PIONEER
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Transmitted via Electronic Mail

July 14, 2023

Ms. Tena Seeds
Washington State Department of Ecology
Toxics Cleanup Program
15700 Dayton Ave N., Shoreline, WA 98133

RE: **Quarterly Progress Report: April 1 through June 30, 2023**
Time Oil Bulk Terminal Site, Cleanup Site ID #14604
Prospective Purchaser Consent Decree No. 20-2-15215-3 SEA

Dear Ms. Seeds:

Pioneer Engineering & Environmental Services, LLC on behalf of TOC Seattle Terminal 1, LLC submits the attached Quarterly Progress Report for the Time Oil Bulk Terminal Site per Section XII of the Prospective Purchaser Consent Decree between the Washington State Department of Ecology and TOC Seattle Terminal 1, LLC. The quarterly progress report consists of a brief narrative summary of notable activities that occurred during the reporting period and that are anticipated for the upcoming reporting period.

If you have any questions about this report, please contact me at 773-435-3725.

Sincerely,

Kim Hempel
Project Coordinator
Pioneer Engineering & Environmental Services, LLC

Distribution List:
Doug Ciserella and Mike Ciserella, TOC Seattle Terminal 1, LLC
Bill Joyce, Hillis Clark Martin & Peterson P.S.
Jamie Stevens, CRETE Consulting
Kristin Anderson, Floyd|Snider

TIME OIL BULK TERMINAL SITE
PROSPECTIVE PURCHASER CONSENT DECREE NO. 20-2-15215-3 SEA
QUARTERLY PROGRESS REPORT: APRIL 1 THROUGH JUNE 30, 2023

This report has been prepared in accordance with the requirements of the Time Oil Bulk Terminal Site Prospective Purchaser Consent Decree (PPCD) between the Washington State Department of Ecology (Ecology) and TOC Seattle Terminal 1, LLC. This progress report provides details on the following: 1) all on site activities; 2) any deviations from required tasks; 3) anticipated problems in meeting schedule or objectives and associated solutions 4) sampling, testing, or other data received; 5) work planned for the upcoming 3-month period; and, 6) deliverables planned for the upcoming 3-month period.

Summary of On-Site Activities Performed During the Reporting Period (PPCD Section XII.A)

Activities completed during this reporting period included:

- A visual check of the site was conducted on April 7, 2023 and June 28-29, 2023. The geotextile fabric was re-secured in three small areas of the interim surface associated with the ISS Swell Management Area on April 7, 2023. All other completed interim surfaces remain in good condition and no other concerns were noted during the site visits.
- Floyd|Snider (F|S) personnel collected the second round of post-remediation groundwater samples per the approved Groundwater Monitoring Plan (GMP) on April 7, 2023.
- F|S personnel collected the third round of post-remediation groundwater samples per the approved GMP on June 28 and 29, 2023, and added groundwater collection at contingency well 01MW107 based on elevated indicator hazardous substances (IHSs) at 01MW53 and/or 01MW85 in first and second quarters of 2023.
- Holocene, in coordination with F|S, abandoned the following four monitoring wells on June 28, 2023: 01MW17, 01MW99, 01MW105, and 01MW110.

Deliverables

Deliverables during this reporting period included the following:

- Groundwater sampling results for the first quarter of 2023 and associated contour maps were submitted to Ecology on April 5, 2023.
- The Quarterly Progress Report for the first quarter of 2023 was submitted to Ecology on April 7, 2023.
- Revised Financial Assurance documentation was submitted to Ecology for review on March 31, 2023, which was subsequently approved by Ecology in a letter dated April 19, 2023.
- Groundwater sampling results for the second quarter of 2023 and associated contour maps were submitted to Ecology on May 19, 2023.
- Monitoring well abandonment request for wells 01MW17, 01MW99, 01MW105, and 01MW110 was submitted to Ecology on May 19, 2023, and was subsequently approved by Ecology on May 23, 2023.
- Crete Consulting Inc. (Crete) submitted a Notification of Construction Activities for 2707 West Commodore Way (i.e., Lot F) to Ecology on June 8, 2023, and Ecology provided minor comments on June 21, 2023. Ecology's comments were addressed and approved on June 21, 2023.
- Crete submitted a bioretention swale design for Lot F to Ecology for review on June 20, 2023, and Ecology subsequently approved the design that same day.
- Proof of Financial Assurance documentation was provided to Ecology on June 23, 2023.

Deviations from Required Tasks (PPCD Section XII.B)

- None.

Anticipated Problems in Meeting Schedule or Objectives and Associated Solutions (PPCD Section XII.C and XII.D)

- There are no anticipated problems in meeting the schedule of deliverables specified in Exhibit D of the PPCD. The schedule of deliverables and activities specified in Table 8.1 of the Cleanup Action Plan (Exhibit C of the PPCD) are currently on track or ahead of schedule.

Raw Data Received (PPCD Section XII.E)

- Groundwater sampling results for the 2nd Quarter 2023 were received from Friedman & Bruya, Inc. on April 17, 2023. Results were received in one sample delivery group (F&BI 304125). A copy of the laboratory report for F&BI 304125 is provided as an attachment to this Progress Report.

Work Planned During the Upcoming Reporting Period (PPCD Section XII.F)

The following work is planned for the 3rd Quarter 2023:

- Construction on Lot F is anticipated to begin in mid-late July; and
- Site checks will be conducted periodically to ensure that conditions remain stable during the interim period prior to site development.

Deliverables Planned During the Upcoming Reporting Period (PPCD Section XII.G)

The following deliverables are anticipated to be completed during the next quarterly reporting period of July through September 2023:

- Transmittal of a summary of 3rd Quarter 2023 groundwater sampling results and associated groundwater contour maps to Ecology via email; and
- Submittal of the Quarterly Progress Report for the 2nd Quarter 2023.

Other Pertinent Information, Including Changes in Key Personnel

- None.

Attachments

- Attachment 1 – Laboratory Analytical Reports

END QUARTERLY PROGRESS REPORT

ATTACHMENT 1

Laboratory Analytical Reports

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Vineta Mills, M.S.
Eric Young, B.S.

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Seattle, WA 98108
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 17, 2023

Kristin Anderson, Project Manager
Floyd-Snider
Two Union Square
601 Union St, Suite 600
Seattle, WA 98101

Dear Ms Anderson:

Included are the results from the testing of material submitted on April 10, 2023 from the Cantera TOC, F&BI 304125 project. There are 26 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Pamela Osterhout
FDS0417R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on April 10, 2023 by Friedman & Bruya, Inc. from the Floyd-Snider Cantera TOC, F&BI 304125 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
304125 -01	01MW46-040723
304125 -02	01MW53-040723
304125 -03	01MW85-040723
304125 -04	01MW19R-040723
304125 -05	01MW35-040723
304125 -06	01MW-51-040723
304125 -07	01MW-84-040723
304125 -08	01MW87-040723
304125 -09	02MW04R-040723
304125 -10	02MW07-040723
304125 -11	02MW19-040723
304125 -12	02MW19-040723-D
304125 -13	Trip Blank

All quality control requirements were acceptable.

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125
Date Extracted: 04/10/23
Date Analyzed: 04/11/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
01MW19R-040723 304125-04	1,100	109
01MW35-040723 304125-05	<100	107
01MW-51-040723 304125-06	<100	104
01MW-84-040723 304125-07 1/10	5,500	110
01MW87-040723 304125-08	<100	102
02MW04R-040723 304125-09	<100	103
02MW07-040723 304125-10	<100	104
02MW19-040723 304125-11	<100	103
02MW19-040723-D 304125-12	<100	105
Method Blank 03-768 MB	<100	103

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125
Date Extracted: 04/11/23
Date Analyzed: 04/11/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
01MW19R-040723 304125-04	700 x	<250	118
01MW35-040723 304125-05	120 x	<250	122
01MW-51-040723 304125-06	<50	<250	119
01MW-84-040723 304125-07	1,500 x	<250	118
01MW87-040723 304125-08	<50	<250	122
02MW04R-040723 304125-09	<50	<250	114
02MW07-040723 304125-10	<50	<250	130
02MW19-040723 304125-11	76 x	<250	122
02MW19-040723-D 304125-12	84 x	<250	123
Method Blank 03-893 MB	<50	<250	121

Analysis For Total Metals By EPA Method 6020B

Client ID:	02MW07-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/10/23	Lab ID:	304125-10
Date Analyzed:	04/10/23	Data File:	304125-10.173
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	02MW19-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/10/23	Lab ID:	304125-11
Date Analyzed:	04/10/23	Data File:	304125-11.174
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.65

Analysis For Total Metals By EPA Method 6020B

Client ID:	02MW19-040723-D	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/10/23	Lab ID:	304125-12
Date Analyzed:	04/10/23	Data File:	304125-12.175
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	4.83

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/10/23	Lab ID:	I3-274 mb
Date Analyzed:	04/10/23	Data File:	I3-274 mb.037
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW46-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-01 1/10
Date Analyzed:	04/11/23	Data File:	041115.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	118	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	9.3
cis-1,2-Dichloroethene	110
Trichloroethene	140
Benzene	<3.5

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW53-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-02
Date Analyzed:	04/11/23	Data File:	041114.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	0.36
cis-1,2-Dichloroethene	3.2
Trichloroethene	2.1

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW85-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-03 1/10
Date Analyzed:	04/11/23	Data File:	041116.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	119	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	17
cis-1,2-Dichloroethene	1,200
Trichloroethene	6.2

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW19R-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-04
Date Analyzed:	04/11/23	Data File:	041117.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	107	68	139
4-Bromofluorobenzene	105	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	4.4

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW35-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-05
Date Analyzed:	04/11/23	Data File:	041118.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW-51-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-06
Date Analyzed:	04/11/23	Data File:	041119.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	71	132
Toluene-d8	91	68	139
4-Bromofluorobenzene	108	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW-84-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-07
Date Analyzed:	04/11/23	Data File:	041120.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	71	132
Toluene-d8	104	68	139
4-Bromofluorobenzene	107	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	01MW87-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-08
Date Analyzed:	04/11/23	Data File:	041121.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	90	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW04R-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-09
Date Analyzed:	04/11/23	Data File:	041122.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	71	132
Toluene-d8	92	68	139
4-Bromofluorobenzene	109	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW07-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-10
Date Analyzed:	04/11/23	Data File:	041123.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	107	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW19-040723	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-11
Date Analyzed:	04/11/23	Data File:	041138.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	71	132
Toluene-d8	93	68	139
4-Bromofluorobenzene	101	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	02MW19-040723-D	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-12
Date Analyzed:	04/11/23	Data File:	041139.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	81	71	132
Toluene-d8	115	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Trip Blank	Client:	Floyd-Snider
Date Received:	04/10/23	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	304125-13
Date Analyzed:	04/11/23	Data File:	041111.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	71	132
Toluene-d8	95	68	139
4-Bromofluorobenzene	103	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.5
Benzene	<0.35

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	Cantera TOC, F&BI 304125
Date Extracted:	04/11/23	Lab ID:	03-0723 mb
Date Analyzed:	04/11/23	Data File:	041109.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	98	68	139
4-Bromofluorobenzene	104	62	136

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	<0.02
cis-1,2-Dichloroethene	<1
Trichloroethene	<0.5
Benzene	<0.35

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 304097-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	100	70-130

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	120	70-130	7

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 304113-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	77.8	34 b	24 b	75-125	34 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Arsenic	ug/L (ppb)	10	98	80-120

Date of Report: 04/17/23
Date Received: 04/10/23
Project: Cantera TOC, F&BI 304125

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 304125-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Vinyl chloride	ug/L (ppb)	10	0.73	100	16-176
cis-1,2-Dichloroethene	ug/L (ppb)	10	3.9	96 b	50-150
Benzene	ug/L (ppb)	10	4.4	94 b	50-150
Trichloroethene	ug/L (ppb)	10	<0.5	99	43-133

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Vinyl chloride	ug/L (ppb)	10	101	99	70-130	2
cis-1,2-Dichloroethene	ug/L (ppb)	10	107	108	70-130	1
Benzene	ug/L (ppb)	10	101	102	70-130	1
Trichloroethene	ug/L (ppb)	10	103	104	70-130	1

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria, biased high; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the standard reporting limit. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

k – The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

304125

SAMPLE CHAIN OF CUSTODY

04/10/23

J2/C2/VW4

Page # 1 of 2

Report To Kristin Anderson & Pamela Ostermont

Company Floyd Snider

Address 601 Union St, Suite 600

City, State, ZIP Seattle, WA 98101

Phone 206-292-2078 Email

SAMPLERS (*signature*)

PROJECT NAME: Cantera TOC

PO #

REMARKS: * CVOC list by 8260 includes TCE, cis-1,2-DCE and vinyl chloride

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Benzene 8260	CVOCs *	Total Arsenic 6020B		Notes
01MW46-040723	01 A-E	4/7/23	15:05	GW	6								✓	✓			(AP) Rec 5 samples at lab
01MW53-040723	02 A-F	"	1130	"	6									✓			
01MW85-040723	03 ↓	"	12:50	"	6									✓			
01MW19R-040723	04 A-G	"	12:05	"	7	✓	✓						✓				
01MW35-040723	05	"	14:10	"	7	✓	✓						✓				
01MW51-040723	06	"	09:45	"	7	✓	✓						✓				Samples received at 2
01MW84-040723	07	"	13:20	"	7	✓	✓						✓				
01MW87-040723	08	"	10:50	"	7	✓	✓						✓				
02MW04R-040723	09 ↓	"	16:35	"	7	✓	✓						✓				
02MW07-040723	10 A-H	"	17:25	"	7	✓	✓						✓		✓		(AP) Rec 8 samples at lab

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	COREIRO	FLOYD SNIDER	4/10/23	0850
Received by:	Nhan Phan	FEBI	4/10/23	0852
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

304125

SAMPLE CHAIN OF CUSTODY

04/10/23 J2/C2/VW4

Page # 2 of 2

Report To Kristin / Pamela
Company Floyd Snider
Address
City, State, ZIP see page 1
Phone Email

SAMPLERS (*signature*)
PROJECT NAME: Cantera TOC
PO #
REMARKS: cVOCs = TCE, cis-1,2-DCE, vinyl chloride by 8260D
Project specific RLs? - Yes / No
INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

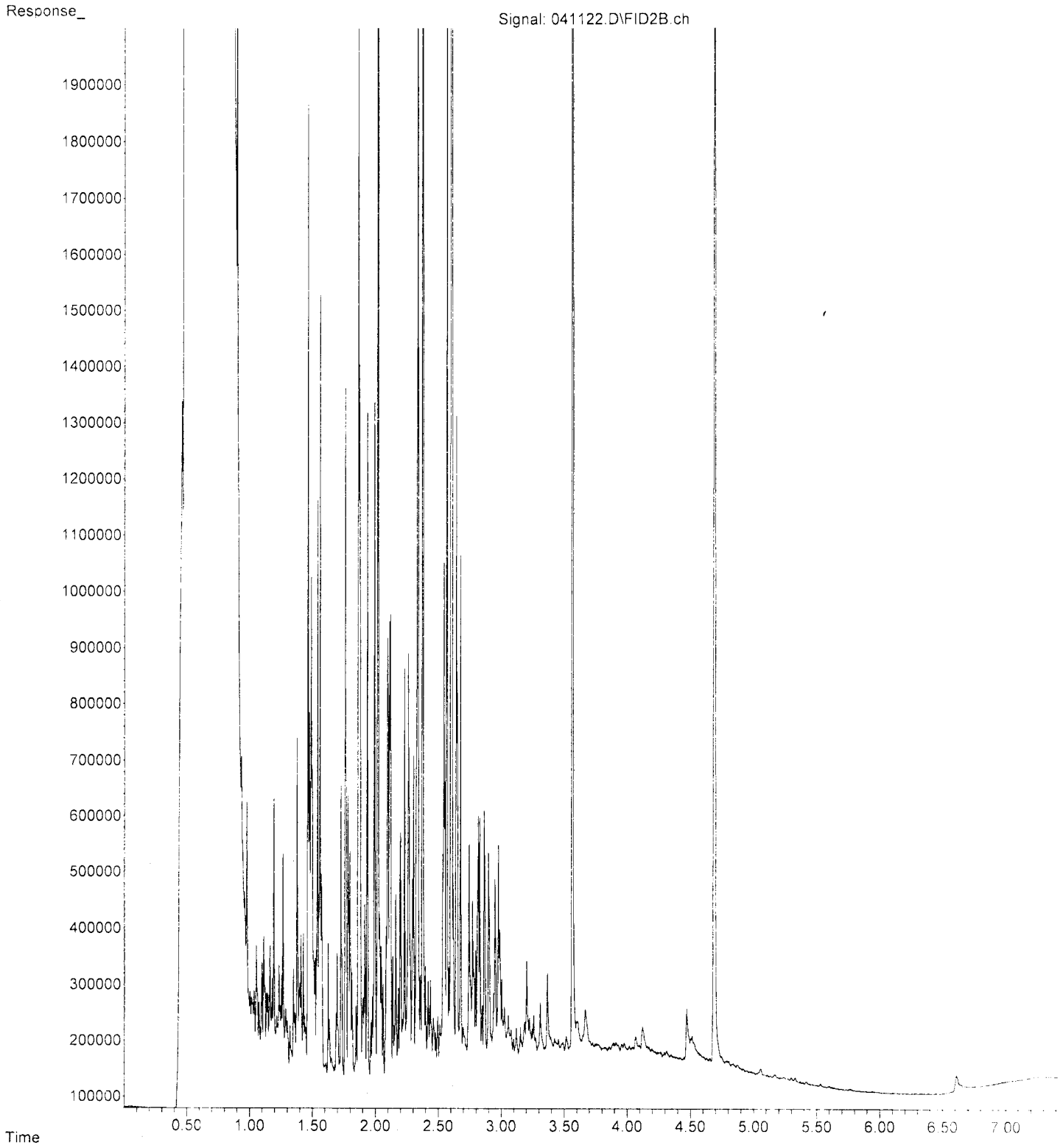
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Benzene by 8260D	cVOCs #	Total arsenic 6020B		Notes
02MW19-040723	11 A-H	4/7/23	1055	GW	8	✓	✓						✓		✓		
02MW19-040723-D	12 ↓	4/7/23	17:00	GW	8	✓	✓						✓		✓		
TRIP BLANK	13 A-B	4/7/23	09:30	QC	2								✓	✓			

Samples received at 2 °C

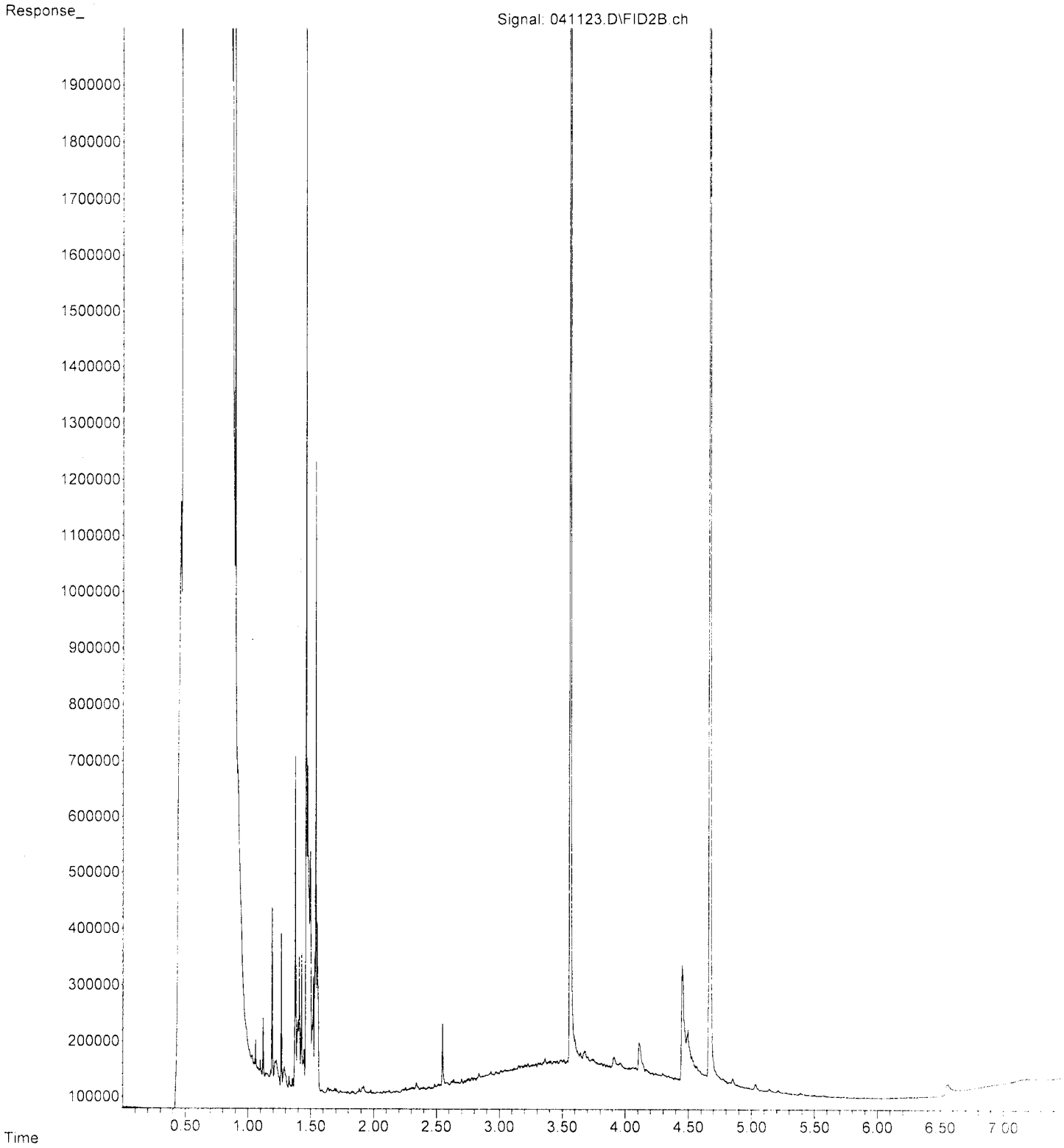
SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	C. OREIRO	FLOYD SNIDER	4/10/23	0850
Received by:	Nhan Phan	F&BT	4/10/23	0850
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
Ph. (206) 285-8282

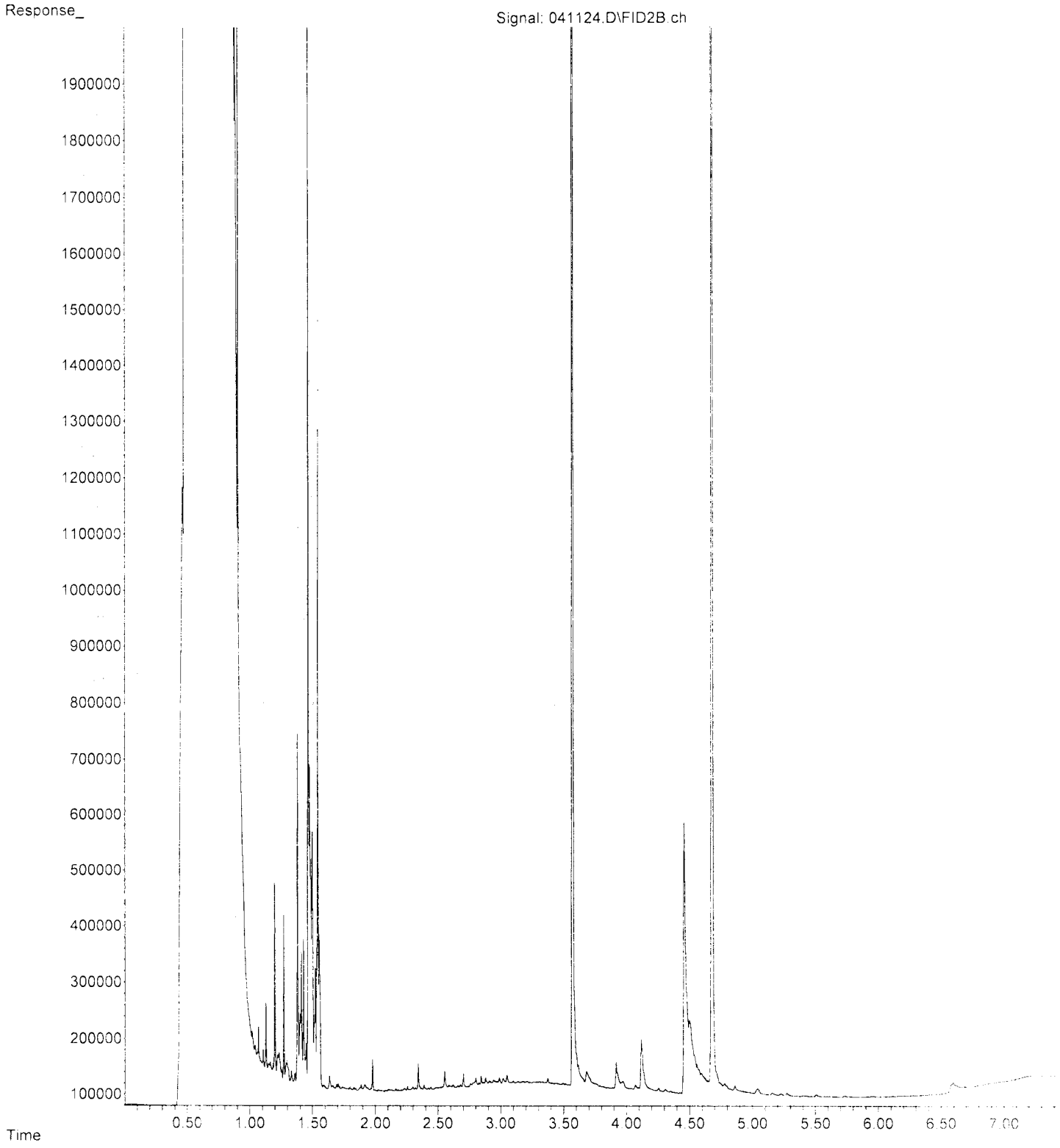
File :P:\Proc_GC10\04-11-23\041122.D
Operator : TL
Acquired : 11 Apr 2023 01:05 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-04
Misc Info :
Vial Number: 20



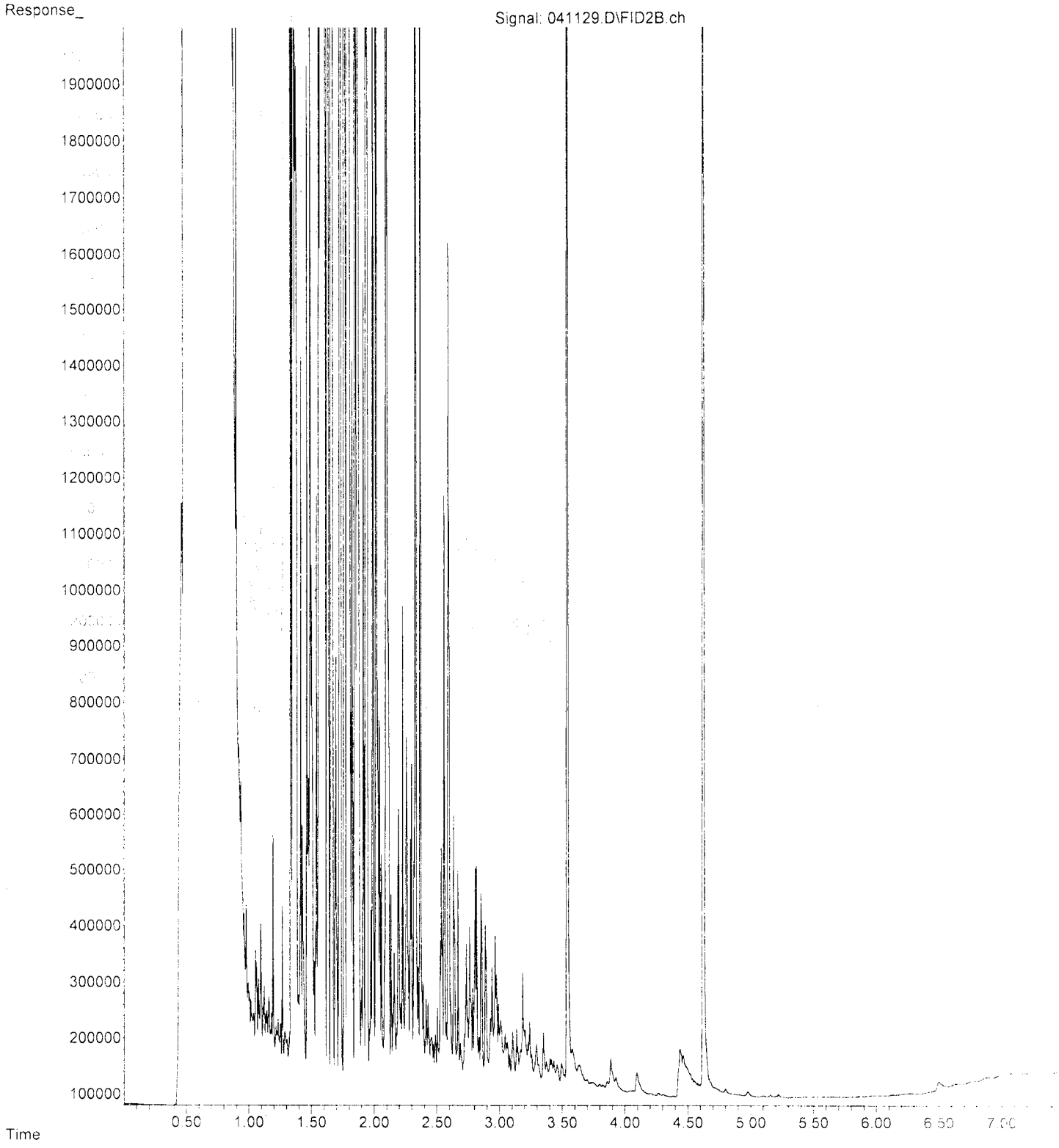
File :P:\Proc_GC10\04-11-23\041123.D
Operator : TL
Acquired : 11 Apr 2023 01:17 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-05
Misc Info :
Vial Number: 21



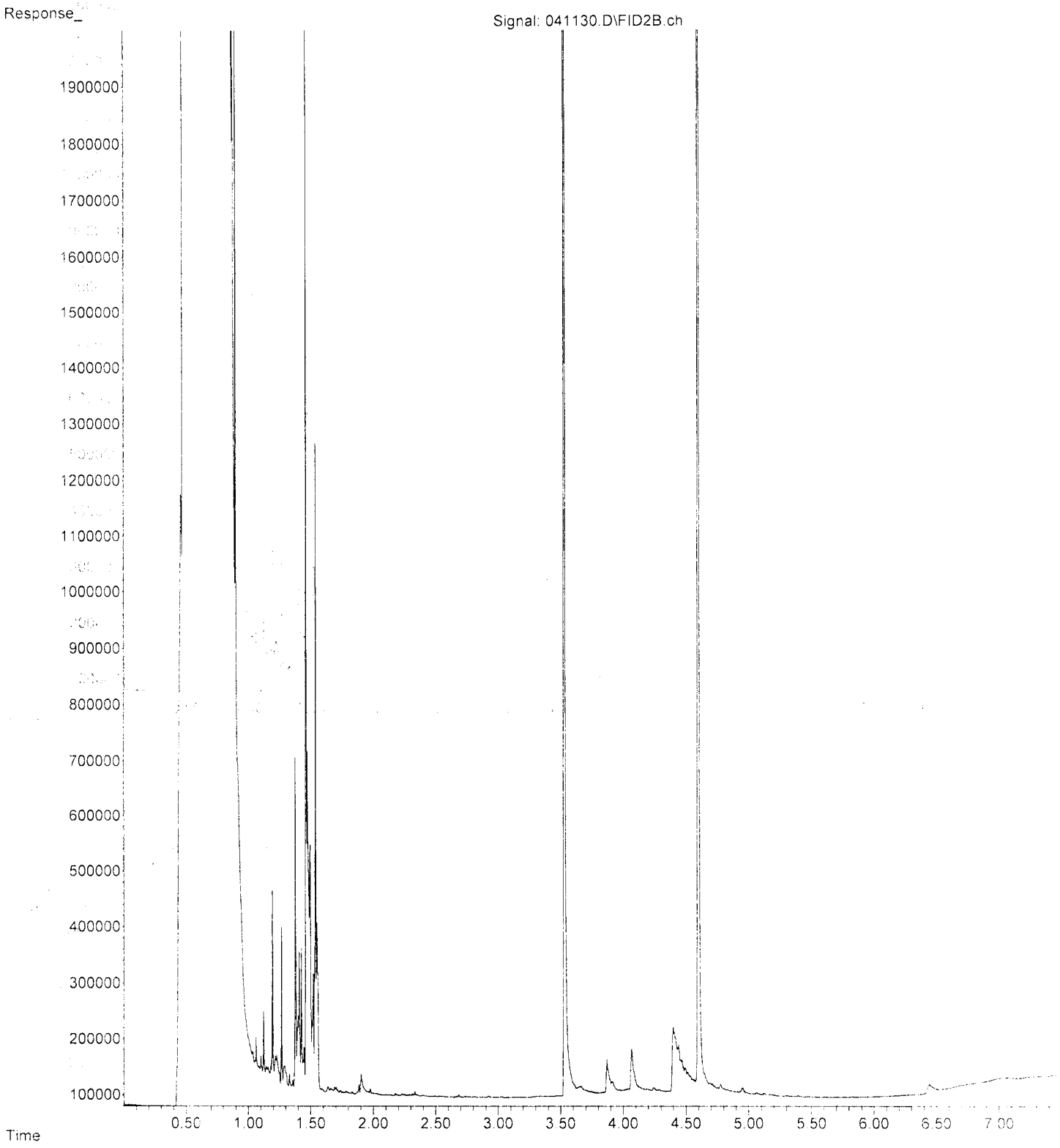
File :P:\Proc_GC10\04-11-23\041124.D
Operator : TL
Acquired : 11 Apr 2023 01:28 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-06
Misc Info :
Vial Number: 22



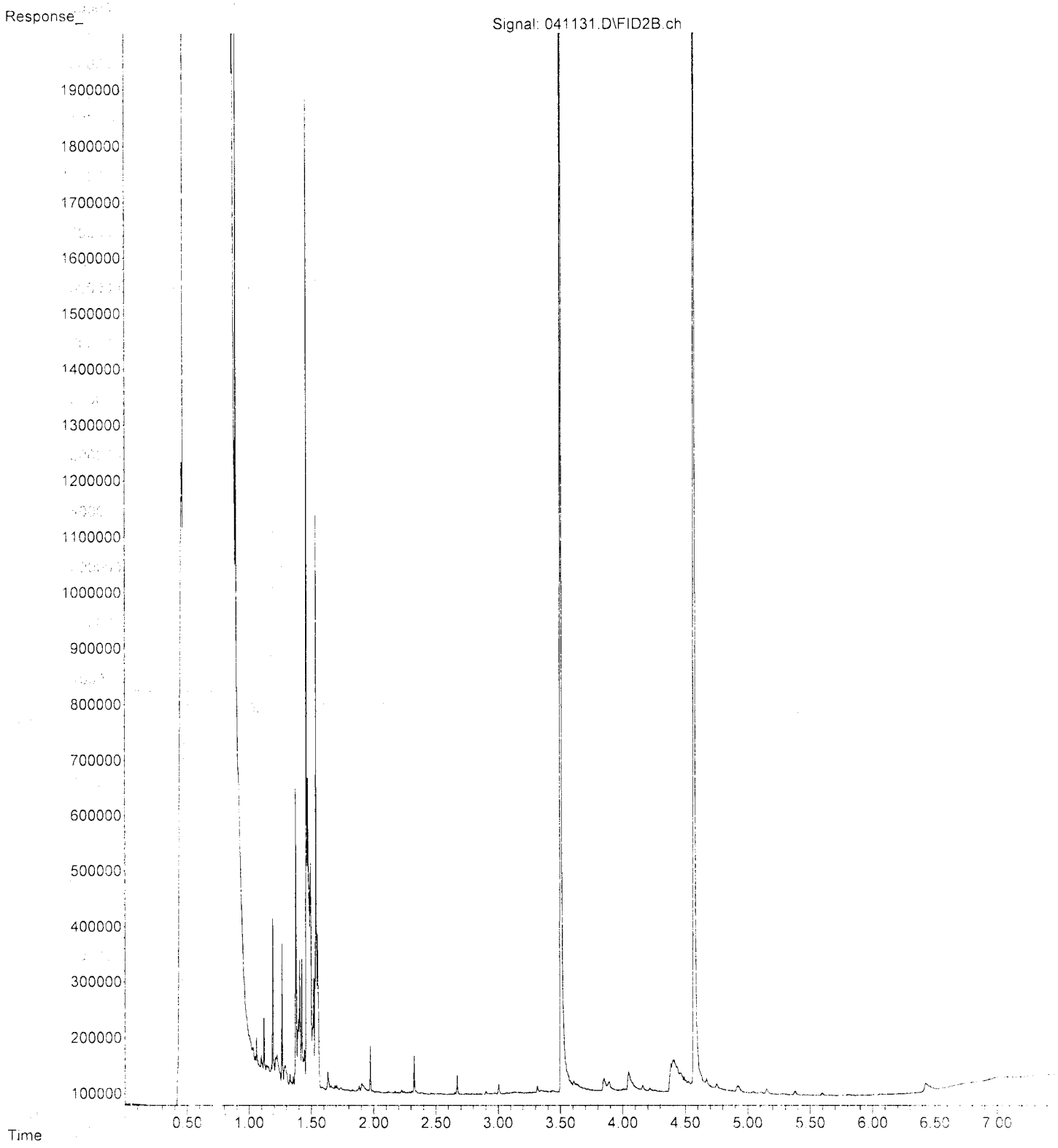
File :P:\Proc_GC10\04-11-23\041129.D
Operator : TL
Acquired : 11 Apr 2023 02:26 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-07
Misc Info :
Vial Number: 23



File :P:\Proc_GC10\04-11-23\041130.D
Operator : TL
Acquired : 11 Apr 2023 02:37 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-08
Misc Info :
Vial Number: 24

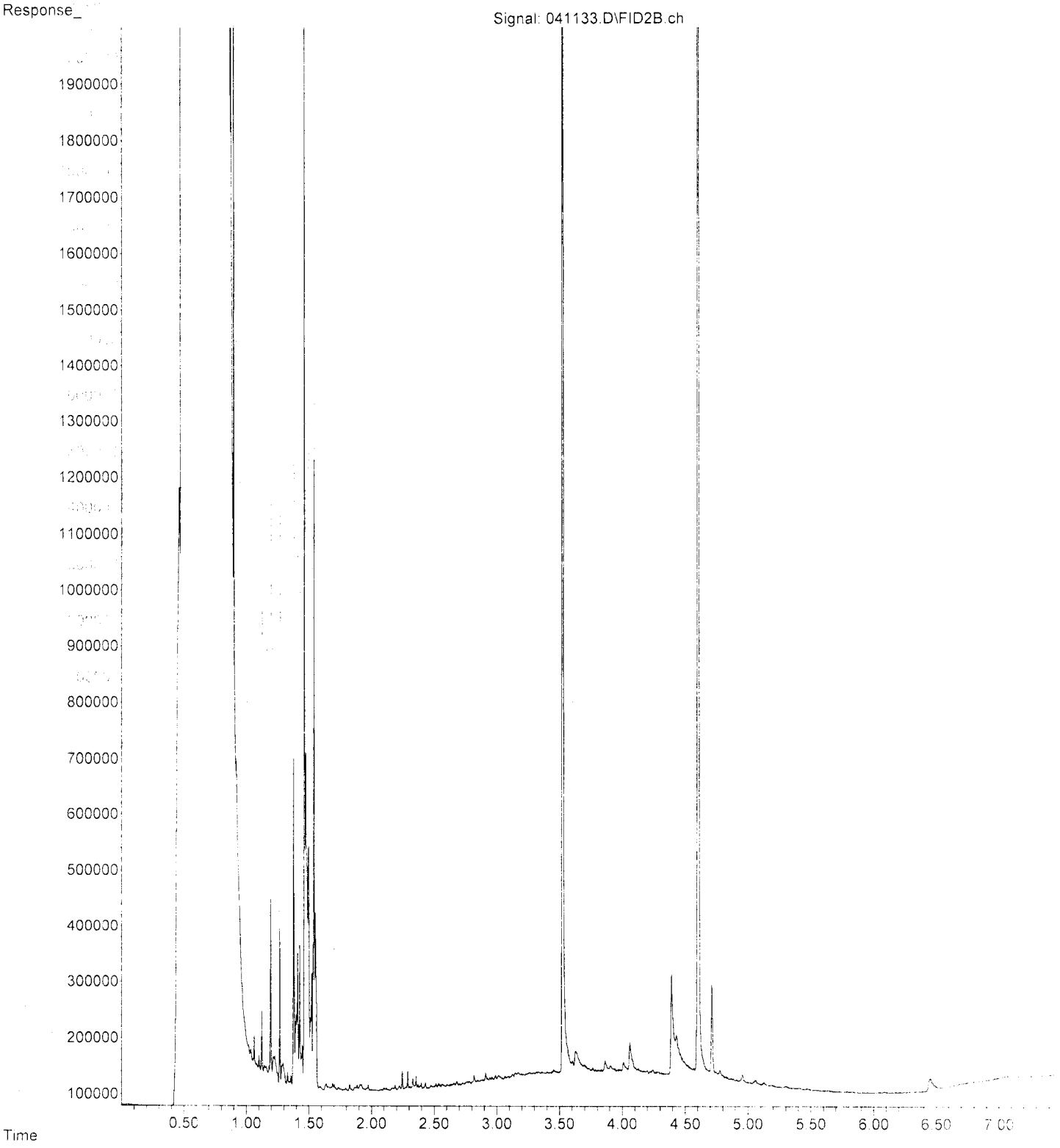


File : P:\Proc_GC10\04-11-23\041131.D
Operator : TL
Acquired : 11 Apr 2023 02:49 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-09
Misc Info :
Vial Number: 25

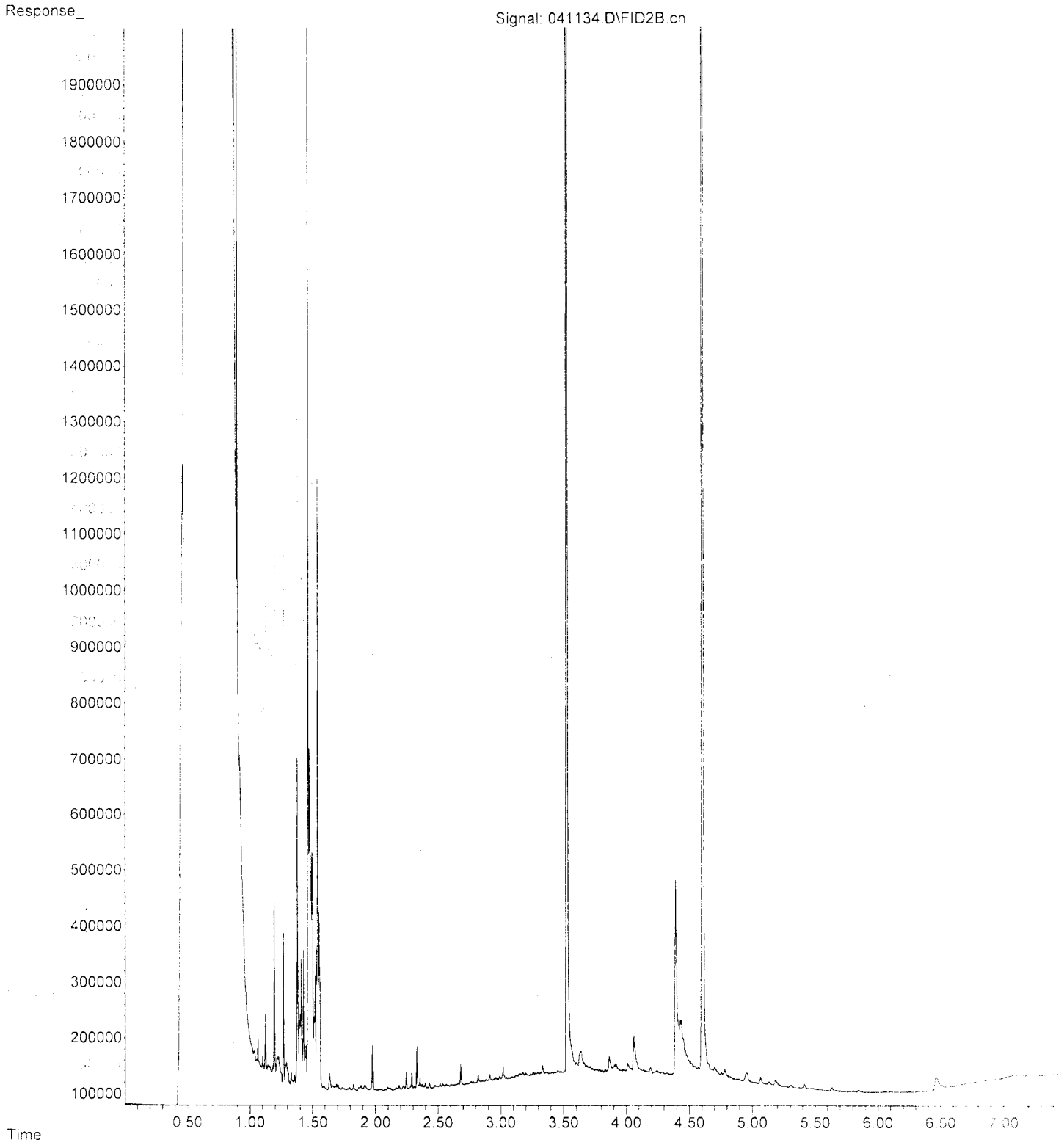


File :P:\Proc_GC10\04-11-23\041132.D
Operator : TL
Acquired : 11 Apr 2023 03:00 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-10
Misc Info :
Vial Number: 26

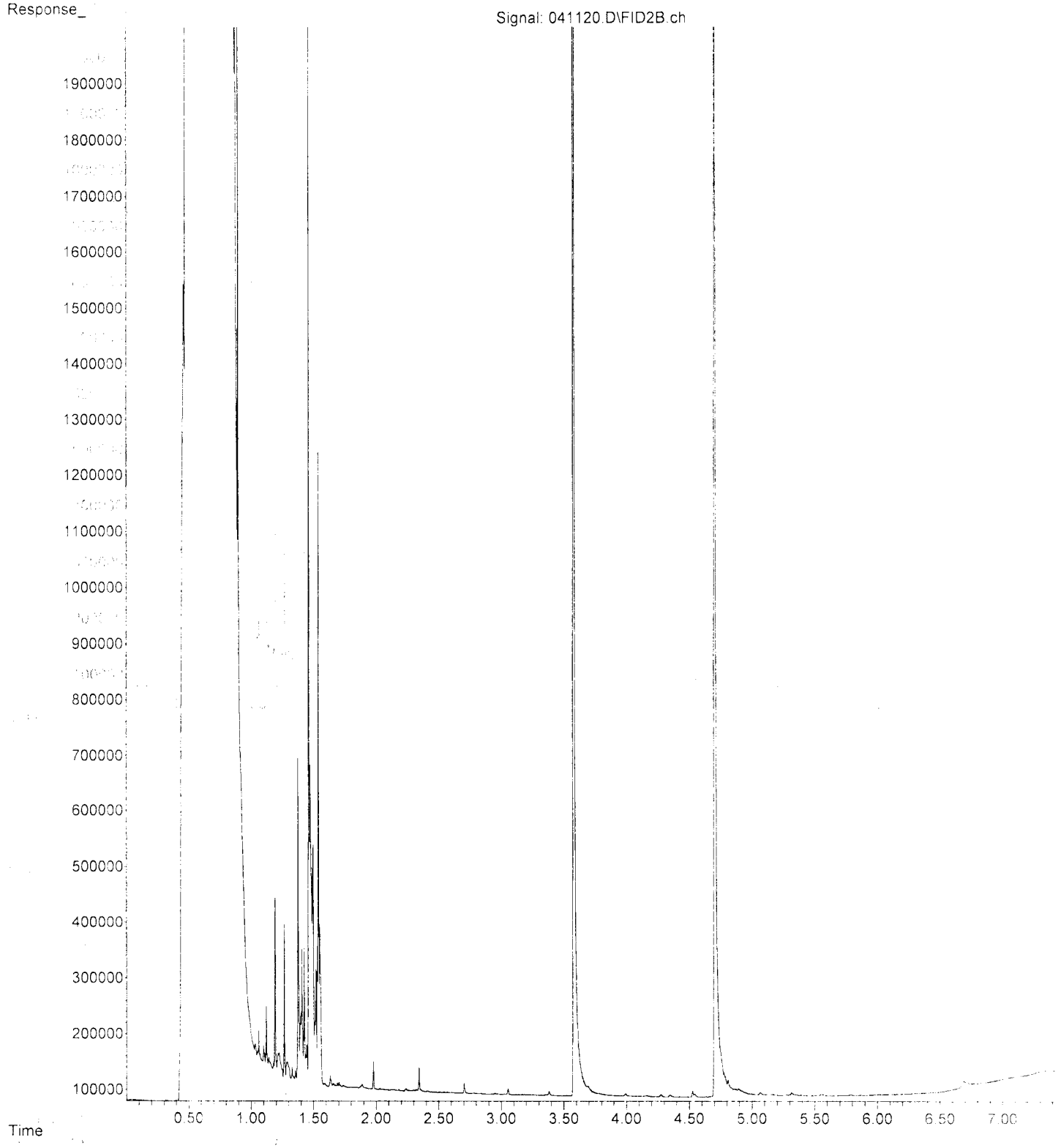
File : P:\Proc_GC10\04-11-23\041133.D
Operator : TL
Acquired : 11 Apr 2023 03:12 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-11
Misc Info :
Vial Number: 27



File : P:\Proc_GC10\04-11-23\041134.D
Operator : TL
Acquired : 11 Apr 2023 03:23 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 304125-12
Misc Info :
Vial Number: 28



File : P:\Proc_GC10\04-11-23\041120.D
Operator : TL
Acquired : 11 Apr 2023 12:42 pm using AcqMethod DX.M
Instrument : GC10
Sample Name: 03-893 mb
Misc Info :
Vial Number: 18



File :P:\Proc_GC10\04-11-23\041103.D
Operator : TL
Acquired : 11 Apr 2023 08:02 am using AcqMethod DX.M
Instrument : GC10
Sample Name: 500 DX 68-66F
Misc Info :
Vial Number: 3