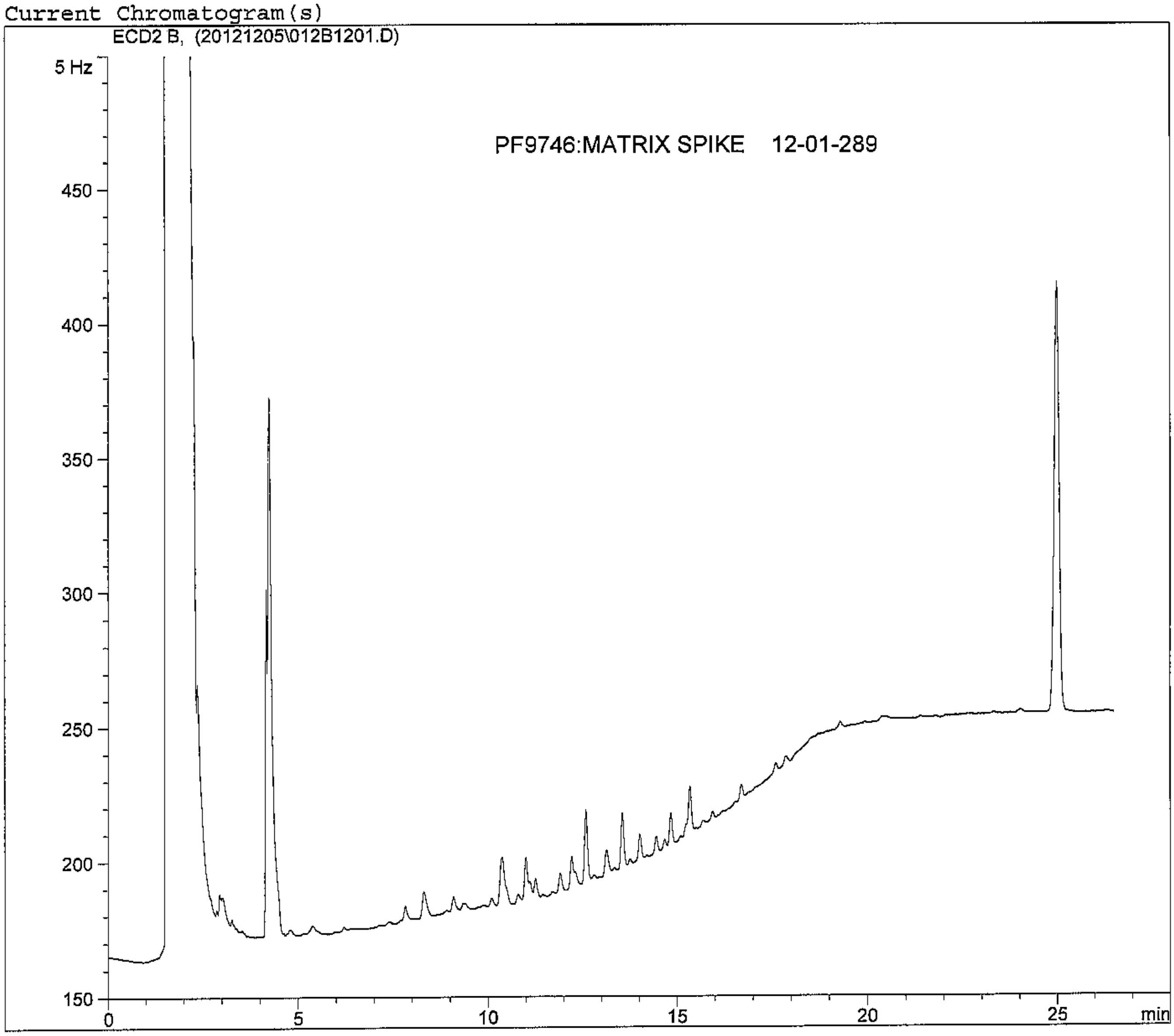
Current Chromatogram(s)



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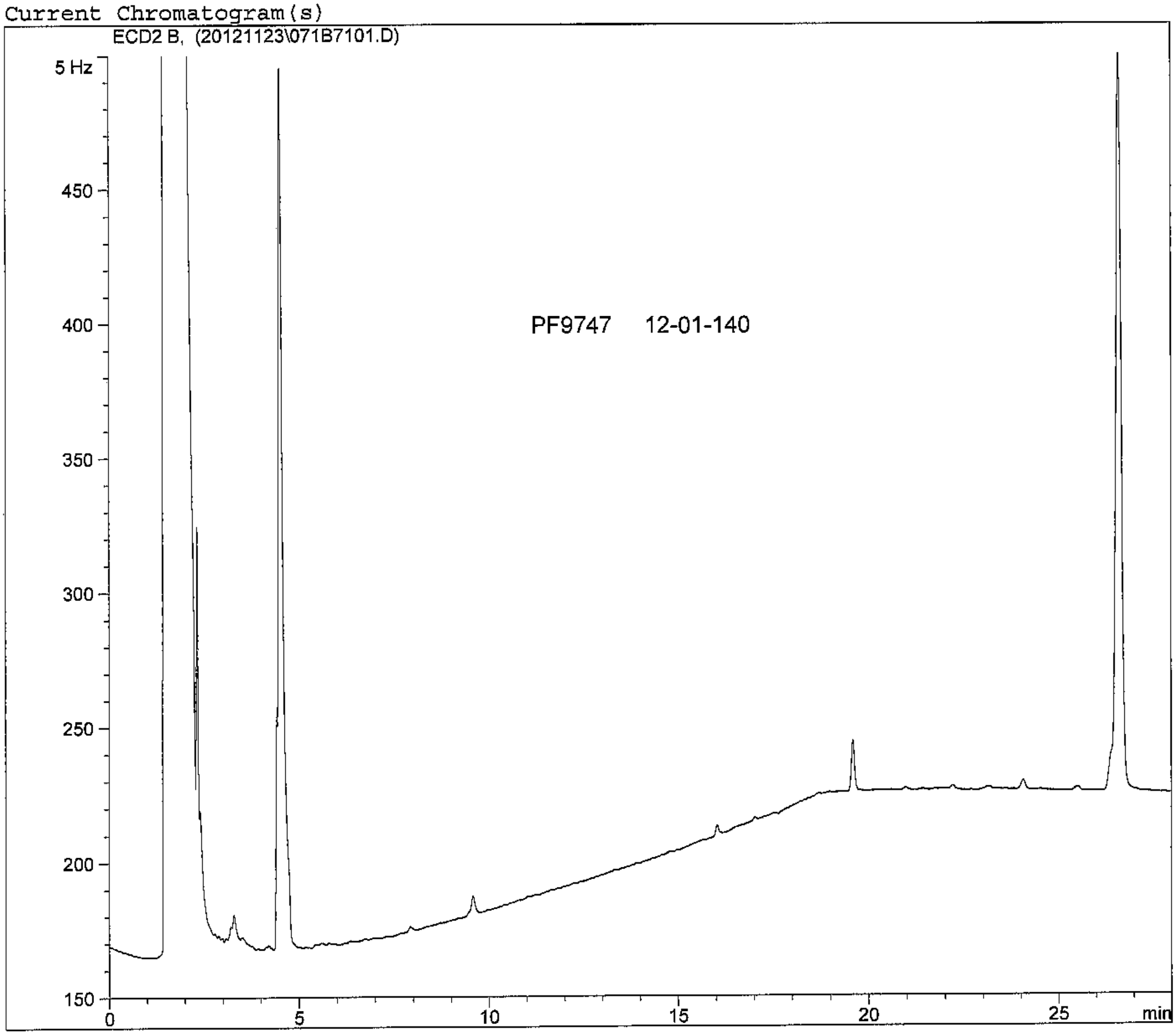

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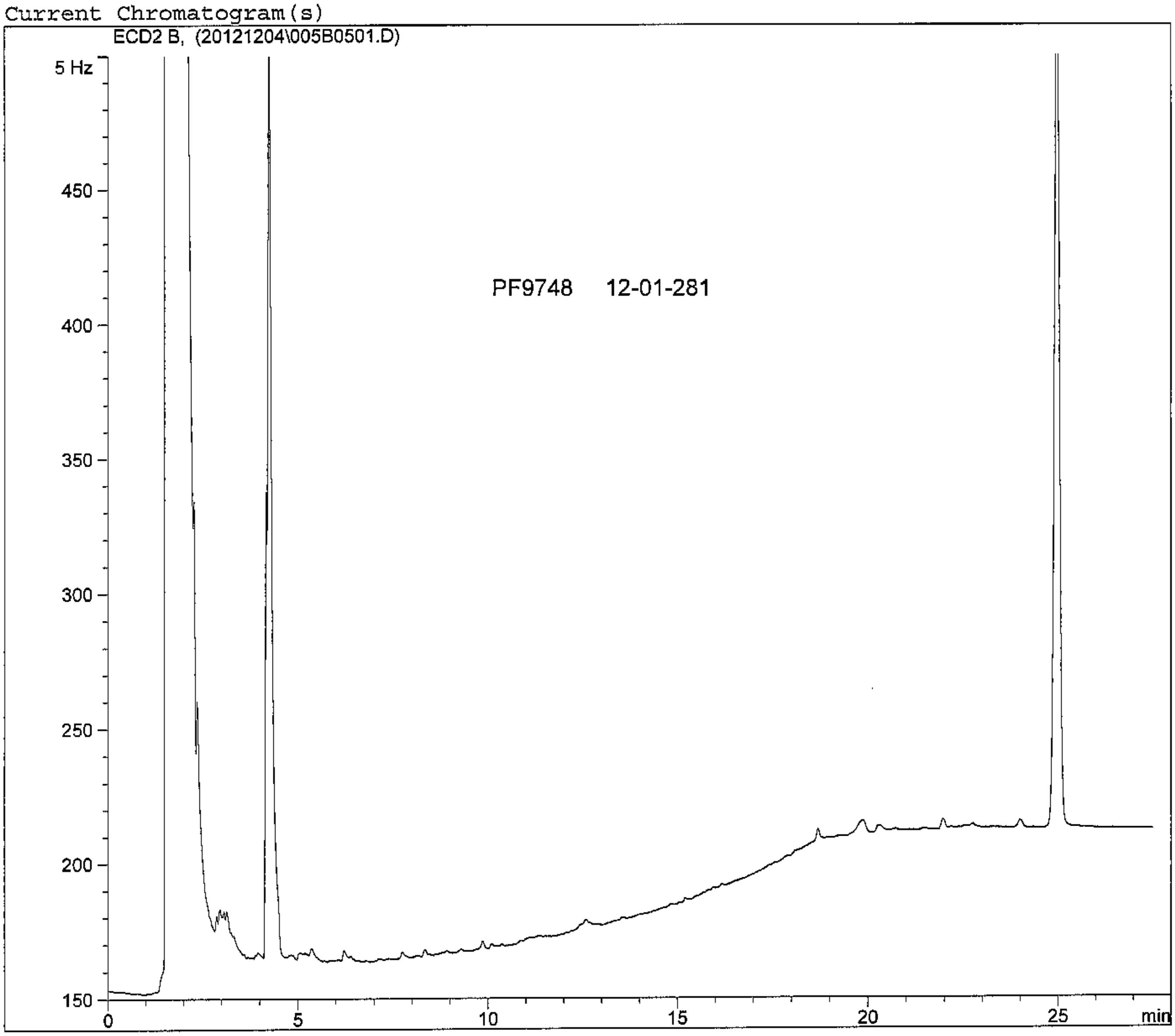

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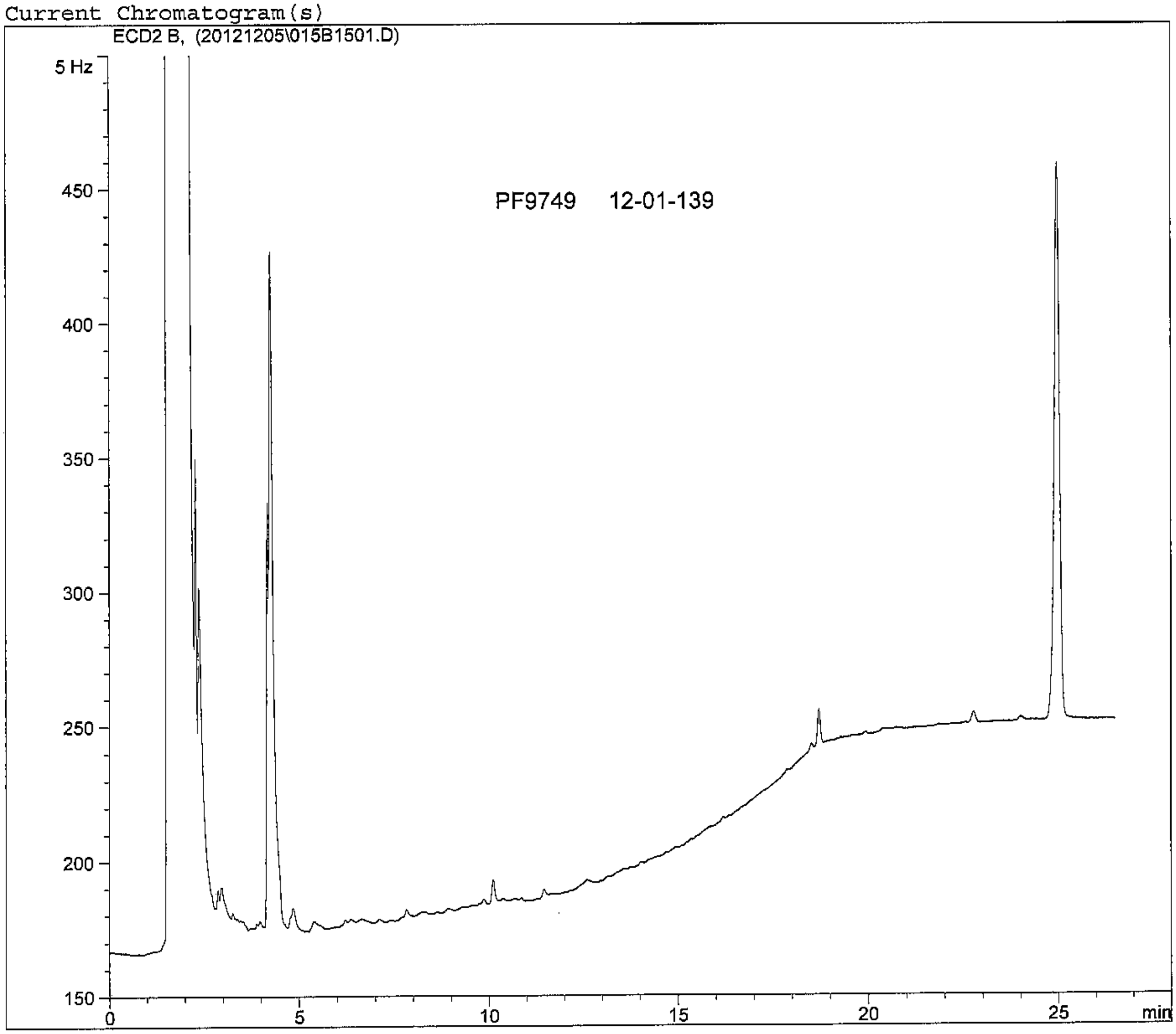

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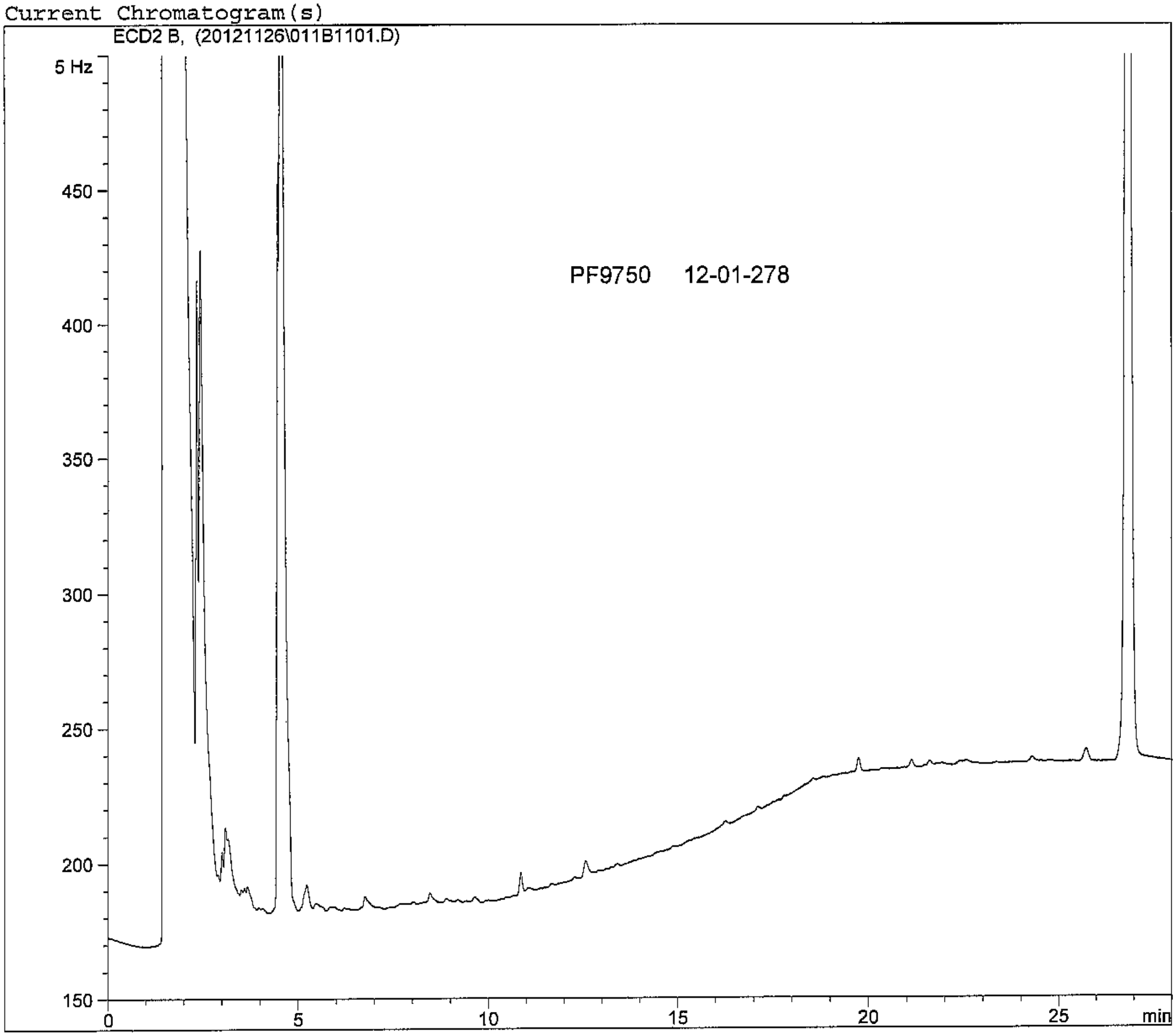

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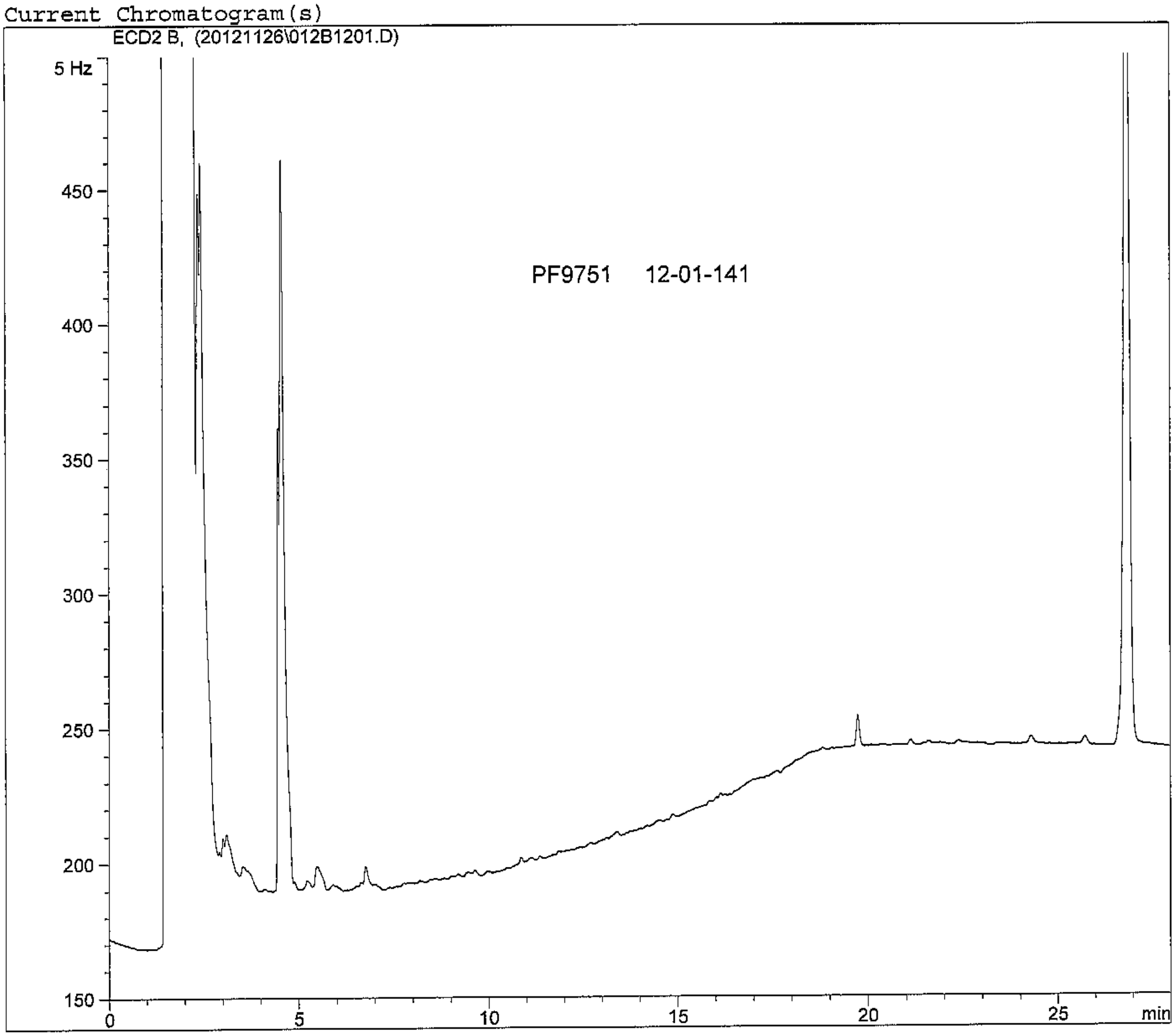
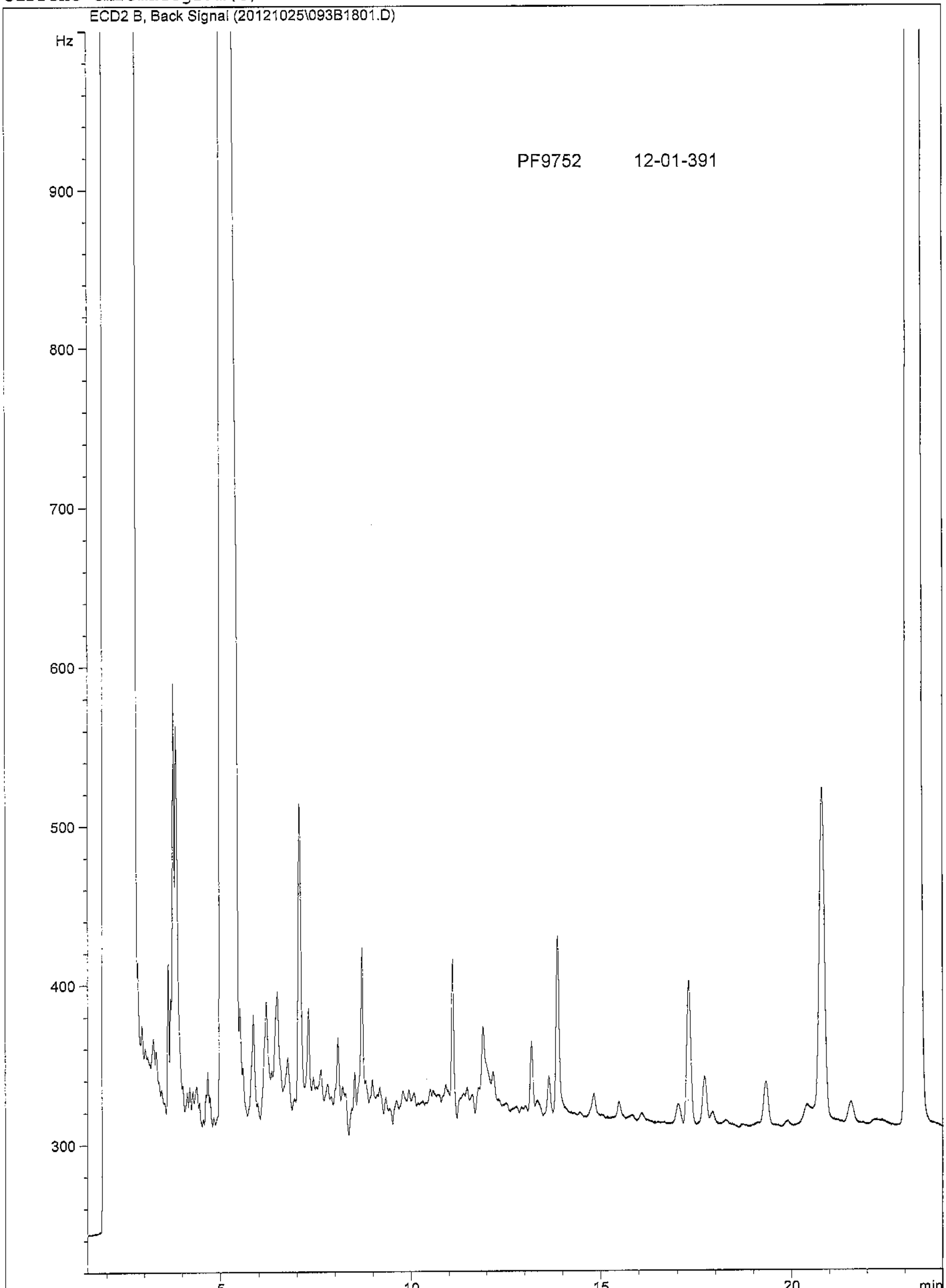
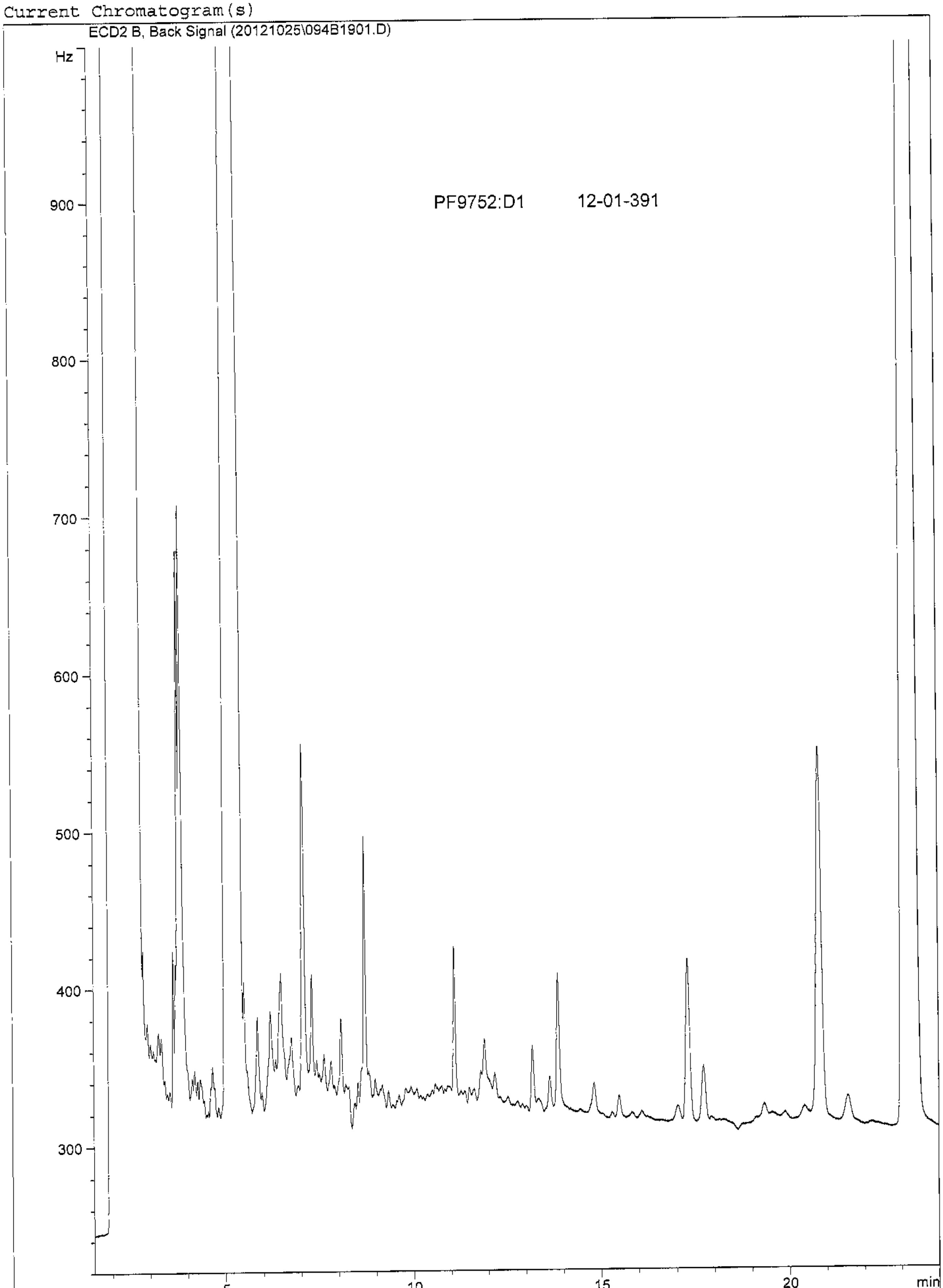


Print of window 38: Current Chromatogram(s)

Current Chromatogram(s)

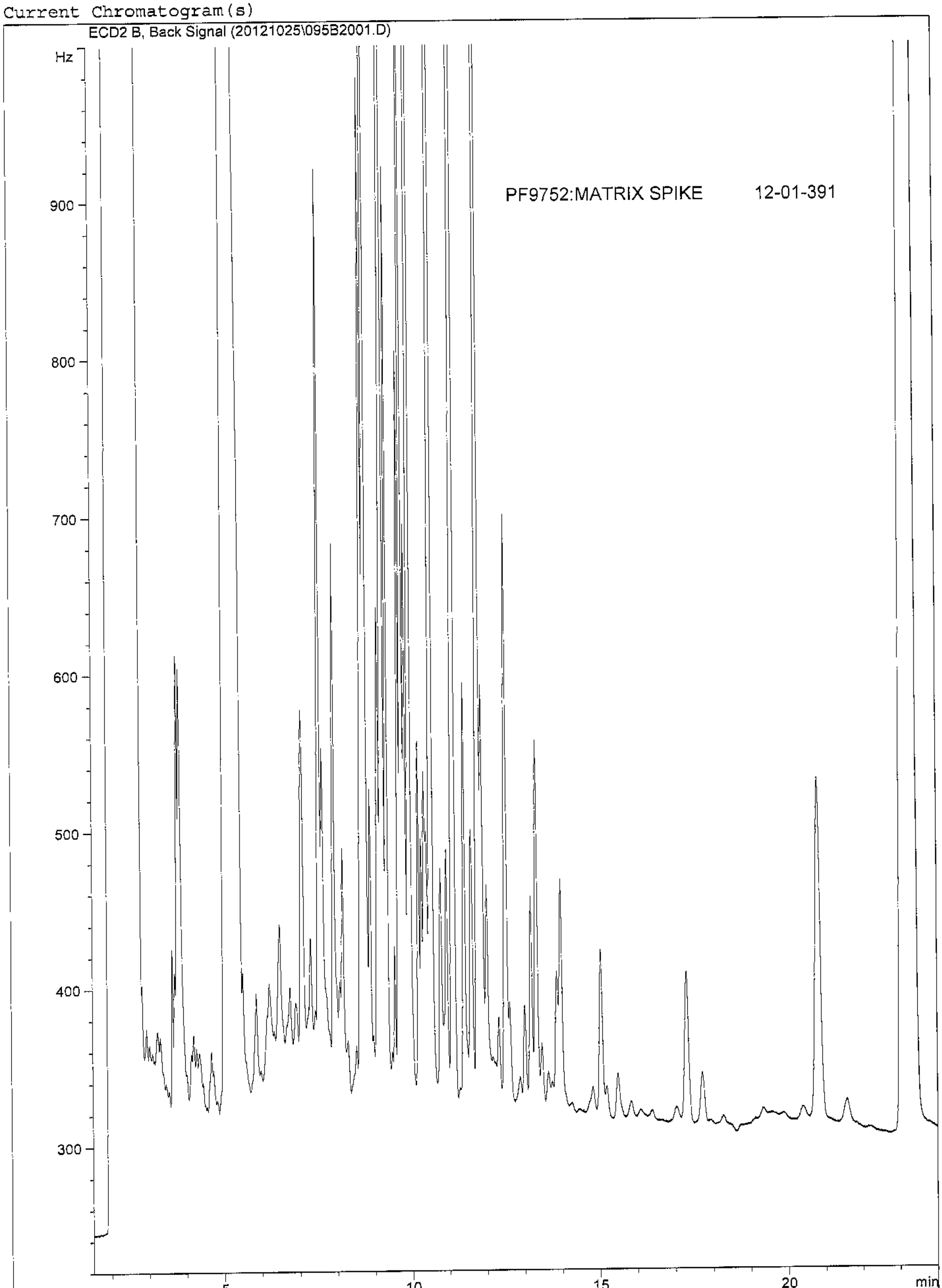


Print of window 38: Current Chromatogram(s)

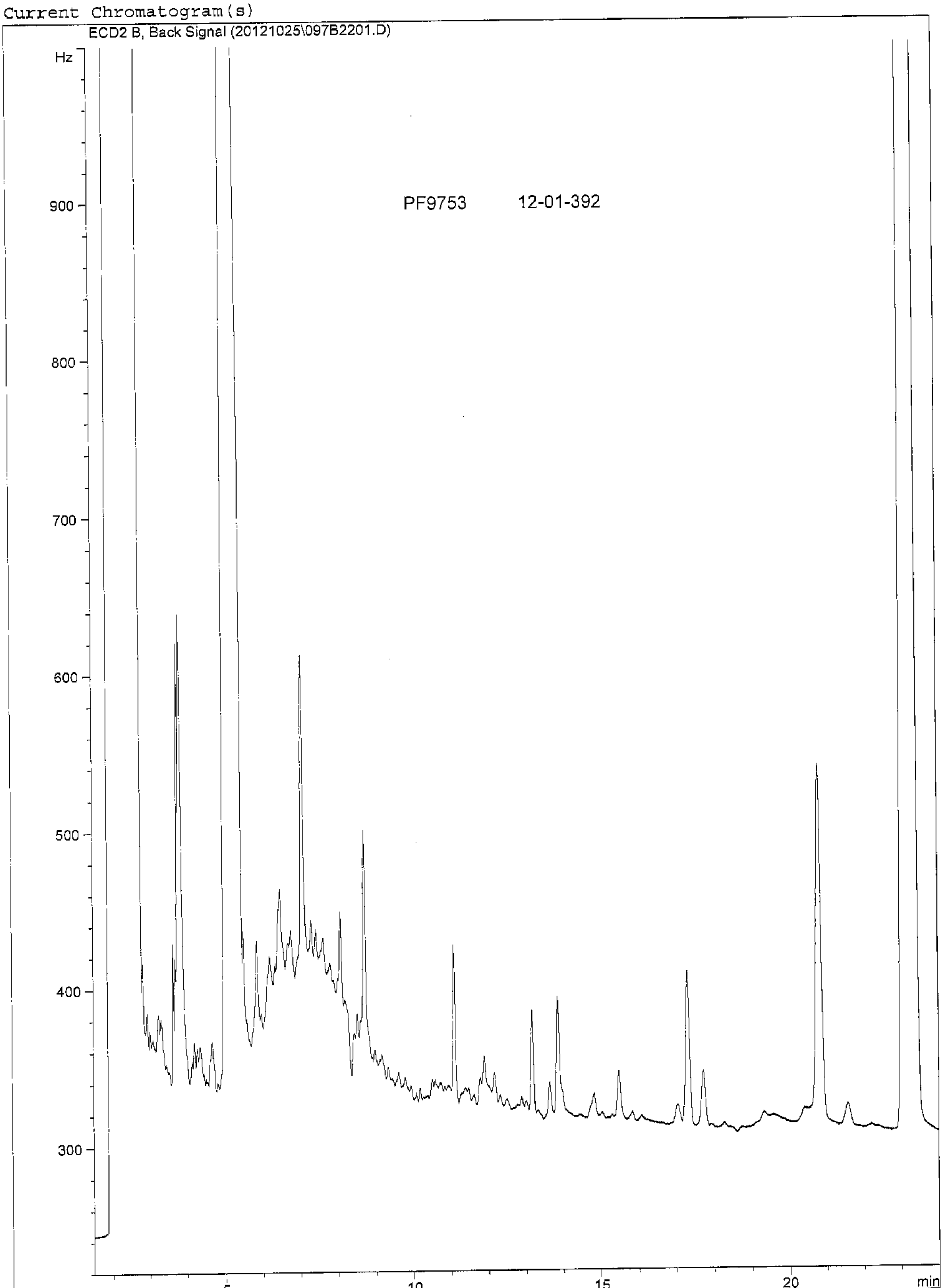


PCB003 2012/12/13 10:20:28 AM Kristy Joudrey

Current Chromatogram(s)

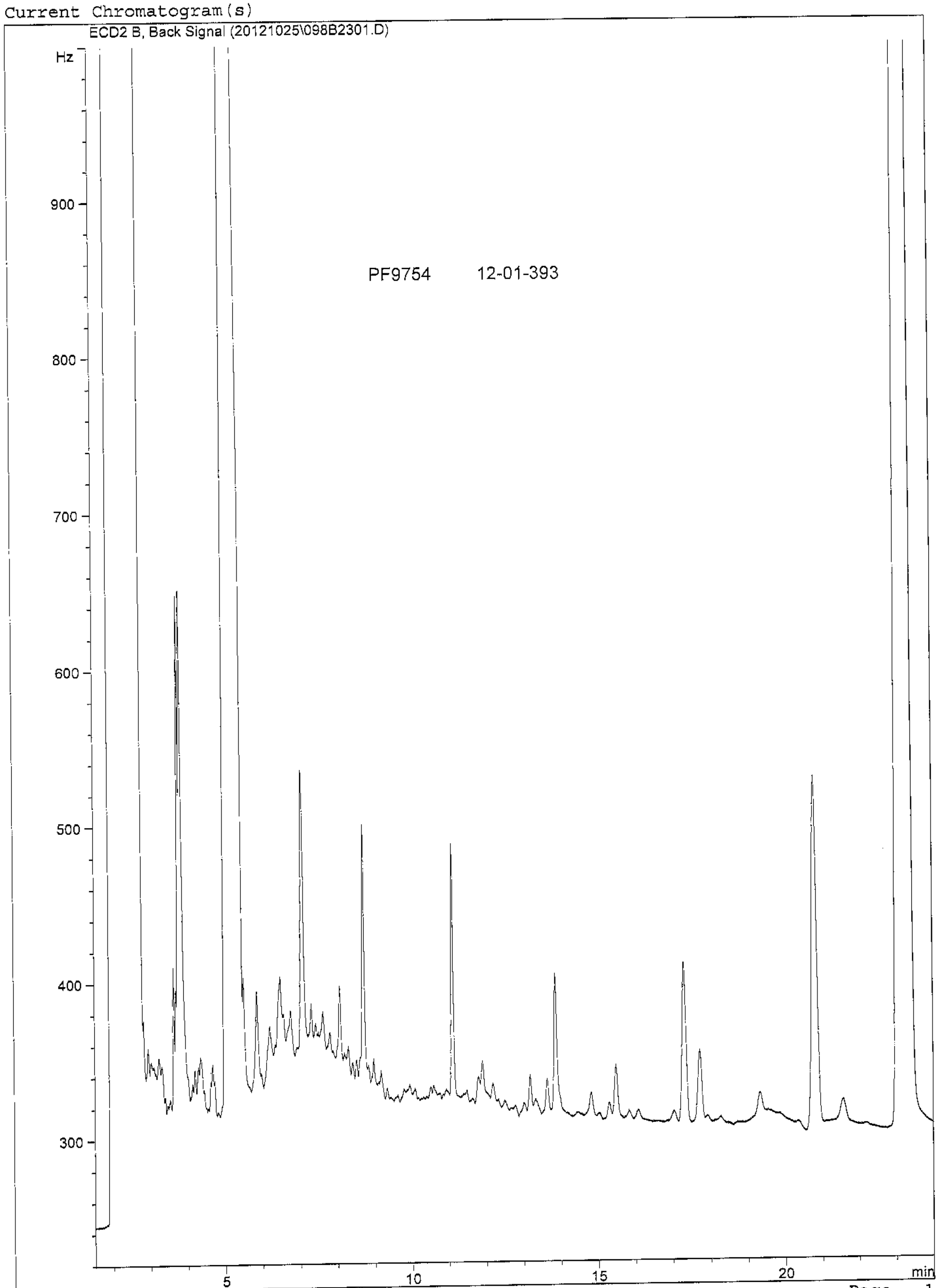


Print of window 38: Current Chromatogram(s)



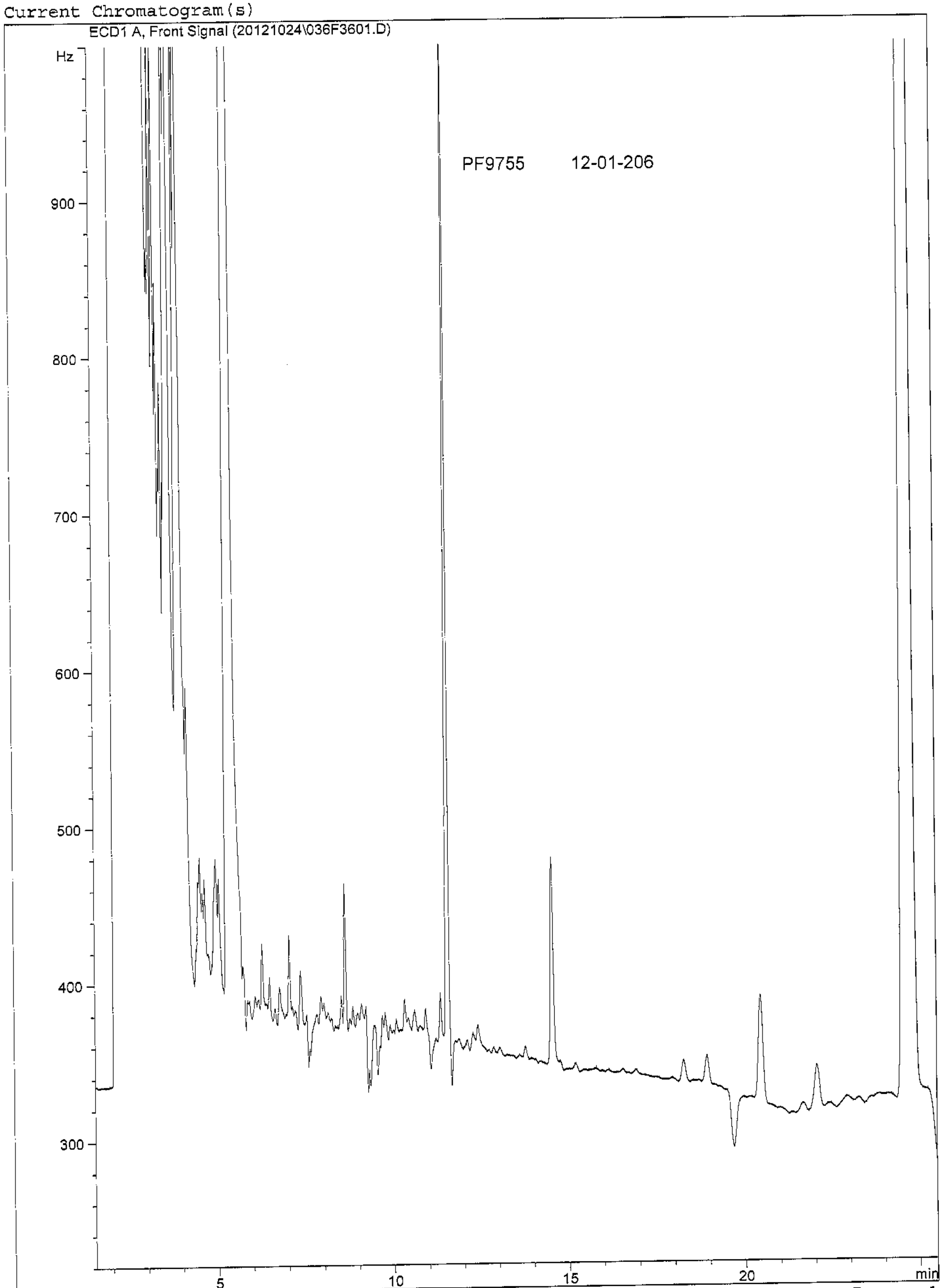
PCB003 2012/12/13 10:21:51 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)



PCB003 2012/12/13 10:22:20 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)



PCB003 2012/12/13 10:24:08 AM Kristy Joudrey

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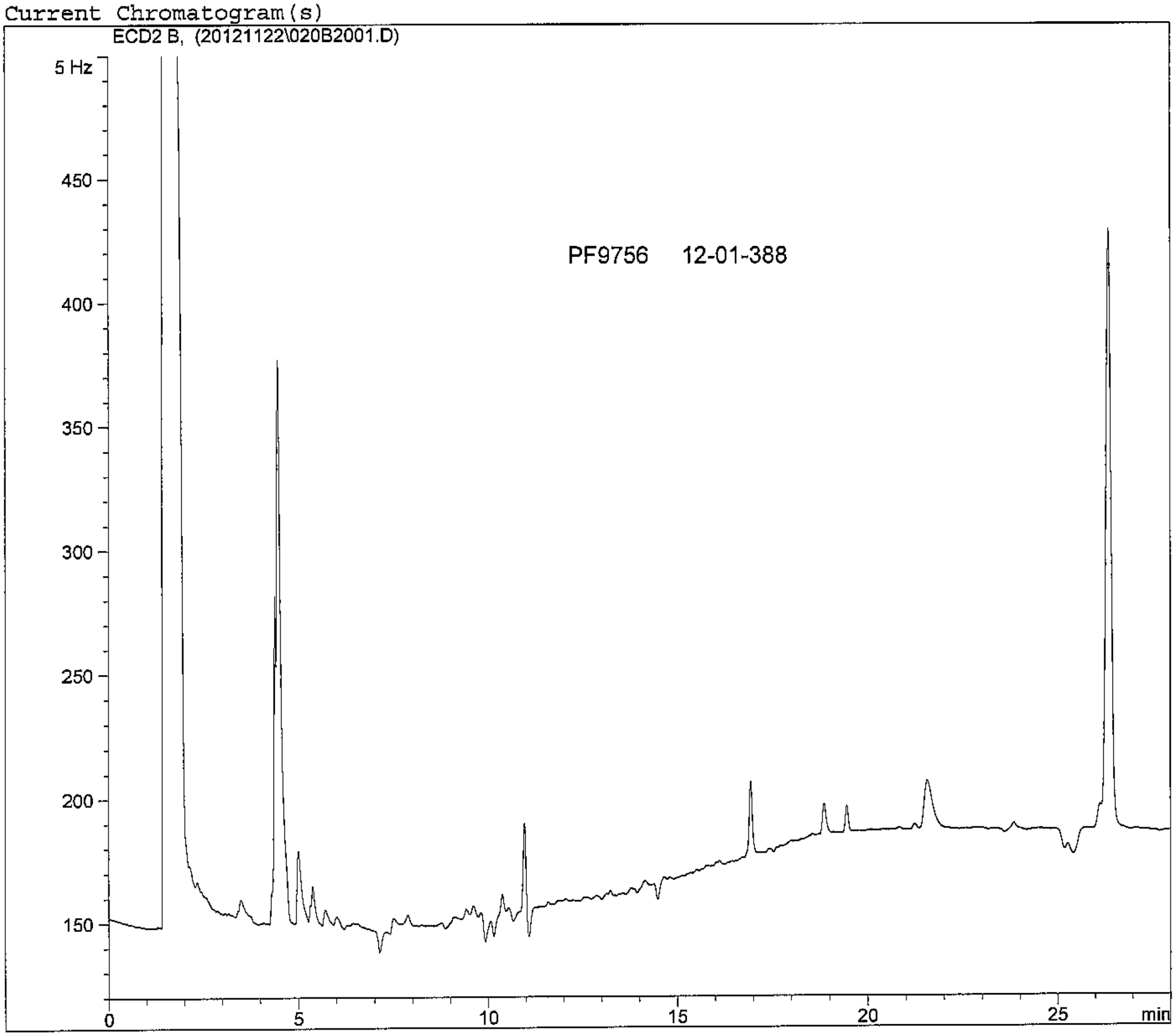
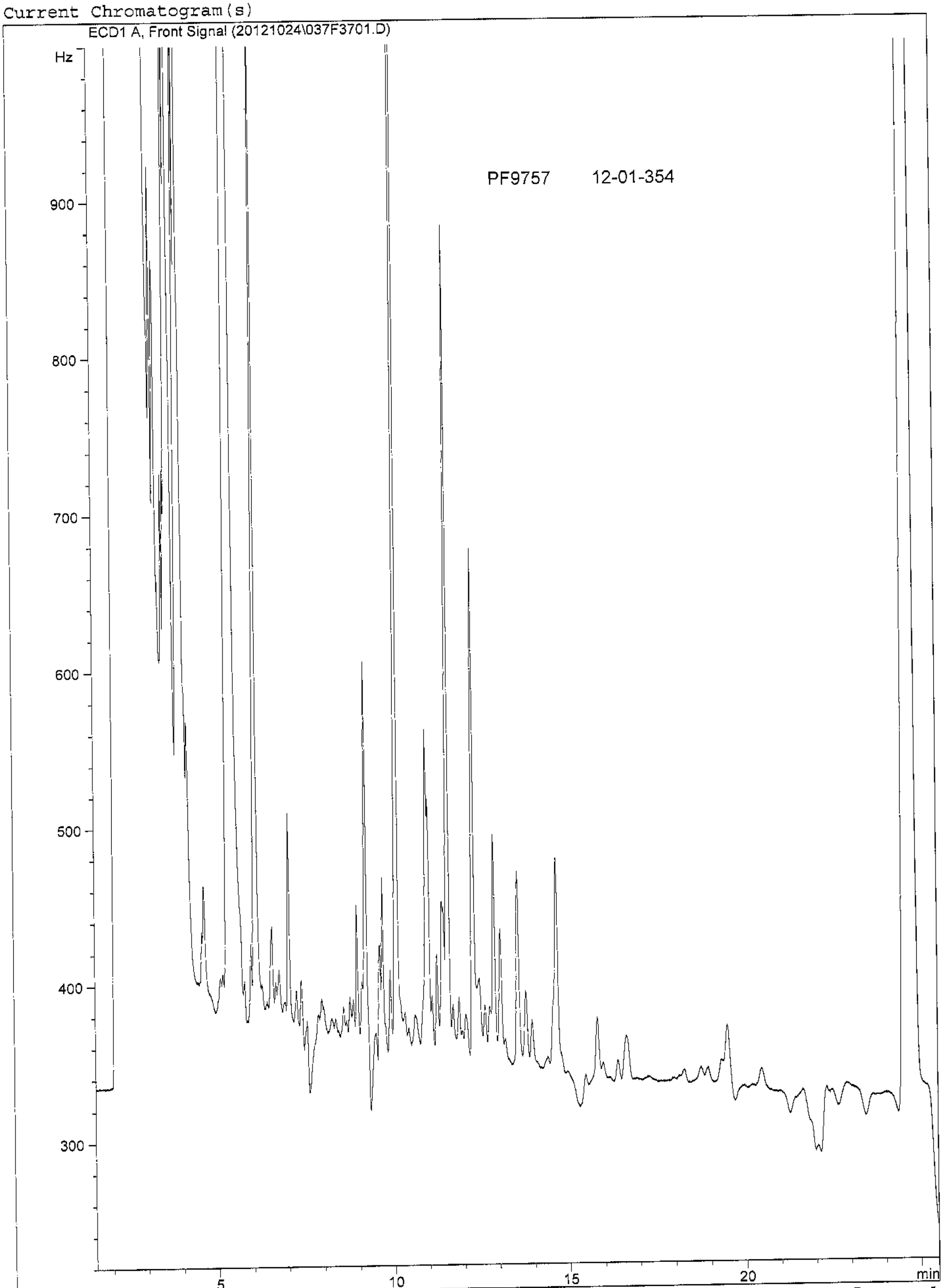
Current Chromatogram(s)

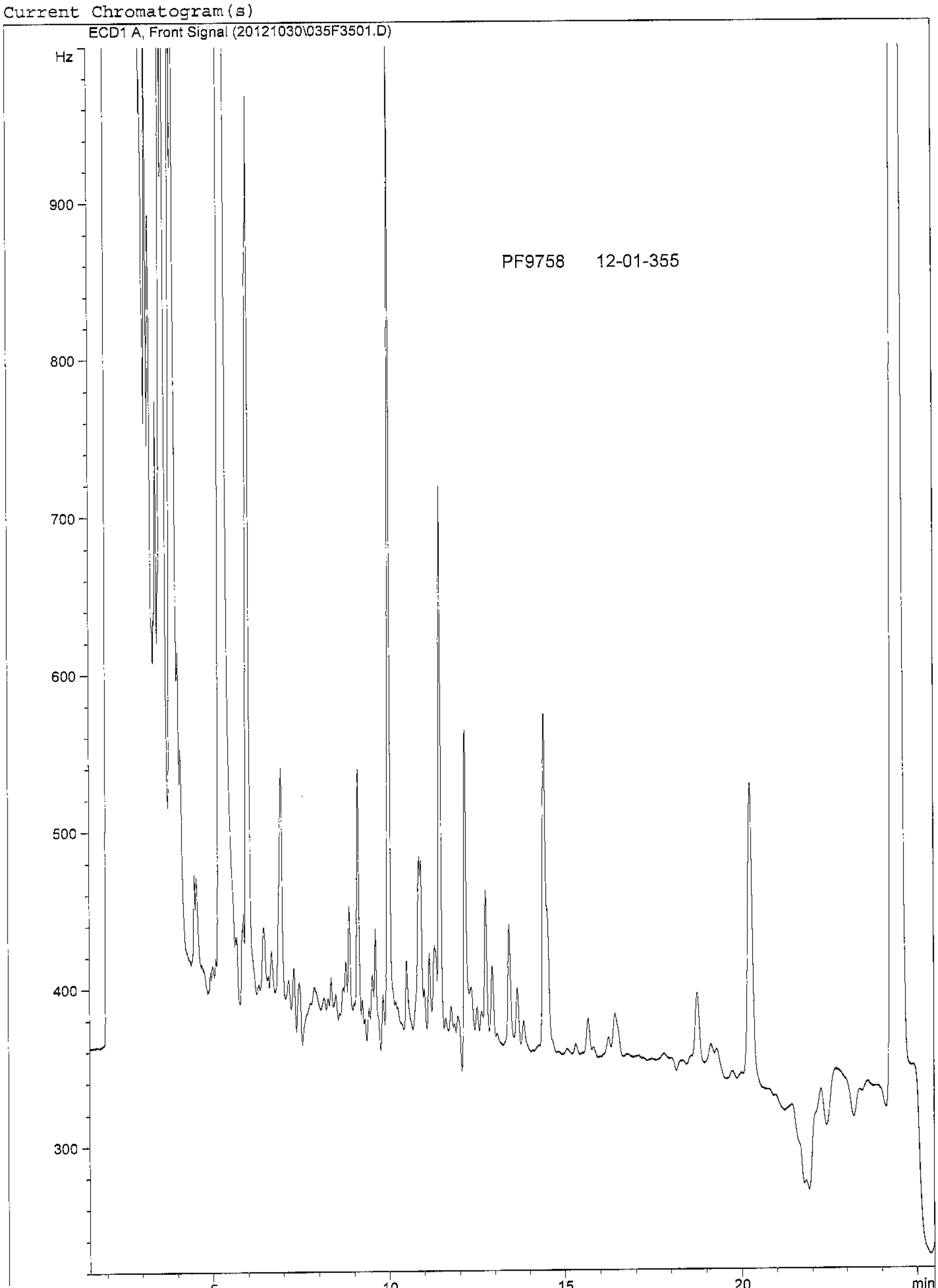


Print of window 38: Current Chromatogram(s)

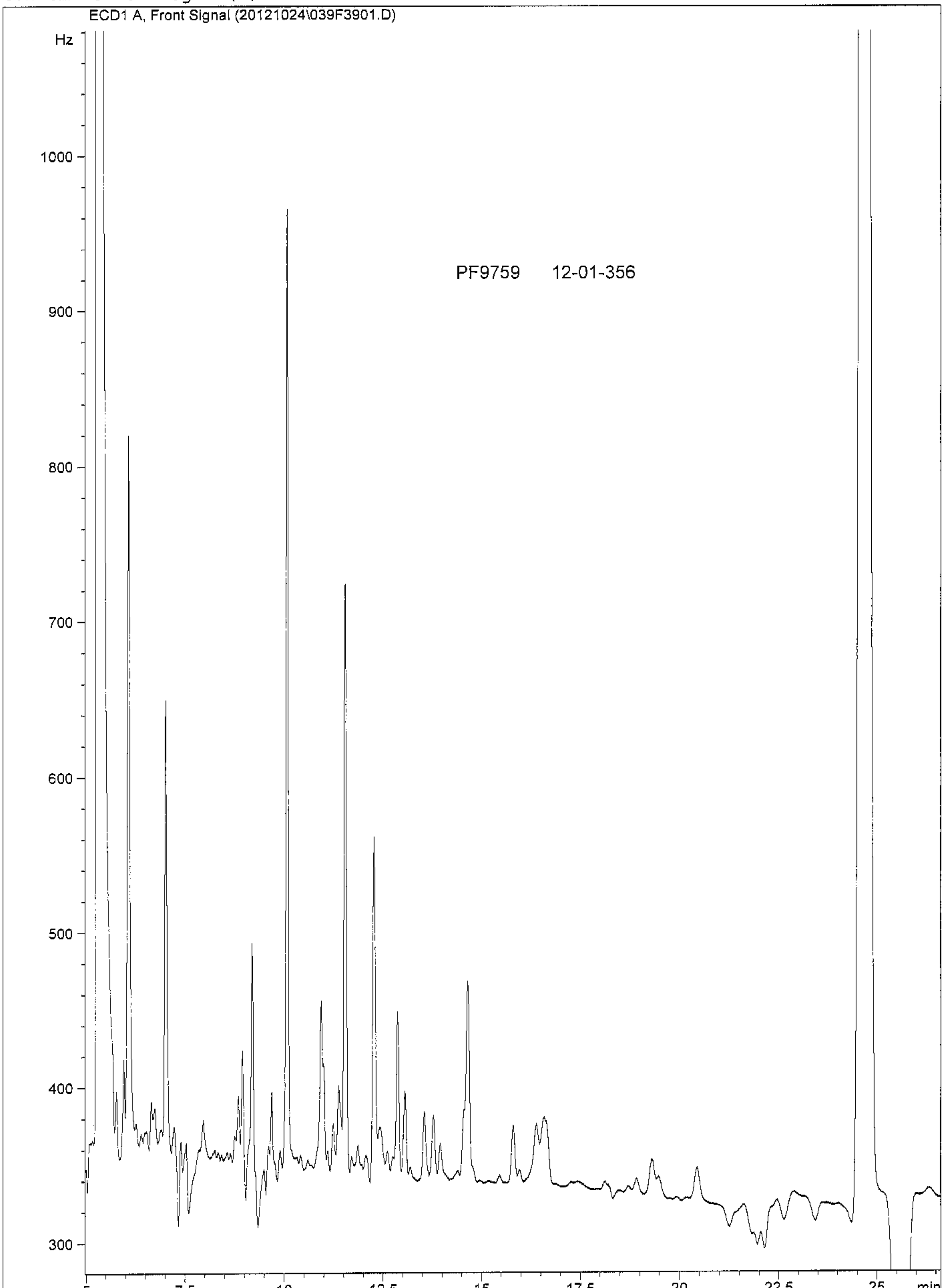
Current Chromatogram(s)



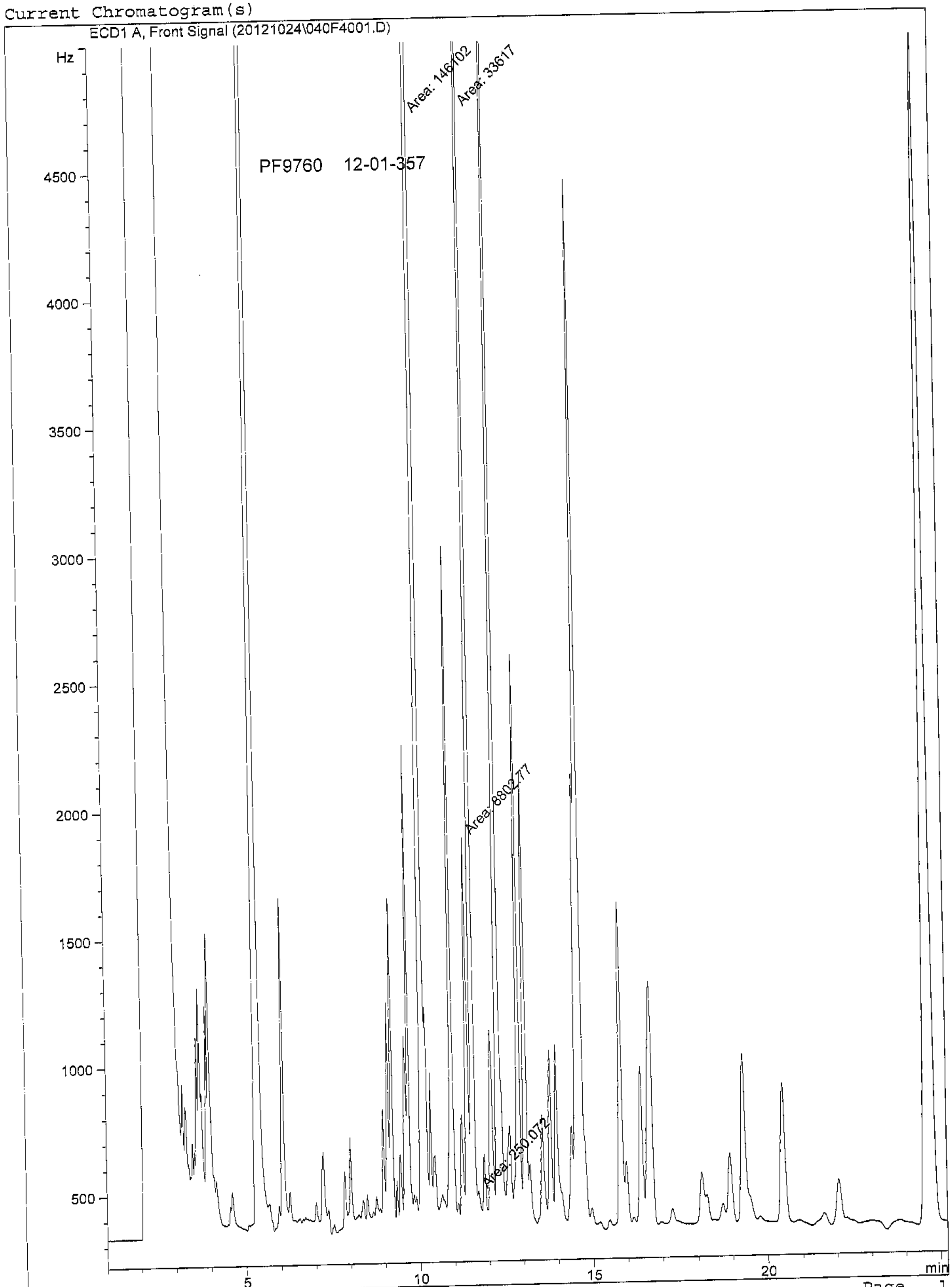
PCB003 2012/12/13 10:24:56 AM Kristy Joudrey


Current Chromatogram(s)
ECD1 A, Front Signal (20121030\035F3501.D)
Hz
900
800
700
600
500
400
300
PF9758 12-01-355
5
10
15
20
min

Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)



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PCB003 2012/12/13 10:33:28 AM Kristy Joudrey

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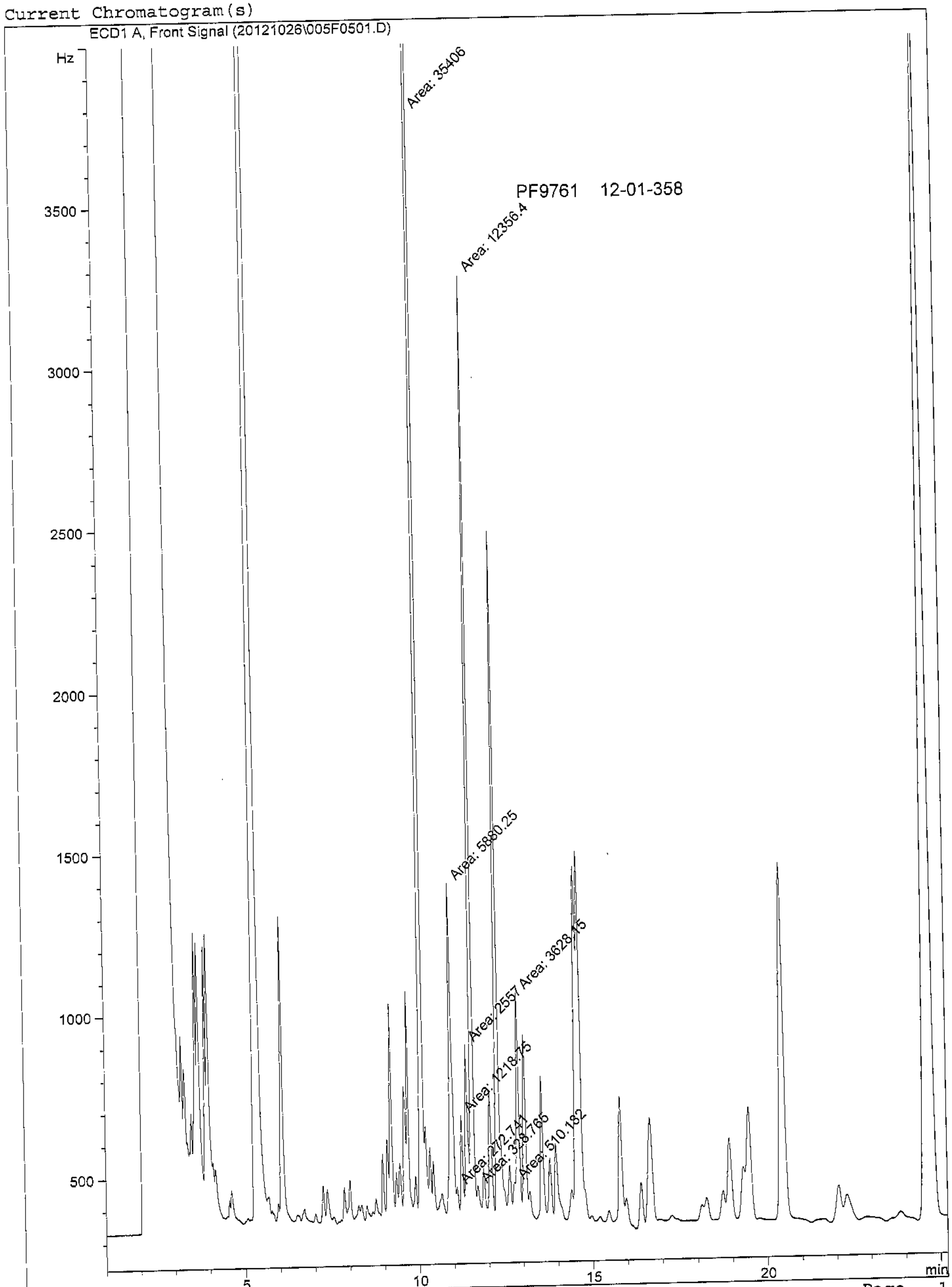

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PCB003 2012/12/13 10:35:08 AM Kristy Joudrey

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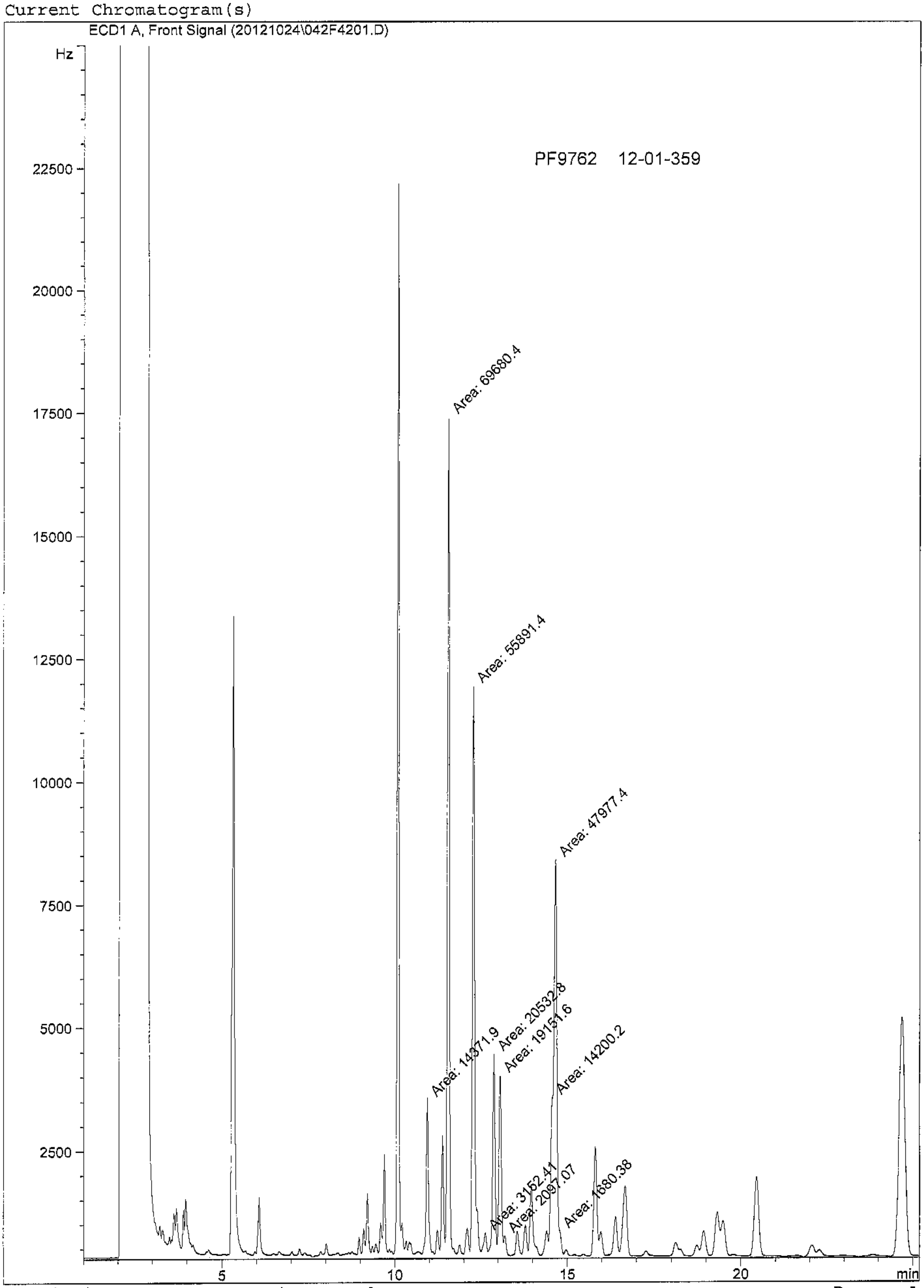

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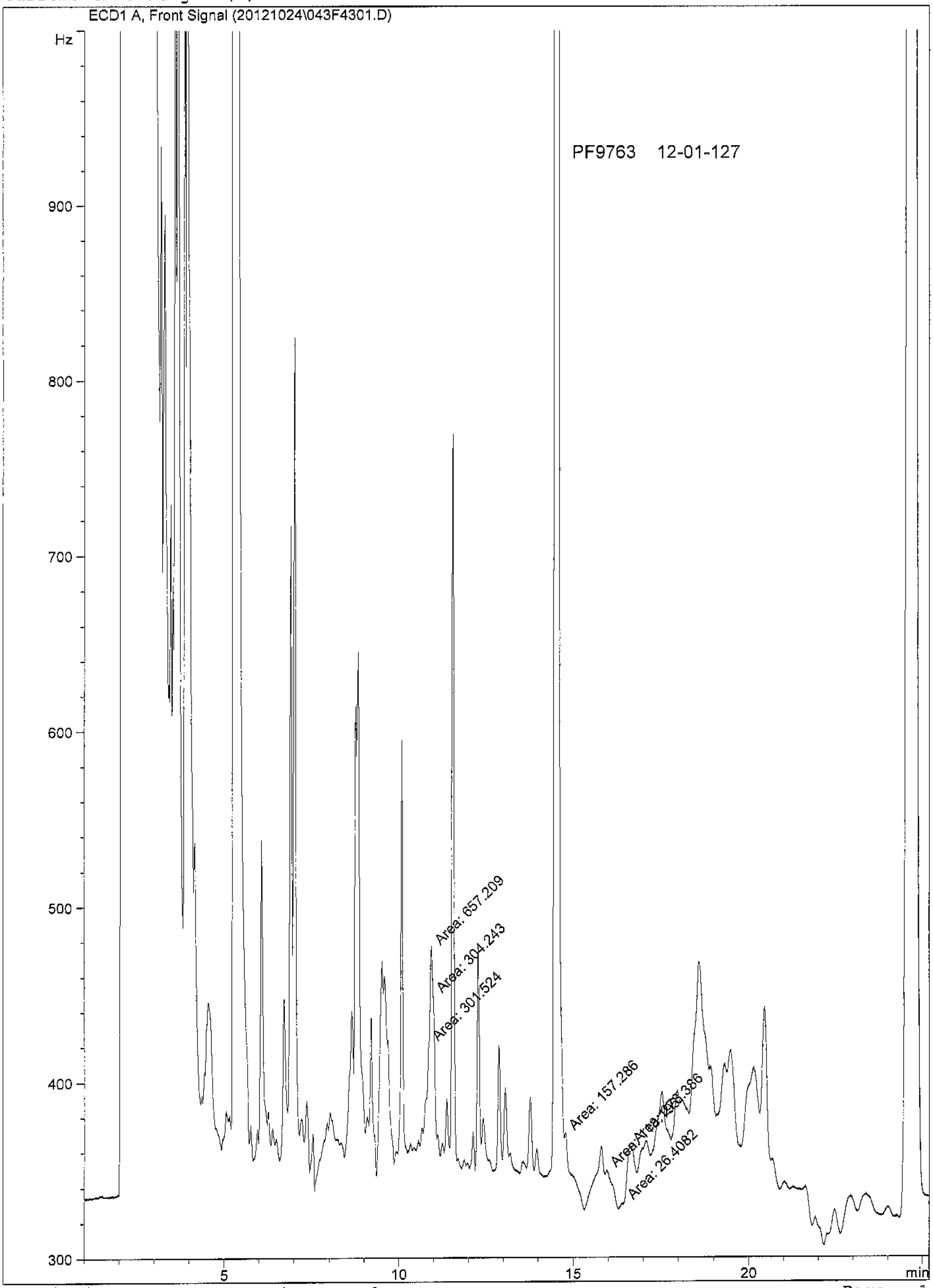
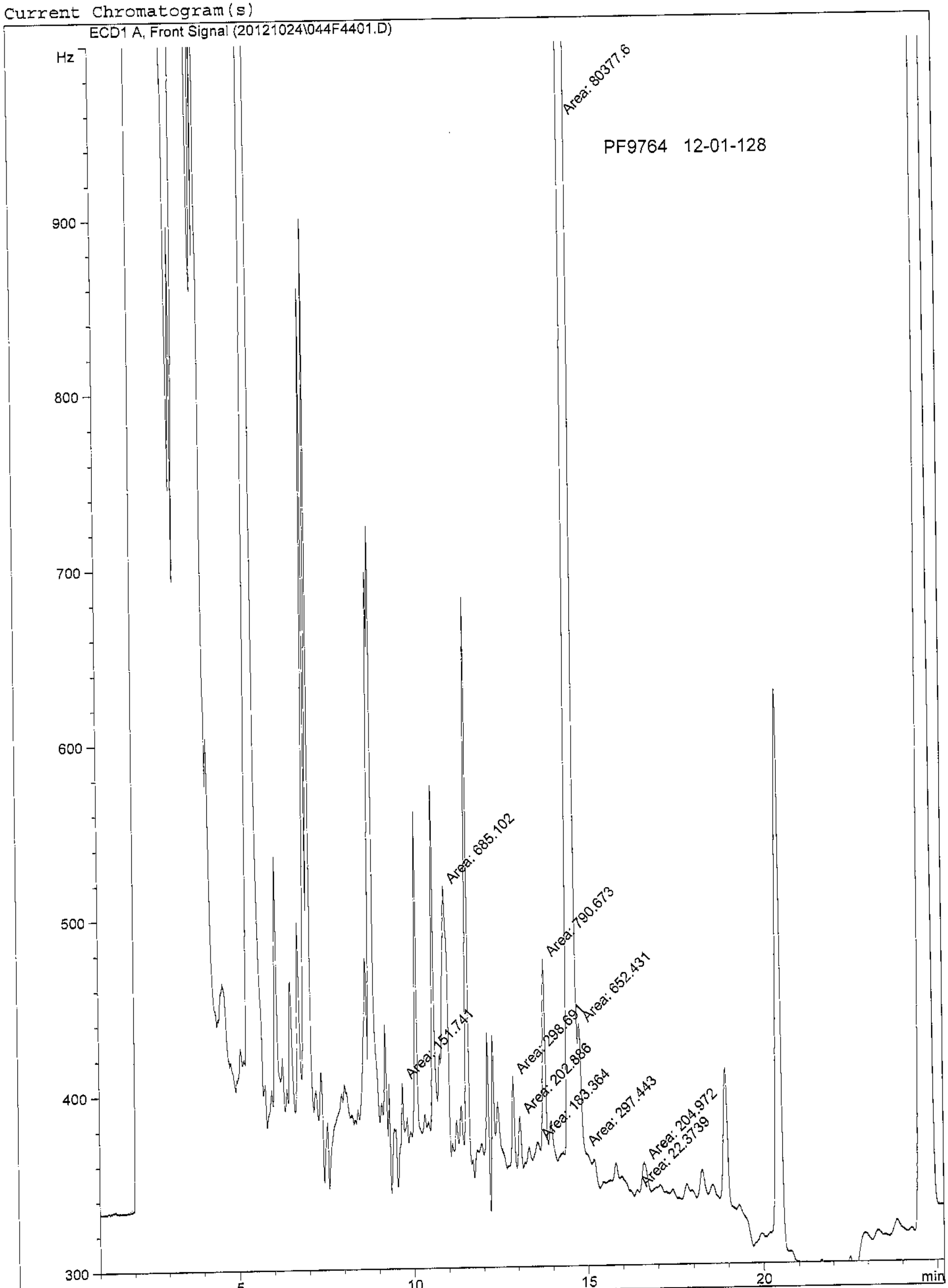
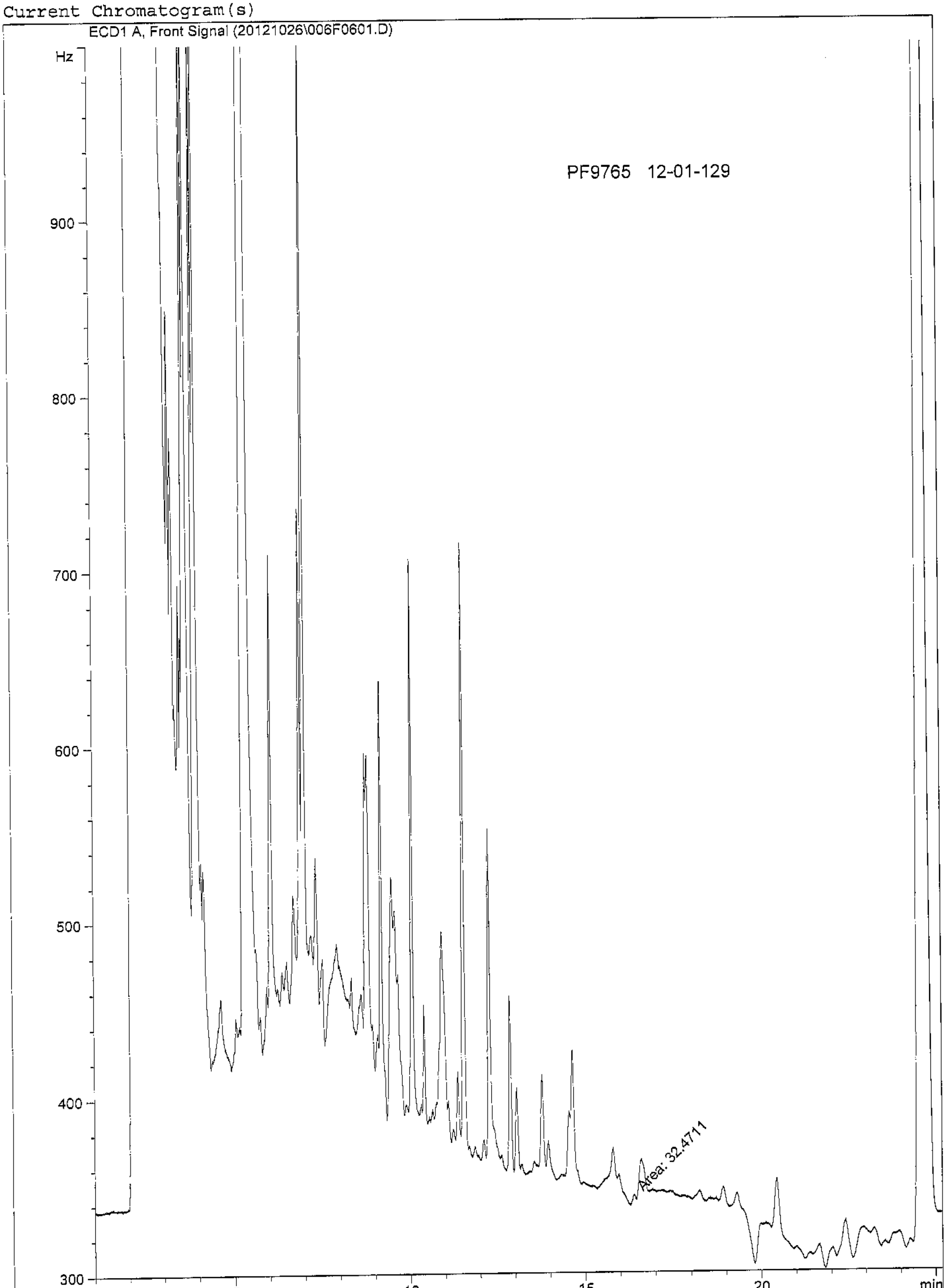


Print of window 38: Current Chromatogram(s)



PCB003 2012/12/13 10:43:03 AM Kristy Joudrey

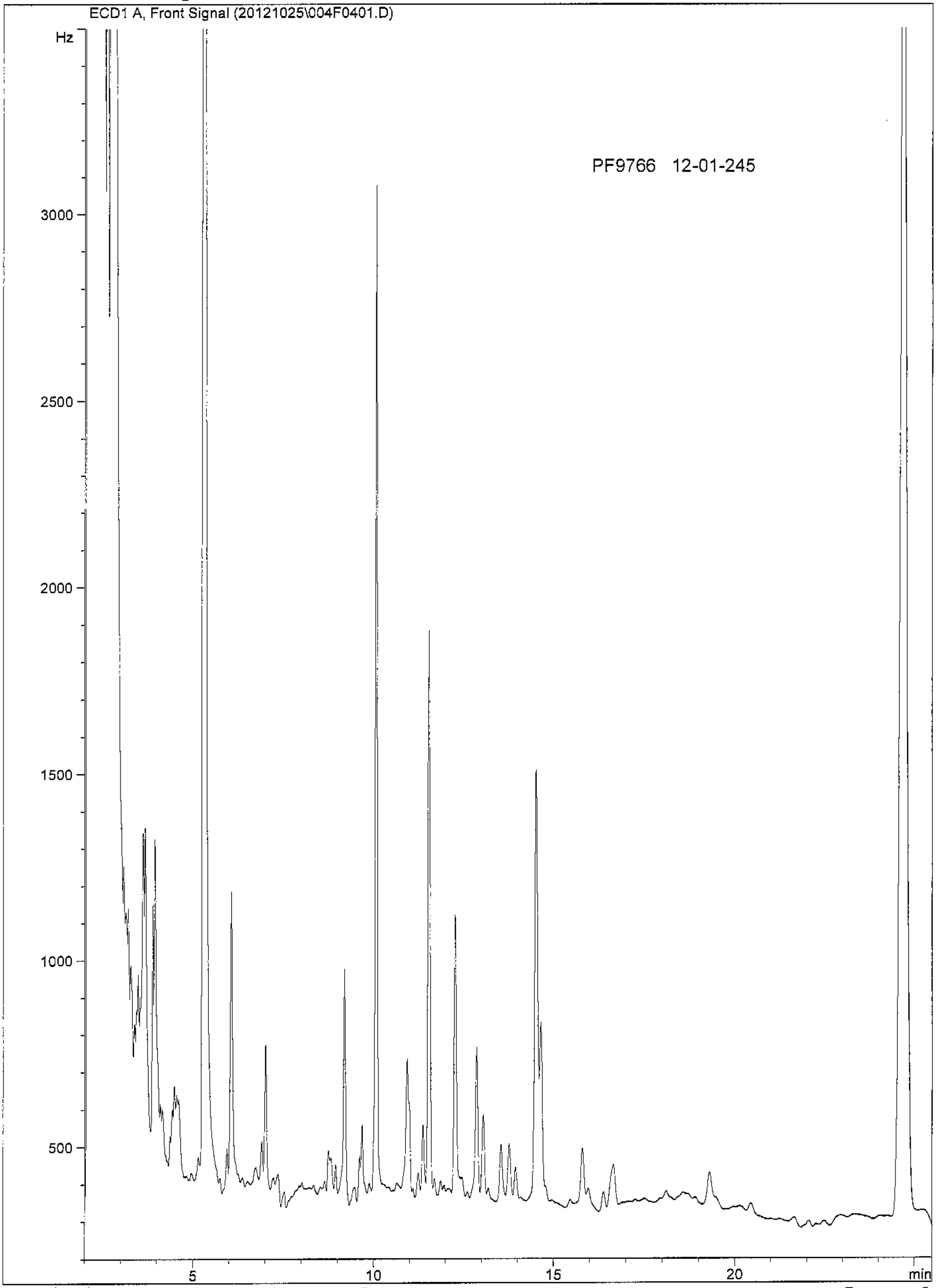
Print of window 38: Current Chromatogram(s)



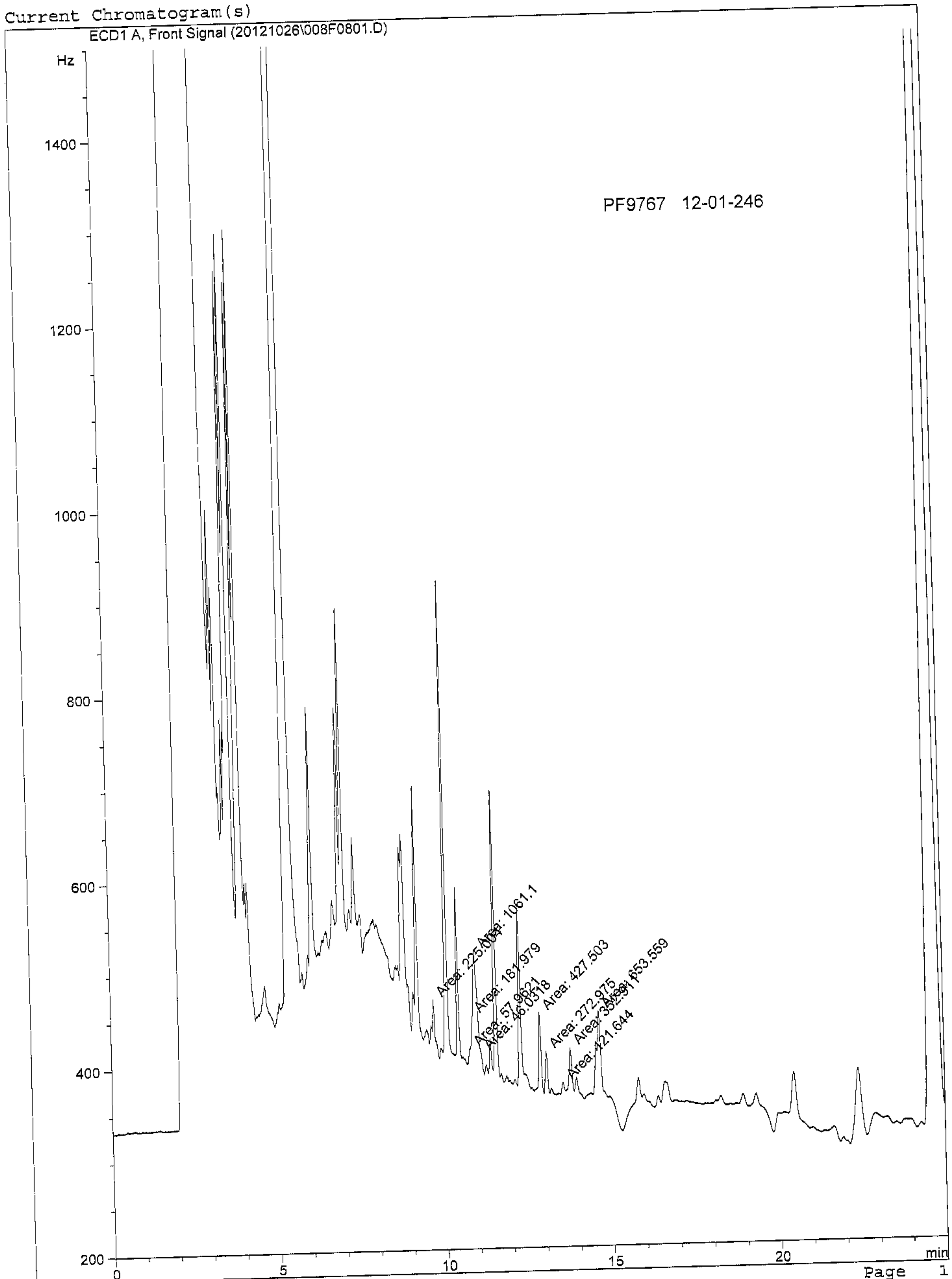
PCB003 2012/12/13 10:43:34 AM Kristy Joudrey

1

Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)



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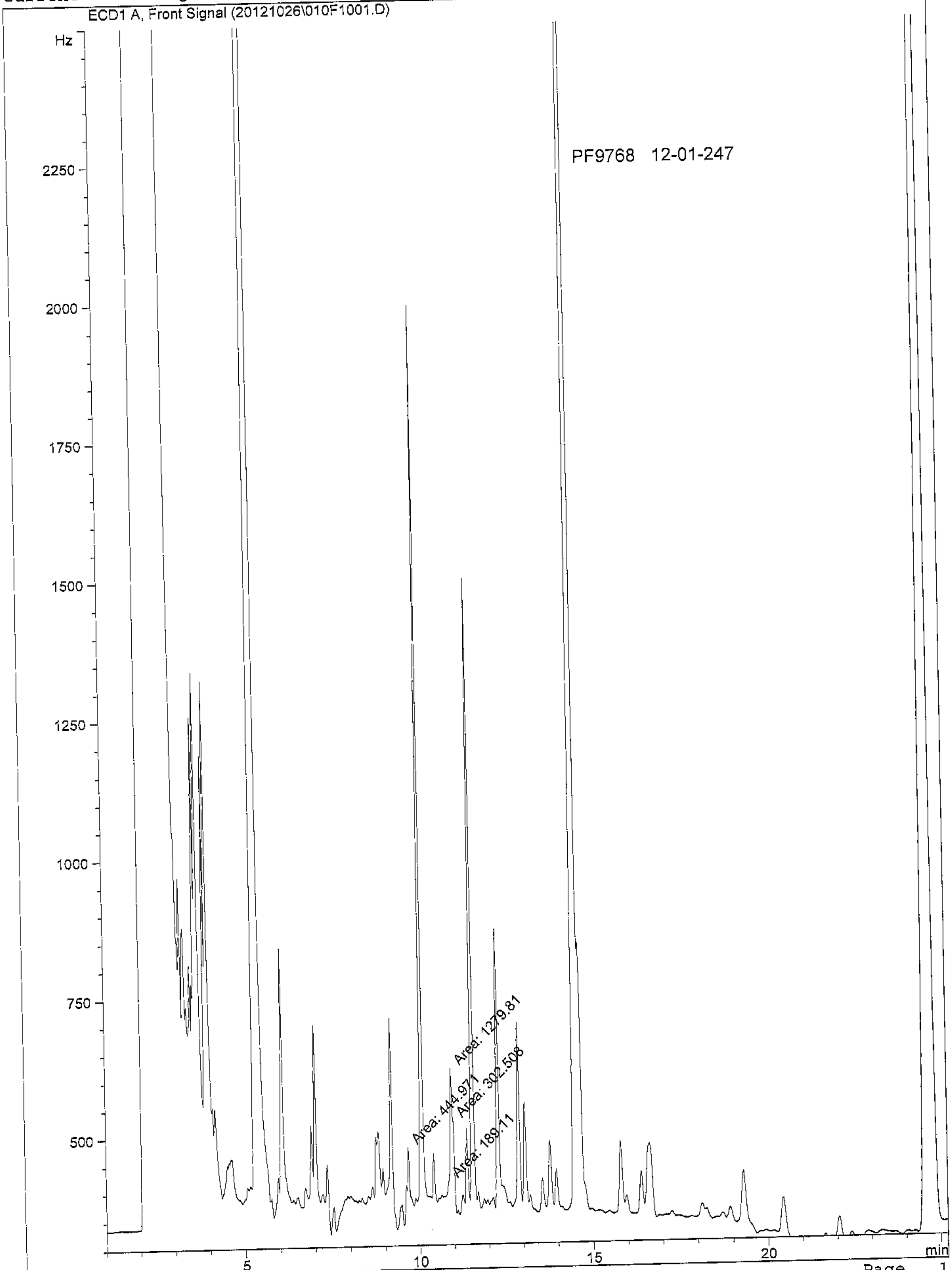
PCB003 2012/12/14 9:59:42 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)

Current Chromatogram(s)



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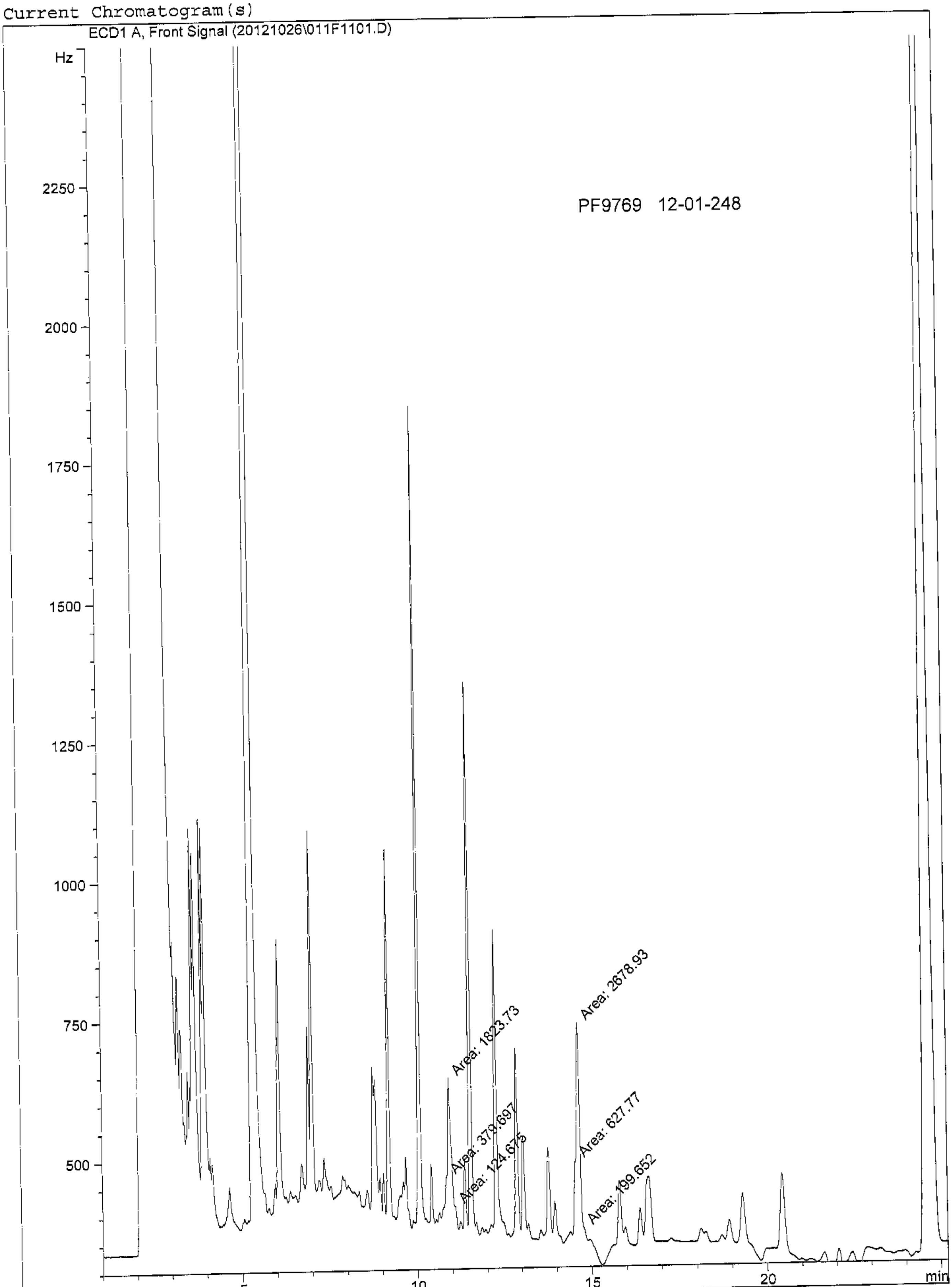
PCB003 2012/12/13 10:45:44 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)



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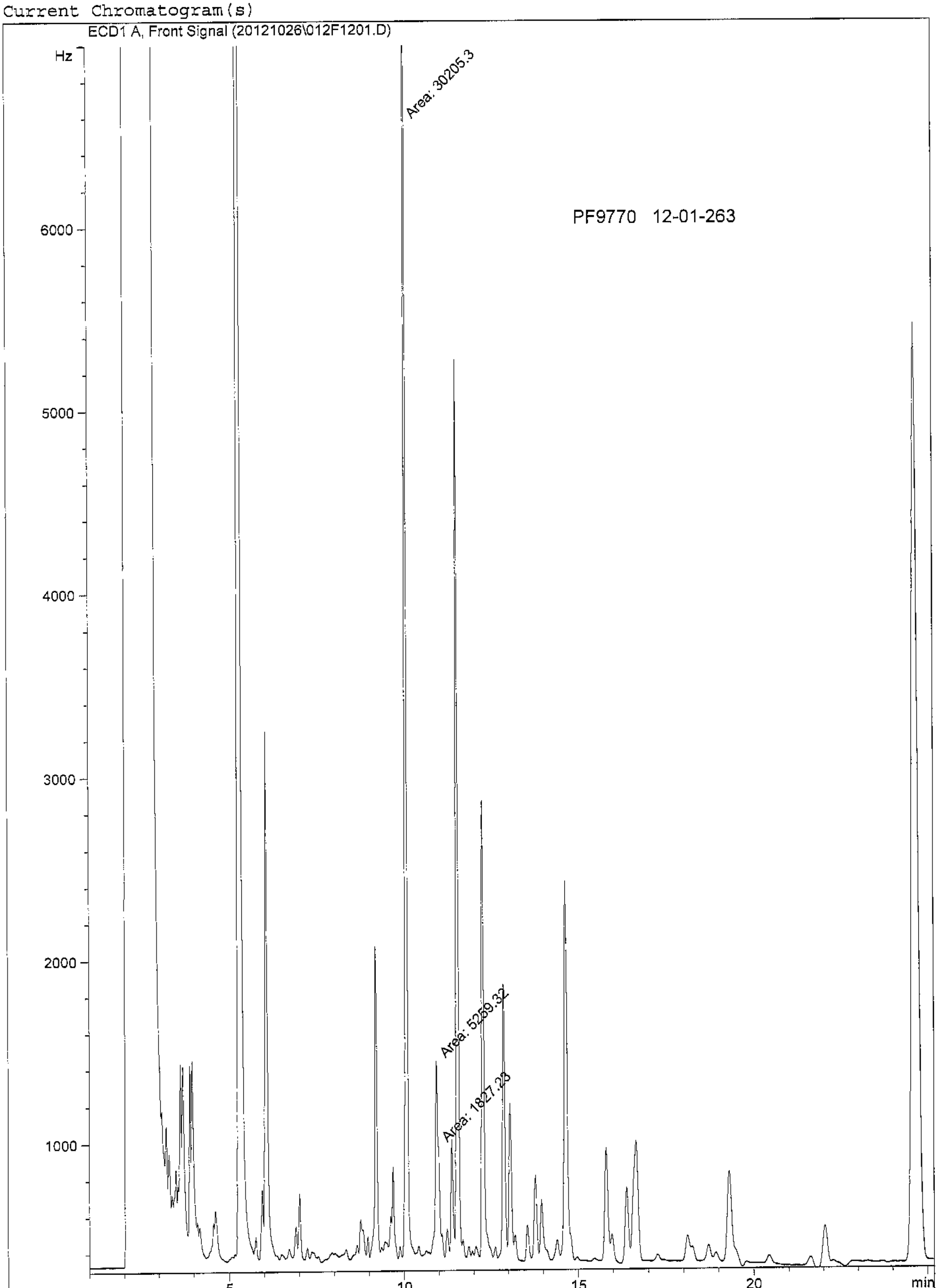
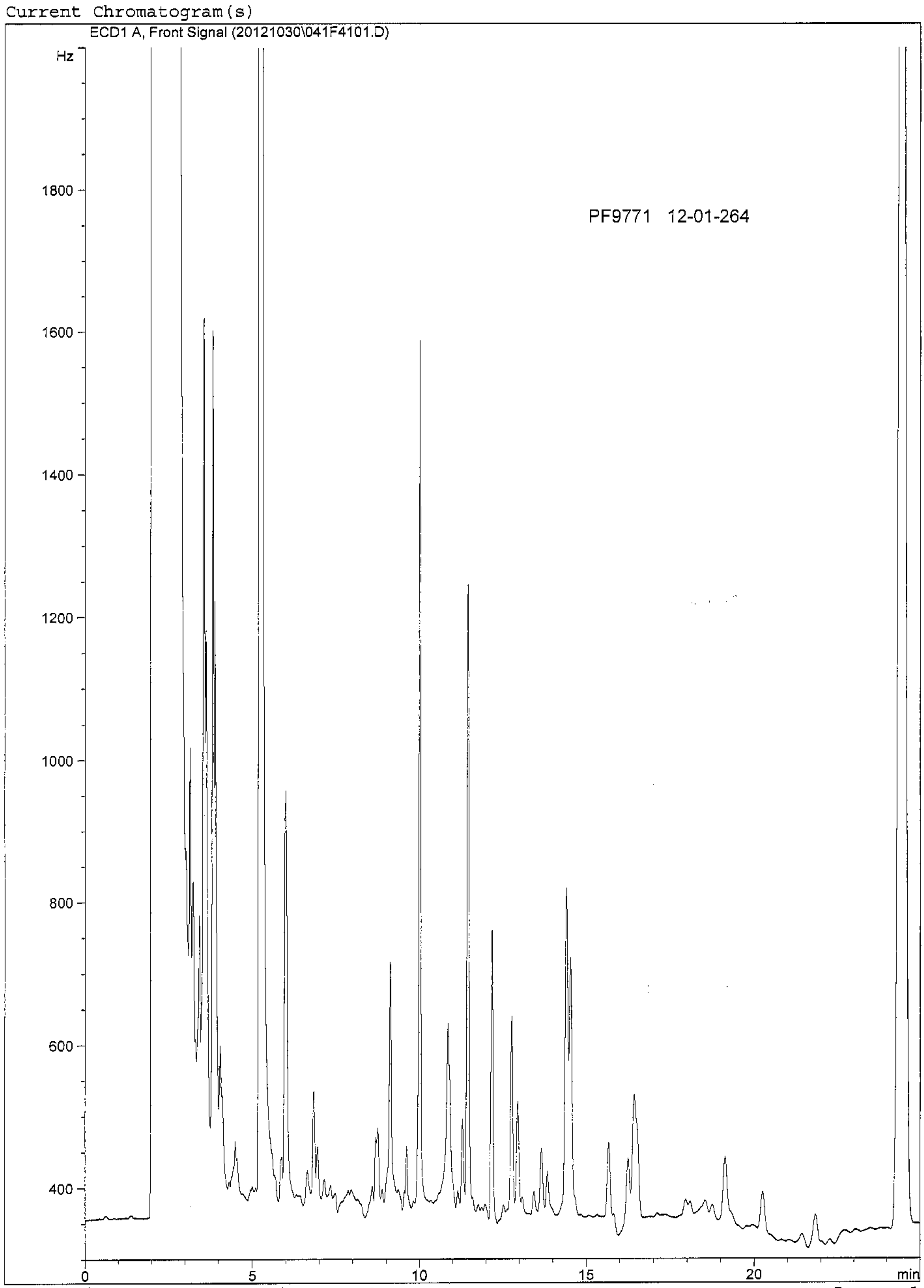
PCB003 2012/12/13 10:46:11 AM Kristy Joudrey

Current Chromatogram(s)

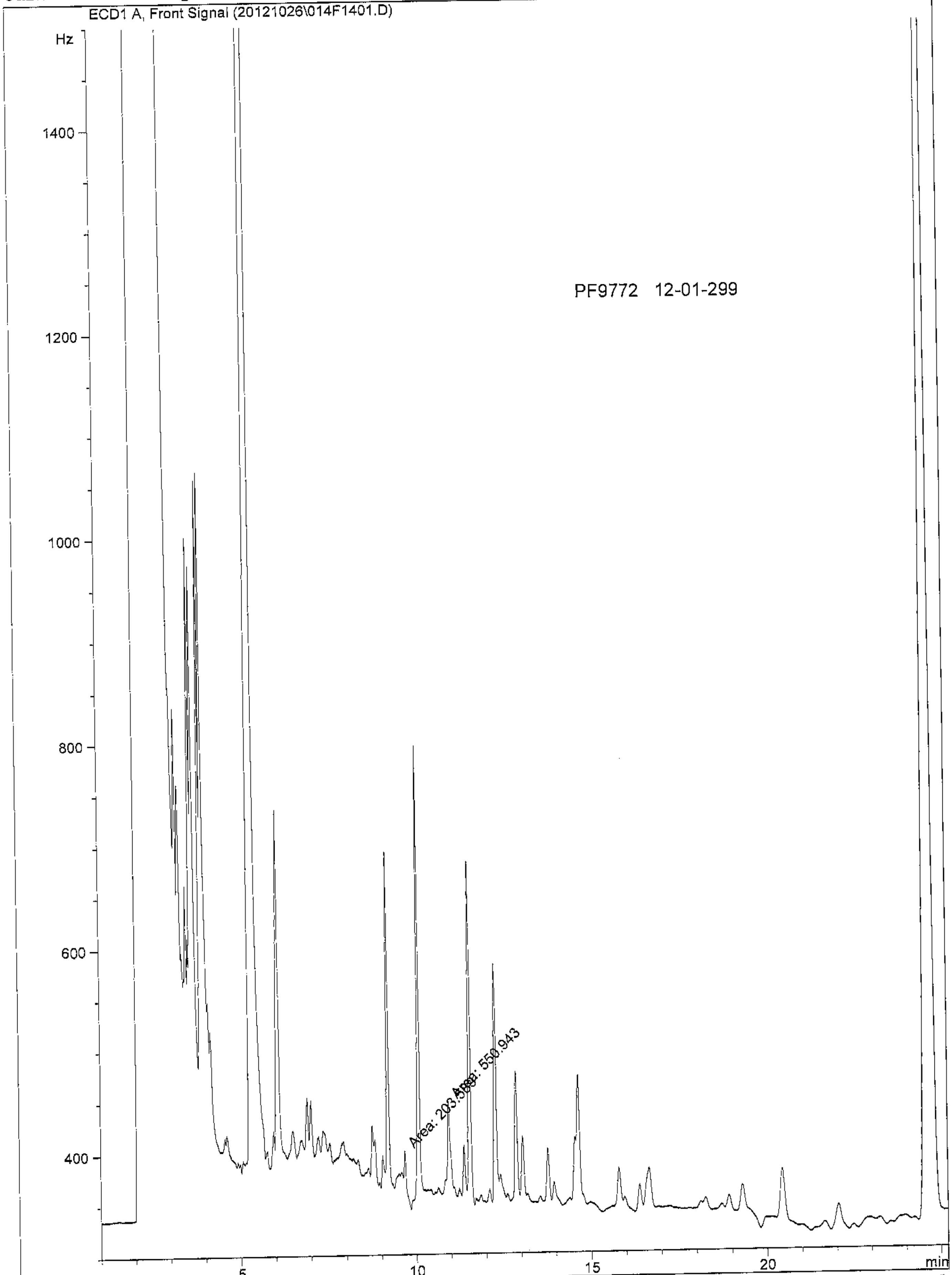


Print of window 38: Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)

Current Chromatogram(s)



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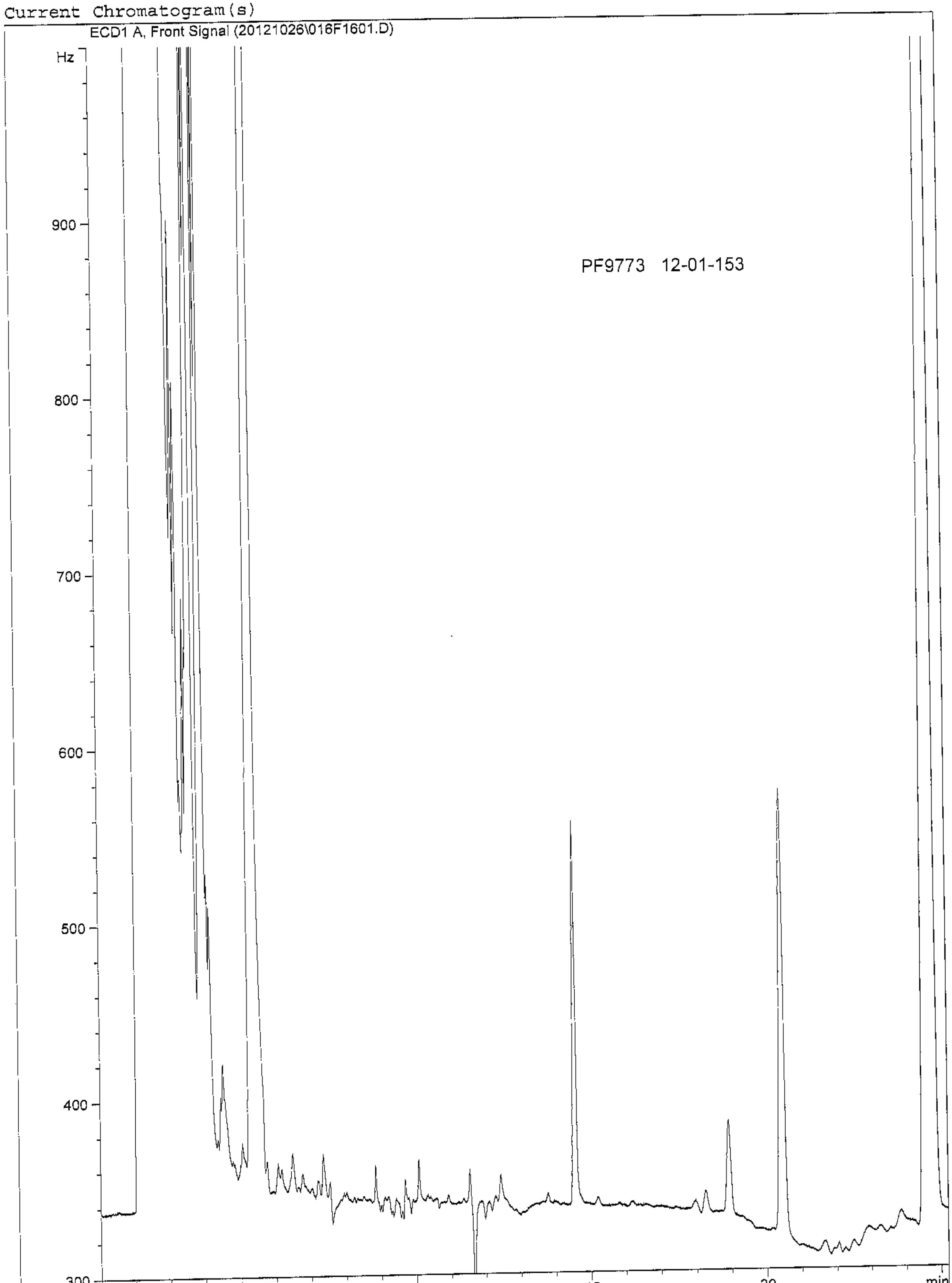
PCB003 2012/12/13 10:48:46 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)



PCB003 2012/12/13 10:49:23 AM Kristy Joudrey

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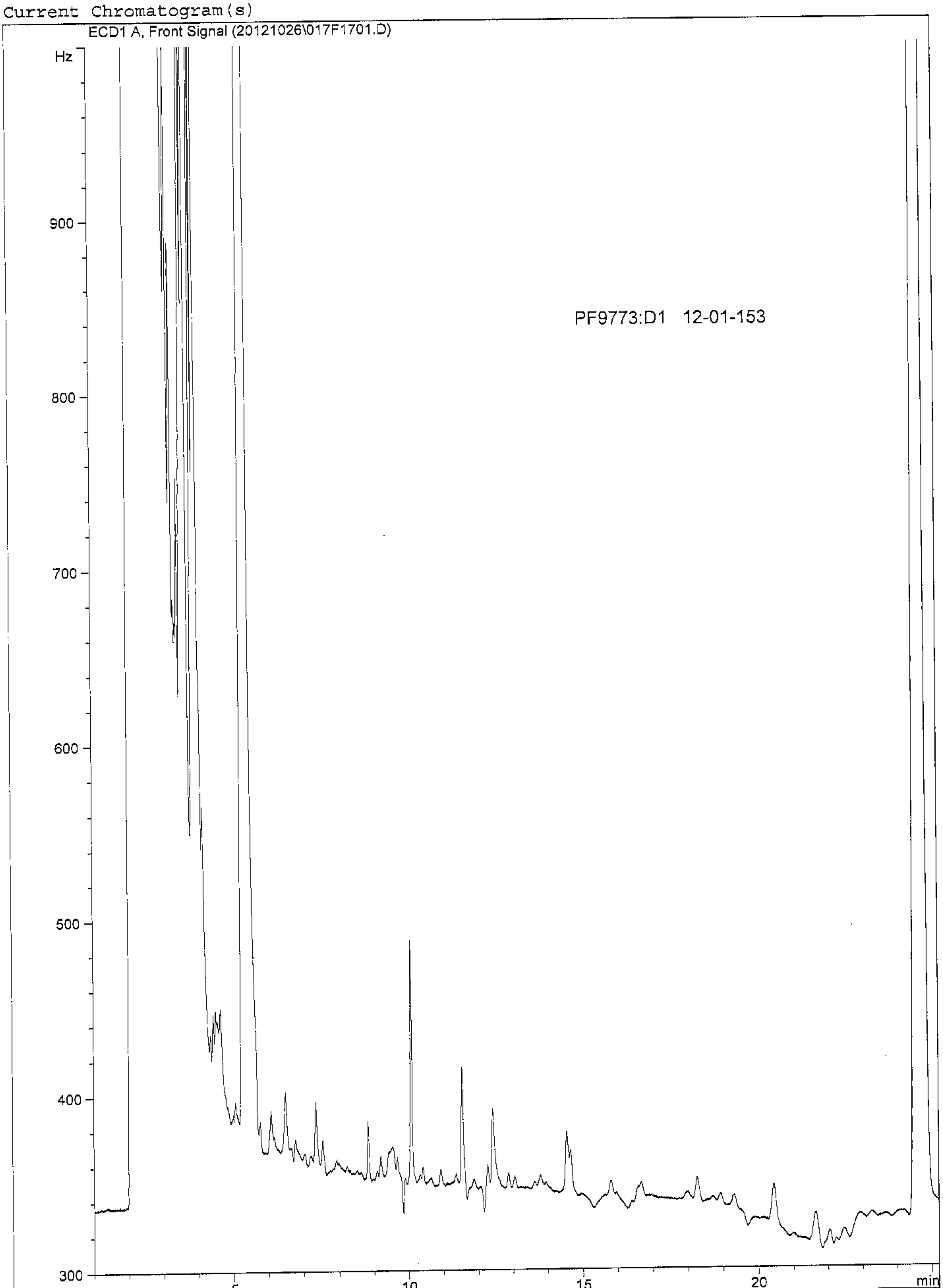
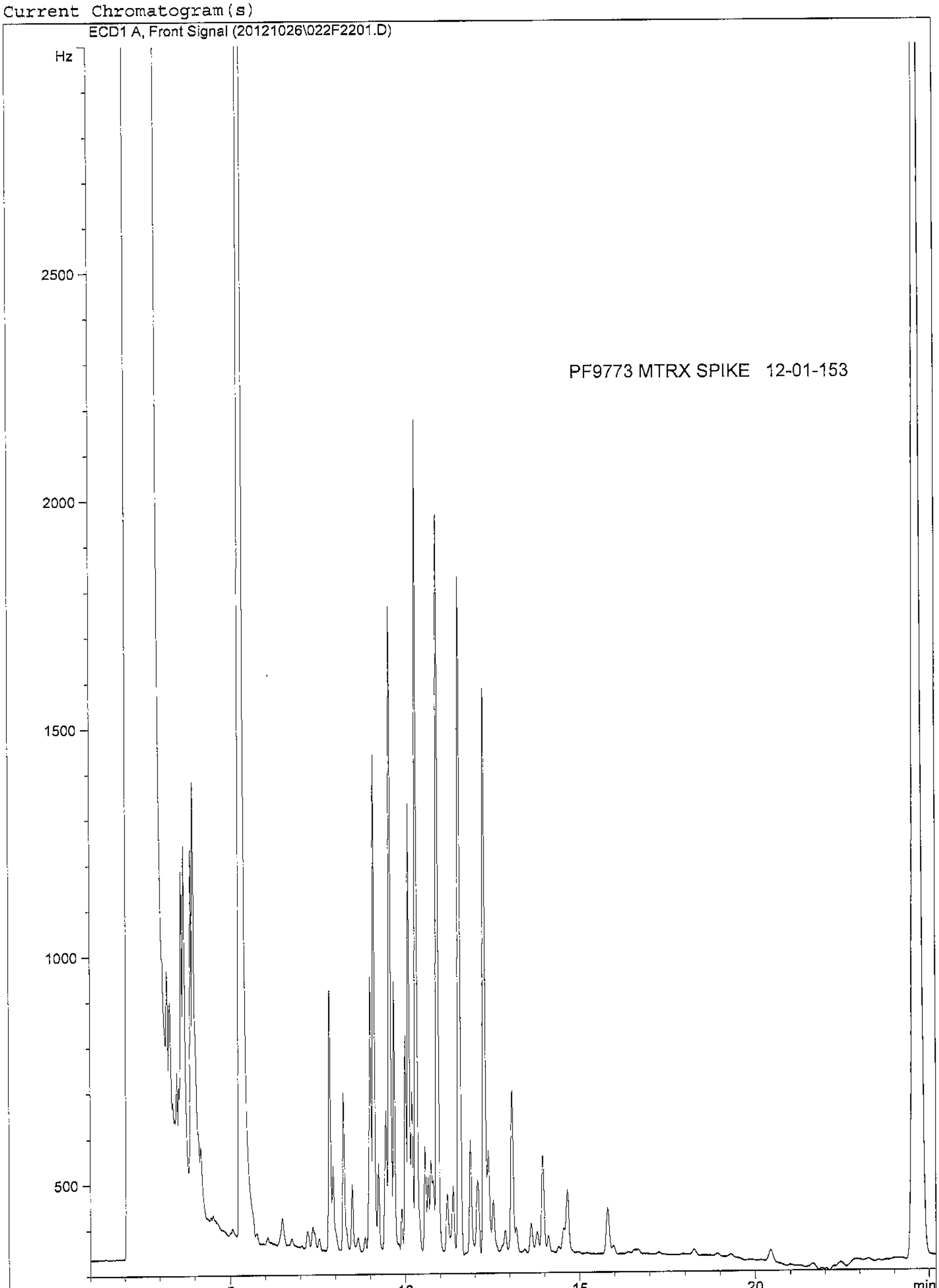


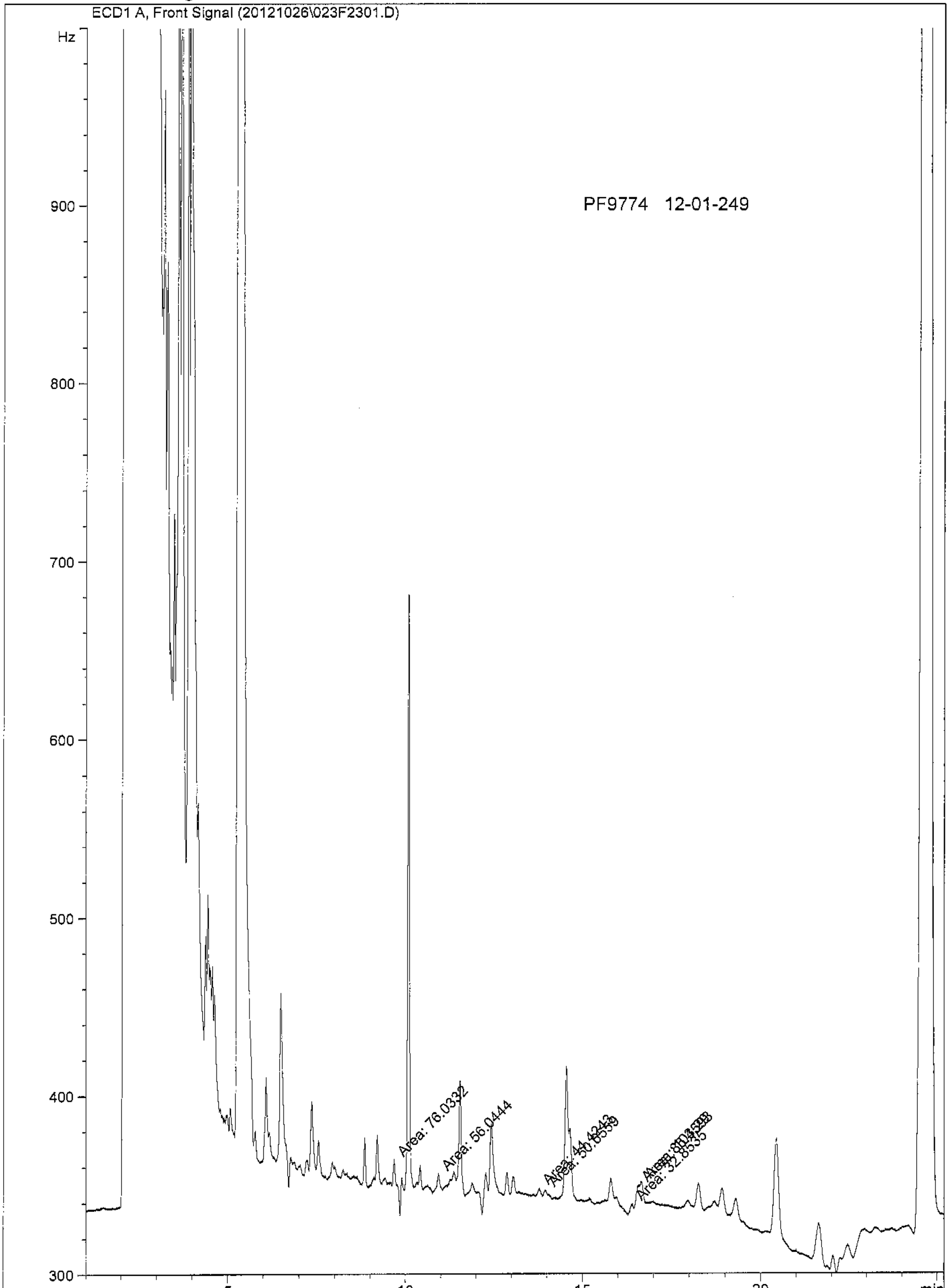
PCB003 2012/12/13 10:49:48 AM Kristy Joudrey

Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)

Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)

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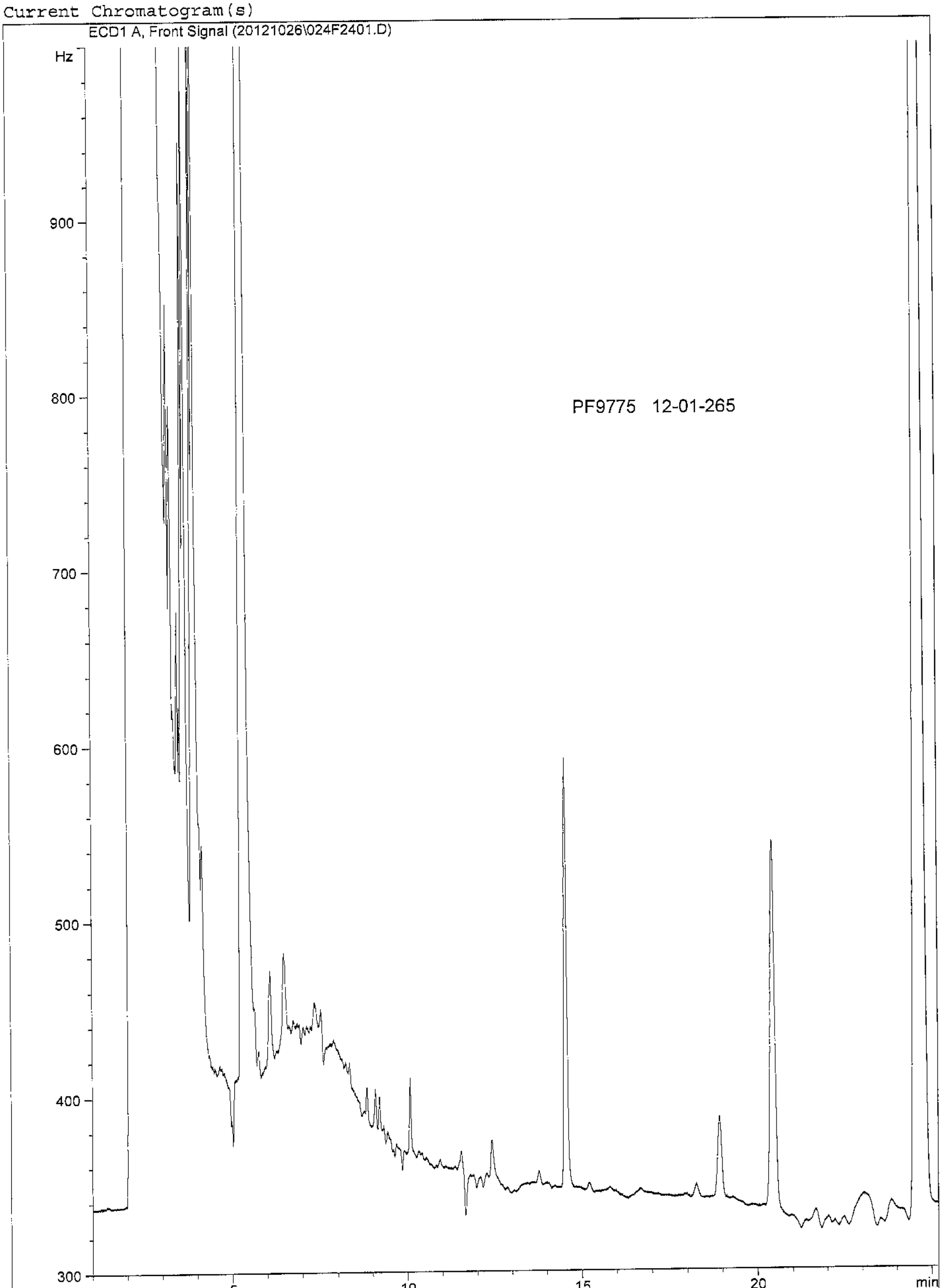

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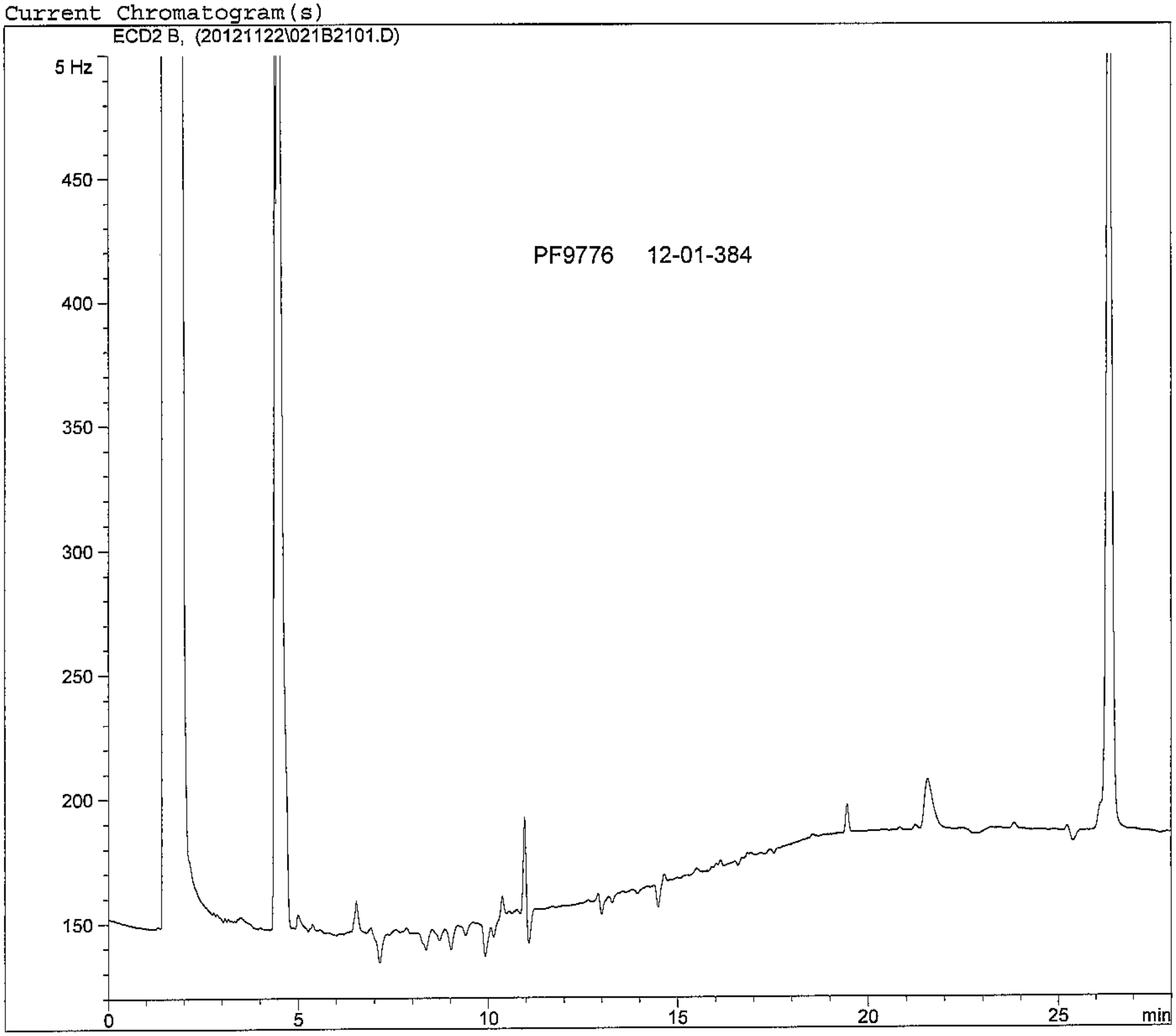

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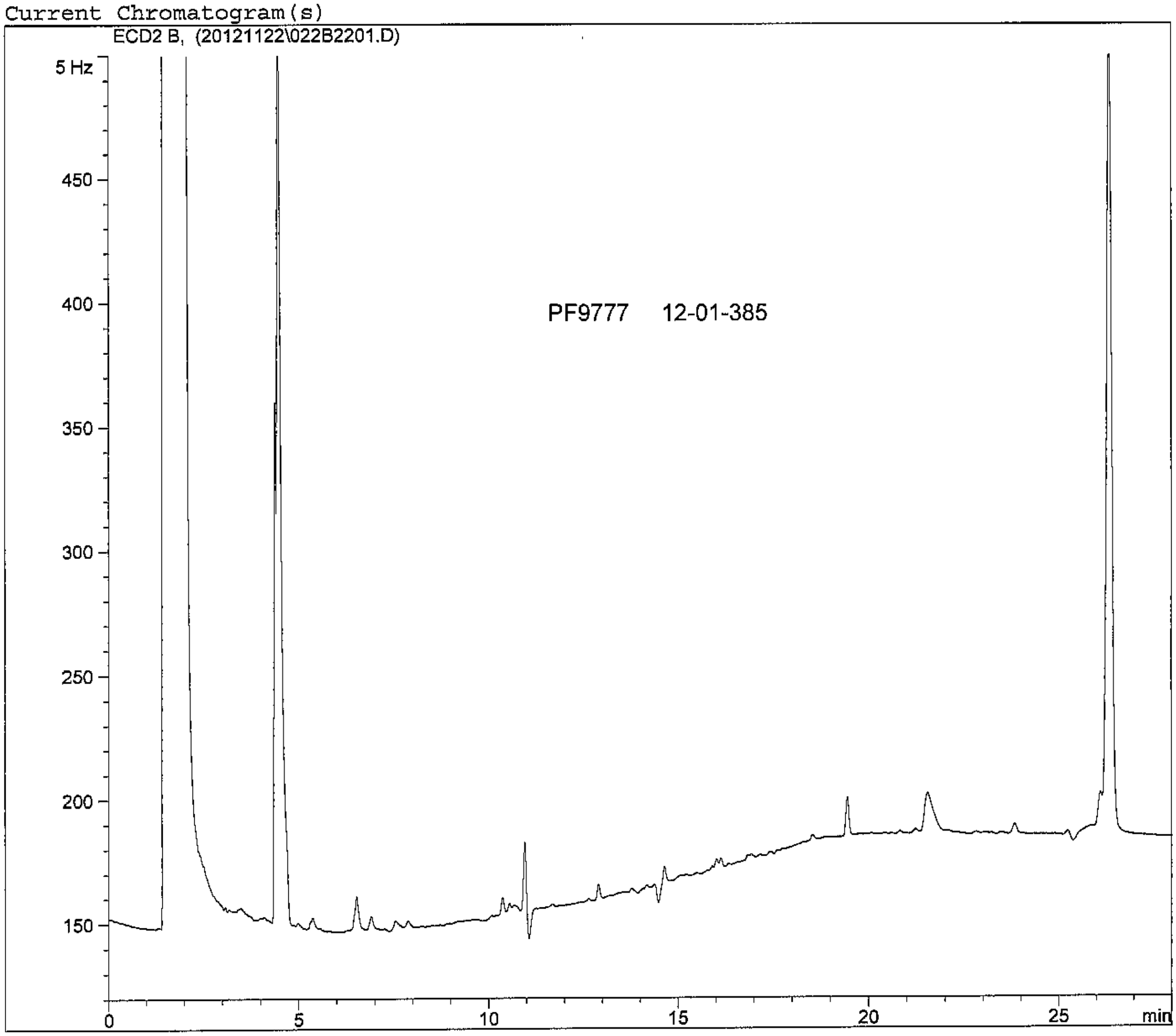

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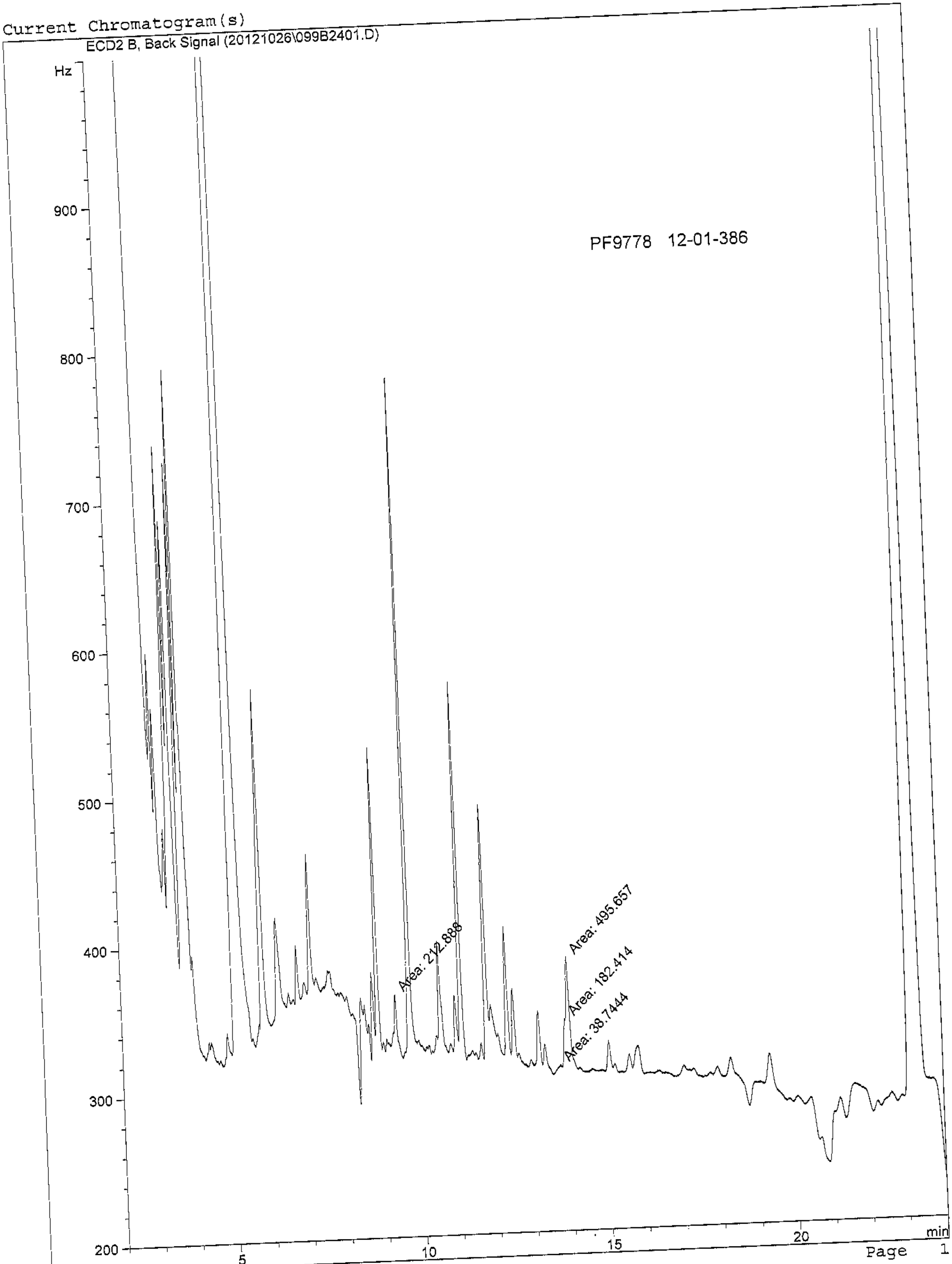

PCB003 2012/12/13 4:19:14 PM Kristy Joudrey

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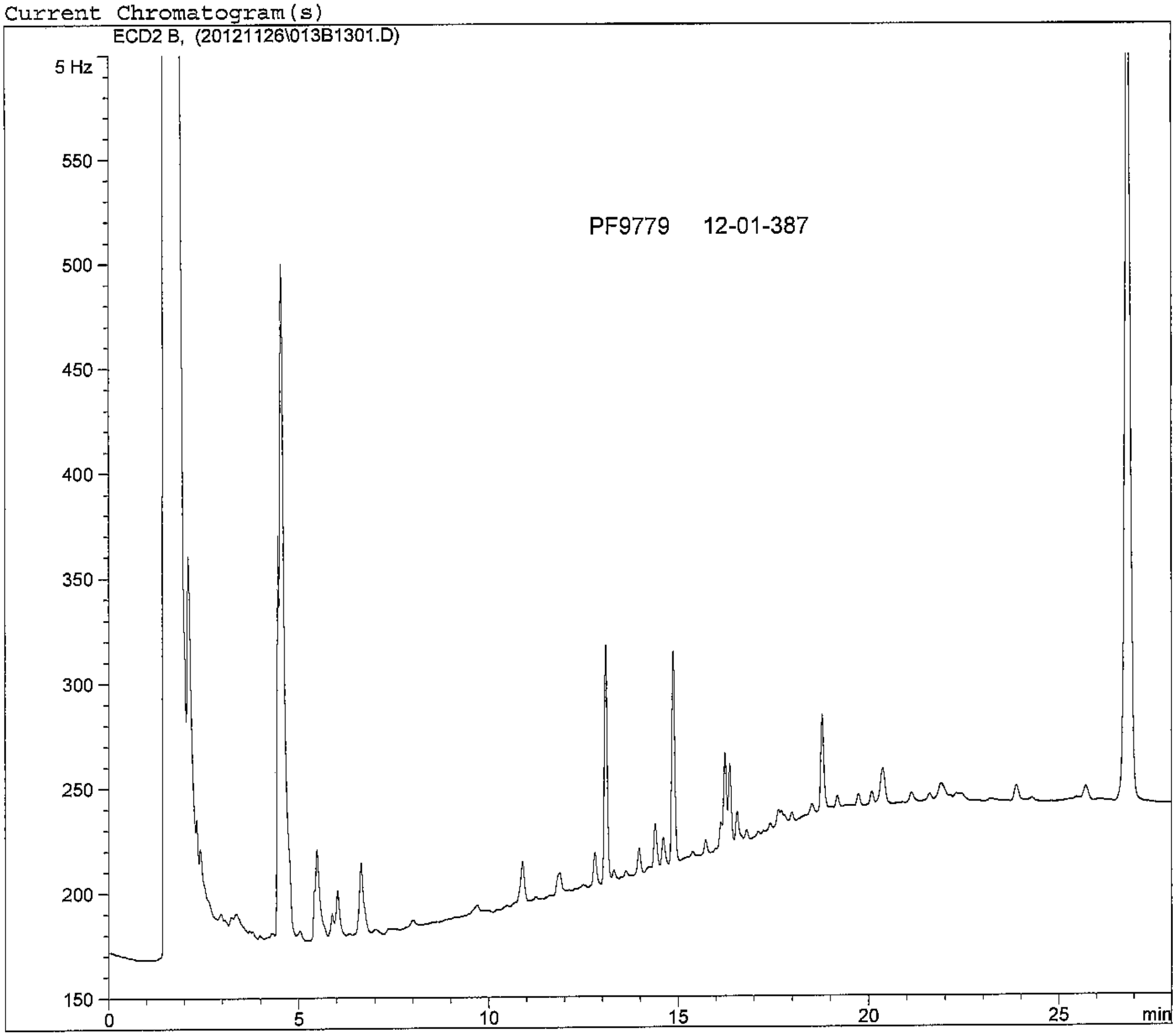

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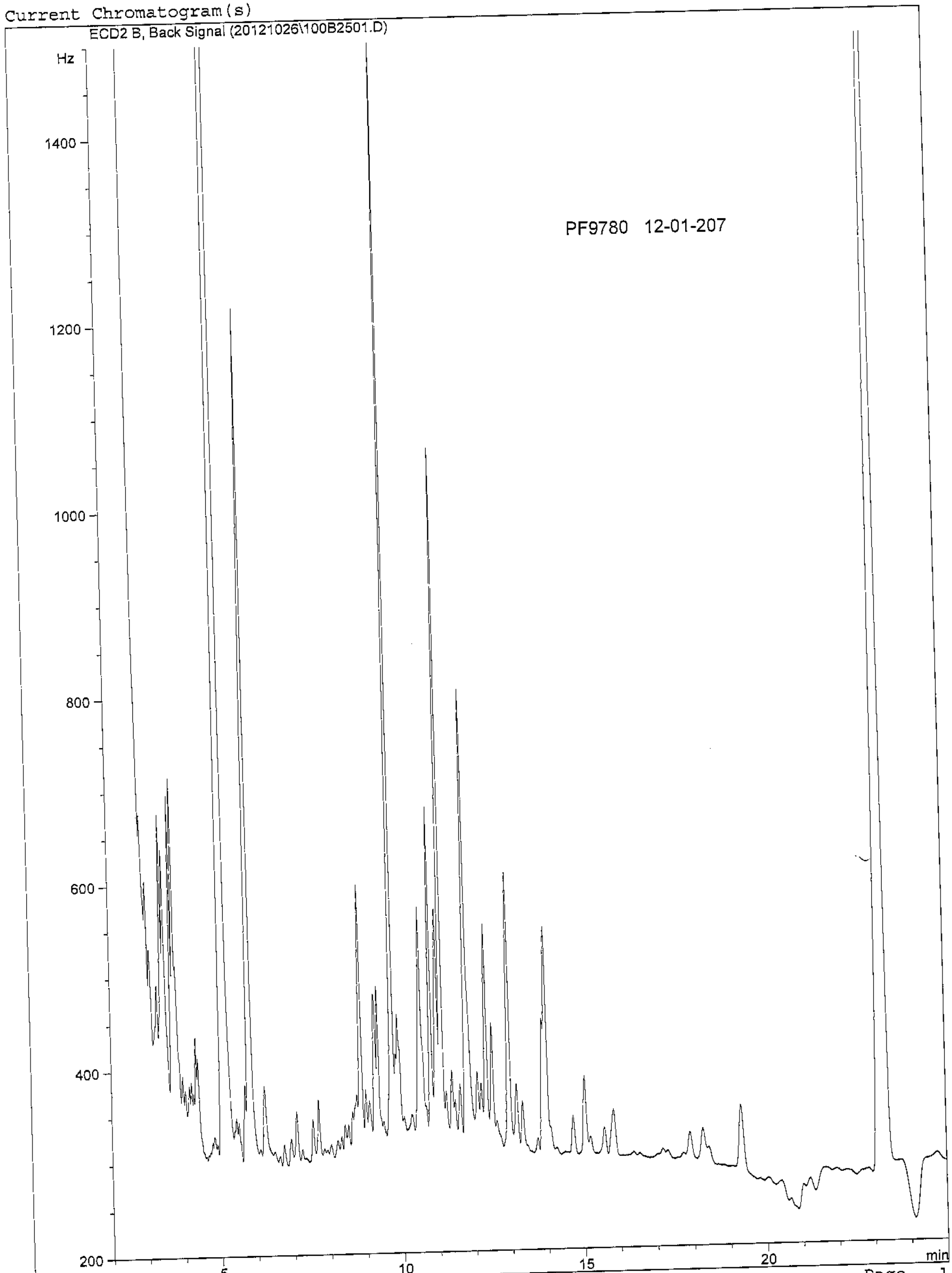

PCB003 2012/12/13 4:18:09 PM Kristy Joudrey

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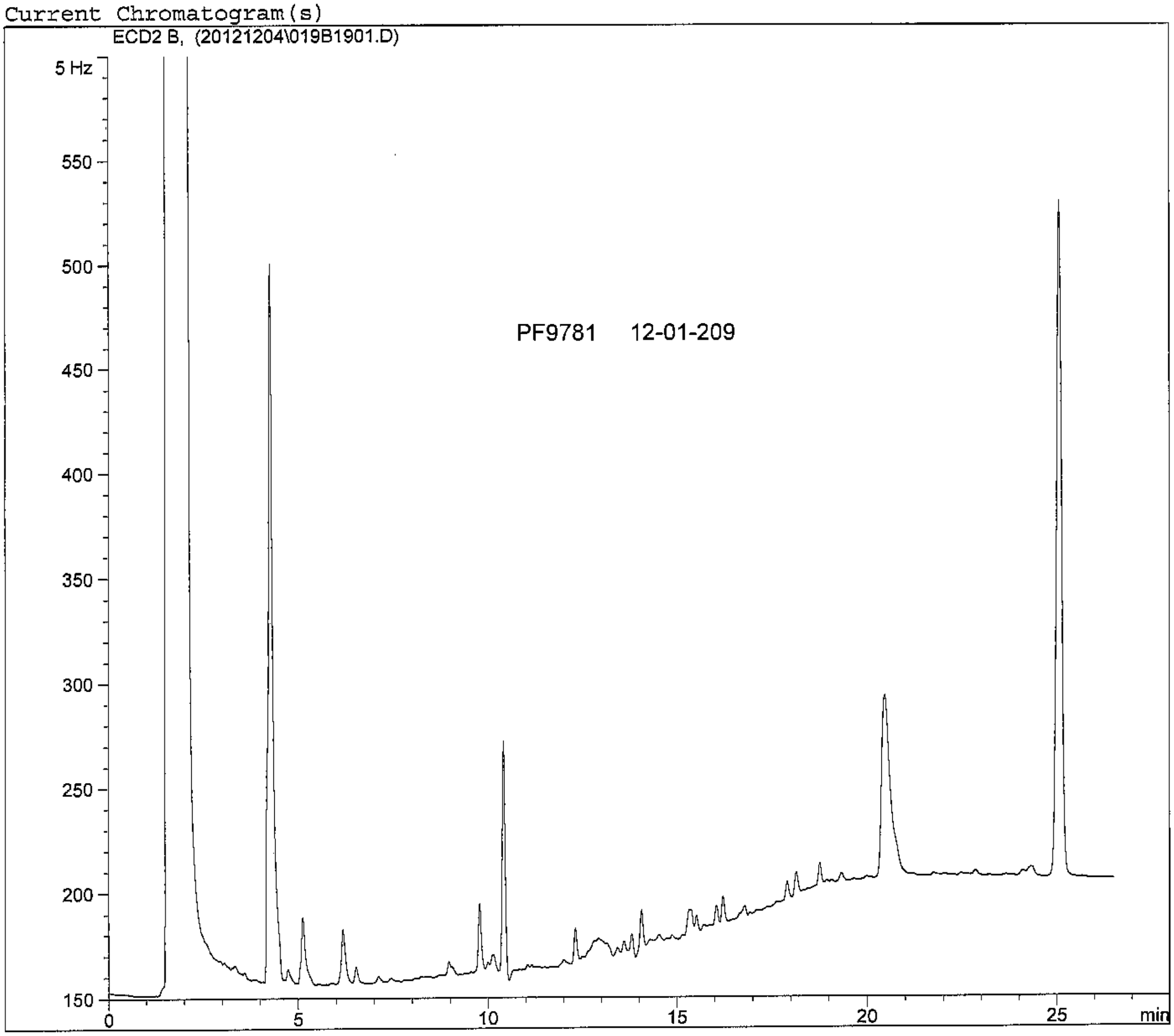

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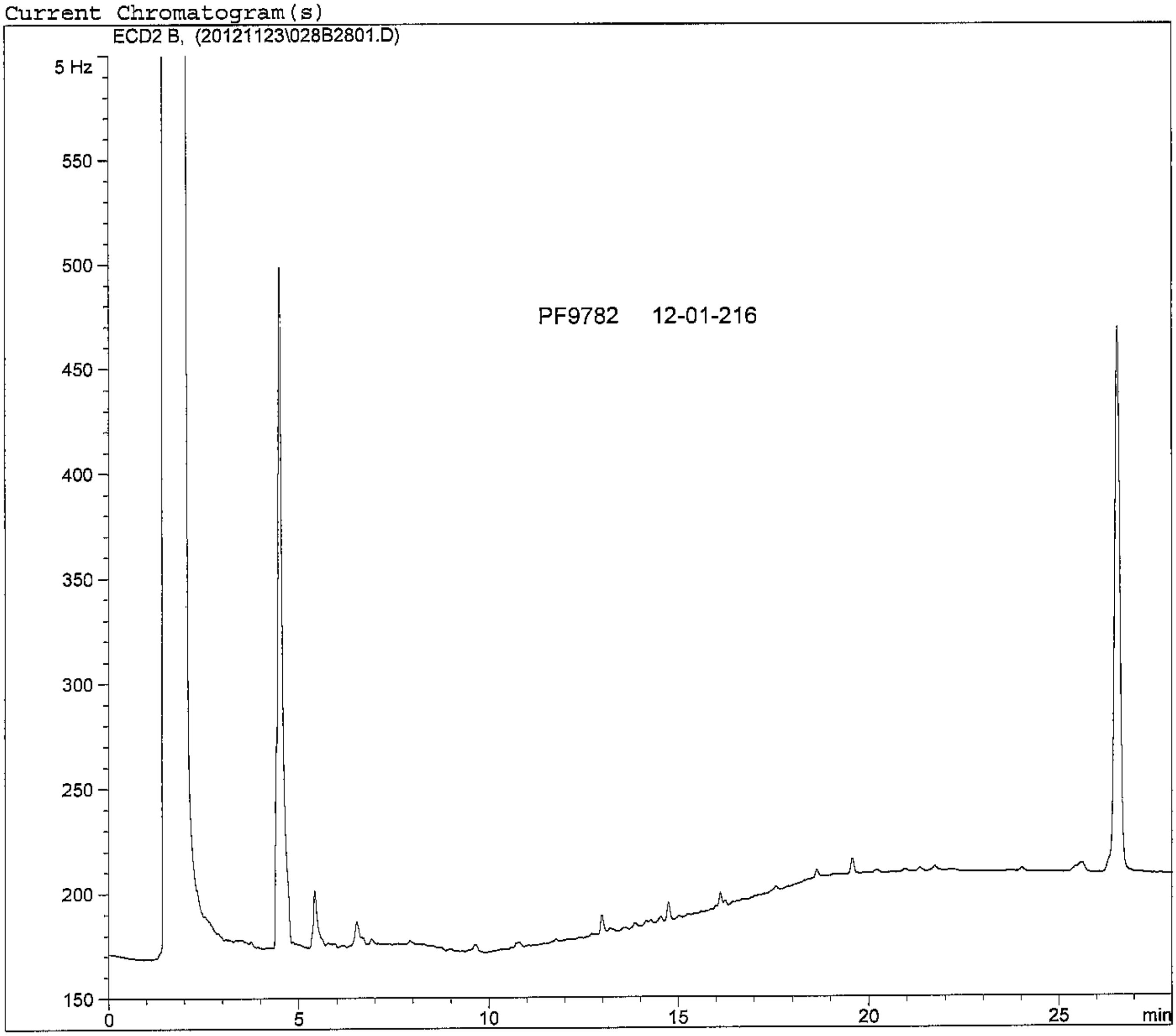

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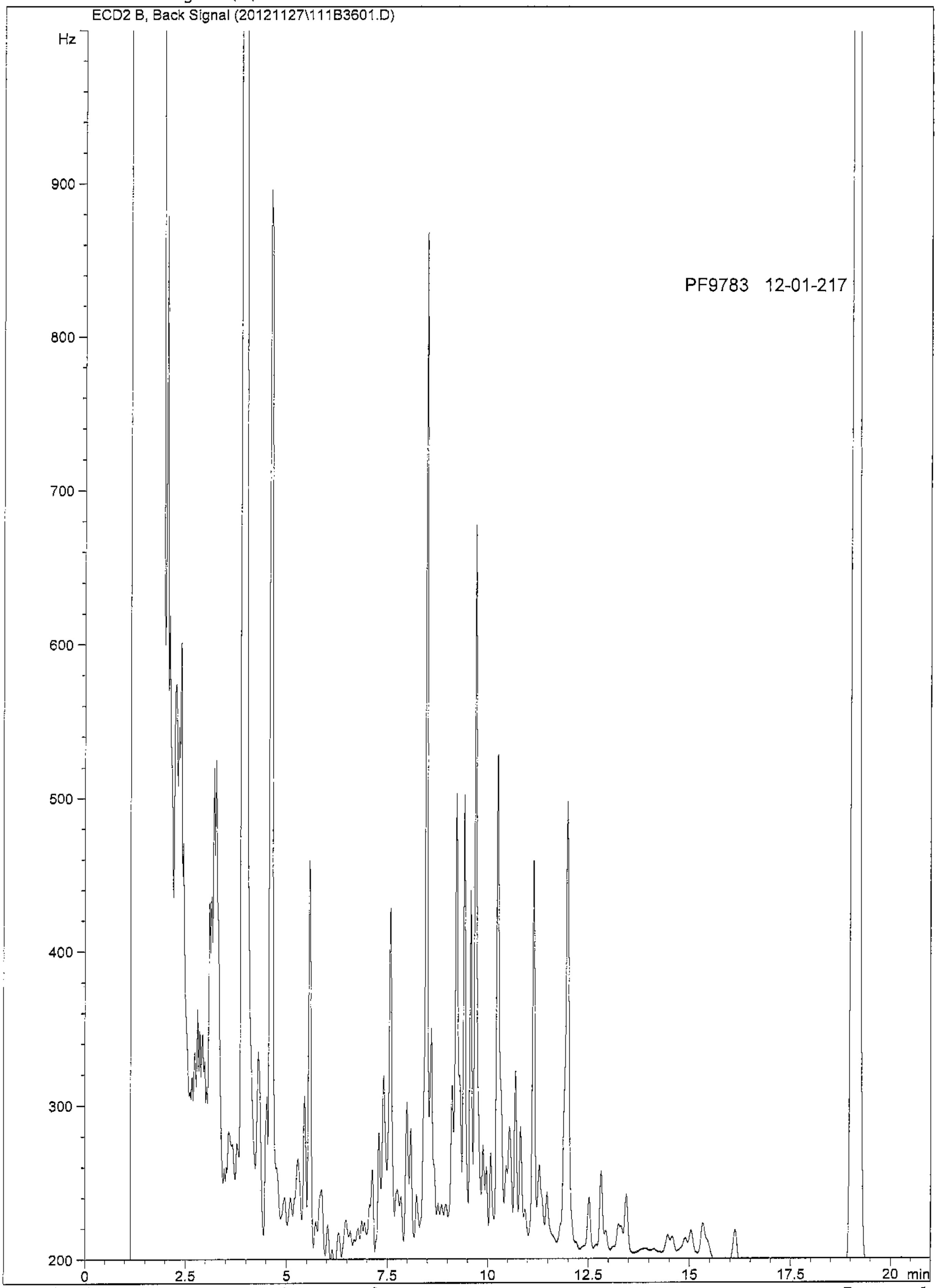

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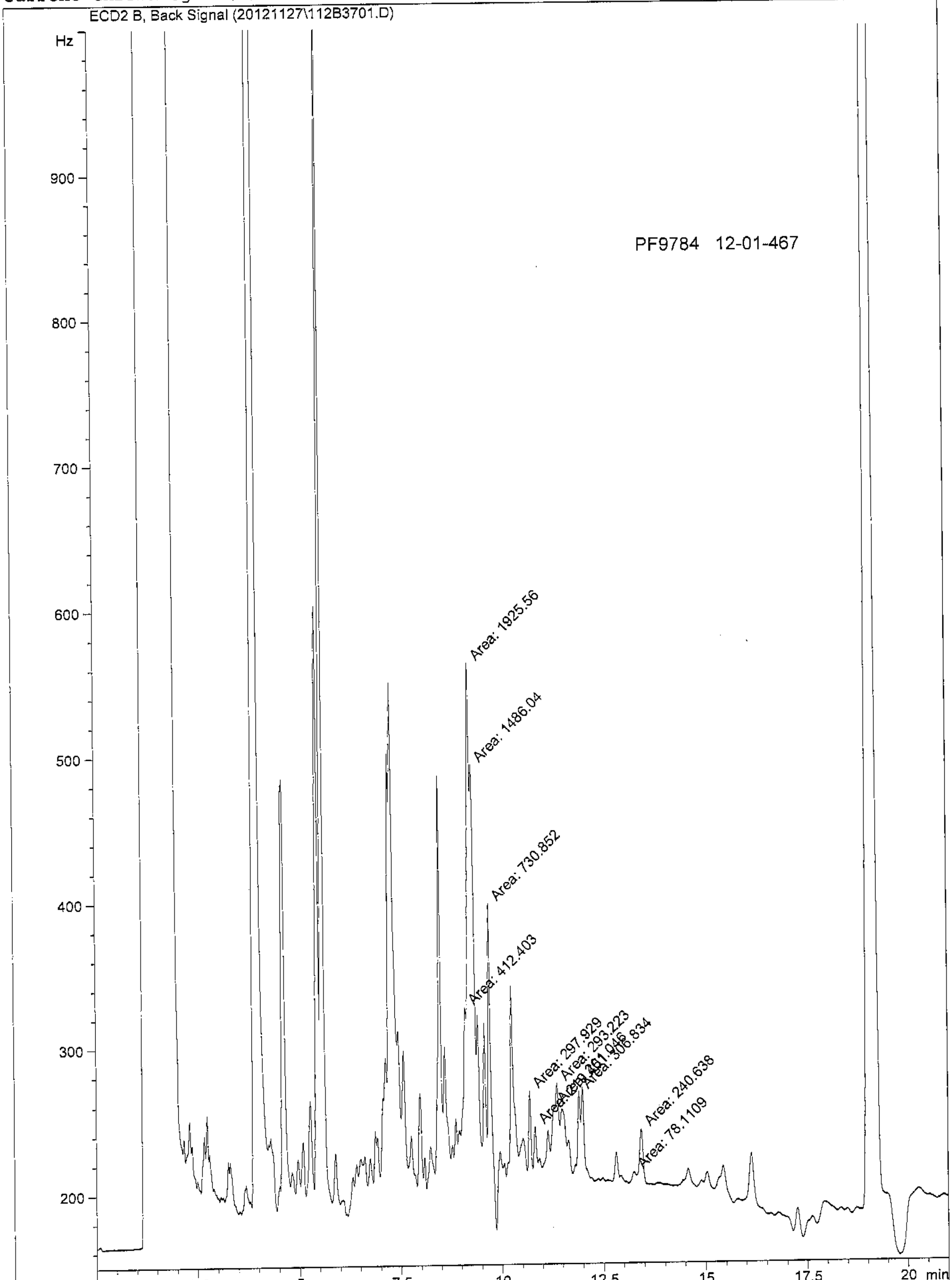
Current Chromatogram(s)



PCB003 2012/12/13 10:53:47 AM Kristy Joudrey

Print of window 38: Current Chromatogram(s)

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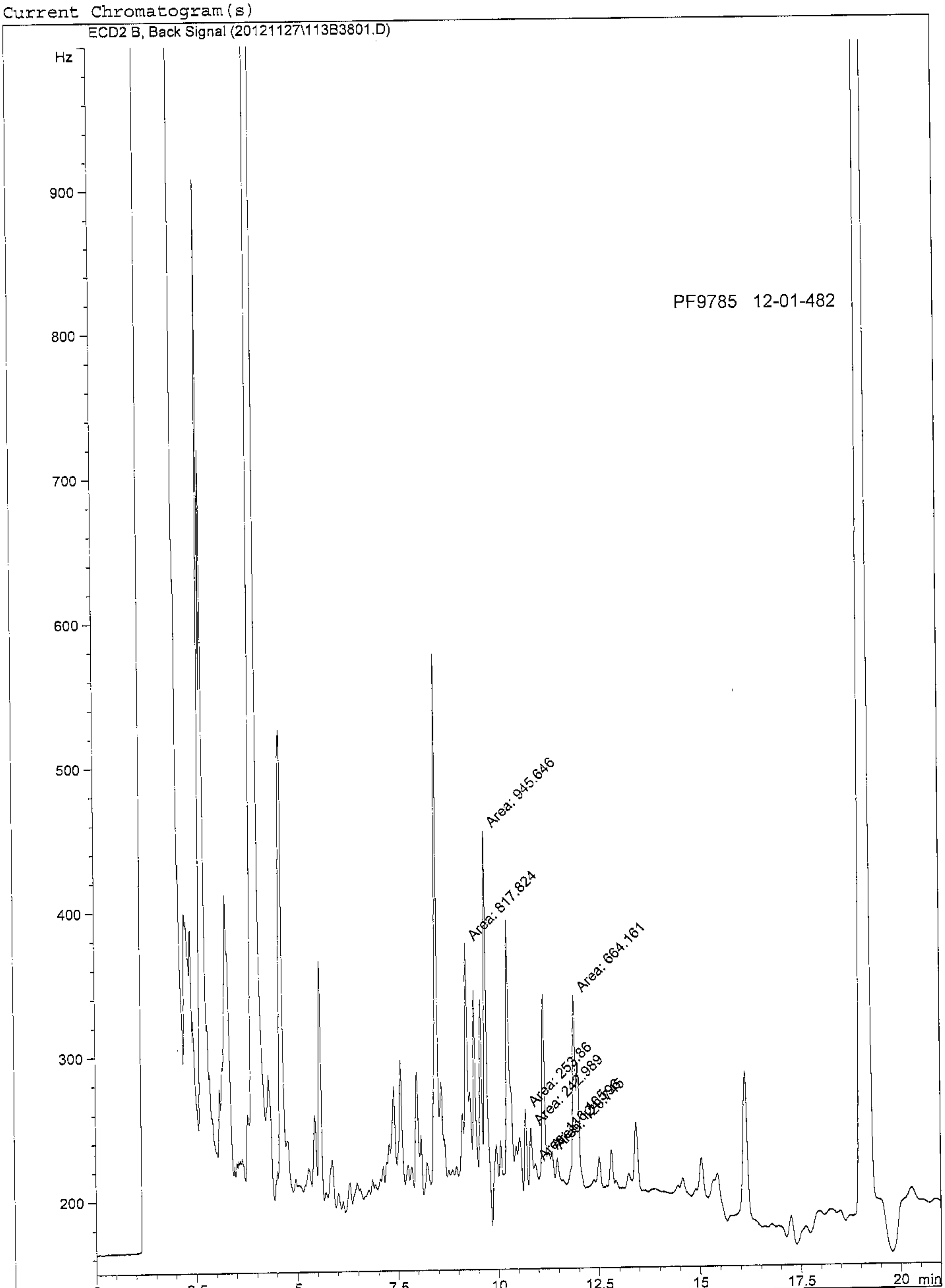

PCB003 2012/12/13 10:54:21 AM Kristy Joudrey

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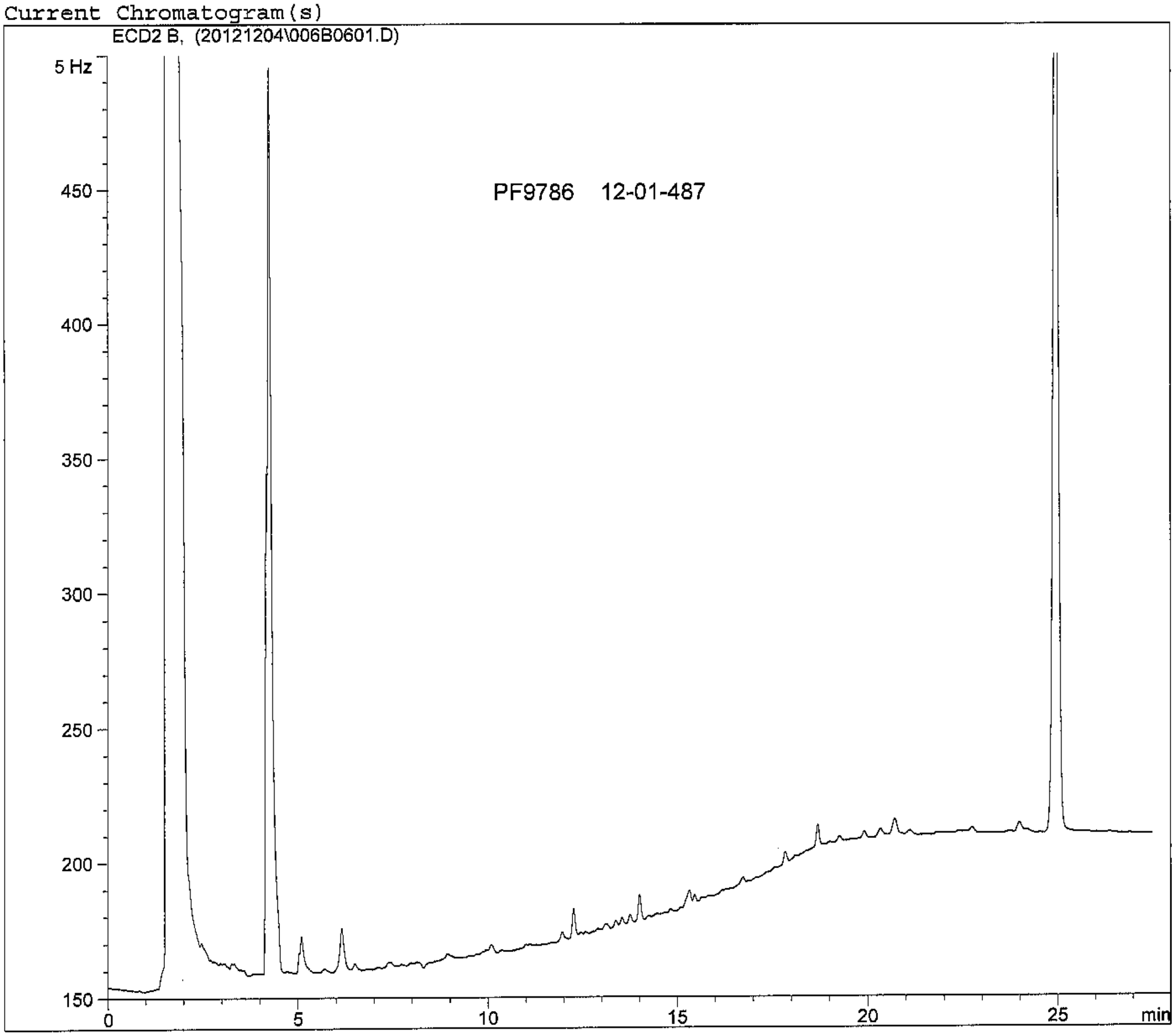

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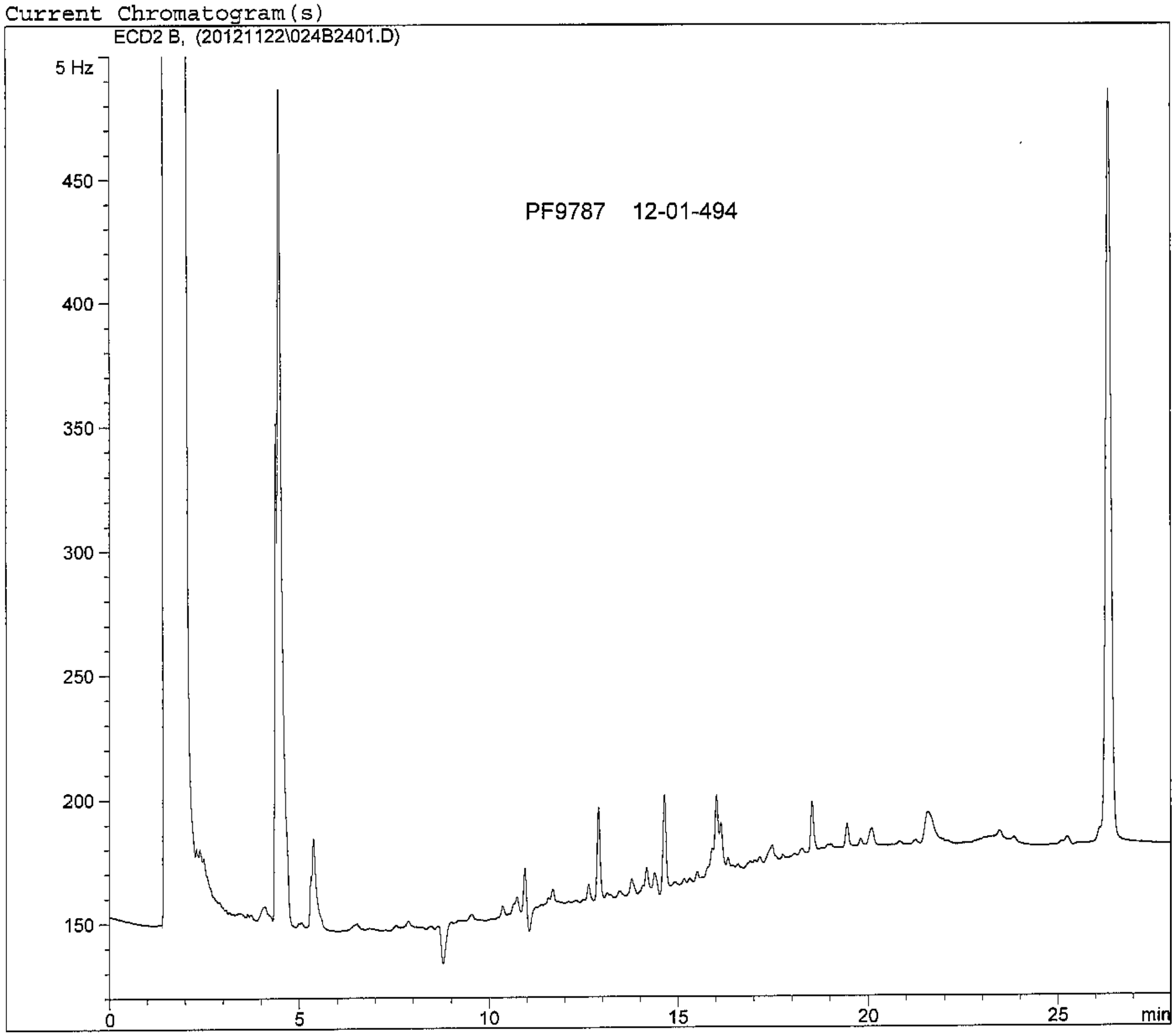

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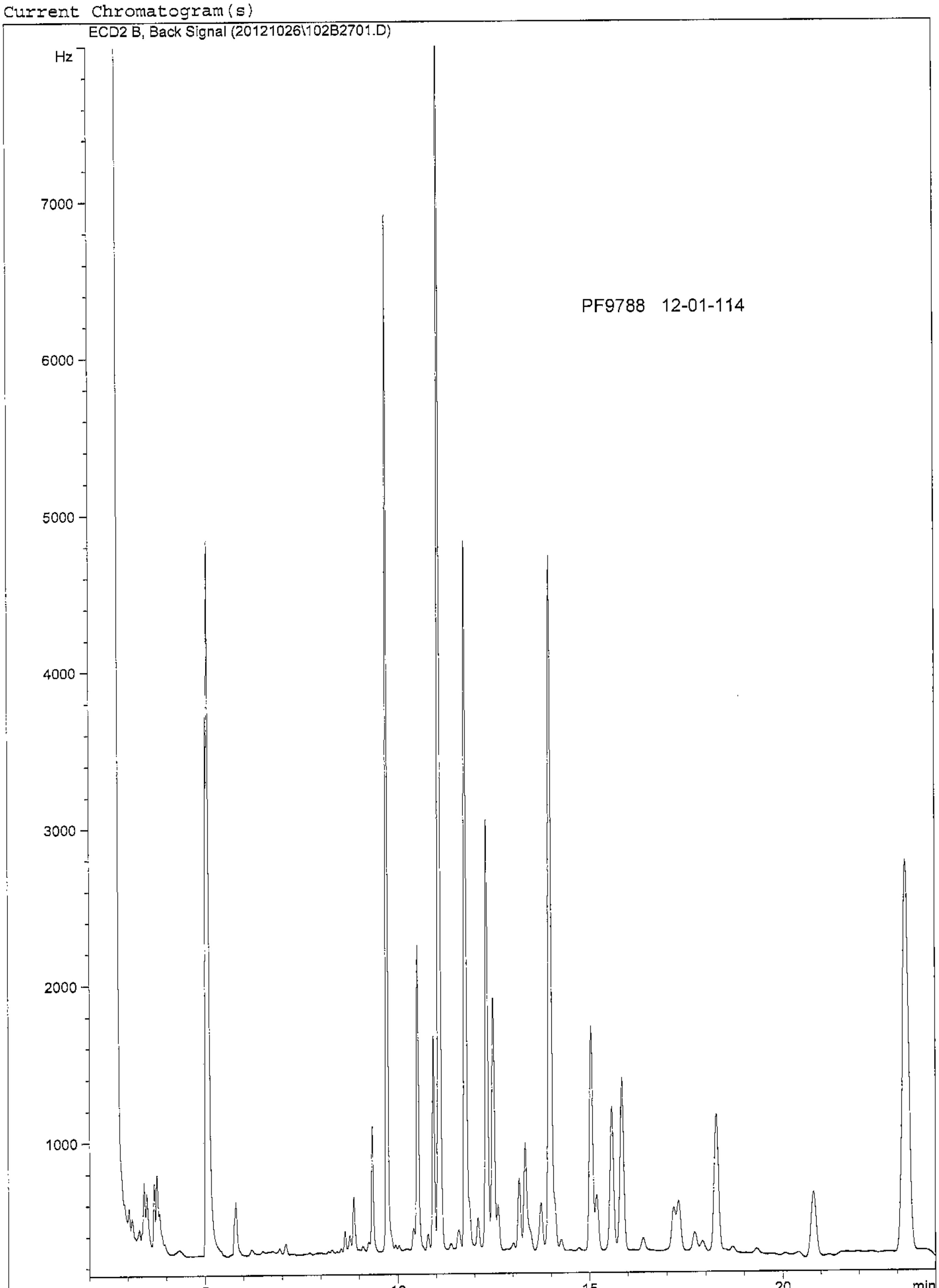

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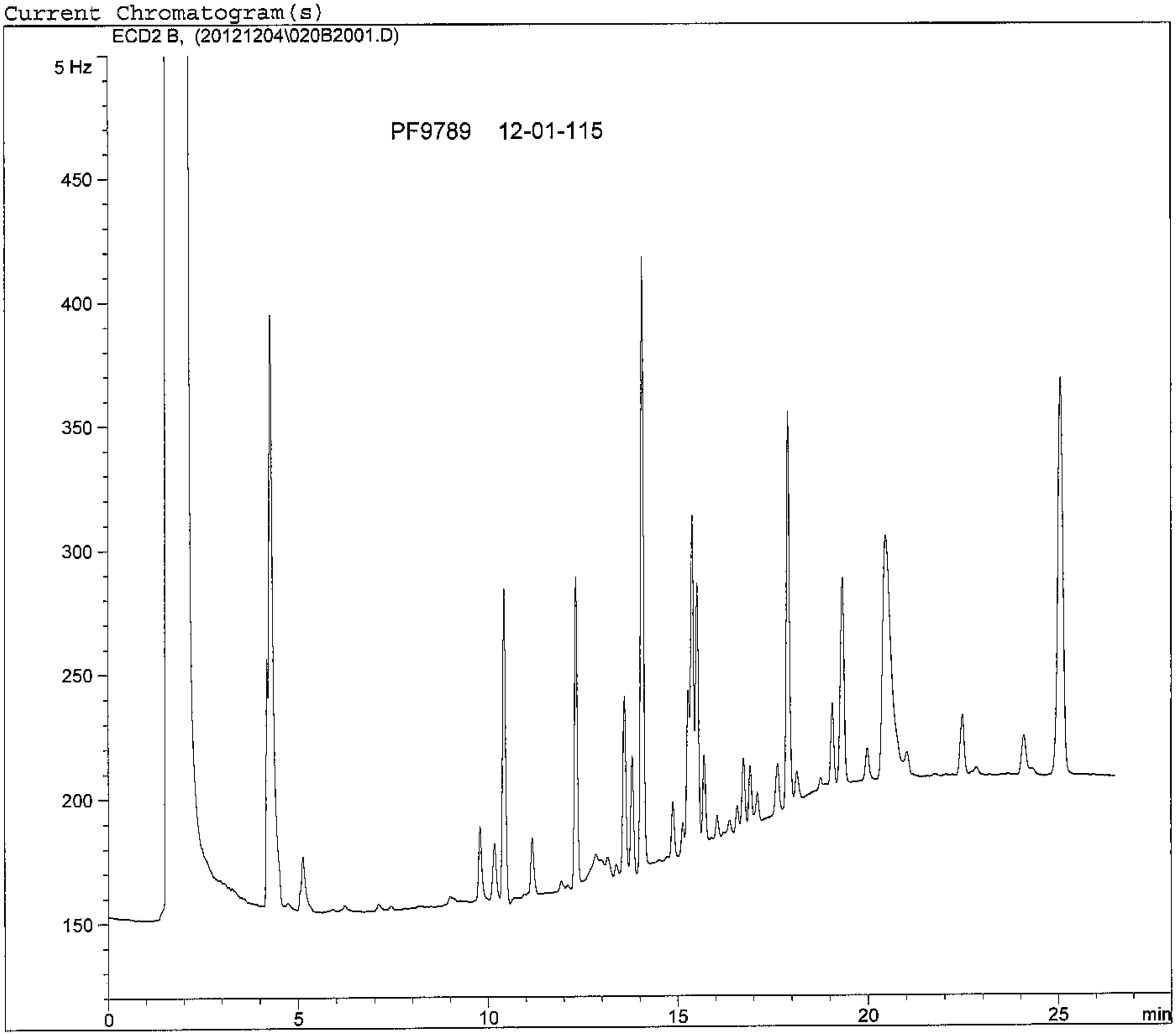

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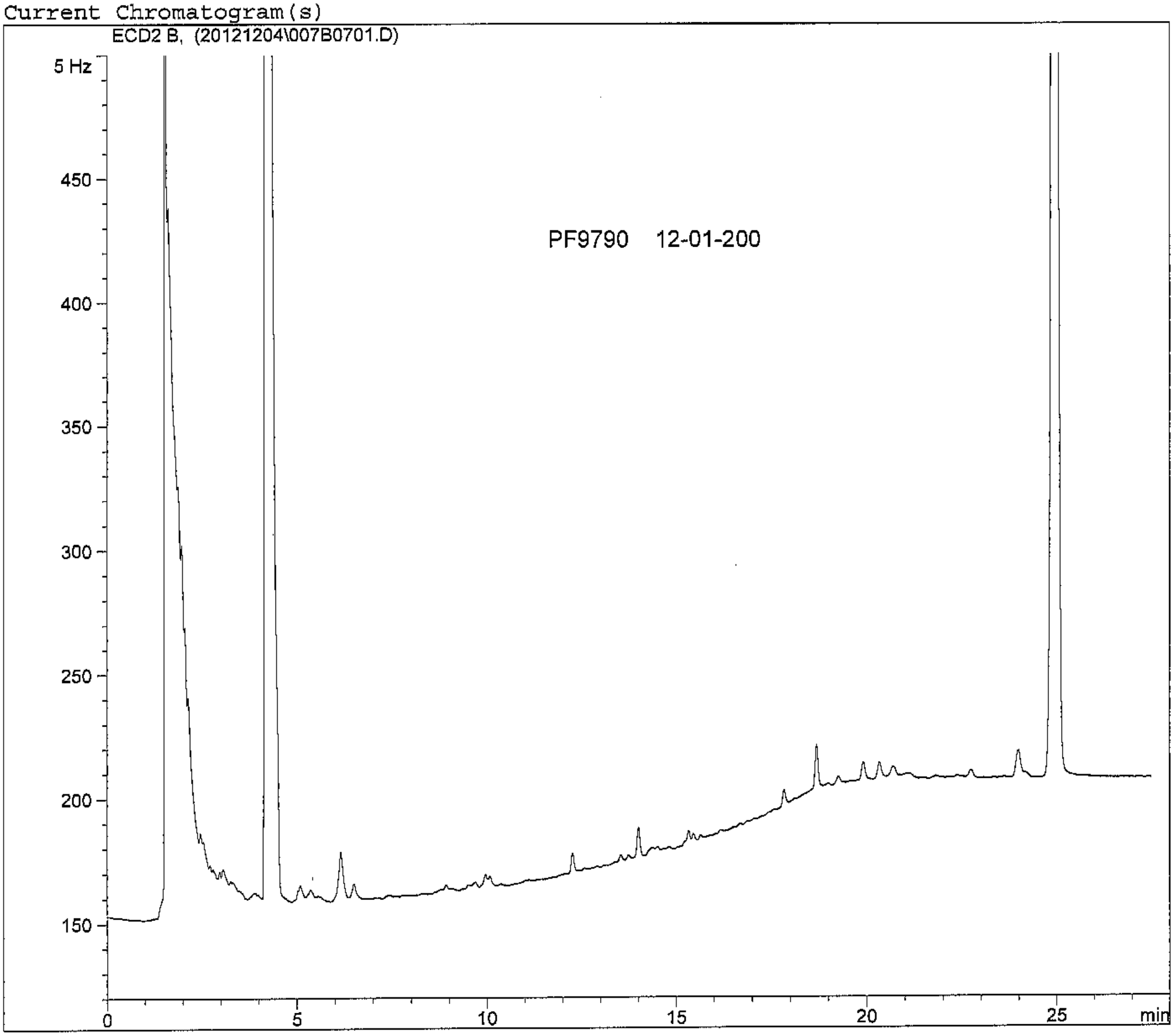

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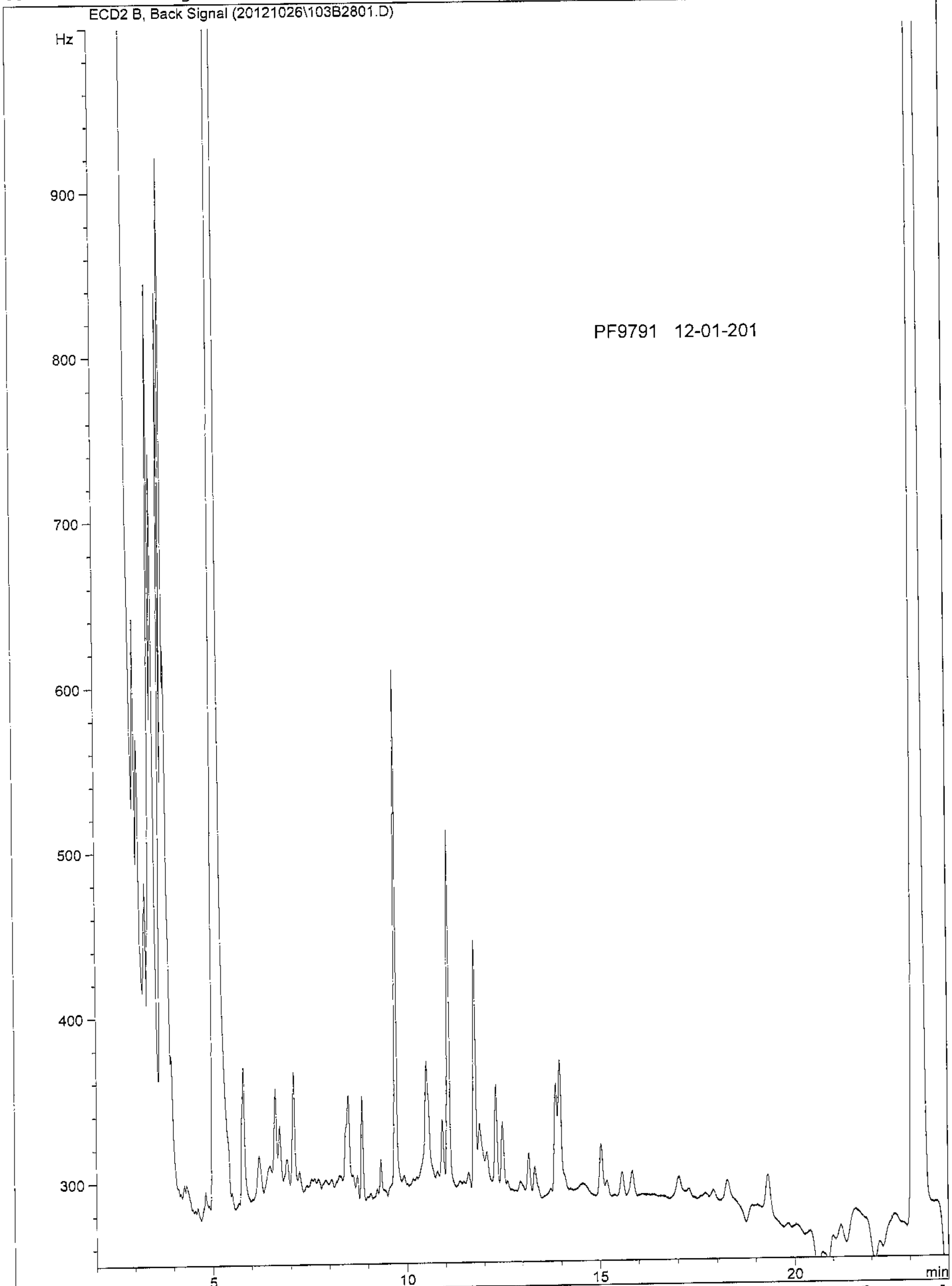
Current Chromatogram(s)



PCB003 2012/12/13 10:56:40 AM Kristy Joudrey

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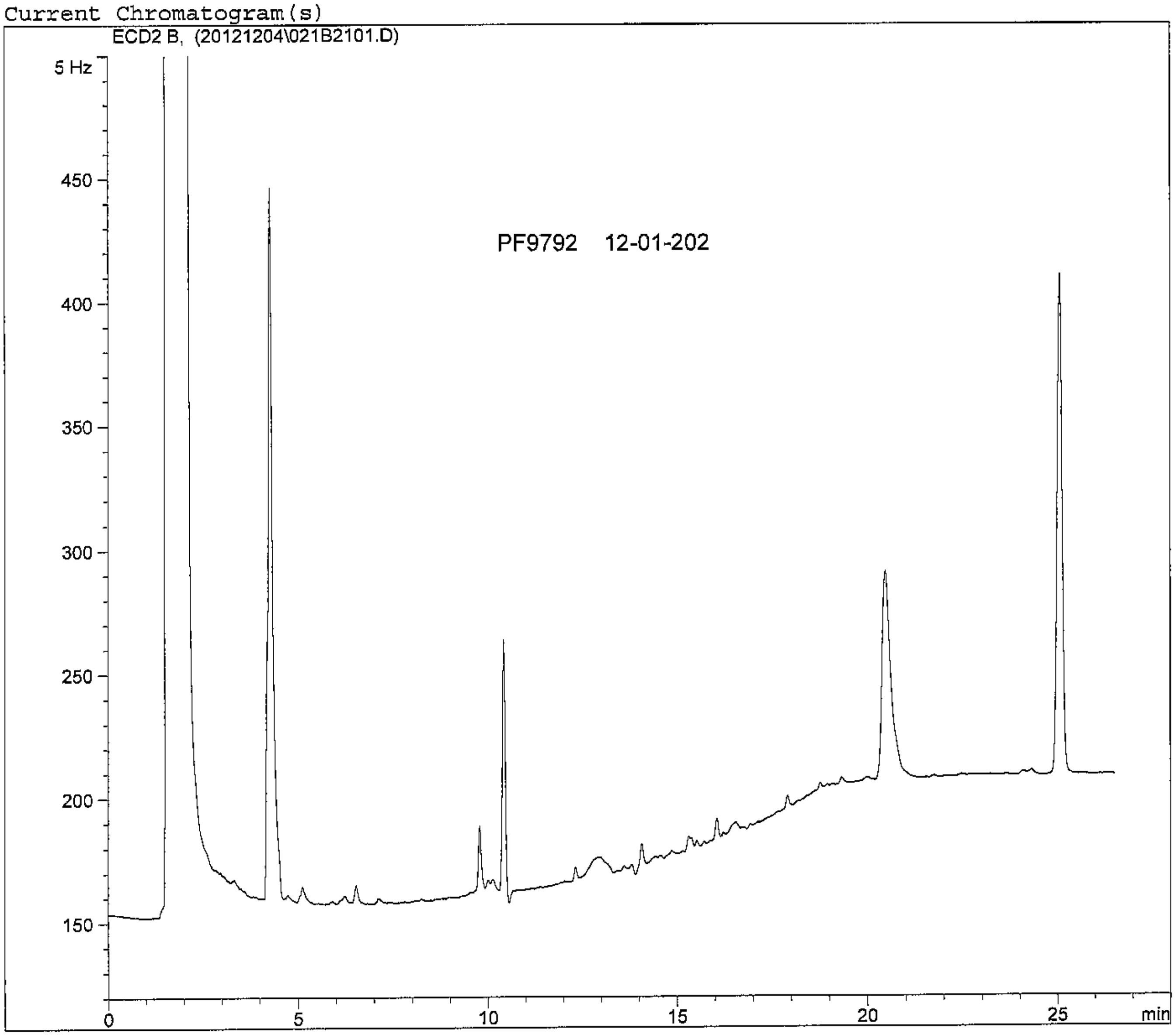

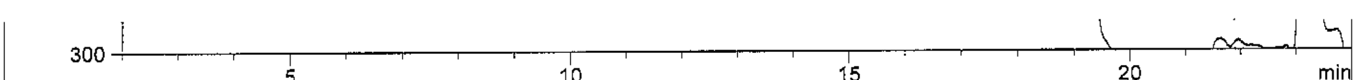

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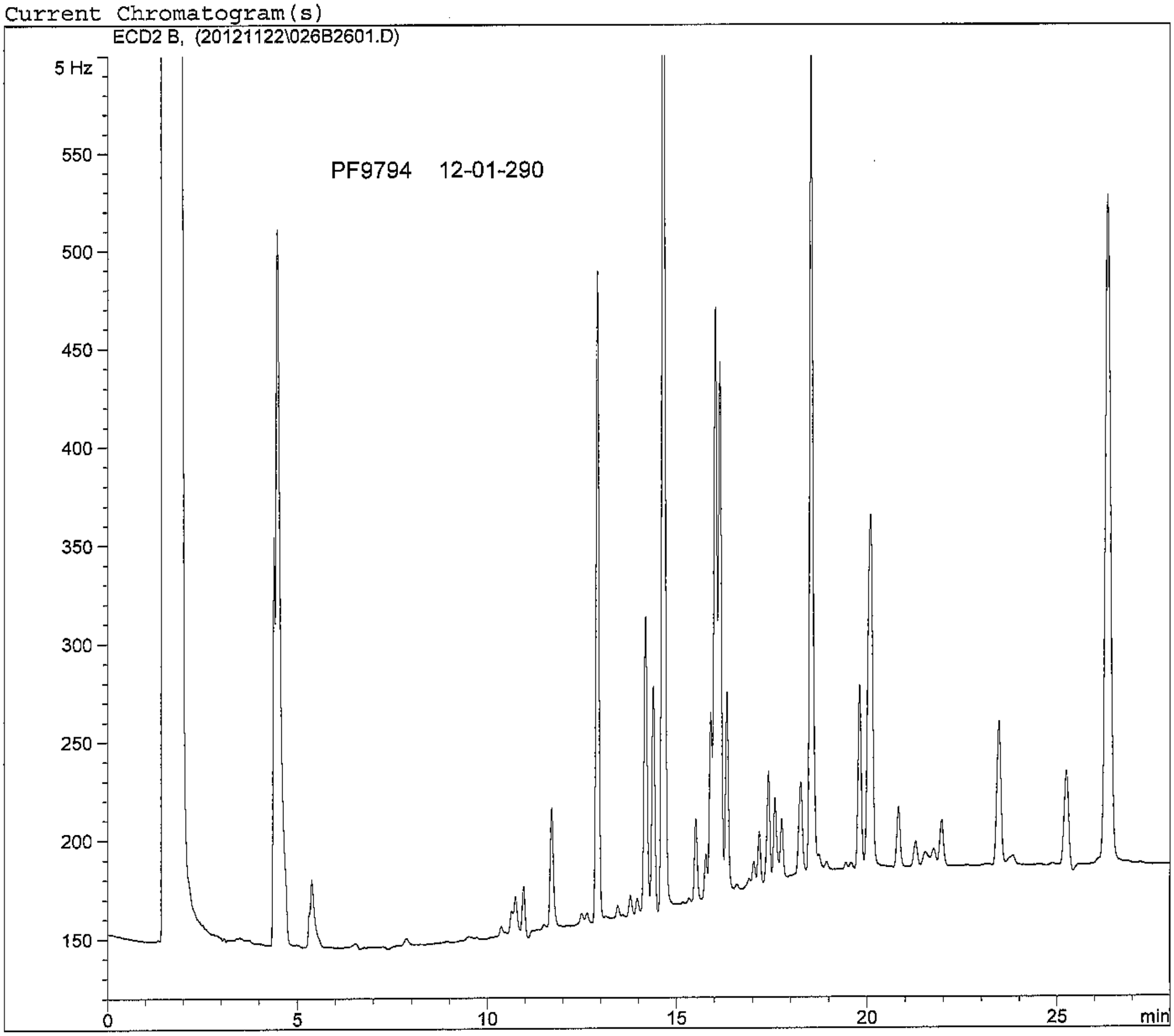

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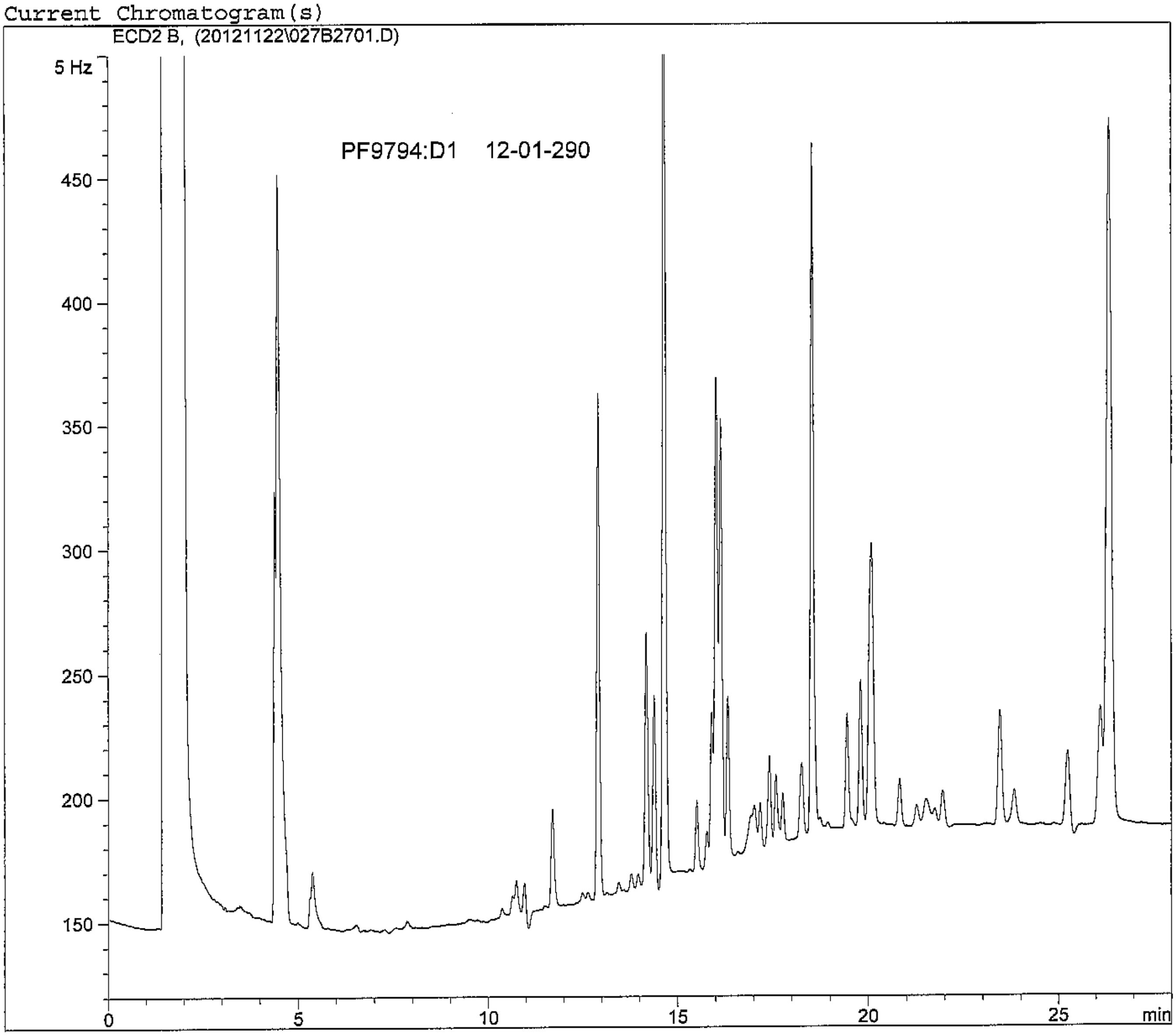

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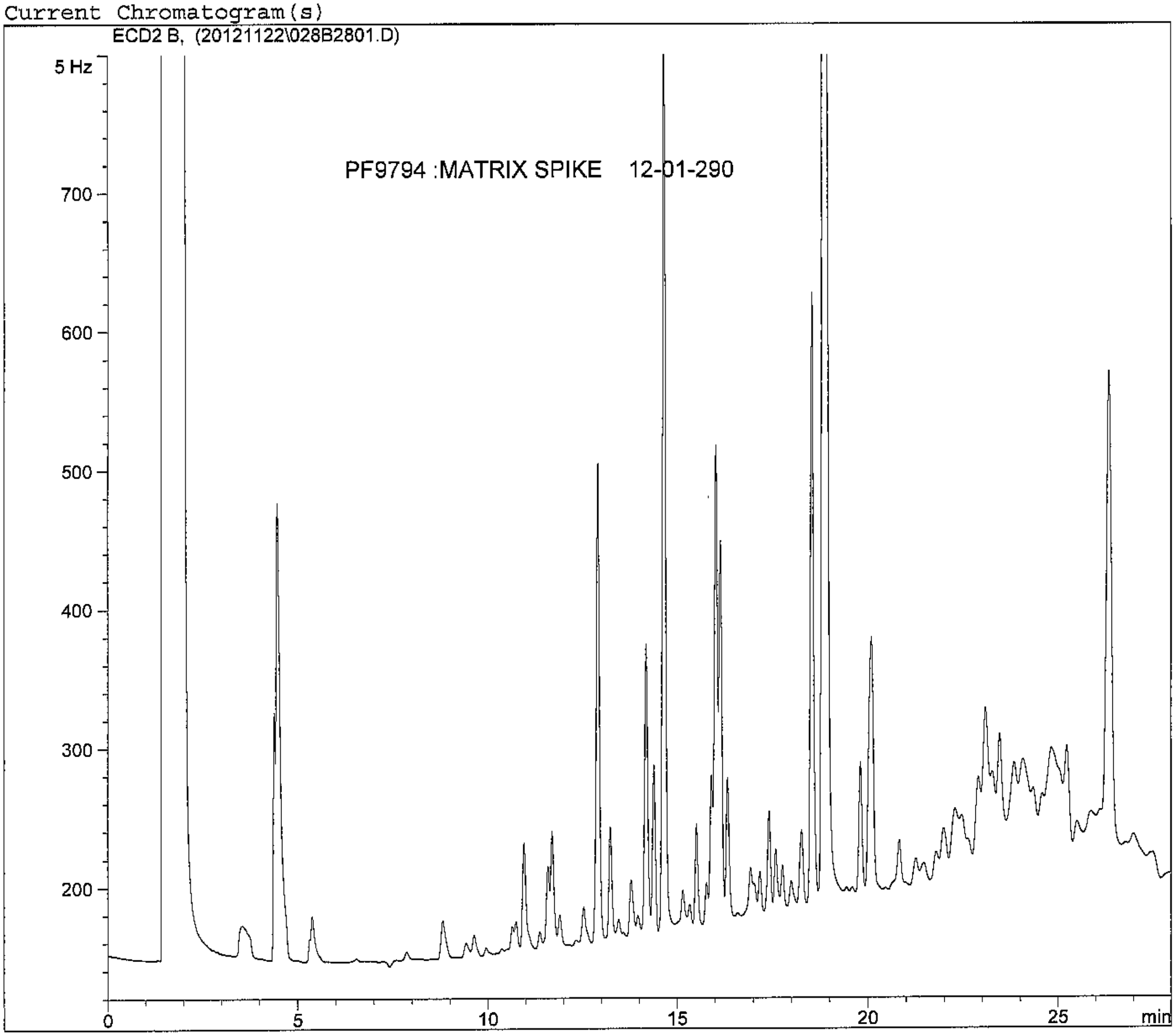

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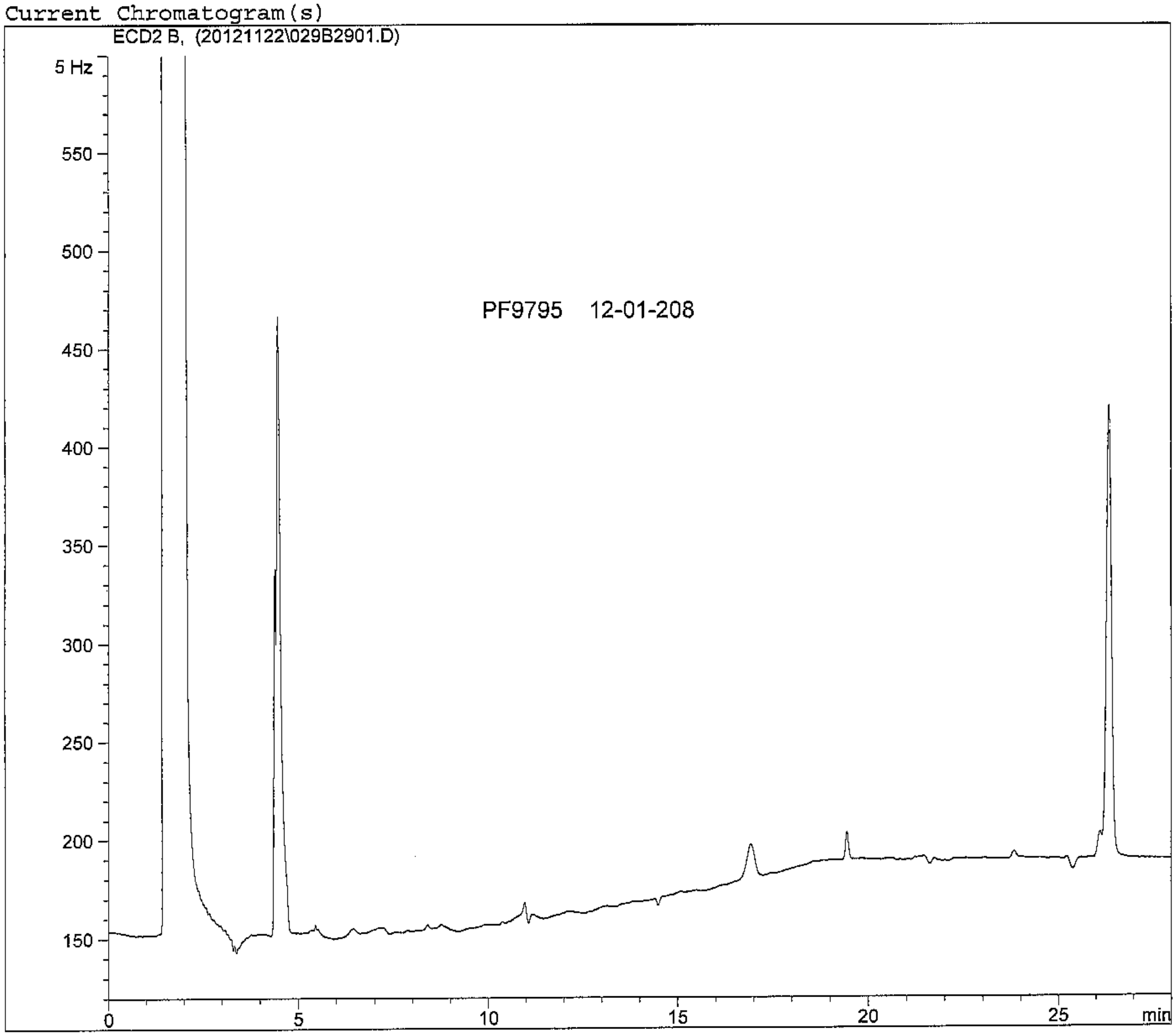

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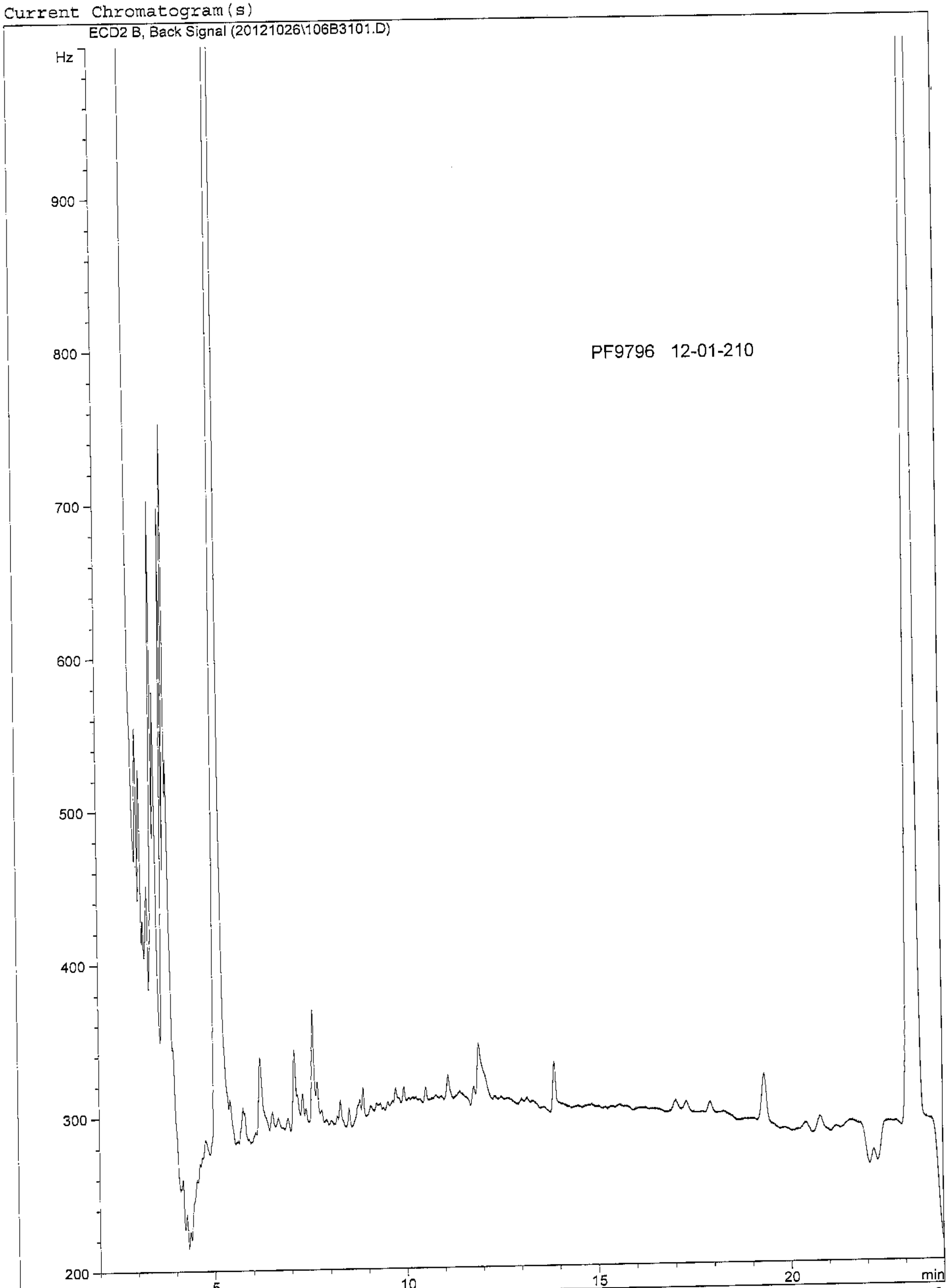
Current Chromatogram(s)



PCB003 2012/12/13 10:58:17 AM Kristy Joudrey

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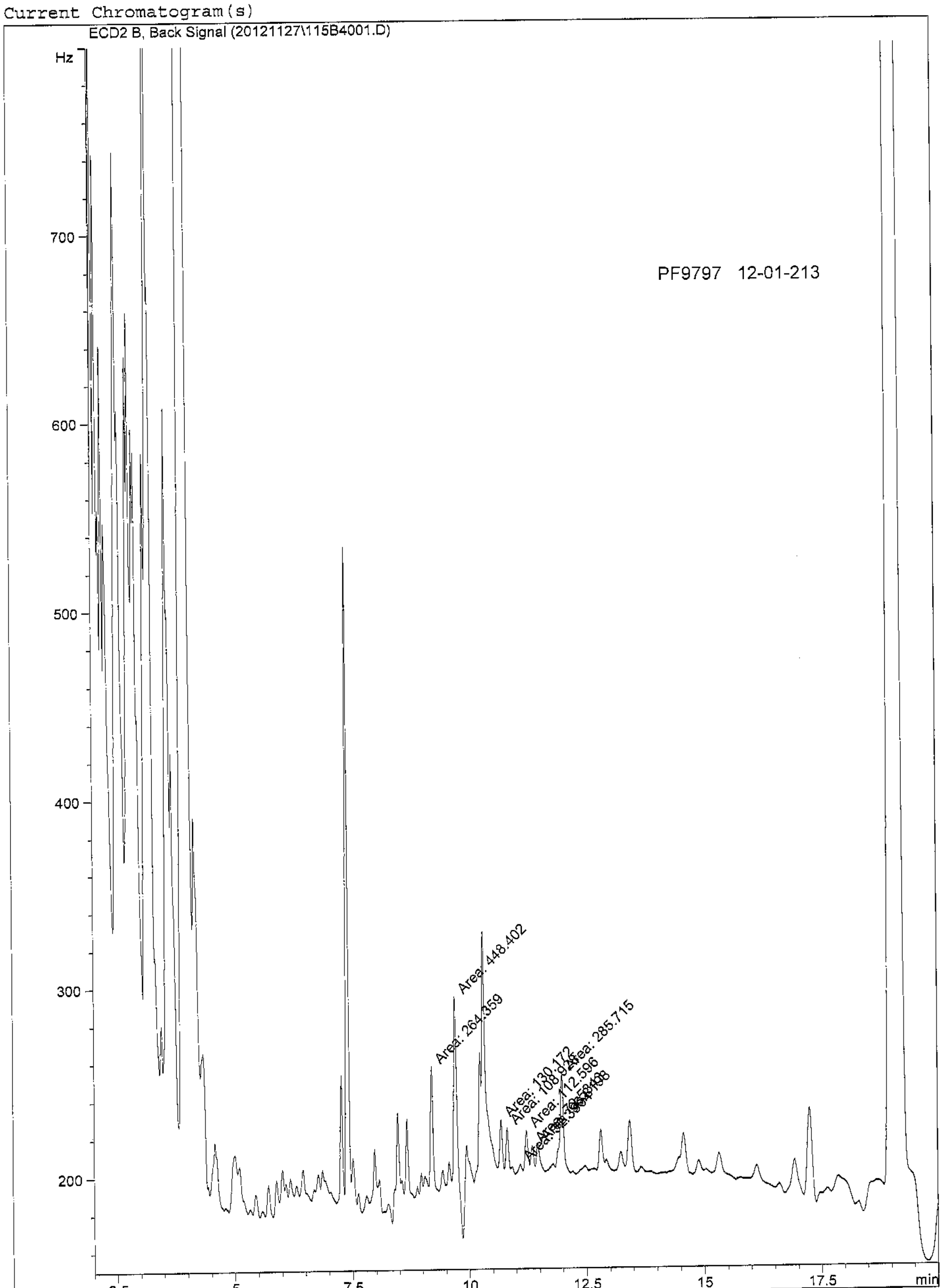

PCB003 2012/12/13 10:59:48 AM Kristy Joudrey

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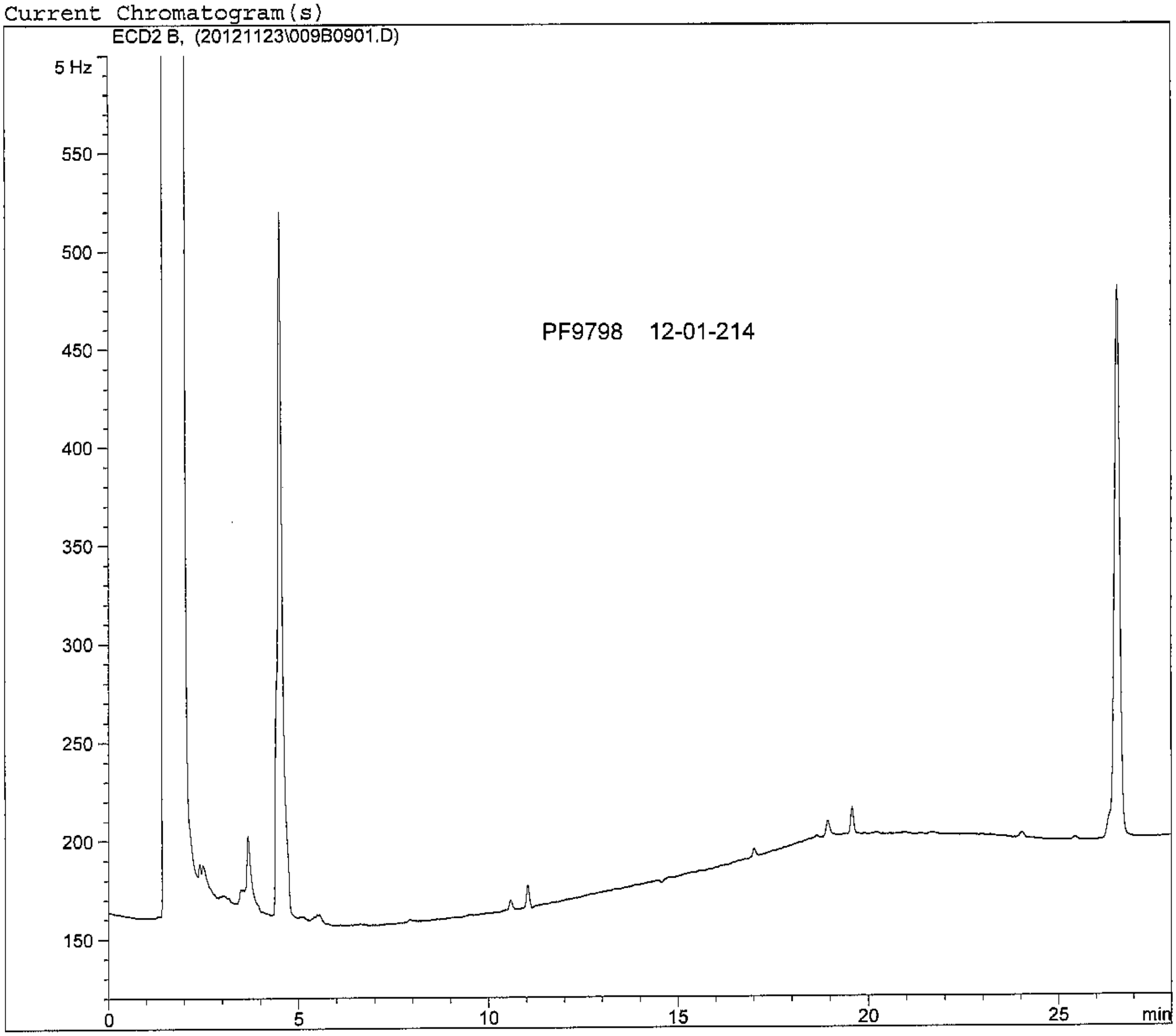

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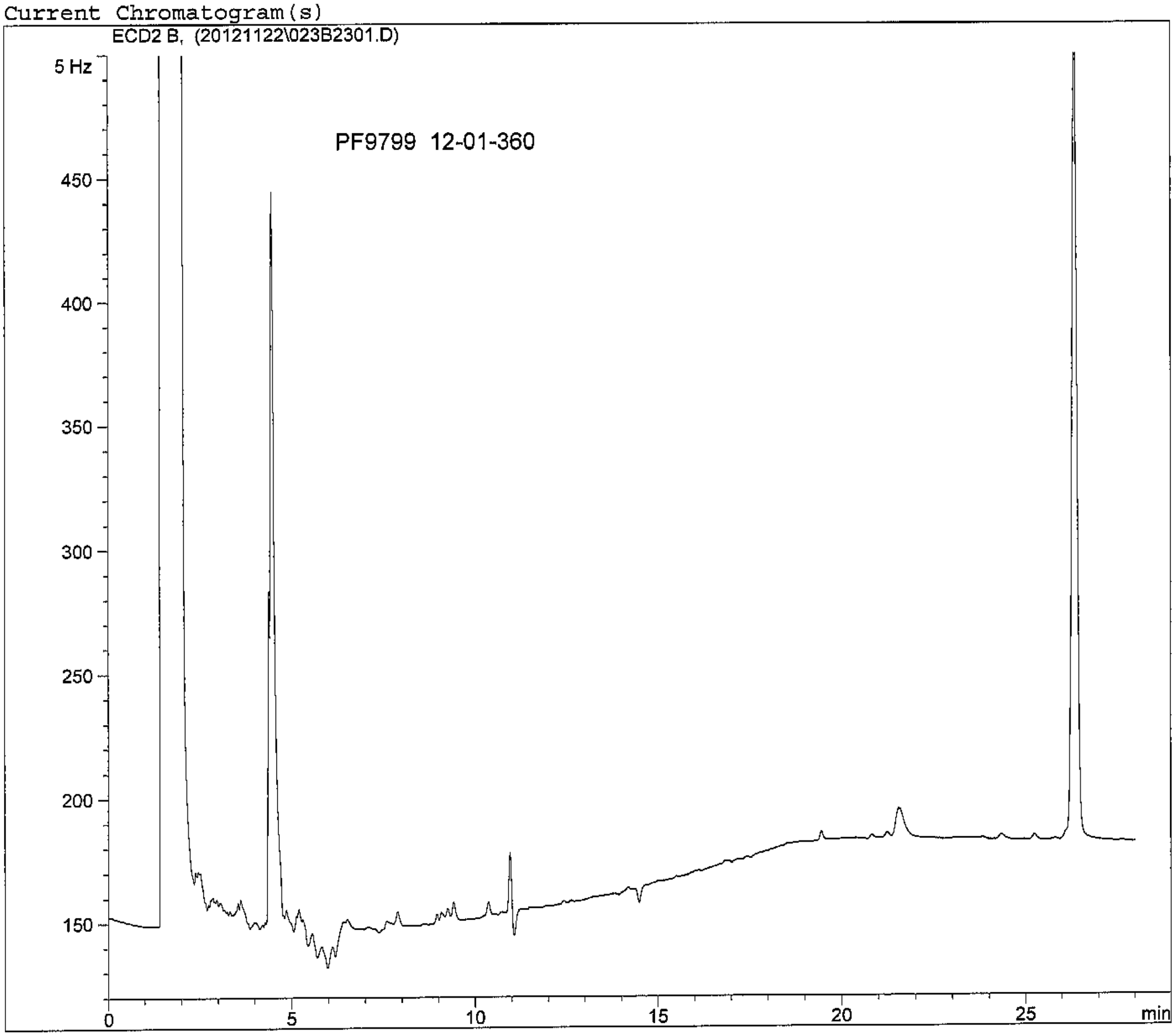

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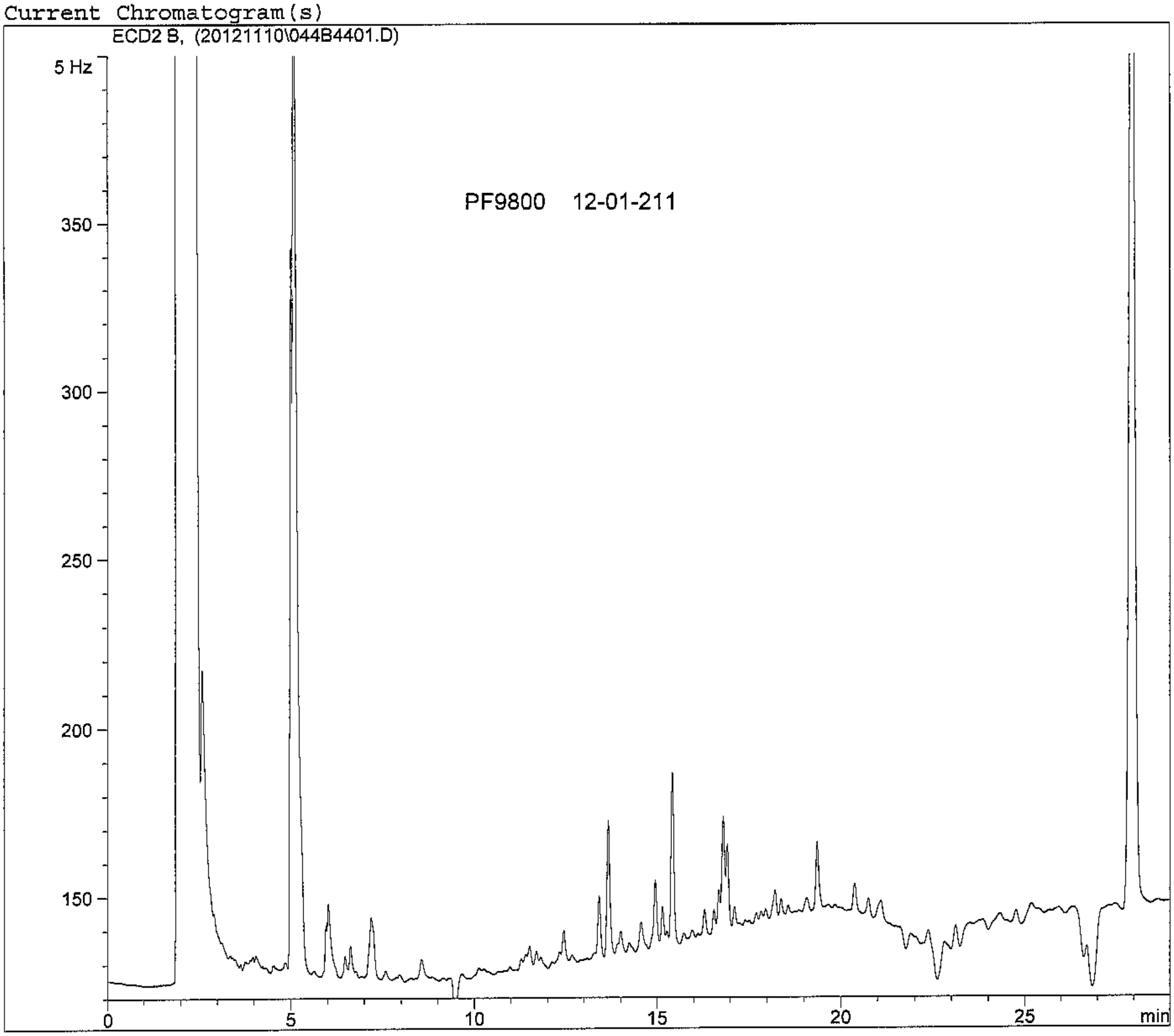

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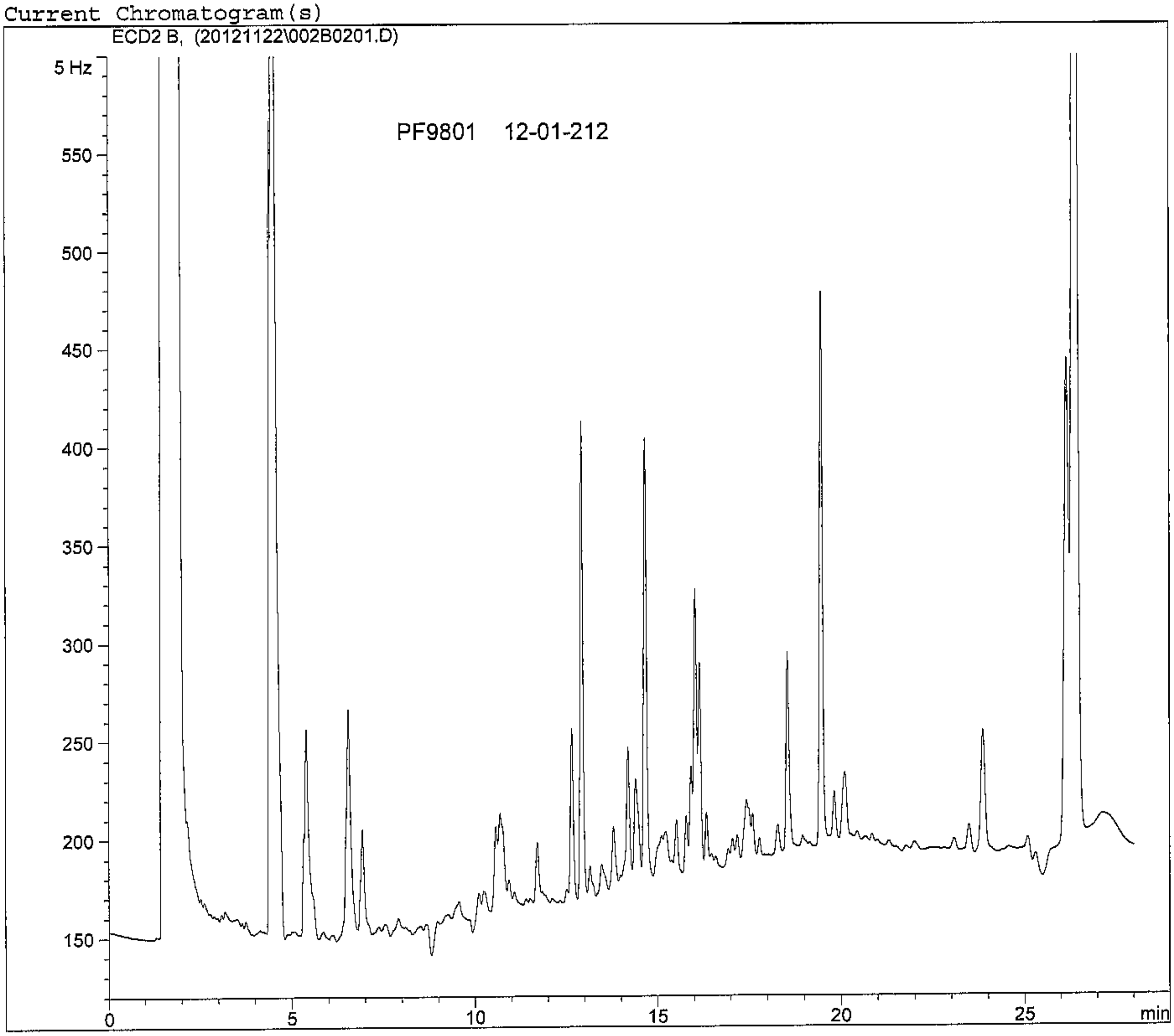

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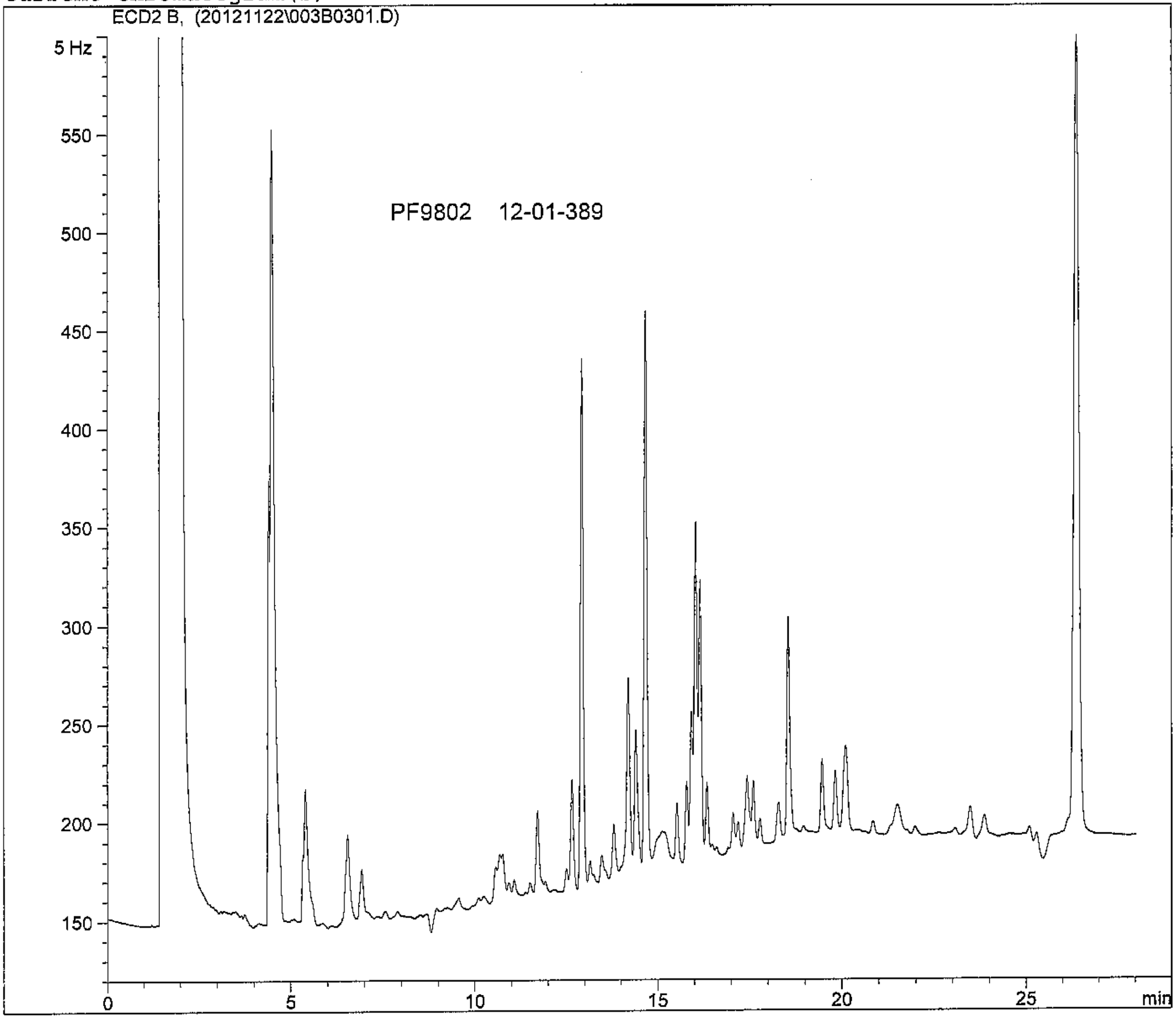

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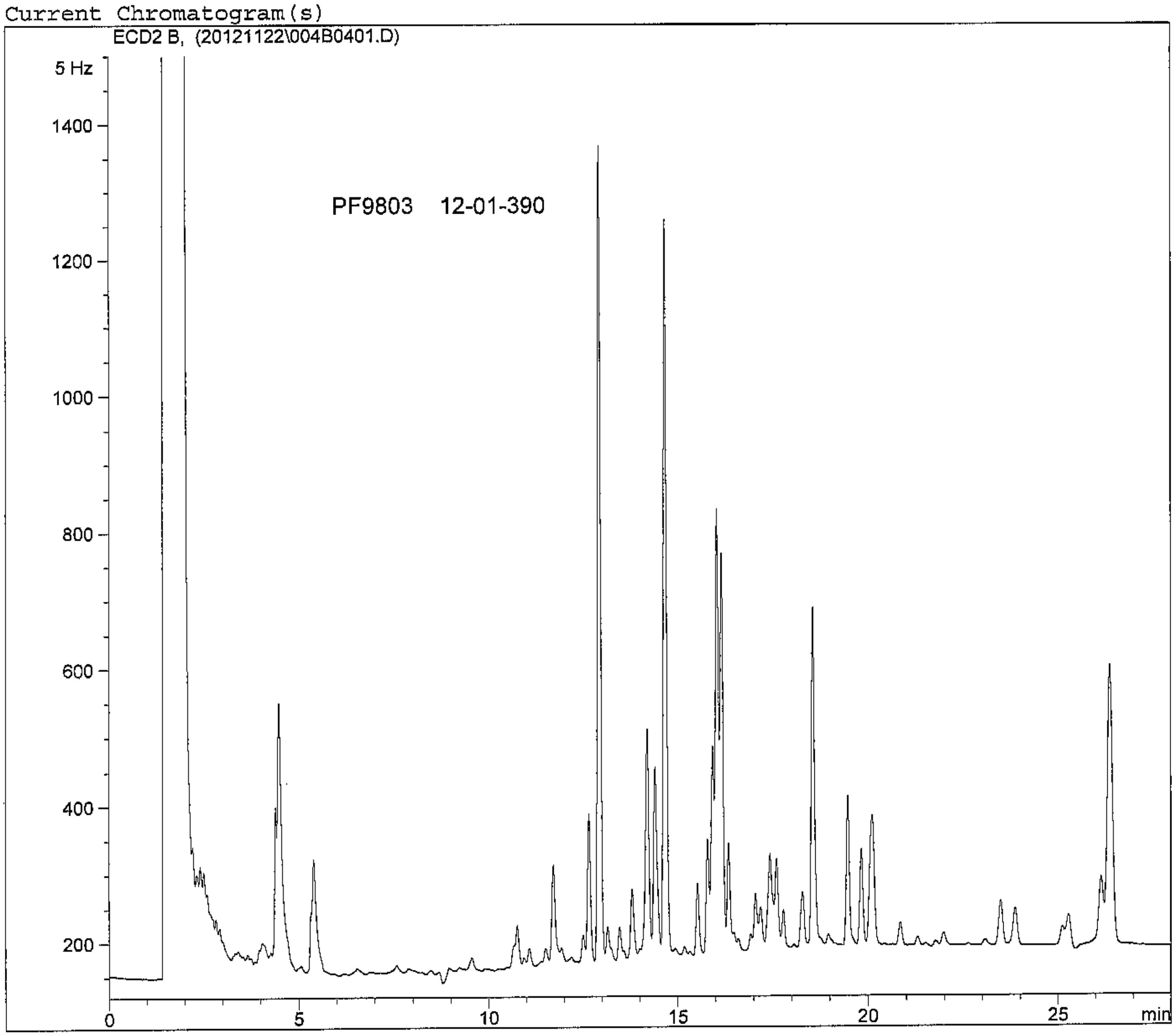

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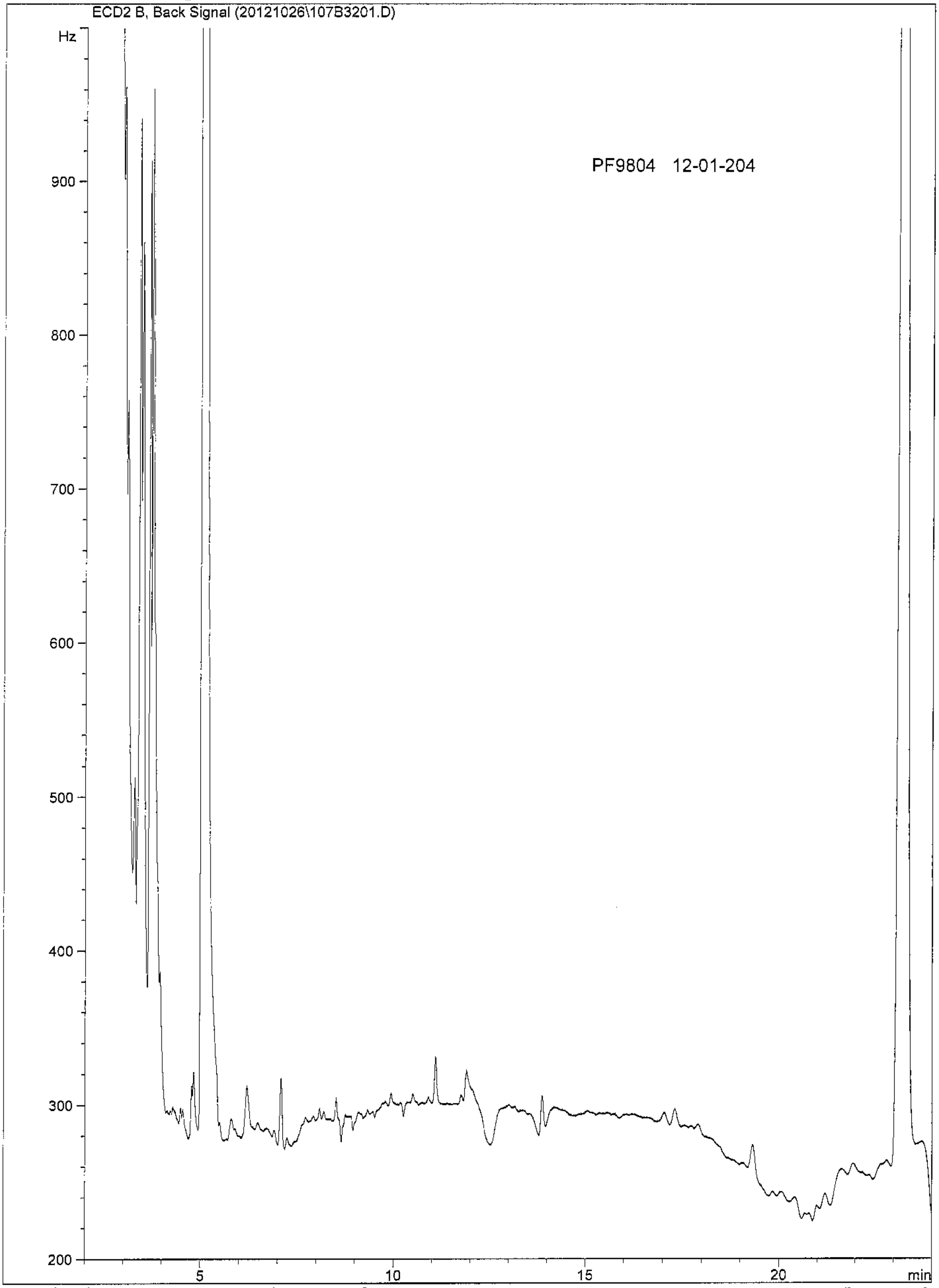

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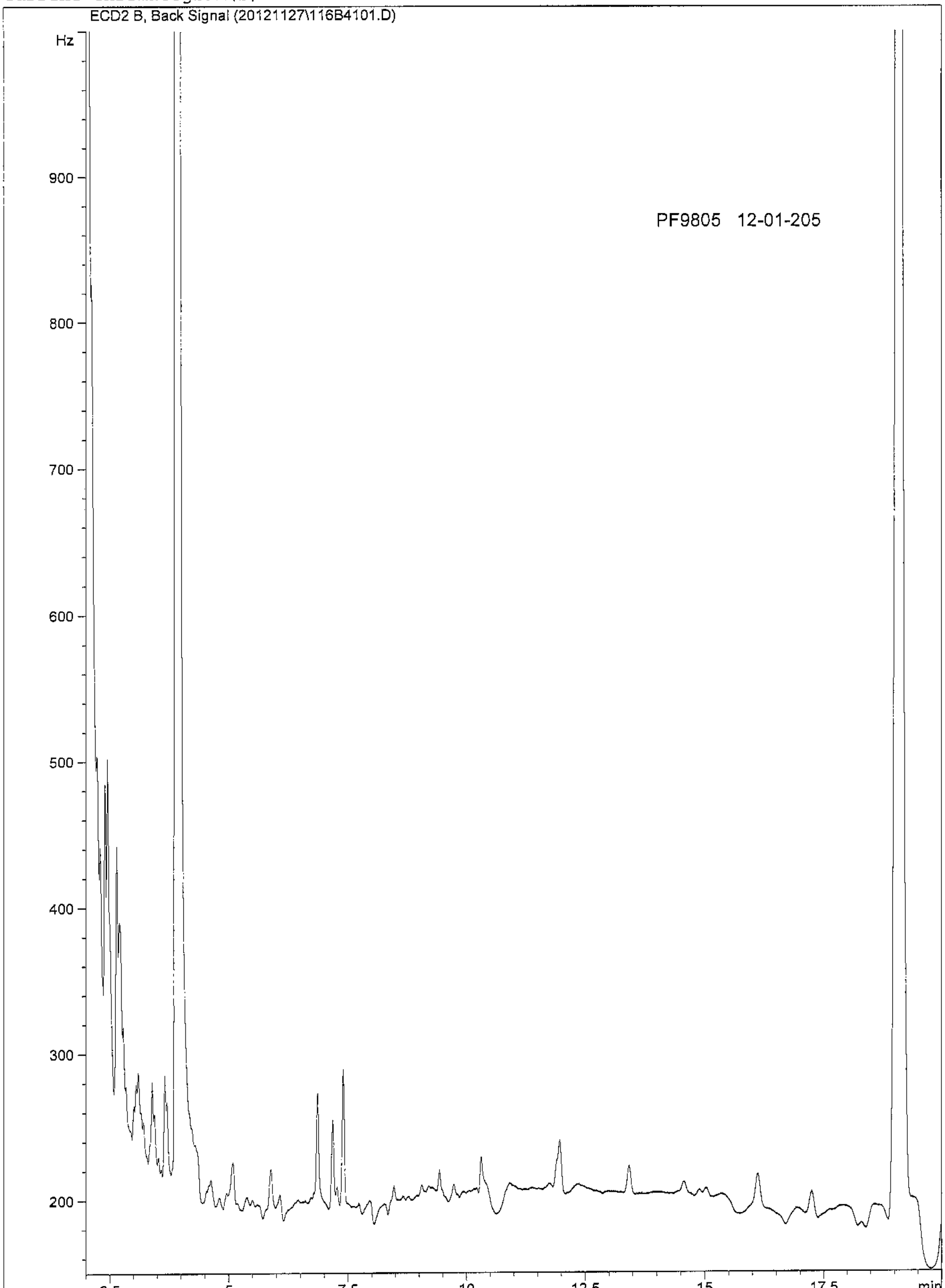

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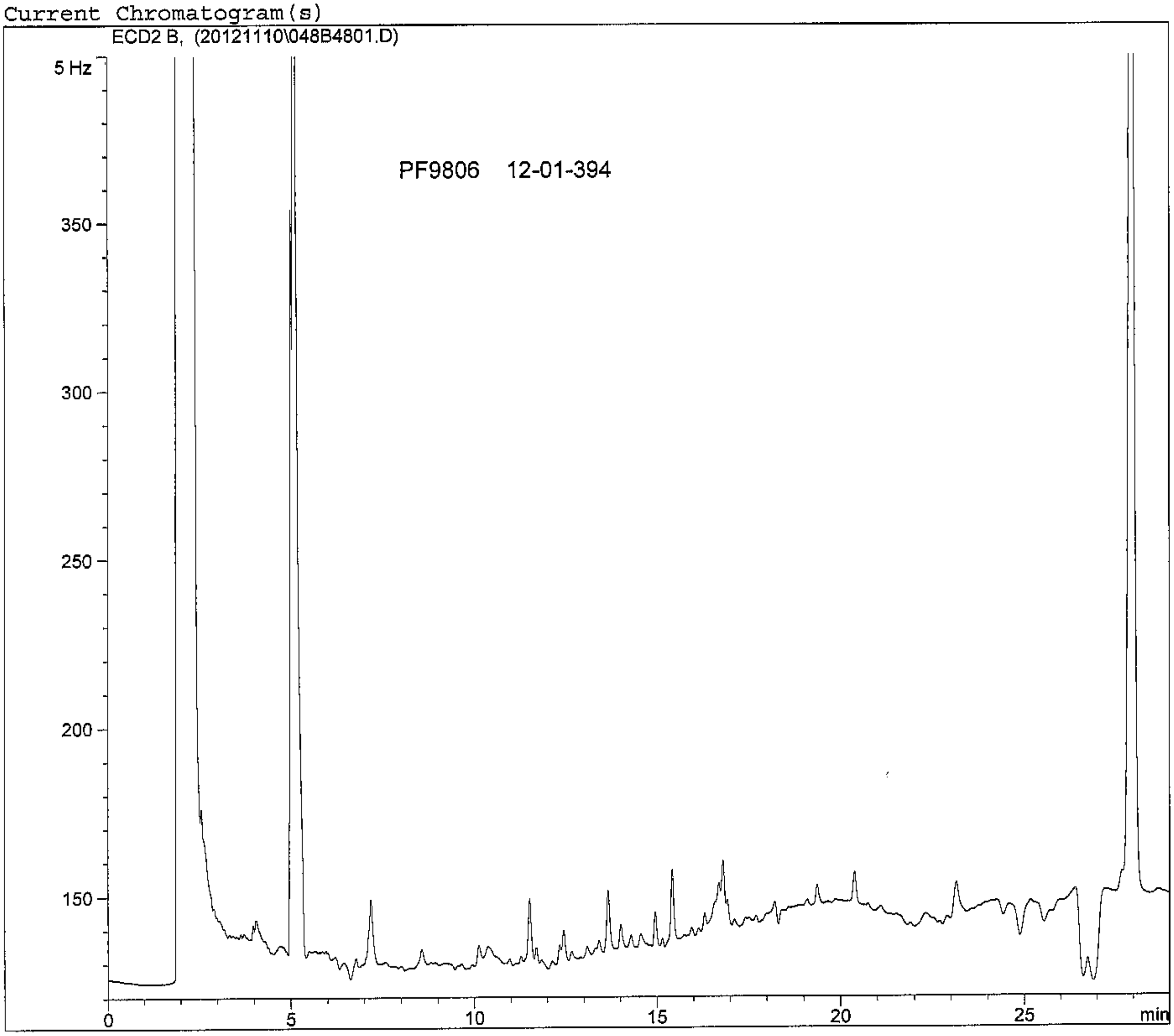

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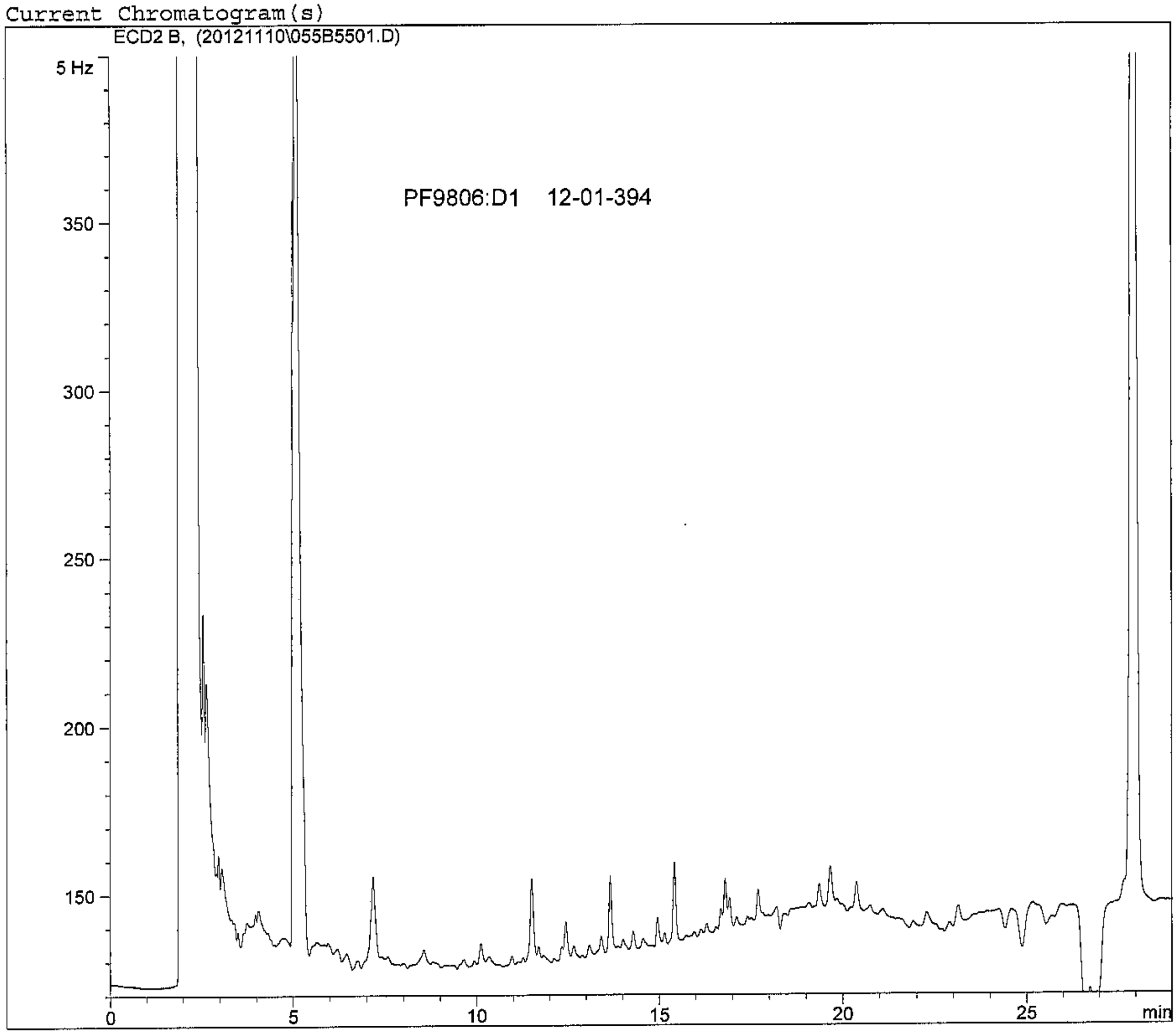

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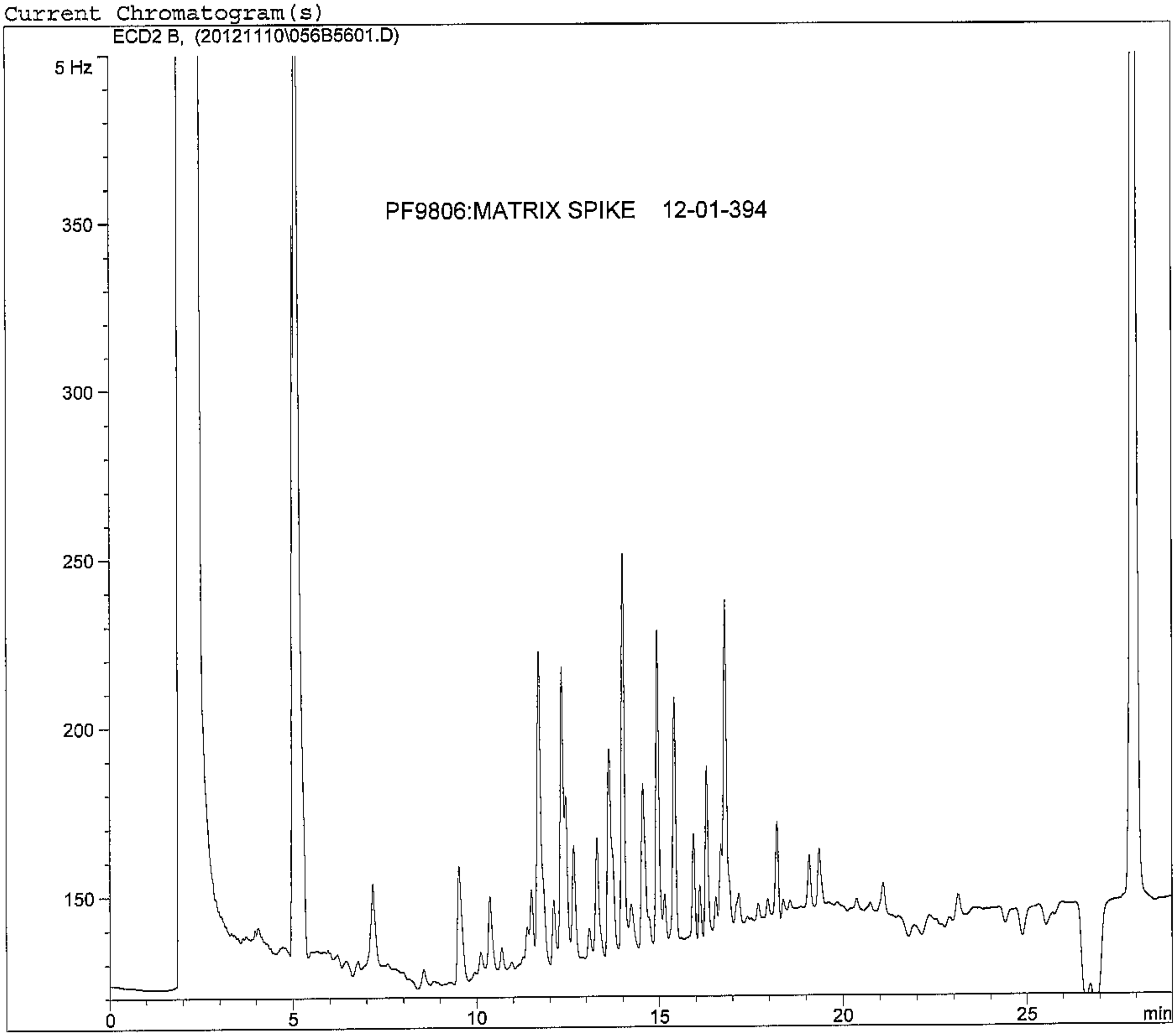

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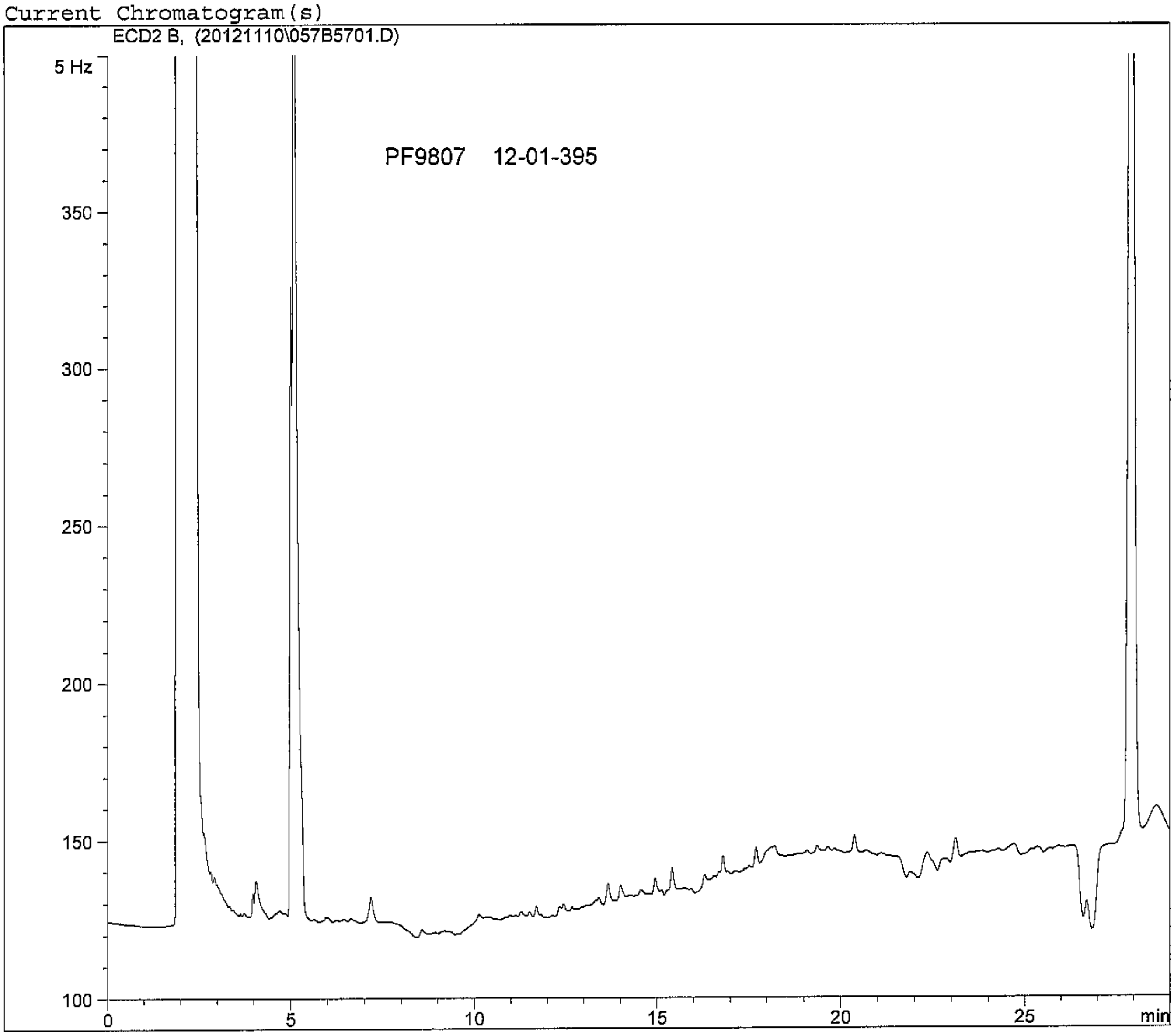

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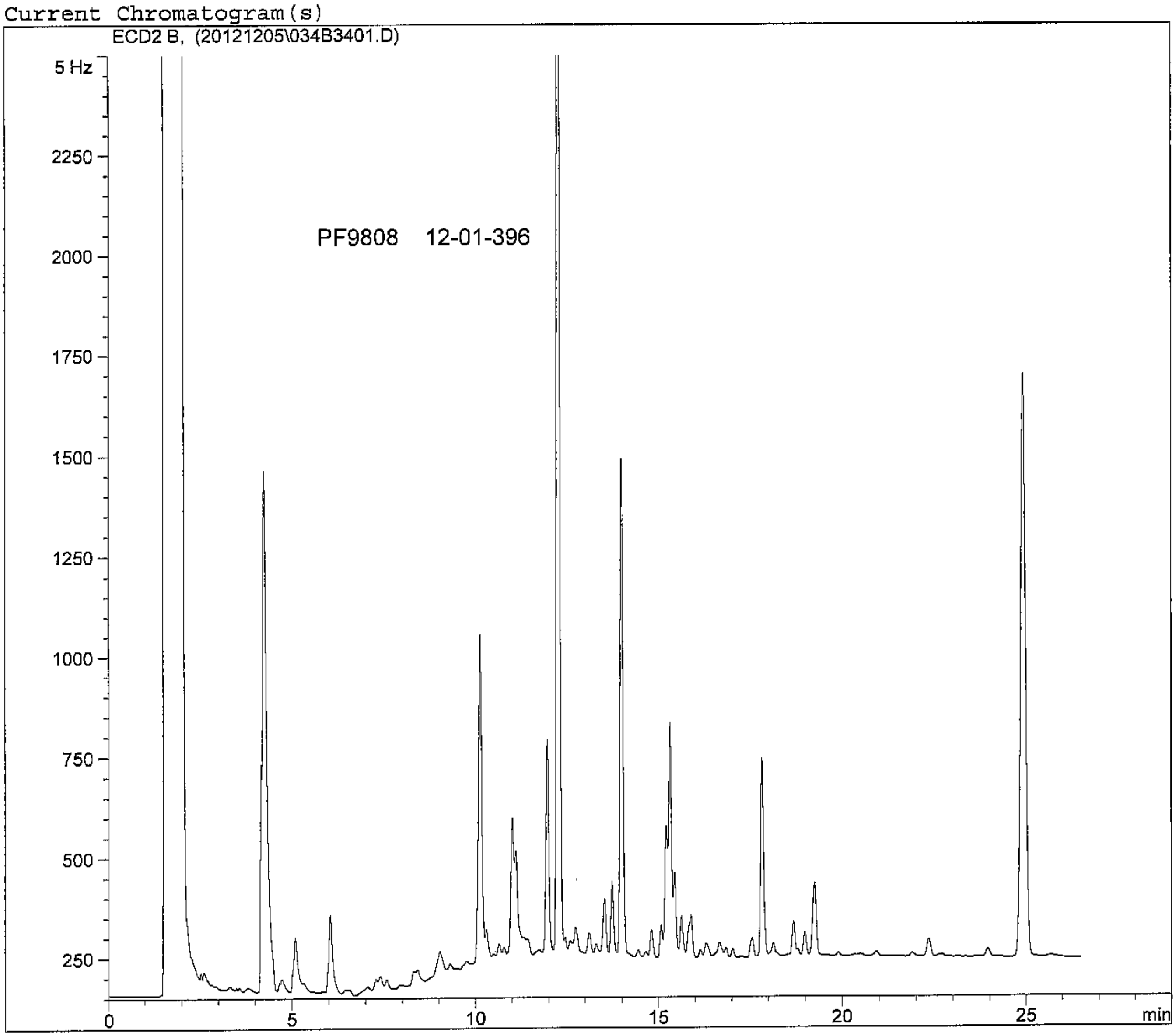

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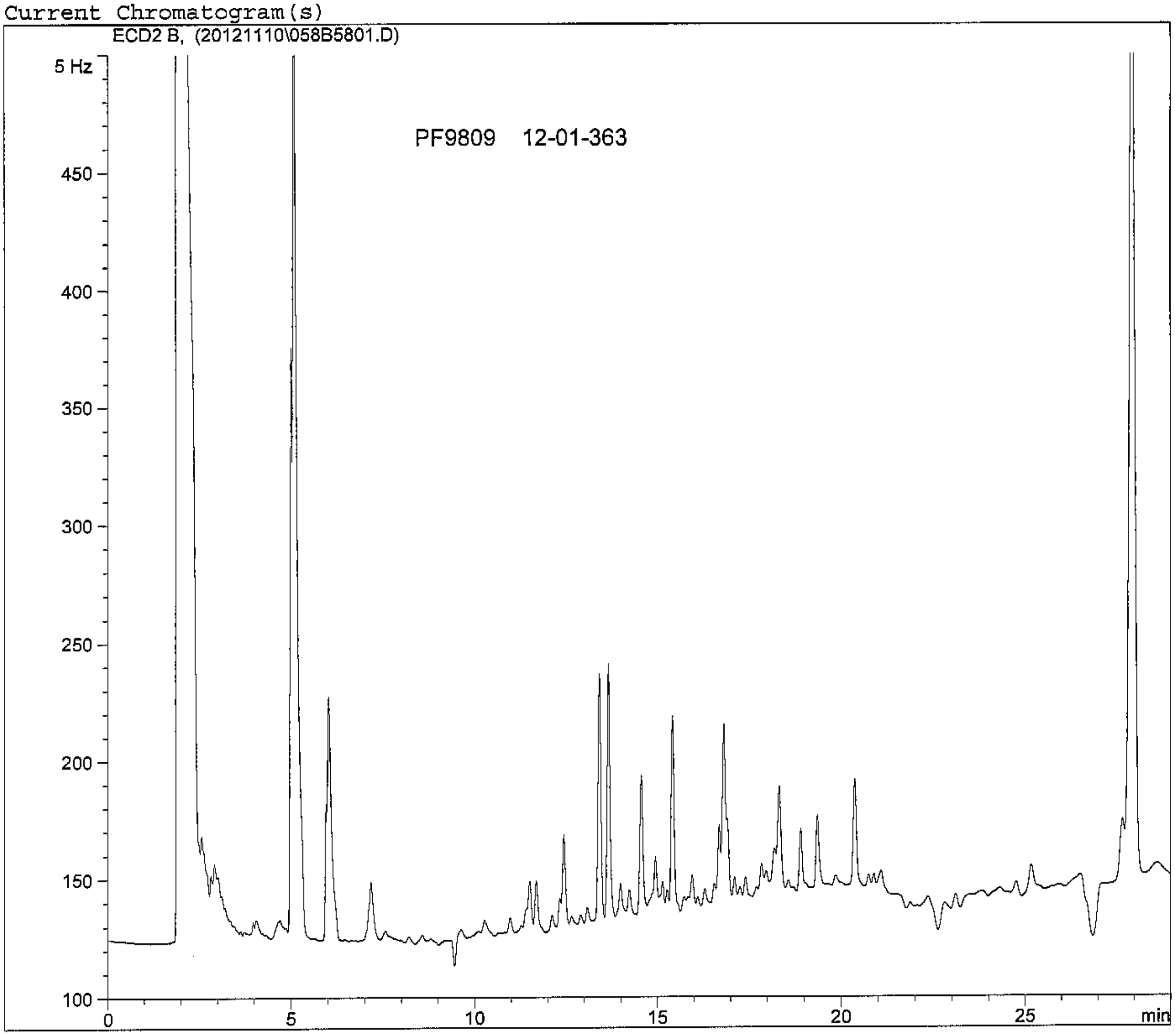

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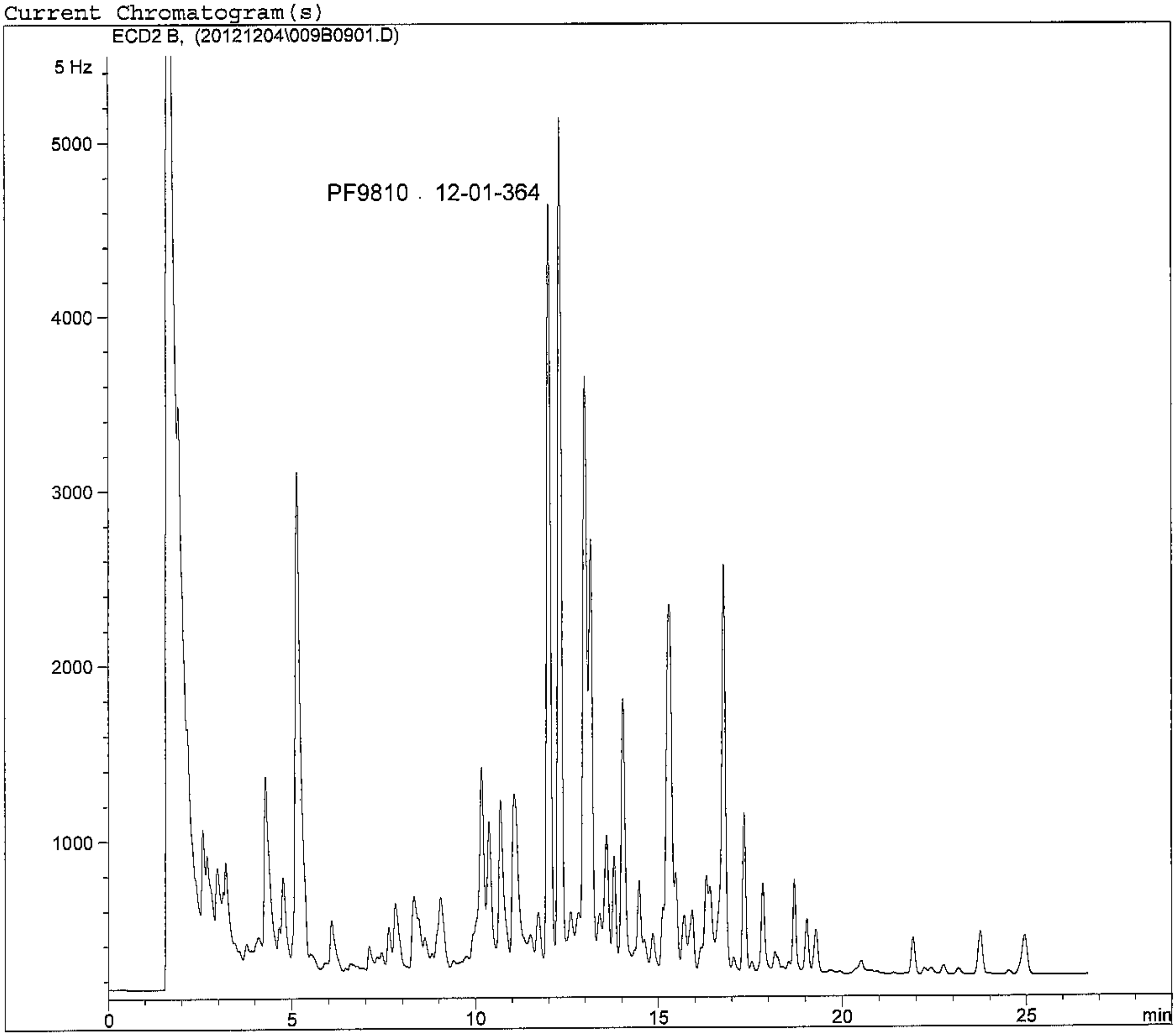

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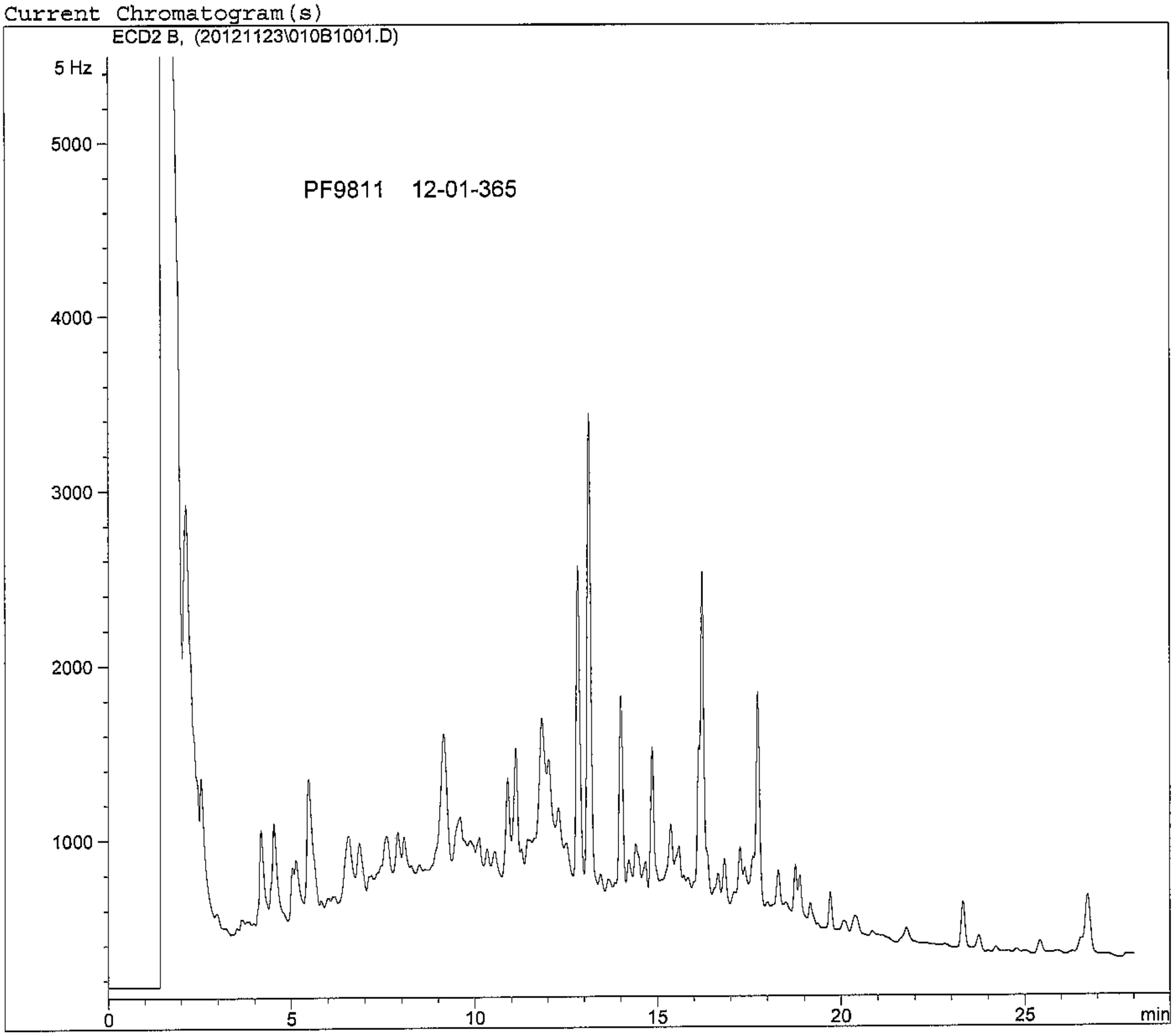

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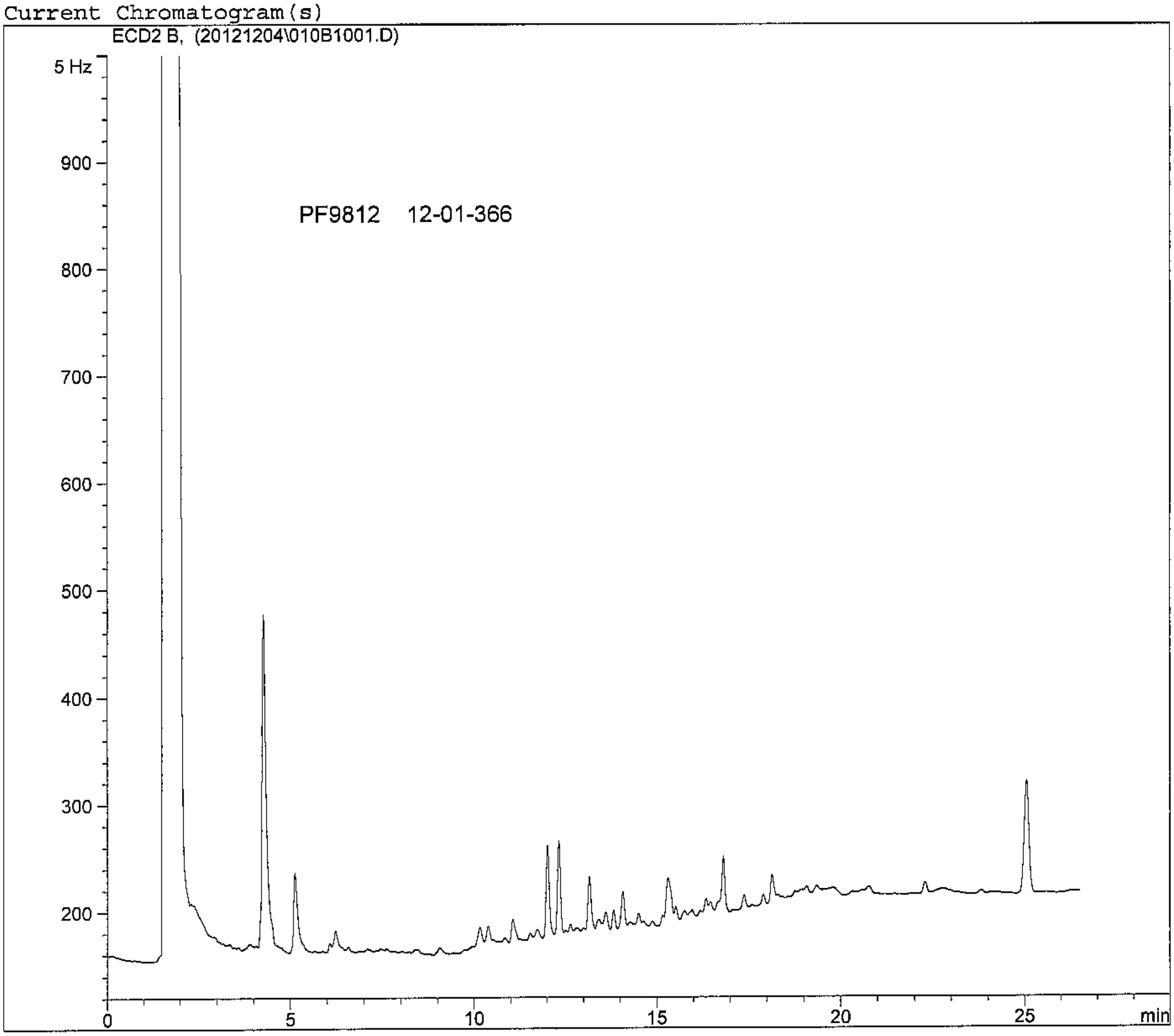

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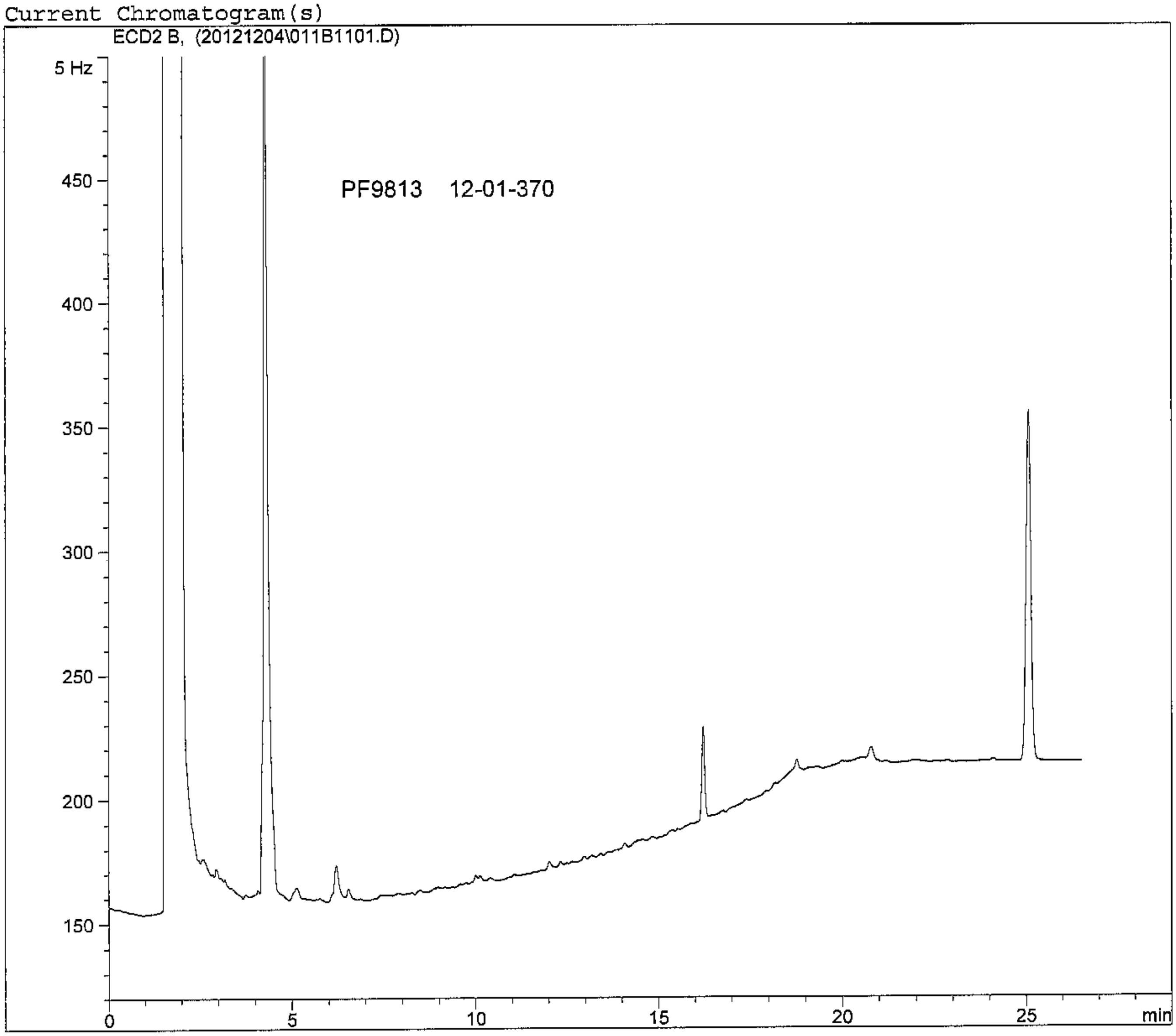

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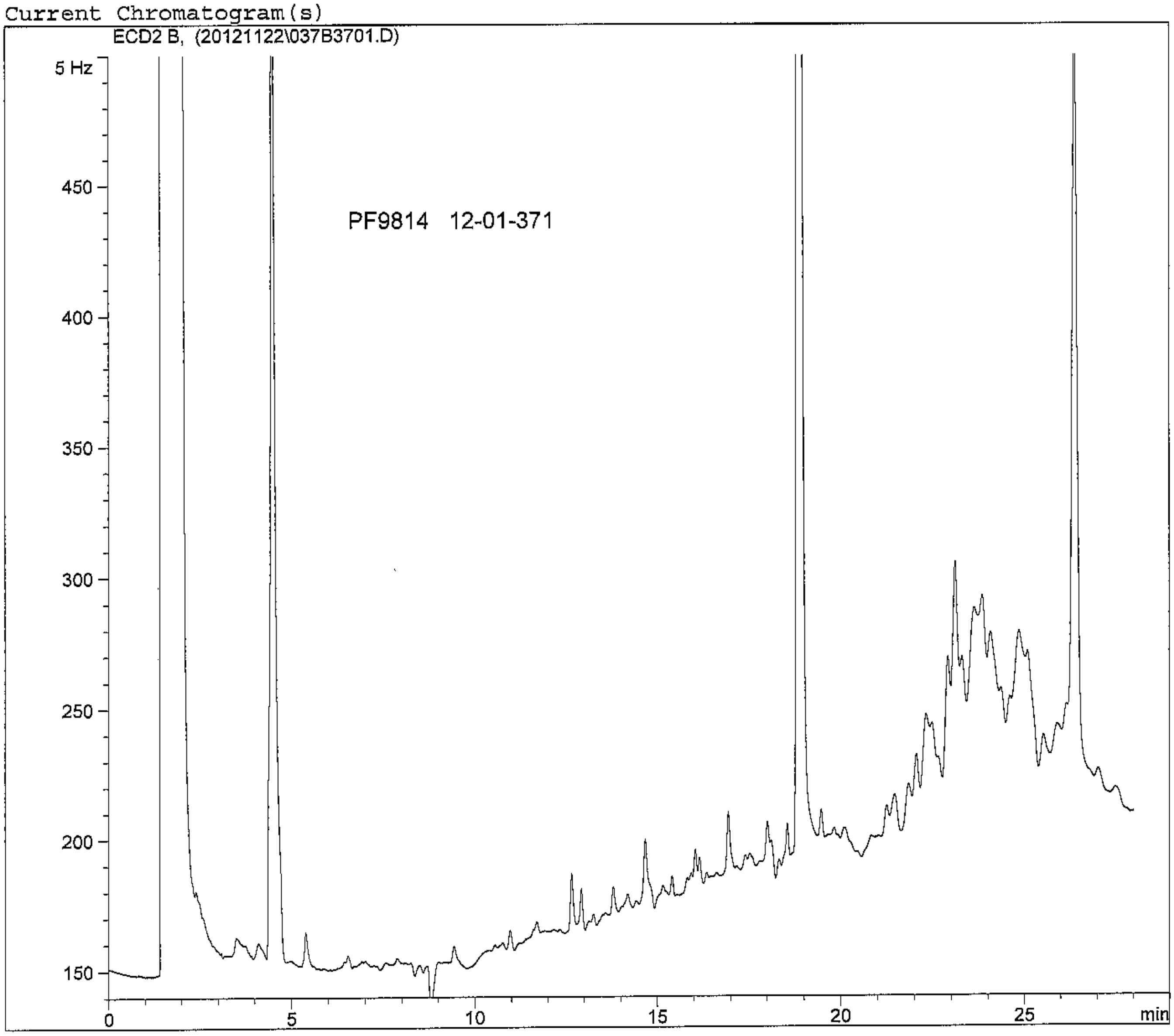

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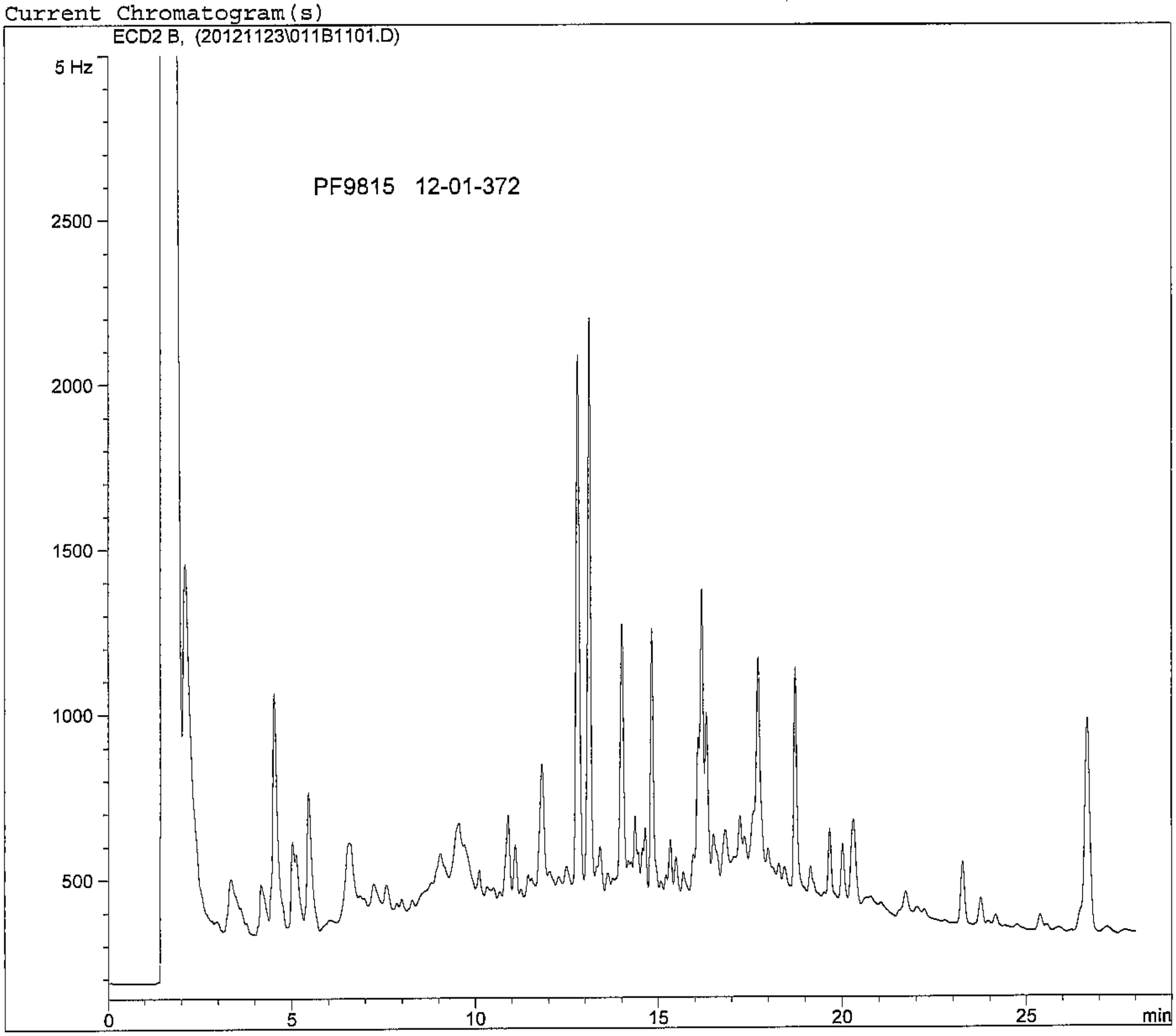

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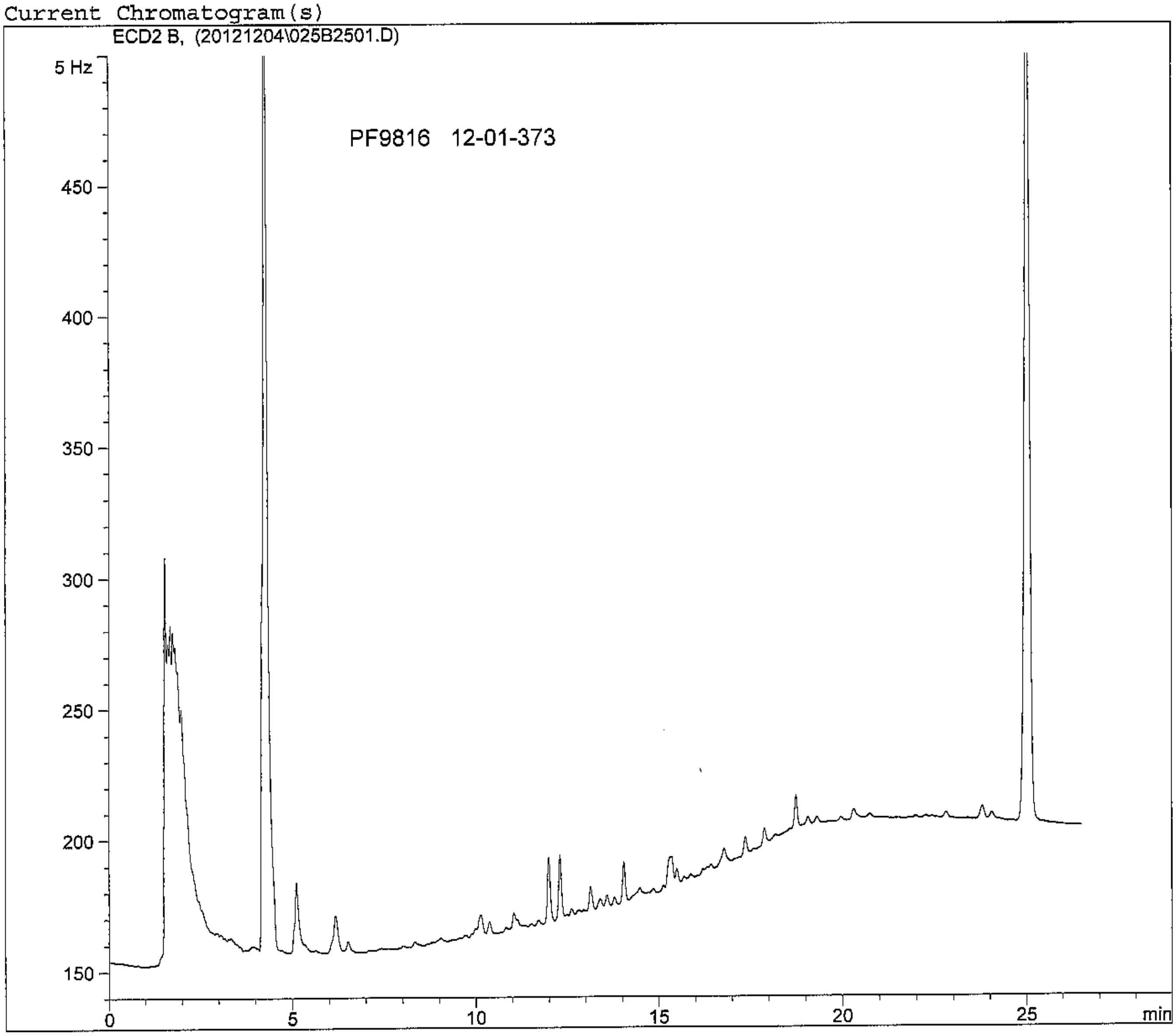

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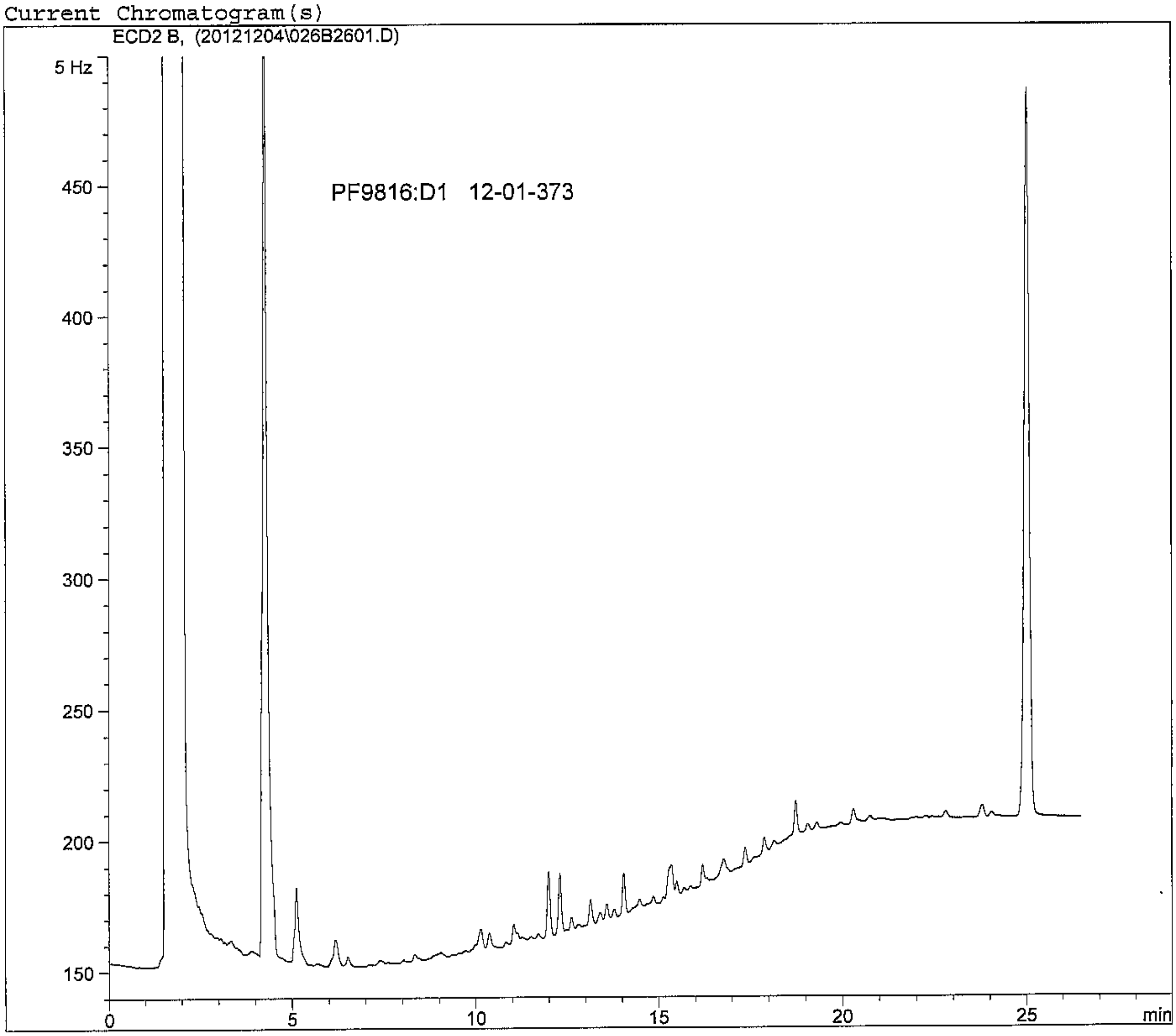

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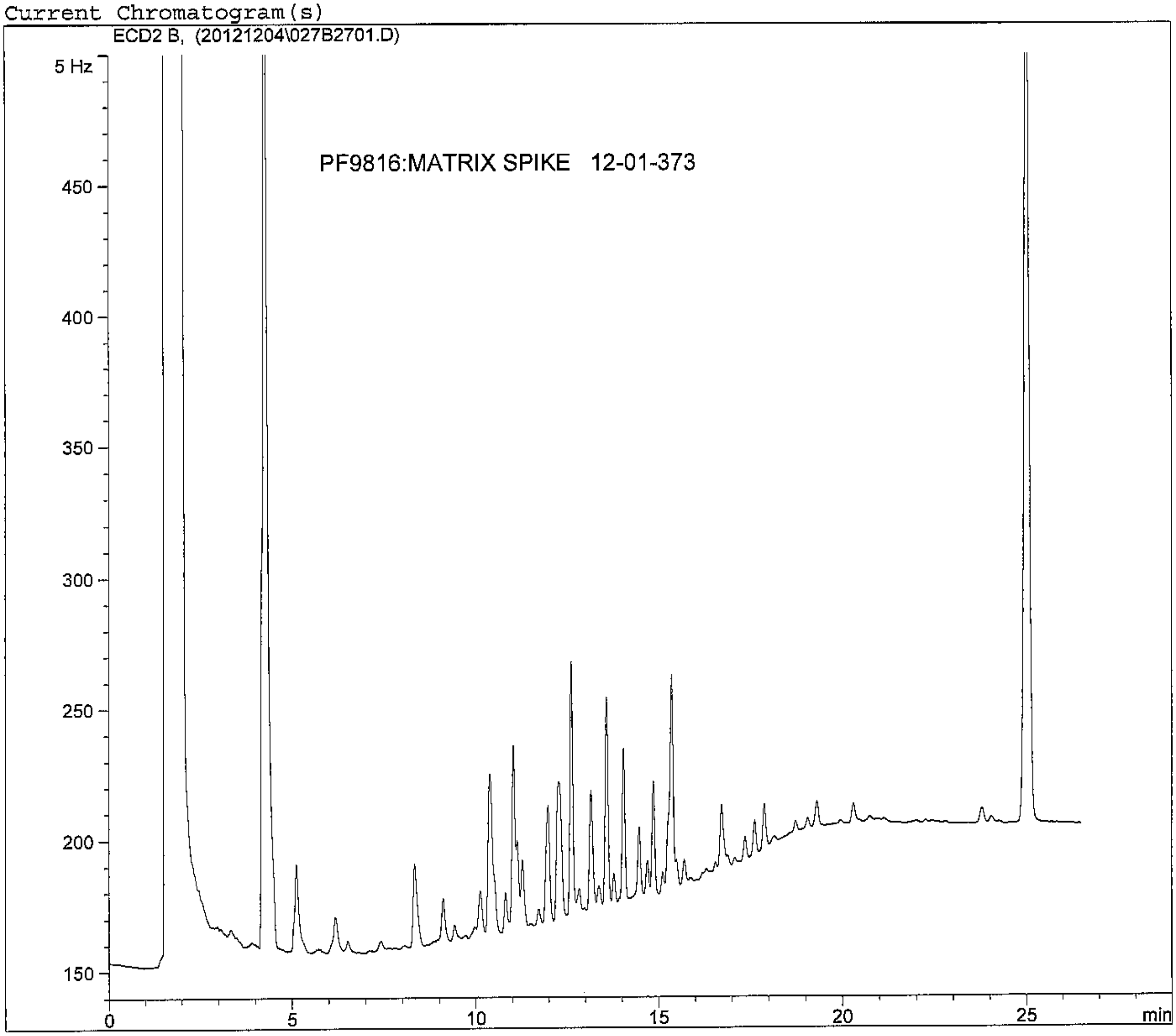

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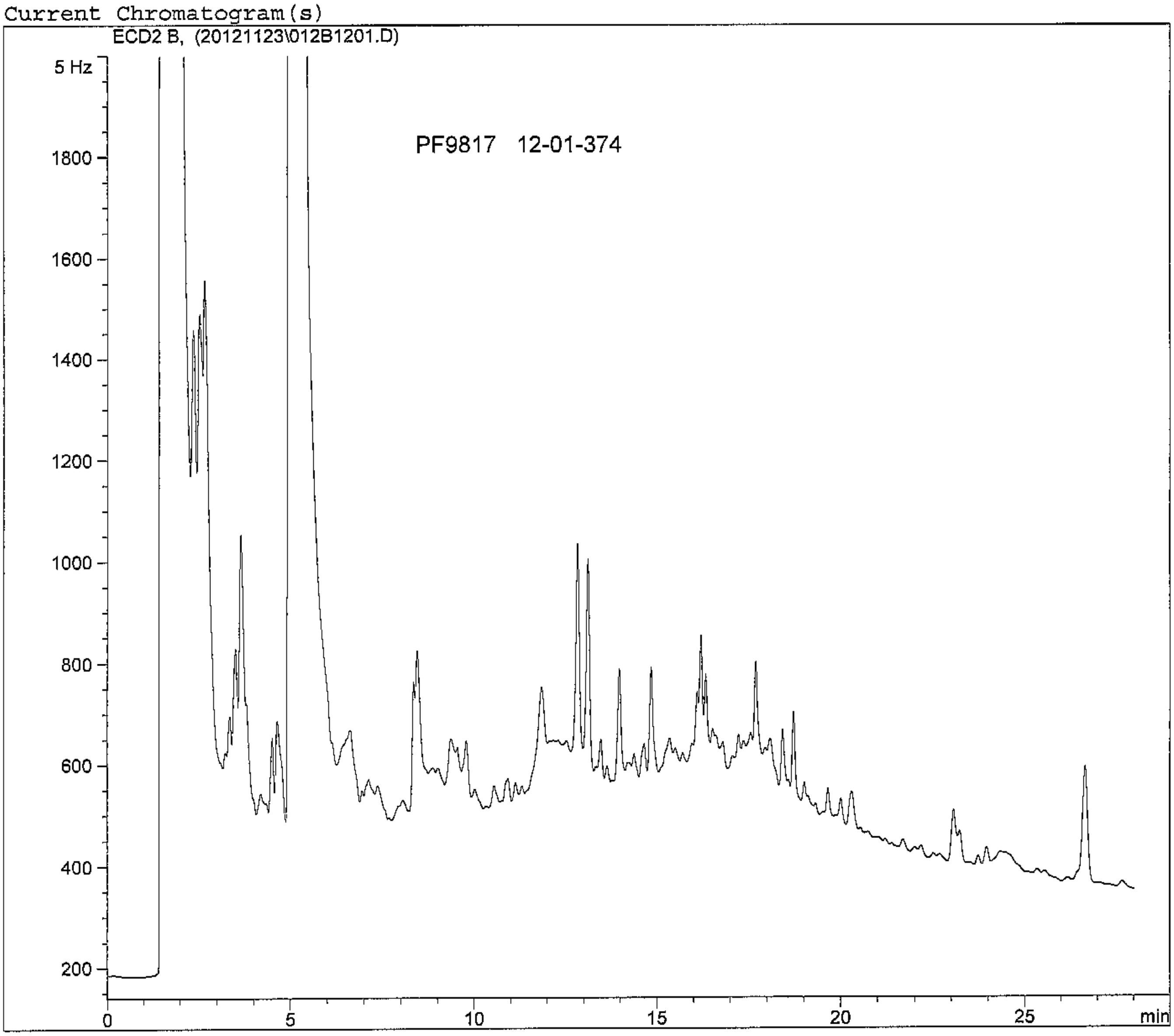

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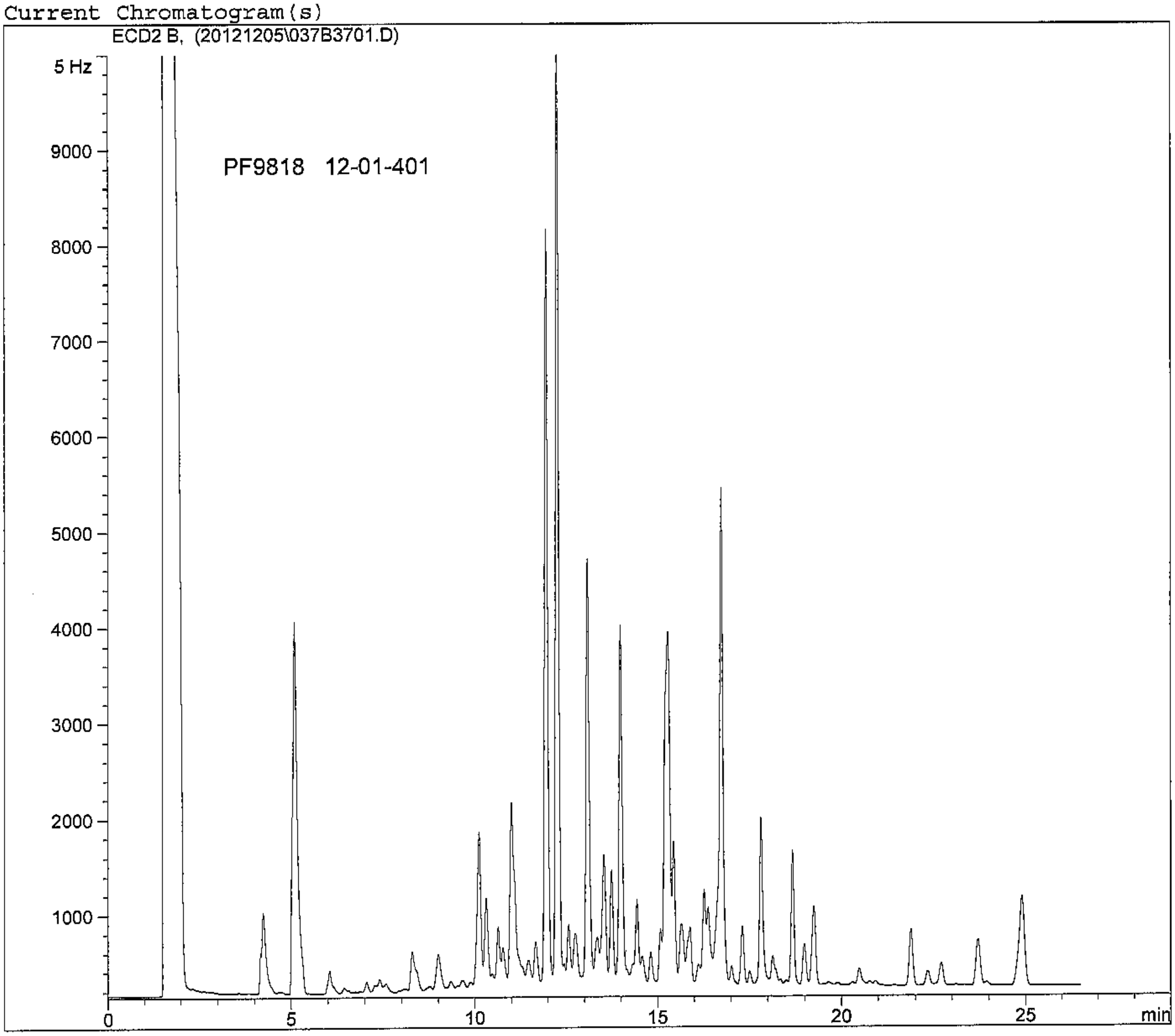

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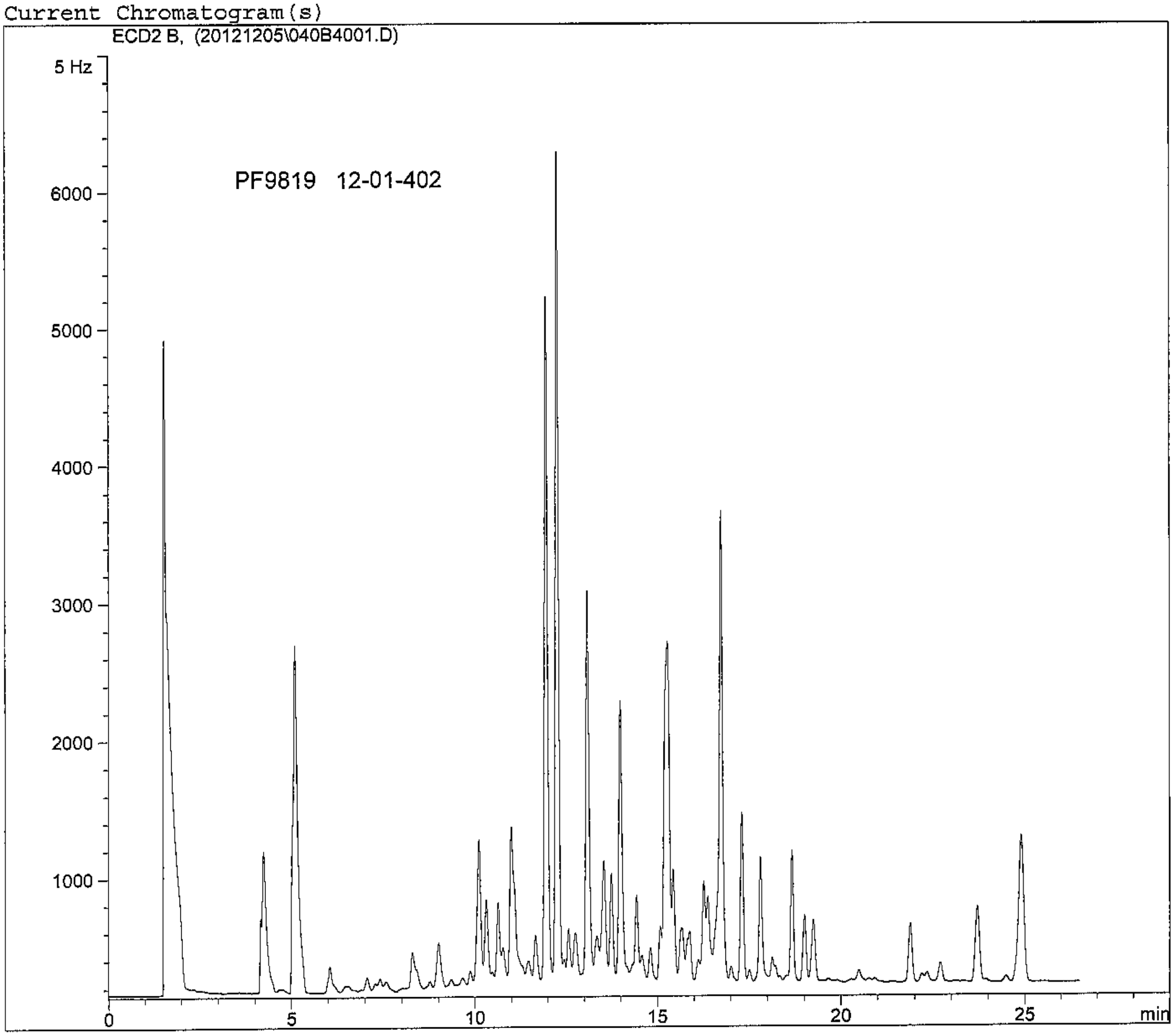

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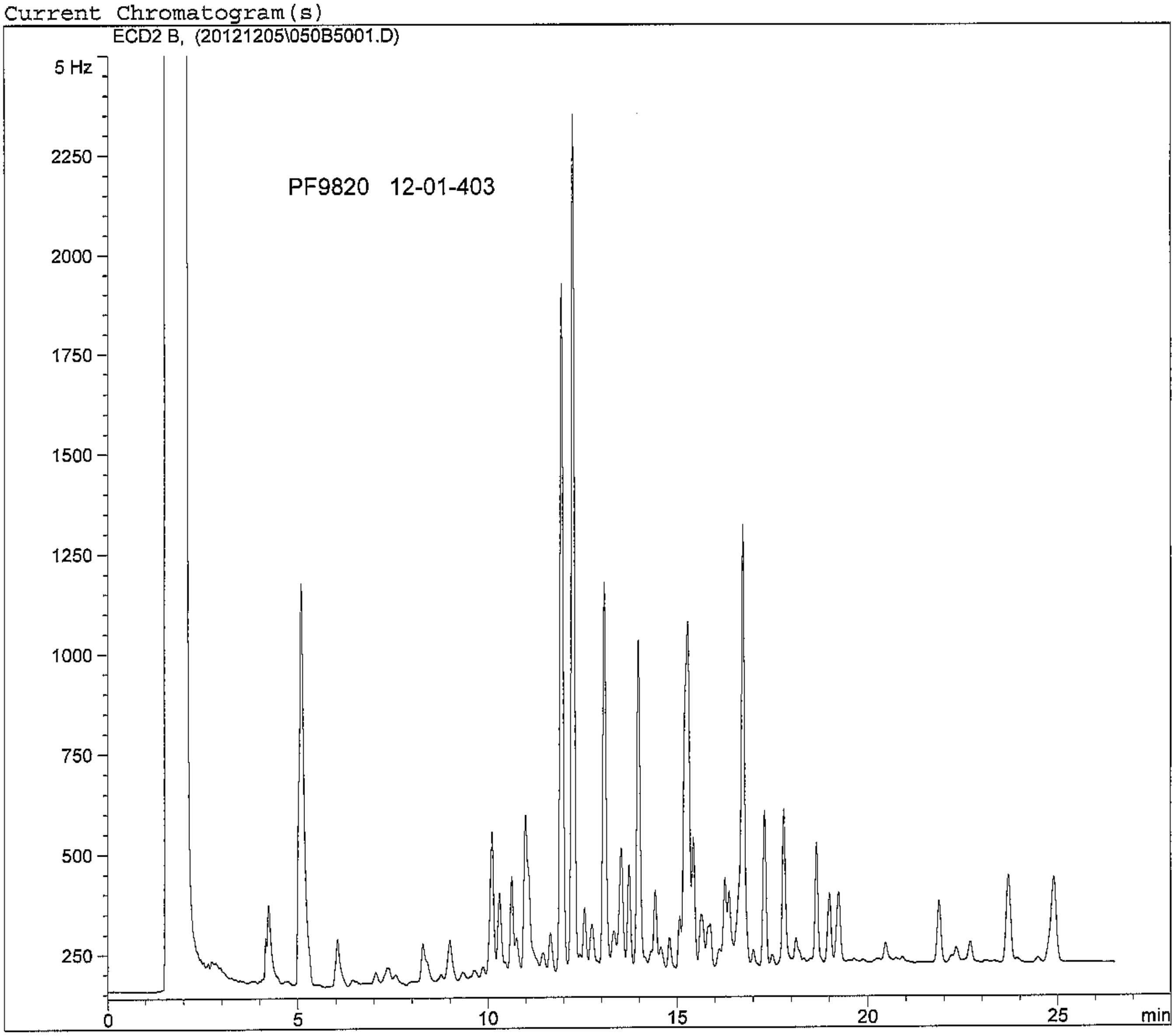

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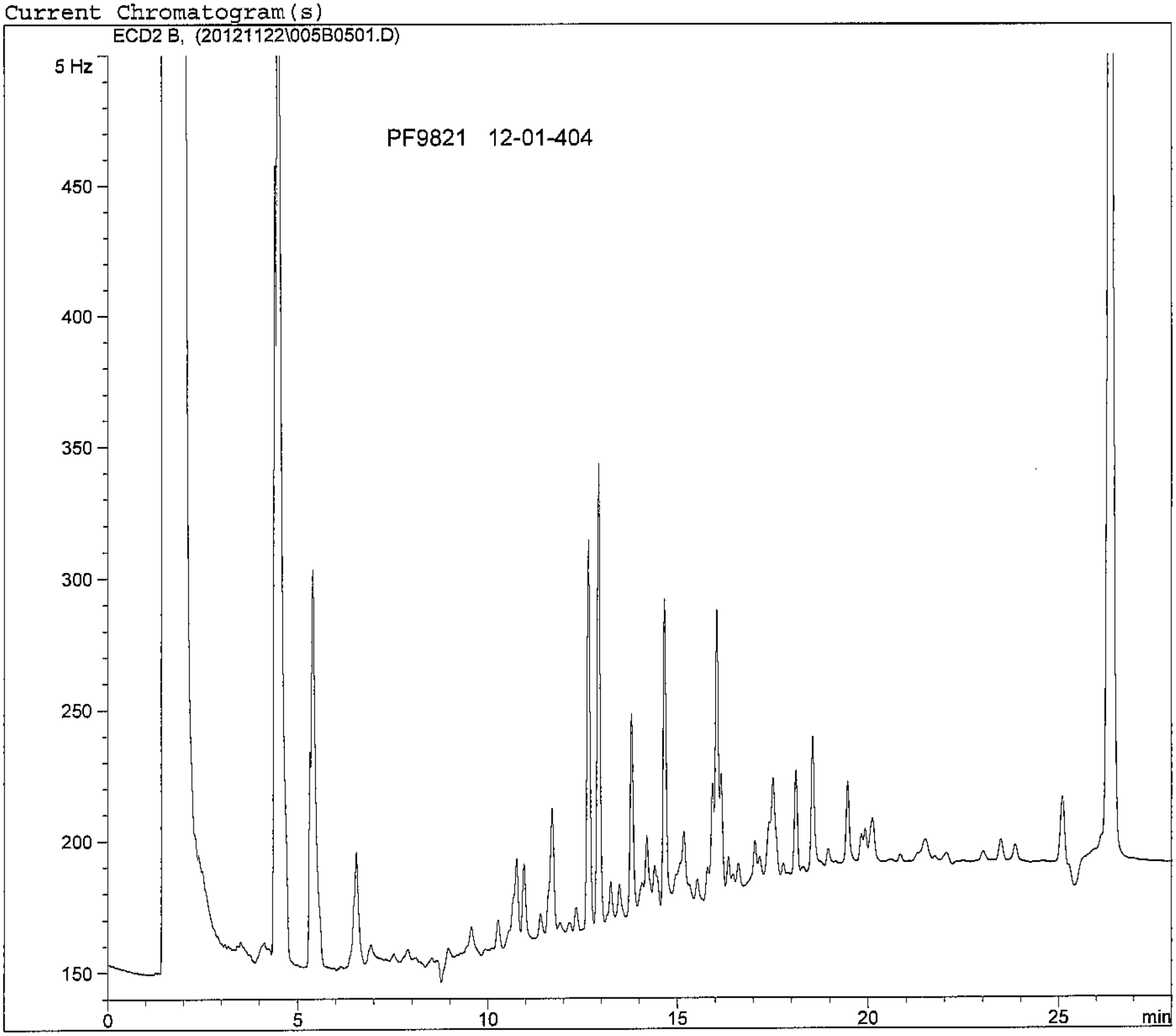

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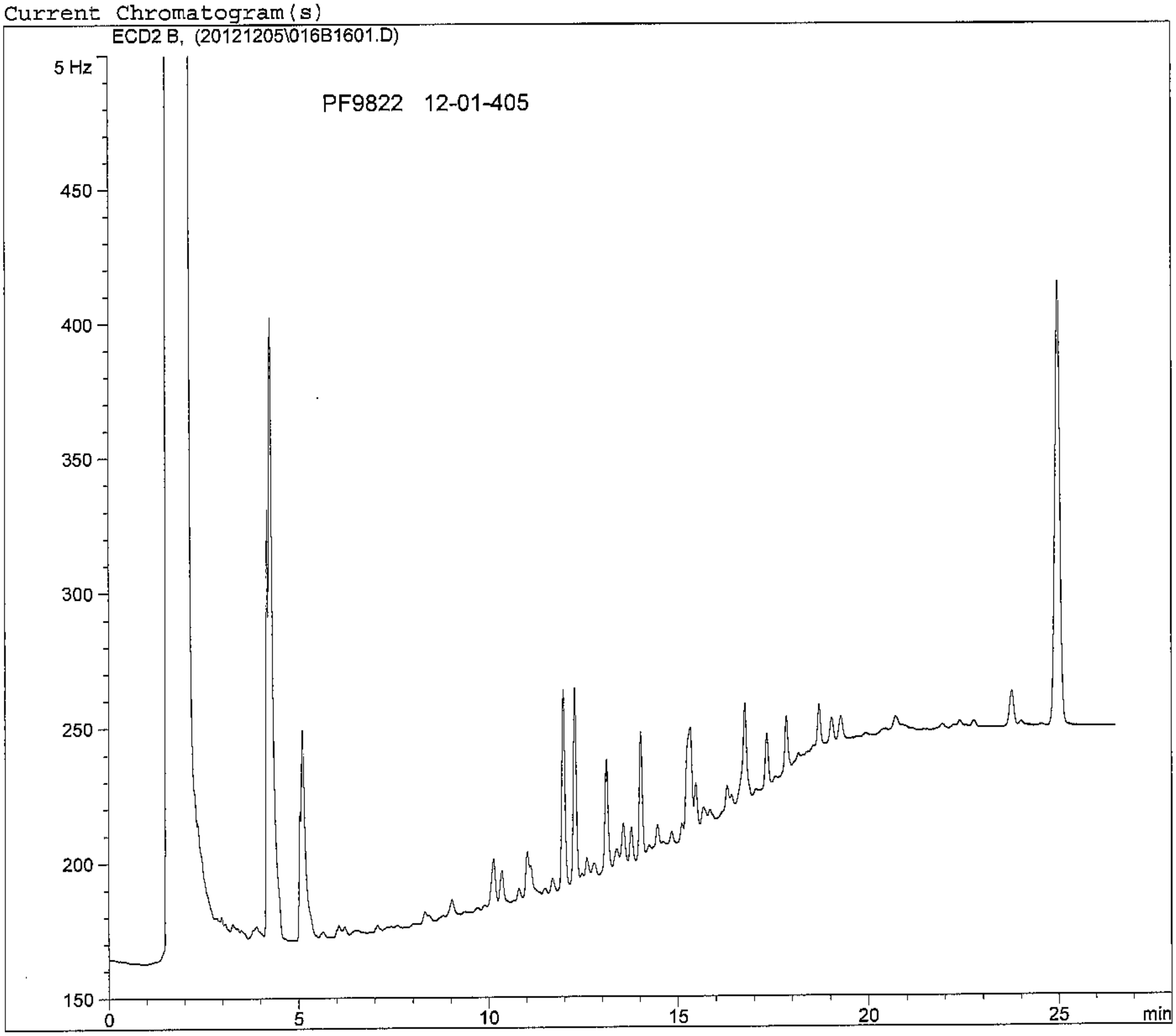

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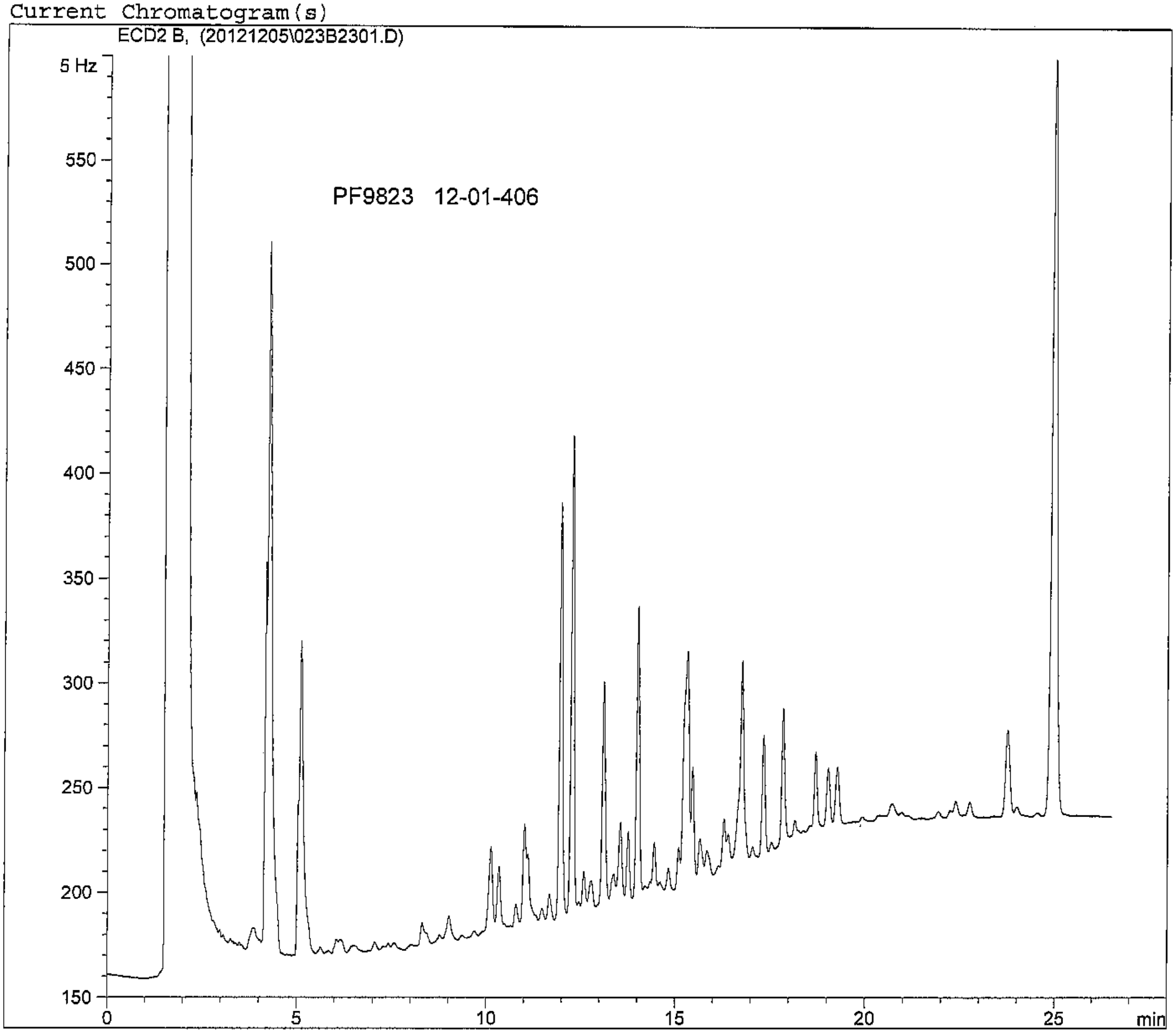

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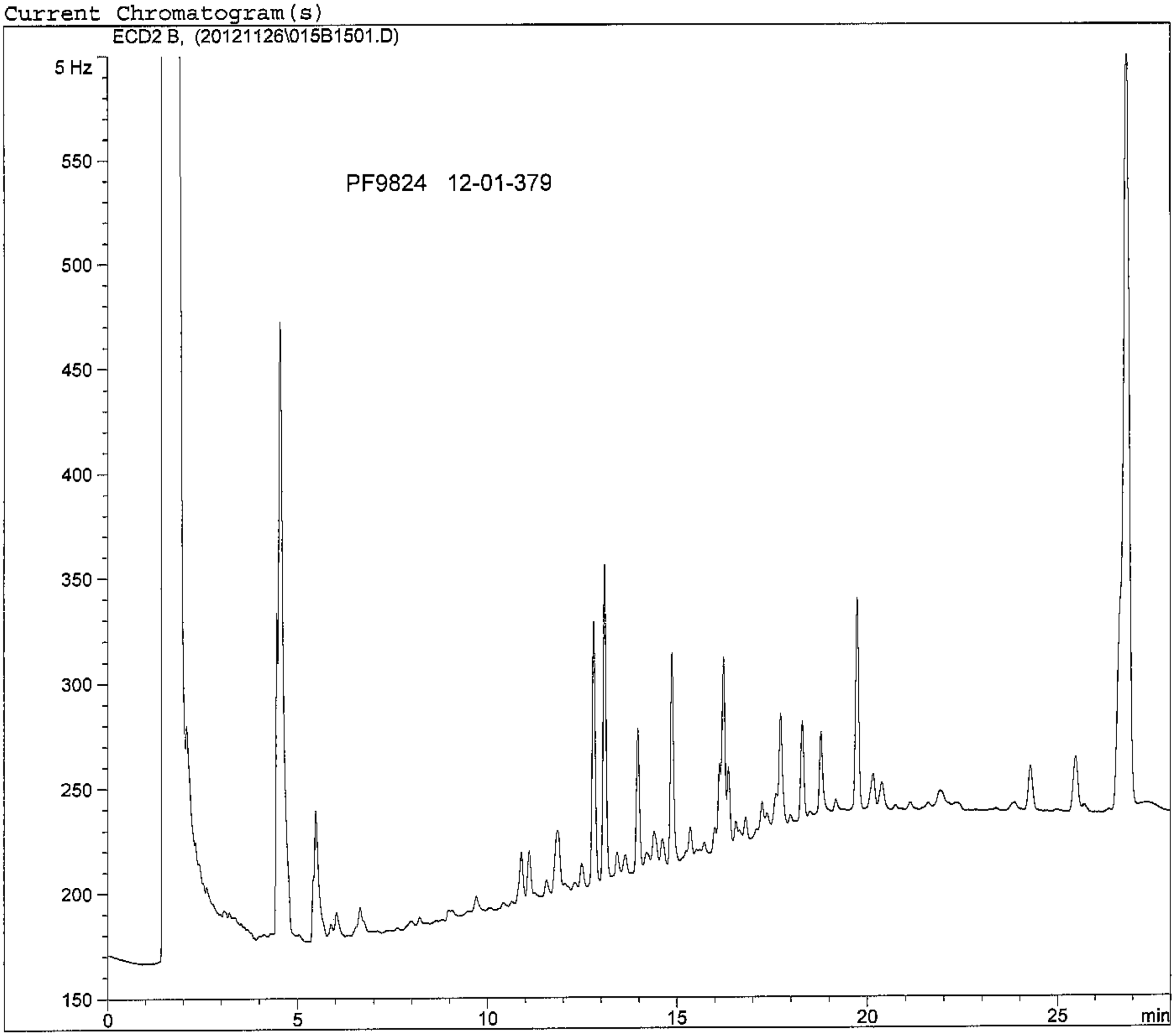

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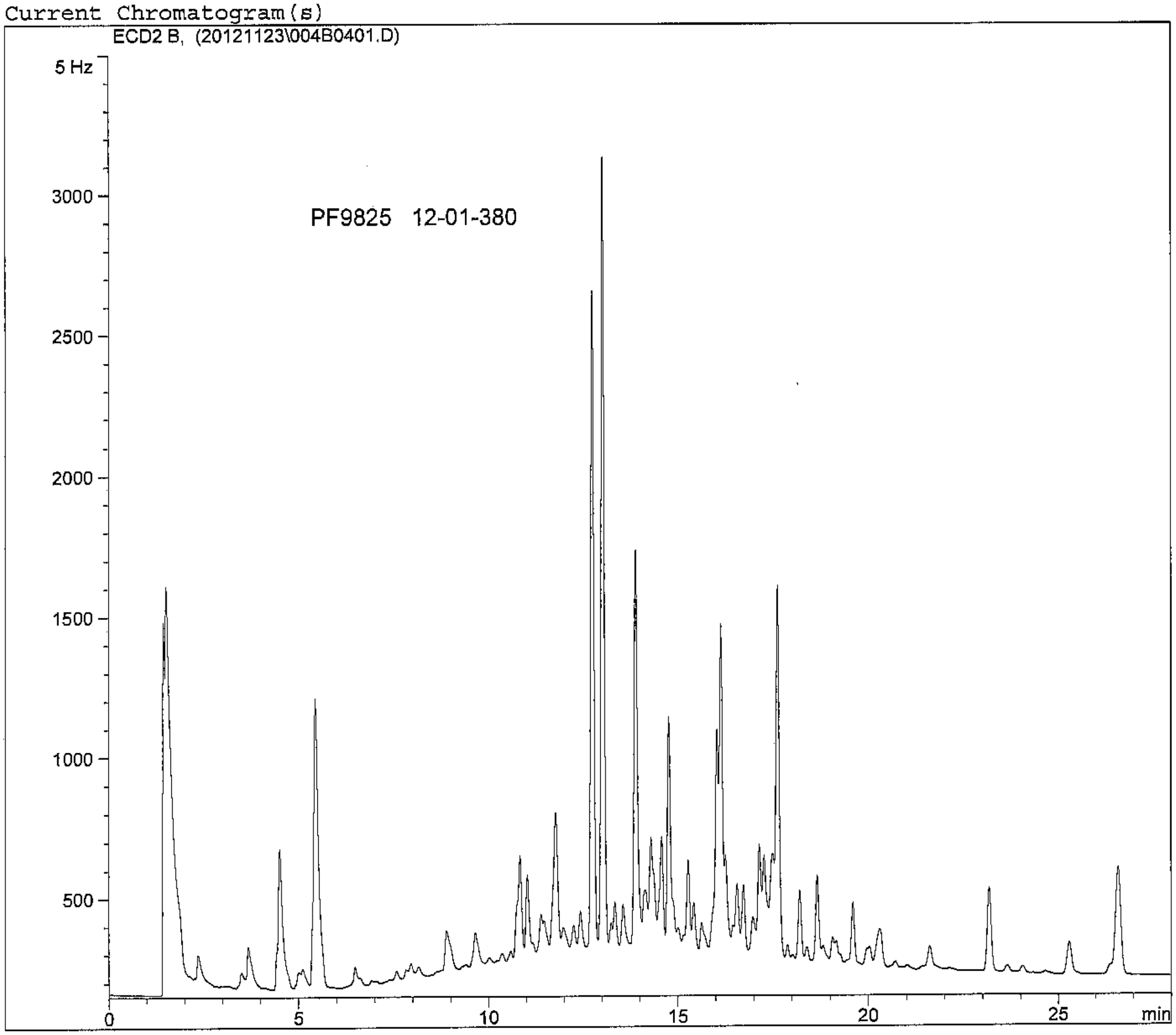

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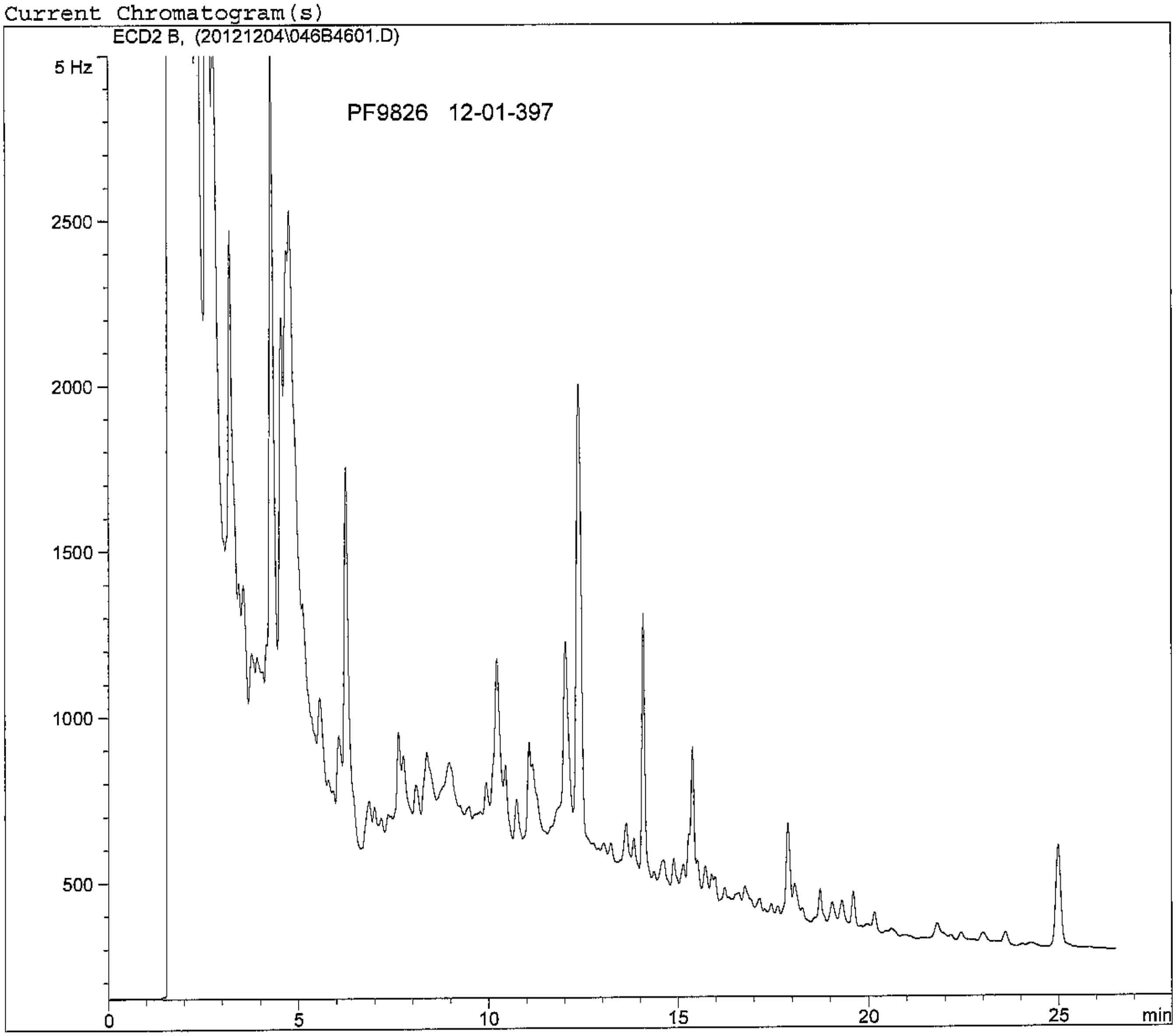

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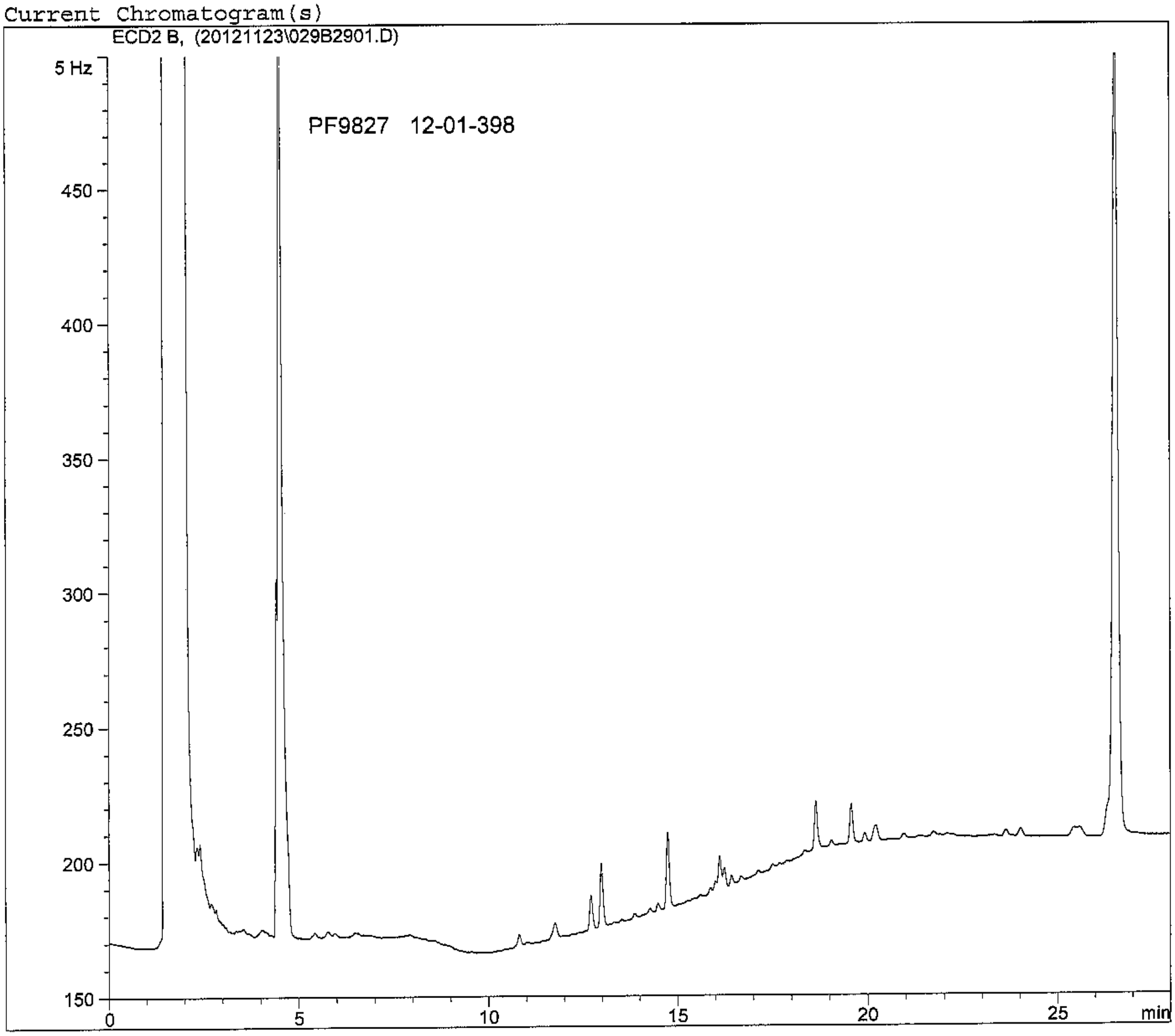

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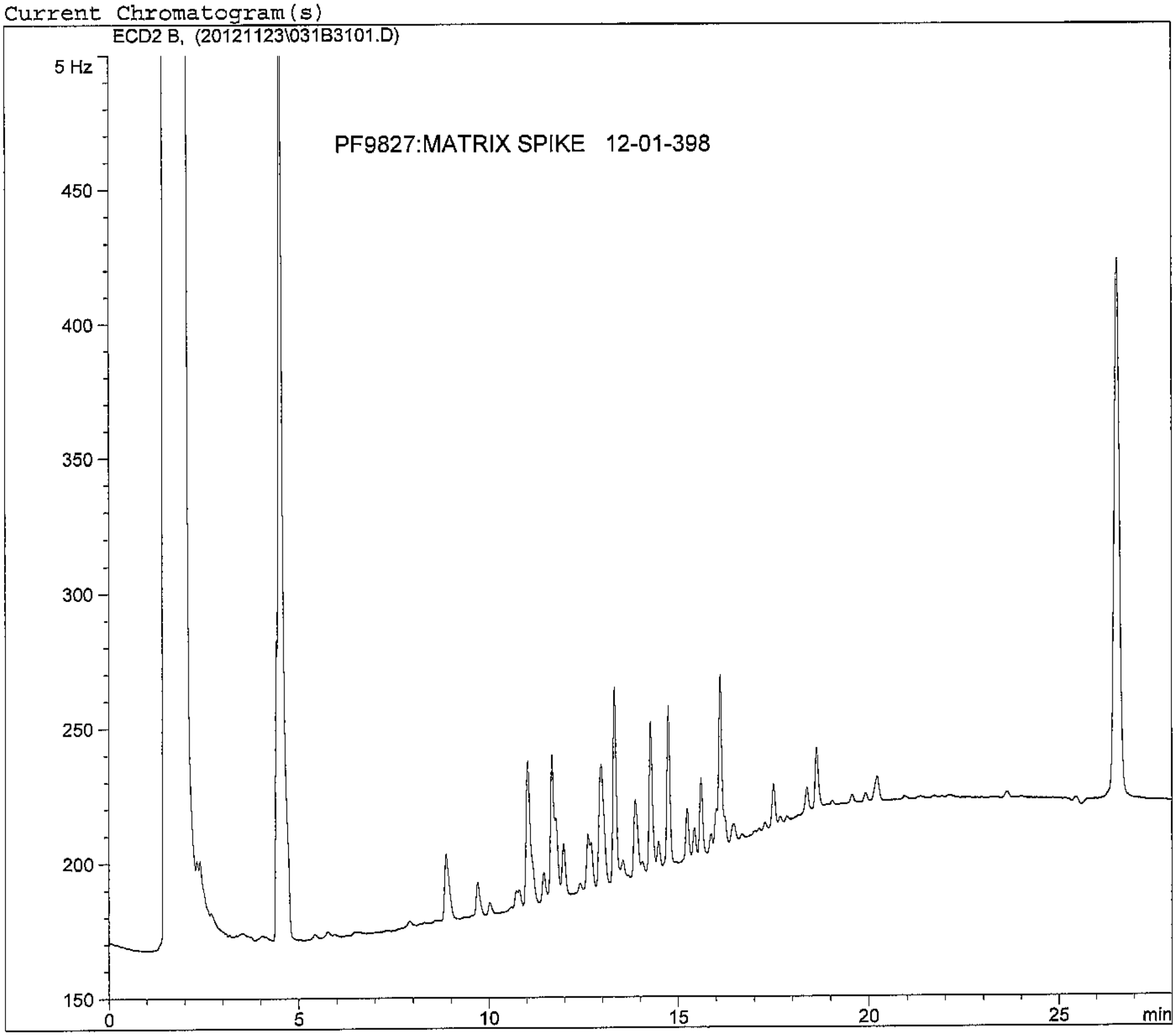

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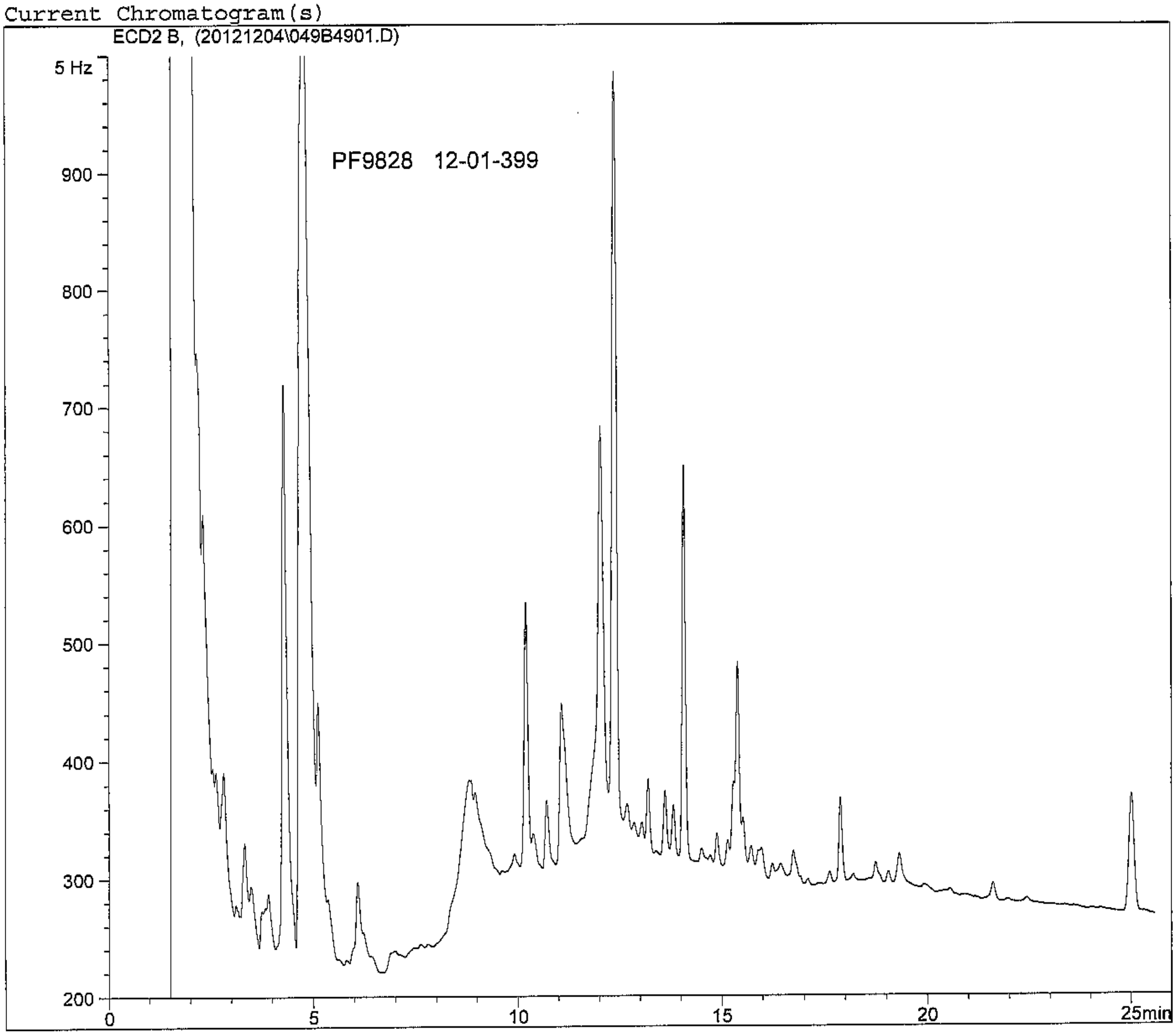

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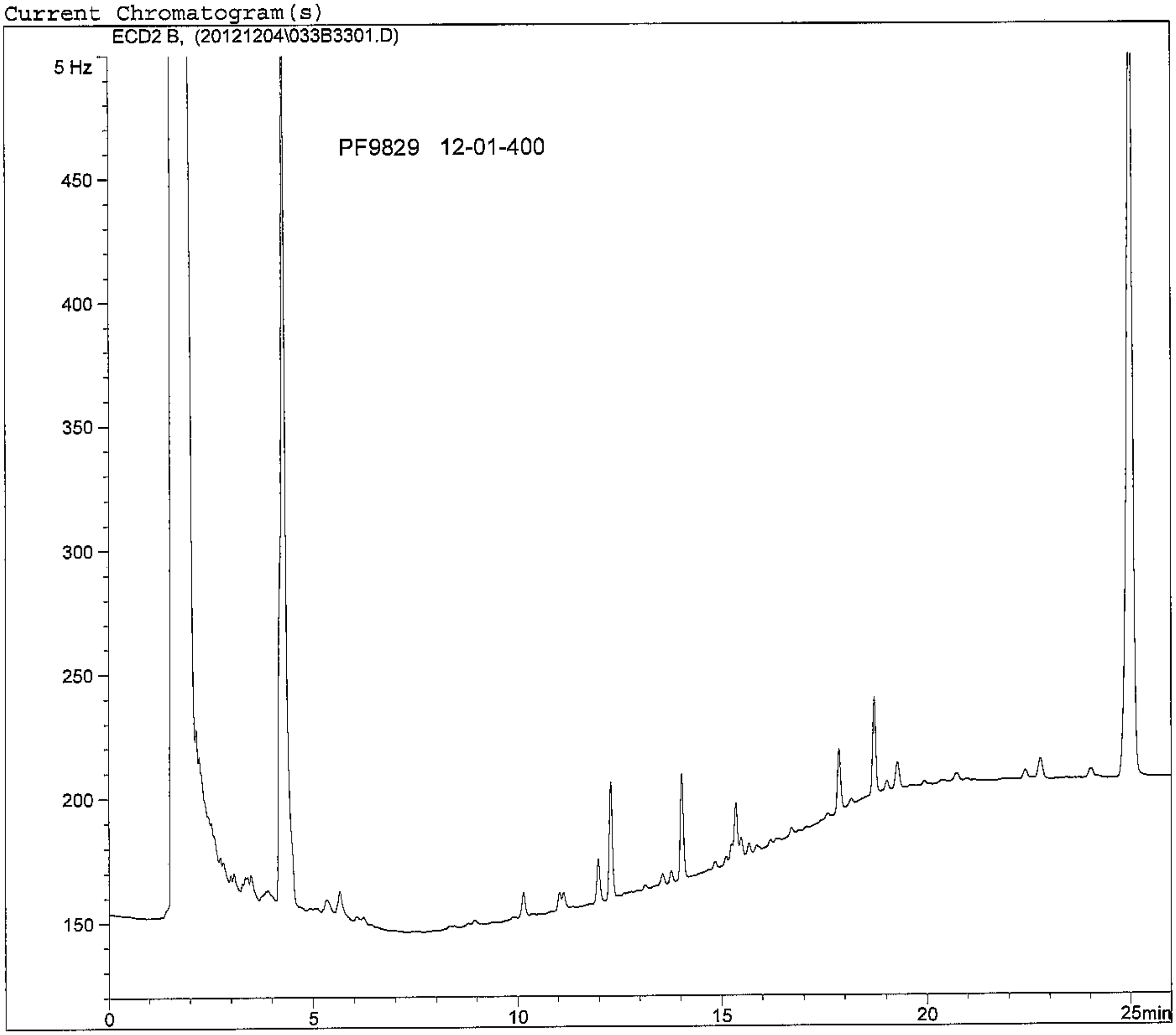

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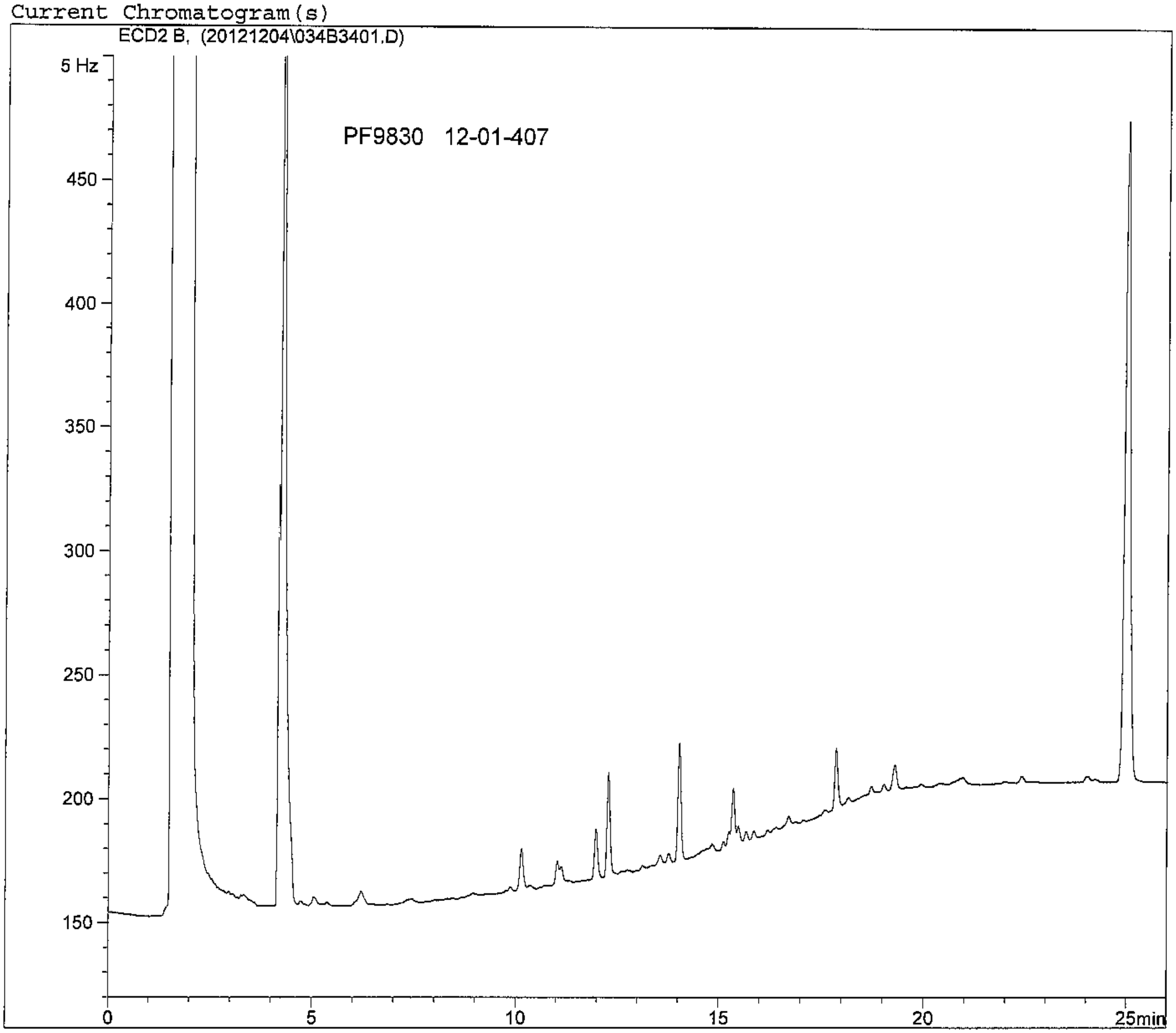

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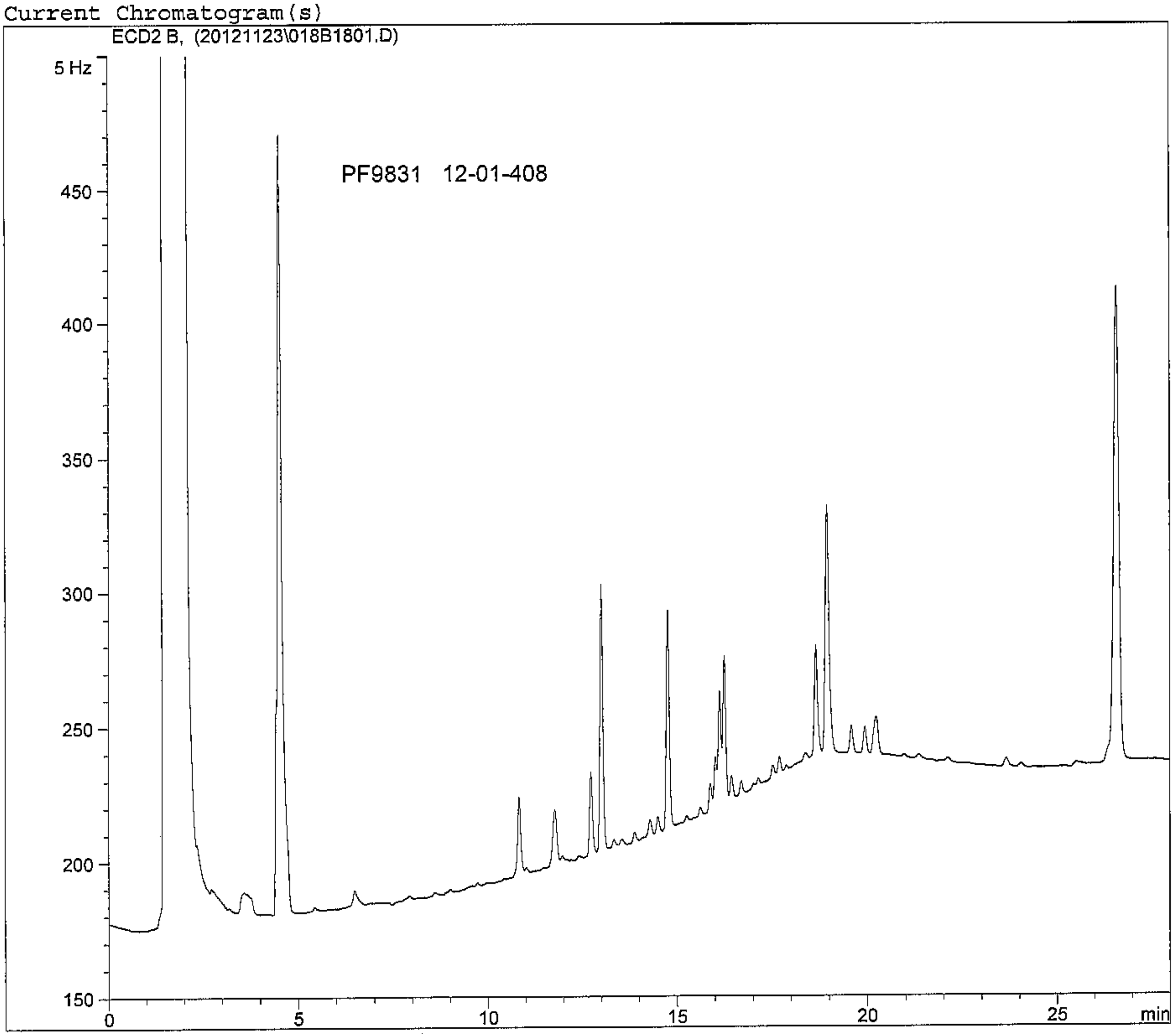

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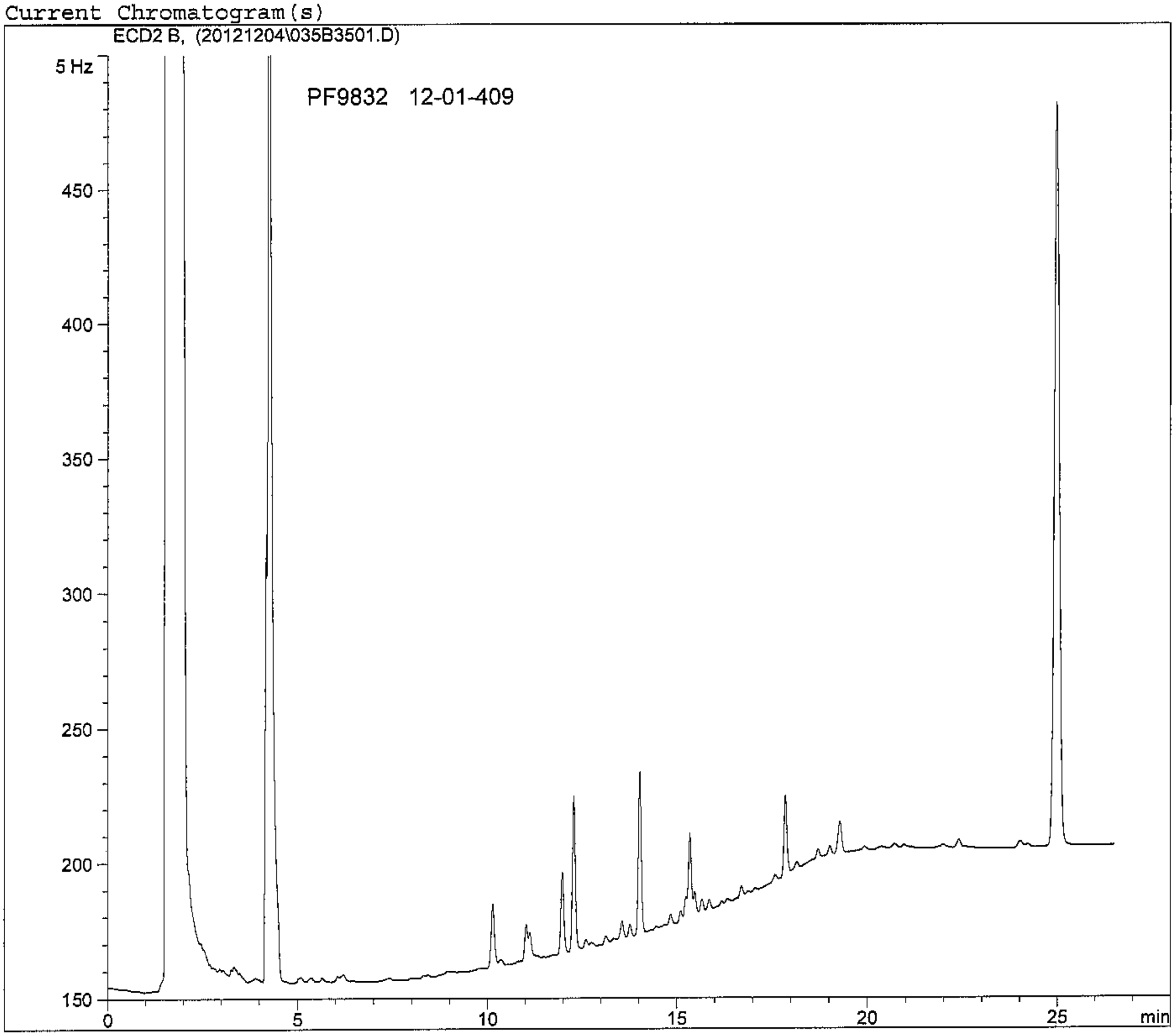

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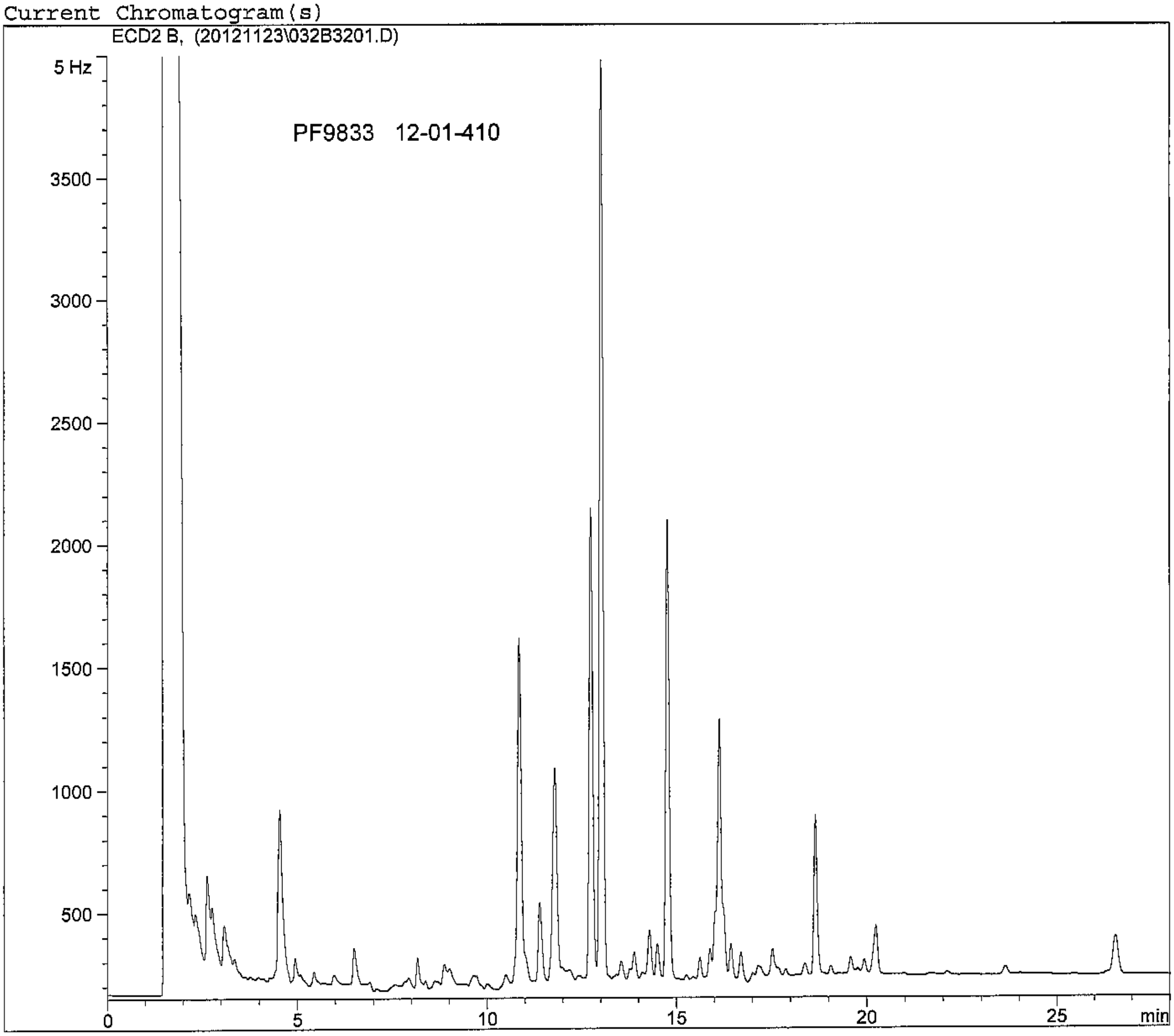

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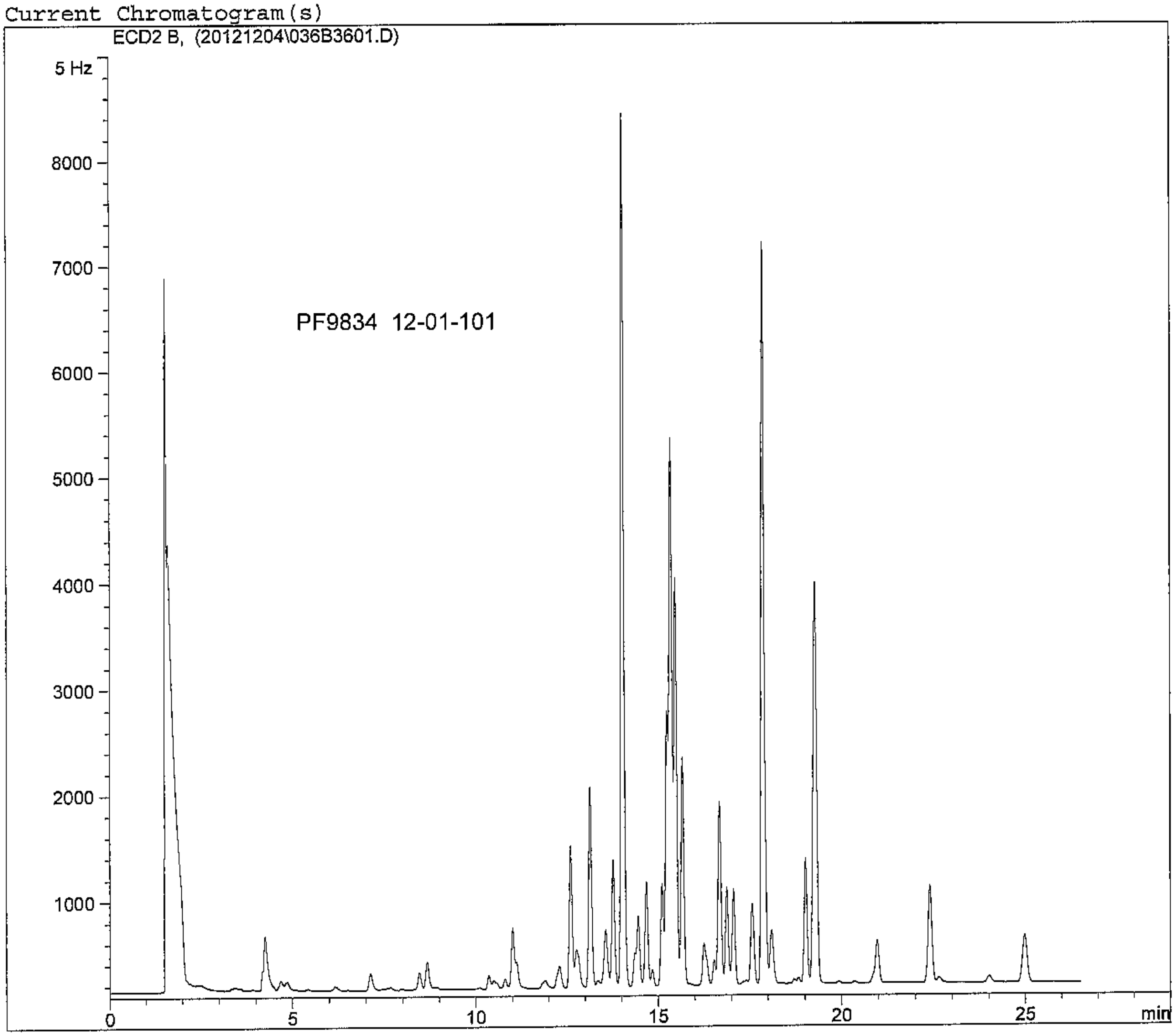

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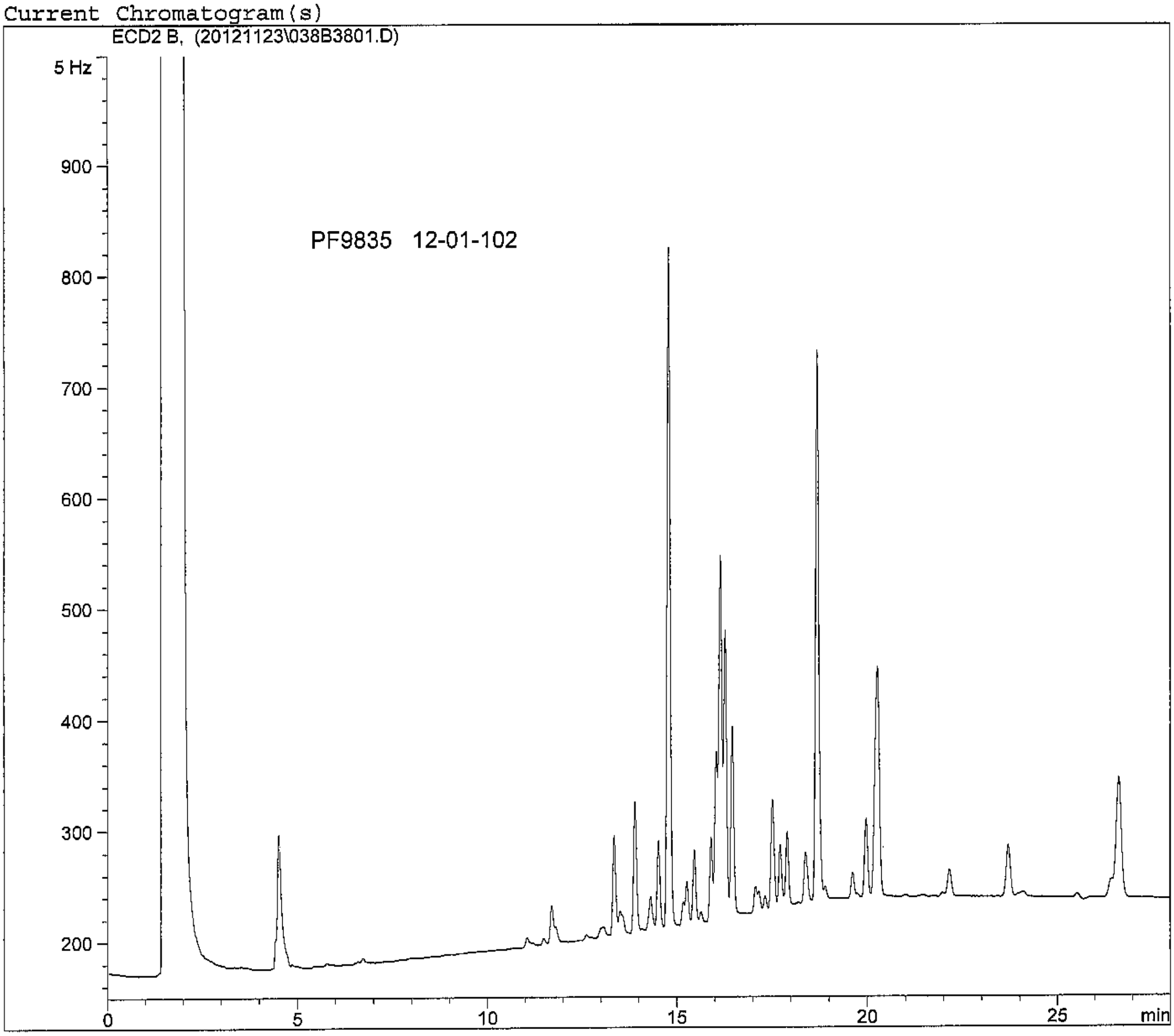

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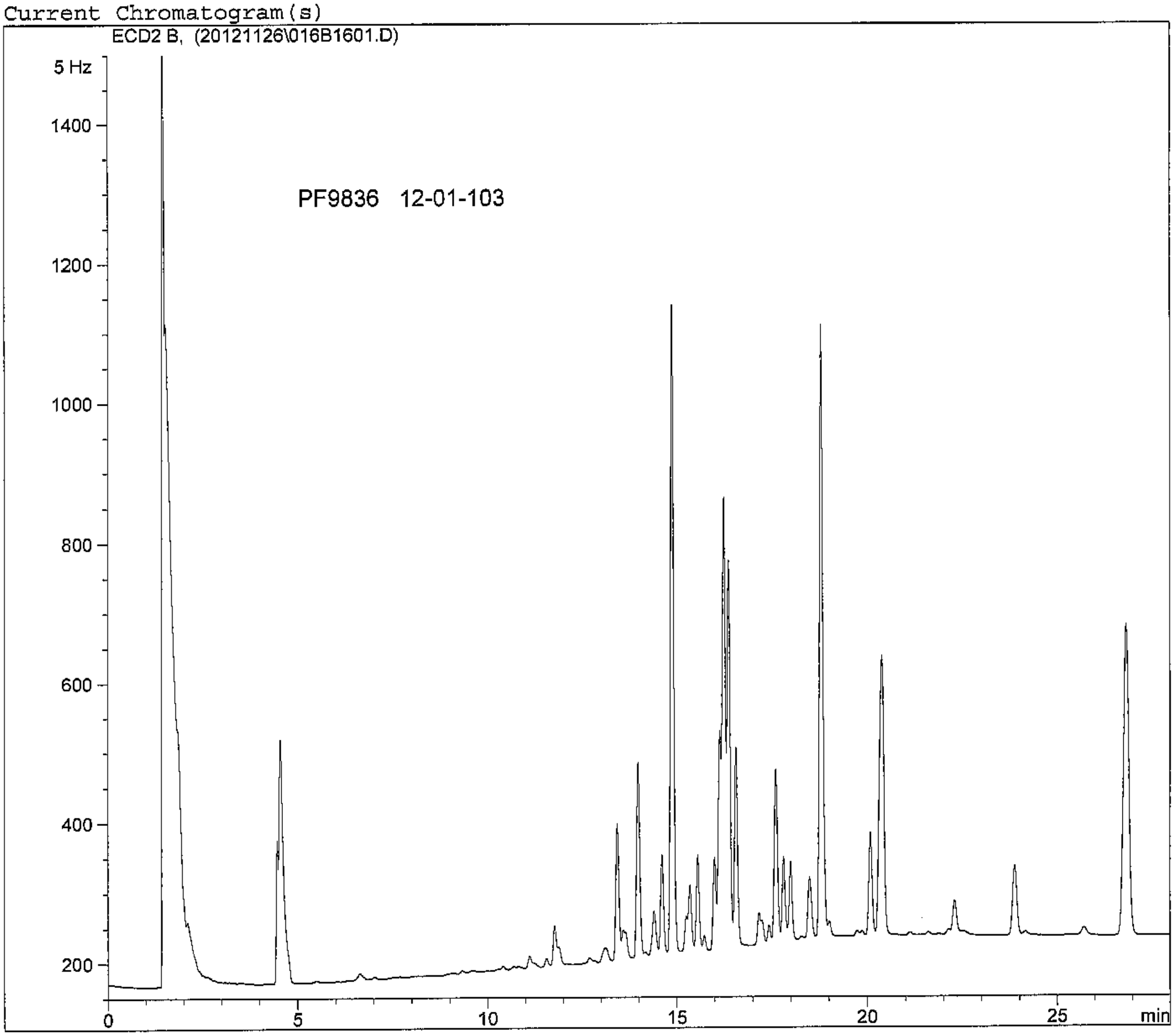

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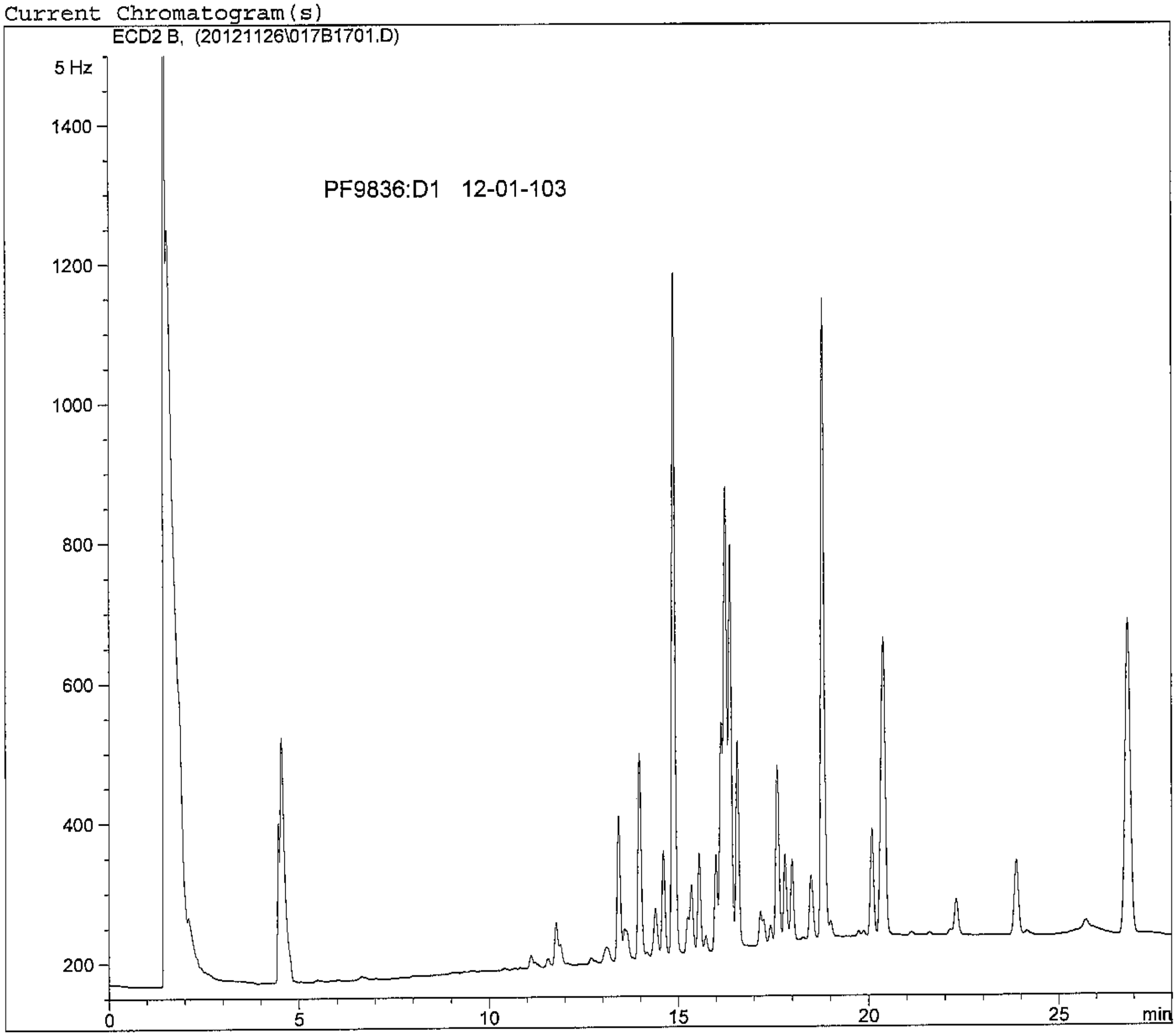

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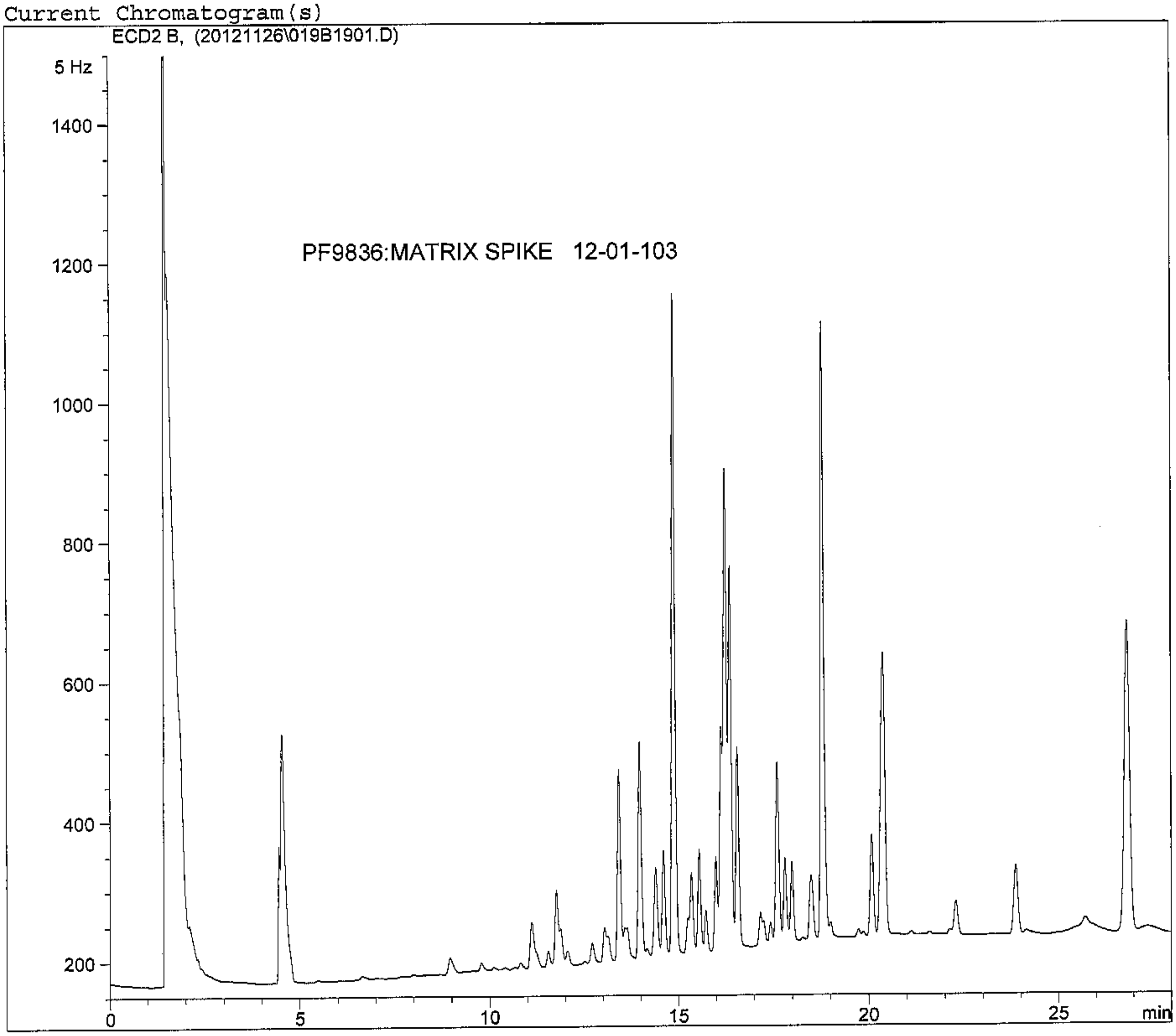

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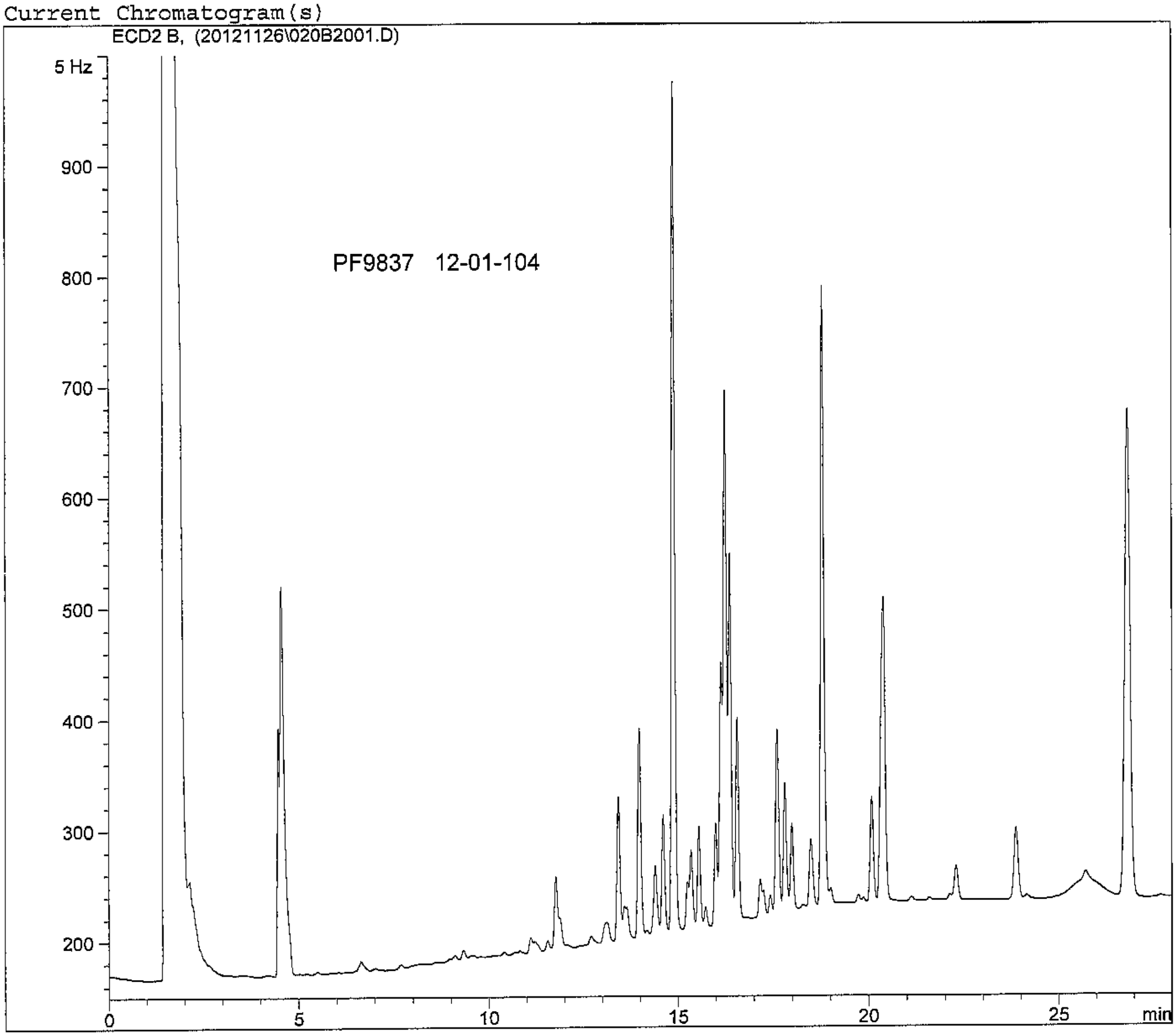

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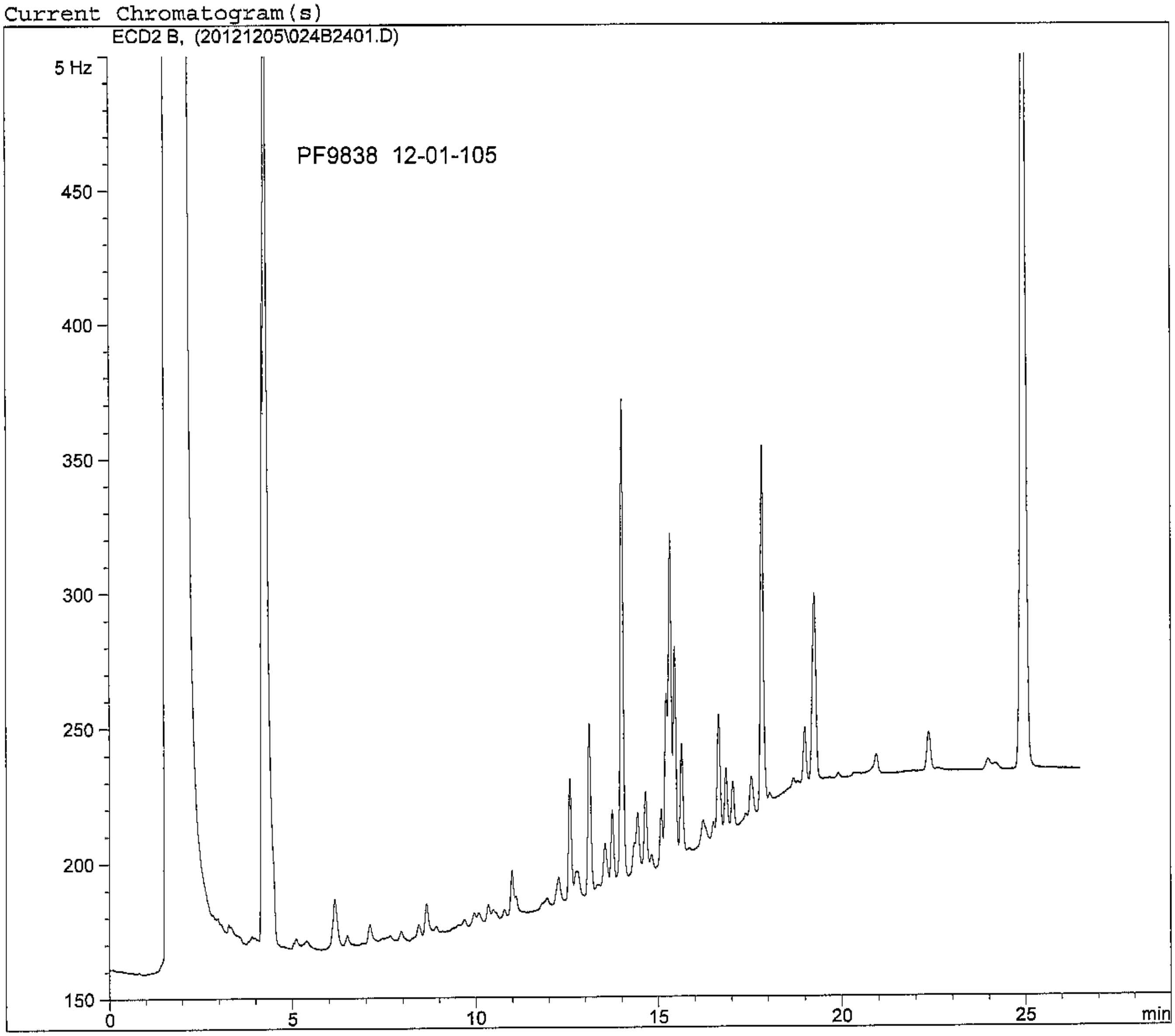

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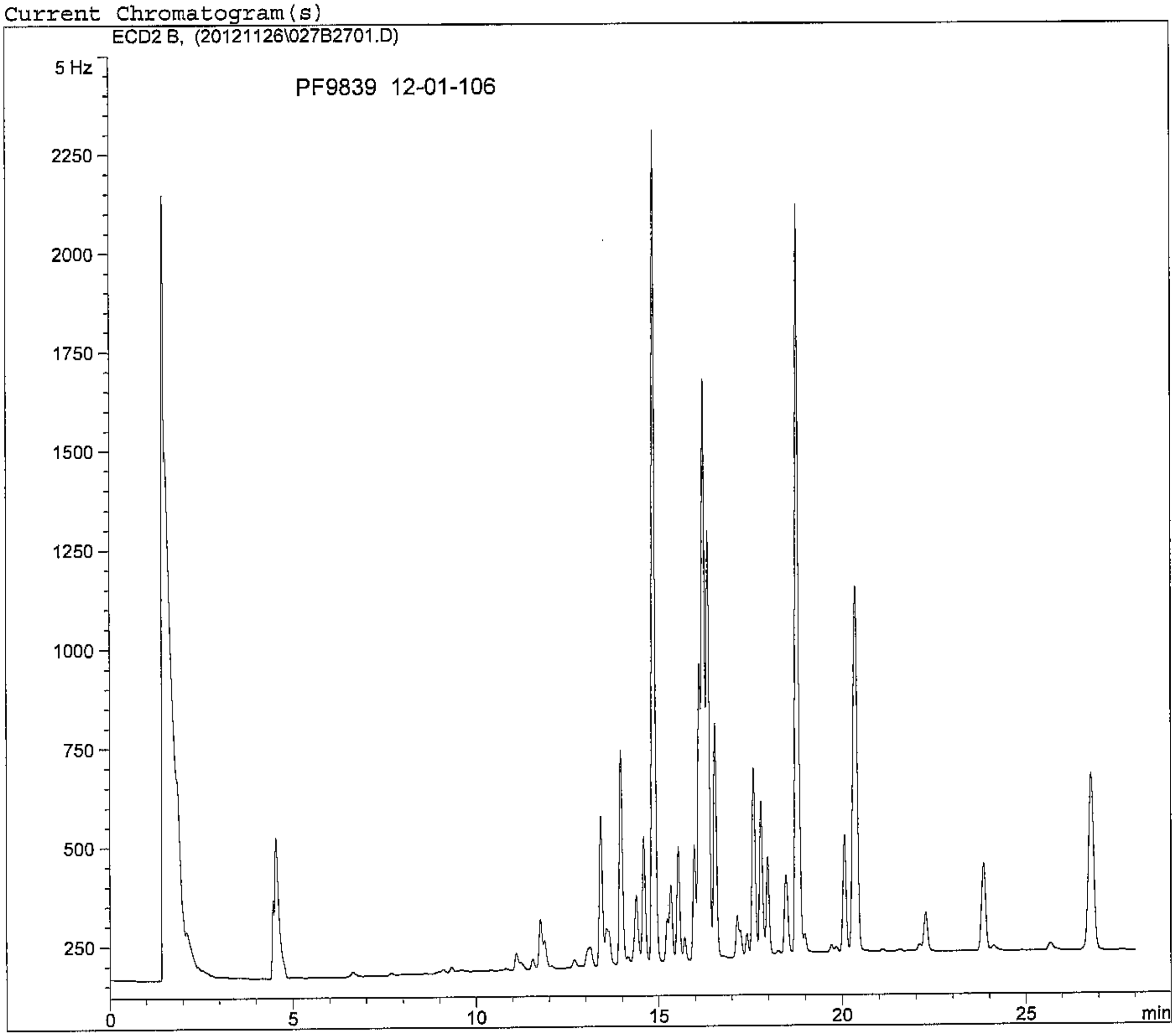

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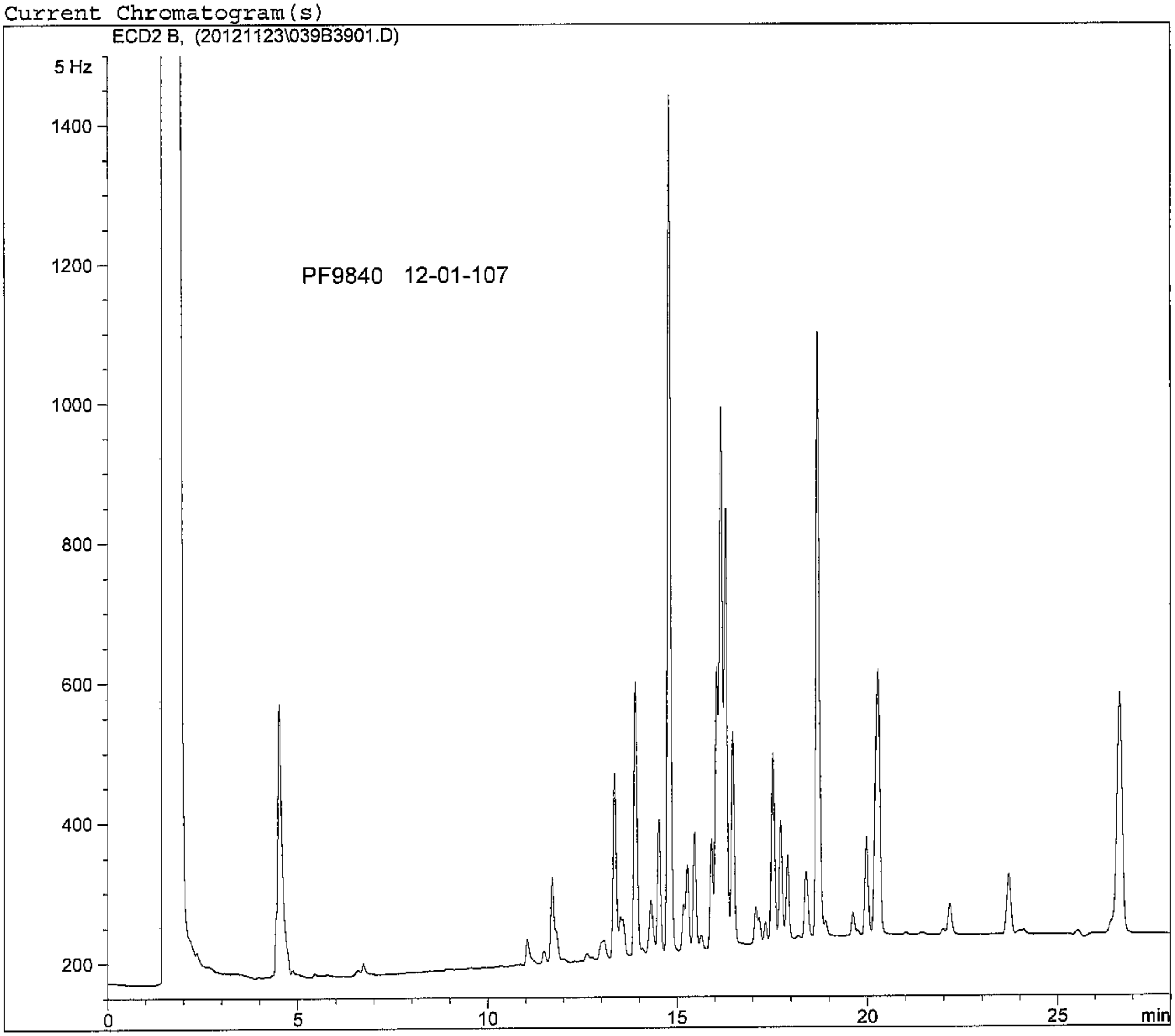

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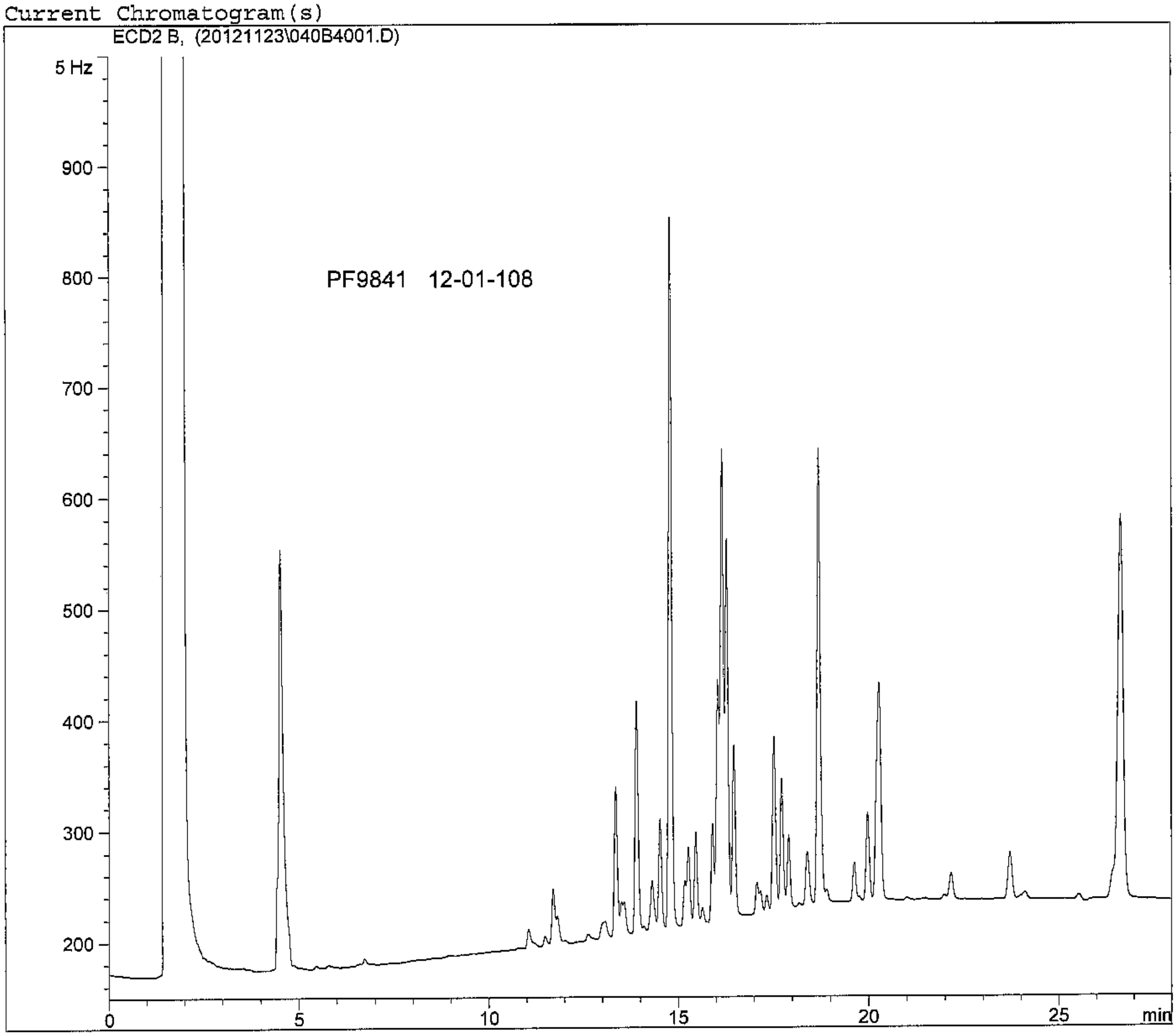

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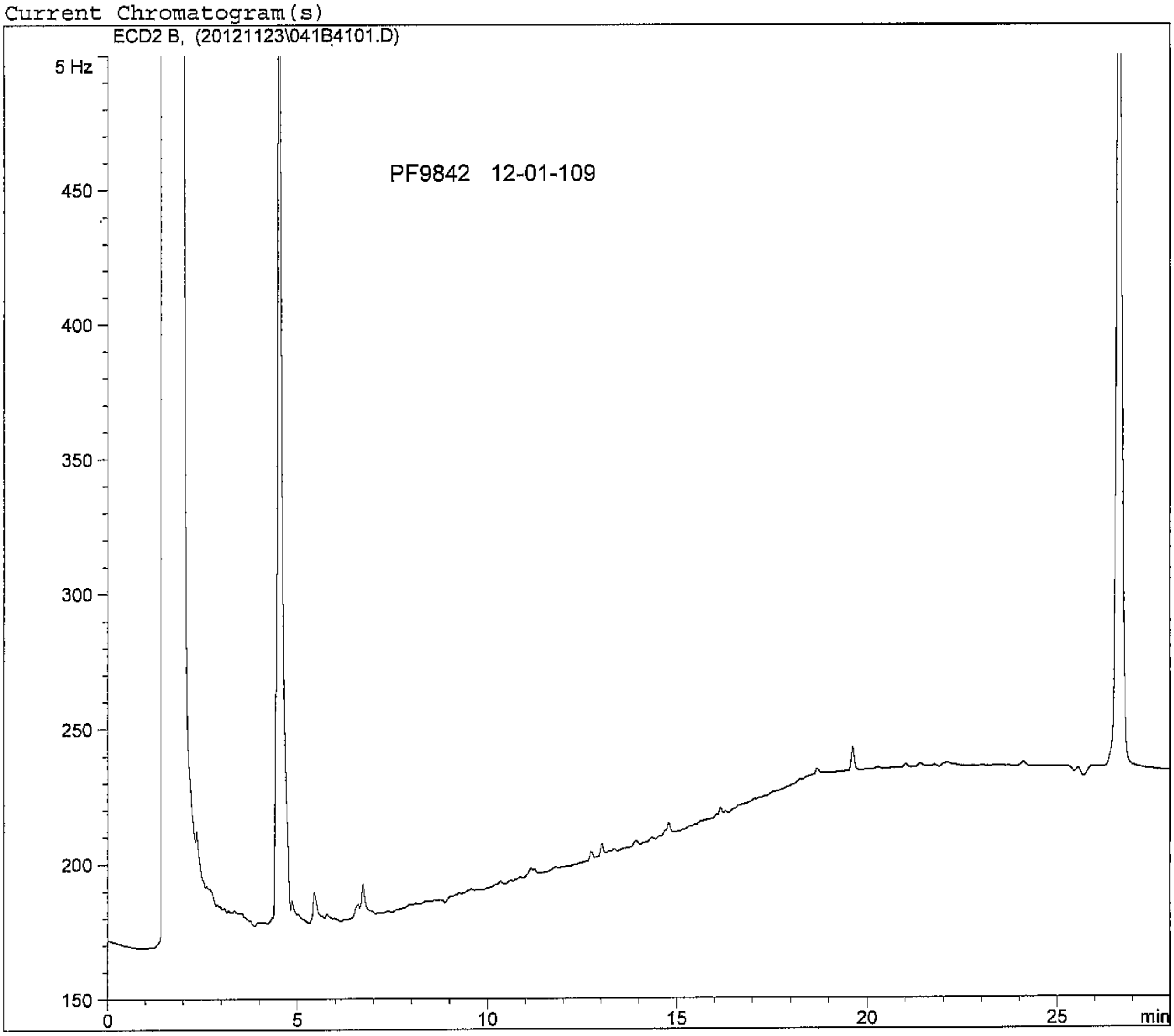

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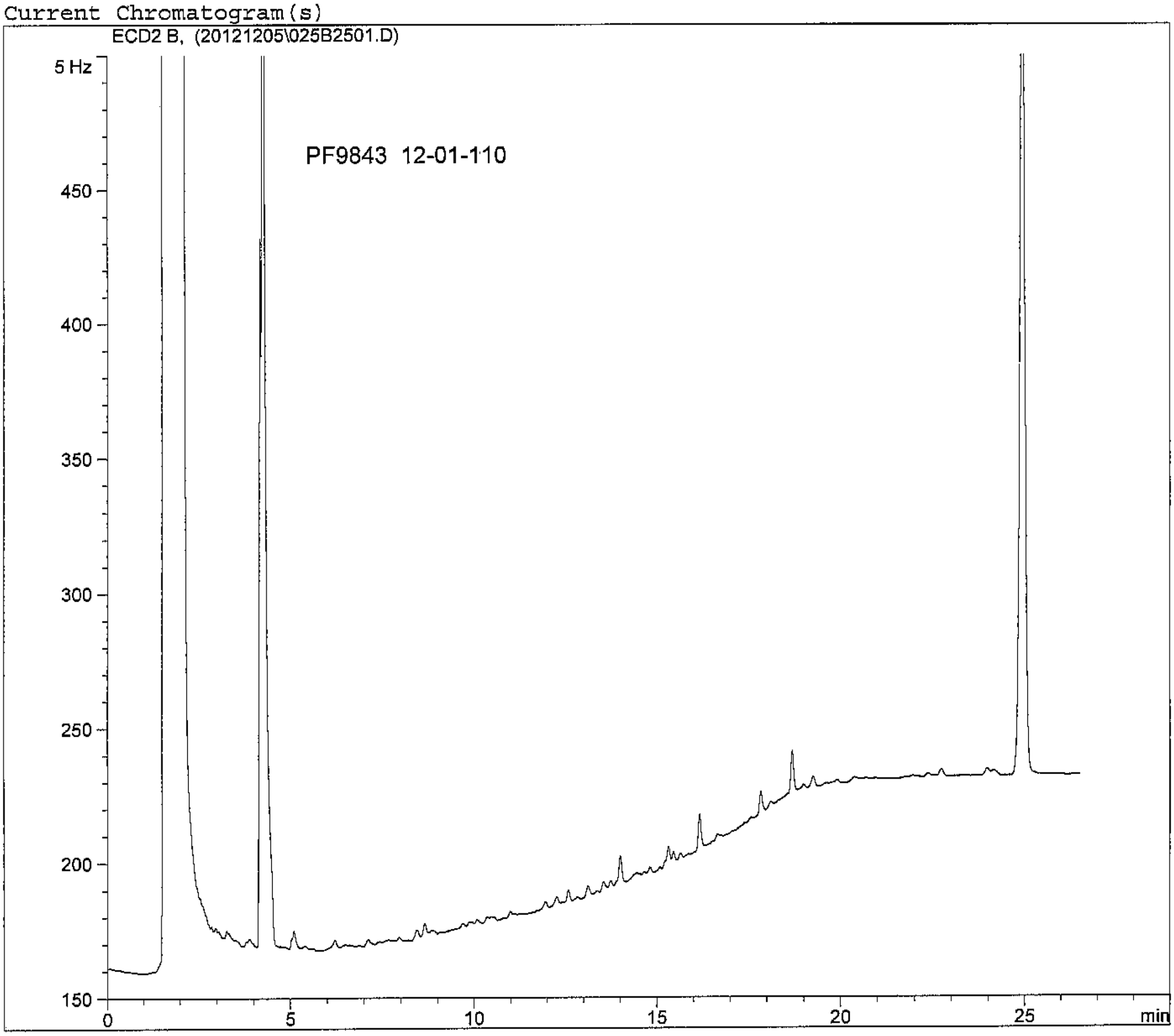

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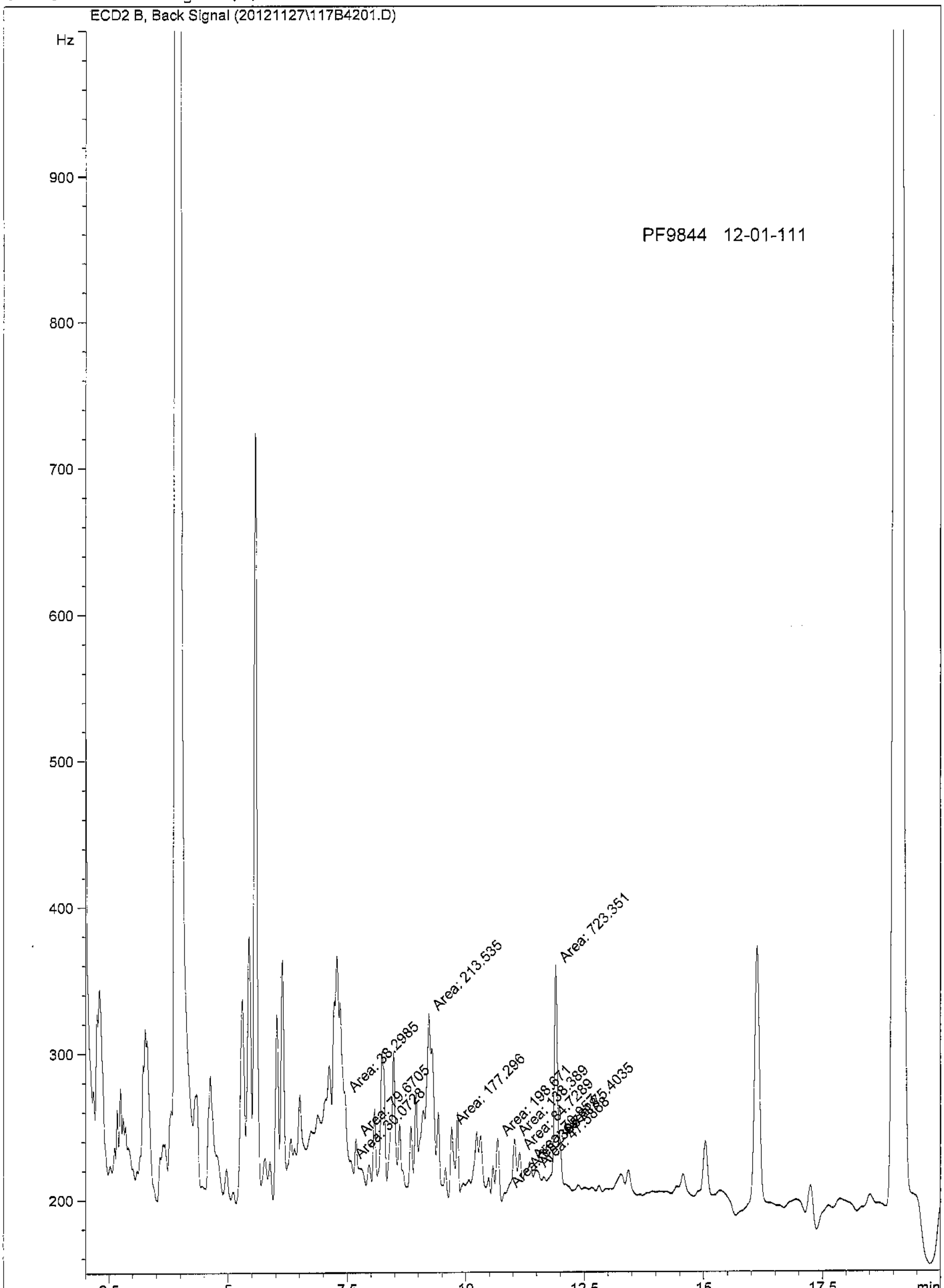

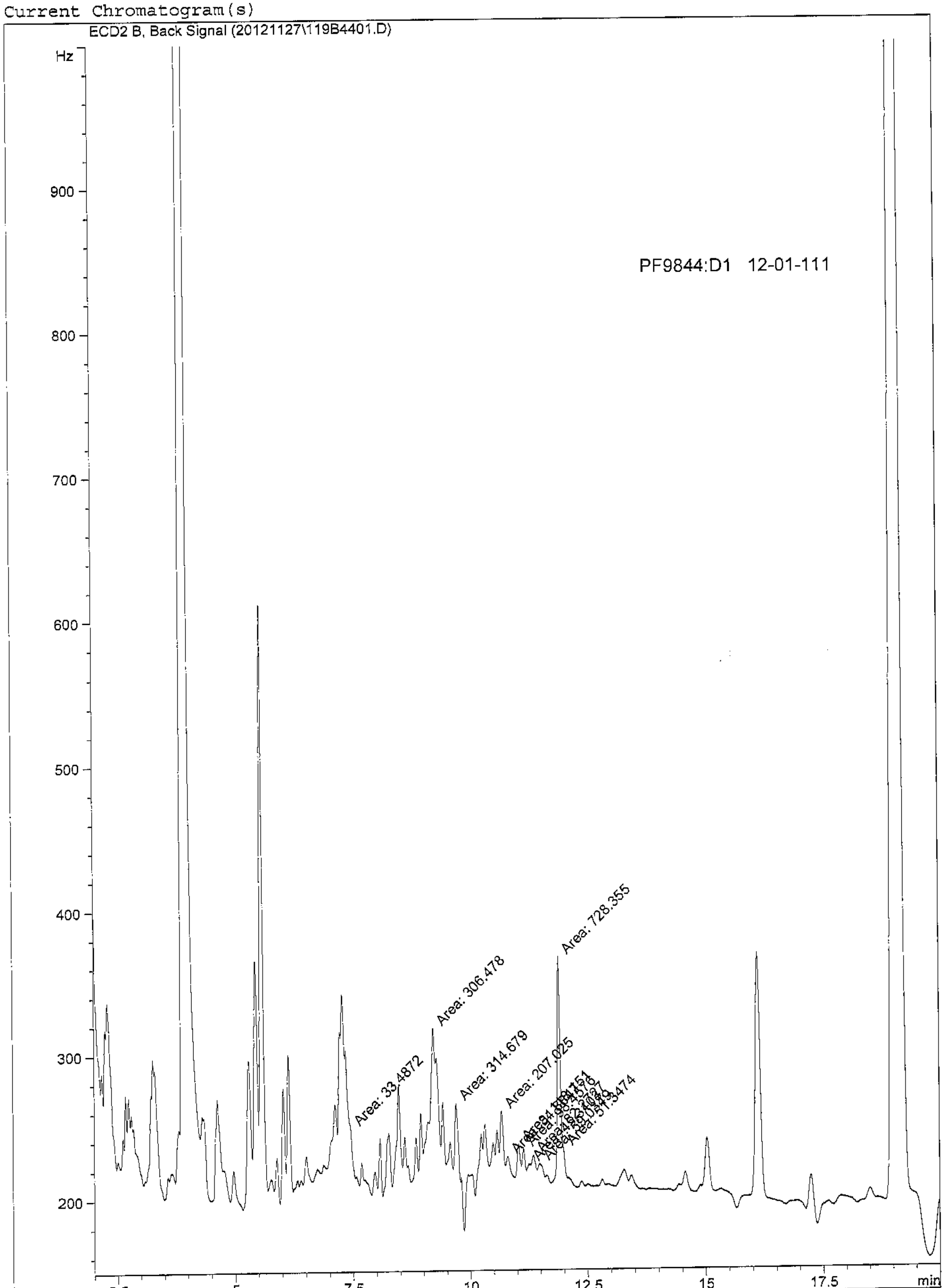

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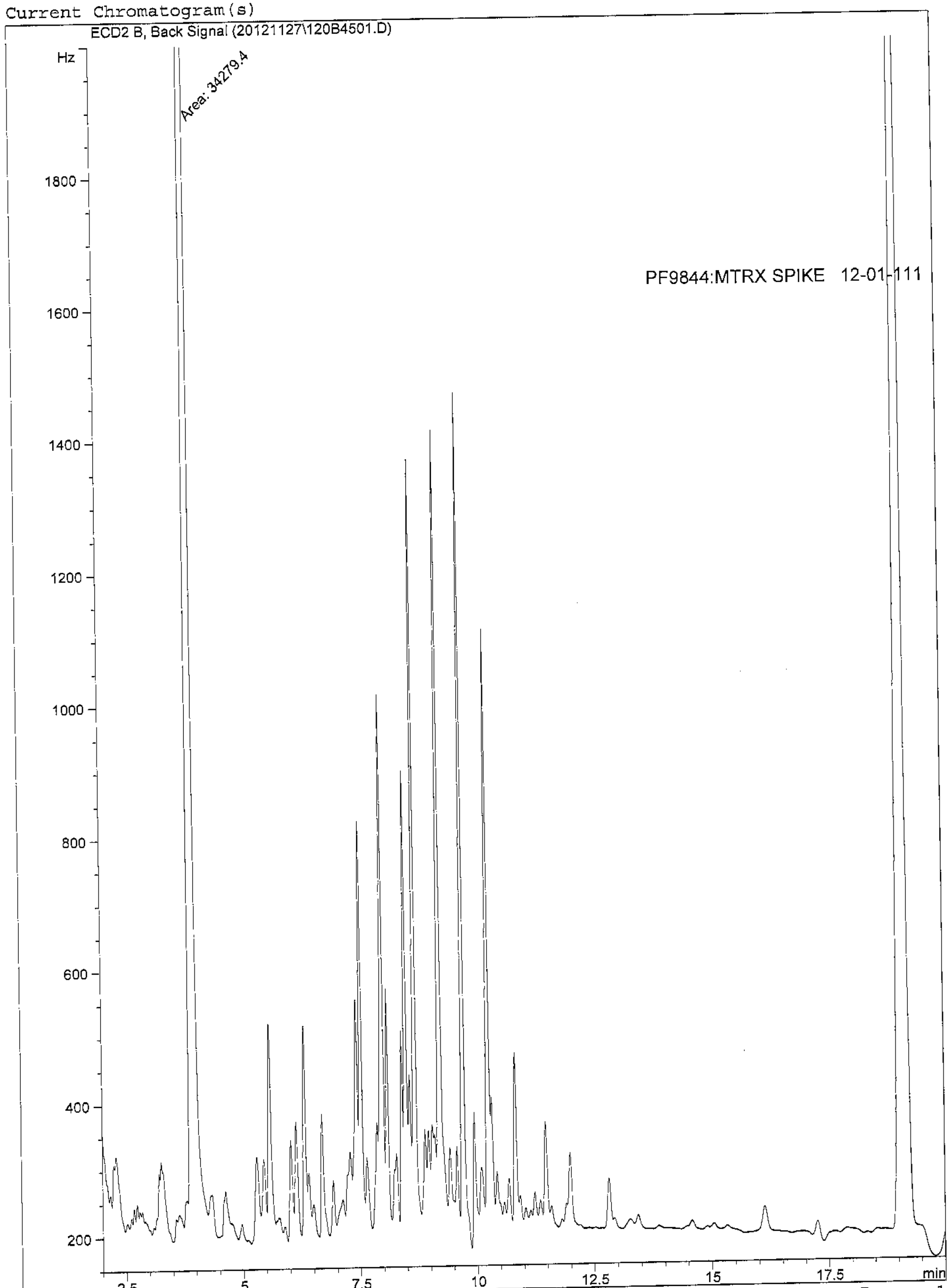

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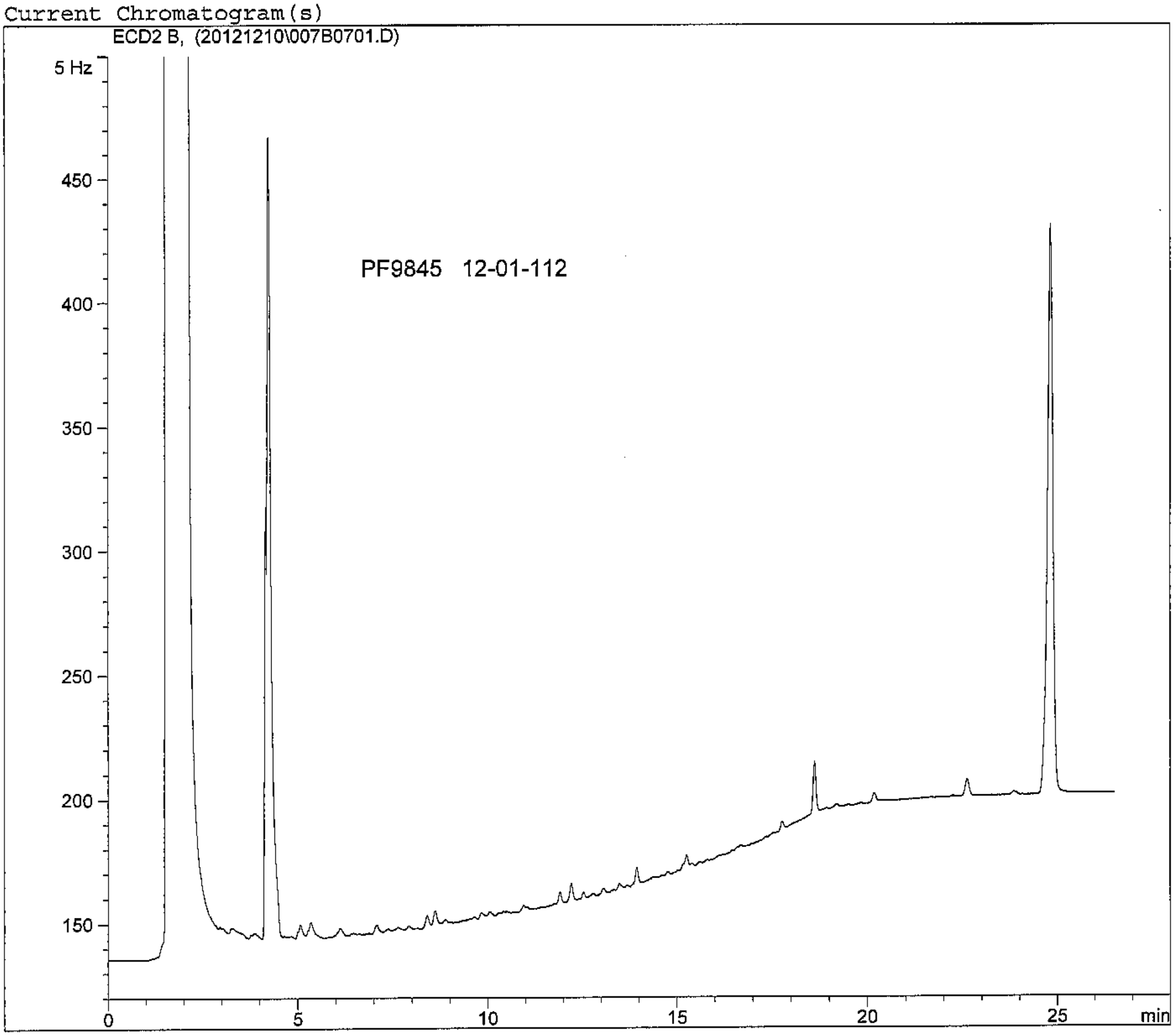

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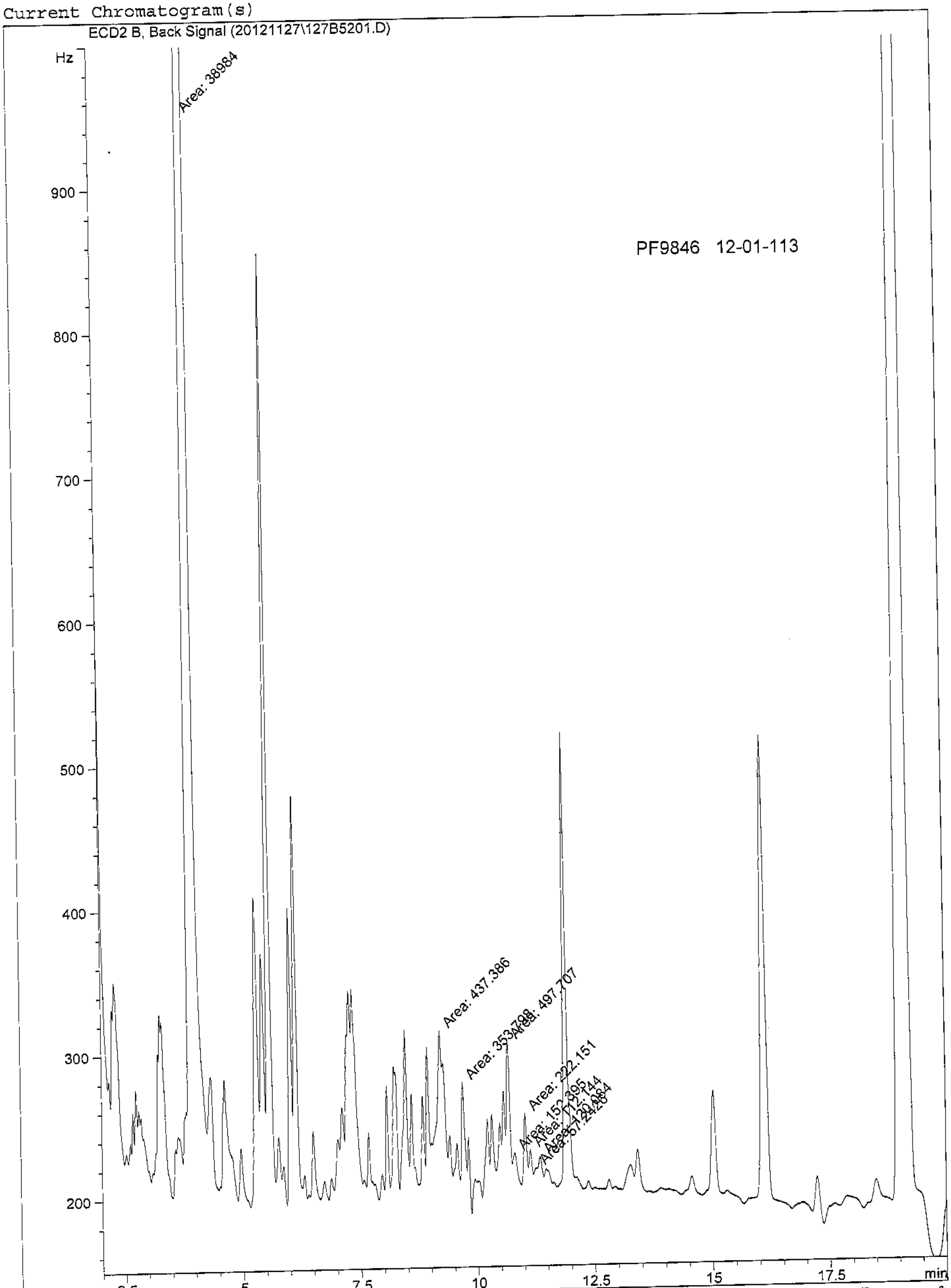

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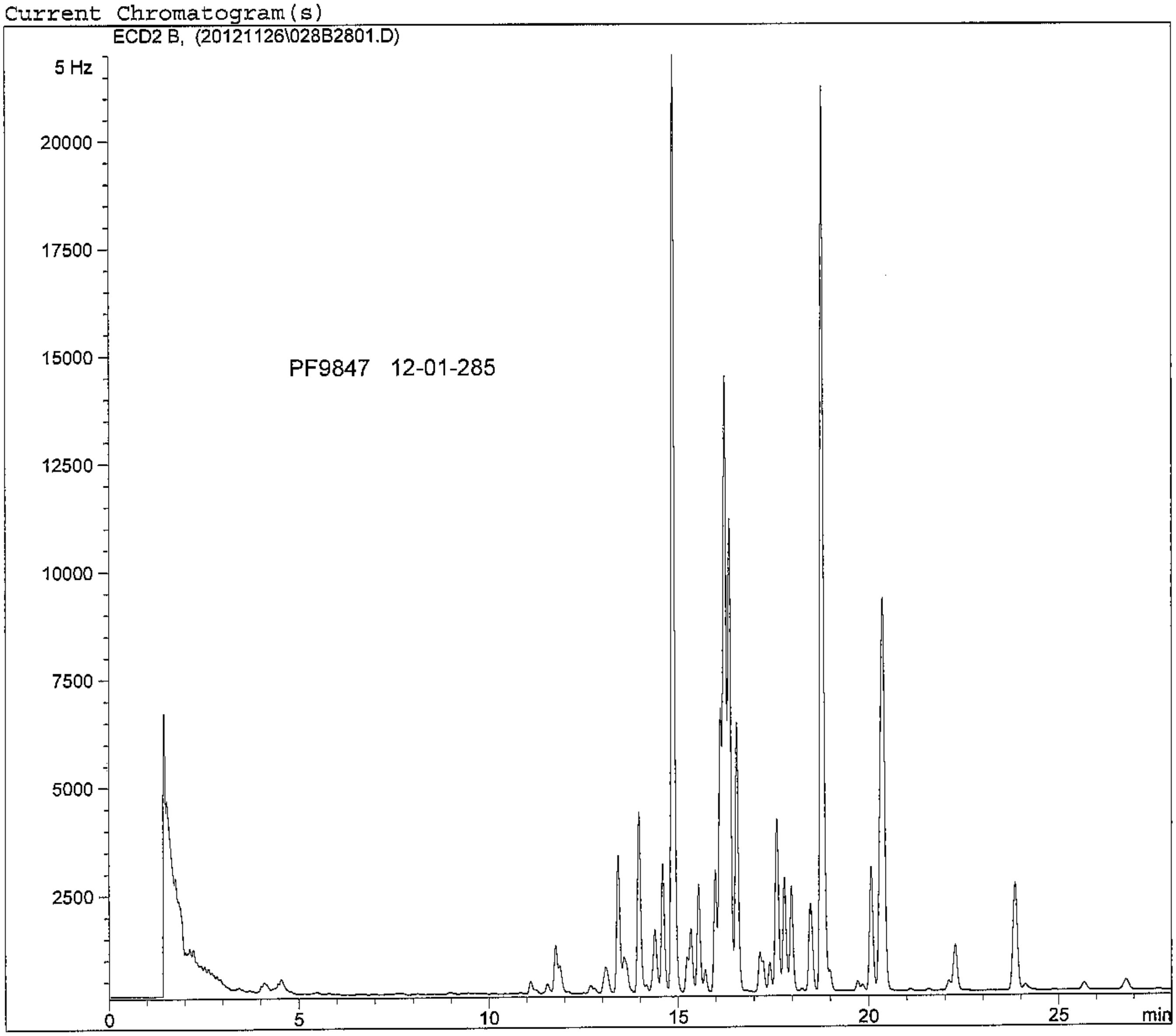

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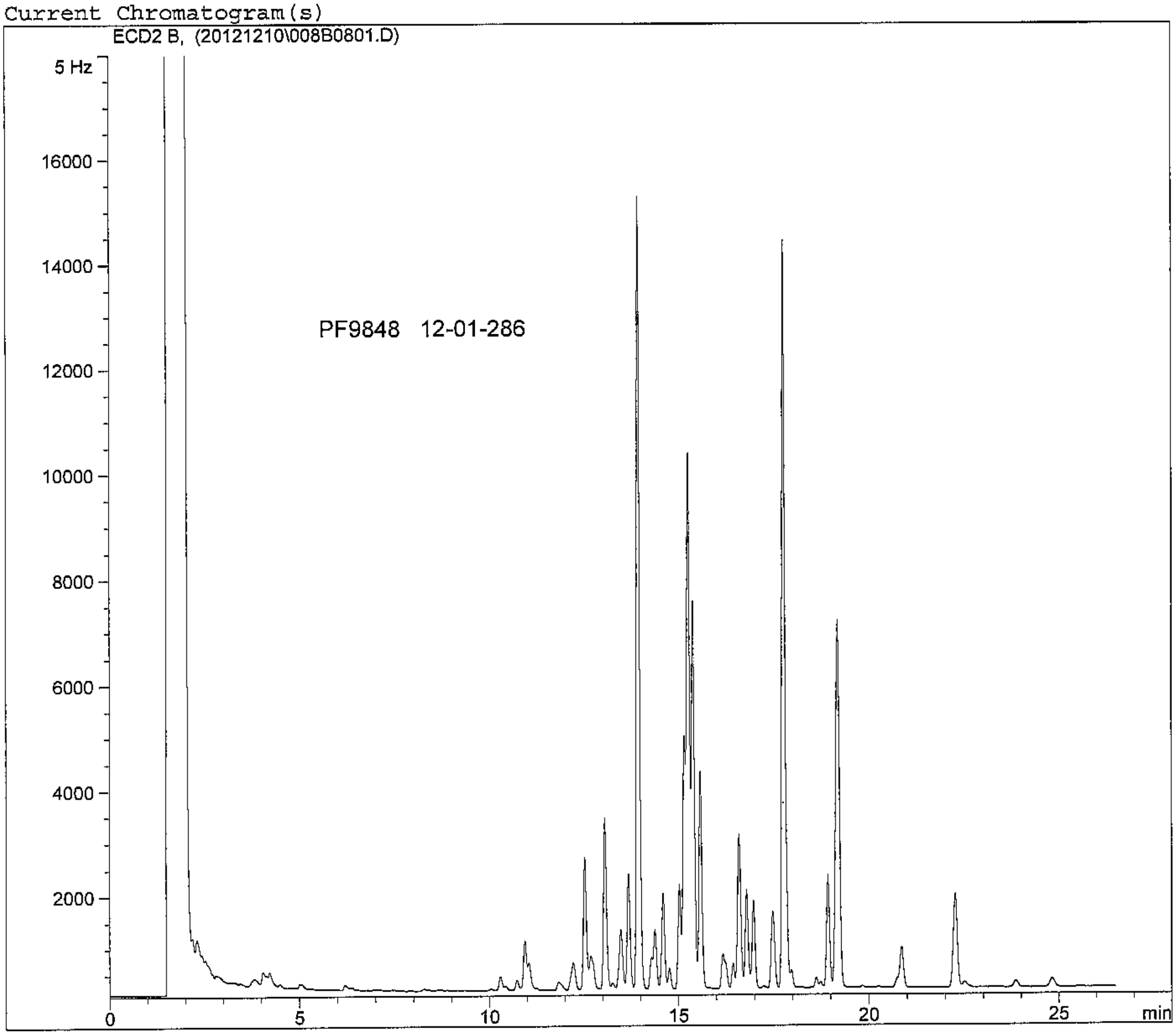

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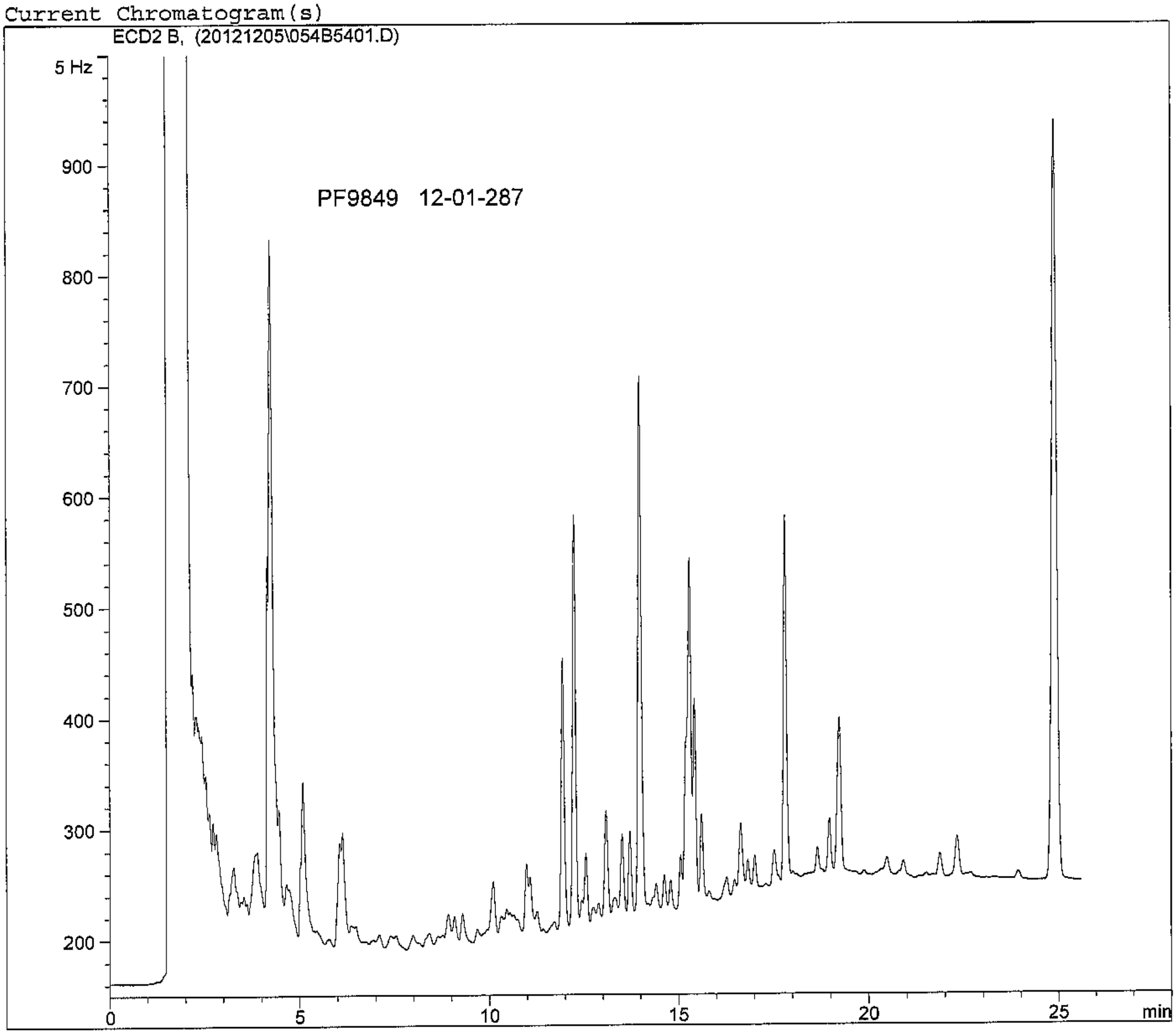

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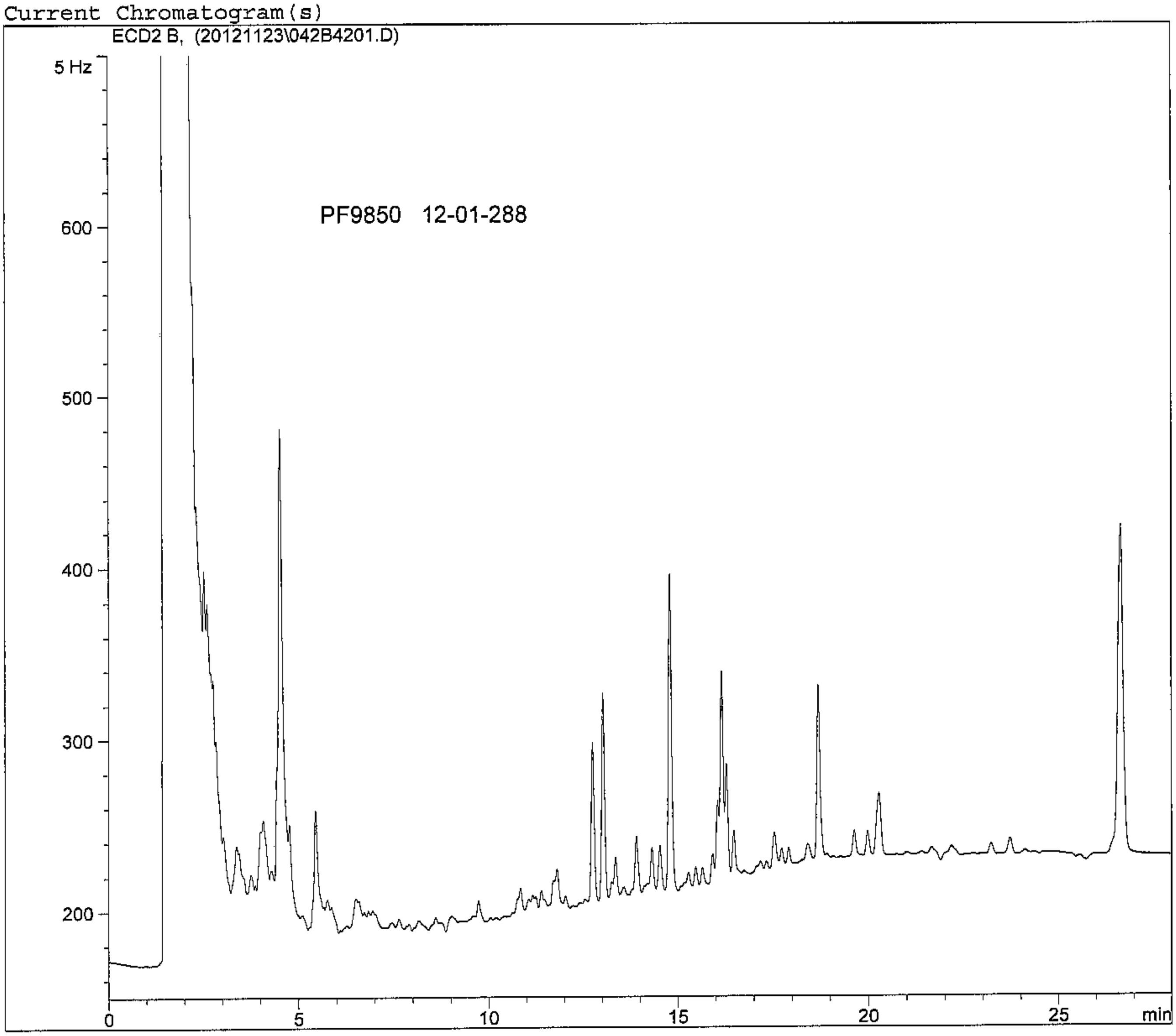

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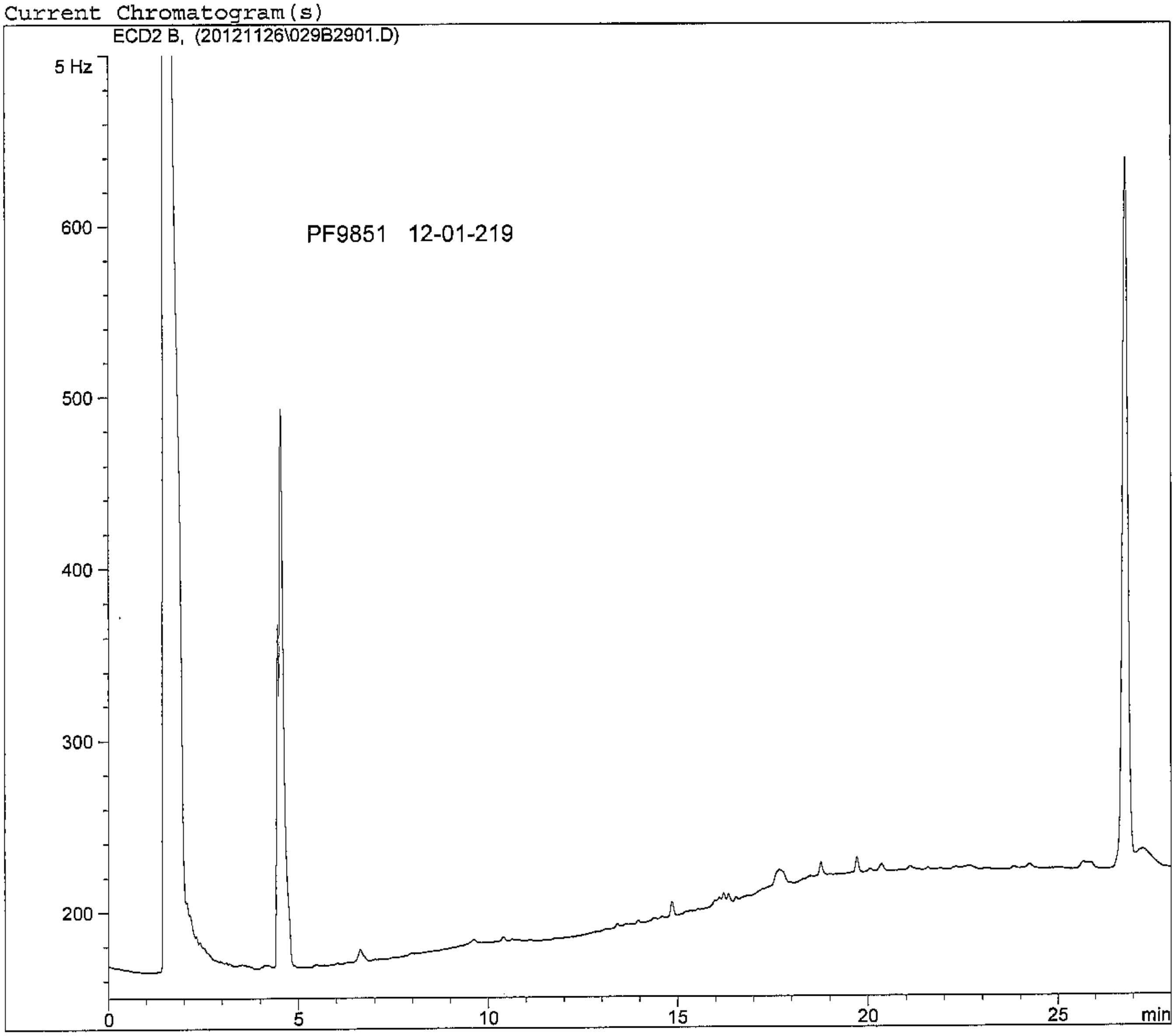

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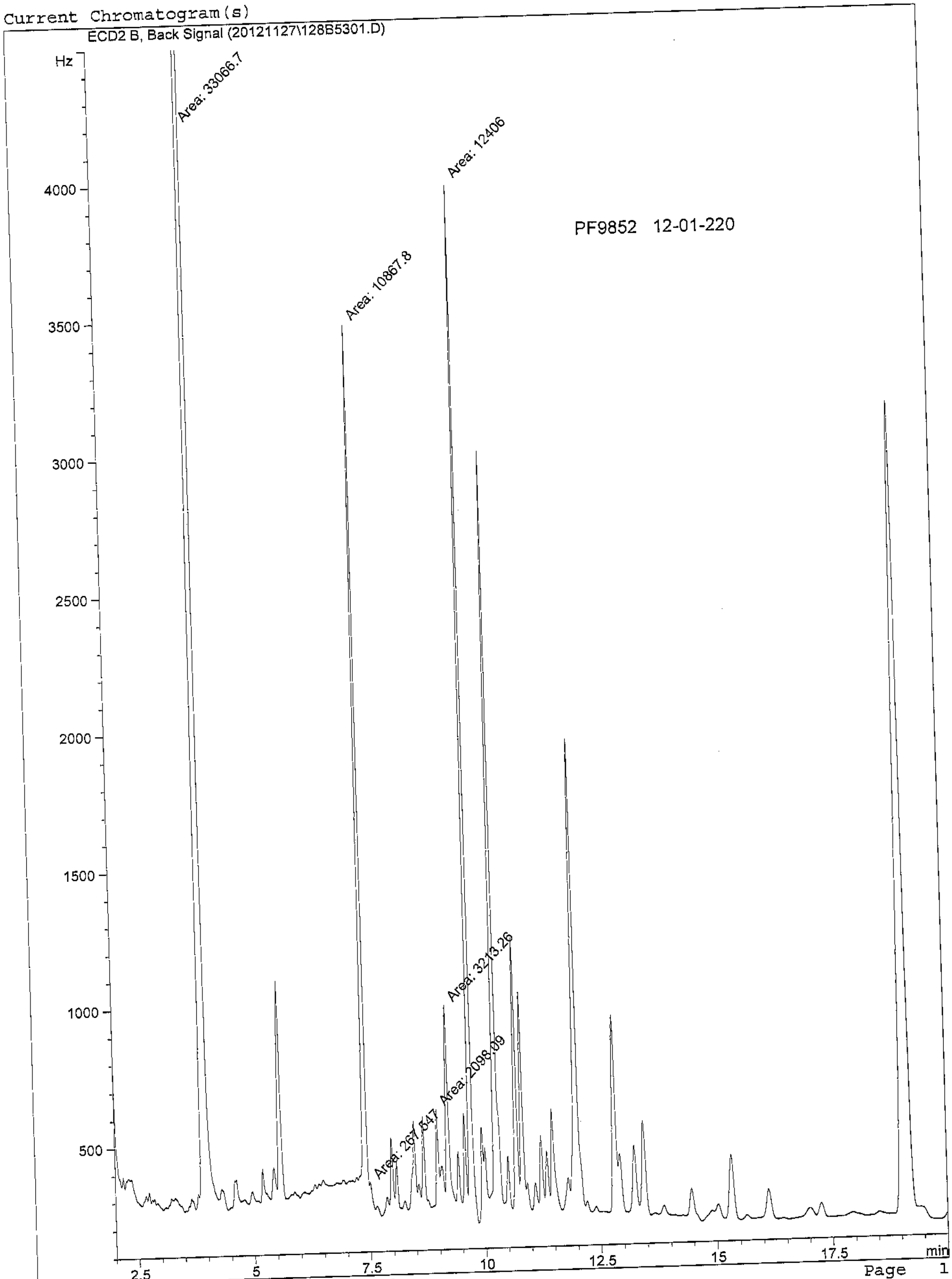

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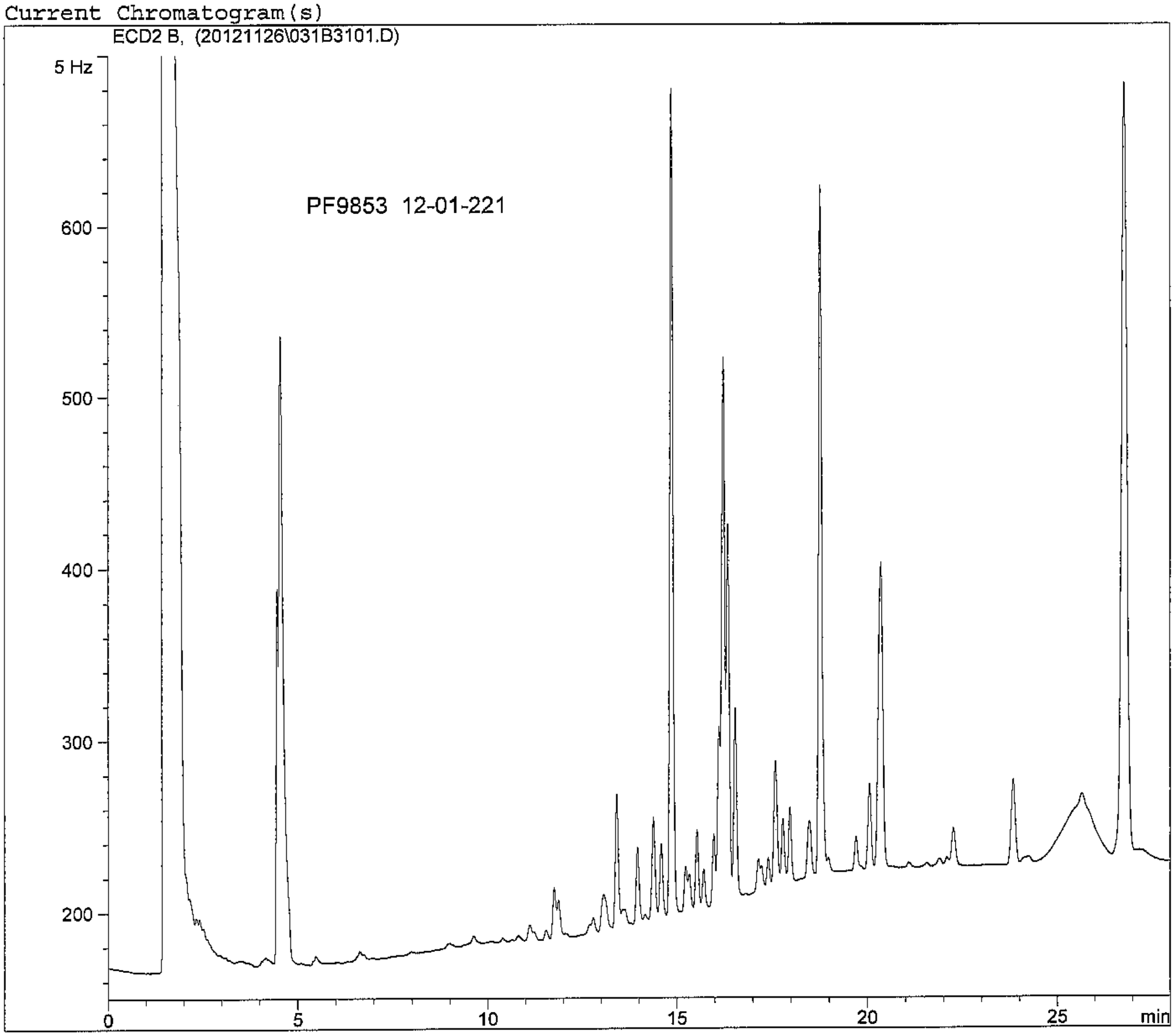

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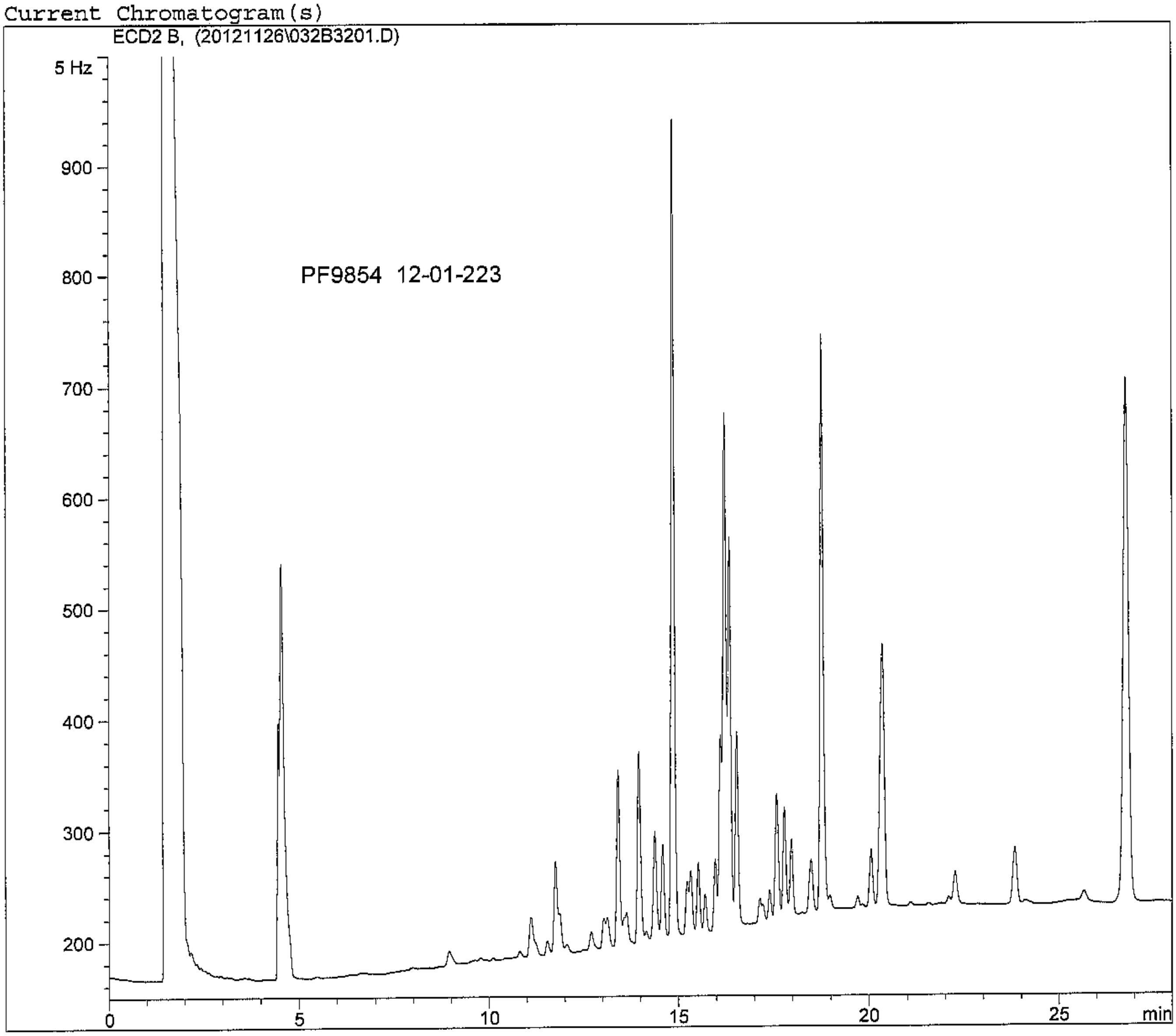

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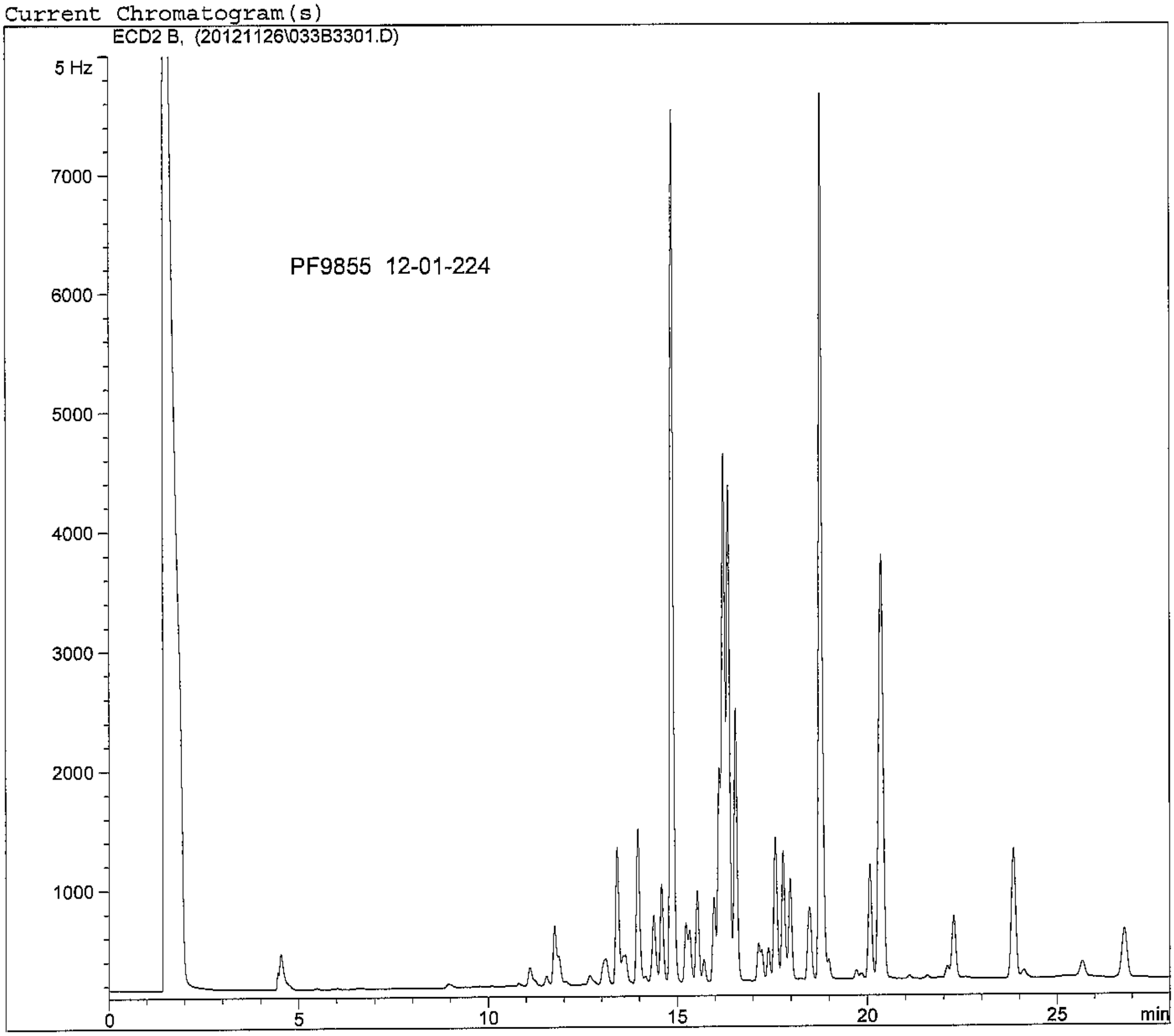

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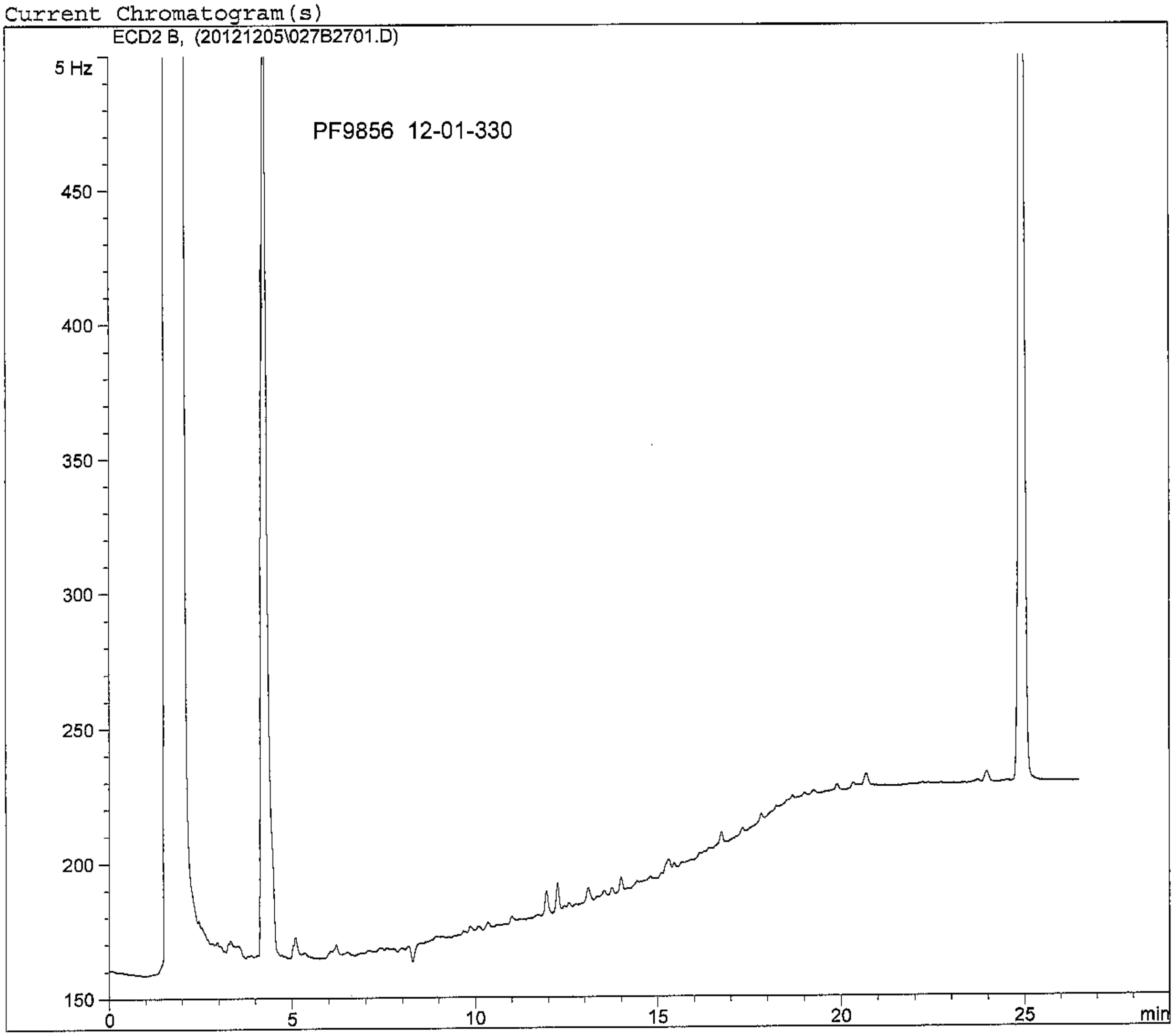

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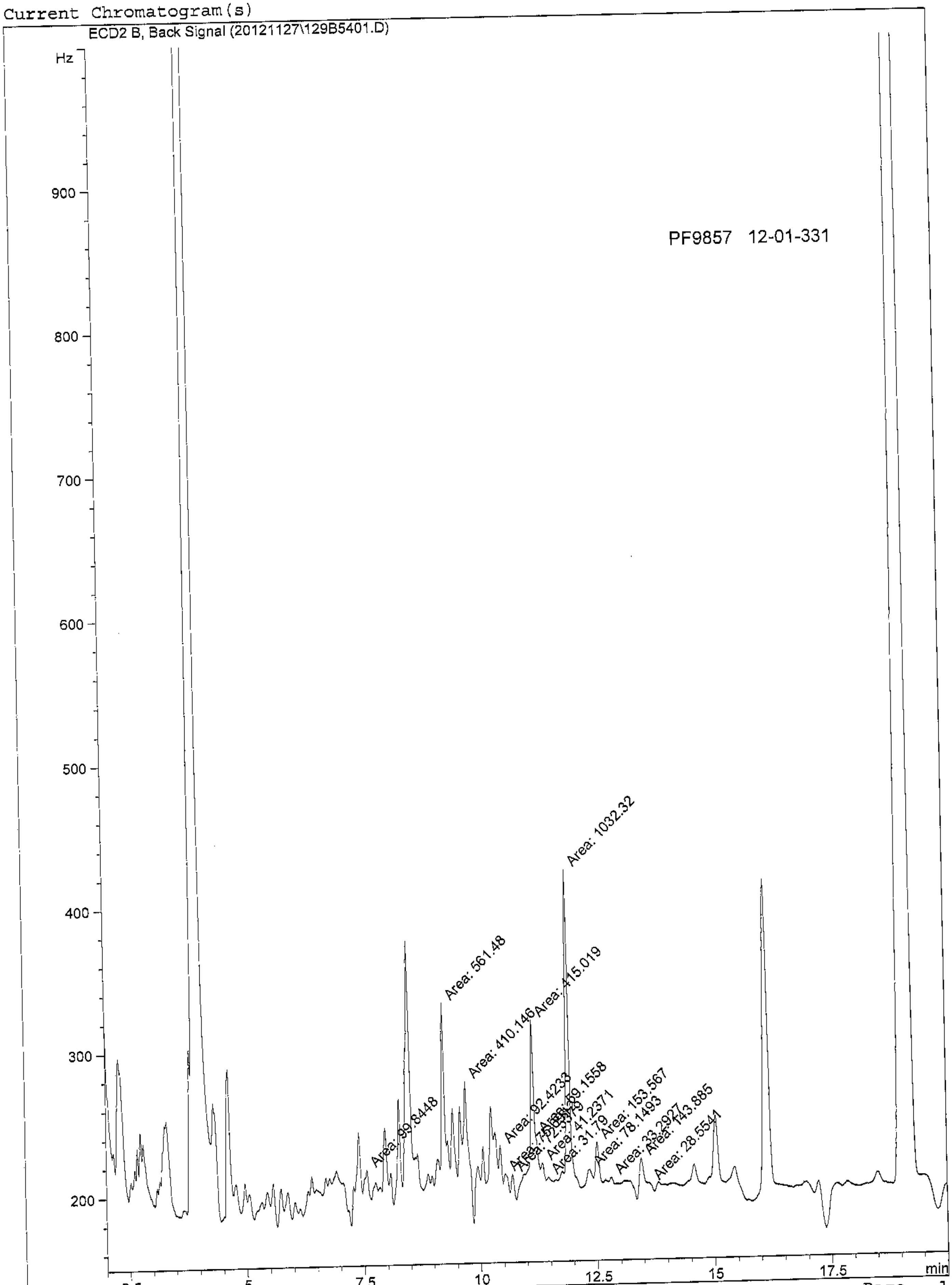

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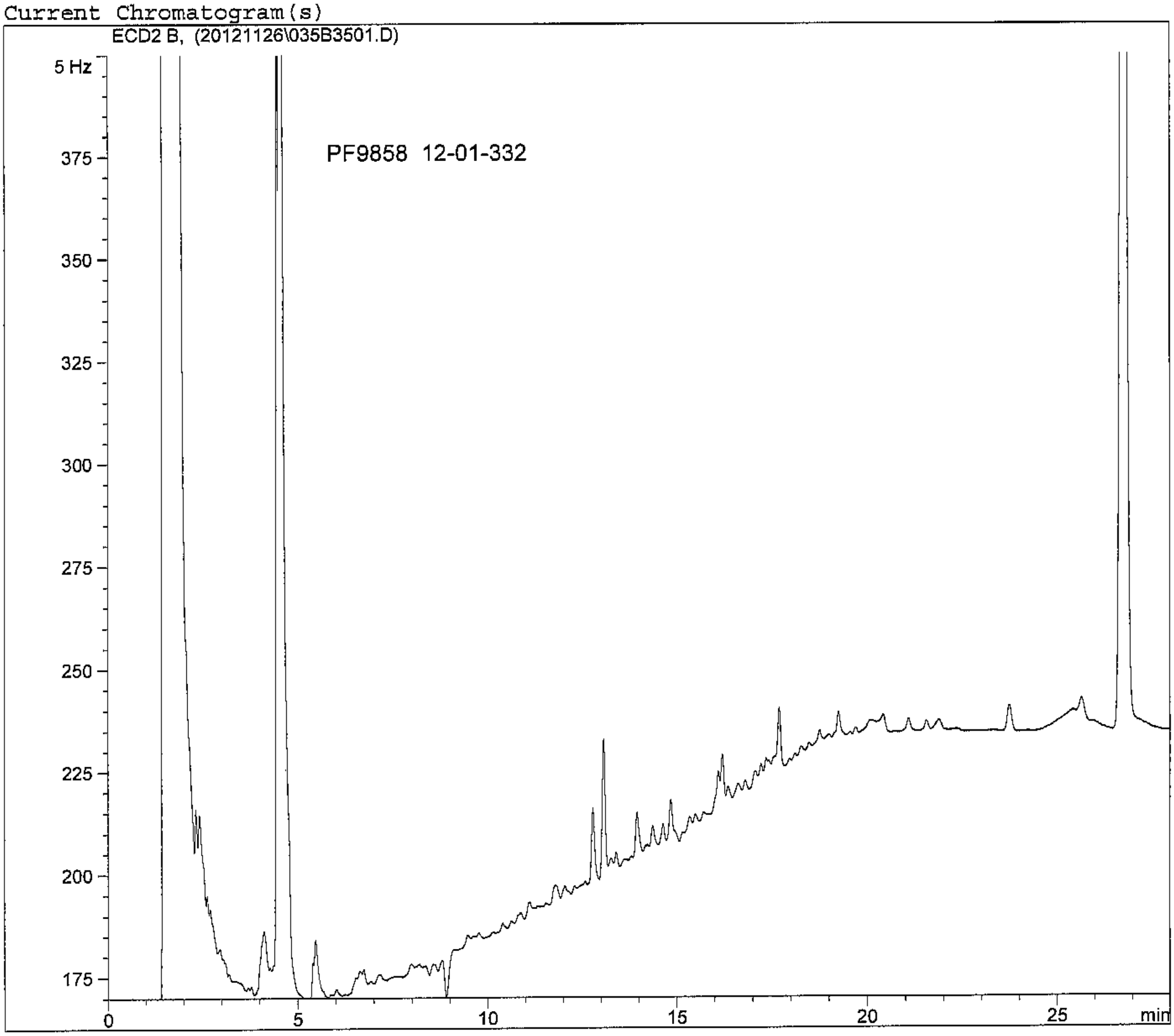

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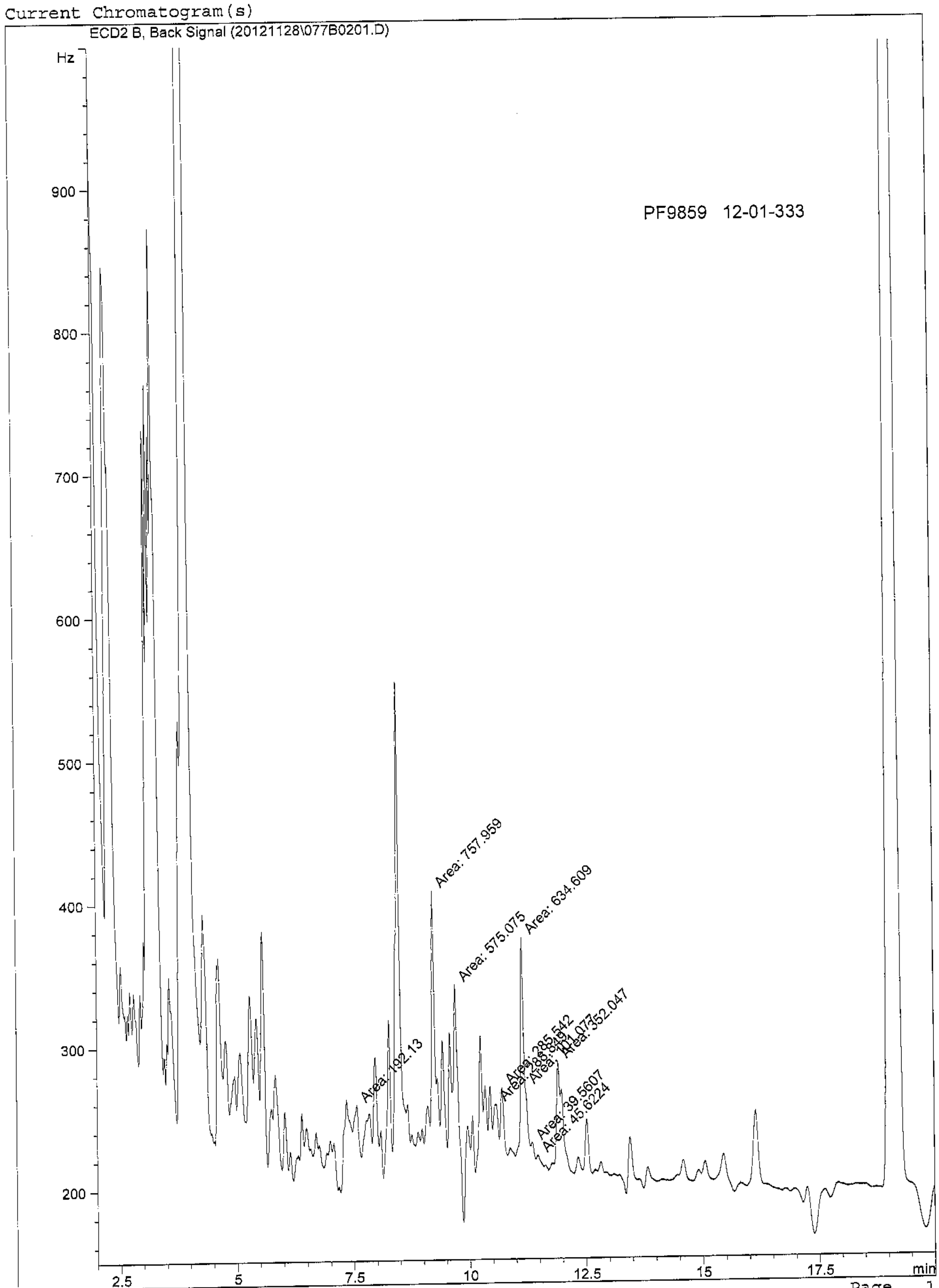

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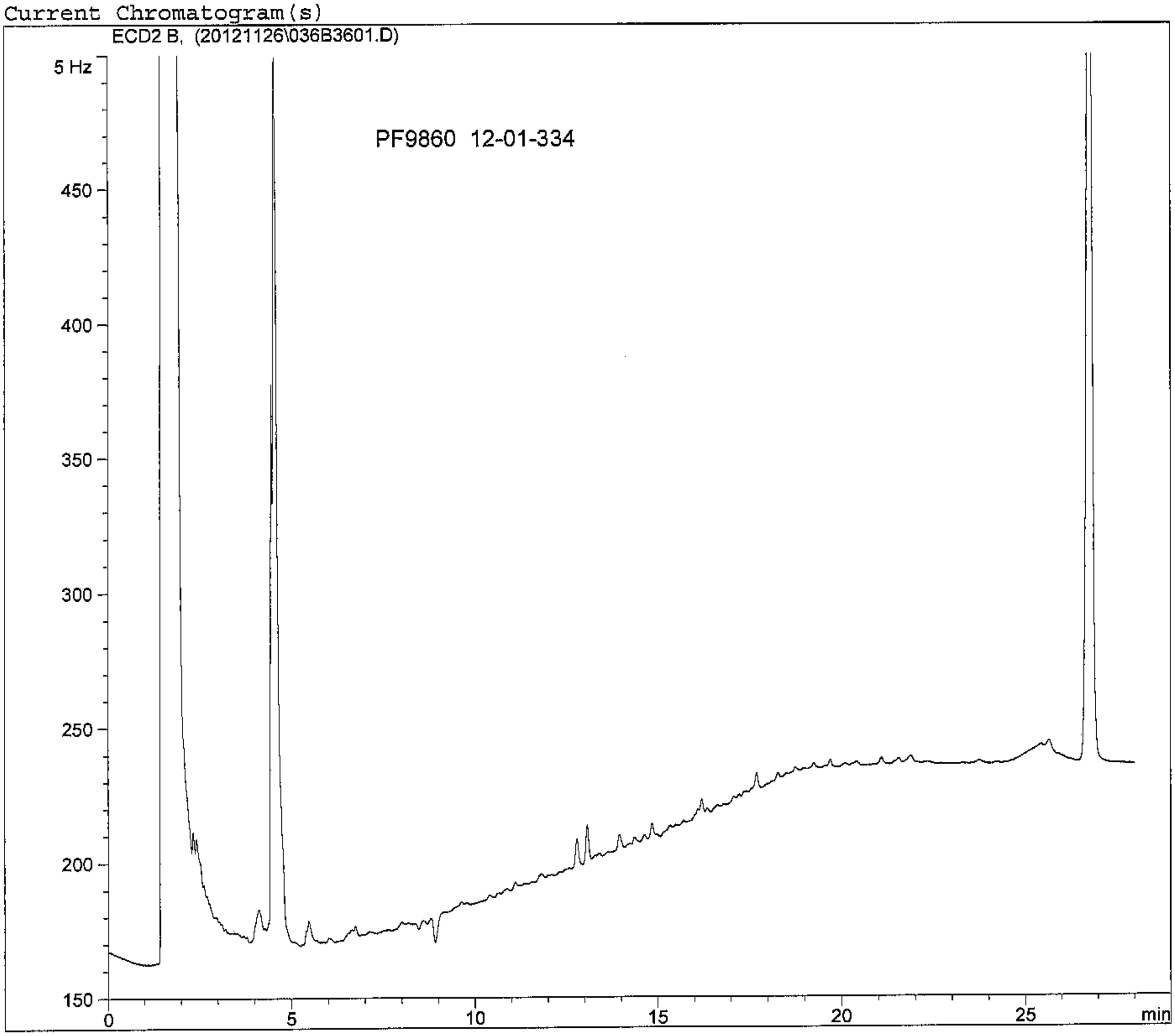

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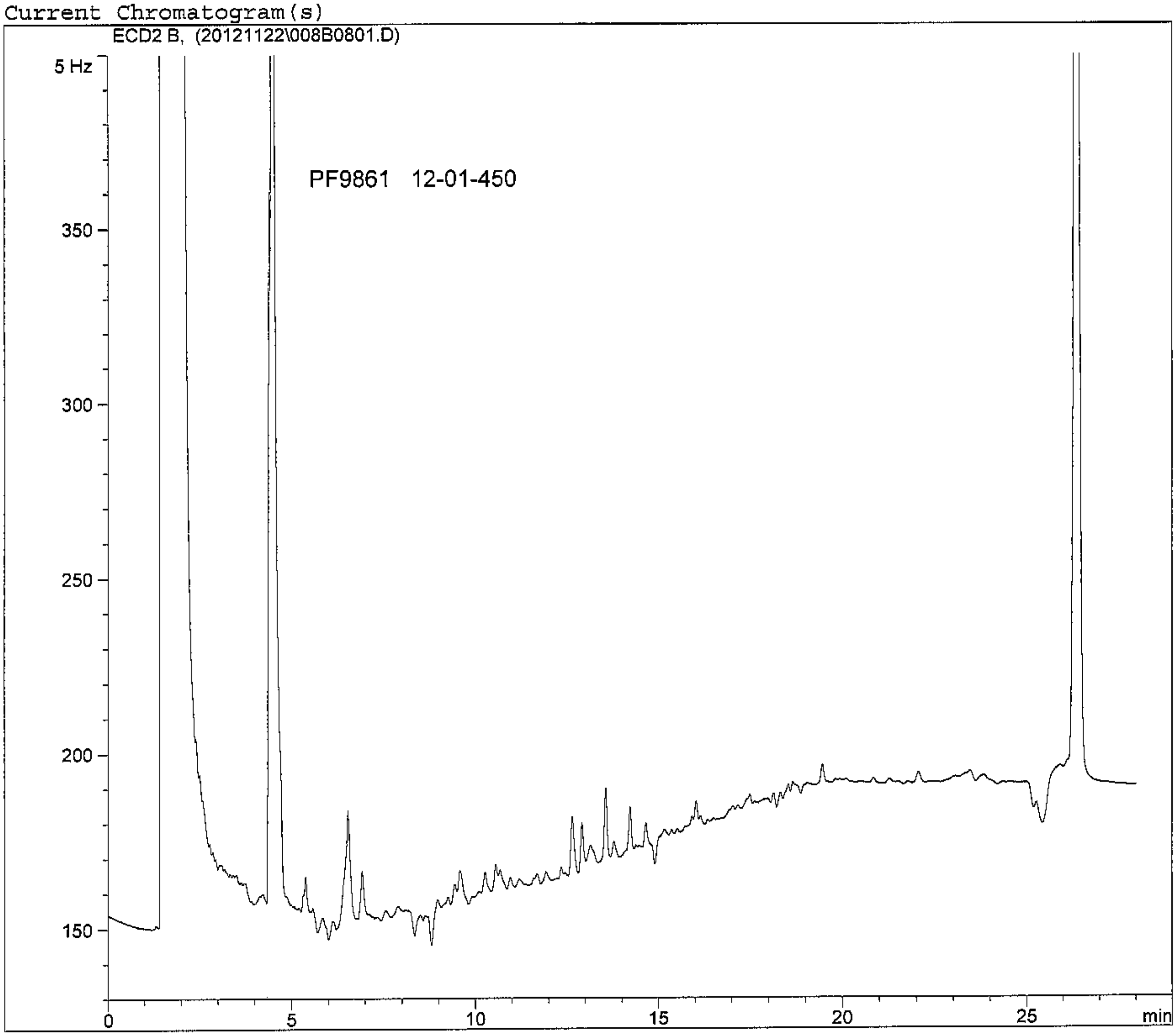

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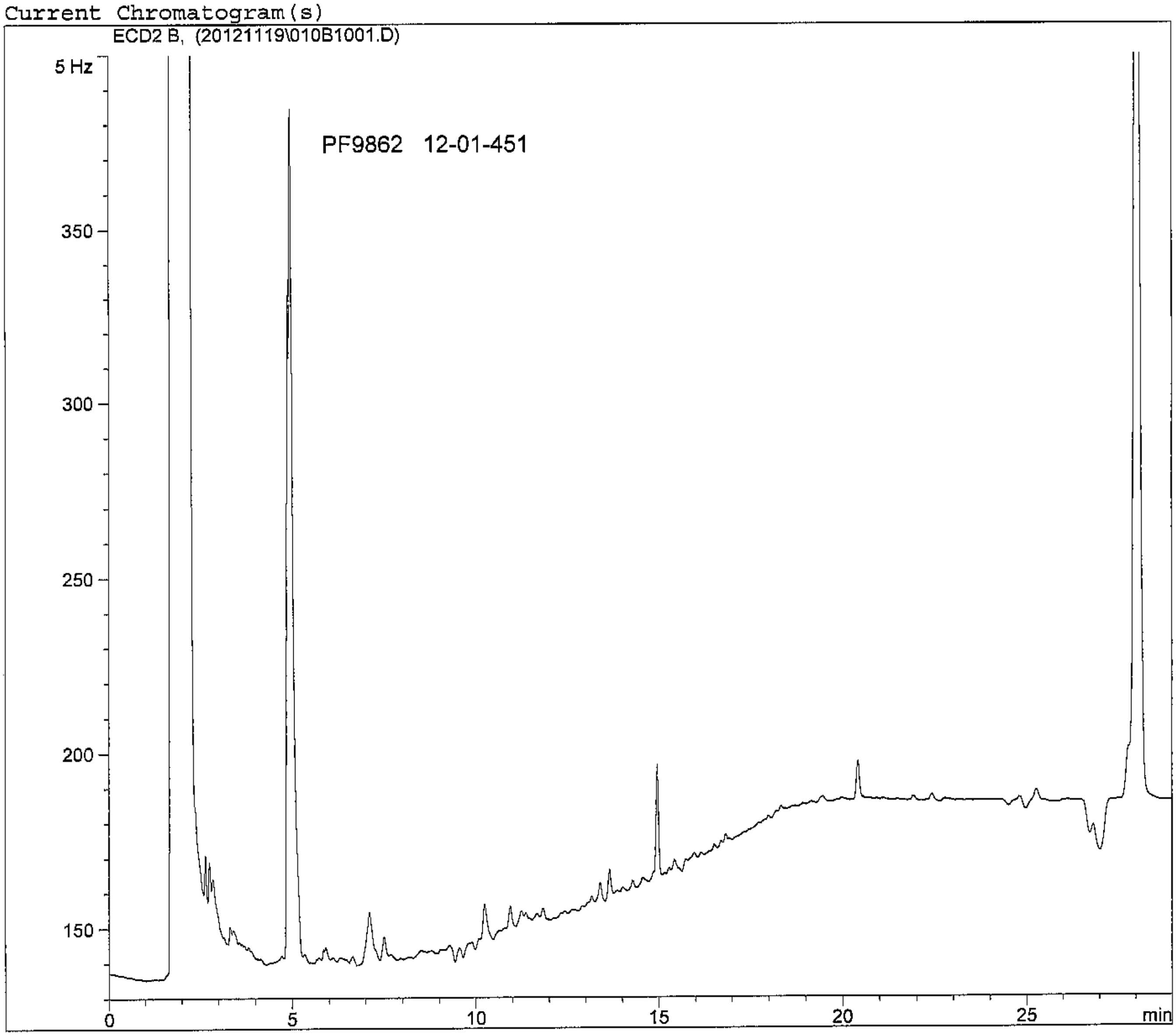

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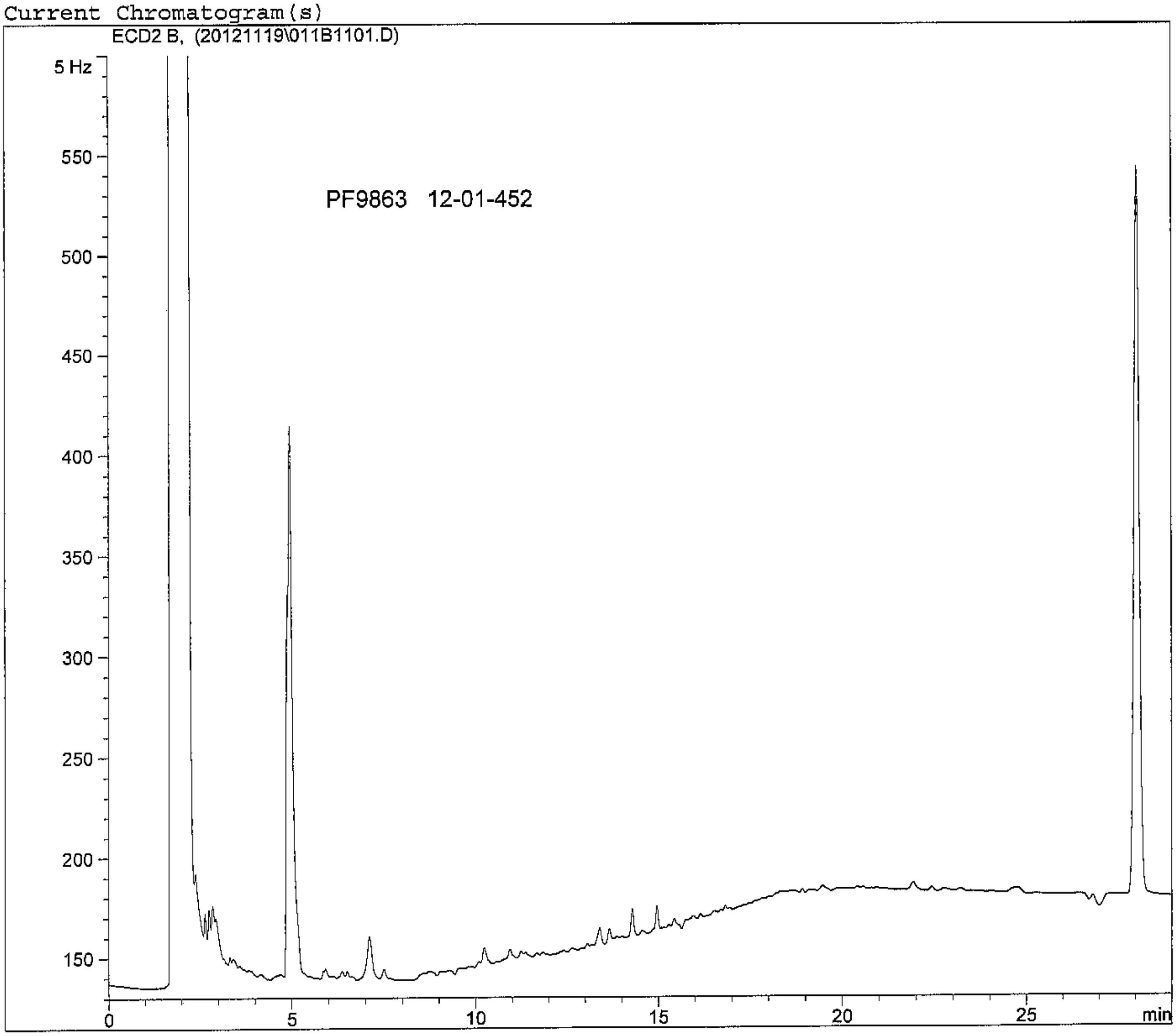

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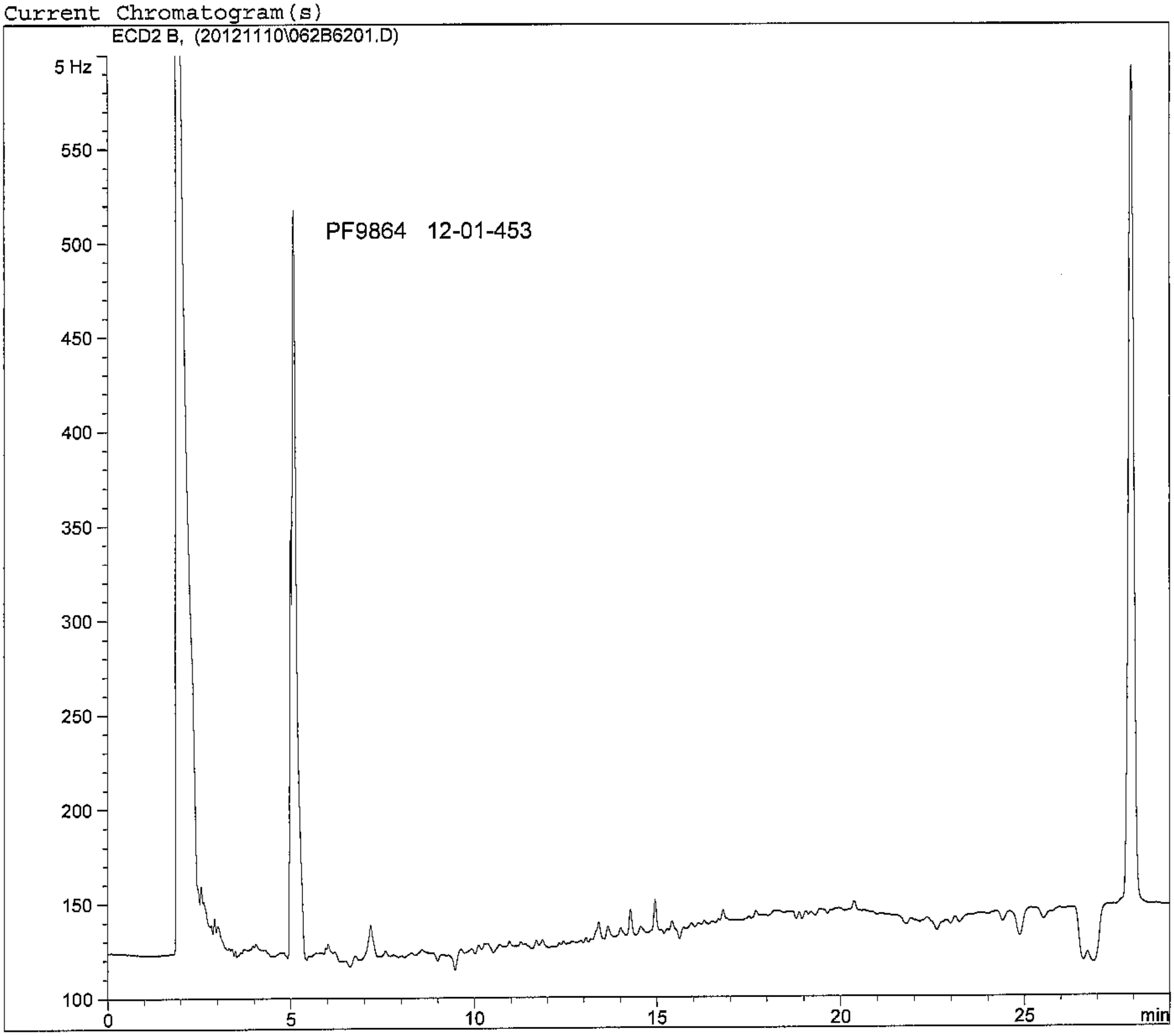

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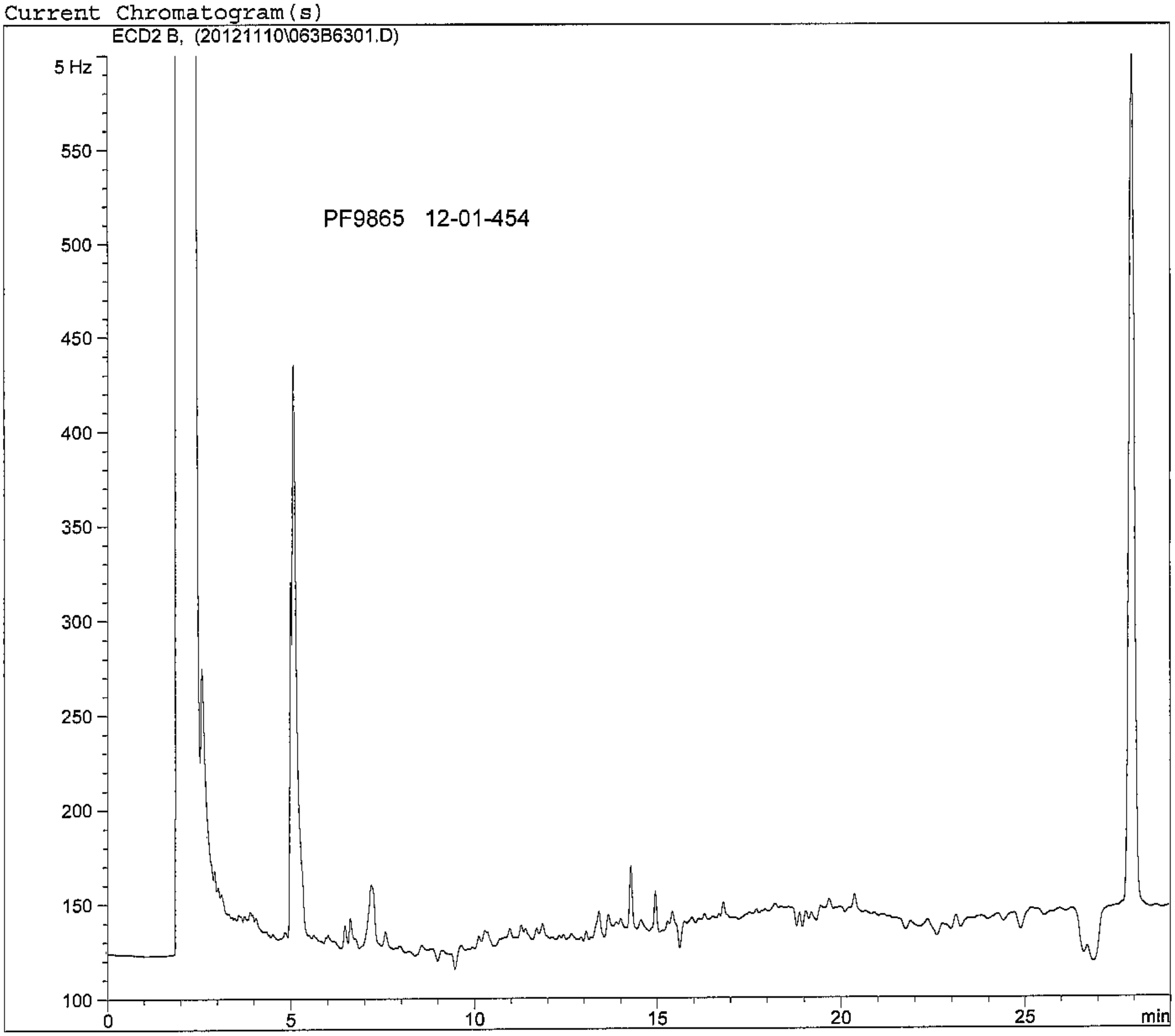

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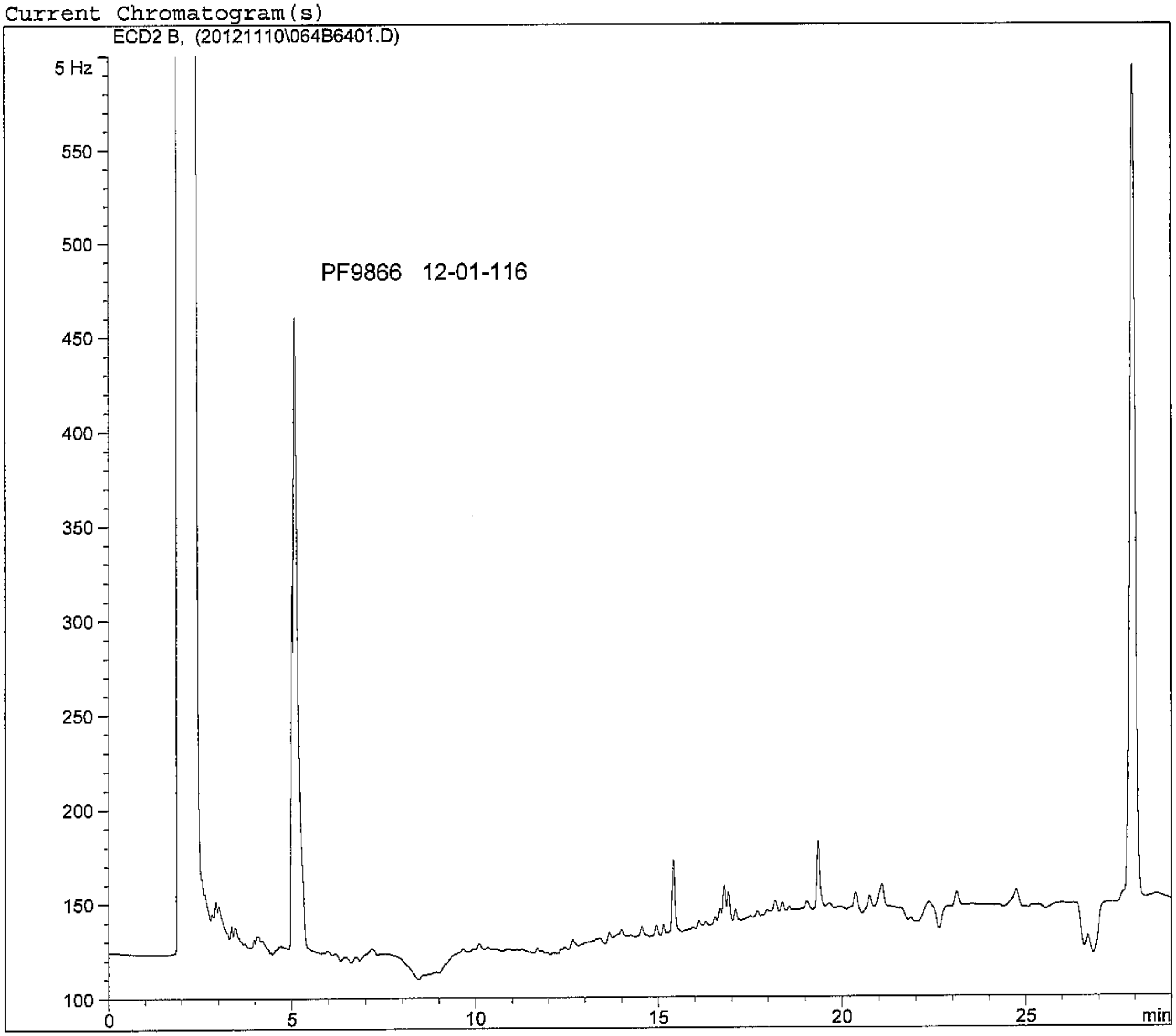

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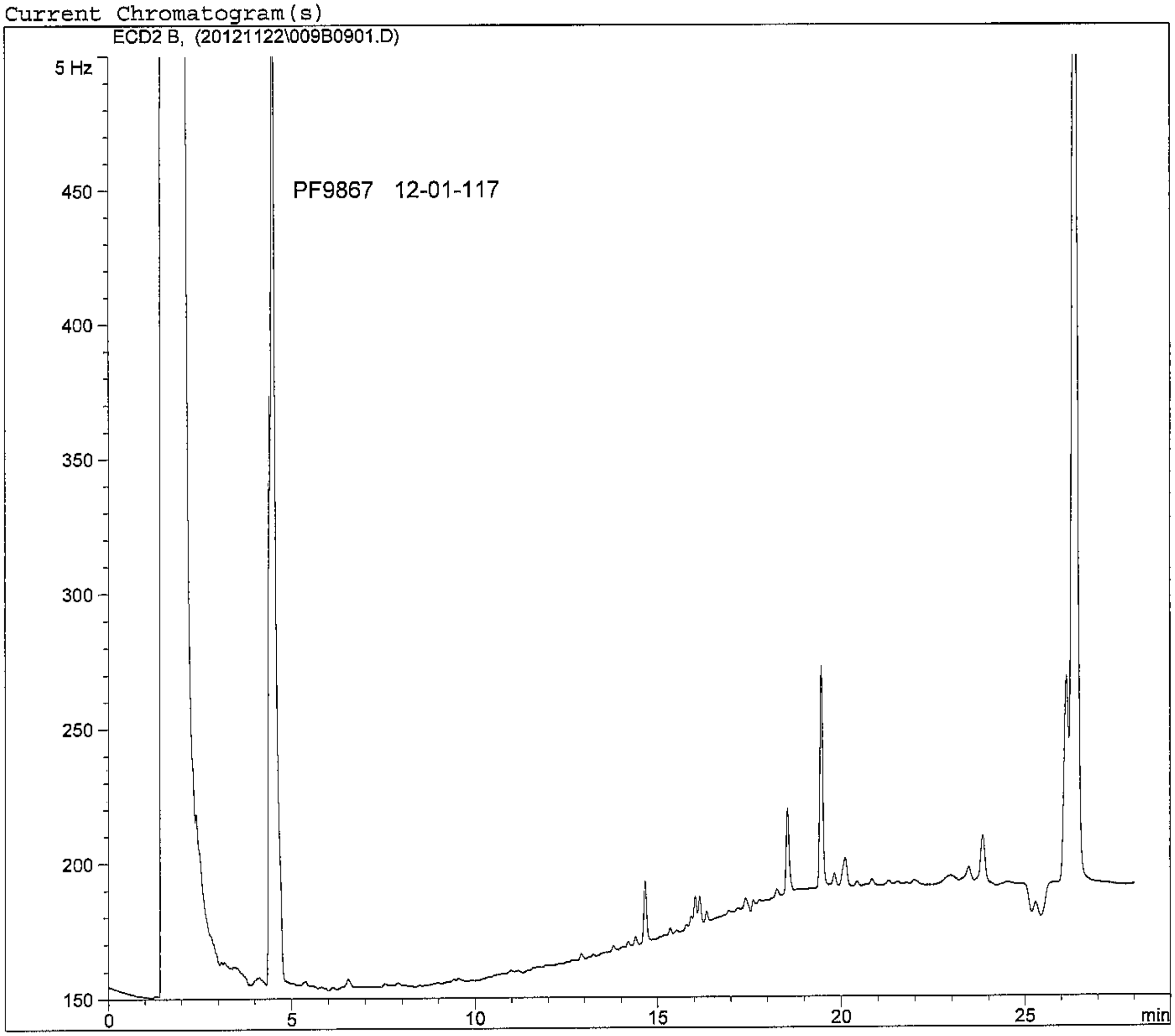

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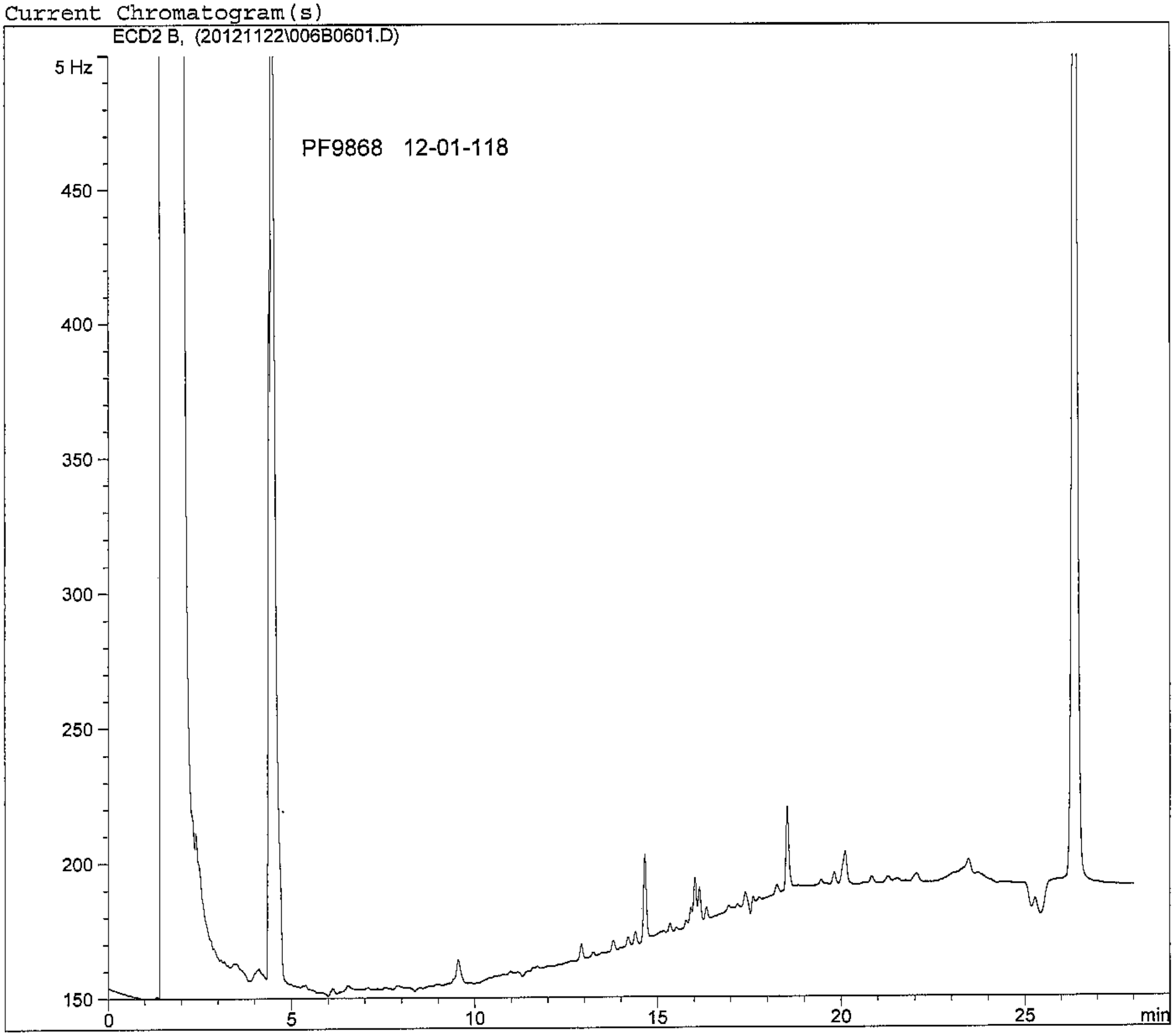

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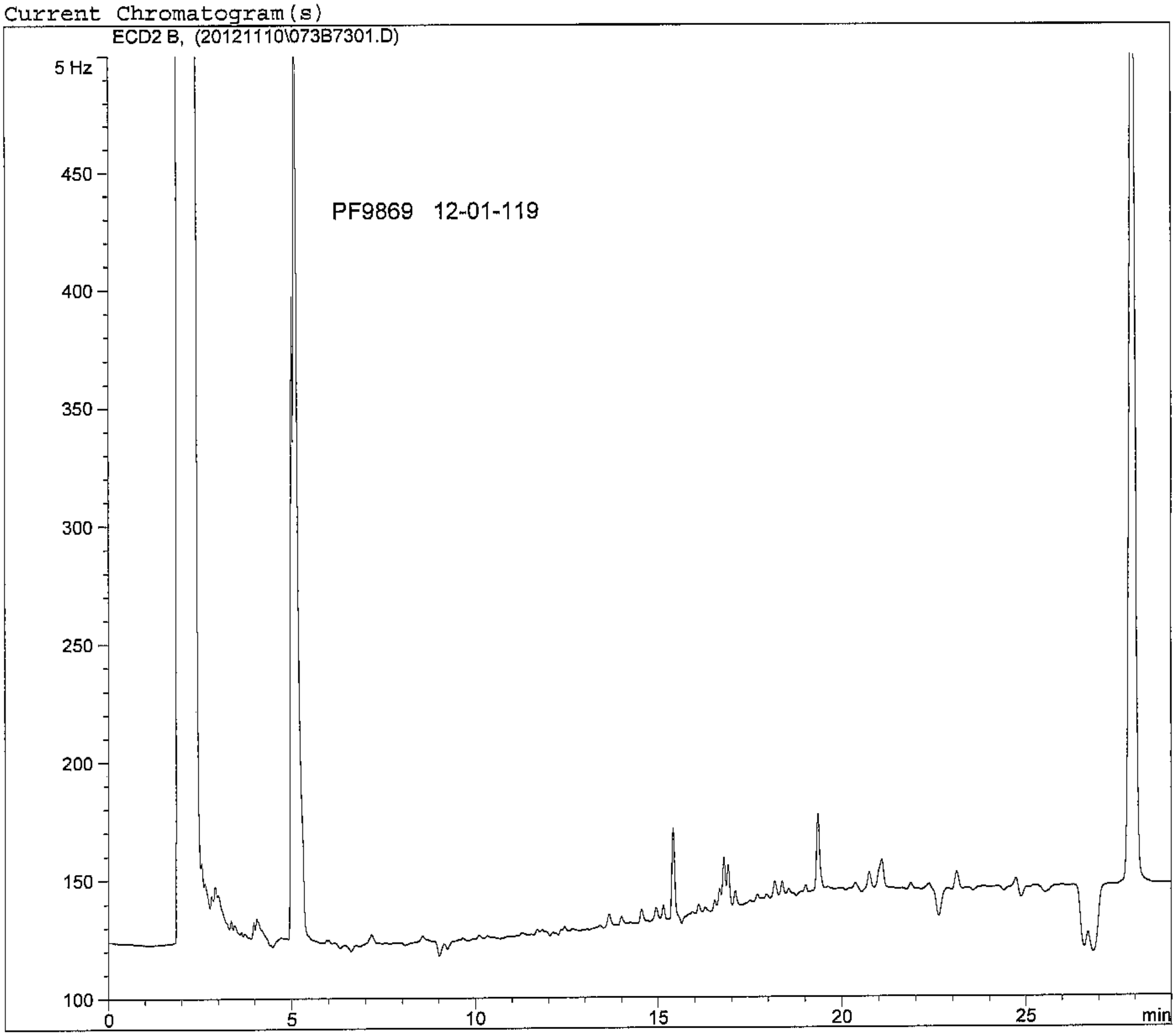

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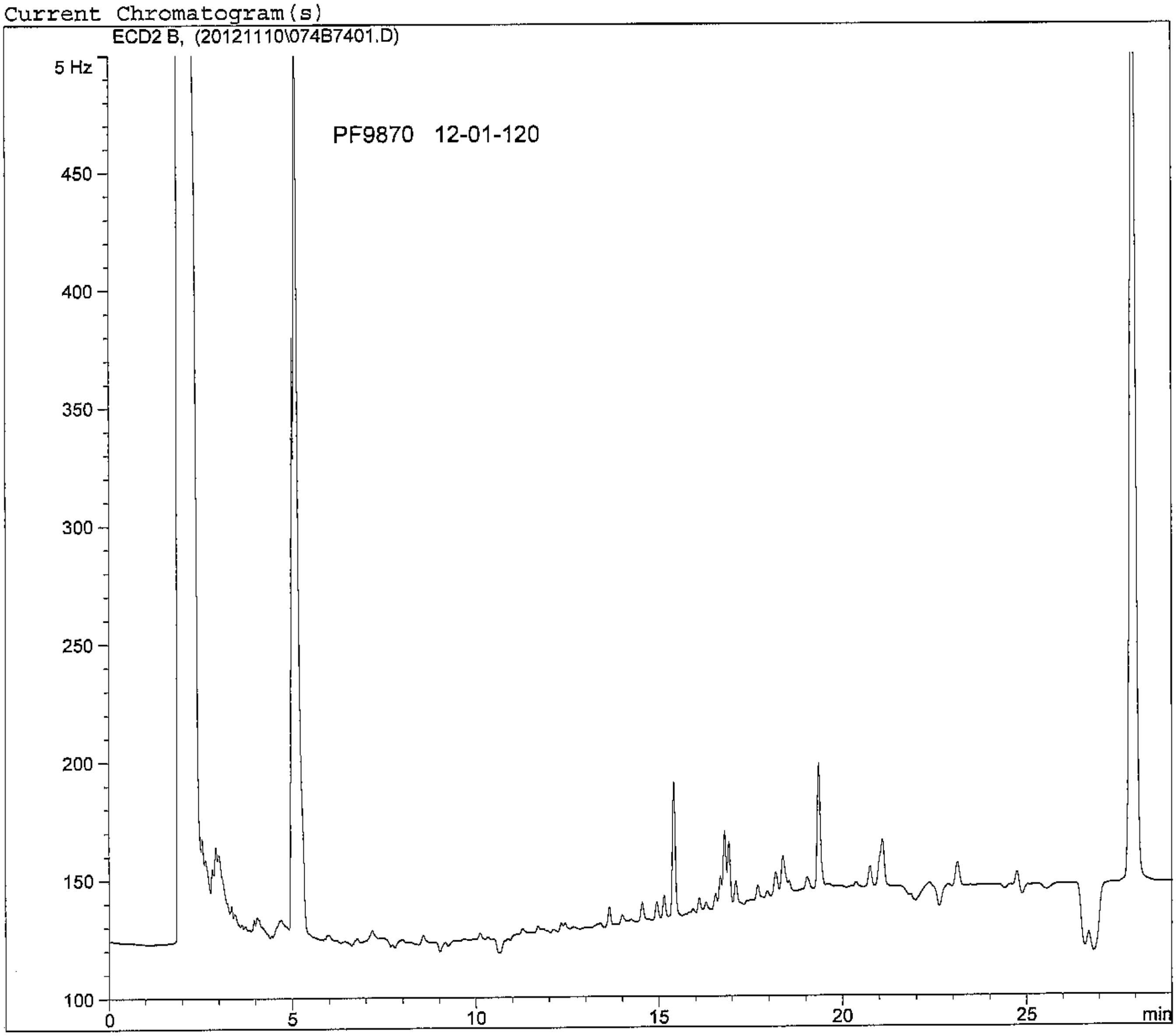

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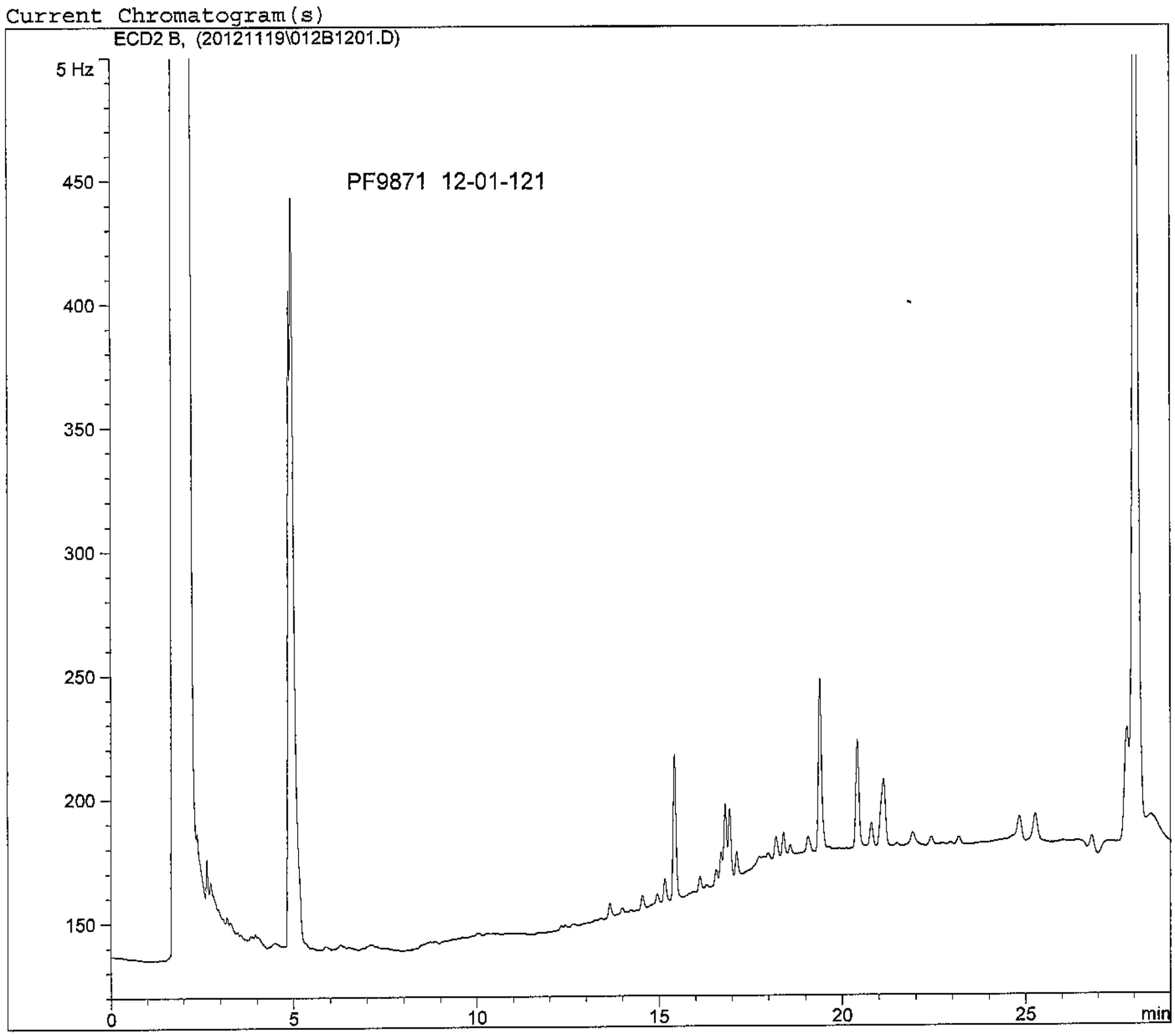

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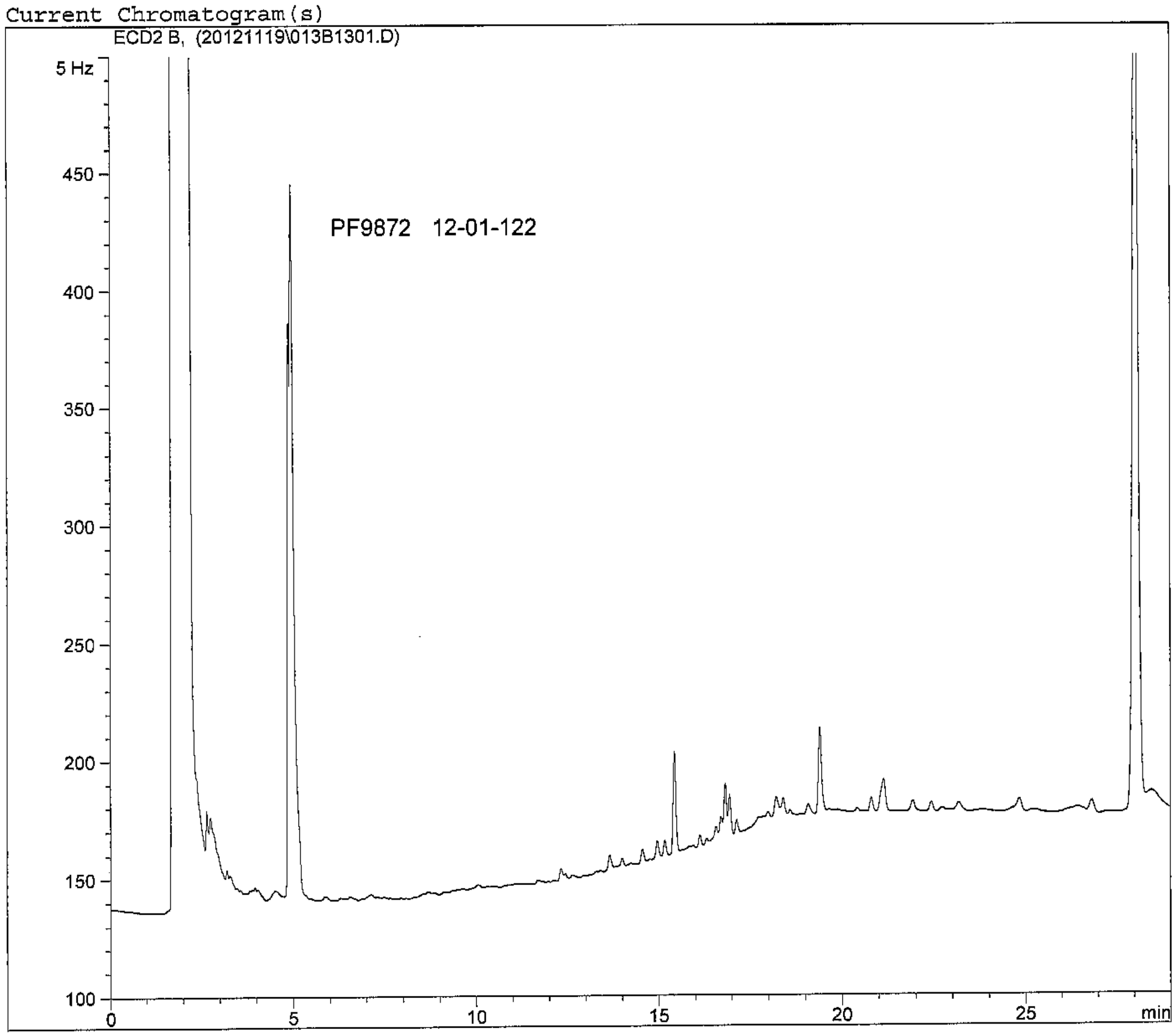

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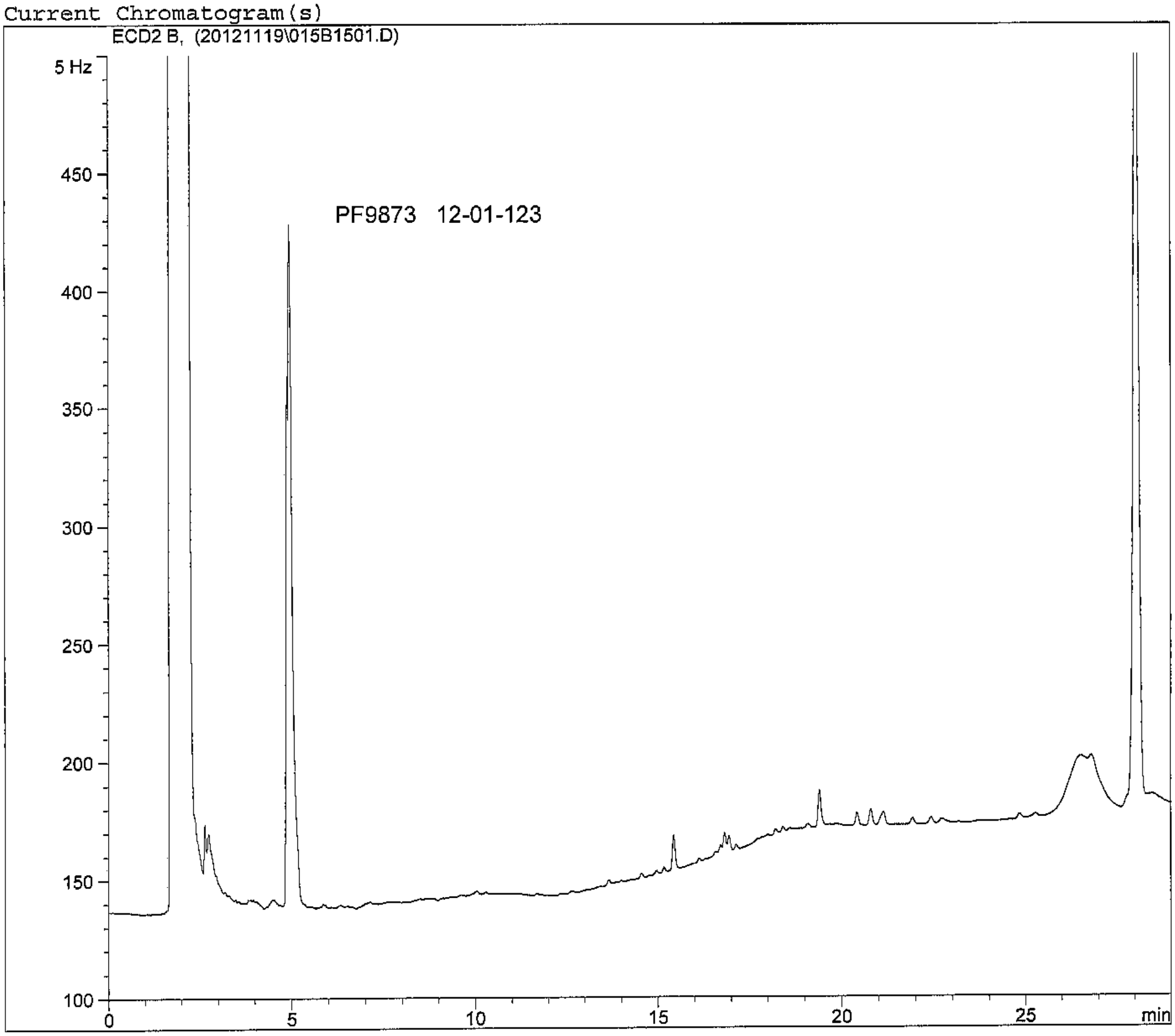

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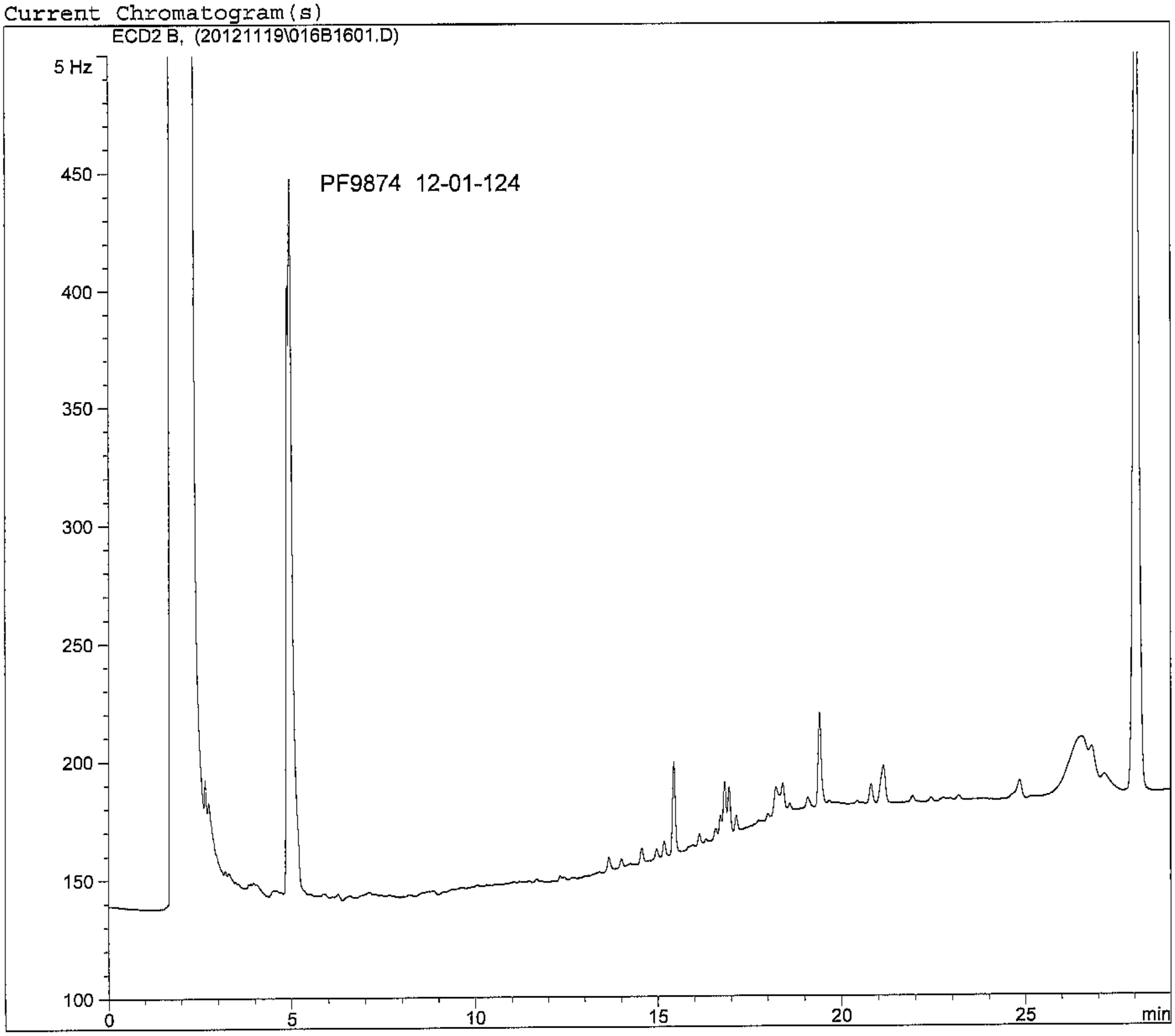

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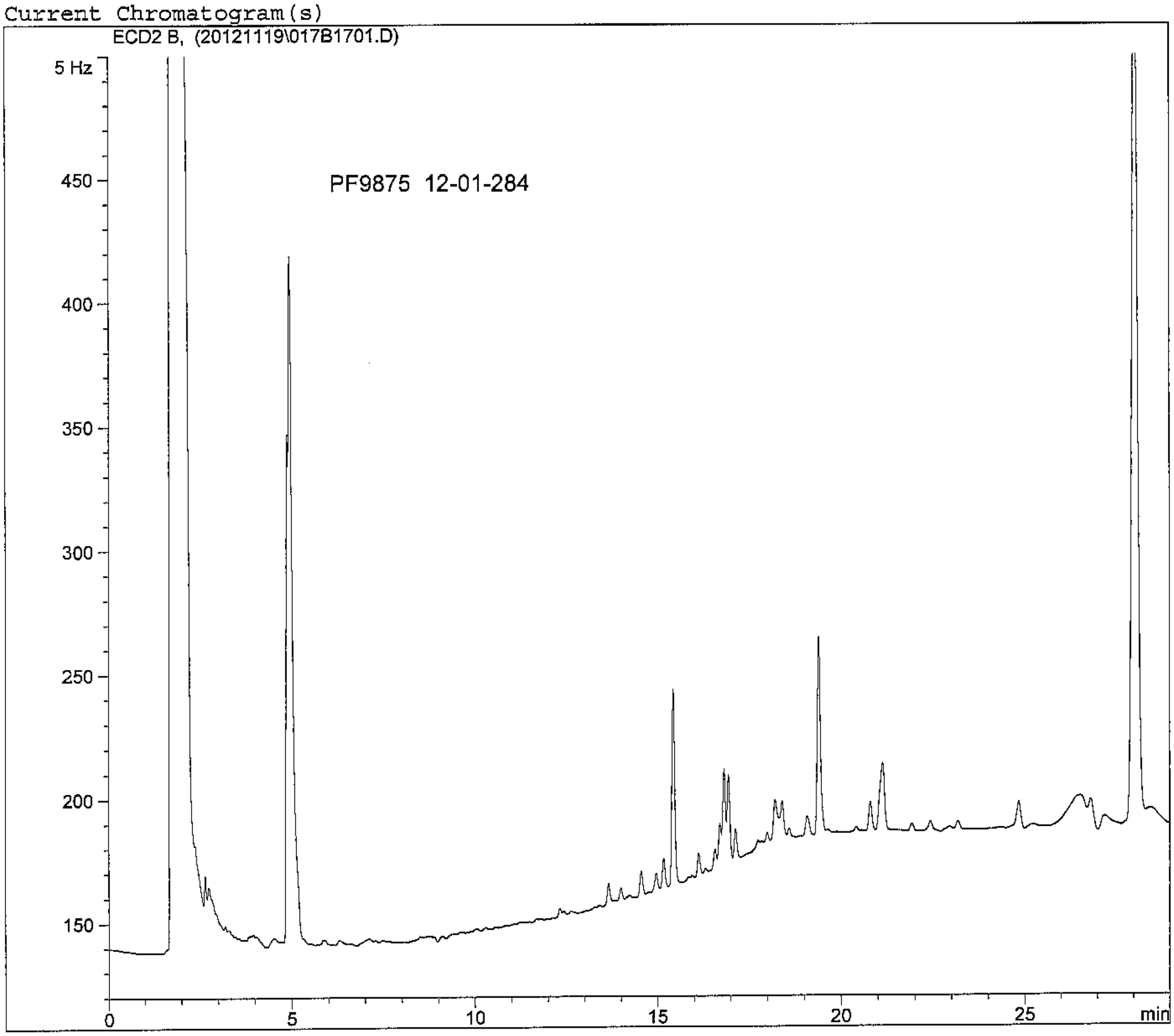

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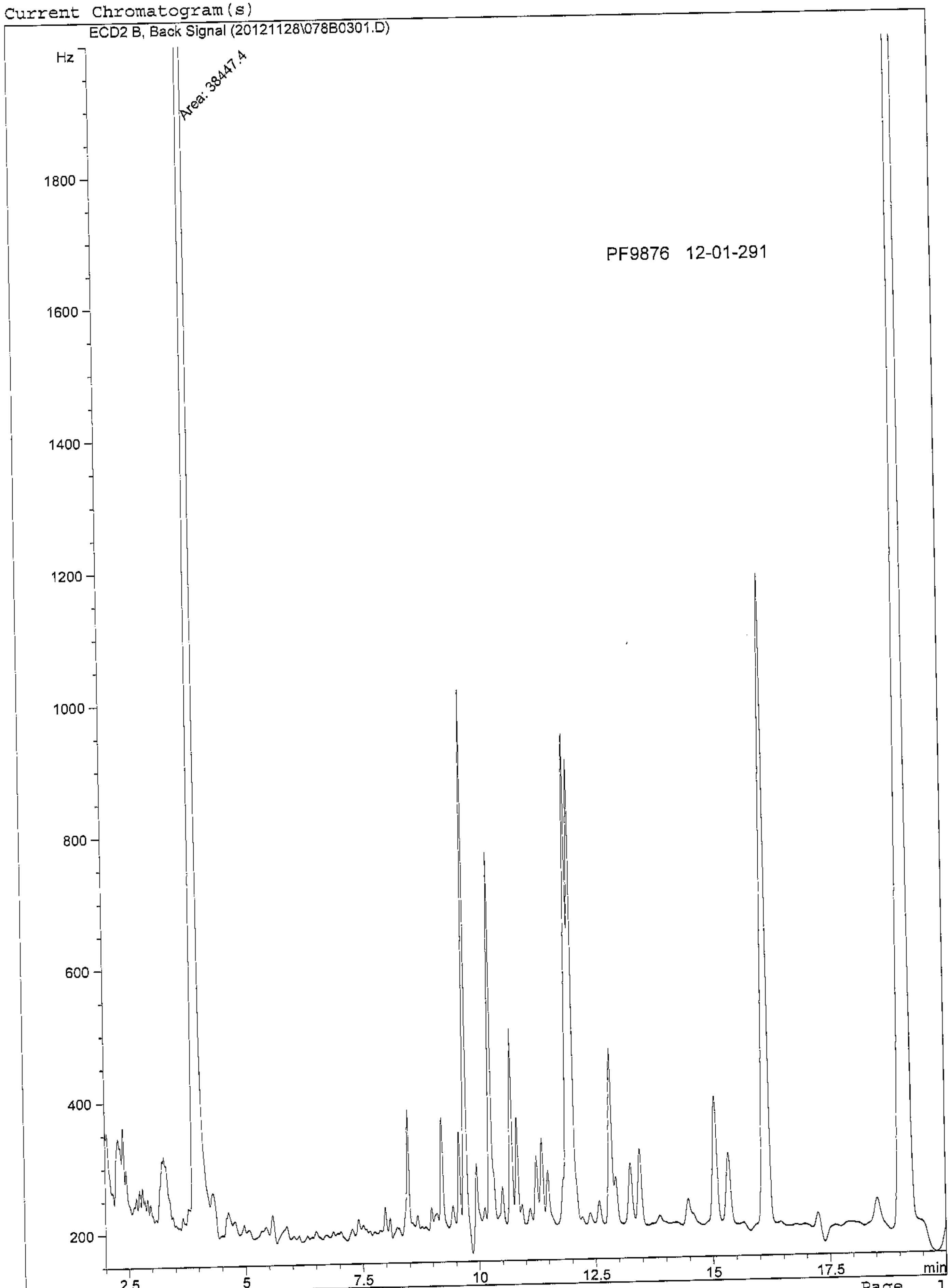

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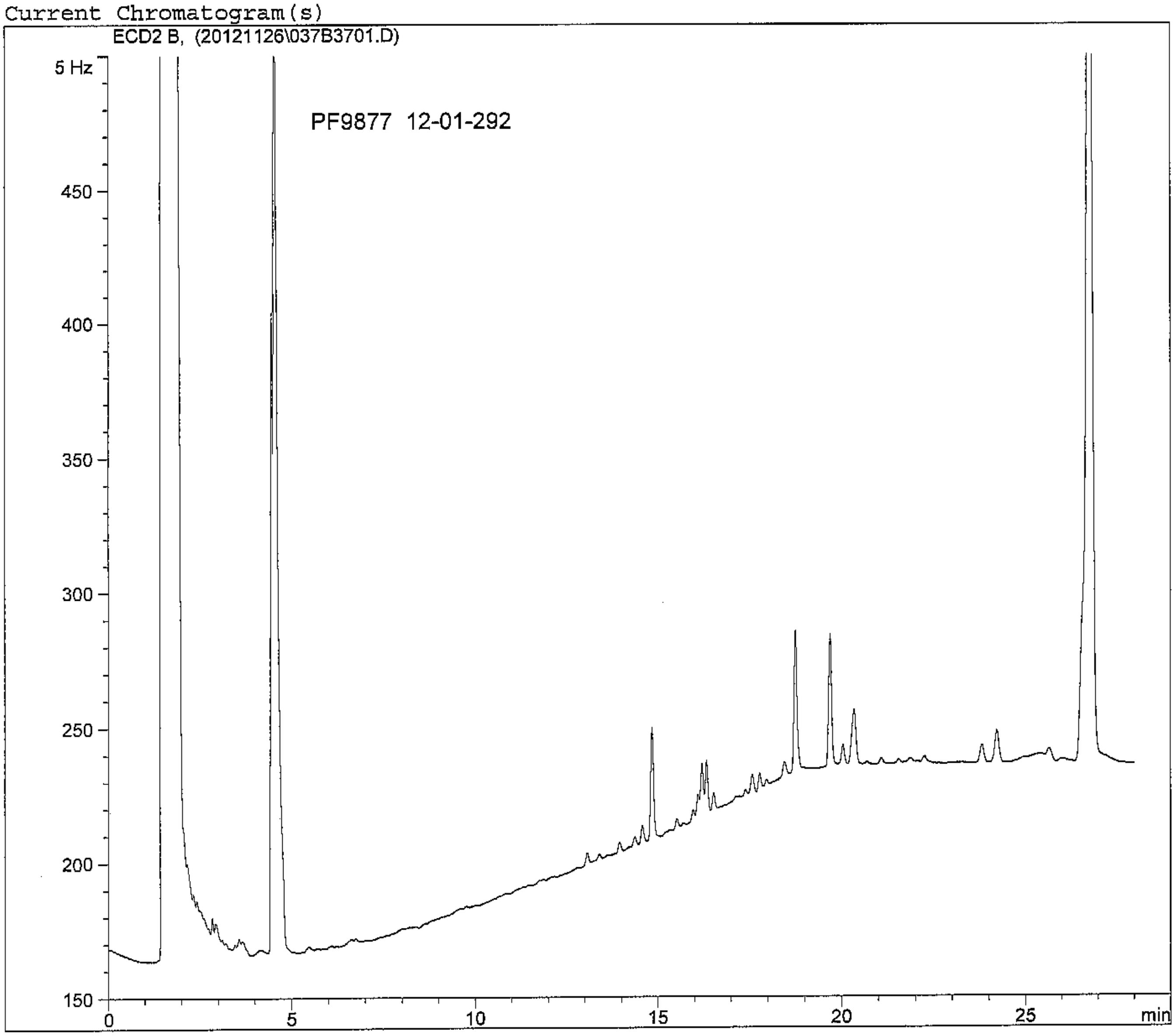
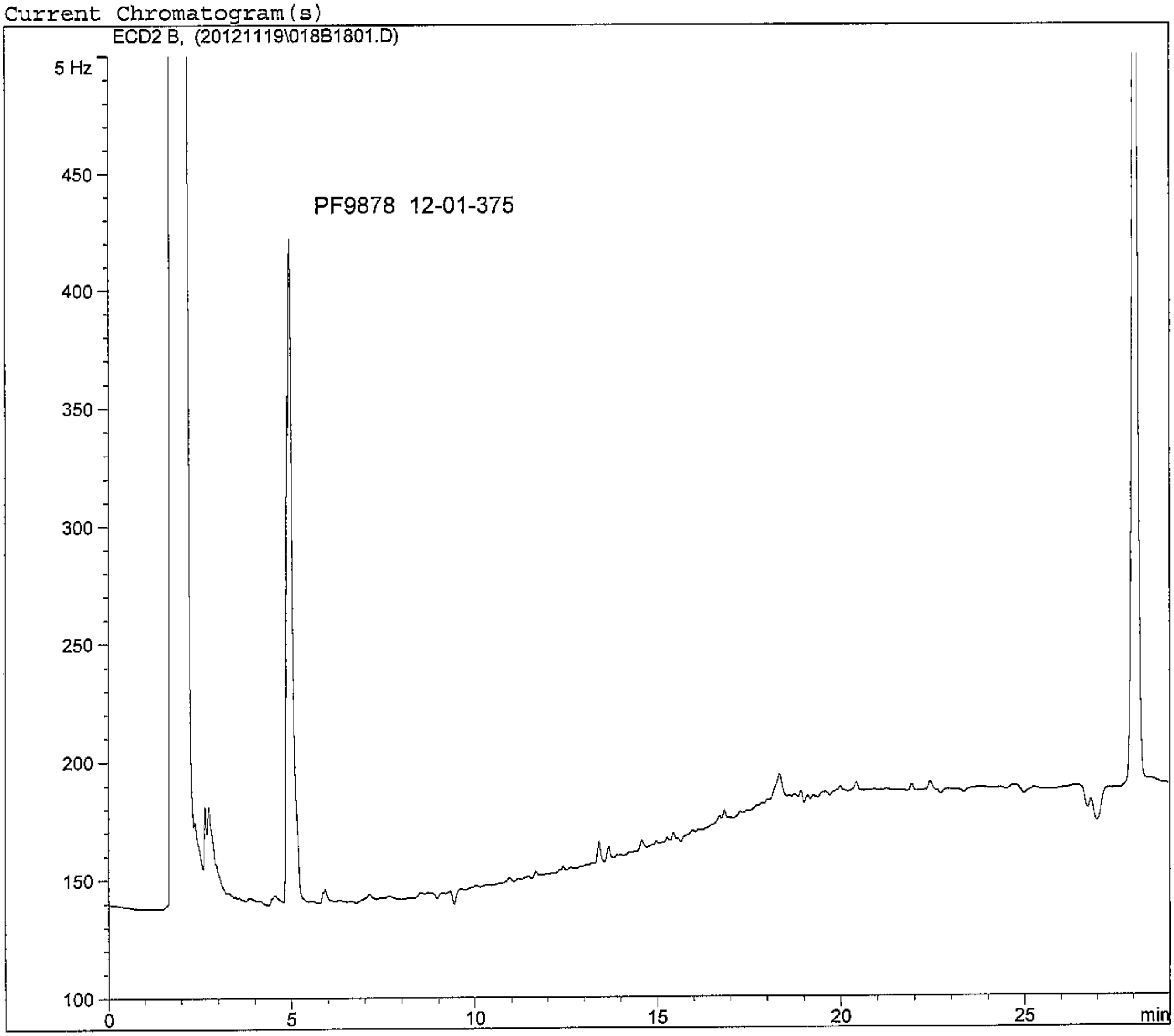
PCB003 2012/12/13 11:07:41 AM Kristy Joudrey

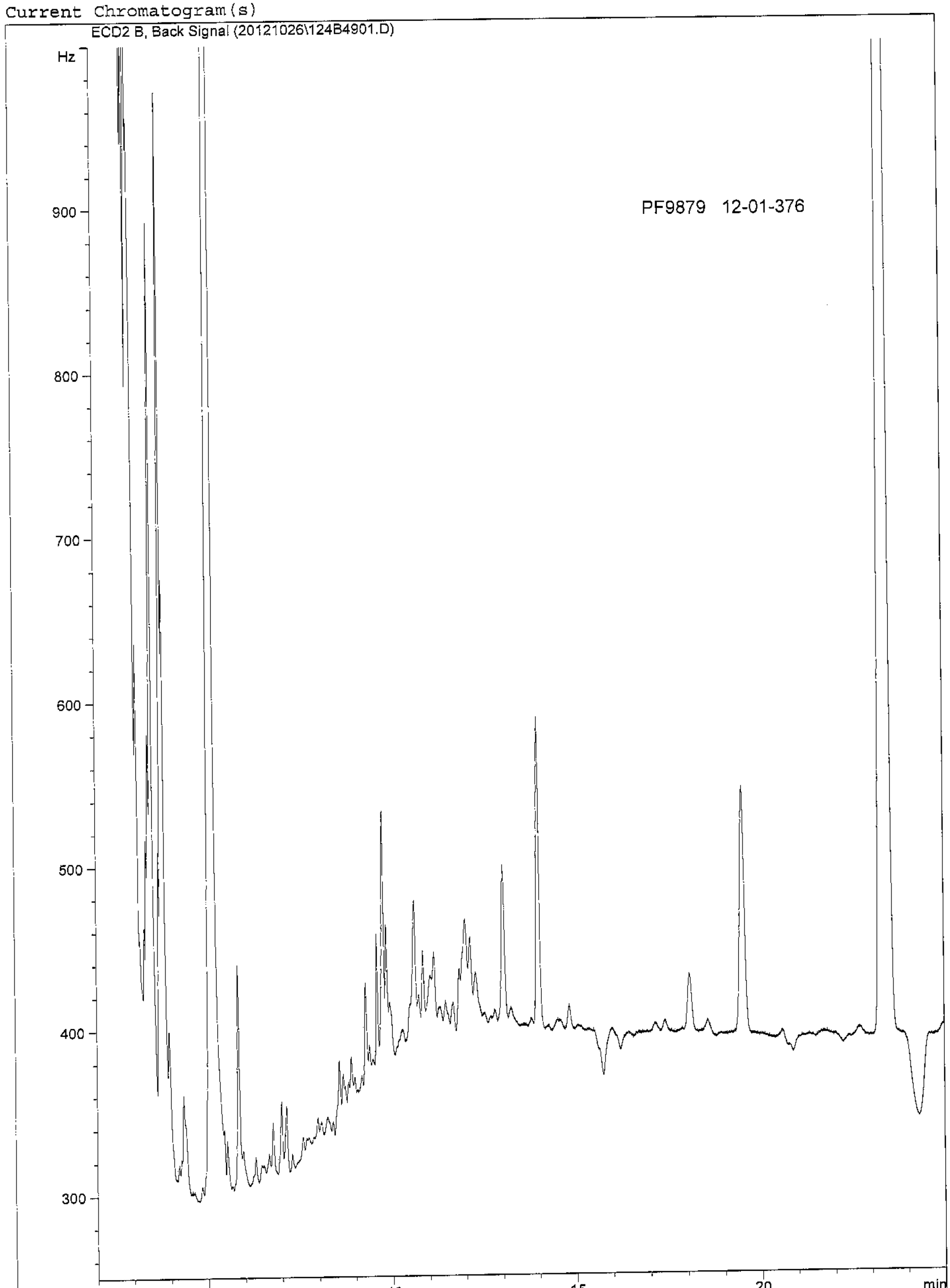
Current Chromatogram(s)



Current Chromatogram(s)



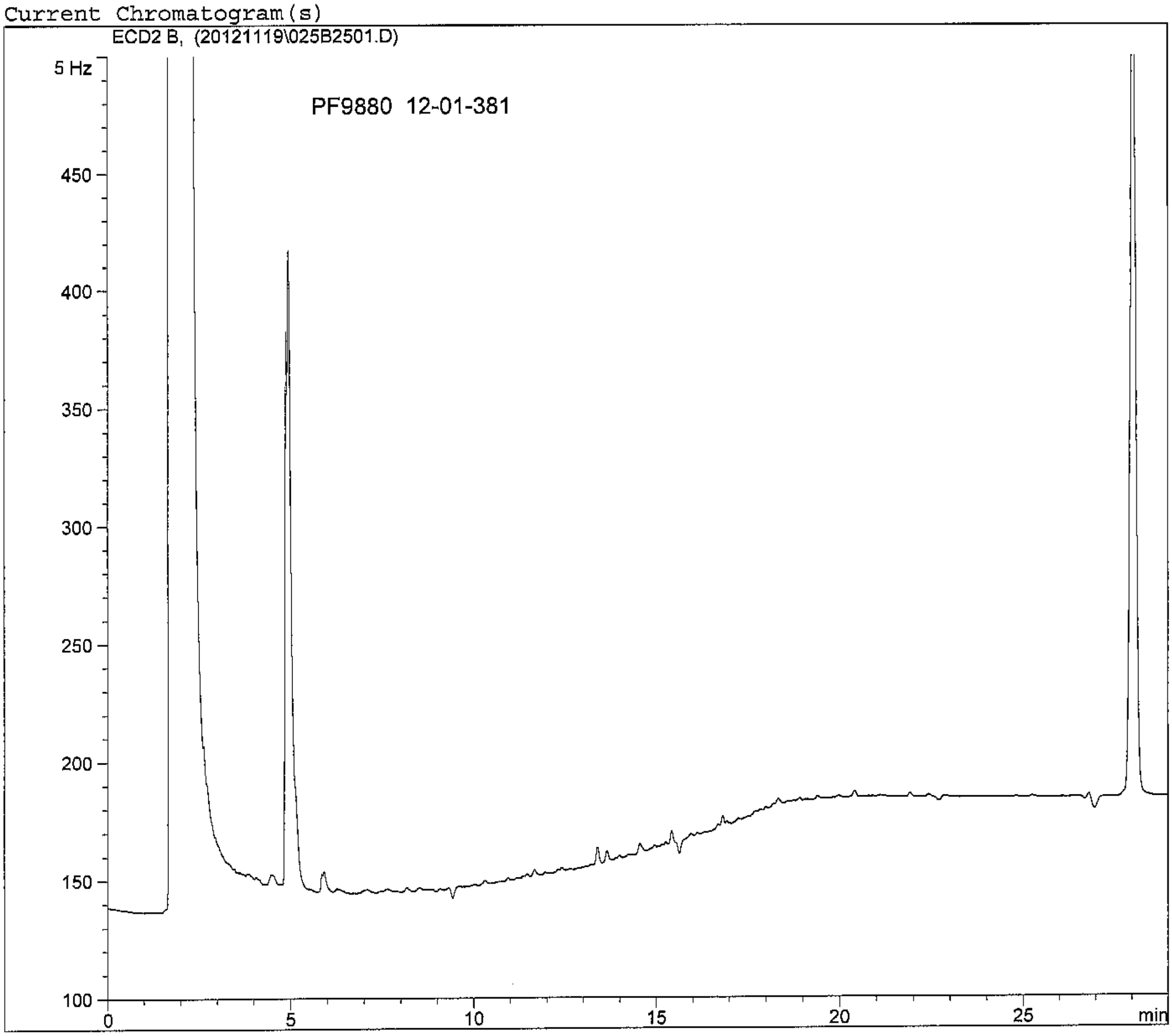
Print of window 38: Current Chromatogram(s)



PCB003 2012/12/13 11:08:33 AM Kristy Joudrey

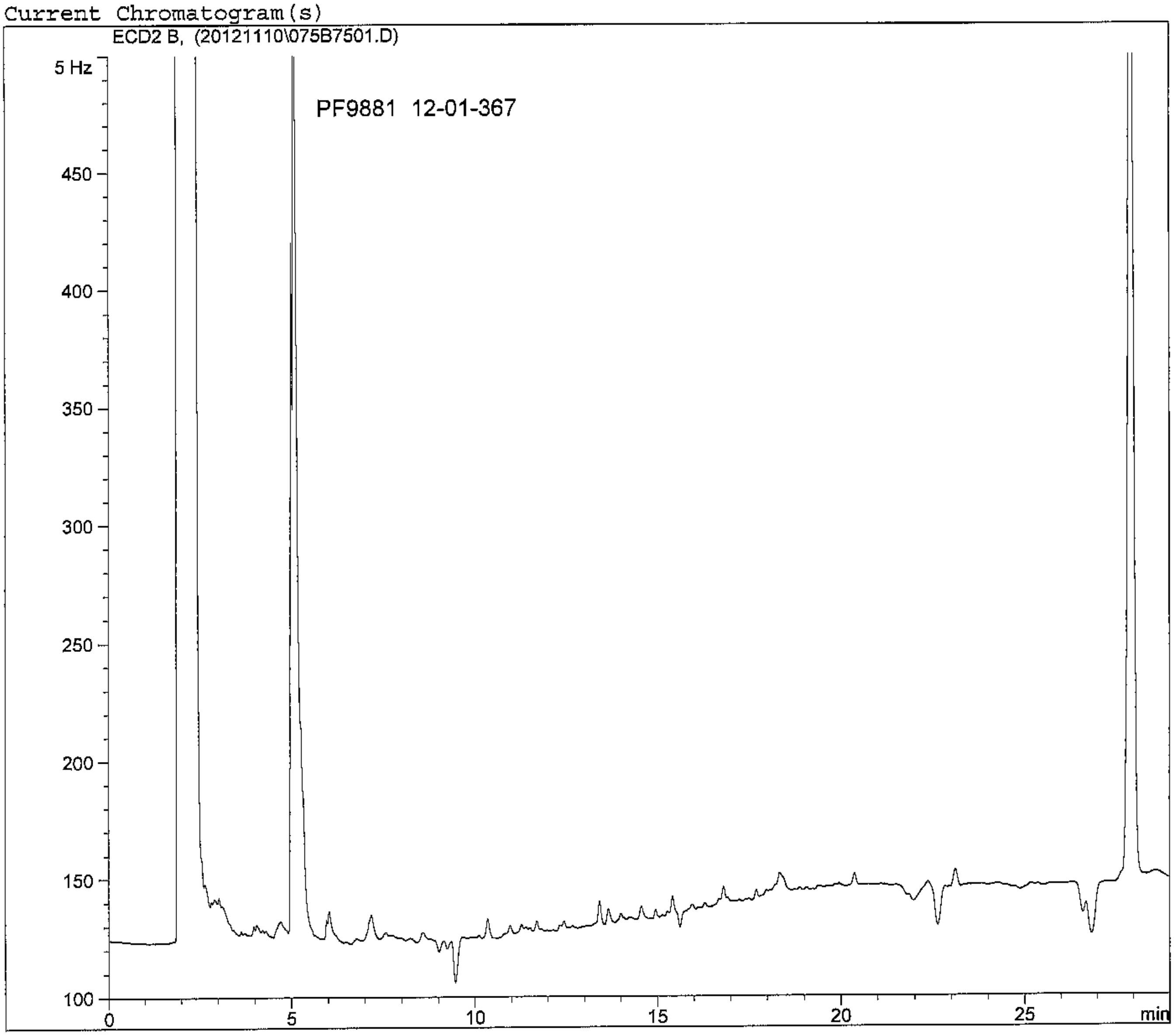
Print of all graphic windows

Current Chromatogram(s)

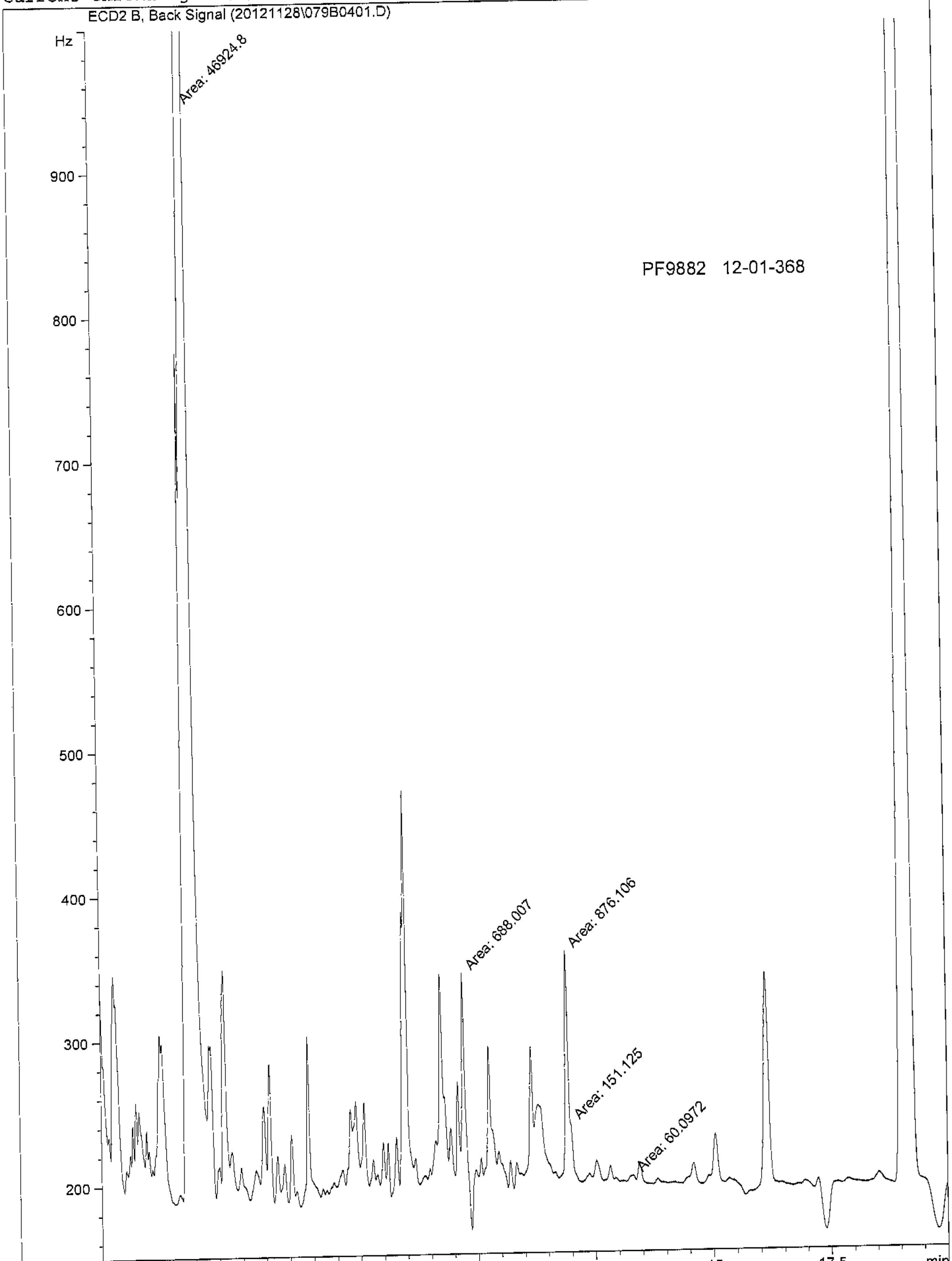


Print of all graphic windows

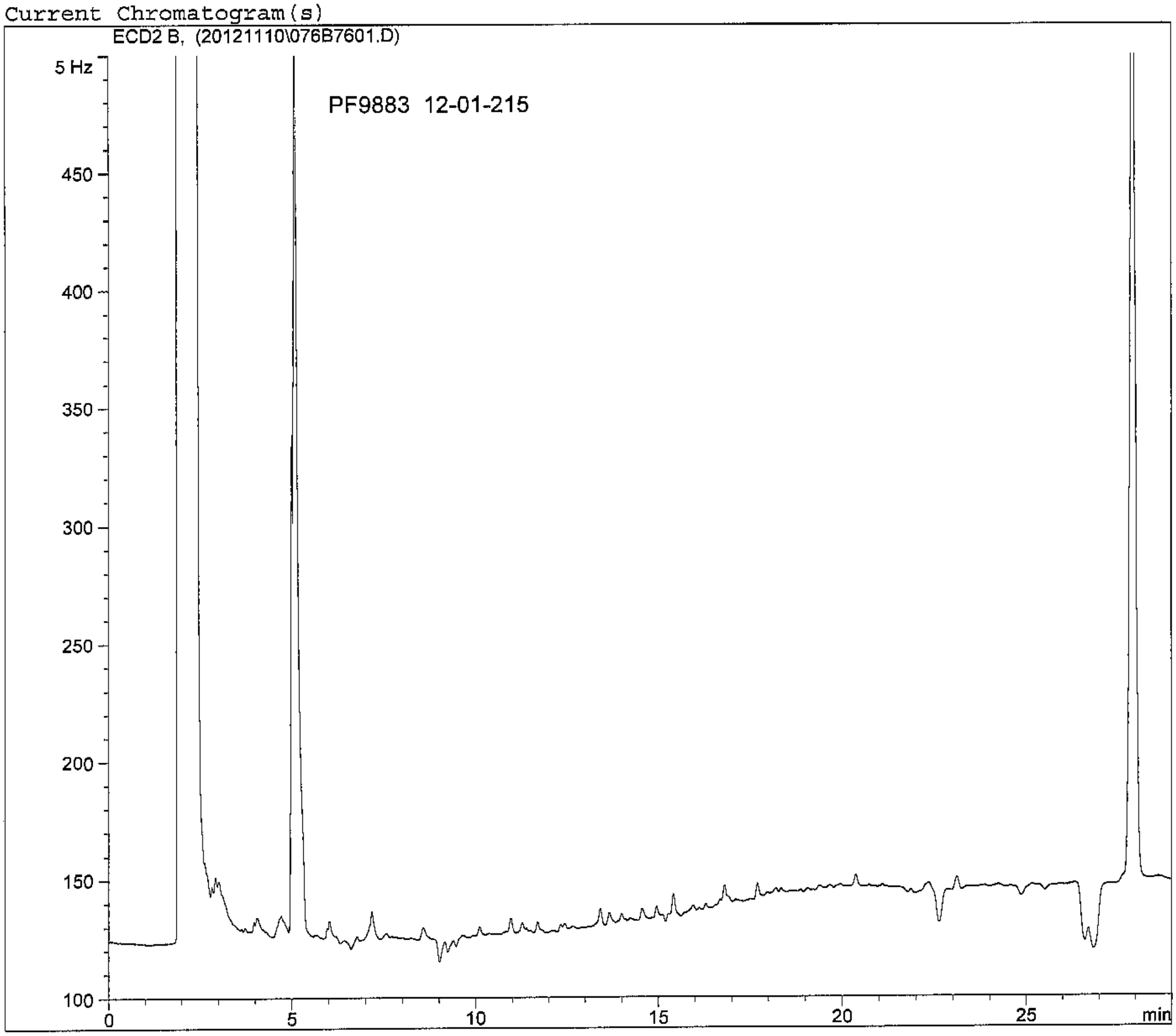
Current Chromatogram(s)



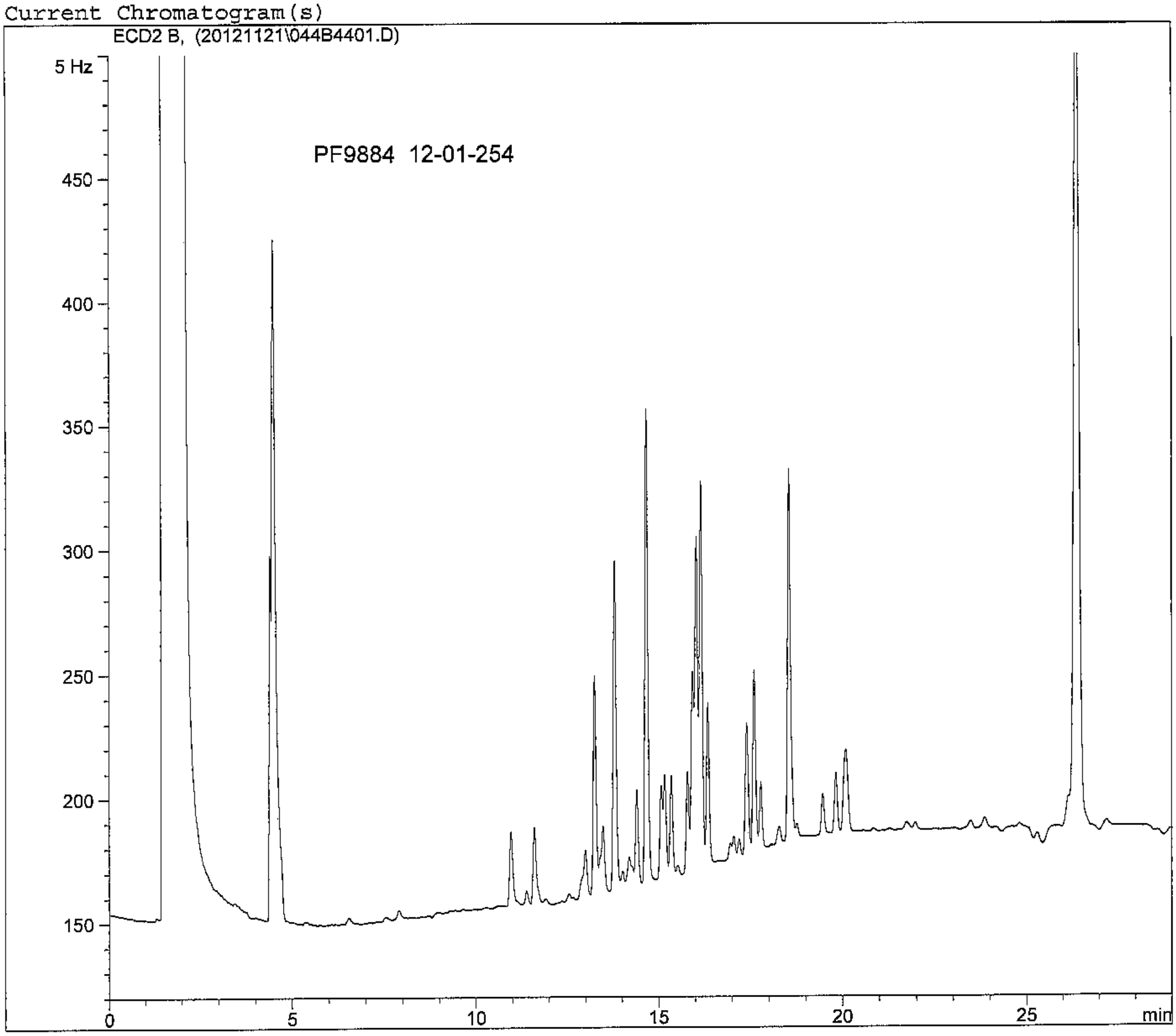
Current Chromatogram(s)



Current Chromatogram(s)

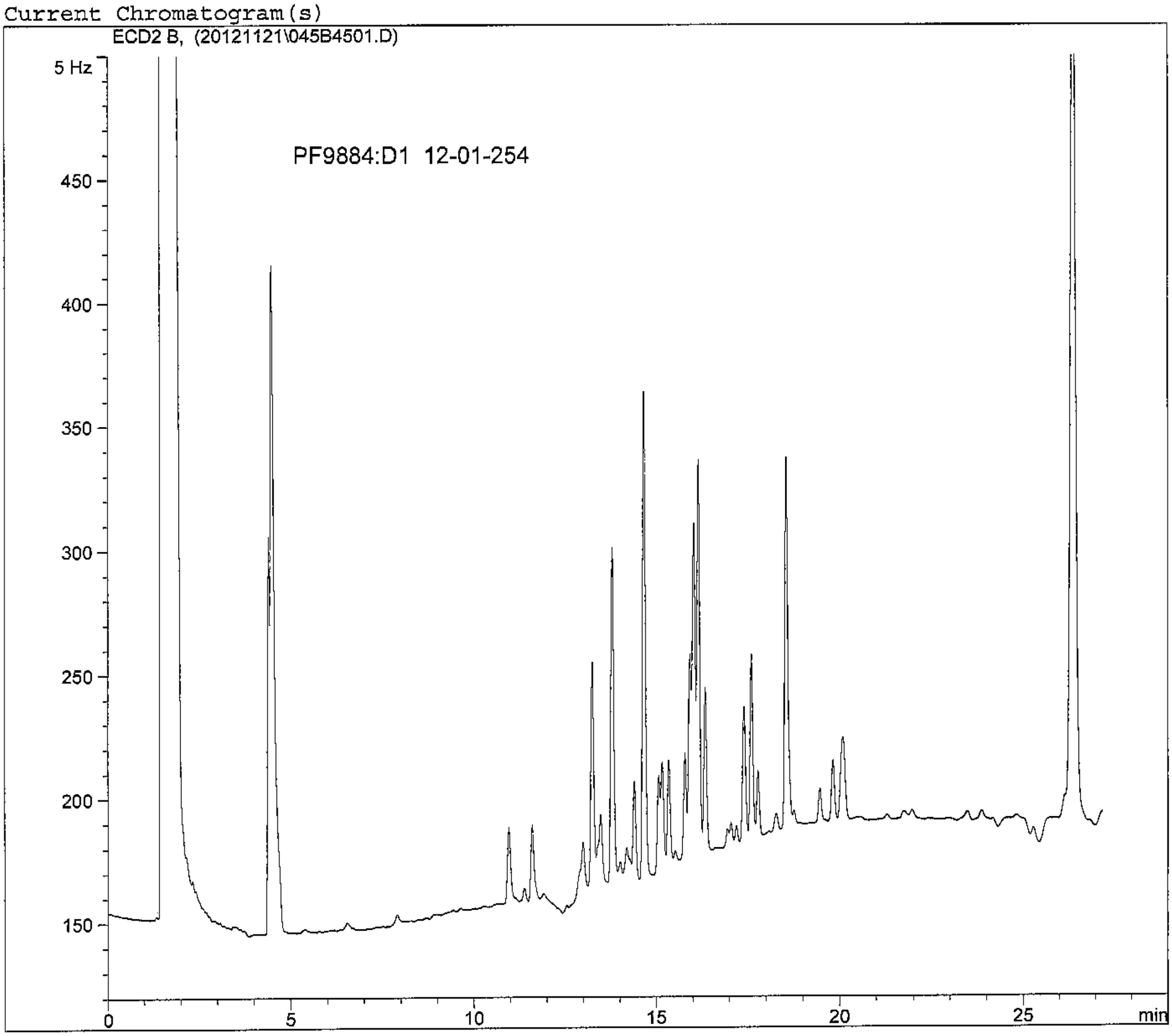


Current Chromatogram(s)



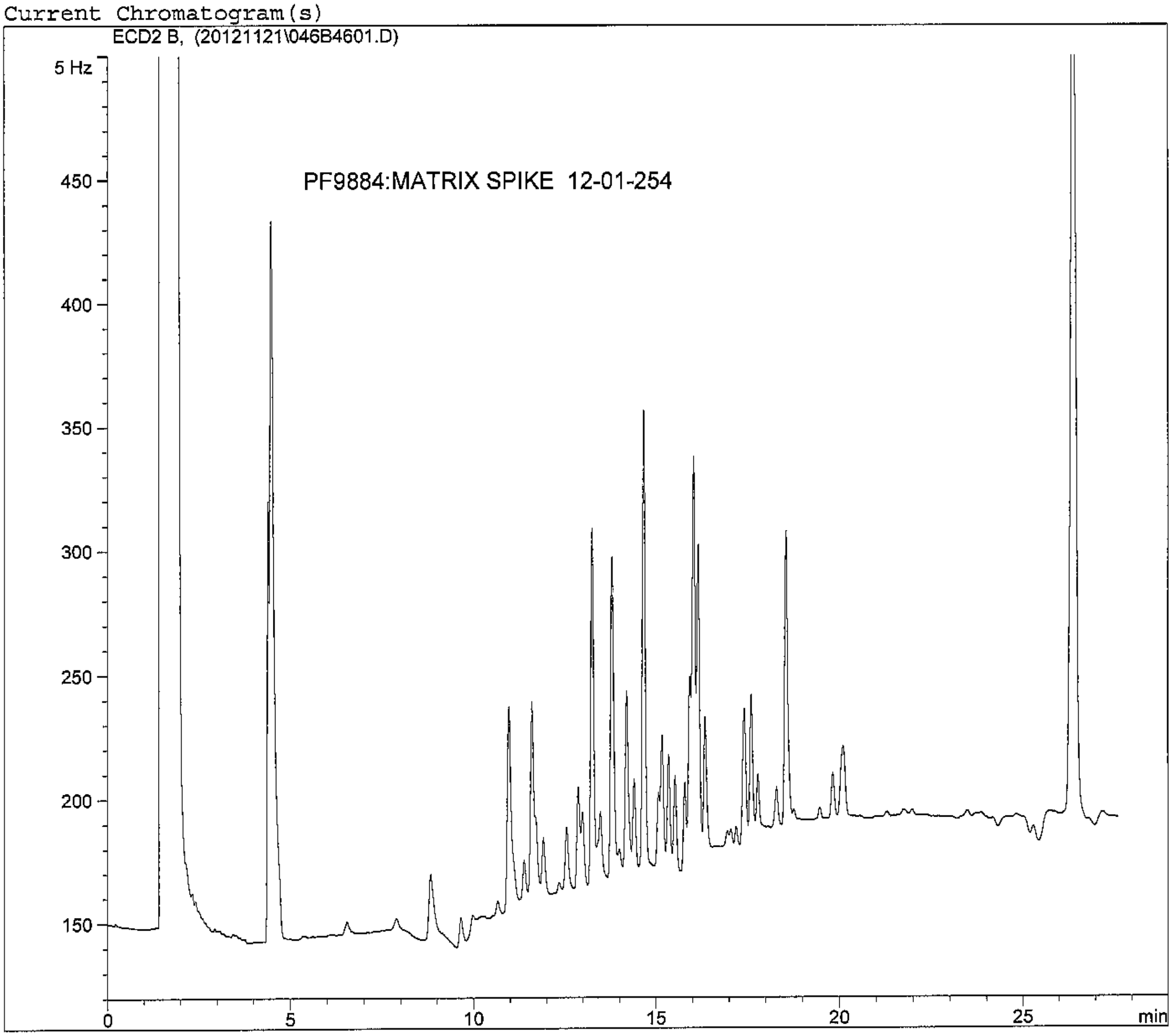
Print of all graphic windows

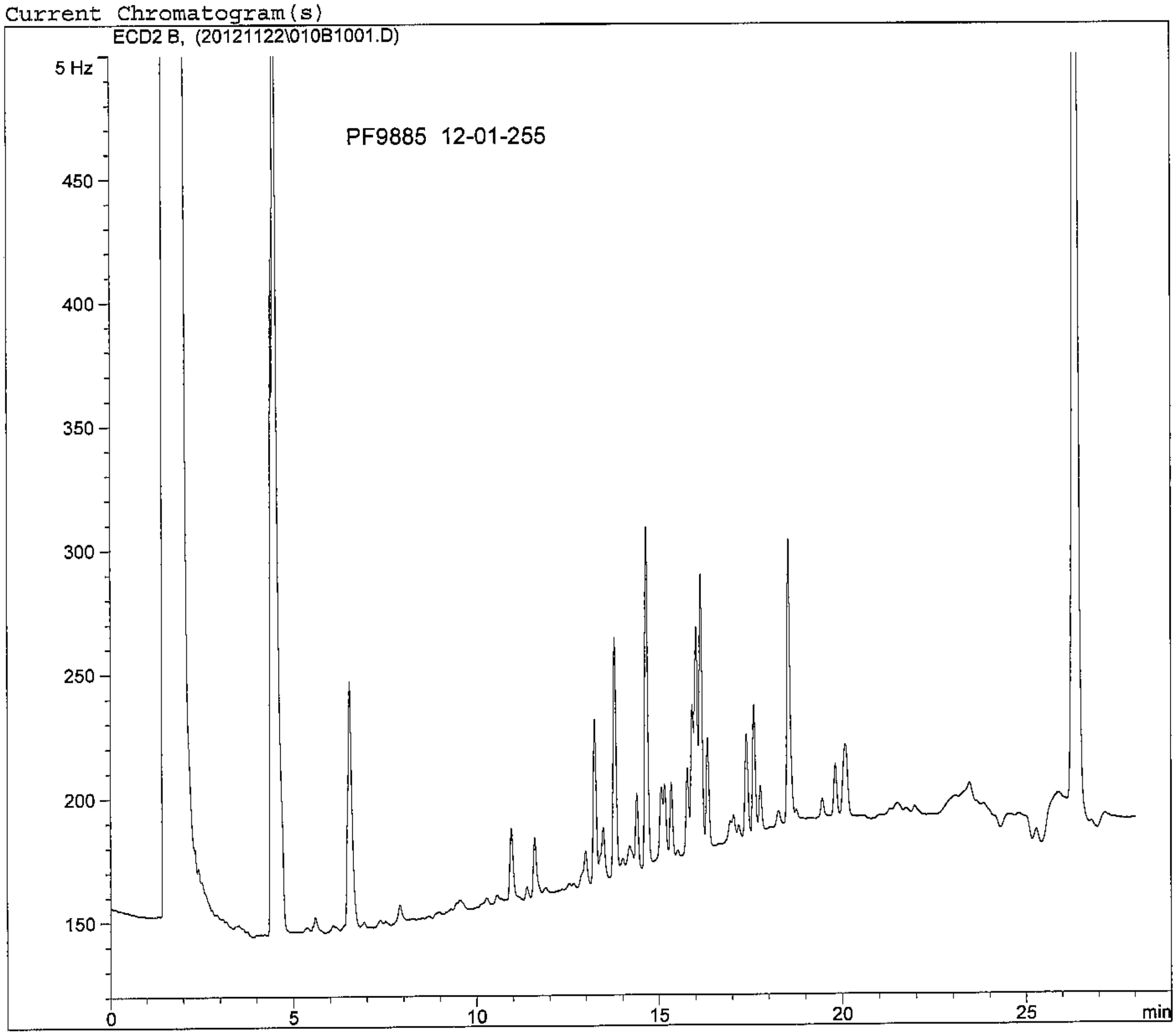
Current Chromatogram(s)



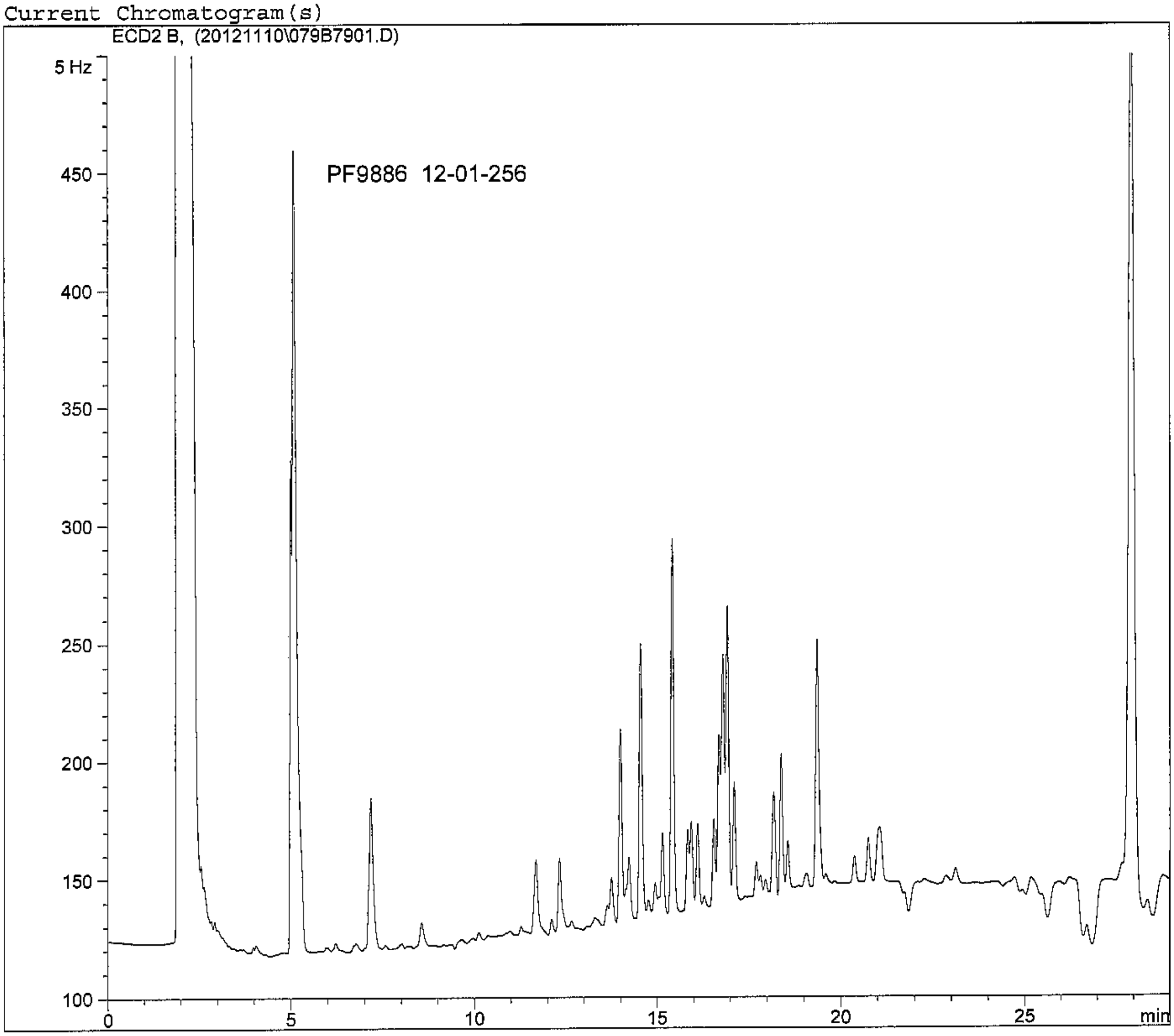
Print of all graphic windows

Current Chromatogram(s)

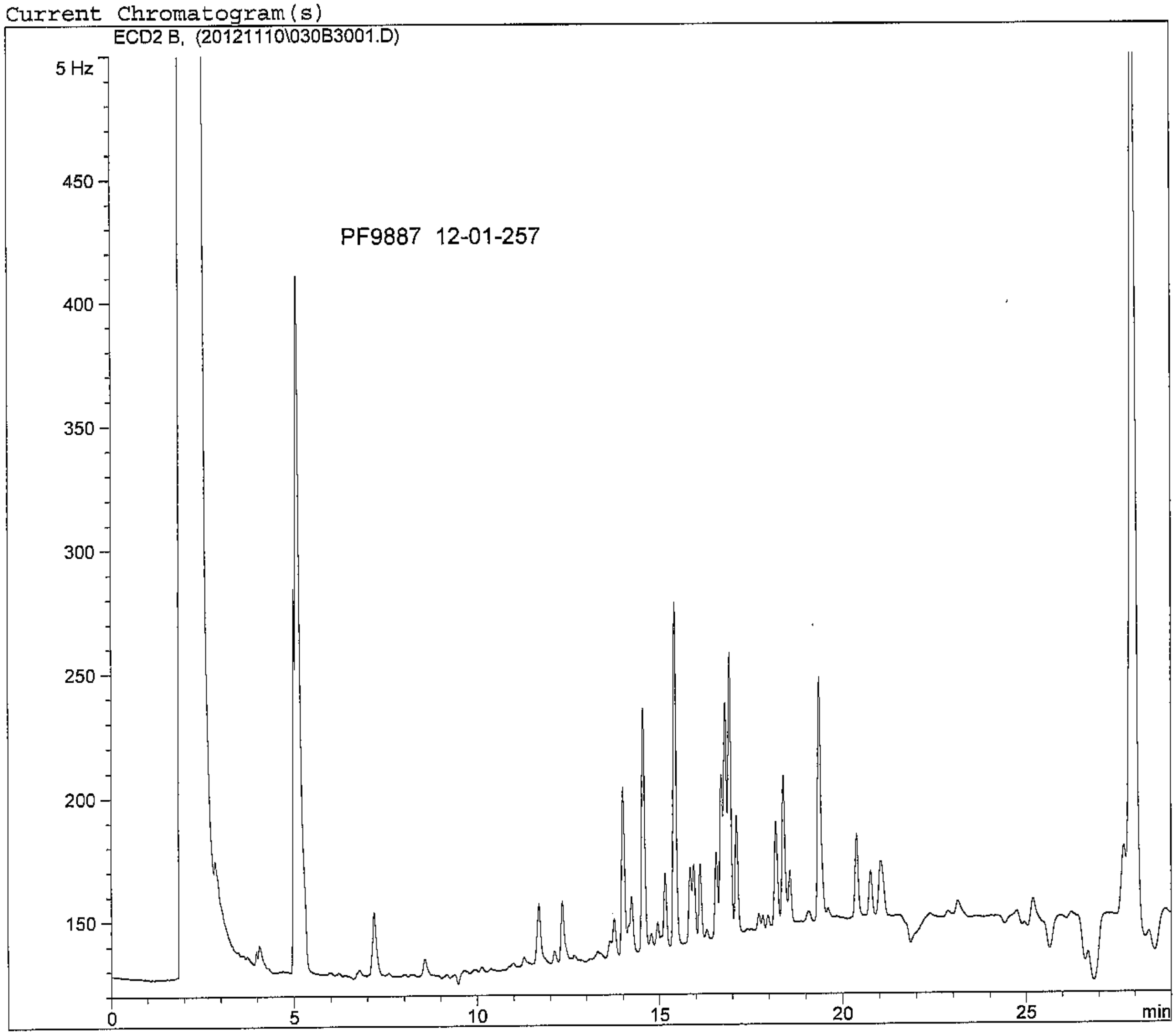



Current Chromatogram(s)
ECD2 B, (20121122\010B1001.D)
5 Hz
450
400
350
300
250
200
150
PF9885 12-01-255
0
5
10
15
20
25
min

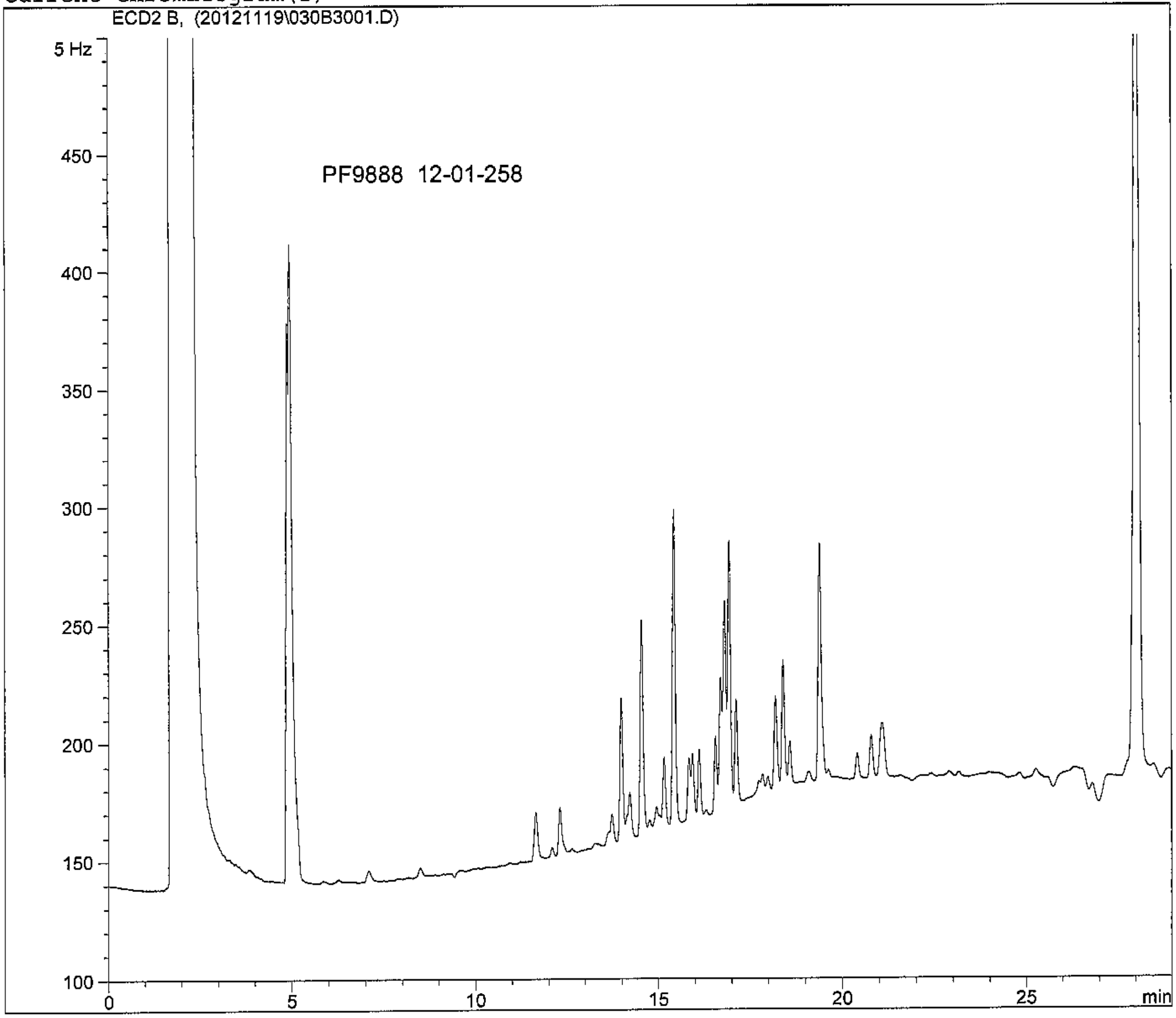
Current Chromatogram(s)



Current Chromatogram(s)

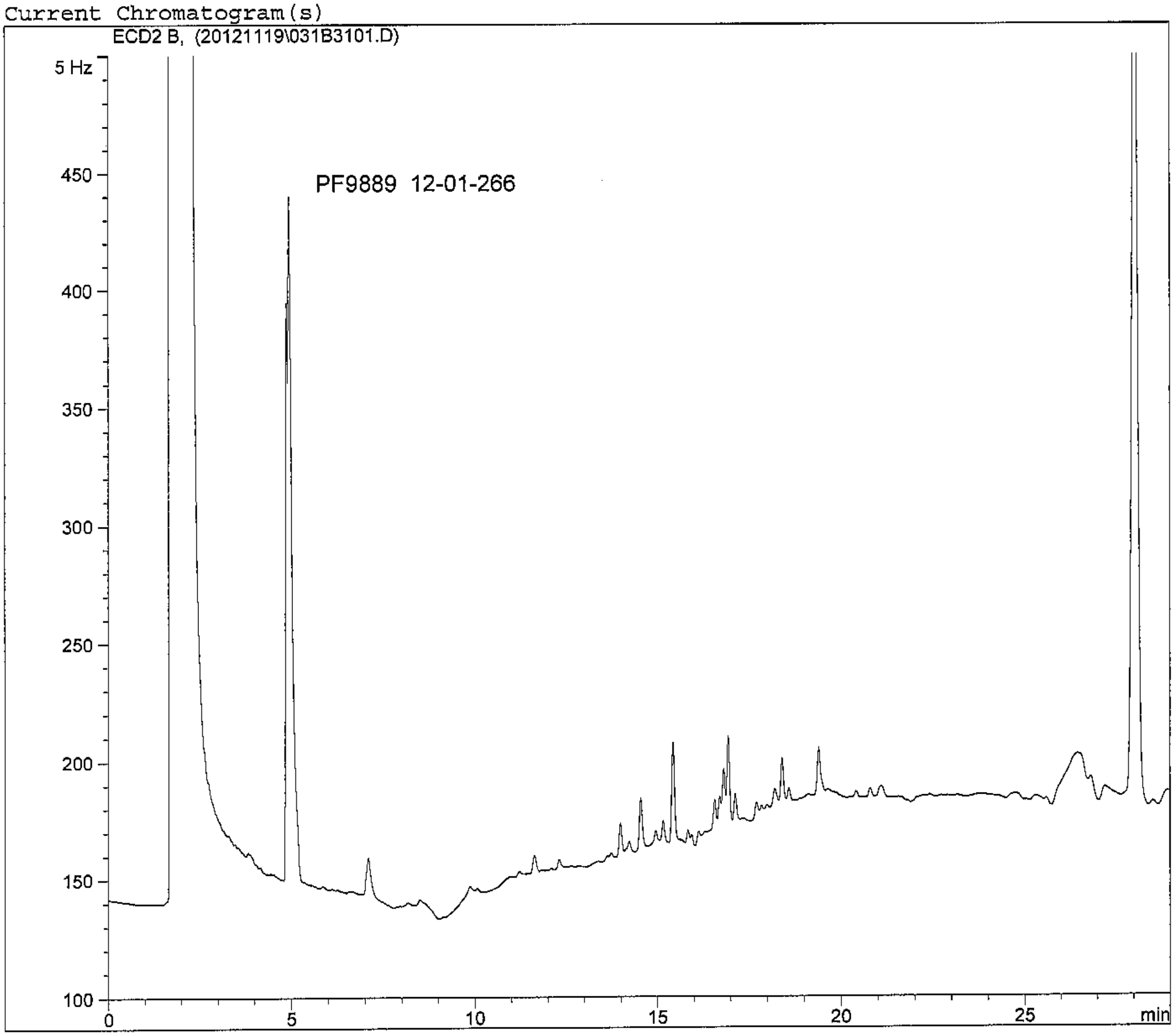


Current Chromatogram(s)

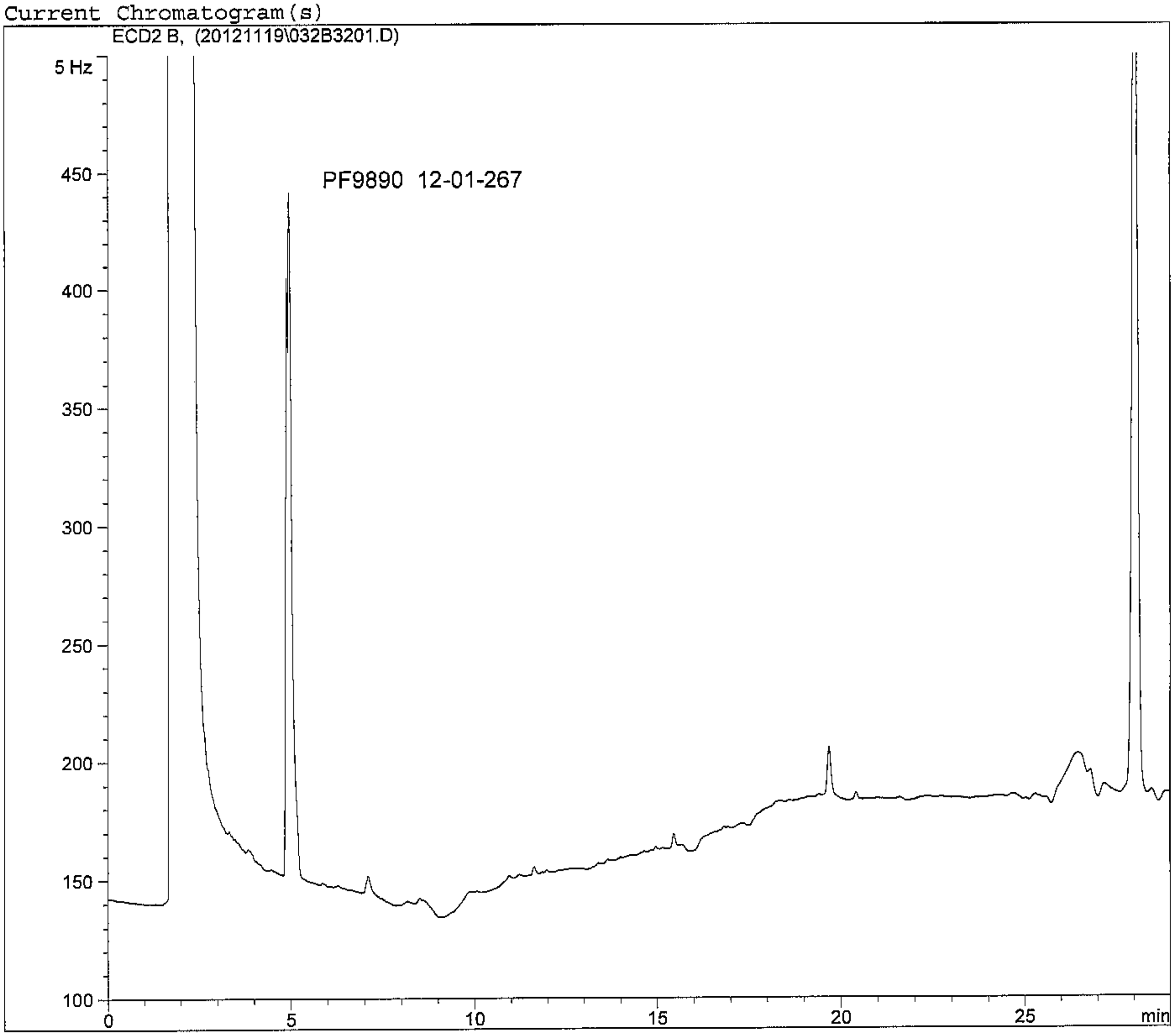


Print of all graphic windows

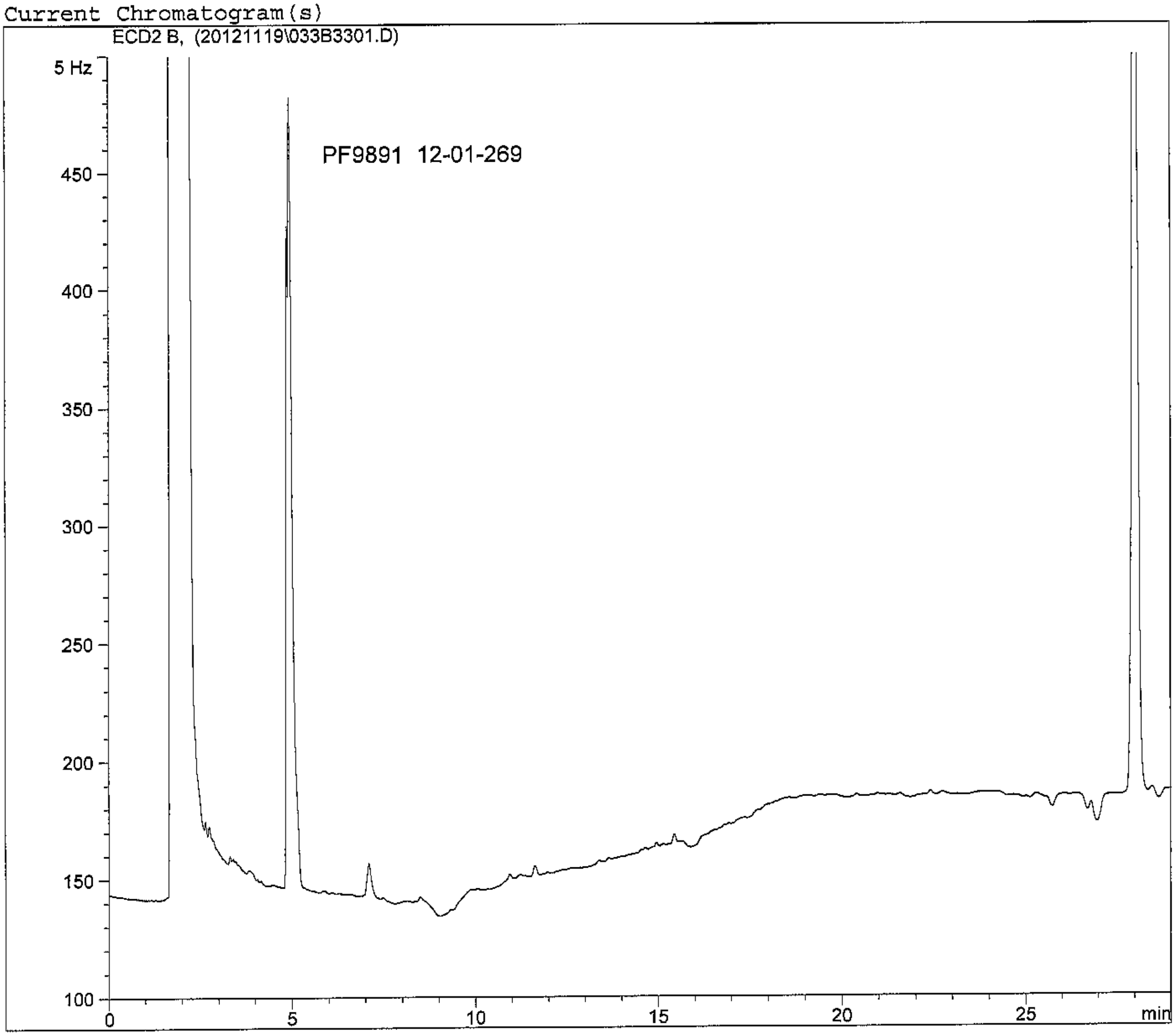
Current Chromatogram(s)



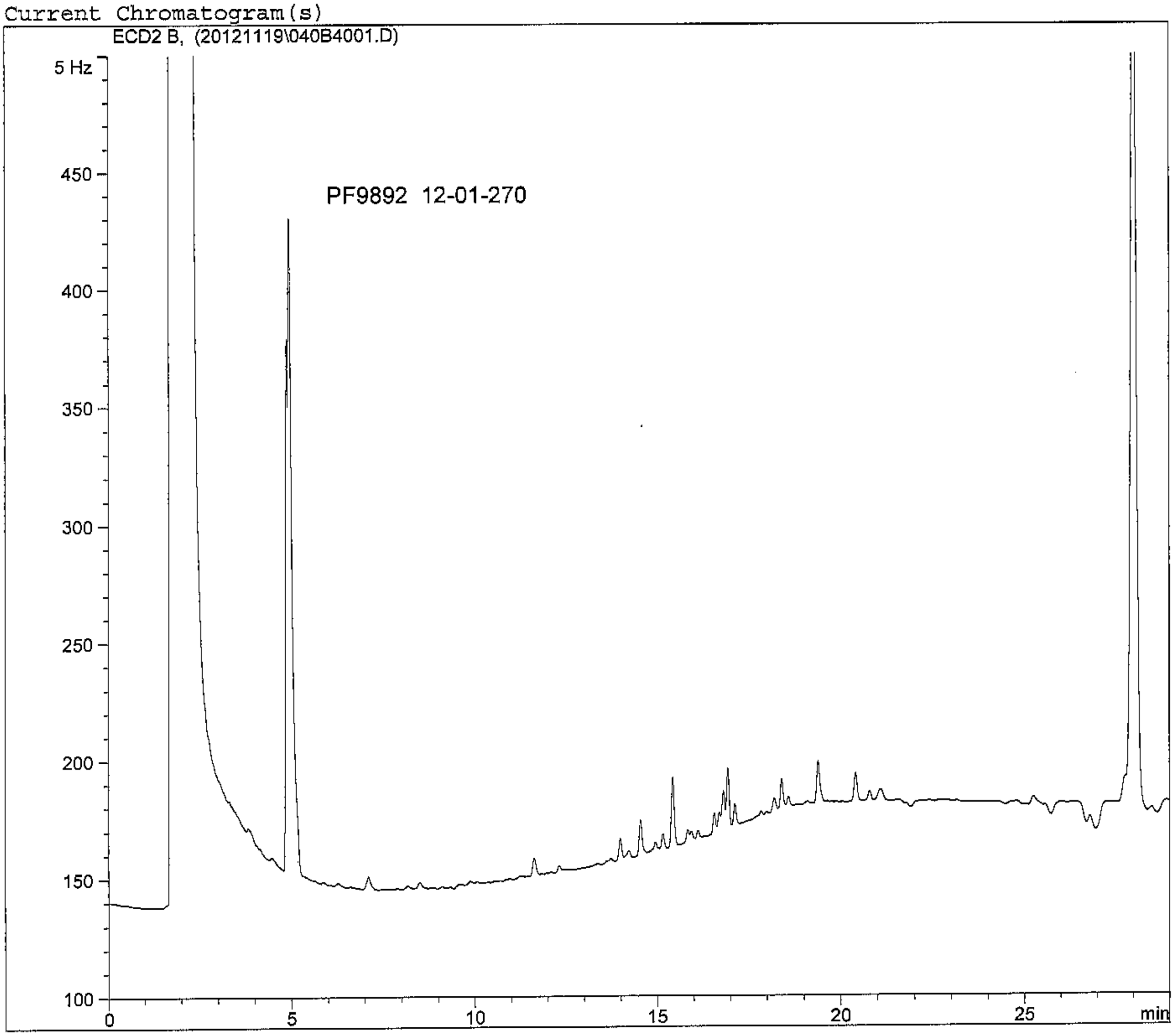
Current Chromatogram(s)



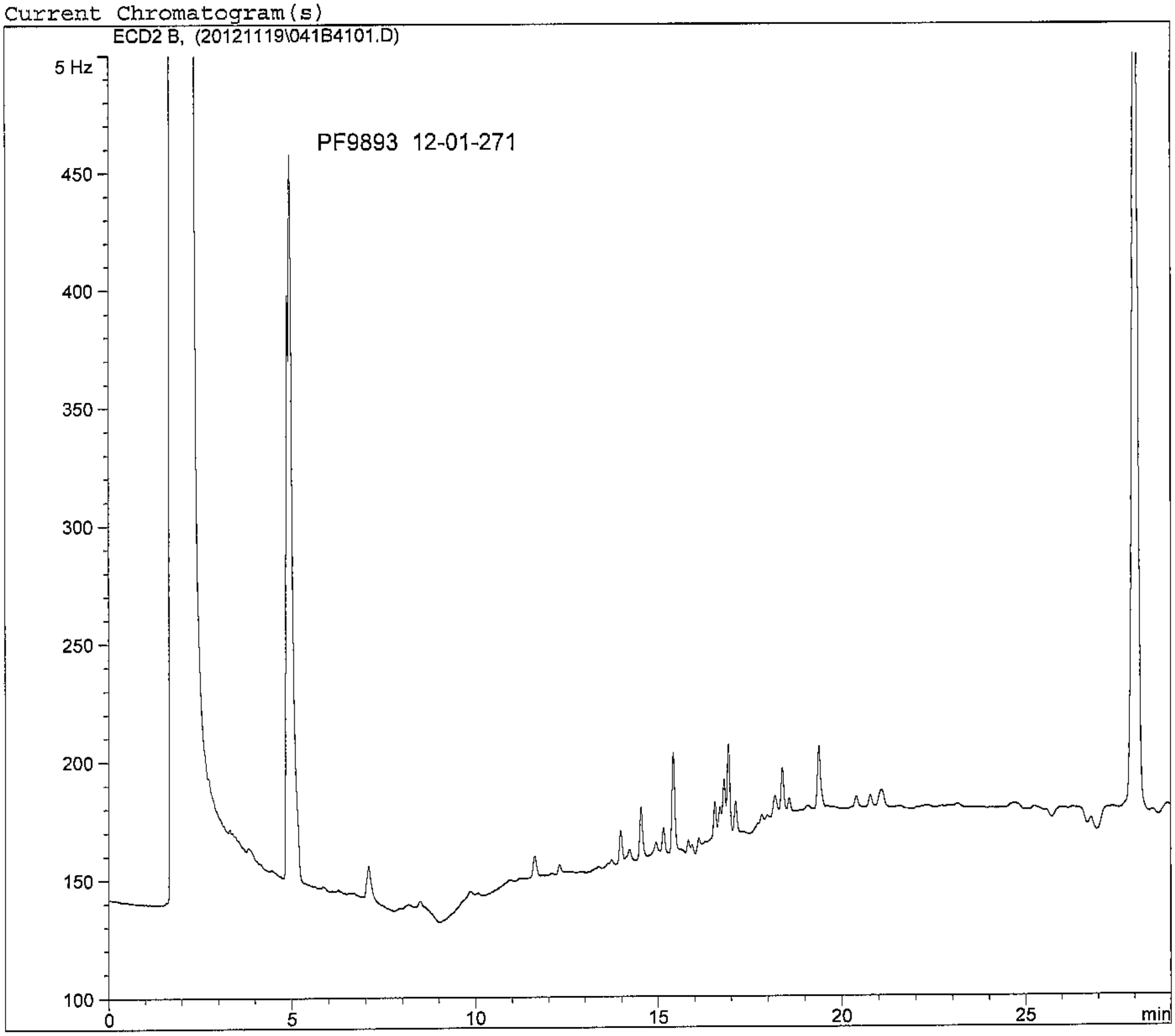
Current Chromatogram(s)



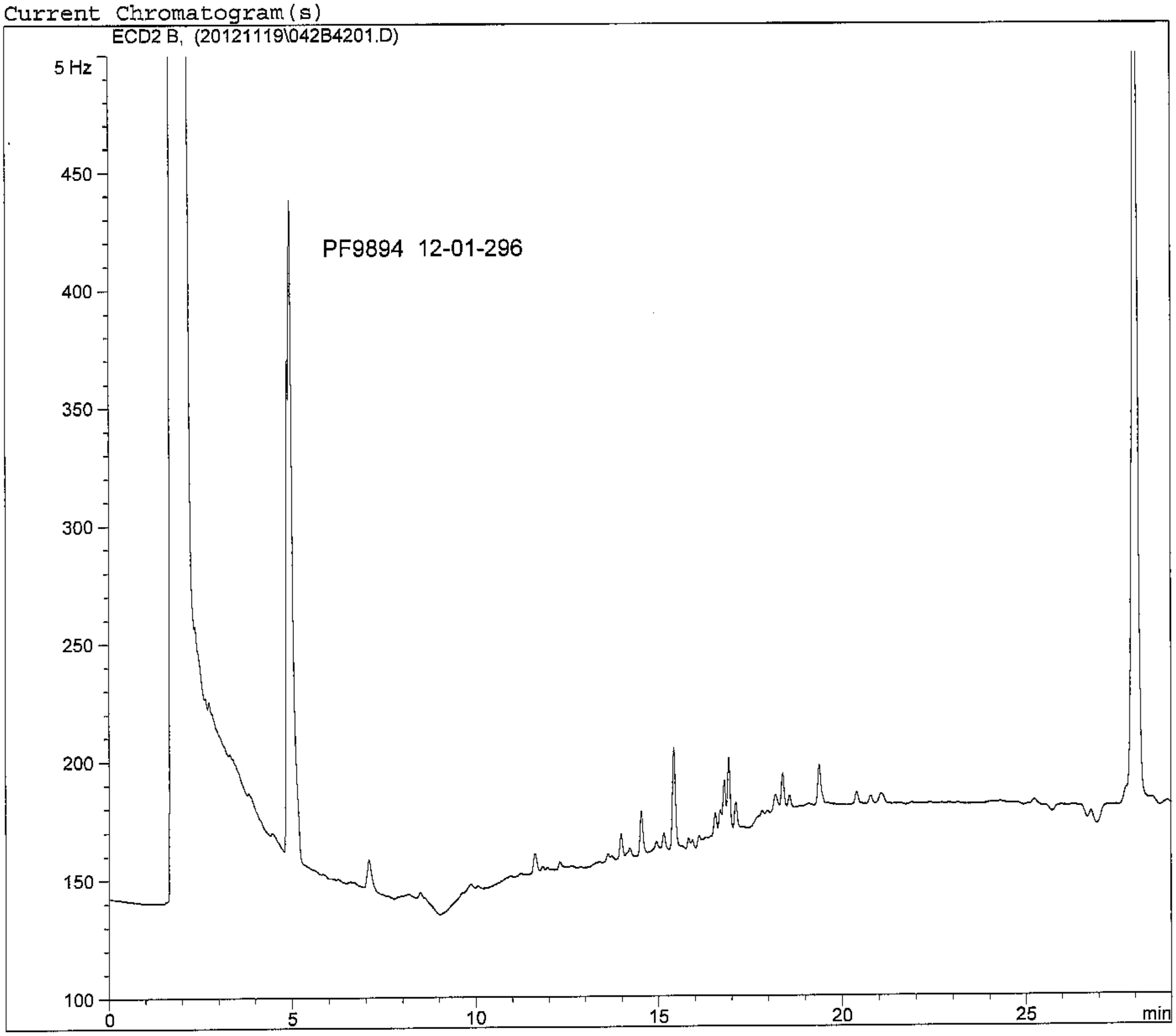
Current Chromatogram(s)



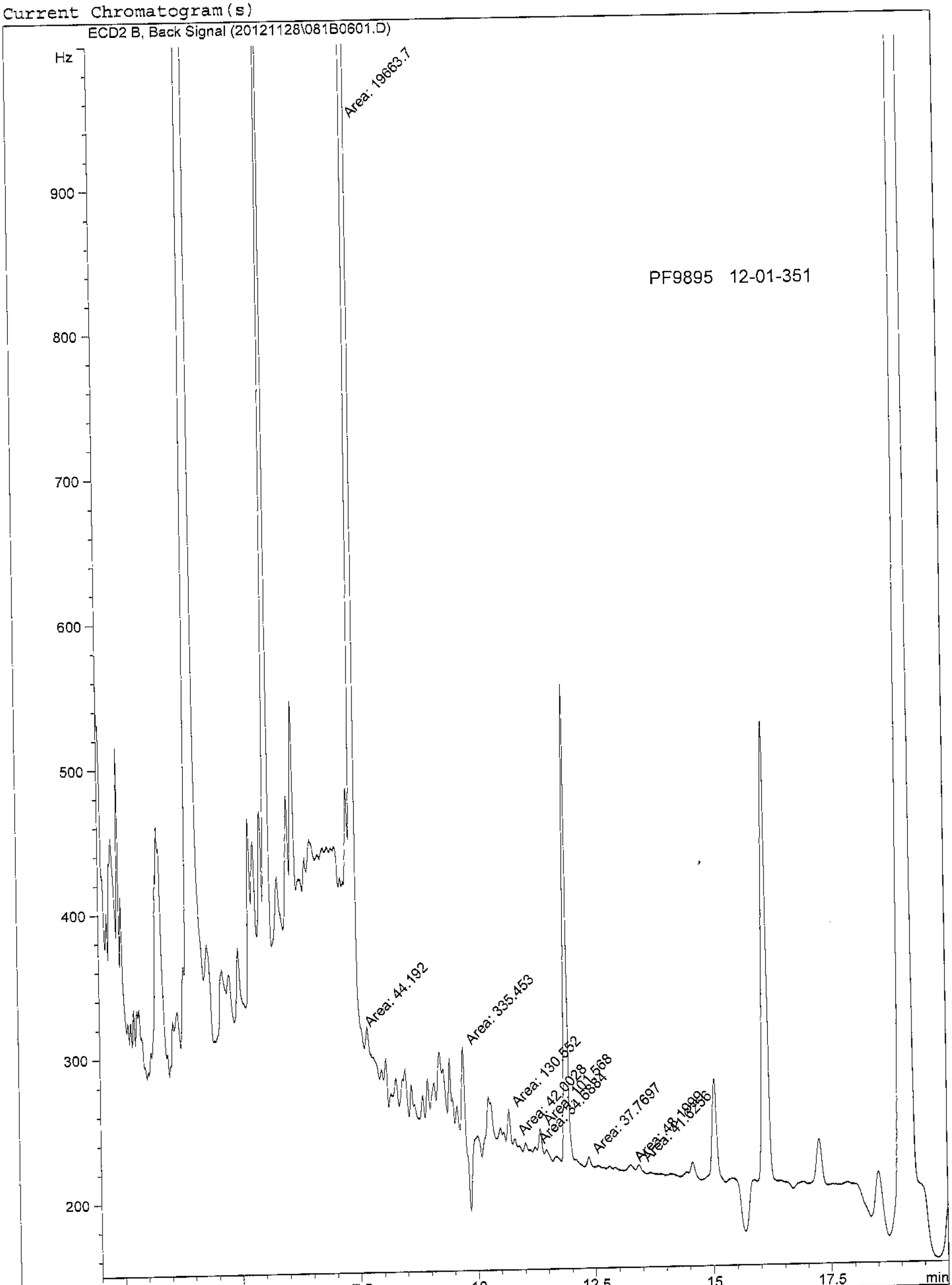
Current Chromatogram(s)



Current Chromatogram(s)



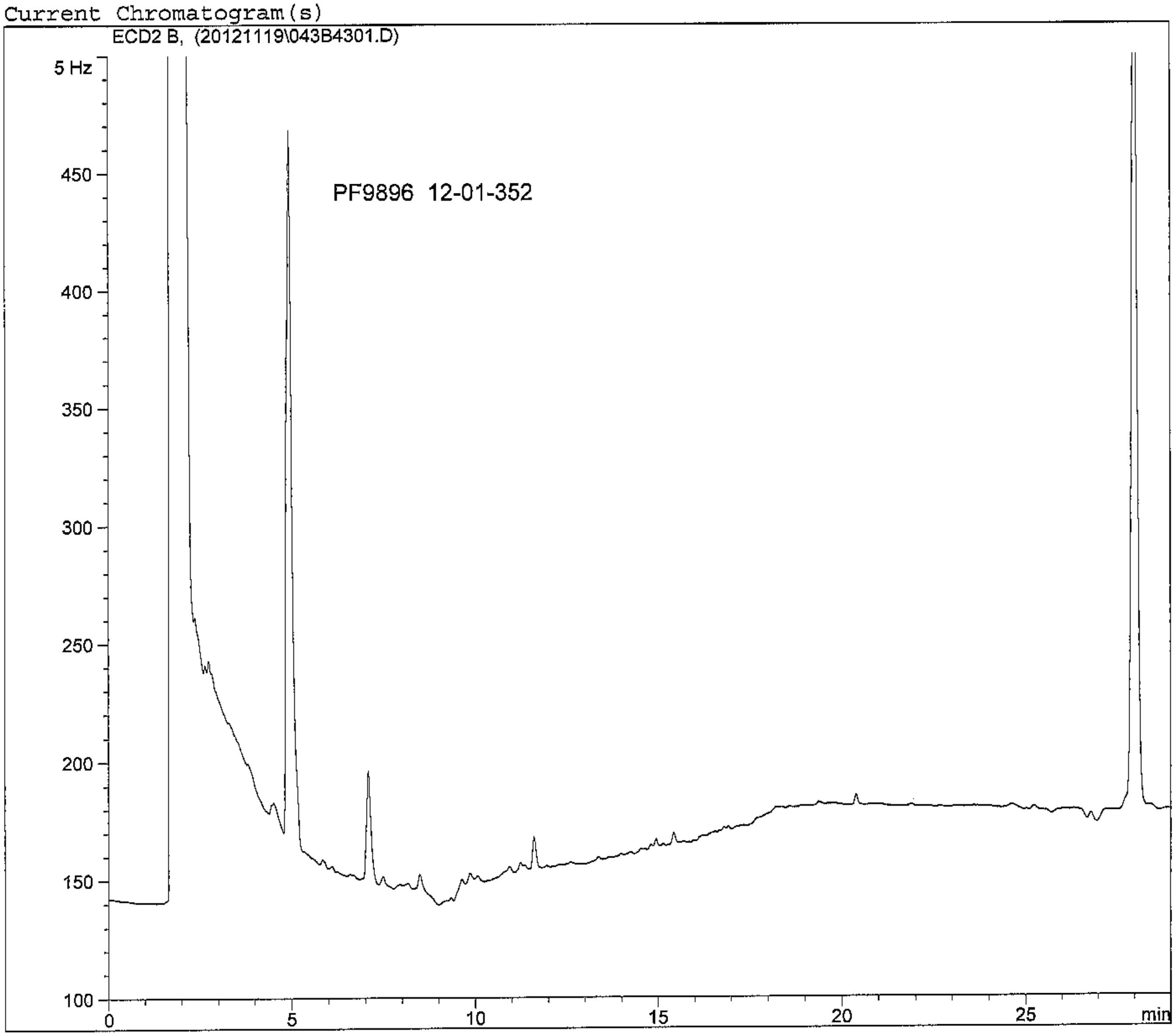
Print of window 38: Current Chromatogram(s)



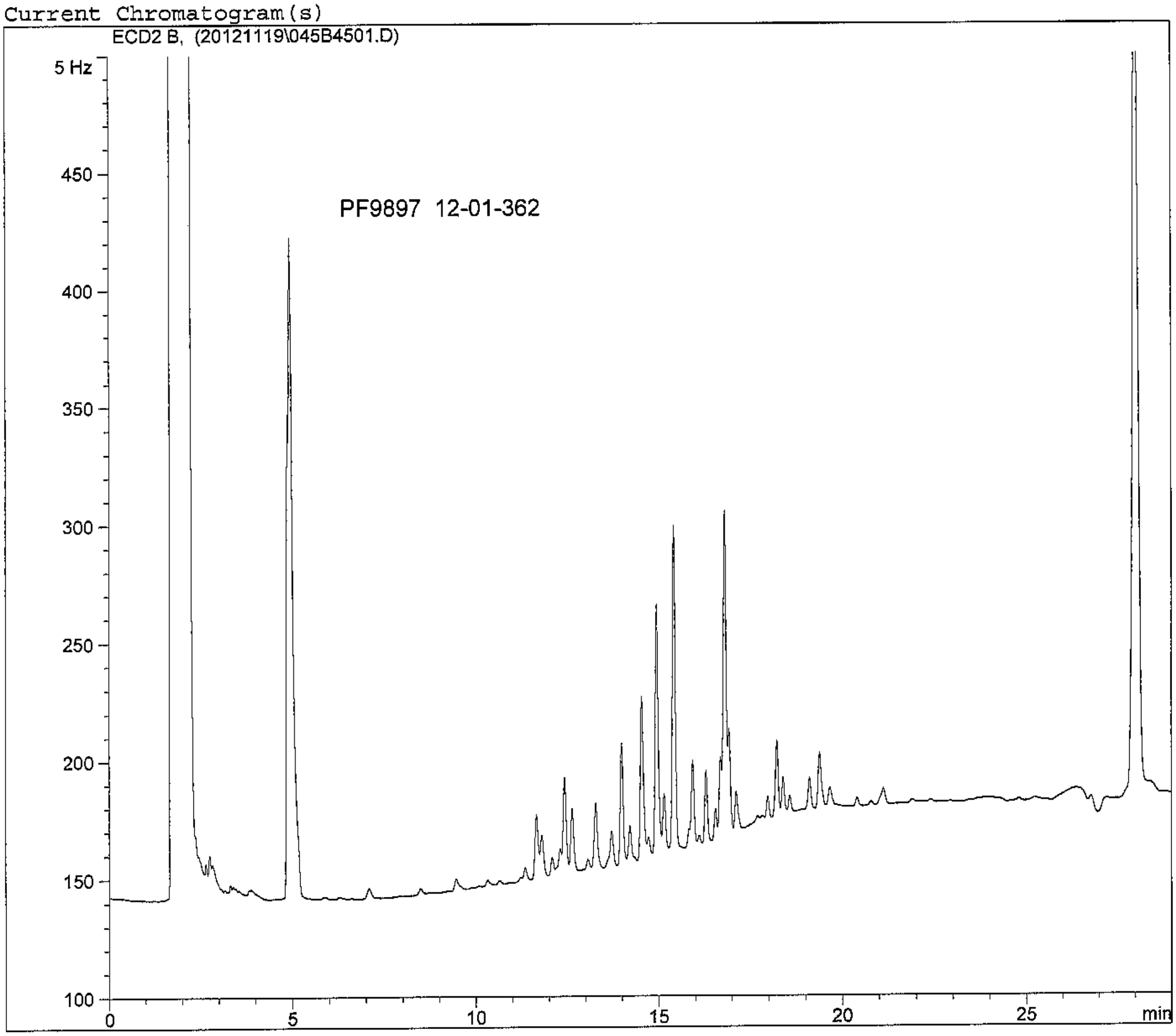
Page 1 of 1

PCB003 2012/12/13 11:10:07 AM Kristy Joudrey

Current Chromatogram(s)

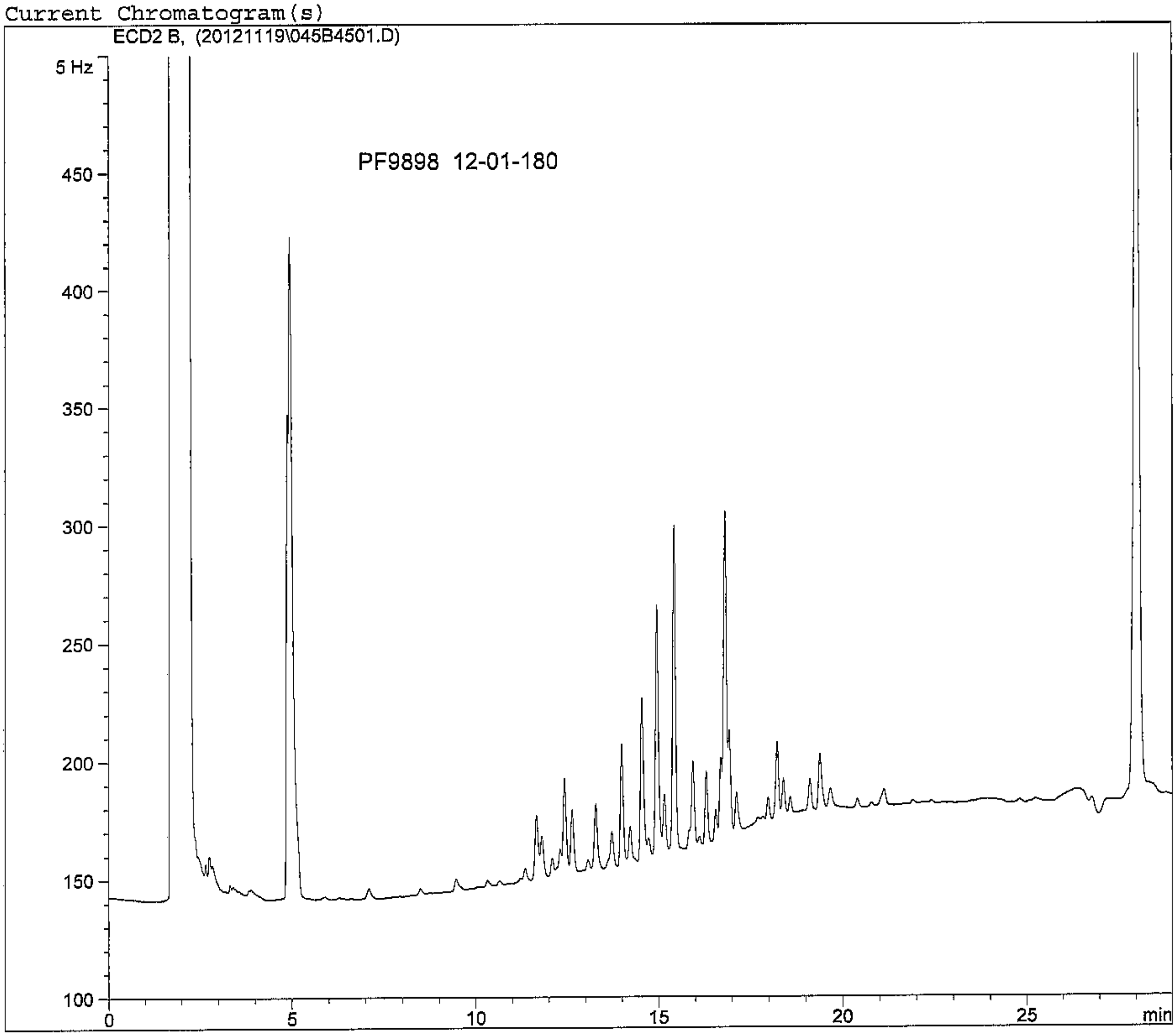


Current Chromatogram(s)

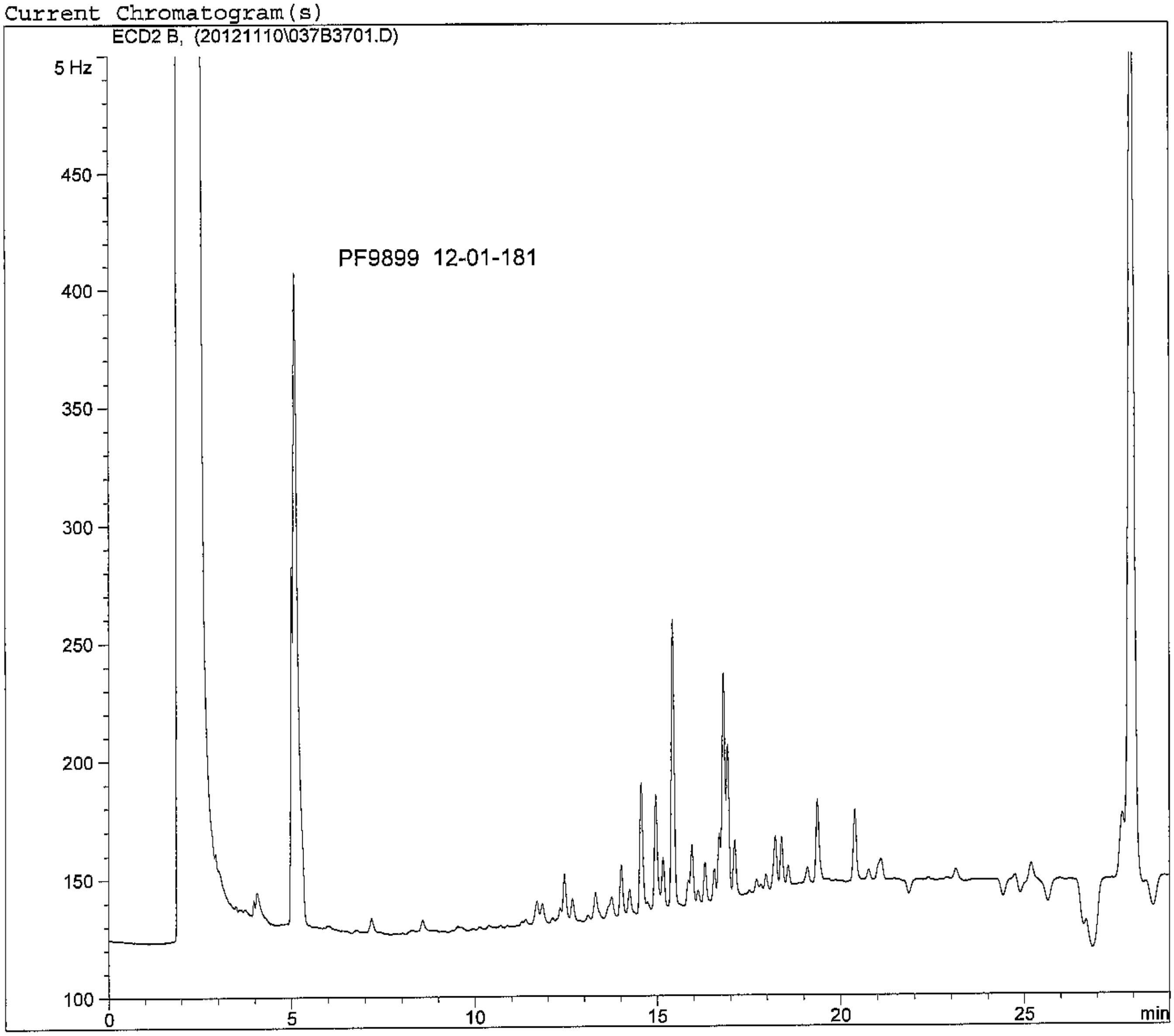


Print of all graphic windows

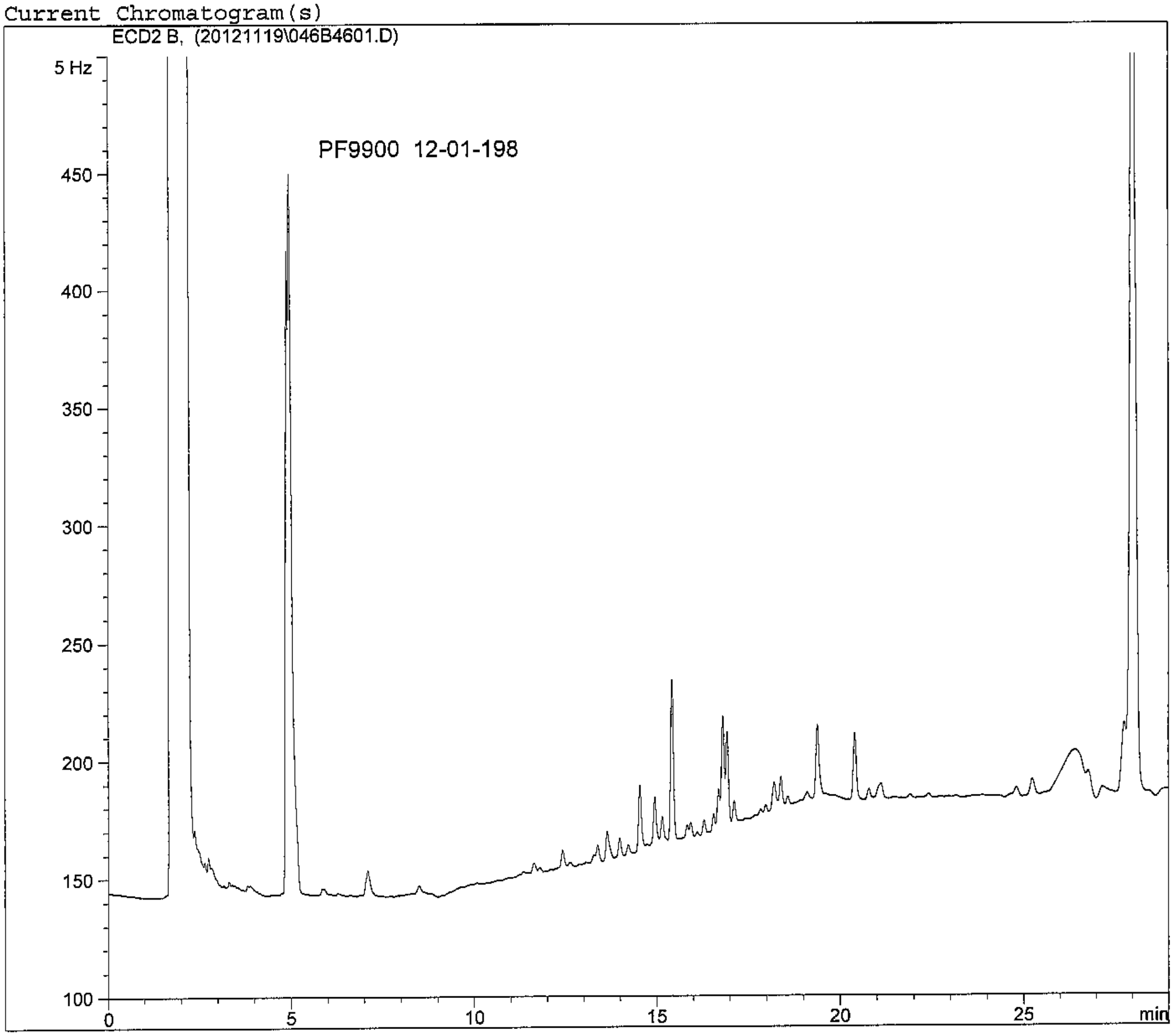
Current Chromatogram(s)



Current Chromatogram(s)

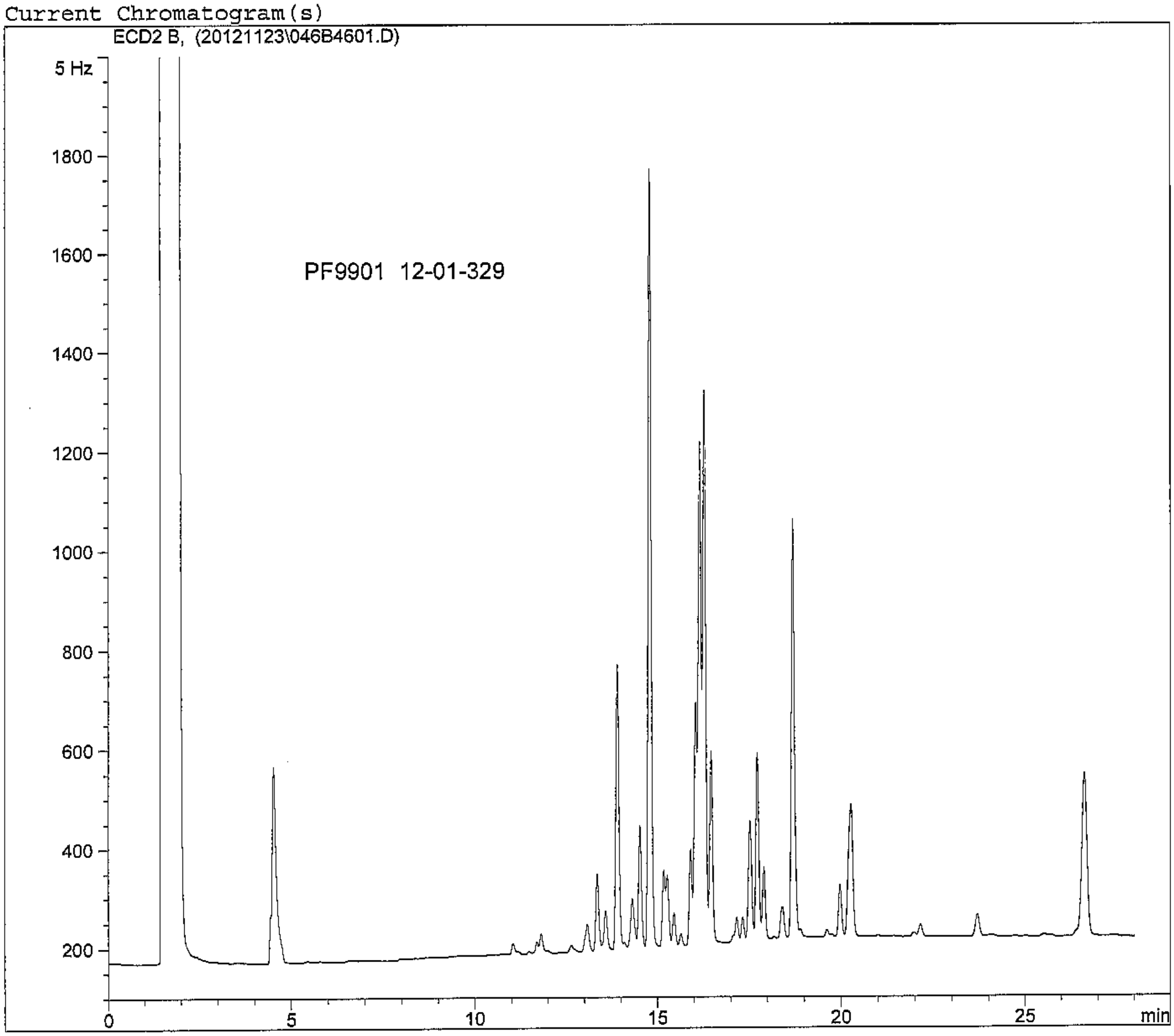


Current Chromatogram(s)

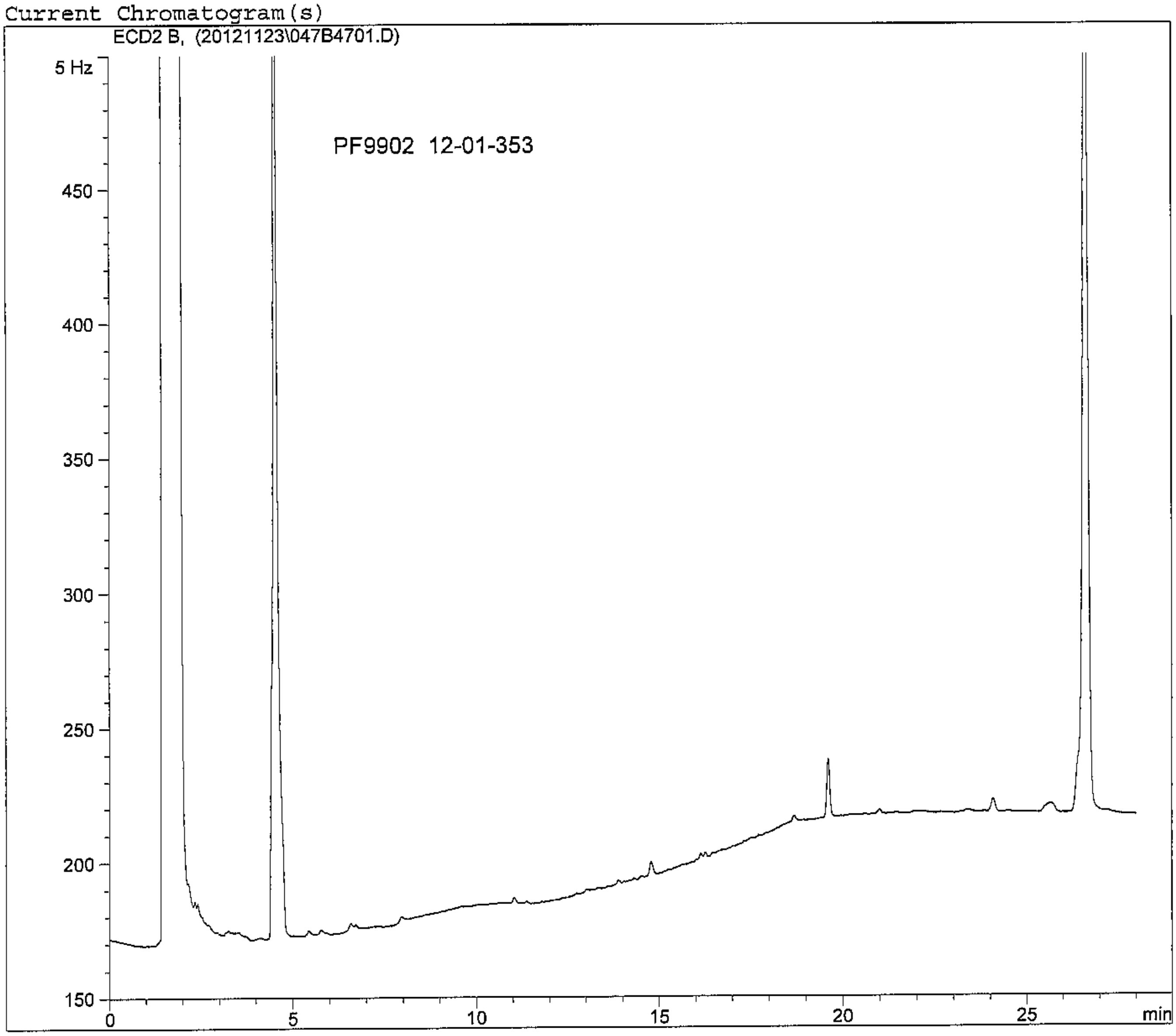


Print of all graphic windows

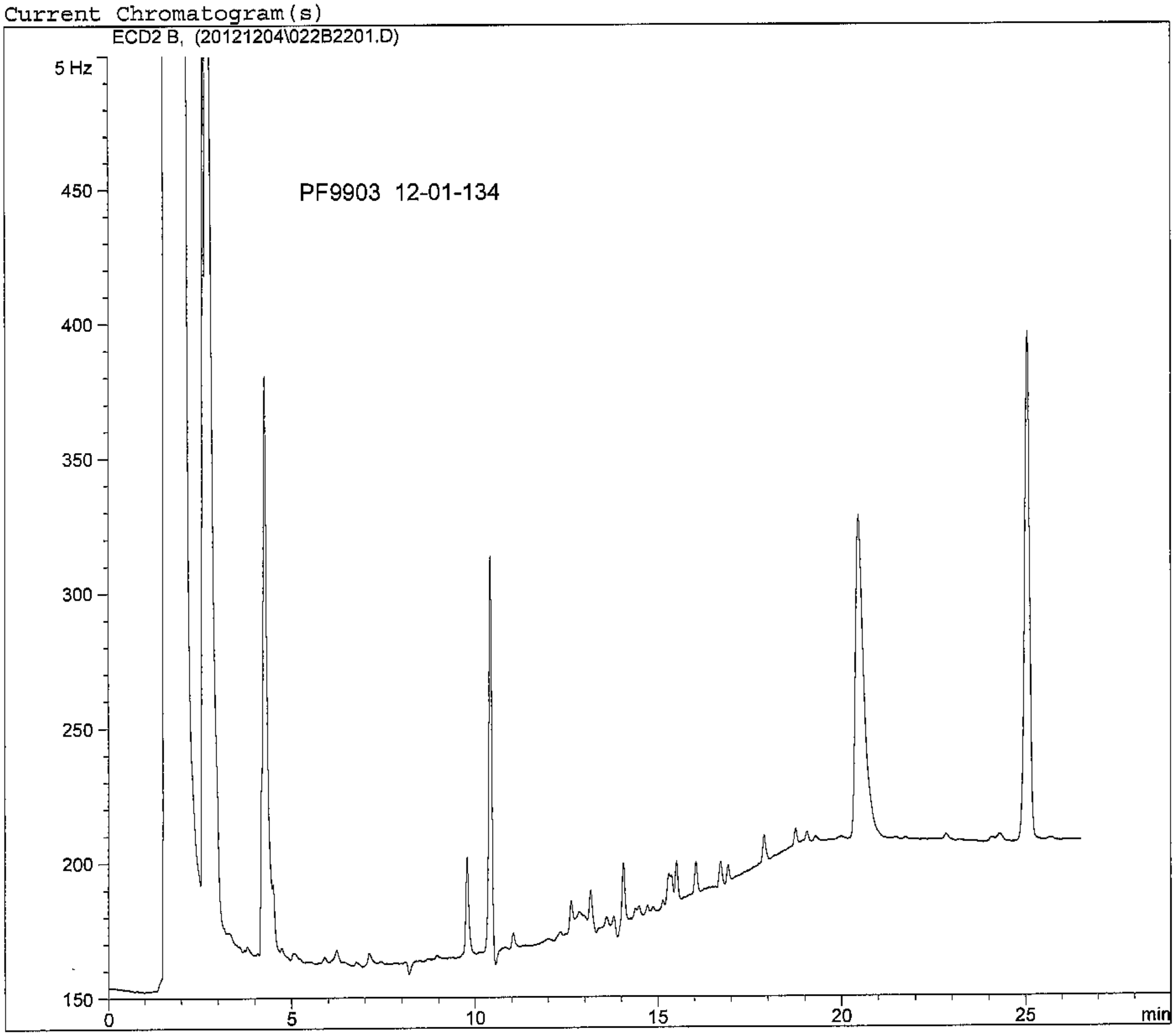
Current Chromatogram(s)



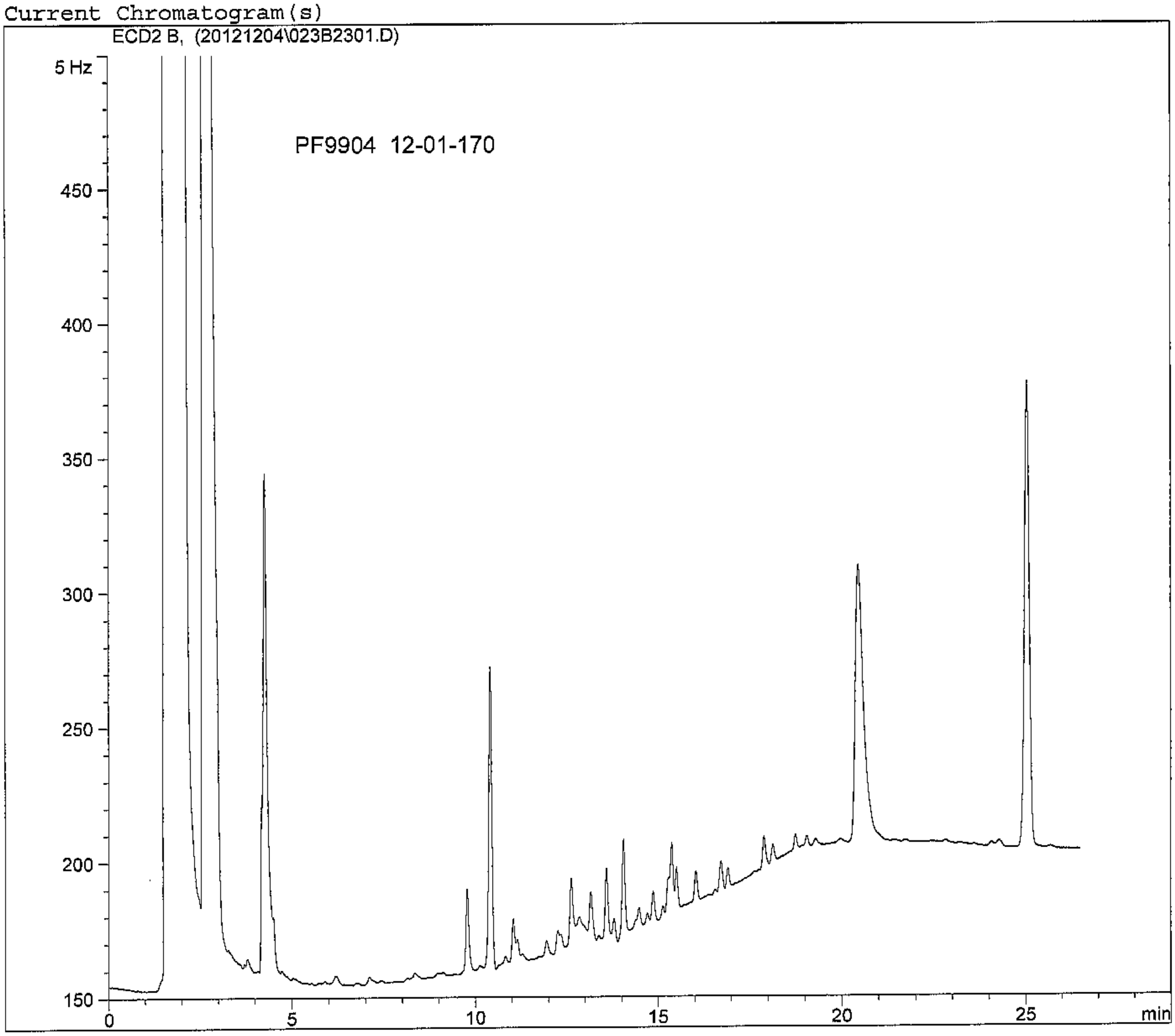
Print of all graphic windows



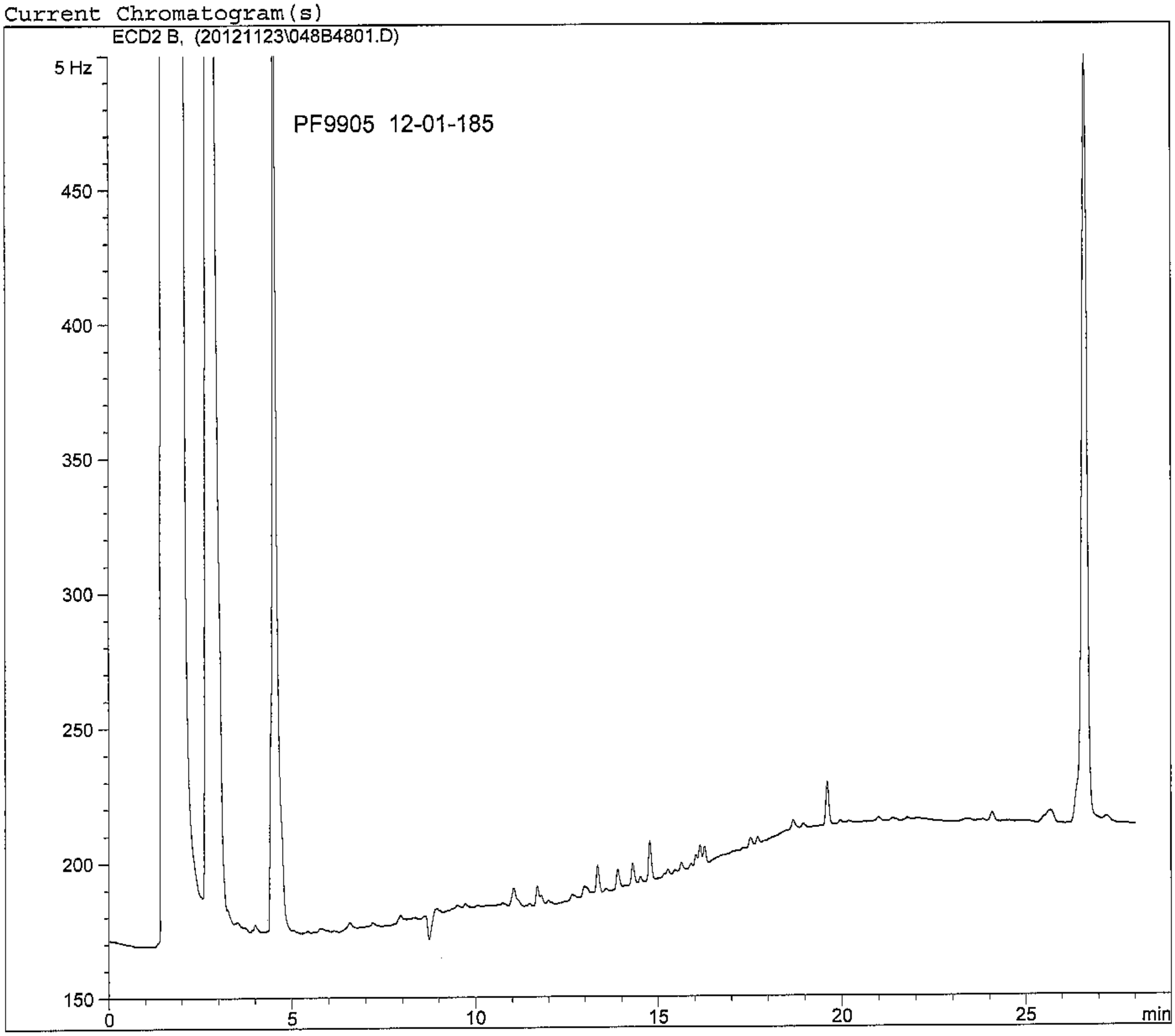
Current Chromatogram(s)



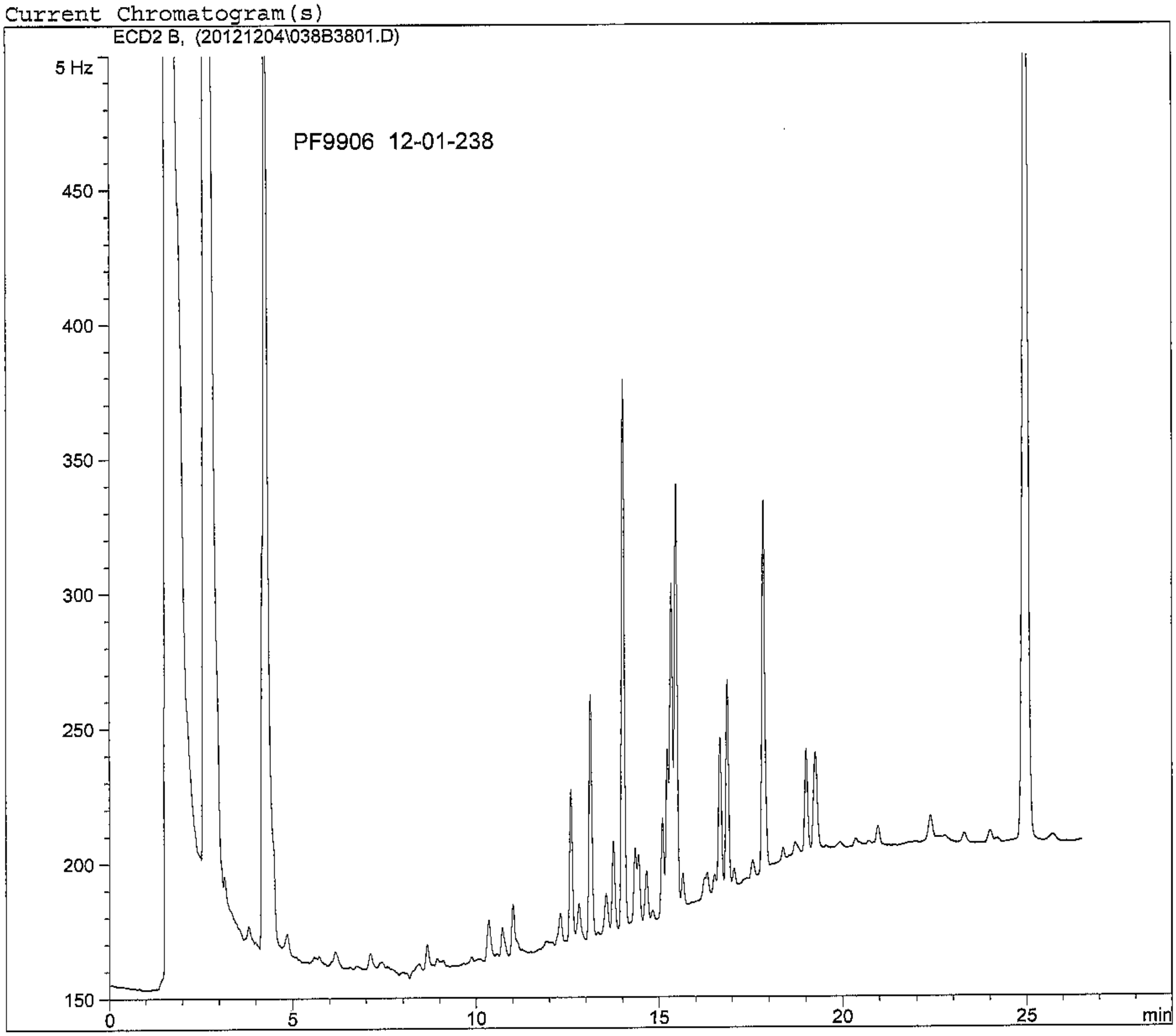
Current Chromatogram(s)



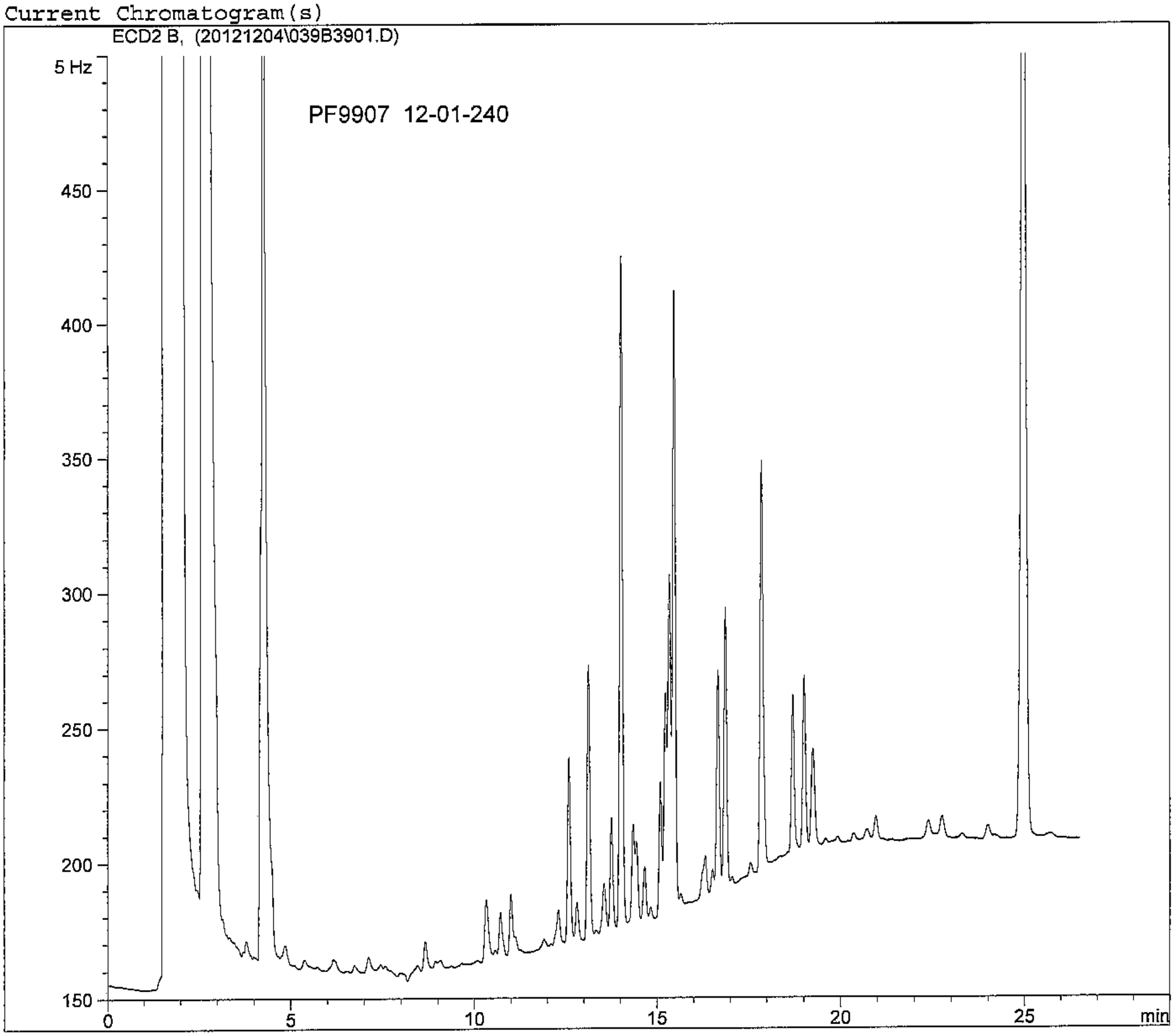
Current Chromatogram(s)



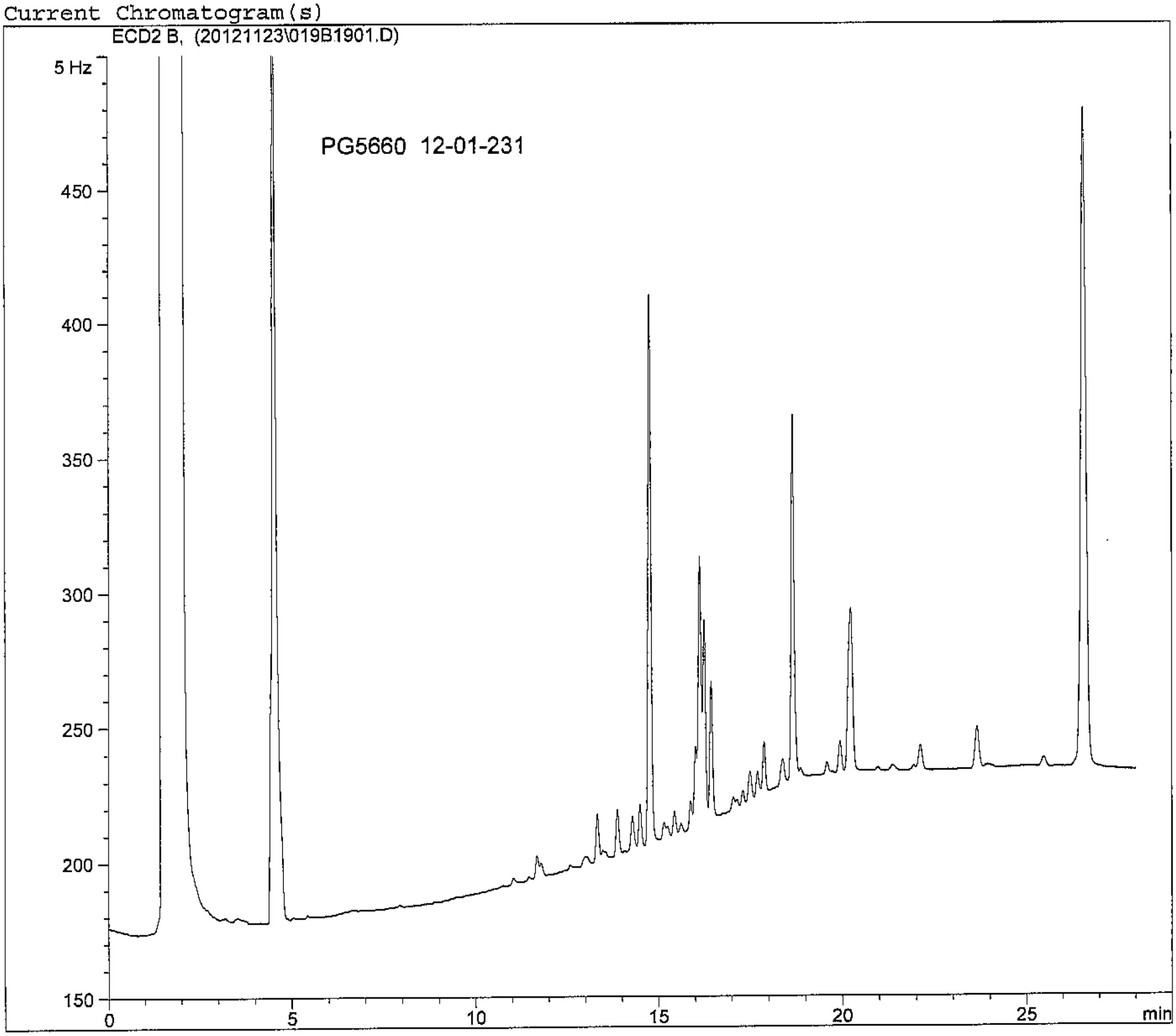
Current Chromatogram(s)



Print of all graphic windows



Current Chromatogram(s)



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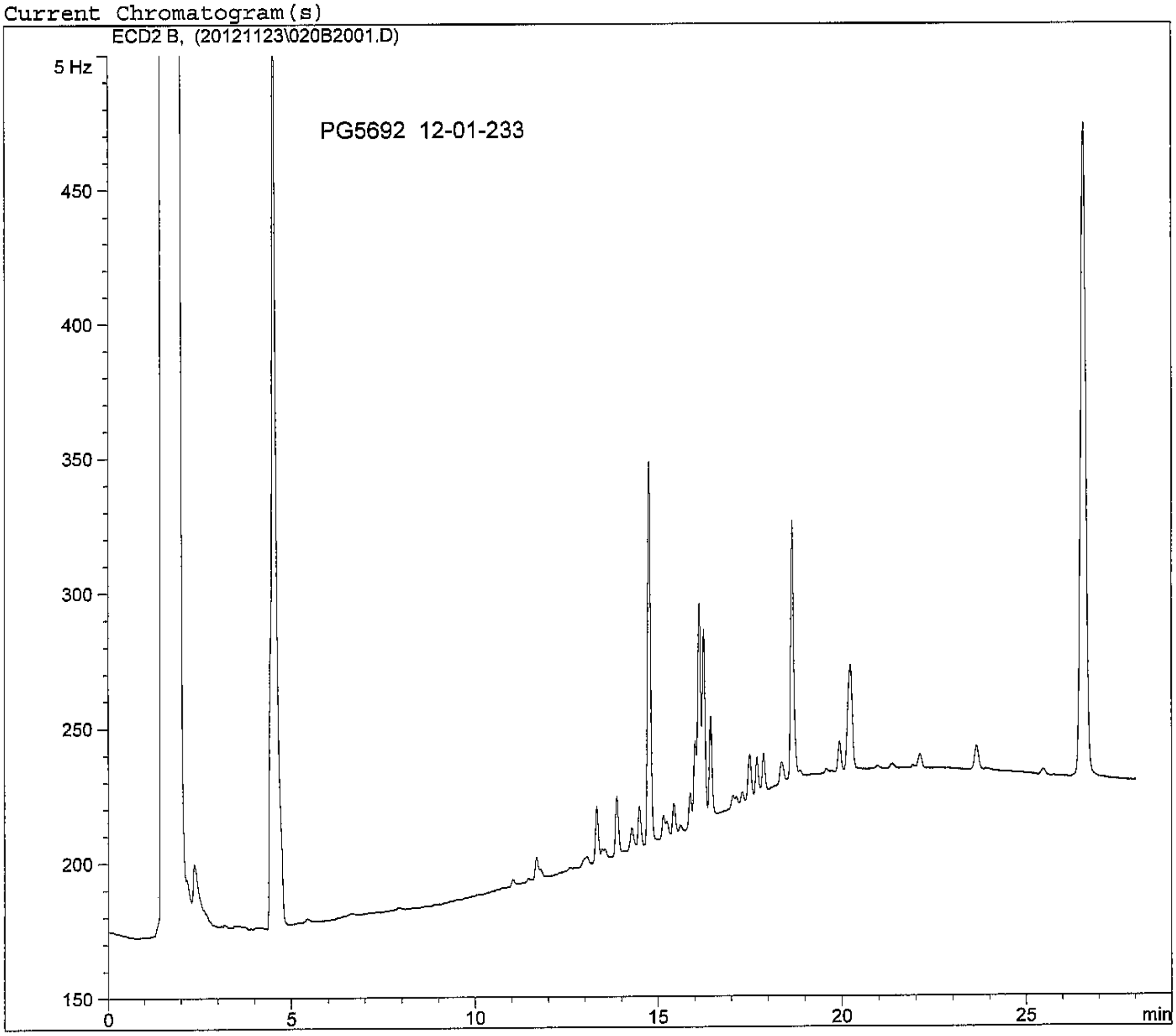

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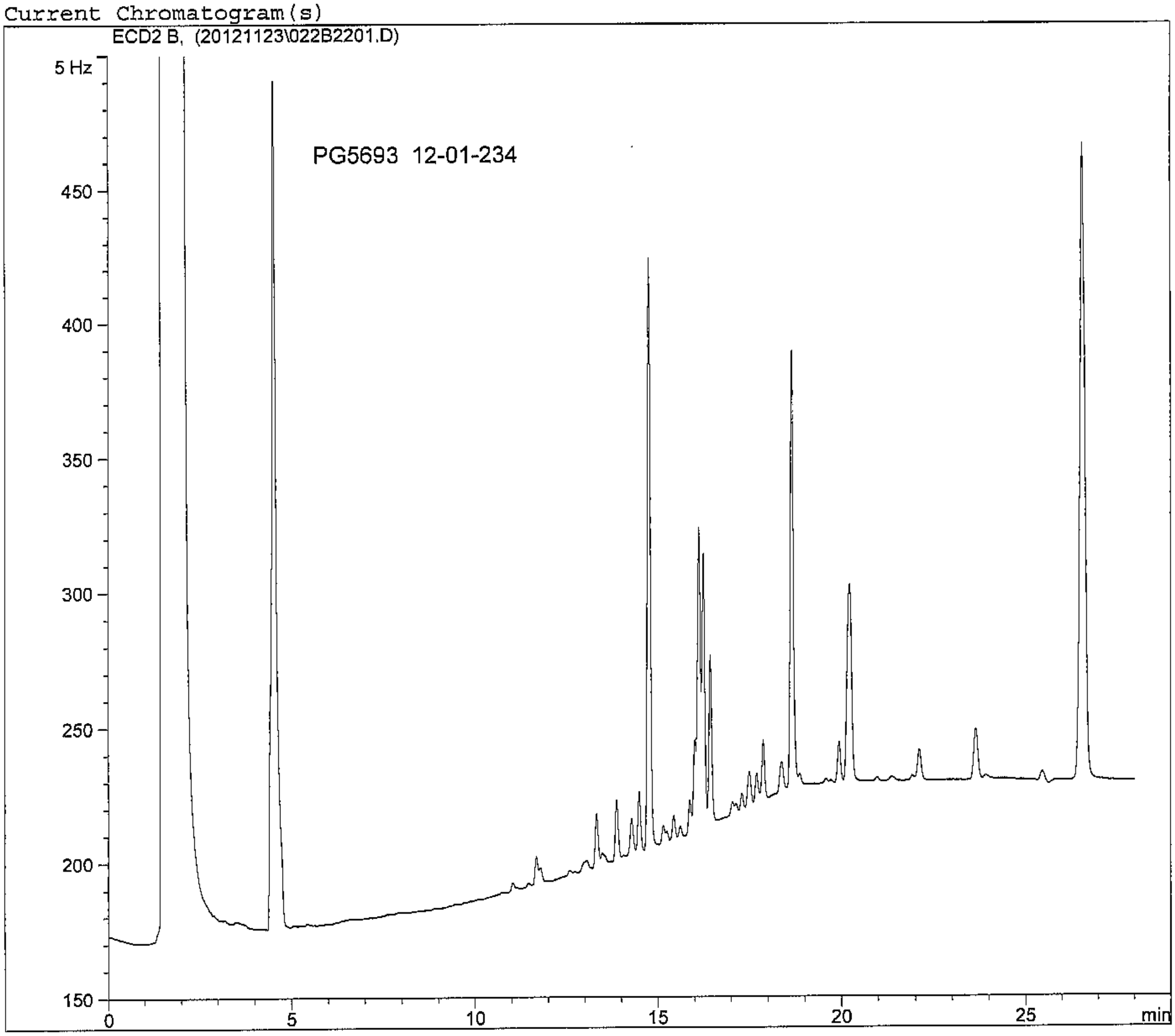

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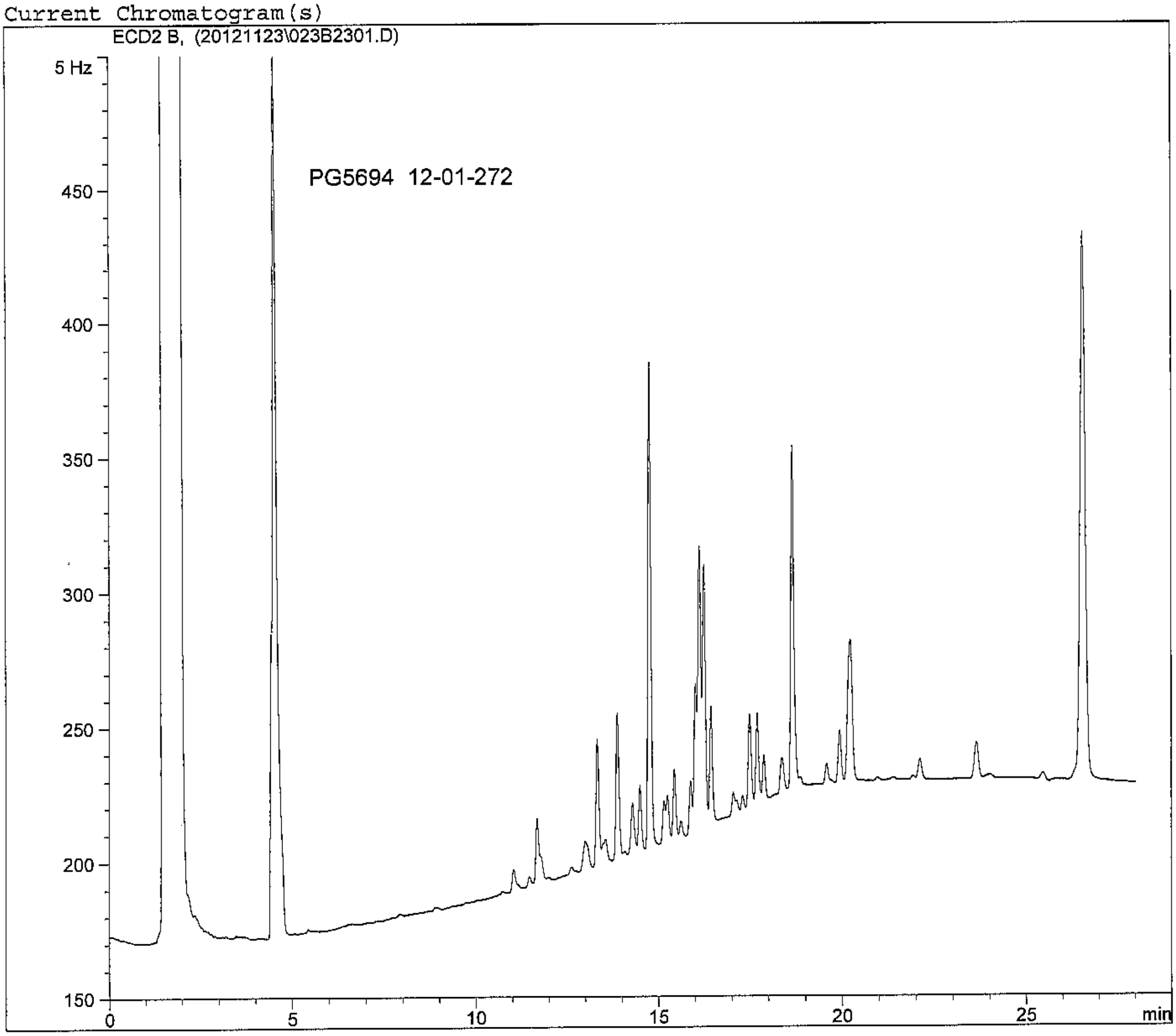
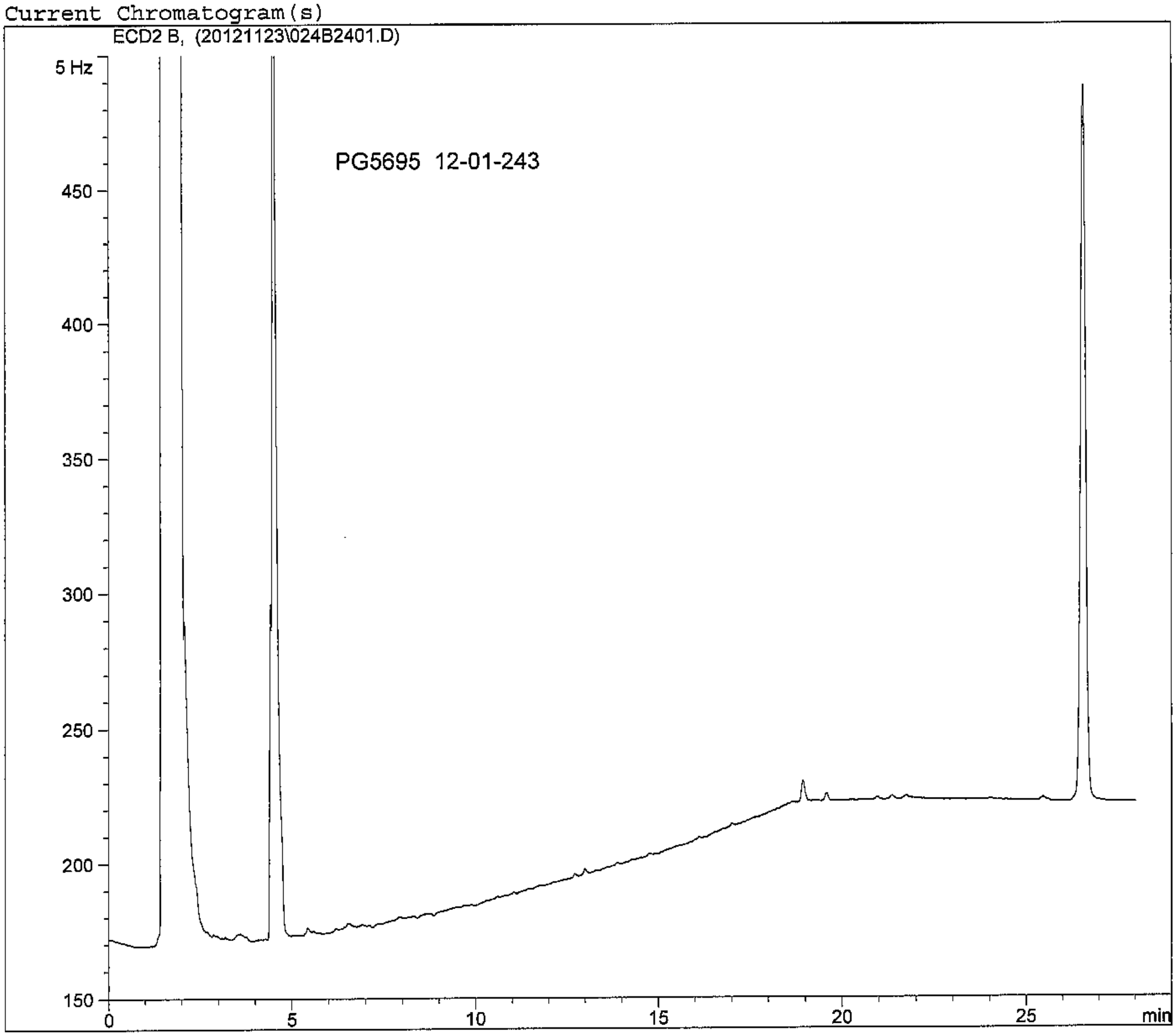
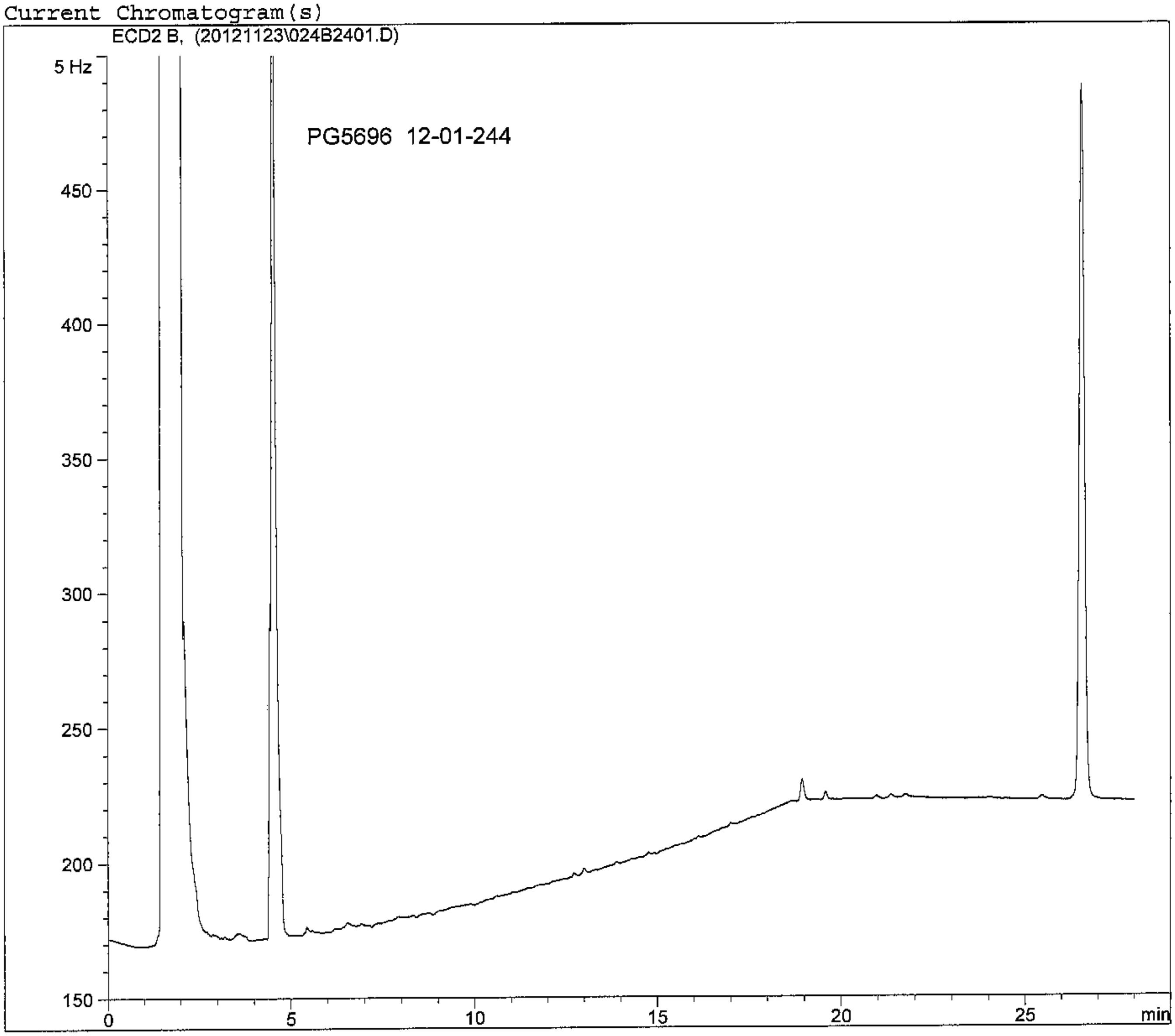


Current Chromatogram(s)



Current Chromatogram(s)



Maxxam

Success Through Science®

Your P.O. #: 16400NR
Your Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your C.O.C. #: N/A

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2013/02/08

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2K0998
Received: 2012/12/20, 13:16

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture	7	N/A	2012/12/24	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD	1	2013/01/18	2013/01/22	ATL SOP 00106	Based EPA8082
Low Level PCB in Soil by GC-ECD	6	2013/01/18	2013/01/25	ATL SOP 00106	Based EPA8082

Sample Matrix: TISSUE
Samples Received: 67

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in tissue by GC/ECD (1)	10	2013/01/04	2013/01/31	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	9	2013/01/04	2013/02/01	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	8	2013/01/04	2013/02/06	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	2	2013/01/04	2013/03/06	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	9	2013/01/08	2013/01/17	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	7	2013/01/08	2013/01/30	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	4	2013/01/08	2013/02/07	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	17	2013/01/09	2013/02/05	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	1	2013/01/09	2013/02/07	ATL SOP 00110	Based on EPA8082

Sample Matrix: Vegetation
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in tissue by GC/ECD (1)	8	2013/01/04	2013/01/31	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	3	2013/01/04	2013/02/01	ATL SOP 00110	Based on EPA8082

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) Results are reported on an as received basis unless otherwise indicated.

Maxxam Job #: B2K0998
Report Date: 2013/02/08

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902) 420-0203 Ext:289

==
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B2K0998
Report Date: 2013/02/08

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		QB1870	QB1871	QB1872	QB1873	QB1874	QB1875	QB1876		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 504**	**12-01 505**	**12-01 506**	**12-01 507**	**12-01 478**	**12-01 508**	**12-01 509**	**RDL**	**QC Batch**
Inorganics										
Moisture	%	15	20	22	49	11	68	13	1	3079664

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		QB1870	QB1871	QB1871	QB1872	QB1873	QB1874	QB1875	QB1876		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 504**	**12-01 505**	**12-01 505 Lab-Dup**	**12-01 506**	**12-01 507**	**12-01 478**	**12-01 508**	**12-01 509**	**RDL**	**QC Batch**
PCBs											
Total PCB	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	3098344
Surrogate Recovery (%)											
Decachlorobiphenyl	%	105	104	101	89	87	87	93	92		3098344

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1838	QB1839	QB1840	QB1841	QB1842	QB1843	QB1844	QB1845		QB1846		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01		
	Units	**12-01 715**	**12-01 716**	**12-01 717**	**12-01 701**	**12-01 702**	**12-01 703**	**12-01 704**	**12-01 730**	**QC Batch**	**12-01 320**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.035	0.020	0.048	0.034	0.013	0.075	0.022	0.59	3085220	0.068	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	103 (1)	124 (1)	81 (1)	82 (1)	57 (2)	85 (1)	82 (1)	118 (1)	3085220	61 (2)		3087673

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam

Success Through Science®

Maxxam Job #: B2K0998
Report Date: 2013/02/08

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1847		QB1848	QB1849	QB1849		QB1850		QB1851		
Sampling Date		2012/09/01		2012/10/01	2012/10/01	2012/10/01		2012/10/01		2012/10/01		
	Units	**12-01 705**	**QC Batch**	**12-01 322**	**12-01 731**	**12-01 731 Lab-Dup**	**QC Batch**	**12-01 732**	**QC Batch**	**12-01 810**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.54	3087673	0.060	<0.010	<0.010	3085220	<0.010	3087673	0.46	0.010	3085220
Surrogate Recovery (%)												
Decachlorobiphenyl	%	47 (1)	3087673	76 (2)	90	94	3085220	77	3087673	114 (2)		3085220

Maxxam ID		QB1852		QB1853		QB1854	QB1858	QB1859	QB1859	QB1860	QB1861		
Sampling Date		2012/10/01		2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 729**	**QC Batch**	**12-01 706**	**QC Batch**	**12-01 707**	**12-01 344**	**12-01 300**	**12-01 300 Lab-Dup**	**12-01 828**	**12-01 483**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.84	3087673	0.018	3085220	0.64	0.22	0.019	0.015	0.016	0.45	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	111 (2)	3087673	81 (2)	3085220	107 (2)	94 (2)	89 (2)	91	92 (2)	84 (2)		3087673

Maxxam ID		QB1862	QB1863	QB1864	QB1865	QB1866	QB1867	QB1868	QB1869	QB1877	QB1878		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/09/01	2012/10/01	2012/10/01	2012/09/01	2012/10/01		
	Units	**12-01 708**	**12-01 709**	**12-01 327**	**12-01 323**	**12-01 325**	**12-01 328**	**12-01 324**	**12-01 326**	**12-01 468**	**12-01 700**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	<0.010	0.016	0.085	<0.010	0.019	0.066	0.017	0.66	<0.010	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	89	83	78 (2)	37 (1)	61 (3)	76 (2)	23 (1)	76 (2)	79 (2)	85		3087673

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(2) - Aroclor 1260.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2K0998
Report Date: 2013/02/08

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1879		QB1880	QB1881	QB1882	QB1884		QB1885	QB1886	QB1887		
Sampling Date		2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 720**	**QC Batch**	**12-01 721**	**12-01 718**	**12-01 719**	**12-01 232**	**QC Batch**	**12-01 236**	**12-01 237**	**12-01 195**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	3087673	0.021	0.031	0.013	0.38	3089136	0.12	0.52	0.069	0.010	3085493
Surrogate Recovery (%)													
Decachlorobiphenyl	%	76	3087673	99 (1)	84 (1)	86 (1)	93 (1)	3089136	98 (1)	92 (1)	87 (1)		3085493

Maxxam ID		QB1888	QB1888		QB1889	QB1890	QB1890		QB1891		QB1892		
Sampling Date		2012/10/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01		2012/09/01		2012/10/01		
	Units	**12-01 490**	**12-01 490 Lab-Dup**	**QC Batch**	**12-01 497**	**12-01 498**	**12-01 498 Lab-Dup**	**QC Batch**	**12-01 235**	**QC Batch**	**12-01 499**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.019	0.018	3085493	0.029	0.035	0.038	3089136	0.29	3085493	0.055	0.010	3089136
Surrogate Recovery (%)													
Decachlorobiphenyl	%	100 (1)	82	3085493	90 (1)	80 (1)	84	3089136	101 (1)	3085493	96 (1)		3089136

Maxxam ID		QB1893	QB1894		QB1895	QB1896		QB1897		QB1898	QB1899		
Sampling Date		2012/10/01	2012/11/01		2012/11/01	2012/11/01		2012/11/01		2012/11/01	2012/11/01		
	Units	**12-01 500**	**12-01 762**	**QC Batch**	**12-01 763**	**12-01 764**	**QC Batch**	**12-01 765**	**QC Batch**	**12-01 766**	**12-01 767**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.036	3.0	3089136	0.019	0.031	3085493	2.4	3089136	0.020	0.027	0.010	3085493
Surrogate Recovery (%)													
Decachlorobiphenyl	%	86 (1)	104 (1)	3089136	99 (1)	98 (1)	3085493	95 (1)	3089136	99 (1)	99 (1)		3085493

Maxxam ID		QB1900	QB1901	QB1902	QB1903	QB1904	QB1905	QB1906	QB1907		QB1908		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		2012/11/01		
	Units	**12-01 768**	**12-01 769**	**12-01 770**	**12-01 771**	**12-01 772**	**12-01 773**	**12-01 774**	**12-01 775**	**QC Batch**	**12-01 776**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	2.0	0.024	0.027	1.9	0.018	0.021	3.5	0.016	3085493	0.023	0.010	3089136
Surrogate Recovery (%)													
Decachlorobiphenyl	%	98 (1)	101 (1)	94 (1)	103 (1)	97 (1)	96 (1)	99 (1)	94 (1)	3085493	91 (1)		3089136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Maxxam Job #: B2K0998
Report Date: 2013/02/08

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1909	QB1910	QB1911	QB1912	QB1913	QB1914	QB1915		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		
	Units	**12-01 777**	**12-01 778**	**12-01 779**	**12-01 780**	**12-01 781**	**12-01 782**	**12-01 369**	**RDL**	**QC Batch**
PCBs										
Total PCB	ug/g	0.010	0.029	0.038	0.064	0.019	0.062	0.72	0.010	3089136
Surrogate Recovery (%)										
Decachlorobiphenyl	%	99 (1)	97 (1)	97 (1)	96 (1)	99 (1)	105 (1)	112 (1)		3089136

POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		QB1830	QB1831		QB1832	QB1833	QB1834	QB1835		
Sampling Date		2012/09/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-BA 1**	**12-BA 2**	**QC Batch**	**12-01 501**	**12-01 486**	**12-01 479**	**12-01 502**	**RDL**	**QC Batch**
PCBs										
Total PCB	ug/g	<0.010	<0.010	3085493	<0.010	<0.010	<0.010	<0.010	0.010	3085220
Surrogate Recovery (%)										
Decachlorobiphenyl	%	44 (2)	48 (2)	3085493	83	81	77	80		3085220

Maxxam ID		QB1836	QB1837	QB1855	QB1856		QB1857		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/09/01		
	Units	**12-01 484**	**12-01 480**	**12-01 503**	**12-01 485**	**QC Batch**	**12-01 481**	**RDL**	**QC Batch**
PCBs									
Total PCB	ug/g	<0.010	<0.010	<0.010	<0.010	3085220	<0.010	0.010	3085493
Surrogate Recovery (%)									
Decachlorobiphenyl	%	72	72	63 (2)	51 (2)	3085220	43 (2)		3085493

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

Package 1	3.0°C
Package 2	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

PCB in sediment samples received past the 14 day holding time recommended for this test.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		Reagent Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3085220	Decachlorobiphenyl	2013/01/31	87	30 - 130	91	30 - 130	73	%			92	30 - 130
3085220	Total PCB	2013/01/31	80	30 - 130	71	30 - 130	<0.010	ug/g	NC	50	<0.010	N/A
3085493	Decachlorobiphenyl	2013/02/01	92	30 - 130	91	30 - 130	87	%			90	30 - 130
3085493	Total PCB	2013/02/01	72	30 - 130	89	30 - 130	<0.010	ug/g	NC	50	<0.010	N/A
3087673	Decachlorobiphenyl	2013/01/17	89	30 - 130	77	30 - 130	93	%			88	30 - 130
3087673	Total PCB	2013/01/17	78	30 - 130	78	30 - 130	<0.010	ug/g	NC	50	<0.010	N/A
3089136	Decachlorobiphenyl	2013/02/05	90	30 - 130	91	30 - 130	78	%			91	30 - 130
3089136	Total PCB	2013/02/05	94	30 - 130	101	30 - 130	<0.010	ug/g	NC	50	<0.010	N/A
3098344	Decachlorobiphenyl	2013/01/22	105	70 - 130	103	70 - 130	95	%				
3098344	Total PCB	2013/01/22	104	70 - 130	96	70 - 130	<0.010	mg/kg	NC	50		

N/A = Not Applicable
RPD = Relative Percent Difference
Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Validation Signature Page

Maxxam Job #: B2K0998

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Rose Macdonald, Scientific Specialist (Organics)

Robin Smith-Armstrong, Bedford SemiVol Spvsr

==

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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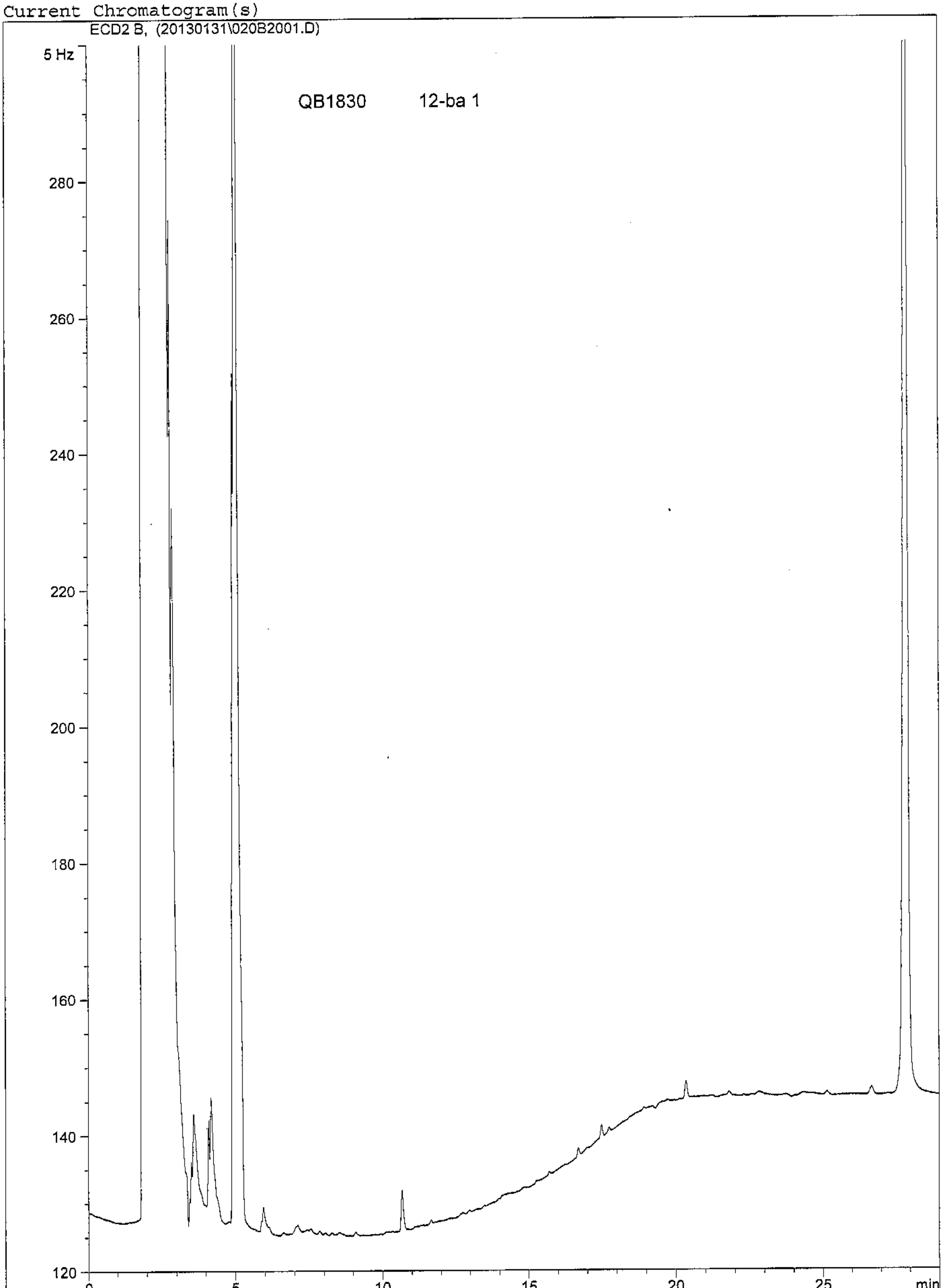

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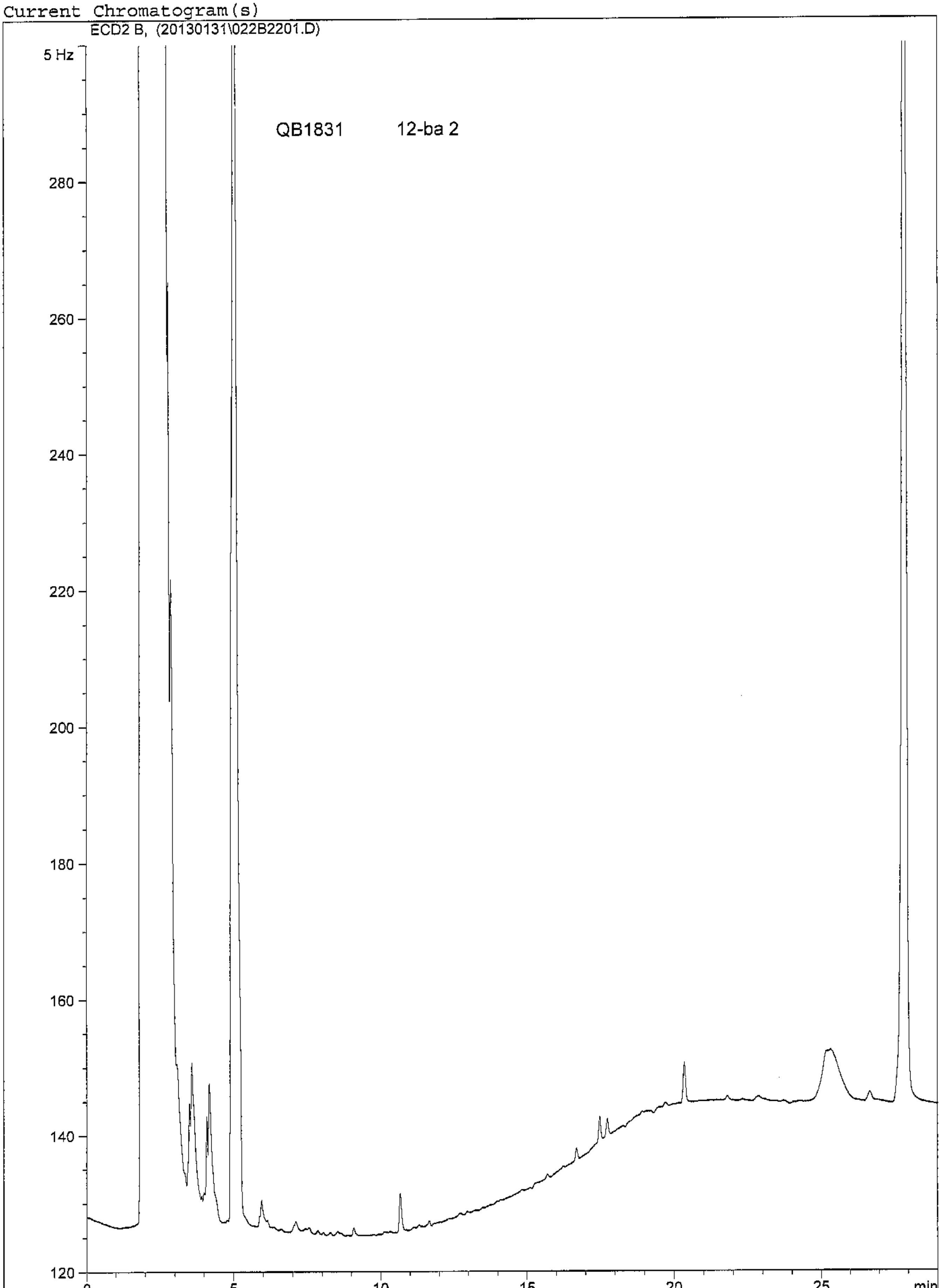

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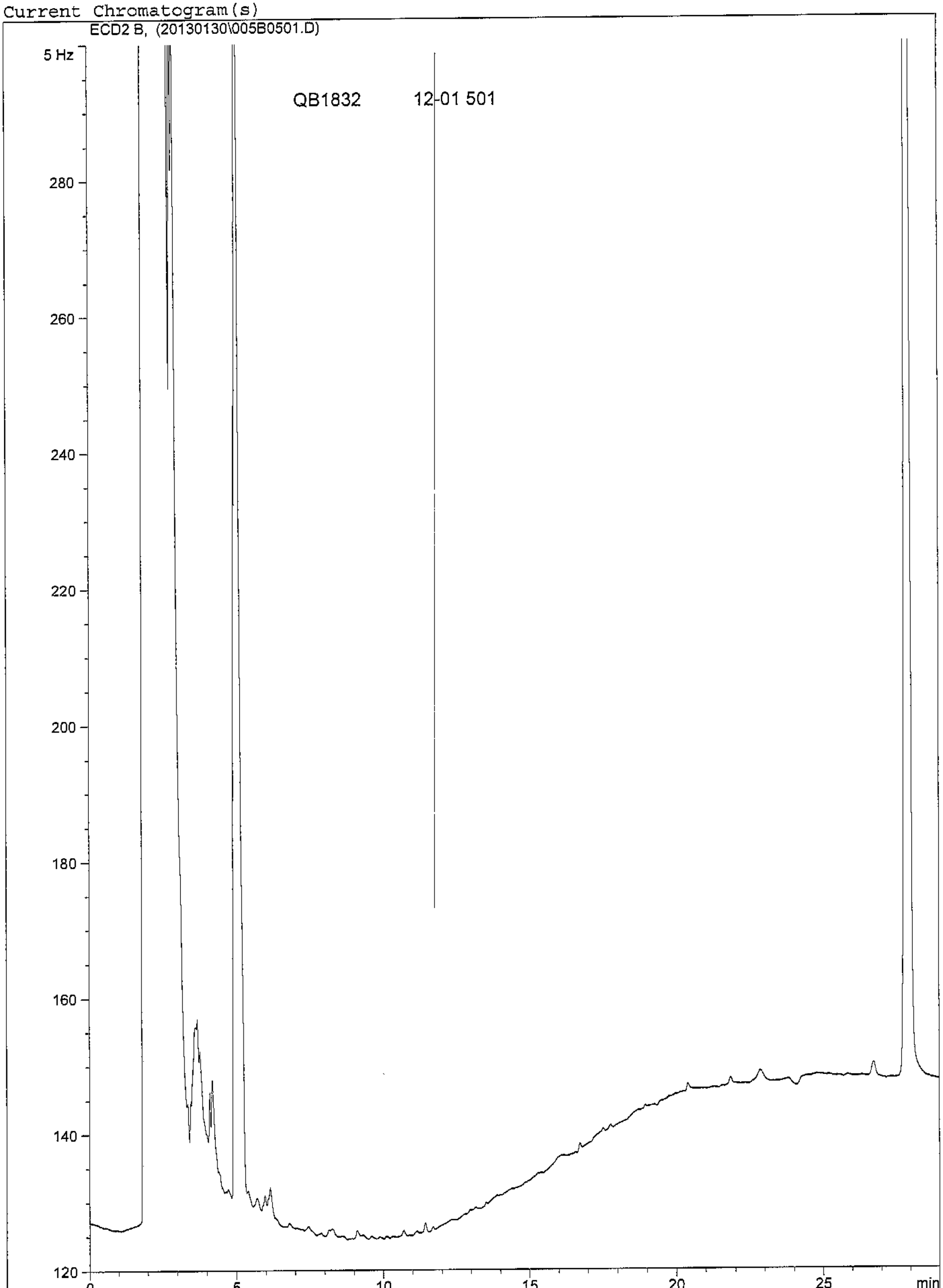

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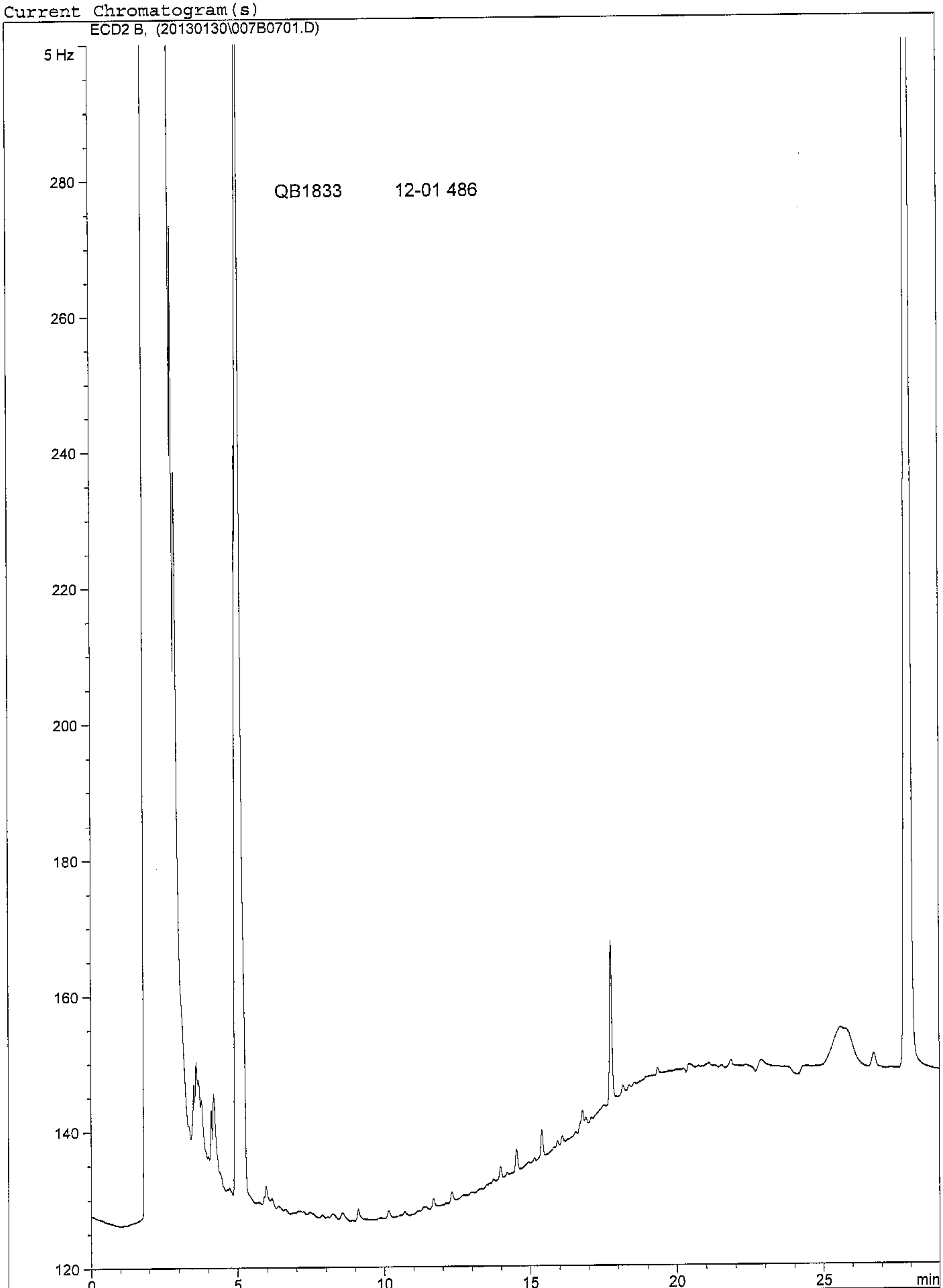

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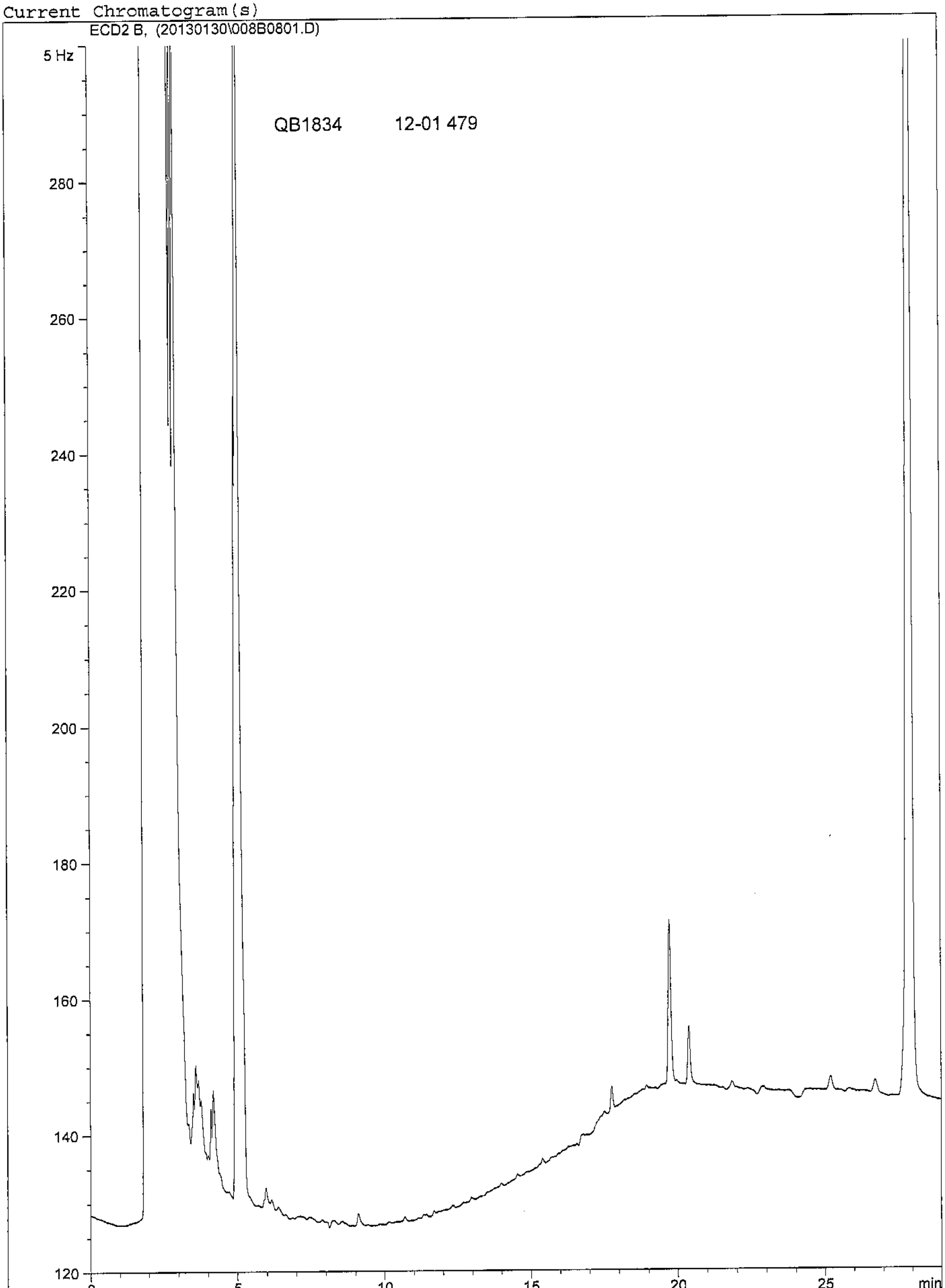

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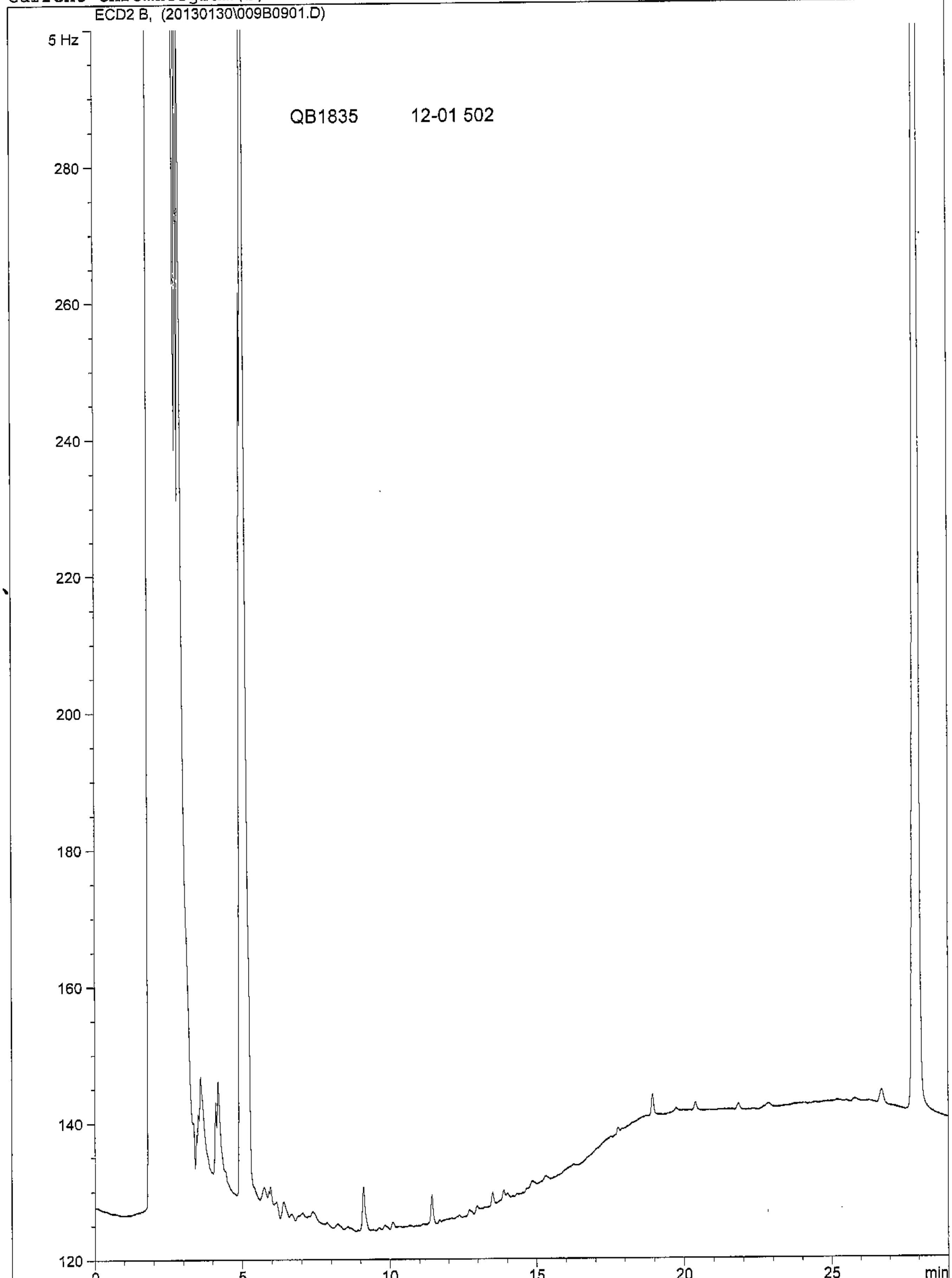

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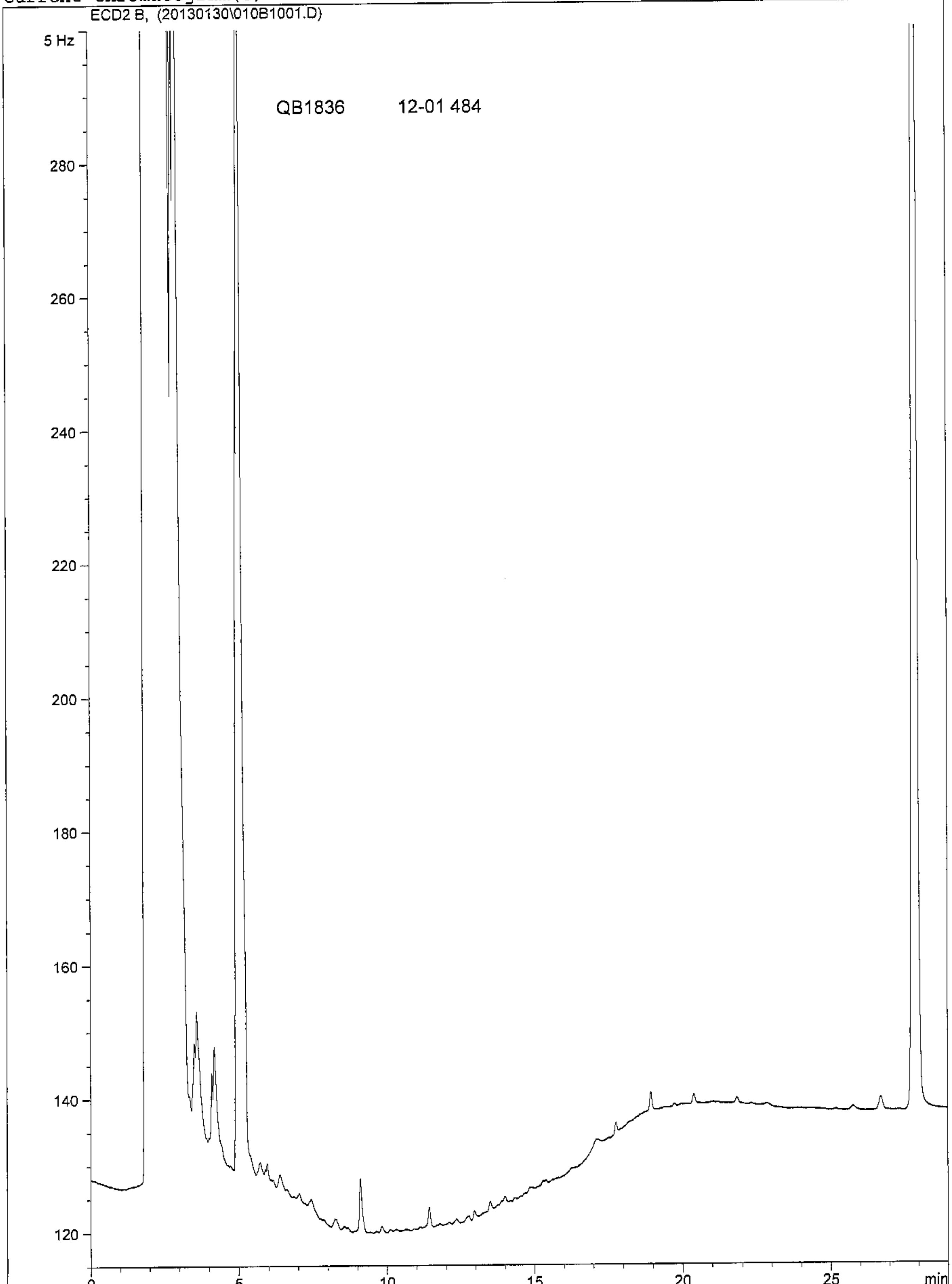

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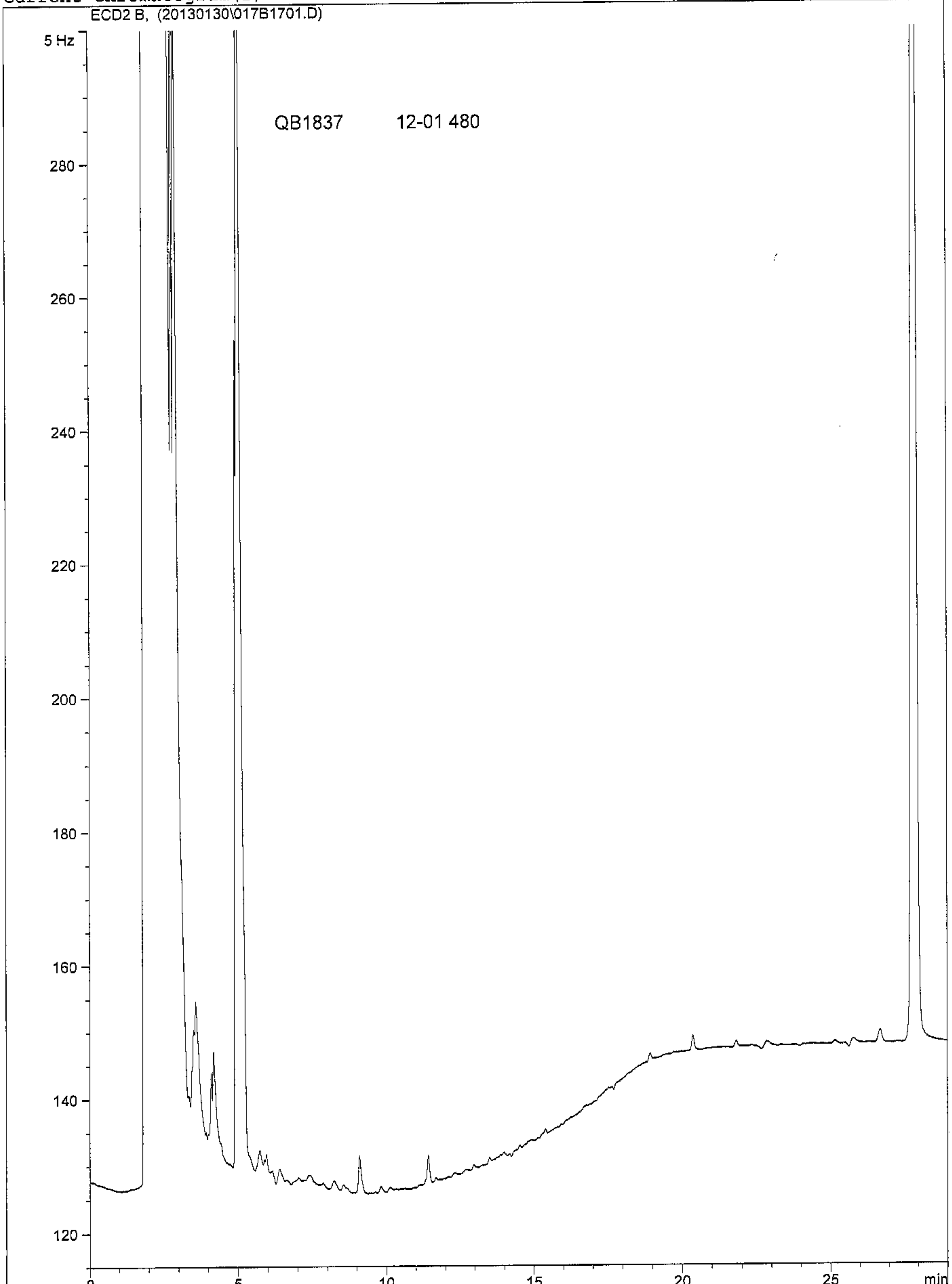

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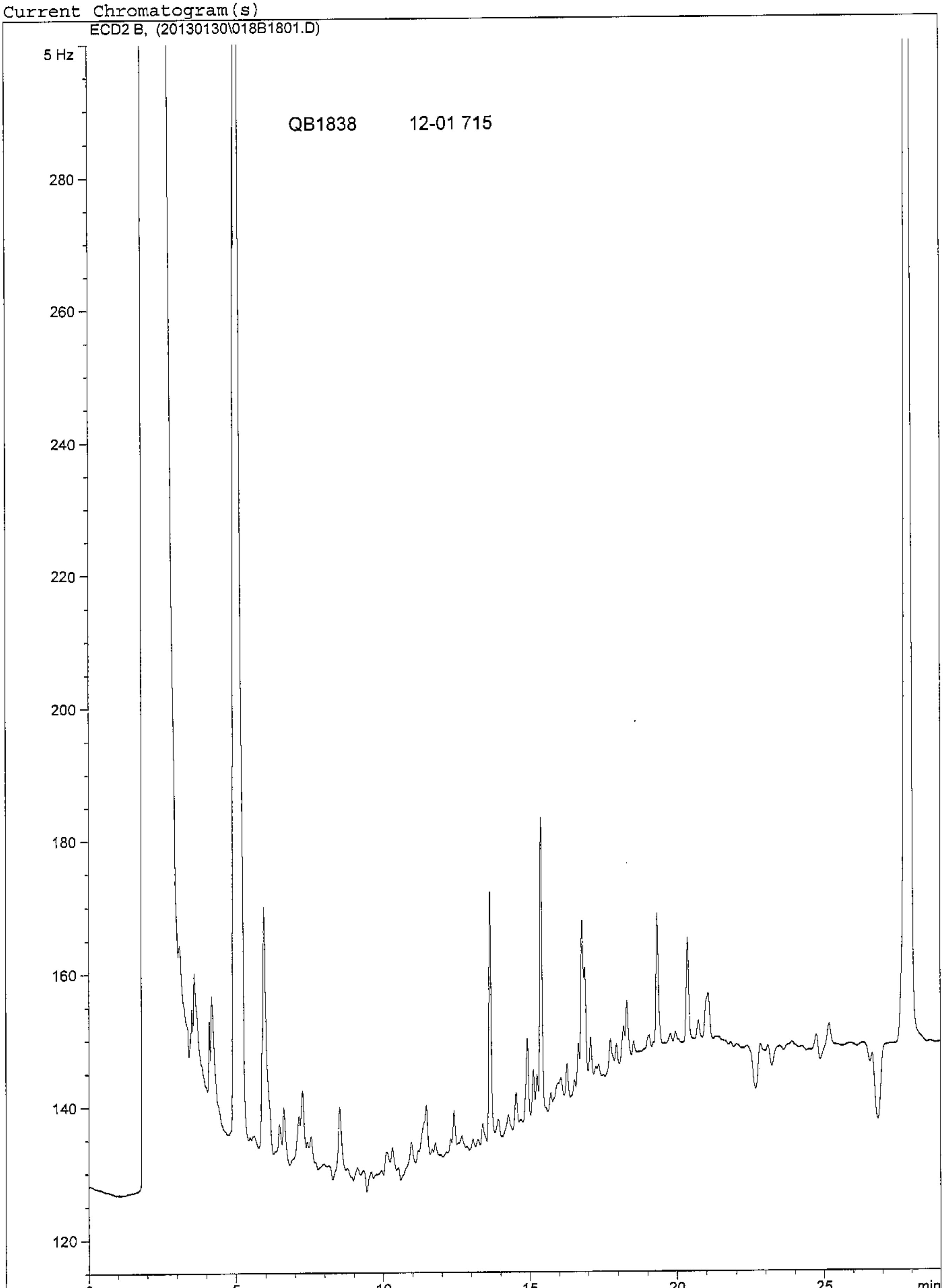

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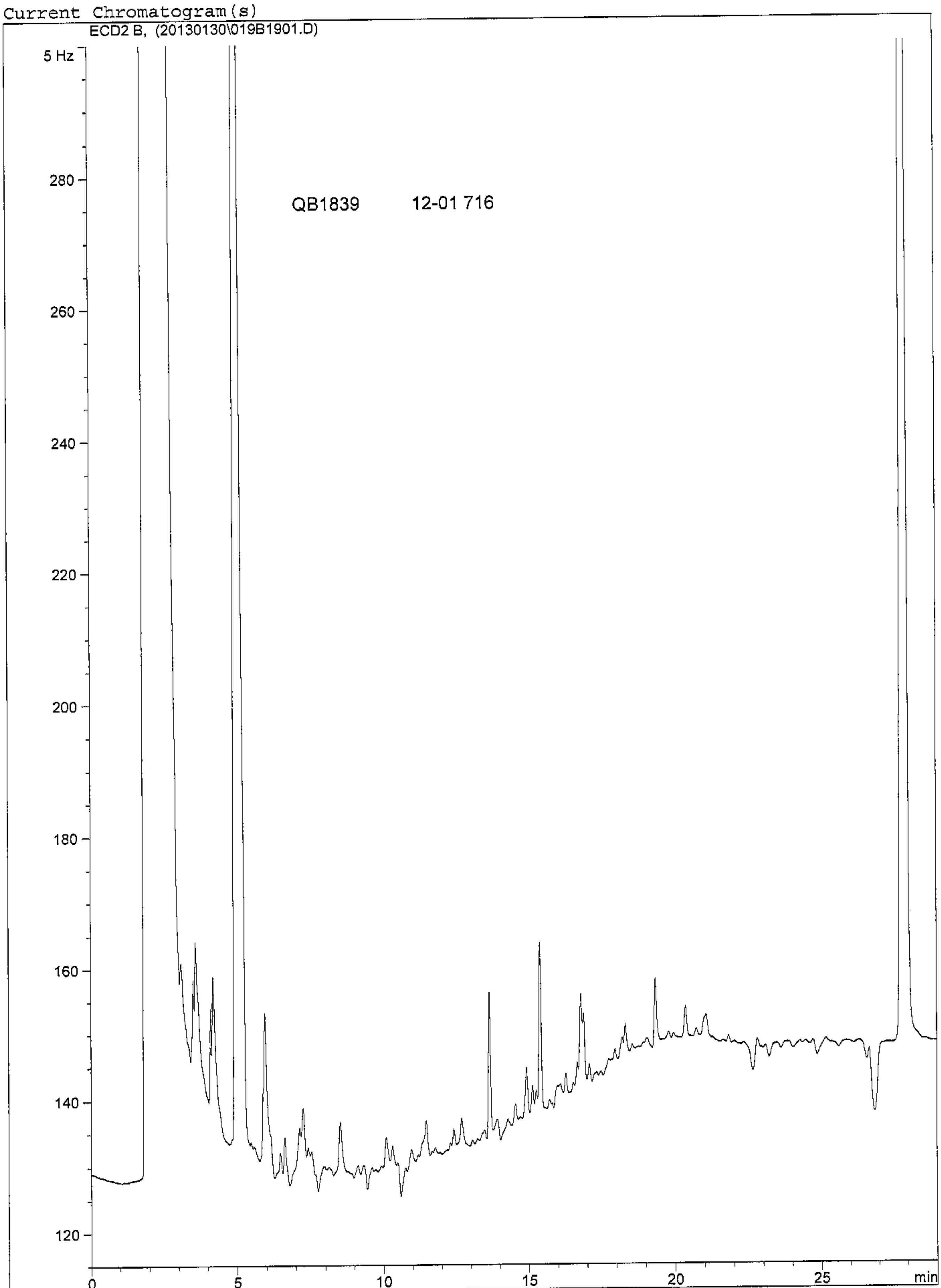

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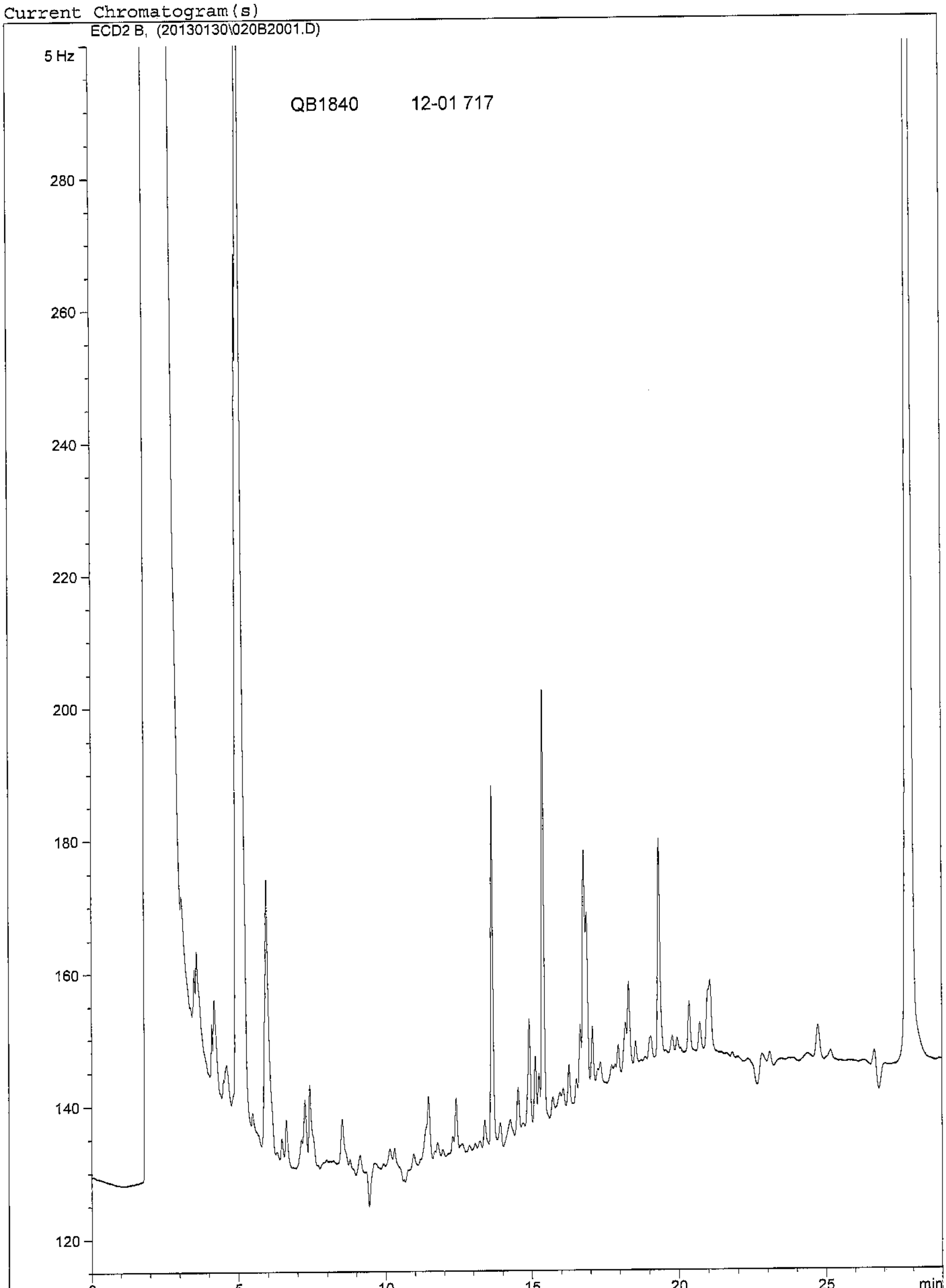

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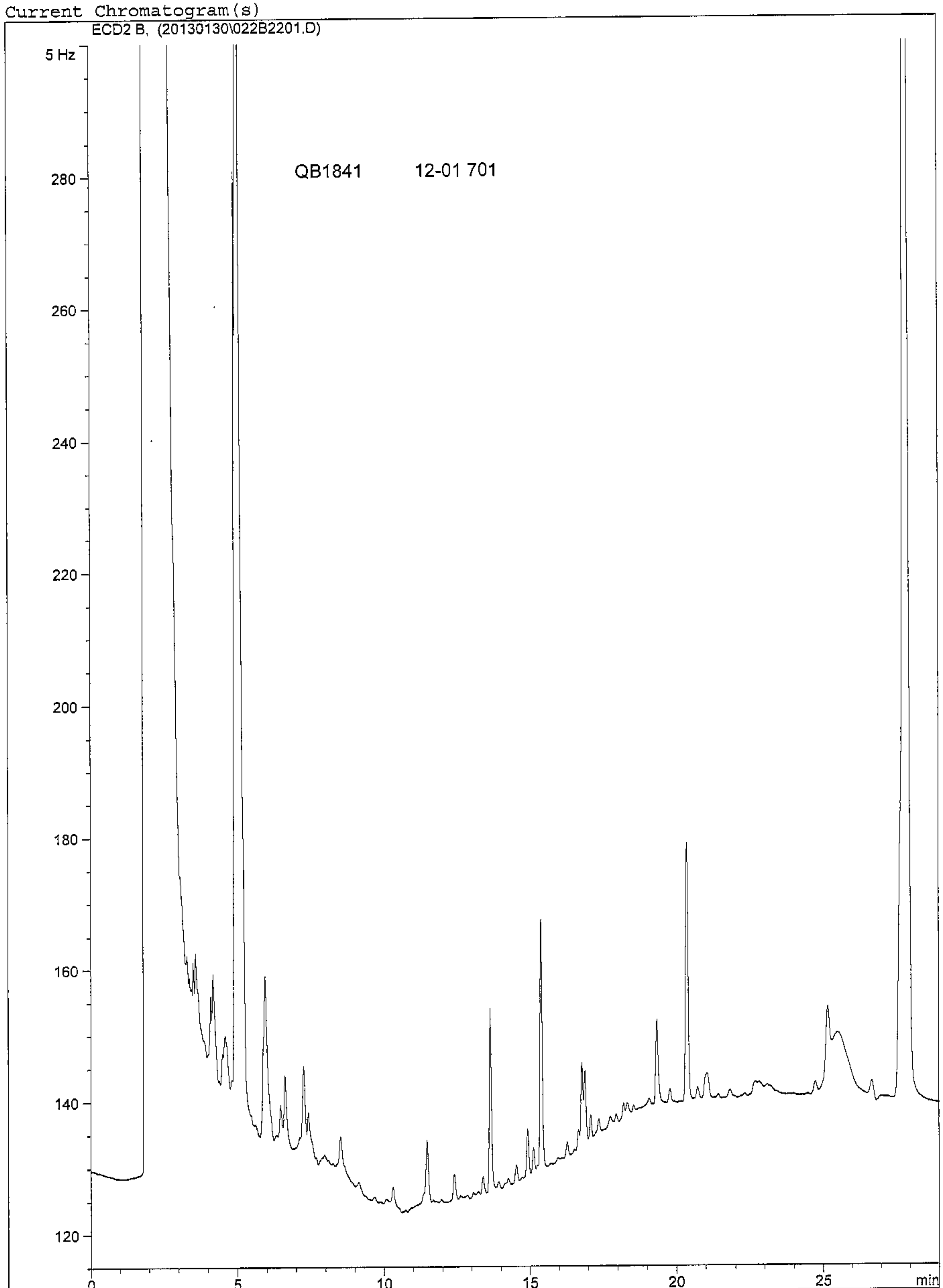

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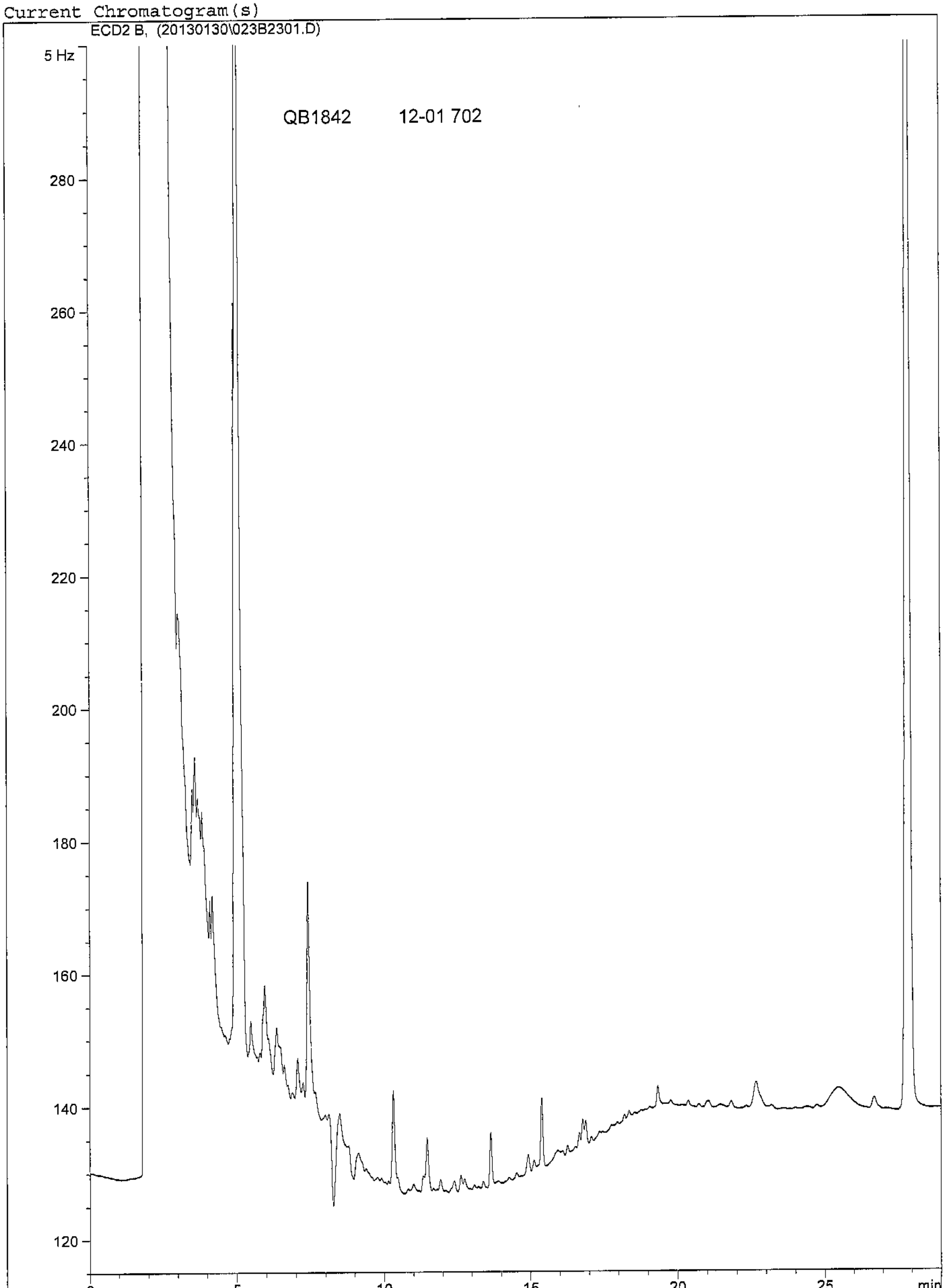

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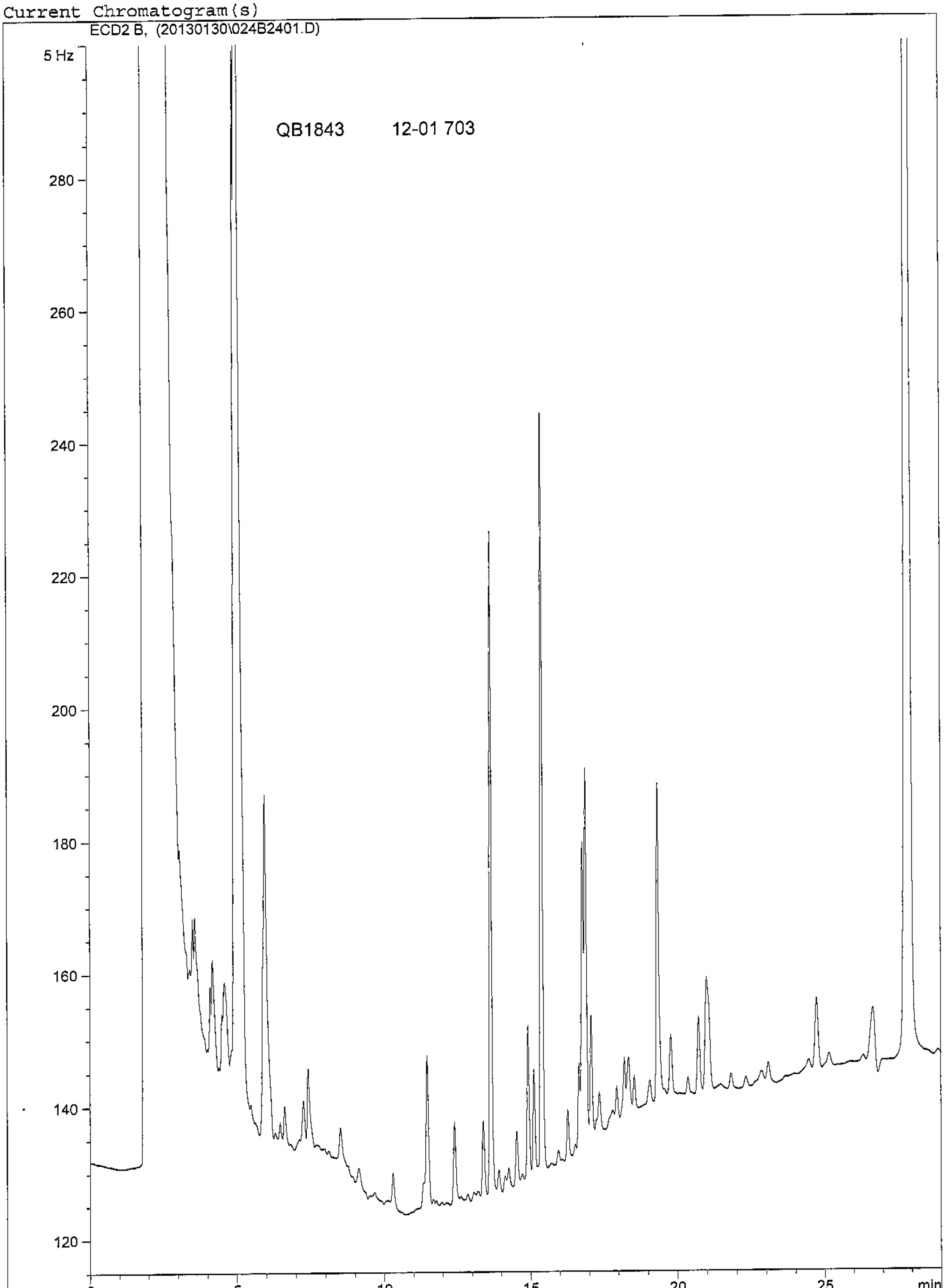

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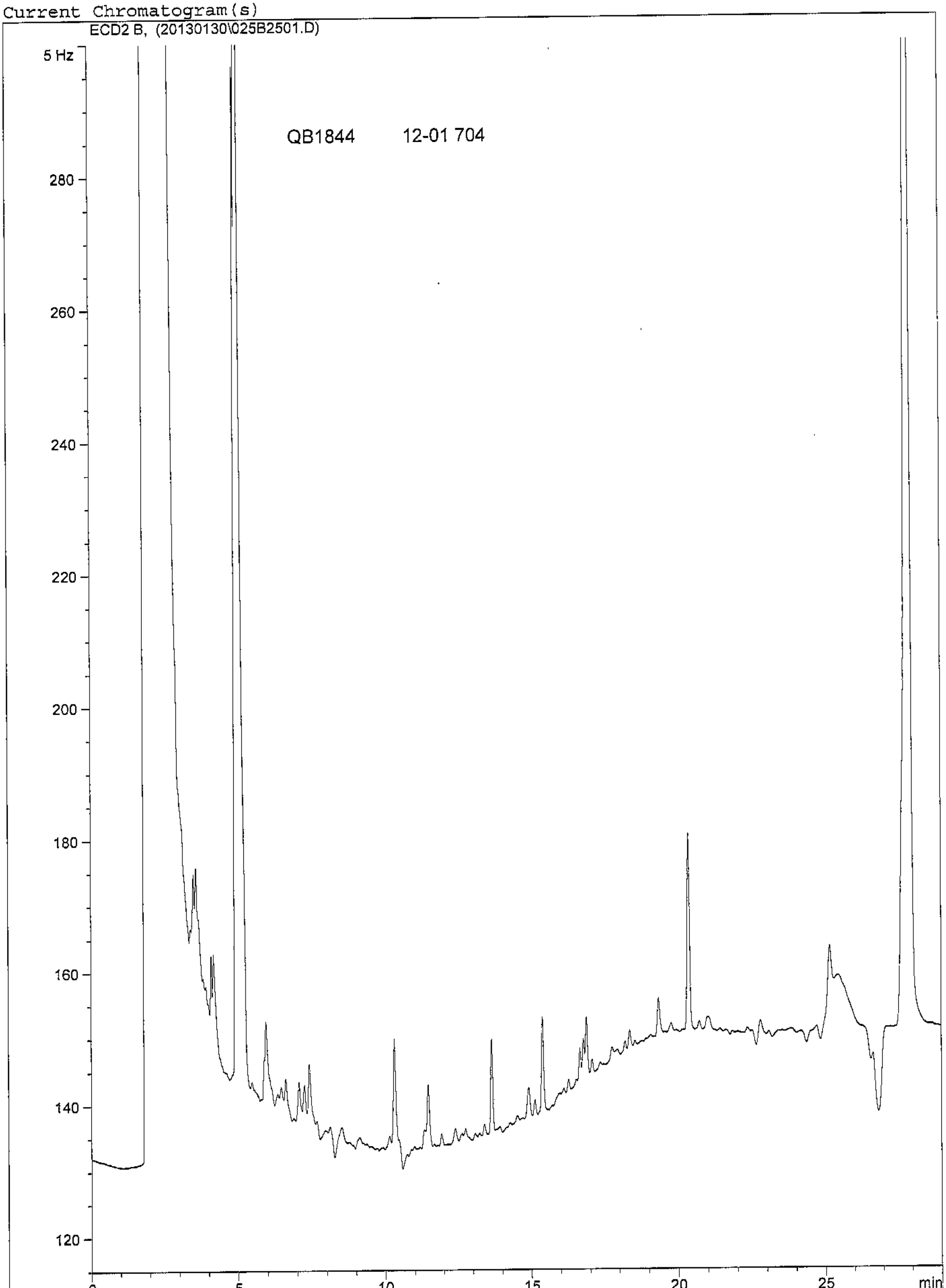

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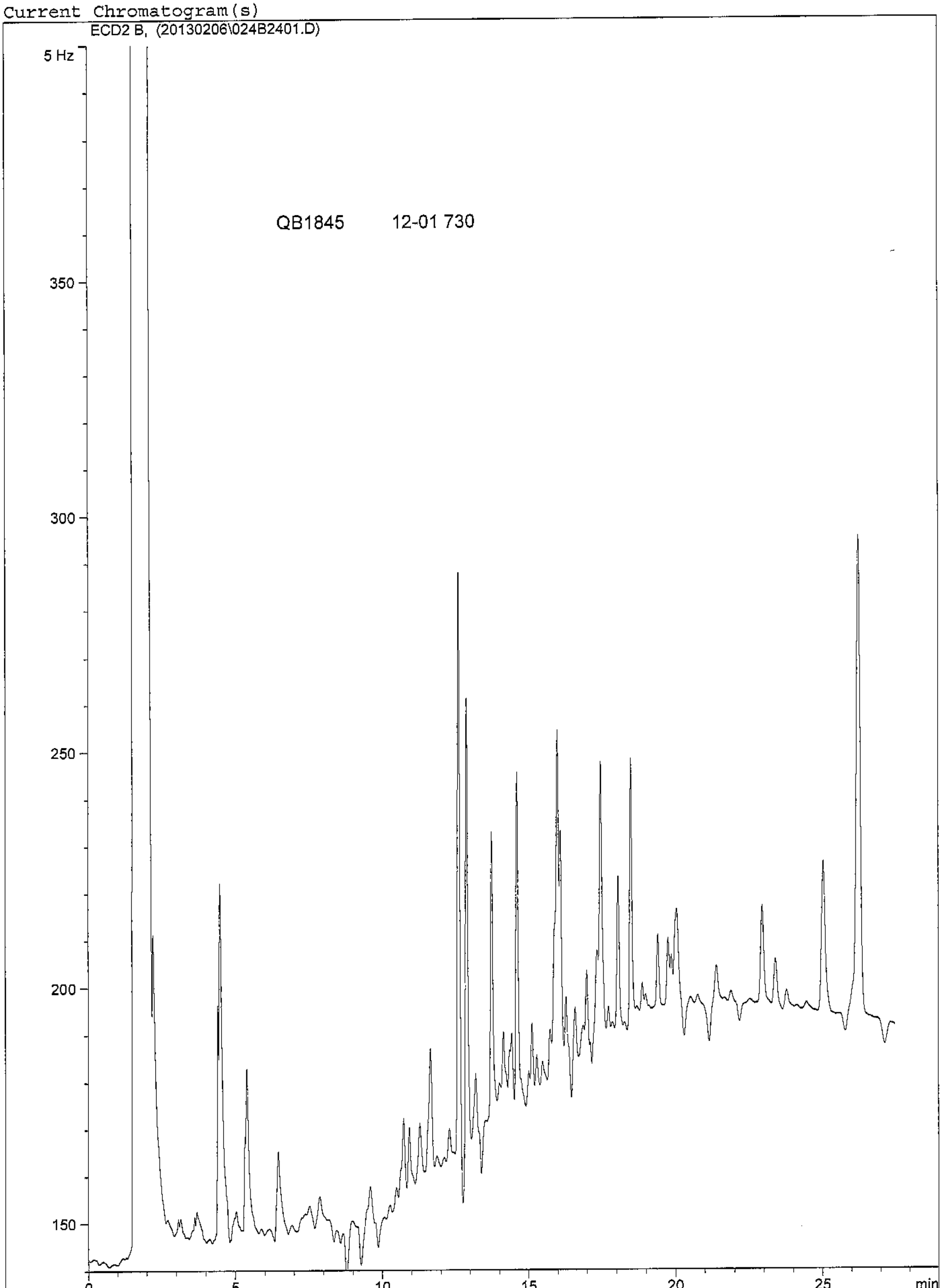

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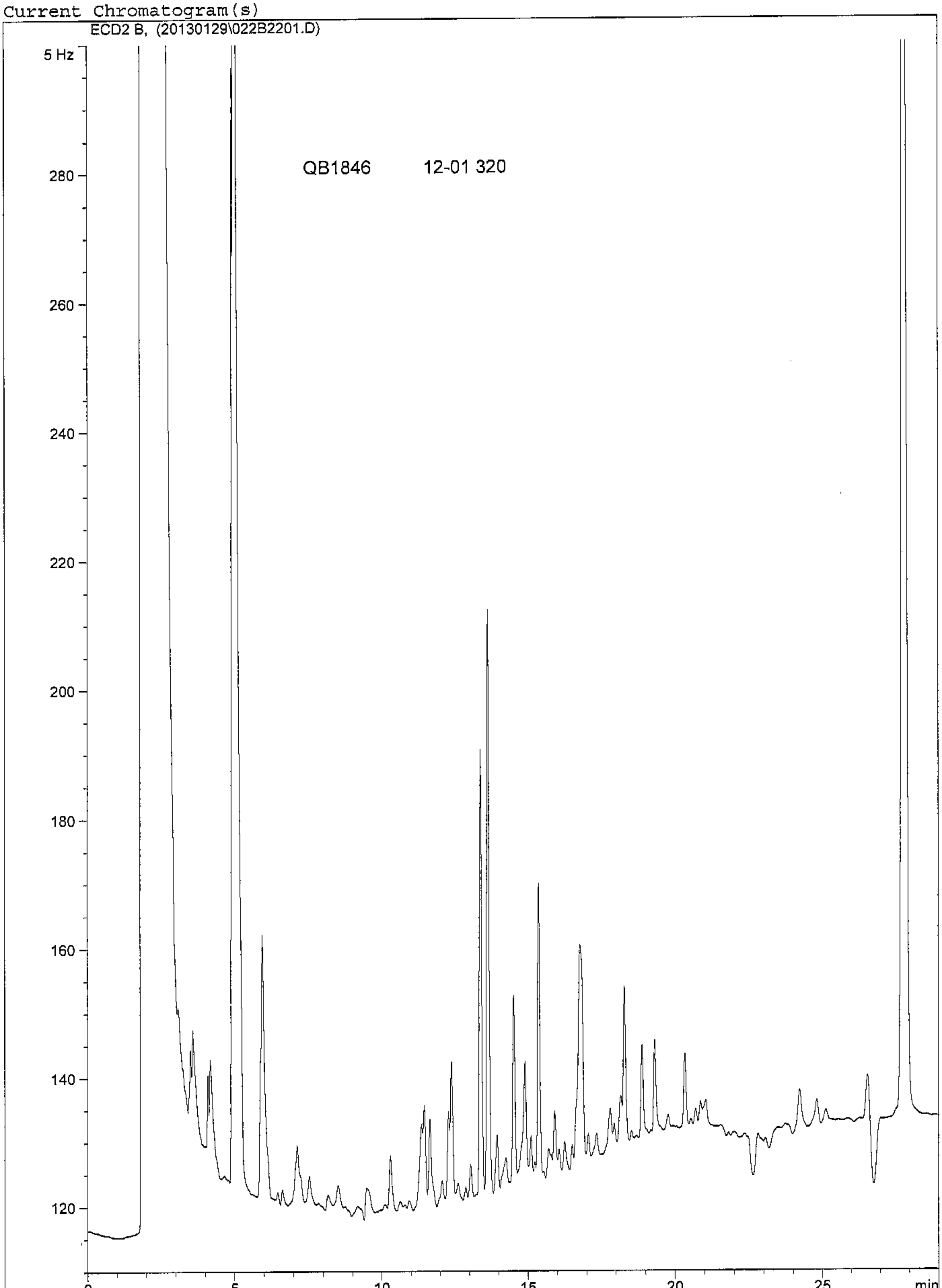

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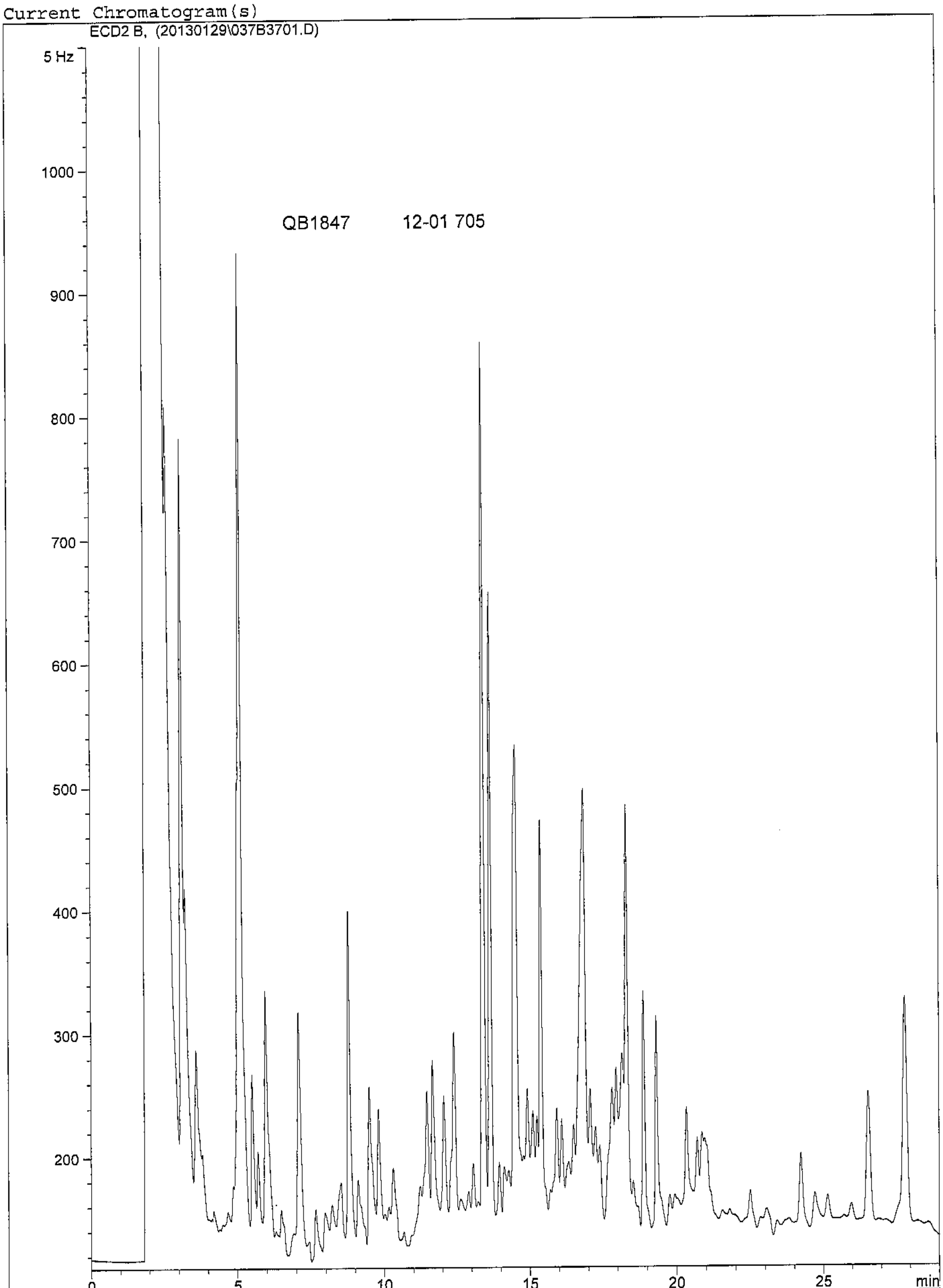

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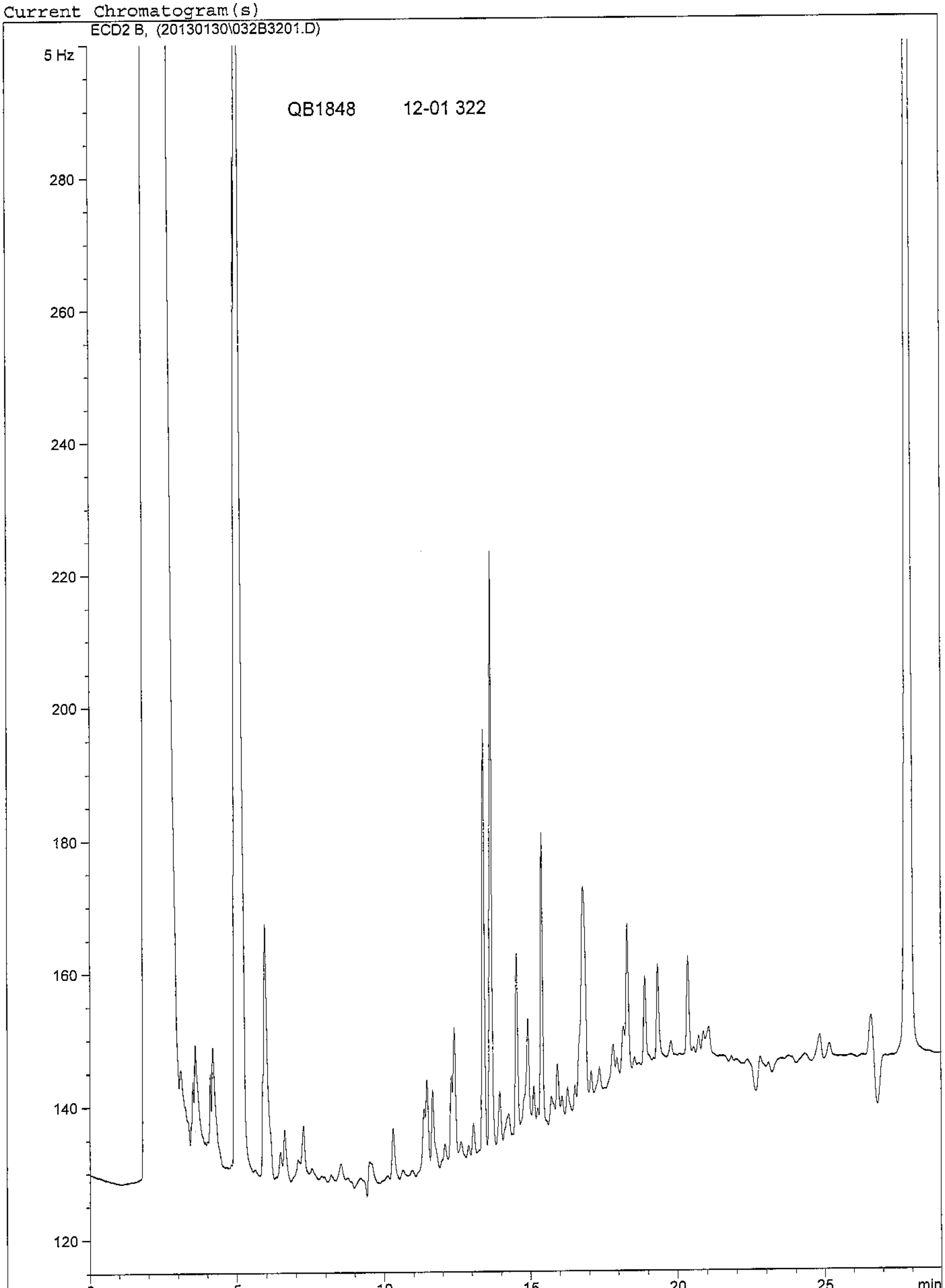

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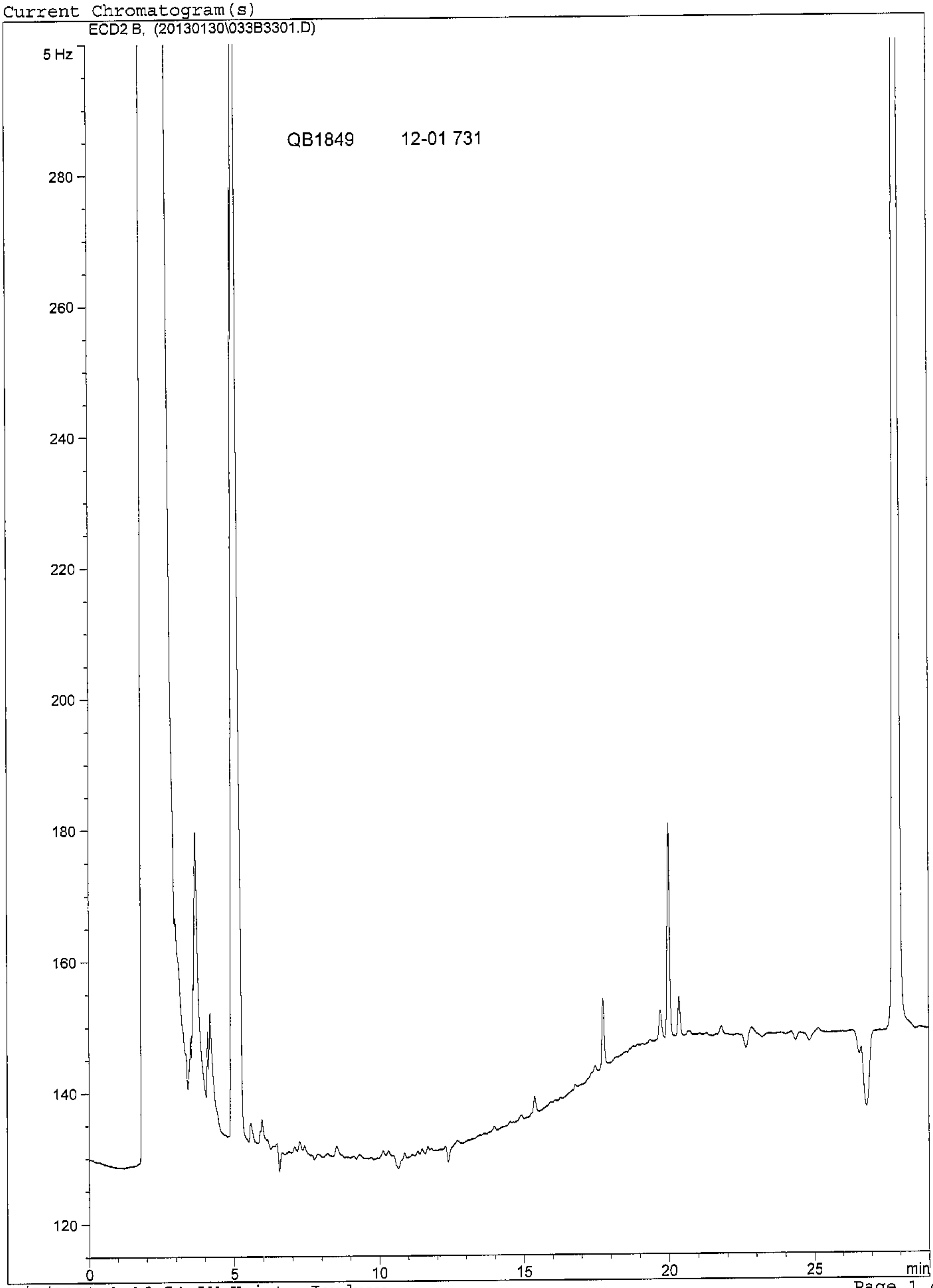

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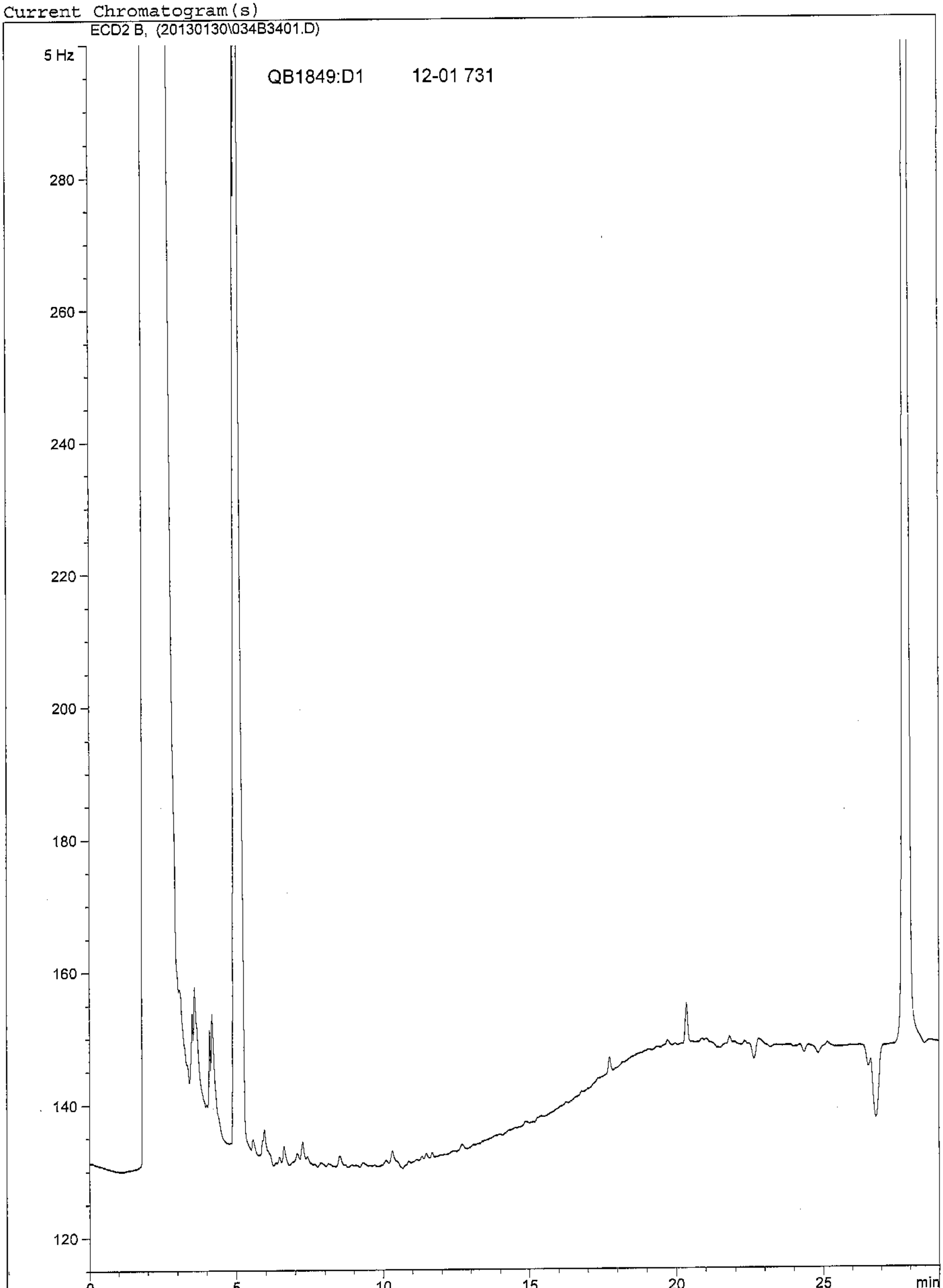

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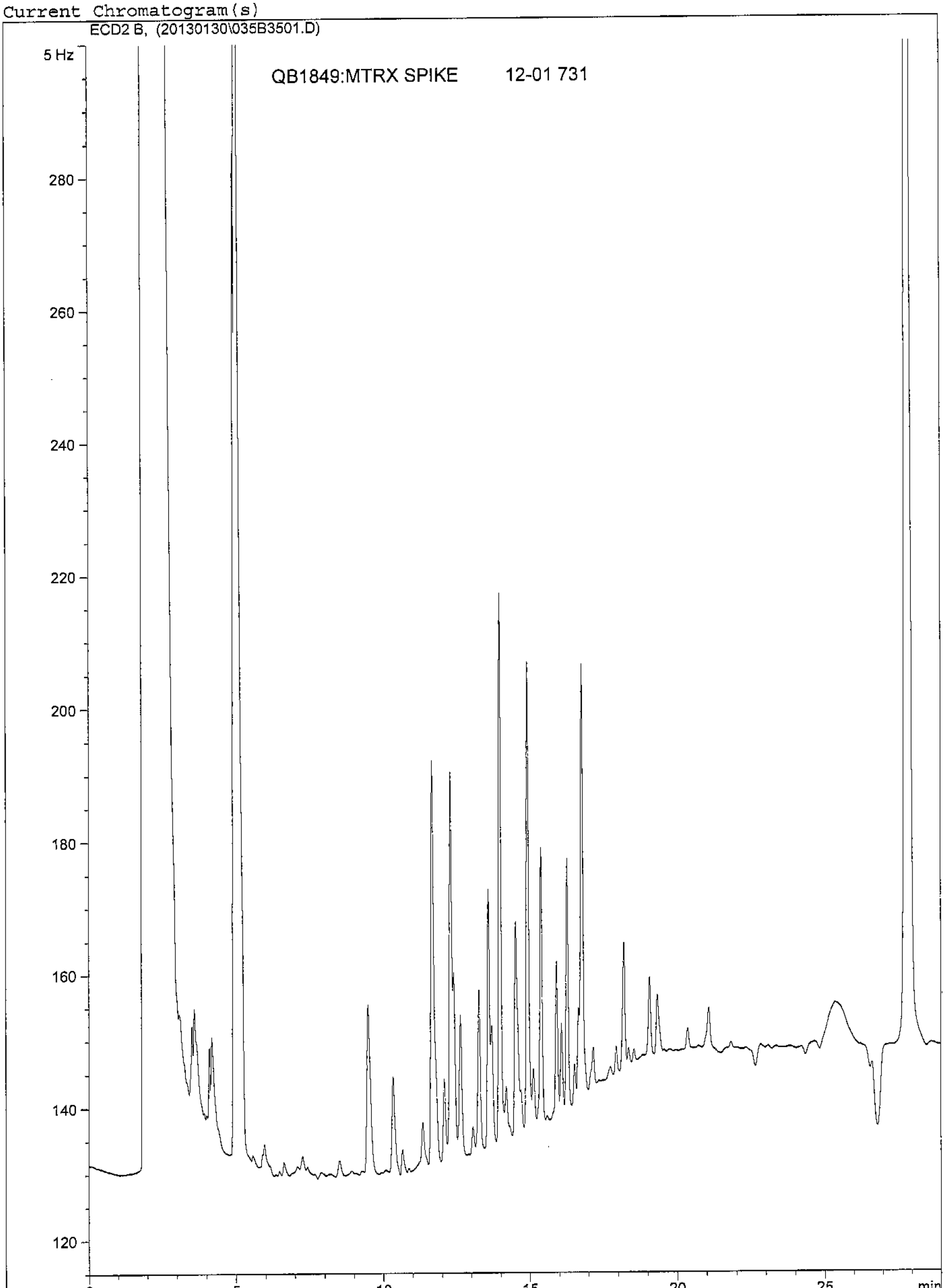

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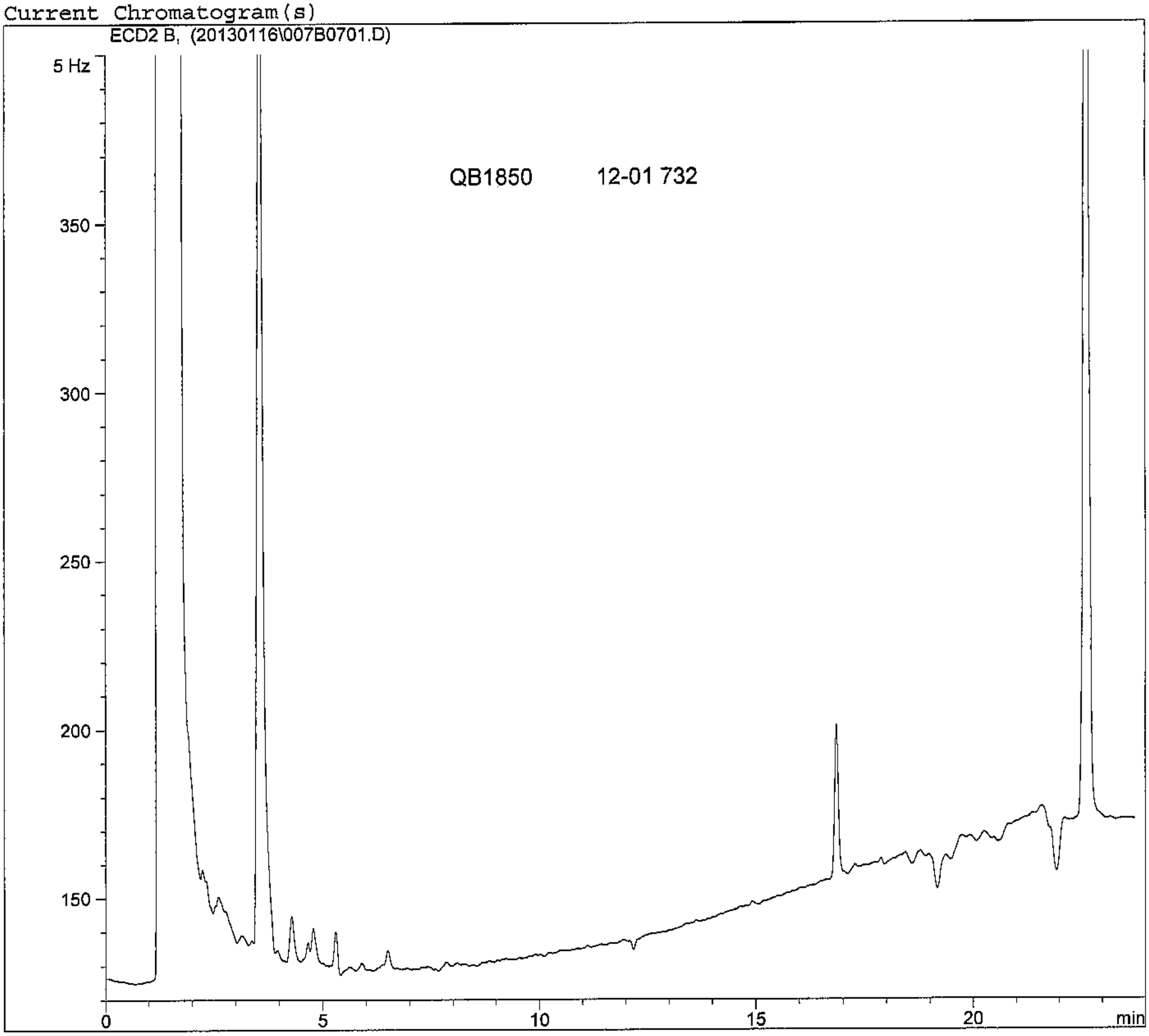

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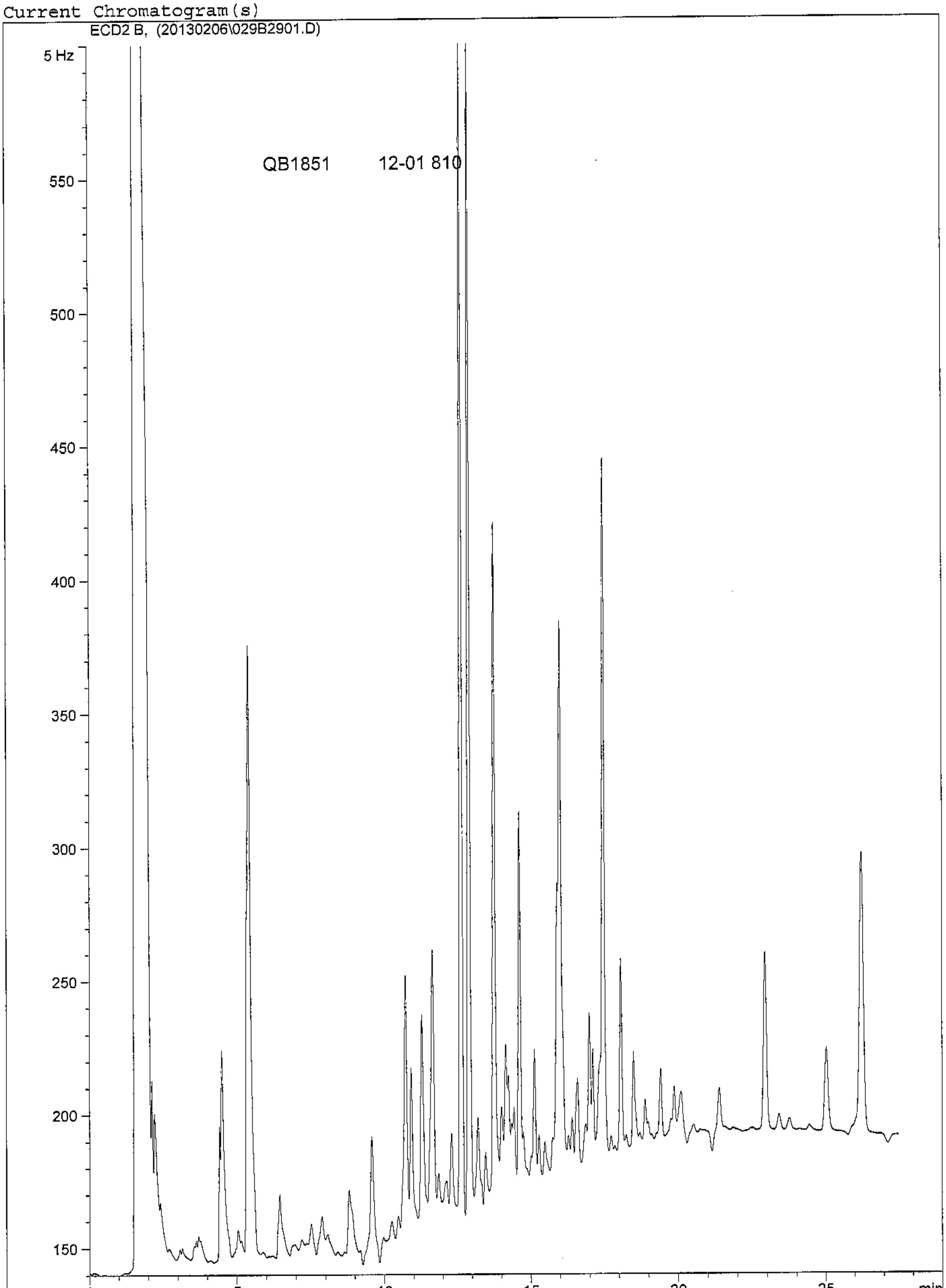

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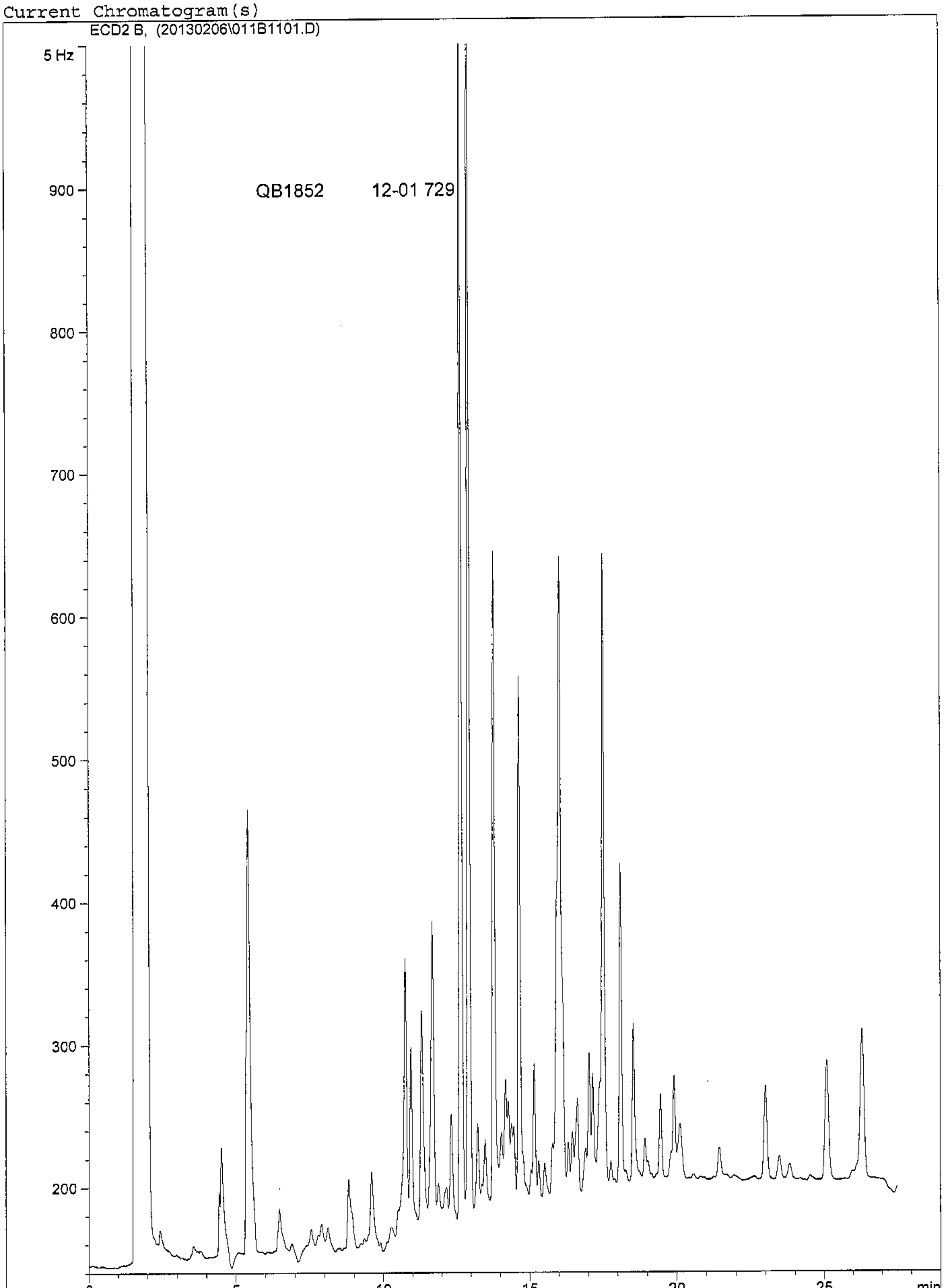

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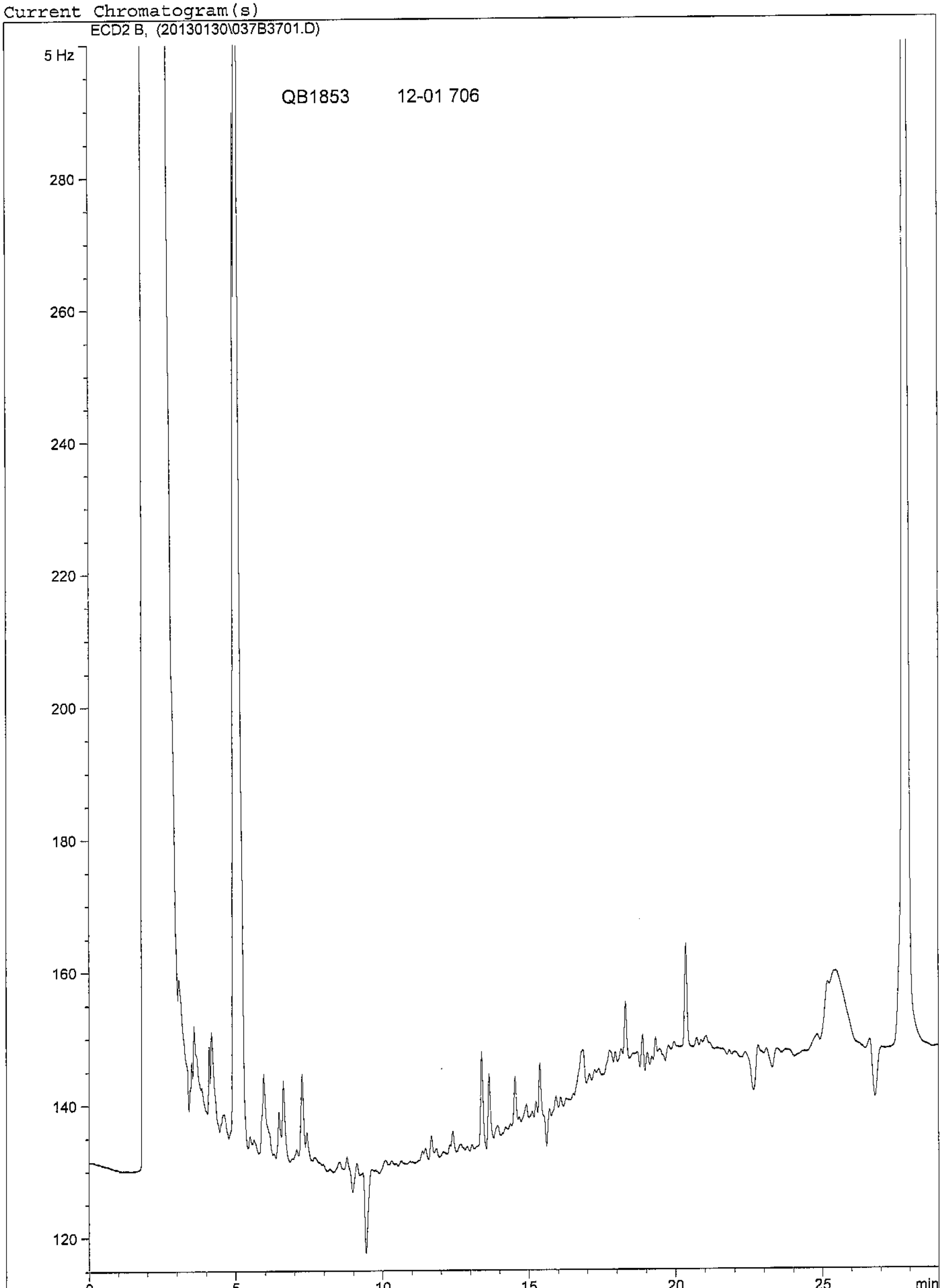

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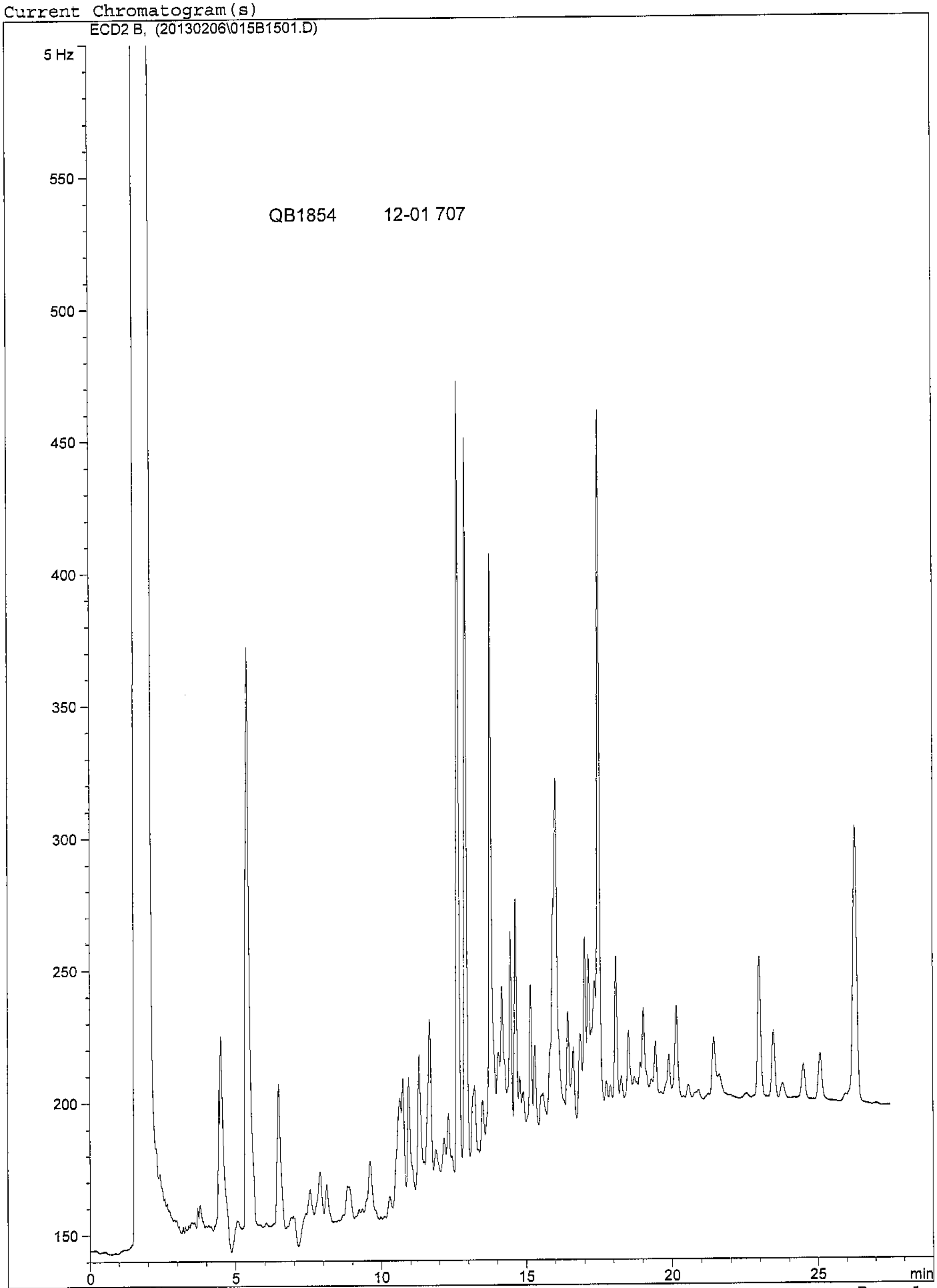

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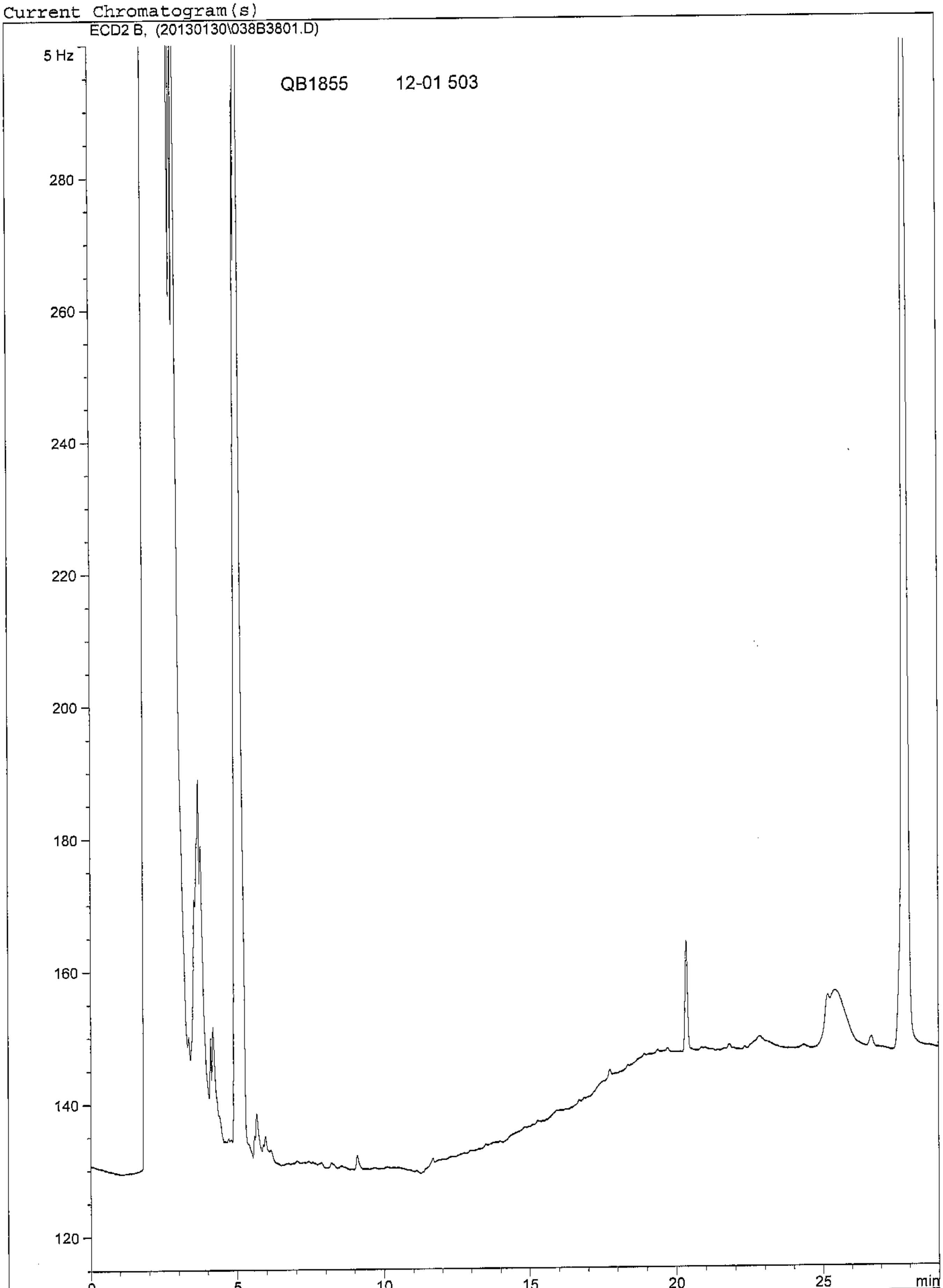

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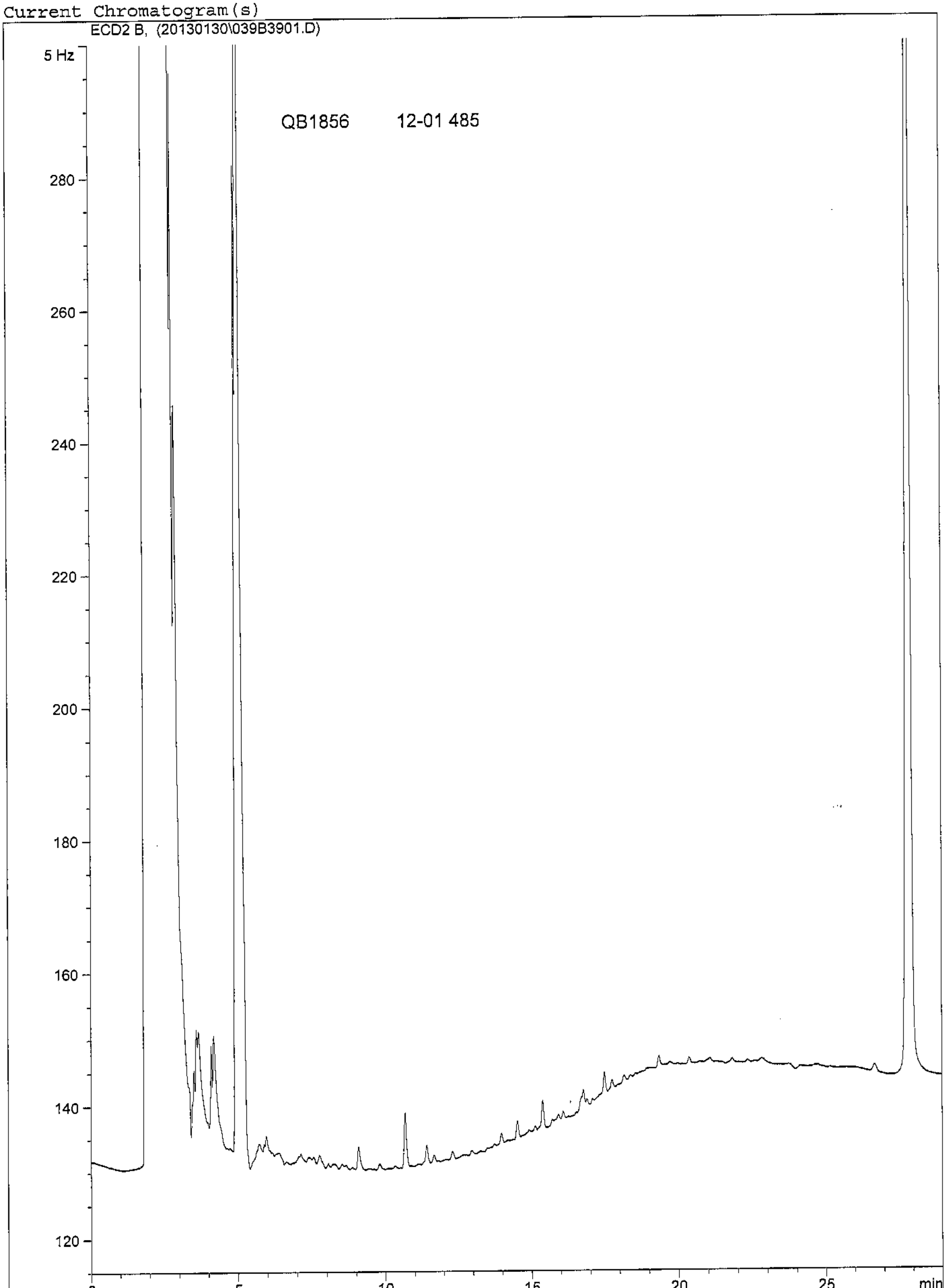

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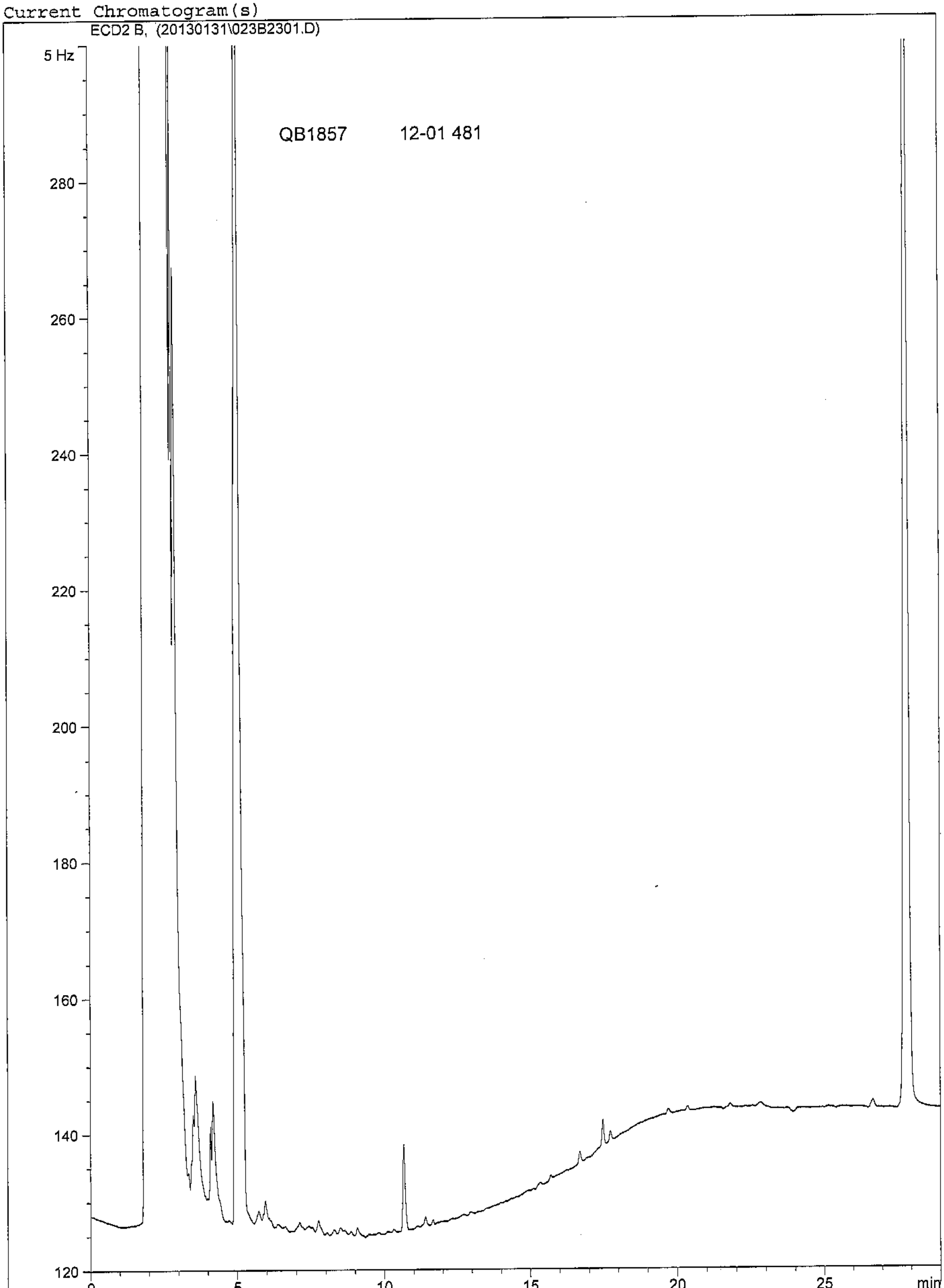

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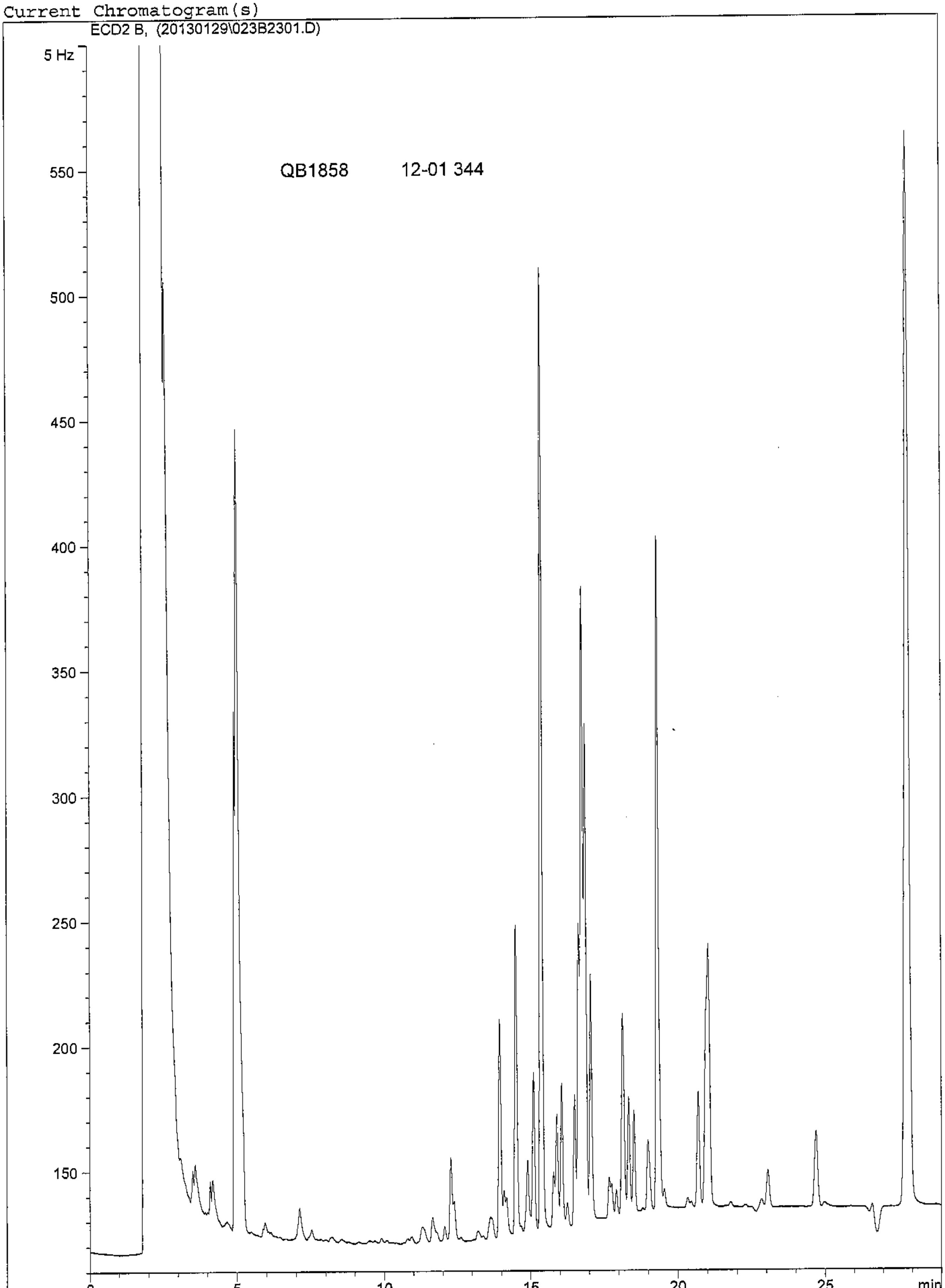

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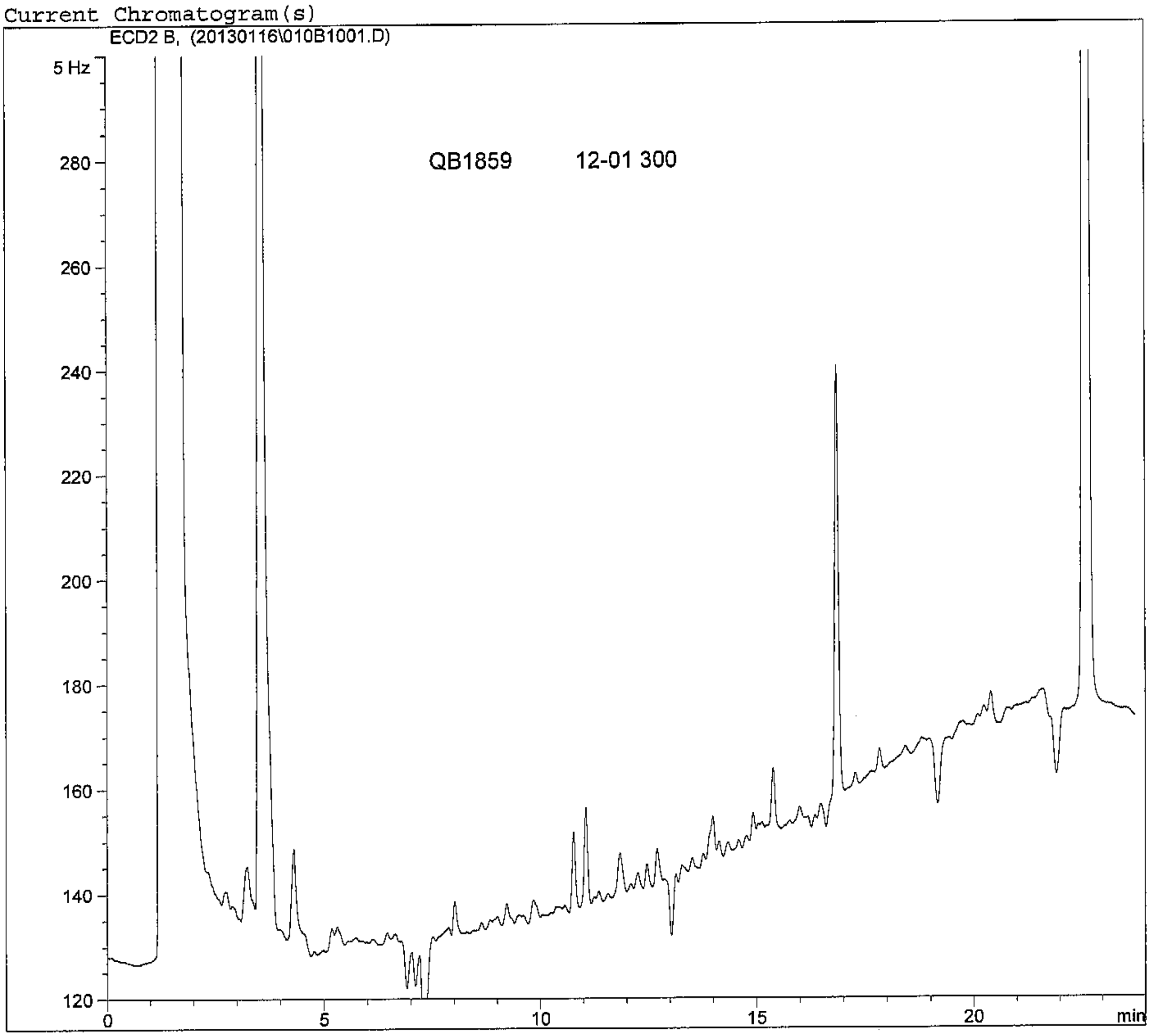

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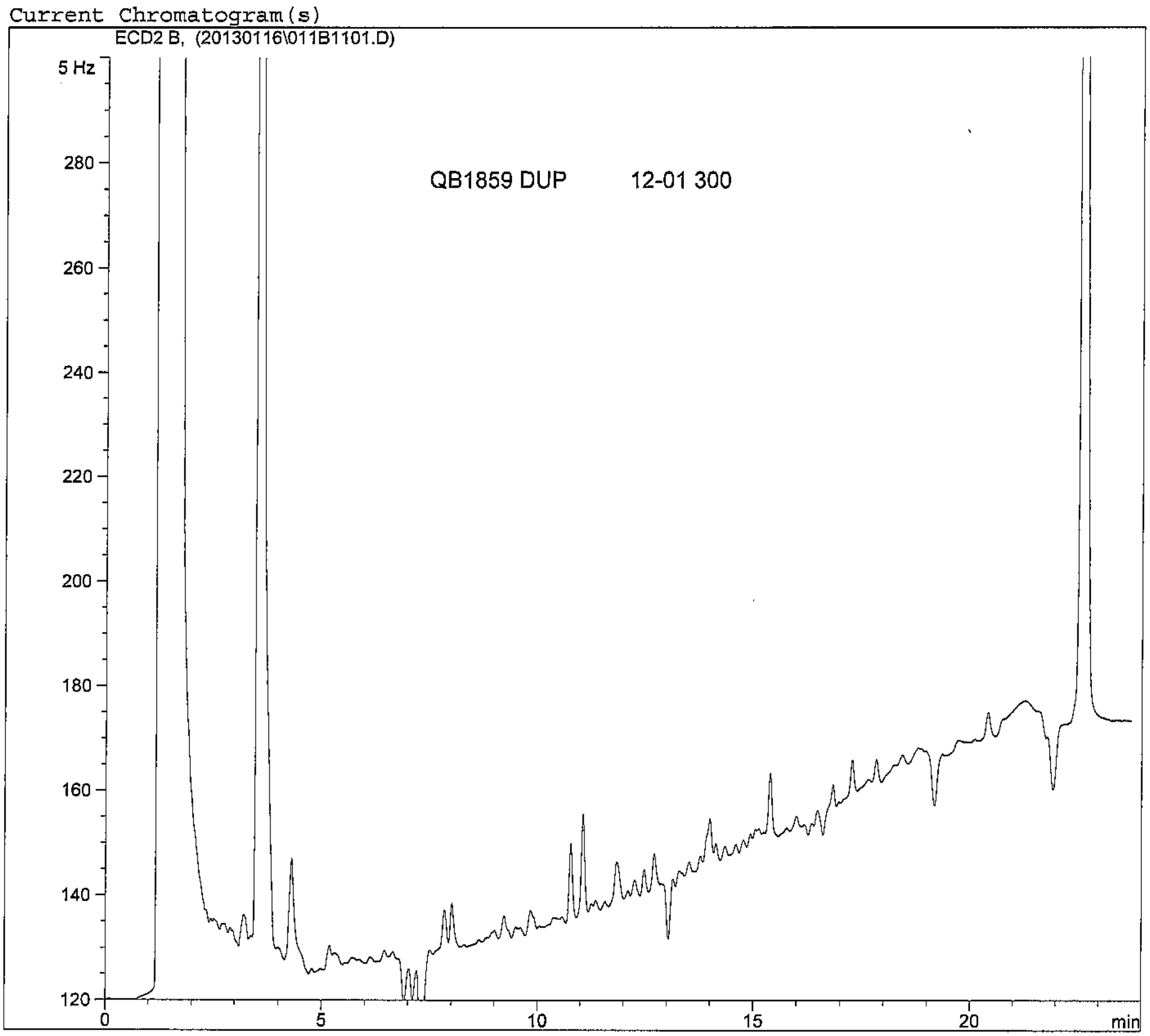

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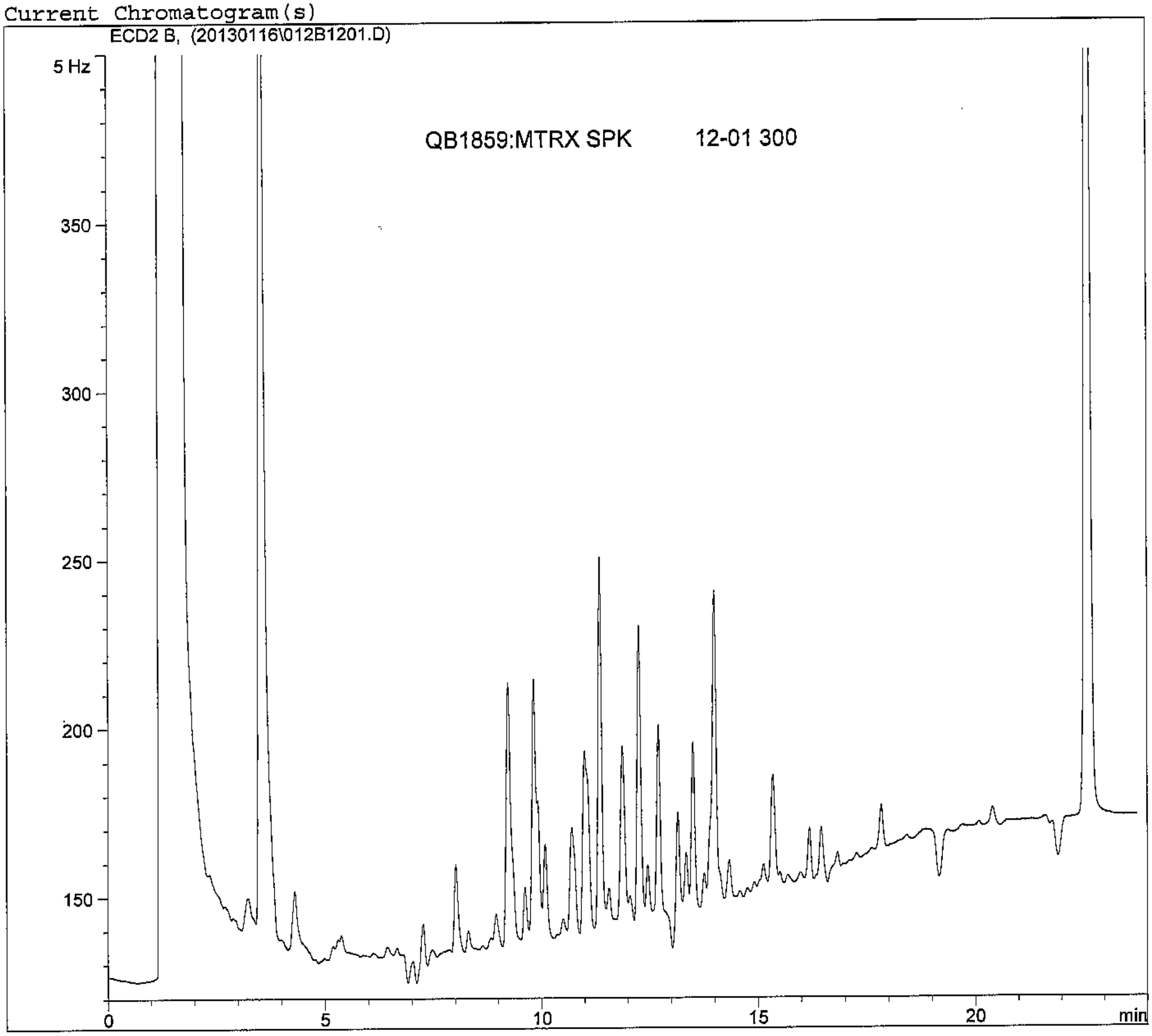

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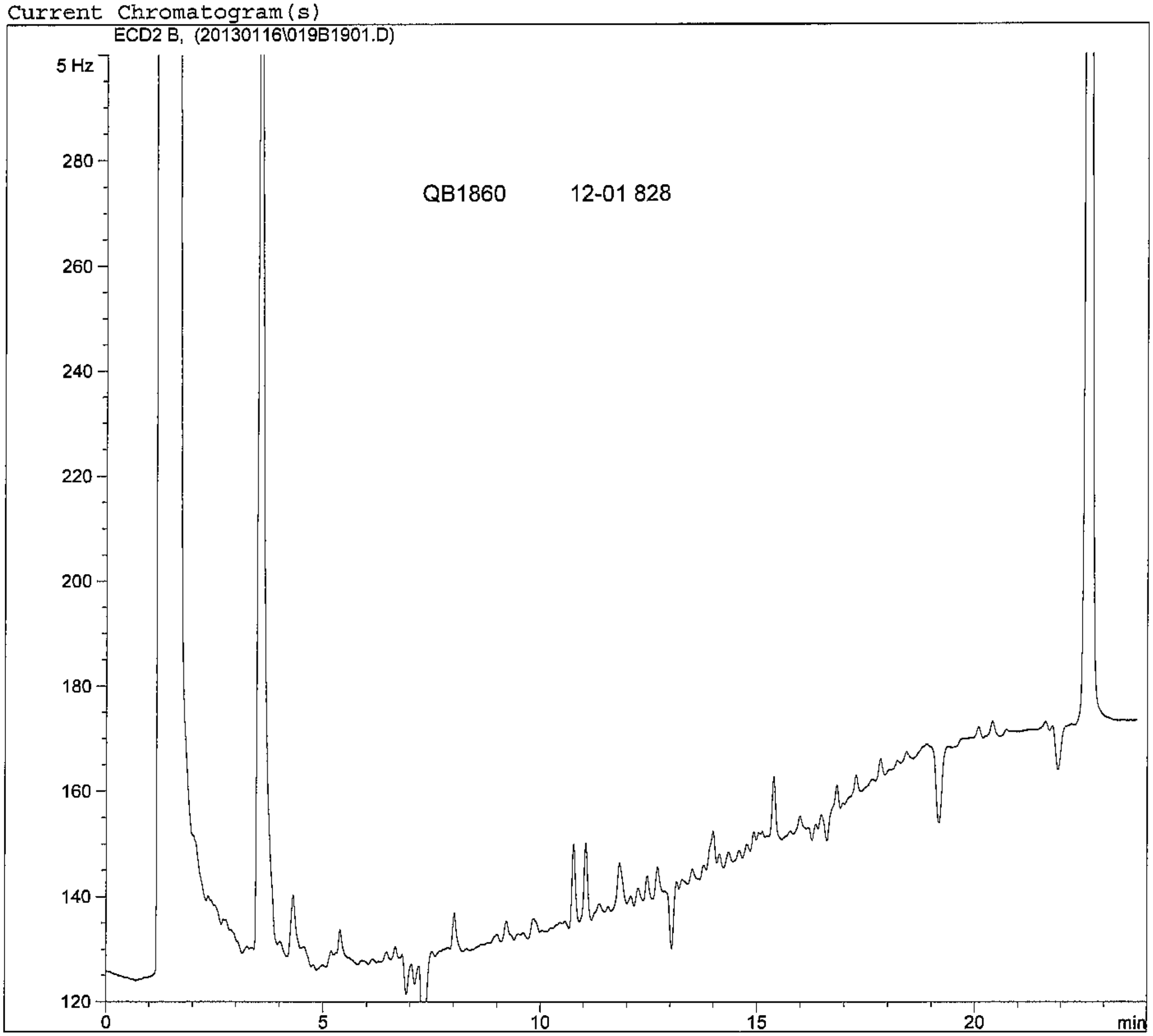

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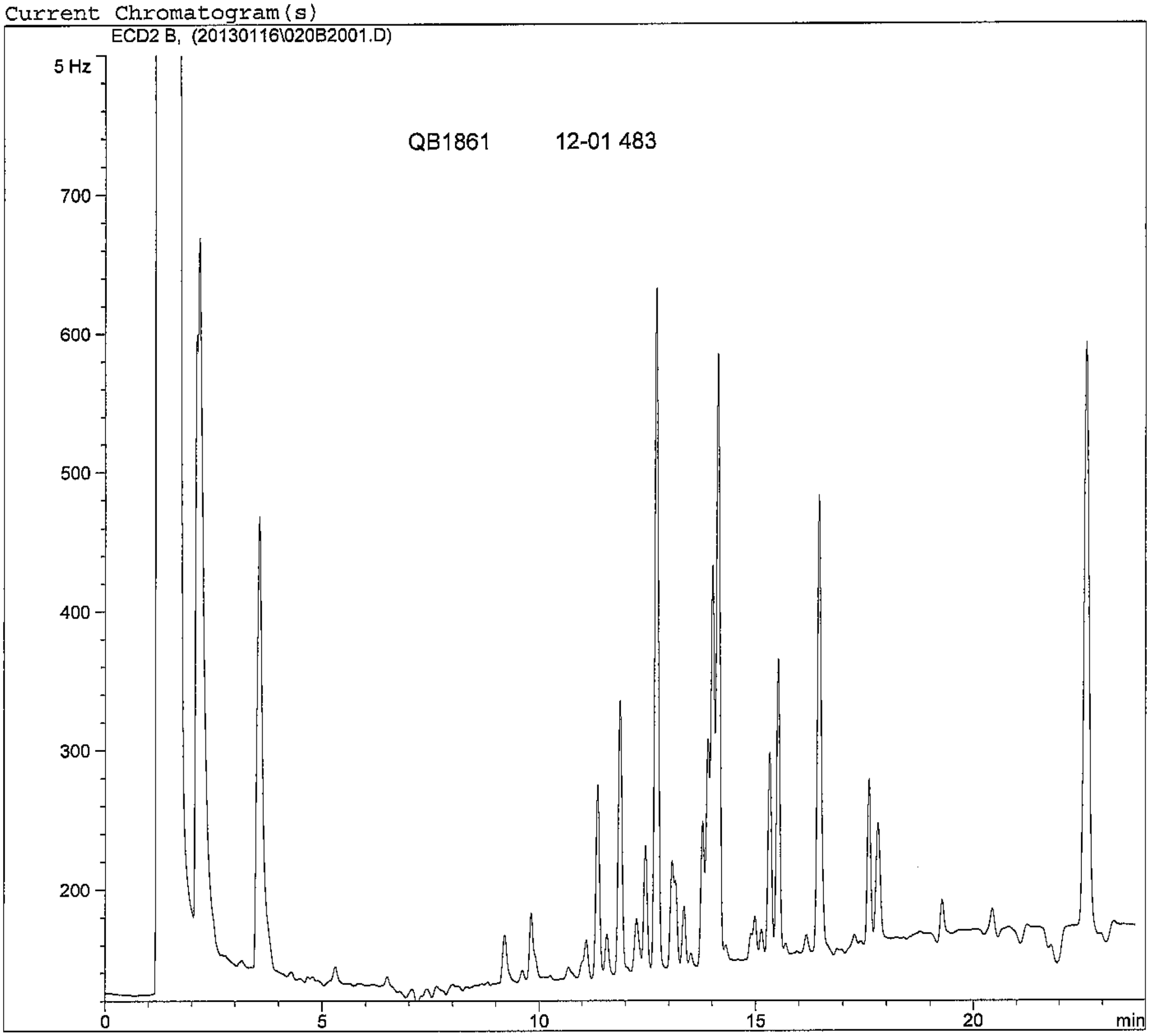

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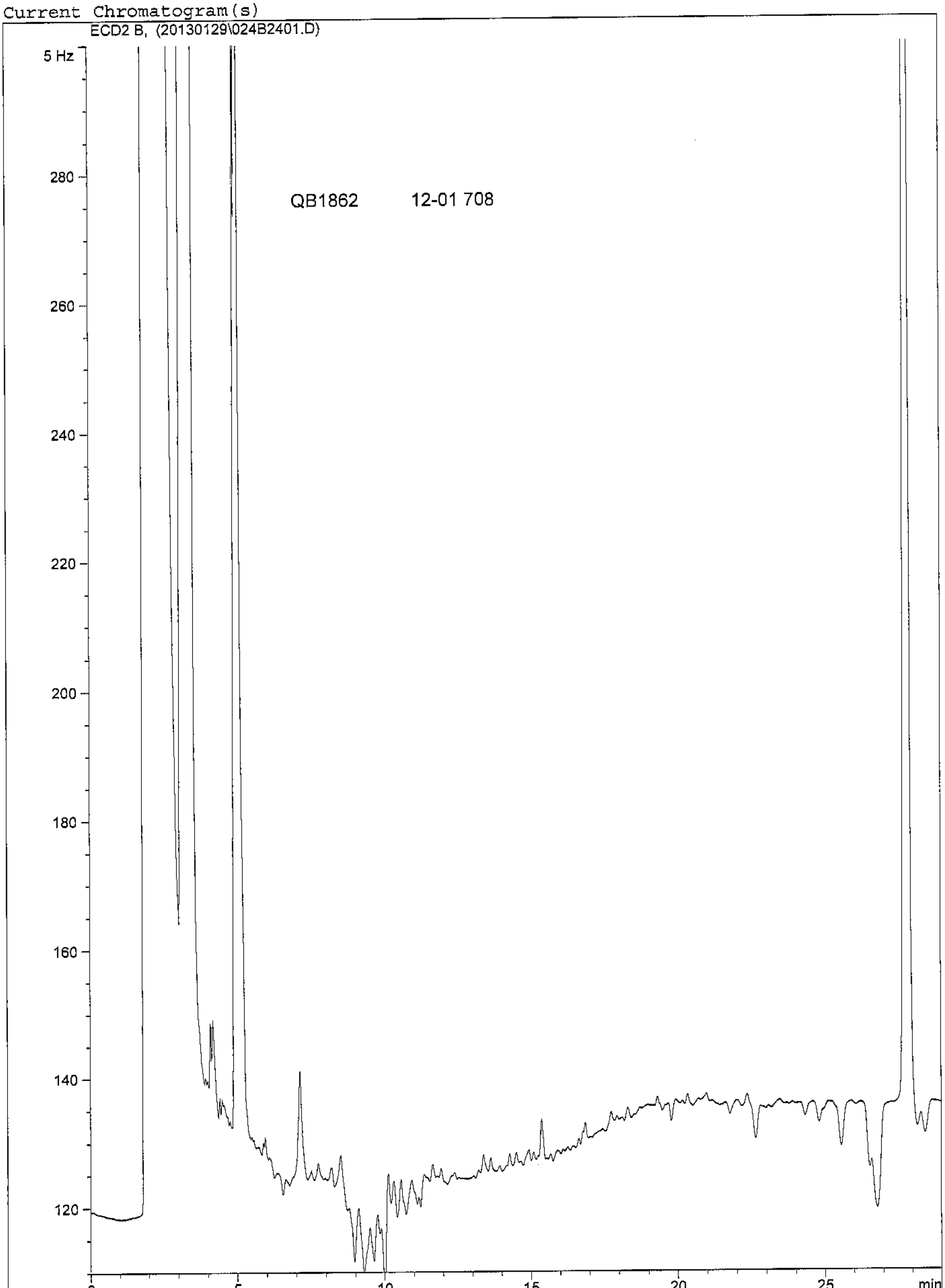

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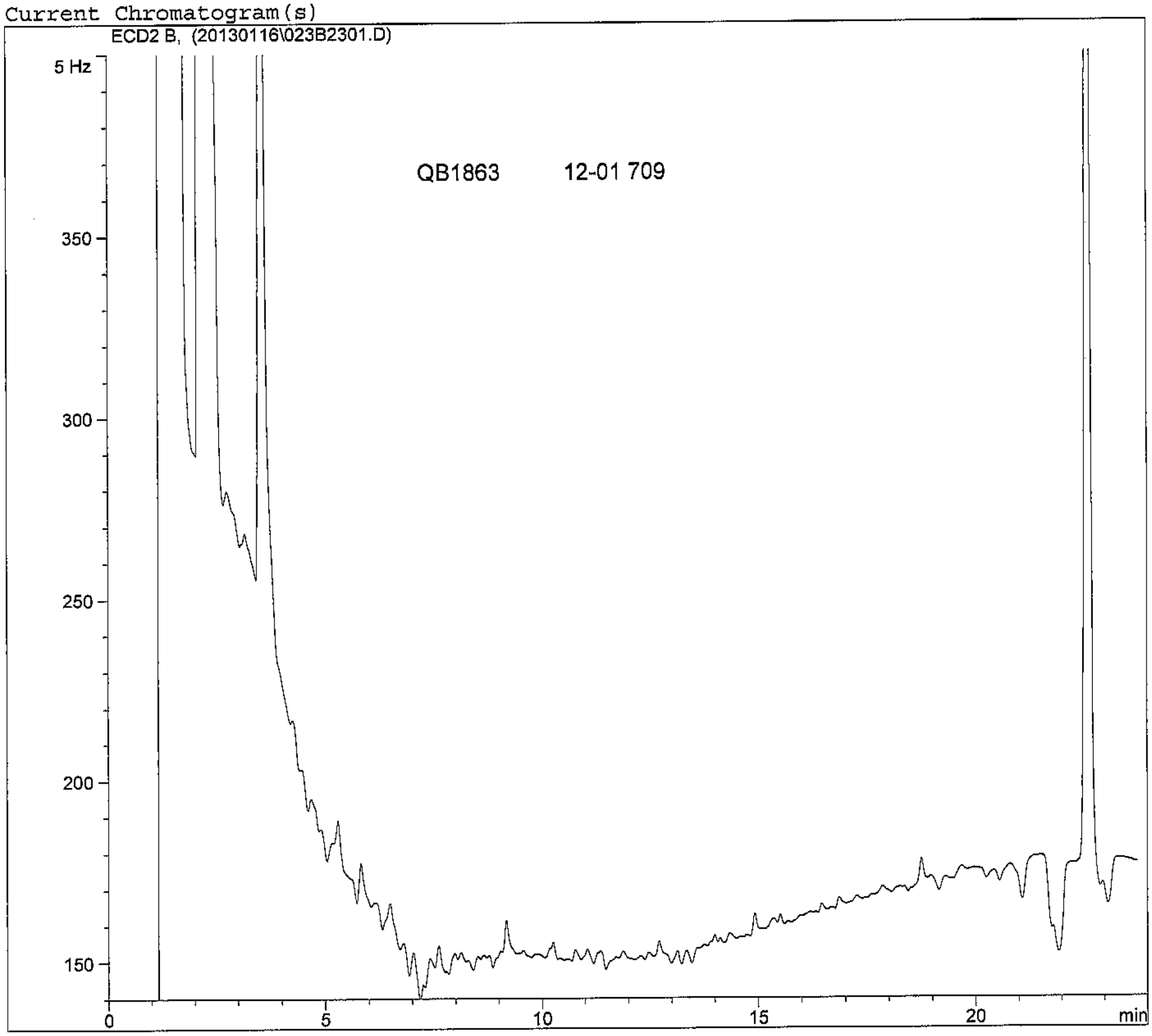

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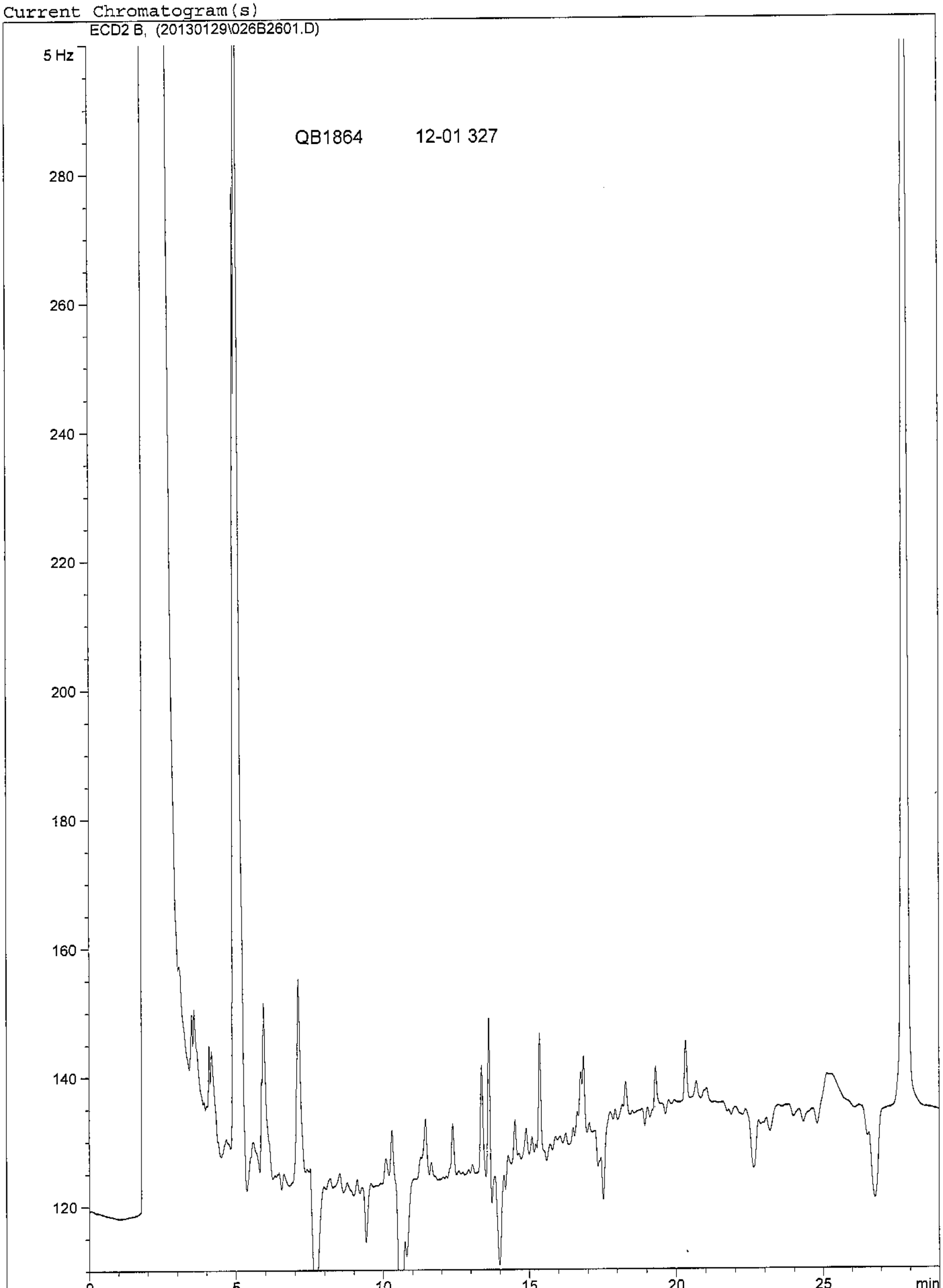

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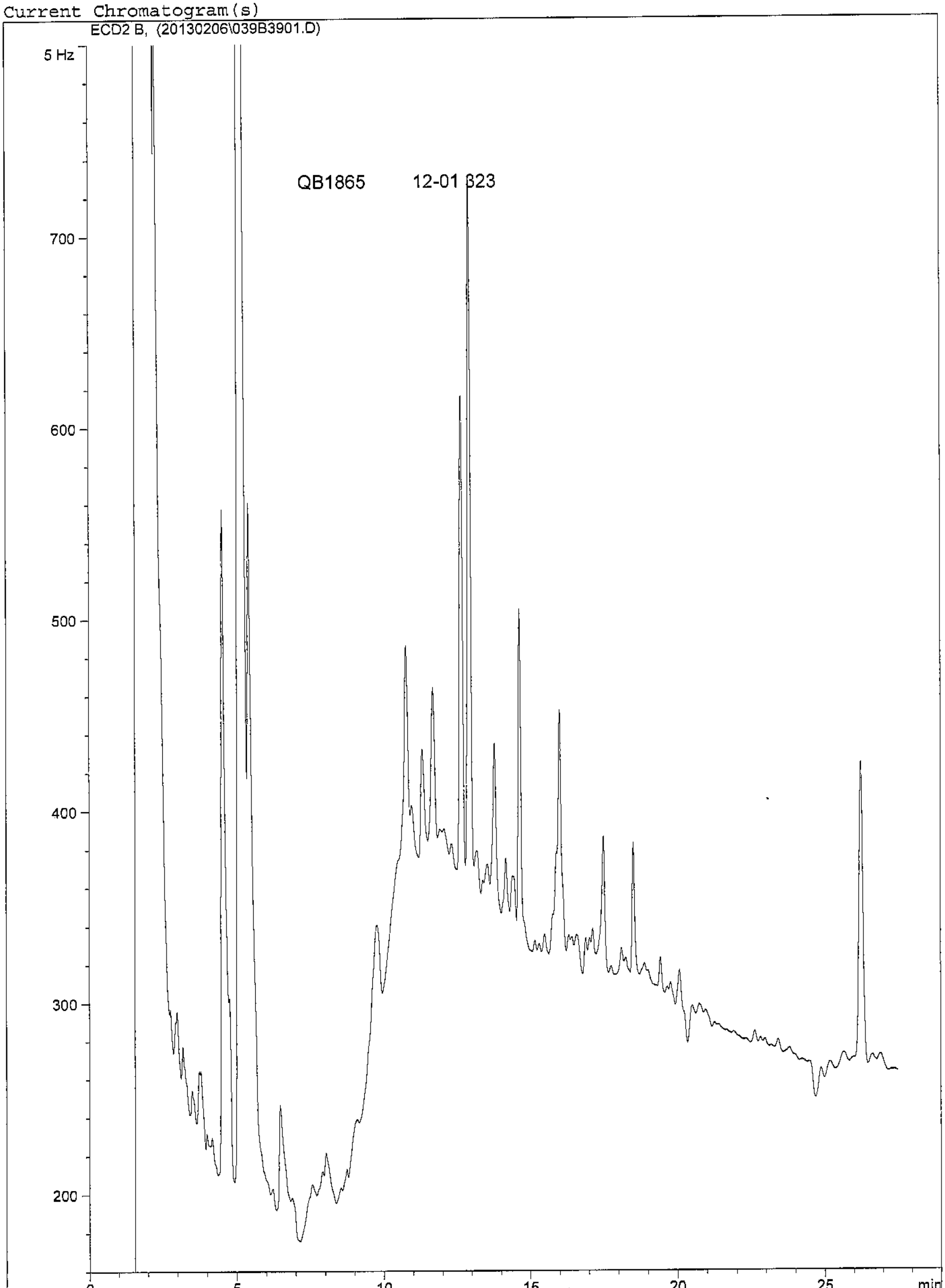

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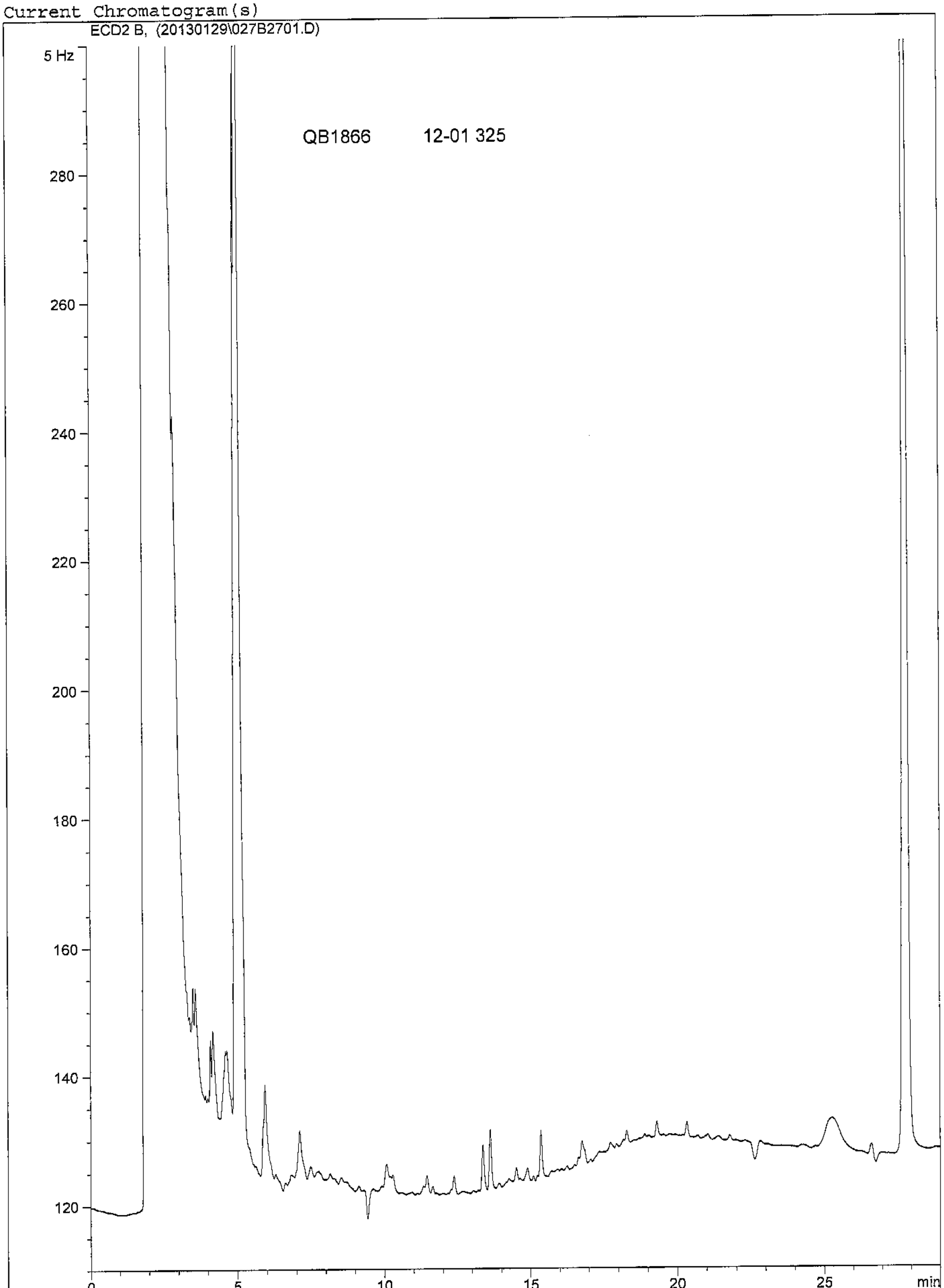
Current Chromatogram(s)



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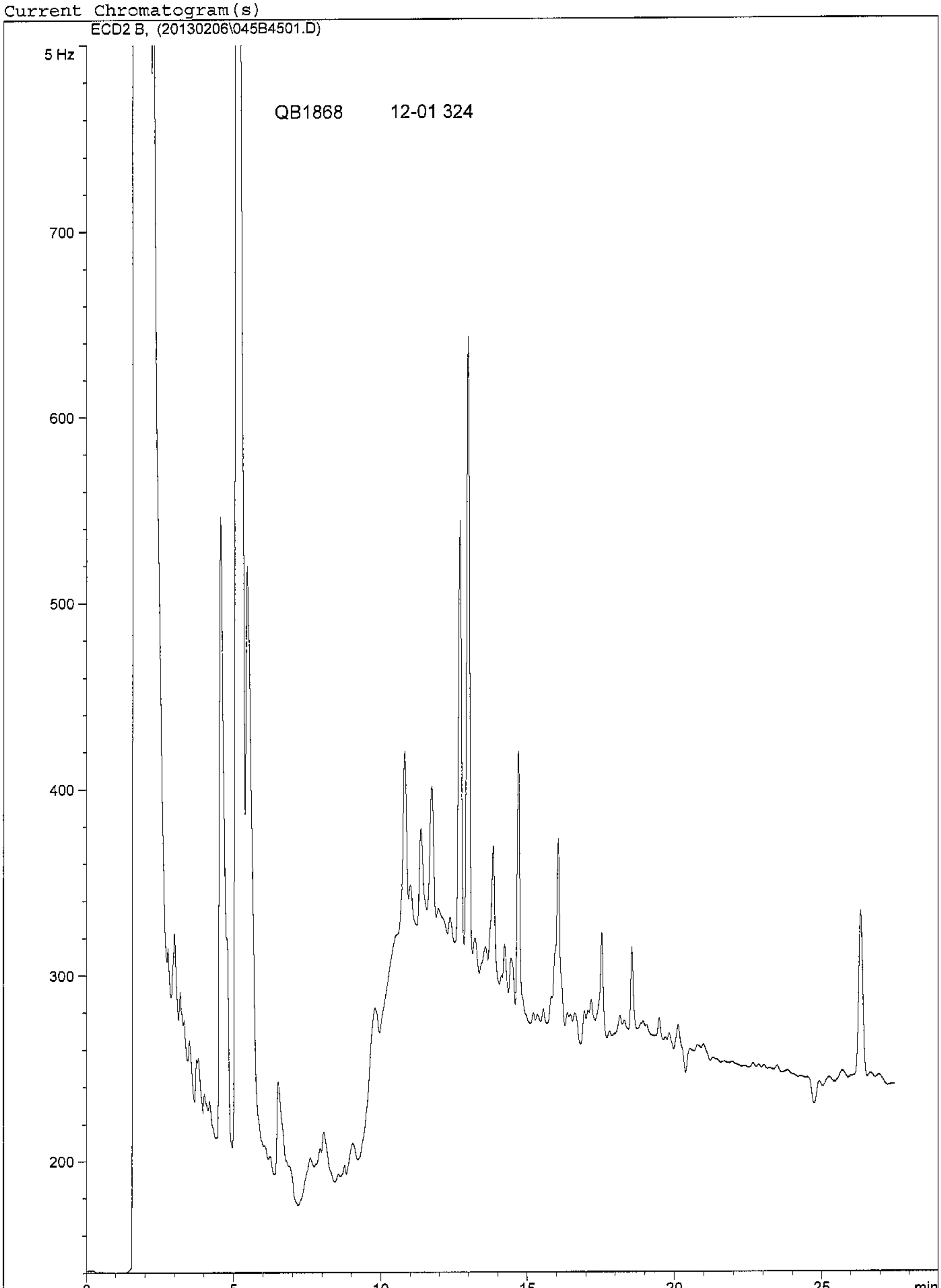
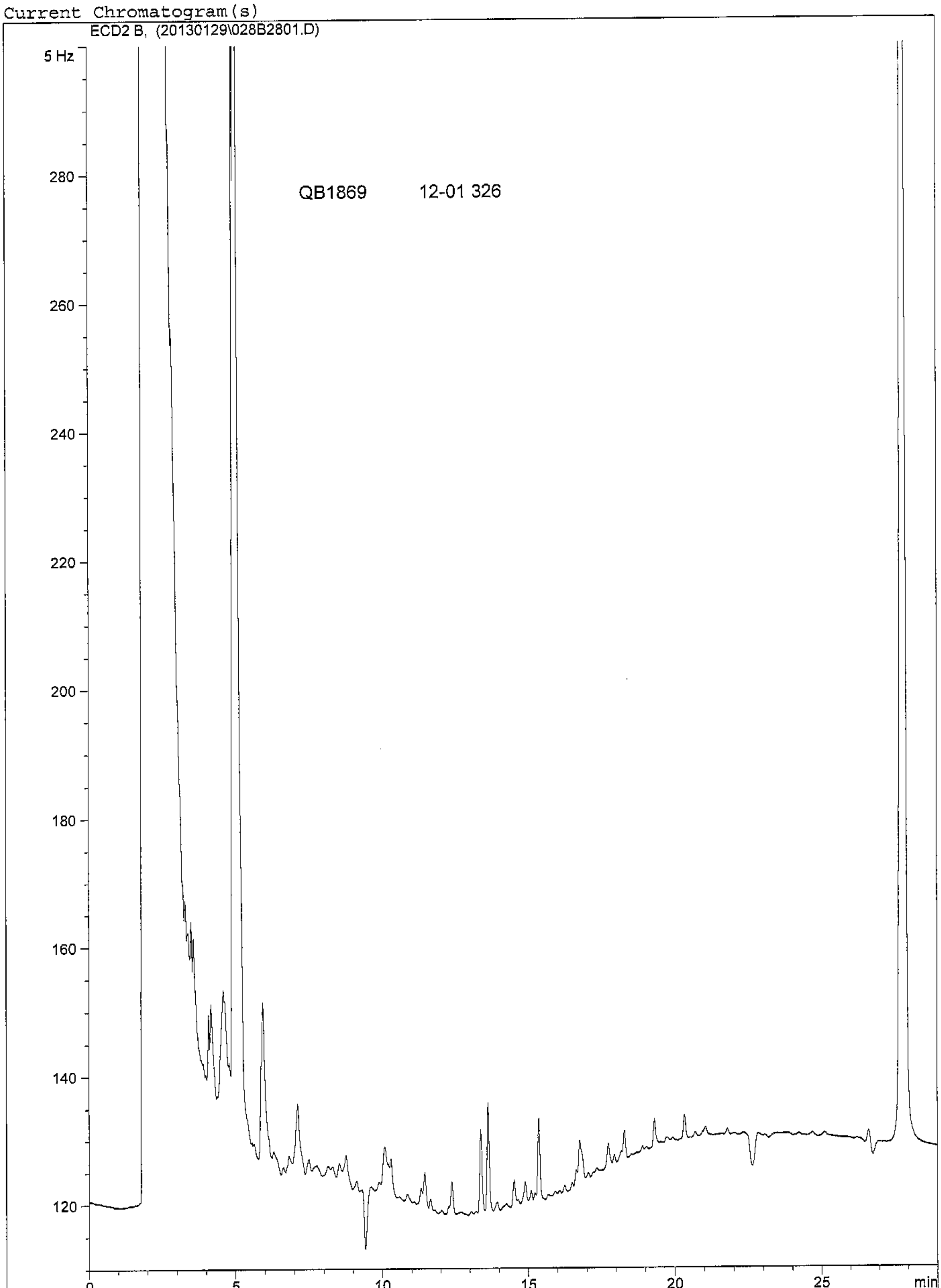
Current Chromatogram(s)



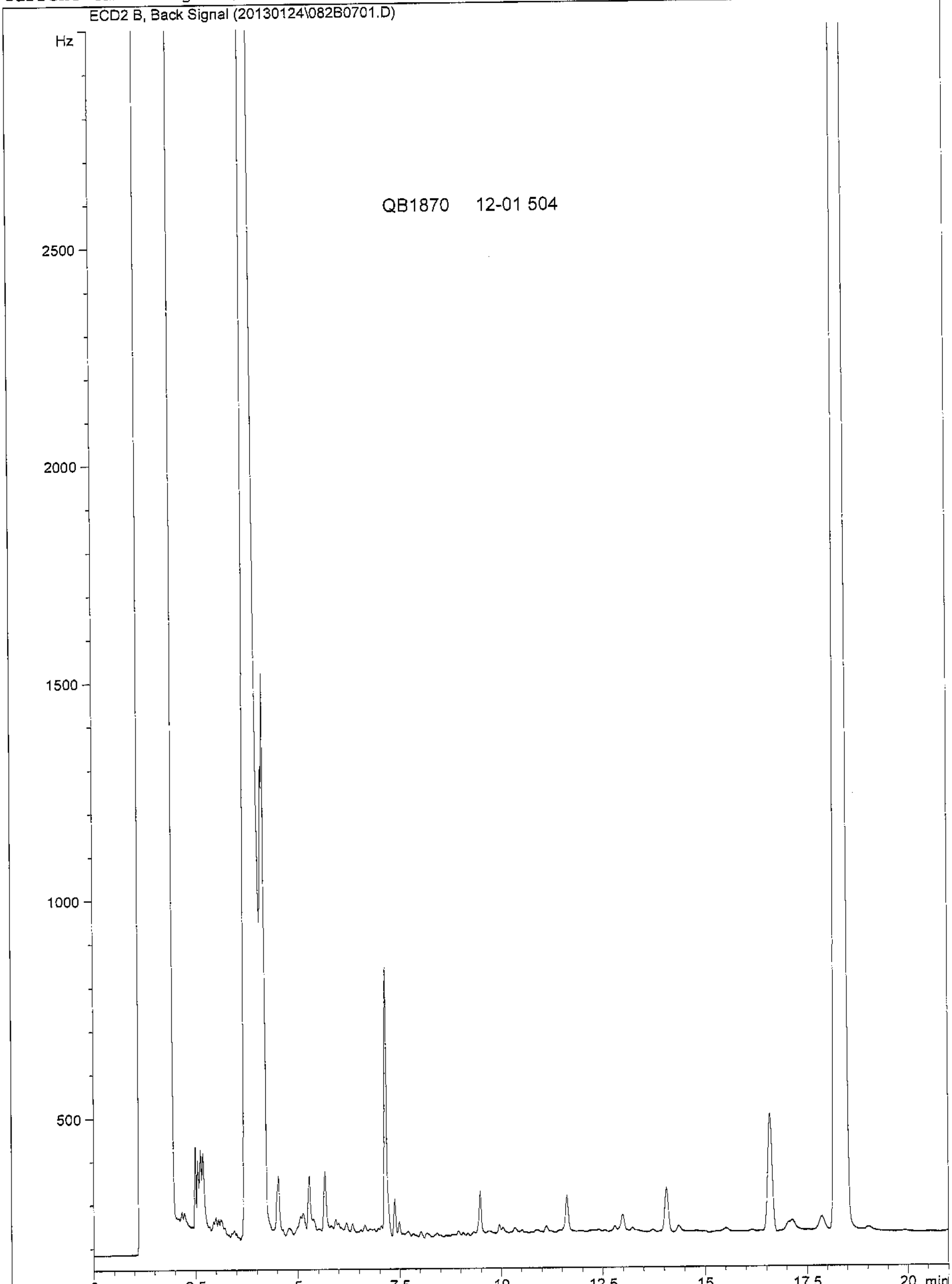
HAA002 2/7/2013 1:52:04 PM Kristy Joudrey

Print of all graphic windows



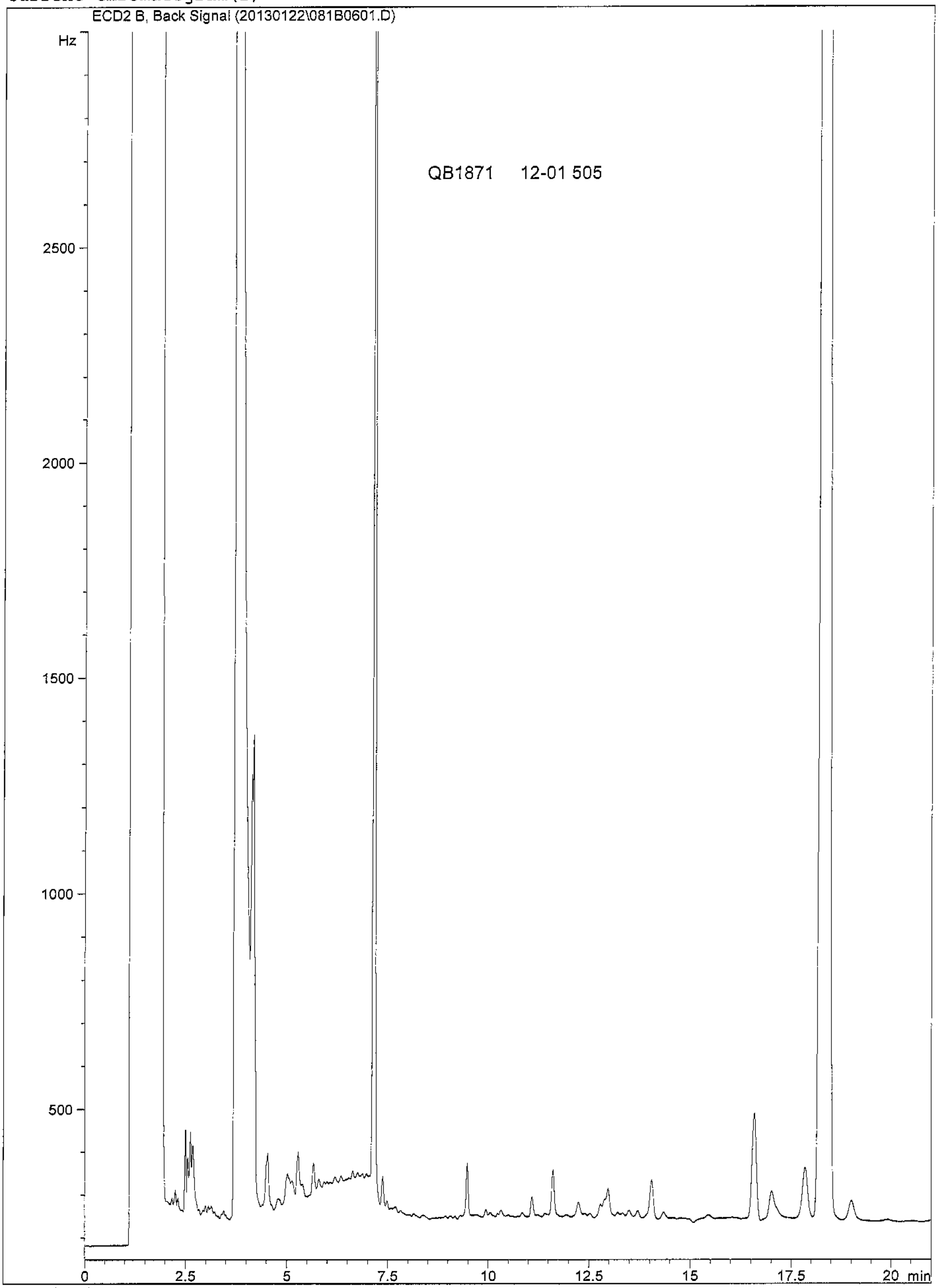
rint of window 38: Current Chromatogram(s)

Current Chromatogram(s)



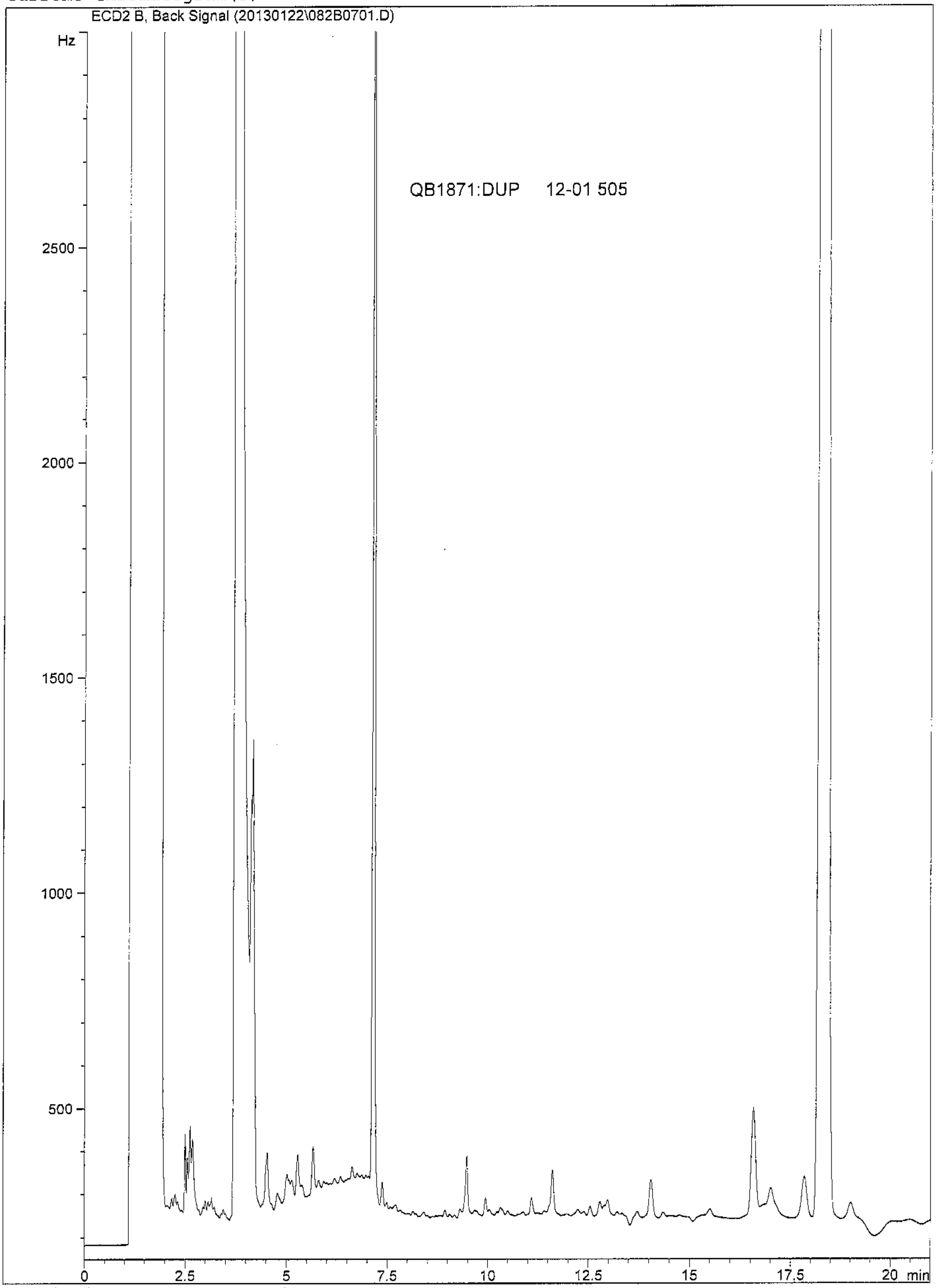
PCB003 2013/01/30 11:19:56 AM Kristy Joudrey

Current Chromatogram(s)



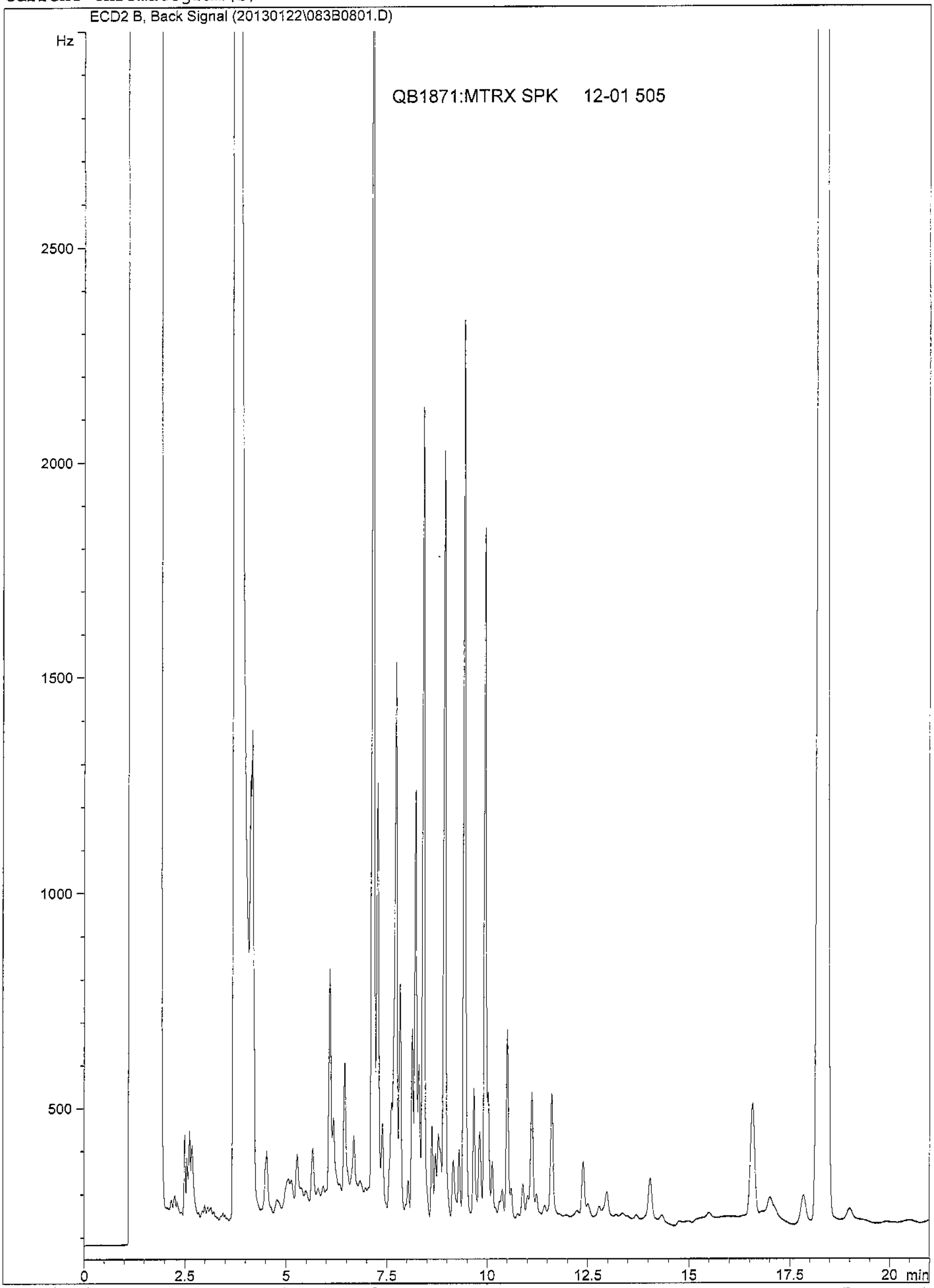
rint of window 38: Current Chromatogram(s)

Current Chromatogram(s)



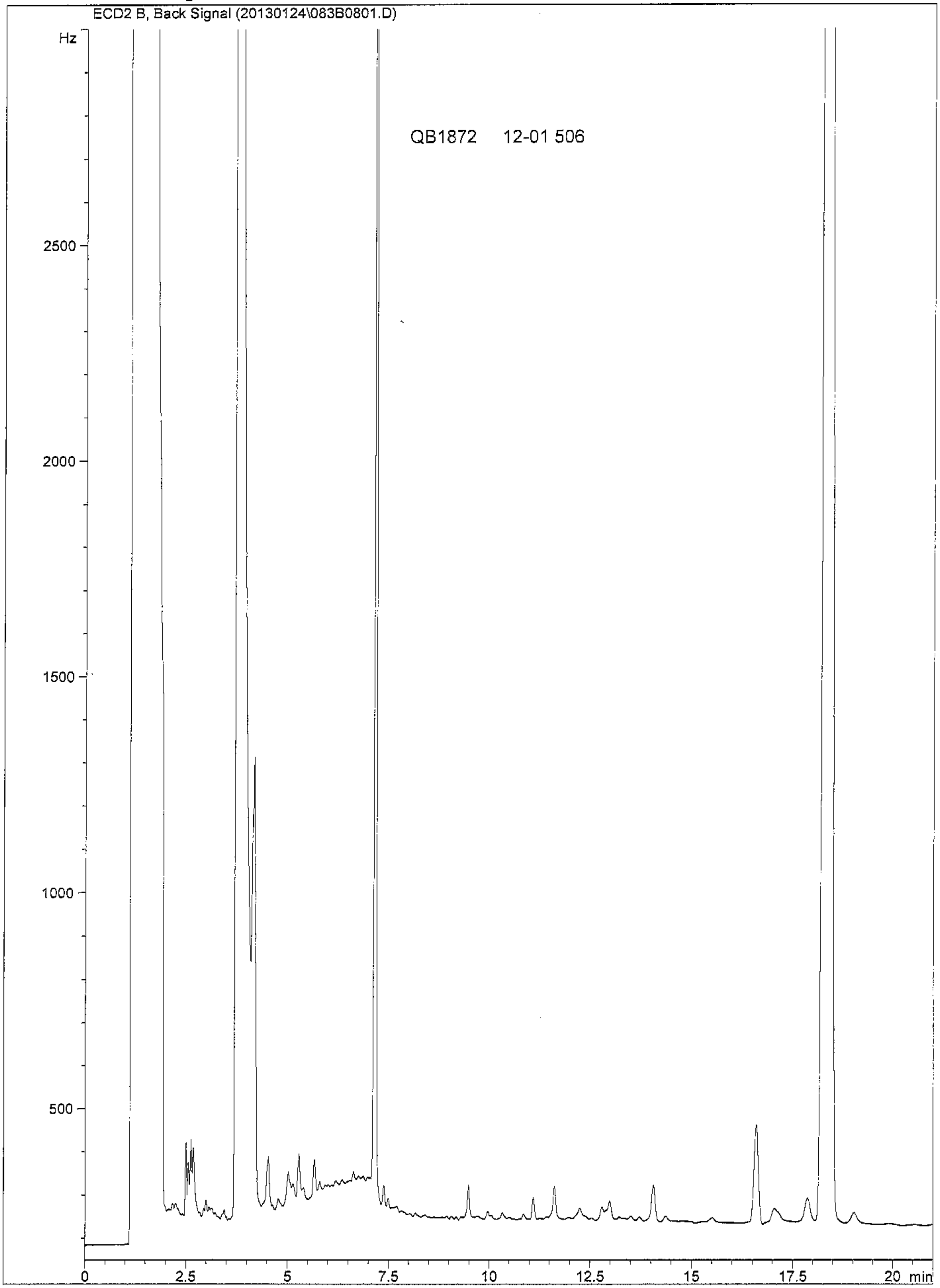
rint of window 38: Current Chromatogram(s)

Current Chromatogram(s)



Print of window 38: Current Chromatogram(s)

Current Chromatogram(s)



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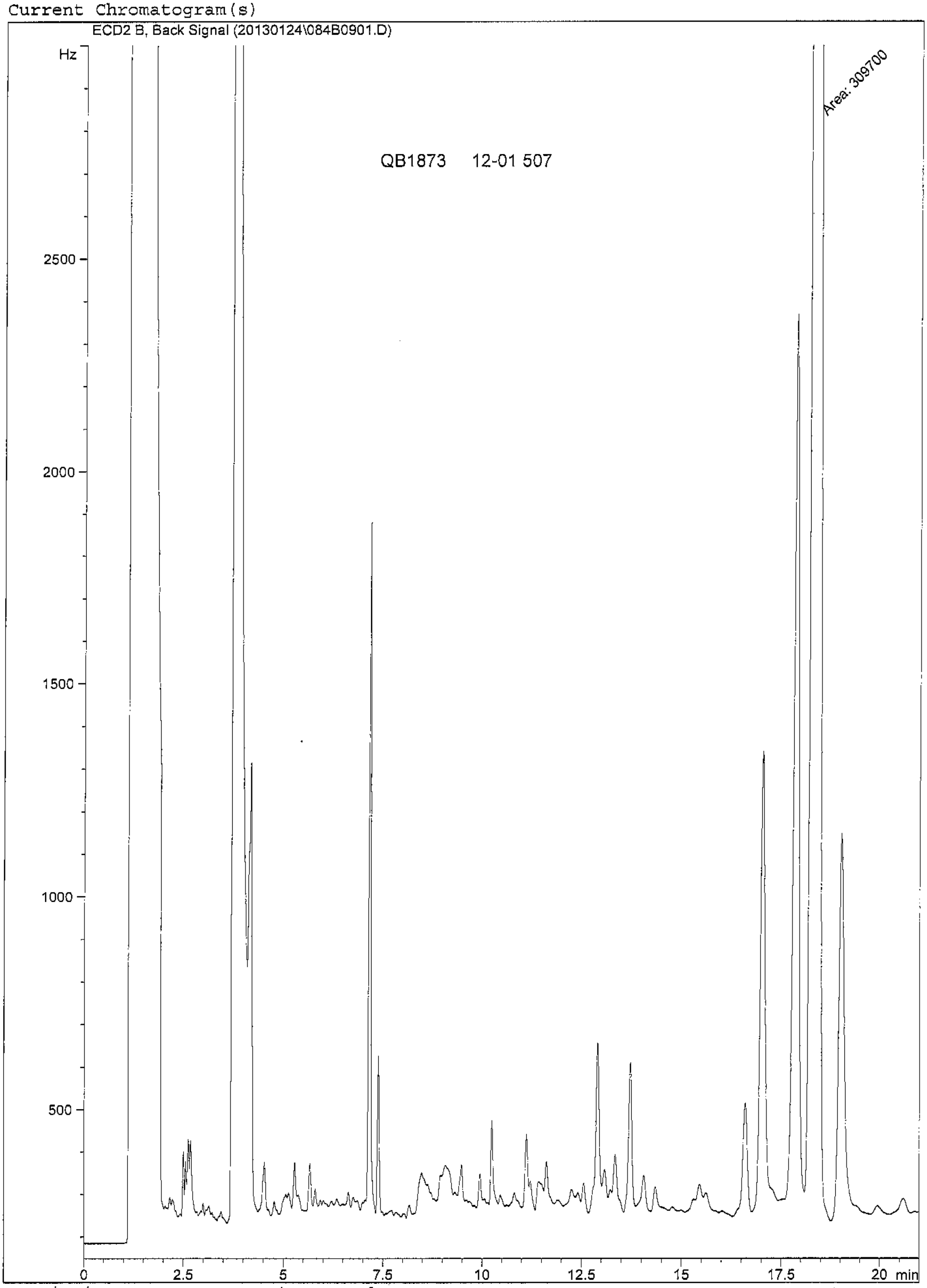

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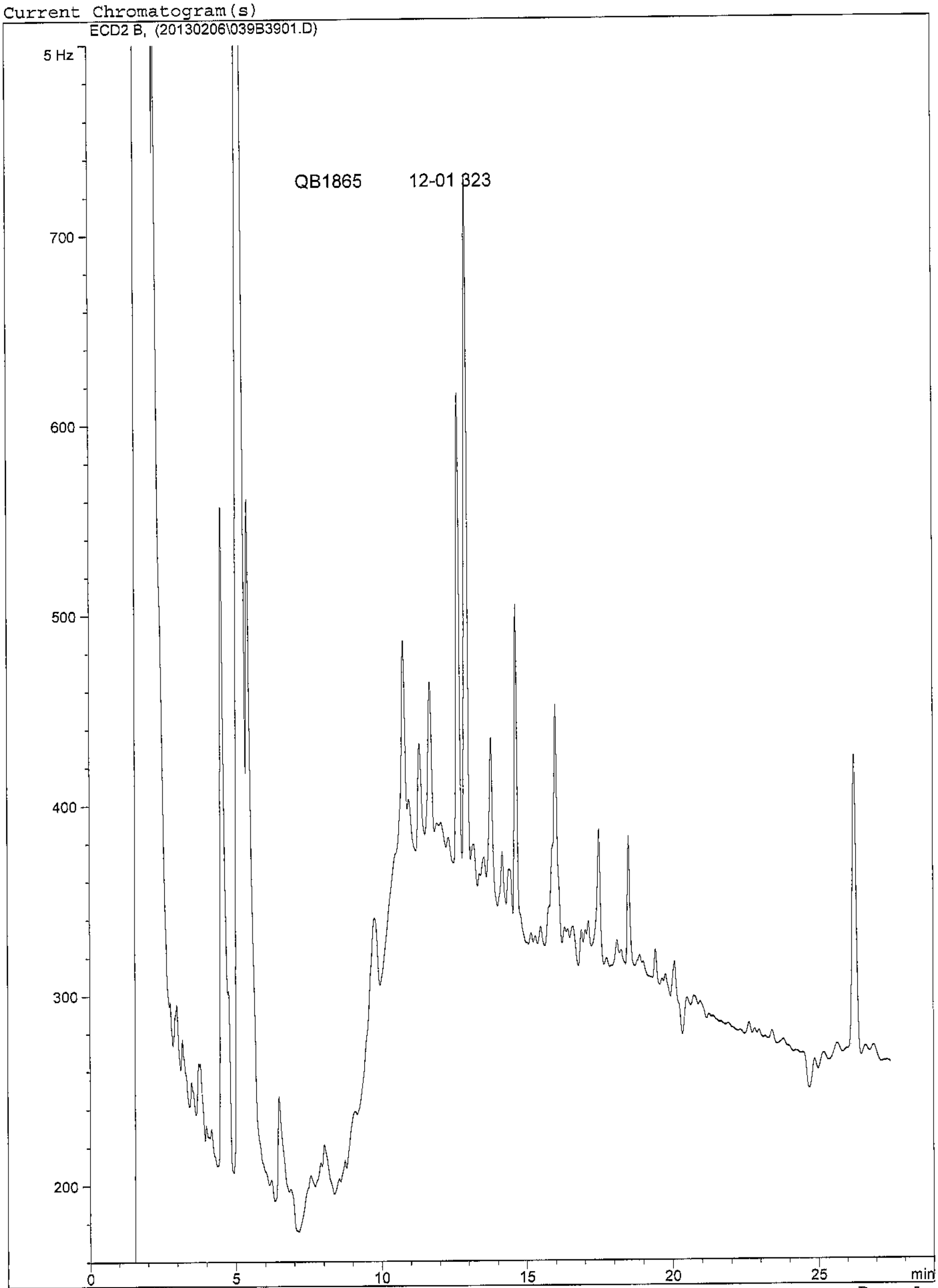

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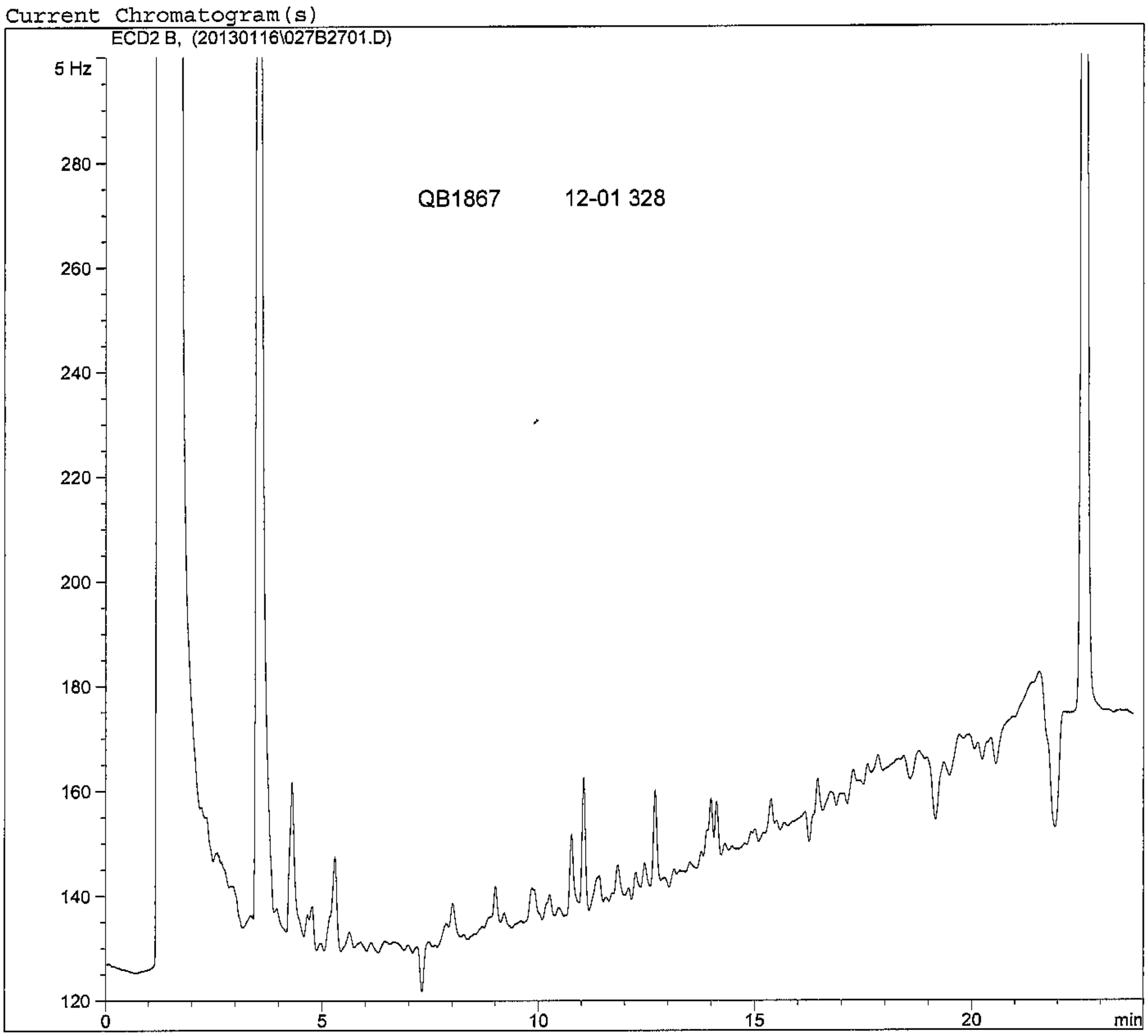

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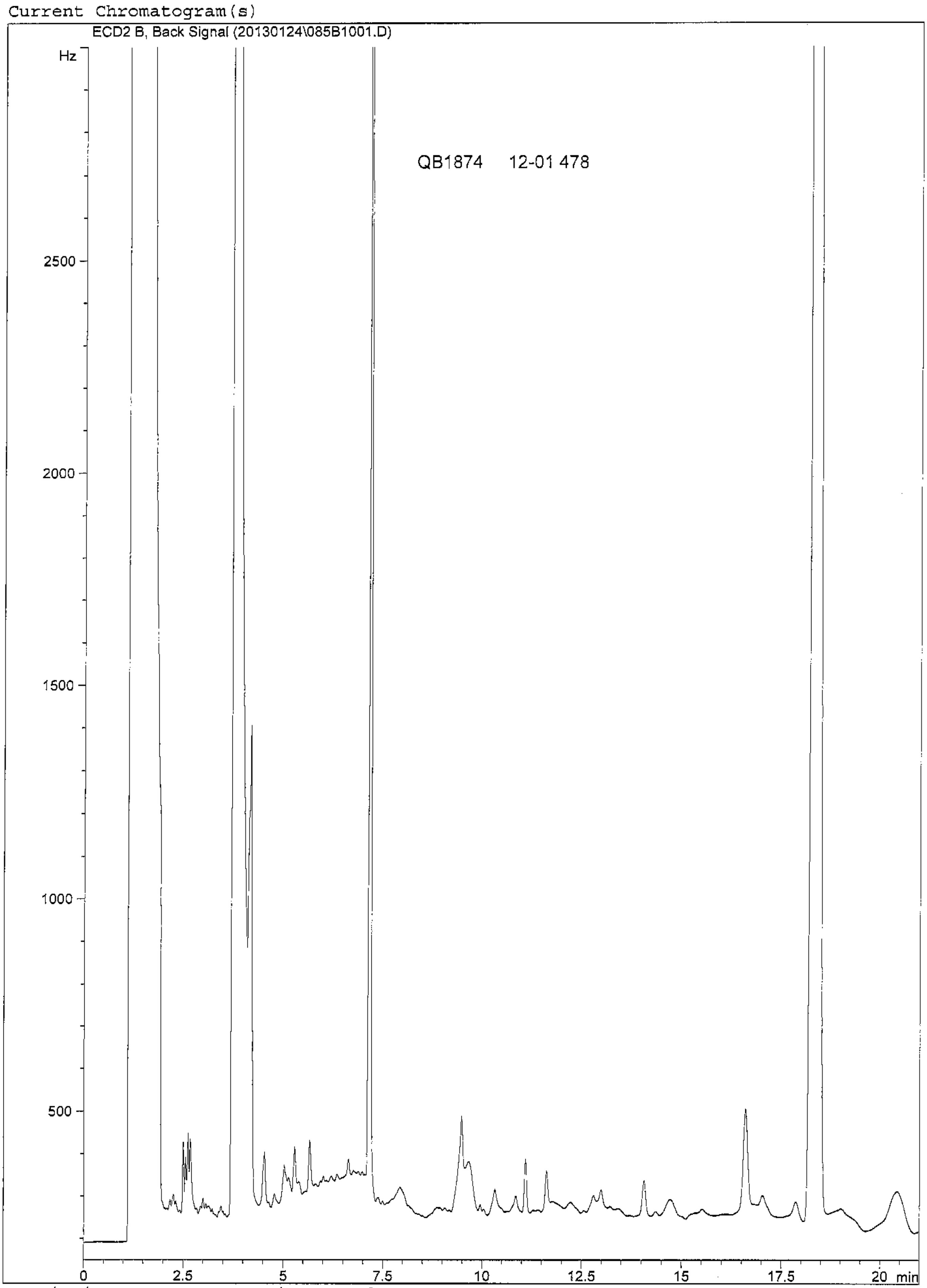

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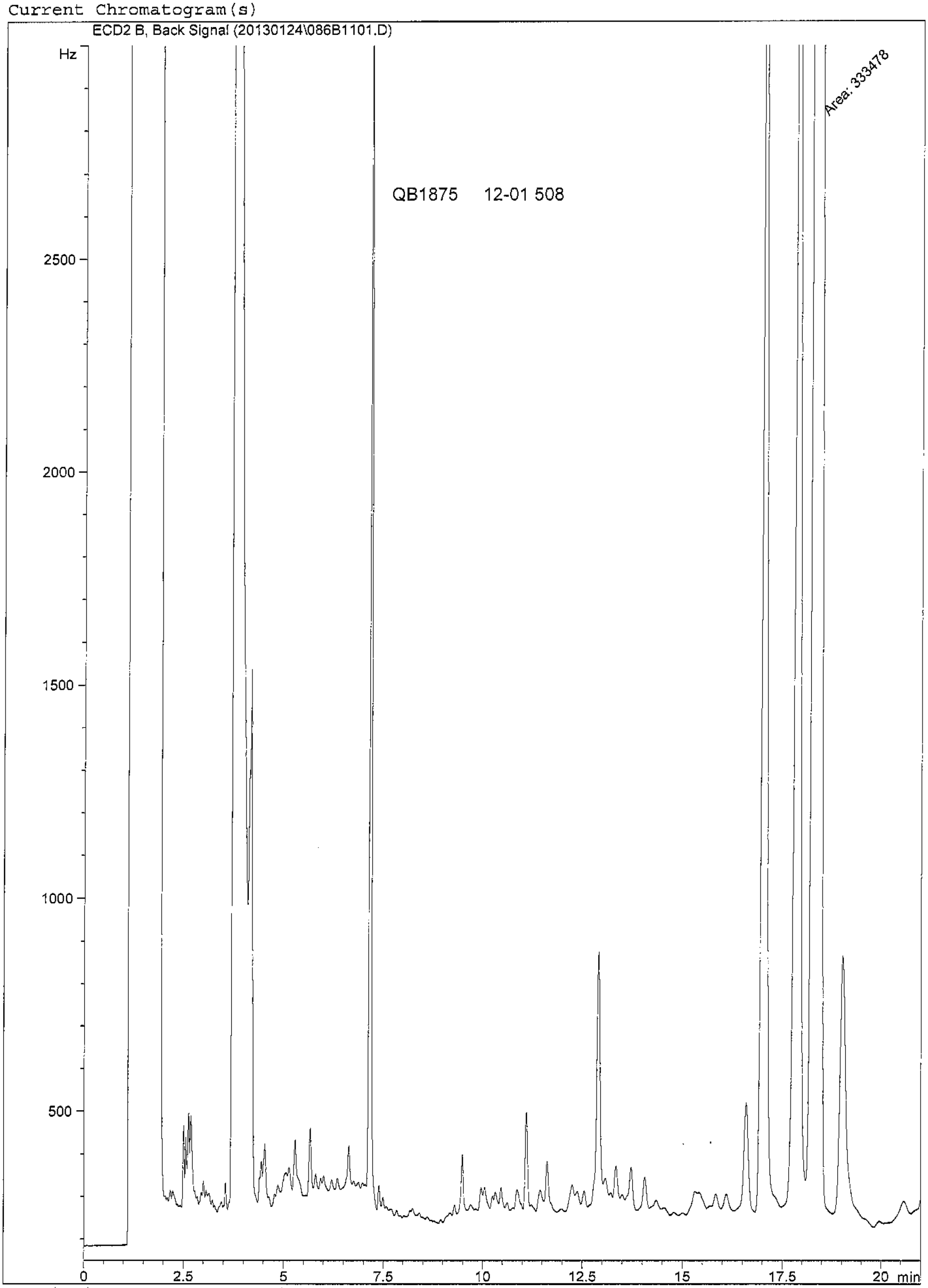

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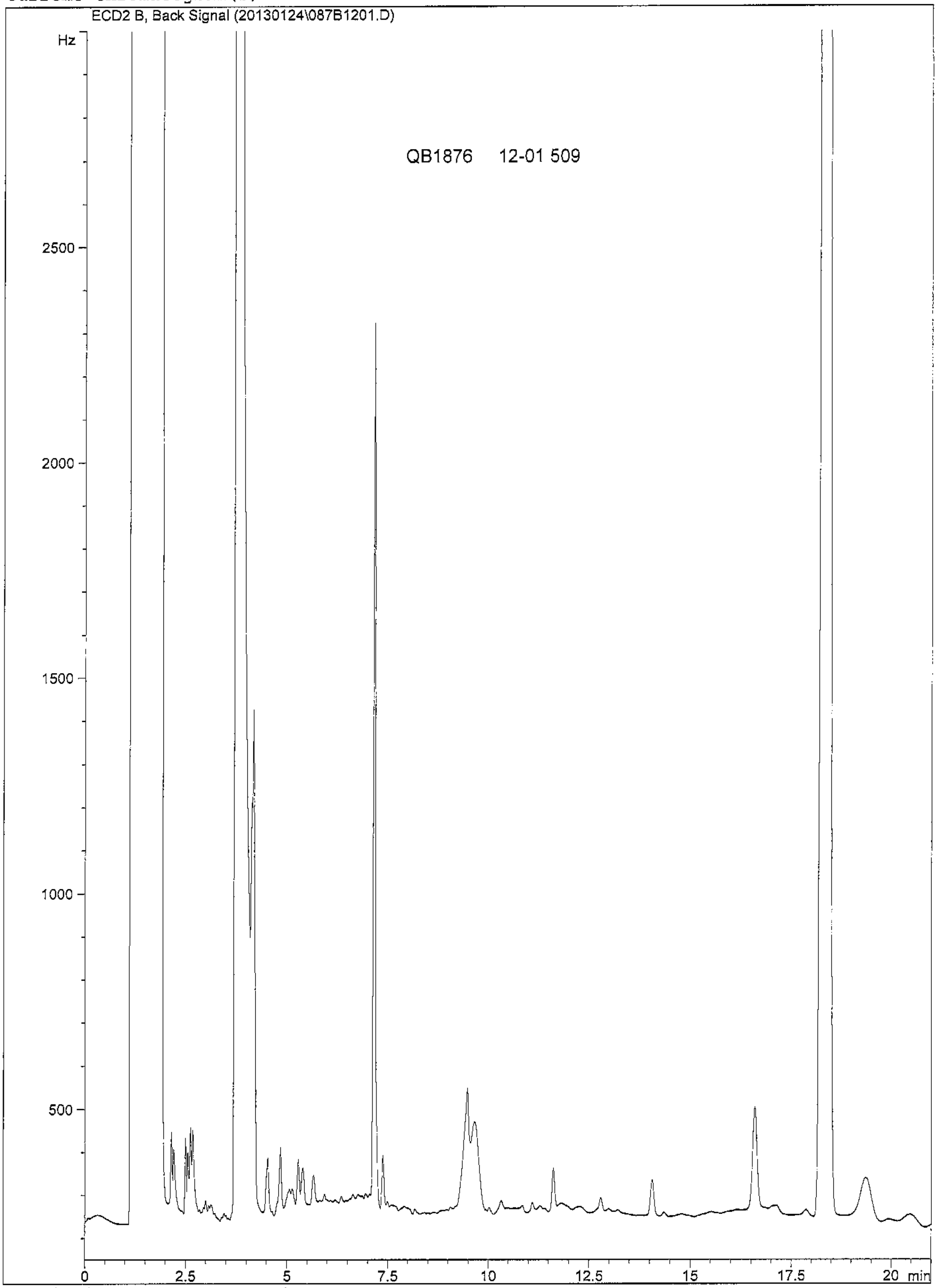

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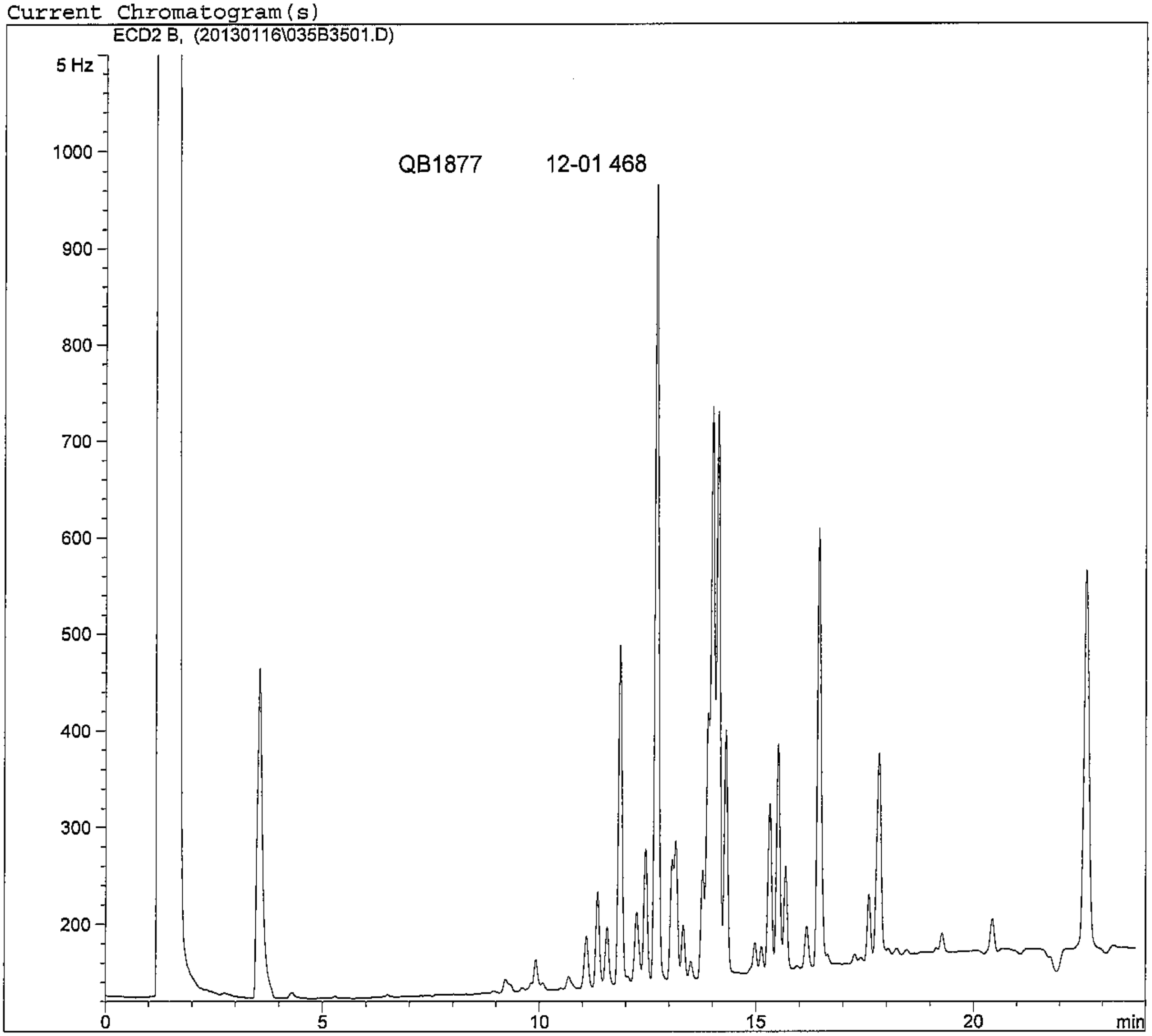

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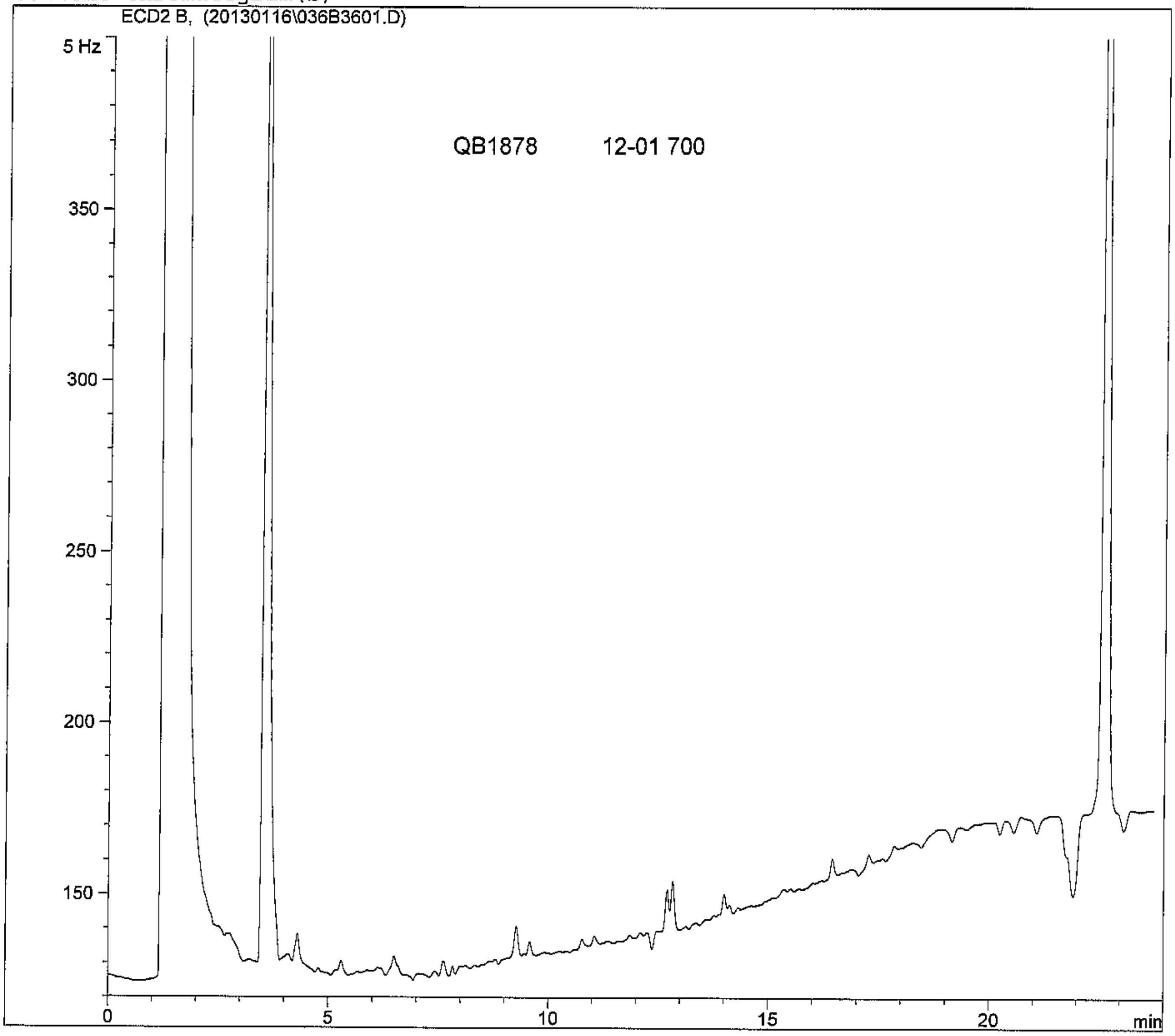

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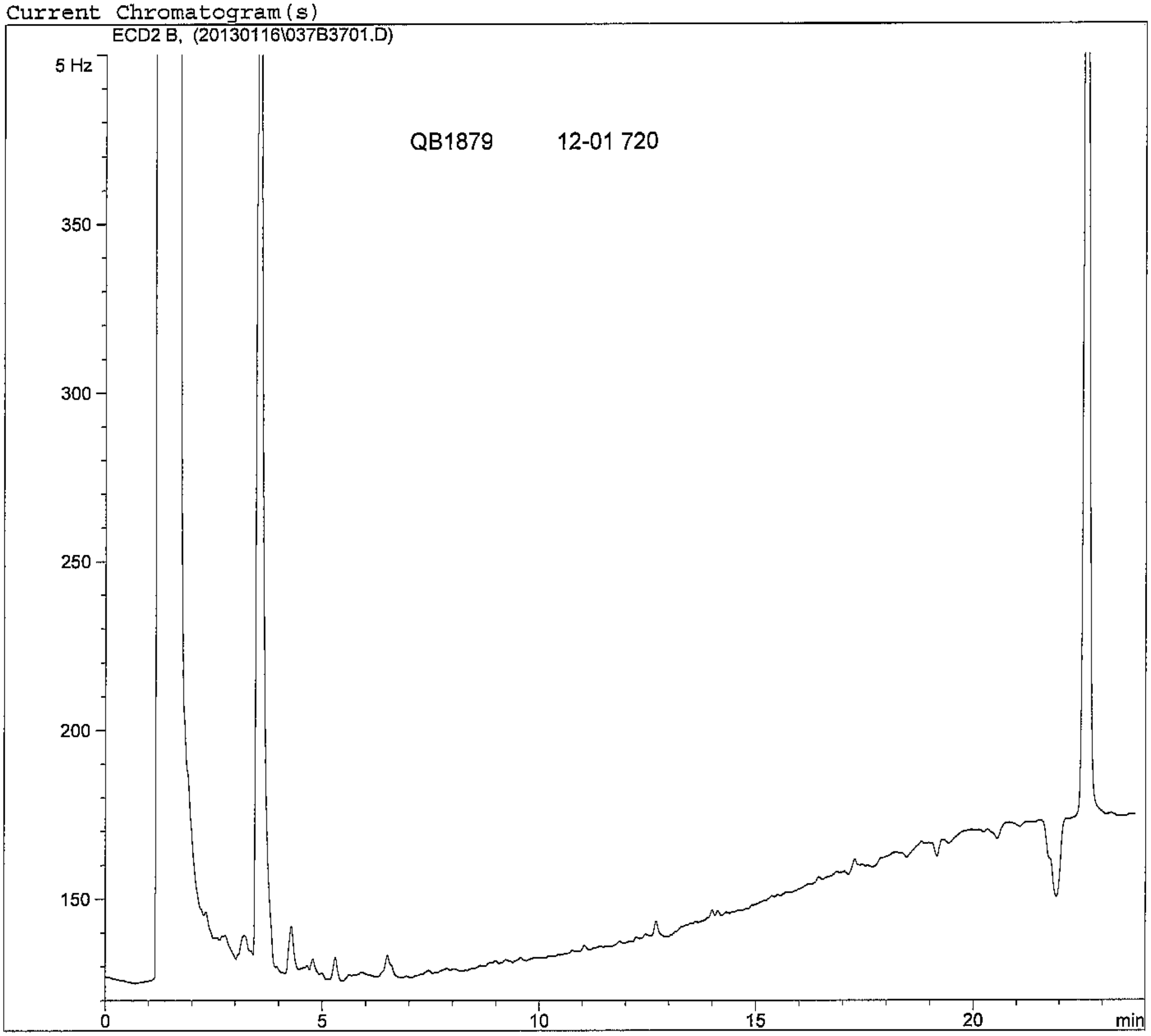

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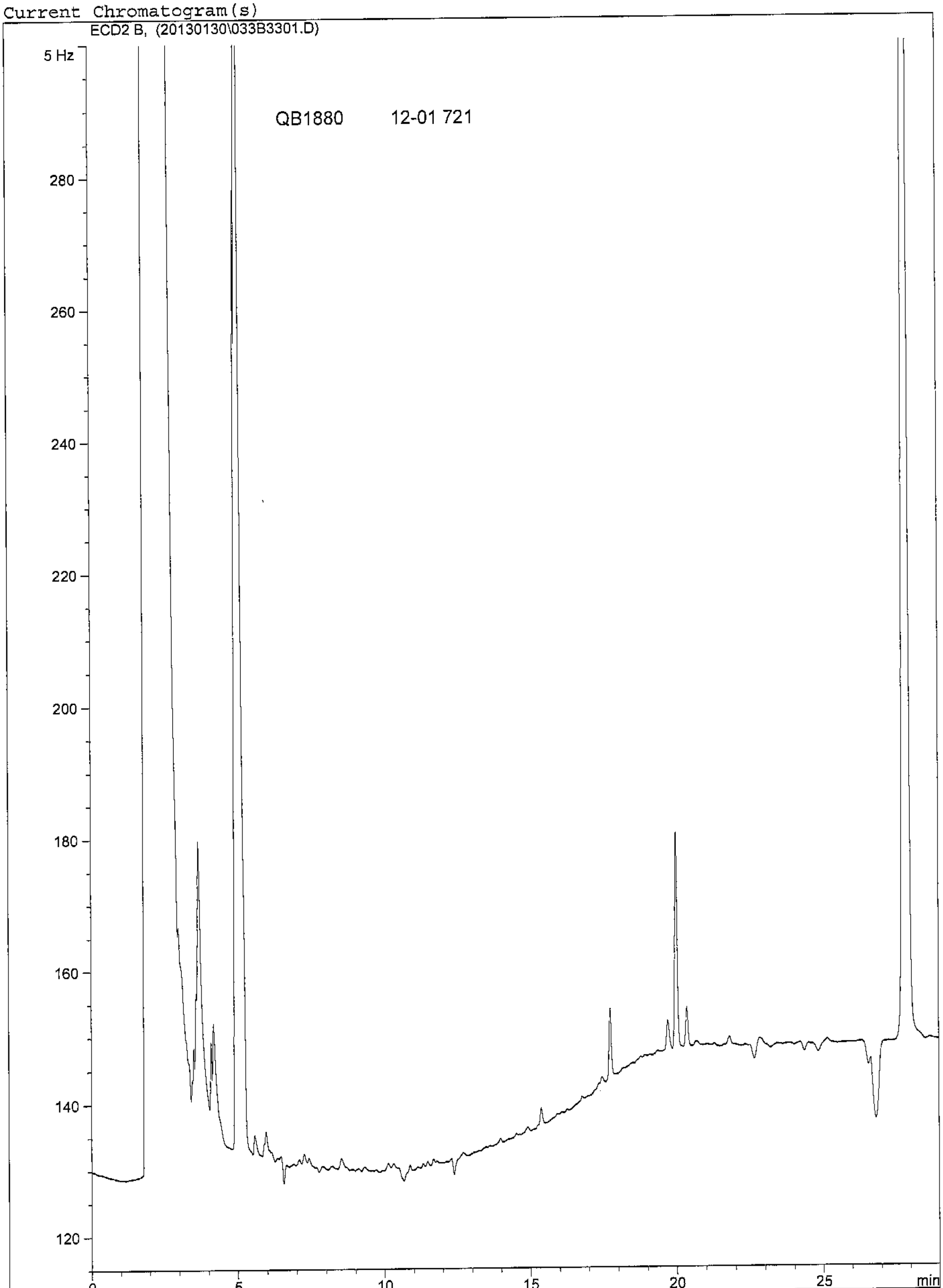

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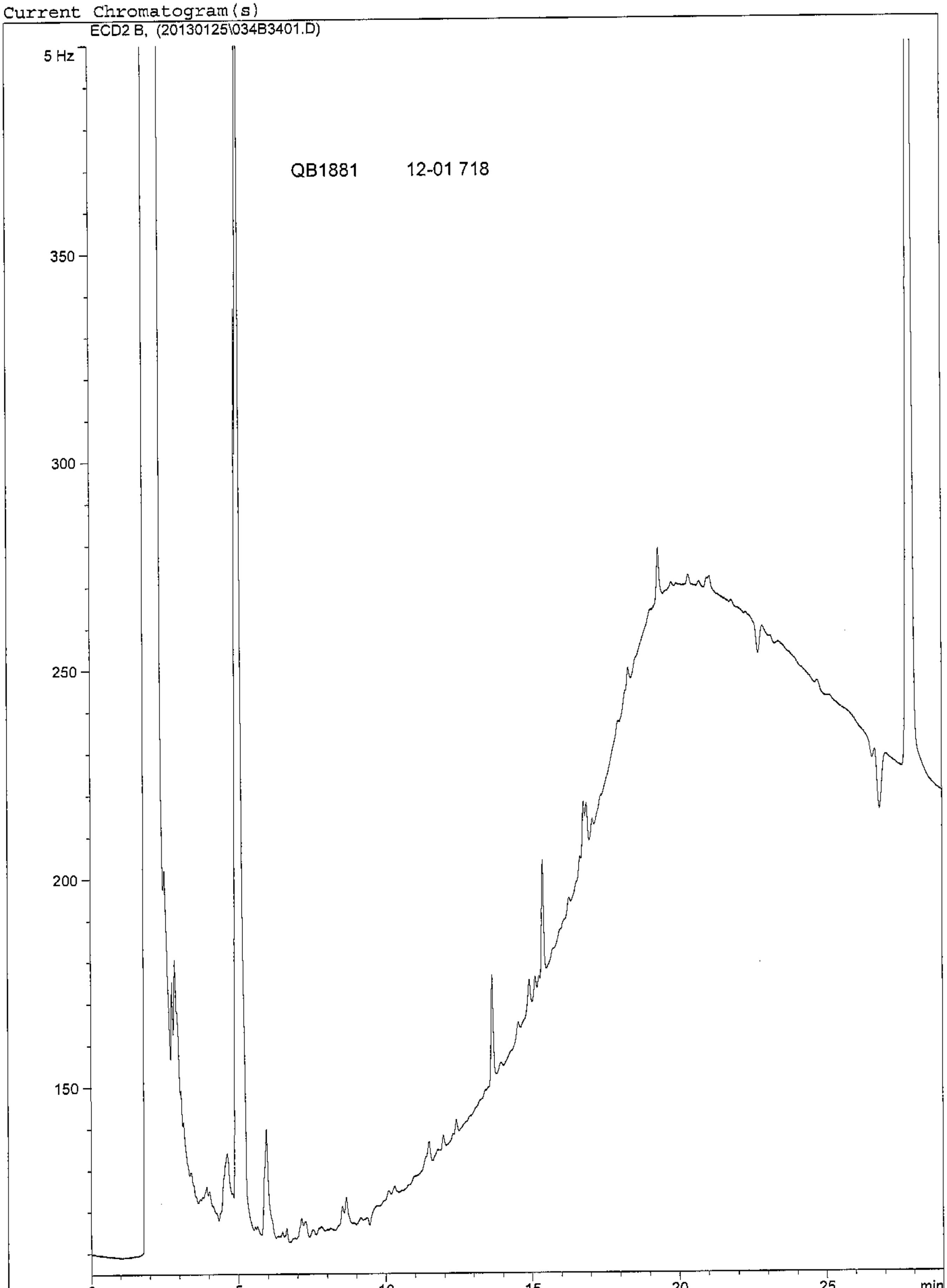
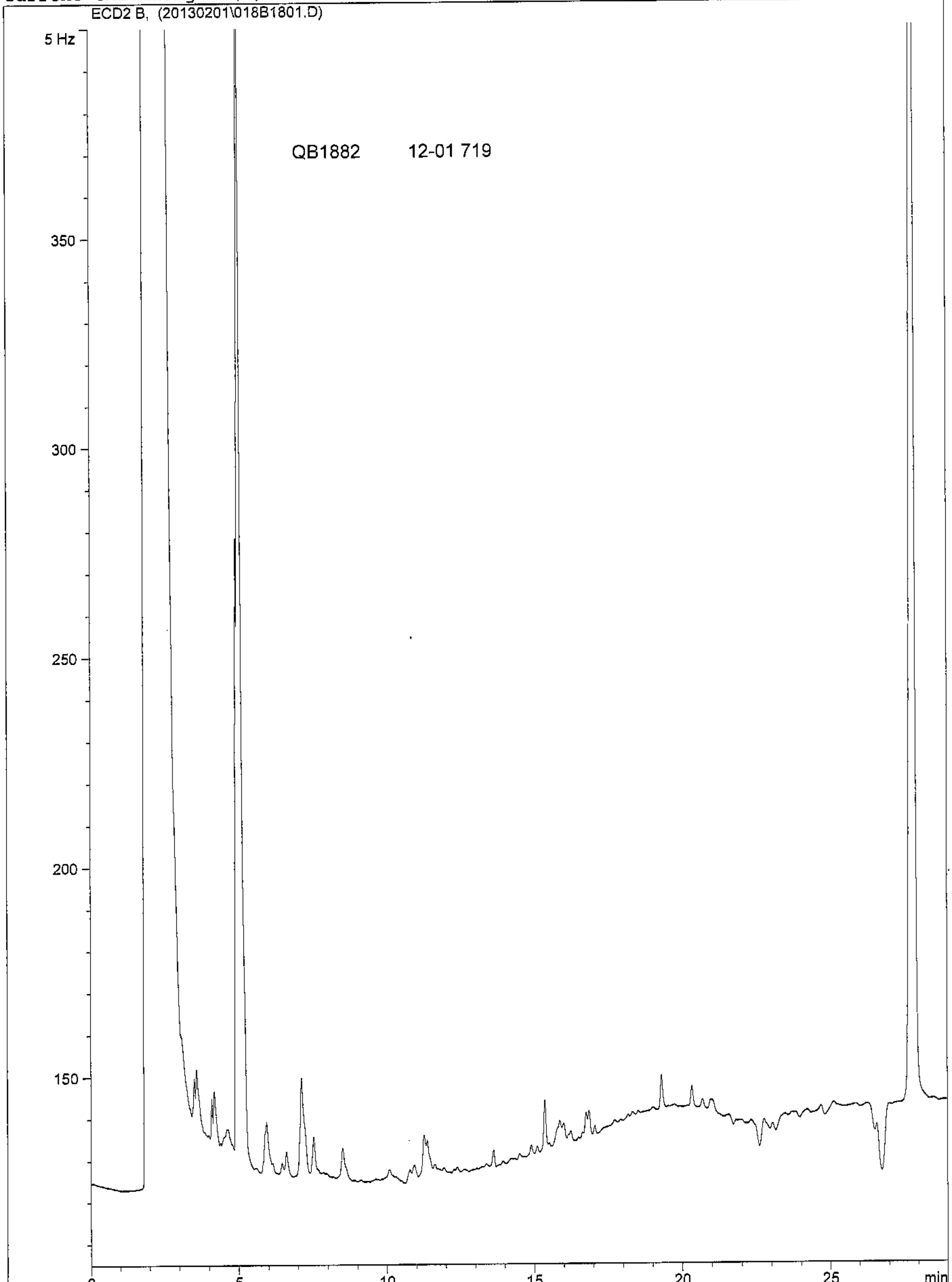
Current Chromatogram(s)



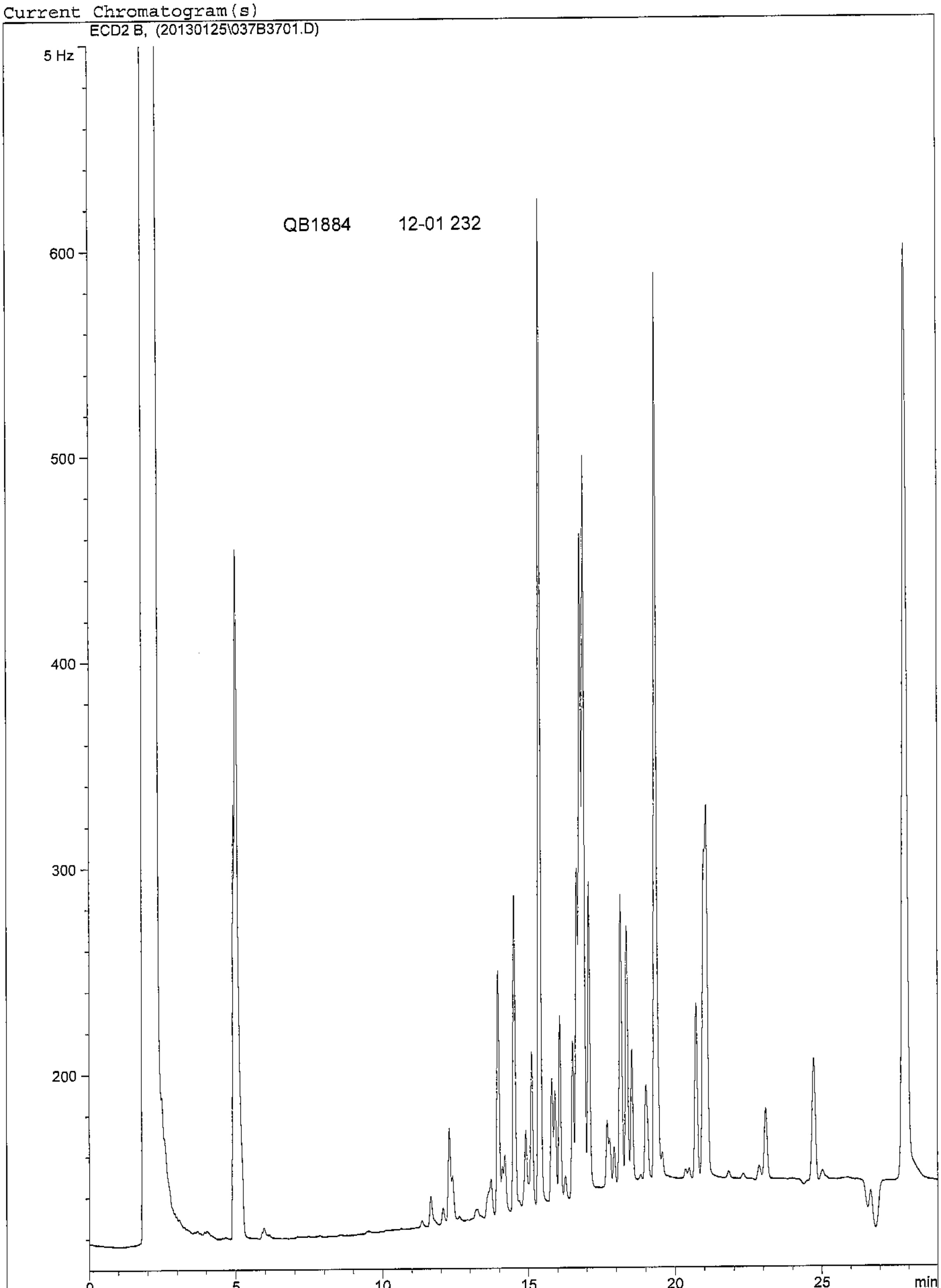
Print of all graphic windows

Current Chromatogram(s)



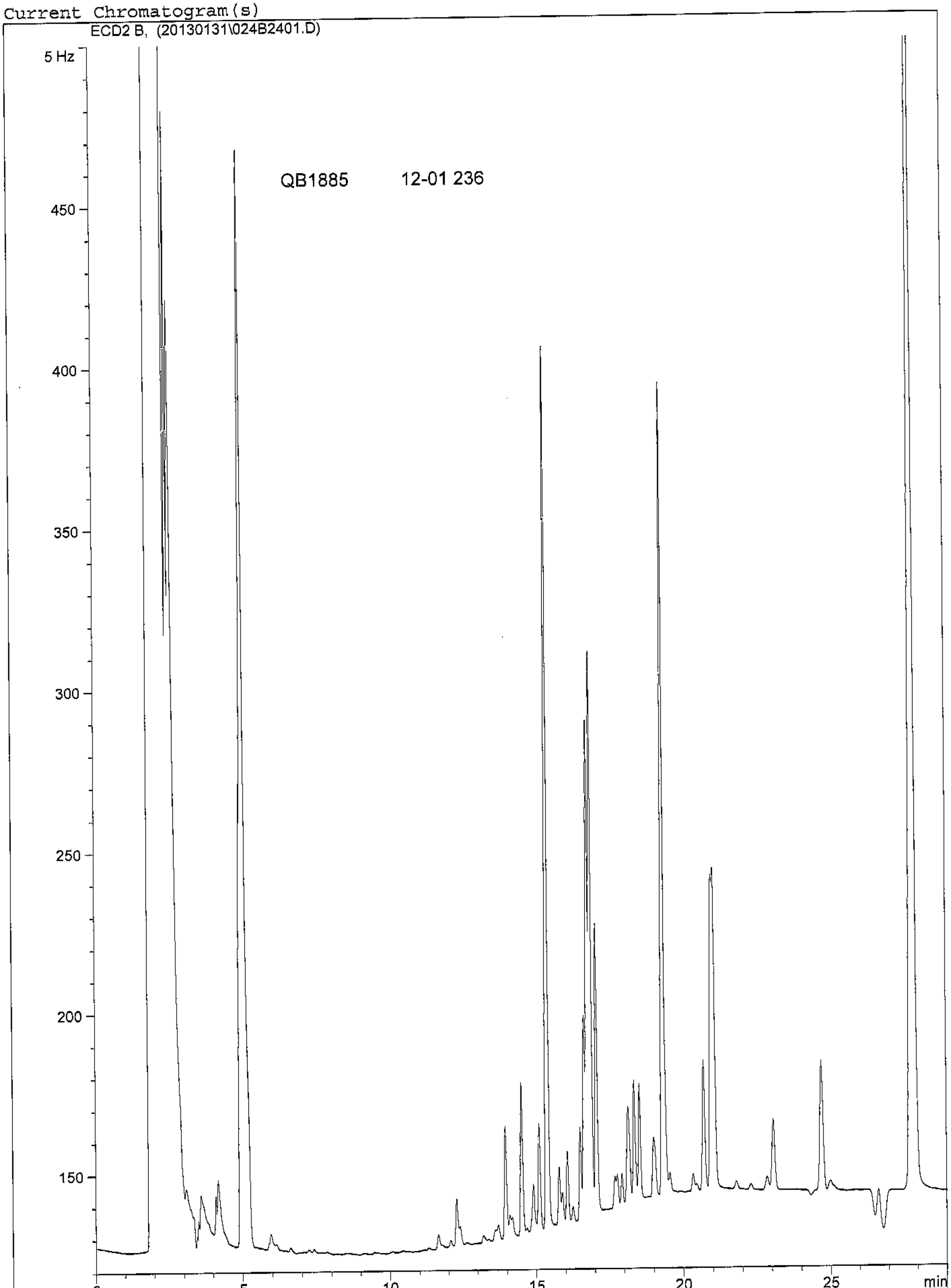
HAA002 2/7/2013 9:11:22 AM Kristy Joudrey

Print of all graphic windows



HAA002 2/7/2013 9:12:05 AM Kristy Joudrey

Print of all graphic windows



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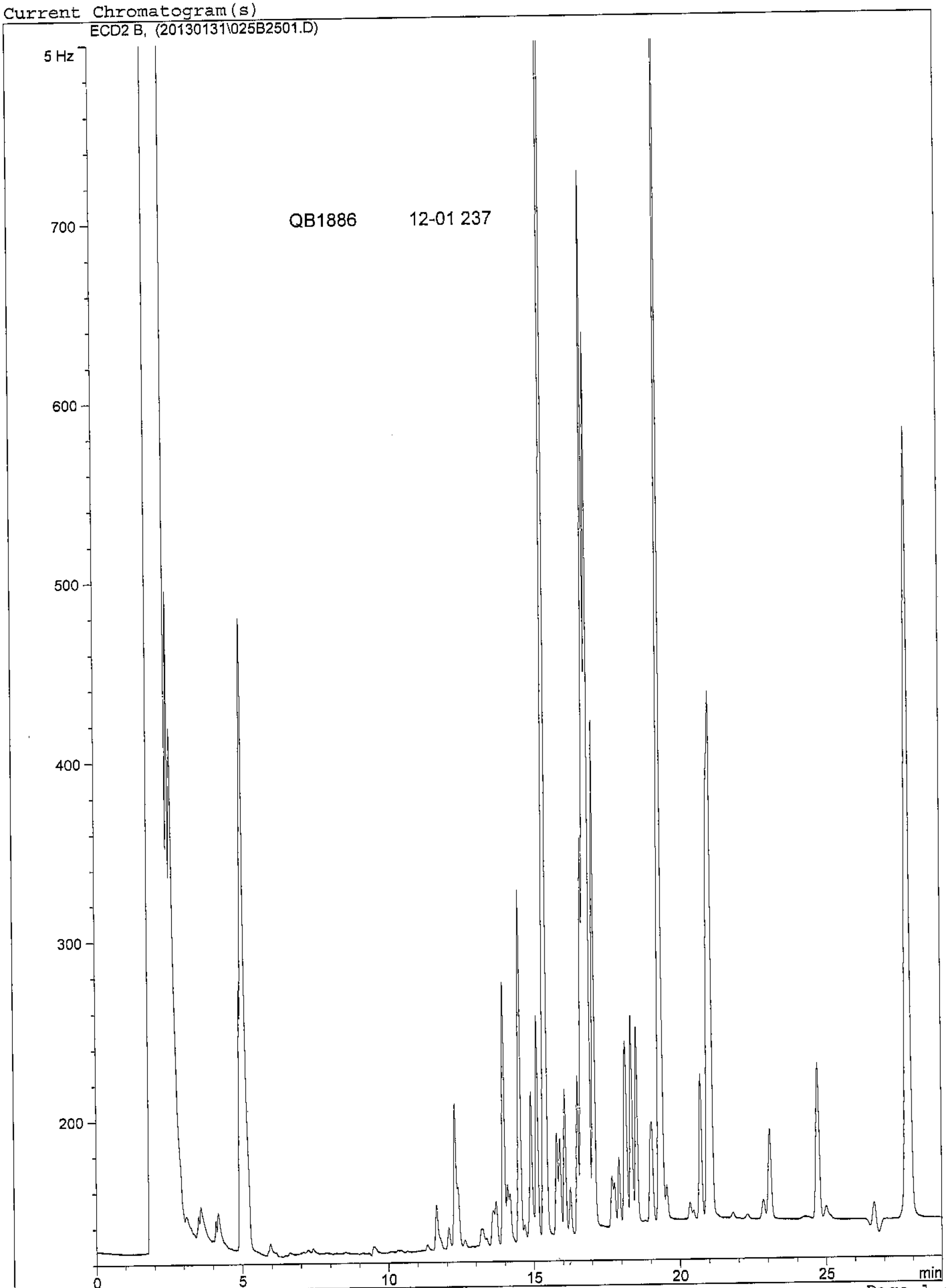
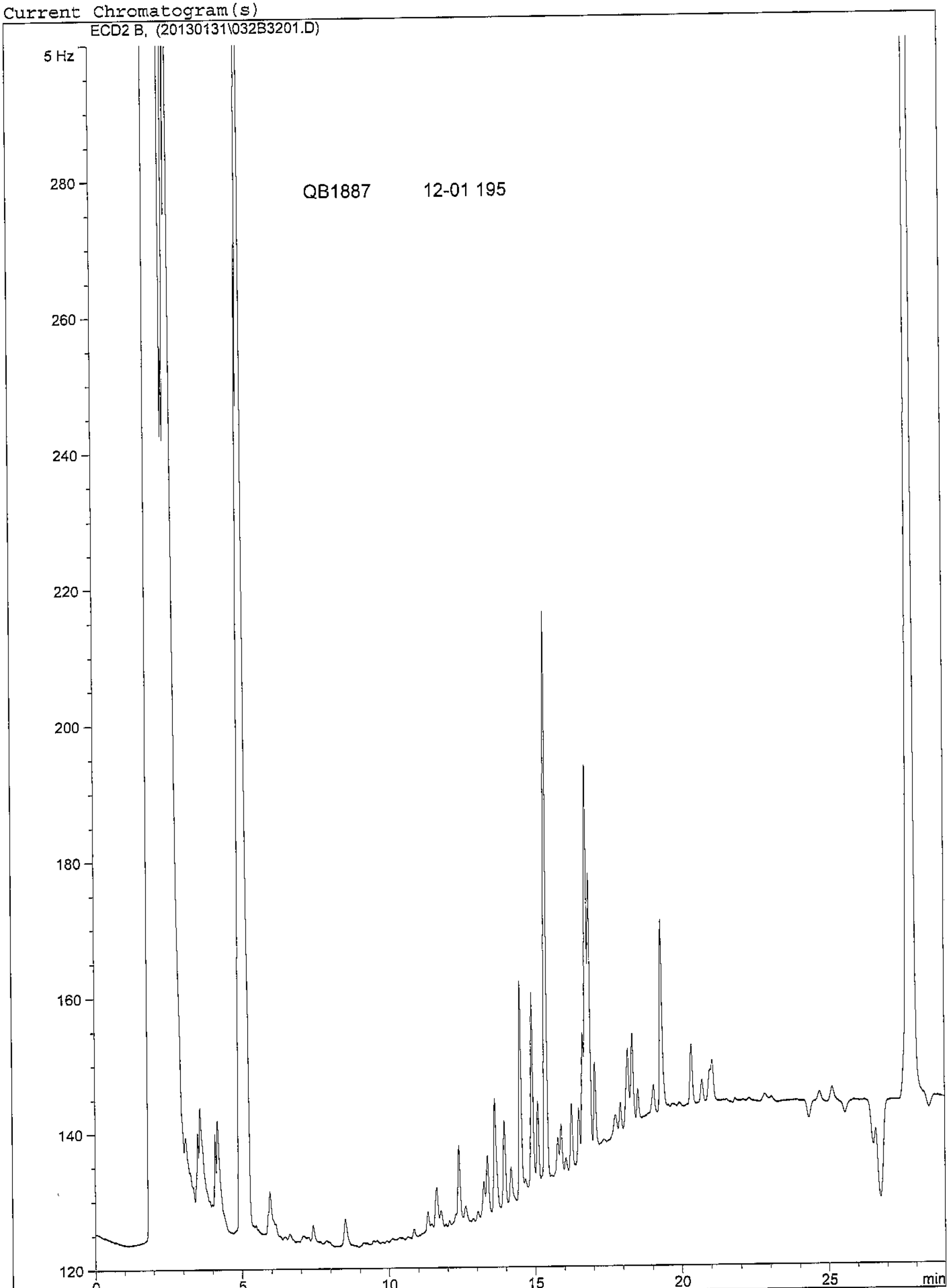


HAA002 2/7/2013 8:51:36 AM Kristy Joudrey

Print of all graphic windows



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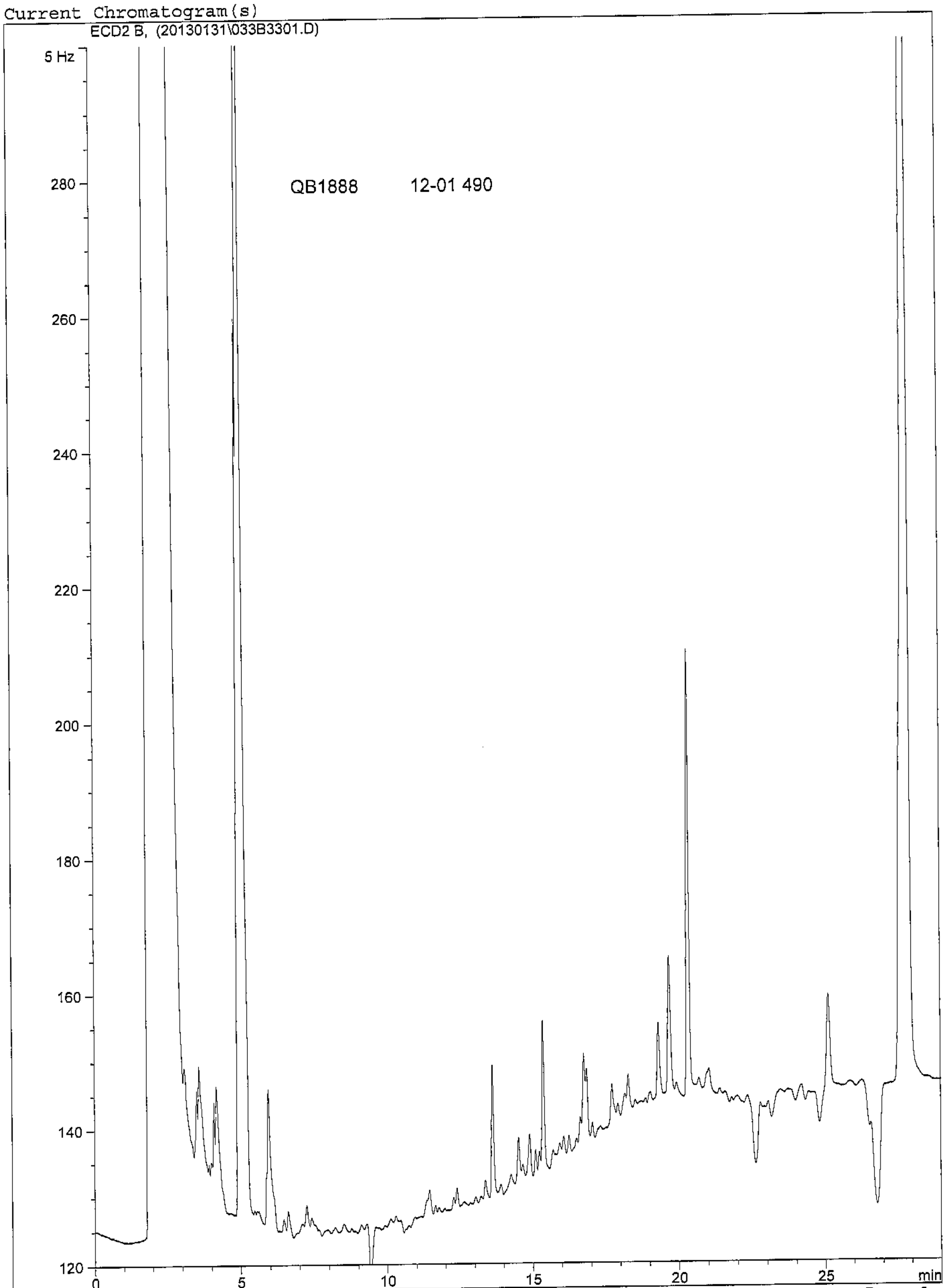

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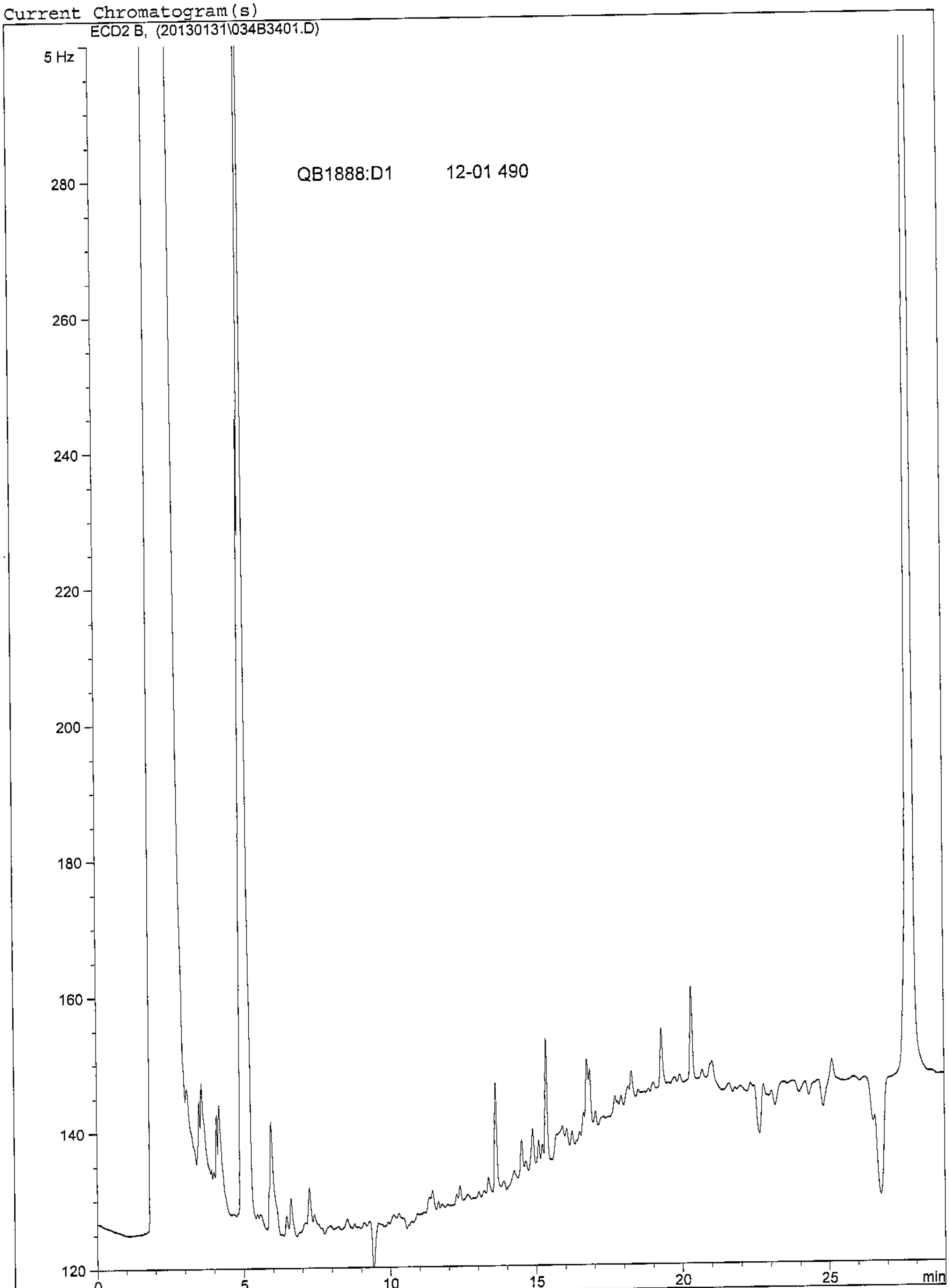

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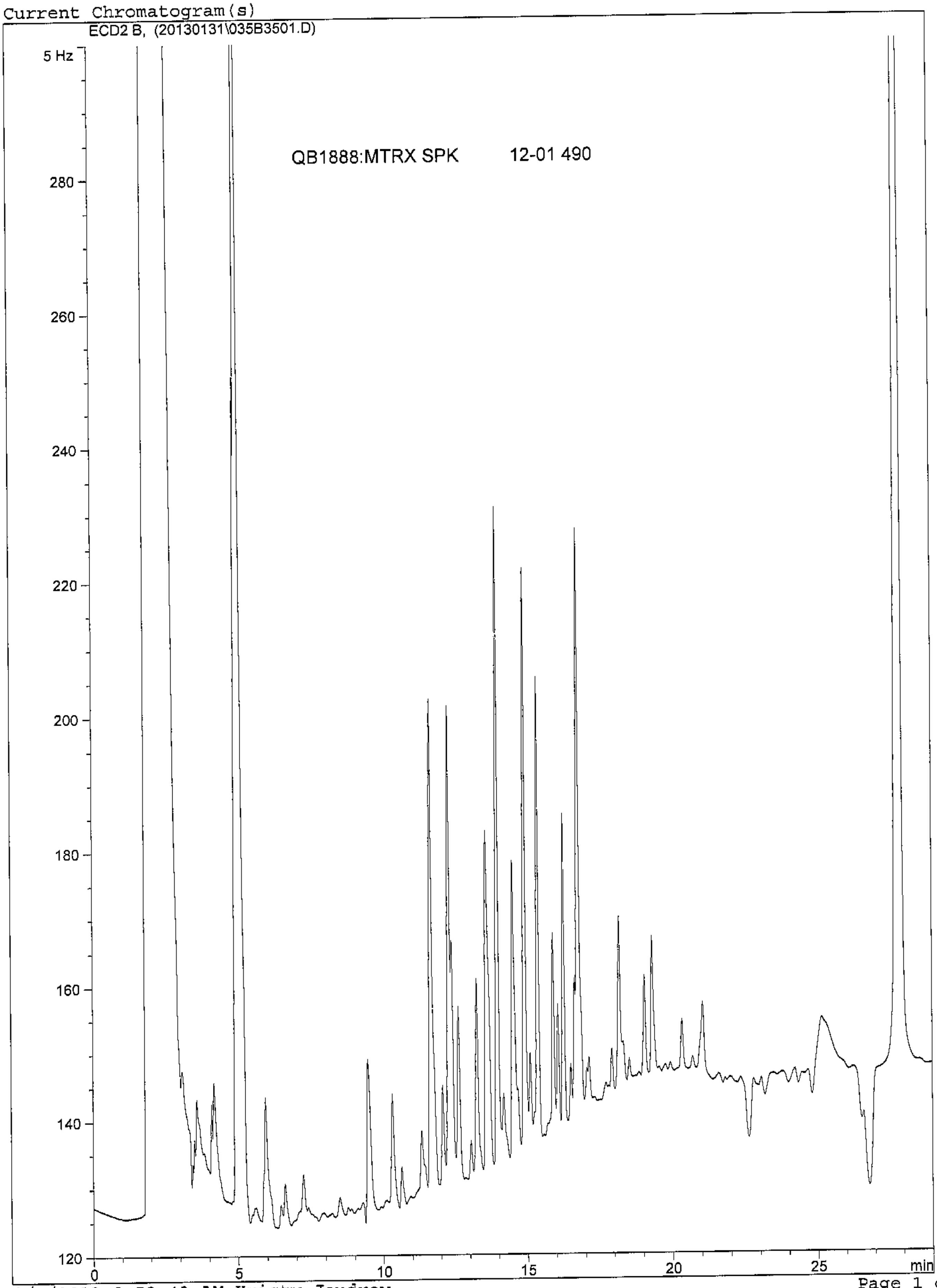

HAA002 2/7/2013 8:53:43 AM Kristy Joudrey

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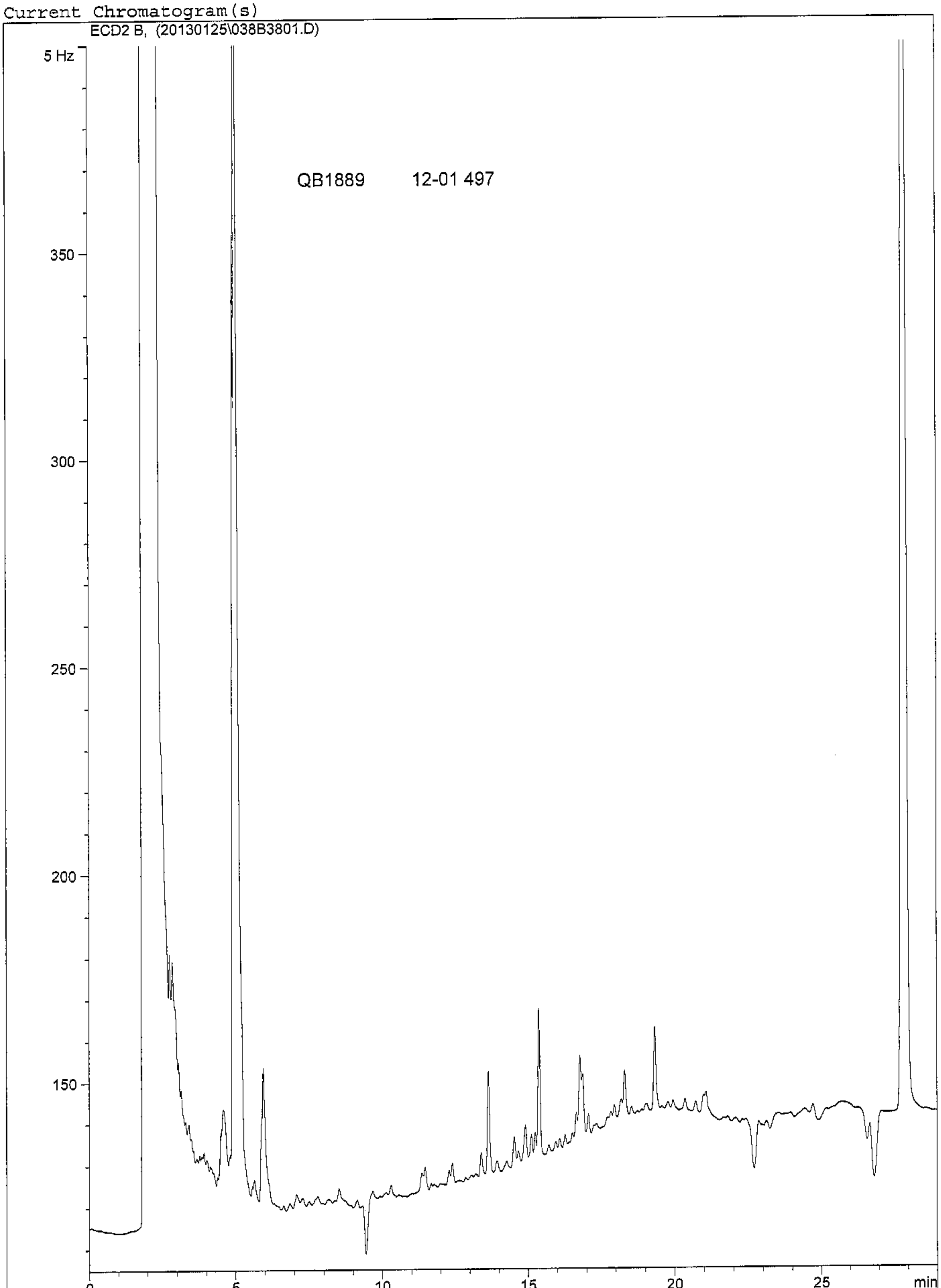

HAA002 2/7/2013 9:12:31 AM Kristy Joudrey

Print of all graphic windows

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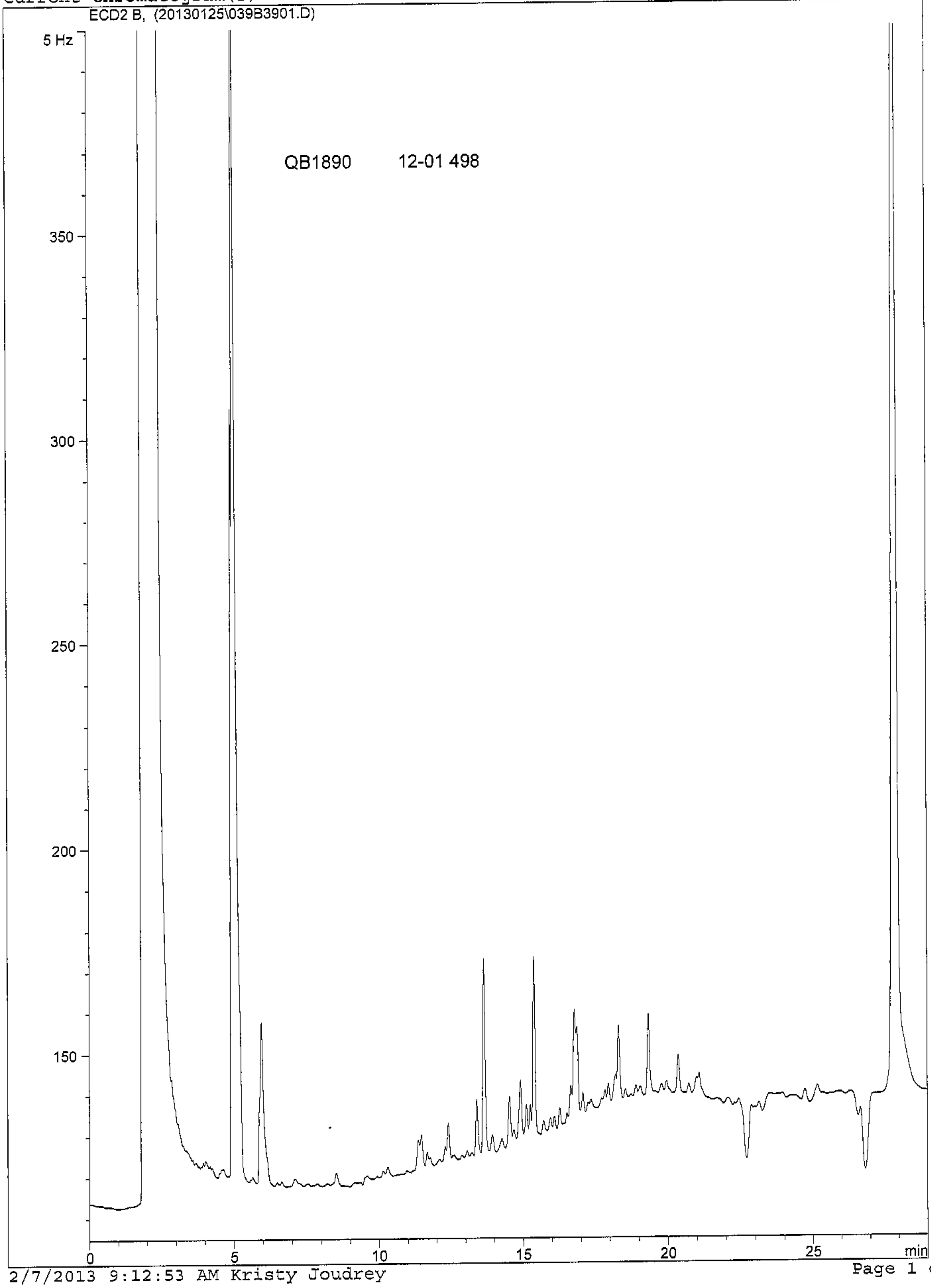

HAA002 2/7/2013 9:12:53 AM Kristy Joudrey

Print of all graphic windows

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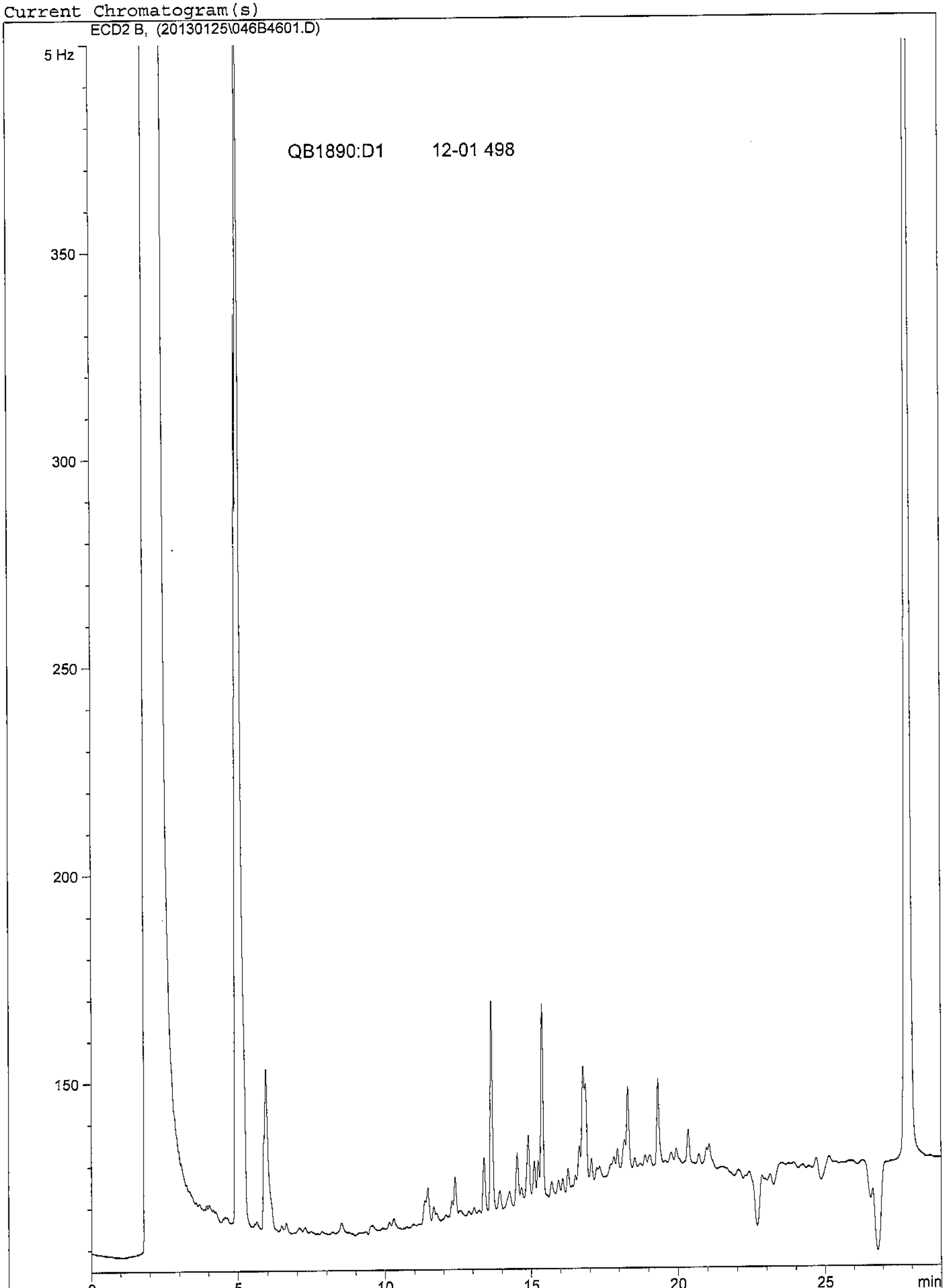

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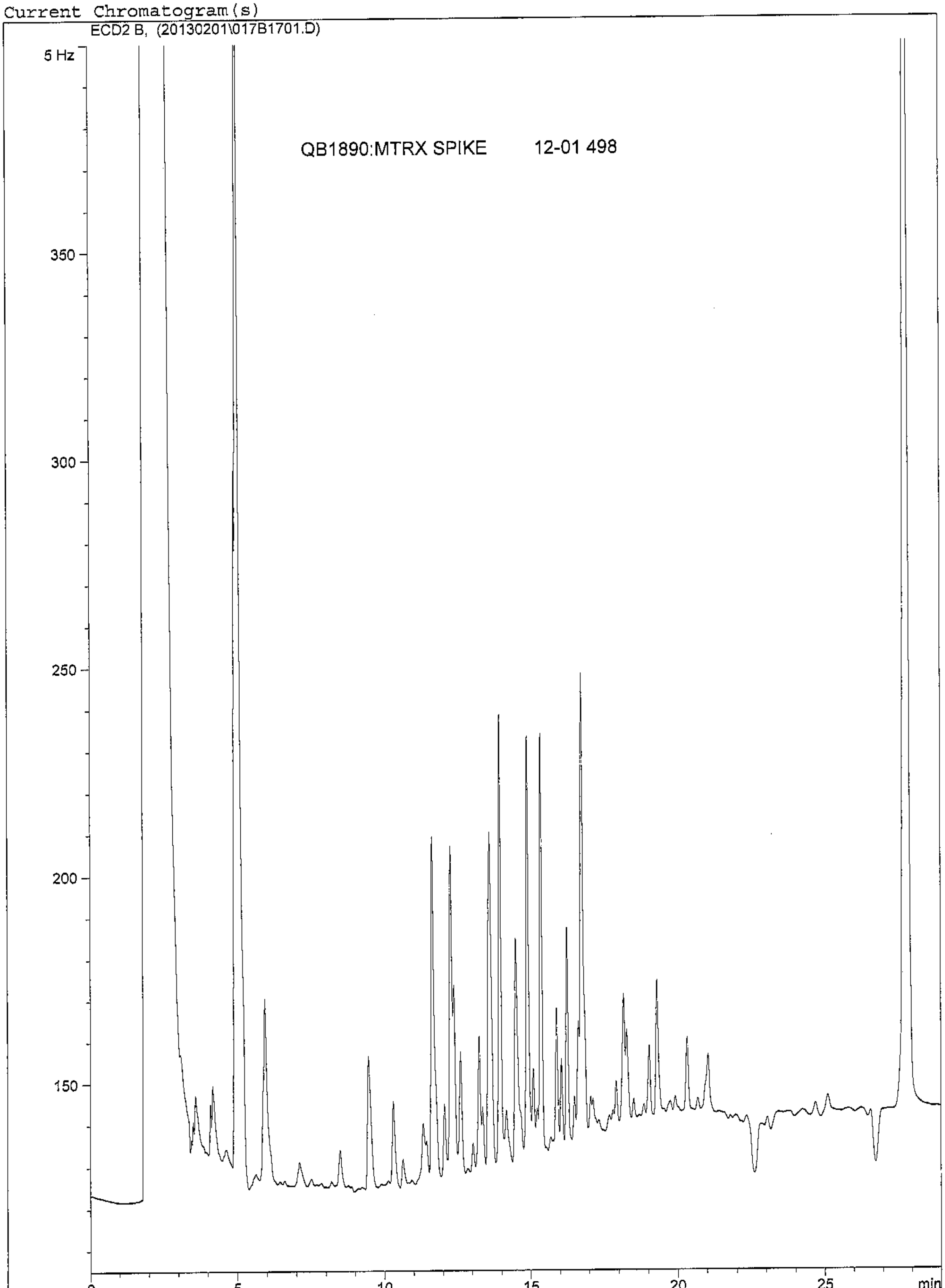

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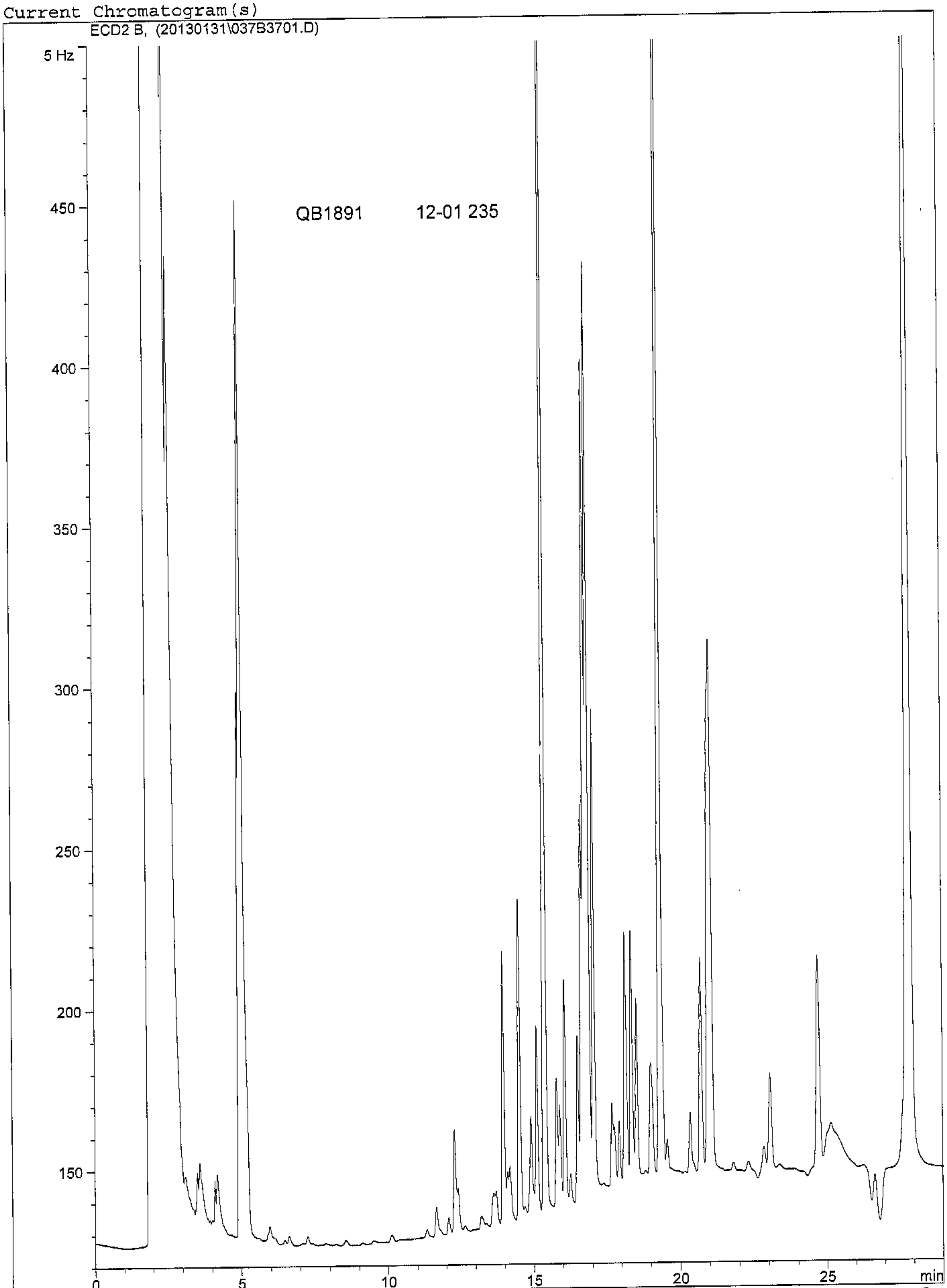

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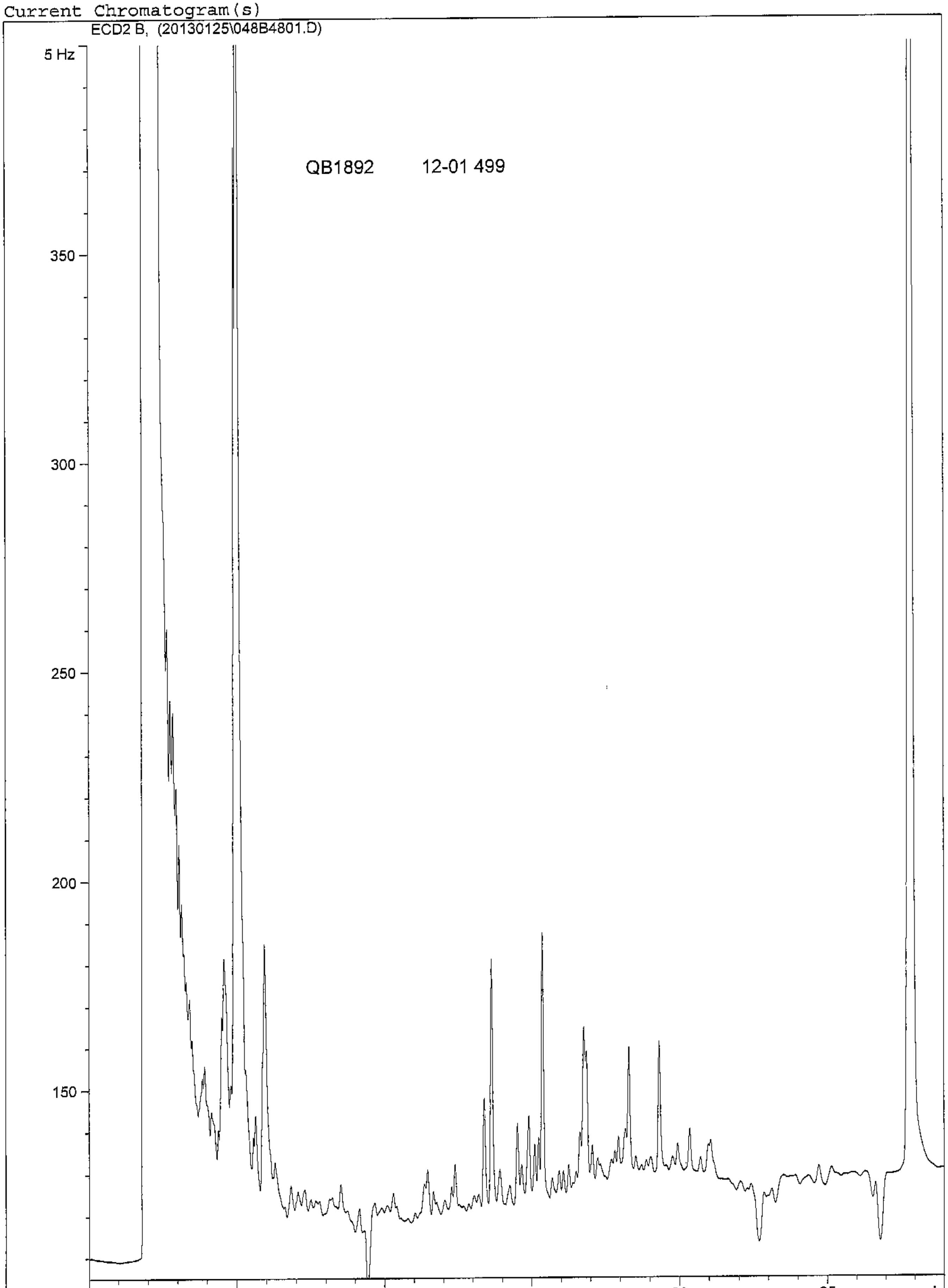

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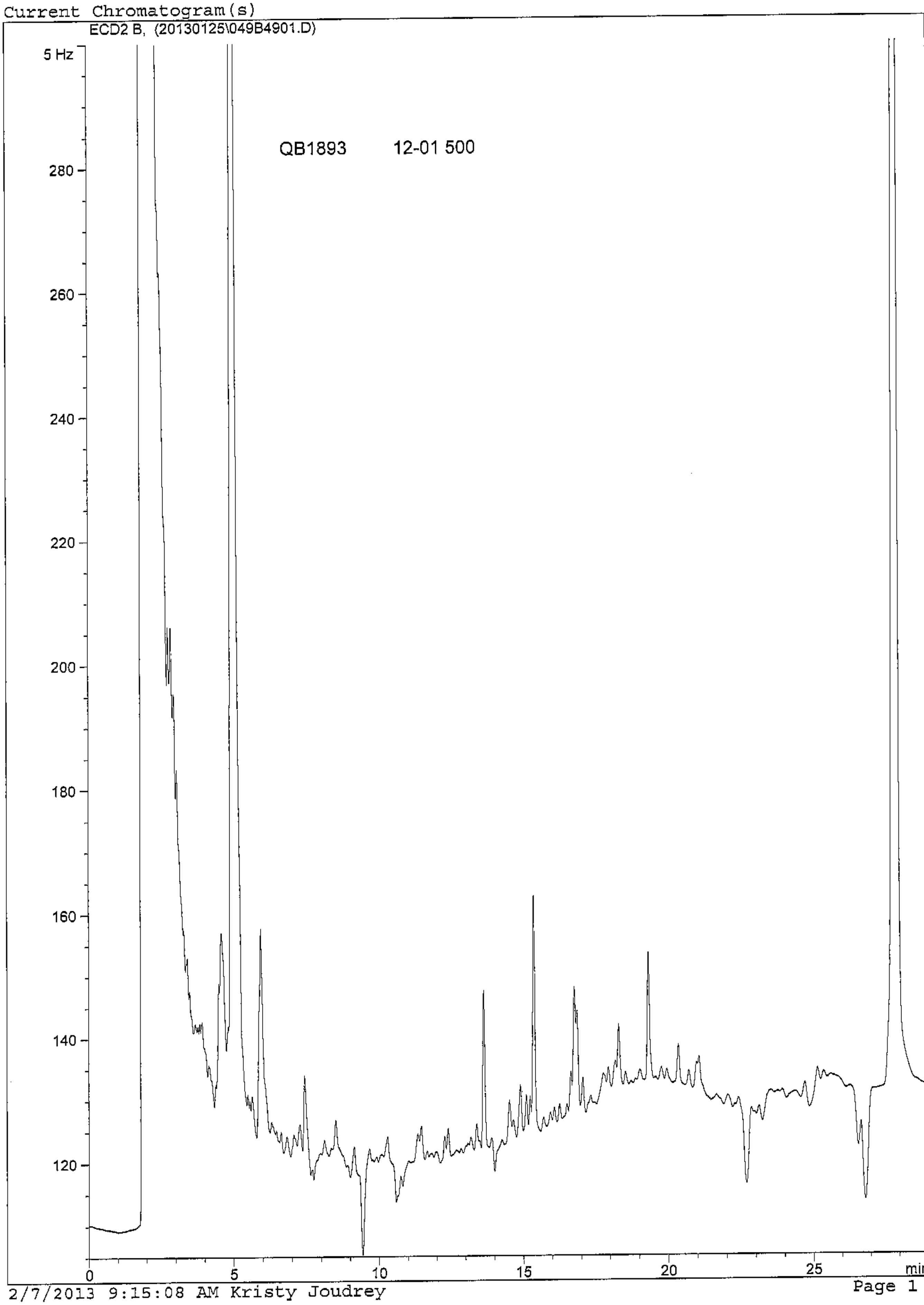

HAA002 2/7/2013 9:15:08 AM Kristy Joudrey

Print of all graphic windows

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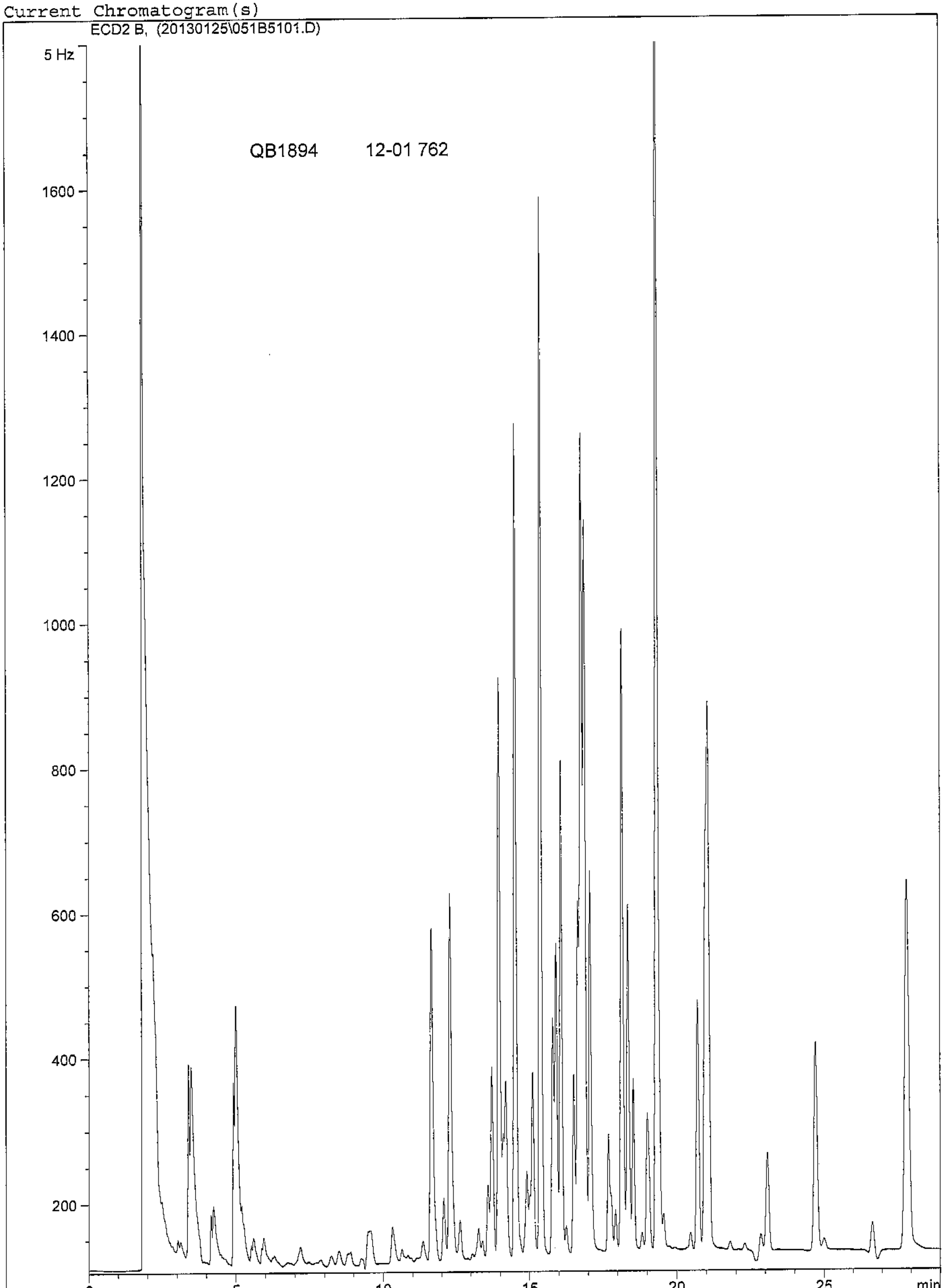

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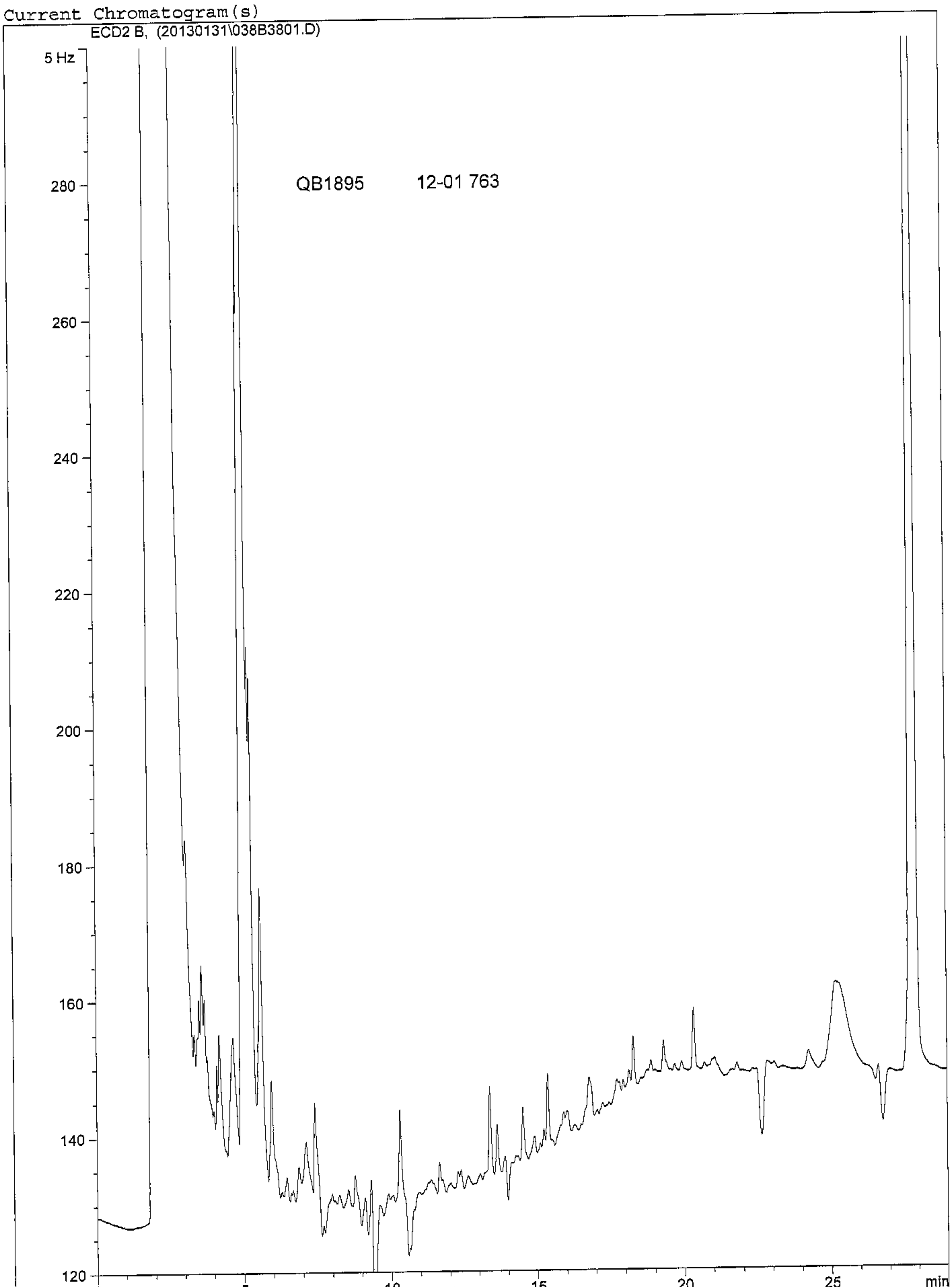

HAA002 2/7/2013 8:54:51 AM Kristy Joudrey

Print of all graphic windows

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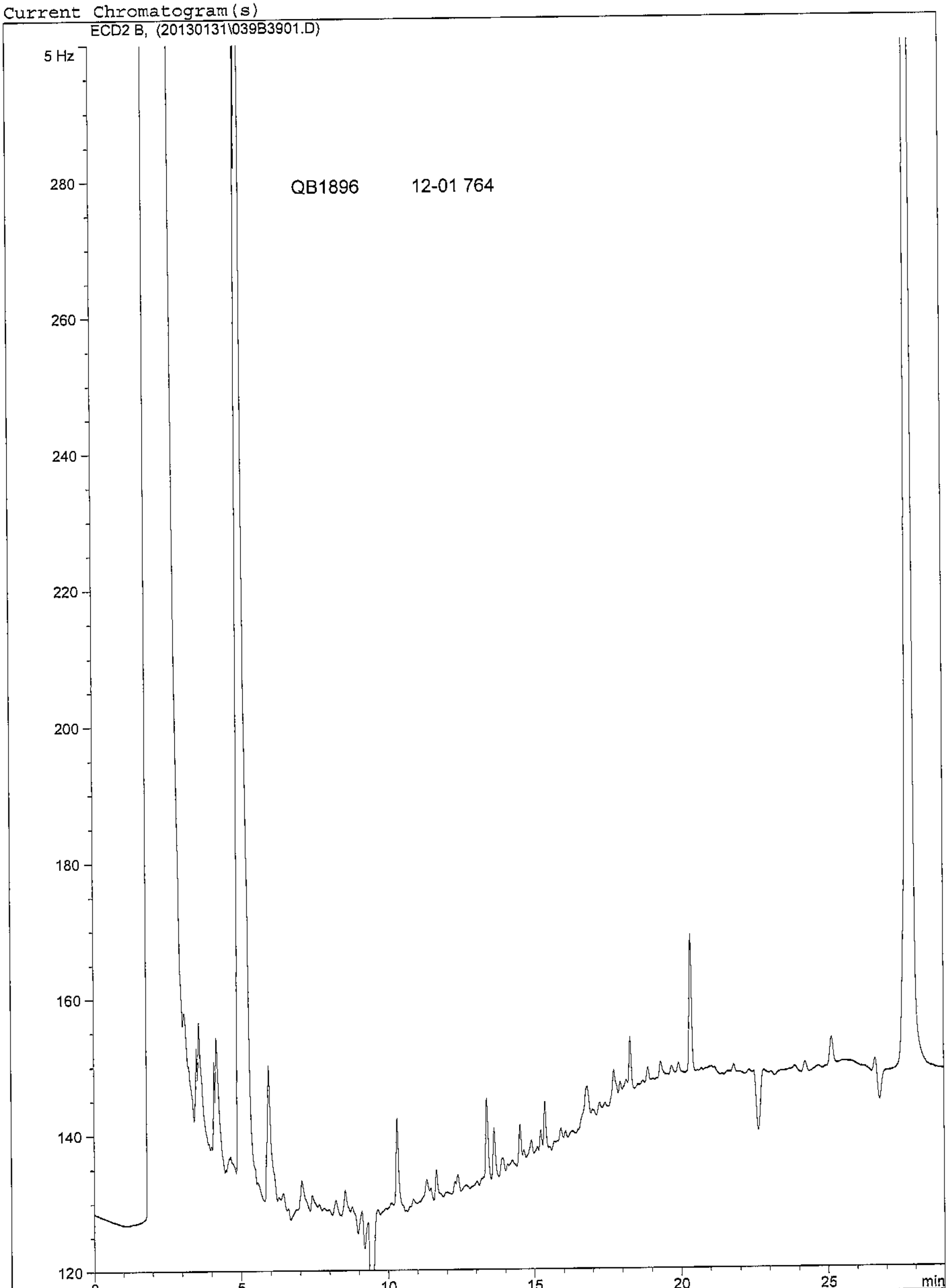

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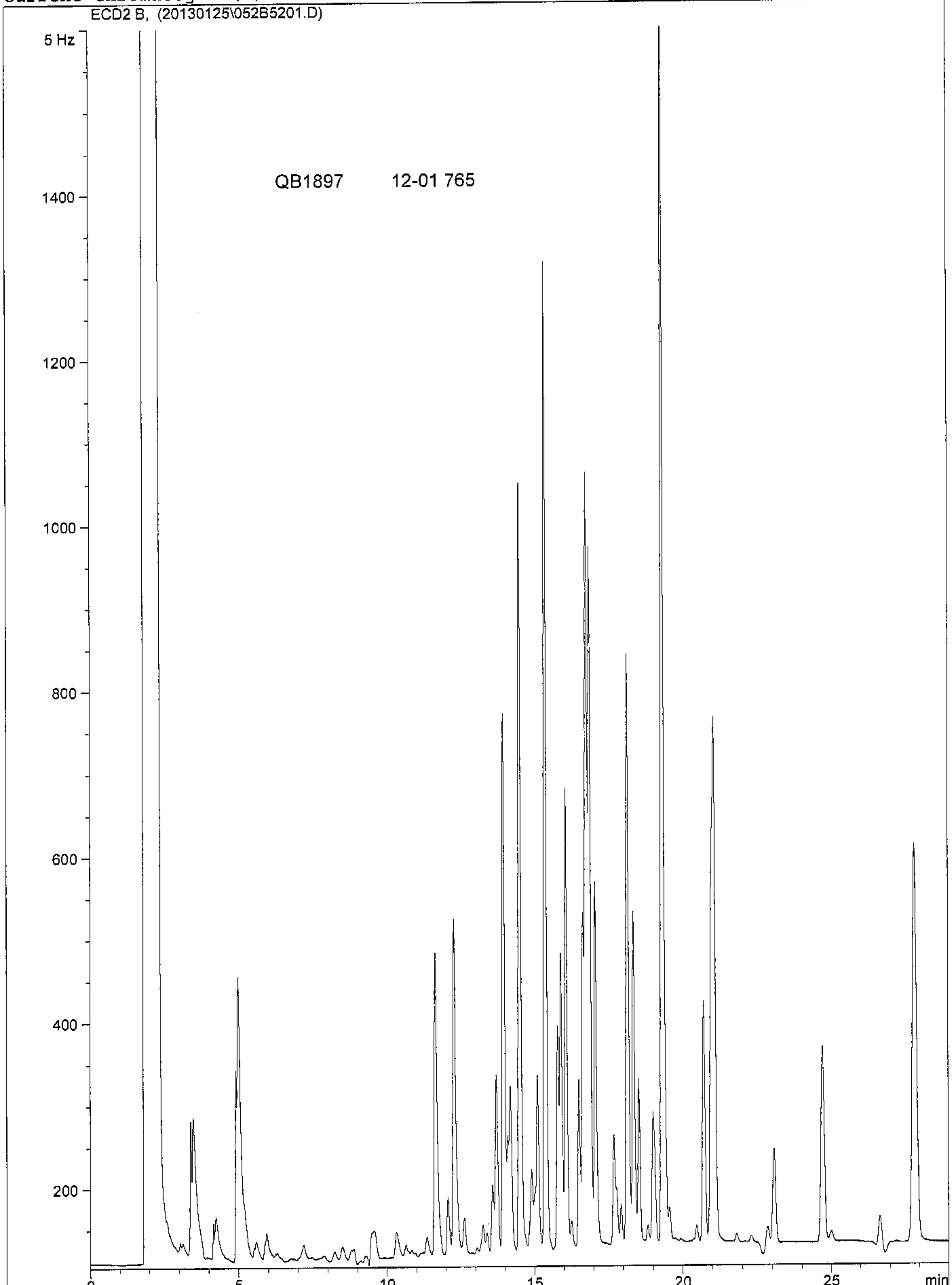

HAA002 2/7/2013 9:16:14 AM Kristy Joudrey

Print of all graphic windows

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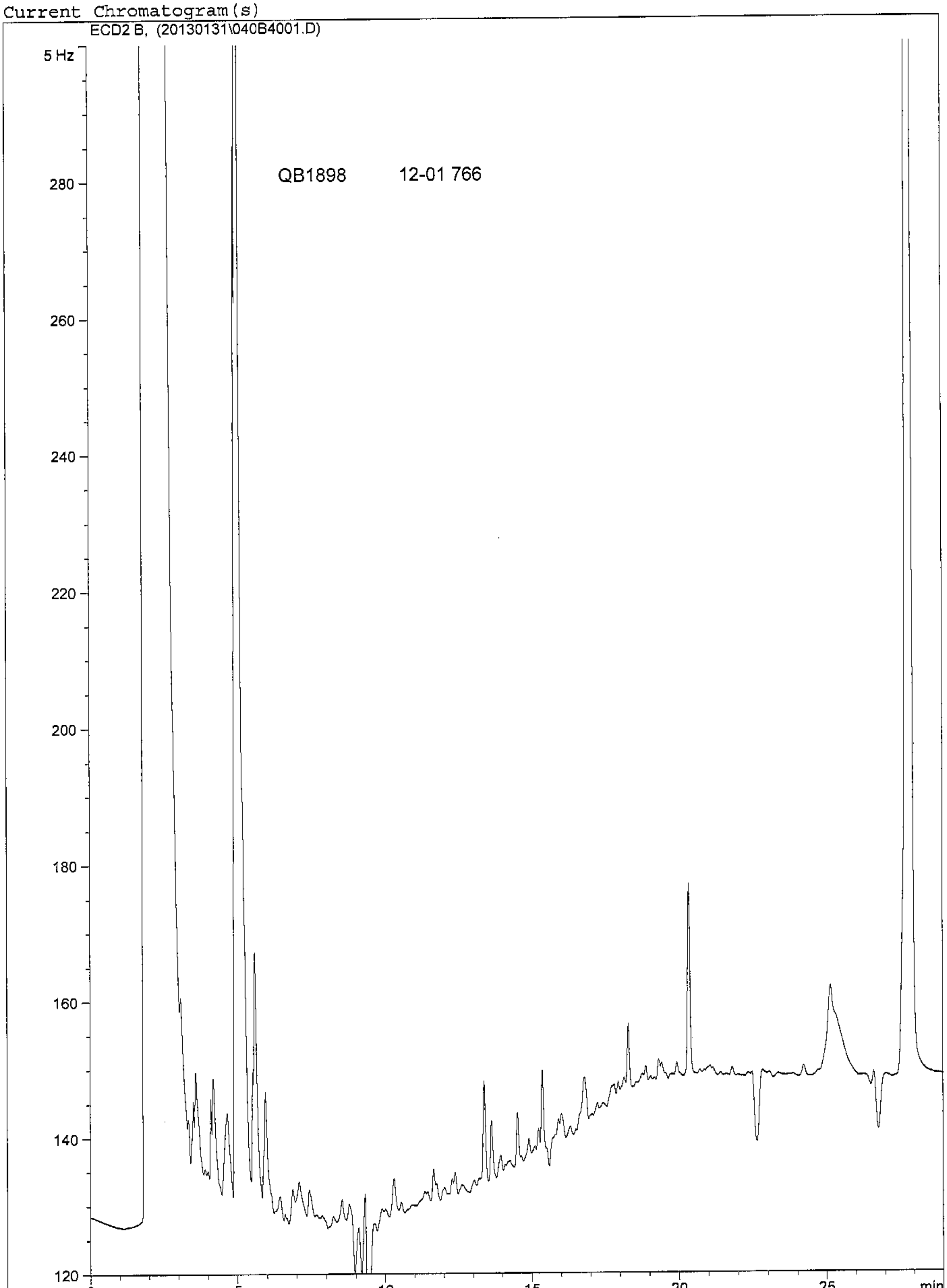

HAA002 2/7/2013 8:55:41 AM Kristy Joudrey

Print of all graphic windows

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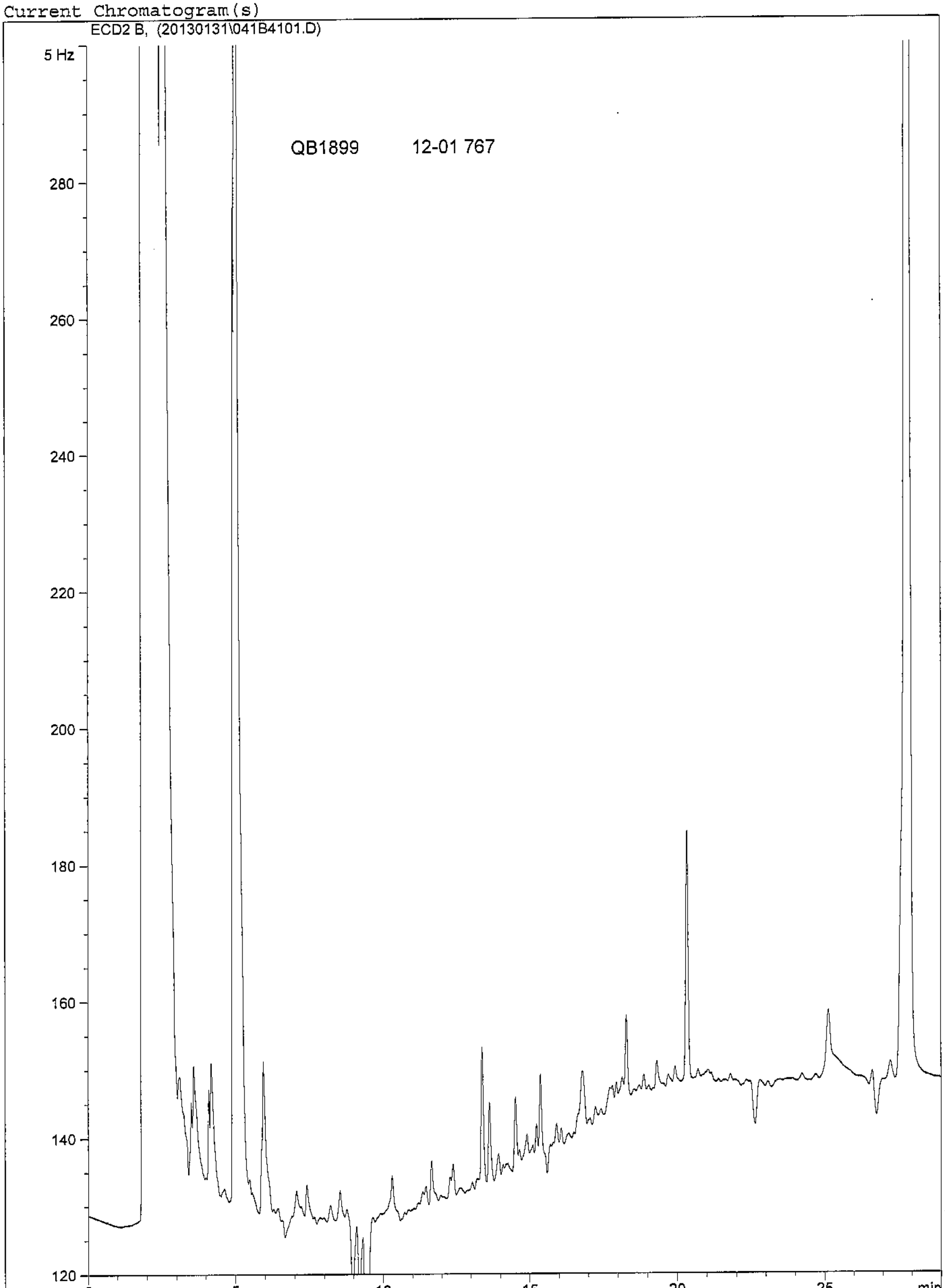

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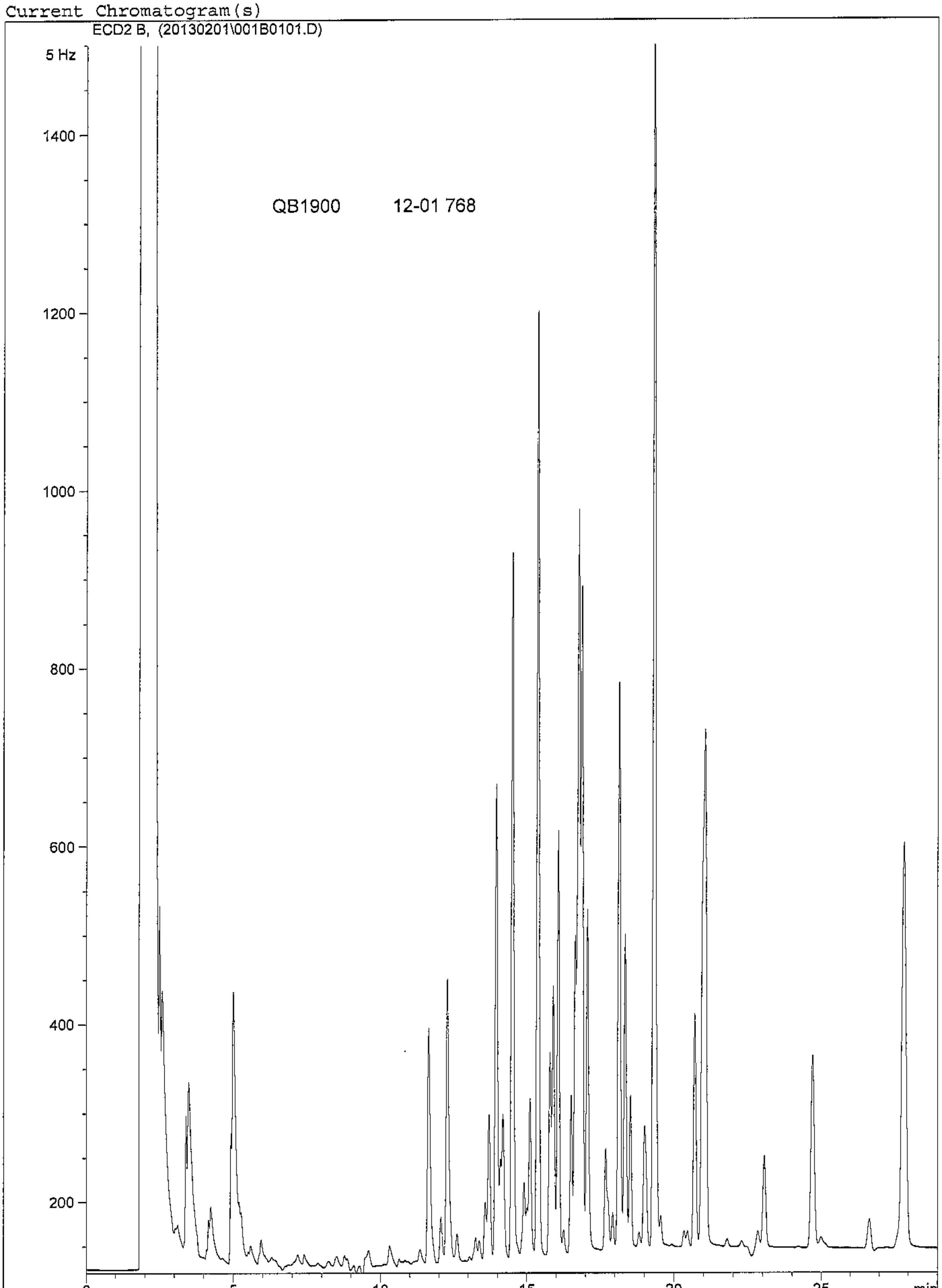

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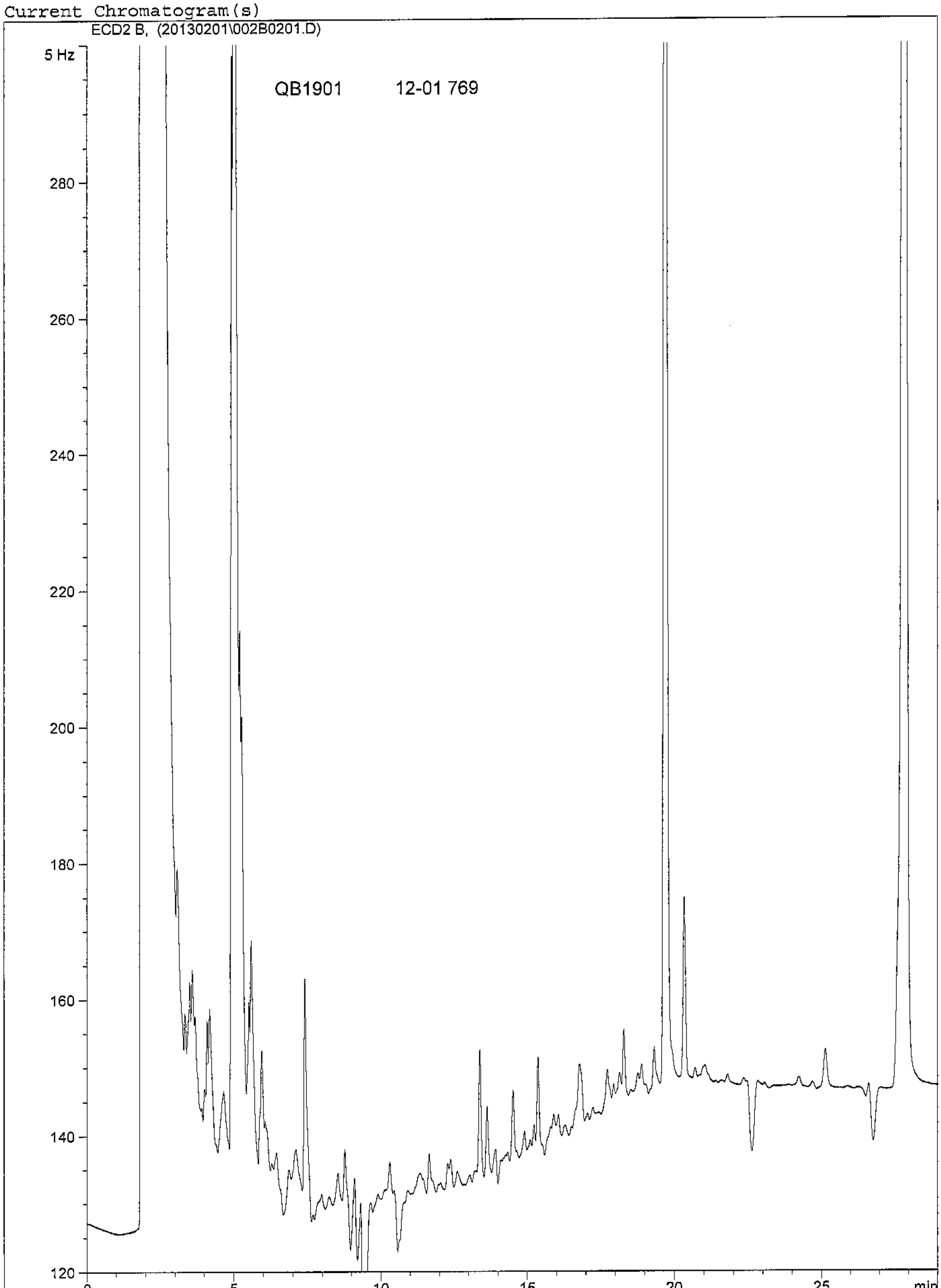

HAA002 2/7/2013 8:44:31 AM Kristy Joudrey

Print of all graphic windows

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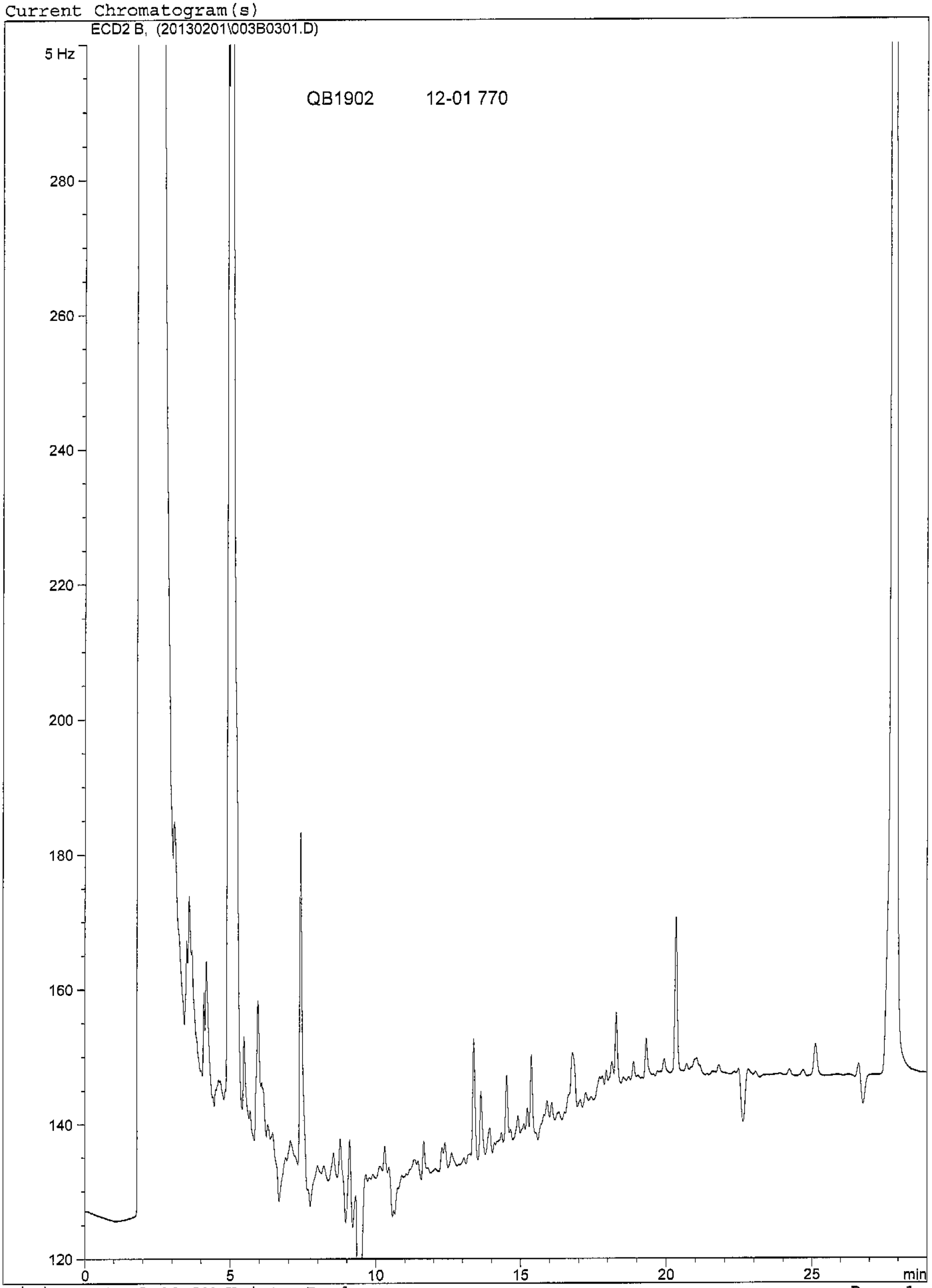

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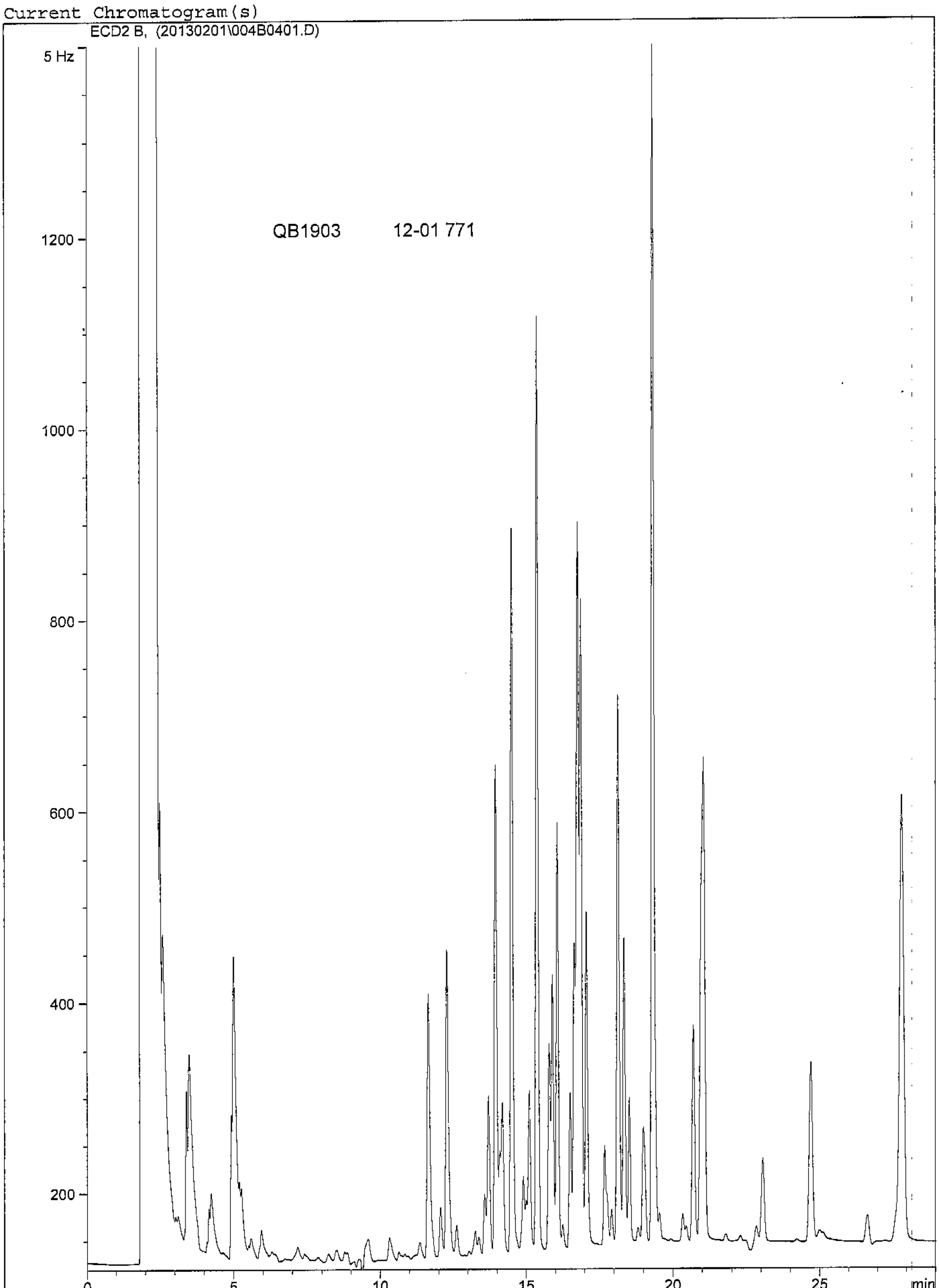
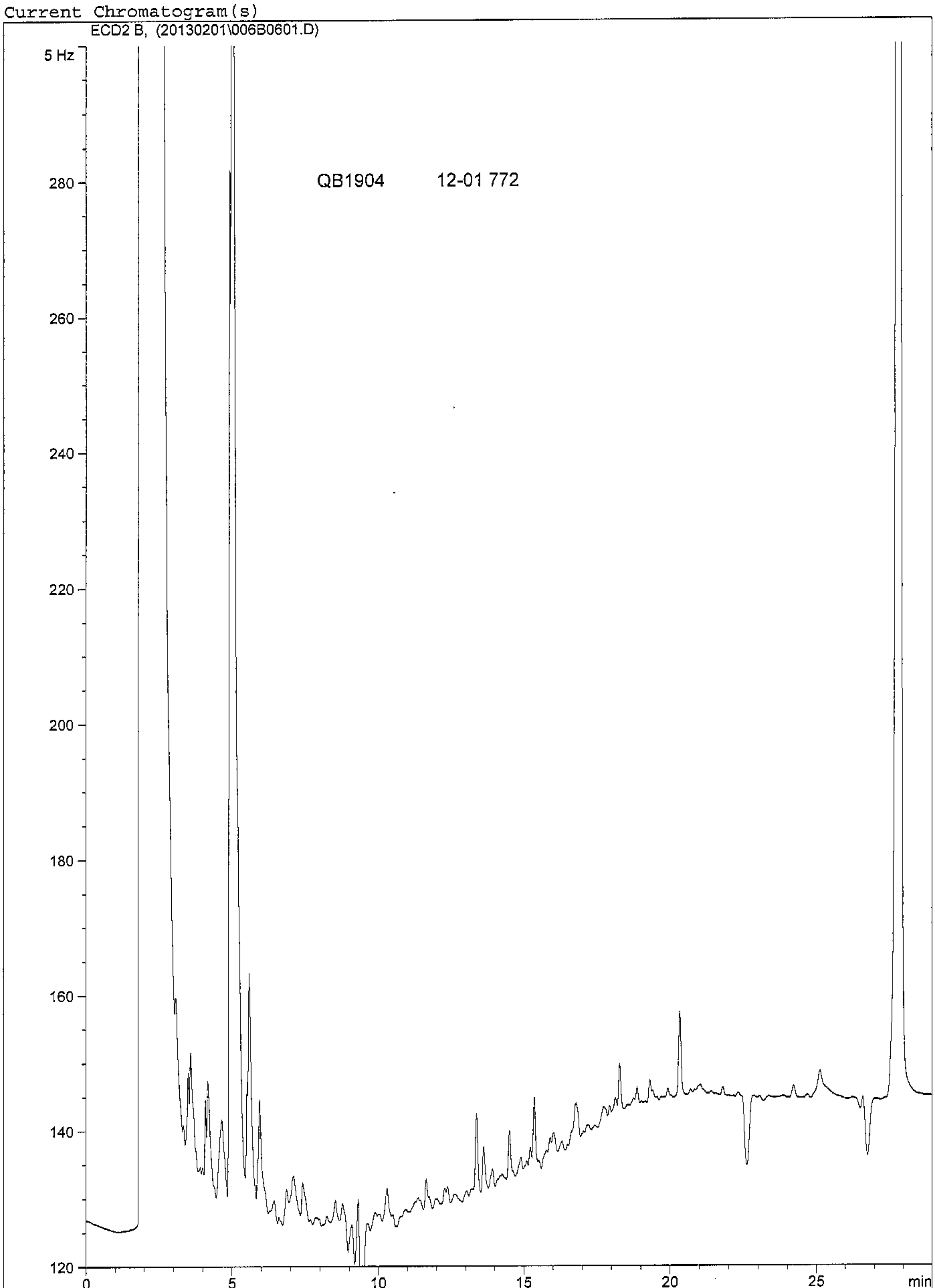


HAA002 2/7/2013 8:45:45 AM Kristy Joudrey

Print of all graphic windows



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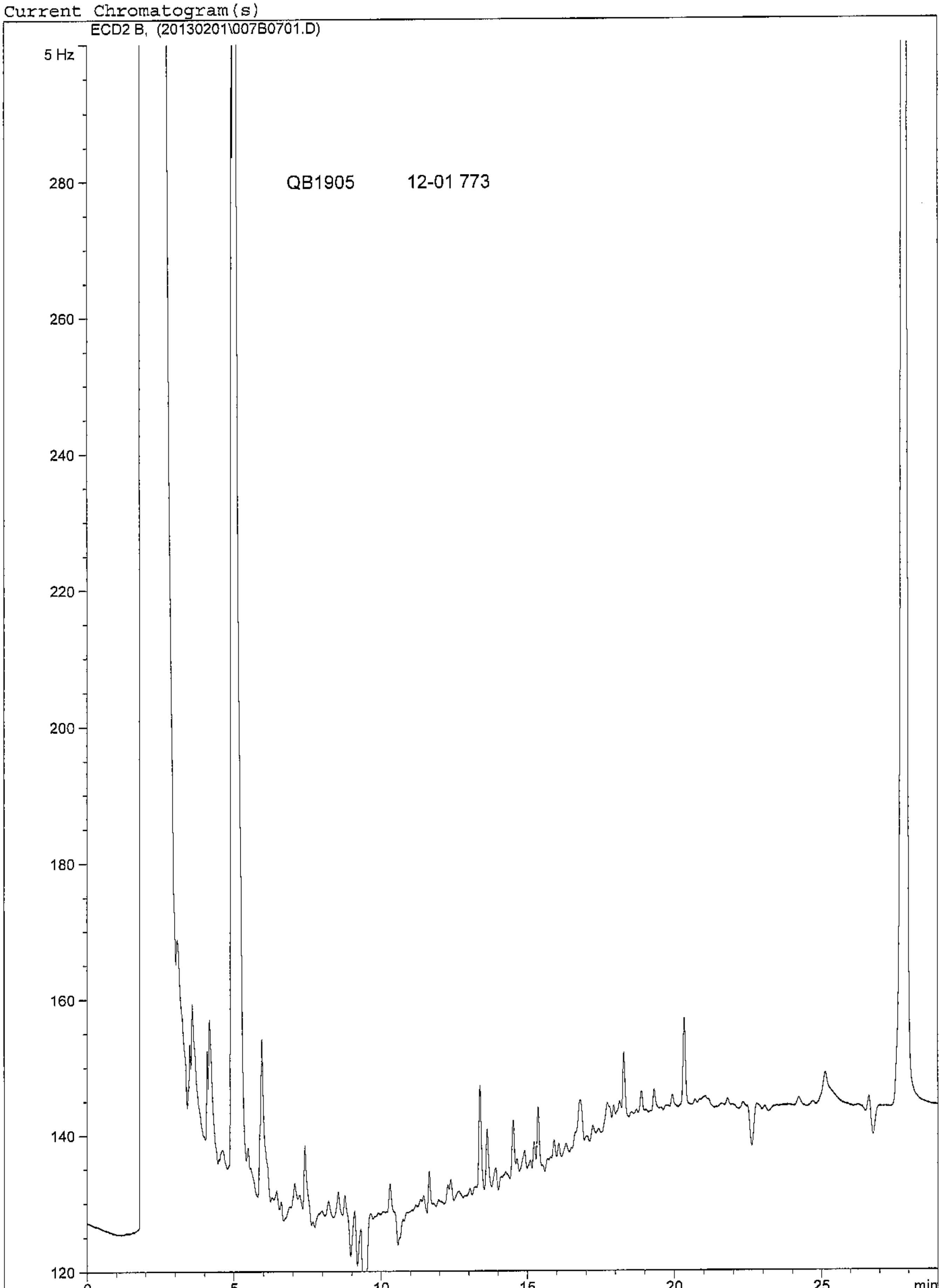

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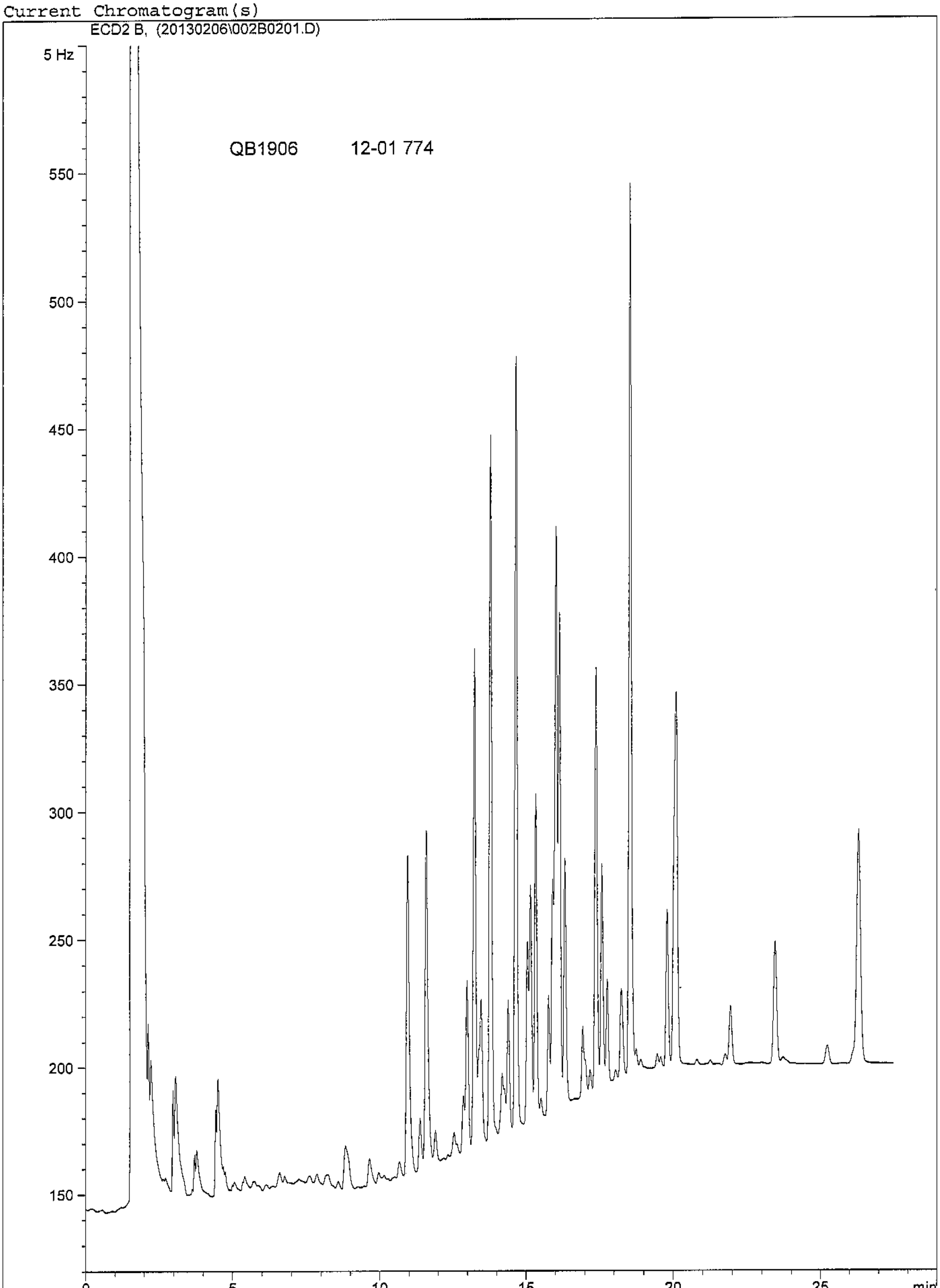

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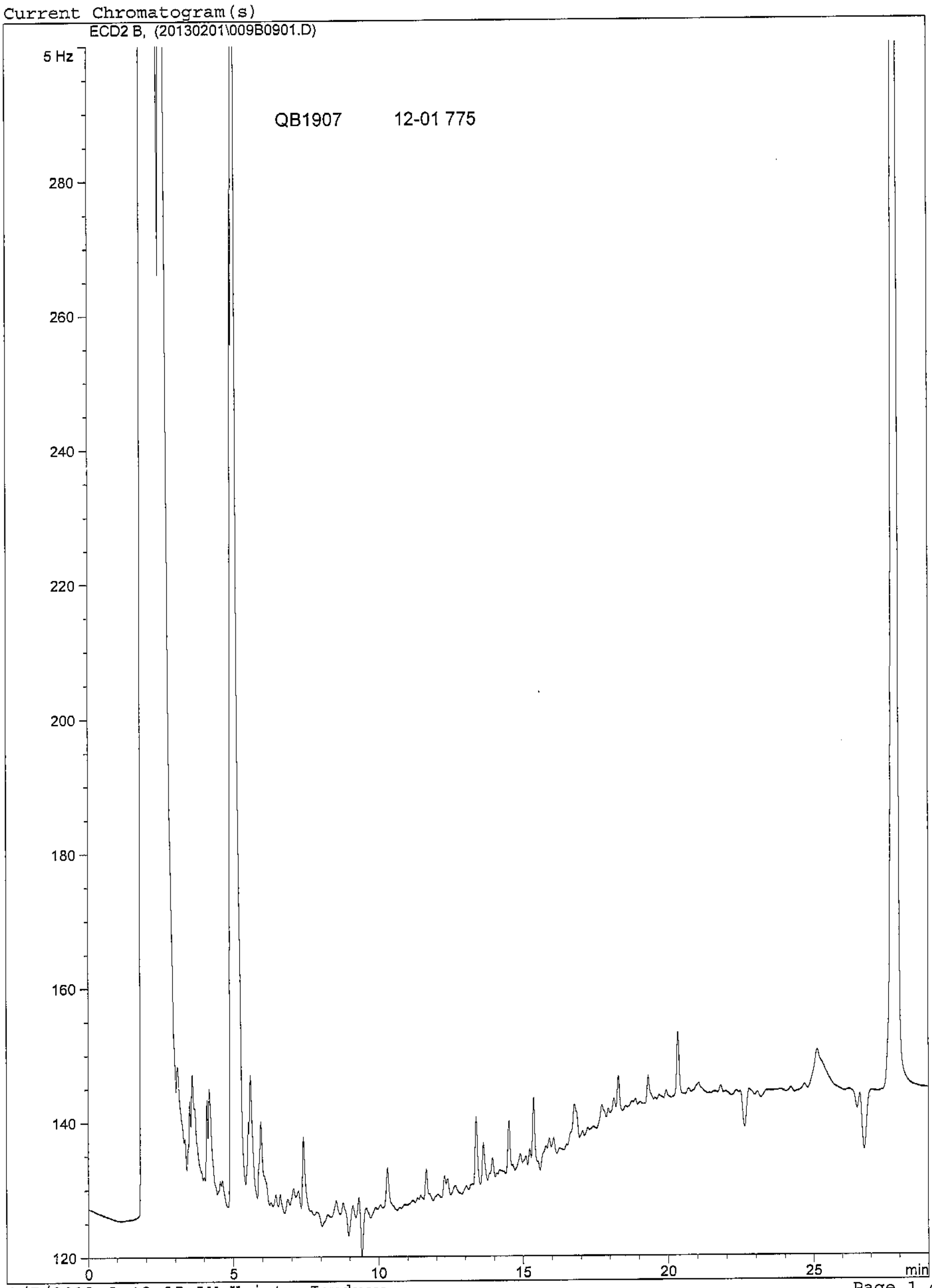

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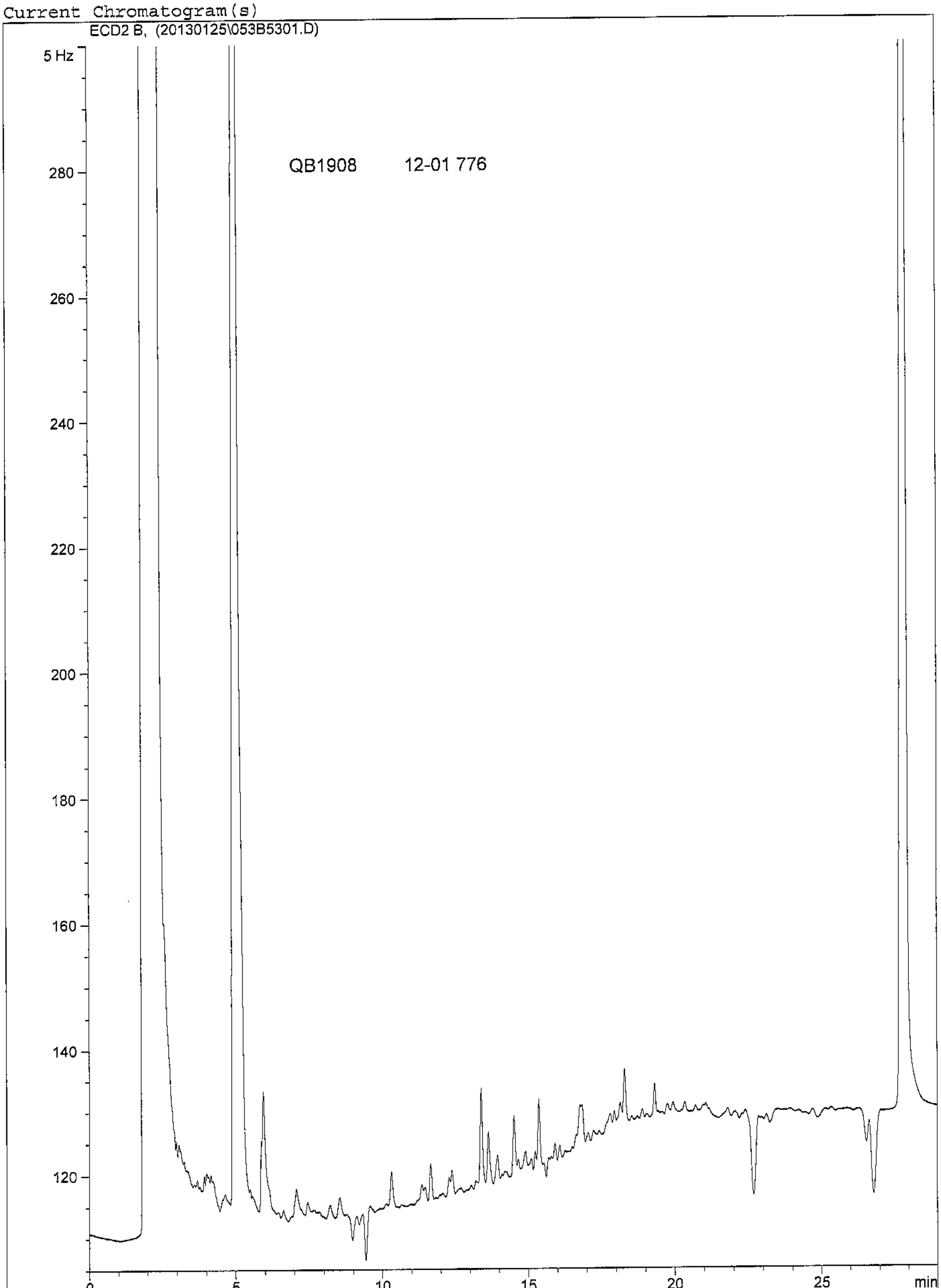

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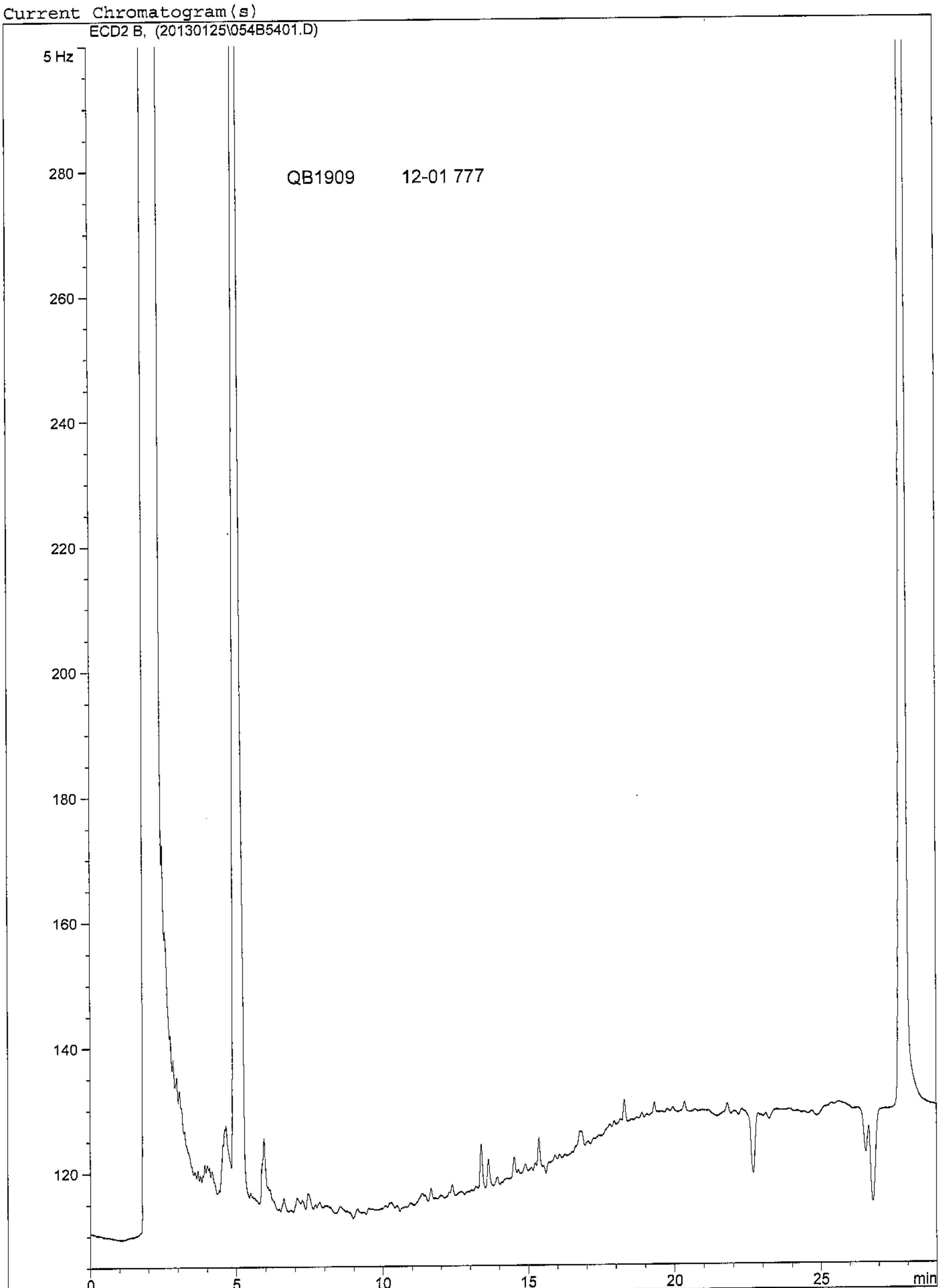

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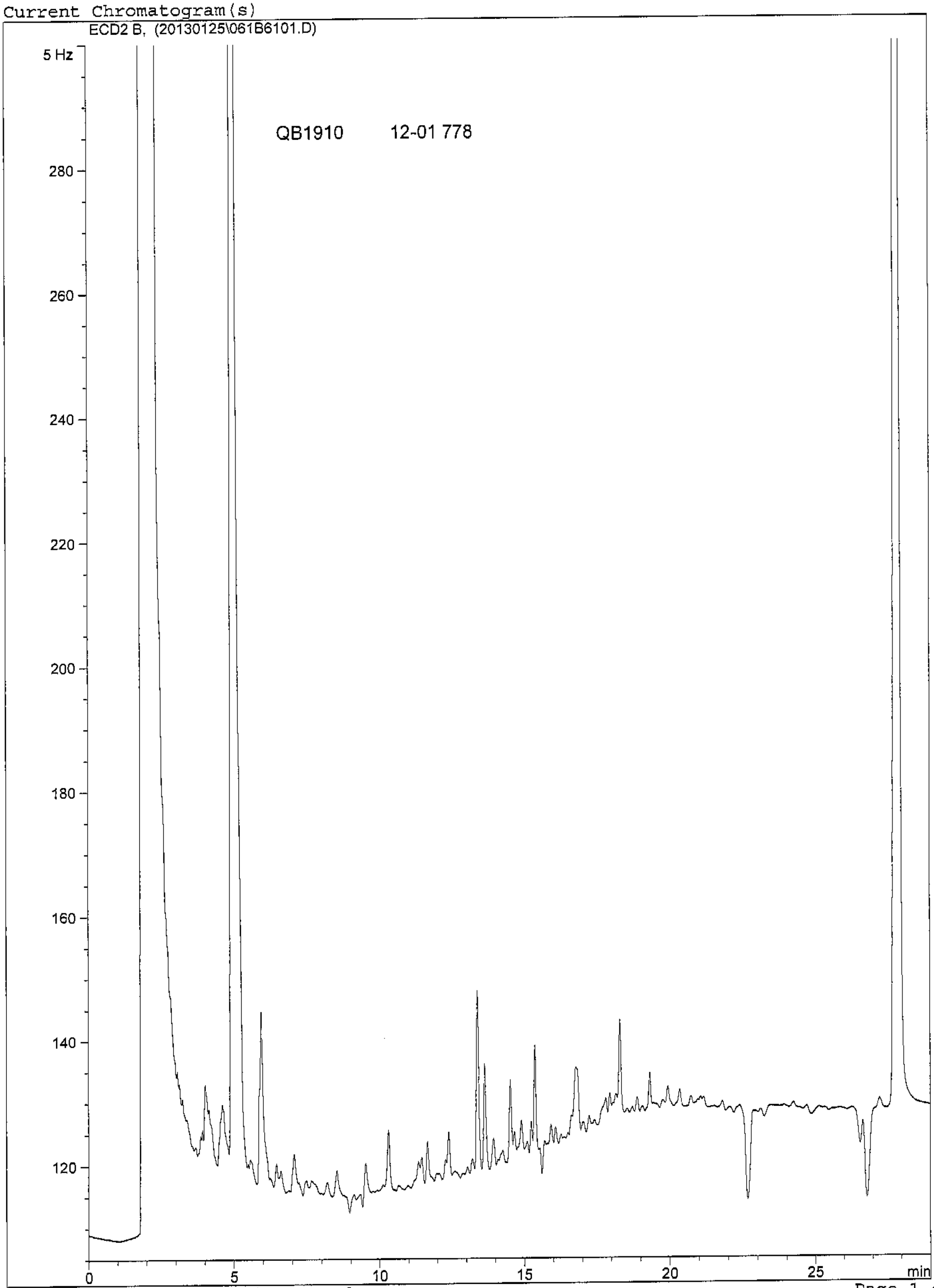

HAA002 2/7/2013 9:17:24 AM Kristy Joudrey

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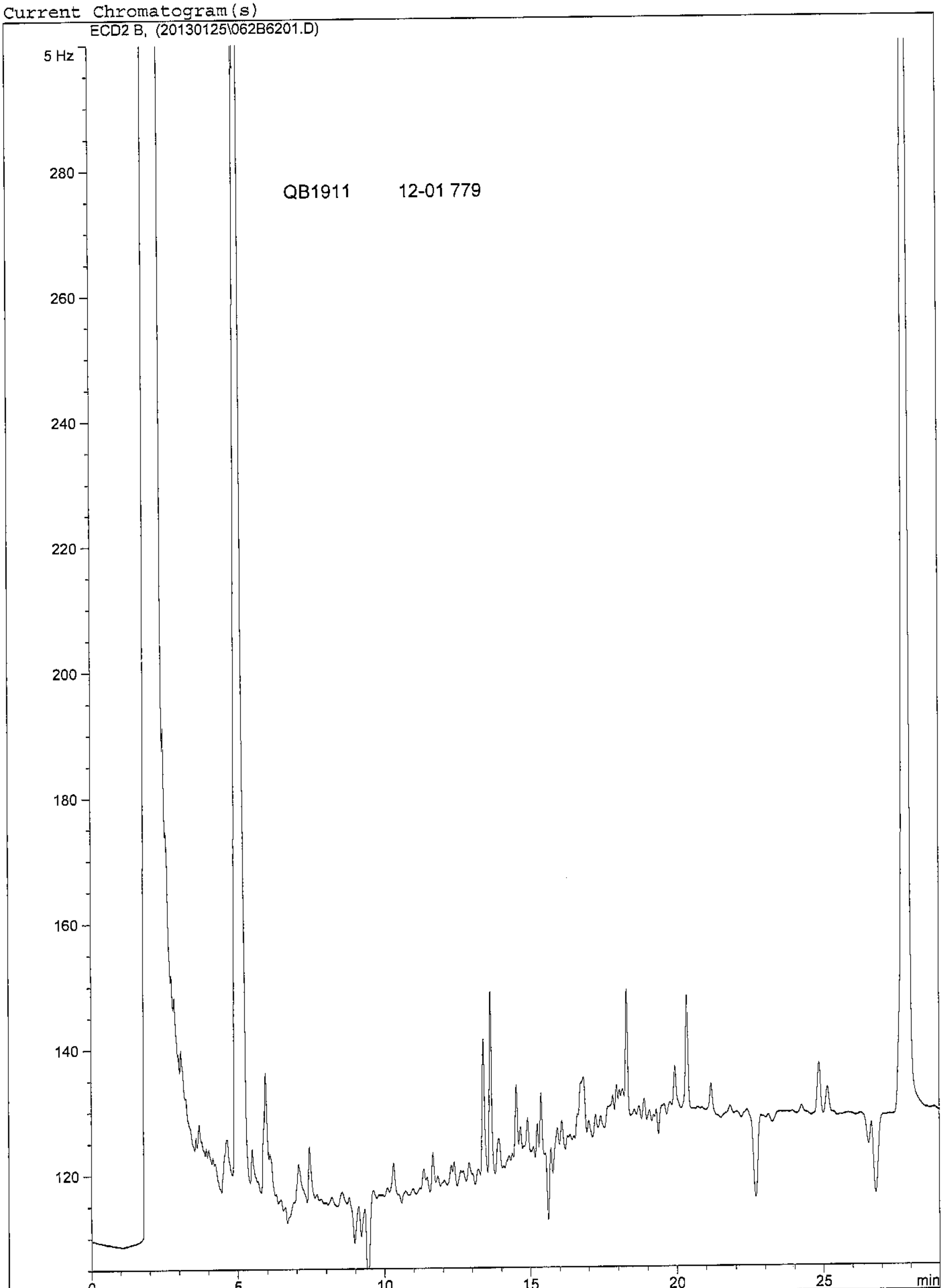

HAA002 2/7/2013 9:17:59 AM Kristy Joudrey

Print of all graphic windows

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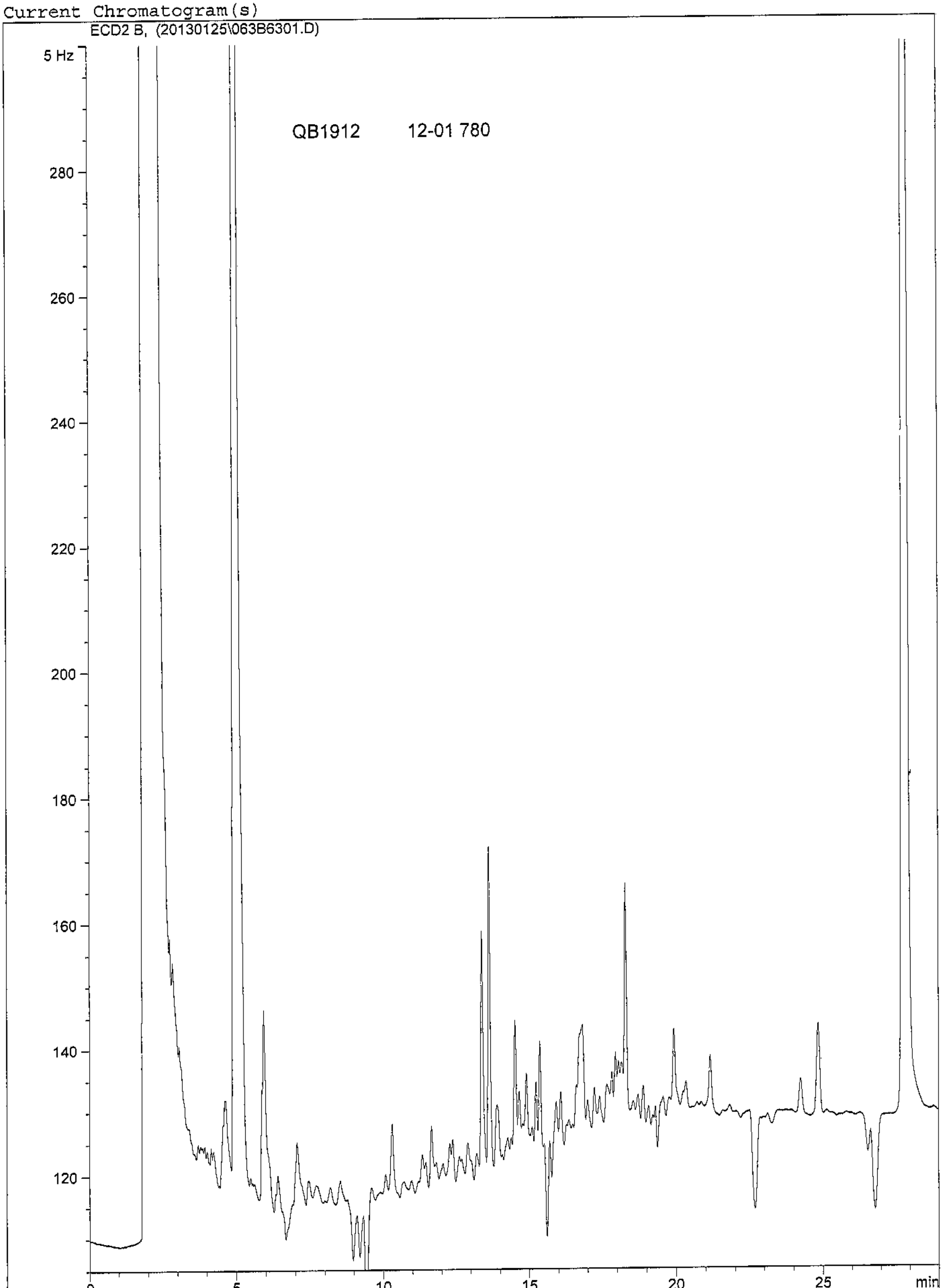
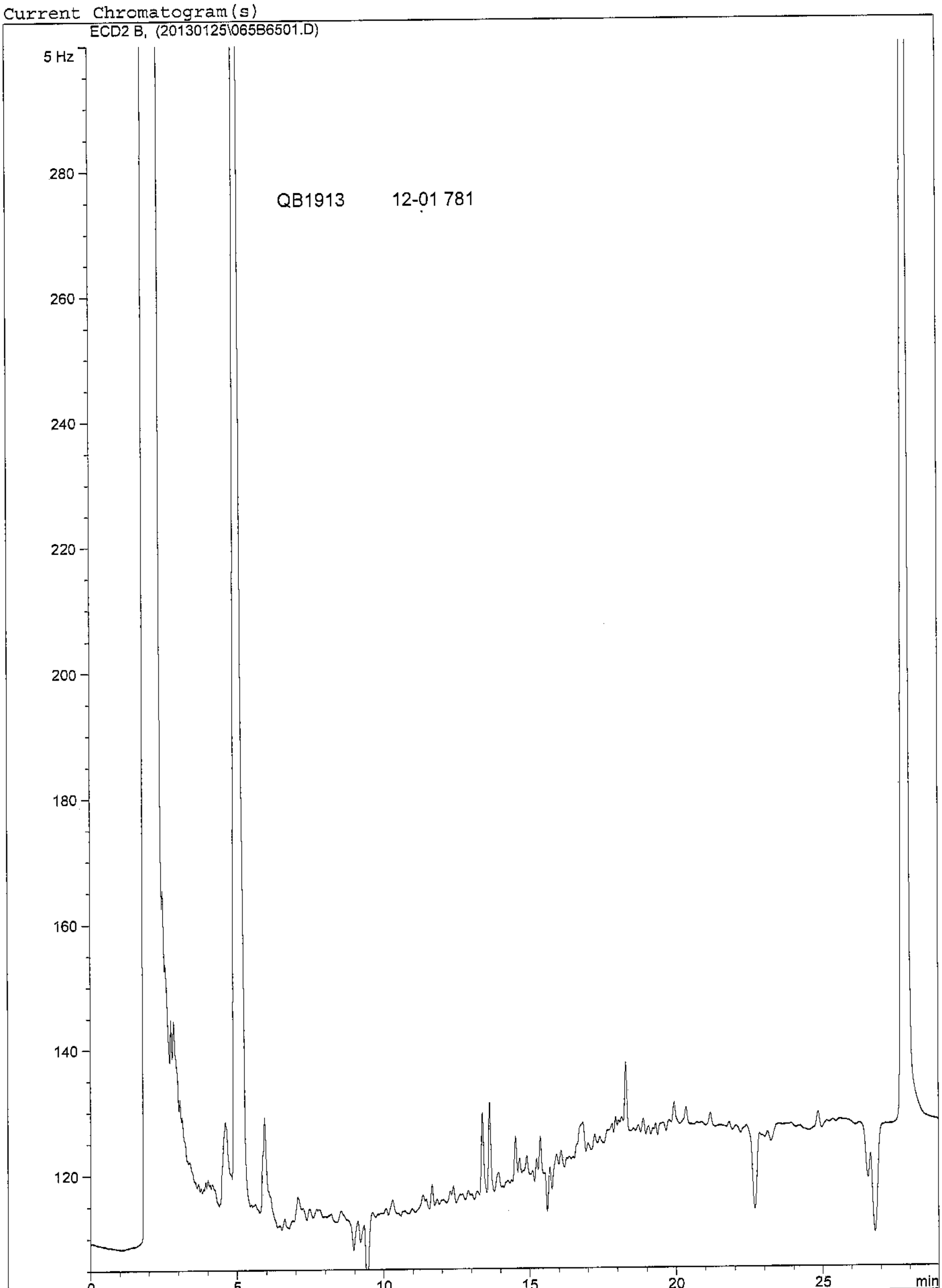


HAA002 2/7/2013 9:18:21 AM Kristy Joudrey

Print of all graphic windows



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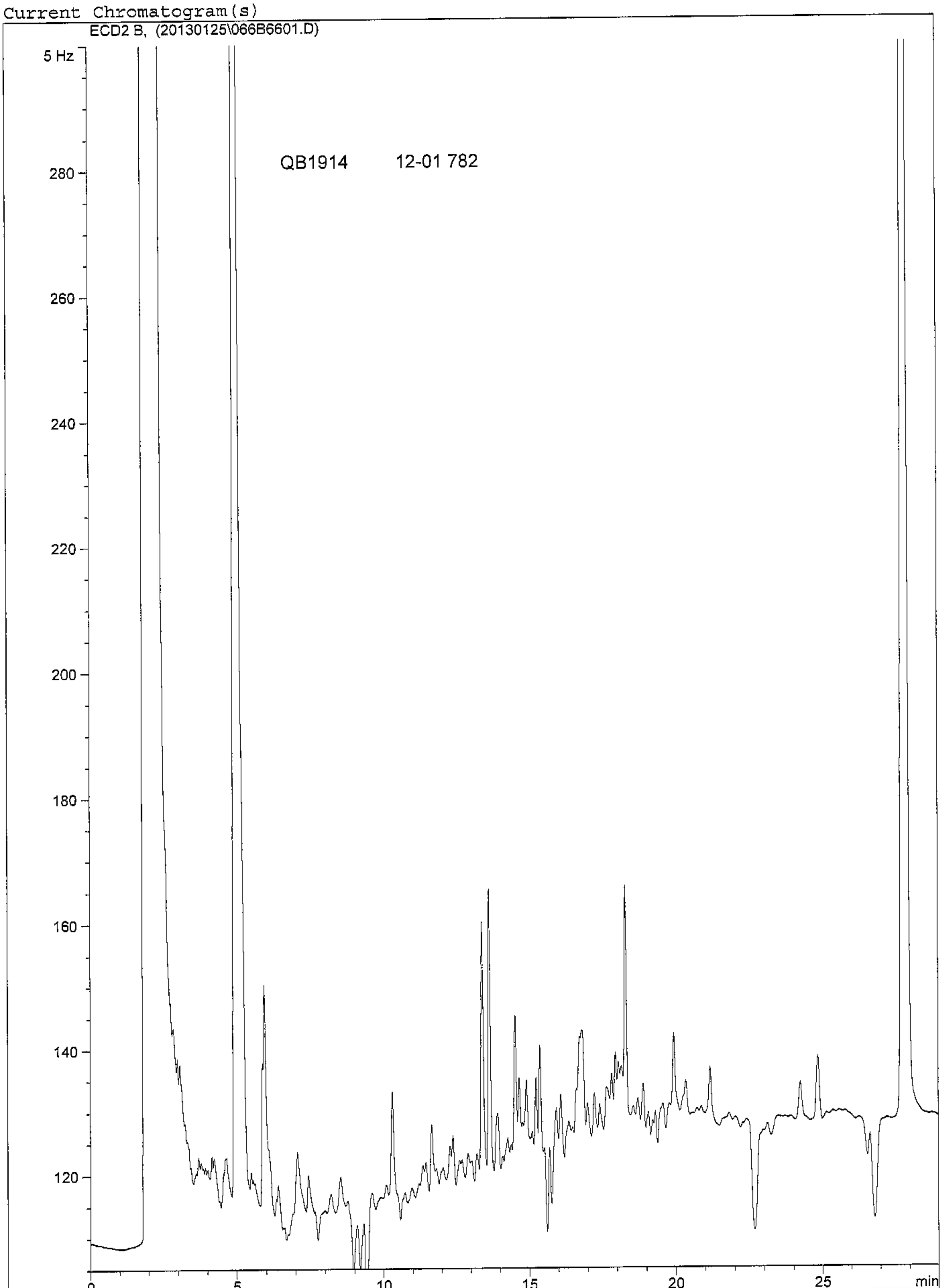

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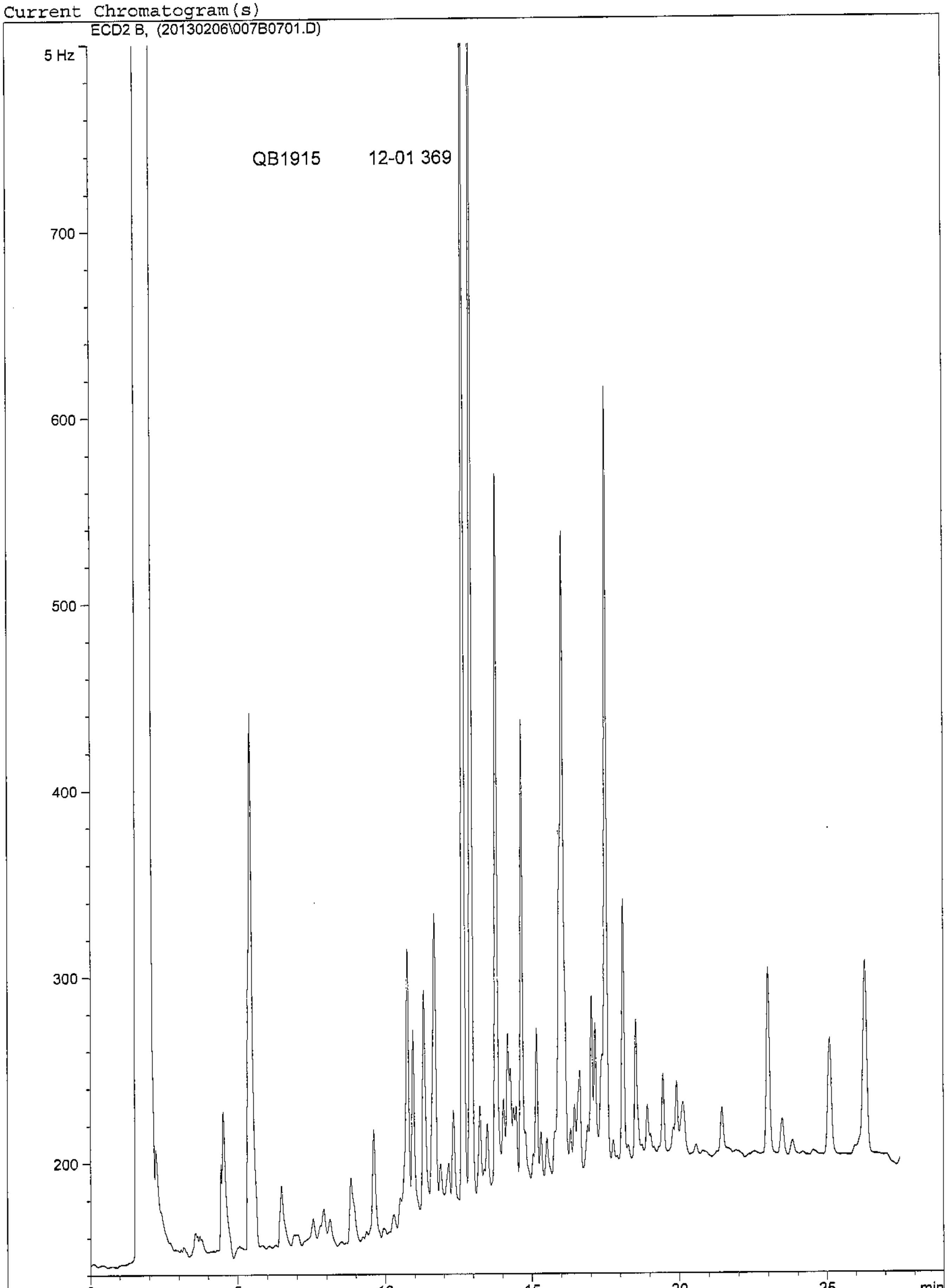
Current Chromatogram(s)



Your P.O. #: 16400NR
Your Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your C.O.C. #: N/A

Attention: Jim Slade
Stantec Consulting Ltd
607 Torbay Rd
St. John's, NL
A1A 4Y6

Report Date: 2013/03/07
This report supersedes all previous reports with the same Maxxam job number

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B2K0998
Received: 2012/12/20, 13:16

Sample Matrix: Soil
Samples Received: 7

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Moisture	7	N/A	2012/12/24	ATL SOP 00001	MOE Handbook 1983
Low Level PCB in Soil by GC-ECD	1	2013/01/18	2013/01/22	ATL SOP 00106	Based EPA8082
Low Level PCB in Soil by GC-ECD	6	2013/01/18	2013/01/25	ATL SOP 00106	Based EPA8082

Sample Matrix: TISSUE
Samples Received: 67

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Lipids (Crude Fat)	4	2013/02/18	2013/02/19		AOAC 948.16
Lipids (Crude Fat)	17	2013/02/19	2013/02/26		AOAC 948.16
Lipids (Crude Fat)	15	2013/02/27	2013/02/26		AOAC 948.16
Lipids (Crude Fat)	11	2013/02/27	2013/02/28		AOAC 948.16
Lipids (Crude Fat)	18	2013/03/05	2013/03/07		AOAC 948.16
PCBs in tissue by GC/ECD (1)	10	2013/01/04	2013/01/31	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	9	2013/01/04	2013/02/01	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	8	2013/01/04	2013/02/06	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	2	2013/01/04	2013/03/06	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	9	2013/01/08	2013/01/17	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	7	2013/01/08	2013/01/30	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	4	2013/01/08	2013/02/07	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	17	2013/01/09	2013/02/05	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	1	2013/01/09	2013/02/07	ATL SOP 00110	Based on EPA8082

Sample Matrix: Vegetation
Samples Received: 11

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
PCBs in tissue by GC/ECD (1)	8	2013/01/04	2013/01/31	ATL SOP 00110	Based on EPA8082
PCBs in tissue by GC/ECD (1)	3	2013/01/04	2013/02/01	ATL SOP 00110	Based on EPA8082

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
* Results relate only to the items tested.

(1) Results are reported on an as received basis unless otherwise indicated.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Michelle Hill, Project Manager
Email: MHill@maxxam.ca
Phone# (902) 420-0203 Ext:289

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 2

Maxxam Job #: B2K0998
Report Date: 2013/03/07

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

RESULTS OF ANALYSES OF SOIL

Maxxam ID		QB1870	QB1871	QB1872	QB1873	QB1874	QB1875	QB1876		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 504**	**12-01 505**	**12-01 506**	**12-01 507**	**12-01 478**	**12-01 508**	**12-01 509**	**RDL**	**QC Batch**
Inorganics										
Moisture	%	15	20	22	49	11	68	13	1	3079664

PCB'S AND DDT BY GC-ECD (SOIL)

Maxxam ID		QB1870	QB1871	QB1871	QB1872	QB1873	QB1874	QB1875	QB1876		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 504**	**12-01 505**	**12-01 505 Lab-Dup**	**12-01 506**	**12-01 507**	**12-01 478**	**12-01 508**	**12-01 509**	**RDL**	**QC Batch**
PCBs											
Total PCB	mg/kg	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.010	3098344
Surrogate Recovery (%)											
Decachlorobiphenyl	%	105	104	101	89	87	87	93	92		3098344

RESULTS OF ANALYSES OF TISSUE

Maxxam ID		QB1840	QB1841	QB1842	QB1843		QB1844	QB1845	QB1846		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 717**	**12-01 701**	**12-01 702**	**12-01 703**	**QC Batch**	**12-01 704**	**12-01 730**	**12-01 320**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	17	14	3.7	11	3126734	1.7	73	1.2	0.50	3133858

Maxxam ID		QB1847			QB1848	QB1848		QB1849			QB1850		
Sampling Date		2012/09/01			2012/10/01	2012/10/01		2012/10/01			2012/10/01		
	Units	**12-01 705**	**RDL**	**QC Batch**	**12-01 322**	**12-01 322 Lab-Dup**	**RDL**	**12-01 731**	**RDL**	**QC Batch**	**12-01 732**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	72	1.0	3140856	1.1	1.5	0.50	2.4	2.0	3133858	1.0	0.50	3135595

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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Maxxam Job #: B2K0998
Report Date: 2013/03/07

Stantec Consulting Ltd
Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
Your P.O. #: 16400NR
Sampler Initials: KH

RESULTS OF ANALYSES OF TISSUE

Maxxam ID		QB1851	QB1852	QB1853	QB1854		QB1858	QB1859		QB1860	QB1861		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01	2012/10/01		2012/10/01	2012/10/01		
	Units	**12-01 810**	**12-01 729**	**12-01 706**	**12-01 707**	**QC Batch**	**12-01 344**	**12-01 300**	**QC Batch**	**12-01 828**	**12-01 483**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	55	87	3.0	75	3133858	0.50	6.1	3140856	9.5	3.3	0.50	3133858

Maxxam ID		QB1862		QB1863		QB1864	QB1865		QB1866	QB1867		
Sampling Date		2012/10/01		2012/10/01		2012/10/01	2012/10/01		2012/10/01	2012/09/01		
	Units	**12-01 708**	**RDL**	**12-01 709**	**RDL**	**12-01 327**	**12-01 323**	**QC Batch**	**12-01 325**	**12-01 328**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	4.1	0.80	3.7	0.70	6.4	81	3133858	2.2	5.7	0.50	3135595

Maxxam ID		QB1868		QB1869			QB1877		QB1878	QB1879	QB1880		
Sampling Date		2012/10/01		2012/10/01			2012/09/01		2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 324**	**RDL**	**12-01 326**	**RDL**	**QC Batch**	**12-01 468**	**RDL**	**12-01 700**	**12-01 720**	**12-01 721**	**RDL**	**QC Batch**
Inorganics													
Crude Fat	%	89	1.7	4.1	0.50	3140856	1.0	0.60	1.4	0.60	1.3	0.50	3135595

Maxxam ID		QB1881	QB1882	QB1884			QB1885		QB1886		
Sampling Date		2012/10/01	2012/10/01	2012/10/01			2012/10/01		2012/10/01		
	Units	**12-01 718**	**12-01 719**	**12-01 232**	**RDL**	**QC Batch**	**12-01 236**	**RDL**	**12-01 237**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	1.6	0.80	<0.50	0.50	3135595	0.80	0.70	<0.90	0.90	3135583

Maxxam ID		QB1887		QB1888			QB1889		
Sampling Date		2012/10/01		2012/10/01			2012/10/01		
	Units	**12-01 195**	**RDL**	**12-01 490**	**RDL**	**QC Batch**	**12-01 497**	**RDL**	**QC Batch**
Inorganics									
Crude Fat	%	0.90	0.50	4.7	0.90	3135583	8.4	0.50	3140856

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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RESULTS OF ANALYSES OF TISSUE

Maxxam ID		QB1890			QB1891			QB1892	QB1893		
Sampling Date		2012/10/01			2012/09/01			2012/10/01	2012/10/01		
	Units	**12-01 498**	**RDL**	**QC Batch**	**12-01 235**	**RDL**	**QC Batch**	**12-01 499**	**12-01 500**	**RDL**	**QC Batch**
Inorganics											
Crude Fat	%	3.3	2.0	3133858	0.90	0.90	3135583	15	7.5	0.50	3140856

Maxxam ID		QB1894	QB1894		QB1895	QB1895	QB1896	QB1897	QB1898	QB1899		
Sampling Date		2012/11/01	2012/11/01		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		
	Units	**12-01 762**	**12-01 762 Lab-Dup**	**QC Batch**	**12-01 763**	**12-01 763 Lab-Dup**	**12-01 764**	**12-01 765**	**12-01 766**	**12-01 767**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	9.6	11	3135595	6.0	6.9	9.6	7.8	8.6	10	0.50	3135583

Maxxam ID		QB1900	QB1901	QB1902	QB1903	QB1904		QB1905	QB1906	QB1906		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		2012/11/01	2012/11/01	2012/11/01		
	Units	**12-01 768**	**12-01 769**	**12-01 770**	**12-01 771**	**12-01 772**	**QC Batch**	**12-01 773**	**12-01 774**	**12-01 774 Lab-Dup**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	9.6	6.8	7.4	10	6.3	3135583	8.3	13	13	0.50	3140856

Maxxam ID		QB1907	QB1908	QB1909	QB1910	QB1911		QB1912		QB1913		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		2012/11/01		2012/11/01		
	Units	**12-01 775**	**12-01 776**	**12-01 777**	**12-01 778**	**12-01 779**	**QC Batch**	**12-01 780**	**QC Batch**	**12-01 781**	**RDL**	**QC Batch**
Inorganics												
Crude Fat	%	6.4	11	3.4	14	11	3140856	24	3133858	6.1	0.50	3140856

Maxxam ID		QB1914		QB1915		
Sampling Date		2012/11/01		2012/11/01		
	Units	**12-01 782**	**RDL**	**12-01 369**	**RDL**	**QC Batch**
Inorganics						
Crude Fat	%	17	0.50	55	1.1	3140856

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1838	QB1839	QB1840	QB1841	QB1842	QB1843	QB1844	QB1845		QB1846		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01		
	Units	**12-01 715**	**12-01 716**	**12-01 717**	**12-01 701**	**12-01 702**	**12-01 703**	**12-01 704**	**12-01 730**	**QC Batch**	**12-01 320**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.035	0.020	0.048	0.034	0.013	0.075	0.022	0.59	3085220	0.068	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	103 (1)	124 (1)	81 (1)	82 (1)	57 (2)	85 (1)	82 (1)	118 (1)	3085220	61 (2)		3087673

Maxxam ID		QB1847		QB1848	QB1849	QB1849		QB1850		QB1851		
Sampling Date		2012/09/01		2012/10/01	2012/10/01	2012/10/01		2012/10/01		2012/10/01		
	Units	**12-01 705**	**QC Batch**	**12-01 322**	**12-01 731**	**12-01 731 Lab-Dup**	**QC Batch**	**12-01 732**	**QC Batch**	**12-01 810**	**RDL**	**QC Batch**
PCBs												
Total PCB	ug/g	0.54	3087673	0.060	<0.010	<0.010	3085220	<0.010	3087673	0.46	0.010	3085220
Surrogate Recovery (%)												
Decachlorobiphenyl	%	47 (2)	3087673	76 (1)	90	94	3085220	77	3087673	114 (1)		3085220

Maxxam ID		QB1852		QB1853		QB1854	QB1858	QB1859	QB1859	QB1860	QB1861		
Sampling Date		2012/10/01		2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 729**	**QC Batch**	**12-01 706**	**QC Batch**	**12-01 707**	**12-01 344**	**12-01 300**	**12-01 300 Lab-Dup**	**12-01 828**	**12-01 483**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.84	3087673	0.018	3085220	0.64	0.22	0.019	0.015	0.016	0.45	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	111 (1)	3087673	81 (1)	3085220	107 (1)	94 (1)	89 (1)	91	92 (1)	84 (1)		3087673

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1862	QB1863	QB1864	QB1865	QB1866	QB1867	QB1868	QB1869	QB1877	QB1878		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/10/01	2012/09/01	2012/10/01	2012/10/01	2012/09/01	2012/10/01		
	Units	**12-01 708**	**12-01 709**	**12-01 327**	**12-01 323**	**12-01 325**	**12-01 328**	**12-01 324**	**12-01 326**	**12-01 468**	**12-01 700**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	<0.010	0.016	0.085	<0.010	0.019	0.066	0.017	0.66	<0.010	0.010	3087673
Surrogate Recovery (%)													
Decachlorobiphenyl	%	89	83	78 (1)	37 (2)	61 (3)	76 (1)	23 (2)	76 (1)	79 (1)	85		3087673

Maxxam ID		QB1879		QB1880	QB1881	QB1882	QB1884		QB1885	QB1886	QB1887		
Sampling Date		2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01		
	Units	**12-01 720**	**QC Batch**	**12-01 721**	**12-01 718**	**12-01 719**	**12-01 232**	**QC Batch**	**12-01 236**	**12-01 237**	**12-01 195**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	<0.010	3087673	0.021	0.031	0.013	0.38	3089136	0.12	0.52	0.069	0.010	3085493
Surrogate Recovery (%)													
Decachlorobiphenyl	%	76	3087673	99 (1)	84 (1)	86 (1)	93 (1)	3089136	98 (1)	92 (1)	87 (1)		3085493

Maxxam ID		QB1888	QB1888		QB1889	QB1890	QB1890		QB1891		QB1892		
Sampling Date		2012/10/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01		2012/09/01		2012/10/01		
	Units	**12-01 490**	**12-01 490 Lab-Dup**	**QC Batch**	**12-01 497**	**12-01 498**	**12-01 498 Lab-Dup**	**QC Batch**	**12-01 235**	**QC Batch**	**12-01 499**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.019	0.018	3085493	0.029	0.035	0.038	3089136	0.29	3085493	0.055	0.010	3089136
Surrogate Recovery (%)													
Decachlorobiphenyl	%	100 (1)	82	3085493	90 (1)	80 (1)	84	3089136	101 (1)	3085493	96 (1)		3089136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.
(2) - Aroclor 1260. PCB surrogate not within acceptance limits. Analysis was repeated with similar results.
(3) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (TISSUE)

Maxxam ID		QB1893	QB1894		QB1895	QB1896		QB1897		QB1898	QB1899		
Sampling Date		2012/10/01	2012/11/01		2012/11/01	2012/11/01		2012/11/01		2012/11/01	2012/11/01		
	Units	**12-01 500**	**12-01 762**	**QC Batch**	**12-01 763**	**12-01 764**	**QC Batch**	**12-01 765**	**QC Batch**	**12-01 766**	**12-01 767**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	0.036	3.0	3089136	0.019	0.031	3085493	2.4	3089136	0.020	0.027	0.010	3085493
Surrogate Recovery (%)													
Decachlorobiphenyl	%	86 (1)	104 (1)	3089136	99 (1)	98 (1)	3085493	95 (1)	3089136	99 (1)	99 (1)		3085493

Maxxam ID		QB1900	QB1901	QB1902	QB1903	QB1904	QB1905	QB1906	QB1907		QB1908		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		2012/11/01		
	Units	**12-01 768**	**12-01 769**	**12-01 770**	**12-01 771**	**12-01 772**	**12-01 773**	**12-01 774**	**12-01 775**	**QC Batch**	**12-01 776**	**RDL**	**QC Batch**
PCBs													
Total PCB	ug/g	2.0	0.024	0.027	1.9	0.018	0.021	3.5	0.016	3085493	0.023	0.010	3089136
Surrogate Recovery (%)													
Decachlorobiphenyl	%	98 (1)	101 (1)	94 (1)	103 (1)	97 (1)	96 (1)	99 (1)	94 (1)	3085493	91 (1)		3089136

Maxxam ID		QB1909	QB1910	QB1911	QB1912	QB1913	QB1914	QB1915		
Sampling Date		2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01	2012/11/01		
	Units	**12-01 777**	**12-01 778**	**12-01 779**	**12-01 780**	**12-01 781**	**12-01 782**	**12-01 369**	**RDL**	**QC Batch**
PCBs										
Total PCB	ug/g	0.010	0.029	0.038	0.064	0.019	0.062	0.72	0.010	3089136
Surrogate Recovery (%)										
Decachlorobiphenyl	%	99 (1)	97 (1)	97 (1)	96 (1)	99 (1)	105 (1)	112 (1)		3089136

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - Aroclor 1260.

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POLYCHLORINATED BIPHENYLS BY GC-ECD (VEGETATION)

Maxxam ID		QB1830	QB1831		QB1832	QB1833	QB1834	QB1835		
Sampling Date		2012/09/01	2012/10/01		2012/10/01	2012/10/01	2012/10/01	2012/10/01		
	Units	**12-BA 1**	**12-BA 2**	**QC Batch**	**12-01 501**	**12-01 486**	**12-01 479**	**12-01 502**	**RDL**	**QC Batch**
PCBs										
Total PCB	ug/g	<0.010	<0.010	3085493	<0.010	<0.010	<0.010	<0.010	0.010	3085220
Surrogate Recovery (%)										
Decachlorobiphenyl	%	44(1)	48(1)	3085493	83	81	77	80		3085220

Maxxam ID		QB1836	QB1837	QB1855	QB1856		QB1857		
Sampling Date		2012/10/01	2012/10/01	2012/10/01	2012/10/01		2012/09/01		
	Units	**12-01 484**	**12-01 480**	**12-01 503**	**12-01 485**	**QC Batch**	**12-01 481**	**RDL**	**QC Batch**
PCBs									
Total PCB	ug/g	<0.010	<0.010	<0.010	<0.010	3085220	<0.010	0.010	3085493
Surrogate Recovery (%)									
Decachlorobiphenyl	%	72	72	63(1)	51(1)	3085220	43(1)		3085493

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
(1) - PCB surrogate not within acceptance limits. Analysis was repeated with similar results.

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Package 1	3.0°C
Package 2	1.0°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

PCB in sediment samples received past the 14 day holding time recommended for this test.

Sample QB1849-01: Fat analysis: DL raised due to limited sample.

Sample QB1862-01: Fat analysis: DL raised due to limited sample.

Sample QB1863-01: Fat analysis: DL raised due to limited sample.

Sample QB1885-01: Fat analysis: DL raised due to limited sample.

Sample QB1886-01: Fat analysis: DL raised due to limited sample.

Sample QB1888-01: Fat analysis: DL raised due to limited sample.

Sample QB1890-01: Fat analysis: DL raised due to limited sample.

Sample QB1891-01: Fat analysis: DL raised due to limited sample.

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Maxxam

Maxxam Job #: B2K0998
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Client Project #: 121411777.400
Site Location: RMC/NG HOPEDALE
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Sampler Initials: KH

QUALITY ASSURANCE REPORT

			Matrix Spike		Spiked Blank		Method Blank		RPD		QC Standard		Reagent Blank	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits	% Recovery	QC Limits
3085220	Decachlorobiphenyl	2013/01/31	87	30 - 130	91	30 - 130	73	%					92	30 - 130
3085220	Total PCB	2013/01/31	80	30 - 130	71	30 - 130	<0.010	ug/g	NC	50			<0.010	N/A
3085493	Decachlorobiphenyl	2013/02/01	92	30 - 130	91	30 - 130	87	%					90	30 - 130
3085493	Total PCB	2013/02/01	72	30 - 130	89	30 - 130	<0.010	ug/g	NC	50			<0.010	N/A
3087673	Decachlorobiphenyl	2013/01/17	89	30 - 130	77	30 - 130	93	%					88	30 - 130
3087673	Total PCB	2013/01/17	78	30 - 130	78	30 - 130	<0.010	ug/g	NC	50			<0.010	N/A
3089136	Decachlorobiphenyl	2013/02/05	90	30 - 130	91	30 - 130	78	%					91	30 - 130
3089136	Total PCB	2013/02/05	94	30 - 130	101	30 - 130	<0.010	ug/g	NC	50			<0.010	N/A
3098344	Decachlorobiphenyl	2013/01/22	105	70 - 130	103	70 - 130	95	%						
3098344	Total PCB	2013/01/22	104	70 - 130	96	70 - 130	<0.010	mg/kg	NC	50				
3126734	Crude Fat	2013/02/19					<0.50	%	16.4	25	106	80 - 120		
3133858	Crude Fat	2013/02/26					<0.50	%	NC	25	95	80 - 120		
3135583	Crude Fat	2013/02/26					<0.50	%	14.0	25	98	80 - 120		
3135595	Crude Fat	2013/02/28					<0.50	%	13.6	25	91	80 - 120		
3140856	Crude Fat	2013/03/07					<0.50	%	0.8	25	96	80 - 120		

N/A = Not Applicable
RPD = Relative Percent Difference
Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.
Reagent Blank: A blank matrix containing all reagents used in the analytical procedure. Used to determine any analytical contamination.
Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.
QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

Maxxam Analytics International Corporation o/a Maxxam Analytics 200 Bluewater Rd, Suite 105, Bedford, Nova Scotia Canada B4B 1G9 Tel:902-420-0203 Toll-free:800-565-7227 Fax:902-420-8612 www.maxxamanalytics.com

Validation Signature Page

Maxxam Job #: B2K0998

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Colleen Acker, Supervisor, General Chemistry

Mike Macgillivray, Scientific Specialist (Inorganics)

Rose Macdonald, Scientific Specialist (Organics)

Robin Smith-Armstrong, Bedford SemiVol Spvsr

==

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

APPENDIX D

Environmental Sciences Group Report on the Country Food Sampling Program

Hopedale
Country Food Sampling Program
Information

Prepared by

Environmental Sciences Group
Royal Military College
Kingston, Ontario

Hopedale Sampling Information

- Collection: Samples were collected by local Hopedale residents, identified hunters in the community and ESG staff when possible. The sampling was done in two different ways. 1) Hopedale residents were asked to provide a sample of their hunted/harvested country foods to the HICG. HICG staff were responsible for packaging and labelling the samples and recording the date, location and type of sample in a record log. We relied on Hopedale residents to provide samples of foods that were being consumed within the community and did not specify what types of foods and/or locations were required. All samples that came in were at the discretion of the harvester; 2) Three to four respected hunters within the community were identified and asked to participate in the sampling program. These individuals were tasked with providing samples of specific types and from specific locations (i.e. porpoise muscle, fat and liver from Hopedale Harbour). This was done to ensure that we had the appropriate number and types of samples from within Hopedale as well as from background areas. ESG trained both HICG staff and the identified hunters in the proper packaging and labelling of samples as well as recording information about the sample (harvesting date, sample type and sub-type, sample # and location) in a record log. The location was recorded in the field notes as either a place name or as 'Outside of Hopedale' when the local name was unknown and the sample came from anywhere outside of Hopedale Harbour or Hopedale itself. Sample numbers were written on maps provided to give approximate location of sampling. Instructions provided to hunters and HICG staff can be found below. All samples were stored in a freezer at the HICG until ESG staff returned to Hopedale to retrieve samples and ship them south. Samples were then stored at ESG. If any additional processing of samples was needed this was done at the ESG lab (e.g. boiling and de-shelling shellfish, sub-sampling of large samples).
- Specific information about the samples:
  - Skin and muscle removed from all muttak/fat samples (sub-samples stored at ESG are a cross-section of skin, muscle and fat).
  - Composite samples: composites were made when enough sample could not be made-up independently. Often the case for shellfish and bird livers. Composites were always combined of samples from the same area.
  - Eggs: Duck and gull eggs were boiled for 15 mins, shell removed and packaged. (Picture 2 and 3 show the boiled eggs prior to packaging.)
  - Shellfish: Shellfish were soaked for 20mins – 1hr with continuous rinsing of water to remove sediment. Shellfish were boiled whole for 10-15 mins, muscle was removed and packaged to obtain sample large enough for analysis. (Sea urchins were only boiled for 2-5 mins). This was done by ESG staff at the ESG laboratory. (Picture 4 and 5)
  - Plants and berries: Only the edible portion of plants and or berries were packaged for analysis. (Picture 6-9).
  - All samples were packaged in baked foil to ensure PCBs were not present, stored in whirlpak and or Ziploc bags with a uniquely numbered label.

Picture 1: Gull and Duck Eggs

Picture 2: Duck Egg

Picture 3: Gull Eggs


Picture 4: Whole wrinkles prior to boiling and de-shelling


Picture 5: Wrinkles after boiling (muscle only for analysis)

Picture 6: Tullignak (Roseroot) growing near Hopedale

Picture 7: Tullignak leaves for analysis.

Picture 8: Black, red and blueberries

Picture 9: Picked berry portion for analysis

Instructions provided to HICG Staff and Hunters:

Goal:

To collect terrestrial and marine wild food samples from different areas around the community of Hopedale, as well as some traditional prepared dishes. See Tables 1 and 2 at the end of this document for the complete list of items we are hoping to get.

Why?

These samples are needed in order to determine where the healthiest populations of country foods can be found for the people of Hopedale to harvest.

Instructions:

As much as possible, we wish to harvest the terrestrial food items from the different locations shown on the terrestrial map located at the end of this document.

For the marine food items, traditional harvesting locations are preferred. To simplify things, however, when filling out the location in the information sheet at the end of this document, use whichever of the following locations is closest to the harvesting point: **Big Island, Black Head Tickle, Ellen Island, Hopedale Harbour and Tooktoosner Bay**.

For each item that is brought in or collected:

1. Find the name of the item that was brought in or collected in Table 1 or 2 to determine which parts are needed.
2. Remove enough of each type of the required material so that a 'fist-sized' sample is collected.
3. For berry, plant and root samples, please rinse the sample as you would normally do before eating it.
4. Wrap up the material in aluminum foil.
5. Place the wrapped sample into one of the ESG-labelled Ziploc bags. Note that each type of sample should get its own Ziploc bag. For example, the fat, liver and muscle samples from each animal will get their own sample number and bag, resulting in three different bags for each animal.
6. Mark the location where the item was collected with an 'X' on one of the maps provided at the end of this document and include the sample number listed on the Ziploc bag. An example has been provided.
7. Fill out the requested information in Table 3.
8. Place the Ziploc bag into the freezer.

Table 1. Terrestrial and marine wild food samples required.

Category	Sub-category	Sample Type	Sub-type	Maximum # of samples	Location	Priority
Terrestrial	Animal	**Bear - black**	**1. Fat 2. Liver 3. Muscle**	5x fat, 5x liver, 5x muscle	anywhere	low
		Bear - polar		5x fat, 5x liver, 5x muscle	anywhere	low
		Caribou		5x fat, 5x liver, 5x muscle	anywhere	high
		Okalik (arctic hare)		10x fat, 10x liver, 10x muscle	Hopedale area and background	high
		Partridge		10x fat, 10x liver, 10x muscle	Hopedale area and background	high
		Porcupine		10x fat, 10x liver, 10x muscle	Hopedale area and background	medium
	Berries	**Bakeapples**	Just the **fruit** portion that you would eat	5x **handful** of fruit	Hopedale area and background	high
		Blackberries		5x **handful** of fruit	Hopedale area and background	high
		Blueberries		5x **handful** of fruit	Hopedale area and background	high
		Raspberries		5x **handful** of fruit	Hopedale area and background	high
		Red berries		5x **handful** of fruit	Hopedale area and background	high
	Plant	**Labrador tea**	**Leaves** only	5x **bagful** of leaves	Hopedale area and background	high
		Tulligunnak		5x **bagful** of leaves	Hopedale area and background	high
		Ukaujak		5x **bagful** of leaves	Hopedale area and background	high
		Wild turnip	Only the **root** portion that you would eat	5x **handful** of root	Hopedale area and background	high
Marine	Animal	**Jumper (dolphin)**	**1. Fat 2. Liver 3. Muscle 4. Jaw bone (from seals only)**	5x fat, 5x liver, 5x muscle	Hopedale area and background	low
		Porpoise		10x fat, 10x liver, 10x muscle	Hopedale area and background	medium
		Seal - harp or ring		10x fat, 10x liver, 10x muscle, 10x jaw bone	Hopedale area and background	high
		Whale		5x fat, 5x liver, 5x muscle	Hopedale area and background	low
	Bird	**Pigeon (black guillemots)**	**1. Liver 2. Muscle**	10x liver, 10x muscle, 10x egg	Hopedale area and background	high

Category	Sub-category	Sample Type	Sub-type	Maximum # of samples	Location	Priority
		Goose	**3. Eggs**	10x liver, 10x muscle, 10x egg	Hopedale area and background	high
		Duck		10x liver, 10x muscle, 10x egg	Hopedale area and background	high
		Beachbirds - snowcap	Whole **bird**	10x bird	Hopedale area and background	medium
		Beachbirds - whitecap		10x bird	Hopedale area and background	medium
		Beachbirds - plumbers		10x bird	Hopedale area and background	medium
	Fish	**Flatfish**	**1. Liver 2. Muscle**	10x liver, 10x muscle	Hopedale area and background	high
		Capelin		10x liver, 10x muscle	Hopedale area and background	high
		Salmon		10x liver, 10x muscle	Hopedale area and background	high
		Char		10x liver, 10x muscle	Hopedale area and background	high
	Shellfish	**Wrinkles (periwinkles)**	Whole **shellfish**	5x shellfish (20-30 shellfish per sample)	Hopedale area and background	high
		Scallop		5x shellfish (20-30 shellfish per sample)	Hopedale area and background	high
		Itiks (sea urchin)		5x shellfish (20-30 shellfish per sample)	Hopedale area and background	high

Table 2. Traditional prepared dishes required.

Category	Type of food
Prepared foods	**Sivak** (fried rock cod liver patte)
	Berry bush-**smoked char** (note which **type of berry** was used)
	Pitsik (dried fish)
	Nikku (dried caribou)

Table 3. Information requirements for each sample.

Harvest date	Sample date	Sample type (see Table 1)	Sub-type (see Table 1)	Sample # (off Ziploc bag)	Location (see Maps for closest names)
July 23, 2012	July 23, 2012	Caribou	Muscle	12114	Closest to Main Station

APPENDIX E

Blank Copy of Hopedale Food Survey (as provided to NLDEC by ESG) and Complete Anonymized Results

PARTICIPANT CONSENT FORM

Hopedale Labrador Community Food Dietary Survey

Project Description: This project is being conducted by the Nunatsiavut Government (NG) for the purposes of peer review and support to the Province of Newfoundland and Labrador in the clean-up of the former military site. A sampling team hired by the province will be coming to Hopedale starting in August for the next three years. This survey will be used to identify any wild foods collected and eaten by the residents of Hopedale to direct the sampling plan and associated exposure assessment following the collection of samples.

Your participation in the Hopedale community dietary survey will help direct future work at Hopedale by the Province, especially the collection of environmental samples, to ultimately better benefit the residents of the community.

You have been selected to participate in this survey. The survey is structured in seven sections. The first 6 sections are general questions related to you, your general health and how you obtain the food you eat. It includes questions related to other health behaviours such as smoking and alcohol consumption, but its focus is on food and diet. The last section is a more detailed questionnaire on what wild foods you eat throughout the year and how much you eat. The first 6 sections can be filled out on your own or with Mary, Sukie or Megan. The last section will be filled out in the office at the Hopedale Inuit Community Government buildings with Mary, Sukie or Megan. If at any point, you wish not to answer a question, please leave it blank or write prefer not to answer. In order to receive the $20.00 payment for completing this questionnaire you must bring this survey to the Hopedale Inuit Community Government building on or before July 20th and complete section 7.

I understand that the information I provide will be used to assess the exposure related to wild foods from the Hopedale area and for related research analyses associated with diet behaviour in the community of Hopedale.

By signing below I _________________________ agree that I have been fully informed and understand the nature of the project and agree to participate. I understand that my participation is voluntary and I am free to withdraw at any time before or during the session. If I decide to withdraw, any information I have given will be promptly destroyed and I will not be included in the project in any way. I understand that my withdrawal will bear no consequences and no judgements or prejudice will be held against me. All data I provide will be confidential and will be kept under lock and key and seen only by the research team for the purposes of this study. The data will be kept under lock and key after the completion of this study by the NG research team and any personal identification information will be kept in a different location. I UNDERSTAND THAT MY NAME OR PERSONAL IDENTIFICATION INFORMATION WILL NEVER BE RELEASED IN THE REPORT OR PUBLICATION OF THE INFORMATION and all reporting will be done in a way that I will not be able to be identified individually unless I am informed and asked to do so and I give prior authorization.

Thank you for your participation and if you have any questions or concerns please ask Mary Denniston (NG), Sukie Aggek (Hopedale), Megan Lord-Hoyle (ESG)

I agree for the information I provide to be used by the NG. I understand that I will be compensated $20.00 for my time and information that is being provided.

Participant: ________________________ Date: _________________

Print Name

____

Signature

Researcher Witness: ________________________ Date: __________________

Print Name

____

Signature

FOR ANY QUESTIONS OR CONCERNS PLEASE CONTACT:

Sukie Aggek

Phone: (709) 933-3864/3587 or seaggek@hotmail.com

Wayne Piercy

Angajukkak Hopedale Inuit Community Government
Phone: (709) 933-3864 or wayne.piercy@nunatsiavut.com

Tom Sheldon

Director, Environment Division
Department of Lands and Natural Resources
Nunatsiavut Government
Phone: (709) 922-2588 or tom_sheldon@nunatsiavut.com

1. Socio-demographic/personal characteristics

LEGEND: DNK (do not know), NR (no response)

<table>
<tr><td>1.</td><td colspan="4">Age Category:

Circle age group: 12-18 19-24 25-30 31-40 41-50 Over 50</td></tr>
<tr><td>2.</td><td colspan="4">Sex:

Circle one: M F</td></tr>
<tr><td>3.</td><td colspan="4">Which of the following best describes your present job status?

Work full-time with salary
Work regular part-time with salary
Work occasionally (seasonal, contract, on-call) with salary
Self-employed
Hunter support program
Housework
Retired or on pension
Employment insurance (or unemployment insurance)
Income support
Student
Other
DNK
NR</td></tr>
<tr><td>4.</td><td>Do you or has anyone in your family ever worked on the old base when it was running or when it was taken down?</td><td>YES</td><td>NO</td><td>NR</td></tr>
<tr><td>5.</td><td>Did you participate in the Inuit Health Survey (blood sampling done along the coast)?</td><td>YES</td><td>NO</td><td>NR</td></tr>
</table>

2. General Health

LEGEND: DNK (do not know), NR (no response)

1.	Do you think you eat a healthy diet?	YES		NO				
2.	In general, would you say your health is:	Excellent	Very Good	Good	Fair	Poor	DNK	NR
3.	Do you smoke?	YES		NO		NR		
3a.	If YES How often? (on average) Circle one: less than 1 pack/week 1 pack/week More than 1 pack/week 1 pack/day more than 1 pack/day							
4.	Do you drink alcohol?	YES		NO		NR		
4a.	If YES How often? (on average) Circle one: less than 1day/month 1 day/month 1 day/week 2 days/week More than 2 days/week							

3. Women's Health

LEGEND: DNK (do not know), NR (no response)

1.	Do you have any children?	YES	NO
1a.	If yes how many?		
2.	Did you ever breastfeed or would you feed breastmilk to any of your children?	YES	NO
2a.	IF YES: At what age did you stop breastfeeding your most recently breastfed child?	|___|___|___|___| ENTER AGE OR ONGOING	DAYS, WEEKS, MONTHS OR YEARS
2b.	IF NO: Why not?		NR
2c.	If NO: How old was your child when they were first fed formula?	|___|___|___|___| ENTER AGE	DAYS, WEEKS, MONTHS OR YEARS
2d.	How old was your child/children when they **completely stopped** drinking formula?	|___|___|___|___| ENTER AGE	DAYS, WEEKS, MONTHS OR YEARS
3.	How old was your child/children when they were first fed anything other than breast milk or formula? (DO NOT COUNT MEDICATIONS, VITAMIN DROPS, OR SMALL AMOUNT OF WATER THAT WAS USED FOR ORAL HYGIENE PURPOSES.)	|___|___|___|___| ENTER AGE	DAYS, WEEKS, MONTHS OR YEARS

4. General uses of the Hopedale Area over the past 12 months

LEGEND: DNK (do not know), NR (no response)

1.	In the past 12 months, how many days have you spent on the former military site						Days		DNK	NR
2.	In the past 12 months, what sorts of activities have you carried out on the former military site? Circle all that apply									
	Hunting	Walking	Camping	Berry Picking	Recreational snowmobiling/ATV	Picnic	Other:		DNK	NR
3.	In which season do you go to the former military site most often over the last 12 months?						Spring	Summer	Winter	Fall
4.	In the past 12 months, how many days have you spent in or around the harbour						Days		DNK	NR
5.	In the past 12 months, what sorts of activities have you carried out in the harbour? Circle all that apply									
	Swimming /wading	Playing on the beach	On water (in boat)	On Ice (skidoo/walking)	Fishing for rock cod / sculpin	Fishing for salmon/char	Harvesting shellfish	Shooting seal/whale/jumper		
6.	In the past 12 months, how often do you fish in the harbour						Days		DNK	NR

5. Diet and Food Access over the last 12 months

LEGEND: DNK (do not know), NR (no response)

<table>
<tr><td>1.</td><td colspan="4">Do you shop at the grocery store for food?</td><td colspan="2">YES</td><td colspan="3">NO</td></tr>
<tr><td>2.</td><td colspan="9">Who grocery shops in your family? List all members:</td></tr>
<tr><td>3.</td><td colspan="4">Do you eat wild foods from the Hopedale area?</td><td>YES</td><td>NO</td><td>DNK</td><td colspan="2">NR</td></tr>
<tr><td>3a.</td><td colspan="9">If YES why?
Circle one: It is the only area I have access to get wild foods I know all the areas I like to go to get wild foods other reason</td></tr>
<tr><td>3b.</td><td colspan="9">If NO why?
Circle one: you don’t like wild foods you are concerned that wild foods are contaminated other reason</td></tr>
<tr><td>4.</td><td colspan="4">Is there an active hunter in your household?</td><td>YES</td><td>NO</td><td>DNK</td><td colspan="2">NR</td></tr>
<tr><td>5.</td><td colspan="4">Do you or your household distribute/share wild foods to/with other members of the community</td><td>YES</td><td>NO</td><td>DNK</td><td colspan="2">NR</td></tr>
<tr><td>6.</td><td colspan="4">Do you prefer mainly wild foods or grocery store foods or a mix of both</td><td>Country Foods</td><td>Store Foods</td><td>Mix of Both</td><td>DNK</td><td>NR</td></tr>
<tr><td>7.</td><td colspan="4">Would you like to eat more wild foods than you have in the last 12 months?</td><td>YES</td><td>NO</td><td>Neutral</td><td>DNK</td><td>NR</td></tr>
<tr><td rowspan="2">8.</td><td colspan="9">In the past 12 months, how did you get your wild foods? Circle all that apply and put a checkmark on the most common source of wild foods:</td></tr>
<tr><td>Hunting</td><td>From family in Hopedale</td><td>From friends in Hopedale</td><td>From stores</td><td>Community Freezer</td><td>No wild foods acquired by/in the home</td><td>Not interested in wild foods</td><td>DNK</td><td>NR</td></tr>
</table>

9.	If you wanted to but could not get wild foods in the past 12 months, can you tell me why?								
	No active hunter in household	Active hunter is sick or away	Not enough money to buy supplies and gas to go hunting/fishing	No skidoo / ATV OR skidoo / ATV is broken	No boat or boat broken	Wild foods not in the area	Wild foods is not importa nt to me	DNK	NR
	Other reason:								

10.	What have you done in the past 12 months when your household was out of wild foods?							
	Go hunting or fishing	Borrow / ask for wild foods from friends or family	Take wild foods from the community freezer	Buy more store food	Do without some food (i.e. eat less)	DNK	NR
	Other:							

6. Grocery Store Foods (Not wild foods)

What foods do you regularly buy at the grocery store? (e.g., fruit, vegetables, milk, pasta, hamburgers, snacks) List as many as you can think of.

7. Wild Foods (hunted/fished/collected)

This section asks specific questions about wild foods that you collect, eat and how much you eat.

Deciding how much? Use the objects in front of you to decide how much of a food you would normally eat. Record the label on the object in the box of usual serving.

If you eat it as a snack and as a meal record how much you would eat as the meal and how much you would eat as the snack and how you eat it separately.

Eating the same thing twice in one day counts as two servings (e.g. if you ate it as a meal and a snack or for breakfast and dinner, that is two servings per day)

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
Land mammals									
Caribou meat	YES	NO	In Season						
			Off Season						
Caribou liver	YES	NO	In Season						
			Off Season						
Caribou heart	YES	NO	In Season						
			Off Season						
Caribou tongue	YES	NO	In Season						
			Off Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
Caribou stomach	YES	NO	In Season						
			Off Season						
Caribou kidney	YES	NO	In Season						
			Off Season						
Caribou ribs	YES	NO	In Season						
			Off Season						
Caribou marrow	YES	NO	In Season						
			Off Season						
Caribou organs (brain or other)	YES	NO	In Season						
			Off Season						
Okalik meat (raw, cooked, dried)	YES	NO	In Season						
			Off Season						
Porcupine meat (raw, cooked, frozen, dried)	YES	NO	In Season						
			Off Season						
Black bear meat (raw, cooked, frozen, dried)	YES	NO	In Season						
			Off Season						
Polar bear meat (raw, cooked, frozen,	YES	NO	In Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
dried)			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
Birds									
Partridge (raw, cooked, frozen, dried)	YES	NO	In Season						
			Off Season						
Goose	YES	NO	In Season						
			Off Season						
Loon	YES	NO	In Season						
			Off Season						
Eider duck	YES	NO	In Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency # of days/week OR # of days/year	Usual Serving # of servings	Serving model (snack)	Serving model (meal)	Notes How do you eat it? Raw, fresh, jams, baked Etc..
			Off Season						
Duck/Turre/Teal/Pintail/Pied bird/Shellbird/Black duck/divers	YES	NO	In Season						
			Off Season						
Tern	YES	NO	In Season						
			Off Season						
Pigeon/Guillemot	YES	NO	In Season						
			Off Season						
Pigeon/Guillemot eggs	YES	NO	In Season						
			Off Season						
Seagull eggs	YES	NO	In Season						
			Off Season						
Tern eggs	YES	NO	In Season						
			Off Season						
Duck eggs	YES	NO	In Season						
			Off Season						
Snowbird/whitecap/plumbers	YES	NO	In Season						
			Off Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
Sea mammals									
Seal blubber	YES	NO	In Season						
			Off Season						
Seal liver	YES	NO	In Season						
			Off Season						
Seal kidney	YES	NO	In Season						
			Off Season						
Seal meat	YES	NO	In Season						
			Off Season						
Whale blubber	YES	NO	In Season						
			Off Season						
Whale meat	YES	NO	In Season						
			Off Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
Porpoise meat	YES	NO	In Season						
			Off Season						
Porpoise liver	YES	NO	In Season						
			Off Season						
Jumper/dolphin meat	YES	NO	In Season						
			Off Season						
Jumper/dolphin blubber	YES	NO	In Season						
			Off Season						
Rock cod	YES	NO	In Season						
			Off Season						
Rock cod liver	YES	NO	In Season						
			Off Season						
Sculpin meat	YES	NO	In Season						
			Off Season						
Sculpin liver	YES	NO	In Season						
			Off Season						
Char meat	YES	NO	In Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
			Off Season						
Salmon meat	YES	NO	In Season						
			Off Season						
Flatfish meat	YES	NO	In Season						
			Off Season						
Capelin meat	YES	NO	In Season						
			Off Season						
Clams	YES	NO	In Season						
			Off Season						
Mussels	YES	NO	In Season						
			Off Season						
Scallop	YES	NO	In Season						
			Off Season						
Wrinkles	YES	NO	In Season						
			Off Season						
Itiks/Sea urchins	YES	NO	In Season						
			Off Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
Wild fruits and wild plants									
Bakeapples	YES	NO	In Season						
			Off Season						
Wild raspberries	YES	NO	In Season						
			Off Season						
Wild blackberries	YES	NO	In Season						
			Off Season						
Wild blueberries	YES	NO	In Season						
			Off Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
Wild red berries	YES	NO	In Season						
			Off Season						
Other picked berries	YES	NO	In Season						
			Off Season						
Labrador tea	YES	NO	In Season						
			Off Season						
tullegunnak	YES	NO	In Season						
			Off Season						
Wild turnip	YES	NO	In Season						
			Off Season						
uKaujak	YES	NO	In Season						
			Off Season						
Other wild plants	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						

In the past 12 months, did you eat any of the following?:	Yes or No Circle:		Time of year In season = fresh Off season = stored	Check mark	Frequency	Usual Serving			Notes
					# of days/week OR # of days/year	# of servings	Serving model (snack)	Serving model (meal)	How do you eat it? Raw, fresh, jams, baked Etc..
			Off Season						
Other									
Sivak (rock cod liver)	YES	NO	In Season						
			Off Season						
Other Sivak (char/salmon spawns, seal fat)	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						
	YES	NO	In Season						
			Off Season						

Measuring Guide for Food Survey

Mounds

Model	Filling Size (cps)	Shell Diameter/length (in)	Height (in)
M1	¼	2	1
M2	1/3	2.5	1.5
M3	½ round	3	1.5
M4	½ long	5	1
M5	1	4	1.5
M6	1.5	4	1.75

Spoons:

Model	Filling Size
S1	1 tsp
S2	1 tbsp

Focus Group Outline

Focus groups held at 10am and 2pm on July 12 and at 10am on July 13, 2011. All 2hrs in length.

Introductions and signatures on the consent forms, followed by an informal presentation where questions were answered as they came up.

Tape recorder started at the end of the presentation. Each participant was paid $20 at the end of the focus group.

General directions to focus group participants:

Remembering over the last year or two, please indicate on the maps the areas where you hunt/fish/collect wild foods. We are most interested in the areas surrounding Hopedale. Other areas are considered background and not likely to be influenced by local contamination. Even most things around Hopedale are likely to contain background concentrations but we want to make sure that everything gets sampled.

There are coloured markers and a symbol key to guide you in some of the foods we are looking for. If you can think of any that we are missing on the list please let one of us know.

On each map please indicate the general area where you would hunt for a food. Please use the coloured markers to indicate in what season you hunt there (e.g. if you hunt there in summer use green, fall use brown, if it is more than one season please use more than one colour. Then use the symbol key to describe the animal or fruit you get from that area. Each animal and fruit has been given a different code from C1 or F1 and up.

If you can remember it would be really helpful if you could write the number of animals you got from each area beside the code (e.g. C1,7 would mean 7 caribou were collected in this area). That way we can get an idea of the proportion of your diet that is coming from different areas. This is especially important when we are looking at foods collected right around Hopedale, maybe only 20% of your berries come from around here or maybe its 100%...?

General questions to ask:

How do you get to these areas in the spring, summer, fall and winter?

If you don't hunt right around Hopedale why not? Could you? Is there foods around to hunt or did there used to be?

Do you know of any areas dump sites, spills, uses of the old base that you think we should be sampling to make sure there is nothing there? i.e. old dump site in the harbour, MCO pond was airplane landing..

Marker	**Season**
Purple	Spring
Green	Summer
Blue	Winter
Brown	Fall

Animal	**Symbol**
Caribou	C1
Black Bear	C2
Polar Bear	C3
Partridge	C4
Okalik (hare)	C5
Pigeon	C6
Goose	C7
Duck	C8
Flatfish	C9
Capelin	C10
Salmon	C11
Char	C12
Rock Cod	C13
Sculpin	C14
Clams	C15
Mussel	C16
Winkle	C17
Scallop	C18
Jumper	C19
Seal	C20
Whale	C21

Fruit	**Symbol**
Bakeapple	F1
Wild raspberries	F2
Wild blueberries	F3
Wild red berries	F4
Wild blackberries	F5

Example: C1, 7 in purple marker = 7 caribou in the spring.

Table E.1 Consumption Rates for Each Country Food Item for Each Survey Participant

Surveyid	Bakeapples	Black Bear Meat	Capelin Meat	Capelin Pitsik	Caribou	Caribou Fish	Caribou Heart	Caribou Kidney	Caribou Liver	Caribou Marrow	Caribou Meat	Caribou Nikku	Caribou Organs(Brain or other)	Caribou Ribs	Caribou Stomach	Caribou Tongue	Char	Char Meat	Clams	Cod fish	Grass roots	Deer Meat	Duck Eggs	Duck/Turre/Teal/Pied birds/Shellbird	Eider Duck	Fish	Flatfish Meat	Goose	Itiks/Sea Urchins	Jumper/Dolphin Blubber	Jumper/Dolphin Meat	Labrador Tea	Loon	Mussels	Nikku	Okalik meat	Other Picked Berries	Other Sivak(Char/	Other Wild Plants	Partridge
	Cups																																							
1	19	NV	NV	NV	NV	NV	NV	NV	NV	NV	32	NV	NV	9	NV	NV	NV	25	3	NV	NV	NV	NV	7.5	NV	NV	NV	3	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	7.5
2	3	NV	NV	NV	NV	NV	2	NV	NV	2	0.5	NV	NV	4.5	NV	2	NV	12	NV	NV	NV	NV	1.5	3	4.5	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	6
3	NV	NV	13	NV	NV	NV	20	NV	NV	51	71	NV	NV	98	NV	13	NV	140	NV	NV	NV	NV	NV	52	52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	120
4	6	NV	NV	NV	NV	26	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	6.9
5	18	NV	9	NV	NV	NV	6	NV	NV	0.75	14	NV	NV	NV	11	NV	NV	27	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	14	NV	3	NV	NV	NV	14
6	72	NV	110	NV	NV	NV	130	NV	NV	NV	720	NV	NV	580	NV	33	NV	110	470	NV	NV	NV	12	290	36	NV	NV	24	NV	27	27	NV	NV	470	NV	48	NV	NV	NV	140
7	26	NV	13	26	NV	NV	26	NV	26	20	6.5	NV	NV	6.5	NV	65	NV	16	4.5	NV	NV	78	20	26	6.5	NV	3.3	52	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	33
8	72	NV	36	NV	NV	NV	11	NV	NV	NV	48	NV	NV	52	NV	NV	NV	90	38	NV	NV	NV	6	6.5	NV	NV	NV	13	NV	NV	72	NV	NV	45	NV	NV	NV	98	NV	7.5
9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
10	7.9	NV	NV	NV	NV	NV	NV	NV	NV	4.5	0.13	NV	NV	NV	NV	NV	NV	0.25	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	0.13
11	1.7	NV	88	NV	NV	NV	NV	NV	NV	NV	120	NV	NV	45	NV	NV	NV	NV	2.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
12	4.5	NV	NV	NV	NV	NV	NV	NV	NV	0.66	52	NV	NV	52	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	160
13	NV	NV	14	NV	NV	NV	NV	NV	NV	NV	53	NV	NV	55	NV	NV	NV	60	NV	NV	NV	NV	1.5	18	NV	NV	NV	90	15	NV	NV	NV	NV	NV	300	44	NV	NV	NV	300
14	14	NV	NV	NV	NV	NV	18	NV	NV	90	360	NV	NV	45	NV	3	NV	27	NV	NV	NV	NV	45	90	90	NV	NV	32	NV	NV	NV	NV	NV	9	NV	9	NV	23	NV	180
15	3	NV	NV	NV	NV	NV	8.6	NV	NV	1.5	8.6	NV	NV	13	NV	NV	NV	7.5	NV	NV	NV	NV	11	24	2	NV	NV	0.99	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	20
16	0.5	NV	NV	NV	NV	NV	NV	NV	NV	0.25	1.5	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3
17	NV	NV	NV	NV	26	NV	NV	NV	NV	26	170	NV	NV	14	NV	3	NV	NV	6.5	NV	NV	NV	NV	NV	NV	52	NV	4.5	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	1.5
18	110	NV	18	NV	NV	NV	15	NV	NV	9	18	NV	NV	12	NV	18	NV	54	9	NV	NV	NV	4.5	NV	NV	NV	NV	9	NV	NV	54	NV	NV	18	NV	NV	NV	NV	NV	4.5
19	1.5	NV	4	NV	NV	NV	NV	NV	NV	1.5	39	NV	NV	12	13	NV	NV	1.5	3	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	2	NV	4.5	NV	NV	NV	9.9
20	1.5	NV	NV	NV	NV	NV	1.5	NV	NV	52	160	NV	NV	39	NV	1.5	NV	27	NV	NV	NV	NV	3	4.5	NV	NV	NV	4.5	NV	NV	NV	NV	NV	4.5	NV	1.5	NV	NV	NV	20
21	NV	NV	NV	NV	NV	NV	NV	NV	1.5	3	7.5	NV	NV	6	2.3	0.75	NV	9	NV	NV	NV	NV	3	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	1.5
22	18	NV	6	NV	NV	NV	NV	NV	NV	36	26	NV	NV	90	NV	NV	NV	180	12	NV	NV	NV	NV	15	3	NV	NV	6	NV	NV	NV	NV	NV	12	NV	27	NV	NV	NV	0.25
23	1.5	NV	0.99	NV	NV	NV	0.99	0.75	0.75	NV	4.5	NV	0.99	3	1.5	0.75	NV	18	0.75	NV	NV	NV	NV	3	3	NV	NV	3	NV	0.99	1.5	78	0.99	0.99	NV	4.5	NV	NV	NV	3
24	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
26	54	NV	NV	NV	NV	NV	14	NV	NV	12	110	NV	NV	18	NV	NV	NV	110	NV	NV	NV	NV	3	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	12
27	1.5	NV	1.5	NV	NV	NV	NV	NV	NV	3	0.75	NV	NV	9	NV	3	NV	54	NV	NV	NV	NV	NV	0.13	NV	NV	NV	11	NV	NV	NV	NV	NV	9	NV	3	NV	NV	NV	0.88
28	NV	NV	NV	NV	NV	NV	30	NV	13	15	190	NV	23	32	NV	NV	NV	23	NV	NV	NV	NV	34	22	22	NV	NV	43	NV	NV	NV	NV	NV	NV	NV	7.5	NV	6.5	NV	22
29	39	NV	13	NV	NV	NV	0.25	NV	NV	4.5	0.75	NV	NV	NV	NV	NV	NV	NV	39	NV	NV	NV	6.5	NV	52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39
30	29	NV	NV	NV	NV	NV	3	NV	NV	2.5	110	NV	NV	8.6	NV	NV	NV	0.19	NV	NV	NV	NV	20	0.25	NV	NV	NV	7.5	NV	NV	NV	NV	NV	0.42	NV	NV	NV	NV	NV	9.8
31	100	NV	52	NV	NV	NV	18	NV	NV	26	NV	NV	NV	13	6.5	6	NV	26	NV	NV	NV	NV	0.75	NV	54	NV	NV	39	NV	6.5	NV	20	NV	13	NV	52	NV	NV	NV	160
32	NV	NV	4.5	NV	NV	NV	9	NV	NV	NV	39	NV	NV	54	NV	14	NV	14	NV	NV	NV	NV	18	14	18	NV	NV	4.5	NV	NV	9	NV	NV	NV	NV	9	NV	NV	NV	1.1
33	NV	NV	NV	NV	NV	NV	3.3	NV	3.3	3.3	6.5	NV	NV	3.3	NV	3.3	NV	NV	NV	NV	NV	NV	3.3	3.3	NV	NV	NV	3.3	NV	NV	NV	NV	NV	NV	NV	3.3	NV	NV	NV	3.3
34	59	NV	NV	NV	NV	NV	NV	NV	NV	1.3	3.5	NV	NV	1	NV	NV	NV	12	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.7	NV	NV	NV	NV	NV	12
35	4.5	NV	NV	NV	NV	NV	3	NV	NV	NV	0.25	NV	NV	26	NV	NV	0.19	NV	NV	NV	NV	NV	NV	NV	11	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
36	14	NV	3	NV	NV	NV	NV	NV	NV	3.5	20	NV	NV	6	NV	1.7	NV	6	NV	NV	NV	NV	9	3.5	7.5	NV	NV	5	NV	NV	3	NV	NV	4.5	NV	3	NV	NV	NV	7.5
37	39	NV	NV	NV	NV	NV	NV	NV	NV	26	270	NV	NV	39	NV	NV	NV	160	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	NV	NV	NV	NV	NV	NV
38	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	52	NV	NV	NV	NV	1.5	NV	39	20	NV	NV	NV	13	96	84	NV	NV	250	NV	NV	NV	NV	NV	20	NV	NV	NV	6.5	NV	52
39	NV	NV	NV	NV	NV	NV	NV	NV	NV	1	210	NV	NV	NV	NV	1	NV	72	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	9	NV	NV	NV	NV	NV	36
40	NV	NV	NV	NV	NV	NV	NV	NV	NV	8.9	78	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	1.5	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV
41	99	NV	NV	NV	NV	NV	NV	NV	NV	NV	140	NV	NV	54	NV	NV	NV	4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	23	NV	NV	NV	NV	5.9
42	NV	NV	NV	NV	NV	NV	24	NV	NV	51	1.5	NV	NV	20	NV	7.9	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99
43	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	29	NV	NV	23	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
44	13	NV	3.3	NV	NV	NV	0.33	NV	NV	0.31	0.27	NV	NV	17	NV	0.35	NV	4.3	NV	NV	NV	NV	8.6	14	3.3	NV	NV	0.33	NV	NV	0.08	NV	NV	34	NV	NV	NV	0.25	NV	4.3
45	NV	NV	NV	NV	NV	NV	60	NV	NV	170	60	NV	NV	170	NV	60	NV	7.5	9	NV	NV	NV	1.5	NV	NV	NV	NV	30	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	30
46	930	NV	NV	NV	NV	NV	420	NV	NV	NV	80	NV	NV	460	NV	NV	NV	NV	NV	NV	NV	NV	440	420	NV	NV	NV	420	NV	NV	NV	NV	NV	NV	NV	420	NV	NV	NV	440
47	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	22	NV	NV	20	NV	NV	NV	4.3	NV	NV	NV	NV	5.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1
48	36	NV	NV	NV	NV	NV	NV	NV	NV	NV	100	NV	NV	140	NV	52	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	NV	NV	NV	NV
49	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	100	NV	NV	72	NV	NV	NV	52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
50	23	NV	NV	NV	NV	NV	NV	NV	NV	360	360	NV	NV	180	NV	NV	NV	3	NV	NV	NV	NV	78	NV	NV	NV	NV	23	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV
51	60	NV	6	NV	NV	NV	1.5	NV	NV	NV	620	NV	NV	60	NV	12	NV	150	NV	NV	NV	NV	15	30	45	NV	6	18	NV	NV	NV	NV	NV	6	NV	4	NV	12	NV	30
52	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	26	NV	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	NV	60	NV	NV	NV	14	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	140
53	0.99	NV	NV	NV	16	NV	NV	NV	NV	0.5	0.63	NV	NV	0.5	NV	NV	4	21	NV	15	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	3
54	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
55	48	NV	0.25	NV	NV	NV	NV	NV	NV	NV	15	NV	NV	11	NV	NV	NV	24	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV
56	39	NV	4.5	NV	NV	NV	NV	NV	NV	0.13	2.3	NV	NV	9	0.75	0.75	NV	20	20	NV	NV	NV	1.5	NV	NV	NV	NV	3	NV	NV	4.5	13	NV	26	NV	3	NV	NV	NV	4.5
57	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	NV	7.5	NV	2.3	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	NV	NV	NV	NV	0.99
58	0.25	NV	NV	NV	NV	NV	NV	NV	NV	13	160	NV	NV	13	NV	NV	NV	20	13	NV	NV	NV	6.5	39	NV	NV	NV	3	NV	NV	20	NV	NV	13	NV	1.5	NV	NV	NV	6.5
59	3	NV	7.9	NV	36	NV	39	NV	39	6	160	NV	NV	72	NV	39	NV	9	18	NV	NV	NV	4.5	14	9	NV	NV	36	20	NV	NV	NV	36	18	NV	NV	NV	NV	NV	36
60	78	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
61	NV	NV	75	NV	NV	NV	52	NV	NV	25	54	NV	NV	180	26	24	NV	26	8.6	NV	NV	NV	2	24	0.25	NV	NV	24	1.5	NV	66	1.5	NV	8.6	NV	36	NV	NV	NV	100
62	0.38	NV	NV	NV	NV	NV	0.63	NV	NV	0.25	1	NV	NV	1	NV	1	NV	1.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1	NV	NV	NV	NV	NV	NV
63	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	350	NV	NV	13	NV	NV	NV	59	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	NV	NV	NV	NV	NV	NV
64	NV	NV	NV	NV	NV	NV	NV	NV	NV	52	3.5	NV	NV	78	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
65	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3.5	NV	NV	220	NV	NV	NV	4	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
66	27	NV	23	NV	NV	NV	72	NV	NV	36	220	NV	NV	180	NV	NV	NV	27	3	NV	NV	NV	9	NV	18	NV	NV	14	NV	NV	3	NV	NV	23	NV	6	NV	NV	NV	110
67	26	NV	7.9	NV	NV	NV	6	NV	NV	6	18	NV	6	24	6	6	NV	18	NV	NV	NV	NV	5.9	12	12	NV	NV	12	2	NV	6	NV	12	2	NV	12	NV	NV	NV	24
68	11	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	NV	4.5	NV	NV	NV	3	3	NV	NV	NV	6.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	14	NV	NV	NV	NV
69	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	0.06	NV	NV	NV	NV	NV	NV	NV	0.75	NV	0.75	NV	NV	0.75	NV	NV	NV
70	120	NV	NV	NV	NV	NV	NV	NV	NV	13	9	NV	NV	4.5	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3
71	32	NV	NV	NV	NV	NV	100	NV	NV	18	160	NV	NV	160	160	NV	NV	23	4.5	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	3	NV	NV	NV	13
72	0.63	NV	13	NV	NV	NV	8.6	NV	NV	78	20	NV	NV	26	NV	26	NV	33	26	NV	NV	NV	39	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	26
73	7.5	NV	30	NV	NV	NV	160	NV	NV	4	230	NV	NV	18	NV	6	NV	30	7.5	NV	NV	NV	NV	11	4.5	NV	NV	4.5	NV	23	23	NV	NV	15	NV	7.5	NV	NV	NV	39

Surveyid	Pigeon/Guillemot	Pigeon/Guillemot Eggs	Pitsik	Polar Bear Meat	Porcupine Meat	Porpoise Liver	Porpoise Meat	Rhubarb	Rock Cod	Rock Cod Liver	Rock Cod Pitsik	Salmon Meat	Scallop	Sculpin Liver	Sculpin Meat	Seagull Eggs	Seal Blubber	Seal Fat	Seal flipper	Seal Kidney	Seal Liver	Seal Meat	Sivak(Rock cod liver)	Snowbird/Whitcap/Plumbers	Spawns	Tern	Tern Eggs	Trout	Trout Pitsik	Trout/Caribou	tullegunnak	Ukaujak	Whale Blubber	Whale Meat	Wild BlackBerries	Wild Blueberries	Wild Raspberries	Wild Red Berries	Wild Turnip	Wrinkles
	Cups																																							
1	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	15	NV	NV	NV	NV
2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV
3	13	3.3	NV	NV	13	NV	20	NV	9	NV	NV	NV	13	NV	NV	13	NV	NV	NV	NV	NV	78	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	20	2	8.6	NV	52	NV	NV
4	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	1.5	NV	NV	NV
5	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	4.5	2.3	NV	NV	NV	NV	NV	NV	NV	14	23	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	15	4.5	3	14	NV	NV
6	290	NV	NV	NV	NV	NV	27	NV	110	110	NV	860	110	NV	NV	48	140	NV	NV	18	NV	290	860	NV	NV	NV	NV	NV	NV	NV	12	12	3	3	72	72	72	72	NV	110
7	NV	NV	NV	NV	20	NV	20	NV	26	NV	78	3.3	NV	4.5	4.5	NV	NV	NV	NV	26	26	26	4.5	NV	NV	NV	NV	78	NV	NV	NV	NV	NV	NV	26	6.5	20	4.3	NV	NV
8	0.75	NV	NV	NV	NV	NV	90	NV	NV	NV	NV	72	NV	NV	NV	9	2.5	NV	NV	NV	7.5	11	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	90	30	NV	NV	NV	45
9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
10	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	8.9	NV	NV	NV	NV
11	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	13	NV	NV	NV	NV	2.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.5	1.7	NV	1.7	NV	NV
12	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV
13	NV	NV	360	NV	NV	NV	NV	NV	48	NV	NV	NV	NV	NV	5	1.5	NV	NV	NV	NV	NV	27	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	32	NV	NV	NV	NV
14	NV	NV	NV	NV	9	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	18	NV	NV	NV	18	18	32	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	6	NV	NV
15	3	7.5	NV	NV	NV	NV	4	NV	NV	NV	NV	3	NV	NV	NV	9	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	3	3	2	0.99	NV	NV	NV
16	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	7.5	NV	NV	NV	NV
17	NV	NV	NV	NV	NV	NV	NV	0.75	0.5	NV	NV	26	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV
18	NV	NV	NV	NV	NV	NV	54	NV	NV	NV	NV	6	NV	NV	NV	9	0.99	NV	NV	NV	3	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5	5.5	NV	NV	NV	9
19	NV	NV	NV	NV	NV	NV	4.5	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	3.8	1.5	0.75	1.5	NV	0.75
20	NV	NV	NV	NV	NV	NV	NV	NV	36	NV	NV	4.5	NV	NV	NV	9	NV	NV	NV	NV	3	160	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	1.5	1.5	1.5	1.5	NV	NV	4.5
21	NV	0.99	NV	NV	0.75	NV	1.5	NV	9	0.75	NV	3	NV	NV	NV	3	NV	NV	NV	NV	1.5	9	3.3	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	0.75
22	60	NV	NV	NV	NV	NV	12	NV	60	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	18	27	NV	12
23	2	3	NV	NV	0.75	NV	1.5	NV	3	1.5	NV	15	1.5	0.75	0.99	3	1.5	NV	NV	0.75	0.99	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	3	3	NV	0.75	NV	NV
24	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.75	NV	0.75	NV	NV
25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
26	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	3	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	9	NV	NV
27	NV	0.99	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	4.5	NV	NV	4	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	4.5
28	NV	91	NV	NV	NV	NV	NV	NV	NV	NV	NV	210	NV	NV	NV	52	NV	NV	NV	NV	22	22	NV	NV	NV	NV	26	NV	NV	NV	NV	NV	22	22	NV	NV	NV	NV	NV	NV
29	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	39	NV	NV	NV	6.5	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	26	26	NV	26	NV	26
30	NV	15	NV	NV	NV	NV	NV	NV	44	NV	NV	1	NV	NV	NV	0.62	0.19	NV	NV	NV	NV	0.98	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	15	11	32	7.5	NV	NV
31	13	13	NV	NV	13	NV	13	NV	26	NV	NV	NV	NV	NV	NV	4.3	6.5	NV	NV	NV	52	6.5	34	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	65	65	13	100	NV	NV
32	18	NV	NV	NV	9	NV	9	NV	23	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	18	18	12	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	90	18	NV	NV
33	3.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3.3	NV	NV	NV	NV	3.3	3.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
34	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	10	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	6	NV	13	NV	NV
35	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	4.5	NV	NV
36	2.5	NV	NV	NV	3.5	NV	3	NV	1.7	NV	NV	4.5	NV	NV	NV	9	NV	NV	NV	NV	5	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	2.5	NV	6	NV	NV
37	NV	NV	NV	NV	NV	NV	NV	NV	26	17	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	17	52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	NV	39	39	9	26	NV	39
38	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
39	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	72	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	36	6	NV	54	NV	NV
40	NV	NV	NV	NV	NV	NV	1.5	NV	1.5	0.75	NV	51	NV	NV	20	0.13	NV	NV	NV	32	32	32	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	32	32	NV	NV	NV	NV	NV	17
41	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	NV	4.3	NV	NV
42	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
43	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	7.5	NV	1.5	NV	NV
44	NV	NV	NV	NV	NV	NV	0.08	NV	13	NV	NV	NV	NV	NV	NV	3.3	13	NV	NV	NV	13	0.33	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.06	0.25	NV	0.06	NV	NV
45	NV	NV	NV	NV	NV	NV	NV	NV	110	NV	NV	NV	NV	NV	NV	1.5	3	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	3	NV	NV	1.5	NV	1.5
46	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	850	NV	NV	NV	440	NV	NV	NV	NV	NV	930	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	590	52	1700	140	71	NV
47	NV	NV	NV	NV	NV	NV	0.5	NV	0.5	NV	NV	78	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.7	NV	NV	1.5	NV	20
48	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	36	36	NV	NV	NV	NV
49	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
50	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	8	NV	NV	NV	NV
51	NV	NV	NV	NV	3	NV	NV	NV	18	NV	NV	180	6	NV	NV	9	NV	NV	NV	NV	NV	15	NV	NV	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	6	6	6	NV	NV	NV
52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	1.5	1.5	NV	NV	NV
53	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	NV	17	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	3	NV	4	NV	NV
54	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3
55	NV	NV	NV	NV	NV	NV	NV	NV	30	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	1.5	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	140	NV	NV
56	NV	NV	NV	NV	0.75	NV	3	NV	52	NV	NV	39	8.6	NV	NV	3	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	4.5	3	59	NV	20
57	NV	NV	NV	NV	NV	NV	NV	NV	90	NV	NV	3.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
58	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	NV	NV	13	26	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.25	0.25	NV	0.25	NV	20
59	NV	4.5	NV	NV	NV	NV	NV	NV	100	NV	NV	180	NV	27	0.75	4.5	NV	NV	NV	4.5	24	100	1.5	NV	NV	4.5	NV	NV	NV	NV	NV	1.5	NV	12	34	34	1.5	16	NV	NV
60	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	NV	NV	NV
61	NV	NV	NV	NV	32	NV	57	NV	84	20	NV	32	1.5	12	12	2	34	NV	NV	32	18	60	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	NV	NV	2
62	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	1.1	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.38	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.38	NV	NV	NV	NV	NV
63	NV	NV	NV	NV	NV	NV	NV	NV	59	NV	NV	39	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	26	NV	NV
64	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
65	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV
66	27	4.5	NV	NV	NV	NV	3	NV	110	3	NV	54	NV	NV	NV	9	NV	NV	NV	4.5	4.5	54	3	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	9	9	3	23	NV	4.5
67	NV	NV	NV	NV	3	NV	3	NV	39	20	NV	2	5.9	NV	NV	5.9	12	NV	NV	6	12	24	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	13	13	13	26	NV	2
68	NV	NV	39	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	14	NV	4.5	NV	11	NV	11	NV	NV	1.5
69	NV	NV	NV	NV	NV	NV	NV	NV	0.17	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	0.06	0.08	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.75	0.75	0.75	NV	0.75
70	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	18	0.75	32	NV	NV
71	NV	NV	NV	NV	NV	NV	4.5	NV	90	NV	NV	4.5	NV	NV	NV	4.5	NV	NV	NV	NV	NV	90	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	4.5	4.5	NV	4.5	NV	9
72	NV	NV	NV	NV	0.13	NV	NV	NV	20	NV	NV	26	NV	NV	NV	26	NV	NV	NV	NV	NV	52	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	1.5	NV	0.38	NV	NV
73	NV	NV	NV	NV	1.5	NV	NV	NV	21	NV	NV	36	NV	NV	NV	6	20	NV	NV	88	64	90	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	140	18	7.5	7.5	NV	6	NV	38

Table E.1 Consumption Rates for Each Country Food Item for Each Survey Participant

Surveyid	Bakeapples	Black Bear Meat	Capelin Meat	Capelin Pitsik	Caribou	Caribou Fish	Caribou Heart	Caribou Kidney	Caribou Liver	Caribou Marrow	Caribou Meat	Caribou Nikku	Caribou Organs(Brain or other)	Caribou Ribs	Caribou Stomach	Caribou Tongue	Char	Char Meat	Clams	Cod fish	Grass roots	Deer Meat	Duck Eggs	Duck/Turre/Teal/Pied birds/Shellbird	Eider Duck	Fish	Flatfish Meat	Goose	Itiks/Sea Urchins	Jumper/Dolphin Blubber	Jumper/Dolphin Meat	Labrador Tea	Loon	Mussels	Nikku	Okalik meat	Other Picked Berries	Other Sivak(Char/	Other Wild Plants	Partridge	Pigeon/Guillemot	Pigeon/Guillemot Eggs	Pitsik	Polar Bear Meat	Porcupine Meat	Porpoise Liver	Porpoise Meat	Rhubarb	Rock Cod	Rock Cod Liver	Rock Cod Pitsik	Salmon Meat	Scallop	Sculpin Liver	Sculpin Meat	Seagull Eggs	Seal Blubber	Seal Fat	Seal flipper	Seal Kidney	Seal Liver	Seal Meat	Sivak(Rock cod liver)	Snowbird/Whitcap/Plumbers	Spawns	Tern	Tern Eggs	Trout	Trout Pitsik	Trout/Caribou	tullegunnak	Ukaujak	Whale Blubber	Whale Meat	Wild BlackBerries	Wild Blueberries	Wild Raspberries	Wild Red Berries	Wild Turnip	Wrinkles
	Cups																																								Cups																																											
74	1.5	NV	13	NV	NV	NV	3	NV	NV	6	6	NV	12	24	0.99	1.5	NV	52	4.5	NV	NV	NV	3	3	NV	NV	NV	3	2	3	3	NV	NV	9	NV	12	NV	4	NV	3	3	NV	NV	NV	3	NV	13	NV	52	34	NV	3	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	6	NV	NV	3	NV	NV	NV	NV	0.99	NV	NV	NV	3	3	NV	0.99	NV	4.5
75	30	NV	NV	NV	NV	NV	1	NV	NV	0.5	52	NV	NV	0.5	NV	1	NV	3	NV	NV	NV	NV	0.75	NV	NV	NV	NV	0.13	NV	NV	11	NV	NV	0.99	NV	NV	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.9	NV	NV	NV	0.75	NV	NV	NV	NV	0.99	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	95	NV	NV
76	0.5	NV	27	NV	NV	NV	0.5	NV	NV	0.25	33	NV	0.13	0.5	NV	0.25	NV	26	NV	NV	NV	NV	5	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	9	NV	NV	NV	6	NV	8.8	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	13	9	NV	NV	NV	NV	NV	NV	NV	3	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	27	NV	2.3	NV	3
77	78	NV	0.5	NV	NV	NV	3	NV	NV	26	160	NV	0.33	26	3	3	NV	350	6.5	NV	NV	NV	4.5	2	0.13	NV	0.13	0.75	6.5	1	1	NV	NV	6.5	NV	0.33	NV	NV	NV	1.5	57	4.5	NV	NV	0.08	NV	0.5	NV	0.25	NV	NV	6.5	NV	9	9	NV	0.13	NV	NV	2	2	2	3	0.99	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	0.13	0.13	1	NV	6.5
78	0.99	NV	NV	NV	NV	NV	NV	NV	NV	0.66	13	NV	NV	1	NV	1	NV	0.33	NV	NV	NV	NV	6.5	8.6	0.17	NV	NV	0.13	NV	NV	0.25	NV	NV	2	NV	0.08	NV	NV	NV	NV	NV	NV	NV	NV	0.08	NV	0.38	NV	NV	NV	NV	2	NV	NV	NV	6.5	0.08	NV	NV	NV	0.08	6.5	0.08	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.08	NV	NV	NV	NV	NV	NV
79	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	0.75	NV	0.13	0.13	NV	NV	NV	0.25	NV	NV	NV	NV	0.25	NV	NV	0.13	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	0.13	NV	NV	NV	0.25	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	1.5	1.5	NV	1.5	NV	NV
80	0.25	NV	3	NV	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	1.5	NV	NV	6.5	4.5	NV	NV	NV	13	3	3	NV	NV	3	NV	NV	NV	NV	NV	14	NV	6	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	6.5	NV	6.5	NV	NV	0.75	3	NV	NV	13	4.3	NV	NV	NV	6.5	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	0.25	0.25	NV	0.25	NV	1.5
81	96	NV	7.5	NV	NV	NV	3	NV	NV	26	620	NV	0.33	26	NV	3	NV	310	0.99	NV	NV	NV	4.5	1	27	NV	NV	0.75	NV	0.5	12	NV	NV	0.99	NV	0.33	NV	NV	NV	0.25	12	4.5	NV	NV	0.08	NV	6	NV	1.5	1.5	NV	NV	3	NV	NV	4.5	1.5	NV	NV	24	24	1	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV
82	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	130	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	3	NV	18	NV	NV
83	160	NV	13	NV	NV	NV	NV	NV	NV	17	59	NV	NV	160	NV	6	NV	59	4.5	NV	NV	NV	26	59	9	NV	NV	54	NV	NV	26	NV	9	4.5	NV	12	NV	NV	NV	230	39	20	NV	NV	9	NV	26	NV	26	NV	NV	20	NV	NV	NV	26	9.8	NV	NV	NV	NV	100	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	39	NV	32	NV	NV
84	NV	NV	NV	NV	NV	NV	0.99	NV	NV	0.08	0.13	NV	NV	0.13	NV	NV	NV	13	NV	NV	NV	NV	1.5	0.25	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	1.5	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
85	9	NV	18	NV	NV	NV	18	NV	NV	3	81	NV	NV	81	NV	12	NV	18	18	NV	NV	NV	12	9	4.5	NV	NV	12	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	9	NV	54	NV	NV	9	NV	NV	NV	12	9	NV	NV	1.5	32	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	9	NV	18
86	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	41	NV	NV	NV	NV	NV	NV	23	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	NV	NV	4.5	NV	NV	18	NV	NV	NV	NV	NV	27	NV	NV	NV	NV	14	NV	9	NV	14	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	14	14	NV	14	NV	NV
87	26	NV	NV	NV	NV	NV	NV	NV	NV	NV	86	NV	NV	NV	26	NV	NV	78	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	17	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	26	26	6	NV	65
88	3.3	NV	NV	NV	NV	NV	26	NV	NV	52	100	NV	NV	0.33	0.75	NV	NV	52	NV	NV	NV	NV	0.13	0.08	0.99	NV	NV	13	NV	8.6	13	NV	NV	0.06	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	0.08	NV	NV	NV	0.13	0.25	NV	NV	NV	0.25	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	13	3.3	3.3	NV	NV	NV	0.06
89	180	NV	NV	NV	NV	NV	NV	NV	NV	30	60	NV	30	60	NV	60	NV	15	NV	NV	NV	NV	15	NV	NV	NV	NV	36	NV	NV	NV	NV	NV	15	NV	NV	NV	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	15	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	180	180	180	180	NV	NV
90	16	20	3	NV	21	NV	12	6.5	12	3	200	NV	NV	39	NV	9	NV	39	NV	NV	NV	NV	21	17	15	NV	4.5	33	NV	1.5	6	NV	NV	9	NV	1.5	NV	NV	NV	26	NV	NV	NV	NV	180	NV	26	NV	90	NV	NV	52	4.5	NV	NV	21	3.3	0.75	NV	NV	4.3	42	0.75	NV	NV	NV	21	NV	NV	NV	NV	NV	2.3	NV	NV	26	3.3	20	NV	NV
91	1.5	NV	2	NV	20	NV	0.13	NV	NV	NV	0.38	NV	NV	26	NV	0.13	NV	1.5	2	NV	NV	NV	20	NV	NV	NV	NV	0.75	NV	NV	4.5	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	1.5	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	4.3	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	1.5	1.5	1.5	1.5	NV	0.99
92	NV	12	NV	NV	NV	NV	NV	NV	14	NV	41	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	6	5	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
93	NV	20	52	NV	160	NV	160	160	160	160	160	NV	160	160	160	160	120	26	52	NV	NV	NV	52	52	39	NV	NV	39	52	26	NV	NV	39	52	NV	20	26	26	NV	39	13	13	NV	20	20	78	26	NV	26	26	NV	210	52	26	26	13	26	NV	NV	26	26	160	26	NV	NV	52	52	NV	NV	NV	NV	NV	NV	26	NV	NV	NV	26	NV	52
94	1.5	NV	1.5	NV	NV	NV	1.5	NV	NV	1.5	6.5	NV	3	0.99	0.75	2	NV	6	3	NV	NV	NV	1.5	4.5	6	NV	NV	3	NV	NV	1.5	NV	NV	3	NV	1.5	NV	NV	NV	7.5	3	3	NV	NV	NV	0.75	1.5	NV	0.99	0.75	NV	1.5	NV	NV	NV	1.5	NV	NV	NV	17	0.99	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.75	1.5	1.5	NV	0.99	NV	NV
95	NV	NV	1.5	NV	NV	NV	NV	NV	NV	0.19	0.38	NV	NV	0.38	NV	2.3	NV	0.13	NV	NV	NV	NV	3.3	0.13	0.13	NV	NV	NV	NV	NV	1.5	NV	NV	0.99	NV	1.5	NV	NV	NV	0.13	0.13	NV	NV	NV	1.5	NV	NV	NV	0.99	NV	NV	0.08	NV	NV	NV	3.3	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
96	6	NV	6	NV	NV	NV	26	NV	NV	3	46	NV	NV	9	3.3	26	NV	12	6	NV	NV	NV	NV	12	NV	NV	NV	14	NV	6	6	NV	NV	6	NV	6	NV	NV	NV	6	3	NV	NV	NV	NV	NV	NV	NV	12	12	NV	24	NV	NV	NV	NV	13	NV	NV	3.3	17	18	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	6	NV	6	NV	NV
97	9	NV	NV	NV	NV	NV	NV	NV	NV	3	4.5	NV	NV	39	NV	5.9	NV	1.5	NV	NV	NV	NV	3	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	4.5	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	3	NV	NV	NV	3	NV	NV	NV	NV	NV	4.5	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	4.5	4.5	NV	4.5	NV	NV
98	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	3	NV	NV	NV	NV	4.5	NV	12	NV	NV	NV	NV	3	3	12	NV	NV	4.5	NV	NV	NV	NV	NV	3	NV	4.5	NV	NV	NV	3	NV	NV	NV	NV	4.5	NV	3	NV	NV	NV	NV	1.5	NV	NV	NV	3	NV	NV	NV	0.75	0.25	2.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5
99	6	NV	1.5	NV	NV	NV	NV	NV	NV	2	4	NV	NV	2	NV	NV	NV	1.5	2	NV	NV	NV	0.75	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	0.75	NV	6	NV	NV	1.5	NV	NV	NV	0.99	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	6	6	6	NV	0.75
100	3.8	NV	3	NV	NV	NV	NV	NV	NV	51	51	NV	NV	0.37	NV	NV	NV	NV	2	NV	NV	NV	2	12	3	NV	NV	2	NV	NV	2	NV	NV	5	NV	NV	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	2	NV	15	NV	NV	4.5	NV	NV	NV	2	NV	NV	NV	NV	NV	12	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3.8	NV	NV	60	NV	NV
101	4.5	NV	NV	NV	NV	NV	0.99	NV	NV	NV	39	NV	1.5	6	1.5	3	NV	26	NV	NV	NV	NV	NV	3	2	NV	NV	3	NV	0.99	1.5	NV	NV	0.99	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	2	NV	3	NV	NV	NV	1.5	4	NV	NV	2	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV
102	3	NV	NV	NV	NV	NV	NV	NV	NV	0.75	3	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	32	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	3	NV	3	NV	NV
103	120	NV	NV	NV	NV	NV	3	NV	NV	13	NV	NV	NV	110	NV	1.5	NV	71	NV	NV	NV	NV	NV	31	13	NV	NV	13	NV	NV	NV	17	NV	6	NV	NV	NV	NV	NV	52	91	1.5	NV	NV	NV	NV	3	26	110	7.5	NV	6	NV	NV	NV	3	20	NV	18	NV	3	90	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	65	26	NV	26	NV	NV
104	9	NV	6	NV	NV	NV	2.3	NV	NV	0.06	34	NV	NV	0.08	NV	3	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.99	NV	18	NV	1.5	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	160	13	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	0.99	52	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	9	NV	6	NV	NV
105	3.3	NV	NV	NV	NV	NV	26	NV	NV	52	100	NV	NV	0.58	NV	17	NV	0.38	NV	NV	NV	NV	NV	0.08	0.08	NV	NV	13	NV	8.6	13	NV	NV	0.06	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	0.08	NV	NV	NV	0.13	NV	NV	NV	NV	NV	1	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	13	13	3.3	3.3	NV	NV	NV	NV
106	4.5	NV	NV	NV	NV	NV	4.5	NV	NV	0.75	36	NV	NV	6	NV	1.5	NV	36	9	NV	NV	NV	14	18	18	NV	NV	NV	NV	3	3	NV	NV	9	NV	NV	NV	NV	NV	27	NV	NV	NV	NV	NV	NV	3	NV	0.99	NV	NV	14	NV	NV	NV	NV	NV	NV	NV	NV	12	72	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	14	14	NV	14	NV	NV
107	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	39	NV	NV	7	NV	NV	NV	38	12	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	23	NV	NV	NV	NV	NV	6	NV	0.75	NV	NV	NV	NV	NV	NV	23	NV	NV	3	NV	NV	NV	0.75	NV	NV	NV	NV	0.75	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
108	36	NV	NV	NV	NV	NV	4.5	NV	NV	NV	620	NV	NV	48	NV	4.5	NV	60	NV	NV	NV	NV	NV	1.5	3	NV	NV	18	NV	NV	3	NV	NV	NV	NV	3	NV	NV	NV	72	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	6	NV	6	NV	NV
109	1.5	NV	NV	NV	NV	NV	1.5	NV	NV	0.13	4.5	NV	NV	0.13	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	1.5	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	1.5	1.5	1.5	1.5	1.5	1.5	1.5	NV	NV
110	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.66	NV	NV	0.17	NV	NV	NV	0.08	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	0.13	NV	NV
111	100	NV	NV	NV	NV	NV	24	NV	NV	100	39	NV	NV	130	NV	3	NV	71	NV	NV	NV	NV	NV	3	3	NV	NV	3	NV	NV	NV	17	NV	6	NV	NV	NV	NV	NV	20	3	1.5	NV	NV	NV	NV	3	26	45	7.5	NV	6	NV	NV	NV	NV	20	NV	18	NV	3	23	26	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	100	26	NV	26	NV	NV
112	45	NV	1.5	NV	NV	NV	NV	NV	NV	NV	45	NV	NV	3	NV	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	15	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV
113	18	NV	3	NV	NV	NV	6	NV	NV	36	20	NV	NV	90	NV	1.5	NV	90	12	NV	NV	NV	3	60	30	NV	NV	6	NV	NV	NV	NV	NV	12	NV	27	NV	60	NV	30	60	NV	NV	NV	9	NV	12	NV	60	0.75	NV	NV	NV	NV	0.75	3	NV	NV	NV	NV	60	60	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	18	18	NV	NV	12
114	21	NV	1.5	NV	NV	NV	1.5	NV	NV	21	52	NV	3	9	1.5	6	NV	66	NV	NV	NV	NV	NV	3	4.5	NV	NV	1.5	NV	NV	NV	NV	NV	27	NV	3	NV	NV	NV	32	NV	9	NV	NV	3	NV	NV	NV	9	NV	NV	24	NV	NV	NV	23	3	NV	NV	NV	1.5	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	6	9	1.5	27	NV	4.5
115	3.7	NV	0.99	NV	NV	NV	NV	NV	NV	0.99	17	NV	NV	0.75	NV	NV	NV	0.25	NV	NV	NV	NV	0.08	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.75	NV	0.75	NV	NV
116	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	36	NV	NV	NV	NV	NV	NV	5.9	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV
117	18	NV	NV	NV	NV	NV	NV	NV	NV	18	360	NV	NV	54	NV	NV	NV	6	6	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	30	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	15	NV	220	27	45	15	NV	18
118	6	NV	0.99	NV	NV	NV	0.25	NV	NV	NV	0.75	NV	NV	4.3	NV	0.06	NV	1.5	1.5	NV	NV	NV	1.5	1.5	6.5	NV	NV	1.5	NV	0.99	1.5	3	NV	0.99	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	3	NV	6.5	NV	NV	0.99	NV	NV	NV	1.5	NV	NV	NV	NV	0.75	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	3	6	1.5	1.5	NV	1.5
119	20	NV	NV	NV	NV	NV	NV	NV	NV	7.7	11	NV	NV	10	NV	NV	NV	13	NV	NV	NV	NV	4.3	0.13	NV	NV	NV	6	NV	NV	NV	NV	NV	0.38	NV	NV	NV	NV	NV	8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	1.5	NV	NV	17	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	13	NV	4.5
120	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV
121	30	NV	NV	NV	NV	NV	NV	NV	NV	15	26	NV	NV	15	NV	NV	NV	6	NV	NV	NV	NV	4.3	NV	NV	NV	NV	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	1.5	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	30	NV	3
122	20	NV	0.25	NV	NV	NV	0.13	NV	NV	0.06	20	NV	NV	0.38	NV	0.13	NV	39	NV	NV	NV	NV	13	6.5	0.13	NV	NV	0.13	NV	0.13	0.38	NV	NV	0.13	NV	0.75	NV	0.99	NV	0.13	NV	NV	NV	NV	NV	NV	0.38	NV	0.38	NV	NV	6.5	NV	NV	NV	13	6.5	NV	NV	3.3	3.3	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV
123	3	NV	NV	NV	NV	NV	NV	NV	NV	0.06	6.5	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	6.5	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	27	NV	NV
124	36	NV	NV	NV	NV	NV	9	NV	9	15	180	NV	NV	15	NV	36	NV	30	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
125	0.99	NV	NV	NV	NV	NV	4.5	NV	NV	NV	1.5	NV	NV	NV	NV	4.5	NV	18	NV	NV	NV	NV	0.99	1.5	12	NV	NV	3	NV	NV	NV	NV	NV	4.5	NV	3	NV	NV	NV	3	NV	NV	NV	NV	3	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	0.25	1	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	0.99	NV	NV	NV	4.5
126	NV	NV	NV	NV	NV	NV	0.33	NV	NV	NV	0.33	NV	NV	NV	NV	NV	NV	0.25	NV	NV	NV	NV	0.25	0.06	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.25	NV	NV	NV	NV	1.5	0.06	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
127	27	NV	NV	NV	NV	NV	NV	NV	NV	14	20	NV	NV	13	NV	4.5	NV	18	NV	NV	NV	NV	36	NV	NV	NV	NV	9	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	0.38	NV	NV	NV	NV	NV	NV	3	NV	3	NV	NV	6	NV	NV	NV	72	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	6	NV	4.5	NV	NV
128	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	8.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.08	NV	NV
129	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	NV	NV	2.3	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV
130	20	NV	NV	NV	NV	NV	NV	NV	NV	13	52	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	39	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	NV	13	NV	NV	NV	NV	NV	39	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV
131	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	51	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	11	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
132	1.5	NV	NV	NV	NV	NV	5	NV	NV	NV	5	NV	NV	NV	NV	5	NV	0.99	2	NV	NV	NV	0.75	0.75	NV	NV	NV	550	NV	NV	1.5	NV	NV	2	NV	NV	NV	NV	NV	550	NV	NV	NV	NV	NV	NV	3	NV	3	NV	NV	0.99	NV	NV	NV	0.75	NV	NV	NV	NV	3	5	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	1.5	NV	2
133	18	NV	18	NV	NV	NV	4.8	NV	NV	NV	1.5	NV	NV	1.5	NV	NV	NV	6	1	NV	NV	NV	1.5	2	NV	NV	NV	14	NV	4.5	6	NV	NV	1	NV	4	NV	NV	NV	1	NV	NV	NV	NV	NV	NV	54	NV	0.74	0.88	NV	6	NV	NV	NV	6	1	NV	NV	NV	3.4	3	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	6	18	6	NV	NV	NV	18
134	1.5	NV	NV	NV	NV	NV	3	NV	NV	6	140	NV	NV	6	NV	3	NV	45	NV	NV	NV	NV	NV	6	NV	NV	NV	45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	60	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	30	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	1.5	1.5	1.5	NV	NV
135	0.75	NV	NV	NV	NV	NV	NV	NV	NV	1.5	210	NV	0.99	9.8	NV	NV	NV	8.6	0.99	NV	NV	NV	6.5	0.75	NV	NV	NV	0.99	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	3.3	NV	NV	NV	NV	NV	NV	8.6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	0.75	NV	0.75	NV	0.75
136	13	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	1	NV	NV	NV	NV	NV	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	0.13	NV	NV	NV	NV
137	1.5	NV	NV	NV	NV	NV	NV	NV	NV	0.5	0.63	NV	NV	0.25	NV	NV	NV	15	12	NV	NV	NV	0.63	0.5	NV	NV	NV	2	NV	NV	NV	NV	NV	12	NV	0.25	NV	NV	NV	0.38	NV	NV	NV	NV	1.5	NV	18	NV	12	NV	NV	NV	NV	NV	NV	3.8	NV	NV	NV	NV	NV	2.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	11	NV	NV
138	20	NV	NV	NV	NV	NV	52	NV	NV	NV	100	NV	NV	NV	NV	13	NV	26	13	NV	NV	NV	20	13	13	NV	NV	0.88	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	72	NV	NV	NV	NV	130	NV	NV	NV	52	NV	NV	40	NV	NV	NV	20	NV	NV	NV	NV	NV	26	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	13	NV	NV	NV	NV
139	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	4.5	NV	4	NV	NV	NV	NV	0.99	1.5	6	NV	NV	1.5	NV	NV	NV	NV	NV	0.99	NV	0.99	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	4.5	NV	4.5	NV	0.99
140	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	0.13	NV	NV	NV	13	NV	NV	NV	NV	1.5	0.25	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	1.5	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
141	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	200	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5	NV	NV	NV	NV	2.5	NV	NV	NV	NV	NV	3	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	7.5	NV	NV	NV	NV	6.5	6.5	NV	NV	NV	NV
142	3	NV	NV	NV	0.5	NV	0.5	NV	NV	NV	3	NV	NV	1	NV	NV	NV	0.25	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV
143	230	NV	NV	NV	NV	NV	NV	NV	NV	NV	1200	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	90	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	270	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	26	4.3	360	NV	NV	NV
144	13	NV	6	NV	NV	NV	NV	NV	NV	2.3	83	NV	NV	18	NV	NV	NV	12	9	NV	NV	NV	9	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	2	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	0.75	NV	NV	NV	0.75	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	3	NV	14	NV	NV
145	NV	NV	NV	NV	NV	NV	0.06	NV	0.08	0.08	11	NV	NV	0.08	0.08	0.06	NV	4.3	4.3	NV	NV	NV	4.3	4.3	4.3	NV	NV	0.08	NV	4.3	4.3	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	4.3	NV	NV	NV	NV	4.3	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3	4.3	4.3	4.3	NV	4.3	NV	NV
146	3	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	2	NV	3	NV	NV
147	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	20	NV	NV	NV	13	NV	NV	NV	NV	13	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	13	NV	6.5	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
148	6.5	NV	6.5	NV	NV	NV	3	NV	NV	3	26	NV	NV	26	NV	NV	NV	26	6.5	NV	NV	NV	26	26	NV	NV	NV	1	NV	1.5	1.5	NV	NV	6.5	NV	NV	NV	6.5	NV	26	NV	NV	NV	NV	NV	NV	1.5	NV	26	26	NV	NV	NV	NV	NV	26	13	NV	NV	13	13	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	6.5	NV	NV

Table E.1 Consumption Rates for Each Country Food Item for Each Survey Participant

Surveyid	Bakeapples	Black Bear Meat	Capelin Meat	Capelin Pitsik	Caribou	Caribou Fish	Caribou Heart	Caribou Kidney	Caribou Liver	Caribou Marrow	Caribou Meat	Caribou Nikku	Caribou Organs(Brain or other)	Caribou Ribs	Caribou Stomach	Caribou Tongue	Char	Char Meat	Clams	Cod fish	Grass roots	Deer Meat	Duck Eggs	Duck/Turre/Teal/Pied birds/Shellbird	Eider Duck	Fish	Flatfish Meat	Goose	Itiks/Sea Urchins	Jumper/Dolphin Blubber	Jumper/Dolphin Meat	Labrador Tea	Loon	Mussels	Nikku	Okalik meat	Other Picked Berries	Other Sivak(Char/	Other Wild Plants	Partridge
	Cups																																							
149	2.3	NV	NV	NV	NV	NV	24	NV	24	NV	24	NV	24	24	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	26	NV	NV	24	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24
150	NV	NV	2	NV	9.9	NV	NV	NV	NV	9	90	NV	NV	68	NV	6	NV	6	NV	NV	NV	NV	2.3	4	NV	NV	NV	7.9	NV	NV	3	NV	NV	7.5	NV	16	NV	NV	NV	7.9
151	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
152	9	NV	NV	NV	NV	NV	NV	NV	NV	6	26	NV	NV	9	NV	NV	NV	15	26	NV	NV	NV	39	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	26	NV	NV	NV	NV	NV	NV
153	14	NV	4.5	NV	NV	NV	41	NV	NV	0.25	41	NV	NV	0.75	NV	27	NV	0.5	NV	NV	NV	NV	20	0.75	20	NV	NV	59	NV	3	3	NV	NV	4.5	NV	0.5	NV	3	NV	20
154	2.3	0.99	2.3	NV	NV	NV	NV	NV	NV	0.75	0.99	NV	NV	0.99	NV	0.75	NV	14	NV	NV	NV	NV	14	14	3	NV	NV	0.99	NV	NV	NV	NV	NV	0.75	NV	2.3	NV	NV	NV	0.75
155	1.5	NV	4.5	NV	NV	NV	27	NV	NV	9	0.5	NV	9	3	NV	6	NV	30	3	NV	NV	NV	NV	1.5	1.5	NV	NV	1.5	NV	NV	6	NV	NV	12	NV	NV	NV	NV	NV	3
156	7.1	NV	20	NV	NV	NV	NV	NV	0.25	0.41	13	NV	NV	0.25	NV	6.5	NV	1.3	NV	NV	NV	NV	0.74	0.75	0.13	NV	NV	NV	NV	NV	NV	NV	NV	0.5	NV	NV	NV	13	NV	NV
157	4.5	NV	1.5	NV	NV	NV	9	NV	NV	7.5	0.5	9	NV	9	NV	21	6.5	6.5	4.5	NV	NV	NV	6.5	15	15	NV	NV	7.5	NV	NV	1.5	NV	NV	4.5	NV	3	NV	7.5	NV	15
158	9	NV	3	NV	NV	NV	6	NV	NV	4.5	23	NV	NV	12	NV	6	NV	NV	NV	NV	NV	NV	1.5	6	NV	NV	NV	NV	NV	2	1.5	NV	NV	14	NV	NV	NV	NV	NV	36
159	NV	NV	3.5	NV	NV	NV	NV	NV	NV	1.5	9	NV	NV	2	NV	NV	NV	NV	11	NV	NV	NV	3.5	NV	0.75	NV	NV	NV	NV	NV	2	NV	NV	11	NV	0.75	9	NV	NV	3
160	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	9	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
161	23	NV	350	NV	NV	NV	NV	NV	NV	5.3	3	NV	9	1.5	NV	12	NV	1.5	4.5	NV	NV	NV	NV	180	180	NV	4.5	180	NV	NV	9	NV	NV	430	NV	18	NV	1.5	NV	140
162	16	NV	NV	NV	NV	NV	0.06	NV	NV	NV	9.8	NV	NV	3.3	NV	NV	NV	6.5	NV	NV	NV	NV	3.3	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.06	NV	NV	NV	NV	NV	3.3
163	3	NV	3	NV	NV	NV	NV	NV	NV	1.5	160	NV	NV	1.3	NV	NV	NV	30	NV	NV	NV	NV	9.8	NV	1.5	NV	NV	12	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	12
164	NV	NV	NV	NV	NV	NV	4.5	NV	NV	0.75	78	NV	NV	4.5	NV	NV	NV	41	18	NV	NV	NV	1.5	9	14	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV
165	NV	NV	NV	NV	NV	NV	9	NV	NV	NV	78	NV	NV	4.5	NV	NV	NV	41	18	NV	NV	NV	1.5	14	14	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV
166	65	NV	1.5	NV	NV	NV	NV	NV	NV	NV	0.17	NV	NV	0.17	0.17	NV	NV	39	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	36
167	13	NV	NV	NV	NV	NV	39	NV	NV	NV	180	NV	NV	20	NV	13	NV	39	6.5	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	59
168	59	NV	20	NV	NV	NV	59	NV	NV	NV	20	NV	NV	78	NV	20	NV	20	52	NV	NV	NV	13	13	13	NV	NV	20	20	26	20	13	NV	78	NV	NV	NV	NV	NV	20
169	16	NV	12	NV	NV	NV	NV	NV	NV	54	78	NV	NV	41	NV	12	NV	30	78	NV	NV	NV	NV	36	36	NV	NV	NV	NV	NV	NV	0.75	NV	90	NV	NV	NV	3	NV	48
170	14	NV	NV	NV	NV	NV	1.5	NV	NV	NV	52	NV	NV	6.5	NV	1.5	NV	26	0.06	NV	NV	NV	4.3	13	NV	NV	NV	6.5	NV	NV	NV	0.75	NV	0.08	NV	NV	NV	NV	NV	13
171	23	NV	NV	NV	NV	NV	36	NV	NV	27	180	NV	NV	NV	NV	12	NV	45	NV	NV	NV	NV	23	36	4.5	NV	NV	72	NV	NV	NV	NV	14	4.5	NV	NV	NV	NV	NV	90
172	NV	NV	NV	NV	NV	NV	6.5	NV	NV	1.5	6.5	NV	NV	6	NV	3.3	NV	NV	NV	NV	NV	NV	3	1.5	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV
173	0.99	NV	0.99	NV	NV	NV	0.08	NV	NV	NV	26	NV	NV	NV	NV	0.08	NV	0.99	4.3	NV	NV	NV	0.99	0.99	NV	NV	NV	0.99	4.3	0.99	0.99	NV	NV	4.3	NV	NV	NV	NV	NV	0.99
174	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	3	NV	4.5	NV	3	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
175	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
176	48	NV	6	NV	NV	NV	27	NV	NV	24	59	NV	0.75	24	0.99	4	NV	36	NV	NV	NV	NV	4.5	24	18	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	30
177	3	NV	NV	NV	NV	NV	15	NV	NV	26	33	NV	NV	26	NV	7.5	NV	7.5	5	NV	NV	NV	15	NV	7.5	NV	NV	33	NV	7.5	7.5	NV	NV	5	NV	7.5	NV	NV	NV	7.5
178	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	9	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5
179	NV	NV	NV	NV	NV	NV	0.38	NV	NV	0.13	20	NV	NV	39	3	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.38	NV	23	23	NV	NV	NV	NV	9	NV	NV	NV	59
180	11	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	6	6	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	12
181	20	NV	NV	NV	NV	NV	NV	NV	NV	NV	59	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	24	NV	NV	NV	NV
182	15	NV	NV	NV	NV	NV	NV	NV	NV	11	27	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	5.5	NV	NV	3	NV	0.99	NV	NV	NV	12
183	NV	NV	0.75	NV	NV	NV	18	3	18	3	0.99	NV	NV	3	NV	18	NV	0.13	0.75	NV	NV	NV	0.99	0.25	0.25	NV	NV	0.75	NV	NV	NV	NV	0.75	0.75	NV	0.99	NV	NV	NV	0.75
184	3	NV	1.5	NV	NV	NV	NV	NV	NV	30	140	NV	NV	20	NV	11	NV	18	NV	NV	NV	NV	4.5	24	NV	NV	NV	11	NV	NV	NV	NV	NV	1.5	NV	NV	NV	1.5	NV	72
185	0.41	NV	NV	NV	NV	NV	NV	NV	NV	NV	3.5	NV	NV	1.7	NV	NV	NV	1.6	0.13	NV	NV	NV	0.38	NV	NV	NV	NV	0.29	NV	NV	NV	NV	NV	0.25	NV	1	NV	NV	NV	0.56
186	NV	NV	3	NV	NV	NV	0.13	NV	NV	NV	13	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	0.25	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
187	2.3	NV	0.75	NV	NV	NV	NV	NV	NV	1.5	13	NV	NV	1.5	NV	NV	NV	6	0.75	NV	NV	NV	9.8	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV
188	4	NV	NV	NV	NV	NV	2	NV	NV	5	85	NV	NV	52	7.5	3	NV	26	NV	NV	NV	NV	46	39	15	NV	NV	6.5	NV	NV	11	NV	NV	11	NV	20	11	7.5	NV	30
189	35	NV	3	NV	NV	NV	NV	NV	NV	30	78	NV	NV	45	NV	NV	NV	140	12	NV	NV	NV	6.5	90	30	NV	NV	30	NV	30	30	NV	NV	12	NV	NV	NV	60	NV	30
190	4.3	NV	NV	NV	NV	NV	26	NV	NV	0.66	65	NV	NV	1	NV	1	NV	0.33	NV	NV	NV	NV	6.5	8.6	0.17	NV	NV	0.13	NV	NV	0.25	NV	NV	7.9	NV	0.08	NV	NV	NV	NV
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192	NV	NV	4.5	NV	NV	NV	9.8	NV	NV	NV	0.5	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	0.08
193	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	45	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5	NV	NV	NV	NV	NV	NV
194	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	3	NV	NV	NV	3
195	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	98	NV	NV	78	NV	NV	NV	2.3	NV	NV	NV	NV	0.75	NV	NV	NV	NV	0.99	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99
196	NV	NV	NV	NV	NV	NV	46	NV	NV	98	190	NV	NV	65	NV	46	NV	15	9	NV	NV	NV	20	NV	13	NV	18	26	NV	NV	3	NV	NV	6	NV	NV	NV	NV	NV	52
197	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	78	NV	NV	39	NV	NV	NV	4.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	20	NV	NV	NV	3.3	NV	NV	NV	NV	NV	NV	NV	NV
198	18	NV	7.5	NV	6	NV	33	NV	NV	13	59	NV	NV	33	NV	33	NV	36	4.5	NV	NV	NV	1.5	3	4.5	NV	NV	1.5	NV	NV	7.5	NV	NV	9	NV	9	NV	20	NV	14

Surveyid	Pigeon/Guillemot	Pigeon/Guillemot Eggs	Pitsik	Polar Bear Meat	Porcupine Meat	Porpoise Liver	Porpoise Meat	Rhubarb	Rock Cod	Rock Cod Liver	Rock Cod Pitsik	Salmon Meat	Scallop	Sculpin Liver	Sculpin Meat	Seagull Eggs	Seal Blubber	Seal Fat	Seal flipper	Seal Kidney	Seal Liver	Seal Meat	Sivak(Rock cod liver)	Snowbird/Whitcap/Plumbers	Spawns	Tern	Tern Eggs	Trout	Trout Pitsik	Trout/Caribou	tullegunnak	Ukaujak	Whale Blubber	Whale Meat	Wild BlackBerries	Wild Blueberries	Wild Raspberries	Wild Red Berries	Wild Turnip	Wrinkles
	Cups																																							
149	NV	NV	NV	NV	30	NV	NV	NV	2.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	NV	NV
150	6	NV	NV	NV	NV	NV	3	NV	18	16	NV	NV	NV	NV	NV	2.3	NV	NV	NV	NV	16	15	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	5
151	NV	NV	NV	NV	NV	NV	NV	NV	8.9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV
152	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	39	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	9	NV	6	NV	6
153	NV	NV	NV	NV	0.5	NV	3	NV	6	NV	NV	0.5	NV	NV	NV	20	6	NV	NV	NV	0.5	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV
154	2	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	14	NV	NV	NV	NV	0.75	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	NV	NV	2.3	NV	NV
155	NV	NV	NV	NV	NV	NV	6	NV	12	NV	NV	12	NV	NV	NV	20	NV	NV	NV	NV	6	9	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	1.5	1.5	NV	3	NV	12
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157	NV	NV	NV	NV	1.5	NV	3	NV	0.38	27	NV	6.5	NV	NV	NV	13	27	NV	NV	9	27	9	4.5	NV	NV	NV	6.5	NV	NV	NV	NV	NV	NV	NV	3	3	NV	9	NV	3
158	NV	NV	NV	NV	NV	NV	3	NV	9	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	3	6	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	NV	9	NV	NV
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160	NV	NV	NV	NV	NV	NV	NV	NV	0.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
161	14	6.5	NV	NV	9	NV	9	NV	0.25	NV	NV	54	6	NV	NV	NV	6	NV	NV	NV	NV	9	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	9	24	18	0.99	59	NV	NV
162	NV	NV	NV	NV	NV	NV	NV	NV	6.5	6.5	NV	NV	NV	NV	NV	3.3	NV	NV	NV	0.06	0.06	0.06	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	16	16	NV	6.5	NV	NV
163	NV	NV	NV	NV	NV	NV	NV	NV	48	NV	NV	12	NV	NV	NV	9.8	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	110	NV	12
164	NV	NV	NV	NV	NV	NV	4.5	NV	6	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6
165	NV	NV	NV	NV	NV	NV	4.5	NV	9	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6
166	4.5	NV	NV	NV	NV	NV	3	NV	26	NV	NV	13	NV	NV	NV	0.99	52	NV	NV	NV	NV	33	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	26	NV	NV	NV	6.5
167	NV	NV	NV	NV	20	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	26	NV	NV	NV	NV	20	78	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3.3	NV	1.5	NV	NV
168	NV	13	NV	NV	NV	NV	NV	NV	100	NV	NV	13	NV	NV	NV	13	52	NV	NV	NV	NV	78	78	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	78	59	NV	39	NV	NV
169	24	4	NV	NV	NV	NV	36	NV	60	6	NV	NV	36	NV	NV	0.99	NV	NV	NV	NV	NV	6	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	12	12	6	12	NV	36
170	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1	NV	NV	NV	4.3	NV	NV	NV	NV	NV	0.08	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	NV	NV	NV	5.9
171	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	360	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
172	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
173	NV	NV	NV	NV	NV	NV	0.99	NV	5.9	0.99	NV	0.99	NV	NV	NV	0.99	0.99	NV	NV	0.08	0.08	0.08	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.99	0.99	0.99	0.99	NV	0.99	NV	0.99
174	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	36	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
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176	NV	1.5	NV	NV	12	NV	1.5	NV	NV	NV	NV	9	NV	NV	NV	4.5	NV	NV	NV	3	3	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	NV
177	51	NV	NV	NV	NV	NV	7.5	NV	7.5	NV	NV	3.8	NV	NV	NV	15	3.8	NV	NV	NV	7.5	7.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	7.5	NV	3	3	NV	3	NV	5
178	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5
179	NV	NV	NV	NV	9	NV	18	NV	NV	NV	NV	23	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	4.5	NV	NV	14	NV	NV	14	NV	NV
180	NV	NV	NV	NV	6	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
181	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6.5	NV	NV	NV	NV	NV	36	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	20	20	NV	NV	NV	NV
182	NV	NV	NV	NV	NV	NV	NV	NV	12	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
183	0.25	NV	NV	NV	NV	NV	NV	NV	1.5	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.08	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	2.3	NV	NV
184	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	23	NV	NV	NV	NV	NV	6	NV	NV	NV	NV	1.5	NV	NV	NV	NV	NV	0.99	0.99	NV	3	NV	NV	NV	1.5
185	NV	NV	NV	NV	NV	NV	0.25	NV	1.6	NV	NV	0.33	NV	NV	NV	0.56	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.13	NV	NV	NV	0.25	NV	0.17	0.31	NV	1.3
186	NV	NV	NV	NV	NV	NV	NV	NV	39	39	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
187	NV	NV	NV	NV	NV	NV	NV	NV	2.3	NV	NV	3	NV	NV	NV	9.8	NV	NV	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	1.5	1.5	NV	1.5	NV	NV
188	6.5	NV	NV	NV	20	NV	43	NV	52	NV	NV	7.5	NV	85	100	17	9.8	9.8	NV	NV	32	50	8.6	NV	NV	NV	17	NV	NV	NV	6.5	6.5	7.5	26	2	2	NV	8.6	NV	11
189	NV	NV	NV	NV	NV	NV	3	NV	NV	NV	NV	180	NV	NV	NV	NV	NV	NV	NV	NV	NV	140	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	90	60	70	48	12	13	NV	NV
190	NV	NV	NV	NV	0.08	NV	0.38	NV	NV	NV	NV	2	NV	NV	NV	6.5	0.08	NV	NV	NV	0.08	6.5	0.33	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.08	NV	NV	NV	NV	NV	NV
191	110	27	NV	NV	110	NV	72	NV	NV	NV	NV	36	NV	NV	NV	27	NV	NV	NV	NV	110	110	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	6	NV	NV	NV	23
192	NV	NV	NV	NV	NV	NV	14	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
193	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	45	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	0.75	NV	NV
194	NV	NV	NV	NV	NV	NV	NV	NV	18	NV	NV	NV	NV	NV	NV	2	NV	NV	NV	NV	NV	0.99	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
195	NV	NV	NV	NV	NV	NV	0.75	NV	12	12	NV	6	NV	NV	NV	0.75	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	4.5	4.5	NV	4.5	NV	NV
196	NV	NV	NV	NV	NV	NV	3	NV	48	NV	NV	30	NV	NV	NV	20	NV	NV	NV	NV	3	18	1.5	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	31	13	NV	53	NV	15
197	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	13	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV	NV
198	9	NV	NV	NV	NV	NV	7.5	NV	14	1.5	NV	12	NV	NV	1.5	1.5	3	NV	NV	18	14	14	26	NV	NV	NV	NV	52	NV	NV	NV	NV	NV	NV	4.5	4.5	NV	59	NV	6

APPENDIX F

Conceptual Site Model

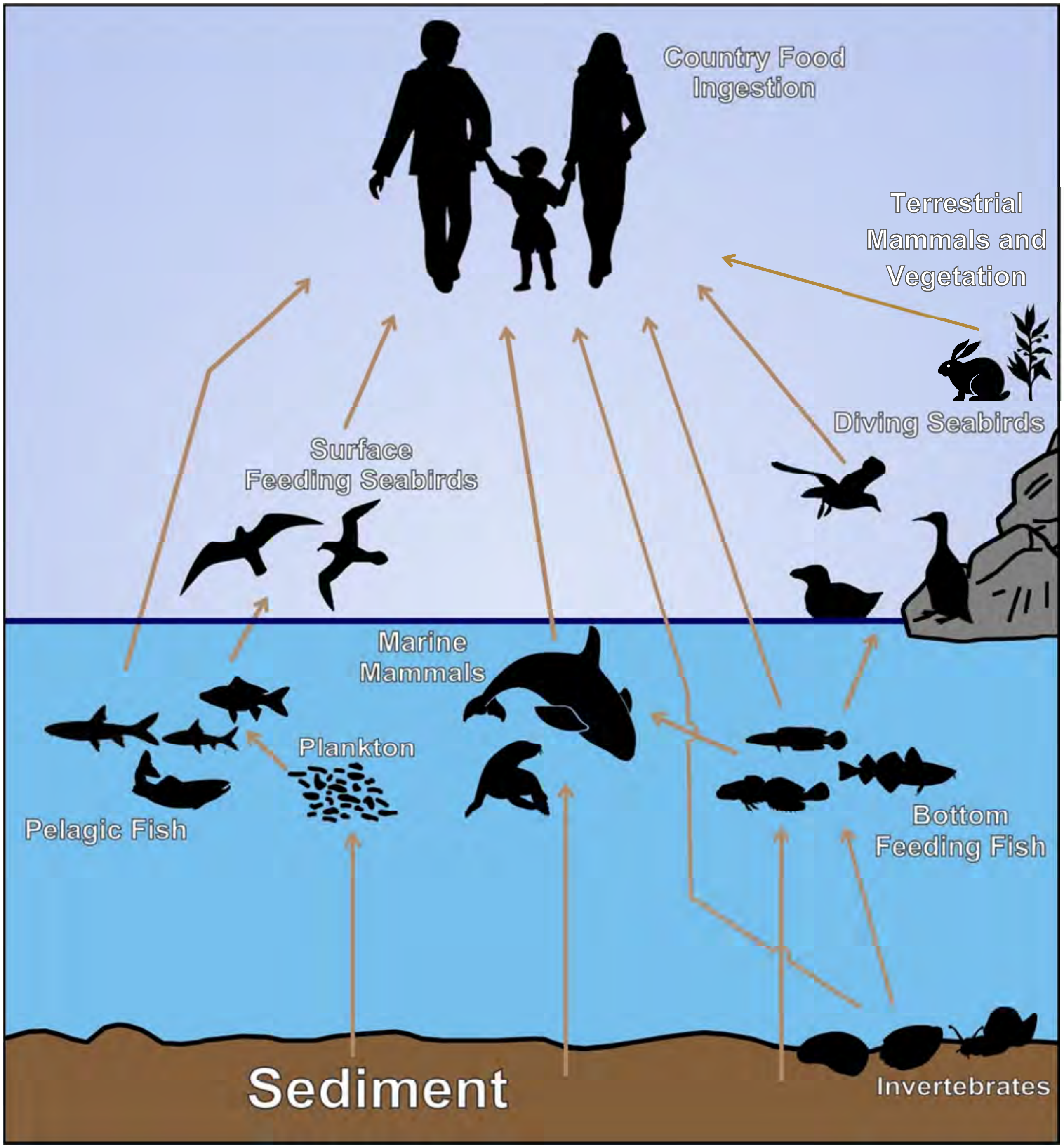

Figure F-1. Conceptual Site Model

APPENDIX G

Sample Calculation – Country Food Consumption Rates

Hazard Quotient Sample Calculation

The initial step was to extract the food item, frequency of consumption and quantity of each food item the respondents stated they ate from the food survey conducted by the Environmental Sciences Group (ESG) based out of the Royal Military College of Canada. The food survey provided the number of cups each respondent ate for each food item in a weekly, monthly or yearly time period in either an "In Season" or "Off Season" time frame. From the information provided, the following time assumptions were made to normalize to a yearly consumption rate for each respondent:

Table 1: Assumed Time Periods

	Unit	In Season	Off Season
Weekly	Weeks	13	39
Monthly	Months	3	9
Yearly	Years	0.25	0.75

For this worked example, the calculations for "Respondent #1" will be used (as noted in the report, all personal information was removed from the dataset before Stantec received the food survey). It should be noted that each individual $HQ_{Food\ i}$ was calculated in a similar manner, therefore, the detailed calculation provided here was for the food item "Char Meat" only.

From the data provided in the food survey, there were two different meal types provided: Snacks and Meals. The total quantity of the food item ingested per year was calculated by summing the snack and meal groups for the same food item. For example:

Snack

Respondent #1 stated that they snack on char meat 10 times per month and consuming on average about 0.33 cups each time. Therefore, the total cups per year of char meat Respondent #1 consumes in snacks is 9.9 cups (Cups/year = 10 times/month * 0.33 cups *3 months/year).

Meal

A similar calculation was conducted for the meal group. Respondent #1 stated that they eat char meat 10 times per month and consuming on average about 0.5 cups during each meal where char meat was consumed. Therefore, the total cups per year of char meat Respondent #1 consumes in meals is 15 cups (Cups/year = 10 times/month * 0.5 cups *3 months/year).

Using the data provided above, the total number of cups of char meat Respondent #1 consumed each year was 24.90 cups (Total cups consumed = 9.9 cups + 15 cups)

It should be noted that Respondent #1 did not state that they ate char meat during the Off Season; however, if it was stated that Respondent #1 ate char meat during the Off Season, similar calculations to those noted above for In Season would be conducted for both the Snack and Meal groupings. Then the Off Season quantity would have been added to the total cups of char meat consumed each year.

From the total cups consumed by Respondent #1, the total number of grams could then be calculated using a few assumptions:

1. The “dry to wet” ratio for chat meat was assumed to be 1 as the char was assumed to be eaten wet. This assumption is more important when calculating the number of grams from food items which are dried.

2. For char, there are 150 g in a cup. See Table below for conversion factors for other food items, as provided by ESG.

Table 2: Conversion Factors (g/cup) for Each Food Item

Food type	Conversion	Weight (g/cup)	Standard on which conversion is based	Reference
Terrestrial large game				
Caribou head	1/2 cup = 75 g	150	Canada’s Food Guide/ CNF for traditional meats and wild game	HC 2010a,b
Caribou heart				
Caribou kidney				
Caribou liver				
Caribou marrow				
Caribou organs (brain or other)				
Caribou ribs				
Caribou stomach				
Caribou tongue				
Caribou muscle	1 cup = 139 g	139	Density of caribou = 0.558 g/cm^3	Aqua-calc 2012
Black bear muscle				
Polar bear muscle				
Duck/bird eggs				
Tern eggs	1 egg = 70 g 1 cup = 243 g	243	Duck egg: whole, fresh, raw/egg: yolk, fresh, raw	Online Conversion 2012
Seagull eggs				
Pigeon/guillemot eggs				
Duck eggs				
Ducks and birds				
Duck/turre/teal/pied birds/shellbird	1 cup = 148 g	148	Density of domesticated duck, cooked, meat and skin on = 0.592 g/cm^3; pheasant has same density	Aqua-calc 2012
Eider duck				
Goose				
Pigeon/guillemot				
Sandpiper				
Snowbird/whitecap/ plumber				
Small game				
Okalik muscle	3 oz = 80 g 8 oz per cup	213	Game meat: rabbit, wild, cooked	USDA 2012
Porcupine muscle				
Partridge	1 cup = 148 g	148	Density of	Aqua-calc 2012

Food type	Conversion	Weight (g/cup)	Standard on which conversion is based	Reference
			domesticated duck, cooked, meat and skin on = 0.592 g/cm^3; pheasant has same density	
Sea mammals				
Jumper/dolphin muscle	1/2 cup = 75 g	150	Canada's Food Guide/ CNF for traditional meats and wild game	HC 2010
Whale muscle				
Seal muscle				
Seal liver				
Seal kidney				
Jumper/dolphin blubber	1 cup = 205 g	205	Density of fat, animal meat = 0.866 g/cm^3	Online Conversion 2012
Whale blubber				
Seal blubber				
Fish				
Char	1/2 cup = 75 g	150	Canada's Food Guide/ CNF for fish and shellfish	HC 2010
Rock cod				
Salmon				
Speckled trout				
Rock cod liver				
Sivak (rock cod liver)				
Other sivak (char)				
Smelt				
Capelin				
Shellfish/sea invertebrates				
Clam	1 cup = 135 g	135	Density of shrimp, multiple species, canned = 0.541 g/cm^3	Aqua-calc 2012
Mussel				
Wrinkle				
Starfish				
Scallop				
Itik/sea urchin				
Plants and berries				
Labrador tea	1 cup = 127 g	127	Rosehip	USDA 2012
Other wild plants				
Seaweed	1/8 cup = 10 g	80	Seaweed, kelp, raw	USDA 2012
Wild raspberries	1 cup = 123 g	123	Density of raspberries, wild = 0.549 g/cm^3	Online Conversion 2012
Wild blackBerries				
Bakeapples				
Wild blueberries	1 cup = 148 g	148	Density of blueberries, raw = 0.626 g/cm^3	Online Conversion 2012
Bilberries	1 cup = 112 g	112	Currants, red and white, raw	USDA 2012
Wild red berries				
Other edible berries	1 cup = 148 g	148	Highest berry weight	

Using these assumptions, the total number of grams Respondent #1 ate of char meat in a year was 3735 g (total grams = 24.90 cups * 1 * 150 g/cup).

Once the total number of grams of each food item consumed by Respondent #1 was determined, the ingestion rate ($IR_{Food\ i}$) was calculated. This information was used to determine the individual Hazard Quotient (HQ) for each food item. Staying with the same food item, the $IR_{food\ i}$ was calculated from the total grams consumed throughout the year and dividing that by 365 days per year. Therefore, the $IR_{Char\ meat}$ was calculated to be 0.0102 kg/day or 10.2 g/day ($IR_{char\ meat}$ = 3735 g/year / 365 days/year).

The HQ was determined for each respondent and food item by using the following equation:

$$Hazard\ Quotient_{Food\ i} = \frac{EPC_{Food\ i} \times AF_{Oral} \times IR_{Food\ i} \times ET_{Food\ i}}{TDI \times BW}$$

Where:

$EPC_{Food\ i}$ = Concentration of PCBs in the food item (mg/kg)
AF_{Oral} = Relative Absorption Factor (assumed to be 1) for the gastrointestinal tract (unitless)
$IR_{Food\ i}$ = Receptor ingestion rate for food *i* (kg/day)
$ET_{Food\ i}$ = Exposure time (assumed to be 100%)
TDI = Tolerable Daily Intake (mg/kg bw/d) (0.00013 mg/kg bw/d from Health Canada 2010a)
BW = Body Weight (70.7 kg; age specific from Health Canada 2012)

Before the HQ for Respondent #1 could be calculated for char meat, the $EPC_{char\ meat}$ was calculated. Instead of modeling the concentration of PCBs in each food item, a food collection study was conducted by ESG and measured data was used to determine EPCs for both Hopedale Harbour and surrounding areas. Using measured data from Hopedale harbor, the $EPC_{char\ meat}$ for char caught in Hopedale harbor was determined to be 0.3 mg/kg. Therefore, for Respondent #1, the HQ for char meat collected in Hopedale Harbour was calculated to be 0.3 using the following equation:

$$Hazard\ Quotient_{Char\ Meat} = \frac{0.3\ mg/kg \times 1 \times 0.0102\ kg/day \times 1}{0.00013\, mg/kg\, bw/day \times 70.7\ kg}$$

$$Hazard\ Quotient_{Char\ Meat} = 0.3$$

Using the process noted above for each food item listed by Respondent #1, HQs (for Hopedale Harbour) for each food item was determined to be:

Table 3: Hazard Quotients for Each Food Item (Respondent #1)

Food Item	**Hazard Quotient (unitless)**
HQ (Bakeapples)	0.0998
HQ (Char meat)	0.334
HQ (Clams)	0.0399

HQ (Duck/Turre/Teal/Pied birds/Shellbird)	0.191
HQ (Goose)	0.00134
HQ (Mussels)	0.0554
HQ (Partridge)	0.00397
HQ (Salmon Meat)	0.000256
HQ (Wild Blueberries)	0.00662

The information on hazard quotients per food item was used for information purposes to identify food items that contribute most significantly to exposure, and therefore, those foods that might best be the subject of short term avoidance as shown in Table 3.6 of the report.

To determine a hazard quotient for Respondent #1 for all food items, the intake was calculated for char and each other food item as shown in the following calculation:

$$Intake_{Food\ i} = \frac{EPC_{Food\ i} \times AF_{Oral} \times IR_{Food\ i} \times ET_{Food\ i}}{BW}$$

Each term has been defined previously.

Therefore, the intake for char meat, for example, was calculated as follows:

$$Intake_{Char\ Meat} = \frac{0.3\ mg/kg \times 1 \times 0.0102\ kg/day \times 1}{70.7\ kg}$$

The intake for char meat was calculated as 4.3E-05 mg kg^{-1} body weight day^{-1}. The intakes for each food item for Respondent#1 were summed to find the total intake.

Table 4: Intakes for Each Food Item (Respondent #1)

Food Item	Intake (mg kg^{-1} body weight day^{-1})
Intake (Bakeapples)	1.3E-05
Intake (Char meat)	4.3E-05
Intake (Clams)	5.2E-06
Intake(Duck/Turre/Teal/Pied birds/Shellbird)	2.5E-05
Intake (Goose)	1.7E-07
Intake (Mussels)	7.2E-06
Intake (Partridge)	5.2E-07
Intake (Salmon Meat)	3.3E-08
Intake (Wild Blueberries)	8.6E-07

Total Intake	9.5E-05

The total intake for Respondent #1 is 9.5E-05 mg kg^{-1} body weight day^{-1}.

The hazard quotient for Respondent#1 is then calculated as follows:

$$Hazard\ Quotient_{Respondent\#1} = \frac{\sum Intake \quad _{Respondent\#1}}{TDI}$$

Where: TDI =Tolerable Daily Intake for PCBs (Health Canada, 2010a) = 0.00013 mg kg^{-1} body weight day^{-1}

The hazard quotient for Respondent#1 is calculated as follows:

$$Hazard\ Quotient_{Respondent\#1} = \frac{9.5E-05\ kg}{0.00013\, mg/kg\ bw/day}$$

$$Hazard\ Quotient_{Total\ for\ Respondent\ \#1} = 0.73$$

The HQ_{Total} for Respondent #1 eating food items from Hopedale Harbour was calculated to be 0.73.

The HQ_{Total} was calculated for each respondent in the survey and the hazard quotients were used for calculations presented in Table 3.7 of the report.