Site: ST. LOUIS (EX) AA
ID #: M0421002222
Break: 3.1
Other:
07YX 10/30/03 LV

6400 GLENWOOD STREET, SUITE 212, OVERLAND PARK, KS 66202

TECHLAW INC.

PHONE: (913) 236-0006
FAX: (913) 236-0013

October 30, 2003

DCN: RR7-TLI-07YX-01-TP-0961

Mr. Thomas Lorenz
U.S. Environmental Protection Agency
Region 7
Superfund Division
Federal Facilities and Special Emphasis Branch
901 North 5th Street
Kansas City, Kansas 66101

RECEIVED
OCT 31 2003
SUPERFUND DIVISION

Re: EPA Contract No. 68-W-01-051; EPA Work Assignment No. 07-YX
TechLaw Project No. RR7-K07; St. Louis (ex) Army Ammunition Plant
Site Visit Trip Report/Sampling and Analysis Report - September 9, 2003

Dear Mr. Lorenz:

Enclosed is the Site Visit Trip Report/Sampling and Analysis Report for the St. Louis (ex) Army Ammunition Plant site. This report documents the field activities performed by TechLaw Senior Geologist, Steve Bryant, on September 9, 2003.

If you have any questions regarding this submittal, please contact me at (913) 236-0006, extension 104 or Steve Bryant at extension 108.

Sincerely,

**TechLaw, Inc.**

Fred Molloy

Fred Molloy
Senior Project Manager

Enclosure

copy: P. Brown-Derocher/Central Files
Document Control

40163925
SUPERFUND RECORDS

DCN: RR7-TLI-07YX-01-TP-0961

# SITE VISIT TRIP REPORT/SAMPLING AND ANALYSIS REPORT
# SEPTEMBER 9, 2003
# ST. LOUIS (EX) ARMY AMMUNITION PLANT
# ST. LOUIS, MISSOURI

Submitted to:

U.S. Environmental Protection Agency
Region 7
Superfund Division
Federal Facilities and Special Emphasis Branch
901 North 5th Street
Kansas City, Kansas 66101

| | |
|---|---|
| Work Assignment No.: | 07-YX |
| Contract No.: | 68-W-01-051 |
| Date Prepared: | October 30, 2003 |
| Prepared By: | TechLaw, Inc.<br>Steve Bryant<br>(913) 236-0006<br>extension 108 |
| TechLaw Project No.: | RR7-K07 |
| EPA Primary Contact: | Thomas Lorenz |
| Telephone No.: | (913) 551-7292 |

RECEIVED
OCT 31 2003
SUPERFUND DIVISION

## 1.0 Introduction

Under the Region 7 Regional Oversight Contract (ROC), Contract No. 68-W-01-051, TechLaw, Inc., (TechLaw) was tasked with providing technical assistance to the EPA Region 7, Superfund Division, Federal Facilities and Special Emphasis Branch. TechLaw was issued Work Assignment Number 07-YX to provide technical oversight support to EPA at the St. Louis (ex) Army Ammunition Plant (SLAAP) site in St. Louis, Missouri.

The report that follows documents TechLaw's site visit to SLAAP on September 9, 2003. Copies of the field logbook notes are included in Attachment 1. Field activities conducted by TechLaw included oversight and the collection of split transite samples. In addition, field activities were conducted by the U.S. Army Corps of Engineers (USACE) contractors, and numerous photographs were taken by TechLaw documenting their efforts. Copies of the site photographs are included in Attachment 2.

## 2.0 Site Visit Activities

The objectives of the site visit were to conduct oversight and collect split transite samples during the Building 2 Siding and Structural Steel Screening Study activities conducted by USACE's contractor, URS Group, Inc., (URS). During oversight TechLaw documented adherence to and deviations from EPA-approved work plans through photographs and logbook entries as summarized below.

### 2.1 Building 2 Siding and Structural Steel Screening Study Oversight and Split Sampling

On September 9, 2003, TechLaw Senior Geologist, Steve Bryant, accompanied the EPA Work Assignment Manager (WAM), Thomas Lorenz, on a site visit of the SLAAP site.

TechLaw observed the Building 2 Siding and Structural Steel Screening Study sampling activities, including transite bulk sampling and wipe sampling. URS personnel on-site included Bob Skach, Matt Phoenix, Mike Mason, and Tim Smith.

Transite sampling was conducted by URS using a decontaminated hammer, chisel, and pliers, as necessary. Except for select sampling locations where additional transite volume was necessary for quality assurance and quality control samples, transite and wipe samples were collected from an approximate one-square foot area. Sample aliquots for transite from the desired location were homogenized in a decontaminated stainless-steel bowl using a decontaminated stainless-steel spoon. Aliquots for analysis of polychlorinated biphenyls (PCBs) and polychlorinated dibenzo-p-dioxins/polychlorinated dibenzofurans (PCDD/PCDFs) were then placed into appropriate containers, labeled, and placed on ice in coolers for shipment to URS's analytical laboratory, Severn Trent Laboratories (STL), in St. Louis, Missouri.

TechLaw collected split transite samples (Sample Nos. 090903-1, 090903-2, and 090903-3) from three URS transite sampling locations as shown on Figure 1. TechLaw split sample containers were filled by URS personnel contemporaneously with URS samples. Following sample homogenization, URS placed the aliquots for PCBs and PCDD/PCDFs into one unpreserved 8-ounce glass jar for both analyses. Filled split sample containers were given to Steve Bryant of TechLaw for labeling. After labeling, the split sample containers were placed into a cooler with ice for shipment to STL in Knoxville, Tennessee.

It should be noted that TechLaw observed only a limited amount of the overall transite bulk sampling and wipe sampling that was being conducted and did not collect any split wipe samples. However, based on observations made by TechLaw on September 9, 2003, sampling was conducted in accordance with URS's approved Sampling and Analysis Plan (SAP) for the Building 2 Siding and Structural Steel Screening Study, dated August 29, 2003.

## 3.0 Split Sample Analytical Results

Analytical results for the split samples collected by TechLaw are discussed in the following sections, and summarized in Table 1. In addition, the analytical data package is included in Attachment 4.

Analytical results for split samples indicated the presence of PCDD/PCDFs in the transite samples collected from Building 2. The analytical results indicate concentrations for the dioxin Toxic Equivalency Quotient (TEQ) above EPA Region 9 Preliminary Remediation Goals (PRGs) for direct contact exposure pathway values in residential and industrial soil, and Superfund Chemical Data Matrix (SCDM) soil exposure pathway values for Cancer Risk (CR). A comparison of data with the soil PRGs and SCDM values is intended for health-based benchmark screening purposes only.

Concentrations of dioxin TEQ ranged from 34 to 100 picograms per gram (pg/g) in the transite samples. In addition, several other PCDD/PCDFs were reported in the transite samples above their respective PRG or SCDM CR values for soil. It is noted that the reported dioxin TEQ values are less than the 5,000 to 20,000 pg/g range for dioxin cleanup levels in industrial soil at Superfund sites, as stated in Office of Solid Waste and Emergency Response (OSWER) Directive No. 9200.4-26, *Approach for Addressing Dioxin in Soil at Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) Sites*, dated April 13, 1998.

No PCBs were reported in any of the transite samples.

## 4.0 Data Validation and Laboratory Comments Regarding Results

TechLaw validated all sample data obtained during the split sampling event. Data validation was conducted by TechLaw in accordance with the following document: *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review* (Functional Guidelines), dated October 1999.

The results of the data validation by TechLaw are included in Attachment 3. Notable issues are as follows:

Laboratory Blank Analyses

Octachlorodibenzo-p-dioxin (OCDD) (0.68 pg/g), 1,2,3,4,6,7,8-heptachlorodibenzo-p-furan (HpCDF) (0.30 pg/g), 1,2,3,4,7,8,9-HpCDF (0.44 pg/g), and total HpCDF (0.75 pg/g) were reported in the associated method blanks. The reported results for 1,2,3,4,7,8,9-HpCDF in Sample Nos. 090903-1 and 090903-3 were qualified as questionable (B). The reported concentrations of the remaining compounds were not high enough to necessitate qualifying the associated sample results.

Matrix Spike/Matrix Spike Duplicate (MS/MSD) Results

Matrix spike duplicate percent recovery (%R) results were outside of the quality control (QC) limits for 1,2,3,6,7,8-hexachlorodibenzo-p-dioxin (135 %R; QC limits 75 - 114 %R), and 1,2,3,4,6,7,8-heptachlorodibenzo-p-dioxin (159 %R; QC limits 40 - 154 %R). All remaining matrix spike and matrix spike duplicate sample results met specified QC requirements. Poor results of this type are not basis alone to indicate qualifying the associated client sample results. Therefore, no further action was needed.

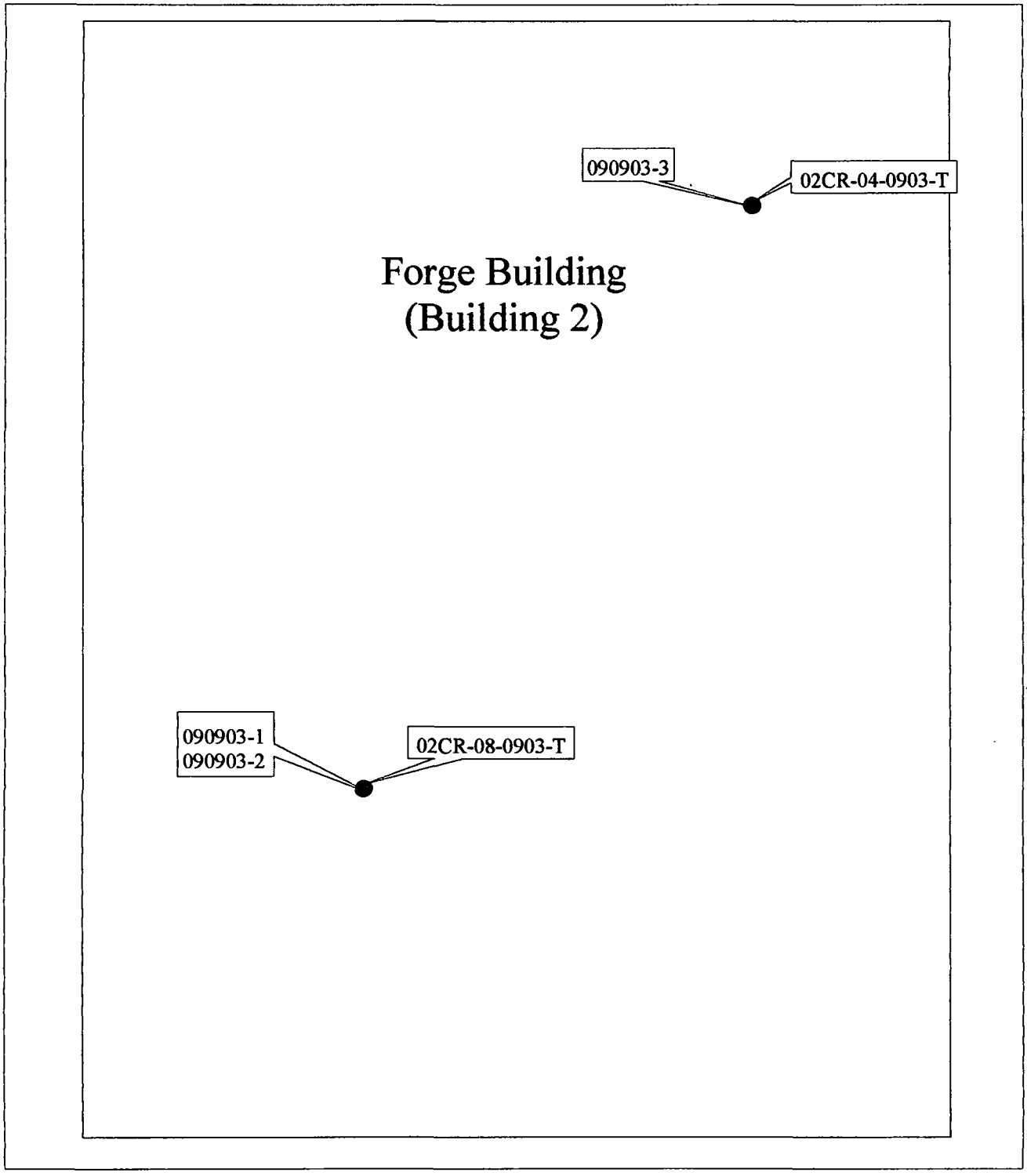
Internal Standard Sample Results

All internal standard sample results for Sample Nos. 090903-1 and 090903-3 met specified QC requirements. The internal standard percent recovery result for OCDD in Sample No. 090903-2 (37 %R) was outside of the QC limits (40 - 135 %R). The result for OCDD in Sample No. 090903-2 was qualified as estimated (J).

Laboratory Control Sample Results

The laboratory control sample percent recovery (%R) results met QC limits. The internal standard recovery for OCDD (29 %R) was outside of the QC limits (40 - 135 %R). Data qualifiers are not applied to quality control samples, therefore, no further action was needed.

FIGURE 1




EPA Sample Locations
URS Sample Locations

**Figure 1**
**EPA Split Sampling Locations**
**and**
**Select URS Characterization Sampling Locations**
**in Building 2**

**St. Louis (ex) Army Ammunition Plant**
**St. Louis, Missouri**

Not to scale

Prepared By
TechLaw, Inc.

**TABLE 1**

**Table 1**
**SUMMARY OF DETECTED COMPOUNDS**
**SPLIT TRANSITE SAMPLES 090903-1 THROUGH 090903-3**
**BUILDING 2 SIDING AND STRUCTURAL STEEL SCREENING STUDY**
**ST. LOUIS (ex) ARMY AMMUNITION PLANT**
**SEPTEMBER 2003**

| Split Sample Number | 090903-1 | 090903-2 | 090903-03 | | SCDM | |
|---|---|---|---|---|---|---|
| Sample Type/URS Sample Location | Transite/02CR-08 | Transite/02CR-08 | Transite/02CR-04 | | CR | RD |
| Building Number | Building 2 | Building 2 | Building 2 | | | |
| Location/Description | Clamshell roof near sixth column from the south | Clamshell roof near sixth column from the south (Duplicate of 090903-1) | Second tier roof between eighth and ninth I-beams east of columns above northeast former furnace | Region 9 PRG (residential/industrial) | | |
| PCDD/PCDF - picograms/gram (pg/g) | | | | | | |
| 2,3,7,8-Tetrachlorodibenzo-p-dioxin | 5.3 | 8.8 Q | 3 | 3.9/16 | 4 | NV |
| Total Tetrachlorodibenzo-p-dioxin | 42 Q | 73 Q | 24 Q | NV | NV | NV |
| 1,2,3,7,8-Pentachlorodibenzo-p-dioxin | 30 | 57 | 16 | NV | 8 | NV |
| Total Pentachlorodibenzo-p-dioxin | 200 | 430 Q | 110 Q | NV | NV | NV |
| 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin | 9.8 | 22 | 7.1 | NV | 40 | NV |
| 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin | 86 | 170 | 69 | NV | 100 | NV |
| 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin | 46 | 75 | 30 | NV | 100 | NV |
| Total Hexachlorodibenzo-p-dioxin | 640 Q | 1300 | 490 Q | NV | NV | NV |
| 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin | 190 | 400 | 120 | NV | 400 | NV |
| Total Heptachlorodibenzo-p-dioxin | 430 | 1000 | 300 | NV | NV | NV |
| 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin | 230 | 470 J* | 98 | NV | NV | NV |
| 2,3,7,8-Tetrachlorodibenzo-p-furan | 1.4 Q | 1.4 Q | 2.0 Q | NV | 40 | NV |
| Total Tetrachlorodibenzo-p-furan | 19 Q | 29 Q | 19 Q | NV | NV | NV |
| 1,2,3,7,8-Pentachlorodibenzo-p-furan | 1.3 J | 2.2 QJ | 1.4 QJ | NV | 80 | NV |
| 2,3,4,7,8-Pentachlorodibenzo-p-furan | 2.2 J | 4.3 QJ | 1.9 J | NV | 8 | NV |
| Total Pentachlorodibenzo-p-furan | 27 Q | 65 Q | 29 Q | NV | NV | NV |
| 1,2,3,4,7,8-Hexachlorodibenzo-p-furan | 5.6 | 12 Q | 4.9 J | NV | 40 | NV |
| 1,2,3,6,7,8-Hexachlorodibenzo-p-furan | 3.7 QJ | 10 Q | 3.4 QJ | NV | 40 | NV |
| 1,2,3,7,8,9-Hexachlorodibenzo-p-furan | 0.3 J | 0.53 QJ | 0.18 U | NV | 40 | NV |
| 2,3,4,6,7,8-Hexachlorodibenzo-p-furan | 2.2 QJ | 4.5 J | 1.6 J | NV | 40 | NV |
| Total Hexachlorodibenzo-p-furan | 57 Q | 160 Q | 53 Q | NV | NV | NV |
| 1,2,3,4,6,7,8-Heptachlorodibenzo-p-furan | 21 | 45 | 18 | NV | 400 | NV |
| 1,2,3,4,7,8,9-Heptachlorodibenzo-p-furan | 1.2 B | 2.4 QJ | 1.1 B | NV | NV | NV |
| Total Heptachlorodibenzo-p-furan | 51 Q | 120 Q | 44 | NV | NV | NV |
| 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-furan | 11 | 27 | 7.0 J | NV | NV | NV |
| 2,3,7,8-Dioxin Toxic Equivalency Quotient | 54 | 100 | 34 | 3.9/16 | 4 | NV |
| Polychlorinated Biphenyls - micrograms/kilogram (ug/kg) | | | | | | |
| Aroclor 1016 | 33 U | 33 U | 33 U | 500/21000 | 83 | 160 |
| Aroclor 1221 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |
| Aroclor 1232 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |
| Aroclor 1242 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |
| Aroclor 1248 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |
| Aroclor 1254 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |
| Aroclor 1260 | 33 U | 33 U | 33 U | 220 / 740 | 83 | 160 |

B: Blank contaminant.

J: Reported result is estimated because it is below the minimum reporting level.

J*: Reported result is an estimated value because of a poor internal standard sample recovery.

NV: No value

Q: Estimated maximum possible concentration.

U: Undetected at reported value.

Reported result is equivalent to or exceeds at least one listed benchmark.

# ATTACHMENT 1

# FIELD LOGBOOK NOTES

9 SEPTEMBER 2003

The TechLaw Work Assignment Manager (WAM) Steve Bryant

OBJECTIVE: Conduct oversight and split sample during Bldg 2 Characterization

WEATHER: Clear, low 70°F, warming to mid 80°sF

PERSONNEL ON SITE

| Name | Affiliation |
|---|---|
| Tom Lorenz | EPA |
| Bob Skach | URS |
| Matt Phoenix | URS |
| Mike Mason | URS |
| Tim Smith | URS |

345 Leave KC on route to site.

815 Arrive on-site. URS preparing for sampling (wipe and materials) on the interior of Bldg 2 (#02CR-08-0903-W)

Initial sample collection will be wipe sample. Middle interior roof by 5th column, upper I-beam just west of middle (I-beam runs north-south)

draft

4 SEPTEMBER 2003

URS using rented (Hertz) JLG Lift 80 HX to access interior ceiling

All personnel in Level C APR (half- or full face), tyvek, hard hat, nitrile gloves, steel-toe boots.

915 Transite sample collected adjacent to wipe sample location.
Transite sample URS# 02CR-08-0903-T
EPA splits 090903-1 and 090903-2 (duplicate of #1)

1055 URS setting up for sample collection at clamshell roof level between 9TH and 10TH columns from the south near the 6TH I-beam West of Bldg SRB TM center line

URS collecting wipe sample from transite then transite sample. Location 02CR-09.

1225 URS setting up at next sample location.

Stuart



4 SEPTEMBER 2003

Photographs.

| No. | Time | Description |
|---|---|---|
| 1 | 849 | Preparing for first wipe sample |
| 2 | 905 | Breaking transite-first sample location (02CR-08) |
| 3 | 1110 | URS breaking transite at 02CR-09 |
| 4 | 1111 | Overview of manlift and sampling location 02CR-09. |
| 5 | 1300 | URS breaking transite from location 02CR-10 |
| 6 | 1510 | URS sampling at location 02CR-04 |

| Split Sample No. | DATE | TIME | URS Sample No. | Location | Containers & Preservative | Analyses |
|---|---|---|---|---|---|---|
| 090903-1 | 9/9/03 | 930 | 02CR-08-0903-T | Clamshell-5th column from south-west of mid | (1) 8oz glass, 4°C | PCB 8082 Dioxins 8290 |
| 090903-2 (Dup. of -1) | 9/9/03 | 930 | " | " | (1) 8oz glass, 4°C | PCB 8082 Dioxin 8290 |
| 090903-3 | 9/9/03 | 1530 | 02CR-04-0903-T | Second tier - between 8th & 9th I-beams east of columns - above NE furnace | (3) 8oz glass, 4°C (MS & MSD included) | PCB 8082 Dioxin 8290 |

[illegible]



9 SEPTEMBER 2003

1235 Location is between 13th and 14th columns from the south by 3rd I-beam east of Bldg center line. URS collecting wipe sample and transite, location 02CR-10

It is noted that column nos. counted from the southern end of the building do not include the south column on the south wall.

1335 Break for lunch.

1425 Return to site. URS begins setting manlift for next sampling location. above northeastern most former rotary furnace location, just slightly east. Location is on second tier ceiling between 8th and 9th I-beams east of main column row. The location is not directly above the former furnace due to obstructions (cross-beams,

[illegible]

9 SEPTEMBER 2003

old light fixtures) in the overhead and obstructions on the floor (debris piles, open holes, etc.) which limited access.

1530 URS collecting sample 02CR-04-0903-T
EPA Split No. 090903-3
extra volume collected for MS/MSD.

1615 Prepare samples/cooler for shipment to Severn Trent Laboratories, Knoxville, TN for PCBs by EPA Method 8082 and Dioxins by EPA Method 8290
Sample Summary table on page 73 of this logbook.
All sample containers for EPA split samples were filled by URS technicians concurrently with URS samples. Sample aliquots of broken transite were placed into a clean stainless steel bowl, homogenized as much as possible,



9 SEPTEMBER 2003

then containers were filled by hand.

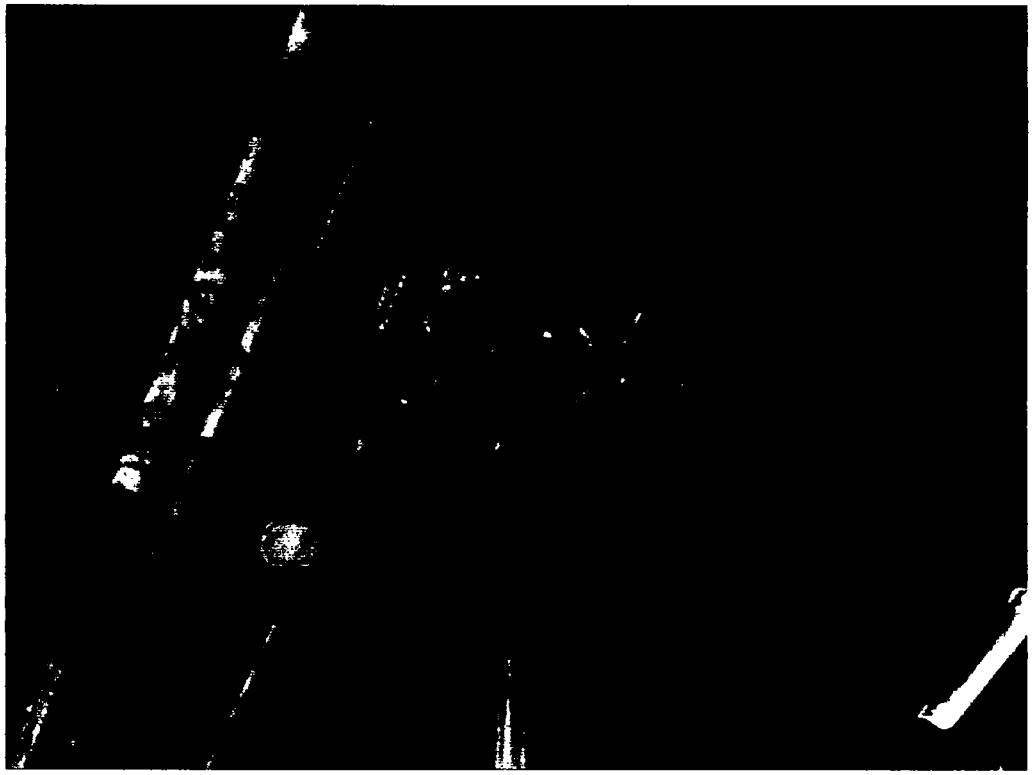
1700 Leave site for the day.

1745 Drop off cooler at FedEx, St. Louis Airport, for shipment to Severn Trent.
Airbill No. 835872895102

# ATTACHMENT 2

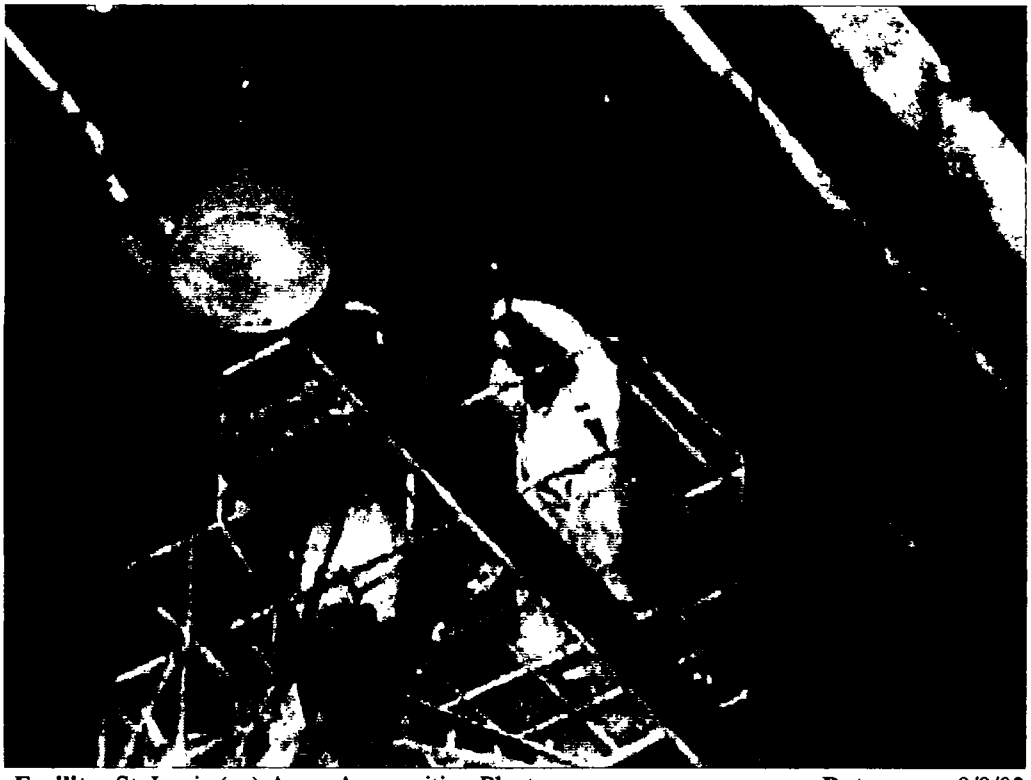
# SITE PHOTOGRAPHS

## PHOTO 1



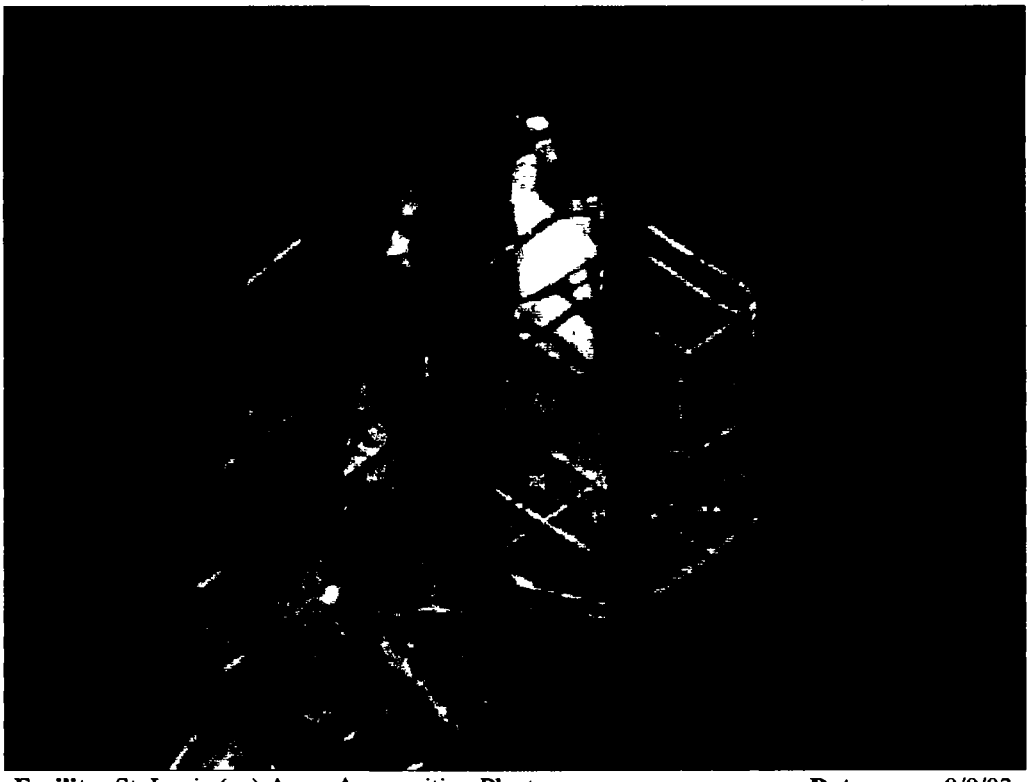
**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** Up **Time:** 0849 hours
**Photographer:** Steve Bryant
**Description:** URS setting up for wipe sampling at location 02CR-08.

## PHOTO 2



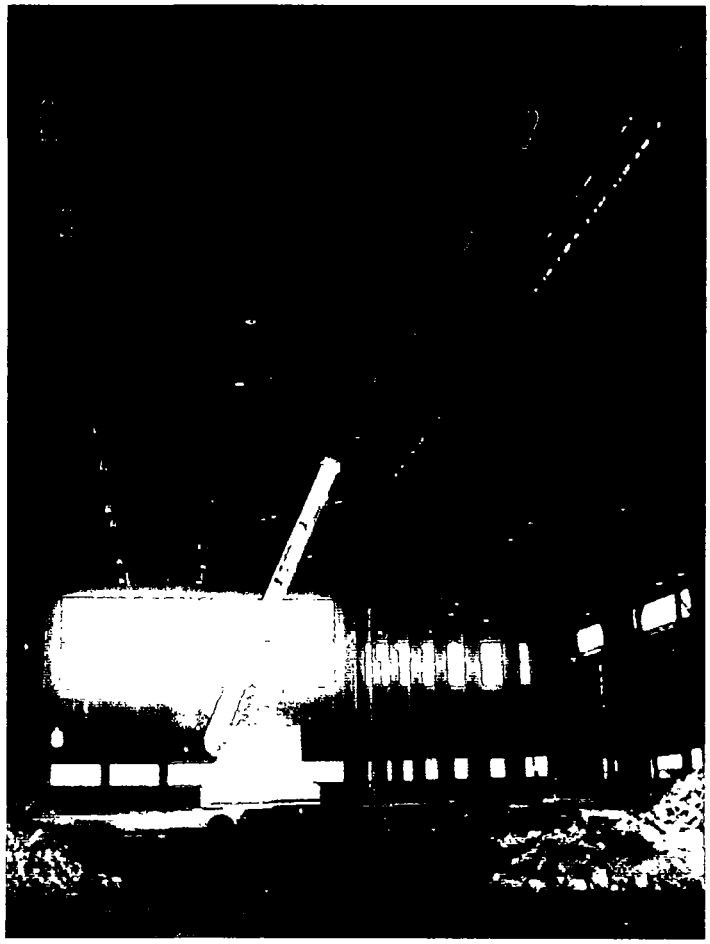
**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** Up **Time:** 0905 hours
**Photographer:** Steve Bryant
**Description:** URS collecting transite sample at location 02CR-08. EPA split Sample Nos. 090903-1 and 090903-2 collected from this location.

# PHOTO 3



**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** Up **Time:** 1110 hours
**Photographer:** Steve Bryant
**Description:** URS collecting transite sample at location 02CR-09.

# PHOTO 4



**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** South **Time:** 1111 hours
**Photographer:** Steve Bryant
**Description:** Overview of manlift at location 02CR-09.

# PHOTO 5

**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** Not applicable **Time:** 1300 hours
**Photographer:** Steve Bryant
**Description:** URS homogenizing transite sample aliquot from location 02CR-10.

# PHOTO 6

**Facility:** St. Louis (ex) Army Ammunition Plant **Date:** 9/9/03
**Location:** Building 2 **Direction:** East **Time:** 1510 hours
**Photographer:** Steve Bryant
**Description:** URS collecting transite sample at location 02CR-04. EPA split Sample No. 090903-3 collected from this location.

# ATTACHMENT 3

# DATA VALIDATION REPORTS

# DATA VALIDATION REPORT

| | |
|---|---|
| Report Date: | October 23, 2003 |
| SDG No.: | H3I100253 |
| Site: | St. Louis (ex) Army Ammunition Plant |
| Matrix: | Three Corrugated Transite Samples |
| Laboratory: | STL Knoxville |
| Collection Date: | 9/9/03 |

This report provides the data validation review for three corrugated transite samples collected on September 9, 2003, from the St. Louis (ex) Army Ammunition Plant located in St. Louis, Missouri. The samples, which are listed below, were analyzed for dibenzodioxins and dibenzofurans (PCDDs/PCDFs) on October 5 through 7, 2003, by Severn Trent Laboratories in Knoxville, Tennessee.

| PARAMETER | SAMPLE NUMBERS |
|---|---|
| PCDDs/PCDFs (SW-846 Method 8290) | 090903-1 (H3I100253-001)<br>090903-2 (H3I100253-002)<br>090903-3 (H3I100253-003) |

Data validation was conducted in accordance with the following documents: *Test Methods for Evaluating Solid Wastes, SW-846, Final Update III*, June, 1997; and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999 (Functional Guidelines).

## PCDDs/PCDFs

- *● data completeness
- *● holding times
- *● calibrations
- ● laboratory blank analyses
- *● matrix spike/matrix spike duplicate (MS/MSD) analyses
- ● internal standard sample analyses
- ● laboratory control sample (LCS) analyses
- *● sample result verification

* All criteria met for this parameter

Data Completeness

This data package was complete and legible. All data were usable as reported.

Holding Times

Analytical holding times were ascertained by determining whether the holding time requirements were met by the laboratory. Holding times (30 days from collection to extraction and 45 days from extraction to analysis) were met for all samples.

Calibrations

All calibration sample results were within quality control (QC) limits. Analytical sequences were acceptable.

Laboratory Blank Analyses

OCDD (0.68 pg/g), 1,2,3,4,6,7,8-HpCDF (0.30 pg/g), 1,2,3,4,7,8,9-HpCDF (0.44 pg/g), and total HpCDF (0.75 pg/g) were reported in the associated method blanks. The reported results for 1,2,3,4,7,8,9-HpCDF in Sample Nos. 090903-1 and 090903-3 were qualified as questionable (B). The reported concentrations of the remaining compounds were not high enough to necessitate qualifying the associated sample results.

MS/MSD Analyses

Matrix spike duplicate percent recovery (%R) results were outside of the QC limits for 1,2,3,6,7,8-HxCDD (135 %R; QC limits 75 - 114 %R), and 1,2,3,4,6,7,8-HpCDD (159 %R; QC limits 40 - 154 %R). All remaining matrix spike and matrix spike duplicate sample results met specified QC requirements. Poor results of this type are not basis alone to indicate qualifying the associated client sample results. Therefore, no further action was needed.

Internal Standard Sample Analyses

All internal standard sample results for Samples Nos. 090903-1 and 090903-3 met specified QC requirements. The internal standard percent recovery (%R) result for OCDD in Sample No. 090903-2 (37 %R) was outside of the QC limits (40 - 135 %R). The result for OCDD in Sample No. 090903-2 was qualified as estimated (J).

LCS Analyses

The LCS percent recovery (%R) results met QC limits. The internal standard recovery for OCDD (29 %R) was outside of the QC limits (40 - 135 %R). Data qualifiers are not applied to quality control samples, therefore, no further action was needed.

Sample Result Verification

The sample results were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors. The reported quantitations were found to be acceptable.

# TABLE 1
## ST. LOUIS (ex) ARMY AMMUNITION PLANT
## ANALYTICAL DATA SUMMARY TABLE SDG #H3I100253
## DIBENZODIOXINS & DIBENZOFURANS ANALYSES (SW-846 METHOD 8290)

| Sample ID Number | 090903-1 | Q* | TEQ | 090903-2 | Q* | TEQ | 090903-3 | Q* | TEQ |
|---|---|---|---|---|---|---|---|---|---|
| Sample Description | | | | | | | | | |
| Matrix | Transite | | | Transite | | | Transite | | |
| Collection Date | 9/9/03 | | | 9/9/03 | | | 9/9/03 | | |
| Analyte | pg/g | | | pg/g | | | pg/g | | |
| 2,3,7,8-TCDD | 5.3 | | 5.3 | 8.8 | Q | 8.8 | 3.0 | | 3.0 |
| Total TCDD | 42 | Q | — | 73 | Q | — | 24 | Q | — |
| 1,2,3,7,8-PeCDD | 30 | | 30 | 57 | | 57 | 16 | | 16 |
| Total PeCDD | 200 | | — | 430 | Q | — | 110 | Q | — |
| 1,2,3,4,7,8-HXCDD | 9.8 | | 0.98 | 22 | | 2.2 | 7.1 | | 0.71 |
| 1,2,3,6,7,8-HXCDD | 86 | | 8.6 | 170 | | 17 | 69 | | 6.9 |
| 1,2,3,7,8,9-HXCDD | 46 | | 4.6 | 75 | | 7.5 | 30 | | 3.0 |
| Total HxCDD | 640 | Q | — | 1300 | | — | 490 | Q | — |
| 1,2,3,4,6,7,8-HpCDD | 190 | | 1.9 | 400 | | 4.0 | 120 | | 1.2 |
| Total HpCDD | 430 | | — | 1000 | | — | 300 | | — |
| OCDD | 230 | | 0.023 | 470 | J* | 0.047 | 98 | | 0.0098 |
| 2,3,7,8-TCDF | 1.4 | Q | 0.14 | 1.4 | Q | 0.28 | 2.0 | Q | 0.24 |
| Total TCDF | 19 | Q | — | 29 | Q | — | 19 | Q | 0.20 |
| 1,2,3,7,8-PeCDF | 1.3 | J | 0.065 | 2.2 | Q/J | 0.11 | 1.4 | Q/J | — |
| 2,3,4,7,8-PeCDF | 2.2 | J | 1.1 | 4.3 | Q/J | 2.2 | 1.9 | J | 0.068 |
| Total PeCDF | 27 | Q | — | 65 | Q | — | 29 | Q | 0.97 |
| 1,2,3,4,7,8-HxCDF | 5.6 | | 0.56 | 12 | Q | 1.2 | 4.9 | J | 0.49 |
| 1,2,3,6,7,8-HxCDF | 3.7 | Q/J | 0.37 | 10 | Q | 1.0 | 3.4 | Q/J | 0.34 |
| 1,2,3,7,8,9-HxCDF | 0.30 | J | 0.030 | 0.53 | Q/J | 0.053 | 0.18 | U | 0.018 |
| 2,3,4,6,7,8-HxCDF | 2.2 | Q/J | 0.22 | 4.5 | J | 0.45 | 1.6 | J | 0.16 |
| Total HxCDF | 57 | Q | — | 160 | Q | — | 53 | Q | — |
| 1,2,3,4,6,7,8-HpCDF | 21 | | 0.21 | 45 | | 0.45 | 18 | | 0.18 |
| 1,2,3,4,7,8,9-HpCDF | 1.2 | B | 0.012 | 2.4 | Q/J | 0.024 | 1.1 | B | 0.011 |
| Total HpCDF | 51 | Q | — | 120 | Q | — | 44 | | — |
| 1,2,3,4,6,7,8,9-OCDF | 11 | Q/J | 0.0011 | 27 | | 0.0027 | 7.0 | J | 0.00070 |
| Total TEQ Concentration | | | 54 | | | 100 | | | 34 |

B: Blank Contaminant
J: The reported result is estimated because it is below the minimum level (ML)
J*: Reported result is an estimated value because of a poor internal standard recovery
Q: Estimated maximum possible concentration
Q*: Qualifier
TEQ: Toxic Equivalency Quotient
U: Undetected at reported value
pg/g - Picograms per gram

# DATA VALIDATION REPORT

| | |
|---|---|
| Report Date: | October 23, 2003 |
| SDG No.: | H3I100253 |
| Site: | St. Louis (ex) Army Ammunition Plant |
| Matrix: | Three Corrugated Transite Samples |
| Laboratory: | STL Knoxville |
| Collection Date: | 9/9/03 |

This report provides the data validation review for three corrugated transite samples collected on September 9, 2003, from the St. Louis (ex) Army Ammunition Plant located in St. Louis, Missouri. The samples, which are listed below, were analyzed for polychlorinated biphenyls (PCBs) on September 18, 2003, by Severn Trent Laboratories in Knoxville, Tennessee.

| PARAMETER | SAMPLE NUMBERS |
|---|---|
| PCBs (SW-846 Method 8082) | 090903-1 (H3I100253-001)<br>090903-2 (H3I100253-002)<br>090903-3 (H3I100253-003) |

Data validation was conducted in accordance with the following documents: *Test Methods for Evaluating Solid Wastes, SW-846, Final Update III*, June 1997; and *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, October 1999 (Functional Guidelines).

**PCBs**

- *● data completeness
- *● holding times
- *● calibrations
- *● laboratory blank analyses
- *● matrix spike/matrix spike duplicate (MS/MSD) analyses
- *● surrogate spike sample analyses
- *● laboratory control sample (LCS) analyses
- *● sample result verification

* All criteria met for this parameter

Data Completeness

This data package was complete and legible. All data were usable as reported.

Holding Times

Analytical holding times were ascertained by determining whether the holding time requirements were met by the laboratory. Holding times (14 days from collection to extraction and 40 days from extraction to analysis) were met for all PCB compounds.

Calibrations

All initial calibration sample results were within quality control (QC) limits. Analytical sequences were acceptable.

Laboratory Blank Analyses

There were no reported compounds in the laboratory blanks.

MS/MSD Analyses

All MS/MSD results met specified QC requirements.

Surrogate Spike Sample Analyses

Surrogate spike sample results were within QC limits for all samples.

LCS Analyses

All LCS results were within QC limits.

Sample Result Verification

The sample results were recalculated to ensure that the reported results were accurate. Raw data were examined for anomalies, transcription errors, and reduction errors. The reported quantations were found to be acceptable.

# TABLE 1
## ST. LOUIS (ex) ARMY AMMUNITION PLANT
## ANALYTICAL DATA SUMMARY TABLE SDG # H3I100253
## PCBs (SW-846 METHOD 8082)

| Sample ID Number | 090903-1 | Q | 090903-2 | Q | 090903-3 | Q |
|---|---|---|---|---|---|---|
| Sample Description | | | | | | |
| Matrix | Transite | | Transite | | Transite | |
| Collection Date | 9/9/03 | | 9/9/03 | | 9/9/03 | |
| Analyte | µg/kg | | µg/kg | | µg/kg | |
| Aroclor-1016 | 33 | U | 33 | U | 33 | U |
| Aroclor-1221 | 33 | U | 33 | U | 33 | U |
| Aroclor-1232 | 33 | U | 33 | U | 33 | U |
| Aroclor-1242 | 33 | U | 33 | U | 33 | U |
| Aroclor-1248 | 33 | U | 33 | U | 33 | U |
| Aroclor-1254 | 33 | U | 33 | U | 33 | U |
| Aroclor-1260 | 33 | U | 33 | U | 33 | U |

U: Undetected at reported value
Q: Qualifier
µg/kg: micrograms per kilogram

# ATTACHMENT 4

# ANALYTICAL RESULTS

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-1

| | | | | | |
|---|---|---|---|---|---|
| **Lot-Sample #...:** | H3I100253 - 001 | **Work Order #...:** | FX1WF2AA | **Matrix.....:** | SOLID |
| **Date Sampled...:** | 09/09/03 | **Date Received..:** | 09/10/03 | **Instrument:** | M2A |
| **Prep Date.....:** | 09/30/03 | **Analysis Date..:** | 10/05/03 | **Units.....:** | pg/g |
| **Prep Batch #...:** | 3273193 | **Dilution Factor:** | 1 | **% Moisture:** | |

| PARAMETER | RESULT | | ESTIMATED DETECTION LIMIT | TEF FACTOR | TEQ CONCENTRATION |
|---|---|---|---|---|---|
| **2,3,7,8-TCDD** | **5.3** | | **0.42** | **1** | **5.3** |
| **Total TCDD** | **42** | **Q** | **0.42** | | |
| **1,2,3,7,8-PeCDD** | **30** | | **0.24** | **1** | **30** |
| **Total PeCDD** | **200** | | **0.24** | | |
| **1,2,3,4,7,8-HxCDD** | **9.8** | | **0.24** | **0.1** | **0.98** |
| **1,2,3,6,7,8-HxCDD** | **86** | | **0.25** | **0.1** | **8.6** |
| **1,2,3,7,8,9-HxCDD** | **46** | | **0.23** | **0.1** | **4.6** |
| **Total HxCDD** | **640** | **Q** | **0.24** | | |
| **1,2,3,4,6,7,8-HpCDD** | **190** | | **0.32** | **0.01** | **1.9** |
| **Total HpCDD** | **430** | | **0.32** | | |
| **OCDD** | **230** | **B** | **0.31** | **0.0001** | **0.023** |
| **2,3,7,8-TCDF** | **1.4** | **Q** | **0.20** | **0.1** | **0.14** |
| **Total TCDF** | **19** | **Q** | **0.37** | | |
| **1,2,3,7,8-PeCDF** | **1.3** | **J** | **0.18** | **0.05** | **0.065** |
| **2,3,4,7,8-PeCDF** | **2.2** | **J** | **0.15** | **0.5** | **1.1** |
| **Total PeCDF** | **27** | **Q** | **0.16** | | |
| **1,2,3,4,7,8-HxCDF** | **5.6** | | **0.14** | **0.1** | **0.56** |
| **1,2,3,6,7,8-HxCDF** | **3.7** | **Q J** | **0.14** | **0.1** | **0.37** |
| **2,3,4,6,7,8-HxCDF** | **2.2** | **Q J** | **0.17** | **0.1** | **0.22** |
| **1,2,3,7,8,9-HxCDF** | **0.30** | **J** | **0.19** | **0.1** | **0.030** |
| **Total HxCDF** | **57** | **Q** | **0.16** | | |
| **1,2,3,4,6,7,8-HpCDF** | **21** | **B** | **0.20** | **0.01** | **0.21** |
| **1,2,3,4,7,8,9-HpCDF** | **1.2** | **Q B J** | **0.23** | **0.01** | **0.012** |
| **Total HpCDF** | **51** | **Q B** | **0.21** | | |
| **OCDF** | **11** | | **0.26** | **0.0001** | **0.0011** |
| **Total TEQ Concentration** | | | | | **54** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 70 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDD | 82 | 40 - 135 |
| 13C-1,2,3,4,7,8-HxCDD | 77 | 40 - 135 |
| 13C-1,2,3,6,7,8-HxCDD | 66 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDD | 71 | 40 - 135 |
| 13C-OCDD | 63 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 71 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 69 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDF | 73 | 40 - 135 |
| 13C-2,3,4,7,8-PeCDF | 80 | 40 - 135 |
| 13C-1,2,3,4,7,8-HxCDF | 74 | 40 - 135 |

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-1

| | | |
|---|---|---|
| 13C-1,2,3,6,7,8-HxCDF | 69 | 40 - 135 |
| 13C-2,3,4,6,7,8-HxCDF | 69 | 40 - 135 |
| 13C-1,2,3,7,8,9-HxCDF | 75 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDF | 67 | 40 - 135 |
| 13C-1,2,3,4,7,8,9-HpCDF | 74 | 40 - 135 |

**Notes:**

ND TEQ Conc. = EDL * TEF Factor

van Leeuwen, FXR. (1997) Derivation of toxic equivalency factors (TEFs) for dioxin-like compounds in humans and wildlife. Organohalogen Compounds 34:237 as cited in the Draft Final Report, Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin(TCDD) and Related Compounds,Part 1. September 2000.

| | |
|---|---|
| B | Method blank contamination. The associated method blank contains the target analyte at a reportable level. |
| J | Estimated result. Result is less than the reporting limit. |
| Q | Estimated maximum possible concentration (EMPC). |

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-2

| | | | | | |
|---|---|---|---|---|---|
| Lot-Sample #...: | H3I100253 - 002 | Work Order #...: | FX1WH2AA | Matrix....: | SOLID |
| Date Sampled...: | 09/09/03 | Date Received..: | 09/10/03 | Instrument: | M2A |
| Prep Date.....: | 09/30/03 | Analysis Date..: | 10/05/03 | Units.....: | pg/g |
| Prep Batch #...: | 3273193 | Dilution Factor: | 1 | % Moisture: | |

| PARAMETER | RESULT | | ESTIMATED DETECTION LIMIT | TEF FACTOR | TEQ CONCENTRATION |
|---|---|---|---|---|---|
| **2,3,7,8-TCDD** | **8.8** | **Q** | **0.37** | **1** | **8.8** |
| **Total TCDD** | **73** | **Q** | **0.37** | | |
| **1,2,3,7,8-PeCDD** | **57** | | **0.21** | **1** | **57** |
| **Total PeCDD** | **430** | **Q** | **0.21** | | |
| **1,2,3,4,7,8-HxCDD** | **22** | | **0.25** | **0.1** | **2.2** |
| **1,2,3,6,7,8-HxCDD** | **170** | | **0.28** | **0.1** | **17** |
| **1,2,3,7,8,9-HxCDD** | **75** | | **0.25** | **0.1** | **7.5** |
| **Total HxCDD** | **1300** | | **0.26** | | |
| **1,2,3,4,6,7,8-HpCDD** | **400** | | **0.57** | **0.01** | **4.0** |
| **Total HpCDD** | **1000** | | **0.57** | | |
| **OCDD** | **470** | **B** | **0.90** | **0.0001** | **0.047** |
| **2,3,7,8-TCDF** | **2.8** | **Q** | **0.25** | **0.1** | **0.28** |
| **Total TCDF** | **29** | **Q** | **0.31** | | |
| **1,2,3,7,8-PeCDF** | **2.2** | **Q J** | **0.16** | **0.05** | **0.11** |
| **2,3,4,7,8-PeCDF** | **4.3** | **Q J** | **0.13** | **0.5** | **2.2** |
| **Total PeCDF** | **65** | **Q** | **0.14** | | |
| **1,2,3,4,7,8-HxCDF** | **12** | **Q** | **0.17** | **0.1** | **1.2** |
| **1,2,3,6,7,8-HxCDF** | **10** | **Q** | **0.17** | **0.1** | **1.0** |
| **2,3,4,6,7,8-HxCDF** | **4.5** | **J** | **0.22** | **0.1** | **0.45** |
| **1,2,3,7,8,9-HxCDF** | **0.53** | **Q J** | **0.32** | **0.1** | **0.053** |
| **Total HxCDF** | **160** | **Q** | **0.20** | | |
| **1,2,3,4,6,7,8-HpCDF** | **45** | **B** | **0.34** | **0.01** | **0.45** |
| **1,2,3,4,7,8,9-HpCDF** | **2.4** | **Q B J** | **0.47** | **0.01** | **0.024** |
| **Total HpCDF** | **120** | **Q B** | **0.39** | | |
| **OCDF** | **27** | | **0.84** | **0.0001** | **0.0027** |
| **Total TEQ Concentration** | | | | | **100** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 77 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDD | 76 | 40 - 135 |
| 13C-1,2,3,4,7,8-HxCDD | 128 | 40 - 135 |
| 13C-1,2,3,6,7,8-HxCDD | 109 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDD | 74 | 40 - 135 |
| 13C-OCDD | 37 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 81 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 78 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDF | 69 | 40 - 135 |
| 13C-2,3,4,7,8-PeCDF | 73 | 40 - 135 |
| 13C-1,2,3,4,7,8-HxCDF | 127 | 40 - 135 |

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-2

| | | |
|---|---|---|
| 13C-1,2,3,6,7,8-HxCDF | 116 | 40 - 135 |
| 13C-2,3,4,6,7,8-HxCDF | 99 | 40 - 135 |
| 13C-1,2,3,7,8,9-HxCDF | 88 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDF | 85 | 40 - 135 |
| 13C-1,2,3,4,7,8,9-HpCDF | 80 | 40 - 135 |

**Notes:**

ND TEQ Conc. = EDL * TEF Factor

van Leeuwen, FXR. (1997) Derivation of toxic equivalency factors (TEFs) for dioxin-like compounds in humans and wildlife. Organohalogen Compounds 34:237 as cited in the Draft Final Report, Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin(TCDD) and Related Compounds,Part 1. September 2000.

| | |
|---|---|
| * | Surrogate recovery is outside stated control limits. |
| B | Method blank contamination. The associated method blank contains the target analyte at a reportable level. |
| J | Estimated result. Result is less than the reporting limit. |
| Q | Estimated maximum possible concentration (EMPC). |

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-3

| | | | | | |
|---|---|---|---|---|---|
| **Lot-Sample #...:** | H3I100253 - 003 | **Work Order #...:** | FX1WJ2AA | **Matrix....:** | SOLID |
| **Date Sampled...:** | 09/09/03 | **Date Received..:** | 09/10/03 | **Instrument:** | M2A |
| **Prep Date.....:** | 09/30/03 | **Analysis Date..:** | 10/05/03 | **Units.....:** | pg/g |
| **Prep Batch #...:** | 3273193 | **Dilution Factor:** | 1 | **% Moisture:** | |

| PARAMETER | RESULT | | ESTIMATED DETECTION LIMIT | TEF FACTOR | TEQ CONCENTRATION |
|---|---|---|---|---|---|
| **2,3,7,8-TCDD** | **3.0** | | **0.29** | **1** | **3.0** |
| **Total TCDD** | **24** | **Q** | **0.29** | | |
| **1,2,3,7,8-PeCDD** | **16** | | **0.18** | **1** | **16** |
| **Total PeCDD** | **110** | **Q** | **0.18** | | |
| **1,2,3,4,7,8-HxCDD** | **7.1** | | **0.18** | **0.1** | **0.71** |
| **1,2,3,6,7,8-HxCDD** | **69** | | **0.20** | **0.1** | **6.9** |
| **1,2,3,7,8,9-HxCDD** | **30** | | **0.18** | **0.1** | **3.0** |
| **Total HxCDD** | **490** | **Q** | **0.19** | | |
| **1,2,3,4,6,7,8-HpCDD** | **120** | | **0.28** | **0.01** | **1.2** |
| **Total HpCDD** | **300** | | **0.28** | | |
| **OCDD** | **98** | **B** | **0.30** | **0.0001** | **0.0098** |
| **2,3,7,8-TCDF** | **2.4** | **X** | **0.27** | **0.1** | **0.24** |
| **2,3,7,8-TCDF** | **2.0** | **Q** | **0.21** | **0.1** | **0.20** |
| **Total TCDF** | **19** | **Q** | **0.27** | | |
| **1,2,3,7,8-PeCDF** | **1.4** | **Q J** | **0.15** | **0.05** | **0.068** |
| **2,3,4,7,8-PeCDF** | **1.9** | **J** | **0.12** | **0.5** | **0.97** |
| **Total PeCDF** | **29** | **Q** | **0.13** | | |
| **1,2,3,4,7,8-HxCDF** | **4.9** | **J** | **0.13** | **0.1** | **0.49** |
| **1,2,3,6,7,8-HxCDF** | **3.4** | **Q J** | **0.14** | **0.1** | **0.34** |
| **2,3,4,6,7,8-HxCDF** | **1.6** | **J** | **0.16** | **0.1** | **0.16** |
| 1,2,3,7,8,9-HxCDF | ND | | 0.18 | 0.1 | 0.018 |
| **Total HxCDF** | **53** | **Q** | **0.15** | | |
| **1,2,3,4,6,7,8-HpCDF** | **18** | **B** | **0.18** | **0.01** | **0.18** |
| **1,2,3,4,7,8,9-HpCDF** | **1.1** | **B J** | **0.23** | **0.01** | **0.011** |
| **Total HpCDF** | **44** | **B** | **0.20** | | |
| **OCDF** | **7.0** | **J** | **0.30** | **0.0001** | **0.00070** |
| **Total TEQ Concentration** | | | | | **34** |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDD | 96 | 40 - 135 |
| 13C-1,2,3,4,7,8-HxCDD | 101 | 40 - 135 |
| 13C-1,2,3,6,7,8-HxCDD | 90 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDD | 84 | 40 - 135 |
| 13C-OCDD | 58 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 92 | 40 - 135 |
| 13C-2,3,7,8-TCDF | 84 | 40 - 135 |
| 13C-1,2,3,7,8-PeCDF | 85 | 40 - 135 |
| 13C-2,3,4,7,8-PeCDF | 90 | 40 - 135 |

TECHLAW, INC.

Dioxins/Furans, HRGC/HRMS (8290)

Client Sample ID: 090903-3

| | | |
|---|---|---|
| 13C-1,2,3,4,7,8-HxCDF | 99 | 40 - 135 |
| 13C-1,2,3,6,7,8-HxCDF | 91 | 40 - 135 |
| 13C-2,3,4,6,7,8-HxCDF | 88 | 40 - 135 |
| 13C-1,2,3,7,8,9-HxCDF | 87 | 40 - 135 |
| 13C-1,2,3,4,6,7,8-HpCDF | 81 | 40 - 135 |
| 13C-1,2,3,4,7,8,9-HpCDF | 87 | 40 - 135 |

**Notes:**

ND TEQ Conc. = EDL * TEF Factor

van Leeuwen, FXR. (1997) Derivation of toxic equivalency factors (TEFs) for dioxin-like compounds in humans and wildlife. Organohalogen Compounds 34:237 as cited in the Draft Final Report, Exposure and Human Health Reassessment of 2,3,7,8-Tetrachlorodibenzo-p-Dioxin(TCDD) and Related Compounds,Part 1. September 2000.

| | |
|---|---|
| B | Method blank contamination. The associated method blank contains the target analyte at a reportable level. |
| J | Estimated result. Result is less than the reporting limit. |
| Q | Estimated maximum possible concentration (EMPC). |
| X | See project narrative. |

# Original Chain of Custody Documentation

# STL Knoxville

5815 Middlebrook Pike • Knoxville, TN 37921-5947
Phone: (865) 291-3000 • Fax: (865) 584-4315
Receiving: (865) 291-3031

H3I100253

## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No.
Page 1 of 1

Project Name/No. [1] St. Louis Army Ammunition Plant (SLAAP)
Sample Team Members [2] Steve Bryant
Profit Center No. [3]
Project Manager [4]
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 9/9/03
Lab Destination [8] Knoxville, TN
Lab Contact [9] Jamie McKinney
Project Contact / Phone [12] Steve Bryant 913/236-0006
Carrier / Waybill No. [13] FedEx/835872895102

Bill to: [5] TechLaw, Inc.
6400 Glenwood, Suite 212
Overland Park, KS 66202
Attn: Steve Bryant
Report to: [10] same as "Bill to"

**ONE CONTAINER PER LINE**

| Sample [14] Number | Sample [15] Type | Date/Time [16] Collected | Container [17] Type | Sample [18] Volume | Pre- [19] servative | Requested Testing [20] Program | Condition on Receipt [21] Lab use only |
|---|---|---|---|---|---|---|---|
| 090903-1 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Custody seals intact (Y) N NA |
| 090903-2 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Temperature received at 3°C |
| 090903-3** | Transite* | 9/9/03 1530 | 8 oz glass | ~100g | 4°C | PCBs 8082 PCDD/DFs 8290 | Received by ADF Date 09-10-03 |
| | | | | | | | Number of packages ADF 09-10-03 1 |
| | | Shipment complete | | | | | Tracking # 835872895102 ADF 09-10-03 |

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☒ Project Specific (specify):

1. Relinquished by [28] (Signature / Affiliation) TechLaw Date: 9/9/03 Time: 1745
1. Received by [28] (Signature / Affiliation) Thomas D. Clements SR Date: 09-10-03 Time: 09:30
1. Relinquished by (Signature / Affiliation) Date: Time:
1. Received by (Signature / Affiliation) Date: Time:

Comments: [29]
*Transite is an asbestos-containing material
**090903-3 includes extra volumes for MS/MSD

White: To accompany samples
Yellow: Field copy

**H3I100253 Sample Data Summary** ..... **1**

**Sample Receipt Documentation** ..... **37**

**PCBs** ..... **40**
Raw Sample Data ..... 41
Standards Data ..... 51
Raw QC Data ..... 90
Miscellaneous Data ..... 104

**Trace Level Organics** ..... **110**
Raw Sample Data DB-5 Column ..... 111
Raw Sample Data DB-225 Column ..... 335
Standards Data DB-5 Column ..... 377
Standards Data DB-225 Column ..... 711
Raw QC Data ..... 848
Miscellaneous Data ..... 1000

**Sample Receipt Documentation** ..... **1011**

**Total Number of Pages** ..... **1013**

SEVERN TRENT STL

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# ANALYTICAL REPORT

Lot #: H3I100253

Steve Bryant

Techlaw, Inc.
6400 Glenwood
Suite 212
Overland Park, KS 66202

SEVERN TRENT LABORATORIES, INC.

Jamie A. McKinney
Project Manager

October 8, 2003

# ANALYTICAL METHODS SUMMARY

**H3I100253**

| PARAMETER | ANALYTICAL METHOD |
|---|---|
| Dibenzodioxins and Dibenzofurans, HRGC/HRMS | SW846 8290 |
| PCBs by SW-846 8082 | SW846 8082 |

**References:**

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

# SAMPLE SUMMARY

**H3I100253**

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|---|---|---|---|---|
| FX1WF | 001 | 090903-1 | 09/09/03 | 09:30 |
| FX1WH | 002 | 090903-2 | 09/09/03 | 09:30 |
| FX1WJ | 003 | 090903-3 | 09/09/03 | 09:30 |

**NOTE(S):**

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

# PROJECT NARRATIVE
## H3I100253

The results reported herein are applicable to the samples submitted for analysis only.

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**The original chain of custody documentation is included with this report.**

### Sample Receipt

There were no problems with the condition of the samples received.

### Quality Control

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Trace Level Organics

The laboratory control sample recovery for internal standard 13C-OCDD was outside control limits, however, the signal to noise ratio met the method requirement of 10:1, and all natives in the laboratory control sample were in control.

The recovery for internal standard 13C-OCDD for sample 090903-2 was outside control limits, however, the signal to noise ratio met the method requirement of 10:1, and the estimated detection limit of the native OCDD was below the minimum level.

The matrix spike/matrix spike duplicate recoveries for sample 090903-3 were outside control limits for some compounds. The laboratory control sample had acceptable results indicating the analysis was in control.

All positive 2378-TCDF results at or above the minimum level were confirmed on the DB-225 column. There were two 2378-TCDF results reported for sample 090903-3. One result was taken from the DB-225 column and the other was reported from the DB-5 column. The value from DB-5 column was reported in order to calculate the RPD properly for the MS/MSD recoveries and was flagged with "X" qualifier.

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# PROJECT NARRATIVE
## H31100253

The following flags are used to qualify results for chlorinated dioxin and furan results:

**J** – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is "the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point". The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report the ML is qualitatively defined as described above, and quantitatively defined as follows: **Minimum Level:** The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.
Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.
Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

**E** – The reported result is an estimate. The amount reported is above the UCL described below.
The E qualifier is applied on the basis of the **Upper Calibration Level (UCL)**. The quantitative definition of the UCL is listed below:
**Upper Calibration Level:** The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

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# PROJECT NARRATIVE
## H3I100253

Example:
The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.
Example:
A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this examples all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

**B** – The analyte is present in the associated method blank at a reportable level. For this analysis, there is no method specified reporting level, other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of 2.5-to-1. Therefore, the presence of any amount of the analyte present in the blank will result a B qualifier on all associated samples.
If the blank has analytes present above the ML (described above) the need for corrective action beyond qualifying the associated data is evaluated. The determination is made whether the amount in the blank is less than 5% of the lowest amount in associated client samples or regulatory limit. If this is the case, sample processing may continue with the qualification of the data. If the amount in the blank is greater than 5% of the lowest amount in associated client samples or regulatory limit, corrective action must be taken.
The corrective actions may include extracting a second aliquot of sample if available, or notifying the client to assess the impact on the project objectives.
Note: Some laboratories do not report contamination in the blank unless it is above their lower calibration limit, or an established percentage of the level in the samples, or an established percentage of the regulatory limit. Likewise, some laboratories set a reporting limit at one half the lower calibration limit.

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# PROJECT NARRATIVE
## H3I100253

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. The criteria include the following areas:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio.)
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within +/- 2 seconds of the furan candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity, due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer

X – Other. See explanation in narrative.

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# Sample Data Summary

**TECHLAW, INC.**

**Client Sample ID: 090903-1**

**GC Semivolatiles**

**Lot-Sample #...:** H3I100253-001 **Work Order #...:** FX1WF1AC **Matrix.....:** SOLID
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1
**% Moisture.....:** **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 98 | (34 - 148) |
| Decachlorobiphenyl | 108 | (41 - 146) |

TECHLAW, INC.

Client Sample ID: 090903-2

GC Semivolatiles

| | | | |
|---|---|---|---|
| **Lot-Sample #...:** H3I100253-002 | **Work Order #...:** FX1WH1AE | **Matrix.....:** SOLID | |
| **Date Sampled...:** 09/09/03 | **Date Received..:** 09/10/03 | | |
| **Prep Date.....:** 09/16/03 | **Analysis Date..:** 09/18/03 | | |
| **Prep Batch #...:** 3259122 | | | |
| **Dilution Factor:** 1 | | | |
| **% Moisture.....:** | **Method.....:** SW846 8082 | | |

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 88 | (34 - 148) |
| Decachlorobiphenyl | 101 | (41 - 146) |

**TECHLAW, INC.**

**Client Sample ID: 090903-3**

**GC Semivolatiles**

**Lot-Sample #...:** H3I100253-003 **Work Order #...:** FX1WJ1AE **Matrix.....:** SOLID
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1
**% Moisture.....:** **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 94 | (34 - 148) |
| Decachlorobiphenyl | 97 | (41 - 146) |

## METHOD BLANK REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** H3I160000-122

**Prep Date.....:** 09/16/03
**Analysis Date..:** 09/19/03 **Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1221 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1232 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1242 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1248 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1254 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1260 | ND | 33 | ug/kg | SW846 8082 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 99 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD |
|---|---|---|---|
| **Aroclor 1016** | **103** | **(52 - 117)** | **SW846 8082** |
| **Aroclor 1260** | **93** | **(53 - 128)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **167** | **172** | **ug/kg** | **103** | **SW846 8082** |
| **Aroclor 1260** | **167** | **155** | **ug/kg** | **93** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ1AF-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ1AG-MSD
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1 **% Moisture.....:**

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **91** | **(44 - 134)** | | | **SW846 8082** |
| | **86** | **(44 - 134)** | **6.0** | **(0-47)** | **SW846 8082** |
| **Aroclor 1260** | **103** | **(45 - 154)** | | | **SW846 8082** |
| | **99** | **(45 - 154)** | **3.4** | **(0-46)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## MATRIX SPIKE SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ1AF-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ1AG-MSD
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1 **% Moisture.....:**

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| **Aroclor 1016** | **ND** | **167** | **151** | **ug/kg** | **91** | | **SW846 8082** |
| | **ND** | **167** | **143** | **ug/kg** | **86** | **6.0** | **SW846 8082** |
| **Aroclor 1260** | **ND** | **167** | **171** | **ug/kg** | **103** | | **SW846 8082** |
| | **ND** | **167** | **165** | **ug/kg** | **99** | **3.4** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

# Sample Data Summary

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 5.3 | 0.42 | pg/g | SW846 8290 |
| Total TCDD | 42 Q | 0.42 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 30 | 0.24 | pg/g | SW846 8290 |
| Total PeCDD | 200 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 9.8 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 86 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 46 | 0.23 | pg/g | SW846 8290 |
| Total HxCDD | 640 Q | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 190 | 0.32 | pg/g | SW846 8290 |
| Total HpCDD | 430 | 0.32 | pg/g | SW846 8290 |
| OCDD | 230 B | 0.31 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.3 J | 0.18 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 2.2 J | 0.15 | pg/g | SW846 8290 |
| Total PeCDF | 27 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 5.6 | 0.14 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.7 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 2.2 Q,J | 0.17 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.30 J | 0.19 | pg/g | SW846 8290 |
| Total HxCDF | 57 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 21 B | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.2 Q,B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 51 Q,B | 0.21 | pg/g | SW846 8290 |
| OCDF | 11 | 0.26 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 70 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 82 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 77 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 66 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 71 | (40 - 135) |
| 13C-OCDD | 63 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 73 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 74 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 67 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 74 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF1AD Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 1.4 Q | 0.20 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 69 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 8.8 Q | 0.37 | pg/g | SW846 8290 |
| Total TCDD | 73 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 57 | 0.21 | pg/g | SW846 8290 |
| Total PeCDD | 430 Q | 0.21 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 22 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 170 | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 75 | 0.25 | pg/g | SW846 8290 |
| Total HxCDD | 1300 | 0.26 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 400 | 0.57 | pg/g | SW846 8290 |
| Total HpCDD | 1000 | 0.57 | pg/g | SW846 8290 |
| OCDD | 470 B | 0.90 | pg/g | SW846 8290 |
| Total TCDF | 29 Q | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 2.2 Q,J | 0.16 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 4.3 Q,J | 0.13 | pg/g | SW846 8290 |
| Total PeCDF | 65 Q | 0.14 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 12 Q | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 10 Q | 0.17 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 4.5 J | 0.22 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.53 Q,J | 0.32 | pg/g | SW846 8290 |
| Total HxCDF | 160 Q | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 45 B | 0.34 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 2.4 Q,B,J | 0.47 | pg/g | SW846 8290 |
| Total HpCDF | 120 Q,B | 0.39 | pg/g | SW846 8290 |
| OCDF | 27 | 0.84 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

**Lot-Sample #...:** H3I100253-002 **Work Order #...:** FX1WH2AA **Matrix.....:** SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 77 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 76 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 128 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 109 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 74 | (40 - 135) |
| 13C-OCDD | 37 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 81 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 69 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 73 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 127 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 116 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 85 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 80 | (40 - 135) |

**NOTE(S):**

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

* Surrogate recovery is outside stated control limits.

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH1AF Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.8 Q | 0.25 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 78 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 3.0 | 0.29 | pg/g | SW846 8290 |
| Total TCDD | 24 Q | 0.29 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 16 | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | 110 Q | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 7.1 | 0.18 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 69 | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 30 | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | 490 Q | 0.19 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 120 | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | 300 | 0.28 | pg/g | SW846 8290 |
| OCDD | 98 B | 0.30 | pg/g | SW846 8290 |
| 2,3,7,8-TCDF | 2.4 X | 0.27 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.27 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.4 Q,J | 0.15 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 1.9 J | 0.12 | pg/g | SW846 8290 |
| Total PeCDF | 29 Q | 0.13 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 4.9 J | 0.13 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.4 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 1.6 J | 0.16 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDF | 53 Q | 0.15 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 18 B | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.1 B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 44 B | 0.20 | pg/g | SW846 8290 |
| OCDF | 7.0 J | 0.30 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 96 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 84 | (40 - 135) |
| 13C-OCDD | 58 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 85 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 91 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 81 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 87 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

X See project narrative.

J Estimated result. Result is less than the reporting limit.

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ1AH Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.0 Q | 0.21 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 84 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

## METHOD BLANK REPORT

### Trace Level Organic Compounds

**Client Lot #...:** H3I100253 **Work Order #...:** F1EPV1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** H3I300000-193

**Prep Date.....:** 09/30/03
**Analysis Date..:** 10/05/03 **Prep Batch #...:** 3273193
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.31 | pg/g | SW846 8290 |
| Total TCDD | ND | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| **OCDD** | **0.68 Q,J** | **0.39** | **pg/g** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.28 | pg/g | SW846 8290 |
| Total TCDF | ND | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 0.14 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 0.11 | pg/g | SW846 8290 |
| Total PeCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.17 | pg/g | SW846 8290 |
| Total HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDF** | **0.30 Q,J** | **0.18** | **pg/g** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **0.44 Q,J** | **0.21** | **pg/g** | **SW846 8290** |
| **Total HpCDF** | **0.75 Q,J** | **0.19** | **pg/g** | **SW846 8290** |
| OCDF | ND | 0.37 | pg/g | SW846 8290 |

(Continued on next page)

**METHOD BLANK REPORT**

Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AA Matrix.....: SOLID

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS | | |
| 13C-2,3,7,8-TCDD | 75 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDD | 92 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDD | 72 | (40 - 135) | | |
| 13C-OCDD | 46 | (40 - 135) | | |
| 13C-2,3,7,8-TCDF | 77 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDF | 72 | (40 - 135) | | |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDF | 89 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDF | 83 | (40 - 135) | | |
| 13C-2,3,4,6,7,8-HxCDF | 76 | (40 - 135) | | |
| 13C-1,2,3,7,8,9-HxCDF | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDF | 69 | (40 - 135) | | |
| 13C-1,2,3,4,7,8,9-HpCDF | 76 | (40 - 135) | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Q Estimated maximum possible concentration (EMPC).

J Estimated result. Result is less than the reporting limit.

# STL Knoxville

5815 Middlebrook Pike • Knoxville, TN 37921-5947
Phone: (865) 291-3000 • Fax: (865) 584-4315
Receiving: (865) 291-3031

#3I100253

## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No.
Page 1 of 1

Project Name/No. [1] St. Louis Army Ammunition Plant (SLAAP)
Sample Team Members [2] Steve Bryant
Profit Center No. [3]
Project Manager [4]
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 9/9/03
Lab Destination [8] Knoxville, TN
Lab Contact [9] Jamie McKinney
Project Contact / Phone [12] Steve Bryant 913/236-0006
Carrier / Waybill No. [13] FedEx/835872895102

Bill to: [5] TechLaw, Inc.
6400 Glenwood, Suite 212
Overland Park, KS 66202
Attn: Steve Bryant
Report to: [10] Same as "Bill to"

**ONE CONTAINER PER LINE**

| Sample [14] Number | Sample [15] Type | Date/Time [16] Collected | Container [17] Type | Sample [18] Volume | Pre- [19] servative | Requested Testing [20] Program |
|---|---|---|---|---|---|---|
| 090903-1 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 |
| 090903-2 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 |
| 090903-3** | Transite* | 9/9/03 1530 | 8 oz glass | ~100g | 4°C | PCBs 8082 PCDD/DFs 8290 |

Shipment complete

Condition on Receipt [21] Lab use only
Custody seals intact (Y) N NA
Temperature received at 3°C
Received by ADF Date 09-10-03
Number of packages ADF 09-10-03 BS-1
Tracking # 835872895102
ADF 09-10-03

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive ____ (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☒ Project Specific (specify):

| | |
|---|---|
| 1. Relinquished by [28] (Signature / Affiliation) /TechLaw | Date: 9/9/03 Time: 1745 |
| 1. Received by [28] (Signature / Affiliation) | Date: 09-10-03 Time: 09:30 |
| 1. Relinquished by (Signature / Affiliation) | Date: Time: |
| 1. Received by (Signature / Affiliation) | Date: Time: |

Comments: [29]
*Transite is an asbestos-containing material
**090903-3 includes extra volumes for MS/MSD

White: To accompany samples
Yellow: Field copy

**H3I100253 Sample Data Summary** ..... **1**

**Sample Receipt Documentation** ..... **37**

**PCBs** ..... **40**
Raw Sample Data ..... 41
Standards Data ..... 51
Raw QC Data ..... 90
Miscellaneous Data ..... 104

**Trace Level Organics** ..... **110**
Raw Sample Data DB-5 Column ..... 111
Raw Sample Data DB-225 Column ..... 335
Standards Data DB-5 Column ..... 377
Standards Data DB-225 Column ..... 711
Raw QC Data ..... 848
Miscellaneous Data ..... 1000

**Sample Receipt Documentation** ..... **1011**

**Total Number of Pages** ..... **1013**

SEVERN TRENT STL

**STL Knoxville**
5815 Middlebrook Pike
Knoxville, TN 37921

Tel: 865 291 3000 Fax: 865 584 4315
www.stl-inc.com

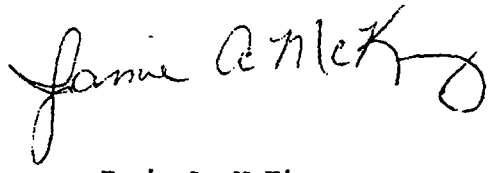
# ANALYTICAL REPORT

**Lot #: H3I100253**

**Steve Bryant**

**Techlaw, Inc.**
**6400 Glenwood**
**Suite 212**
**Overland Park, KS 66202**

**SEVERN TRENT LABORATORIES, INC.**



**Jamie A. McKinney**
Project Manager

**October 8, 2003**

# ANALYTICAL METHODS SUMMARY

H3I100253

| PARAMETER | ANALYTICAL METHOD |
|---|---|
| Dibenzodioxins and Dibenzofurans, HRGC/HRMS | SW846 8290 |
| PCBs by SW-846 8082 | SW846 8082 |

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

# SAMPLE SUMMARY

H3I100253

| WO # | SAMPLE# | CLIENT SAMPLE ID | SAMPLED DATE | SAMP TIME |
|---|---|---|---|---|
| FX1WF | 001 | 090903-1 | 09/09/03 | 09:30 |
| FX1WH | 002 | 090903-2 | 09/09/03 | 09:30 |
| FX1WJ | 003 | 090903-3 | 09/09/03 | 09:30 |

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

# PROJECT NARRATIVE
## H3I100253

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

**The original chain of custody documentation is included with this report.**

**Sample Receipt**

There were no problems with the condition of the samples received.

**Quality Control**

Unless otherwise noted all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Trace Level Organics

The laboratory control sample recovery for internal standard 13C-OCDD was outside control limits, however, the signal to noise ratio met the method requirement of 10:1, and all natives in the laboratory control sample were in control.

The recovery for internal standard 13C-OCDD for sample 090903-2 was outside control limits, however, the signal to noise ratio met the method requirement of 10:1, and the estimated detection limit of the native OCDD was below the minimum level.

The matrix spike/matrix spike duplicate recoveries for sample 090903-3 were outside control limits for some compounds. The laboratory control sample had acceptable results indicating the analysis was in control.

All positive 2378-TCDF results at or above the minimum level were confirmed on the DB-225 column. There were two 2378-TCDF results reported for sample 090903-3. One result was taken from the DB-225 column and the other was reported from the DB-5 column. The value from DB-5 column was reported in order to calculate the RPD properly for the MS/MSD recoveries and was flagged with "X" qualifier.

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# PROJECT NARRATIVE
## H3I100253

The following flags are used to qualify results for chlorinated dioxin and furan results:

**J** – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is "the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point". The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report the ML is qualitatively defined as described above, and quantitatively defined as follows: **Minimum Level:** The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.
Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.
Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

**E** – The reported result is an estimate. The amount reported is above the UCL described below.
The E qualifier is applied on the basis of the **Upper Calibration Level (UCL)**. The quantitative definition of the UCL is listed below:
**Upper Calibration Level:** The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

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# PROJECT NARRATIVE
## H3I100253

Example:
The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.
Example:
A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this examples all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

**B** – The analyte is present in the associated method blank at a reportable level. For this analysis, there is no method specified reporting level, other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of 2.5-to-1. Therefore, the presence of any amount of the analyte present in the blank will result a B qualifier on all associated samples.
If the blank has analytes present above the ML (described above) the need for corrective action beyond qualifying the associated data is evaluated. The determination is made whether the amount in the blank is less than 5% of the lowest amount in associated client samples or regulatory limit. If this is the case, sample processing may continue with the qualification of the data. If the amount in the blank is greater than 5% of the lowest amount in associated client samples or regulatory limit, corrective action must be taken.
The corrective actions may include extracting a second aliquot of sample if available, or notifying the client to assess the impact on the project objectives.
Note: Some laboratories do not report contamination in the blank unless it is above their lower calibration limit, or an established percentage of the level in the samples, or an established percentage of the regulatory limit. Likewise, some laboratories set a reporting limit at one half the lower calibration limit.

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# PROJECT NARRATIVE
## H3I100253

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. The criteria include the following areas:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio.)
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- Polychlorinated dibenzofuran purity. No peak can be identified as a polychlorinated dibenzofuran if a polychlorinated diphenyl ether peak maximizes within +/- 2 seconds of the furan candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity, due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer

X – Other. See explanation in narrative.

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# Sample Data Summary

**TECHLAW, INC.**

**Client Sample ID: 090903-1**

**GC Semivolatiles**

**Lot-Sample #...:** H3I100253-001 **Work Order #...:** FX1WF1AC **Matrix.....:** SOLID
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1
**% Moisture.....:** **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 98 | (34 - 148) |
| Decachlorobiphenyl | 108 | (41 - 146) |

TECHLAW, INC.

Client Sample ID: 090903-2

GC Semivolatiles

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH1AE Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/16/03 Analysis Date..: 09/18/03
Prep Batch #...: 3259122
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 88 | (34 - 148) |
| Decachlorobiphenyl | 101 | (41 - 146) |

**TECHLAW, INC.**

**Client Sample ID: 090903-3**

**GC Semivolatiles**

**Lot-Sample #...:** H3I100253-003 **Work Order #...:** FX1WJ1AE **Matrix.....:** SOLID
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1
**% Moisture.....:** **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 94 | (34 - 148) |
| Decachlorobiphenyl | 97 | (41 - 146) |

## METHOD BLANK REPORT

### GC Semivolatiles

Client Lot #...: H3I100253 Work Order #...: F0D1C1AA Matrix.....: SOLID
MB Lot-Sample #: H3I160000-122

Prep Date.....: 09/16/03
Analysis Date..: 09/19/03 Prep Batch #...: 3259122
Dilution Factor: 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1221 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1232 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1242 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1248 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1254 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1260 | ND | 33 | ug/kg | SW846 8082 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 99 | (41 - 146) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD |
|---|---|---|---|
| **Aroclor 1016** | **103** | **(52 - 117)** | **SW846 8082** |
| **Aroclor 1260** | **93** | **(53 - 128)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

# LABORATORY CONTROL SAMPLE DATA REPORT

## GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **167** | **172** | **ug/kg** | **103** | **SW846 8082** |
| **Aroclor 1260** | **167** | **155** | **ug/kg** | **93** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ1AF-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ1AG-MSD
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1 **% Moisture.....:**

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **91** | **(44 - 134)** | | | **SW846 8082** |
| | **86** | **(44 - 134)** | **6.0** | **(0-47)** | **SW846 8082** |
| **Aroclor 1260** | **103** | **(45 - 154)** | | | **SW846 8082** |
| | **99** | **(45 - 154)** | **3.4** | **(0-46)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## MATRIX SPIKE SAMPLE DATA REPORT

### GC Semivolatiles

Client Lot #...: H3I100253 Work Order #...: FX1WJ1AF-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ1AG-MSD
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/16/03 Analysis Date..: 09/18/03
Prep Batch #...: 3259122
Dilution Factor: 1 % Moisture.....:

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| Aroclor 1016 | ND | 167 | 151 | ug/kg | 91 | | SW846 8082 |
| | ND | 167 | 143 | ug/kg | 86 | 6.0 | SW846 8082 |
| Aroclor 1260 | ND | 167 | 171 | ug/kg | 103 | | SW846 8082 |
| | ND | 167 | 165 | ug/kg | 99 | 3.4 | SW846 8082 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold prim denotes control parameters

# Sample Data Summary

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 5.3 | 0.42 | pg/g | SW846 8290 |
| Total TCDD | 42 Q | 0.42 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 30 | 0.24 | pg/g | SW846 8290 |
| Total PeCDD | 200 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 9.8 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 86 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 46 | 0.23 | pg/g | SW846 8290 |
| Total HxCDD | 640 Q | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 190 | 0.32 | pg/g | SW846 8290 |
| Total HpCDD | 430 | 0.32 | pg/g | SW846 8290 |
| OCDD | 230 B | 0.31 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.3 J | 0.18 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 2.2 J | 0.15 | pg/g | SW846 8290 |
| Total PeCDF | 27 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 5.6 | 0.14 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.7 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 2.2 Q,J | 0.17 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.30 J | 0.19 | pg/g | SW846 8290 |
| Total HxCDF | 57 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 21 B | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.2 Q,B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 51 Q,B | 0.21 | pg/g | SW846 8290 |
| OCDF | 11 | 0.26 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 70 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 82 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 77 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 66 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 71 | (40 - 135) |
| 13C-OCDD | 63 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 73 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 74 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 67 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 74 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF1AD Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 1.4 Q | 0.20 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 69 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 8.8 Q | 0.37 | pg/g | SW846 8290 |
| Total TCDD | 73 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 57 | 0.21 | pg/g | SW846 8290 |
| Total PeCDD | 430 Q | 0.21 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 22 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 170 | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 75 | 0.25 | pg/g | SW846 8290 |
| Total HxCDD | 1300 | 0.26 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 400 | 0.57 | pg/g | SW846 8290 |
| Total HpCDD | 1000 | 0.57 | pg/g | SW846 8290 |
| OCDD | 470 B | 0.90 | pg/g | SW846 8290 |
| Total TCDF | 29 Q | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 2.2 Q,J | 0.16 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 4.3 Q,J | 0.13 | pg/g | SW846 8290 |
| Total PeCDF | 65 Q | 0.14 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 12 Q | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 10 Q | 0.17 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 4.5 J | 0.22 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.53 Q,J | 0.32 | pg/g | SW846 8290 |
| Total HxCDF | 160 Q | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 45 B | 0.34 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 2.4 Q,B,J | 0.47 | pg/g | SW846 8290 |
| Total HpCDF | 120 Q,B | 0.39 | pg/g | SW846 8290 |
| OCDF | 27 | 0.84 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 77 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 76 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 128 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 109 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 74 | (40 - 135) |
| 13C-OCDD | 37 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 81 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 69 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 73 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 127 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 116 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 85 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 80 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

* Surrogate recovery is outside stated control limits.

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH1AF Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.8 Q | 0.25 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 78 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 3.0 | 0.29 | pg/g | SW846 8290 |
| Total TCDD | 24 Q | 0.29 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 16 | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | 110 Q | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 7.1 | 0.18 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 69 | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 30 | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | 490 Q | 0.19 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 120 | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | 300 | 0.28 | pg/g | SW846 8290 |
| OCDD | 98 B | 0.30 | pg/g | SW846 8290 |
| 2,3,7,8-TCDF | 2.4 X | 0.27 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.27 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.4 Q,J | 0.15 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 1.9 J | 0.12 | pg/g | SW846 8290 |
| Total PeCDF | 29 Q | 0.13 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 4.9 J | 0.13 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.4 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 1.6 J | 0.16 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDF | 53 Q | 0.15 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 18 B | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.1 B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 44 B | 0.20 | pg/g | SW846 8290 |
| OCDF | 7.0 J | 0.30 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 96 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 84 | (40 - 135) |
| 13C-OCDD | 58 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 85 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 91 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 81 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 87 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

X See project narrative.

J Estimated result. Result is less than the reporting limit.

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ1AH Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.0 Q | 0.21 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 84 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

## METHOD BLANK REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AA Matrix.....: SOLID
MB Lot-Sample #: H3I300000-193

Prep Date.....: 09/30/03
Analysis Date..: 10/05/03 Prep Batch #...: 3273193
Dilution Factor: 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.31 | pg/g | SW846 8290 |
| Total TCDD | ND | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| **OCDD** | **0.68 Q,J** | **0.39** | **pg/g** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.28 | pg/g | SW846 8290 |
| Total TCDF | ND | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 0.14 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 0.11 | pg/g | SW846 8290 |
| Total PeCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.17 | pg/g | SW846 8290 |
| Total HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDF** | **0.30 Q,J** | **0.18** | **pg/g** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **0.44 Q,J** | **0.21** | **pg/g** | **SW846 8290** |
| **Total HpCDF** | **0.75 Q,J** | **0.19** | **pg/g** | **SW846 8290** |
| OCDF | ND | 0.37 | pg/g | SW846 8290 |

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## METHOD BLANK REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AA Matrix.....: SOLID

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS | | |
| 13C-2,3,7,8-TCDD | 75 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDD | 92 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDD | 72 | (40 - 135) | | |
| 13C-OCDD | 46 | (40 - 135) | | |
| 13C-2,3,7,8-TCDF | 77 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDF | 72 | (40 - 135) | | |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDF | 89 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDF | 83 | (40 - 135) | | |
| 13C-2,3,4,6,7,8-HxCDF | 76 | (40 - 135) | | |
| 13C-1,2,3,7,8,9-HxCDF | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDF | 69 | (40 - 135) | | |
| 13C-1,2,3,4,7,8,9-HpCDF | 76 | (40 - 135) | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Q Estimated maximum possible concentration (EMPC).

J Estimated result. Result is less than the reporting limit.

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD |
|---|---|---|---|
| 2,3,7,8-TCDD | 97 | (70 - 115) | SW846 8290 |
| 1,2,3,7,8-PeCDD | 98 | (76 - 113) | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 94 | (68 - 120) | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 100 | (76 - 114) | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 75 | (62 - 123) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 92 | (74 - 109) | SW846 8290 |
| OCDD | 91 B | (75 - 112) | SW846 8290 |
| 2,3,7,8-TCDF | 98 | (75 - 115) | SW846 8290 |
| 1,2,3,7,8-PeCDF | 105 | (75 - 117) | SW846 8290 |
| 2,3,4,7,8-PeCDF | 101 | (63 - 126) | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 97 | (78 - 114) | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 96 | (78 - 114) | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 95 | (74 - 112) | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 93 | (60 - 130) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 93 B | (72 - 111) | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 97 B | (60 - 125) | SW846 8290 |
| OCDF | 125 | (69 - 128) | SW846 8290 |

(Continued on next page)

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193

| INTERNAL STANDARD | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 77 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 60 | (40 - 135) |
| 13C-OCDD | 29 * | (40 - 135) |
| 13C-2 [illegible] | 72 | (40 - 135) |
| 13C [illegible] | 68 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 91 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 83 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 71 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 65 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 63 | (40 - 135) |

NOTE(S):

Calculations are performed b[illegible]nding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

LABORATORY CONTROL SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 20.0 | 19.4 | pg/g | 97 | SW846 8290 |
| 1,2,3,7,8-PeCDD | 100 | 98.0 | pg/g | 98 | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 100 | 94.4 | pg/g | 94 | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 100 | 100 | pg/g | 100 | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 100 | 74.8 | pg/g | 75 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 100 | 91.7 | pg/g | 92 | SW846 8290 |
| OCDD | 200 | 182 B | pg/g | 91 | SW846 8290 |
| 2,3,7,8-TCDF | 20.0 | 19.7 | pg/g | 98 | SW846 8290 |
| 1,2,3,7,8-PeCDF | 100 | 105 | pg/g | 105 | SW846 8290 |
| 2,3,4,7,8-PeCDF | 100 | 101 | pg/g | 101 | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 100 | 97.3 | pg/g | 97 | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 100 | 96.0 | pg/g | 96 | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 100 | 94.5 | pg/g | 95 | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 100 | 92.9 | pg/g | 93 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 100 | 93.5 B | pg/g | 93 | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 100 | 96.6 B | pg/g | 97 | SW846 8290 |
| OCDF | 200 | 249 | pg/g | 125 | SW846 8290 |

(Continued on next page)

## LABORATORY CONTROL SAMPLE DATA REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193

| INTERNAL STANDARD | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 77 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 60 | (40 - 135) |
| 13C-OCDD | 29 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 72 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 68 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 91 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 83 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 71 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 65 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 63 | (40 - 135) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

MATRIX SPIKE SAMPLE EVALUATION REPORT

Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1 % Moisture.....:

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD |
|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 104 | (70 - 116) | | | SW846 8290 |
| | 109 | (70 - 116) | 4.2 | (0-20) | SW846 8290 |
| 1,2,3,7,8-PeCDD | 102 | (75 - 113) | | | SW846 8290 |
| | 110 | (75 - 113) | 6.5 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 98 | (62 - 130) | | | SW846 8290 |
| | 100 | (62 - 130) | 2.1 | (0-20) | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 111 | (75 - 114) | | | SW846 8290 |
| | 135 a | (75 - 114) | 12 | (0-20) | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 104 | (59 - 128) | | | SW846 8290 |
| | 110 | (59 - 128) | 4.4 | (0-20) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 113 | (40 - 154) | | | SW846 8290 |
| | 159 a | (40 - 154) | 18 | (0-20) | SW846 8290 |
| OCDD | 97 B | (33 - 154) | | | SW846 8290 |
| | 116 B | (33 - 154) | 12 | (0-20) | SW846 8290 |
| 2,3,7,8-TCDF | 107 | (65 - 130) | | | SW846 8290 |
| | 112 | (65 - 130) | 4.8 | (0-20) | SW846 8290 |
| 1,2,3,7,8-PeCDF | 108 | (67 - 123) | | | SW846 8290 |
| | 108 | (67 - 123) | 0.09 | (0-20) | SW846 8290 |
| 2,3,4,7,8-PeCDF | 102 | (62 - 126) | | | SW846 8290 |
| | 103 | (62 - 126) | 1.4 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 97 | (74 - 114) | | | SW846 8290 |
| | 100 | (74 - 114) | 3.0 | (0-20) | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 98 Q | (66 - 114) | | | SW846 8290 |
| | 100 Q | (66 - 114) | 2.3 | (0-20) | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 100 | (65 - 118) | | | SW846 8290 |
| | 99 | (65 - 118) | 0.86 | (0-20) | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 95 | (60 - 130) | | | SW846 8290 |
| | 94 | (60 - 130) | 0.58 | (0-20) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 95 B | (51 - 133) | | | SW846 8290 |
| | 105 B | (51 - 133) | 8.6 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 95 B | (60 - 125) | | | SW846 8290 |
| | 97 B | (60 - 125) | 2.6 | (0-20) | SW846 8290 |
| OCDF | 108 | (52 - 137) | | | SW846 8290 |
| | 113 | (52 - 137) | 4.5 | (0-20) | SW846 8290 |

(Continued on next page)

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 101 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-OCDD | 81 | (40 - 135) |
| | 81 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 88 | (40 - 135) |
| | 91 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 92 | (40 - 135) |
| | 95 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 92 | (40 - 135) |
| | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| | 92 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 85 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 93 | (40 - 135) |
| | 97 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 87 | (40 - 135) |
| | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 101 | (40 - 135) |
| | 105 | (40 - 135) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Q Estimated maximum possible concentration (EMPC).

MATRIX SPIKE SAMPLE DATA REPORT

Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1 % Moisture.....:

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 3.0 | 20.0 | 23.7 | pg/g | 104 | | SW846 8290 |
| | 3.0 | 20.0 | 24.7 | pg/g | 109 | 4.2 | SW846 8290 |
| 1,2,3,7,8-PeCDD | 16 | 100 | 118 | pg/g | 102 | | SW846 8290 |
| | 16 | 100 | 126 | pg/g | 110 | 6.5 | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 7.1 | 100 | 105 | pg/g | 98 | | SW846 8290 |
| | 7.1 | 100 | 107 | pg/g | 100 | 2.1 | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 69 | 100 | 180 | pg/g | 111 | | SW846 8290 |
| | 69 | 100 | 204 | pg/g | 135 a | 12 | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 30 | 100 | 134 | pg/g | 104 | | SW846 8290 |
| | 30 | 100 | 140 | pg/g | 110 | 4.4 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 120 | 100 | 229 | pg/g | 113 | | SW846 8290 |
| | 120 | 100 | 275 | pg/g | 159 a | 18 | SW846 8290 |
| OCDD | 98 | 200 | 292 | pg/g | 97 B | | SW846 8290 |
| | 98 | 200 | 330 | pg/g | 116 B | 12 | SW846 8290 |
| 2,3,7,8-TCDF | 2.4 | 20.0 | 21.4 | pg/g | 107 | | SW846 8290 |
| | 2.4 | 20.0 | 22.5 | pg/g | 112 | 4.8 | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.4 | 100 | 110 | pg/g | 108 | | SW846 8290 |
| | 1.4 | 100 | 110 | pg/g | 108 | 0.09 | SW846 8290 |
| 2,3,4,7,8-PeCDF | 1.9 | 100 | 104 | pg/g | 102 | | SW846 8290 |
| | 1.9 | 100 | 105 | pg/g | 103 | 1.4 | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 4.9 | 100 | 102 | pg/g | 97 | | SW846 8290 |
| | 4.9 | 100 | 105 | pg/g | 100 | 3.0 | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.4 | 100 | 101 | pg/g | 98 Q | | SW846 8290 |
| | 3.4 | 100 | 103 | pg/g | 100 Q | 2.3 | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 1.6 | 100 | 101 | pg/g | 100 | | SW846 8290 |
| | 1.6 | 100 | 101 | pg/g | 99 | 0.86 | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 100 | 94.6 | pg/g | 95 | | SW846 8290 |
| | ND | 100 | 94.0 | pg/g | 94 | 0.58 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 18 | 100 | 113 | pg/g | 95 B | | SW846 8290 |
| | 18 | 100 | 124 | pg/g | 105 B | 8.6 | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.1 | 100 | 95.9 | pg/g | 95 B | | SW846 8290 |
| | 1.1 | 100 | 98.4 | pg/g | 97 B | 2.6 | SW846 8290 |
| OCDF | 7.0 | 200 | 223 | pg/g | 108 | | SW846 8290 |
| | 7.0 | 200 | 234 | pg/g | 113 | 4.5 | SW846 8290 |

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 101 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-OCDD | 81 | (40 - 135) |
| | 81 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 88 | (40 - 135) |
| | 91 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 92 | (40 - 135) |
| | 95 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 92 | (40 - 135) |
| | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| | 92 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 85 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 93 | (40 - 135) |
| | 97 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 87 | (40 - 135) |
| | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 101 | (40 - 135) |
| | 105 | (40 - 135) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Q Estimated maximum possible concentration (EMPC).

# Sample Receipt Documentation

# STL Knoxville

5815 Middlebrook Pike • Knoxville, TN 37921-5947
Phone: (865) 291-3000 • Fax: (865) 584-4315
Receiving: (865) 291-3031

11311002S3

## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No.
Page 1 of 1

Project Name/No. [1] St. Louis Army Ammunition Plant (SLAAP)
Sample Team Members [2] Steve Bryant
Profit Center No. [3]
Project Manager [4]
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 9/9/03
Lab Destination [8] Knoxville, TN
Lab Contact [9] Jamie McKinney
Project Contact / Phone [12] Steve Bryant 913/236-0006
Carrier / Waybill No. [13] FedEx/835872895102

Bill to: [5] TechLaw, Inc.
6400 Glenwood, Suite 212
Overland Park, KS 66202
Attn: Steve Bryant
Report to: [10] same as "Bill to"

**ONE CONTAINER PER LINE**

| Sample Number [14] | Sample Type [15] | Date/Time Collected [16] | Container Type [17] | Sample Volume [18] | Preservative [19] | Requested Testing Program [20] | Condition on Receipt Lab use only [21] |
|---|---|---|---|---|---|---|---|
| 090903-1 | Transite* | 9/9/03 9:30 | 8 oz glass | ~100 g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Custody seals intact (Y) N NA |
| 090903-2 | Transite* | 9/9/03 9:30 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Temperature received at 3°C |
| 090903-3** | Transite* | 9/9/03 15:30 | 8 oz glass | ~100g | 4°C | PCBs 8082 PCDD/DFs 8290 | Received by ADF Date 09-10-03 ADF |
| | | | | | | | Number of packages 1 |
| | | | | | | | Tracking # 835872895102 ADF 09-10-03 |
| | | Shipment complete | | | | | |

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☒ Project Specific (specify):

1. Relinquished by [29] (Signature / Affiliation) [signature] / TechLaw — Date: 9/9/03 Time: 17:45
1. Received by [28] (Signature / Affiliation) [signature] SR — Date: 09-10-03 Time: 09:30

1. Relinquished by (Signature / Affiliation) — Date: Time:
1. Received by (Signature / Affiliation) — Date: Time:

Comments: [29]
*Transite is an asbestos-containing material
**090903-3 includes extra volumes for MS/MSD

White: To accompany samples
Yellow: Field copy

# STL KNOXVILLE
## SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

CLIENT: Techlaw Inc. PROJECT: SLAAP Lot No.: #36 #320053
AFF 9-10-03

TO BE COMPLETED BY SAMPLE RECEIPT ASSOCIATE:

| | | YES | NO | NA |
|---|---|---|---|---|
| 1. | Sample Receipt: | | | |
| a. | Do sample container labels match COC? (IDs, Dates, Times) | ✓ | | |
| b. | Is the cooler temperature within acceptance limits? (NOTE: North Carolina, 1668, 1613B: 0-4°C; VOST: 10°C) | ✓ | | |
| c. | Were samples received with correct chemical preservative (excluding Encore)? | | | ✓ |
| d. | Were custody seals present/intact on cooler and/or containers? | ✓ | | |
| e. | Were all of the samples listed on the COC received? | ✓ | | |
| f. | Were all of the sample containers received intact? | ✓ | | |
| g. | Were containers received for VOAs received without headspace? | | | ✓ |
| h. | Were samples received in the appropriate containers? | ✓ | | |
| i. | Did you check for residual chlorine, if necessary? | | | ✓ |
| j. | Were samples received within 1/2 of the holding time? | ✓ | | |
| k. | Were samples screened for radioactivity? | | | ✓ |
| l. | For aqueous samples for SOG tests (i.e., 1613B, 1668A, 8290, LR PAHs), does the sample(s) have visible solids present? | | | ✓ |
| | If yes, was SOG staff notified? | | | ✓ |
| m. | Were client's sample documents (RFA/COC) received? | ✓ | | |
| n. | Has the RFA/COC been relinquished? (Signed, Dated, Timed) | ✓ | | |
| o. | Are test/parameters listed for each sample? | ✓ | | |
| p. | Is the matrix of the samples noted? | ✓ | | |
| q. | Is the date/time of sample collection noted? | ✓ | | |
| r. | Is the client and project name/No. identified? | ✓ | | |
| s. | Was the sampler identified on the RFA/COC? | ✓ | | |

SAMPLE RECEIVING ASSOCIATE: Andrew D. Flood DATE: 09-10-03

TO BE COMPLETED BY PROJECT MANAGER :

| | | YES | NO | NA |
|---|---|---|---|---|
| 1. | Project manager "Sample Greet": | | | |
| a. | Quote number to be logged-in under 52982 | | | |
| b. | Informed Login associates of special instructions ? | | | X |

PROJECT MANAGER : [signature] DATE: 9/12/03

| Client Sample ID | Analysis Requested | Condition (see legend) | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

☐ Client informed on _____ by _____. Person contacted: _____.
☐ Noted actions in comments section above.
☐ No action necessary; process as is.

Project Manager: _____ Date: _____

# PCBs

# Raw Sample Data

TECHLAW, INC.

Client Sample ID: 090903-1

GC Semivolatiles

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF1AC Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/16/03 Analysis Date..: 09/18/03
Prep Batch #...: 3259122
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 98 | (34 - 148) |
| Decachlorobiphenyl | 108 | (41 - 146) |

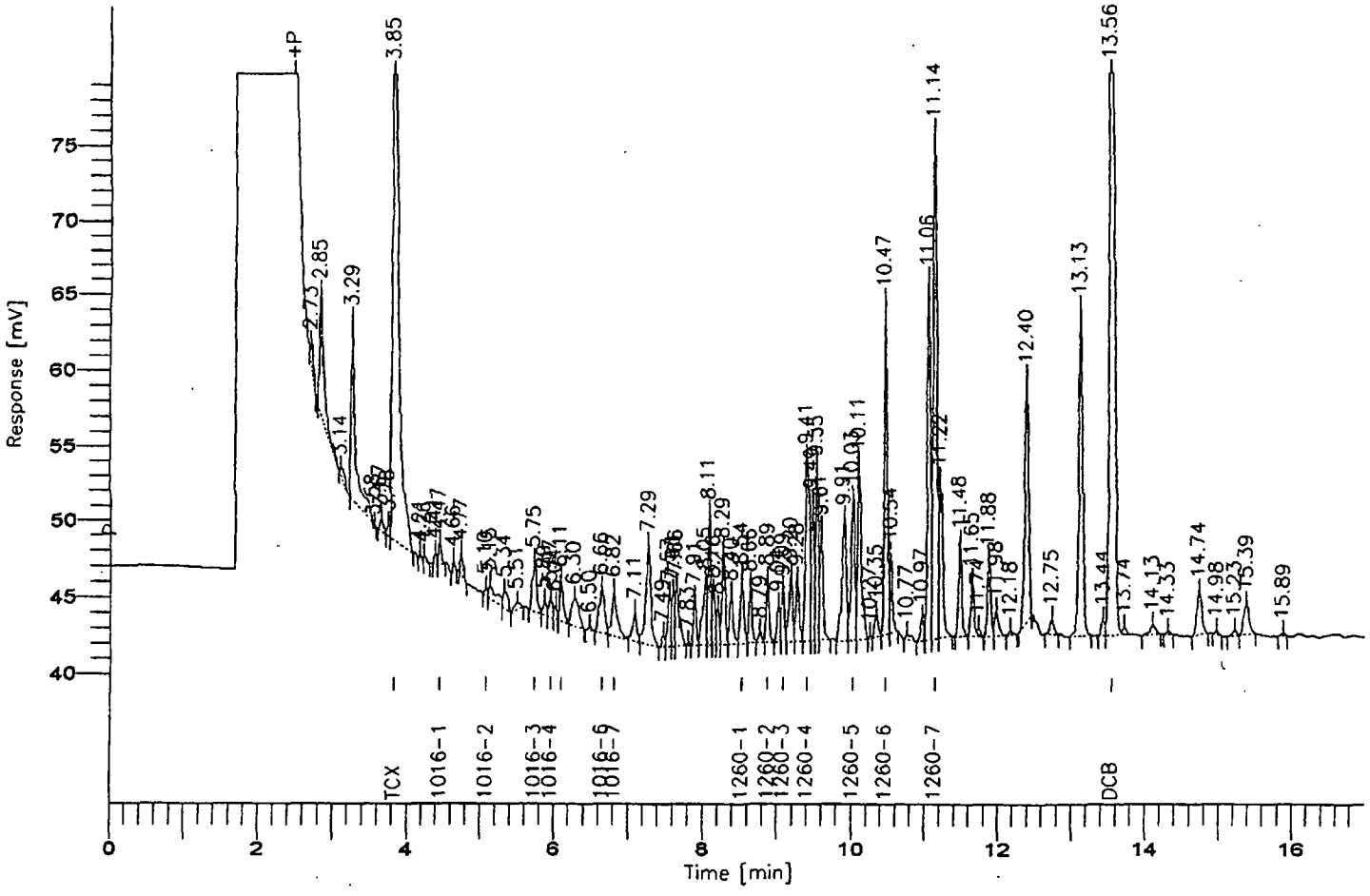
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 07:56 AM
Sample Number: FX1WF1AC Study :
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 03:32 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5084.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5084.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5084.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.946 | TCX | 6.5067 | 6.6667 | 19.52 | 255964 | 64678 | 0.129 | TCX | 0.0050 | 3.941 | 10 | 97.6 |
| 5.752 | AR1016 | 6.1357 | 166.6667 | 18.41 | 63022 | 14757 | 0.000 | AR1016 | -0.0000 | 5.752 | 10 | 3.7 |
| 11.144 | AR1260 | 22.5076 | 166.6667 | 67.52 | 289797 | 88939 | 0.000 | AR1260 | -0.0000 | 11.144 | 10 | 13.5 |
| 13.556 | DCB | 7.2104 | 6.6667 | 21.63 | 296959 | 76135 | 0.107 | DCB | 0.0145 | 13.541 | 10 | 108.2 |
| | | 42.3604 | | | 905741 | 244510 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.472 | 1016-1 | 6.3827 | 0.0000 | 19.15 | 3675 | 1344 | -1.419 | 1016-1 | -0.0644 | 4.537 | 10 | -------- |
| 5.097 | 1016-2 | 1.2401 | 0.0000 | 3.72 | 1363 | 498 | 0.091 | 1016-2 | 0.0047 | 5.093 | 10 | -------- |
| 5.752 | 1016-3 | 4.6589 | 0.0000 | 13.98 | 13950 | 3217 | 0.124 | 1016-3 | 0.0071 | 5.745 | 10 | -------- |
| 5.969 | 1016-4 | 4.2088 | 0.0000 | 12.63 | 4656 | 1339 | 0.153 | 1016-4 | 0.0091 | 5.960 | 10 | -------- |
| 6.114 | 1016-5 | 11.7482 | 0.0000 | 35.24 | 9055 | 2598 | 0.045 | 1016-5 | 0.0028 | 6.111 | 10 | -------- |
| 6.660 | 1016-6 | 9.1363 | 0.0000 | 27.41 | 15301 | 2852 | 0.030 | 1016-6 | 0.0020 | 6.658 | 10 | -------- |
| 6.821 | 1016-7 | 11.5820 | 0.0000 | 34.75 | 15021 | 2909 | 0.099 | 1016-7 | 0.0068 | 6.814 | 10 | -------- |
| | | 48.9571 | | | 63022 | 14757 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.544 | 1260-1 | 7.8127 | 0.0000 | 23.44 | 14140 | 4232 | 0.091 | 1260-1 | 0.0078 | 8.536 | 10 | -------- |
| 8.886 | 1260-2 | 6.8085 | 0.0000 | 20.43 | 10950 | 4031 | 0.119 | 1260-2 | 0.0105 | 8.876 | 10 | -------- |
| 9.092 | 1260-3 | 9.7826 | 0.0000 | 29.35 | 9102 | 3341 | 0.087 | 1260-3 | 0.0079 | 9.085 | 10 | -------- |
| 9.414 | 1260-4 | 16.6982 | 0.0000 | 50.09 | 50270 | 12040 | -0.138 | 1260-4 | -0.0130 | 9.427 | 10 | -------- |
| 10.029 | 1260-5 | 20.7563 | 0.0000 | 62.27 | 32671 | 9347 | 0.121 | 1260-5 | 0.0122 | 10.017 | 10 | -------- |
| 10.471 | 1260-6 | 27.5281 | 0.0000 | 82.58 | 60975 | 22058 | 0.096 | 1260-6 | 0.0100 | 10.461 | 10 | -------- |
| 11.144 | 1260-7 | 67.2874 | 0.0000 | 201.86 | 111688 | 33891 | 0.290 | 1260-7 | 0.0322 | 11.112 | 10 | -------- |
| | | 156.6737 | | | 289797 | 88939 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5084.TXO

**TECHLAW, INC.**

**Client Sample ID: 090903-2**

**GC Semivolatiles**

**Lot-Sample #...:** H3I100253-002 **Work Order #...:** FX1WH1AE **Matrix.....:** SOLID
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1
**% Moisture.....:** **Method.....:** SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 88 | (34 - 148) |
| Decachlorobiphenyl | 101 | (41 - 146) |

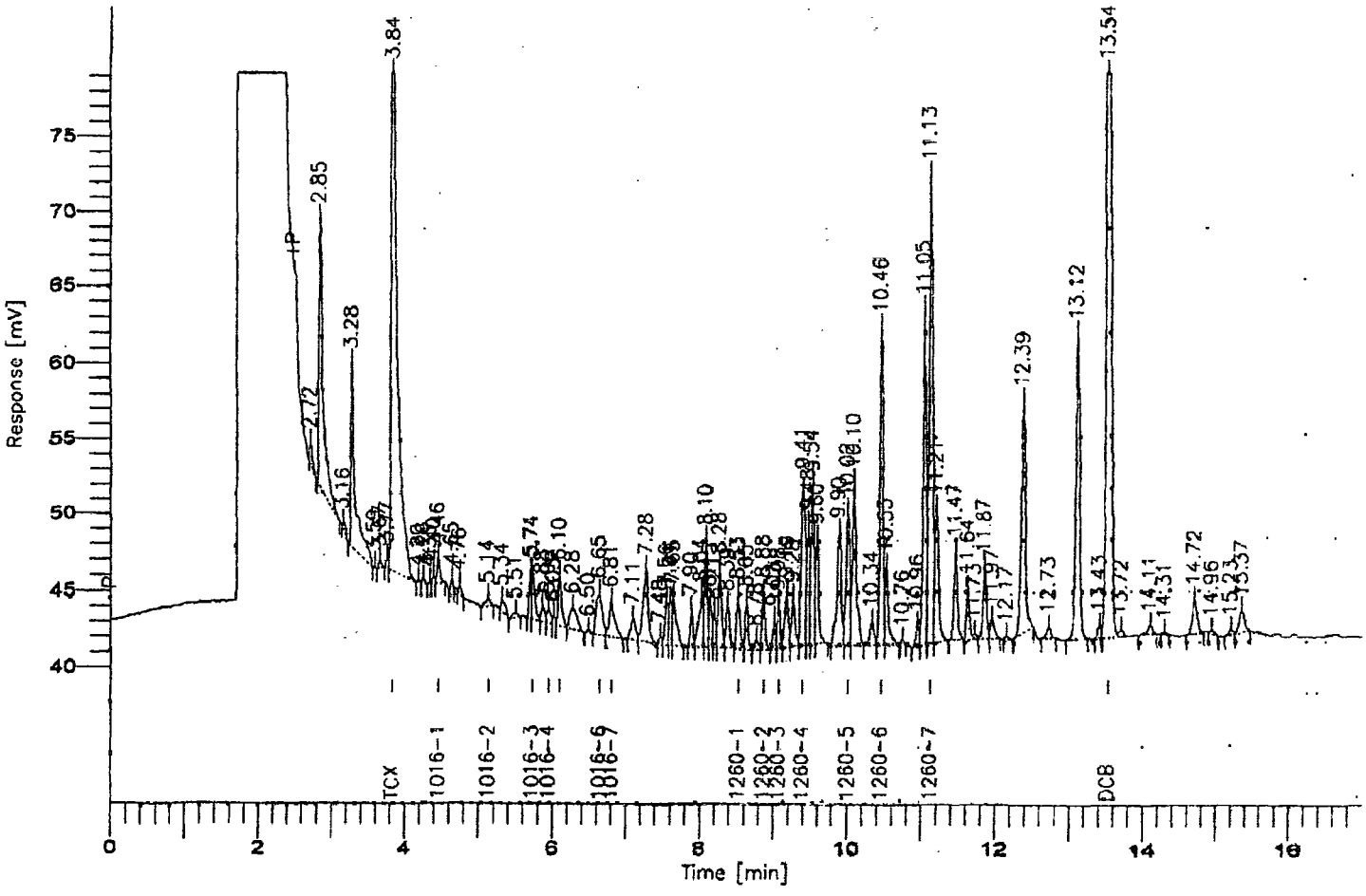
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 07:57 AM
Sample Number: FX1WH1AE Study :
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 03:56 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5085.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5085.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5085.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.839 | TCX | 5.8822 | 6.6667 | 17.65 | 234820 | 58470 | -0.064 | TCX | -0.0024 | 3.841 | 10 | 88.2 |
| 6.104 | AR1016 | 6.0305 | 166.6667 | 18.09 | 58597 | 14504 | 0.000 | AR1016 | -0.0000 | 6.104 | 10 | 3.6 |
| 11.131 | AR1260 | 20.6522 | 166.6667 | 61.96 | 269523 | 81608 | 0.000 | AR1260 | -0.0000 | 11.131 | 10 | 12.4 |
| 13.538 | DCB | 6.7239 | 6.6667 | 20.17 | 275538 | 70998 | -0.023 | DCB | -0.0031 | 13.541 | 10 | 100.9 |
| | | 39.2887 | | | 838478 | 225580 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.464 | 1016-1 | 7.6193 | 0.0000 | 22.86 | 4566 | 1605 | -1.599 | 1016-1 | -0.0725 | 4.537 | 10 | ------- |
| 5.142 | 1016-2 | 1.4506 | 0.0000 | 4.35 | 2600 | 582 | 0.980 | 1016-2 | 0.0499 | 5.093 | 10 | ------- |
| 5.738 | 1016-3 | 4.3481 | 0.0000 | 13.04 | 8478 | 3002 | -0.121 | 1016-3 | -0.0070 | 5.745 | 10 | ------- |
| 5.958 | 1016-4 | 3.1986 | 0.0000 | 9.60 | 3702 | 1018 | -0.026 | 1016-4 | -0.0015 | 5.960 | 10 | ------- |
| 6.104 | 1016-5 | 15.0216 | 0.0000 | 45.06 | 11101 | 3322 | -0.113 | 1016-5 | -0.0069 | 6.111 | 10 | ------- |
| 6.647 | 1016-6 | 8.6819 | 0.0000 | 26.05 | 16135 | 2710 | -0.163 | 1016-6 | -0.0108 | 6.658 | 10 | ------- |
| 6.812 | 1016-7 | 9.0180 | 0.0000 | 27.05 | 12015 | 2265 | -0.037 | 1016-7 | -0.0025 | 6.814 | 10 | ------- |
| | | 49.3381 | | | 58597 | 14504 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.534 | 1260-1 | 6.5332 | 0.0000 | 19.60 | 11597 | 3539 | -0.024 | 1260-1 | -0.0020 | 8.536 | 10 | ------- |
| 8.875 | 1260-2 | 6.3279 | 0.0000 | 18.98 | 10391 | 3746 | -0.007 | 1260-2 | -0.0006 | 8.876 | 10 | ------- |
| 9.081 | 1260-3 | 8.2994 | 0.0000 | 24.90 | 8228 | 2834 | -0.038 | 1260-3 | -0.0035 | 9.085 | 10 | ------- |
| 9.407 | 1260-4 | 14.8098 | 0.0000 | 44.43 | 43364 | 10679 | -0.217 | 1260-4 | -0.0204 | 9.427 | 10 | ------- |
| 10.019 | 1260-5 | 19.5609 | 0.0000 | 58.68 | 30212 | 8808 | 0.019 | 1260-5 | 0.0019 | 10.017 | 10 | ------- |
| 10.459 | 1260-6 | 26.0335 | 0.0000 | 78.10 | 58768 | 20861 | -0.018 | 1260-6 | -0.0019 | 10.461 | 10 | ------- |
| 11.131 | 1260-7 | 61.8276 | 0.0000 | 185.48 | 106962 | 31141 | 0.171 | 1260-7 | 0.0190 | 11.112 | 10 | ------- |
| | | 143.3922 | | | 269523 | 81608 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5085.TX0

TECHLAW, INC.

Client Sample ID: 090903-3

GC Semivolatiles

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ1AE Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/16/03 Analysis Date..: 09/18/03
Prep Batch #...: 3259122
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8082

| PARAMETER | RESULT | REPORTING LIMIT | UNITS |
|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg |
| Aroclor 1221 | ND | 33 | ug/kg |
| Aroclor 1232 | ND | 33 | ug/kg |
| Aroclor 1242 | ND | 33 | ug/kg |
| Aroclor 1248 | ND | 33 | ug/kg |
| Aroclor 1254 | ND | 33 | ug/kg |
| Aroclor 1260 | ND | 33 | ug/kg |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 94 | (34 - 148) |
| Decachlorobiphenyl | 97 | (41 - 146) |

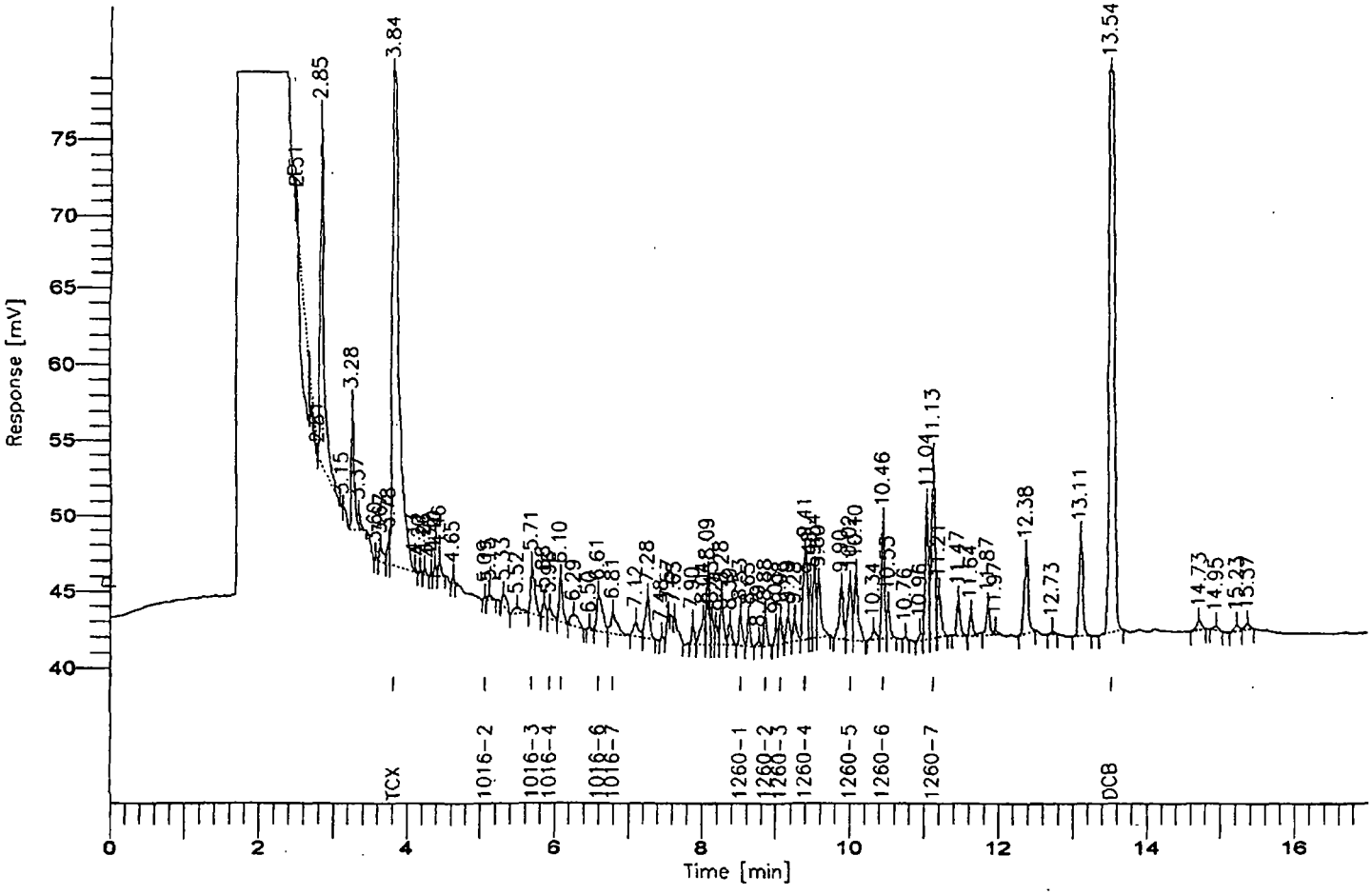
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 07:57 AM
Sample Number: FX1WJ1AE Study :
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 04:20 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5086.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5086.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5086.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.840 | TCX | 6.2776 | 6.6667 | 18.83 | 244913 | 62401 | -0.038 | TCX | -0.0015 | 3.841 | 10 | 94.2 |
| 5.708 | AR1016 | 4.5347 | 166.6667 | 13.60 | 46965 | 10906 | 0.000 | AR1016 | -0.0000 | 5.708 | 10 | 2.7 |
| 11.130 | AR1260 | 8.8503 | 166.6667 | 26.55 | 115944 | 34972 | 0.000 | AR1260 | -0.0000 | 11.130 | 10 | 5.3 |
| 13.536 | DCB | 6.4546 | 6.6667 | 19.36 | 261816 | 68155 | -0.039 | DCB | -0.0053 | 13.541 | 10 | 96.8 |
| | | 26.1173 | | | 669639 | 176435 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.537 | 1016-1 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1016-1 | -------- | -------- | 10 | -------- |
| 5.087 | 1016-2 | 0.5985 | 0.0000 | 1.80 | 631 | 240 | -0.102 | 1016-2 | -0.0052 | 5.093 | 10 | -------- |
| 5.708 | 1016-3 | 4.6512 | 0.0000 | 13.95 | 13195 | 3212 | -0.642 | 1016-3 | -0.0369 | 5.745 | 10 | -------- |
| 5.957 | 1016-4 | 2.4117 | 0.0000 | 7.23 | 2999 | 768 | -0.045 | 1016-4 | -0.0027 | 5.960 | 10 | -------- |
| 6.103 | 1016-5 | 13.3638 | 0.0000 | 40.09 | 9374 | 2955 | -0.128 | 1016-5 | -0.0078 | 6.111 | 10 | -------- |
| 6.614 | 1016-6 | 7.6795 | 0.0000 | 23.04 | 12977 | 2397 | -0.665 | 1016-6 | -0.0443 | 6.658 | 10 | -------- |
| 6.810 | 1016-7 | 5.3132 | 0.0000 | 15.94 | 7790 | 1334 | -0.066 | 1016-7 | -0.0045 | 6.814 | 10 | -------- |
| | | 34.0179 | | | 46965 | 10906 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.532 | 1260-1 | 3.6653 | 0.0000 | 11.00 | 6023 | 1986 | -0.041 | 1260-1 | -0.0035 | 8.536 | 10 | -------- |
| 8.875 | 1260-2 | 3.3632 | 0.0000 | 10.09 | 5441 | 1991 | -0.014 | 1260-2 | -0.0013 | 8.876 | 10 | -------- |
| 9.080 | 1260-3 | 4.9789 | 0.0000 | 14.94 | 4805 | 1700 | -0.045 | 1260-3 | -0.0040 | 9.085 | 10 | -------- |
| 9.410 | 1260-4 | 7.9597 | 0.0000 | 23.88 | 24003 | 5739 | -0.183 | 1260-4 | -0.0173 | 9.427 | 10 | -------- |
| 10.017 | 1260-5 | 8.2139 | 0.0000 | 24.64 | 13834 | 3699 | -0.002 | 1260-5 | -0.0002 | 10.017 | 10 | -------- |
| 10.458 | 1260-6 | 9.7167 | 0.0000 | 29.15 | 21843 | 7786 | -0.028 | 1260-6 | -0.0030 | 10.461 | 10 | -------- |
| 11.130 | 1260-7 | 23.9666 | 0.0000 | 71.90 | 39995 | 12071 | 0.169 | 1260-7 | 0.0187 | 11.112 | 10 | -------- |
| | | 61.8644 | | | 115944 | 34972 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5086.TX0

# Standards Data

# STL Knoxville GC PCBs Initial Calibration Data Review / Narrative Checklist
## Method 8082 and TO-4A, SOP KNOX -GC-0015, Rev. 4


| Analysis Date: | 9-15-03 | Instrument/File ID: | I15ML60 |
|---|---|---|---|
| 2nd Source Verification Filename: | M#A5011 | | |

| *Review Items*<br>A. Initial Calibration | Yes | No | N/A | 2nd Level | If No, why is data reportable? |
|---|---|---|---|---|---|
| 1. Were at least 5-levels of the Aroclor analyzed? | ✓ | | | ✓ | |
| 2. Was at least one single point, mid (8082) level standard analyzed for each Aroclor? | ✓ | | | ✓ | |
| 3. Were all ICAL standards used for calibration? | ✓ | | | ✓ | |
| 4. Is low level standard concentration ≤ RL? | ✓ | | | ✓ | |
| 5. Are all %RSDs ≤ 20% or correlation coefficients [R2] ≥ 0.99 ? | ✓ | | | ✓ | |
| 6. Was each run checked for saturation? | ✓ | | | ✓ | |
| 7. Is integration acceptable and are all manual integrations clearly identified, initialed, dated and reason given? | ✓ | | | ✓ | Reasons: 1) Corrected split peak; 2) Unresolved peak; 3) Tailing; 4) RT shift; 5) Wrong peak selected; 6) Other |
| 8. Was ICAL method file processed using the correct result files? (Compare peak heights-areas in method file to heights-areas of calibration standards) | ✓ | | | ✓ | |
| 9. Is the 2nd source standard within +/- 20% of the expected value? | ✓ | | | ✓ | |

Analyst: MOP Date: 9/15/03

Comments:

2nd Level Reviewer : KRM Date: 9/16/03

Comments:

Turbochrom Method File : K:\#GMN\#MTHCALB\I15ML60.MTH
Created by : MSP on : 9/15/03 01:18 PM
Edited by : Analyst on : 9/15/03 01:26 PM
Description : ICAL FOR 9/15/03

Number of Times Edited : 3
Number of Times Calibrated : 323

---

**Global Information :**

Default Sample Volume : 1.000 ul
Quantitation Units : ppb
Void Time : 0.000 min
Correct amounts during calibration : NO
Reject outliers during calibration : NO
An External Standard calibration will be used
Unknown peaks will use the response factor of the nearest component

**Component Information :**

TCX

Component Type : Single Peak Component
Retention Time : 3.841 min Search Window: 3.00 s, 1.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 10.000000
Value 2: 25.000000
Value 3: 10.000000
Value 4: 0.200000
Value 5: 200.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 2.5000 | 35471.62 | 8278.26 | ---------- | ---------- | 1 |
| 2 | 5.0000 | 62056.28 | 15873.35 | ---------- | ---------- | 1 |
| 3 | 10.0000 | 118202.67 | 36195.85 | ---------- | ---------- | 1 |
| 4 | 25.0000 | 286825.22 | 89591.61 | ---------- | ---------- | 1 |
| 5 | 50.0000 | 556760.01 | 143891.27 | ---------- | ---------- | 1 |

Average Calibration Factor = 3313.409788 (%RSD = 9.25)

1016-1

Component Type : Single Peak Component
Retention Time : 4.537 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 14561.33 | 3588.22 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 29682.75 | 7130.01 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 57678.44 | 15776.72 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 135095.75 | 35657.22 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 251876.25 | 97730.50 | ---------- | ---------- | 1 |

Average Calibration Factor = 70.198558 (%RSD = 10.94)

1016-2

Component Type : Single Peak Component
Retention Time : 5.093 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 31373.89 | 7486.87 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 58807.31 | 14098.93 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 105829.29 | 29731.12 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 223761.32 | 64079.02 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 409014.33 | 101283.50 | ---------- | ---------- | 1 |

Average Calibration Factor = 133.764796 (%RSD = 15.02)

AR1016

Component Type : Named Group
Group Members:
1016-1
1016-2
1016-3
1016-4
1016-5
1016-6
1016-7

Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 200.000000
Value 4: 5.000000
Value 5: 5000.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 179619.97 | 42325.77 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 347529.05 | 82958.47 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 678370.15 | 176209.39 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 1447112.88 | 393757.28 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 2750530.90 | 663837.25 | ---------- | ---------- | 1 |

Average Calibration Factor = 801.699766 (%RSD = 10.49)

1016-3

Component Type : Single Peak Component
Retention Time : 5.745 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 49773.39 | 12083.27 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 95838.85 | 23568.64 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 186975.04 | 50426.41 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 397824.75 | 114123.08 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 764447.96 | 193150.76 | ---------- | ---------- | 1 |

Average Calibration Factor = 230.176166 (%RSD = 9.76)

1016-4

Component Type : Single Peak Component
Retention Time : 5.960 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 22867.09 | 5615.05 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 45605.58 | 11101.69 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 90095.66 | 23406.10 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 181243.00 | 51049.14 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 369609.44 | 87965.25 | ---------- | ---------- | 1 |

Average Calibration Factor = 106.082378 (%RSD = 10.82)

1016-5

Component Type : Single Peak Component
Retention Time : 6.111 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000

Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 15338.68 | 3564.60 | | | 1 |
| 2 | 100.0000 | 31189.96 | 7307.96 | | | 1 |
| 3 | 200.0000 | 64572.66 | 16288.25 | | | 1 |
| 4 | 500.0000 | 136804.34 | 37468.81 | | | 1 |
| 5 | 1000.0000 | 282109.58 | 67829.43 | | | 1 |

Average Calibration Factor = 73.715981 (%RSD = 6.85)

1016-6

Component Type : Single Peak Component
Retention Time : 6.658 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 26931.93 | 5667.14 | | | 1 |
| 2 | 100.0000 | 51240.62 | 11178.84 | | | 1 |
| 3 | 200.0000 | 98143.91 | 22399.11 | | | 1 |
| 4 | 500.0000 | 201146.62 | 49677.43 | | | 1 |
| 5 | 1000.0000 | 358316.46 | 83787.22 | | | 1 |

Average Calibration Factor = 104.053754 (%RSD = 12.18)

1016-7

Component Type : Single Peak Component
Retention Time : 6.814 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 18773.67 | 4320.61 | | | 1 |
| 2 | 100.0000 | 35163.98 | 8572.40 | | | 1 |
| 3 | 200.0000 | 75075.15 | 18181.69 | | | 1 |
| 4 | 500.0000 | 171237.09 | 41702.57 | | | 1 |
| 5 | 1000.0000 | 315156.91 | 72090.79 | | | 1 |

Average Calibration Factor = 83.708133 (%RSD = 8.41)

1260-1

Component Type : Single Peak Component

Retention Time : 8.536 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 30146.82 | 10405.21 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 56494.89 | 19815.76 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 104948.12 | 37568.22 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 227857.60 | 83512.40 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 395312.41 | 141710.53 | ---------- | ---------- | 1 |

Average Calibration Factor = 180.567625 (%RSD = 14.69)

1260-2
Component Type : Single Peak Component
Retention Time : 8.876 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 32772.88 | 11340.12 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 62069.46 | 21379.09 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 116459.24 | 41281.43 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 254730.41 | 90888.06 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 437554.95 | 157882.90 | ---------- | ---------- | 1 |

Average Calibration Factor = 197.331895 (%RSD = 13.92)

1260-3
Component Type : Single Peak Component
Retention Time : 9.085 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 18476.05 | 6404.54 | | | 1 |
| 2 | 100.0000 | 35806.39 | 12372.19 | | | 1 |
| 3 | 200.0000 | 68097.63 | 23743.42 | | | 1 |
| 4 | 500.0000 | 145035.12 | 53224.34 | | | 1 |
| 5 | 1000.0000 | 261148.99 | 92174.49 | | | 1 |

Average Calibration Factor = 113.830599 (%RSD = 12.80)

1260-4

Component Type : Single Peak Component
Retention Time : 9.427 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 45227.22 | 12950.83 | | | 1 |
| 2 | 100.0000 | 87809.72 | 25531.38 | | | 1 |
| 3 | 200.0000 | 170772.76 | 49826.11 | | | 1 |
| 4 | 500.0000 | 384969.80 | 116186.50 | | | 1 |
| 5 | 1000.0000 | 688549.59 | 205932.40 | | | 1 |

Average Calibration Factor = 240.353271 (%RSD = 9.06)

1260-5

Component Type : Single Peak Component
Retention Time : 10.017 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 26040.95 | 8377.55 | | | 1 |
| 2 | 100.0000 | 48945.60 | 15986.16 | | | 1 |
| 3 | 200.0000 | 94414.15 | 31088.30 | | | 1 |
| 4 | 500.0000 | 211443.53 | 70647.36 | | | 1 |
| 5 | 1000.0000 | 373883.11 | 126354.76 | | | 1 |

Average Calibration Factor = 150.100749 (%RSD = 10.89)

AR1260

Component Type : Named Group
Group Members:
1260-1
1260-2

1260-3
1260-4
1260-5
1260-6
1260-7

Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 200.000000
Value 4: 5.000000
Value 5: 5000.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 235874.16 | 72284.37 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 450815.34 | 139894.66 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 873890.51 | 272834.61 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 1980107.40 | 629370.09 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 3499998.87 | 1.12e+06 | ---------- | ---------- | 1 |

Average Calibration Factor = 1317.173869 (%RSD = 9.93)

1260-6
Component Type : Single Peak Component
Retention Time : 10.461 min Search Window: 3.00 s, 0.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000
Value 4: 0.000000
Value 5: 0.000000
Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 44894.72 | 14119.98 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 84540.27 | 27567.52 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 166945.26 | 54626.95 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 380276.88 | 131687.49 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 683802.35 | 240916.44 | ---------- | ---------- | 1 |

Average Calibration Factor = 267.100200 (%RSD = 6.05)

1260-7
Component Type : Single Peak Component
Retention Time : 11.112 min Search Window: 3.00 s, 0.50 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 200.000000
Value 2: 500.000000
Value 3: 0.000000

Value 4: 0.000000
Value 5: 0.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 50.0000 | 38315.53 | 8686.13 | ---------- | ---------- | 1 |
| 2 | 100.0000 | 75149.02 | 17242.56 | ---------- | ---------- | 1 |
| 3 | 200.0000 | 152253.36 | 34700.17 | ---------- | ---------- | 1 |
| 4 | 500.0000 | 375794.06 | 83223.95 | ---------- | ---------- | 1 |
| 5 | 1000.0000 | 659747.47 | 153350.66 | ---------- | ---------- | 1 |

Average Calibration Factor = 167.889528 (%RSD = 5.15)

DCB

Component Type : Single Peak Component
Retention Time : 13.541 min Search Window: 3.00 s, 1.00 %
Reference Component:
Find peak closest to expected RT in window
Use Average Calibration Factor (Height / Amount)
User Values:
Label :
Value 1: 10.000000
Value 2: 25.000000
Value 3: 10.000000
Value 4: 0.200000
Value 5: 200.000000

Calibration Levels:

| Level Name | Amount | Area | Height | ISTD Resp. | ISTD Amt. | # Replicates |
|---|---|---|---|---|---|---|
| 1 | 2.5000 | 38388.00 | 10064.18 | ---------- | ---------- | 1 |
| 2 | 5.0000 | 75574.00 | 19730.77 | ---------- | ---------- | 1 |
| 3 | 10.0000 | 137822.00 | 35195.45 | ---------- | ---------- | 1 |
| 4 | 25.0000 | 317900.60 | 82011.15 | ---------- | ---------- | 1 |
| 5 | 50.0000 | 554893.60 | 141333.34 | ---------- | ---------- | 1 |

Average Calibration Factor = 3519.696757 (%RSD = 14.03)

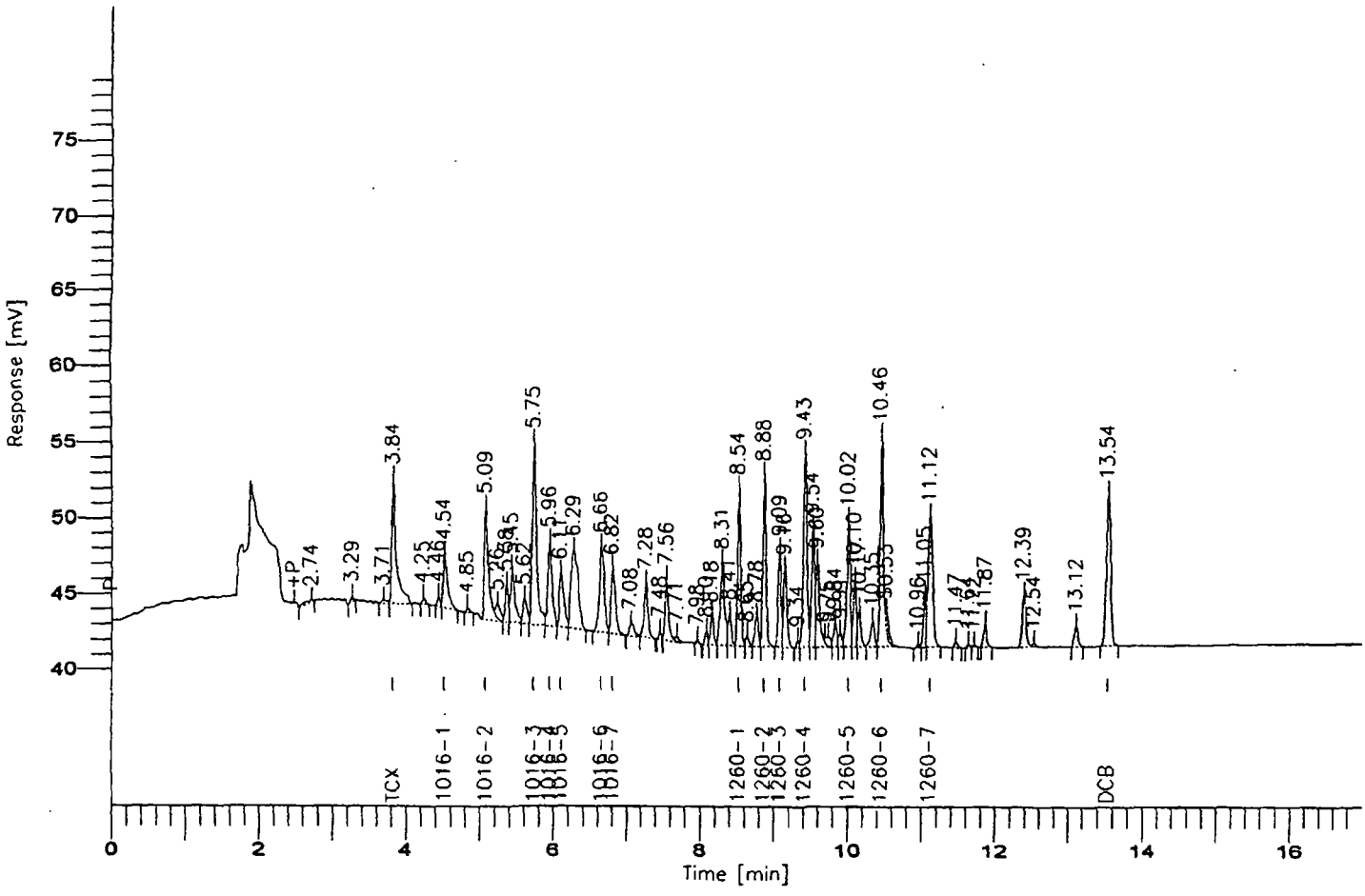
Software Version: 4.1<2F12>
Sample Name : 1660-1 Time : 9/15/03 01:20 PM
Sample Number: AI1864 Study : LINEARITY
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 11:20 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5006.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5006.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5006.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.841 | TCX | 2.50 | 35472 | 8278 | 0.001 | TCX |
| 5.746 | AR1016 | 50.00 | 179620 | 42326 | 0.000 | AR1016 |
| 10.463 | AR1260 | 50.00 | 235874 | 72284 | 0.000 | AR1260 |
| 13.542 | DCB | 2.50 | 38388 | 10064 | 0.003 | DCB |
| | | | 489354 | 132953 | | |

## Group Report For : AR1016

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.538 | 1016-1 | 50.00 | 14561 | 3588 | 0.032 | 1016-1 |
| 5.094 | 1016-2 | 50.00 | 31374 | 7487 | 0.035 | 1016-2 |
| 5.746 | 1016-3 | 50.00 | 49773 | 12083 | 0.024 | 1016-3 |
| 5.961 | 1016-4 | 50.00 | 22867 | 5615 | 0.028 | 1016-4 |
| 6.113 | 1016-5 | 50.00 | 15339 | 3565 | 0.024 | 1016-5 |
| 6.660 | 1016-6 | 50.00 | 26932 | 5667 | 0.029 | 1016-6 |
| 6.817 | 1016-7 | 50.00 | 18774 | 4321 | 0.033 | 1016-7 |
| | | | 179620 | 42326 | | |

## Group Report For : AR1260

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 8.539 | 1260-1 | 50.00 | 30147 | 10405 | 0.038 | 1260-1 |
| 8.879 | 1260-2 | 50.00 | 32773 | 11340 | 0.033 | 1260-2 |
| 9.087 | 1260-3 | 50.00 | 18476 | 6405 | 0.025 | 1260-3 |
| 9.430 | 1260-4 | 50.00 | 45227 | 12951 | 0.030 | 1260-4 |
| 10.019 | 1260-5 | 50.00 | 26041 | 8378 | 0.023 | 1260-5 |
| 10.463 | 1260-6 | 50.00 | 44895 | 14120 | 0.015 | 1260-6 |
| 11.115 | 1260-7 | 50.00 | 38316 | 8686 | 0.026 | 1260-7 |
| | | | 235874 | 72284 | | |

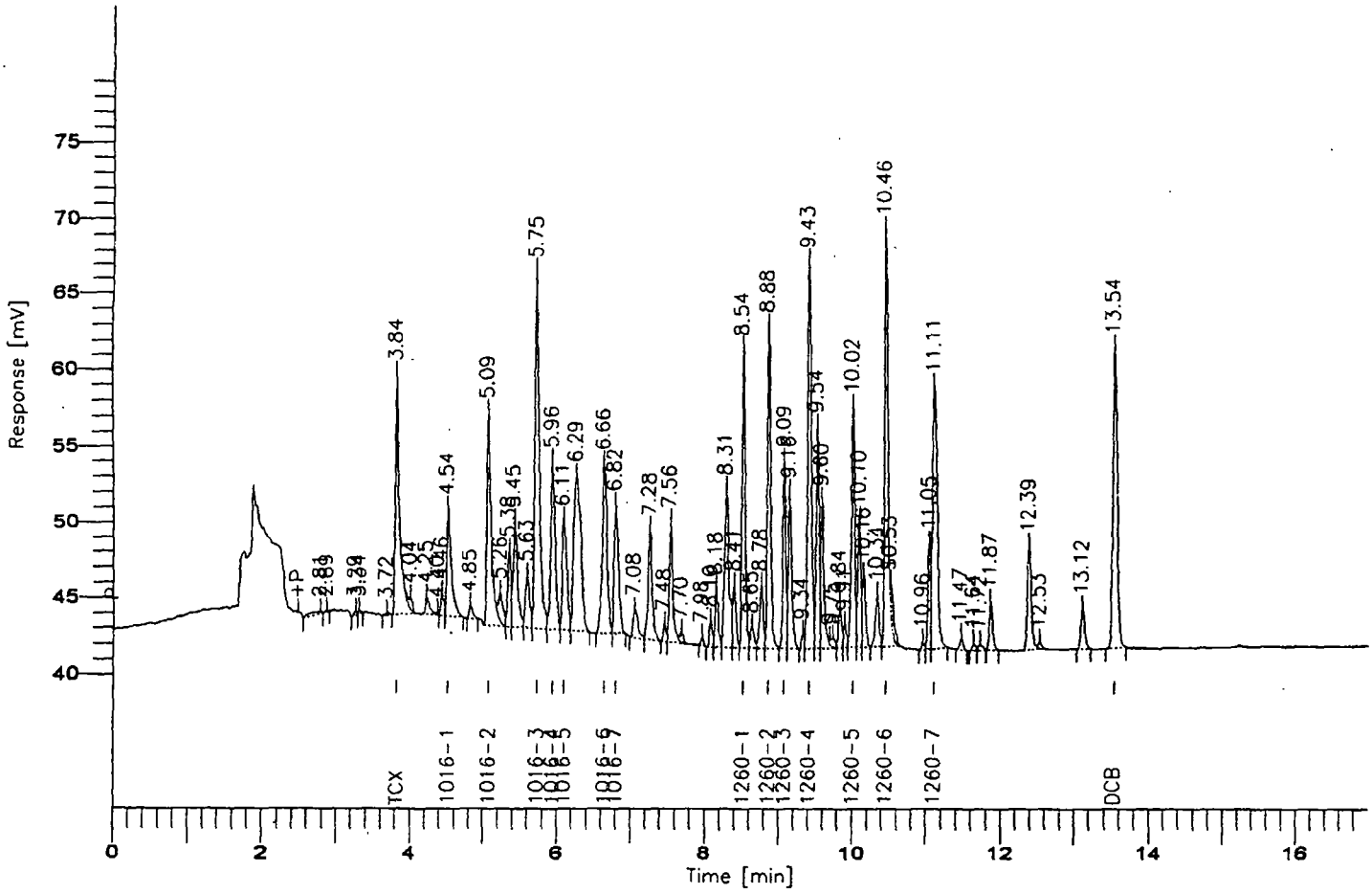
Software Version: 4.1<2F12>
Sample Name : 1660-2 Time : 9/15/03 01:21 PM
Sample Number: AI1865 Study : LINEARITY
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 11:43 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5007.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5007.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5007.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.841 | TCX | 5.00 | 62056 | 15873 | 0.010 | TCX |
| 5.747 | AR1016 | 100.00 | 347529 | 82958 | 0.000 | AR1016 |
| 10.461 | AR1260 | 100.00 | 450815 | 139895 | 0.000 | AR1260 |
| 13.539 | DCB | 5.00 | 75574 | 19731 | -0.015 | DCB |
| | | | 935975 | 258457 | | |

## Group Report For : AR1016

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.539 | 1016-1 | 100.00 | 29683 | 7130 | 0.044 | 1016-1 |
| 5.094 | 1016-2 | 100.00 | 58807 | 14099 | 0.038 | 1016-2 |
| 5.747 | 1016-3 | 100.00 | 95839 | 23569 | 0.033 | 1016-3 |
| 5.961 | 1016-4 | 100.00 | 45606 | 11102 | 0.031 | 1016-4 |
| 6.113 | 1016-5 | 100.00 | 31190 | 7308 | 0.027 | 1016-5 |
| 6.659 | 1016-6 | 100.00 | 51241 | 11179 | 0.017 | 1016-6 |
| 6.817 | 1016-7 | 100.00 | 35164 | 8572 | 0.031 | 1016-7 |
| | | | 347529 | 82958 | | |

## Group Report For : AR1260

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 8.537 | 1260-1 | 100.00 | 56495 | 19816 | 0.014 | 1260-1 |
| 8.877 | 1260-2 | 100.00 | 62069 | 21379 | 0.011 | 1260-2 |
| 9.085 | 1260-3 | 100.00 | 35806 | 12372 | 0.005 | 1260-3 |
| 9.428 | 1260-4 | 100.00 | 87810 | 25531 | 0.010 | 1260-4 |
| 10.017 | 1260-5 | 100.00 | 48946 | 15986 | 0.003 | 1260-5 |
| 10.461 | 1260-6 | 100.00 | 84540 | 27568 | 0.001 | 1260-6 |
| 11.111 | 1260-7 | 100.00 | 75149 | 17243 | -0.007 | 1260-7 |
| | | | 450815 | 139895 | | |

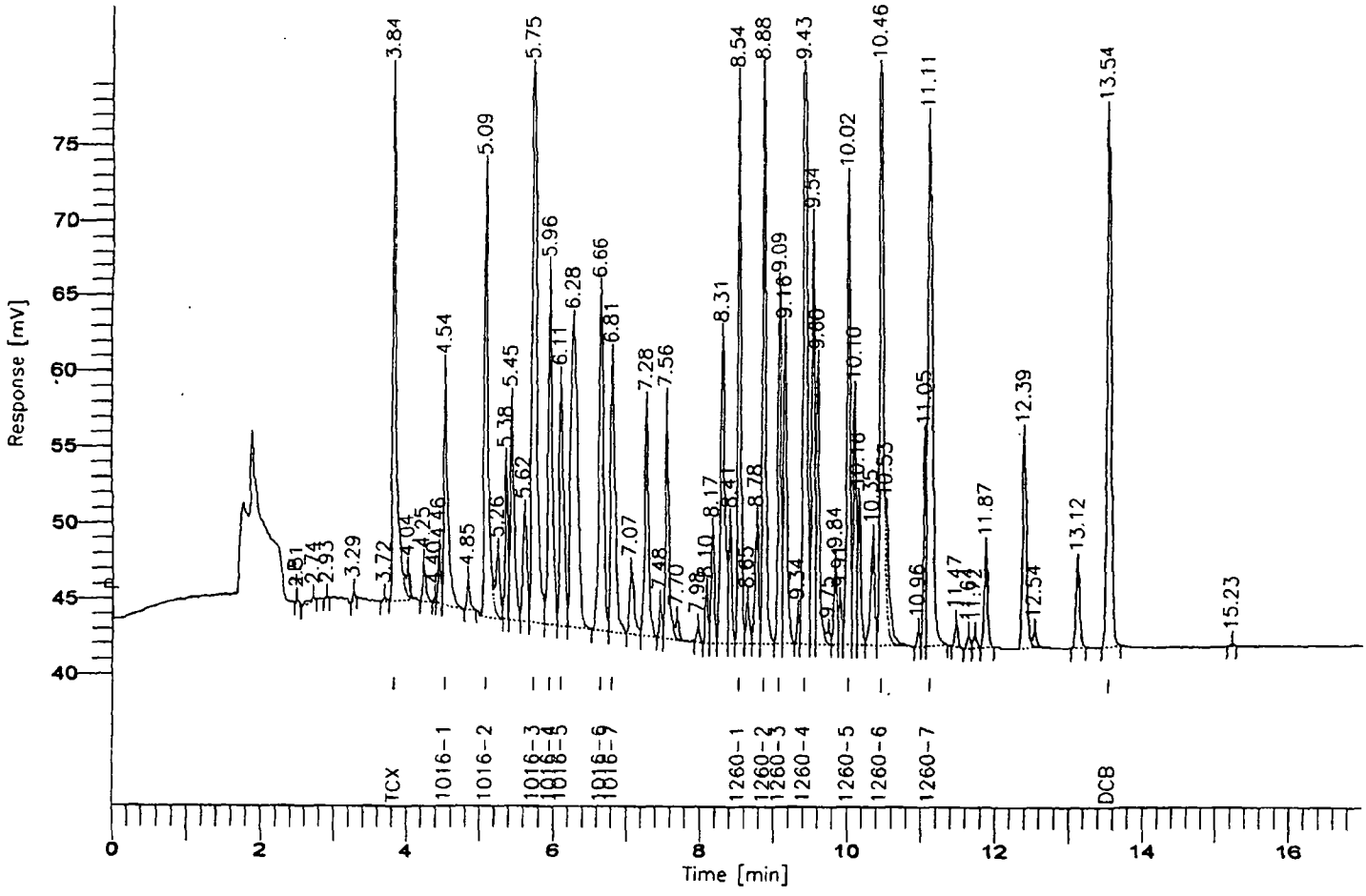
Software Version: 4.1<2F12>
Sample Name : 1660-3 Time : 9/15/03 01:21 PM
Sample Number: AI1866 Study : LINEARITY
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 12:07 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5008.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5008.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5008.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



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STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.841 | TCX | 10.00 | 118203 | 36196 | -8e-15 | TCX |
| 5.745 | AR1016 | 200.00 | 678370 | 176209 | 0.000 | AR1016 |
| 10.461 | AR1260 | 200.00 | 873891 | 272835 | 0.000 | AR1260 |
| 13.541 | DCB | 10.00 | 137822 | 35195 | -3e-15 | DCB |
| | | | 1808285 | 520435 | | |

## Group Report For : AR1016

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.537 | 1016-1 | 200.00 | 57678 | 15777 | -1e-15 | 1016-1 |
| 5.093 | 1016-2 | 200.00 | 105629 | 29731 | -6e-15 | 1016-2 |
| 5.745 | 1016-3 | 200.00 | 186975 | 50426 | -6e-15 | 1016-3 |
| 5.960 | 1016-4 | 200.00 | 90096 | 23406 | -5e-15 | 1016-4 |
| 6.111 | 1016-5 | 200.00 | 64573 | 16288 | -6e-15 | 1016-5 |
| 6.658 | 1016-6 | 200.00 | 98144 | 22399 | 4e-15 | 1016-6 |
| 6.814 | 1016-7 | 200.00 | 75075 | 18182 | 2e-15 | 1016-7 |
| | | | 678370 | 176209 | | |

## Group Report For : AR1260

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 8.536 | 1260-1 | 200.00 | 104948 | 37568 | 8e-15 | 1260-1 |
| 8.876 | 1260-2 | 200.00 | 116459 | 41281 | -4e-15 | 1260-2 |
| 9.085 | 1260-3 | 200.00 | 68098 | 23743 | -5e-15 | 1260-3 |
| 9.427 | 1260-4 | 200.00 | 170773 | 49826 | 1e-15 | 1260-4 |
| 10.017 | 1260-5 | 200.00 | 94414 | 31088 | 8e-15 | 1260-5 |
| 10.461 | 1260-6 | 200.00 | 166945 | 54627 | 2e-15 | 1260-6 |
| 11.112 | 1260-7 | 200.00 | 152253 | 34700 | -5e-15 | 1260-7 |
| | | | 873891 | 272835 | | |

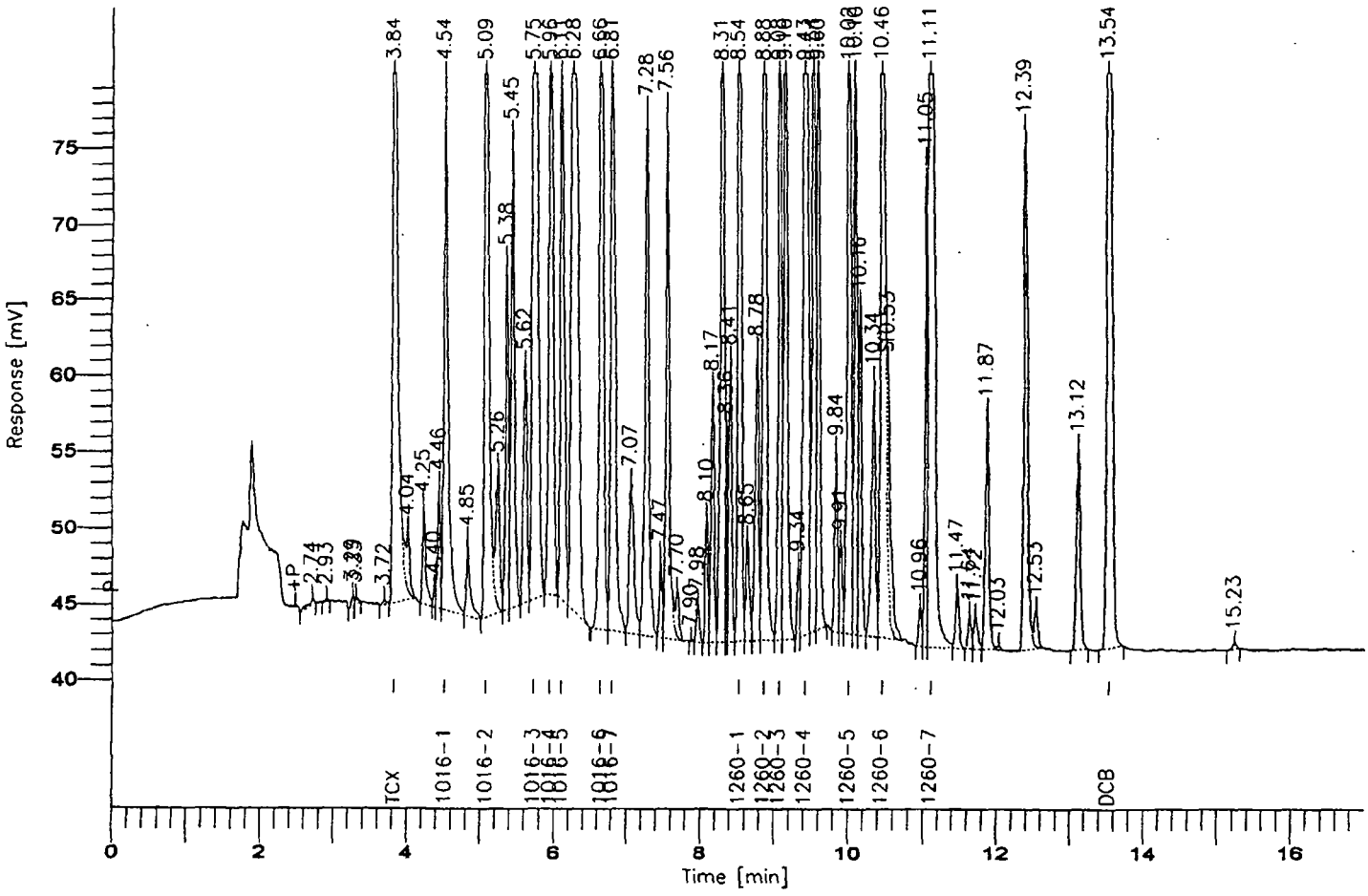
Software Version: 4.1<2F12>
Sample Name : 1660-4 Time : 9/15/03 01:21 PM
Sample Number: AI1867 Study : LINEARITY
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 12:31 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5009.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5009.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5009.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.841 | TCX | 25.00 | 286825 | 89592 | 0.008 | TCX |
| 5.745 | AR1016 | 500.00 | 1447113 | 393757 | 0.000 | AR1016 |
| 10.459 | AR1260 | 500.00 | 1980107 | 629370 | 0.000 | AR1260 |
| 13.539 | DCB | 25.00 | 317901 | 82011 | -0.019 | DCB |
| | | | 4031946 | 1194730 | | |

## Group Report For : AR1016

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.538 | 1016-1 | 500.00 | 135096 | 35657 | 0.015 | 1016-1 |
| 5.093 | 1016-2 | 500.00 | 223761 | 64079 | 0.002 | 1016-2 |
| 5.745 | 1016-3 | 500.00 | 397825 | 114123 | -0.007 | 1016-3 |
| 5.959 | 1016-4 | 500.00 | 181243 | 51049 | -0.005 | 1016-4 |
| 6.111 | 1016-5 | 500.00 | 136804 | 37469 | 0.002 | 1016-5 |
| 6.658 | 1016-6 | 500.00 | 201147 | 49677 | -0.004 | 1016-6 |
| 6.814 | 1016-7 | 500.00 | 171237 | 41703 | -0.009 | 1016-7 |
| | | | 1447113 | 393757 | | |

## Group Report For : AR1260

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 8.535 | 1260-1 | 500.00 | 227858 | 83512 | -0.012 | 1260-1 |
| 8.875 | 1260-2 | 500.00 | 254730 | 90888 | -0.015 | 1260-2 |
| 9.083 | 1260-3 | 500.00 | 145035 | 53224 | -0.012 | 1260-3 |
| 9.427 | 1260-4 | 500.00 | 384970 | 116186 | -0.002 | 1260-4 |
| 10.015 | 1260-5 | 500.00 | 211444 | 70647 | -0.018 | 1260-5 |
| 10.459 | 1260-6 | 500.00 | 380277 | 131687 | -0.020 | 1260-6 |
| 11.109 | 1260-7 | 500.00 | 375794 | 83224 | -0.028 | 1260-7 |
| | | | 1980107 | 629370 | | |

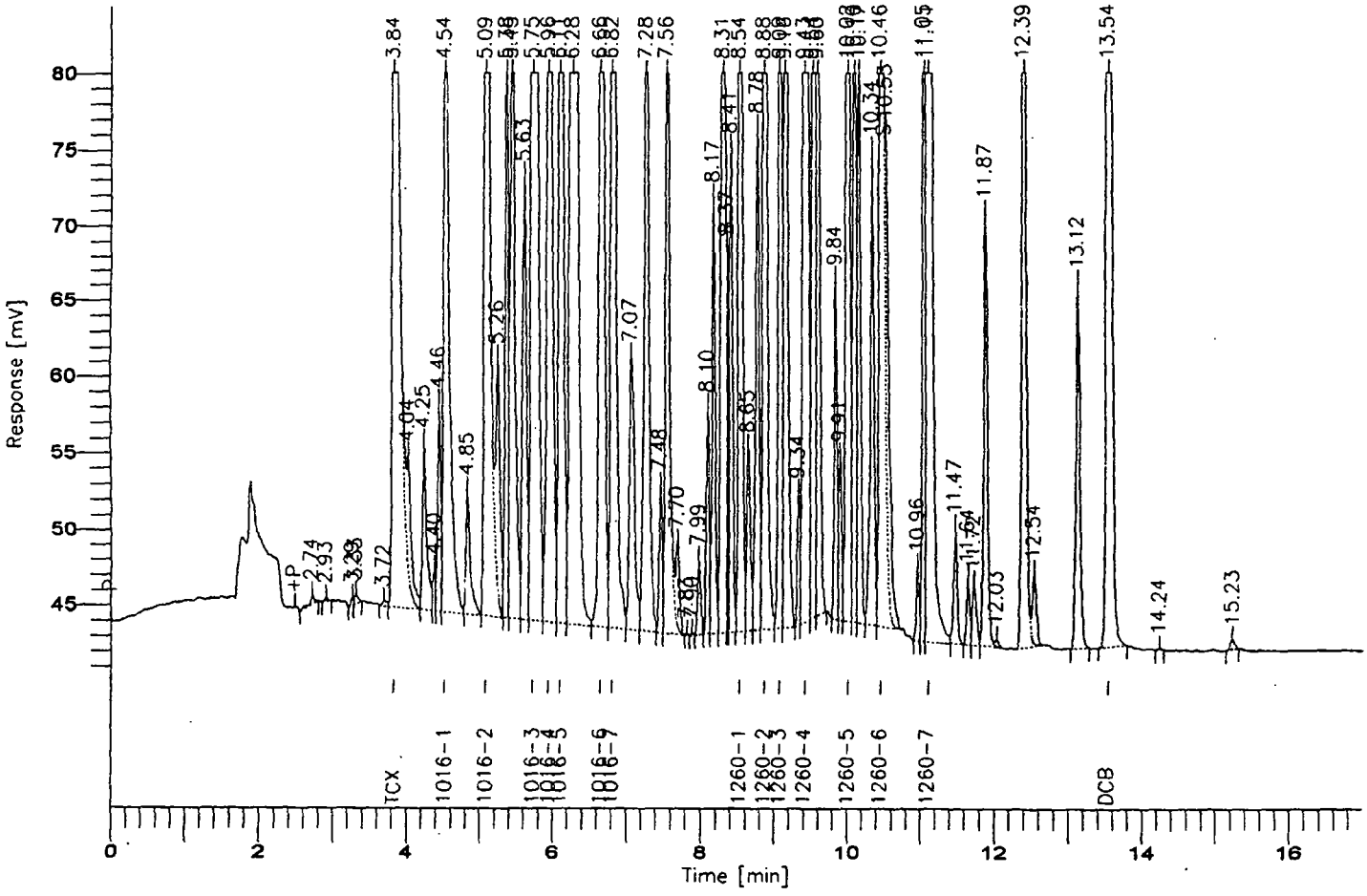
Software Version: 4.1<2F12>
Sample Name : 1660-5 Time : 9/15/03 01:21 PM
Sample Number: AI1868 Study : LINEARITY
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 12:55 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5010.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5010.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5010.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.841 | TCX | 50.00 | 556760 | 143891 | -0.009 | TCX |
| 5.745 | AR1016 | 1000.00 | 2750531 | 663837 | 0.000 | AR1016 |
| 10.460 | AR1260 | 1000.00 | 3499999 | 1118322 | 0.000 | AR1260 |
| 13.540 | DCB | 50.00 | 554894 | 141333 | -0.008 | DCB |
| | | | 7362183 | 2067384 | | |

## Group Report For : AR1016

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.536 | 1016-1 | 1000.00 | 251876 | 57730 | -0.009 | 1016-1 |
| 5.092 | 1016-2 | 1000.00 | 409014 | 101283 | -0.007 | 1016-2 |
| 5.745 | 1016-3 | 1000.00 | 764448 | 193151 | -0.008 | 1016-3 |
| 5.959 | 1016-4 | 1000.00 | 369609 | 87965 | -0.005 | 1016-4 |
| 6.111 | 1016-5 | 1000.00 | 282110 | 67829 | -0.005 | 1016-5 |
| 6.660 | 1016-6 | 1000.00 | 358316 | 83787 | 0.021 | 1016-6 |
| 6.815 | 1016-7 | 1000.00 | 315157 | 72091 | 0.008 | 1016-7 |
| | | | 2750531 | 663837 | | |

## Group Report For : AR1260

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 8.536 | 1260-1 | 1000.00 | 395312 | 141711 | -0.003 | 1260-1 |
| 8.876 | 1260-2 | 1000.00 | 437555 | 157883 | -0.004 | 1260-2 |
| 9.085 | 1260-3 | 1000.00 | 261149 | 92174 | 0.001 | 1260-3 |
| 9.427 | 1260-4 | 1000.00 | 688550 | 205932 | 0.001 | 1260-4 |
| 10.016 | 1260-5 | 1000.00 | 373883 | 126355 | -0.008 | 1260-5 |
| 10.460 | 1260-6 | 1000.00 | 683802 | 240916 | -0.011 | 1260-6 |
| 11.109 | 1260-7 | 1000.00 | 659747 | 153351 | -0.024 | 1260-7 |
| | | | 3499999 | 1118322 | | |

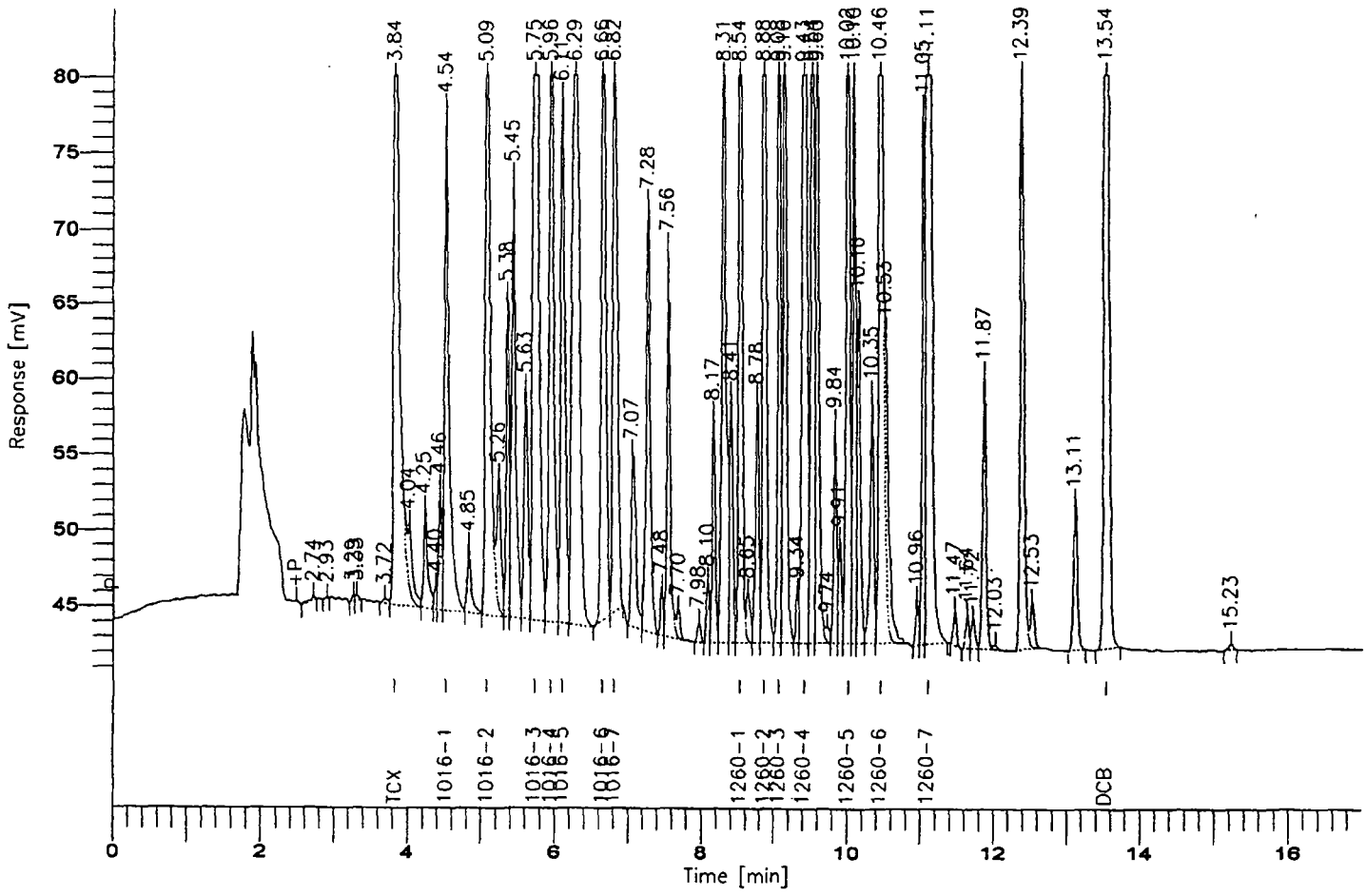
Software Version: 4.1<2F12>
Sample Name : AR1660 Time : 9/15/03 01:45 PM
Sample Number: AI1869 Study : 2ND SOURCE
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 01:19 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5011.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5011.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5011.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



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PESTICIDE/PCB STANDARD CHECK REPORT

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 3.841 | 0.0029 | TCX | 298197 | 81680 | 25.00000 | 24.65135 | TCX | -1.3946 |
| 5.746 | 0.0000 | AR1016 | 1444891 | 364653 | 500.00000 | 454.85010 | AR1016 | -9.0300 |
| 10.459 | 0.0000 | AR1260 | 1942431 | 610863 | 500.00000 | 463.76814 | AR1260 | -7.2464 |
| 13.538 | -0.0270 | DCB | 326384 | 82248 | 25.00000 | 23.36797 | DCB | -6.5281 |
| | | | 4011905 | 1139445 | | | | -24.1991 |

Group Report For : AR1016

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 4.537 | 0.0027 | 1016-1 | 140836 | 33642 | 500.00000 | 479.23598 | 1016-1 | -4.1528 |
| 5.092 | -0.0032 | 1016-2 | 220578 | 57488 | 500.00000 | 429.77022 | 1016-2 | -14.0460 |
| 5.746 | 0.0101 | 1016-3 | 396950 | 103848 | 500.00000 | 451.16927 | 1016-3 | -9.7661 |
| 5.959 | -0.0014 | 1016-4 | 192449 | 47871 | 500.00000 | 451.25799 | 1016-4 | -9.7484 |
| 6.112 | 0.0035 | 1016-5 | 142693 | 35016 | 500.00000 | 475.00997 | 1016-5 | -4.9980 |
| 6.660 | 0.0200 | 1016-6 | 185798 | 45261 | 500.00000 | 434.97545 | 1016-6 | -13.0049 |
| 6.815 | 0.0076 | 1016-7 | 165587 | 41528 | 500.00000 | 496.10270 | 1016-7 | -0.7795 |
| | | | 1444891 | 364653 | | | | -56.4957 |

Group Report For : AR1260

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 8.536 | -0.0014 | 1260-1 | 216582 | 77627 | 500.00000 | 429.90586 | 1260-1 | -14.0188 |
| 8.875 | -0.0104 | 1260-2 | 243576 | 85006 | 500.00000 | 430.77812 | 1260-2 | -13.8444 |
| 9.082 | -0.0228 | 1260-3 | 135650 | 49074 | 500.00000 | 431.11133 | 1260-3 | -13.7777 |
| 9.427 | -0.0081 | 1260-4 | 339496 | 97884 | 500.00000 | 407.25058 | 1260-4 | -18.5499 |
| 10.016 | -0.0114 | 1260-5 | 218153 | 75591 | 500.00000 | 503.60288 | 1260-5 | 0.7206 |
| 10.459 | -0.0240 | 1260-6 | 411986 | 140019 | 500.00000 | 524.21925 | 1260-6 | 4.8439 |
| 11.109 | -0.0203 | 1260-7 | 376989 | 85662 | 500.00000 | 510.22851 | 1260-7 | 2.0457 |
| | | | 1942431 | 610863 | | | | -52.5807 |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5011.TXO

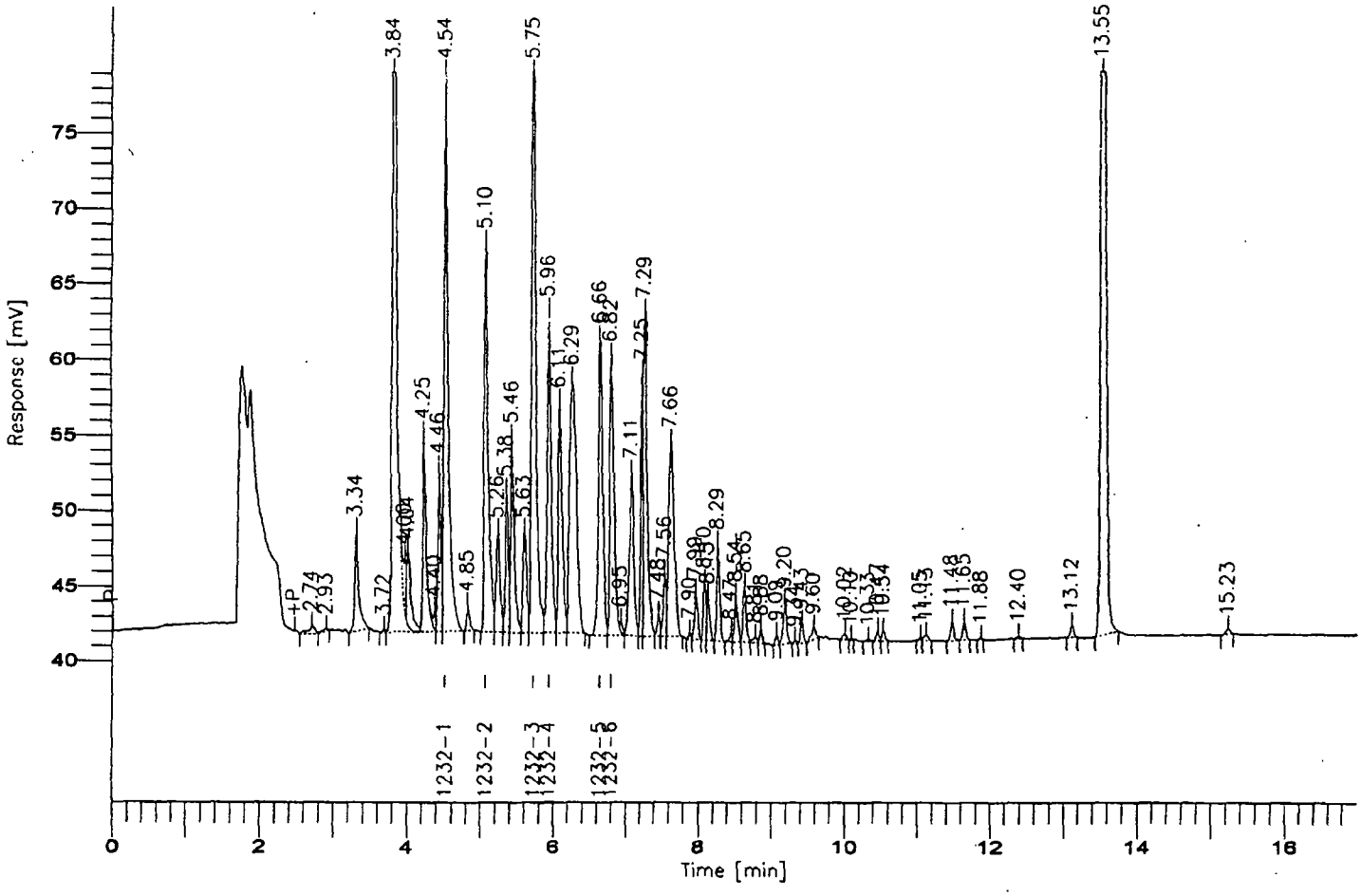
Software Version: 4.1<2F12>
Sample Name : AR1232-3 Time : 9/15/03 02:16 PM
Sample Number: AI1856 Study : ICAL
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 09:46 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5002.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5002.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5002.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15M32.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Rot Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 5.747 | Aroclor-1232 | 500.00 | 659557 | 169603 | 0.000 | Aroclor-1232 |
| | | | 659557 | 169603 | | |

## Group Report For : Aroclor-1232

| Rot Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.539 | 1232-1 | 500.00 | 147590 | 37493 | -7e-15 | 1232-1 |
| 5.095 | 1232-2 | 500.00 | 97312 | 25938 | 0.000 | 1232-2 |
| 5.747 | 1232-3 | 500.00 | 171573 | 46311 | 0.000 | 1232-3 |
| 5.962 | 1232-4 | 500.00 | 81980 | 21479 | -6e-15 | 1232-4 |
| 6.661 | 1232-5 | 500.00 | 83600 | 19793 | -2e-15 | 1232-5 |
| 6.819 | 1232-6 | 500.00 | 77502 | 18589 | 5e-15 | 1232-6 |
| | | | 659557 | 169603 | | |

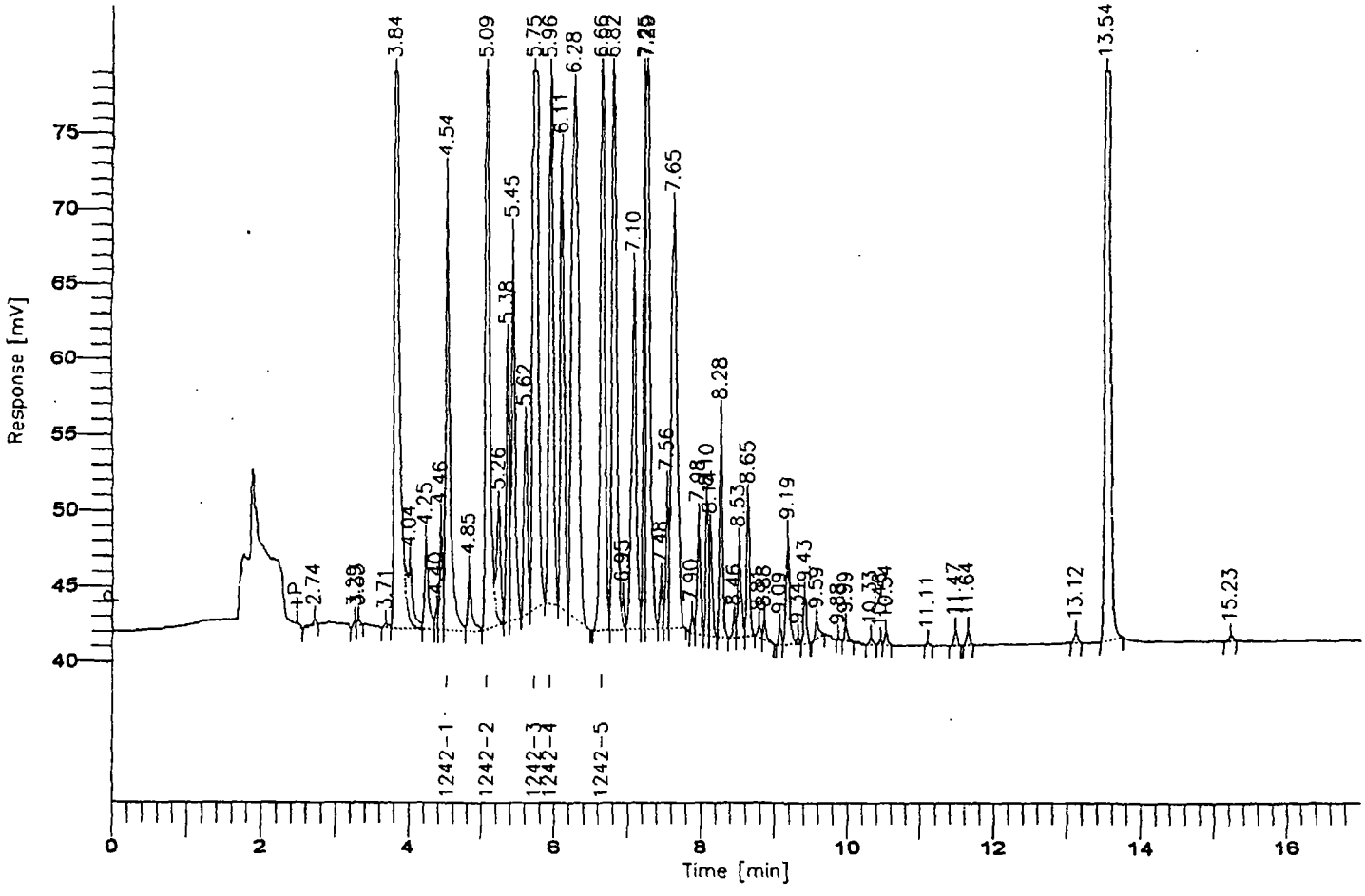
Software Version: 4.1<2F12>
Sample Name : AR1242-3 Time : 9/15/03 02:16 PM
Sample Number: AI1857 Study : ICAL
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 10:09 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5003.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5003.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5003.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15M42.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 5.745 | AR1242 | 500.00 | 950909 | 260897 | 0.000 | AR1242 |
| | | | 950909 | 260897 | | |

## Group Report For : AR1242

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.537 | 1242-1 | 500.00 | 119592 | 30919 | 9e-15 | 1242-1 |
| 5.092 | 1242-2 | 500.00 | 185892 | 53027 | -5e-15 | 1242-2 |
| 5.745 | 1242-3 | 500.00 | 324325 | 93142 | 0.000 | 1242-3 |
| 5.959 | 1242-4 | 500.00 | 148220 | 42038 | 2e-15 | 1242-4 |
| 6.657 | 1242-5 | 500.00 | 172880 | 41771 | 3e-15 | 1242-5 |
| | | | 950909 | 260897 | | |

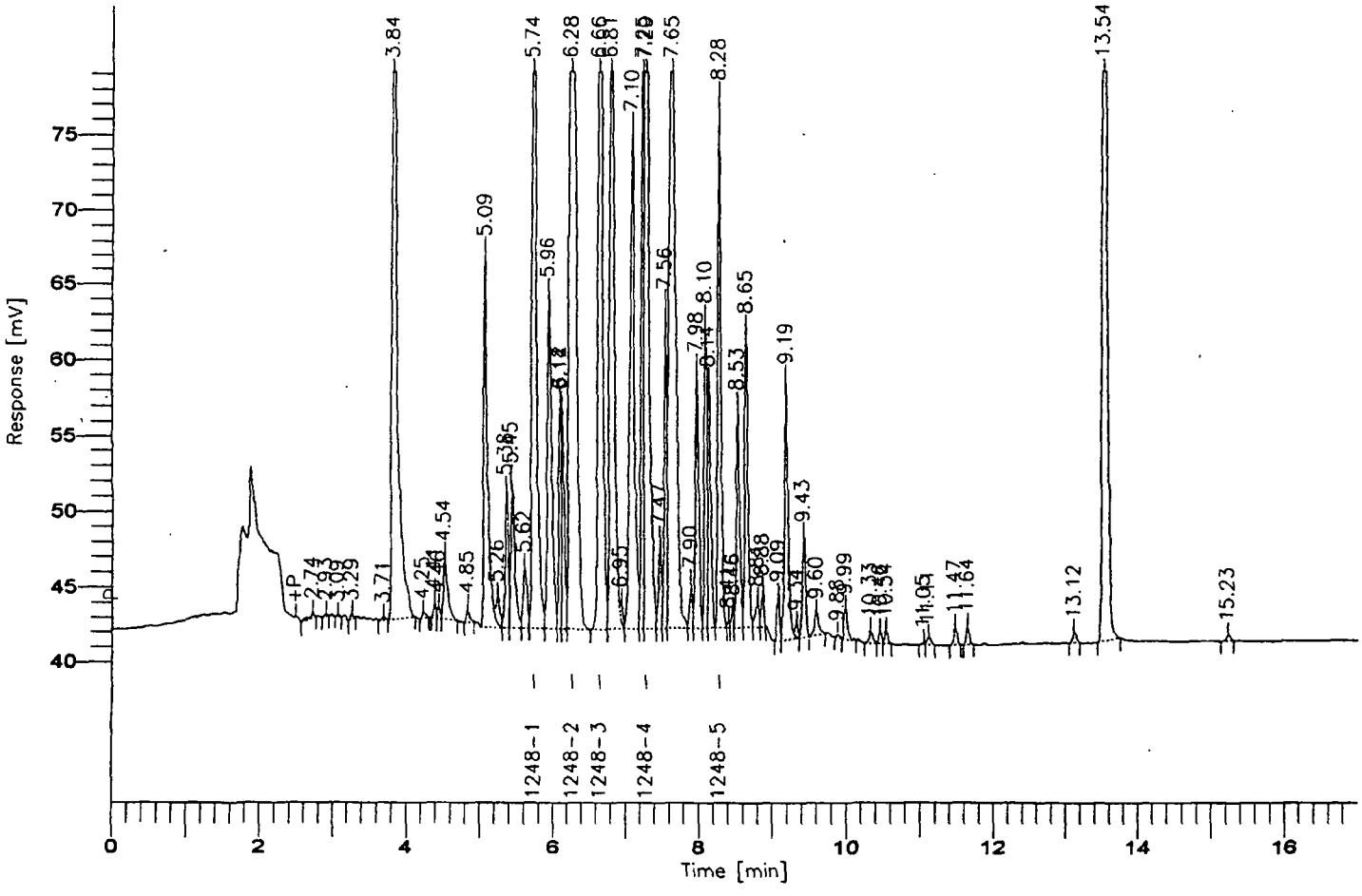
Software Version: 4.1<2F12>
Sample Name : AR1248-3 Time : 9/15/03 02:16 PM
Sample Number: AI1858 Study : ICAL
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 10:32 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5004.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5004.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5004.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15M48.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 7.286 | AR1248 | 500.00 | 1101862 | 267176 | 0.000 | AR1248 |
| | | | 1101862 | 267176 | | |

## Group Report For : AR1248

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 5.744 | 1248-1 | 500.00 | 202458 | 54201 | 6e-15 | 1248-1 |
| 6.282 | 1248-2 | 500.00 | 322914 | 49456 | 3e-15 | 1248-2 |
| 6.656 | 1248-3 | 500.00 | 226694 | 57249 | -2e-15 | 1248-3 |
| 7.286 | 1248-4 | 500.00 | 250869 | 70706 | -3e-15 | 1248-4 |
| 8.282 | 1248-5 | 500.00 | 98926 | 35563 | 4e-15 | 1248-5 |
| | | | 1101862 | 267176 | | |

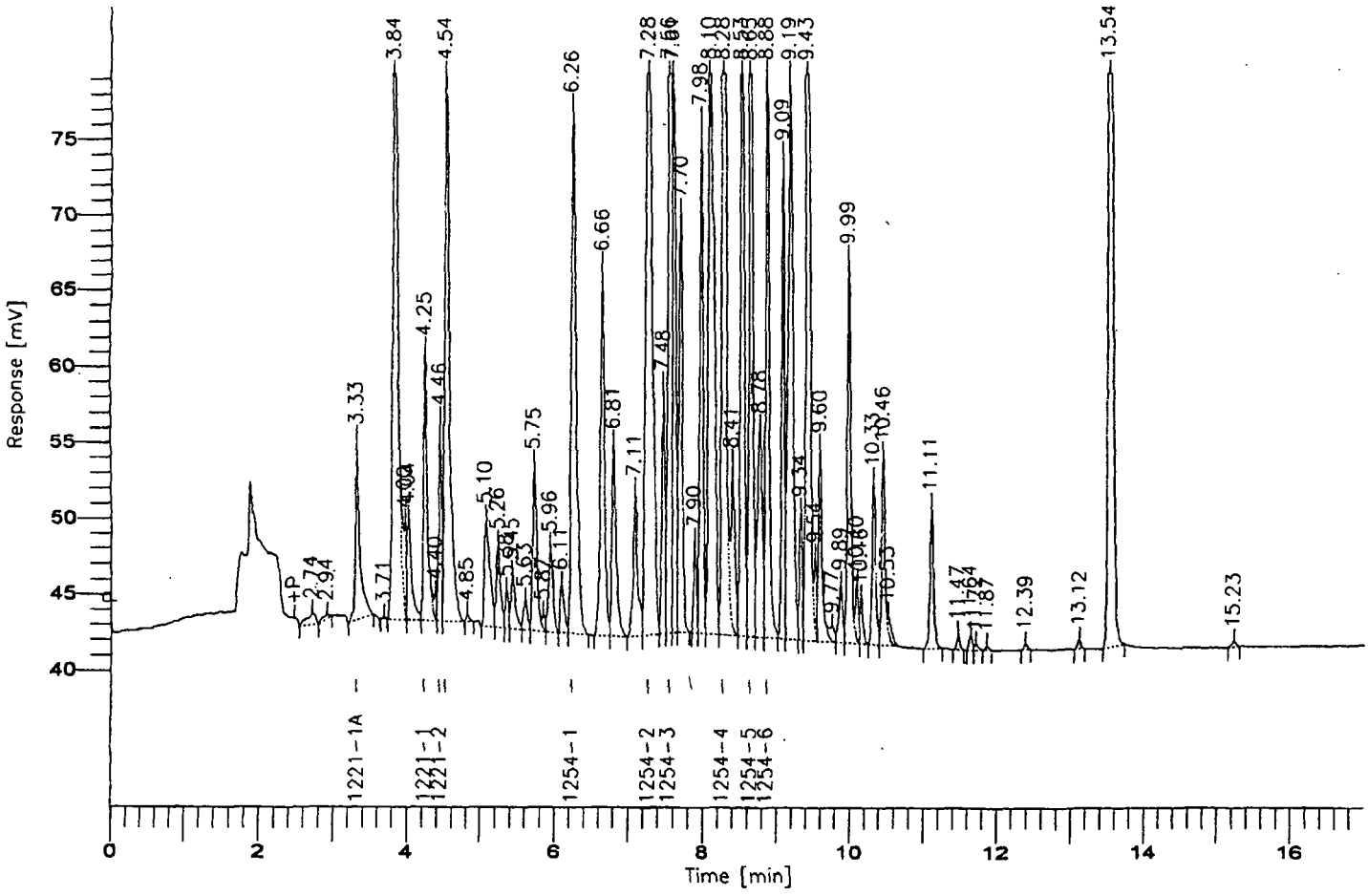
Software Version: 4.1<2F12>
Sample Name : AR2154-3 Time : 9/15/03 02:16 PM
Sample Number: AI1859 Study : ICAL
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/15/03 10:56 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5005.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5005.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5005.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15M54.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 4.538 | AR1221 | 500.00 | 327539 | 84887 | 0.000 | AR1221 |
| 8.282 | AR1254 | 500.00 | 1284675 | 374466 | 0.000 | AR1254 |
| | | | 1612214 | 459353 | | |

## Group Report For : AR1221

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 3.334 | 1221-1A | 500.00 | 49038 | 12034 | 9e-16 | 1221-1A |
| 4.251 | 1221-1 | 500.00 | 63423 | 18064 | -8e-15 | 1221-1 |
| 4.458 | 1221-2 | 500.00 | 37724 | 13374 | -5e-15 | 1221-2 |
| 4.538 | 1221-3 | 500.00 | 177354 | 41415 | 3e-15 | 1221-3 |
| | | | 327539 | 84887 | | |

## Group Report For : AR1254

| Ret Time [min] | Component | Raw Amount ppb | Area [µV·s] | Height [µV] | Delta RT % | Component |
|---|---|---|---|---|---|---|
| 6.255 | 1254-1 | 500.00 | 158756 | 34888 | 9e-16 | 1254-1 |
| 7.279 | 1254-2 | 500.00 | 304524 | 67200 | 8e-16 | 1254-2 |
| 7.558 | 1254-3 | 500.00 | 198407 | 66864 | -5e-15 | 1254-3 |
| 8.282 | 1254-4 | 500.00 | 317089 | 103906 | 6e-15 | 1254-4 |
| 8.650 | 1254-5 | 500.00 | 180747 | 60395 | 3e-15 | 1254-5 |
| 8.875 | 1254-6 | 500.00 | 125152 | 41213 | -7e-15 | 1254-6 |
| | | | 1284675 | 374466 | | |

## STL Knoxville GC PCB's Continuing Calibration Data Review Checklist
### Method 8082, SOP KNOX-GC-0015, Rev. 3

**Sequence ID:** I15M **Date:** 9-16-03

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyst Init/Date: | mop 9-16-03 | | | | mop 9-17-03 | | | | mop 9-18-03 | | | | | | mop 9-19-03 | | | | mop 9/22/03 | | | |
| Review Init/Date: | KRM 9/16/03 | | | | KRM 9/22/03 | | | | | | | | | | | | | | | | | |
| ICAL File ID: | I15ML60 | | | | I15ML60 | | | | I15ML60 | | | | | | I15ML60 | | | | I15ML60 | | | |
| CCV #: | 26 | | 41 | | 42 | | 60 | | 75 | | 76 | | 83 | | 95 | | 110 | | 111 | | 124 | |
| Analyte %D | | | | | | | | | | | | | | | | | | | | | | |
| | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB | ChanA | ChanB |
| AR1016-1 | ✓ | N/A | ✓ | N/A | ✓ | N/A | +16 | N/A | ✓ | N/A | +17 | N/A | +16 | N/A | ✓ | N/A | ✓ | N/A | ✓ | N/A | ✓ | N/A |
| AR1016-2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ✓ | ↓ | ↓ | ↓ | ✓ | ↓ | ✓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1016-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1016-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1016-5 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1016-6 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1016-7 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-1 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-2 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-3 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-4 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-5 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-6 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |
| AR1260-7 | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ | ↓ |

**Other Aroclors**

| | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Analyst Init/Date: | | | | | | | | | | | | |
| Review Init/Date: | | | | | | | | | | | | |
| ICAL File ID: | | | | | | | | | | | | |
| Aroclor/CCV# | | | | | | | | | | | | |
| %D: | | | | | | | | | | | | |

By signing above, the analyst and reviewer verify that the following items have been reviewed:

**Review Items:**
1. Correct ICAL used for quantitation.
2. Same process file used for the CCAL as for the ICAL.
3. CCAL standards run at proper frequency (before all samples and after no more than 20 samples/12 hrs. of sample analysis)
4. CCAL %D <= 15% for all analytes
5. All RTs within RT windows (+/- 0.05 min.)
6. Integration acceptable and all manual integrations are clearly identified, initialed, dated and reason given.
   Reasons: 1) corrected split peak; 2) unresolved peak; 3) tailing; 4) RT shift; 5) wrong peak selected; 6) other.

**Comments:** LOD Analyzed
Mid-Pt Analyzed ✓

I15M. SEQ

# STL GC RUN LOG FOR HP5890 GMN



ANALYST: mp

PREVENTATIVE MAINTENANCE PERFORMED: Y

| | Inj. Date | Inj. Time | File Name | | | | TCX Ret. Time [min.] | dil | DCB Ret. Time [min.] | dil |
|---|---|---|---|---|---|---|---|---|---|---|
| 8082 | 9/15/03 | 09:22 | M#A5001.rst | PRIME | PRIME | PRIME | 3.85 | 1.0 | 13.56 | 1.0 |
| 8082 | 9/15/03 | 09:46 | M#A5002.rst | AI1856 | ICAL | AR1232-3 | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/15/03 | 10:09 | M#A5003.rst | AI1857 | ICAL | AR1242-3 | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/15/03 | 10:32 | M#A5004.rst | AI1858 | ICAL | AR1248-3 | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/15/03 | 10:56 | M#A5005.rst | AI1859 | ICAL | AR2154-3 | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/15/03 | 11:20 | M#A5006.rst | AI1864 | LINEARITY | 1660-1 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 11:43 | M#A5007.rst | AI1865 | LINEARITY | 1660-2 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 12:07 | M#A5008.rst | AI1866 | LINEARITY | 1660-3 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 12:31 | M#A5009.rst | AI1867 | LINEARITY | 1660-4 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 12:55 | M#A5010.rst | AI1868 | LINEARITY | 1660-5 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 01:19 | M#A5011.rst | AI1869 | 2ND SOURCE | AR1660 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 01:43 | M#A5012.rst | FXQJ21AD | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 02:06 | M#A5013.rst | FXQJ81AC | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 02:29 | M#A5014.rst | FXQJ91AL | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 02:54 | M#A5015.rst | HEX | HEX | HEX | ------ | 1.0 | 13.58 | 1.0 |
| 8082 | 9/15/03 | 03:17 | M#A5016.rst | FXQKA1AV | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 03:40 | M#A5017.rst | FXQKC1A5 | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 04:04 | M#A5018.rst | FXQKD1AG | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 04:28 | M#A5019.rst | FXQKF1AQ | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 04:51 | M#A5020.rst | FXQKG1AQ | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 05:14 | M#A5021.rst | FXQKH1AQ | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 05:38 | M#A5022.rst | FXQKJ1CJ | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 06:01 | M#A5023.rst | FXQJ91AL | | 3252159 | 3.84 | 2.0 | 13.54 | 2.0 |
| 8082 | 9/15/03 | 06:25 | M#A5024.rst | FXKLW1AL | | 3251135 | 3.84 | 2.0 | 13.54 | 2.0 |
| 8082 | 9/15/03 | 06:49 | M#A5025.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/15/03 | 07:12 | M#A5026.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 07:36 | M#A5027.rst | FXQKK1AQ | | 3252159 | 3.84 | 2.0 | 13.54 | 2.0 |
| 8082 | 9/15/03 | 08:00 | M#A5028.rst | HEX | HEX | HEX | ------ | 1.0 | 13.57 | 1.0 |
| 8082 | 9/15/03 | 08:23 | M#A5029.rst | FXQKL1CJ | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 08:47 | M#A5030.rst | FXQKL1CKS | MS | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 09:11 | M#A5031.rst | FXQKL1CLD | MSD | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 09:35 | M#A5032.rst | FXQKP1AQ | | 3252159 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/15/03 | 09:58 | M#A5033.rst | FXQKT1AQ | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 10:21 | M#A5034.rst | FXQKV1AC | | 3252159 | 3.84 | 20.0 | 13.58 | 20.0 |
| 8082 | 9/15/03 | 10:45 | M#A5035.rst | FXQKV1AC | | 3252159 | 3.84 | 50.0 | 13.54 | 50.0 |
| 8082 | 9/15/03 | 11:09 | M#A5036.rst | HEX | HEX | HEX | ------ | 1.0 | 13.61 | 1.0 |
| 8082 | 9/15/03 | 11:32 | M#A5037.rst | FXQK11A1 | | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/15/03 | 11:55 | M#A5038.rst | FXVGL1AAB | BLK | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/16/03 | 12:19 | M#A5039.rst | FXVGL1AOC | LCS | 3252159 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/16/03 | 12:43 | M#A5040.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/16/03 | 01:06 | M#A5041.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 08:55 | M#A5042.rst | AI1866 | CCV | 1660-3 | 3.85 | 1.0 | 13.56 | 1.0 |
| 8082 | 9/17/03 | 09:25 | M#A5043.rst | FXVHA1AD | | 3258147 | 3.85 | 1.0 | 13.55 | 1.0 |
| 8082 | 9/17/03 | 09:49 | M#A5044.rst | FXVHC1AP | | 3258147 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/17/03 | 10:12 | M#A5045.rst | FXVHD1AP | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 10:36 | M#A5046.rst | FXVHE1AC | | 3258147 | ------ | 20.0 | ------ | 20.0 |
| 8082 | 9/17/03 | 11:00 | M#A5047.rst | HEX | HEX | HEX | ------ | 1.0 | 13.57 | 1.0 |
| 8082 | 9/17/03 | 11:23 | M#A5048.rst | FXOAG1AD | | 3258147 | ------ | 20.0 | ------ | 20.0 |
| 8082 | 9/17/03 | 11:47 | M#A5049.rst | HEX | HEX | HEX | ------ | 1.0 | 13.56 | 1.0 |
| 8082 | 9/17/03 | 12:10 | M#A5050.rst | FXOAG1AD | | 3258147 | ------ | 50.0 | ------ | 50.0 |
| 8082 | 9/17/03 | 12:34 | M#A5051.rst | HEX | HEX | HEX | ------ | 1.0 | 13.58 | 1.0 |
| 8082 | 9/17/03 | 12:57 | M#A5052.rst | FXOAR1AP | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 01:21 | M#A5053.rst | FXOA21AP | | 3258147 | ------ | 5.0 | ------ | 6.0 |
| 8082 | 9/17/03 | 01:45 | M#A5054.rst | FXOA31AP | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 02:08 | M#A5055.rst | FXOA91AC | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 02:31 | M#A5056.rst | FXOCA1AL | | 3258147 | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/17/03 | 02:55 | M#A5057.rst | FXOCC1AV | | 3258147 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/17/03 | 03:19 | M#A5058.rst | FXOCD1AV | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 03:42 | M#A5059.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 |
| 8082 | 9/17/03 | 04:05 | M#A5060.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 04:29 | M#A5061.rst | FXOCG1AL | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 04:53 | M#A5062.rst | FXOCJ1AV | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 05:17 | M#A5063.rst | FXOCL1A5 | | 3258147 | 3.84 | 1.0 | 13.54 | 1.0 |
| 8082 | 9/17/03 | 05:40 | M#A5064.rst | FXOCX1A5 | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 06:04 | M#A5065.rst | FXOC01AV | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 06:27 | M#A5066.rst | FXOC11AV | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |
| 8082 | 9/17/03 | 06:51 | M#A5067.rst | FXOC21AV | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 8082 | 9/17/03 | 07:14 | M#A5068.rst | FX0C31CX | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/17/03 | 07:38 | M#A5069.rst | FX0C31C0S | MS | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/17/03 | 08:01 | M#A5070.rst | FX0C31C1D | MSD | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/17/03 | 08:25 | M#A5071.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/17/03 | 08:49 | M#A5072.rst | F0CC31AAB | BLK | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/17/03 | 09:12 | M#A5073.rst | F0CC31ACC | LCS | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/17/03 | 09:36 | M#A5074.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/17/03 | 09:59 | M#A5075.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 08:02 | M#A5076.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.56 | 1.0 | |
| 8082 | 9/18/03 | 08:26 | M#A5077.rst | FX0CJ1AV | | 3258147 | 3.84 | 10.0 | 13.54 | 10.0 | |
| 8082 | 9/18/03 | 08:50 | M#A5078.rst | | | 3258147 | ------ | 1.0 | 13.58 | 1.0 | |
| 8082 | 9/18/03 | 09:13 | M#A5079.rst | | | 3258147 | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/18/03 | 09:36 | M#A5080.rst | FX0CL1A5 | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 10:00 | M#A5081.rst | FX0CX1A5 | | 3258147 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 10:23 | M#A5082.rst | | | 3258147 | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/18/03 | 10:47 | M#A5083.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 03:32 | M#A5084.rst | FX1WF1AC | | 3259122 | 3.85 | 1.0 | 13.56 | 1.0 | |
| 8082 | 9/18/03 | 03:56 | M#A5085.rst | FX1WH1AE | | 3259122 | 3.84 | 1.0 | 13.54 | 1.0 | |
| 8082 | 9/18/03 | 04:20 | M#A5086.rst | FX1WJ1AE | | 3259122 | 3.84 | 1.0 | 13.54 | 1.0 | |
| 8082 | 9/18/03 | 04:44 | M#A5087.rst | FX1WJ1AFS | MS | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 05:08 | M#A5088.rst | FX1WJ1AGD | MSD | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 05:32 | M#A5089.rst | FX3J31AD | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 05:56 | M#A5090.rst | FX3KM1AC | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 06:19 | M#A5091.rst | FX3KP1AL | | 3259122 | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/18/03 | 06:43 | M#A5092.rst | FX3KT1AV | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 07:06 | M#A5093.rst | FX3KV1A5 | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 07:30 | M#A5094.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/18/03 | 07:53 | M#A5095.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 08:17 | M#A5096.rst | FX3KX1A5 | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 08:40 | M#A5097.rst | FX3K21A5 | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 09:04 | M#A5098.rst | FX3K41AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 09:27 | M#A5099.rst | FX3LA1A5 | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 09:50 | M#A5100.rst | FX3LE1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 10:14 | M#A5101.rst | FX3LG1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 10:37 | M#A5102.rst | FX3LH1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 11:00 | M#A5103.rst | FX3LJ1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 11:24 | M#A5104.rst | FX3LK1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/18/03 | 11:47 | M#A5105.rst | FX3LL1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 12:10 | M#A5106.rst | FX3LM1AG | | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 12:34 | M#A5107.rst | F0D1C1AAB | BLK | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 12:57 | M#A5108.rst | F0D1C1ACC | LCS | 3259122 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 01:21 | M#A5109.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/19/03 | 01:44 | M#A5110.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 01:07 | M#A5111.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.55 | 1.0 | |
| 8082 | 9/19/03 | 02:06 | M#A5112.rst | F0L7P1AA | | 3262127 | 3.85 | 1.0 | 13.55 | 1.0 | |
| 8082 | 9/19/03 | 02:29 | M#A5113.rst | F0L7W1AA | | 3262127 | 3.84 | 1.0 | 13.54 | 1.0 | |
| 8082 | 9/19/03 | 02:53 | M#A5114.rst | F0L7X1AA | | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 03:16 | M#A5115.rst | F0L721AA | | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 03:39 | M#A5116.rst | F0L731AA | | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 04:03 | M#A5117.rst | F0L741AA | | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 04:26 | M#A5118.rst | F0L751AA | | 3262127 | 3.83 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 04:50 | M#A5119.rst | F0L761AA | | 3262127 | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/19/03 | 05:13 | M#A5120.rst | F0NRM1AAB | BLK | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 05:37 | M#A5121.rst | F0NRM1ACC | LCS | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 06:01 | M#A5122.rst | F0NRM1ADL | LCS DUP | 3262127 | 3.84 | 1.0 | 13.53 | 1.0 | |
| 8082 | 9/19/03 | 06:25 | M#A5123.rst | HEX | HEX | HEX | ------ | 1.0 | ------ | 1.0 | |
| 8082 | 9/19/03 | 06:48 | M#A5124.rst | AI1866 | CCV | 1660-3 | 3.84 | 1.0 | 13.53 | 1.0 | |

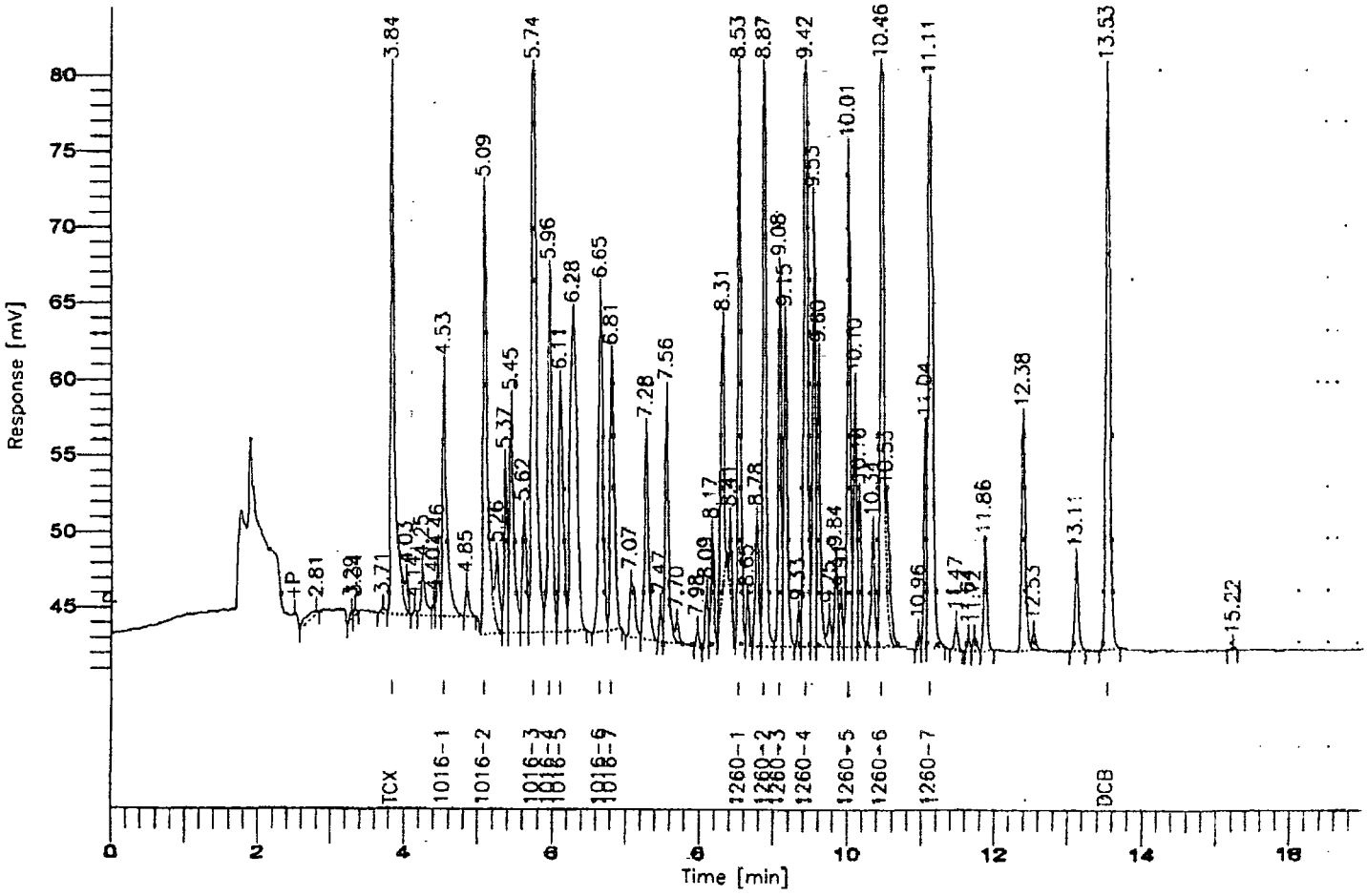
Software Version: 4.1<2F12>
Sample Name : 1660-3 Time : 9/18/03 12:59 PM
Sample Number: AI1866 Study : CCV
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 10:47 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5083.RAW
Result File : K:\#GMN\#SEQ\I15M\m#a5083.rst
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\m#a5083.rst
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



# PESTICIDE/PCB STANDARD CHECK REPORT

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 3.839 | -0.0602 | TCX | 122964 | 35808 | 10.00000 | 10.80691 | TCX | 8.0691 |
| 5.741 | 0.0000 | AR1016 | 693498 | 176751 | 200.00000 | 220.46977 | AR1016 | 10.2349 |
| 10.456 | 0.0000 | AR1260 | 905862 | 284576 | 200.00000 | 216.05073 | AR1260 | 8.0254 |
| 13.533 | -0.0615 | DCB | 146887 | 37770 | 10.00000 | 10.73116 | DCB | 7.3116 |
| | | | 1869210 | 534905 | | | | 33.6410 |

## Group Report For : AR1016

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 4.534 | -0.0564 | 1016-1 | 63179 | 16234 | 200.00000 | 231.26031 | 1016-1 | 15.6302 |
| 5.089 | -0.0619 | 1016-2 | 113716 | 29482 | 200.00000 | 220.40432 | 1016-2 | 10.2022 |
| 5.741 | -0.0656 | 1016-3 | 194745 | 50901 | 200.00000 | 221.13907 | 1016-3 | 10.5695 |
| 5.956 | -0.0675 | 1016-4 | 92840 | 23656 | 200.00000 | 222.99202 | 1016-4 | 11.4960 |
| 6.108 | -0.0597 | 1016-5 | 65647 | 16306 | 200.00000 | 221.19769 | 1016-5 | 10.5988 |
| 6.654 | -0.0561 | 1016-6 | 92471 | 22279 | 200.00000 | 214.10893 | 1016-6 | 7.0545 |
| 6.810 | -0.0596 | 1016-7 | 70901 | 17893 | 200.00000 | 213.75428 | 1016-7 | 6.8771 |
| | | | 693498 | 176751 | | | | 72.4283 |

## Group Report For : AR1260

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 8.532 | -0.0503 | 1260-1 | 106569 | 37988 | 200.00000 | 210.38346 | 1260-1 | 5.1917 |
| 8.871 | -0.0504 | 1260-2 | 119192 | 42585 | 200.00000 | 215.80474 | 1260-2 | 7.9024 |
| 9.080 | -0.0503 | 1260-3 | 70395 | 24714 | 200.00000 | 217.11322 | 1260-3 | 8.5566 |
| 9.424 | -0.0372 | 1260-4 | 176739 | 51851 | 200.00000 | 215.73006 | 1260-4 | 7.8650 |
| 10.012 | -0.0465 | 1260-5 | 97984 | 32602 | 200.00000 | 217.20153 | 1260-5 | 8.6008 |
| 10.456 | -0.0533 | 1260-6 | 174689 | 58049 | 200.00000 | 217.33007 | 1260-6 | 8.6650 |
| 11.106 | -0.0540 | 1260-7 | 160294 | 36786 | 200.00000 | 219.10954 | 1260-7 | 9.5548 |
| | | | 905862 | 284576 | | | | 56.3363 |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\m#a5083.TX0

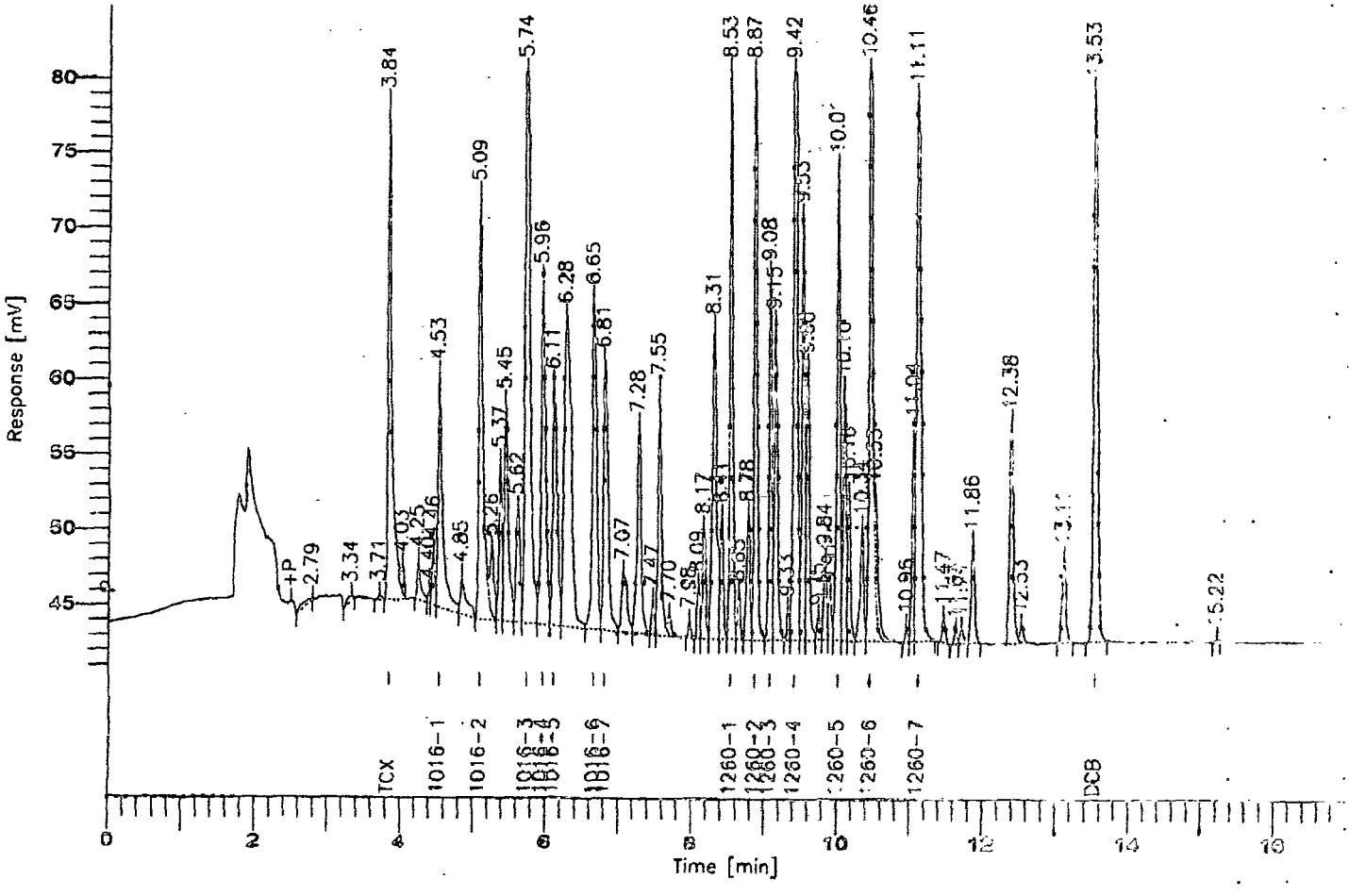
Software Version: 4.1<2F12>
Sample Name : 1660-3 Time : 9/19/03 07:56 AM
Sample Number: AI1866 Study : CCV
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 07:53 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5095.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5095.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5095.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sec [illegible]\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



# PESTICIDE/PCB STANDARD CHECK REPORT

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 3.839 | -0.0572 | TCX | 121198 | 33199 | 10.00000 | 10.01947 | TCX | 0.1947 |
| 5.741 | 0.0000 | AR1016 | 713902 | 171958 | 200.00000 | 214.49170 | AR1016 | 7.2458 |
| 10.455 | 0.0000 | AR1260 | 890156 | 278823 | 200.00000 | 211.68297 | AR1260 | 5.8415 |
| 13.533 | -0.0632 | DCB | 143837 | 36644 | 10.00000 | 10.41114 | DCB | 4.1114 |
| | | | 1869093 | 520624 | | | | 17.3934 |

## Group Report For : AR1016

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 4.534 | -0.0584 | 1016-1 | 68581 | 15543 | 200.00000 | 221.41352 | 1016-1 | 10.7068 |
| 5.089 | -0.0701 | 1016-2 | 112158 | 28364 | 200.00000 | 212.04472 | 1016-2 | 6.0224 |
| 5.741 | -0.0617 | 1016-3 | 195623 | 48881 | 200.00000 | 212.36495 | 1016-3 | 6.1825 |
| 5.955 | -0.0721 | 1016-4 | 94839 | 23082 | 200.00000 | 217.58242 | 1016-4 | 8.7912 |
| 6.108 | -0.0607 | 1016-5 | 68377 | 16141 | 200.00000 | 218.96503 | 1016-5 | 9.4825 |
| 6.654 | -0.0597 | 1016-6 | 96134 | 21942 | 200.00000 | 210.87255 | 1016-6 | 5.4363 |
| 6.810 | -0.0617 | 1016-7 | 78190 | 18005 | 200.00000 | 215.08785 | 1016-7 | 7.5439 |
| | | | 713902 | 171958 | | | | 54.1655 |

## Group Report For : AR1260

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 8.531 | -0.0545 | 1260-1 | 105975 | 38012 | 200.00000 | 210.51577 | 1260-1 | 5.2579 |
| 8.871 | -0.0537 | 1260-2 | 117730 | 41499 | 200.00000 | 210.29826 | 1260-2 | 5.1491 |
| 9.079 | -0.0559 | 1260-3 | 68702 | 24239 | 200.00000 | 212.94079 | 1260-3 | 6.4704 |
| 9.423 | -0.0471 | 1260-4 | 173376 | 50814 | 200.00000 | 211.41453 | 1260-4 | 5.7073 |
| 10.011 | -0.0541 | 1260-5 | 95467 | 31577 | 200.00000 | 210.37531 | 1260-5 | 5.1877 |
| 10.455 | -0.0576 | 1260-6 | 171105 | 56451 | 200.00000 | 211.34613 | 1260-6 | 5.6731 |
| 11.105 | -0.0557 | 1260-7 | 157802 | 36231 | 200.00000 | 215.80234 | 1260-7 | 7.9012 |
| | | | 890156 | 278823 | | | | 41.3466 |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5095.TX0

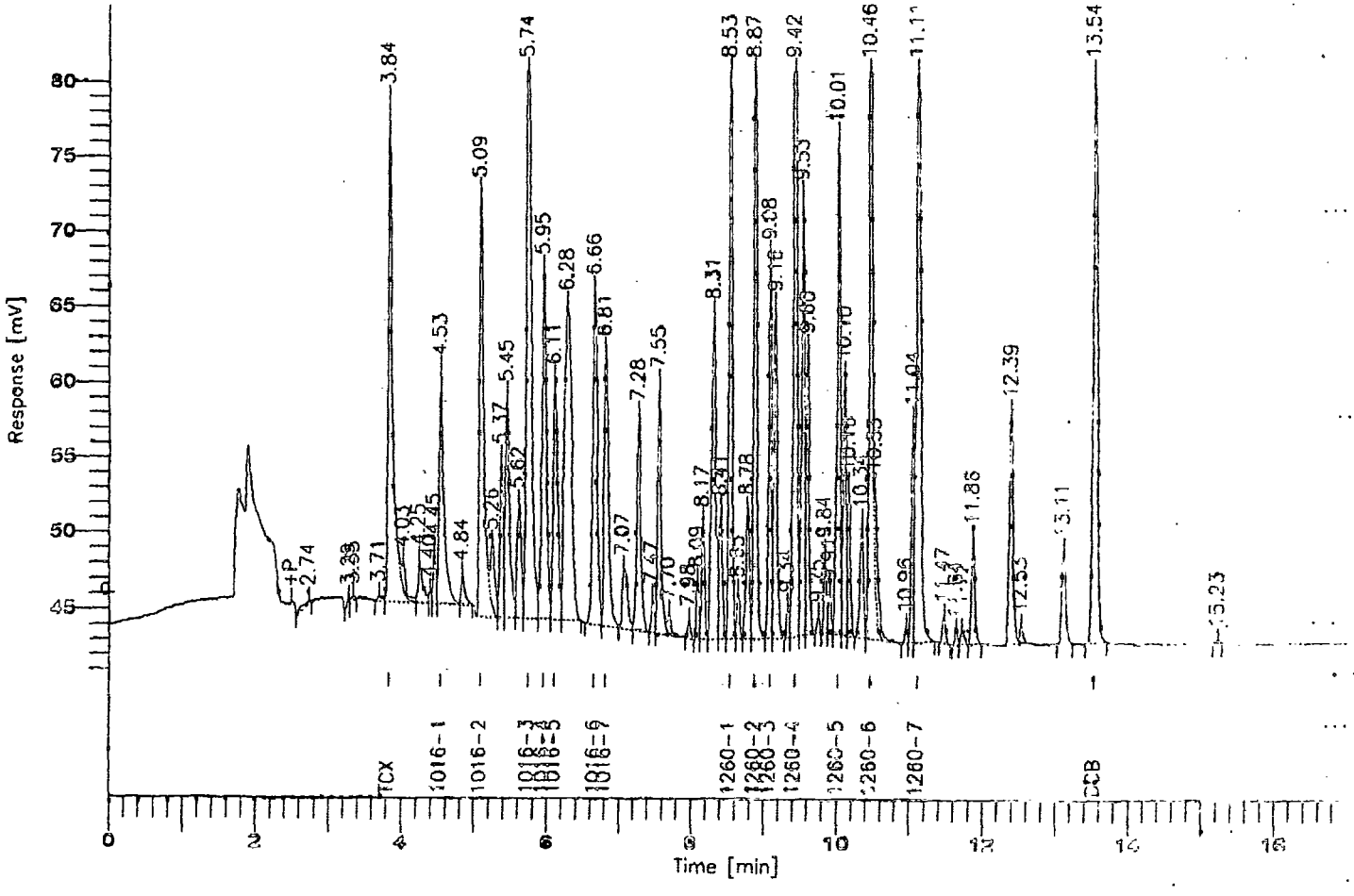
Software Version: 4.1<2F12>
Sample Name : 1660-3 Time : 9/19/03 07:56 AM
Sample Number: AI1866 Study : CCV
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/19/03 01:44 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5110.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5110.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5110.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 1.0000 Dilution Factor : 1.00



# PESTICIDE/PCB STANDARD CHECK REPORT

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 3.836 | -0.1392 | TCX | 132707 | 33875 | 10.00000 | 10.22348 | TCX | 2.2348 |
| 5.740 | 0.0000 | AR1016 | 737678 | 173739 | 200.00000 | 216.71274 | AR1016 | 8.3564 |
| 10.456 | 0.0000 | AR1260 | 933429 | 292405 | 200.00000 | 221.99458 | AR1260 | 10.9973 |
| 13.535 | -0.0473 | DCB | 151030 | 38488 | 10.00000 | 10.93513 | DCB | 9.3513 |
| | | | 1954844 | 538507 | | | | 30.9397 |

## Group Report For : AR1016

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 4.532 | -0.1054 | 1016-1 | 68546 | 15556 | 200.00000 | 221.59783 | 1016-1 | 10.7989 |
| 5.088 | -0.0934 | 1016-2 | 119640 | 28300 | 200.00000 | 211.56385 | 1016-2 | 5.7819 |
| 5.740 | -0.0840 | 1016-3 | 204746 | 49863 | 200.00000 | 216.62821 | 1016-3 | 8.3141 |
| 5.954 | -0.0854 | 1016-4 | 97301 | 23240 | 200.00000 | 219.07568 | 1016-4 | 9.5378 |
| 6.107 | -0.0728 | 1016-5 | 69552 | 16002 | 200.00000 | 217.08226 | 1016-5 | 8.5411 |
| 6.655 | -0.0504 | 1016-6 | 97900 | 22279 | 200.00000 | 214.10852 | 1016-6 | 7.0543 |
| 6.810 | -0.0668 | 1016-7 | 79993 | 18499 | 200.00000 | 220.99359 | 1016-7 | 10.4968 |
| | | | 737678 | 173739 | | | | 60.5250 |

## Group Report For : AR1260

| Time [min] | Delta RT [%] | Component Name | Area [µV·s] | Height [µV] | Std. Conc. (ppb) | Calc. Conc. (ppb) | Component Name | Percent Difference |
|---|---|---|---|---|---|---|---|---|
| 8.532 | -0.0477 | 1260-1 | 112010 | 39500 | 200.00000 | 218.75231 | 1260-1 | 9.3762 |
| 8.872 | -0.0491 | 1260-2 | 123147 | 43583 | 200.00000 | 220.86037 | 1260-2 | 10.4302 |
| 9.080 | -0.0473 | 1260-3 | 71665 | 25452 | 200.00000 | 223.59248 | 1260-3 | 11.7962 |
| 9.424 | -0.0362 | 1260-4 | 181214 | 52940 | 200.00000 | 220.25832 | 1260-4 | 10.1292 |
| 10.013 | -0.0393 | 1260-5 | 97807 | 33070 | 200.00000 | 220.32129 | 1260-5 | 10.1606 |
| 10.456 | -0.0493 | 1260-6 | 180119 | 59171 | 200.00000 | 221.52984 | 1260-6 | 10.7649 |
| 11.107 | -0.0422 | 1260-7 | 167467 | 38691 | 200.00000 | 230.45245 | 1260-7 | 15.2262 |
| | | | 933429 | 292405 | | | | 77.8835 |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5110.TX0

# Raw QC Data

## METHOD BLANK REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** H3I160000-122

**Prep Date.....:** 09/16/03
**Analysis Date..:** 09/19/03 **Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | RESULT | REPORTING LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| Aroclor 1016 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1221 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1232 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1242 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1248 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1254 | ND | 33 | ug/kg | SW846 8082 |
| Aroclor 1260 | ND | 33 | ug/kg | SW846 8082 |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 99 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

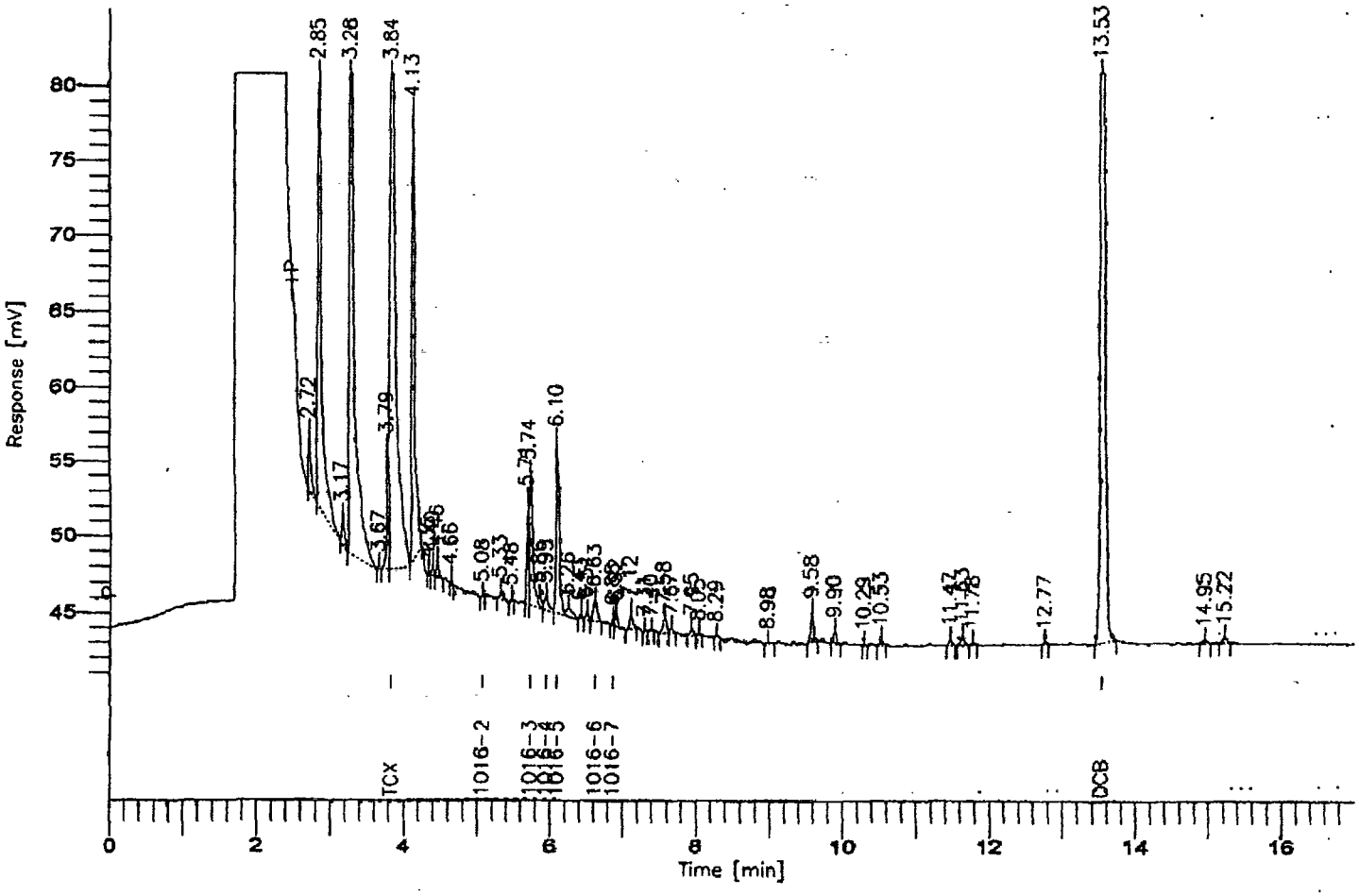
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 08:00 AM
Sample Number: F0D1C1AAB Study : BLK
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/19/03 12:34 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5107.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5107.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5107.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.838 | TCX | 6.9879 | 6.6667 | 20.96 | 253837 | 69461 | -0.077 | TCX | -0.0030 | 3.841 | 10 | 104.8 |
| 6.101 | AR1016 | 9.6144 | 166.6667 | 28.84 | 69957 | 23124 | 0.000 | AR1016 | -0.0000 | 6.101 | 10 | 5.8 |
| 10.460 | AR1260 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | AR1260 | ------- | -------- | 10 | ------- |
| 13.533 | DCB | 6.5893 | 6.6667 | 19.77 | 272272 | 69577 | -0.063 | DCB | -0.0085 | 13.541 | 10 | 98.8 |
| | | 23.1915 | | | 596067 | 162161 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.537 | 1016-1 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1016-1 | ------- | -------- | 10 | ------- |
| 5.080 | 1016-2 | 0.1893 | 0.0000 | 0.57 | 182 | 76 | -0.241 | 1016-2 | -0.0123 | 5.093 | 10 | ------- |
| 5.742 | 1016-3 | 12.6696 | 0.0000 | 38.01 | 26218 | 8749 | -0.048 | 1016-3 | -0.0027 | 5.745 | 10 | ------- |
| 5.952 | 1016-4 | 2.8068 | 0.0000 | 8.42 | 3755 | 893 | -0.130 | 1016-4 | -0.0077 | 5.960 | 10 | ------- |
| 6.101 | 1016-5 | 52.3080 | 0.0000 | 156.92 | 32875 | 11568 | -0.162 | 1016-5 | -0.0099 | 6.111 | 10 | ------- |
| 6.625 | 1016-6 | 4.4392 | 0.0000 | 13.32 | 6055 | 1386 | -0.501 | 1016-6 | -0.0334 | 6.658 | 10 | ------- |
| 6.881 | 1016-7 | 1.8003 | 0.0000 | 5.40 | 873 | 452 | 0.975 | 1016-7 | 0.0664 | 6.814 | 10 | ------- |
| | | 74.2133 | | | 69957 | 23124 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.536 | 1260-1 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-1 | ------- | -------- | 10 | ------- |
| 8.876 | 1260-2 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-2 | ------- | -------- | 10 | ------- |
| 9.085 | 1260-3 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-3 | ------- | -------- | 10 | ------- |
| 9.427 | 1260-4 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-4 | ------- | -------- | 10 | ------- |
| 10.017 | 1260-5 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-5 | ------- | -------- | 10 | ------- |
| 10.461 | 1260-6 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-6 | ------- | -------- | 10 | ------- |
| 11.112 | 1260-7 | 0.0000 | -------- | 0.00 | 0 | 0 | ------ | 1260-7 | ------- | -------- | 10 | ------- |
| | | 0.0000 | | | 0 | 0 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5107.TXO

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

## GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD |
|---|---|---|---|
| **Aroclor 1016** | **103** | **(52 - 117)** | **SW846 8082** |
| **Aroclor 1260** | **93** | **(53 - 128)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

*Bold print denotes control parameters*

## LABORATORY CONTROL SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** F0D1C1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I160000-122
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/19/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **167** | **172** | **ug/kg** | **103** | **SW846 8082** |
| **Aroclor 1260** | **167** | **155** | **ug/kg** | **93** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 105 | (34 - 148) |
| Decachlorobiphenyl | 98 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

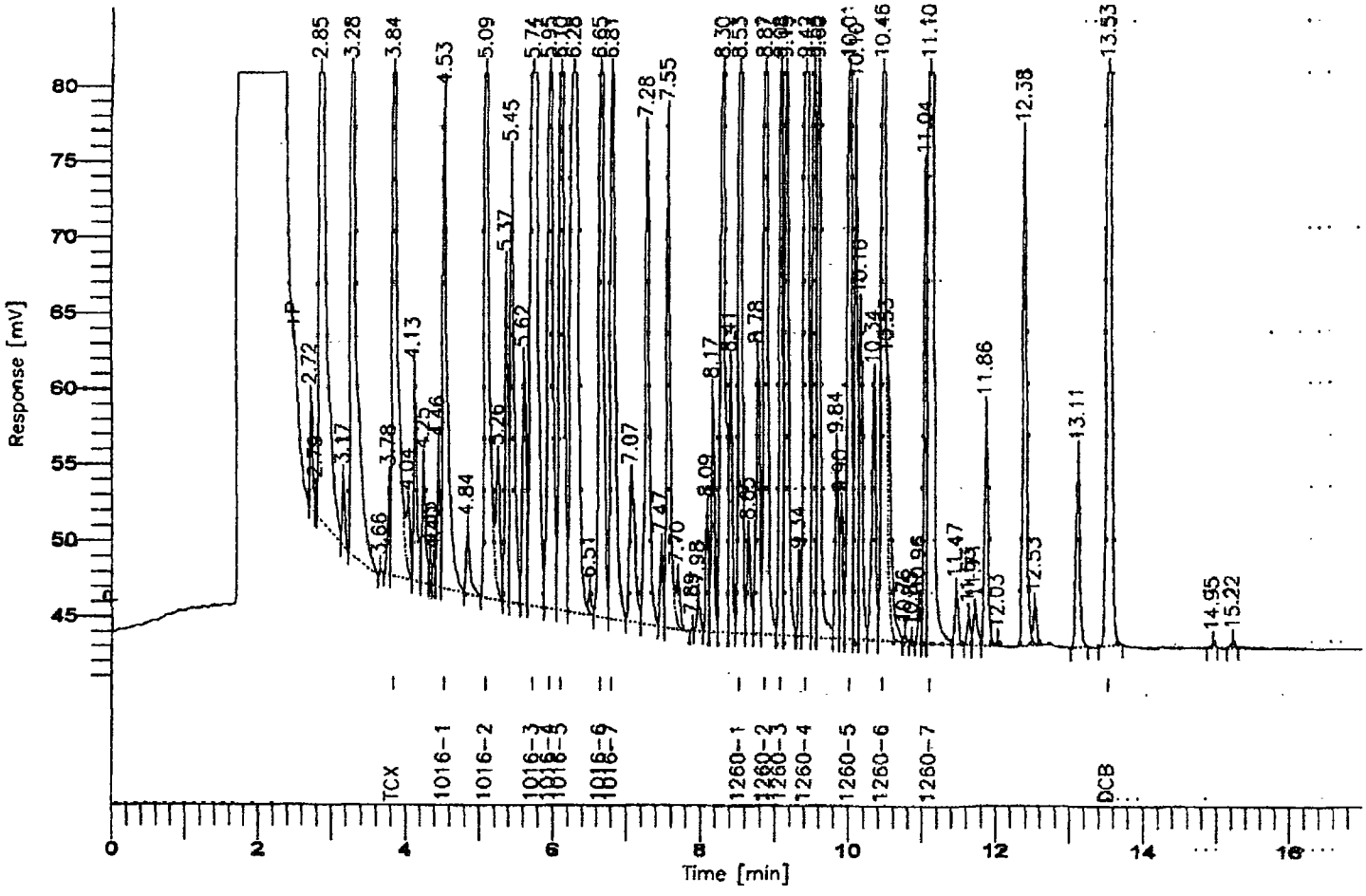
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 08:00 AM
Sample Number: F0D1C1ACC Study : LCS
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/19/03 12:57 AM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5108.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5108.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5108.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.836 | TCX | 6.9801 | 6.6667 | 20.94 | 250896 | 69384 | -0.128 | TCX | -0.0049 | 3.841 | 10 | 104.7 |
| 5.739 | AR1016 | 172.4095 | 166.6667 | 517.23 | 1671420 | 414662 | 0.000 | AR1016 | -0.0000 | 5.739 | 10 | 103.4 |
| 10.455 | AR1260 | 154.8376 | 166.6667 | 464.51 | 1940981 | 611844 | 0.000 | AR1260 | -0.0000 | 10.455 | 10 | 92.9 |
| 13.534 | DCB | 6.5459 | 6.6667 | 19.64 | 270854 | 69118 | -0.057 | DCB | -0.0077 | 13.541 | 10 | 98.2 |
| | | 340.7731 | | | 4134152 | 1165008 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.532 | 1016-1 | 153.7293 | 0.0000 | 461.19 | 134543 | 32375 | -0.099 | 1016-1 | -0.0045 | 4.537 | 10 | ------- |
| 5.087 | 1016-2 | 143.3488 | 0.0000 | 430.05 | 220772 | 57525 | -0.113 | 1016-2 | -0.0057 | 5.093 | 10 | ------- |
| 5.739 | 1016-3 | 173.0221 | 0.0000 | 519.07 | 503127 | 119477 | -0.103 | 1016-3 | -0.0059 | 5.745 | 10 | ------- |
| 5.954 | 1016-4 | 161.3736 | 0.0000 | 484.12 | 206575 | 51357 | -0.096 | 1016-4 | -0.0057 | 5.960 | 10 | ------- |
| 6.103 | 1016-5 | 308.2155 | 0.0000 | 924.65 | 238664 | 68161 | -0.132 | 1016-5 | -0.0081 | 6.111 | 10 | ------- |
| 6.653 | 1016-6 | 149.7646 | 0.0000 | 449.29 | 197427 | 46751 | -0.078 | 1016-6 | -0.0052 | 6.658 | 10 | ------- |
| 6.809 | 1016-7 | 155.3691 | 0.0000 | 466.11 | 170312 | 39017 | -0.081 | 1016-7 | -0.0055 | 6.814 | 10 | ------- |
| | | 1244.8229 | | | 1671420 | 414662 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.530 | 1260-1 | 146.5031 | 0.0000 | 439.51 | 221804 | 79361 | -0.073 | 1260-1 | -0.0062 | 8.536 | 10 | ------- |
| 8.870 | 1260-2 | 147.5695 | 0.0000 | 442.71 | 250608 | 87361 | -0.069 | 1260-2 | -0.0061 | 8.876 | 10 | ------- |
| 9.079 | 1260-3 | 151.5748 | 0.0000 | 454.72 | 145473 | 51762 | -0.062 | 1260-3 | -0.0056 | 9.085 | 10 | ------- |
| 9.422 | 1260-4 | 156.1162 | 0.0000 | 468.35 | 380738 | 112569 | -0.055 | 1260-4 | -0.0052 | 9.427 | 10 | ------- |
| 10.011 | 1260-5 | 154.3917 | 0.0000 | 463.18 | 206621 | 69523 | -0.055 | 1260-5 | -0.0055 | 10.017 | 10 | ------- |
| 10.455 | 1260-6 | 161.5754 | 0.0000 | 484.73 | 376881 | 129470 | -0.060 | 1260-6 | -0.0063 | 10.461 | 10 | ------- |
| 11.104 | 1260-7 | 162.4052 | 0.0000 | 487.22 | 358856 | 81798 | -0.069 | 1260-7 | -0.0076 | 11.112 | 10 | ------- |
| | | 1080.1359 | | | 1940981 | 611844 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5108.TX0

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### GC Semivolatiles

| | | | | | |
|---|---|---|---|---|---|
| **Client Lot #...:** | H3I100253 | **Work Order #...:** | FX1WJ1AF-MS | **Matrix.....:** | SOLID |
| **MS Lot-Sample #:** | H3I100253-003 | | FX1WJ1AG-MSD | | |
| **Date Sampled...:** | 09/09/03 | **Date Received..:** | 09/10/03 | | |
| **Prep Date.....:** | 09/16/03 | **Analysis Date..:** | 09/18/03 | | |
| **Prep Batch #...:** | 3259122 | | | | |
| **Dilution Factor:** | 1 | **% Moisture.....:** | | | |

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD |
|---|---|---|---|---|---|
| **Aroclor 1016** | **91** | **(44 - 134)** | | | **SW846 8082** |
| | **86** | **(44 - 134)** | **6.0** | **(0-47)** | **SW846 8082** |
| **Aroclor 1260** | **103** | **(45 - 154)** | | | **SW846 8082** |
| | **99** | **(45 - 154)** | **3.4** | **(0-46)** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

## MATRIX SPIKE SAMPLE DATA REPORT

### GC Semivolatiles

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ1AF-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ1AG-MSD
**Date Sampled...:** 09/09/03 **Date Received..:** 09/10/03
**Prep Date.....:** 09/16/03 **Analysis Date..:** 09/18/03
**Prep Batch #...:** 3259122
**Dilution Factor:** 1 **% Moisture.....:**

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| **Aroclor 1016** | **ND** | **167** | **151** | **ug/kg** | **91** | | **SW846 8082** |
| | **ND** | **167** | **143** | **ug/kg** | **86** | **6.0** | **SW846 8082** |
| **Aroclor 1260** | **ND** | **167** | **171** | **ug/kg** | **103** | | **SW846 8082** |
| | **ND** | **167** | **165** | **ug/kg** | **99** | **3.4** | **SW846 8082** |

| SURROGATE | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| Tetrachloro-m-xylene | 104 | (34 - 148) |
| | 95 | (34 - 148) |
| Decachlorobiphenyl | 110 | (41 - 146) |
| | 104 | (41 - 146) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

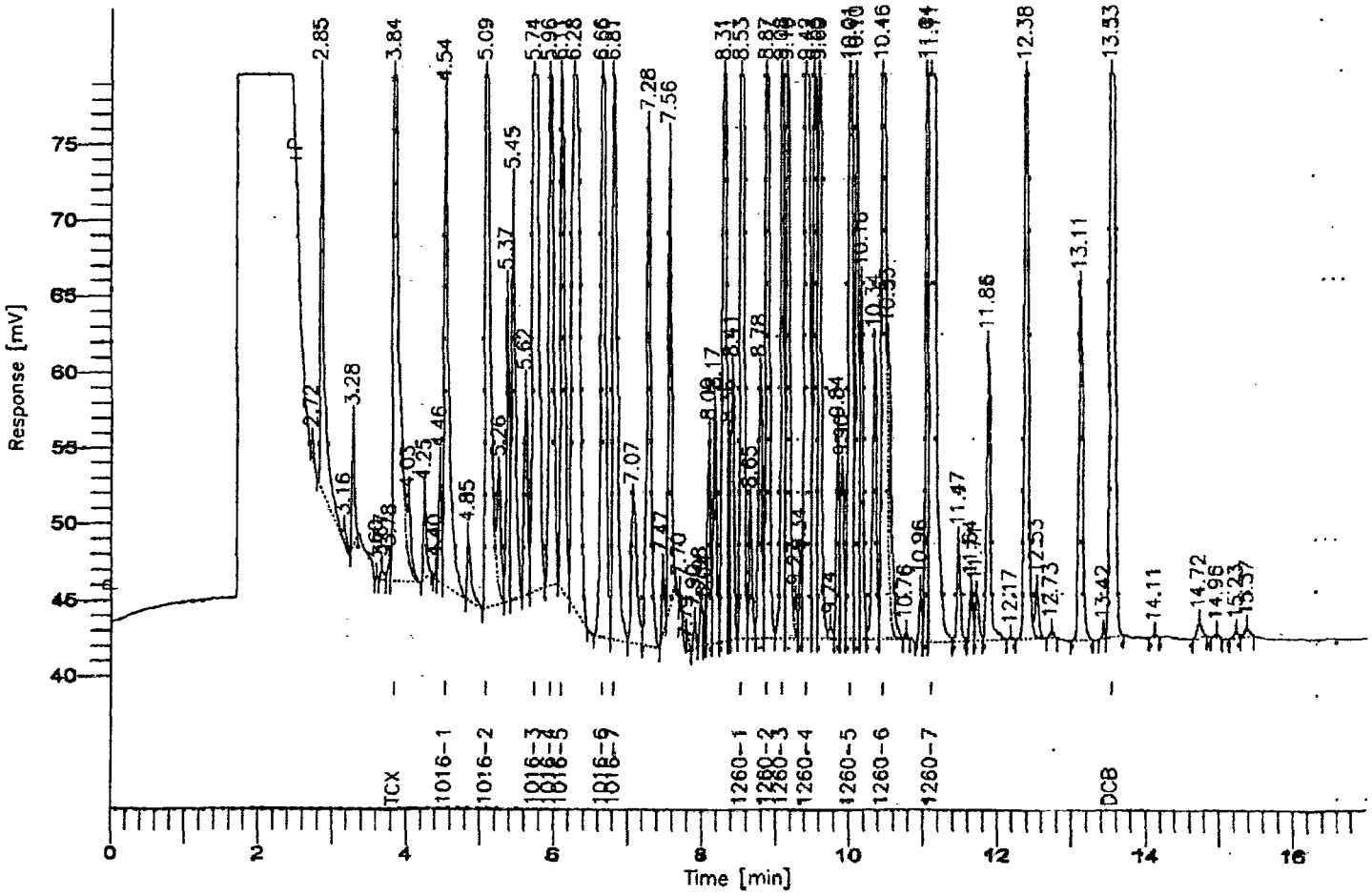
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 07:58 AM
Sample Number: FX1WJ1AFS Study : MS
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 04:44 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5087.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5087.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5087.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.840 | TCX | 6.9321 | 6.6667 | 20.80 | 255018 | 68906 | -0.038 | TCX | -0.0015 | 3.841 | 10 | 104.0 |
| 5.742 | AR1016 | 151.3632 | 166.6667 | 454.09 | 1434412 | 364044 | 0.000 | AR1016 | -0.0000 | 5.742 | 10 | 90.8 |
| 10.455 | AR1260 | 170.9725 | 166.6667 | 512.92 | 2155878 | 675602 | 0.000 | AR1260 | -0.0000 | 10.455 | 10 | 102.6 |
| 13.534 | DCB | 7.3291 | 6.6667 | 21.99 | 297224 | 77388 | -0.054 | DCB | -0.0073 | 13.541 | 10 | 109.9 |
| | | 336.5969 | | | 4142532 | 1185940 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.535 | 1016-1 | 154.0216 | 0.0000 | 462.06 | 134085 | 32436 | -0.047 | 1016-1 | -0.0021 | 4.537 | 10 | ------- |
| 5.089 | 1016-2 | 143.1789 | 0.0000 | 429.54 | 224522 | 57457 | -0.067 | 1016-2 | -0.0034 | 5.093 | 10 | ------- |
| 5.742 | 1016-3 | 153.8427 | 0.0000 | 461.53 | 401070 | 106233 | -0.055 | 1016-3 | -0.0032 | 5.745 | 10 | ------- |
| 5.956 | 1016-4 | 143.4941 | 0.0000 | 430.48 | 169421 | 45667 | -0.061 | 1016-4 | -0.0036 | 5.960 | 10 | ------- |
| 6.108 | 1016-5 | 166.9340 | 0.0000 | 500.80 | 136202 | 36917 | -0.057 | 1016-5 | -0.0035 | 6.111 | 10 | ------- |
| 6.655 | 1016-6 | 147.1188 | 0.0000 | 441.36 | 199540 | 45925 | -0.048 | 1016-6 | -0.0032 | 6.658 | 10 | ------- |
| 6.812 | 1016-7 | 156.9309 | 0.0000 | 470.79 | 169574 | 39409 | -0.042 | 1016-7 | -0.0028 | 6.814 | 10 | ------- |
| | | 1065.5210 | | | 1434412 | 364044 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.531 | 1260-1 | 147.1329 | 0.0000 | 441.40 | 217998 | 79702 | -0.051 | 1260-1 | -0.0044 | 8.536 | 10 | ------- |
| 8.872 | 1260-2 | 152.0152 | 0.0000 | 456.05 | 244070 | 89992 | -0.050 | 1260-2 | -0.0044 | 8.876 | 10 | ------- |
| 9.080 | 1260-3 | 154.8065 | 0.0000 | 464.42 | 149565 | 52865 | -0.047 | 1260-3 | -0.0043 | 9.085 | 10 | ------- |
| 9.423 | 1260-4 | 171.7688 | 0.0000 | 515.31 | 430505 | 123856 | -0.048 | 1260-4 | -0.0045 | 9.427 | 10 | ------- |
| 10.012 | 1260-5 | 169.8172 | 0.0000 | 509.45 | 227814 | 76469 | -0.046 | 1260-5 | -0.0046 | 10.017 | 10 | ------- |
| 10.455 | 1260-6 | 190.0666 | 0.0000 | 570.20 | 425054 | 152300 | -0.061 | 1260-6 | -0.0064 | 10.461 | 10 | ------- |
| 11.107 | 1260-7 | 199.3704 | 0.0000 | 598.11 | 460872 | 100417 | -0.046 | 1260-7 | -0.0051 | 11.112 | 10 | ------- |
| | | 1184.9776 | | | 2155878 | 675602 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5087.TX0

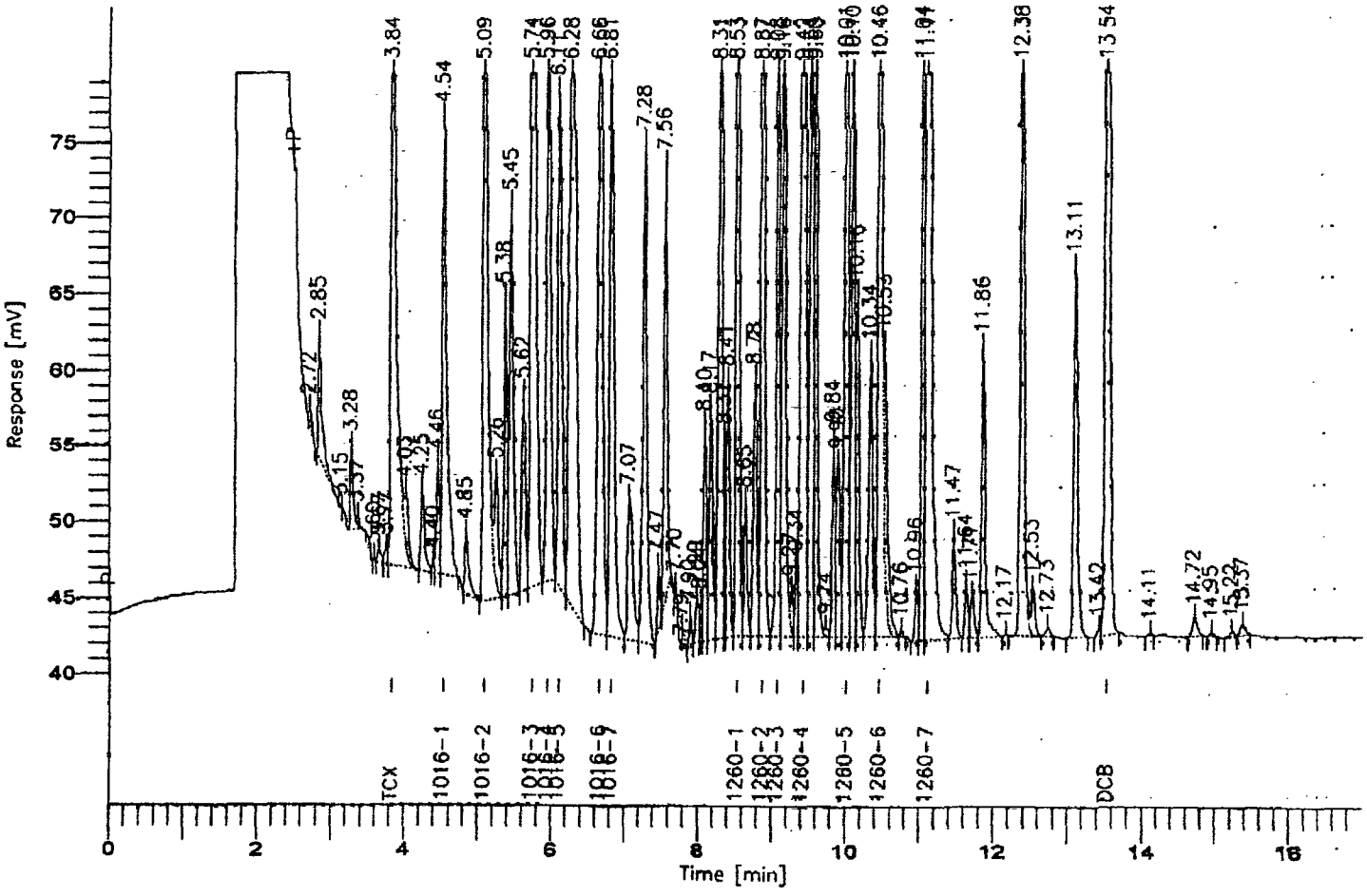
Software Version: 4.1<2F12>
Sample Name : 3259122 Time : 9/19/03 07:58 AM
Sample Number: FX1WJ1AGD Study : MSD
Operator : Analyst

Instrument : GMN Channel : A A/D mV Range : 1000
AutoSampler :
Rack/Vial : 0/0

Interface Serial # : 0159572268 Data Acquisition Time: 9/18/03 05:08 PM
Delay Time : 0.00 min.
End Time : 17.00 min.
Sampling Rate : 2.5000 pts/sec

Raw Data File : K:\#GMN\#SEQ\I15M\M#A5088.RAW
Result File : K:\#GMN\#SEQ\I15M\M#A5088.RST
Inst Method : K:\5890M\PCBINST from K:\#GMN\#SEQ\I15M\M#A5088.RST
Proc Method : K:\#GMN\#MTHINST\MPCBPRC.mth
Calib Method : K:\#GMN\#MTHCALB\I15ML60.mth
Sequence File : K:\#GMN\#SEQ\I15M.SEQ

Sample Volume : 1.0000 ul Area Reject : 0.000000
Sample Amount : 30.0000 Dilution Factor : 1.00



STL-KNOXVILLE GMN

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 3.839 | TCX | 6.3624 | 6.6667 | 19.09 | 248057 | 63244 | -0.060 | TCX | -0.0023 | 3.841 | 10 | 95.4 |
| 5.742 | AR1016 | 142.5444 | 166.6667 | 427.63 | 1373665 | 342834 | 0.000 | AR1016 | -0.0000 | 5.742 | 10 | 85.5 |
| 10.457 | AR1260 | 165.2408 | 166.6667 | 495.72 | 2080330 | 652953 | 0.000 | AR1260 | -0.0000 | 10.457 | 10 | 99.1 |
| 13.535 | DCB | 6.9224 | 6.6667 | 20.77 | 281317 | 73094 | -0.047 | DCB | -0.0063 | 13.541 | 10 | 103.8 |
| | | 321.0701 | | | 3983368 | 1132124 | | | | | | |

## Group Report For : AR1016

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4.535 | 1016-1 | 143.9517 | 0.0000 | 431.86 | 123607 | 30316 | -0.049 | 1016-1 | -0.0022 | 4.537 | 10 | ------- |
| 5.089 | 1016-2 | 136.2584 | 0.0000 | 408.78 | 219896 | 54680 | -0.059 | 1016-2 | -0.0030 | 5.093 | 10 | ------- |
| 5.742 | 1016-3 | 144.5284 | 0.0000 | 433.59 | 379732 | 99801 | -0.044 | 1016-3 | -0.0025 | 5.745 | 10 | ------- |
| 5.956 | 1016-4 | 136.1841 | 0.0000 | 408.55 | 162915 | 43340 | -0.054 | 1016-4 | -0.0032 | 5.960 | 10 | ------- |
| 6.109 | 1016-5 | 149.0797 | 0.0000 | 447.24 | 125093 | 32969 | -0.040 | 1016-5 | -0.0024 | 6.111 | 10 | ------- |
| 6.656 | 1016-6 | 141.0606 | 0.0000 | 423.18 | 197677 | 44034 | -0.035 | 1016-6 | -0.0023 | 6.658 | 10 | ------- |
| 6.813 | 1016-7 | 150.1036 | 0.0000 | 450.31 | 164744 | 37695 | -0.020 | 1016-7 | -0.0014 | 6.814 | 10 | ------- |
| | | 1001.1666 | | | 1373665 | 342834 | | | | | | |

## Group Report For : AR1260

| Ret Time [min] | Component | ADJ. Amount PPB | Spike ppb | Raw Amount (ppb) | Area [µV·s] | Height [µV] | Delta RT % | Component | RT Diff (min) | Expected RT (min) | Final Vol | %REC |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8.533 | 1260-1 | 142.1565 | 0.0000 | 426.47 | 210343 | 77007 | -0.032 | 1260-1 | -0.0027 | 8.536 | 10 | ------- |
| 8.873 | 1260-2 | 145.5392 | 0.0000 | 436.62 | 234881 | 86159 | -0.037 | 1260-2 | -0.0033 | 8.876 | 10 | ------- |
| 9.081 | 1260-3 | 149.3655 | 0.0000 | 448.10 | 144505 | 51007 | -0.034 | 1260-3 | -0.0031 | 9.085 | 10 | ------- |
| 9.424 | 1260-4 | 164.6694 | 0.0000 | 494.01 | 418770 | 118736 | -0.033 | 1260-4 | -0.0031 | 9.427 | 10 | ------- |
| 10.013 | 1260-5 | 165.0170 | 0.0000 | 495.05 | 220208 | 74308 | -0.034 | 1260-5 | -0.0034 | 10.017 | 10 | ------- |
| 10.457 | 1260-6 | 183.9249 | 0.0000 | 551.77 | 409458 | 147379 | -0.045 | 1260-6 | -0.0047 | 10.461 | 10 | ------- |
| 11.108 | 1260-7 | 195.2816 | 0.0000 | 585.84 | 442164 | 98357 | -0.032 | 1260-7 | -0.0036 | 11.112 | 10 | ------- |
| | | 1145.9542 | | | 2080330 | 652953 | | | | | | |

Report stored in ASCII file: K:\#GMN\#SEQ\I15M\M#A5088.TXO

# Miscellaneous Data

**STL Knoxville GC Pesticides/PCBs Data Review / Narrative Checklist LOT # H3I100253**
**Methods: 8081A, 8082, TO-4A, SOPs: KNOX-GC-0014 Rev. 1 and KNOX-GC-0015 Rev. 4 Page 1 of 1**

| | | | | | | |
|---|---|---|---|---|---|---|
| Sequence No.: | I15m | | | | | |
| Scanned File: | I15m060 ✓ | I15m095 ✓ | | | | |
| | I15m069 ✓ | I15m110 ✓ | | | | |
| | I15m083 ✓ | | | | | |

| *Review Items*<br>A. Continuing Calibration (CCAL)) | Yes | No | N/A | 2nd √ | If No, why is data reportable? |
|---|---|---|---|---|---|
| 1. CCAL Checklist completed for each analytical batch? | ✓ | | | ✓ | |
| **B. Client Sample and QC Sample Results** | | | | | |
| 1. Were all special project requirements met? | ✓ | | | ✓ | |
| 2. Were Turbochrom sample IDs, DFs, prep factors verified? | ✓ | | | ✓ | |
| 3. Sample analyses done within preparation and analytical holding time (HT)? *If no, list samples and NCM#:* _____ | ✓ | | | ✓ | ☐ *[ht1] HT expired upon receipt.*<br>☐ *[ht2] Client requested analysis after HT expired.* *<br>☐ **Re-extraction done after HT expired.** |
| 4. Same process file used for samples and ICAL? (2nd Level - Check 1-2 compounds for batch by manually calculating concentration using the ICAL avg. RF or curve.) | ✓ | | | ✓ | |
| 5. Are sample and MS/MSD surrogates within QC limits? | ✓ | | | ✓ | ☐ [sur1] MS/MSD surr.%R showed same effect.<br>☐ [sur2] Re-extraction demonstrated same effect.<br>☐ **[sur3] Not enough sample for re-extraction.**<br>☐ [sur7] Obvious matrix interference.<br>☐ **[sur12] Surr.%R high and all targets ND.**<br>☐ **[sur16] 1 Surr. out, but blank & LCS surrogates in control - matrix effect.** |
| 6. Are internal standards within 50-150% of last CCV? | | | ✓ | ✓ | |
| 7. Do positive hits meet identification criteria? (**RT and 2nd column confirmation** for single peak analytes; **fingerprint** for multi-peak analytes) | ✓ | | | ✓ | |
| 8. Are positive results **within calibration range**? | ✓ | | | ✓ | |
| 9. Were peaks checked for **saturation**? | ✓ | | | ✓ | |
| 10. Is **integration** acceptable and are all manual integrations clearly identified, initaled, dated and reason given? | ✓ | | | ✓ | Reasons: 1) Corrected split peak; 2) Unresolved peak; 3) Tailing; 4) RT shift; 5) Wrong peak selected; 6) Other |
| 11. Is largest analyte **diluted to 20-100%** of the calibration range? | ✓ | | | ✓ | ☐ [dil1] Dilution required to prevent contamination of instrument due to non-target compounds. |
| 12. Were runs checked for **carryover**? | ✓ | | | ✓ | |
| 13. Final **report acceptable**? (Results correct, RLs calculated correctly, units correct, surrogate %R correct, appropriate flags used, deviations noted in narrative, dilution factor correct, and extraction/ analysis dates correct.) | ✓ | | | ✓ | |
| **C. Preparation/Matrix QC** | | | | | |
| 1. LCS done per prep batch and all analytes and surrogates within laboratory established QC limits? | ✓ | | | ✓ | ☐ **[lcs2] Insufficient sample for reanalysis.***<br>☐ **[lcs3] LCS %R high and all analyte(s) were <RL in associated samples.** |
| 2. **Method blank** done per prep batch, method blank or instrument blank run with each sequence, and all analytes <RL? | ✓ | | | ✓ | ☐ **[mb3] No analyte > RL in associated samples.***<br>☐ **[mb4] Sample results > 20x higher than blank.**<br>☐ **[mb5] Insufficient sample for reanalysis.*** |
| 3. **Method blank surrogate recoveries** within QC limits? | ✓ | | | ✓ | ☐ **[mb1] Sample surrogates OK and there is no analyte >RL in samples associated with blank.*** |
| 4. MS/MSD done per batch? | ✓ | | | ✓ | ☐ [lcsd] Insufficient sample. LCS/LCSD analyzed. |
| 5. **MS/MSD** recoveries and RPDs within laboratory generated control limits? | ✓ | | | ✓ | ☐ [ms1] LCS acceptable - sample matrix effects.<br>☐ [ms2] LCS acceptable. High native analyte concentration relative to spike level.<br>☐ [ms3] Spikes diluted out. LCS acceptable.<br>☐ [rpd] LCS acceptable. RPD out due to lack of sample homogeneity. |
| 6. Were MS run #'s assigned correctly? | ✓ | | | ✓ | |
| **D. Other** | | | | | |
| 1. Are all **nonconformances** documented appropriately? | | | ✓ | ✓ | |

| | | | |
|---|---|---|---|
| **Analyst:** MOP | **Date:** 9/21/03 | **2nd Level Reviewer:** | **Date:** 9/26/03 |
| **Comments:** | | **Comments:** | |

* Such action must be taken in consultation with client.

Screen
I18C 1-19

PCB 8082

**STL KNOXVILLE**

**Extraction Sheet - Soils**

Batch 325 9122
Extracted By/Date: MJR 9.16.03
Extract Concentration By/Date: AJR 9-17-03

GPC Cleanup By/Date: NA
GPC Extract Conc By/Date: ↓
Florisil Cleanup By/Date: ↓
Final Conc By/Date: ↓

Sulfuric Acid Cleanup By/Date: AJR 9-17-03
SOP # ☑ KNOX-OP-0011 or ☐ _____

Spiked by: MJR
Witness Surr/Spike: Ray
Conc Method Used: KD

Conc Method Used: NA
Florisil Lot # ↓

Reagent Lot No:

Methylene Chloride Y27E33
Acetone Y03E02
AJR 9-17-03 Sodium Sulfate ~~5024-06~~ Y26599
Hexane XY8E08
Sulfuric Acid Y12A01
Other _____

Sample Lot Numbers: H3I100253
H3I110106

Relinquished by: AJR Date: 9-17-03 Time: 16:00
Received by: ↓ Date: ↓ Time: ↓
Comments: _____

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 9/17/03
Time: 12:01:45

| LEV 1 | LEV 2 | | LEV 1 | LEV 2 | |
|---|---|---|---|---|---|
| Y | Y | Blank | Y | Y | Weights/Volumes |
| Y | Y | Check | Y | Y | Spike & Surrogate Worksheet |
| Y | Y | MS/MSD | Y | Y | Vial contains correct volume |
| | | | Y | Y | Labels, greenbars, worksheets computer batch: correct & all match |
| | | | _ | _ | Anomalies to Extraction Method |

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGroup
Y Bench Sheet Copied per COC

Extractionist: 060062 Marcus J. Ramsey

Concentrationist: 014113 Annette J. Ribet

**QC BATCH: 3259122**

**PREP DATE:** 9/16/03 9:00
**COMP DATE:** 9/16/03 15:00

**Reviewer/Date:** RIBETA / 9/17/03

**PCBs (8082)**
**SONICATION w/ACID STRIP (PCB)**

| EXTR EXPR | ANL DUE | LOT#,MSRUN#/ WORK ORDER | TEST FLGS | EXT | MTH | MATRIX | INIT/FIN WT/VOL | INIT | PH"S ADJ1 | ADJ2 | SOLVENTS EXTRACTION | VOL | EXCHANGE | VOL | SPIKE STANDARD/ SURROGATE ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/03 | 9/29/03 | H3I100253-001 **FX1WF-1-AC** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I100253-002 **FX1WH-1-AE** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I100253-003 **FX1WJ-1-AE** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I100253-003 **FX1WJ-1-AFS** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1849 500 UL<br>AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I100253-003 **FX1WJ-1-AGD** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1849 500 UL<br>AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/24/03 | 9/29/03 | H3I110106-005 **FX3J3-1-AD** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-010 **FX3KM-1-AC** | D | 71 | QH | SOLID | **30.0g** 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 9/17/03
Time: 12:01:45

**QC BATCH: 3259122**

**PREP DATE:** 9/16/03 9:00
**COMP DATE:** 9/16/03 15:00

| EXTR EXPR | ANL DUE | LOT#,MSRUN#/ WORK ORDER | TEST FLGS | EXT | MTH | MATRIX | INIT/FIN WT/VOL | PH"S INIT | PH"S ADJ1 | PH"S ADJ2 | SOLVENTS EXTRACTION | VOL | EXCHANGE | VOL | SPIKE STANDARD/ SURROGATE ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/23/03 | 9/29/03 | H3I110106-011 FX3KP-1-AL | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-012 FX3KT-1-AV | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-013 FX3KV-1-A5 | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-014 FX3KX-1-A5 | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-015 FX3K2-1-A5 | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-016 FX3K4-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-017 FX3LA-1-A5 | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-018 FX3LE-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/23/03 | 9/29/03 | H3I110106-019 FX3LG-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |
| 9/24/03 | 9/29/03 | H3I110106-020 FX3LH-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1883 1.0 ML |
| COMMENTS: | | | | | | | | | | | | | | | |

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 9/17/03
Time: 12:01:45

**QC BATCH: 3259122**

**PREP DATE:** 9/16/03 9:00
**COMP DATE:** 9/16/03 15:00

| EXTR EXPR | ANL DUE | LOT#,MSRUN# / WORK ORDER | TEST FLGS | EXT | MTH | MATRIX | INIT/FIN WT/VOL | INIT | PH"S ADJ1 | ADJ2 | SOLVENTS EXTRACTION | VOL | EXCHANGE | VOL | SPIKE STANDARD/ SURROGATE ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9/24/03 | 9/29/03 | H3I110106-021 FX3LJ-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |
| 9/23/03 | 9/29/03 | H3I110106-022 FX3LK-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |
| 9/23/03 | 9/29/03 | H3I110106-023 FX3LL-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |
| 9/23/03 | 9/29/03 | H3I110106-024 FX3LM-1-AG | D | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |
| 9/23/03 | 0/00/00 | H3I160000-122 F0D1C-1-AAB | | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |
| 9/23/03 | 0/00/00 | H3I160000-122 F0D1C-1-ACC | | 71 | QH | SOLID | 30.0g 10.00mL | NA | NA | NA | METH/ACE | 300.0 | HEXANE | 50.0 | AI-1849 500 UL |
| COMMENTS: | | | | | | | | | | | | | | | AI-1883 1.0 ML |

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 23

# Trace Level Organics

# Raw Sample Data
# DB-5 Column

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 5.3 | 0.42 | pg/g | SW846 8290 |
| Total TCDD | 42 Q | 0.42 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 30 | 0.24 | pg/g | SW846 8290 |
| Total PeCDD | 200 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 9.8 | 0.24 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 86 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 46 | 0.23 | pg/g | SW846 8290 |
| Total HxCDD | 640 Q | 0.24 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 190 | 0.32 | pg/g | SW846 8290 |
| Total HpCDD | 430 | 0.32 | pg/g | SW846 8290 |
| OCDD | 230 B | 0.31 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.3 J | 0.18 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 2.2 J | 0.15 | pg/g | SW846 8290 |
| Total PeCDF | 27 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 5.6 | 0.14 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.7 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 2.2 Q,J | 0.17 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.30 J | 0.19 | pg/g | SW846 8290 |
| Total HxCDF | 57 Q | 0.16 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 21 B | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.2 Q,B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 51 Q,B | 0.21 | pg/g | SW846 8290 |
| OCDF | 11 | 0.26 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 70 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 82 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 77 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 66 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 71 | (40 - 135) |
| 13C-OCDD | 63 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 73 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 74 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 69 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 67 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 74 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

STL - Knoxville

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-001 |
| **Data File** | /20031004s1/tfx1wf2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71197 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/5/2003 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Analysis Time** | 01:48 | **Initial Wt/Vol** | 10.0 | **Lims Test Code** | XXA11IN01 |
| **Anal Exp Date** | 11/14/03 | **Extract Vol** | 20 | **Method** | DX8290_2 |
| **Instrument** | M2A | **Dil Factor** | 1.0 | **Code** | IN2 |
| **Analyst** | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:51 | 31048 | 4560 | 1.095 | | 53.148617 | | 5.314862 | | 0.416 |
| Total TCDD | | 211470 | 27496 | 1.095 | | 415.147035 | | 41.514703 | Q | 0.416 |
| 2,3,7,8-TCDF | 33:46 | 20193 | 1667 | 1.017 | | 26.005908 | | 2.600591 | Q | 0.366 |
| Total TCDF | | 126909 | 14724 | 1.017 | | 189.448113 | | 18.944811 | Q | 0.366 |
| 1,2,3,7,8-PeCDD | 43:12 | 159854 | 47282 | 0.984 | | 295.594917 | | 29.559492 | | 0.235 |
| Total PeCDD | | 946522 | 224229 | 0.984 | | 2045.86136 | | 204.586136 | | 0.235 |
| 1,2,3,7,8-PeCDF | 41:40 | 9187 | 2213 | 0.970 | | 12.949946 | | 1.294995 | J | 0.182 |
| 2,3,4,7,8-PeCDF | 42:44 | 18009 | 4299 | 1.035 | | 22.489717 | | 2.248972 | J | 0.148 |
| Total PeCDF | | 177553 | 37396 | 1.003 | | 270.793326 | | 27.079333 | Q | 0.163 |
| 1,2,3,4,7,8-HxCDD | 47:22 | 55637 | 13650 | 1.111 | | 98.042513 | | 9.804251 | | 0.238 |
| 1,2,3,6,7,8-HxCDD | 47:30 | 440087 | 120618 | 1.026 | | 856.542335 | | 85.654233 | | 0.249 |
| 1,2,3,7,8,9-HxCDD | 47:55 | 258127 | 60137 | 1.109 | | 460.057215 | | 46.005721 | | 0.234 |
| Total HxCDD | | 2751826 | 733695 | 1.082 | | 6442.55126 | | 644.255126 | Q | 0.240 |
| 1,2,3,4,7,8-HxCDF | 46:16 | 46235 | 8308 | 1.226 | | 56.309519 | | 5.630952 | | 0.143 |
| 1,2,3,6,7,8-HxCDF | 46:25 | 30574 | 7444 | 1.197 | | 37.238738 | | 3.723874 | QJ | 0.140 |
| 2,3,4,6,7,8-HxCDF | 47:12 | 15754 | 4608 | 1.155 | | 21.557307 | | 2.155731 | QJ | 0.168 |
| 1,2,3,7,8,9-HxCDF | 48:13 | 2193 | 641 | 1.236 | | 3.045330 | | 0.304533 | J | 0.186 |
| Total HxCDF | | 346146 | 101270 | 1.204 | | 565.640426 | | 56.564043 | Q | 0.157 |
| 1,2,3,4,6,7,8-HpCDD | 52:31 | 925571 | 211614 | 0.986 | | 1936.90347 | | 193.690347 | | 0.318 |
| Total HpCDD | | 1116750 | 240359 | 0.986 | | 4273.87918 | | 427.387918 | | 0.318 |
| 1,2,3,4,6,7,8-HpCDF | 50:48 | 149938 | 33516 | 1.512 | | 207.171458 | | 20.717146 | B | 0.195 |
| 1,2,3,4,7,8,9-HpCDF | 53:10 | 7401 | 2440 | 1.426 | | 12.276441 | | 1.227644 | QBJ | 0.231 |
| Total HpCDF | | 190828 | 41052 | 1.469 | | 507.668370 | | 50.766837 | QB | 0.212 |
| OCDD | 56:48 | 934541 | 249404 | 1.075 | | 2304.65672 | | 230.465672 | B | 0.314 |
| OCDF | 56:57 | 48197 | 11948 | 1.135 | | 112.493415 | | 11.249341 | | 0.265 |
| 13C-2,3,7,8-TCDD | 35:47 | 533469 | 65328 | 1.083 | 1000 | 703.198077 | 70.32 | 70.319808 | | 0.811 |
| 13C-2,3,7,8-TCDF | 33:40 | 763176 | 78597 | 1.527 | 1000 | 713.364217 | 71.34 | 71.336422 | | 0.311 |
| 13C-1,2,3,7,8-PeCDD | 43:11 | 549384 | 157686 | 0.958 | 1000 | 818.064698 | 81.81 | 81.806470 | | 0.298 |
| 13C-1,2,3,7,8-PeCDF | 41:39 | 731489 | 185478 | 1.427 | 1000 | 731.606634 | 73.16 | 73.160663 | | 0.278 |
| 13C-2,3,4,7,8-PeCDF | 42:43 | 773545 | 214148 | 1.384 | 1000 | 797.697045 | 79.77 | 79.769704 | | 0.287 |
| 13C-1,2,3,4,7,8-HxCDD | 47:21 | 510760 | 135334 | 0.941 | 1000 | 773.008604 | 77.30 | 77.300860 | | 0.182 |
| 13C-1,2,3,6,7,8-HxCDD | 47:29 | 500959 | 140003 | 1.078 | 1000 | 661.853045 | 66.19 | 66.185304 | | 0.158 |
| 13C-1,2,3,4,7,8-HxCDF | 46:15 | 669582 | 188614 | 1.283 | 1000 | 742.943742 | 74.29 | 74.294374 | | 0.168 |
| 13C-1,2,3,6,7,8-HxCDF | 46:24 | 685748 | 197148 | 1.406 | 1000 | 694.583365 | 69.46 | 69.458337 | | 0.154 |
| 13C-2,3,4,6,7,8-HxCDF | 47:11 | 632571 | 170011 | 1.301 | 1000 | 692.466226 | 69.25 | 69.246623 | | 0.166 |
| 13C-1,2,3,7,8,9-HxCDF | 48:12 | 582784 | 143353 | 1.105 | 1000 | 750.686018 | 75.07 | 75.068602 | | 0.196 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:30 | 484585 | 110744 | 0.970 | 1000 | 711.389144 | 71.14 | 71.138914 | | 0.190 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:47 | 478537 | 105846 | 1.017 | 1000 | 669.972887 | 67.00 | 66.997289 | | 0.144 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:08 | 422787 | 94755 | 0.812 | 1000 | 741.346505 | 74.13 | 74.134651 | | 0.180 |
| 13C-OCDD | 56:47 | 754691 | 206194 | 0.856 | 2000 | 1256.13673 | 62.81 | 125.613673 | | 0.196 |
| 13C-1,2,3,4-TCDD | 35:19 | 1401489 | 166190 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.879 |
| 13C-1,2,3,7,8,9-HxCDD | 47:54 | 1404544 | 363047 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.171 |

VMK 10/7/03

BKW 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-001 |
| **Data File** | /20031004s1/tfx1wf2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71197 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 01:48 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 150 | 57 | 60 | 0.95 * | / | |
| | Unidentified | 27:24 | 00:00 | 0 | 4252 | 4678 | 286 | 348 | 0.91 * | MVV/AVV | R |
| | Unidentified | 27:54 | 00:00 | 0 | 3613 | 3046 | 329 | 464 | 1.19 * | MVV/MVV | R |
| | Unidentified | 28:31 | 00:00 | 0 | 4890 | 5076 | 435 | 643 | 0.96 * | ABV/ABV | R |
| | Unidentified | 28:48 | 00:00 | 0 | 2179 | 2355 | 308 | 351 | 0.93 * | AVB/AVB | RT |
| | Unidentified | 29:11 | 00:00 | 0 | 1432 | 2048 | 211 | 235 | 0.70 | MVV/AVV | T |
| | Unidentified | 29:23 | 00:00 | 0 | 2309 | 1361 | 361 | 271 | 1.70 * | MVB/AVB | R |
| | Unidentified | 30:12 | 00:00 | 0 | 5935 | 7714 | 783 | 700 | 0.77 | MVV/MVV | |
| | Unidentified | 30:57 | 00:00 | 0 | 6675 | 6778 | 538 | 516 | 0.98 * | MVV/MVV | R |
| | Unidentified | 31:36 | 00:00 | 0 | 7558 | 7887 | 556 | 509 | 0.96 * | MVV/MVV | RT |
| | Unidentified | 32:28 | 00:00 | 0 | 5113 | 6838 | 573 | 621 | 0.75 | ABV/ABB | |
| | Unidentified | 33:02 | 00:00 | 0 | 3778 | 3770 | 401 | 494 | 1.00 * | MBB/ABB | RT |
| | 2,3,7,8-TCDF | 33:46 | 33:43 | 3 | 9088 | 11105 | 643 | 1024 | 0.82 | ABV/ABB | M |
| | Unidentified | 35:05 | 00:00 | 0 | 6270 | 8619 | 736 | 1129 | 0.73 | AVV/AVV | |
| | Unidentified | 35:38 | 00:00 | 0 | 3107 | 4573 | 648 | 711 | 0.68 | ABB/AVV | |
| | Unidentified | 37:20 | 00:00 | 0 | 3234 | 3383 | 884 | 574 | 0.96 * | | RM |
| | Unidentified | 37:50 | 00:00 | 0 | 3288 | 4121 | 396 | 600 | 0.80 | ABV/ABB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 200 | 78 | 80 | 0.98 * | / | |
| | 13C-2,3,7,8-TCDF | 33:40 | 33:41 | -1 | 337441 | 425735 | 34914 | 43683 | 0.79 | ABV/ABV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 150 | 59 | 60 | 0.98 * | / | |
| | Unidentified | 29:11 | 00:00 | 0 | 8489 | 9635 | 1124 | 1415 | 0.88 | ABB/ABB | |
| | Unidentified | 30:01 | 00:00 | 0 | 8714 | 9041 | 1055 | 1055 | 0.96 * | AVB/ABV | R |
| | Unidentified | 30:47 | 00:00 | 0 | 7073 | 9305 | 855 | 1497 | 0.76 | ABB/ABB | |
| | Unidentified | 32:34 | 00:00 | 0 | 30007 | 38482 | 3595 | 4690 | 0.78 | ABB/ABB | |
| | Unidentified | 33:21 | 00:00 | 0 | 5721 | 8077 | 616 | 866 | 0.71 | MBV/ABV | |
| | Unidentified | 33:34 | 00:00 | 0 | 6712 | 6404 | 992 | 925 | 1.05 * | AVB/AVB | R |
| | Unidentified | 34:27 | 00:00 | 0 | 7189 | 7682 | 688 | 899 | 0.94 * | ABB/ABB | RT |
| | Unidentified | 35:18 | 00:00 | 0 | 4431 | 4900 | 414 | 628 | 0.90 * | AVV/AVB | RT |
| | Unidentified | 35:35 | 00:00 | 0 | 3485 | 4785 | 416 | 706 | 0.73 | AVV/ABV | |
| | 2,3,7,8-TCDD | 35:51 | 35:50 | 1 | 14023 | 17025 | 2510 | 2050 | 0.82 | AVB/AVB | |
| | Unidentified | 36:43 | 00:00 | 0 | 11660 | 15312 | 1725 | 2083 | 0.76 | ABB/ABV | |
| | Unidentified | 37:13 | 00:00 | 0 | 1749 | 2093 | 352 | 388 | 0.84 | MBB/ABB | |
| | Unidentified | 38:02 | 00:00 | 0 | 2473 | 3516 | 373 | 588 | 0.70 | MBB/ABB | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 368 | 363 | 147 | 145 | 1.01 * | / | |
| | 13C-1,2,3,4-TCDD | 35:19 | 35:19 | 0 | 630148 | 771341 | 74572 | 91618 | 0.82 | ABV/ABV | |
| | 13C-2,3,7,8-TCDD | 35:47 | 35:48 | -1 | 241723 | 291746 | 29843 | 35485 | 0.83 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 178 | 60 | 71 | 0.85 * | / | |
| | Unidentified | 38:32 | 00:00 | 0 | 15807 | 11579 | 2911 | 2209 | 1.37 | ABB/ABB | |
| | Unidentified | 40:11 | 00:00 | 0 | 1764 | 1313 | 496 | 410 | 1.34 | ABB/ABB | |

Notes:
R = ratio is ouside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF2AA | **Prep Batch** | 3273193 | **Lot No** | M3I200253-001 |
| **Data File** | /20031004s1/tfx1wf2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71197 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 01:48 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA1IIN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Unidentified | 40:23 | 00:00 | 0 | 26635 | 15807 | 3912 | 2644 | 1.69 | ABB/ABB | |
| | Unidentified | 40:42 | 00:00 | 0 | 3245 | 3477 | 889 | 589 | 0.93 * | ABB/ABB | R |
| | Unidentified | 41:05 | 00:00 | 0 | 5730 | 3880 | 950 | 649 | 1.48 | MVV/MVV | |
| | Unidentified | 41:15 | 00:00 | 0 | 12772 | 6951 | 2526 | 1391 | 1.84 * | AVB/AVB | R |
| | Unidentified | 41:35 | 00:00 | 0 | 1548 | 1980 | 488 | 677 | 0.78 * | ABV/ABV | R |
| | 1,2,3,7,8-PeCDF | 41:40 | 41:39 | 1 | 5456 | 3731 | 1194 | 1019 | 1.46 | AVB/AVB | |
| | Unidentified | 41:54 | 00:00 | 0 | 4431 | 2277 | 1004 | 577 | 1.95 * | ABV/ABB | R |
| | Unidentified | 42:07 | 00:00 | 0 | 13115 | 8176 | 3076 | 1539 | 1.60 | AVB/ABB | |
| | Unidentified | 42:29 | 00:00 | 0 | 782 | 937 | 280 | 307 | 0.83 * | ABV/ABB | R |
| | 2,3,4,7,8-PeCDF | 42:44 | 42:43 | 1 | 10594 | 7415 | 2464 | 1835 | 1.43 | AVB/ABV | |
| | Unidentified | 42:55 | 00:00 | 0 | 10867 | 8518 | 2723 | 1860 | 1.28 * | ABB/AVB | R |
| | Unidentified | 43:15 | 00:00 | 0 | 1450 | 1860 | 446 | 364 | 0.78 * | | RM |
| | Unidentified | 43:56 | 00:00 | 0 | 12397 | 8383 | 3302 | 2340 | 1.48 | ABB/ABB | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 193 | 71 | 61 | 1.16 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:39 | 41:38 | 1 | 448264 | 283225 | 114118 | 71360 | 1.58 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 42:43 | 42:42 | 1 | 472310 | 301235 | 131518 | 82630 | 1.57 | AVV/AVV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 198 | 67 | 79 | 0.85 * | / | |
| | Unidentified | 40:41 | 00:00 | 0 | 153886 | 103595 | 29778 | 18855 | 1.49 | ABB/ABV | |
| | Unidentified | 41:23 | 00:00 | 0 | 30785 | 20171 | 7217 | 5019 | 1.53 | ABB/AVB | |
| | Unidentified | 41:46 | 00:00 | 0 | 63083 | 41618 | 16262 | 10945 | 1.52 | ABV/ABV | |
| | Unidentified | 41:58 | 00:00 | 0 | 147265 | 94056 | 38210 | 25085 | 1.57 | AVV/AVV | |
| | Unidentified | 42:10 | 00:00 | 0 | 45102 | 29755 | 11473 | 7508 | 1.52 | AVB/AVB | |
| | Unidentified | 42:26 | 00:00 | 0 | 22196 | 13237 | 5523 | 3456 | 1.68 | ABV/ABV | |
| | Unidentified | 42:33 | 00:00 | 0 | 60087 | 36418 | 12829 | 7854 | 1.65 | AVB/AVB | |
| | Unidentified | 42:47 | 00:00 | 0 | 2678 | 2010 | 632 | 368 | 1.33 | ABB/ABV | |
| | Unidentified | 42:58 | 00:00 | 0 | 2137 | 1475 | 618 | 457 | 1.45 | ABB/AVB | |
| | 1,2,3,7,8-PeCDD | 43:12 | 43:10 | 2 | 97013 | 62841 | 28110 | 19172 | 1.54 | ABV/ABB | |
| | Unidentified | 43:23 | 00:00 | 0 | 24964 | 15202 | 6980 | 4225 | 1.64 | AVB/ABB | |
| | Unidentified | 43:48 | 00:00 | 0 | 21939 | 14863 | 6350 | 4585 | 1.48 | ABB/ABB | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 95 | 57 | 38 | 1.50 | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:11 | 43:09 | 2 | 335282 | 214102 | 96845 | 60841 | 1.57 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 169 | 66 | 66 | 1.00 * | / | |
| | Unidentified | 45:00 | 00:00 | 0 | 12892 | 10197 | 3767 | 2859 | 1.26 | ABB/ABV | |
| | Unidentified | 45:11 | 00:00 | 0 | 65107 | 49437 | 18849 | 15308 | 1.32 | ABB/AVB | |
| | Unidentified | 45:23 | 00:00 | 0 | 2170 | 1656 | 605 | 551 | 1.31 | ABB/ABV | |
| | Unidentified | 45:34 | 00:00 | 0 | 4345 | 4525 | 1392 | 1613 | 0.96 * | ABV/AVV | R |
| | Unidentified | 45:39 | 00:00 | 0 | 1765 | 3184 | 618 | 966 | 0.55 * | AVV/AVV | R |
| | Unidentified | 45:48 | 00:00 | 0 | 77527 | 61452 | 23228 | 17413 | 1.26 | AVB/AVV | |
| | Unidentified | 45:58 | 00:00 | 0 | 8846 | 6247 | 2500 | 2023 | 1.42 | ABB/AVB | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-001 |
| **Data File** | /20031004s1/tfx1wf2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71197 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 01:48 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | 1,2,3,4,7,8-HxCDF | 46:16 | 46:17 | -1 | 27209 | 19026 | 5169 | 3139 | 1.43 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDF | 46:25 | 46:25 | 0 | 17425 | 13149 | 3689 | 3755 | 1.33 | AVB/AVV | |
| | Unidentified | 46:36 | 00:00 | 0 | 2229 | 1990 | 370 | 343 | 1.12 | ABB/AVB | T |
| | Unidentified | 46:48 | 00:00 | 0 | 4157 | 3471 | 895 | 535 | 1.20 | ABV/ABV | |
| | Unidentified | 46:58 | 00:00 | 0 | 8188 | 5793 | 2374 | 1843 | 1.41 | AVV/AVV | |
| | Unidentified | 47:05 | 00:00 | 0 | 6090 | 4111 | 1366 | 1408 | 1.48 * | AVV/AVV | R |
| | 2,3,4,6,7,8-HxCDF | 47:12 | 47:11 | 1 | 10765 | 7033 | 3142 | 2057 | 1.53 * | AVB/AVB | R |
| | 1,2,3,7,8,9-HxCDF | 48:13 | 48:13 | 0 | 1170 | 1023 | 242 | 399 | 1.14 | ABB/ABV | |
| | Unidentified | 48:21 | 00:00 | 0 | 2514 | 2581 | 566 | 575 | 0.97 * | ABB/AVB | R |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 215 | 71 | 86 | 0.83 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:15 | 46:16 | -1 | 232897 | 436685 | 65014 | 123600 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:24 | 46:25 | -1 | 235620 | 450128 | 66242 | 130906 | 0.52 | AVB/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:11 | 47:10 | 1 | 218510 | 414061 | 57122 | 112889 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:12 | 48:12 | 0 | 203549 | 379235 | 51545 | 91808 | 0.54 | ABB/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 180 | 71 | 72 | 0.99 * | / | |
| | Unidentified | 45:41 | 00:00 | 0 | 391226 | 314847 | 117575 | 95008 | 1.24 | ABV/ABB | |
| | Unidentified | 46:17 | 00:00 | 0 | 93570 | 71118 | 24636 | 19568 | 1.32 | ABB/ABB | |
| | Unidentified | 46:37 | 00:00 | 0 | 1040139 | 825699 | 265352 | 207829 | 1.26 | ABV/ABV | |
| | Unidentified | 46:47 | 00:00 | 0 | 8429 | 10857 | 2063 | 2048 | 0.78 * | AVB/AVB | R |
| | 1,2,3,4,7,8-HxCDD | 47:22 | 47:22 | 0 | 30069 | 25568 | 7692 | 5958 | 1.18 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:30 | 47:29 | 1 | 244184 | 195903 | 67867 | 52751 | 1.25 | AVB/AVV | |
| | 1,2,3,7,8,9-HxCDD | 47:55 | 47:55 | 0 | 147207 | 110920 | 33374 | 26763 | 1.33 | ABB/AVB | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 155 | 62 | 62 | 1.00 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:21 | 47:21 | 0 | 282829 | 227931 | 74928 | 60406 | 1.24 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:29 | 47:28 | 1 | 275969 | 224990 | 76724 | 63279 | 1.23 | AVB/AVB | |
| | 13C-1,2,3,7,8,9-HxCDD | 47:54 | 47:54 | 0 | 785297 | 619247 | 204905 | 158142 | 1.27 | ABV/ABV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 160 | 61 | 64 | 0.95 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:48 | 50:49 | -1 | 77947 | 71991 | 16769 | 16747 | 1.08 | ABV/ABB | M |
| | Unidentified | 51:16 | 00:00 | 0 | 5148 | 4198 | 818 | 939 | 1.23 * | ABV/ABB | R |
| | Unidentified | 51:31 | 00:00 | 0 | 90711 | 91553 | 19163 | 19973 | 0.99 | AVV/ABV | |
| | 1,2,3,4,7,8,9-HpCDF | 53:10 | 53:09 | 1 | 3773 | 4627 | 1244 | 1037 | 0.82 * | ABB/ABB | RM |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 128 | 55 | 51 | 1.08 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:47 | 50:47 | 0 | 150763 | 327774 | 32114 | 73732 | 0.46 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:08 | 53:08 | 0 | 129373 | 293414 | 28663 | 66092 | 0.44 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 180 | 67 | 72 | 0.93 | / | |
| | Unidentified | 51:20 | 00:00 | 0 | 569151 | 547599 | 120716 | 119643 | 1.04 | ABV/ABV | |
| | 1,2,3,4,6,7,8-HpCDD | 52:31 | 52:32 | -1 | 477318 | 448253 | 108219 | 103395 | 1.06 | ABV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF2AA | **Prep Batch** | 3273193 | **Lot No** | H3110253-001 |
| **Data File** | /20031004s1/tfx1wf2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71197 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 01:48 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Dilution Factor** | 1.00 | **Code** | IN2 |

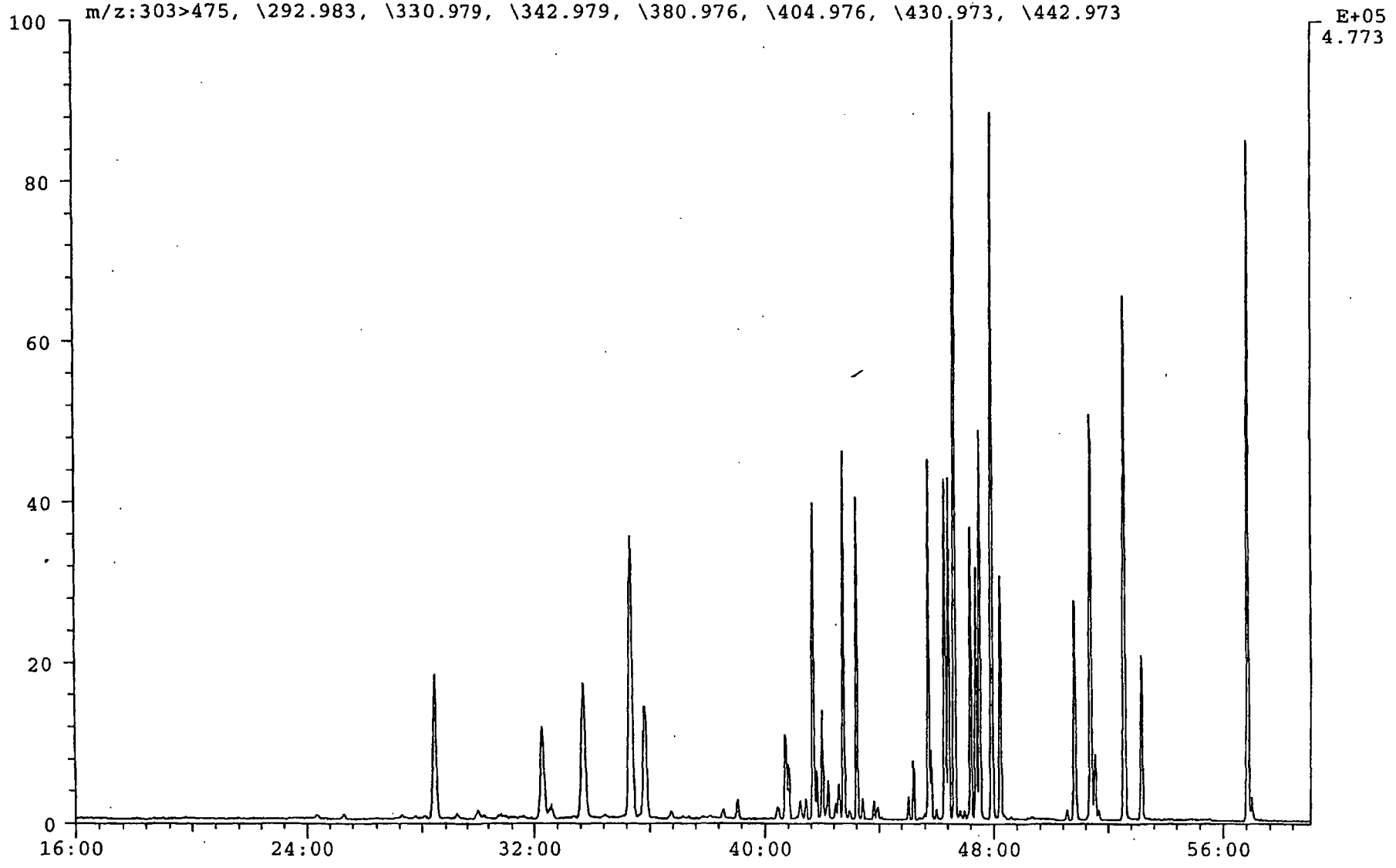
**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 175 | 64 | 70 | 0.91 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:30 | 52:31 | -1 | 247188 | 237397 | 54873 | 55871 | 1.04 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 168 | 57 | 67 | 0.85 | / | |
| | OCDF | 56:57 | 56:59 | -2 | 23846 | 24351 | 5662 | 6286 | 0.98 | ABB/AVV | |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 175 | 69 | 70 | 0.99 | / | |
| | OCDD | 56:48 | 56:49 | -1 | 438302 | 496239 | 116633 | 132771 | 0.88 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 138 | 66 | 55 | 1.20 * | / | |
| | 13C-OCDD | 56:47 | 56:48 | -1 | 357957 | 396734 | 96069 | 110125 | 0.90 | ABV/ABV | |

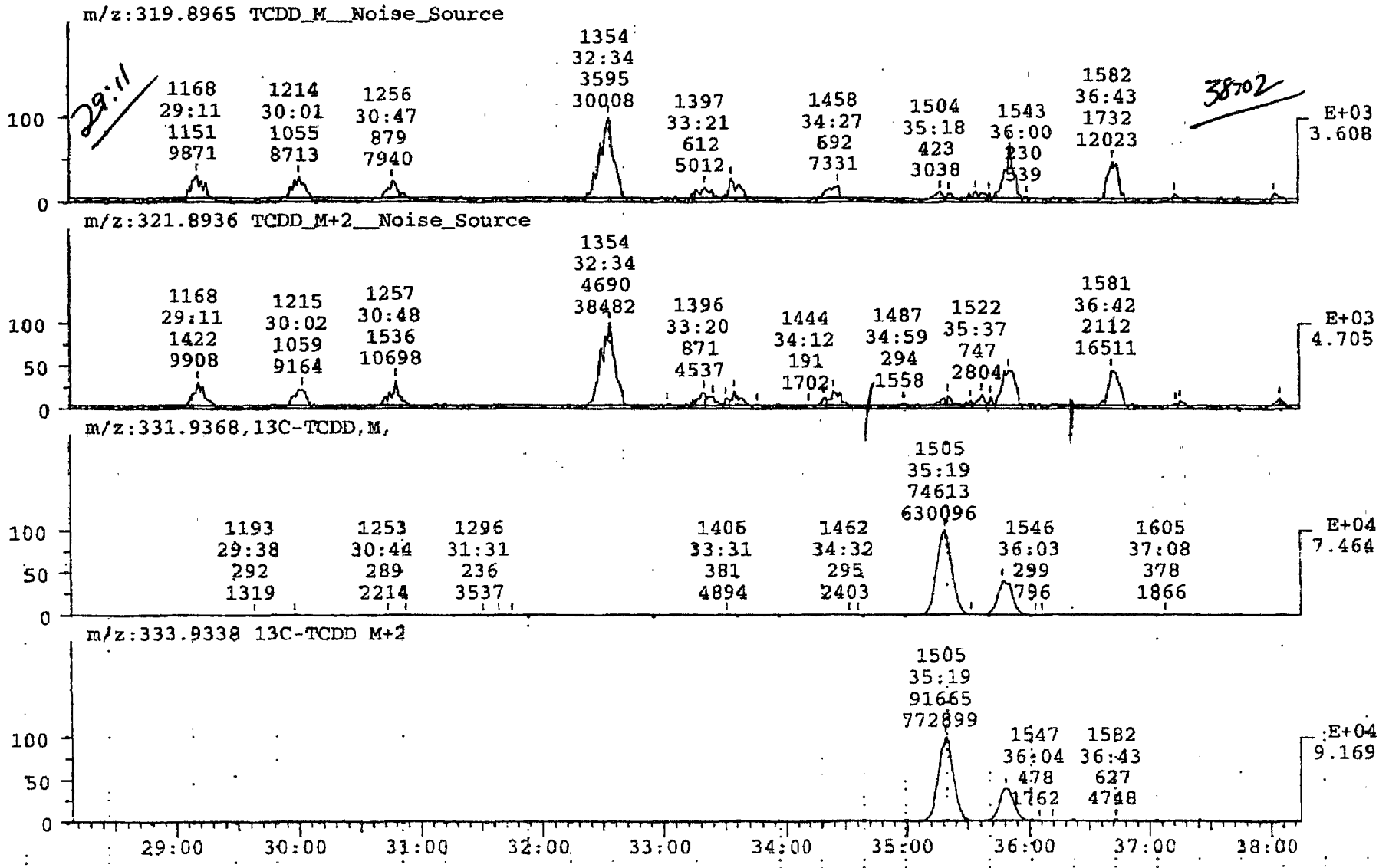
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tfx1wf2 05-Oct-03 Elapse: 55:05 2612
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 442 > 2831 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

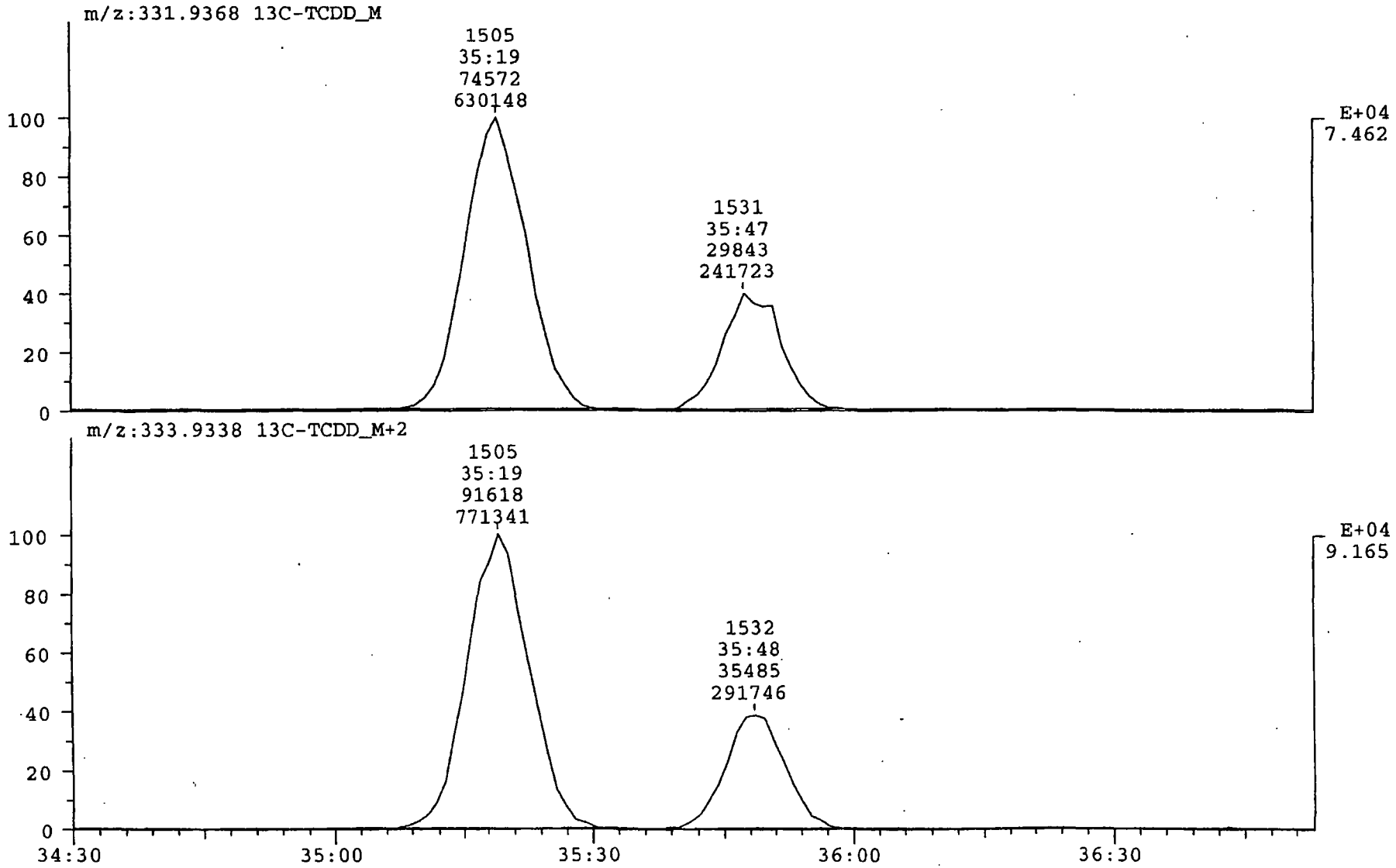
Just JJSD 10/6/03
Calc DKW 10-6-03
QC VMK 10-7-03
Reviewed 10.7.03



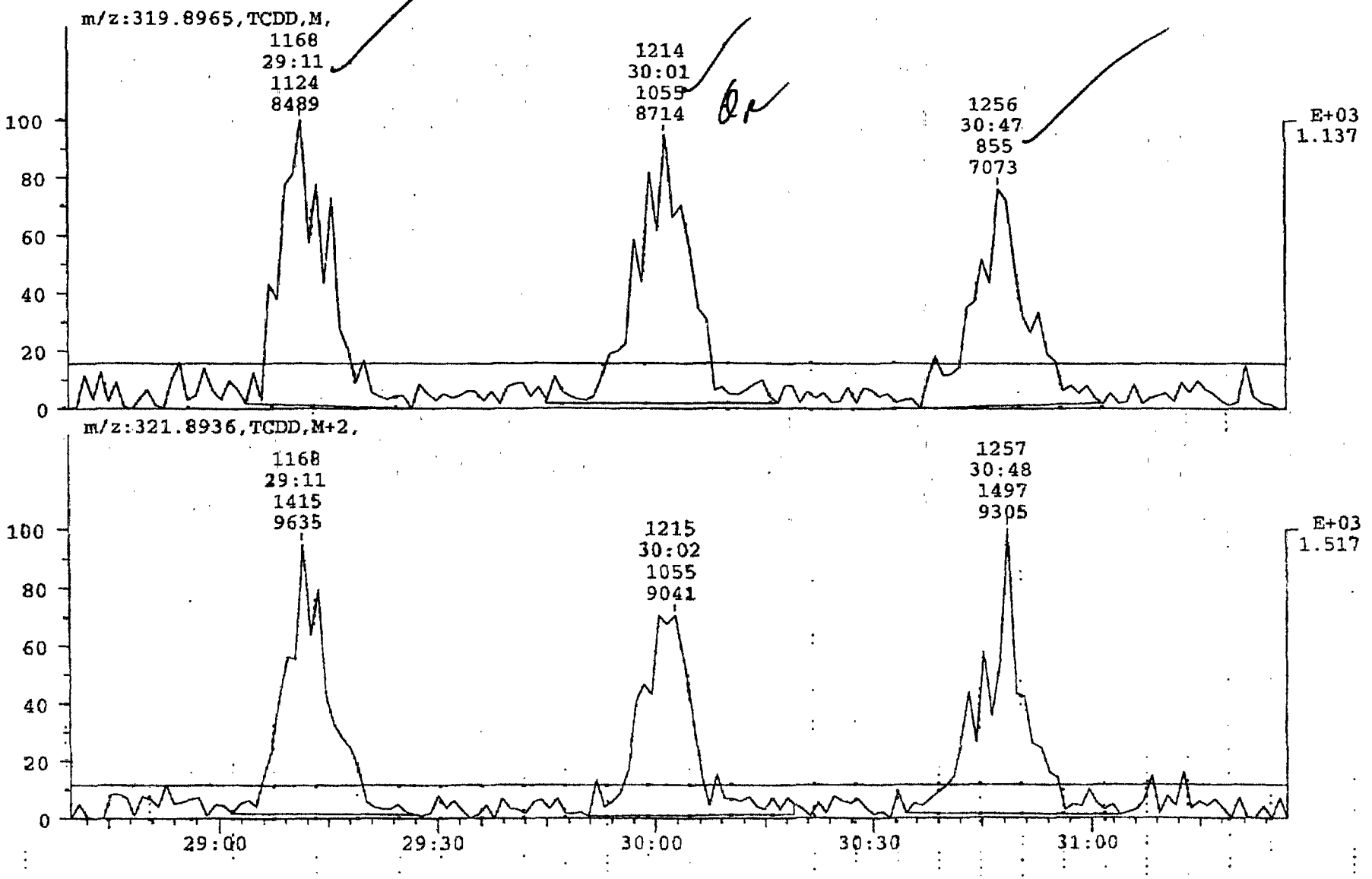
CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1111 > 1666 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wf2 05-Oct-03 Elapse: 35:40 1525
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1460 > 1591 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

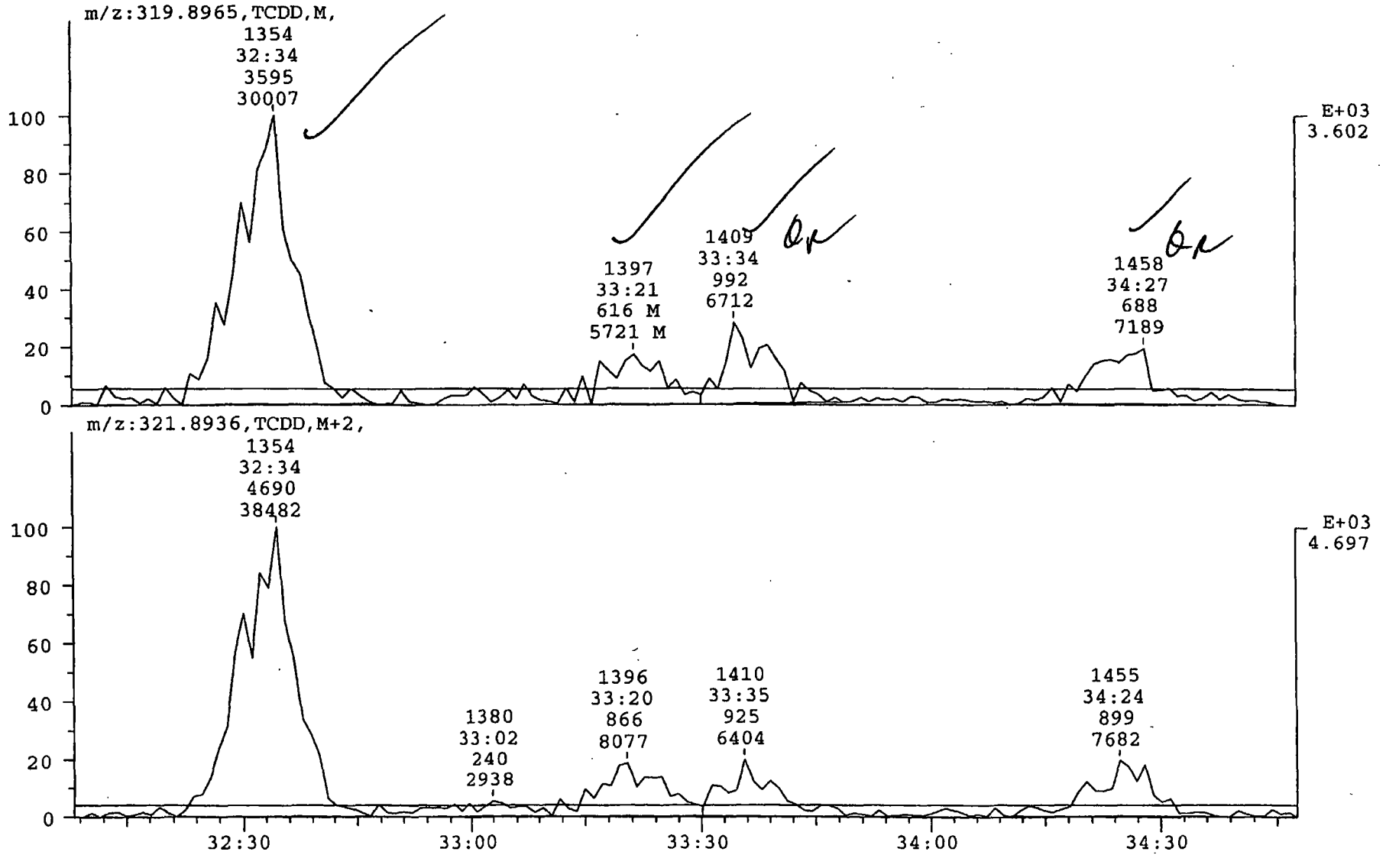


CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1139 > 1292 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

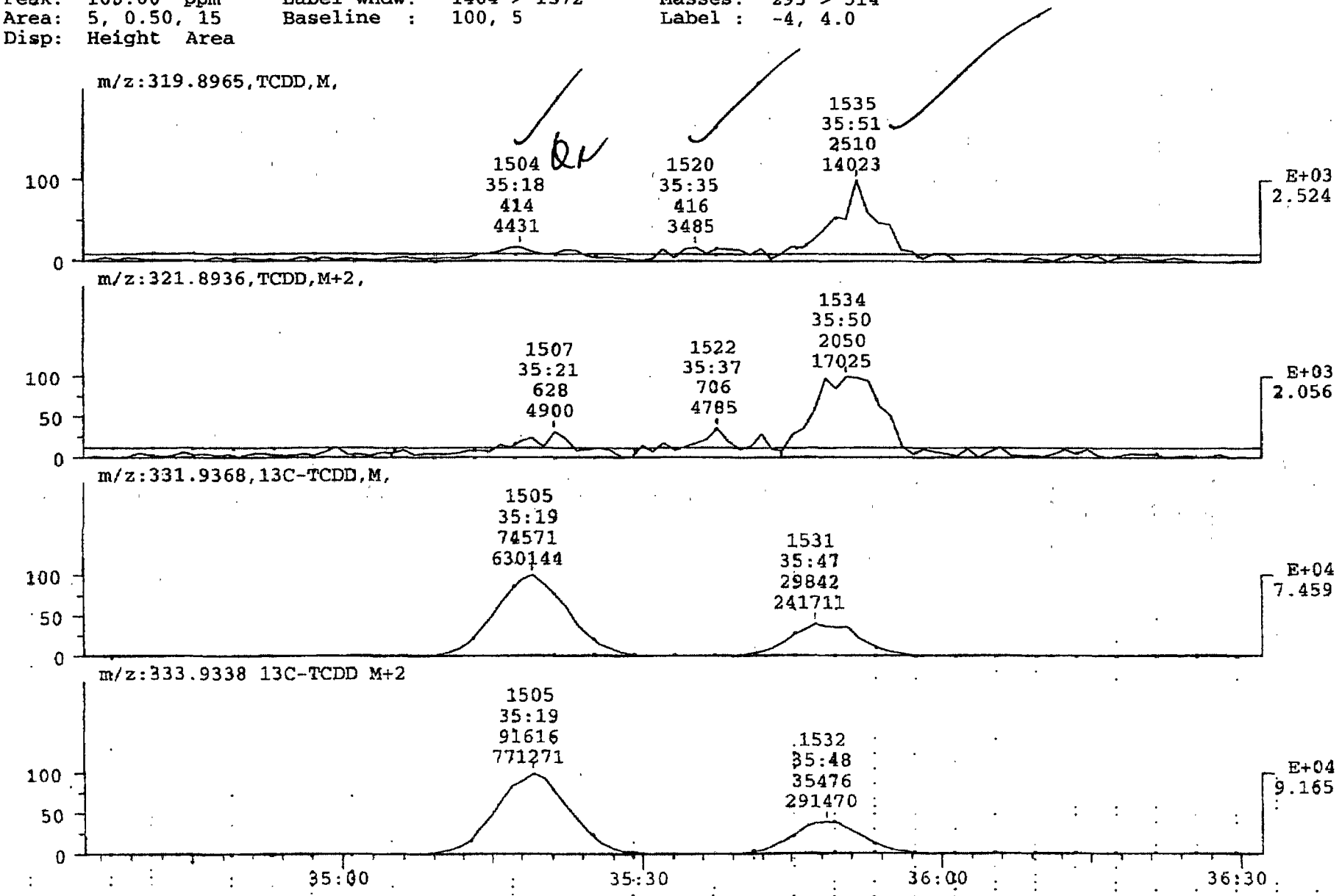



122

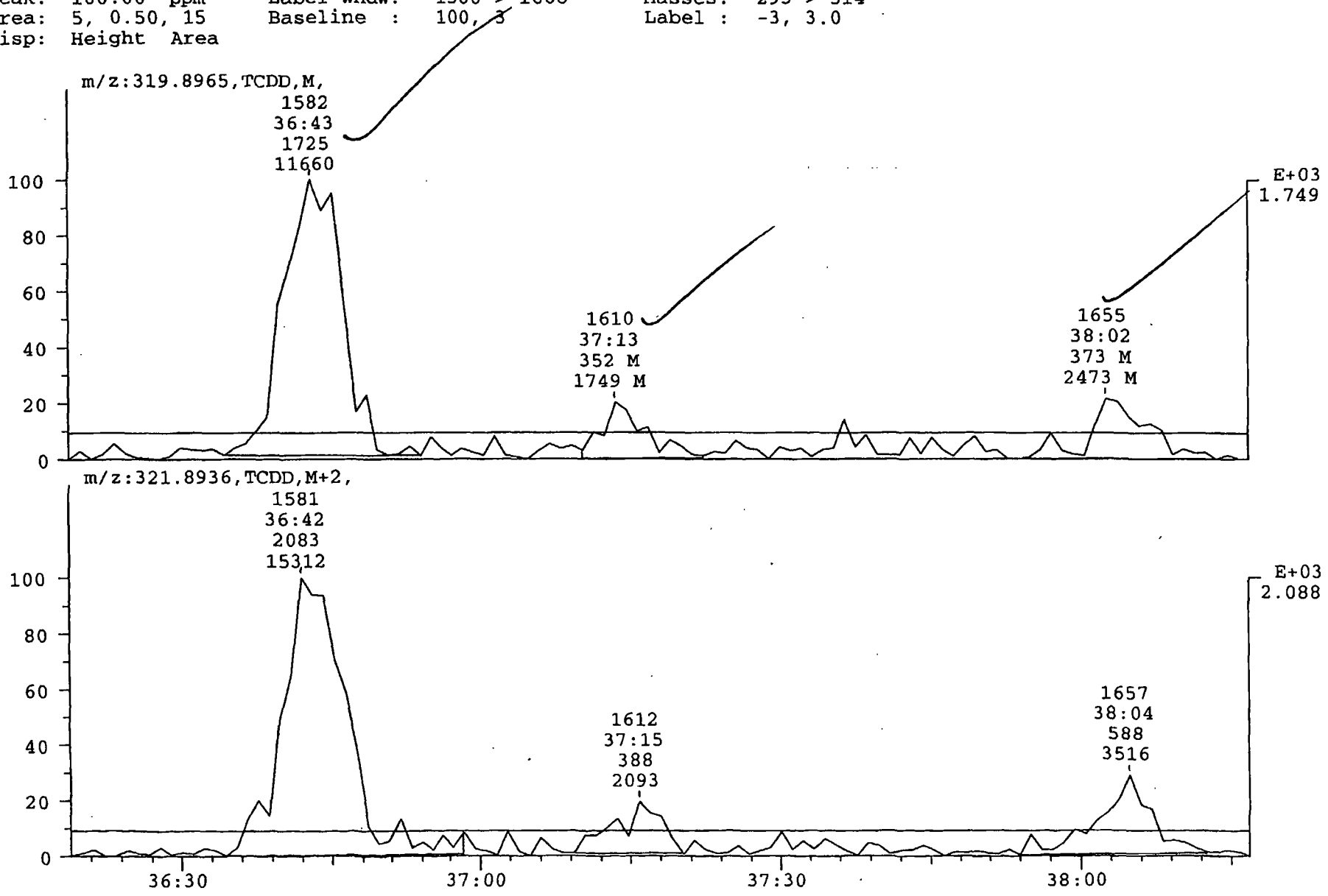
CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1330 > 1476 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 6 Label : -2, 3.0
Disp: Height Area



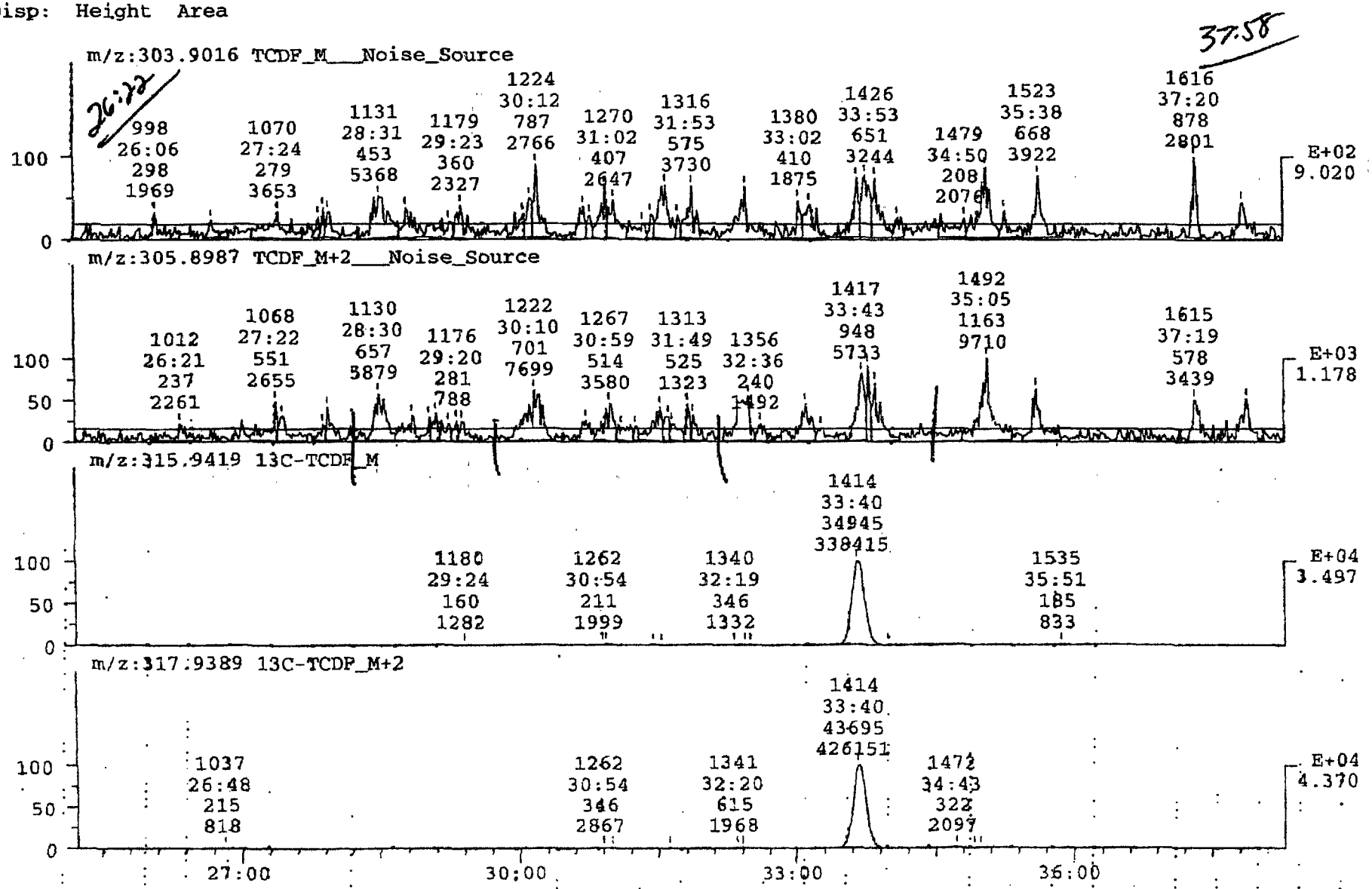
CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1464 > 1572 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : -4, 4.0
Disp: Height Area



CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1560 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area

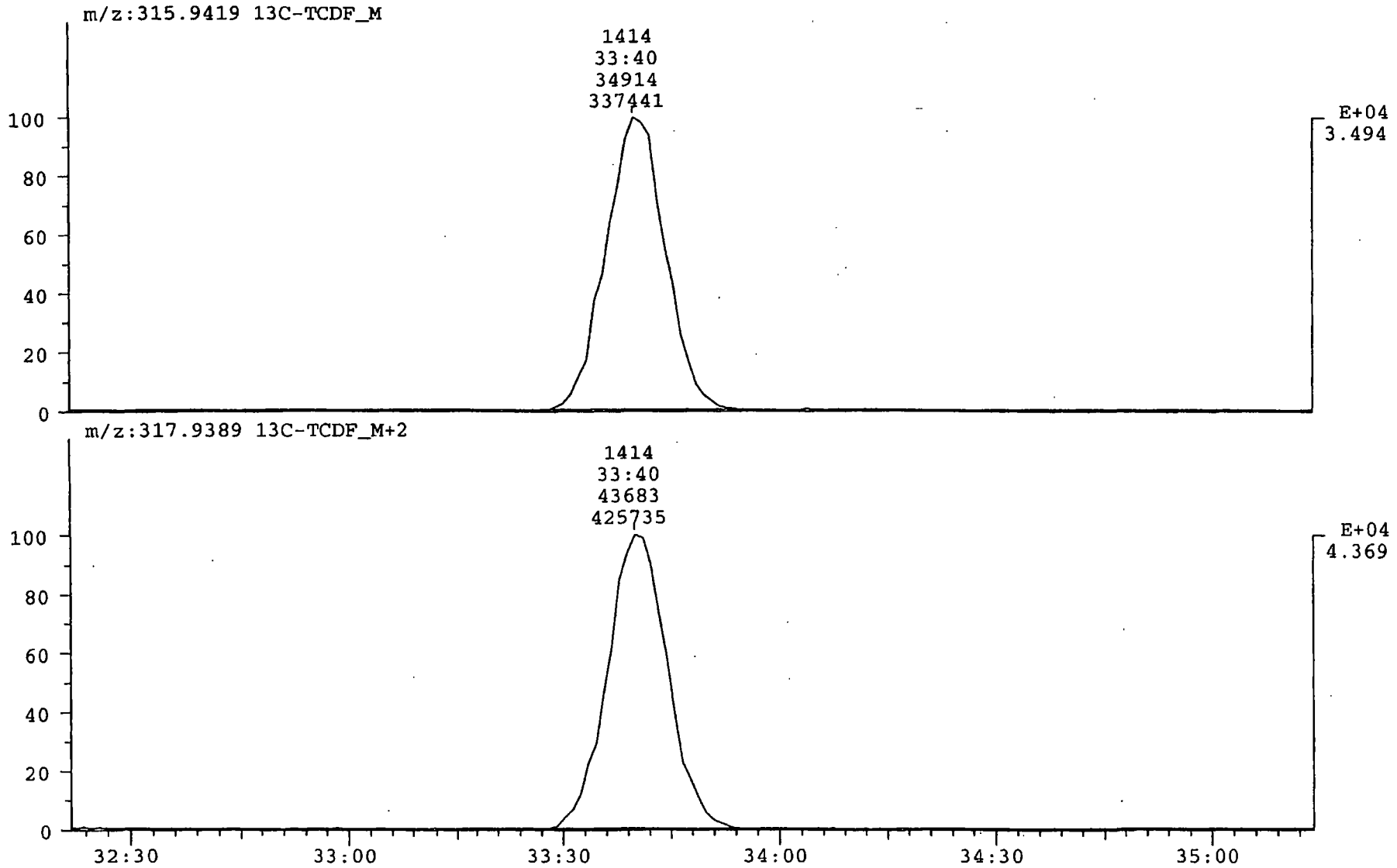


CHRO: tfx1wf2 05-Oct-03 Elapse: 35:40 1525
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: *EI +VE +LMR ESCAN LR NRM* Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 950 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

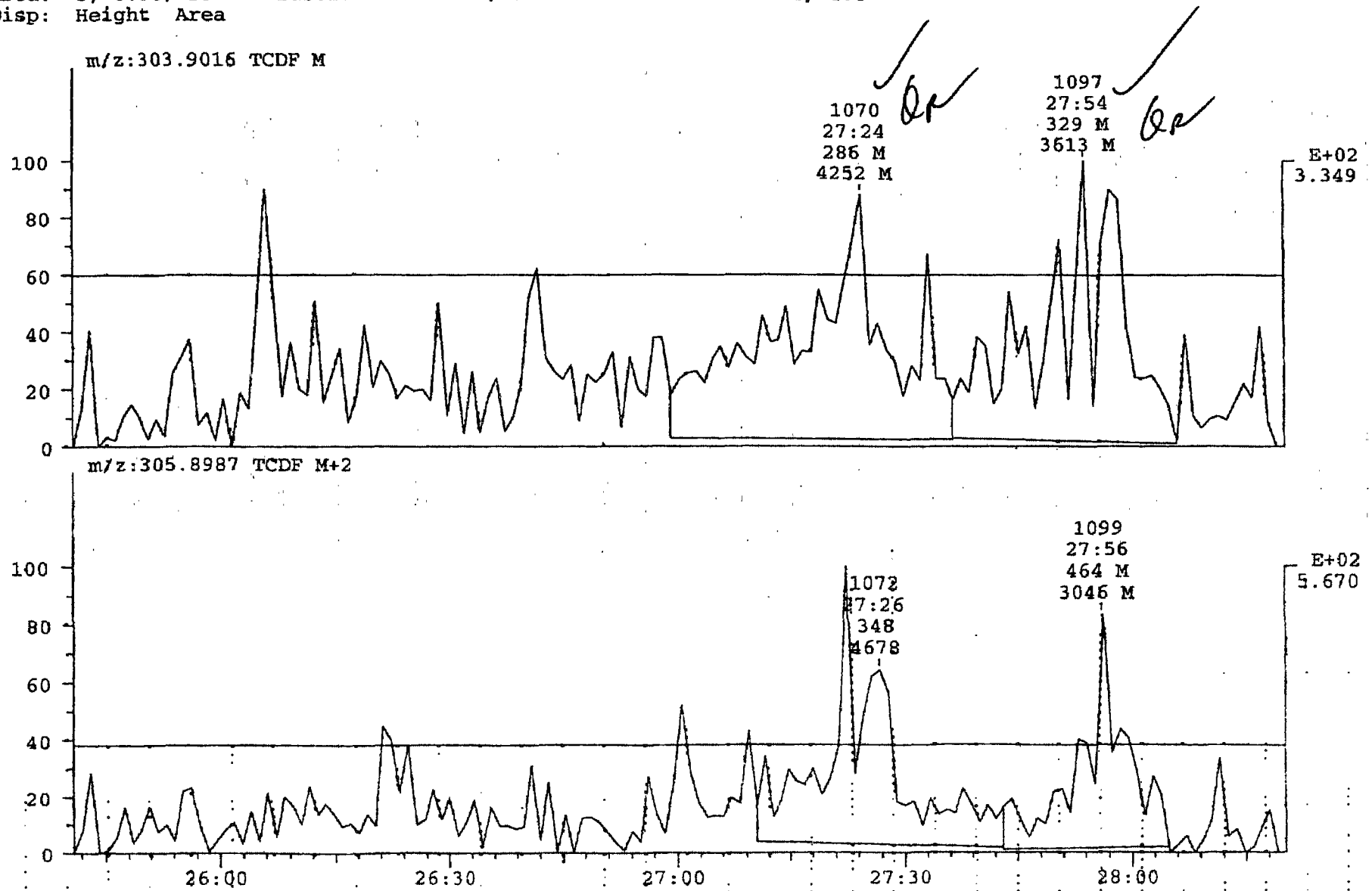



126

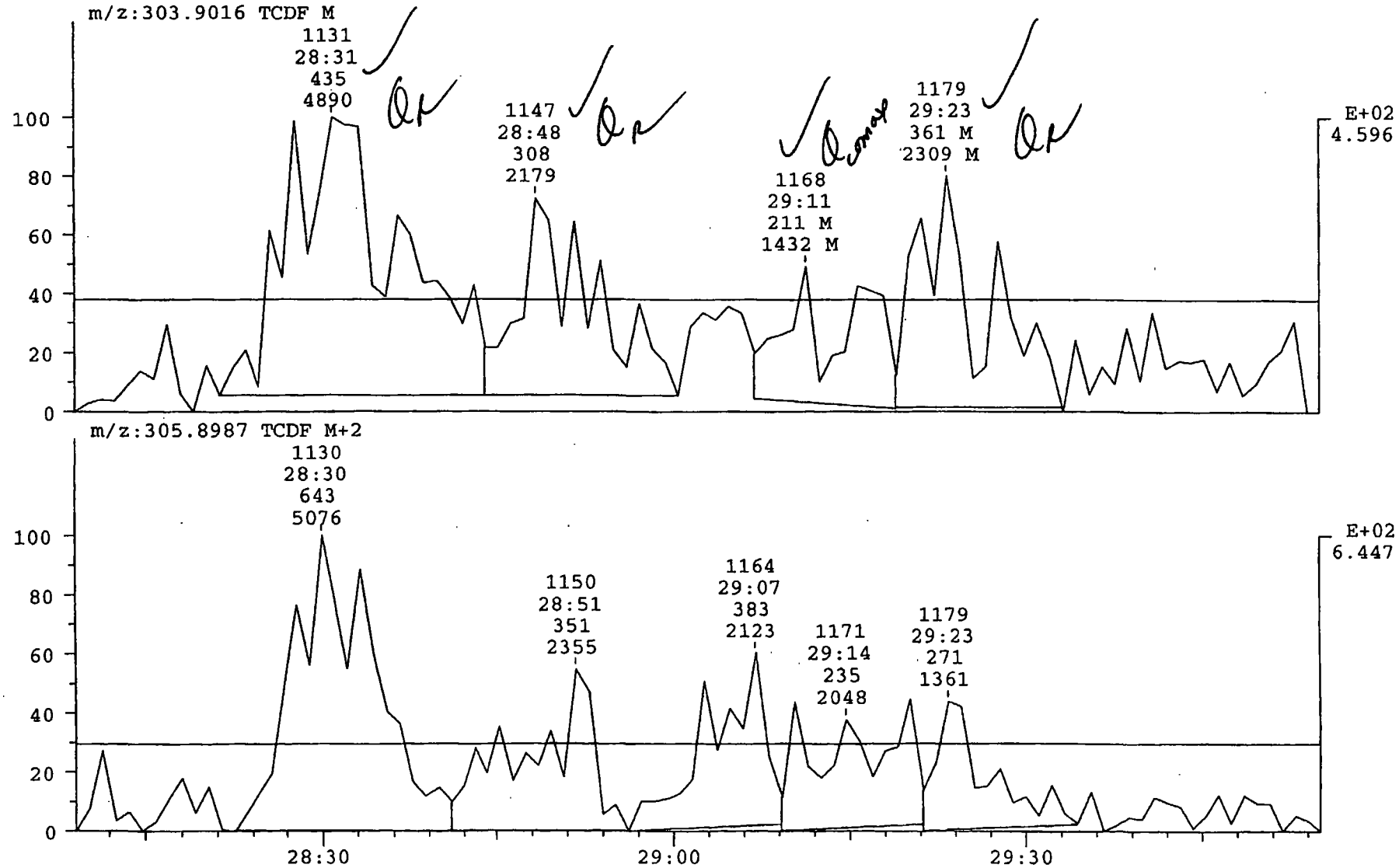
CHRO: tfx1wf2 05-Oct-03 Elapse: 33:45 1419
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1343 > 1500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



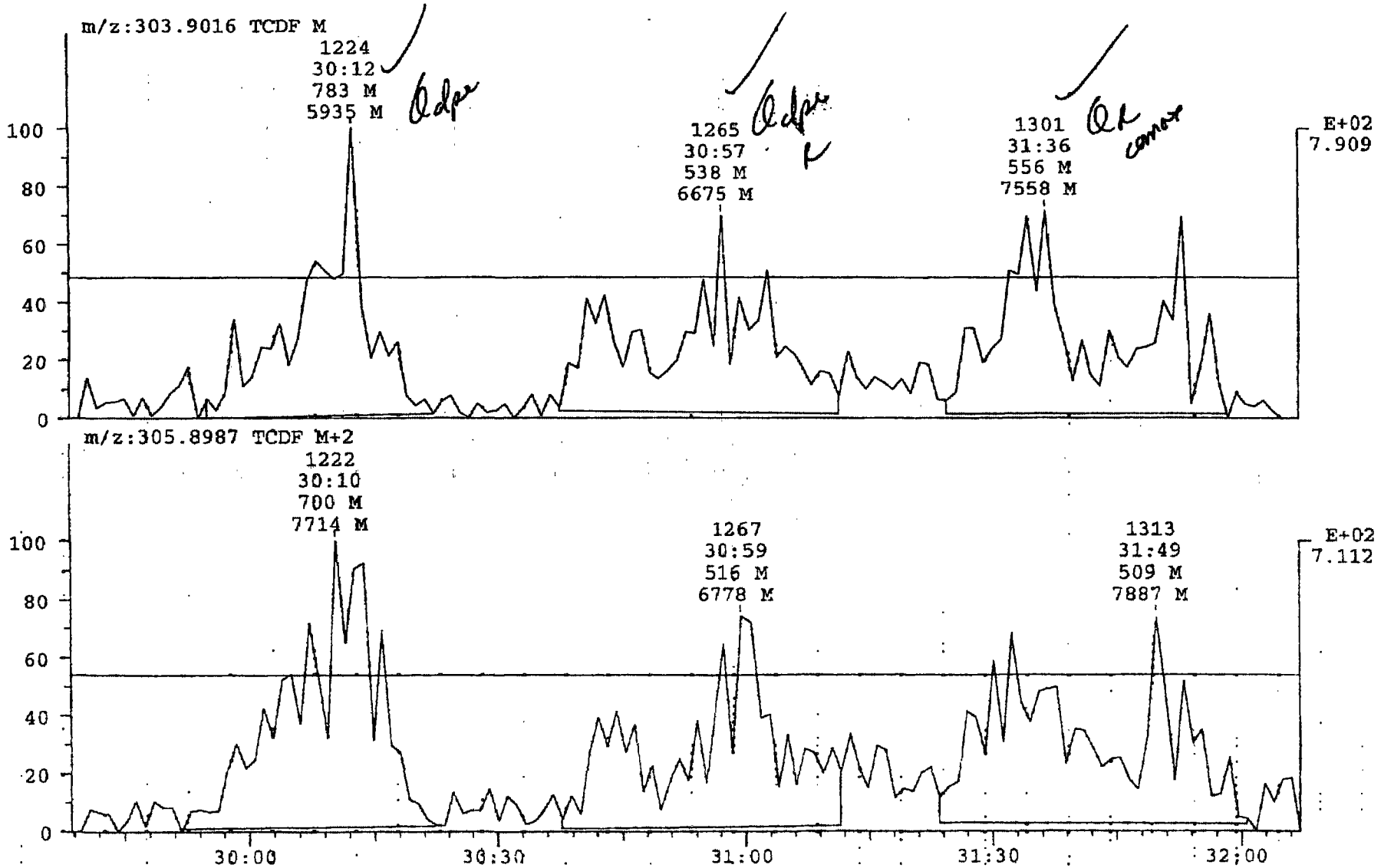
CHRO: tfx1wf2 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 975 > 1121 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -4, 4.0
Disp: Height Area



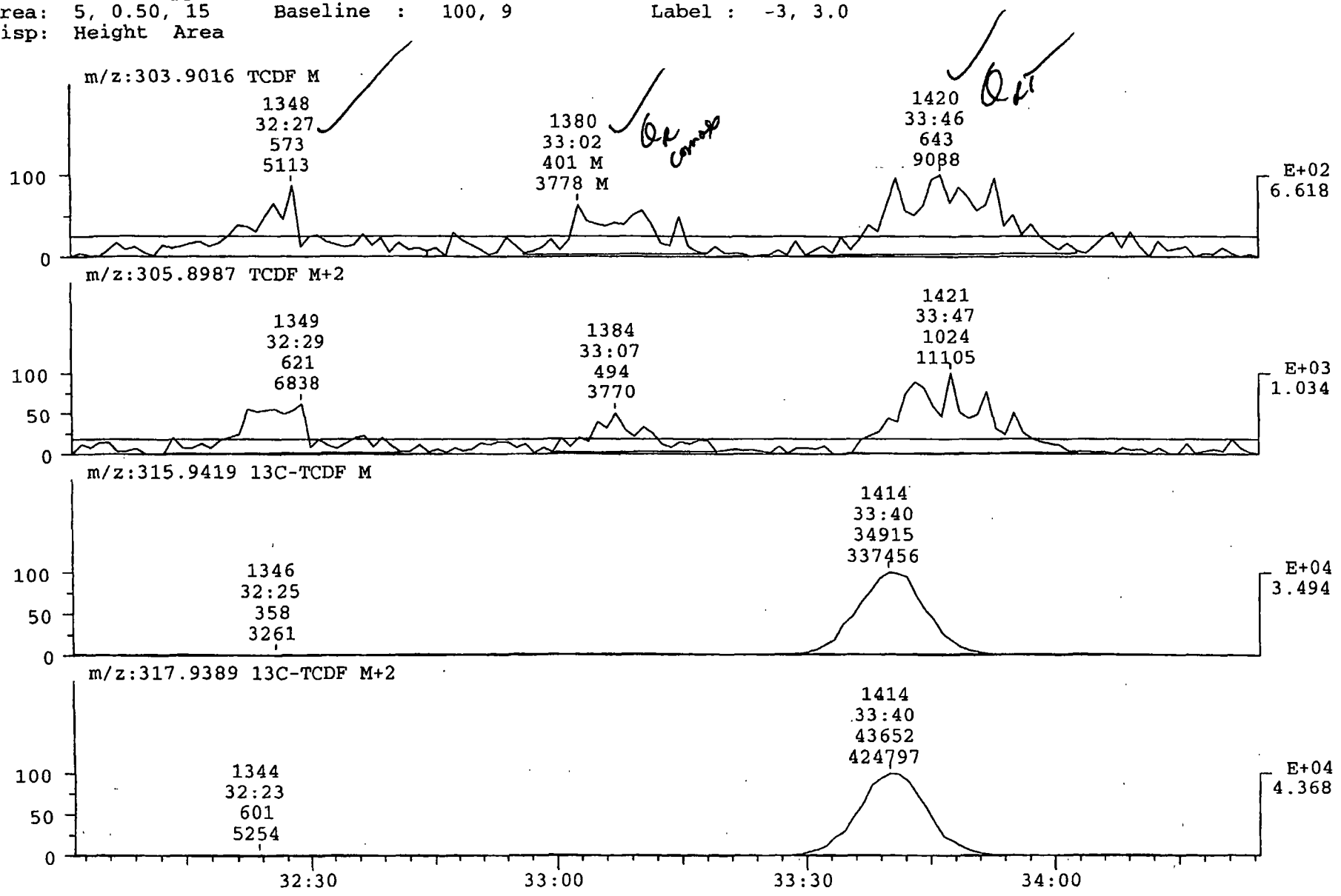
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1111 > 1208 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



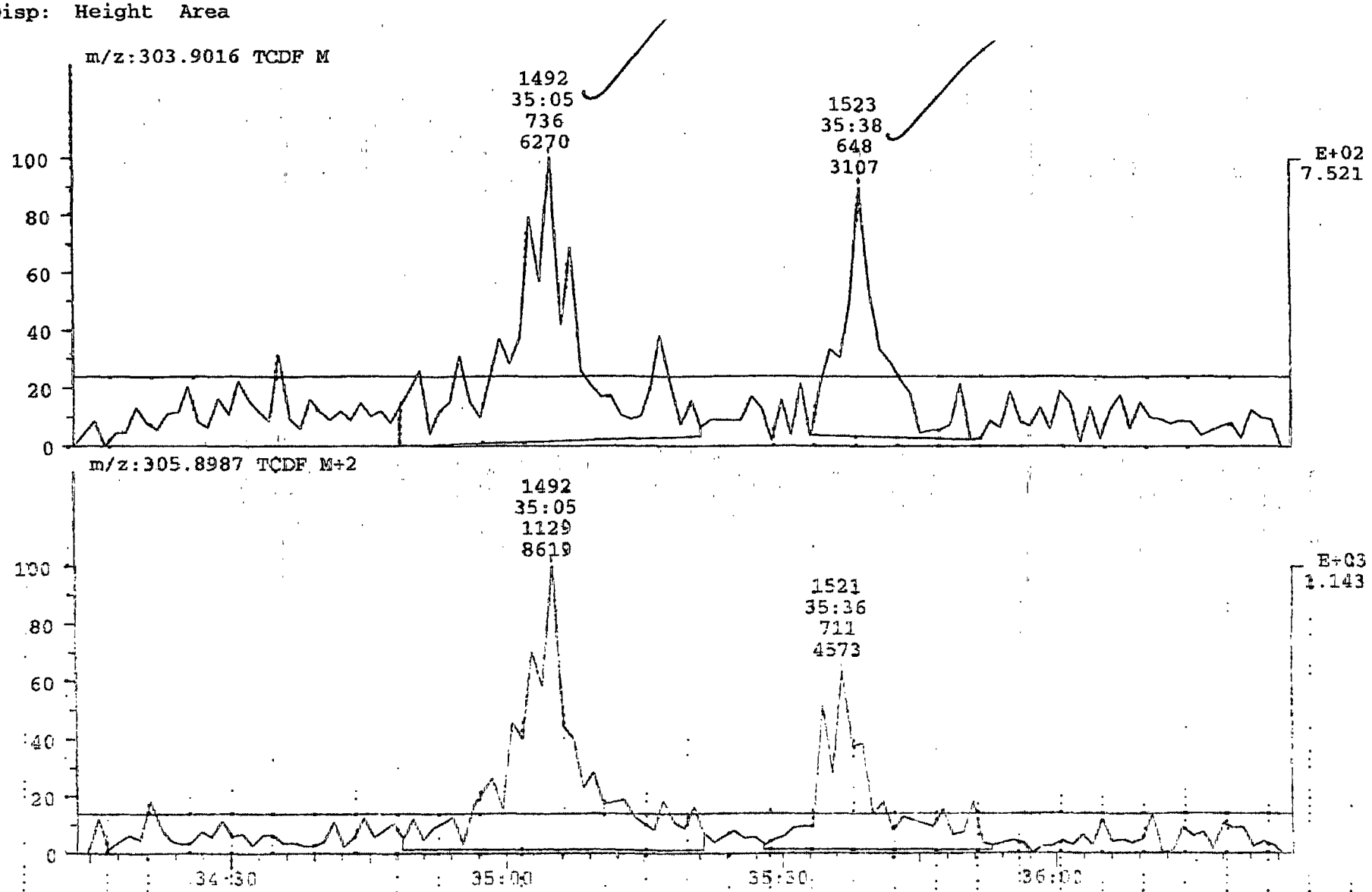
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1193 > 1329 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -6, 6.0
Disp: Height Area



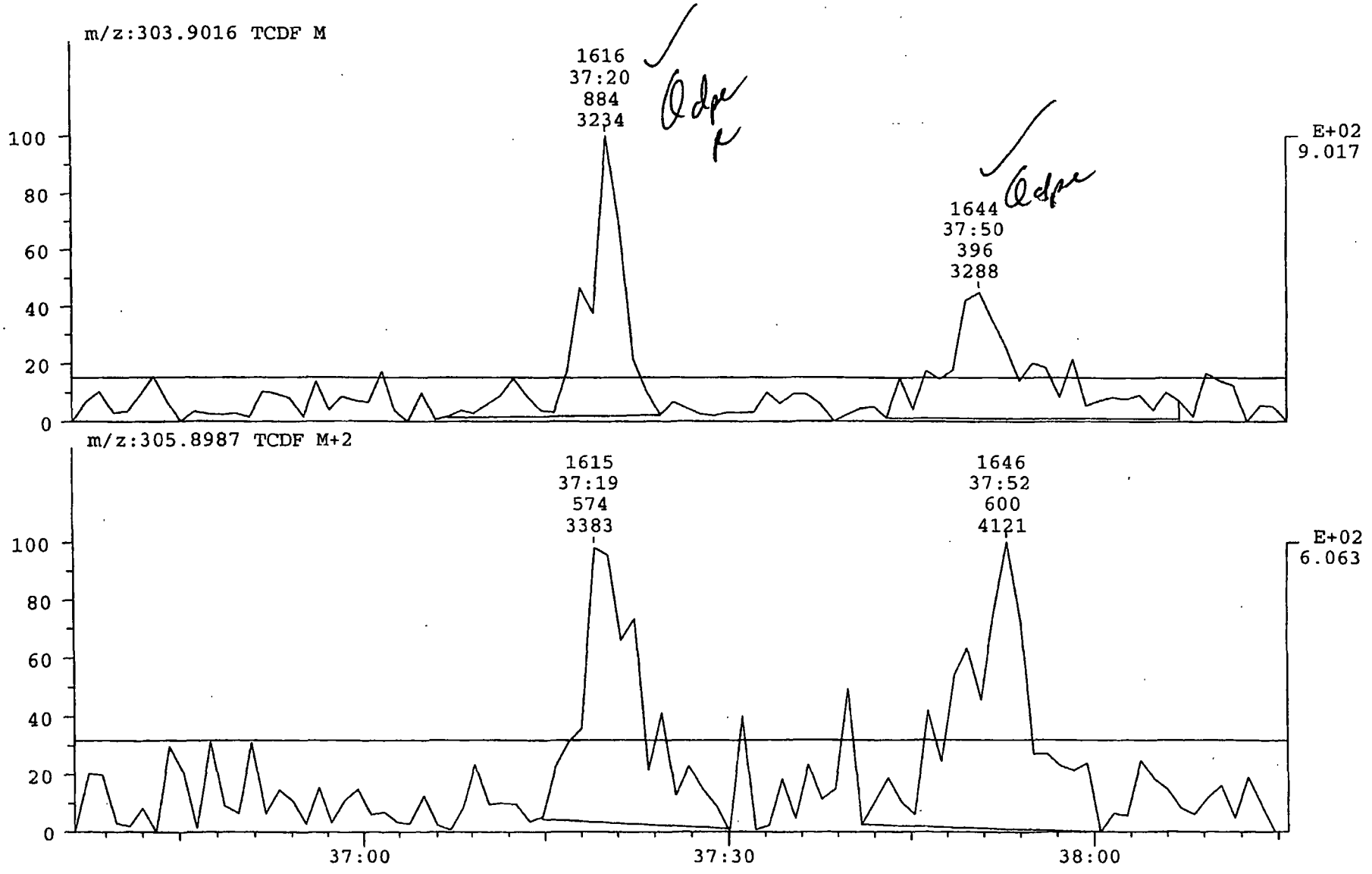
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1324 > 1455 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -3, 3.0
Disp: Height Area



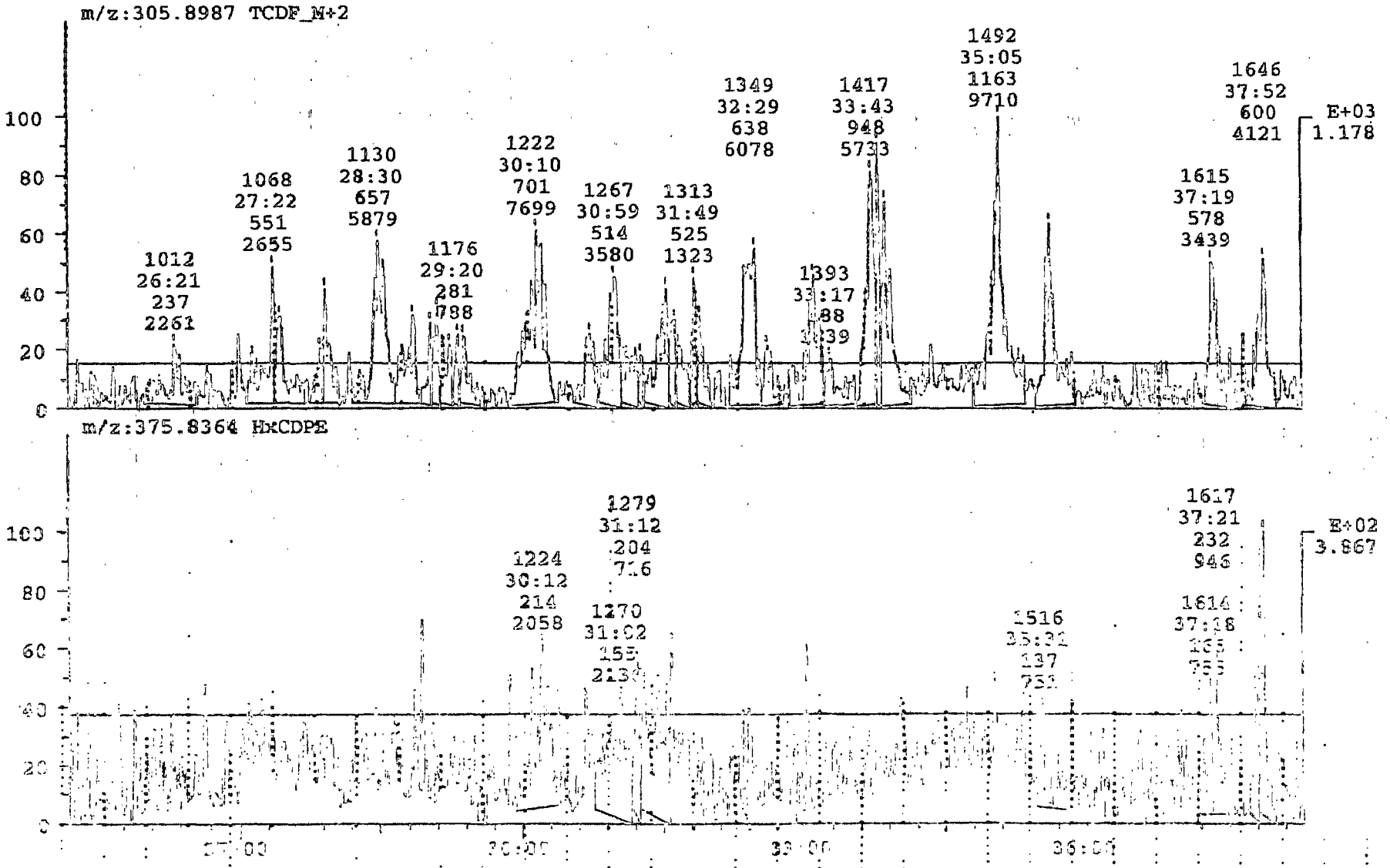
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1445 > 1566 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



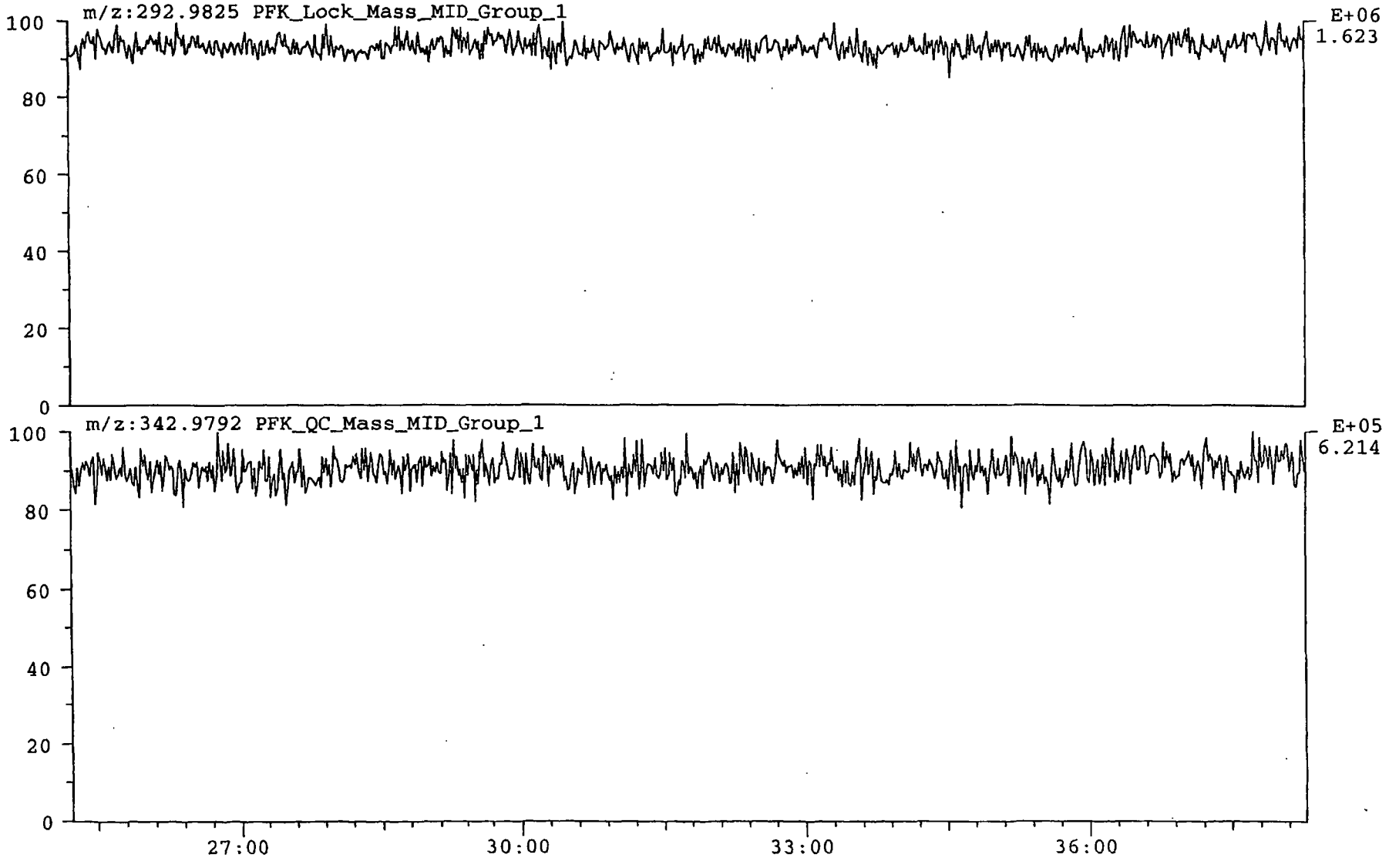
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1576 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



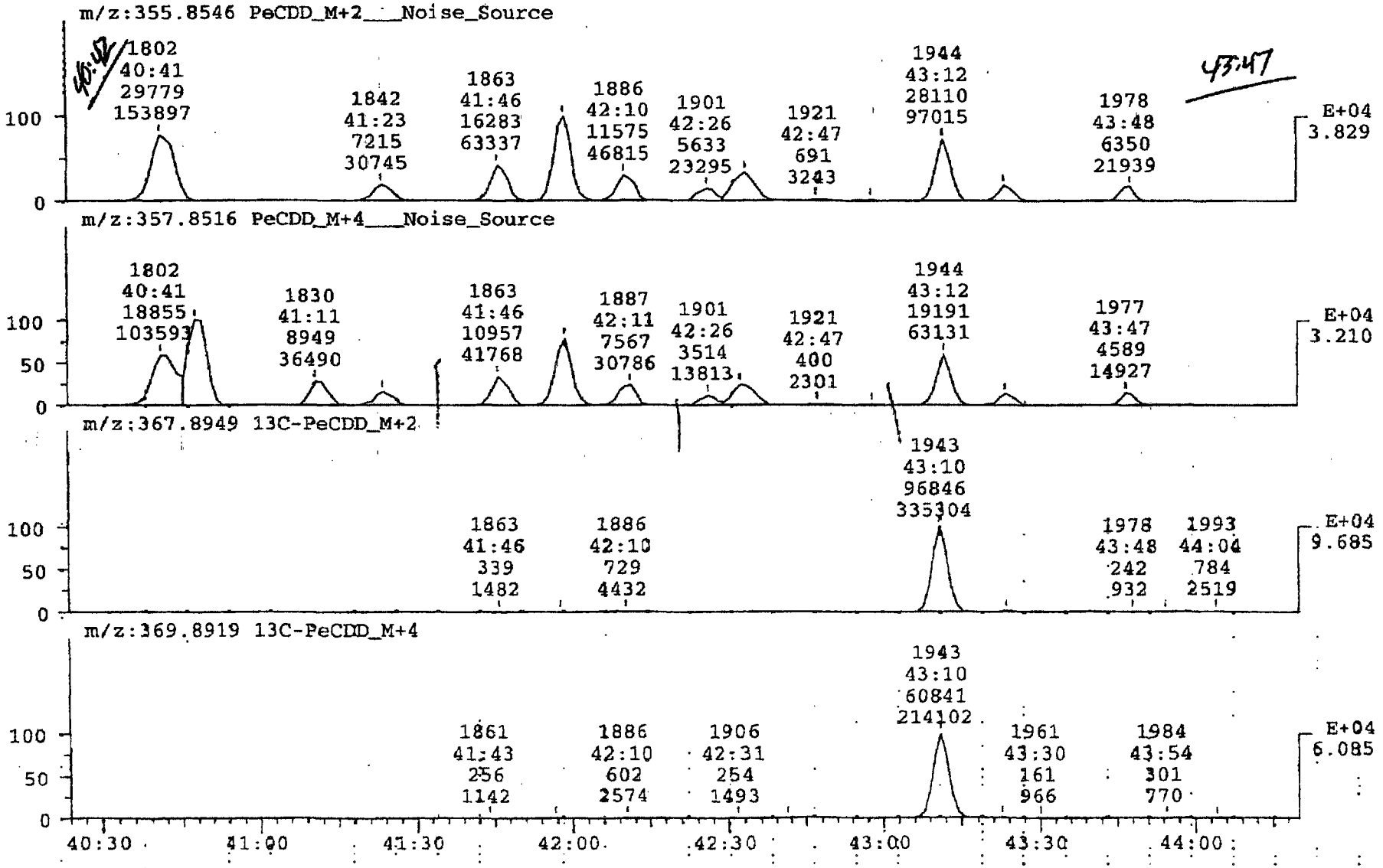
CHRO: tfx1wf2 05-Oct-03 Elapse: 33:45 1419
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 950 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



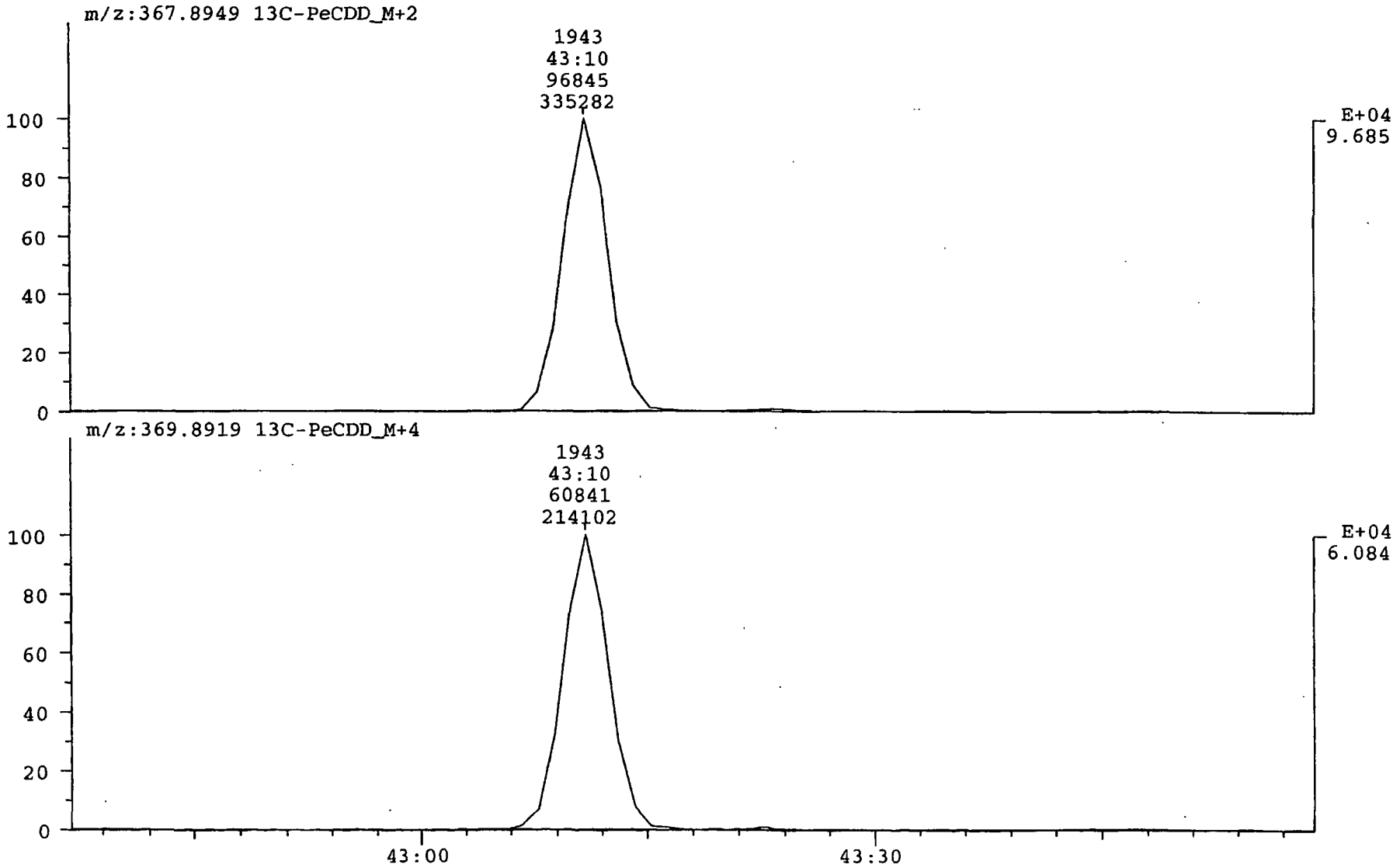
```
CHRO:  tfx1wf2                                05-Oct-03   Elapse:   33:45      1419
Samp:  Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1                 Start :   01:48:29   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-001               Inlet :   GC     Vial  24
Peak:  100.00  ppm     Label wndw:   950 > 1668            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :   0, 0.0
Disp:  Height  Area
```



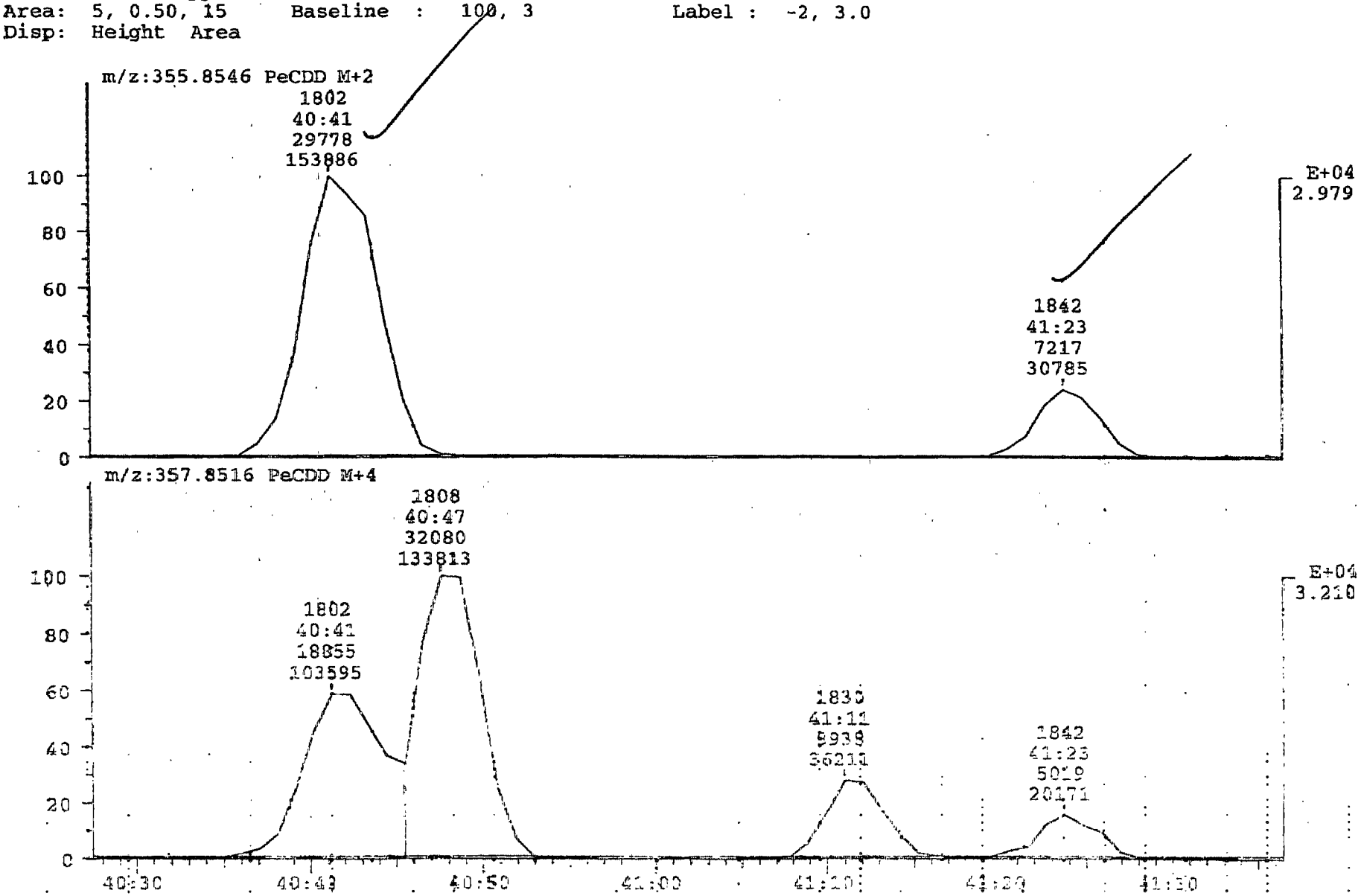
CHRO: tfx1wf2 05-Oct-03 Elapse: 33:45 1419
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1786 > 2008 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



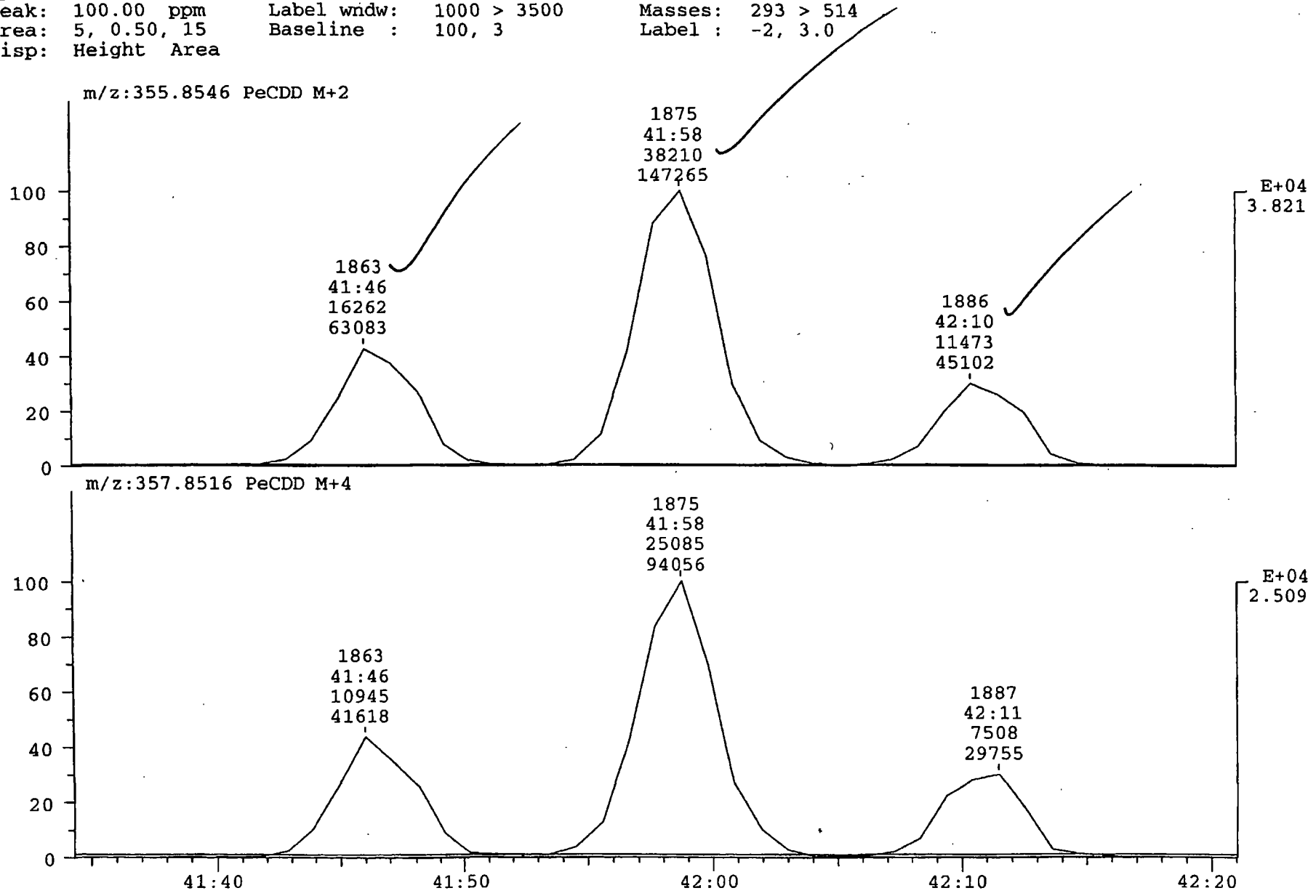
```
CHRO:  tfx1wf2                                  05-Oct-03   Elapse:   43:15      1947
Samp:  Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1                   Start :   01:48:29   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-001                 Inlet :   GC     Vial  24
Peak:  100.00  ppm     Label wndw:   1911 > 1988            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :   -2, 3.0
Disp:  Height  Area
```



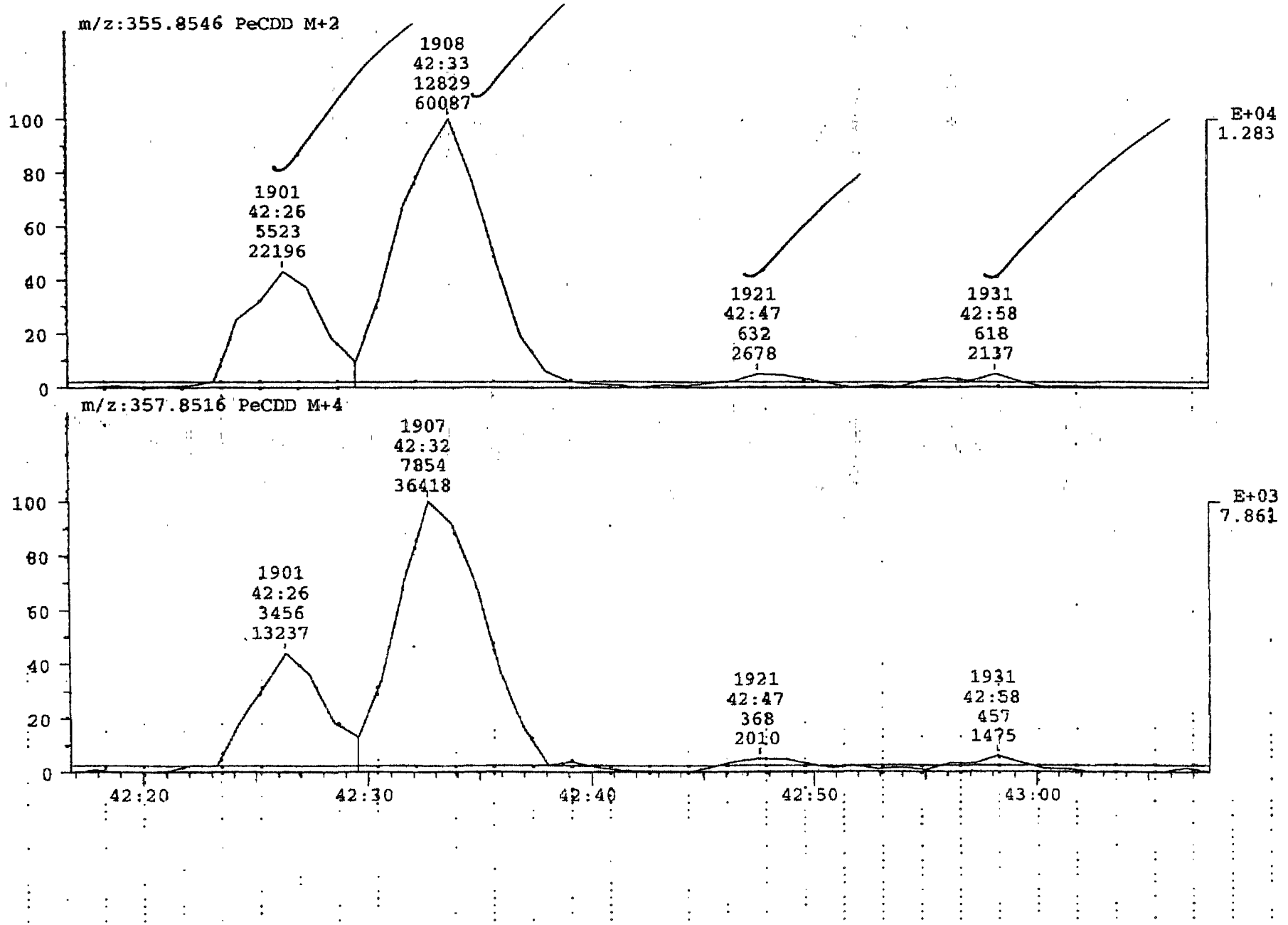
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



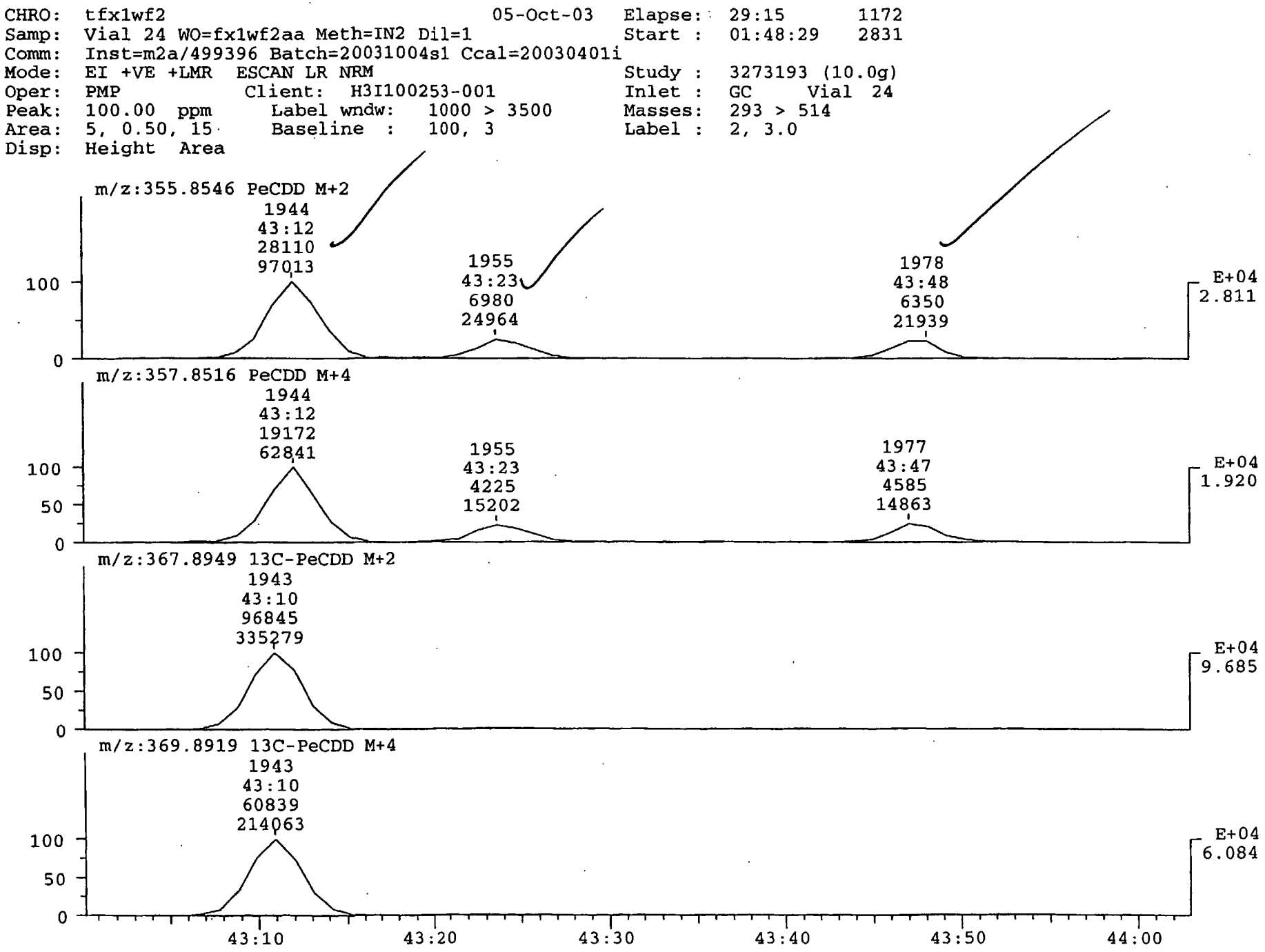
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



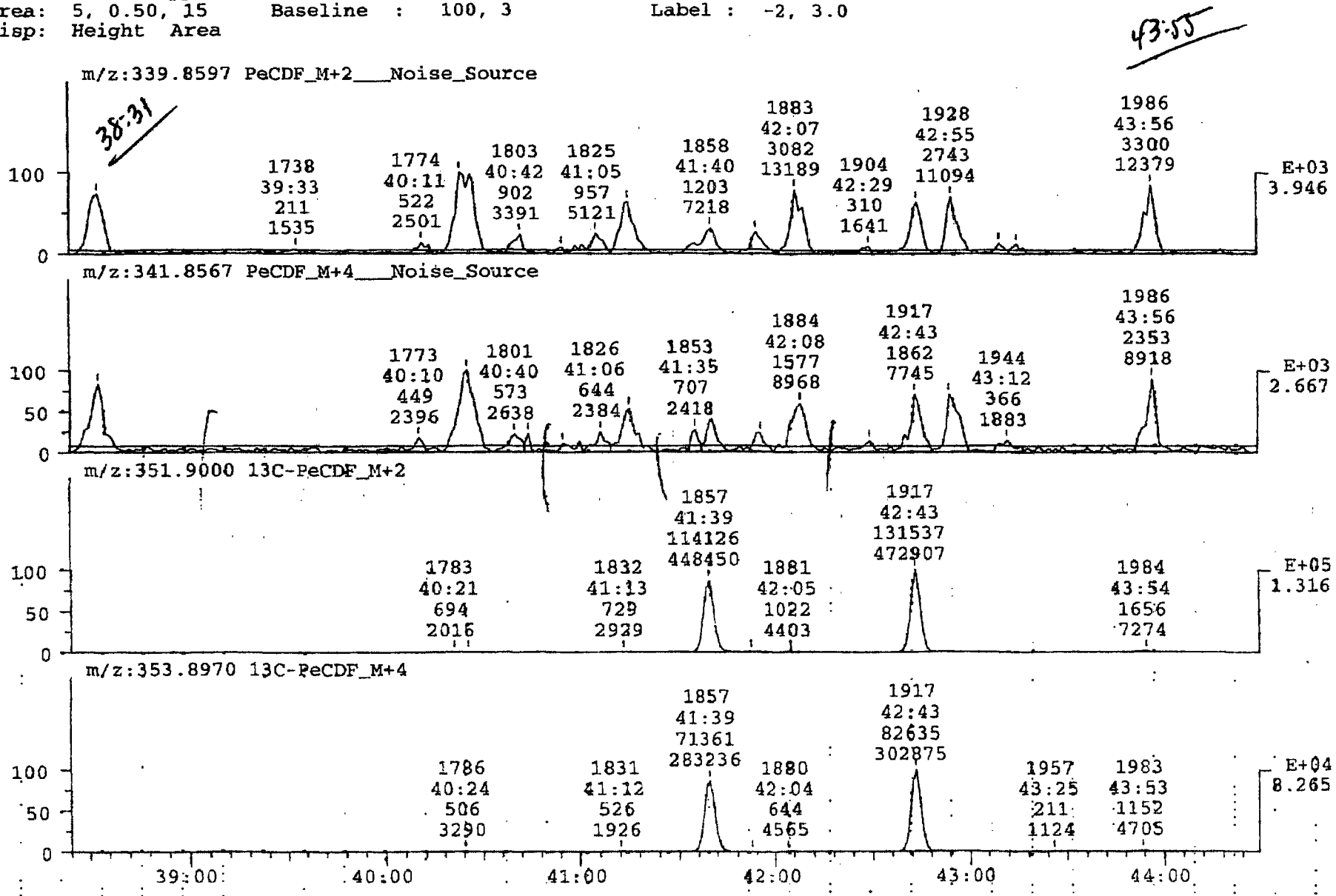
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



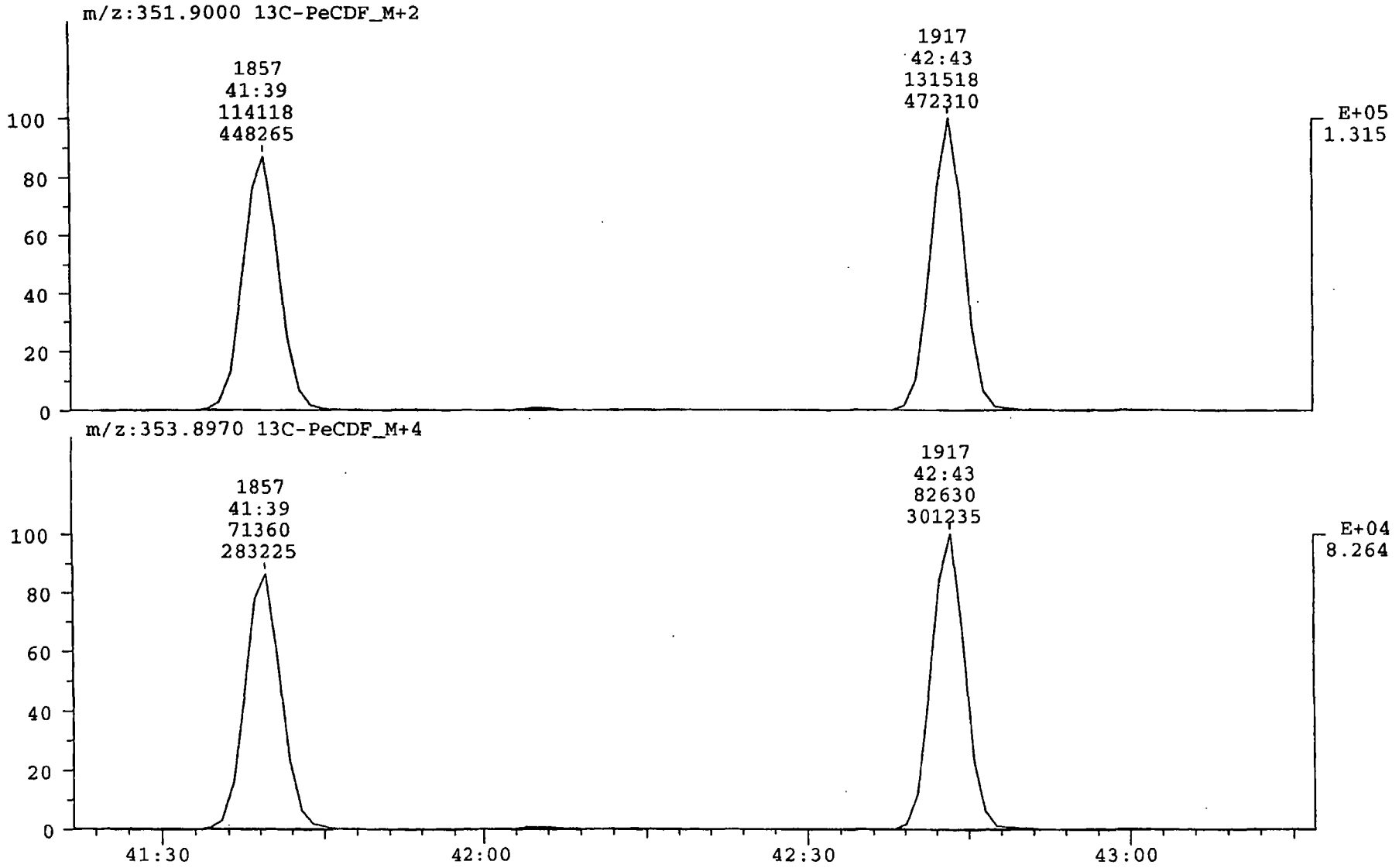

14.0


CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area
m/z:355.8546 PeCDD M+2
1944
43:12
28110
97013
1955
43:23
6980
24964
1978
43:48
6350
21939
E+04
2.811
m/z:357.8516 PeCDD M+4
1944
43:12
19172
62841
1955
43:23
4225
15202
1977
43:47
4585
14863
E+04
1.920
m/z:367.8949 13C-PeCDD M+2
1943
43:10
96845
335279
E+04
9.685
m/z:369.8919 13C-PeCDD M+4
1943
43:10
60839
214063
E+04
6.084
100
50
0
43:10
43:20
43:30
43:40
43:50
44:00

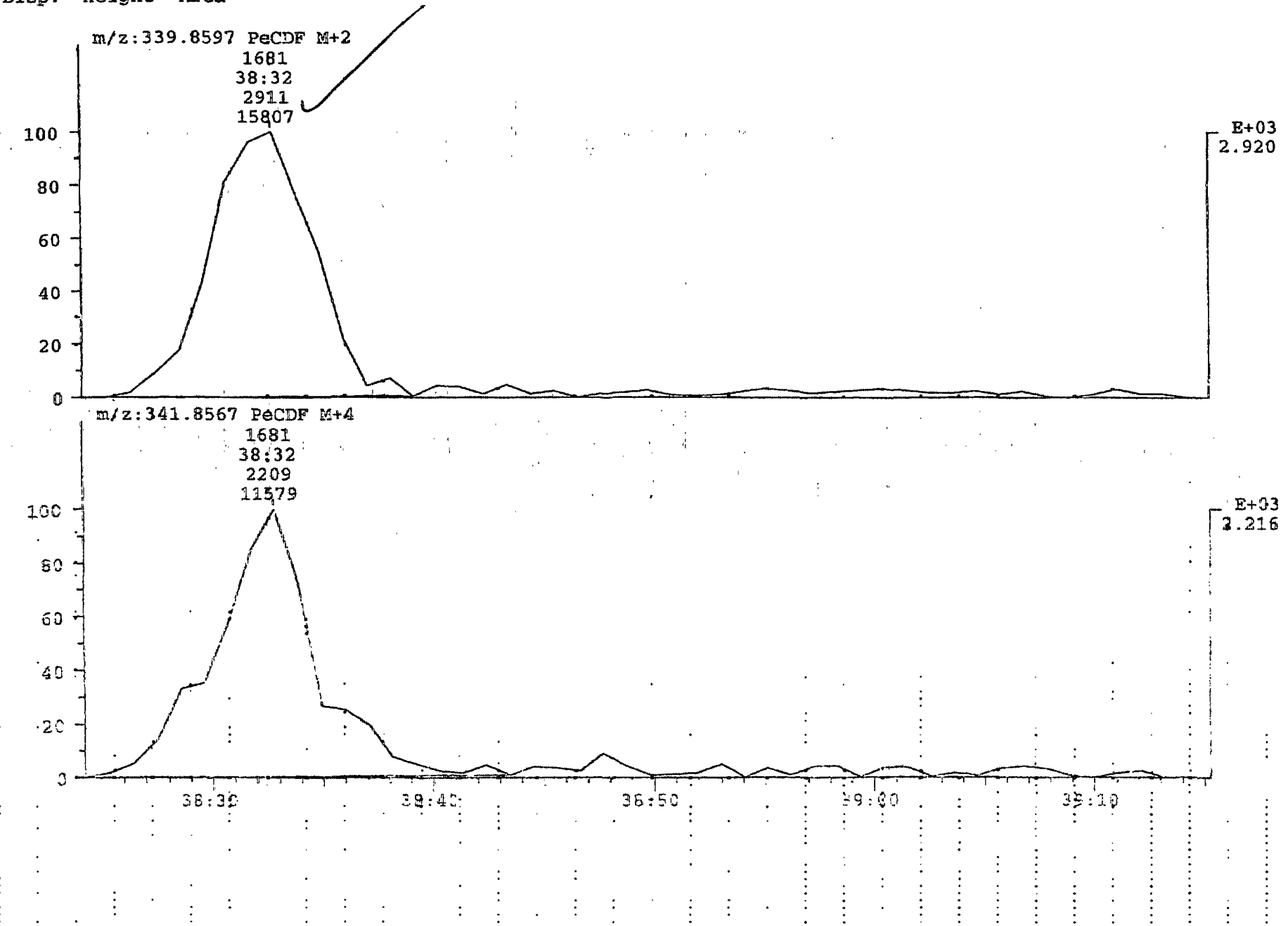
CHRO: tfx1wf2 05-Oct-03 Elapse: 43:15 1947
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1673 > 2017 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



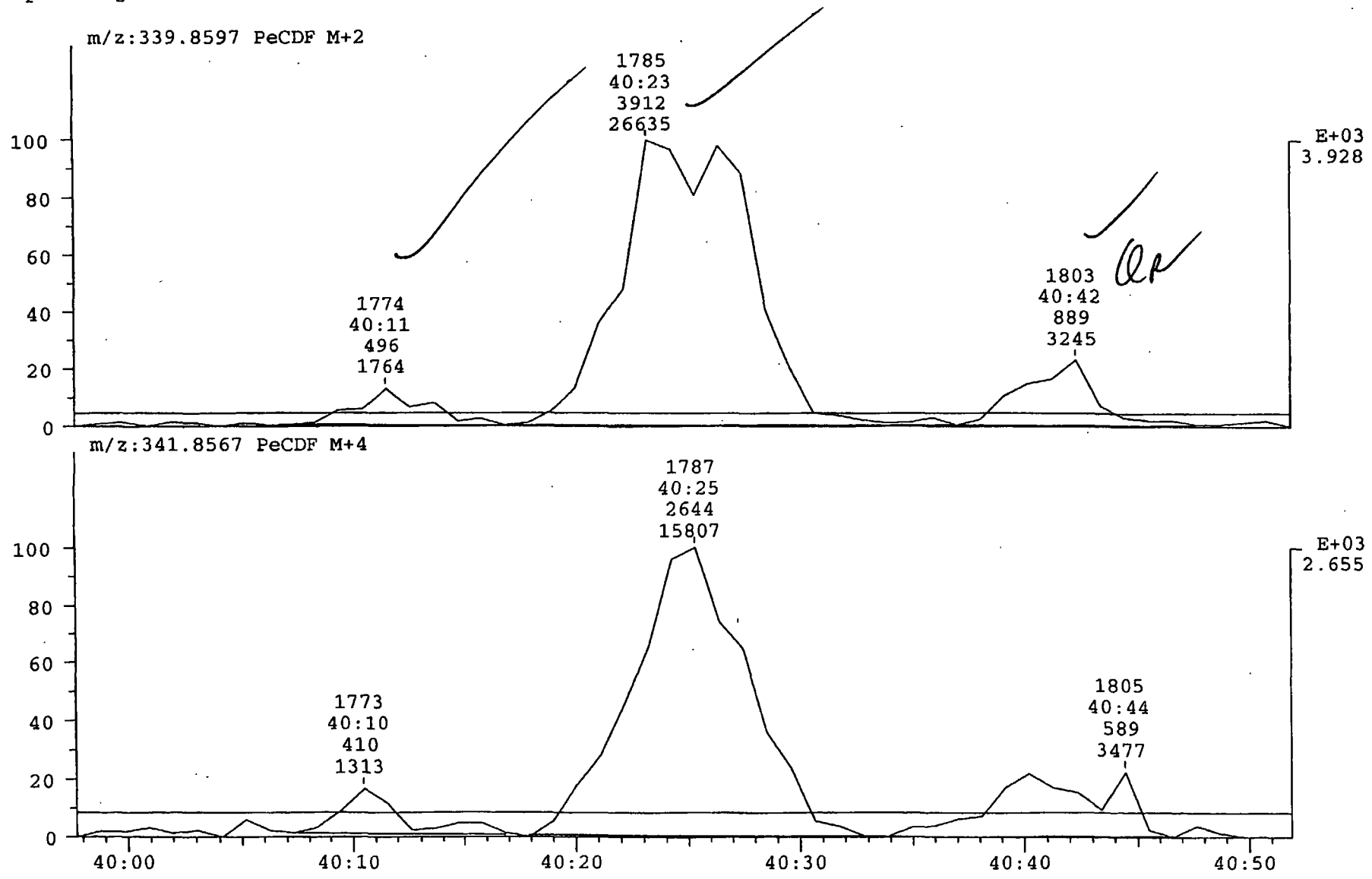
CHRO: tfx1wf2 05-Oct-03 Elapse: 42:18 1894
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1840 > 1949 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



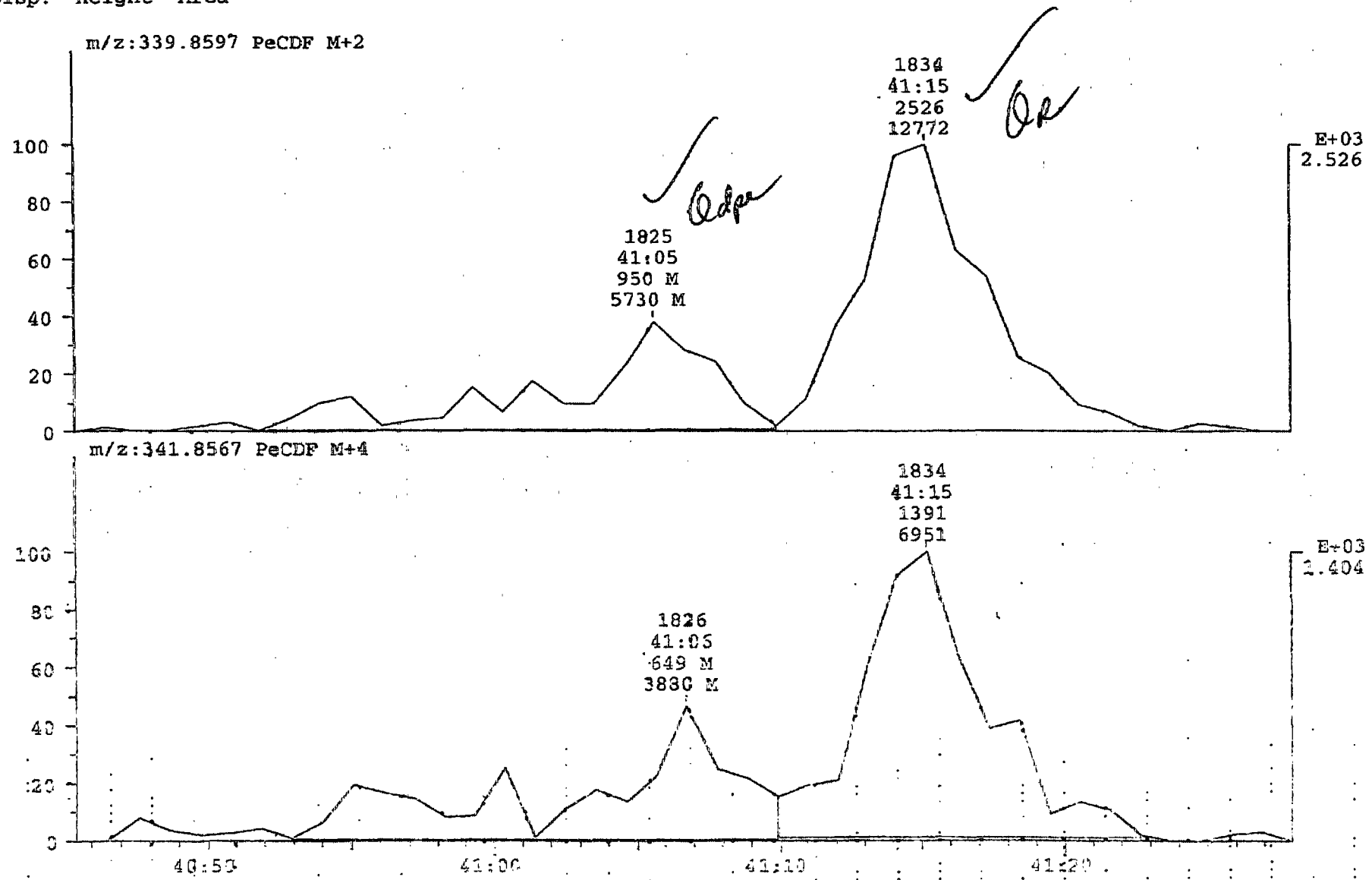
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1673 > 1721 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



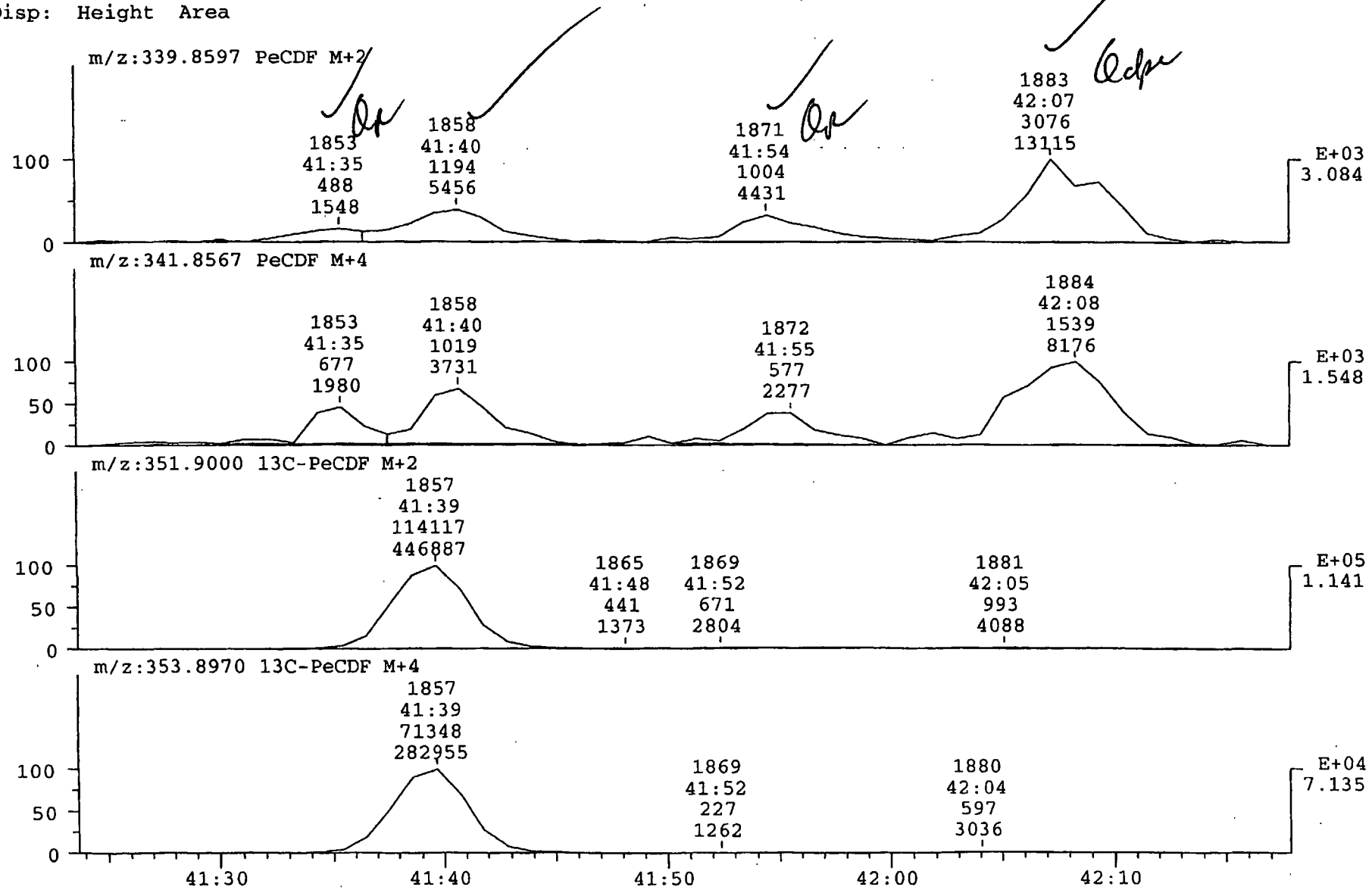
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1761 > 1812 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -2, 3.0
Disp: Height Area



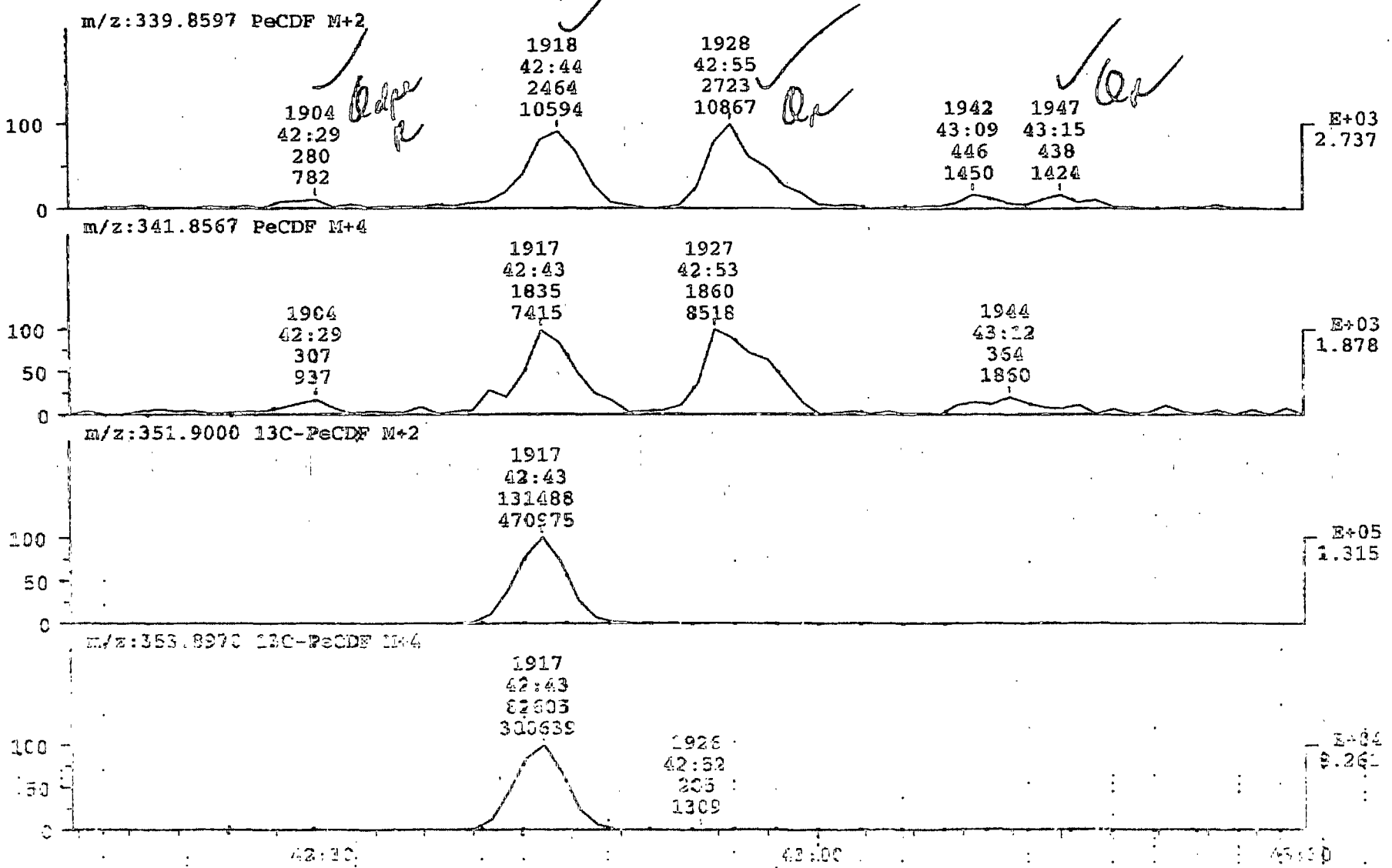
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1806 > 1846 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



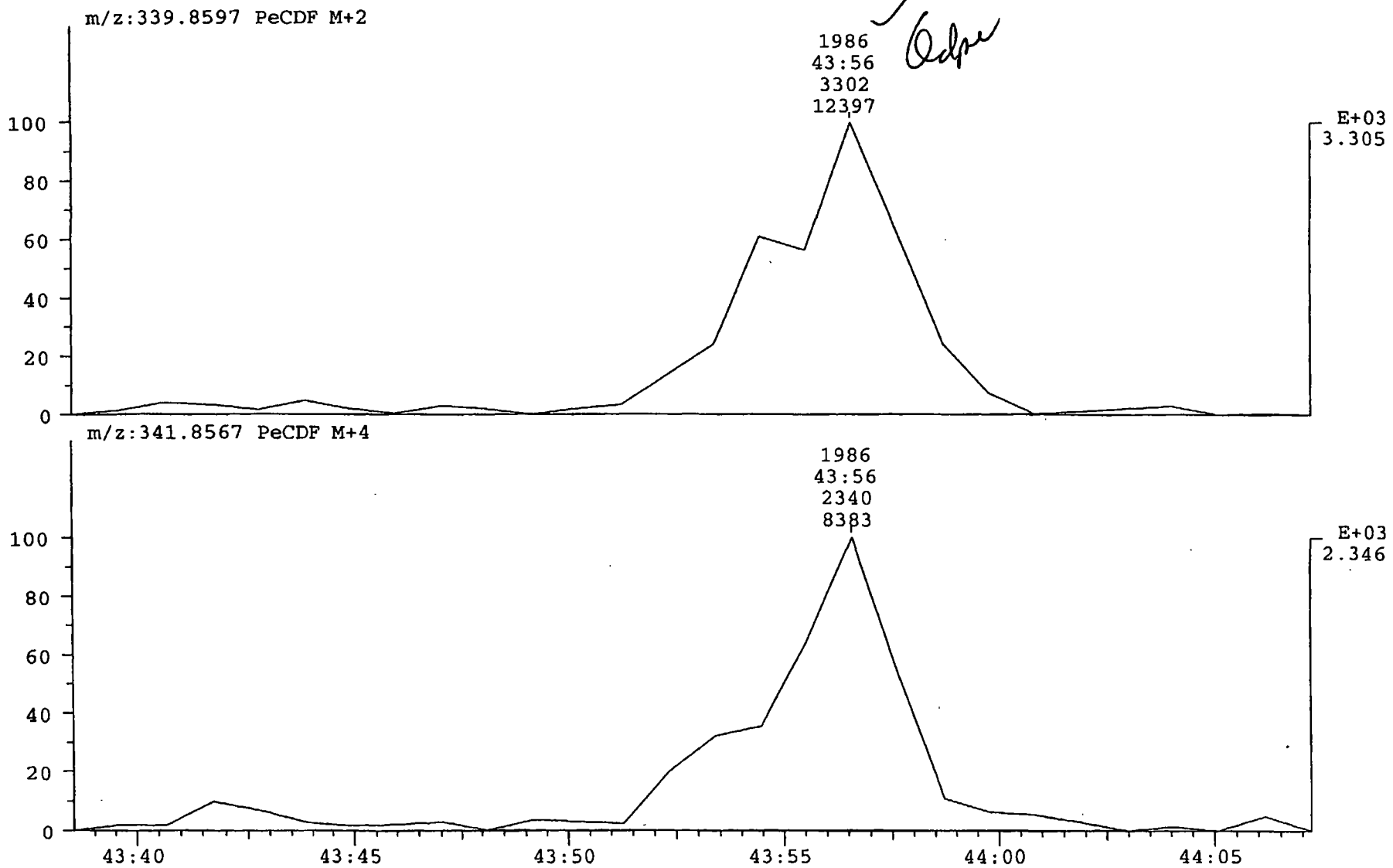
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1842 > 1893 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : 2, 3.0
Disp: Height Area



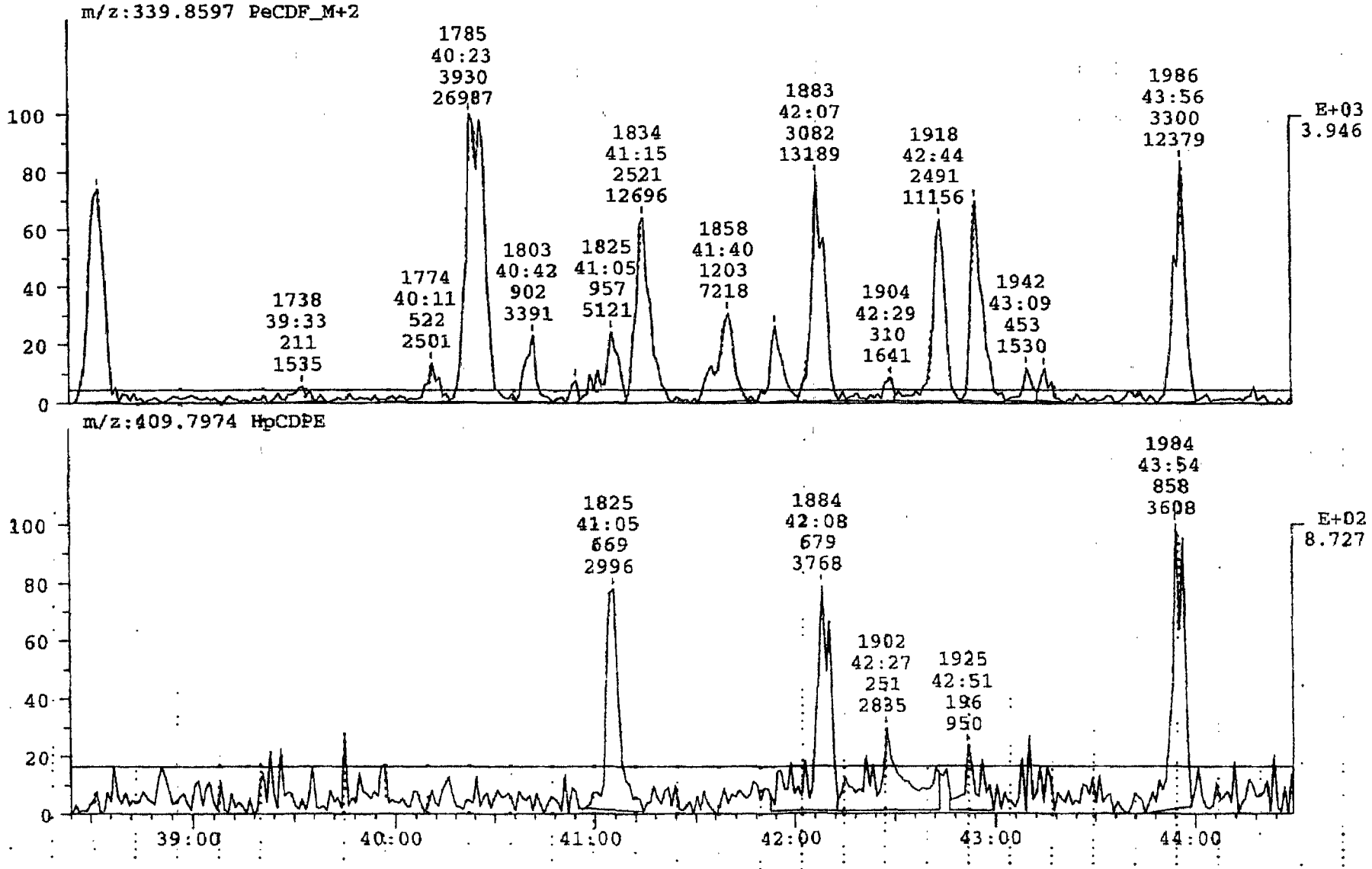
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WC=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1890 > 1961 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



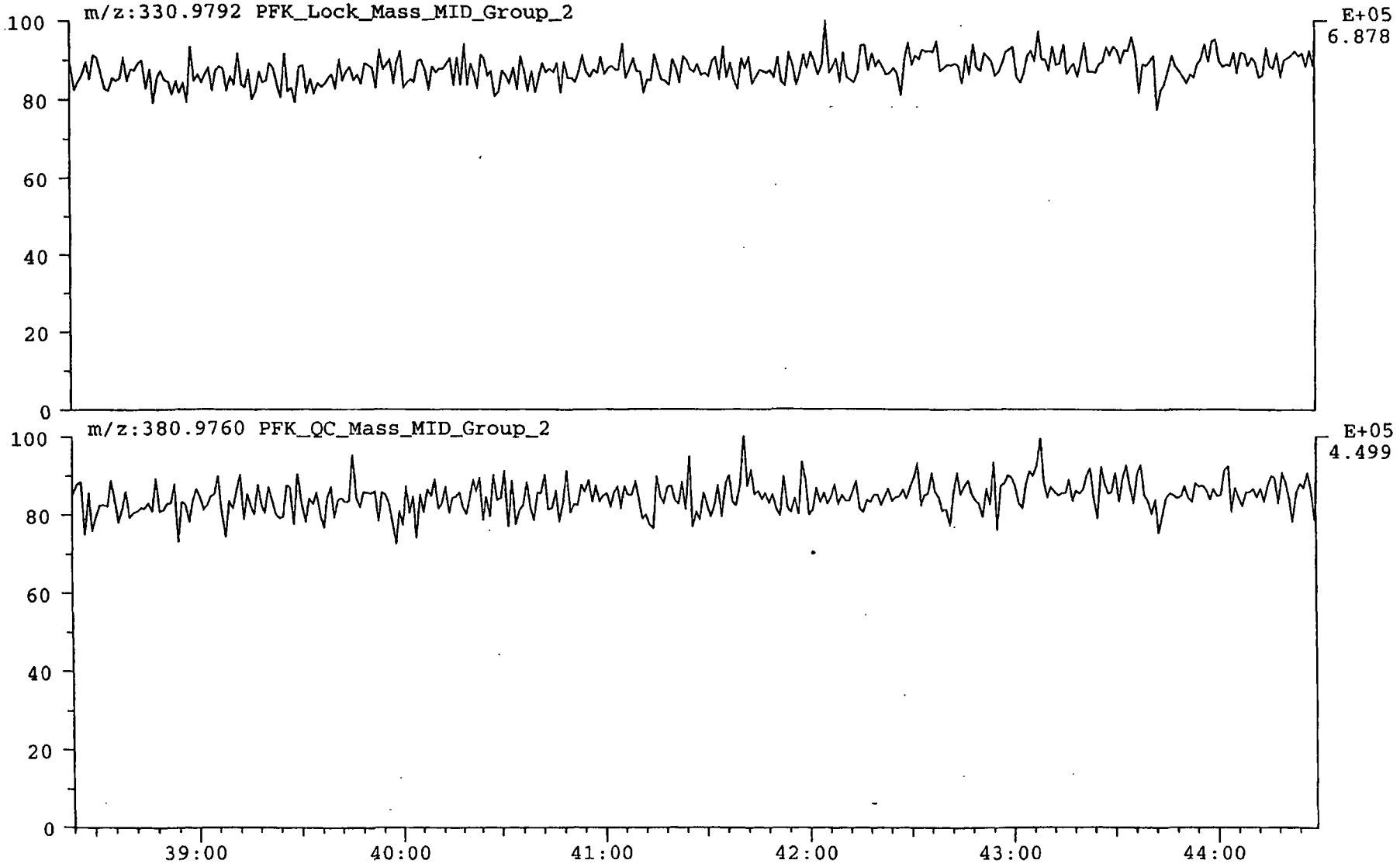
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1969 > 1996 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



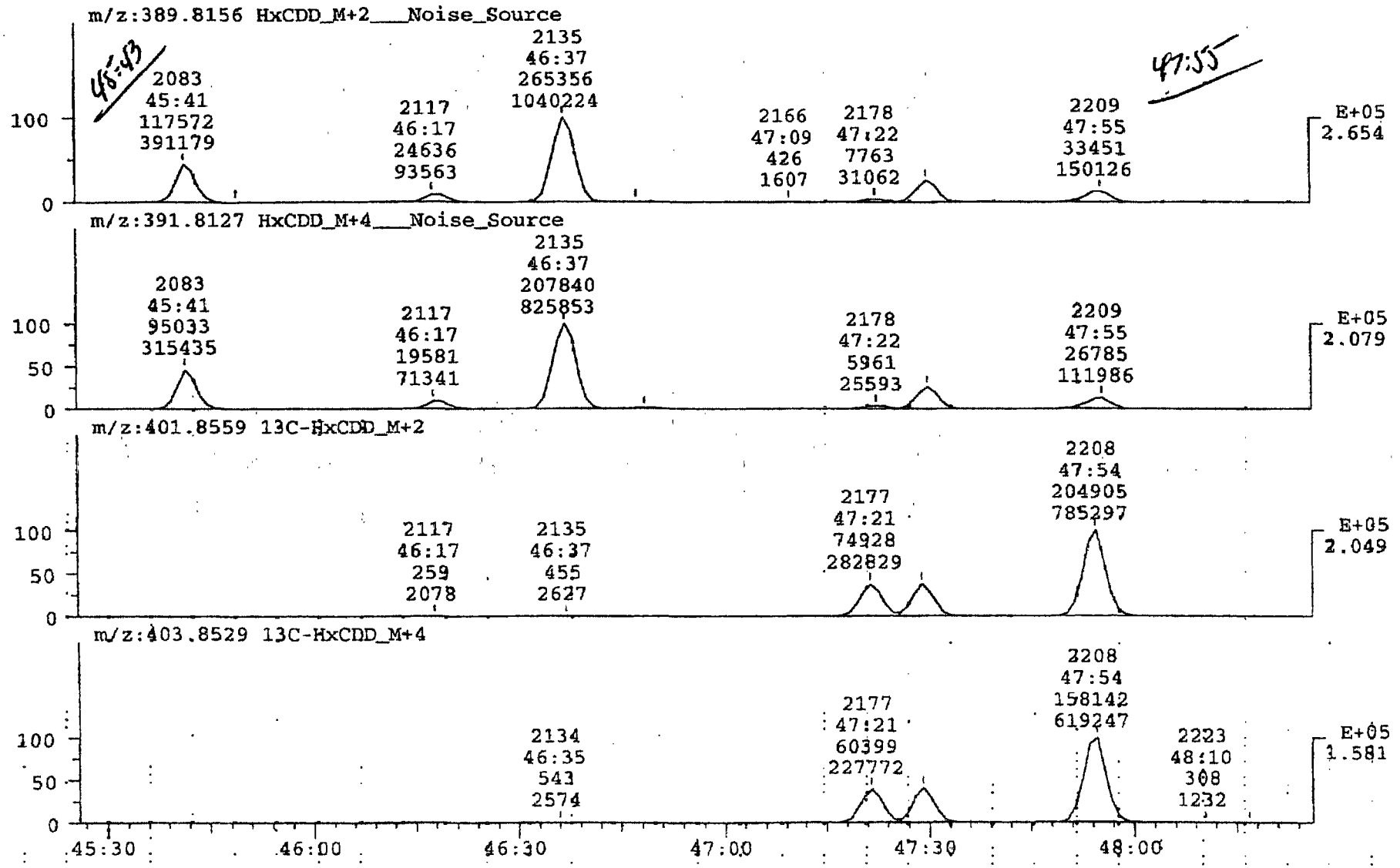
CHRO: tfx1wf2 05-Oct-03 Elapse: 42:18 1894
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1673 > 2017 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



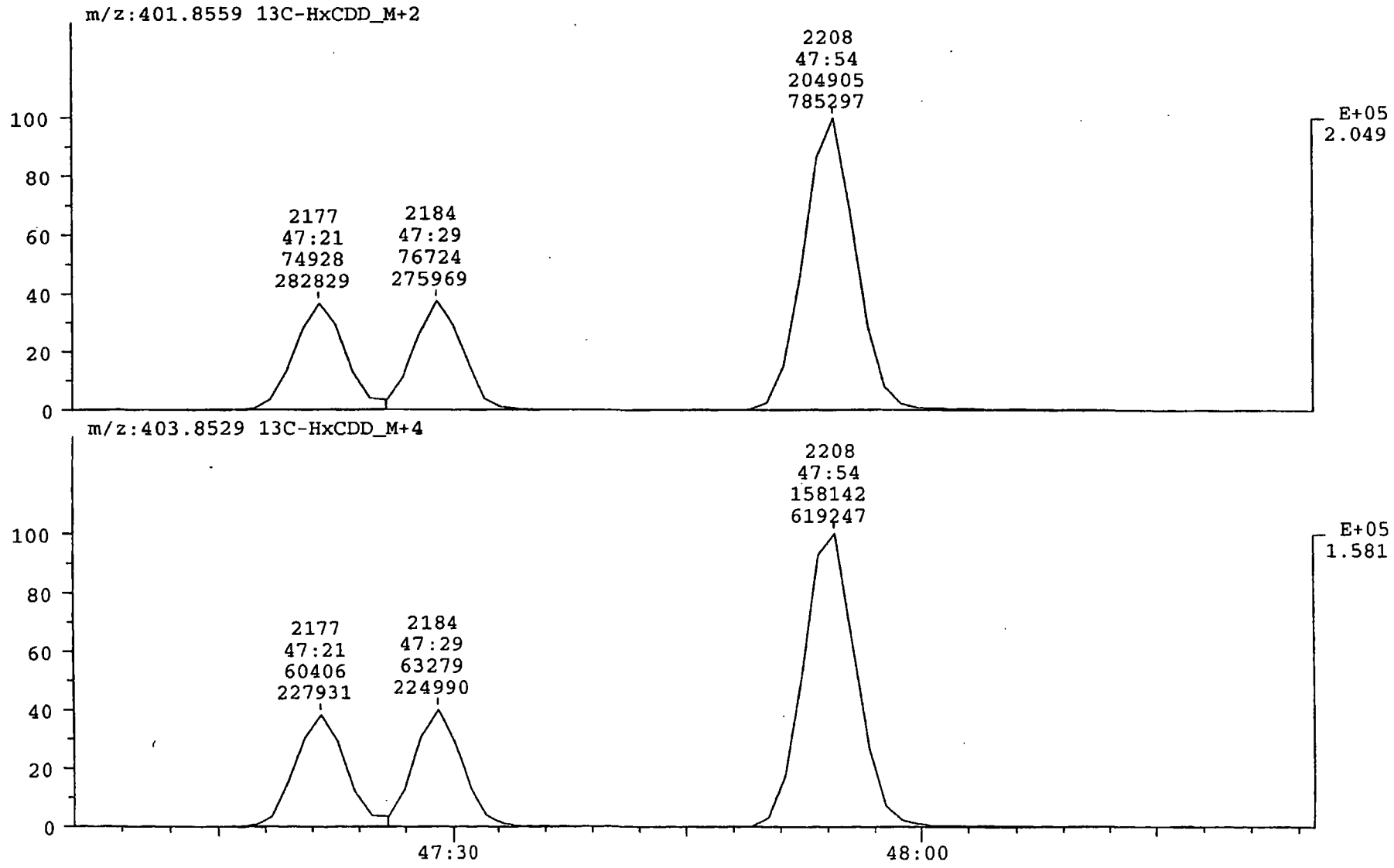
CHRO: tfx1wf2 05-Oct-03 Elapse: 42:18 1894
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 1673 > 2017 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



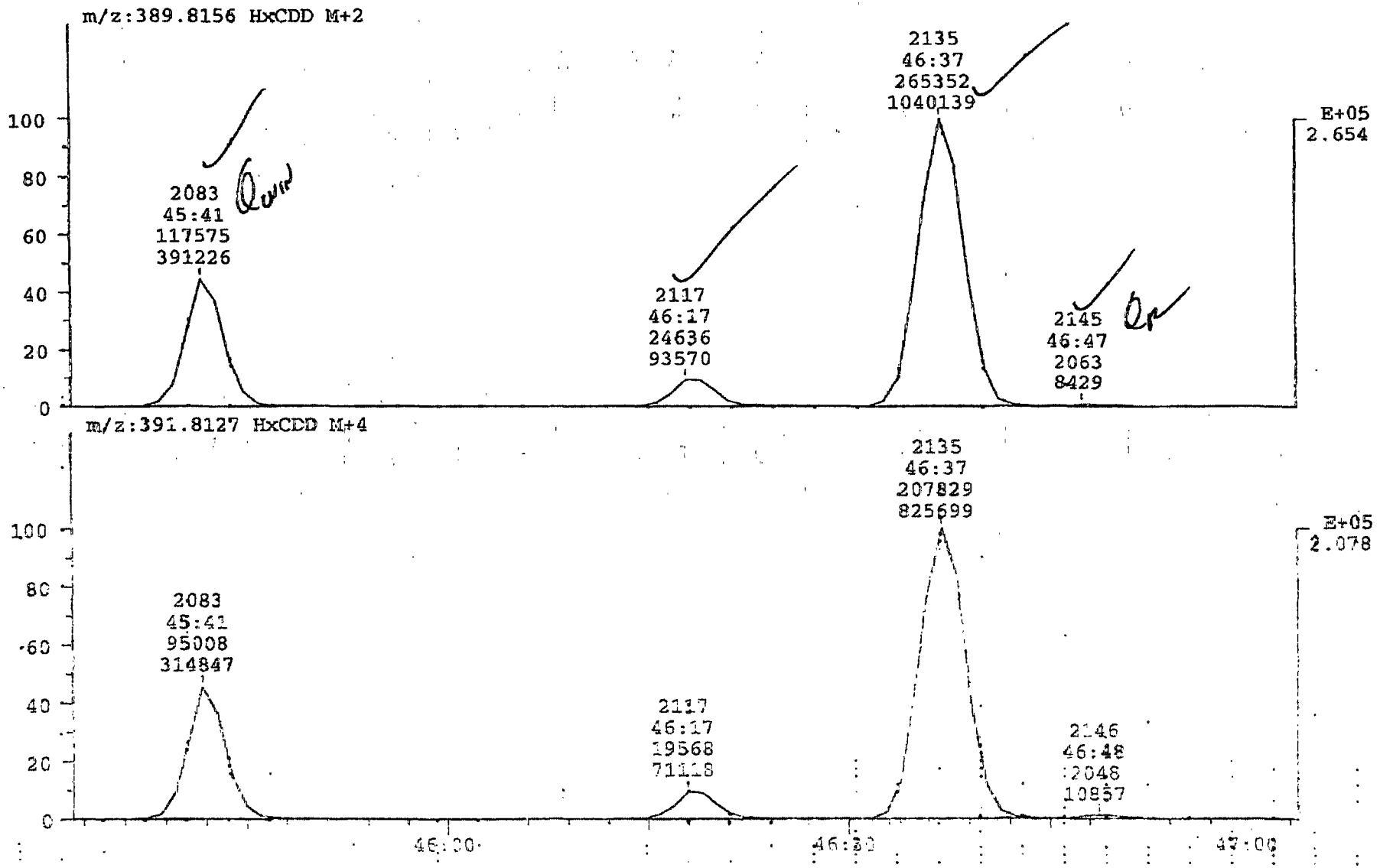
CHRO: tfx1wf2 05-Oct-03 Elapse: 42:18 1894
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2068 > 2238 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



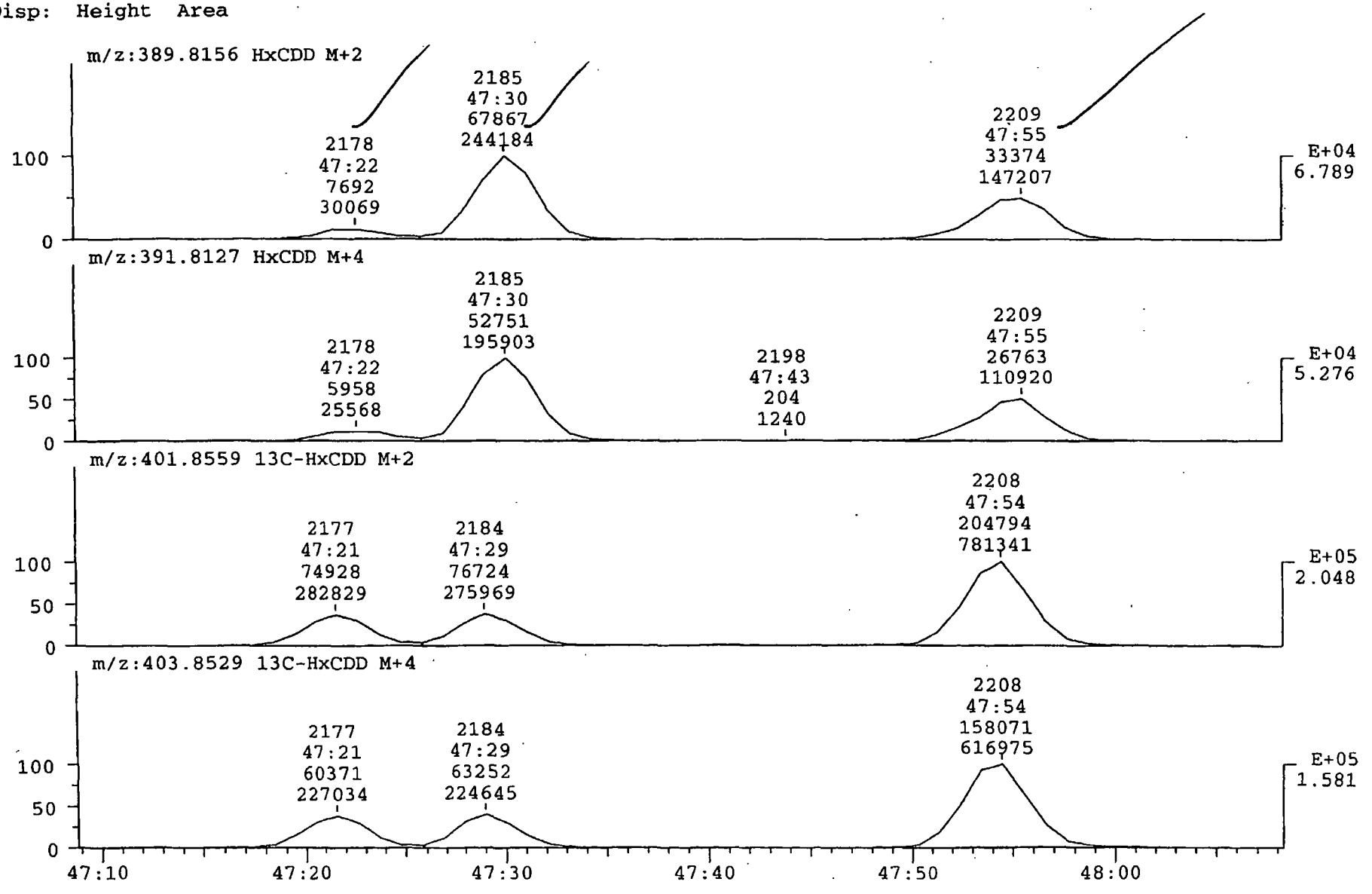
CHRO: tfx1wf2 05-Oct-03 Elapse: 47:44 2199
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2162 > 2237 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



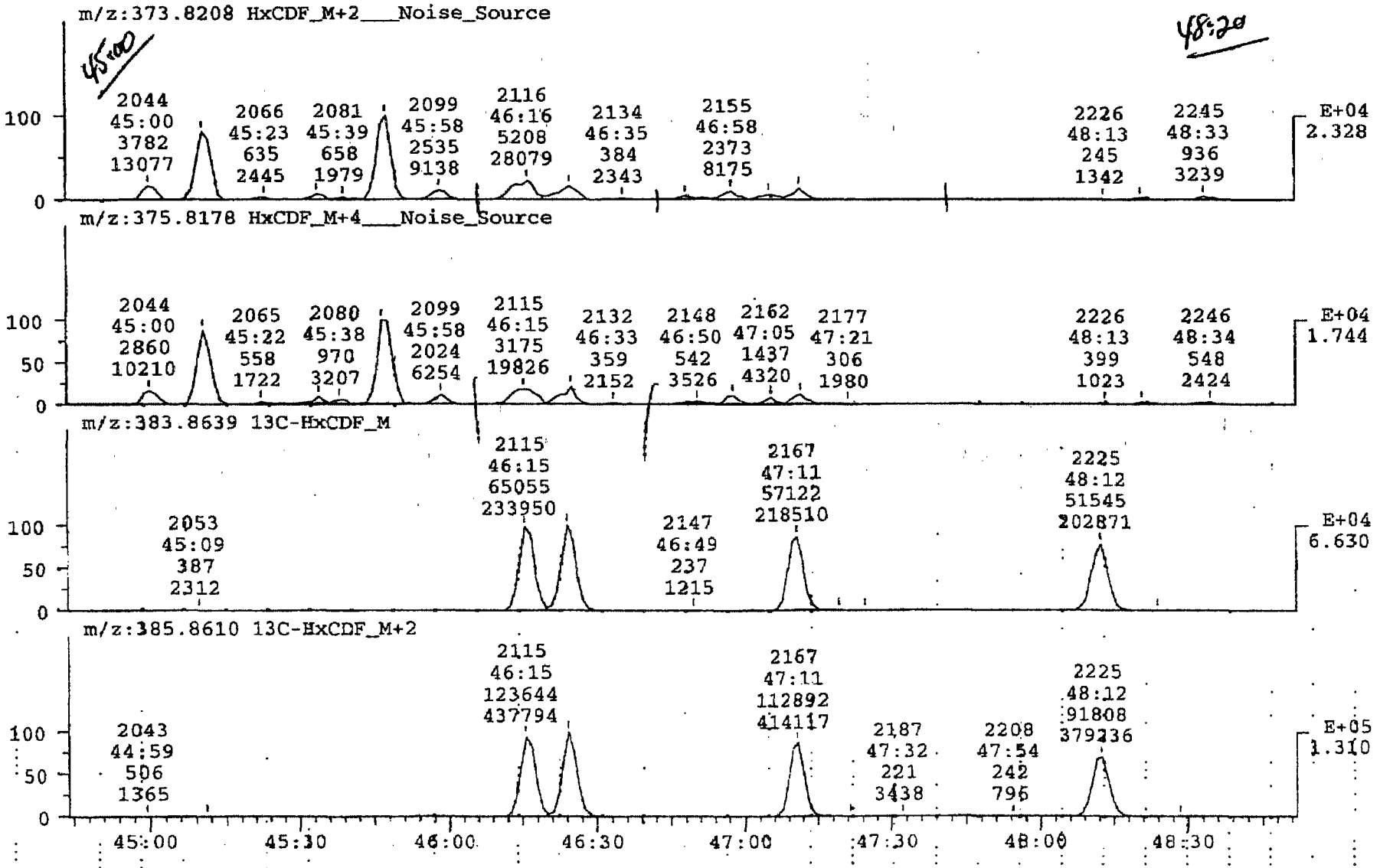
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2074 > 2160 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



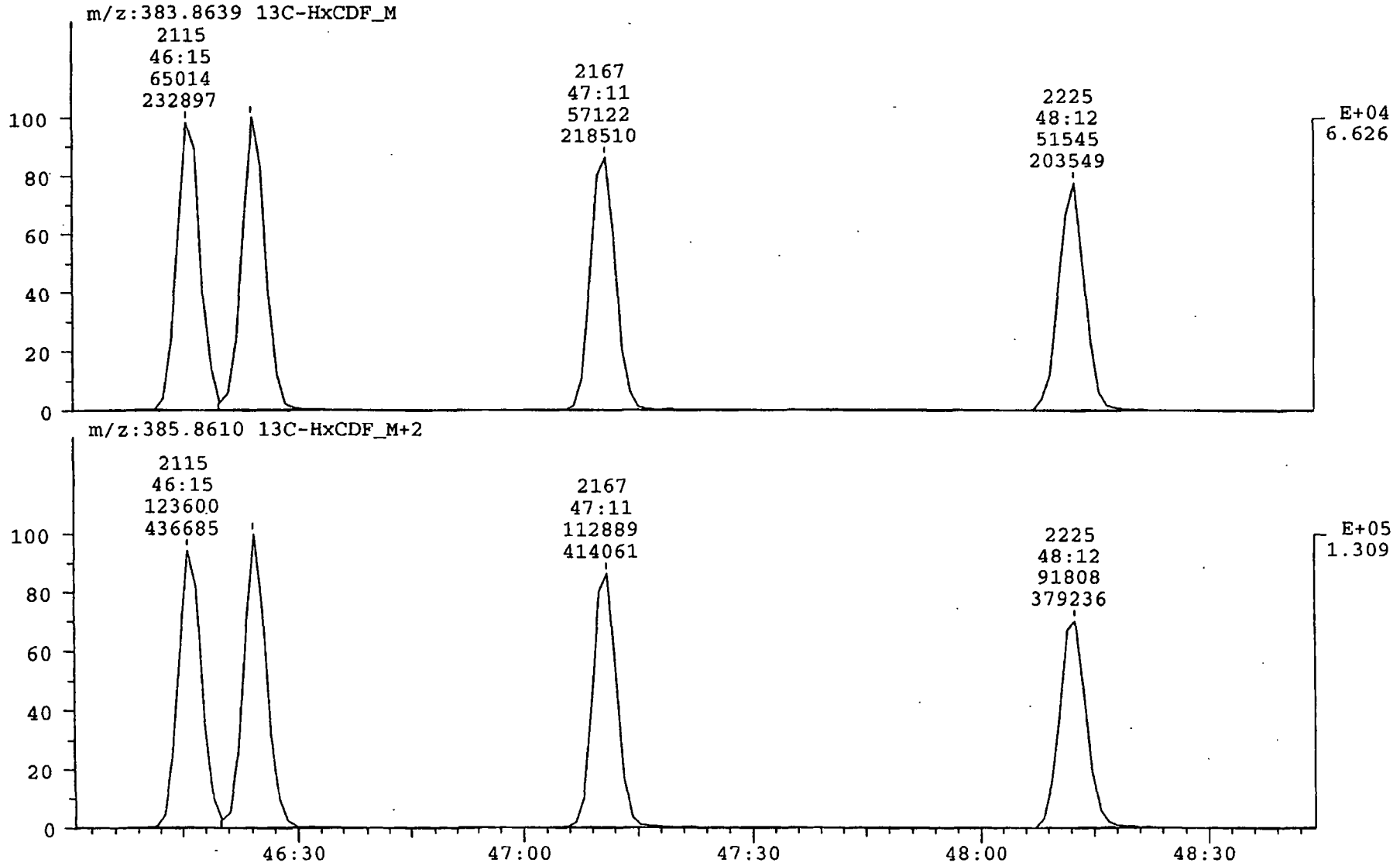
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2165 > 2221 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



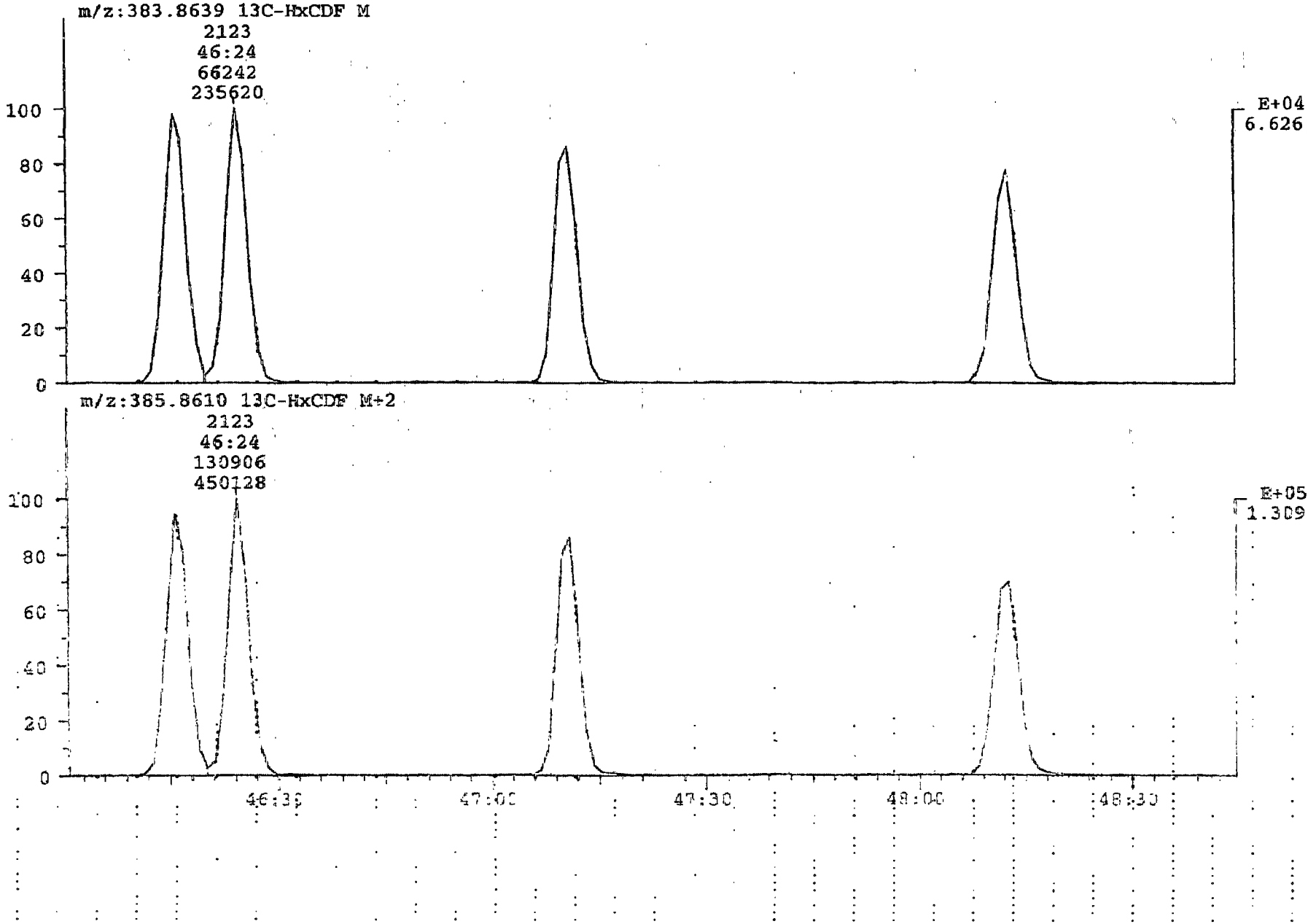
CHRO: tfx1wf2 05-Oct-03 Elapse: 47:44 2199
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2029 > 2262 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



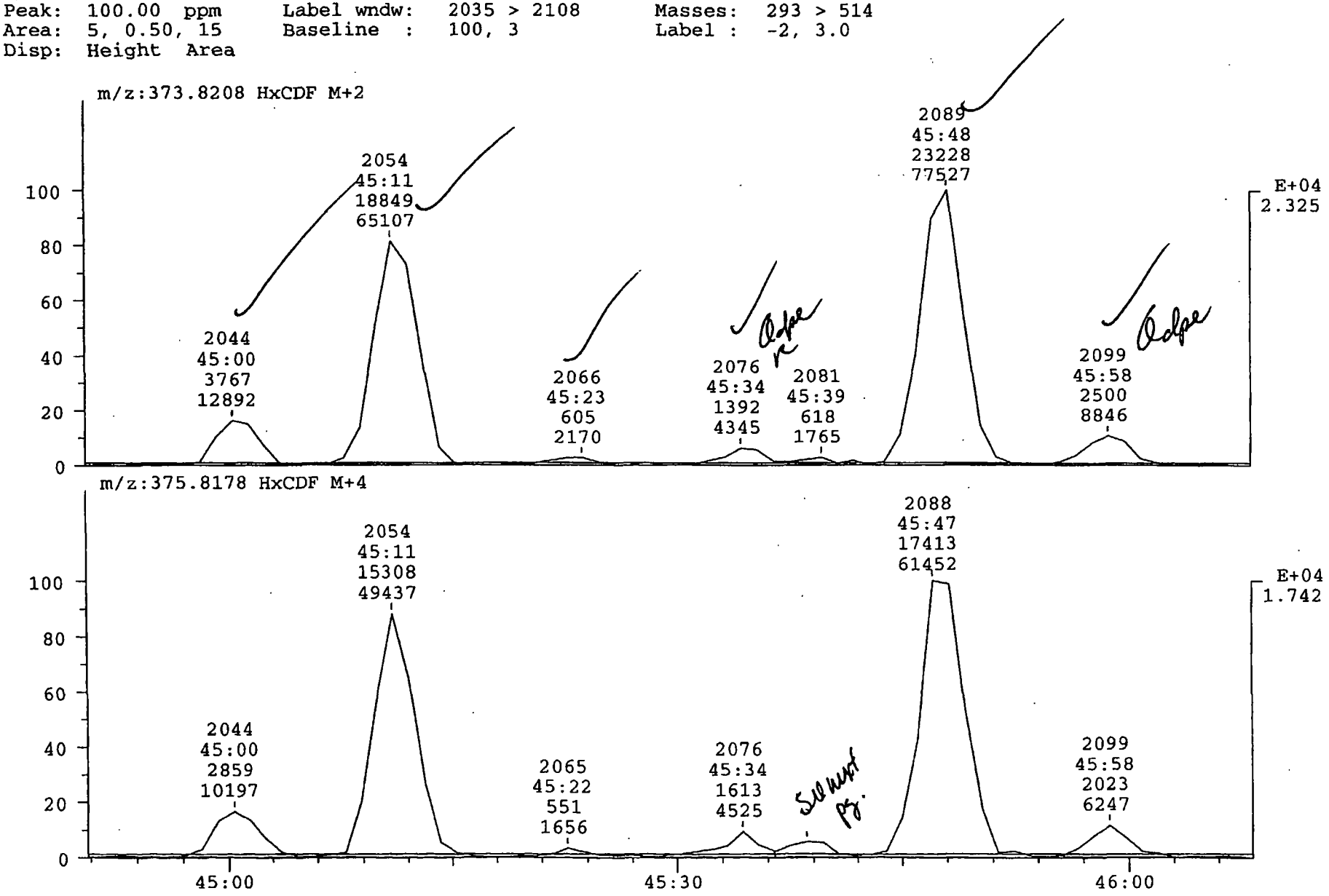
CHRO: tfx1wf2 05-Oct-03 Elapse: 47:21 2177
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2101 > 2255 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



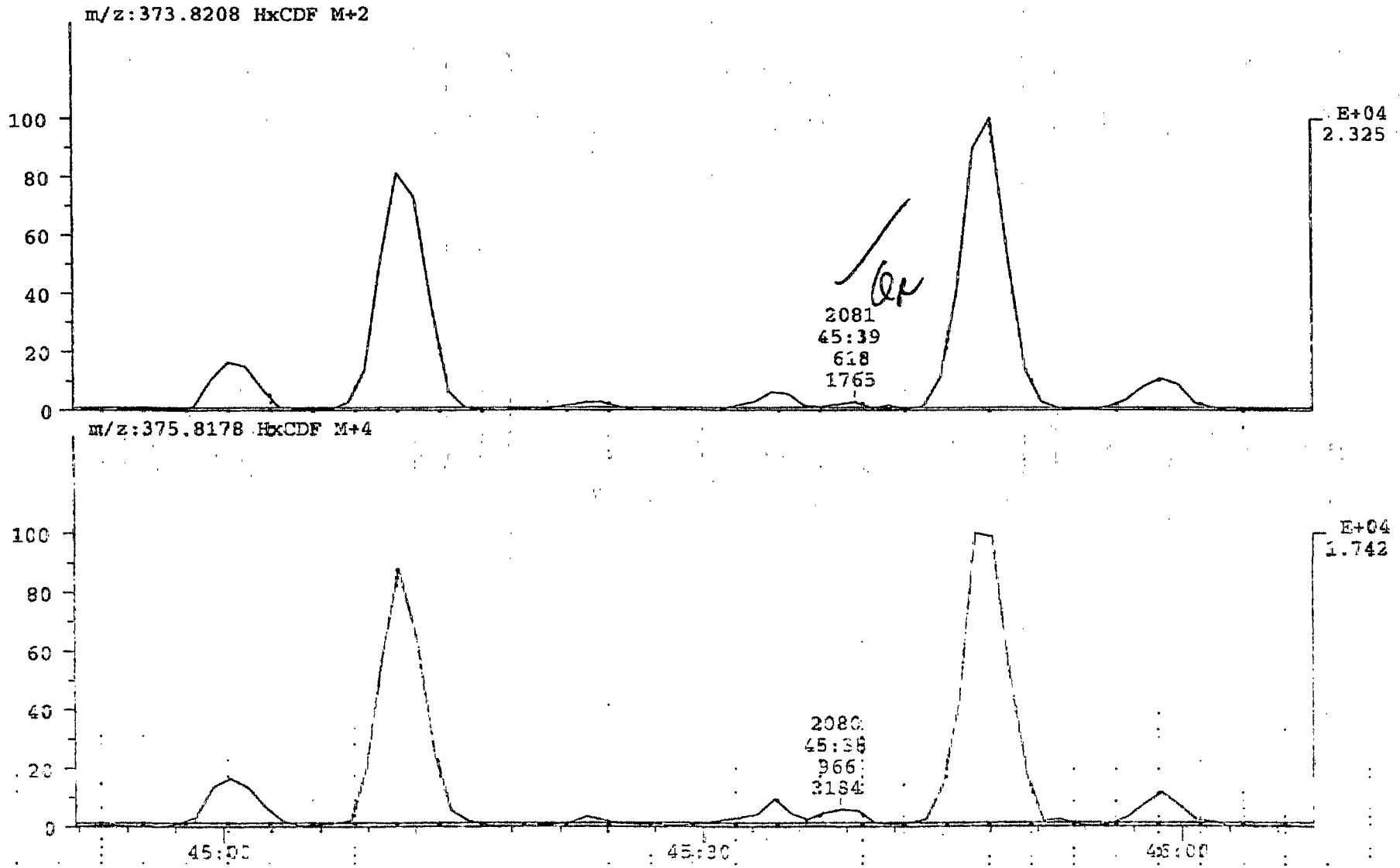
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 24 WC=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2118 > 2130 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



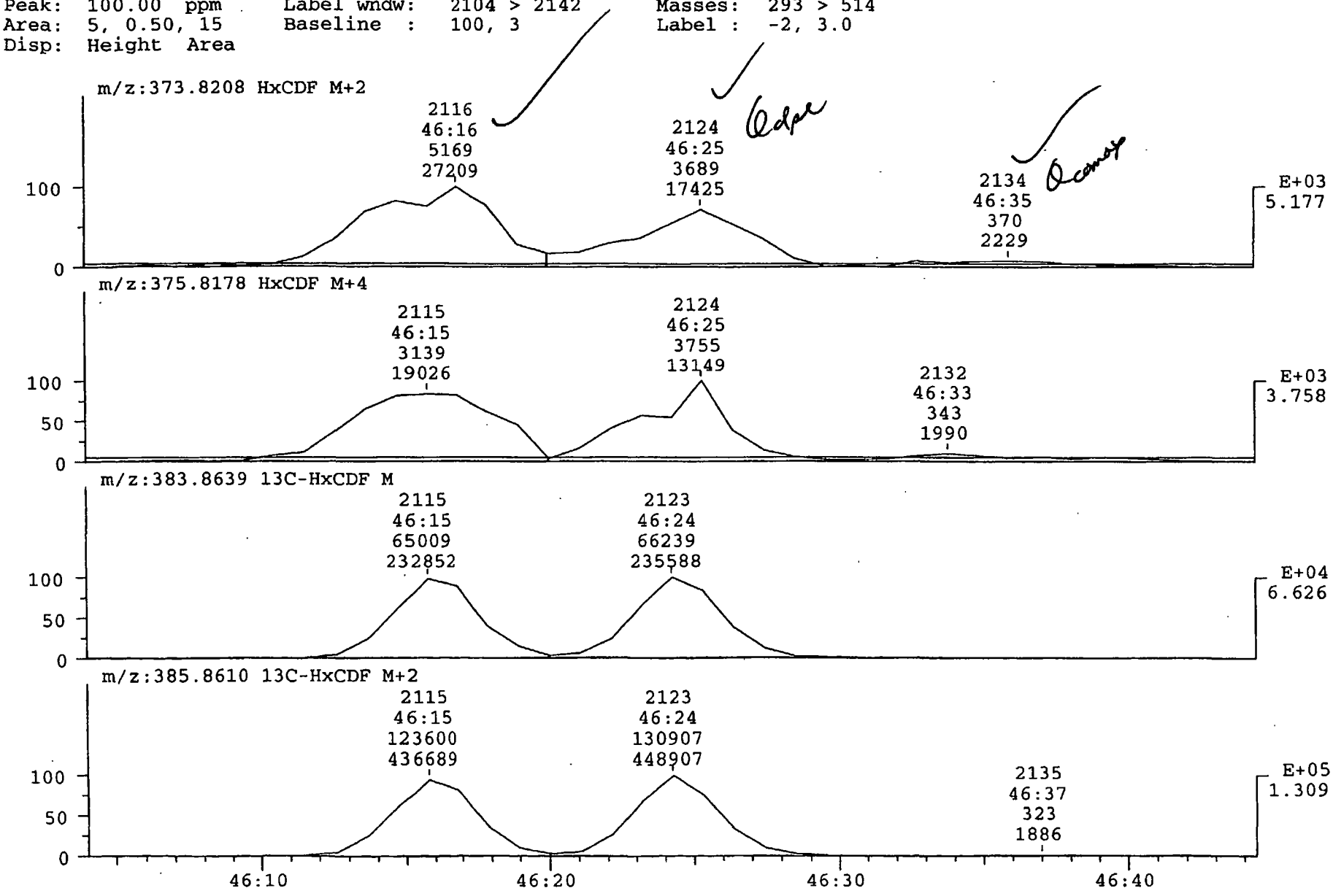
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2035 > 2108 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



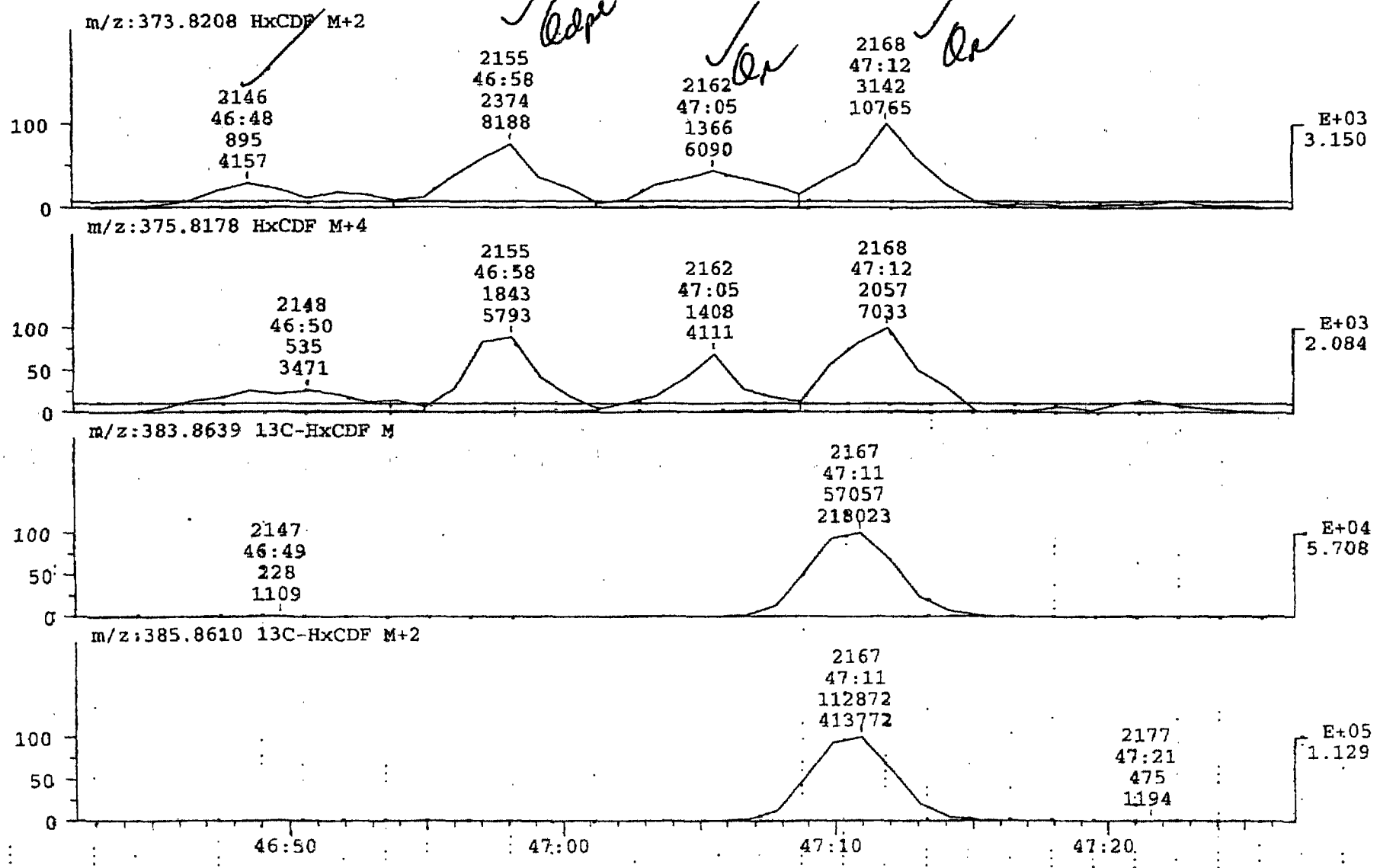
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2077 > 2085 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



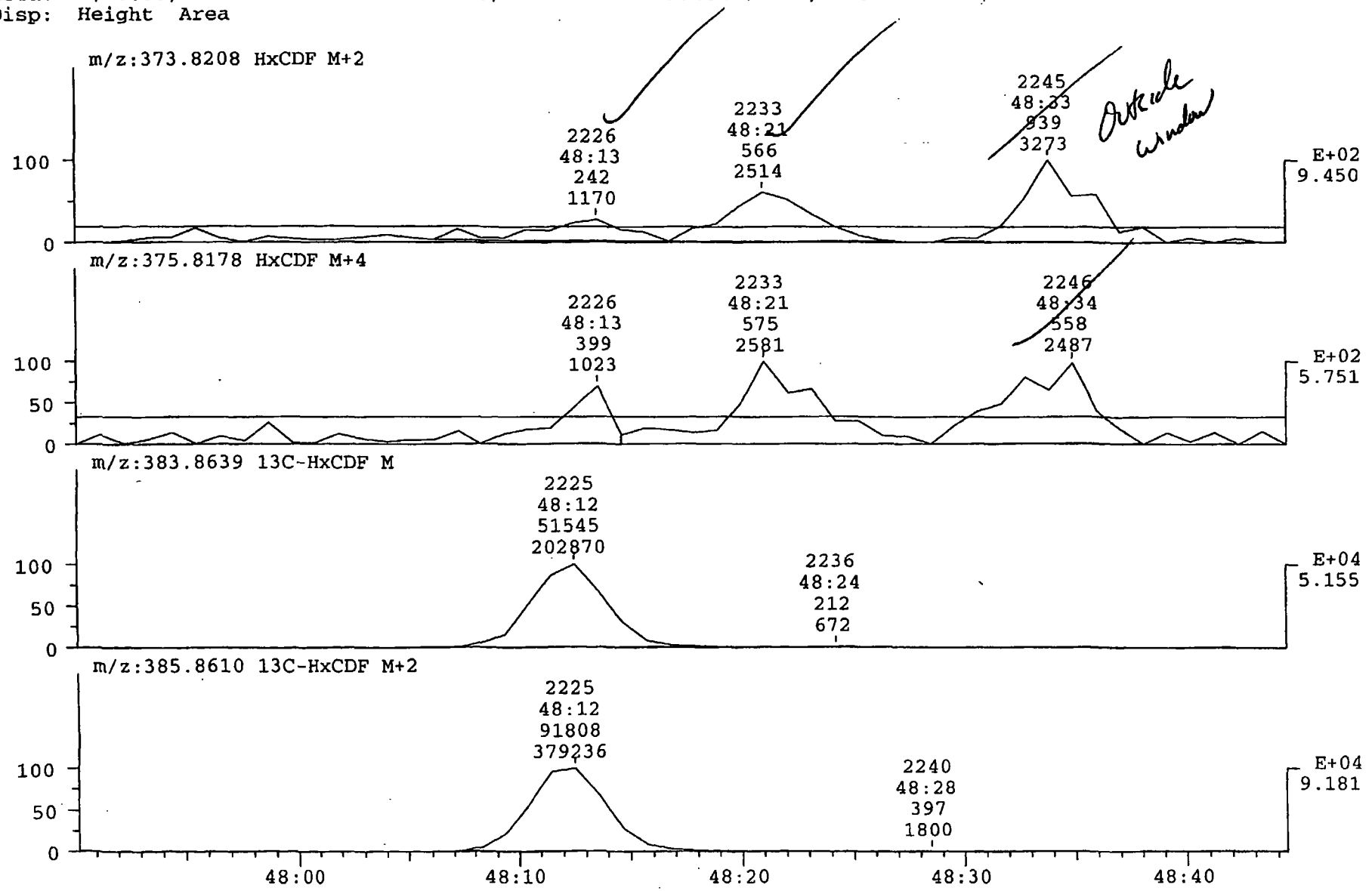
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2104 > 2142 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



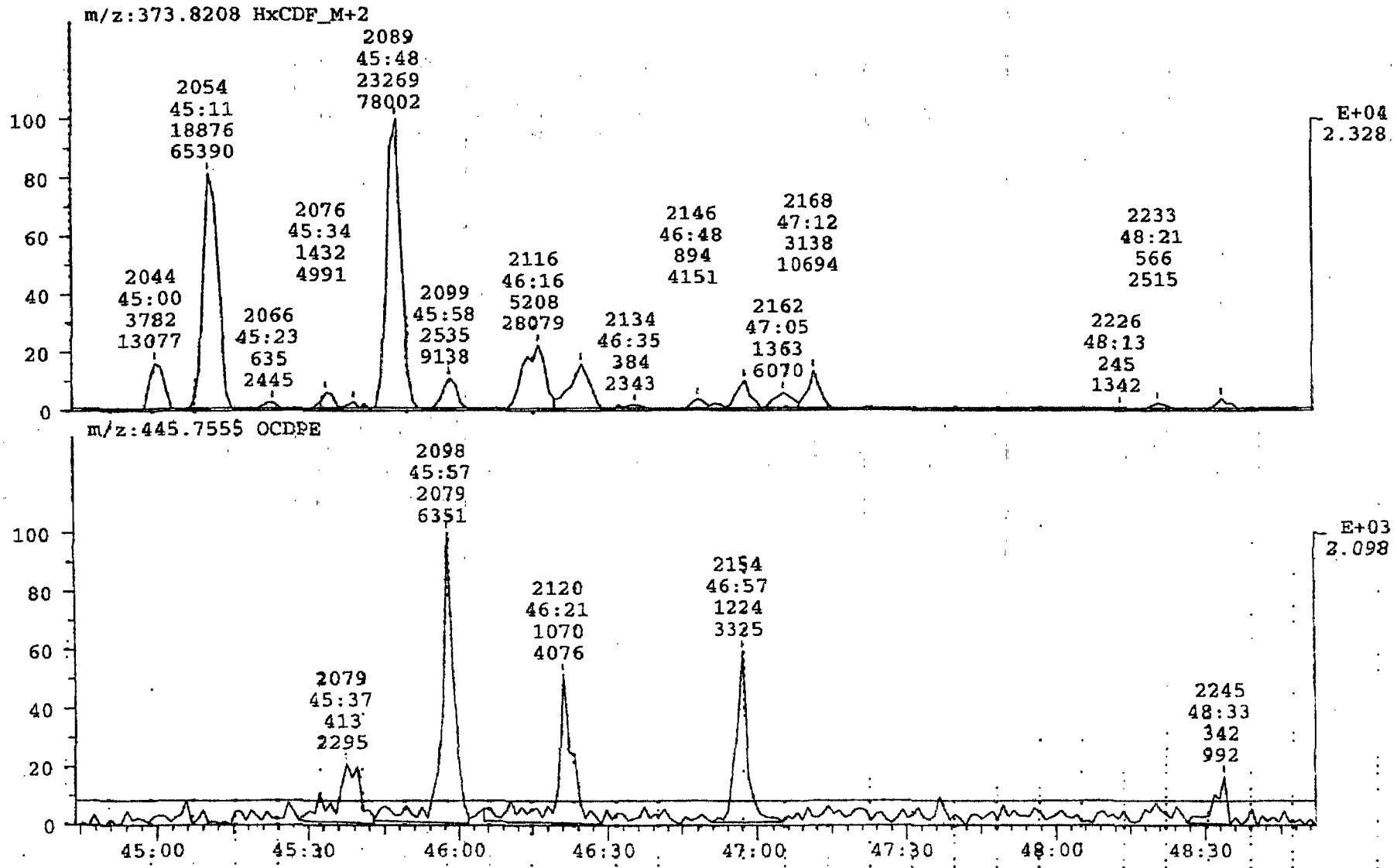
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2140 > 2182 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



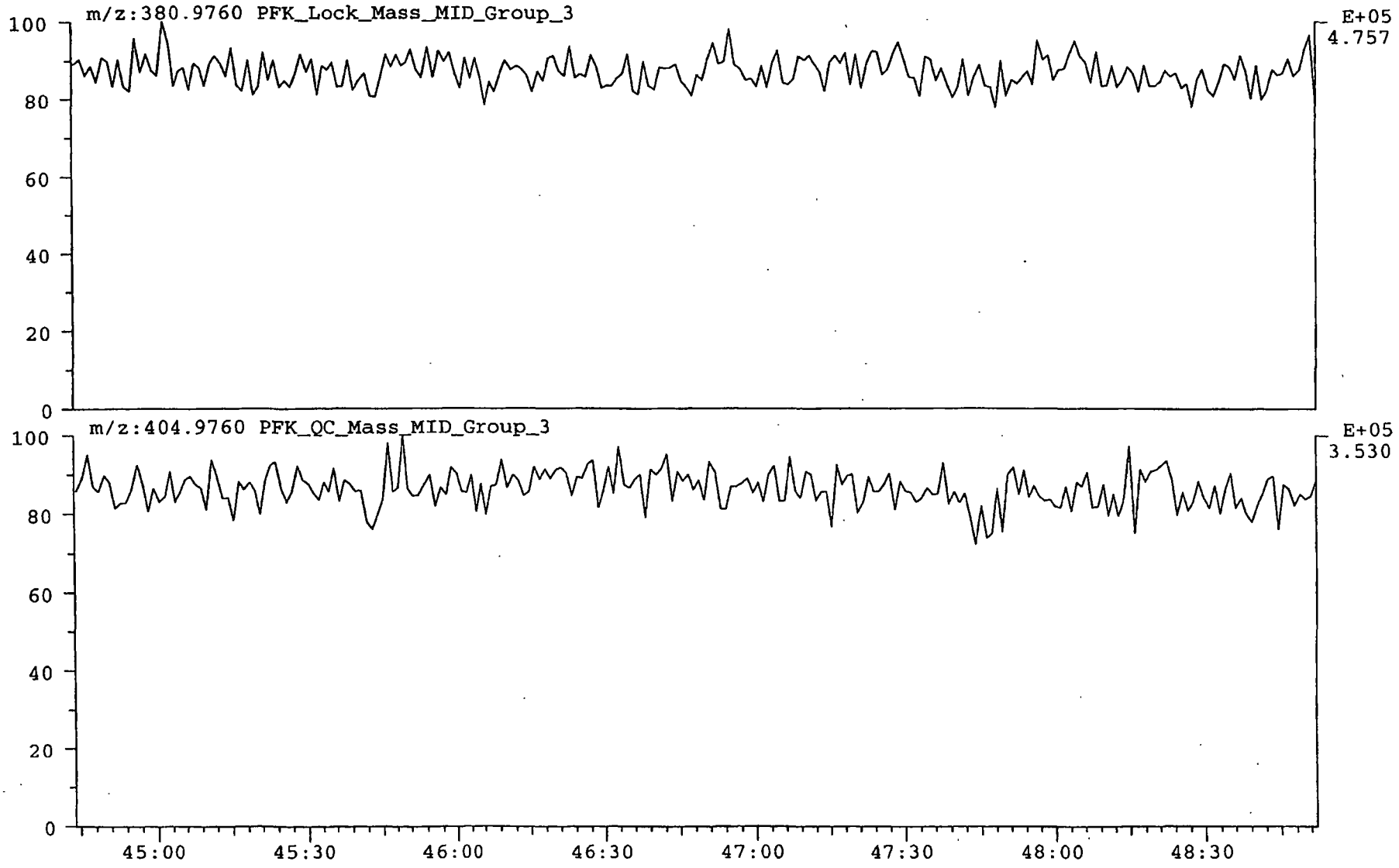
CHRO: tfx1wf2 05-Oct-03 Elapse: 29:15 1172
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2204 > 2255 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



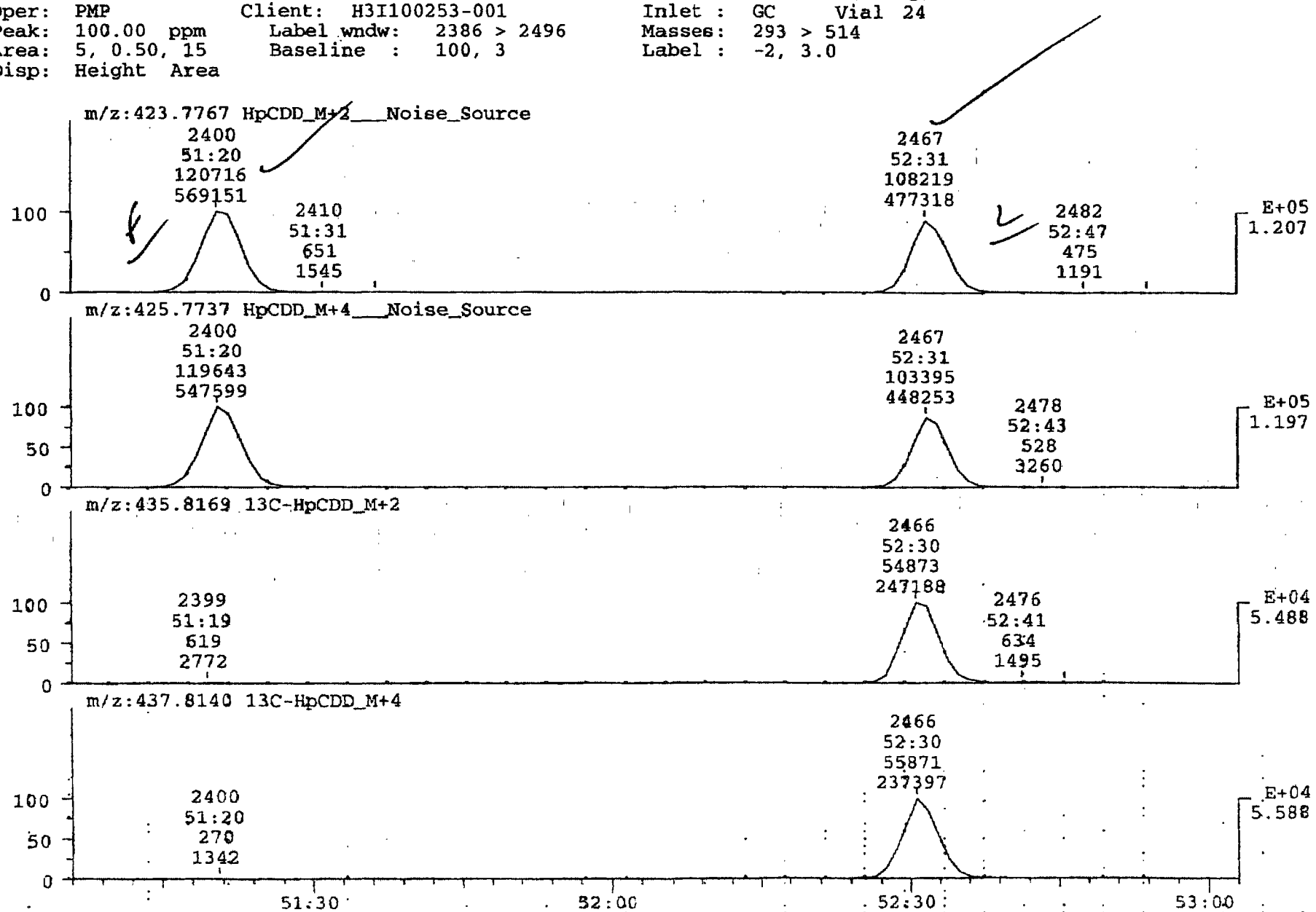
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2029 > 2262 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



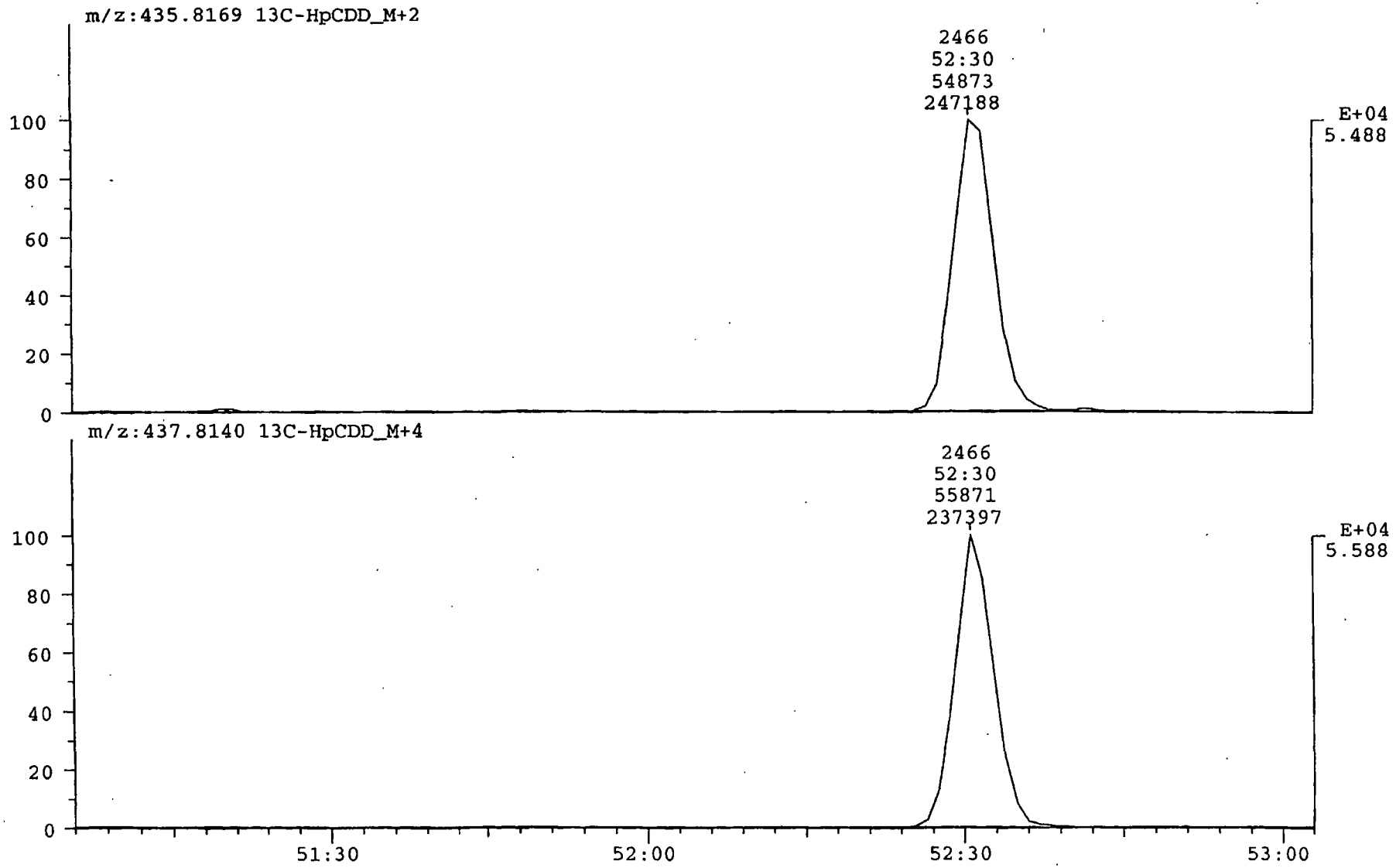
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2029 > 2262 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



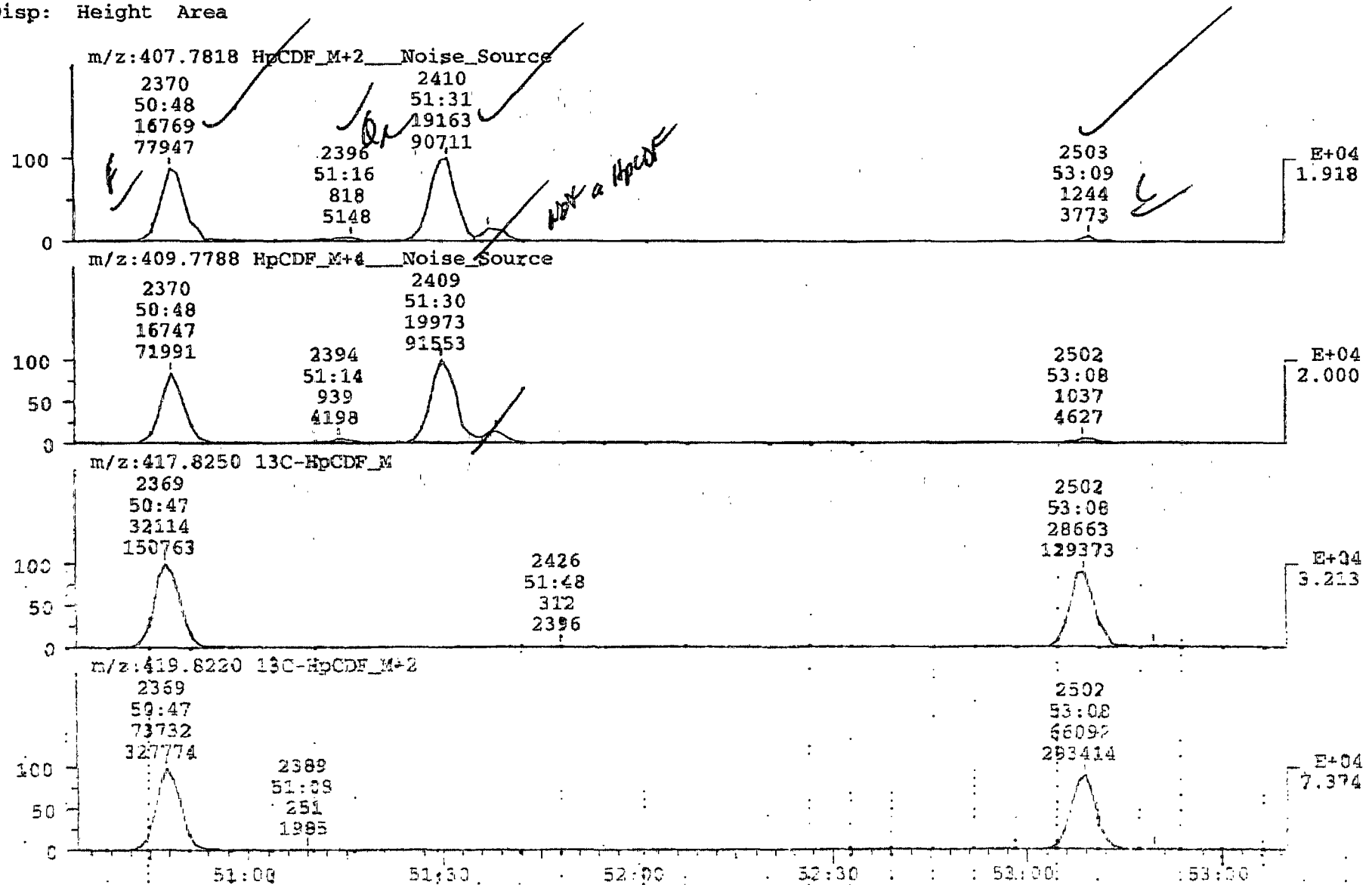
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2386 > 2496 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



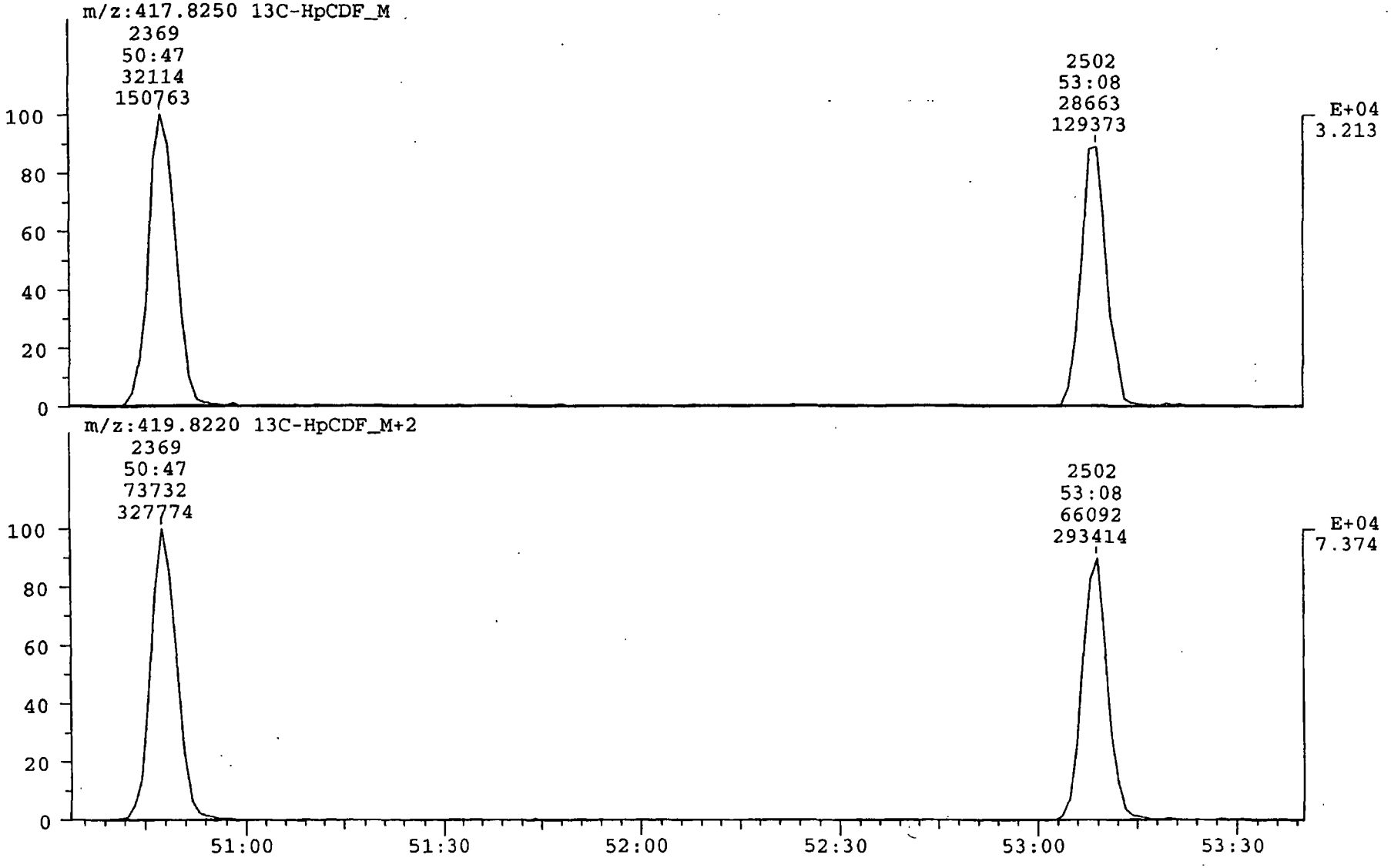
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2386 > 2496 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



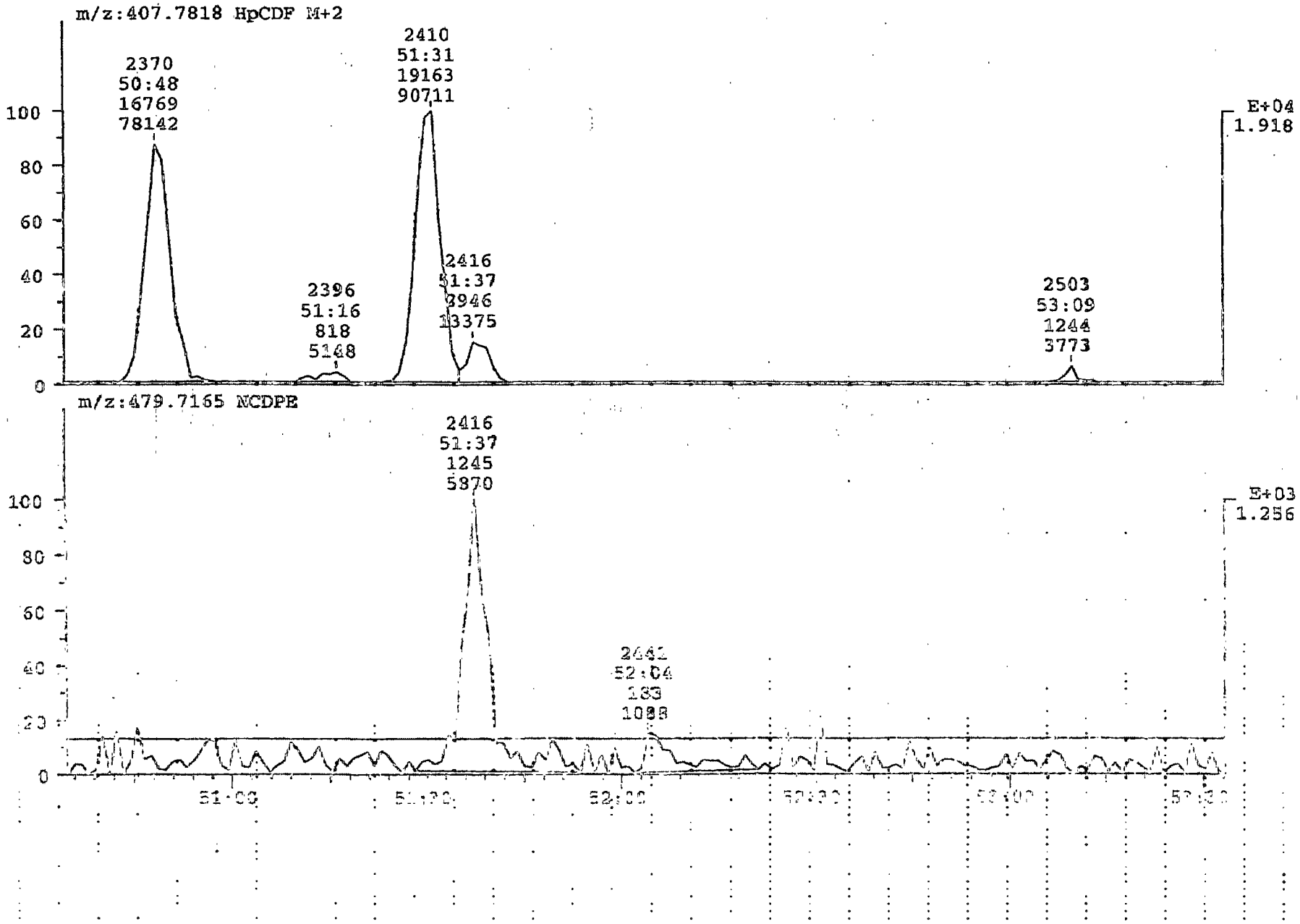
CHRO: tfx1wf2 05-Oct-03 Elapse: 52:07 2444
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



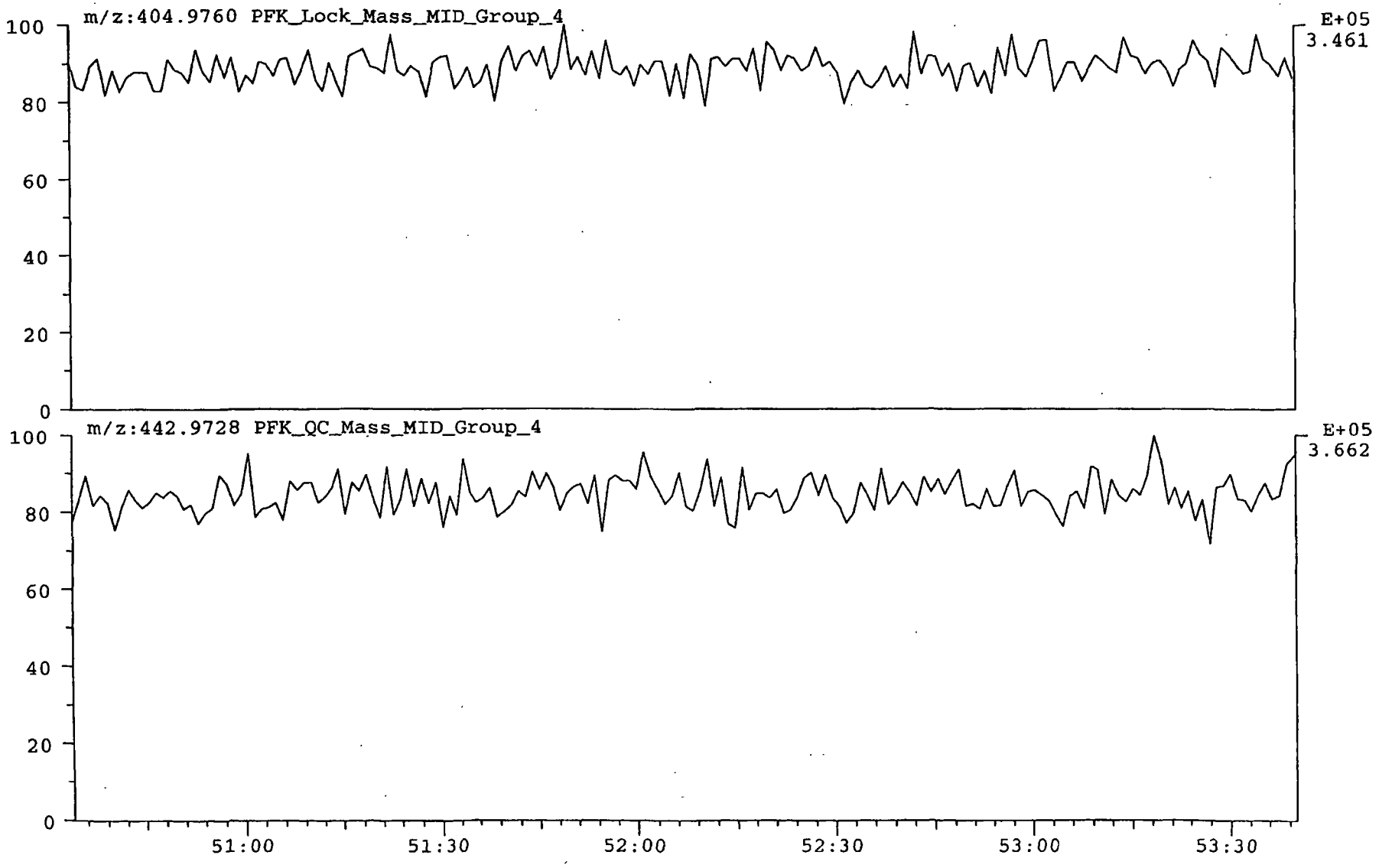
CHRO: tfx1wf2 05-Oct-03 Elapse: 52:07 2444
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



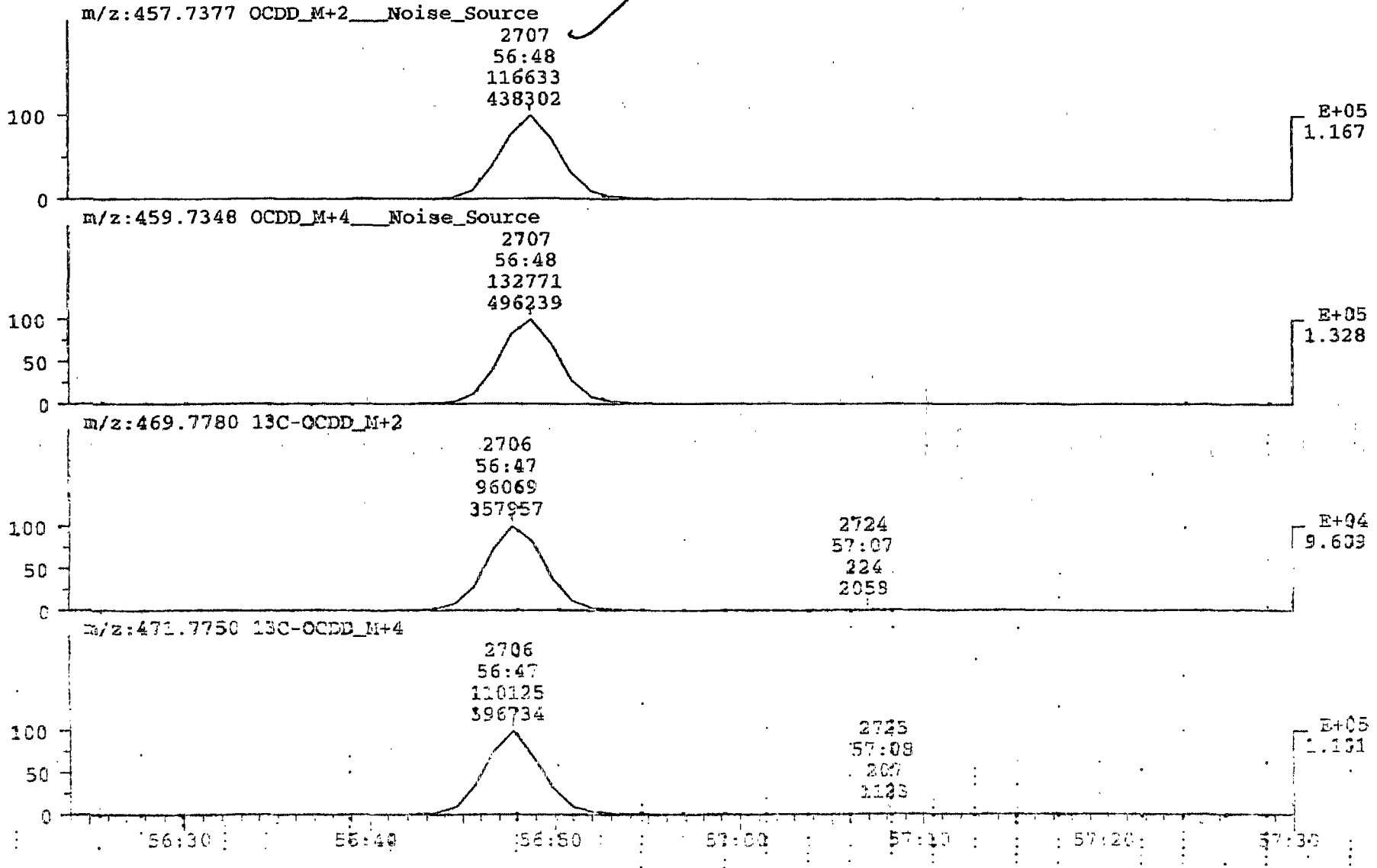
CHRO: tfx1wf2 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2357 > 2525 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



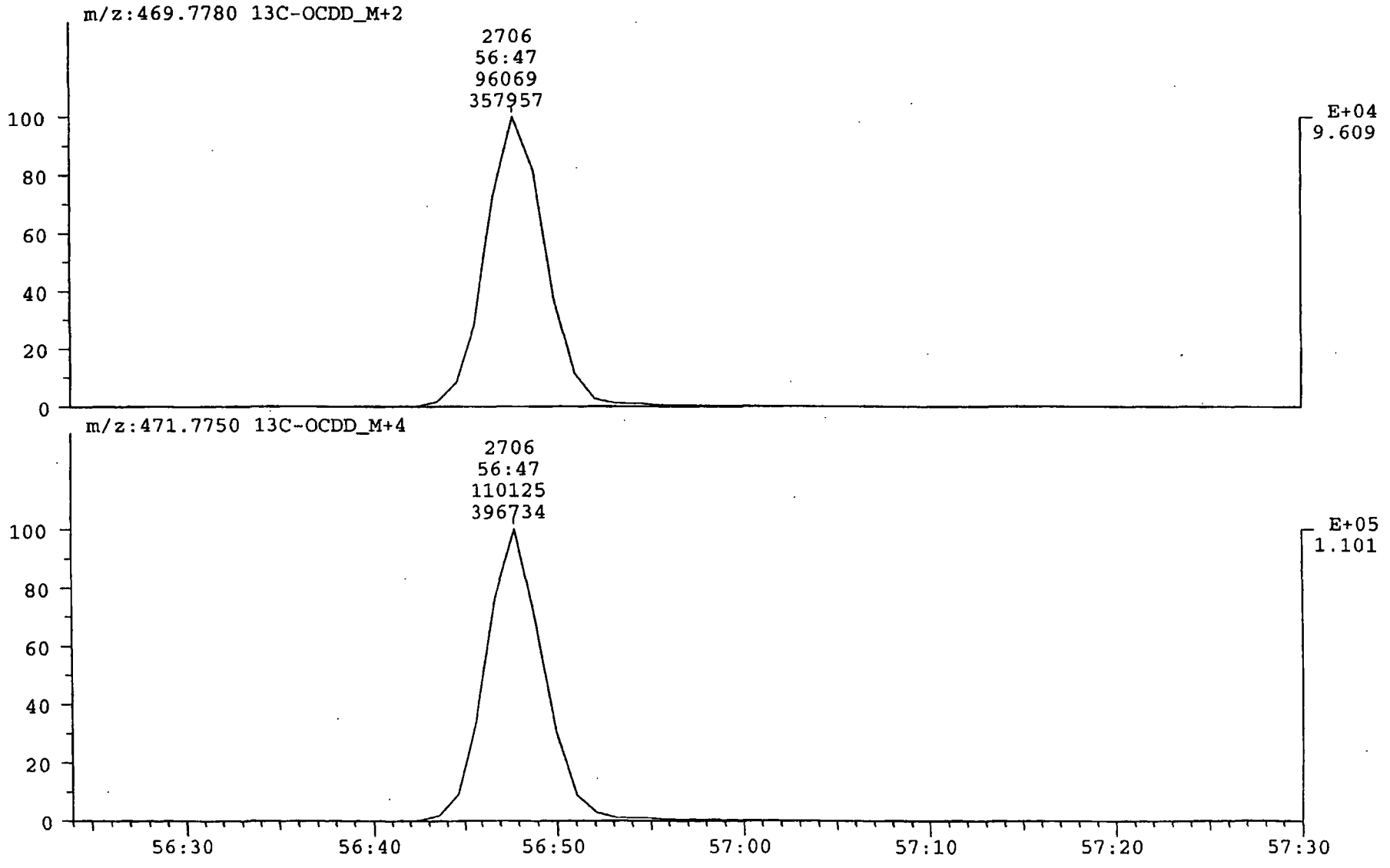
```
CHRO:  tfx1wf2                                  05-Oct-03   Elapse:  52:07       2444
Samp:  Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1                   Start :  01:48:29    2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-001                  Inlet :  GC     Vial  24
Peak:  100.00  ppm     Label wndw:   2356 > 2531            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



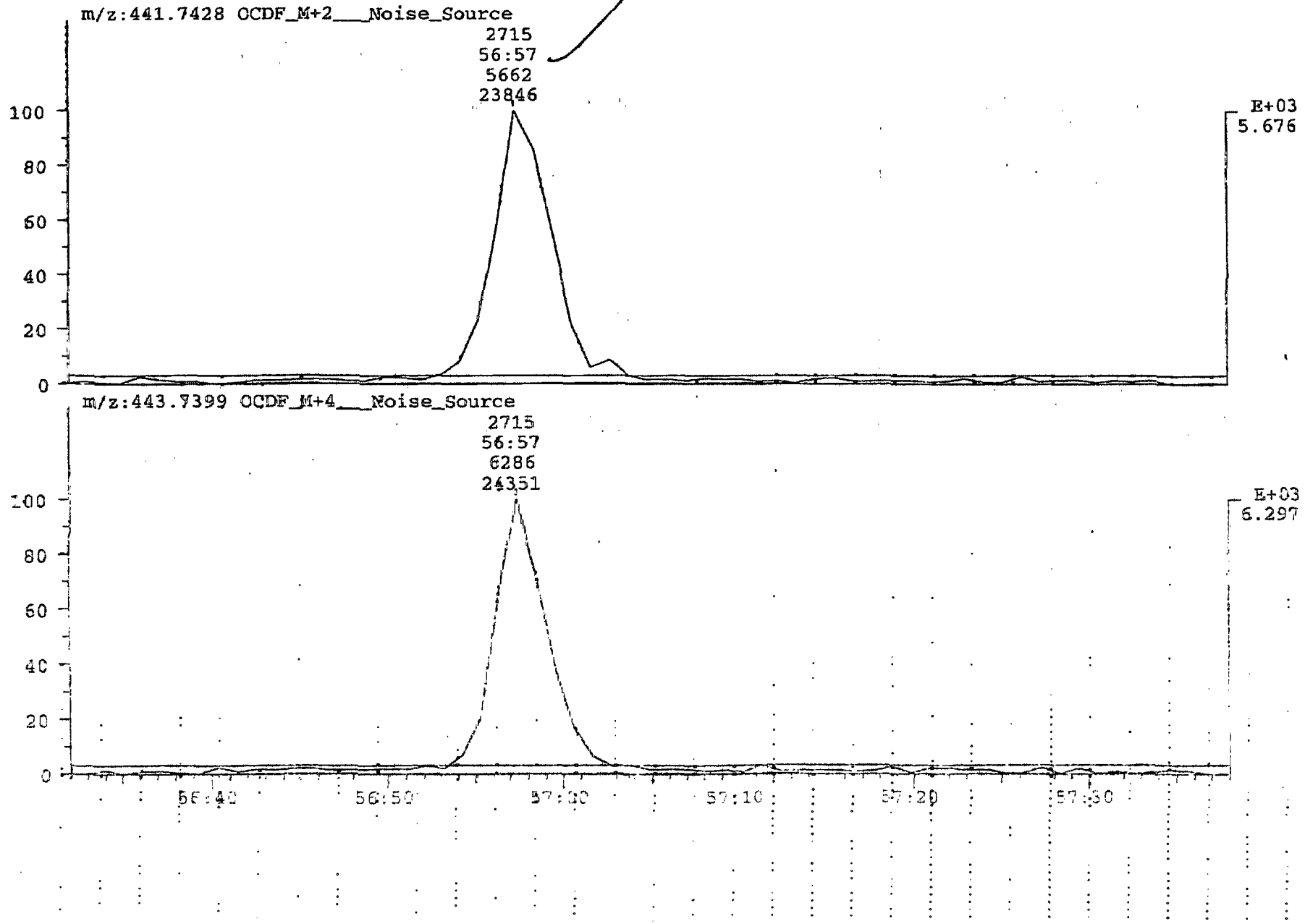
CHRO: tfx1wf2 05-Oct-03 Elapse: 56:54 2712
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2684 > 2746 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



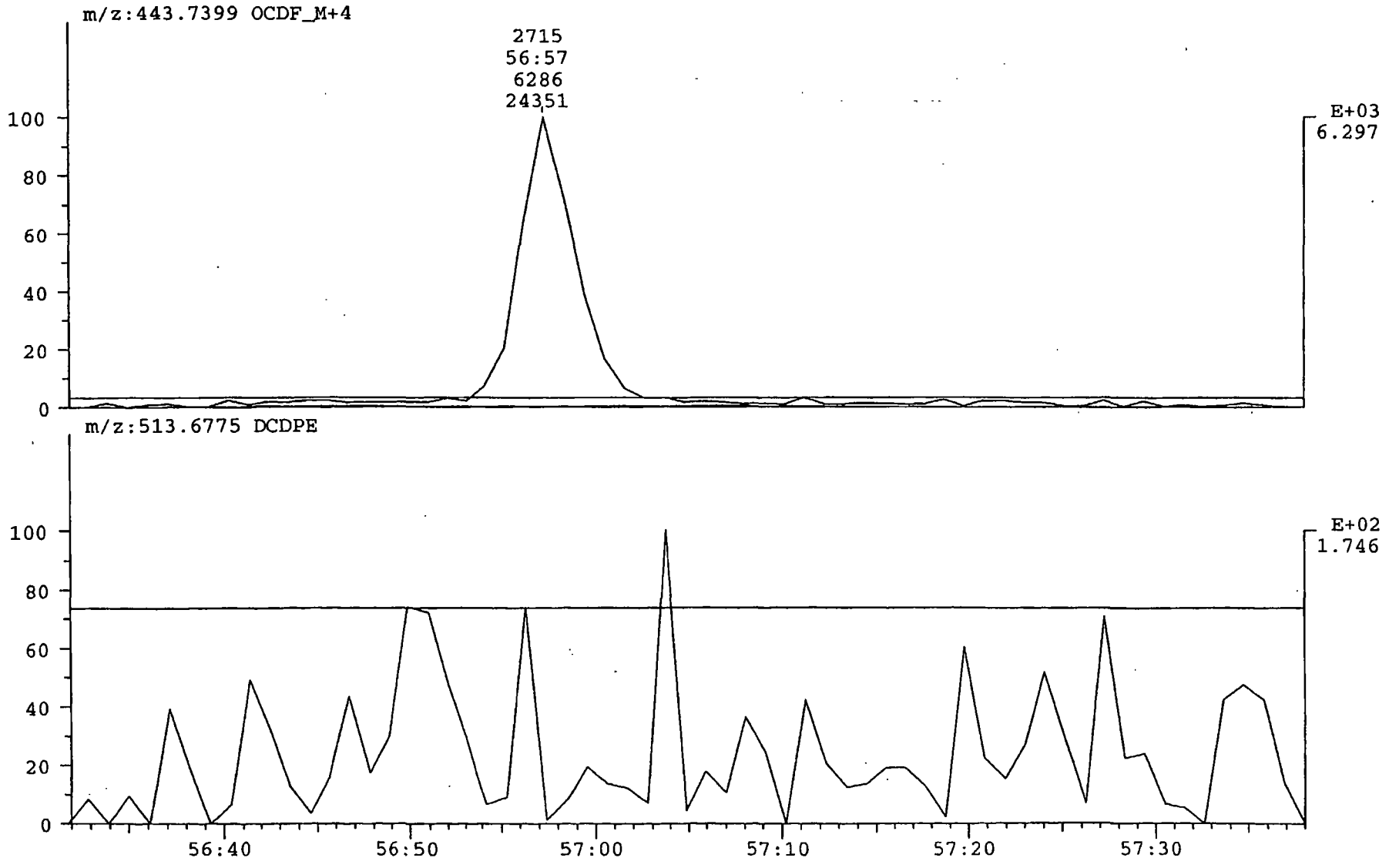
CHRO: tfx1wf2 05-Oct-03 Elapse: 56:54 2712
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2684 > 2746 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



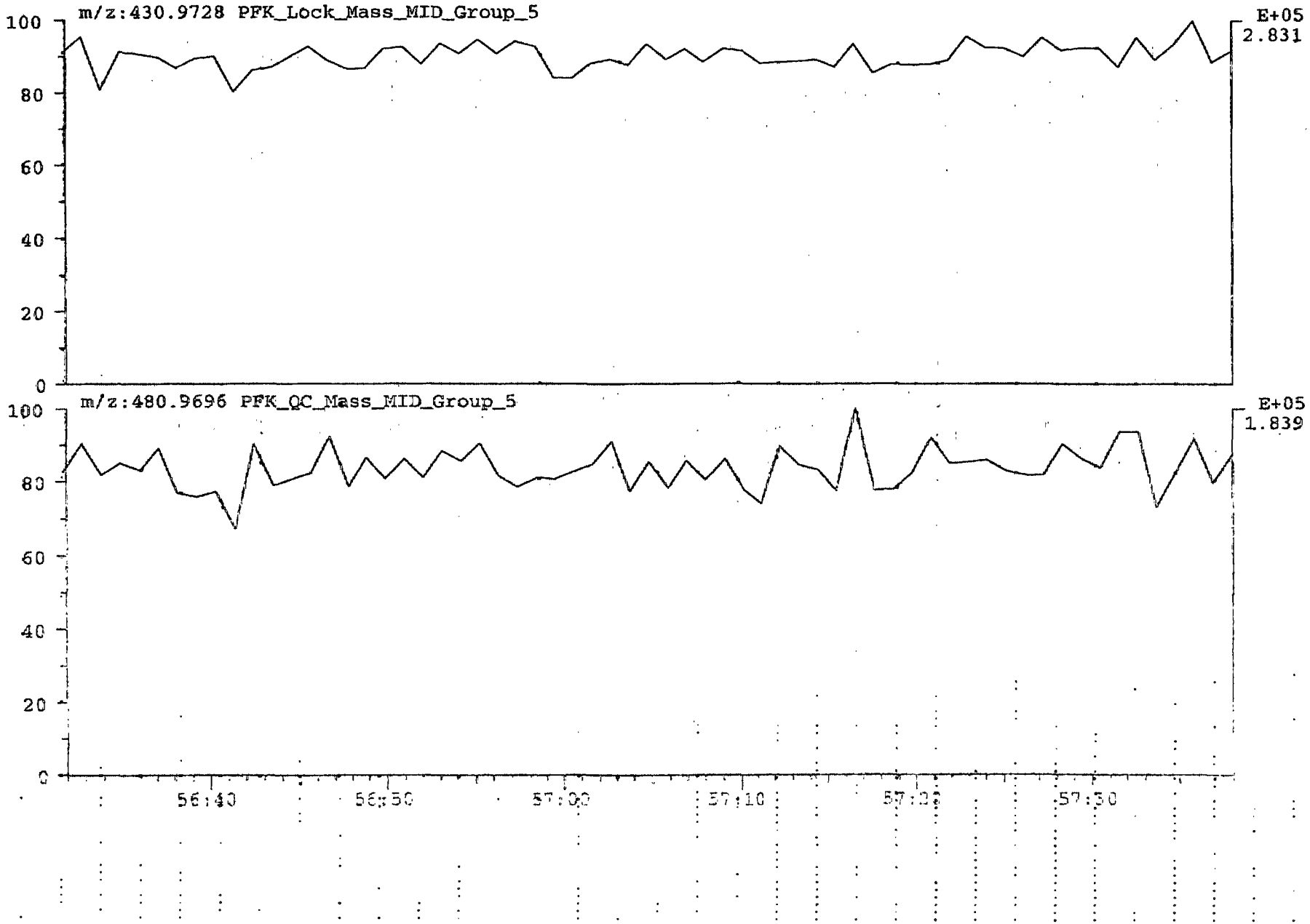
CHRO: tfx1wf2 05-Oct-03 Elapse: 57:01 2719
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2691 > 2753 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wf2 05-Oct-03 Elapse: 57:01 2719
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24
Peak: 100.00 ppm Label wndw: 2691 > 2753 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  tfx1wf2                                  05-Oct-03   Elapse:  57:01      2719
Samp:  Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1                   Start :  01:48:29   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-001                Inlet :  GC     Vial 24
Peak:  100.00  ppm      Label wndw:   2691 > 2753           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
```



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tfx1wf2
Study: 3273193 (10.0g)
Sample: WO=fx1wf2aa Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I100253-001
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 24
Analysis will stop when MID run finishes
Tune file name: tune2
File 2 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | | |
|---|---|---|---|
| Slvnt A cln before inj | (K): | 3 | times |
| Slvnt B cln before inj | (L): | 0 | times |
| Sample rinse cycles | (R): | 0 | times |
| Syringe filling volume | (F): | 1.0 | ul |
| Pullup delay time | (D): | 4 | sec |
| Sample pullup speed | (E): | 5.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Sample pullup count | (P): | 2 | times |
| Injection speed | (S): | 10.0 | ul/sec |
| Injection wait time | (W): | 10 | sec |
| Injection hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 20 | times |
| Loop clean w slvnt A | (LC): | 0 | times |

```
 Loop clean w slvnt B (LB):      0 times
 Standard sample volume(X):    0.0 ul
 Standard air volume    (Y):    0.0 ul
 2nd Injection volume   (I):    0.0 ul
 Air volume of 2nd inj  (J):    0.0 ul
 Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:          270 deg                        300 deg max
  Transfer Line:     290 deg                        300 deg max
  Column:            140 deg at    0.0 minutes      330 deg max
                     140 deg at    3.0 minutes
                     210 deg at    6.5 minutes
                     210 deg at   34.5 minutes
                     280 deg at   44.5 minutes
                     280 deg at   51.0 minutes
                     325 deg at   60.0 minutes
  Inlet    :
  Pressure         18.0 psi
  Splitless mode
  Purge time        1.5 min
  Purge flow       40.0 mL/min

   Gas saver is on
   Saver time       3.0 min
   Saver flow      15.0 mL/min

  Stabilize time    0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8436.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 293.0000 | FVINLET | 809.0000 |
| FVSRC | 928.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.3627 | HVANAL | 978.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4766.7840 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2837.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8200 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 01:48:29.5

Autosampler has injected sample from vial 24
Analysis stopped at: 05-Oct-03 02:47:31.6 (run time 59.03 minutes)
Analysis stopped because MID run finished

QUAN: tfx1wf2.q0 Entries: 274

Data file(s) used
File: tfx1wf2 05-Oct-03
Samp: Vial 24 WO=fx1wf2aa Meth=IN2 Dil=1 Start : 01:48:29 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 24

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 32:34 | 30008. | 3595. | 32:22 | 32:47 | 59. | 1 | 1.0 |
| 321.8775 | 32:34 | 38482. | 4690. | 32:21 | 32:46 | 60. | 1 | 1.0 |
| 331.9202 | 35:19 | 630148. | 74572. | 35:04 | 35:35 | 147. | 2 | 3.0 |
| 331.9202 | 35:47 | 241723. | 29843. | 35:36 | 36:03 | 147. | 2 | 3.0 |
| 333.9171 | 35:19 | 771341. | 91618. | 35:06 | 35:35 | 145. | 2 | 3.0 |
| 333.9171 | 35:48 | 291746. | 35485. | 35:35 | 36:04 | 145. | 2 | 3.0 |
| 303.8864 | 28:31 | 5073. | 453. | 28:24 | 28:44 | 57. | 1 | 1.0 |
| 305.8834 | 35:05 | 8058. | 1163. | 34:55 | 35:16 | 60. | 1 | 1.0 |
| 315.9261 | 33:40 | 337441. | 34914. | 33:25 | 33:56 | 78. | 2 | 3.0 |
| 317.9230 | 33:40 | 425735. | 43683. | 33:25 | 33:56 | 80. | 2 | 3.0 |
| 355.8368 | 40:41 | 153772. | 29779. | 40:32 | 40:53 | 67. | 1 | 1.0 |
| 357.8337 | 40:47 | 133661. | 32080. | 40:45 | 40:54 | 79. | 1 | 1.0 |
| 367.8765 | 43:11 | 335282. | 96845. | 43:04 | 43:19 | 57. | 2 | 3.0 |
| 369.8734 | 43:11 | 214102. | 60841. | 43:03 | 43:20 | 38. | 2 | 3.0 |
| 339.8427 | 40:23 | 26775. | 3930. | 40:16 | 40:33 | 60. | 1 | 1.0 |
| 341.8396 | 40:25 | 15914. | 2652. | 40:17 | 40:32 | 71. | 1 | 1.0 |
| 351.8824 | 41:39 | 448264. | 114118. | 41:29 | 41:51 | 71. | 2 | 3.0 |
| 351.8824 | 42:43 | 472310. | 131518. | 42:27 | 42:59 | 71. | 2 | 3.0 |
| 353.8793 | 41:39 | 283225. | 71360. | 41:30 | 41:50 | 61. | 2 | 3.0 |
| 353.8793 | 42:43 | 301235. | 82630. | 42:30 | 42:51 | 61. | 2 | 3.0 |
| 389.7961 | 46:37 | 1040224. | 265356. | 46:30 | 46:46 | 71. | 1 | 1.0 |
| 391.7931 | 46:37 | 825853. | 207840. | 46:29 | 46:44 | 72. | 1 | 1.0 |
| 401.8358 | 47:21 | 282829. | 74928. | 47:15 | 47:25 | 62. | 2 | 3.0 |
| 401.8358 | 47:29 | 275969. | 76724. | 47:25 | 47:41 | 62. | 2 | 3.0 |
| 401.8358 | 47:54 | 785297. | 204905. | 47:41 | 48:10 | 62. | 2 | 3.0 |
| 403.8327 | 47:21 | 227931. | 60406. | 47:06 | 47:25 | 62. | 2 | 3.0 |
| 403.8327 | 47:29 | 224990. | 63279. | 47:25 | 47:41 | 62. | 2 | 3.0 |
| 403.8327 | 47:54 | 619247. | 158142. | 47:41 | 48:08 | 62. | 2 | 3.0 |
| 373.8021 | 45:48 | 78002. | 23269. | 45:42 | 45:54 | 66. | 1 | 1.0 |
| 375.7990 | 45:47 | 61485. | 17416. | 45:41 | 45:54 | 66. | 1 | 1.0 |
| 383.8447 | 46:15 | 232897. | 65014. | 46:09 | 46:20 | 71. | 2 | 3.0 |
| 383.8447 | 46:24 | 235620. | 66242. | 46:20 | 46:38 | 71. | 2 | 3.0 |
| 383.8447 | 47:11 | 218510. | 57122. | 46:59 | 47:17 | 71. | 2 | 3.0 |
| 383.8447 | 48:12 | 203549. | 51545. | 48:02 | 48:28 | 71. | 2 | 3.0 |
| 385.8417 | 46:15 | 436685. | 123600. | 46:09 | 46:20 | 86. | 2 | 3.0 |
| 385.8417 | 46:24 | 450128. | 130906. | 46:20 | 46:40 | 86. | 2 | 3.0 |
| 385.8417 | 47:11 | 414061. | 112889. | 47:01 | 47:19 | 86. | 2 | 3.0 |
| 385.8417 | 48:12 | 379235. | 91808. | 48:04 | 48:27 | 86. | 2 | 3.0 |
| 423.7555 | 51:20 | 570696. | 120716. | 51:13 | 51:34 | 67. | 1 | 1.0 |
| 425.7524 | 51:20 | 547453. | 119643. | 51:12 | 51:35 | 72. | 1 | 1.0 |
| 435.7951 | 52:30 | 247188. | 54873. | 52:24 | 52:40 | 64. | 2 | 3.0 |
| 437.7921 | 52:30 | 237397. | 55871. | 52:23 | 52:46 | 70. | 2 | 3.0 |
| 407.7614 | 51:31 | 90711. | 19163. | 51:22 | 51:35 | 61. | 1 | 1.0 |
| 409.7583 | 51:30 | 91553. | 19973. | 51:23 | 51:36 | 64. | 1 | 1.0 |
| 417.8041 | 50:47 | 150763. | 32114. | 50:41 | 51:03 | 55. | 2 | 3.0 |
| 417.8041 | 53:08 | 129373. | 28663. | 52:59 | 53:18 | 55. | 2 | 3.0 |
| 419.8010 | 50:47 | 327774. | 73732. | 50:37 | 51:03 | 51. | 2 | 3.0 |
| 419.8010 | 53:08 | 293414. | 66092. | 52:59 | 53:18 | 51. | 2 | 3.0 |
| 457.7148 | 56:48 | 438302. | 116633. | 56:39 | 57:04 | 69. | 1 | 1.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 459.7118 | 56:48 | 496239. | 132771. | 56:40 | 57:04 | 70. | 1 | 1.0 |
| 469.7545 | 56:47 | 357957. | 96069. | 56:39 | 57:03 | 66. | 2 | 3.0 |
| 471.7514 | 56:47 | 396734. | 110125. | 56:37 | 57:03 | 55. | 2 | 3.0 |
| 441.7207 | 56:57 | 23476. | 5662. | 56:41 | 57:07 | 57. | 1 | 1.0 |
| 443.7177 | 56:57 | 23386. | 6286. | 56:46 | 57:08 | 67. | 1 | 1.0 |
| 441.7207 | 56:57 | 23846. | 5662. | 56:41 | 57:13 | 57. | 2 | 3.0 |
| 443.7177 | 56:57 | 24351. | 6286. | 56:41 | 57:13 | 67. | 2 | 3.0 |
| 319.8805 | 29:11 | 8489. | 1124. | 29:03 | 29:26 | 59. | 2 | 3.0 |
| 319.8805 | 30:01 | 8714. | 1055. | 29:45 | 30:16 | 59. | 2 | 3.0 |
| 319.8805 | 30:47 | 7073. | 855. | 30:36 | 31:01 | 59. | 2 | 3.0 |
| 321.8775 | 29:11 | 9635. | 1415. | 29:01 | 29:26 | 58. | 2 | 3.0 |
| 321.8775 | 30:02 | 9041. | 1055. | 29:50 | 30:19 | 58. | 2 | 3.0 |
| 321.8775 | 30:48 | 9305. | 1497. | 30:34 | 31:03 | 58. | 2 | 3.0 |
| 319.8805 | 32:34 | 30007. | 3595. | 32:22 | 32:47 | 65. | 2 | 3.0 |
| 319.8805 | 33:21 | 4980. | 610. | 33:16 | 33:30 | 65. | 2 | 3.0 |
| 319.8805 | 33:21 | 5721. | 616. | 33:11 | 33:30 | 65. | 2 | 3.0 |
| 319.8805 | 33:34 | 6712. | 992. | 33:30 | 33:48 | 65. | 2 | 3.0 |
| 319.8805 | 34:27 | 7189. | 688. | 34:11 | 34:44 | 65. | 2 | 3.0 |
| 321.8775 | 32:34 | 38482. | 4690. | 32:21 | 32:46 | 63. | 2 | 3.0 |
| 321.8775 | 33:02 | 2938. | 240. | 32:46 | 33:10 | 63. | 2 | 3.0 |
| 321.8775 | 33:20 | 8077. | 866. | 33:10 | 33:30 | 63. | 2 | 3.0 |
| 321.8775 | 33:35 | 6404. | 925. | 33:30 | 33:48 | 63. | 2 | 3.0 |
| 321.8775 | 34:24 | 7682. | 899. | 34:10 | 34:36 | 63. | 2 | 3.0 |
| 319.8805 | 35:18 | 4431. | 414. | 35:01 | 35:30 | 58. | 4 | 4.0 |
| 319.8805 | 35:35 | 3485. | 416. | 35:30 | 35:43 | 58. | 4 | 4.0 |
| 319.8805 | 35:51 | 14023. | 2510. | 35:43 | 36:01 | 58. | 4 | 4.0 |
| 321.8775 | 35:21 | 4900. | 628. | 35:05 | 35:27 | 60. | 4 | 4.0 |
| 321.8775 | 35:37 | 4785. | 706. | 35:29 | 35:44 | 60. | 4 | 4.0 |
| 321.8775 | 35:50 | 17025. | 2050. | 35:44 | 36:03 | 60. | 4 | 4.0 |
| 319.8805 | 36:43 | 11660. | 1725. | 36:34 | 36:54 | 54. | 3 | 3.0 |
| 319.8805 | 37:13 | 1861. | 339. | 37:04 | 37:22 | 54. | 3 | 3.0 |
| 319.8805 | 37:13 | 1749. | 352. | 37:10 | 37:22 | 54. | 3 | 3.0 |
| 319.8805 | 38:02 | 2009. | 357. | 38:00 | 38:13 | 54. | 3 | 3.0 |
| 319.8805 | 38:02 | 2473. | 373. | 37:55 | 38:13 | 54. | 3 | 3.0 |
| 321.8775 | 36:42 | 15312. | 2083. | 36:34 | 36:58 | 63. | 3 | 3.0 |
| 321.8775 | 37:15 | 2093. | 388. | 37:09 | 37:20 | 63. | 3 | 3.0 |
| 321.8775 | 38:04 | 3516. | 588. | 37:54 | 38:12 | 63. | 3 | 3.0 |
| 303.8864 | 27:24 | 4252. | 286. | 26:59 | 27:36 | 50. | 4 | 4.0 |
| 303.8864 | 27:54 | 3613. | 329. | 27:36 | 28:06 | 50. | 4 | 4.0 |
| 305.8834 | 27:26 | 4678. | 348. | 27:10 | 27:43 | 54. | 4 | 4.0 |
| 305.8834 | 27:56 | 3046. | 464. | 27:43 | 28:04 | 54. | 4 | 4.0 |
| 303.8864 | 28:31 | 4890. | 435. | 28:21 | 28:44 | 58. | 2 | 3.0 |
| 303.8864 | 28:48 | 2179. | 308. | 28:44 | 29:00 | 58. | 2 | 3.0 |
| 303.8864 | 29:11 | 1432. | 211. | 29:07 | 29:19 | 58. | 2 | 3.0 |
| 303.8864 | 29:23 | 2184. | 351. | 29:19 | 29:33 | 58. | 2 | 3.0 |
| 303.8864 | 29:23 | 2309. | 361. | 29:19 | 29:33 | 58. | 2 | 3.0 |
| 305.8834 | 28:30 | 5076. | 643. | 28:22 | 28:40 | 64. | 2 | 3.0 |
| 305.8834 | 28:51 | 2355. | 351. | 28:40 | 28:56 | 64. | 2 | 3.0 |
| 305.8834 | 29:07 | 2123. | 383. | 28:56 | 29:09 | 64. | 2 | 3.0 |
| 305.8834 | 29:14 | 2048. | 235. | 29:09 | 29:21 | 64. | 2 | 3.0 |
| 305.8834 | 29:23 | 1361. | 271. | 29:21 | 29:34 | 64. | 2 | 3.0 |
| 303.8864 | 30:12 | 5935. | 783. | 29:55 | 30:22 | 64. | 6 | 6.0 |
| 303.8864 | 30:57 | 6675. | 538. | 30:37 | 31:11 | 64. | 6 | 6.0 |
| 303.8864 | 31:36 | 7558. | 556. | 31:24 | 31:58 | 64. | 6 | 6.0 |
| 305.8834 | 30:10 | 7714. | 700. | 29:51 | 30:22 | 64. | 6 | 6.0 |
| 305.8834 | 30:59 | 6778. | 516. | 30:37 | 31:11 | 64. | 6 | 6.0 |
| 305.8834 | 31:49 | 7887. | 509. | 31:23 | 32:00 | 64. | 6 | 6.0 |
| 303.8864 | 32:28 | 5113. | 573. | 32:11 | 32:44 | 56. | 3 | 3.0 |
| 303.8864 | 33:02 | 4023. | 401. | 32:52 | 33:18 | 56. | 3 | 3.0 |
| 303.8864 | 33:02 | 3778. | 401. | 32:56 | 33:18 | 56. | 3 | 3.0 |
| 303.8864 | 33:46 | 9088. | 643. | 33:30 | 34:02 | 56. | 3 | 3.0 |
| 305.8834 | 32:29 | 6838. | 621. | 32:12 | 32:41 | 63. | 3 | 3.0 |
| 305.8834 | 33:07 | 3770. | 494. | 32:59 | 33:19 | 63. | 3 | 3.0 |
| 305.8834 | 33:47 | 11105. | 1024. | 33:35 | 34:02 | 63. | 3 | 3.0 |
| 303.8864 | 35:05 | 6270. | 736. | 34:48 | 35:21 | 60. | 2 | 3.0 |
| 303.8864 | 35:38 | 3107. | 648. | 35:33 | 35:50 | 60. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 305.8834 | 35:05 | 8619. | 1129. | 34:48 | 35:21 | 53. | 2 | 3.0 |
| 305.8834 | 35:36 | 4573. | 711. | 35:27 | 35:52 | 53. | 2 | 3.0 |
| 303.8864 | 37:20 | 3234. | 884. | 37:07 | 37:24 | 46. | 3 | 3.0 |
| 303.8864 | 37:50 | 3288. | 396. | 37:43 | 38:07 | 46. | 3 | 3.0 |
| 305.8834 | 37:19 | 3383. | 574. | 37:14 | 37:30 | 65. | 3 | 3.0 |
| 305.8834 | 37:52 | 4121. | 600. | 37:40 | 38:00 | 65. | 3 | 3.0 |
| 355.8368 | 40:41 | 153886. | 29778. | 40:32 | 40:55 | 64. | 2 | 3.0 |
| 355.8368 | 41:23 | 30785. | 7217. | 41:15 | 41:34 | 64. | 2 | 3.0 |
| 357.8337 | 40:41 | 103595. | 18855. | 40:33 | 40:45 | 76. | 2 | 3.0 |
| 357.8337 | 40:47 | 133813. | 32080. | 40:45 | 40:56 | 76. | 2 | 3.0 |
| 357.8337 | 41:11 | 36211. | 8938. | 41:03 | 41:17 | 76. | 2 | 3.0 |
| 357.8337 | 41:23 | 20171. | 5019. | 41:17 | 41:29 | 76. | 2 | 3.0 |
| 355.8368 | 41:46 | 63083. | 16262. | 41:35 | 41:52 | 68. | 2 | 3.0 |
| 355.8368 | 41:58 | 147265. | 38210. | 41:52 | 42:05 | 68. | 2 | 3.0 |
| 355.8368 | 42:10 | 45102. | 11473. | 42:05 | 42:17 | 68. | 2 | 3.0 |
| 357.8337 | 41:46 | 41618. | 10945. | 41:39 | 41:52 | 82. | 2 | 3.0 |
| 357.8337 | 41:58 | 94056. | 25085. | 41:52 | 42:04 | 82. | 2 | 3.0 |
| 357.8337 | 42:11 | 29755. | 7508. | 42:04 | 42:16 | 82. | 2 | 3.0 |
| 355.8368 | 42:26 | 22196. | 5523. | 42:20 | 42:29 | 89. | 2 | 3.0 |
| 355.8368 | 42:33 | 60087. | 12829. | 42:29 | 42:42 | 89. | 2 | 3.0 |
| 355.8368 | 42:47 | 2678. | 632. | 42:42 | 42:51 | 89. | 2 | 3.0 |
| 355.8368 | 42:58 | 2137. | 618. | 42:54 | 43:02 | 89. | 2 | 3.0 |
| 357.8337 | 42:26 | 13237. | 3456. | 42:21 | 42:29 | 60. | 2 | 3.0 |
| 357.8337 | 42:32 | 36418. | 7854. | 42:29 | 42:43 | 60. | 2 | 3.0 |
| 357.8337 | 42:47 | 2010. | 368. | 42:44 | 42:55 | 60. | 2 | 3.0 |
| 357.8337 | 42:58 | 1475. | 457. | 42:55 | 43:02 | 60. | 2 | 3.0 |
| 355.8368 | 43:12 | 97013. | 28110. | 43:03 | 43:18 | 47. | 2 | 3.0 |
| 355.8368 | 43:23 | 24964. | 6980. | 43:18 | 43:35 | 47. | 2 | 3.0 |
| 355.8368 | 43:38 | 433. | 230. | 43:37 | 43:40 | 47. | 2 | 3.0 |
| 355.8368 | 43:48 | 21939. | 6350. | 43:40 | 43:53 | 47. | 2 | 3.0 |
| 355.8368 | 44:00 | 817. | 164. | 43:53 | 44:01 | 47. | 2 | 3.0 |
| 357.8337 | 43:12 | 62841. | 19172. | 43:04 | 43:17 | 84. | 2 | 3.0 |
| 357.8337 | 43:23 | 15202. | 4225. | 43:18 | 43:30 | 84. | 2 | 3.0 |
| 357.8337 | 43:47 | 14863. | 4585. | 43:41 | 43:55 | 84. | 2 | 3.0 |
| 339.8427 | 38:32 | 15807. | 2911. | 38:25 | 38:39 | 56. | 2 | 3.0 |
| 341.8396 | 38:32 | 11579. | 2209. | 38:24 | 38:43 | 69. | 2 | 3.0 |
| 339.8427 | 40:11 | 1764. | 496. | 40:07 | 40:16 | 62. | 2 | 3.0 |
| 339.8427 | 40:23 | 26635. | 3912. | 40:16 | 40:37 | 62. | 2 | 3.0 |
| 339.8427 | 40:42 | 3245. | 889. | 40:37 | 40:47 | 62. | 2 | 3.0 |
| 341.8396 | 40:10 | 1313. | 410. | 40:07 | 40:16 | 76. | 2 | 3.0 |
| 341.8396 | 40:25 | 15807. | 2644. | 40:17 | 40:32 | 76. | 2 | 3.0 |
| 341.8396 | 40:44 | 3477. | 589. | 40:33 | 40:46 | 76. | 2 | 3.0 |
| 339.8427 | 41:05 | 5730. | 950. | 40:51 | 41:10 | 63. | 2 | 3.0 |
| 339.8427 | 41:15 | 12772. | 2526. | 41:10 | 41:23 | 63. | 2 | 3.0 |
| 339.8427 | 41:15 | 12772. | 2526. | 41:10 | 41:23 | 63. | 2 | 3.0 |
| 341.8396 | 41:06 | 3880. | 649. | 40:53 | 41:10 | 69. | 2 | 3.0 |
| 341.8396 | 41:15 | 6951. | 1391. | 41:10 | 41:22 | 69. | 2 | 3.0 |
| 341.8396 | 41:15 | 6951. | 1391. | 41:10 | 41:22 | 69. | 2 | 3.0 |
| 339.8427 | 41:35 | 1548. | 488. | 41:31 | 41:36 | 75. | 2 | 3.0 |
| 339.8427 | 41:40 | 5456. | 1194. | 41:36 | 41:46 | 75. | 2 | 3.0 |
| 339.8427 | 41:54 | 4431. | 1004. | 41:49 | 42:02 | 75. | 2 | 3.0 |
| 339.8427 | 42:07 | 13115. | 3076. | 42:02 | 42:13 | 75. | 2 | 3.0 |
| 341.8396 | 41:35 | 1980. | 677. | 41:30 | 41:37 | 76. | 2 | 3.0 |
| 341.8396 | 41:40 | 3731. | 1019. | 41:37 | 41:46 | 76. | 2 | 3.0 |
| 341.8396 | 41:55 | 2277. | 577. | 41:50 | 41:59 | 76. | 2 | 3.0 |
| 341.8396 | 42:08 | 8176. | 1539. | 41:59 | 42:13 | 76. | 2 | 3.0 |
| 339.8427 | 42:29 | 782. | 280. | 42:26 | 42:30 | 62. | 2 | 3.0 |
| 339.8427 | 42:44 | 10594. | 2464. | 42:30 | 42:49 | 62. | 2 | 3.0 |
| 339.8427 | 42:55 | 10867. | 2723. | 42:50 | 43:03 | 62. | 2 | 3.0 |
| 339.8427 | 43:09 | 1450. | 446. | 43:03 | 43:13 | 62. | 2 | 3.0 |
| 339.8427 | 43:15 | 1424. | 438. | 43:13 | 43:20 | 62. | 2 | 3.0 |
| 341.8396 | 42:29 | 937. | 307. | 42:23 | 42:31 | 66. | 2 | 3.0 |
| 341.8396 | 42:43 | 7415. | 1835. | 42:37 | 42:48 | 66. | 2 | 3.0 |
| 341.8396 | 42:54 | 8518. | 1860. | 42:48 | 43:00 | 66. | 2 | 3.0 |
| 341.8396 | 43:12 | 1860. | 364. | 43:07 | 43:17 | 66. | 2 | 3.0 |
| 339.8427 | 43:56 | 12397. | 3302. | 43:49 | 44:00 | 40. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 341.8396 | 43:56 | 8383. | 2340. | 43:48 | 44:03 | 60. | 2 | 3.0 |
| 389.7961 | 45:41 | 391226. | 117575. | 45:33 | 45:48 | 76. | 2 | 3.0 |
| 389.7961 | 46:17 | 93570. | 24636. | 46:07 | 46:27 | 76. | 2 | 3.0 |
| 389.7961 | 46:37 | 1040139. | 265352. | 46:30 | 46:46 | 76. | 2 | 3.0 |
| 389.7961 | 46:47 | 8429. | 2063. | 46:46 | 46:58 | 76. | 2 | 3.0 |
| 391.7931 | 45:41 | 314847. | 95008. | 45:36 | 45:53 | 82. | 2 | 3.0 |
| 391.7931 | 46:17 | 71118. | 19568. | 46:11 | 46:27 | 82. | 2 | 3.0 |
| 391.7931 | 46:37 | 825699. | 207829. | 46:29 | 46:44 | 82. | 2 | 3.0 |
| 391.7931 | 46:48 | 10857. | 2048. | 46:44 | 46:58 | 82. | 2 | 3.0 |
| 389.7961 | 47:22 | 30069. | 7692. | 47:18 | 47:25 | 75. | 2 | 3.0 |
| 389.7961 | 47:30 | 244184. | 67867. | 47:25 | 47:39 | 75. | 2 | 3.0 |
| 389.7961 | 47:55 | 147207. | 33374. | 47:46 | 48:03 | 75. | 2 | 3.0 |
| 391.7931 | 47:22 | 25568. | 5958. | 47:16 | 47:25 | 50. | 2 | 3.0 |
| 391.7931 | 47:30 | 195903. | 52751. | 47:25 | 47:38 | 50. | 2 | 3.0 |
| 391.7931 | 47:43 | 1240. | 204. | 47:38 | 47:47 | 50. | 2 | 3.0 |
| 391.7931 | 47:55 | 110920. | 26763. | 47:47 | 48:02 | 50. | 2 | 3.0 |
| 373.8021 | 45:00 | 12892. | 3767. | 44:53 | 45:06 | 68. | 2 | 3.0 |
| 373.8021 | 45:11 | 65107. | 18849. | 45:06 | 45:17 | 68. | 2 | 3.0 |
| 373.8021 | 45:23 | 2170. | 605. | 45:18 | 45:25 | 68. | 2 | 3.0 |
| 373.8021 | 45:34 | 4345. | 1392. | 45:30 | 45:37 | 68. | 2 | 3.0 |
| 373.8021 | 45:39 | 1765. | 618. | 45:37 | 45:42 | 68. | 2 | 3.0 |
| 373.8021 | 45:48 | 77527. | 23228. | 45:42 | 45:54 | 68. | 2 | 3.0 |
| 373.8021 | 45:58 | 8846. | 2500. | 45:54 | 46:03 | 68. | 2 | 3.0 |
| 375.7990 | 45:00 | 10197. | 2859. | 44:56 | 45:04 | 67. | 2 | 3.0 |
| 375.7990 | 45:11 | 49437. | 15308. | 45:04 | 45:17 | 67. | 2 | 3.0 |
| 375.7990 | 45:22 | 1656. | 551. | 45:18 | 45:28 | 67. | 2 | 3.0 |
| 375.7990 | 45:34 | 4525. | 1613. | 45:28 | 45:36 | 67. | 2 | 3.0 |
| 375.7990 | 45:38 | 3184. | 966. | 45:36 | 45:41 | 67. | 2 | 3.0 |
| 375.7990 | 45:47 | 61452. | 17413. | 45:41 | 45:54 | 67. | 2 | 3.0 |
| 375.7990 | 45:58 | 6247. | 2023. | 45:54 | 46:03 | 67. | 2 | 3.0 |
| 373.8021 | 46:16 | 27209. | 5169. | 46:07 | 46:20 | 71. | 2 | 3.0 |
| 373.8021 | 46:25 | 17425. | 3689. | 46:20 | 46:31 | 71. | 2 | 3.0 |
| 373.8021 | 46:36 | 2229. | 370. | 46:31 | 46:42 | 71. | 2 | 3.0 |
| 375.7990 | 46:15 | 19026. | 3139. | 46:08 | 46:20 | 65. | 2 | 3.0 |
| 375.7990 | 46:25 | 13149. | 3755. | 46:20 | 46:30 | 65. | 2 | 3.0 |
| 375.7990 | 46:33 | 1990. | 343. | 46:30 | 46:42 | 65. | 2 | 3.0 |
| 373.8021 | 46:48 | 4157. | 895. | 46:44 | 46:54 | 77. | 2 | 3.0 |
| 373.8021 | 46:58 | 8188. | 2374. | 46:54 | 47:01 | 77. | 2 | 3.0 |
| 373.8021 | 47:05 | 6090. | 1366. | 47:01 | 47:08 | 77. | 2 | 3.0 |
| 373.8021 | 47:12 | 10765. | 3142. | 47:08 | 47:25 | 77. | 2 | 3.0 |
| 375.7990 | 46:50 | 3471. | 535. | 46:44 | 46:55 | 74. | 2 | 3.0 |
| 375.7990 | 46:58 | 5793. | 1843. | 46:55 | 47:01 | 74. | 2 | 3.0 |
| 375.7990 | 47:05 | 4111. | 1408. | 47:01 | 47:08 | 74. | 2 | 3.0 |
| 375.7990 | 47:12 | 7033. | 2057. | 47:08 | 47:15 | 74. | 2 | 3.0 |
| 373.8021 | 48:13 | 1170. | 242. | 48:06 | 48:16 | 60. | 2 | 3.0 |
| 373.8021 | 48:21 | 2514. | 566. | 48:16 | 48:26 | 60. | 2 | 3.0 |
| 373.8021 | 48:33 | 3273. | 939. | 48:28 | 48:39 | 60. | 2 | 3.0 |
| 375.7990 | 48:13 | 1023. | 399. | 48:08 | 48:14 | 62. | 2 | 3.0 |
| 375.7990 | 48:21 | 2581. | 575. | 48:14 | 48:28 | 62. | 2 | 3.0 |
| 375.7990 | 48:34 | 2487. | 558. | 48:28 | 48:38 | 62. | 2 | 3.0 |
| 373.8021 | 45:39 | 1765. | 618. | 45:37 | 45:42 | 68. | 2 | 3.0 |
| 375.7990 | 45:38 | 3184. | 966. | 45:36 | 45:41 | 67. | 2 | 3.0 |
| 423.7555 | 51:20 | 569151. | 120716. | 51:13 | 51:30 | 67. | 2 | 3.0 |
| 423.7555 | 51:31 | 1545. | 651. | 51:30 | 51:34 | 67. | 2 | 3.0 |
| 423.7555 | 51:36 | 2605. | 356. | 51:34 | 51:52 | 67. | 2 | 3.0 |
| 423.7555 | 52:31 | 477318. | 108219. | 52:20 | 52:45 | 67. | 2 | 3.0 |
| 423.7555 | 52:47 | 1191. | 475. | 52:45 | 52:50 | 67. | 2 | 3.0 |
| 423.7555 | 52:54 | 1463. | 262. | 52:50 | 52:59 | 67. | 2 | 3.0 |
| 425.7524 | 51:20 | 547599. | 119643. | 51:12 | 51:36 | 72. | 2 | 3.0 |
| 425.7524 | 52:31 | 448253. | 103395. | 52:25 | 52:41 | 72. | 2 | 3.0 |
| 425.7524 | 52:43 | 3260. | 528. | 52:41 | 52:57 | 72. | 2 | 3.0 |
| 435.7951 | 51:19 | 2772. | 619. | 51:12 | 51:25 | 64. | 2 | 3.0 |
| 435.7951 | 52:30 | 247188. | 54873. | 52:24 | 52:40 | 64. | 2 | 3.0 |
| 435.7951 | 52:41 | 1495. | 634. | 52:40 | 52:44 | 64. | 2 | 3.0 |
| 435.7951 | 52:45 | 1448. | 269. | 52:44 | 52:54 | 64. | 2 | 3.0 |
| 437.7921 | 51:20 | 1342. | 270. | 51:16 | 51:24 | 70. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 437.7921 | 52:30 | 237397. | 55871. | 52:23 | 52:46 | 70. | 2 | 3.0 |
| 407.7614 | 50:48 | 77947. | 16769. | 50:40 | 51:04 | 61. | 2 | 3.0 |
| 407.7614 | 51:16 | 5148. | 818. | 51:07 | 51:22 | 61. | 2 | 3.0 |
| 407.7614 | 51:31 | 90711. | 19163. | 51:22 | 51:35 | 61. | 2 | 3.0 |
| 407.7614 | 51:37 | 13352. | 2946. | 51:35 | 51:53 | 61. | 2 | 3.0 |
| 407.7614 | 53:10 | 3773. | 1244. | 53:01 | 53:15 | 61. | 2 | 3.0 |
| 409.7583 | 50:48 | 71991. | 16747. | 50:42 | 51:00 | 64. | 2 | 3.0 |
| 409.7583 | 51:14 | 4198. | 939. | 51:05 | 51:21 | 64. | 2 | 3.0 |
| 409.7583 | 51:30 | 91553. | 19973. | 51:23 | 51:36 | 64. | 2 | 3.0 |
| 409.7583 | 51:38 | 10142. | 2802. | 51:36 | 51:44 | 64. | 2 | 3.0 |
| 409.7583 | 53:08 | 4627. | 1037. | 52:59 | 53:14 | 64. | 2 | 3.0 |
| 417.8041 | 50:47 | 150763. | 32114. | 50:41 | 51:03 | 55. | 2 | 3.0 |
| 417.8041 | 51:48 | 2396. | 312. | 51:32 | 52:02 | 55. | 2 | 3.0 |
| 417.8041 | 53:08 | 129373. | 28663. | 52:59 | 53:18 | 55. | 2 | 3.0 |
| 417.8041 | 53:19 | 1246. | 341. | 53:18 | 53:28 | 55. | 2 | 3.0 |
| 419.8010 | 50:47 | 327774. | 73732. | 50:37 | 51:03 | 51. | 2 | 3.0 |
| 419.8010 | 51:08 | 1985. | 251. | 51:03 | 51:23 | 51. | 2 | 3.0 |
| 419.8010 | 53:08 | 293414. | 66092. | 52:59 | 53:18 | 51. | 2 | 3.0 |
| 419.8010 | 53:19 | 1984. | 445. | 53:18 | 53:35 | 51. | 2 | 3.0 |
| 457.7148 | 56:48 | 438302. | 116633. | 56:39 | 57:04 | 69. | 2 | 3.0 |
| 459.7118 | 56:48 | 496239. | 132771. | 56:40 | 57:04 | 70. | 2 | 3.0 |
| 469.7545 | 56:47 | 357957. | 96069. | 56:39 | 57:03 | 66. | 2 | 3.0 |
| 469.7545 | 57:07 | 2058. | 224. | 57:04 | 57:23 | 66. | 2 | 3.0 |
| 471.7514 | 56:47 | 396734. | 110125. | 56:37 | 57:03 | 55. | 2 | 3.0 |
| 471.7514 | 57:08 | 1123. | 207. | 57:07 | 57:18 | 55. | 2 | 3.0 |
| 441.7207 | 56:57 | 23846. | 5662. | 56:41 | 57:13 | 57. | 2 | 3.0 |
| 443.7177 | 56:57 | 24351. | 6286. | 56:41 | 57:13 | 67. | 2 | 3.0 |

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 8.8 Q | 0.37 | pg/g | SW846 8290 |
| Total TCDD | 73 Q | 0.37 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 57 | 0.21 | pg/g | SW846 8290 |
| Total PeCDD | 430 Q | 0.21 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 22 | 0.25 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 170 | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 75 | 0.25 | pg/g | SW846 8290 |
| Total HxCDD | 1300 | 0.26 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 400 | 0.57 | pg/g | SW846 8290 |
| Total HpCDD | 1000 | 0.57 | pg/g | SW846 8290 |
| OCDD | 470 B | 0.90 | pg/g | SW846 8290 |
| Total TCDF | 29 Q | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 2.2 Q,J | 0.16 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 4.3 Q,J | 0.13 | pg/g | SW846 8290 |
| Total PeCDF | 65 Q | 0.14 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 12 Q | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 10 Q | 0.17 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 4.5 J | 0.22 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 0.53 Q,J | 0.32 | pg/g | SW846 8290 |
| Total HxCDF | 160 Q | 0.20 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 45 B | 0.34 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 2.4 Q,B,J | 0.47 | pg/g | SW846 8290 |
| Total HpCDF | 120 Q,B | 0.39 | pg/g | SW846 8290 |
| OCDF | 27 | 0.84 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 77 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 76 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 128 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 109 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 74 | (40 - 135) |
| 13C-OCDD | 37 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 81 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 69 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 73 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 127 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 116 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 85 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 80 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

J Estimated result. Result is less than the reporting limit.

* Surrogate recovery is outside stated control limits.

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WH2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-002 |
| **Data File** | /20031004s1/tfx1wh2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71233 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/5/2003 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Analysis Time** | 02:52 | **Initial Wt/Vol** | 10.0 | **Lims Test Code** | XXA11IN01 |
| **Anal Exp Date** | 11/14/03 | **Extract Vol** | 20 | **Method** | DX8290_2 |
| **Instrument** | M2A | **Dil Factor** | 1.0 | **Code** | IN2 |
| **Analyst** | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:57 | 67412 | 8128 | 1.095 | | 87.870663 | | 8.787066 | Q | 0.370 |
| Total TCDD | | 490343 | 60830 | 1.095 | | 727.026133 | | 72.702613 | Q | 0.370 |
| 2,3,7,8-TCDF | 33:49 | 44441 | 3128 | 1.017 | | 41.924777 | | 4.192478 | Q | 0.307 |
| Total TCDF | | 265834 | 30580 | 1.017 | | 292.707019 | | 29.270702 | Q | 0.307 |
| 1,2,3,7,8-PeCDD | 43:17 | 346056 | 94921 | 0.984 | | 571.386671 | | 57.138667 | | 0.210 |
| Total PeCDD | | 2277040 | 550638 | 0.984 | | 4331.09664 | | 433.109664 | Q | 0.210 |
| 1,2,3,7,8-PeCDF | 41:46 | 18075 | 4582 | 0.970 | | 22.435731 | | 2.243573 | QJ | 0.157 |
| 2,3,4,7,8-PeCDF | 42:49 | 37839 | 9091 | 1.035 | | 43.071930 | | 4.307193 | QJ | 0.131 |
| Total PeCDF | | 496017 | 103054 | 1.003 | | 654.752611 | | 65.475261 | Q | 0.143 |
| 1,2,3,4,7,8-HxCDD | 47:27 | 117311 | 33623 | 1.111 | | 215.861377 | | 21.586138 | | 0.266 |
| 1,2,3,6,7,8-HxCDD | 47:35 | 857430 | 234240 | 1.026 | | 1748.63704 | | 174.863704 | | 0.275 |
| 1,2,3,7,8,9-HxCDD | 48:00 | 404018 | 90496 | 1.109 | | 753.198201 | | 75.319820 | | 0.250 |
| Total HxCDD | | 5625913 | 1518183 | 1.082 | | 13469.7072 | | 1346.97072 | | 0.257 |
| 1,2,3,4,7,8-HxCDF | 46:22 | 97986 | 16983 | 1.226 | | 120.223220 | | 12.022322 | Q | 0.165 |
| 1,2,3,6,7,8-HxCDF | 46:27 | 80525 | 14801 | 1.197 | | 101.588963 | | 10.158896 | Q | 0.173 |
| 2,3,4,6,7,8-HxCDF | 47:17 | 27225 | 7950 | 1.155 | | 45.127316 | | 4.512732 | J | 0.218 |
| 1,2,3,7,8,9-HxCDF | 48:18 | 2585 | 685 | 1.236 | | 5.283134 | | 0.528313 | QJ | 0.317 |
| Total HxCDF | | 915899 | 267541 | 1.204 | | 1628.11882 | | 162.811882 | Q | 0.204 |
| 1,2,3,4,6,7,8-HpCDD | 52:38 | 1157370 | 262316 | 0.986 | | 4021.48710 | | 402.148710 | | 0.569 |
| Total HpCDD | | 1709875 | 370974 | 0.986 | | 9962.75070 | | 996.275070 | | 0.569 |
| 1,2,3,4,6,7,8-HpCDF | 50:54 | 236767 | 52258 | 1.512 | | 445.012948 | | 44.501295 | B | 0.336 |
| 1,2,3,4,7,8,9-HpCDF | 53:15 | 9190 | 1705 | 1.426 | | 24.428943 | | 2.442894 | QBJ | 0.472 |
| Total HpCDF | | 310335 | 65694 | 1.469 | | 1155.68841 | | 115.568841 | QB | 0.394 |
| OCDD | 56:54 | 656175 | 170977 | 1.075 | | 4739.46706 | | 473.946706 | B | 0.904 |
| OCDF | 57:02 | 38891 | 9158 | 1.135 | | 265.863151 | | 26.586315 | | 0.842 |
| 13C-2,3,7,8-TCDD | 35:52 | 700585 | 84580 | 1.083 | 1000 | 769.928189 | 76.99 | 76.992819 | | 0.574 |
| 13C-2,3,7,8-TCDF | 33:45 | 1041859 | 101502 | 1.527 | 1000 | 811.927082 | 81.19 | 81.192708 | | 0.317 |
| 13C-1,2,3,7,8-PeCDD | 43:16 | 615270 | 176191 | 0.958 | 1000 | 763.833757 | 76.38 | 76.383376 | | 0.350 |
| 13C-1,2,3,7,8-PeCDF | 41:44 | 830710 | 203925 | 1.427 | 1000 | 692.692902 | 69.27 | 69.269290 | | 0.273 |
| 13C-2,3,4,7,8-PeCDF | 42:48 | 848637 | 228719 | 1.384 | 1000 | 729.618481 | 72.96 | 72.961848 | | 0.281 |
| 13C-1,2,3,4,7,8-HxCDD | 47:26 | 489138 | 134327 | 0.941 | 1000 | 1276.72855 | 127.67 | 127.672855 | | 0.374 |
| 13C-1,2,3,6,7,8-HxCDD | 47:34 | 478092 | 130211 | 1.078 | 1000 | 1089.35789 | 108.94 | 108.935789 | | 0.326 |
| 13C-1,2,3,4,7,8-HxCDF | 46:21 | 664646 | 186057 | 1.283 | 1000 | 1271.86867 | 127.19 | 127.186867 | | 0.230 |
| 13C-1,2,3,6,7,8-HxCDF | 46:29 | 662051 | 182136 | 1.406 | 1000 | 1156.51426 | 116.65 | 115.651426 | | 0.210 |
| 13C-2,3,4,6,7,8-HxCDF | 47:16 | 522208 | 150125 | 1.301 | 1000 | 985.899294 | 98.59 | 98.589929 | | 0.227 |
| 13C-1,2,3,7,8,9-HxCDF | 48:17 | 395973 | 96284 | 1.105 | 1000 | 879.662336 | 87.97 | 87.966234 | | 0.267 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 291846 | 66385 | 0.970 | 1000 | 738.908613 | 73.89 | 73.890861 | | 0.266 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 351789 | 74332 | 1.017 | 1000 | 849.422338 | 84.94 | 84.942234 | | 0.258 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 263834 | 56133 | 0.812 | 1000 | 797.866257 | 79.79 | 79.786626 | | 0.323 |
| 13C-OCDD | 56:53 | 257672 | 64318 | 0.856 | 2000 | 739.664352 | 36.98 | 73.986435 | | 0.915 |
| 13C-1,2,3,4-TCDD | 35:22 | 1681002 | 184976 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.622 |
| 13C-1,2,3,7,8,9-HxCDD | 47:59 | 814396 | 213261 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.352 |

MK 10/6/03 KCW 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WH2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-002 |
| **Data File** | /20031004s1/tfx1wh2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71223 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 02:52 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 165 | 61 | 66 | 0.92 * | / | |
| | Unidentified | 26:26 | 00:00 | 0 | 3942 | 4128 | 431 | 472 | 0.95 * | MVV/MVV | RTM |
| | Unidentified | 27:23 | 00:00 | 0 | 2694 | 2747 | 425 | 428 | 0.98 * | MVV/MVV | RT |
| | Unidentified | 28:00 | 00:00 | 0 | 4681 | 5264 | 501 | 804 | 0.89 | ABB/ABB | |
| | Unidentified | 28:34 | 00:00 | 0 | 13084 | 13779 | 1220 | 1058 | 0.95 * | MBV/MVV | RT |
| | Unidentified | 29:26 | 00:00 | 0 | 9443 | 9586 | 646 | 685 | 0.99 * | MVB/MVV | R |
| | Unidentified | 30:15 | 00:00 | 0 | 14121 | 17678 | 1174 | 1568 | 0.80 | ABB/ABB | |
| | Unidentified | 31:04 | 00:00 | 0 | 8689 | 10605 | 861 | 863 | 0.82 | ABB/ABB | T |
| | Unidentified | 31:38 | 00:00 | 0 | 6183 | 9488 | 722 | 1087 | 0.65 | ABV/ABV | |
| | Unidentified | 31:56 | 00:00 | 0 | 4449 | 7085 | 422 | 1003 | 0.63 * | AVB/AVB | R |
| | Unidentified | 32:28 | 00:00 | 0 | 6142 | 9887 | 686 | 1414 | 0.62 * | ABB/ABB | R |
| | Unidentified | 33:06 | 00:00 | 0 | 10075 | 10111 | 760 | 904 | 1.00 * | ABV/ABV | RT |
| | 2,3,7,8-TCDF | 33:49 | 33:47 | 2 | 20120 | 24321 | 1447 | 1681 | 0.83 | AVB/AVB | DT |
| | Unidentified | 35:07 | 00:00 | 0 | 7908 | 9685 | 1178 | 1114 | 0.82 | MBB/ABV | |
| | Unidentified | 35:42 | 00:00 | 0 | 7606 | 6801 | 750 | 767 | 1.12 * | ABB/MVV | RT |
| | Unidentified | 37:23 | 00:00 | 0 | 16443 | 23077 | 2704 | 3554 | 0.71 | ABB/AVB | |
| | Unidentified | 37:55 | 00:00 | 0 | 10742 | 13465 | 1965 | 2302 | 0.80 | ABB/ABB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 280 | 67 | 112 | 0.60 * | / | |
| | 13C-2,3,7,8-TCDF | 33:45 | 33:45 | 0 | 457427 | 584432 | 45090 | 56412 | 0.78 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 173 | 68 | 69 | 0.99 * | / | |
| | Unidentified | 29:13 | 00:00 | 0 | 18433 | 23672 | 2240 | 2940 | 0.78 | ABB/ABB | |
| | Unidentified | 30:05 | 00:00 | 0 | 17893 | 21463 | 2168 | 2709 | 0.83 | AVV/AVV | |
| | Unidentified | 30:17 | 00:00 | 0 | 2083 | 2314 | 214 | 306 | 0.90 * | AVB/AVV | RT |
| | Unidentified | 30:47 | 00:00 | 0 | 18129 | 18653 | 1915 | 2189 | 0.97 * | ABV/ABB | R |
| | Unidentified | 32:36 | 00:00 | 0 | 70514 | 88166 | 8275 | 9137 | 0.80 | ABB/ABV | |
| | Unidentified | 33:09 | 00:00 | 0 | 3116 | 3897 | 369 | 473 | 0.80 | MVV/ABV | T |
| | Unidentified | 33:24 | 00:00 | 0 | 13205 | 20802 | 1531 | 2541 | 0.63 * | AVV/AVV | R |
| | Unidentified | 33:40 | 00:00 | 0 | 17250 | 17767 | 2160 | 2364 | 0.97 * | AVB/AVB | R |
| | Unidentified | 34:28 | 00:00 | 0 | 14156 | 15556 | 1661 | 2060 | 0.91 * | ABB/ABB | R |
| | Unidentified | 35:23 | 00:00 | 0 | 8272 | 12833 | 1171 | 1341 | 0.64 * | ABV/ABV | R |
| | Unidentified | 35:40 | 00:00 | 0 | 7044 | 10319 | 1151 | 1139 | 0.68 | MVV/AVV | T |
| | 2,3,7,8-TCDD | 35:57 | 35:54 | 3 | 29536 | 37876 | 3248 | 4880 | 0.78 | AVB/AVB | TM |
| | Unidentified | 36:20 | 00:00 | 0 | 2273 | 1643 | 268 | 265 | 1.38 * | ABB/ABB | R |
| | Unidentified | 36:47 | 00:00 | 0 | 26994 | 33165 | 3602 | 4959 | 0.81 | ABB/ABB | |
| | Unidentified | 37:19 | 00:00 | 0 | 5028 | 4760 | 588 | 736 | 1.06 * | AVV/ABB | R |
| | Unidentified | 38:10 | 00:00 | 0 | 3969 | 4902 | 523 | 916 | 0.81 | ABB/ABB | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 343 | 233 | 137 | 93 | 1.47 * | / | |
| | 13C-1,2,3,4-TCDD | 35:22 | 35:23 | -1 | 759781 | 921221 | 84375 | 100601 | 0.82 | ABV/AVV | |
| | 13C-2,3,7,8-TCDD | 35:52 | 35:52 | 0 | 313114 | 387471 | 36626 | 47954 | 0.81 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WH2AA | **Prep Batch** | 3273193 | **Lot No** | R3YI00253-002 |
| **Data File** | /20031004s1/tfx1wh2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71223 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 02:52 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 155 | 62 | 62 | 1.00 * | / | |
| | Unidentified | 38:38 | 00:00 | 0 | 38343 | 25033 | 6831 | 4732 | 1.53 | ABB/ABB | |
| | Unidentified | 40:16 | 00:00 | 0 | 4619 | 3308 | 1098 | 612 | 1.40 | ABB/ABB | |
| | Unidentified | 40:30 | 00:00 | 0 | 61078 | 38384 | 10802 | 6442 | 1.59 | ABV/ABV | |
| | Unidentified | 40:46 | 00:00 | 0 | 10832 | 6302 | 1930 | 1304 | 1.72 | AVB/AVV | |
| | Unidentified | 40:58 | 00:00 | 0 | 1470 | 1425 | 343 | 433 | 1.03 * | ABV/AVV | R |
| | Unidentified | 41:12 | 00:00 | 0 | 14295 | 11531 | 3190 | 2522 | 1.24 * | AVV/AVV | R |
| | Unidentified | 41:19 | 00:00 | 0 | 25394 | 16767 | 4374 | 3386 | 1.51 | AVB/AVB | |
| | Unidentified | 41:39 | 00:00 | 0 | 5332 | 4367 | 1261 | 1641 | 1.22 * | ABV/ABV | R |
| | 1,2,3,7,8-PeCDF | 41:46 | 41:44 | 2 | 10987 | 8937 | 2785 | 1936 | 1.23 * | AVV/AVB | R |
| | Unidentified | 42:00 | 00:00 | 0 | 9973 | 6375 | 2013 | 1476 | 1.59 | AVV/ABV | |
| | Unidentified | 42:14 | 00:00 | 0 | 46805 | 27936 | 9768 | 5790 | 1.68 | AVB/AVB | |
| | Unidentified | 42:28 | 00:00 | 0 | 1848 | 1047 | 612 | 292 | 1.77 | ABV/ABV | |
| | Unidentified | 42:33 | 00:00 | 0 | 5080 | 4150 | 1383 | 1246 | 1.22 * | AVB/AVB | R |
| | 2,3,4,7,8-PeCDF | 42:49 | 42:48 | 1 | 23000 | 18547 | 5526 | 4535 | 1.24 * | ABV/ABV | R |
| | Unidentified | 43:00 | 00:00 | 0 | 22553 | 15299 | 5412 | 3543 | 1.47 | AVB/AVV | |
| | Unidentified | 43:17 | 00:00 | 0 | 6375 | 4747 | 977 | 993 | 1.34 | ABB/AVB | |
| | Unidentified | 43:46 | 00:00 | 0 | 1637 | 1369 | 499 | 221 | 1.20 * | ABB/ABB | R |
| | Unidentified | 44:01 | 00:00 | 0 | 47364 | 29976 | 11887 | 7797 | 1.58 | ABB/ABB | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 140 | 220 | 56 | 88 | 0.64 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:44 | 41:43 | 1 | 512237 | 318473 | 124008 | 79917 | 1.61 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 42:48 | 42:47 | 1 | 519567 | 329070 | 140062 | 88657 | 1.58 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 198 | 168 | 79 | 67 | 1.18 * | / | |
| | Unidentified | 40:47 | 00:00 | 0 | 381656 | 239835 | 75110 | 49390 | 1.59 | ABB/ABV | |
| | Unidentified | 41:29 | 00:00 | 0 | 71781 | 46233 | 17129 | 10591 | 1.55 | ABB/AVB | |
| | Unidentified | 41:52 | 00:00 | 0 | 155335 | 104252 | 41549 | 26535 | 1.49 | ABV/ABV | |
| | Unidentified | 42:04 | 00:00 | 0 | 377840 | 236840 | 99188 | 61904 | 1.60 | AVV/AVV | |
| | Unidentified | 42:15 | 00:00 | 0 | 113536 | 68777 | 31553 | 18101 | 1.65 | AVB/AVB | |
| | Unidentified | 42:31 | 00:00 | 0 | 51428 | 33205 | 14644 | 8668 | 1.55 | ABV/ABV | |
| | Unidentified | 42:39 | 00:00 | 0 | 134397 | 87438 | 27950 | 18535 | 1.54 | AVB/AVB | |
| | Unidentified | 42:53 | 00:00 | 0 | 6103 | 4634 | 1802 | 1774 | 1.32 | ABB/ABB | |
| | Unidentified | 43:01 | 00:00 | 0 | 3047 | 2337 | 833 | 617 | 1.30 * | ABB/ABB | R |
| | 1,2,3,7,8-PeCDD | 43:17 | 43:15 | 2 | 208711 | 137345 | 57931 | 36990 | 1.52 | ABV/ABV | |
| | Unidentified | 43:29 | 00:00 | 0 | 52323 | 34583 | 15023 | 10285 | 1.51 | AVV/AVV | |
| | Unidentified | 43:52 | 00:00 | 0 | 42548 | 29283 | 11193 | 8344 | 1.45 | ABB/ABB | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 148 | 65 | 59 | 1.10 * | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:16 | 43:14 | 2 | 378958 | 236312 | 106381 | 69810 | 1.60 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 198 | 72 | 79 | 0.91 * | / | |
| | Unidentified | 45:05 | 00:00 | 0 | 30366 | 23678 | 8537 | 7057 | 1.28 | ABV/ABB | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal N = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WH2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-002 |
| **Data File** | /20031004s1/tfx1wh2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71223 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 02:52 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Unidentified | 45:16 | 00:00 | 0 | 140252 | 115375 | 41359 | 34498 | 1.22 | AVV/ABB | |
| | Unidentified | 45:29 | 00:00 | 0 | 2839 | 2726 | 940 | 683 | 1.04 * | AVB/ABB | R |
| | Unidentified | 45:39 | 00:00 | 0 | 11923 | 9687 | 3828 | 2621 | 1.23 | ABV/ABV | |
| | Unidentified | 45:43 | 00:00 | 0 | 17542 | 12497 | 5365 | 3527 | 1.40 | AVV/AVV | |
| | Unidentified | 45:53 | 00:00 | 0 | 163344 | 134808 | 49514 | 39457 | 1.21 | AVV/AVV | |
| | Unidentified | 46:04 | 00:00 | 0 | 43165 | 37191 | 12885 | 10589 | 1.16 | AVB/AVB | |
| | 1,2,3,4,7,8-HxCDF | 46:22 | 46:22 | 0 | 54307 | 43679 | 9725 | 7228 | 1.24 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDF | 46:27 | 46:30 | -3 | 43561 | 36964 | 8445 | 6356 | 1.18 | AVV/AVV | TM |
| | Unidentified | 46:40 | 00:00 | 0 | 4850 | 4871 | 828 | 734 | 1.00 * | AVB/AVB | R |
| | Unidentified | 46:56 | 00:00 | 0 | 7454 | 7286 | 1384 | 1430 | 1.02 * | ABV/ABV | R |
| | Unidentified | 47:03 | 00:00 | 0 | 63389 | 51865 | 18611 | 15185 | 1.22 | AVV/AVV | |
| | Unidentified | 47:10 | 00:00 | 0 | 10631 | 7956 | 2803 | 2093 | 1.34 | AVV/AVV | |
| | 2,3,4,6,7,8-HxCDF | 47:17 | 47:16 | 1 | 14694 | 12531 | 4288 | 3662 | 1.17 | AVV/AVV | |
| | Unidentified | 47:26 | 00:00 | 0 | 3661 | 3593 | 1053 | 962 | 1.02 * | AVB/AVB | R |
| | 1,2,3,7,8,9-HxCDF | 48:18 | 48:18 | 0 | 2372 | 1154 | 506 | 306 | 2.06 * | ABV/MVV | R |
| | Unidentified | 48:27 | 00:00 | 0 | 4549 | 3712 | 1198 | 818 | 1.23 | AVB/MBB | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 168 | 59 | 67 | 0.88 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:21 | 46:21 | 0 | 237503 | 427143 | 66127 | 119930 | 0.56 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:29 | 46:30 | -1 | 226853 | 435198 | 62414 | 119722 | 0.52 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:16 | 47:15 | 1 | 179105 | 343103 | 51624 | 98501 | 0.52 | ABV/ABV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:17 | 48:17 | 0 | 136234 | 259739 | 34104 | 62180 | 0.52 | AVV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 195 | 69 | 78 | 0.88 * | / | |
| | Unidentified | 45:47 | 00:00 | 0 | 797409 | 636303 | 234545 | 189326 | 1.25 | ABV/ABV | |
| | Unidentified | 46:24 | 00:00 | 0 | 193450 | 155841 | 55284 | 41499 | 1.24 | ABB/ABB | |
| | Unidentified | 46:42 | 00:00 | 0 | 2109294 | 1695931 | 545694 | 442384 | 1.24 | ABV/ABV | |
| | Unidentified | 46:53 | 00:00 | 0 | 19843 | 17842 | 5205 | 4246 | 1.11 | AVB/AVB | |
| | 1,2,3,4,7,8-HxCDD | 47:27 | 47:27 | 0 | 66469 | 50842 | 17597 | 16026 | 1.31 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:35 | 47:34 | 1 | 481254 | 376176 | 130195 | 104045 | 1.28 | AVV/AVB | |
| | 1,2,3,7,8,9-HxCDD | 48:00 | 48:00 | 0 | 225406 | 178612 | 51080 | 39416 | 1.26 | AVB/ABB | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 180 | 78 | 72 | 1.08 | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:26 | 47:26 | 0 | 269815 | 219323 | 74156 | 60171 | 1.23 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:34 | 47:33 | 1 | 263900 | 214192 | 71322 | 58889 | 1.23 | AVV/AVB | |
| | 13C-1,2,3,7,8,9-HxCDD | 47:59 | 47:59 | 0 | 450088 | 364308 | 117556 | 95705 | 1.24 | ABV/ABV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 193 | 74 | 77 | 0.96 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:54 | 50:55 | -1 | 118929 | 117838 | 26618 | 25640 | 1.01 | ABV/ABB | M |
| | Unidentified | 51:20 | 00:00 | 0 | 8788 | 5832 | 1842 | 1303 | 1.51 * | AVB/ABV | R |
| | Unidentified | 51:35 | 00:00 | 0 | 151887 | 146551 | 31824 | 31212 | 1.04 | ABV/AVV | |
| | 1,2,3,4,7,8,9-HpCDF | 53:15 | 53:15 | 0 | 5570 | 4505 | 1177 | 836 | 1.24 * | ABB/ABB | RM |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WH2AA | Prep Batch | 3273193 | Lot No | H3I100253-002 |
| Data File | /20031004s1/tfx1wh2.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71223 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/05/03 02:52 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Anal Exp Date | 11/14/03 | Initial Wt/Vol | 10.0 g | Lims Test Code | XXA11IN01 |
| Instrument | M2A | Extract Vol | 20 uL | Method | DX8290_2 |
| Analyst | PMP | Diluton Factor | 1.00 | Code | IN2 |

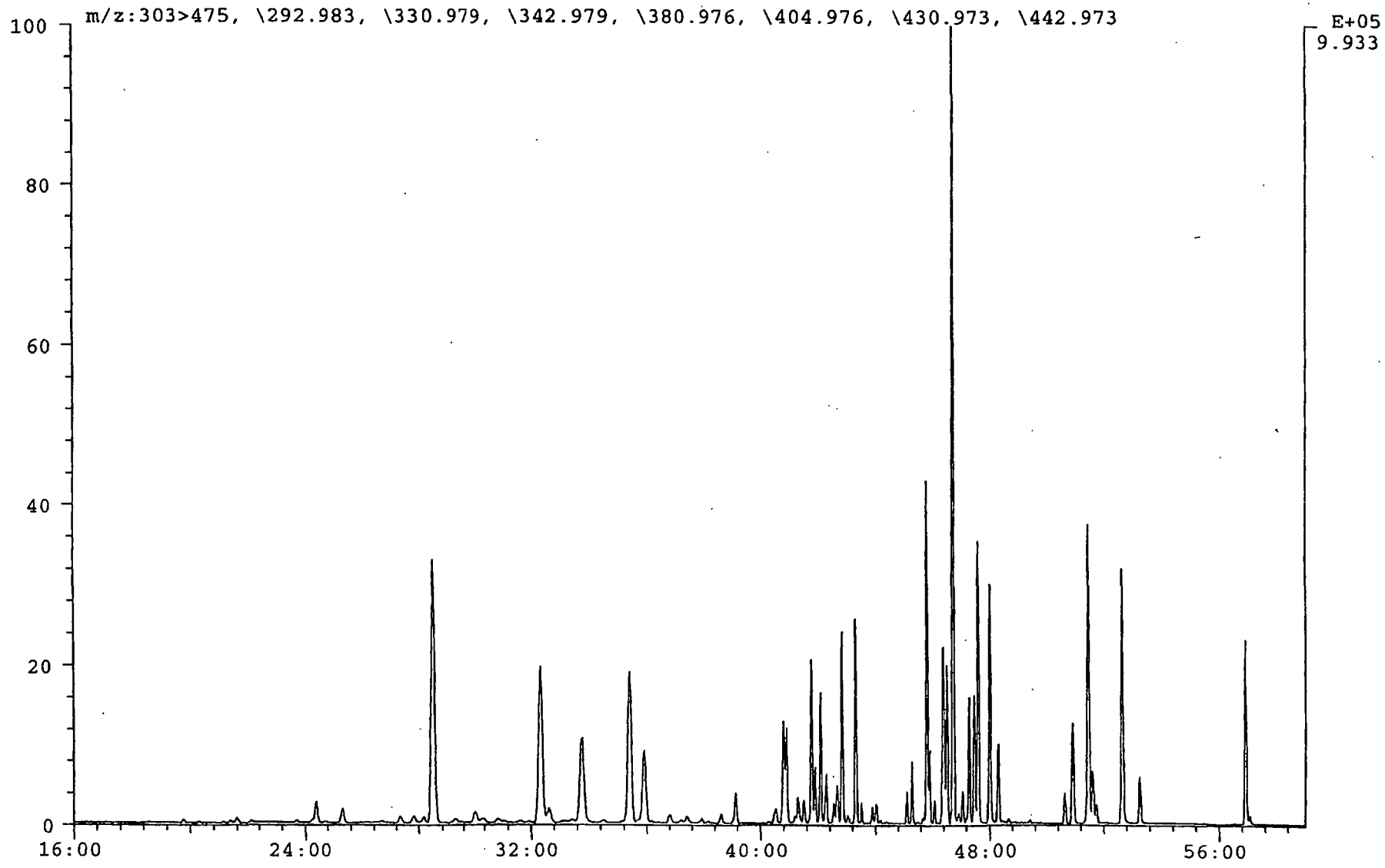
View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 133 | 59 | 53 | 1.11 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 50:53 | 1 | 113972 | 237817 | 25659 | 48673 | 0.48 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 53:14 | 0 | 84611 | 179223 | 17134 | 38999 | 0.47 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 210 | 163 | 84 | 65 | 1.29 * | / | |
| | Unidentified | 51:26 | 00:00 | 0 | 872253 | 837622 | 191992 | 178982 | 1.04 | ABV/ABV | |
| | 1,2,3,4,6,7,8-HpCDD | 52:38 | 52:38 | 0 | 587368 | 570002 | 135337 | 126979 | 1.03 | ABV/ABV | |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 140 | 54 | 56 | 0.96 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 52:37 | 0 | 152332 | 139514 | 33856 | 32529 | 1.09 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 165 | 57 | 66 | 0.86 | / | |
| | OCDF | 57:02 | 57:05 | -3 | 18116 | 20775 | 4490 | 4668 | 0.87 | ABB/ABB | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 153 | 64 | 61 | 1.05 * | / | |
| | OCDD | 56:54 | 56:55 | -1 | 308234 | 347941 | 79448 | 91529 | 0.89 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 140 | 148 | 56 | 59 | 0.95 | / | |
| | 13C-OCDD | 56:53 | 56:54 | -1 | 123926 | 133746 | 30123 | 34195 | 0.93 | ABV/ABV | |

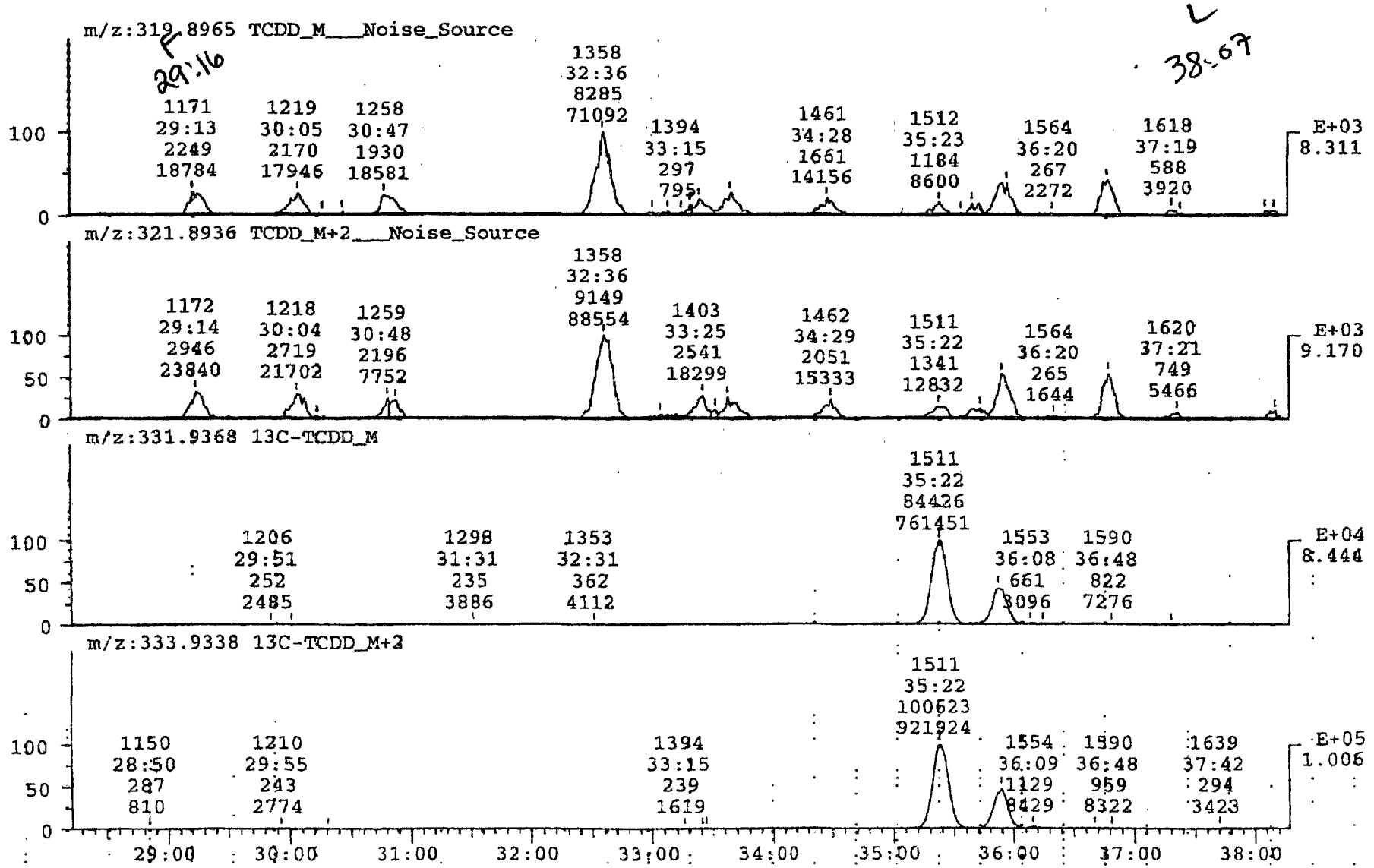
Notes:
R = ratio is oustide limits N = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tfx1wh2 05-Oct-03 Elapse: 56:58 2719
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 442 > 2834 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

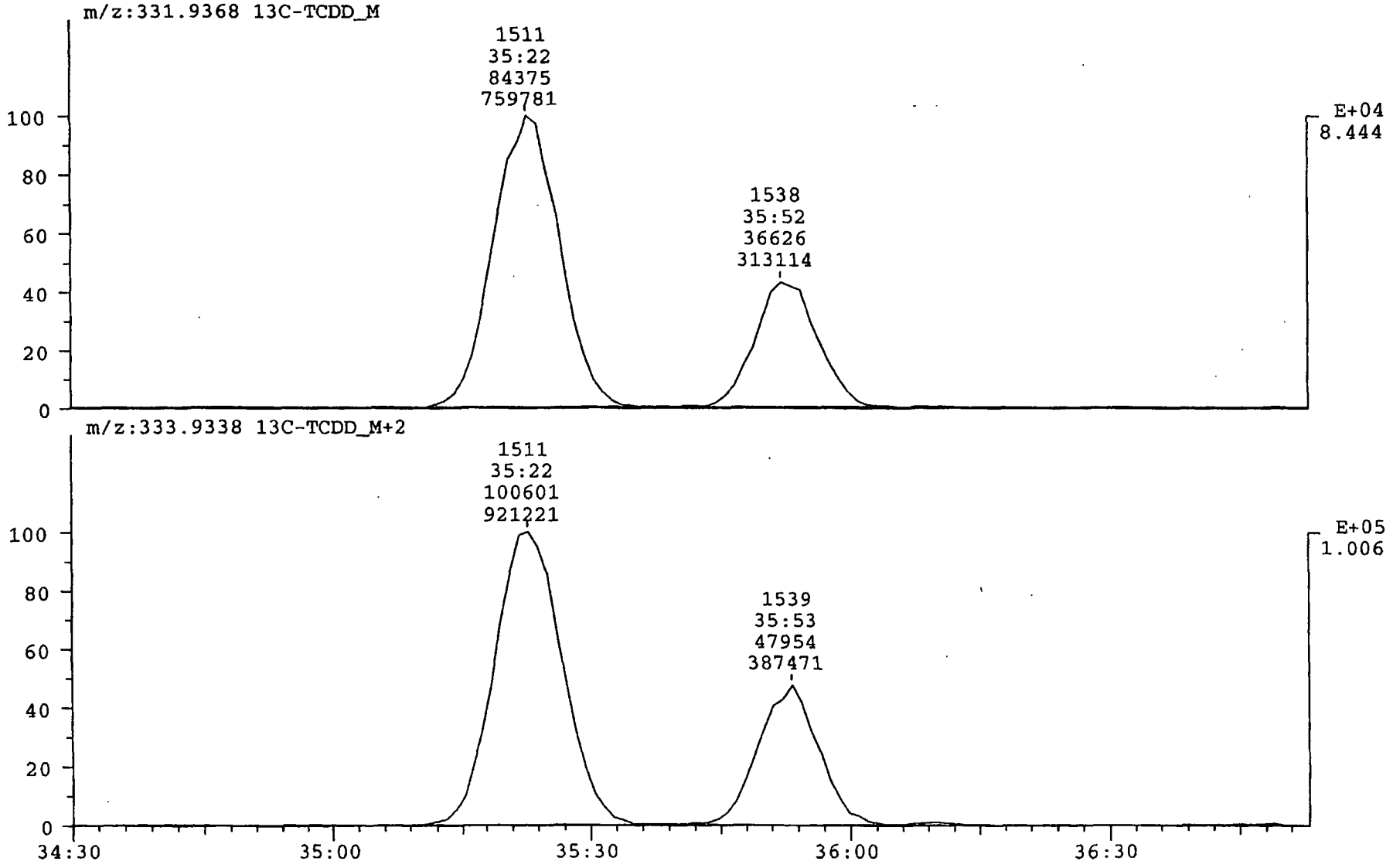
Jut MSD 10/6/03
Calc VMK 10/7/03
QC BKW 10-7-03
Rev'd CG 10-7-03



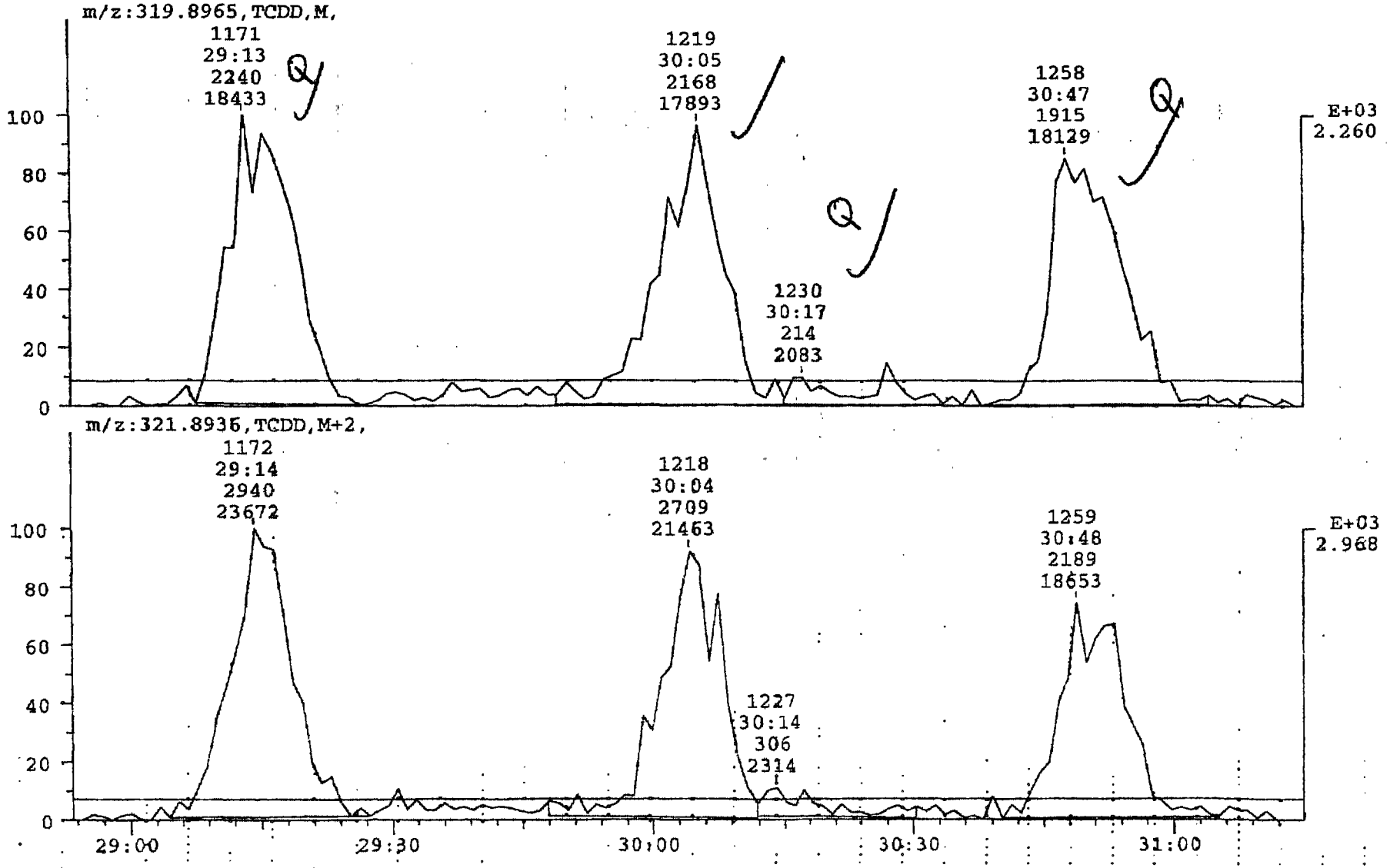
CHRO: tfx1wh2 05-Oct-03 Elapse: 56:58 2719
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1116 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



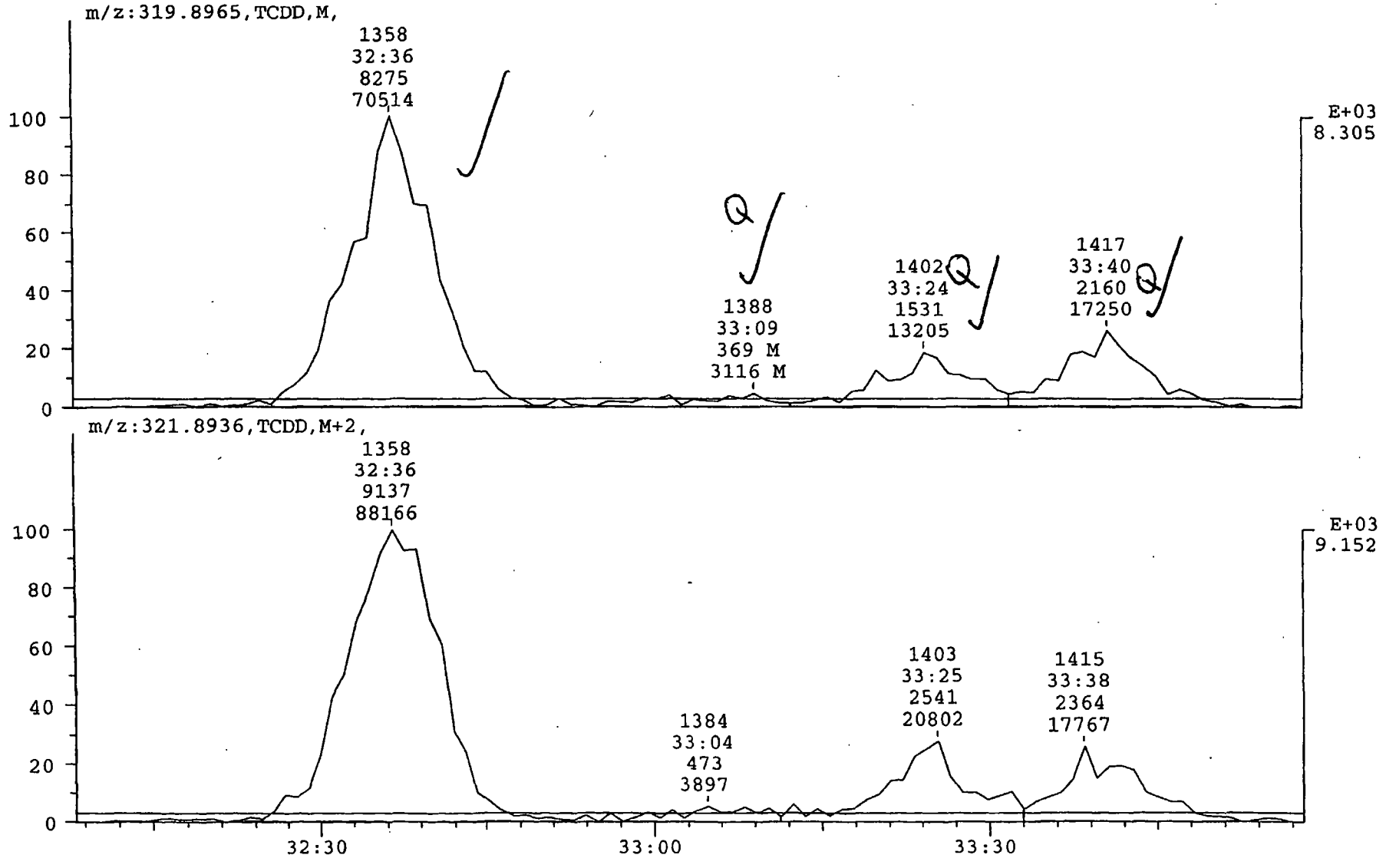
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:   35:41       1528
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :   02:52:13    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-002                 Inlet :   GC      Vial  25
Peak:  100.00  ppm     Label wndw:   1462 > 1594            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :   -2, 3.0
Disp:  Height  Area
```



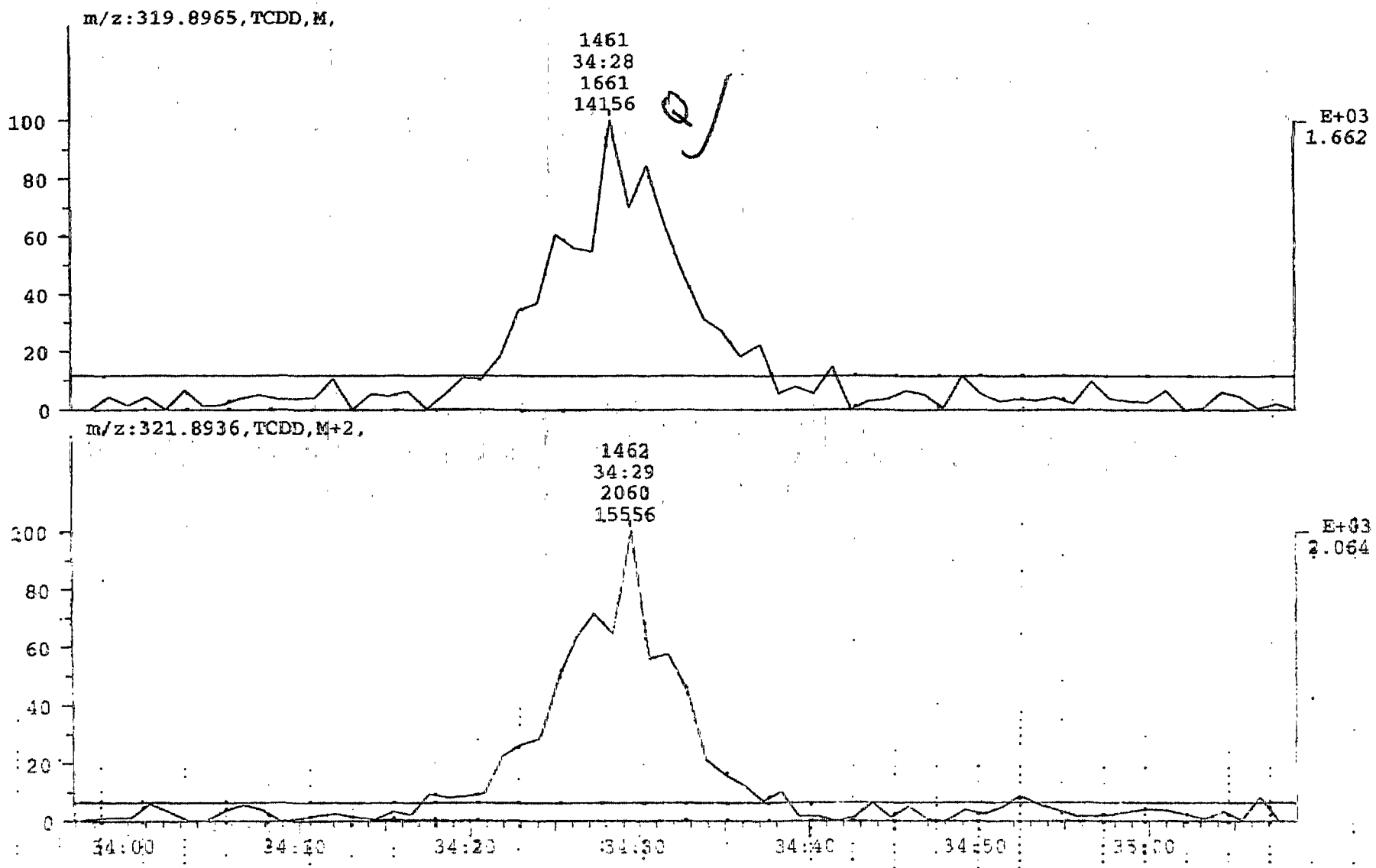
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1153 > 1283 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 4 Label : -2, 3.0
Disp: Height Area



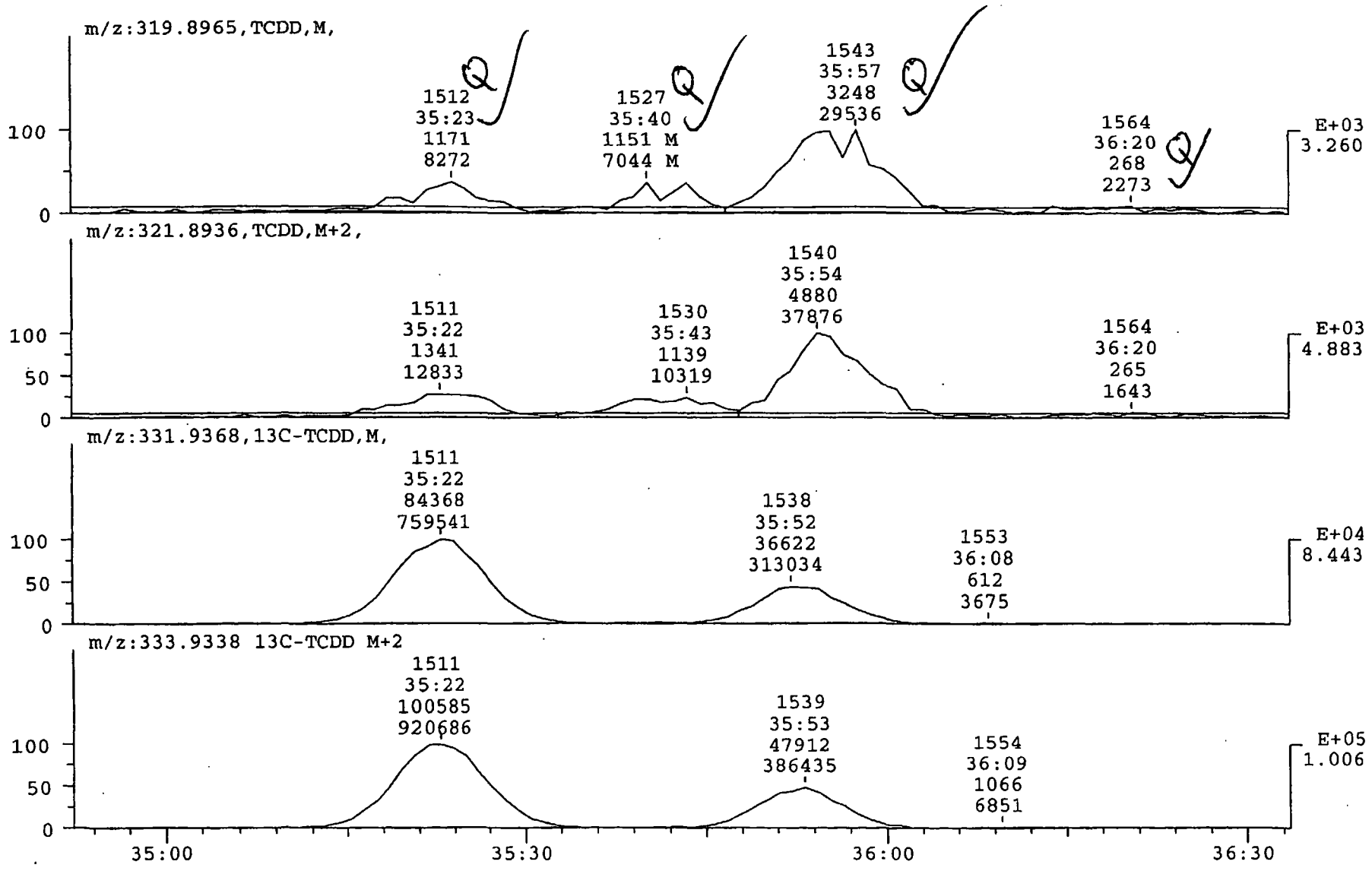
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1332 > 1433 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -2, 3.0
Disp: Height Area



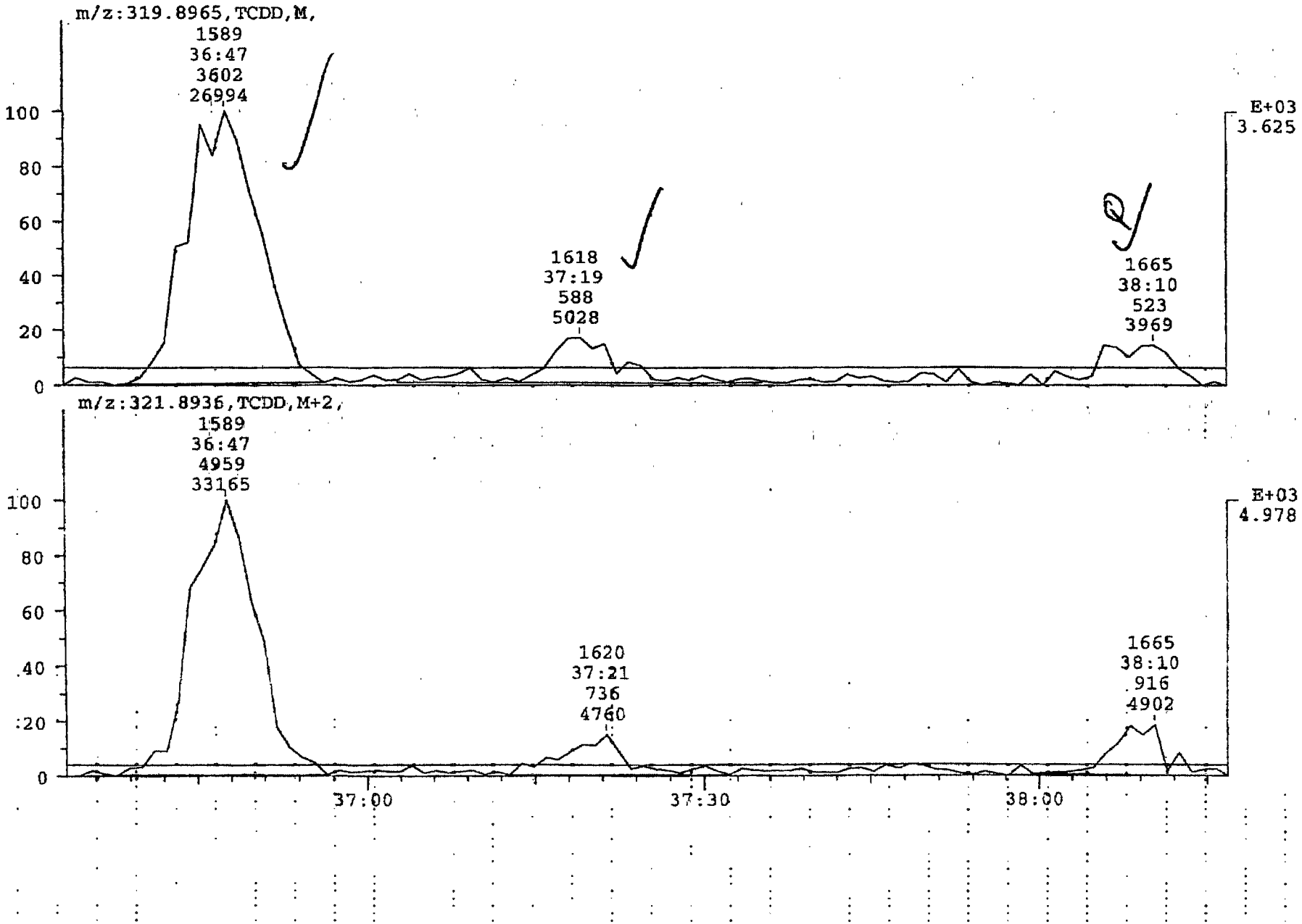
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1432 > 1498 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



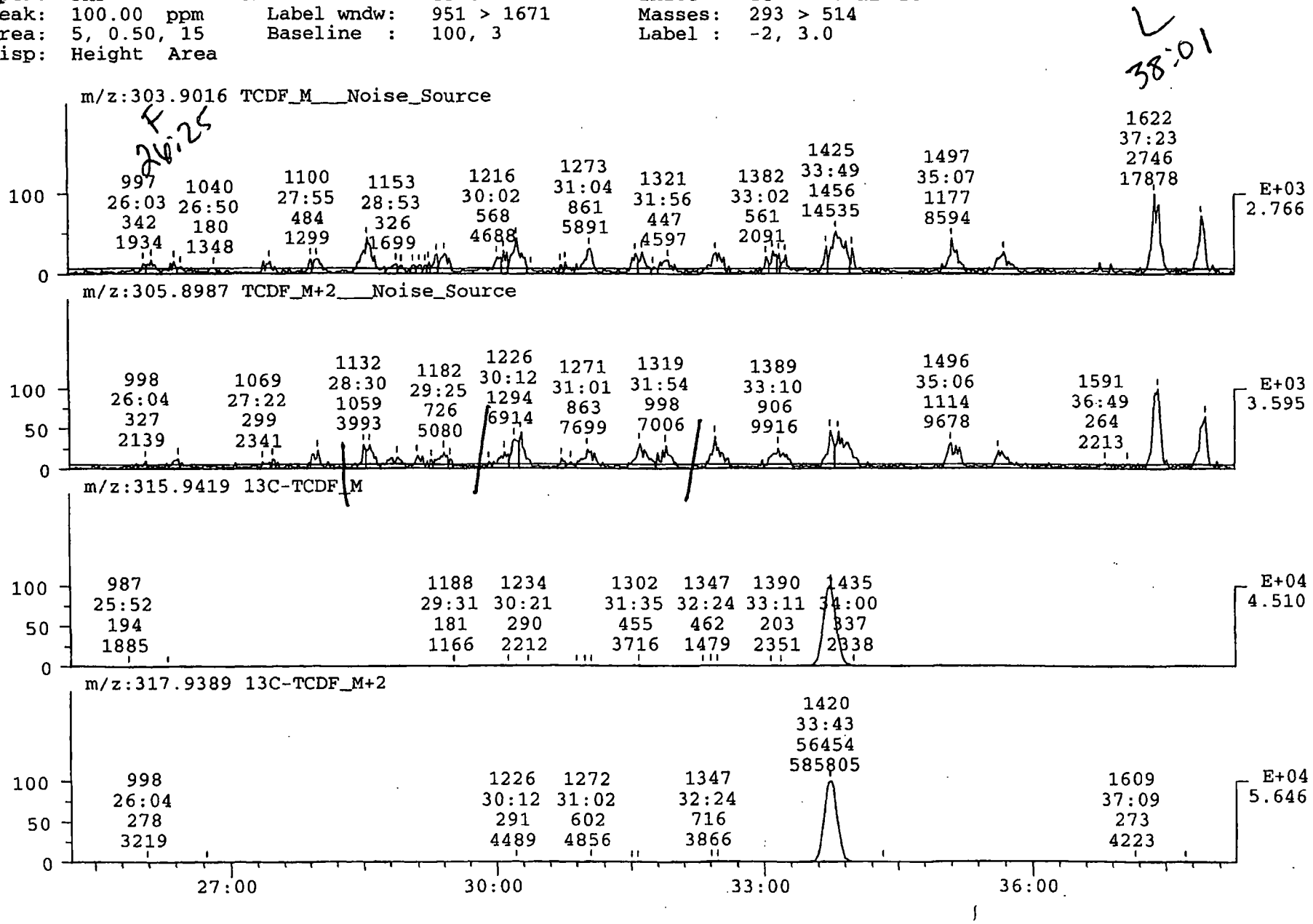
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1483 > 1576 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



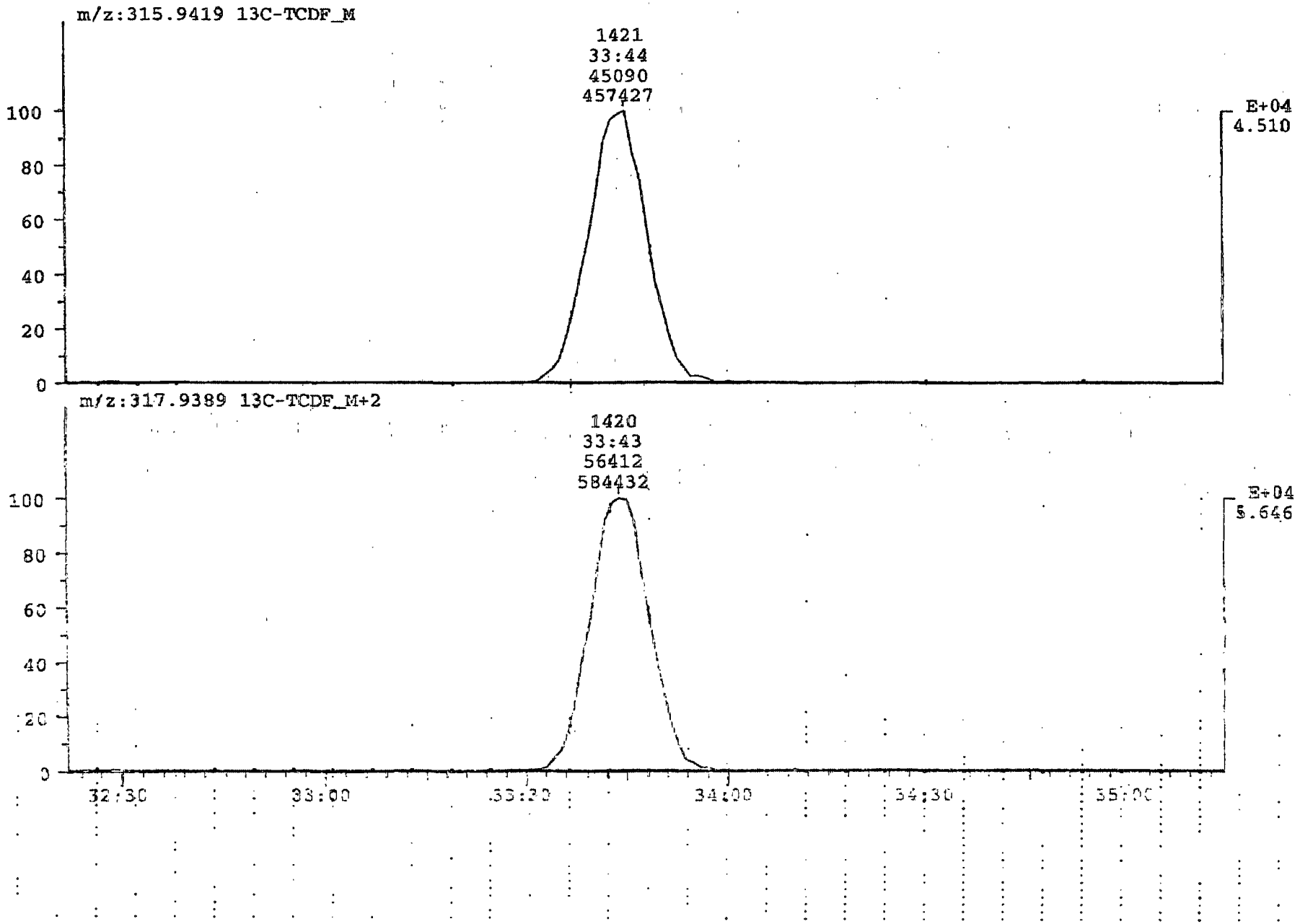
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  46:08      2111
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                 Inlet :  GC     Vial 25
Peak:  100.00  ppm     Label wndw:   1576 > 1671           Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 9                Label :  -3, 3.0
Disp:  Height  Area
```



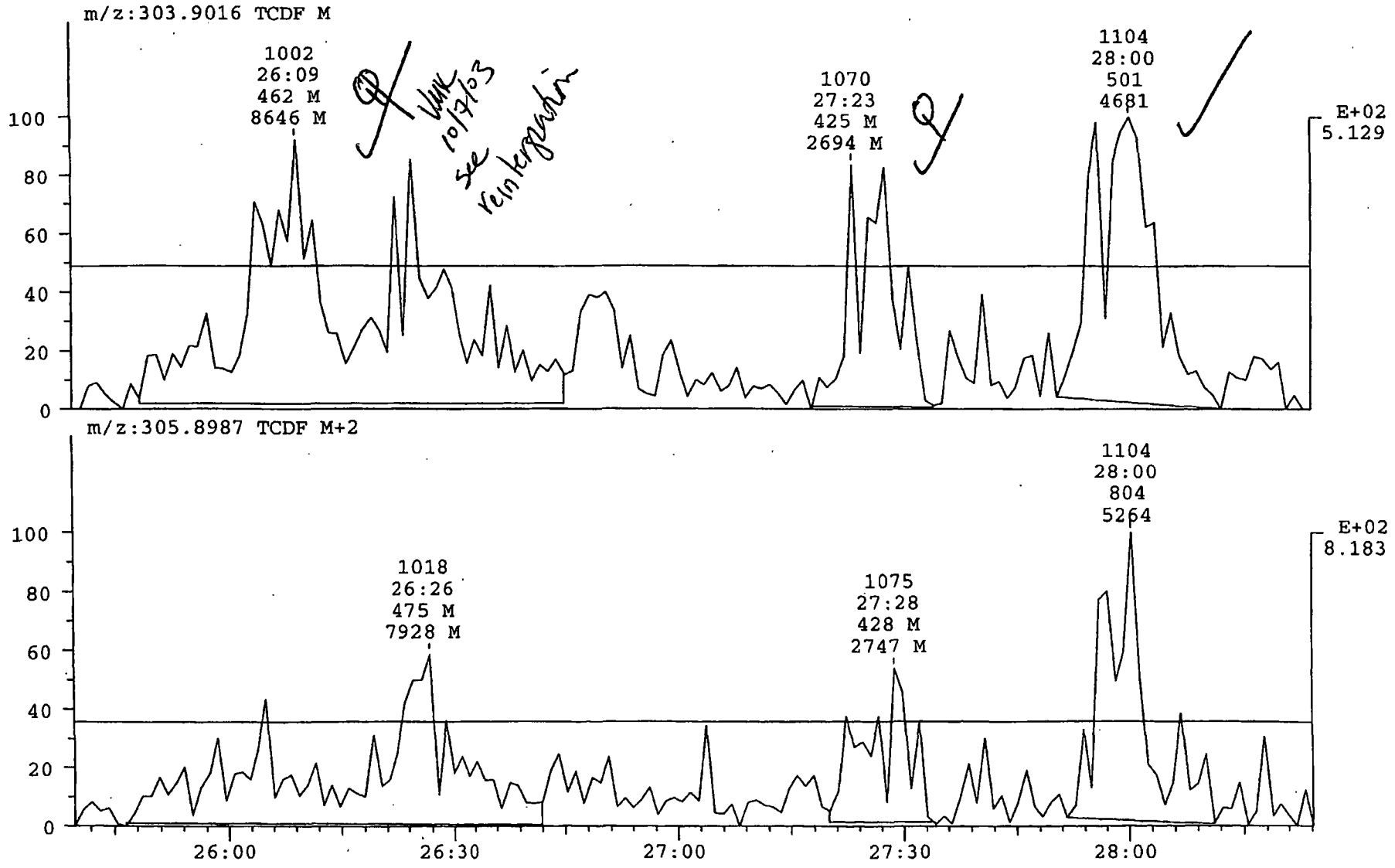
CHRO: tfx1wh2 05-Oct-03 Elapse: 35:41 1528
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 951 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



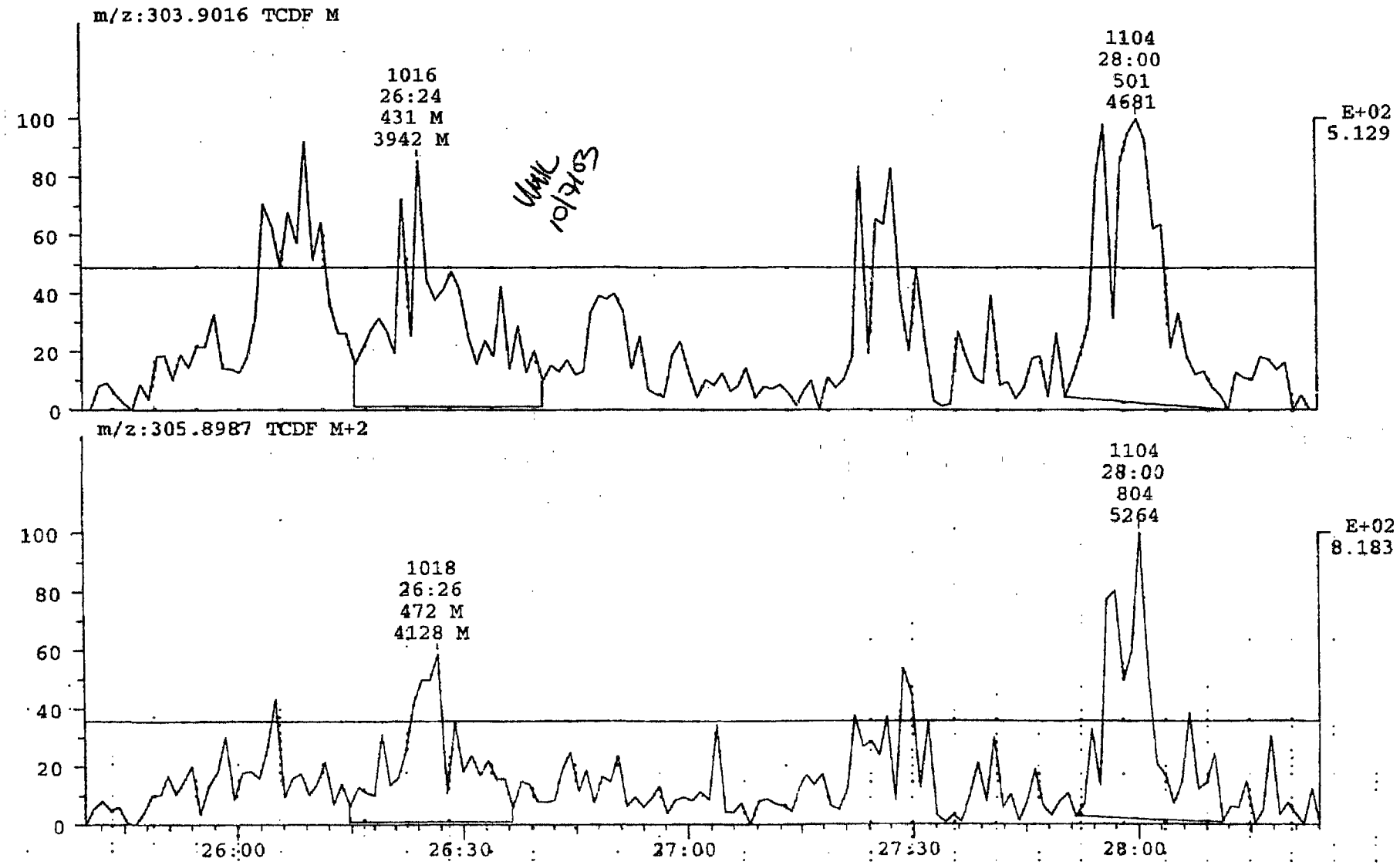
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  33:44      1421
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                  Inlet :  GC     Vial 25
Peak:  100.00  ppm    Label wndw:   1345 > 1503             Masses:  293 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3                  Label :  -2, 3.0
Disp:  Height  Area
```



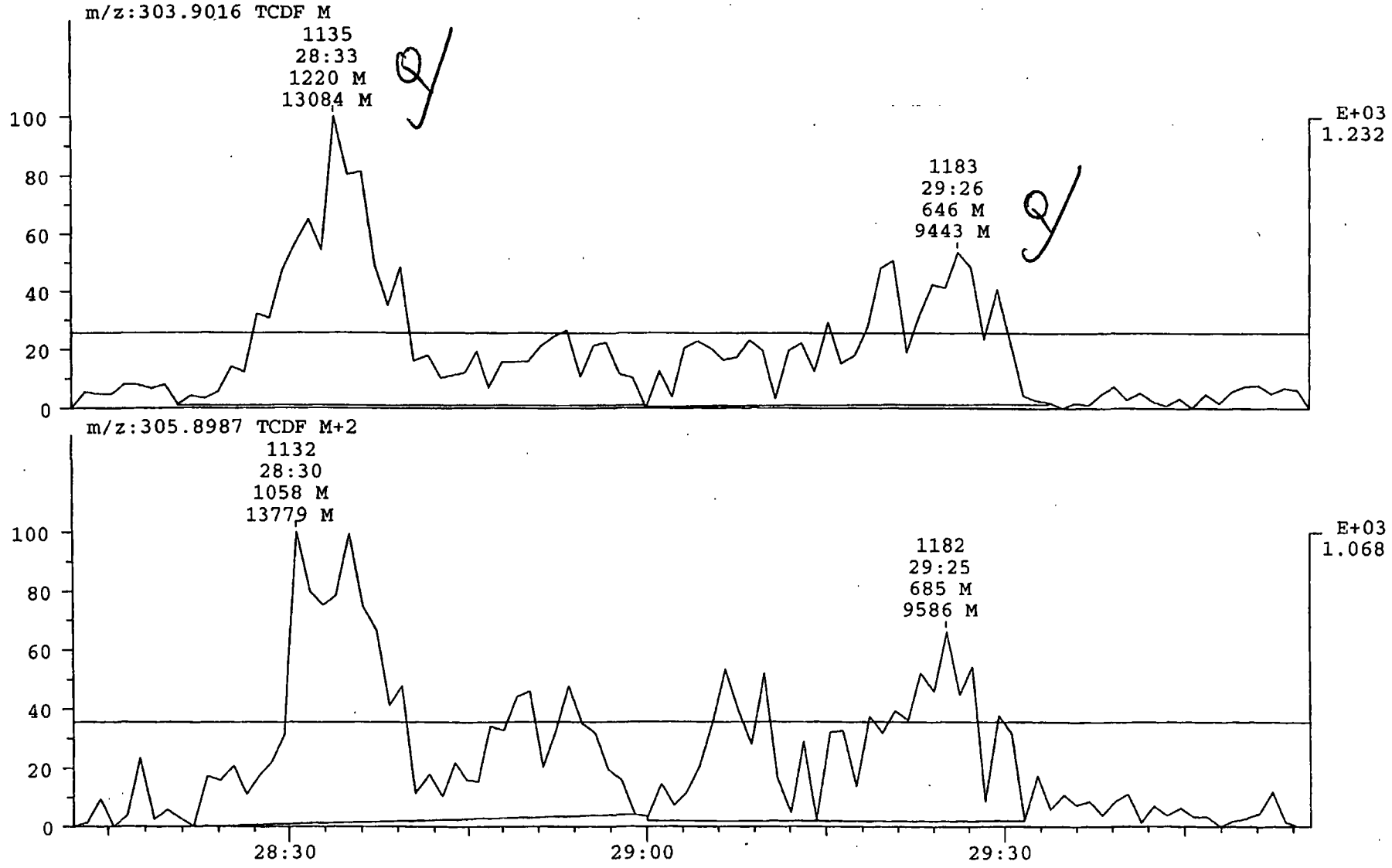
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 975 > 1126 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -5, 5.0
Disp: Height Area



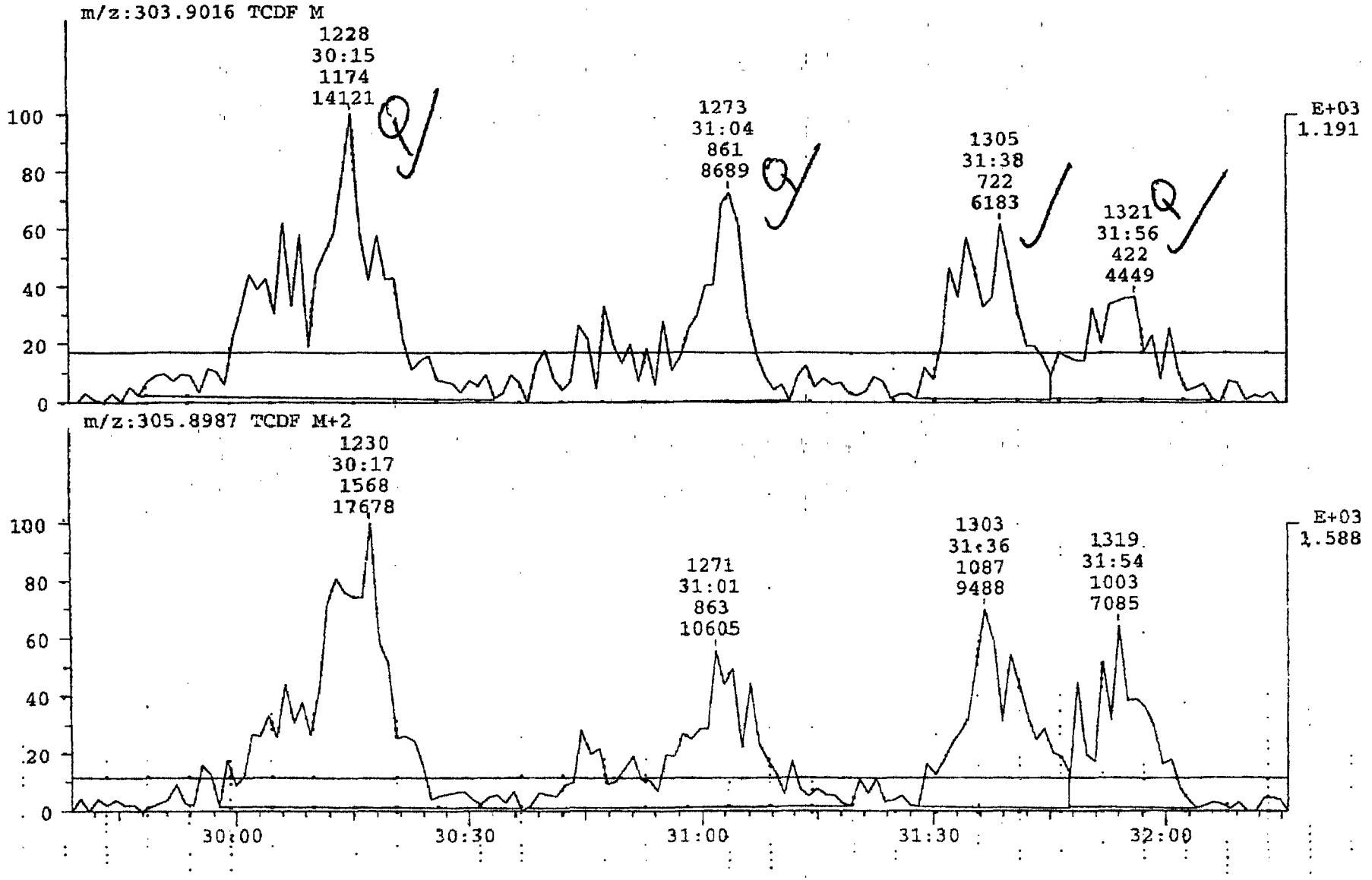
CHRO: tfx1wh2 05-Oct-03 Elapse: 33:40 1417
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 975 > 1126 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -5, 5.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1115 > 1210 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -5, 5.0
Disp: Height Area

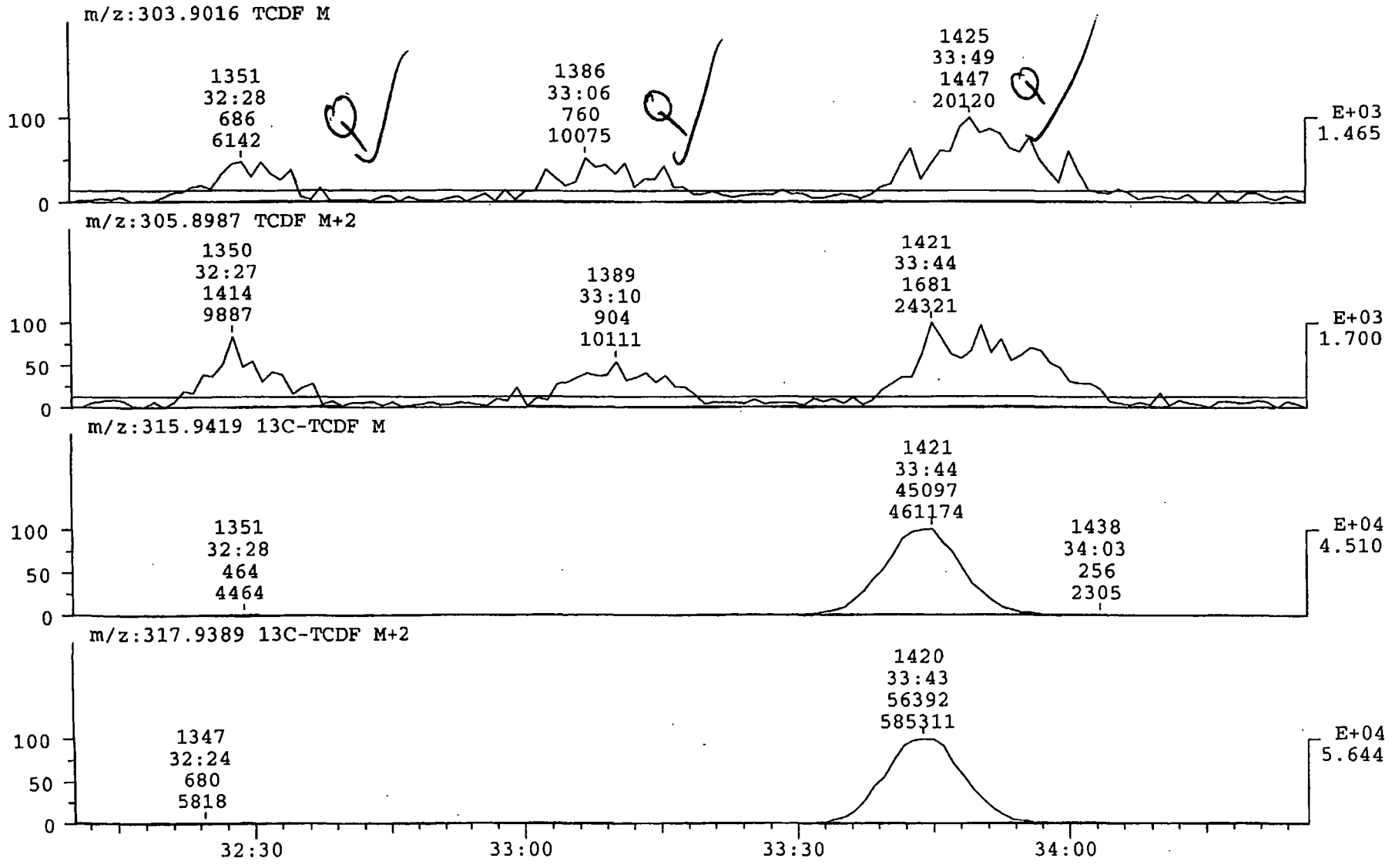


CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1195 > 1339 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 9 Label : -4, 3.0
Disp: Height Area

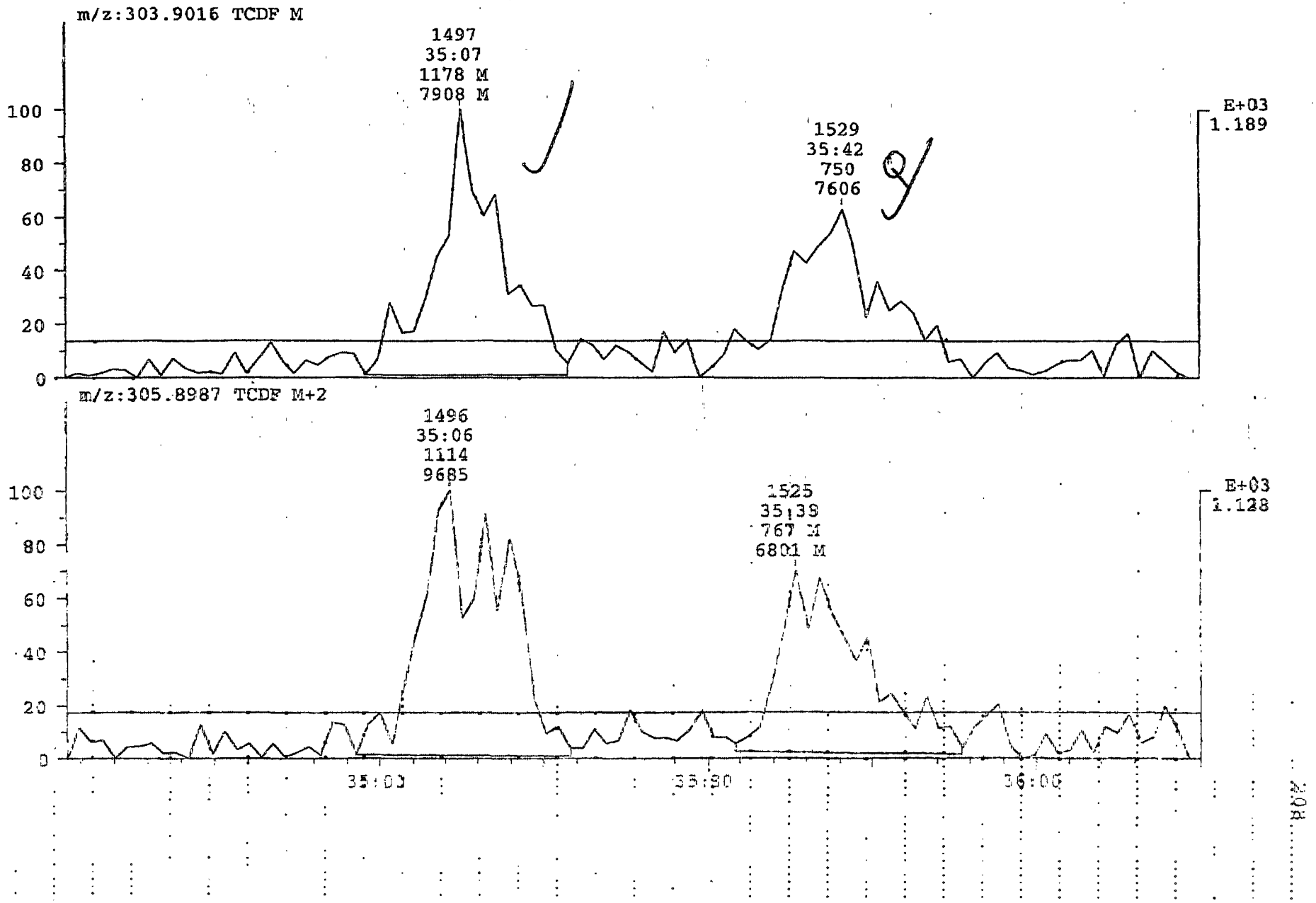



206

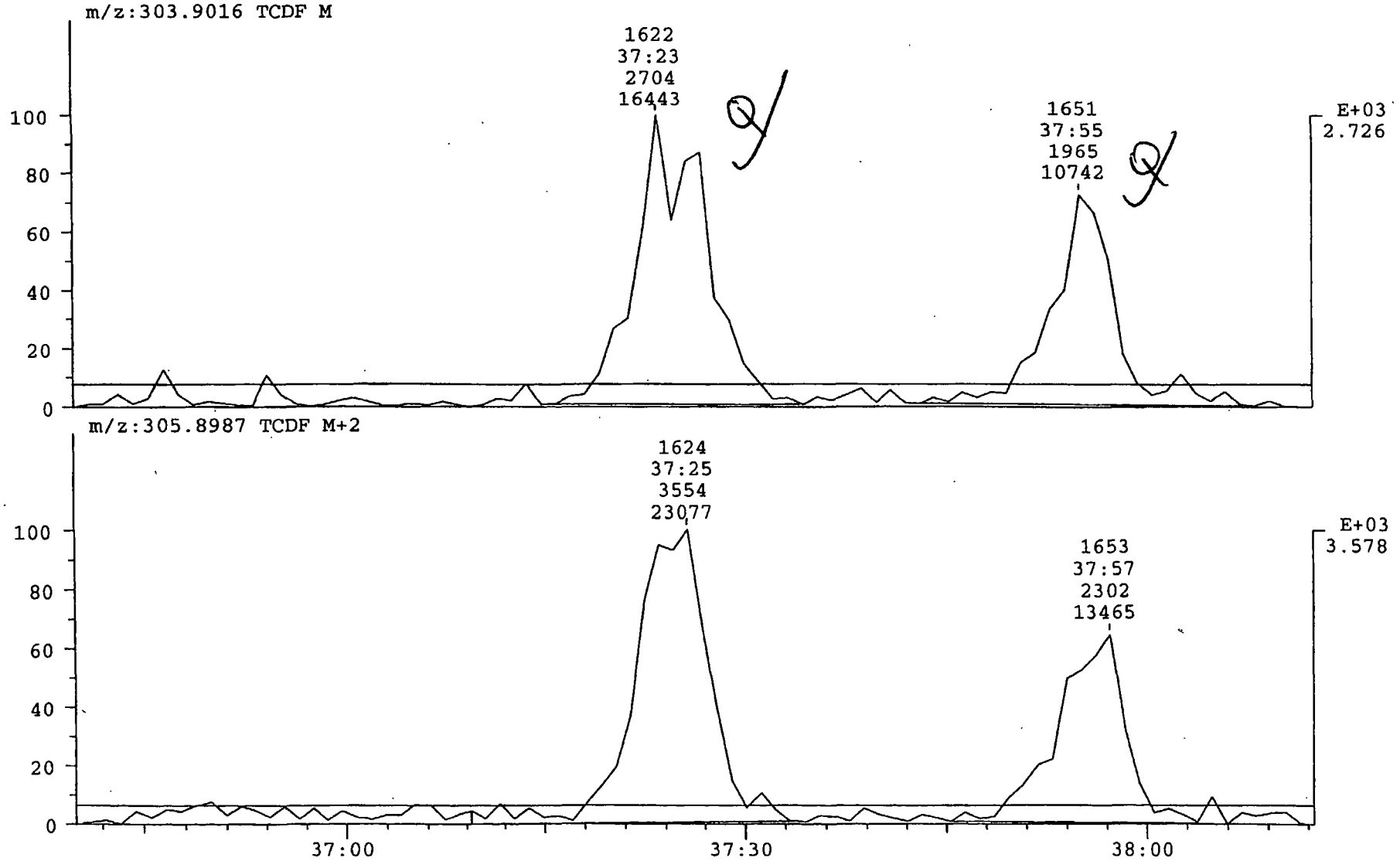
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1334 > 1459 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 9 Label : -2, 3.0
Disp: Height Area



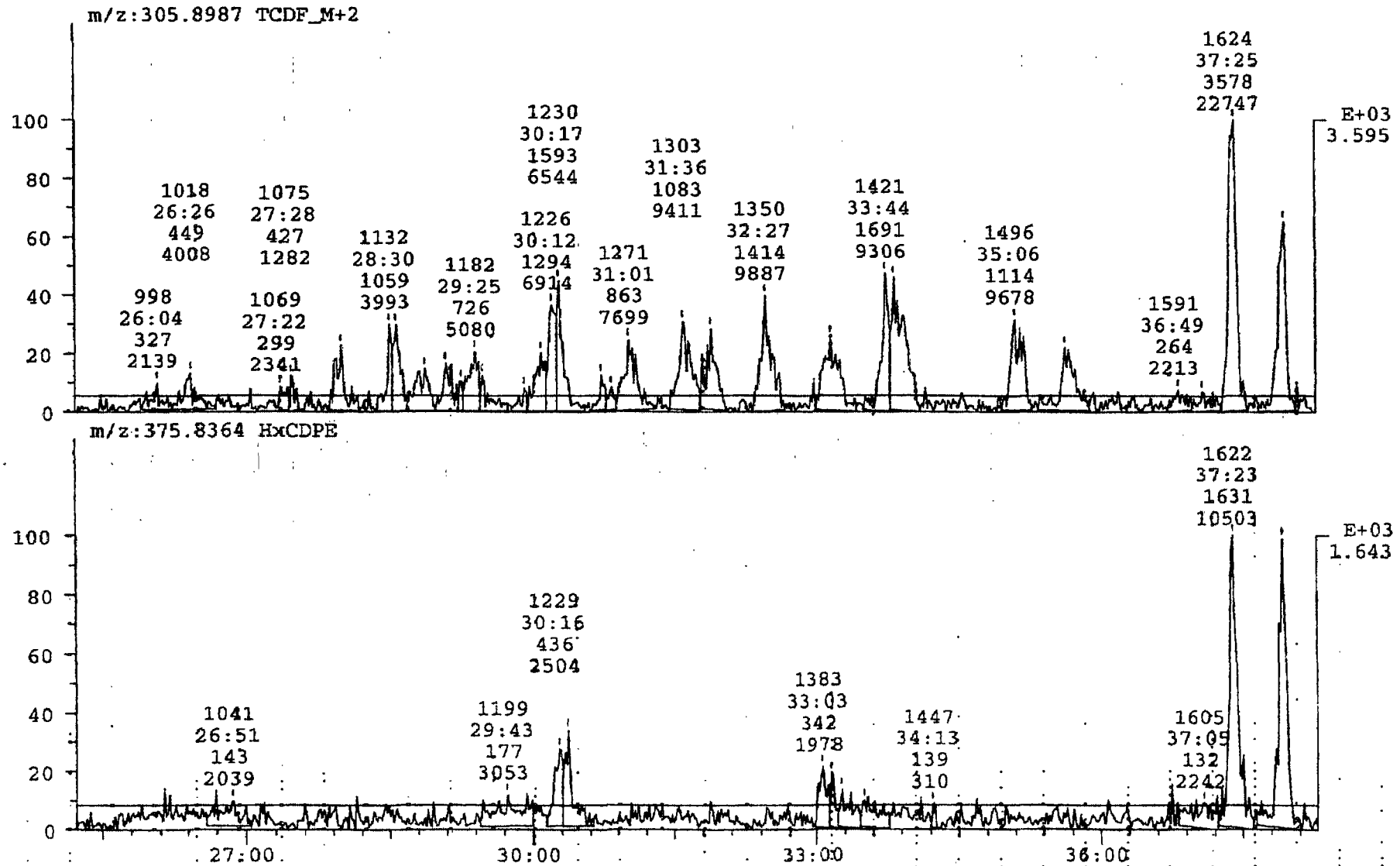
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1464 > 1559 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



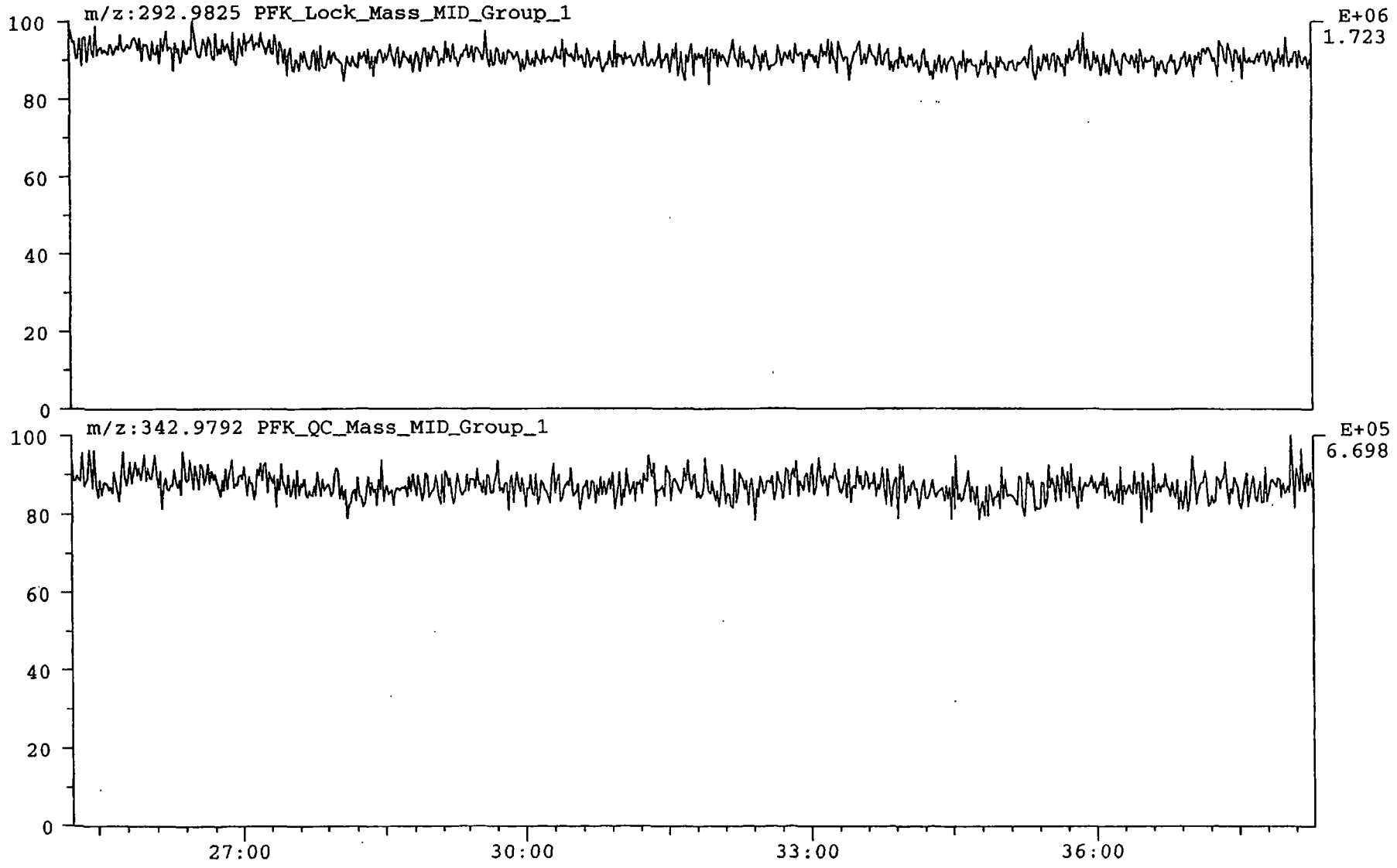
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1582 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



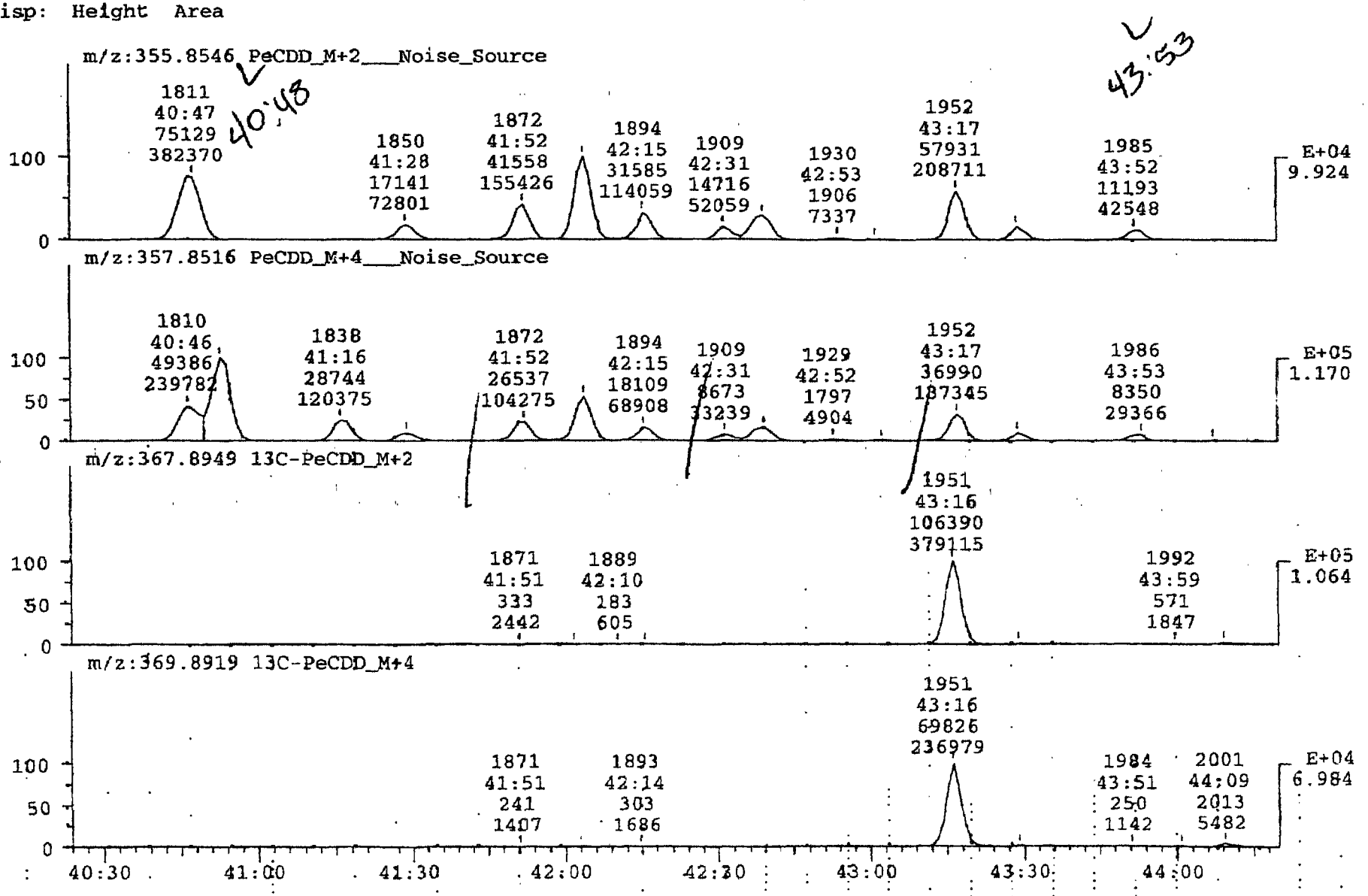
CHRO: tfx1wh2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 951 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



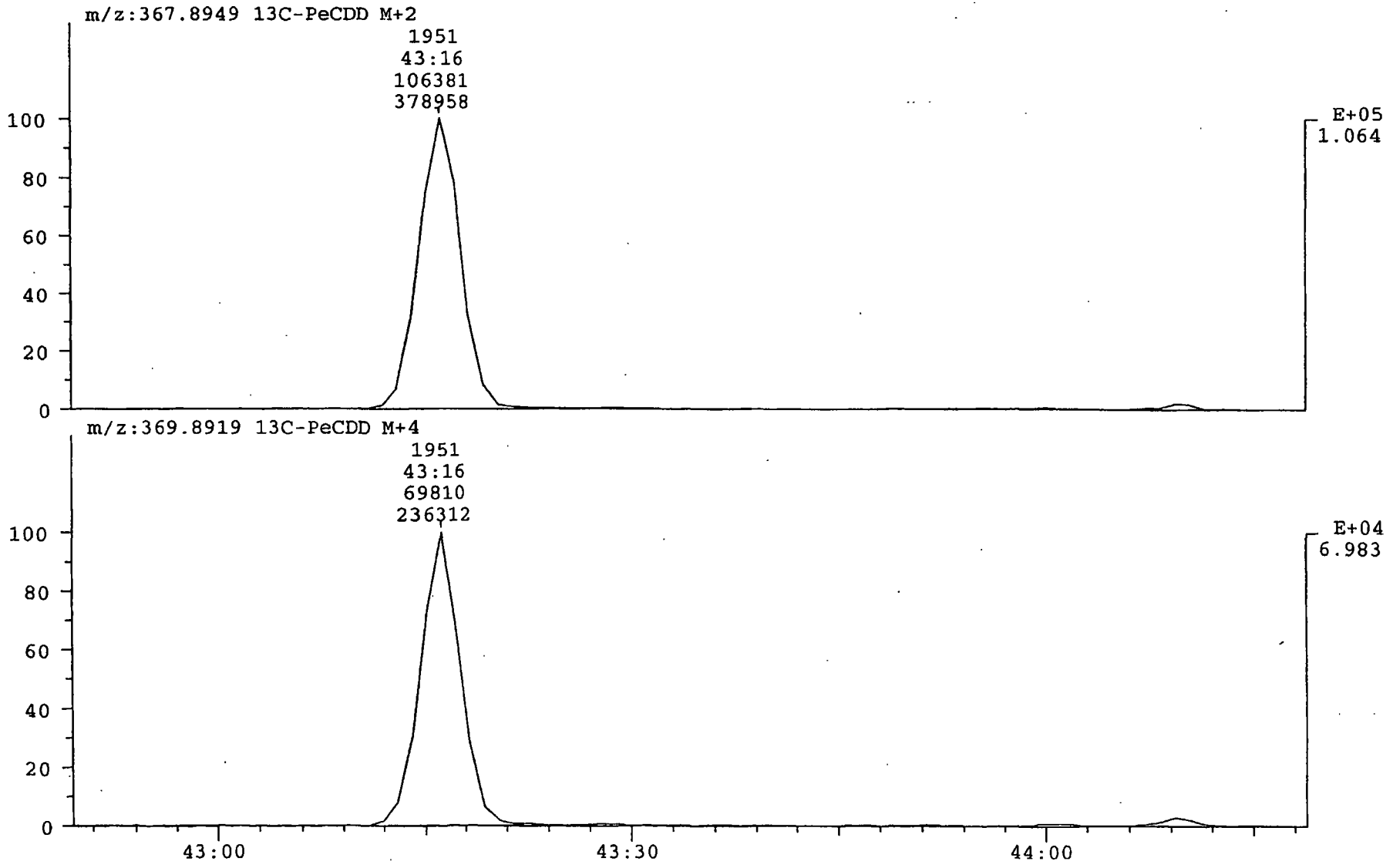
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:   33:44      1421
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :   02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :   3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                 Inlet :   GC     Vial 25
Peak:  100.00  ppm     Label wndw:   951 > 1671             Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :   0, 0.0
Disp:  Height  Area
```



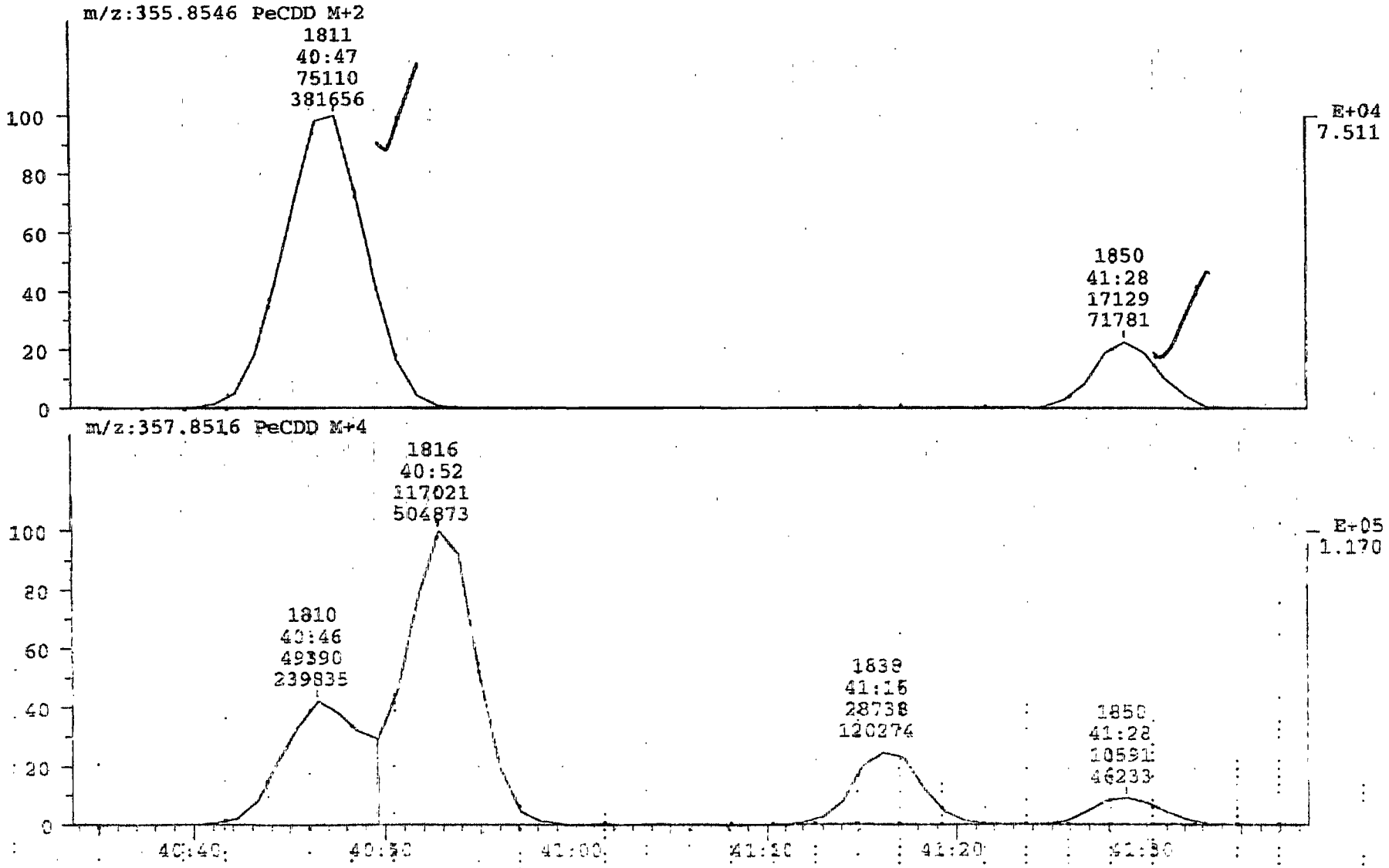
CHRO: tfx1wh2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1789 > 2011 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



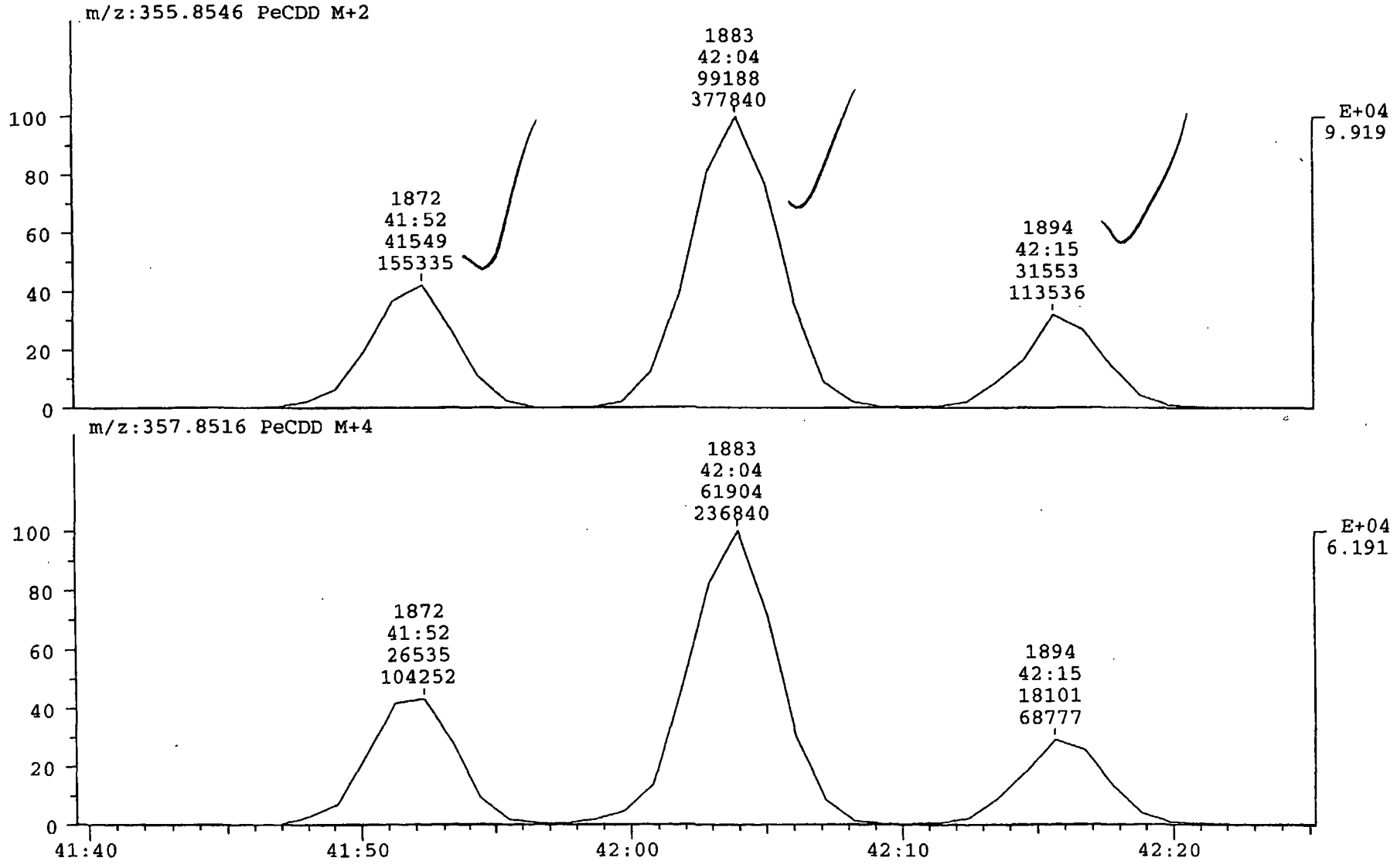
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  42:57      1933
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                 Inlet :  GC     Vial 25
Peak:  100.00  ppm     Label wndw:   1945 > 1955           Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                Label :  2, 3.0
Disp:  Height  Area
```



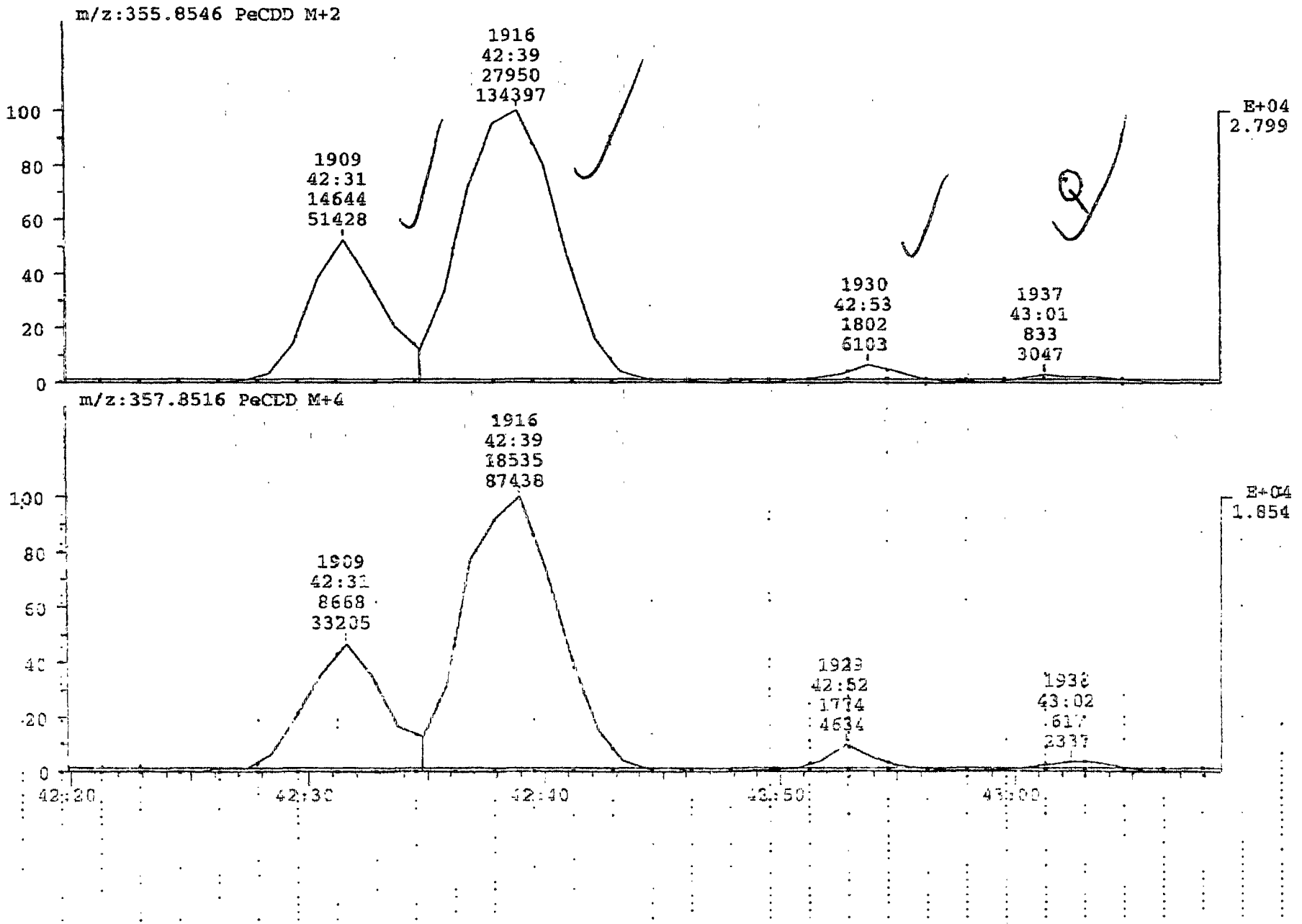
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



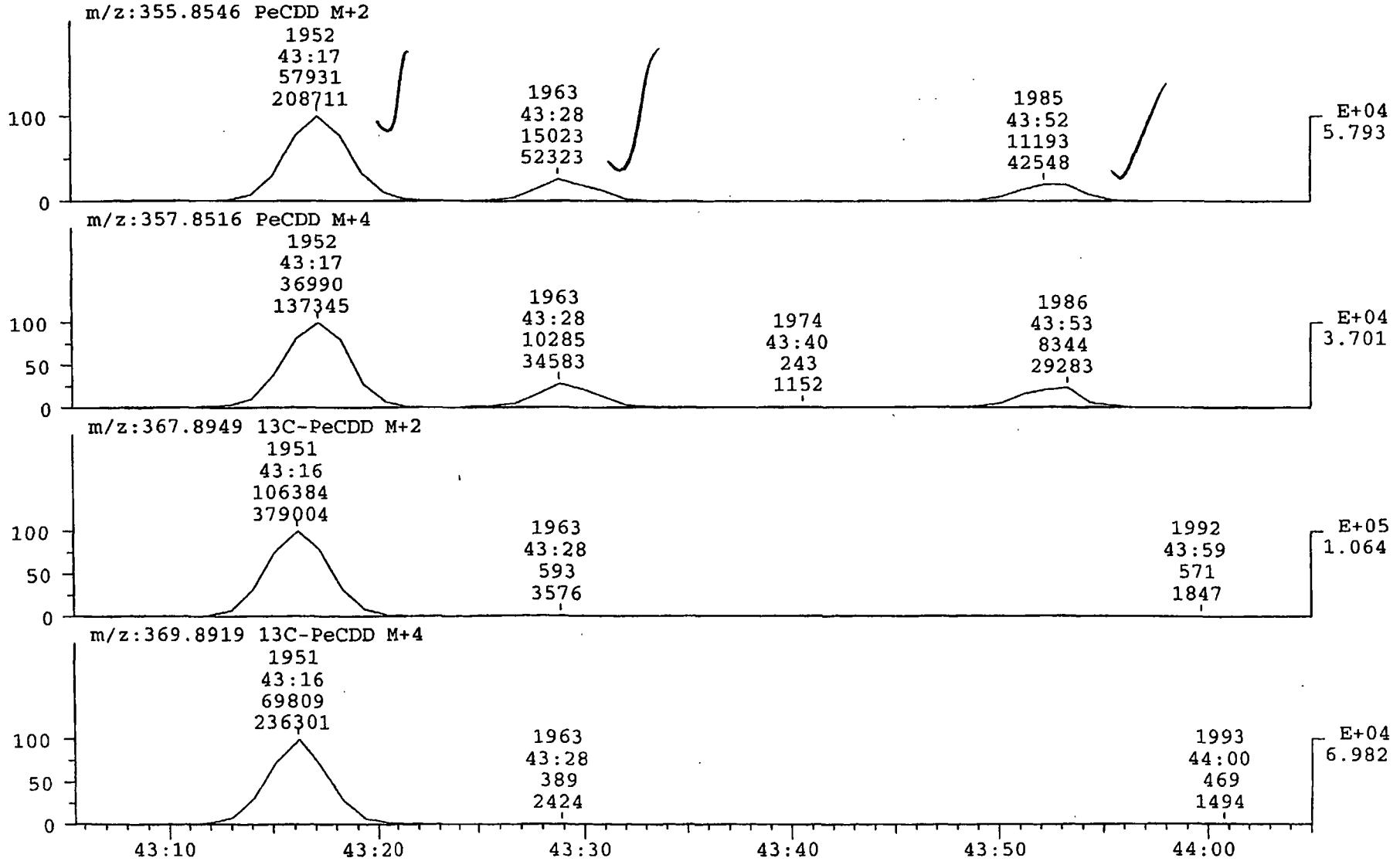
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  46:08      2111
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                  Inlet :  GC     Vial 25
Peak:  100.00  ppm     Label wndw:   1000 > 3500            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 3.0
Disp:  Height  Area
```



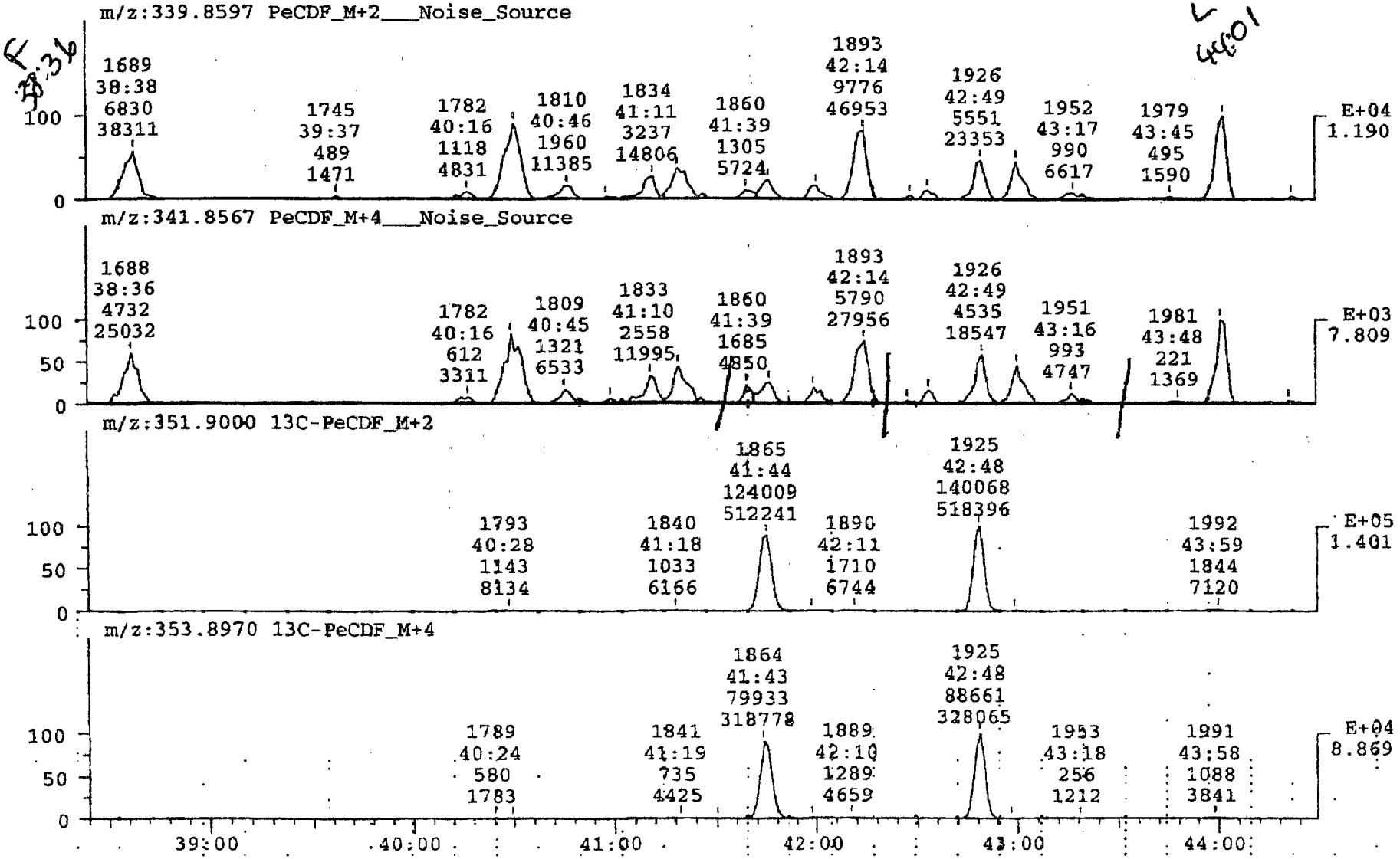
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



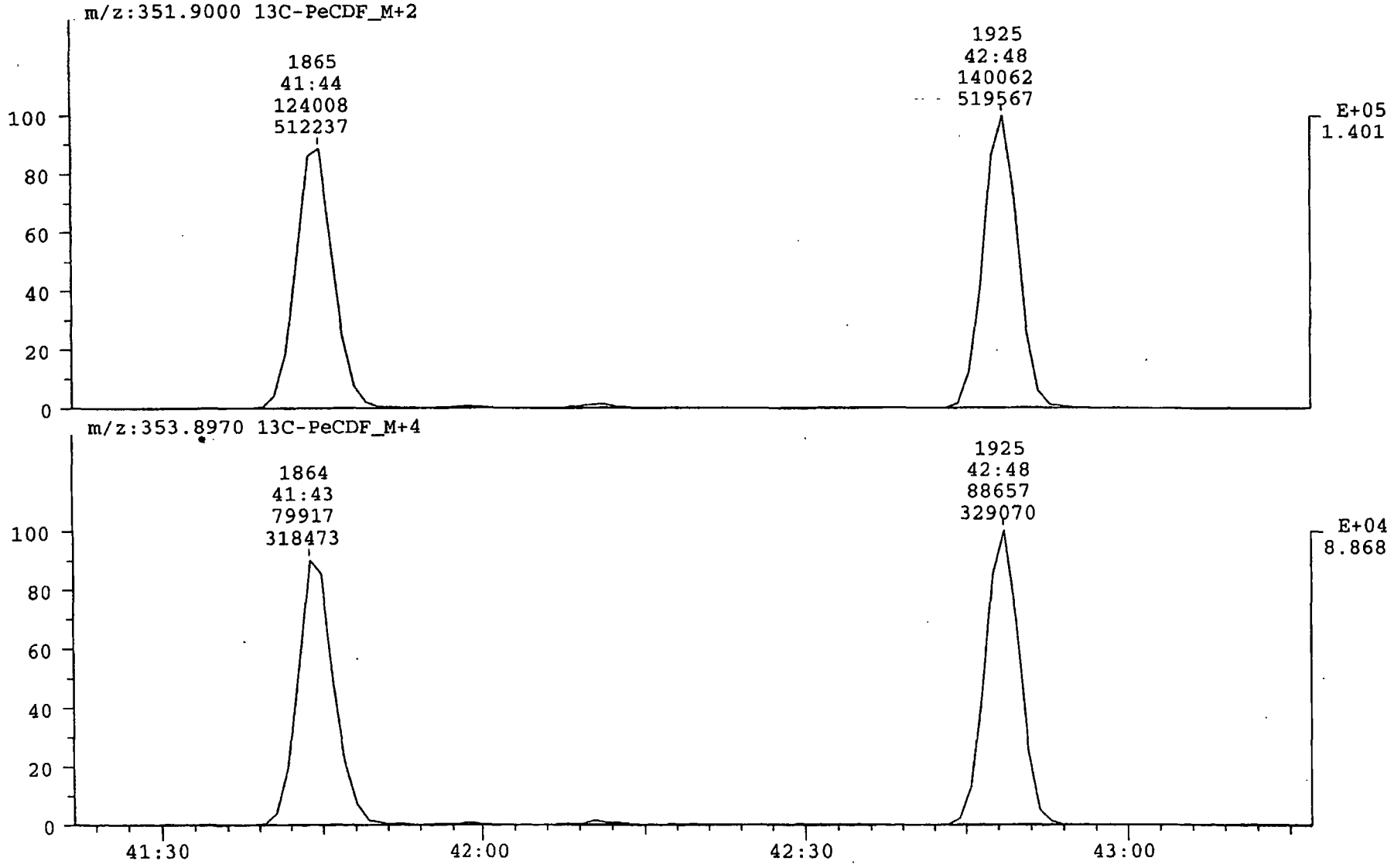
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:08 2111
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



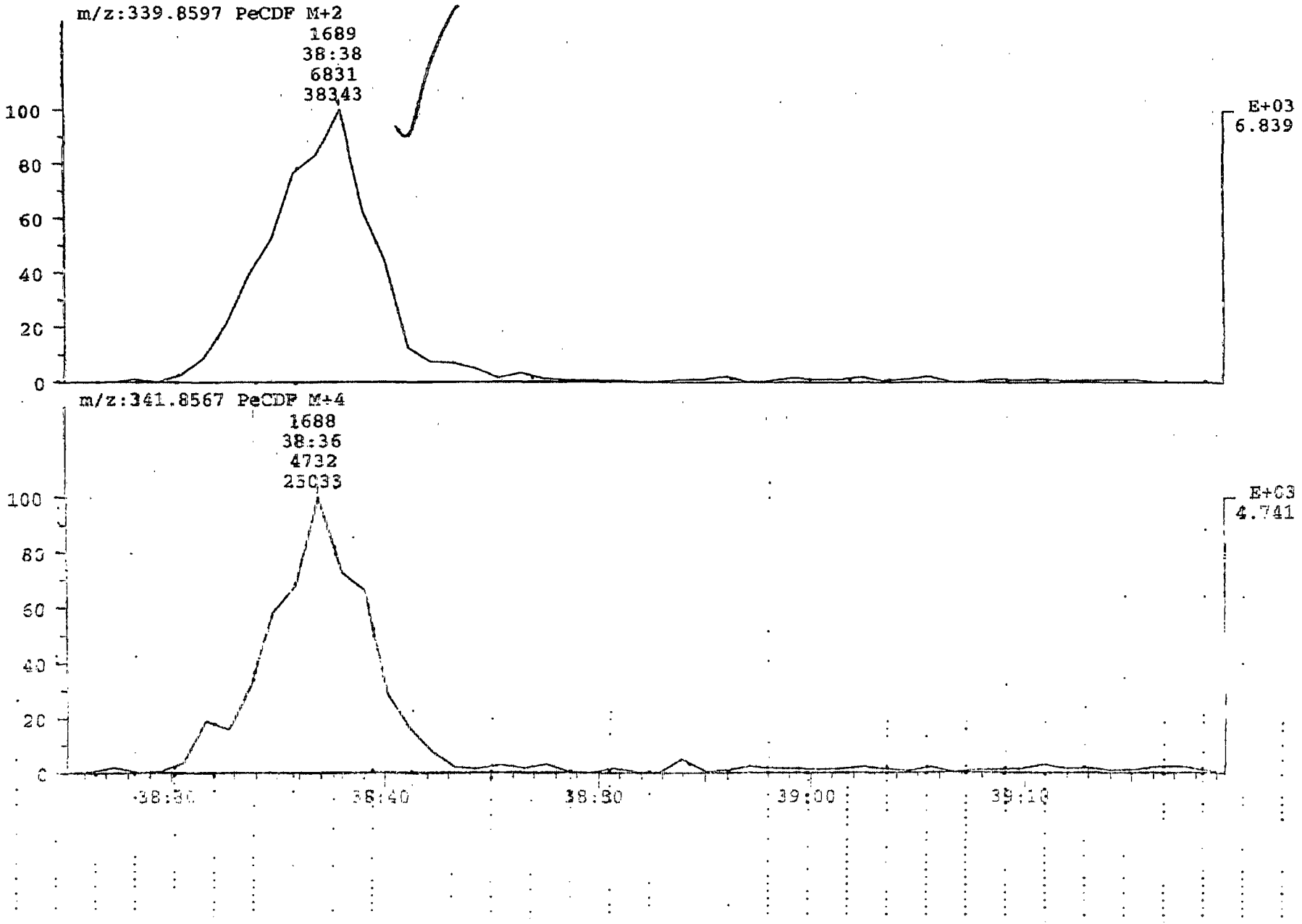
CHRO: tfx1wh2 05-Oct-03 Elapse: 43:15 1950
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



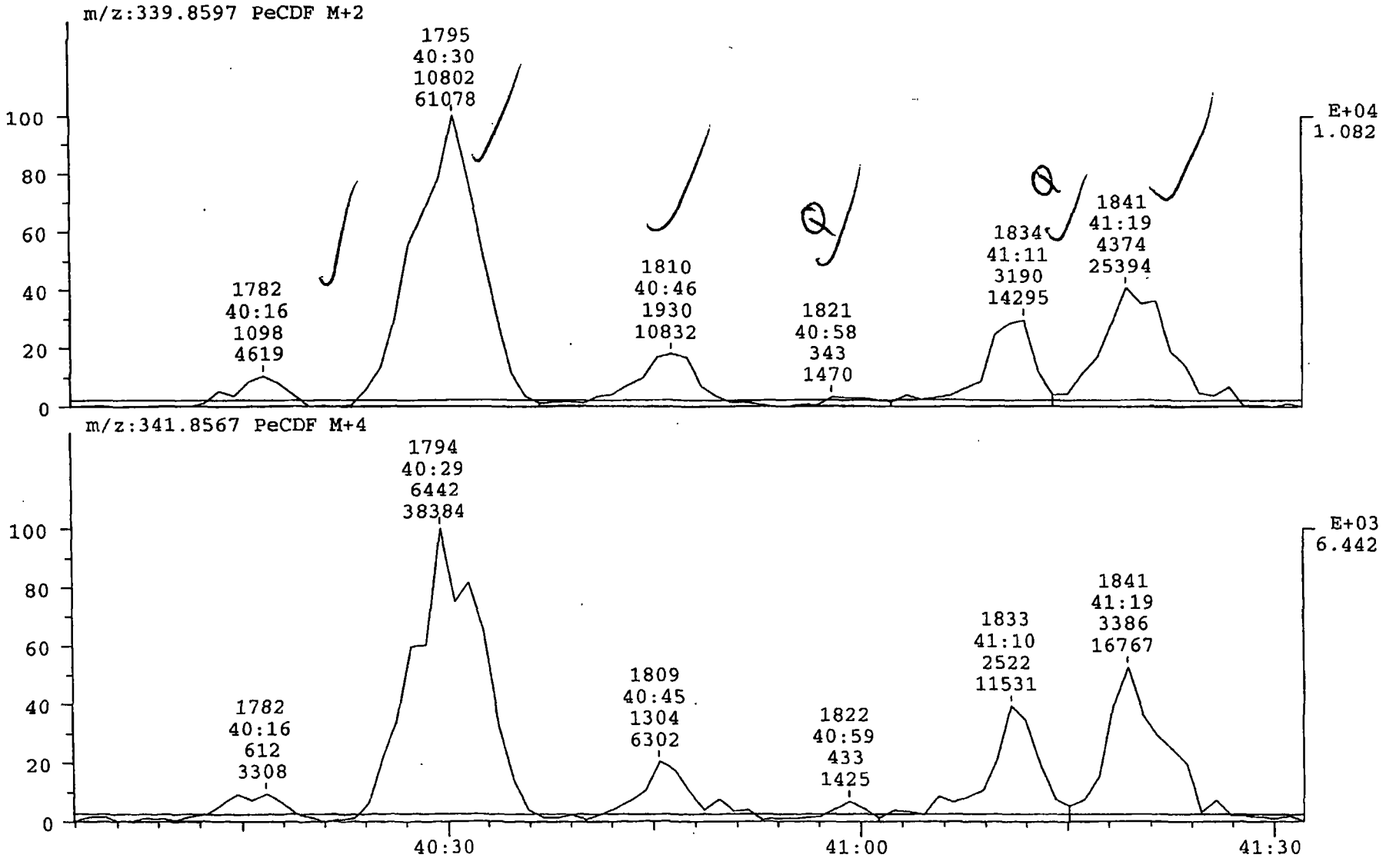
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:18 1897
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1843 > 1952 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



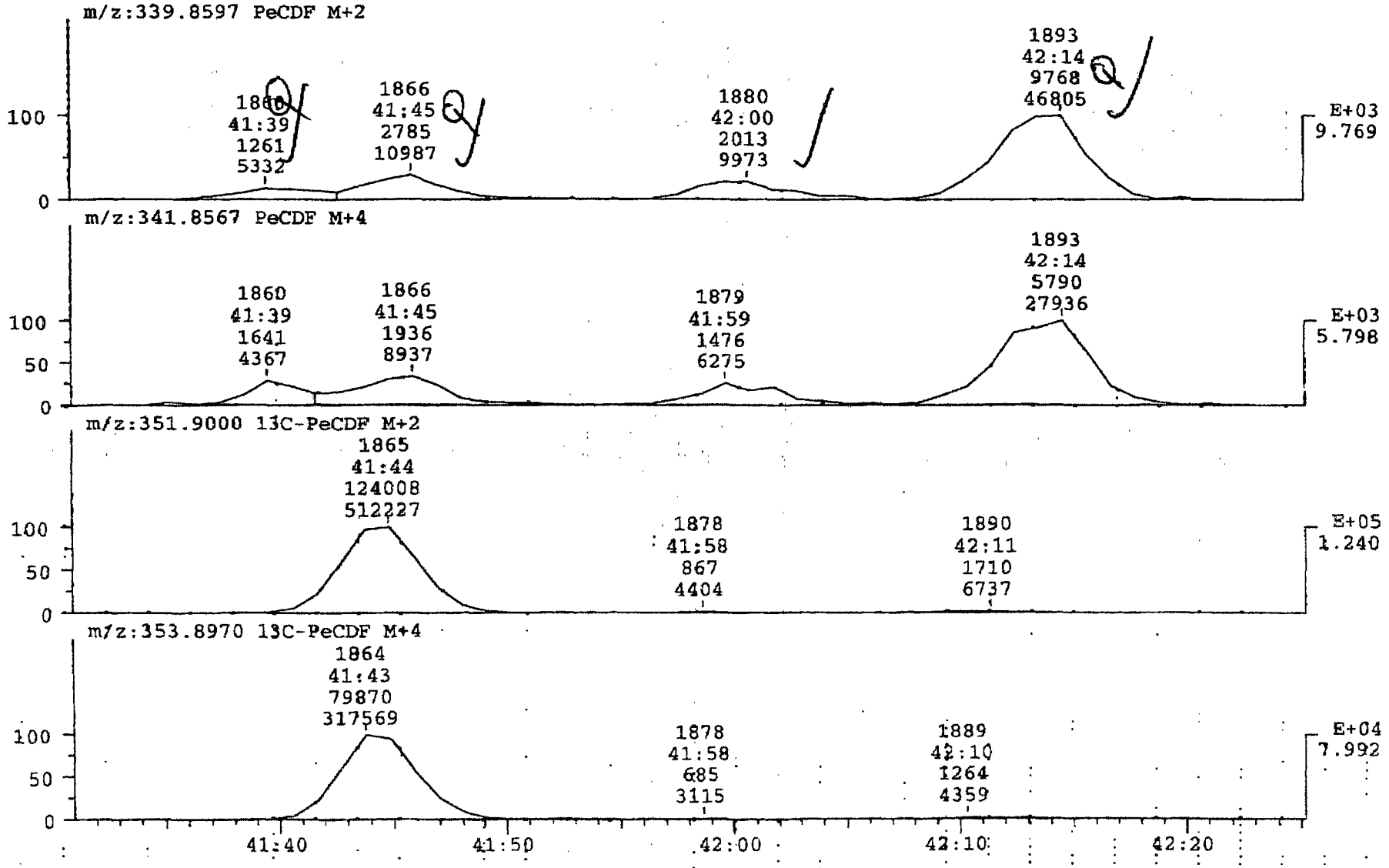
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1677 > 1728 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1769 > 1853 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1852 > 1903 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

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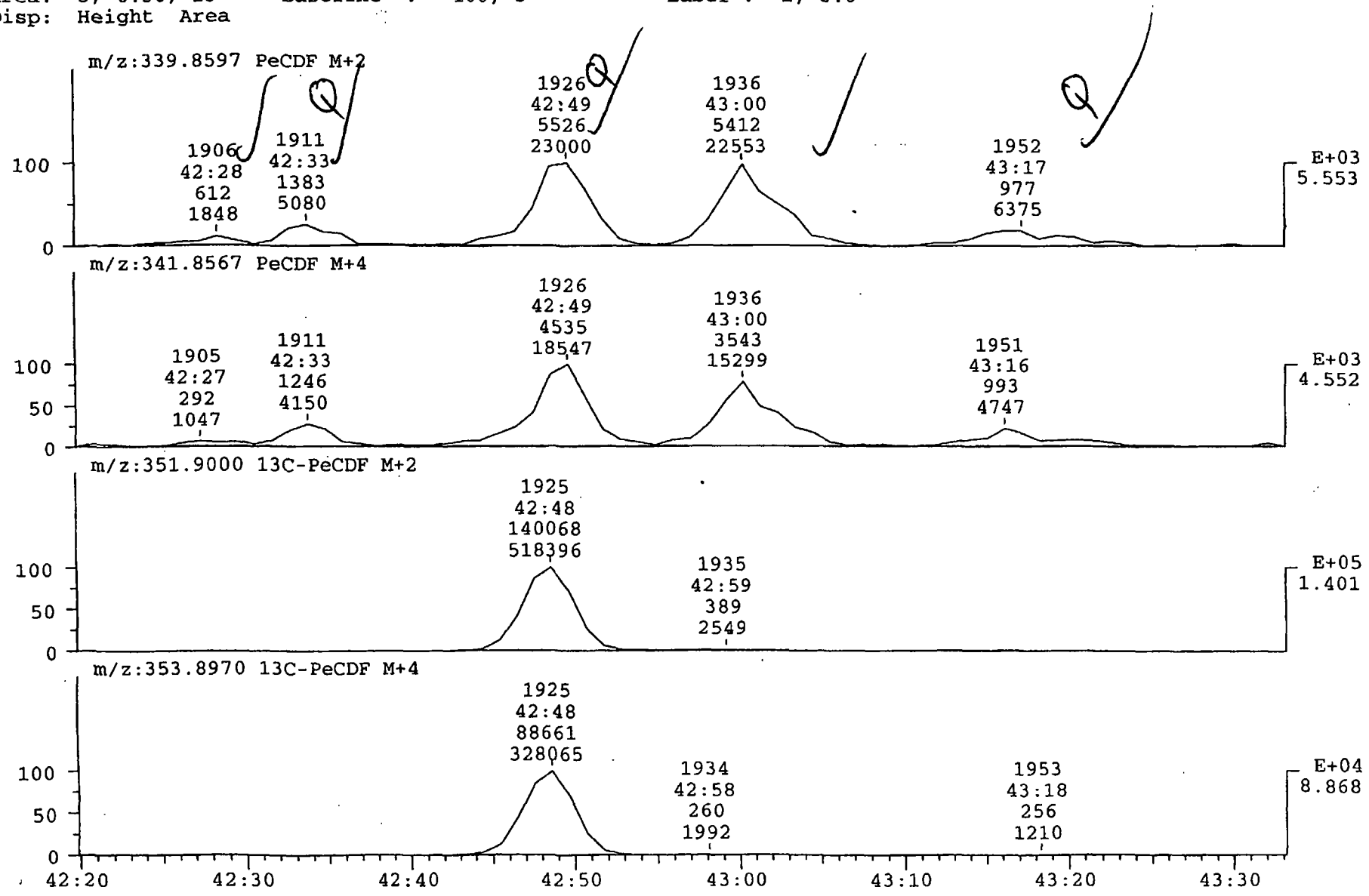
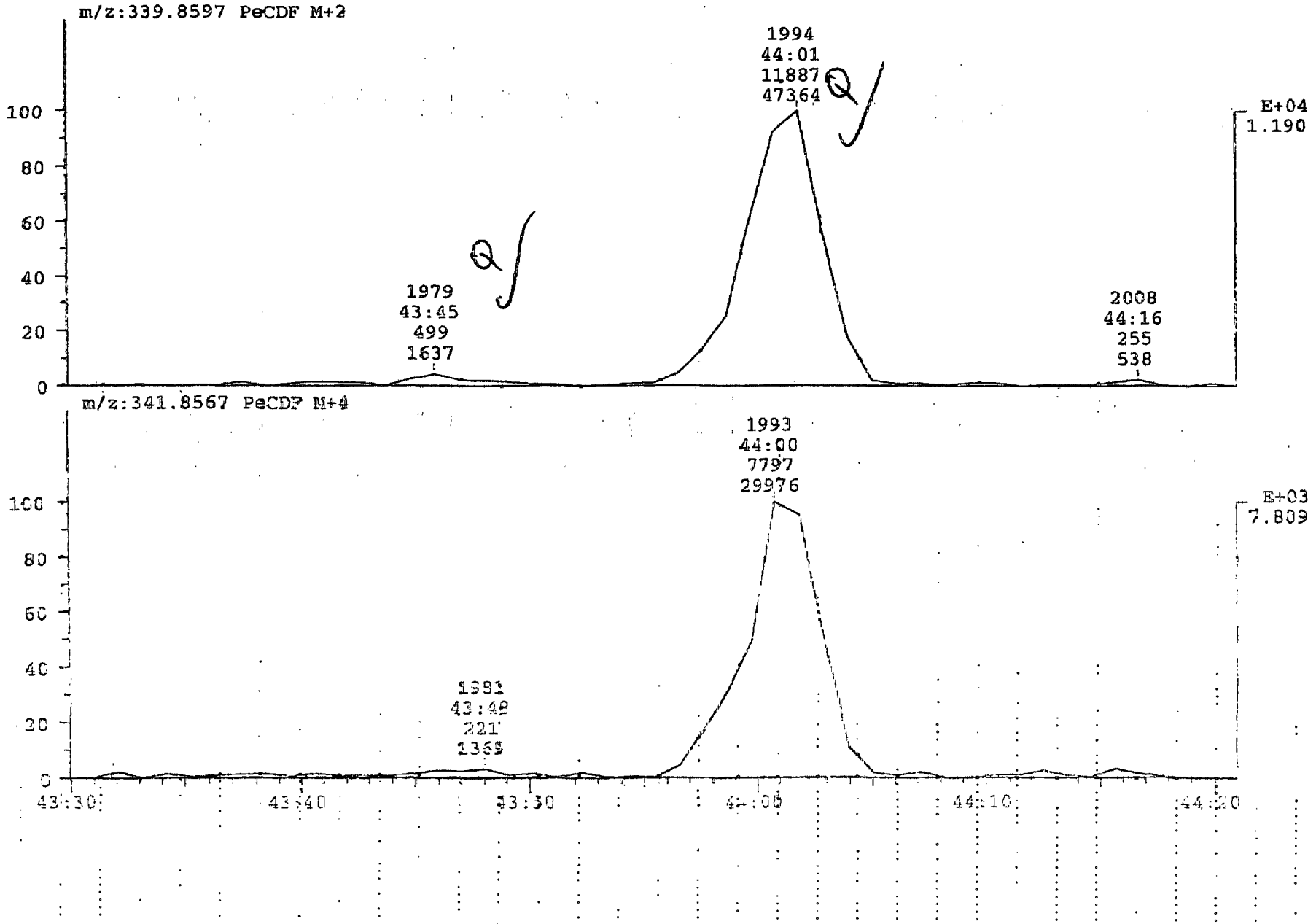
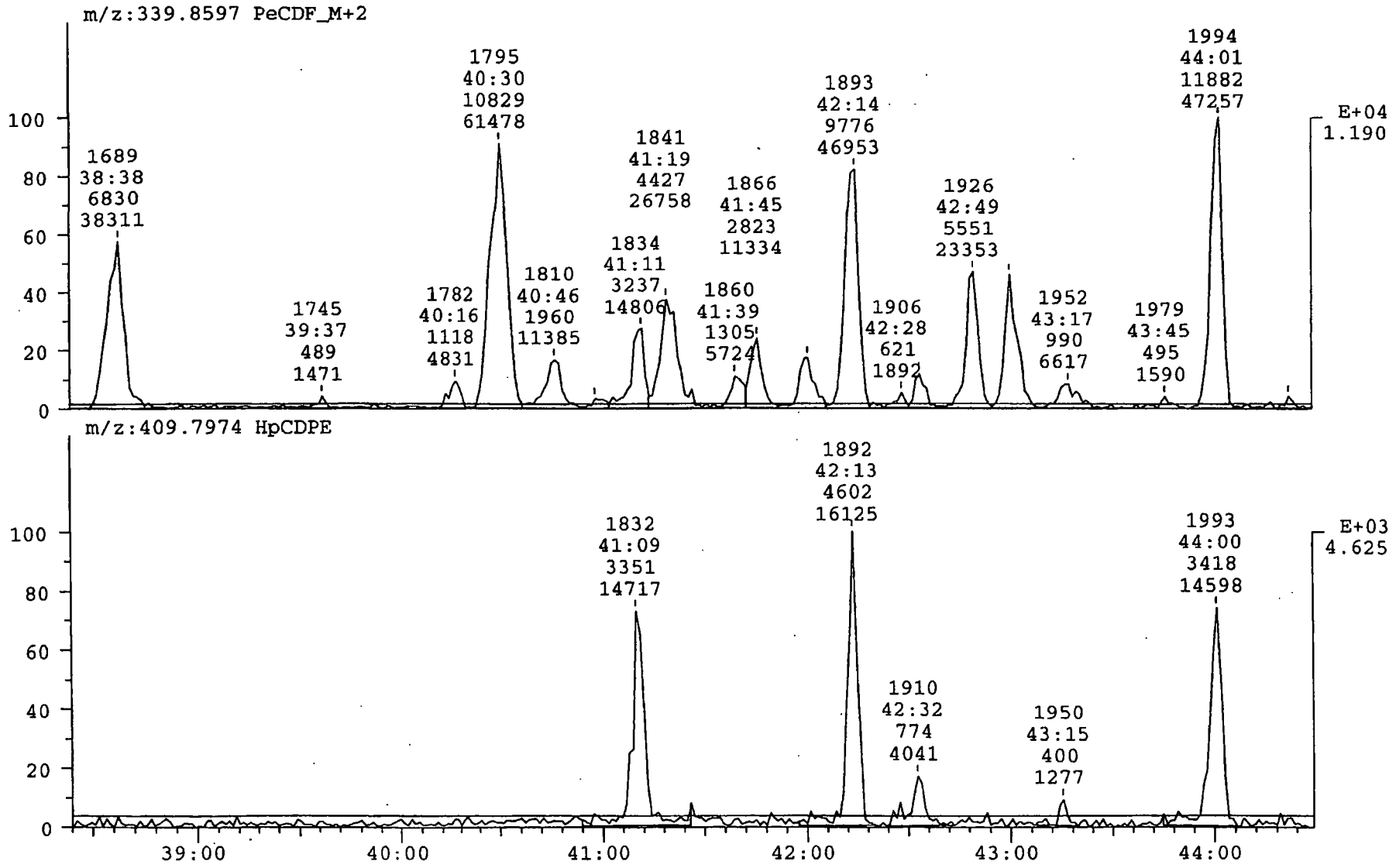
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1898 > 1967 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



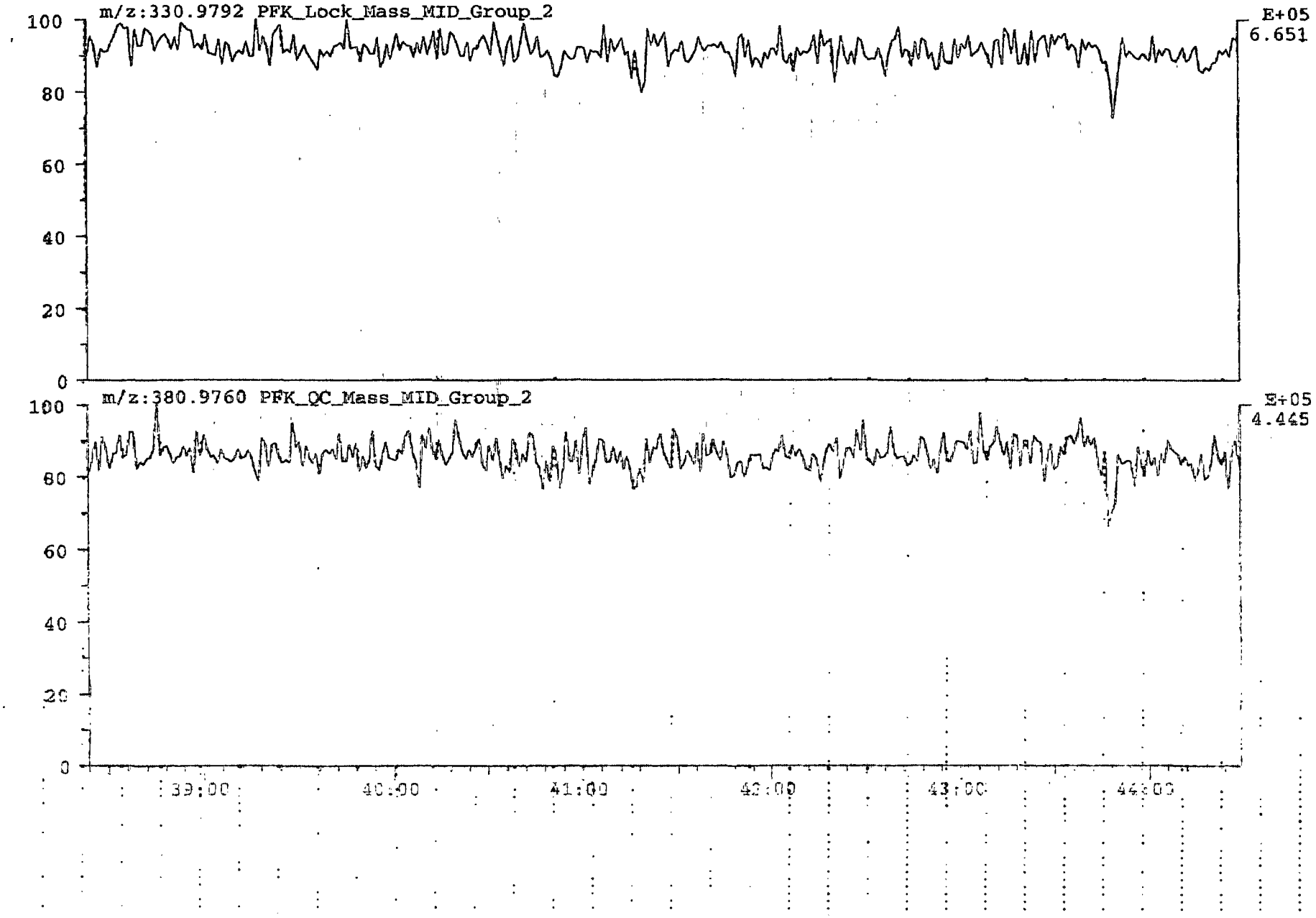
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LNR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1964 > 2012 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



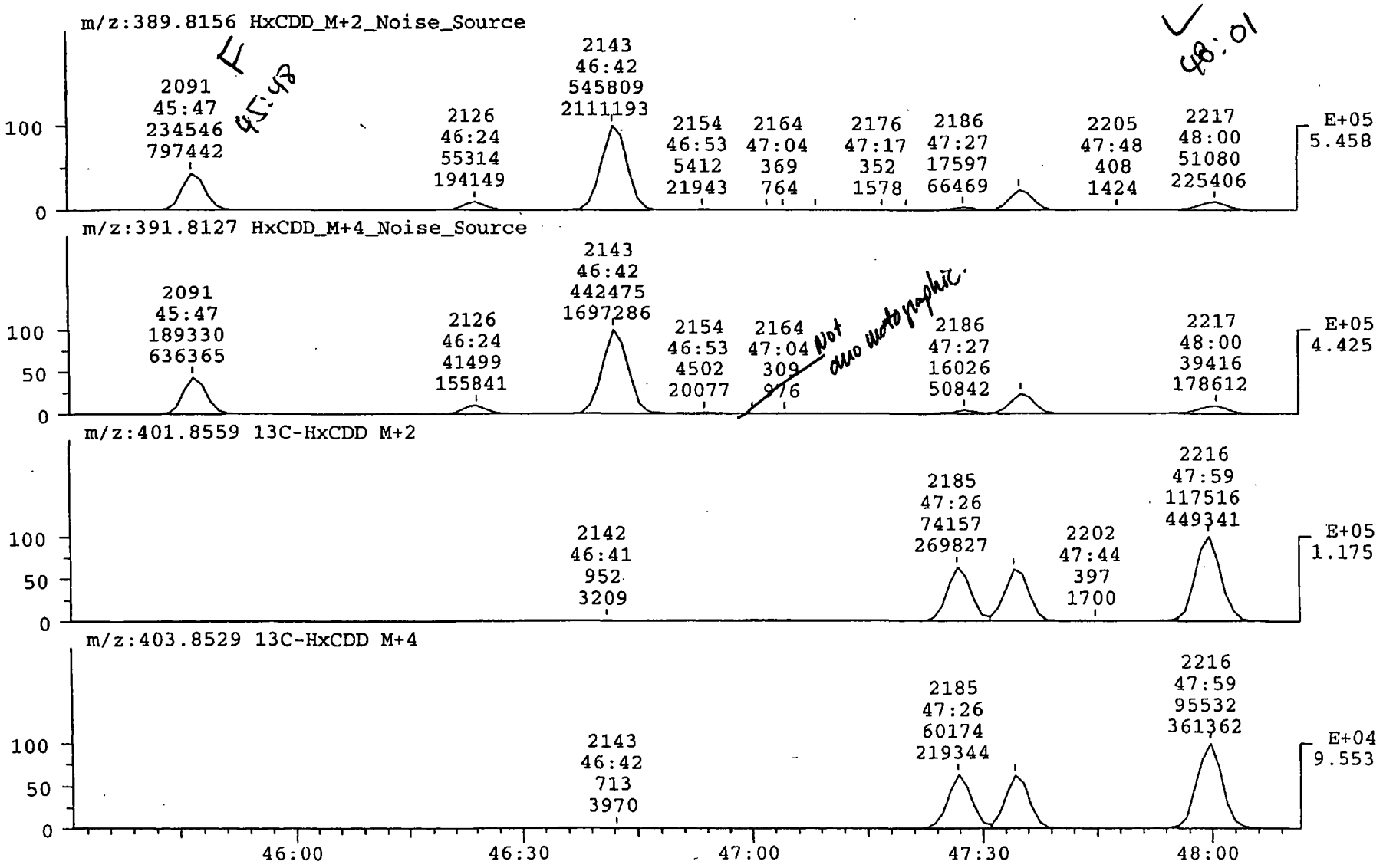
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:18 1897
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



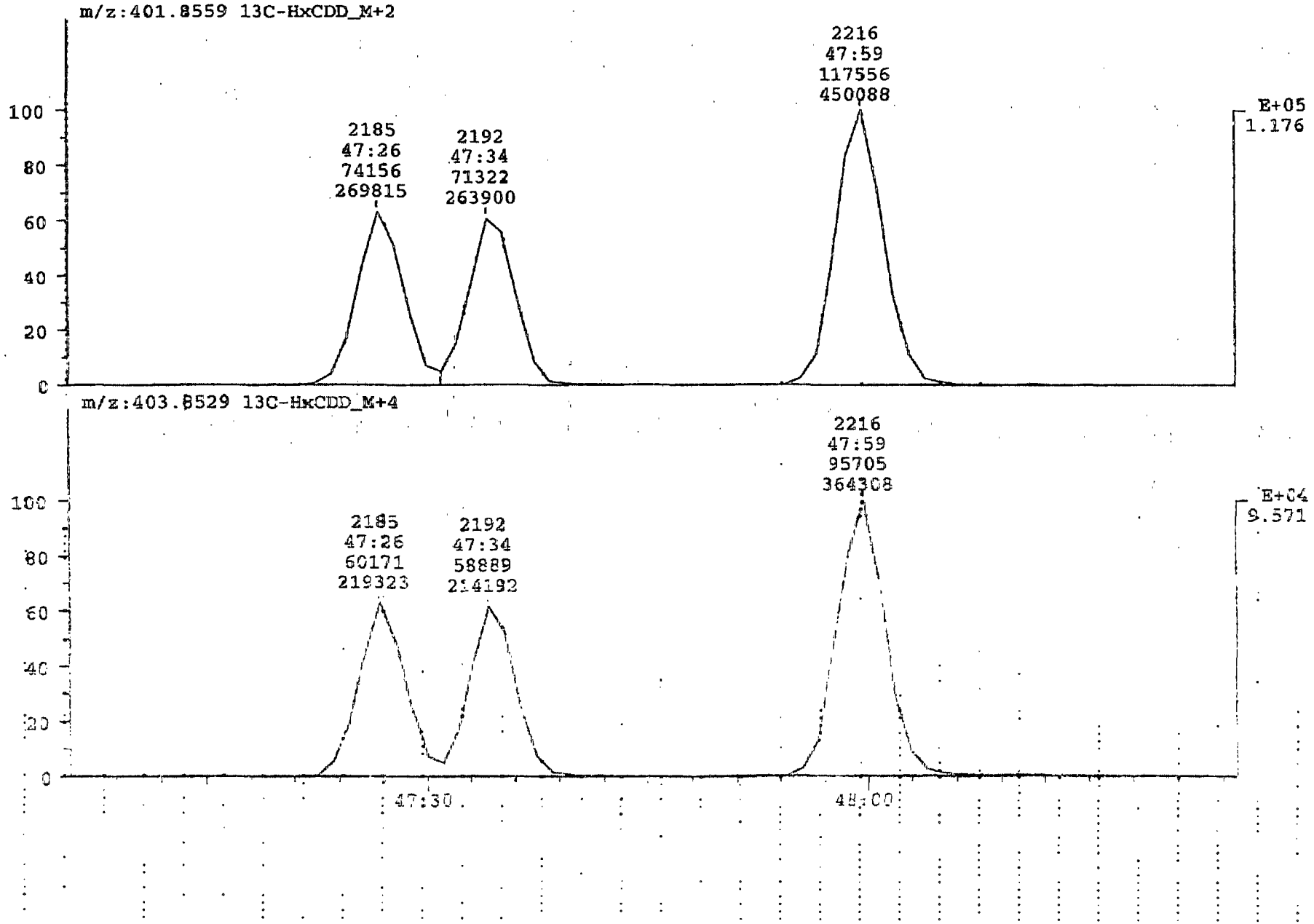
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:18 1897
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



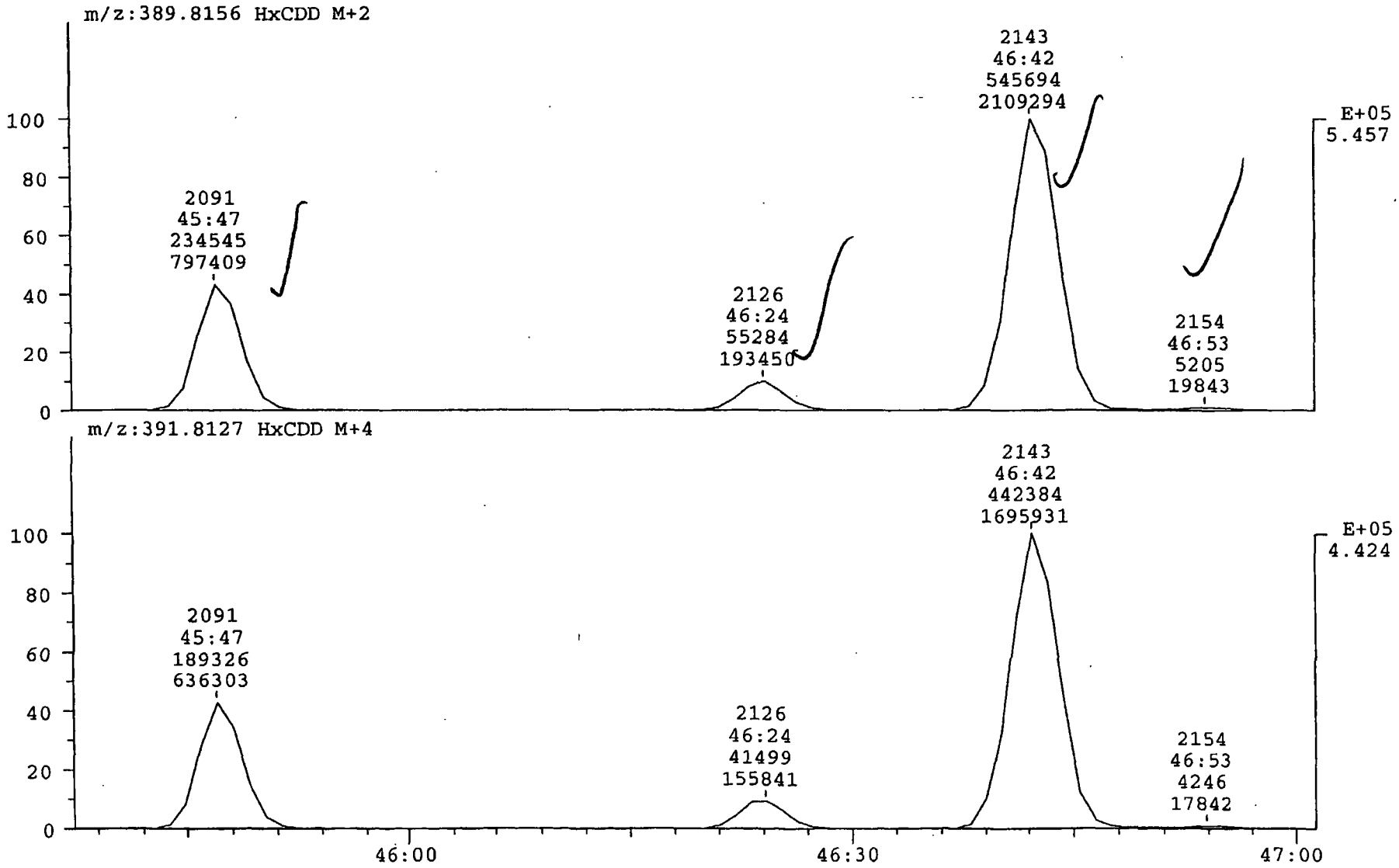
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2076 > 2227 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 47:44 2202
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2165 > 2240 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2082 > 2161 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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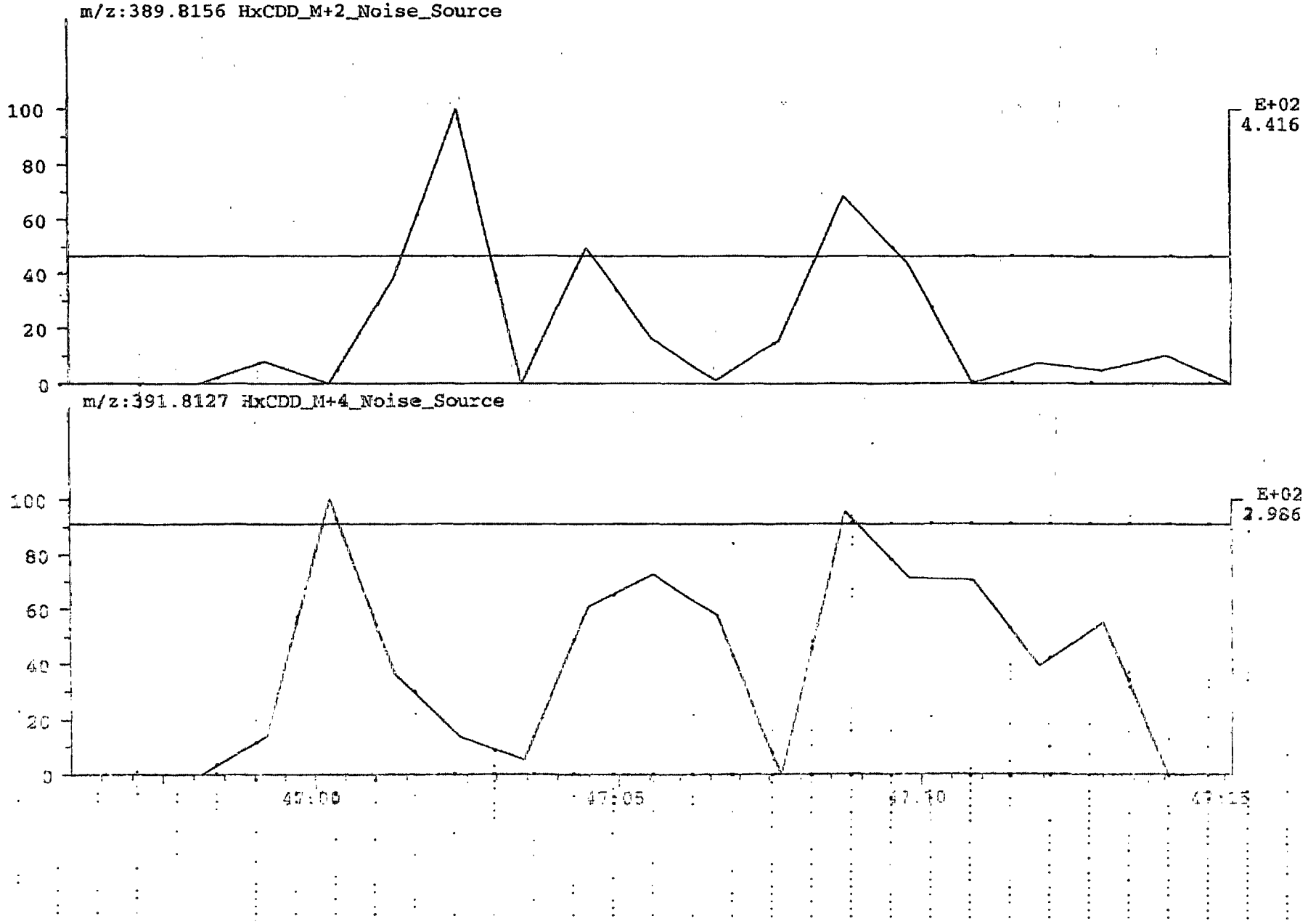
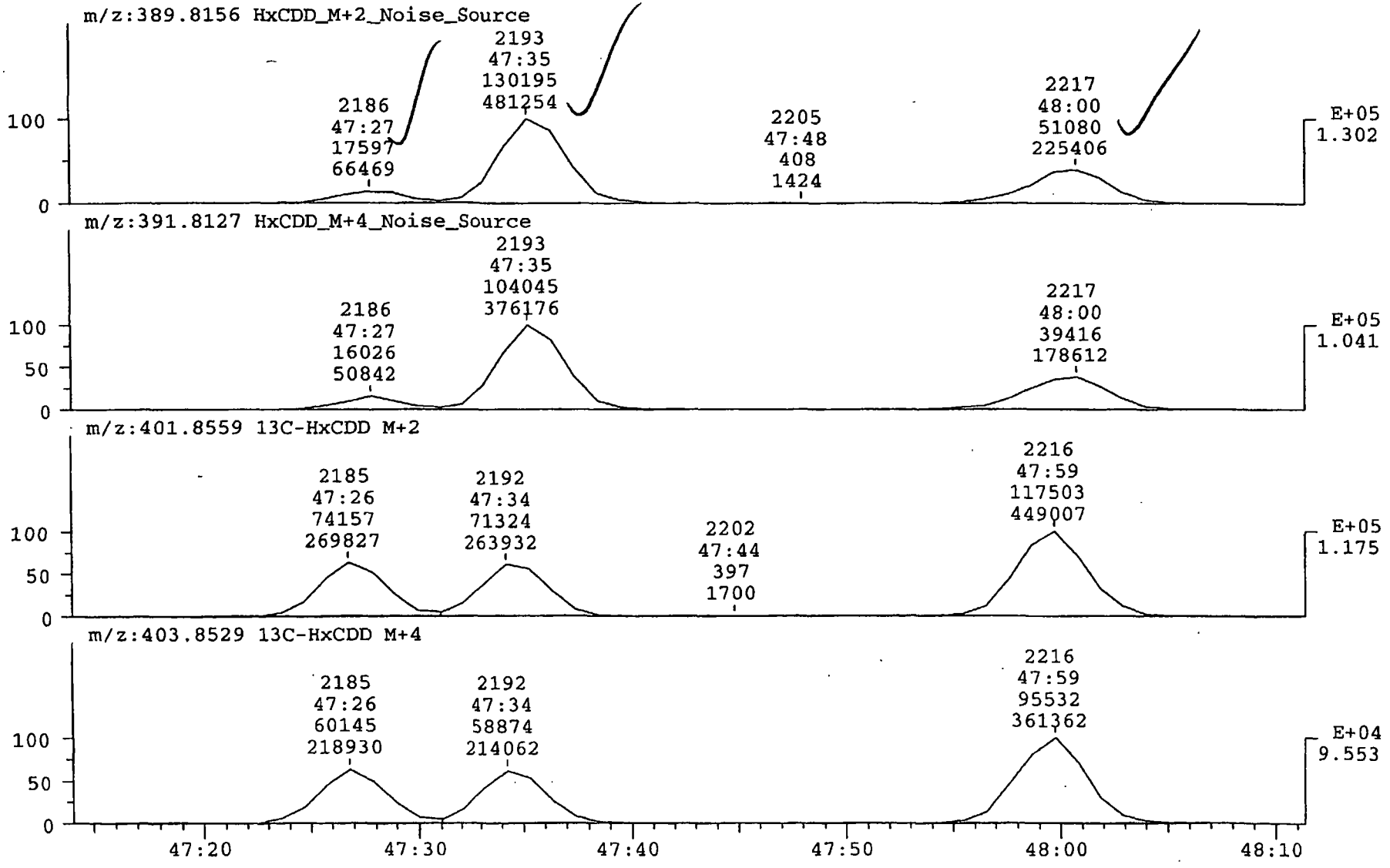
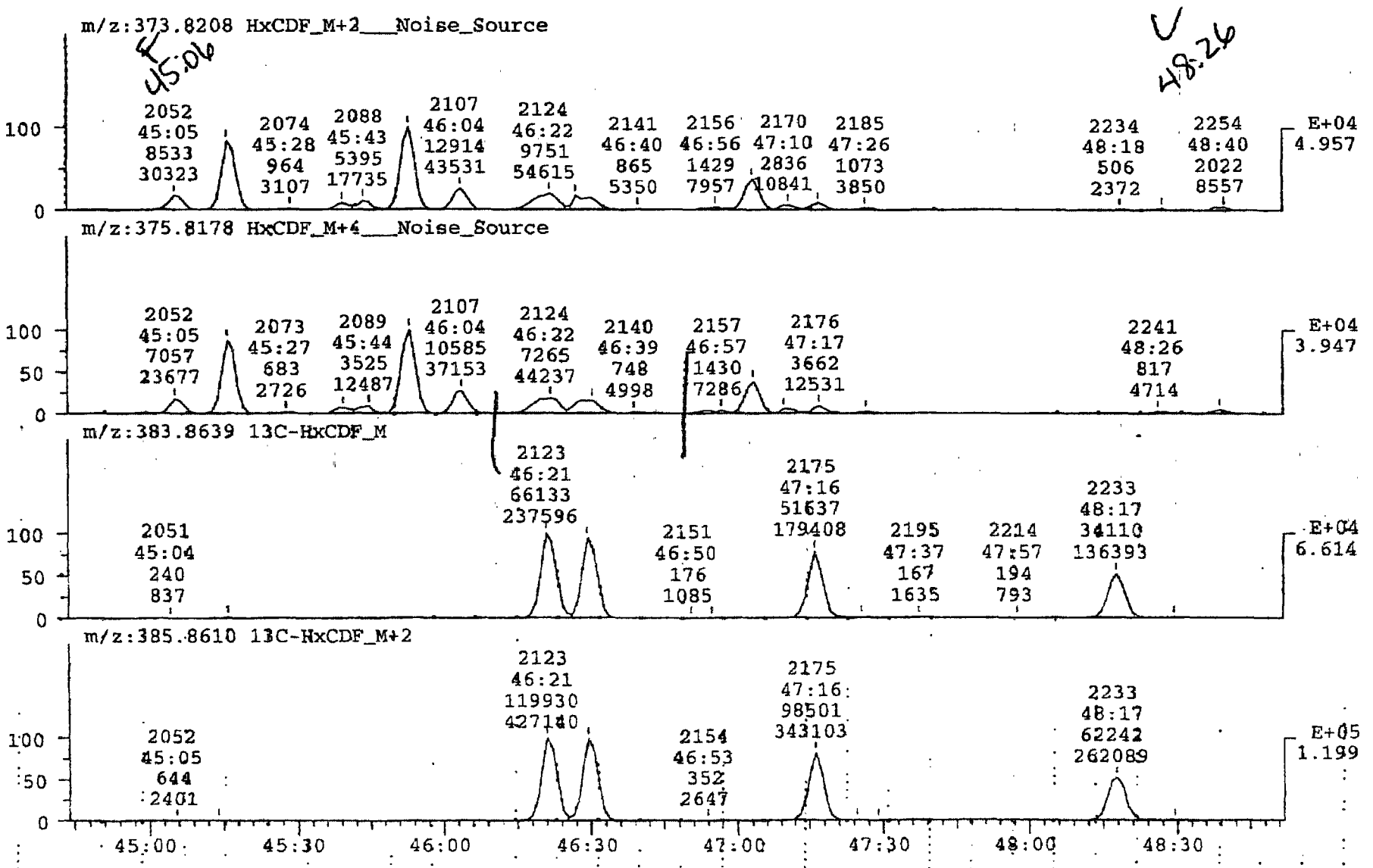
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:   42:57       1933
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :   02:52:13    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-002                 Inlet :   GC      Vial  25
Peak:  100.00  ppm     Label wndw:   2156 > 2174            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :   -2, 3.0
Disp:  Height  Area
```



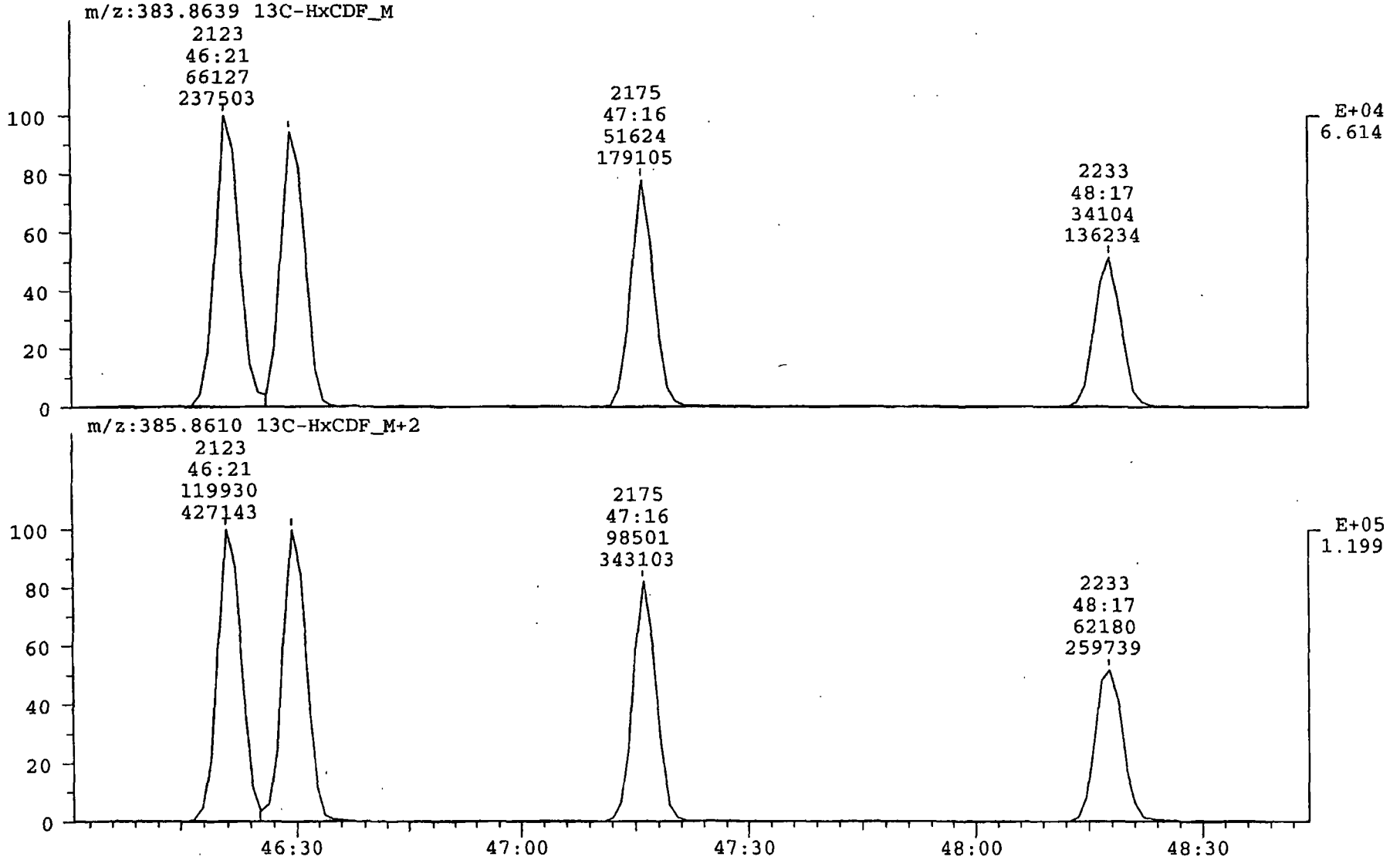
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2173 > 2227 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 47:44 2202
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 47:21 2180
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2104 > 2258 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  46:30      2132
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-002                  Inlet :  GC     Vial 25
Peak:  100.00  ppm     Label wndw:   2128 > 2136            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 3.0
Disp:  Height  Area
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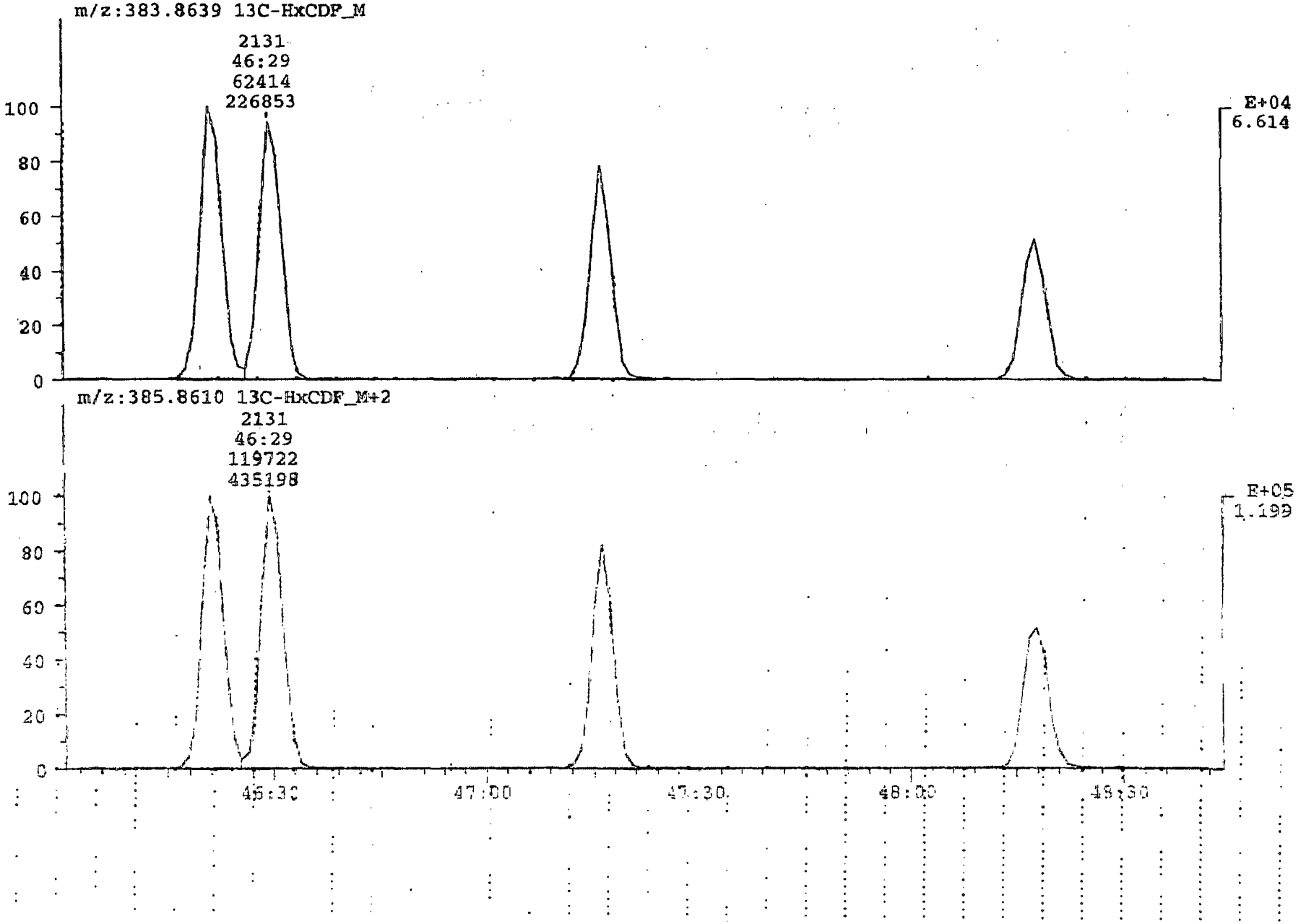
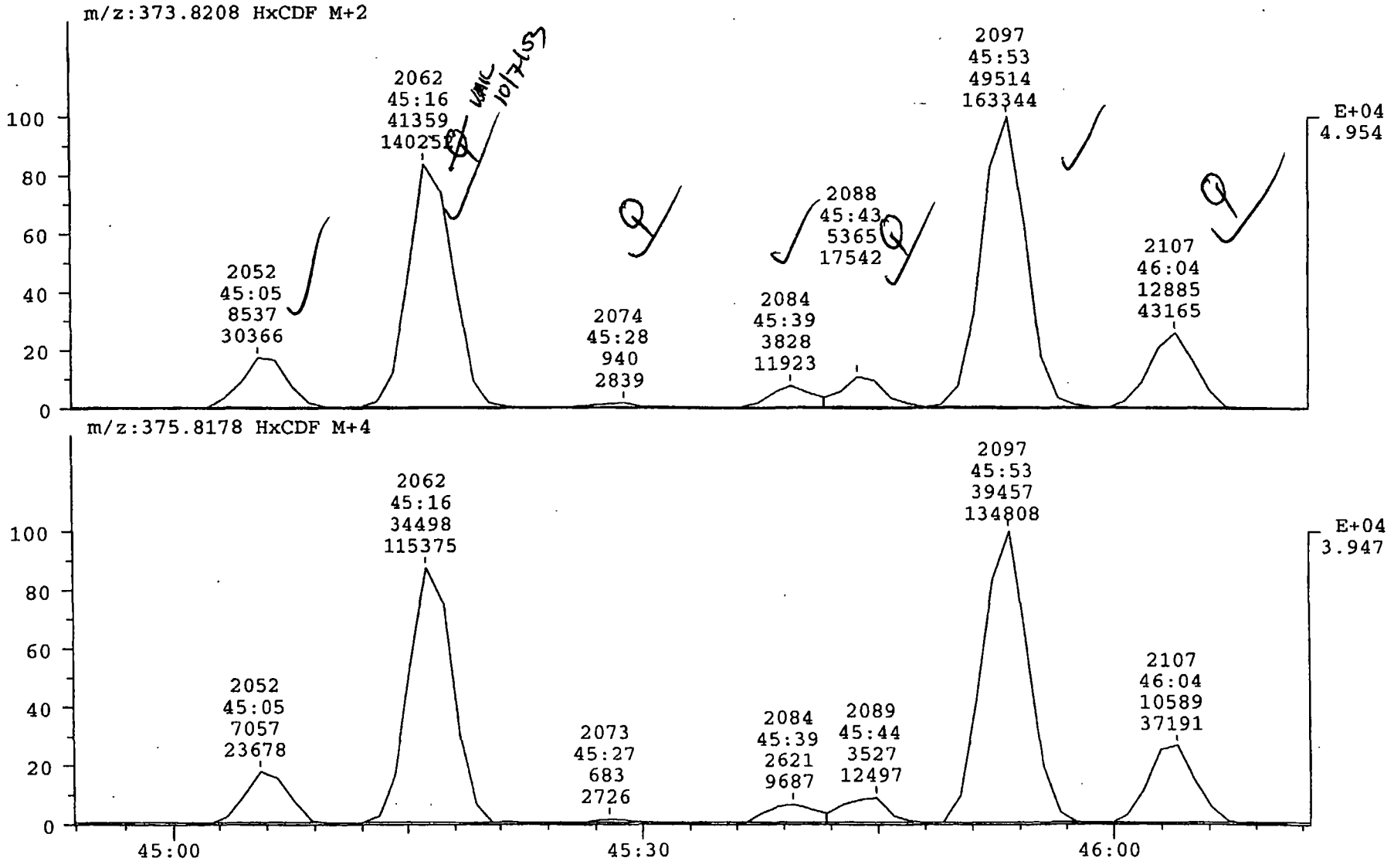


CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2041 > 2115 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  42:57      1933
Samp:  Vial 25 WO=fx1wh2aa Meth=LN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-002                Inlet :  GC     Vial 25
Peak:  100.00  ppm      Label wndw:   2112 > 2150           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  -2, 3.0
Disp:  Height  Area
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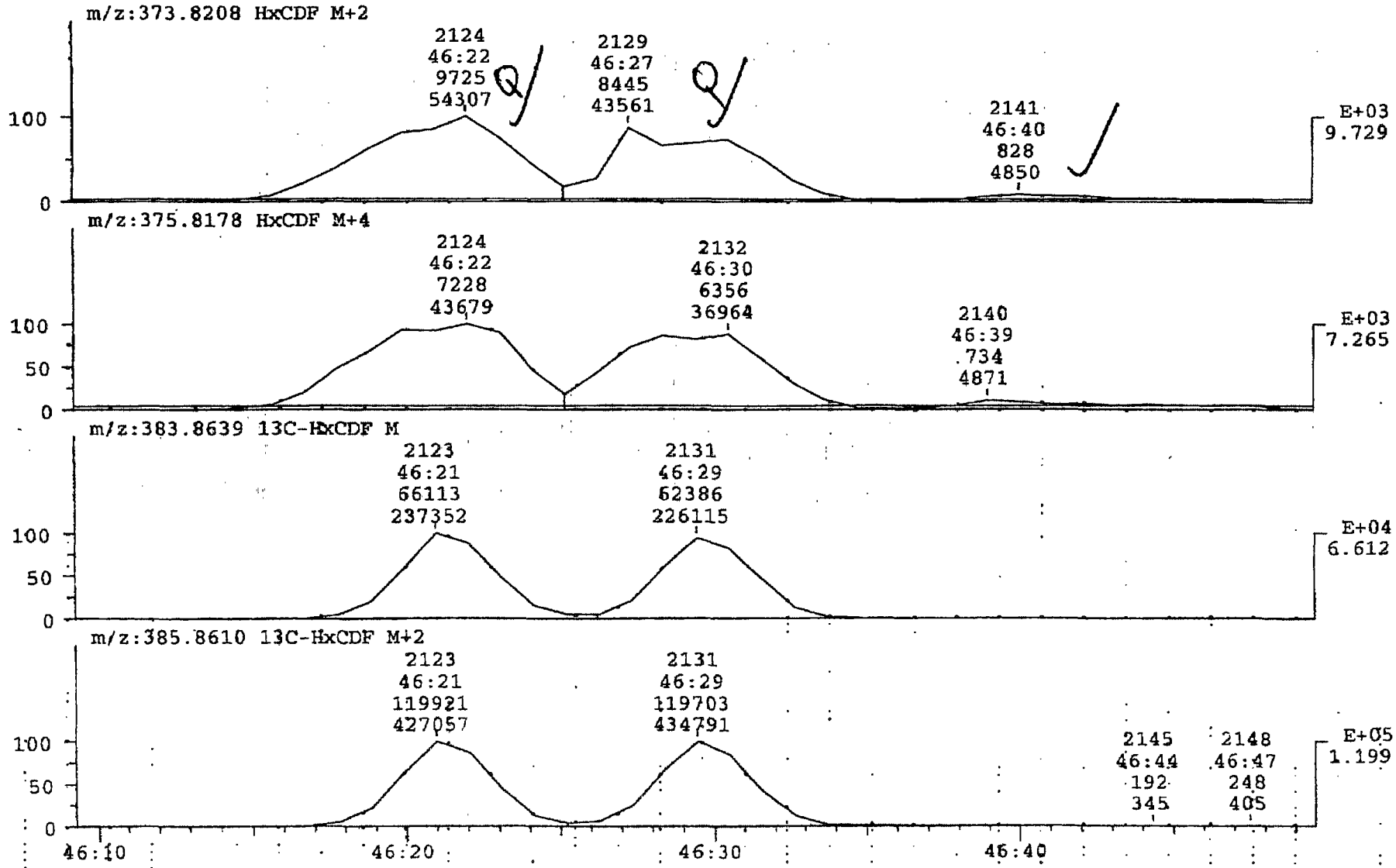
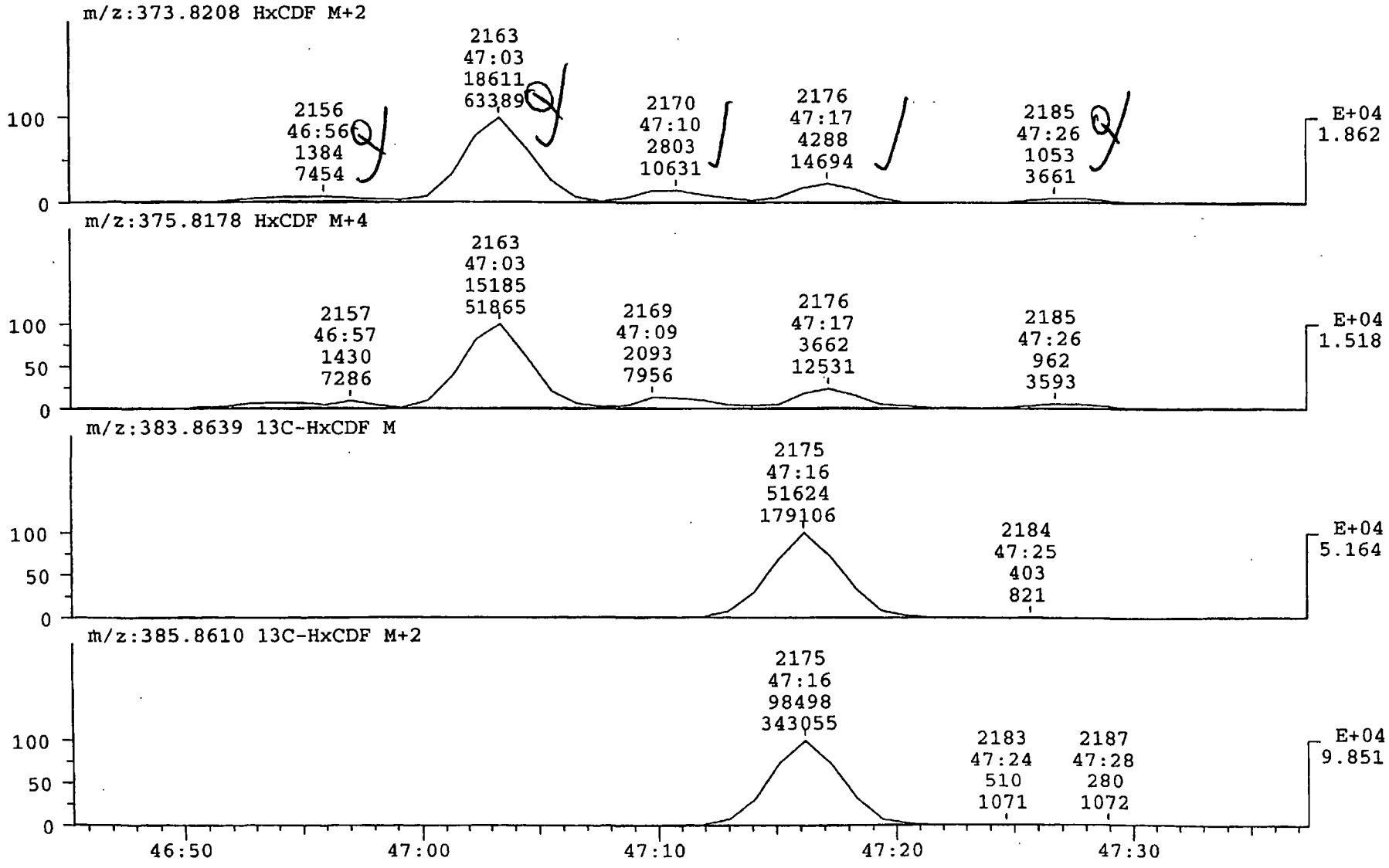
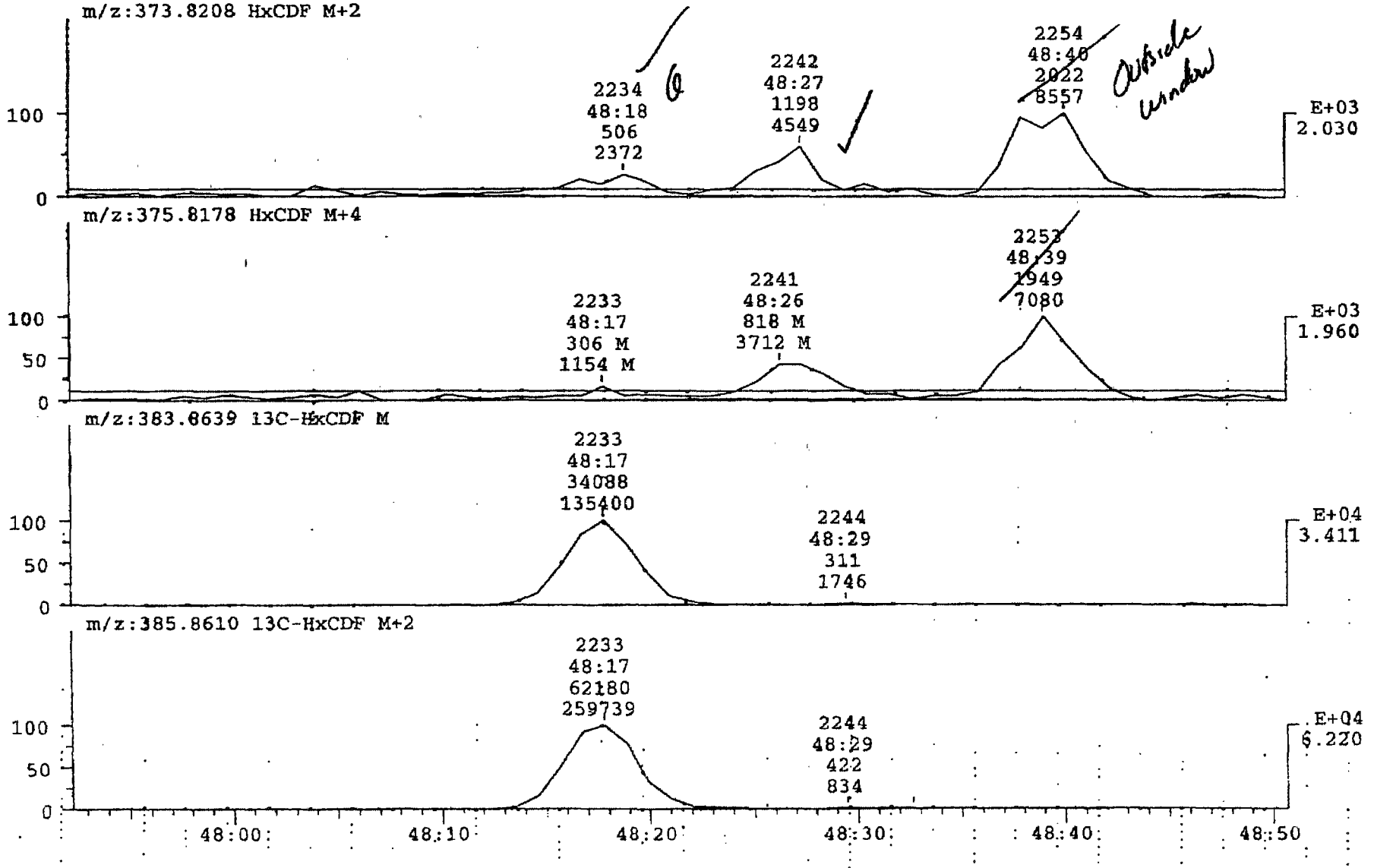


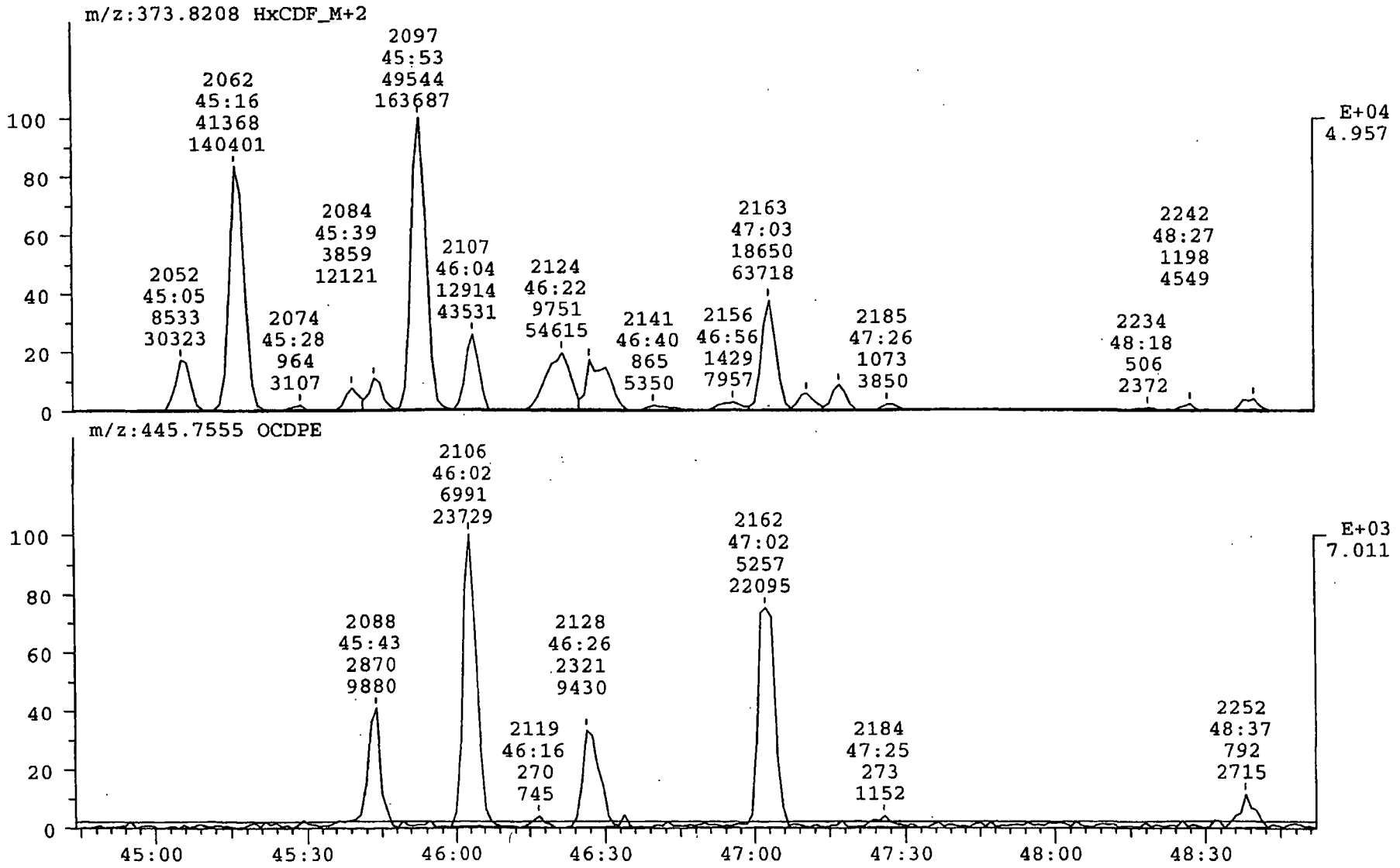
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2146 > 2195 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



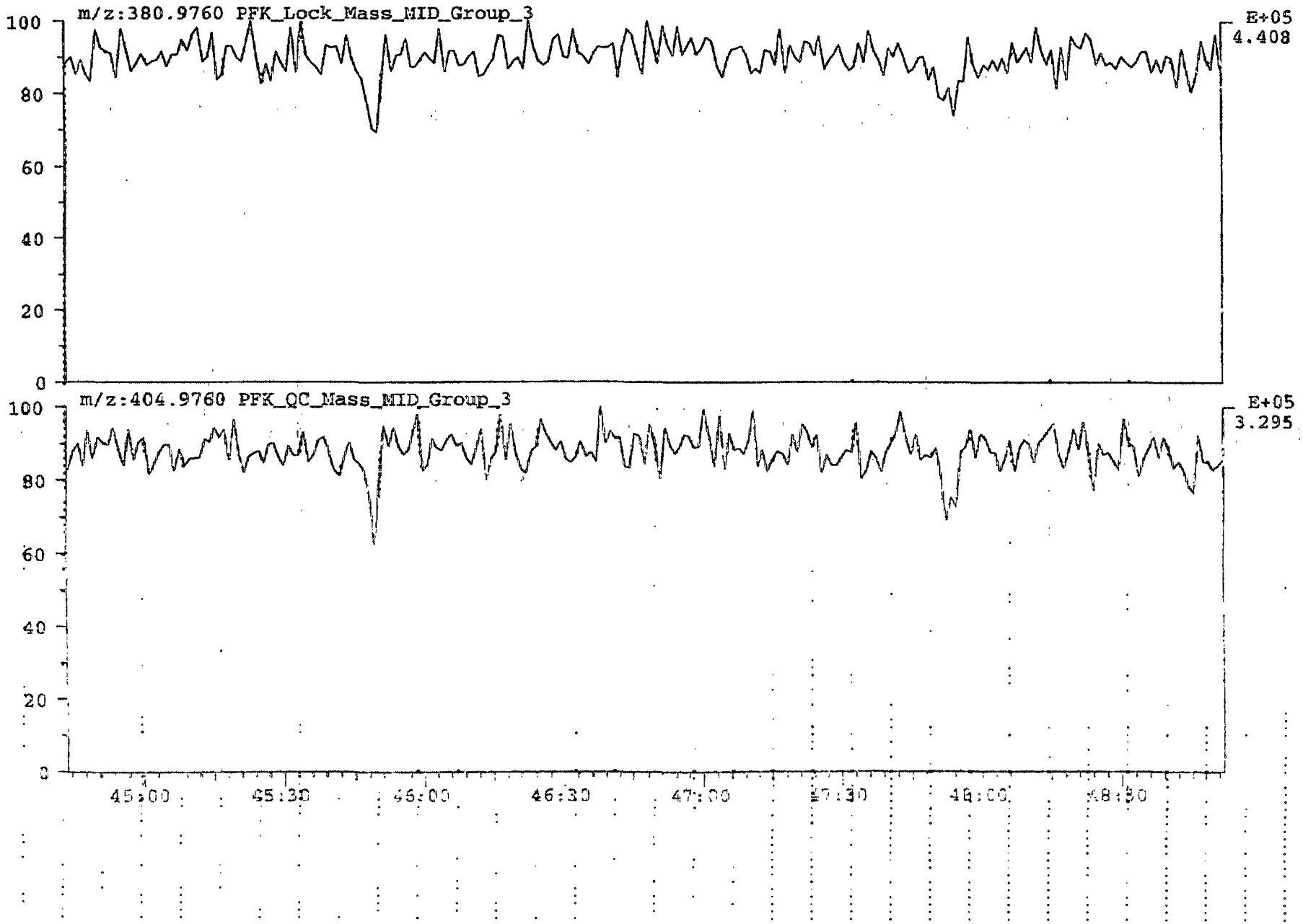
CHRO: tfx1wh2 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2209 > 2264 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



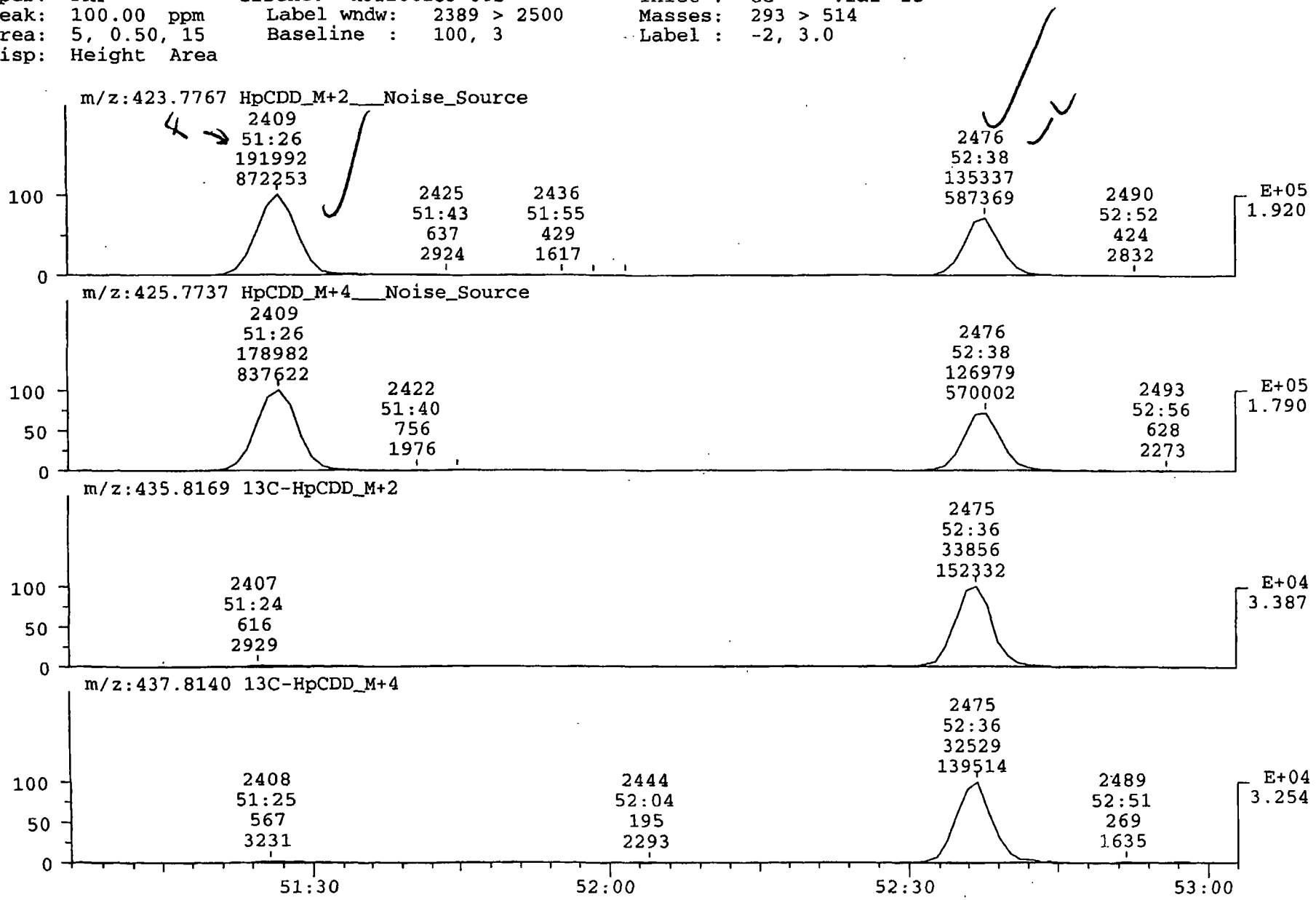
CHRO: tfx1wh2 05-Oct-03 Elapse: 46:30 2132
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 46:30 2132
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 46:30 2132
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2389 > 2500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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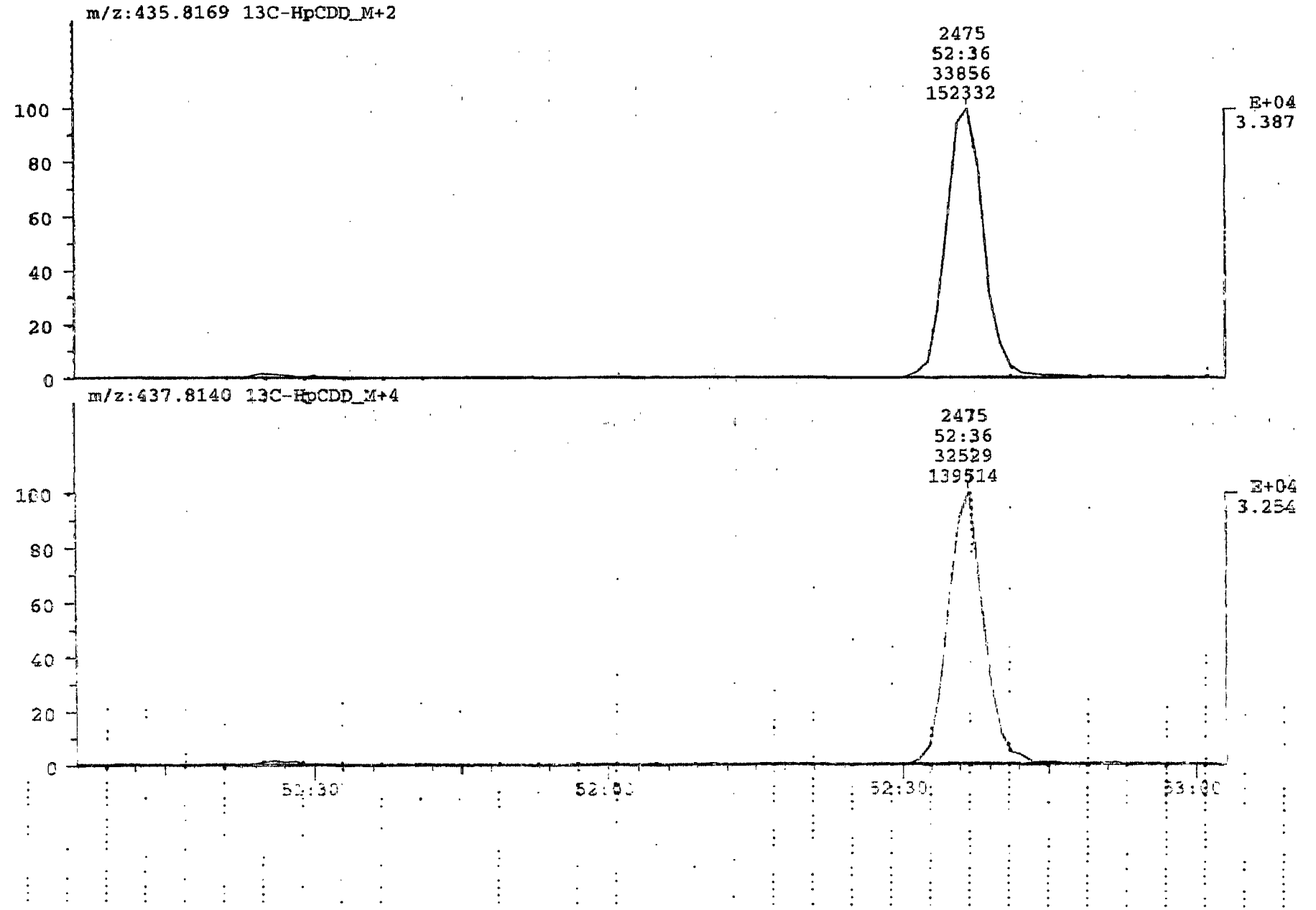
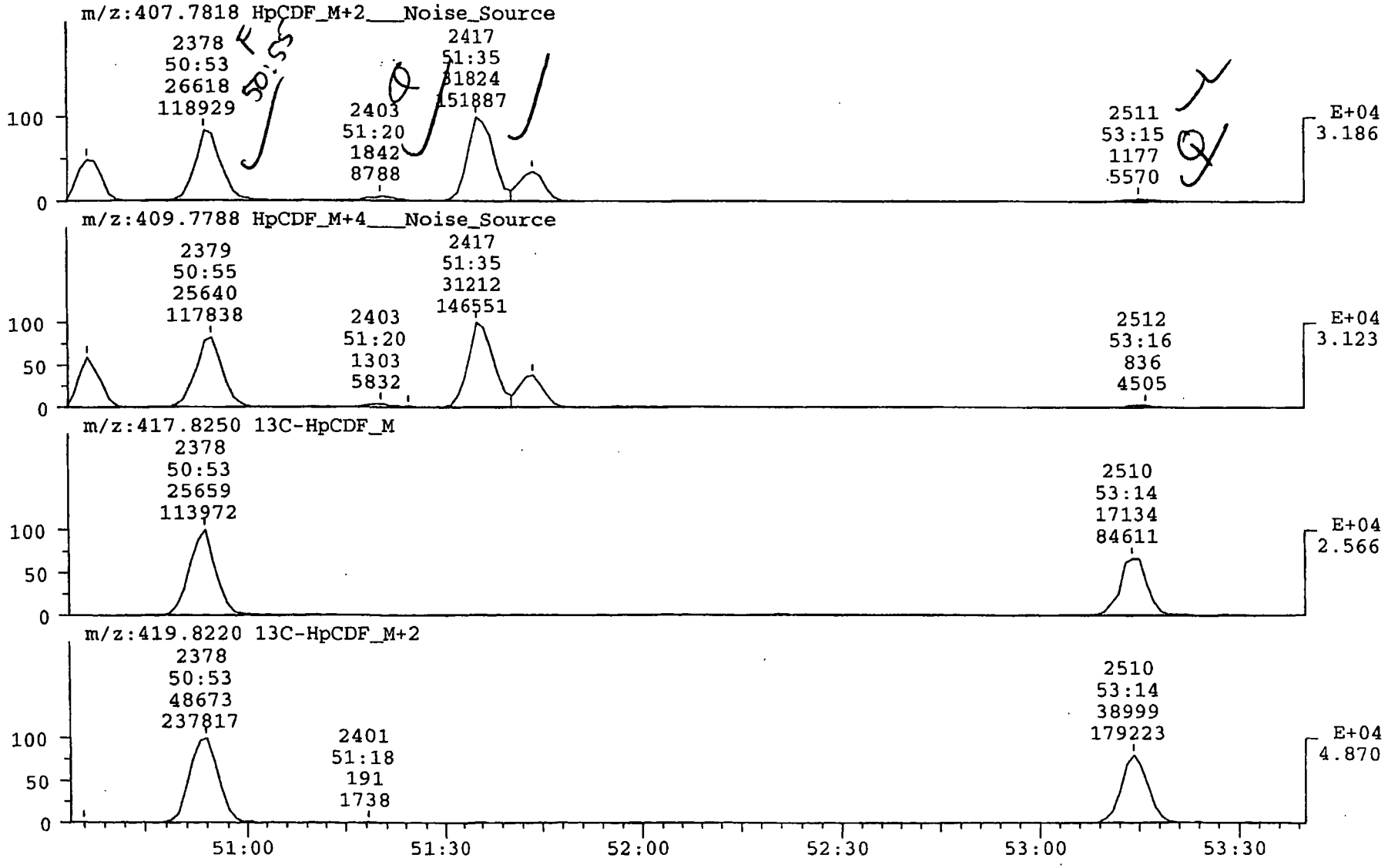
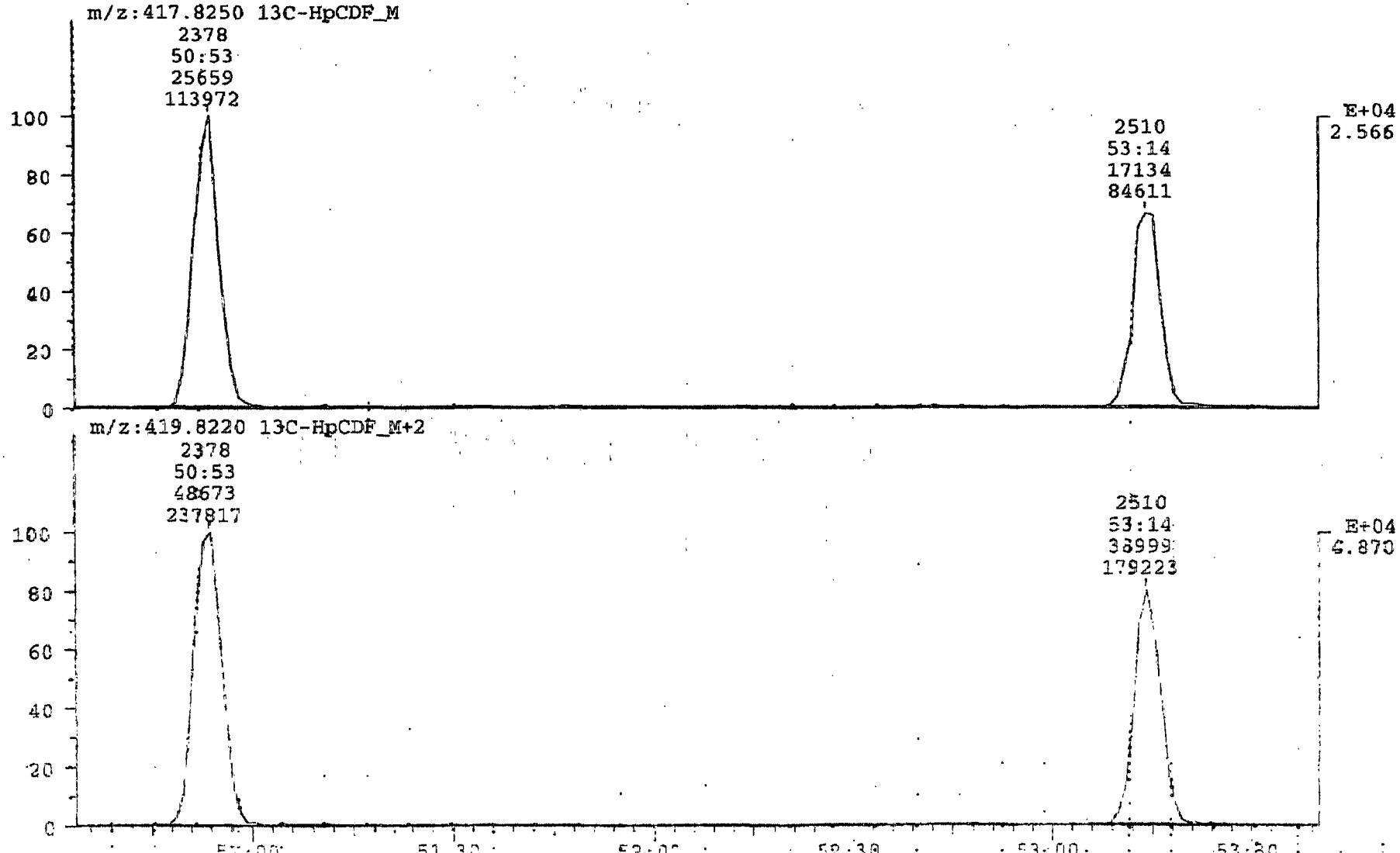
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:  46:30      2132
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :  02:52:13   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-002                Inlet :  GC     Vial 25
Peak:  100.00  ppm      Label wndw:   2389 > 2500           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  -2, 3.0
Disp:  Height  Area
```



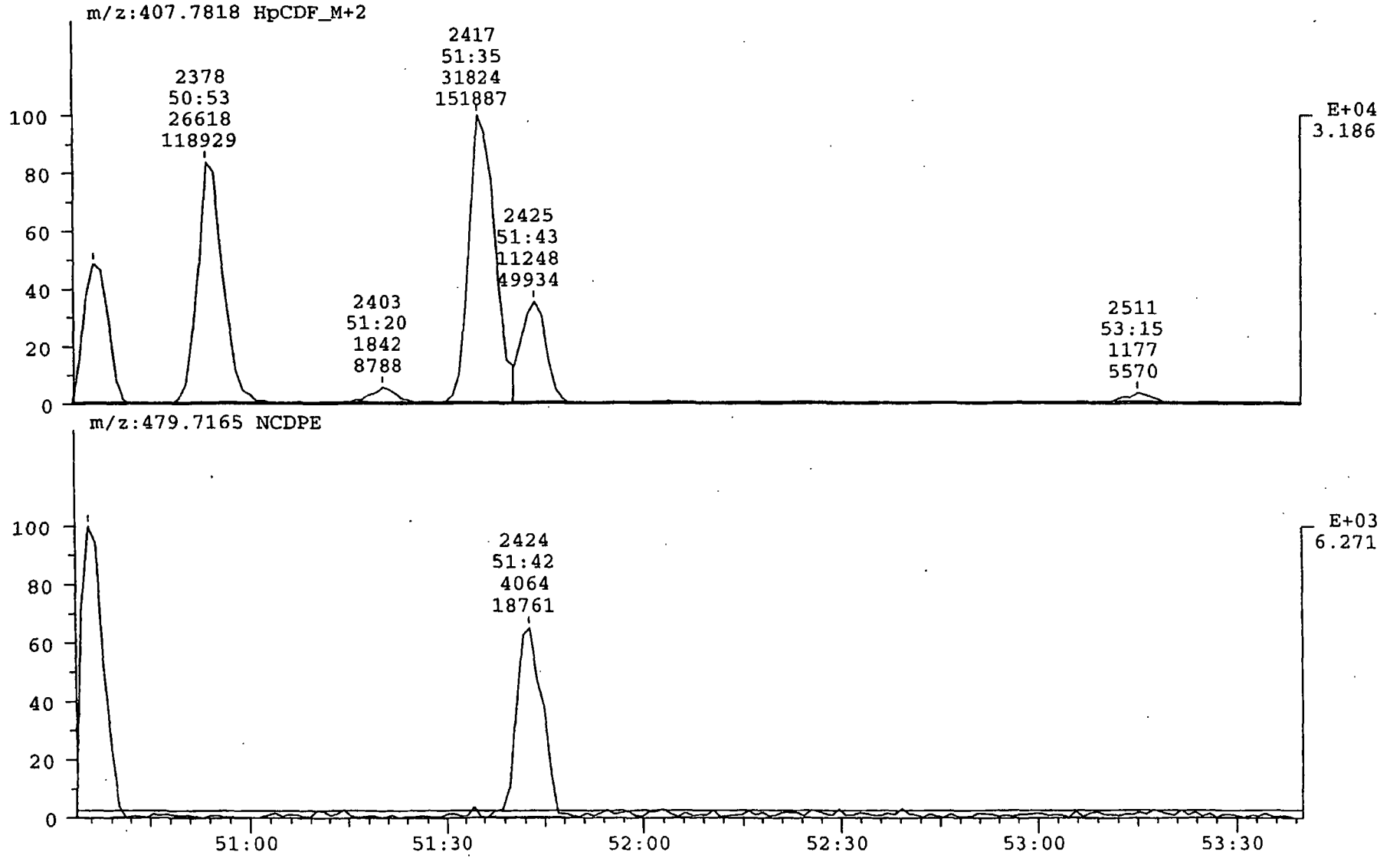
```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:   52:07       2447
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :   02:52:13    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :   3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-002                Inlet :   GC      Vial  25
Peak:  100.00  ppm      Label wndw:   2359 > 2534           Masses:   293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :   -2, 3.0
Disp:  Height  Area
```



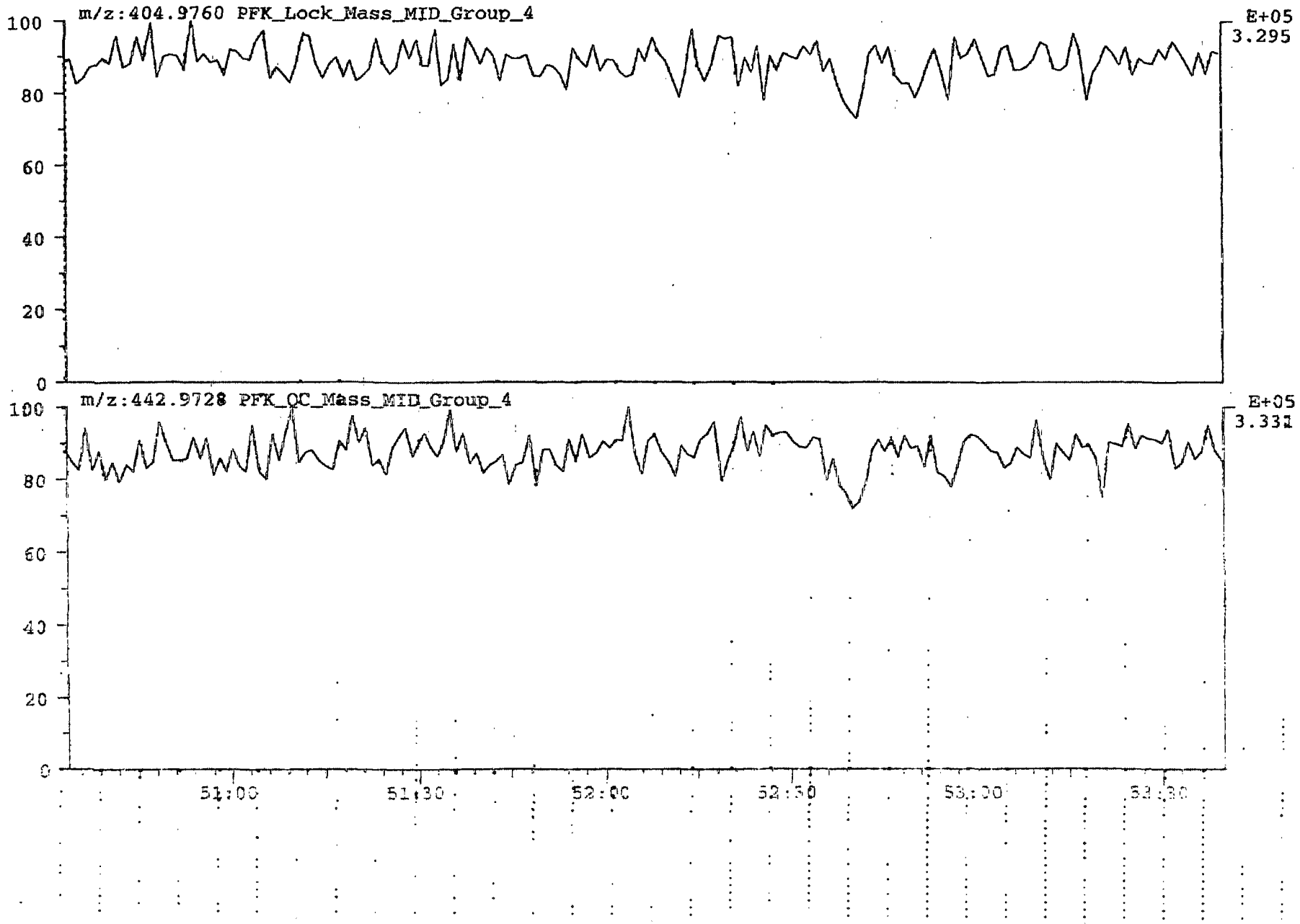
CHRO: tfx1wh2 05-Oct-03 Elapse: 52:07 2447
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2359 > 2534 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



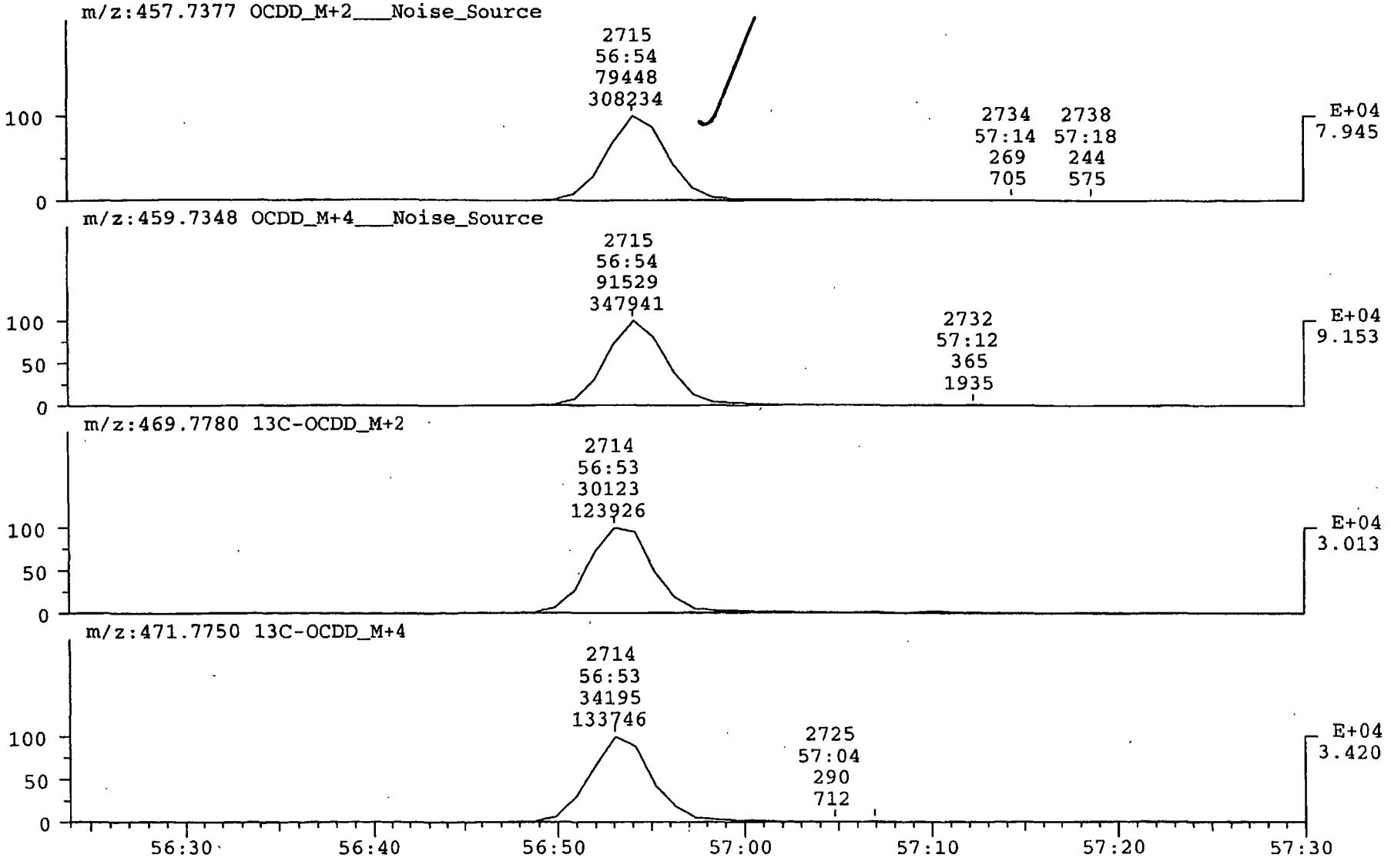
CHRO: tfx1wh2 05-Oct-03 Elapse: 52:07 2447
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2359 > 2534 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



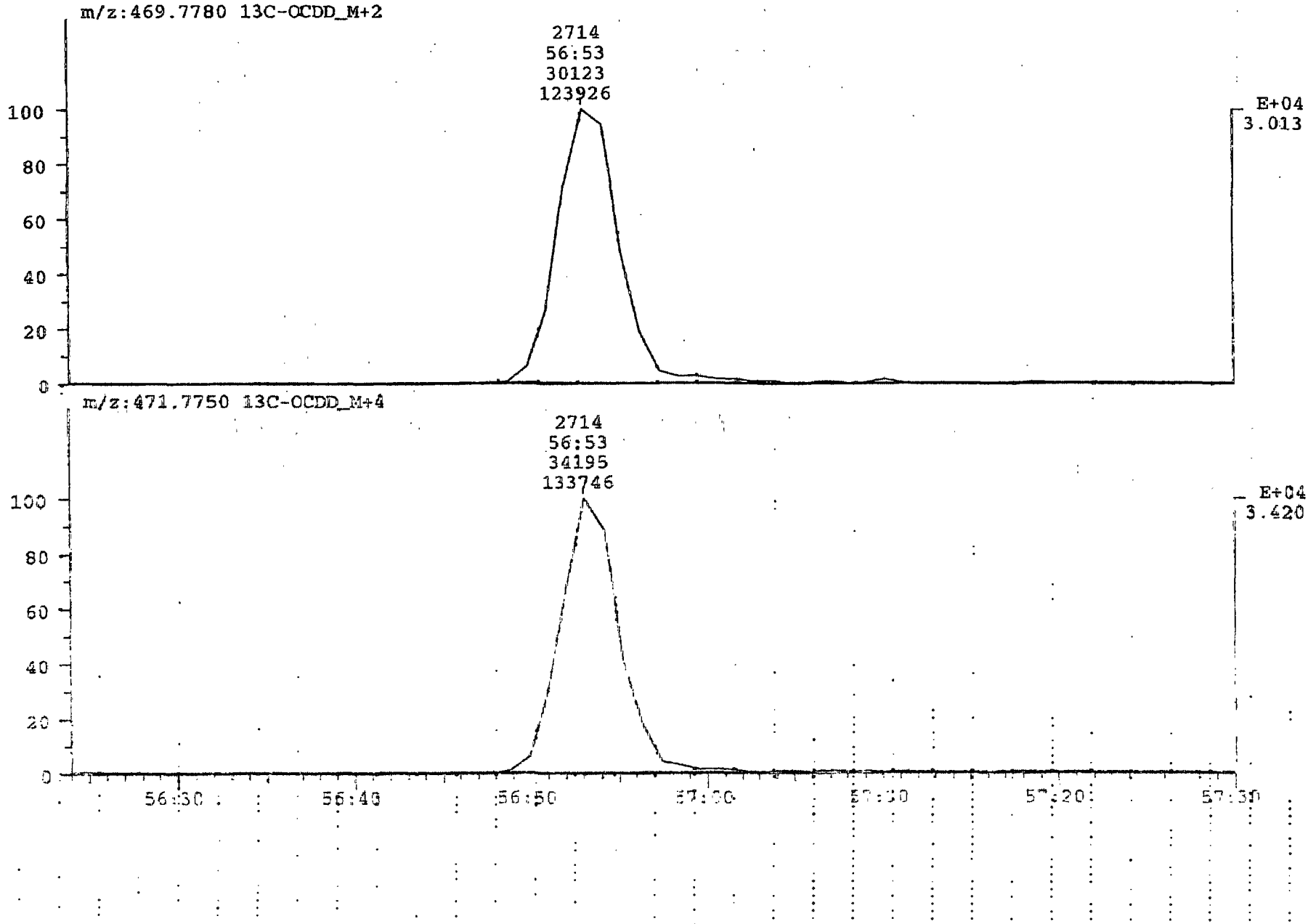
CHRO: tfx1wh2 05-Oct-03 Elapse: 52:07 2447
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2359 > 2534 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



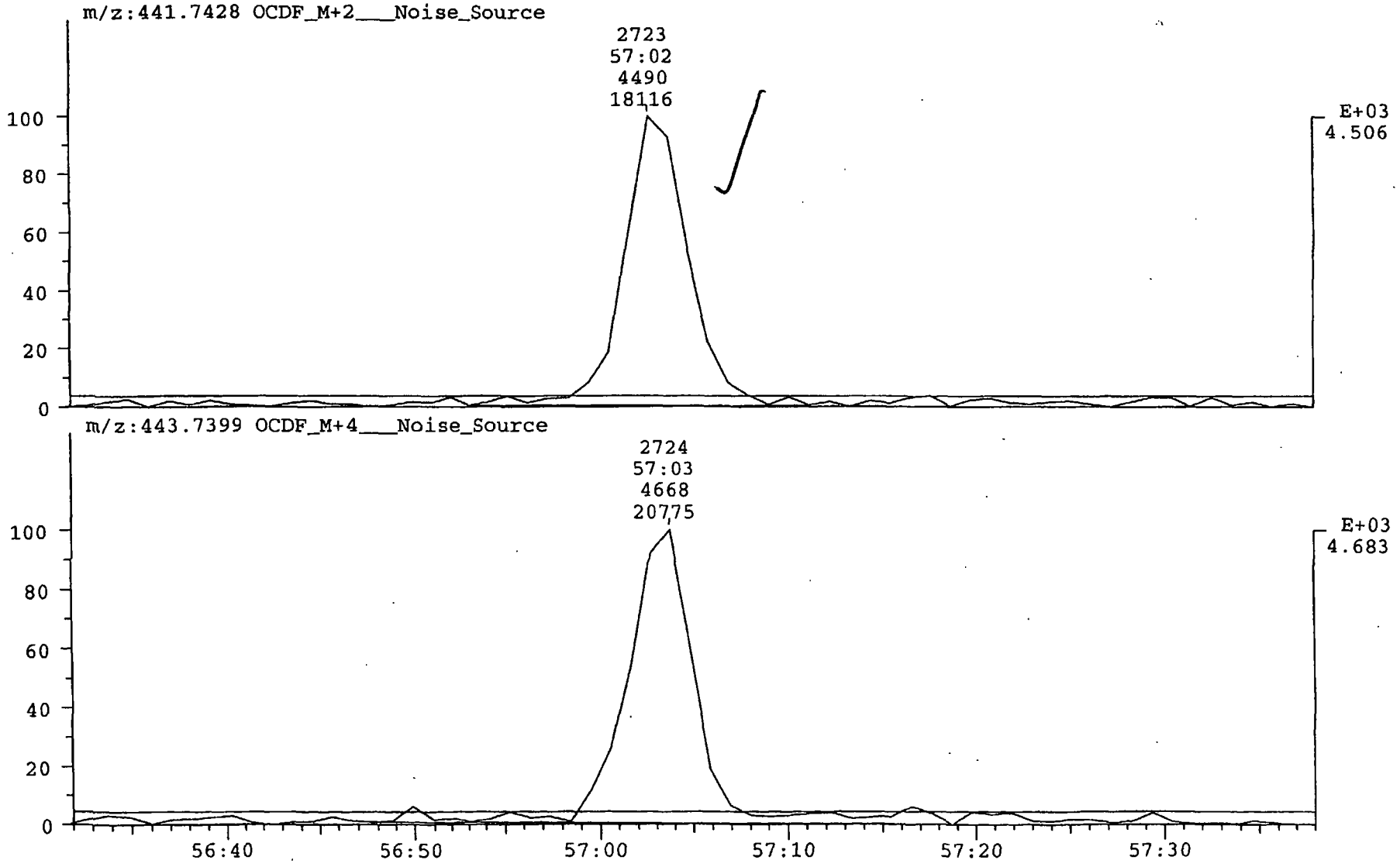
CHRO: tfx1wh2 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2687 > 2749 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



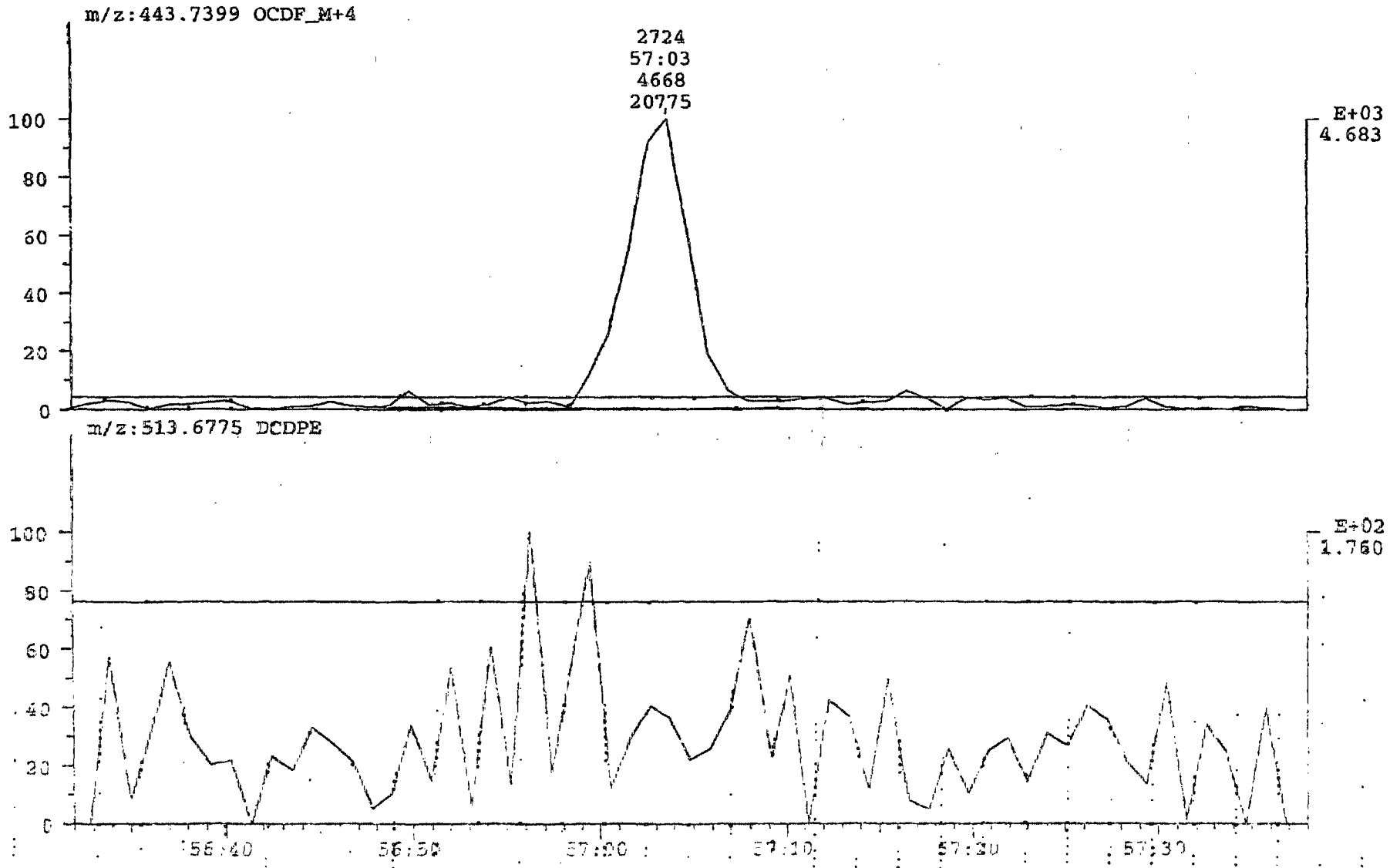
CHRO: tfx1wh2 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2687 > 2749 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



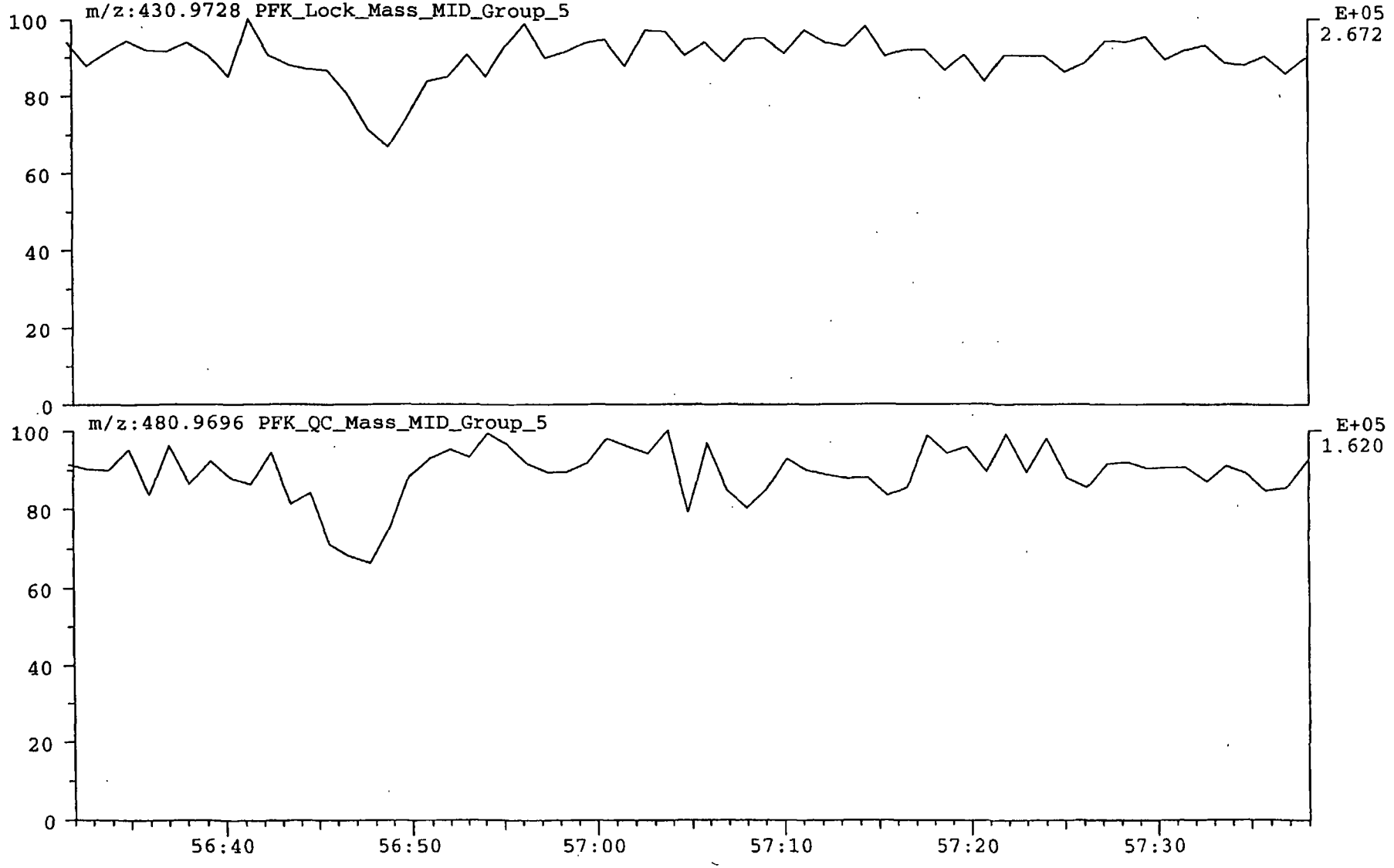
CHRO: tfx1wh2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wh2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  tfx1wh2                                  05-Oct-03   Elapse:   57:01       2722
Samp:  Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1                   Start :   02:52:13    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-002                 Inlet :   GC      Vial 25
Peak:  100.00  ppm     Label wndw:   2694 > 2756            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :   0, 0.0
Disp:  Height  Area
```



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tfx1wh2
Study: 3273193 (10.0g)
Sample: WO=fx1wh2aa Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I100253-002
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 25
Analysis will stop when MID run finishes
Tune file name: tune2
File 3 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

Loop clean w slvnt B (LB): 0 times
Standard sample volume(X): 0.0 ul
Standard air volume (Y): 0.0 ul
2nd Injection volume (I): 0.0 ul
Air volume of 2nd inj (J): 0.0 ul
Time btwn 2 injections(T): 0 sec

GC descriptor : epa1613

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 300 deg max |
| Transfer Line: | 290 deg | | | 300 deg max |
| Column: | 140 deg | at 0.0 | minutes | 330 deg max |
| | 140 deg | at 3.0 | minutes | |
| | 210 deg | at 6.5 | minutes | |
| | 210 deg | at 34.5 | minutes | |
| | 280 deg | at 44.5 | minutes | |
| | 280 deg | at 51.0 | minutes | |
| | 325 deg | at 60.0 | minutes | |

Inlet :
Pressure 18.0 psi
Splitless mode
Purge time 1.5 min
Purge flow 40.0 mL/min

Gas saver is on
Saver time 3.0 min
Saver flow 15.0 mL/min

Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8428.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 298.0000 | FVINLET | 808.0000 |
| FVSRC | 940.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.3725 | HVANAL | 979.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4766.7840 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2837.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9200 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 02:52:13.4

Autosampler has injected sample from vial 25
Analysis stopped at: 05-Oct-03 03:51:15.4 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: tfx1wh2.q0 Entries: 308

Data file(s) used
File: tfx1wh2 05-Oct-03
Samp: Vial 25 WO=fx1wh2aa Meth=IN2 Dil=1 Start : 02:52:13 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 25

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 32:36 | 70759. | 8285. | 32:21 | 32:49 | 68. | 1 | 1.0 |
| 321.8775 | 32:36 | 88554. | 9149. | 32:21 | 32:52 | 69. | 1 | 1.0 |
| 331.9202 | 35:22 | 759781. | 84375. | 35:06 | 35:39 | 137. | 2 | 3.0 |
| 331.9202 | 35:52 | 313114. | 36626. | 35:40 | 36:06 | 137. | 2 | 3.0 |
| 333.9171 | 35:22 | 921221. | 100601. | 35:06 | 35:39 | 93. | 2 | 3.0 |
| 333.9171 | 35:53 | 387471. | 47954. | 35:40 | 36:05 | 93. | 2 | 3.0 |
| 303.8864 | 37:23 | 17238. | 2746. | 37:14 | 37:34 | 61. | 1 | 1.0 |
| 305.8834 | 37:25 | 22747. | 3578. | 37:17 | 37:34 | 66. | 1 | 1.0 |
| 315.9261 | 33:45 | 457427. | 45090. | 33:28 | 33:59 | 67. | 2 | 3.0 |
| 317.9230 | 33:43 | 584432. | 56412. | 33:27 | 34:00 | 112. | 2 | 3.0 |
| 355.8368 | 40:47 | 382175. | 75129. | 40:34 | 40:56 | 79. | 1 | 1.0 |
| 357.8337 | 40:52 | 504515. | 117018. | 40:49 | 41:02 | 67. | 1 | 1.0 |
| 367.8765 | 43:16 | 379116. | 106390. | 43:06 | 43:24 | 65. | 2 | 3.0 |
| 369.8734 | 43:16 | 236396. | 69815. | 43:10 | 43:24 | 59. | 2 | 3.0 |
| 339.8427 | 40:30 | 61478. | 10829. | 40:22 | 40:36 | 62. | 1 | 1.0 |
| 341.8396 | 40:29 | 38514. | 6448. | 40:21 | 40:40 | 62. | 1 | 1.0 |
| 351.8824 | 41:44 | 512237. | 124008. | 41:33 | 41:54 | 56. | 2 | 3.0 |
| 351.8824 | 42:48 | 519567. | 140062. | 42:42 | 43:04 | 56. | 2 | 3.0 |
| 353.8793 | 41:43 | 318473. | 79917. | 41:35 | 41:54 | 88. | 2 | 3.0 |
| 353.8793 | 42:48 | 329070. | 88657. | 42:42 | 43:04 | 88. | 2 | 3.0 |
| 389.7961 | 46:42 | 2111193. | 545809. | 46:34 | 46:50 | 69. | 1 | 1.0 |
| 391.7931 | 46:42 | 1697286. | 442475. | 46:35 | 46:49 | 78. | 1 | 1.0 |
| 401.8358 | 47:26 | 269815. | 74156. | 47:19 | 47:31 | 78. | 2 | 3.0 |
| 401.8358 | 47:34 | 263900. | 71322. | 47:31 | 47:41 | 78. | 2 | 3.0 |
| 401.8358 | 47:59 | 450088. | 117556. | 47:50 | 48:09 | 78. | 2 | 3.0 |
| 403.8327 | 47:26 | 219323. | 60171. | 47:18 | 47:31 | 72. | 2 | 3.0 |
| 403.8327 | 47:34 | 214192. | 58889. | 47:31 | 47:43 | 72. | 2 | 3.0 |
| 403.8327 | 47:59 | 364308. | 95705. | 47:52 | 48:08 | 72. | 2 | 3.0 |
| 373.8021 | 45:53 | 163687. | 49544. | 45:48 | 45:59 | 72. | 1 | 1.0 |
| 375.7990 | 45:53 | 134772. | 39454. | 45:48 | 45:59 | 79. | 1 | 1.0 |
| 383.8447 | 46:21 | 237503. | 66127. | 46:12 | 46:26 | 59. | 2 | 3.0 |
| 383.8447 | 46:29 | 226853. | 62414. | 46:26 | 46:45 | 59. | 2 | 3.0 |
| 383.8447 | 47:16 | 179105. | 51624. | 47:03 | 47:24 | 59. | 2 | 3.0 |
| 383.8447 | 48:17 | 136234. | 34104. | 48:01 | 48:26 | 59. | 2 | 3.0 |
| 385.8417 | 46:21 | 427143. | 119930. | 46:13 | 46:25 | 67. | 2 | 3.0 |
| 385.8417 | 46:29 | 435198. | 119722. | 46:25 | 46:42 | 67. | 2 | 3.0 |
| 385.8417 | 47:16 | 343103. | 98501. | 47:04 | 47:23 | 67. | 2 | 3.0 |
| 385.8417 | 48:17 | 259739. | 62180. | 48:10 | 48:27 | 67. | 2 | 3.0 |
| 423.7555 | 51:26 | 872091. | 191992. | 51:19 | 51:42 | 84. | 1 | 1.0 |
| 425.7524 | 51:26 | 837622. | 178982. | 51:17 | 51:37 | 65. | 1 | 1.0 |
| 435.7951 | 52:37 | 152332. | 33856. | 52:29 | 52:52 | 54. | 2 | 3.0 |
| 437.7921 | 52:37 | 139514. | 32529. | 52:25 | 52:48 | 56. | 2 | 3.0 |
| 407.7614 | 51:35 | 151887. | 31824. | 51:25 | 51:40 | 74. | 1 | 1.0 |
| 409.7583 | 51:35 | 146551. | 31212. | 51:29 | 51:40 | 77. | 1 | 1.0 |
| 417.8041 | 50:54 | 113972. | 25659. | 50:46 | 51:09 | 59. | 2 | 3.0 |
| 417.8041 | 53:14 | 84611. | 17134. | 52:58 | 53:30 | 59. | 2 | 3.0 |
| 419.8010 | 50:54 | 237817. | 48673. | 50:46 | 51:09 | 53. | 2 | 3.0 |
| 419.8010 | 53:14 | 179223. | 38999. | 52:59 | 53:30 | 53. | 2 | 3.0 |
| 457.7148 | 56:54 | 307982. | 79448. | 56:44 | 57:10 | 64. | 1 | 1.0 |

| | | | | | | |
|---|---|---|---|---|---|---|
| 459.7118 | 56:54 | 347941. | 91529. | 56:46 | 57:10 | 61. 1 1.0 |
| 457.7148 | 56:54 | 308234. | 79448. | 56:41 | 57:10 | 64. 2 3.0 |
| 459.7118 | 56:54 | 347941. | 91529. | 56:46 | 57:10 | 61. 2 3.0 |
| 469.7545 | 56:53 | 123926. | 30123. | 56:41 | 57:09 | 56. 2 3.0 |
| 471.7514 | 56:53 | 133746. | 34195. | 56:41 | 57:02 | 59. 2 3.0 |
| 441.7207 | 57:02 | 17745. | 4490. | 56:56 | 57:09 | 57. 1 1.0 |
| 443.7177 | 57:03 | 18534. | 4668. | 56:58 | 57:09 | 66. 1 1.0 |
| 441.7207 | 57:02 | 18116. | 4490. | 56:53 | 57:11 | 57. 2 3.0 |
| 443.7177 | 57:03 | 20775. | 4668. | 56:47 | 57:18 | 66. 2 3.0 |
| 319.8805 | 29:13 | 18433. | 2240. | 29:07 | 29:26 | 66. 2 3.0 |
| 319.8805 | 30:05 | 17893. | 2168. | 29:49 | 30:15 | 66. 2 3.0 |
| 319.8805 | 30:17 | 2083. | 214. | 30:15 | 30:33 | 66. 2 3.0 |
| 319.8805 | 30:47 | 18129. | 1915. | 30:39 | 31:04 | 66. 2 3.0 |
| 321.8775 | 29:14 | 23672. | 2940. | 29:04 | 29:27 | 70. 2 3.0 |
| 321.8775 | 30:04 | 21463. | 2709. | 29:47 | 30:11 | 70. 2 3.0 |
| 321.8775 | 30:14 | 2314. | 306. | 30:11 | 30:30 | 70. 2 3.0 |
| 321.8775 | 30:48 | 18653. | 2189. | 30:40 | 31:05 | 70. 2 3.0 |
| 319.8805 | 32:36 | 70514. | 8275. | 32:21 | 32:49 | 79. 2 3.0 |
| 319.8805 | 33:09 | 1866. | 370. | 33:02 | 33:12 | 79. 2 3.0 |
| 319.8805 | 33:09 | 3116. | 369. | 32:55 | 33:12 | 79. 2 3.0 |
| 319.8805 | 33:24 | 13205. | 1531. | 33:12 | 33:32 | 79. 2 3.0 |
| 319.8805 | 33:40 | 17250. | 2160. | 33:32 | 33:51 | 79. 2 3.0 |
| 321.8775 | 32:36 | 88166. | 9137. | 32:22 | 32:52 | 93. 2 3.0 |
| 321.8775 | 33:04 | 3897. | 473. | 32:57 | 33:11 | 93. 2 3.0 |
| 321.8775 | 33:25 | 20802. | 2541. | 33:11 | 33:33 | 93. 2 3.0 |
| 321.8775 | 33:38 | 17767. | 2364. | 33:33 | 33:52 | 93. 2 3.0 |
| 319.8805 | 34:28 | 14156. | 1661. | 34:17 | 34:42 | 65. 2 3.0 |
| 321.8775 | 34:29 | 15556. | 2060. | 34:14 | 34:41 | 44. 2 3.0 |
| 319.8805 | 35:23 | 8272. | 1171. | 35:13 | 35:30 | 78. 2 3.0 |
| 319.8805 | 35:40 | 6327. | 1162. | 35:37 | 35:46 | 78. 2 3.0 |
| 319.8805 | 35:40 | 7044. | 1151. | 35:30 | 35:46 | 78. 2 3.0 |
| 319.8805 | 35:57 | 29536. | 3248. | 35:46 | 36:10 | 78. 2 3.0 |
| 319.8805 | 36:20 | 2273. | 268. | 36:12 | 36:27 | 78. 2 3.0 |
| 321.8775 | 35:22 | 12833. | 1341. | 35:10 | 35:31 | 82. 2 3.0 |
| 321.8775 | 35:43 | 10319. | 1139. | 35:31 | 35:47 | 82. 2 3.0 |
| 321.8775 | 35:54 | 37876. | 4880. | 35:47 | 36:10 | 82. 2 3.0 |
| 321.8775 | 36:20 | 1643. | 265. | 36:12 | 36:23 | 82. 2 3.0 |
| 319.8805 | 36:47 | 26994. | 3602. | 36:39 | 36:56 | 77. 3 3.0 |
| 319.8805 | 37:19 | 5028. | 588. | 37:02 | 37:35 | 77. 3 3.0 |
| 319.8805 | 38:10 | 3969. | 523. | 38:00 | 38:14 | 77. 3 3.0 |
| 321.8775 | 36:47 | 33165. | 4959. | 36:37 | 36:56 | 65. 3 3.0 |
| 321.8775 | 37:21 | 4760. | 736. | 37:12 | 37:32 | 65. 3 3.0 |
| 321.8775 | 38:10 | 4902. | 916. | 38:00 | 38:16 | 65. 3 3.0 |
| 303.8864 | 26:09 | 8646. | 462. | 25:48 | 26:45 | 50. 5 5.0 |
| 303.8864 | 27:23 | 2694. | 425. | 27:17 | 27:34 | 50. 5 5.0 |
| 303.8864 | 28:00 | 4681. | 501. | 27:50 | 28:12 | 50. 5 5.0 |
| 303.8864 | 28:00 | 4681. | 501. | 27:50 | 28:12 | 50. 5 5.0 |
| 305.8834 | 26:26 | 7928. | 475. | 25:46 | 26:41 | 58. 5 5.0 |
| 305.8834 | 27:28 | 2747. | 428. | 27:20 | 27:34 | 58. 5 5.0 |
| 305.8834 | 28:00 | 5264. | 804. | 27:51 | 28:11 | 58. 5 5.0 |
| 303.8864 | 28:34 | 13084. | 1220. | 28:20 | 29:00 | 63. 5 5.0 |
| 303.8864 | 29:26 | 9443. | 646. | 29:00 | 29:33 | 63. 5 5.0 |
| 303.8864 | 29:26 | 9443. | 646. | 29:00 | 29:33 | 63. 5 5.0 |
| 303.8864 | 28:34 | 13084. | 1220. | 28:20 | 29:00 | 63. 5 5.0 |
| 305.8834 | 28:30 | 13779. | 1058. | 28:22 | 28:59 | 76. 5 5.0 |
| 305.8834 | 29:25 | 9586. | 685. | 29:00 | 29:31 | 76. 5 5.0 |
| 305.8834 | 29:25 | 9586. | 685. | 29:00 | 29:31 | 76. 5 5.0 |
| 305.8834 | 28:30 | 13779. | 1058. | 28:22 | 28:59 | 76. 5 5.0 |
| 303.8864 | 30:15 | 14121. | 1174. | 29:47 | 30:33 | 68. 4 3.0 |
| 303.8864 | 31:04 | 8689. | 861. | 30:38 | 31:11 | 68. 4 3.0 |
| 303.8864 | 31:38 | 6183. | 722. | 31:28 | 31:45 | 68. 4 3.0 |
| 303.8864 | 31:56 | 4449. | 422. | 31:45 | 32:06 | 68. 4 3.0 |
| 305.8834 | 30:17 | 17678. | 1568. | 29:57 | 30:36 | 60. 4 3.0 |
| 305.8834 | 31:01 | 10605. | 863. | 30:38 | 31:19 | 60. 4 3.0 |
| 305.8834 | 31:36 | 9488. | 1087. | 31:28 | 31:47 | 60. 4 3.0 |
| 305.8834 | 31:54 | 7085. | 1003. | 31:47 | 32:03 | 60. 4 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 303.8864 | 32:28 | 6142. | 686. | 32:19 | 32:38 | 66. | 2 | 3.0 |
| 303.8864 | 33:06 | 10075. | 760. | 32:57 | 33:37 | 66. | 2 | 3.0 |
| 303.8864 | 33:49 | 20120. | 1447. | 33:37 | 34:14 | 66. | 2 | 3.0 |
| 305.8834 | 32:27 | 9887. | 1414. | 32:20 | 32:39 | 71. | 2 | 3.0 |
| 305.8834 | 33:10 | 10111. | 904. | 33:00 | 33:30 | 71. | 2 | 3.0 |
| 305.8834 | 33:45 | 24321. | 1681. | 33:30 | 34:11 | 71. | 2 | 3.0 |
| 303.8864 | 35:07 | 7908. | 1178. | 34:58 | 35:17 | 54. | 3 | 3.0 |
| 303.8864 | 35:42 | 7606. | 750. | 35:29 | 35:54 | 54. | 3 | 3.0 |
| 303.8864 | 35:42 | 7606. | 750. | 35:29 | 35:54 | 54. | 3 | 3.0 |
| 305.8834 | 35:06 | 9685. | 1114. | 34:57 | 35:17 | 65. | 3 | 3.0 |
| 305.8834 | 35:38 | 9000. | 780. | 35:17 | 35:58 | 65. | 3 | 3.0 |
| 305.8834 | 35:38 | 6801. | 767. | 35:32 | 35:53 | 65. | 3 | 3.0 |
| 303.8864 | 37:23 | 16443. | 2704. | 37:16 | 37:34 | 68. | 2 | 3.0 |
| 303.8864 | 37:55 | 10742. | 1965. | 37:43 | 38:07 | 68. | 2 | 3.0 |
| 305.8834 | 37:25 | 23077. | 3554. | 37:09 | 37:33 | 75. | 2 | 3.0 |
| 305.8834 | 37:57 | 13465. | 2302. | 37:45 | 38:03 | 75. | 2 | 3.0 |
| 355.8368 | 40:47 | 381656. | 75110. | 40:36 | 40:56 | 61. | 2 | 3.0 |
| 355.8368 | 41:29 | 71781. | 17129. | 41:21 | 41:37 | 61. | 2 | 3.0 |
| 357.8337 | 40:46 | 239835. | 49390. | 40:38 | 40:49 | 59. | 2 | 3.0 |
| 357.8337 | 40:52 | 504873. | 117021. | 40:49 | 41:05 | 59. | 2 | 3.0 |
| 357.8337 | 41:16 | 120274. | 28738. | 41:10 | 41:23 | 59. | 2 | 3.0 |
| 357.8337 | 41:29 | 46233. | 10591. | 41:23 | 41:36 | 59. | 2 | 3.0 |
| 355.8368 | 41:52 | 155335. | 41549. | 41:42 | 41:56 | 70. | 2 | 3.0 |
| 355.8368 | 42:04 | 377840. | 99188. | 41:56 | 42:09 | 70. | 2 | 3.0 |
| 355.8368 | 42:15 | 113536. | 31553. | 42:09 | 42:25 | 70. | 2 | 3.0 |
| 357.8337 | 41:52 | 104252. | 26535. | 41:43 | 41:57 | 63. | 2 | 3.0 |
| 357.8337 | 42:04 | 236840. | 61904. | 41:57 | 42:09 | 63. | 2 | 3.0 |
| 357.8337 | 42:15 | 68777. | 18101. | 42:09 | 42:24 | 63. | 2 | 3.0 |
| 355.8368 | 42:31 | 51428. | 14644. | 42:25 | 42:34 | 120. | 2 | 3.0 |
| 355.8368 | 42:39 | 134397. | 27950. | 42:34 | 42:47 | 120. | 2 | 3.0 |
| 355.8368 | 42:53 | 6103. | 1802. | 42:47 | 42:59 | 120. | 2 | 3.0 |
| 355.8368 | 43:01 | 3047. | 833. | 42:59 | 43:06 | 120. | 2 | 3.0 |
| 357.8337 | 42:31 | 33205. | 8668. | 42:25 | 42:34 | 73. | 2 | 3.0 |
| 357.8337 | 42:39 | 87438. | 18535. | 42:34 | 42:46 | 73. | 2 | 3.0 |
| 357.8337 | 42:52 | 4634. | 1774. | 42:47 | 42:58 | 73. | 2 | 3.0 |
| 357.8337 | 43:02 | 2337. | 617. | 42:58 | 43:07 | 73. | 2 | 3.0 |
| 355.8368 | 43:17 | 208711. | 57931. | 43:10 | 43:23 | 84. | 2 | 3.0 |
| 355.8368 | 43:29 | 52323. | 15023. | 43:23 | 43:44 | 84. | 2 | 3.0 |
| 355.8368 | 43:52 | 42548. | 11193. | 43:46 | 43:58 | 84. | 2 | 3.0 |
| 357.8337 | 43:17 | 137345. | 36990. | 43:10 | 43:23 | 63. | 2 | 3.0 |
| 357.8337 | 43:29 | 34583. | 10285. | 43:23 | 43:36 | 63. | 2 | 3.0 |
| 357.8337 | 43:40 | 1152. | 243. | 43:36 | 43:46 | 63. | 2 | 3.0 |
| 357.8337 | 43:53 | 29283. | 8344. | 43:46 | 44:00 | 63. | 2 | 3.0 |
| 367.8765 | 43:16 | 378958. | 106381. | 43:07 | 43:24 | 70. | 2 | 3.0 |
| 369.8734 | 43:16 | 236312. | 69810. | 43:10 | 43:24 | 64. | 2 | 3.0 |
| 339.8427 | 38:38 | 38343. | 6831. | 38:29 | 38:51 | 53. | 2 | 3.0 |
| 341.8396 | 38:37 | 25033. | 4732. | 38:29 | 38:48 | 56. | 2 | 3.0 |
| 339.8427 | 40:16 | 4619. | 1098. | 40:11 | 40:20 | 81. | 3 | 3.0 |
| 339.8427 | 40:30 | 61078. | 10802. | 40:22 | 40:36 | 81. | 3 | 3.0 |
| 339.8427 | 40:46 | 10832. | 1930. | 40:36 | 40:53 | 81. | 3 | 3.0 |
| 339.8427 | 40:58 | 1470. | 343. | 40:55 | 41:02 | 81. | 3 | 3.0 |
| 339.8427 | 41:12 | 14295. | 3190. | 41:02 | 41:14 | 81. | 3 | 3.0 |
| 339.8427 | 41:19 | 25394. | 4374. | 41:14 | 41:27 | 81. | 3 | 3.0 |
| 341.8396 | 40:16 | 3308. | 612. | 40:07 | 40:21 | 54. | 3 | 3.0 |
| 341.8396 | 40:29 | 38384. | 6442. | 40:21 | 40:40 | 54. | 3 | 3.0 |
| 341.8396 | 40:45 | 6302. | 1304. | 40:40 | 40:52 | 54. | 3 | 3.0 |
| 341.8396 | 40:59 | 1425. | 433. | 40:52 | 41:01 | 54. | 3 | 3.0 |
| 341.8396 | 41:10 | 11531. | 2522. | 41:01 | 41:15 | 54. | 3 | 3.0 |
| 341.8396 | 41:19 | 16767. | 3386. | 41:15 | 41:32 | 54. | 3 | 3.0 |
| 339.8427 | 41:39 | 5332. | 1261. | 41:35 | 41:42 | 86. | 2 | 3.0 |
| 339.8427 | 41:46 | 10987. | 2785. | 41:42 | 41:52 | 86. | 2 | 3.0 |
| 339.8427 | 42:00 | 9973. | 2013. | 41:52 | 42:06 | 86. | 2 | 3.0 |
| 339.8427 | 42:14 | 46805. | 9768. | 42:06 | 42:23 | 86. | 2 | 3.0 |
| 341.8396 | 41:39 | 4367. | 1641. | 41:36 | 41:41 | 106. | 2 | 3.0 |
| 341.8396 | 41:46 | 8937. | 1936. | 41:41 | 41:52 | 106. | 2 | 3.0 |
| 341.8396 | 41:59 | 6275. | 1476. | 41:54 | 42:07 | 106. | 2 | 3.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 341.8396 | 42:14 | 27936. | 5790. | 42:07 | 42:19 | 106. | 2 3.0 |
| 339.8427 | 42:28 | 1848. | 612. | 42:23 | 42:30 | 64. | 2 3.0 |
| 339.8427 | 42:33 | 5080. | 1383. | 42:30 | 42:41 | 64. | 2 3.0 |
| 339.8427 | 42:49 | 23000. | | | | | |

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | 3.0 | 0.29 | pg/g | SW846 8290 |
| Total TCDD | 24 Q | 0.29 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | 16 | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | 110 Q | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 7.1 | 0.18 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 69 | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 30 | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | 490 Q | 0.19 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 120 | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | 300 | 0.28 | pg/g | SW846 8290 |
| OCDD | 98 B | 0.30 | pg/g | SW846 8290 |
| 2,3,7,8-TCDF | 2.4 X | 0.27 | pg/g | SW846 8290 |
| Total TCDF | 19 Q | 0.27 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.4 Q,J | 0.15 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | 1.9 J | 0.12 | pg/g | SW846 8290 |
| Total PeCDF | 29 Q | 0.13 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 4.9 J | 0.13 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.4 Q,J | 0.14 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 1.6 J | 0.16 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDF | 53 Q | 0.15 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 18 B | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.1 B,J | 0.23 | pg/g | SW846 8290 |
| Total HpCDF | 44 B | 0.20 | pg/g | SW846 8290 |
| OCDF | 7.0 J | 0.30 | pg/g | SW846 8290 |

(Continued on next page)

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ2AA Matrix.....: SOLID

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 96 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 90 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 84 | (40 - 135) |
| 13C-OCDD | 58 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 92 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 85 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 99 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 91 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 88 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 87 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 81 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 87 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

X See project narrative.

J Estimated result. Result is less than the reporting limit.

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WJ2AA | Prep Batch | 3273193 | Lot No | H3I100253-003 |
| Data File | /20031004s1/tfx1wj2.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71222 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/5/2003 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Analysis Time | 03:55 | Initial Wt/Vol | 10.0 | Limx Test Code | MMA11IN01 |
| Anal Exp Date | 11/14/03 | Extract Vol | 20 | Method | DX8290_2 |
| Instrument | M2A | Dil Factor | 1.0 | Code | IN2 |
| Analyst | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:56 | 25735 | 3478 | 1.095 | | 29.539374 | | 2.953937 | | 0.287 |
| Total TCDD | | 184359 | 23299 | 1.095 | | 241.151826 | | 24.115183 | Q | 0.287 |
| 2,3,7,8-TCDF | 33:54 | 27317 | 2083 | 1.017 | | 23.823129 | | 2.382313 | | 0.272 |
| Total TCDF | | 195290 | 22719 | 1.017 | | 194.135408 | | 19.413541 | Q | 0.272 |
| 1,2,3,7,8-PeCDD | 43:17 | 116117 | 31426 | 0.984 | | 159.206166 | | 15.920617 | | 0.182 |
| Total PeCDD | | 720815 | 180275 | 0.984 | | 1147.50432 | | 114.750432 | Q | 0.182 |
| 1,2,3,7,8-PeCDF | 41:46 | 12738 | 3287 | 0.970 | | 13.508177 | | 1.350818 | QJ | 0.148 |
| 2,3,4,7,8-PeCDF | 42:50 | 20104 | 5241 | 1.035 | | 19.398651 | | 1.939865 | J | 0.119 |
| Total PeCDF | | 255456 | 50534 | 1.003 | | 291.146623 | | 29.114662 | Q | 0.132 |
| 1,2,3,4,7,8-HxCDD | 47:28 | 51030 | 14443 | 1.111 | | 71.490183 | | 7.149018 | | 0.183 |
| 1,2,3,6,7,8-HxCDD | 47:36 | 464562 | 120922 | 1.026 | | 694.384672 | | 69.438467 | | 0.198 |
| 1,2,3,7,8,9-HxCDD | 48:01 | 218115 | 51261 | 1.109 | | 303.759509 | | 30.375951 | | 0.183 |
| Total HxCDD | | 2662553 | 711330 | 1.082 | | 4870.92161 | | 487.092161 | Q | 0.188 |
| 1,2,3,4,7,8-HxCDF | 46:20 | 50902 | 8924 | 1.226 | | 48.589988 | | 4.858999 | J | 0.129 |
| 1,2,3,6,7,8-HxCDF | 46:31 | 34832 | 6772 | 1.197 | | 33.708555 | | 3.370855 | QJ | 0.139 |
| 2,3,4,6,7,8-HxCDF | 47:18 | 14041 | 4079 | 1.155 | | 15.703679 | | 1.570368 | J | 0.158 |
| 1,2,3,7,8,9-HxCDF | | | | 1.236 | | | | ND | | 0.184 |
| Total HxCDF | | 407811 | 122062 | 1.204 | | 529.503409 | | 52.950341 | Q | 0.150 |
| 1,2,3,4,6,7,8-HpCDD | 52:38 | 625256 | 151184 | 0.986 | | 1160.42684 | | 116.042684 | | 0.278 |
| Total HpCDD | | 994389 | 221561 | 0.986 | | 3005.93602 | | 300.593602 | | 0.278 |
| 1,2,3,4,6,7,8-HpCDF | 50:55 | 152960 | 32162 | 1.512 | | 183.234458 | | 18.323446 | B | 0.179 |
| 1,2,3,4,7,8,9-HpCDF | 53:16 | 7389 | 1420 | 1.426 | | 10.943494 | | 1.094349 | BJ | 0.225 |
| Total HpCDF | | 184592 | 39506 | 1.469 | | 439.225505 | | 43.922550 | B | 0.200 |
| OCDD | 56:58 | 349667 | 93969 | 1.078 | | 981.831035 | | 98.183104 | B | 0.301 |
| OCDF | 57:03 | 26382 | 7516 | 1.135 | | 70.111463 | | 7.011146 | J | 0.300 |
| 13C-2,3,7,8-TCDD | 35:58 | 795592 | 97739 | 1.083 | 1000 | 916.998111 | 91.70 | 91.699811 | | 0.661 |
| 13C-2,3,7,8-TCDF | 33:46 | 1127016 | 113785 | 1.527 | 1000 | 921.141280 | 92.11 | 92.114128 | | 0.354 |
| 13C-1,2,3,7,8-PeCDD | 43:16 | 740944 | 202011 | 0.988 | 1000 | 964.731762 | 96.47 | 96.473176 | | 0.343 |
| 13C-1,2,3,7,8-PeCDF | 41:45 | 972351 | 243521 | 1.427 | 1000 | 850.359264 | 85.04 | 85.035926 | | 0.240 |
| 13C-2,3,4,7,8-PeCDF | 42:49 | 1001131 | 283875 | 1.384 | 1000 | 902.719567 | 90.27 | 90.271967 | | 0.347 |
| 13C-1,2,3,4,7,8-HxCDD | 47:28 | 642461 | 169982 | 0.941 | 1000 | 1013.77748 | 101.38 | 101.377748 | | 0.278 |
| 13C-1,2,3,6,7,8-HxCDD | 47:35 | 652313 | 169872 | 1.078 | 1000 | 898.553296 | 89.86 | 89.855330 | | 0.243 |
| 13C-1,2,3,4,7,8-HxCDF | 46:22 | 854285 | 238108 | 1.283 | 1000 | 988.287630 | 98.83 | 98.828763 | | 0.187 |
| 13C-1,2,3,6,7,8-HxCDF | 46:30 | 863069 | 226996 | 1.406 | 1000 | 911.451925 | 91.15 | 91.145192 | | 0.171 |
| 13C-2,3,4,6,7,8-HxCDF | 47:18 | 773948 | 206350 | 1.301 | 1000 | 883.343302 | 88.33 | 88.334330 | | 0.185 |
| 13C-1,2,3,7,8,9-HxCDF | 48:18 | 649561 | 165732 | 1.105 | 1000 | 872.366679 | 87.24 | 87.236668 | | 0.218 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 546397 | 130582 | 0.970 | 1000 | 836.322908 | 83.63 | 83.632291 | | 0.178 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 551956 | 122892 | 1.017 | 1000 | 805.702264 | 80.57 | 80.570226 | | 0.166 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 473522 | 103431 | 0.812 | 1000 | 865.701562 | 86.57 | 86.570156 | | 0.207 |
| 13C-OCDD | 56:54 | 662819 | 182196 | 0.856 | 2000 | 1150.24701 | 57.51 | 115.024701 | | 0.223 |
| 13C-1,2,3,4-TCDD | 35:25 | 1602803 | 179639 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.715 |
| 13C-1,2,3,7,8,9-HxCDD | 48:00 | 1347122 | 353409 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.268 |

BEW 10-7-03

VMC 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71222 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 03:55 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 165 | 60 | 66 | 0.91 * | / | |
| | Unidentified | 26:29 | 00:00 | 0 | 2552 | 2387 | 372 | 297 | 1.07 * | MVV/ABB | R |
| | Unidentified | 28:01 | 00:00 | 0 | 1860 | 2704 | 275 | 341 | 0.69 | MBB/ABB | T |
| | Unidentified | 28:34 | 00:00 | 0 | 6022 | 6093 | 685 | 904 | 0.99 * | MBV/ABV | R |
| | Unidentified | 28:57 | 00:00 | 0 | 8227 | 8158 | 566 | 457 | 1.01 * | MVV/AVV | RT |
| | Unidentified | 29:25 | 00:00 | 0 | 3242 | 4677 | 375 | 522 | 0.69 | AVB/AVB | T |
| | Unidentified | 30:16 | 00:00 | 0 | 9047 | 11291 | 766 | 1053 | 0.80 | ABB/MVV | |
| | Unidentified | 31:03 | 00:00 | 0 | 7024 | 6632 | 636 | 525 | 1.06 * | ABB/ABB | R |
| | Unidentified | 31:40 | 00:00 | 0 | 5895 | 6540 | 651 | 816 | 0.90 * | ABV/ABV | RT |
| | Unidentified | 31:53 | 00:00 | 0 | 4978 | 6430 | 542 | 935 | 0.77 | AVV/AVV | T |
| | Unidentified | 32:34 | 00:00 | 0 | 5903 | 7947 | 636 | 897 | 0.74 | MVV/AVV | |
| | Unidentified | 33:17 | 00:00 | 0 | 7189 | 8202 | 591 | 691 | 0.88 | ABB/ABB | T |
| | 2,3,7,8-TCDF | 33:54 | 33:49 | 5 | 12440 | 14877 | 926 | 1157 | 0.84 | ABB/ABB | M |
| | Unidentified | 35:11 | 00:00 | 0 | 6605 | 9231 | 1017 | 1053 | 0.72 | ABB/ABB | |
| | Unidentified | 35:44 | 00:00 | 0 | 5808 | 6381 | 477 | 631 | 0.91 * | MVB/ABV | RT |
| | Unidentified | 37:24 | 00:00 | 0 | 11479 | 13076 | 1789 | 2125 | 0.88 | ABB/ABV | |
| | Unidentified | 37:56 | 00:00 | 0 | 8021 | 9350 | 1210 | 1476 | 0.86 | ABB/ABB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 223 | 263 | 89 | 105 | 0.85 | / | |
| | 13C-2,3,7,8-TCDF | 33:46 | 33:47 | -1 | 503318 | 623698 | 51049 | 62736 | 0.81 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 165 | 57 | 66 | 0.86 | / | |
| | Unidentified | 29:17 | 00:00 | 0 | 7773 | 10582 | 1209 | 1162 | 0.73 | AVB/ABB | |
| | Unidentified | 30:05 | 00:00 | 0 | 8699 | 9212 | 1114 | 1008 | 0.94 * | ABB/ABB | R |
| | Unidentified | 30:56 | 00:00 | 0 | 4556 | 7856 | 565 | 1064 | 0.58 * | ABB/ABB | R |
| | Unidentified | 32:40 | 00:00 | 0 | 26564 | 31186 | 2985 | 3261 | 0.85 | ABB/ABB | |
| | Unidentified | 33:24 | 00:00 | 0 | 4519 | 6163 | 531 | 726 | 0.73 | ABB/ABV | |
| | Unidentified | 33:43 | 00:00 | 0 | 5898 | 6683 | 761 | 780 | 0.88 | ABB/AVB | |
| | Unidentified | 34:30 | 00:00 | 0 | 6036 | 6923 | 698 | 708 | 0.87 | ABB/ABB | |
| | Unidentified | 35:24 | 00:00 | 0 | 3990 | 5541 | 599 | 791 | 0.72 | MVV/ABV | |
| | Unidentified | 35:42 | 00:00 | 0 | 5556 | 5726 | 789 | 869 | 0.97 * | MVV/AVV | R |
| | 2,3,7,8-TCDD | 35:56 | 35:56 | 0 | 10520 | 15215 | 1518 | 1960 | 0.69 | AVV/AVB | |
| | Unidentified | 36:22 | 00:00 | 0 | 1661 | 2250 | 256 | 351 | 0.74 | MVV/MVV | |
| | Unidentified | 36:50 | 00:00 | 0 | 7733 | 12547 | 1209 | 1534 | 0.62 * | ABB/ABB | RT |
| | Unidentified | 38:12 | 00:00 | 0 | 1697 | 2705 | 470 | 468 | 0.63 * | ABB/ABB | R |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 398 | 245 | 159 | 98 | 1.62 * | / | |
| | 13C-1,2,3,4-TCDD | 35:25 | 35:25 | 0 | 716906 | 885897 | 79700 | 99939 | 0.81 | ABV/ABV | |
| | 13C-2,3,7,8-TCDD | 35:55 | 35:54 | 1 | 347039 | 448553 | 42599 | 55140 | 0.77 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 175 | 175 | 70 | 70 | 1.00 * | / | |
| | Unidentified | 38:37 | 00:00 | 0 | 20228 | 12634 | 3291 | 2407 | 1.60 | ABB/ABB | |
| | Unidentified | 40:17 | 00:00 | 0 | 3360 | 3055 | 735 | 472 | 1.10 * | ABB/AVB | R |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71222 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 03:55 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Unidentified | 40:32 | 00:00 | 0 | 32099 | 22387 ✓ | 5043 | 3221 | 1.43 | ABB/ABB | |
| | Unidentified | 40:47 | 00:00 | 0 | 5572 | 3878 ✓ | 1146 | 503 | 1.44 | ABB/ABB | |
| | Unidentified | 41:11 | 00:00 | 0 | 9632 | 7351 ✓ | 1998 | 1535 | 1.31 * | ABV/ABV | R |
| | Unidentified | 41:21 | 00:00 | 0 | 15000 | 10468 ✓ | 2961 | 1659 | 1.43 | AVB/AVB | |
| | Unidentified | 41:41 | 00:00 | 0 | 3673 | 2169 ✓ | 1217 | 538 | 1.69 | ABV/ABV | |
| | 1,2,3,7,8-PeCDF | 41:46 | 41:46 | 0 | 7743 | 6160 ✓ | 1998 | 1553 | 1.26 * | AVV/AVB | R |
| | Unidentified | 42:01 | 00:00 | 0 | 5613 | 3838 ✓ | 1645 | 824 | 1.46 * | AVB/ABV | |
| | Unidentified | 42:15 | 00:00 | 0 | 21724 | 15211 ✓ | 4530 | 3499 | 1.43 | ABB/AVB | |
| | Unidentified | 42:34 | 00:00 | 0 | 3085 | 2480 ✓ | 795 | 604 | 1.24 * | MVV/ABB | R |
| | 2,3,4,7,8-PeCDF | 42:50 | 42:50 | 0 | 11806 | 8298 ✓ | 2888 | 2353 | 1.42 | AVV/ABB | |
| | Unidentified | 43:01 | 00:00 | 0 | 13652 | 8845 ✓ | 2800 | 2087 | 1.54 | AVV/ABB | |
| | Unidentified | 43:17 | 00:00 | 0 | 3467 | 2906 ✓ | 575 | 413 | 1.19 * | AVB/ABB | R |
| | Unidentified | 44:02 | 00:00 | 0 | 15154 | 11158 ✓ | 4248 | 2165 | 1.36 | ABB/AVB | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 160 | 88 | 84 | 0.92 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:45 | 41:45 | 0 | 595729 | 376622 ✓ | 149789 | 93732 | 1.58 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 42:49 | 42:49 | 0 | 615279 | 385852 ✓ | 173814 | 110061 | 1.59 | ABV/ABB | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 200 | 65 | 80 | 0.81 * | / | |
| | Unidentified | 40:48 | 00:00 | 0 | 125158 | 66758 ✓ | 24186 | 15358 | 1.87 * | ABB/ABV | R |
| | Unidentified | 41:29 | 00:00 | 0 | 20245 | 14330 ✓ | 4852 | 3230 | 1.41 | ABB/ABB | |
| | Unidentified | 41:54 | 00:00 | 0 | 53394 | 37433 ✓ | 14645 | 10915 | 1.43 | ABB/ABV | |
| | Unidentified | 42:04 | 00:00 | 0 | 111909 | 75594 ✓ | 28019 | 19326 | 1.48 | ABB/AVV | |
| | Unidentified | 42:17 | 00:00 | 0 | 40269 | 25444 ✓ | 11216 | 6644 | 1.58 | ABB/AVB | |
| | Unidentified | 42:32 | 00:00 | 0 | 15085 | 10288 ✓ | 4248 | 2488 | 1.47 | ABV/ABV | |
| | Unidentified | 42:39 | 00:00 | 0 | 47375 | 29868 ✓ | 9384 | 5942 | 1.59 | AVV/AVB | |
| | Unidentified | 42:54 | 00:00 | 0 | 4178 | 3162 ✓ | 942 | 861 | 1.32 | AVB/ABB | |
| | Unidentified | 43:03 | 00:00 | 0 | 1872 | 1599 ✓ | 512 | 424 | 1.17 * | ABV/ABB | R |
| | 1,2,3,7,8-PeCDD | 43:17 | 43:17 | 0 | 69647 | 46470 ✓ | 19296 | 12130 | 1.50 | ABV/ABV | |
| | Unidentified | 43:30 | 00:00 | 0 | 18761 | 11379 ✓ | 5186 | 3414 | 1.65 | AVB/AVB | |
| | Unidentified | 43:45 | 00:00 | 0 | 782 | 1209 | 224 | 246 | 0.65 * | ABV/ABB | RT |
| | Unidentified | 43:53 | 00:00 | 0 | 17160 | 10352 ✓ | 5695 | 3894 | 1.66 | AVB/ABB | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 123 | 69 | 49 | 1.41 | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:16 | 43:16 | 0 | 455789 | 285155 ✓ | 126416 | 75595 | 1.60 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 190 | 188 | 76 | 75 | 1.01 * | / | |
| | Unidentified | 45:07 | 00:00 | 0 | 16617 | 14693 ✓ | 5883 | 4827 | 1.13 | ABB/ABB | |
| | Unidentified | 45:18 | 00:00 | 0 | 74930 | 60344 ✓ | 23059 | 16633 | 1.24 | ABB/ABB | |
| | Unidentified | 45:29 | 00:00 | 0 | 2011 | 1830 ✓ | 442 | 555 | 1.10 | ABV/ABB | |
| | Unidentified | 45:41 | 00:00 | 0 | 6408 | 3815 ✓ | 2186 | 939 | 1.68 * | AVV/ABV | R |
| | Unidentified | 45:45 | 00:00 | 0 | 4634 | 3233 ✓ | 1155 | 989 | 1.43 | AVV/AVB | |
| | Unidentified | 45:54 | 00:00 | 0 | 83463 | 61605 ✓ | 25750 | 19548 | 1.35 | AVB/ABB | |

Notes:
R = ratio is oustide limits H = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

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# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AA | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71222 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 03:55 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Unidentified | 46:04 | 00:00 | 0 | 11839 | 8898 ✓ | 3912 | 2560 | 1.33 | ABB/ABB | |
| | 1,2,3,4,7,8-HxCDF | 46:20 | 46:23 | -3 | 29005 | 21897 ✓ | 4795 | 4129 | 1.32 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 46:31 | 46:31 | 0 | 18867 | 15965 ✓ | 3550 | 3222 | 1.18 | AVB/AVB | |
| | Unidentified | 46:39 | 00:00 | 0 | 2673 | 1999 ✓ | 451 | 483 | 1.34 | ABB/MVV | |
| | Unidentified | 46:54 | 00:00 | 0 | 3319 | 3549 ✓ | 672 | 714 | 0.94 * | ABV/ABV | R |
| | Unidentified | 47:04 | 00:00 | 0 | 15918 | 13436 ✓ | 4631 | 3731 | 1.18 | AVB/AVV | |
| | Unidentified | 47:11 | 00:00 | 0 | 5124 | 4077 ✓ | 1754 | 1195 | 1.26 | ABV/AVV | |
| | 2,3,4,6,7,8-HxCDF | 47:18 | 47:17 | 1 | 7212 | 6829 ✓ | 2160 | 1919 | 1.06 | AVB/AVB | |
| | Unidentified | 48:28 | 00:00 | 0 | 3446 | 2500 ✓ | 631 | 556 | 1.38 | MBV/ABV | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 255 | 68 | 102 | 0.67 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:22 | 46:22 | 0 | 291372 | 562913 ✓ | 80487 | 157621 | 0.52 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:30 | 46:31 | -1 | 297592 | 565477 ✓ | 77839 | 149157 | 0.53 | AVB/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:18 | 47:16 | 2 | 268579 | 505369 ✓ | 71620 | 134730 | 0.53 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:18 | 48:18 | 0 | 221672 | 427889 ✓ | 54478 | 111254 | 0.52 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 188 | 63 | 75 | 0.84 * | / | |
| | Unidentified | 45:48 | 00:00 | 0 | 290553 | 236979 ✓ | 83691 | 69289 | 1.23 | ABV/ABB | |
| | Unidentified | 46:25 | 00:00 | 0 | 120972 | 94514 ✓ | 34483 | 28048 | 1.28 | ABB/ABV | |
| | Unidentified | 46:43 | 00:00 | 0 | 1046278 | 854831 ✓ | 273598 | 216419 | 1.22 | ABV/AVV | |
| | Unidentified | 46:54 | 00:00 | 0 | 10200 | 10303 ✓ | 3212 | 2553 | 0.99 * | AVB/AVB | R |
| | 1,2,3,4,7,8-HxCDD | 47:28 | 47:28 | 0 | 28010 | 23020 ✓ | 7974 | 6469 | 1.22 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:36 | 47:35 | 1 | 255137 | 209425 ✓ | 66801 | 54121 | 1.22 | AVV/AVB | |
| | 1,2,3,7,8,9-HxCDD | 48:01 | 48:01 | 0 | 121360 | 96755 ✓ | 28787 | 22474 | 1.25 | ABV/ABB | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 310 | 153 | 124 | 61 | 2.03 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:28 | 47:27 | 1 | 350367 | 292094 ✓ | 92873 | 77109 | 1.20 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:35 | 47:34 | 1 | 362151 | 290162 ✓ | 93306 | 76566 | 1.25 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 48:00 | 48:00 | 0 | 752286 | 594836 ✓ | 197952 | 155457 | 1.26 | ABB/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 168 | 66 | 67 | 0.99 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:55 | 50:56 | -1 | 78945 | 74015 ✓ | 16316 | 15846 | 1.07 | ABB/ABB | M |
| | Unidentified | 51:21 | 00:00 | 0 | 5064 | 5126 ✓ | 830 | 874 | 0.99 | ABV/ABV | |
| | Unidentified | 51:37 | 00:00 | 0 | 84982 | 89420 ✓ | 20116 | 17686 | 0.95 | AVV/AVV | |
| | 1,2,3,4,7,8,9-HpCDF | 53:16 | 53:16 | 0 | 3452 | 3937 ✓ | 534 | 886 | 0.88 | | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 150 | 59 | 60 | 0.98 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 50:54 | 0 | 176249 | 375707 ✓ | 38203 | 84689 | 0.47 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 53:15 | -1 | 146962 | 326560 ✓ | 30180 | 73251 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 190 | 168 | 76 | 67 | 1.13 | / | |
| | Unidentified | 51:27 | 00:00 | 0 | 509221 | 485168 ✓ | 115320 | 106241 | 1.05 | ABV/ABV | |
| | 1,2,3,4,6,7,8-HpCDD | 52:38 | 52:39 | -1 | 317289 | 307967 ✓ | 76149 | 75035 | 1.03 | ABV/ABV | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WJ2AA | Prep Batch | 3273193 | Lot No | H3I1002A3-003 |
| Data File | /20031004s1/tfx1wj2.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71222 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/05/03 03:55 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Anal Exp Date | 11/14/03 | Initial Wt/Vol | 10.0 g | Lims Test Code | XXA11TN01 |
| Instrument | M2A | Extract Vol | 20 uL | Method | EX8290_2 |
| Analyst | PMP | Diluton Factor | 1.00 | Code | TN2 |

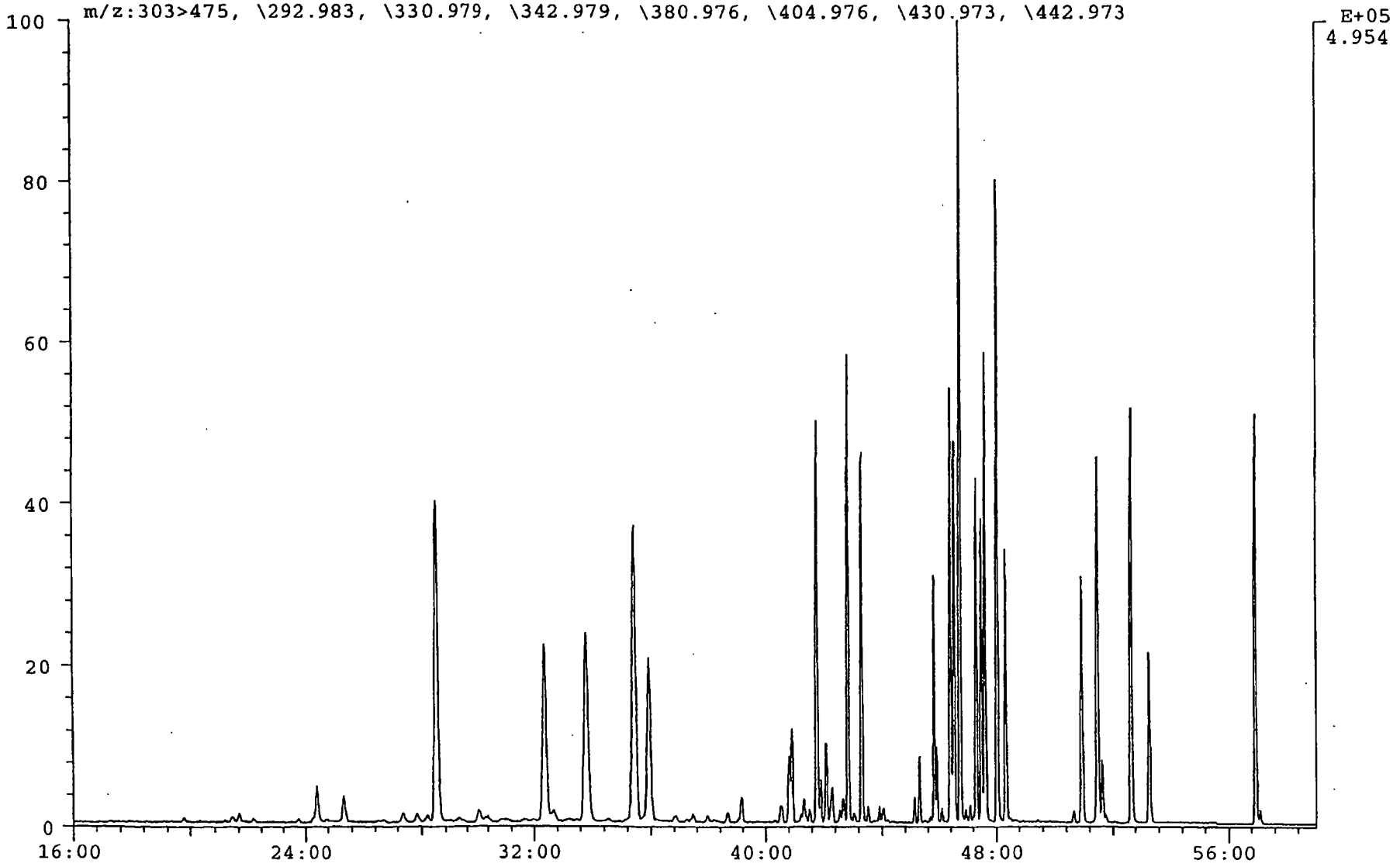
View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Prod RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration Flags | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 436 | | | | | 435.8169 | 437.8140 | 435.8169 | 437.8140 | 0.88-1.20 | | |
| | Noise | 00:00 | 00:00 | 0 | 133 | 133 | 61 | 81 | 1.00 | / | |
| | Unidentified | 51:26 | 00:00 | 0 | 7583 | 8089 | 1270 | 1489 | 0.94 | ABB/ABB | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 52:38 | -1 | 280343 | 266054 ✓ | 67393 | 63189 | 1.08 | ABV/ABV | |
| 442 | | | | | 441.7428 | 443.7399 | 441.7428 | 443.7399 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 168 | 57 | 67 | 0.85 | / | |
| | OCDF | 57:03 | 57:05 | -2 | 11956 | 14426 ✓ | 3107 | 4409 | 0.83 | MBB/MBB | |
| 458 | | | | | 457.7377 | 459.7348 | 457.7377 | 459.7348 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 150 | 58 | 60 | 0.97 | / | |
| | OCDD | 56:55 | 56:55 | 0 | 165501 | 184166 ✓ | 43472 | 50497 | 0.90 | ABV/AVV | M |
| 470 | | | | | 469.7780 | 471.7750 | 469.7780 | 471.7750 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 175 | 163 | 70 | 65 | 1.08 * | / | |
| | 13C-OCDD | 56:54 | 56:54 | 0 | 313895 | 348924 ✓ | 87056 | 95140 | 0.90 | ABV/ABV | |

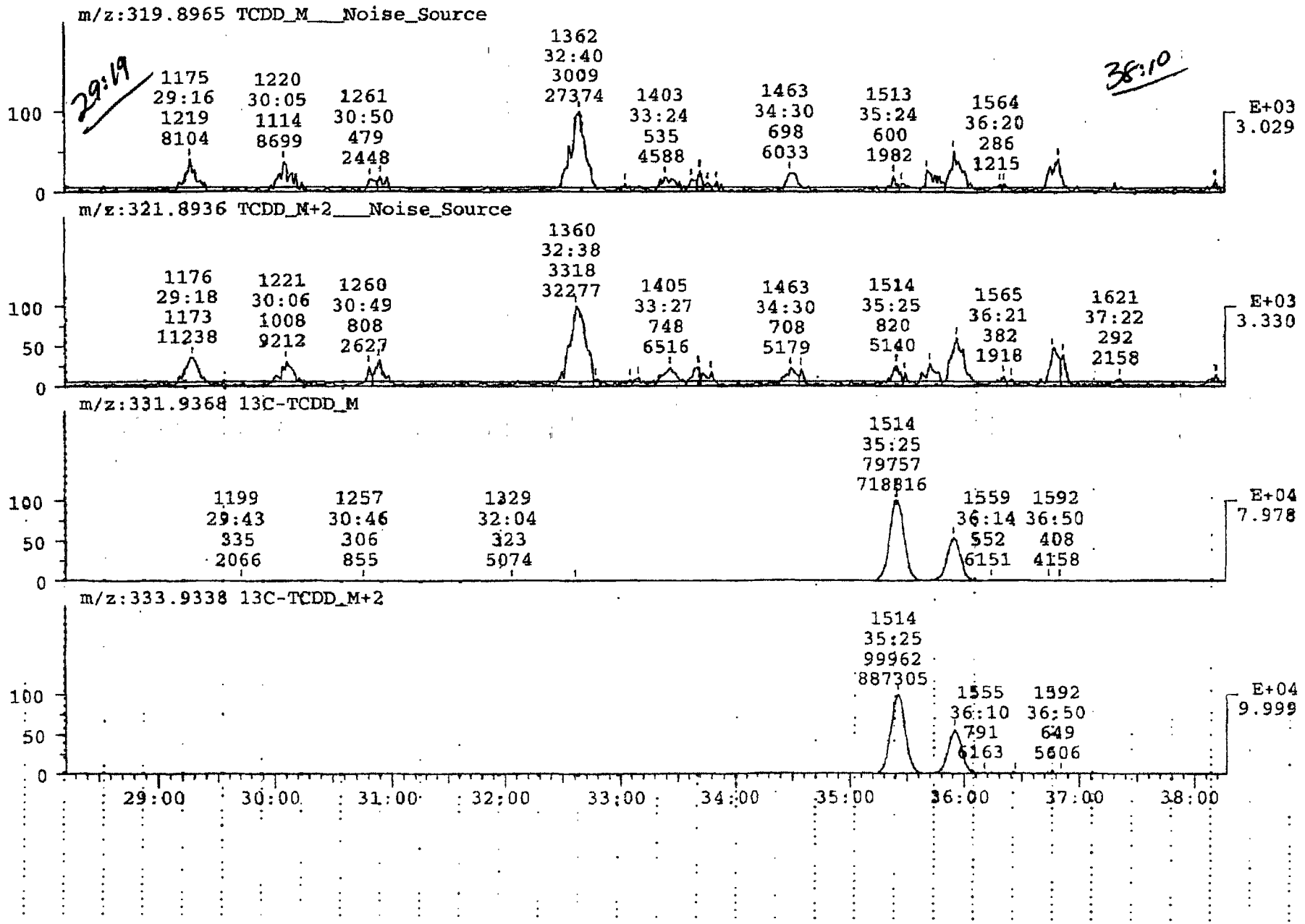
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tfx1wj2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 442 > 2834 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

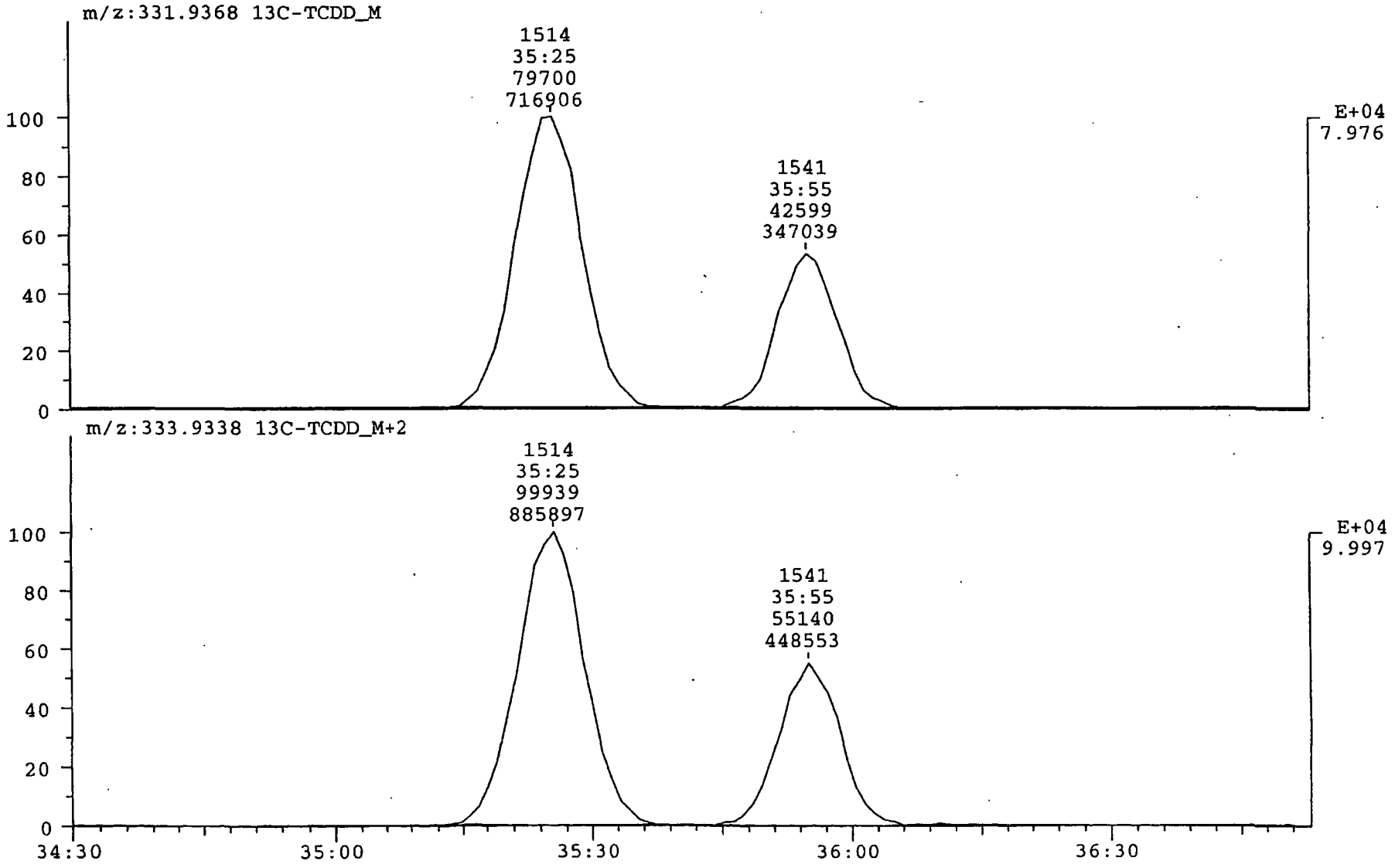
Jwt MSD 10/6/03
Calc DAW 10.7.03
QC VMK 10.7.03
Rev CS 10.7.03



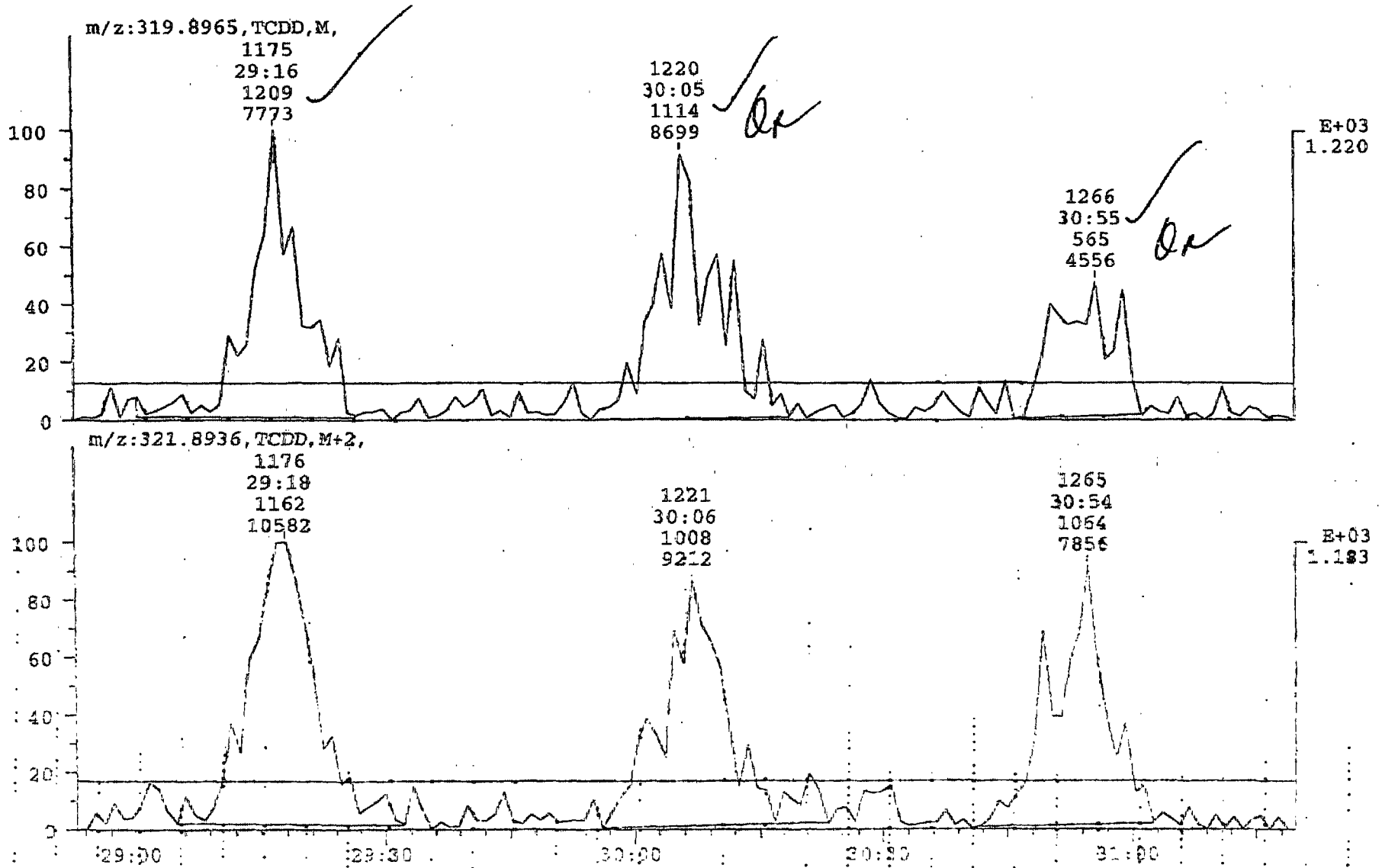
CHRO: tfx1wj2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1116 > 1672 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



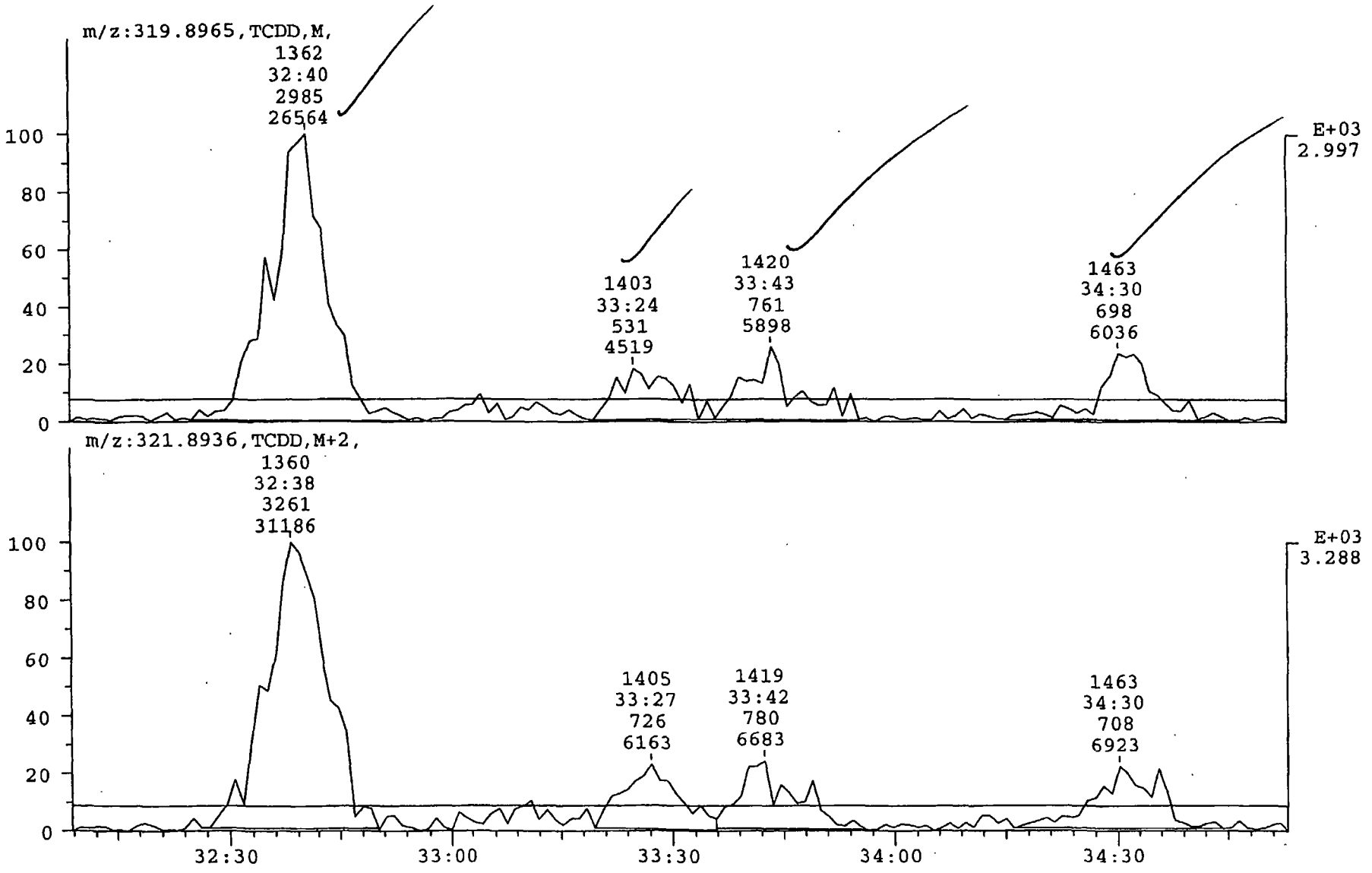
CHRO: tfx1wj2 05-Oct-03 Elapse: 35:40 1528
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1463 > 1594 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



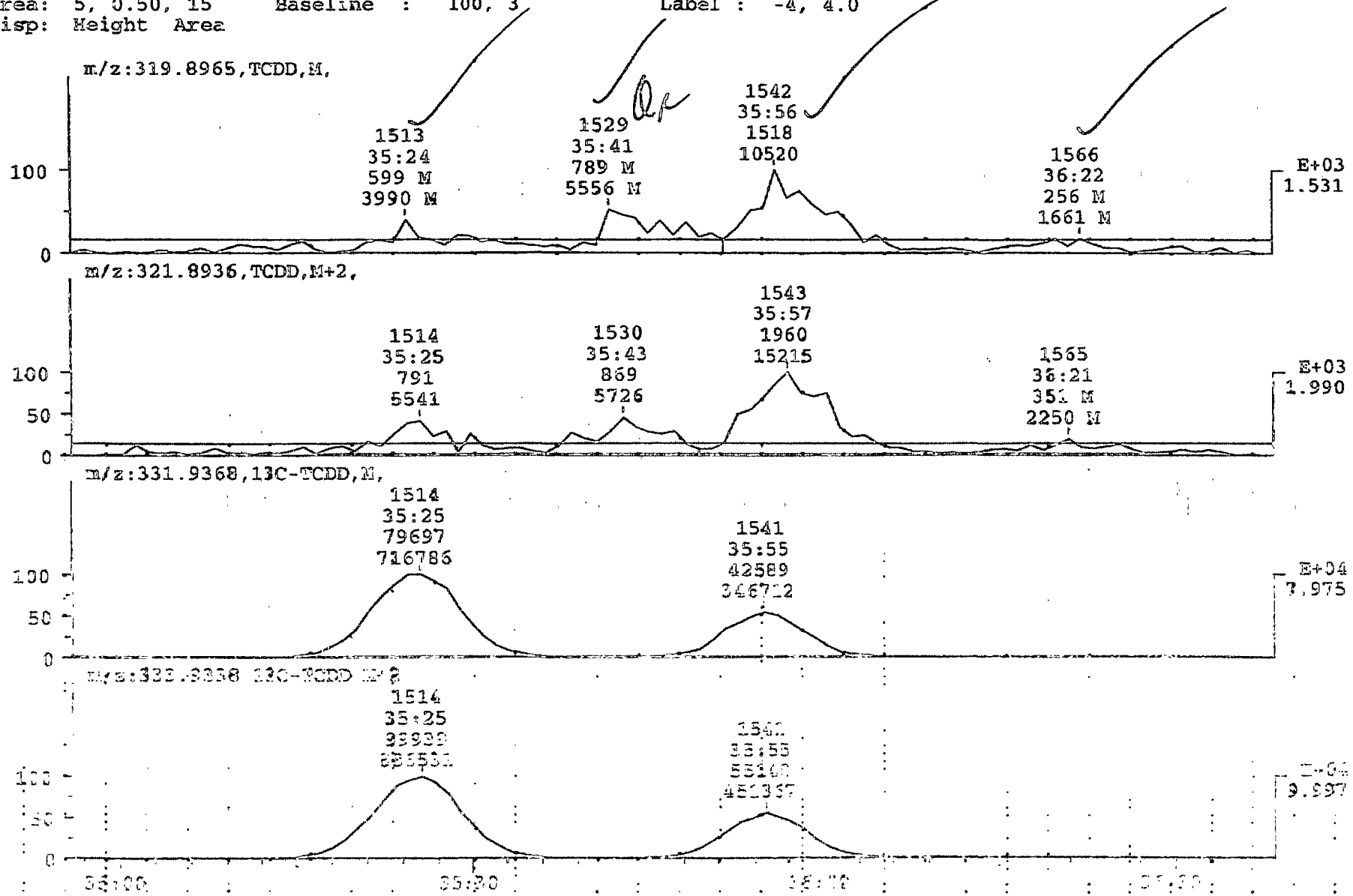
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1153 > 1288 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 9 Label : -2, 3.0
Disp: Height Area



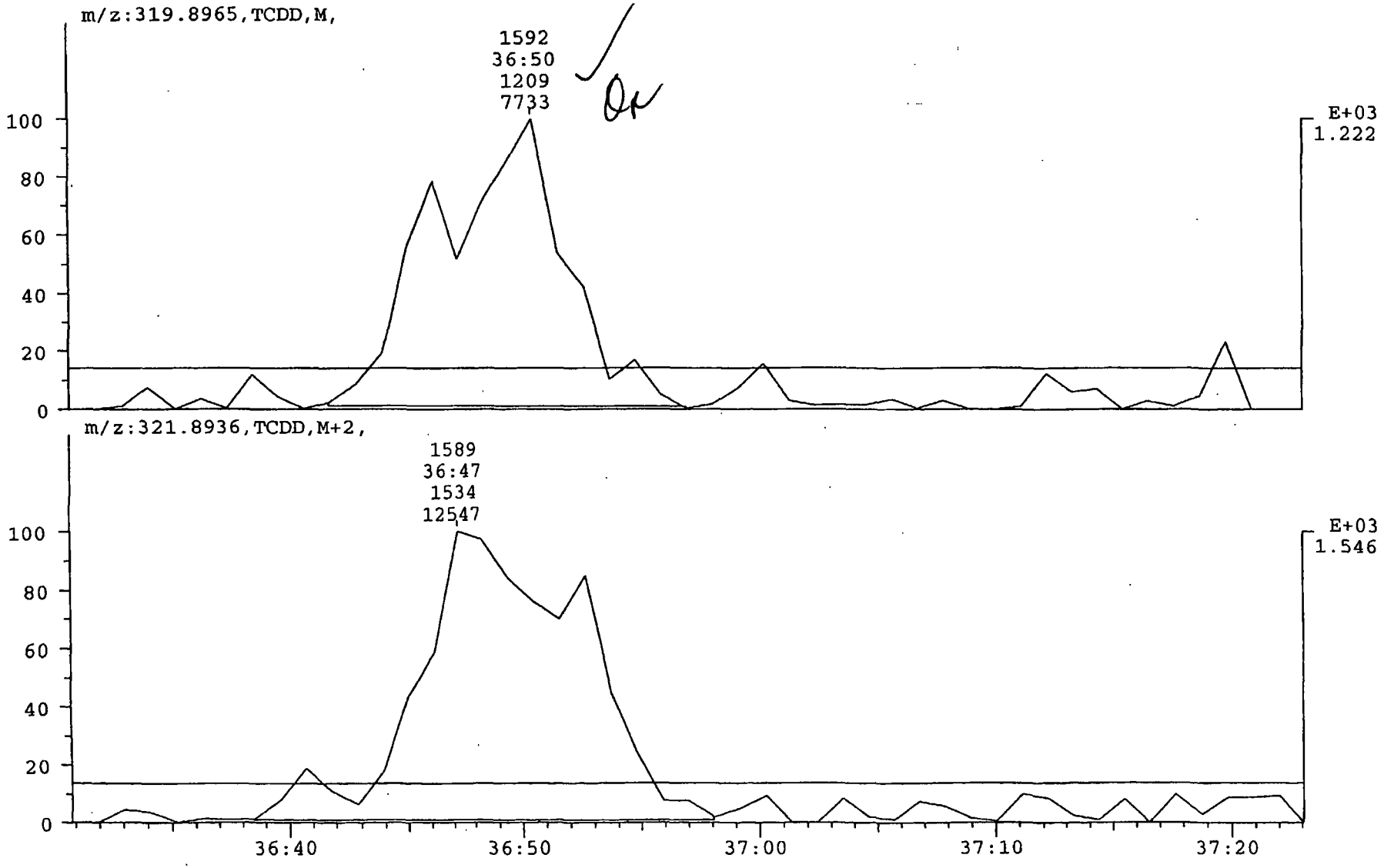
```
CHRO:  tfx1wj2                                  05-Oct-03   Elapse:  42:56      1933
Samp:  Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1                   Start :  03:55:59   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003                 Inlet :  GC     Vial  26
Peak:  100.00  ppm     Label wndw:   1333 > 1484           Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 9                Label :  -4, 4.0
Disp:  Height  Area
```



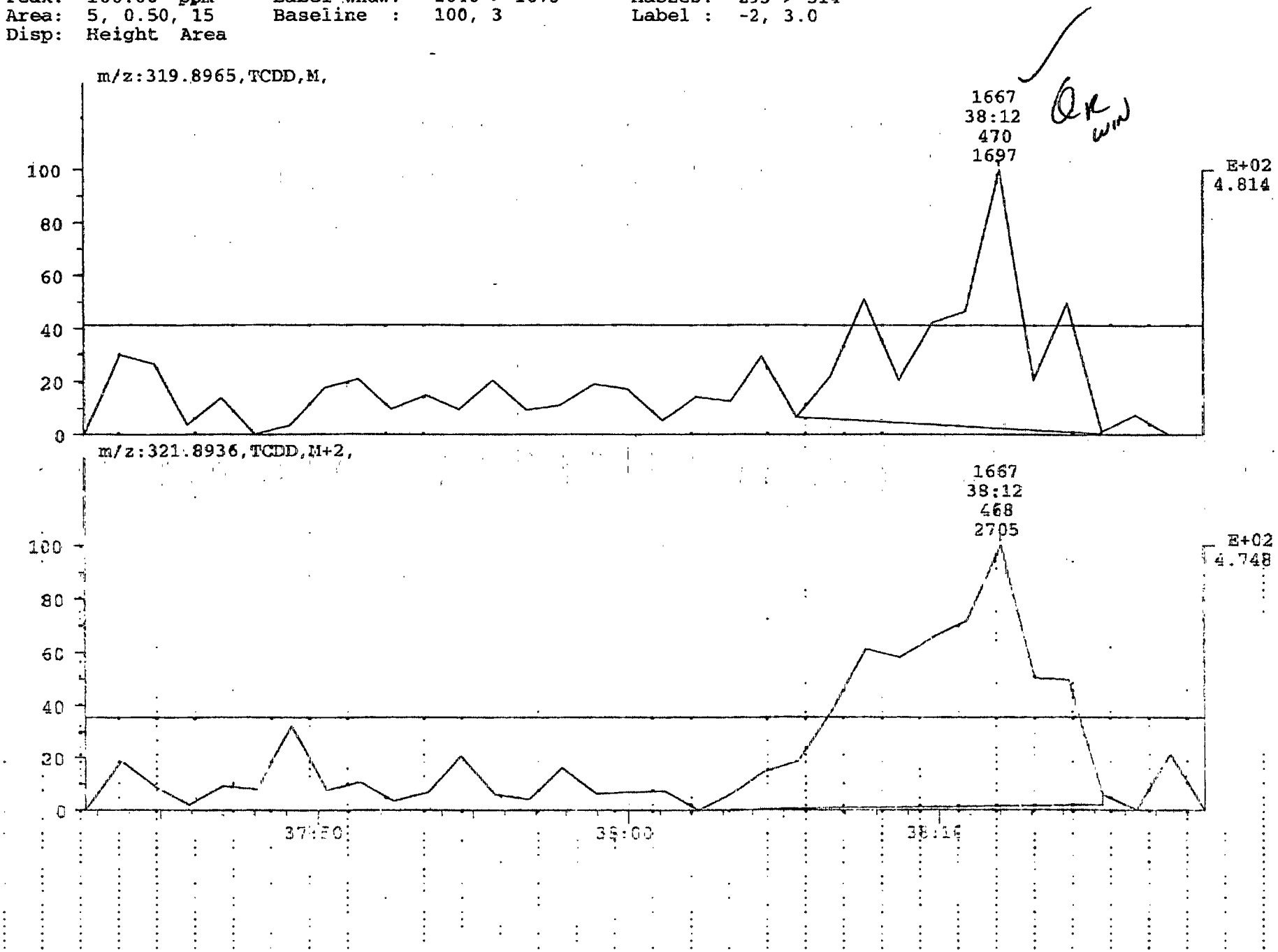
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1487 > 1581 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -4, 4.0
Disp: Height Area



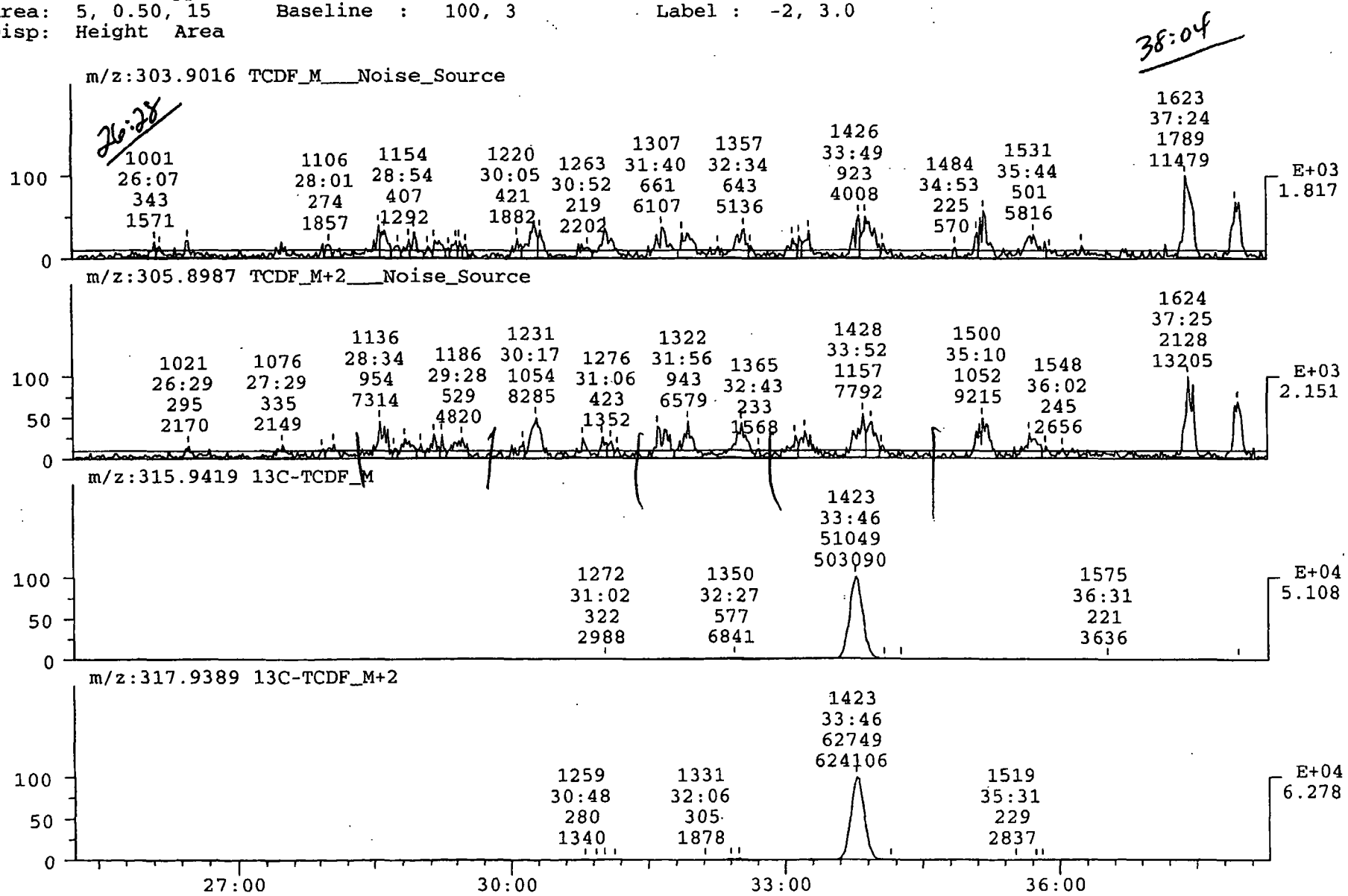
```
CHRO:  tfx1wj2                                  05-Oct-03   Elapse:   42:56      1933
Samp:  Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1                   Start :   03:55:59    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-003                Inlet :   GC     Vial  26
Peak:  100.00  ppm      Label wndw:   1574 > 1622           Masses:   293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 9                 Label :   -2, 3.0
Disp:  Height  Area
```



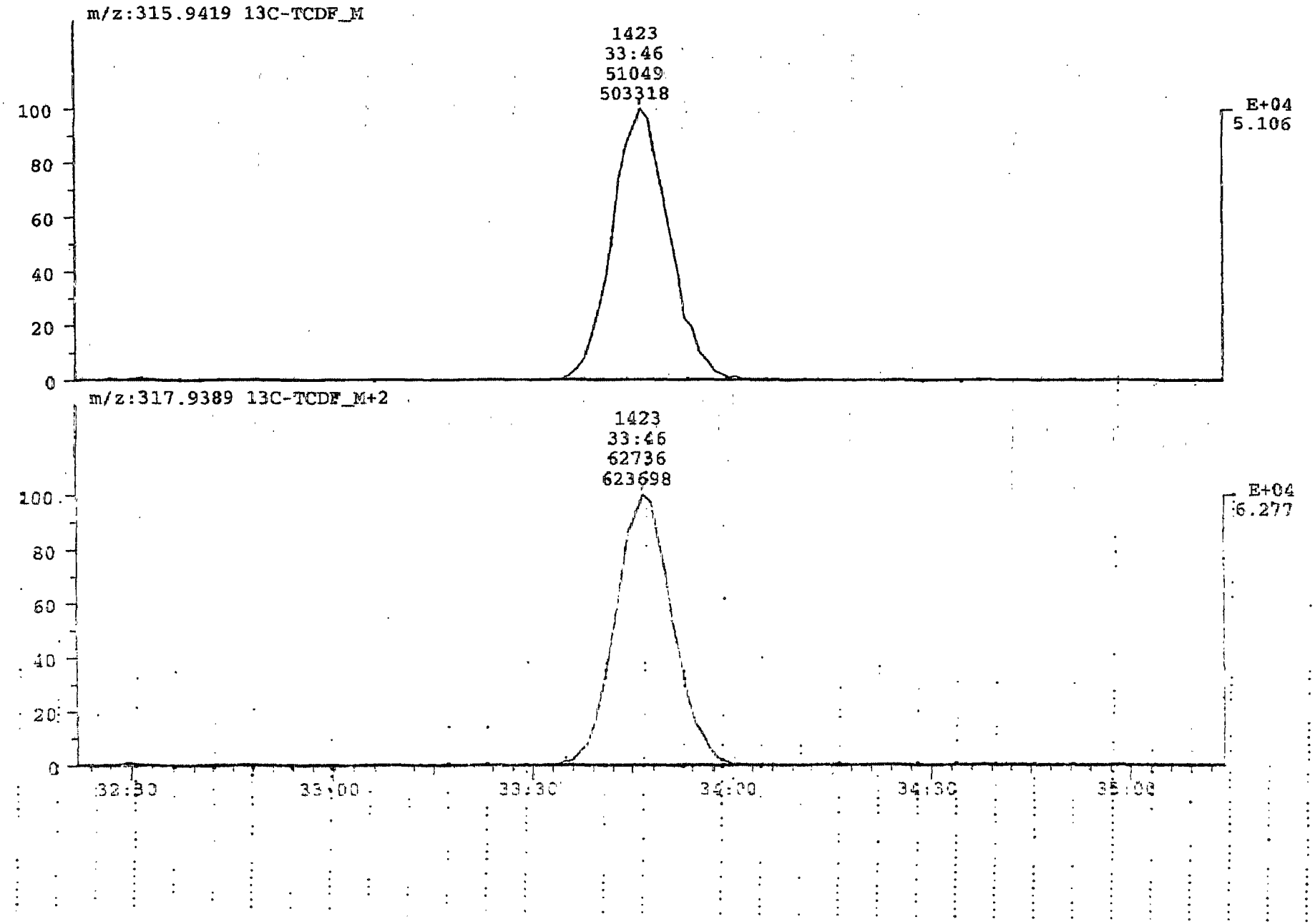
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1640 > 1673 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



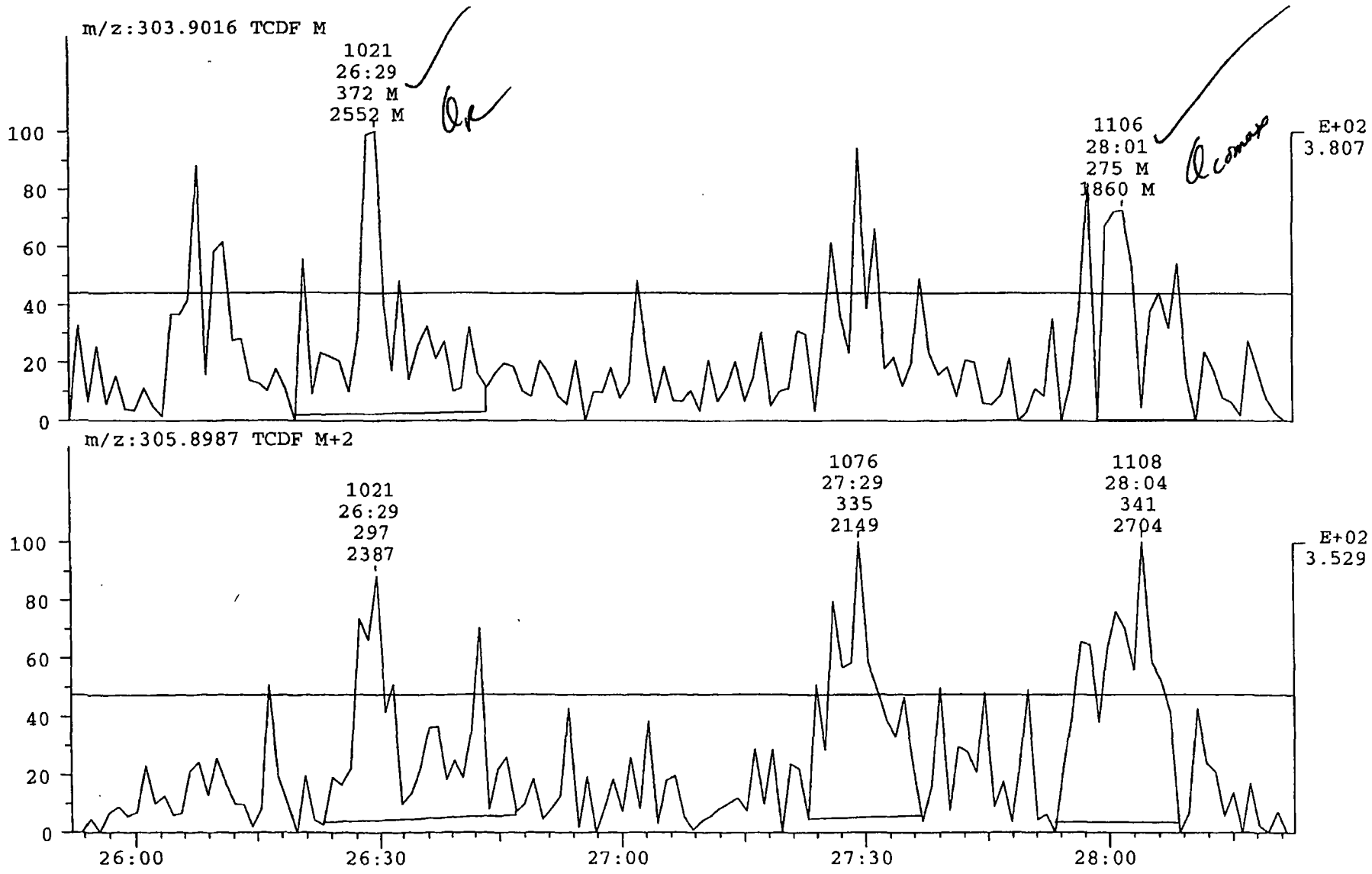
CHRO: tfx1wj2 05-Oct-03 Elapse: 35:40 1528
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 952 > 1672 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1345 > 1503 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 987 > 1125 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



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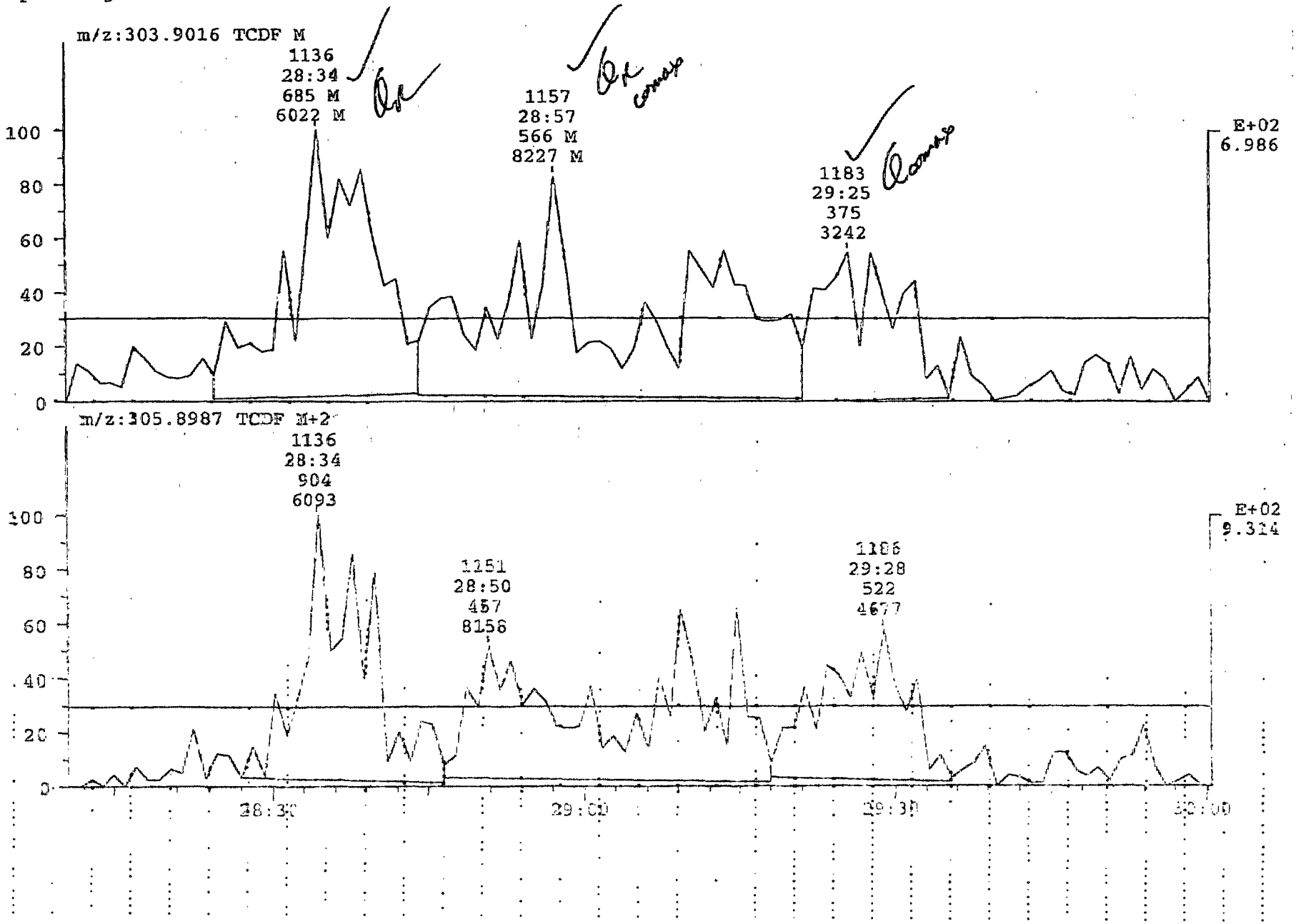
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1114 > 1215 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 9 Label : -4, 4.0
Disp: Height Area



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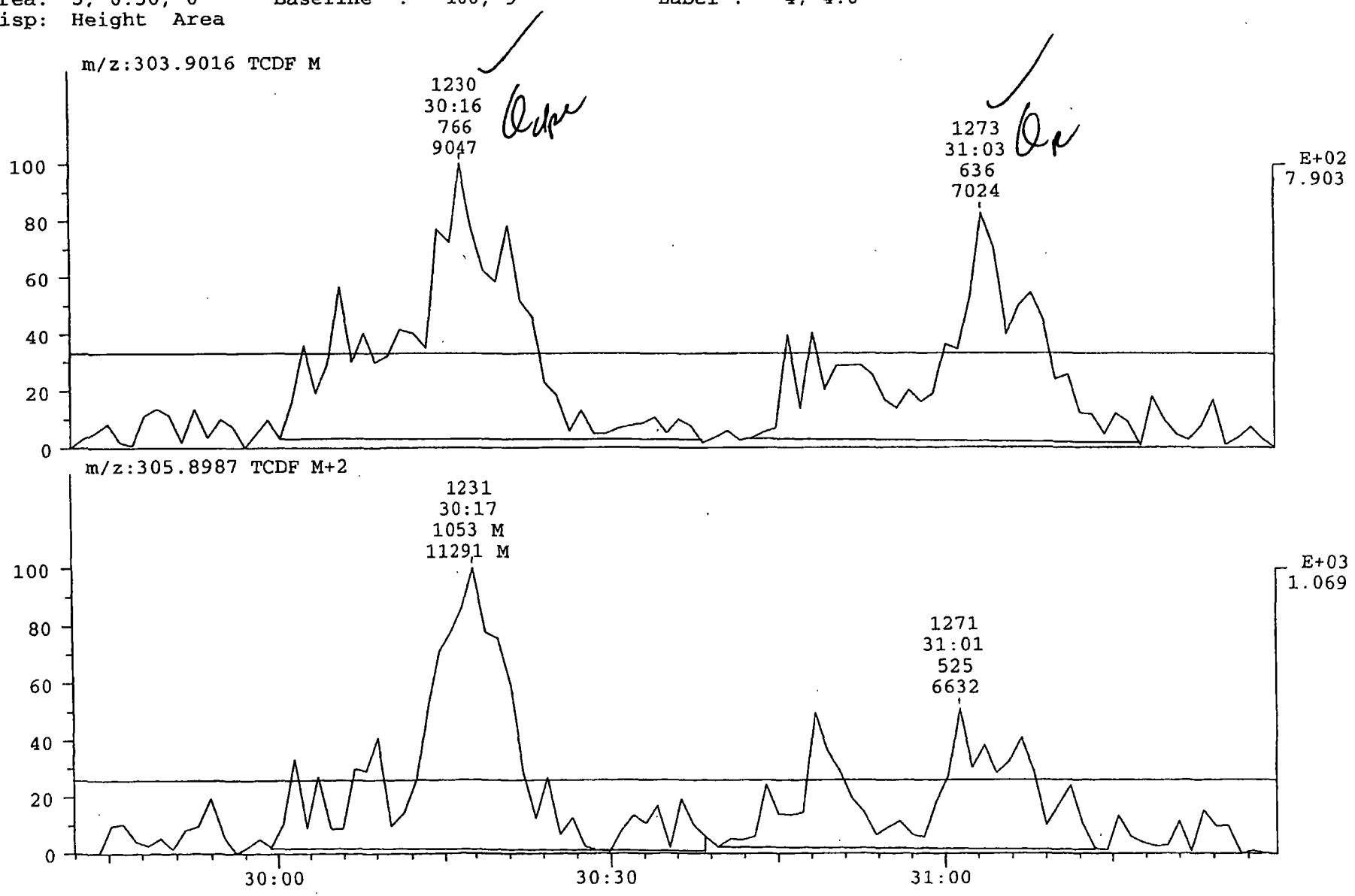
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1198 > 1297 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 9 Label : -4, 4.0
Disp: Height Area



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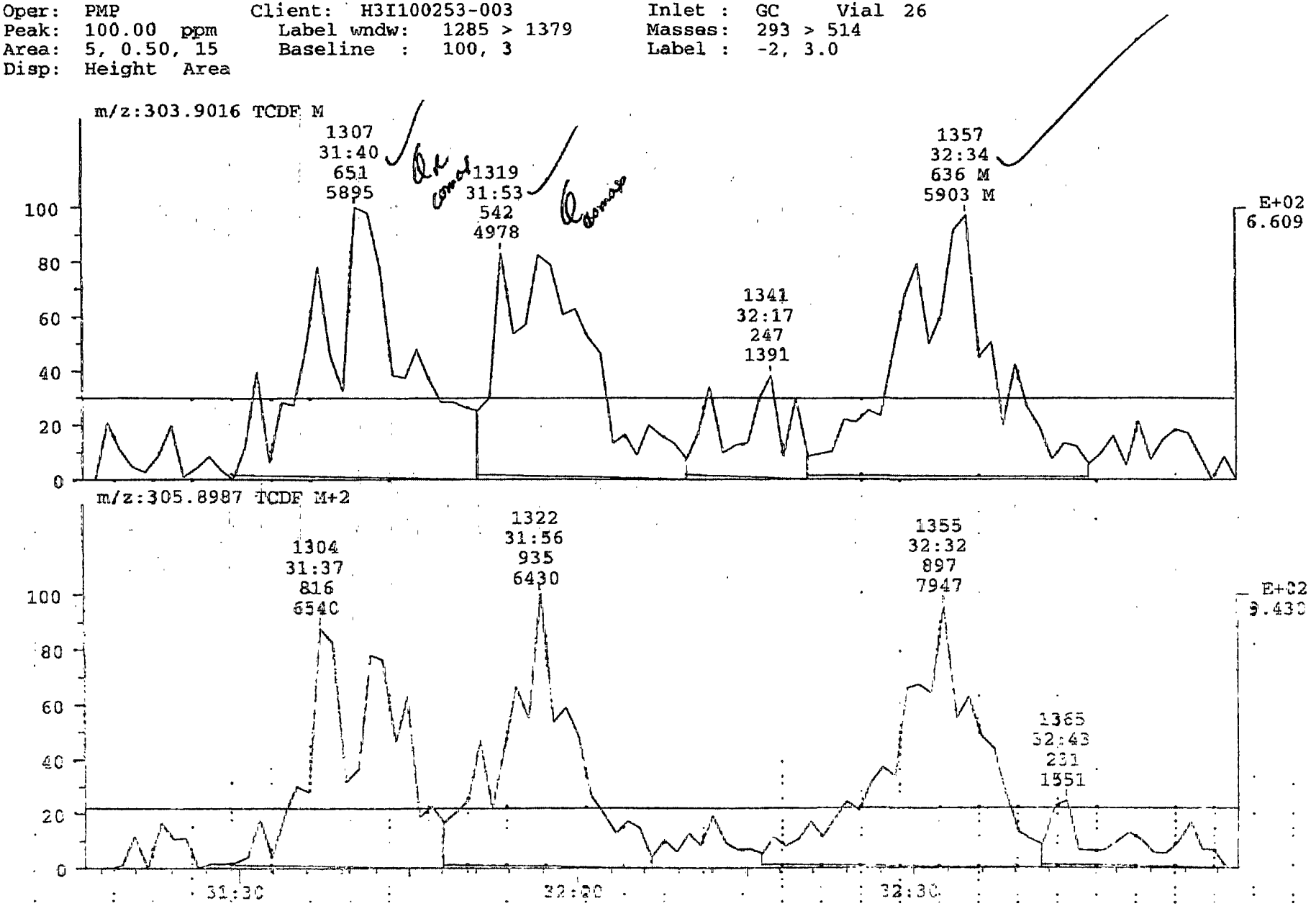
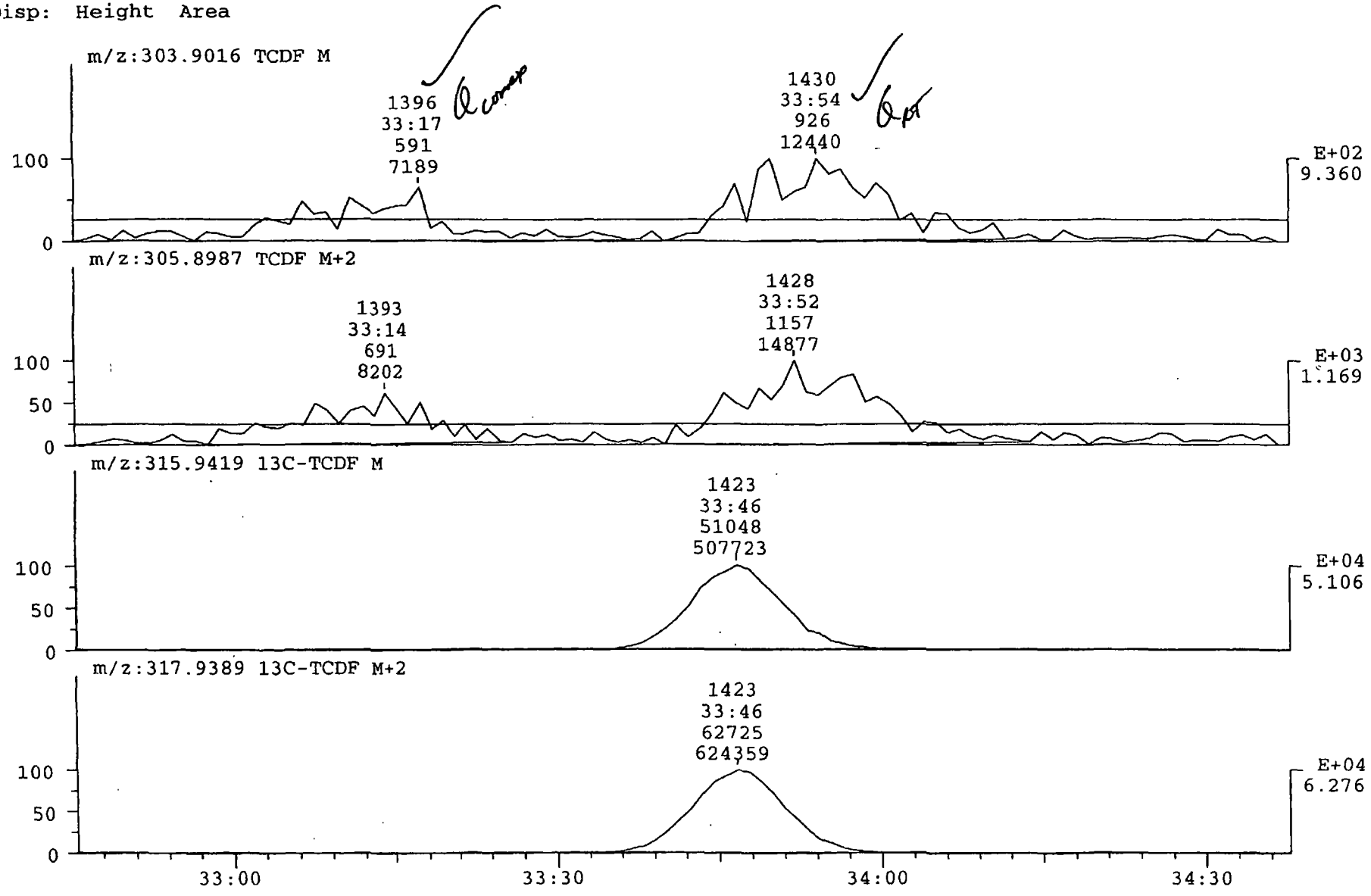
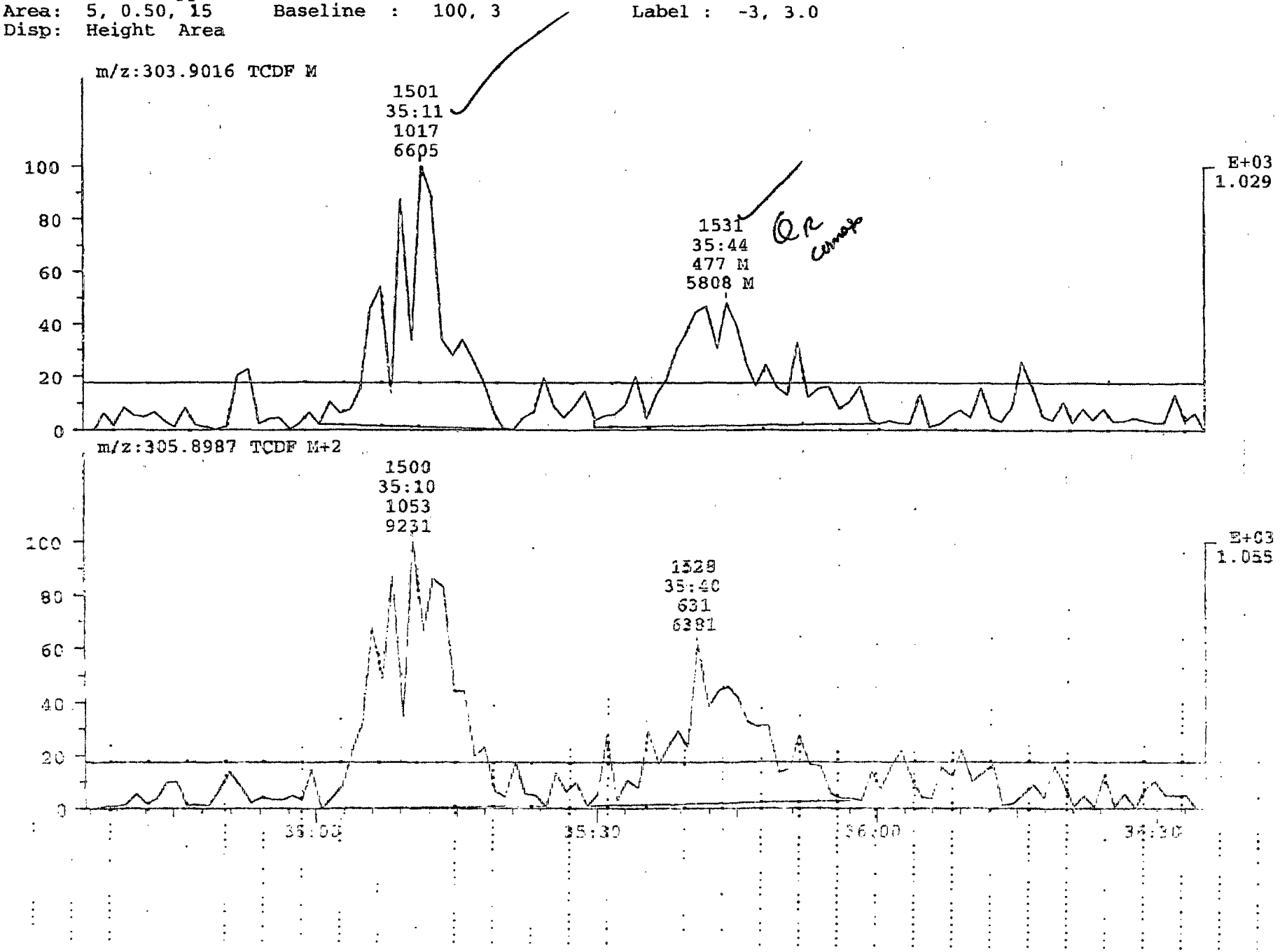
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1285 > 1379 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



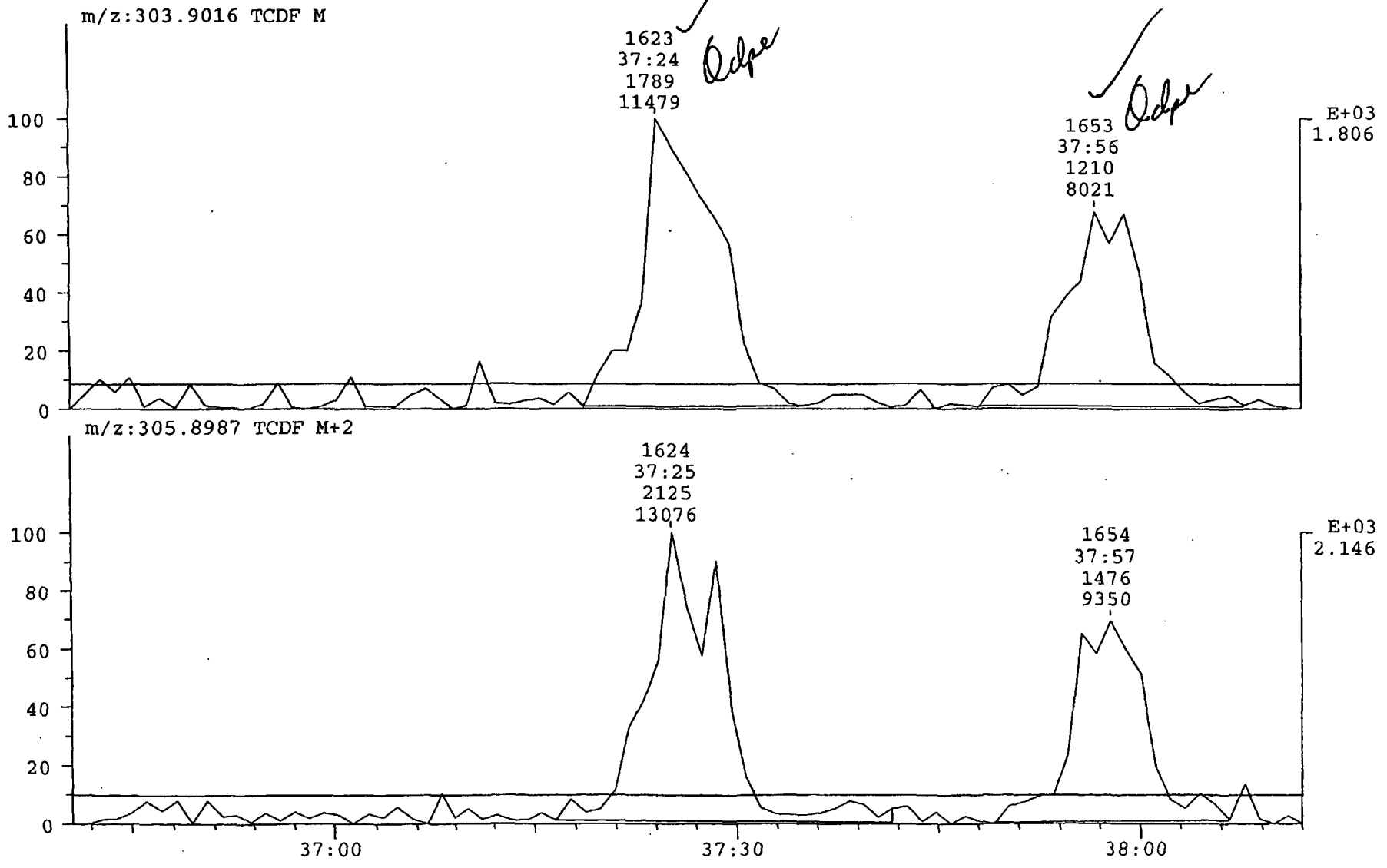
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1367 > 1470 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 9 Label : -4, 4.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1468 > 1578 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1583 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
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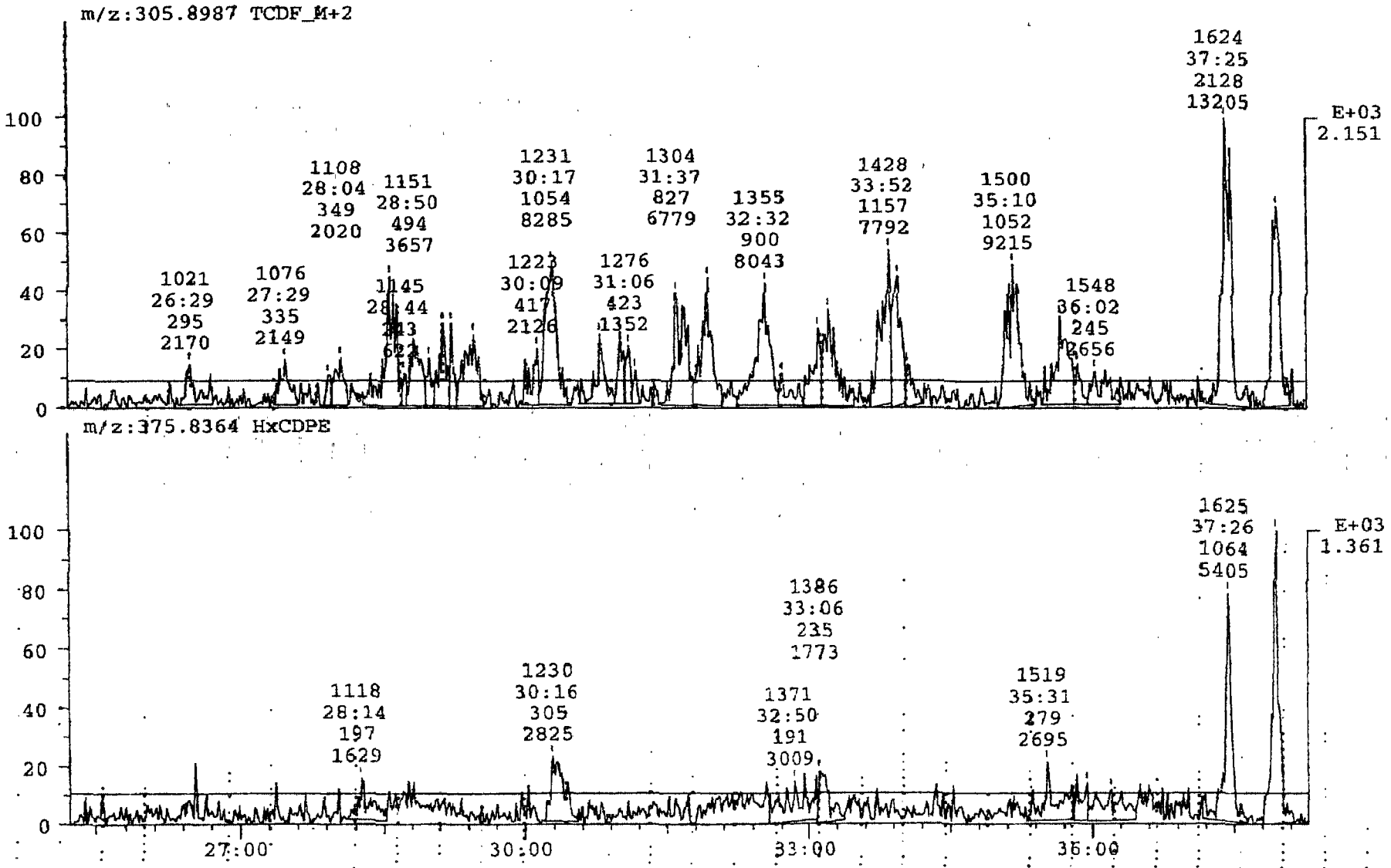
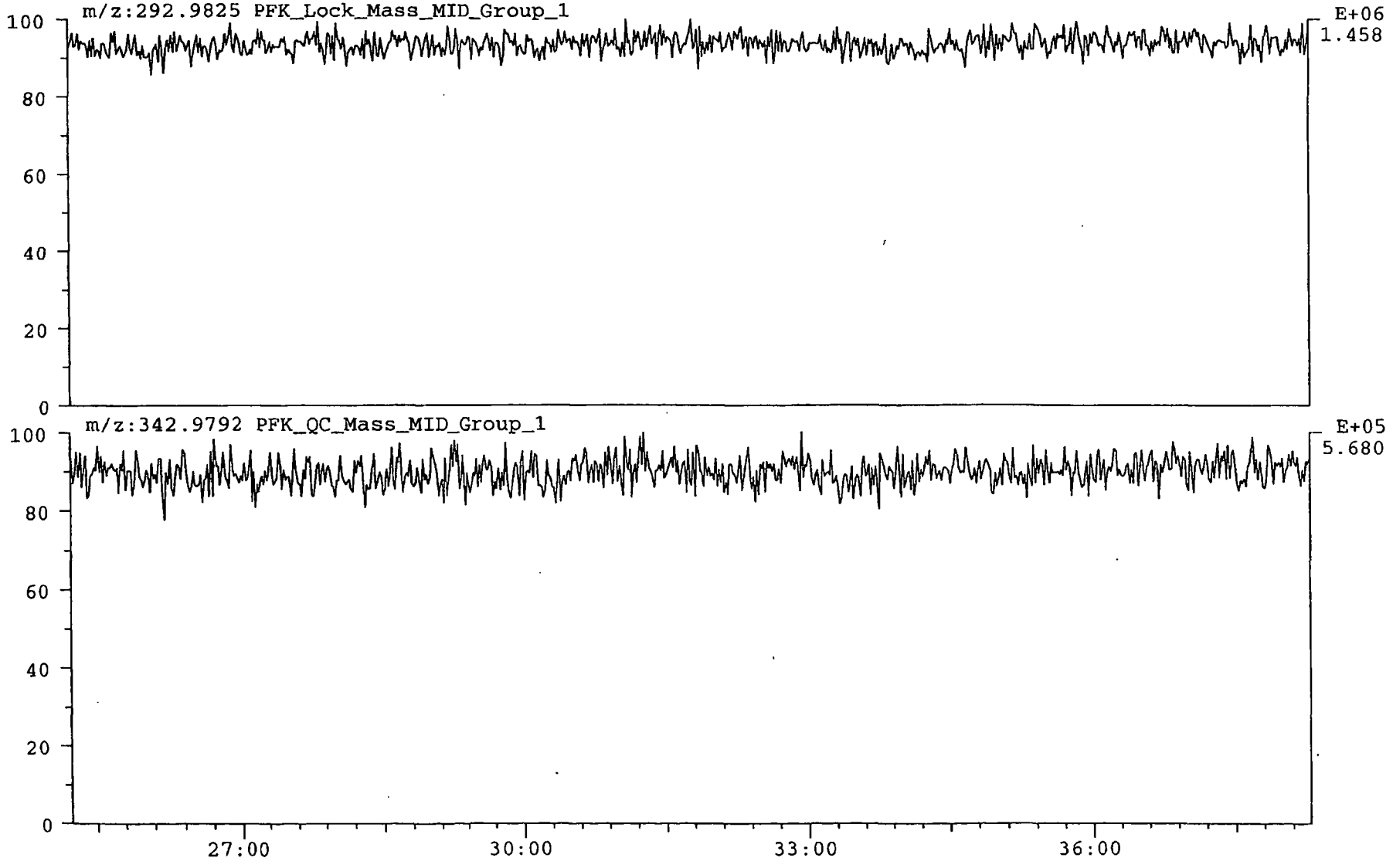
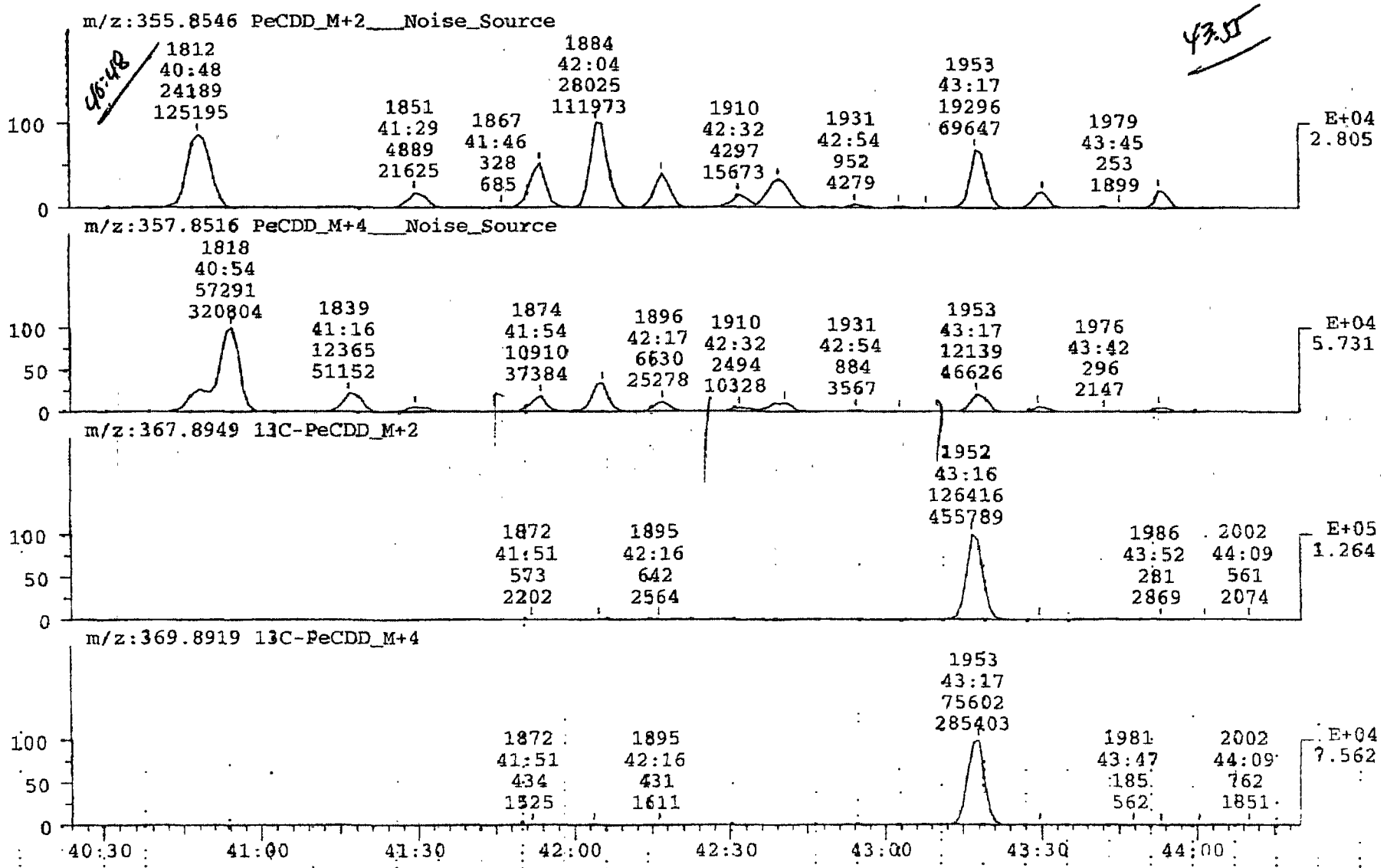
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 952 > 1672 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



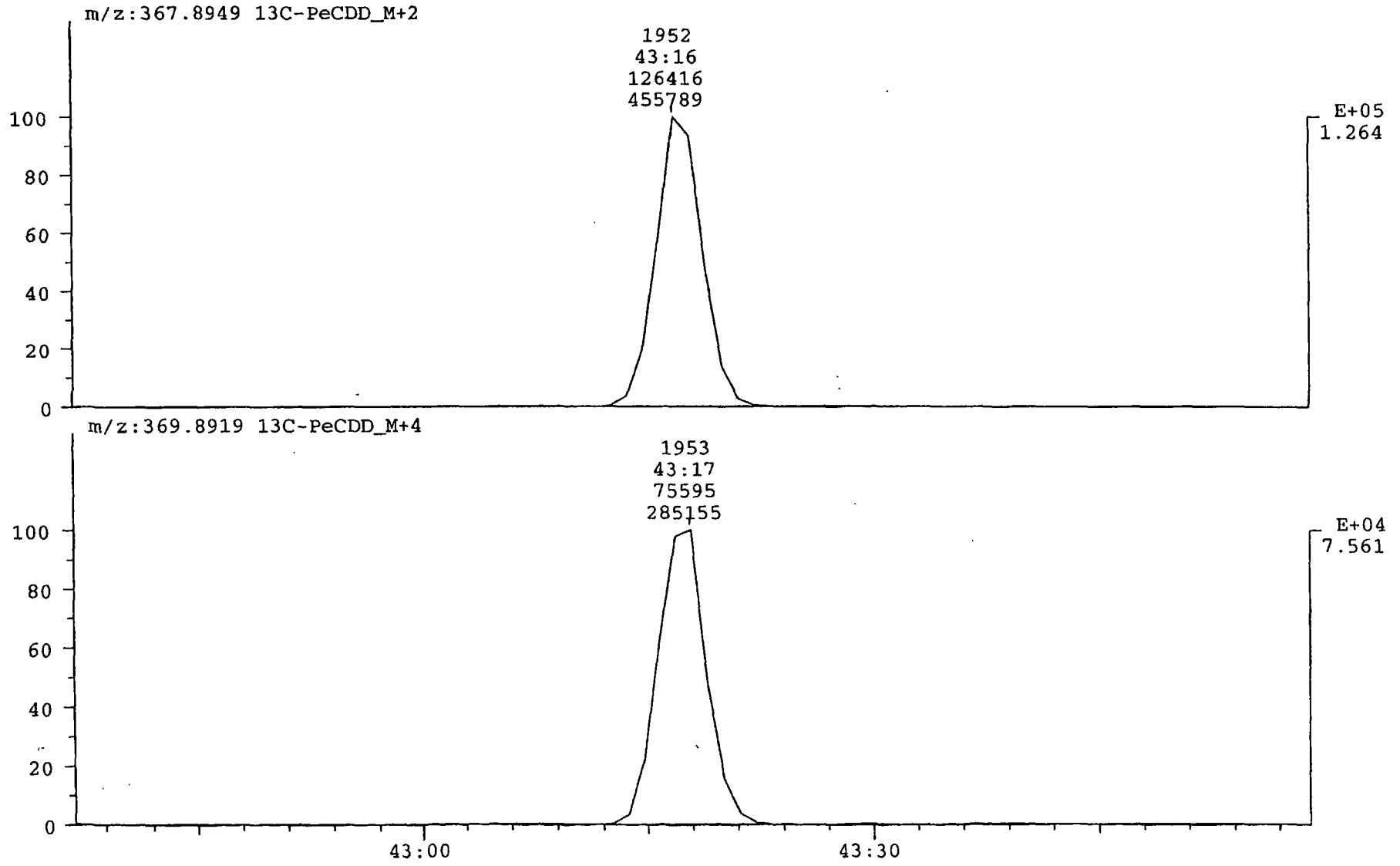
CHRO: tfx1wj2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 952 > 1672 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



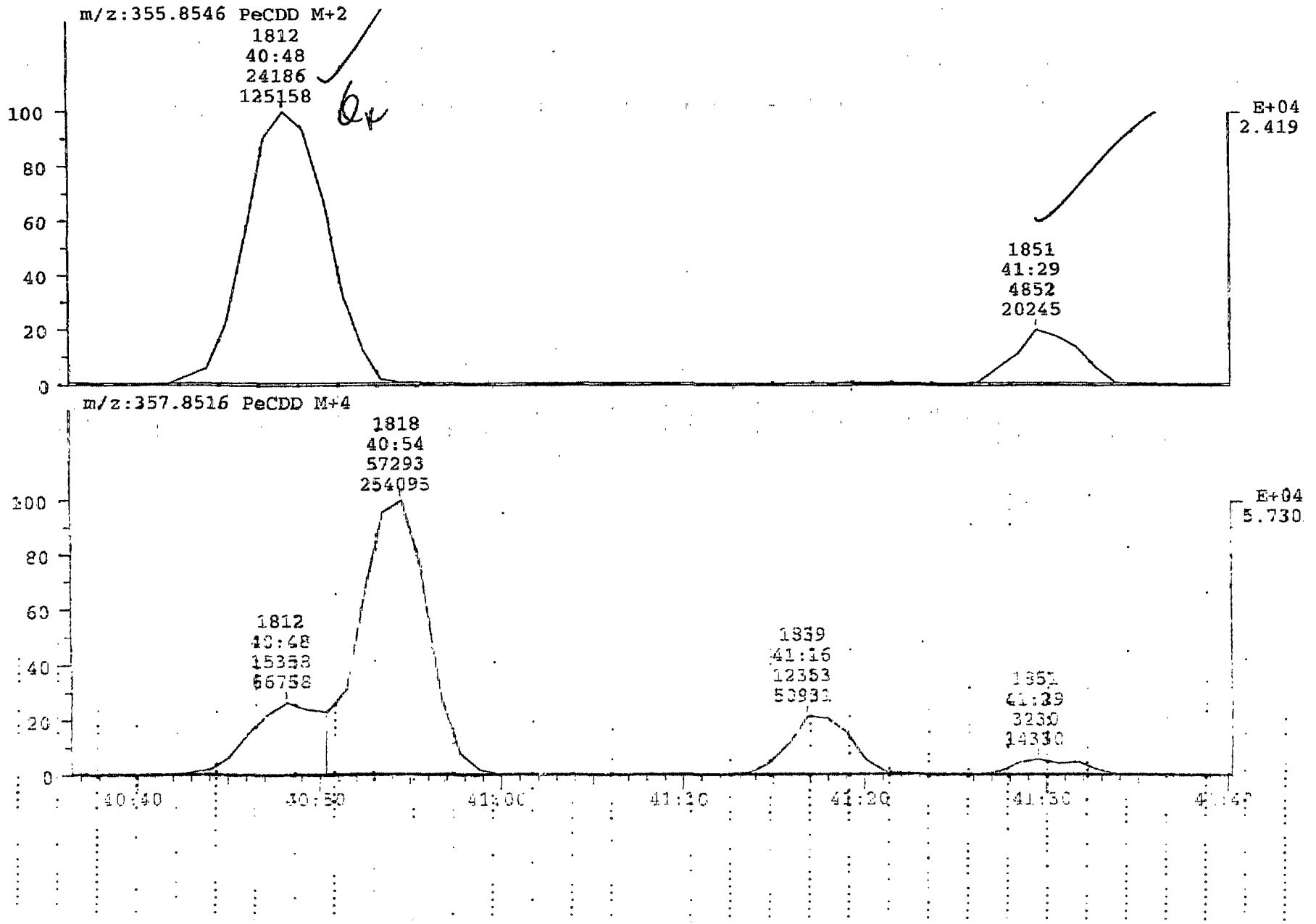
CHRO: tfx1wj2 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1789 > 2011 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



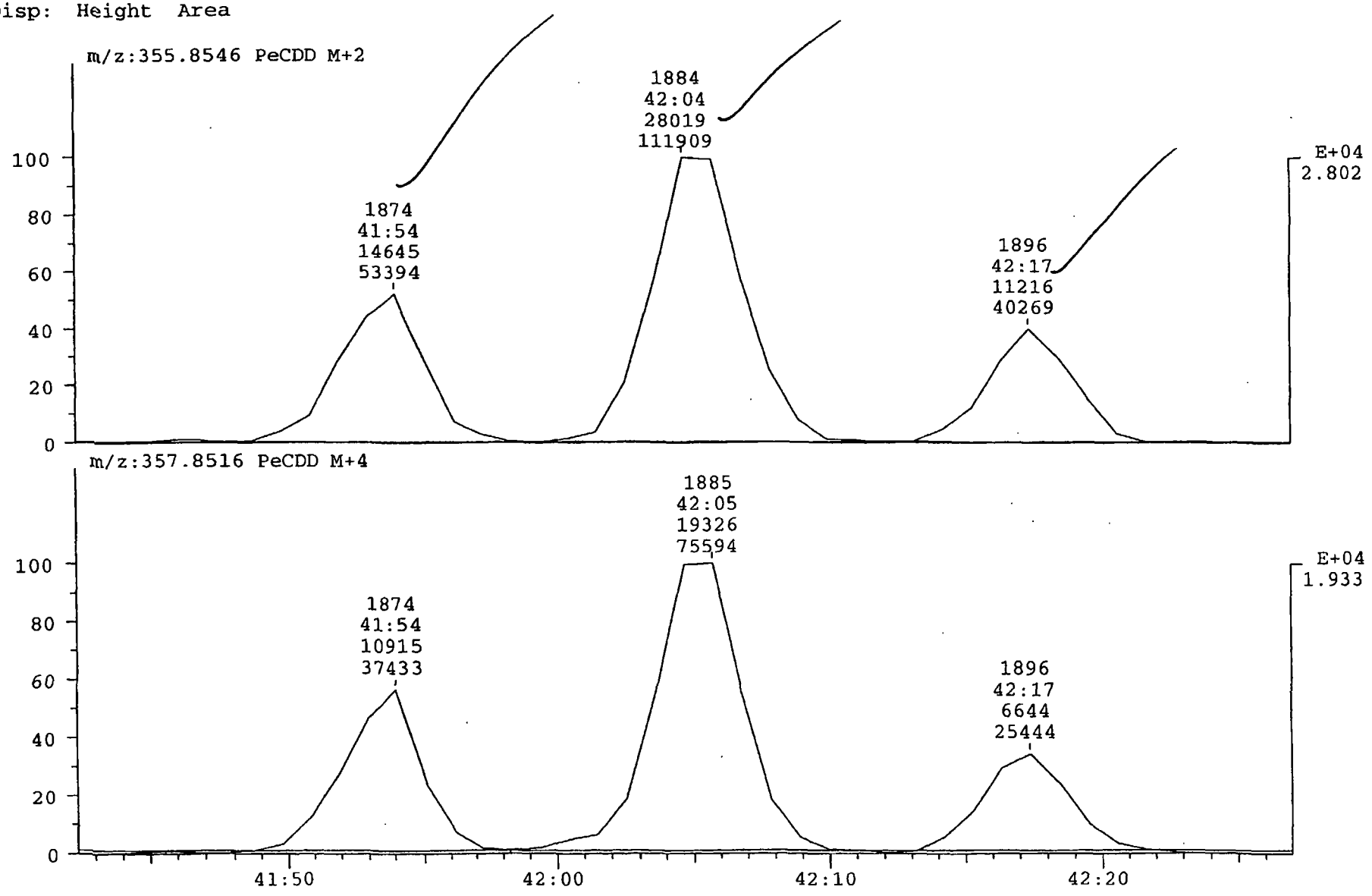
CHRO: tfx1wj2 05-Oct-03 Elapse: 43:14 1950
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1914 > 1992 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



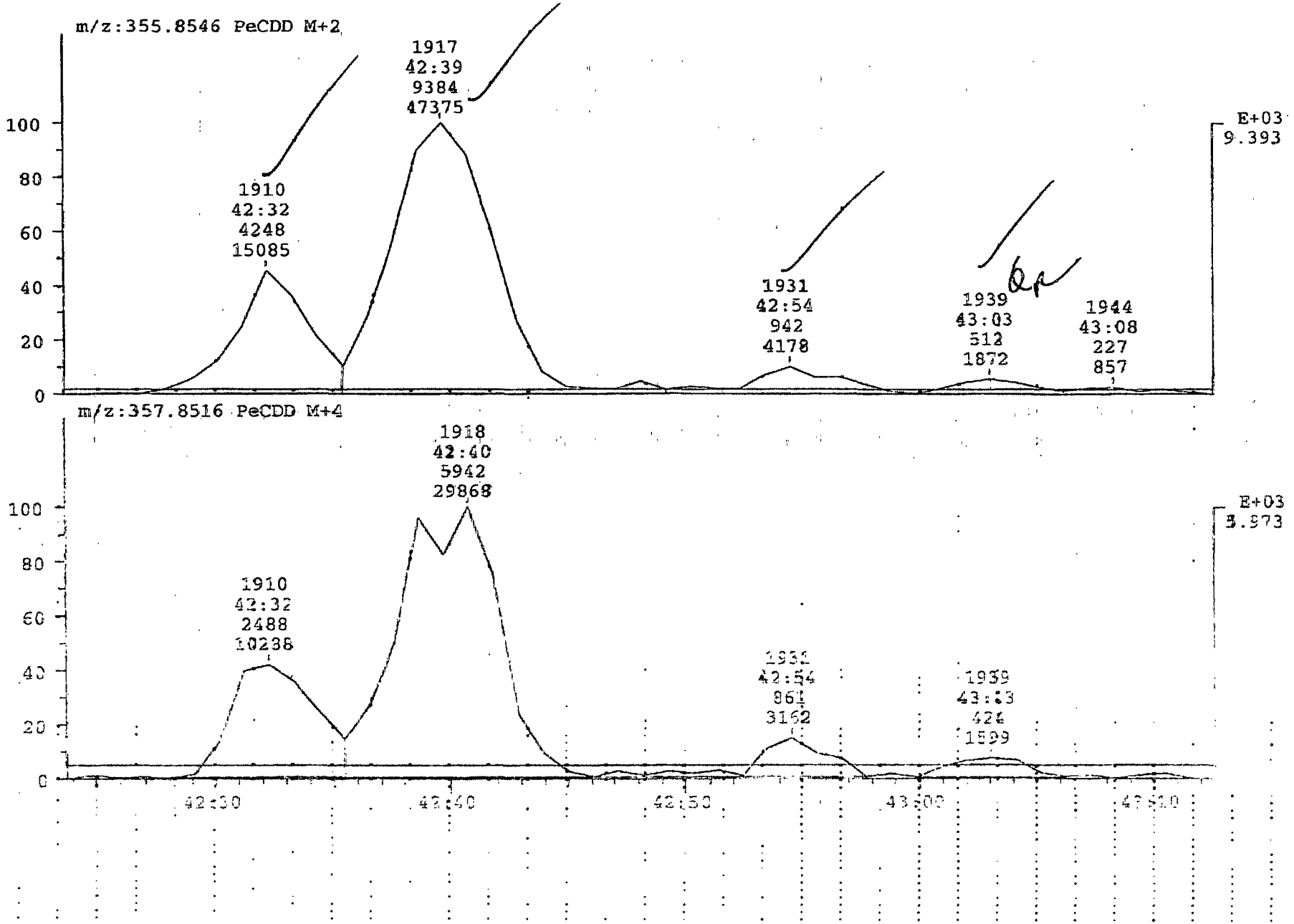
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : -2, 3.0
Disp: Height Area

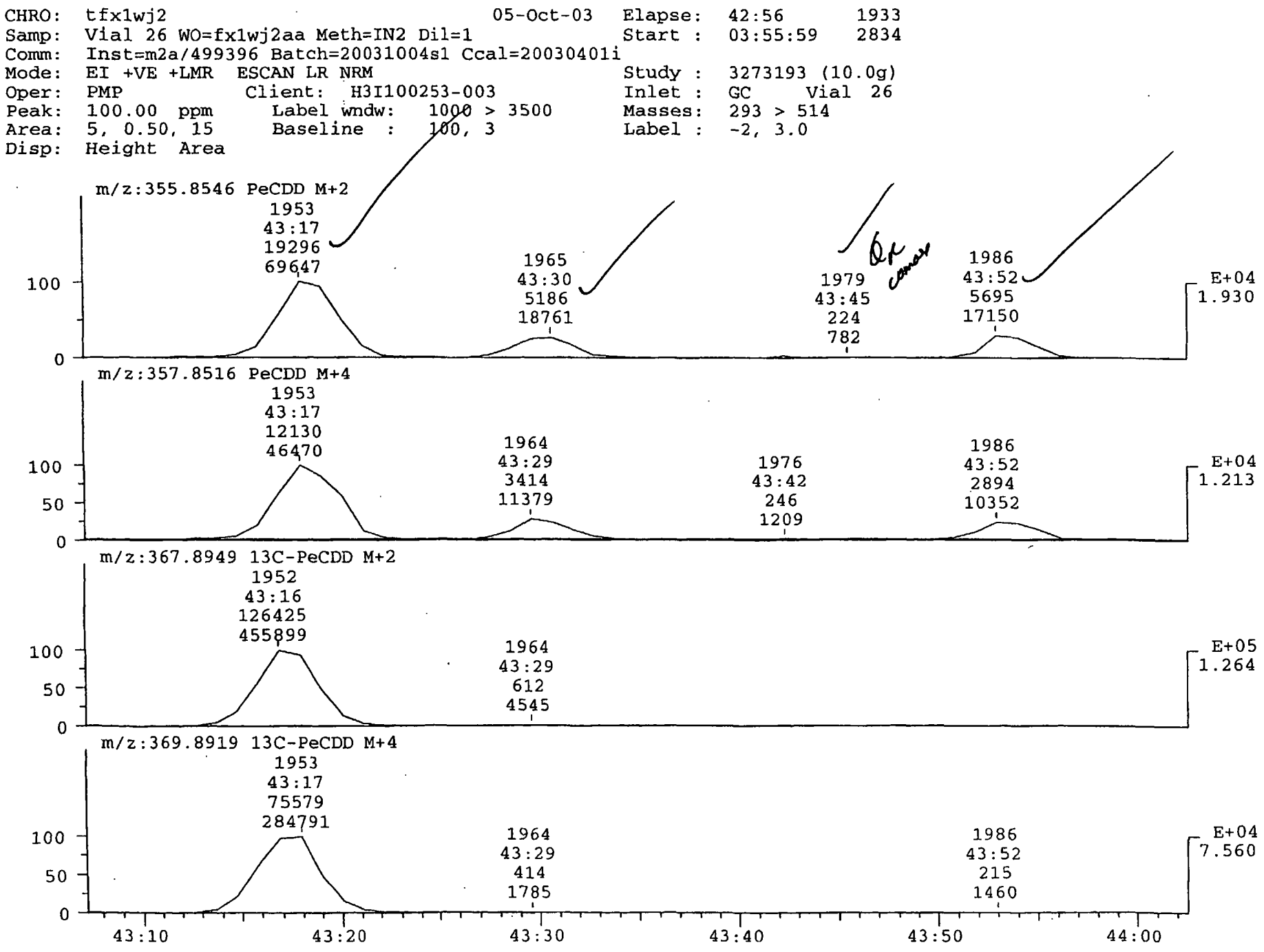


CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

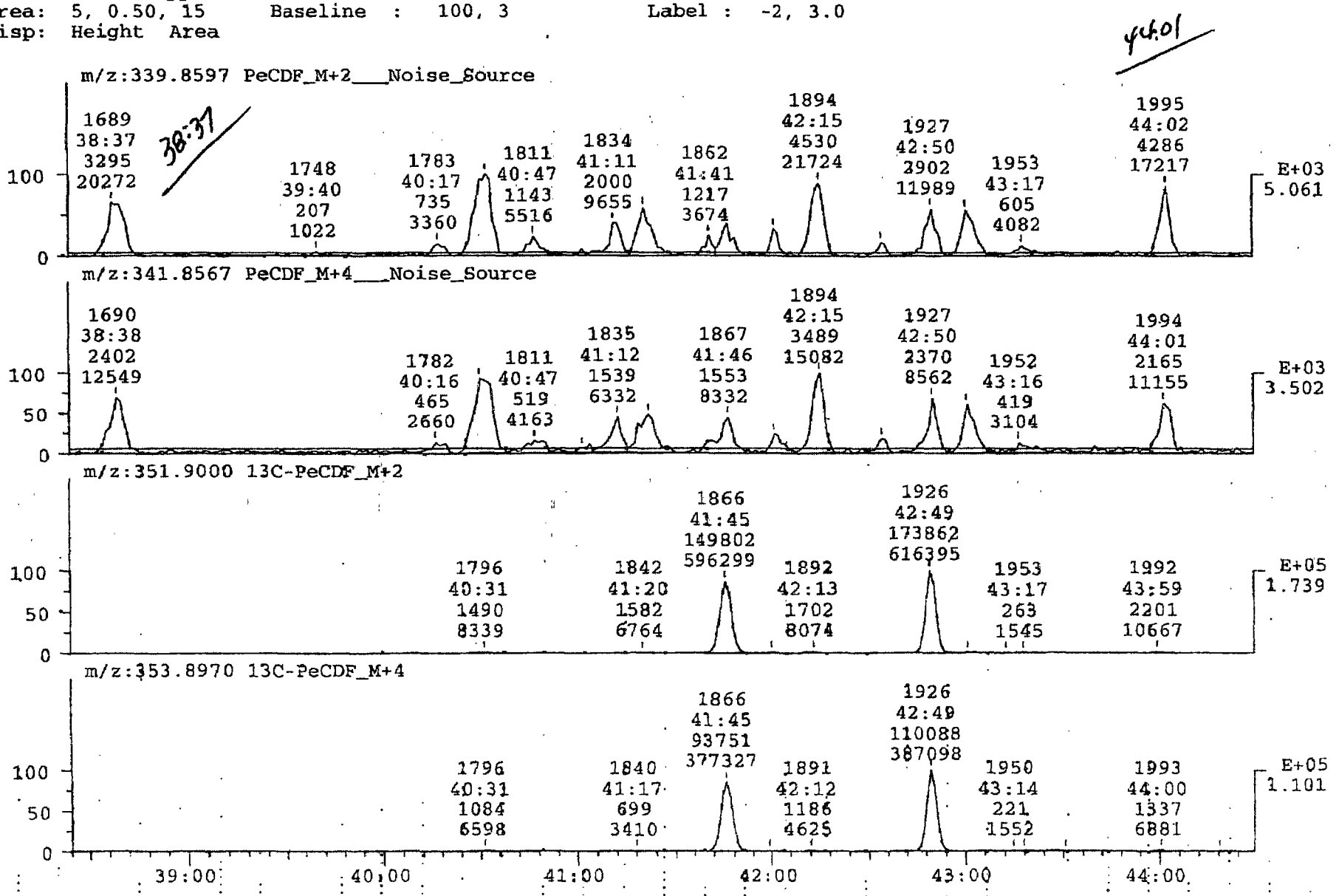


CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

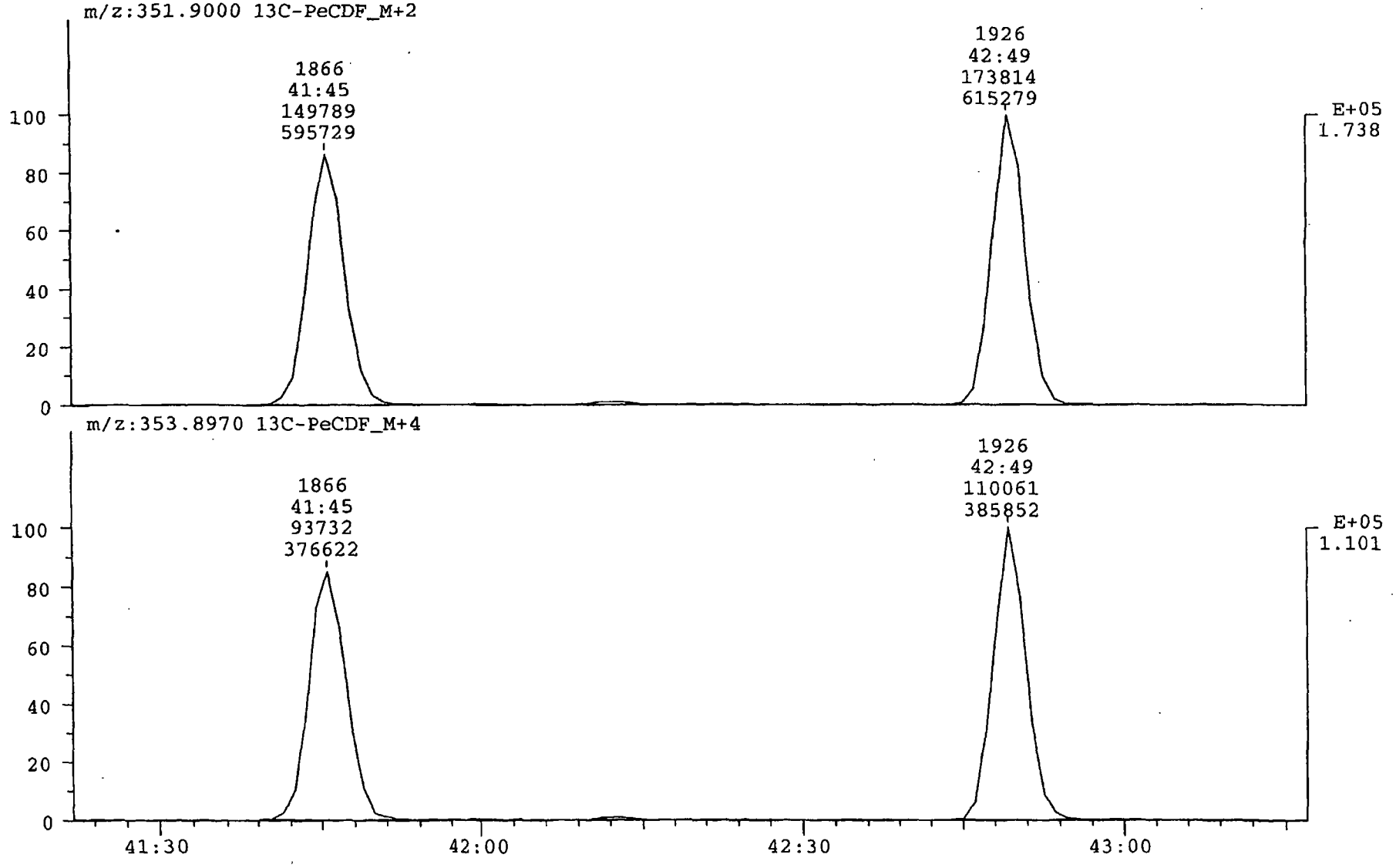



CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area
m/z:355.8546 PeCDD M+2
1953
43:17
19296
69647
1965
43:30
5186
18761
1979
43:45
224
782
1986
43:52
5695
17150
E+04
1.930
m/z:357.8516 PeCDD M+4
1953
43:17
12130
46470
1964
43:29
3414
11379
1976
43:42
246
1209
1986
43:52
2894
10352
E+04
1.213
m/z:367.8949 13C-PeCDD M+2
1952
43:16
126425
455899
1964
43:29
612
4545
E+05
1.264
m/z:369.8919 13C-PeCDD M+4
1953
43:17
75579
284791
1964
43:29
414
1785
1986
43:52
215
1460
E+04
7.560
100
50
0
43:10
43:20
43:30
43:40
43:50
44:00

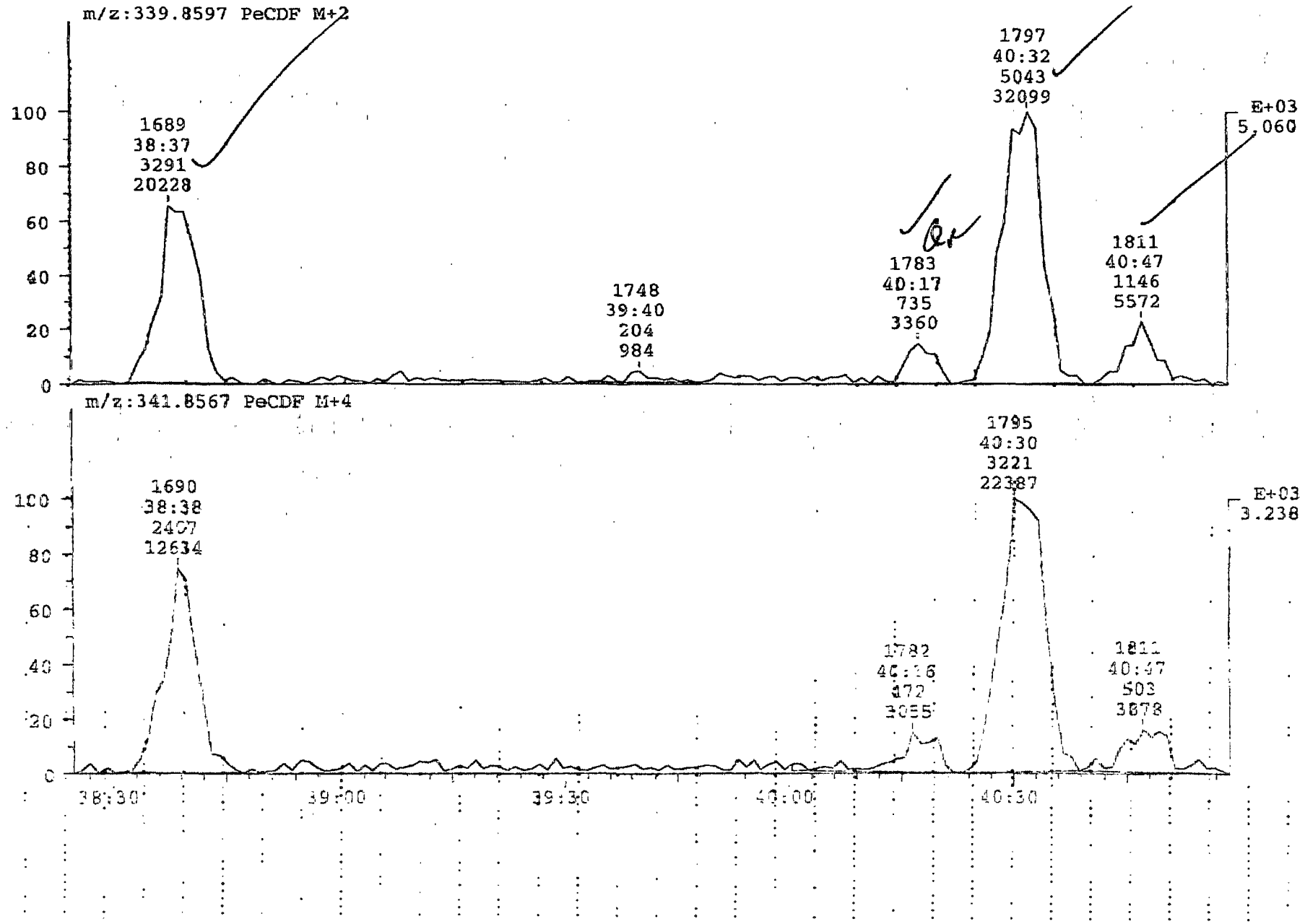
CHRO: tfx1wj2 05-Oct-03 Elapse: 43:14 1950
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



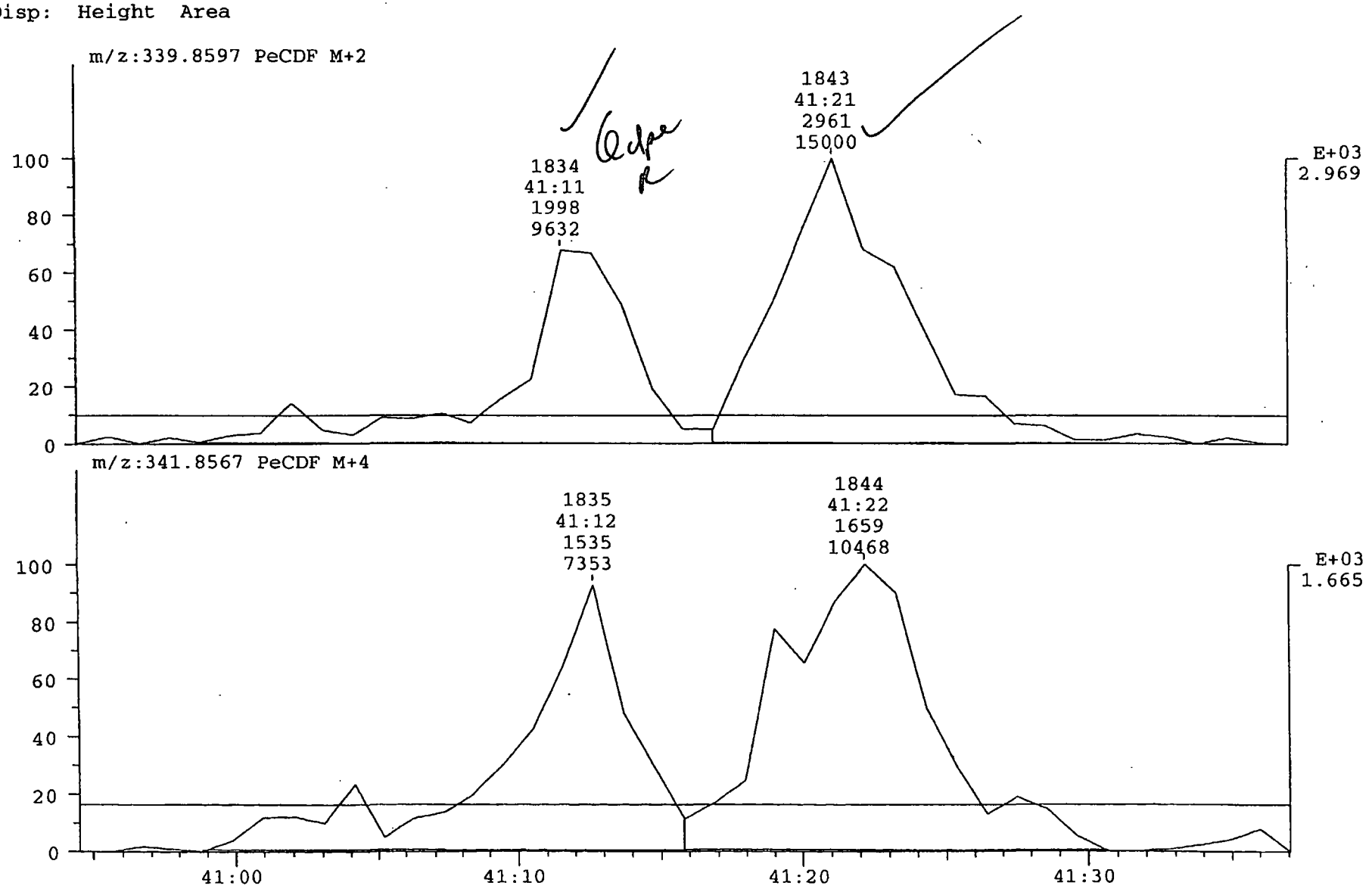
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:19 1898
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1844 > 1952 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



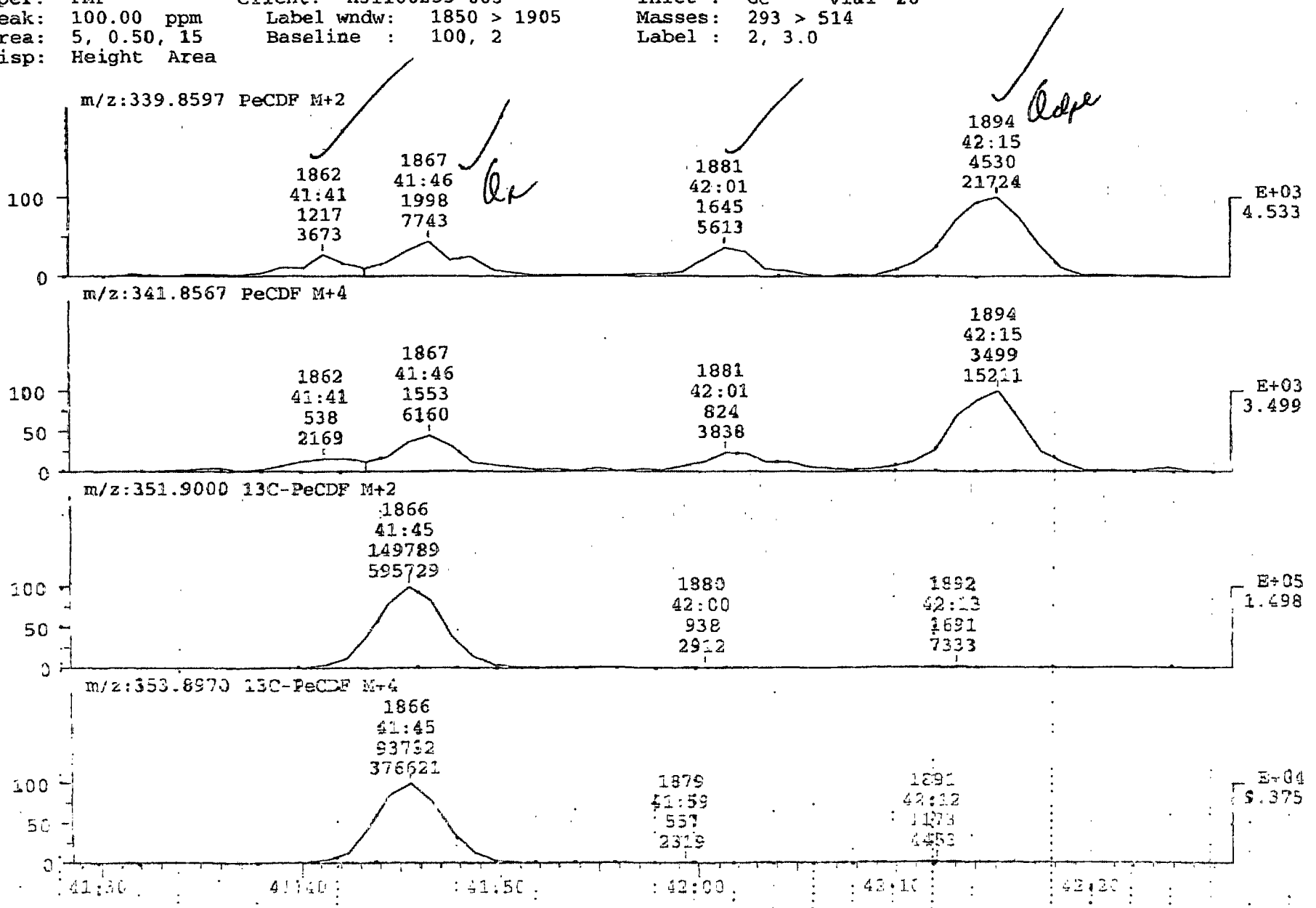
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1677 > 1822 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



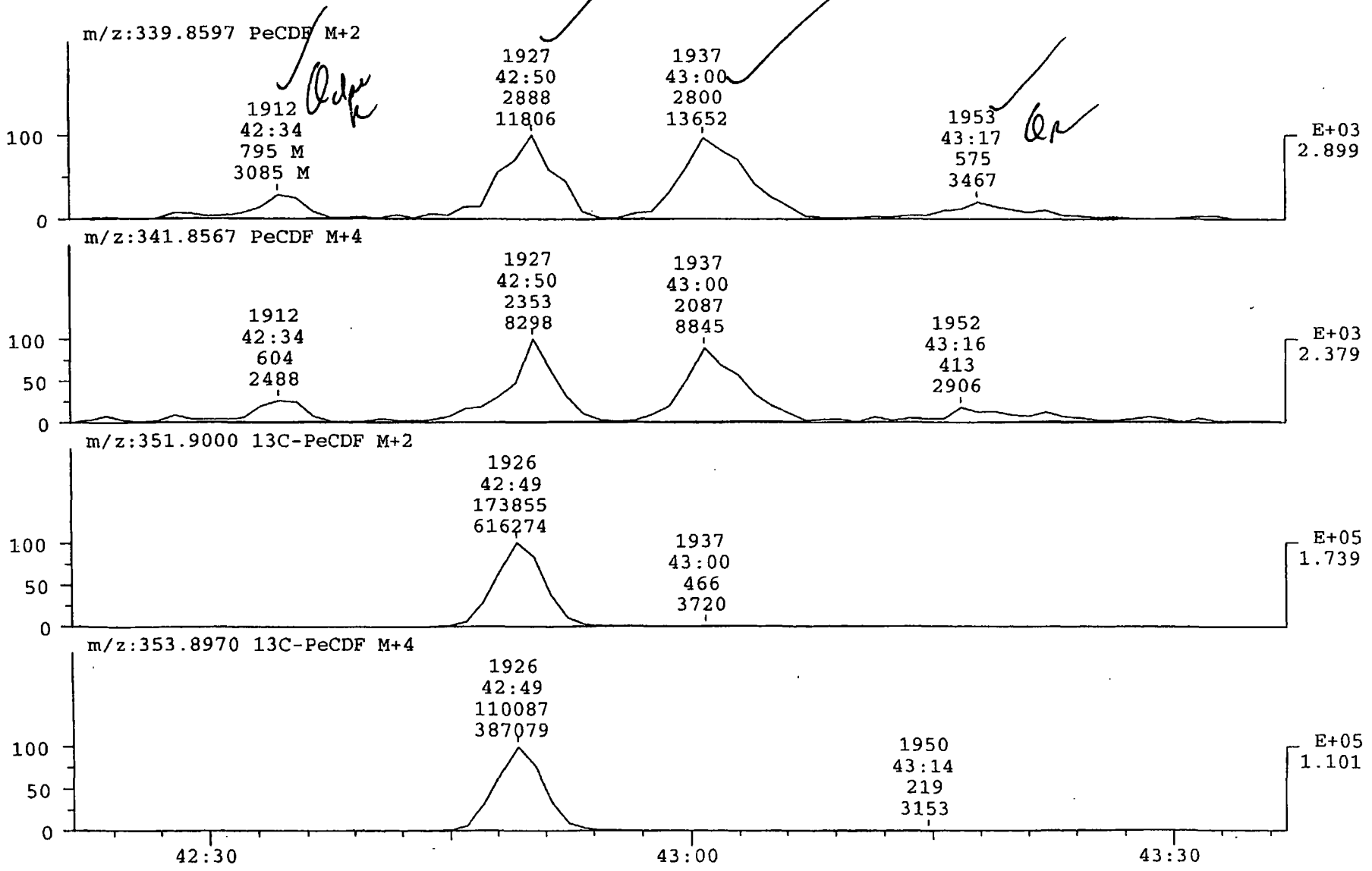
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1818 > 1858 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -4, 4.0
Disp: Height Area



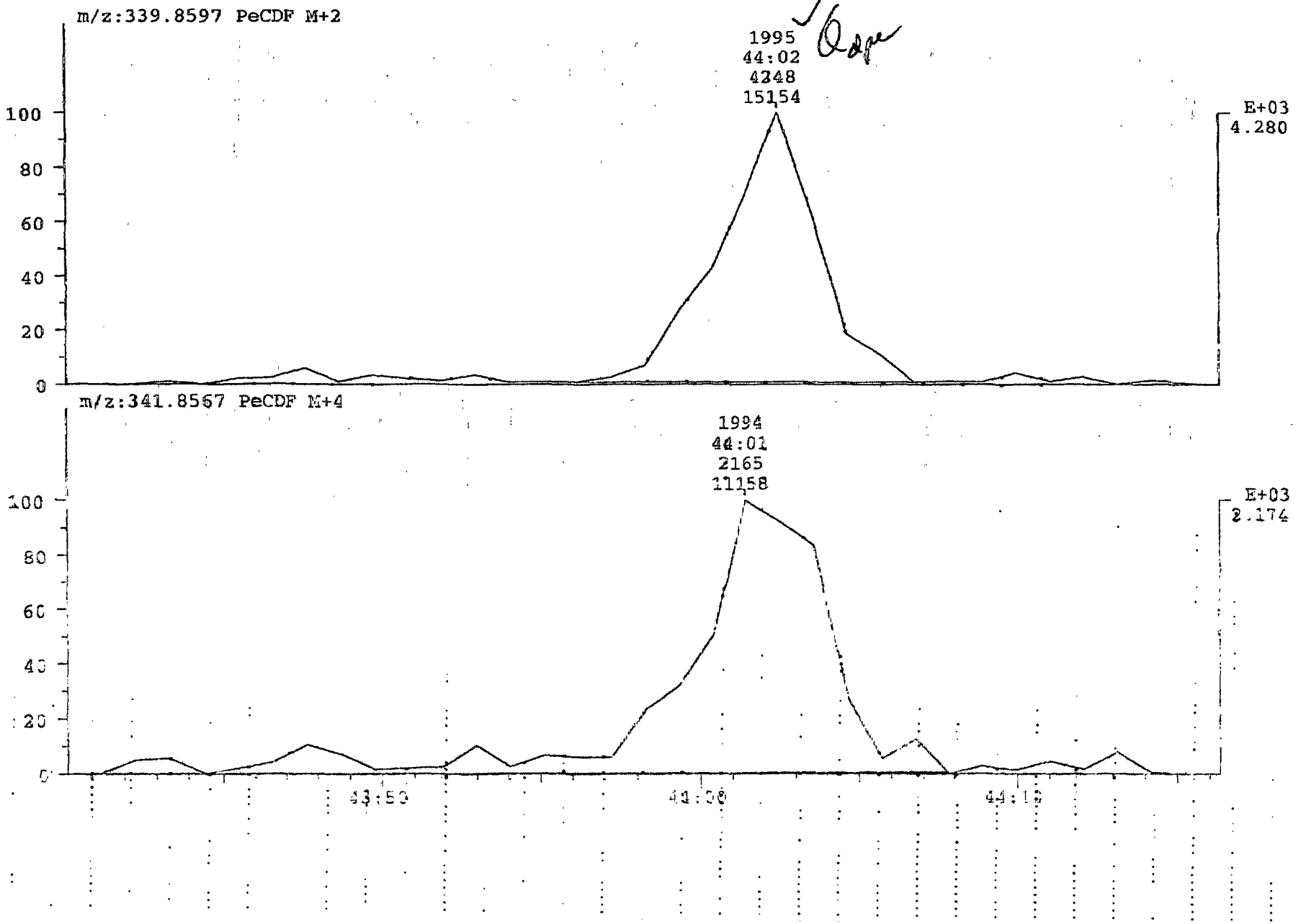
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1850 > 1905 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 2 Label : 2, 3.0
Disp: Height Area



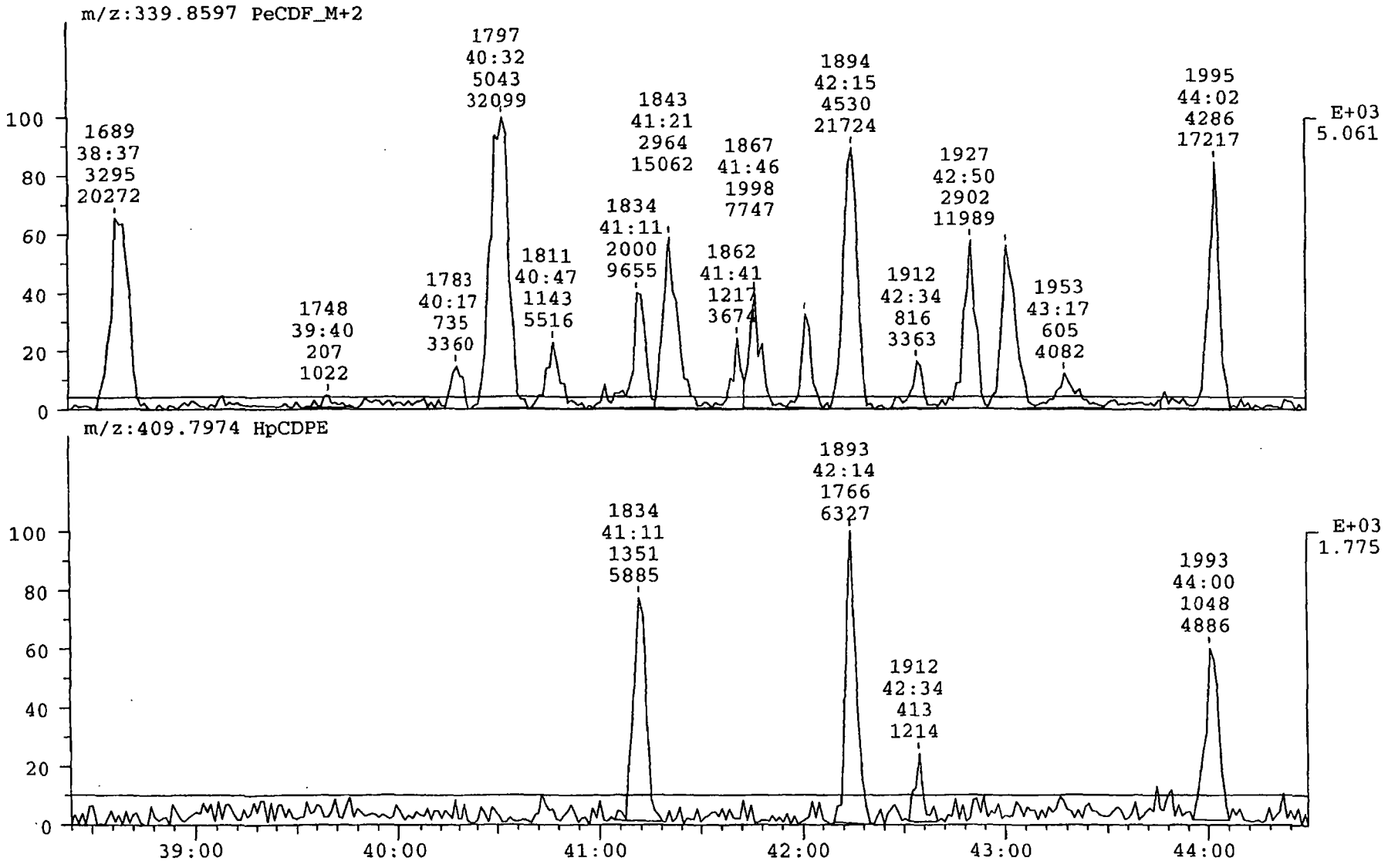
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1900 > 1971 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



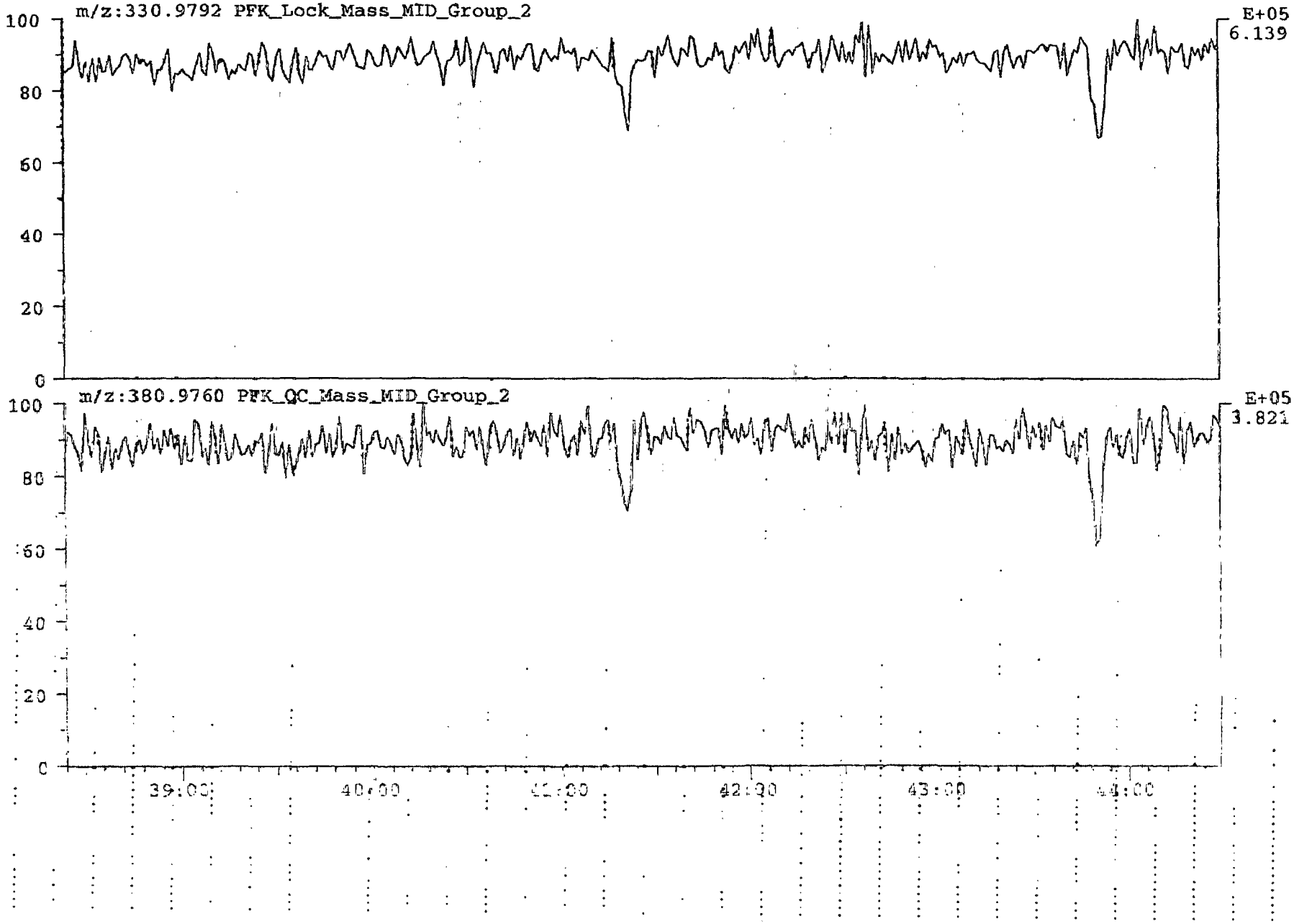
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1974 > 2008 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



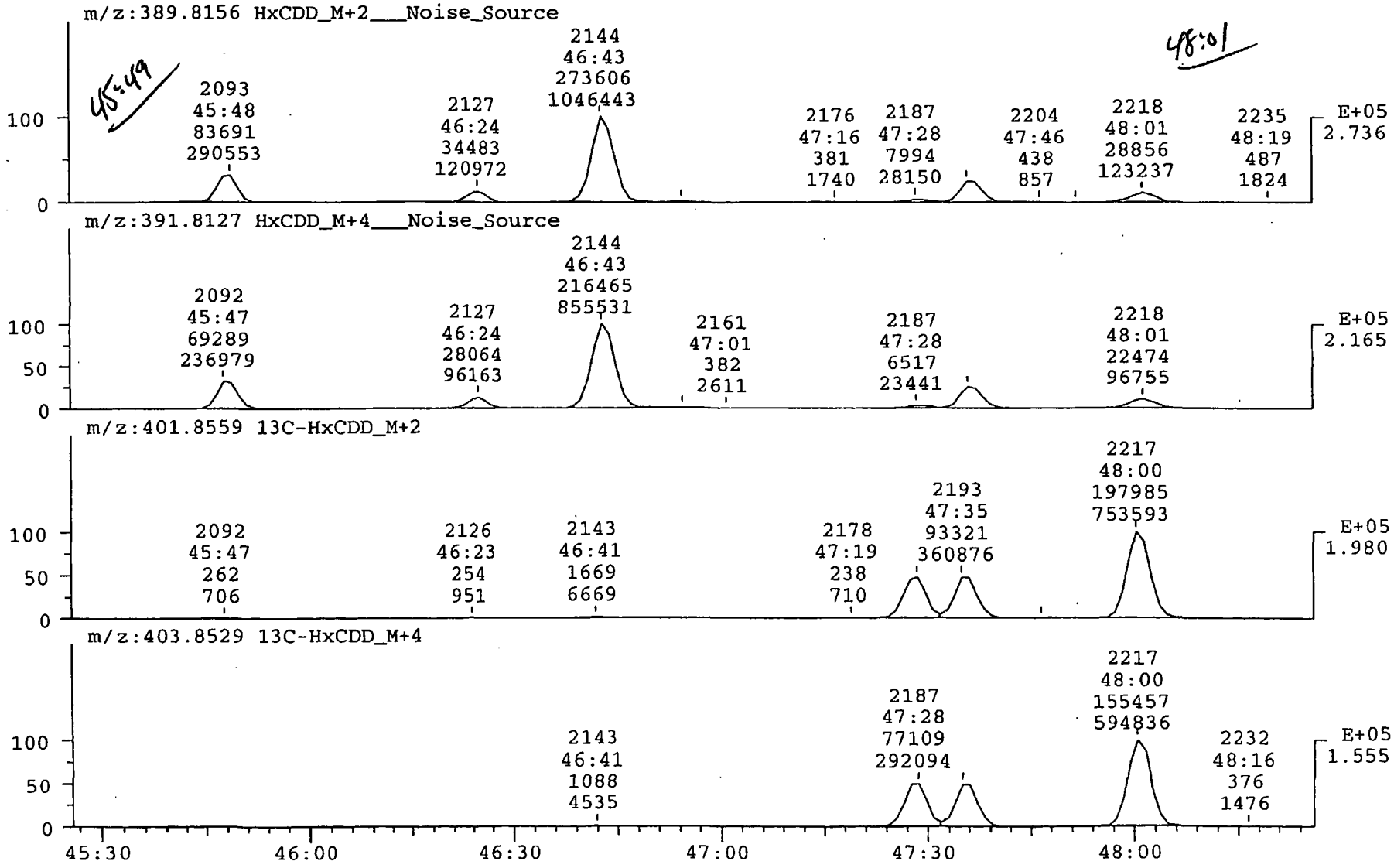
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:19 1898
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



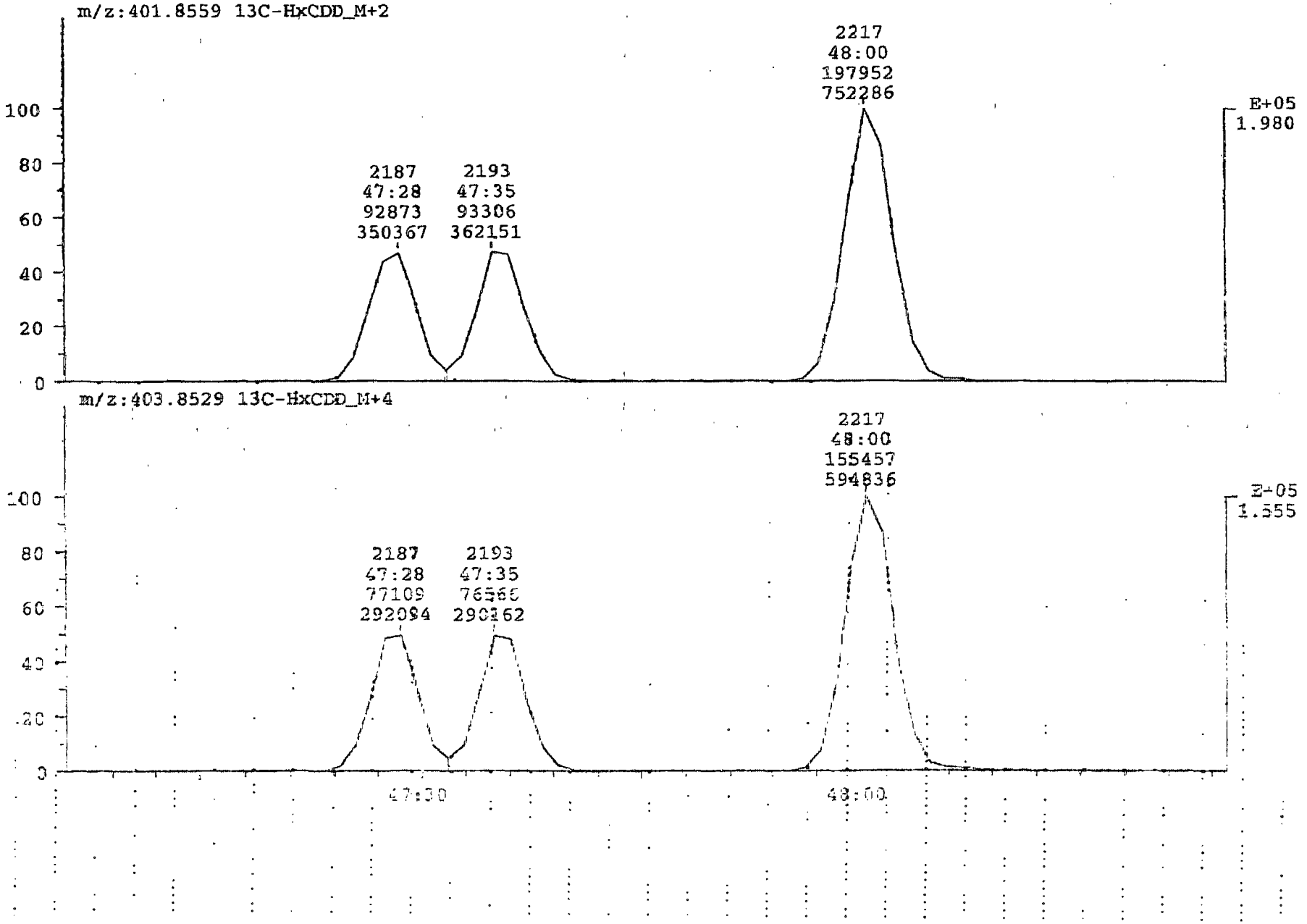
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:19 1898
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



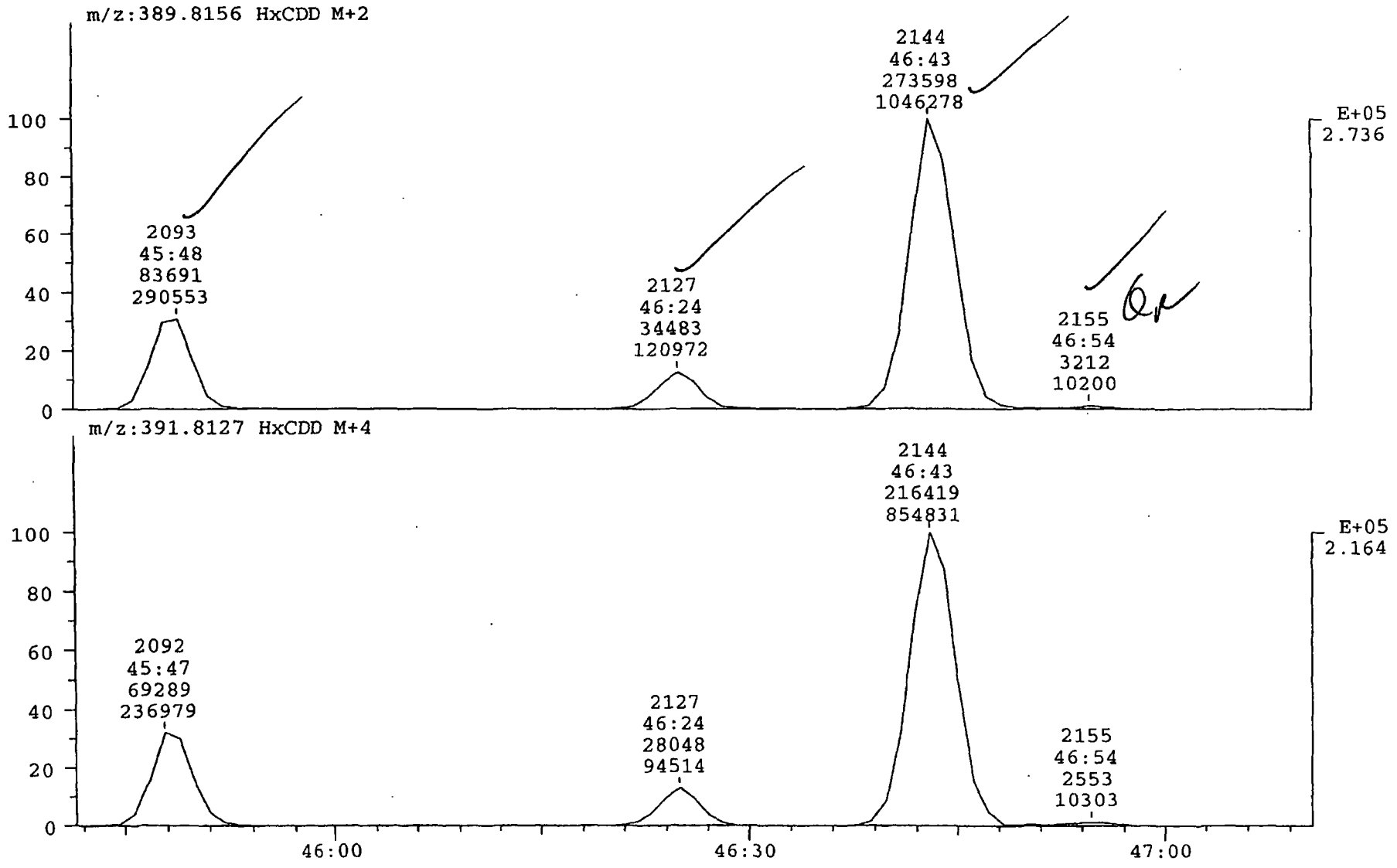
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:19 1898
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2071 > 2241 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



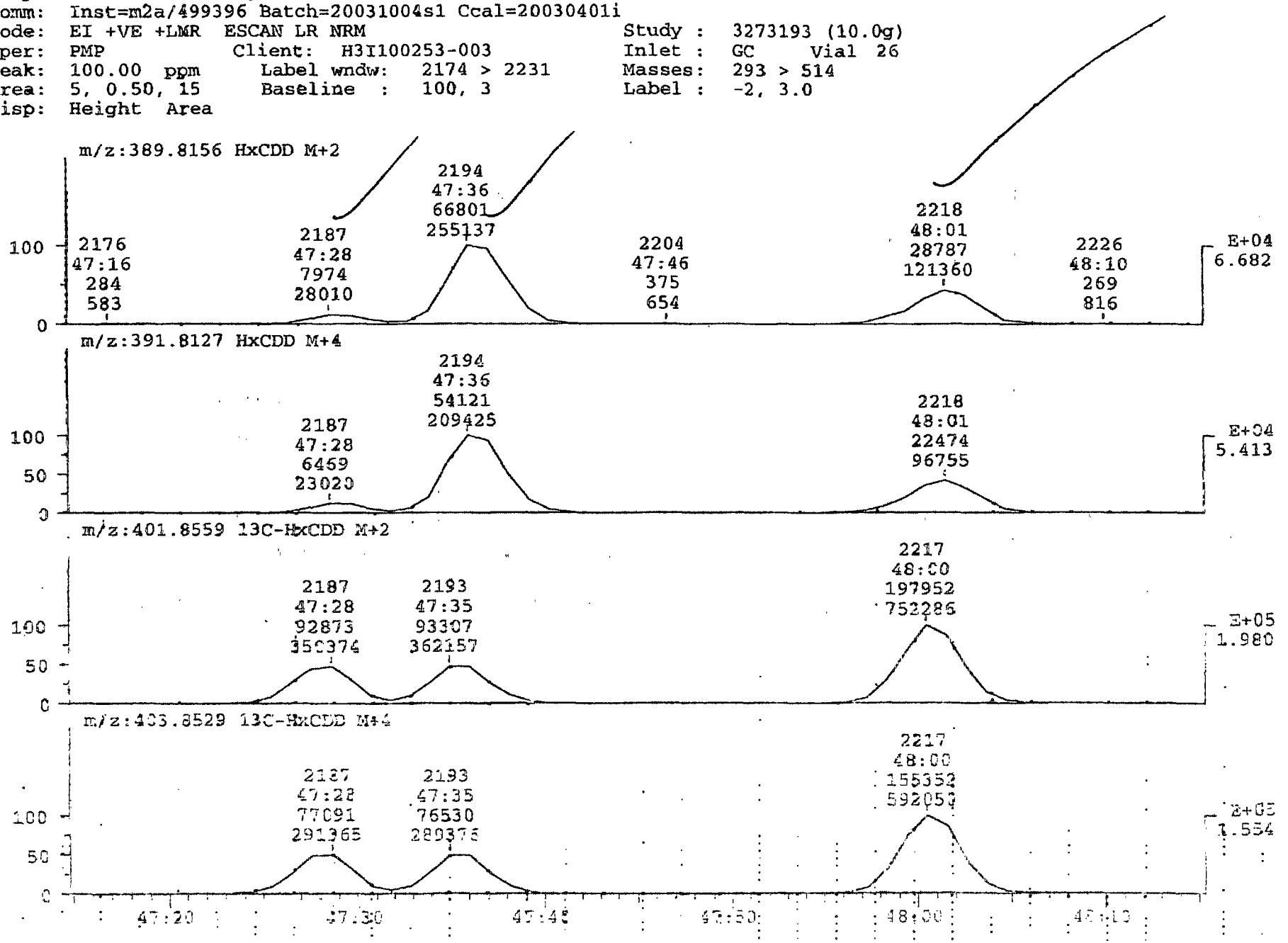
CHRO: tfx1wj2 05-Oct-03 Elapse: 47:44 2202
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2166 > 2240 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



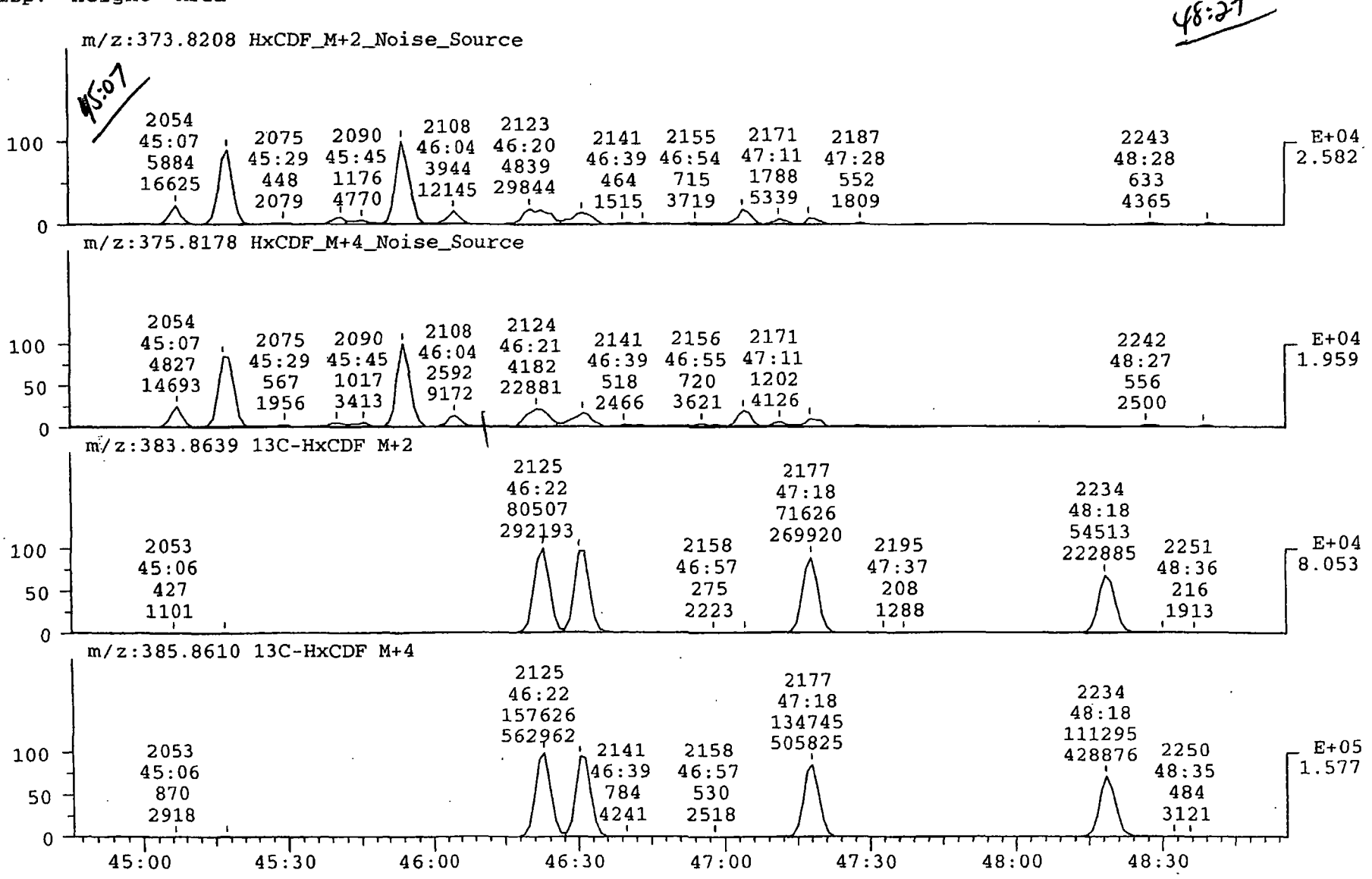
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2086 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



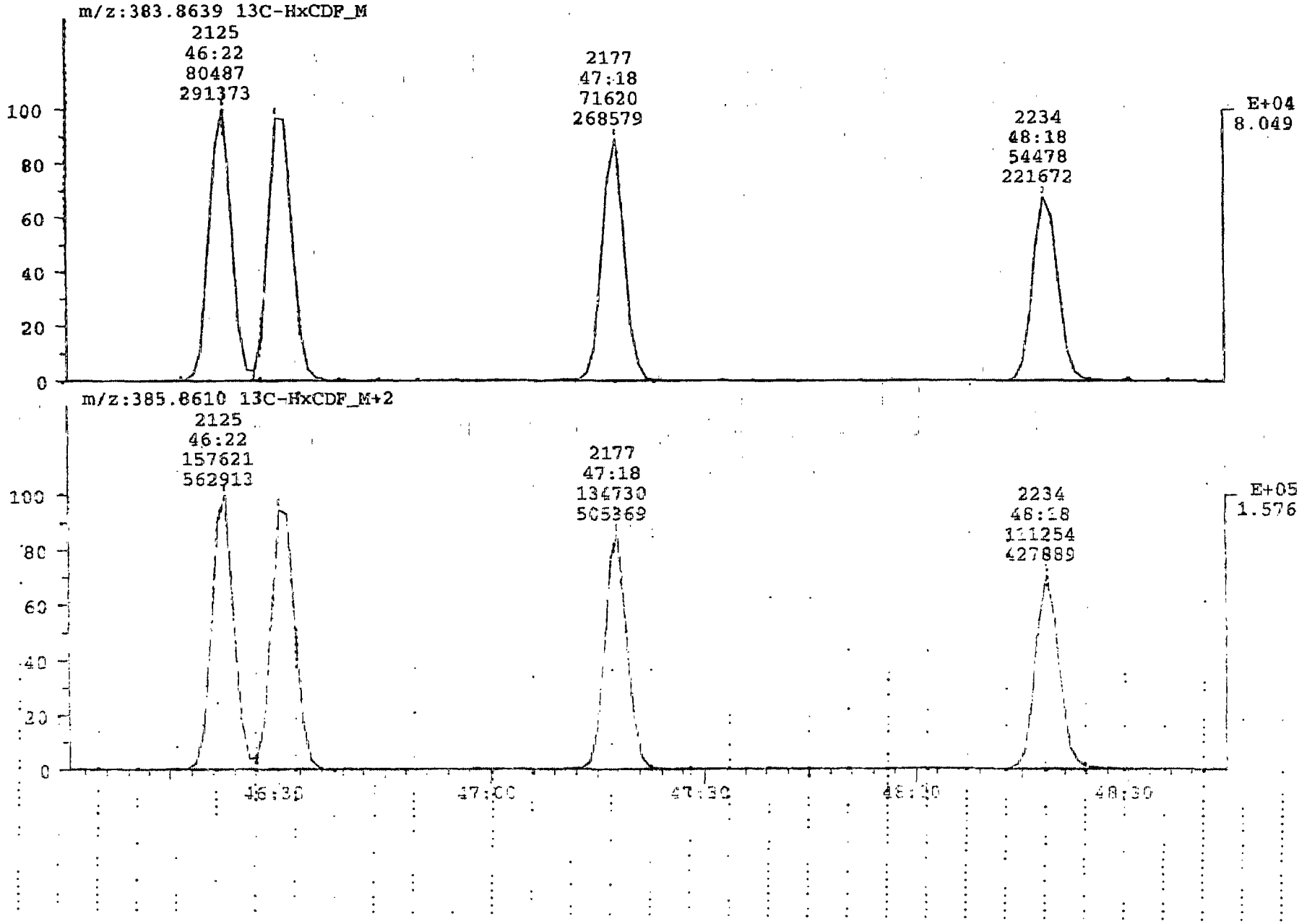
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2174 > 2231 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2034 > 2269 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 47:22 2181
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2104 > 2258 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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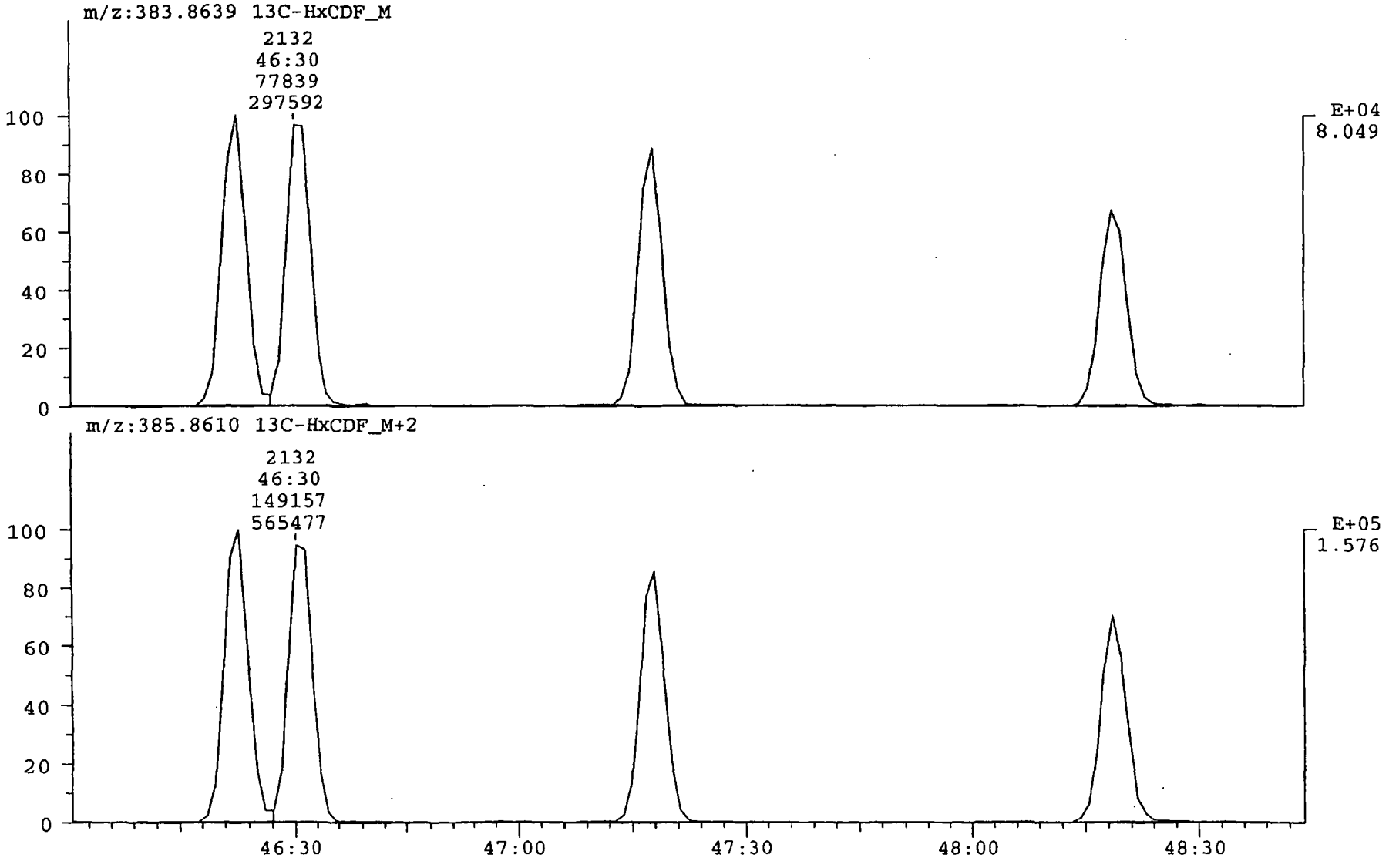
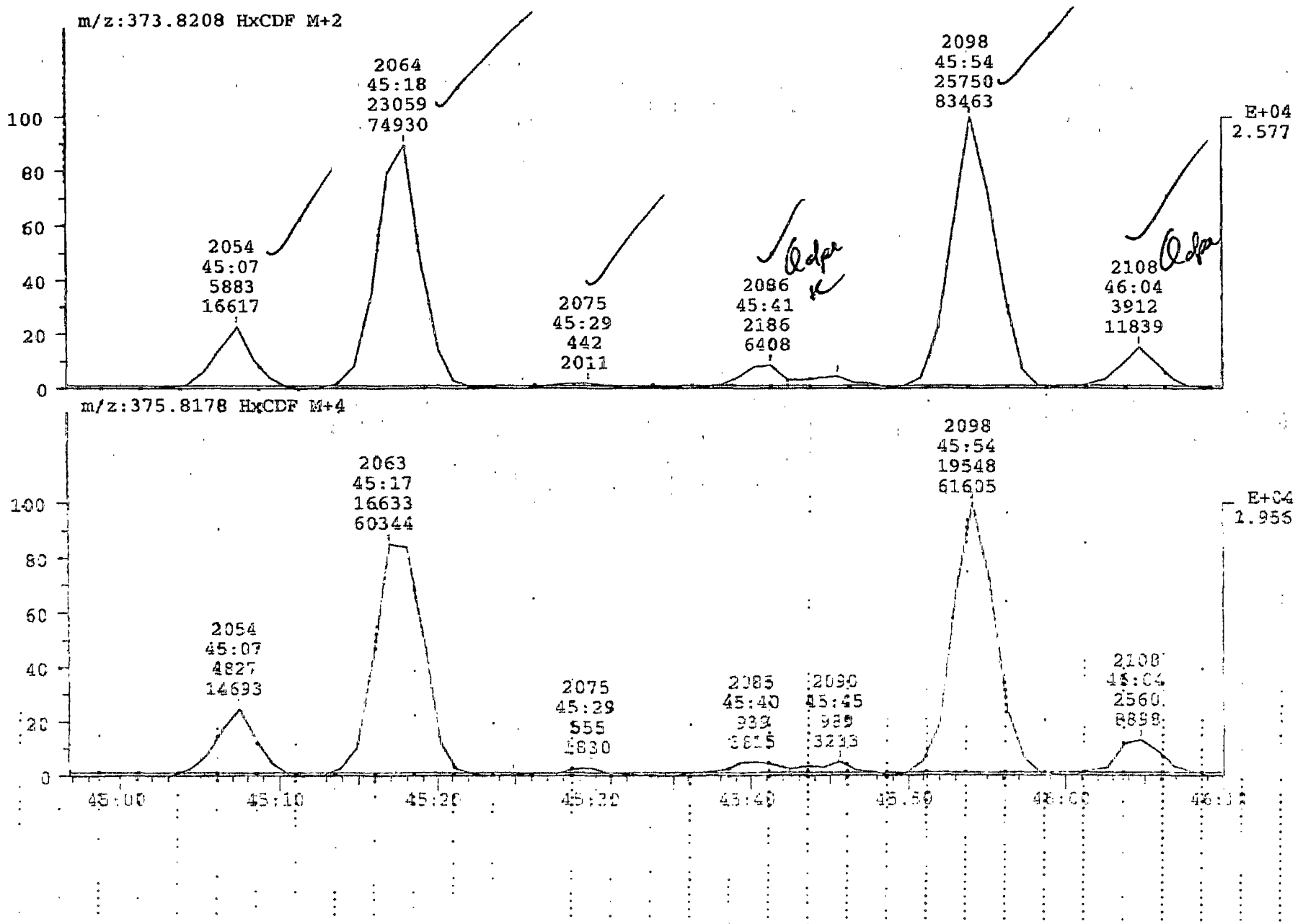
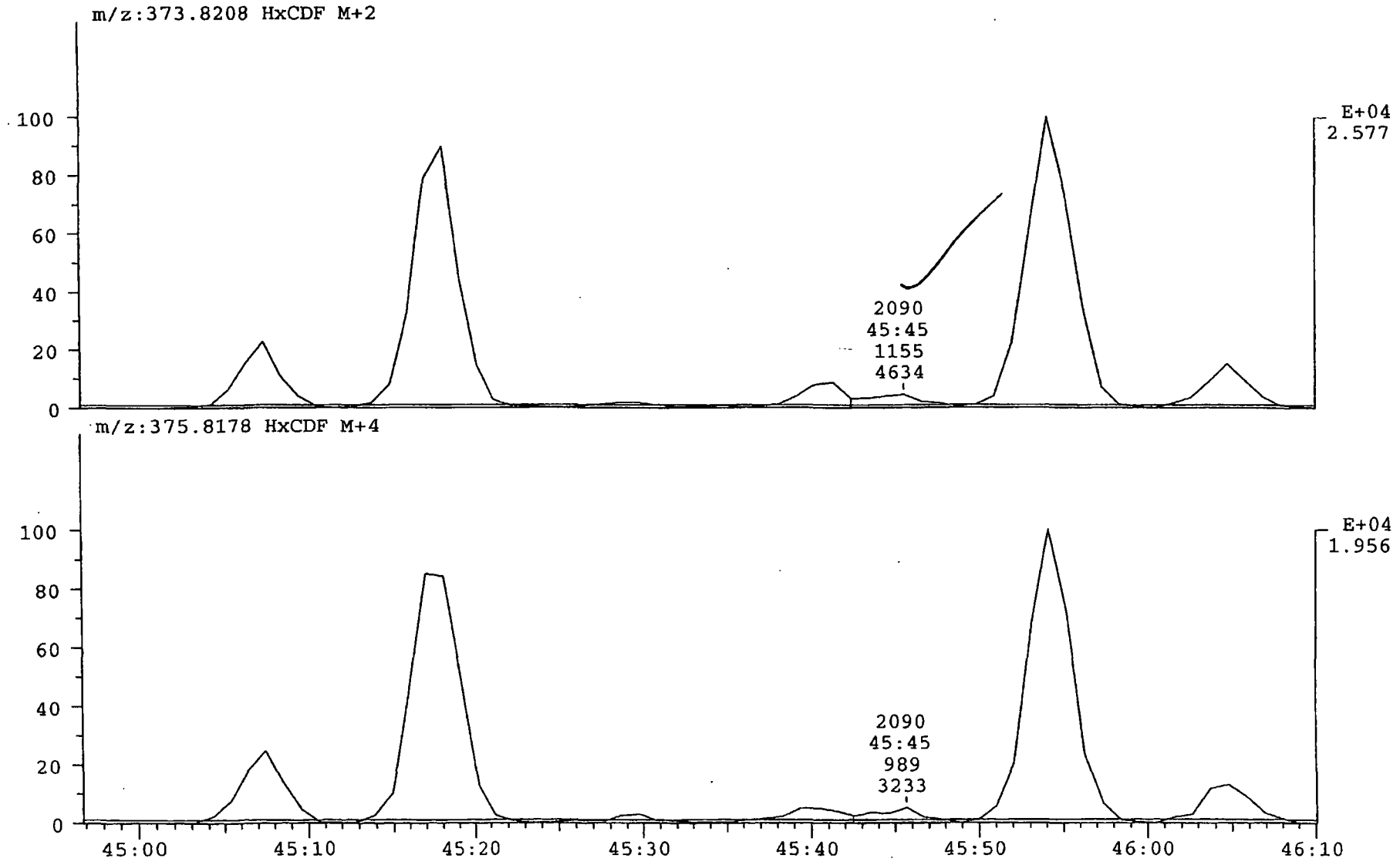
CHRO:  tfx1wj2                                  05-Oct-03   Elapse:  46:31      2133
Samp:  Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1                   Start :  03:55:59   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003                  Inlet :  GC     Vial 26
Peak:  100.00  ppm     Label wndw:   2129 > 2137            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  -2, 3.0
Disp:  Height  Area
```



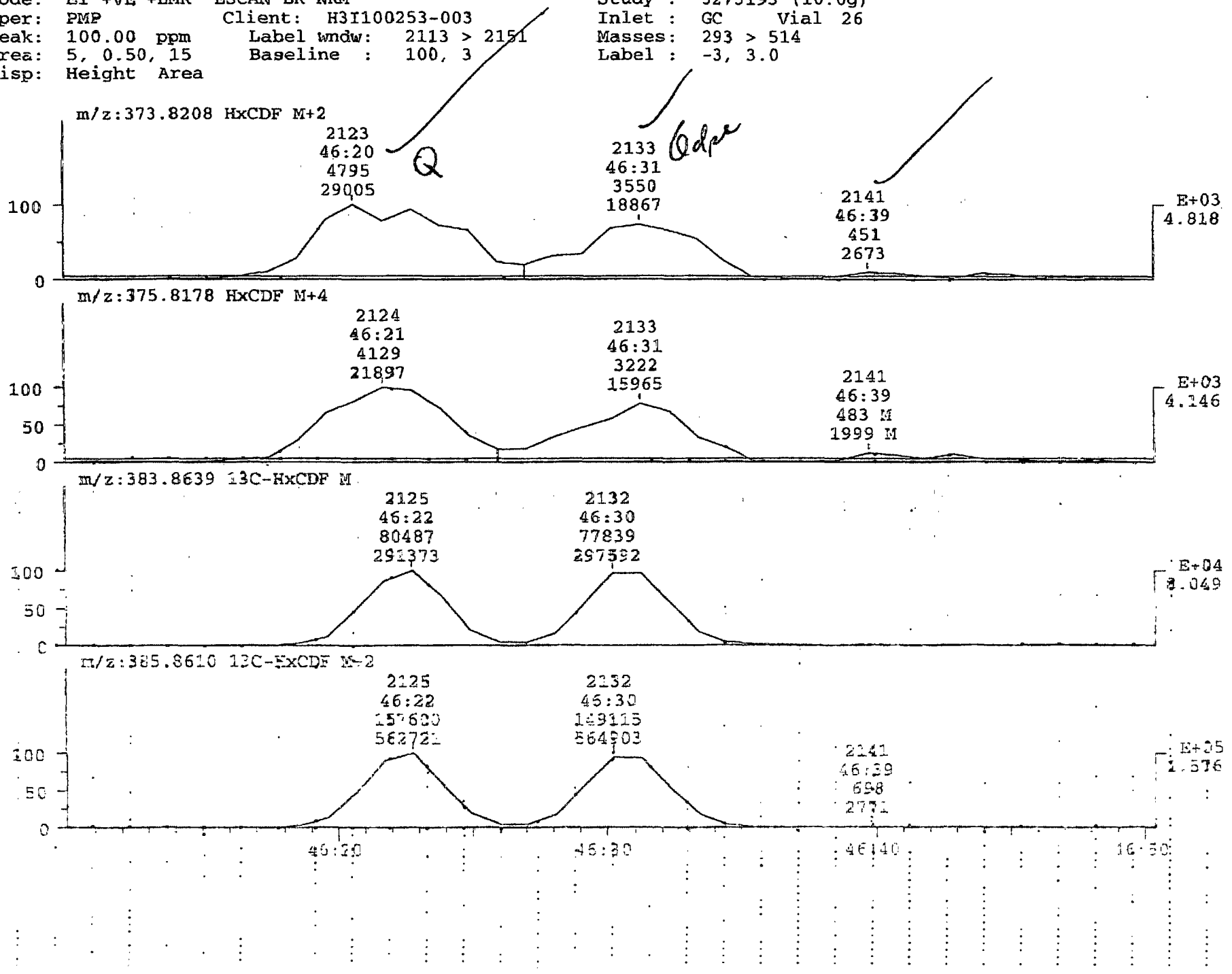
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2044 > 2113 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



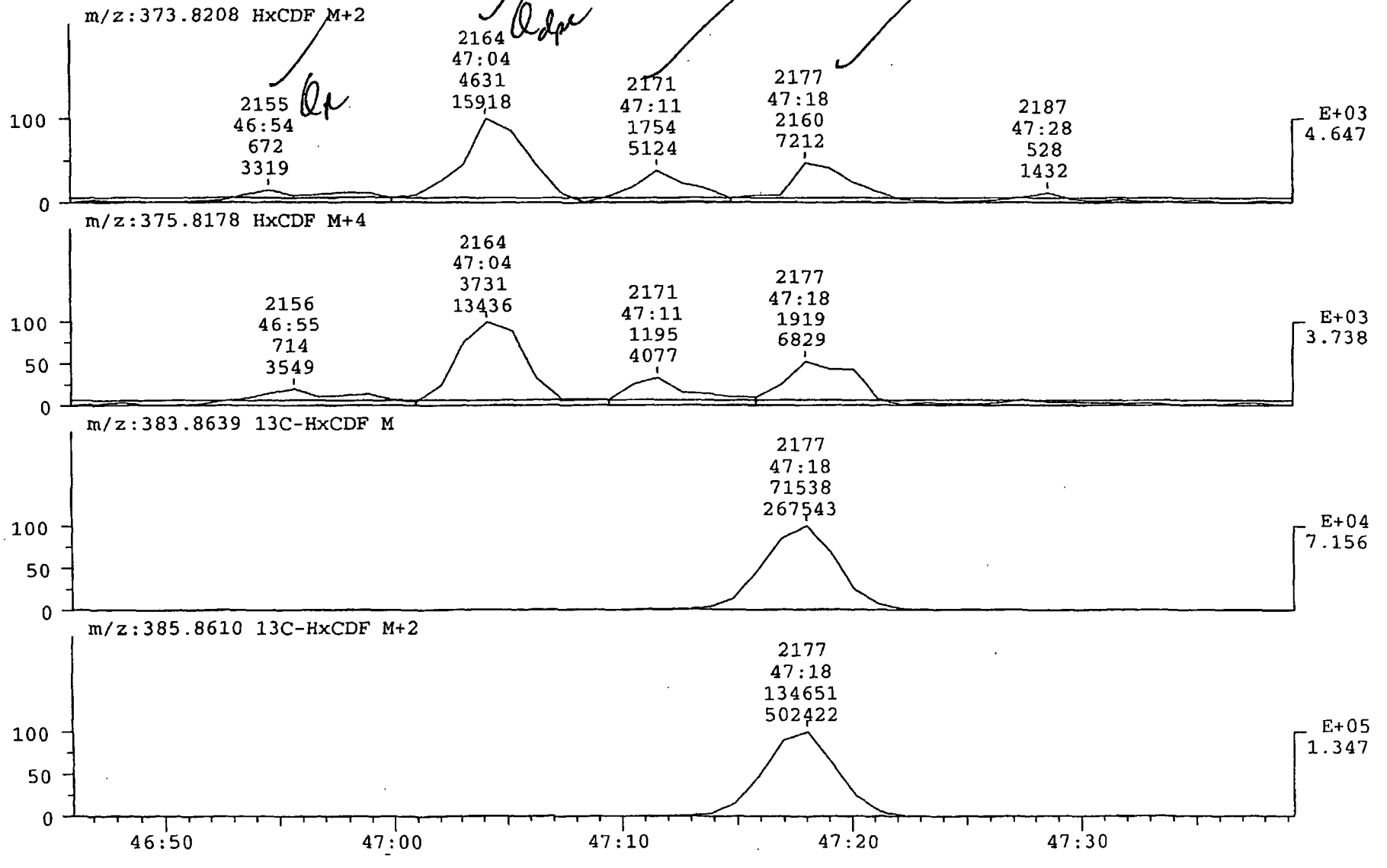
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2087 > 2092 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



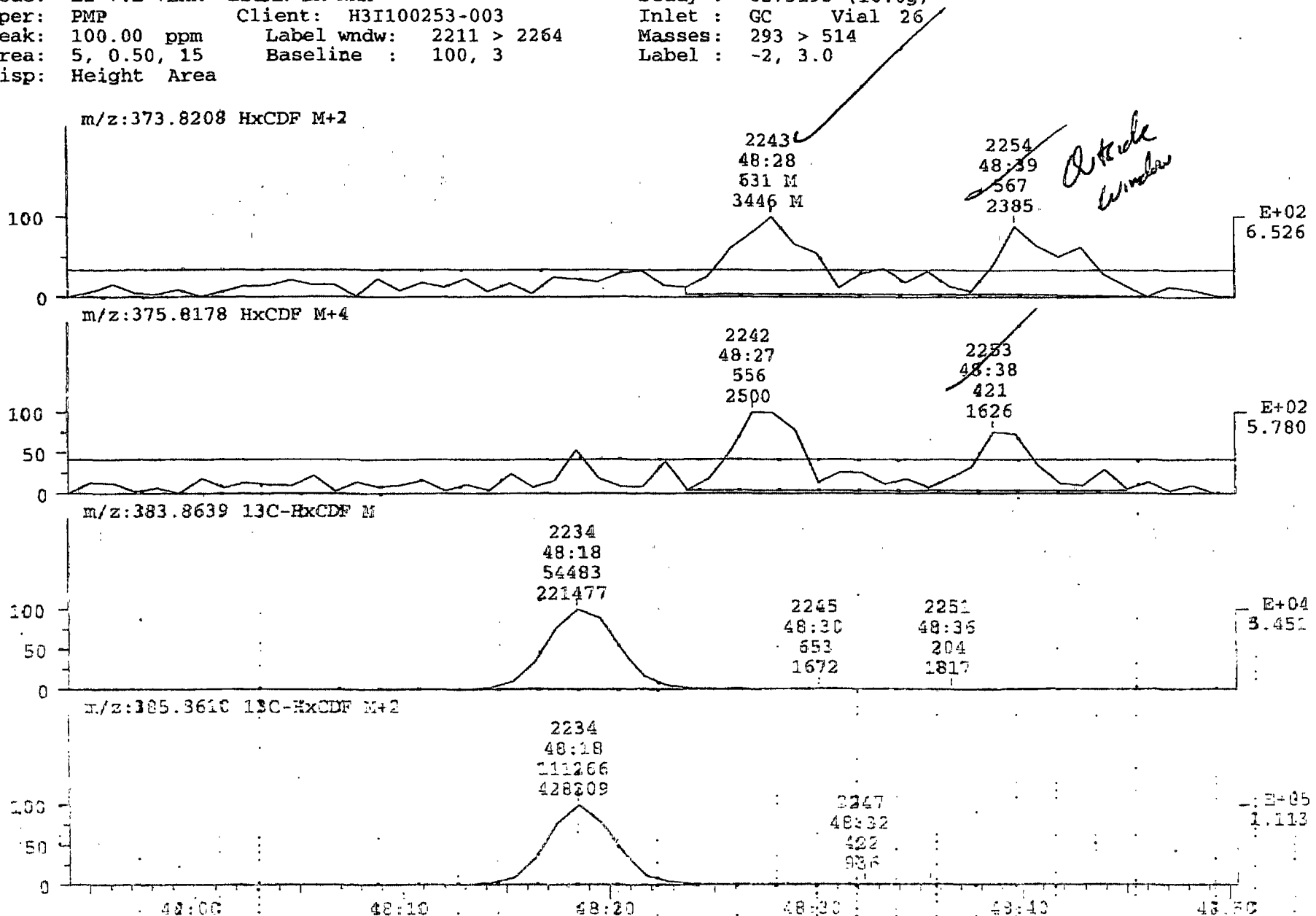
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2113 > 2151 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



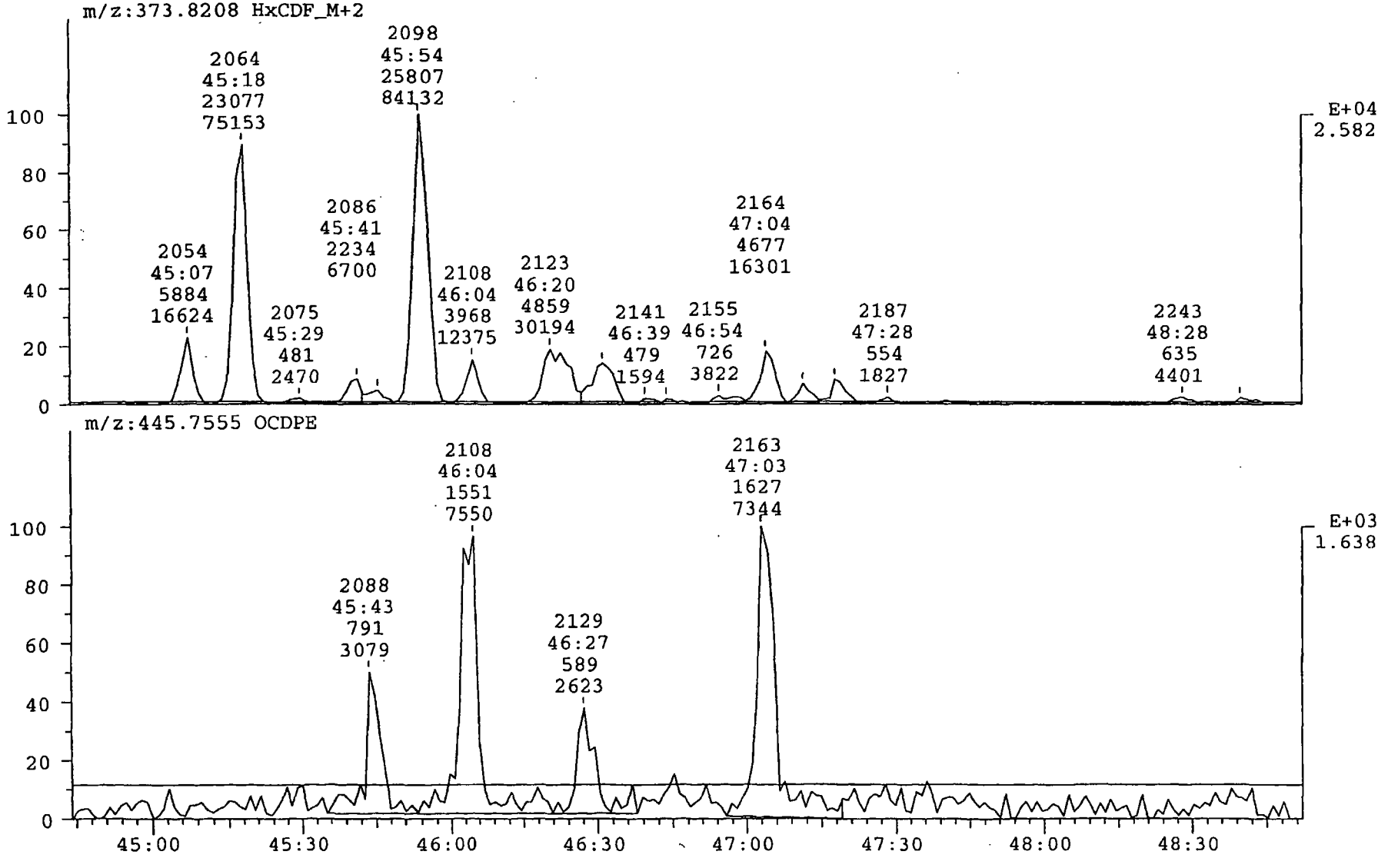
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2147 > 2197 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



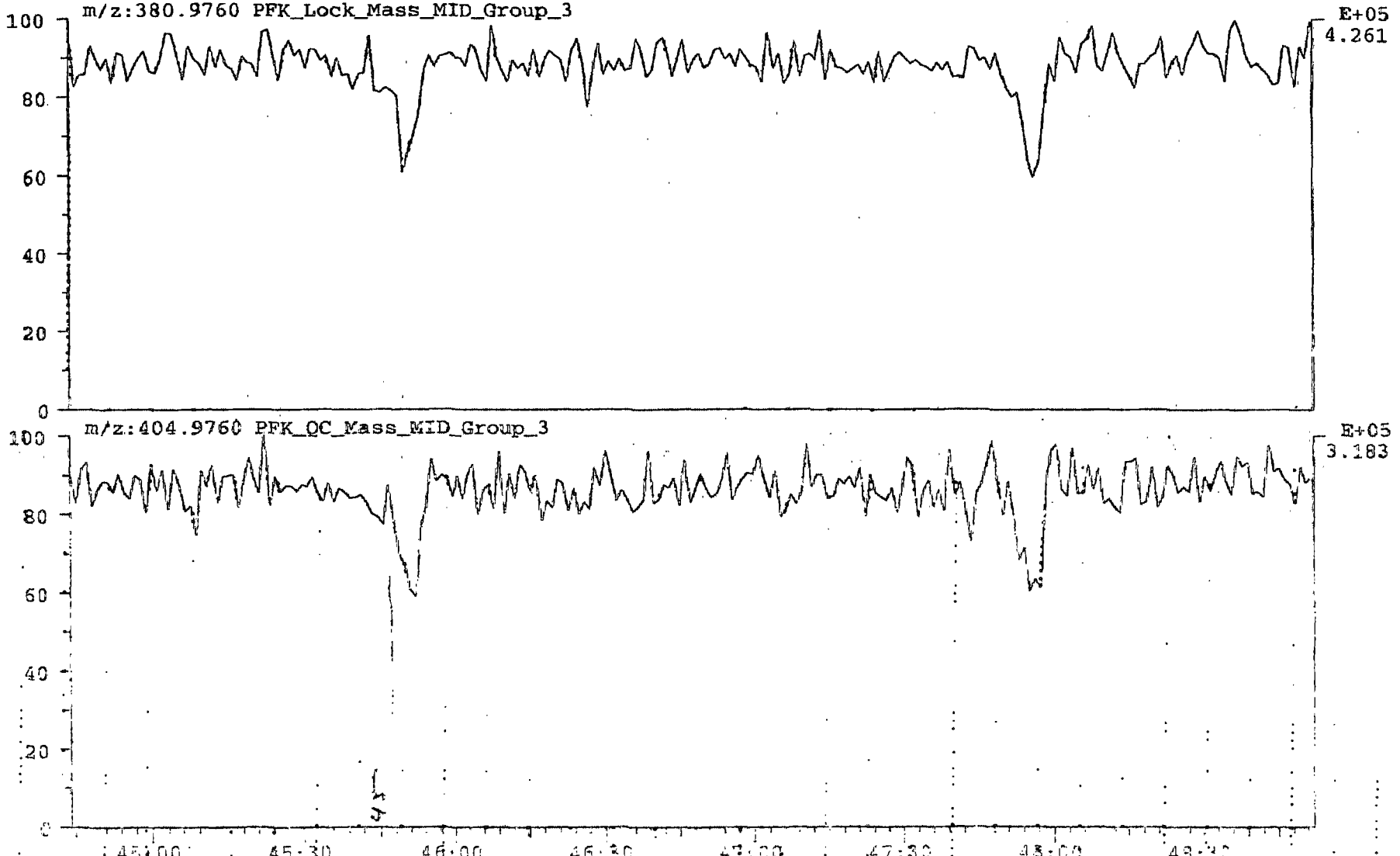
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2211 > 2264 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



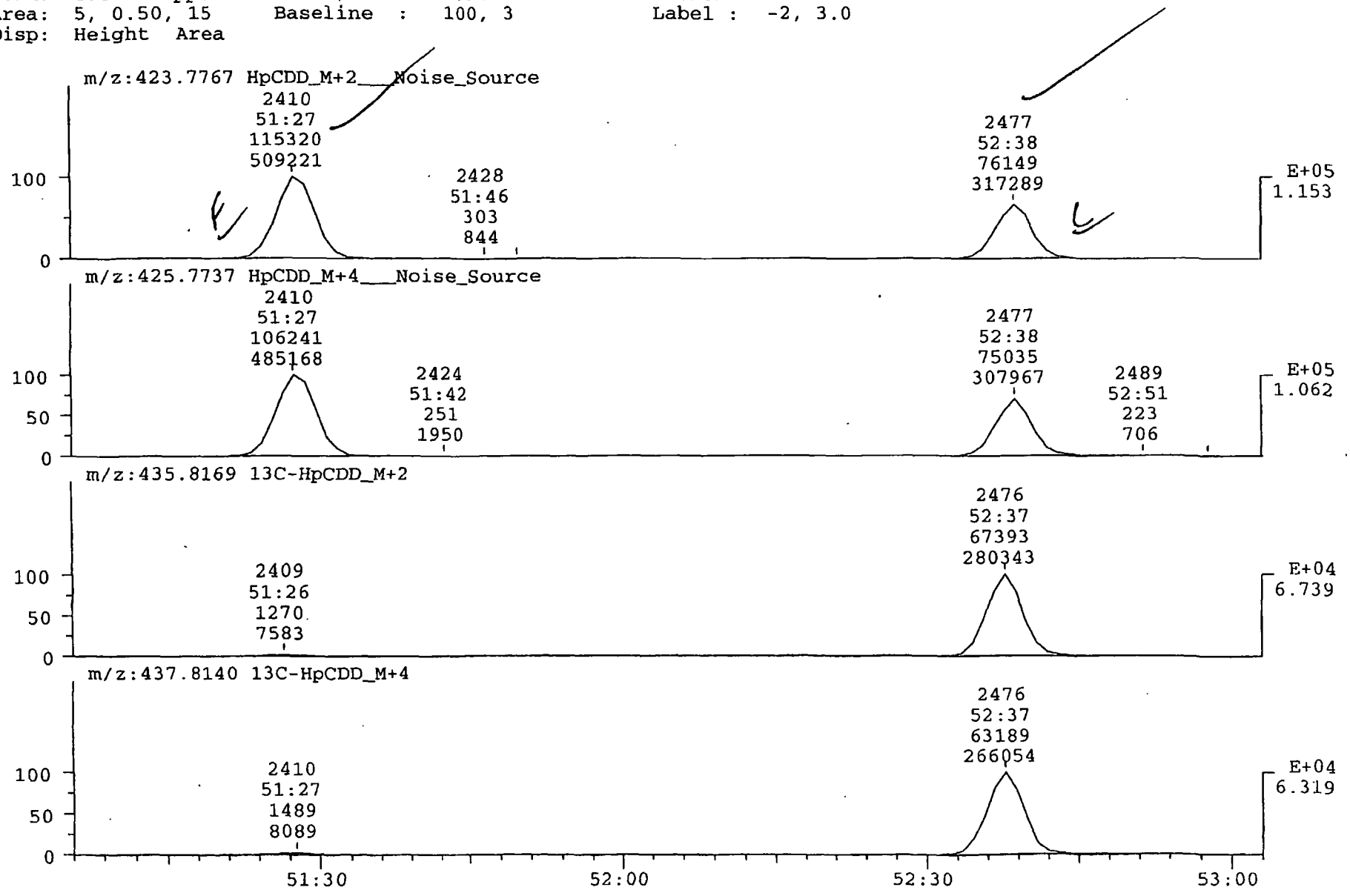
CHRO: tfx1wj2 05-Oct-03 Elapse: 46:31 2133
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2032 > 2266 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



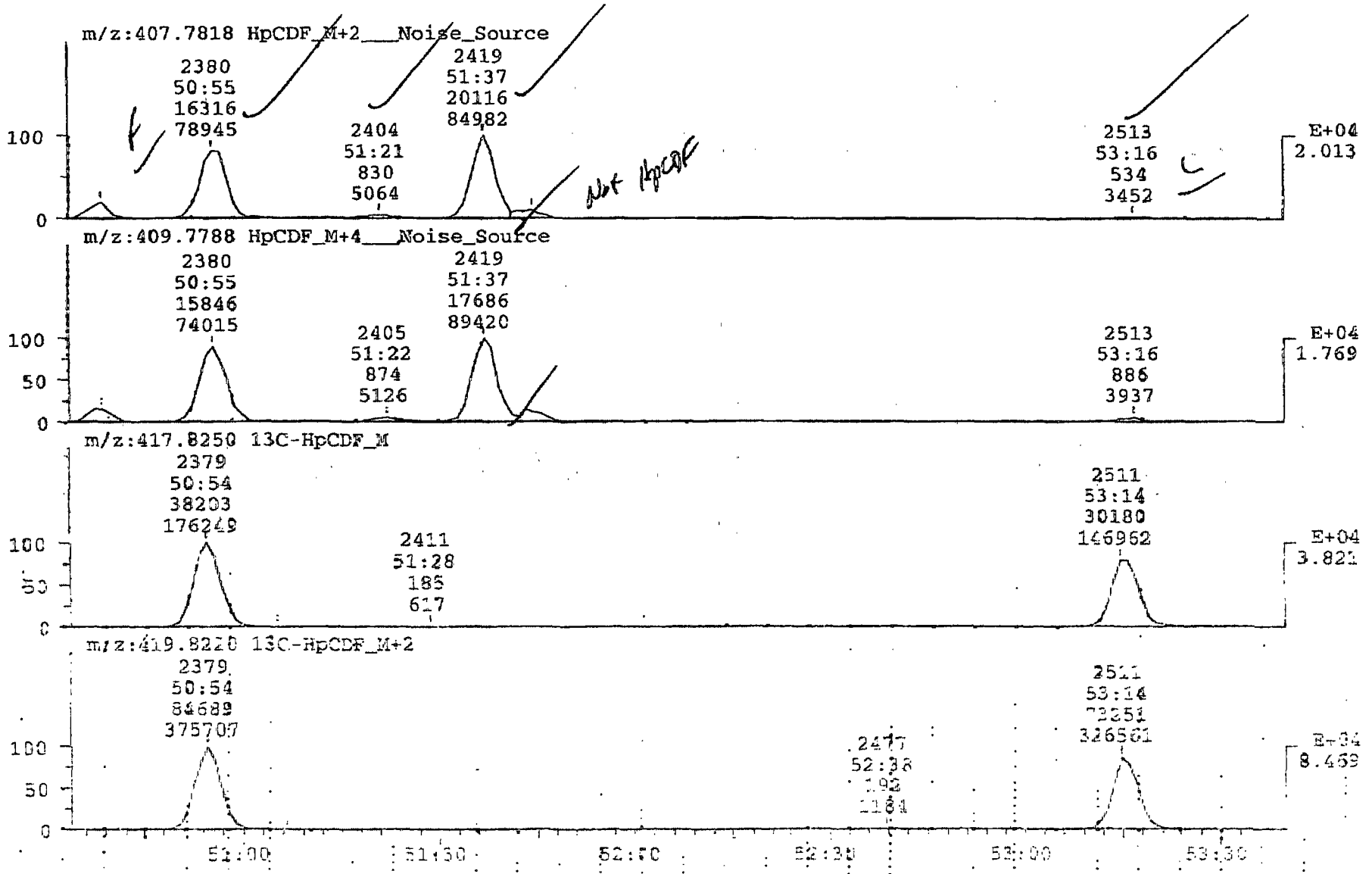
CHRO: tfx1wj2 05-Oct-03 Elapse: 46:31 2133
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2032 > 2266 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



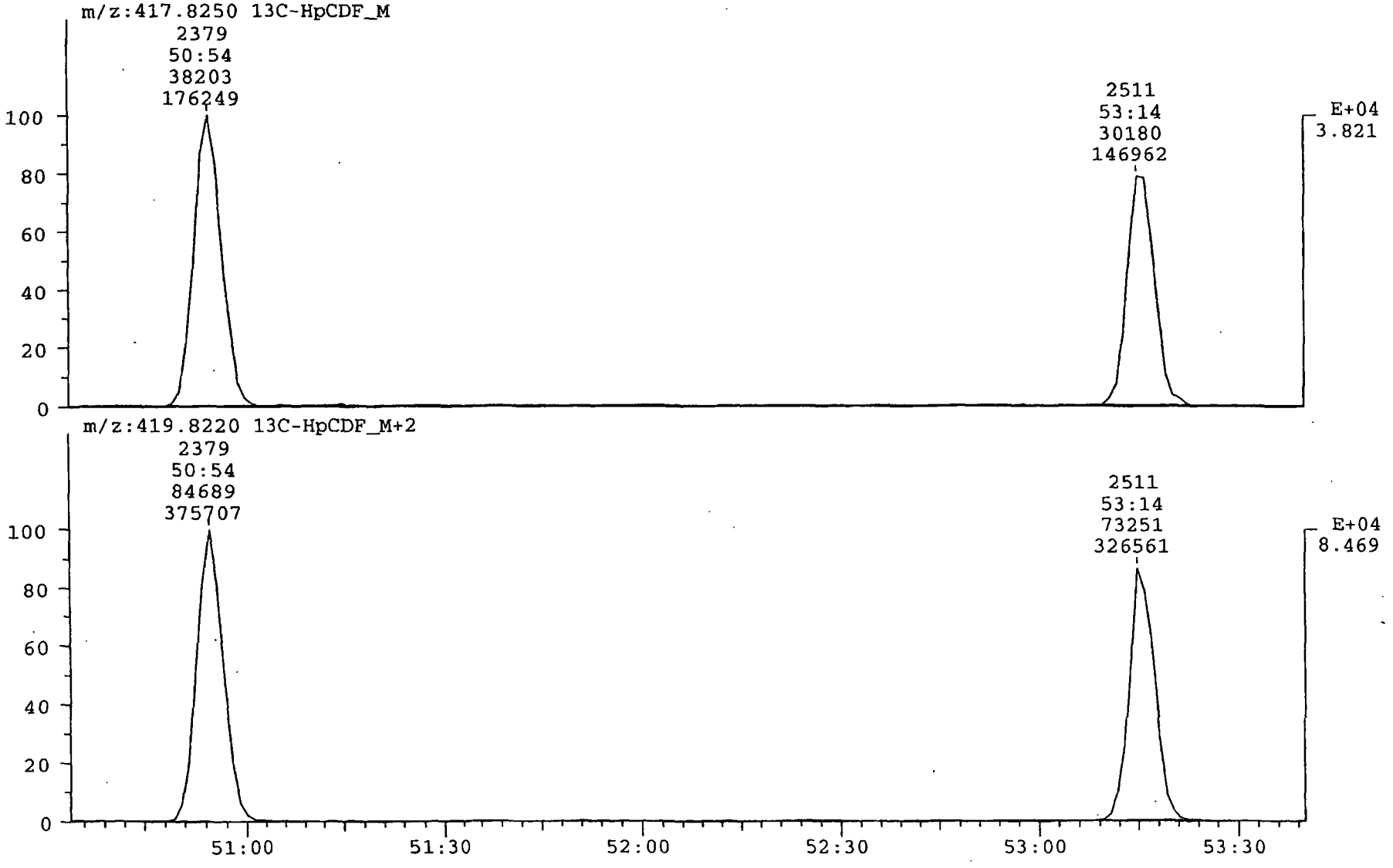
CHRO: tfx1wj2 05-Oct-03 Elapse: 46:31 2133
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2390 > 2500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



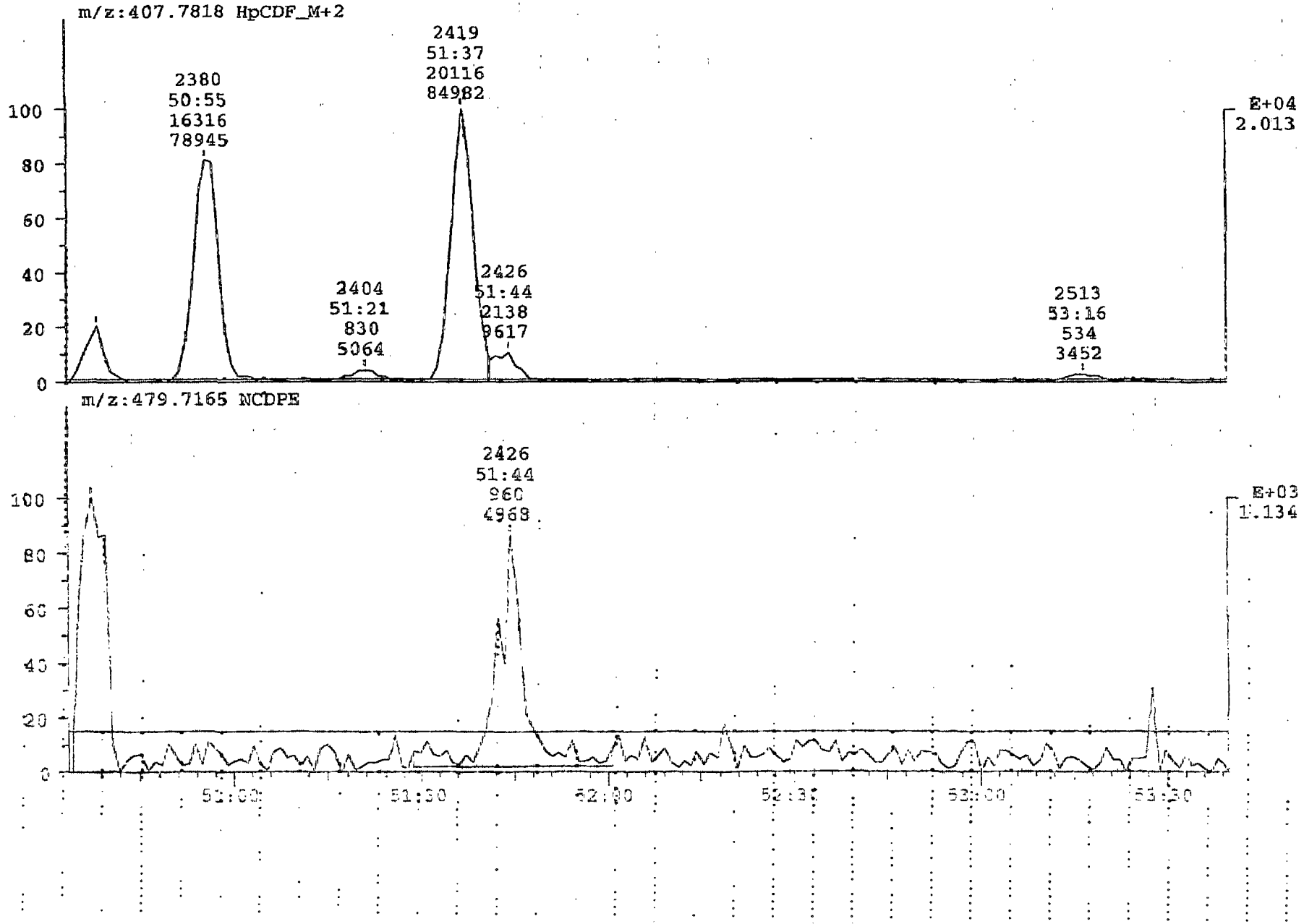
CHRO: tfx1wj2 05-Oct-03 Elapse: 52:06 2447
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



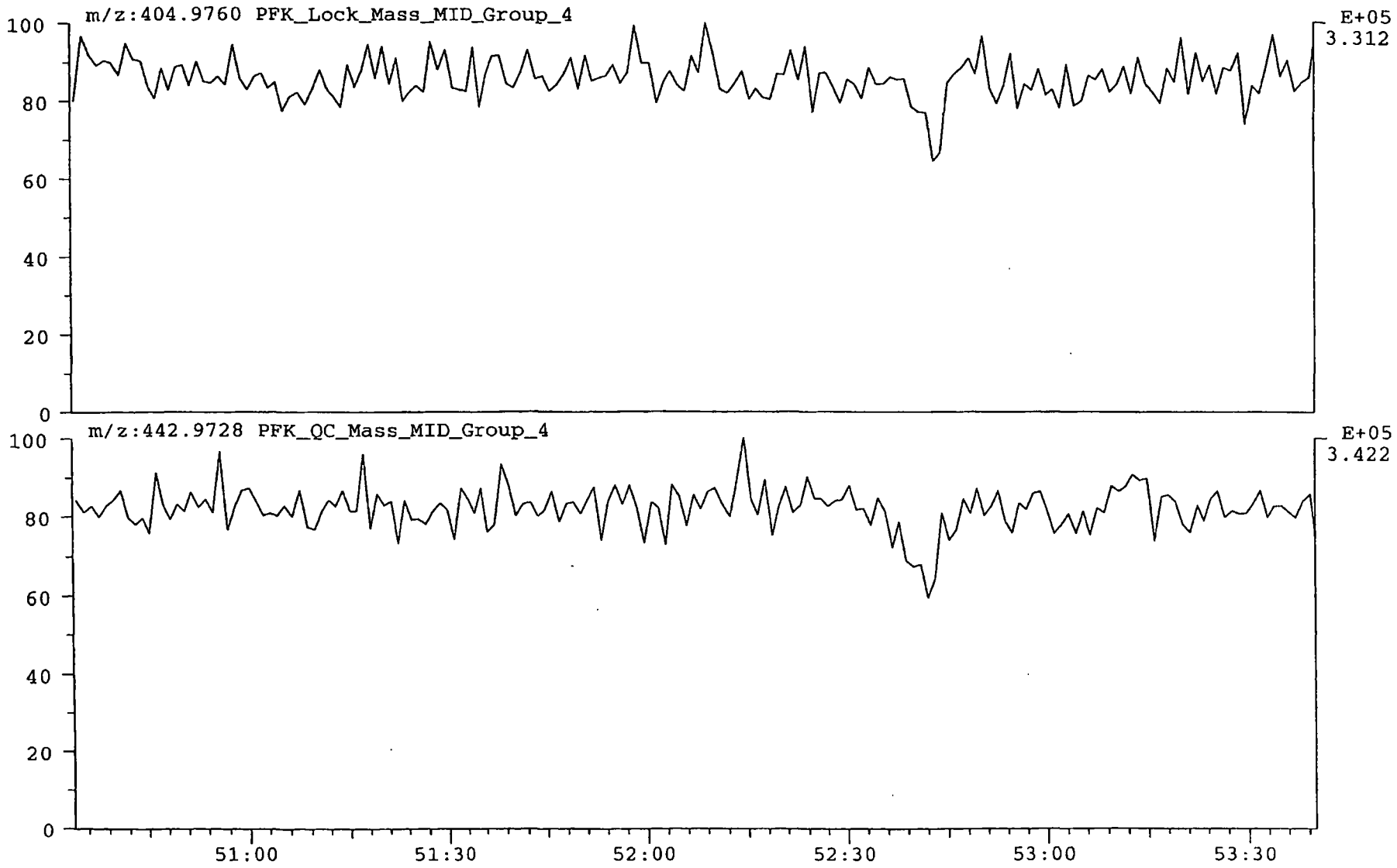
CHRO: tfx1wj2 05-Oct-03 Elapse: 52:06 2447
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



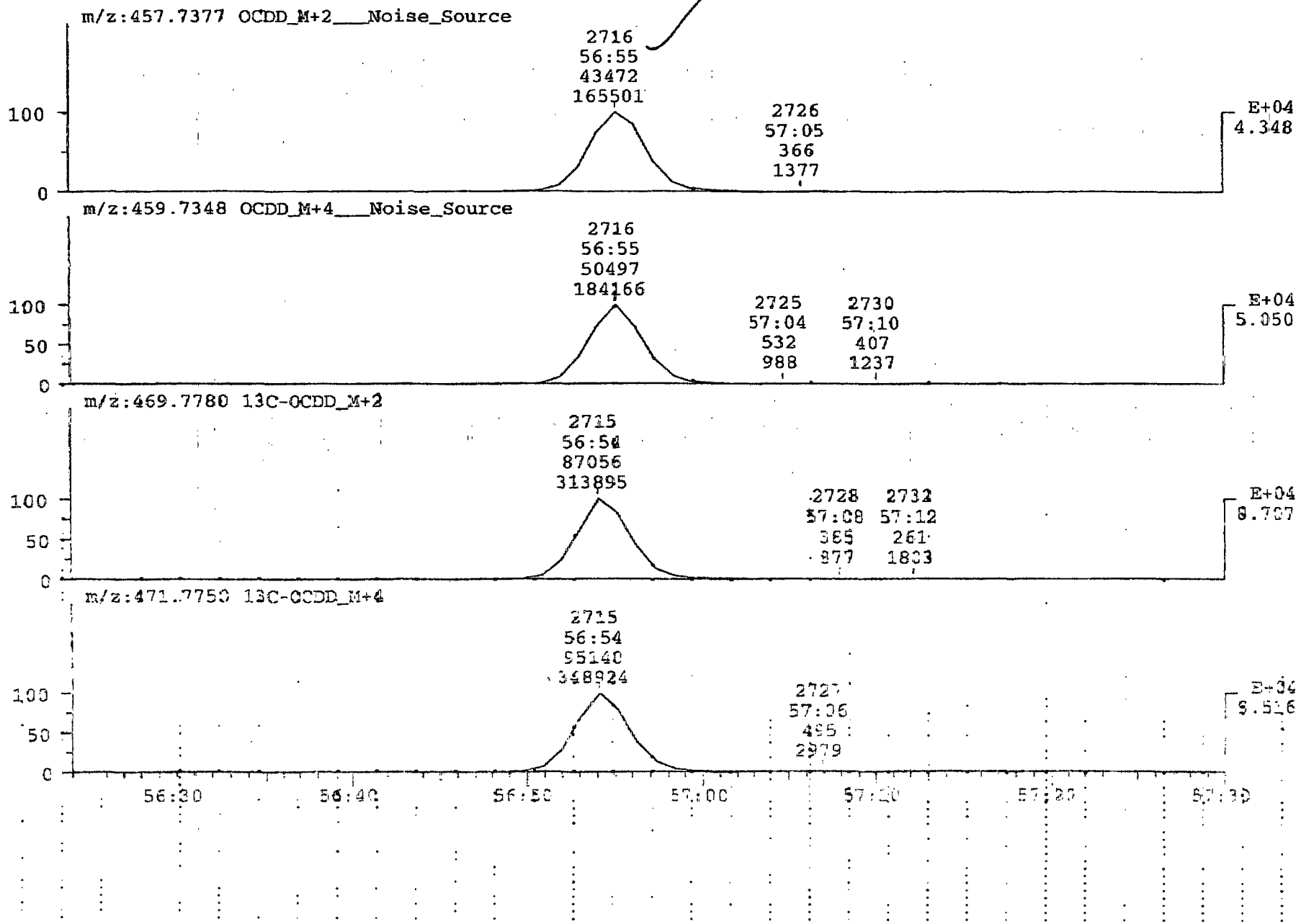
CHRO: tfx1wj2 05-Oct-03 Elapse: 52:06 2447
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



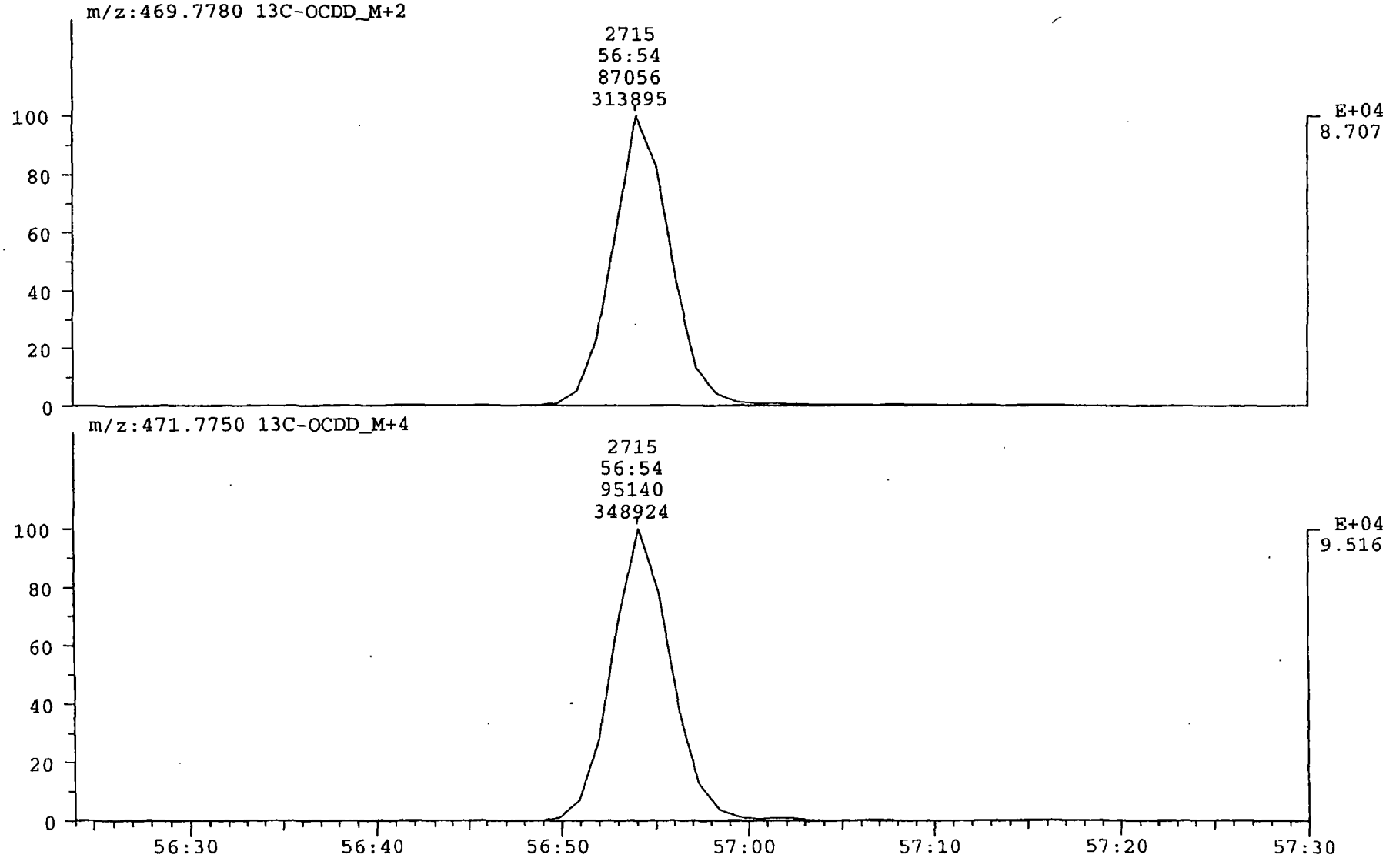
CHRO: tfx1wj2 05-Oct-03 Elapse: 52:06 2447
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



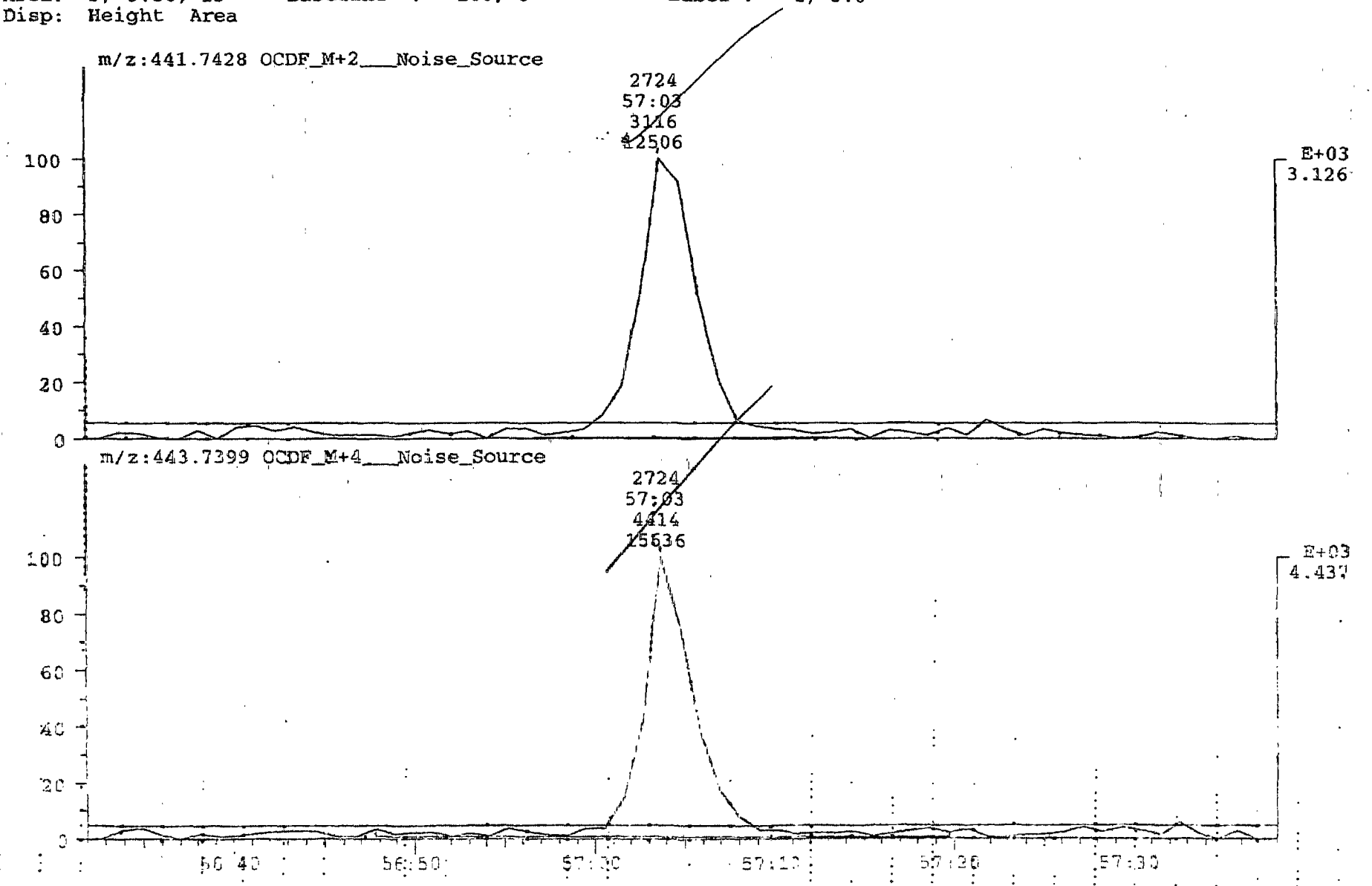
CHRO: tfx1wj2 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2687 > 2749 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



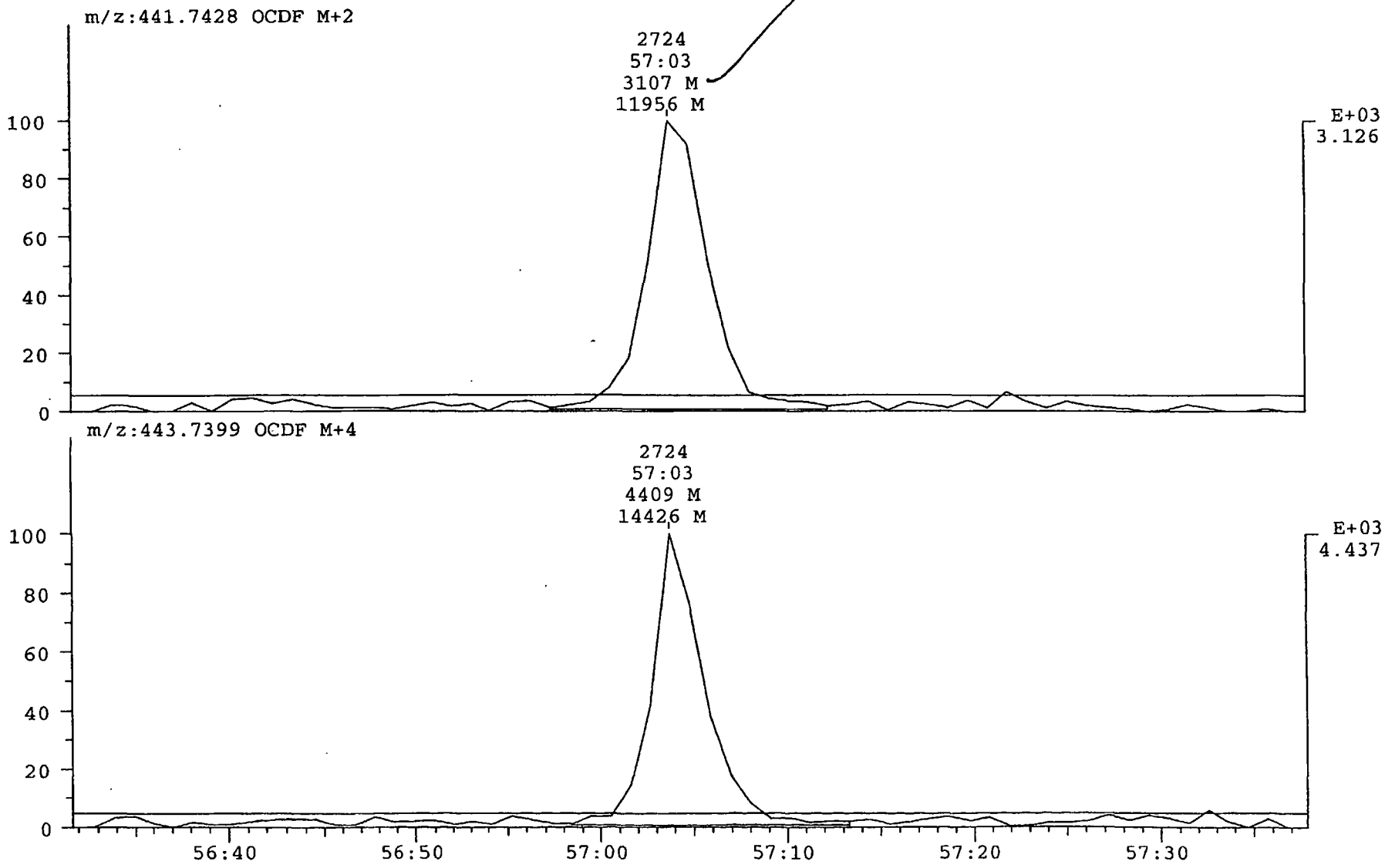
CHRO: tfx1wj2 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2687 > 2749 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



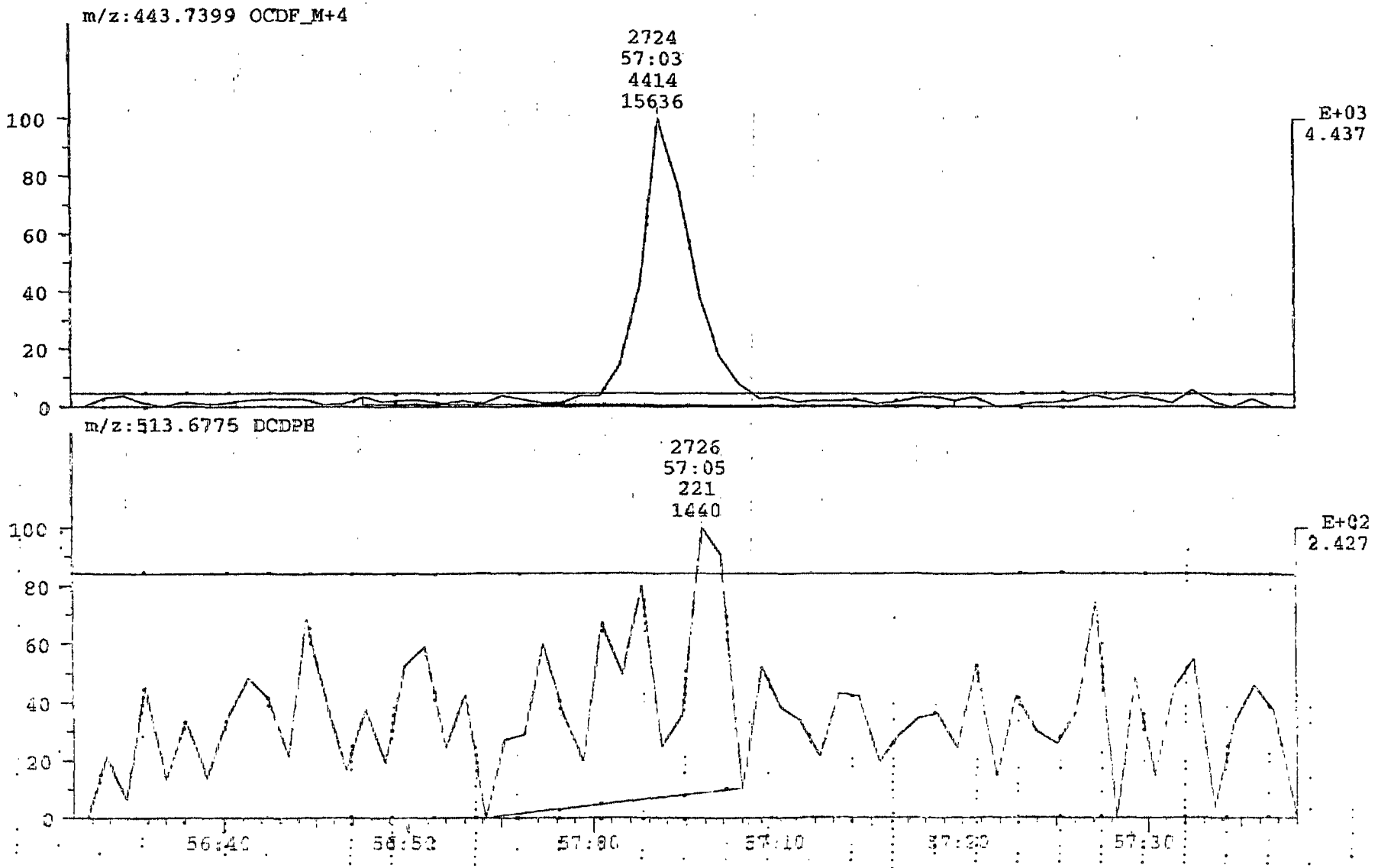
CHRO: tfx1wj2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM. Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



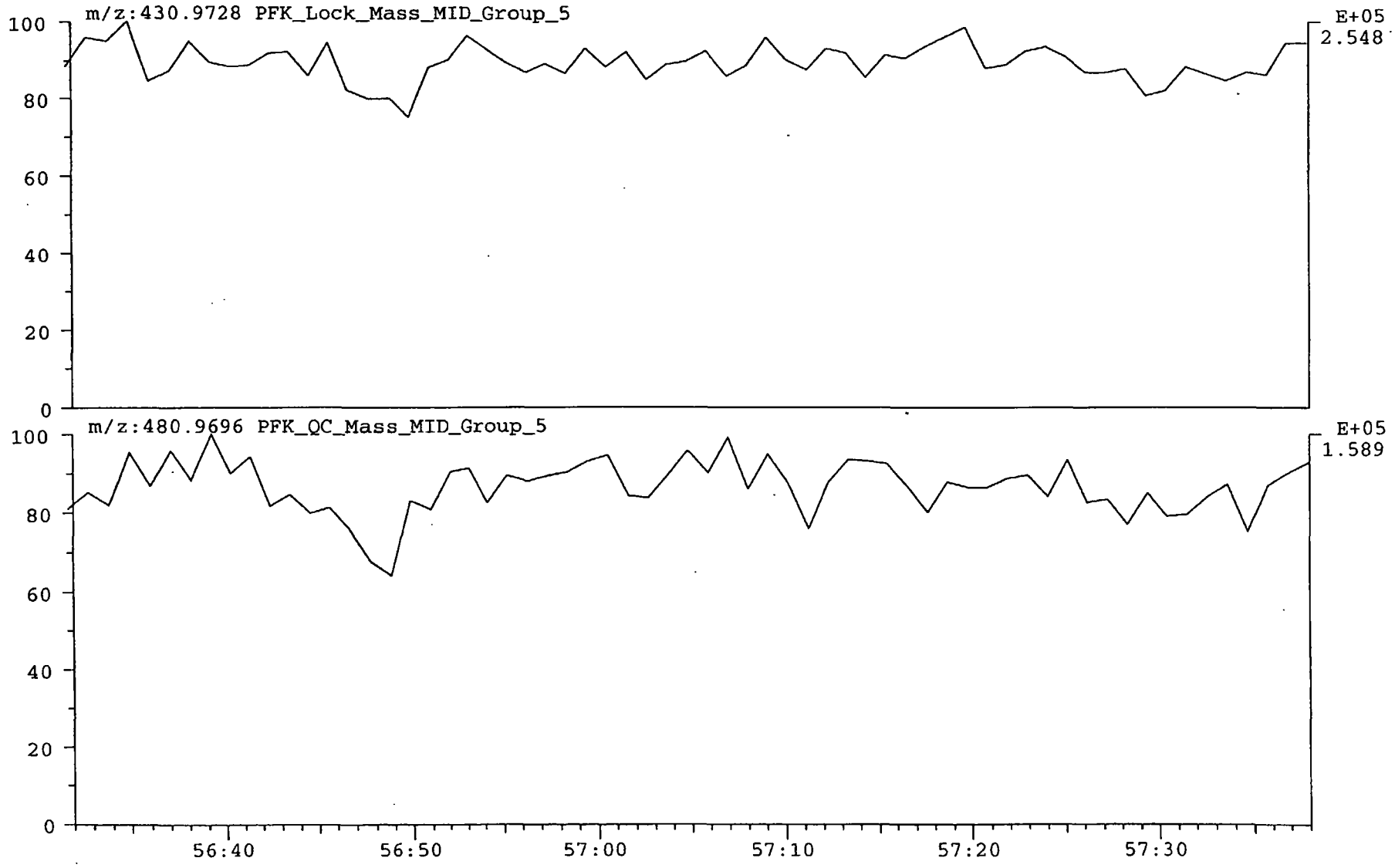
CHRO: tfx1wj2 05-Oct-03 Elapse: 42:56 1933
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 314
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tfx1wj2
Study: 3273193 (10.0g)
Sample: WO=fx1wj2aa Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I100253-003
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=200304011
Injected volume: 2.0
Sample from Vial 26
Analysis will stop when MID run finishes
Tune file name: tune2
File 4 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

Loop clean w slvnt B (LB): 0 times
Standard sample volume(X): 0.0 ul
Standard air volume (Y): 0.0 ul
2nd Injection volume (I): 0.0 ul
Air volume of 2nd inj (J): 0.0 ul
Time btwn 2 injections(T): 0 sec

GC descriptor : epa1613

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 300 deg max |
| Transfer Line: | 290 deg | | | 300 deg max |
| Column: | 140 deg | at | 0.0 minutes | 330 deg max |
| | 140 deg | at | 3.0 minutes | |
| | 210 deg | at | 6.5 minutes | |
| | 210 deg | at | 34.5 minutes | |
| | 280 deg | at | 44.5 minutes | |
| | 280 deg | at | 51.0 minutes | |
| | 325 deg | at | 60.0 minutes | |

Inlet :
Pressure 18.0 psi
Splitless mode
Purge time 1.5 min
Purge flow 40.0 mL/min

Gas saver is on
Saver time 3.0 min
Saver flow 15.0 mL/min

Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8421.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 295.0000 | FVINLET | 808.0000 |
| FVSRC | 932.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4118 | HVANAL | 980.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4766.7840 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3320 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2840.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8800 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 03:55:59.2

Autosampler has injected sample from vial 26
Analysis stopped at: 05-Oct-03 04:55:01.2 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: tfx1wj2.q0 Entries: 301

Data file(s) used
File: tfx1wj2 05-Oct-03
Samp: Vial 26 WO=fx1wj2aa Meth=IN2 Dil=1 Start : 03:55:59 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 26

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 32:40 | 27054. | 3009. | 32:27 | 32:54 | 57. | 1 | 1.0 |
| 321.8775 | 32:38 | 32916. | 3318. | 32:23 | 32:50 | 66. | 1 | 1.0 |
| 331.9202 | 35:25 | 716906. | 79700. | 35:10 | 35:42 | 159. | 2 | 3.0 |
| 331.9202 | 35:55 | 347039. | 42599. | 35:42 | 36:11 | 159. | 2 | 3.0 |
| 333.9171 | 35:25 | 885897. | 99939. | 35:10 | 35:39 | 98. | 2 | 3.0 |
| 333.9171 | 35:55 | 448553. | 55140. | 35:43 | 36:05 | 98. | 2 | 3.0 |
| 303.8864 | 37:24 | 11479. | 1789. | 37:18 | 37:35 | 60. | 1 | 1.0 |
| 305.8834 | 37:25 | 12539. | 2128. | 37:16 | 37:35 | 66. | 1 | 1.0 |
| 315.9261 | 33:46 | 503318. | 51049. | 33:30 | 34:03 | 89. | 2 | 3.0 |
| 317.9230 | 33:46 | 623698. | 62736. | 33:30 | 34:03 | 105. | 2 | 3.0 |
| 355.8368 | 40:48 | 125195. | 24189. | 40:38 | 40:56 | 63. | 1 | 1.0 |
| 357.8337 | 40:54 | 320804. | 57291. | 40:39 | 41:02 | 80. | 1 | 1.0 |
| 367.8765 | 43:16 | 455789. | 126416. | 43:09 | 43:23 | 69. | 2 | 3.0 |
| 369.8734 | 43:17 | 285155. | 75595. | 43:07 | 43:25 | 49. | 2 | 3.0 |
| 339.8427 | 40:32 | 32099. | 5043. | 40:22 | 40:39 | 70. | 1 | 1.0 |
| 341.8396 | 40:30 | 22611. | 3234. | 40:22 | 40:38 | 70. | 1 | 1.0 |
| 351.8824 | 41:45 | 595729. | 149789. | 41:33 | 41:58 | 59. | 2 | 3.0 |
| 351.8824 | 42:49 | 615279. | 173814. | 42:39 | 42:57 | 59. | 2 | 3.0 |
| 353.8793 | 41:45 | 376622. | 93732. | 41:38 | 41:56 | 64. | 2 | 3.0 |
| 353.8793 | 42:49 | 385852. | 110061. | 42:38 | 42:59 | 64. | 2 | 3.0 |
| 389.7961 | 46:43 | 1046443. | 273606. | 46:34 | 46:52 | 63. | 1 | 1.0 |
| 391.7931 | 46:43 | 855531. | 216465. | 46:36 | 46:51 | 75. | 1 | 1.0 |
| 401.8358 | 47:28 | 350367. | 92873. | 47:22 | 47:31 | 124. | 2 | 3.0 |
| 401.8358 | 47:35 | 362151. | 93306. | 47:31 | 47:51 | 124. | 2 | 3.0 |
| 401.8358 | 48:00 | 752286. | 197952. | 47:53 | 48:15 | 124. | 2 | 3.0 |
| 403.8327 | 47:28 | 292094. | 77109. | 47:22 | 47:31 | 61. | 2 | 3.0 |
| 403.8327 | 47:35 | 290162. | 76566. | 47:31 | 47:47 | 61. | 2 | 3.0 |
| 403.8327 | 48:00 | 594836. | 155457. | 47:47 | 48:13 | 61. | 2 | 3.0 |
| 373.8021 | 45:54 | 84132. | 25807. | 45:48 | 46:00 | 76. | 1 | 1.0 |
| 375.7990 | 45:54 | 61892. | 19573. | 45:48 | 46:00 | 75. | 1 | 1.0 |
| 383.8447 | 46:22 | 291372. | 80487. | 46:15 | 46:27 | 68. | 2 | 3.0 |
| 383.8447 | 46:30 | 297592. | 77839. | 46:27 | 46:43 | 68. | 2 | 3.0 |
| 383.8447 | 47:18 | 268579. | 71620. | 47:02 | 47:24 | 68. | 2 | 3.0 |
| 383.8447 | 48:18 | 221672. | 54478. | 48:13 | 48:29 | 68. | 2 | 3.0 |
| 385.8417 | 46:22 | 562913. | 157621. | 46:15 | 46:27 | 102. | 2 | 3.0 |
| 385.8417 | 46:30 | 565477. | 149157. | 46:27 | 46:38 | 102. | 2 | 3.0 |
| 385.8417 | 47:18 | 505369. | 134730. | 47:02 | 47:34 | 102. | 2 | 3.0 |
| 385.8417 | 48:18 | 427889. | 111254. | 48:11 | 48:31 | 102. | 2 | 3.0 |
| 423.7555 | 51:27 | 509221. | 115320. | 51:19 | 51:43 | 76. | 1 | 1.0 |
| 425.7524 | 51:27 | 485168. | 106241. | 51:18 | 51:39 | 67. | 1 | 1.0 |
| 435.7951 | 52:37 | 280343. | 67393. | 52:30 | 52:53 | 61. | 2 | 3.0 |
| 437.7921 | 52:37 | 266054. | 63189. | 52:25 | 52:53 | 61. | 2 | 3.0 |
| 407.7614 | 51:37 | 84982. | 20116. | 51:27 | 51:41 | 66. | 1 | 1.0 |
| 409.7583 | 51:37 | 89193. | 17686. | 51:28 | 51:51 | 67. | 1 | 1.0 |
| 417.8041 | 50:54 | 176249. | 38203. | 50:47 | 51:04 | 59. | 2 | 3.0 |
| 417.8041 | 53:14 | 146962. | 30180. | 53:08 | 53:30 | 59. | 2 | 3.0 |
| 419.8010 | 50:54 | 375707. | 84689. | 50:43 | 51:05 | 60. | 2 | 3.0 |
| 419.8010 | 53:14 | 326560. | 73251. | 53:06 | 53:30 | 60. | 2 | 3.0 |
| 457.7148 | 56:55 | 165501. | 43472. | 56:48 | 57:04 | 58. | 1 | 1.0 |

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| 459.7118 | 56:55 | 183407. | 50497. | 56:46 | 57:03 | 60. | 1 1.0 |
| 457.7148 | 56:55 | 165501. | 43472. | 56:48 | 57:04 | 58. | 2 3.0 |
| 459.7118 | 56:55 | 184166. | 50497. | 56:39 | 57:03 | 60. | 2 3.0 |
| 469.7545 | 56:54 | 313895. | 87056. | 56:46 | 57:07 | 70. | 2 3.0 |
| 471.7514 | 56:54 | 348924. | 95140. | 56:45 | 57:05 | 65. | 2 3.0 |
| 441.7207 | 57:03 | 12093. | 3116. | 56:57 | 57:12 | 57. | 1 1.0 |
| 443.7177 | 57:03 | 14387. | 4414. | 56:58 | 57:11 | 67. | 1 1.0 |
| 441.7207 | 57:03 | 12506. | 3116. | 56:54 | 57:15 | 57. | 2 3.0 |
| 443.7177 | 57:03 | 15636. | 4414. | 56:47 | 57:19 | 67. | 2 3.0 |
| 319.8805 | 29:17 | 7773. | 1209. | 29:00 | 29:26 | 52. | 2 3.0 |
| 319.8805 | 30:05 | 8699. | 1114. | 29:55 | 30:19 | 52. | 2 3.0 |
| 319.8805 | 30:56 | 4556. | 565. | 30:47 | 31:01 | 52. | 2 3.0 |
| 321.8775 | 29:18 | 10582. | 1162. | 29:05 | 29:32 | 67. | 2 3.0 |
| 321.8775 | 30:07 | 9212. | 1008. | 29:56 | 30:23 | 67. | 2 3.0 |
| 321.8775 | 30:54 | 7856. | 1064. | 30:41 | 31:02 | 67. | 2 3.0 |
| 319.8805 | 32:40 | 26564. | 2985. | 32:25 | 32:54 | 58. | 4 4.0 |
| 319.8805 | 33:24 | 4519. | 531. | 33:19 | 33:33 | 58. | 4 4.0 |
| 319.8805 | 33:43 | 5898. | 761. | 33:33 | 33:55 | 58. | 4 4.0 |
| 319.8805 | 34:30 | 6036. | 698. | 34:15 | 34:45 | 58. | 4 4.0 |
| 321.8775 | 32:38 | 31186. | 3261. | 32:27 | 32:50 | 71. | 4 4.0 |
| 321.8775 | 33:27 | 6163. | 726. | 33:19 | 33:35 | 71. | 4 4.0 |
| 321.8775 | 33:42 | 6683. | 780. | 33:35 | 33:56 | 71. | 4 4.0 |
| 321.8775 | 34:30 | 6923. | 708. | 34:16 | 34:44 | 71. | 4 4.0 |
| 319.8805 | 35:24 | 3990. | 599. | 35:18 | 35:38 | 62. | 4 4.0 |
| 319.8805 | 35:42 | 5556. | 789. | 35:38 | 35:51 | 62. | 4 4.0 |
| 319.8805 | 35:56 | 10520. | 1518. | 35:51 | 36:12 | 62. | 4 4.0 |
| 319.8805 | 36:22 | 1661. | 256. | 36:13 | 36:26 | 62. | 4 4.0 |
| 319.8805 | 36:22 | 1661. | 256. | 36:13 | 36:26 | 62. | 4 4.0 |
| 321.8775 | 35:25 | 5541. | 791. | 35:16 | 35:36 | 71. | 4 4.0 |
| 321.8775 | 35:43 | 5726. | 869. | 35:36 | 35:49 | 71. | 4 4.0 |
| 321.8775 | 35:57 | 15215. | 1960. | 35:49 | 36:12 | 71. | 4 4.0 |
| 321.8775 | 36:21 | 2250. | 351. | 36:12 | 36:27 | 71. | 4 4.0 |
| 319.8805 | 36:50 | 7733. | 1209. | 36:41 | 36:57 | 57. | 2 3.0 |
| 321.8775 | 36:47 | 12547. | 1534. | 36:38 | 36:58 | 71. | 2 3.0 |
| 319.8805 | 38:12 | 1697. | 470. | 38:05 | 38:15 | 66. | 2 3.0 |
| 321.8775 | 38:12 | 2705. | 468. | 38:02 | 38:15 | 56. | 2 3.0 |
| 303.8864 | 26:29 | 2552. | 372. | 26:19 | 26:43 | 56. | 3 3.0 |
| 303.8864 | 28:01 | 1860. | 275. | 27:58 | 28:10 | 56. | 3 3.0 |
| 303.8864 | 28:01 | 1860. | 275. | 27:58 | 28:10 | 56. | 3 3.0 |
| 305.8834 | 26:29 | 2387. | 297. | 26:23 | 26:46 | 56. | 3 3.0 |
| 305.8834 | 27:29 | 2149. | 335. | 27:22 | 27:36 | 56. | 3 3.0 |
| 305.8834 | 28:04 | 2704. | 341. | 27:53 | 28:08 | 56. | 3 3.0 |
| 303.8864 | 28:34 | 6022. | 685. | 28:24 | 28:44 | 53. | 4 4.0 |
| 303.8864 | 28:57 | 8227. | 566. | 28:44 | 29:21 | 53. | 4 4.0 |
| 303.8864 | 29:25 | 3242. | 375. | 29:21 | 29:35 | 53. | 4 4.0 |
| 303.8864 | 29:25 | 3242. | 375. | 29:21 | 29:35 | 53. | 4 4.0 |
| 305.8834 | 28:34 | 6093. | 904. | 28:27 | 28:46 | 69. | 4 4.0 |
| 305.8834 | 28:50 | 8158. | 457. | 28:46 | 29:18 | 69. | 4 4.0 |
| 305.8834 | 29:28 | 4677. | 522. | 29:18 | 29:35 | 69. | 4 4.0 |
| 303.8864 | 30:16 | 9047. | 766. | 30:00 | 30:38 | 65. | 4 4.0 |
| 303.8864 | 31:03 | 7024. | 636. | 30:42 | 31:17 | 65. | 4 4.0 |
| 305.8834 | 30:17 | 11291. | 1053. | 29:59 | 30:38 | 69. | 4 4.0 |
| 305.8834 | 31:01 | 6632. | 525. | 30:39 | 31:13 | 69. | 4 4.0 |
| 305.8834 | 31:01 | 6632. | 525. | 30:39 | 31:13 | 69. | 4 4.0 |
| 303.8864 | 31:40 | 5895. | 651. | 31:29 | 31:51 | 66. | 2 3.0 |
| 303.8864 | 31:53 | 4978. | 542. | 31:51 | 32:09 | 66. | 2 3.0 |
| 303.8864 | 32:17 | 1391. | 247. | 32:09 | 32:20 | 66. | 2 3.0 |
| 303.8864 | 32:34 | 6443. | 640. | 32:20 | 32:51 | 66. | 2 3.0 |
| 303.8864 | 32:34 | 5903. | 636. | 32:20 | 32:45 | 66. | 2 3.0 |
| 305.8834 | 31:37 | 6540. | 816. | 31:29 | 31:48 | 69. | 2 3.0 |
| 305.8834 | 31:56 | 6430. | 935. | 31:48 | 32:06 | 69. | 2 3.0 |
| 305.8834 | 32:32 | 7947. | 897. | 32:16 | 32:41 | 69. | 2 3.0 |
| 305.8834 | 32:43 | 1551. | 231. | 32:41 | 32:57 | 69. | 2 3.0 |
| 303.8864 | 33:17 | 7189. | 591. | 32:56 | 33:36 | 62. | 4 4.0 |
| 303.8864 | 33:54 | 12440. | 926. | 33:40 | 34:11 | 62. | 4 4.0 |
| 305.8834 | 33:14 | 8202. | 691. | 32:57 | 33:26 | 72. | 4 4.0 |

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|---|---|---|---|---|---|---|---|
| 305.8834 | 33:52 | 14877. | 1157. | 33:40 | 34:13 | 72. | 4 4.0 |
| 303.8864 | 35:11 | 6605. | 1017. | 35:00 | 35:20 | 61. | 3 3.0 |
| 303.8864 | 35:44 | 6048. | 478. | 35:27 | 36:00 | 61. | 3 3.0 |
| 303.8864 | 35:44 | 5808. | 477. | 35:30 | 36:00 | 61. | 3 3.0 |
| 305.8834 | 35:10 | 9231. | 1053. | 35:00 | 35:24 | 62. | 3 3.0 |
| 305.8834 | 35:40 | 6381. | 631. | 35:28 | 35:57 | 62. | 3 3.0 |
| 303.8864 | 37:24 | 11479. | 1789. | 37:18 | 37:35 | 51. | 2 3.0 |
| 303.8864 | 37:56 | 8021. | 1210. | 37:48 | 38:07 | 51. | 2 3.0 |
| 305.8834 | 37:25 | 13076. | 2125. | 37:16 | 37:41 | 70. | 2 3.0 |
| 305.8834 | 37:57 | 9350. | 1476. | 37:49 | 38:06 | 70. | 2 3.0 |
| 355.8368 | 40:48 | 125158. | 24186. | 40:38 | 40:56 | 71. | 2 3.0 |
| 355.8368 | 41:29 | 20245. | 4852. | 41:24 | 41:38 | 71. | 2 3.0 |
| 357.8337 | 40:48 | 66758. | 15358. | 40:39 | 40:50 | 95. | 2 3.0 |
| 357.8337 | 40:54 | 254095. | 57293. | 40:50 | 41:02 | 95. | 2 3.0 |
| 357.8337 | 41:16 | 50931. | 12353. | 41:11 | 41:25 | 95. | 2 3.0 |
| 357.8337 | 41:29 | 14330. | 3230. | 41:25 | 41:35 | 95. | 2 3.0 |
| 355.8368 | 41:54 | 53394. | 14645. | 41:44 | 41:59 | 31. | 2 3.0 |
| 355.8368 | 42:04 | 111909. | 28019. | 41:59 | 42:12 | 31. | 2 3.0 |
| 355.8368 | 42:17 | 40269. | 11216. | 42:12 | 42:24 | 31. | 2 3.0 |
| 357.8337 | 41:54 | 37433. | 10915. | 41:43 | 41:58 | 64. | 2 3.0 |
| 357.8337 | 42:05 | 75594. | 19326. | 41:58 | 42:12 | 64. | 2 3.0 |
| 357.8337 | 42:17 | 25444. | 6644. | 42:12 | 42:23 | 64. | 2 3.0 |
| 355.8368 | 42:32 | 15085. | 4248. | 42:27 | 42:35 | 58. | 2 3.0 |
| 355.8368 | 42:39 | 47375. | 9384. | 42:35 | 42:49 | 58. | 2 3.0 |
| 355.8368 | 42:54 | 4178. | 942. | 42:49 | 42:59 | 58. | 2 3.0 |
| 355.8368 | 43:03 | 1872. | 512. | 42:59 | 43:06 | 58. | 2 3.0 |
| 355.8368 | 43:08 | 857. | 227. | 43:06 | 43:12 | 58. | 2 3.0 |
| 357.8337 | 42:32 | 10288. | 2488. | 42:28 | 42:35 | 98. | 2 3.0 |
| 357.8337 | 42:40 | 29868. | 5942. | 42:35 | 42:46 | 98. | 2 3.0 |
| 357.8337 | 42:54 | 3162. | 861. | 42:46 | 42:57 | 98. | 2 3.0 |
| 357.8337 | 43:03 | 1599. | 424. | 42:59 | 43:06 | 98. | 2 3.0 |
| 355.8368 | 43:17 | 69647. | 19296. | 43:12 | 43:25 | 61. | 2 3.0 |
| 355.8368 | 43:30 | 18761. | 5186. | 43:25 | 43:37 | 61. | 2 3.0 |
| 355.8368 | 43:45 | 782. | 224. | 43:43 | 43:49 | 61. | 2 3.0 |
| 355.8368 | 43:53 | 17150. | 5695. | 43:49 | 43:59 | 61. | 2 3.0 |
| 357.8337 | 43:17 | 46470. | 12130. | 43:08 | 43:26 | 63. | 2 3.0 |
| 357.8337 | 43:29 | 11379. | 3414. | 43:26 | 43:34 | 63. | 2 3.0 |
| 357.8337 | 43:42 | 1209. | 246. | 43:39 | 43:48 | 63. | 2 3.0 |
| 357.8337 | 43:53 | 10352. | 2894. | 43:48 | 43:58 | 63. | 2 3.0 |
| 339.8427 | 38:37 | 20228. | 3291. | 38:32 | 38:47 | 72. | 2 3.0 |
| 339.8427 | 39:40 | 984. | 204. | 39:32 | 39:47 | 72. | 2 3.0 |
| 339.8427 | 40:17 | 3360. | 735. | 40:11 | 40:21 | 72. | 2 3.0 |
| 339.8427 | 40:32 | 32099. | 5043. | 40:22 | 40:39 | 72. | 2 3.0 |
| 339.8427 | 40:47 | 5572. | 1146. | 40:40 | 40:56 | 72. | 2 3.0 |
| 341.8396 | 38:38 | 12634. | 2407. | 38:31 | 38:47 | 63. | 2 3.0 |
| 341.8396 | 40:16 | 3055. | 472. | 40:00 | 40:21 | 63. | 2 3.0 |
| 341.8396 | 40:30 | 22387. | 3221. | 40:22 | 40:38 | 63. | 2 3.0 |
| 341.8396 | 40:47 | 3878. | 503. | 40:38 | 40:58 | 63. | 2 3.0 |
| 339.8427 | 41:11 | 9632. | 1998. | 40:58 | 41:16 | 73. | 4 4.0 |
| 339.8427 | 41:21 | 15000. | 2961. | 41:16 | 41:33 | 73. | 4 4.0 |
| 341.8396 | 41:12 | 7353. | 1535. | 40:58 | 41:15 | 68. | 4 4.0 |
| 341.8396 | 41:22 | 10468. | 1659. | 41:15 | 41:30 | 68. | 4 4.0 |
| 339.8427 | 41:41 | 3673. | 1217. | 41:33 | 41:43 | 64. | 2 3.0 |
| 339.8427 | 41:46 | 7743. | 1998. | 41:43 | 41:56 | 64. | 2 3.0 |
| 339.8427 | 42:01 | 5613. | 1645. | 41:56 | 42:06 | 64. | 2 3.0 |
| 339.8427 | 42:15 | 21724. | 4530. | 42:08 | 42:21 | 64. | 2 3.0 |
| 341.8396 | 41:41 | 2169. | 538. | 41:37 | 41:43 | 76. | 2 3.0 |
| 341.8396 | 41:46 | 6160. | 1553. | 41:43 | 41:54 | 76. | 2 3.0 |
| 341.8396 | 42:01 | 3838. | 824. | 41:56 | 42:07 | 76. | 2 3.0 |
| 341.8396 | 42:15 | 15211. | 3499. | 42:07 | 42:21 | 76. | 2 3.0 |
| 339.8427 | 42:34 | 3085. | 795. | 42:27 | 42:40 | 58. | 2 3.0 |
| 339.8427 | 42:50 | 11806. | 2888. | 42:40 | 42:55 | 58. | 2 3.0 |
| 339.8427 | 43:01 | 13652. | 2800. | 42:55 | 43:09 | 58. | 2 3.0 |
| 339.8427 | 43:17 | 3467. | 575. | 43:09 | 43:28 | 58. | 2 3.0 |
| 339.8427 | 43:17 | 3467. | 575. | 43:09 | 43:28 | 58. | 2 3.0 |
| 341.8396 | 42:34 | 2488. | 604. | 42:25 | 42:38 | 75. | 2 3.0 |

| | | | | | | | | |
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| 341.8396 | 42:50 | 8298. | 2353. | 42:39 | 42:55 | 75. | 2 | 3.0 |
| 341.8396 | 43:01 | 8845. | 2087. | 42:55 | 43:07 | 75. | 2 | 3.0 |
| 341.8396 | 43:16 | 2906. | 413. | 43:10 | 43:30 | 75. | 2 | 3.0 |
| 339.8427 | 44:02 | 15154. | 4248. | 43:56 | 44:06 | 82. | 2 | 3.0 |
| 341.8396 | 44:01 | 11158. | 2165. | 43:45 | 44:07 | 57. | 2 | 3.0 |
| 389.7961 | 45:48 | 290553. | 83691. | 45:41 | 46:04 | 60. | 2 | 3.0 |
| 389.7961 | 46:25 | 120972. | 34483. | 46:17 | 46:34 | 60. | 2 | 3.0 |
| 389.7961 | 46:43 | 1046278. | 273598. | 46:34 | 46:52 | 60. | 2 | 3.0 |
| 389.7961 | 46:54 | 10200. | 3212. | 46:52 | 47:10 | 60. | 2 | 3.0 |
| 391.7931 | 45:47 | 236979. | 69289. | 45:41 | 46:02 | 83. | 2 | 3.0 |
| 391.7931 | 46:25 | 94514. | 28048. | 46:15 | 46:29 | 83. | 2 | 3.0 |
| 391.7931 | 46:43 | 854831. | 216419. | 46:36 | 46:51 | 83. | 2 | 3.0 |
| 391.7931 | 46:54 | 10303. | 2553. | 46:51 | 47:04 | 83. | 2 | 3.0 |
| 389.7961 | 47:17 | 583. | 284. | 47:15 | 47:20 | 62. | 2 | 3.0 |
| 389.7961 | 47:28 | 28010. | 7974. | 47:23 | 47:31 | 62. | 2 | 3.0 |
| 389.7961 | 47:36 | 255137. | 66801. | 47:31 | 47:45 | 62. | 2 | 3.0 |
| 389.7961 | 47:46 | 654. | 375. | 47:45 | 47:48 | 62. | 2 | 3.0 |
| 389.7961 | 48:01 | 121360. | 28787. | 47:48 | 48:08 | 62. | 2 | 3.0 |
| 389.7961 | 48:10 | 816. | 269. | 48:08 | 48:13 | 62. | 2 | 3.0 |
| 391.7931 | 47:28 | 23020. | 6469. | 47:23 | 47:31 | 51. | 2 | 3.0 |
| 391.7931 | 47:36 | 209425. | 54121. | 47:31 | 47:52 | 51. | 2 | 3.0 |
| 391.7931 | 48:01 | 96755. | 22474. | 47:52 | 48:11 | 51. | 2 | 3.0 |
| 373.8021 | 45:07 | 16617. | 5883. | 45:01 | 45:11 | 79. | 2 | 3.0 |
| 373.8021 | 45:18 | 74930. | 23059. | 45:11 | 45:24 | 79. | 2 | 3.0 |
| 373.8021 | 45:29 | 2011. | 442. | 45:24 | 45:36 | 79. | 2 | 3.0 |
| 373.8021 | 45:41 | 6408. | 2186. | 45:36 | 45:42 | 79. | 2 | 3.0 |
| 373.8021 | 45:45 | 4634. | 1155. | 45:42 | 45:48 | 79. | 2 | 3.0 |
| 373.8021 | 45:54 | 83463. | 25750. | 45:48 | 46:00 | 79. | 2 | 3.0 |
| 373.8021 | 46:04 | 11839. | 3912. | 46:00 | 46:10 | 79. | 2 | 3.0 |
| 375.7990 | 45:07 | 14693. | 4827. | 45:03 | 45:12 | 71. | 2 | 3.0 |
| 375.7990 | 45:17 | 60344. | 16633. | 45:12 | 45:23 | 71. | 2 | 3.0 |
| 375.7990 | 45:29 | 1830. | 555. | 45:23 | 45:35 | 71. | 2 | 3.0 |
| 375.7990 | 45:40 | 3815. | 939. | 45:35 | 45:42 | 71. | 2 | 3.0 |
| 375.7990 | 45:45 | 3233. | 989. | 45:42 | 45:48 | 71. | 2 | 3.0 |
| 375.7990 | 45:54 | 61605. | 19548. | 45:48 | 46:00 | 71. | 2 | 3.0 |
| 375.7990 | 46:04 | 8898. | 2560. | 46:00 | 46:09 | 71. | 2 | 3.0 |
| 373.8021 | 45:07 | 16617. | 5883. | 45:01 | 45:11 | 79. | 2 | 3.0 |
| 373.8021 | 45:18 | 74930. | 23059. | 45:11 | 45:24 | 79. | 2 | 3.0 |
| 373.8021 | 45:29 | 2011. | 442. | 45:24 | 45:36 | 79. | 2 | 3.0 |
| 373.8021 | 45:41 | 6408. | 2186. | 45:36 | 45:42 | 79. | 2 | 3.0 |
| 373.8021 | 45:45 | 4634. | 1155. | 45:42 | 45:48 | 79. | 2 | 3.0 |
| 373.8021 | 45:54 | 83463. | 25750. | 45:48 | 46:00 | 79. | 2 | 3.0 |
| 373.8021 | 46:04 | 11839. | 3912. | 46:00 | 46:10 | 79. | 2 | 3.0 |
| 375.7990 | 45:07 | 14693. | 4827. | 45:03 | 45:12 | 71. | 2 | 3.0 |
| 375.7990 | 45:17 | 60344. | 16633. | 45:12 | 45:23 | 71. | 2 | 3.0 |
| 375.7990 | 45:29 | 1830. | 555. | 45:23 | 45:35 | 71. | 2 | 3.0 |
| 375.7990 | 45:40 | 3815. | 939. | 45:35 | 45:42 | 71. | 2 | 3.0 |
| 375.7990 | 45:45 | 3233. | 989. | 45:42 | 45:48 | 71. | 2 | 3.0 |
| 375.7990 | 45:54 | 61605. | 19548. | 45:48 | 46:00 | 71. | 2 | 3.0 |
| 375.7990 | 46:04 | 8898. | 2560. | 46:00 | 46:09 | 71. | 2 | 3.0 |
| 373.8021 | 46:20 | 29005. | 4795. | 46:13 | 46:27 | 71. | 3 | 3.0 |
| 373.8021 | 46:31 | 18867. | 3550. | 46:27 | 46:37 | 71. | 3 | 3.0 |
| 373.8021 | 46:39 | 2673. | 451. | 46:37 | 46:50 | 71. | 3 | 3.0 |
| 375.7990 | 46:21 | 21897. | 4129. | 46:14 | 46:26 | 69. | 3 | 3.0 |
| 375.7990 | 46:31 | 15965. | 3222. | 46:26 | 46:37 | 69. | 3 | 3.0 |
| 375.7990 | 46:39 | 1999. | 483. | 46:37 | 46:49 | 69. | 3 | 3.0 |
| 373.8021 | 46:54 | 3319. | 672. | 46:50 | 47:00 | 84. | 2 | 3.0 |
| 373.8021 | 47:04 | 15918. | 4631. | 47:00 | 47:08 | 84. | 2 | 3.0 |
| 373.8021 | 47:11 | 5124. | 1754. | 47:08 | 47:14 | 84. | 2 | 3.0 |
| 373.8021 | 47:18 | 7212. | 2160. | 47:14 | 47:24 | 84. | 2 | 3.0 |
| 373.8021 | 47:28 | 1432. | 528. | 47:24 | 47:32 | 84. | 2 | 3.0 |
| 375.7990 | 46:55 | 3549. | 714. | 46:51 | 47:01 | 74. | 2 | 3.0 |
| 375.7990 | 47:04 | 13436. | 3731. | 47:01 | 47:09 | 74. | 2 | 3.0 |
| 375.7990 | 47:11 | 4077. | 1195. | 47:09 | 47:15 | 74. | 2 | 3.0 |
| 375.7990 | 47:18 | 6829. | 1919. | 47:15 | 47:22 | 74. | 2 | 3.0 |
| 373.8021 | 48:28 | 3446. | 631. | 48:23 | 48:37 | 74. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 373.8021 | 48:39 | 2385. | 567. | 48:37 | 48:46 | 74. | 2 | 3.0 |
| 373.8021 | 48:39 | 2385. | 567. | 48:37 | 48:46 | 74. | 2 | 3.0 |
| 375.7990 | 48:27 | 2500. | 556. | 48:23 | 48:35 | 81. | 2 | 3.0 |
| 375.7990 | 48:38 | 1626. | 421. | 48:35 | 48:45 | 81. | 2 | 3.0 |
| 423.7555 | 51:27 | 509221. | 115320. | 51:19 | 51:43 | 76. | 2 | 3.0 |
| 423.7555 | 51:46 | 844. | 303. | 51:44 | 51:48 | 76. | 2 | 3.0 |
| 423.7555 | 51:49 | 2402. | 299. | 51:48 | 52:05 | 76. | 2 | 3.0 |
| 423.7555 | 52:38 | 317289. | 76149. | 52:30 | 52:54 | 76. | 2 | 3.0 |
| 425.7524 | 51:27 | 485168. | 106241. | 51:18 | 51:39 | 67. | 2 | 3.0 |
| 425.7524 | 51:42 | 1950. | 251. | 51:39 | 51:53 | 67. | 2 | 3.0 |
| 425.7524 | 52:38 | 307967. | 75035. | 52:30 | 52:49 | 67. | 2 | 3.0 |
| 425.7524 | 52:51 | 706. | 223. | 52:49 | 52:54 | 67. | 2 | 3.0 |
| 425.7524 | 52:57 | 1338. | 303. | 52:54 | 53:03 | 67. | 2 | 3.0 |
| 435.7951 | 51:26 | 7583. | 1270. | 51:17 | 51:41 | 61. | 2 | 3.0 |
| 435.7951 | 52:37 | 280343. | 67393. | 52:30 | 52:53 | 61. | 2 | 3.0 |
| 437.7921 | 51:27 | 8089. | 1489. | 51:16 | 51:40 | 61. | 2 | 3.0 |
| 437.7921 | 52:37 | 266054. | 63189. | 52:25 | 52:53 | 61. | 2 | 3.0 |
| 407.7614 | 50:38 | 14512. | 4061. | 50:34 | 50:44 | 66. | 2 | 3.0 |
| 407.7614 | 50:55 | 78945. | 16316. | 50:49 | 51:09 | 66. | 2 | 3.0 |
| 407.7614 | 51:21 | 5064. | 830. | 51:11 | 51:27 | 66. | 2 | 3.0 |
| 407.7614 | 51:37 | 84982. | 20116. | 51:27 | 51:41 | 66. | 2 | 3.0 |
| 407.7614 | 51:44 | 9617. | 2138. | 51:41 | 51:51 | 66. | 2 | 3.0 |
| 407.7614 | 53:17 | 3452. | 534. | 53:10 | 53:26 | 66. | 2 | 3.0 |
| 409.7583 | 50:38 | 11728. | 2788. | 50:34 | 50:43 | 67. | 2 | 3.0 |
| 409.7583 | 50:55 | 74015. | 15846. | 50:49 | 51:05 | 67. | 2 | 3.0 |
| 409.7583 | 51:22 | 5126. | 874. | 51:14 | 51:28 | 67. | 2 | 3.0 |
| 409.7583 | 51:37 | 89420. | 17686. | 51:28 | 51:53 | 67. | 2 | 3.0 |
| 409.7583 | 53:17 | 3937. | 886. | 53:04 | 53:21 | 67. | 2 | 3.0 |
| 417.8041 | 50:54 | 176249. | 38203. | 50:47 | 51:04 | 59. | 2 | 3.0 |
| 417.8041 | 51:05 | 839. | 236. | 51:04 | 51:12 | 59. | 2 | 3.0 |
| 417.8041 | 51:28 | 617. | 185. | 51:25 | 51:32 | 59. | 2 | 3.0 |
| 417.8041 | 53:14 | 146962. | 30180. | 53:08 | 53:30 | 59. | 2 | 3.0 |
| 419.8010 | 50:54 | 375707. | 84689. | 50:43 | 51:05 | 60. | 2 | 3.0 |
| 419.8010 | 51:06 | 1888. | 222. | 51:05 | 51:22 | 60. | 2 | 3.0 |
| 419.8010 | 52:38 | 1184. | 192. | 52:33 | 52:49 | 60. | 2 | 3.0 |
| 419.8010 | 53:14 | 326560. | 73251. | 53:06 | 53:30 | 60. | 2 | 3.0 |
| 457.7148 | 56:55 | 165501. | 43472. | 56:48 | 57:04 | 58. | 2 | 3.0 |
| 457.7148 | 57:05 | 1377. | 366. | 57:04 | 57:14 | 58. | 2 | 3.0 |
| 459.7118 | 56:55 | 184166. | 50497. | 56:39 | 57:03 | 60. | 2 | 3.0 |
| 459.7118 | 57:04 | 988. | 532. | 57:03 | 57:07 | 60. | 2 | 3.0 |
| 459.7118 | 57:10 | 1237. | 407. | 57:07 | 57:13 | 60. | 2 | 3.0 |
| 469.7545 | 56:54 | 313895. | 87056. | 56:46 | 57:07 | 70. | 2 | 3.0 |
| 469.7545 | 57:08 | 877. | 385. | 57:07 | 57:10 | 70. | 2 | 3.0 |
| 469.7545 | 57:12 | 1803. | 261. | 57:10 | 57:23 | 70. | 2 | 3.0 |
| 471.7514 | 56:54 | 348924. | 95140. | 56:45 | 57:05 | 65. | 2 | 3.0 |
| 471.7514 | 57:07 | 2979. | 495. | 57:05 | 57:23 | 65. | 2 | 3.0 |
| 441.7207 | 57:03 | 11956. | 3107. | 56:57 | 57:12 | 57. | 2 | 3.0 |
| 441.7207 | 57:03 | 11956. | 3107. | 56:57 | 57:12 | 57. | 2 | 3.0 |
| 443.7177 | 57:03 | 14426. | 4409. | 56:58 | 57:13 | 67. | 2 | 3.0 |
| 443.7177 | 57:03 | 14426. | 4409. | 56:58 | 57:13 | 67. | 2 | 3.0 |
| 441.7207 | 57:03 | 11956. | 3107. | 56:57 | 57:12 | 57. | 2 | 3.0 |
| 441.7207 | 57:03 | 11956. | 3107. | 56:57 | 57:12 | 57. | 2 | 3.0 |
| 443.7177 | 57:03 | 14426. | 4409. | 56:58 | 57:13 | 67. | 2 | 3.0 |
| 443.7177 | 57:03 | 14426. | 4409. | 56:58 | 57:13 | 67. | 2 | 3.0 |

# Raw Sample Data
# DB-225 Column

TECHLAW, INC.

Client Sample ID: 090903-1

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-001 Work Order #...: FX1WF1AD Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 1.4 Q | 0.20 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 69 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

STL - Knoxville

# IsoCalc Preliminary Sample Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WF1AD | Prep Batch | 3273193 | Lot No | 1131100353-001 |
| Data File | /20031006b3/ffx1wf.d | Prep Date | 09/30/03 | Sbd No | |
| Analysis ID | 71214 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/7/2003 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Analysis Time | 01:19 | Initial Wt/Vol | 10.0 | Lims Test Code | XHA11N01 |
| Anal Exp Date | 11/14/03 | Extract Vol | 20 | Method | DX8290_Conf |
| Instrument | M3C | Dil Factor | 1.0 | Code | TW |
| Analyst | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | | | | 1.062 | | | | ND | | 0.[illegible] |
| 2,3,7,8-TCDF | 19:47 | 11122 | 1885 | 0.939 | | 14.282126 | | 1.428213 | Q | 0.[illegible] |
| 37Cl4-2,3,7,8-TCDD | | | | 1.126 | | | | ND | | 0.[illegible] |
| 13C-2,3,7,8-TCDD | 18:00 | 620562 | 119862 | 1.097 | 1000 | 687.340482 | 68.73 | 68.734048 | | 0.[illegible] |
| 13C-2,3,7,8-TCDF | 19:47 | 829662 | 152486 | 1.461 | 1000 | 690.006807 | 69.00 | 69.000681 | | 0.[illegible] |
| 13C-1,2,3,4-TCDD | 18:20 | 1645868 | 311231 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.244 |

BKW 10-7-03

MIL 10/7/03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

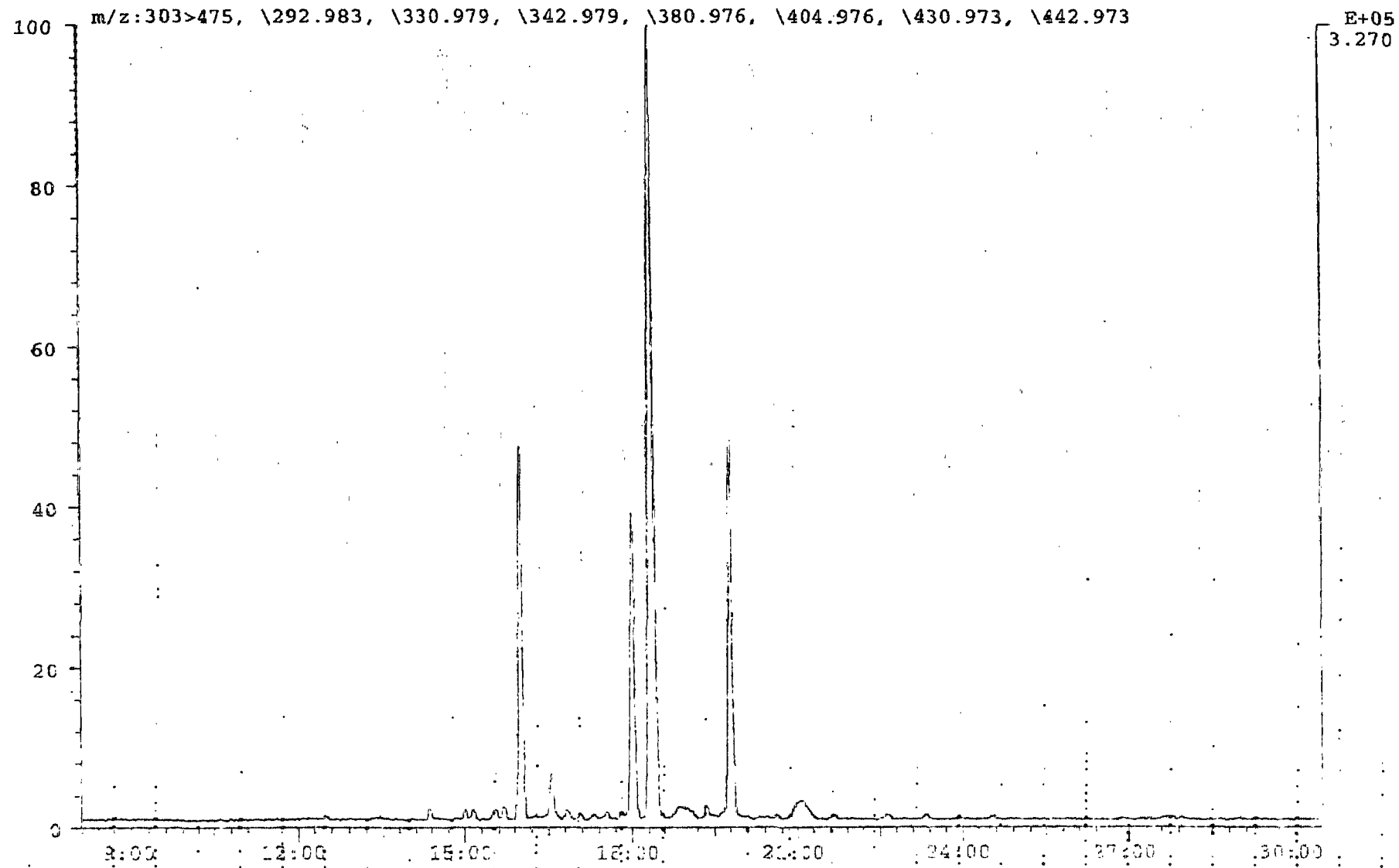
| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WF1AD | **Prep Batch** | 3273193 | **Lot No** | H3I100253-001 |
| **Data File** | /20031006s3/ffx1wf.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71214 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/07/03 01:19 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M3C | **Extract Vol** | 20 uL | **Method** | DX8290_Conf |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | INc |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 148 | 57 | 59 | 0.97 * | / | |
| | Unidentified | 18:17 | 00:00 | 0 | 2201 | 2680 | 442 | 625 | 0.82 | ABB/ABB | |
| | Unidentified | 18:32 | 00:00 | 0 | 2602 | 2872 | 495 | 472 | 0.91 * | ABB/ABB | RT |
| | Unidentified | 19:04 | 00:00 | 0 | 1665 | 2605 | 361 | 462 | 0.64 * | ABB/ABB | R |
| | Unidentified | 19:26 | 00:00 | 0 | 2550 | 3514 | 472 | 700 | 0.73 | ABV/ABV | |
| | Unidentified | 19:36 | 00:00 | 0 | 1855 | 1789 | 351 | 395 | 1.04 * | AVV/AVV | RT |
| | 2,3,7,8-TCDF | 19:47 | 19:48 | -1 | 4845 | 6277 | 839 | 1046 | 0.77 | AVB/AVB | |
| | Unidentified | 20:05 | 00:00 | 0 | 1840 | 2858 | 286 | 407 | 0.64 * | ABB/ABB | R |
| | Unidentified | 20:24 | 00:00 | 0 | 2057 | 2402 | 529 | 646 | 0.86 | ABB/AVV | |
| | Unidentified | 20:37 | 00:00 | 0 | 3848 | 5250 | 617 | 823 | 0.73 | ABB/AVB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 203 | 183 | 81 | 73 | 1.11 * | / | |
| | 13C-2,3,7,8-TCDF | 19:47 | 19:47 | 0 | 377288 | 452374 | 68224 | 84262 | 0.83 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 215 | 220 | 86 | 88 | 0.98 * | / | |
| | Unidentified | 18:54 | 00:00 | 0 | 30595 | 43486 | 1941 | 2819 | 0.70 | AVV/AVB | |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | | 67 | | | | |
| | Unidentified | 18:24 | 00:00 | 0 | 489232 | | 99127 | | | ABB | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 200 | 72 | 80 | 0.90 * | / | |
| | 13C-2,3,7,8-TCDD | 18:00 | 17:59 | 1 | 272895 | 347667 | 53136 | 66726 | 0.78 | ABV/ABV | |
| | 13C-1,2,3,4-TCDD | 18:20 | 18:21 | -1 | 728625 | 917243 | 139525 | 171706 | 0.79 | AVV/AVV | |

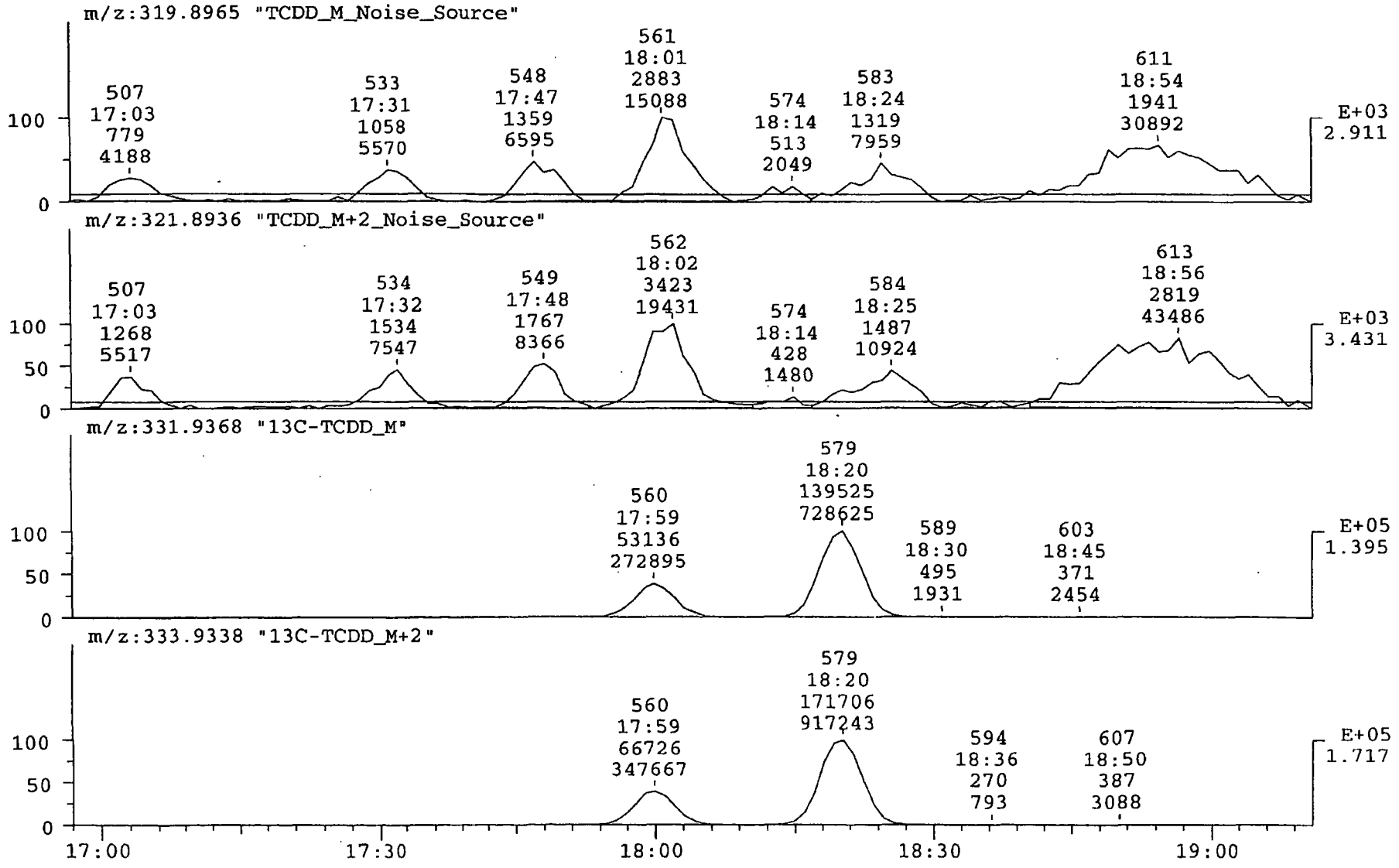
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: ffx1wf 07-Oct-03 Elapse: 19:38.3 652
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 6 > 1260 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

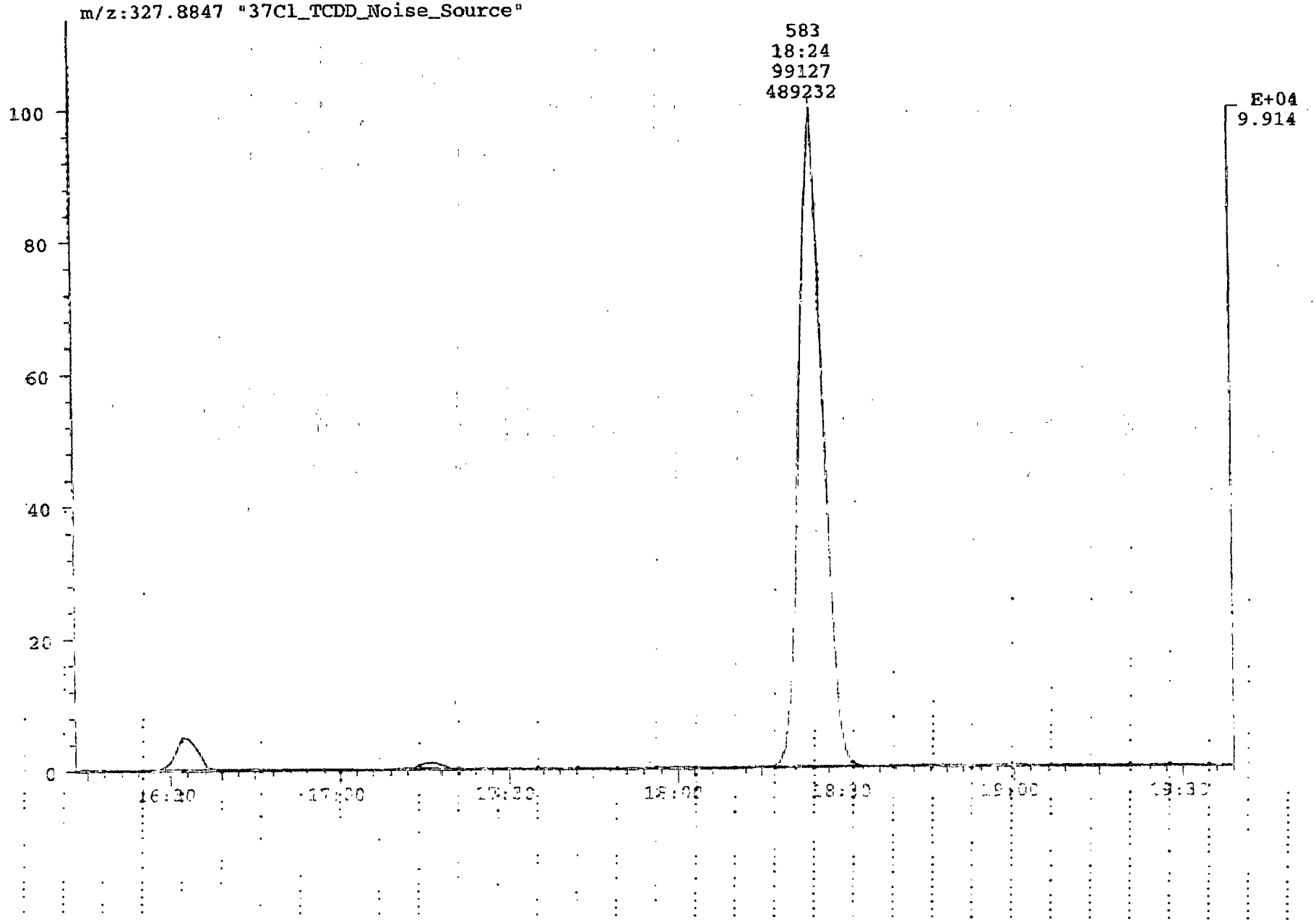
INK BRW 10-7-03
Calc BRW 10-7-03
QC WMK 10.7.03
Rev DCS 10.7.03



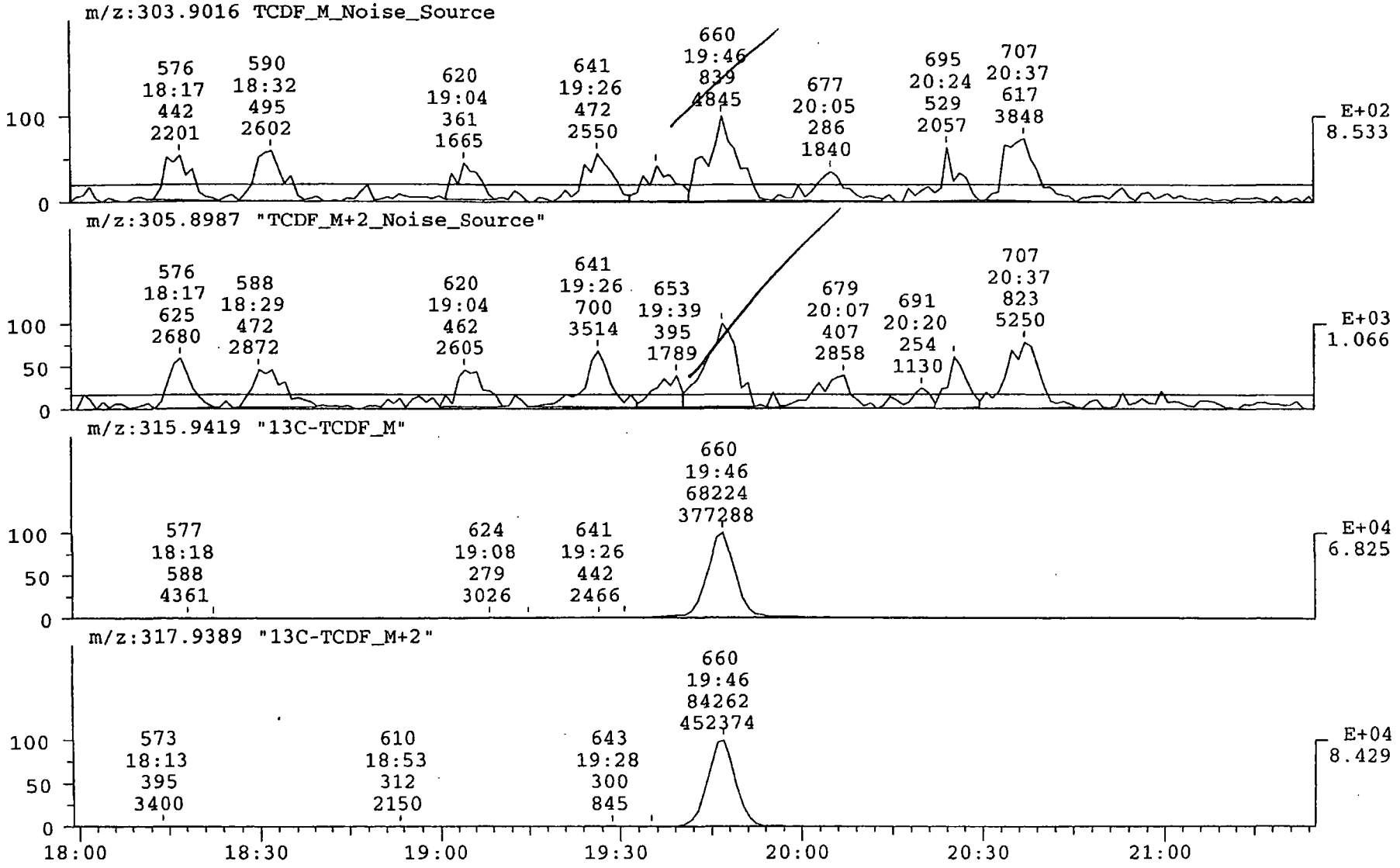
CHRO: ffx1wf 07-Oct-03 Elapse: 17:53.5 554
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 501 > 626 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



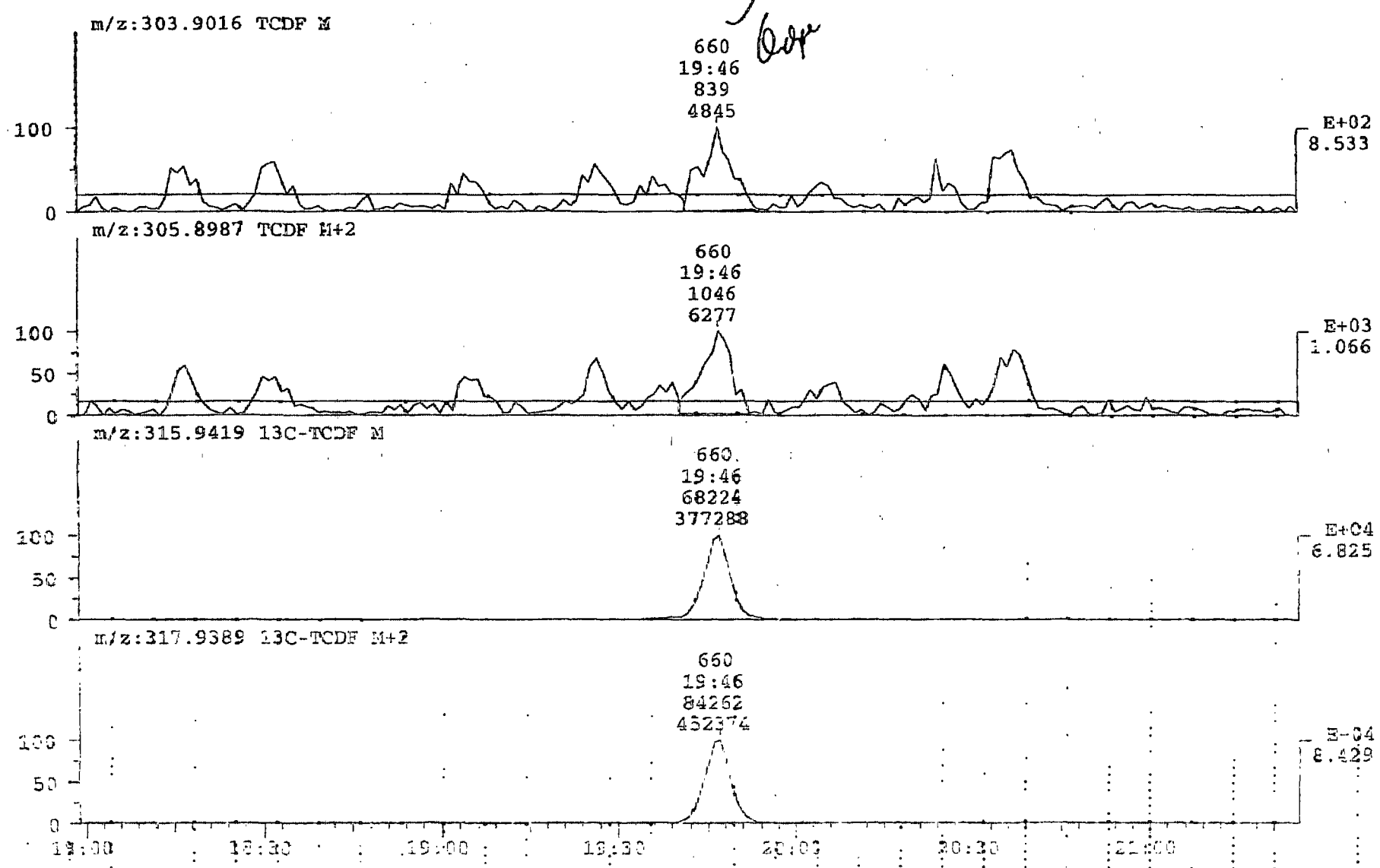
CHRO: ffx1wf 07-Oct-03 Elapse: 17:53.5 554
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 460 > 653 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



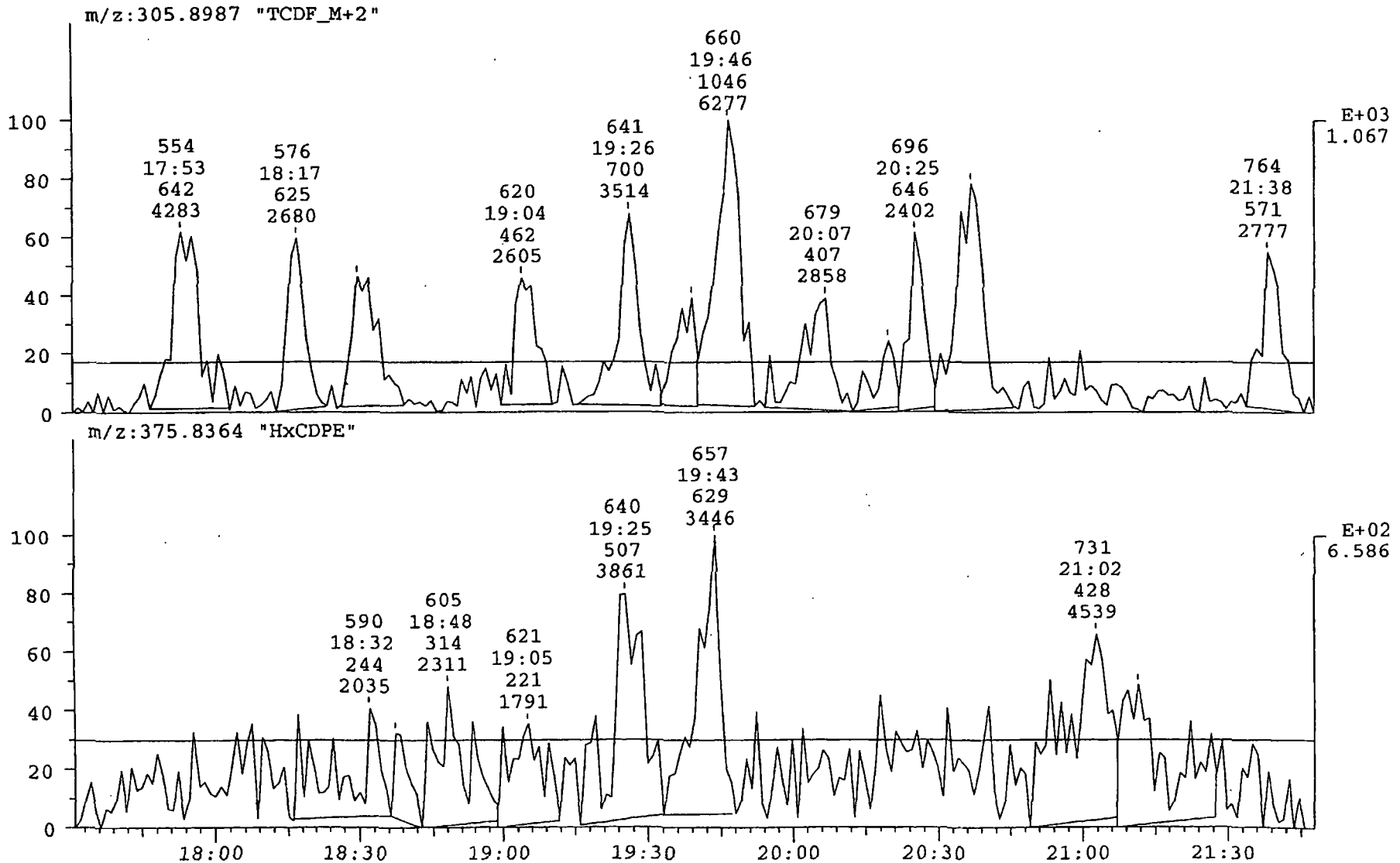
CHRO: ffx1wf 07-Oct-03 Elapse: 19:39.4 653
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 559 > 752 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



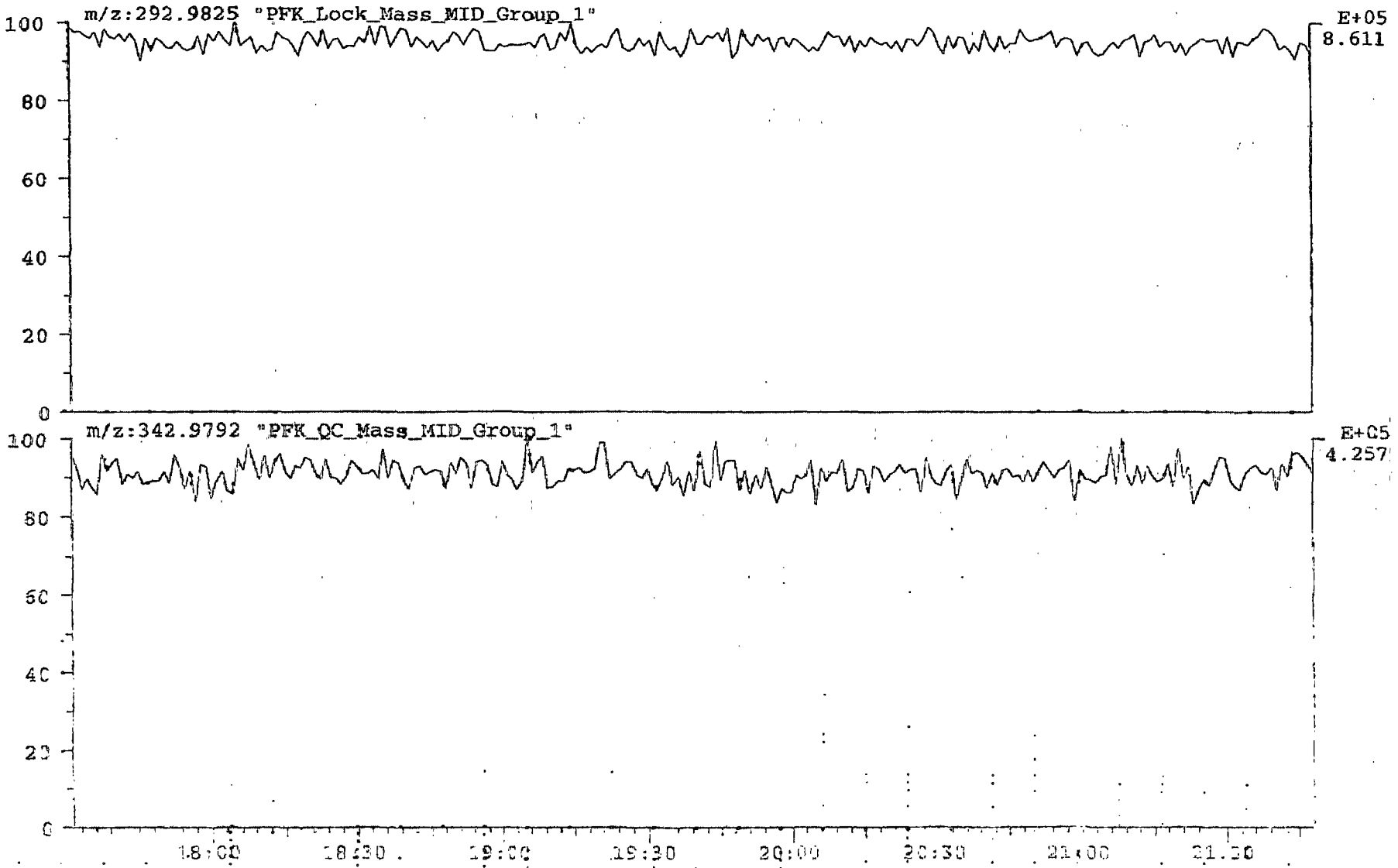
CHRO: ffx1wf 07-Oct-03 Elapse: 19:36.2 650
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 660 > 670 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: ffx1wf 07-Oct-03 Elapse: 19:39.4 653
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18
Peak: 100.00 ppm Label wndw: 533 > 773 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  ffx1wf                                07-Oct-03   Elapse:  19:39.4      653
Samp:  Vial 18 WO=fx1wf1ad Meth=INc Dil=1                Start :  01:19:39    1261
Comm:  Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                        Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-001               Inlet :  GC     Vial 18
Peak:  100.00  ppm     Label wndw:   533 > 773           Masses:  293 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: ffx1wf
Study: 3273193 (10.0g)
Sample: WO=fx1wf1ad Meth=INc Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: H3I100253-001
Comments: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 18
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
Single File
  ICL procedure: sleep 6
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start         Measure       End        Cycletime
  # 1    8:00 min    22:30 min    30:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
   Pullup delay time       (D):     4 sec
```

| | | |
|---|---|---|
| Sample pullup count | (P): | 2 times |
| Sample pullup speed | (E): | 1.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Injection speed | (S): | 1.0 ul/sec |
| Pre Inj. wait time | (W): | 10 sec |
| Post Inj. hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 0 times |
| Loop clean w slvnt A | (LC): | 0 times |
| Loop clean w slvnt B | (LB): | 0 times |
| Standard sample volume | (X): | 0.0 ul |
| Standard air volume | (Y): | 0.0 ul |
| 2nd Injection volume | (I): | 0.0 ul |
| Air volume of 2nd inj | (J): | 0.0 ul |
| Time btwn 2 injections | (T): | 0 sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 30.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -19.0000 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3301.5000 |
| ELEN | 62.2250 | EMULT | 2.0500 | ENS | 200.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 145.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 125.0000 | FVINLET | 419.0000 | FVSRC | 422.0000 |
| FWIN | 0.7000 | GCTC | 140.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 1052.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4747.2480 |
| IST | 271.3713 | ISTC | 209.0276 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -173.2000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1260.0000 | NSMAX | 8.0000 |
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |

| | | | | | |
|---|---|---|---|---|---|
| PUSHER | -8.3000 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10422.1566 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.4950 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -67.4000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 07-Oct-03 01:19:39.6

Autosampler has injected sample from vial 18
MID Time Window 1: Resolution is 9155
Analysis stopped at: 07-Oct-03 01:50:12.1 (run time 30.52 minutes)
Analysis stopped because MID run finished

QUAN: ffx1wf.q0 Entries: 33

Data file(s) used
File: ffx1wf 07-Oct-03
Samp: Vial 18 WO=fx1wf1ad Meth=INc Dil=1 Start : 01:19:39 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-001 Inlet : GC Vial 18

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 18:54 | 30595. | 1941. | 18:38 | 19:08 | 86. | 1 | 1.0 |
| 321.8775 | 18:56 | 43486. | 2819. | 18:40 | 19:10 | 88. | 1 | 1.0 |
| 331.9202 | 18:00 | 272895. | 53136. | 17:47 | 18:09 | 72. | 2 | 3.0 |
| 331.9202 | 18:20 | 728625. | 139525. | 18:09 | 18:29 | 72. | 2 | 3.0 |
| 333.9171 | 18:00 | 347667. | 66726. | 17:51 | 18:11 | 80. | 2 | 3.0 |
| 333.9171 | 18:20 | 917243. | 171706. | 18:11 | 18:33 | 80. | 2 | 3.0 |
| 327.8683 | 18:24 | 489056. | 99127. | 18:13 | 18:37 | 67. | 1 | 1.0 |
| 327.8683 | 18:24 | 489232. | 99127. | 18:13 | 18:40 | 67. | 2 | 3.0 |
| 303.8864 | 19:47 | 4845. | 839. | 19:41 | 19:54 | 57. | 1 | 1.0 |
| 305.8834 | 19:47 | 6277. | 1046. | 19:40 | 19:52 | 59. | 1 | 1.0 |
| 303.8864 | 19:36 | 1855. | 351. | 19:32 | 19:41 | 57. | 2 | 3.0 |
| 305.8834 | 19:39 | 1789. | 395. | 19:33 | 19:40 | 59. | 2 | 3.0 |
| 315.9261 | 19:47 | 377288. | 68224. | 19:32 | 20:03 | 81. | 2 | 3.0 |
| 317.9230 | 19:47 | 452374. | 84262. | 19:38 | 20:03 | 73. | 2 | 3.0 |
| 303.8864 | 18:17 | 2201. | 442. | 18:11 | 18:23 | 57. | 2 | 3.0 |
| 303.8864 | 18:32 | 2602. | 495. | 18:26 | 18:37 | 57. | 2 | 3.0 |
| 303.8864 | 19:04 | 1665. | 361. | 19:00 | 19:09 | 57. | 2 | 3.0 |
| 303.8864 | 19:26 | 2550. | 472. | 19:19 | 19:32 | 57. | 2 | 3.0 |
| 303.8864 | 19:36 | 1855. | 351. | 19:32 | 19:41 | 57. | 2 | 3.0 |
| 303.8864 | 19:47 | 4845. | 839. | 19:41 | 19:54 | 57. | 2 | 3.0 |
| 303.8864 | 20:05 | 1840. | 286. | 19:55 | 20:13 | 57. | 2 | 3.0 |
| 303.8864 | 20:24 | 2057. | 529. | 20:16 | 20:29 | 57. | 2 | 3.0 |
| 303.8864 | 20:37 | 3848. | 617. | 20:30 | 20:45 | 57. | 2 | 3.0 |
| 305.8834 | 18:17 | 2680. | 625. | 18:12 | 18:23 | 59. | 2 | 3.0 |
| 305.8834 | 18:29 | 2872. | 472. | 18:26 | 18:39 | 59. | 2 | 3.0 |
| 305.8834 | 19:04 | 2605. | 462. | 18:59 | 19:10 | 59. | 2 | 3.0 |
| 305.8834 | 19:26 | 3514. | 700. | 19:15 | 19:33 | 59. | 2 | 3.0 |
| 305.8834 | 19:39 | 1789. | 395. | 19:33 | 19:40 | 59. | 2 | 3.0 |
| 305.8834 | 19:47 | 6277. | 1046. | 19:40 | 19:52 | 59. | 2 | 3.0 |
| 305.8834 | 20:07 | 2858. | 407. | 19:54 | 20:12 | 59. | 2 | 3.0 |
| 305.8834 | 20:20 | 1130. | 254. | 20:12 | 20:22 | 59. | 2 | 3.0 |
| 305.8834 | 20:25 | 2402. | 646. | 20:22 | 20:29 | 59. | 2 | 3.0 |
| 305.8834 | 20:37 | 5250. | 823. | 20:29 | 20:45 | 59. | 2 | 3.0 |

TECHLAW, INC.

Client Sample ID: 090903-2

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-002 Work Order #...: FX1WH1AF Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.8 Q | 0.25 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 78 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WH1AF | Prep Batch | 3273193 | Lot No | H3T100203-002 |
| Data File | /20031006s3/ffx1wh.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71215 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/7/2003 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Analysis Time | 01:58 | Initial Wt/Vol | 10.0 | Lims Test Code | XXA1[illegible] |
| Anal Exp Date | 11/14/03 | Extract Vol | 20 | Method | DX8290_Conf |
| Instrument | M3C | Dil Factor | 1.0 | Code | INC |
| Analyst | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | | | | 1.062 | | | | ND | | 0.411 |
| 2,3,7,8-TCDF | 19:44 | 20132 | 3175 | 0.939 ✓ | | 27.531931 | | 2.753193 | Q | 0.2[illegible] |
| 37Cl4-2,3,7,8-TCDD | | | | 1.126 | | | | ND | | 0.1[illegible] |
| 13C-2,3,7,8-TCDD | 17:58 | 594338 | 112887 | 1.097 | 1000 | 794.410207 | 79.44 | 79.441021 | | 0.225 |
| 13C-2,3,7,8-TCDF | 19:45 | 779044 | 146133 | 1.461 | 1000 | 781.877536 | 78.19 | 78.187754 | | 0.1[illegible] |
| 13C-1,2,3,4-TCDD | 18:19 | 1363862 | 257530 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.2[illegible] |

BKW 10-7-03

VMK 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WH1AF | **Prep Batch** | 3273193 | **Lot No** | H3I100253-002 |
| **Data File** | /20031006s3/ffx1wh.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71215 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/07/03 01:58 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M3C | **Extract Vol** | 20 uL | **Method** | DX8290_Conf |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | INc |

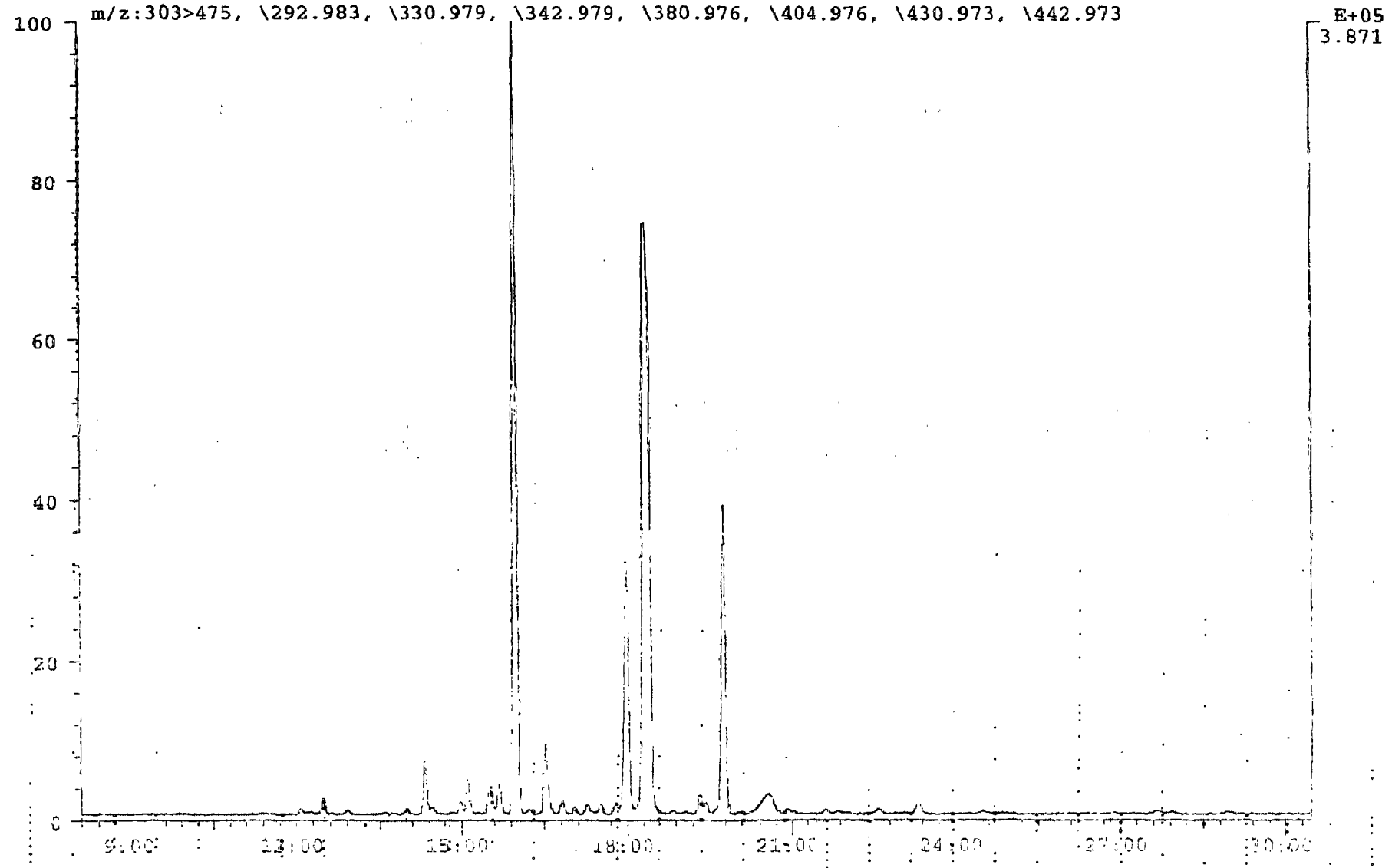
**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 165 | 71 | 66 | 1.08 * | / | |
| | Unidentified | 18:17 | 00:00 | 0 | 3679 | 4366 | 750 | 865 | 0.84 | ABB/ABB | |
| | Unidentified | 18:31 | 00:00 | 0 | 3210 | 4926 | 656 | 1009 | 0.65 | ABB/ABB | |
| | Unidentified | 19:03 | 00:00 | 0 | 2625 | 3952 | 477 | 679 | 0.66 | ABB/ABB | |
| | Unidentified | 19:25 | 00:00 | 0 | 8591 | 12032 | 1764 | 2190 | 0.71 | ABV/ABV | |
| | Unidentified | 19:37 | 00:00 | 0 | 1859 | 1555 | 307 | 503 | 1.20 * | AVV/AVV | RT |
| | 2,3,7,8-TCDF | 19:44 | 19:46 | -2 | 8758 | 14154 ✓ | 1381 | 1786 | 0.62 * | AVB/AVV | R |
| | Unidentified | 20:04 | 00:00 | 0 | 2511 | 3527 | 436 | 554 | 0.71 | ABB/AVB | |
| | Unidentified | 20:24 | 00:00 | 0 | 3704 | 2442 | 393 | 592 | 1.52 * | ABV/ABV | R |
| | Unidentified | 20:36 | 00:00 | 0 | 5665 | 6889 | 1023 | 1175 | 0.82 | AVB/AVB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 138 | 68 | 55 | 1.24 * | / | |
| | 13C-2,3,7,8-TCDF | 19:45 | 19:45 | 0 | 343466 | 435578 ✓ | 64542 | 81591 | 0.79 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 228 | 265 | 91 | 106 | 0.86 | / | |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 175 | | 70 | | | | |
| | Unidentified | 18:23 | 00:00 | 0 | 1183633 | | 220942 | | | AVV | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 153 | 66 | 61 | 1.08 * | / | |
| | 13C-2,3,7,8-TCDD | 17:58 | 17:58 | 0 | 260579 | 333759 | 49227 | 63660 | 0.78 | ABV/AVV | |
| | 13C-1,2,3,4-TCDD | 18:19 | 18:19 | 0 | 603799 | 760063 ✓ | 116069 | 141461 | 0.79 | AVV/AVV | |

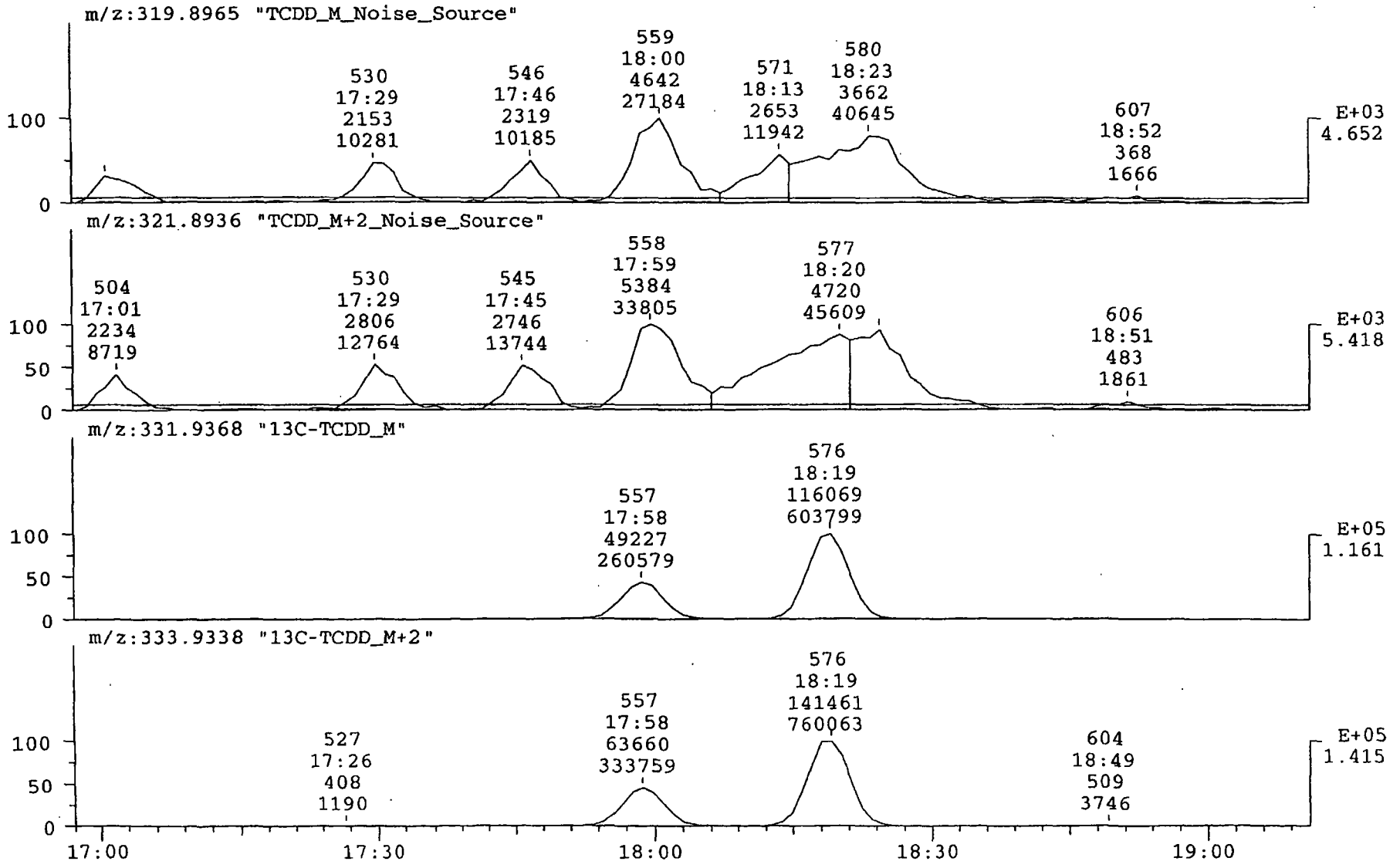
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less then 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: ffx1wh 07-Oct-03 Elapse: 19:41.8 653
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 6 > 1257 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

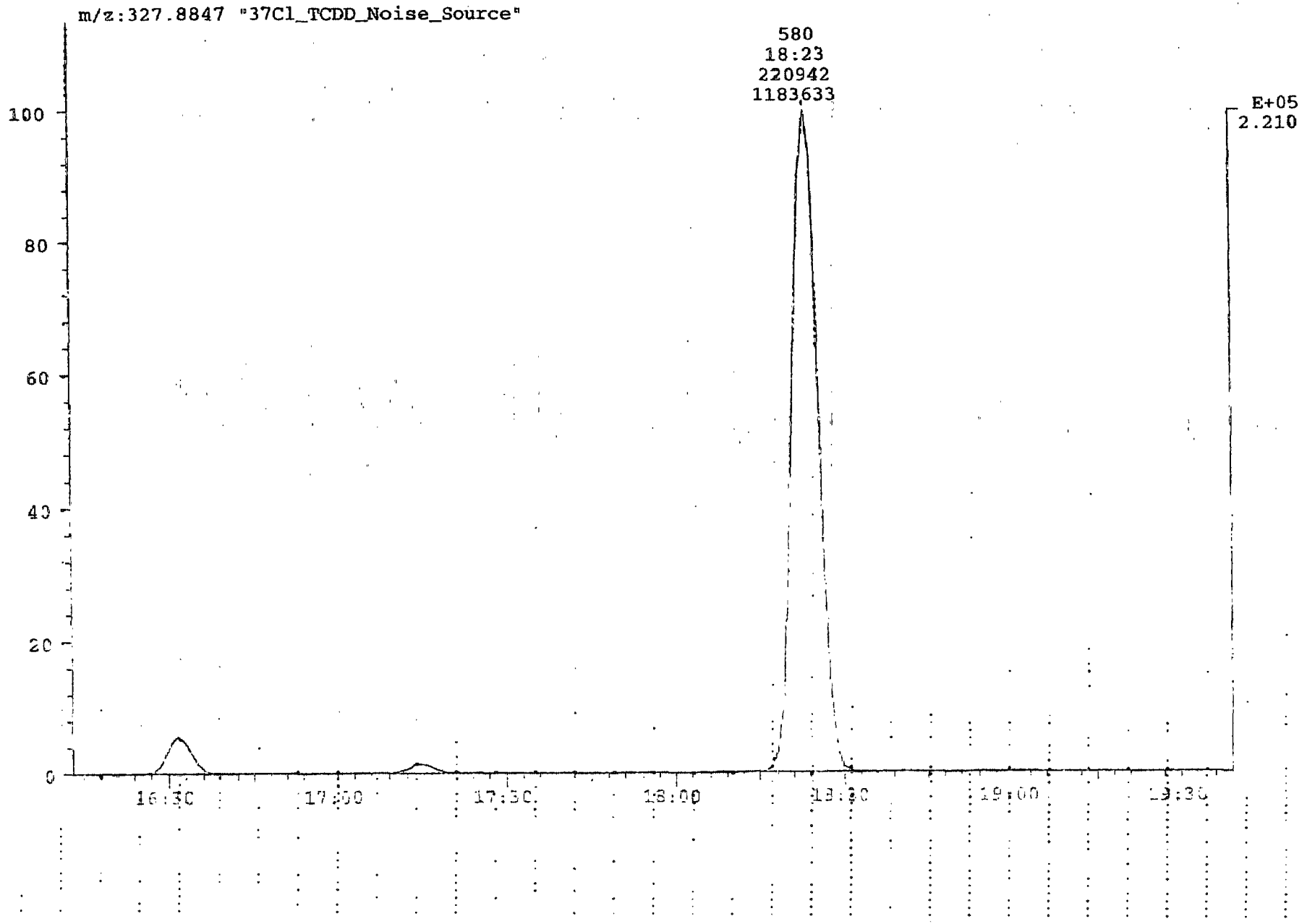
Init KLW 10-7-03
Calc KLW 10-7-03
QC VMIC 10/7/03
PRV DG 10/7/03



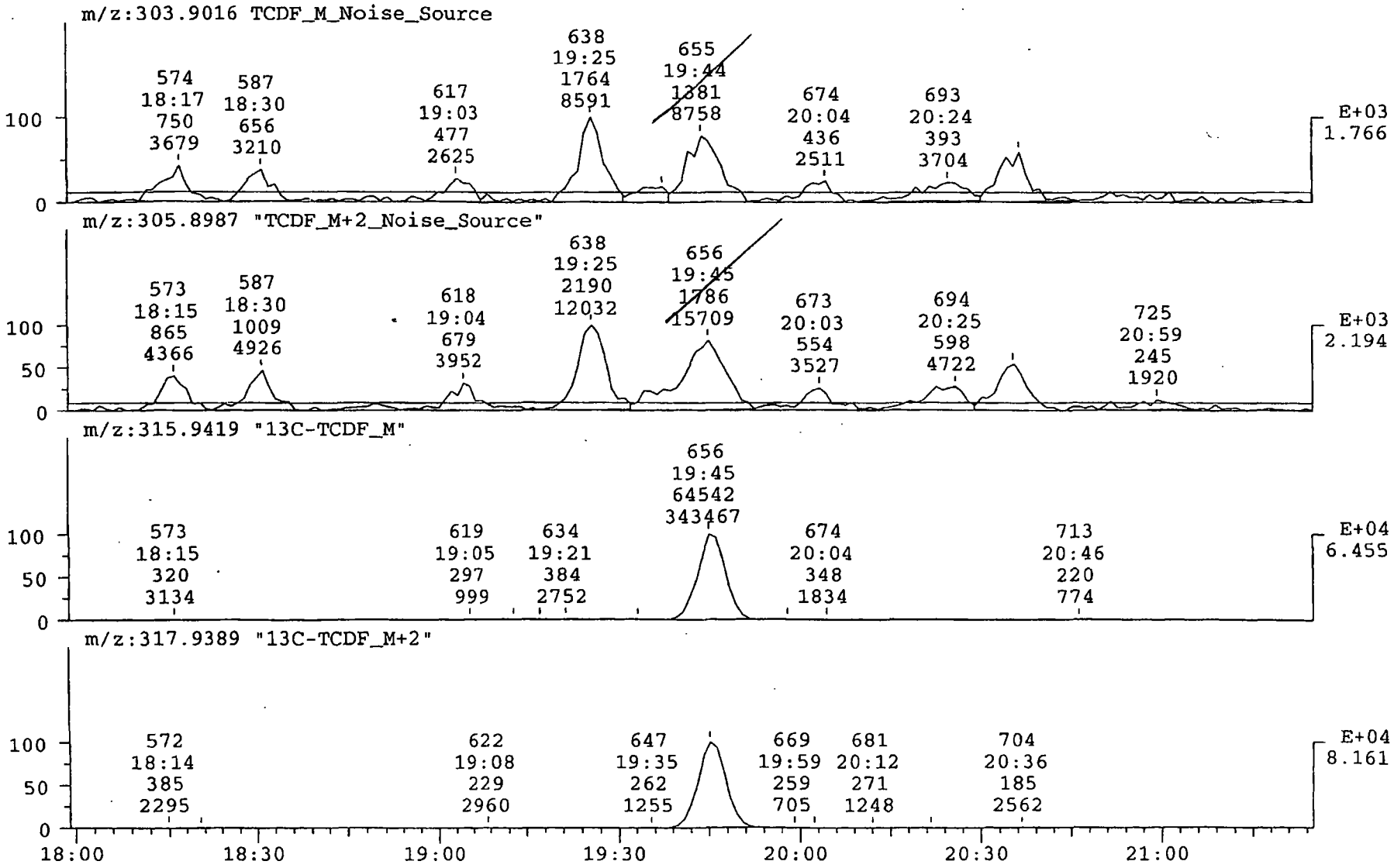
CHRO: ffx1wh 07-Oct-03 Elapse: 17:53.3 552
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 500 > 624 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



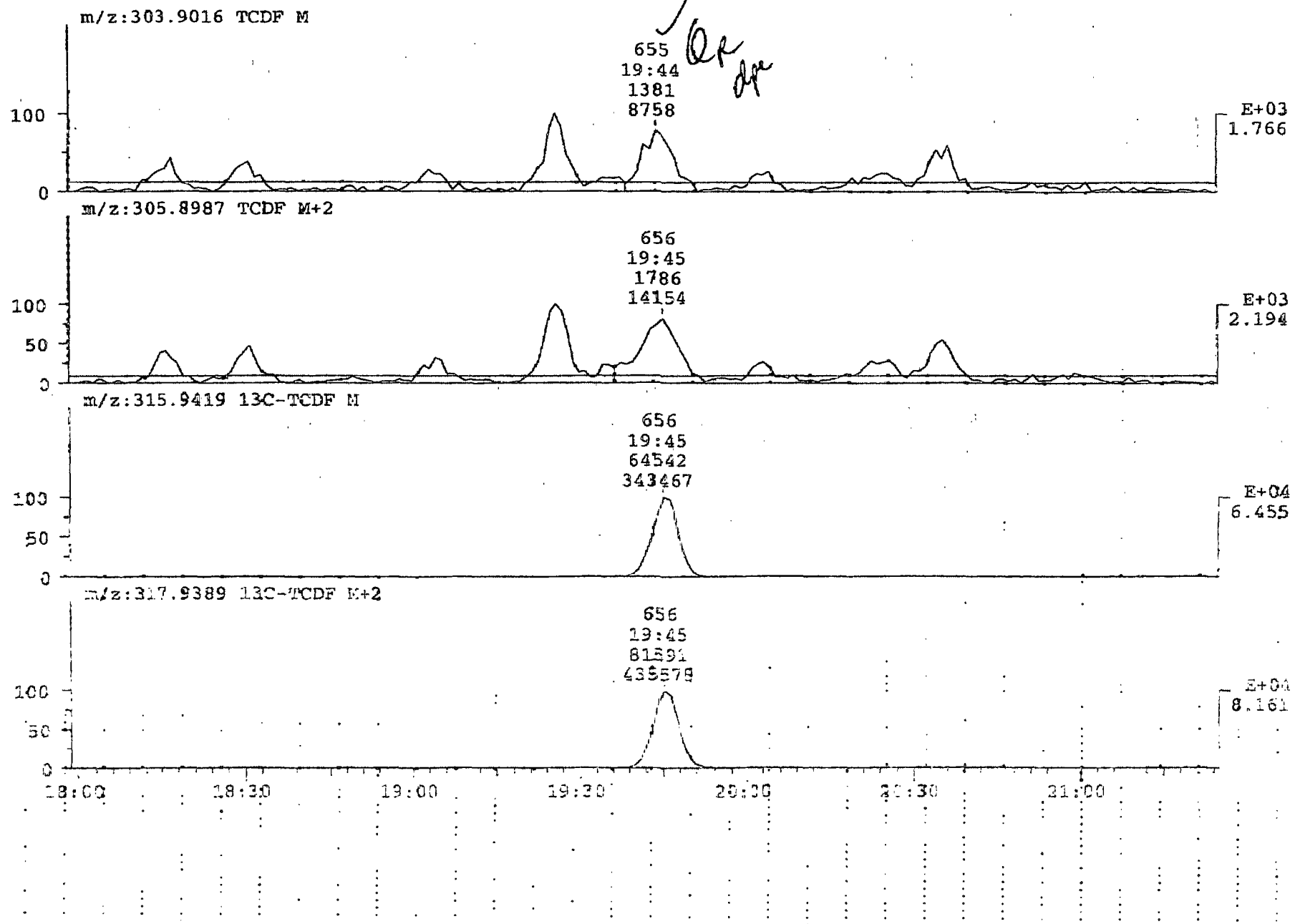
CHRO: ffx1wh 07-Oct-03 Elapse: 17:53.3 552
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 459 > 650 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



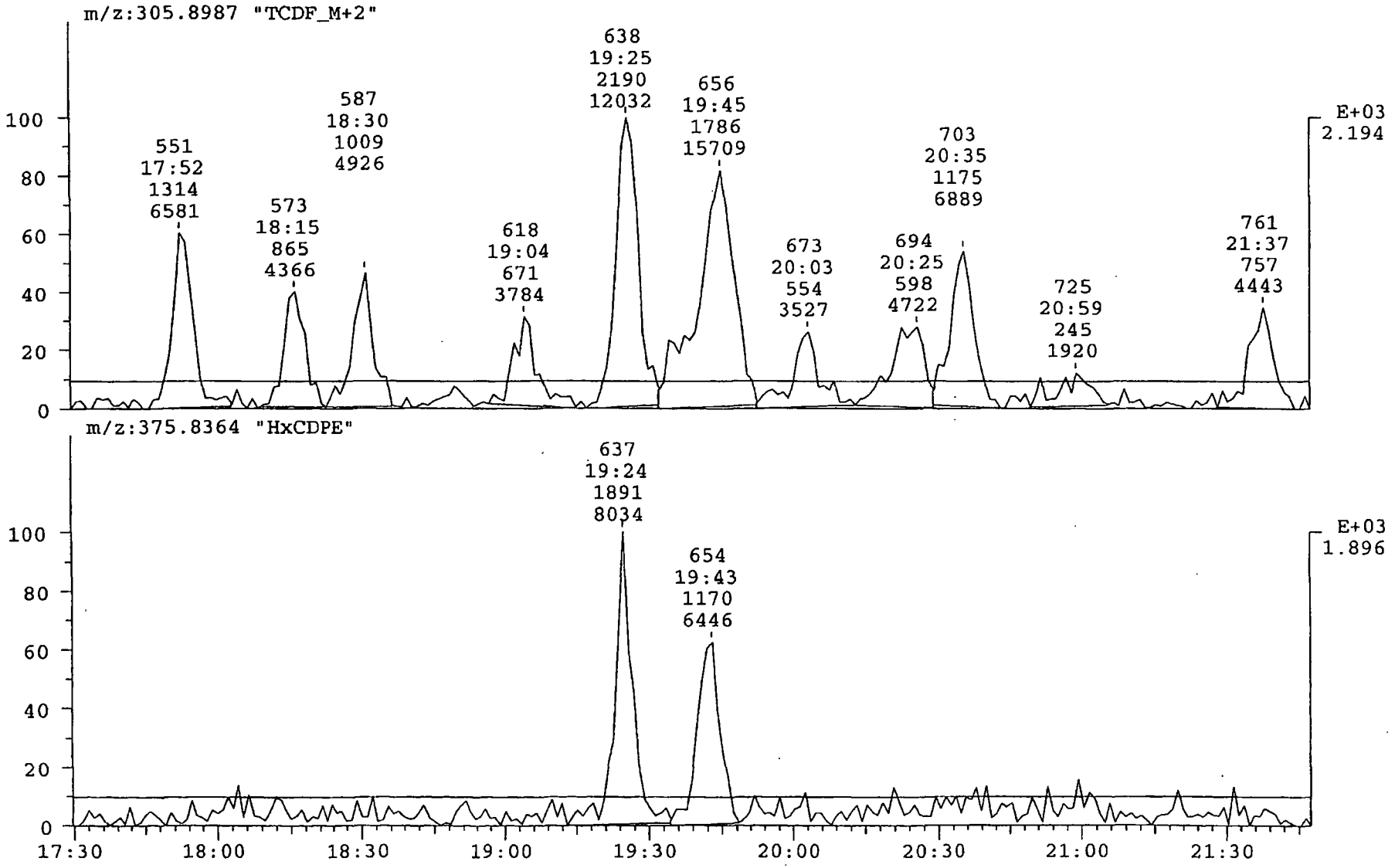
CHRO: ffx1wh 07-Oct-03 Elapse: 19:38.7 650
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 557 > 749 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



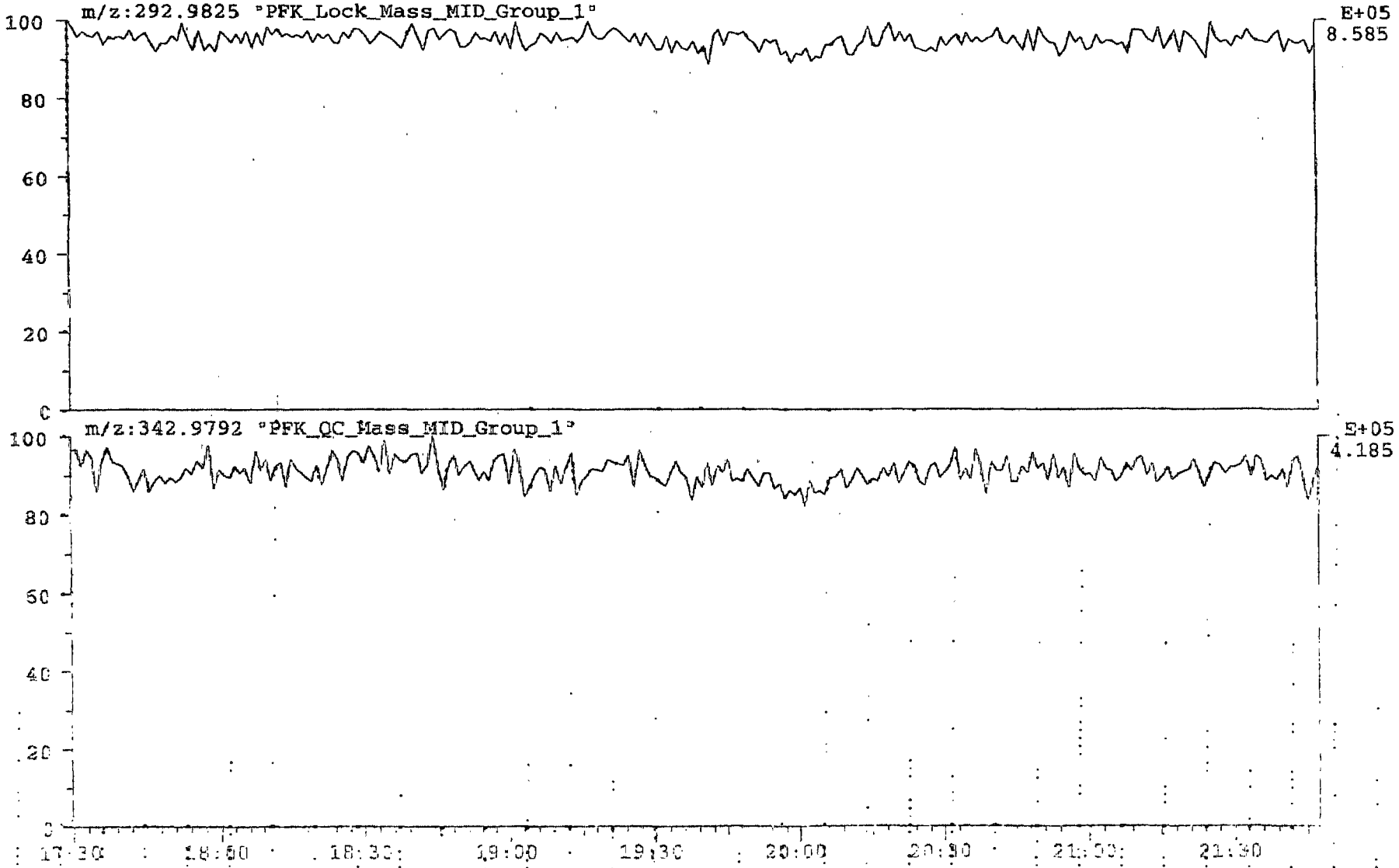
CHRO: ffx1wh 07-Oct-03 Elapse: 19:38.7 650
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 650 > 660 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 2 Label : -2, 3.0
Disp: Height Area



CHRO: ffx1wh 07-Oct-03 Elapse: 19:38.7 650
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19
Peak: 100.00 ppm Label wndw: 530 > 770 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  ffx1wh                                  07-Oct-03   Elapse:  19:38.7      650
Samp:  Vial 19 WO=fx1wh1af Meth=INc Dil=1                  Start :  01:58:55    1259
Comm:  Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-002              Inlet :  GC      Vial 19
Peak:  100.00  ppm      Label wndw:   530 > 770           Masses:  293 > 376
Area:  5, 0.50, 15      Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: ffx1wh
Study: 3273193 (10.0g)
Sample: WO=fx1wh1af Meth=INc Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: H3I100253-002
Comments: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 19
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 1 of list 031006c
  ICL procedure: sleep 6
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start        Measure      End       Cycletime
  # 1    8:00 min   22:30 min   30:30 min    1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
   Pullup delay time       (D):     4 sec
```

| | | | |
|---|---|---|---|
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 30.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -19.0000 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3301.5000 |
| ELEN | 62.2250 | EMULT | 2.0500 | ENS | 200.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 145.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 135.0000 | FVINLET | 421.0000 | FVSRC | 285.0000 |
| FWIN | 0.7000 | GCTC | 140.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 1050.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4747.2480 |
| IST | 266.6654 | ISTC | 218.8687 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -173.2000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1263.0000 | NSMAX | 8.0000 |
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |

| | | | | | |
|---|---|---|---|---|---|
| PUSHER | -8.3000 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10422.1566 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.4950 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -67.4000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 07-Oct-03 01:58:55.9

Autosampler has injected sample from vial 19
MID Time Window 1: Resolution is 9155
Analysis stopped at: 07-Oct-03 02:29:29.7 (run time 30.55 minutes)
Analysis stopped because MID run finished

QUAN: ffx1wh.q0 Entries: 33

Data file(s) used
File: ffx1wh 07-Oct-03
Samp: Vial 19 WO=fx1wh1af Meth=INc Dil=1 Start : 01:58:55 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-002 Inlet : GC Vial 19

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 18:23 | 40645. | 3662. | 18:14 | 18:38 | 91. | 1 | 1.0 |
| 321.8775 | 18:20 | 45609. | 4720. | 18:06 | 18:21 | 106. | 1 | 1.0 |
| 331.9202 | 17:58 | 260579. | 49227. | 17:46 | 18:09 | 66. | 2 | 3.0 |
| 331.9202 | 18:19 | 603799. | 116069. | 18:09 | 18:35 | 66. | 2 | 3.0 |
| 333.9171 | 17:58 | 333759. | 63660. | 17:42 | 18:10 | 61. | 2 | 3.0 |
| 333.9171 | 18:19 | 760063. | 141461. | 18:10 | 18:35 | 61. | 2 | 3.0 |
| 327.8683 | 18:23 | 1183633. | 220942. | 18:07 | 18:35 | 70. | 1 | 1.0 |
| 327.8683 | 18:23 | 1183633. | 220942. | 18:07 | 18:35 | 70. | 2 | 3.0 |
| 303.8864 | 19:44 | 10617. | 1381. | 19:31 | 19:51 | 71. | 1 | 1.0 |
| 305.8834 | 19:45 | 15709. | 1786. | 19:32 | 19:52 | 66. | 1 | 1.0 |
| 303.8864 | 19:37 | 1859. | 307. | 19:31 | 19:38 | 71. | 2 | 3.0 |
| 315.9261 | 19:45 | 343466. | 64542. | 19:34 | 19:55 | 68. | 2 | 3.0 |
| 317.9230 | 19:45 | 435578. | 81591. | 19:37 | 19:57 | 55. | 2 | 3.0 |
| 303.8864 | 18:17 | 3679. | 750. | 18:10 | 18:24 | 71. | 2 | 3.0 |
| 303.8864 | 18:31 | 3210. | 656. | 18:24 | 18:35 | 71. | 2 | 3.0 |
| 303.8864 | 19:03 | 2625. | 477. | 18:57 | 19:10 | 71. | 2 | 3.0 |
| 303.8864 | 19:25 | 8591. | 1764. | 19:19 | 19:31 | 71. | 2 | 3.0 |
| 303.8864 | 19:37 | 1859. | 307. | 19:31 | 19:38 | 71. | 2 | 3.0 |
| 303.8864 | 19:44 | 8758. | 1381. | 19:38 | 19:51 | 71. | 2 | 3.0 |
| 303.8864 | 20:04 | 2511. | 436. | 19:51 | 20:07 | 71. | 2 | 3.0 |
| 303.8864 | 20:24 | 3704. | 393. | 20:09 | 20:30 | 71. | 2 | 3.0 |
| 303.8864 | 20:36 | 5665. | 1023. | 20:30 | 20:46 | 71. | 2 | 3.0 |
| 305.8834 | 18:16 | 4366. | 865. | 18:09 | 18:22 | 66. | 2 | 3.0 |
| 305.8834 | 18:31 | 4926. | 1009. | 18:22 | 18:36 | 66. | 2 | 3.0 |
| 305.8834 | 19:04 | 3952. | 679. | 18:54 | 19:15 | 66. | 2 | 3.0 |
| 305.8834 | 19:25 | 12032. | 2190. | 19:17 | 19:32 | 66. | 2 | 3.0 |
| 305.8834 | 19:34 | 1555. | 503. | 19:32 | 19:36 | 66. | 2 | 3.0 |
| 305.8834 | 19:45 | 14154. | 1786. | 19:36 | 19:52 | 66. | 2 | 3.0 |
| 305.8834 | 20:03 | 3527. | 554. | 19:52 | 20:13 | 66. | 2 | 3.0 |
| 305.8834 | 20:22 | 2442. | 592. | 20:13 | 20:23 | 66. | 2 | 3.0 |
| 305.8834 | 20:26 | 2279. | 598. | 20:23 | 20:29 | 66. | 2 | 3.0 |
| 305.8834 | 20:35 | 6889. | 1175. | 20:29 | 20:43 | 66. | 2 | 3.0 |
| 305.8834 | 20:59 | 1920. | 245. | 20:49 | 21:05 | 66. | 2 | 3.0 |

TECHLAW, INC.

Client Sample ID: 090903-3

Trace Level Organic Compounds

Lot-Sample #...: H3I100253-003 Work Order #...: FX1WJ1AH Matrix.....: SOLID
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/07/03
Prep Batch #...: 3273193
Dilution Factor: 1
% Moisture.....:

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDF | 2.0 Q | 0.21 | pg/g | SW846 8290 |

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDF | 84 | (40 - 135) |

NOTE(S):

Q Estimated maximum possible concentration (EMPC).

STL - Knoxville

# IsoCalc Preliminary Sample Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WJ1AH | Prep Batch | 3273193 | Lot No | H3T100253-00[illegible] |
| Data File | /20031006s3/ffx1wj.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71216 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/7/2003 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Analysis Time | 02:32 | Initial Wt/Vol | 10.0 | Lims Test Code | XXA111N01 |
| Anal Exp Date | 11/14/03 | Extract Vol | 20 | Method | DX8290_[illegible] |
| Instrument | M3C | Dil Factor | 1.0 | Code | INC |
| Analyst | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | | | | 1.062 | | | | ND | [illegible] |
| 2,3,7,8-TCDF | 19:44 | 16592 | 2258 | 0.939 | | 20.347947 | | 2.034795 | 0.207 |
| 37Cl4-2,3,7,8-TCDD | | | | 1.126 | | | | ND | [illegible] |
| 13C-2,3,7,8-TCDD | 17:58 | 675705 | 130979 | 1.097 | 1000 | 865.125702 | 86.51 | 86.512570 | 0.229 |
| 13C-2,3,7,8-TCDF | 19:45 | 868739 | 164482 | 1.461 | 1000 | 835.173744 | 83.62 | 83.517374 | [illegible] |
| 13C-1,2,3,4-TCDD | 18:19 | 1423835 | 274704 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | 0.251 |

BFW 10-7-03

VMK 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 8290 - DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ1AH | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031006s3/ffx1wj.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71216 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/07/03 02:32 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M3C | **Extract Vol** | 20 uL | **Method** | DX8290_Conf |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | INc |

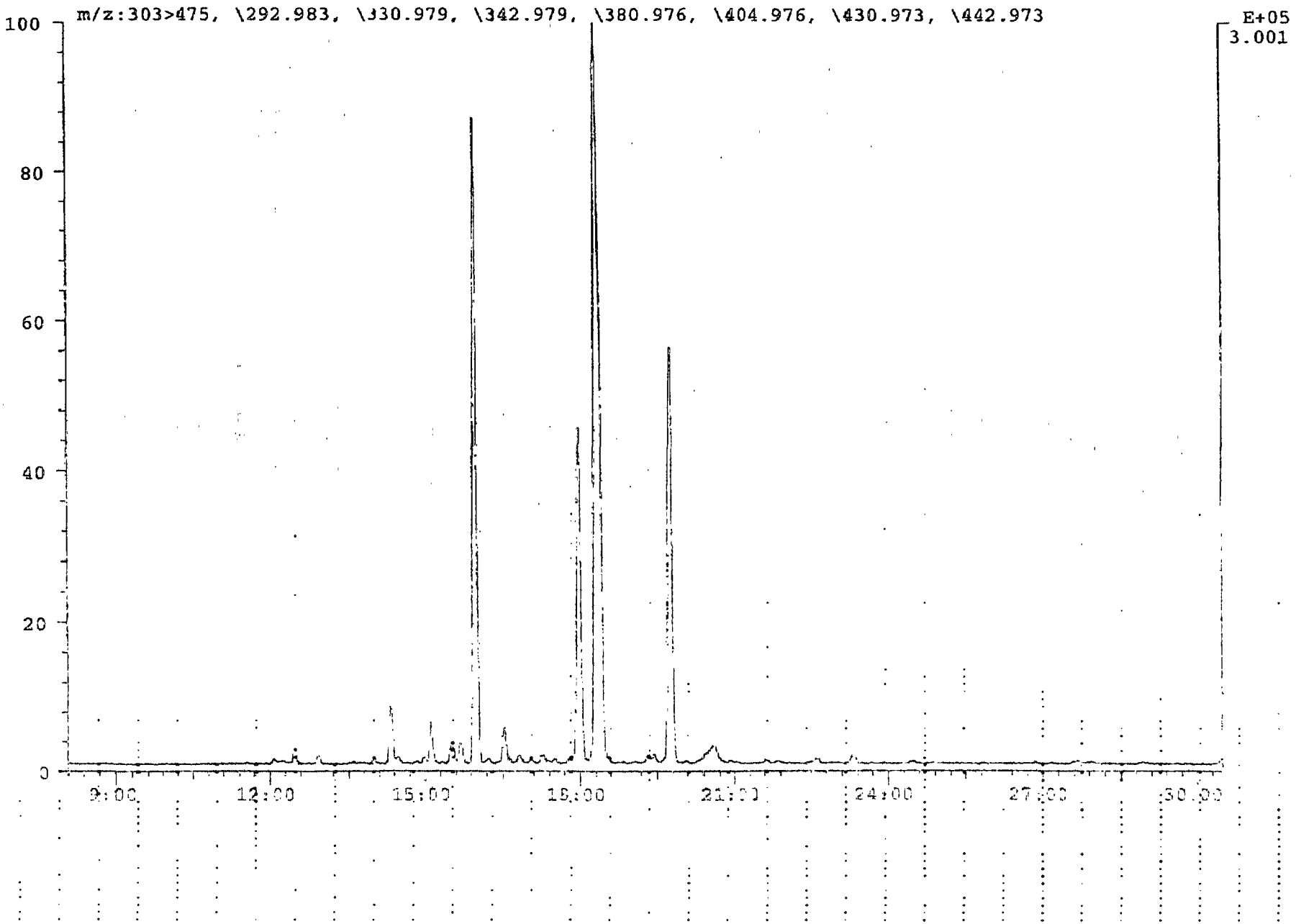
**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 163 | 63 | 65 | 0.97 * | / | |
| | Unidentified | 18:18 | 00:00 | 0 | 2195 | 3089 | 450 | 757 | 0.71 | ABB/ABB | T |
| | Unidentified | 18:28 | 00:00 | 0 | 2626 | 3726 | 355 | 600 | 0.70 | ABB/ABB | |
| | Unidentified | 19:03 | 00:00 | 0 | 2525 | 2569 | 563 | 431 | 0.98 * | ABB/ABB | R |
| | Unidentified | 19:25 | 00:00 | 0 | 6292 | 8079 | 1648 | 1431 | 0.78 | ABV/ABV | |
| | Unidentified | 19:36 | 00:00 | 0 | 1883 | 1748 | 372 | 553 | 1.08 * | AVV/AVV | R |
| | 2,3,7,8-TCDF | 19:44 | 19:46 | -2 | 7051 | 9541 | 903 | 1355 | 0.74 | AVB/AVB | |
| | Unidentified | 20:04 | 00:00 | 0 | 1635 | 1392 | 452 | 499 | 1.17 * | ABB/ABV | R |
| | Unidentified | 20:23 | 00:00 | 0 | 3030 | 3035 | 578 | 534 | 1.00 * | ABV/ABV | R |
| | Unidentified | 20:35 | 00:00 | 0 | 4200 | 4973 | 794 | 826 | 0.84 | AVB/AVB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 158 | 72 | 63 | 1.14 * | / | |
| | 13C-2,3,7,8-TCDF | 19:45 | 19:45 | 0 | 385148 | 483591 | 73340 | 91142 | 0.80 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 213 | 225 | 85 | 90 | 0.94 * | / | |
| | Unidentified | 18:22 | 00:00 | 0 | 32960 | 49991 | 2040 | 3454 | 0.66 | AVV/AVV | |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 175 | | 70 | | | | |
| | Unidentified | 18:23 | 00:00 | 0 | 743304 | | 145814 | | | ABV | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 190 | 155 | 76 | 62 | 1.23 * | / | |
| | 13C-2,3,7,8-TCDD | 17:58 | 17:58 | 0 | 300028 | 375677 | 57999 | 72980 | 0.80 | ABV/ABV | |
| | 13C-1,2,3,4-TCDD | 18:19 | 18:19 | 0 | 630536 | 793299 | 121687 | 153017 | 0.79 | AVV/AVV | |

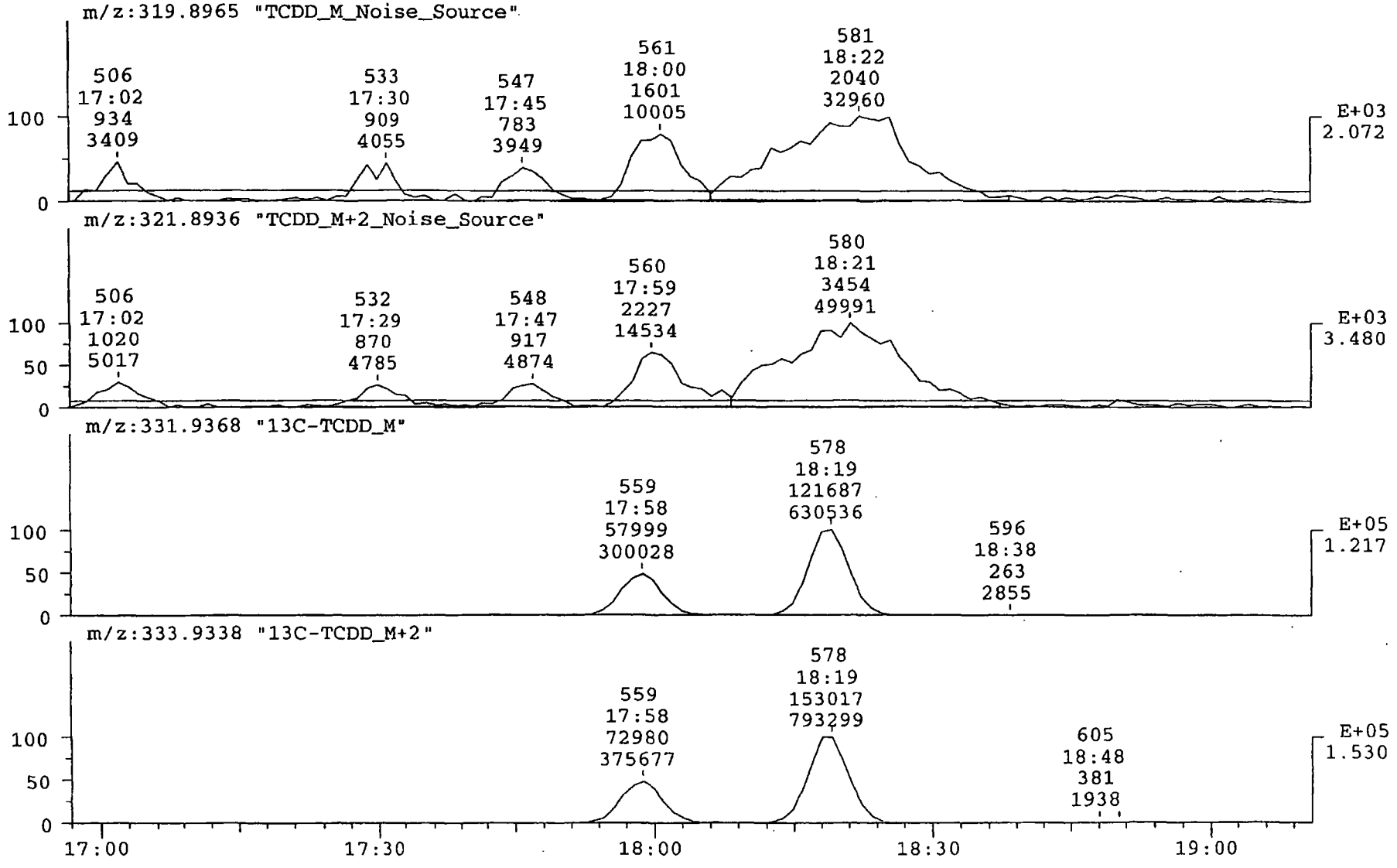
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: ffx1wj 07-Oct-03 Elapse: 19:36.4 650
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 6 > 1257 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

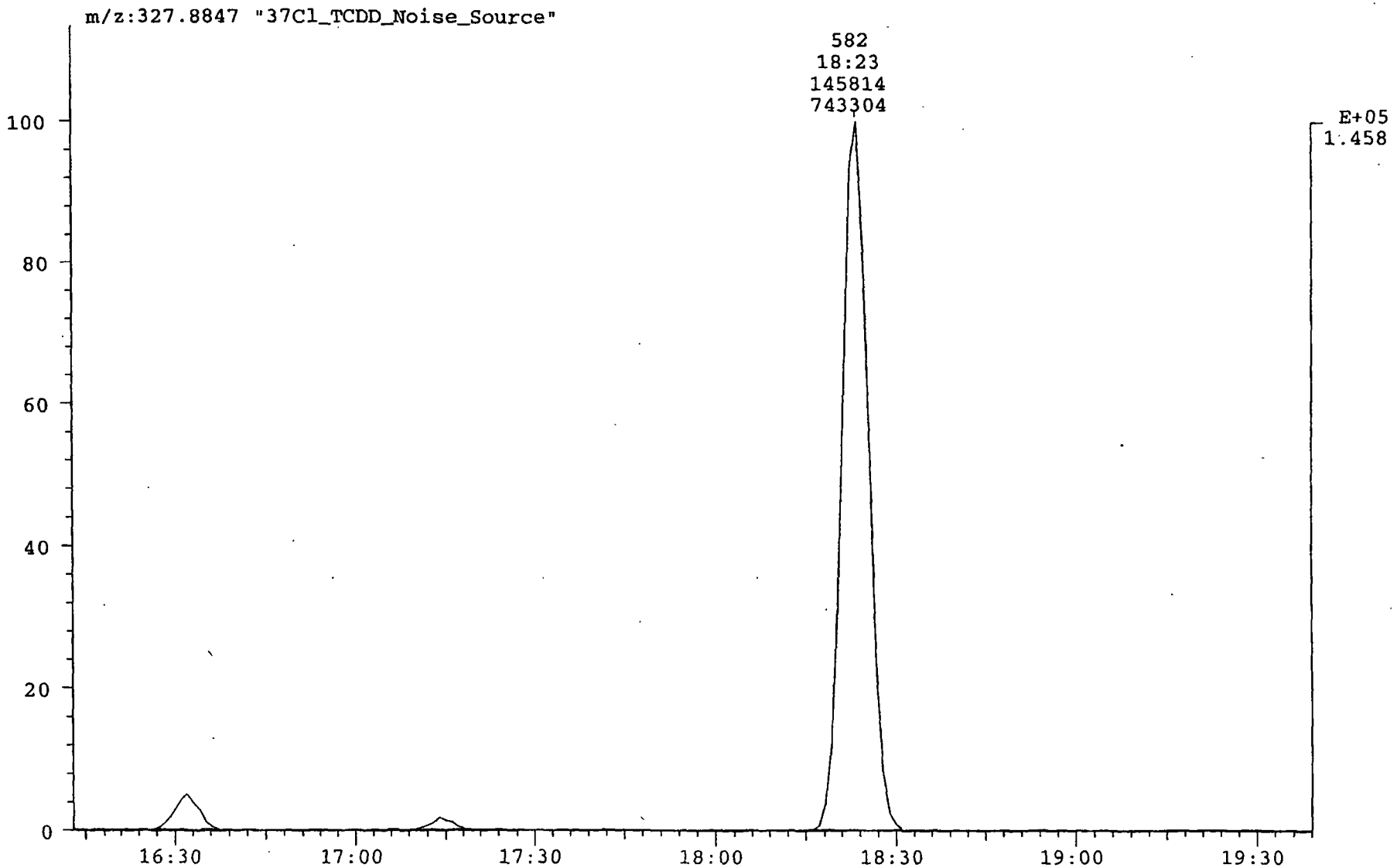
Int BKW 10-7-03
Calc BKW 10-7-03
QC VMK 10-7-03
Rev ACS 10.7.03



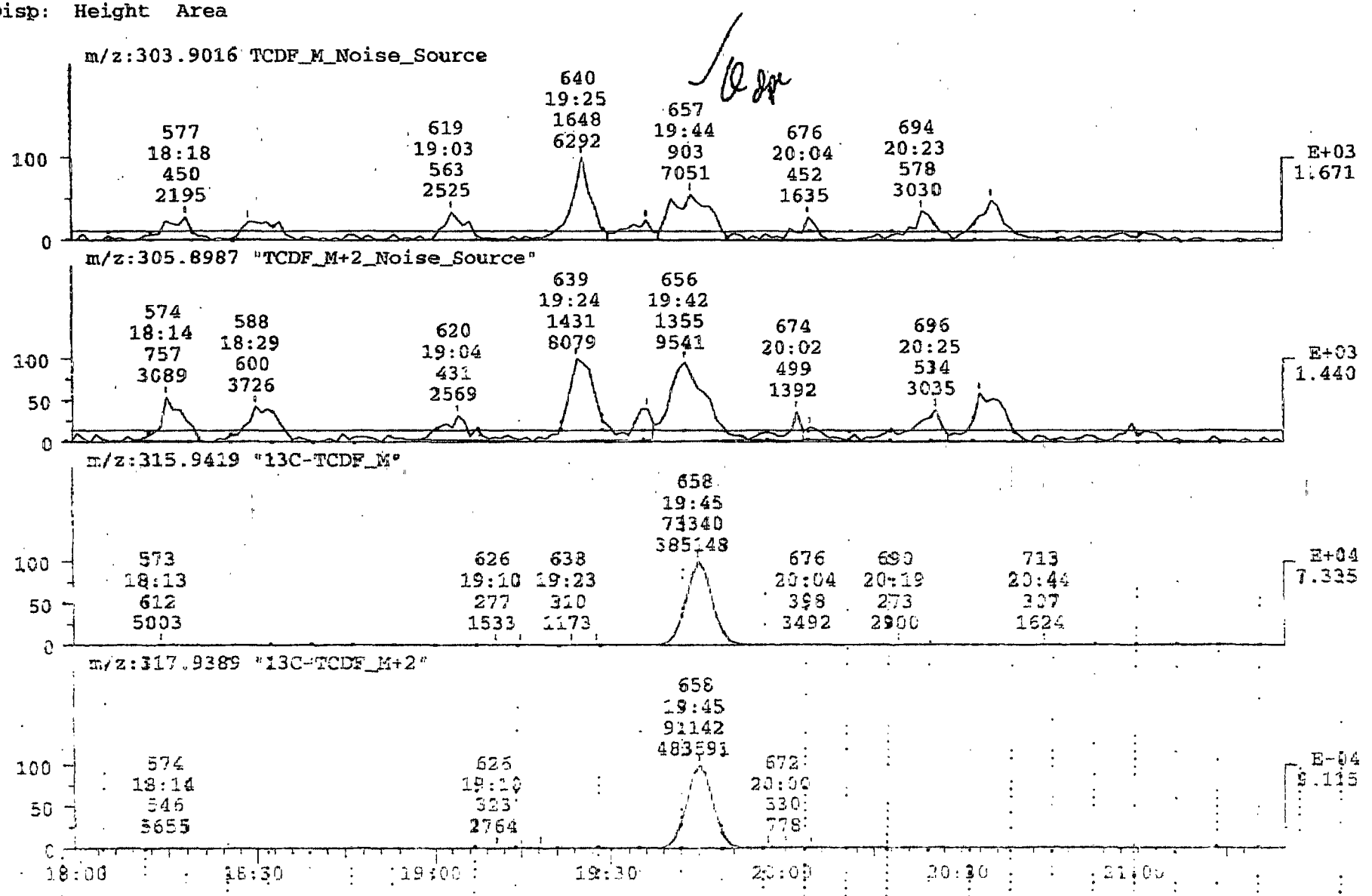
CHRO: ffx1wj 07-Oct-03 Elapse: 17:53.4 554
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 501 > 626 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: ffx1wj 07-Oct-03 Elapse: 17:53.4 554
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 460 > 652 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: ffx1wj 07-Oct-03 Elapse: 19:38.6 652
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 559 > 751 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

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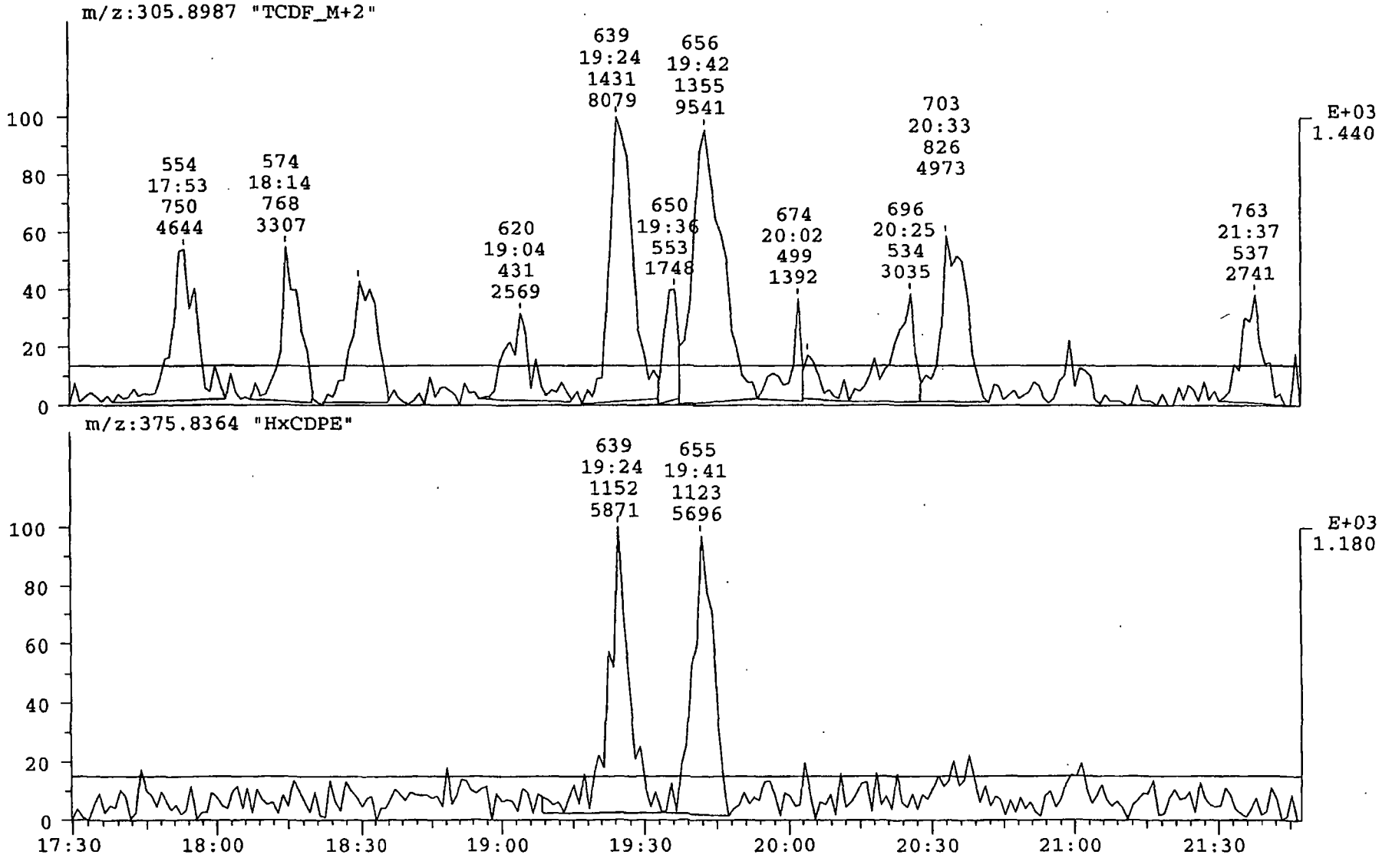
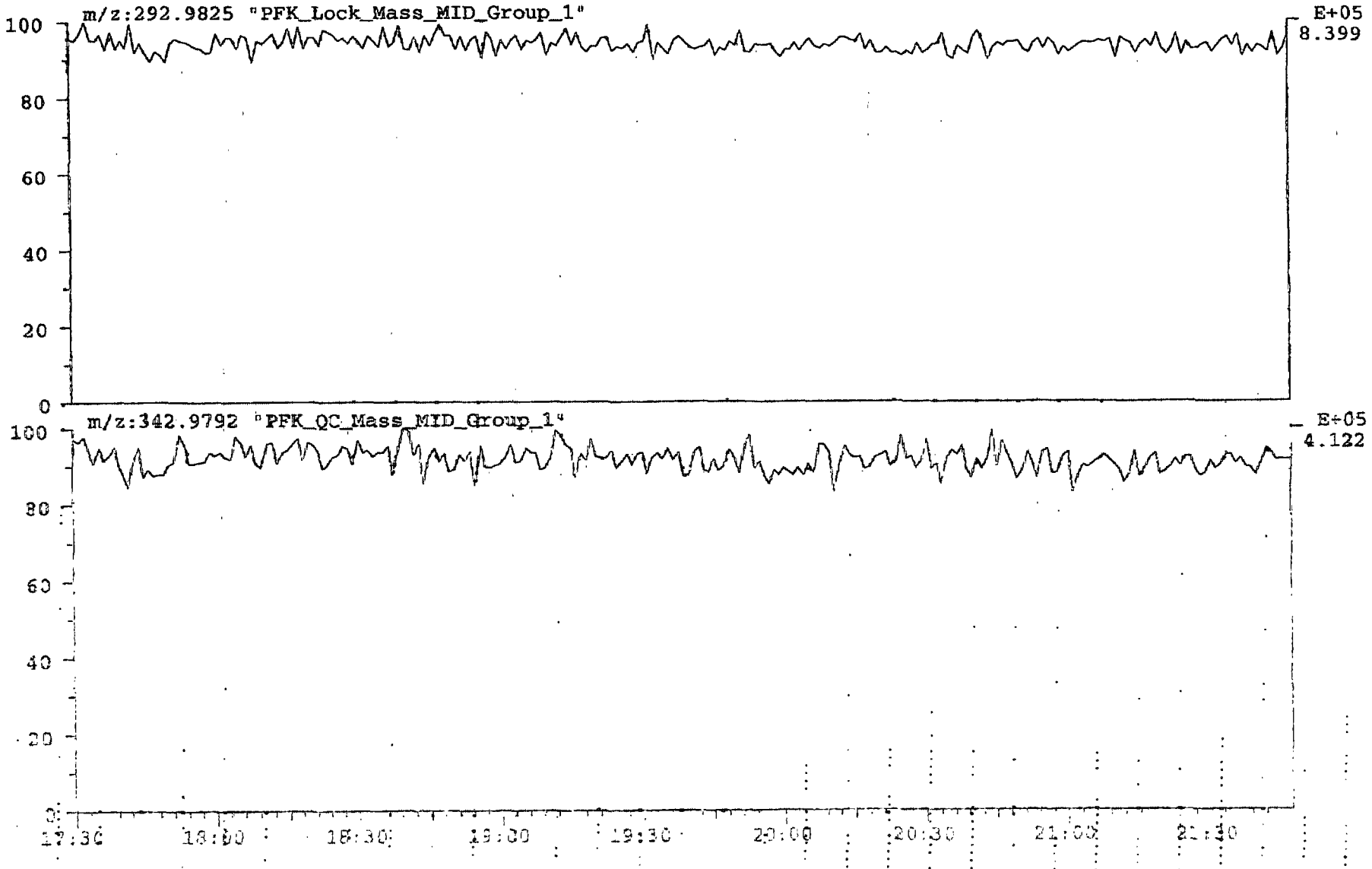
CHRO: ffx1wj 07-Oct-03 Elapse: 19:38.6 652
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 532 > 772 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: ffx1wj 07-Oct-03 Elapse: 19:38.6 652
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=200211191
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20
Peak: 100.00 ppm Label wndw: 532 > 772 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: ffx1wj
Study: 3273193 (10.0g)
Sample: WO=fx1wj1ah Meth=INc Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: H3I100253-003
Comments: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 20
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 2 of list 031006c
  ICL procedure: sleep 6
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    22:30 min    30:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
   Pullup delay time       (D):     4 sec
```

| | | | |
|---|---|---|---|
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg | at | 0.0 minutes | 230 deg max |
| | 140 deg | at | 2.0 minutes | |
| | 200 deg | at | 5.0 minutes | |
| | 230 deg | at | 20.0 minutes | |
| | 230 deg | at | 30.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -19.0000 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3301.5000 |
| ELEN | 62.2250 | EMULT | 2.0500 | ENS | 200.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 145.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 131.0000 | FVINLET | 422.0000 | FVSRC | 583.0000 |
| FWIN | 0.7000 | GCTC | 191.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 1052.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | ICNEN | 4747.2480 |
| IST | 269.8026 | ISTC | 206.0155 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -173.2000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1261.0000 | NSMAX | 8.0000 |
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |

| | | | | | |
|---|---|---|---|---|---|
| PUSHER | -8.3000 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10422.1566 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.4950 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -67.4000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 07-Oct-03 02:32:13.4

Autosampler has injected sample from vial 20
MID Time Window 1: Resolution is 9155
Analysis stopped at: 07-Oct-03 03:02:46.0 (run time 30.53 minutes)
Analysis stopped because MID run finished

QUAN: ffx1wj.q0 Entries: 33

Data file(s) used
File: ffx1wj 07-Oct-03
Samp: Vial 20 WO=fx1wj1ah Meth=INc Dil=1 Start : 02:32:13 1259
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-003 Inlet : GC Vial 20

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 18:22 | 32960. | 2040. | 18:06 | 18:38 | 85. | 1 | 1.0 |
| 321.8775 | 18:21 | 49991. | 3454. | 18:08 | 18:37 | 90. | 1 | 1.0 |
| 331.9202 | 17:58 | 300028. | 57999. | 17:45 | 18:08 | 76. | 2 | 3.0 |
| 331.9202 | 18:19 | 630536. | 121687. | 18:08 | 18:35 | 76. | 2 | 3.0 |
| 333.9171 | 17:58 | 375677. | 72980. | 17:45 | 18:10 | 62. | 2 | 3.0 |
| 333.9171 | 18:19 | 793299. | 153017. | 18:10 | 18:35 | 62. | 2 | 3.0 |
| 327.8683 | 18:23 | 742603. | 145814. | 18:15 | 18:37 | 70. | 1 | 1.0 |
| 327.8683 | 18:23 | 743304. | 145814. | 18:11 | 18:39 | 70. | 2 | 3.0 |
| 303.8864 | 19:25 | 8107. | 1648. | 19:17 | 19:38 | 63. | 1 | 1.0 |
| 305.8834 | 19:43 | 9541. | 1355. | 19:37 | 19:53 | 65. | 1 | 1.0 |
| 303.8864 | 19:36 | 1883. | 372. | 19:30 | 19:38 | 63. | 2 | 3.0 |
| 305.8834 | 19:36 | 1748. | 553. | 19:33 | 19:37 | 65. | 2 | 3.0 |
| 315.9261 | 19:45 | 385148. | 73340. | 19:33 | 19:56 | 72. | 2 | 3.0 |
| 317.9230 | 19:45 | 483591. | 91142. | 19:30 | 19:55 | 63. | 2 | 3.0 |
| 303.8864 | 18:18 | 2195. | 450. | 18:10 | 18:22 | 63. | 2 | 3.0 |
| 303.8864 | 18:28 | 2626. | 355. | 18:25 | 18:37 | 63. | 2 | 3.0 |
| 303.8864 | 19:03 | 2525. | 563. | 18:58 | 19:11 | 63. | 2 | 3.0 |
| 303.8864 | 19:25 | 6292. | 1648. | 19:15 | 19:30 | 63. | 2 | 3.0 |
| 303.8864 | 19:36 | 1883. | 372. | 19:30 | 19:38 | 63. | 2 | 3.0 |
| 303.8864 | 19:44 | 7051. | 903. | 19:38 | 19:53 | 63. | 2 | 3.0 |
| 303.8864 | 20:04 | 1635. | 452. | 19:55 | 20:07 | 63. | 2 | 3.0 |
| 303.8864 | 20:23 | 3030. | 578. | 20:11 | 20:29 | 63. | 2 | 3.0 |
| 303.8864 | 20:35 | 4200. | 794. | 20:29 | 20:45 | 63. | 2 | 3.0 |
| 305.8834 | 18:14 | 3089. | 757. | 18:09 | 18:20 | 65. | 2 | 3.0 |
| 305.8834 | 18:29 | 3726. | 600. | 18:22 | 18:36 | 65. | 2 | 3.0 |
| 305.8834 | 19:04 | 2569. | 431. | 18:55 | 19:15 | 65. | 2 | 3.0 |
| 305.8834 | 19:24 | 8079. | 1431. | 19:17 | 19:33 | 65. | 2 | 3.0 |
| 305.8834 | 19:36 | 1748. | 553. | 19:33 | 19:37 | 65. | 2 | 3.0 |
| 305.8834 | 19:43 | 9541. | 1355. | 19:37 | 19:53 | 65. | 2 | 3.0 |
| 305.8834 | 20:02 | 1392. | 499. | 19:53 | 20:03 | 65. | 2 | 3.0 |
| 305.8834 | 20:04 | 909. | 223. | 20:03 | 20:13 | 65. | 2 | 3.0 |
| 305.8834 | 20:25 | 3035. | 534. | 20:13 | 20:28 | 65. | 2 | 3.0 |
| 305.8834 | 20:33 | 4973. | 826. | 20:28 | 20:42 | 65. | 2 | 3.0 |

# Standards Data
# DB-5 Column

# STL Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
## Method: 1613B - KNOX-ID-0004-R1

| PFK Date/Time: | 4-1-03 17:21 | Inst: | MAT95 | Win Filename: | t030401w1 | Col Perf Filename: | t030401w1 |
|---|---|---|---|---|---|---|---|

| CS1 Filename | CS2 Filename | CS3 Filename | CS4 Filename | CS5 Filename |
|---|---|---|---|---|
| t030401c1 | t030401c2 | t030401c6 | t030401c4 | t030401c5 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented before beginning the initial calibration? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | | ✓ | | | ✓ |
| 5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 6. Were the five calibration standard solutions, at the concentrations specified in the SOP, analyzed? | | ✓ | | | ✓ |
| 7. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula. | | ✓ | | | ✓ |
| 9. Are %RSD ≤20% for all unlabeled native analytes except 1,2,3,7,8,9-HxCDD and OCDF? | | ✓ | | | ✓ |
| 10. Are %RSD ≤35% for 1,2,3,7,8,9-HxCDD and OCDF and all labeled internal standards ? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | | ✓ | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the ICAL folder contain complete data in the following order? Data review checklist, a complete runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard. | | ✓ | | | ✓ |

| Analyst: PMP | Date: 4-2-03 | 2nd Level Reviewer: [illegible] | Date: 4/3/03 |
|---|---|---|---|
| Comments: | | Comments: | |

# STL Knoxville Specialty Organics GC/MS Initial Calibration Data Review / Narrative Checklist
## Methods: 8290/23 - KNOX-ID-0003, Rev. 5

| PFK Date/Time: | 4-1-03 17:21 | Inst: | MAT95 | Win Filename: | t030401w1 | Col Perf Filename: | t030401w1 |
|---|---|---|---|---|---|---|---|

| CS1 Filename | CS2 Filename | CS3 Filename | CS4 Filename | CS5 Filename |
|---|---|---|---|---|
| t030401i1 | t030401i2 | t030401i3 | t030401i4 | t030401i5 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented before beginning the initial calibration? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | | ✓ | | | ✓ |
| 5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 6. Were the five calibration standard solutions, at the concentrations specified in the SOP, analyzed? | | ✓ | | | ✓ |
| 7. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula. | | ✓ | | | ✓ |
| 9. Are %RSD ≤20% for all unlabeled native analytes? | | ✓ | | | ✓ |
| 10. Are %RSD ≤30% for all labeled internal standards? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | | ✓ | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard. | | ✓ | | | ✓ |

| Analyst: PNP | Date: 4-2-03 | 2nd Level Reviewer : DTW | Date: 4/3/03 |
|---|---|---|---|
| **Comments:** | | **Comments:** | |

# STL KNOXVILLE
## SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG

| Date | Time | Opr | Sample ID | Filename | Code | Matrix | Type | Tape | Lot#/Comments |
|---|---|---|---|---|---|---|---|---|---|
| 4-1-03 | 17:21 | DCG | PFK | — | OK | — | RES | | MASS RES CHK |
| 4-1-03 | 17:25 | DCG | 2553:27 | t030401W1 | OK | — | WIN | | Col Perf |
| 4-1-03 | 18:25 | DCG | NONANE | r | OK | — | QC | | Flush |
| 4-1-03 | 18:36 | DCG | NONANE | r | OK | — | QC | | Flush |
| 4-1-03 | 18:46 | DCG | NONANE | r | OK | — | QC | | Flush |
| 4-1-03 | 18:57 | DCG | 2427:46 CS1 | t030401i1 | OK | — | ICAL | | 8290/1613 ICAL |
| 4-1-03 | 19:58 | DCG | CS2 | t030401i2 | OK | — | ICAL | | |
| 4-1-03 | 20:59 | DCG | CS3 | t030401i3 | DS | — | ICAL | | ART out |
| 4-1-03 | 22:00 | DCG | CS4 | t030401i4 | OK | — | ICAL | | |
| 4-1-03 | 23:02 | DCG | CS5 | t030401i5 | OK | — | ICAL | | |
| 4-2-03 | 00:04 | DCG | NONANE | ts60401 | OK | — | QC | | Flush |
| — | — | DCG | NONANE | ts60401 | DR 4-2-03 | — | QC | | Flush |
| — | — | DCG | NONANE | ts60401 | DR | — | QC | | Flush |
| 4-2-03 | 01:15 | PMP | Nonane | r | OK | — | QC | | Flush |
| 4-2-03 | 02:21 | PMP | 2427:46 CS3 | t030401i6 | OK | — | ICAL | | 8290/1613 ICAL |
| 4-2-03 | 4:22 | PMP | PFK | — | OK | — | Res | | Mass Res Chk |

Read and Understood by: _____ Date: _____

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***PCDD/PCDF by EPA Method 1613B***

SEVERN TRENT SERVICES

**Date:** 4/1/03 6:57:14PM

**Method:** DX1613B

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| **CS2:** | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| **CS3:** | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| **CS4:** | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| **CS5:** | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Response Factors**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.237 | 1.093 | 1.075 | 1.032 | 1.037 | 1.095 | 7.6 | 20.0 | True |
| Total TCDD | 1.237 | 1.093 | 1.075 | 1.032 | 1.037 | 1.095 | 0.0 | 20.0 | True |
| 2,3,7,8-TCDF | 1.136 | 0.993 | 0.981 | 0.984 | 0.993 | 1.017 | 6.5 | 20.0 | True |
| Total TCDF | 1.136 | 0.993 | 0.981 | 0.984 | 0.993 | 1.017 | 0.0 | 20.0 | True |
| 1,2,3,7,8-PeCDD | 1.030 | 0.972 | 0.995 | 0.963 | 0.962 | 0.984 | 2.9 | 20.0 | True |
| Total PeCDD | 1.030 | 0.972 | 0.995 | 0.963 | 0.962 | 0.984 | 0.0 | 20.0 | True |
| 1,2,3,7,8-PeCDF | 1.041 | 0.957 | 0.979 | 0.935 | 0.937 | 0.970 | 4.5 | 20.0 | True |
| 2,3,4,7,8-PeCDF | 1.129 | 1.039 | 1.027 | 0.990 | 0.991 | 1.035 | 5.5 | 20.0 | True |
| Total PeCDF | 1.129 | 1.039 | 1.027 | 0.990 | 0.991 | 1.003 | 0.0 | 20.0 | True |
| 1,2,3,4,7,8-HxCDD | 1.241 | 1.102 | 1.114 | 1.065 | 1.032 | 1.111 | 7.2 | 20.0 | True |
| 1,2,3,6,7,8-HxCDD | 1.083 | 1.034 | 1.029 | 0.987 | 0.995 | 1.026 | 3.7 | 20.0 | True |
| 1,2,3,7,8,9-HxCDD | 1.193 | 1.103 | 1.118 | 1.076 | 1.056 | 1.109 | 4.7 | 35.0 | True |
| Total HxCDD | 1.169 | 1.078 | 1.085 | 1.041 | 1.027 | 1.082 | 0.0 | 20.0 | True |
| 1,2,3,4,7,8-HxCDF | 1.365 | 1.206 | 1.222 | 1.172 | 1.166 | 1.226 | 6.6 | 20.0 | True |
| 1,2,3,6,7,8-HxCDF | 1.330 | 1.154 | 1.199 | 1.142 | 1.162 | 1.197 | 6.5 | 20.0 | True |
| 2,3,4,6,7,8-HxCDF | 1.270 | 1.140 | 1.164 | 1.103 | 1.100 | 1.155 | 6.0 | 20.0 | True |
| 1,2,3,7,8,9-HxCDF | 1.439 | 1.194 | 1.221 | 1.158 | 1.167 | 1.236 | 9.4 | 20.0 | True |
| Total HxCDF | 1.439 | 1.194 | 1.221 | 1.158 | 1.167 | 1.204 | 0.0 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDD | 1.111 | 0.950 | 0.982 | 0.944 | 0.944 | 0.986 | 7.3 | 20.0 | True |
| Total HpCDD | 1.111 | 0.950 | 0.982 | 0.944 | 0.944 | 0.986 | 0.0 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDF | 1.677 | 1.451 | 1.492 | 1.469 | 1.472 | 1.512 | 6.2 | 20.0 | True |
| 1,2,3,4,7,8,9-HpCDF | 1.539 | 1.419 | 1.429 | 1.376 | 1.366 | 1.426 | 4.8 | 20.0 | True |
| Total HpCDF | 1.539 | 1.419 | 1.429 | 1.376 | 1.366 | 1.469 | 0.0 | 20.0 | True |
| OCDD | 1.276 | 1.055 | 1.067 | 0.983 | 0.992 | 1.075 | 11.0 | 20.0 | True |
| OCDF | 1.262 | 1.109 | 1.172 | 1.052 | 1.081 | 1.135 | 7.4 | 35.0 | True |
| 13C-2,3,7,8-TCDD | 1.051 | 1.048 | 1.082 | 1.091 | 1.142 | 1.083 | 3.5 | 35.0 | True |
| 13C-2,3,7,8-TCDF | 1.486 | 1.490 | 1.595 | 1.507 | 1.556 | 1.527 | 3.1 | 35.0 | True |
| 13C-1,2,3,7,8-PeCDD | 0.939 | 0.913 | 0.912 | 0.976 | 1.052 | 0.958 | 6.1 | 35.0 | True |
| 13C-1,2,3,7,8-PeCDF | 1.395 | 1.363 | 1.365 | 1.454 | 1.558 | 1.427 | 5.7 | 35.0 | True |
| 13C-2,3,4,7,8-PeCDF | 1.352 | 1.322 | 1.341 | 1.404 | 1.500 | 1.384 | 5.2 | 35.0 | True |
| 13C-1,2,3,4,7,8-HxCDD | 0.960 | 0.920 | 0.923 | 0.927 | 0.974 | 0.941 | 2.6 | 35.0 | True |
| 13C-1,2,3,6,7,8-HxCDD | 1.095 | 1.097 | 1.065 | 1.081 | 1.050 | 1.078 | 1.9 | 35.0 | True |
| 13C-1,2,3,4,7,8-HxCDF | 1.287 | 1.244 | 1.280 | 1.310 | 1.296 | 1.283 | 1.9 | 35.0 | True |
| 13C-1,2,3,6,7,8-HxCDF | 1.433 | 1.438 | 1.397 | 1.396 | 1.366 | 1.406 | 2.1 | 35.0 | True |
| 13C-2,3,4,6,7,8-HxCDF | 1.330 | 1.278 | 1.300 | 1.302 | 1.293 | 1.301 | 1.5 | 35.0 | True |
| 13C-1,2,3,7,8,9-HxCDF | 1.124 | 1.074 | 1.101 | 1.107 | 1.121 | 1.105 | 1.8 | 35.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | 1.017 | 0.961 | 0.918 | 0.962 | 0.991 | 0.970 | 3.8 | 35.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | 1.049 | 1.015 | 1.018 | 1.005 | 1.000 | 1.017 | 1.9 | 35.0 | True |
| 13C-1,2,3,4,7,8,9-HpCDF | 0.866 | 0.802 | 0.770 | 0.791 | 0.831 | 0.812 | 4.6 | 35.0 | True |
| 13C-OCDD | 0.910 | 0.820 | 0.777 | 0.844 | 0.926 | 0.856 | 7.2 | 35.0 | True |
| 37Cl4-2,3,7,8-TCDD | 1.164 | 1.067 | 1.125 | 1.074 | 1.130 | 1.112 | 3.7 | 35.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | 35.0 | True |
| 13C-1,2,3,7,8,9-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | 35.0 | True |

PMP 4-20-03

DFW 4/3/03

STL - Knoxville

# IsoCalc Initial Calibration Report

*PCDD/PCDF by EPA Method 1613B*

**Date:** 4/1/03 6:57:14PM

**Method:** DX1613B

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| CS2: | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| CS3: | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| CS4: | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| CS5: | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Ion Abundance Ratios**

| Analyte | M/Z's | CS1 | CS2 | CS3 | CS4 | CS5 | Ratio Limits | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.71 | 0.85 | 0.76 | 0.79 | 0.78 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.82 | 0.77 | 0.80 | 0.79 | 0.78 | 0.65-0.89 | True |
| 1,2,3,7,8-PeCDD | M+2/M+4 | 1.57 | 1.64 | 1.56 | 1.57 | 1.56 | 1.32-1.78 | True |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.58 | 1.49 | 1.59 | 1.54 | 1.57 | 1.32-1.78 | True |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.56 | 1.58 | 1.55 | 1.57 | 1.54 | 1.32-1.78 | True |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.20 | 1.24 | 1.26 | 1.25 | 1.24 | 1.05-1.43 | True |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.31 | 1.23 | 1.24 | 1.25 | 1.25 | 1.05-1.43 | True |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.18 | 1.21 | 1.27 | 1.23 | 1.24 | 1.05-1.43 | True |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.23 | 1.21 | 1.24 | 1.24 | 1.26 | 1.05-1.43 | True |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.28 | 1.24 | 1.25 | 1.24 | 1.26 | 1.05-1.43 | True |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.29 | 1.28 | 1.22 | 1.24 | 1.25 | 1.05-1.43 | True |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.32 | 1.31 | 1.24 | 1.26 | 1.26 | 1.05-1.43 | True |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.06 | 1.06 | 1.04 | 1.04 | 1.04 | 0.88-1.20 | True |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.02 | 1.04 | 1.05 | 1.04 | 1.04 | 0.88-1.20 | True |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.97 | 1.00 | 1.03 | 1.04 | 1.04 | 0.88-1.20 | True |
| OCDD | M+2/M+4 | 0.87 | 0.92 | 0.89 | 0.89 | 0.89 | 0.76-1.02 | True |
| OCDF | M+2/M+4 | 0.88 | 0.92 | 0.90 | 0.91 | 0.90 | 0.76-1.03 | True |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.78 | 0.78 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.79 | 0.80 | 0.79 | 0.79 | 0.80 | 0.65-0.89 | True |
| 13C-1,2,3,7,8-PeCDD | M+2/M+4 | 1.56 | 1.57 | 1.56 | 1.55 | 1.57 | 1.32-1.78 | True |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.55 | 1.58 | 1.61 | 1.59 | 1.57 | 1.32-1.78 | True |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.58 | 1.58 | 1.59 | 1.60 | 1.58 | 1.32-1.78 | True |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.28 | 1.27 | 1.26 | 1.25 | 1.31 | 1.05-1.43 | True |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.29 | 1.27 | 1.27 | 1.27 | 1.22 | 1.05-1.43 | True |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.53 | 0.52 | 0.52 | 0.53 | 0.53 | 0.43-0.59 | True |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.53 | 0.53 | 0.53 | 0.52 | 0.51 | 0.43-0.59 | True |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.53 | 0.52 | 0.53 | 0.53 | 0.53 | 0.43-0.59 | True |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.52 | 0.53 | 0.53 | 0.52 | 0.53 | 0.43-0.59 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.06 | 1.04 | 1.05 | 1.04 | 1.05 | 0.88-1.20 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | M/M+2 | 0.46 | 0.45 | 0.45 | 0.46 | 0.45 | 0.37-0.51 | True |
| 13C-1,2,3,4,7,8,9-HpCDF | M/M+2 | 0.45 | 0.45 | 0.45 | 0.45 | 0.44 | 0.37-0.51 | True |
| 13C-OCDD | M+2/M+4 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.76-1.02 | True |
| 37Cl4-2,3,7,8-TCDD | M | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.79 | 0.79 | 0.81 | 0.81 | 0.81 | 0.65-0.89 | True |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.28 | 1.25 | 1.26 | 1.27 | 1.27 | 1.05-1.43 | True |

**STL - Knoxville** **IsoCalc Initial Calibration Report**

***PCDD/PCDF by EPA Method 1613B***

SEVERN TRENT SERVICES

**Date:** 4/1/03 6:57:14PM

**Method:** DX1613B

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| **CS2:** | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| **CS3:** | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| **CS4:** | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| **CS5:** | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.002 | 1.002 | 1.001 | 1.002 | 0.999-1.002 | ~~False~~ True PMP 4.2.03 |
| 2,3,7,8-TCDF | 1.001 | 1.002 | 1.001 | 1.002 | 1.001 | 0.999-1.003 | True |
| 1,2,3,7,8-PeCDD | 1.000 | 1.000 | 1.001 | 1.000 | 1.000 | 0.999-1.002 | True |
| 1,2,3,7,8-PeCDF | 1.000 | 1.000 | 1.000 | 1.001 | 1.000 | 0.999-1.002 | True |
| 2,3,4,7,8-PeCDF | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.002 | True |
| 1,2,3,4,7,8-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,6,7,8-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.998-1.004 | True |
| 1,2,3,7,8,9-HxCDD | 1.009 | 1.009 | 1.009 | 1.008 | 1.009 | 1.000-1.019 | True |
| 1,2,3,4,7,8-HxCDF | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,6,7,8-HxCDF | 1.000 | 1.000 | 1.000 | 1.001 | 1.000 | 0.997-1.005 | True |
| 2,3,4,6,7,8-HxCDF | 1.000 | 1.001 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,7,8,9-HxCDF | 1.000 | 1.001 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,4,6,7,8-HpCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,4,6,7,8-HpCDF | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| 1,2,3,4,7,8,9-HpCDF | 1.000 | 1.000 | 1.000 | 1.001 | 1.000 | 0.999-1.001 | True |
| OCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.999-1.001 | True |
| OCDF | 1.002 | 1.003 | 1.003 | 1.003 | 1.003 | 0.999-1.008 | True |
| 13C-2,3,7,8-TCDD | 1.019 | 1.018 | 1.018 | 1.018 | 1.017 | 0.976-1.043 | True |
| 13C-2,3,7,8-TCDF | 0.955 | 0.955 | 0.955 | 0.955 | 0.954 | 0.923-1.103 | True |
| 13C-1,2,3,7,8-PeCDD | 1.338 | 1.338 | 1.339 | 1.339 | 1.339 | 1.000-1.567 | True |
| 13C-1,2,3,7,8-PeCDF | 1.280 | 1.280 | 1.281 | 1.280 | 1.281 | 1.000-1.425 | True |
| 13C-2,3,4,7,8-PeCDF | 1.320 | 1.321 | 1.322 | 1.322 | 1.321 | 1.011-1.526 | True |
| 13C-1,2,3,4,7,8-HxCDD | 0.989 | 0.989 | 0.989 | 0.990 | 0.990 | 0.977-1.000 | True |
| 13C-1,2,3,6,7,8-HxCDD | 0.991 | 0.992 | 0.991 | 0.992 | 0.992 | 0.981-1.003 | True |
| 13C-1,2,3,4,7,8-HxCDF | 0.967 | 0.968 | 0.967 | 0.968 | 0.968 | 0.944-0.970 | True |
| 13C-1,2,3,6,7,8-HxCDF | 0.970 | 0.970 | 0.970 | 0.970 | 0.971 | 0.949-0.975 | True |
| 13C-2,3,4,6,7,8-HxCDF | 0.985 | 0.986 | 0.985 | 0.986 | 0.986 | 0.977-1.047 | True |
| 13C-1,2,3,7,8,9-HxCDF | 1.006 | 1.006 | 1.006 | 1.006 | 1.006 | 0.959-1.021 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | 1.092 | 1.092 | 1.092 | 1.092 | 1.092 | 1.086-1.110 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | 1.056 | 1.056 | 1.056 | 1.057 | 1.057 | 1.043-1.085 | True |
| 13C-1,2,3,4,7,8,9-HpCDF | 1.106 | 1.106 | 1.106 | 1.107 | 1.106 | 1.057-1.151 | True |
| 13C-OCDD | 1.188 | 1.188 | 1.187 | 1.188 | 1.188 | 1.032-1.311 | True |
| 37Cl4-2,3,7,8-TCDD | 1.020 | 1.020 | 1.020 | 1.019 | 1.019 | 0.989-1.052 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000-1.000 | True |
| 13C-1,2,3,7,8,9-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000-1.000 | True |

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F in Drinking Water by EPA Method 1613B*

**Date:** 4/1/2003 6:57:14PM

**Method:** DX1613_L

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20030401i/030401i1.d | 4/1/2003 6:57:14PM |
| CS2: | /20030401i/030401i2.d | 4/1/2003 7:58:08PM |
| CS3: | /20030401i/030401i3.d | 4/2/2003 2:21:54AM |
| CS4: | /20030401i/030401i4.d | 4/1/2003 10:00:17PM |
| CS5: | /20030401i/030401i5.d | 4/1/2003 11:02:22PM |

**Response Factors**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.237 | 1.093 | 1.075 | 1.032 | 1.037 | 1.095 | 7.6 | 20.0 | True |
| 2,3,7,8-TCDF | 1.136 | 0.993 | 0.981 | 0.984 | 0.993 | 1.017 | 6.5 | 20.0 | True |
| 37Cl4-2,3,7,8-TCDD | 1.164 | 1.067 | 1.125 | 1.074 | 1.130 | 1.112 | 3.7 | 35.0 | True |
| 13C-2,3,7,8-TCDD | 1.051 | 1.048 | 1.082 | 1.091 | 1.142 | 1.083 | 3.5 | 35.0 | True |
| 13C-2,3,7,8-TCDF | 1.486 | 1.490 | 1.595 | 1.507 | 1.556 | 1.527 | 3.1 | 35.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | | |

JSD 4/3/03

DAW 4/3/03

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***TCDD/F in Drinking Water by EPA Method 1613B***

SEVERN TRENT SERVICES

**Date:** 4/1/2003 6:57:14PM

**Method:** DX1613_L

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20030401i/030401i1.d | 4/1/2003 6:57:14PM |
| **CS2:** | /20030401i/030401i2.d | 4/1/2003 7:58:08PM |
| **CS3:** | /20030401i/030401i3.d | 4/2/2003 2:21:54AM |
| **CS4:** | /20030401i/030401i4.d | 4/1/2003 10:00:17PM |
| **CS5:** | /20030401i/030401i5.d | 4/1/2003 11:02:22PM |

**Ion Abundance Ratios**

| Analyte | M/Z's | CS1 | CS2 | CS3 | CS4 | CS5 | Ratio Limits | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.71 | 0.85 | 0.76 | 0.79 | 0.78 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.82 | 0.77 | 0.80 | 0.79 | 0.78 | 0.65-0.89 | True |
| 37Cl4-2,3,7,8-TCDD | M | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.78 | 0.78 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.79 | 0.80 | 0.79 | 0.79 | 0.80 | 0.65-0.89 | True |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.79 | 0.79 | 0.81 | 0.81 | 0.81 | 0.65-0.89 | True |

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F in Drinking Water by EPA Method 1613B*

**Date:** 4/1/2003 6:57:14PM

**Method:** DX1613_L

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20030401i/030401i1.d | 4/1/2003 6:57:14PM |
| CS2: | /20030401i/030401i2.d | 4/1/2003 7:58:08PM |
| CS3: | /20030401i/030401i3.d | 4/2/2003 2:21:54AM |
| CS4: | /20030401i/030401i4.d | 4/1/2003 10:00:17PM |
| CS5: | /20030401i/030401i5.d | 4/1/2003 11:02:22PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.002 | 1.002 | 1.001 | 1.002 | 0.999-1.002 | ~~False~~ True |
| 2,3,7,8-TCDF | 1.001 | 1.002 | 1.001 | 1.002 | 1.001 | 0.999-1.003 | True |
| 37Cl4-2,3,7,8-TCDD | 1.020 | 1.020 | 1.020 | 1.019 | 1.019 | 0.989-1.052 | True |
| 13C-2,3,7,8-TCDD | 1.019 | 1.018 | 1.018 | 1.018 | 1.017 | 0.976-1.043 | True |
| 13C-2,3,7,8-TCDF | 0.955 | 0.955 | 0.955 | 0.955 | 0.954 | 0.923-1.103 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000-1.000 | True |

MLSD 4/3/03

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***PCDD/PCDF by EPA Method 8290***

SEVERN TRENT SERVICES

**Date:** 4/1/03 6:57:14PM

**Method:** DX8290

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| **CS2:** | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| **CS3:** | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| **CS4:** | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| **CS5:** | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Response Factors**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.237 | 1.093 | 1.075 | 1.032 | 1.037 | 1.095 | 7.6 | 20.0 | True |
| Total TCDD | 1.237 | 1.093 | 1.075 | 1.032 | 1.037 | 1.095 | 0.0 | 20.0 | True |
| 2,3,7,8-TCDF | 1.136 | 0.993 | 0.981 | 0.984 | 0.993 | 1.017 | 6.5 | 20.0 | True |
| Total TCDF | 1.136 | 0.993 | 0.981 | 0.984 | 0.993 | 1.017 | 0.0 | 20.0 | True |
| 1,2,3,7,8-PeCDD | 1.030 | 0.972 | 0.995 | 0.963 | 0.962 | 0.984 | 2.9 | 20.0 | True |
| Total PeCDD | 1.030 | 0.972 | 0.995 | 0.963 | 0.962 | 0.984 | 0.0 | 20.0 | True |
| 1,2,3,7,8-PeCDF | 1.041 | 0.957 | 0.979 | 0.935 | 0.937 | 0.970 | 4.5 | 20.0 | True |
| 2,3,4,7,8-PeCDF | 1.094 | 1.008 | 1.009 | 0.956 | 0.955 | 1.004 | 5.6 | 20.0 | True |
| Total PeCDF | 1.094 | 1.008 | 1.009 | 0.956 | 0.955 | 0.987 | 0.0 | 20.0 | True |
| 1,2,3,4,7,8-HxCDD | 1.089 | 0.924 | 0.965 | 0.913 | 0.957 | 0.970 | 7.2 | 20.0 | True |
| 1,2,3,6,7,8-HxCDD | 1.083 | 1.034 | 1.029 | 0.987 | 0.995 | 1.026 | 3.7 | 20.0 | True |
| 1,2,3,7,8,9-HxCDD | 1.119 | 1.014 | 1.043 | 0.999 | 1.018 | 1.039 | 4.6 | 20.0 | True |
| Total HxCDD | 1.119 | 1.014 | 1.043 | 0.999 | 1.018 | 1.011 | 0.0 | 20.0 | True |
| 1,2,3,4,7,8-HxCDF | 1.365 | 1.206 | 1.222 | 1.172 | 1.166 | 1.226 | 6.6 | 20.0 | True |
| 1,2,3,6,7,8-HxCDF | 1.481 | 1.333 | 1.308 | 1.217 | 1.225 | 1.313 | 8.2 | 20.0 | True |
| 2,3,4,6,7,8-HxCDF | 1.313 | 1.171 | 1.182 | 1.096 | 1.098 | 1.172 | 7.5 | 20.0 | True |
| 1,2,3,7,8,9-HxCDF | 1.257 | 1.030 | 1.051 | 0.978 | 1.010 | 1.065 | 10.4 | 20.0 | True |
| Total HxCDF | 1.257 | 1.030 | 1.051 | 0.978 | 1.010 | 1.194 | 0.0 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDD | 1.111 | 0.950 | 0.982 | 0.944 | 0.944 | 0.986 | 7.3 | 20.0 | True |
| Total HpCDD | 1.111 | 0.950 | 0.982 | 0.944 | 0.944 | 0.986 | 0.0 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDF | 1.677 | 1.451 | 1.492 | 1.469 | 1.472 | 1.512 | 6.2 | 20.0 | True |
| 1,2,3,4,7,8,9-HpCDF | 1.271 | 1.122 | 1.080 | 1.084 | 1.136 | 1.139 | 6.8 | 20.0 | True |
| Total HpCDF | 1.271 | 1.122 | 1.080 | 1.084 | 1.136 | 1.326 | 0.0 | 20.0 | True |
| OCDD | 1.276 | 1.055 | 1.067 | 0.983 | 0.992 | 1.075 | 11.0 | 20.0 | True |
| OCDF | 1.262 | 1.109 | 1.172 | 1.052 | 1.081 | 1.135 | 7.4 | 20.0 | True |
| 13C-2,3,7,8-TCDD | 1.051 | 1.048 | 1.082 | 1.091 | 1.142 | 1.083 | 3.5 | 30.0 | True |
| 13C-2,3,7,8-TCDF | 1.486 | 1.490 | 1.595 | 1.507 | 1.556 | 1.527 | 3.1 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDD | 0.939 | 0.913 | 0.912 | 0.976 | 1.052 | 0.958 | 6.1 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDF | 1.395 | 1.363 | 1.365 | 1.454 | 1.558 | 1.427 | 5.7 | 30.0 | True |
| 13C-1,2,3,6,7,8-HxCDD | 1.095 | 1.097 | 1.065 | 1.081 | 1.050 | 1.078 | 1.9 | 30.0 | True |
| 13C-1,2,3,4,7,8-HxCDF | 1.287 | 1.244 | 1.280 | 1.310 | 1.296 | 1.283 | 1.9 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | 1.017 | 0.961 | 0.918 | 0.962 | 0.991 | 0.970 | 3.8 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | 1.049 | 1.015 | 1.018 | 1.005 | 1.000 | 1.017 | 1.9 | 30.0 | True |
| 13C-OCDD | 0.910 | 0.820 | 0.777 | 0.844 | 0.926 | 0.856 | 7.2 | 30.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | 30.0 | True |
| 13C-1,2,3,7,8,9-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | 30.0 | True |

PRW 4-2-03

DKW 4/3/03

STL - Knoxville

# IsoCalc Initial Calibration Report

*PCDD/PCDF by EPA Method 8290*

**Data:** 4/1/03 6:57:14PM

**Method:** DX8290

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| CS2: | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| CS3: | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| CS4: | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| CS5: | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Ion Abundance Ratios**

| Analyte | M/Z's | CS1 | CS2 | CS3 | CS4 | CS5 | Ratio Limits | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.71 | 0.85 | 0.76 | 0.79 | 0.78 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.82 | 0.77 | 0.80 | 0.79 | 0.78 | 0.65-0.89 | True |
| 1,2,3,7,8-PeCDD | M+2/M+4 | 1.57 | 1.64 | 1.56 | 1.57 | 1.56 | 1.32-1.78 | True |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.58 | 1.49 | 1.59 | 1.54 | 1.57 | 1.32-1.78 | True |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.56 | 1.58 | 1.55 | 1.57 | 1.54 | 1.32-1.78 | True |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.20 | 1.24 | 1.26 | 1.25 | 1.24 | 1.05-1.43 | True |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.31 | 1.23 | 1.24 | 1.25 | 1.25 | 1.05-1.43 | True |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.18 | 1.21 | 1.27 | 1.23 | 1.24 | 1.05-1.43 | True |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.23 | 1.21 | 1.24 | 1.24 | 1.26 | 1.05-1.43 | True |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.28 | 1.24 | 1.25 | 1.24 | 1.26 | 1.05-1.43 | True |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.29 | 1.28 | 1.22 | 1.24 | 1.25 | 1.05-1.43 | True |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.32 | 1.31 | 1.24 | 1.26 | 1.26 | 1.05-1.43 | True |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.06 | 1.06 | 1.04 | 1.04 | 1.04 | 0.88-1.20 | True |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.02 | 1.04 | 1.05 | 1.04 | 1.04 | 0.88-1.20 | True |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 0.97 | 1.00 | 1.03 | 1.04 | 1.04 | 0.88-1.20 | True |
| OCDD | M+2/M+4 | 0.87 | 0.92 | 0.89 | 0.89 | 0.89 | 0.76-1.02 | True |
| OCDF | M+2/M+4 | 0.88 | 0.92 | 0.90 | 0.91 | 0.90 | 0.76-1.02 | True |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.78 | 0.78 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.79 | 0.80 | 0.79 | 0.79 | 0.80 | 0.65-0.89 | True |
| 13C-1,2,3,7,8-PeCDD | M+2/M+4 | 1.56 | 1.57 | 1.56 | 1.55 | 1.57 | 1.32-1.78 | True |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.55 | 1.58 | 1.61 | 1.59 | 1.57 | 1.32-1.78 | True |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.29 | 1.27 | 1.27 | 1.27 | 1.22 | 1.05-1.43 | True |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.53 | 0.52 | 0.52 | 0.53 | 0.53 | 0.43-0.59 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.06 | 1.04 | 1.05 | 1.04 | 1.05 | 0.88-1.20 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | M/M+2 | 0.46 | 0.45 | 0.45 | 0.46 | 0.45 | 0.37-0.51 | True |
| 13C-OCDD | M+2/M+4 | 0.91 | 0.91 | 0.90 | 0.90 | 0.90 | 0.76-1.02 | True |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.79 | 0.79 | 0.81 | 0.81 | 0.81 | 0.65-0.89 | True |
| 13C-1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.28 | 1.25 | 1.26 | 1.27 | 1.27 | 1.05-1.43 | True |

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***PCDD/PCDF by EPA Method 8290***

SEVERN TRENT SERVICES

**Date:** 4/1/03 6:57:14PM

**Method:** DX8290

**Instrument:** M2A

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20030401i/030401i1.d | 4/1/03 6:57:14PM |
| **CS2:** | /20030401i/030401i2.d | 4/1/03 7:58:08PM |
| **CS3:** | /20030401i/030401i3.d | 4/2/03 2:21:54AM |
| **CS4:** | /20030401i/030401i4.d | 4/1/03 10:00:17PM |
| **CS5:** | /20030401i/030401i5.d | 4/1/03 11:02:22PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.002 | 1.002 | 1.001 | 1.002 | - | |
| 2,3,7,8-TCDF | 1.001 | 1.002 | 1.001 | 1.002 | 1.001 | - | |
| 1,2,3,7,8-PeCDD | 1.000 | 1.000 | 1.001 | 1.000 | 1.000 | - | |
| 1,2,3,7,8-PeCDF | 1.000 | 1.000 | 1.000 | 1.001 | 1.000 | - | |
| 2,3,4,7,8-PeCDF | 1.032 | 1.032 | 1.032 | 1.033 | 1.032 | - | |
| 1,2,3,4,7,8-HxCDD | 0.998 | 0.998 | 0.998 | 0.998 | 0.998 | - | |
| 1,2,3,6,7,8-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| 1,2,3,7,8,9-HxCDD | 1.009 | 1.009 | 1.009 | 1.008 | 1.009 | - | |
| 1,2,3,4,7,8-HxCDF | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| 1,2,3,6,7,8-HxCDF | 1.003 | 1.003 | 1.003 | 1.003 | 1.003 | - | |
| 2,3,4,6,7,8-HxCDF | 1.019 | 1.019 | 1.019 | 1.019 | 1.019 | - | |
| 1,2,3,7,8,9-HxCDF | 1.040 | 1.040 | 1.040 | 1.040 | 1.040 | - | |
| 1,2,3,4,6,7,8-HpCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| 1,2,3,4,6,7,8-HpCDF | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| 1,2,3,4,7,8,9-HpCDF | 1.048 | 1.048 | 1.048 | 1.048 | 1.047 | - | |
| OCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| OCDF | 1.002 | 1.003 | 1.003 | 1.003 | 1.003 | - | |
| 13C-2,3,7,8-TCDD | 1.019 | 1.018 | 1.018 | 1.018 | 1.017 | - | |
| 13C-2,3,7,8-TCDF | 0.955 | 0.955 | 0.955 | 0.955 | 0.954 | - | |
| 13C-1,2,3,7,8-PeCDD | 1.338 | 1.338 | 1.339 | 1.339 | 1.339 | - | |
| 13C-1,2,3,7,8-PeCDF | 1.280 | 1.280 | 1.281 | 1.280 | 1.281 | - | |
| 13C-1,2,3,6,7,8-HxCDD | 0.991 | 0.992 | 0.991 | 0.992 | 0.992 | - | |
| 13C-1,2,3,4,7,8-HxCDF | 0.967 | 0.968 | 0.967 | 0.968 | 0.968 | - | |
| 13C-1,2,3,4,6,7,8-HpCDD | 1.092 | 1.092 | 1.092 | 1.092 | 1.092 | - | |
| 13C-1,2,3,4,6,7,8-HpCDF | 1.056 | 1.056 | 1.056 | 1.057 | 1.057 | - | |
| 13C-OCDD | 1.188 | 1.188 | 1.187 | 1.188 | 1.188 | - | |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |
| 13C-1,2,3,7,8,9-HxCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS1 | **Prep Batch** | | **Lot No.** | |
| **Data File** | /20030401i/030401i1.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68249 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 18:57 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 110 | 120 | 44 | 48 | 0.92 * | / | |
| | 2,3,7,8-TCDF | 29:49 | 00:00 | 0 | 7539 | 9232 | 732 | 905 | 0.82 | ABB/ABV | M |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 358 | 335 | 143 | 134 | 1.07 * | / | |
| | 13C-2,3,7,8-TCDF | 29:47 | 00:00 | 0 | 1306367 | 1646128 | 125395 | 160766 | 0.79 | ABV/ABV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 115 | 130 | 46 | 52 | 0.88 | / | |
| | 2,3,7,8-TCDD | 31:47 | 00:00 | 0 | 5346 | 7569 | 541 | 666 | 0.71 | ABV/ABV | M |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 123 | | 49 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 31:49 | 00:00 | 0 | 11570 | | 1406 | | | ABV | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 400 | 365 | 160 | 146 | 1.10 * | / | |
| | 13C-1,2,3,4-TCDD | 31:11 | 00:00 | 0 | 877451 | 1109997 | 84921 | 109016 | 0.79 | ABV/ABV | |
| | 13C-2,3,7,8-TCDD | 31:46 | 00:00 | 0 | 918572 | 1169489 | 83806 | 107453 | 0.79 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 140 | 66 | 56 | 1.18 * | / | |
| | 1,2,3,7,8-PeCDF | 39:56 | 00:00 | 0 | 44251 | 27939 | 8078 | 4911 | 1.58 | ABV/ABV | M |
| | 2,3,4,7,8-PeCDF | 41:11 | 00:00 | 0 | 46156 | 29654 | 9032 | 5650 | 1.56 | ABV/ABV | M |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 398 | 345 | 159 | 138 | 1.15 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 39:55 | 00:00 | 0 | 1685261 | 1087848 | 289826 | 191655 | 1.55 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 41:10 | 00:00 | 0 | 1643910 | 1042272 | 333679 | 214296 | 1.58 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 138 | 60 | 55 | 1.09 * | / | |
| | 1,2,3,7,8-PeCDD | 41:44 | 00:00 | 0 | 29360 | 18658 | 6299 | 4312 | 1.57 | ABV/ABB | B |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 260 | 178 | 104 | 71 | 1.46 | / | |
| | 13C-1,2,3,7,8-PeCDD | 41:43 | 00:00 | 0 | 1138091 | 727249 | 243203 | 153451 | 1.56 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 133 | 63 | 53 | 1.19 | / | |
| | 1,2,3,4,7,8-HxCDF | 44:57 | 00:00 | 0 | 41249 | 33467 | 11279 | 9576 | 1.23 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 45:05 | 00:00 | 0 | 45558 | 35525 | 11272 | 8853 | 1.28 | AVV/AVV | M |
| | 2,3,4,6,7,8-HxCDF | 45:48 | 00:00 | 0 | 40430 | 31422 | 9512 | 8549 | 1.29 | ABB/ABB | M |
| | 1,2,3,7,8,9-HxCDF | 46:45 | 00:00 | 0 | 39214 | 29605 | 7971 | 6199 | 1.32 | ABV/ABV | M |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 240 | 278 | 96 | 111 | 0.86 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 44:56 | 00:00 | 0 | 762449 | 1427321 | 220006 | 420726 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 45:05 | 00:00 | 0 | 845051 | 1592809 | 205842 | 387041 | 0.53 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 45:47 | 00:00 | 0 | 779271 | 1484253 | 204273 | 390751 | 0.53 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 46:44 | 00:00 | 0 | 656711 | 1256642 | 140045 | 265167 | 0.52 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not expected S = peak less than 3.5x S/N
T = peak outside RT delta D = peak shifted from cal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## PCDD/PCDF by EPA Method 1613B

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS1 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/030401i1.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68245 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 18:57 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 130 | 50 | 52 | 0.96 * | / | |
| | 1,2,3,4,7,8-HxCDD | 45:59 | 00:00 | 0 | 27673 | 23045 | 7307 | 6103 | 1.20 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDD | 46:05 | 00:00 | 0 | 28607 | 21858 | 6901 | 6101 | 1.31 | AVB/AVB | M |
| | 1,2,3,7,8,9-HxCDD | 46:29 | 00:00 | 0 | 28215 | 23932 | 6725 | 5978 | 1.18 | ABB/ABB | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 240 | 335 | 96 | 134 | 0.72 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 45:58 | 00:00 | 0 | 918108 | 716168 | 252906 | 196106 | 1.28 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 46:04 | 00:00 | 0 | 1048234 | 815071 | 271744 | 213969 | 1.29 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 46:28 | 00:00 | 0 | 956324 | 745246 | 253264 | 198219 | 1.28 | AVB/AVB | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 118 | 118 | 47 | 47 | 1.00 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 49:05 | 00:00 | 0 | 37784 | 37028 | 7956 | 7958 | 1.02 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 51:25 | 00:00 | 0 | 27958 | 28753 | 5064 | 4884 | 0.97 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 215 | 198 | 86 | 79 | 1.09 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 49:04 | 00:00 | 0 | 562236 | 1221932 | 118045 | 263201 | 0.46 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 51:24 | 00:00 | 0 | 458106 | 1015833 | 80651 | 176182 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 100 | 95 | 40 | 38 | 1.05 | / | |
| | 1,2,3,4,6,7,8-HpCDD | 50:45 | 00:00 | 0 | 24690 | 23395 | 4671 | 4940 | 1.06 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 175 | 133 | 70 | 53 | 1.32 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 50:44 | 00:00 | 0 | 890043 | 840702 | 177891 | 168098 | 1.06 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 118 | 120 | 47 | 48 | 0.98 | / | |
| | OCDF | 55:19 | 00:00 | 0 | 45732 | 51983 | 11210 | 11813 | 0.88 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 103 | 130 | 41 | 52 | 0.79 | / | |
| | OCDD | 55:11 | 00:00 | 0 | 46056 | 52708 | 10574 | 12072 | 0.87 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 163 | 58 | 65 | 0.89 | / | |
| | 13C-OCDD | 55:11 | 00:00 | 0 | 1475509 | 1620504 | 338897 | 374399 | 0.91 | ABV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS2 | **Prep Batch** | | **Lab No** | |
| **Data File** | /20030401i/03040112.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68246 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 19:58 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Ilms Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 110 | 158 | 44 | 63 | 0.70 | / | |
| | 2,3,7,8-TCDF | 29:45 | 00:00 | 0 | 21739 | 28409 | 2351 | 3724 | 0.77 | ABV/ABV | M |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 250 | 288 | 100 | 115 | 0.87 | / | |
| | 13C-2,3,7,8-TCDF | 29:41 | 00:00 | 0 | 1120829 | 1404283 | 108701 | 136923 | 0.80 | ABV/ABV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 103 | 125 | 41 | 50 | 0.82 | / | |
| | 2,3,7,8-TCDD | 31:42 | 00:00 | 0 | 17864 | 20974 | 1661 | 2239 | 0.89 | ABV/ABV | M |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | | 50 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 31:42 | 00:00 | 0 | 36163 | | 3334 | | | ABV | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 343 | 373 | 137 | 149 | 0.92 * | / | |
| | 13C-1,2,3,4-TCDD | 31:05 | 00:00 | 0 | 750110 | 944213 | 79078 | 96247 | 0.79 | ABV/ABV | |
| | 13C-2,3,7,8-TCDD | 31:38 | 00:00 | 0 | 780125 | 995886 | 71767 | 89367 | 0.78 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 163 | 67 | 65 | 1.03 * | / | |
| | 1,2,3,7,8-PeCDF | 39:48 | 00:00 | 0 | 132283 | 88779 | 22079 | 15124 | 1.49 | ABV/ABV | M |
| | 2,3,4,7,8-PeCDF | 41:04 | 00:00 | 0 | 142423 | 90326 | 27256 | 17497 | 1.58 | ABV/ABV | M |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 343 | 338 | 137 | 135 | 1.01 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 39:47 | 00:00 | 0 | 1413763 | 895218 | 255621 | 158154 | 1.58 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 41:03 | 00:00 | 0 | 1372778 | 866834 | 275296 | 176021 | 1.58 | AVV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 130 | 61 | 52 | 1.17 * | / | |
| | 1,2,3,7,8-PeCDD | 41:36 | 00:00 | 0 | 93394 | 57033 | 19658 | 11252 | 1.64 | ABV/ABV | M |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 245 | 173 | 98 | 69 | 1.42 | / | |
| | 13C-1,2,3,7,8-PeCDD | 41:35 | 00:00 | 0 | 944520 | 602545 | 204022 | 132474 | 1.57 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 143 | 63 | 57 | 1.11 | / | |
| | 1,2,3,4,7,8-HxCDF | 44:51 | 00:00 | 0 | 112995 | 93231 | 33055 | 24272 | 1.21 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 44:58 | 00:00 | 0 | 126380 | 101628 | 29200 | 25166 | 1.24 | AVV/AVV | M |
| | 2,3,4,6,7,8-HxCDF | 45:42 | 00:00 | 0 | 112489 | 87792 | 28383 | 21756 | 1.28 | AVV/ABV | M |
| | 1,2,3,7,8,9-HxCDF | 46:38 | 00:00 | 0 | 100038 | 76106 | 19397 | 15893 | 1.31 | ABV/ABV | M |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 263 | 330 | 105 | 132 | 0.80 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 44:50 | 00:00 | 0 | 586621 | 1123364 | 172763 | 319391 | 0.52 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 44:57 | 00:00 | 0 | 686151 | 1290356 | 174013 | 329362 | 0.53 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 45:40 | 00:00 | 0 | 603219 | 1153650 | 157038 | 300365 | 0.52 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 46:36 | 00:00 | 0 | 510891 | 964938 | 106208 | 201965 | 0.53 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

**STL - Knoxville**

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS2 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/03040112.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68246 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 19:58 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 165 | 78 | 66 | 1.18 | / | |
| | 1,2,3,4,7,8-HxCDD | 45:51 | 00:00 | 0 | 77209 | 62164 | 22673 | 16606 | 1.24 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDD | 45:57 | 00:00 | 0 | 86149 | 69811 | 20352 | 16696 | 1.23 | AVB/AVV | M |
| | 1,2,3,7,8,9-HxCDD | 46:21 | 00:00 | 0 | 83670 | 69232 | 19396 | 17016 | 1.21 | ABV/AVV | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 305 | 225 | 122 | 90 | 1.36 | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 45:50 | 00:00 | 0 | 706766 | 557788 | 211359 | 167597 | 1.27 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 45:57 | 00:00 | 0 | 844764 | 663401 | 198290 | 157398 | 1.27 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 46:20 | 00:00 | 0 | 763696 | 610803 | 190990 | 152885 | 1.25 | AVV/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 143 | 54 | 57 | 0.95 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 48:58 | 00:00 | 0 | 103293 | 99109 | 21150 | 20730 | 1.04 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 51:17 | 00:00 | 0 | 78201 | 78245 | 12626 | 13142 | 1.00 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 235 | 74 | 94 | 0.79 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 48:57 | 00:00 | 0 | 435965 | 958928 | 88023 | 191727 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 51:16 | 00:00 | 0 | 343078 | 759263 | 60464 | 130180 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 108 | 113 | 43 | 45 | 0.96 | / | |
| | 1,2,3,4,6,7,8-HpCDD | 50:38 | 00:00 | 0 | 64589 | 60821 | 12440 | 11503 | 1.06 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 155 | 78 | 62 | 1.26 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 50:37 | 00:00 | 0 | 674883 | 645874 | 130342 | 119247 | 1.04 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 118 | 155 | 47 | 62 | 0.76 | / | |
| | OCDF | 55:12 | 00:00 | 0 | 119481 | 130568 | 27753 | 29442 | 0.92 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 130 | 108 | 52 | 43 | 1.21 * | / | |
| | OCDD | 55:03 | 00:00 | 0 | 114181 | 123819 | 26185 | 28618 | 0.92 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 130 | 200 | 52 | 80 | 0.65 * | / | |
| | 13C-OCDD | 55:02 | 00:00 | 0 | 1071958 | 1182906 | 249224 | 279077 | 0.91 | ABV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT

| | | | | | |
|---|---|---|---|---|---|
| Workorder | 2427:46CS3 | Prep Batch | | Lot No | |
| Data File | /200304011/03040114.d | Prep Date | | SDG No | |
| IDB ID | 68251 | Prep Exp Date | | Date Received | |
| Analysis Date | 04/02/03 02:21 | Matrix | UNKNOWN | Date Sampled | |
| Anal Exp Date | | Initial Wt/Vol | | Lims Test Code | |
| Instrument | M2A | Extract Vol | | Method | |
| Analyst | PMP | Diluton Factor | 1.00 | Code | F8 |

View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 304 | | | | | 303.9016 | 305.8987 | 303.9016 | 305.8987 | 0.65-0.89 | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 165 | 59 | 66 | 0.89 * | / | |
| | 2,3,7,8-TCDF | 29:44 | 00:00 | 0 | 119223 | 149369 | 11793 | 14631 | 0.80 | ABV/ABV | M |
| 316 | | | | | 315.9419 | 317.9389 | 315.9419 | 317.9389 | 0.65-0.89 | | |
| | Noise | 00:00 | 00:00 | 0 | 210 | 303 | 84 | 121 | 0.69 | / | |
| | 13C-2,3,7,8-TCDF | 29:42 | 00:00 | 0 | 1211237 | 1526692 | 122680 | 193507 | 0.79 | ABV/ABV | |
| 320 | | | | | 319.8965 | 321.8936 | 319.8965 | 321.8936 | 0.65-0.89 | | |
| | Noise | 00:00 | 00:00 | 0 | 128 | 153 | 51 | 61 | 0.84 | / | |
| | 2,3,7,8-TCDD | 31:44 | 00:00 | 0 | 86255 | 113383 | 8117 | 10556 | 0.76 | ABV/ABV | M |
| 328 | | | | | 327.8847 | | 327.8847 | | | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | | 68 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 31:43 | 00:00 | 0 | 193073 | | 17748 | | | ABV | M |
| 332 | | | | | 331.9368 | 333.9338 | 331.9368 | 333.9338 | 0.65-0.89 | | |
| | Noise | 00:00 | 00:00 | 0 | 395 | 285 | 158 | 194 | 1.39 * | / | |
| | 13C-1,2,3,4-TCDD | 31:06 | 00:00 | 0 | 769340 | 947006 | 79426 | 96889 | 0.81 | AVV/AVV | |
| | 13C-2,3,7,8-TCDD | 31:40 | 00:00 | 0 | 816394 | 1040010 | 76135 | 96330 | 0.79 | AVV/AVV | |
| 340 | | | | | 339.8597 | 341.8567 | 339.8597 | 341.8567 | 1.32-1.78 | | |
| | Noise | 00:00 | 00:00 | 0 | 313 | 238 | 125 | 95 | 1.32 * | / | |
| | 1,2,3,7,8-PeCDF | 39:52 | 00:00 | 0 | 704474 | 442293 | 127319 | 77958 | 1.59 | ABV/ABV | M |
| | 2,3,4,7,8-PeCDF | 41:08 | 00:00 | 0 | 717705 | 464208 | 150524 | 100276 | 1.55 | ABV/ABV | M |
| 352 | | | | | 351.9000 | 353.8970 | 351.9000 | 353.8970 | 1.32-1.78 | | |
| | Noise | 00:00 | 00:00 | 0 | 250 | 248 | 100 | 99 | 1.01 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 39:51 | 00:00 | 0 | 1443761 | 898196 | 269746 | 169374 | 1.61 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 41:07 | 00:00 | 0 | 1411478 | 890214 | 313741 | 193899 | 1.59 | ABV/ABV | |
| 356 | | | | | 355.8546 | 357.8516 | 355.8546 | 357.8516 | 1.32-1.78 | | |
| | Noise | 00:00 | 00:00 | 0 | 228 | 188 | 91 | 75 | 1.21 * | / | |
| | 1,2,3,7,8-PeCDD | 41:41 | 00:00 | 0 | 474281 | 304470 | 100657 | 64260 | 1.56 | ABV/ABV | M |
| 368 | | | | | 367.8949 | 369.8919 | 367.8949 | 369.8919 | 1.32-1.78 | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 185 | 72 | 74 | 0.97 * | / | |
| | 13C-1,2,3,7,8-PeCDD | 41:39 | 00:00 | 0 | 952958 | 612799 | 214351 | 140871 | 1.56 | ABV/ABV | |
| 374 | | | | | 373.8208 | 375.8178 | 373.8208 | 375.8178 | 1.05-1.43 | | |
| | Noise | 00:00 | 00:00 | 0 | 260 | 215 | 104 | 86 | 1.21 | / | |
| | 1,2,3,4,7,8-HxCDF | 44:54 | 00:00 | 0 | 653855 | 527189 | 195952 | 156020 | 1.24 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 45:02 | 00:00 | 0 | 701993 | 562045 | 170466 | 139058 | 1.25 | AVV/AVV | M |
| | 2,3,4,6,7,8-HxCDF | 45:45 | 00:00 | 0 | 628295 | 513859 | 163031 | 136304 | 1.22 | AVV/AVV | M |
| | 1,2,3,7,8,9-HxCDF | 46:42 | 00:00 | 0 | 561209 | 454001 | 119782 | 97283 | 1.24 | ABV/ABV | M |
| 384 | | | | | 383.8639 | 385.8610 | 383.8639 | 385.8610 | 0.43-0.59 | | |
| | Noise | 00:00 | 00:00 | 0 | 283 | 275 | 113 | 110 | 1.03 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 44:53 | 00:00 | 0 | 665251 | 1267174 | 198847 | 378332 | 0.52 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 45:02 | 00:00 | 0 | 728358 | 1380504 | 182810 | 344967 | 0.53 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 45:44 | 00:00 | 0 | 679774 | 1283488 | 181544 | 348545 | 0.53 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 46:41 | 00:00 | 0 | 574407 | 1088876 | 127604 | 237532 | 0.53 | ABV/ABV | |
| 390 | | | | | 389.8156 | 391.8127 | 389.8156 | 391.8127 | 1.05-1.43 | | |

Notes:
R = ratio is outside limits H = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS3 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/0304011[illegible].d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68251 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/02/03 02:21 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DXI613B |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | F8 |

3 pwp 4-2-03

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 250 | 165 | 100 | 66 | 1.52 * | / | |
| | 1,2,3,4,7,8-HxCDD | 45:56 | 00:00 | 0 | 432363 | 343769 | 116722 | 93211 | 1.26 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDD | 46:02 | 00:00 | 0 | 458953 | 368662 | 118809 | 94791 | 1.24 | AVV/AVV | M |
| | 1,2,3,7,8,9-HxCDD | 46:26 | 00:00 | 0 | 468487 | 370127 | 121556 | 96269 | 1.27 | ABB/ABV | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 218 | 210 | 87 | 84 | 1.04 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 45:55 | 00:00 | 0 | 777539 | 615767 | 212760 | 165630 | 1.26 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 46:01 | 00:00 | 0 | 900589 | 707668 | 242428 | 193408 | 1.27 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 46:25 | 00:00 | 0 | 841122 | 668951 | 224928 | 174954 | 1.26 | ABB/AVB | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 185 | 72 | 74 | 0.97 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 49:02 | 00:00 | 0 | 588131 | 558356 | 124513 | 114307 | 1.05 | ABV/ABV | M |
| | 1,2,3,4,7,8-[illegible]CDF | [illegible] | 00:00 | 0 | 420589 | 409701 | 75944 | 74001 | 1.03 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 173 | 57 | 69 | 0.83 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 49:01 | 00:00 | 0 | 480305 | 1056673 | 104460 | 224061 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 51:20 | 00:00 | 0 | 361378 | 800750 | 66122 | 149153 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 128 | 153 | 51 | 61 | 0.84 * | / | |
| | 1,2,3,4,6,7,8-HpCDD | 50:42 | 00:00 | 0 | 347460 | 333066 | 69323 | 66472 | 1.04 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 115 | 55 | 46 | 1.20 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 50:41 | 00:00 | 0 | 710735 | 675711 | 137785 | 132147 | 1.05 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 160 | 65 | 64 | 1.02 * | / | |
| | OCDF | 55:16 | 00:00 | 0 | 651091 | 725300 | 158759 | 177964 | 0.90 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 198 | 68 | 79 | 0.86 | / | |
| | OCDD | 55:08 | 00:00 | 0 | 589141 | 663043 | 138531 | 161729 | 0.89 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 115 | 188 | 46 | 75 | 0.61 * | / | |
| | 13C-OCDD | 55:07 | 00:00 | 0 | 1109822 | 1238186 | 259867 | 290889 | 0.90 | ABV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

[redacted]

| | | | | | |
|---|---|---|---|---|---|
| **Workordar** | 2427:46CS4 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/03040114.d | **Prep Date** | | **SDG No** | |
| **IBB ID** | 68248 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 22:00 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 250 | 308 | 100 | 123 | 0.81 | / | |
| | 2,3,7,8-TCDF | 29:42 | 00:00 | 0 | 554244 | 701694 | 53996 | 68795 | 0.79 | ABV/ABV | M |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 348 | 318 | 139 | 127 | 1.09 * | / | |
| | 13C-2,3,7,8-TCDF | 29:39 | 00:00 | 0 | 1412828 | 1777802 | 144828 | 181929 | 0.79 | ABV/ABV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 200 | 158 | 80 | 63 | 1.27 * | / | |
| | 2,3,7,8-TCDD | 31:39 | 00:00 | 0 | 419939 | 533599 | 39531 | 50117 | 0.79 | AVV/AVV | M |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 190 | | 76 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 31:39 | 00:00 | 0 | 909865 | | 87580 | | | ABV | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 328 | 470 | 131 | 188 | 0.70 | / | |
| | 13C-1,2,3,4-TCDD | 31:03 | 00:00 | 0 | 948287 | 1169216 | 97186 | 120559 | 0.81 | AVV/ABV | |
| | 13C-2,3,7,8-TCDD | 31:37 | 00:00 | 0 | 1018703 | 1290916 | 98954 | 125820 | 0.79 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 360 | 310 | 144 | 124 | 1.16 * | / | |
| | 1,2,3,7,8-PeCDF | 39:47 | 00:00 | 0 | 3489621 | 2265714 | 644452 | 415223 | 1.54 | ABV/ABV | M |
| | 2,3,4,7,8-PeCDF | 41:04 | 00:00 | 0 | 3595984 | 2290868 | 791354 | 491877 | 1.57 | ABV/ABV | M |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 355 | 265 | 142 | 106 | 1.34 | / | |
| | 13C-1,2,3,7,8-PeCDF | 39:45 | 00:00 | 0 | 1891705 | 1187145 | 357186 | 227133 | 1.59 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 41:03 | 00:00 | 0 | 1829000 | 1144619 | 404164 | 255439 | 1.60 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 278 | 235 | 111 | 94 | 1.18 * | / | |
| | 1,2,3,7,8-PeCDD | 41:36 | 00:00 | 0 | 2427810 | 1550295 | 541630 | 352778 | 1.57 | ABV/ABV | M |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 235 | 165 | 94 | 66 | 1.42 | / | |
| | 13C-1,2,3,7,8-PeCDD | 41:35 | 00:00 | 0 | 1257075 | 809195 | 298685 | 190865 | 1.55 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 428 | 505 | 171 | 202 | 0.85 * | / | |
| | 1,2,3,4,7,8-HxCDF | 44:50 | 00:00 | 0 | 3141254 | 2531423 | 933943 | 740198 | 1.24 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 44:58 | 00:00 | 0 | 3264481 | 2625537 | 900856 | 721946 | 1.24 | AVV/AVB | M |
| | 2,3,4,6,7,8-HxCDF | 45:41 | 00:00 | 0 | 2939180 | 2366775 | 809375 | 648127 | 1.24 | AVV/AVV | M |
| | 1,2,3,7,8,9-HxCDF | 46:36 | 00:00 | 0 | 2639206 | 2096783 | 608392 | 479407 | 1.26 | ABV/ABV | M |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 258 | 278 | 183 | 111 | 0.93 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 44:49 | 00:00 | 0 | 834500 | 1586043 | 262925 | 493430 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 44:56 | 00:00 | 0 | 885791 | 1692912 | 248047 | 478817 | 0.52 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 45:40 | 00:00 | 0 | 831761 | 1574107 | 235293 | 441542 | 0.53 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 46:35 | 00:00 | 0 | 700969 | 1344192 | 163854 | 315856 | 0.52 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |

Notes:
E = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS4 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/030401i4.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68248 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 22:00 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 398 | 343 | 159 | 137 | 1.16 | / | |
| | 1,2,3,4,7,8-HxCDD | 45:51 | 00:00 | 0 | 2025160 | 1625236 | 612342 | 487146 | 1.25 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDD | 45:58 | 00:00 | 0 | 2187229 | 1756400 | 558816 | 445554 | 1.25 | AVV/AVV | M |
| | 1,2,3,7,8,9-HxCDD | 46:20 | 00:00 | 0 | 2205718 | 1788174 | 595348 | 485541 | 1.23 | AVV/AVV | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 225 | 205 | 90 | 82 | 1.10 | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 45:50 | 00:00 | 0 | 952514 | 760636 | 295152 | 234666 | 1.25 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 45:57 | 00:00 | 0 | 1119830 | 878408 | 292309 | 227540 | 1.27 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 46:19 | 00:00 | 0 | 1032330 | 815480 | 283767 | 225859 | 1.27 | AVV/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 220 | 235 | 88 | 94 | 0.94 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 48:57 | 00:00 | 0 | 2780083 | 2675055 | 593271 | 575134 | 1.04 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 51:17 | 00:00 | 0 | 2051899 | 1972332 | 368929 | 353222 | 1.04 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 193 | 215 | 77 | 86 | 0.90 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 48:57 | 00:00 | 0 | 585073 | 1271103 | 126355 | 280889 | 0.46 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 51:15 | 00:00 | 0 | 453182 | 1008625 | 80138 | 182958 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 175 | 68 | 70 | 0.97 | / | |
| | 1,2,3,4,6,7,8-HpCDD | 50:36 | 00:00 | 0 | 1715246 | 1642801 | 358421 | 338718 | 1.04 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 140 | 71 | 56 | 1.27 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 50:35 | 00:00 | 0 | 907474 | 870610 | 191054 | 181921 | 1.04 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 235 | 258 | 94 | 103 | 0.91 | / | |
| | OCDF | 55:11 | 00:00 | 0 | 3130005 | 3436591 | 825352 | 911435 | 0.91 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 175 | 63 | 70 | 0.90 | / | |
| | OCDD | 55:03 | 00:00 | 0 | 2892817 | 3241569 | 730058 | 801529 | 0.89 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 175 | 62 | 70 | 0.89 | / | |
| | 13C-OCDD | 55:02 | 00:00 | 0 | 1479180 | 1640520 | 375379 | 410126 | 0.90 | ABV/ABV | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

SEVERN TRENT

| | | | | | |
|---|---|---|---|---|---|
| Workorder | 2427:46C85 | Prep Batch | | Lot No | |
| Data File | /20030401i/03040115.d | Prep Date | | SDG No | |
| IDB ID | 68249 | Prep Exp Date | | Date Received | |
| Analysis Date | 06/01/03 23:02 | Matrix | UNKNOWN | Date Sampled | |
| Anal Exp Date | | Initial Wt/Vol | | Lims Test Code | |
| Instrument | M2A | Extract Vol | | Method | DX1613B |
| Analyst | DCG | Diluton Factor | 1.00 | Code | F8 |

View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 304 | | | | | 303.9016 | 305.8987 | 303.9016 | 305.8987 | 0.65-0.89 | | |
| Noise | | 00:00 | 00:00 | 0 | 380 | 443 | 152 | 177 | 0.86 | / | |
| 2,3,7,8-TCDF | | 29:44 | 00:00 | 0 | 2994089 | 3822050 | 309740 | 394645 | 0.78 | ABV/ABV | M |
| 316 | | | | | 315.9419 | 317.9389 | 315.9419 | 317.9389 | 0.65-0.89 | | |
| Noise | | 00:00 | 00:00 | 0 | 308 | 273 | 123 | 109 | 1.13 * | / | |
| 13C-2,3,7,8-TCDF | | 29:42 | 00:00 | 0 | 1520868 | 1911171 | 164322 | 211904 | 0.80 | ABV/ABV | |
| 320 | | | | | 319.8965 | 321.8936 | 319.8965 | 321.8936 | 0.65-0.89 | | |
| Noise | | 00:00 | 00:00 | 0 | 170 | 200 | 68 | 80 | 0.85 | / | |
| 2,3,7,8-TCDD | | 31:43 | 00:00 | 0 | 2295396 | 2930867 | 226423 | 289837 | 0.78 | AVV/AVV | M |
| 328 | | | | | 327.8847 | | 327.8847 | | | | |
| Noise | | 00:00 | 00:00 | 0 | 238 | | 95 | | | | |
| 37Cl4-2,3,7,8-TCDD | | 31:43 | 00:00 | 0 | 4987281 | | 483390 | | | ABV | M |
| 332 | | | | | 331.9368 | 333.9338 | 331.9368 | 333.9338 | 0.65-0.89 | | |
| Noise | | 00:00 | 00:00 | 0 | 455 | 338 | 182 | 135 | 1.35 * | / | |
| 13C-1,2,3,4-TCDD | | 31:07 | 00:00 | 0 | 984116 | 1222139 | 100898 | 124356 | 0.81 | ABV/ABV | |
| 13C-2,3,7,8-TCDD | | 31:39 | 00:00 | 0 | 1106836 | 1412443 | 113261 | 142869 | 0.78 | AVV/AVV | |
| 340 | | | | | 339.8597 | 341.8567 | 339.8597 | 341.8567 | 1.32-1.78 | | |
| Noise | | 00:00 | 00:00 | 0 | 785 | 480 | 314 | 192 | 1.64 | / | |
| 1,2,3,7,8-PeCDF | | 39:52 | 00:00 | 0 | 19645044 | 12536343 | 3983354 | 2526947 | 1.57 | ABV/ABV | M |
| 2,3,4,7,8-PeCDF | | 41:08 | 00:00 | 0 | 19894116 | 12911737 | 4689586 | 3032590 | 1.54 | ABV/ABV | M |
| 352 | | | | | 351.9000 | 353.8970 | 351.9000 | 353.8970 | 1.32-1.78 | | |
| Noise | | 00:00 | 00:00 | 0 | 235 | 245 | 94 | 98 | 0.96 * | / | |
| 13C-1,2,3,7,8-PeCDF | | 39:51 | 00:00 | 0 | 2099720 | 1336594 | 426823 | 273357 | 1.57 | ABV/ABV | |
| 13C-2,3,4,7,8-PeCDF | | 41:07 | 00:00 | 0 | 2026276 | 1284164 | 492517 | 315534 | 1.58 | ABV/ABV | |
| 356 | | | | | 355.8546 | 357.8516 | 355.8546 | 357.8516 | 1.32-1.78 | | |
| Noise | | 00:00 | 00:00 | 0 | 440 | 375 | 176 | 150 | 1.17 * | / | |
| 1,2,3,7,8-PeCDD | | 41:41 | 00:00 | 0 | 13604447 | 8733941 | 3352136 | 2108795 | 1.56 | ABV/ABV | M |
| 368 | | | | | 367.8949 | 369.8919 | 367.8949 | 369.8919 | 1.32-1.78 | | |
| Noise | | 00:00 | 00:00 | 0 | 208 | 153 | 83 | 61 | 1.36 | / | |
| 13C-1,2,3,7,8-PeCDD | | 41:40 | 00:00 | 0 | 1417851 | 903317 | 351247 | 221965 | 1.57 | ABV/ABV | |
| 374 | | | | | 373.8208 | 375.8178 | 373.8208 | 375.8178 | 1.05-1.43 | | |
| Noise | | 00:00 | 00:00 | 0 | 523 | 585 | 209 | 234 | 0.89 * | / | |
| 1,2,3,4,7,8-HxCDF | | 44:55 | 00:00 | 0 | 17675136 | 14062473 | 5616703 | 4343154 | 1.36 | ABV/ABV | M |
| 1,2,3,6,7,8-HxCDF | | 45:03 | 00:00 | 0 | 18558774 | 14762074 | 5590976 | 4453881 | 1.26 | AVV/AVV | M |
| 2,3,4,6,7,8-HxCDF | | 45:46 | 00:00 | 0 | 16599401 | 13279929 | 4925006 | 3827959 | 1.29 | AVV/AVB | M |
| 1,2,3,7,8,9-HxCDF | | 46:41 | 00:00 | 0 | 15294210 | 12177844 | 3876010 | 3006299 | 1.28 | ABV/ABV | M |
| 384 | | | | | 383.8639 | 385.8610 | 383.8639 | 385.8610 | 0.43-0.59 | | |
| Noise | | 00:00 | 00:00 | 0 | 200 | 285 | 80 | 114 | 0.70 * | / | |
| 13C-1,2,3,4,7,8-HxCDF | | 44:54 | 00:00 | 0 | 945698 | 1775321 | 303209 | 571688 | 0.53 | ABV/ABV | |
| 13C-1,2,3,6,7,8-HxCDF | | 45:02 | 00:00 | 0 | 973272 | 1895405 | 295949 | 564532 | 0.51 | AVV/AVV | |
| 13C-2,3,4,6,7,8-HxCDF | | 45:45 | 00:00 | 0 | 940605 | 1774698 | 276612 | 512438 | 0.53 | AVV/AVV | |
| 13C-1,2,3,7,8,9-HxCDF | | 46:40 | 00:00 | 0 | 811022 | 1542150 | 210017 | 391283 | 0.53 | ABV/ABV | |
| 390 | | | | | 389.8156 | 391.8127 | 389.8156 | 391.8127 | 1.05-1.43 | | |

Flags:
* = ratio is outside limit N = data changed manually E = Peak not reported L = peak less than 2.5x S/N
# = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## PCDD/PCDF by EPA Method 1613B

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS5 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20030401i/03040115.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 68249 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 04/01/03 23:02 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | DCG | **Diluton Factor** | 1.00 | **Code** | F8 |

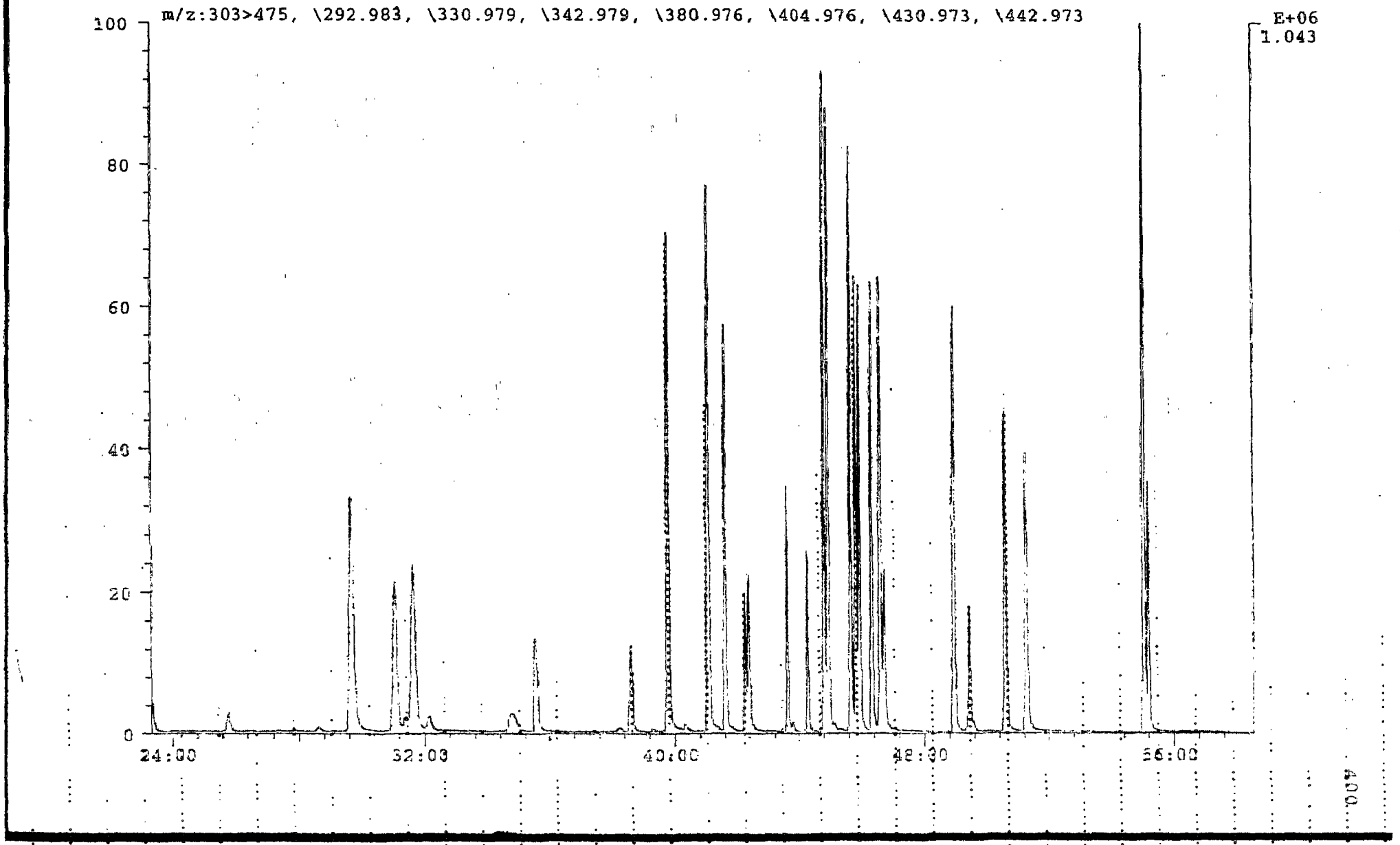
**View Small Peaks?** False **View deleted peaks?** False

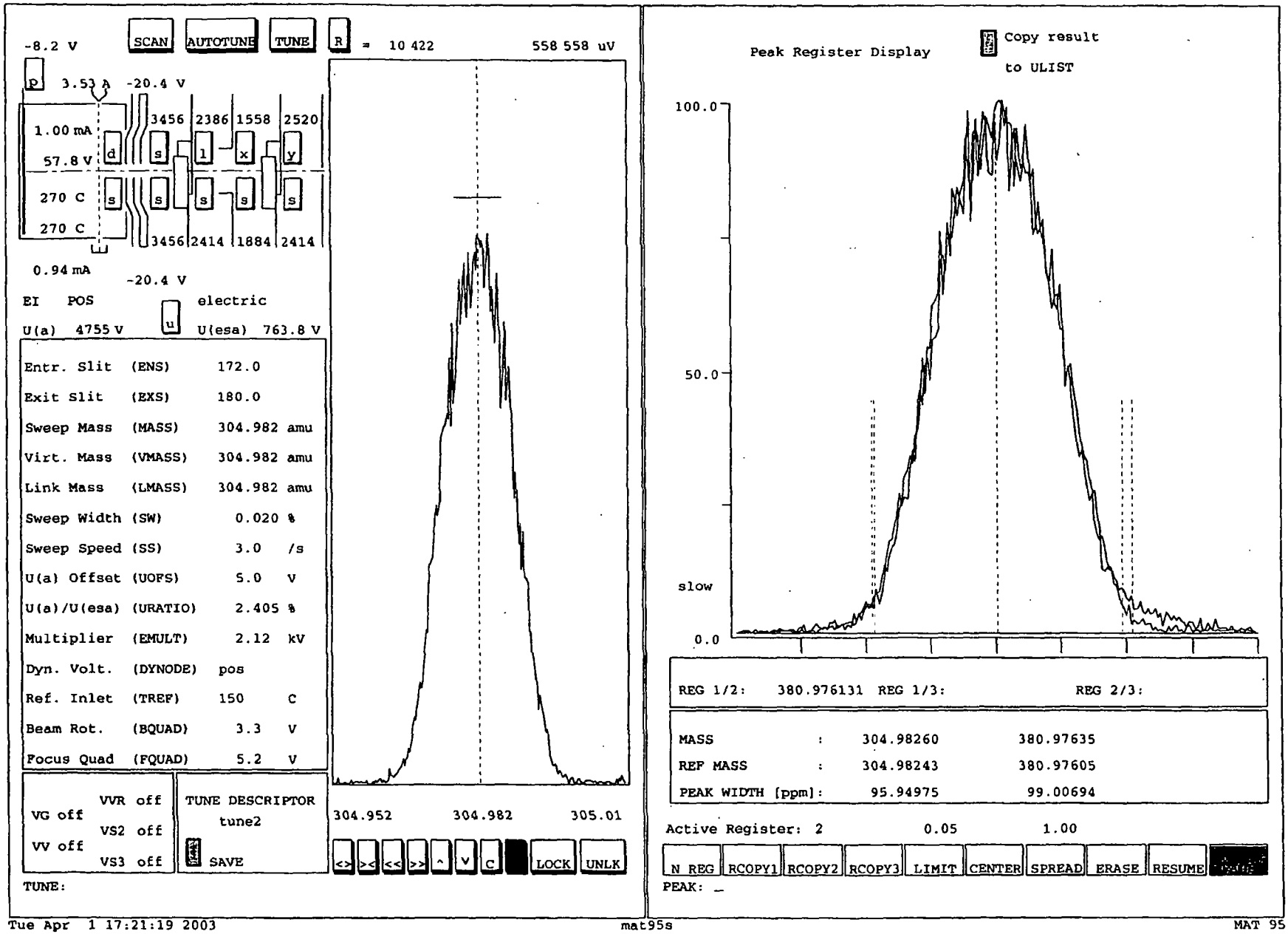
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 255 | 338 | 102 | 135 | 0.76 * | / | |
| | 1,2,3,4,7,8-HxCDD | 45:56 | 00:00 | 0 | 11677504 | 9431370 | 3634085 | 2940057 | 1.24 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDD | 46:03 | 00:00 | 0 | 12170517 | 9761135 | 3425475 | 2694337 | 1.25 | AVV/AVB | M |
| | 1,2,3,7,8,9-HxCDD | 46:26 | 00:00 | 0 | 12430933 | 10017298 | 3582510 | 2902234 | 1.24 | ABB/ABB | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 173 | 64 | 69 | 0.93 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 45:55 | 00:00 | 0 | 1161217 | 883752 | 341086 | 272384 | 1.31 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 46:02 | 00:00 | 0 | 1213774 | 991121 | 345551 | 272134 | 1.22 | AVB/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 46:24 | 00:00 | 0 | 1175294 | 924130 | 340586 | 276003 | 1.27 | ABB/ABV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 315 | 408 | 126 | 163 | 0.77 * | / | |
| | 1,2,3,4,6,7,8-HpCDF | 49:03 | 00:00 | 0 | 15750571 | 15150592 | 3631433 | 3528619 | 1.04 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 51:21 | 00:00 | 0 | 12143876 | 11698902 | 2467242 | 2381016 | 1.04 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 168 | 62 | 67 | 0.93 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 49:02 | 00:00 | 0 | 653040 | 1445650 | 152497 | 329586 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 51:20 | 00:00 | 0 | 536403 | 1209185 | 110753 | 250263 | 0.44 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 200 | 173 | 80 | 69 | 1.16 | / | |
| | 1,2,3,4,6,7,8-HpCDD | 50:41 | 00:00 | 0 | 10021209 | 9622798 | 2183002 | 2097122 | 1.04 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 100 | 62 | 40 | 1.55 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 50:40 | 00:00 | 0 | 1067298 | 1014062 | 232703 | 222955 | 1.05 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 323 | 440 | 129 | 176 | 0.73 * | / | |
| | OCDF | 55:17 | 00:00 | 0 | 19915868 | 22106606 | 5561086 | 6086943 | 0.90 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 288 | 230 | 115 | 92 | 1.25 * | / | |
| | OCDD | 55:08 | 00:00 | 0 | 18132802 | 20427986 | 4895593 | 5699653 | 0.89 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 145 | 50 | 58 | 0.86 | / | |
| | 13C-OCDD | 55:08 | 00:00 | 0 | 1846378 | 2041573 | 483793 | 521746 | 0.90 | ABV/ABV | |

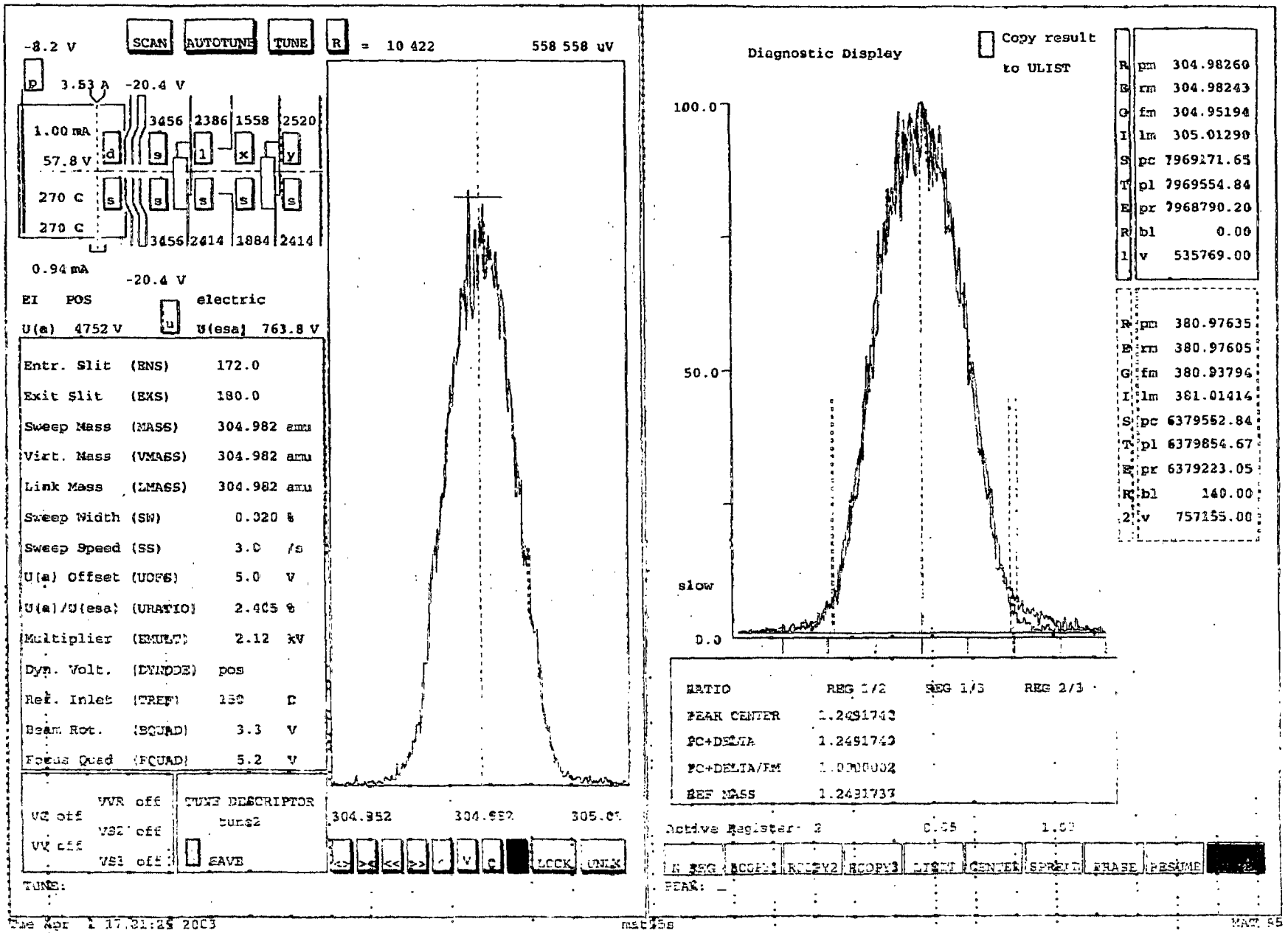
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

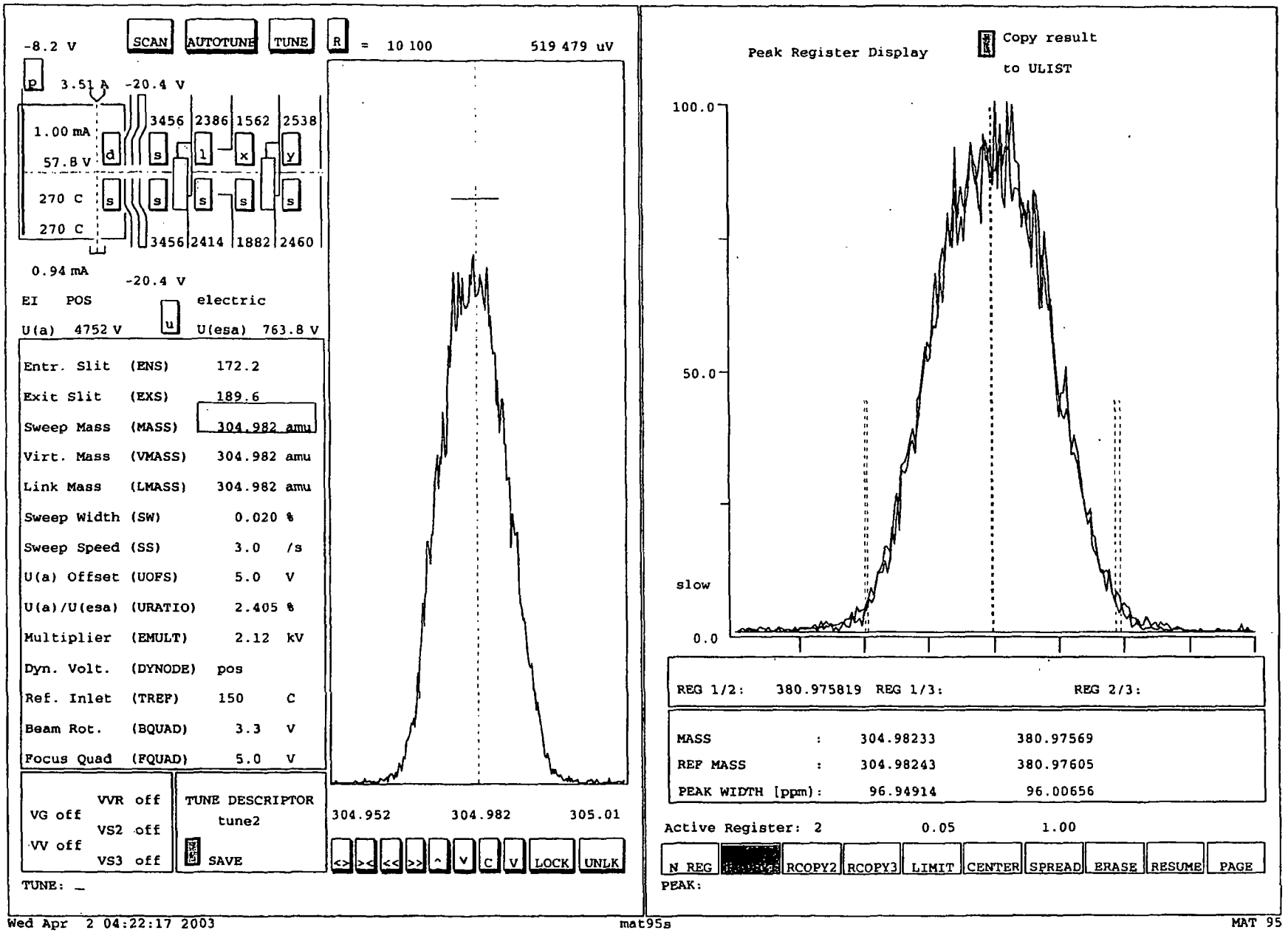
Int, Calc DCG 4-1-03
QC Pump 4-1-03

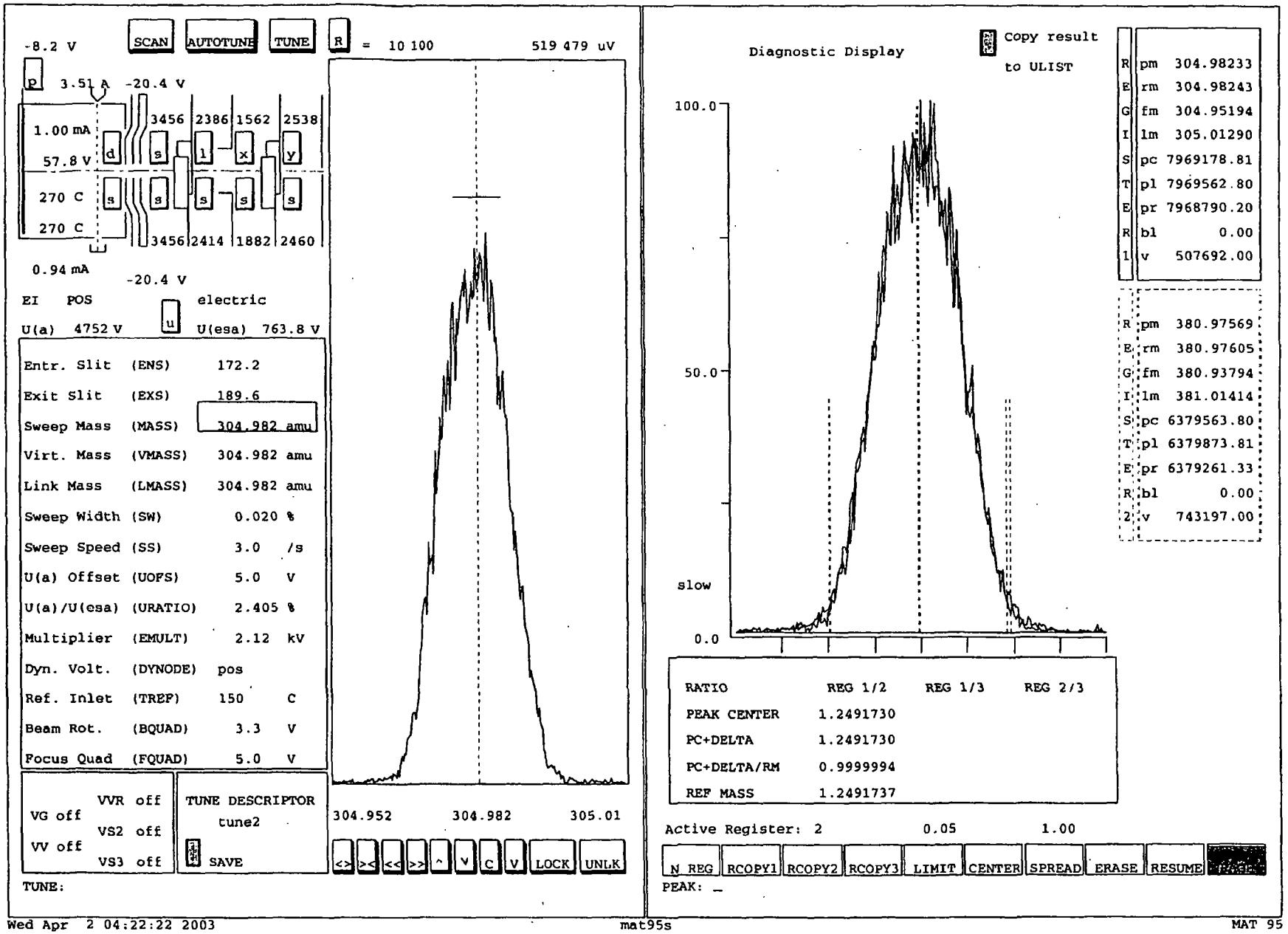
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 847 > 2811 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



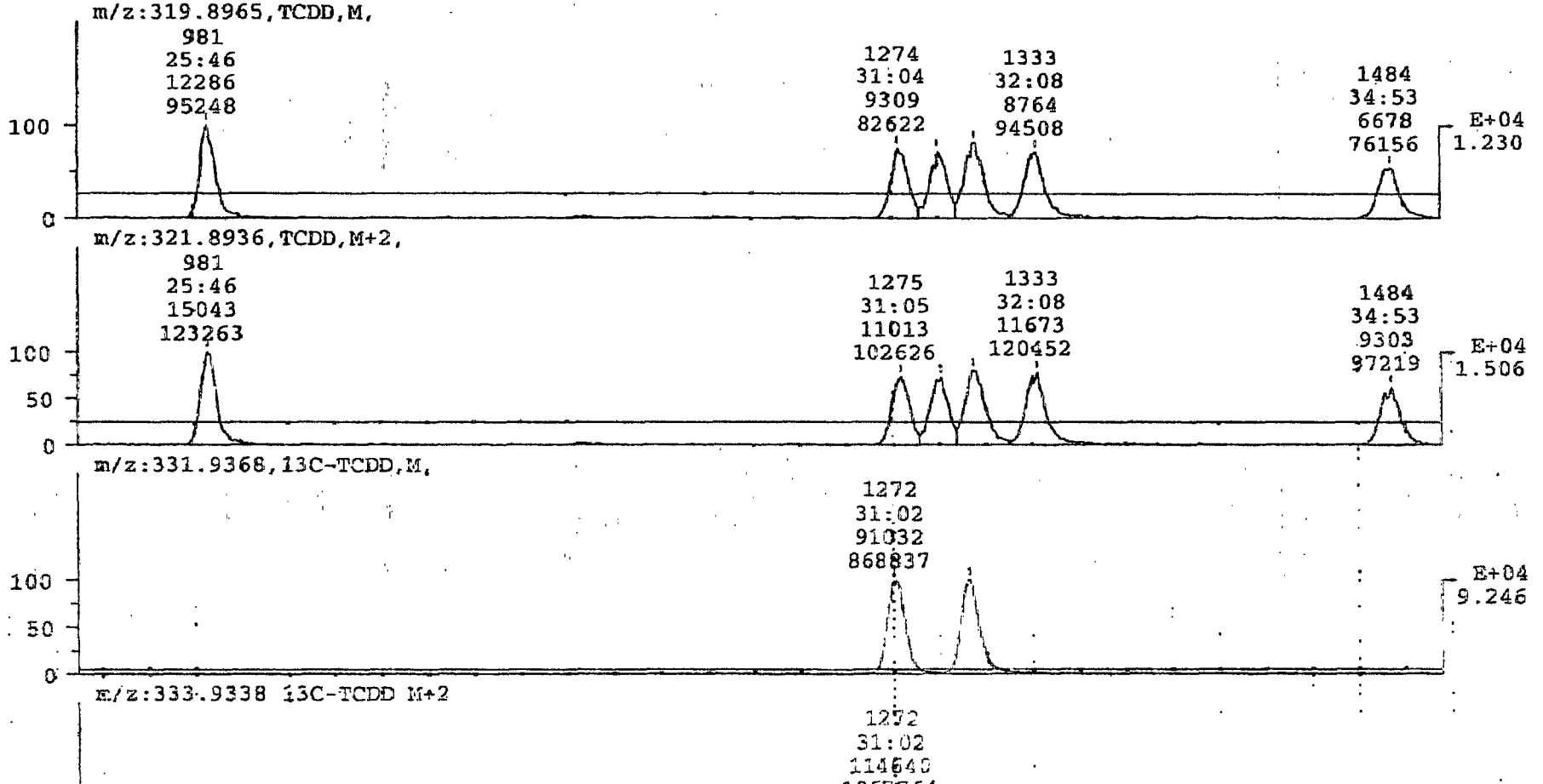

-8.2 V
SCAN
AUTOTUNE
TUNE
R
= 10 422
558 558 uV
P
3.53 A
-20.4 V
1.00 mA
57.8 V
270 C
270 C
3456 2386 1558 2520
3456 2414 1884 2414
0.94 mA
-20.4 V
EI POS
electric
U(a) 4755 V
U(esa) 763.8 V
Entr. Slit (ENS) 172.0
Exit Slit (EXS) 180.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.405 %
Multiplier (EMULT) 2.12 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 3.3 V
Focus Quad (FQUAD) 5.2 V
VG off
VV off
VVR off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE:
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.976131 REG 1/3: REG 2/3:
MASS : 304.98260 380.97635
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 95.94975 99.00694
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Tue Apr 1 17:21:19 2003
mat95s
MAT 95


-8.2 V
SCAN
AUTOTUNE
TUNE
R
= 10 422
558 558 uV
p
3.53 A
-20.4 V
1.00 mA
57.8 V
270 C
270 C
3456 2386 1558 2520
3456 2414 1884 2414
0.94 mA
-20.4 V
EI POS
electric
U(a) 4752 V
U(esa) 763.8 V
Entr. Slit (ENS) 172.0
Exit Slit (EXS) 180.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.405 %
Multiplier (EMULT) 2.12 kV
Dyn. Volt. (DYNDOE) pos
Ref. Inlet (TREF) 180 C
Beam Rot. (BQUAD) 3.3 V
Focus Quad (FQUAD) 5.2 V
VR off
VS2 off
VS1 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.012
LOCK
UNLK
TUNE:
Tue Apr 1 17:31:25 2003
matiss
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
R pm 304.98260
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969171.65
T pl 7969554.84
E pr 7968790.20
R bl 0.00
1 v 535769.00
R pm 380.97635
E rm 380.97605
G fm 380.93796
I lm 381.01414
S pc 6379552.84
T pl 6379854.67
E pr 6379223.05
R bl 140.00
2 v 757155.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491742
PC+DELTA 1.2491743
PC+DELTA/FM 1.0000002
REF MASS 1.2491733
Active Register: 2
0.05
1.00
R REG
RCOPY1
RCOPY2
RCOPY3
CENTER
ERASE
RESUME
PEAK: _
MAT 95

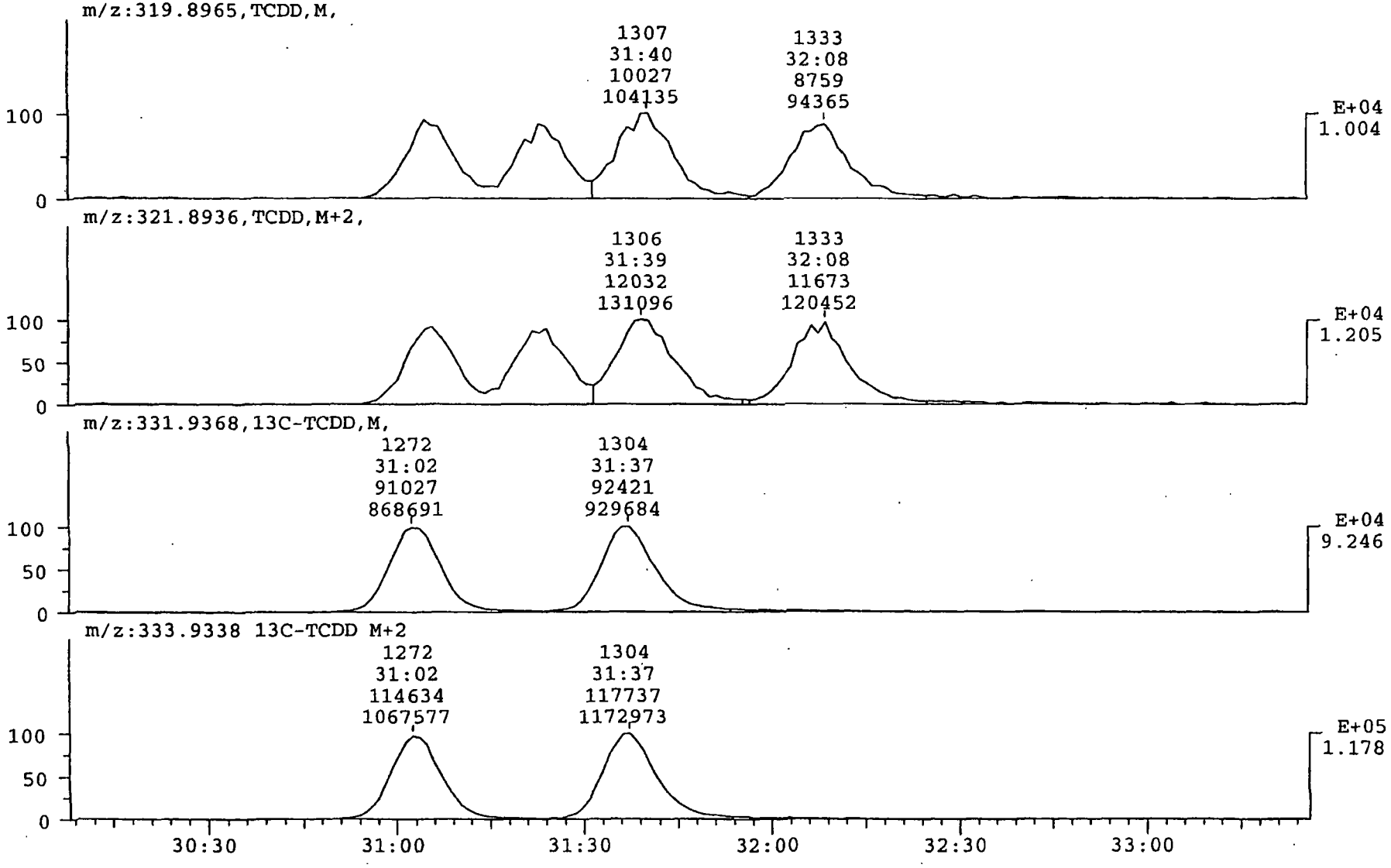

-8.2 V
SCAN
AUTOTUNE
TUNE
R
= 10 100
519 479 uV
3.51 A
-20.4 V
1.00 mA
57.8 V
270 C
270 C
3456 2386 1562 2538
3456 2414 1882 2460
0.94 mA
-20.4 V
EI POS
electric
U(a) 4752 V
U(esa) 763.8 V
Entr. Slit (ENS) 172.2
Exit Slit (EXS) 189.6
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.405 %
Multiplier (EMULT) 2.12 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 3.3 V
Focus Quad (FQUAD) 5.0 V
VG off
VVR off
VV off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE: _
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975819 REG 1/3: REG 2/3:
MASS : 304.98233 380.97569
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 96.94914 96.00656
Active Register: 2 0.05 1.00
N REG
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PAGE
PEAK:
Wed Apr 2 04:22:17 2003
mat95s
MAT 95


-8.2 V
SCAN
AUTOTUNE
TUNE
R
= 10 100
519 479 uV
P
3.51 A
-20.4 V
1.00 mA
57.8 V
270 C
270 C
3456 2386 1562 2538
3456 2414 1882 2460
0.94 mA
-20.4 V
EI POS
electric
U(a) 4752 V
U(esa) 763.8 V
Entr. Slit (ENS) 172.2
Exit Slit (EXS) 189.6
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.405 %
Multiplier (EMULT) 2.12 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 3.3 V
Focus Quad (FQUAD) 5.0 V
VG off
VV off
VVR off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
R pm 304.98233
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969178.81
T pl 7969562.80
E pr 7968790.20
R bl 0.00
1 v 507692.00
R pm 380.97569
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379563.80
T pl 6379873.81
E pr 6379261.33
R bl 0.00
2 v 743197.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491730
PC+DELTA 1.2491730
PC+DELTA/RM 0.9999994
REF MASS 1.2491737
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Wed Apr 2 04:22:22 2003
mat95s
MAT 95

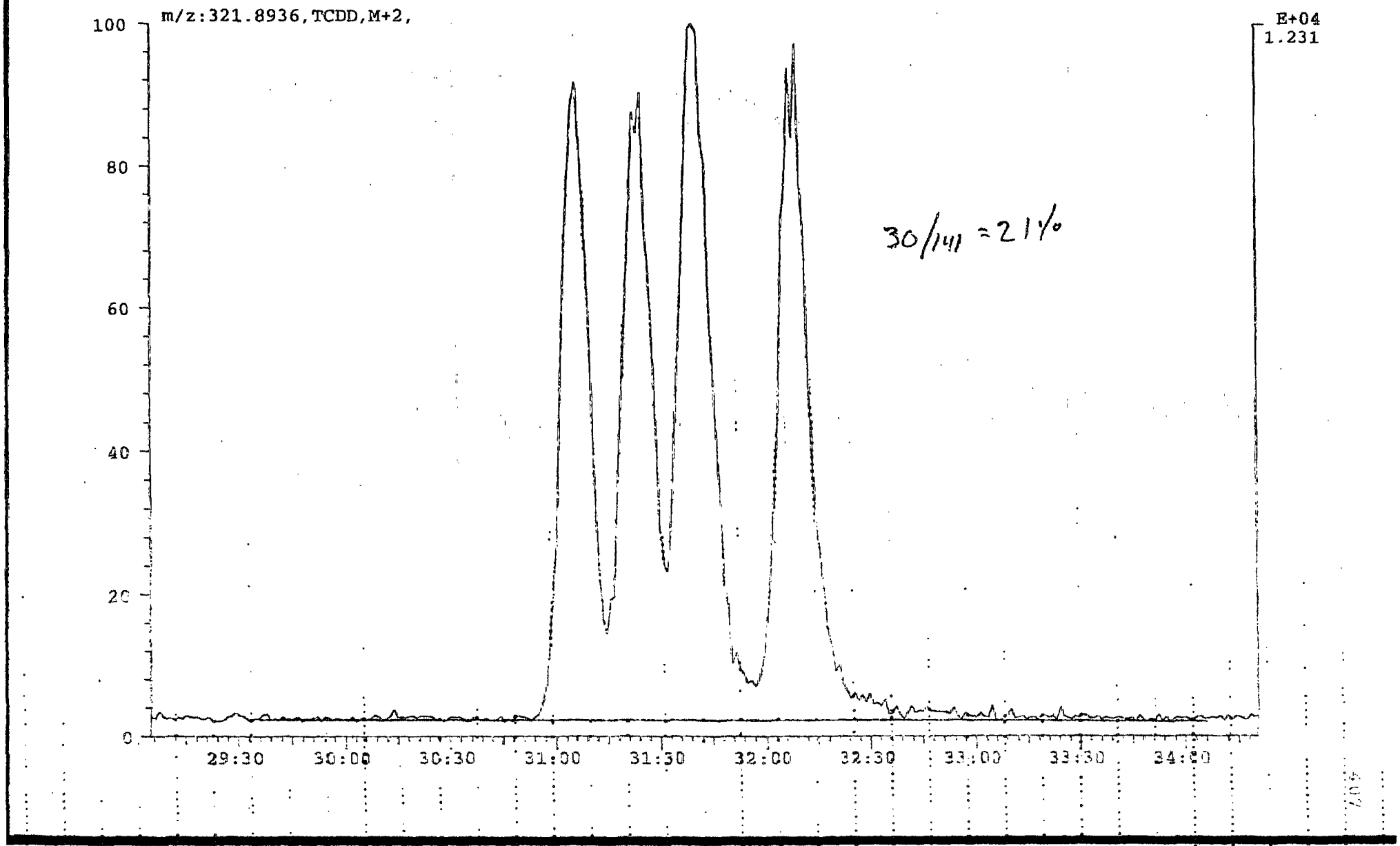
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 926 > 1505 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



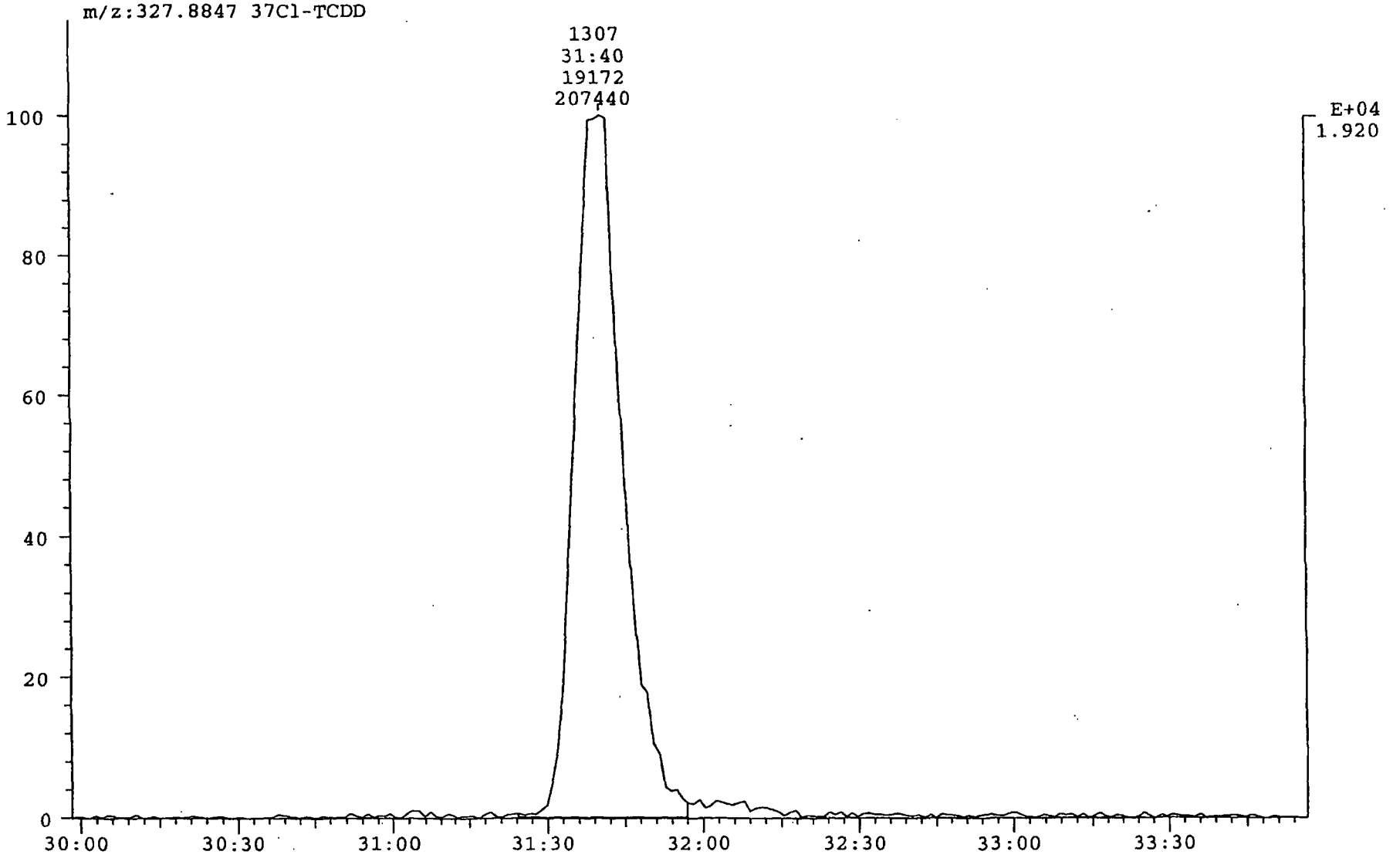
CHRO: t030401w1 - 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1222 > 1404 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



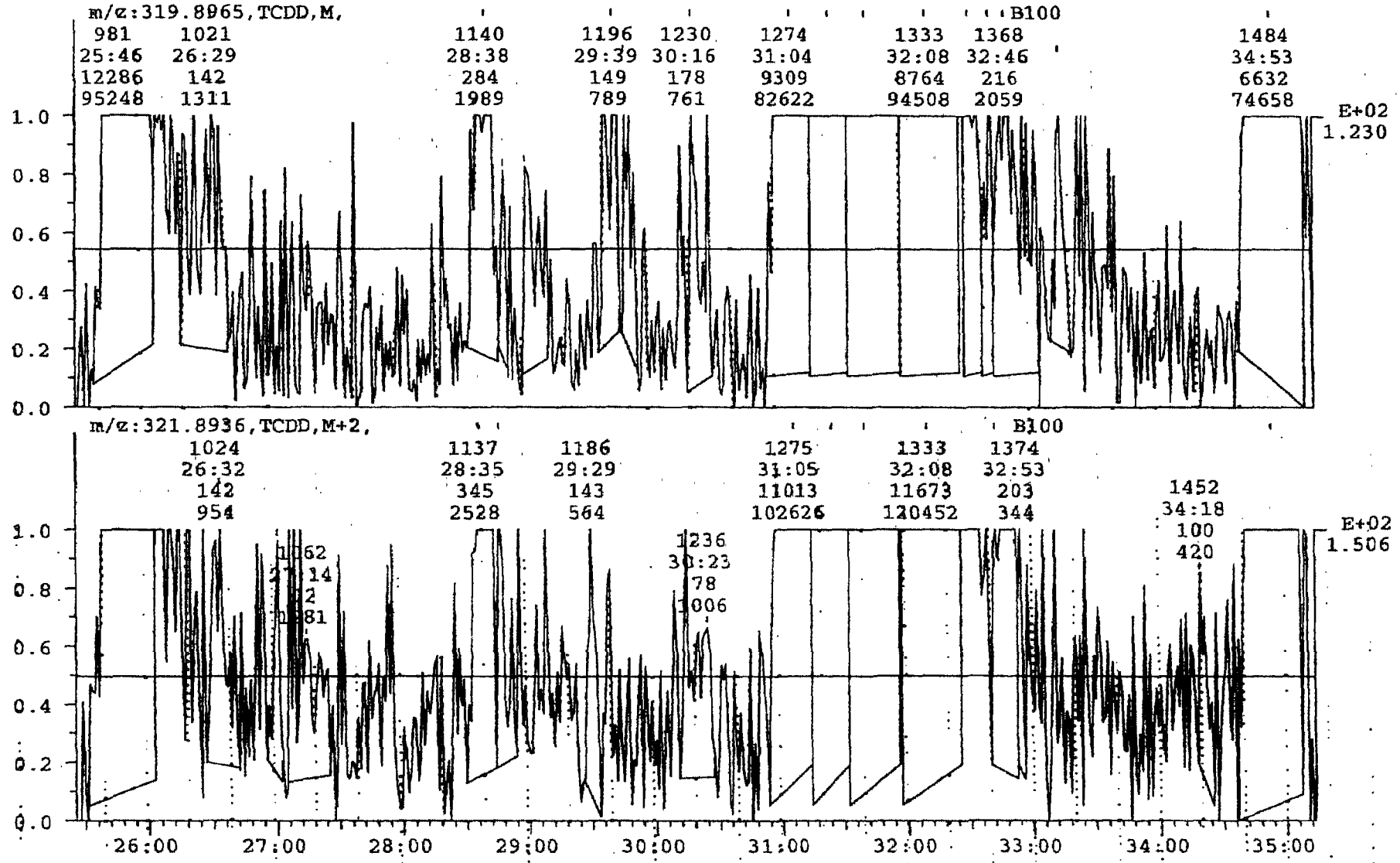
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1164 > 1454 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 5 Label : 0, 2.5
Disp: Height Area



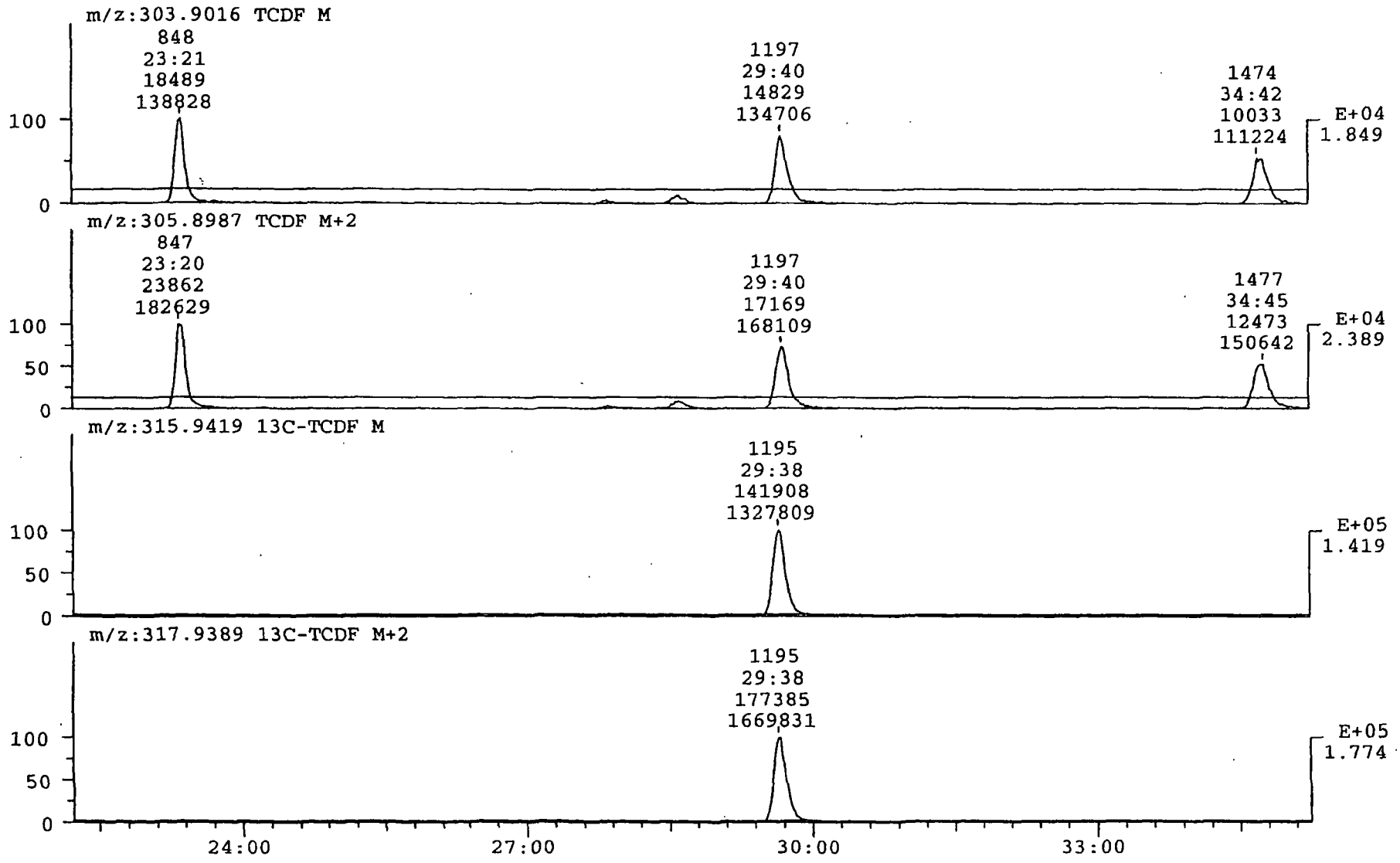
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



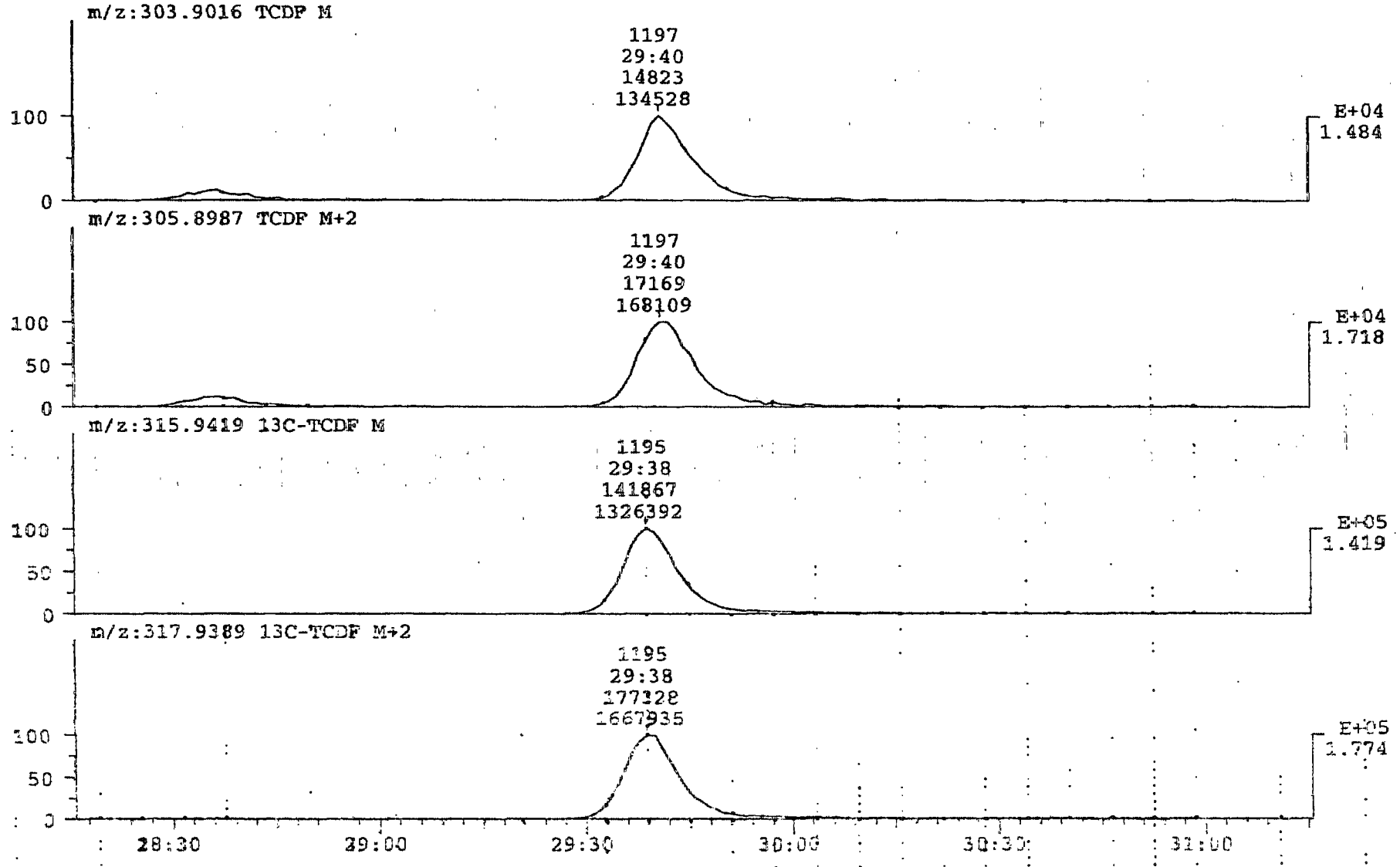
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 962 > 1503 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : -3, 1.0
Disp: Height Area



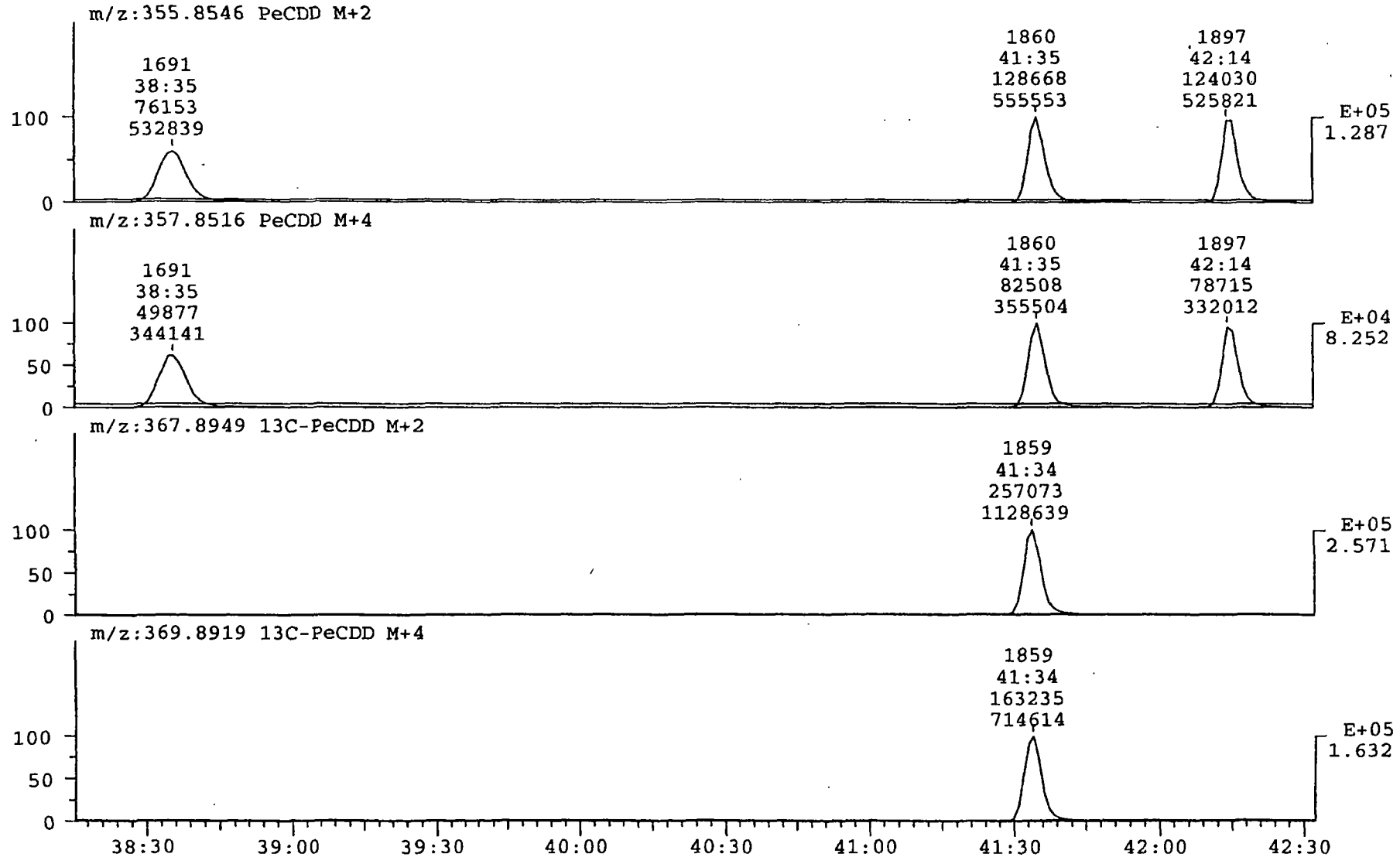
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 786 > 1504 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



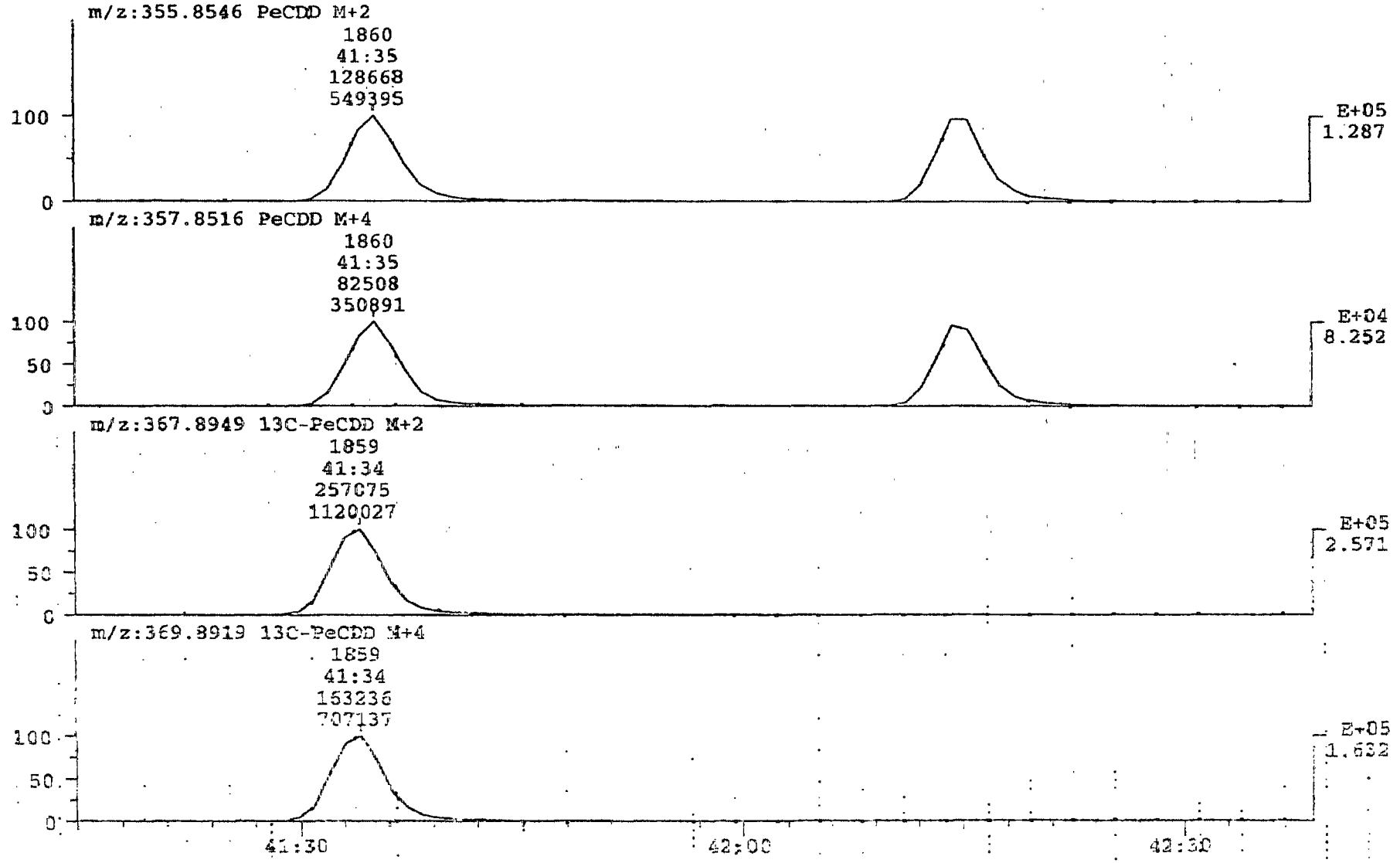
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



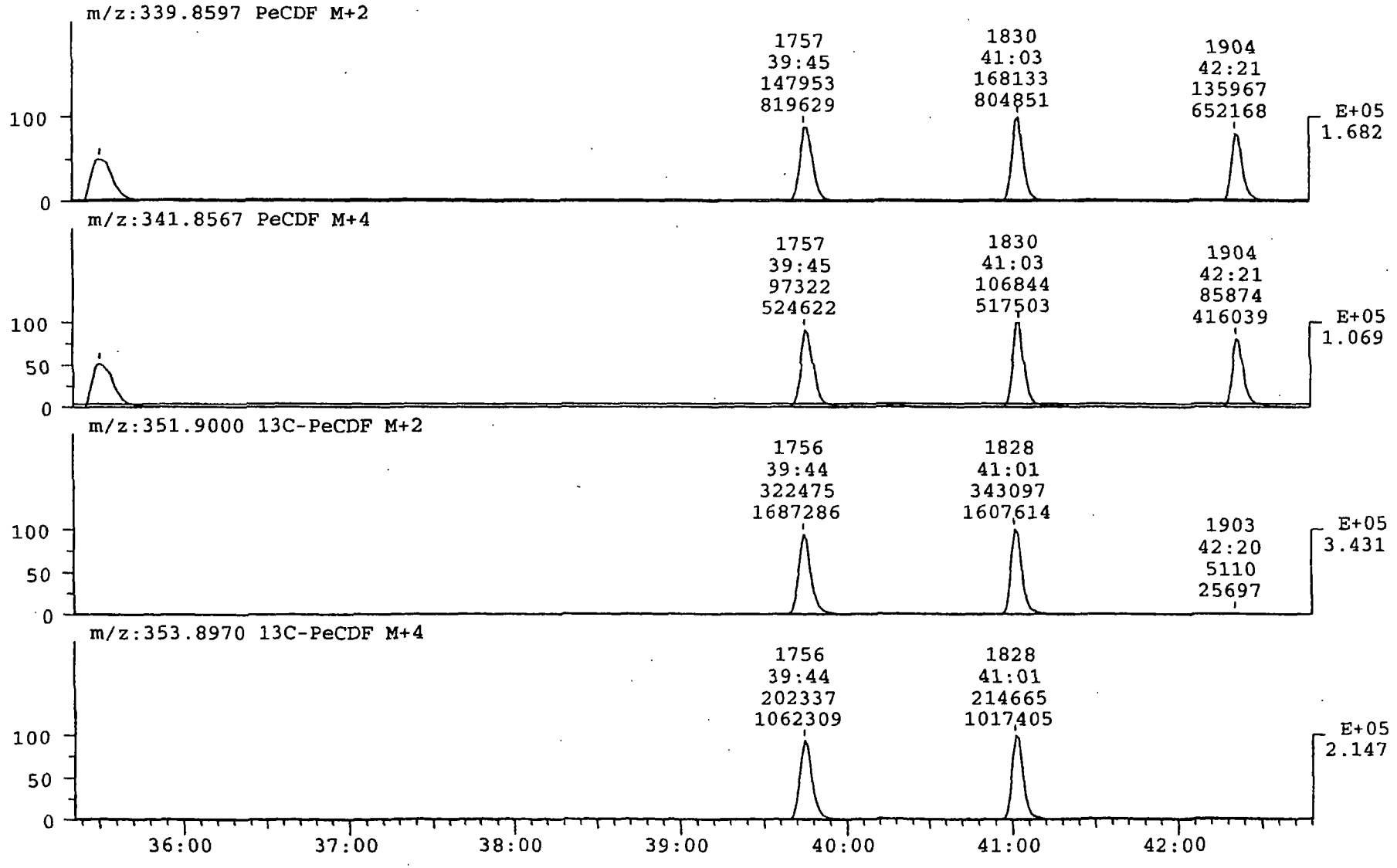
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1672 > 1914 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



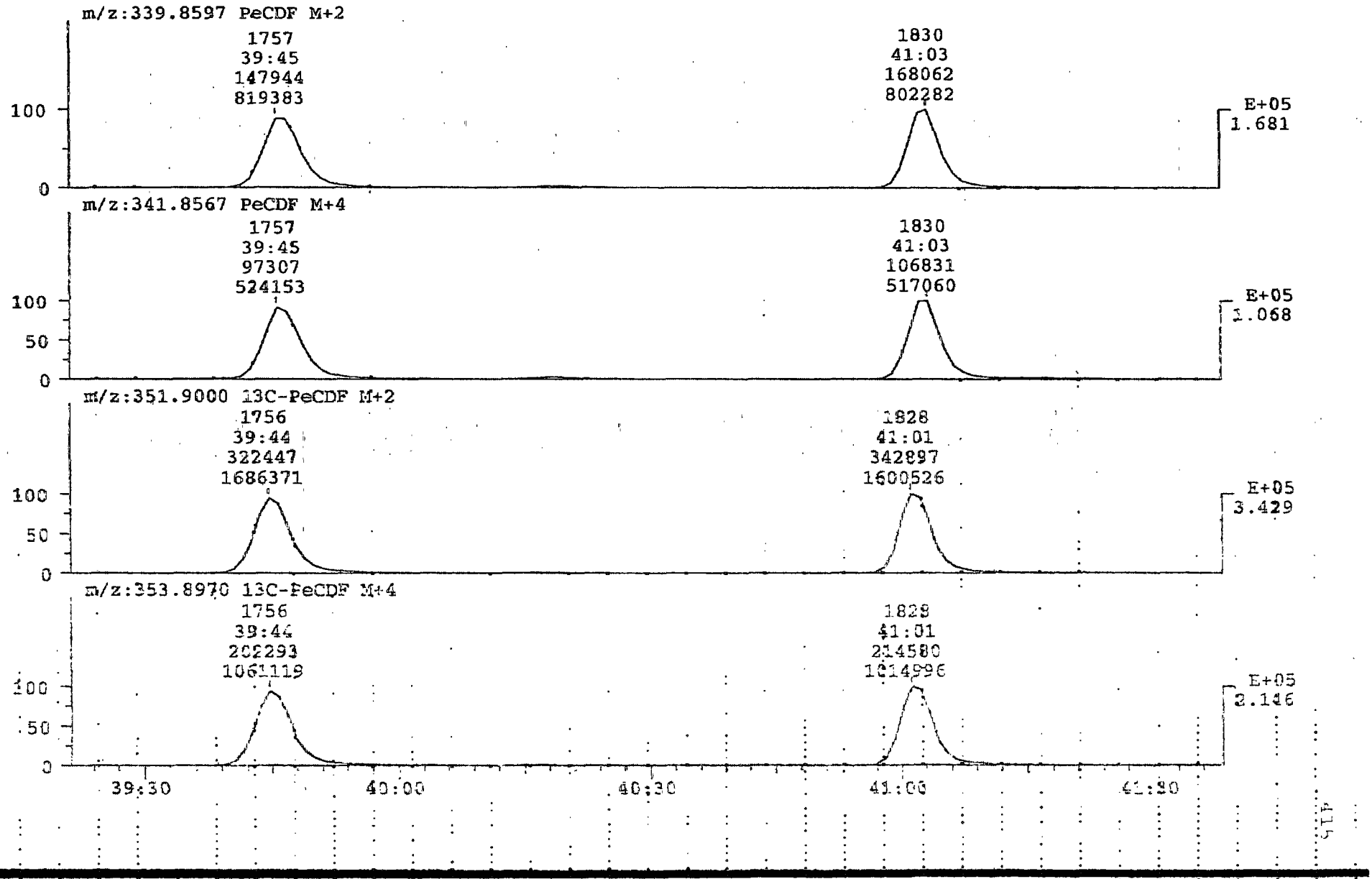
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



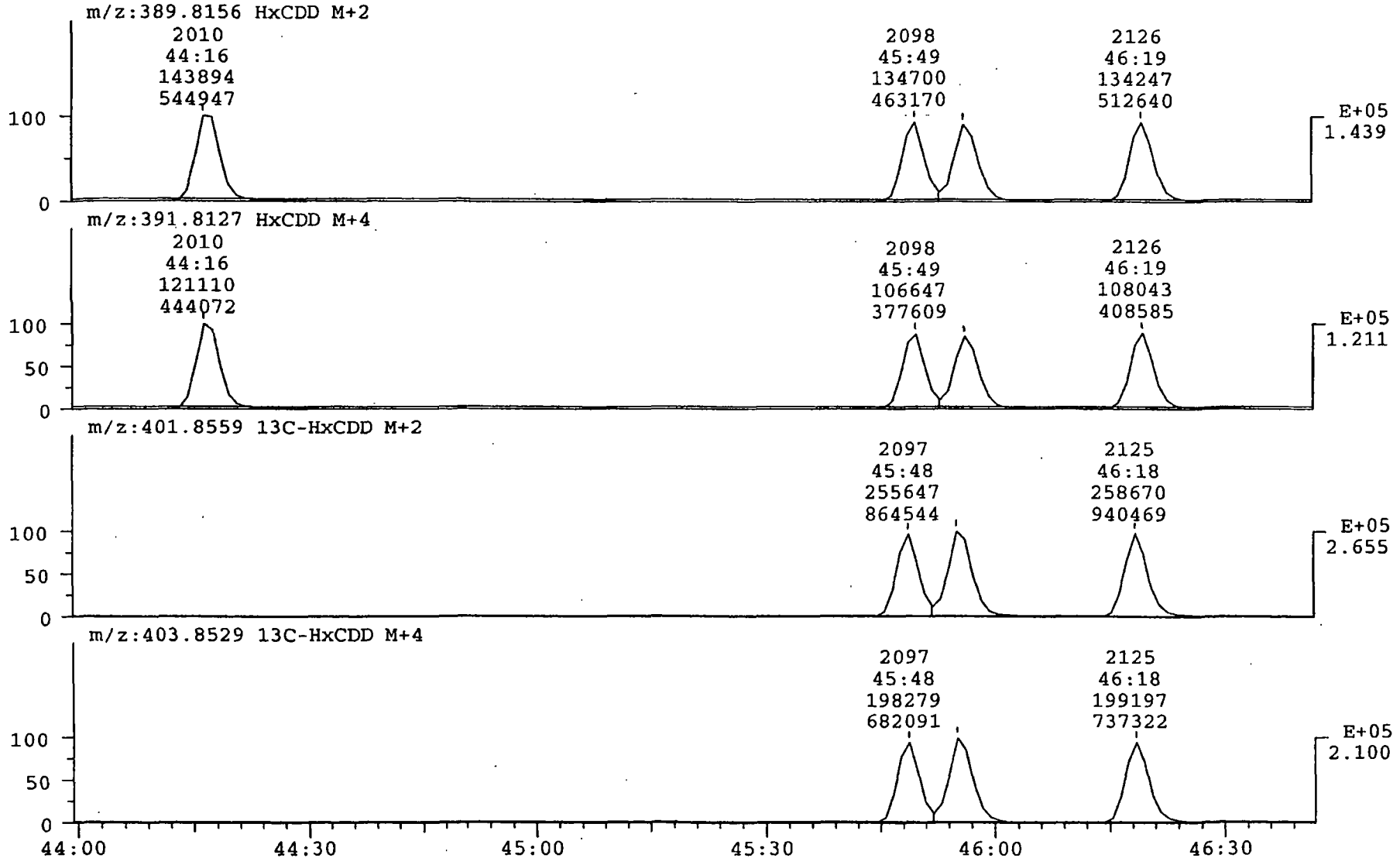
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1510 > 1929 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



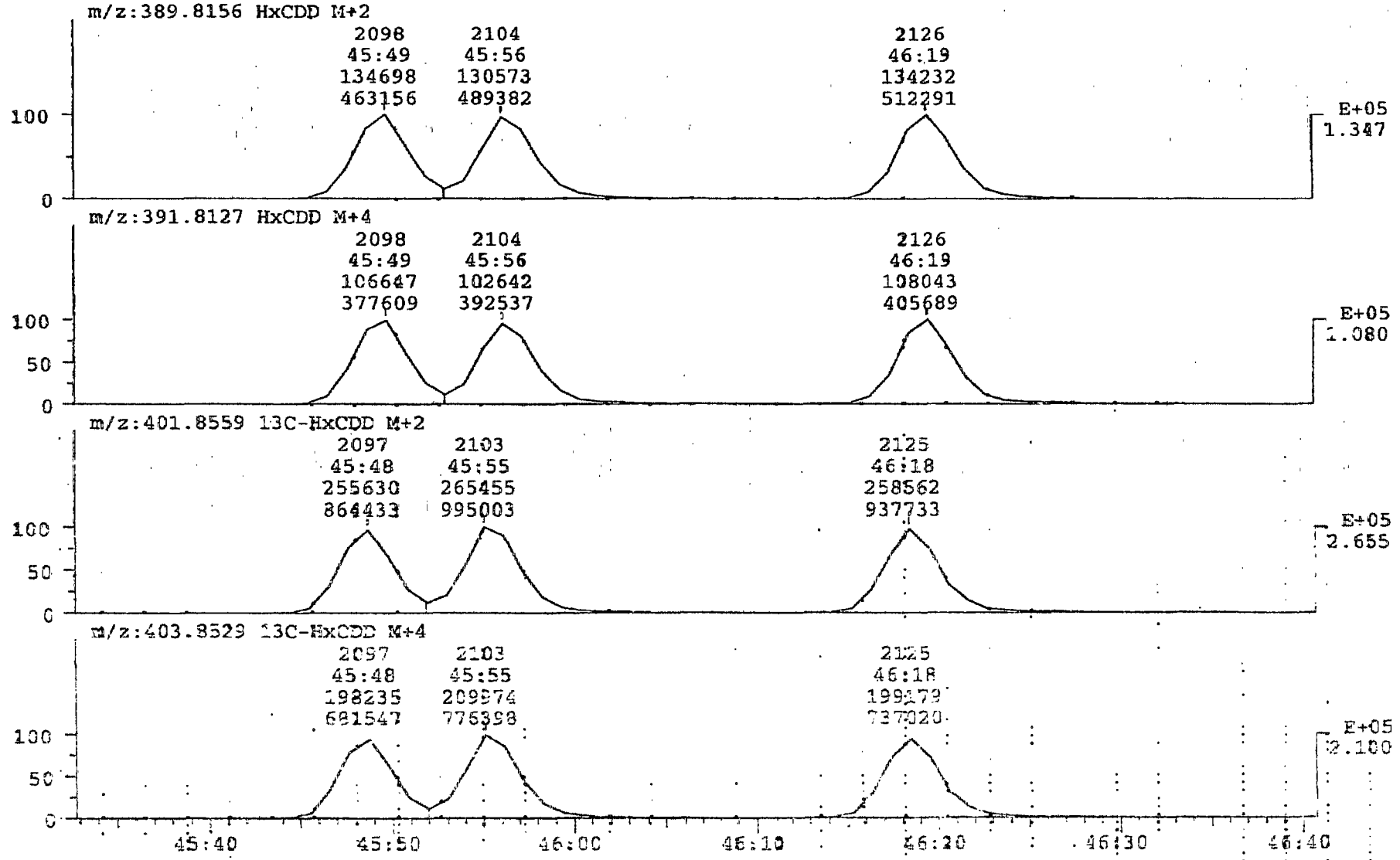
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



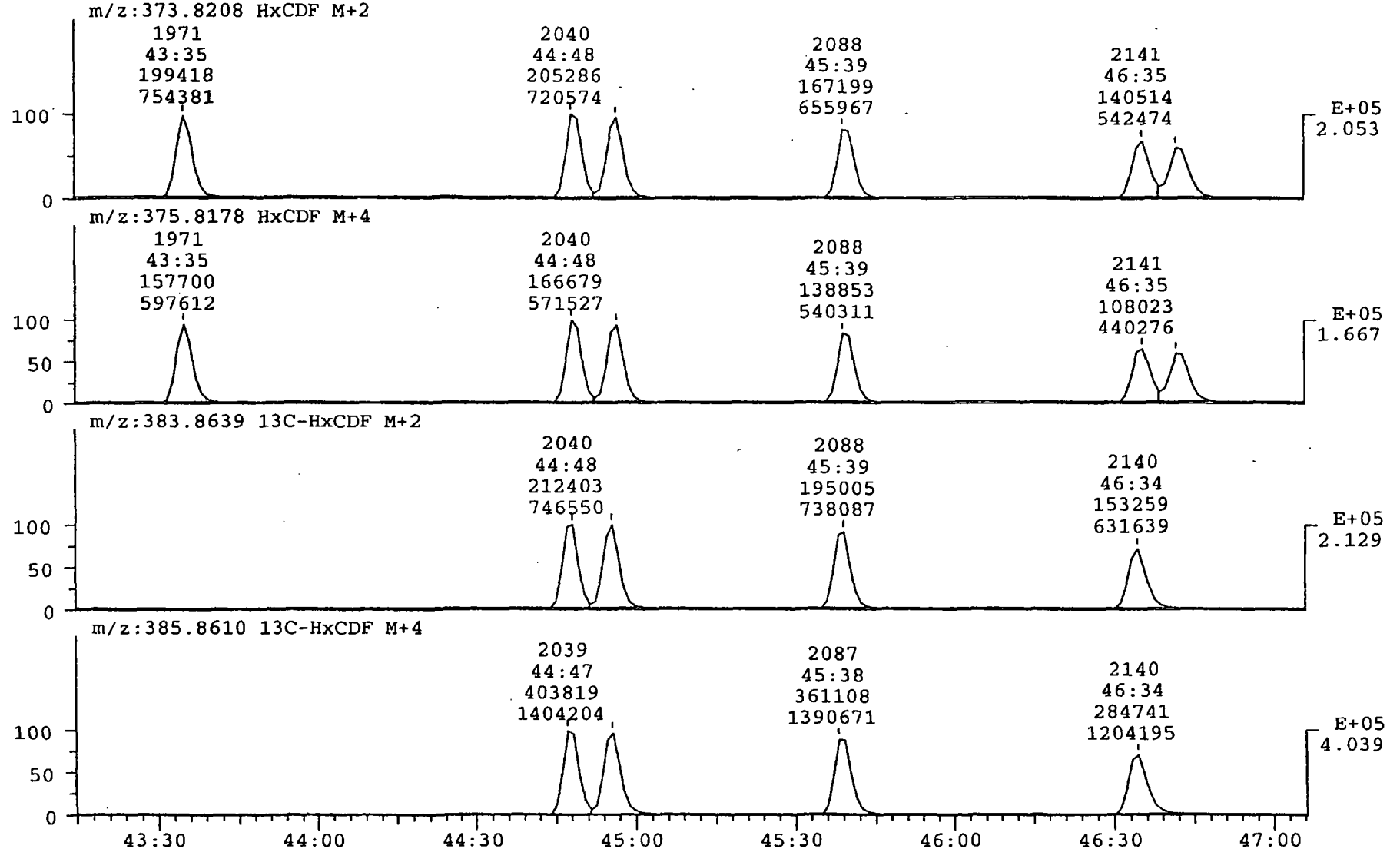
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1994 > 2147 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



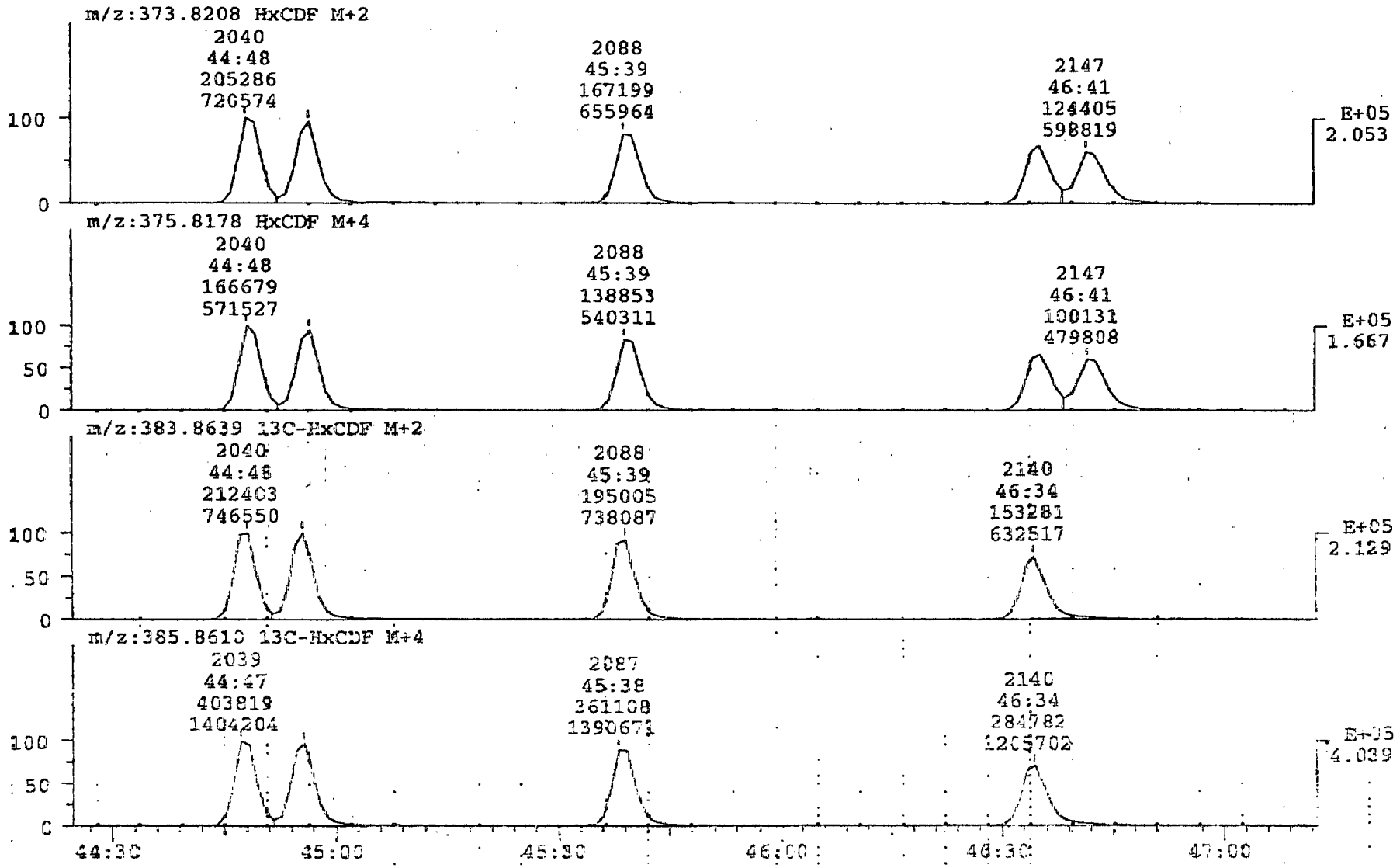
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



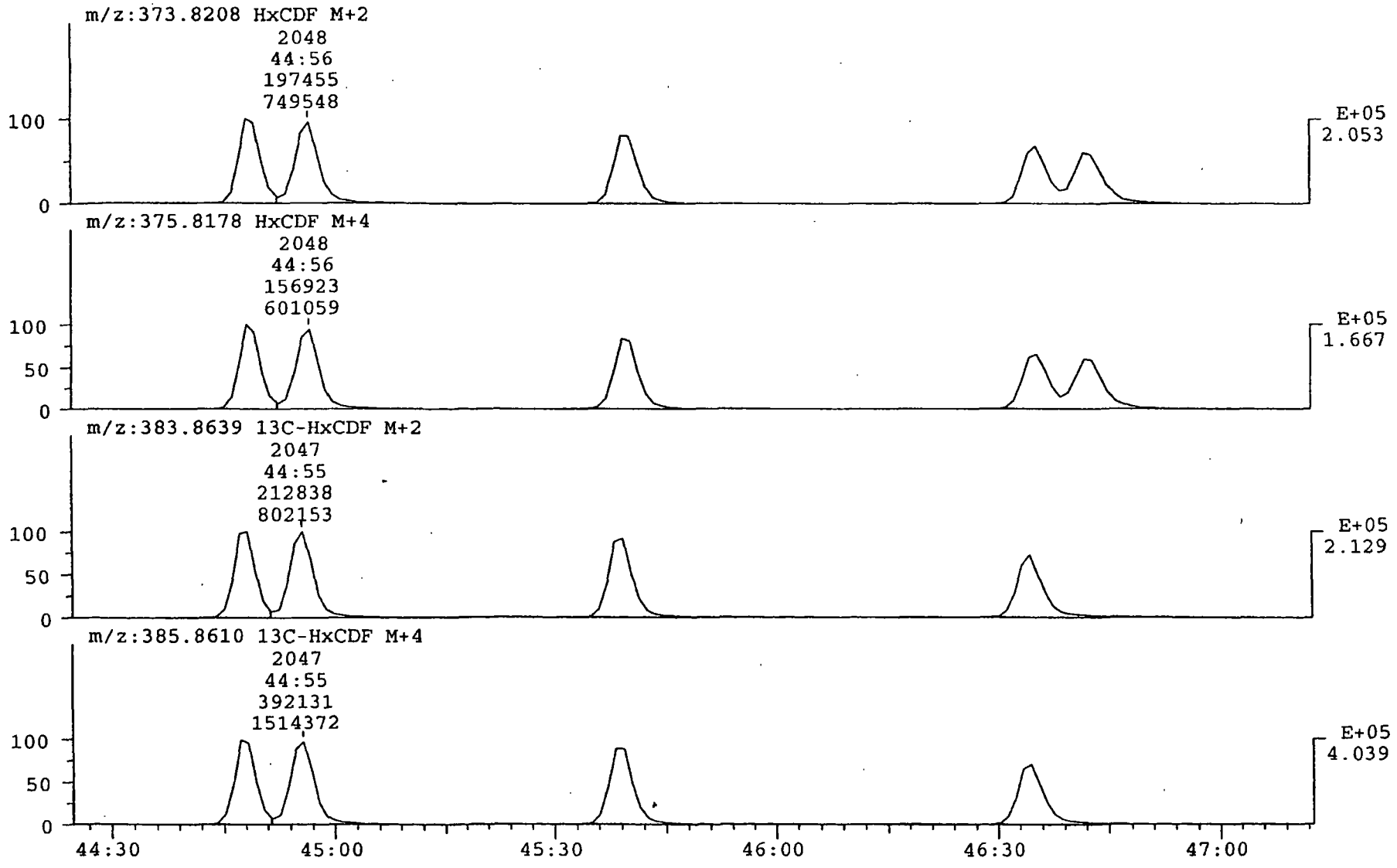
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



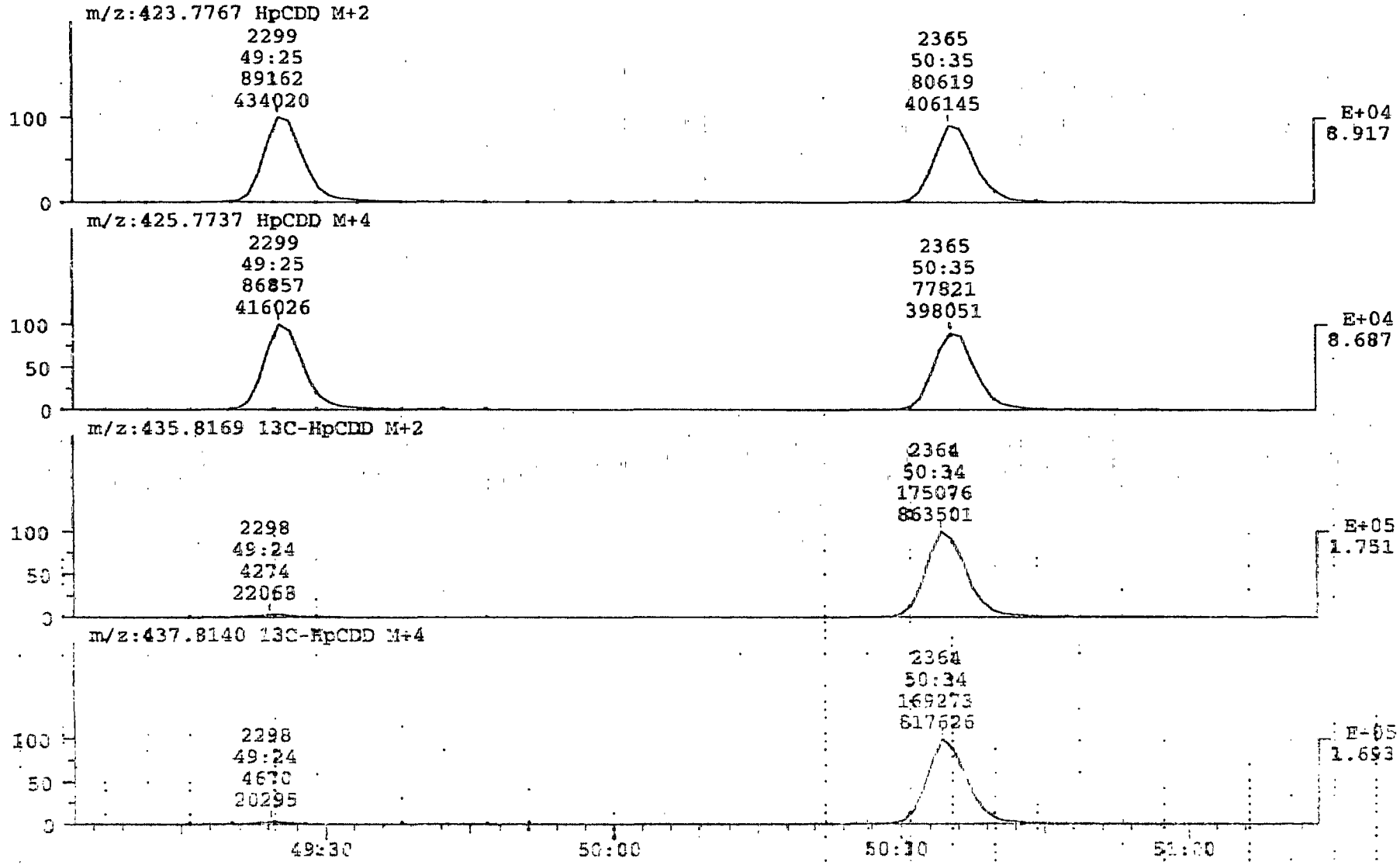
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



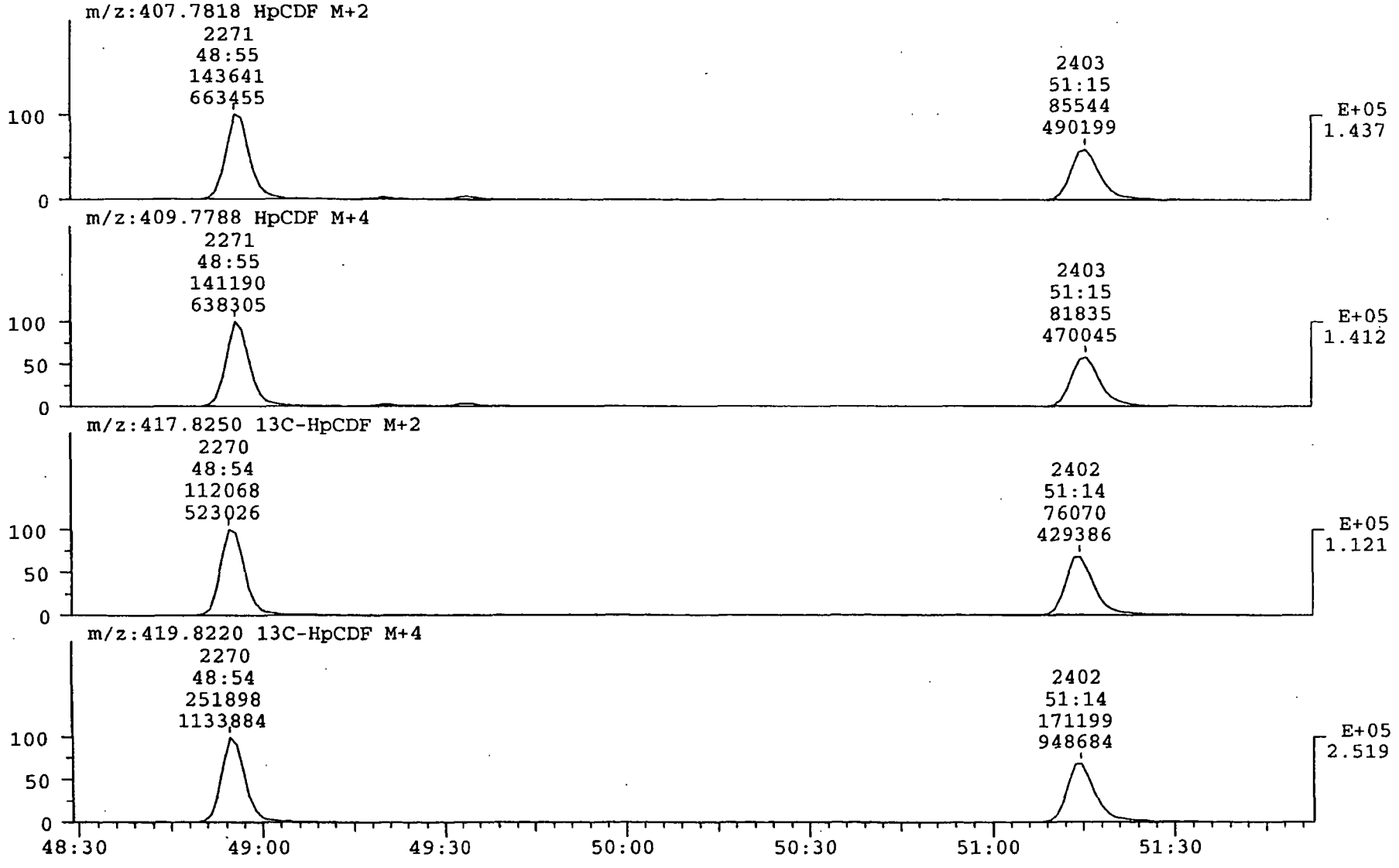
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2043 > 2053 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



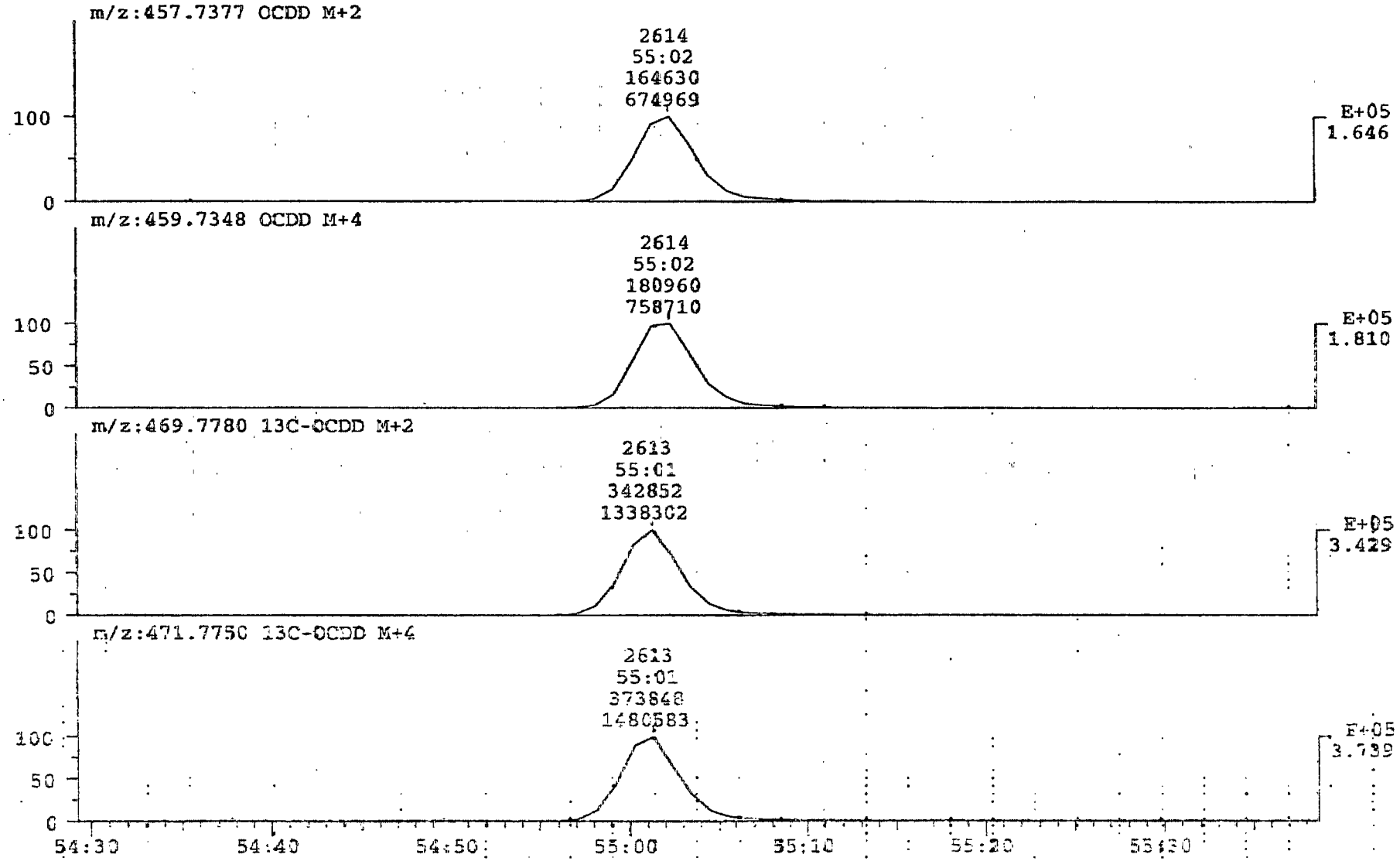
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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CHRO:  t030401w1                              01-Apr-03   Elapse:  50:36      2366
Samp:  Vial 1 WO=2553:27 Meth=F8 Dil=1                    Start :  17:25:15   2766
Comm:  Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   2587 > 2665          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  2, 3.0
Disp:  Height  Area
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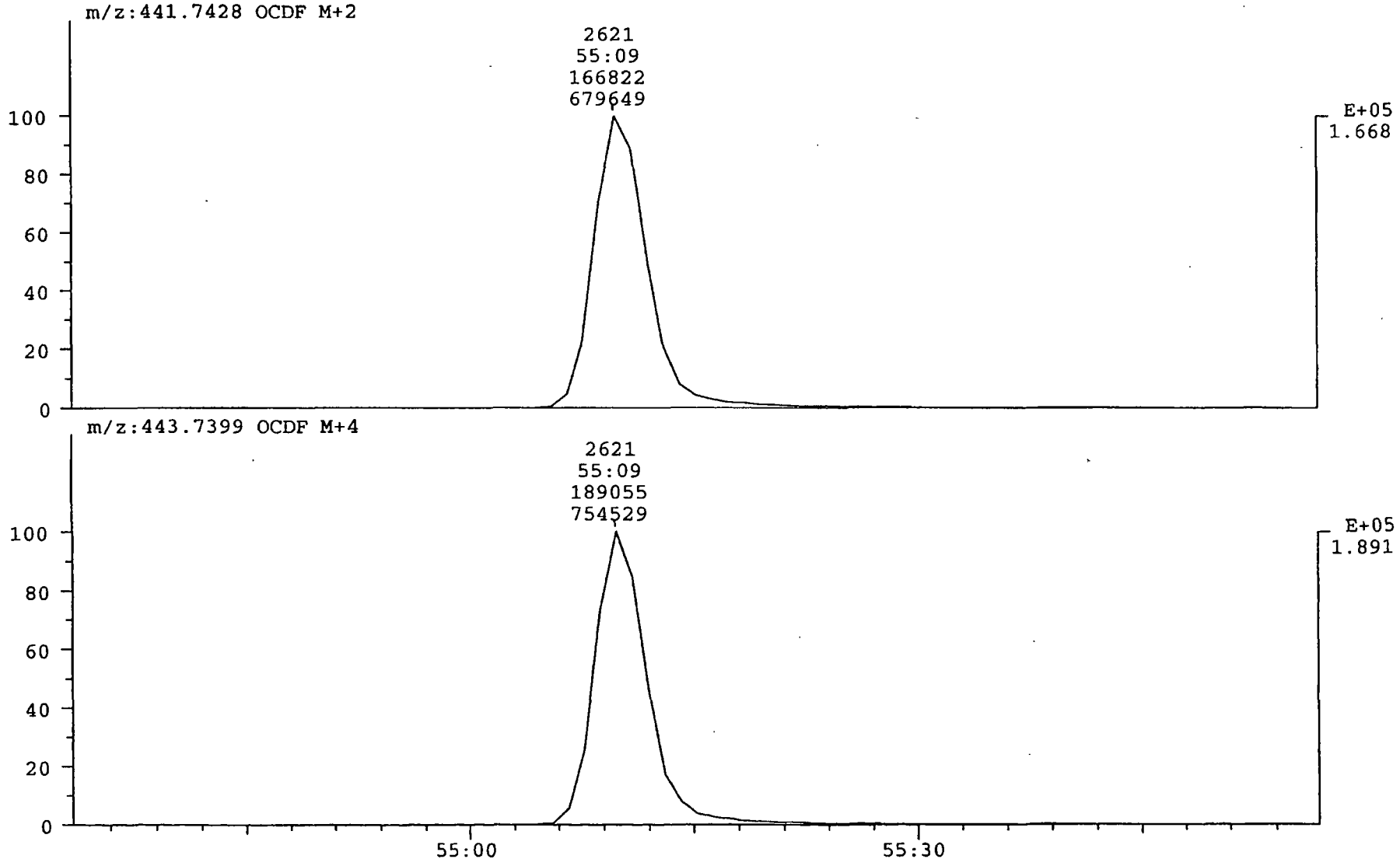
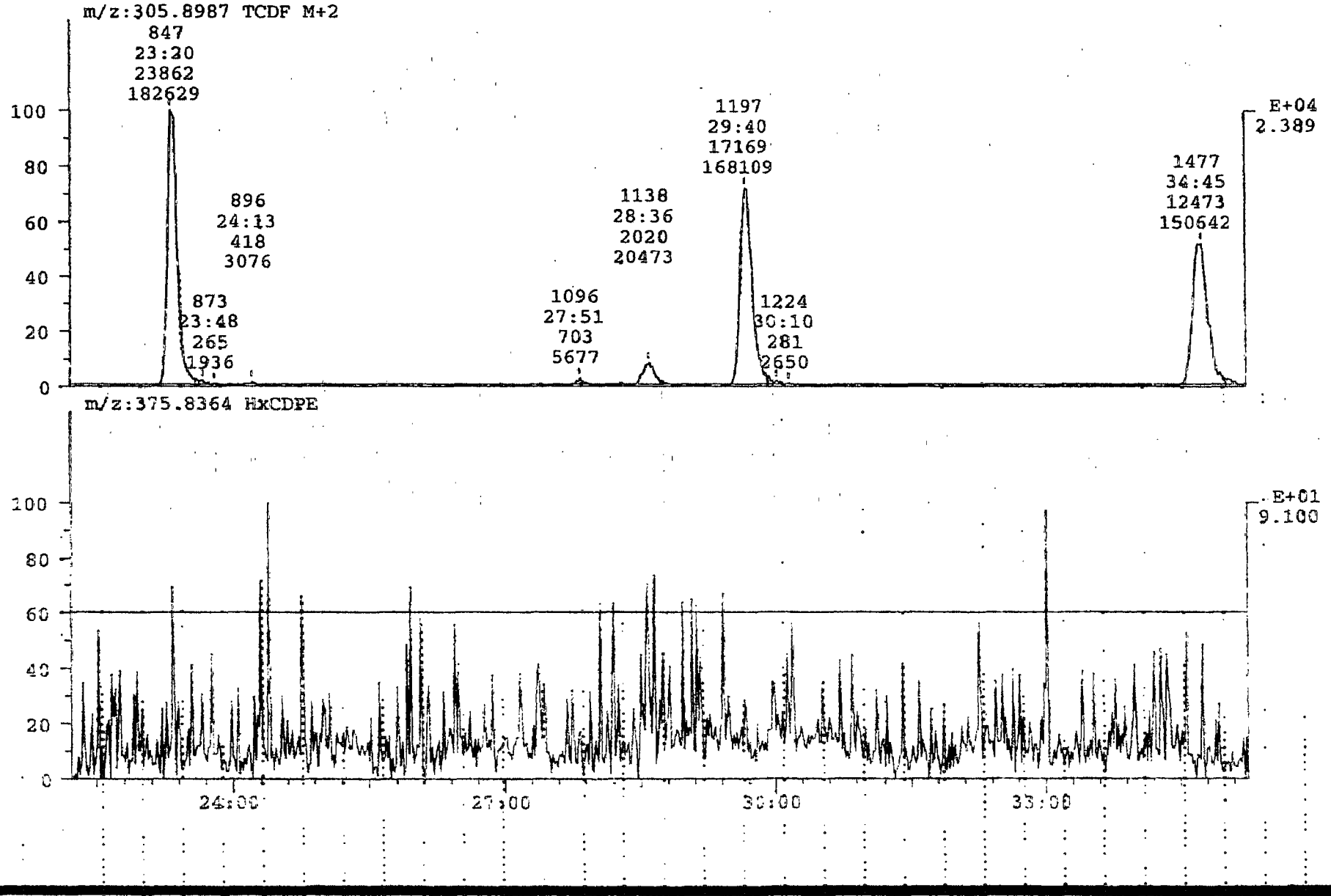


CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 786 > 1504 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area




425

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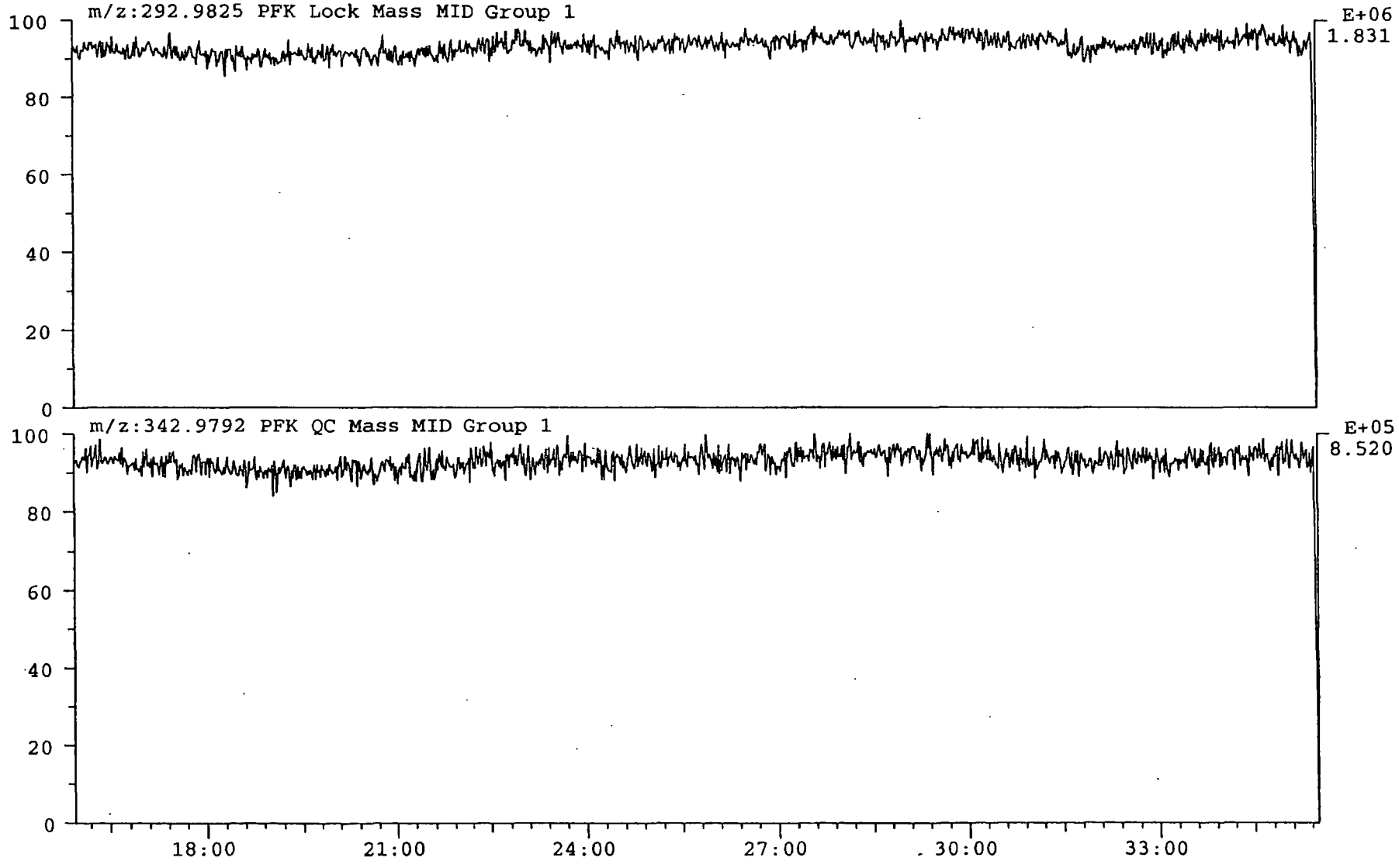
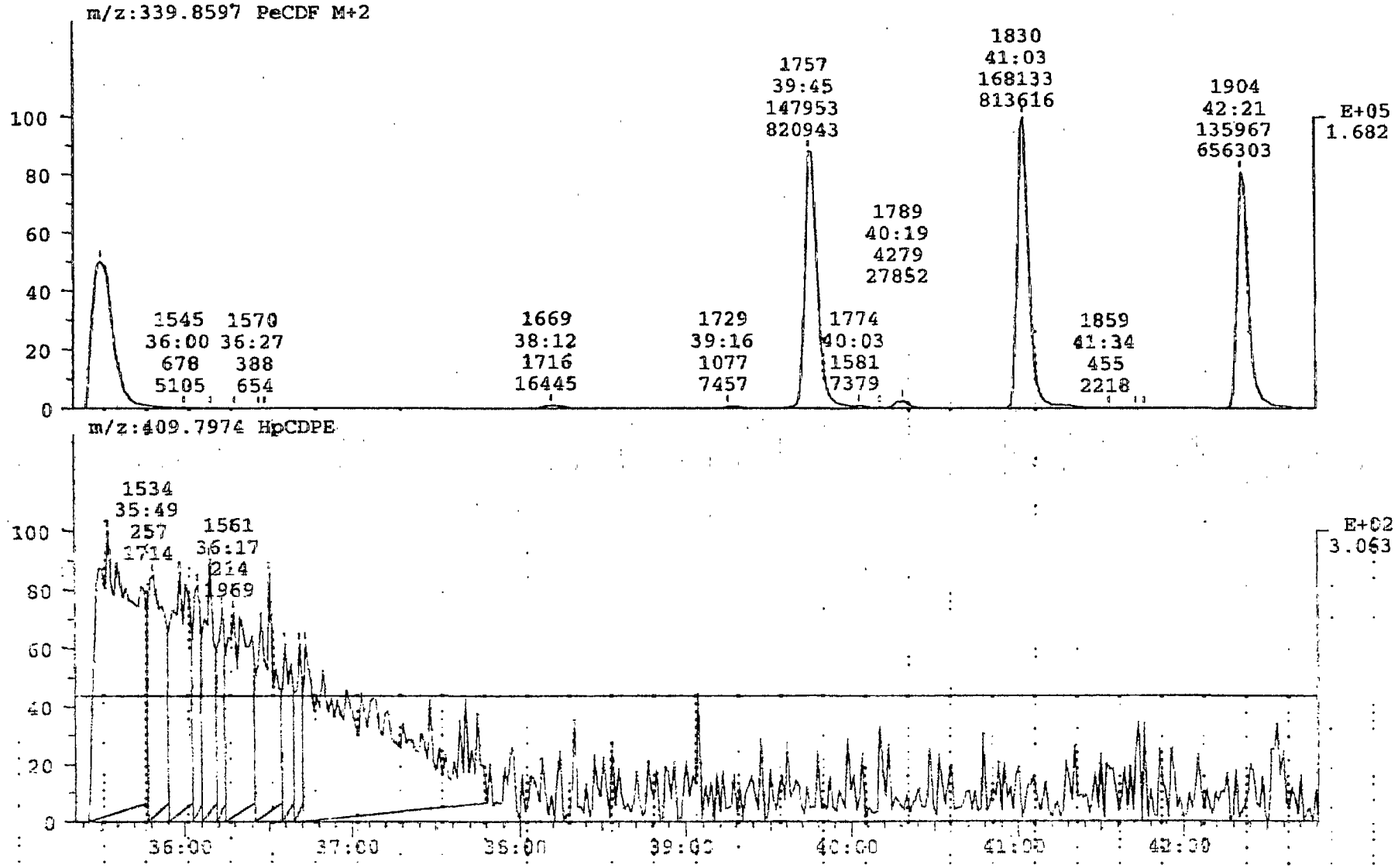
CHRO:  t030401w1                              01-Apr-03   Elapse:  50:36      2366
Samp:  Vial 1 WO=2553:27 Meth=F8 Dil=1                    Start :  17:25:15   2766
Comm:  Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   440 > 1516           Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1510 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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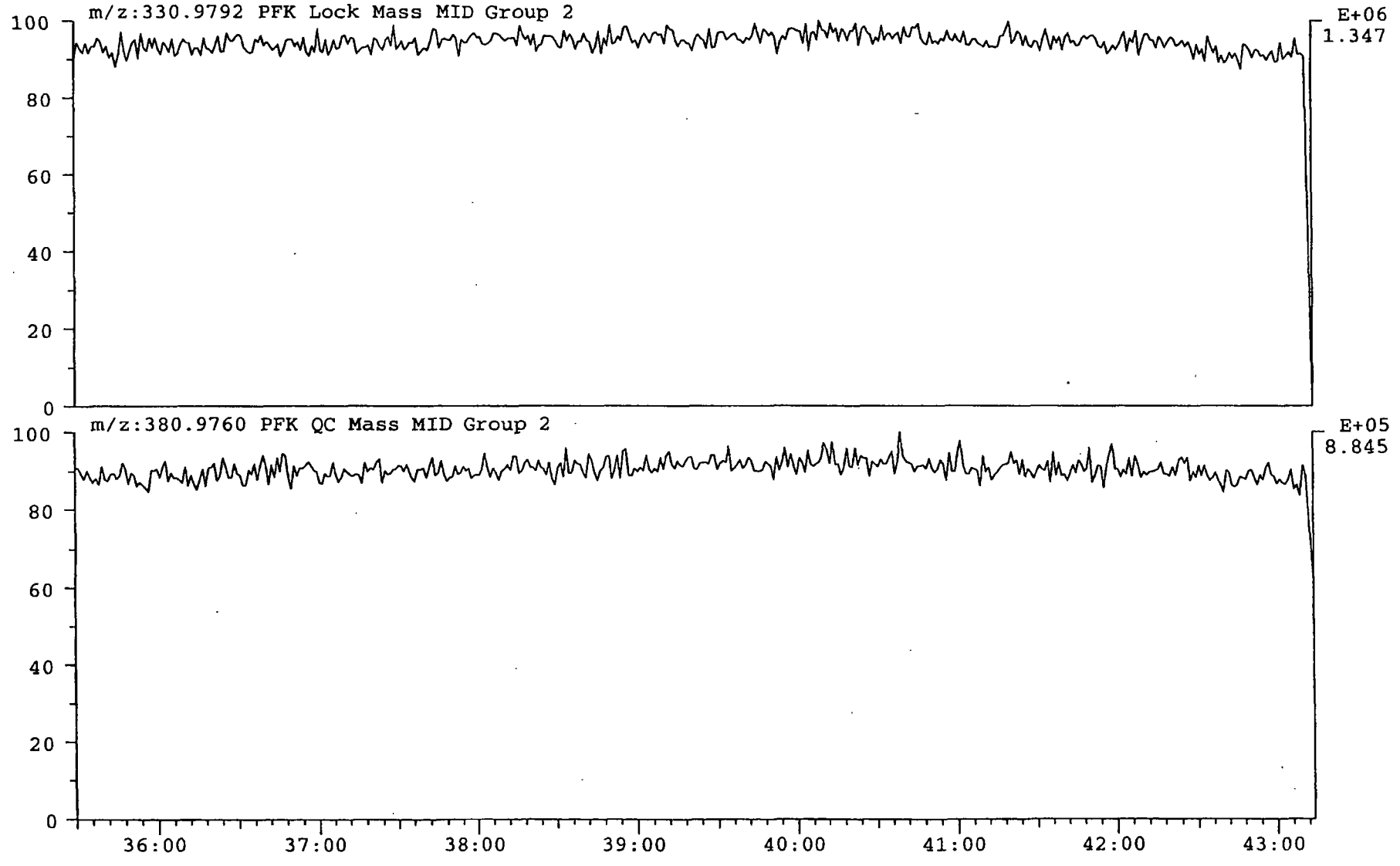
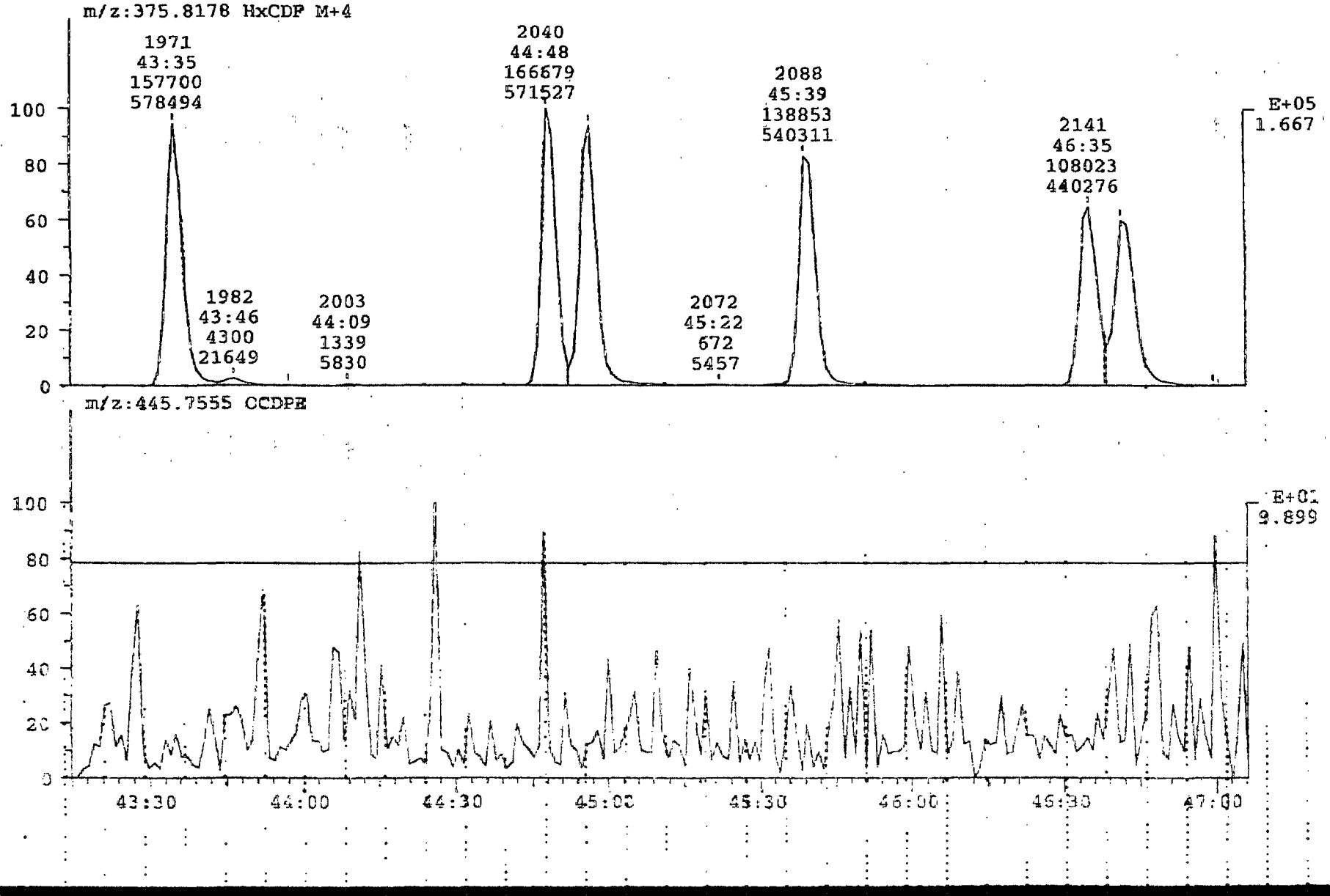
CHRO:  t030401w1                              01-Apr-03   Elapse:  50:36      2366
Samp:  Vial 1 WO=2553:27 Meth=F8 Dil=1                    Start :  17:25:15   2766
Comm:  Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   1516 > 1951          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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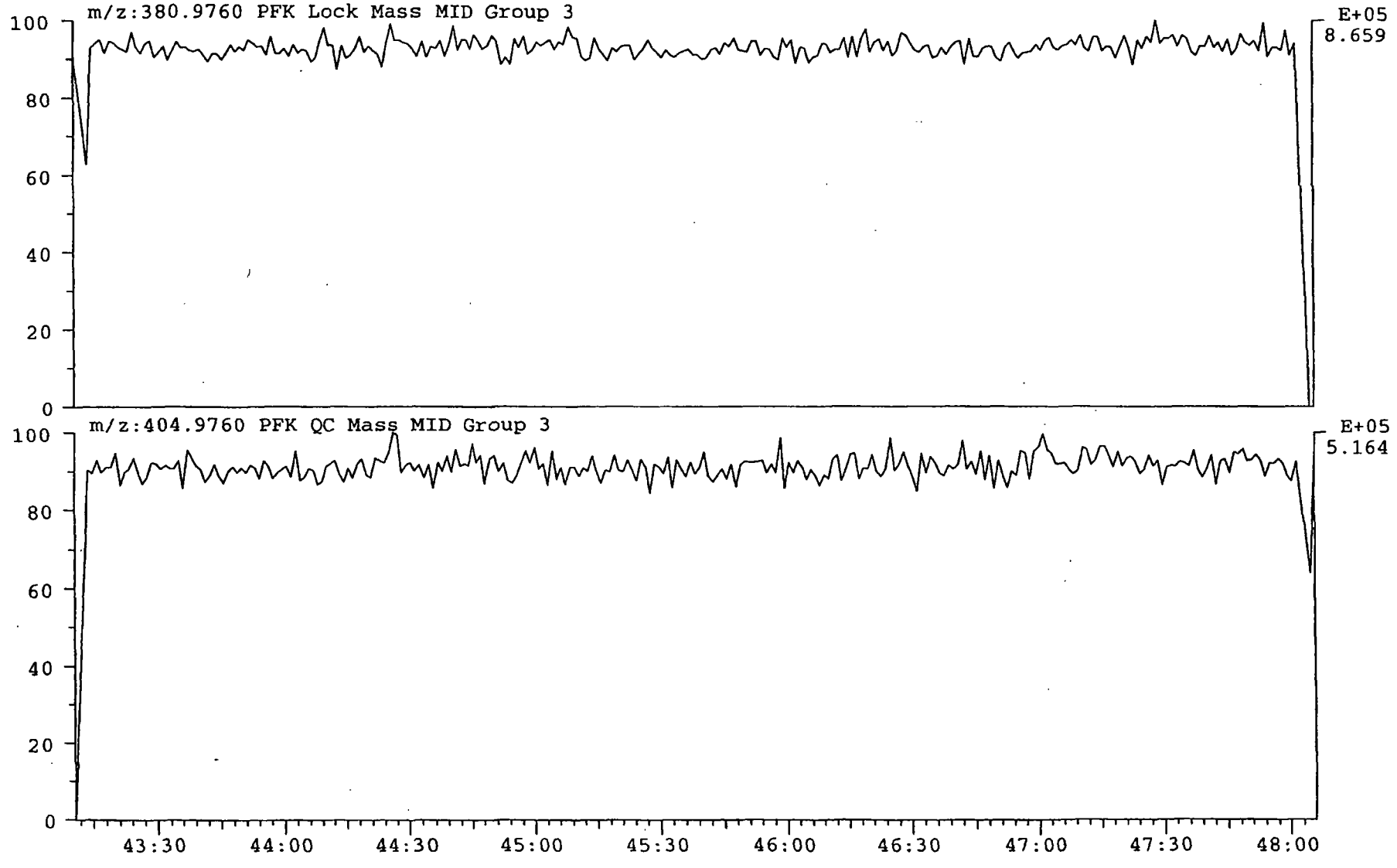
CHRO:  t030401w1                              01-Apr-03   Elapse:  50:36      2366
Samp:  Vial 1 WO=2553:27 Meth=F8 Dil=1                    Start :  17:25:15   2766
Comm:  Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   1950 > 2224          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



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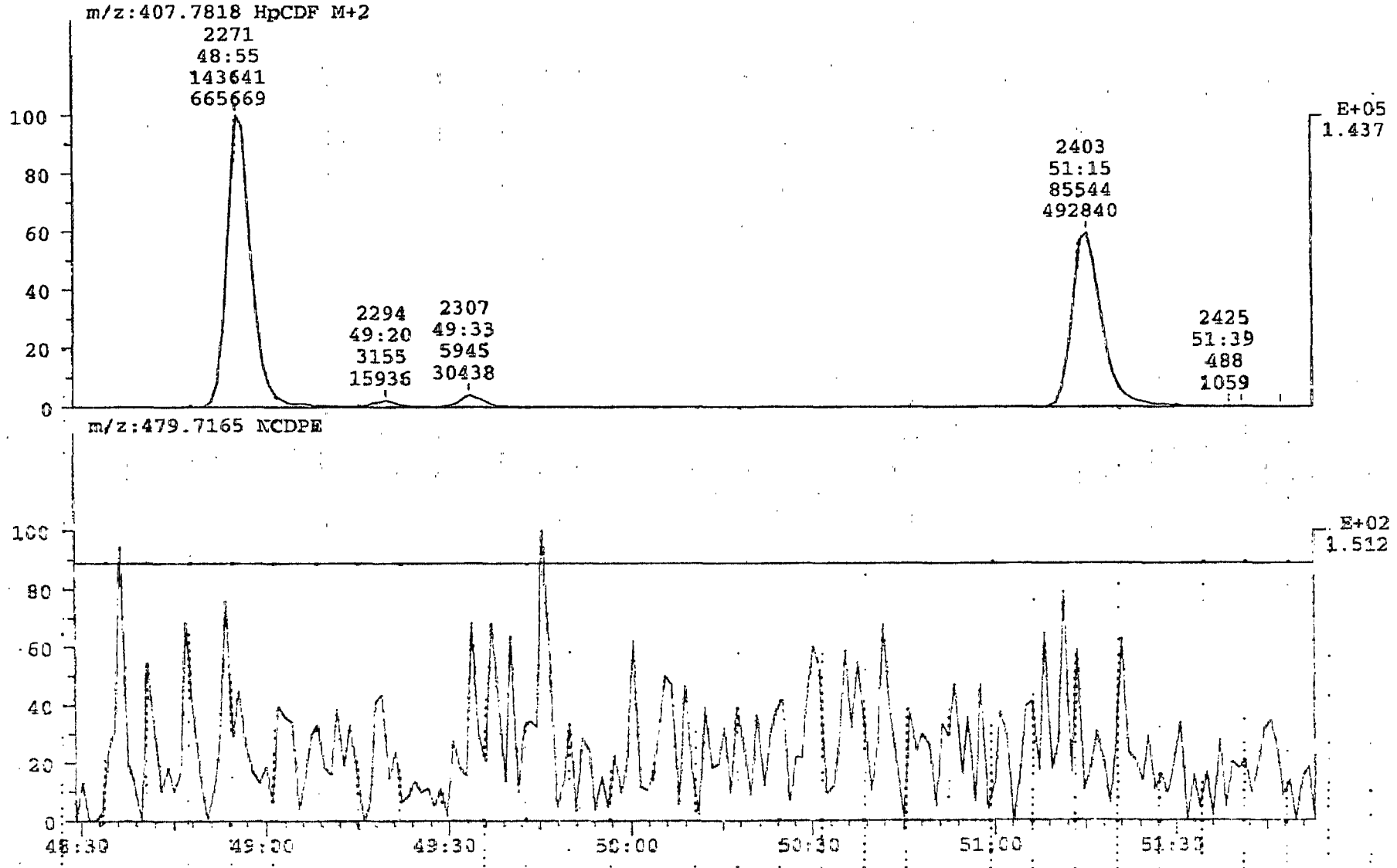
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t030401w1                              01-Apr-03   Elapse:  50:36      2366
Samp:  Vial 1 WO=2553:27 Meth=F8 Dil=1                    Start :  17:25:15   2766
Comm:  Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  DCG           Client:  STL Knoxville               Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   2222 > 2523           Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                  Label :  0, 2.5
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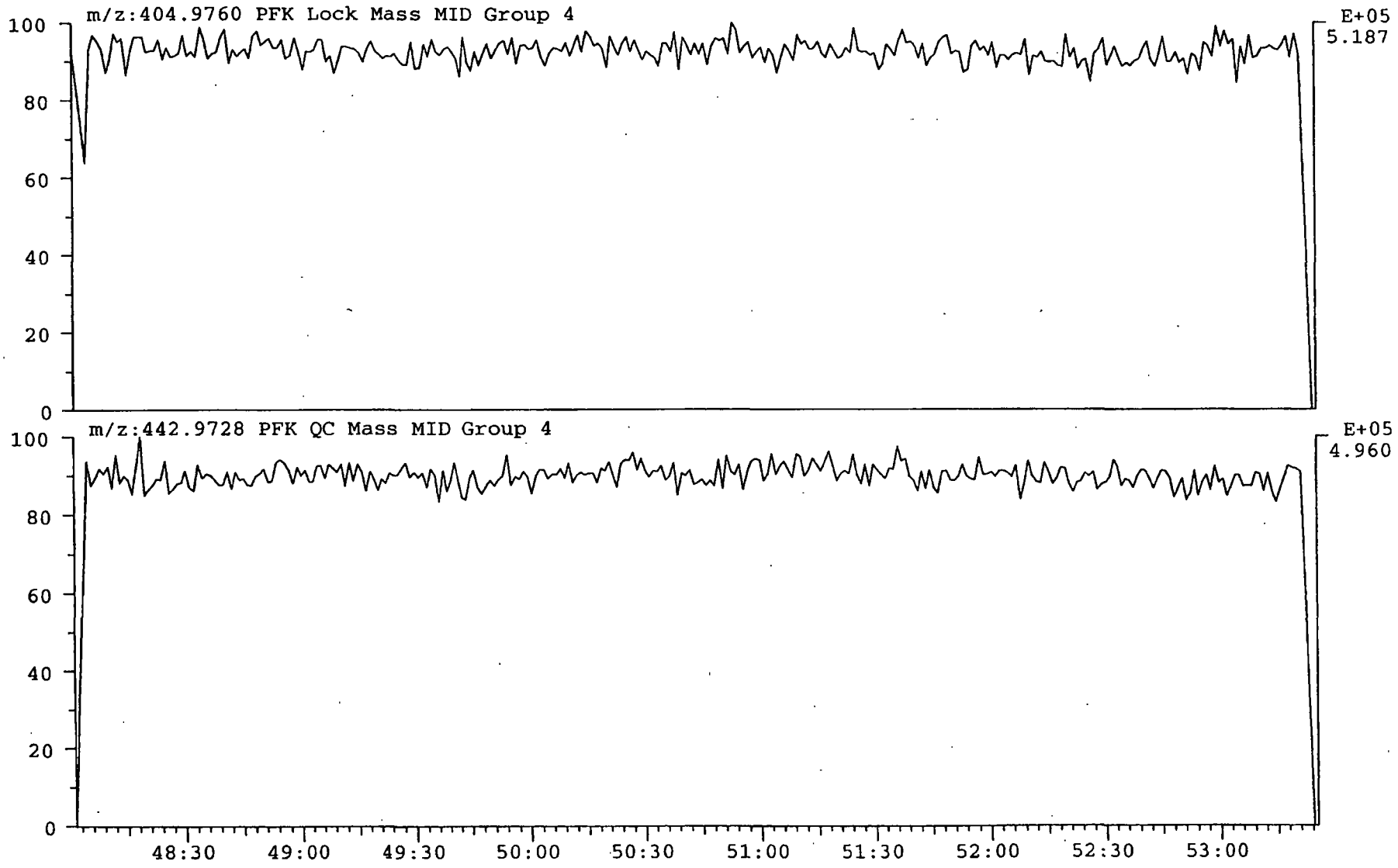
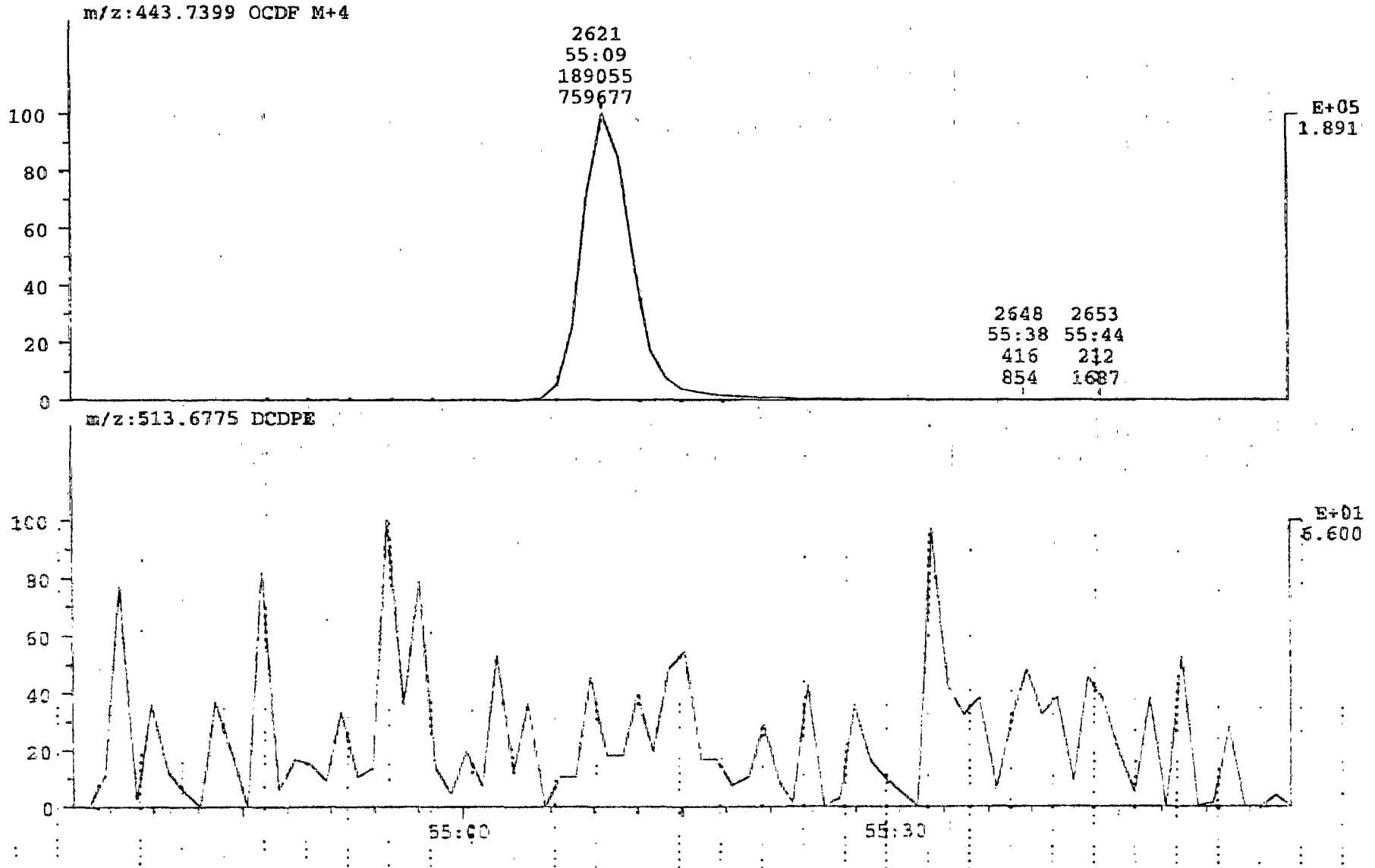
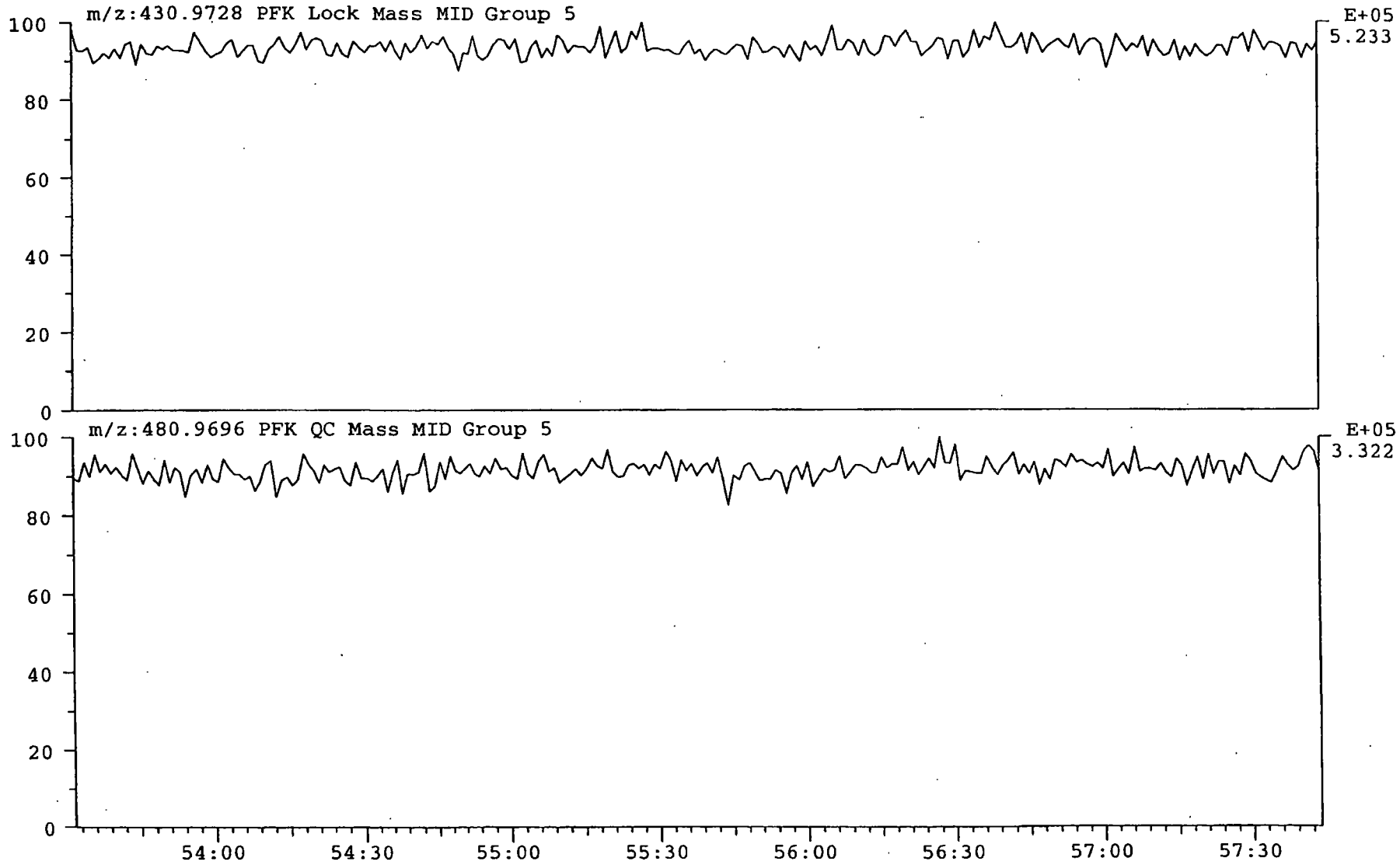


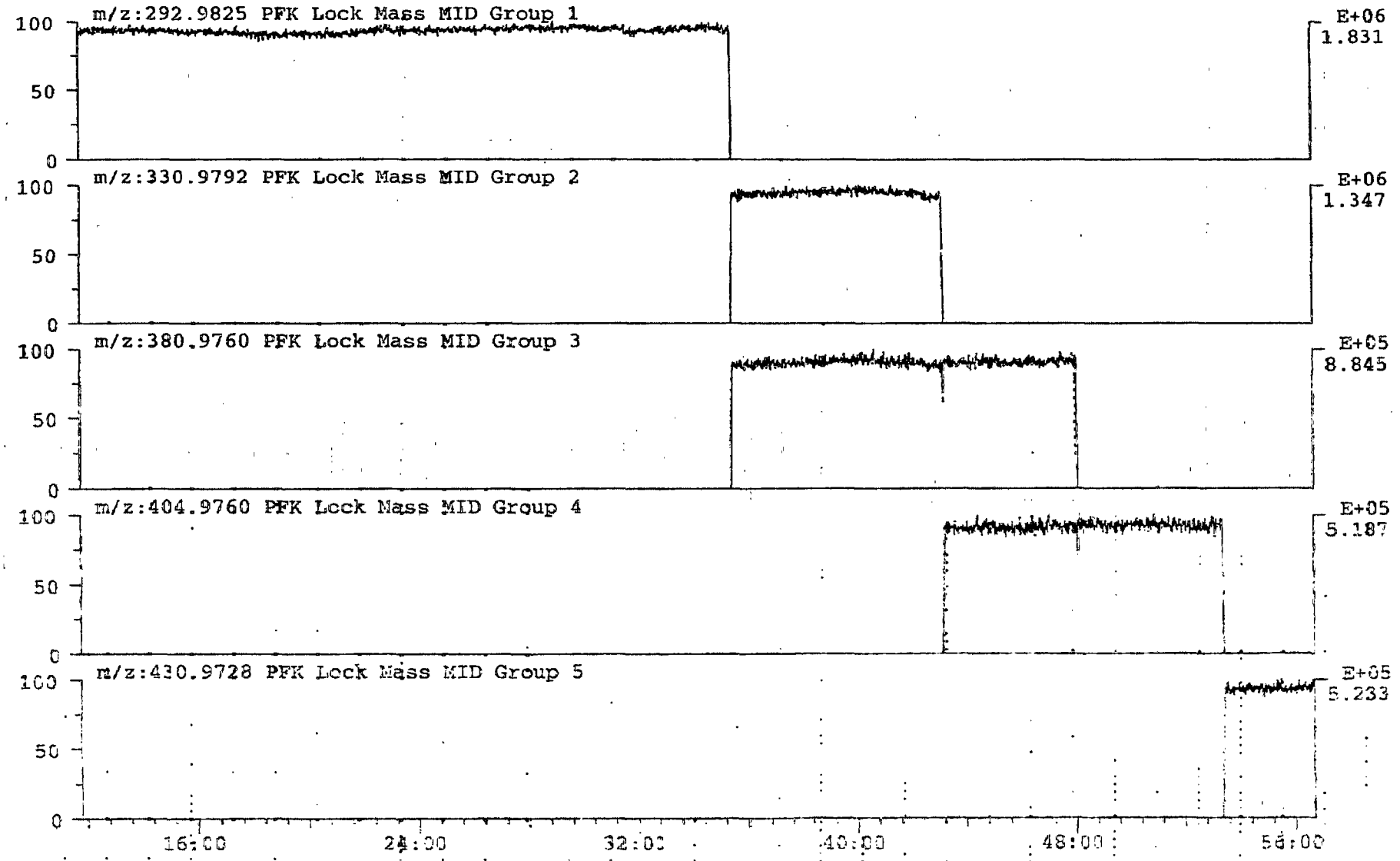
CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2529 > 2765 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



CHRO: t030401w1 01-Apr-03 Elapse: 50:36 2366
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 210 > 2707 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat95s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis2ms
ICIS Version 8.2.1


ICL Version: 10.500
File name: t030401w1
Study: Ver/Win
Sample: WO=2553:27 Meth=F8 Dil=1
Amount:    0.0
Volume:    0.0
Operator: DCG
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Injected volume:    2.0
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
File 1 of list 030401i
  ICL procedure: sleep6x
  ICIS procedure: tstdw $
  MID procedure: epa1613

  MID Remarks:  Tetra-Octa PCDD/F EPA Method 8290/1613B

  Mid Set Up Parameter:
   Measure/lock ratio         1
   Damping Relay          FALSE
   Width first lock        0.35 amu
   Electric jump time        10 ms
   Magnetic jump time        60 ms
   Offset                   100 cts
   Electric range           300 %
   Sweep peak width        3.00
   MID mode               Lock mode
   Acq mode               Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    27:25 min    35:25 min     1.00 sec
  # 2   35:25 min     7:44 min    43:10 min     1.00 sec
  # 3   43:10 min     4:49 min    48:00 min     1.00 sec
  # 4   48:00 min     5:20 min    53:20 min     1.00 sec
  # 5   53:20 min     4:47 min    58:08 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92
   Window # 2
        mass F  int  gr  time (ms)
    330.9792 1   10   1      8.19
    339.8597      1   1     91.48
```

| | | | | |
|---|---|---|---|---|
| 342.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2u1

*Injector A*

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
Loop clean w slvnt A (LC):      0 times
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume   (Y):    0.0 ul
2nd Injection volume  (I):    0.0 ul
Air volume of 2nd inj (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:         270 deg                        300 deg max
  Transfer Line:    290 deg                        300 deg max
  Column:           140 deg at   0.0 minutes       330 deg max
                    140 deg at   3.0 minutes
                    210 deg at   6.5 minutes
                    210 deg at  34.5 minutes
                    280 deg at  44.5 minutes
                    280 deg at  51.0 minutes
                    325 deg at  58.4 minutes
  Inlet    :
  Pressure       18.0 psi
  Splitless mode
  Purge time      1.5 min
  Purge flow     40.0 mL/min

   Gas saver is on
   Saver time      3.0 min
   Saver flow     15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8408.0000 |
| BDEV | 8274.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.6000 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 1.0003 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4857.3333 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.0000 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 180.0000 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.2000 | FREQ | 600.9615 |
| FSLOPE | 36000000.0000 | FVANAL | 164.0000 | FVINLET | 488.0000 |
| FVSRC | 914.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 156.0000 |
| HCURR | 1.4510 | HVANAL | 991.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4754.5740 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 304.9824 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 200.0000 | NSAM | 200.0000 | NSCAN | 1405.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10422.1189 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 2.0000 |
| SCIDLE | 1.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8400 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1721.0000 | XLENSS | 163.4000 |
| YLENS | 2467.0000 | YLENSS | -53.4000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 01-Apr-03 17:25:15.4

Autosampler has injected sample from vial 1
Analysis stopped at: 01-Apr-03 18:23:01.7 (run time 57.76 minutes)
Analysis stopped because user requested stop from analysis

QUAN: t030401w1.q0 Entries: 69

Data file(s) used
File: t030401w1 01-Apr-03
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 332. | 31:02 | 1272 | 91027.398 | 868690.500 | 145.24 |
| 2 | 332. | 31:37 | 1304 | 92421.195 | 929683.812 | 145.24 |
| 3 | 334. | 31:02 | 1272 | 114633.750 | 1067577.250 | 129.16 |
| 4 | 334. | 31:37 | 1304 | 117736.523 | 1172972.875 | 129.16 |
| 5 | 320. | 31:40 | 1307 | 10027.201 | 104135.195 | 84.79 |
| 6 | 322. | 31:39 | 1306 | 12031.771 | 131095.687 | 94.54 |
| 7 | 328. | 31:40 | 1307 | 19171.681 | 207440.484 | 56.83 |
| 8 | 304. | 29:41 | 1197 | 14823.316 | 134527.875 | 78.03 |
| 9 | 306. | 29:41 | 1197 | 17169.341 | 168108.671 | 72.21 |
| 10 | 316. | 29:38 | 1195 | 141866.578 | 1326392.375 | 94.81 |
| 11 | 318. | 29:38 | 1195 | 177327.968 | 1667934.750 | 164.31 |
| 12 | 356. | 41:35 | 1860 | 128668.328 | 549394.812 | 98.27 |
| 13 | 358. | 41:35 | 1860 | 82507.523 | 350890.562 | 82.86 |
| 14 | 368. | 41:34 | 1859 | 257075.265 | 1120026.875 | 68.57 |
| 15 | 370. | 41:34 | 1859 | 163235.937 | 707137.125 | 72.75 |
| 16 | 340. | 39:45 | 1757 | 147944.187 | 819383.437 | 96.24 |
| 17 | 340. | 41:03 | 1830 | 168061.953 | 802282.125 | 96.24 |
| 18 | 342. | 39:45 | 1757 | 97306.562 | 524152.812 | 97.62 |
| 19 | 342. | 41:03 | 1830 | 106830.601 | 517060.375 | 97.62 |
| 20 | 352. | 39:44 | 1756 | 322447.125 | 1686371.125 | 101.80 |
| 21 | 352. | 41:01 | 1828 | 342896.906 | 1600525.875 | 101.80 |
| 22 | 354. | 39:44 | 1756 | 202293.359 | 1061119.125 | 96.10 |
| 23 | 354. | 41:01 | 1828 | 214579.671 | 1014995.687 | 96.10 |
| 24 | 390. | 45:49 | 2098 | 134698.125 | 463155.718 | 140.97 |
| 25 | 390. | 45:56 | 2104 | 130573.054 | 489382.281 | 140.97 |
| 26 | 390. | 46:19 | 2126 | 134232.328 | 512290.656 | 140.97 |
| 27 | 392. | 45:49 | 2098 | 106646.562 | 377609.093 | 80.55 |
| 28 | 392. | 45:56 | 2104 | 102642.093 | 392537.031 | 80.55 |
| 29 | 392. | 46:19 | 2126 | 108043.031 | 405689.218 | 80.55 |
| 30 | 402. | 45:48 | 2097 | 255630.359 | 864432.687 | 108.79 |
| 31 | 402. | 45:55 | 2103 | 265454.500 | 995003.187 | 108.79 |
| 32 | 402. | 46:18 | 2125 | 258561.796 | 937732.562 | 108.79 |
| 33 | 404. | 45:48 | 2097 | 198235.000 | 681547.125 | 96.83 |
| 34 | 404. | 45:55 | 2103 | 209974.187 | 776397.875 | 96.83 |
| 35 | 404. | 46:18 | 2125 | 199178.750 | 737020.375 | 96.83 |
| 36 | 374. | 44:48 | 2040 | 205285.890 | 720573.937 | 97.03 |
| 37 | 374. | 44:56 | 2048 | 197455.109 | 749547.500 | 97.03 |
| 38 | 374. | 45:39 | 2088 | 167199.125 | 655963.687 | 97.03 |
| 39 | 374. | 46:41 | 2147 | 124405.445 | 598819.062 | 97.03 |
| 40 | 376. | 44:48 | 2040 | 166679.453 | 571526.750 | 80.08 |
| 41 | 376. | 44:56 | 2048 | 156922.906 | 601058.750 | 80.08 |
| 42 | 376. | 45:39 | 2088 | 138853.187 | 540311.312 | 80.08 |
| 43 | 376. | 46:41 | 2147 | 100131.234 | 479808.156 | 80.08 |
| 44 | 384. | 44:48 | 2040 | 212403.312 | 746550.187 | 96.19 |
| 45 | 384. | 44:55 | 2047 | 212837.625 | 802152.750 | 96.19 |
| 46 | 384. | 45:39 | 2088 | 195004.765 | 738086.562 | 96.19 |
| 47 | 384. | 46:34 | 2140 | 153281.156 | 632517.312 | 96.19 |
| 48 | 386. | 44:47 | 2039 | 403818.656 | 1404203.750 | 117.14 |
| 49 | 386. | 44:55 | 2047 | 392131.312 | 1514372.250 | 117.14 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 386., | 45:38 | , | 2087, | 361107.687, | 1390670.750, | 117.14, |
| 51, | 386., | 46:34 | , | 2140, | 284782.000, | 1205702.000, | 117.14, |
| 52, | 424., | 50:35 | , | 2365, | 80618.593, | 406144.562, | 61.08, |
| 53, | 426., | 50:35 | , | 2365, | 77820.898, | 398051.312, | 82.55, |
| 54, | 436., | 50:34 | , | 2364, | 175076.000, | 863501.062, | 65.82, |
| 55, | 438., | 50:34 | , | 2364, | 169273.421, | 817625.562, | 69.29, |
| 56, | 408., | 48:55 | , | 2271, | 143640.515, | 663454.875, | 61.90, |
| 57, | 408., | 51:15 | , | 2403, | 85543.601, | 490199.031, | 61.90, |
| 58, | 410., | 48:55 | , | 2271, | 141190.250, | 638305.437, | 72.37, |
| 59, | 410., | 51:15 | , | 2403, | 81835.210, | 470045.125, | 72.37, |
| 60, | 418., | 48:54 | , | 2270, | 112068.187, | 523025.687, | 73.79, |
| 61, | 418., | 51:14 | , | 2402, | 76070.093, | 429386.375, | 73.79, |
| 62, | 420., | 48:54 | , | 2270, | 251898.437, | 1133883.625, | 82.10, |
| 63, | 420., | 51:14 | , | 2402, | 171199.453, | 948684.312, | 82.10, |
| 64, | 458., | 55:02 | , | 2614, | 164630.187, | 674968.750, | 41.05, |
| 65, | 460., | 55:02 | , | 2614, | 180960.000, | 758710.375, | 67.96, |
| 66, | 470., | 55:01 | , | 2613, | 342852.187, | 1338302.000, | 63.44, |
| 67, | 472., | 55:01 | , | 2613, | 373847.593, | 1480582.875, | 126.61, |
| 68, | 442., | 55:09 | , | 2621, | 166822.328, | 679649.250, | 57.34, |
| 69, | 444., | 55:09 | , | 2621, | 189054.671, | 754529.312, | 67.15, |

QUAN: twin.q0 Entries: 28

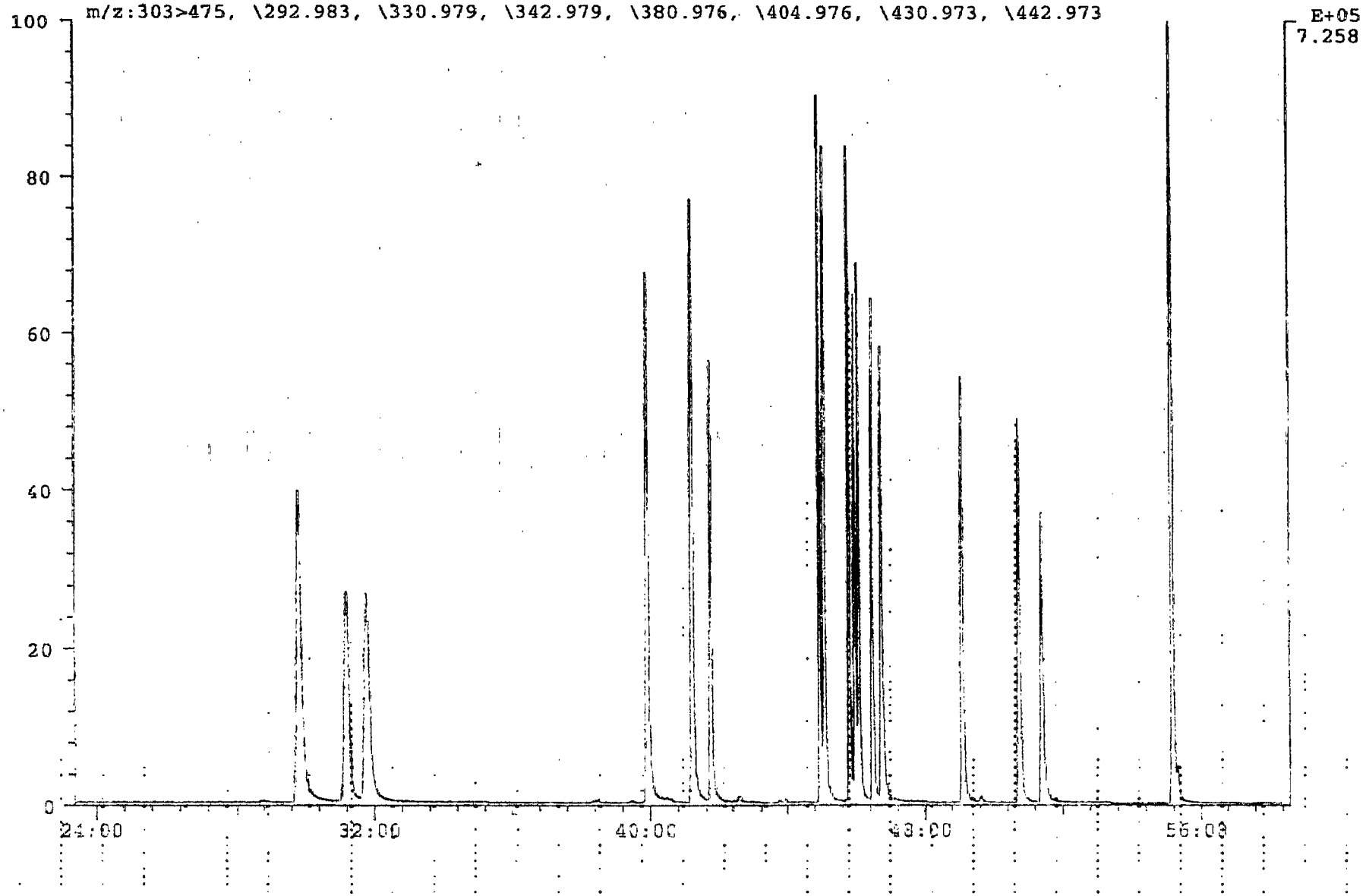
Data file(s) used
File: t030401w1 01-Apr-03
Samp: Vial 1 WO=2553:27 Meth=F8 Dil=1 Start : 17:25:15 2766
Comm: Inst=m2a/176261 Batch=20030401s3 Ccal=20020912i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: DCG Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Compound Name | Actual Time | Specified Time | Actual Rel Time |
|---|---|---|---|---|
| 1 | | 25:46 | 26:49 | 1.0000 |
| 2 | | 32:29 | 32:25 | 1.0000 |
| 3 | | 32:29 | 32:42 | 1.0000 |
| 4 | | 32:29 | 32:57 | 1.0000 |
| 5 | | 32:29 | 33:29 | 1.0000 |
| 6 | | 35:18 | 36:05 | 1.0000 |
| 7 | | 25:46 | 26:49 | 1.0000 |
| 8 | | 32:29 | 32:23 | 1.0000 |
| 9 | | 32:33 | 32:42 | 1.0000 |
| 10 | | 32:33 | 32:57 | 1.0000 |
| 11 | | 32:33 | 33:29 | 1.0000 |
| 12 | | 35:24 | 36:05 | 1.0000 |
| 13 | | 32:21 | 32:20 | 1.0000 |
| 14 | | 32:30 | 32:55 | 1.0000 |
| 15 | | 32:21 | 32:20 | 1.0000 |
| 16 | | 32:30 | 32:55 | 1.0000 |
| 17 | | 32:08 | 32:25 | 1.0000 |
| 18 | | 32:08 | 32:42 | 1.0000 |
| 19 | | 32:08 | 32:57 | 1.0000 |
| 20 | | 32:08 | 33:29 | 1.0000 |
| 21 | | 32:29 | 32:23 | 1.0000 |
| 22 | | 32:08 | 32:42 | 1.0000 |
| 23 | | 32:08 | 32:57 | 1.0000 |
| 24 | | 32:08 | 33:29 | 1.0000 |
| 25 | | 32:21 | 32:20 | 1.0000 |
| 26 | | 32:21 | 32:55 | 1.0000 |
| 27 | | 32:21 | 32:20 | 1.0000 |
| 28 | | 31:37 | 32:55 | 1.0000 |

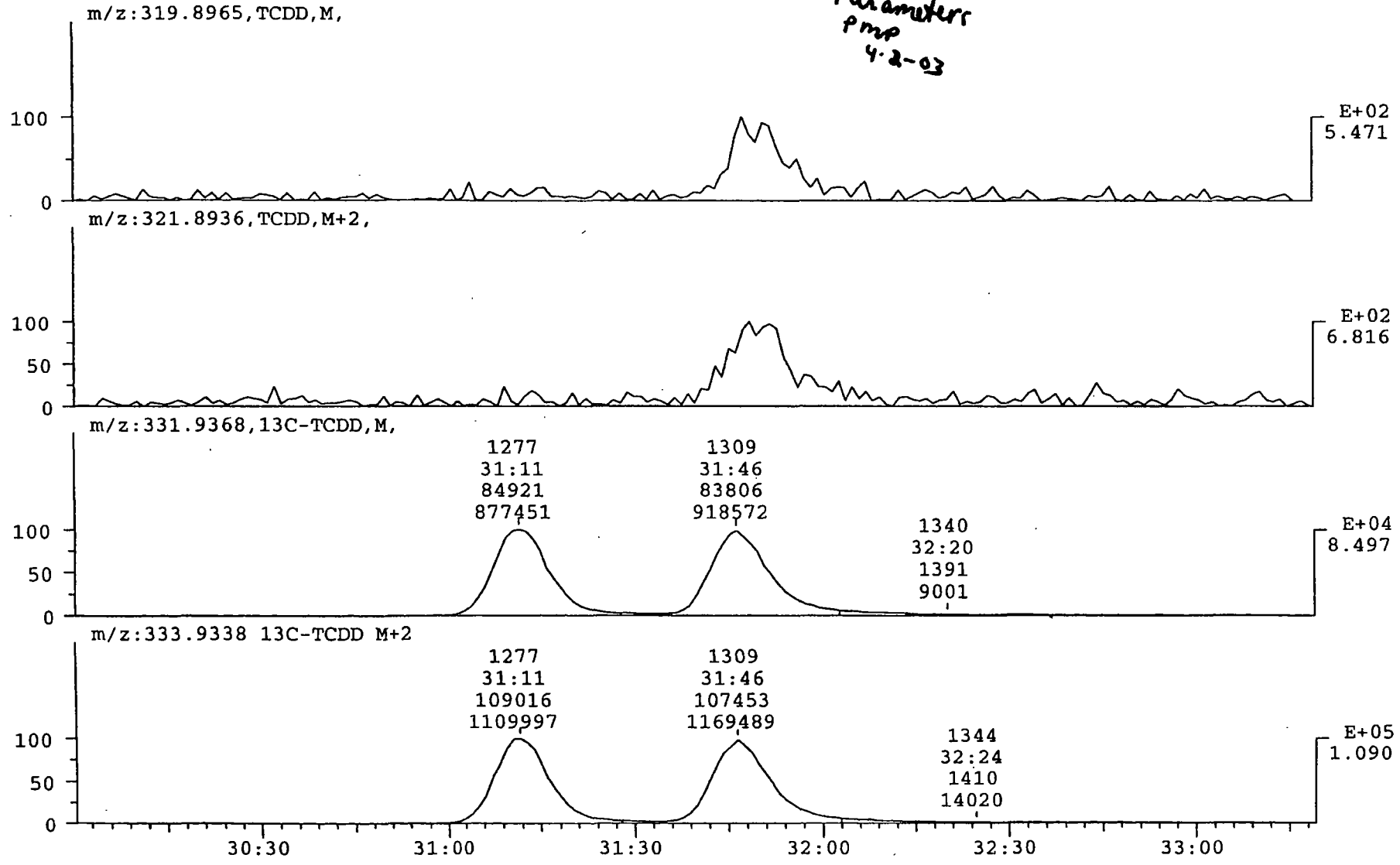
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 847 > 2811 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int Prep 4-2-03
Calc Prep 4-2-03
OK DFW 4/3/03

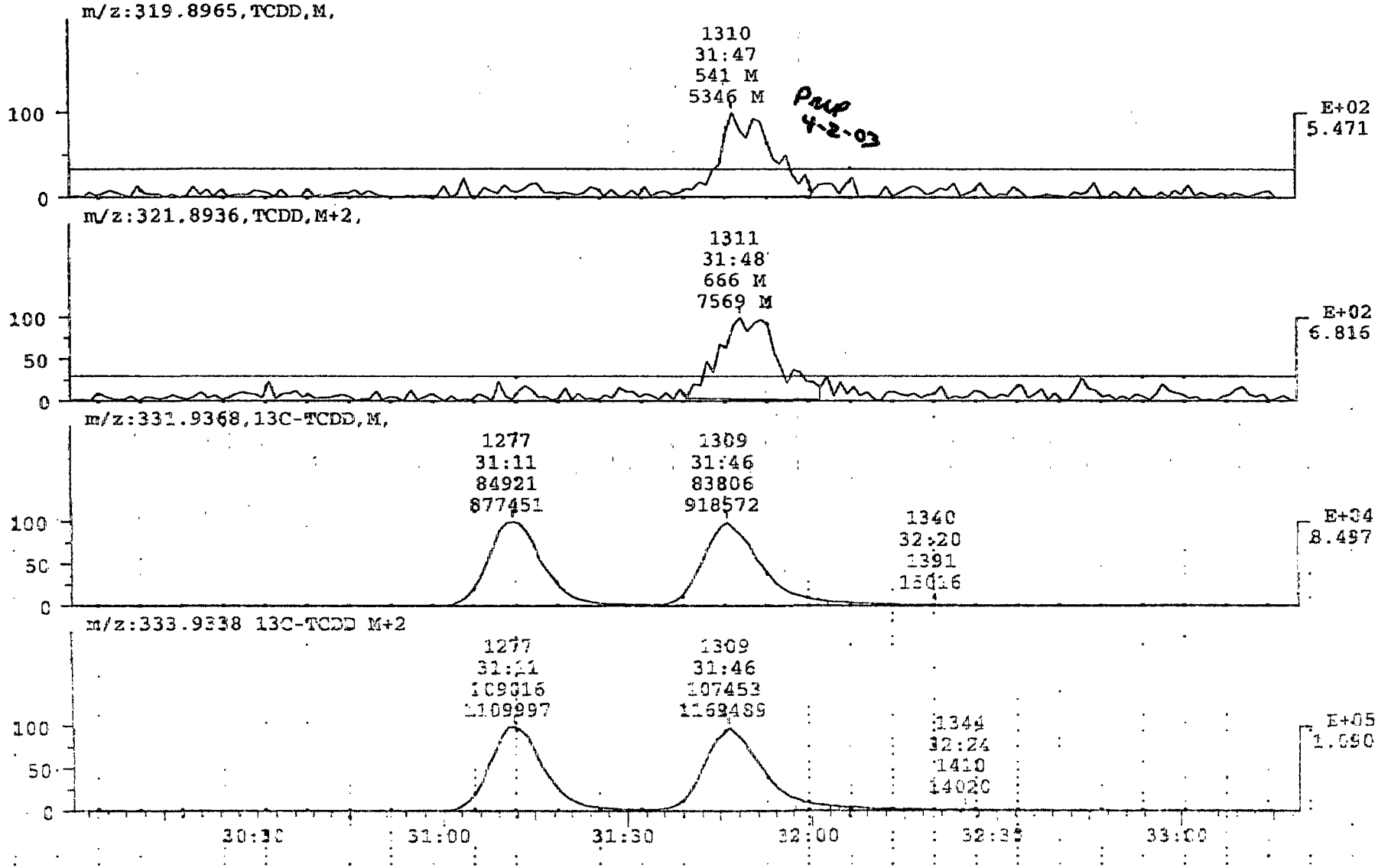


CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

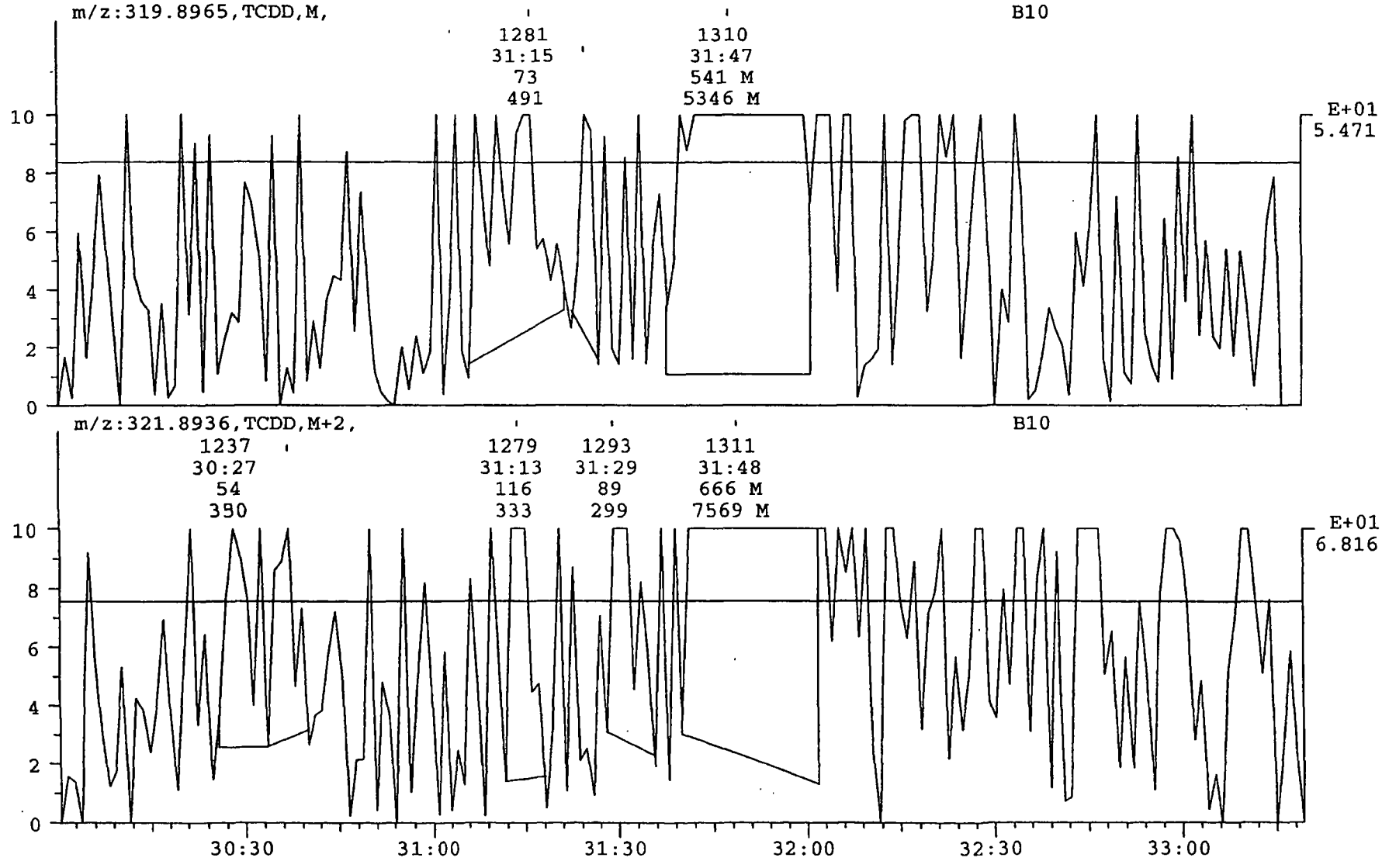
Changed Parameters PMP 4-2-03



CHRO: t03040111 01-Apr-03 Elapse: 45:07 2054
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -4, 4.0
Disp: Height Area

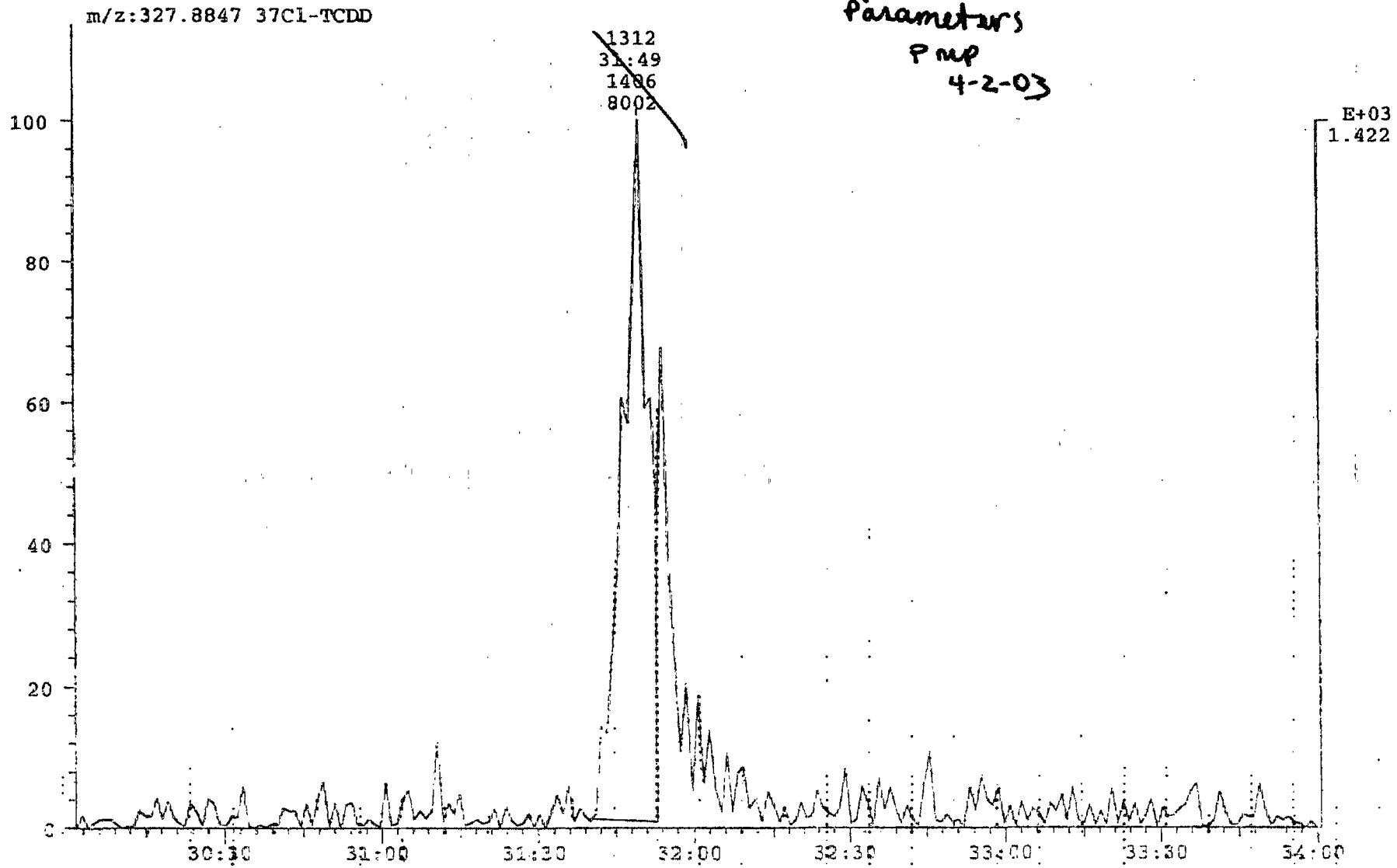


CHRO: t030401i1 01-Apr-03 Elapse: 45:07 2054
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area

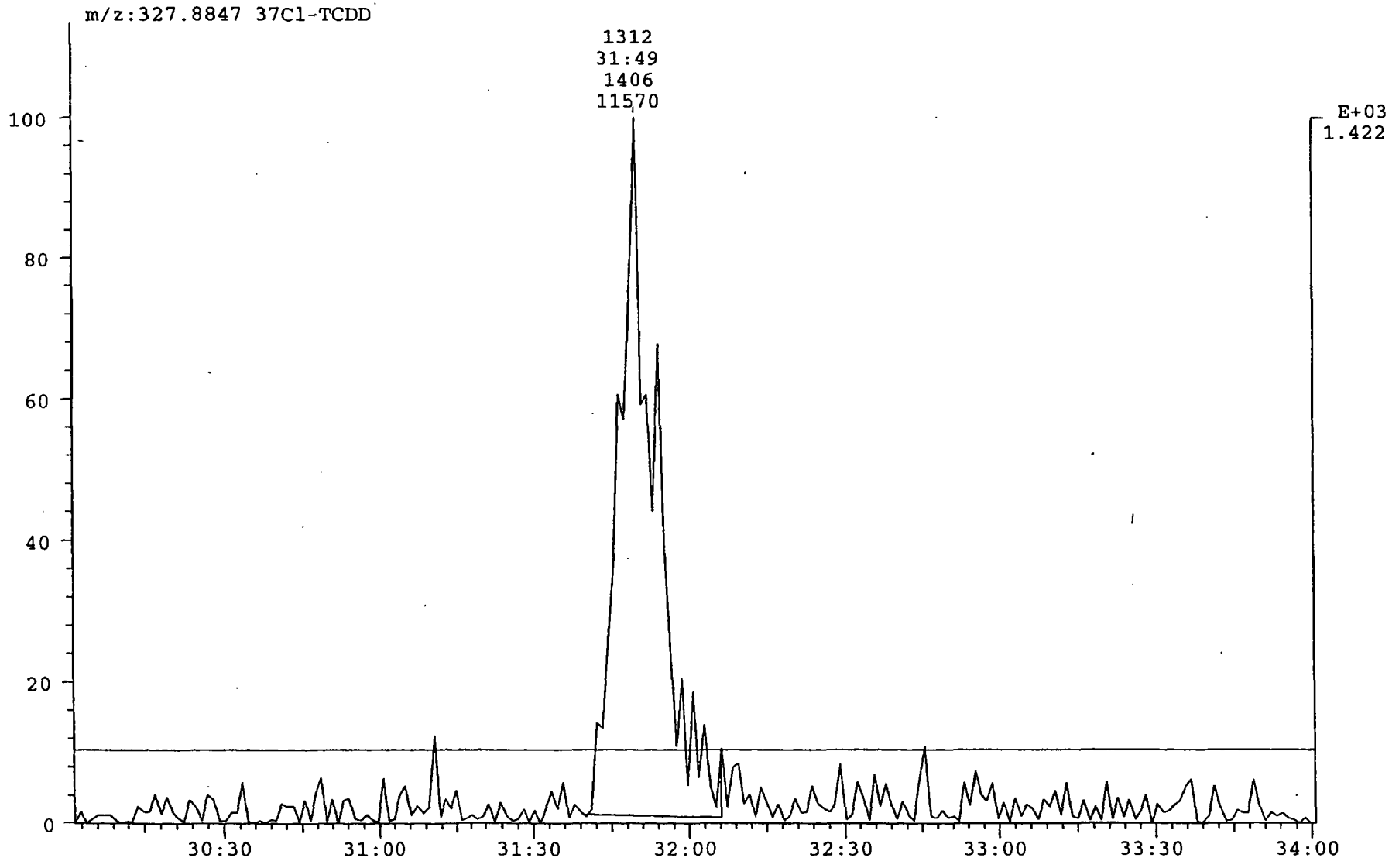


CHRO: t03040li1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

Changed Parameters PMP 4-2-03



CHRO: t030401i1 01-Apr-03 Elapse: 45:07 2054
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 4 Label : -2, 3.0
Disp: Height Area



CHRO: t03040111 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

Changed parameter PME 4-2-03

m/z:303.9016 TCDF M
1202
29:49
732
7539
E+02
7.473

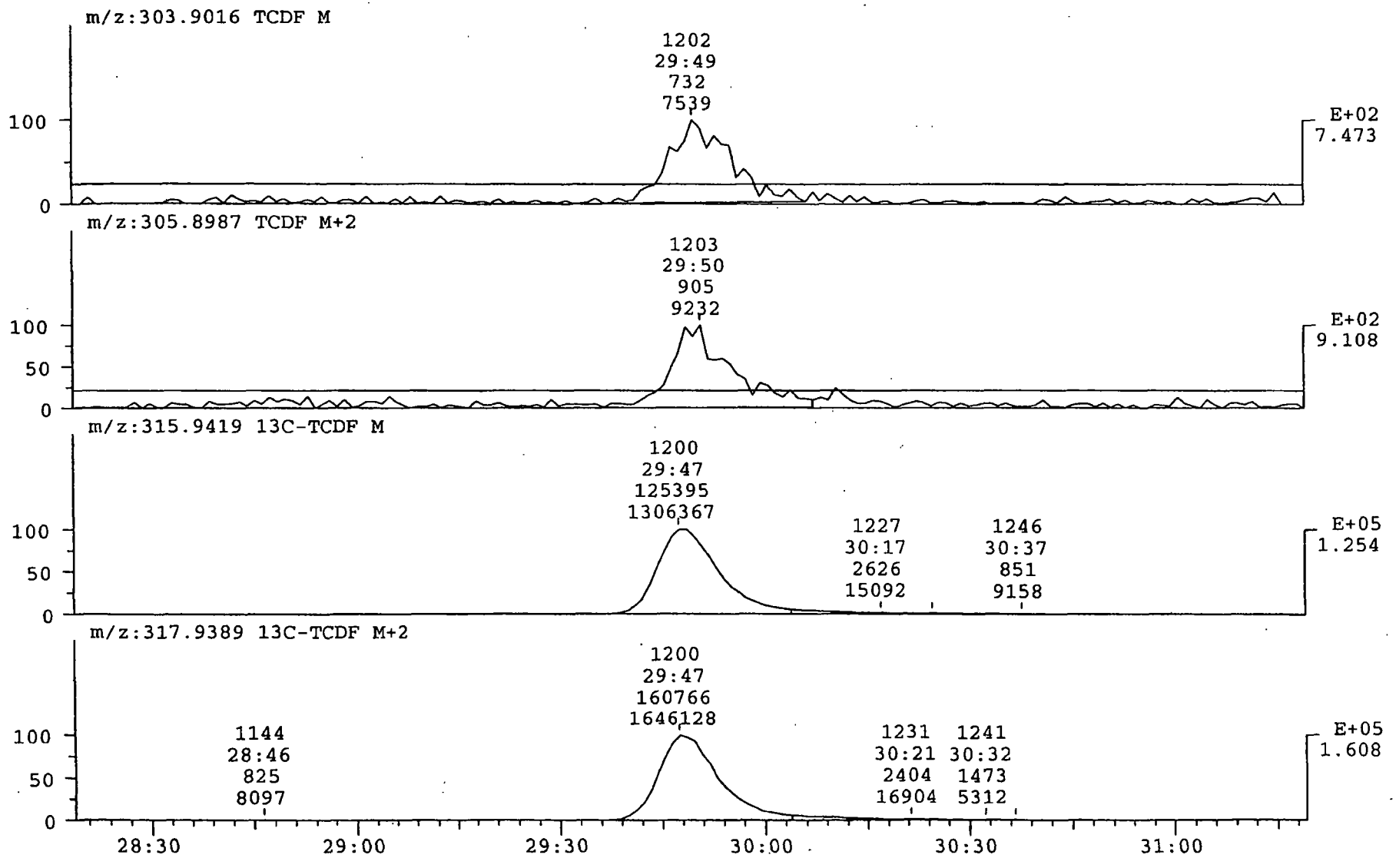
m/z:305.8987 TCDF M+2
1203
29:50
905
7847
E+02
9.108

m/z:315.9419 13C-TCDF M
1200
29:47
125395
1306367
E+05
1.254

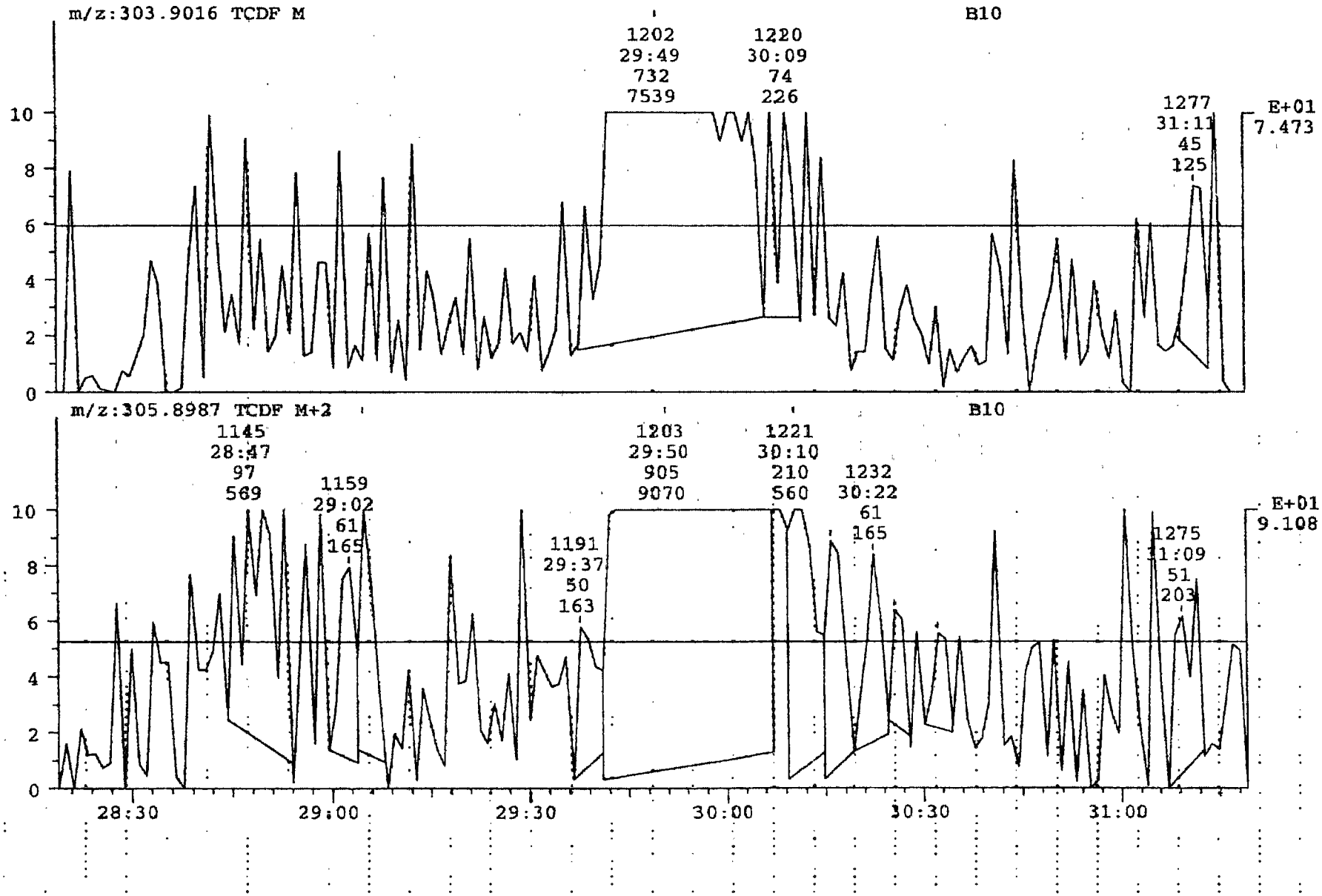
m/z:317.9389 13C-TCDF M+2
1200
29:47
160756
1646128
E+05
1.608

28:30 29:00 29:30 30:00 30:30 31:00

CHRO: t030401i1 01-Apr-03 Elapse: 45:07 2054
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -4, 4.0
Disp: Height Area

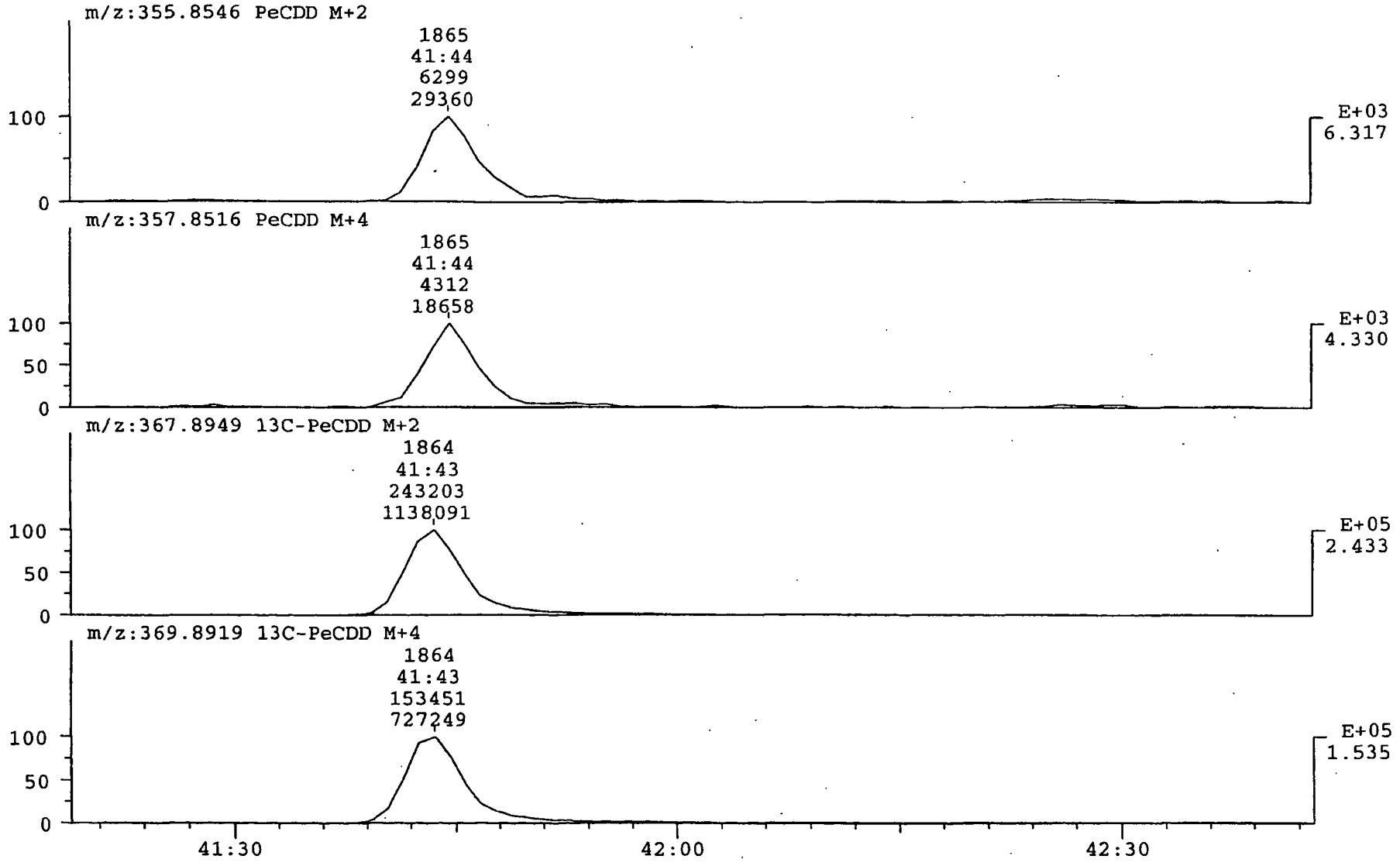


CHRO: t030401i1 01-Apr-03 Elapse: 45:05 2052
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area

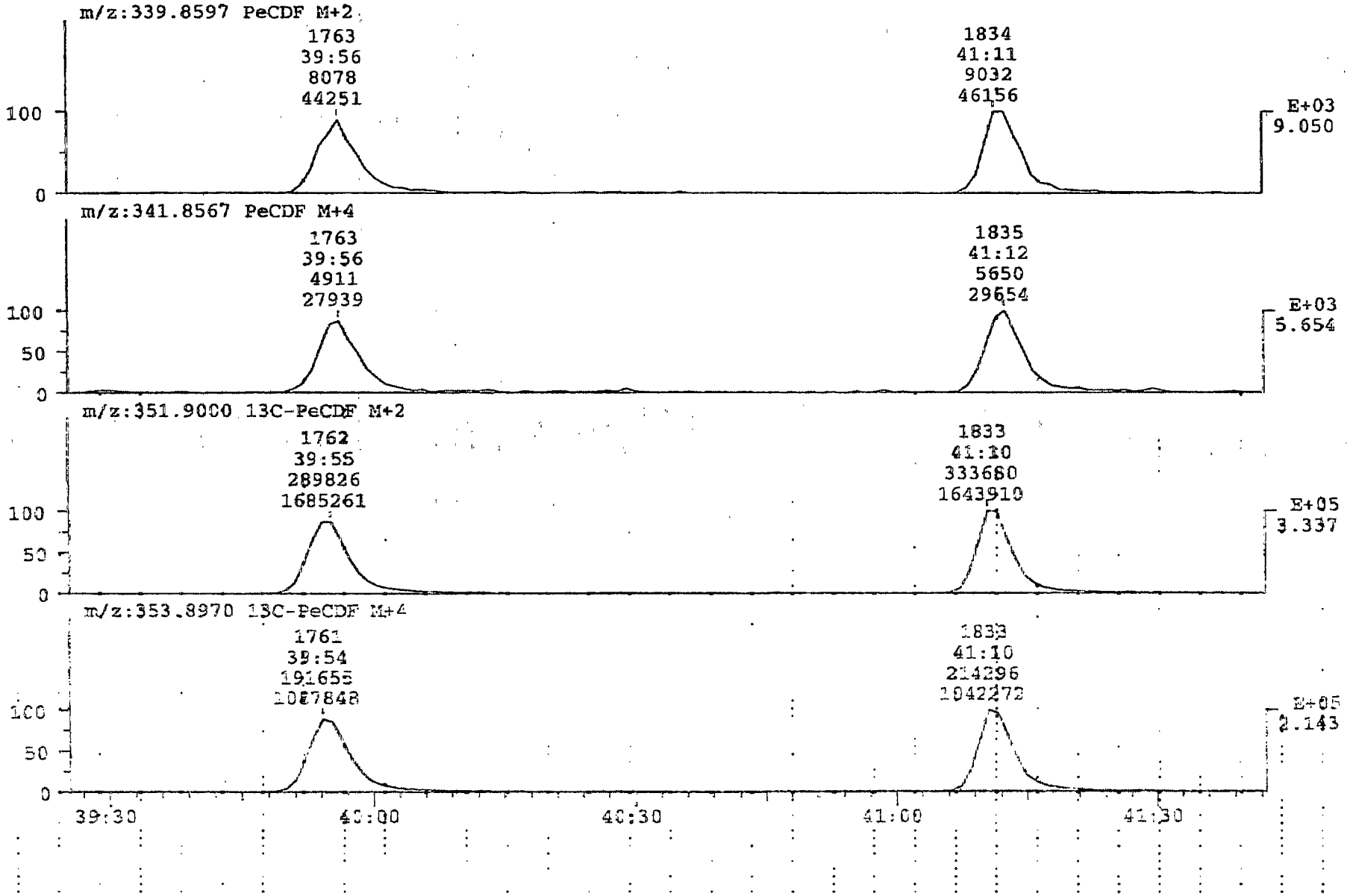



451

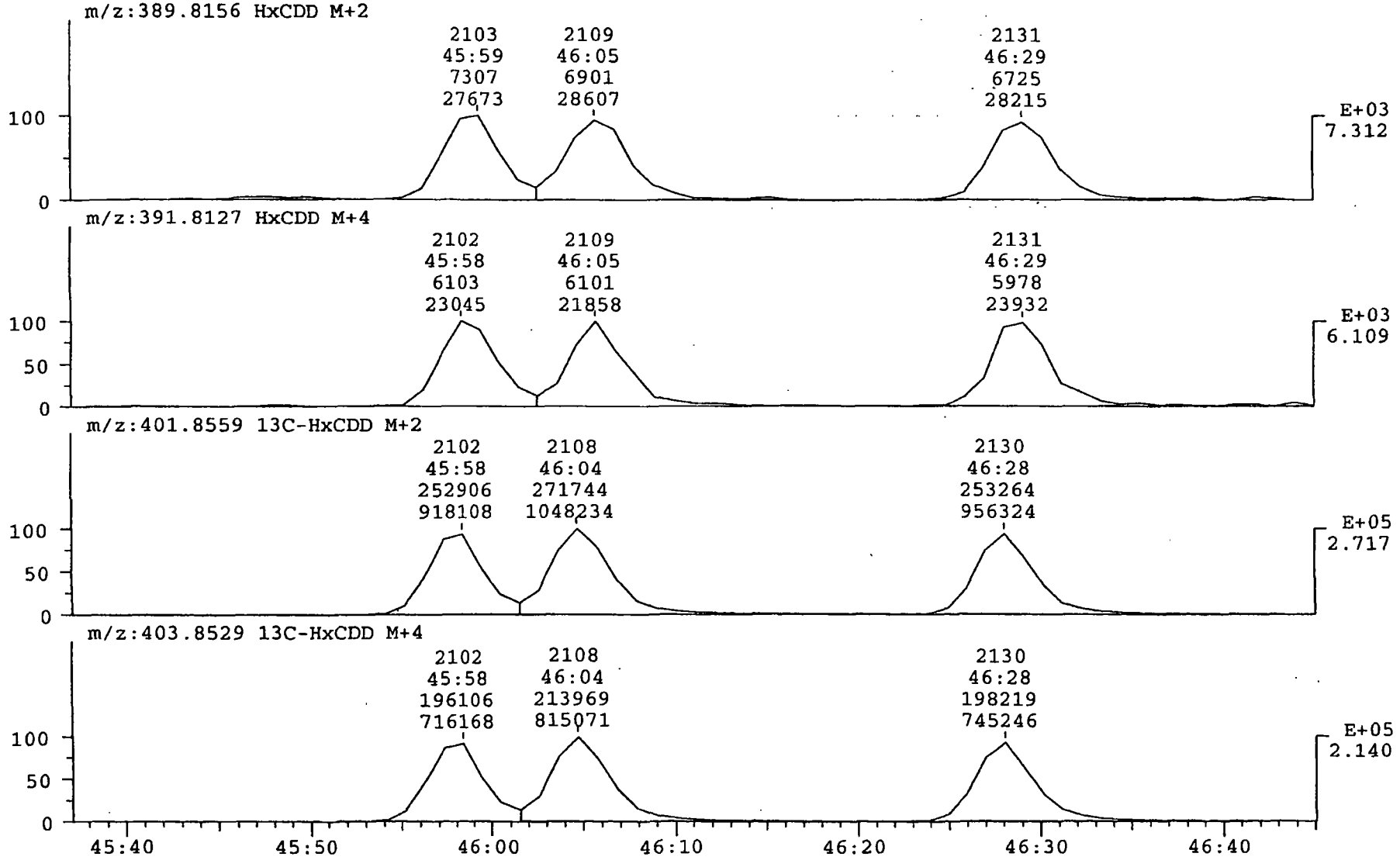
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



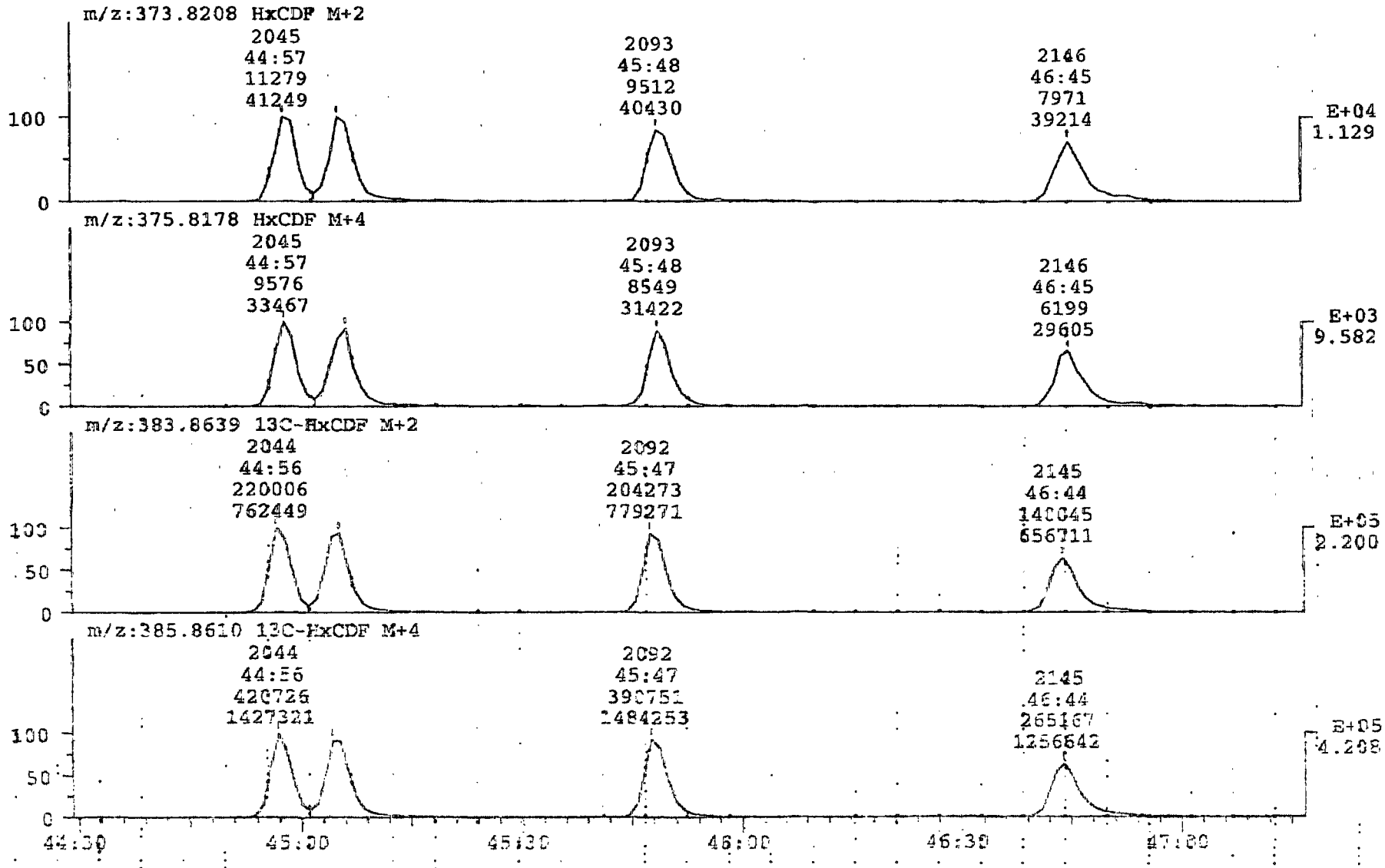
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



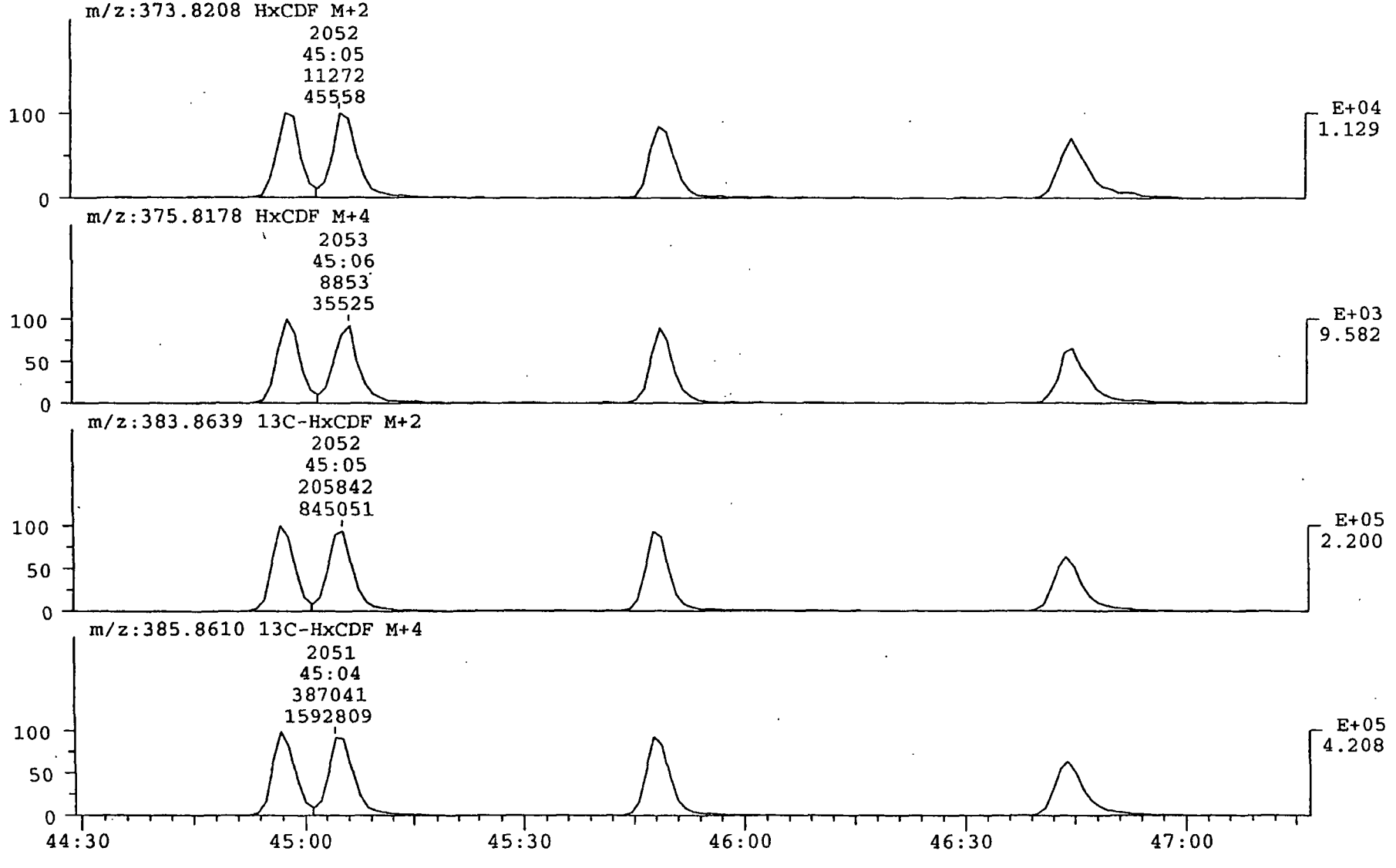
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



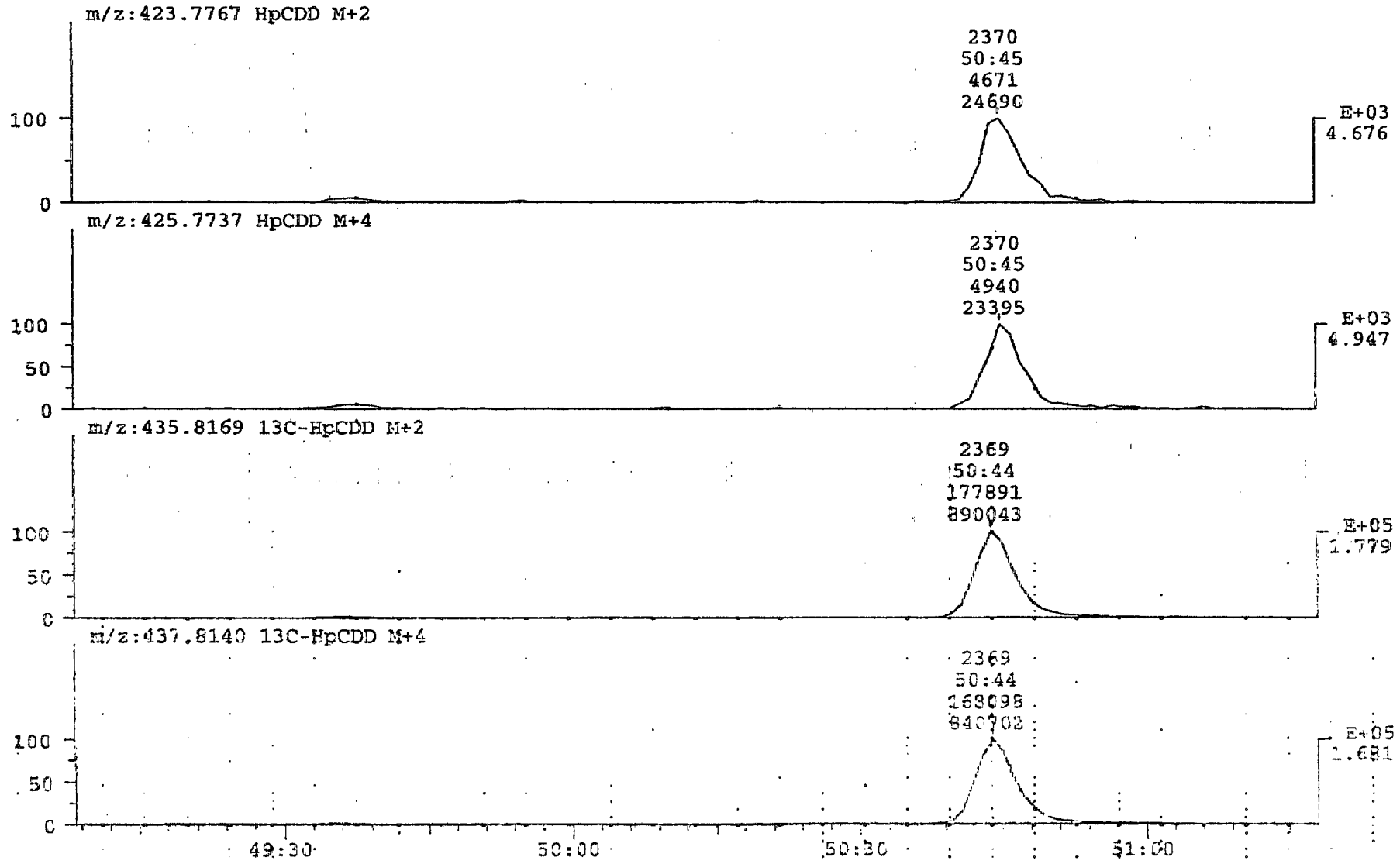
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



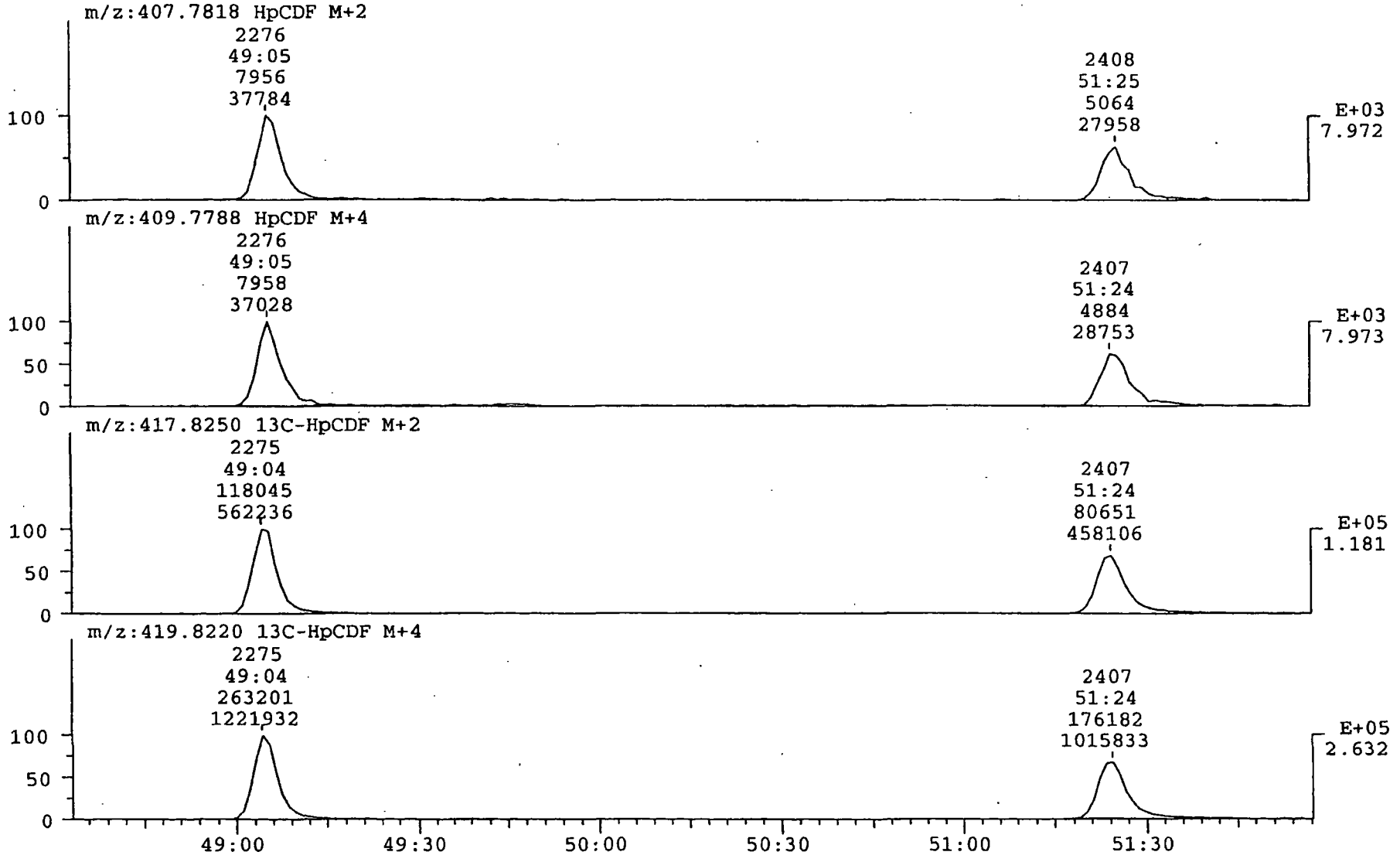
CHRO: t030401i1 01-Apr-03 Elapse: 45:05 2052
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2047 > 2057 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



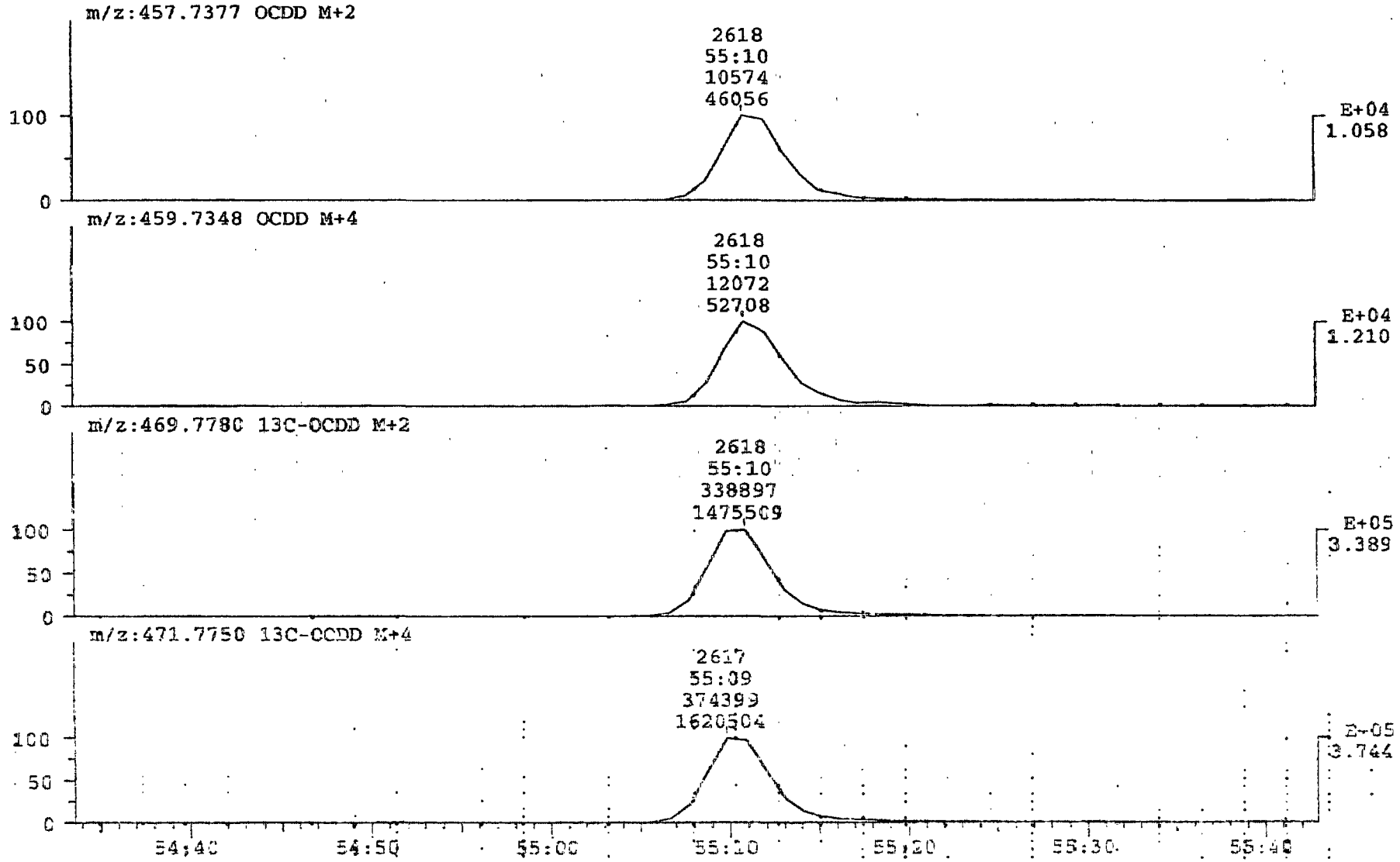
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



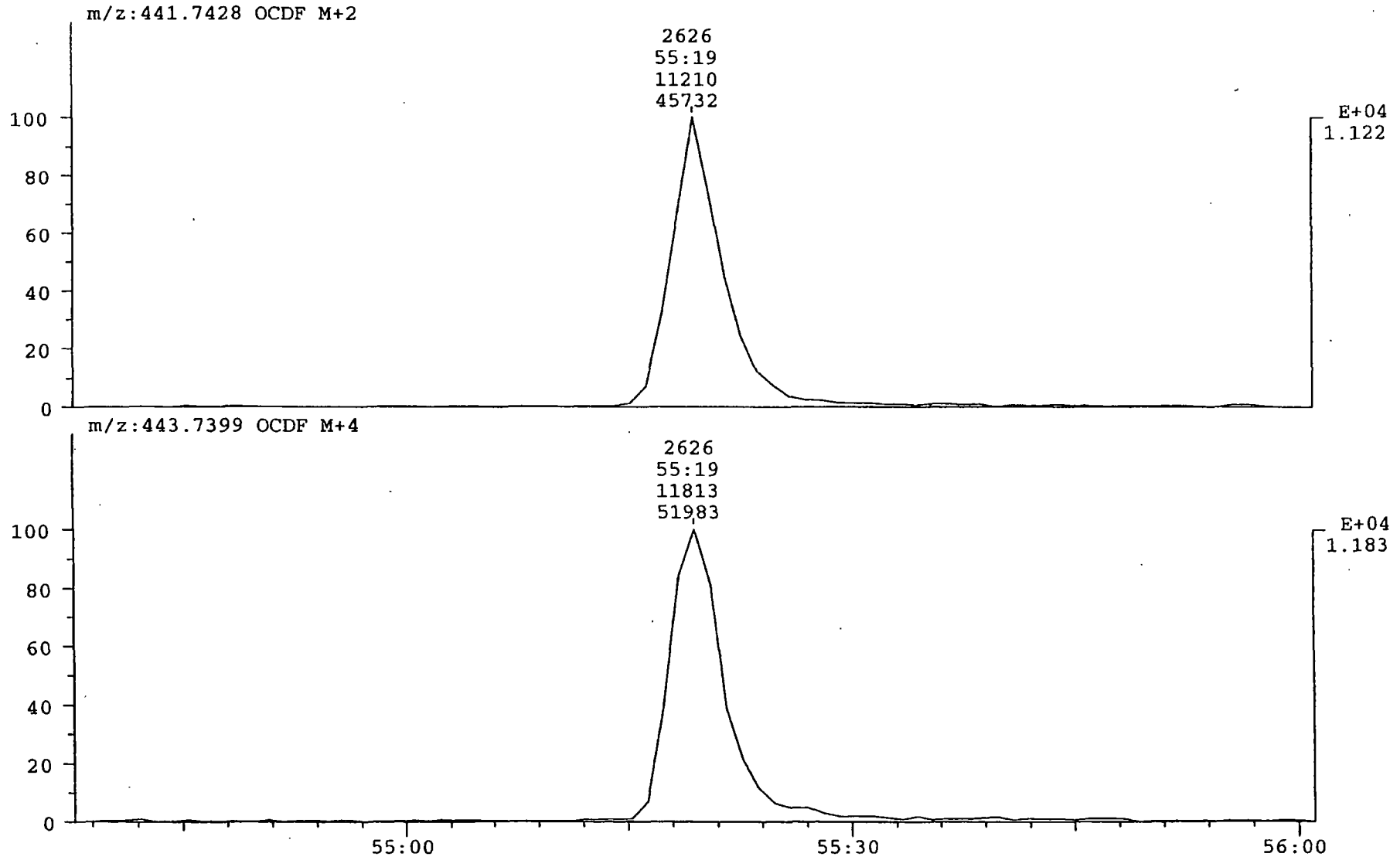
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



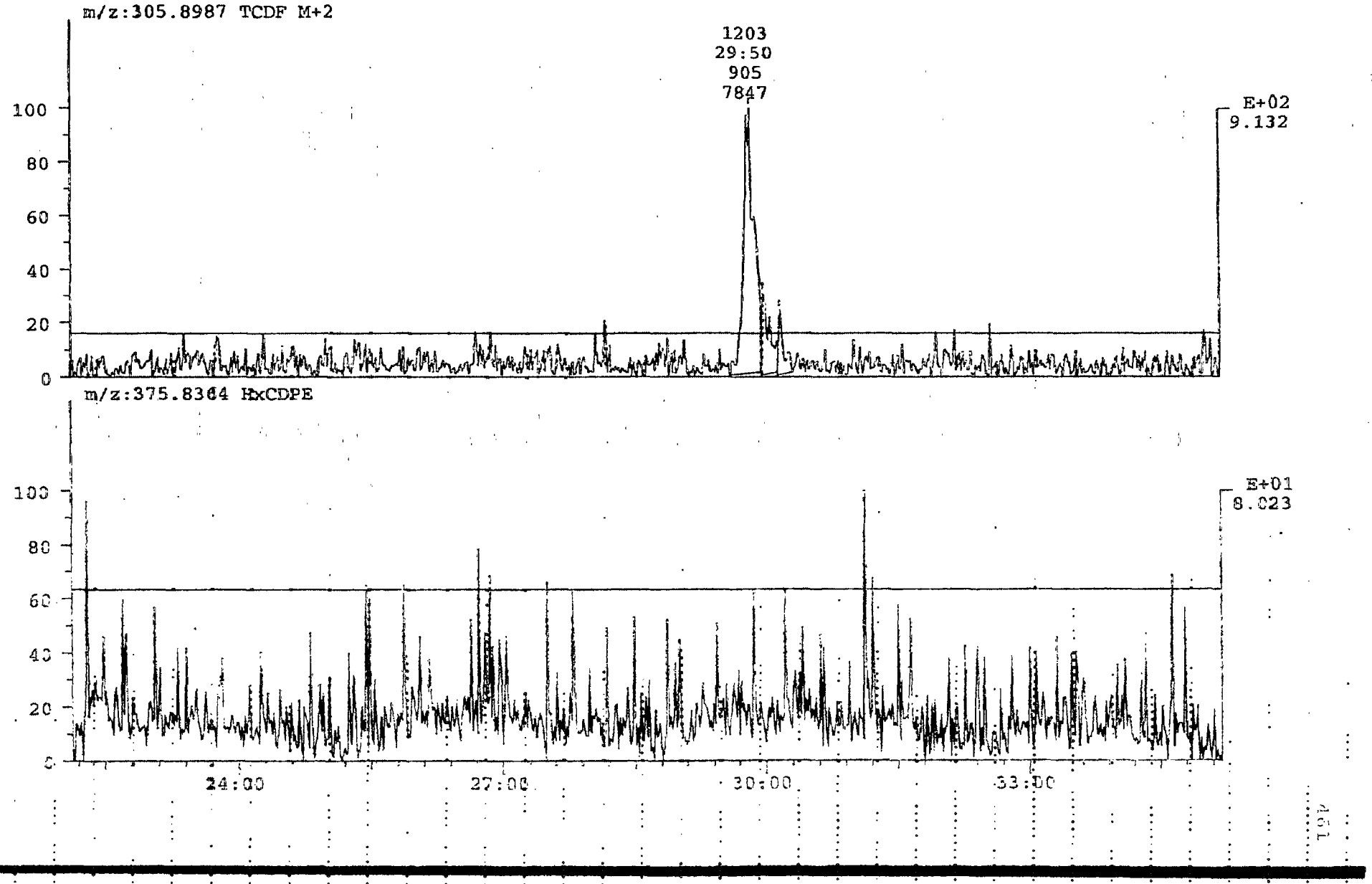
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



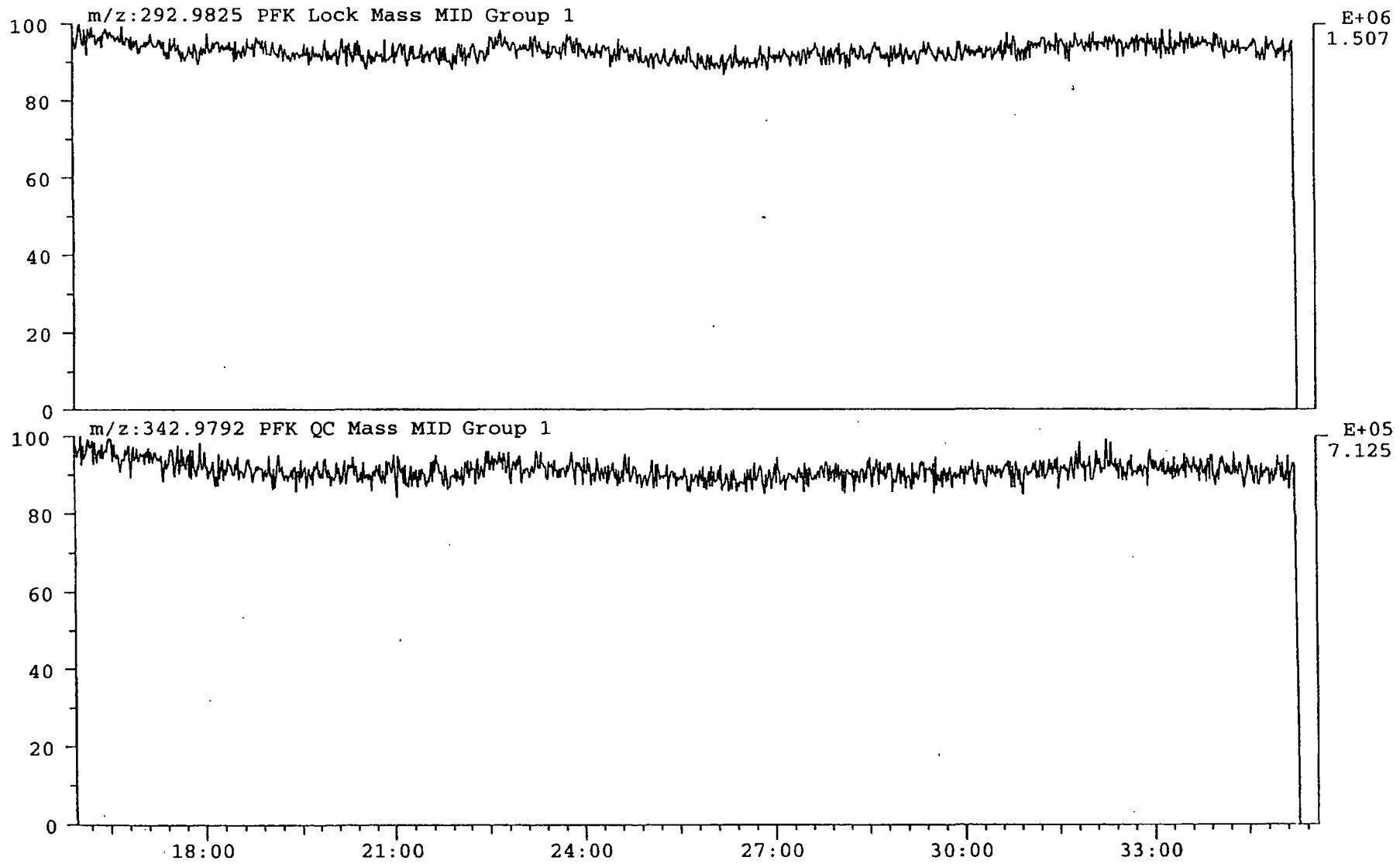
CHRO: t03040li1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



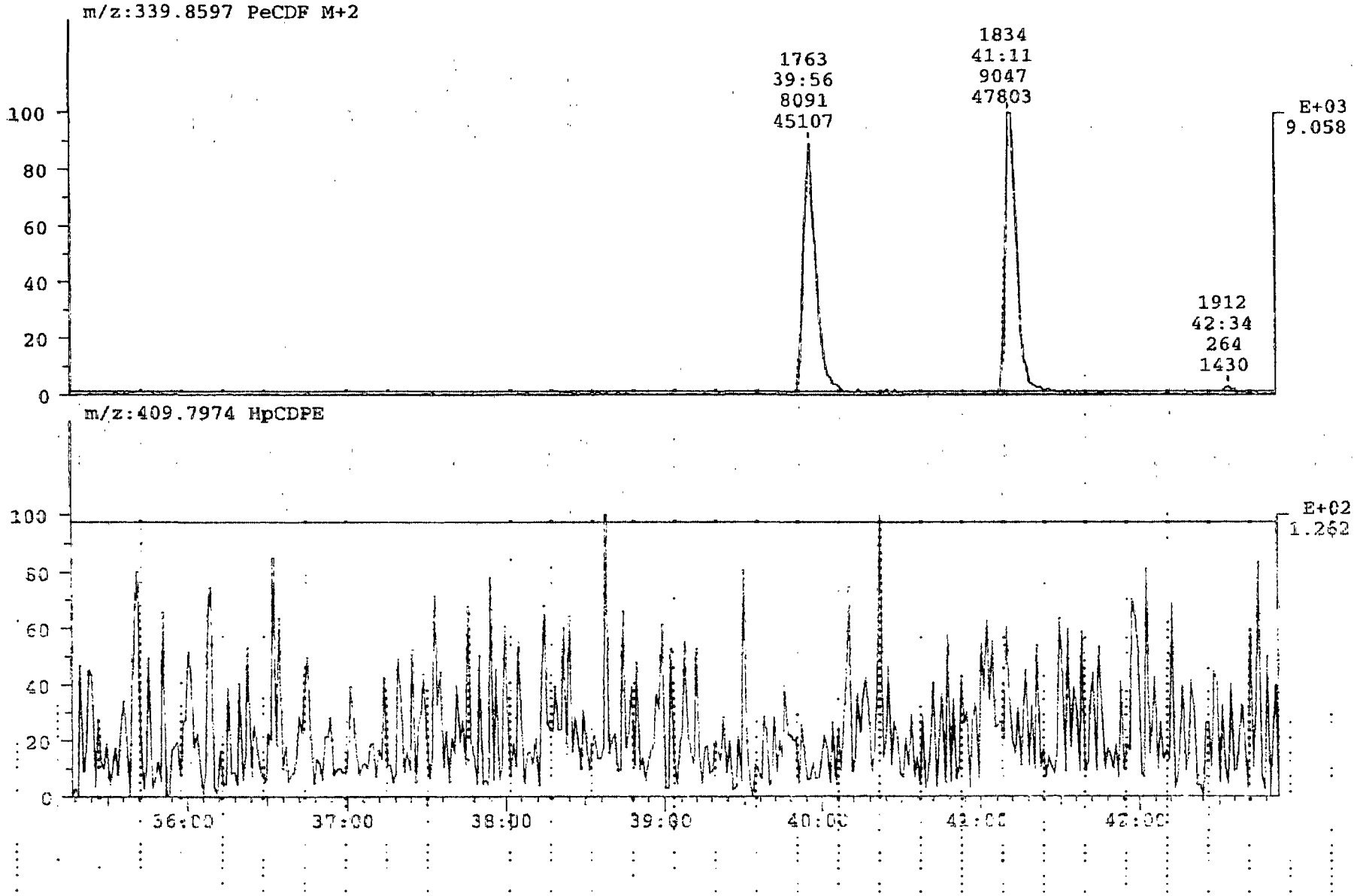
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 779 > 1497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



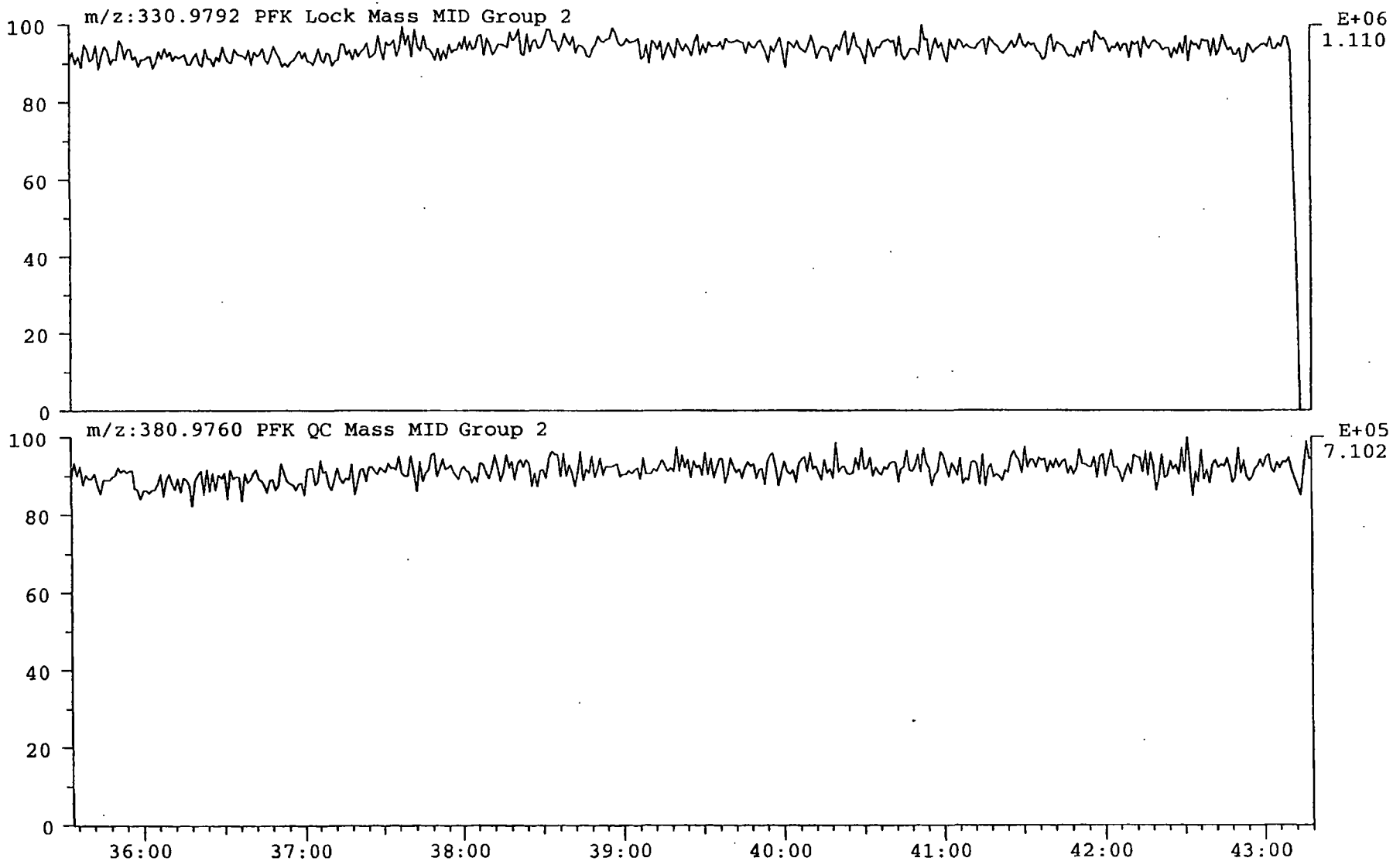
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 440 > 1516 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



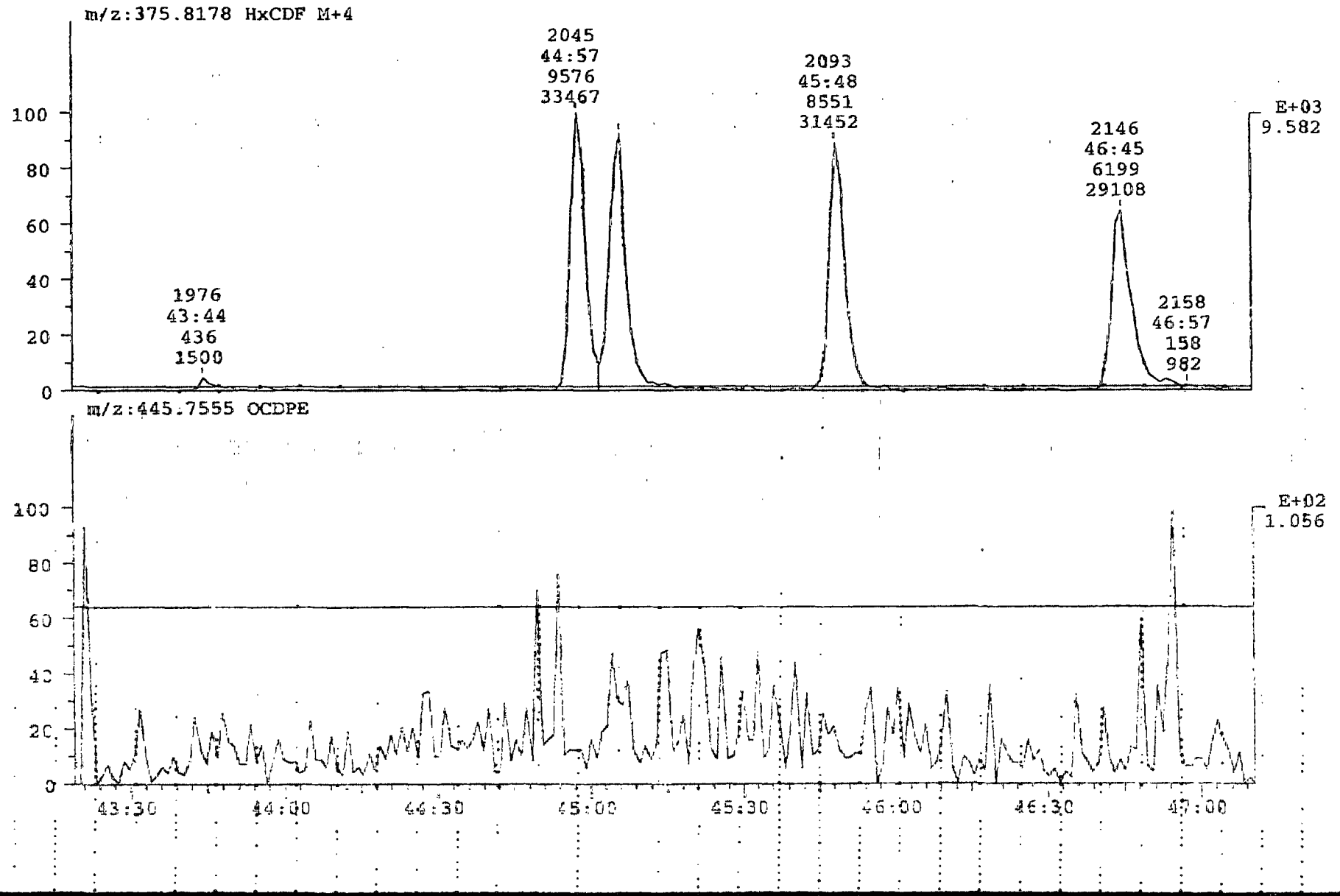
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1500 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



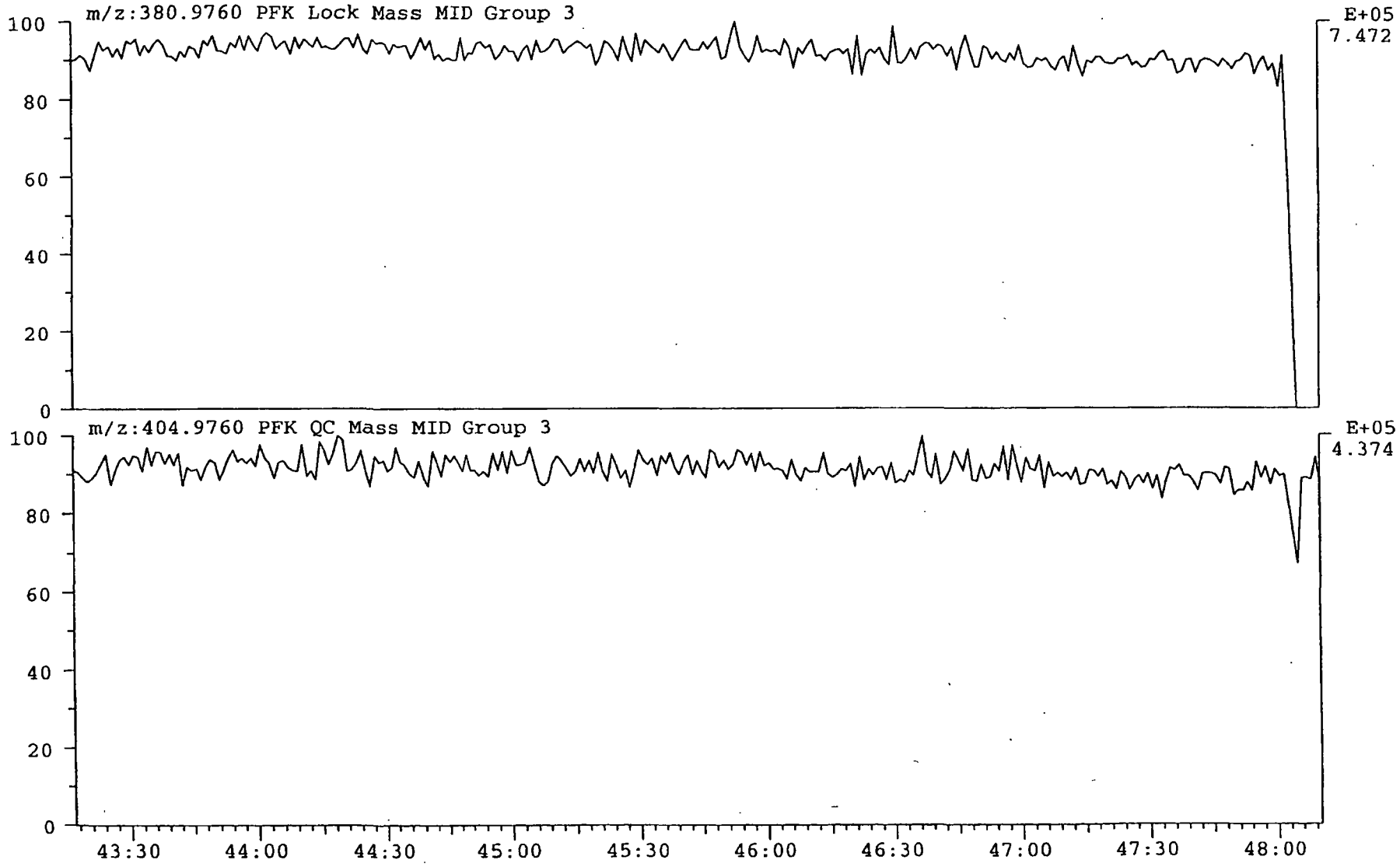
```
CHRO:  t030401i1                              01-Apr-03   Elapse:  08:00.5        1
Samp:  Vial 41 WO=2427:46CS1 Meth=F8 Dil=1                Start :  18:57:14    2796
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS1
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  41
Peak:  100.00  ppm     Label wndw:   1516 > 1951          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



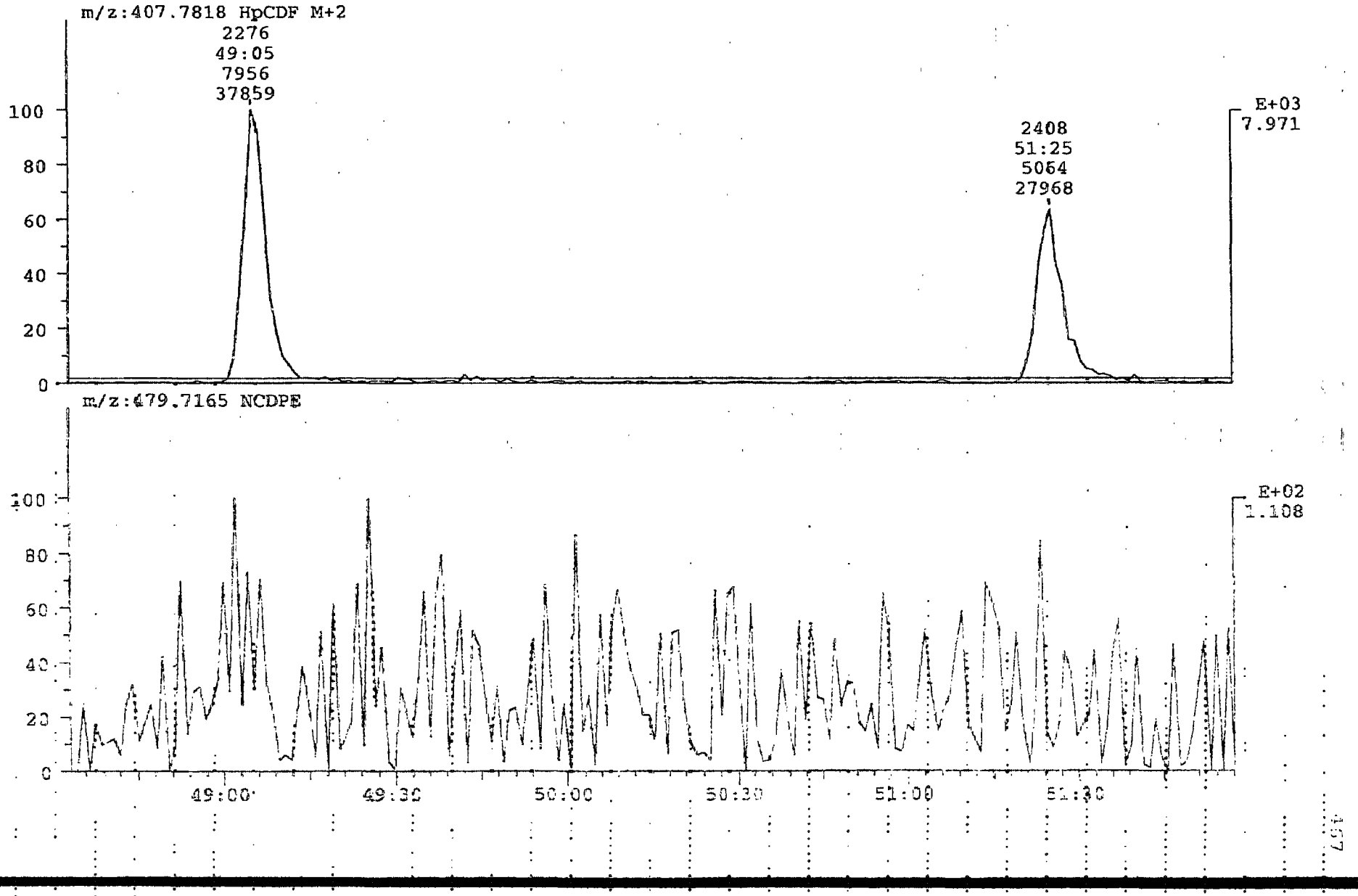
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



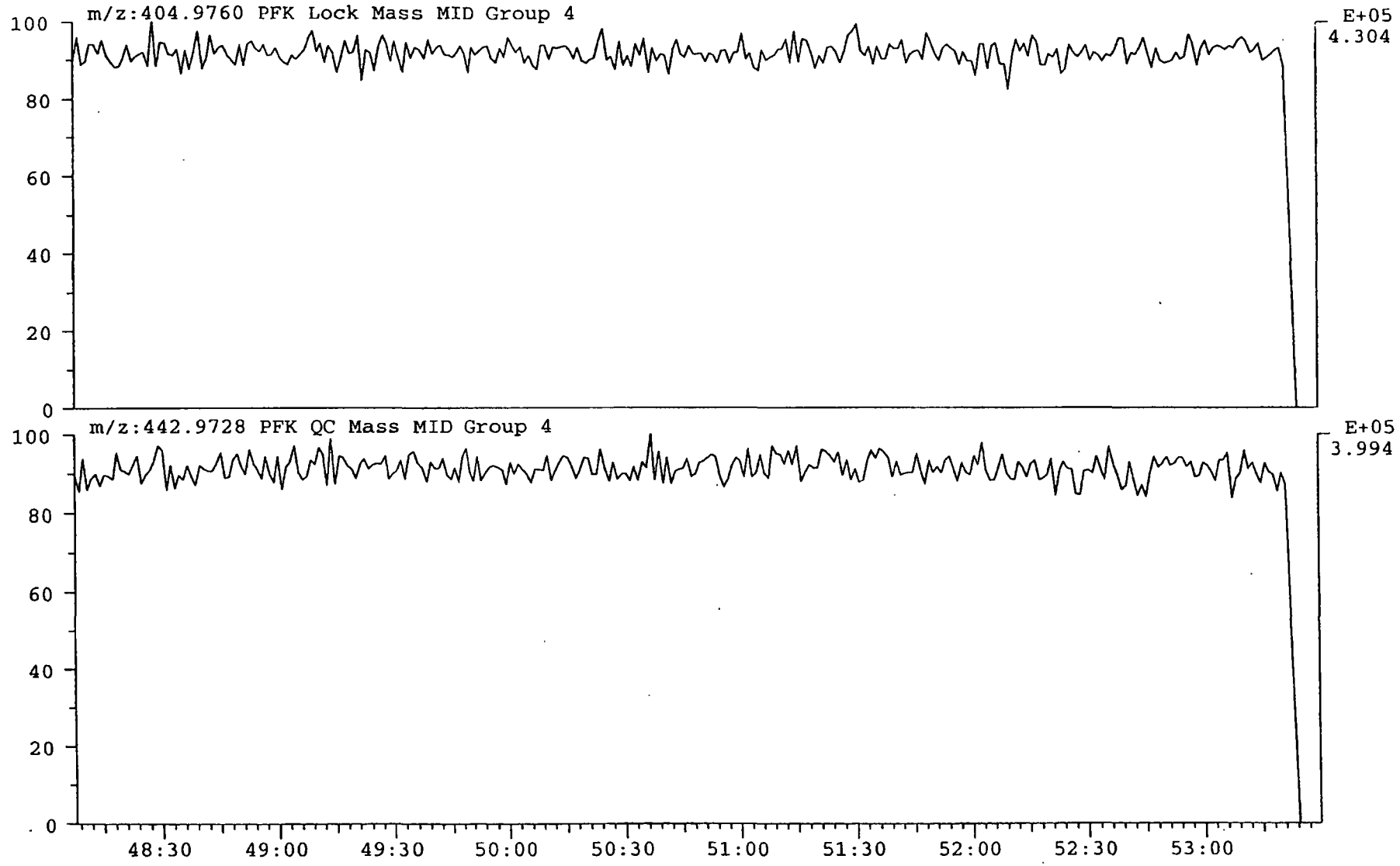
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 1950 > 2224 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



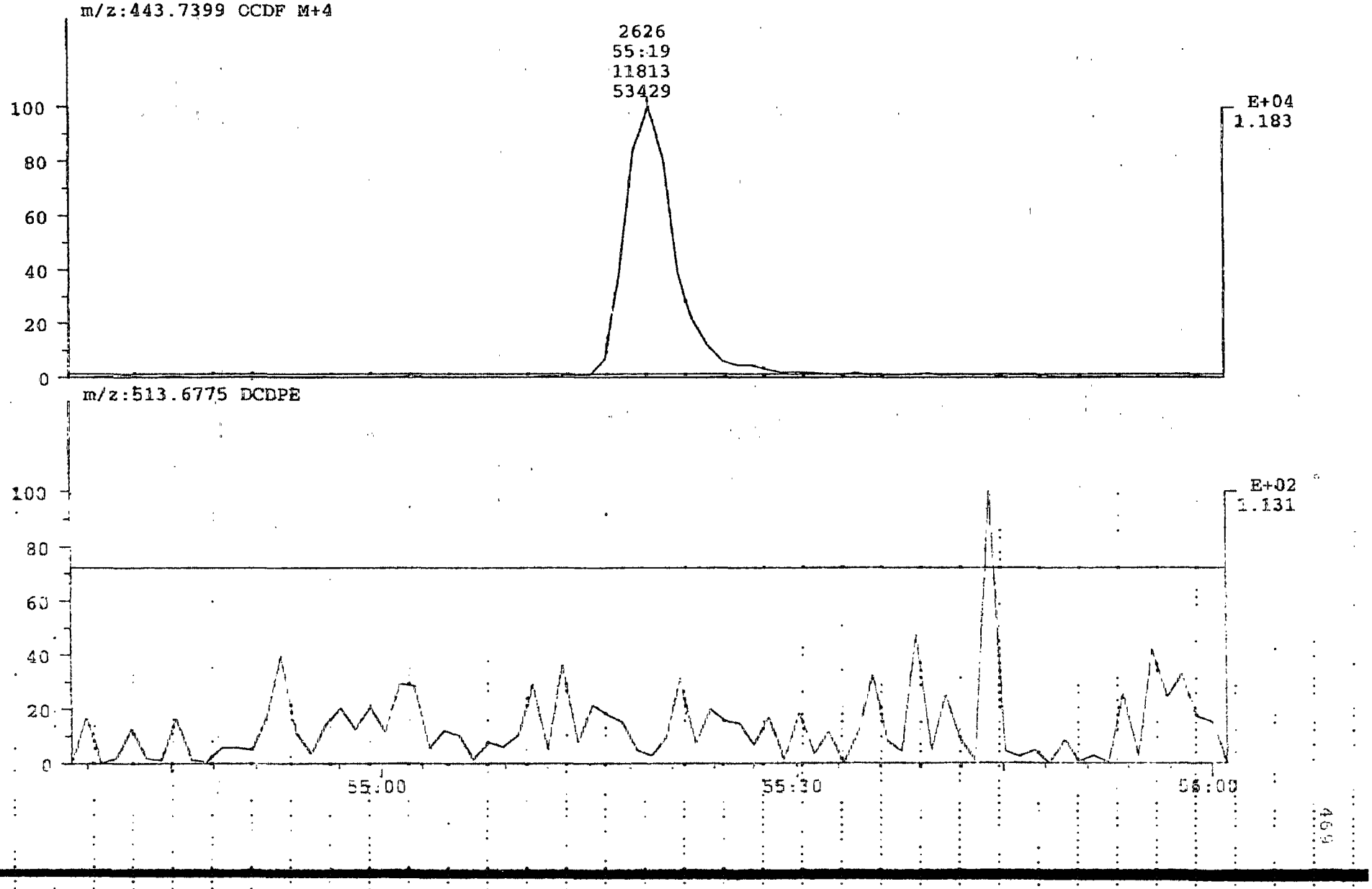
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2222 > 2523 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

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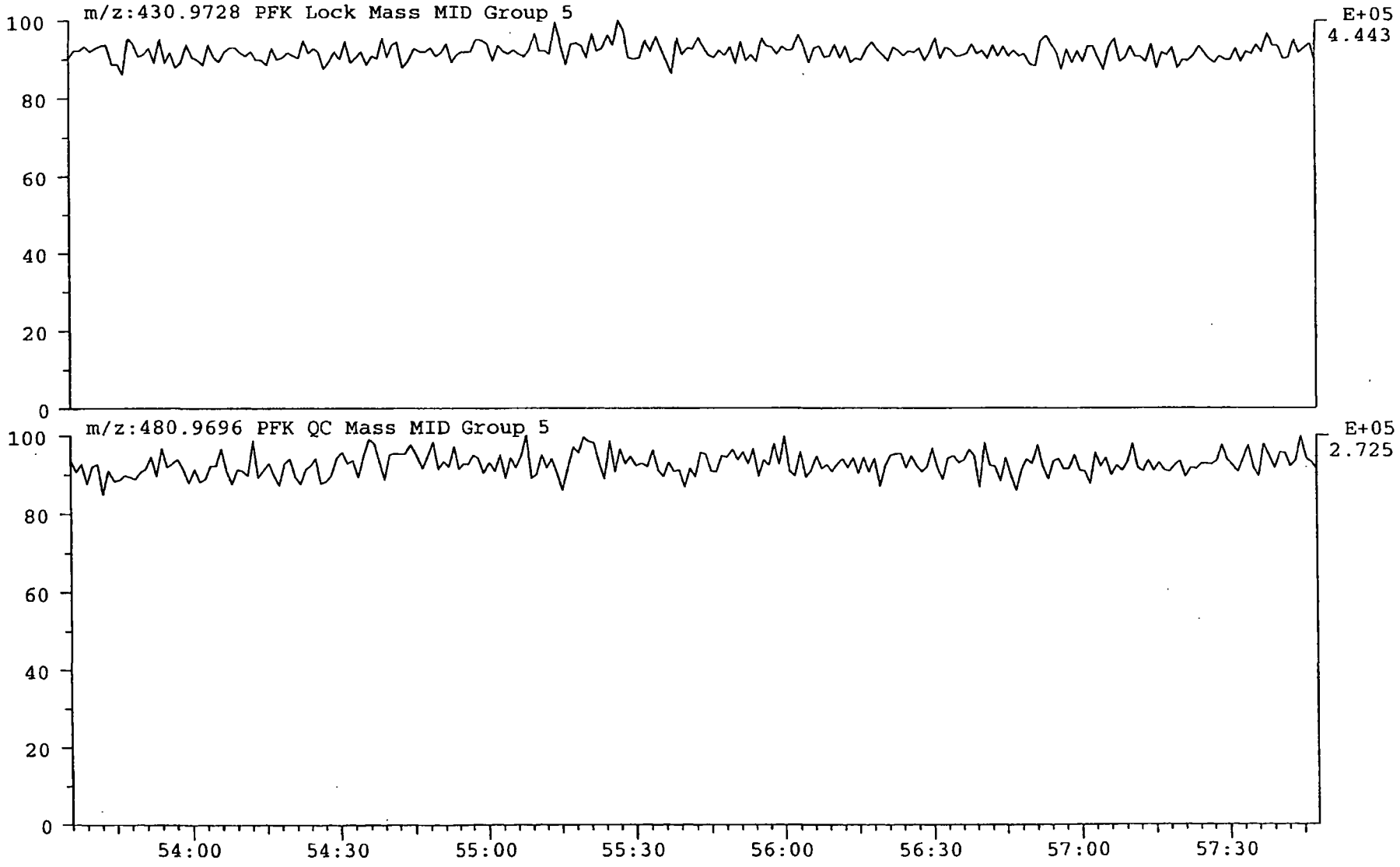
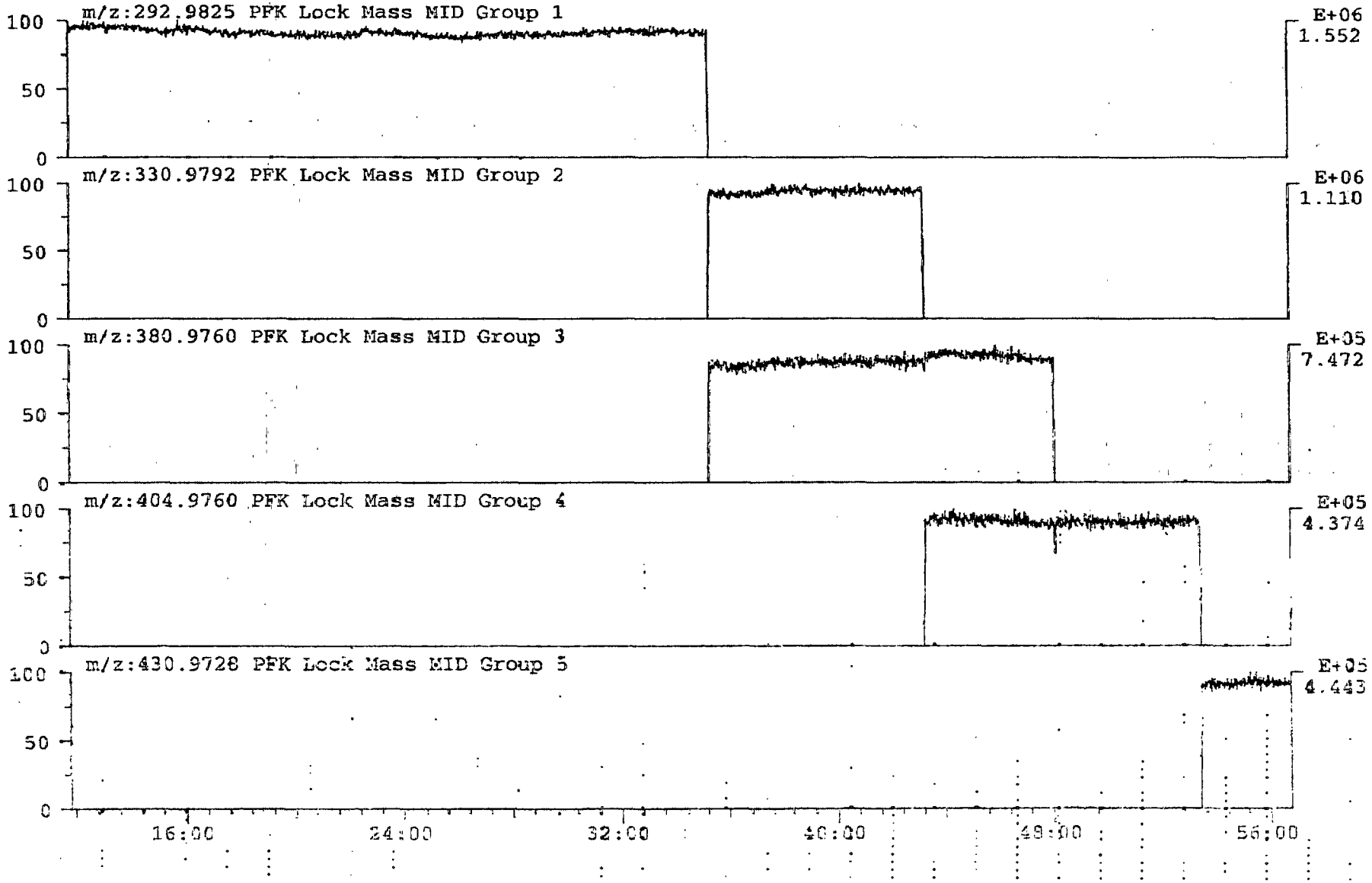
CHRO: t030401i1 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41
Peak: 100.00 ppm Label wndw: 2529 > 2765 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



```
CHRO:  t03040li1                              01-Apr-03   Elapse:  08:00.5        1
Samp:  Vial 41 WO=2427:46CS1 Meth=F8 Dil=1                Start :  18:57:14    2796
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS1
Oper:  DCG            Client:  STL Knoxville              Inlet :  GC     Vial  41
Peak:  100.00  ppm      Label wndw:   210 > 2707          Masses:  293 > 514
Area:  0, 0.00, 0       Baseline  :   0, 3                Label :  0, 0.0
```



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: t030401i1
Study: ICAL/CS1
Sample: WO=2427:46CS1 Meth=F8 Dil=1
Amount: 0.0
Volume: 0.0
Operator: DCG
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Injected volume: 2.0
Sample from Vial 41
Analysis will stop when MID run finishes
Tune file name: tune2
File 1 of list 030401i
ICL procedure: sleep6x
ICIS procedure: tstd $
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.35 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 27:12 min | 35:12 min | 1.00 sec |
| # 2 | 35:12 min | 7:58 min | 43:10 min | 1.00 sec |
| # 3 | 43:10 min | 4:50 min | 48:00 min | 1.00 sec |
| # 4 | 48:00 min | 5:20 min | 53:20 min | 1.00 sec |
| # 5 | 53:20 min | 5:00 min | 58:20 min | 1.00 sec |

Mid Masses:
Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | l | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | l | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
Loop clean w slvnt A (LC):      0 times
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume   (Y):    0.0 ul
2nd Injection volume  (I):    0.0 ul
Air volume of 2nd inj (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:          270 deg                          300 deg max
  Transfer Line:     290 deg                          300 deg max
  Column:            140 deg at    0.0 minutes        330 deg max
                     140 deg at    3.0 minutes
                     210 deg at    6.5 minutes
                     210 deg at   34.5 minutes
                     280 deg at   44.5 minutes
                     280 deg at   51.0 minutes
                     325 deg at   58.4 minutes
  Inlet    :
  Pressure         18.0 psi
  Splitless mode
  Purge time        1.5 min
  Purge flow       40.0 mL/min

   Gas saver is on
   Saver time        3.0 min
   Saver flow       15.0 mL/min

  Stabilize time    0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8422.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.5765 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.5861 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 1.0004 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4857.3333 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.0000 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 180.0000 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.2000 | FREQ | 600.9615 |
| FSLOPE | 36000000.0000 | FVANAL | 152.0000 | FVINLET | 477.0000 |
| FVSRC | 885.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 156.0000 |
| HCURR | 1.4804 | HVANAL | 941.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4754.5740 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 304.9824 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 200.0000 | NSAM | 200.0000 | NSCAN | 333.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10422.1189 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 2.0000 |
| SCIDLE | 0.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9700 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1721.0000 | XLENSS | 163.4000 |
| YLENS | 2467.0000 | YLENSS | -53.4000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 01-Apr-03 18:57:14.1

Autosampler has injected sample from vial 41
Analysis stopped at: 01-Apr-03 19:55:35.9 (run time 58.35 minutes)
Analysis stopped because MID run finished

QUAN: t030401i1.q0 Entries: 69

Data file(s) used
File: t030401i1 01-Apr-03
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 332. | 31:11 | 1277 | 84920.992 | 877450.562 | 159.83 |
| 2 | 332. | 31:46 | 1309 | 83806.468 | 918572.250 | 159.83 |
| 3 | 332. | 32:20 | 1340 | 1391.139 | 9001.462 | 159.83 |
| 4 | 334. | 31:11 | 1277 | 109016.328 | 1109997.250 | 146.38 |
| 5 | 334. | 31:46 | 1309 | 107453.101 | 1169489.375 | 146.38 |
| 6 | 334. | 32:24 | 1344 | 1410.356 | 14020.131 | 146.38 |
| 7 | 328. | 31:49 | 1312 | 1406.002 | 8002.448 | 49.19 |
| 8 | 356. | 41:44 | 1865 | 6299.287 | 29359.996 | 59.77 |
| 9 | 358. | 41:44 | 1865 | 4311.667 | 18657.751 | 55.22 |
| 10 | 368. | 41:43 | 1864 | 243203.140 | 1138090.875 | 104.33 |
| 11 | 370. | 41:43 | 1864 | 153451.000 | 727248.750 | 71.37 |
| 12 | 390. | 45:59 | 2103 | 7307.319 | 27672.910 | 50.13 |
| 13 | 390. | 46:05 | 2109 | 6900.638 | 28607.074 | 50.13 |
| 14 | 390. | 46:29 | 2131 | 6725.378 | 28214.634 | 50.13 |
| 15 | 392. | 45:58 | 2102 | 6102.996 | 23044.662 | 51.64 |
| 16 | 392. | 46:05 | 2109 | 6100.617 | 21858.189 | 51.64 |
| 17 | 392. | 46:29 | 2131 | 5977.531 | 23932.472 | 51.64 |
| 18 | 402. | 45:58 | 2102 | 252905.843 | 918107.562 | 95.68 |
| 19 | 402. | 46:04 | 2108 | 271744.468 | 1048233.562 | 95.68 |
| 20 | 402. | 46:28 | 2130 | 253264.250 | 956323.687 | 95.68 |
| 21 | 404. | 45:58 | 2102 | 196106.031 | 716168.375 | 133.82 |
| 22 | 404. | 46:04 | 2108 | 213968.828 | 815071.062 | 133.82 |
| 23 | 404. | 46:28 | 2130 | 198218.546 | 745246.000 | 133.82 |
| 24 | 424. | 50:45 | 2370 | 4671.421 | 24689.769 | 39.99 |
| 25 | 426. | 50:45 | 2370 | 4940.180 | 23395.238 | 38.45 |
| 26 | 436. | 50:44 | 2369 | 177891.156 | 890042.812 | 70.20 |
| 27 | 438. | 50:44 | 2369 | 168097.812 | 840701.625 | 52.57 |
| 28 | 458. | 55:11 | 2618 | 10573.851 | 46056.429 | 41.05 |
| 29 | 460. | 55:11 | 2618 | 12072.203 | 52707.742 | 52.08 |
| 30 | 470. | 55:11 | 2618 | 338897.062 | 1475509.375 | 57.59 |
| 31 | 472. | 55:09 | 2617 | 374398.656 | 1620504.375 | 65.28 |
| 32 | 304. | 29:49 | 1202 | 732.473 | 7539.468 | 44.36 |
| 33 | 306. | 29:50 | 1203 | 904.997 | 7847.446 | 47.72 |
| 34 | 316. | 29:47 | 1200 | 125394.773 | 1306367.125 | 143.29 |
| 35 | 318. | 29:47 | 1200 | 160766.109 | 1646128.000 | 134.18 |
| 36 | 340. | 39:56 | 1763 | 8077.840 | 44251.082 | 66.37 |
| 37 | 340. | 41:11 | 1834 | 9032.101 | 46156.179 | 66.37 |
| 38 | 342. | 39:56 | 1763 | 4911.124 | 27939.304 | 55.58 |
| 39 | 342. | 41:12 | 1835 | 5650.441 | 29654.328 | 55.58 |
| 40 | 352. | 39:55 | 1762 | 289826.343 | 1685261.000 | 159.41 |
| 41 | 352. | 41:10 | 1833 | 333679.500 | 1643910.250 | 159.41 |
| 42 | 354. | 39:54 | 1761 | 191655.265 | 1087848.375 | 138.17 |
| 43 | 354. | 41:10 | 1833 | 214296.109 | 1042271.937 | 138.17 |
| 44 | 374. | 44:57 | 2045 | 11278.987 | 41248.730 | 62.63 |
| 45 | 374. | 45:05 | 2052 | 11272.452 | 45557.562 | 62.63 |
| 46 | 374. | 45:48 | 2093 | 9511.898 | 40429.714 | 62.63 |
| 47 | 374. | 46:45 | 2146 | 7970.539 | 39213.765 | 62.63 |
| 48 | 376. | 44:57 | 2045 | 9576.243 | 33466.664 | 53.24 |
| 49 | 376. | 45:06 | 2053 | 8853.032 | 35525.085 | 53.24 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 376., | 45:48 | , | 2093, | 8549.355, | 31422.392, | 53.24, |
| 51, | 376., | 46:45 | , | 2146, | 6199.110, | 29604.705, | 53.24, |
| 52, | 384., | 44:56 | , | 2044, | 220005.671, | 762449.125, | 96.17, |
| 53, | 384., | 45:05 | , | 2052, | 205842.453, | 845050.937, | 96.17, |
| 54, | 384., | 45:47 | , | 2092, | 204273.437, | 779270.562, | 96.17, |
| 55, | 384., | 46:44 | , | 2145, | 140045.015, | 656710.937, | 96.17, |
| 56, | 386., | 44:56 | , | 2044, | 420726.468, | 1427320.500, | 110.74, |
| 57, | 386., | 45:04 | , | 2051, | 387040.968, | 1592808.500, | 110.74, |
| 58, | 386., | 45:47 | , | 2092, | 390751.125, | 1484252.750, | 110.74, |
| 59, | 386., | 46:44 | , | 2145, | 265167.093, | 1256642.000, | 110.74, |
| 60, | 408., | 49:05 | , | 2276, | 7955.632, | 37783.980, | 46.80, |
| 61, | 408., | 51:25 | , | 2408, | 5063.571, | 27956.310, | 46.80, |
| 62, | 410., | 49:05 | , | 2276, | 7958.044, | 37027.921, | 46.69, |
| 63, | 410., | 51:24 | , | 2407, | 4884.438, | 28753.128, | 46.69, |
| 64, | 418., | 49:04 | , | 2275, | 118044.890, | 562236.125, | 86.13, |
| 65, | 418., | 51:24 | , | 2407, | 80651.210, | 458105.656, | 86.13, |
| 66, | 420., | 49:04 | , | 2275, | 263200.656, | 1221931.625, | 78.91, |
| 67, | 420., | 51:24 | , | 2407, | 176182.187, | 1015833.125, | 78.91, |
| 68, | 442., | 55:19 | , | 2626, | 11210.409, | 45731.812, | 46.53, |
| 69, | 444., | 55:19 | , | 2626, | 11812.556, | 51982.984, | 48.30, |

QUAN: t030401i1.q0 Entries: 83

Data file(s) used
File: t030401i1 01-Apr-03
Samp: Vial 41 WO=2427:46CS1 Meth=F8 Dil=1 Start : 18:57:14 2796
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS1
Oper: DCG Client: STL Knoxville Inlet : GC Vial 41

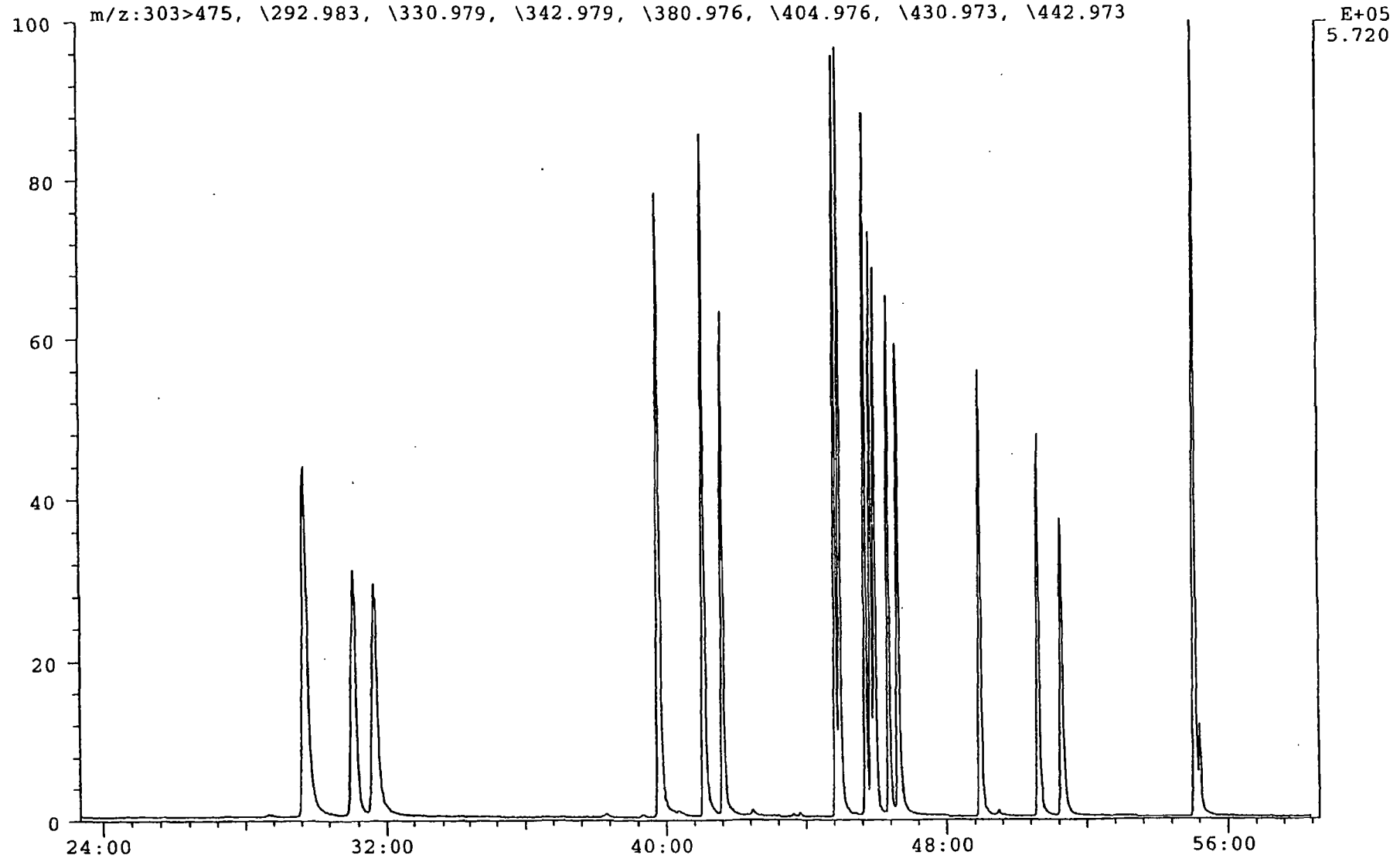
Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 31:47 | 5346. | 541. | 31:37 | 32:00 | 46. | 4 | 4.0 |
| 319.8805 | 31:47 | 5346. | 541. | 31:37 | 32:00 | 46. | 4 | 4.0 |
| 321.8775 | 31:48 | 7569. | 666. | 31:40 | 32:01 | 52. | 4 | 4.0 |
| 321.8775 | 31:48 | 7569. | 666. | 31:40 | 32:01 | 52. | 4 | 4.0 |
| 331.9202 | 31:11 | 877451. | 84921. | 30:57 | 31:28 | 160. | 4 | 4.0 |
| 331.9202 | 31:46 | 918572. | 83806. | 31:33 | 32:02 | 160. | 4 | 4.0 |
| 331.9202 | 32:20 | 15016. | 1391. | 32:18 | 32:36 | 160. | 4 | 4.0 |
| 333.9171 | 31:11 | 1109997. | 109016. | 30:57 | 31:28 | 146. | 4 | 4.0 |
| 333.9171 | 31:46 | 1169489. | 107453. | 31:34 | 32:02 | 146. | 4 | 4.0 |
| 333.9171 | 32:24 | 14020. | 1410. | 32:23 | 32:41 | 146. | 4 | 4.0 |
| 327.8683 | 31:49 | 11570. | 1406. | 31:40 | 32:06 | 49. | 2 | 3.0 |
| 303.8864 | 29:49 | 7539. | 732. | 29:37 | 30:06 | 44. | 4 | 4.0 |
| 305.8834 | 29:50 | 9232. | 905. | 29:36 | 30:07 | 48. | 4 | 4.0 |
| 315.9261 | 29:47 | 1306367. | 125395. | 29:35 | 30:03 | 143. | 4 | 4.0 |
| 315.9261 | 30:17 | 15092. | 2626. | 30:14 | 30:22 | 143. | 4 | 4.0 |
| 315.9261 | 30:24 | 15762. | 1698. | 30:22 | 30:36 | 143. | 4 | 4.0 |
| 315.9261 | 30:37 | 9158. | 851. | 30:36 | 30:54 | 143. | 4 | 4.0 |
| 317.9230 | 28:46 | 8097. | 825. | 28:34 | 28:59 | 134. | 4 | 4.0 |
| 317.9230 | 29:47 | 1646128. | 160766. | 29:34 | 30:03 | 134. | 4 | 4.0 |
| 317.9230 | 30:21 | 16904. | 2404. | 30:19 | 30:30 | 134. | 4 | 4.0 |
| 317.9230 | 30:32 | 5312. | 1473. | 30:30 | 30:35 | 134. | 4 | 4.0 |
| 317.9230 | 30:36 | 11045. | 1065. | 30:35 | 30:53 | 134. | 4 | 4.0 |
| 355.8368 | 41:44 | 29360. | 6299. | 41:38 | 42:00 | 60. | 2 | 3.0 |
| 357.8337 | 41:44 | 18658. | 4312. | 41:39 | 42:00 | 55. | 2 | 3.0 |
| 367.8765 | 41:43 | 1138091. | 243203. | 41:36 | 41:59 | 104. | 2 | 3.0 |
| 369.8734 | 41:43 | 727249. | 153451. | 41:36 | 41:59 | 71. | 2 | 3.0 |
| 339.8427 | 39:56 | 44251. | 8078. | 39:46 | 40:12 | 66. | 2 | 3.0 |
| 339.8427 | 41:11 | 46156. | 9032. | 41:06 | 41:27 | 66. | 2 | 3.0 |
| 341.8396 | 39:56 | 27939. | 4911. | 39:47 | 40:12 | 56. | 2 | 3.0 |
| 341.8396 | 41:12 | 29654. | 5650. | 41:05 | 41:28 | 56. | 2 | 3.0 |
| 351.8824 | 39:55 | 1685261. | 289826. | 39:44 | 40:11 | 159. | 2 | 3.0 |
| 351.8824 | 40:27 | 18890. | 2662. | 40:22 | 40:33 | 159. | 2 | 3.0 |
| 351.8824 | 40:35 | 7282. | 790. | 40:33 | 40:51 | 159. | 2 | 3.0 |
| 351.8824 | 41:10 | 1643910. | 333679. | 41:03 | 41:26 | 159. | 2 | 3.0 |
| 353.8793 | 39:54 | 1087848. | 191655. | 39:43 | 40:10 | 138. | 2 | 3.0 |
| 353.8793 | 40:27 | 14770. | 1699. | 40:22 | 40:43 | 138. | 2 | 3.0 |
| 353.8793 | 41:10 | 1042272. | 214296. | 41:04 | 41:26 | 138. | 2 | 3.0 |
| 389.7961 | 45:59 | 27673. | 7307. | 45:53 | 46:02 | 50. | 2 | 3.0 |
| 389.7961 | 46:05 | 28607. | 6901. | 46:02 | 46:16 | 50. | 2 | 3.0 |
| 389.7961 | 46:29 | 28215. | 6725. | 46:22 | 46:39 | 50. | 2 | 3.0 |
| 391.7931 | 45:58 | 23045. | 6103. | 45:49 | 46:02 | 52. | 2 | 3.0 |
| 391.7931 | 46:05 | 21858. | 6101. | 46:02 | 46:20 | 52. | 2 | 3.0 |
| 391.7931 | 46:29 | 23932. | 5978. | 46:22 | 46:43 | 52. | 2 | 3.0 |
| 401.8358 | 45:58 | 918108. | 252906. | 45:52 | 46:01 | 96. | 2 | 3.0 |
| 401.8358 | 46:04 | 1048234. | 271744. | 46:01 | 46:20 | 96. | 2 | 3.0 |
| 401.8358 | 46:28 | 956324. | 253264. | 46:21 | 46:43 | 96. | 2 | 3.0 |
| 403.8327 | 45:58 | 716168. | 196106. | 45:53 | 46:01 | 134. | 2 | 3.0 |
| 403.8327 | 46:04 | 815071. | 213969. | 46:01 | 46:19 | 134. | 2 | 3.0 |
| 403.8327 | 46:28 | 745246. | 198219. | 46:19 | 46:44 | 134. | 2 | 3.0 |

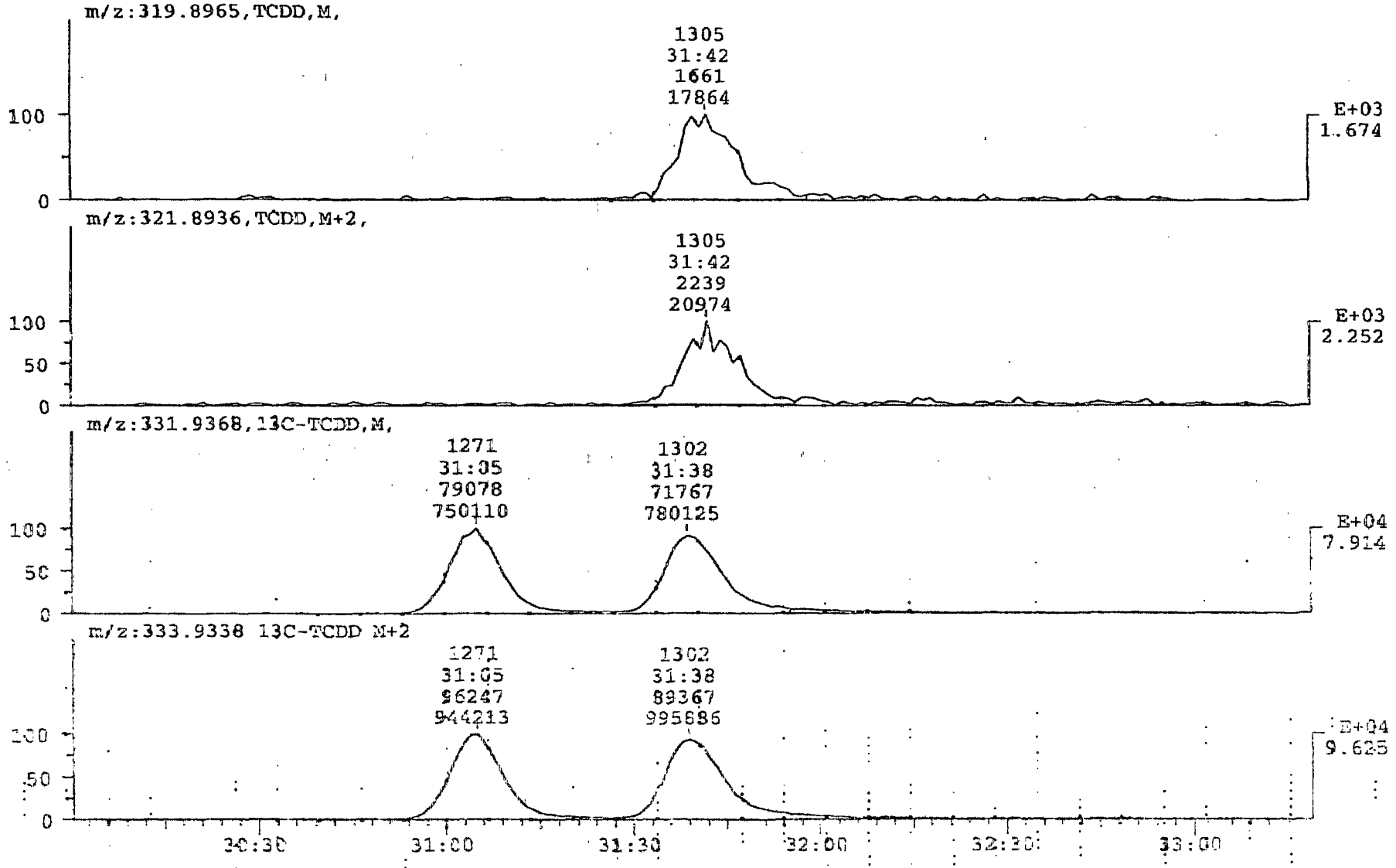
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 373.8021 | 44:57 | 41249. | 11279. | 44:52 | 45:02 | 63. | 2 3.0 |
| 373.8021 | 45:05 | 45558. | 11272. | 45:02 | 45:21 | 63. | 2 3.0 |
| 373.8021 | 45:48 | 40430. | 9512. | 45:34 | 46:04 | 63. | 2 3.0 |
| 373.8021 | 46:45 | 39214. | 7971. | 46:39 | 47:01 | 63. | 2 3.0 |
| 375.7990 | 44:57 | 33467. | 9576. | 44:52 | 45:02 | 53. | 2 3.0 |
| 375.7990 | 45:06 | 35525. | 8853. | 45:02 | 45:22 | 53. | 2 3.0 |
| 375.7990 | 45:48 | 31422. | 8549. | 45:43 | 46:00 | 53. | 2 3.0 |
| 375.7990 | 46:45 | 29605. | 6199. | 46:39 | 47:01 | 53. | 2 3.0 |
| 383.8447 | 44:56 | 762449. | 220006. | 44:51 | 45:01 | 96. | 2 3.0 |
| 383.8447 | 45:05 | 845051. | 205842. | 45:01 | 45:21 | 96. | 2 3.0 |
| 383.8447 | 45:47 | 779271. | 204273. | 45:38 | 46:03 | 96. | 2 3.0 |
| 383.8447 | 46:44 | 656711. | 140045. | 46:37 | 47:00 | 96. | 2 3.0 |
| 385.8417 | 44:56 | 1427321. | 420726. | 44:50 | 45:01 | 111. | 2 3.0 |
| 385.8417 | 45:04 | 1592809. | 387041. | 45:01 | 45:20 | 111. | 2 3.0 |
| 385.8417 | 45:47 | 1484253. | 390751. | 45:37 | 46:03 | 111. | 2 3.0 |
| 385.8417 | 46:44 | 1256642. | 265167. | 46:35 | 47:00 | 111. | 2 3.0 |
| 423.7555 | 50:45 | 24690. | 4671. | 50:35 | 51:01 | 40. | 2 3.0 |
| 425.7524 | 50:45 | 23395. | 4940. | 50:38 | 51:01 | 38. | 2 3.0 |
| 435.7951 | 50:44 | 890043. | 177891. | 50:36 | 50:59 | 70. | 2 3.0 |
| 437.7921 | 50:44 | 840702. | 168098. | 50:35 | 50:59 | 53. | 2 3.0 |
| 407.7614 | 49:05 | 37784. | 7956. | 48:57 | 49:21 | 47. | 2 3.0 |
| 407.7614 | 51:25 | 27958. | 5064. | 51:19 | 51:41 | 47. | 2 3.0 |
| 409.7583 | 49:05 | 37028. | 7958. | 49:00 | 49:21 | 47. | 2 3.0 |
| 409.7583 | 51:24 | 28753. | 4884. | 51:18 | 51:40 | 47. | 2 3.0 |
| 417.8041 | 49:04 | 562236. | 118045. | 48:54 | 49:20 | 86. | 2 3.0 |
| 417.8041 | 51:24 | 458106. | 80651. | 51:13 | 51:40 | 86. | 2 3.0 |
| 419.8010 | 49:04 | 1221932. | 263201. | 48:57 | 49:20 | 79. | 2 3.0 |
| 419.8010 | 51:24 | 1015833. | 176182. | 51:15 | 51:40 | 79. | 2 3.0 |
| 457.7148 | 55:11 | 46056. | 10574. | 55:05 | 55:27 | 41. | 2 3.0 |
| 459.7118 | 55:11 | 52708. | 12072. | 55:05 | 55:27 | 52. | 2 3.0 |
| 469.7545 | 55:11 | 1475509. | 338897. | 55:03 | 55:27 | 58. | 2 3.0 |
| 471.7514 | 55:09 | 1620504. | 374399. | 55:03 | 55:25 | 65. | 2 3.0 |
| 441.7207 | 55:19 | 45732. | 11210. | 55:11 | 55:35 | 47. | 2 3.0 |
| 443.7177 | 55:19 | 51983. | 11813. | 55:11 | 55:35 | 48. | 2 3.0 |

CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 847 > 2811 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

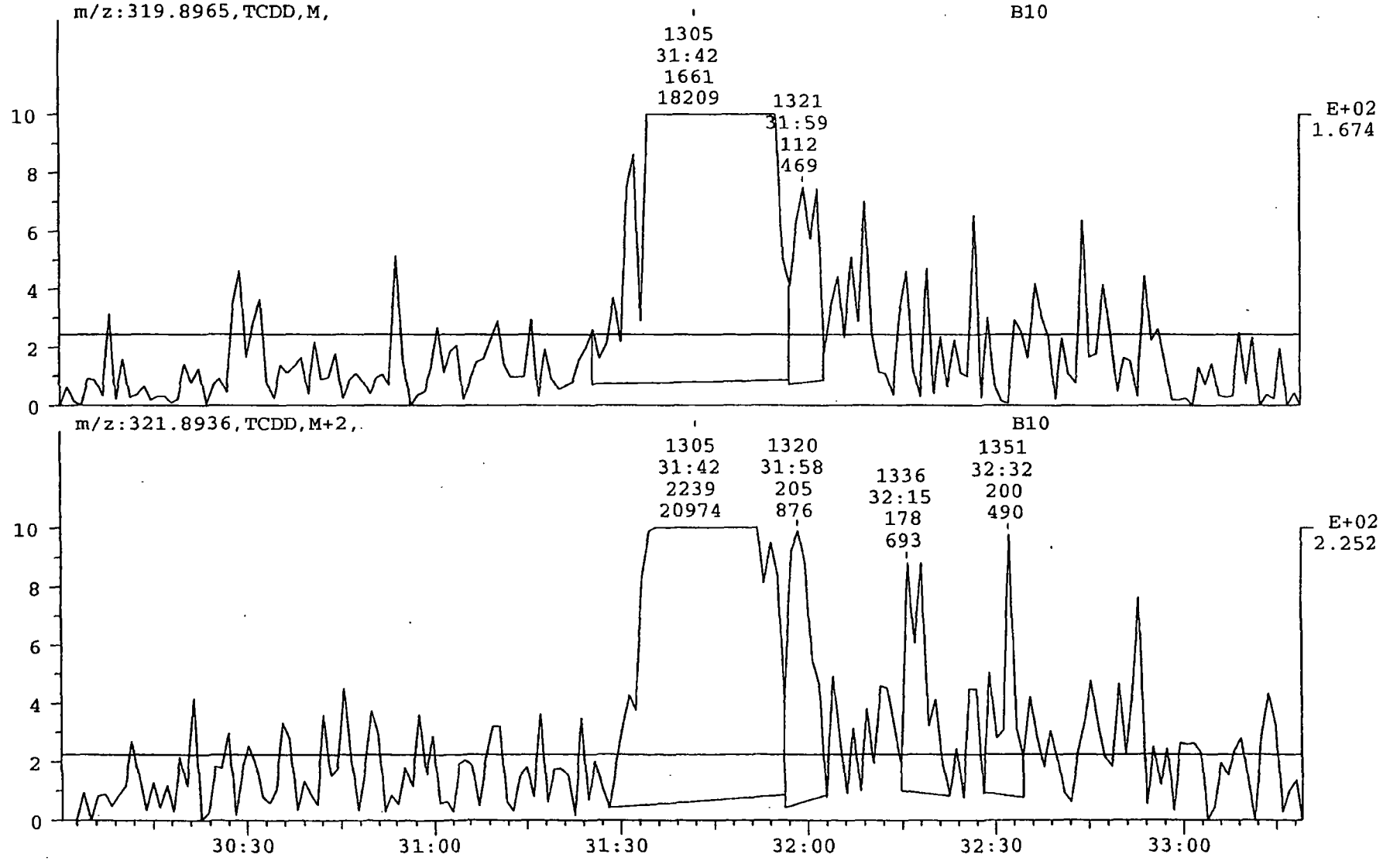
Int/Calv PMP 4-2-03
QC DFW 4/3/03



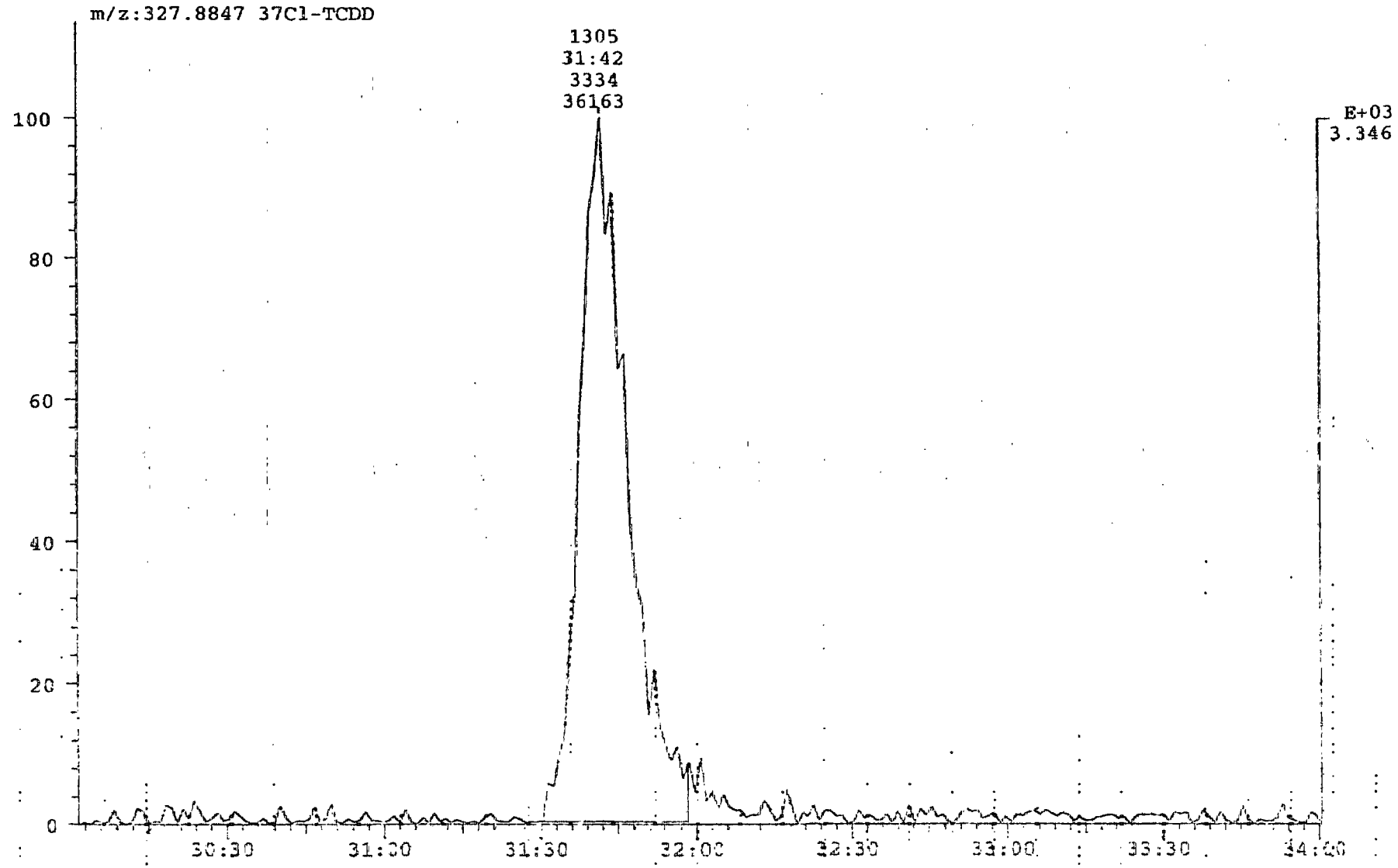
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



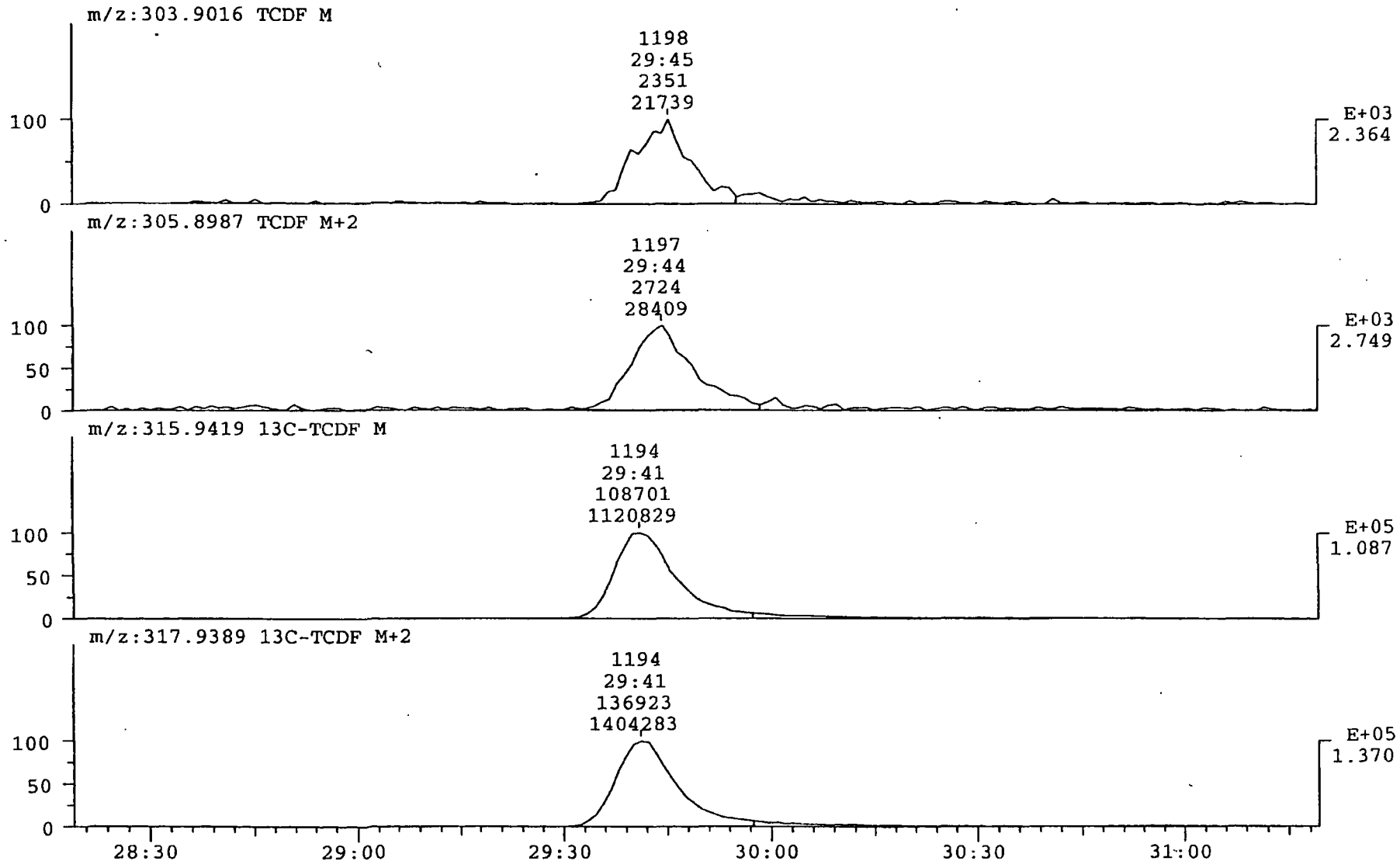
CHRO: t030401i2 01-Apr-03 Elapse: 45:04 2052
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



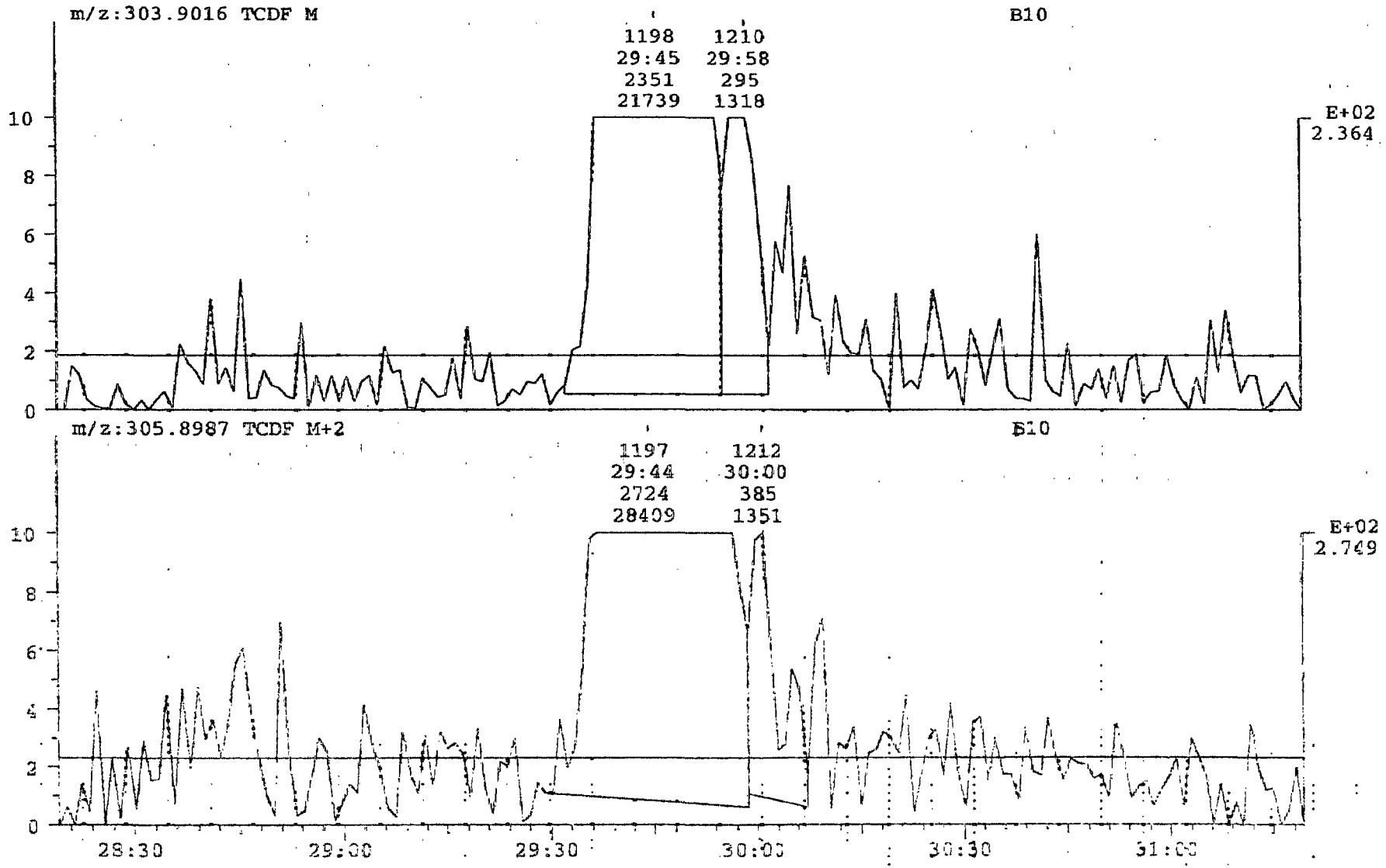
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



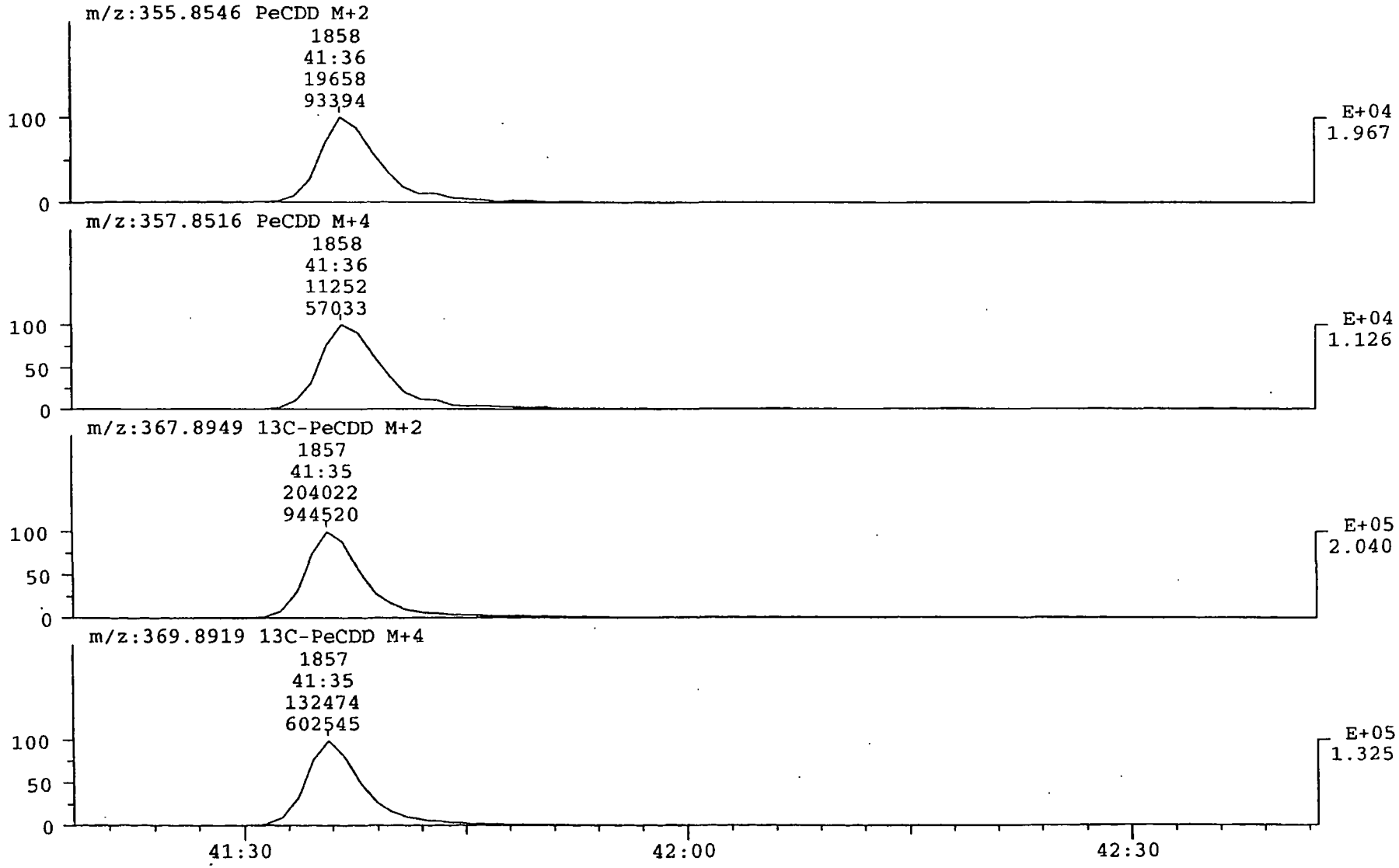
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



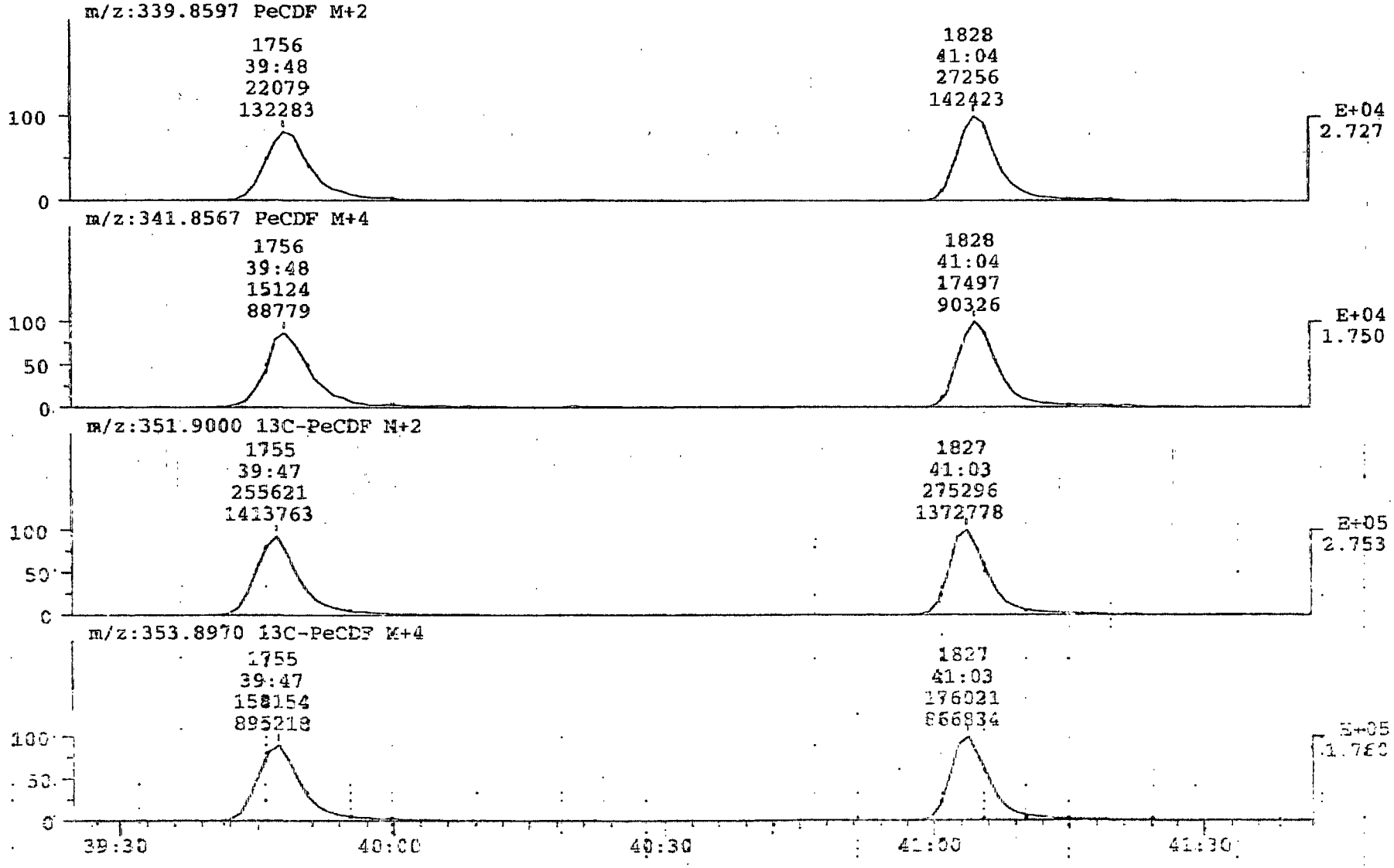
CHRO: t030401i2 01-Apr-03 Elapse: 45:04 2052
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



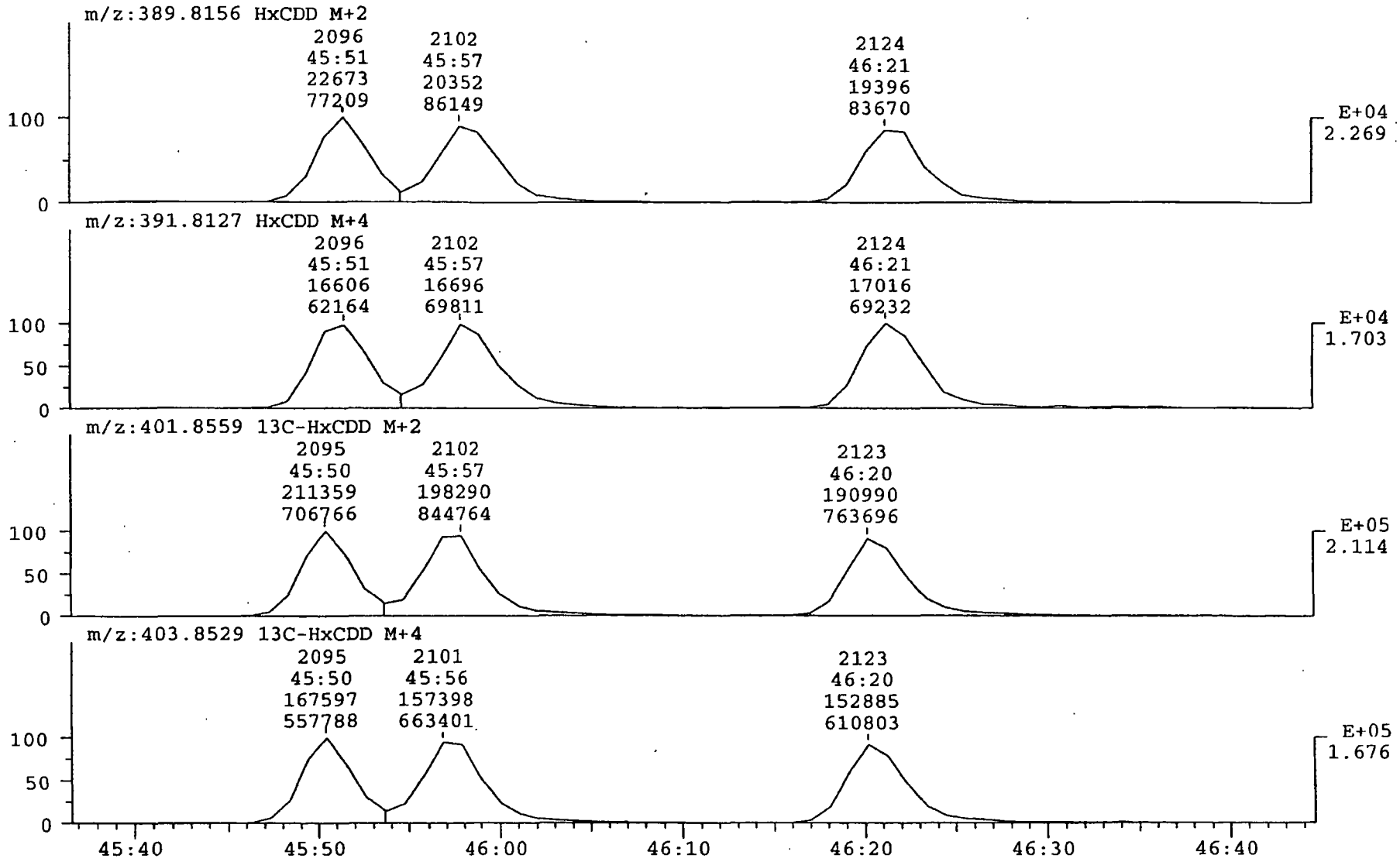
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



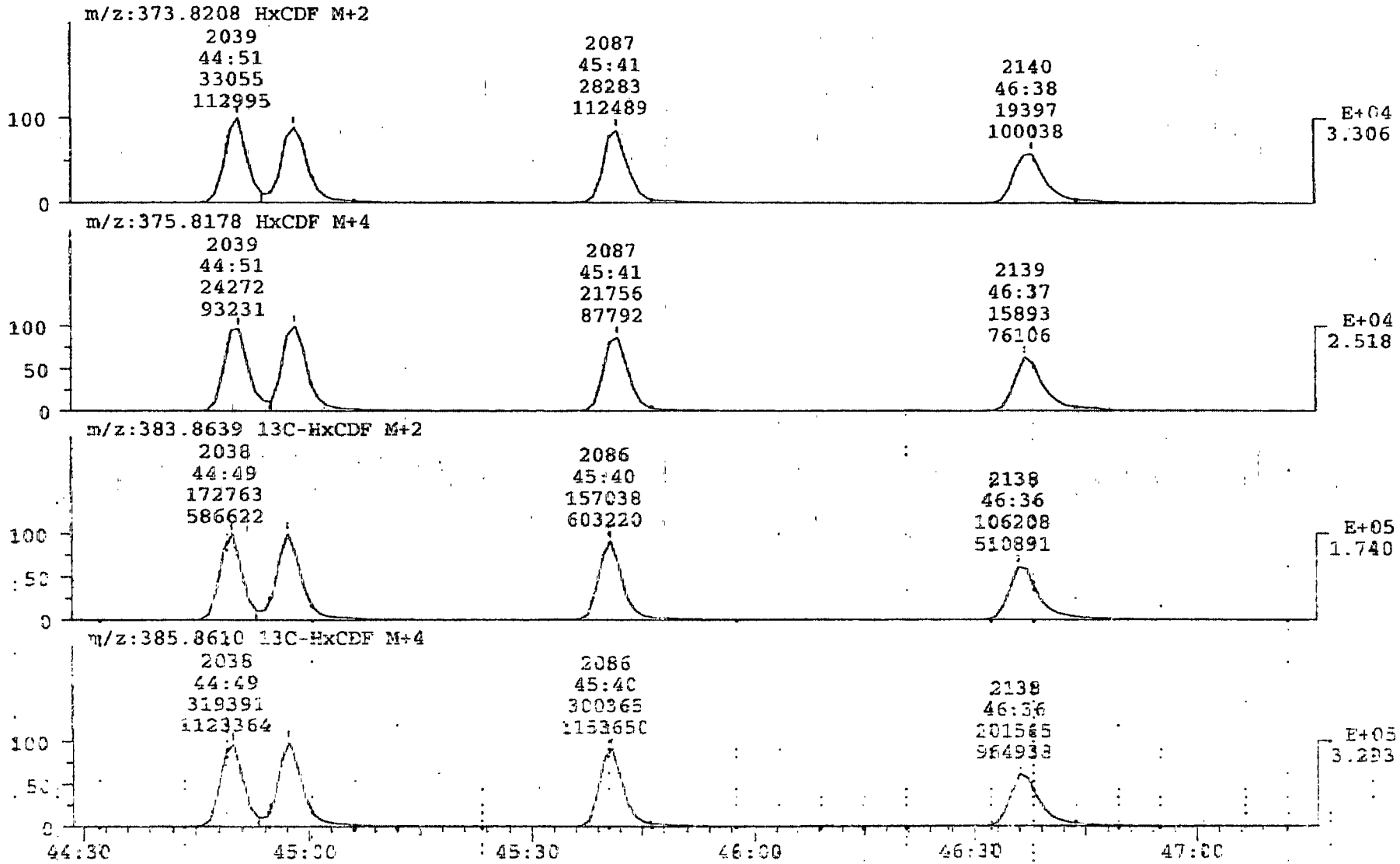
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



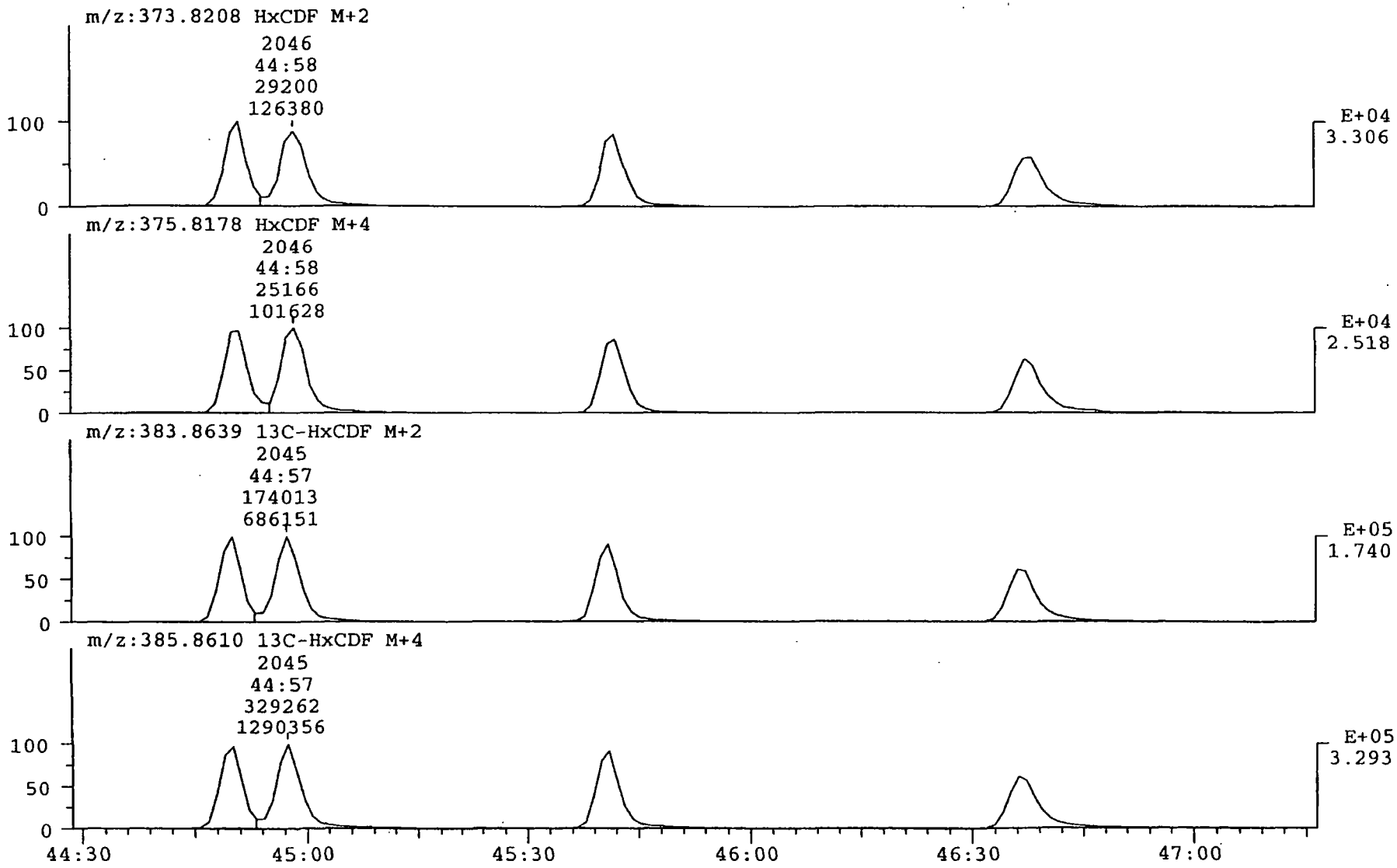
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



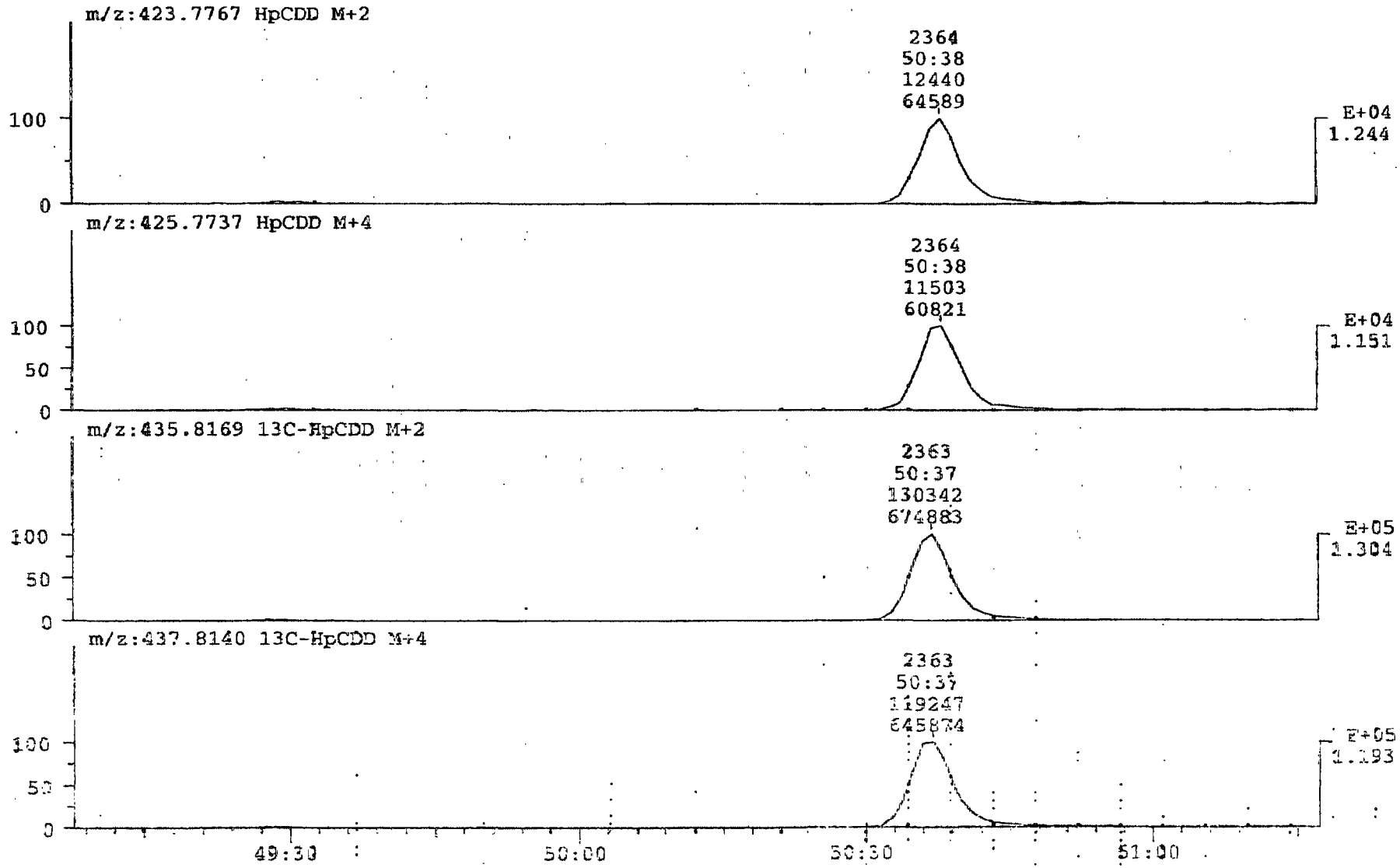
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2043 > 2053 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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CHRO:  t030401i2                                01-Apr-03   Elapse:  08:00.5       1
Samp:  Vial 42 WO=2427:46CS2 Meth=F8 Dil=1                  Start :  19:58:08    2797
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  ICAL/CS2
Oper:  DCG           Client:  STL Knoxville                 Inlet :  GC     Vial  42
Peak:  100.00  ppm     Label wndw:   2246 > 2438            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  2, 3.0
Disp:  Height  Area
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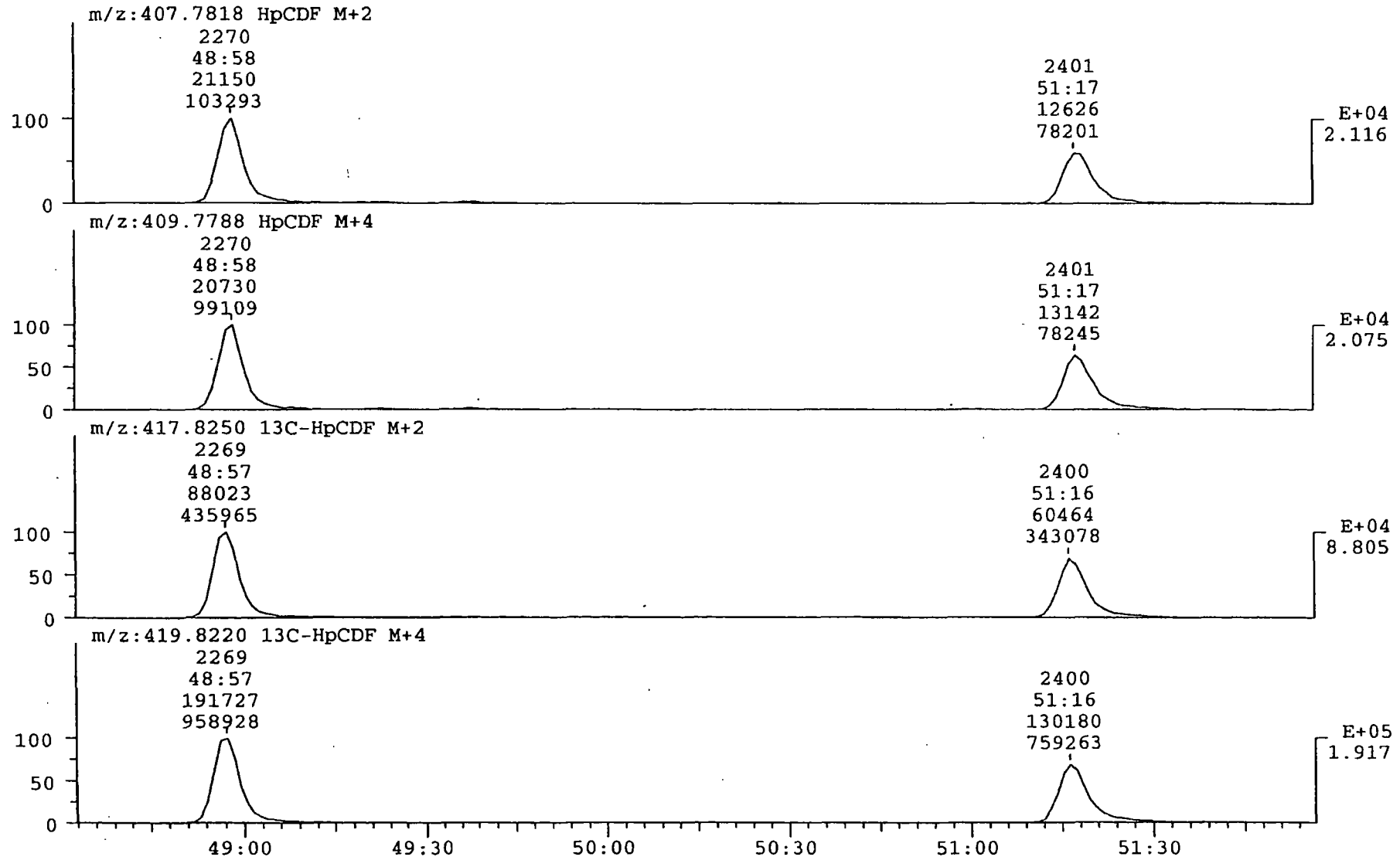
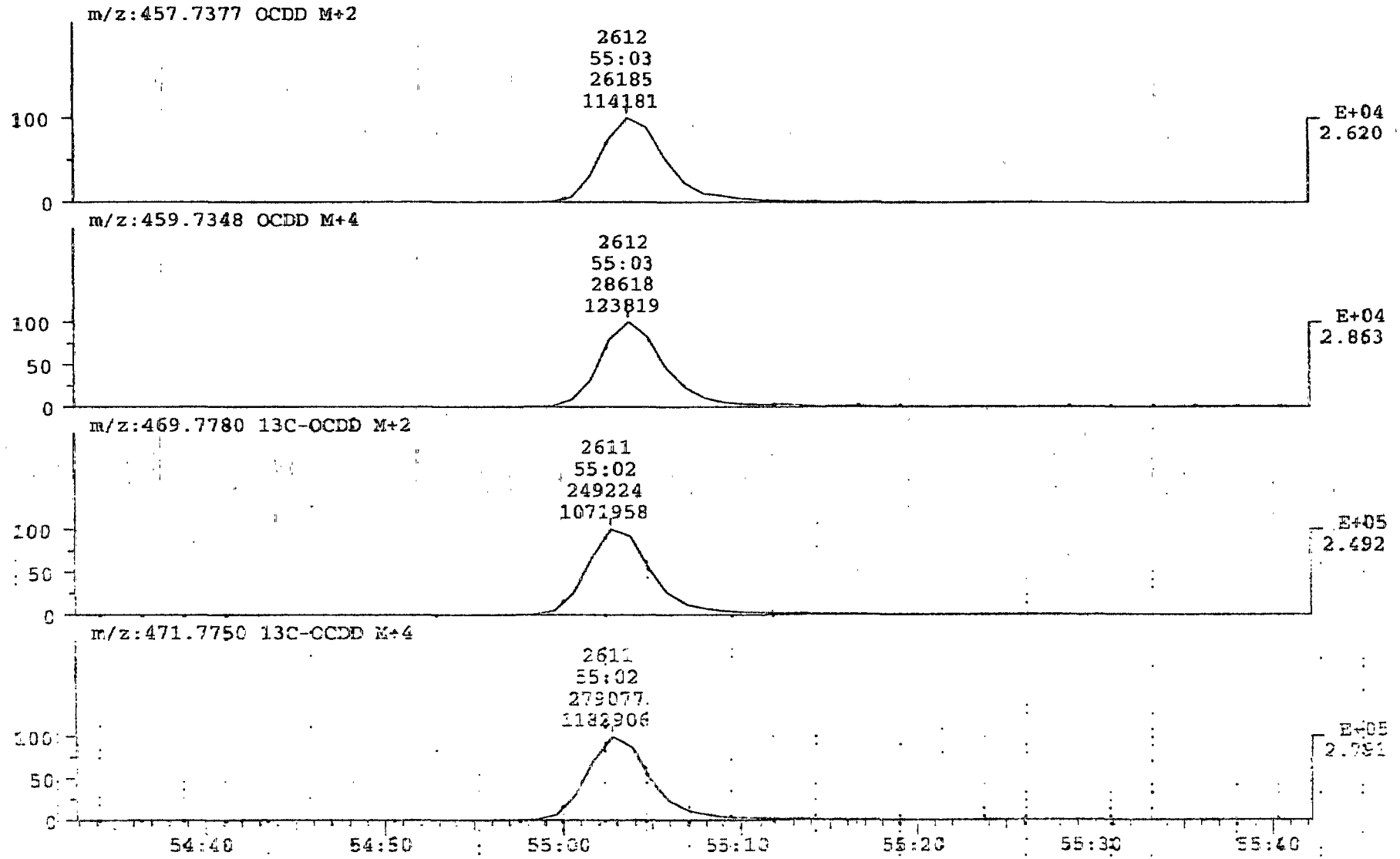
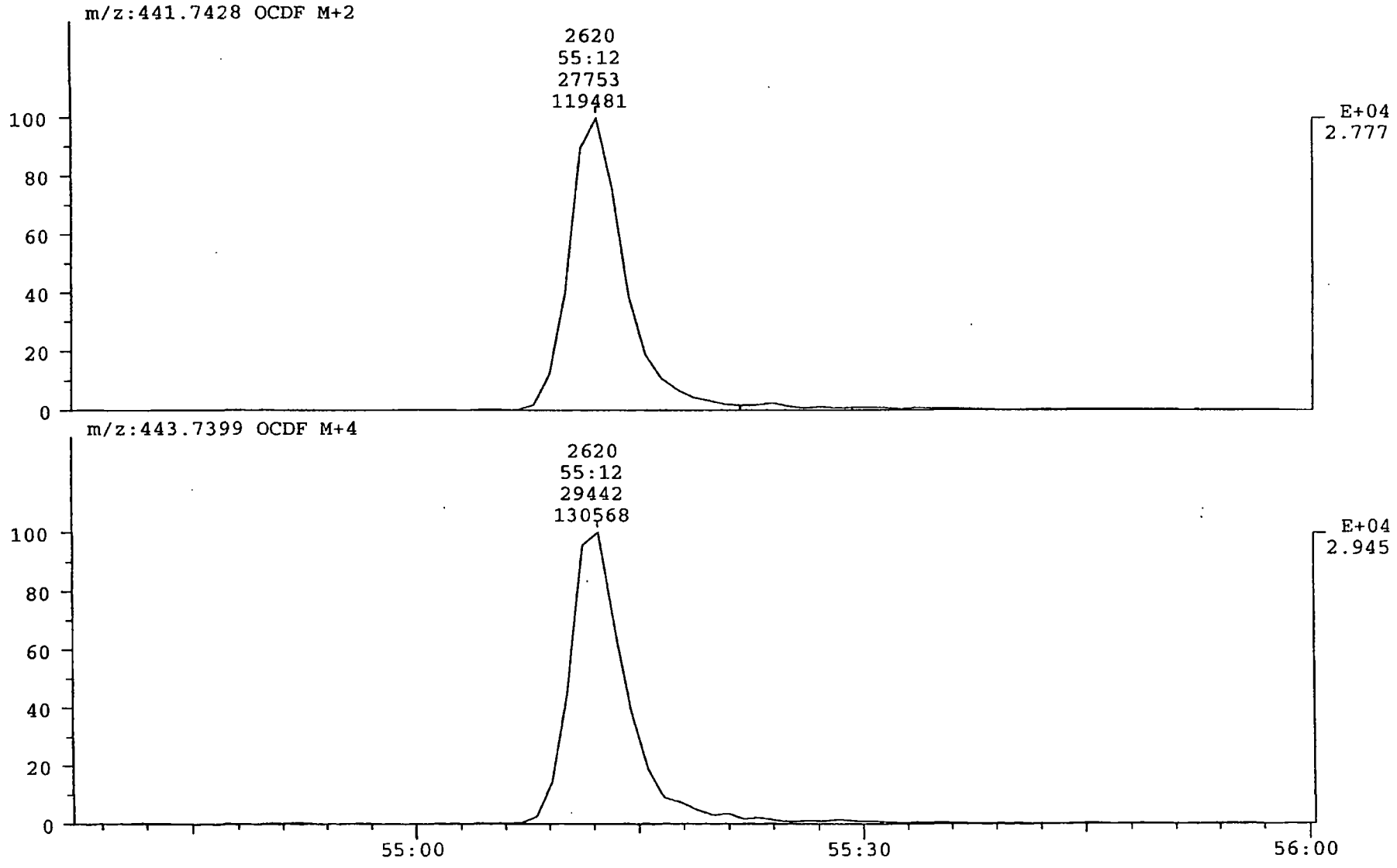


CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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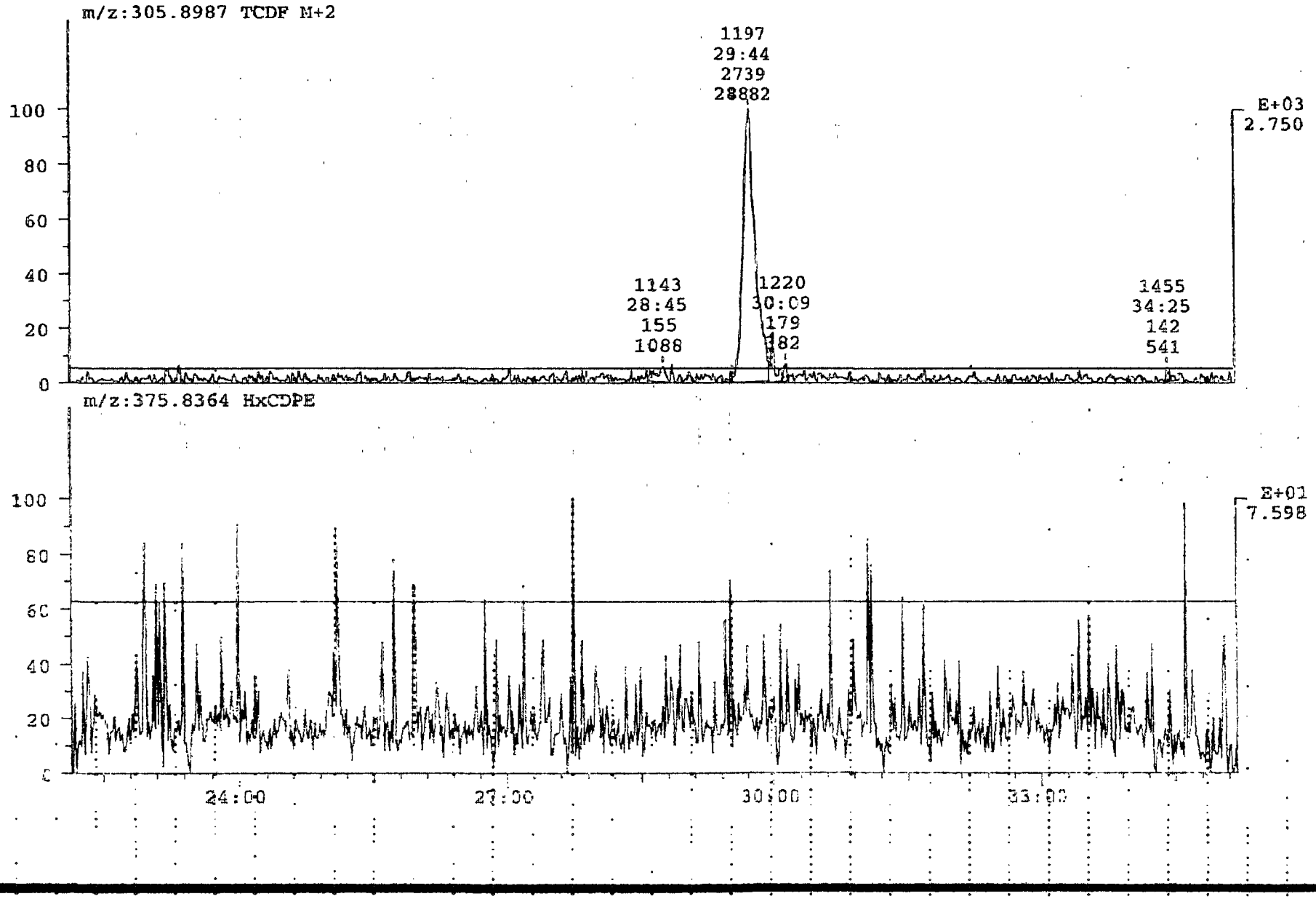
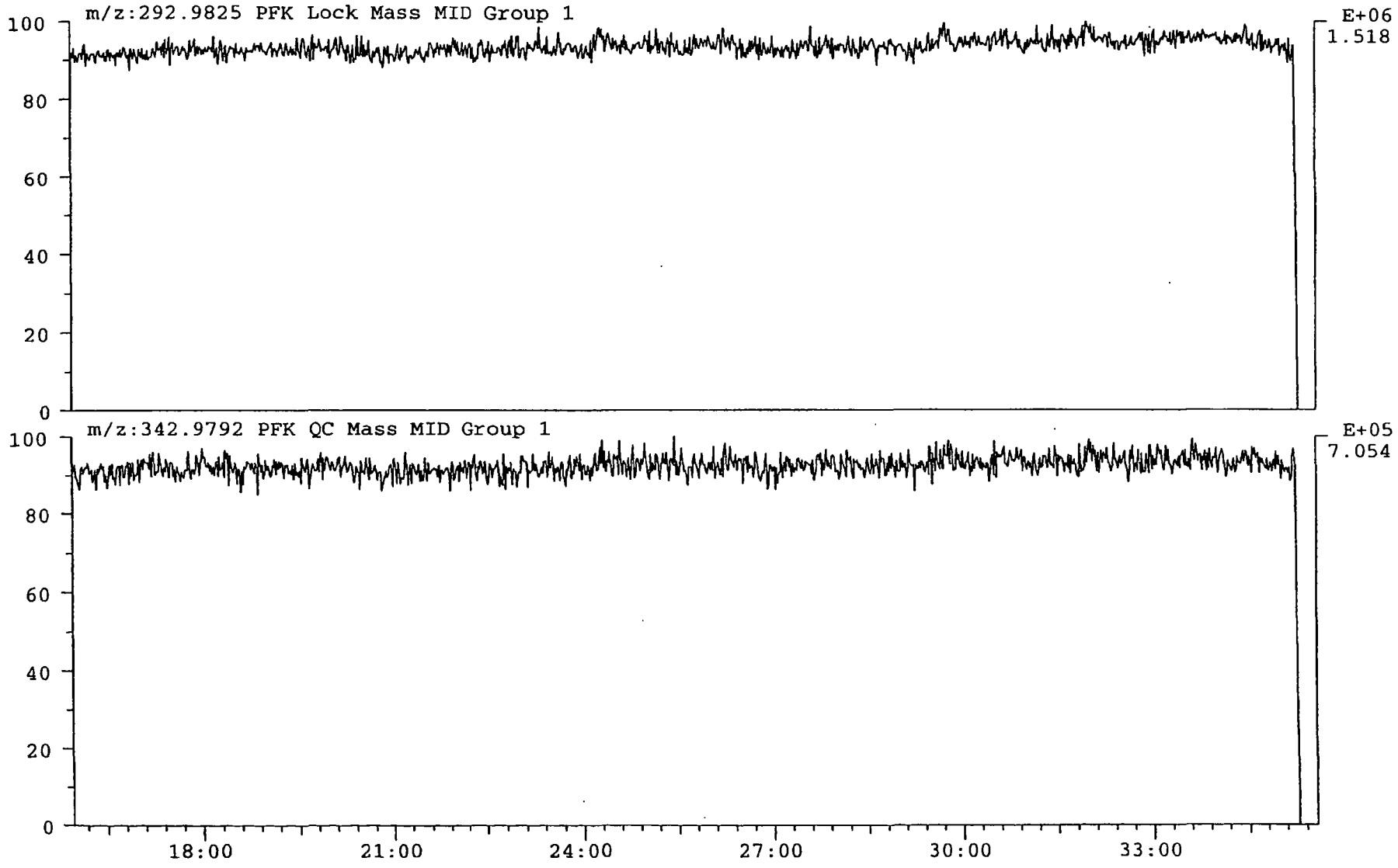
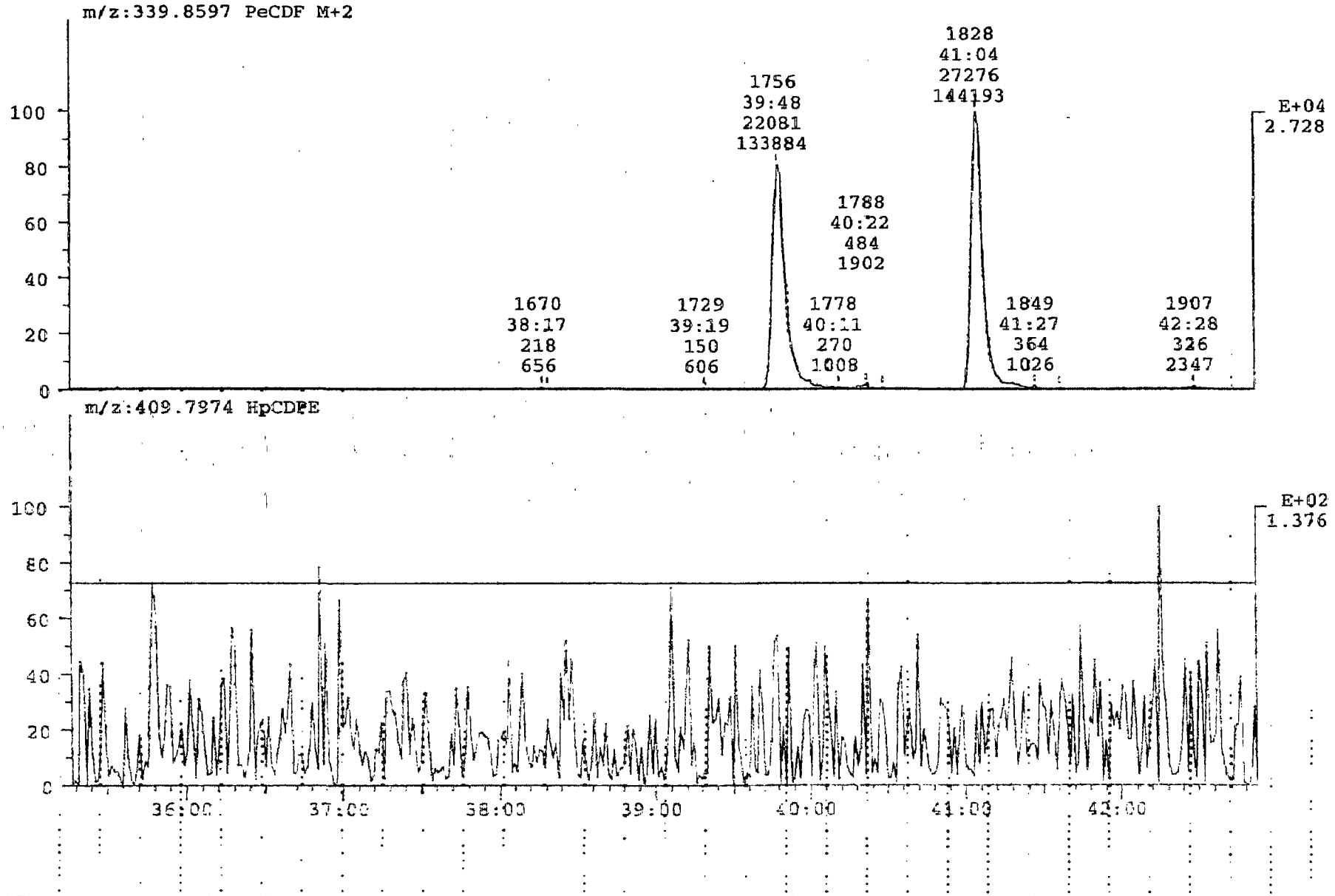
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 779 > 1497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



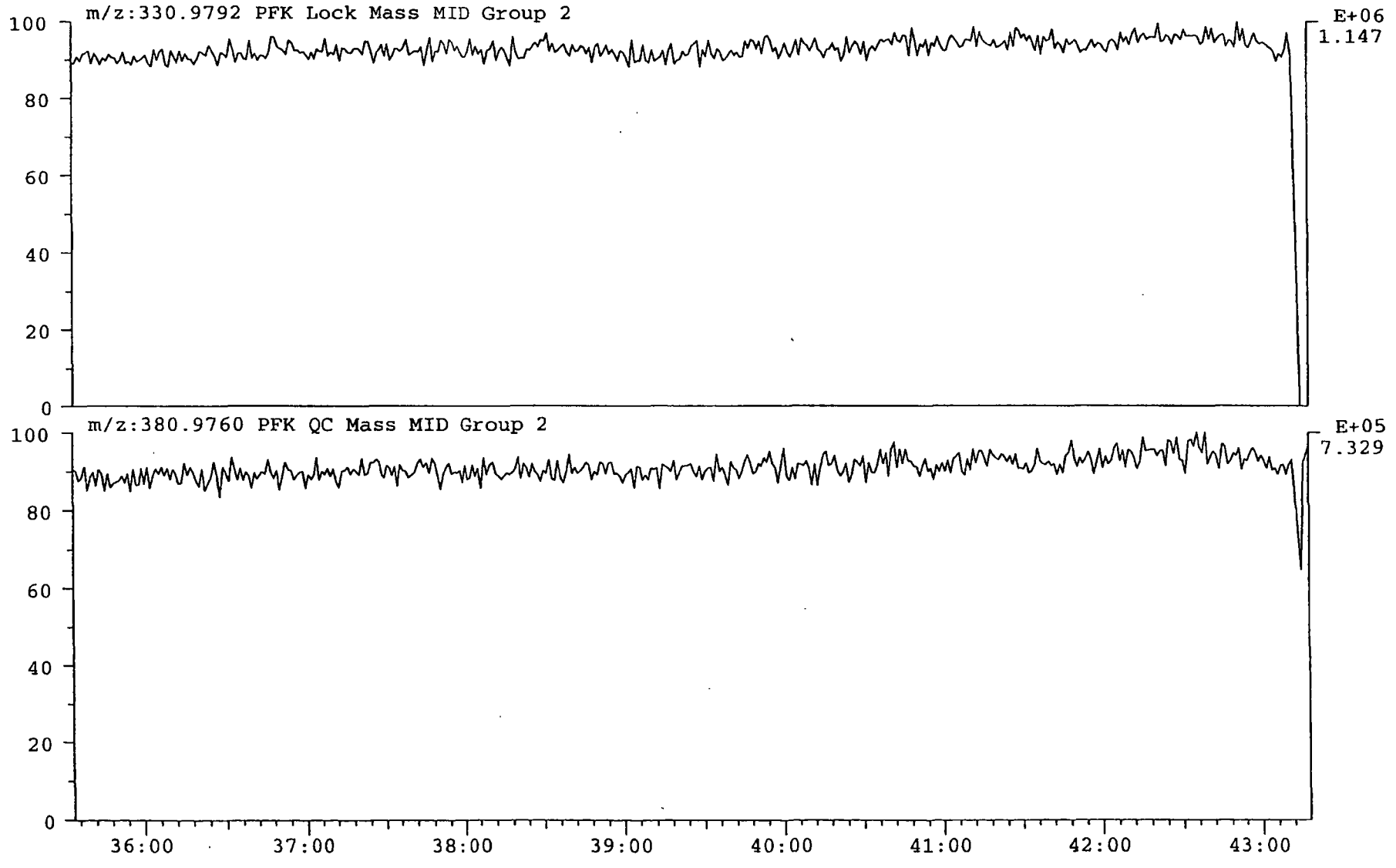
CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 440 > 1516 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1500 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1516 > 1951 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



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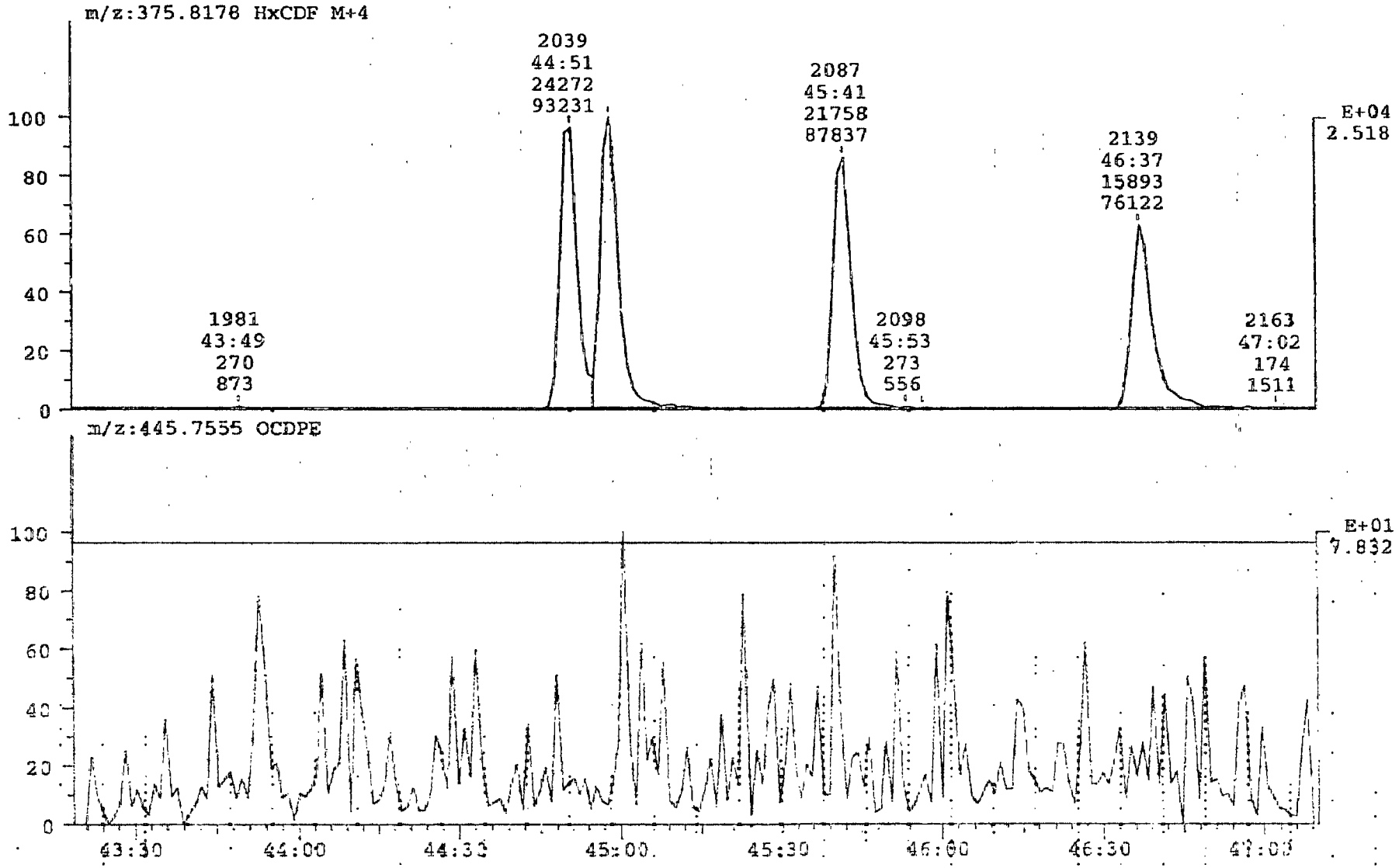
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t030401i2                              01-Apr-03   Elapse:  08:00.5       1
Samp:  Vial 42 WO=2427:46CS2 Meth=F8 Dil=1                Start :  19:58:08    2797
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS2
Oper:  DCG           Client:  STL Knoxville               Inlet :  GC     Vial  42
Peak:  100.00  ppm     Label wndw:   1950 > 2224          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
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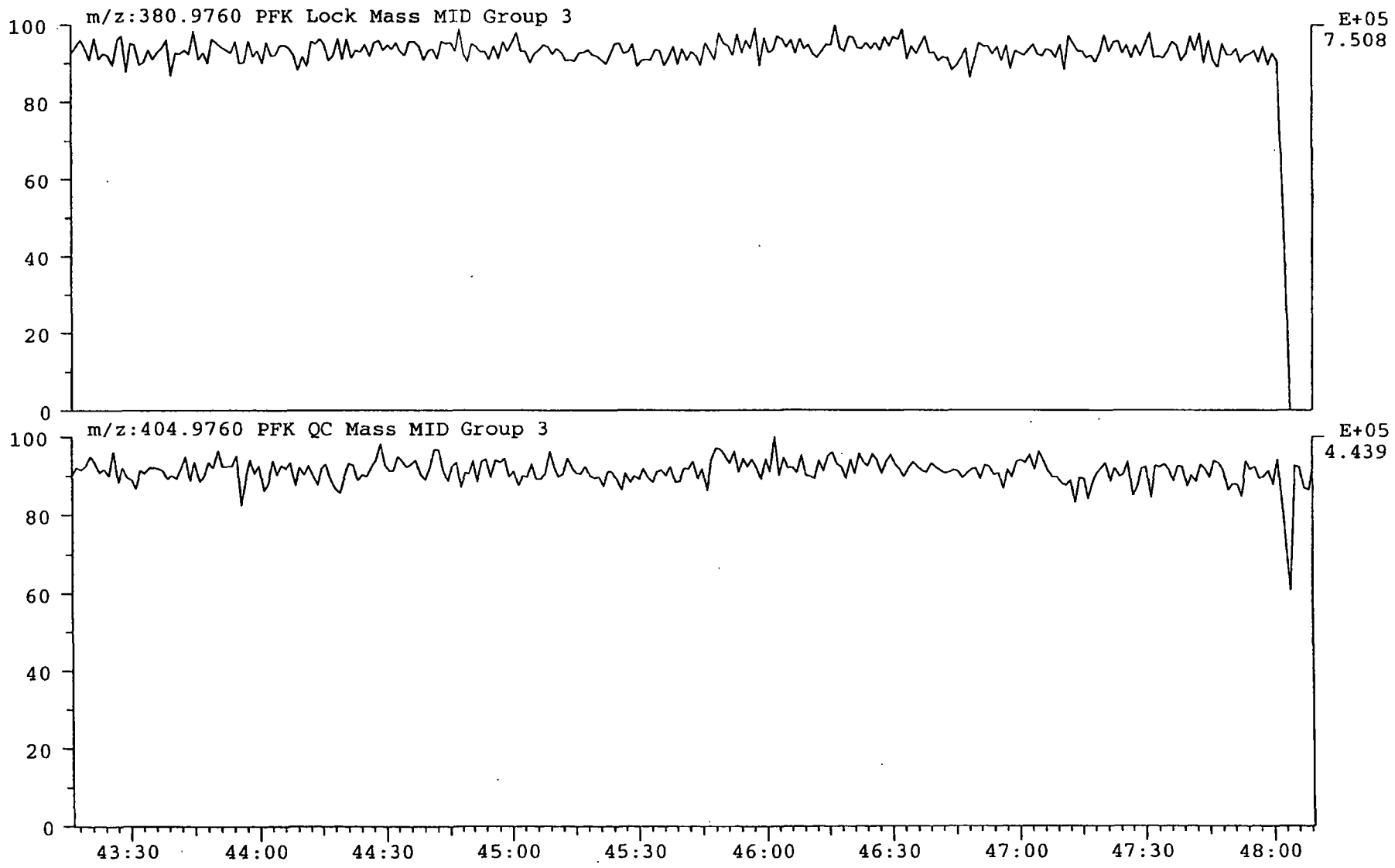
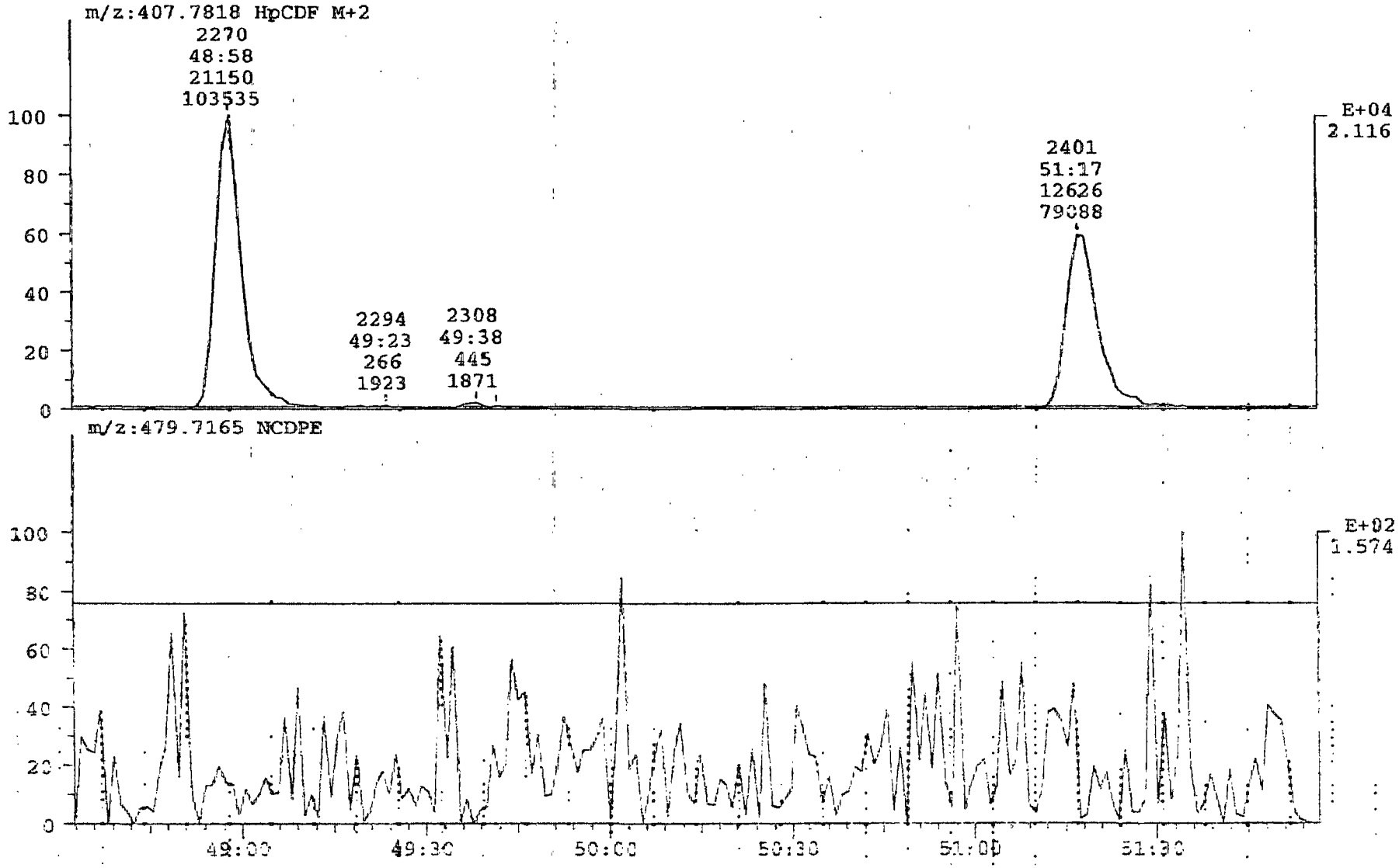


CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2222 > 2523 Masses: 293 > 514
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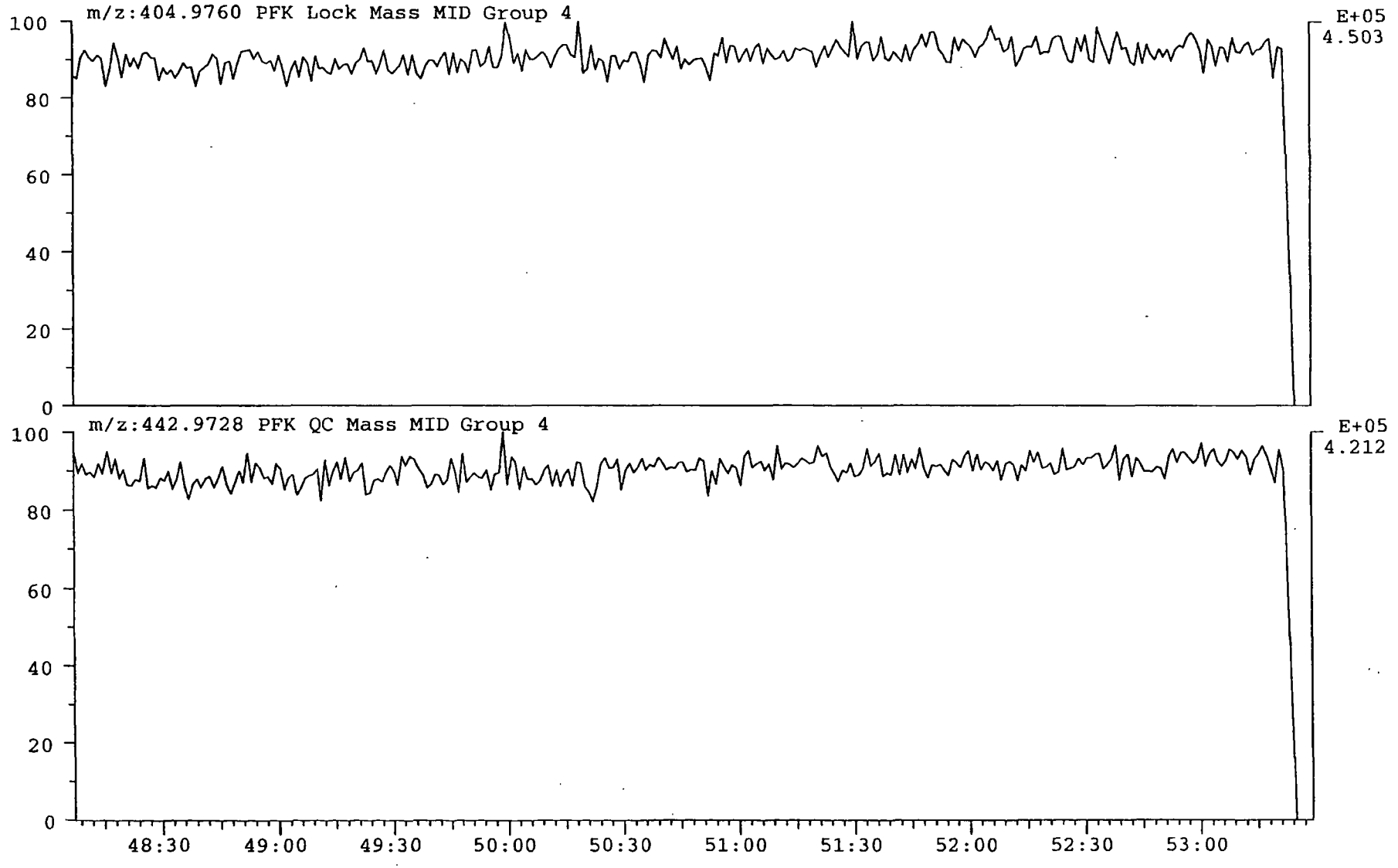
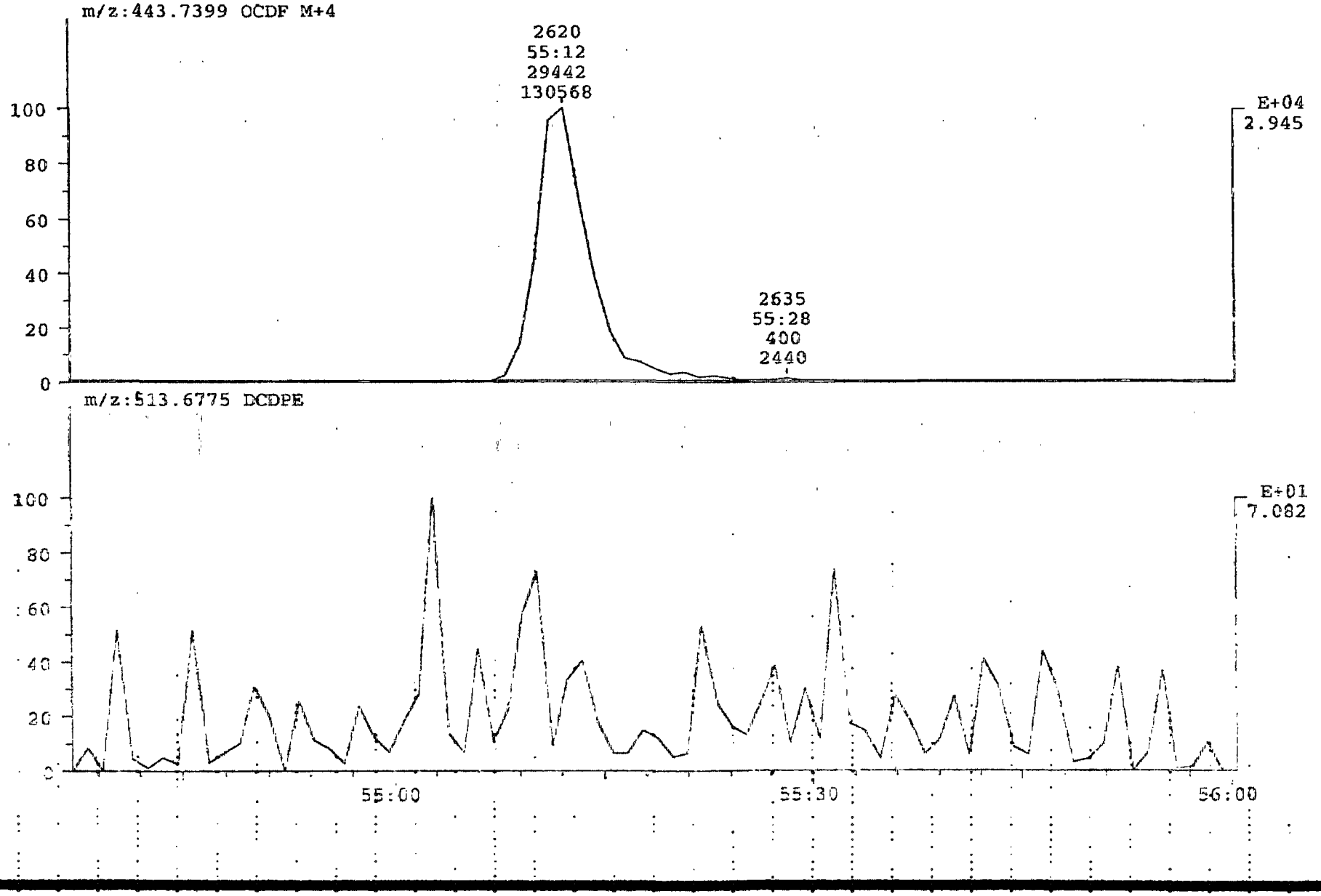


CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 2529 > 2765 Masses: 293 > 514
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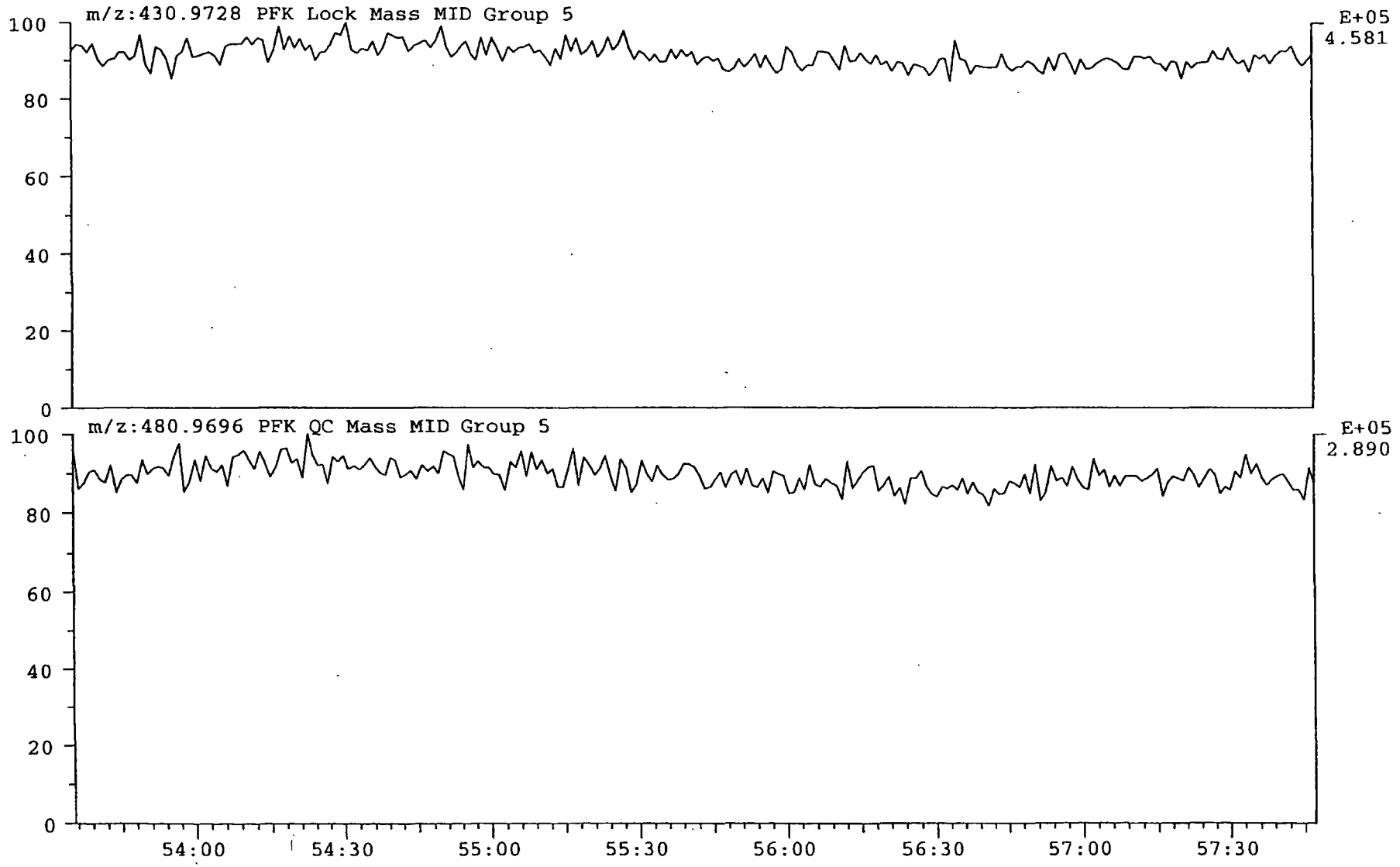

CHRO: t030401i2 01-Apr-03 Elapse: 08:00.5 1
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42
Peak: 100.00 ppm Label wndw: 210 > 2707 Masses: 293 > 514
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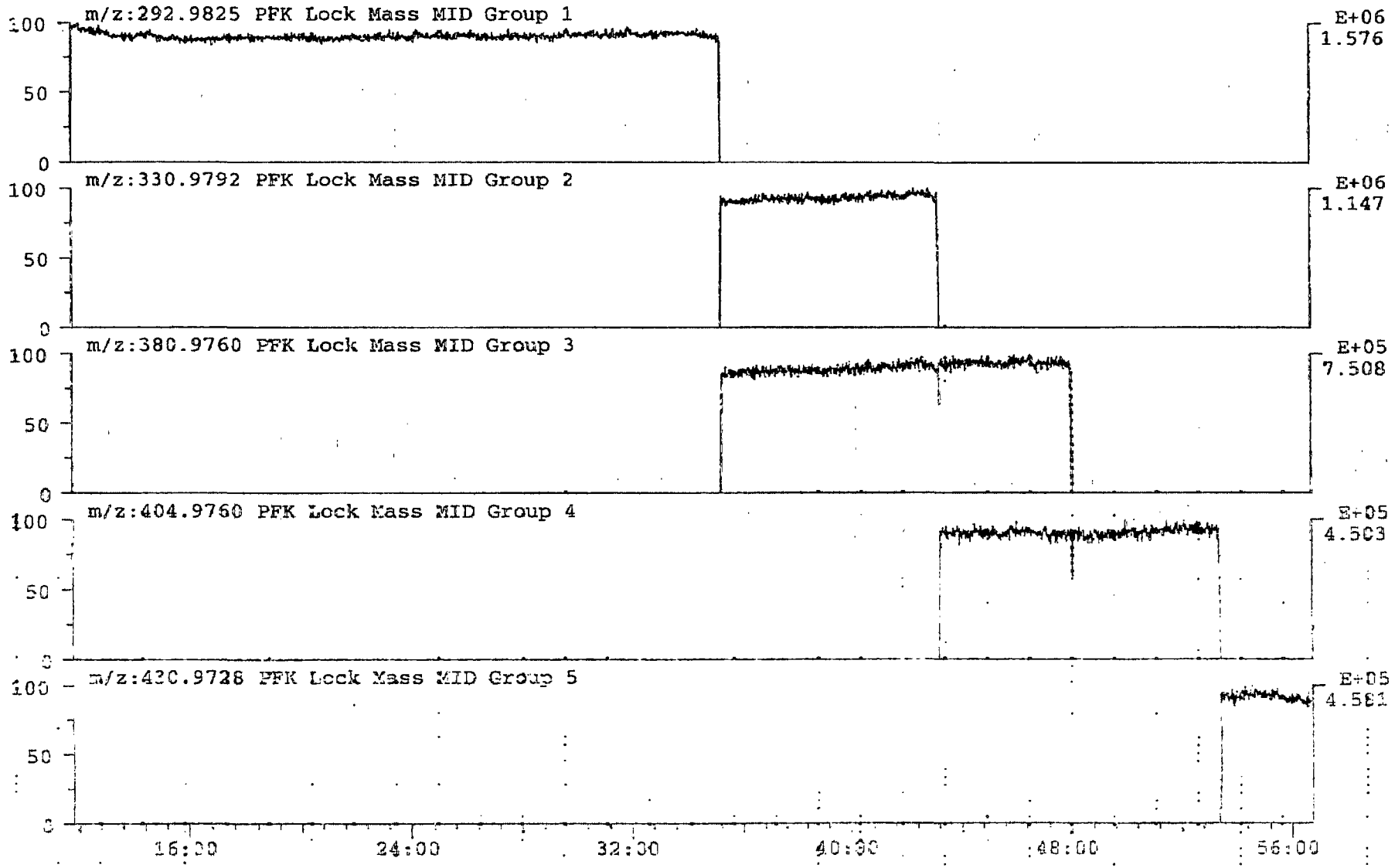

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Instrument internet name  -  mat95s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis2ms
ICIS Version 8.2.1


ICL Version: 10.500
File name: t030401i2
Study: ICAL/CS2
Sample: WO=2427:46CS2 Meth=F8 Dil=1
Amount:   0.0
Volume:   0.0
Operator: DCG
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Injected volume:   2.0
Sample from Vial 42
Analysis will stop when MID run finishes
Tune file name: tune2
File 2 of list 030401i
  ICL procedure: sleep6x
  ICIS procedure: tstd $
  MID procedure: epa1613

  MID Remarks:  Tetra-Octa PCDD/F EPA Method 8290/1613B

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay         FALSE
   Width first lock       0.35 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start          Measure       End          Cycletime
  # 1    8:00 min    27:12 min    35:12 min     1.00 sec
  # 2   35:12 min     7:58 min    43:10 min     1.00 sec
  # 3   43:10 min     4:50 min    48:00 min     1.00 sec
  # 4   48:00 min     5:20 min    53:20 min     1.00 sec
  # 5   53:20 min     5:00 min    58:20 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l   10   1       8.19
    303.9016      1   1      81.92
    305.8987      1   1      81.92
    315.9419      1   1      81.92
    317.9389      1   1      81.92
    319.8965      1   1      81.92
    321.8936      1   1      81.92
    327.8847      1   1      81.92
    331.9368      1   1      81.92
    333.9338      1   1      81.92
    342.9792 c   10   1       8.19
    375.8364      1   1      81.92
   Window # 2
        mass F  int  gr  time (ms)
    330.9792 l   10   1       8.19
    339.8597      1   1      91.48
```

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | | |
|---|---|---|---|
| Slvnt A cln before inj | (K): | 3 | times |
| Slvnt B cln before inj | (L): | 0 | times |
| Sample rinse cycles | (R): | 0 | times |
| Syringe filling volume | (F): | 1.0 | ul |
| Pullup delay time | (D): | 4 | sec |
| Sample pullup speed | (E): | 5.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Sample pullup count | (P): | 2 | times |
| Injection speed | (S): | 10.0 | ul/sec |
| Injection wait time | (W): | 10 | sec |
| Injection hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 20 | times |

```
 Loop clean w slvnt A (LC):      0 times
 Loop clean w slvnt B (LB):      0 times
 Standard sample volume(X):    0.0 ul
 Standard air volume   (Y):    0.0 ul
 2nd Injection volume  (I):    0.0 ul
 Air volume of 2nd inj (J):    0.0 ul
 Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:         270 deg                          300 deg max
  Transfer Line:    290 deg                          300 deg max
  Column:           140 deg at    0.0 minutes        330 deg max
                    140 deg at    3.0 minutes
                    210 deg at    6.5 minutes
                    210 deg at   34.5 minutes
                    280 deg at   44.5 minutes
                    280 deg at   51.0 minutes
                    325 deg at   58.4 minutes
  Inlet    :
  Pressure        18.0 psi
  Splitless mode
  Purge time       1.5 min
  Purge flow      40.0 mL/min

   Gas saver is on
   Saver time       3.0 min
   Saver flow      15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8420.0000 |
| BDEV | 8280.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.5529 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.5861 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 1.0004 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4857.3333 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.0000 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 180.0000 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.2000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 151.0000 | FVINLET | 487.0000 |
| FVSRC | 875.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4314 | HVANAL | 942.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4754.5740 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2806.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10422.1189 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9900 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1721.0000 | XLENSS | 163.4000 |
| YLENS | 2467.0000 | YLENSS | -53.4000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 01-Apr-03 19:58:08.5

Autosampler has injected sample from vial 42
Analysis stopped at: 01-Apr-03 20:56:30.7 (run time 58.36 minutes)
Analysis stopped because MID run finished

QUAN: t030401i2.q0 Entries: 69

Data file(s) used
File: t030401i2 01-Apr-03
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 320. | 31:42 | 1305 | 1661.244 | 17864.453 | 40.99 |
| 2 | 322. | 31:42 | 1305 | 2238.753 | 20973.564 | 50.28 |
| 3 | 332. | 31:05 | 1271 | 79077.632 | 750109.812 | 137.21 |
| 4 | 332. | 31:38 | 1302 | 71766.960 | 780125.312 | 137.21 |
| 5 | 334. | 31:05 | 1271 | 96247.187 | 944212.875 | 149.27 |
| 6 | 334. | 31:38 | 1302 | 89366.757 | 995885.562 | 149.27 |
| 7 | 328. | 31:42 | 1305 | 3333.961 | 36162.546 | 49.81 |
| 8 | 356. | 41:36 | 1858 | 19658.269 | 93394.312 | 61.04 |
| 9 | 358. | 41:36 | 1858 | 11252.142 | 57032.570 | 52.24 |
| 10 | 368. | 41:35 | 1857 | 204022.109 | 944520.375 | 97.77 |
| 11 | 370. | 41:35 | 1857 | 132474.265 | 602545.125 | 68.80 |
| 12 | 390. | 45:51 | 2096 | 22673.011 | 77209.460 | 78.11 |
| 13 | 390. | 45:58 | 2102 | 20352.037 | 86149.101 | 78.11 |
| 14 | 390. | 46:21 | 2124 | 19396.406 | 83669.812 | 78.11 |
| 15 | 392. | 45:51 | 2096 | 16605.562 | 62164.328 | 66.45 |
| 16 | 392. | 45:58 | 2102 | 16695.599 | 69811.335 | 66.45 |
| 17 | 392. | 46:21 | 2124 | 17015.726 | 69231.835 | 66.45 |
| 18 | 402. | 45:50 | 2095 | 211359.296 | 706766.125 | 122.44 |
| 19 | 402. | 45:58 | 2102 | 198290.093 | 844763.875 | 122.44 |
| 20 | 402. | 46:20 | 2123 | 190990.390 | 763696.437 | 122.44 |
| 21 | 404. | 45:50 | 2095 | 167596.906 | 557788.312 | 90.01 |
| 22 | 404. | 45:56 | 2101 | 157398.000 | 663400.937 | 90.01 |
| 23 | 404. | 46:20 | 2123 | 152885.250 | 610803.062 | 90.01 |
| 24 | 424. | 50:38 | 2364 | 12439.532 | 64588.605 | 43.43 |
| 25 | 426. | 50:38 | 2364 | 11503.239 | 60821.285 | 45.42 |
| 26 | 436. | 50:37 | 2363 | 130342.460 | 674882.562 | 77.76 |
| 27 | 438. | 50:37 | 2363 | 119247.187 | 645874.250 | 62.15 |
| 28 | 458. | 55:03 | 2612 | 26185.392 | 114180.789 | 51.59 |
| 29 | 460. | 55:03 | 2612 | 28617.650 | 123819.171 | 43.40 |
| 30 | 470. | 55:02 | 2611 | 249224.328 | 1071957.875 | 52.26 |
| 31 | 472. | 55:02 | 2611 | 279077.218 | 1182906.250 | 80.17 |
| 32 | 304. | 29:45 | 1198 | 2351.427 | 21738.679 | 43.82 |
| 33 | 306. | 29:44 | 1197 | 2724.405 | 28408.687 | 63.19 |
| 34 | 316. | 29:41 | 1194 | 108701.250 | 1120829.375 | 99.64 |
| 35 | 318. | 29:41 | 1194 | 136923.015 | 1404282.625 | 114.71 |
| 36 | 340. | 39:48 | 1756 | 22079.232 | 132283.000 | 67.09 |
| 37 | 340. | 41:05 | 1828 | 27255.613 | 142422.718 | 67.09 |
| 38 | 342. | 39:48 | 1756 | 15123.612 | 88778.609 | 65.46 |
| 39 | 342. | 41:05 | 1828 | 17496.664 | 90325.523 | 65.46 |
| 40 | 352. | 39:47 | 1755 | 255621.484 | 1413762.875 | 136.59 |
| 41 | 352. | 41:03 | 1827 | 275296.343 | 1372778.375 | 136.59 |
| 42 | 354. | 39:47 | 1755 | 158153.906 | 895218.312 | 135.02 |
| 43 | 354. | 41:03 | 1827 | 176021.015 | 866834.250 | 135.02 |
| 44 | 374. | 44:51 | 2039 | 33054.921 | 112994.593 | 62.88 |
| 45 | 374. | 44:58 | 2046 | 29200.494 | 126380.148 | 62.88 |
| 46 | 374. | 45:42 | 2087 | 28283.277 | 112488.906 | 62.88 |
| 47 | 374. | 46:38 | 2140 | 19397.015 | 100037.578 | 62.88 |
| 48 | 376. | 44:51 | 2039 | 24271.757 | 93230.789 | 56.90 |
| 49 | 376. | 44:58 | 2046 | 25166.185 | 101627.703 | 56.90 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 376., | 45:42 | , | 2087, | 21756.412, | 87792.195, | 56.90, |
| 51, | 376., | 46:37 | , | 2139, | 15893.070, | 76105.562, | 56.90, |
| 52, | 384., | 44:50 | , | 2038, | 172762.578, | 586621.500, | 104.97, |
| 53, | 384., | 44:57 | , | 2045, | 174012.984, | 686150.875, | 104.97, |
| 54, | 384., | 45:41 | , | 2086, | 157037.515, | 603219.500, | 104.97, |
| 55, | 384., | 46:36 | , | 2138, | 106208.234, | 510890.531, | 104.97, |
| 56, | 386., | 44:50 | , | 2038, | 319391.343, | 1123364.125, | 132.45, |
| 57, | 386., | 44:57 | , | 2045, | 329261.812, | 1290356.125, | 133.45, |
| 58, | 386., | 45:41 | , | 2086, | 300364.656, | 1153650.000, | 132.45, |
| 59, | 386., | 46:36 | , | 2138, | 201565.484, | 964938.187, | 132.45, |
| 60, | 408., | 48:58 | , | 2270, | 21150.318, | 103292.578, | 53.91, |
| 61, | 408., | 51:17 | , | 2401, | 12626.093, | 78200.812, | 53.91, |
| 62, | 410., | 48:58 | , | 2270, | 20730.324, | 99109.101, | 56.68, |
| 63, | 410., | 51:17 | , | 2401, | 13141.922, | 78244.890, | 56.68, |
| 64, | 418., | 48:57 | , | 2269, | 88023.164, | 435964.906, | 74.00, |
| 65, | 418., | 51:16 | , | 2400, | 60463.625, | 343077.906, | 74.00, |
| 66, | 420., | 48:57 | , | 2269, | 191727.281, | 958928.250, | 93.89, |
| 67, | 420., | 51:16 | , | 2400, | 130180.062, | 759263.125, | 93.89, |
| 68, | 442., | 55:12 | , | 2620, | 27752.751, | 119481.343, | 46.82, |
| 69, | 444., | 55:12 | , | 2620, | 29442.195, | 130568.312, | 61.50, |

QUAN: t030401i2.q0 Entries: 69

Data file(s) used
File: t030401i2 01-Apr-03
Samp: Vial 42 WO=2427:46CS2 Meth=F8 Dil=1 Start : 19:58:08 2797
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS2
Oper: DCG Client: STL Knoxville Inlet : GC Vial 42

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 31:42 | 17864. | 1661. | 31:33 | 31:58 | 41. | 2 | 3.0 |
| 321.8775 | 31:42 | 20974. | 2239. | 31:28 | 31:56 | 50. | 2 | 3.0 |
| 331.9202 | 31:05 | 750110. | 79078. | 30:49 | 31:21 | 137. | 2 | 3.0 |
| 331.9202 | 31:38 | 780125. | 71767. | 31:26 | 31:55 | 137. | 2 | 3.0 |
| 333.9171 | 31:05 | 944213. | 96247. | 30:49 | 31:21 | 149. | 2 | 3.0 |
| 333.9171 | 31:38 | 995886. | 89367. | 31:25 | 31:55 | 149. | 2 | 3.0 |
| 327.8683 | 31:42 | 36163. | 3334. | 31:30 | 31:58 | 50. | 2 | 3.0 |
| 303.8864 | 29:45 | 21739. | 2351. | 29:32 | 29:55 | 44. | 2 | 3.0 |
| 305.8834 | 29:44 | 28409. | 2724. | 29:30 | 29:58 | 63. | 2 | 3.0 |
| 315.9261 | 29:41 | 1120829. | 108701. | 29:28 | 29:57 | 100. | 2 | 3.0 |
| 317.9230 | 29:41 | 1404283. | 136923. | 29:28 | 29:57 | 115. | 2 | 3.0 |
| 355.8368 | 41:36 | 93394. | 19658. | 41:27 | 41:52 | 61. | 2 | 3.0 |
| 357.8337 | 41:36 | 57033. | 11252. | 41:31 | 41:52 | 52. | 2 | 3.0 |
| 367.8765 | 41:35 | 944520. | 204022. | 41:29 | 41:51 | 98. | 2 | 3.0 |
| 369.8734 | 41:35 | 602545. | 132474. | 41:28 | 41:51 | 69. | 2 | 3.0 |
| 339.8427 | 39:48 | 132283. | 22079. | 39:37 | 40:04 | 67. | 2 | 3.0 |
| 339.8427 | 41:04 | 142423. | 27256. | 40:58 | 41:20 | 67. | 2 | 3.0 |
| 341.8396 | 39:48 | 88779. | 15124. | 39:38 | 40:04 | 65. | 2 | 3.0 |
| 341.8396 | 41:04 | 90326. | 17497. | 40:59 | 41:20 | 65. | 2 | 3.0 |
| 351.8824 | 39:47 | 1413763. | 255621. | 39:35 | 40:03 | 137. | 2 | 3.0 |
| 351.8824 | 41:03 | 1372778. | 275296. | 40:47 | 41:19 | 137. | 2 | 3.0 |
| 353.8793 | 39:47 | 895218. | 158154. | 39:37 | 40:03 | 135. | 2 | 3.0 |
| 353.8793 | 41:03 | 866834. | 176021. | 40:52 | 41:19 | 135. | 2 | 3.0 |
| 389.7961 | 45:51 | 77209. | 22673. | 45:46 | 45:54 | 78. | 2 | 3.0 |
| 389.7961 | 45:57 | 86149. | 20352. | 45:54 | 46:12 | 78. | 2 | 3.0 |
| 389.7961 | 46:21 | 83670. | 19396. | 46:16 | 46:37 | 78. | 2 | 3.0 |
| 391.7931 | 45:51 | 62164. | 16606. | 45:39 | 45:54 | 66. | 2 | 3.0 |
| 391.7931 | 45:57 | 69811. | 16696. | 45:54 | 46:12 | 66. | 2 | 3.0 |
| 391.7931 | 46:21 | 69232. | 17016. | 46:12 | 46:31 | 66. | 2 | 3.0 |
| 401.8358 | 45:50 | 706766. | 211359. | 45:45 | 45:53 | 122. | 2 | 3.0 |
| 401.8358 | 45:57 | 844764. | 198290. | 45:53 | 46:11 | 122. | 2 | 3.0 |
| 401.8358 | 46:20 | 763696. | 190990. | 46:11 | 46:36 | 122. | 2 | 3.0 |
| 403.8327 | 45:50 | 557788. | 167597. | 45:44 | 45:53 | 90. | 2 | 3.0 |
| 403.8327 | 45:56 | 663401. | 157398. | 45:53 | 46:12 | 90. | 2 | 3.0 |
| 403.8327 | 46:20 | 610803. | 152885. | 46:12 | 46:36 | 90. | 2 | 3.0 |
| 373.8021 | 44:51 | 112995. | 33055. | 44:44 | 44:54 | 63. | 2 | 3.0 |
| 373.8021 | 44:58 | 126380. | 29200. | 44:54 | 45:14 | 63. | 2 | 3.0 |
| 373.8021 | 45:42 | 112489. | 28283. | 45:32 | 45:54 | 63. | 2 | 3.0 |
| 373.8021 | 46:38 | 100038. | 19397. | 46:29 | 46:53 | 63. | 2 | 3.0 |
| 375.7990 | 44:51 | 93231. | 24272. | 44:44 | 44:55 | 57. | 2 | 3.0 |
| 375.7990 | 44:58 | 101628. | 25166. | 44:55 | 45:14 | 57. | 2 | 3.0 |
| 375.7990 | 45:42 | 87792. | 21756. | 45:33 | 45:52 | 57. | 2 | 3.0 |
| 375.7990 | 46:37 | 76106. | 15893. | 46:31 | 46:53 | 57. | 2 | 3.0 |
| 383.8447 | 44:50 | 586621. | 172763. | 44:42 | 44:53 | 105. | 2 | 3.0 |
| 383.8447 | 44:57 | 686151. | 174013. | 44:53 | 45:13 | 105. | 2 | 3.0 |
| 383.8447 | 45:40 | 603219. | 157038. | 45:29 | 45:56 | 105. | 2 | 3.0 |
| 383.8447 | 46:36 | 510891. | 106208. | 46:30 | 46:52 | 105. | 2 | 3.0 |
| 385.8417 | 44:50 | 1123364. | 319391. | 44:43 | 44:53 | 132. | 2 | 3.0 |
| 385.8417 | 44:57 | 1290356. | 329262. | 44:53 | 45:13 | 132. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 385.8417 | 45:40 | 1153650. | 300365. | 45:31 | 45:56 | 132. | 2 | 3.0 |
| 385.8417 | 46:36 | 964938. | 201565. | 46:30 | 46:52 | 132. | 2 | 3.0 |
| 423.7555 | 50:38 | 64589. | 12440. | 50:31 | 50:50 | 43. | 2 | 3.0 |
| 425.7524 | 50:38 | 60821. | 11503. | 50:30 | 50:54 | 45. | 2 | 3.0 |
| 435.7951 | 50:37 | 674883. | 130342. | 50:29 | 50:53 | 78. | 2 | 3.0 |
| 437.7921 | 50:37 | 645874. | 119247. | 50:29 | 50:53 | 62. | 2 | 3.0 |
| 407.7614 | 48:58 | 103293. | 21150. | 48:52 | 49:14 | 54. | 2 | 3.0 |
| 407.7614 | 51:17 | 78201. | 12626. | 51:07 | 51:33 | 54. | 3 | 3.0 |
| 409.7583 | 48:58 | 99109. | 20730. | 48:52 | 49:11 | 57. | 2 | 3.0 |
| 409.7583 | 51:17 | 78245. | 13142. | 51:08 | 51:33 | 57. | 3 | 3.0 |
| 417.8041 | 48:57 | 435965. | 88023. | 48:49 | 49:13 | 74. | 2 | 3.0 |
| 417.8041 | 51:16 | 343078. | 60464. | 51:06 | 51:32 | 74. | 3 | 3.0 |
| 419.8010 | 48:57 | 958928. | 191727. | 48:49 | 49:13 | 94. | 2 | 3.0 |
| 419.8010 | 51:16 | 759263. | 130180. | 51:08 | 51:32 | 94. | 2 | 3.0 |
| 457.7148 | 55:03 | 114181. | 26185. | 54:58 | 55:19 | 52. | 2 | 3.0 |
| 459.7118 | 55:03 | 123819. | 28618. | 54:56 | 55:19 | 43. | 2 | 3.0 |
| 469.7545 | 55:02 | 1071958. | 249224. | 54:56 | 55:18 | 52. | 2 | 3.0 |
| 471.7514 | 55:02 | 1182906. | 279077. | 54:56 | 55:18 | 60. | 2 | 3.0 |
| 441.7207 | 55:12 | 119481. | 27753. | 55:03 | 55:22 | 47. | 2 | 3.0 |
| 443.7177 | 55:12 | 130568. | 29442. | 55:06 | 55:25 | 62. | 2 | 3.0 |

CHRO: t030401i3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 847 > 2811 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int/Calc PMP 4-2-03
QC DAW 4/3/03

m/z:303>475, \292.983, \330.979, \342.979, \380.976, \404.976, \430.973, \442.973

E+05
8.641

100
80
60
40
20
0

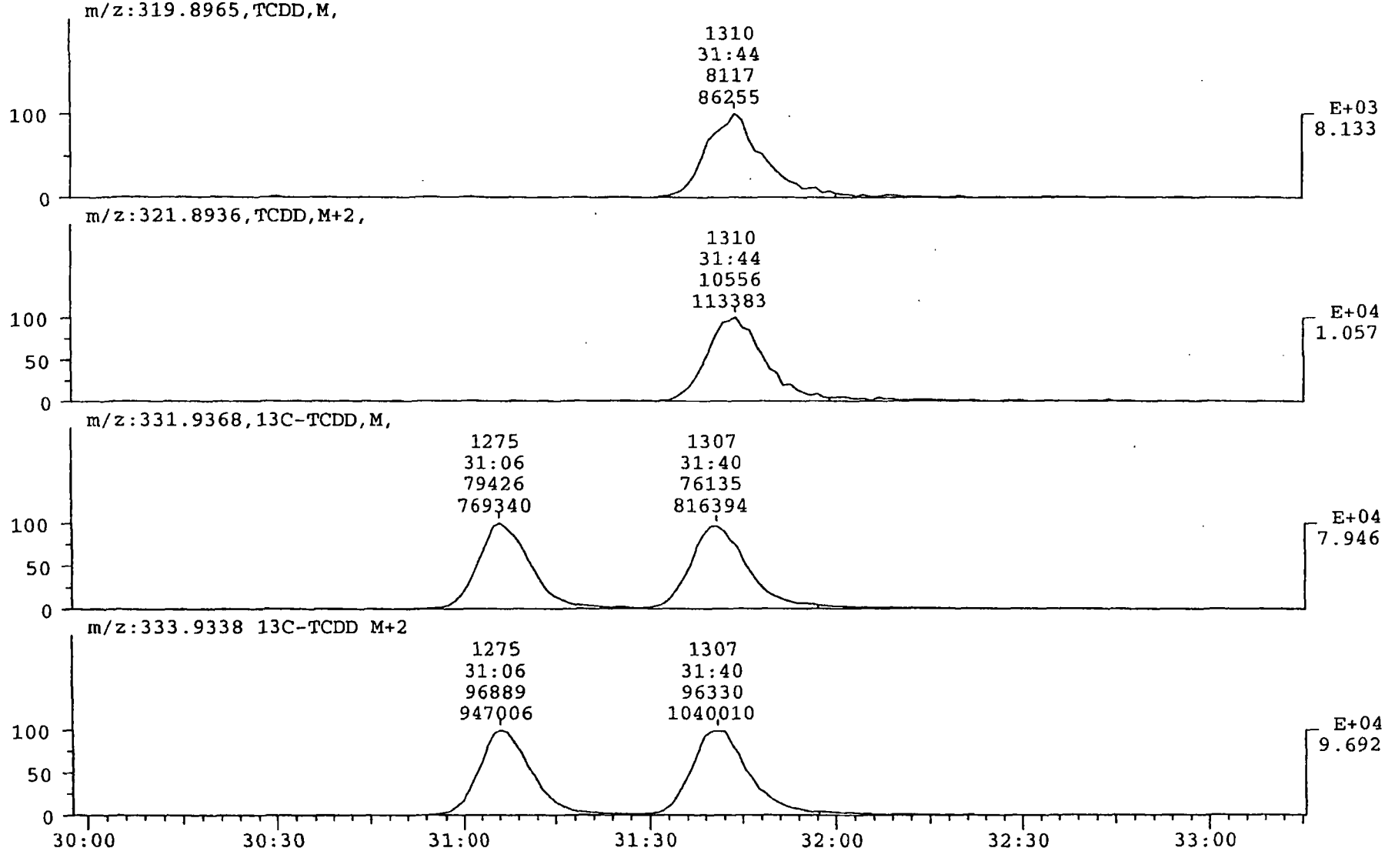
24:00 32:00 40:00 48:00 56:00

* Data acquired with t030401i6 filename. This is a CS3 calibration run – name changed to t030401i3 to accommodate isocalc processing.

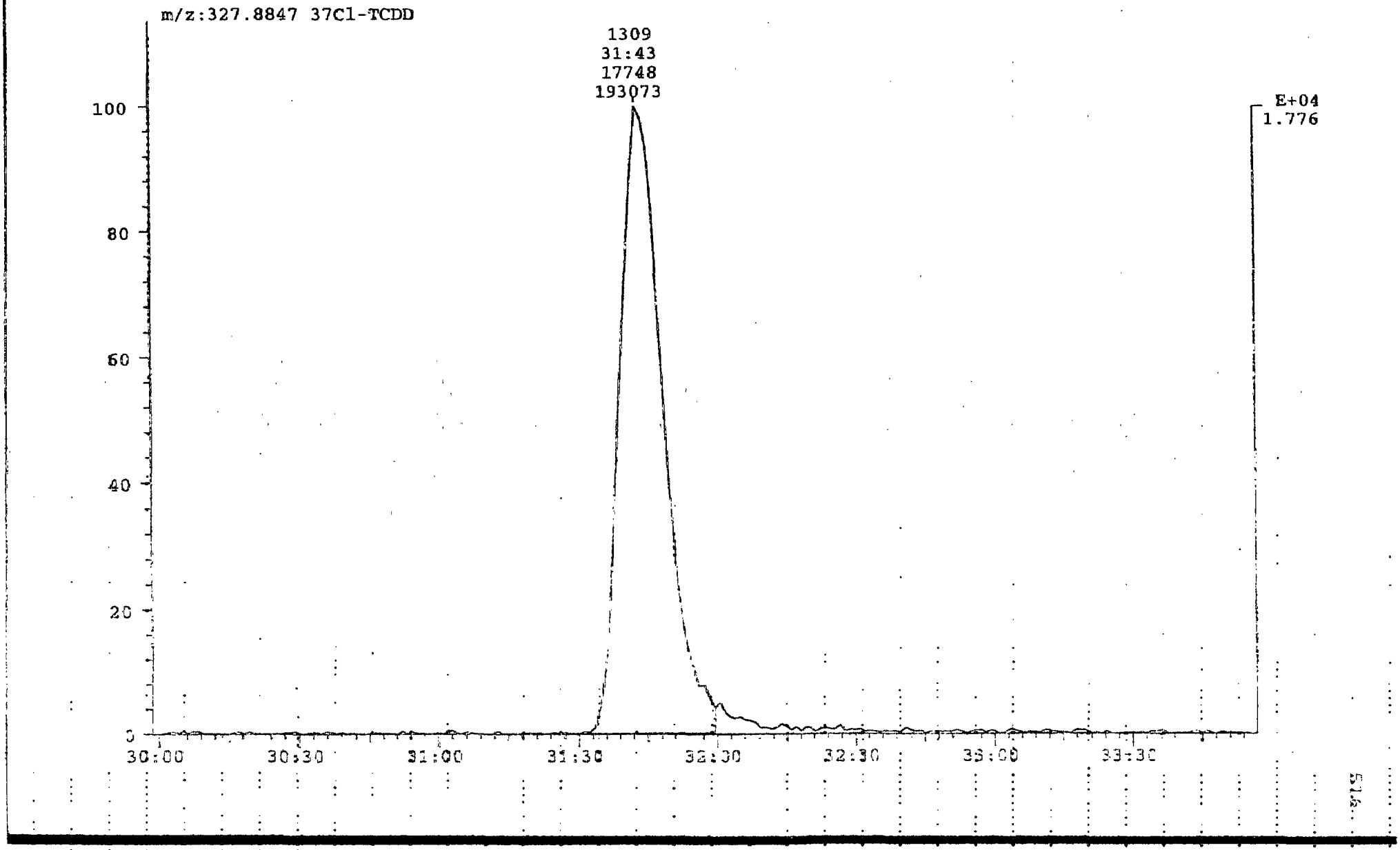
MSD 4/3/03

514

CHRO: t030401i3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

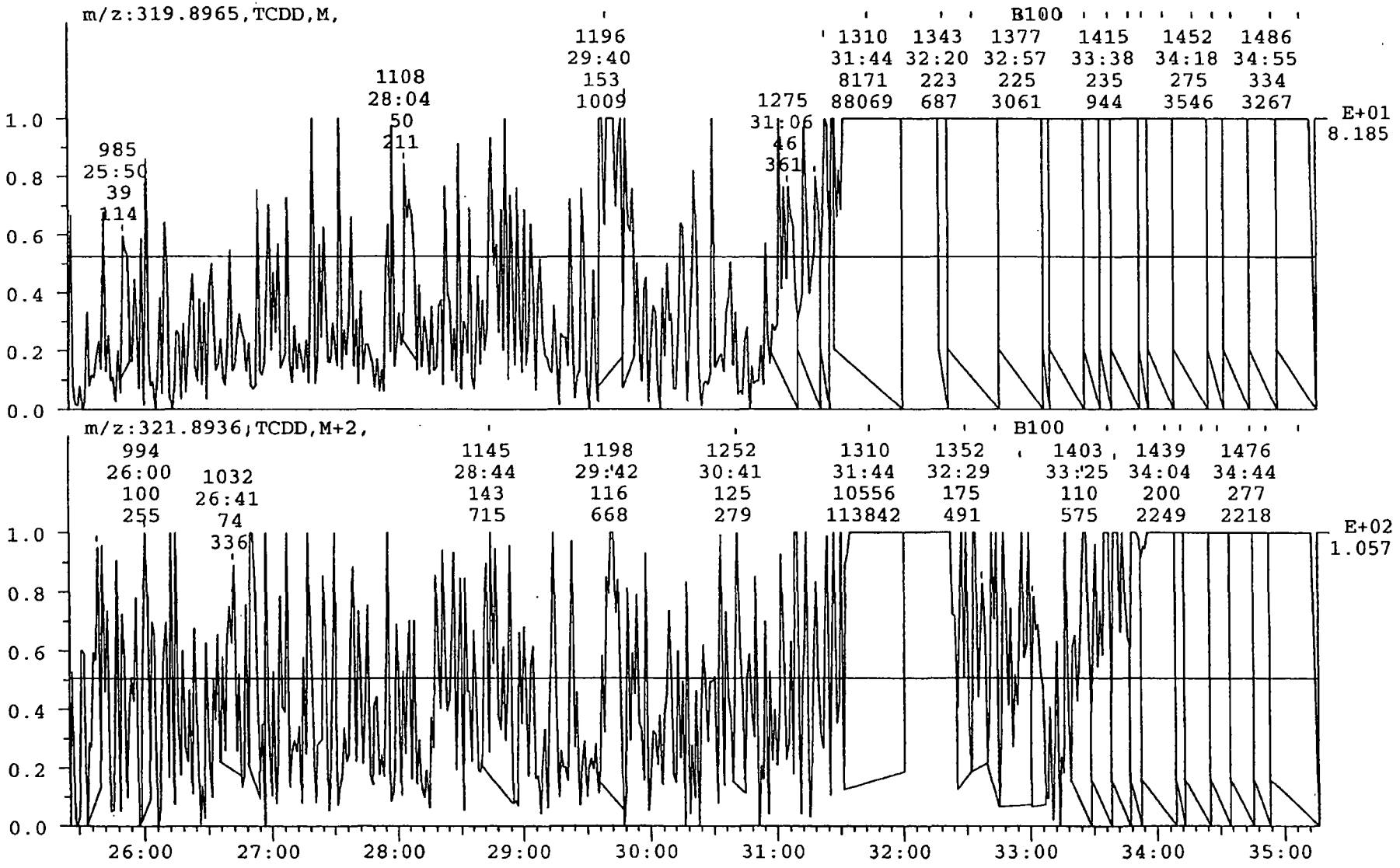


CHRO: t030401i8 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

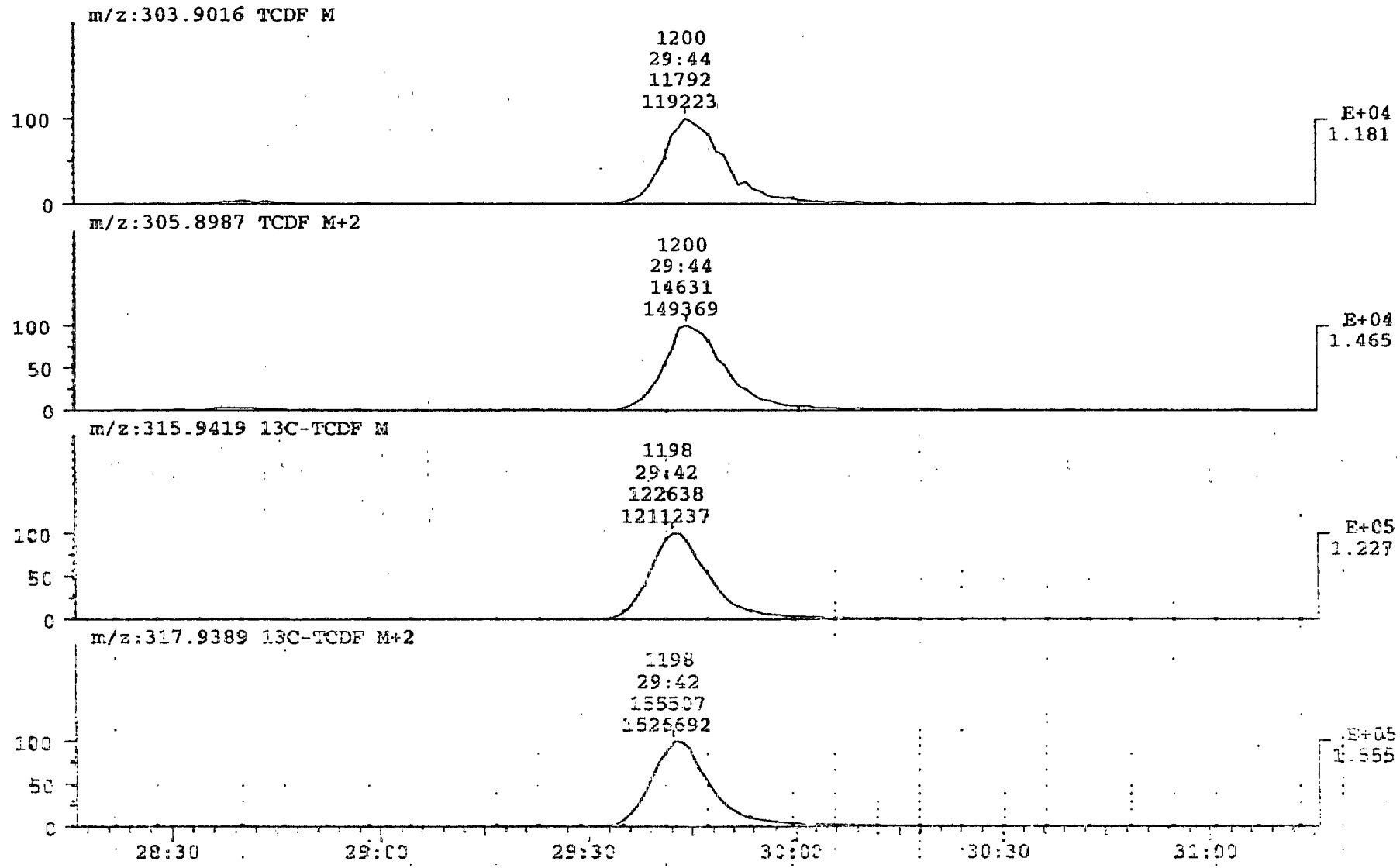



516

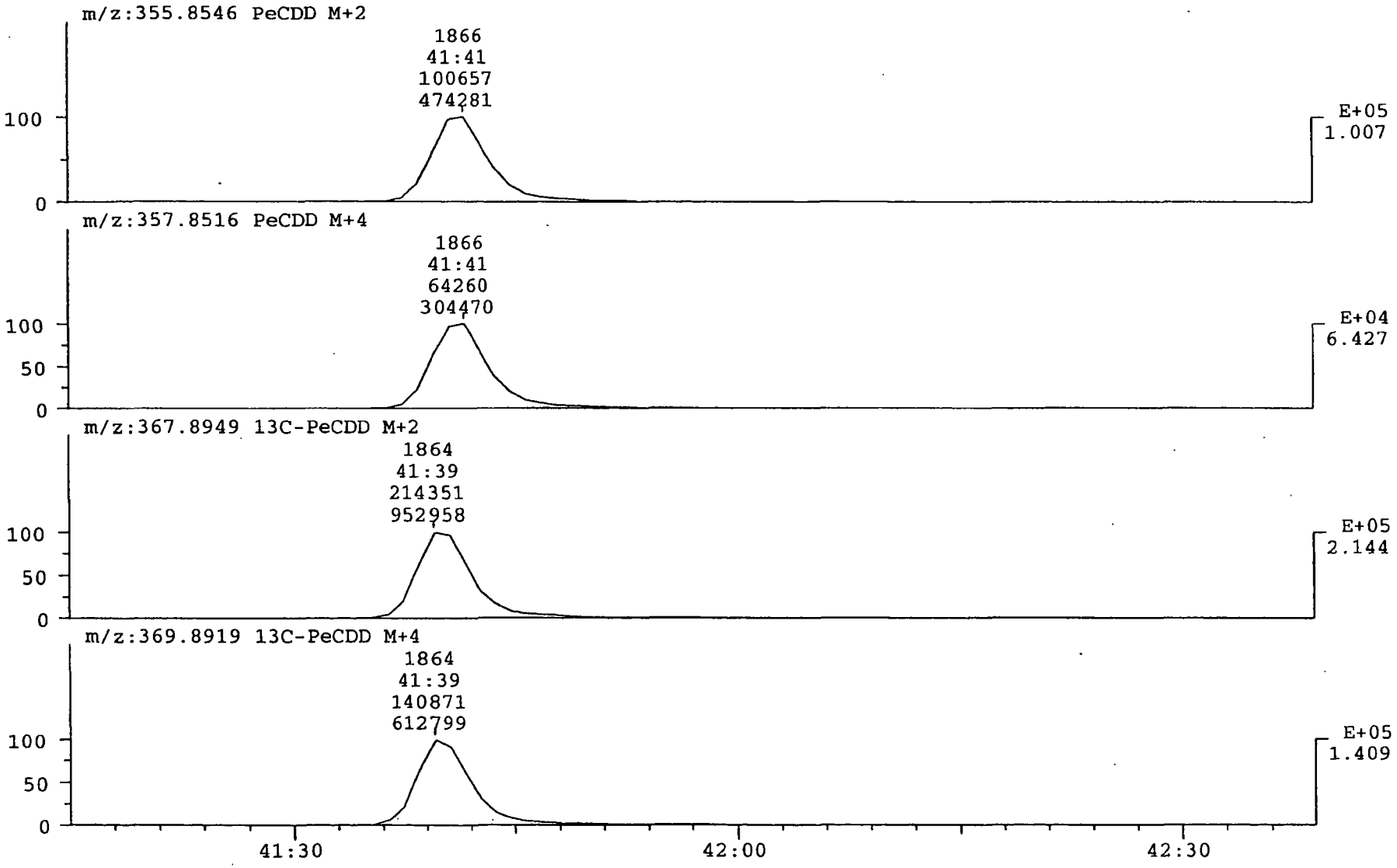
CHRO: t030401i 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 962 > 1503 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : -3, 1.0
Disp: Height Area



3
CHRO: t030401i 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

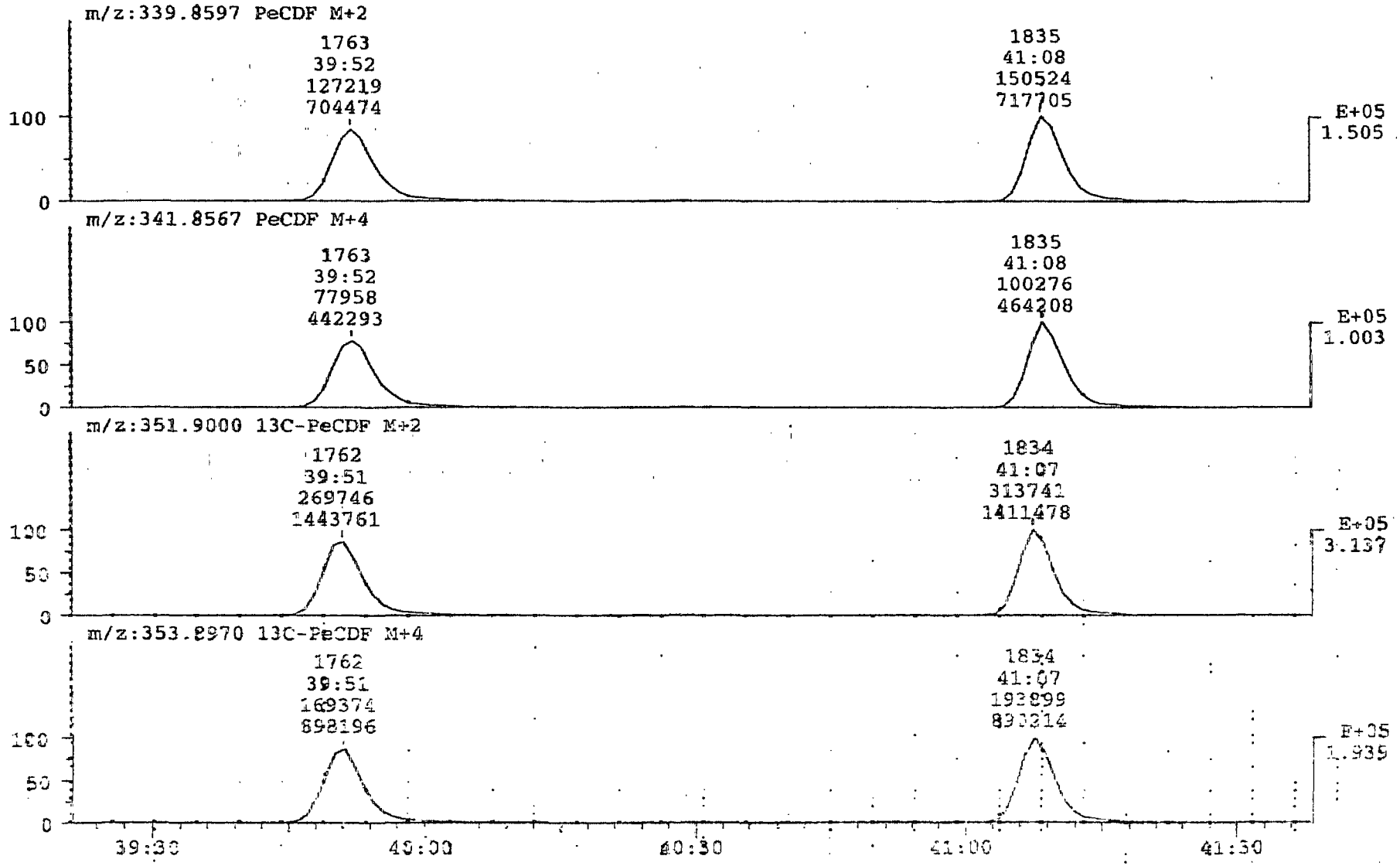


CHRO: t030401i~~6~~ 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

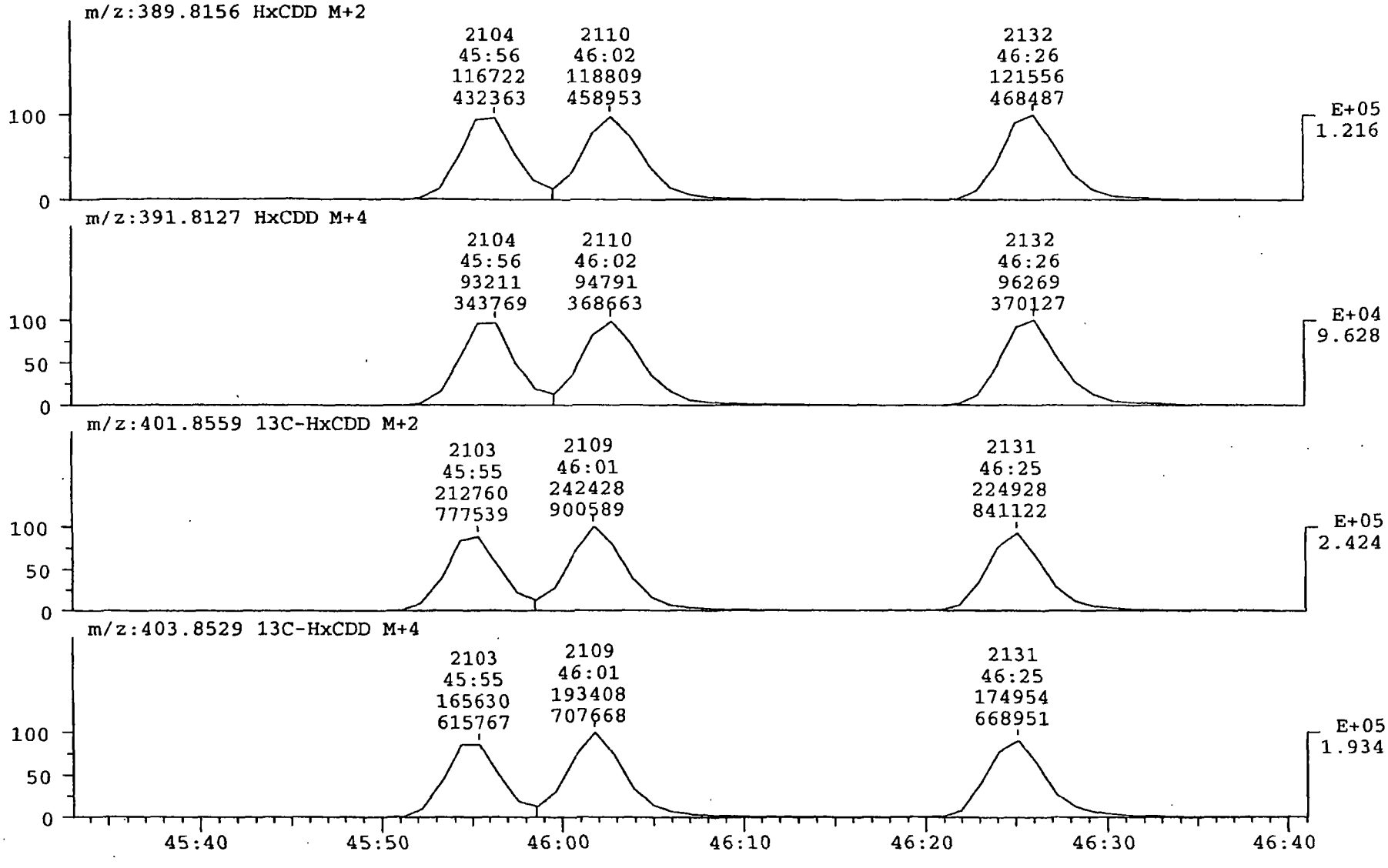


3 PMS 4-2-03

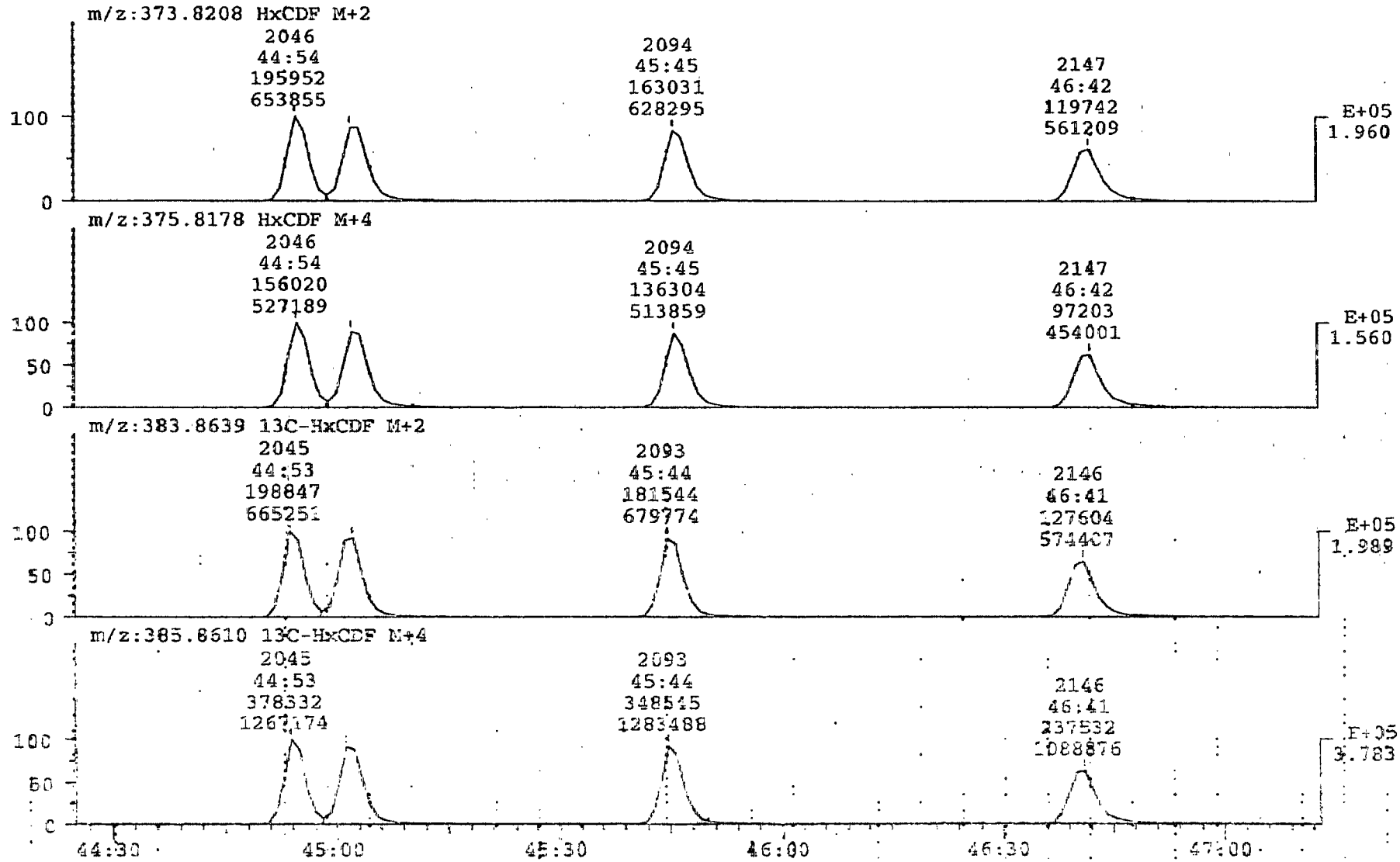
CHRO: t030401i 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

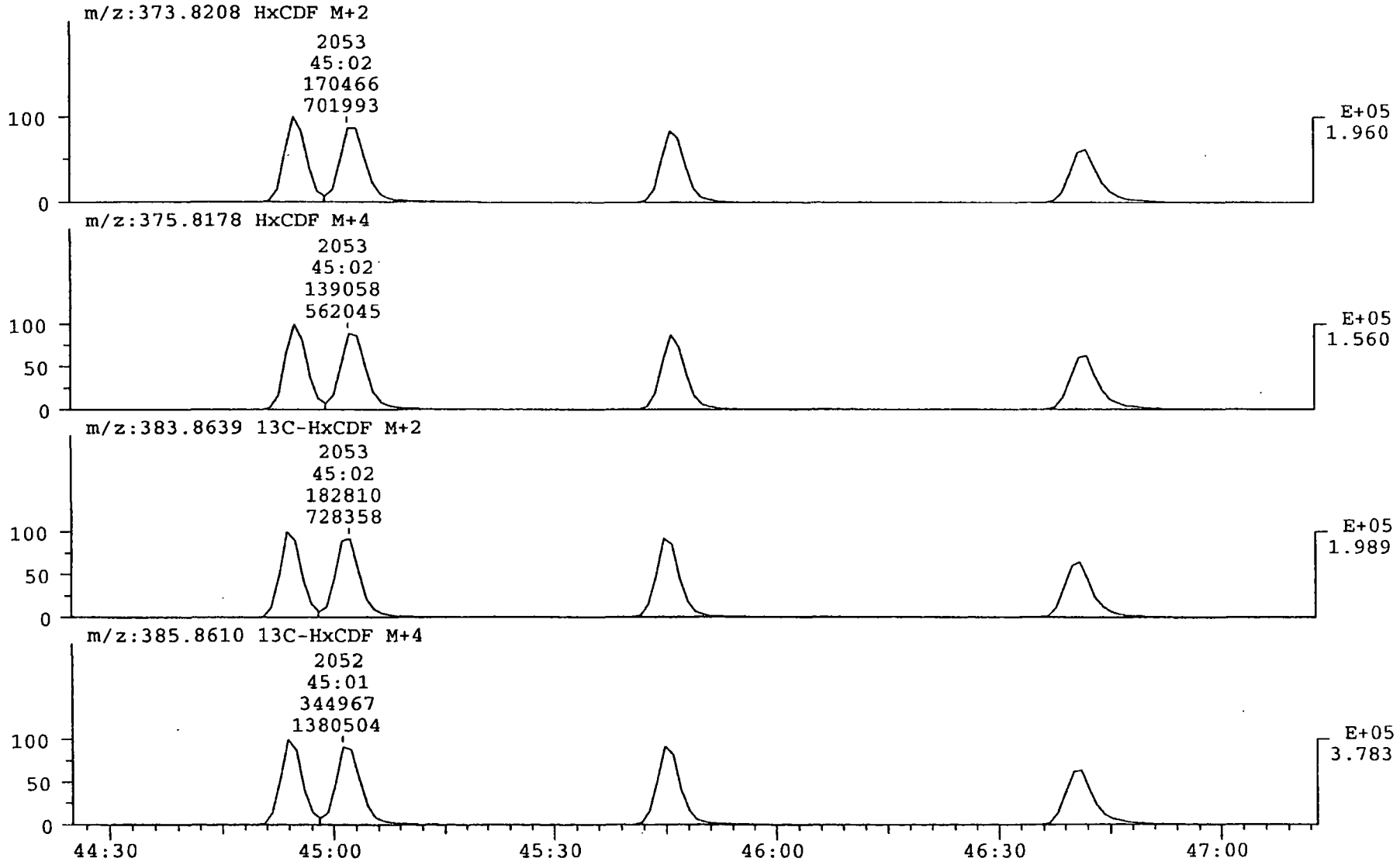


CHRO: t030401i 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



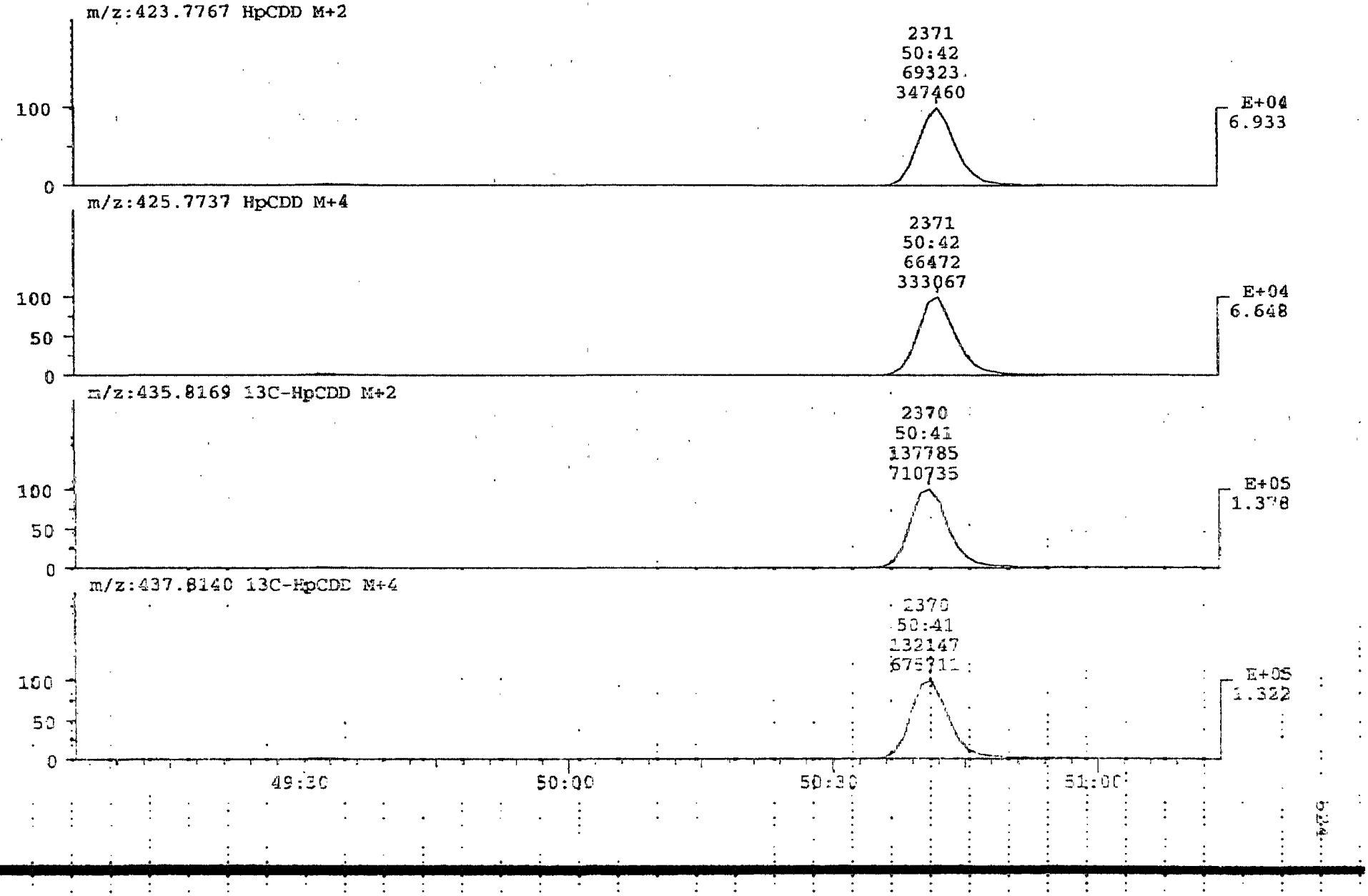
3 PMP 4-2-03

CHRO: t030401i 02-Apr-03 Elapse: 45:03 2054
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2049 > 2059 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

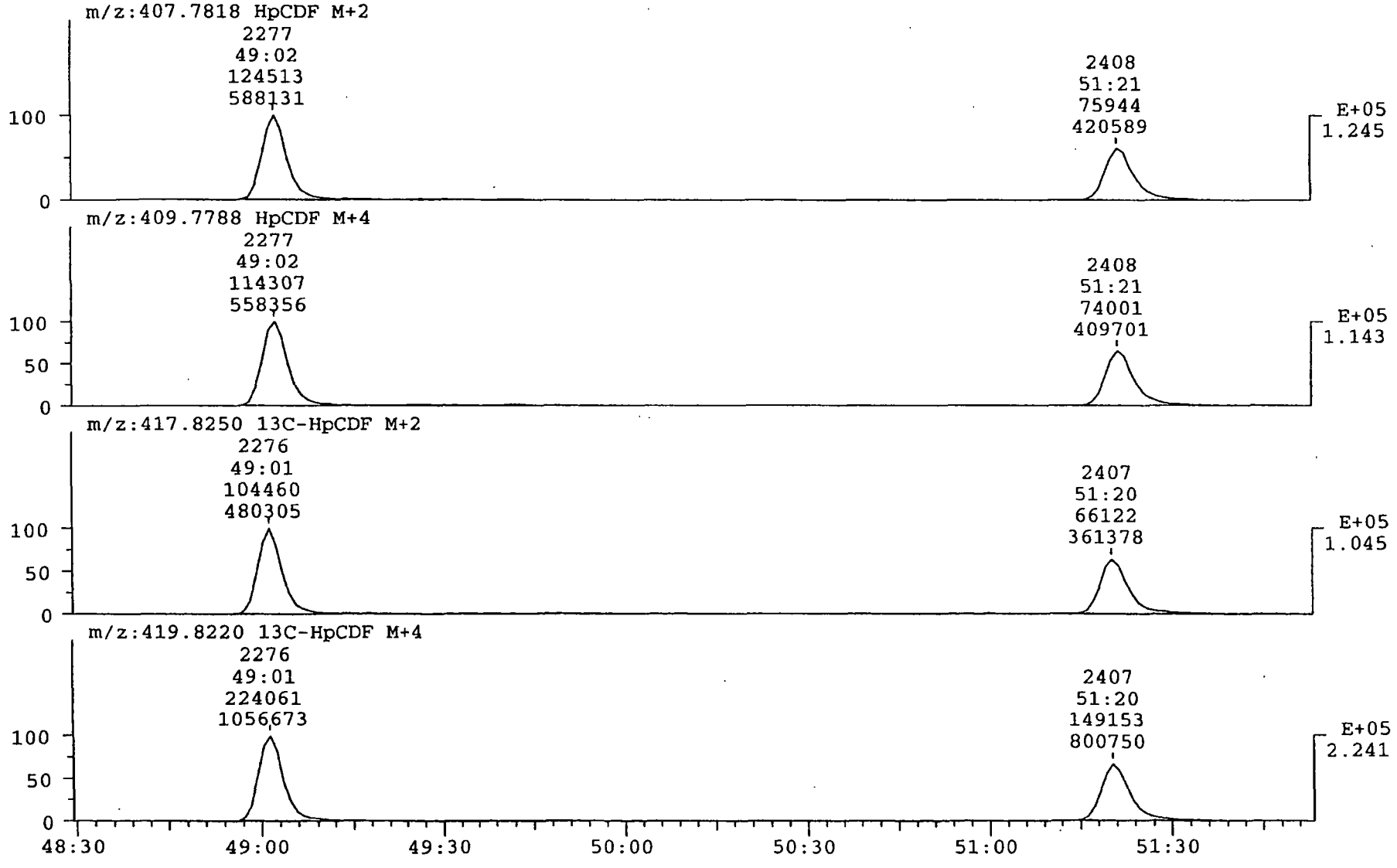


3 PMP 4-2-03

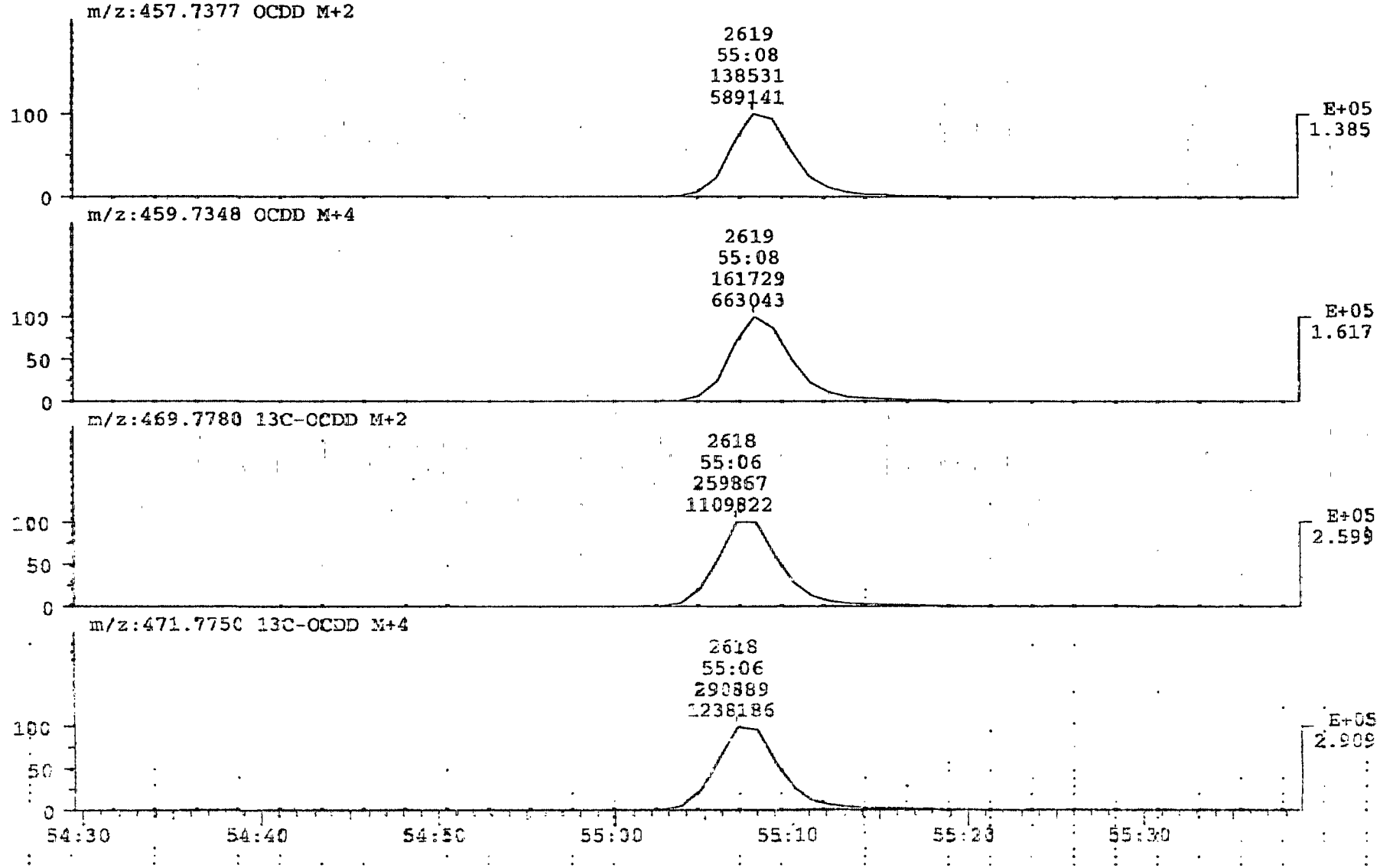
CHRO: t030401i 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WC=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i 3 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

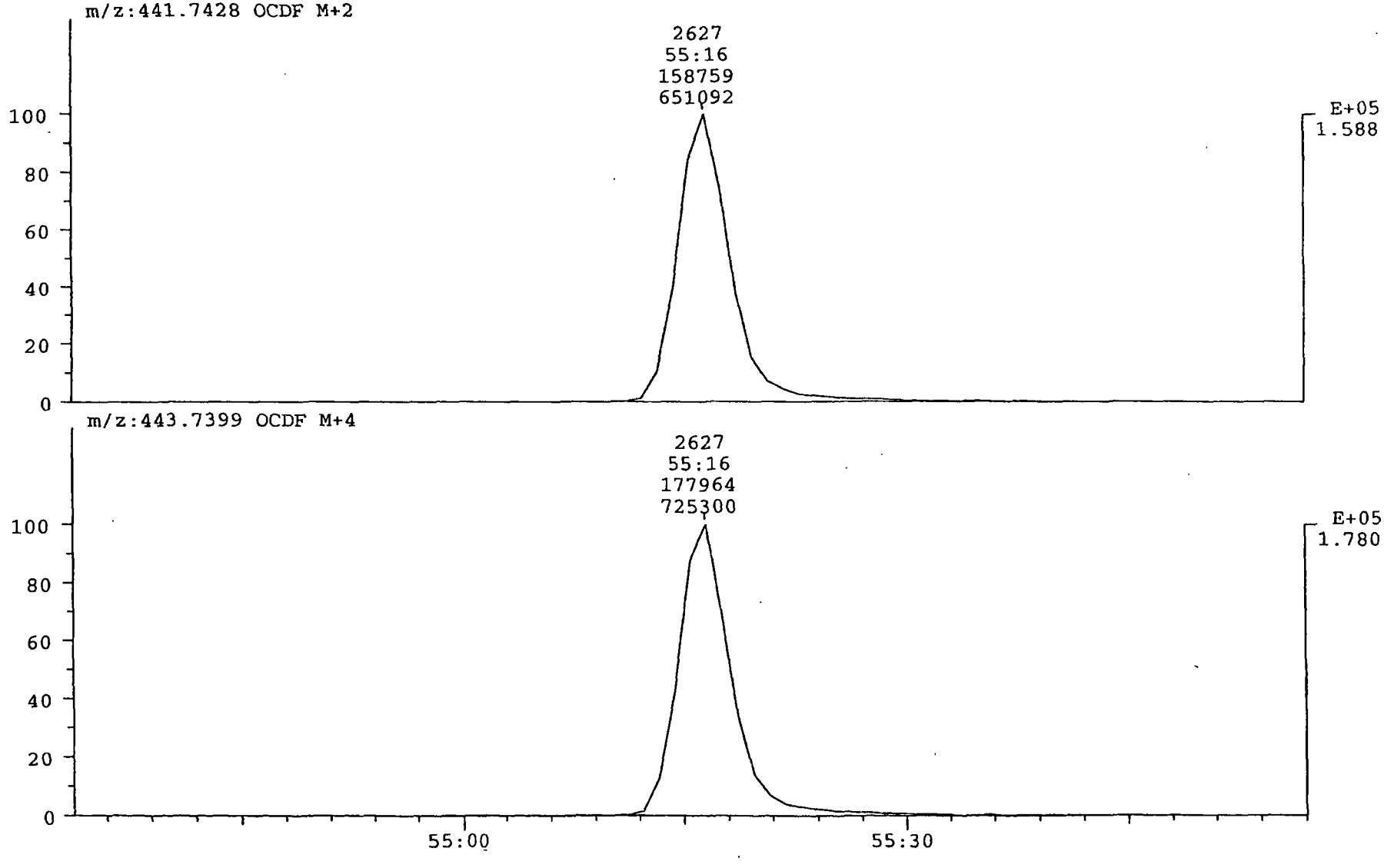


CHRO: t030401i 2 PMP 4-2-03 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

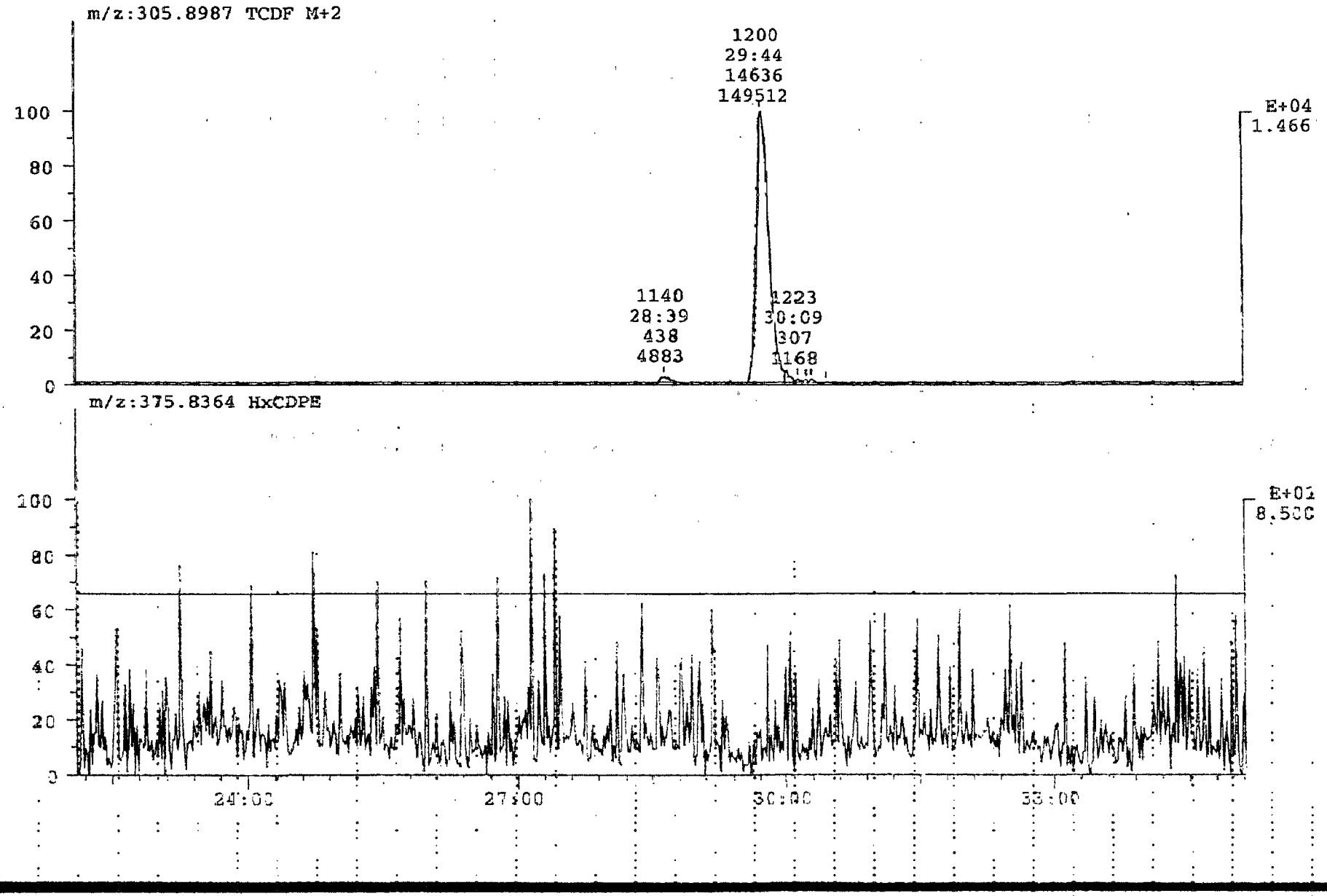


3 PMP4-2-03

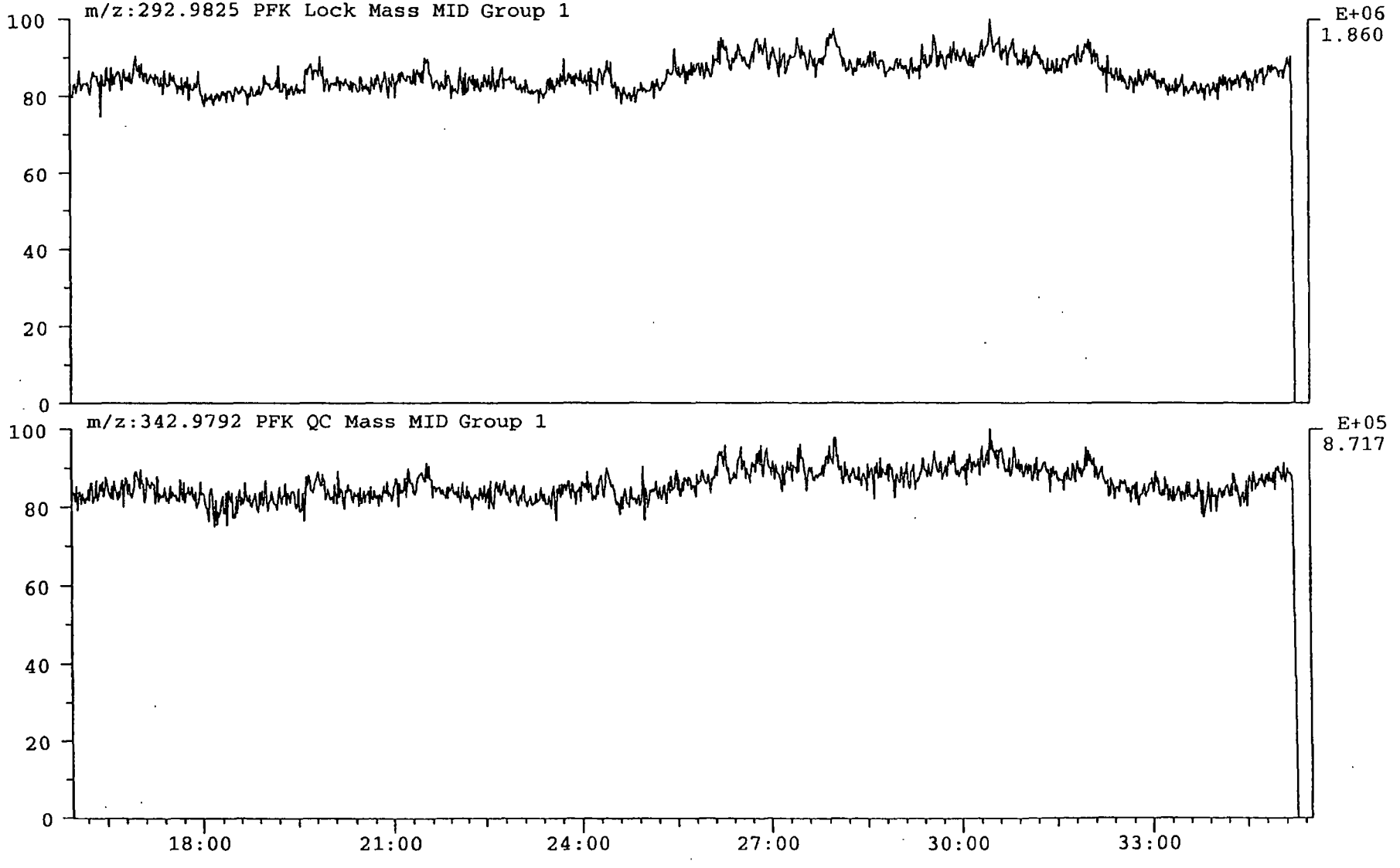
CHRO: t030401i8 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



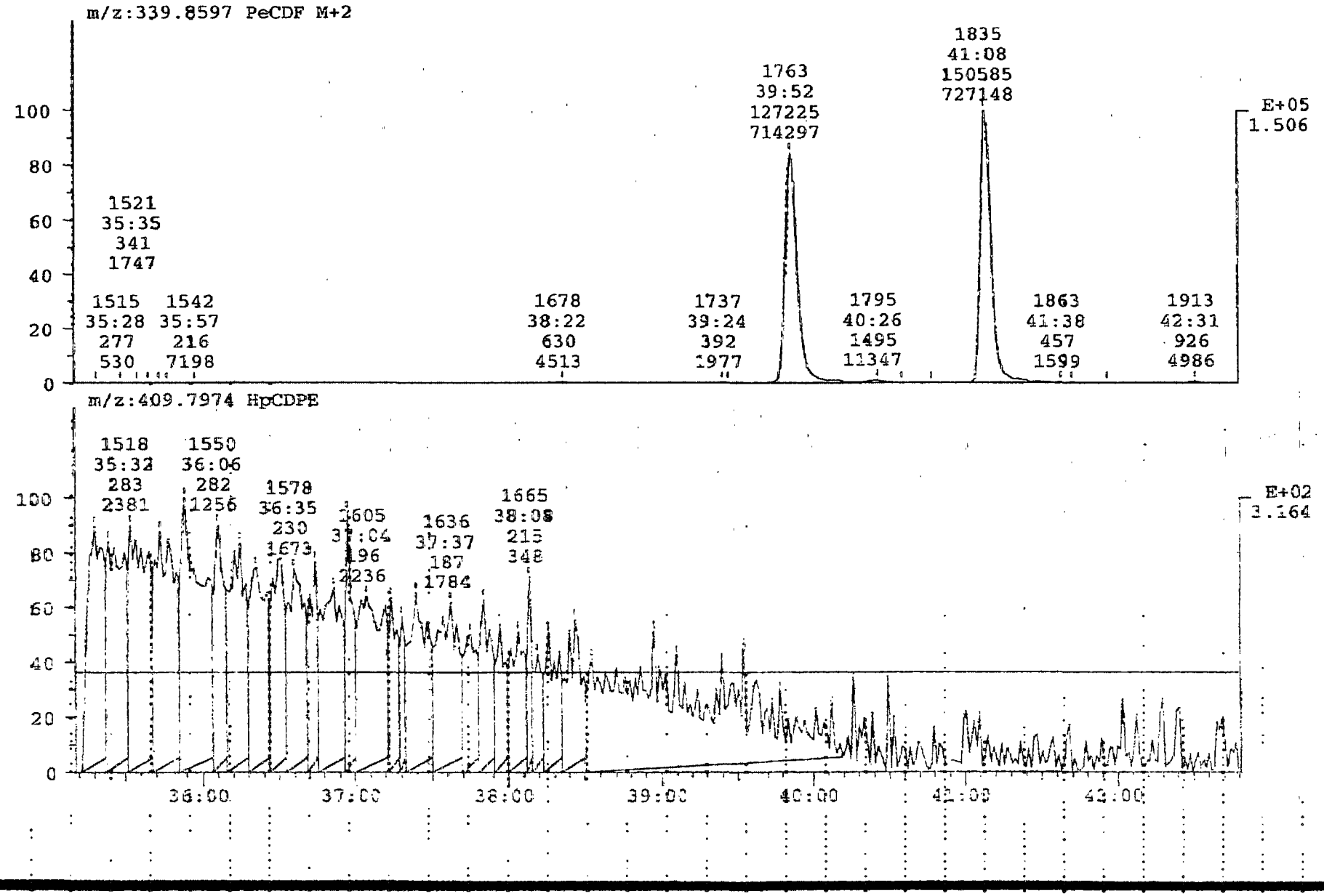
CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 779 > 1497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



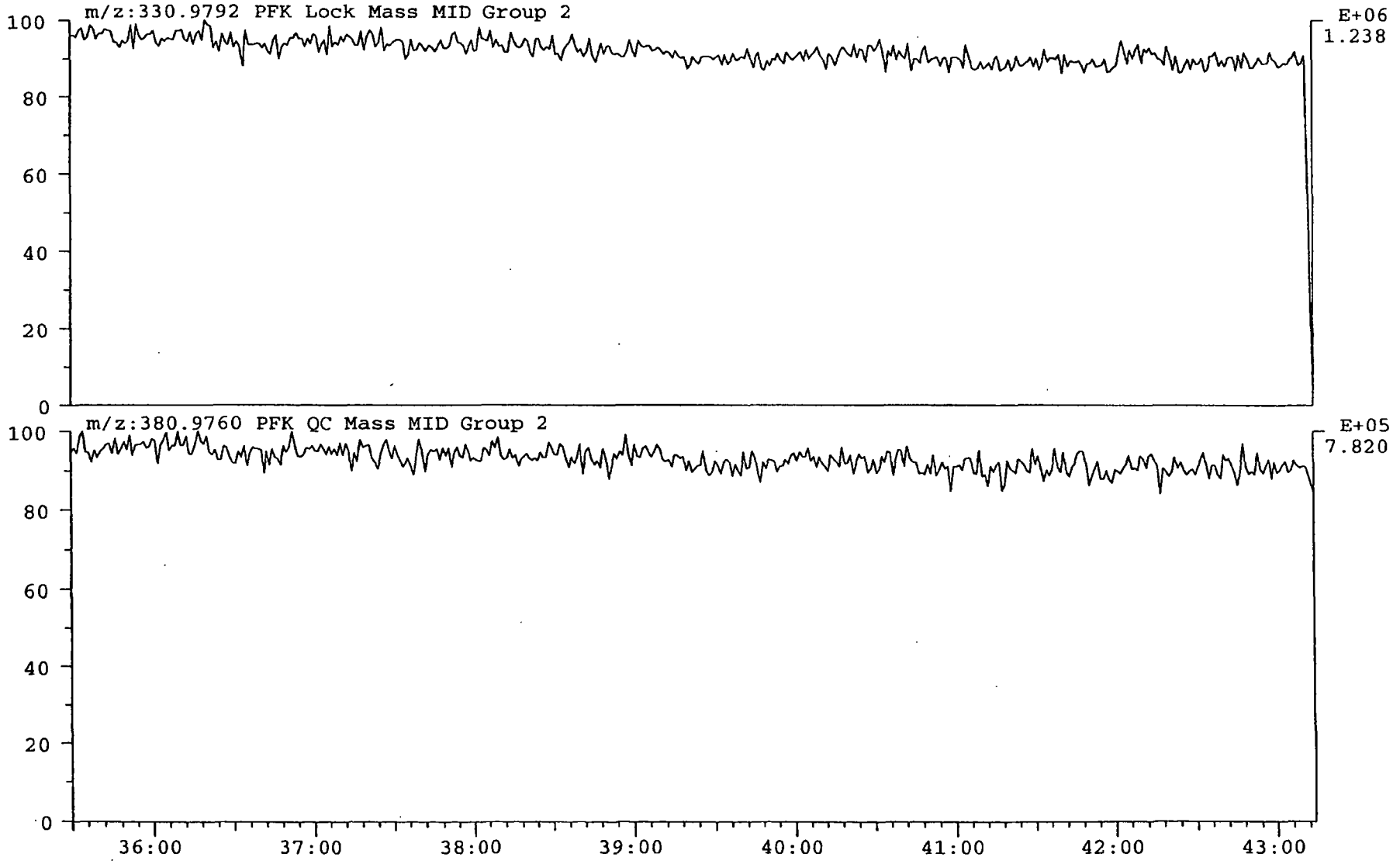
CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 440 > 1516 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



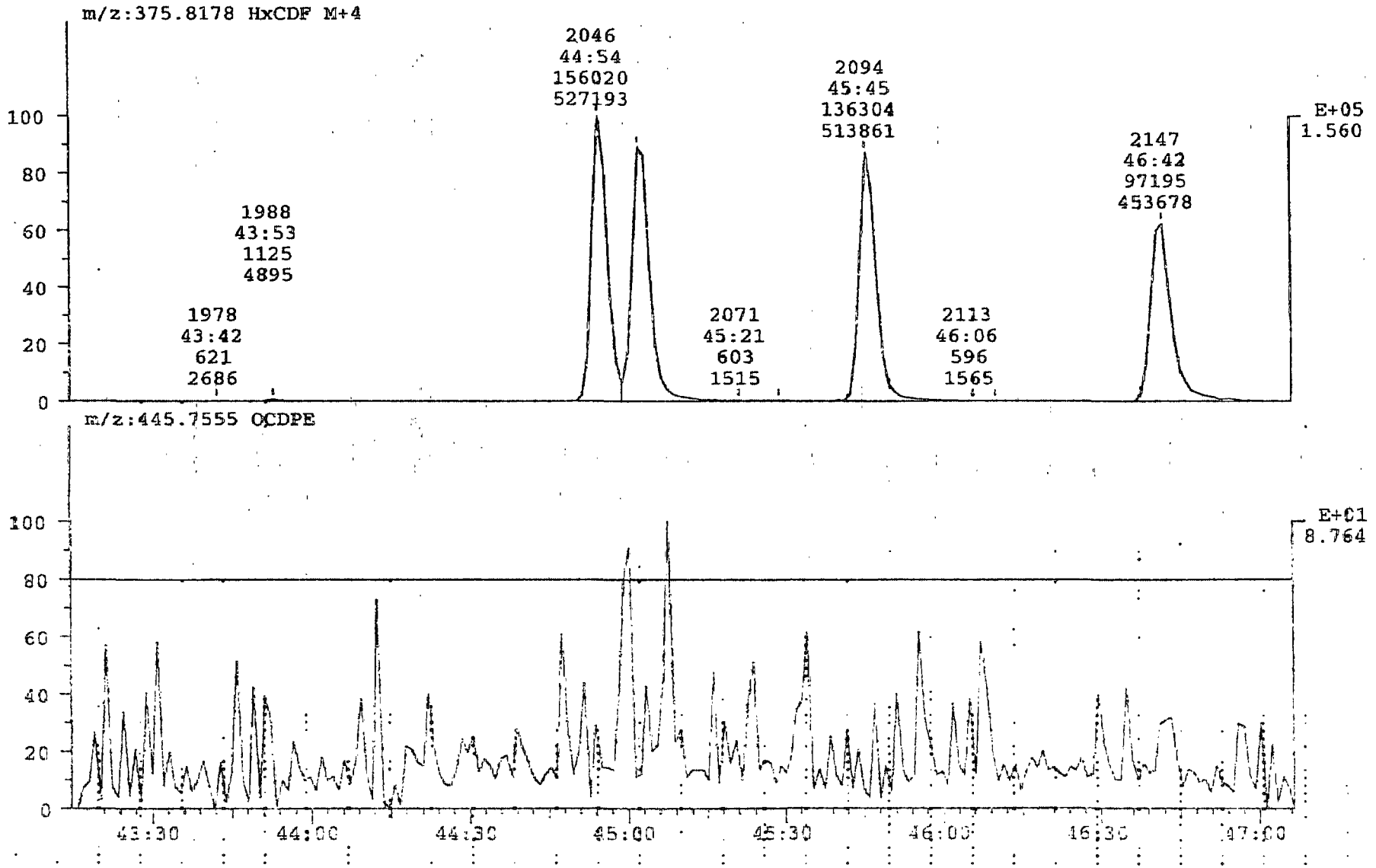
CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1500 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1516 > 1951 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t03040li6                              02-Apr-03   Elapse:  08:00.5       1
Samp:  Vial 43 WO=2427:46CS3 Meth=F8 Dil=1                Start :  02:21:54    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS3
Oper:  PMP           Client:  STL Knoxville               Inlet :  GC     Vial  43
Peak:  100.00  ppm     Label wndw:   1950 > 2224          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
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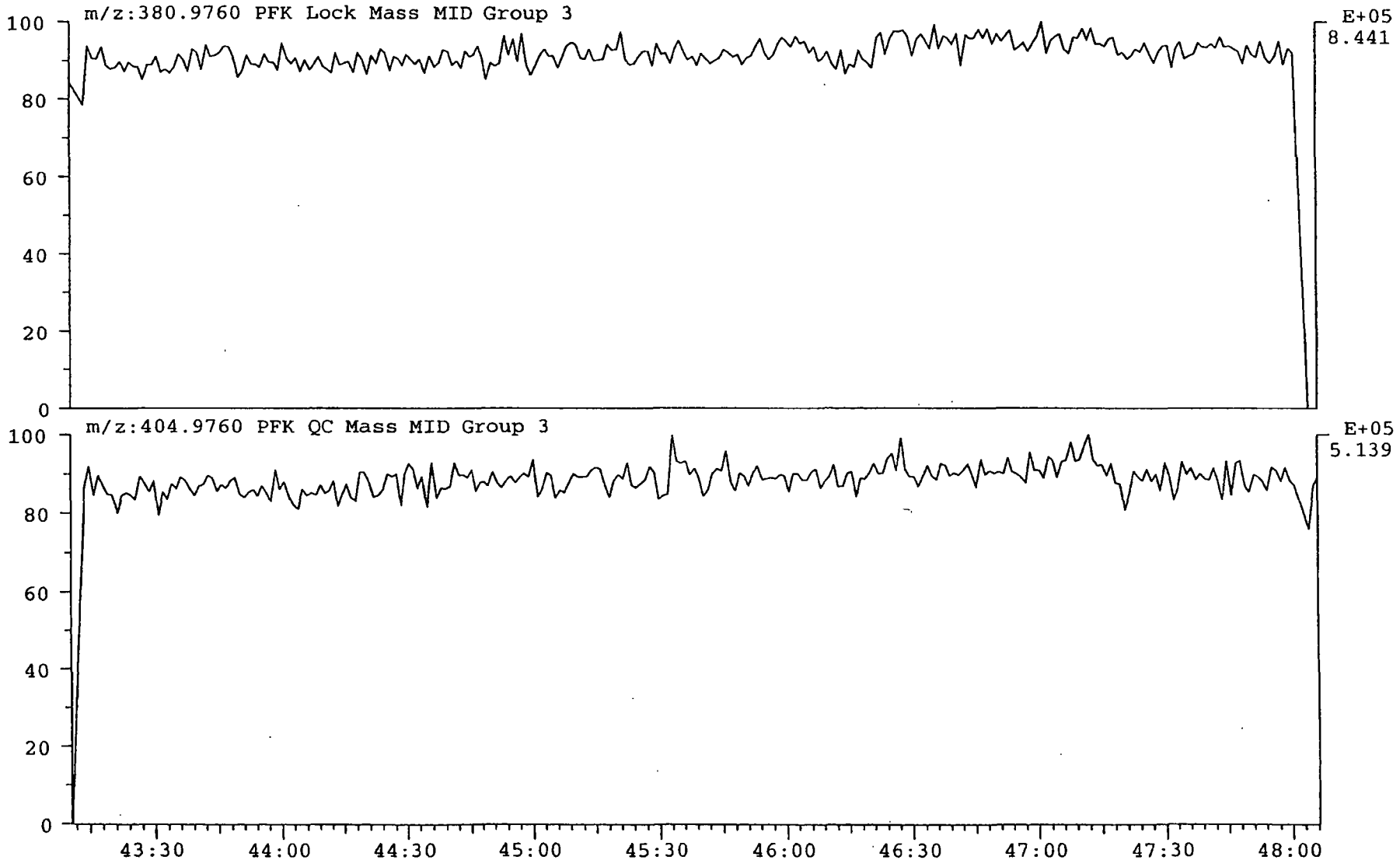
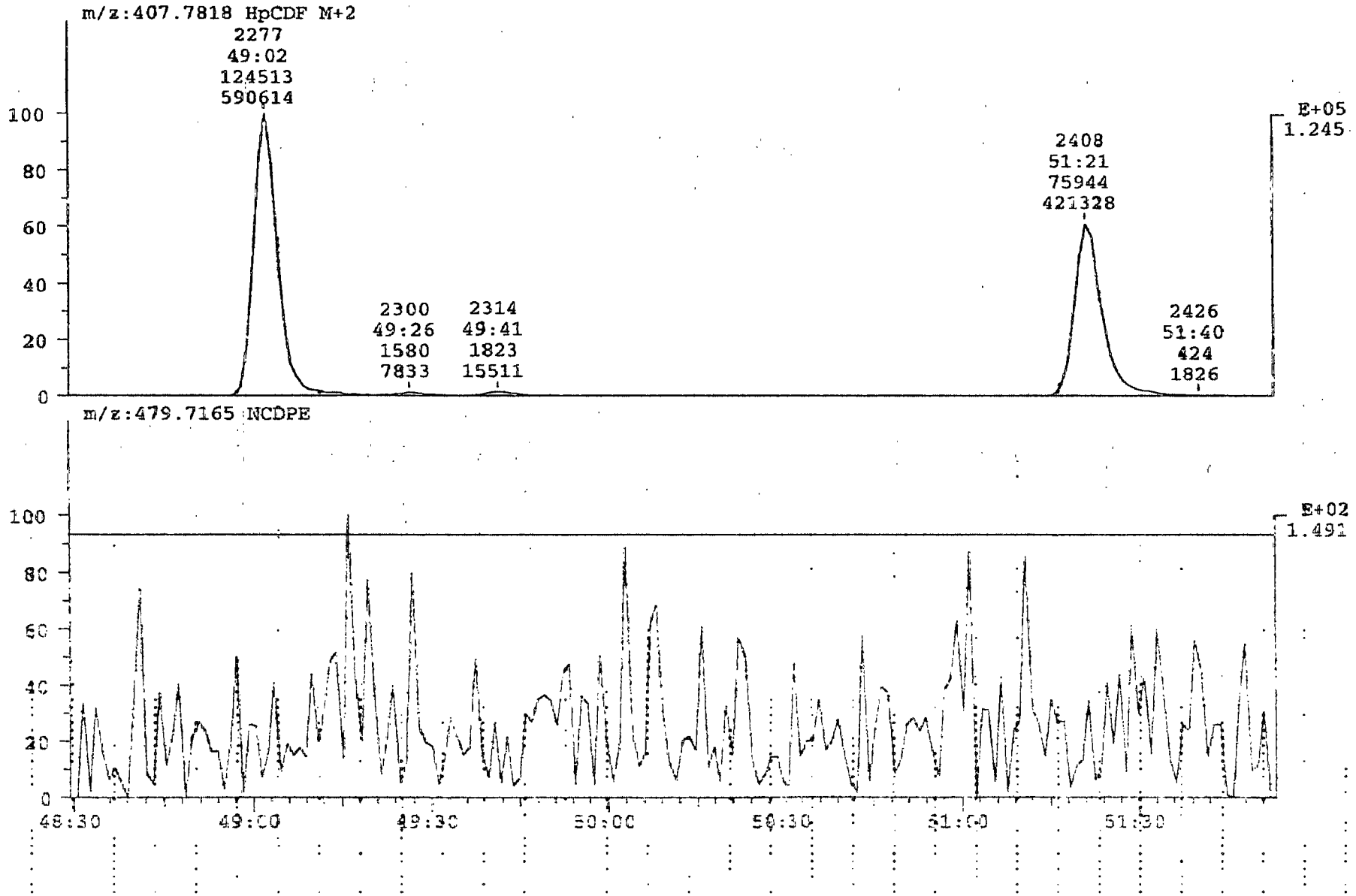


CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2222 > 2523 Masses: 293 > 514
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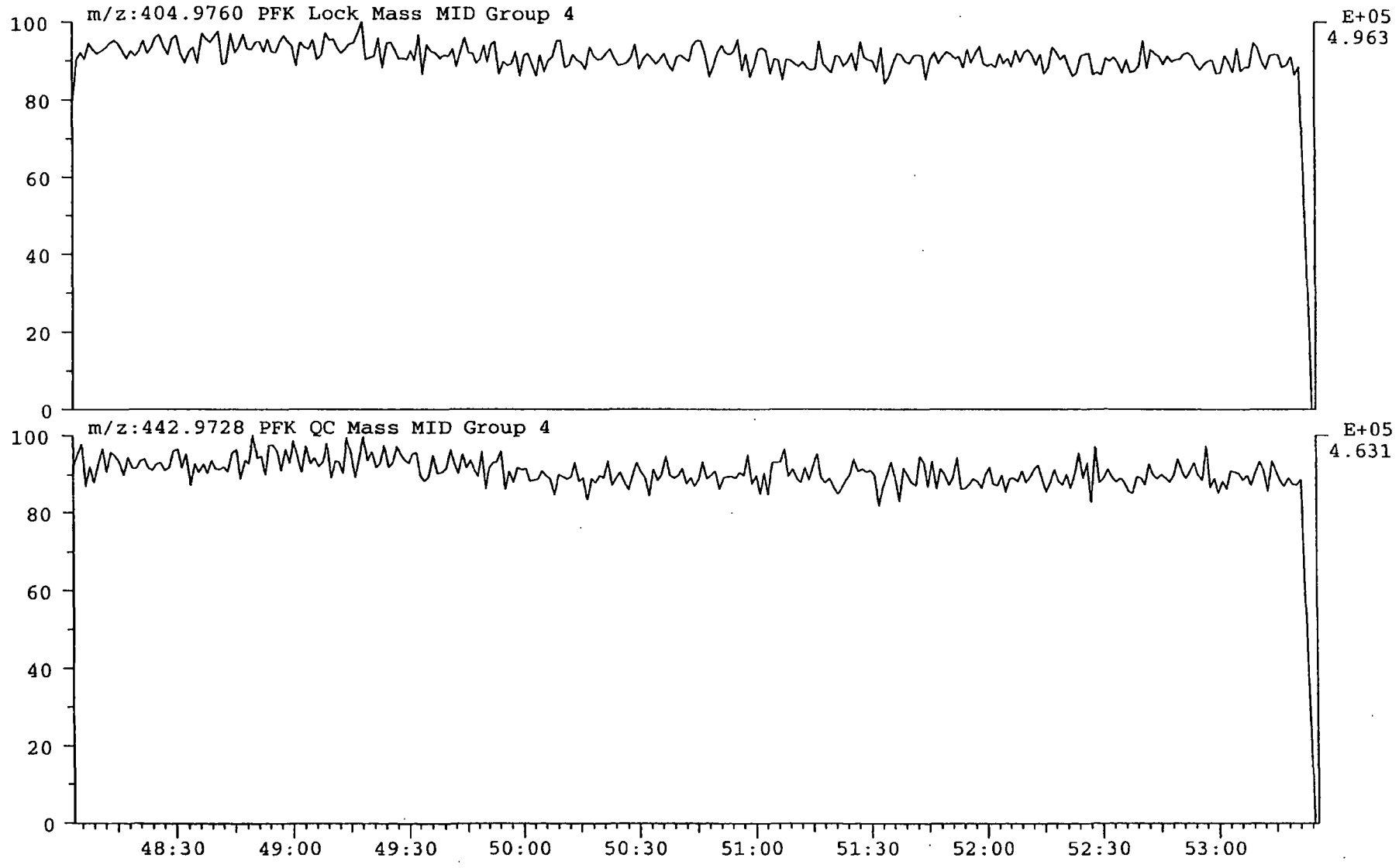
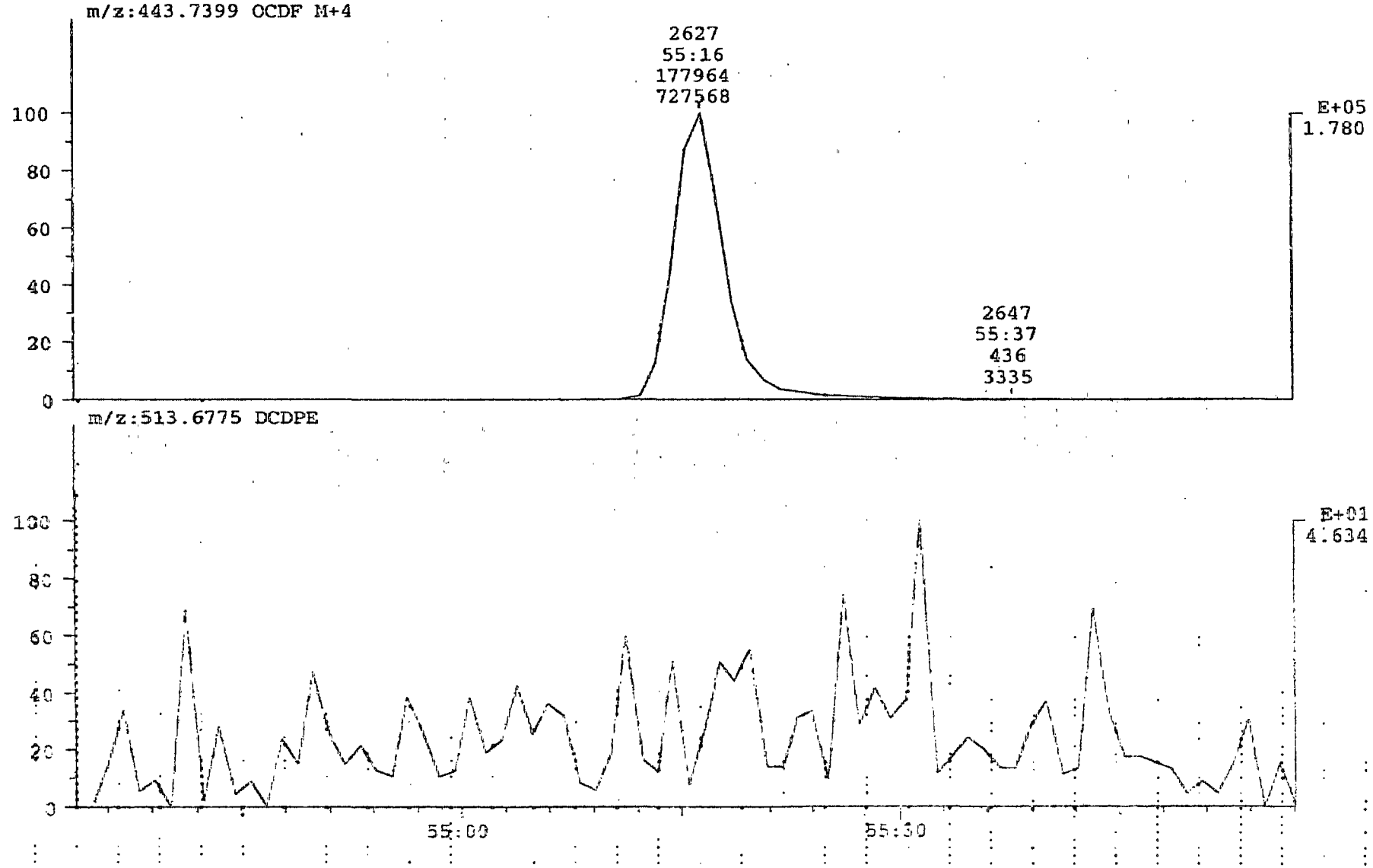
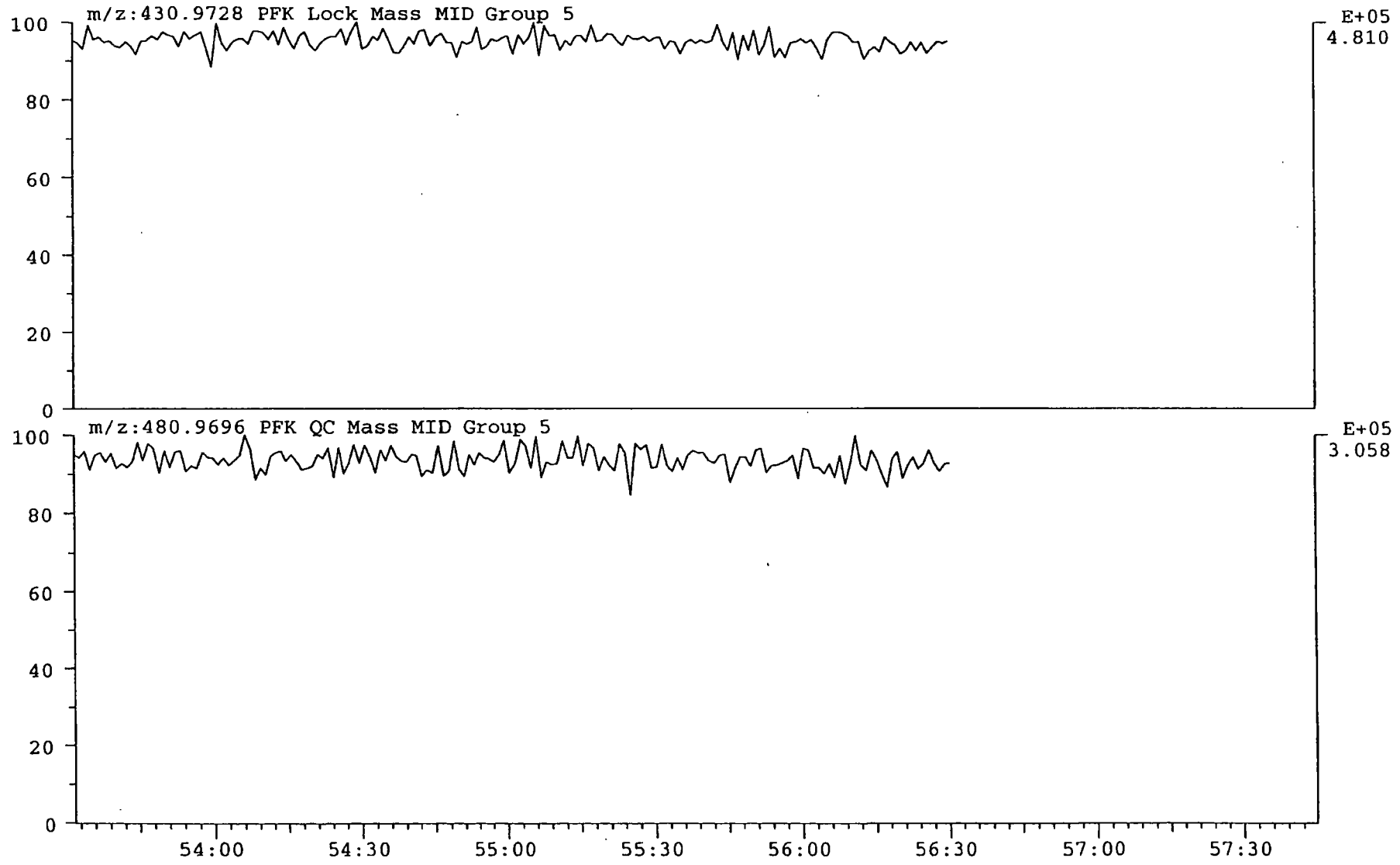


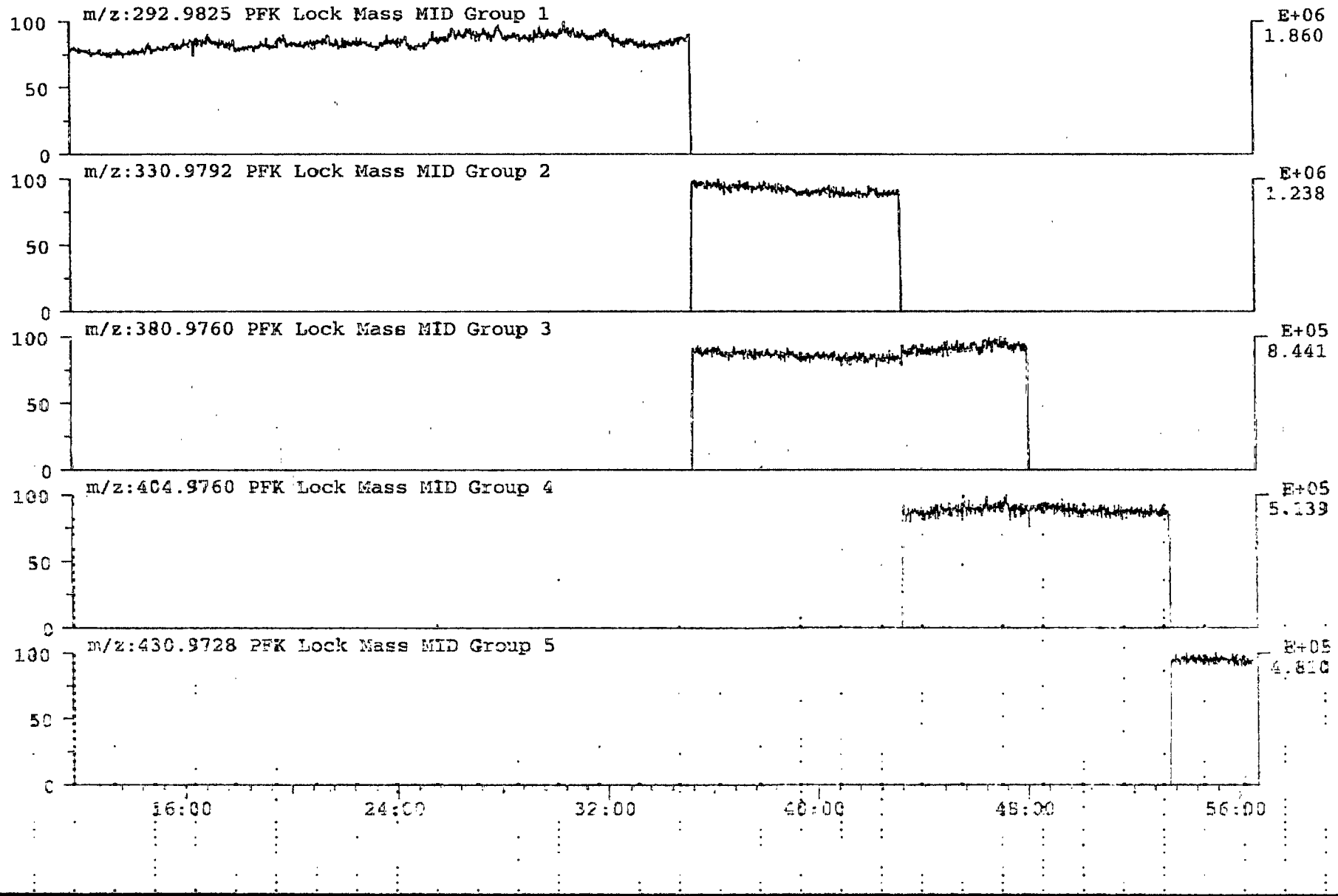
CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i6 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 2529 > 2765 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



CHRO: t03040116 02-Apr-03 Elapse: 08:00.5 1
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43
Peak: 100.00 ppm Label wndw: 210 > 2707 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: t030401i6
Study: ICAL/CS3
Sample: WO=2427:46CS3 Meth=F8 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Injected volume: 2.0
Sample from Vial 43
Analysis will stop when MID run finishes
Tune file name: tune2
Single File
ICL procedure: sleep6x
ICIS procedure: tstd $
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.35 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 27:12 min | 35:12 min | 1.00 sec |
| # 2 | 35:12 min | 7:58 min | 43:10 min | 1.00 sec |
| # 3 | 43:10 min | 4:50 min | 48:00 min | 1.00 sec |
| # 4 | 48:00 min | 5:20 min | 53:20 min | 1.00 sec |
| # 5 | 53:20 min | 5:00 min | 58:20 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
 Loop clean w slvnt A (LC):      0 times
 Loop clean w slvnt B (LB):      0 times
 Standard sample volume(X):    0.0 ul
 Standard air volume   (Y):    0.0 ul
 2nd Injection volume  (I):    0.0 ul
 Air volume of 2nd inj (J):    0.0 ul
 Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:          270 deg                          300 deg max
  Transfer Line:     290 deg                          300 deg max
  Column:            140 deg at    0.0 minutes        330 deg max
                     140 deg at    3.0 minutes
                     210 deg at    6.5 minutes
                     210 deg at   34.5 minutes
                     280 deg at   44.5 minutes
                     280 deg at   51.0 minutes
                     325 deg at   58.4 minutes
  Inlet    :
  Pressure         18.0 psi
  Splitless mode
  Purge time        1.5 min
  Purge flow       40.0 mL/min

   Gas saver is on
   Saver time        3.0 min
   Saver flow       15.0 mL/min

  Stabilize time    0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8498.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.5529 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 0.9999 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4918.0000 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.2088 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 189.5646 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.0000 | FREQ | 600.9615 |
| FSLOPE | 36000000.0000 | FVANAL | 155.0000 | FVINLET | 477.0000 |
| FVSRC | 901.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 156.0000 |
| HCURR | 1.4118 | HVANAL | 958.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4752.1320 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 304.9824 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 200.0000 | NSAM | 200.0000 | NSCAN | 11731.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10100.3188 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 2.0000 |
| SCIDLE | 1.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 0.0000 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1722.0000 | XLENSS | 179.6000 |
| YLENS | 2499.0000 | YLENSS | -38.6000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 02-Apr-03 02:21:54.9

Autosampler has injected sample from vial 43
Analysis stopped at: 02-Apr-03 03:18:25.9 (run time 56.51 minutes)
Analysis stopped because MID run finished

QUAN: t030401i6.q0 Entries: 69

Data file(s) used
File: t030401i6 02-Apr-03
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 320. | 31:44 | 1310 | 8116.729 | 86254.625 | 51.27 |
| 2 | 322. | 31:44 | 1310 | 10555.715 | 113383.437 | 61.42 |
| 3 | 332. | 31:06 | 1275 | 79425.773 | 769340.312 | 157.75 |
| 4 | 332. | 31:41 | 1307 | 76135.437 | 816393.562 | 157.75 |
| 5 | 334. | 31:06 | 1275 | 96888.781 | 947005.875 | 113.77 |
| 6 | 334. | 31:41 | 1307 | 96330.367 | 1040010.187 | 113.77 |
| 7 | 328. | 31:43 | 1309 | 17748.417 | 193073.281 | 68.47 |
| 8 | 356. | 41:41 | 1866 | 100656.546 | 474280.781 | 91.03 |
| 9 | 358. | 41:41 | 1866 | 64260.335 | 304469.812 | 75.13 |
| 10 | 368. | 41:39 | 1864 | 214351.171 | 952957.562 | 71.68 |
| 11 | 370. | 41:39 | 1864 | 140871.218 | 612798.562 | 74.05 |
| 12 | 390. | 45:56 | 2104 | 116721.710 | 432363.187 | 99.65 |
| 13 | 390. | 46:02 | 2110 | 118808.546 | 458953.406 | 99.65 |
| 14 | 390. | 46:26 | 2132 | 121556.453 | 468486.593 | 99.65 |
| 15 | 392. | 45:56 | 2104 | 93210.976 | 343768.843 | 65.61 |
| 16 | 392. | 46:02 | 2110 | 94791.031 | 368662.500 | 65.61 |
| 17 | 392. | 46:26 | 2132 | 96268.773 | 370126.656 | 65.61 |
| 18 | 402. | 45:55 | 2103 | 212760.000 | 777538.937 | 87.22 |
| 19 | 402. | 46:01 | 2109 | 242428.046 | 900589.312 | 87.22 |
| 20 | 402. | 46:25 | 2131 | 224927.859 | 841122.437 | 87.22 |
| 21 | 404. | 45:55 | 2103 | 165630.265 | 615767.125 | 84.06 |
| 22 | 404. | 46:01 | 2109 | 193407.656 | 707668.437 | 84.06 |
| 23 | 404. | 46:25 | 2131 | 174953.859 | 668951.312 | 84.06 |
| 24 | 424. | 50:42 | 2371 | 69322.937 | 347460.093 | 50.60 |
| 25 | 426. | 50:42 | 2371 | 66472.242 | 333066.500 | 60.90 |
| 26 | 436. | 50:41 | 2370 | 137784.921 | 710735.187 | 55.40 |
| 27 | 438. | 50:41 | 2370 | 132146.921 | 675710.812 | 46.13 |
| 28 | 458. | 55:08 | 2619 | 138530.796 | 589140.625 | 68.31 |
| 29 | 460. | 55:08 | 2619 | 161728.765 | 663043.375 | 79.41 |
| 30 | 470. | 55:07 | 2618 | 259866.828 | 1109821.625 | 46.10 |
| 31 | 472. | 55:07 | 2618 | 290888.906 | 1238185.875 | 74.70 |
| 32 | 304. | 29:44 | 1200 | 11791.905 | 119223.492 | 58.89 |
| 33 | 306. | 29:44 | 1200 | 14631.454 | 149369.468 | 66.17 |
| 34 | 316. | 29:42 | 1198 | 122638.390 | 1211237.000 | 84.10 |
| 35 | 318. | 29:42 | 1198 | 155507.406 | 1526691.750 | 120.79 |
| 36 | 340. | 39:52 | 1763 | 127218.828 | 704474.437 | 125.46 |
| 37 | 340. | 41:08 | 1835 | 150523.640 | 717704.687 | 125.46 |
| 38 | 342. | 39:52 | 1763 | 77957.882 | 442293.437 | 94.59 |
| 39 | 342. | 41:08 | 1835 | 100276.171 | 464207.625 | 94.59 |
| 40 | 352. | 39:51 | 1762 | 269745.718 | 1443761.125 | 99.52 |
| 41 | 352. | 41:07 | 1834 | 313740.812 | 1411478.375 | 99.52 |
| 42 | 354. | 39:51 | 1762 | 169373.562 | 898195.687 | 98.52 |
| 43 | 354. | 41:07 | 1834 | 193899.046 | 890213.687 | 98.52 |
| 44 | 374. | 44:54 | 2046 | 195951.734 | 653854.937 | 104.09 |
| 45 | 374. | 45:02 | 2053 | 170465.625 | 701992.875 | 104.09 |
| 46 | 374. | 45:45 | 2094 | 163030.531 | 628294.687 | 104.09 |
| 47 | 374. | 46:42 | 2147 | 119742.304 | 561208.625 | 104.09 |
| 48 | 376. | 44:54 | 2046 | 156019.921 | 527189.312 | 85.61 |
| 49 | 376. | 45:02 | 2053 | 139057.953 | 562044.812 | 85.61 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 376., | 45:45 | , | 2094, | 136304.265, | 513859.312, | 85.61, |
| 51, | 376., | 46:42 | , | 2147, | 97203.000, | 454000.531, | 85.61, |
| 52, | 384., | 44:53 | , | 2045, | 198847.453, | 665250.625, | 113.01, |
| 53, | 384., | 45:02 | , | 2053, | 182809.625, | 728358.187, | 113.01, |
| 54, | 384., | 45:44 | , | 2093, | 181543.515, | 679774.250, | 113.01, |
| 55, | 384., | 46:41 | , | 2146, | 127604.265, | 574407.062, | 113.01, |
| 56, | 386., | 44:53 | , | 2045, | 378331.875, | 1267174.250, | 110.26, |
| 57, | 386., | 45:01 | , | 2052, | 344966.937, | 1380503.625, | 110.26, |
| 58, | 386., | 45:44 | , | 2093, | 348545.468, | 1283488.250, | 110.25, |
| 59, | 386., | 46:41 | , | 2146, | 237531.875, | 1088876.375, | 110.26, |
| 60, | 408., | 49:02 | , | 2277, | 124512.757, | 588130.687, | 72.34, |
| 61, | 408., | 51:21 | , | 2408, | 75943.671, | 420588.718, | 72.34, |
| 62, | 410., | 49:02 | , | 2277, | 114307.367, | 558355.875, | 74.15, |
| 63, | 410., | 51:21 | , | 2408, | 74000.898, | 409701.093, | 74.15, |
| 64, | 418., | 49:01 | , | 2276, | 104460.171, | 480305.218, | 56.75, |
| 65, | 418., | 51:20 | , | 2407, | 66122.398, | 361377.562, | 56.75, |
| 66, | 420., | 49:01 | , | 2276, | 224060.593, | 1056672.500, | 68.68, |
| 67, | 420., | 51:20 | , | 2407, | 149152.765, | 800749.750, | 68.68, |
| 68, | 442., | 55:16 | , | 2627, | 158758.671, | 651091.500, | 64.69, |
| 69, | 444., | 55:16 | , | 2627, | 177964.093, | 725299.687, | 63.77, |

QUAN: t030401i6.q0 Entries: 69

Data file(s) used
File: t030401i6 02-Apr-03
Samp: Vial 43 WO=2427:46CS3 Meth=F8 Dil=1 Start : 02:21:54 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS3
Oper: PMP Client: STL Knoxville Inlet : GC Vial 43

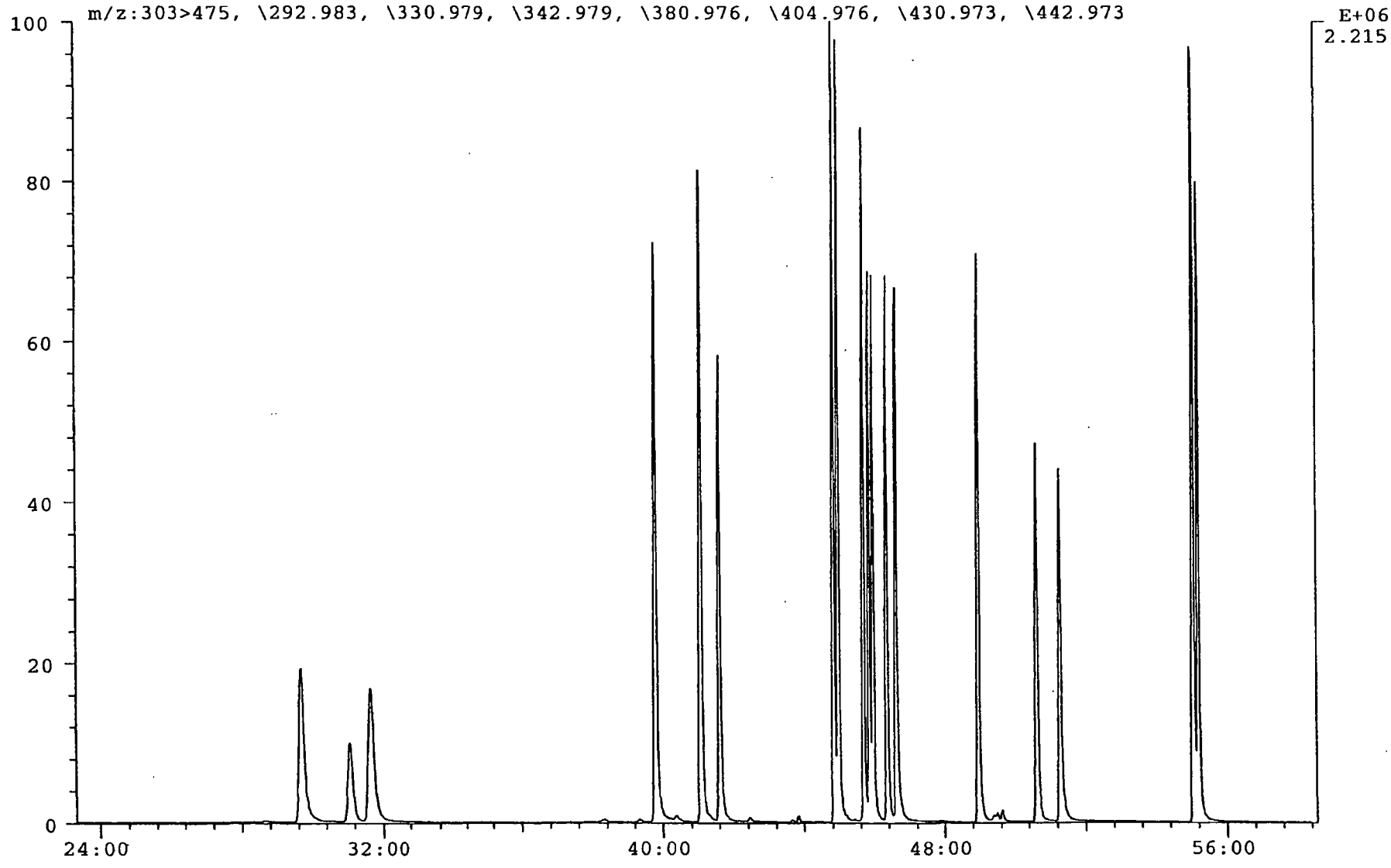
Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 31:44 | 86255. | 8117. | 31:31 | 32:00 | 51. | 2 | 3.0 |
| 321.8775 | 31:44 | 113383. | 10556. | 31:31 | 31:59 | 61. | 2 | 3.0 |
| 331.9202 | 31:06 | 769340. | 79426. | 30:49 | 31:22 | 158. | 2 | 3.0 |
| 331.9202 | 31:40 | 816394. | 76135. | 31:26 | 31:57 | 158. | 2 | 3.0 |
| 333.9171 | 31:06 | 947006. | 96889. | 30:51 | 31:22 | 114. | 2 | 3.0 |
| 333.9171 | 31:40 | 1040010. | 96330. | 31:27 | 31:57 | 114. | 2 | 3.0 |
| 327.8683 | 31:43 | 193073. | 17748. | 31:30 | 31:59 | 68. | 2 | 3.0 |
| 303.8864 | 29:44 | 119223. | 11792. | 29:33 | 30:00 | 59. | 2 | 3.0 |
| 305.8834 | 29:44 | 149369. | 14631. | 29:33 | 30:00 | 66. | 2 | 3.0 |
| 315.9261 | 29:42 | 1211237. | 122638. | 29:30 | 29:58 | 84. | 2 | 3.0 |
| 317.9230 | 29:42 | 1526692. | 155507. | 29:27 | 29:58 | 121. | 2 | 3.0 |
| 355.8368 | 41:41 | 474281. | 100657. | 41:34 | 41:57 | 91. | 2 | 3.0 |
| 357.8337 | 41:41 | 304470. | 64260. | 41:35 | 41:57 | 75. | 2 | 3.0 |
| 367.8765 | 41:39 | 952958. | 214351. | 41:34 | 41:55 | 72. | 2 | 3.0 |
| 369.8734 | 41:39 | 612799. | 140871. | 41:34 | 41:55 | 74. | 2 | 3.0 |
| 339.8427 | 39:52 | 704474. | 127219. | 39:40 | 40:08 | 125. | 2 | 3.0 |
| 339.8427 | 41:08 | 717705. | 150524. | 41:02 | 41:24 | 125. | 2 | 3.0 |
| 341.8396 | 39:52 | 442293. | 77958. | 39:41 | 40:08 | 95. | 2 | 3.0 |
| 341.8396 | 41:08 | 464208. | 100276. | 41:01 | 41:24 | 95. | 2 | 3.0 |
| 351.8824 | 39:51 | 1443761. | 269746. | 39:40 | 40:06 | 100. | 2 | 3.0 |
| 351.8824 | 41:07 | 1411478. | 313741. | 41:01 | 41:23 | 100. | 2 | 3.0 |
| 353.8793 | 39:51 | 898196. | 169374. | 39:41 | 40:07 | 99. | 2 | 3.0 |
| 353.8793 | 41:07 | 890214. | 193899. | 41:01 | 41:23 | 99. | 2 | 3.0 |
| 389.7961 | 45:56 | 432363. | 116722. | 45:51 | 45:59 | 100. | 2 | 3.0 |
| 389.7961 | 46:02 | 458953. | 118809. | 45:59 | 46:18 | 100. | 2 | 3.0 |
| 389.7961 | 46:26 | 468487. | 121556. | 46:20 | 46:37 | 100. | 2 | 3.0 |
| 391.7931 | 45:56 | 343769. | 93211. | 45:50 | 45:59 | 66. | 2 | 3.0 |
| 391.7931 | 46:02 | 368662. | 94791. | 45:59 | 46:18 | 66. | 2 | 3.0 |
| 391.7931 | 46:26 | 370127. | 96269. | 46:20 | 46:37 | 66. | 2 | 3.0 |
| 401.8358 | 45:55 | 777539. | 212760. | 45:49 | 45:58 | 87. | 2 | 3.0 |
| 401.8358 | 46:01 | 900589. | 242428. | 45:58 | 46:17 | 87. | 2 | 3.0 |
| 401.8358 | 46:25 | 841122. | 224928. | 46:18 | 46:40 | 87. | 2 | 3.0 |
| 403.8327 | 45:55 | 615767. | 165630. | 45:49 | 45:58 | 84. | 2 | 3.0 |
| 403.8327 | 46:01 | 707668. | 193408. | 45:58 | 46:17 | 84. | 2 | 3.0 |
| 403.8327 | 46:25 | 668951. | 174954. | 46:19 | 46:41 | 84. | 2 | 3.0 |
| 373.8021 | 44:54 | 653855. | 195952. | 44:48 | 44:59 | 104. | 2 | 3.0 |
| 373.8021 | 45:02 | 701993. | 170466. | 44:59 | 45:18 | 104. | 2 | 3.0 |
| 373.8021 | 45:45 | 628295. | 163031. | 45:36 | 46:00 | 104. | 2 | 3.0 |
| 373.8021 | 46:42 | 561209. | 119742. | 46:35 | 46:58 | 104. | 2 | 3.0 |
| 375.7990 | 44:54 | 527189. | 156020. | 44:41 | 44:59 | 86. | 2 | 3.0 |
| 375.7990 | 45:02 | 562045. | 139058. | 44:59 | 45:18 | 86. | 2 | 3.0 |
| 375.7990 | 45:45 | 513859. | 136304. | 45:35 | 46:01 | 86. | 2 | 3.0 |
| 375.7990 | 46:42 | 454001. | 97203. | 46:35 | 46:58 | 86. | 2 | 3.0 |
| 383.8447 | 44:53 | 665251. | 198847. | 44:48 | 44:58 | 113. | 2 | 3.0 |
| 383.8447 | 45:02 | 728358. | 182810. | 44:58 | 45:18 | 113. | 2 | 3.0 |
| 383.8447 | 45:44 | 679774. | 181544. | 45:34 | 46:00 | 113. | 2 | 3.0 |
| 383.8447 | 46:41 | 574407. | 127604. | 46:34 | 46:57 | 113. | 2 | 3.0 |
| 385.8417 | 44:53 | 1267174. | 378332. | 44:47 | 44:58 | 110. | 2 | 3.0 |
| 385.8417 | 45:01 | 1380504. | 344967. | 44:58 | 45:17 | 110. | 2 | 3.0 |

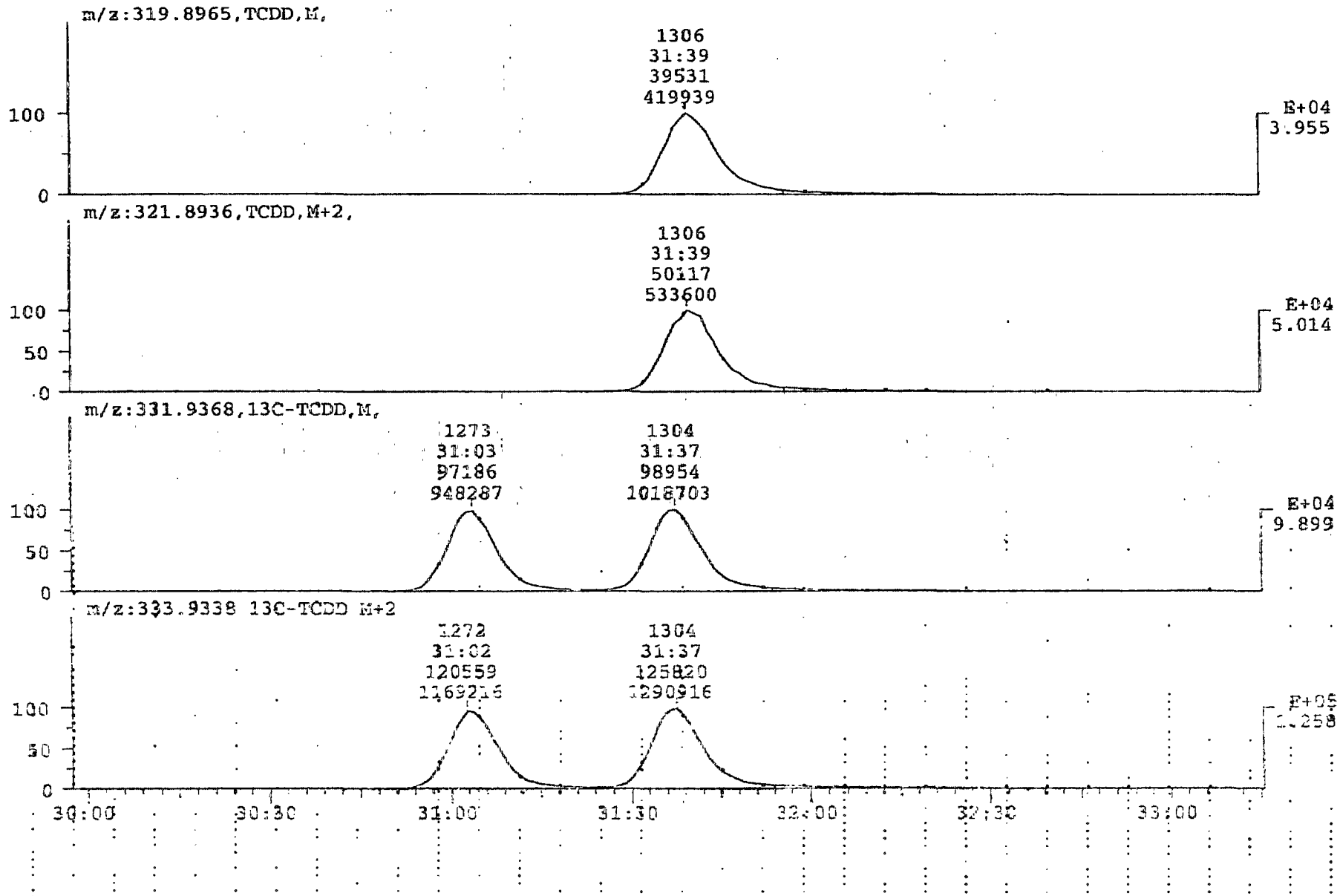
| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 385.8417 | 45:44 | 1283488. | 348545. | 45:36 | 46:00 | 110. | 2 3.0 |
| 385.8417 | 46:41 | 1088876. | 237532. | 46:29 | 46:57 | 110. | 2 3.0 |
| 423.7555 | 50:42 | 347460. | 69323. | 50:34 | 50:58 | 51. | 2 3.0 |
| 425.7524 | 50:42 | 333066. | 66472. | 50:34 | 50:58 | 61. | 2 3.0 |
| 435.7951 | 50:41 | 710735. | 137785. | 50:33 | 50:57 | 55. | 2 3.0 |
| 437.7921 | 50:41 | 675711. | 132147. | 50:32 | 50:57 | 46. | 2 3.0 |
| 407.7614 | 49:02 | 588131. | 124513. | 48:52 | 49:18 | 72. | 2 3.0 |
| 407.7614 | 51:21 | 420589. | 75944. | 51:14 | 51:37 | 72. | 2 3.0 |
| 409.7583 | 49:02 | 558356. | 114307. | 48:48 | 49:18 | 74. | 2 3.0 |
| 409.7583 | 51:21 | 409701. | 74001. | 51:11 | 51:37 | 74. | 2 3.0 |
| 417.8041 | 49:01 | 480305. | 104460. | 48:53 | 49:17 | 57. | 2 3.0 |
| 417.8041 | 51:20 | 361378. | 66122. | 51:12 | 51:36 | 57. | 2 3.0 |
| 419.8010 | 49:01 | 1056673. | 224061. | 48:53 | 49:17 | 69. | 2 3.0 |
| 419.8010 | 51:20 | 800750. | 149153. | 51:12 | 51:36 | 69. | 2 3.0 |
| 457.7148 | 55:08 | 589141. | 138531. | 55:01 | 55:24 | 98. | 2 3.0 |
| 459.7118 | 55:08 | 663043. | 161729. | 54:59 | 55:24 | 79. | 2 3.0 |
| 469.7545 | 55:07 | 1109822. | 259867. | 55:00 | 55:22 | 46. | 2 3.0 |
| 471.7514 | 55:07 | 1238186. | 290889. | 55:01 | 55:22 | 75. | 2 3.0 |
| 441.7207 | 55:16 | 651091. | 158759. | 55:05 | 55:32 | 65. | 2 3.0 |
| 443.7177 | 55:16 | 725300. | 177964. | 55:01 | 55:32 | 64. | 2 3.0 |

CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 847 > 2811 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int Pmp 4-1-03
Calc Pmp 4-2-03
QC BKW 4/3/03



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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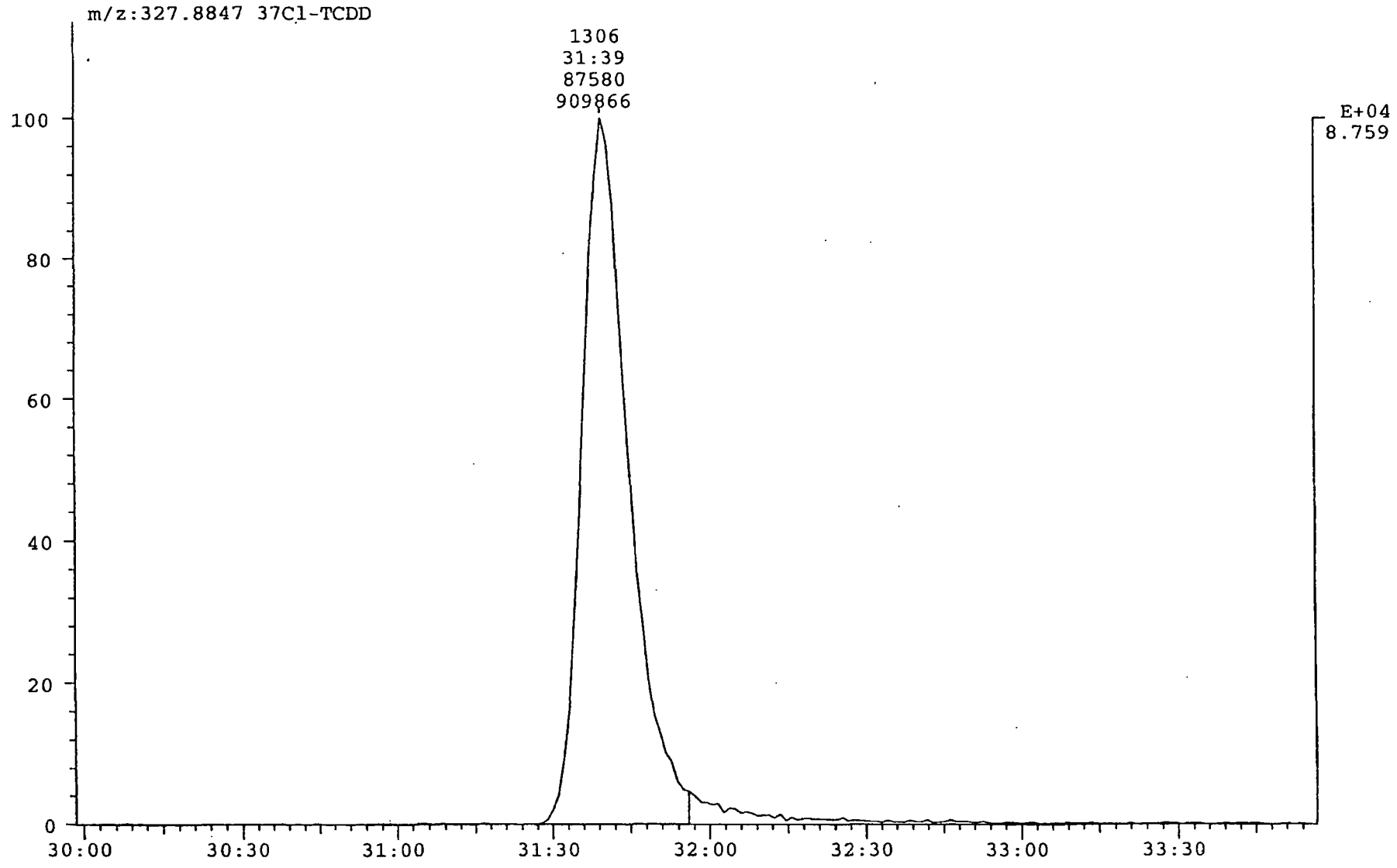
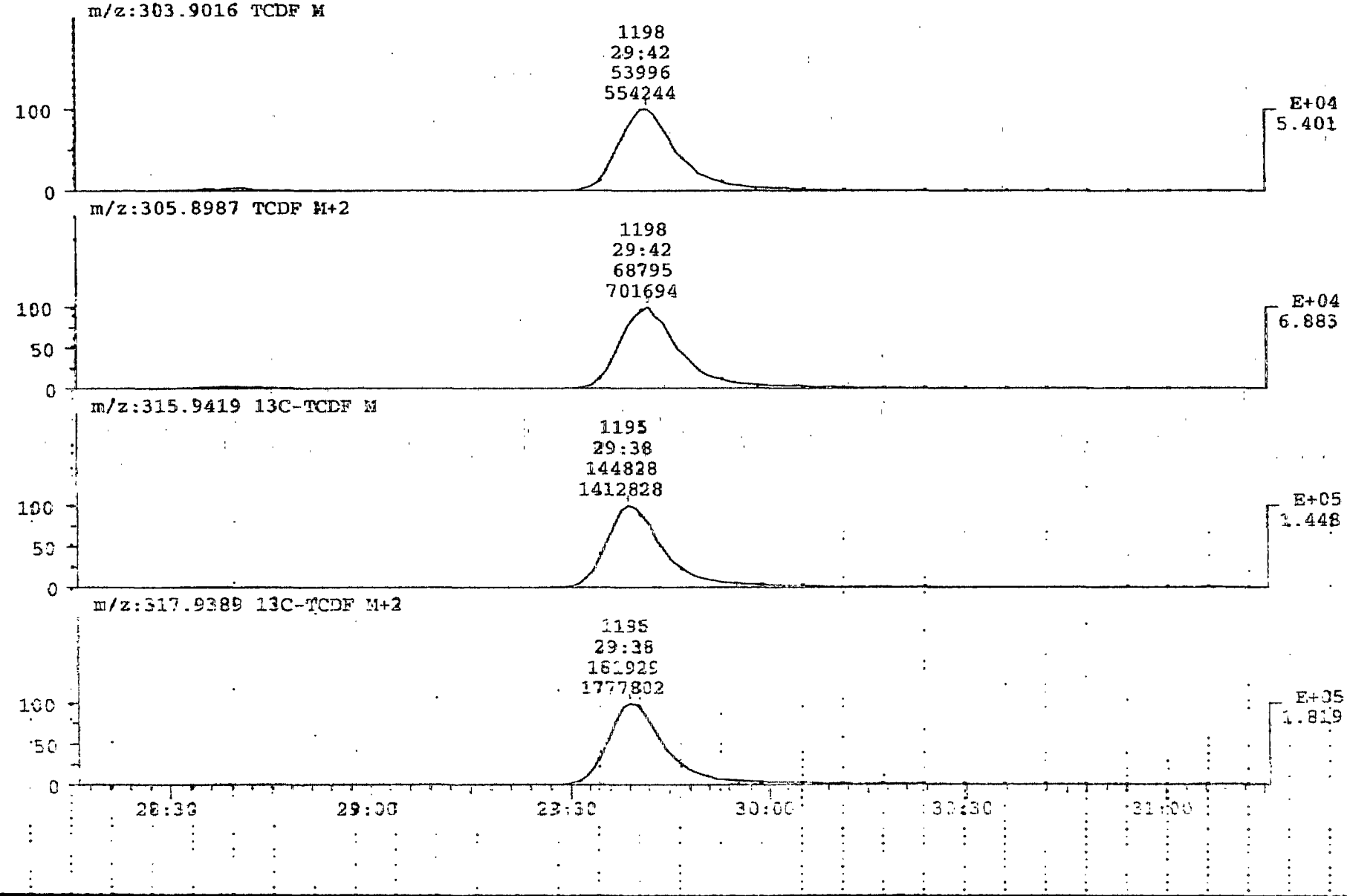
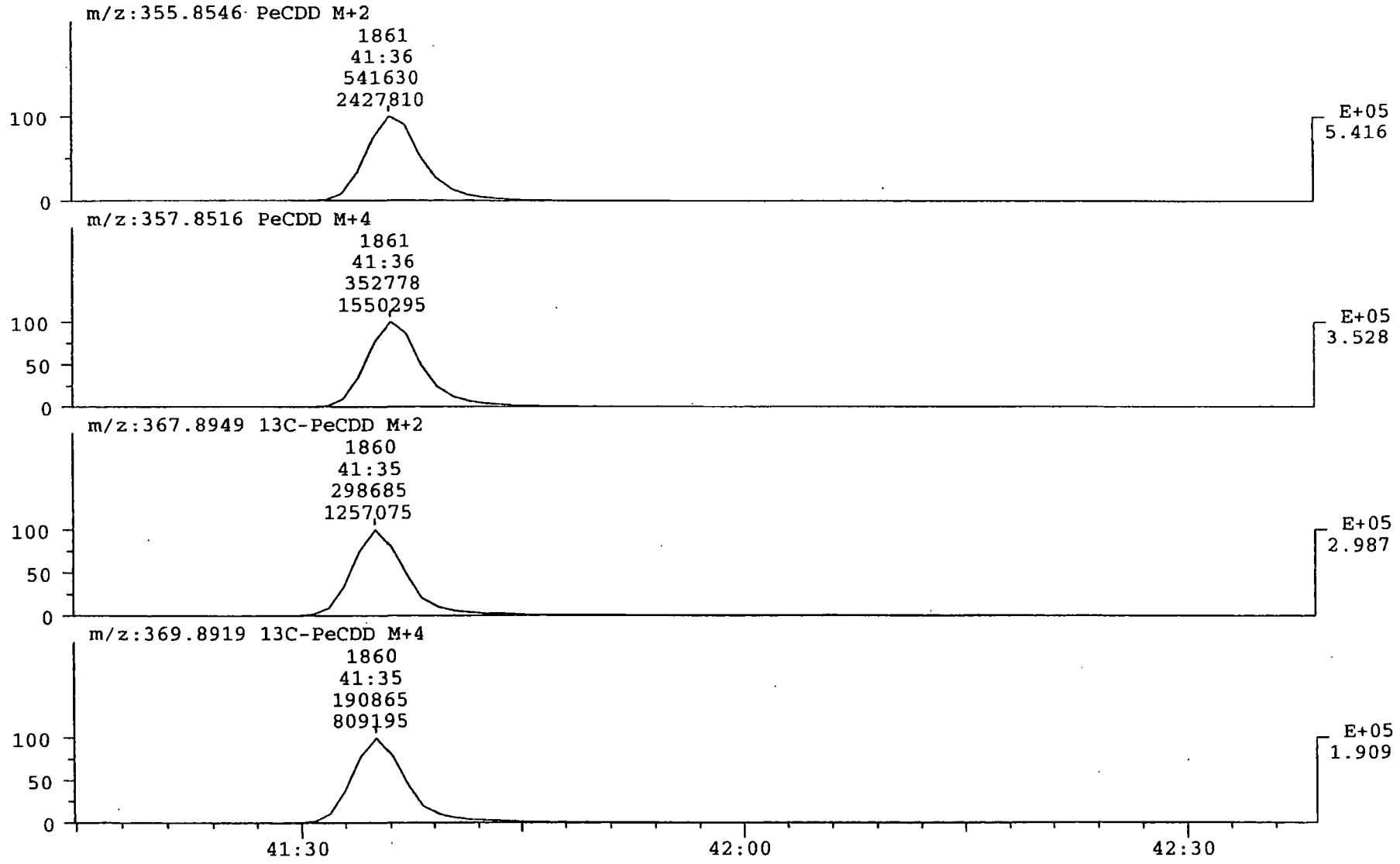
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



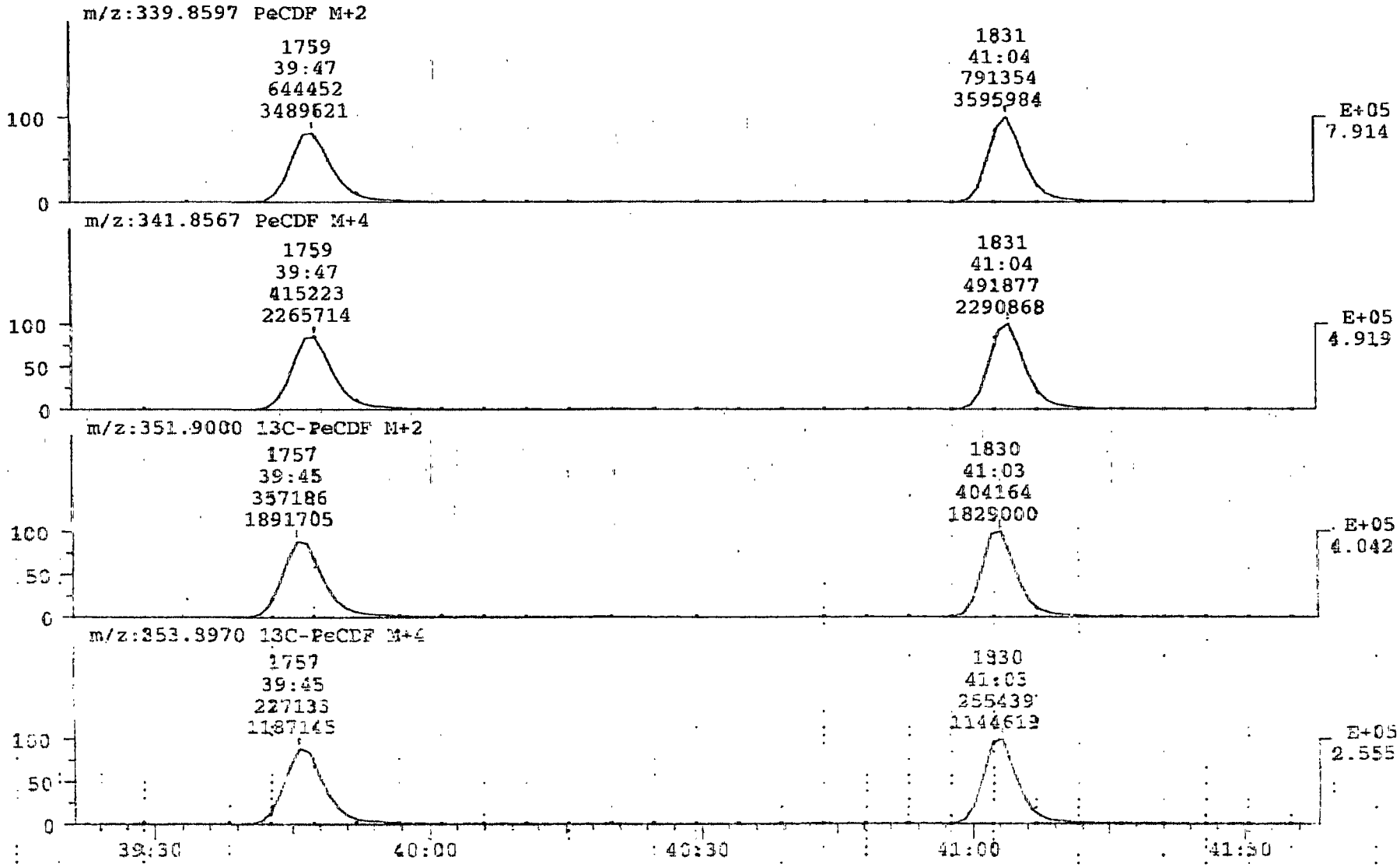
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



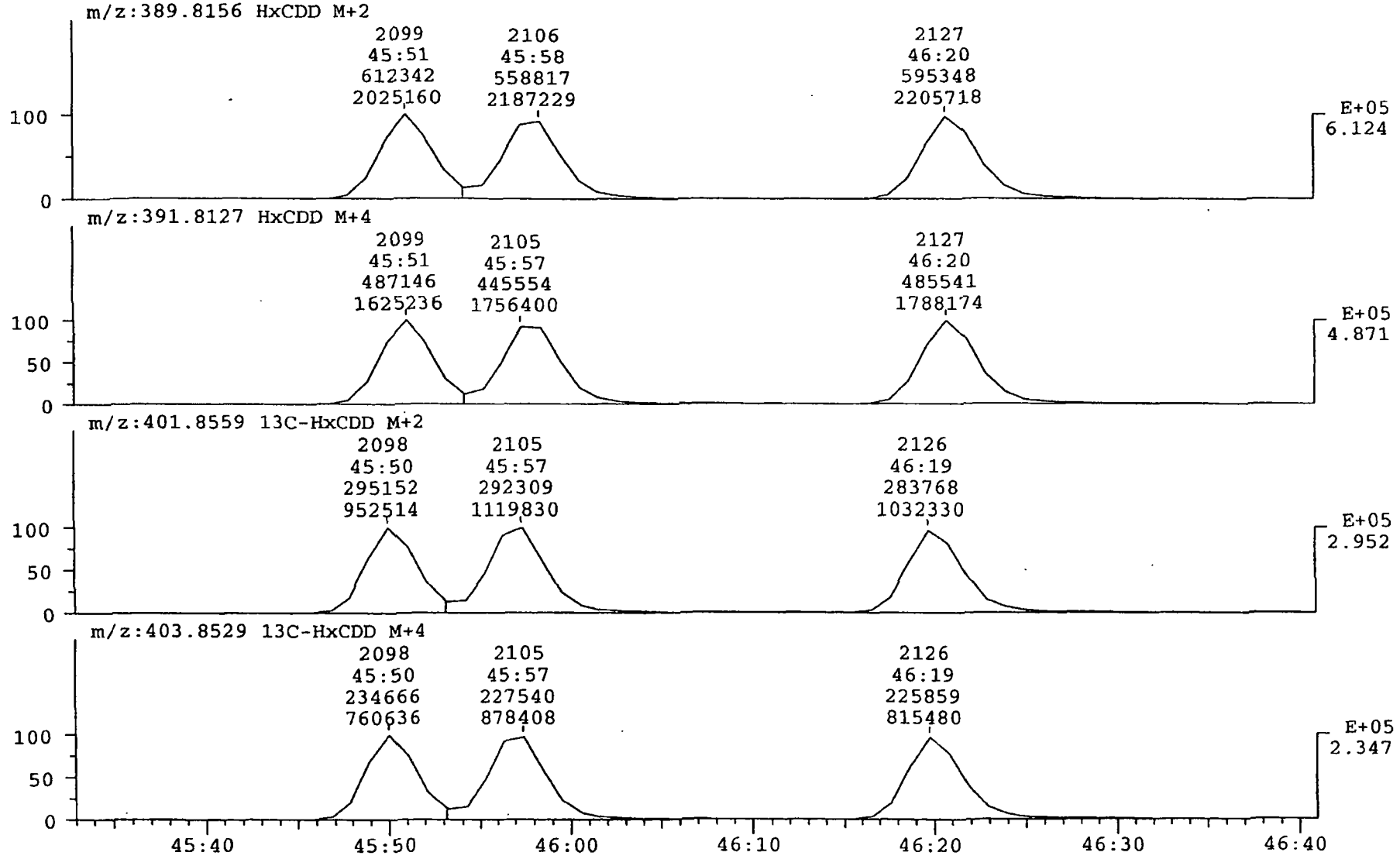
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



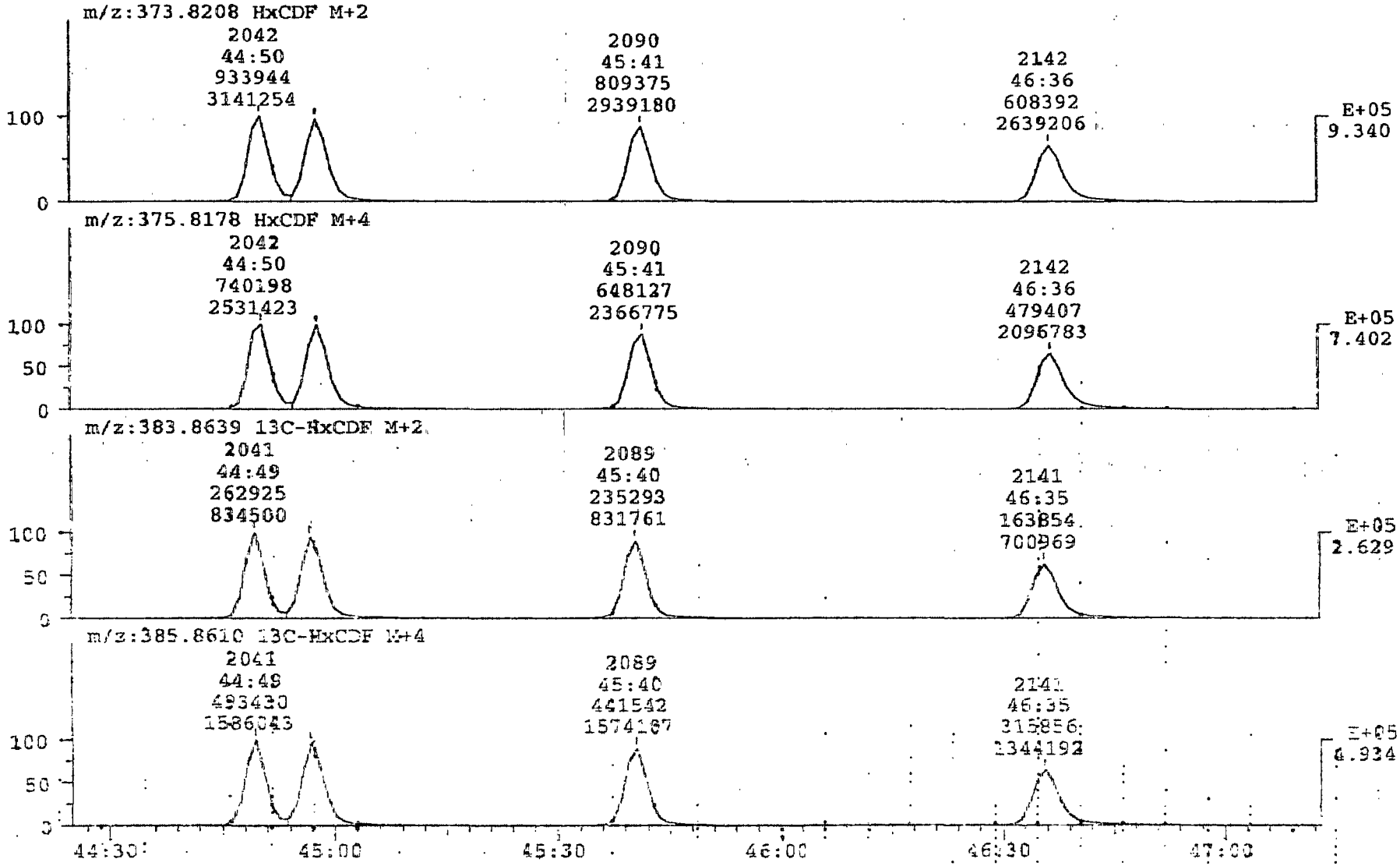
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



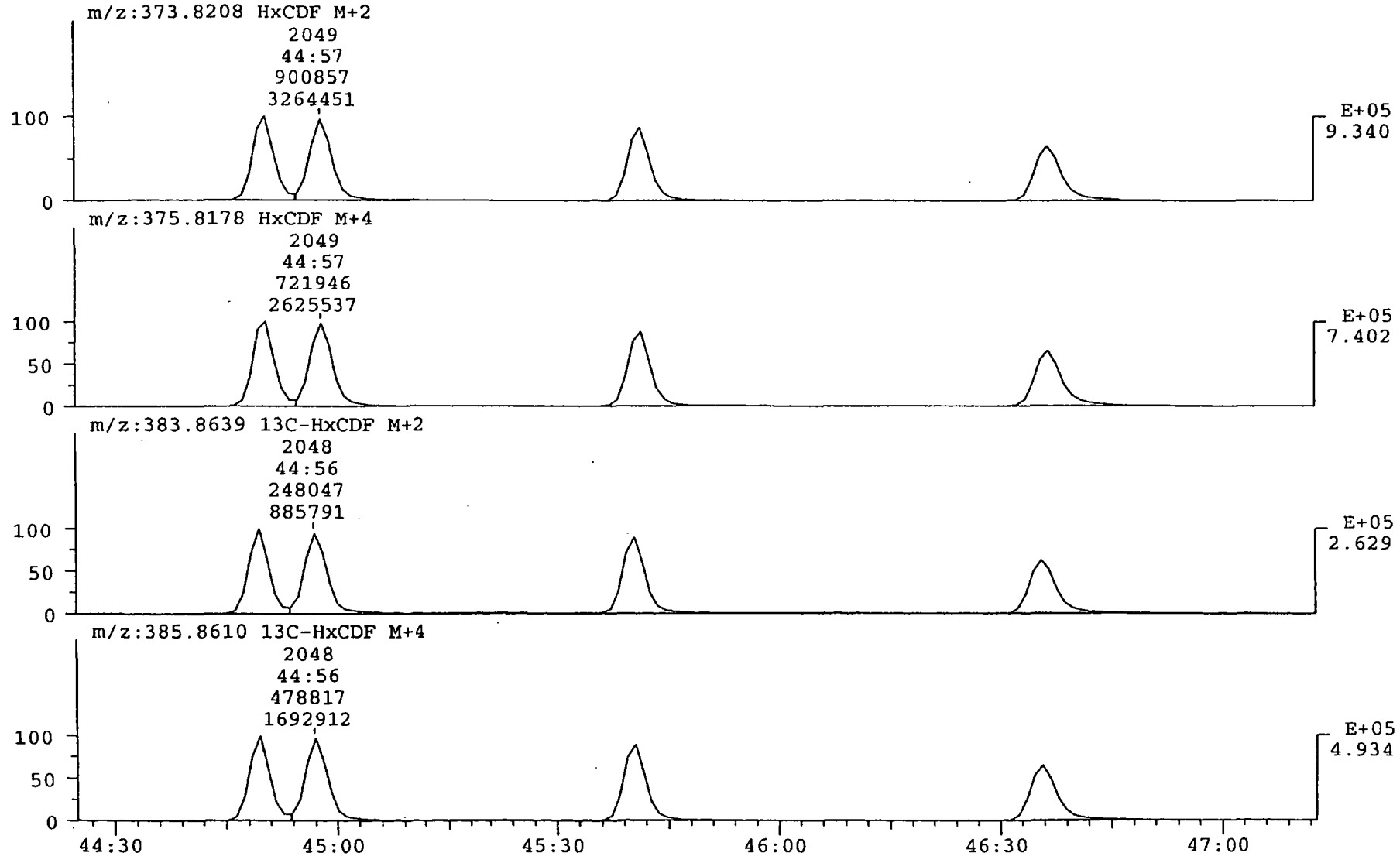
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



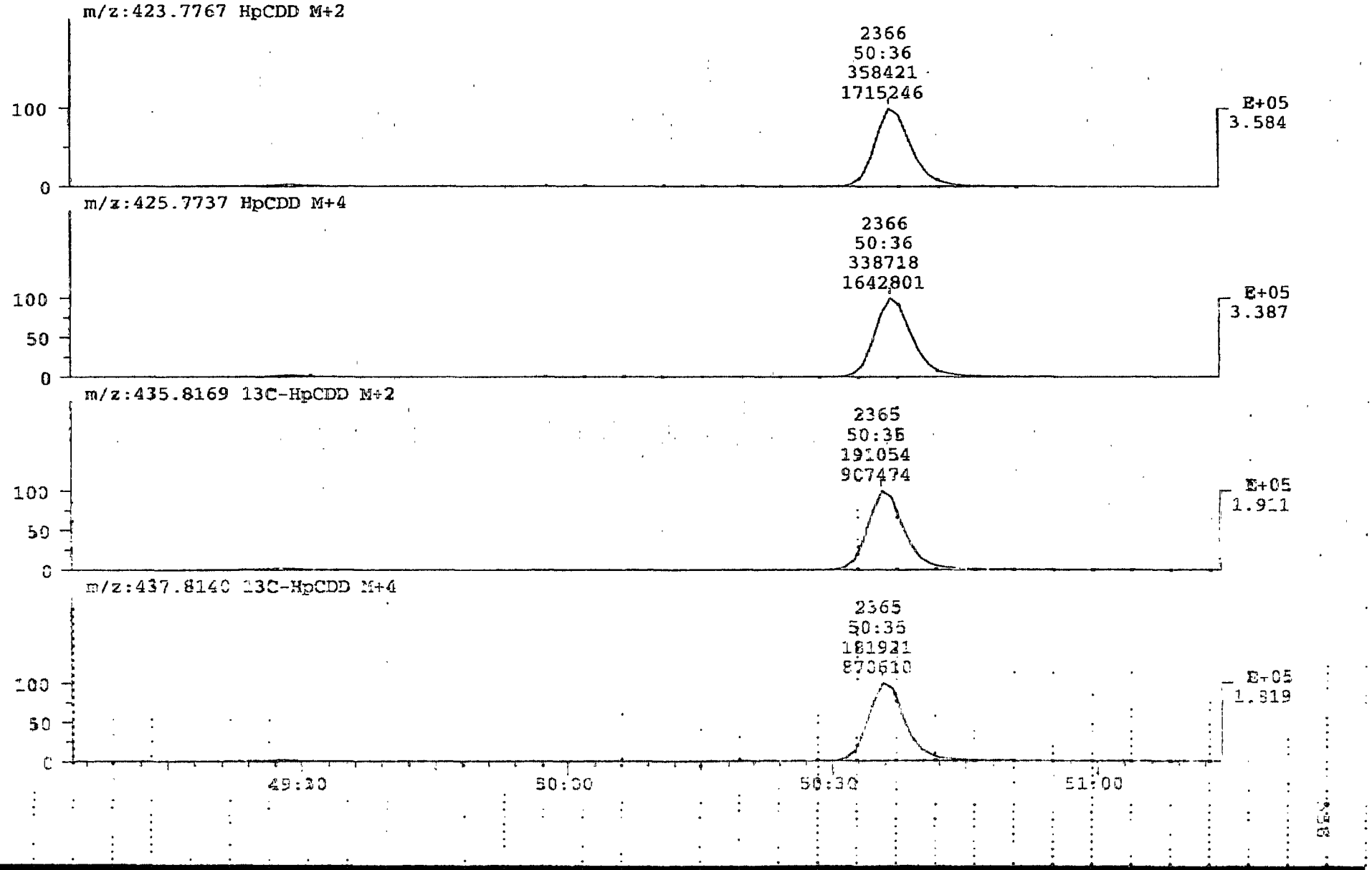
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t03040li4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2043 > 2053 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t03040114 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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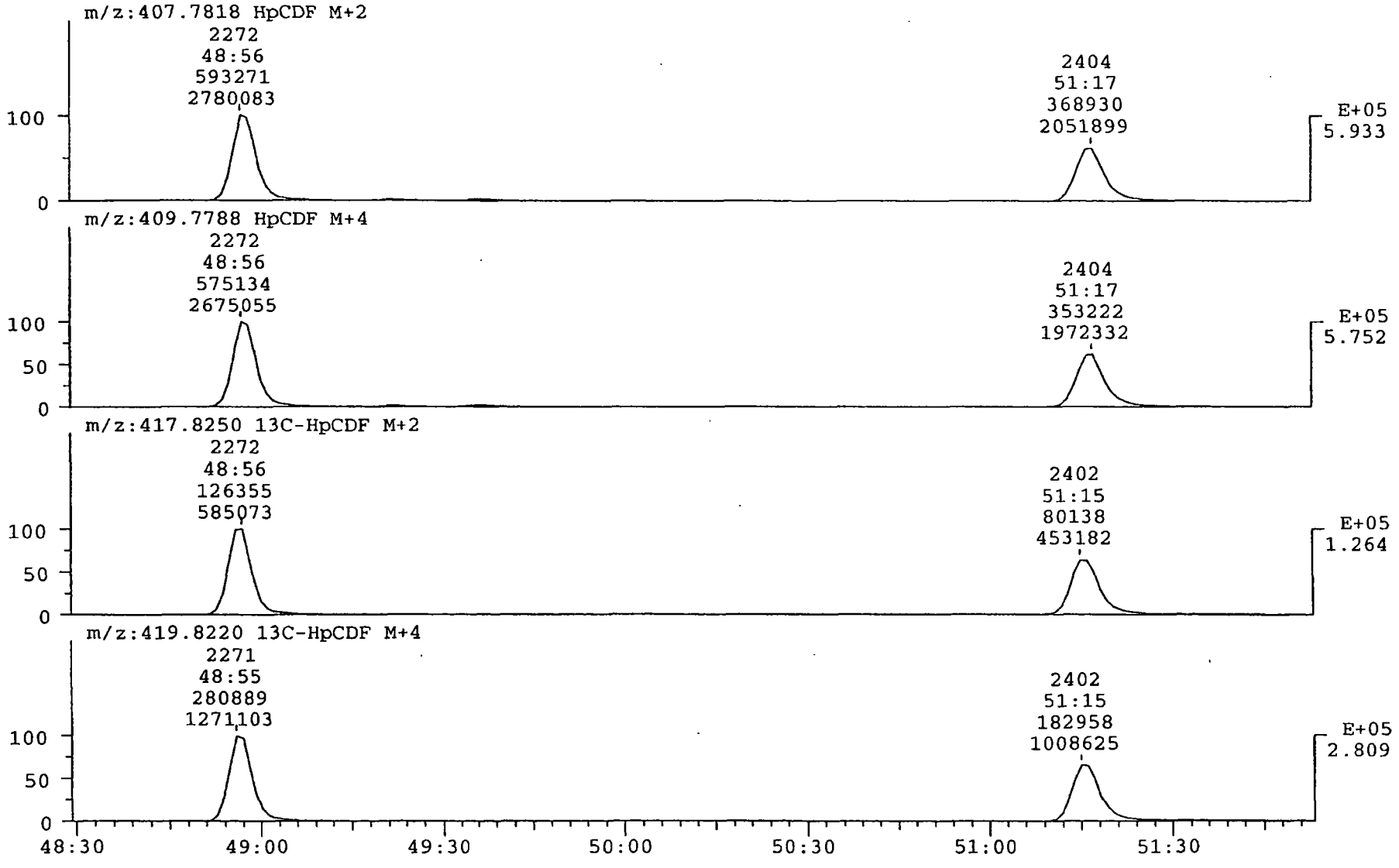
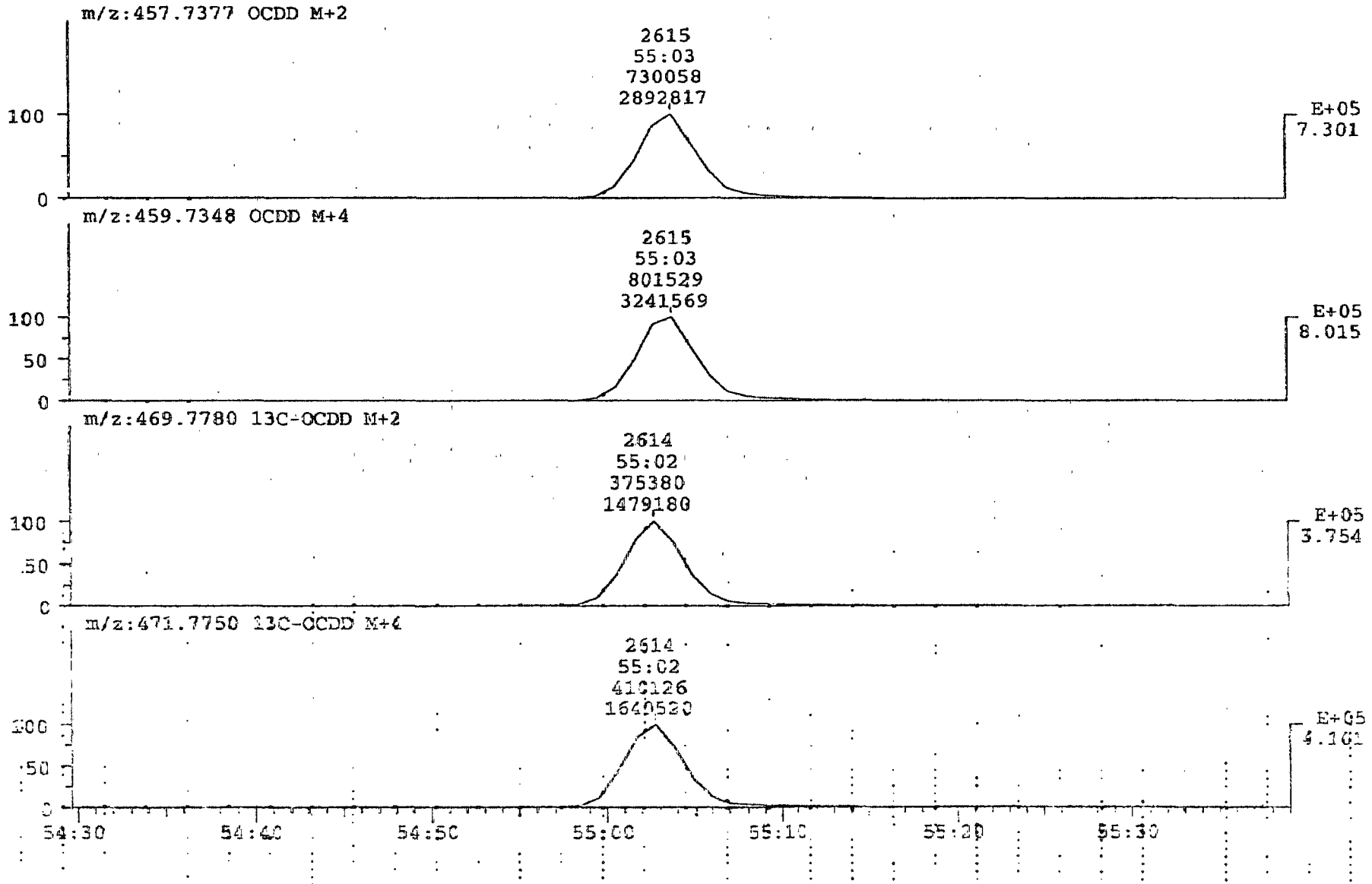
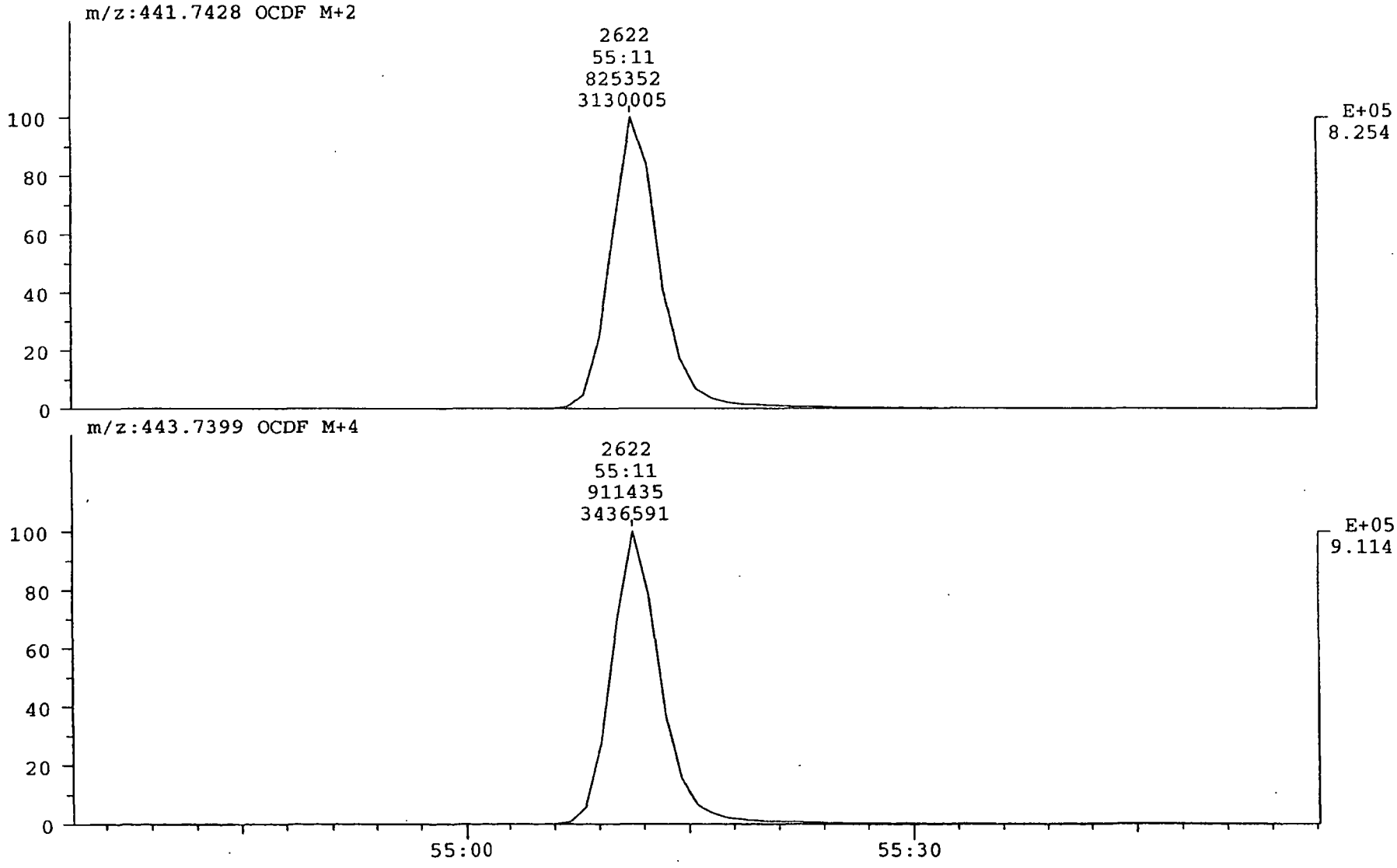
CHRO:  t03040114                              01-Apr-03   Elapse:  45:46      2095
Samp:  Vial 44 WO=2427:46CS4 Meth=F8 Dil=1                Start :  22:00:17   2800
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS4
Oper:  DCG           Client:  STL Knoxville               Inlet :  GC     Vial  44
Peak:  100.00  ppm     Label wndw:   2246 > 2438          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  2, 3.0
Disp:  Height  Area
```



CHRO: t03040114 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR MRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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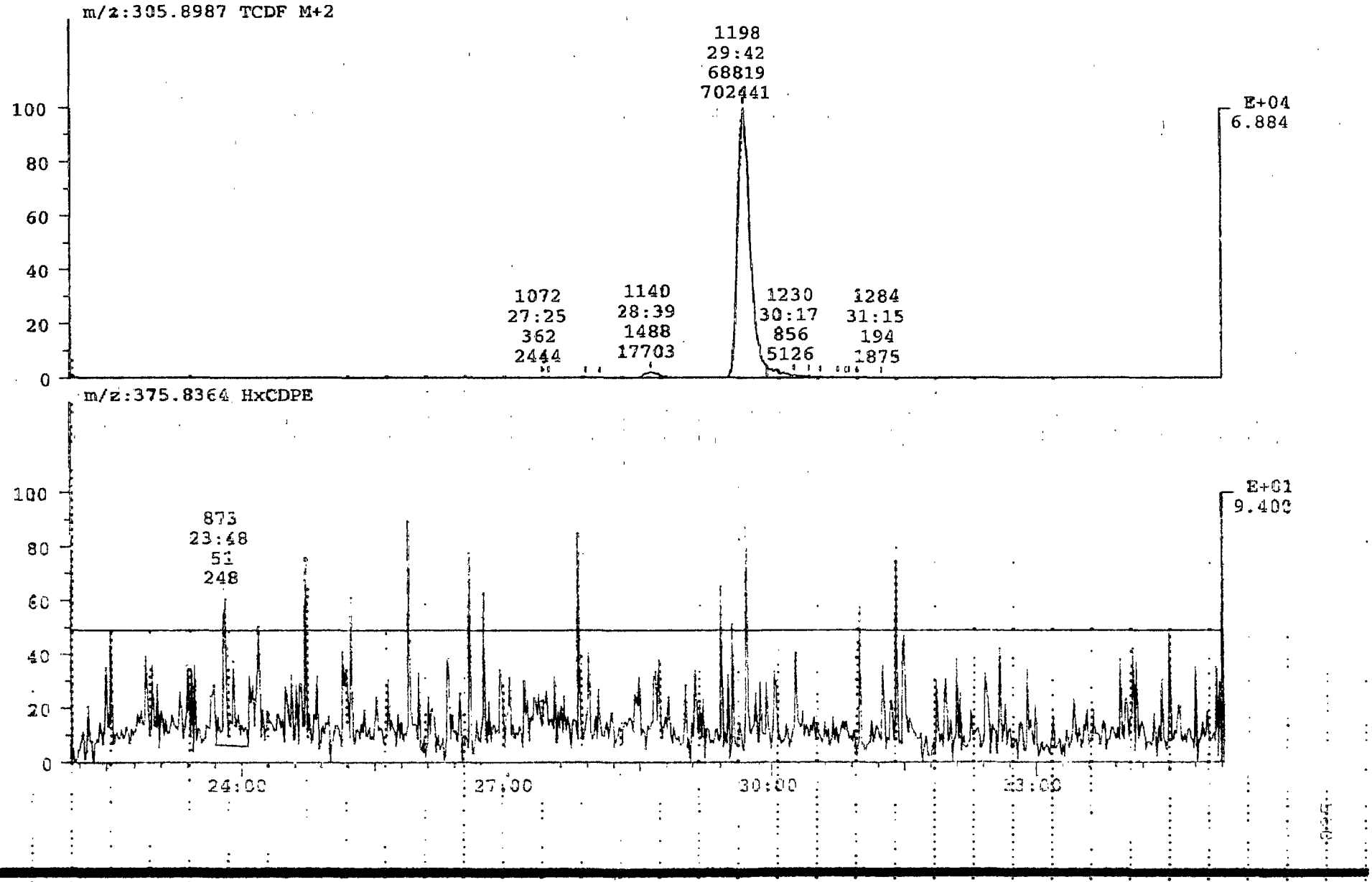
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 779 > 1497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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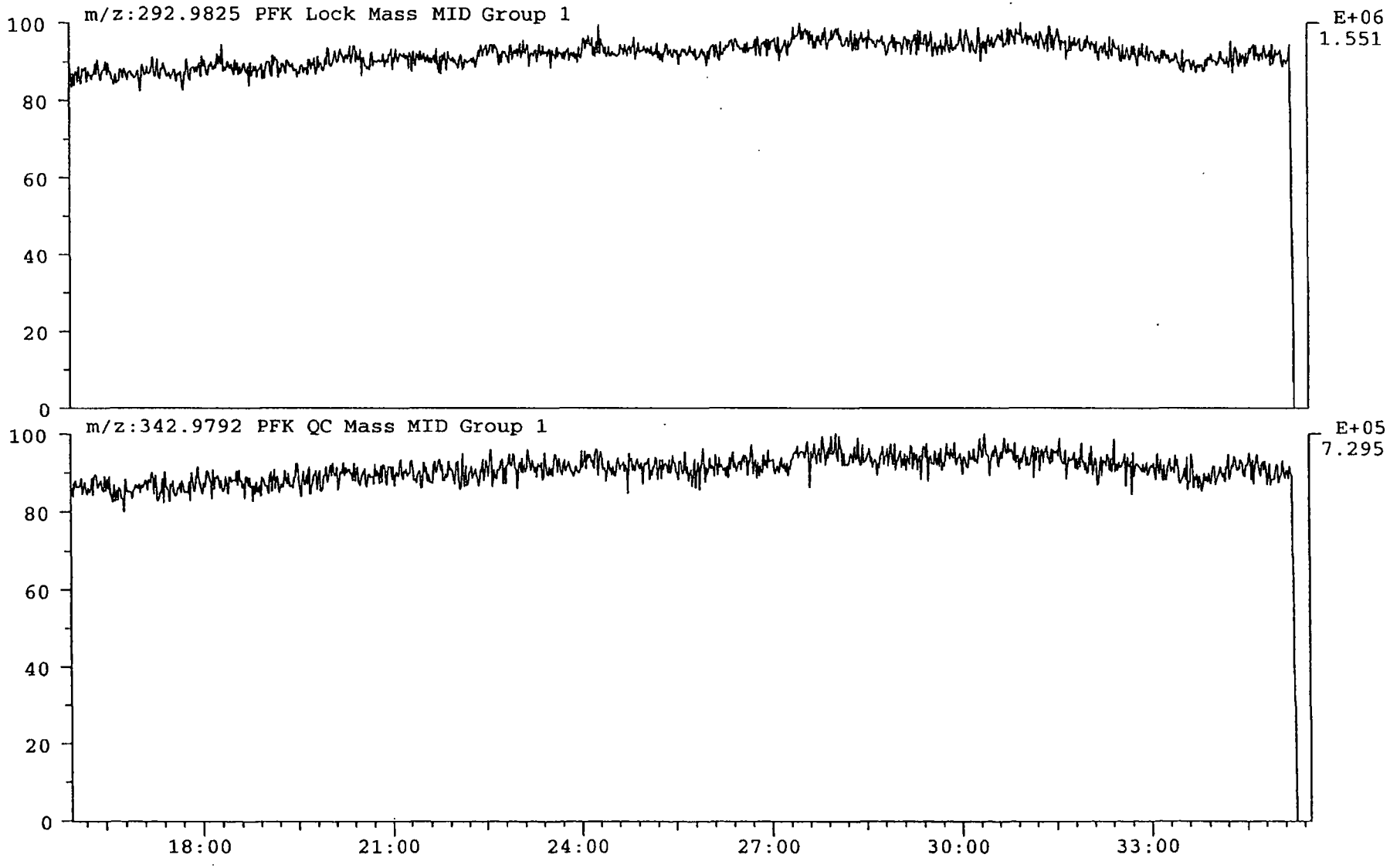
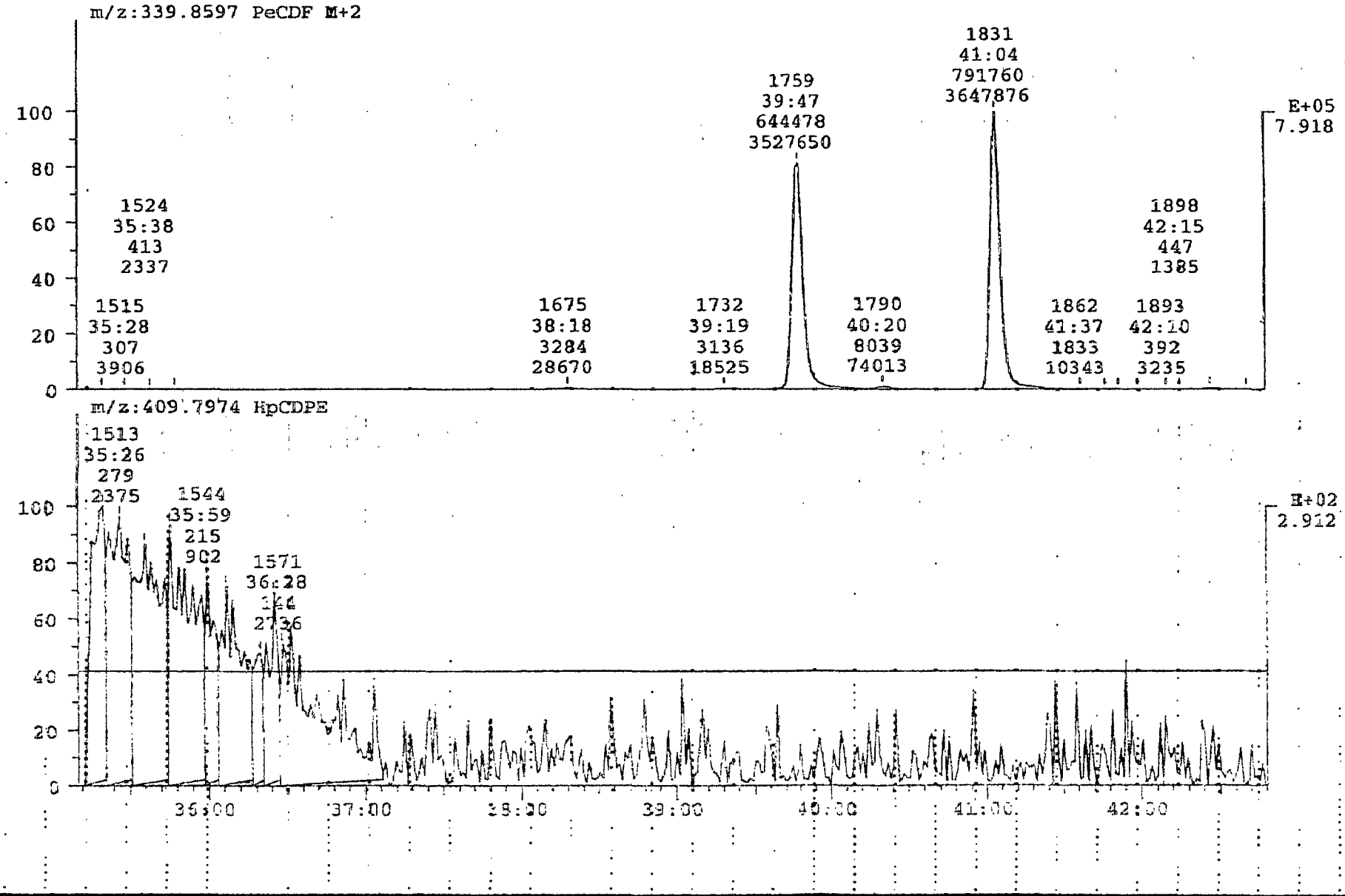
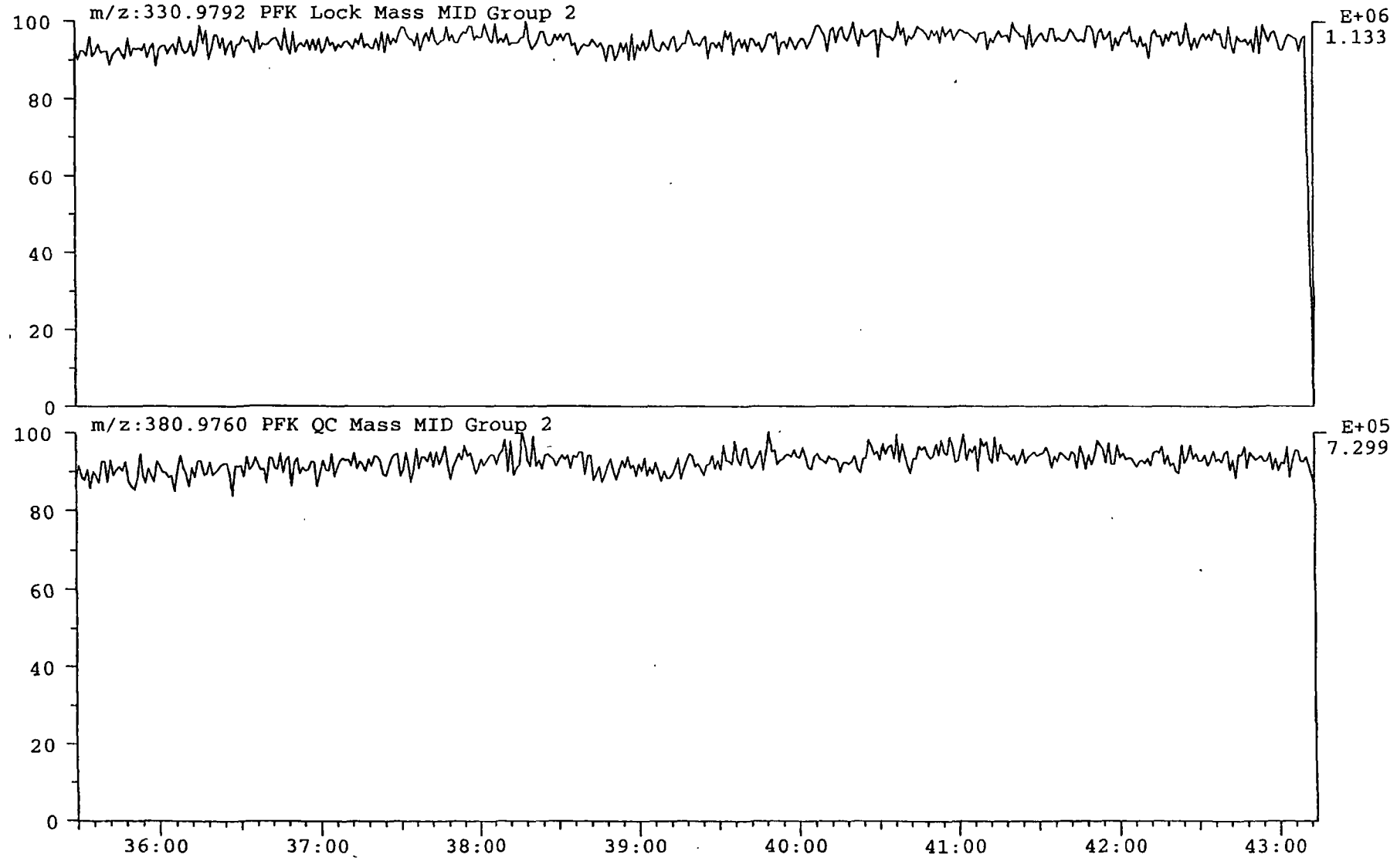
CHRO:  t030401i4                              01-Apr-03   Elapse:   45:46       2095
Samp:  Vial 44 WO=2427:46CS4 Meth=F8 Dil=1                Start :   22:00:17    2800
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                         Study :   ICAL/CS4
Oper:  DCG            Client:  STL Knoxville              Inlet :   GC     Vial  44
Peak:  100.00  ppm      Label wndw:    440 > 1516         Masses:   293 > 514
Area:  0, 0.00, 0       Baseline  :    0, 3               Label :   0, 0.0
```



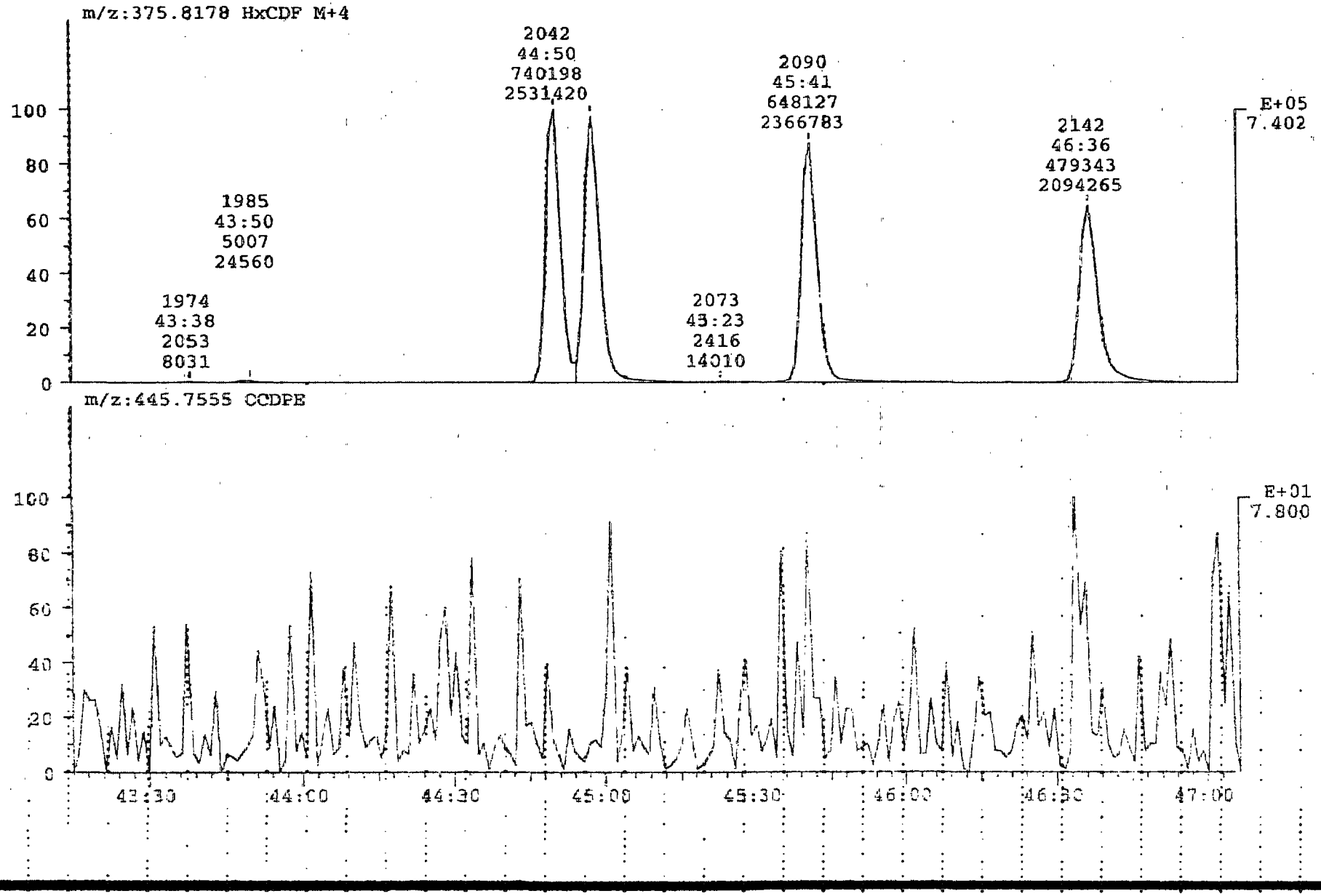
CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1500 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t03040li4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1516 > 1951 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
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Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 1950 > 2224 Masses: 293 > 514
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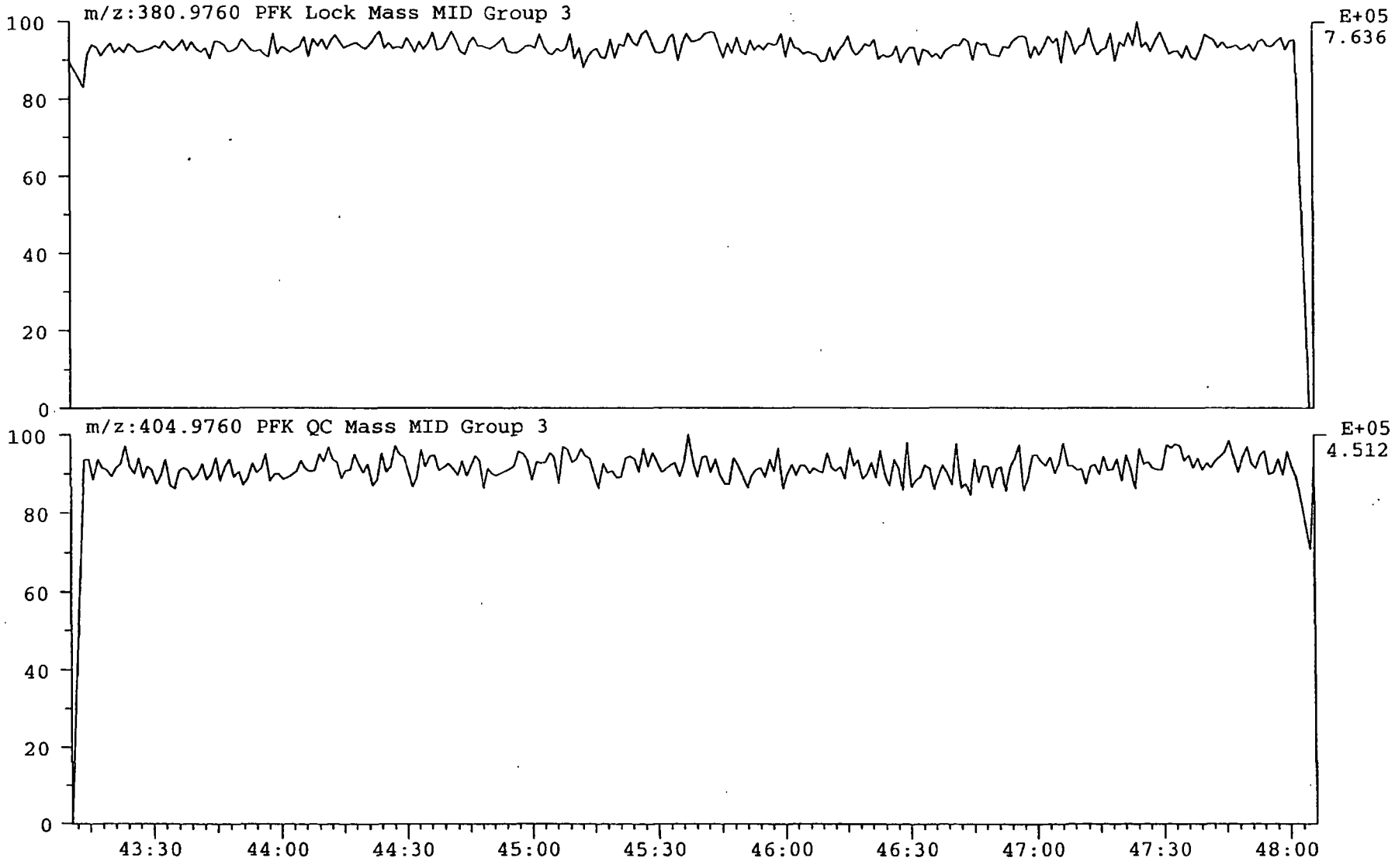
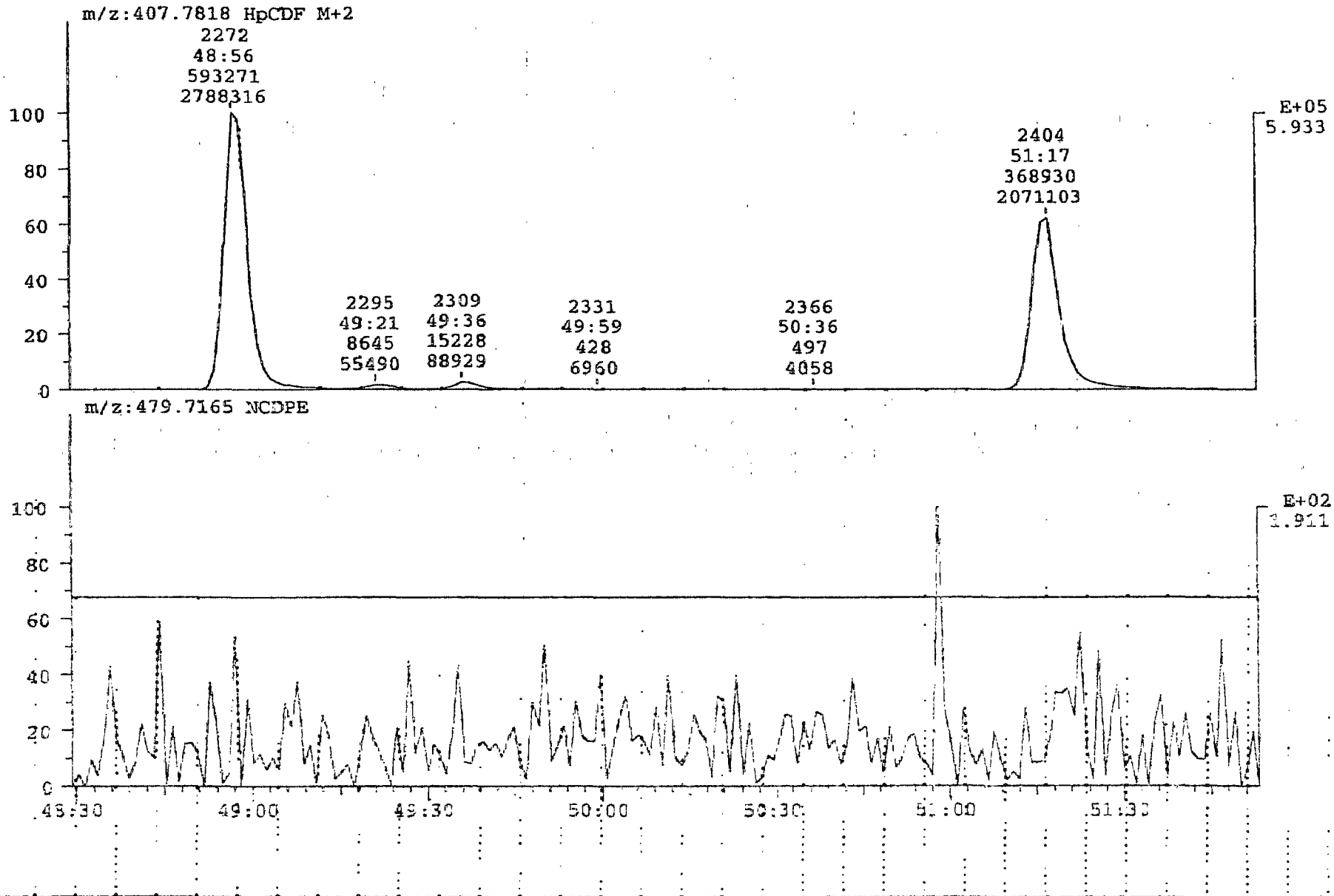


CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO#2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2222 > 2523 Masses: 293 > 514
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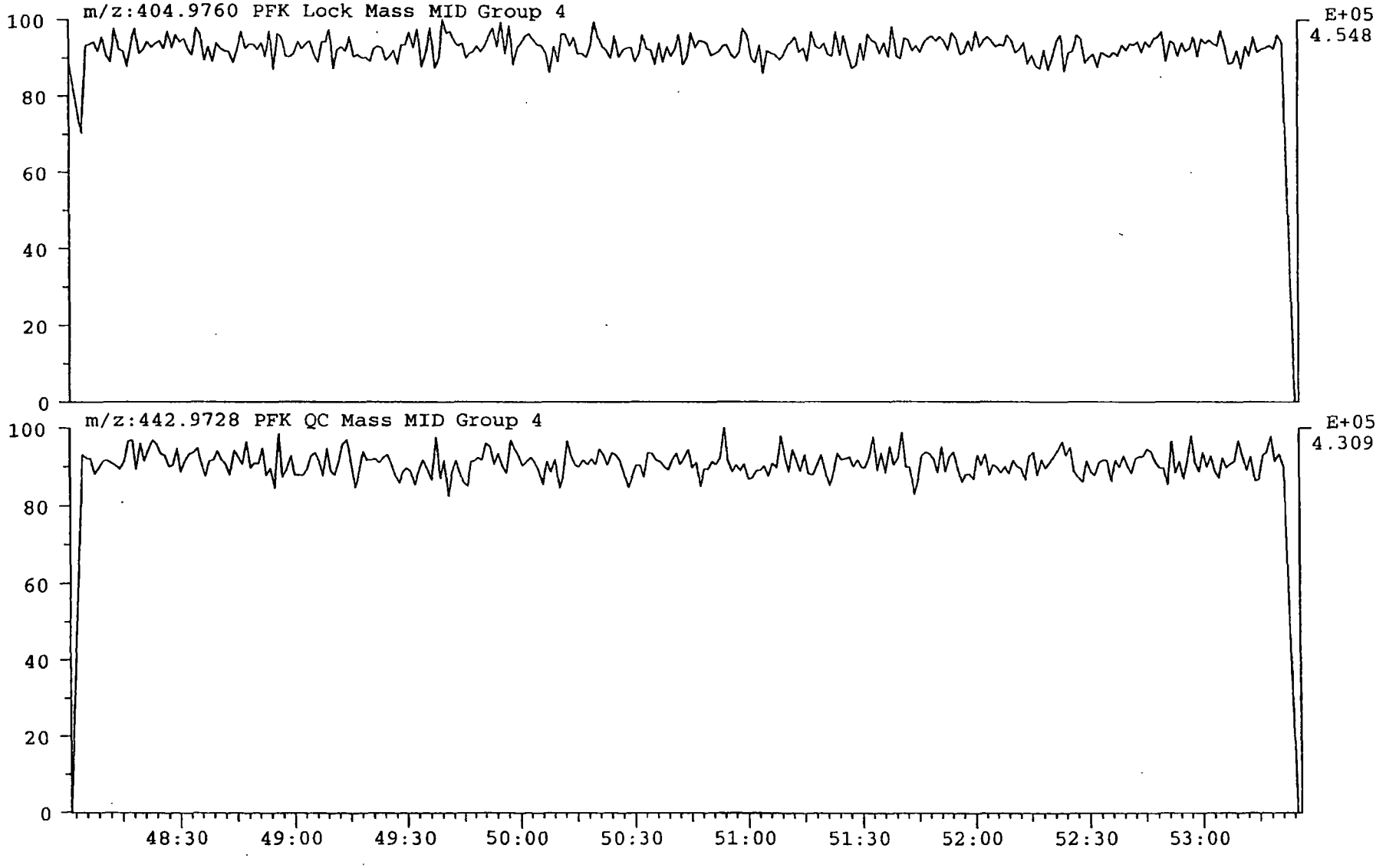
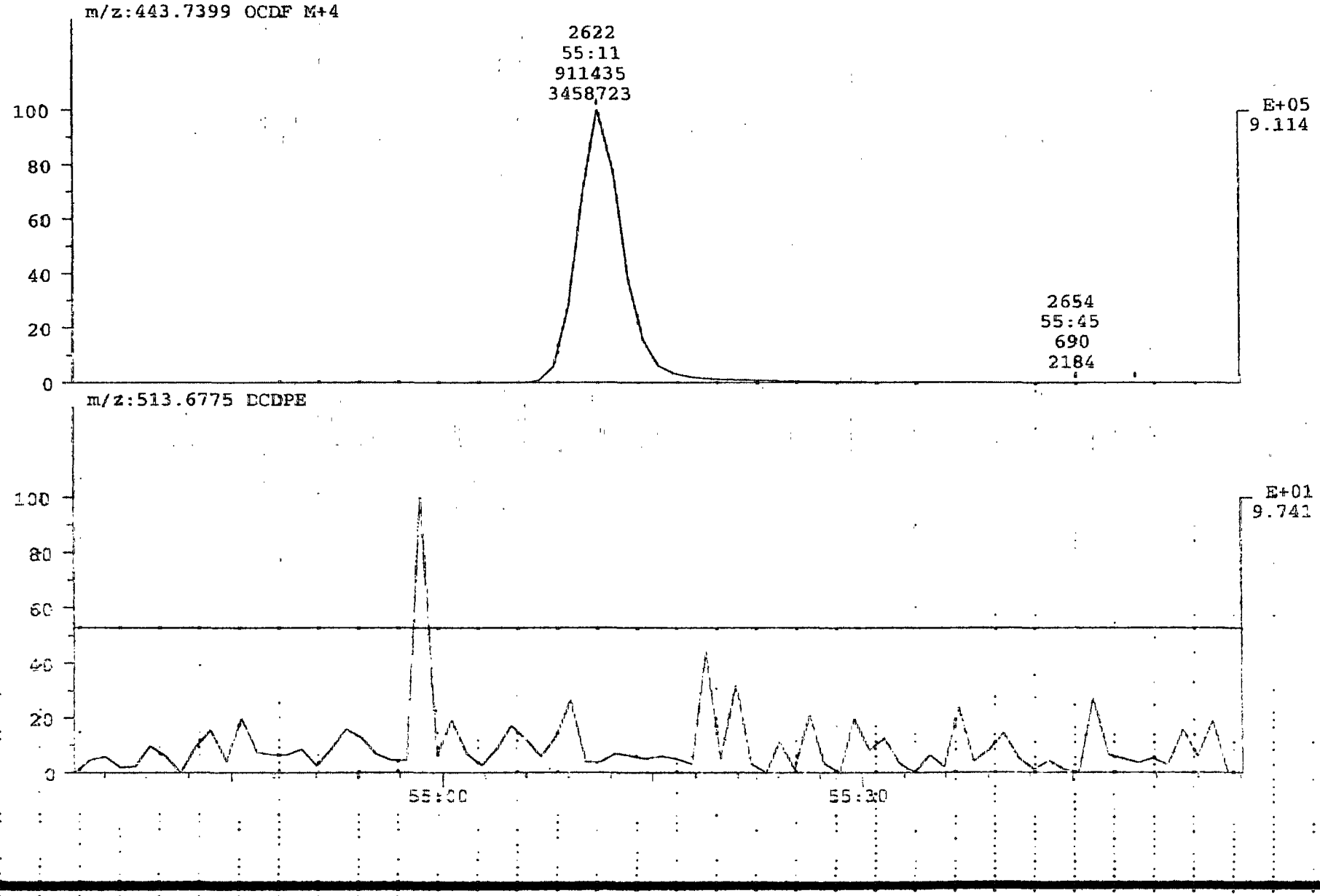


CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i4 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 2529 > 2765 Masses: 293 > 514
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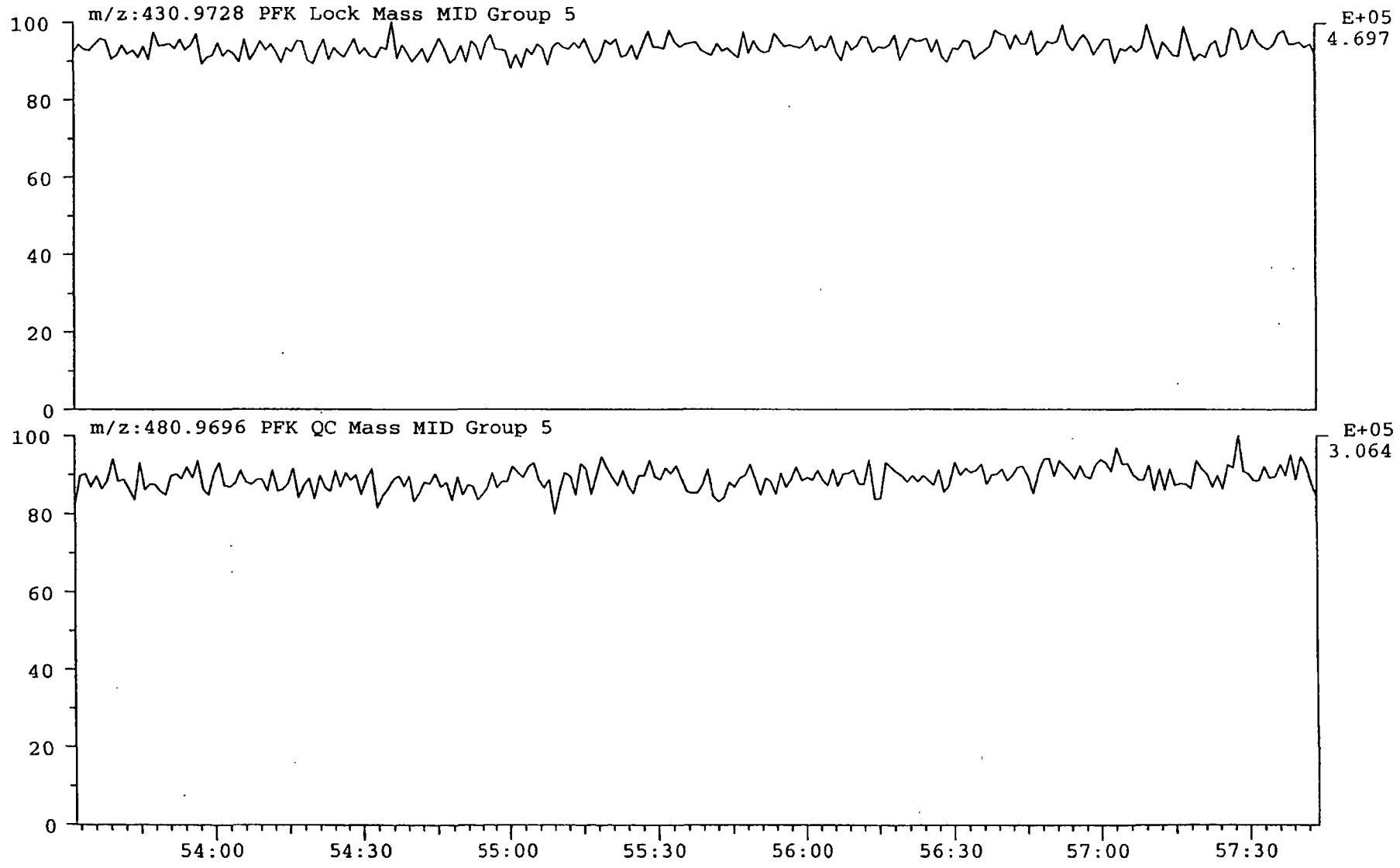
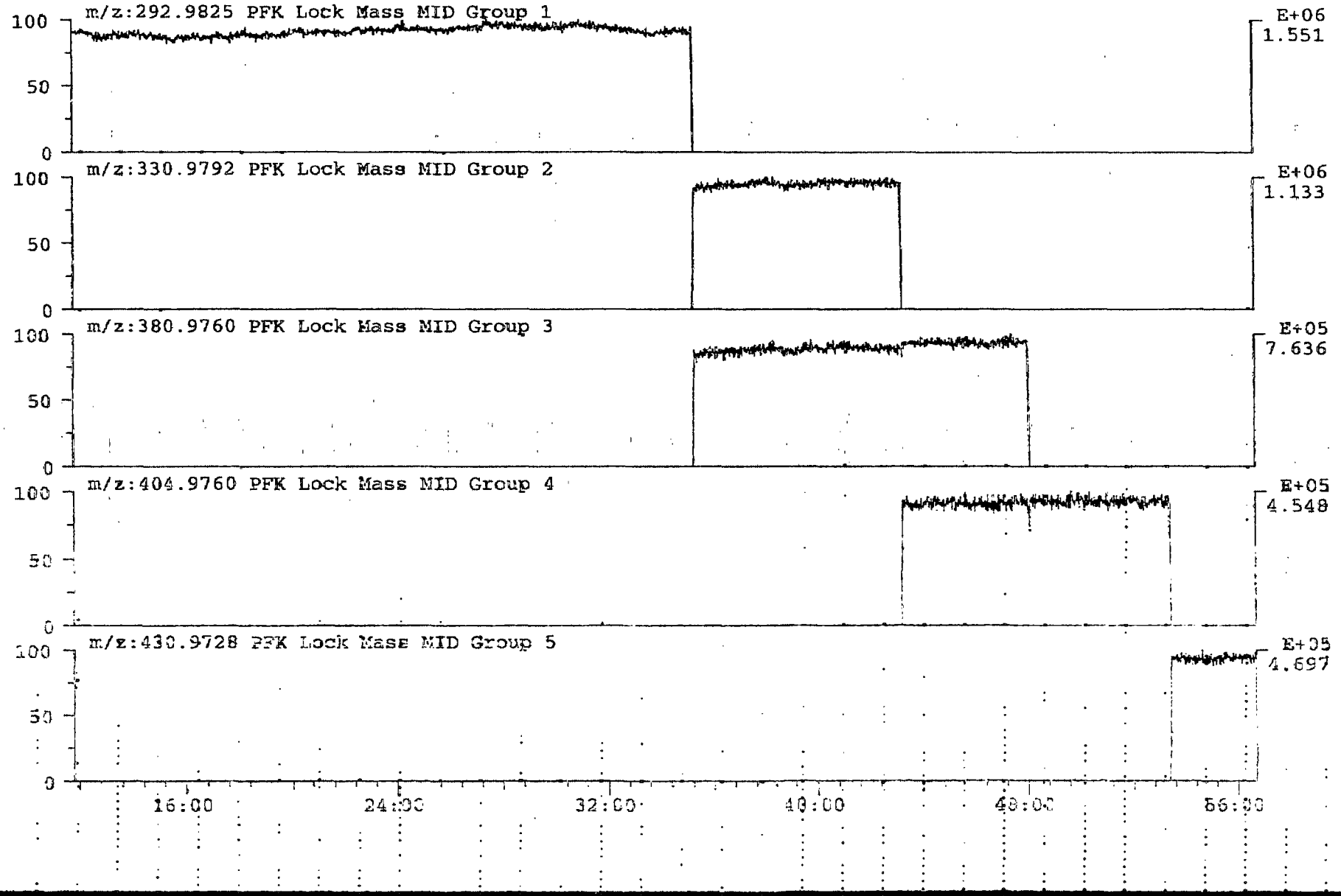


CHRO: t03040114 01-Apr-03 Elapse: 45:46 2095
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44
Peak: 100.00 ppm Label wndw: 210 > 2707 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: t030401i4
Study: ICAL/CS4
Sample: WO=2427:46CS4 Meth=F8 Dil=1
Amount: 0.0
Volume: 0.0
Operator: DCG
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Injected volume: 2.0
Sample from Vial 44
Analysis will stop when MID run finishes
Tune file name: tune2
File 4 of list 030401i
ICL procedure: sleep6x
ICIS procedure: tstd $
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.35 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 27:12 min | 35:12 min | 1.00 sec |
| # 2 | 35:12 min | 7:58 min | 43:10 min | 1.00 sec |
| # 3 | 43:10 min | 4:50 min | 48:00 min | 1.00 sec |
| # 4 | 48:00 min | 5:20 min | 53:20 min | 1.00 sec |
| # 5 | 53:20 min | 5:00 min | 58:20 min | 1.00 sec |

Mid Masses:
Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | l | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | l | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
 Loop clean w slvnt A (LC):      0 times
 Loop clean w slvnt B (LB):      0 times
 Standard sample volume(X):    0.0 ul
 Standard air volume   (Y):    0.0 ul
 2nd Injection volume  (I):    0.0 ul
 Air volume of 2nd inj (J):    0.0 ul
 Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
   Injector:        270 deg                        300 deg max
   Transfer Line:   290 deg                        300 deg max
   Column:          140 deg at    0.0 minutes      330 deg max
                    140 deg at    3.0 minutes
                    210 deg at    6.5 minutes
                    210 deg at   34.5 minutes
                    280 deg at   44.5 minutes
                    280 deg at   51.0 minutes
                    325 deg at   58.4 minutes
   Inlet    :
   Pressure        18.0 psi
   Splitless mode
   Purge time       1.5 min
   Purge flow      40.0 mL/min

    Gas saver is on
    Saver time       3.0 min
    Saver flow      15.0 mL/min

   Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8423.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.5529 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 1.0004 |
| ECURR | 1.0000 | EDAC | 7950685.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4857.3333 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.0000 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 762.0277 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 180.0000 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.2000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 162.0000 | FVINLET | 474.0000 |
| FVSRC | 885.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4314 | HVANAL | 943.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4742.3640 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2806.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10422.1189 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8700 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1721.0000 | XLENSS | 163.4000 |
| YLENS | 2467.0000 | YLENSS | -53.4000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 01-Apr-03 22:00:17.5

Autosampler has injected sample from vial 44
Analysis stopped at: 01-Apr-03 22:58:39.7 (run time 58.36 minutes)
Analysis stopped because MID run finished

QUAN: t030401i4.q0 Entries: 69

Data file(s) used
File: t030401i4 01-Apr-03
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 320. | 31:39 | 1306 | 39530.859 | 419938.531 | 79.88 |
| 2 | 322. | 31:39 | 1306 | 50116.695 | 533599.500 | 63.38 |
| 3 | 332. | 31:03 | 1273 | 97185.765 | 948286.625 | 130.76 |
| 4 | 332. | 31:37 | 1304 | 98953.953 | 1018703.375 | 130.76 |
| 5 | 334. | 31:02 | 1272 | 120559.335 | 1169216.125 | 187.92 |
| 6 | 334. | 31:37 | 1304 | 125819.726 | 1290915.500 | 187.92 |
| 7 | 328. | 31:39 | 1306 | 87579.765 | 909865.500 | 76.07 |
| 8 | 356. | 41:36 | 1861 | 541630.062 | 2427810.250 | 110.69 |
| 9 | 358. | 41:36 | 1861 | 352777.875 | 1550294.625 | 94.11 |
| 10 | 368. | 41:35 | 1860 | 298684.687 | 1257074.875 | 93.89 |
| 11 | 370. | 41:35 | 1860 | 190864.515 | 809195.062 | 65.60 |
| 12 | 390. | 45:51 | 2099 | 612342.125 | 2025159.750 | 158.68 |
| 13 | 390. | 45:58 | 2106 | 558816.500 | 2187228.500 | 158.68 |
| 14 | 390. | 46:20 | 2127 | 595348.437 | 2205718.250 | 158.68 |
| 15 | 392. | 45:51 | 2099 | 487146.125 | 1625235.750 | 137.15 |
| 16 | 392. | 45:57 | 2105 | 445554.468 | 1756399.750 | 137.15 |
| 17 | 392. | 46:20 | 2127 | 485540.687 | 1788174.375 | 137.15 |
| 18 | 402. | 45:50 | 2098 | 295151.812 | 952513.875 | 90.00 |
| 19 | 402. | 45:57 | 2105 | 292309.031 | 1119830.375 | 90.00 |
| 20 | 402. | 46:19 | 2126 | 283767.500 | 1032329.562 | 90.00 |
| 21 | 404. | 45:50 | 2098 | 234666.093 | 760636.000 | 82.28 |
| 22 | 404. | 45:57 | 2105 | 227540.093 | 878408.000 | 82.28 |
| 23 | 404. | 46:19 | 2126 | 225858.937 | 815480.375 | 82.28 |
| 24 | 424. | 50:36 | 2366 | 358421.218 | 1715246.000 | 67.76 |
| 25 | 426. | 50:36 | 2366 | 338718.218 | 1642801.250 | 70.37 |
| 26 | 436. | 50:35 | 2365 | 191054.031 | 907474.312 | 70.53 |
| 27 | 438. | 50:35 | 2365 | 181921.484 | 870609.750 | 56.13 |
| 28 | 458. | 55:03 | 2615 | 730057.750 | 2892817.000 | 63.08 |
| 29 | 460. | 55:03 | 2615 | 801529.437 | 3241569.000 | 69.72 |
| 30 | 470. | 55:02 | 2614 | 375379.500 | 1479180.250 | 62.03 |
| 31 | 472. | 55:02 | 2614 | 410126.125 | 1640519.500 | 69.83 |
| 32 | 304. | 29:42 | 1198 | 53996.417 | 554244.187 | 99.70 |
| 33 | 306. | 29:42 | 1198 | 68795.429 | 701694.250 | 123.05 |
| 34 | 316. | 29:39 | 1195 | 144828.000 | 1412827.625 | 139.32 |
| 35 | 318. | 29:39 | 1195 | 181928.796 | 1777802.000 | 127.40 |
| 36 | 340. | 39:47 | 1759 | 644452.437 | 3489620.750 | 143.76 |
| 37 | 340. | 41:04 | 1831 | 791354.125 | 3595983.750 | 143.76 |
| 38 | 342. | 39:47 | 1759 | 415223.062 | 2265714.000 | 123.76 |
| 39 | 342. | 41:04 | 1831 | 491877.156 | 2290867.500 | 123.76 |
| 40 | 352. | 39:45 | 1757 | 357185.750 | 1891704.500 | 142.03 |
| 41 | 352. | 41:03 | 1830 | 404164.125 | 1829000.000 | 142.03 |
| 42 | 354. | 39:45 | 1757 | 227133.281 | 1187145.000 | 106.36 |
| 43 | 354. | 41:03 | 1830 | 255438.625 | 1144618.750 | 106.36 |
| 44 | 374. | 44:50 | 2042 | 933943.500 | 3141253.750 | 171.00 |
| 45 | 374. | 44:58 | 2049 | 900856.500 | 3264450.750 | 171.00 |
| 46 | 374. | 45:41 | 2090 | 809375.250 | 2939179.500 | 171.00 |
| 47 | 374. | 46:36 | 2142 | 608392.375 | 2639205.500 | 171.00 |
| 48 | 376. | 44:50 | 2042 | 740198.000 | 2531422.750 | 202.25 |
| 49 | 376. | 44:58 | 2049 | 721946.437 | 2625536.500 | 202.25 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 376., | 45:41 | , | 2090, | 648126.625, | 2366774.750, | 202.25, |
| 51, | 376., | 46:36 | , | 2142, | 479407.437, | 2096782.875, | 202.25, |
| 52, | 384., | 44:49 | , | 2041, | 262924.968, | 834499.812, | 102.50, |
| 53, | 384., | 44:56 | , | 2048, | 248047.265, | 885791.437, | 102.50, |
| 54, | 384., | 45:40 | , | 2089, | 235292.718, | 831761.000, | 102.50, |
| 55, | 384., | 46:35 | , | 2141, | 163853.546, | 700968.937, | 102.50, |
| 56, | 386., | 44:49 | , | 2041, | 493429.531, | 1586043.000, | 110.61, |
| 57, | 386., | 44:56 | , | 2048, | 478817.281, | 1698912.125, | 110.61, |
| 58, | 386., | 45:40 | , | 2089, | 441542.312, | 1574107.125, | 110.61, |
| 59, | 386., | 46:35 | , | 2141, | 315856.156, | 1344191.500, | 110.61, |
| 60, | 408., | 48:57 | , | 2272, | 593270.750, | 2780083.250, | 87.68, |
| 61, | 408., | 51:17 | , | 2404, | 368929.500, | 2051898.625, | 87.68, |
| 62, | 410., | 48:57 | , | 2272, | 575133.562, | 2675054.750, | 93.50, |
| 63, | 410., | 51:17 | , | 2404, | 353221.687, | 1972332.375, | 93.50, |
| 64, | 418., | 48:57 | , | 2272, | 126354.695, | 585073.000, | 77.40, |
| 65, | 418., | 51:15 | , | 2402, | 80137.898, | 453182.218, | 77.40, |
| 66, | 420., | 48:56 | , | 2271, | 280889.375, | 1271102.875, | 86.03, |
| 67, | 420., | 51:15 | , | 2402, | 182957.890, | 1008624.750, | 86.03, |
| 68, | 442., | 55:11 | , | 2622, | 825351.625, | 3130005.250, | 94.05, |
| 69, | 444., | 55:11 | , | 2622, | 911435.375, | 3436590.750, | 103.49, |

QUAN: t030401i4.q0 Entries: 69

Data file(s) used
File: t030401i4 01-Apr-03
Samp: Vial 44 WO=2427:46CS4 Meth=F8 Dil=1 Start : 22:00:17 2800
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS4
Oper: DCG Client: STL Knoxville Inlet : GC Vial 44

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 31:39 | 419939. | 39531. | 31:23 | 31:55 | 80. | 2 | 3.0 |
| 321.8775 | 31:39 | 533599. | 50117. | 31:23 | 31:55 | 63. | 2 | 3.0 |
| 331.9202 | 31:03 | 948287. | 97186. | 30:47 | 31:20 | 131. | 2 | 3.0 |
| 331.9202 | 31:37 | 1018703. | 98954. | 31:23 | 31:53 | 131. | 2 | 3.0 |
| 333.9171 | 31:02 | 1169216. | 120559. | 30:49 | 31:19 | 188. | 2 | 3.0 |
| 333.9171 | 31:37 | 1290916. | 125820. | 31:23 | 31:53 | 188. | 2 | 3.0 |
| 327.8683 | 31:39 | 909865. | 87580. | 31:25 | 31:55 | 76. | 2 | 3.0 |
| 303.8864 | 29:42 | 554244. | 53996. | 29:29 | 29:58 | 100. | 2 | 3.0 |
| 305.8834 | 29:42 | 701694. | 68795. | 29:29 | 29:58 | 123. | 2 | 3.0 |
| 315.9261 | 29:39 | 1412828. | 144828. | 29:27 | 29:55 | 139. | 2 | 3.0 |
| 317.9230 | 29:39 | 1777802. | 181929. | 29:24 | 29:55 | 127. | 2 | 3.0 |
| 355.8368 | 41:36 | 2427810. | 541630. | 41:29 | 41:52 | 111. | 2 | 3.0 |
| 357.8337 | 41:36 | 1550295. | 352778. | 41:29 | 41:52 | 94. | 2 | 3.0 |
| 367.8765 | 41:35 | 1257075. | 298685. | 41:27 | 41:51 | 94. | 2 | 3.0 |
| 369.8734 | 41:35 | 809195. | 190865. | 41:28 | 41:51 | 66. | 2 | 3.0 |
| 339.8427 | 39:47 | 3489621. | 644452. | 39:36 | 40:03 | 144. | 2 | 3.0 |
| 339.8427 | 41:04 | 3595984. | 791354. | 40:55 | 41:20 | 144. | 2 | 3.0 |
| 341.8396 | 39:47 | 2265714. | 415223. | 39:36 | 40:03 | 124. | 2 | 3.0 |
| 341.8396 | 41:04 | 2290868. | 491877. | 40:55 | 41:20 | 124. | 2 | 3.0 |
| 351.8824 | 39:45 | 1891705. | 357186. | 39:35 | 40:01 | 142. | 2 | 3.0 |
| 351.8824 | 41:03 | 1829000. | 404164. | 40:56 | 41:19 | 142. | 2 | 3.0 |
| 353.8793 | 39:45 | 1187145. | 227133. | 39:36 | 40:01 | 106. | 2 | 3.0 |
| 353.8793 | 41:03 | 1144619. | 255439. | 40:55 | 41:19 | 106. | 2 | 3.0 |
| 389.7961 | 45:51 | 2025160. | 612342. | 45:45 | 45:54 | 159. | 2 | 3.0 |
| 389.7961 | 45:58 | 2187229. | 558816. | 45:54 | 46:14 | 159. | 2 | 3.0 |
| 389.7961 | 46:20 | 2205718. | 595348. | 46:14 | 46:36 | 159. | 2 | 3.0 |
| 391.7931 | 45:51 | 1625236. | 487146. | 45:44 | 45:54 | 137. | 2 | 3.0 |
| 391.7931 | 45:57 | 1756400. | 445554. | 45:54 | 46:13 | 137. | 2 | 3.0 |
| 391.7931 | 46:20 | 1788174. | 485541. | 46:14 | 46:36 | 137. | 2 | 3.0 |
| 401.8358 | 45:50 | 952514. | 295152. | 45:44 | 45:53 | 90. | 2 | 3.0 |
| 401.8358 | 45:57 | 1119830. | 292309. | 45:53 | 46:13 | 90. | 2 | 3.0 |
| 401.8358 | 46:19 | 1032330. | 283767. | 46:14 | 46:35 | 90. | 2 | 3.0 |
| 403.8327 | 45:50 | 760636. | 234666. | 45:44 | 45:53 | 82. | 2 | 3.0 |
| 403.8327 | 45:57 | 878408. | 227540. | 45:53 | 46:13 | 82. | 2 | 3.0 |
| 403.8327 | 46:19 | 815480. | 225859. | 46:14 | 46:35 | 82. | 2 | 3.0 |
| 373.8021 | 44:50 | 3141254. | 933943. | 44:44 | 44:54 | 171. | 2 | 3.0 |
| 373.8021 | 44:58 | 3264451. | 900856. | 44:54 | 45:13 | 171. | 2 | 3.0 |
| 373.8021 | 45:41 | 2939180. | 809375. | 45:30 | 45:57 | 171. | 2 | 3.0 |
| 373.8021 | 46:36 | 2639206. | 608392. | 46:29 | 46:52 | 171. | 2 | 3.0 |
| 375.7990 | 44:50 | 2531423. | 740198. | 44:44 | 44:54 | 202. | 2 | 3.0 |
| 375.7990 | 44:58 | 2625537. | 721946. | 44:54 | 45:13 | 202. | 2 | 3.0 |
| 375.7990 | 45:41 | 2366775. | 648127. | 45:31 | 45:57 | 202. | 2 | 3.0 |
| 375.7990 | 46:36 | 2096783. | 479407. | 46:30 | 46:52 | 202. | 2 | 3.0 |
| 383.8447 | 44:49 | 834500. | 262925. | 44:43 | 44:53 | 103. | 2 | 3.0 |
| 383.8447 | 44:56 | 885791. | 248047. | 44:53 | 45:12 | 103. | 2 | 3.0 |
| 383.8447 | 45:40 | 831761. | 235293. | 45:29 | 45:56 | 103. | 2 | 3.0 |
| 383.8447 | 46:35 | 700969. | 163854. | 46:28 | 46:51 | 103. | 2 | 3.0 |
| 385.8417 | 44:49 | 1586043. | 493430. | 44:43 | 44:53 | 111. | 2 | 3.0 |
| 385.8417 | 44:56 | 1692912. | 478817. | 44:53 | 45:12 | 111. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 385.8417 | 45:40 | 1574107. | 441542. | 45:28 | 45:56 | 111. | 2 | 3.0 |
| 385.8417 | 46:35 | 1344192. | 315856. | 46:29 | 46:51 | 111. | 2 | 3.0 |
| 423.7555 | 50:36 | 1715246. | 358421. | 50:29 | 50:52 | 68. | 2 | 3.0 |
| 425.7524 | 50:36 | 1642801. | 338718. | 50:29 | 50:52 | 70. | 2 | 3.0 |
| 435.7951 | 50:35 | 907474. | 191054. | 50:28 | 50:51 | 71. | 2 | 3.0 |
| 437.7921 | 50:35 | 870610. | 181921. | 50:28 | 50:51 | 56. | 2 | 3.0 |
| 407.7614 | 48:57 | 2780083. | 593271. | 48:50 | 49:12 | 88. | 2 | 3.0 |
| 407.7614 | 51:17 | 2051899. | 368929. | 51:08 | 51:33 | 88. | 2 | 3.0 |
| 409.7583 | 48:57 | 2675055. | 575134. | 48:49 | 49:12 | 94. | 2 | 3.0 |
| 409.7583 | 51:17 | 1972332. | 353222. | 51:08 | 51:33 | 94. | 2 | 3.0 |
| 417.8041 | 48:57 | 585073. | 126355. | 48:49 | 49:12 | 77. | 2 | 3.0 |
| 417.8041 | 51:15 | 453182. | 80138. | 51:08 | 51:30 | 77. | 2 | 3.0 |
| 419.8010 | 48:55 | 1271103. | 280889. | 48:49 | 49:11 | 86. | 2 | 3.0 |
| 419.8010 | 51:15 | 1008625. | 182958. | 51:07 | 51:30 | 86. | 2 | 3.0 |
| 457.7148 | 55:03 | 2892817. | 730058. | 54:56 | 55:19 | 63. | 2 | 3.0 |
| 459.7118 | 55:03 | 3241569. | 801529. | 54:56 | 55:19 | 70. | 2 | 3.0 |
| 469.7545 | 55:02 | 1479180. | 375379. | 54:56 | 55:18 | 62. | 2 | 3.0 |
| 471.7514 | 55:02 | 1640520. | 410126. | 54:56 | 55:18 | 70. | 2 | 3.0 |
| 441.7207 | 55:11 | 3130005. | 825352. | 54:59 | 55:27 | 94. | 2 | 3.0 |
| 443.7177 | 55:11 | 3436591. | 911435. | 55:00 | 55:27 | 103. | 2 | 3.0 |

```
CHRO:  t030401i5                                01-Apr-03   Elapse:  08:00.4        1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1                  Start :  23:02:22    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  ICAL/CS5
Oper:  DCG            Client:  STL Knoxville                Inlet :  GC     Vial  45
Peak:  100.00  ppm      Label wndw:   847 > 2811            Masses:  293 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3                Label :  0, 0.0
Disp:  Height  Area
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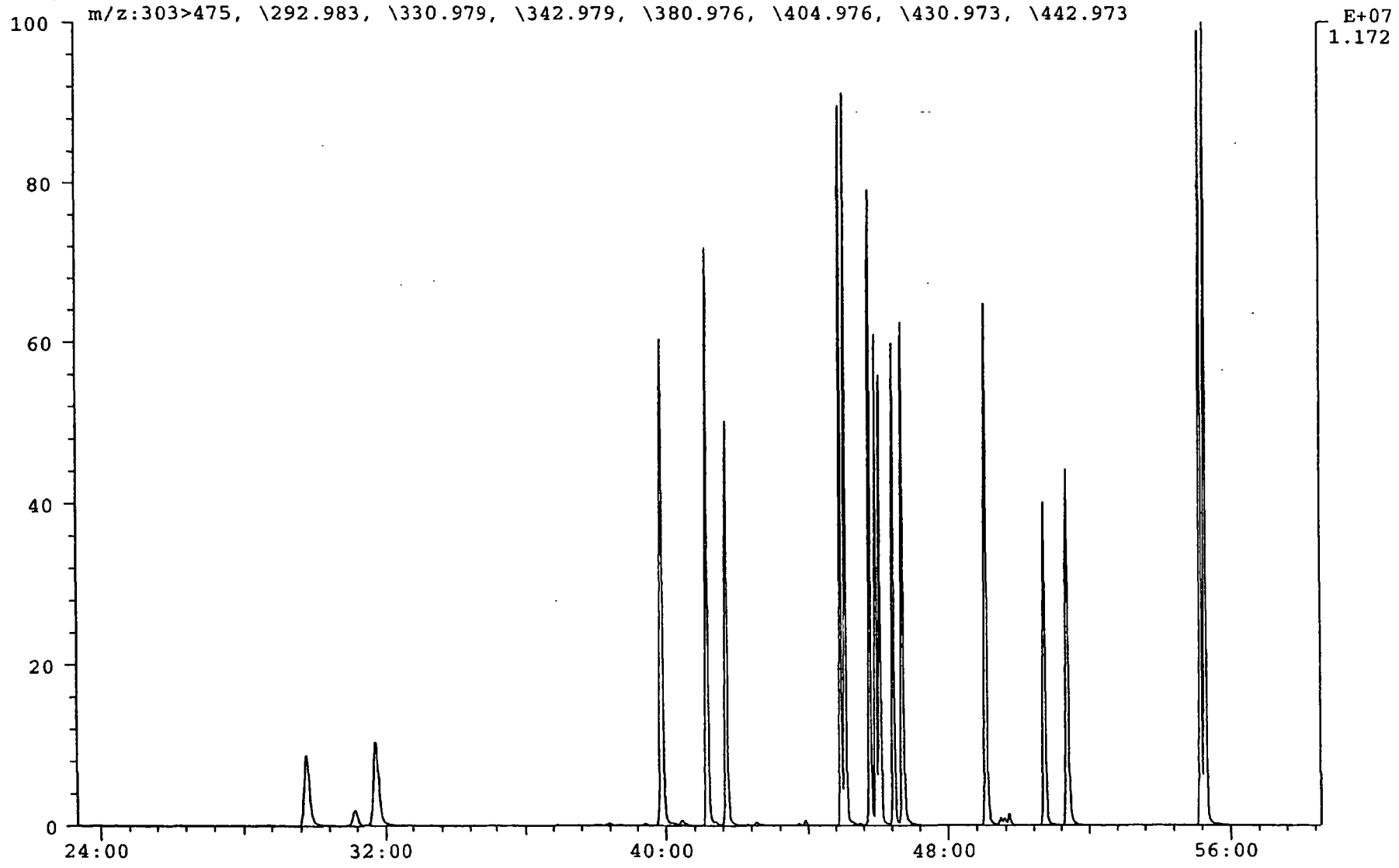
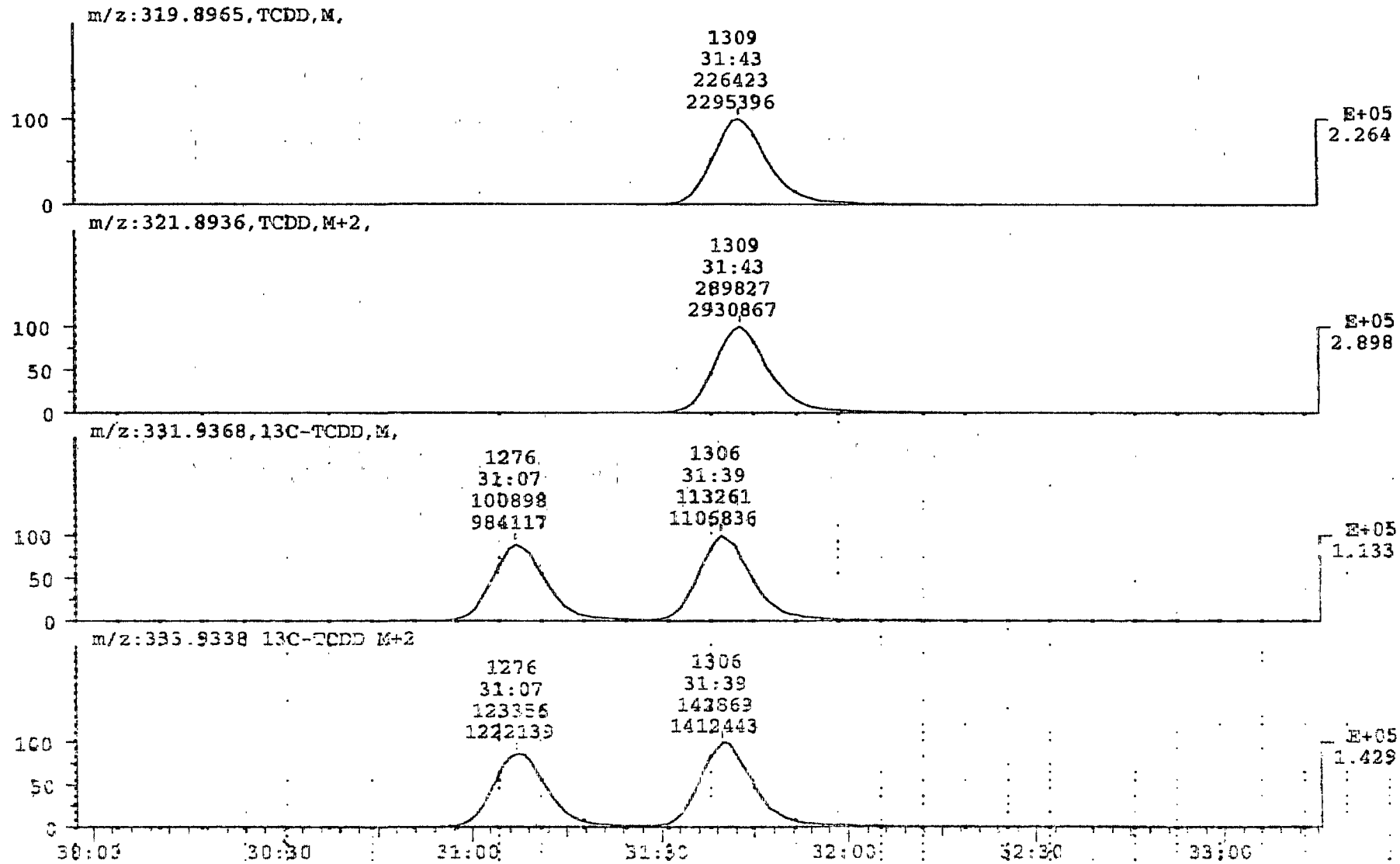
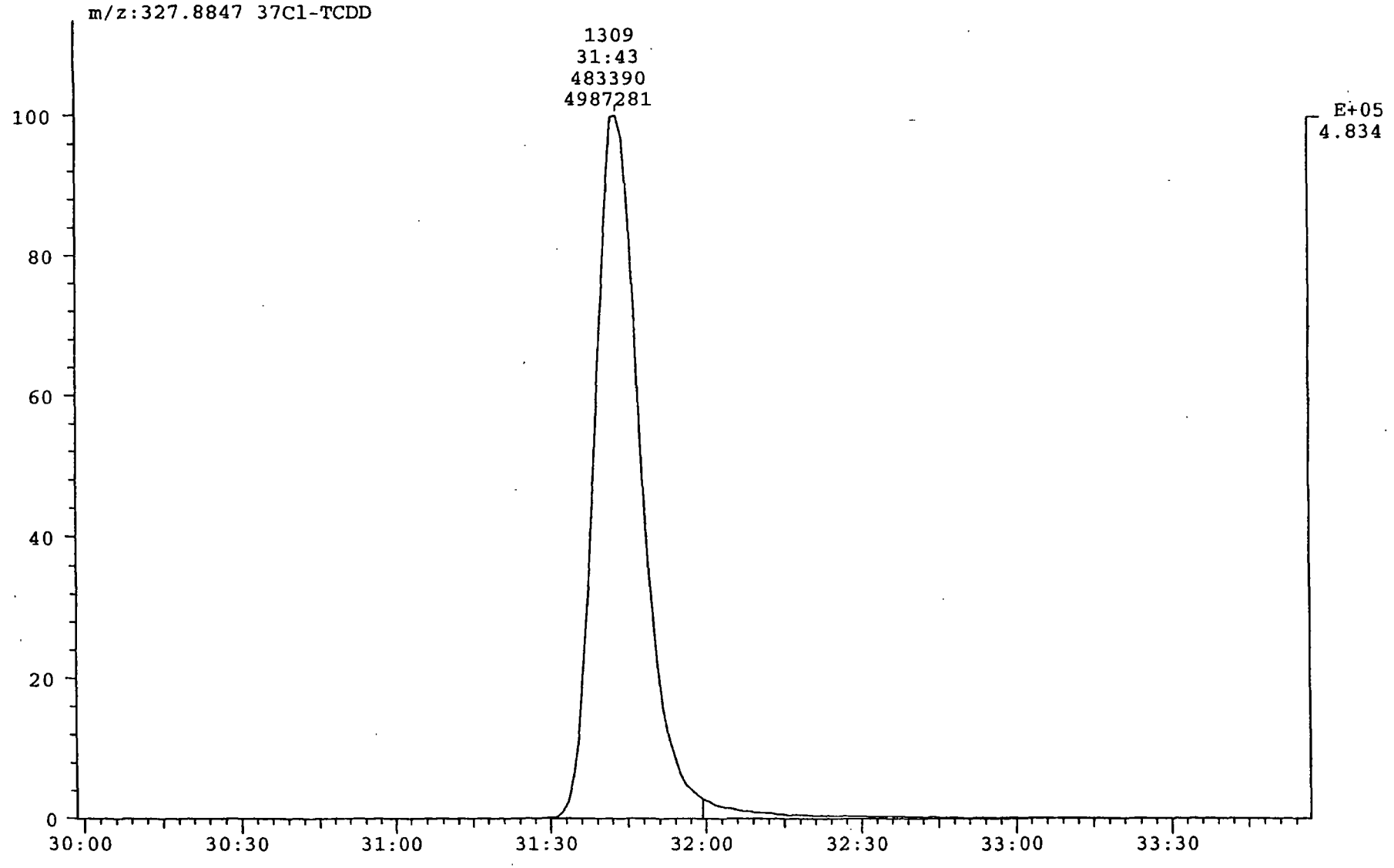
Int PMP 4-2-03
Calc PMP 4-2-03
QC DCG 4/3/03



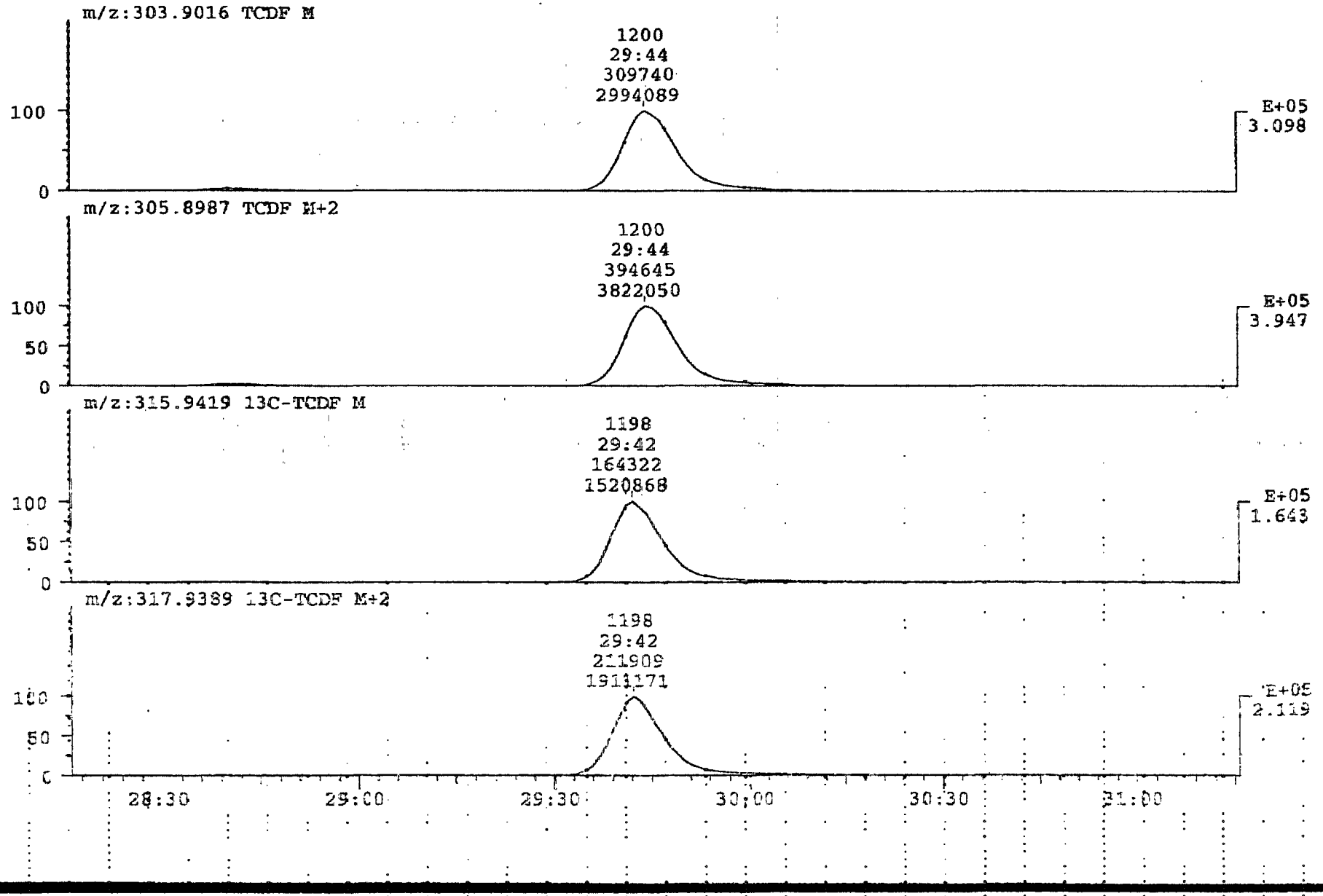
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1212 > 1394 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



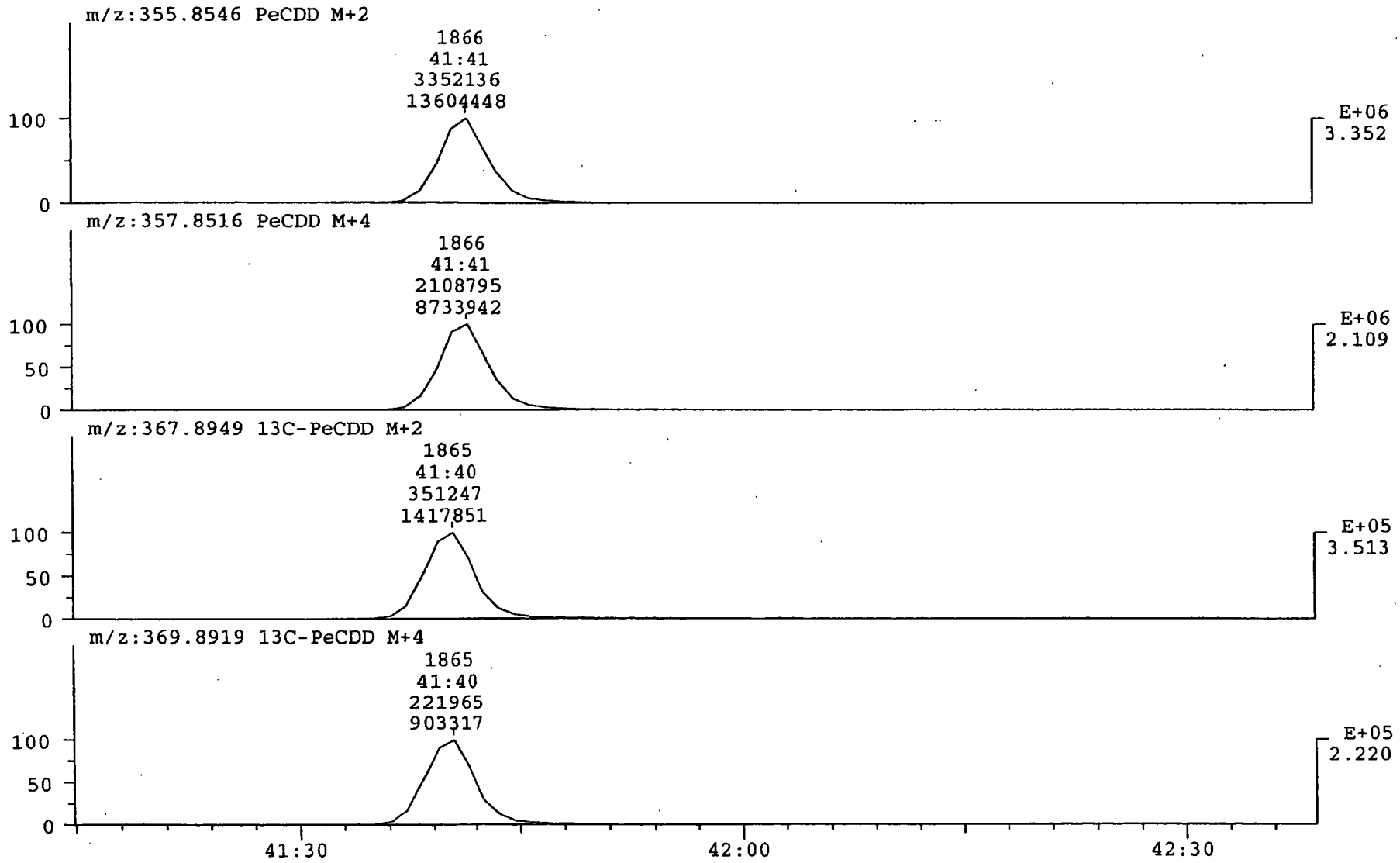
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1213 > 1432 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



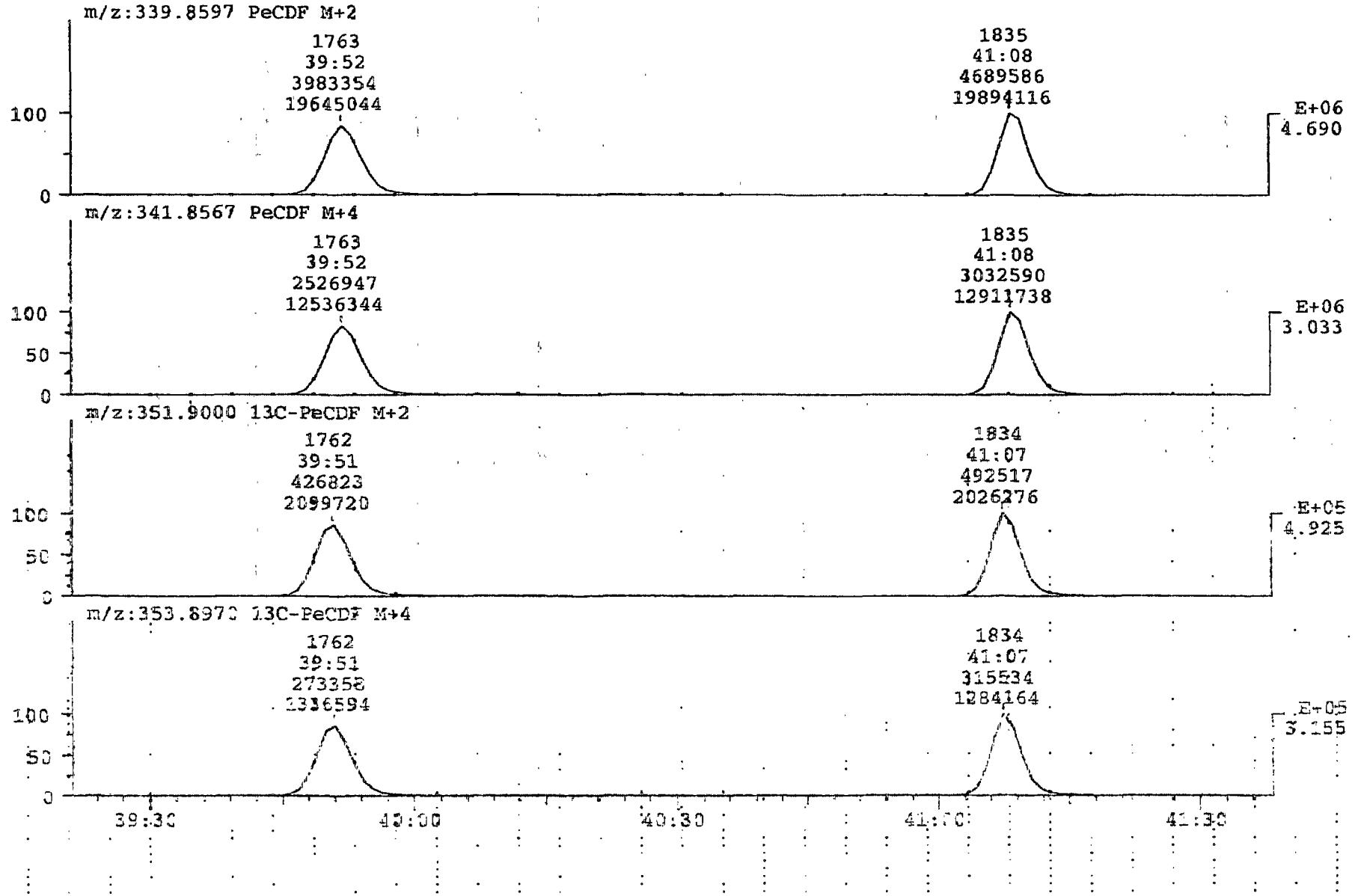
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1119 > 1284 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



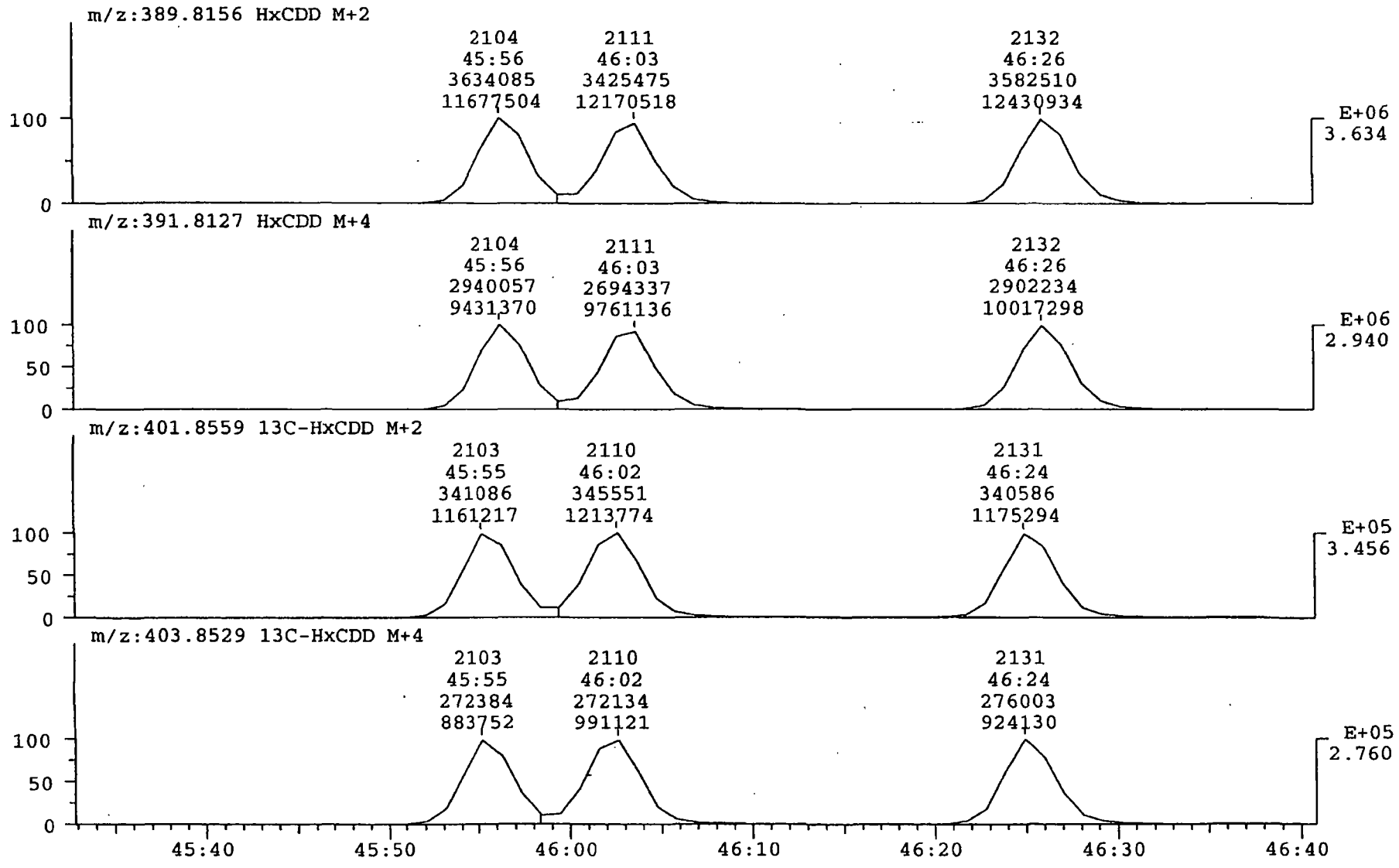
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1840 > 1890 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



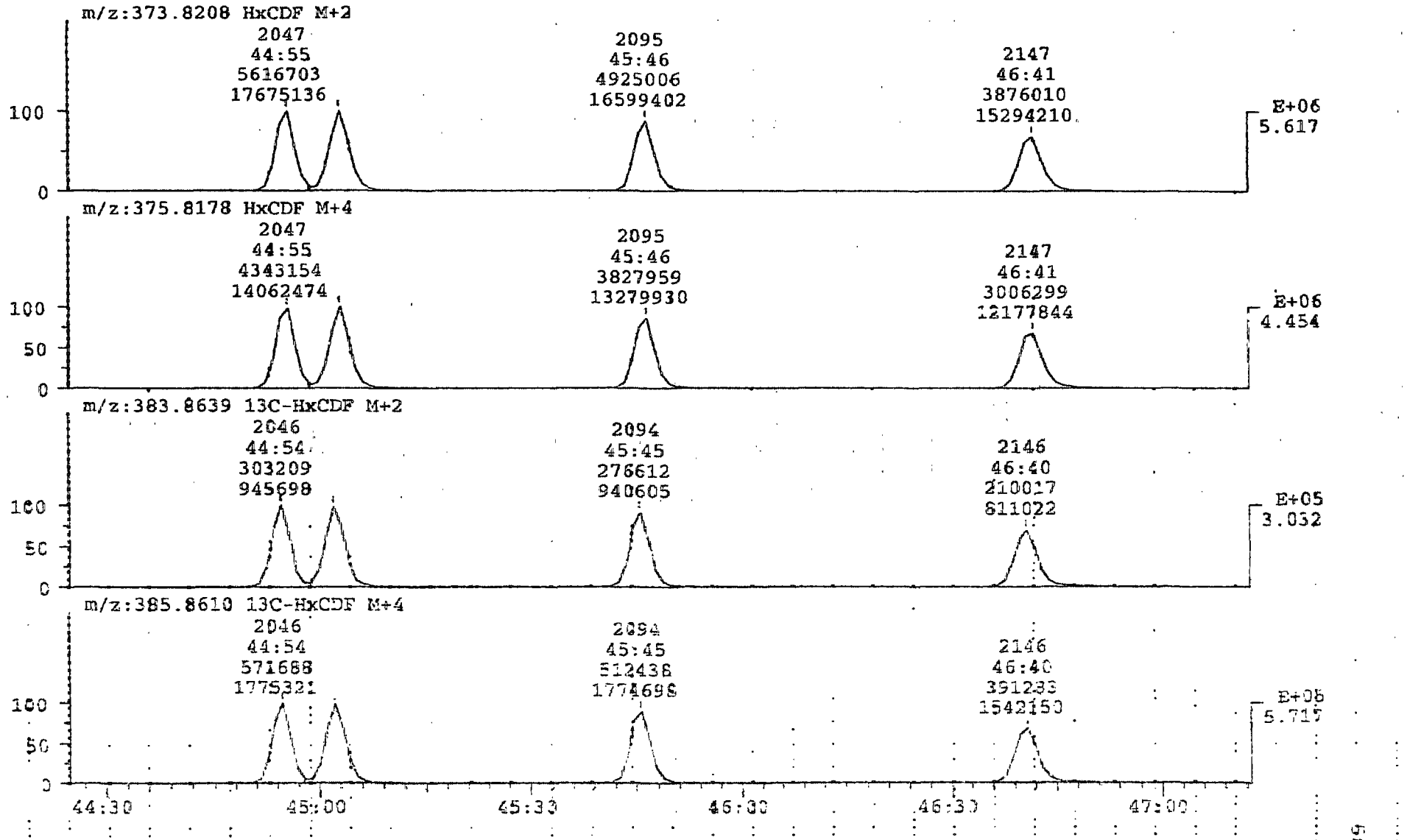
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LHR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1734 > 1863 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



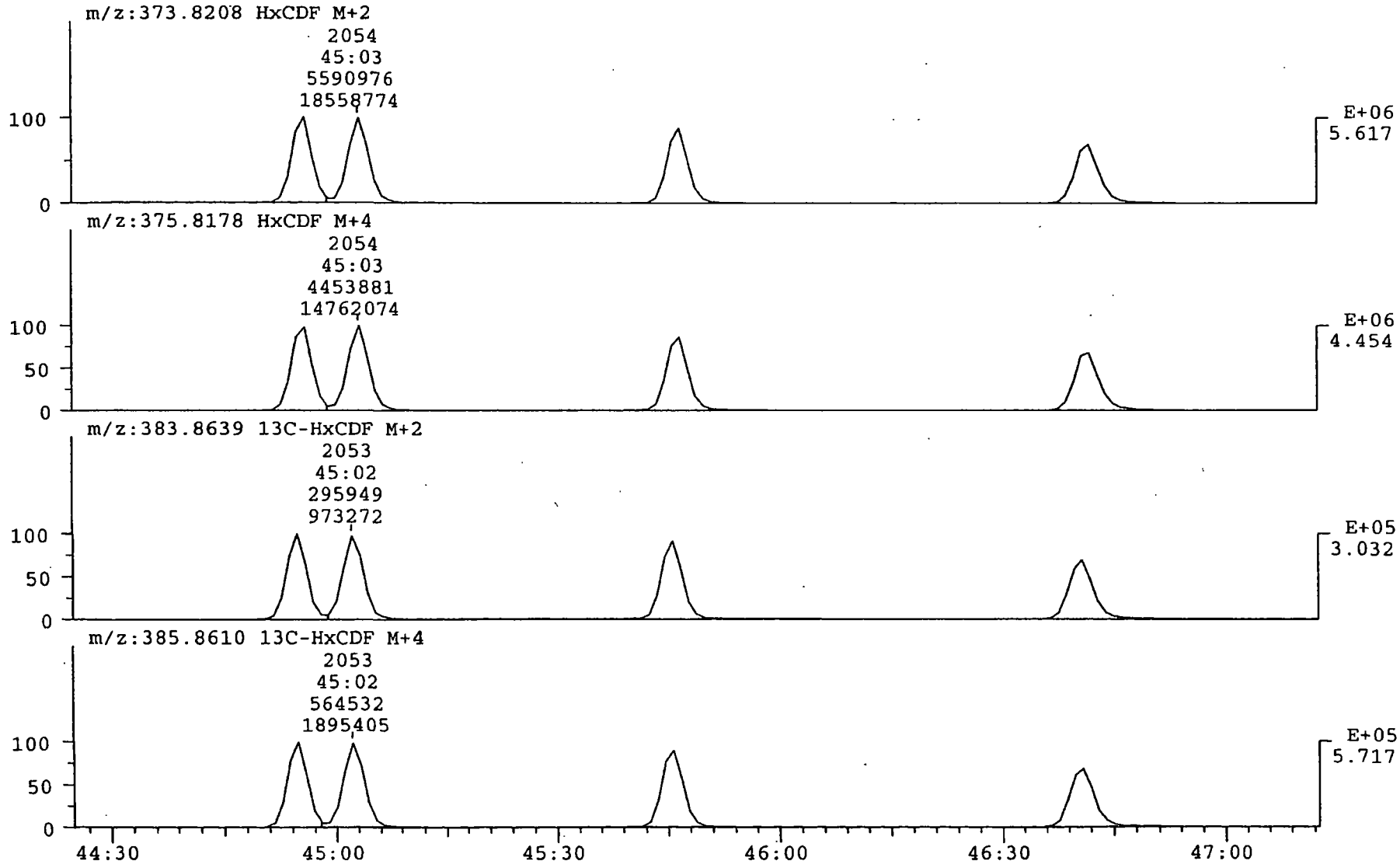
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2082 > 2146 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



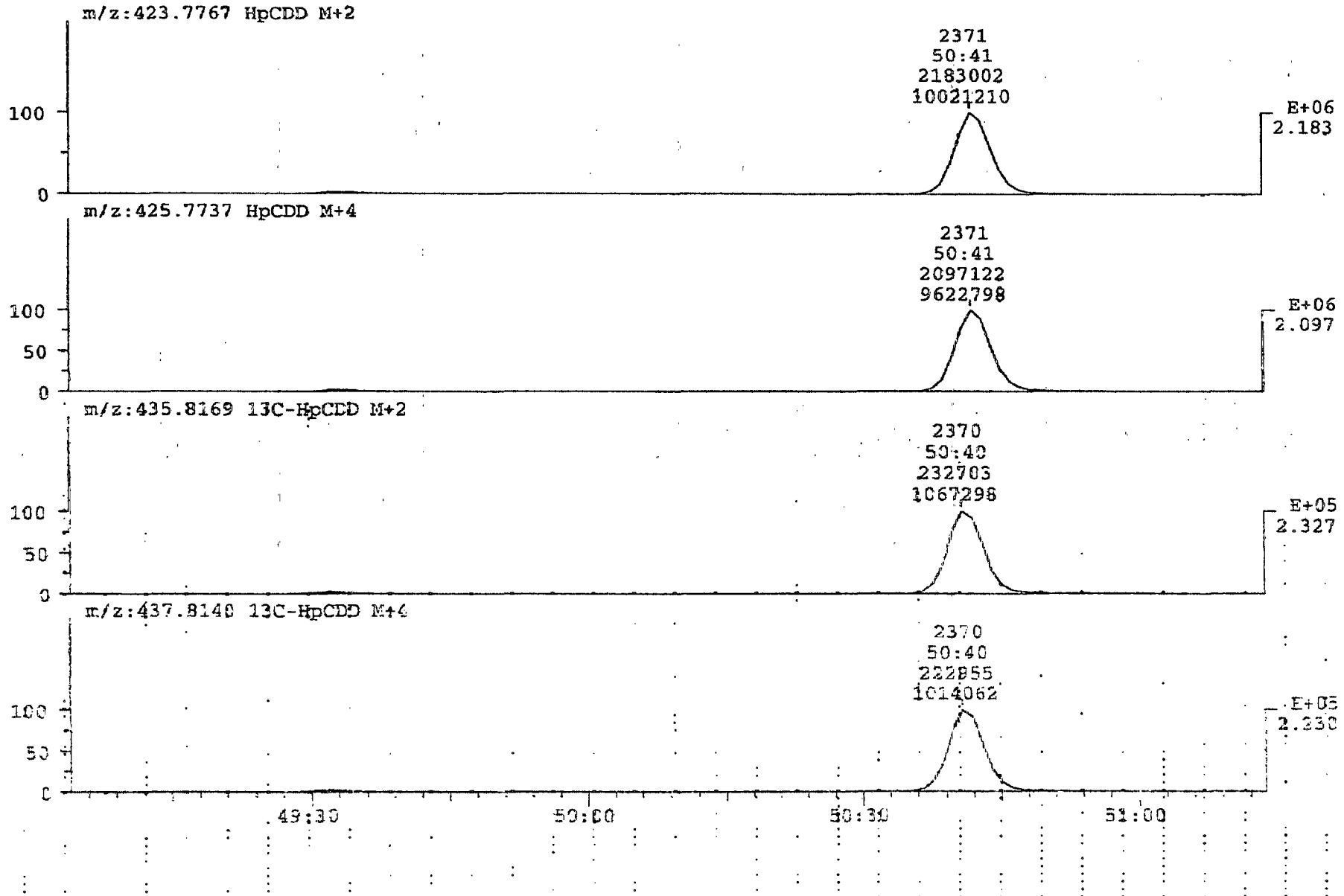
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2018 > 2176 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i5 01-Apr-03 Elapse: 45:03 2054
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2049 > 2059 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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CHRO:  t030401i5                              01-Apr-03   Elapse:  08:00.4       1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1                Start :  23:02:22   2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS5
Oper:  DCG           Client:  STL Knoxville               Inlet :  GC     Vial  45
Peak:  100.00  ppm     Label wndw:   2246 > 2438          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  2, 3.0
Disp:  Height  Area
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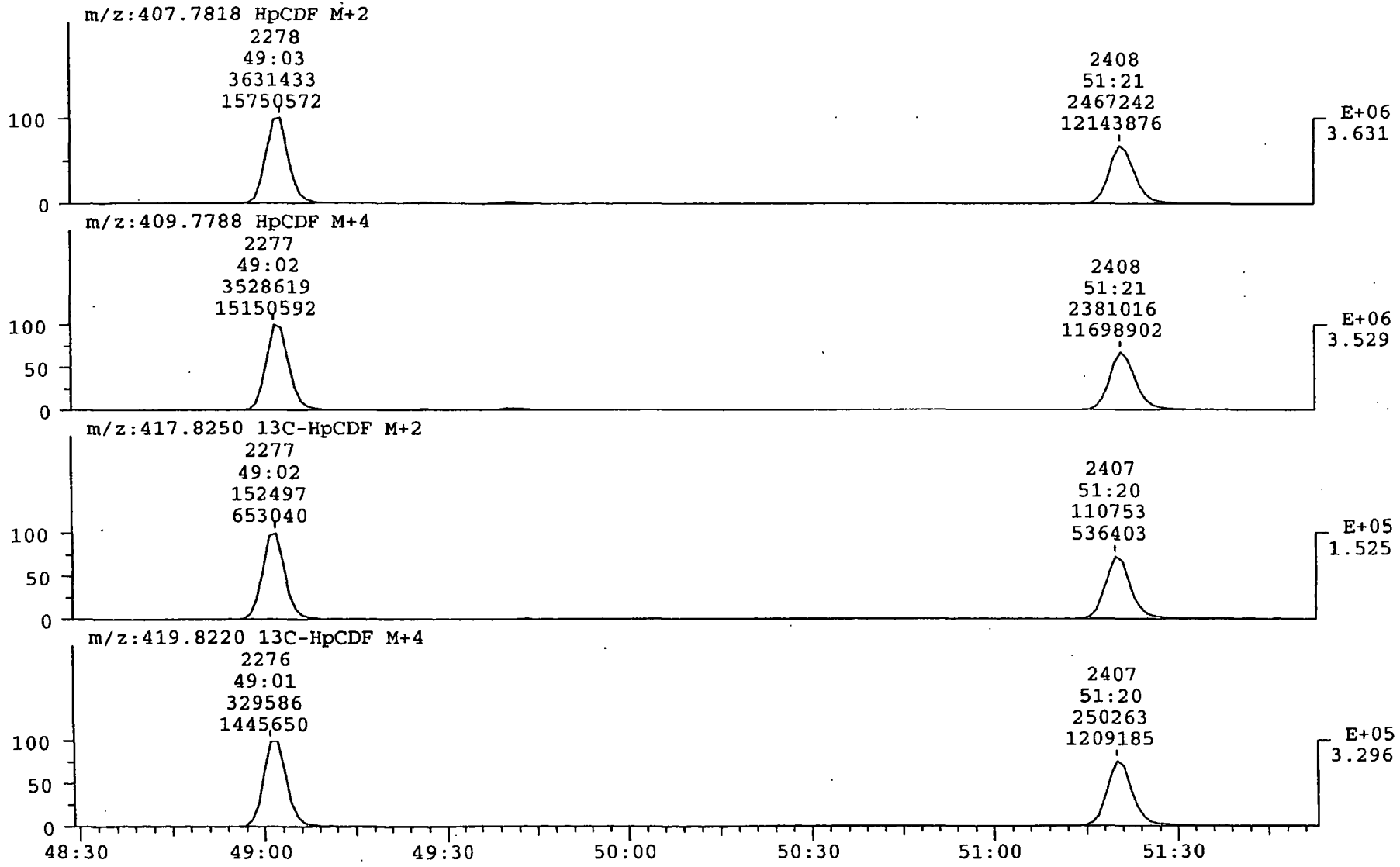
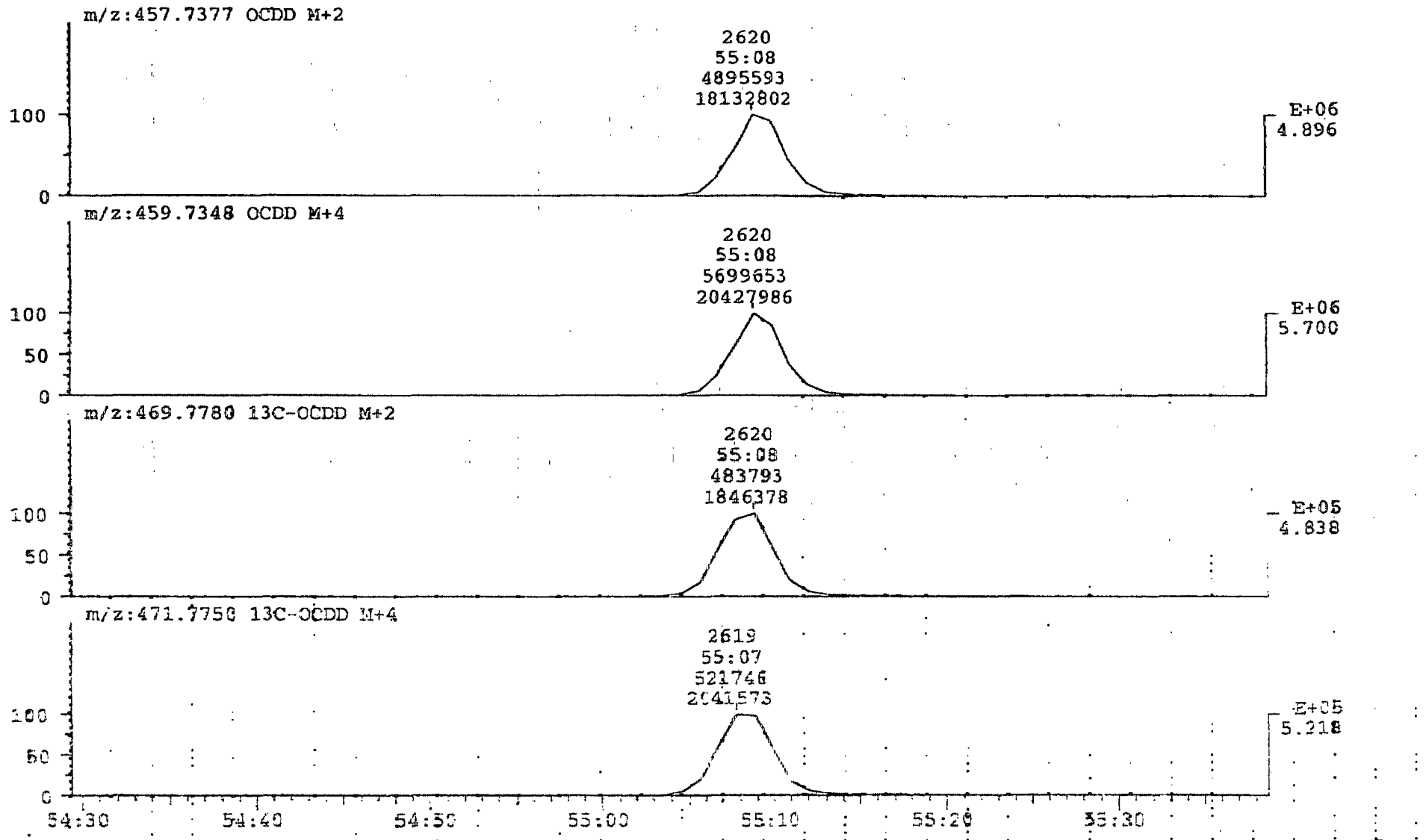
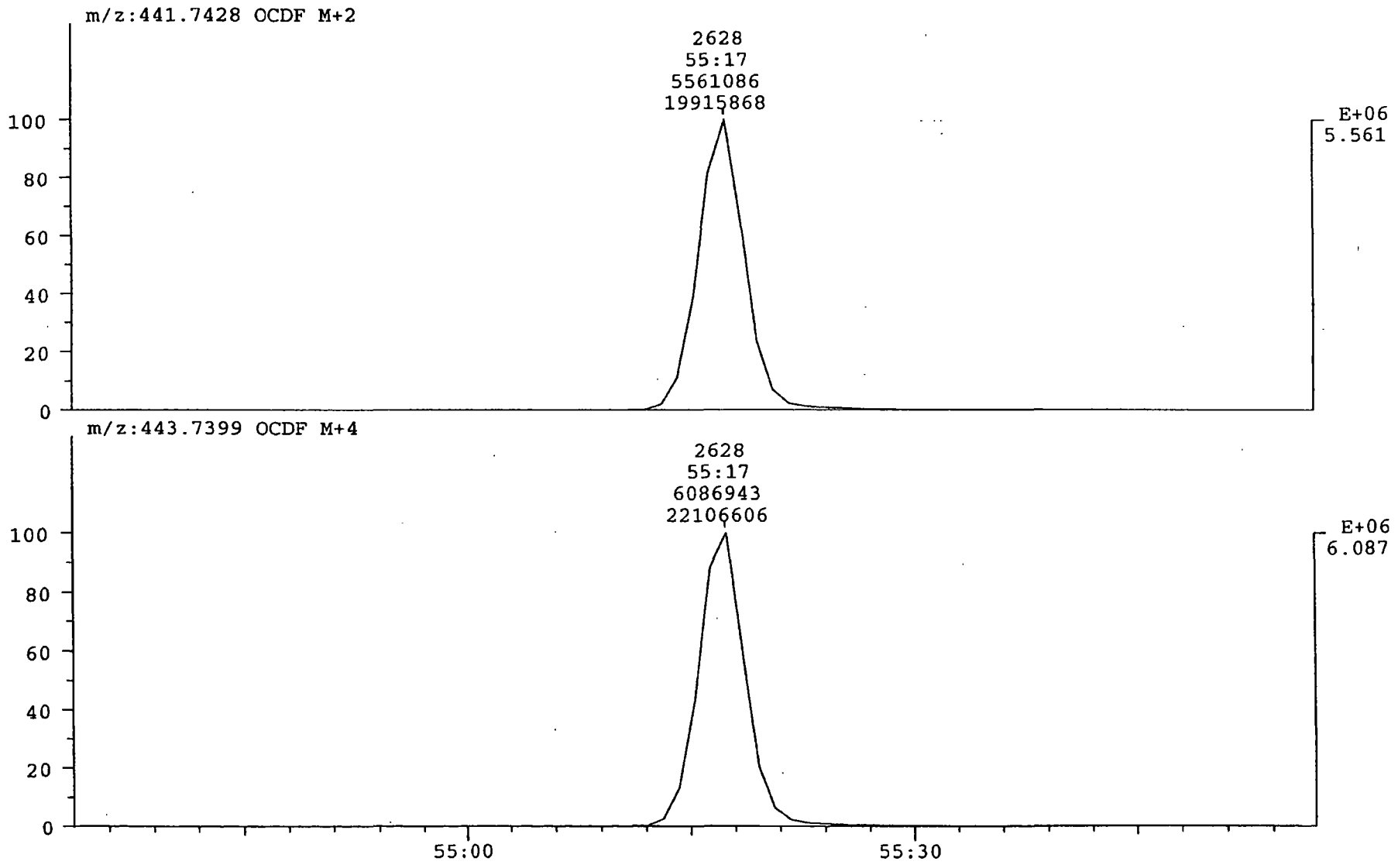


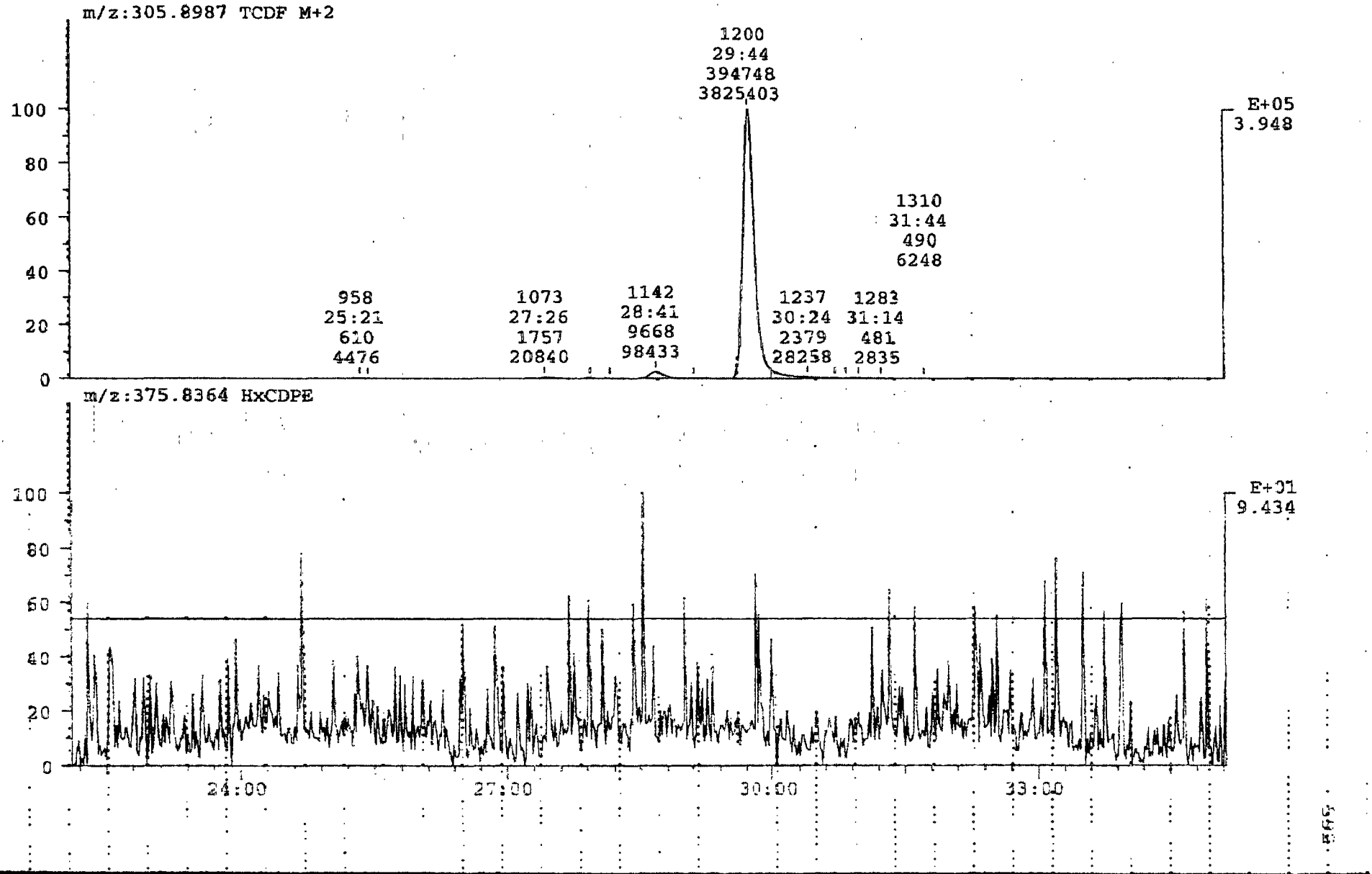
CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2583 > 2648 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 779 > 1497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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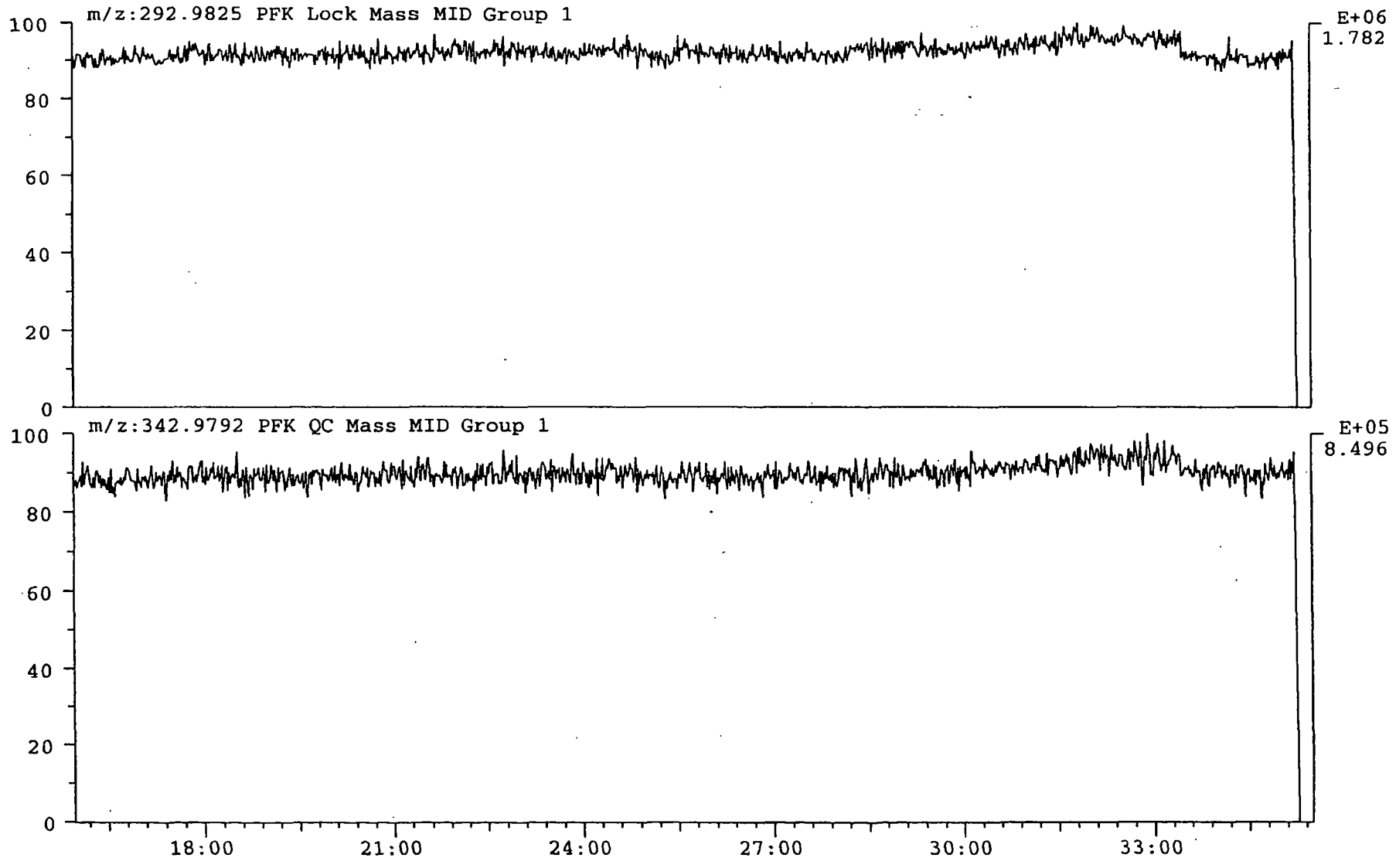
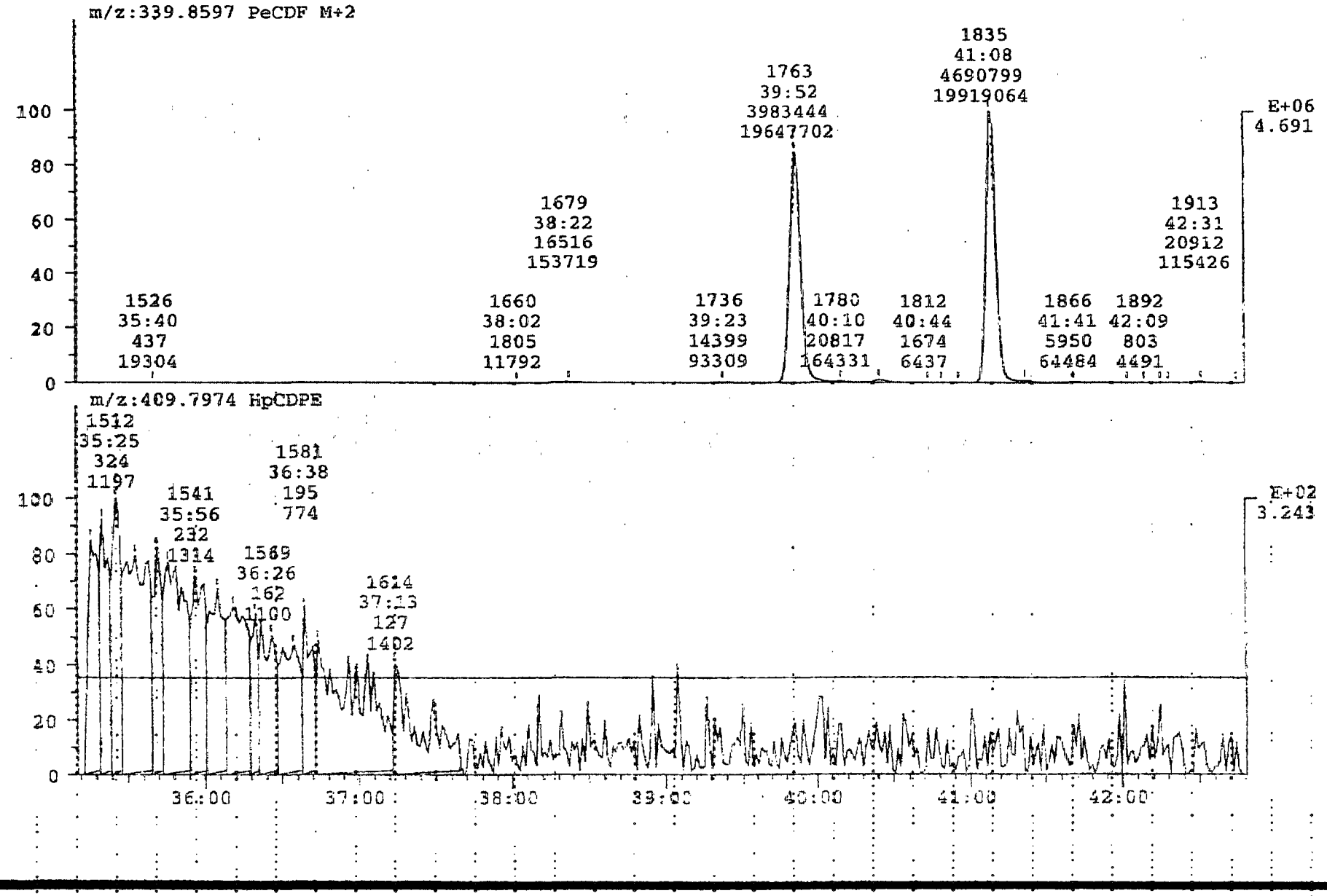
CHRO:  t030401i5                              01-Apr-03   Elapse:  08:00.4        1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1                Start :  23:02:22    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS5
Oper:  DCG           Client:  STL Knoxville               Inlet :  GC     Vial  45
Peak:  100.00  ppm     Label wndw:   440 > 1516           Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



CHRO: t03040115 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1500 > 1929 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1516 > 1951 Masses: 293 > 514
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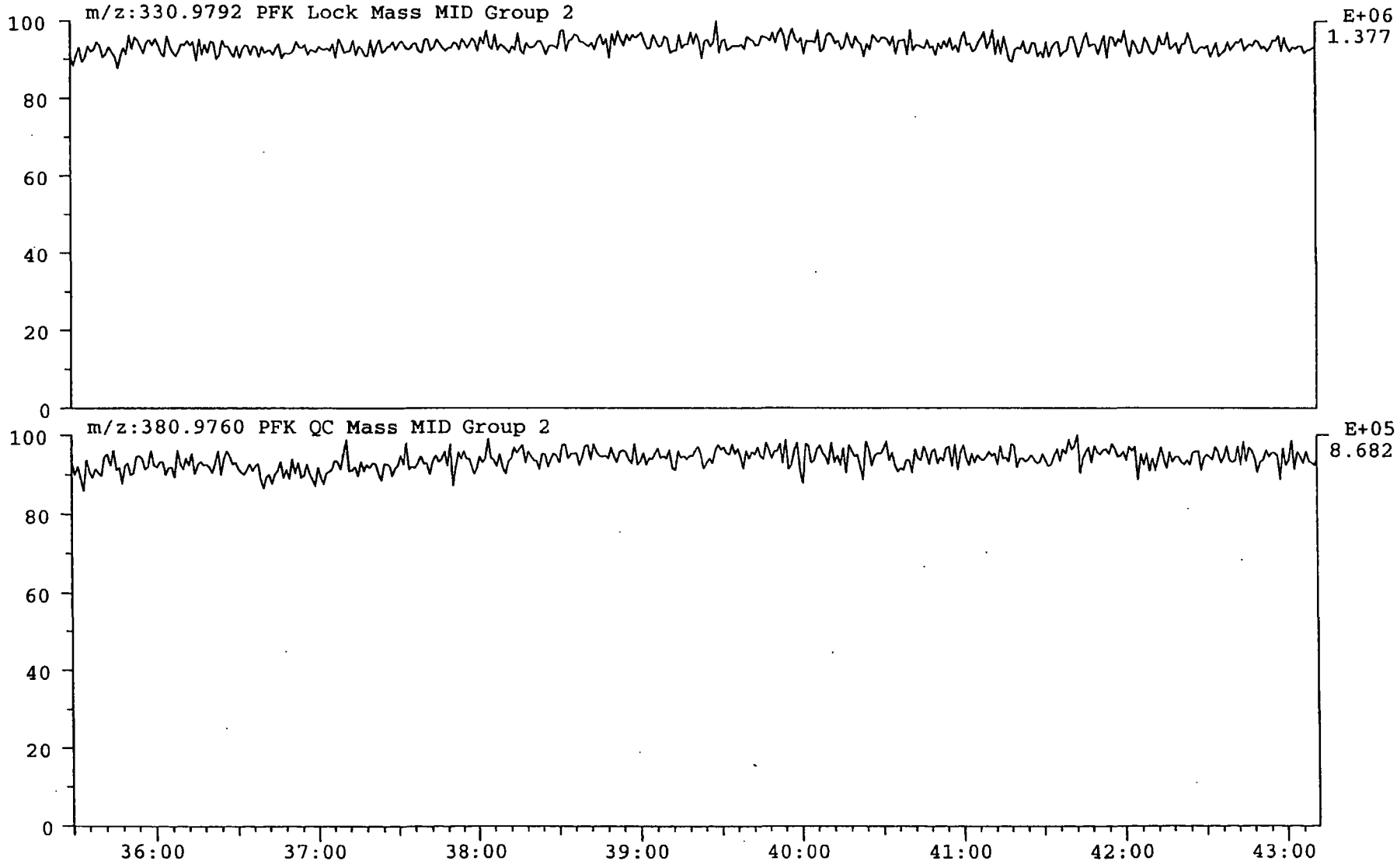
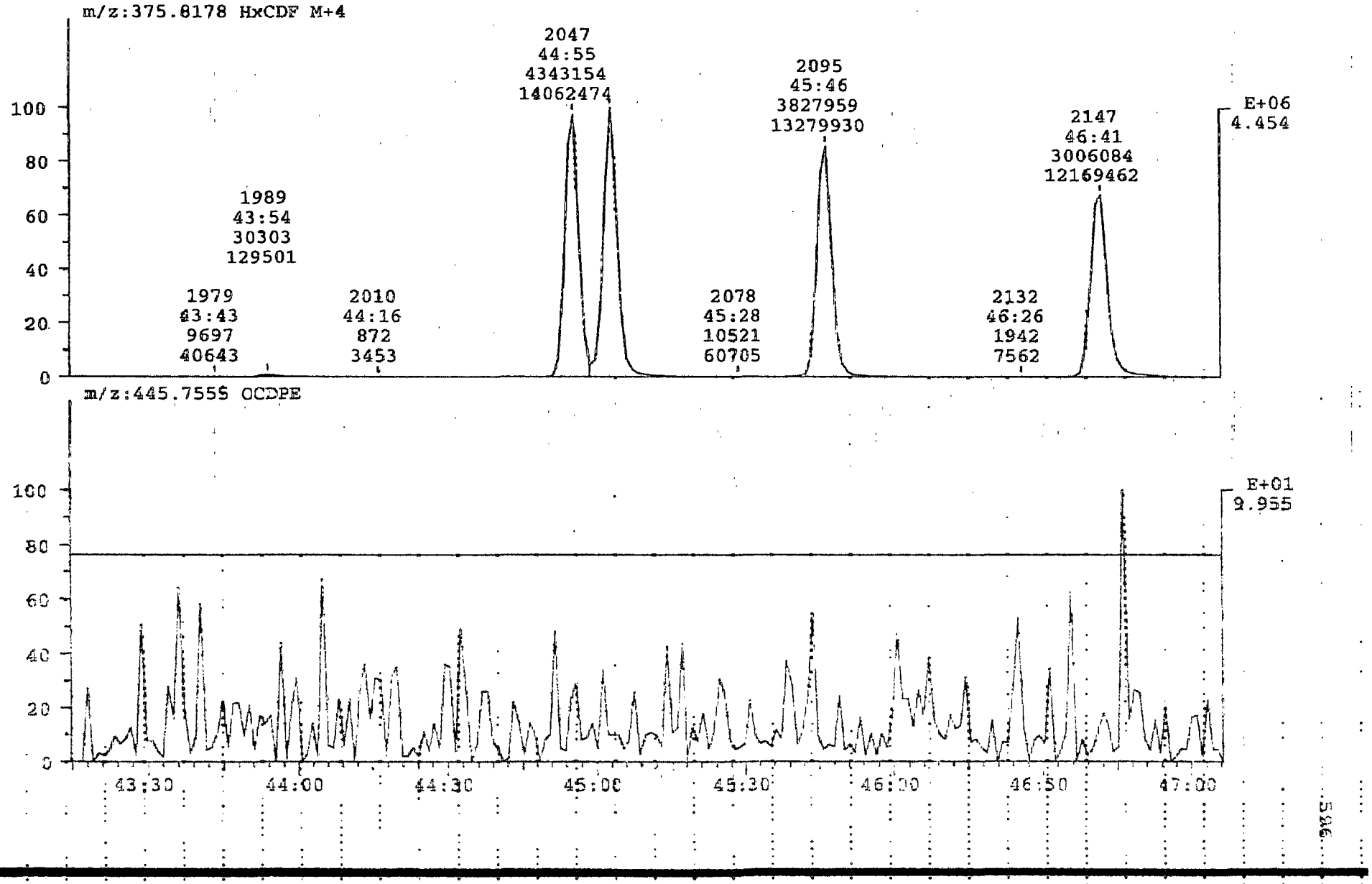


CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 1952 > 2170 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t030401i5                                01-Apr-03   Elapse:  08:00.4        1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1                  Start :  23:02:22    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  ICAL/CS5
Oper:  DCG           Client:  STL Knoxville                 Inlet :  GC     Vial  45
Peak:  100.00  ppm     Label wndw:   1950 > 2224            Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                   Label :  0, 0.0
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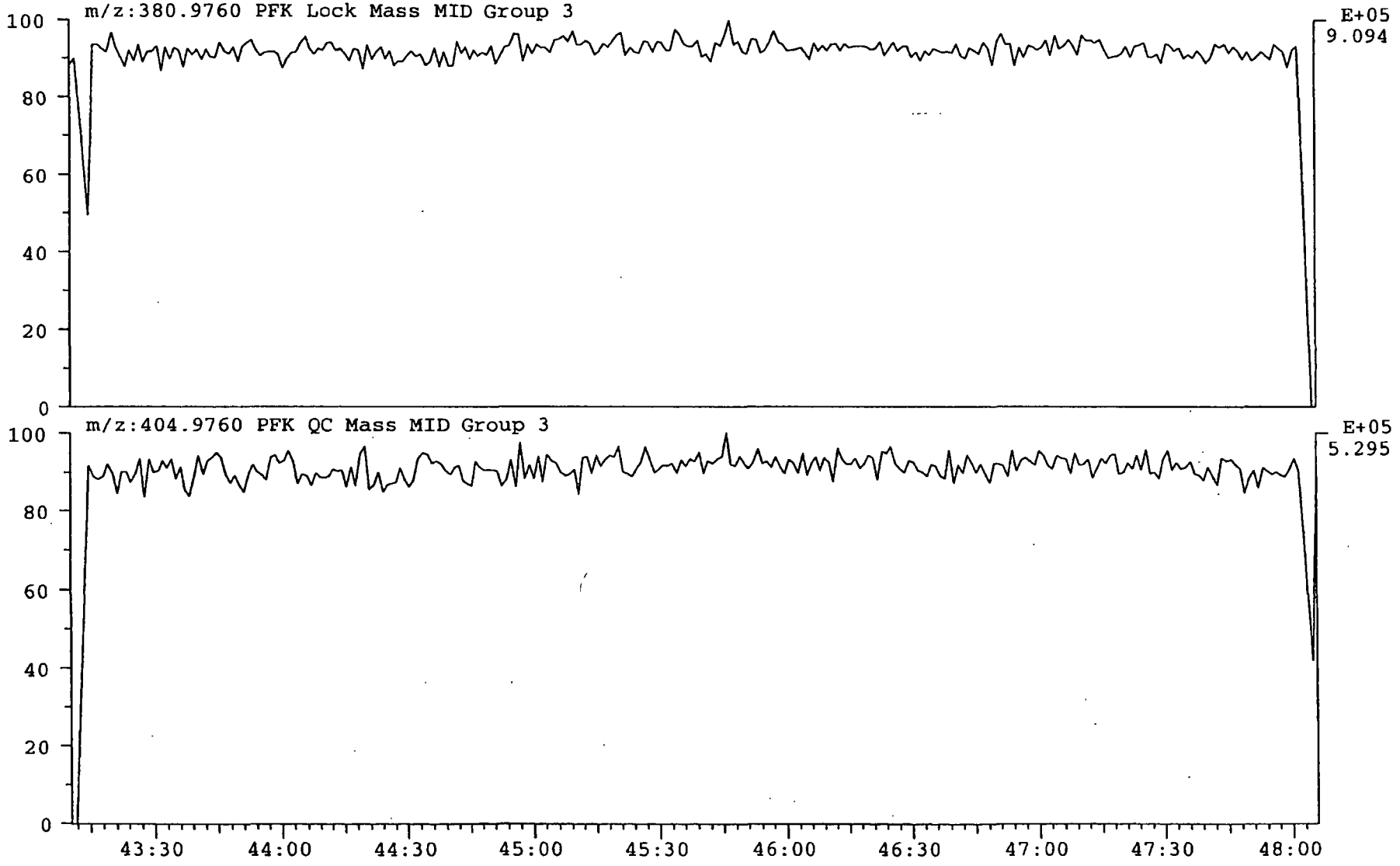
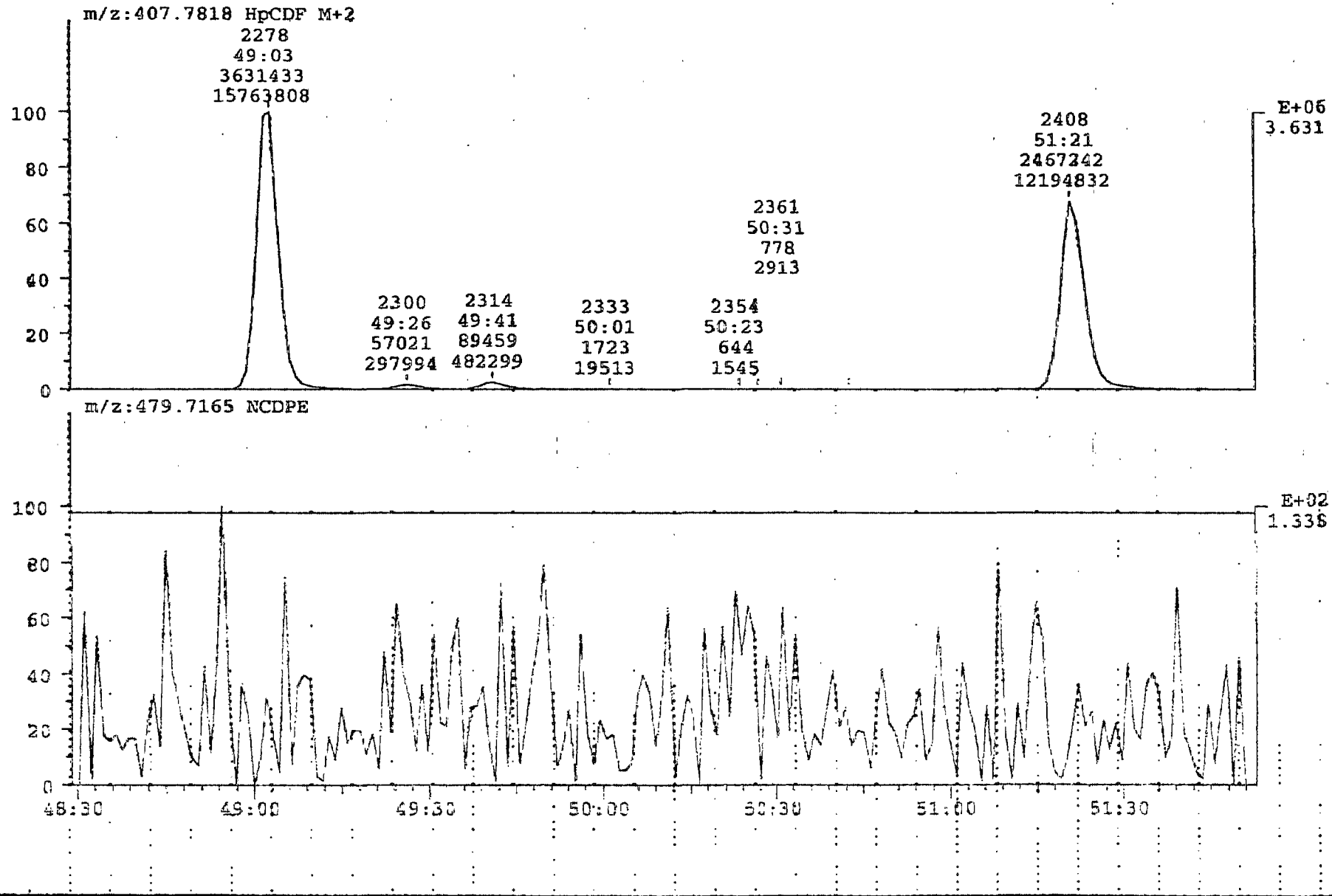


CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2246 > 2438 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t030401i5                              01-Apr-03   Elapse:  08:00.4        1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1                Start :  23:02:22    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL/CS5
Oper:  DCG          Client:  STL Knoxville                Inlet :  GC     Vial  45
Peak:  100.00  ppm     Label wndw:   2222 > 2523          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 2.5
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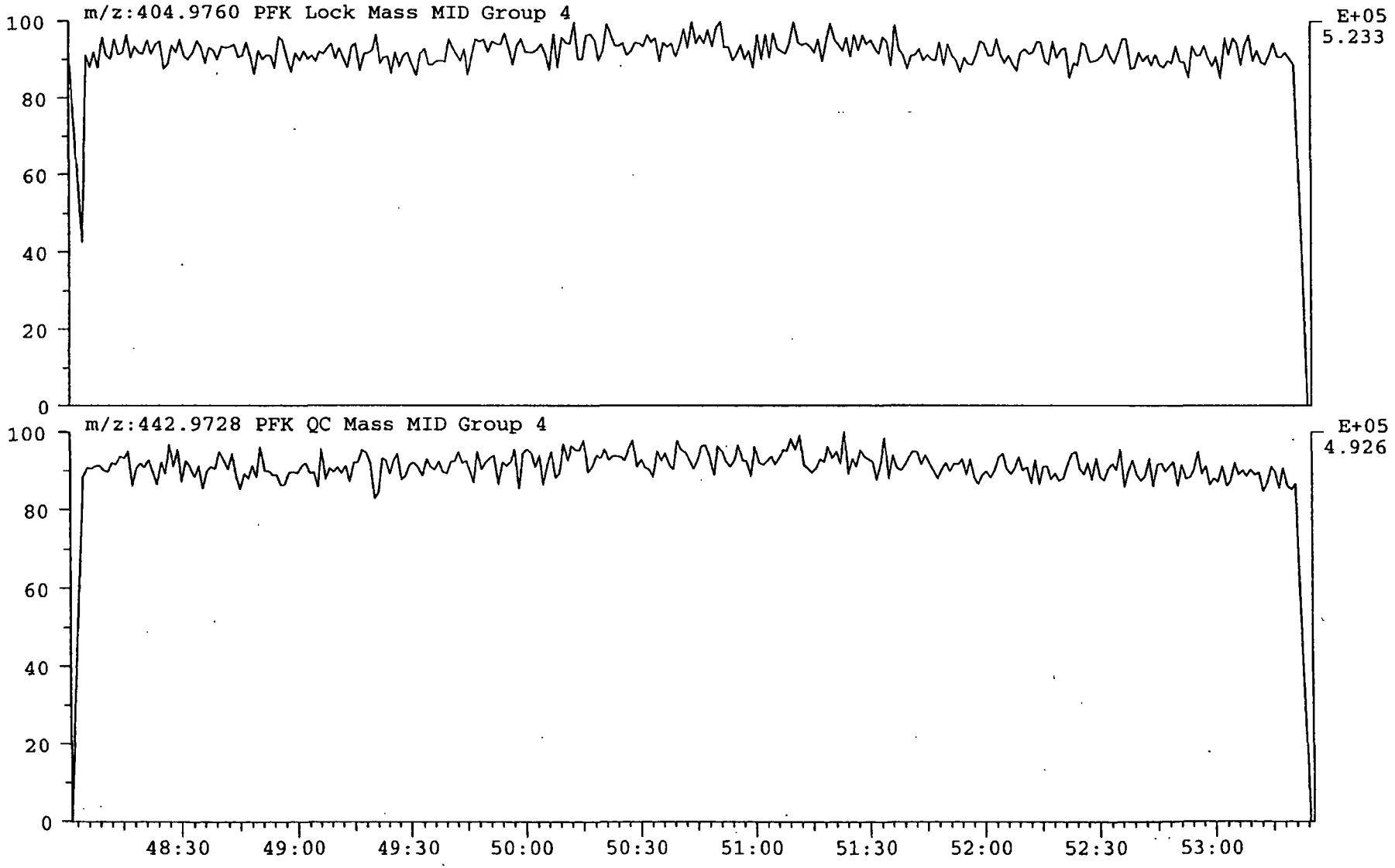
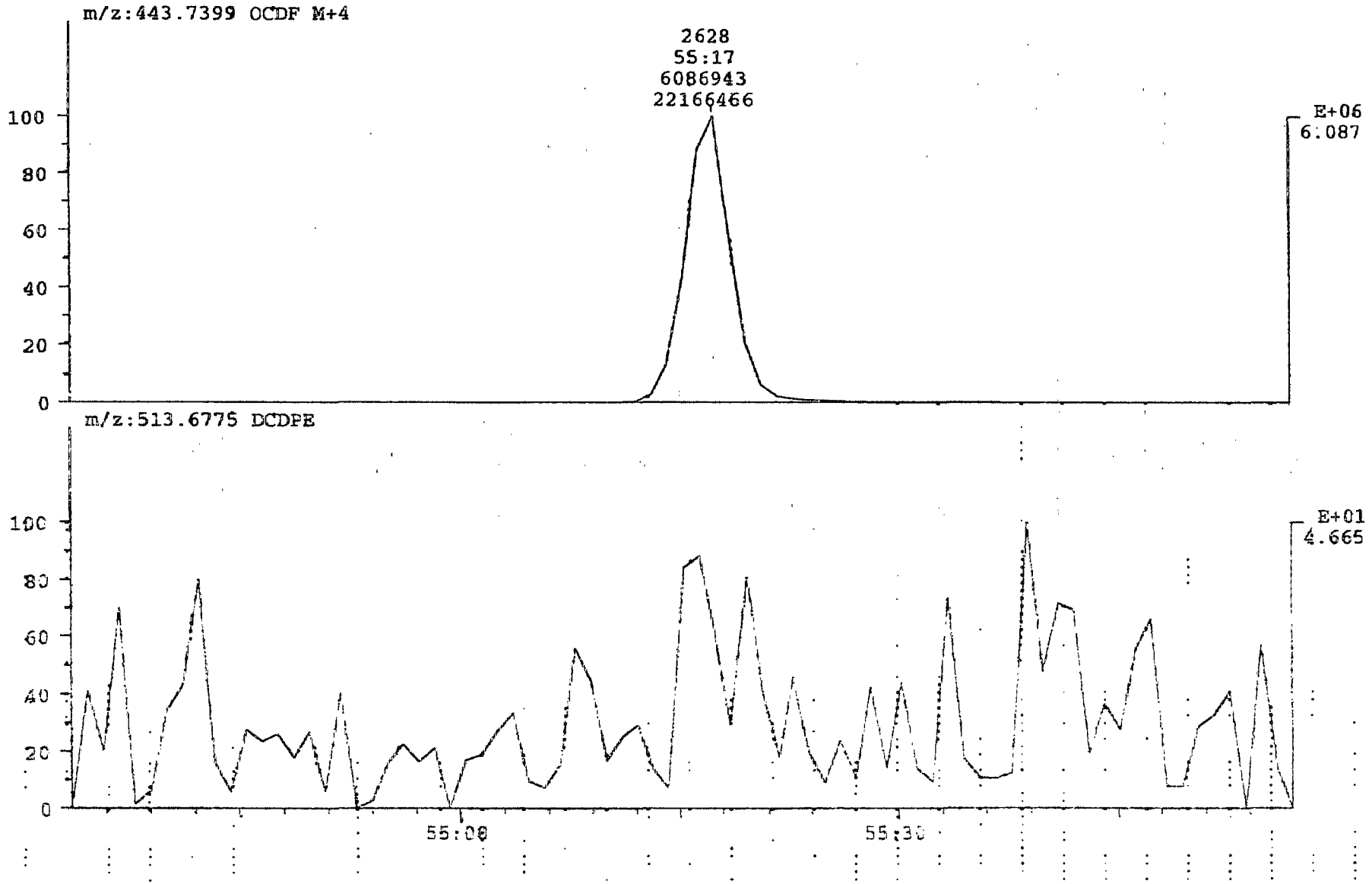


CHRO: t030401i5 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 2587 > 2665 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t030401i5                              01-Apr-03  Elapse:  08:00.4        1
Samp:  Vial 45 WO=2427:46CS5 Meth=F8 Dil=1               Start :  23:02:22    2696
Comm:  Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                        Study :  ICAL/CS5
Oper:  DCG           Client:  STL Knoxville             Inlet :  GC     Vial  45
Peak:  100.00  ppm     Label wndw:   2529 > 2765        Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3               Label :  0, 2.5
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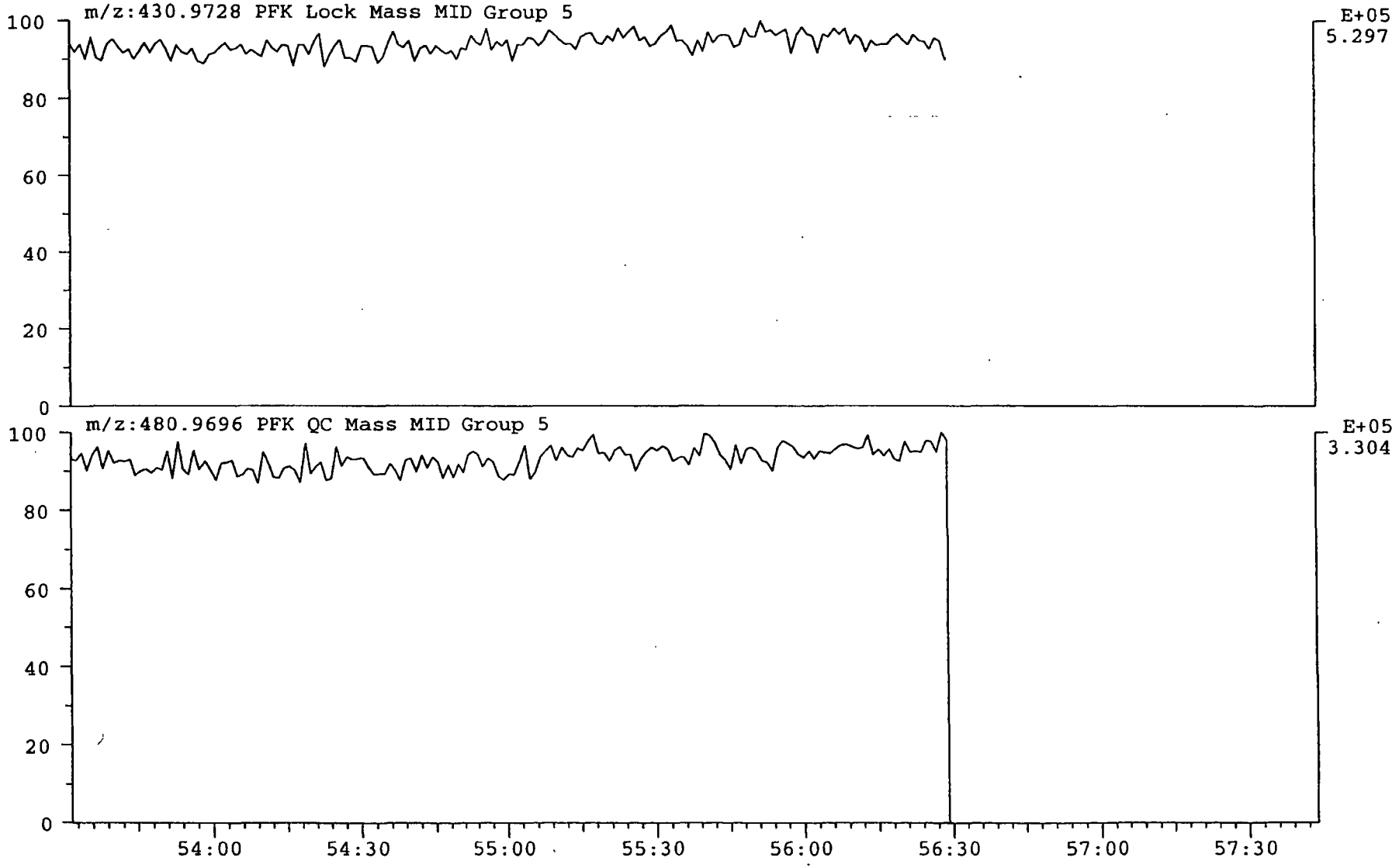
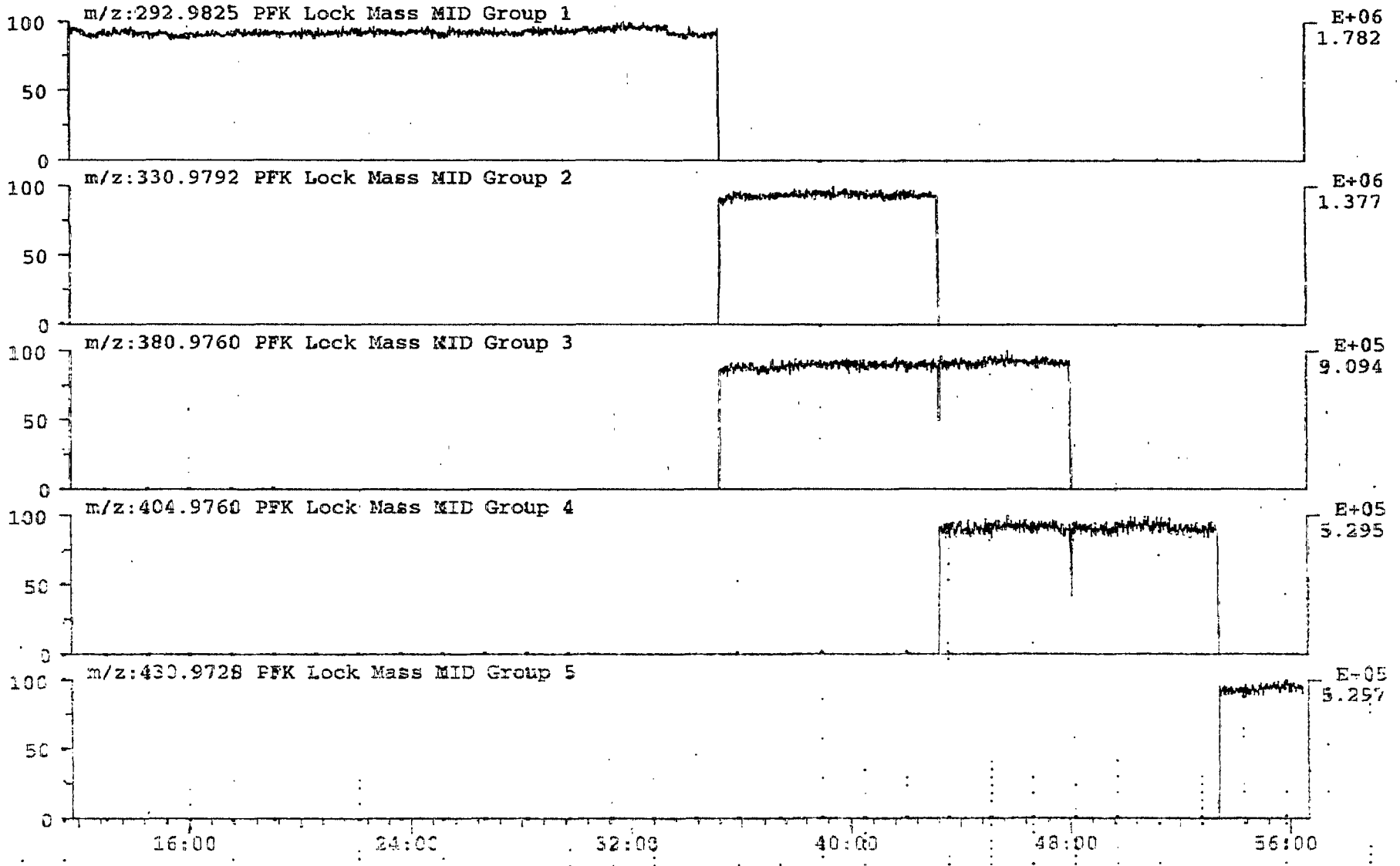



601

CHRO: t03040115 01-Apr-03 Elapse: 08:00.4 1
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45
Peak: 100.00 ppm Label wndw: 210 > 2707 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



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Instrument internet name  -  mat95s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis2ms
ICIS Version 8.2.1


ICL Version: 10.500
File name: t030401i5
Study: ICAL/CS5
Sample: WO=2427:46CS5 Meth=F8 Dil=1
Amount:    0.0
Volume:    0.0
Operator: DCG
Client: STL Knoxville
Comments: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Injected volume:    2.0
Sample from Vial 45
Analysis will stop when MID run finishes
Tune file name: tune2
File 5 of list 030401i
  ICL procedure: sleep6x
  ICIS procedure: tstd $
  MID procedure: epa1613

  MID Remarks:  Tetra-Octa PCDD/F EPA Method 8290/1613B

  Mid Set Up Parameter:
   Measure/lock ratio         1
   Damping Relay          FALSE
   Width first lock        0.35 amu
   Electric jump time        10 ms
   Magnetic jump time        60 ms
   Offset                   100 cts
   Electric range           300 %
   Sweep peak width        3.00
   MID mode               Lock mode
   Acq mode               Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    27:12 min    35:12 min     1.00 sec
  # 2   35:12 min     7:58 min    43:10 min     1.00 sec
  # 3   43:10 min     4:50 min    48:00 min     1.00 sec
  # 4   48:00 min     5:20 min    53:20 min     1.00 sec
  # 5   53:20 min     5:00 min    58:20 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92
   Window # 2
        mass F  int  gr  time (ms)
    330.9792 1   10   1      8.19
    339.8597      1   1     91.48
```

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
Loop clean w slvnt A (LC):      0 times
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume    (Y):    0.0 ul
2nd Injection volume   (I):    0.0 ul
Air volume of 2nd inj  (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:        270 deg                          300 deg max
  Transfer Line:   290 deg                          300 deg max
  Column:          140 deg at    0.0 minutes        330 deg max
                   140 deg at    3.0 minutes
                   210 deg at    6.5 minutes
                   210 deg at   34.5 minutes
                   280 deg at   44.5 minutes
                   280 deg at   51.0 minutes
                   325 deg at   58.4 minutes

  Inlet    :
  Pressure        18.0 psi
  Splitless mode
  Purge time       1.5 min
  Purge flow      40.0 mL/min

   Gas saver is on
   Saver time       3.0 min
   Saver flow      15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8418.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1038.9734 |
| BMASS | 304.9824 | BQUAD | 3.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.5529 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -20.3750 |
| DRAWC | 1.0000 | DRAWS | -0.0050 | ECORR | 1.0004 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9994 |
| EDACR | 20.0000 | EDACZ | 4857.3333 | ELEN | 57.7750 |
| EMULT | 2.1200 | ENS | 172.0000 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 180.0000 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 5.2000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 149.0000 | FVINLET | 488.0000 |
| FVSRC | 875.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4412 | HVANAL | 943.0000 | HVSRC | 3179.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4752.1320 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2400.0000 | LENSS | 14.4000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3476162.6581 | MDACR | 20.0000 |
| MRANGE | 1038.9734 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2806.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -8.2000 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10422.1189 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 3456.0000 | SHIELDS | 0.2000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8100 | TCURR | 0.9375 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.4050 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1721.0000 | XLENSS | 163.4000 |
| YLENS | 2467.0000 | YLENSS | -53.4000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 01-Apr-03 23:02:22.2

Autosampler has injected sample from vial 45
Analysis stopped at: 01-Apr-03 23:58:52.5 (run time 56.50 minutes)
Analysis stopped because MID run finished

QUAN: t030401i5.q0 Entries: 69

Data file(s) used
File: t030401i5 01-Apr-03
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Entry | Mass | Time | Scan | Height | Area | Noise |
|---|---|---|---|---|---|---|
| 1 | 320. | 31:43 | 1309 | 226422.531 | 2295395.500 | 67.68 |
| 2 | 322. | 31:43 | 1309 | 289827.093 | 2930867.250 | 79.57 |
| 3 | 332. | 31:07 | 1276 | 100898.445 | 984116.500 | 181.57 |
| 4 | 332. | 31:39 | 1306 | 113261.343 | 1106835.750 | 181.57 |
| 5 | 334. | 31:07 | 1276 | 123356.226 | 1222139.125 | 134.53 |
| 6 | 334. | 31:39 | 1306 | 142868.781 | 1412443.250 | 134.53 |
| 7 | 328. | 31:43 | 1309 | 483390.468 | 4987281.000 | 95.00 |
| 8 | 356. | 41:41 | 1866 | 3352136.250 | 13604447.000 | 175.80 |
| 9 | 358. | 41:41 | 1866 | 2108795.000 | 8733941.000 | 149.51 |
| 10 | 368. | 41:40 | 1865 | 351246.968 | 1417850.750 | 82.60 |
| 11 | 370. | 41:40 | 1865 | 221965.140 | 903317.187 | 61.32 |
| 12 | 390. | 45:56 | 2104 | 3634085.000 | 11677504.000 | 102.26 |
| 13 | 390. | 46:03 | 2111 | 3425474.500 | 12170517.000 | 102.26 |
| 14 | 390. | 46:26 | 2132 | 3582509.500 | 12430933.000 | 102.26 |
| 15 | 392. | 45:56 | 2104 | 2940056.500 | 9431370.000 | 134.78 |
| 16 | 392. | 46:03 | 2111 | 2694337.250 | 9761135.000 | 134.78 |
| 17 | 392. | 46:26 | 2132 | 2902233.750 | 10017298.000 | 134.78 |
| 18 | 402. | 45:55 | 2103 | 341086.312 | 1161217.375 | 64.00 |
| 19 | 402. | 46:02 | 2110 | 345551.406 | 1213774.375 | 64.00 |
| 20 | 402. | 46:25 | 2131 | 340586.468 | 1175294.375 | 64.00 |
| 21 | 404. | 45:55 | 2103 | 272384.343 | 883752.125 | 68.90 |
| 22 | 404. | 46:02 | 2110 | 272134.125 | 991120.937 | 68.90 |
| 23 | 404. | 46:25 | 2131 | 276002.781 | 924129.687 | 68.90 |
| 24 | 424. | 50:41 | 2371 | 2183002.000 | 10021209.000 | 80.28 |
| 25 | 426. | 50:41 | 2371 | 2097121.625 | 9622798.000 | 68.66 |
| 26 | 436. | 50:40 | 2370 | 232702.828 | 1067298.250 | 62.09 |
| 27 | 438. | 50:40 | 2370 | 222955.375 | 1014061.812 | 39.98 |
| 28 | 458. | 55:08 | 2620 | 4895592.500 | 18132802.000 | 114.71 |
| 29 | 460. | 55:08 | 2620 | 5699653.000 | 20427986.000 | 91.87 |
| 30 | 470. | 55:08 | 2620 | 483792.968 | 1846378.375 | 49.96 |
| 31 | 472. | 55:07 | 2619 | 521746.250 | 2041572.875 | 58.06 |
| 32 | 304. | 29:44 | 1200 | 309739.593 | 2994089.000 | 152.05 |
| 33 | 306. | 29:44 | 1200 | 394645.468 | 3822049.500 | 176.98 |
| 34 | 316. | 29:42 | 1198 | 164322.359 | 1520867.500 | 122.64 |
| 35 | 318. | 29:42 | 1198 | 211908.609 | 1911171.375 | 108.91 |
| 36 | 340. | 39:52 | 1763 | 3983353.500 | 19645044.000 | 313.56 |
| 37 | 340. | 41:08 | 1835 | 4689585.500 | 19894116.000 | 313.56 |
| 38 | 342. | 39:52 | 1763 | 2526946.500 | 12536343.000 | 191.95 |
| 39 | 342. | 41:08 | 1835 | 3032589.750 | 12911737.000 | 191.95 |
| 40 | 352. | 39:51 | 1762 | 426823.125 | 2099720.000 | 93.96 |
| 41 | 352. | 41:07 | 1834 | 492516.687 | 2026276.000 | 93.96 |
| 42 | 354. | 39:51 | 1762 | 273357.500 | 1336594.375 | 98.30 |
| 43 | 354. | 41:07 | 1834 | 315534.187 | 1284164.375 | 98.30 |
| 44 | 374. | 44:55 | 2047 | 5616703.000 | 17675136.000 | 209.49 |
| 45 | 374. | 45:03 | 2054 | 5590976.000 | 18558774.000 | 209.49 |
| 46 | 374. | 45:46 | 2095 | 4925005.500 | 16599401.000 | 209.49 |
| 47 | 374. | 46:42 | 2147 | 3876010.000 | 15294210.000 | 209.49 |
| 48 | 376. | 44:55 | 2047 | 4343153.500 | 14062473.000 | 233.60 |
| 49 | 376. | 45:03 | 2054 | 4453881.000 | 14762074.000 | 233.60 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 50, | 376., | 45:46 | , | 2095, | 3827958.750, | 13279929.000, | 233.60, |
| 51, | 376., | 46:42 | , | 2147, | 3006298.500, | 12177844.000, | 233.60, |
| 52, | 384., | 44:54 | , | 2046, | 303209.125, | 945697.812, | 80.29, |
| 53, | 384., | 45:02 | , | 2053, | 295948.937, | 973271.812, | 80.29, |
| 54, | 384., | 45:45 | , | 2094, | 276611.781, | 940604.562, | 80.29, |
| 55, | 384., | 46:40 | , | 2146, | 210016.546, | 811022.375, | 80.29, |
| 56, | 386., | 44:54 | , | 2046, | 571688.312, | 1775321.125, | 114.26, |
| 57, | 386., | 45:02 | , | 2053, | 564531.750, | 1895404.750, | 114.26, |
| 58, | 386., | 45:45 | , | 2094, | 512438.312, | 1774697.500, | 114.26, |
| 59, | 386., | 46:40 | , | 2146, | 391283.406, | 1542149.625, | 114.26, |
| 60, | 408., | 49:03 | , | 2278, | 3631433.250, | 15750571.000, | 125.87, |
| 61, | 408., | 51:21 | , | 2408, | 2467242.000, | 12143876.000, | 125.87, |
| 62, | 410., | 49:02 | , | 2277, | 3528618.750, | 15150592.000, | 162.56, |
| 63, | 410., | 51:21 | , | 2408, | 2381016.000, | 11698902.000, | 162.56, |
| 64, | 418., | 49:02 | , | 2277, | 152497.468, | 653039.625, | 62.33, |
| 65, | 418., | 51:20 | , | 2407, | 110753.070, | 536403.312, | 62.33, |
| 66, | 420., | 49:01 | , | 2276, | 329585.531, | 1445649.500, | 67.18, |
| 67, | 420., | 51:20 | , | 2407, | 250262.531, | 1209184.900, | 67.18, |
| 68, | 442., | 55:17 | , | 2628, | 5561085.500, | 19915868.000, | 129.42, |
| 69, | 444., | 55:17 | , | 2628, | 6086943.000, | 22106606.000, | 176.32, |

QUAN: t030401i5.q0 Entries: 69

Data file(s) used
File: t030401i5 01-Apr-03
Samp: Vial 45 WO=2427:46CS5 Meth=F8 Dil=1 Start : 23:02:22 2696
Comm: Inst=m2a/176261 Batch=20030401i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL/CS5
Oper: DCG Client: STL Knoxville Inlet : GC Vial 45

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 31:43 | 2295396. | 226423. | 31:26 | 31:59 | 68. | 2 | 3.0 |
| 321.8775 | 31:43 | 2930867. | 289827. | 31:26 | 31:59 | 80. | 2 | 3.0 |
| 331.9202 | 31:07 | 984116. | 100898. | 30:52 | 31:23 | 182. | 2 | 3.0 |
| 331.9202 | 31:39 | 1106836. | 113261. | 31:27 | 31:56 | 182. | 2 | 3.0 |
| 333.9171 | 31:07 | 1222139. | 123356. | 30:52 | 31:23 | 135. | 2 | 3.0 |
| 333.9171 | 31:39 | 1412443. | 142869. | 31:27 | 31:56 | 135. | 2 | 3.0 |
| 327.8683 | 31:43 | 4987281. | 483390. | 31:26 | 31:59 | 95. | 2 | 3.0 |
| 303.8864 | 29:44 | 2994089. | 309740. | 29:31 | 30:00 | 152. | 2 | 3.0 |
| 305.8834 | 29:44 | 3822050. | 394645. | 29:30 | 30:00 | 177. | 2 | 3.0 |
| 315.9261 | 29:42 | 1520868. | 164322. | 29:29 | 29:58 | 123. | 2 | 3.0 |
| 317.9230 | 29:42 | 1911171. | 211909. | 29:27 | 29:58 | 109. | 2 | 3.0 |
| 355.8368 | 41:41 | 13604447. | 3352136. | 41:34 | 41:57 | 176. | 2 | 3.0 |
| 357.8337 | 41:41 | 8733941. | 2108795. | 41:34 | 41:57 | 150. | 2 | 3.0 |
| 367.8765 | 41:40 | 1417851. | 351247. | 41:29 | 41:50 | 83. | 2 | 3.0 |
| 369.8734 | 41:40 | 903317. | 221965. | 41:32 | 41:56 | 61. | 2 | 3.0 |
| 339.8427 | 39:52 | 19645044. | 3983354. | 39:39 | 40:06 | 314. | 2 | 3.0 |
| 339.8427 | 41:08 | 19894116. | 4689586. | 41:00 | 41:19 | 314. | 2 | 3.0 |
| 341.8396 | 39:52 | 12536343. | 2526947. | 39:40 | 40:05 | 192. | 2 | 3.0 |
| 341.8396 | 41:08 | 12911737. | 3032590. | 41:01 | 41:24 | 192. | 2 | 3.0 |
| 351.8824 | 39:51 | 2099720. | 426823. | 39:39 | 40:06 | 94. | 2 | 3.0 |
| 351.8824 | 41:07 | 2026276. | 492517. | 41:01 | 41:23 | 94. | 2 | 3.0 |
| 353.8793 | 39:51 | 1336594. | 273357. | 39:39 | 40:06 | 98. | 2 | 3.0 |
| 353.8793 | 41:07 | 1284164. | 315534. | 41:01 | 41:23 | 98. | 2 | 3.0 |
| 389.7961 | 45:56 | 11677504. | 3634085. | 45:50 | 45:59 | 102. | 2 | 3.0 |
| 389.7961 | 46:03 | 12170517. | 3425475. | 45:59 | 46:19 | 102. | 2 | 3.0 |
| 389.7961 | 46:26 | 12430933. | 3582510. | 46:20 | 46:40 | 102. | 2 | 3.0 |
| 391.7931 | 45:56 | 9431370. | 2940057. | 45:49 | 45:59 | 135. | 2 | 3.0 |
| 391.7931 | 46:03 | 9761135. | 2694337. | 45:59 | 46:19 | 135. | 2 | 3.0 |
| 391.7931 | 46:26 | 10017298. | 2902234. | 46:20 | 46:40 | 135. | 2 | 3.0 |
| 401.8358 | 45:55 | 1161217. | 341086. | 45:49 | 45:59 | 64. | 2 | 3.0 |
| 401.8358 | 46:02 | 1213774. | 345551. | 45:59 | 46:18 | 64. | 2 | 3.0 |
| 401.8358 | 46:24 | 1175294. | 340586. | 46:18 | 46:40 | 64. | 2 | 3.0 |
| 403.8327 | 45:55 | 883752. | 272384. | 45:49 | 45:58 | 69. | 2 | 3.0 |
| 403.8327 | 46:02 | 991121. | 272134. | 45:58 | 46:18 | 69. | 2 | 3.0 |
| 403.8327 | 46:24 | 924130. | 276003. | 46:19 | 46:38 | 69. | 2 | 3.0 |
| 373.8021 | 44:55 | 17675136. | 5616703. | 44:48 | 44:58 | 209. | 2 | 3.0 |
| 373.8021 | 45:03 | 18558774. | 5590976. | 44:58 | 45:19 | 209. | 2 | 3.0 |
| 373.8021 | 45:46 | 16599401. | 4925006. | 45:37 | 46:00 | 209. | 2 | 3.0 |
| 373.8021 | 46:41 | 15294210. | 3876010. | 46:35 | 46:57 | 209. | 2 | 3.0 |
| 375.7990 | 44:55 | 14062473. | 4343154. | 44:48 | 44:58 | 234. | 2 | 3.0 |
| 375.7990 | 45:03 | 14762074. | 4453881. | 44:58 | 45:19 | 234. | 2 | 3.0 |
| 375.7990 | 45:46 | 13279929. | 3827959. | 45:37 | 46:02 | 234. | 2 | 3.0 |
| 375.7990 | 46:41 | 12177844. | 3006299. | 46:35 | 46:57 | 234. | 2 | 3.0 |
| 383.8447 | 44:54 | 945698. | 303209. | 44:48 | 44:58 | 80. | 2 | 3.0 |
| 383.8447 | 45:02 | 973272. | 295949. | 44:58 | 45:18 | 80. | 2 | 3.0 |
| 383.8447 | 45:45 | 940605. | 276612. | 45:32 | 46:01 | 80. | 2 | 3.0 |
| 383.8447 | 46:40 | 811022. | 210017. | 46:34 | 46:56 | 80. | 2 | 3.0 |
| 385.8417 | 44:54 | 1775321. | 571688. | 44:48 | 44:57 | 114. | 2 | 3.0 |
| 385.8417 | 45:02 | 1895405. | 564532. | 44:57 | 45:18 | 114. | 2 | 3.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | 610 |
| 385.8417 | 45:45 | 1774698. | 512438. | 45:35 | 45:59 | 114. | 2 3.0 |
| 385.8417 | 46:40 | 1542150. | 391283. | 46:33 | 46:56 | 114. | 2 3.0 |
| 423.7555 | 50:41 | 10021209. | 2183002. | 50:33 | 50:57 | 80. | 2 3.0 |
| 425.7524 | 50:41 | 9622798. | 2097122. | 50:34 | 50:57 | 69. | 2 3.0 |
| 435.7951 | 50:40 | 1067298. | 232703. | 50:33 | 50:56 | 62. | 2 3.0 |
| 437.7921 | 50:40 | 1014062. | 222955. | 50:33 | 50:56 | 40. | 2 3.0 |
| 407.7614 | 49:03 | 15750571. | 3631433. | 48:54 | 49:19 | 126. | 2 3.0 |
| 407.7614 | 51:21 | 12143876. | 2467242. | 51:13 | 51:37 | 126. | 2 3.0 |
| 409.7583 | 49:02 | 15150592. | 3528619. | 48:54 | 49:17 | 163. | 2 3.0 |
| 409.7583 | 51:21 | 11698902. | 2381016. | 51:12 | 51:37 | 163. | 2 3.0 |
| 417.8041 | 49:02 | 653040. | 152497. | 48:54 | 49:16 | 62. | 2 3.0 |
| 417.8041 | 51:20 | 536403. | 110753. | 51:12 | 51:36 | 62. | 2 3.0 |
| 419.8010 | 49:01 | 1445650. | 329586. | 48:53 | 49:16 | 67. | 2 3.0 |
| 419.8010 | 51:20 | 1209185. | 250263. | 51:11 | 51:36 | 67. | 2 3.0 |
| 457.7148 | 55:08 | 18132802. | 4895593. | 55:02 | 55:24 | 115. | 2 3.0 |
| 459.7118 | 55:08 | 20427986. | 5699653. | 55:01 | 55:24 | 92. | 2 3.0 |
| 469.7545 | 55:08 | 1846378. | 483793. | 55:01 | 55:24 | 50. | 2 3.0 |
| 471.7514 | 55:07 | 2041573. | 521746. | 55:01 | 55:23 | 58. | 2 3.0 |
| 441.7207 | 55:17 | 19915868. | 5561086. | 55:05 | 55:33 | 129. | 2 3.0 |
| 443.7177 | 55:17 | 22106606. | 6086943. | 55:05 | 55:33 | 176. | 2 3.0 |

# STL Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
## Method: 8290 - KNOX-ID-0004-R3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| **Start PFK:** | 22:25 ✓ | **VER Filename:** | 4031004S1 | ✓ **Win Filename:** | 4031004S1 | **Inst:** | MAT95J |
| **End PFK:** | 09:59 ✓ | **VER Filename:** | 4031005S1 | **Col Perf Filename:** | + | **ICAL Date:** | 9-30-03 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented at both the beginning and end of the 12 hour shift? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | | ✓ | | | ✓ |
| 6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 7. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 22), and formula (Section 10.2.6)? | | ✓ | | | ✓ |
| 9. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs? | | ✓ | | | ✓ |
| 10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | ✓ | | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards? | | ✓ | | | ✓ |
| 16. | | | | | |

| | | | |
|---|---|---|---|
| **Analyst:** PMH | **Date:** 10·05·03 | **2nd Level Reviewer :** VMK | **Date:** 10-6-03 |
| **Comments:** | | **Comments:** | |

**STL KNOXVILLE**
**SPECIALTY ORGANICS INSTRUMENT MAT 955 RUN LOG**

| Date | Time | Opr | Sample ID | Filename | Code | Matrix | Type | Tape | Lot#/Comments |
|---|---|---|---|---|---|---|---|---|---|
| 10-2-03 | 22:13 | DW | FIJCLIAA | tfljcl | OK | TBST | TEST SPIKE | | H3I161210-001 |
| 10-02-03 | 23:17 | DW | FDA4WIAA | tfoa4wa | ok | $H_2O$ | SAM | | C3I130202-001 |
| 10-03-03 | 00:21 01:27 | DW | FDA4XIAA | tfoa4x | OK | $H_2O$ | SAM | | C3I130202-002 |
| 10-03-03 | 02:30 | DW | FDED9IAA | tfoed9 | OK | $H_2O$ | SAM | | H3I160214-001 |
| 10-03-03 | 03:34 | DW | FOEIDIAA | tfoeid | OK | $H_2O$ | SAM | | H3I160214-004 |
| 10-03-03 | 04:37 | DW | FDHGMIAA | tfohgm | OK | $H_2O$ | SAM | | H3I170183-001 |
| 10-03-03 | 05:41 | DW | FDHGVIAA | tfohgv | OK | $H_2O$ | SAM | | H3I170183-002 |
| 10-03-03 | 06:45 | DW | FOHGWIAA | tfohgw | OK | $H_2O$ | SAM | | H3I170183-003 |
| 10-03-03 | — | DW | FDHGDIAA | tfohgD | DR | $H_2O$ | SAM | | H3I170183-004 |
| 10-3-03 | 08:05 | DFW | PFK | — | OK | — | Res | | Mass Res Check |
| 10-3-03 | 09:00 | DFW | PFK | — | OK | — | Res | | Mass Res Check |
| 10-3-03 | 09:04 | DFW | 2553:86 | t03100351 | OK | - | WIN/VER | | WIN/VER Std |
| 10-3-03 | 10:40 | DFW | FIDWJIAC | tfidwjc | OK | $H_2O$ | QC | | H3I290000-526C |
| 10-3-03 | 11:45 | DFW | Noname | r | OK | — | QC | | Flush |
| 10-3-03 | 12:01 | DFW | Noname | r | OK | — | QC | | " |
| 10-3-03 | 12:17 | DFW | Noname | r | OK | — | QC | | " |
| 10-3-03 | 12:52 | DFW | FIDWJIAA | tfidwjb | OK | $H_2O$ | QC | | H3I290000-526B |
| 10-3-03 | 13:55 | DFW | FOHGWIAA | tfohgw ① | OK | $H_2O$ | SAM | | H3I170183-003 |
| 10-3-03 | 14:58 | DFW | FOEIAIAA | tfoela | OK | $H_2O$ | SAM | | H3I160214-002 |
| 10-3-03 | 16:02 | DFW | FOEICIAA | tfoelc | OK | $H_2O$ | SAM | | " -003 |
| 10-3-03 | 17:05 | DFW | FOK7TIAA | tfok7t | OK | $H_2O$ | SAM | | H3I180135-001 |
| 10-3-03 | 18:07 | DFW | FOK7WIAA | tfok7w | | $H_2O$ | SAM | | " -002 |
| 10-3-03 | — | DFW | Noname | tsb1003 | DR | — | QC | | Flush |
| 10-3-03 | 19:10 | DFW | 2553:86 | t03100352 | OK to close | — | WIN/VER | | WIN/VER Std. |
| 10-03-03 | 20:28 | PMP | PFK | — | OK | — | Res | | Mass Res Chk |
| 10-04-03 | 22:25 | PMP | PFK | — | OK | — | Res | | Mass Res Chk |
| 10-04-03 | 22:26 | PMP | 2553:86 | t03100451 | ok | — | WIN/VER | | Ver/Win |
| 10-04-03 | 23:30 | PMP | Noname | r | OK | — | QC | | Flush |
| 10-04-03 | 23:45 | PMP | Noname | r | OK | — | QC | | " |
| 10-05-03 | 00:01 | PMP | Noname | r | OK | — | QC | | " |
| 10-05-03 | 00:46 | PMP | FIEPVIAA | tfiepvb | OK | SOLID | QC | | H3I300000-193B |
| 10-05-03 | 01:48 | PMP | FXIWF2AA | tfxiwf2 | OK | SOLID | SAM | | H3I100025-001 |

Read and Understood by:

PMP Date: 10-05-03

* Lost lock reset autosave

① Run by mistake. Use this run to calculate. DFW 10-3-03

**STL KNOXVILLE**
**SPECIALTY ORGANICS INSTRUMENT MAT 95S RUN LOG**

| Date | Time | Opr | Sample ID | Filename | Code | Matrix | Type | Tape | Lot#/Comments |
|---|---|---|---|---|---|---|---|---|---|
| 10-05-03 | 02:52 | PMP | FX1WH2AA | tfx1wh2 | OK | SOLID | SAM | | H3I100253-002 |
| 10-05-03 | 03:55 | PMP | FX1WJ2AA | tfx1wj2 | OK | SOLID | SAM | | 003 |
| 10-05-03 | 04:59 | PMP | FX1WJ2AC | tfx1wj2s | OK | SOLID | QC | | 003S |
| 10-05-03 | 06:03 | PMP | FX1WJ2AD | tfx1wj2d | OK | SOLID | QC | | 003D |
| 10-05-03 | 07:06 | PMP | Noname | tsb1004 | ok | — | QC | | flush |
| 10-05-03 | 07:56 | PMP | FIEPV1AC | tfiepv1c | OK | SOLID | QC | | H3I300000-193C |
| 10-05-03 | 08:59 | PMP | 2553:86 | t031005s1 ✓ | OK | — | WW VER | | Ver/Ww |
| 10-05-03 | 09:59 | PMP | PFK | — ✓ | OK | — | Reo | | Meoo Reo Chk |

Read and Understood by:

_____ Date: _____

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**PCDD/PCDF by EPA Method 8290 w/15 IS's**

**CCAL ID:** 4424 - 03100481 **ICAL Date:** 04/01/03

**CCAL Filename:** t031004s1 **Method:** IN2 DX8290_2

**CCAL Sample ID:** 2553:86 **Instrument:** M2A

**CCAL Result Dir:** /20031004s1/031004s1.d **Column SN:** 499396

**CCAL Date/Time:** 10/04/03 22:26 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

| Analytes | m/z's Forming Ratio | Ion Abund Ratio | QC Limits | Calc Conc (ng/mL) | ICAL RF | CCAL RF | %D | QC Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.78 | 0.65-0.89 | 9.6 | 1.095 | 1.052 | -3.9 | 20.0 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.80 | 0.65-0.89 | 10.1 | 1.017 | 1.032 | 1.5 | 20.0 | True |
| 1,2,3,7,8-PeCDD | M+2/M+4 | 1.57 | 1.32-1.78 | 50 | 0.984 | 0.987 | 0.3 | 20.0 | True |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.55 | 1.32-1.78 | 51 | 0.970 | 0.995 | 2.5 | 20.0 | True |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.55 | 1.32-1.78 | 50 | 1.035 | 1.028 | -0.7 | 20.0 | True |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.24 | 1.05-1.43 | 49 | 1.111 | 1.087 | -2.1 | 20.0 | True |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.27 | 1.05-1.43 | 49 | 1.026 | 1.013 | -1.2 | 20.0 | True |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.24 | 1.05-1.43 | 51 | 1.109 | 1.122 | 1.2 | 20.0 | True |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | 50 | 1.276 | 1.214 | 1.0 | 20.0 | True |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.25 | 1.05-1.43 | 49 | 1.197 | 1.177 | -1.7 | 20.0 | True |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | 49 | 1.155 | 1.131 | -2.1 | 20.0 | True |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | 49 | 1.236 | 1.202 | -2.8 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.03 | 0.88-1.20 | 49 | 0.986 | 0.955 | -3.2 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | 50 | 1.512 | 1.509 | -0.2 | 20.0 | True |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | 49 | 1.426 | 1.412 | -1.0 | 20.0 | True |
| OCDD | M+2/M+4 | 0.89 | 0.76-1.02 | 96 | 1.075 | 1.026 | -4.5 | 20.0 | True |
| OCDF | M+2/M+4 | 0.91 | 0.76-1.02 | 104 | 1.135 | 1.179 | 3.8 | 20.0 | True |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.65-0.89 | 101 | 1.083 | 1.096 | 1.2 | 30.0 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.79 | 0.65-0.89 | 102 | 1.527 | 1.556 | 1.9 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDD | M+2/M+4 | 1.54 | 1.32-1.78 | 118 | 0.958 | 1.129 | 17.8 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.58 | 1.32-1.78 | 112 | 1.427 | 1.596 | 11.8 | 30.0 | True |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.60 | 1.32-1.78 | 117 | 1.384 | 1.625 | 17.4 | 30.0 | True |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.27 | 1.05-1.43 | 103 | 0.941 | 0.972 | 3.3 | 30.0 | True |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.29 | 1.05-1.43 | 95 | 1.078 | 1.023 | -5.1 | 30.0 | True |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.53 | 0.43-0.59 | 103 | 1.283 | 1.327 | 3.4 | 30.0 | True |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | 94 | 1.406 | 1.325 | -5.8 | 30.0 | True |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.53 | 0.43-0.59 | 99 | 1.301 | 1.293 | -0.6 | 30.0 | True |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.52 | 0.43-0.59 | 108 | 1.105 | 1.198 | 8.4 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.05 | 0.88-1.20 | 104 | 0.970 | 1.005 | 3.6 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | M/M+2 | 0.46 | 0.37-0.51 | 98 | 1.017 | 1.001 | -1.6 | 30.0 | True |
| 13C-1,2,3,4,7,8,9-HpCDF | M/M+2 | 0.45 | 0.37-0.51 | 108 | 0.813 | 0.878 | 8.1 | 30.0 | True |
| 13C-OCDD | M+2/M+4 | 0.90 | 0.76-1.02 | 214 | 0.856 | 0.917 | 7.2 | 30.0 | True |

PNP 10-05-03

VMK 10-6-03

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**PCDD/PCDF by EPA Method 8290 w/15 IS's**

**CCAL ID:** 4424 - 031004S1 **ICAL Date:** 04/01/03

**CCAL Filename:** t031004s1 **Method:** IN2 - DX8290_2

**CCAL Sample ID:** 2553:86 **Instrument:** M2A

**CCAL Result Dir:** /20031004s1/031004s1.d **Column SN:** 499396

**CCAL Date/Time:** 10/04/03 22:26 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

| Analytes | ICAL RT | CCAL RT | RT Diff | ICAL RRT | CCAL RRT | RRT QC Limit | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 31:43 | 35:51 | 248 | 1.002 | 1.001 | - | |
| 2,3,7,8-TCDF | 29:45 | 33:44 | 239 | 1.001 | 1.001 | - | |
| 1,2,3,7,8-PeCDD | 41:40 | 43:11 | 91 | 1.000 | 1.000 | - | |
| 1,2,3,7,8-PeCDF | 39:51 | 41:40 | 109 | 1.001 | 1.000 | - | |
| 2,3,4,7,8-PeCDF | 41:07 | 42:44 | 97 | 1.000 | 1.000 | - | |
| 1,2,3,4,7,8-HxCDD | 45:55 | 47:22 | 87 | 1.000 | 1.000 | - | |
| 1,2,3,6,7,8-HxCDD | 46:01 | 47:29 | 88 | 1.000 | 1.000 | - | |
| 1,2,3,7,8,9-HxCDD | 46:24 | 47:55 | 91 | 1.009 | 1.009 | - | |
| 1,2,3,4,7,8-HxCDF | 44:53 | 46:17 | 84 | 1.000 | 1.000 | - | |
| 1,2,3,6,7,8-HxCDF | 45:01 | 46:25 | 84 | 1.000 | 1.000 | - | |
| 2,3,4,6,7,8-HxCDF | 45:44 | 47:11 | 87 | 1.000 | 1.000 | - | |
| 1,2,3,7,8,9-HxCDF | 46:40 | 48:13 | 93 | 1.000 | 1.000 | - | |
| 1,2,3,4,6,7,8-HpCDD | 50:40 | 52:32 | 112 | 1.000 | 1.000 | - | |
| 1,2,3,4,6,7,8-HpCDF | 49:01 | 50:49 | 108 | 1.000 | 1.001 | - | |
| 1,2,3,4,7,8,9-HpCDF | 51:20 | 53:09 | 109 | 1.000 | 1.000 | - | |
| OCDD | 55:07 | 56:48 | 101 | 1.000 | 1.000 | - | |
| OCDF | 55:15 | 56:58 | 103 | 1.003 | 1.003 | - | |
| 13C-2,3,7,8-TCDD | 31:40 | 35:49 | 249 | 1.018 | 1.014 | - | |
| 13C-2,3,7,8-TCDF | 29:42 | 33:42 | 240 | 0.955 | 0.954 | - | |
| 13C-1,2,3,7,8-PeCDD | 41:38 | 43:10 | 92 | 1.339 | 1.222 | - | |
| 13C-1,2,3,7,8-PeCDF | 39:50 | 41:39 | 109 | 1.280 | 1.179 | - | |
| 13C-2,3,4,7,8-PeCDF | 41:06 | 42:43 | 97 | 1.321 | 1.209 | - | |
| 13C-1,2,3,4,7,8-HxCDD | 45:54 | 47:21 | 87 | 0.989 | 0.989 | - | |
| 13C-1,2,3,6,7,8-HxCDD | 46:00 | 47:28 | 88 | 0.992 | 0.991 | - | |
| 13C-1,2,3,4,7,8-HxCDF | 44:52 | 46:16 | 84 | 0.967 | 0.966 | - | |
| 13C-1,2,3,6,7,8-HxCDF | 45:00 | 46:25 | 85 | 0.970 | 0.969 | - | |
| 13C-2,3,4,6,7,8-HxCDF | 45:43 | 47:10 | 87 | 0.986 | 0.985 | - | |
| 13C-1,2,3,7,8,9-HxCDF | 46:39 | 48:12 | 93 | 1.006 | 1.006 | - | |
| 13C-1,2,3,4,6,7,8-HpCDD | 50:39 | 52:31 | 112 | 1.092 | 1.096 | - | |
| 13C-1,2,3,4,6,7,8-HpCDF | 49:00 | 50:47 | 107 | 1.056 | 1.060 | - | |
| 13C-1,2,3,4,7,8,9-HpCDF | 51:19 | 53:08 | 109 | 1.106 | 1.109 | - | |
| 13C-OCDD | 55:06 | 56:47 | 101 | 1.188 | 1.185 | - | |

**STL - Knoxville**

# IsoCalc Continuing Calibration Report

*PCDD/PCDF by EPA Method 8290 w/15 IS's*

**CCAL ID:** 4424 - 031004S1

**WIN Filename:** t031004s1 **Method:** IN2 - DX8290_2

**WIN Sample ID:** 2553:86 **Instrument:** M2A

**WIN Result Dir:** /20031004s1/031004s1.d **Column SN:** 499396

**WIN Date/Time:** 10/04/03 22:26 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

**Window Defining First/Last Eluter Retention Times**

| Analyte | Reference | M/Z | Ref RT | First Eluter RT | First Eluter RRT | Last Eluter RT | Last Eluter RRT |
|---|---|---|---|---|---|---|---|
| Total TCDD | 13C-2,3,7,8-TCDD | 320 | 35:49 ✓ | 29:13 ✓ | 0.8157 | 38:04 ✓ | 1.0628 |
| Total TCDF | 13C-2,3,7,8-TCDF | 304 | 33:42 ✓ | 26:24 ✓ | 0.7834 | 38:00 ✓ | 1.1276 |
| Total PeCDD | 13C-1,2,3,7,8-PeCDD | 356 | 43:10 ✓ | 40:42 ✓ | 0.9429 | 43:47 ✓ | 1.0145 |
| Total PeCDF | 13C-1,2,3,7,8-PeCDF | 340 | 41:39 ✓ | 38:31 ✓ | 0.9248 | 43:55 ✓ | 1.0544 |
| Total HxCDD | 13C-1,2,3,6,7,8-HxCDD | 390 | 47:28 ✓ | 45:42 ✓ | 0.9628 | 47:55 ✓ | 1.0095 |
| Total HxCDF | 13C-1,2,3,4,7,8-HxCDF | 374 | 46:16 ✓ | 45:01 ✓ | 0.9730 | 48:21 ✓ | 1.0450 |
| Total HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 424 | 52:31 ✓ | 51:21 ✓ | 0.9778 | 52:32 ✓ | 1.0003 |
| Total HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 408 | 50:47 ✓ | 50:49 ✓ | 1.0007 | 53:09 ✓ | 1.0466 |
| OCDD | 13C-OCDD | 458 | 56:47 ✓ | 56:48 ✓ | 1.0003 | 56:48 ✓ | 1.0003 |
| OCDF | 13C-OCDD | 442 | 56:47 | 56:58 ✓ | 1.0032 | 56:58 ✓ | 1.0032 |

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031004s1/031004s1.d | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71184 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/04/03 22:26 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | F8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 133 | 163 | 53 | 65 | 0.82 | / | |
| | Unidentified | 26:24 | 00:00 | 0 | 150933 | 179880 | 22369 | 24699 | 0.84 | AVB/AVB | |
| | 2,3,7,8-TCDF | 33:44 | 34:08 | -24 | 140568 | 175445 | 15461 | 18632 | 0.80 | ABV/ABV | M |
| | Unidentified | 38:00 | 00:00 | 0 | 134177 | 168600 | 22108 | 28165 | 0.80 | ABB/ABB | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 155 | 60 | 62 | 0.97 * | / | |
| | 13C-2,3,7,8-TCDF | 33:42 | 34:06 | -24 | 1355496 | 1705453 | 139653 | 180751 | 0.79 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 168 | 58 | 67 | 0.87 | / | |
| | Unidentified | 29:13 | 00:00 | 0 | 98013 | 123536 | 13194 | 15607 | 0.79 | ABV/AVV | |
| | Unidentified | 35:22 | 00:00 | 0 | 88888 | 110646 | 11573 | 13368 | 0.80 | ABV/ABV | |
| | Unidentified | 35:37 | 00:00 | 0 | 84879 | 111358 | 10133 | 13919 | 0.76 | AVV/AVV | |
| | 2,3,7,8-TCDD | 35:51 | 35:29 | 22 | 99408 | 127380 | 13203 | 16042 | 0.78 | AVB/AVB | M |
| | Unidentified | 36:15 | 00:00 | 0 | 94676 | 127953 | 12219 | 17398 | 0.74 | ABB/ABB | |
| | Unidentified | 38:04 | 00:00 | 0 | 86624 | 113984 | 14849 | 19355 | 0.76 | ABB/ABB | |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | | 64 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 35:53 | 35:29 | 24 | 217270 | | 28482 | | | AVB | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 235 | 178 | 94 | 71 | 1.32 * | / | |
| | 13C-1,2,3,4-TCDD | 35:20 | 35:03 | 17 | 881296 | 1085847 | 103574 | 125014 | 0.81 | AVV/ABV | |
| | 13C-2,3,7,8-TCDD | 35:49 | 35:27 | 22 | 954555 | 1201449 | 118674 | 151162 | 0.79 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 150 | 58 | 60 | 0.97 * | / | |
| | Unidentified | 38:31 | 00:00 | 0 | 841771 | 544379 | 158036 | 102633 | 1.55 | ABB/ABB | |
| | 1,2,3,7,8-PeCDF | 41:40 | 41:49 | -9 | 949413 | 611635 | 239055 | 155858 | 1.55 | ABV/ABV | M |
| | 2,3,4,7,8-PeCDF | 42:44 | 42:55 | -11 | 998266 | 644942 | 279679 | 184320 | 1.55 | ABB/ABB | M |
| | Unidentified | 43:55 | 00:00 | 0 | 850745 | 545511 | 242222 | 149095 | 1.56 | ABB/ABB | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 118 | 140 | 47 | 56 | 0.84 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:39 | 41:48 | -9 | 1923357 | 1215936 | 501252 | 318317 | 1.58 | ABV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 42:43 | 42:55 | -12 | 1966858 | 1230207 | 565963 | 352318 | 1.60 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 168 | 66 | 67 | 0.99 * | / | |
| | Unidentified | 40:42 | 00:00 | 0 | 602816 | 390513 | 129532 | 82691 | 1.54 | ABV/ABB | |
| | 1,2,3,7,8-PeCDD | 43:11 | 43:25 | -14 | 669996 | 425814 | 193442 | 120647 | 1.57 | ABV/ABV | M |
| | Unidentified | 43:47 | 00:00 | 0 | 691167 | 458951 | 207265 | 133625 | 1.51 | ABB/AVB | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 133 | 123 | 53 | 49 | 1.08 * | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:10 | 43:23 | -13 | 1347766 | 873136 | 385048 | 258634 | 1.54 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 188 | 195 | 75 | 78 | 0.96 * | / | |
| | Unidentified | 45:01 | 00:00 | 0 | 899715 | 714679 | 268907 | 210054 | 1.26 | ABV/ABV | |

Notes:
R = ratio is oustide limits H = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031004s1/031004s1.d | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71184 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/04/03 22:26 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DXL613B |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | P8 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | 1,2,3,4,7,8-HxCDF | 46:17 | 46:23 | -6 | 880658 | 710833 | 246047 | 197367 | 1.24 | ABV/ABV | M |
| | 1,2,3,6,7,8-HxCDF | 46:25 | 46:31 | -6 | 854087 | 685863 | 229665 | 188900 | 1.25 | AVV/AVB | DM |
| | 2,3,4,6,7,8-HxCDF | 47:11 | 47:12 | -1 | 799123 | 645375 | 215102 | 168197 | 1.24 | ABV/ABV | |
| | 1,2,3,7,8,9-HxCDF | 48:13 | 48:07 | 6 | 787740 | 634182 | 212565 | 164689 | 1.24 | ABV/ABV | M |
| | Unidentified | 48:21 | 00:00 | 0 | 725238 | 567793 | 178999 | 136321 | 1.28 | AVB/AVB | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 128 | 183 | 51 | 73 | 0.70 | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:16 | 46:22 | -6 | 907991 | 1713383 | 252415 | 472204 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:25 | 46:30 | -5 | 887966 | 1728843 | 232764 | 472047 | 0.51 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:10 | 47:11 | -1 | 882891 | 1671972 | 247228 | 442995 | 0.53 | ABV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:12 | 48:06 | 6 | 812461 | 1554434 | 206487 | 396823 | 0.52 | AVV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 148 | 63 | 59 | 1.07 | / | |
| | Unidentified | 45:42 | 00:00 | 0 | 660675 | 533178 | 187315 | 151366 | 1.24 | ABV/ABV | |
| | 1,2,3,4,7,8-HxCDD | 47:22 | 47:23 | -1 | 578110 | 465306 | 164222 | 132410 | 1.24 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:29 | 47:29 | 0 | 573672 | 450208 | 155228 | 123947 | 1.27 | AVV/AVV | |
| | 1,2,3,7,8,9-HxCDD | 47:55 | 47:52 | 3 | 613034 | 492526 | 157950 | 126638 | 1.24 | AVV/AVV | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 150 | 61 | 60 | 1.02 | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:21 | 47:22 | -1 | 1074204 | 844983 | 291979 | 229340 | 1.27 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:28 | 47:28 | 0 | 1138011 | 883202 | 310524 | 247657 | 1.29 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 47:54 | 47:51 | 3 | 1108814 | 866347 | 293328 | 231159 | 1.28 | AVV/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 180 | 65 | 72 | 0.90 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:49 | 50:30 | 19 | 765442 | 726793 | 167078 | 163240 | 1.05 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 53:09 | 52:57 | 12 | 628109 | 596205 | 142384 | 134978 | 1.05 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 168 | 61 | 67 | 0.91 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:47 | 50:29 | 18 | 624109 | 1353102 | 139700 | 303054 | 0.46 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:08 | 52:56 | 12 | 540485 | 1194148 | 123790 | 273290 | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 145 | 67 | 58 | 1.16 | / | |
| | Unidentified | 51:21 | 00:00 | 0 | 522656 | 497113 | 114748 | 105766 | 1.05 | ABV/ABV | |
| | 1,2,3,4,6,7,8-HpCDD | 52:32 | 52:14 | 18 | 481653 | 466230 | 113818 | 110033 | 1.03 | ABV/ABV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 148 | 65 | 59 | 1.10 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:31 | 52:13 | 18 | 1018013 | 967281 | 236773 | 231160 | 1.05 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 185 | 60 | 74 | 0.81 | / | |
| | OCDF | 56:58 | 57:20 | -22 | 1015692 | 1120386 | 266436 | 294616 | 0.91 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 160 | 62 | 64 | 0.97 | / | |
| | OCDD | 56:48 | 57:11 | -23 | 875859 | 983944 | 247611 | 273806 | 0.89 | ABV/ABV | M |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

Printed: 10/05/03 00:00

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031004s1/031004s1.d | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71184 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/04/03 22:26 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | F8 |

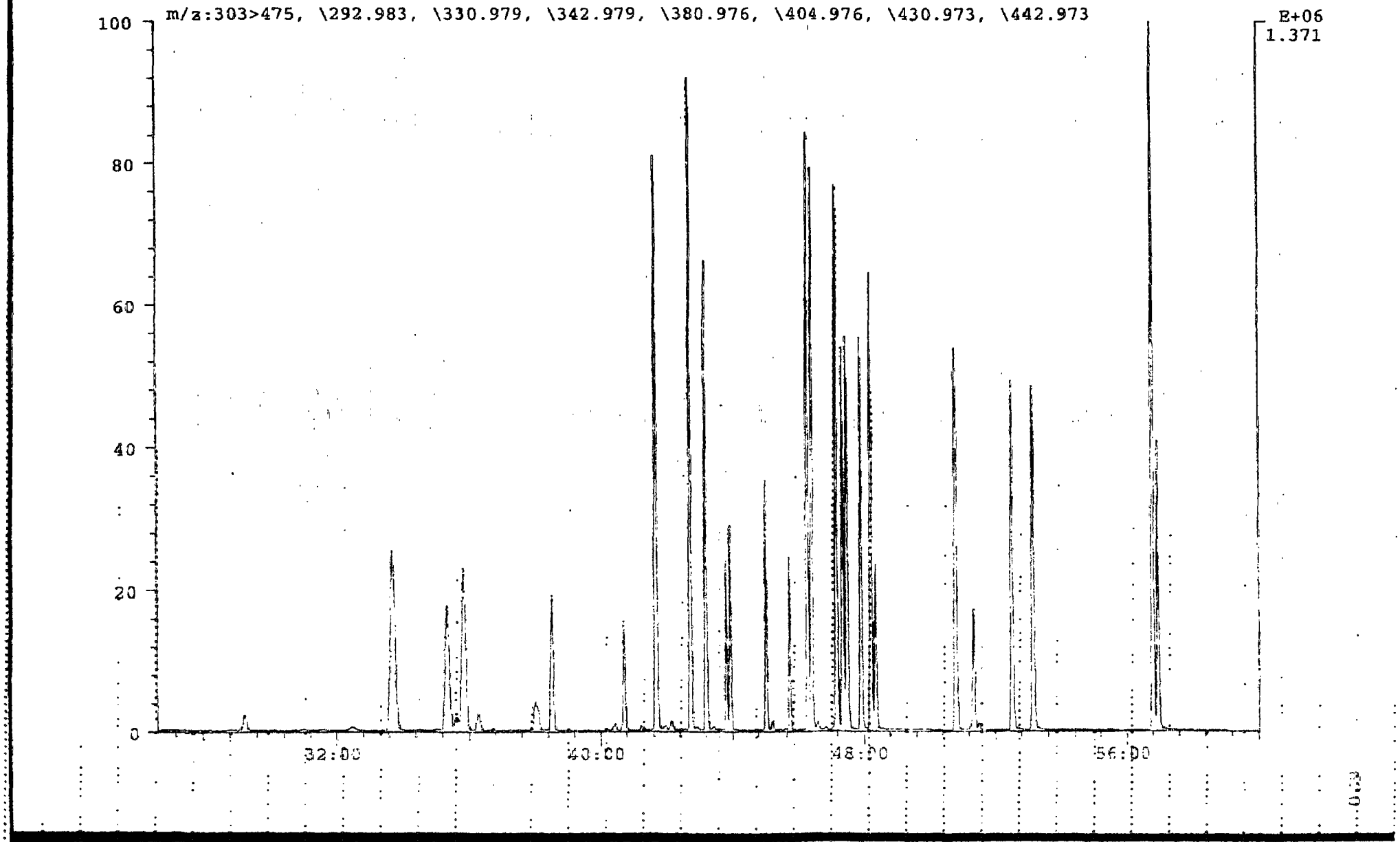
**View Small Peaks?** False **View deleted peaks?** False

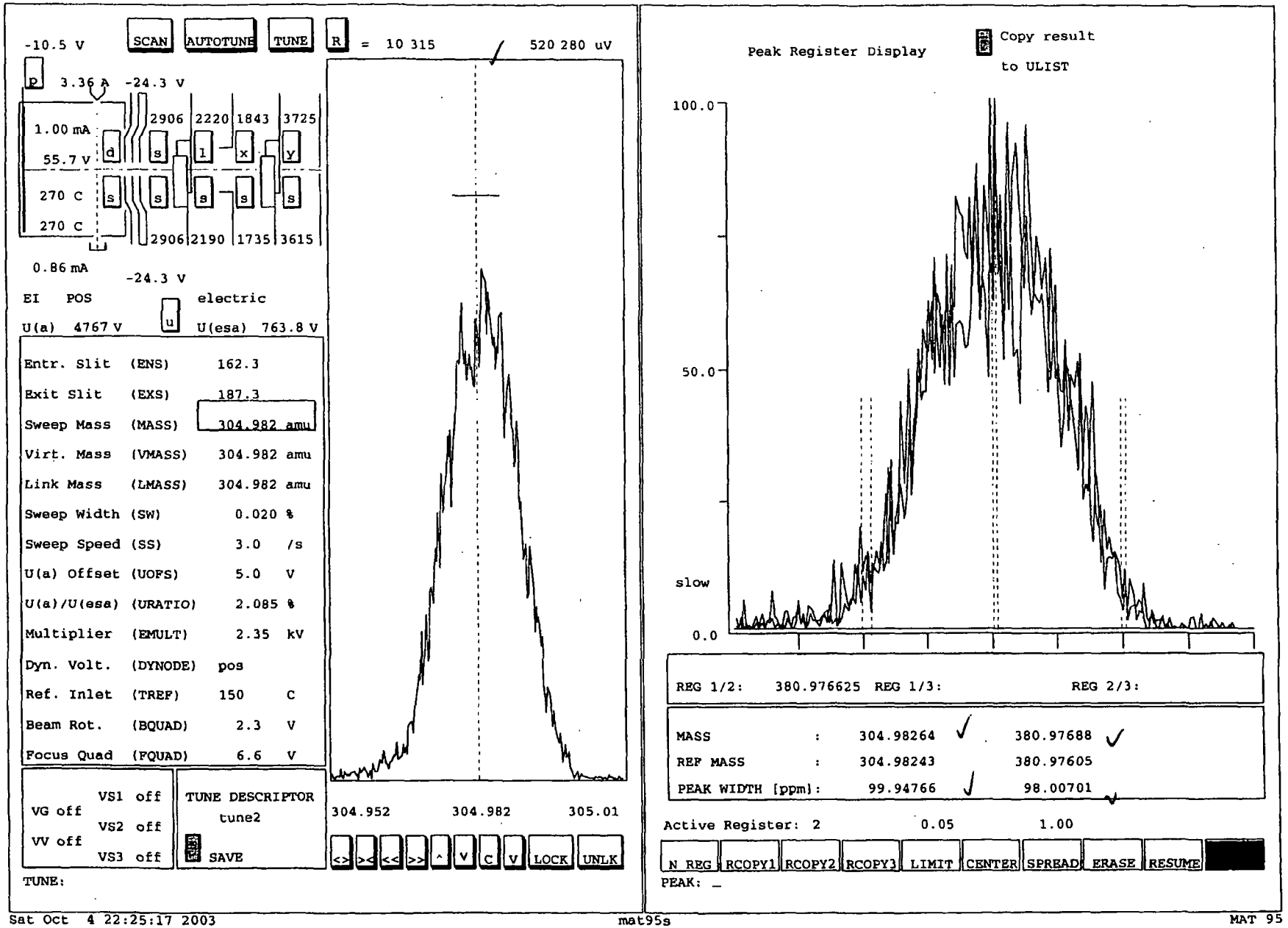
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 178 | 63 | 71 | 0.89 | / |
| | 13C-OCDD | 56:47 | 57:10 | -23 | 1719150 | 1904446 | 471204 | 526660 | 0.90 | ABV/ABV |

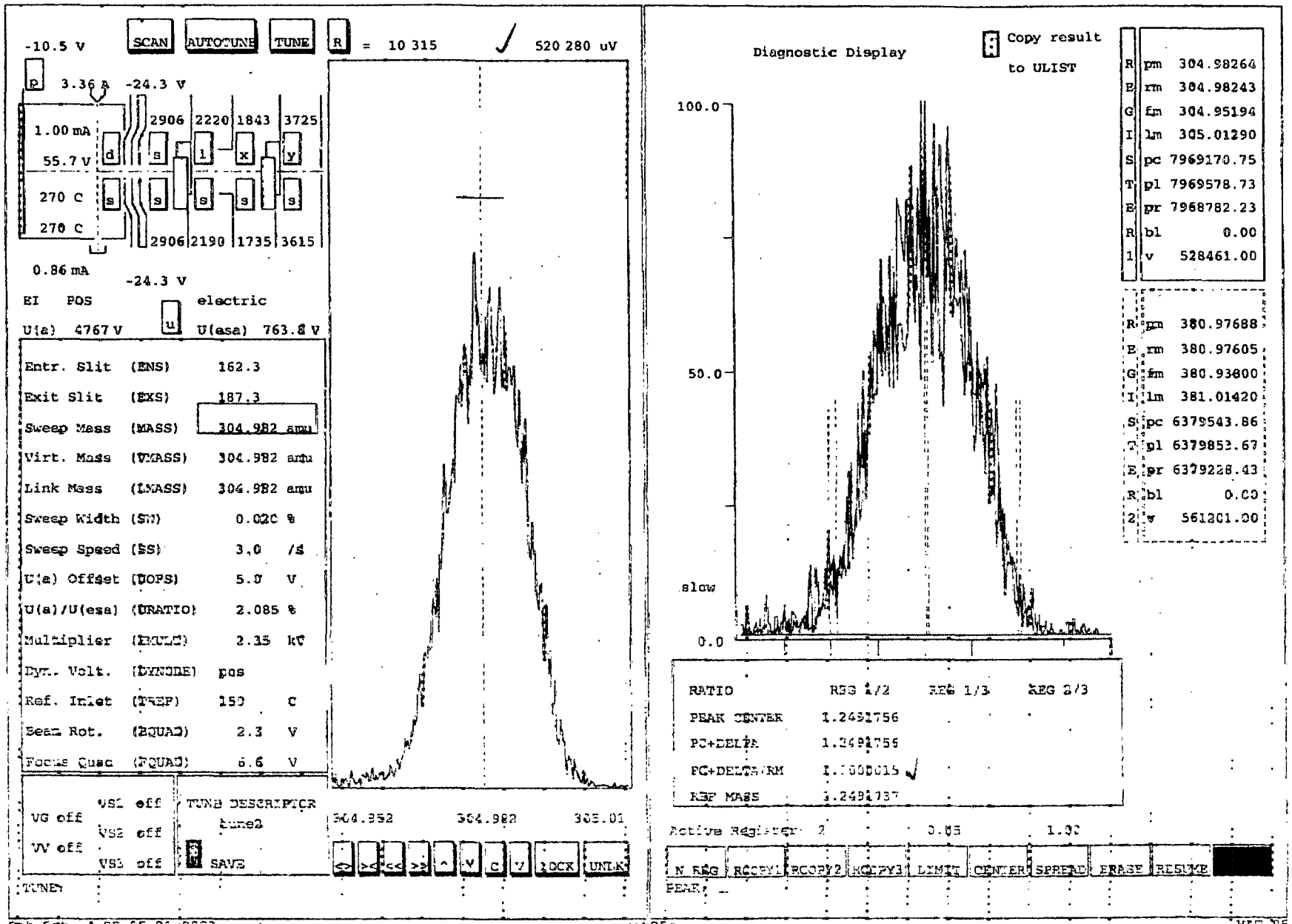
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak ahifted from ccal W = peak outside first/last X = peak has dup match

Int / Calc PMP 10-4-03
QC VMK 10-6-03

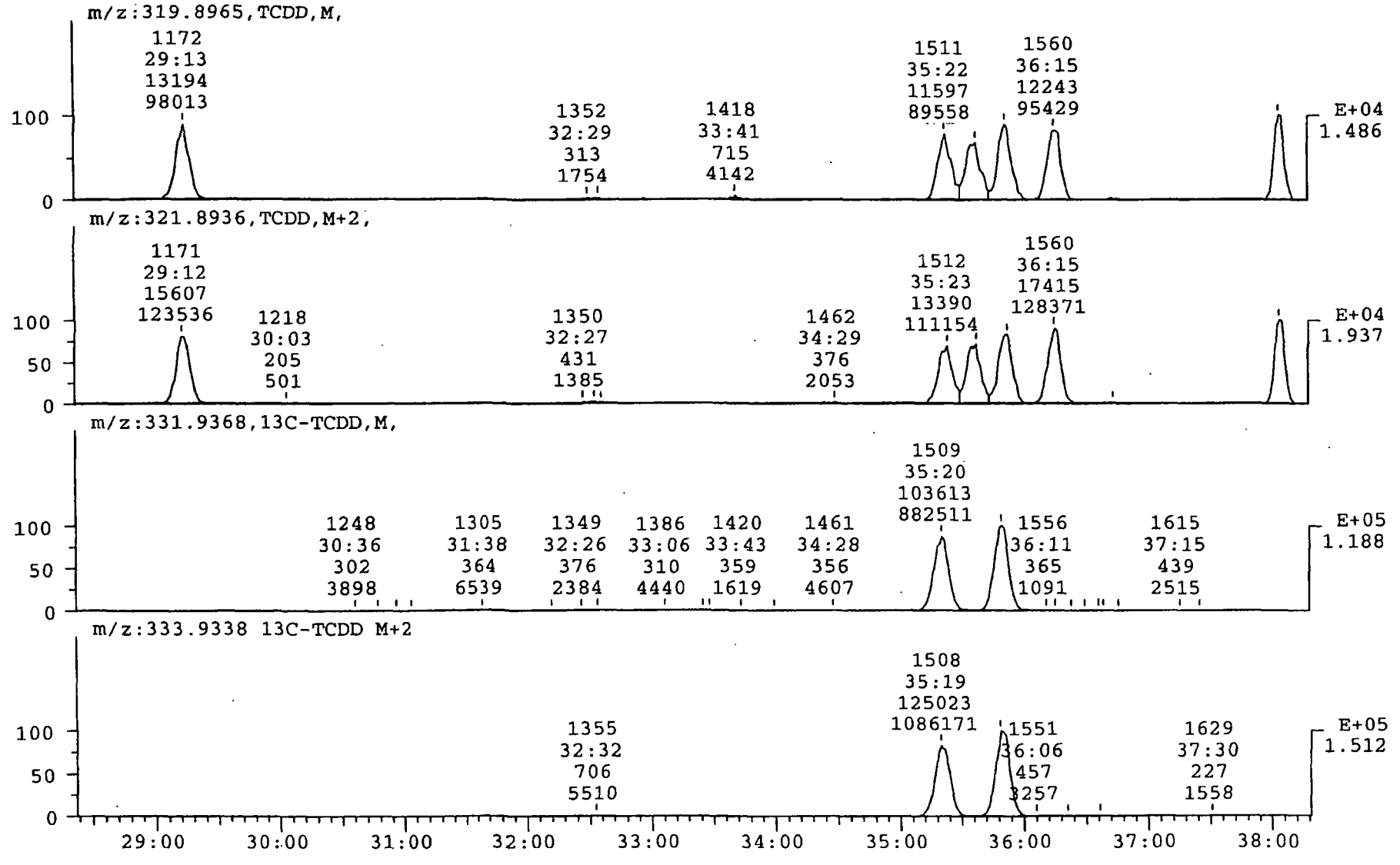
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=200304011
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1030 > 2890 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



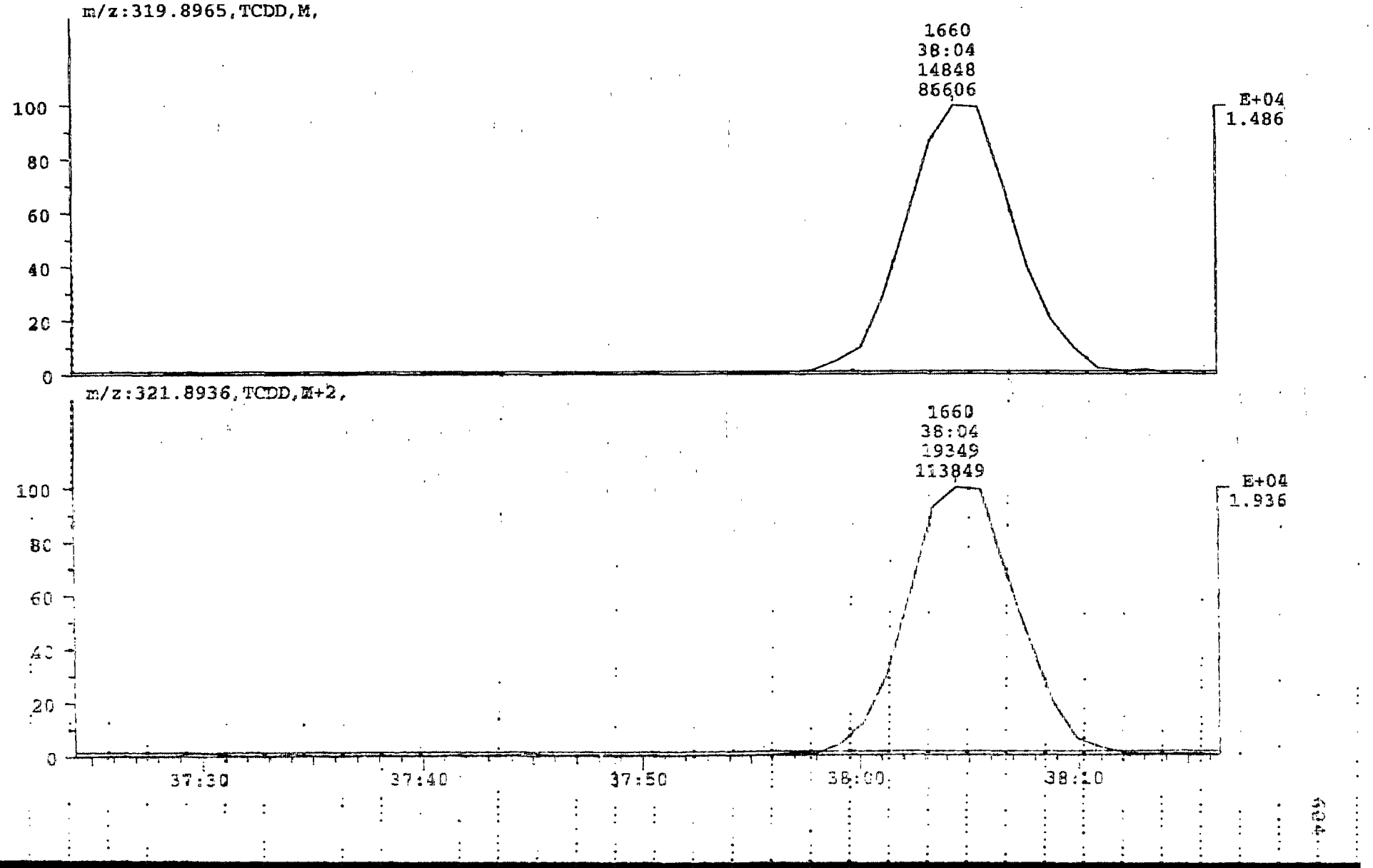

-10.5 V
SCAN
AUTOTUNE
TUNE
R
= 10 315
520 280 uV
P
3.36 A
-24.3 V
1.00 mA
55.7 V
270 C
270 C
2906 2220 1843 3725
2906 2190 1735 3615
0.86 mA
-24.3 V
EI POS
electric
U(a) 4767 V
U(esa) 763.8 V
Entr. Slit (ENS) 162.3
Exit Slit (EXS) 187.3
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.085 %
Multiplier (EMULT) 2.35 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 2.3 V
Focus Quad (FQUAD) 6.6 V
VG off
VS1 off
VS2 off
VV off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE:
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.976625 REG 1/3: REG 2/3:
MASS : 304.98264 380.97688
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 99.94766 98.00701
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Sat Oct 4 22:25:17 2003
mat95s
MAT 95


-10.5 V
SCAN
AUTOTUNE
TUNE
R = 10 315
520 280 uV
3.36 A
-24.3 V
1.00 mA
55.7 V
270 C
270 C
2906 2220 1843 3725
2906 2190 1735 3615
0.86 mA
-24.3 V
EI POS
electric
U(a) 4767 V
U(esa) 763.8 V
Entr. Slit (ENS) 162.3
Exit Slit (EXS) 187.3
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.085 %
Multiplier (EMULT) 2.35 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 2.3 V
Focus Quad (FQUAD) 6.6 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
UNLK
TUNE>
Diagnostic Display
Copy result
to ULIST
100.0
50.0
0.0
slow
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491756
PC+DELTA 1.2491755
PC+DELTA/RM 1.0000015
REF MASS 1.2491737
R pm 304.98264
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969170.75
T pl 7969578.73
E pr 7968782.23
R bl 0.00
1 v 528461.00
R pm 380.97688
E rm 380.97605
G fm 380.93800
I lm 381.01420
S pc 6379543.86
T pl 6379853.67
E pr 6379228.43
R bl 0.00
2 v 561201.00
Active Register: 2
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Sat Oct 4 22:25:21 2003
mat95a
MAC 95

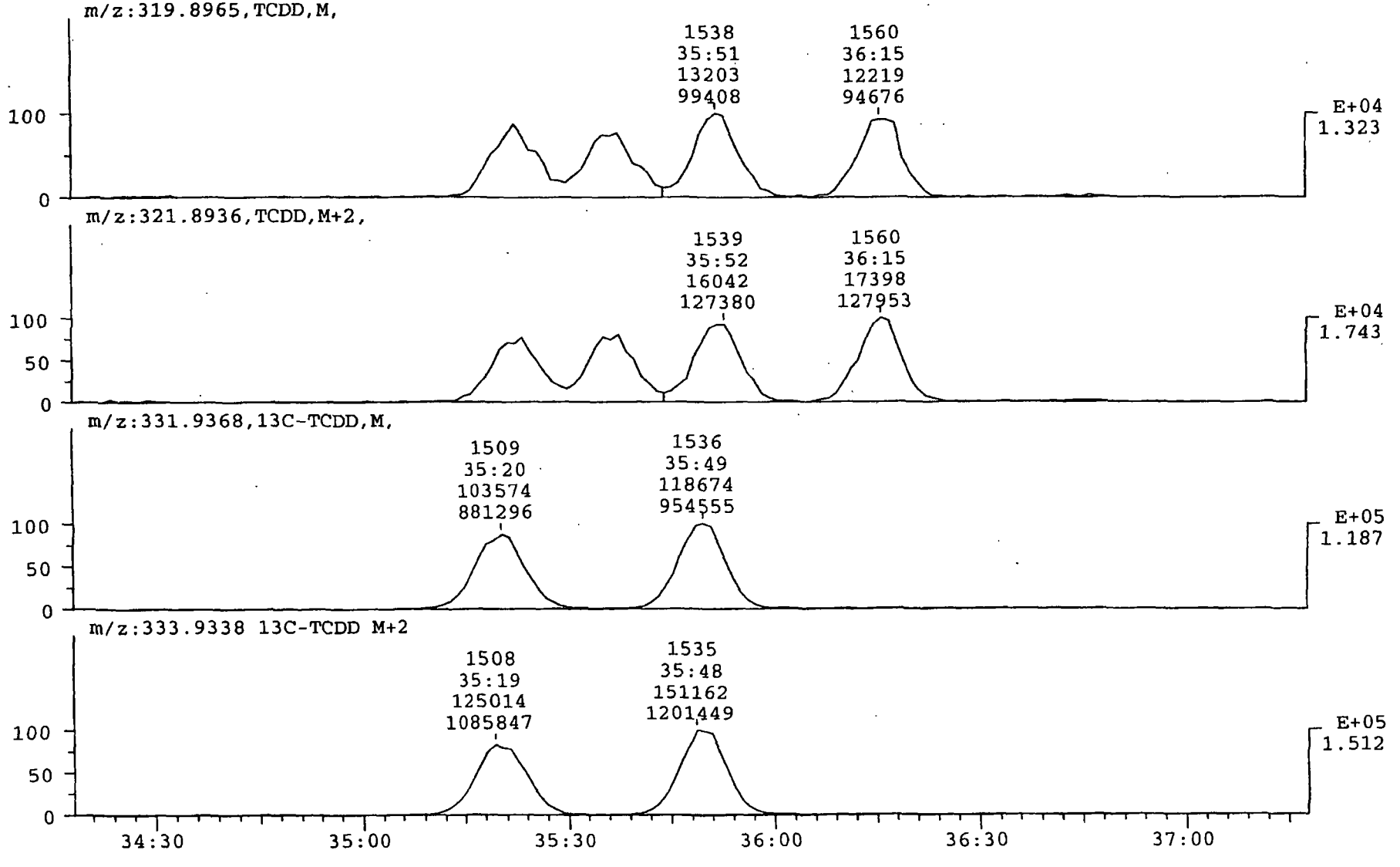
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1125 > 1673 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



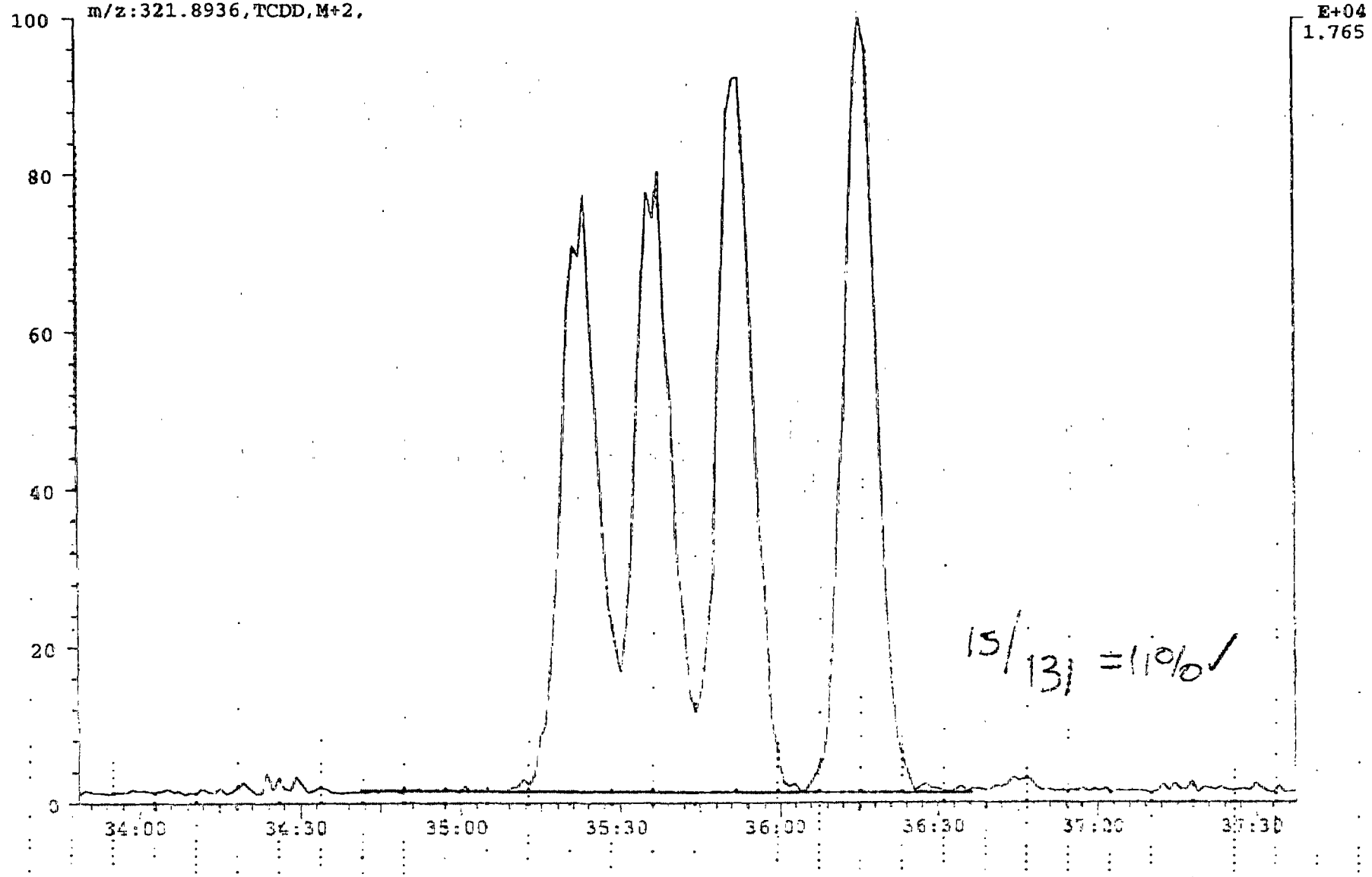
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1623 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1452 > 1617 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

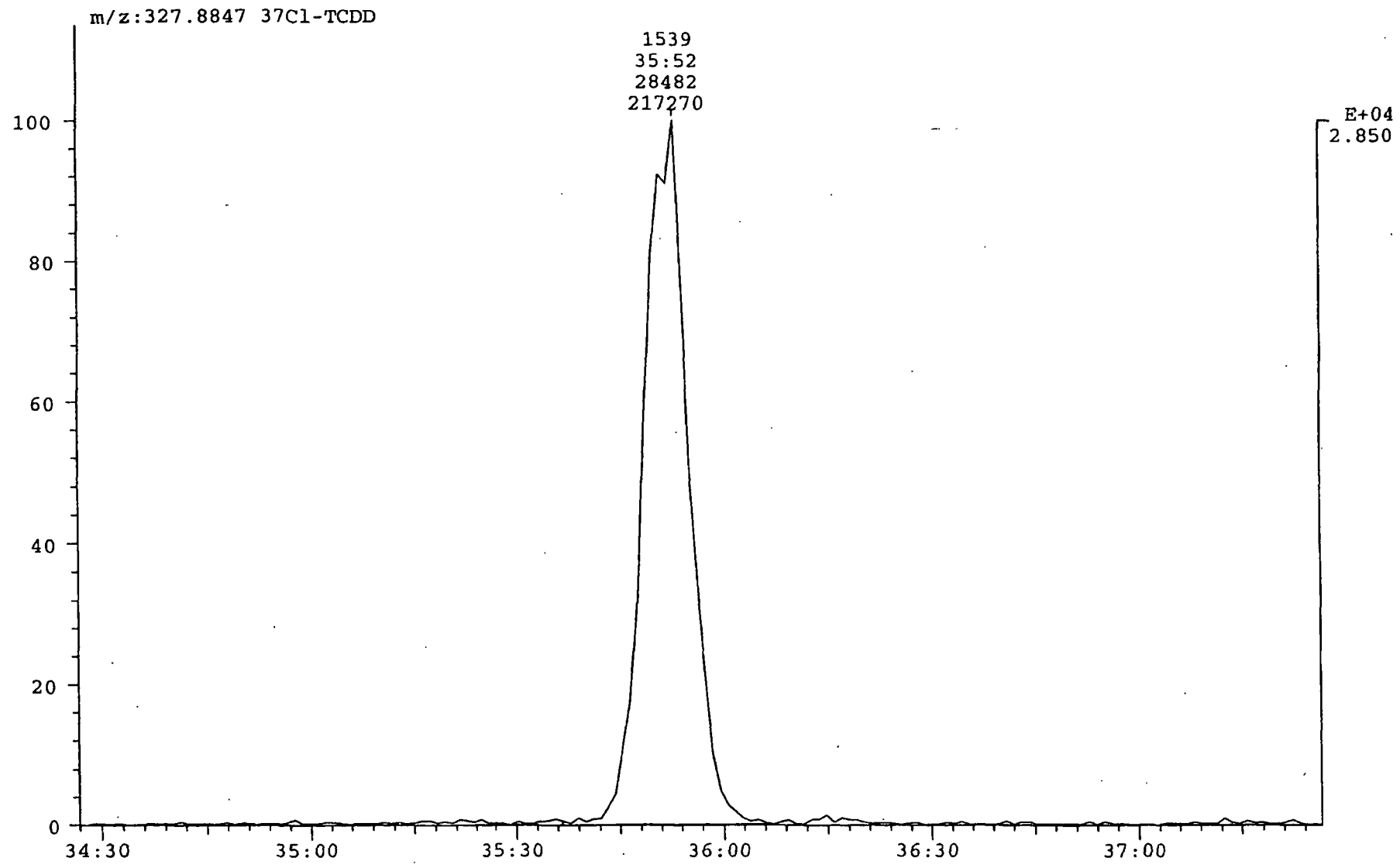


CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1425 > 1635 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 5 Label : 0, 2.5
Disp: Height Area



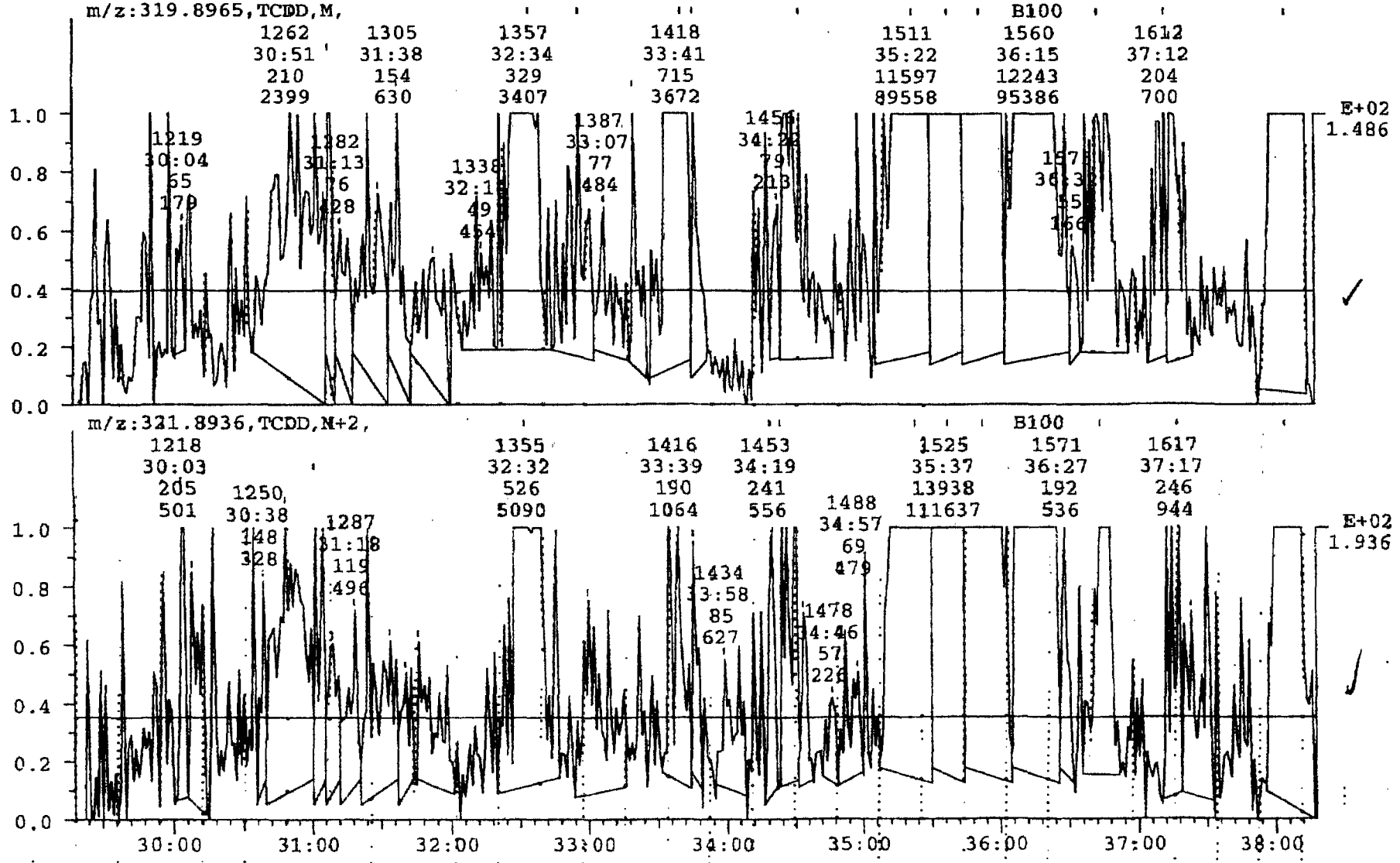

635

CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1460 > 1625 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



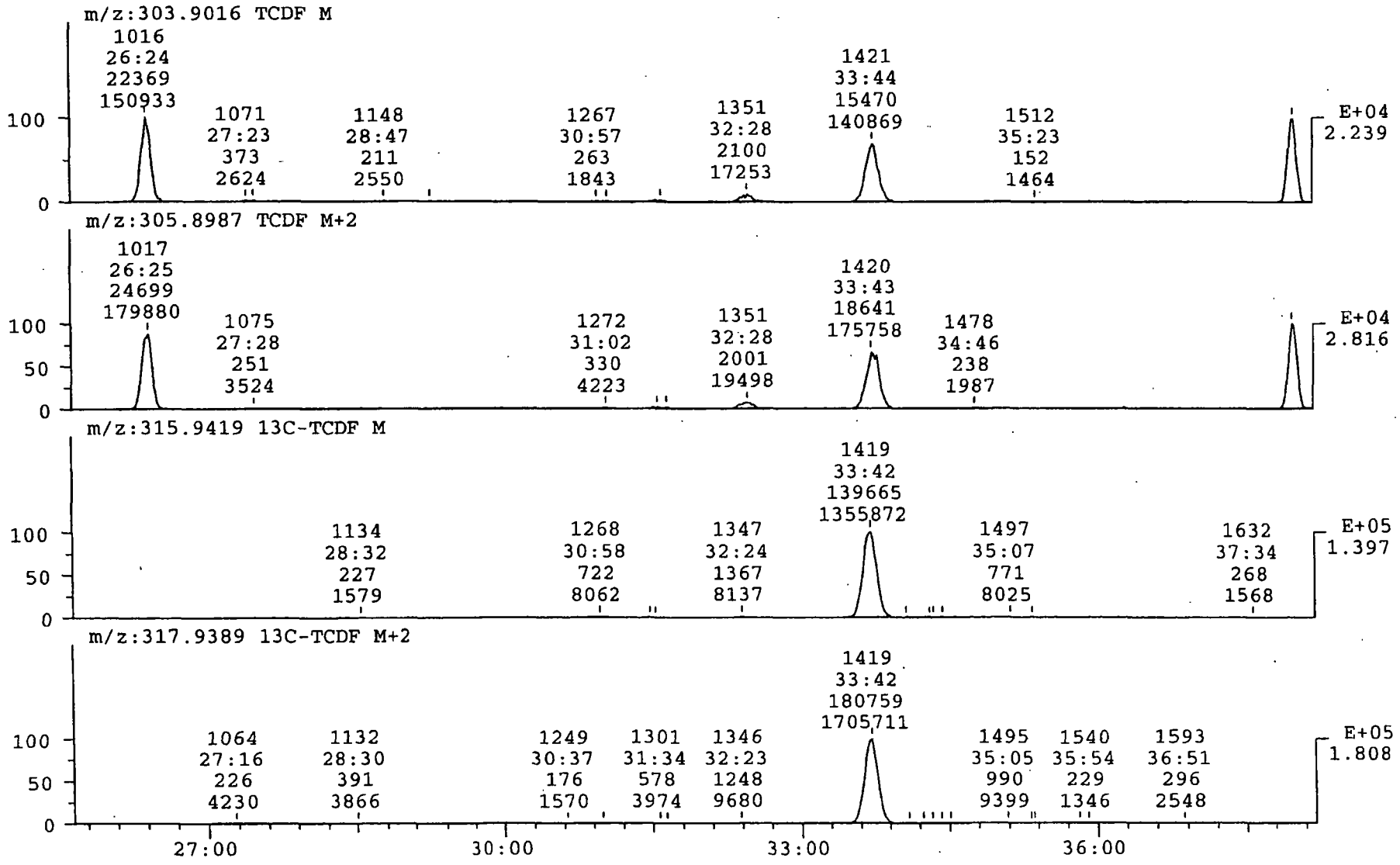

627

CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1176 > 1672 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 5 Label : -3, 1.0
Disp: Height Area

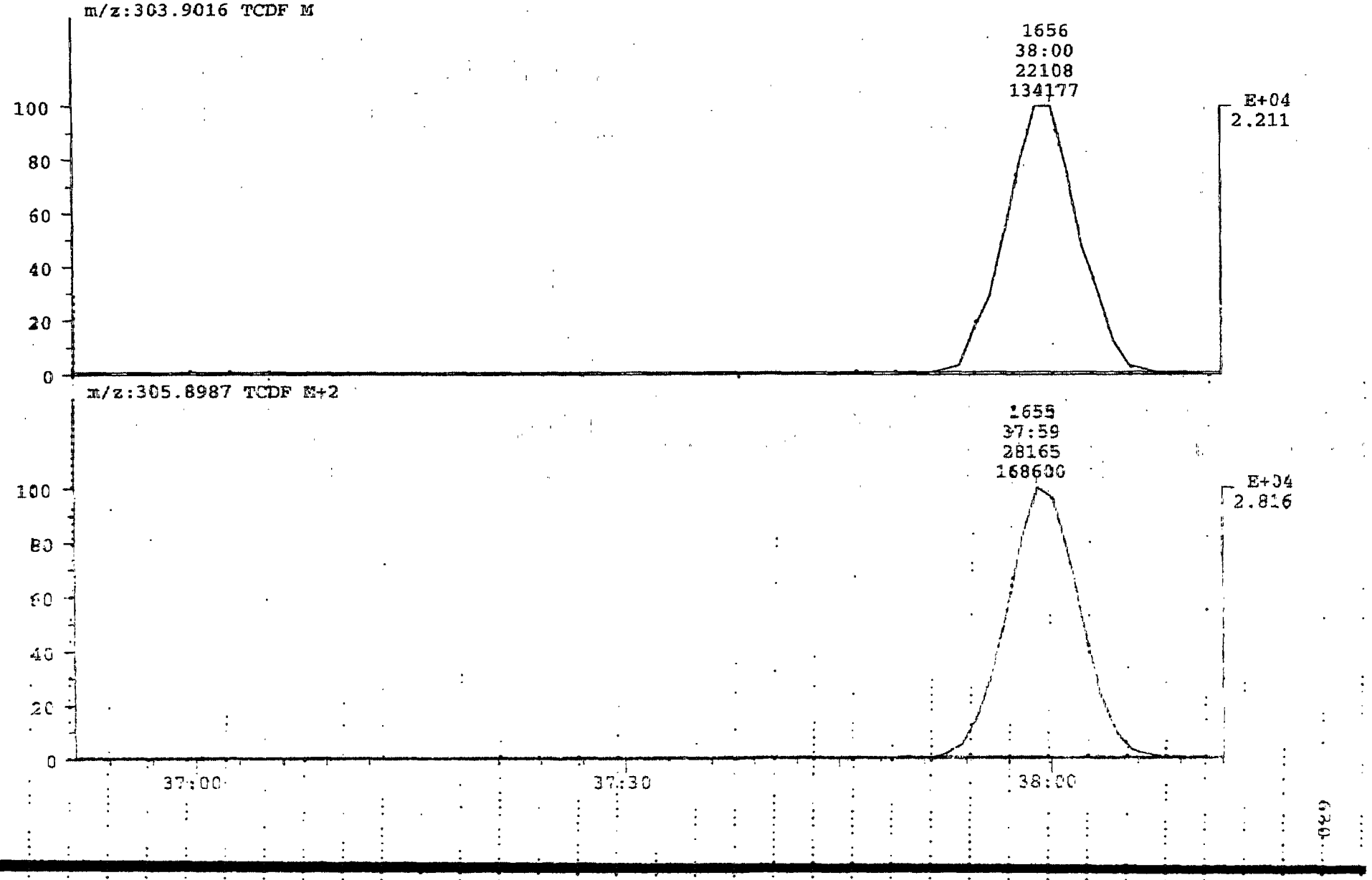



628

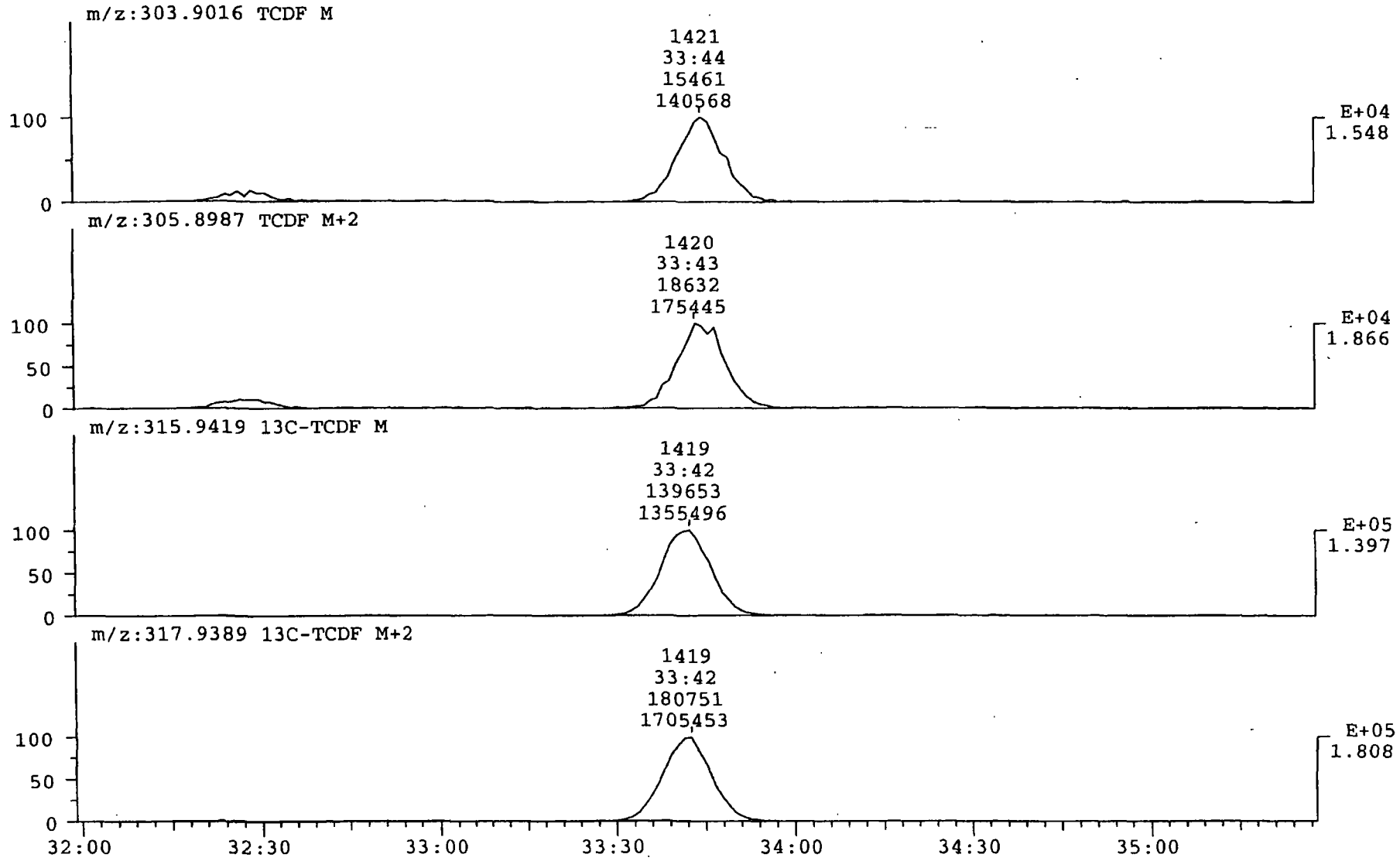
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 975 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1593 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

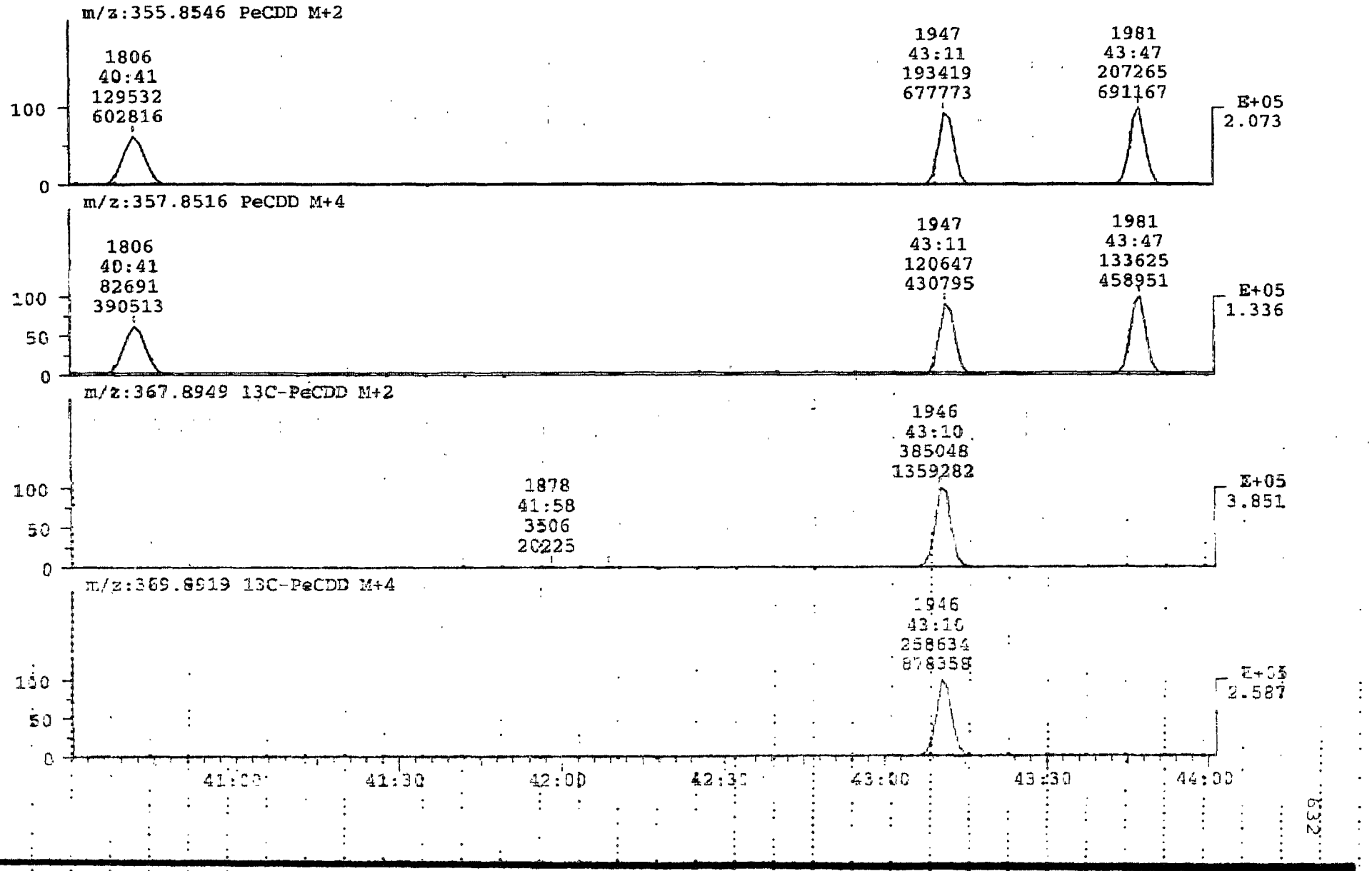


CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1324 > 1516 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



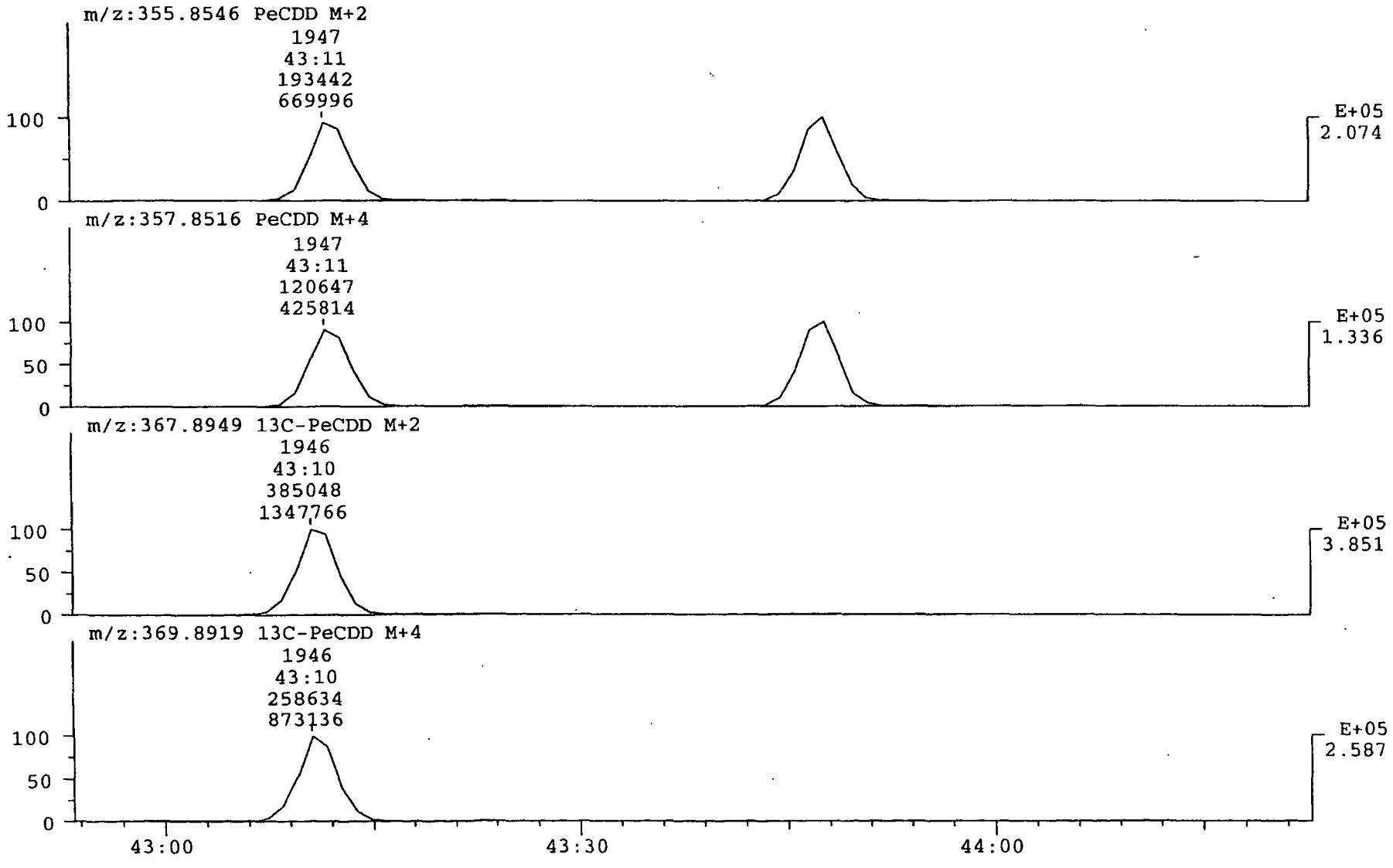

631

CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1000 > 3500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area

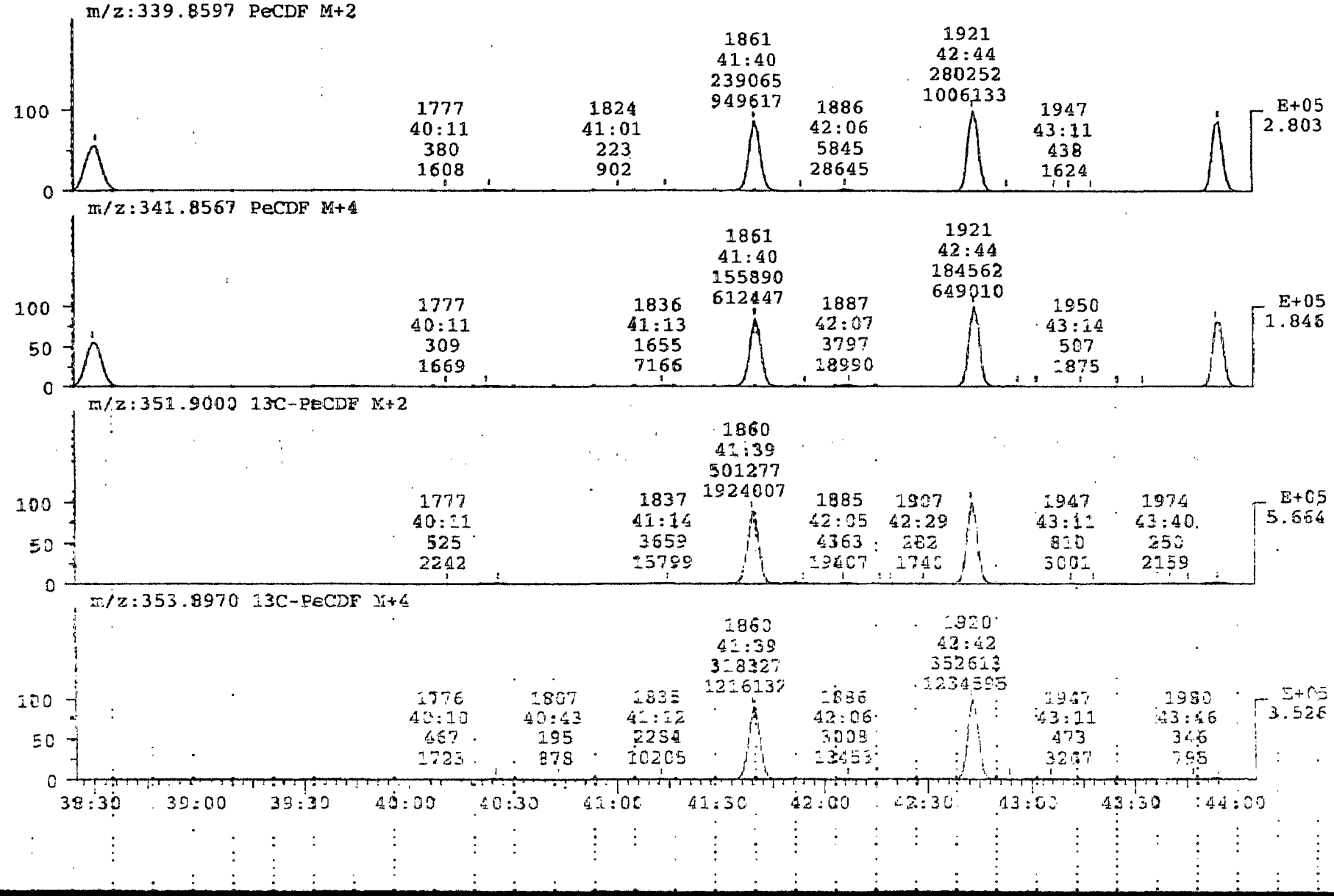



632

CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1945 > 1955 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1677 > 1997 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



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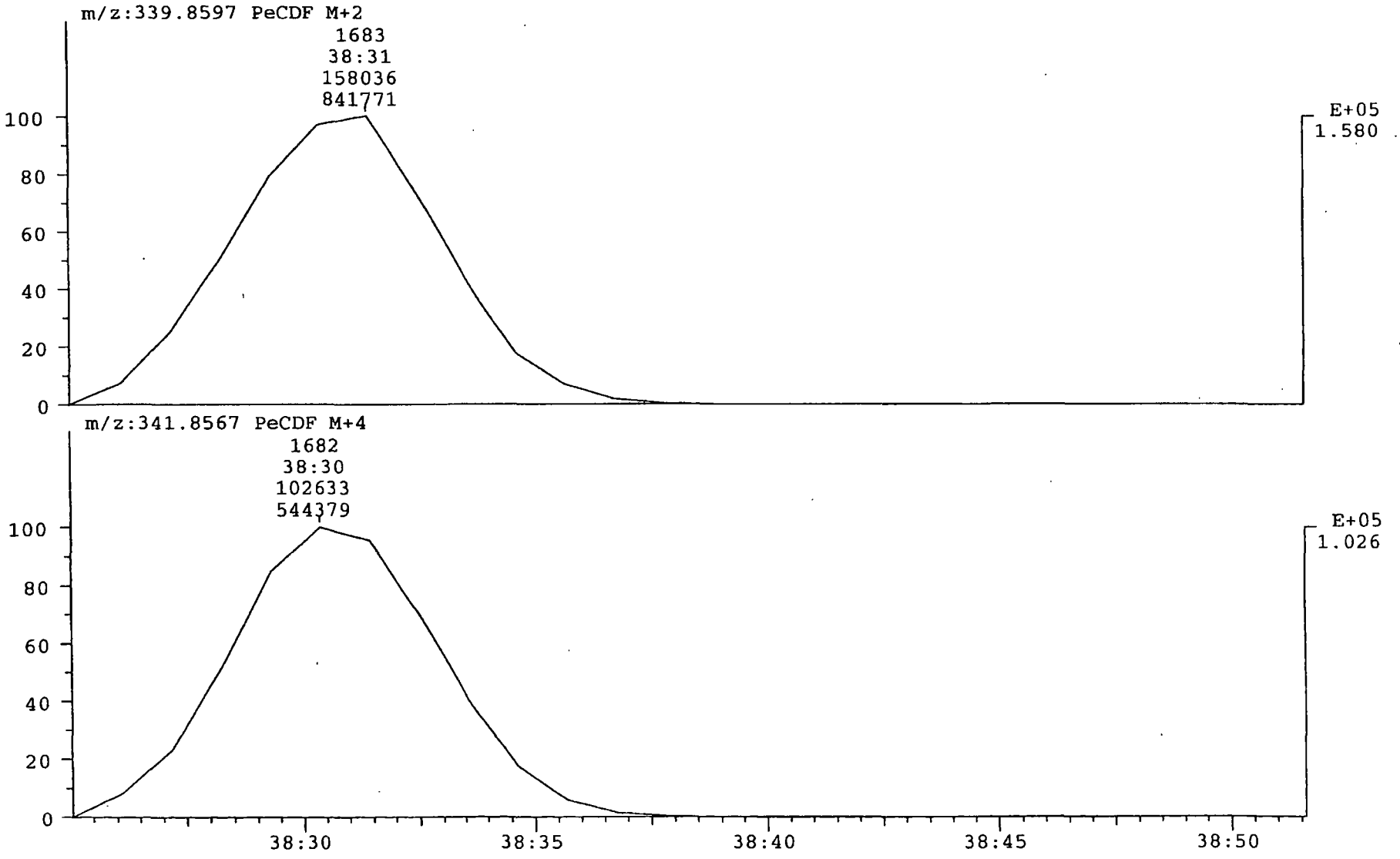
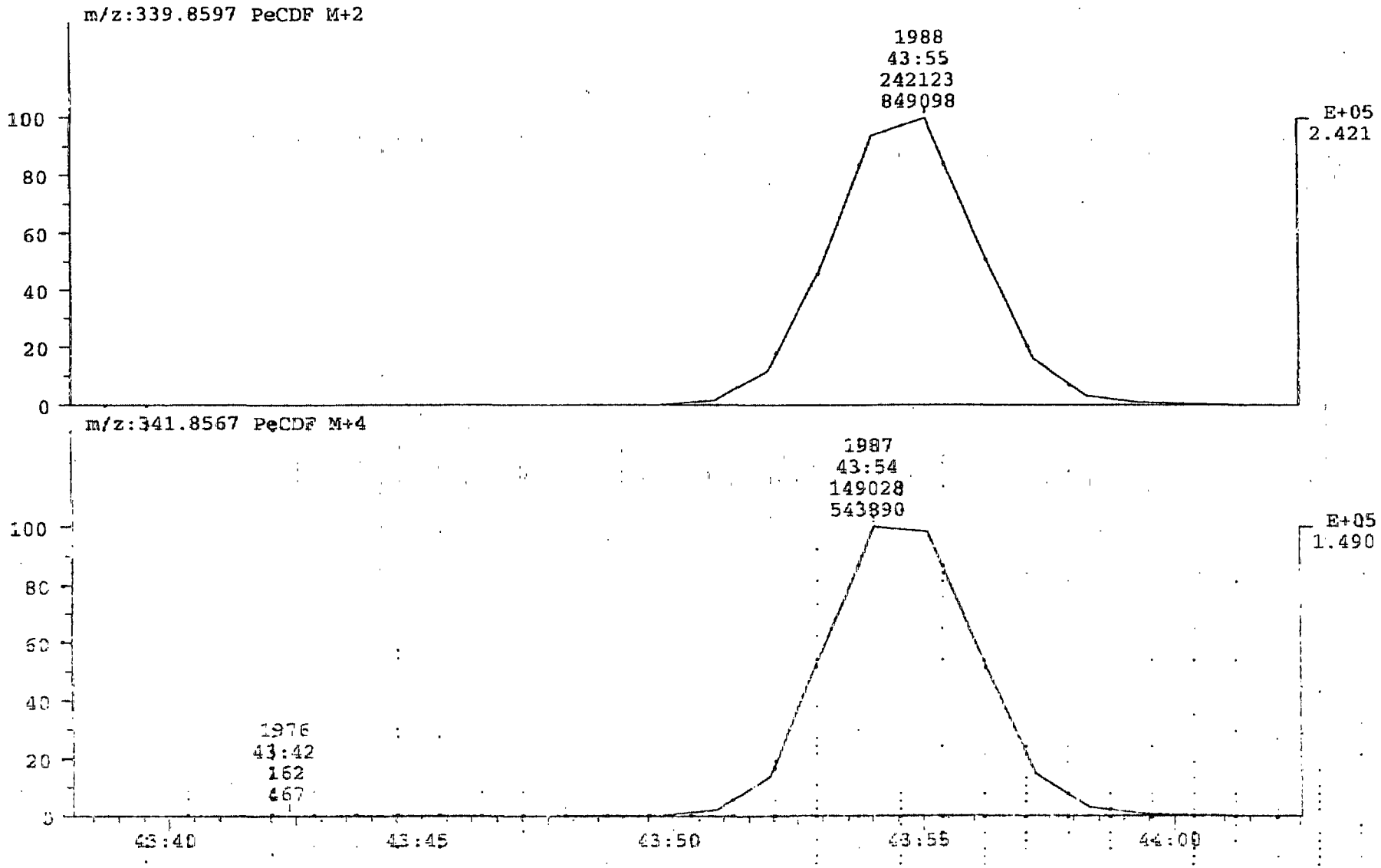
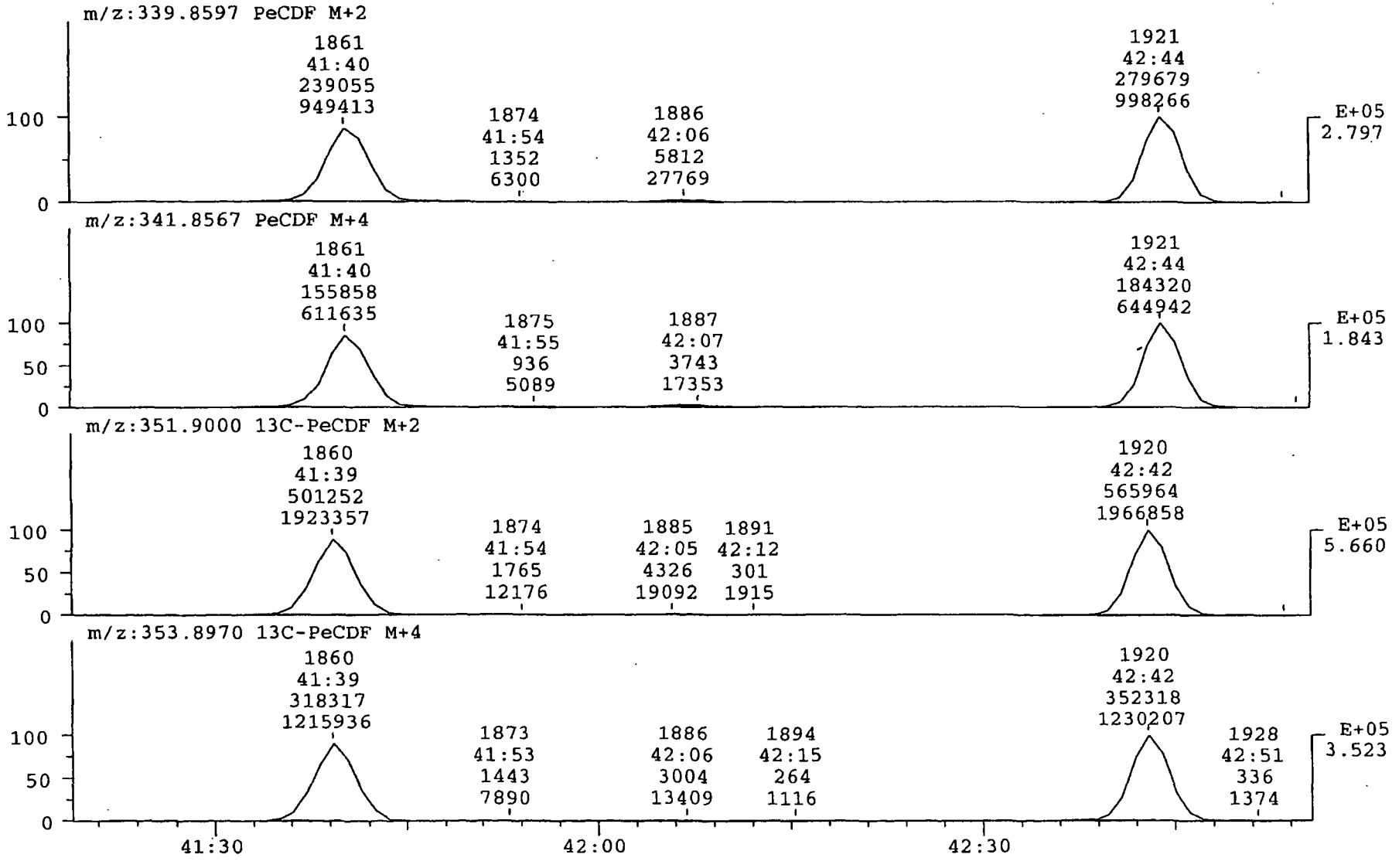
CHRO:  t031004s1                              04-Oct-03   Elapse:   46:26       2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   22:26:41    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP           Client:  STL Knoxville               Inlet :   GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1677 > 1702          Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :   2, 3.0
Disp:  Height  Area
```



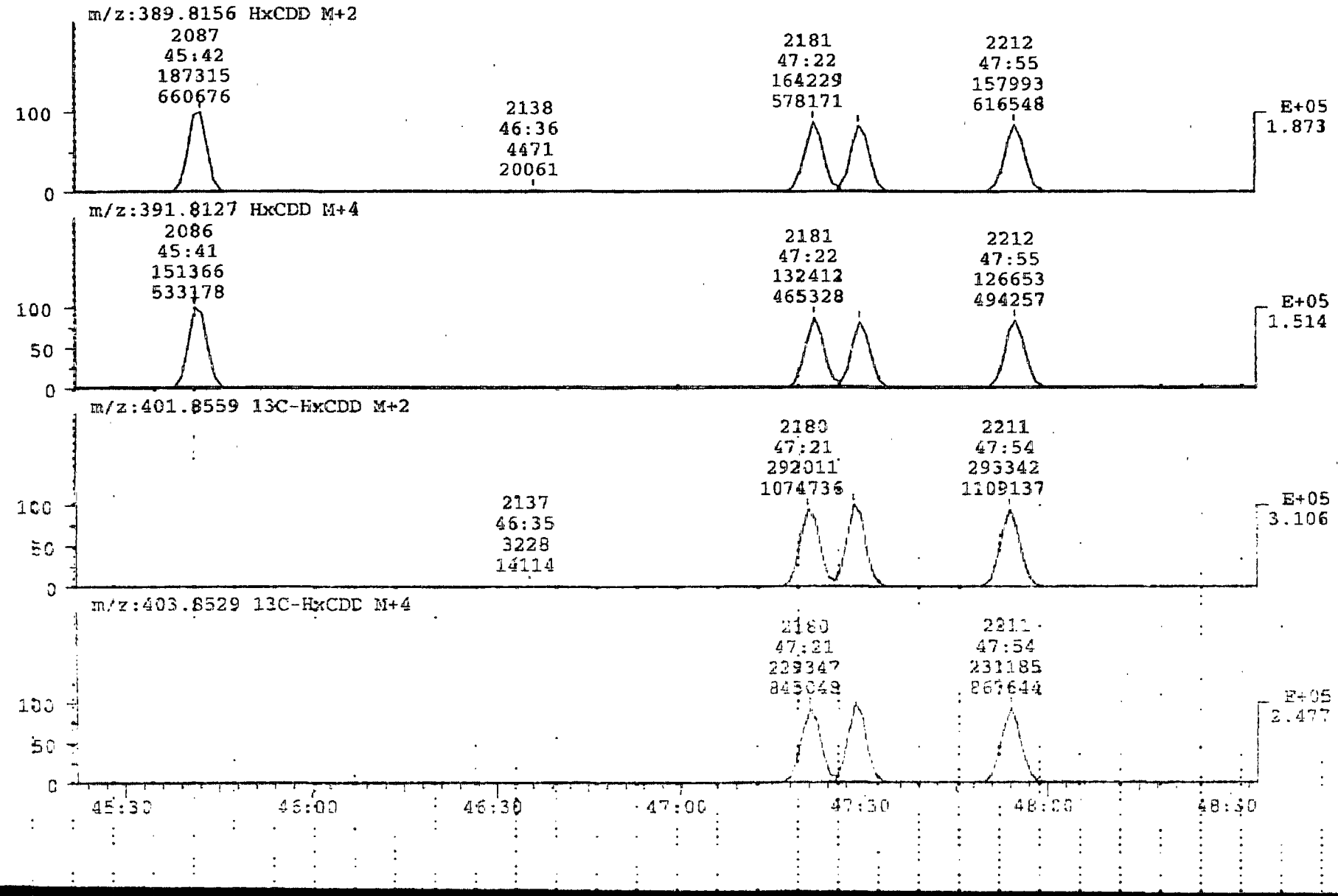
```
CHRO:  t031004s1                              04-Oct-03   Elapse:  46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville              Inlet :  GC     Vial  1
Peak:  100.00  ppm      Label wndw:   1972 > 1995         Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3              Label :  2, 3.0
Disp:  Height  Area
```



CHRO: t031004s1 04-Oct-03 Elapse: 42:18 1897
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1841 > 1932 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2068 > 2249 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



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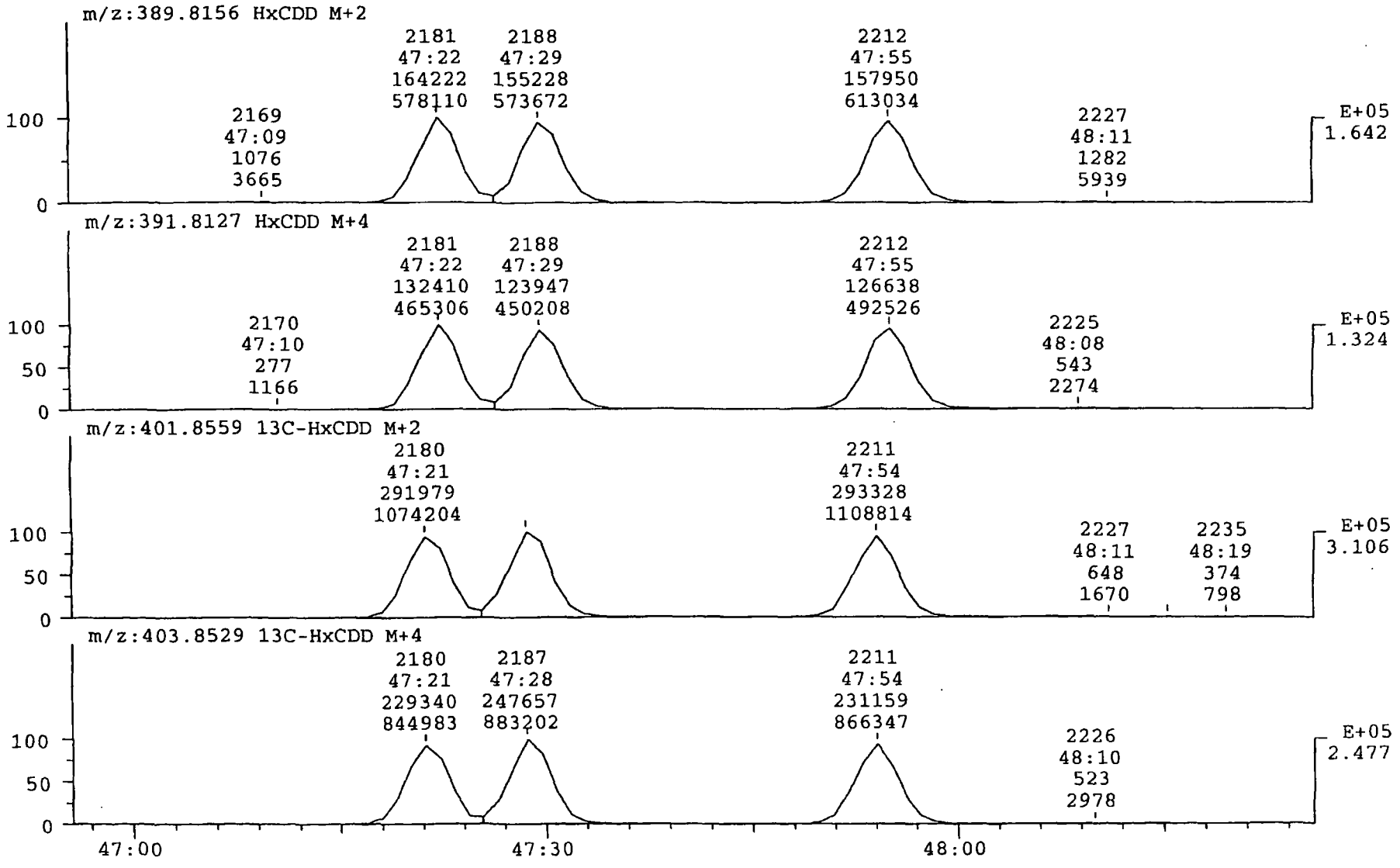
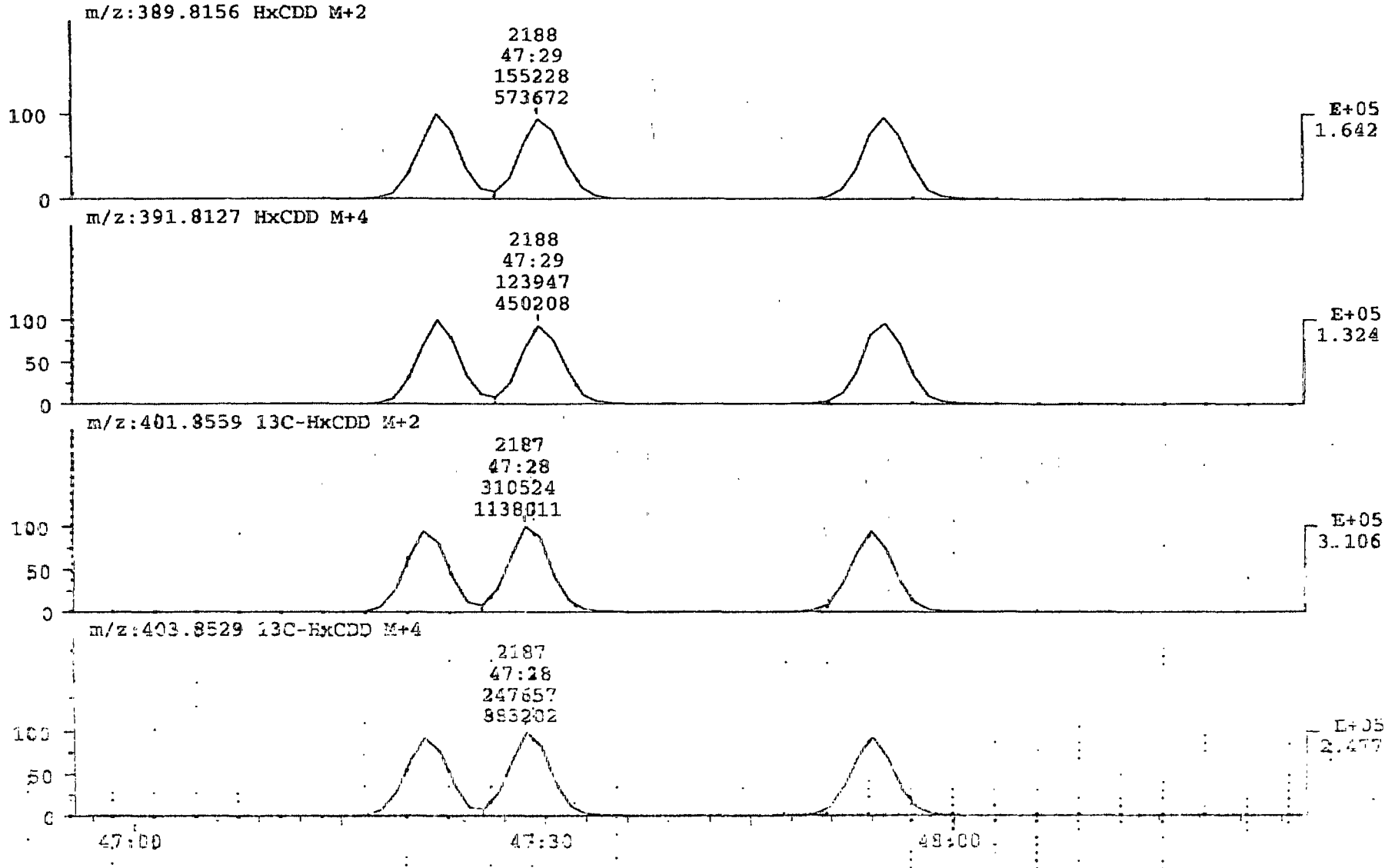
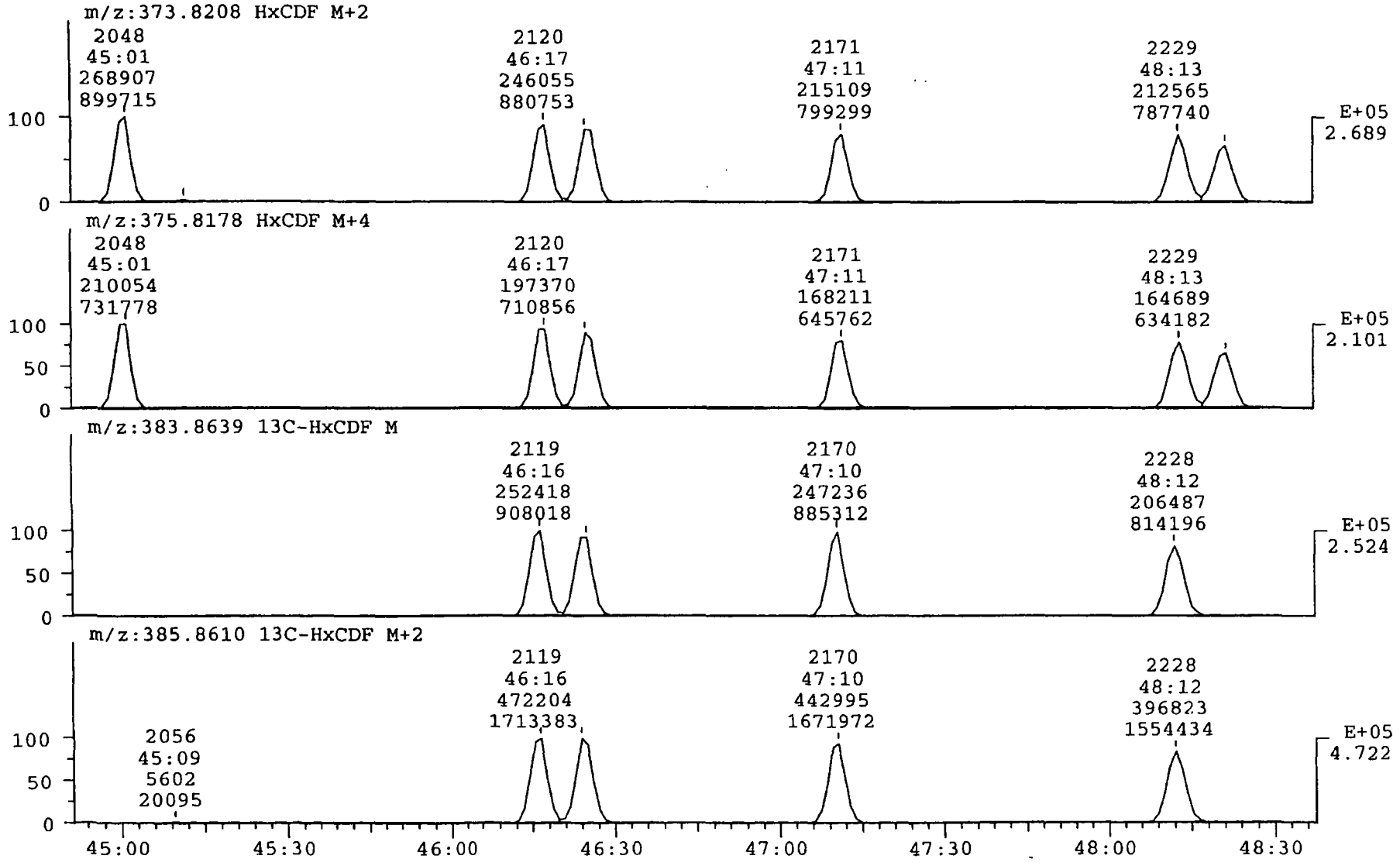
CHRO:  t031004s1                              04-Oct-03   Elapse:  46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP           Client:  STL Knoxville               Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   2156 > 2241          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 3.0
Disp:  Height  Area
```



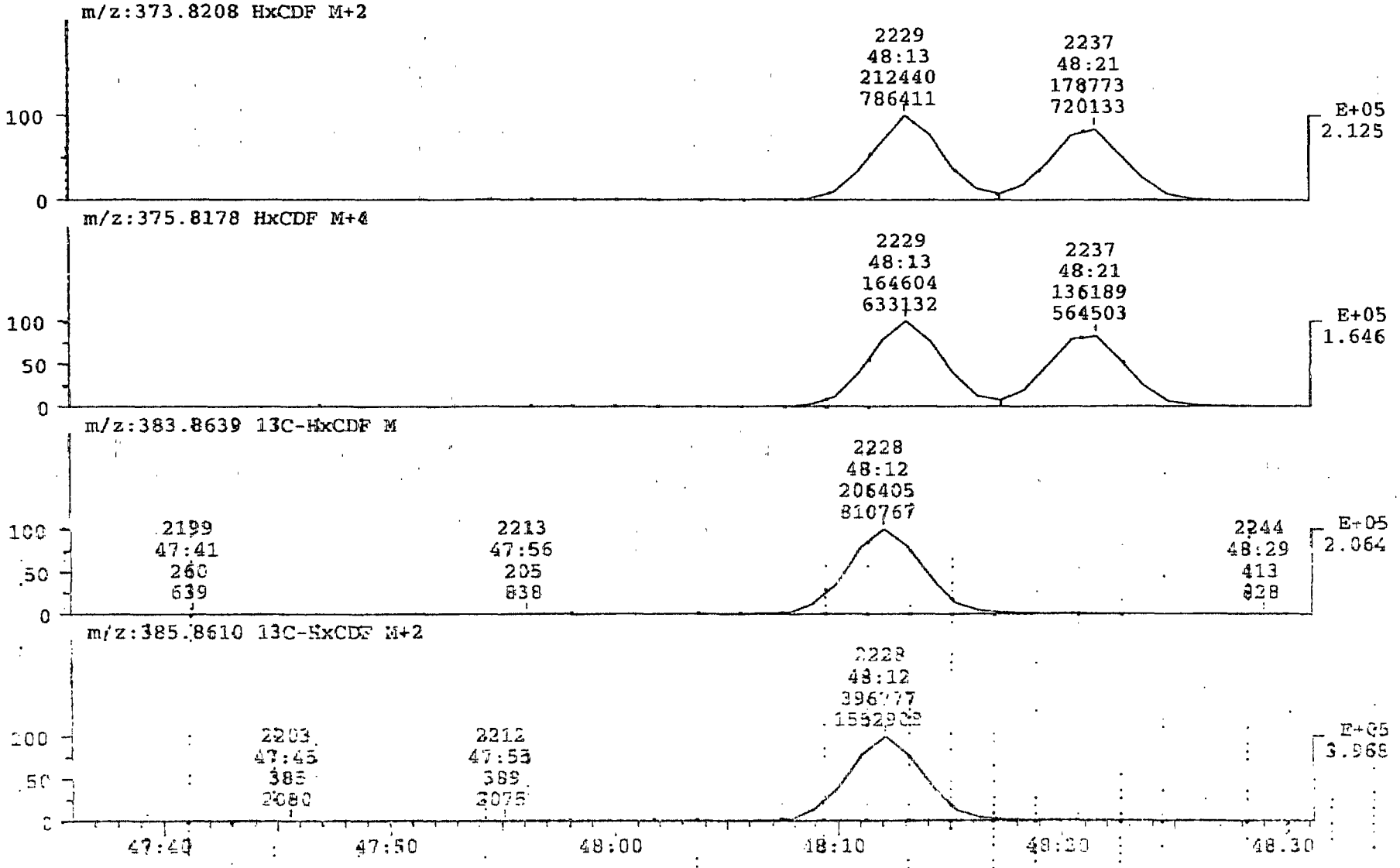
CHRO: t031004s1 04-Oct-03 Elapse: 47:28 2187
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2182 > 2192 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



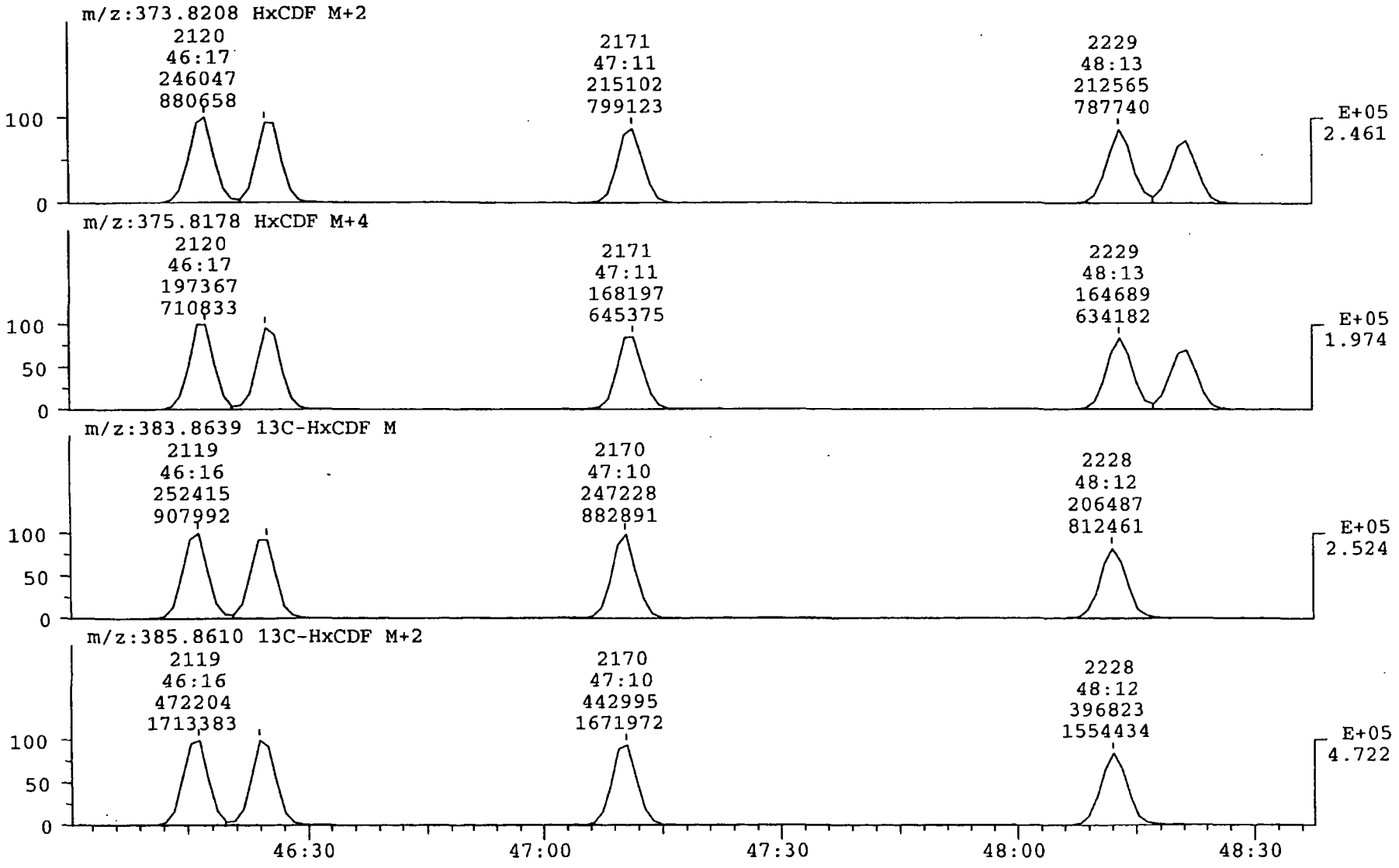
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2039 > 2252 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 50.0
Disp: Height Area



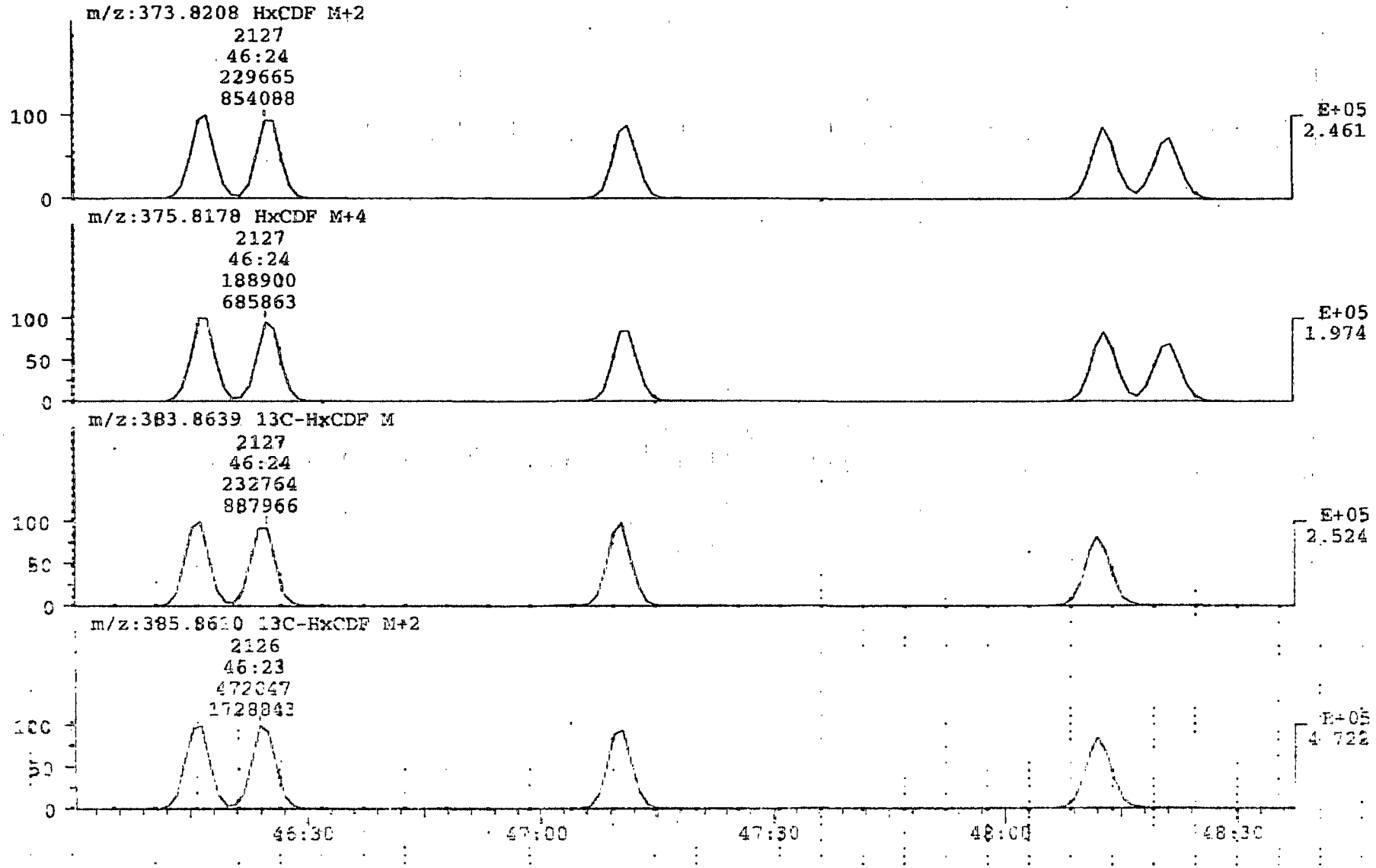
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2194 > 2246 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



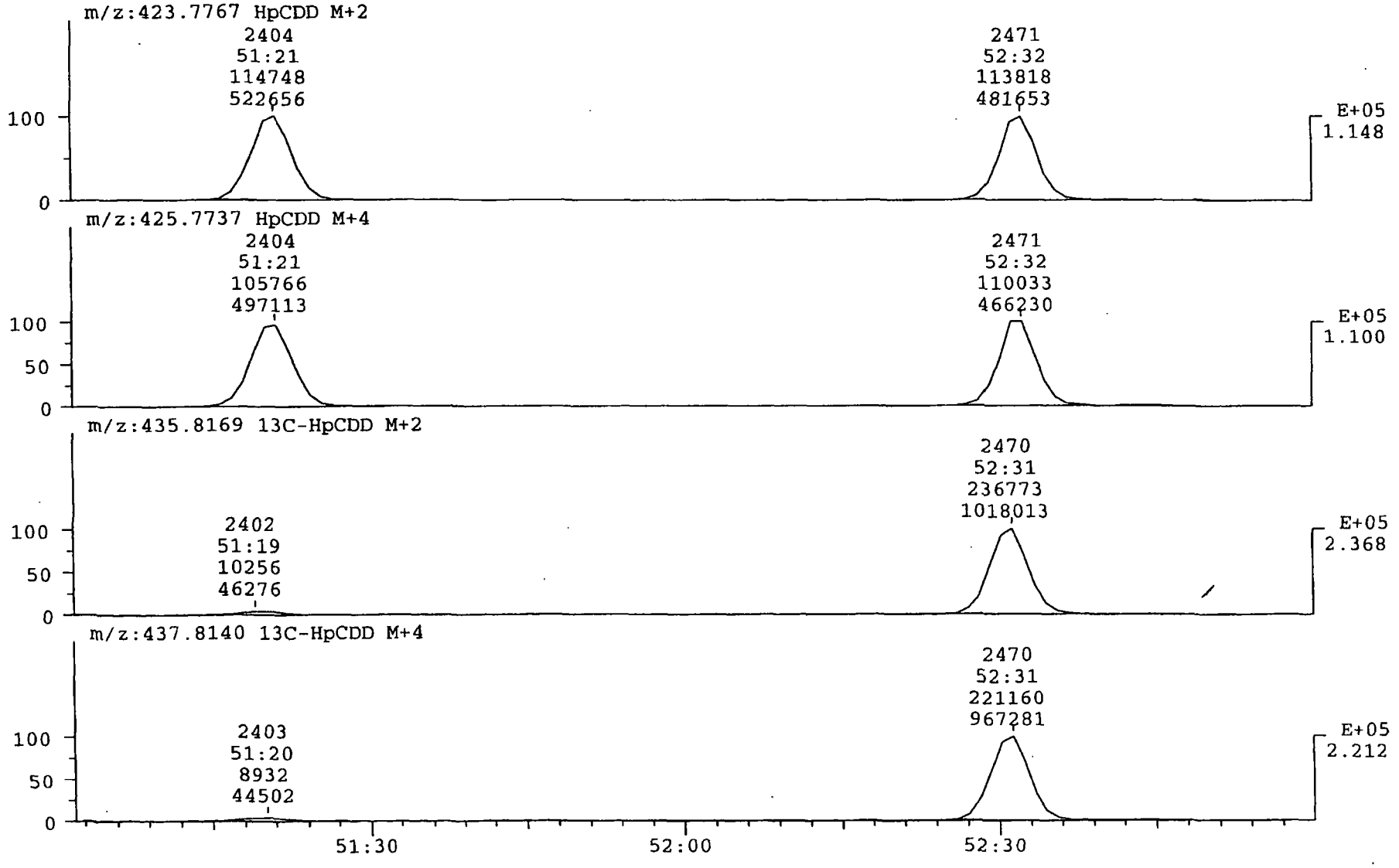
```
CHRO:  t031004s1                              04-Oct-03   Elapse:   46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :   GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2104 > 2252          Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :   2, 3.0
Disp:  Height  Area
```



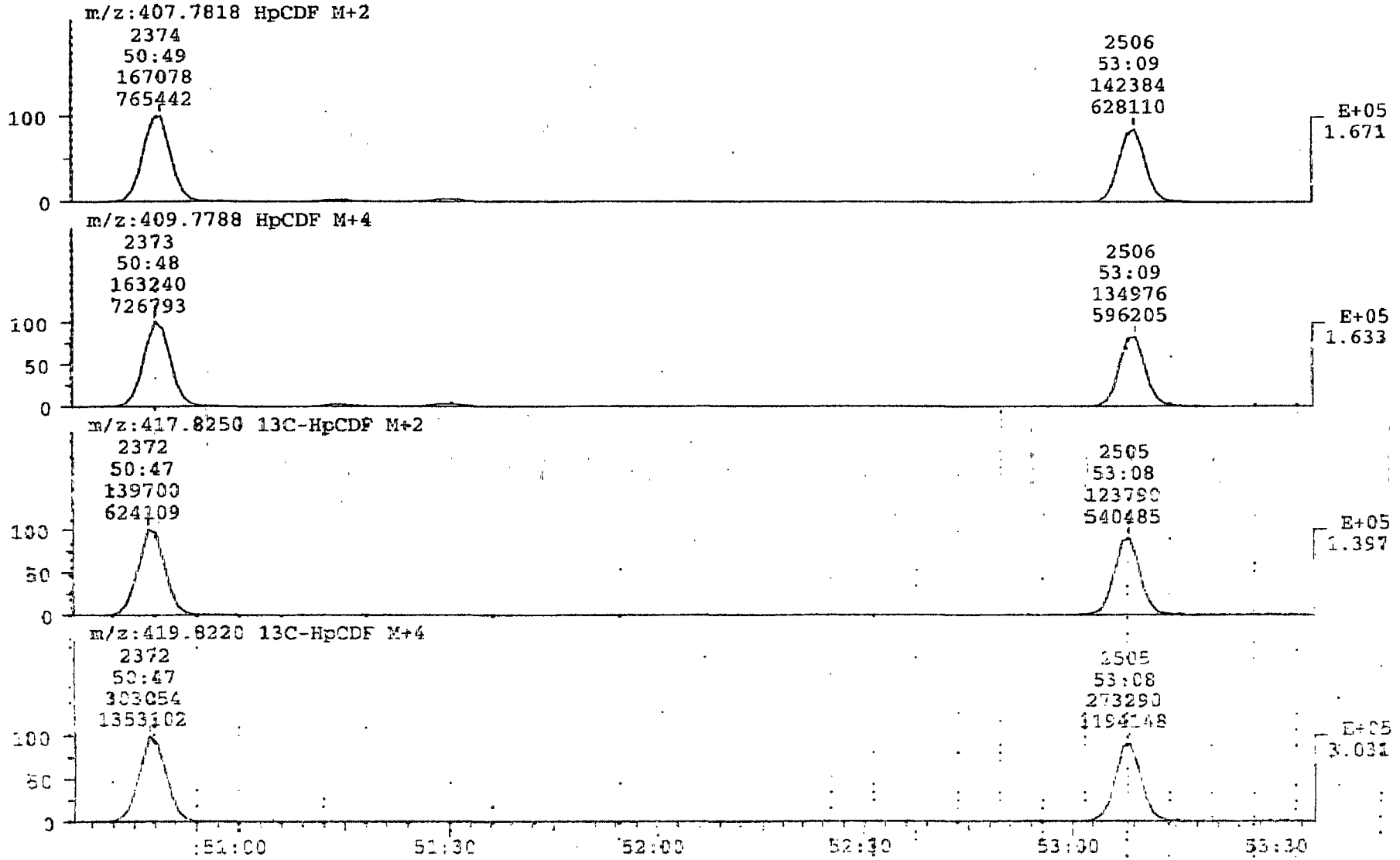
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2123 > 2133 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



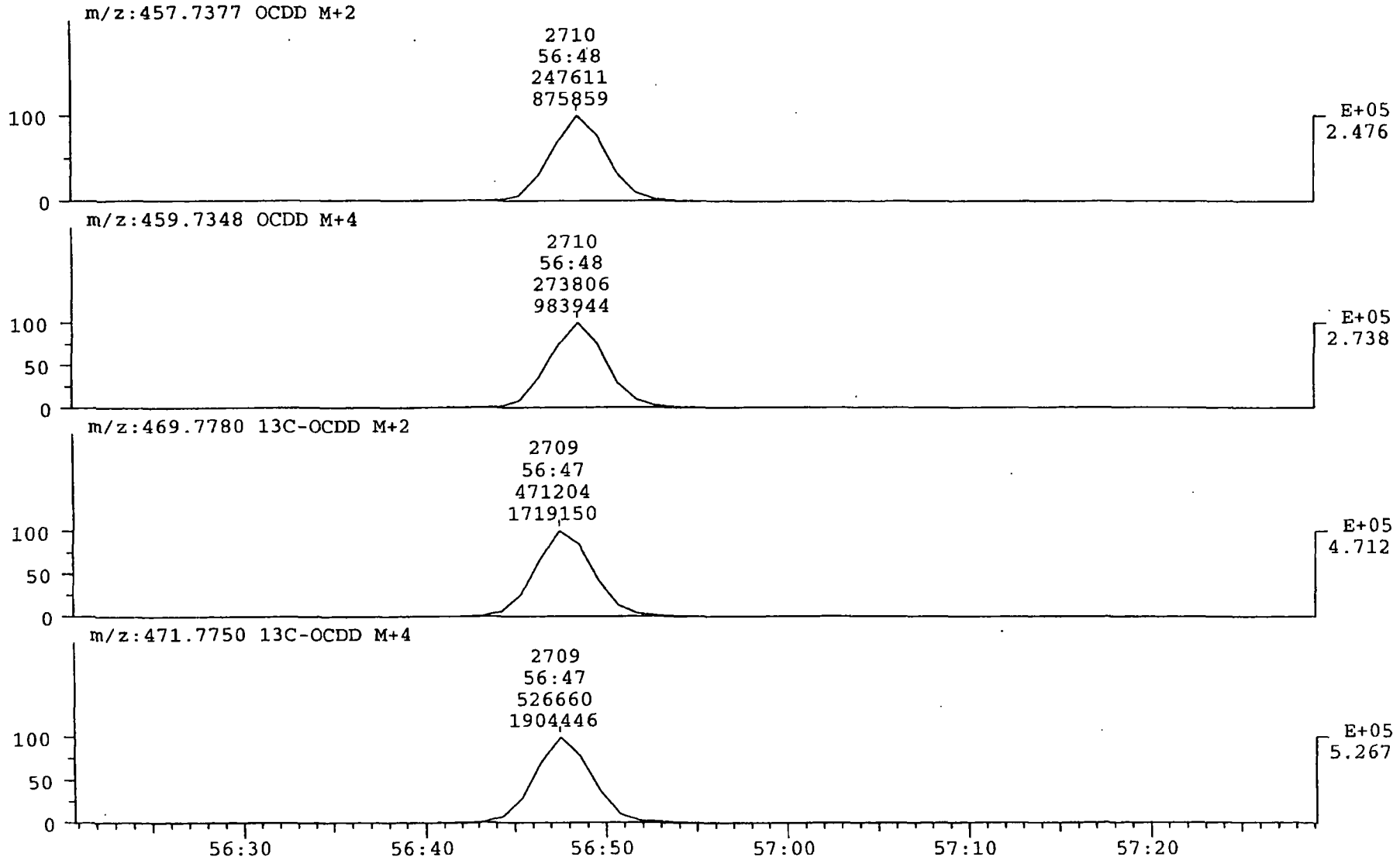
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



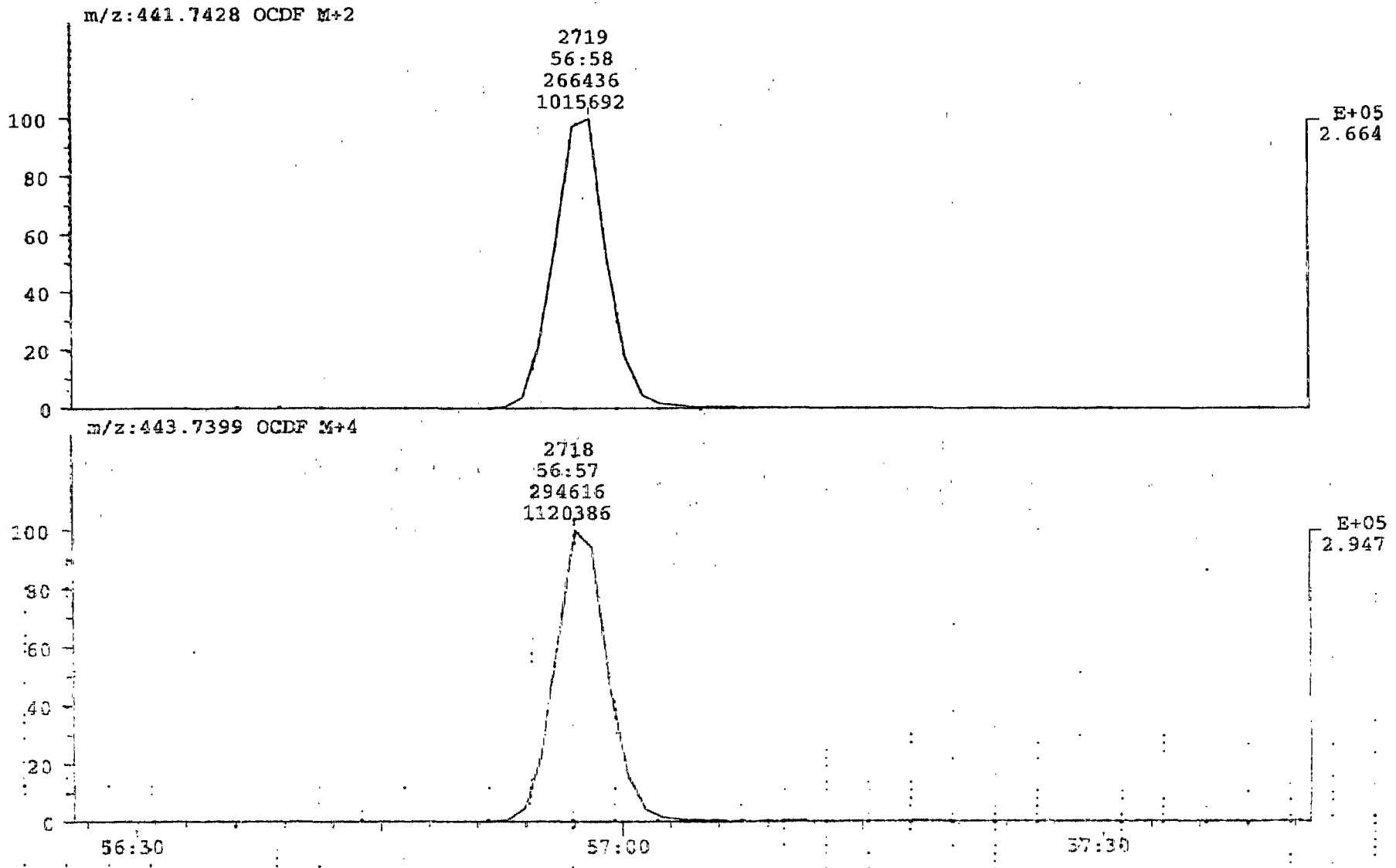
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR MRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2362 > 2530 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



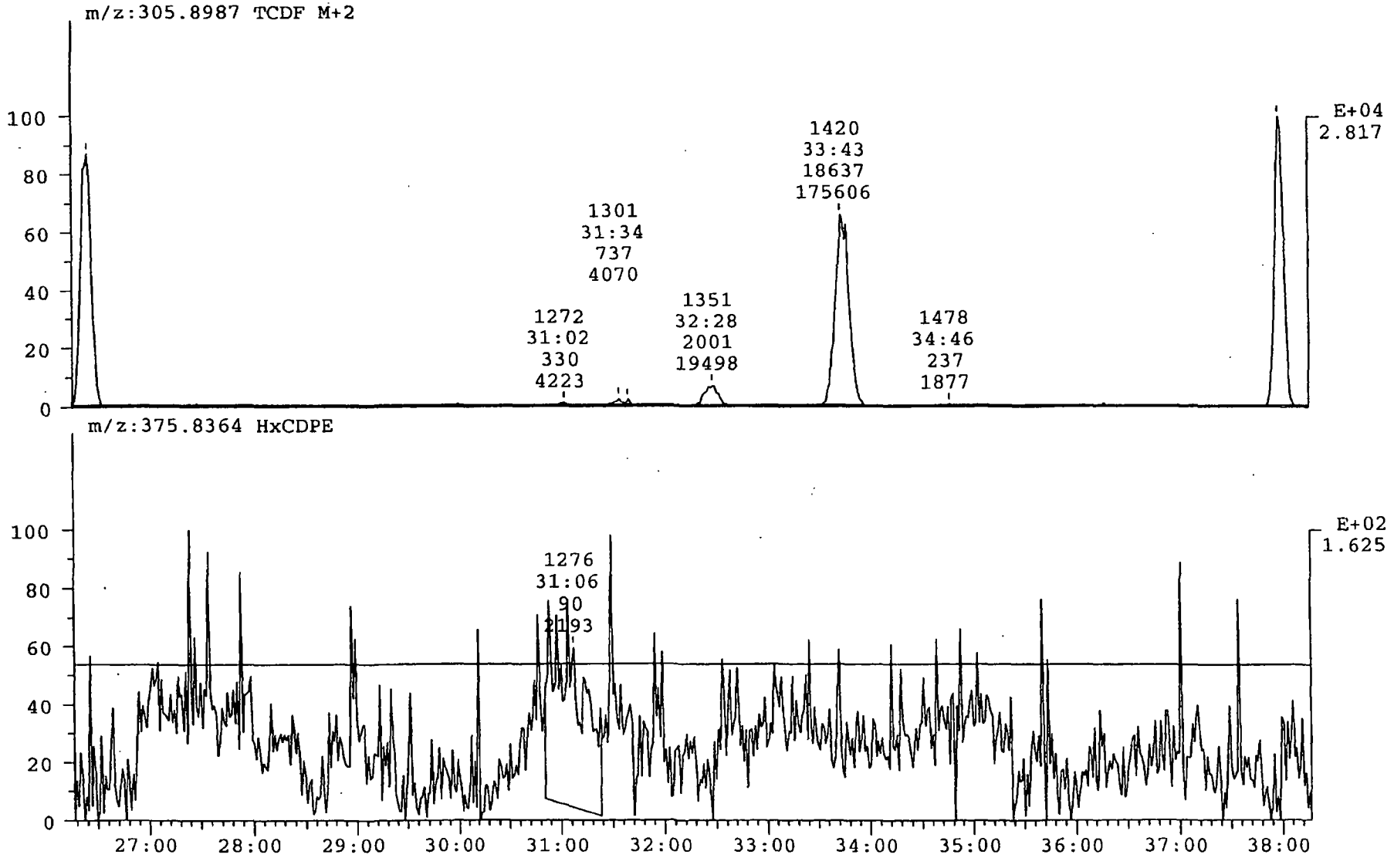
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2684 > 2748 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



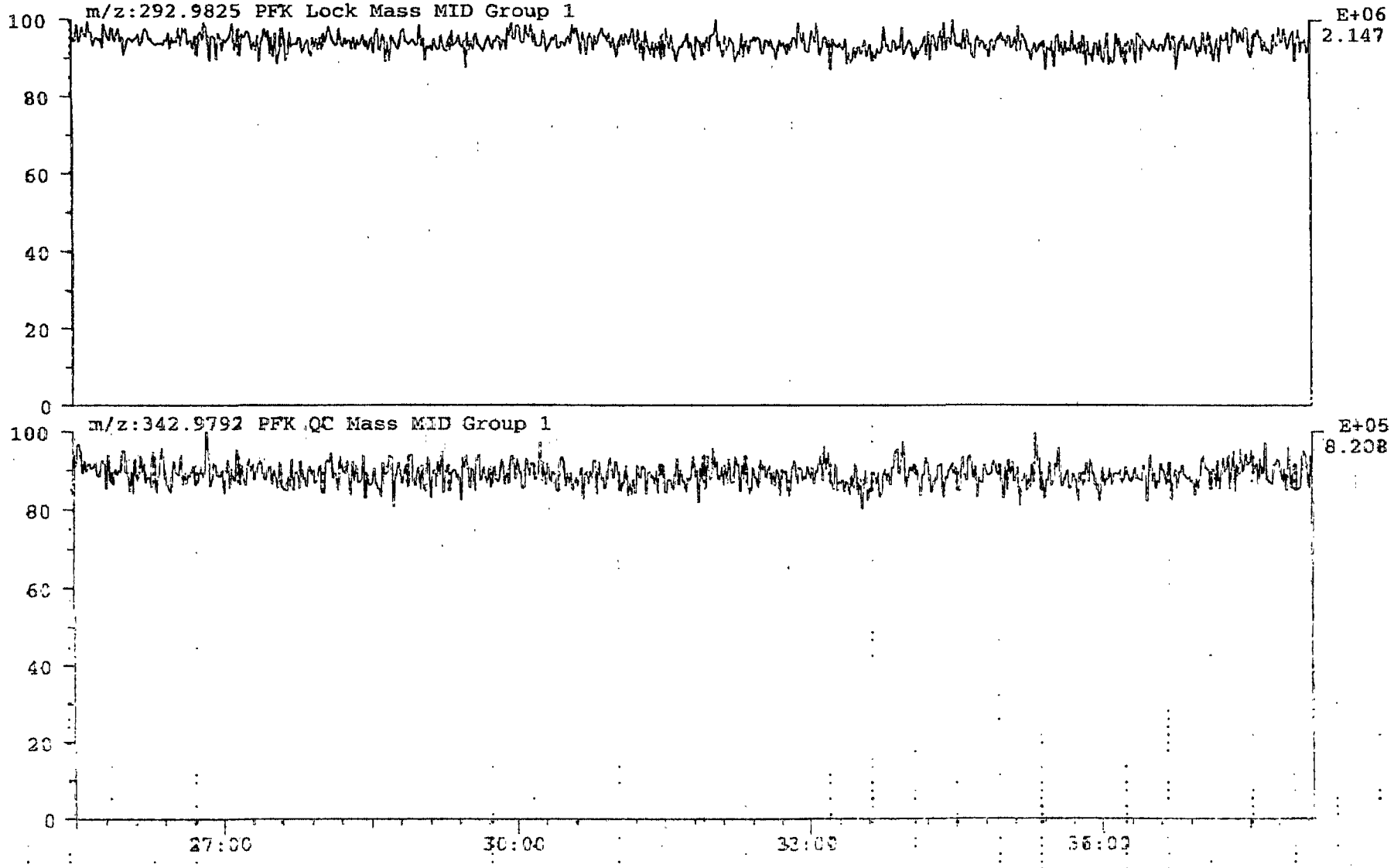
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2689 > 2761 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



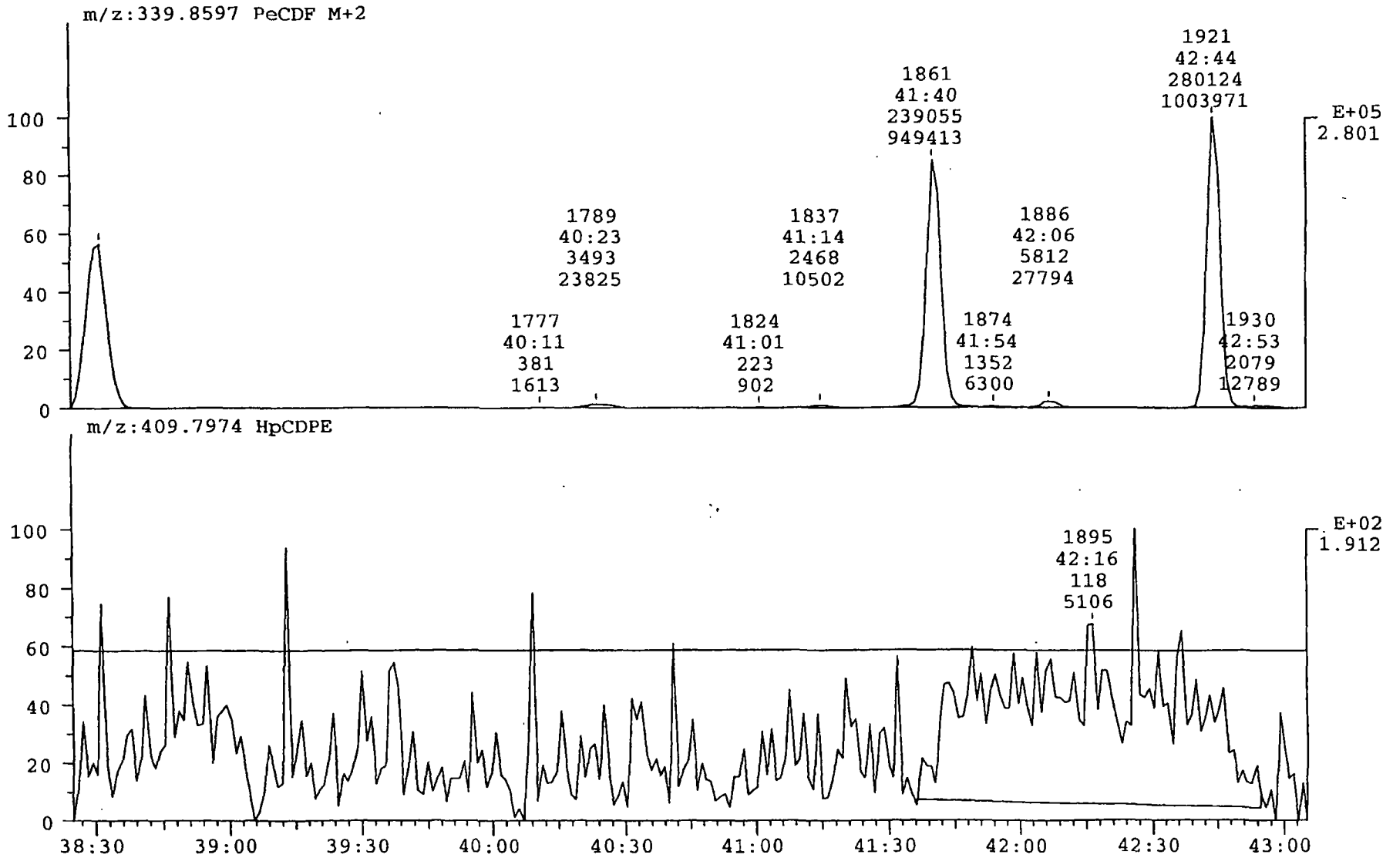
```
CHRO:  t031004s1                              04-Oct-03   Elapse:   46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :   GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1009 > 1671          Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :   -2, 3.0
Disp:  Height  Area
```



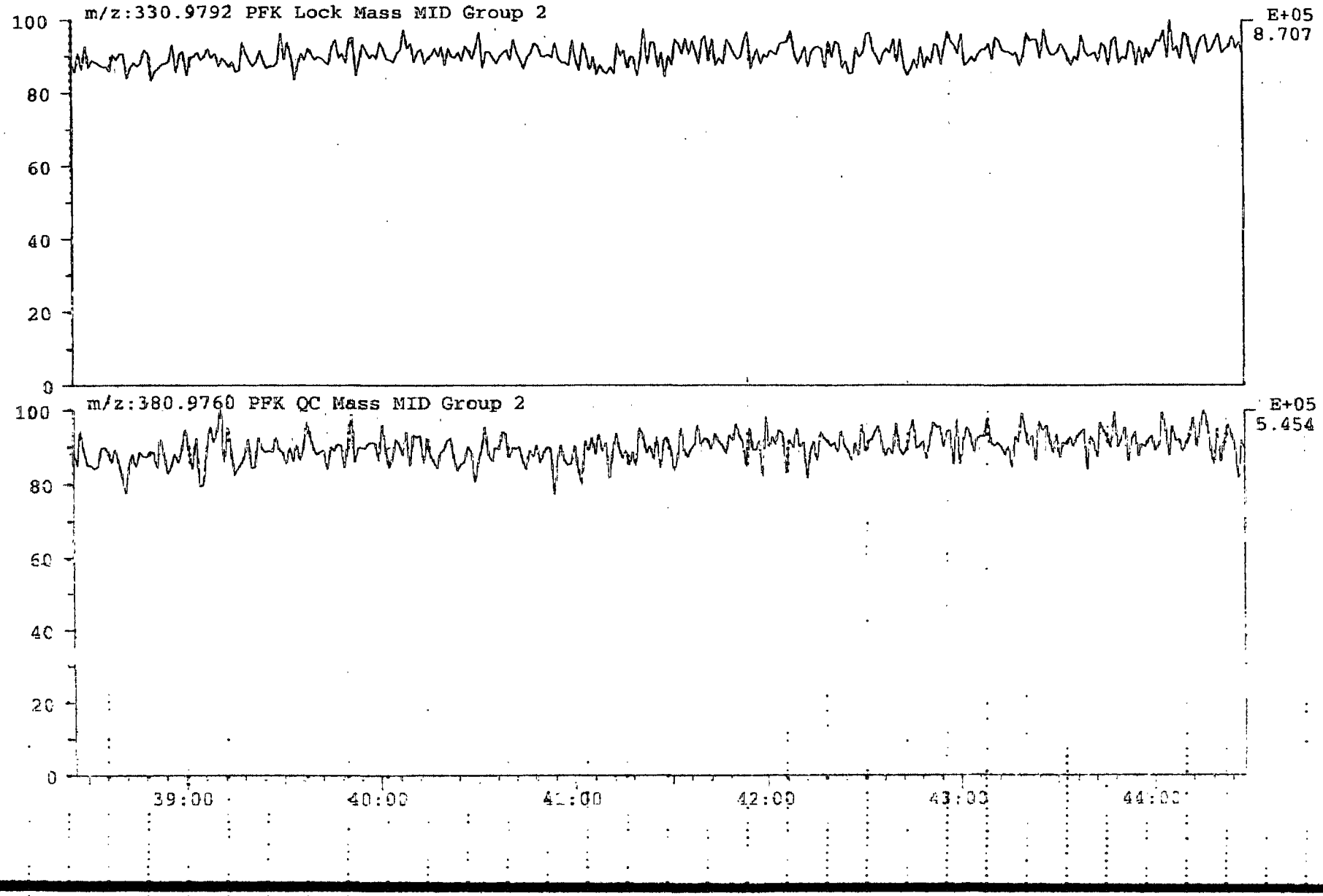
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 966 > 1665 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



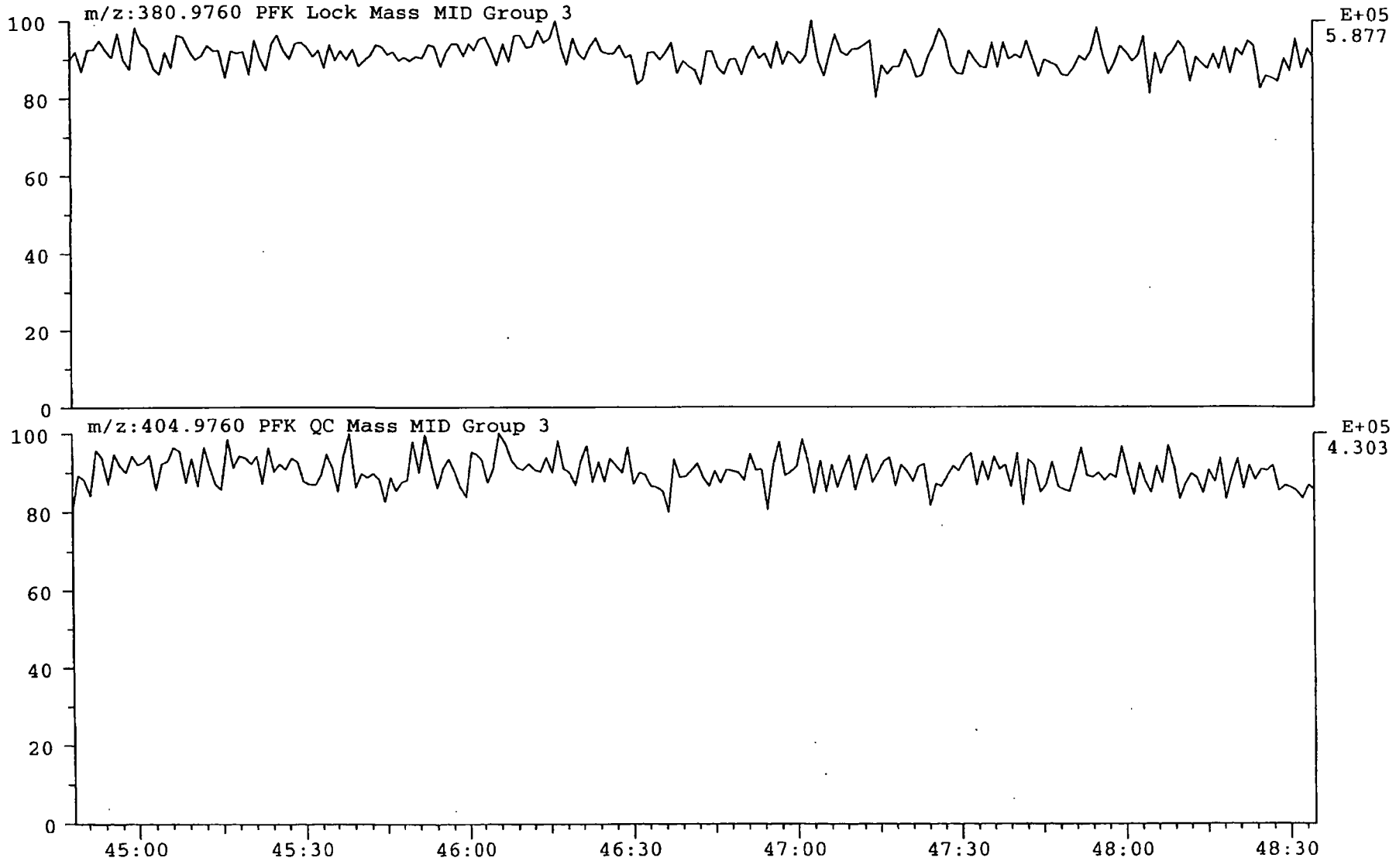
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1677 > 1941 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



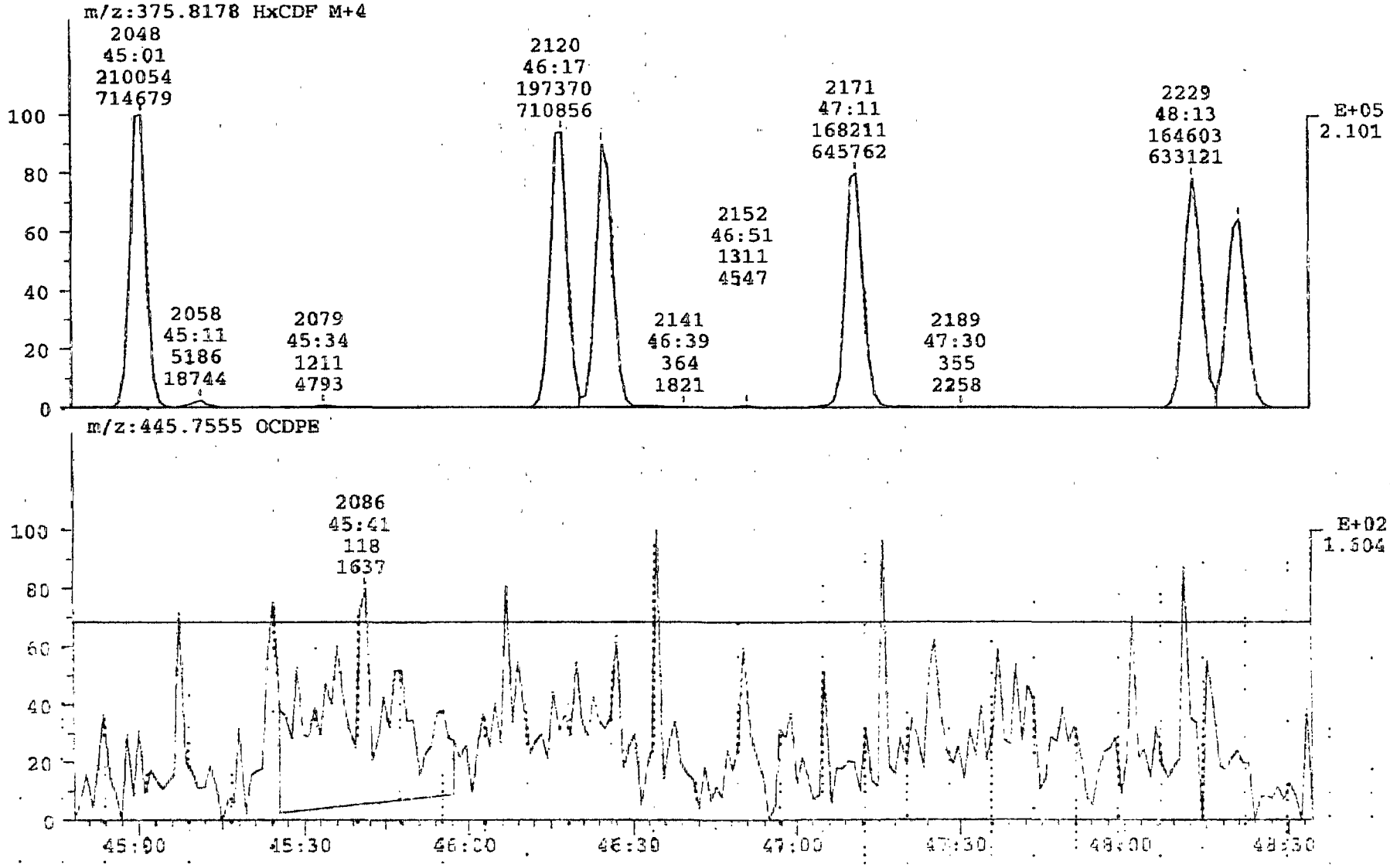
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1678 > 2019 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



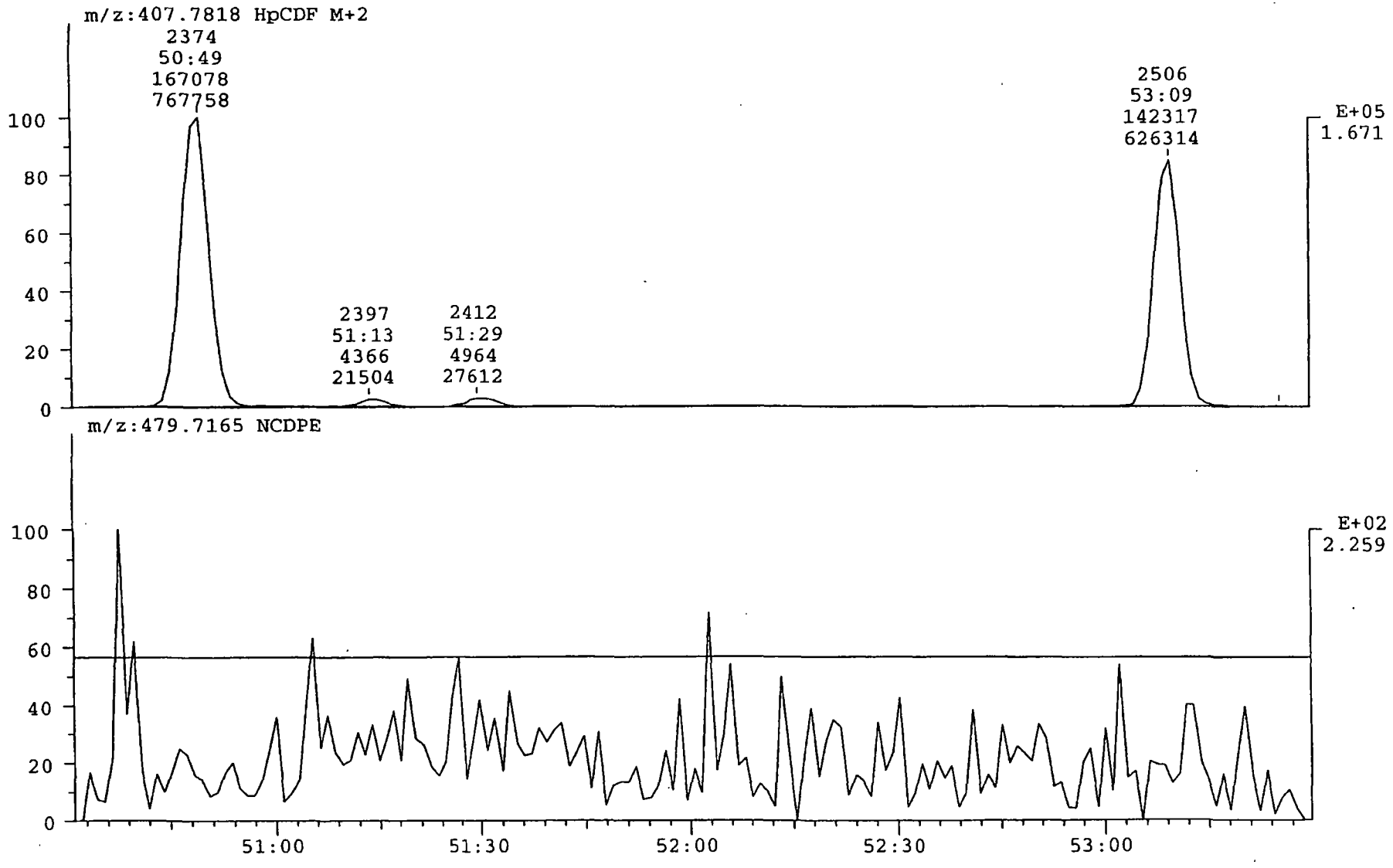
```
CHRO:  t031004s1                              04-Oct-03   Elapse:  46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial  1
Peak:  100.00  ppm     Label wndw:   2036 > 2249          Masses:  293 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



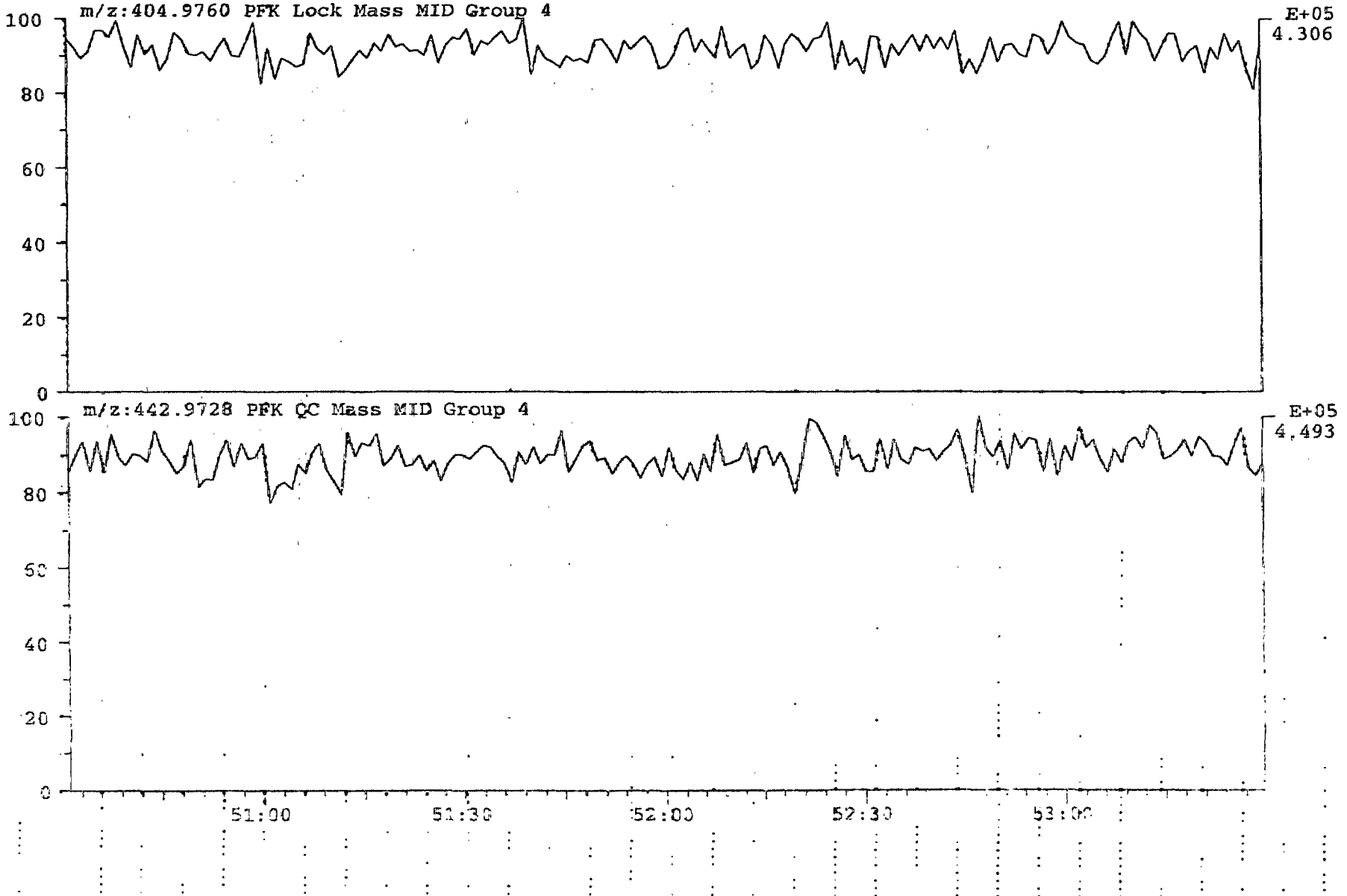
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2036 > 2249 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



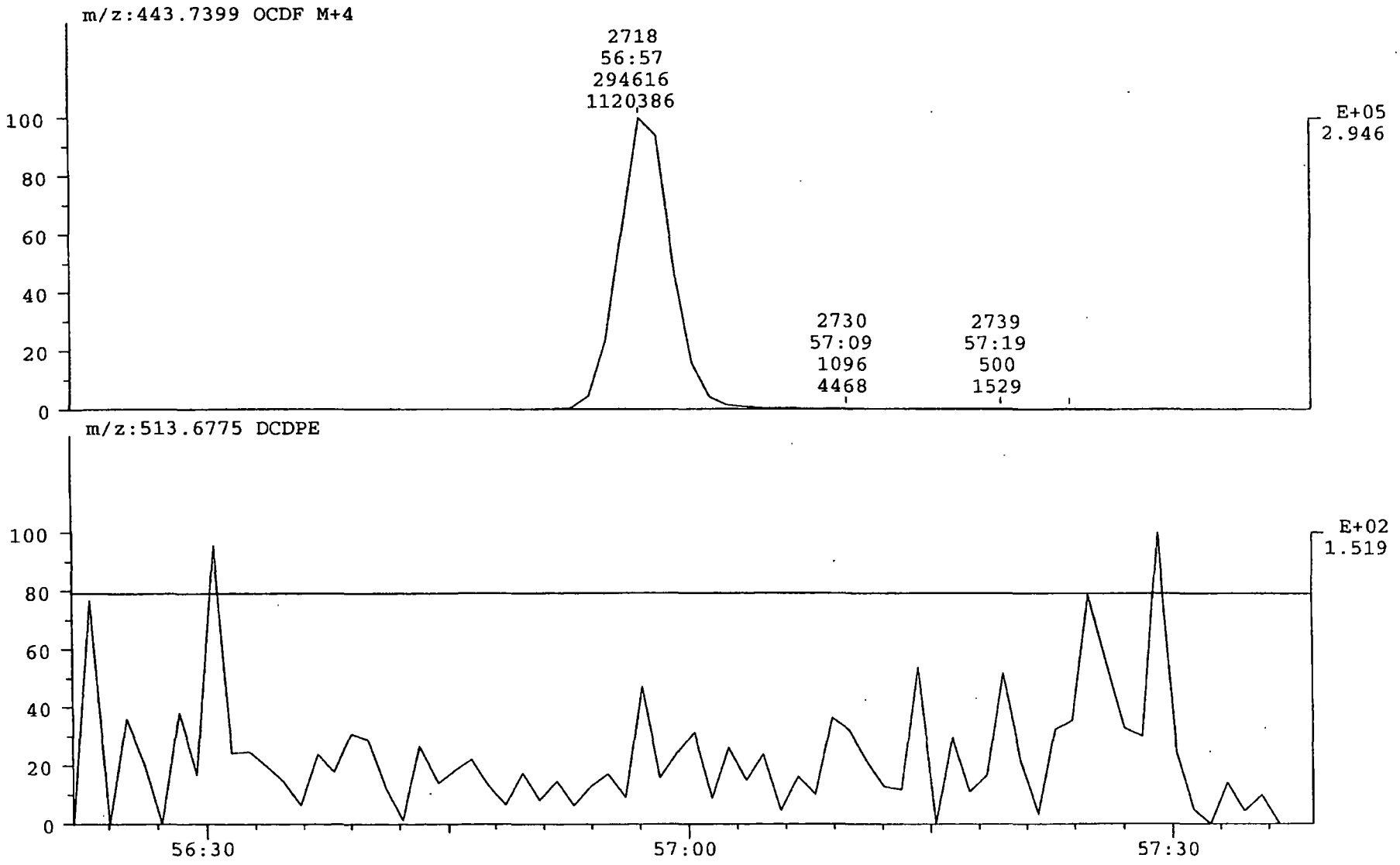
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2357 > 2525 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



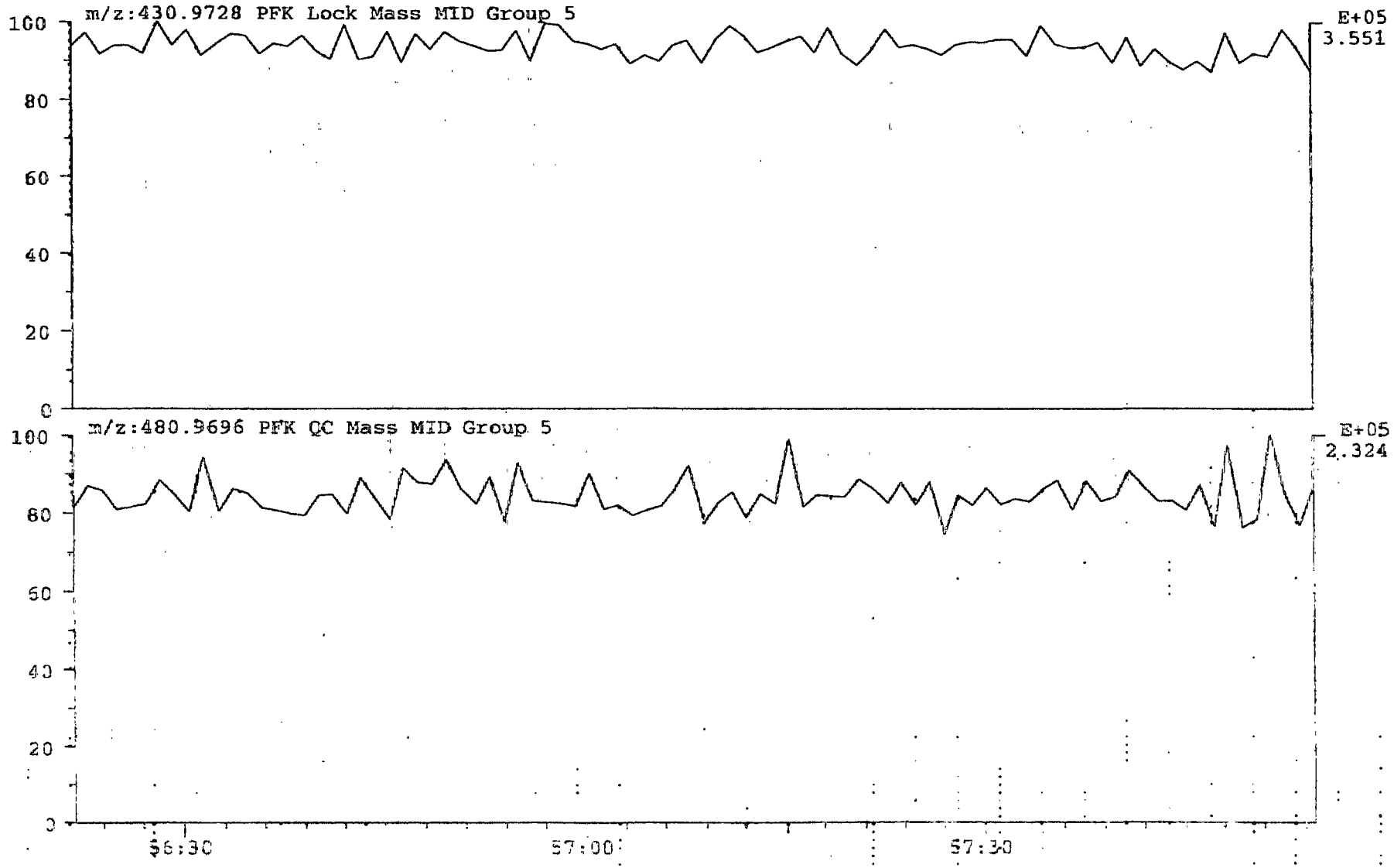
CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2357 > 2525 Masses: 293 > 514
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 2.5



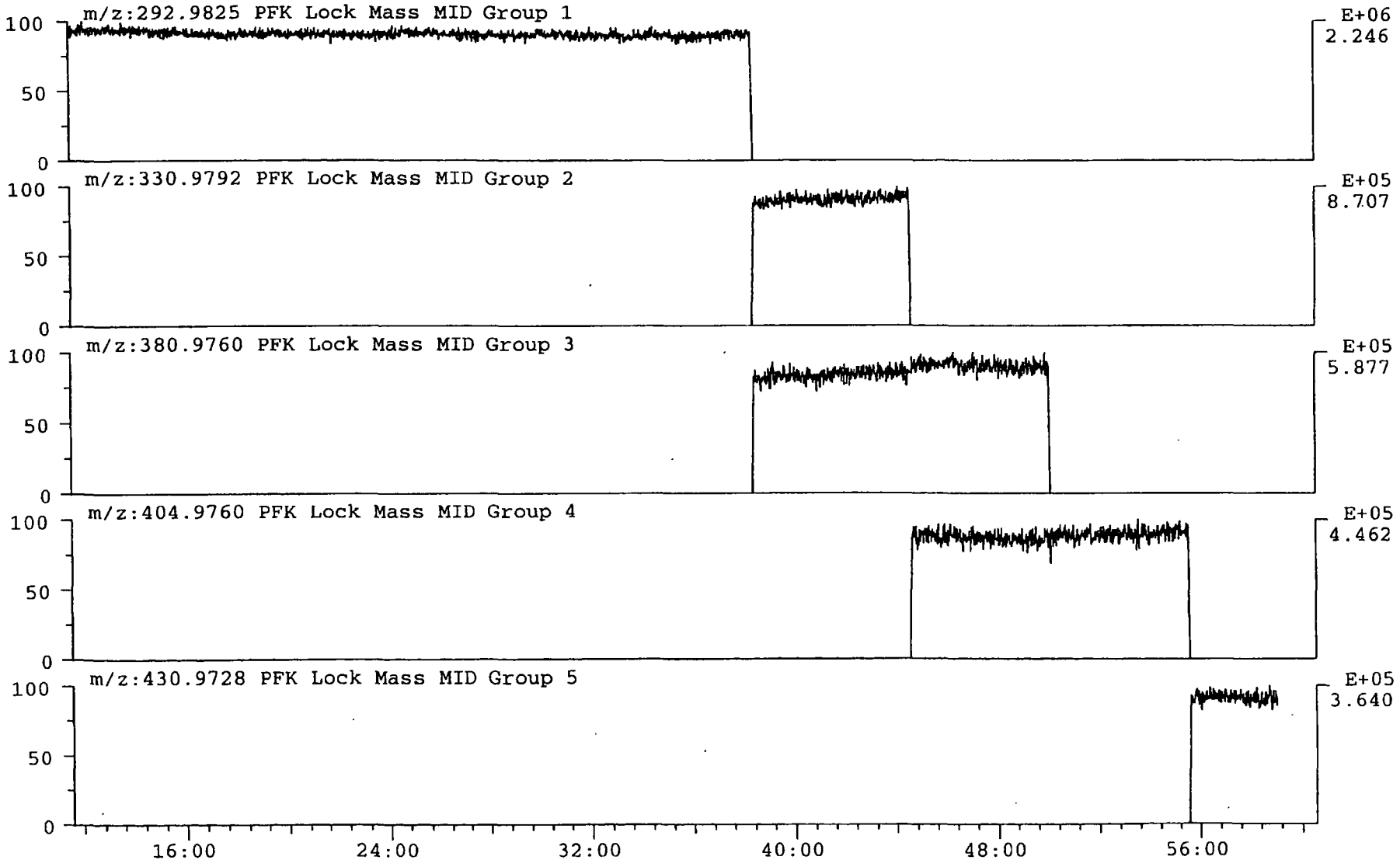
```
CHRO:  t031004s1                              04-Oct-03   Elapse:   46:26      2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   22:26:41   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP            Client:  STL Knoxville              Inlet :   GC     Vial  1
Peak:  100.00  ppm      Label wndw:   2685 > 2757         Masses:   293 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3               Label :   -2, 3.0
Disp:  Height  Area
```



CHRO: t031004s1 04-Oct-03 Elapse: 46:26 2128
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2685 > 2772 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 3.0
Disp: Height Area



```
CHRO:  t031004s1                              04-Oct-03   Elapse:   46:26       2128
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   22:26:41    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :   GC     Vial   1
Peak:  100.00  ppm     Label wndw:   198 > 2919           Masses:   293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :   0, 0.0
```



```
Instrument internet name  -  mat95s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis2ms
ICIS Version 8.2.1


ICL Version: 10.500
File name: t031004s1
Study: Ver/Win
Sample: WO=2553:86 Meth=F8 Dil=1
Amount:    0.0
Volume:    0.0
Operator: PMP
Client: STL Knoxville
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume:    2.0
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
File 1 of list 031003
  ICL procedure: sleep6x
  ICIS procedure: tstdw $
  MID procedure: epa1613

  MID Remarks:  Tetra-Octa PCDD/F EPA Method 829U/1613B

  Mid Set Up Parameter:
   Measure/lock ratio          1
   Damping Relay           FALSE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode               Lock mode
   Acq mode               Cent mode

  Mid Time Windows:
        Start          Measure        End          Cycletime
  # 1    8:00 min     30:20 min    38:20 min      1.00 sec
  # 2   38:20 min      6:10 min    44:30 min      1.00 sec
  # 3   44:30 min      5:29 min    50:00 min      1.00 sec
  # 4   50:00 min      5:30 min    55:30 min      1.00 sec
  # 5   55:30 min      3:29 min    59:00 min      1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92
   Window # 2
        mass F  int  gr  time (ms)
    330.9792 l   10   1      8.19
    339.8597      1   1     91.48
```

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

Loop clean w slvnt A (LC): 0 times
Loop clean w slvnt B (LB): 0 times
Standard sample volume(X): 0.0 ul
Standard air volume (Y): 0.0 ul
2nd Injection volume (I): 0.0 ul
Air volume of 2nd inj (J): 0.0 ul
Time btwn 2 injections(T): 0 sec

GC descriptor : epa1613

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 300 deg max |
| Transfer Line: | 290 deg | | | 300 deg max |
| Column: | 140 deg at | 0.0 | minutes | 330 deg max |
| | 140 deg at | 3.0 | minutes | |
| | 210 deg at | 6.5 | minutes | |
| | 210 deg at | 34.5 | minutes | |
| | 280 deg at | 44.5 | minutes | |
| | 280 deg at | 51.0 | minutes | |
| | 325 deg at | 60.0 | minutes | |

Inlet :
Pressure 18.0 psi
Splitless mode
Purge time 1.5 min
Purge flow 40.0 mL/min

Gas saver is on
Saver time 3.0 min
Saver flow 15.0 mL/min

Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8448.0000 |
| BDEV | 8284.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 600.9615 |
| FSLOPE | 36000000.0000 | FVANAL | 282.0000 | FVINLET | 795.0000 |
| FVSRC | 933.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 156.0000 |
| HCURR | 1.4608 | HVANAL | 986.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4766.7840 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 304.9824 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 200.0000 | NSAM | 200.0000 | NSCAN | 3107.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 2.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 361.0700 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 04-Oct-03 22:26:41.2

Autosampler has injected sample from vial 1
Analysis stopped at: 04-Oct-03 23:25:43.1 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: t031004s1.q0 Entries: 157

Data file(s) used
File: t031004s1 04-Oct-03
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 22:26:41 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 29:13 | 98013. | 13194. | 28:57 | 29:30 | 58. | 2 | 3.0 |
| 319.8805 | 35:22 | 89558. | 11597. | 35:06 | 35:30 | 58. | 2 | 3.0 |
| 319.8805 | 35:37 | 85186. | 10155. | 35:30 | 35:44 | 58. | 2 | 3.0 |
| 319.8805 | 35:51 | 99765. | 13223. | 35:44 | 36:02 | 58. | 2 | 3.0 |
| 319.8805 | 36:15 | 95429. | 12243. | 36:02 | 36:32 | 58. | 2 | 3.0 |
| 319.8805 | 38:04 | 86624. | 14849. | 37:53 | 38:14 | 58. | 2 | 3.0 |
| 321.8775 | 29:12 | 123536. | 15607. | 28:56 | 29:28 | 67. | 2 | 3.0 |
| 321.8775 | 35:23 | 111154. | 13390. | 35:07 | 35:30 | 67. | 2 | 3.0 |
| 321.8775 | 35:37 | 111689. | 13942. | 35:30 | 35:44 | 67. | 2 | 3.0 |
| 321.8775 | 35:53 | 127892. | 16067. | 35:44 | 36:04 | 67. | 2 | 3.0 |
| 321.8775 | 36:15 | 128371. | 17415. | 36:04 | 36:32 | 67. | 2 | 3.0 |
| 321.8775 | 38:04 | 113984. | 19355. | 37:55 | 38:16 | 67. | 2 | 3.0 |
| 331.9202 | 35:20 | 882511. | 103613. | 35:04 | 35:35 | 94. | 2 | 3.0 |
| 331.9202 | 35:49 | 956016. | 118722. | 35:35 | 36:06 | 94. | 2 | 3.0 |
| 333.9171 | 35:19 | 1086171. | 125023. | 35:02 | 35:35 | 71. | 2 | 3.0 |
| 333.9171 | 35:48 | 1201254. | 151167. | 35:37 | 36:03 | 71. | 2 | 3.0 |
| 319.8805 | 35:22 | 88888. | 11573. | 35:07 | 35:30 | 100. | 2 | 3.0 |
| 319.8805 | 35:37 | 84879. | 10133. | 35:30 | 35:44 | 100. | 2 | 3.0 |
| 319.8805 | 35:51 | 99408. | 13203. | 35:44 | 36:02 | 100. | 2 | 3.0 |
| 319.8805 | 36:15 | 94676. | 12219. | 36:02 | 36:29 | 100. | 2 | 3.0 |
| 321.8775 | 35:23 | 110646. | 13368. | 35:08 | 35:30 | 95. | 2 | 3.0 |
| 321.8775 | 35:37 | 111358. | 13919. | 35:30 | 35:44 | 95. | 2 | 3.0 |
| 321.8775 | 35:53 | 127380. | 16042. | 35:44 | 36:03 | 95. | 2 | 3.0 |
| 321.8775 | 36:15 | 127953. | 17398. | 36:04 | 36:31 | 95. | 2 | 3.0 |
| 331.9202 | 35:20 | 881296. | 103574. | 35:04 | 35:35 | 149. | 2 | 3.0 |
| 331.9202 | 35:49 | 954555. | 118674. | 35:35 | 36:06 | 149. | 2 | 3.0 |
| 333.9171 | 35:19 | 1085847. | 125014. | 35:05 | 35:35 | 127. | 2 | 3.0 |
| 333.9171 | 35:48 | 1201449. | 151162. | 35:37 | 36:04 | 127. | 2 | 3.0 |
| 327.8683 | 35:53 | 217270. | 28482. | 35:36 | 36:07 | 64. | 2 | 3.0 |
| 303.8864 | 26:24 | 150933. | 22369. | 26:07 | 26:36 | 53. | 2 | 3.0 |
| 303.8864 | 33:44 | 140869. | 15470. | 33:28 | 34:00 | 53. | 2 | 3.0 |
| 303.8864 | 38:00 | 134177. | 22108. | 37:49 | 38:11 | 53. | 2 | 3.0 |
| 305.8834 | 26:25 | 179880. | 24699. | 26:08 | 26:40 | 65. | 2 | 3.0 |
| 305.8834 | 33:43 | 175758. | 18641. | 33:27 | 33:59 | 65. | 2 | 3.0 |
| 305.8834 | 37:59 | 168600. | 28165. | 37:50 | 38:09 | 65. | 2 | 3.0 |
| 315.9261 | 33:42 | 1355872. | 139665. | 33:26 | 33:58 | 60. | 2 | 3.0 |
| 317.9230 | 33:42 | 1705711. | 180759. | 33:26 | 33:58 | 62. | 2 | 3.0 |
| 303.8864 | 33:44 | 140568. | 15461. | 33:28 | 34:00 | 56. | 2 | 3.0 |
| 305.8834 | 33:43 | 175445. | 18632. | 33:28 | 33:59 | 80. | 2 | 3.0 |
| 315.9261 | 33:42 | 1355496. | 139653. | 33:26 | 33:58 | 80. | 2 | 3.0 |
| 317.9230 | 33:42 | 1705453. | 180751. | 33:26 | 33:58 | 66. | 2 | 3.0 |
| 355.8368 | 40:42 | 602816. | 129532. | 40:33 | 40:57 | 66. | 2 | 3.0 |
| 355.8368 | 43:11 | 669326. | 193419. | 43:05 | 43:20 | 66. | 2 | 3.0 |
| 355.8368 | 43:47 | 691167. | 207265. | 43:41 | 44:01 | 66. | 2 | 3.0 |
| 357.8337 | 40:42 | 390513. | 82691. | 40:33 | 40:52 | 67. | 2 | 3.0 |
| 357.8337 | 43:11 | 425814. | 120647. | 43:05 | 43:20 | 67. | 2 | 3.0 |
| 357.8337 | 43:47 | 458951. | 133625. | 43:31 | 44:01 | 67. | 2 | 3.0 |
| 367.8765 | 43:10 | 1347761. | 385048. | 43:04 | 43:19 | 53. | 2 | 3.0 |
| 369.8734 | 43:10 | 873135. | 258634. | 43:04 | 43:20 | 49. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 355.8368 | 43:11 | 669996. | 193442. | 43:01 | 43:20 | 79. | 2 | 3.0 |
| 357.8337 | 43:11 | 425814. | 120647. | 43:05 | 43:20 | 86. | 2 | 3.0 |
| 367.8765 | 43:10 | 1347766. | 385048. | 43:04 | 43:19 | 77. | 2 | 3.0 |
| 369.8734 | 43:10 | 873136. | 258634. | 43:04 | 43:20 | 64. | 2 | 3.0 |
| 339.8427 | 38:31 | 841771. | 158036. | 38:25 | 38:38 | 58. | 2 | 3.0 |
| 339.8427 | 41:40 | 949617. | 239065. | 41:29 | 41:50 | 58. | 2 | 3.0 |
| 339.8427 | 42:44 | 1006133. | 280252. | 42:32 | 42:50 | 58. | 2 | 3.0 |
| 339.8427 | 43:55 | 850745. | 242222. | 43:49 | 44:03 | 58. | 2 | 3.0 |
| 341.8396 | 38:30 | 544379. | 102633. | 38:25 | 38:38 | 60. | 2 | 3.0 |
| 341.8396 | 41:40 | 612447. | 155890. | 41:27 | 41:50 | 60. | 2 | 3.0 |
| 341.8396 | 42:44 | 649010. | 184562. | 42:36 | 42:52 | 60. | 2 | 3.0 |
| 341.8396 | 43:54 | 545511. | 149095. | 43:47 | 44:03 | 60. | 2 | 3.0 |
| 351.8824 | 41:39 | 1924007. | 501277. | 41:23 | 41:47 | 47. | 2 | 3.0 |
| 351.8824 | 42:43 | 1981611. | 566367. | 42:34 | 42:58 | 47. | 2 | 3.0 |
| 353.8793 | 41:39 | 1216132. | 318327. | 41:28 | 41:48 | 56. | 2 | 3.0 |
| 353.8793 | 42:43 | 1234595. | 352613. | 42:34 | 42:50 | 56. | 2 | 3.0 |
| 339.8427 | 41:40 | 949413. | 239055. | 41:29 | 41:50 | 75. | 2 | 3.0 |
| 339.8427 | 42:44 | 998266. | 279679. | 42:36 | 42:50 | 75. | 2 | 3.0 |
| 341.8396 | 41:40 | 611635. | 155858. | 41:30 | 41:50 | 72. | 2 | 3.0 |
| 341.8396 | 42:44 | 644942. | 184320. | 42:37 | 42:52 | 72. | 2 | 3.0 |
| 351.8824 | 41:39 | 1923357. | 501252. | 41:28 | 41:47 | 67. | 2 | 3.0 |
| 351.8824 | 42:43 | 1966858. | 565963. | 42:36 | 42:52 | 67. | 2 | 3.0 |
| 353.8793 | 41:39 | 1215936. | 318317. | 41:30 | 41:48 | 74. | 2 | 3.0 |
| 353.8793 | 42:43 | 1230207. | 352318. | 42:36 | 42:50 | 74. | 2 | 3.0 |
| 389.7961 | 45:42 | 660675. | 187315. | 45:36 | 45:58 | 63. | 2 | 3.0 |
| 389.7961 | 47:22 | 578171. | 164229. | 47:15 | 47:26 | 63. | 2 | 3.0 |
| 389.7961 | 47:29 | 574092. | 155243. | 47:26 | 47:45 | 63. | 2 | 3.0 |
| 389.7961 | 47:55 | 612979. | 157993. | 47:45 | 48:05 | 63. | 2 | 3.0 |
| 391.7931 | 45:41 | 533178. | 151366. | 45:36 | 45:57 | 59. | 2 | 3.0 |
| 391.7931 | 47:22 | 465328. | 132412. | 47:15 | 47:26 | 59. | 2 | 3.0 |
| 391.7931 | 47:29 | 450345. | 123952. | 47:26 | 47:44 | 59. | 2 | 3.0 |
| 391.7931 | 47:55 | 492889. | 126653. | 47:44 | 48:07 | 59. | 2 | 3.0 |
| 401.8358 | 47:21 | 1074736. | 292011. | 47:11 | 47:25 | 61. | 2 | 3.0 |
| 401.8358 | 47:28 | 1138484. | 310552. | 47:25 | 47:44 | 61. | 2 | 3.0 |
| 401.8358 | 47:54 | 1109137. | 293342. | 47:44 | 48:10 | 61. | 2 | 3.0 |
| 403.8327 | 47:21 | 845048. | 229347. | 47:14 | 47:25 | 60. | 2 | 3.0 |
| 403.8327 | 47:28 | 883488. | 247668. | 47:25 | 47:44 | 60. | 2 | 3.0 |
| 403.8327 | 47:54 | 866965. | 231185. | 47:45 | 48:07 | 60. | 2 | 3.0 |
| 389.7961 | 47:22 | 578110. | 164222. | 47:15 | 47:26 | 75. | 2 | 3.0 |
| 389.7961 | 47:29 | 573672. | 155228. | 47:26 | 47:45 | 75. | 2 | 3.0 |
| 389.7961 | 47:55 | 613034. | 157950. | 47:45 | 48:07 | 75. | 2 | 3.0 |
| 391.7931 | 47:22 | 465306. | 132410. | 47:15 | 47:26 | 63. | 2 | 3.0 |
| 391.7931 | 47:29 | 450208. | 123947. | 47:26 | 47:44 | 63. | 2 | 3.0 |
| 391.7931 | 47:55 | 492526. | 126638. | 47:44 | 48:07 | 63. | 2 | 3.0 |
| 401.8358 | 47:21 | 1074204. | 291979. | 47:14 | 47:25 | 72. | 2 | 3.0 |
| 401.8358 | 47:28 | 1138011. | 310524. | 47:25 | 47:44 | 72. | 2 | 3.0 |
| 401.8358 | 47:54 | 1108814. | 293328. | 47:44 | 48:10 | 72. | 2 | 3.0 |
| 403.8327 | 47:21 | 844983. | 229340. | 47:14 | 47:25 | 68. | 2 | 3.0 |
| 403.8327 | 47:28 | 883202. | 247657. | 47:25 | 47:44 | 68. | 2 | 3.0 |
| 403.8327 | 47:54 | 866347. | 231159. | 47:45 | 48:07 | 68. | 2 | 3.0 |
| 373.8021 | 45:01 | 899715. | 268907. | 44:54 | 45:07 | 75. | 2 | 3.0 |
| 373.8021 | 46:17 | 880752. | 246055. | 46:09 | 46:21 | 75. | 2 | 3.0 |
| 373.8021 | 46:25 | 854342. | 229676. | 46:21 | 46:40 | 75. | 2 | 3.0 |
| 373.8021 | 47:11 | 799299. | 215108. | 46:57 | 47:27 | 75. | 2 | 3.0 |
| 373.8021 | 48:13 | 787740. | 212565. | 48:04 | 48:17 | 75. | 2 | 3.0 |
| 373.8021 | 48:21 | 725238. | 178999. | 48:17 | 48:36 | 75. | 2 | 3.0 |
| 375.7990 | 45:01 | 714679. | 210054. | 44:53 | 45:06 | 78. | 2 | 3.0 |
| 375.7990 | 46:17 | 710856. | 197370. | 46:10 | 46:20 | 78. | 2 | 3.0 |
| 375.7990 | 46:25 | 686007. | 188906. | 46:20 | 46:38 | 78. | 2 | 3.0 |
| 375.7990 | 47:11 | 645762. | 168211. | 46:57 | 47:27 | 78. | 2 | 3.0 |
| 375.7990 | 48:13 | 634182. | 164689. | 48:02 | 48:17 | 78. | 2 | 3.0 |
| 375.7990 | 48:21 | 566348. | 136321. | 48:17 | 48:30 | 78. | 2 | 3.0 |
| 383.8447 | 46:16 | 908018. | 252418. | 46:07 | 46:20 | 51. | 2 | 3.0 |
| 383.8447 | 46:25 | 888093. | 232770. | 46:20 | 46:38 | 51. | 2 | 3.0 |
| 383.8447 | 47:10 | 883053. | 247236. | 46:59 | 47:21 | 51. | 2 | 3.0 |
| 383.8447 | 48:12 | 812461. | 206487. | 48:03 | 48:25 | 51. | 2 | 3.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 85.8417 | 46:16 | 1713383. | 472204. | 46:07 | 46:19 | 73. | 2 3.0 |
| 85.8417 | 46:23 | 1728843. | 472047. | 46:19 | 46:39 | 73. | 2 3.0 |
| 85.8417 | 47:10 | 1671972. | 442995. | 46:59 | 47:26 | 73. | 2 3.0 |
| 85.8417 | 48:12 | 1554434. | 396823. | 48:01 | 48:28 | 73. | 2 3.0 |
| 73.8021 | 46:17 | 880658. | 246047. | 46:09 | 46:21 | 76. | 2 3.0 |
| 73.8021 | 46:25 | 854087. | 229665. | 46:21 | 46:40 | 76. | 2 3.0 |
| 73.8021 | 47:11 | 799123. | 215102. | 46:57 | 47:27 | 76. | 2 3.0 |
| 73.8021 | 48:13 | 787740. | 212565. | 48:04 | 48:17 | 76. | 2 3.0 |
| 73.8021 | 48:21 | 725238. | 178999. | 48:17 | 48:36 | 76. | 2 3.0 |
| 75.7990 | 46:17 | 710833. | 197367. | 46:10 | 46:30 | 85. | 2 3.0 |
| 75.7990 | 46:25 | 685863. | 188900. | 46:20 | 46:38 | 85. | 2 3.0 |
| 75.7990 | 47:11 | 645375. | 168197. | 46:57 | 47:27 | 85. | 2 3.0 |
| 75.7990 | 48:13 | 634182. | 164689. | 48:02 | 48:17 | 85. | 2 3.0 |
| 75.7990 | 48:21 | 567793. | 136321. | 48:17 | 48:36 | 85. | 2 3.0 |
| 83.8447 | 46:16 | 907991. | 252415. | 46:07 | 46:20 | 59. | 2 3.0 |
| 83.8447 | 46:25 | 887966. | 232764. | 46:20 | 46:38 | 59. | 2 3.0 |
| 83.8447 | 47:10 | 882891. | 247228. | 46:59 | 47:21 | 59. | 2 3.0 |
| 83.8447 | 48:12 | 812461. | 206487. | 48:03 | 48:25 | 59. | 2 3.0 |
| 85.8417 | 46:16 | 1713383. | 472204. | 46:07 | 46:19 | 91. | 2 3.0 |
| 85.8417 | 46:23 | 1728843. | 472047. | 46:19 | 46:39 | 91. | 2 3.0 |
| 85.8417 | 47:10 | 1671972. | 442995. | 46:59 | 47:26 | 91. | 2 3.0 |
| 85.8417 | 48:12 | 1554434. | 396823. | 48:01 | 48:28 | 91. | 2 3.0 |
| 23.7555 | 51:21 | 522656. | 114748. | 51:12 | 51:30 | 67. | 2 3.0 |
| 23.7555 | 52:32 | 481653. | 113818. | 52:23 | 52:47 | 67. | 2 3.0 |
| 25.7524 | 51:21 | 497113. | 105766. | 51:12 | 51:33 | 58. | 2 3.0 |
| 25.7524 | 52:32 | 466230. | 110033. | 52:22 | 52:39 | 58. | 2 3.0 |
| 35.7951 | 52:31 | 1018013. | 236773. | 52:19 | 52:47 | 65. | 2 3.0 |
| 37.7921 | 52:31 | 967281. | 221160. | 52:22 | 52:47 | 59. | 2 3.0 |
| 07.7614 | 50:49 | 765442. | 167078. | 50:40 | 50:59 | 65. | 2 3.0 |
| 07.7614 | 53:09 | 628109. | 142384. | 52:58 | 53:23 | 65. | 2 3.0 |
| 09.7583 | 50:48 | 726793. | 163240. | 50:40 | 51:02 | 72. | 2 3.0 |
| 09.7583 | 53:09 | 596205. | 134976. | 52:56 | 53:21 | 72. | 2 3.0 |
| 17.8041 | 50:47 | 624109. | 139700. | 50:38 | 50:58 | 61. | 2 3.0 |
| 17.8041 | 53:08 | 540485. | 123790. | 52:56 | 53:19 | 61. | 2 3.0 |
| 19.8010 | 50:47 | 1353102. | 303054. | 50:38 | 51:03 | 67. | 2 3.0 |
| 19.8010 | 53:08 | 1194148. | 273290. | 52:58 | 53:24 | 67. | 2 3.0 |
| 57.7148 | 56:48 | 875859. | 247611. | 56:42 | 56:58 | 62. | 2 3.0 |
| 59.7118 | 56:48 | 983944. | 273806. | 56:40 | 57:03 | 64. | 2 3.0 |
| 69.7545 | 56:47 | 1719150. | 471204. | 56:41 | 57:03 | 63. | 2 3.0 |
| 71.7514 | 56:47 | 1904446. | 526660. | 56:41 | 57:03 | 71. | 2 3.0 |
| 41.7207 | 56:58 | 1015692. | 266436. | 56:44 | 57:11 | 60. | 2 3.0 |
| 43.7177 | 56:57 | 1120386. | 294616. | 56:45 | 57:07 | 74. | 2 3.0 |

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**PCDD/PCDF by EPA Method 8290 w/15 IS's**

**CCAL ID:** 4428 - 031005S1 **ICAL Date:** 04/01/03

**CCAL Filename:** t031005s1 **Method:** IN2 - DX8290_2

**CCAL Sample ID:** 2553:86 **Instrument:** M2A

**CCAL Result Dir:** /20031005s1/031005s1.d **Column SN:** 499396

**CCAL Date/Time:** 10/05/03 08:59 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

| Analytes | m/z's Forming Ratio | Ion Abund Ratio | QC Limits | Calc Conc (ng/mL) | ICAL RF | CCAL RF | %D | QC Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.84 | 0.65-0.89 | 9.7 | 1.095 | 1.061 | -3.1 | 20.0 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.82 | 0.65-0.89 | 9.9 | 1.017 | 1.010 | -0.8 | 20.0 | True |
| 1,2,3,7,8-PeCDD | M+2/M+4 | 1.55 | 1.32-1.78 | 50 | 0.984 | 0.975 | -0.9 | 20.0 | True |
| 1,2,3,7,8-PeCDF | M+2/M+4 | 1.56 | 1.32-1.78 | 50 | 0.970 | 0.967 | -0.3 | 20.0 | True |
| 2,3,4,7,8-PeCDF | M+2/M+4 | 1.61 | 1.32-1.78 | 48 | 1.035 | 0.992 | -4.2 | 20.0 | True |
| 1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.26 | 1.05-1.43 | 49 | 1.111 | 1.085 | -2.4 | 20.0 | True |
| 1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.28 | 1.05-1.43 | 50 | 1.026 | 1.017 | -0.9 | 20.0 | True |
| 1,2,3,7,8,9-HxCDD | M+2/M+4 | 1.22 | 1.05-1.43 | 49 | 1.109 | 1.086 | -2.1 | 20.0 | True |
| 1,2,3,4,7,8-HxCDF | M+2/M+4 | 1.27 | 1.05-1.43 | 49 | 1.226 | 1.208 | -1.5 | 20.0 | True |
| 1,2,3,6,7,8-HxCDF | M+2/M+4 | 1.25 | 1.05-1.43 | 49 | 1.197 | 1.167 | -2.5 | 20.0 | True |
| 2,3,4,6,7,8-HxCDF | M+2/M+4 | 1.24 | 1.05-1.43 | 49 | 1.155 | 1.127 | -2.5 | 20.0 | True |
| 1,2,3,7,8,9-HxCDF | M+2/M+4 | 1.23 | 1.05-1.43 | 46 | 1.236 | 1.138 | -7.9 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.05 | 0.88-1.20 | 48 | 0.986 | 0.942 | -4.5 | 20.0 | True |
| 1,2,3,4,6,7,8-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | 48 | 1.512 | 1.448 | -4.2 | 20.0 | True |
| 1,2,3,4,7,8,9-HpCDF | M+2/M+4 | 1.05 | 0.88-1.20 | 49 | 1.426 | 1.407 | -1.3 | 20.0 | True |
| OCDD | M+2/M+4 | 0.88 | 0.76-1.02 | 94 | 1.075 | 1.012 | -5.8 | 20.0 | True |
| OCDF | M+2/M+4 | 0.92 | 0.76-1.02 | 107 | 1.135 | 1.213 | 6.8 | 20.0 | True |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.80 | 0.65-0.89 | 96 | 1.083 | 1.044 | -3.6 | 30.0 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.80 | 0.65-0.89 | 100 | 1.527 | 1.527 | 0.0 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDD | M+2/M+4 | 1.55 | 1.32-1.78 | 112 | 0.958 | 1.072 | 11.8 | 30.0 | True |
| 13C-1,2,3,7,8-PeCDF | M+2/M+4 | 1.59 | 1.32-1.78 | 102 | 1.427 | 1.454 | 1.9 | 30.0 | True |
| 13C-2,3,4,7,8-PeCDF | M+2/M+4 | 1.59 | 1.32-1.78 | 109 | 1.384 | 1.515 | 9.5 | 30.0 | True |
| 13C-1,2,3,4,7,8-HxCDD | M+2/M+4 | 1.27 | 1.05-1.43 | 104 | 0.941 | 0.983 | 4.4 | 30.0 | True |
| 13C-1,2,3,6,7,8-HxCDD | M+2/M+4 | 1.25 | 1.05-1.43 | 98 | 1.078 | 1.059 | -1.8 | 30.0 | True |
| 13C-1,2,3,4,7,8-HxCDF | M/M+2 | 0.53 | 0.43-0.59 | 105 | 1.283 | 1.349 | 5.1 | 30.0 | True |
| 13C-1,2,3,6,7,8-HxCDF | M/M+2 | 0.53 | 0.43-0.59 | 96 | 1.406 | 1.347 | -4.2 | 30.0 | True |
| 13C-2,3,4,6,7,8-HxCDF | M/M+2 | 0.53 | 0.43-0.59 | 101 | 1.301 | 1.312 | 0.9 | 30.0 | True |
| 13C-1,2,3,7,8,9-HxCDF | M/M+2 | 0.51 | 0.43-0.59 | 100 | 1.105 | 1.111 | 0.5 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDD | M+2/M+4 | 1.04 | 0.88-1.20 | 101 | 0.970 | 0.979 | 1.0 | 30.0 | True |
| 13C-1,2,3,4,6,7,8-HpCDF | M/M+2 | 0.46 | 0.37-0.51 | 96 | 1.017 | 0.974 | -4.2 | 30.0 | True |
| 13C-1,2,3,4,7,8,9-HpCDF | M/M+2 | 0.45 | 0.37-0.51 | 102 | 0.812 | 0.827 | 1.8 | 30.0 | True |
| 13C-OCDD | M+2/M+4 | 0.90 | 0.76-1.02 | 186 | 0.856 | 0.796 | -7.0 | 30.0 | True |

PMP 10-05-03

VMK 10-6-03

STL - Knoxville

# IsoCalc Continuing Calibration Report

## PCDD/PCDF by EPA Method 8290 w/15 IS's

CCAL ID: 4428 - 031005S1

CCAL Filename: t031005s1

CCAL Sample ID: 2553:86

CCAL Result Dir: /20031005s1/031005s1.d

CCAL Date/Time: 10/05/03 08:59

ICAL Date: 04/01/03

Method: IN2 - DX8290_2

Instrument: M2A

Column SN: 499396

Column Base: Rtx-5 60m x 0.32mm ID x 0.25um

| Analytes | ICAL RT | CCAL RT | RT Diff | ICAL RRT | CCAL RRT | RRT gC Limits | Values |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 31:43 | 35:50 | 247 | 1.002 | 1.001 | - | |
| 2,3,7,8-TCDF | 29:45 | 33:42 | 237 | 1.001 | 1.002 | - | |
| 1,2,3,7,8-PeCDD | 41:40 | 43:10 | 90 | 1.000 | 1.000 | - | |
| 1,2,3,7,8-PeCDF | 39:51 | 41:38 | 107 | 1.001 | 1.000 | - | |
| 2,3,4,7,8-PeCDF | 41:07 | 42:42 | 95 | 1.000 | 1.000 | - | |
| 1,2,3,4,7,8-HxCDD | 45:55 | 47:20 | 85 | 1.000 | 1.000 | - | |
| 1,2,3,6,7,8-HxCDD | 46:01 | 47:29 | 88 | 1.000 | 1.000 | - | |
| 1,2,3,7,8,9-HxCDD | 46:24 | 47:53 | 89 | 1.009 | 1.009 | - | |
| 1,2,3,4,7,8-HxCDF | 44:53 | 46:15 | 82 | 1.000 | 1.000 | - | |
| 1,2,3,6,7,8-HxCDF | 45:01 | 46:24 | 83 | 1.000 | 1.000 | - | |
| 2,3,4,6,7,8-HxCDF | 45:44 | 47:10 | 86 | 1.000 | 1.000 | - | |
| 1,2,3,7,8,9-HxCDF | 46:40 | 48:11 | 91 | 1.000 | 1.000 | - | |
| 1,2,3,4,6,7,8-HpCDD | 50:40 | 52:30 | 110 | 1.000 | 1.000 | - | |
| 1,2,3,4,6,7,8-HpCDF | 49:01 | 50:47 | 106 | 1.000 | 1.000 | - | |
| 1,2,3,4,7,8,9-HpCDF | 51:20 | 53:07 | 107 | 1.000 | 1.000 | - | |
| OCDD | 55:07 | 56:47 | 100 | 1.000 | 1.000 | - | |
| OCDF | 55:15 | 56:56 | 101 | 1.003 | 1.003 | - | |
| 13C-2,3,7,8-TCDD | 31:40 | 35:47 | 247 | 1.018 | 1.015 | - | |
| 13C-2,3,7,8-TCDF | 29:42 | 33:37 | 235 | 0.955 | 0.953 | - | |
| 13C-1,2,3,7,8-PeCDD | 41:38 | 43:10 | 92 | 1.339 | 1.224 | - | |
| 13C-1,2,3,7,8-PeCDF | 39:50 | 41:37 | 107 | 1.280 | 1.180 | - | |
| 13C-2,3,4,7,8-PeCDF | 41:06 | 42:41 | 95 | 1.321 | 1.210 | - | |
| 13C-1,2,3,4,7,8-HxCDD | 45:54 | 47:20 | 86 | 0.989 | 0.989 | - | |
| 13C-1,2,3,6,7,8-HxCDD | 46:00 | 47:28 | 88 | 0.992 | 0.992 | - | |
| 13C-1,2,3,4,7,8-HxCDF | 44:52 | 46:14 | 82 | 0.967 | 0.966 | - | |
| 13C-1,2,3,6,7,8-HxCDF | 45:00 | 46:23 | 83 | 0.970 | 0.969 | - | |
| 13C-2,3,4,6,7,8-HxCDF | 45:43 | 47:09 | 86 | 0.986 | 0.985 | - | |
| 13C-1,2,3,7,8,9-HxCDF | 46:39 | 48:10 | 91 | 1.006 | 1.006 | - | |
| 13C-1,2,3,4,6,7,8-HpCDD | 50:39 | 52:29 | 110 | 1.092 | 1.096 | - | |
| 13C-1,2,3,4,6,7,8-HpCDF | 49:00 | 50:46 | 106 | 1.056 | 1.061 | - | |
| 13C-1,2,3,4,7,8,9-HpCDF | 51:19 | 53:06 | 107 | 1.106 | 1.109 | - | |
| 13C-OCDD | 55:06 | 56:46 | 100 | 1.188 | 1.186 | - | |

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

*PCDD/PCDF by EPA Method 8290 w/15 IS's*

**CCAL ID:** 4428 - 031005S1

**WIN Filename:** t031005s1 **Method:** IN2 - DX8290_2

**WIN Sample ID:** 2553:86 **Instrument:** M2A

**WIN Result Dir:** /20031005s1/031005s1.d **Column SN:** 499396

**WIN Date/Time:** 10/05/03 08:59 **Column Desc:** Rtx-5 60m x 0.32mm ID x 0.25um

**Window Defining First/Last Eluter Retention Times**

| Analyte | Reference | M/Z | Ref RT | First Eluter RT | First Eluter RRT | Last Eluter RT | Last Eluter RRT |
|---|---|---|---|---|---|---|---|
| Total TCDD | 13C-2,3,7,8-TCDD | 320 | 35:47 | 35:21 | 0.9879 | 36:14 | 1.0126 |
| Total TCDF | 13C-2,3,7,8-TCDF | 304 | 33:37 | 33:42 | 1.0025 | 33:42 | 1.0025 |
| Total PeCDD | 13C-1,2,3,7,8-PeCDD | 356 | 43:10 | 43:10 | 1.0000 | 43:10 | 1.0000 |
| Total PeCDF | 13C-1,2,3,7,8-PeCDF | 340 | 41:37 | 41:38 | 1.0004 | 42:42 | 1.0260 |
| Total HxCDD | 13C-1,2,3,6,7,8-HxCDD | 390 | 47:28 | 47:20 | 0.9972 | 47:53 | 1.0088 |
| Total HxCDF | 13C-1,2,3,4,7,8-HxCDF | 374 | 46:14 | 46:15 | 1.0004 | 48:20 | 1.0454 |
| Total HpCDD | 13C-1,2,3,4,6,7,8-HpCDD | 424 | 52:29 | 51:19 | 0.9778 | 52:30 | 1.0003 |
| Total HpCDF | 13C-1,2,3,4,6,7,8-HpCDF | 408 | 50:46 | 50:47 | 1.0003 | 53:07 | 1.0463 |
| OCDD | 13C-OCDD | 458 | 56:46 | 56:47 | 1.0003 | 56:47 | 1.0003 |
| OCDF | 13C-OCDD | 442 | 56:46 | 56:56 | 1.0029 | 56:56 | 1.0029 |

STL - Knoxville

# IsoCalc Preliminary Peak Report

## PCDD/PCDF by EPA Method 1613B

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | 2553:86 | Prep Batch | | Lot No | |
| Data File | /20031005s1/031005s1.d | Prep Date | | SDG No | |
| Analysis ID | 71185 | Prep Exp Date | | Date Received | |
| Analysis Date | 10/05/03 08:59 | Matrix | UNKNOWN | Date Sampled | |
| Anal Exp Date | | Initial Wt/Vol | | Lims Test Code | |
| Instrument | M2A | Extract Vol | | Method | 8M1613B |
| Analyst | PMP | Diluton Factor | 1.00 | Code | FR |

View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 163 | 150 | 65 | 60 | 1.08 * | / | |
| 2,3,7,8-TCDF | | 33:42 | 34:04 | -22 | 87675 | 107530 ✓ | 9762 | 11339 | 0.87 | AVV/AVV | M |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 185 | 180 | 74 | 72 | 1.03 * | / | |
| 13C-2,3,7,8-TCDF | | 33:37 | 34:02 | -25 | 856990 | 1076554 ✓ | 91120 | 115103 ✓ | 0.80 | AVV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 225 | 200 | 90 | 80 | 1.13 * | / | |
| Unidentified | | 35:21 | 00:00 | 0 | 53724 | 69209 | 6459 | 8461 | 0.78 | ABV/ABV | |
| Unidentified | | 35:33 | 00:00 | 0 | 54754 | 68619 | 6603 | 8849 | 0.80 | AVV/AVV | |
| 2,3,7,8-TCDD | | 35:50 | 35:25 | 25 | 63964 | 76228 | 8240 | 10883 | 0.94 | AVB/AVV | M |
| Unidentified | | 36:14 | 00:00 | 0 | 62339 | 79247 | 7551 | 10547 | 0.79 | ABB/AVB | |
| **328** | | | | | **327.8847** | | **327.8847** | | | | |
| Noise | | 00:00 | 00:00 | 0 | 158 ✓ | | 63 | | | | |
| 37Cl4-2,3,7,8-TCDD | | 35:49 | 35:25 | 24 | 136052 | | 17055 | | | ABV | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 263 | 310 | 105 | 124 | 0.85 | / | |
| 13C-1,2,3,4-TCDD | | 35:16 | 34:59 | 17 | 570401 | 695583 ✓ | 63017 | 81332 | 0.82 | ABV/AVV | |
| 13C-2,3,7,8-TCDD | | 35:47 | 35:23 | 24 | 586661 | 734577 ✓ | 74714 | 93576 ✓ | 0.80 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 190 | 153 | 76 | 61 | 1.25 * | / | |
| 1,2,3,7,8-PeCDF | | 41:38 | 41:48 | -10 | 542024 | 348207 ✓ | 136184 | 87466 | 1.56 | ABV/ABV | M |
| 2,3,4,7,8-PeCDF | | 42:42 | 42:54 | -12 | 586961 | 364123 ✓ | 163870 | 103630 | 1.61 | ABB/ABV | M |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 208 | 170 | 83 | 68 | 1.22 * | / | |
| 13C-1,2,3,7,8-PeCDF | | 41:37 | 41:47 | -10 | 1129541 | 711617 ✓ | 288082 | 177826 ✓ | 1.59 | ABV/ABV | |
| 13C-2,3,4,7,8-PeCDF | | 42:41 | 42:53 | -12 | 1177506 | 740312 ✓ | 330229 | 217062 ✓ | 1.59 | ABB/ABB | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 203 | 218 | 81 | 87 | 0.93 * | / | |
| 1,2,3,7,8-PeCDD | | 43:10 | 43:23 | -13 | 402108 | 259607 ✓ | 109954 | 71770 | 1.53 | ABV/ABV | M |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 158 | 173 | 63 | 69 | 0.91 * | / | |
| 13C-1,2,3,7,8-PeCDD | | 43:10 | 43:21 | -11 | 824831 | 532006 ✓ | 228845 | 150582 ✓ | 1.55 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.48** | | |
| Noise | | 00:00 | 00:00 | 0 | 173 | 170 | 69 | 68 | 1.01 * | / | |
| 1,2,3,4,7,8-HxCDF | | 46:15 | 46:22 | -7 | 524128 | 413572 ✓ | 150024 | 118687 | 1.27 | ABV/ABV | M |
| 1,2,3,6,7,8-HxCDF | | 46:24 | 46:30 | -6 | 503075 | 401243 ✓ | 138651 | 109151 | 1.25 | AVB/AVB | DM |
| 2,3,4,6,7,8-HxCDF | | 47:10 | 47:11 | -1 | 470545 | 380304 ✓ | 133645 | 105484 | 1.24 | AVV/AVV | M |
| 1,2,3,7,8,9-HxCDF | | 48:11 | 48:06 | 5 | 402004 | 325570 ✓ | 99273 | 84462 | 1.23 | ABV/ABV | M |
| Unidentified | | 48:20 | 00:00 | 0 | 407426 | 330531 | 101993 | 82779 | 1.23 | AVV/AVB | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| Noise | | 00:00 | 00:00 | 0 | 203 | 310 | 81 | 124 | 0.65 * | / | |
| 13C-1,2,3,4,7,8-HxCDF | | 46:14 | 46:21 | -7 | 539499 | 1012395 ✓ | 156529 | 292507 ✓ | 0.53 | ABV/ABV | |
| 13C-1,2,3,6,7,8-HxCDF | | 46:23 | 46:29 | -6 | 538116 | 1011891 ✓ | 151481 | 277825 ✓ | 0.53 | AVV/AVV | |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from eval H = peak outside first/last K = peak has dup match

**STL - Knoxville**

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 1613B*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031005s1/031005s1.d | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71185 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/05/03 08:59 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M2A | **Extract Vol** | | **Method** | DX1613B |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | F8 |

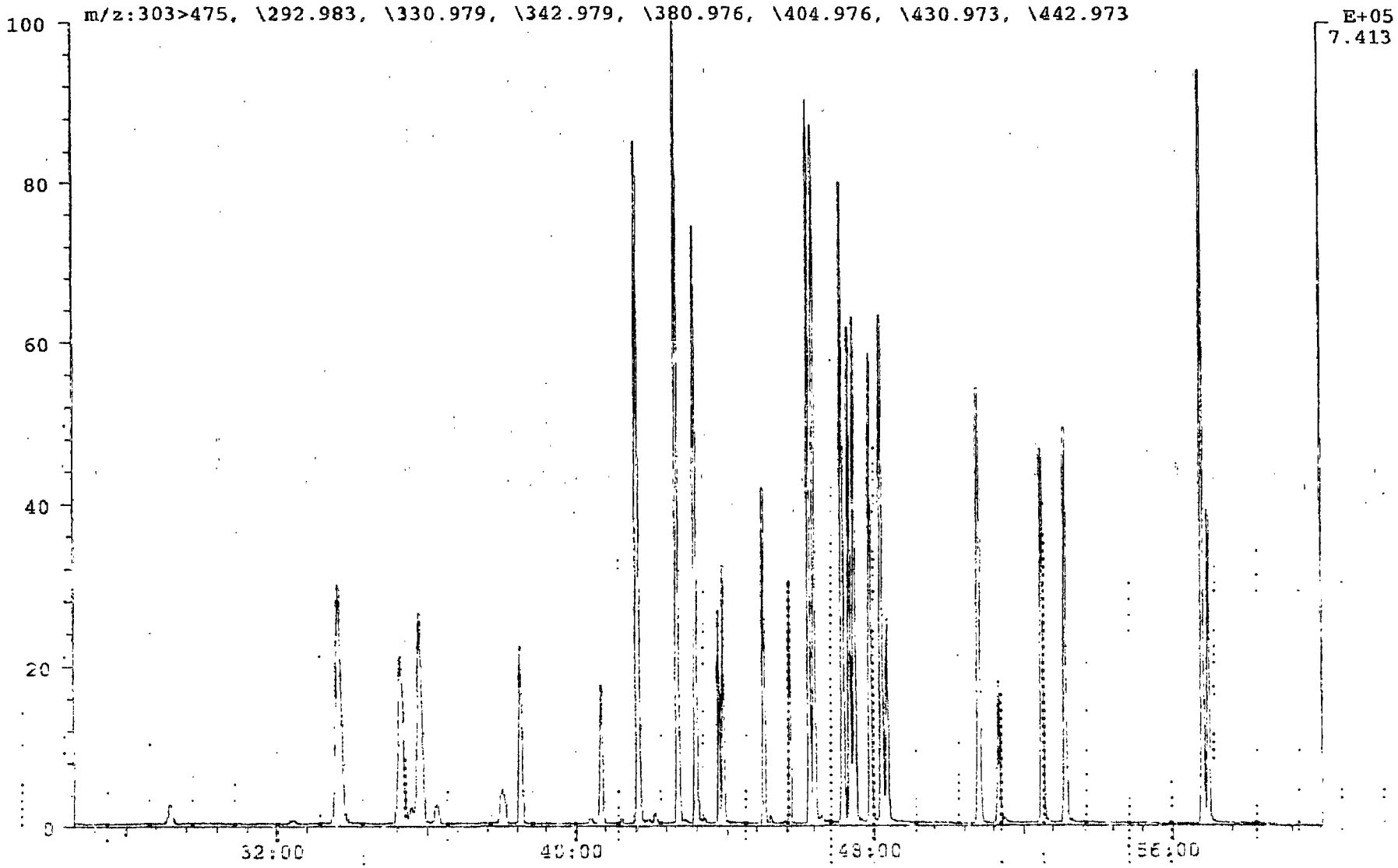
**View Small Peaks?** False **View deleted peaks?** False

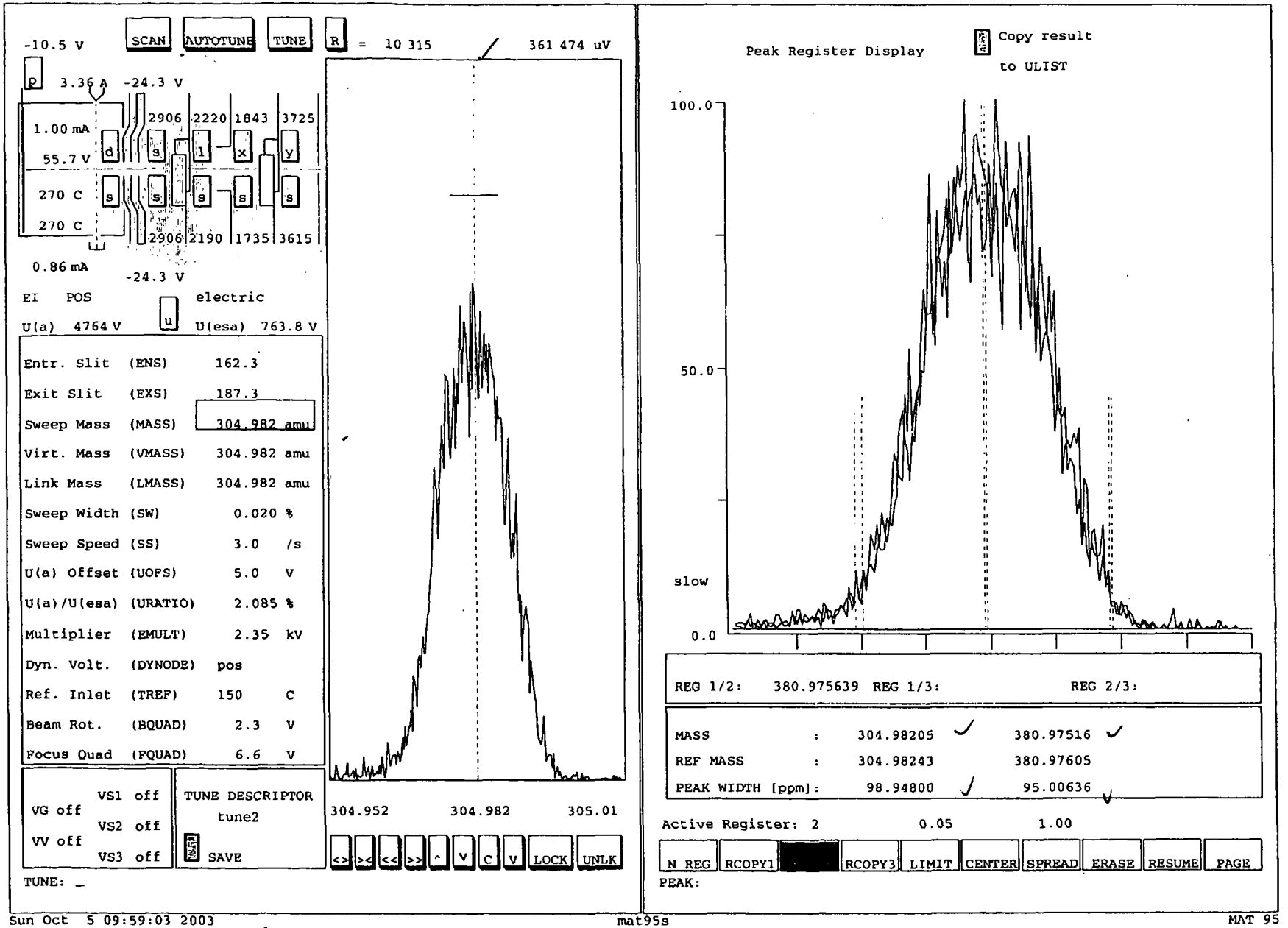
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:09 | 47:10 | -1 | 525678 | 984602 ✓ | 145293 | 275236 ✓ | 0.53 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:10 | 48:05 | 5 | 431934 | 846216 ✓ | 103993 | 212012 ✓ | 0.51 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 260 | 230 | 104 | 92 | 1.13 | / | |
| | 1,2,3,4,7,8-HxCDD | 47:20 | 47:22 | -2 | 341679 | 271601 ✓ | 87354 | 69942 | 1.26 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:29 | 47:28 | 1 | 347747 | 271767 ✓ | 88036 | 70416 | 1.28 | AVV/AVV | |
| | 1,2,3,7,8,9-HxCDD | 47:53 | 47:50 | 3 | 350784 | 286819 ✓ | 88509 | 76360 | 1.22 | AVV/AVB | M |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 203 | 67 | 81 | 0.83 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:20 | 47:21 | -1 | 633592 | 497115 ✓ | 167675 | 134480 ✓ | 1.27 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:28 | 47:27 | 1 | 676510 | 541950 ✓ | 173978 | 139282 ✓ | 1.25 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 47:52 | 47:49 | 3 | 643572 | 507221 ✓ | 161899 | 127207 ✓ | 1.27 | AVV/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 163 | 71 | 65 | 1.09 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:47 | 50:29 | 18 | 415738 | 396162 ✓ | 93921 | 91053 | 1.05 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 53:07 | 52:56 | 11 | 343650 | 326157 ✓ | 81033 | 76317 | 1.05 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 143 | 58 | 57 | 1.02 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:46 | 50:28 | 18 | 354971 | 766271 ✓ | 79226 | 169925 ✓ | 0.46 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:06 | 52:55 | 11 | 296821 | 654958 ✓ | 67220 | 149855 ✓ | 0.45 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 183 | 130 | 73 | 52 | 1.40 * | / | |
| | Unidentified | 51:19 | 00:00 | 0 | 288181 | 286989 | 63651 | 63898 | 1.00 | ABV/ABV | |
| | 1,2,3,4,6,7,8-HpCDD | 52:30 | 52:13 | 17 | 271519 | 259002 ✓ | 61262 | 56281 | 1.05 | AVV/AVV | M |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 145 | 60 | 58 | 1.03 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:29 | 52:12 | 17 | 575323 | 551567 ✓ | 128858 | 126171 | 1.04 | ABV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 173 | 61 | 69 | 0.88 | / | |
| | OCDF | 56:56 | 57:18 | -22 | 532376 | 578236 ✓ | 134701 | 150861 ✓ | 0.92 | ABV/ABV | M |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 163 | 62 | 65 | 0.95 | / | |
| | OCDD | 56:47 | 57:09 | -22 | 432998 | 494333 ✓ | 120130 | 136033 | 0.88 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 193 | 61 | 77 | 0.79 | / | |
| | 13C-OCDD | 56:46 | 57:08 | -22 | 867412 | 964475 ✓ | 236353 | 267446 ✓ | 0.90 | ABV/ABV | |

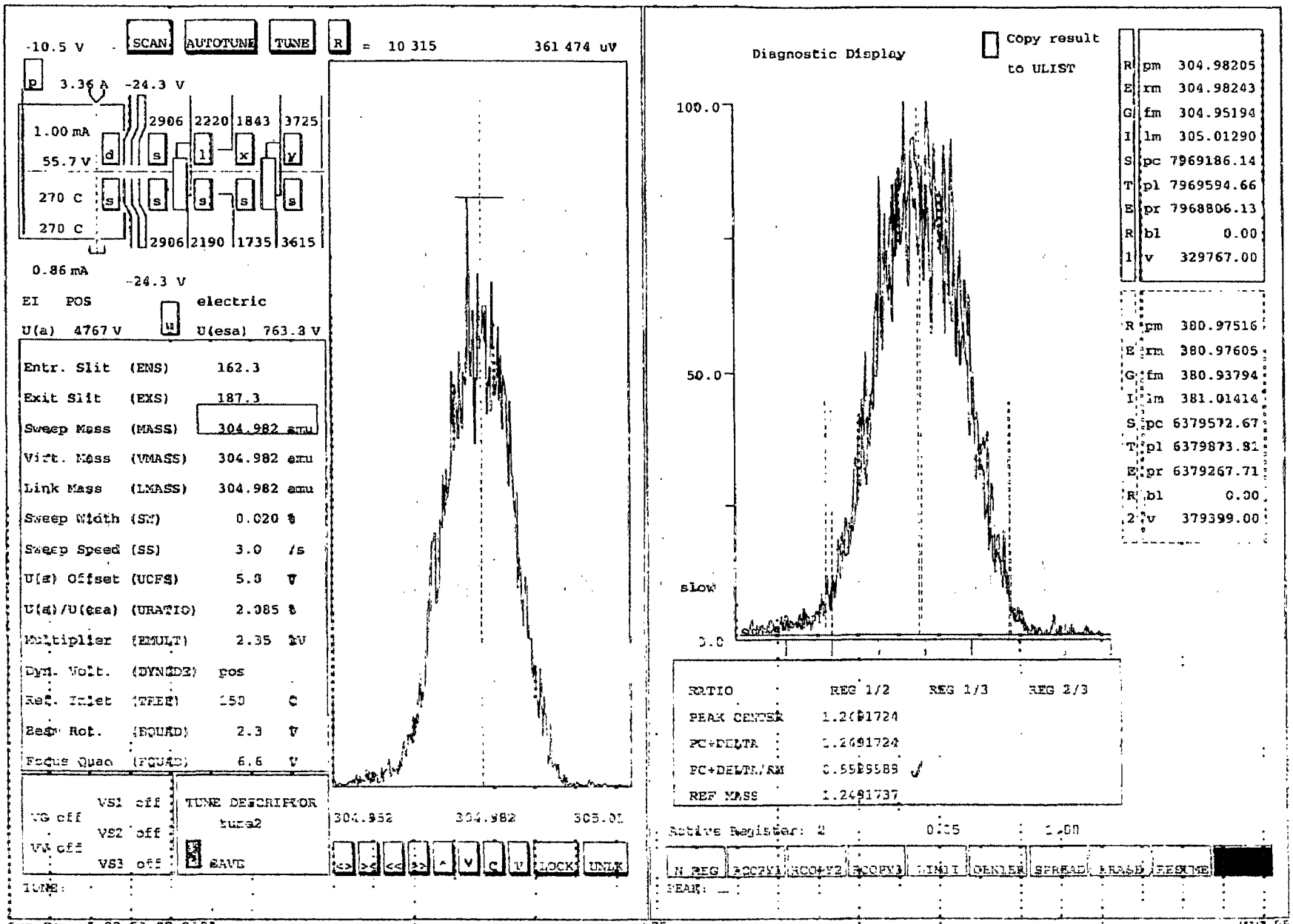
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1030 > 2890 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

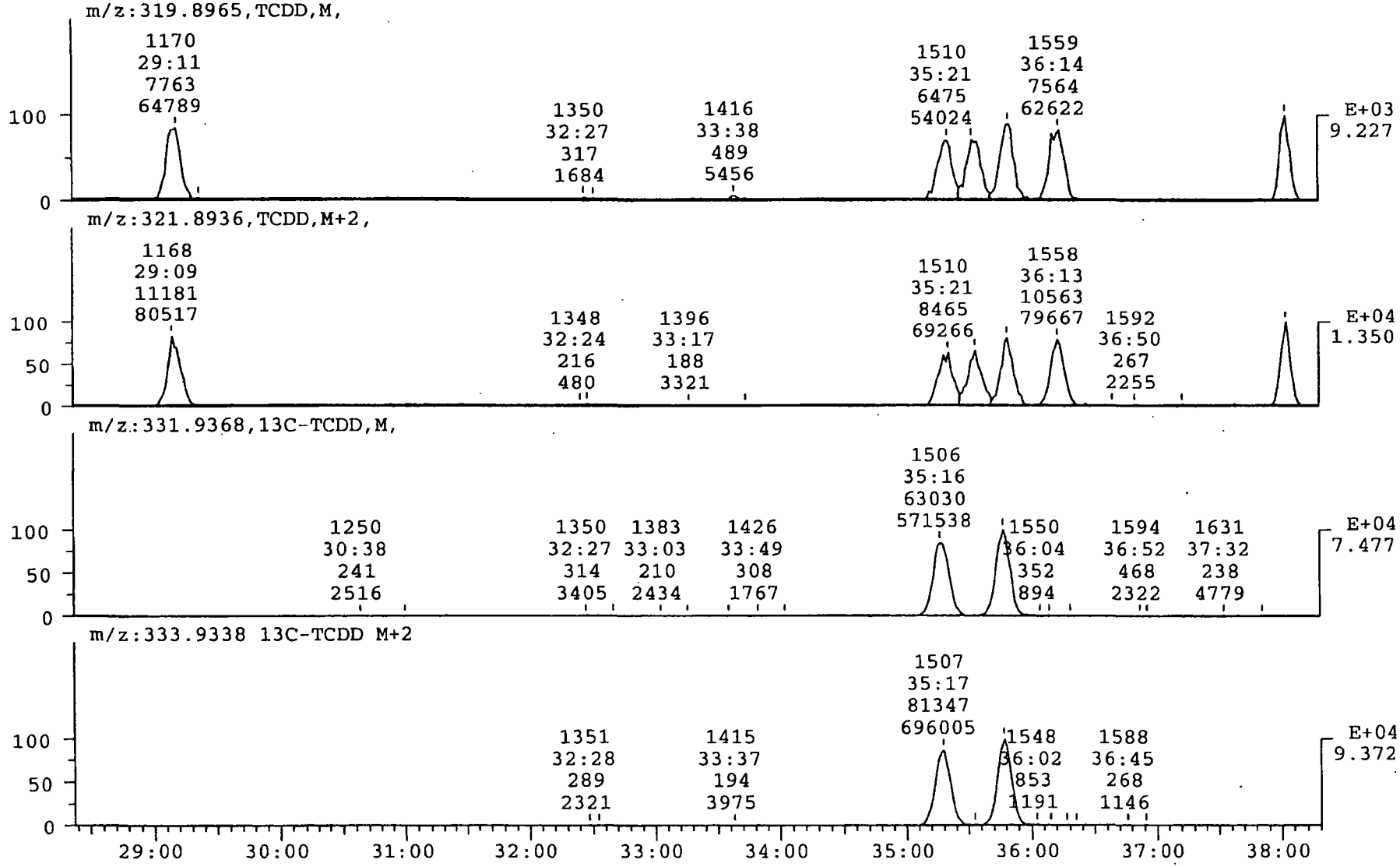
Int/PMP 10-05-03 Cal
QC VMK 10-6-03




-10.5 V
SCAN
AUTOTUNE
TUNE
R = 10 315
361 474 uV
p
3.36 A
-24.3 V
1.00 mA
55.7 V
2906 2220 1843 3725
d s l x y
270 C
270 C
s s s s s
2906 2190 1735 3615
0.86 mA
-24.3 V
EI POS
electric
u
U(a) 4764 V
U(esa) 763.8 V
Entr. Slit (ENS) 162.3
Exit Slit (EXS) 187.3
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.085 %
Multiplier (EMULT) 2.35 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 2.3 V
Focus Quad (FQUAD) 6.6 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952 304.982 305.01
<> >< << >> ^ v C v LOCK UNLK
TUNE: _
Peak Register Display
Copy result to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975639 REG 1/3: REG 2/3:
MASS : 304.98205 380.97516
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 98.94800 95.00636
Active Register: 2 0.05 1.00
N REG RCOPY1 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME PAGE
PEAK:
Sun Oct 5 09:59:03 2003
mat95s
MAT 95

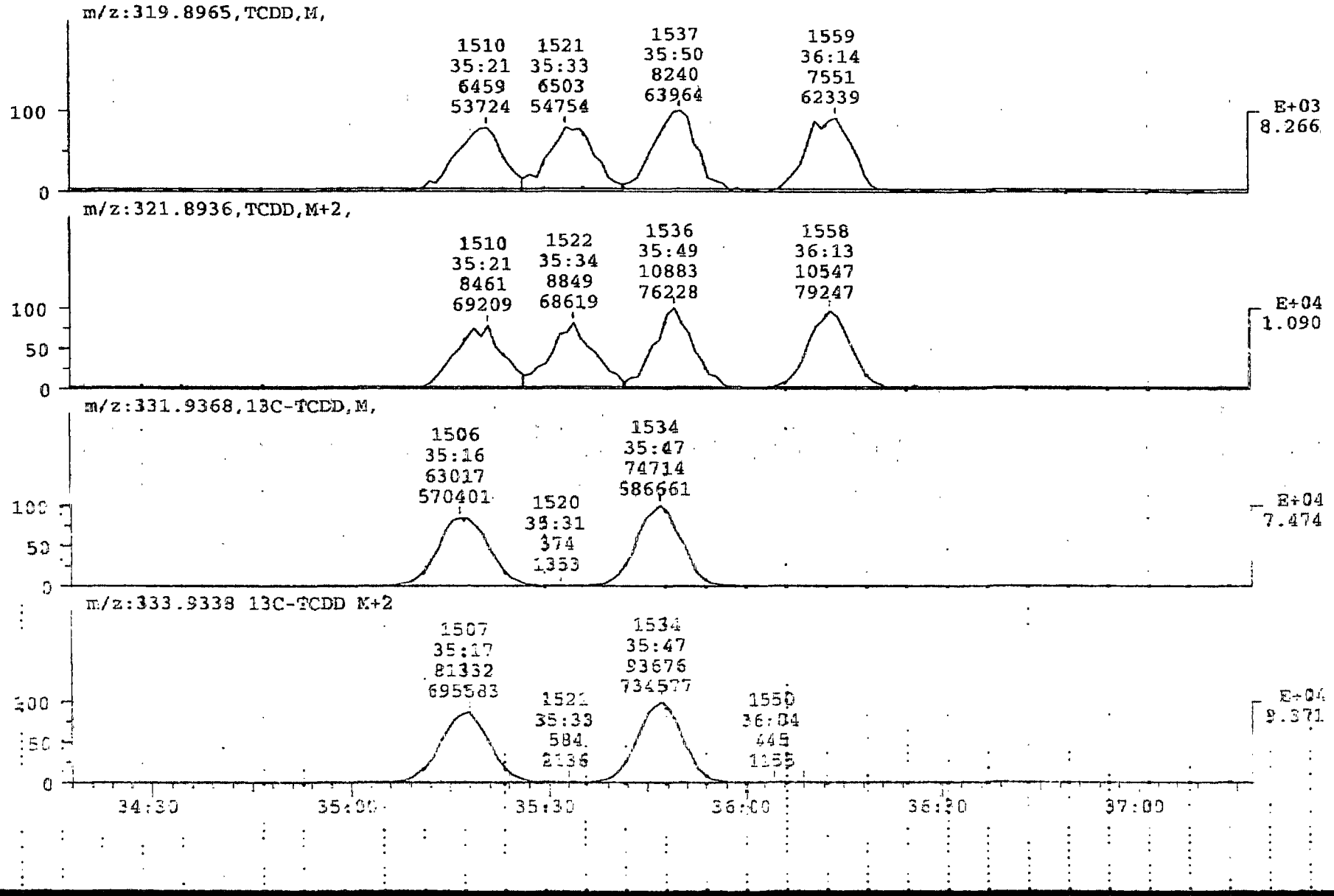

-10.5 V
SCAN
AUTOTUNE
TUNE
R = 10 315
361 474 uV
p 3.36 A -24.3 V
1.00 mA
55.7 V
270 C
270 C
2906 2220 1843 3725
2906 2190 1735 3615
0.86 mA
-24.3 V
EI POS
electric
U(a) 4767 V
U(esa) 763.3 V
Entr. Slit (ENS) 162.3
Exit Slit (EXS) 187.3
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.085 %
Multiplier (EMULT) 2.35 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREE) 150 C
Beam Rot. (BQUAD) 2.3 V
Focus Quad (FQUAD) 6.6 V
VG off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result to ULIST
100.0
50.0
slow
0.0
R pm 304.98205
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969186.14
T pl 7969594.66
E pr 7968806.13
R bl 0.00
1 v 329767.00
R pm 380.97516
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379572.67
T pl 6379873.81
E pr 6379267.71
R bl 0.00
2 v 379399.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491724
PC+DELTA 1.2491724
PC+DELTA/RM 0.5529589
REF MASS 1.2491737
Active Register: 2
0.05
1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK:
Sun Oct 5 09:55:07 2003
mat95s
MAT 95

CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1125 > 1673 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

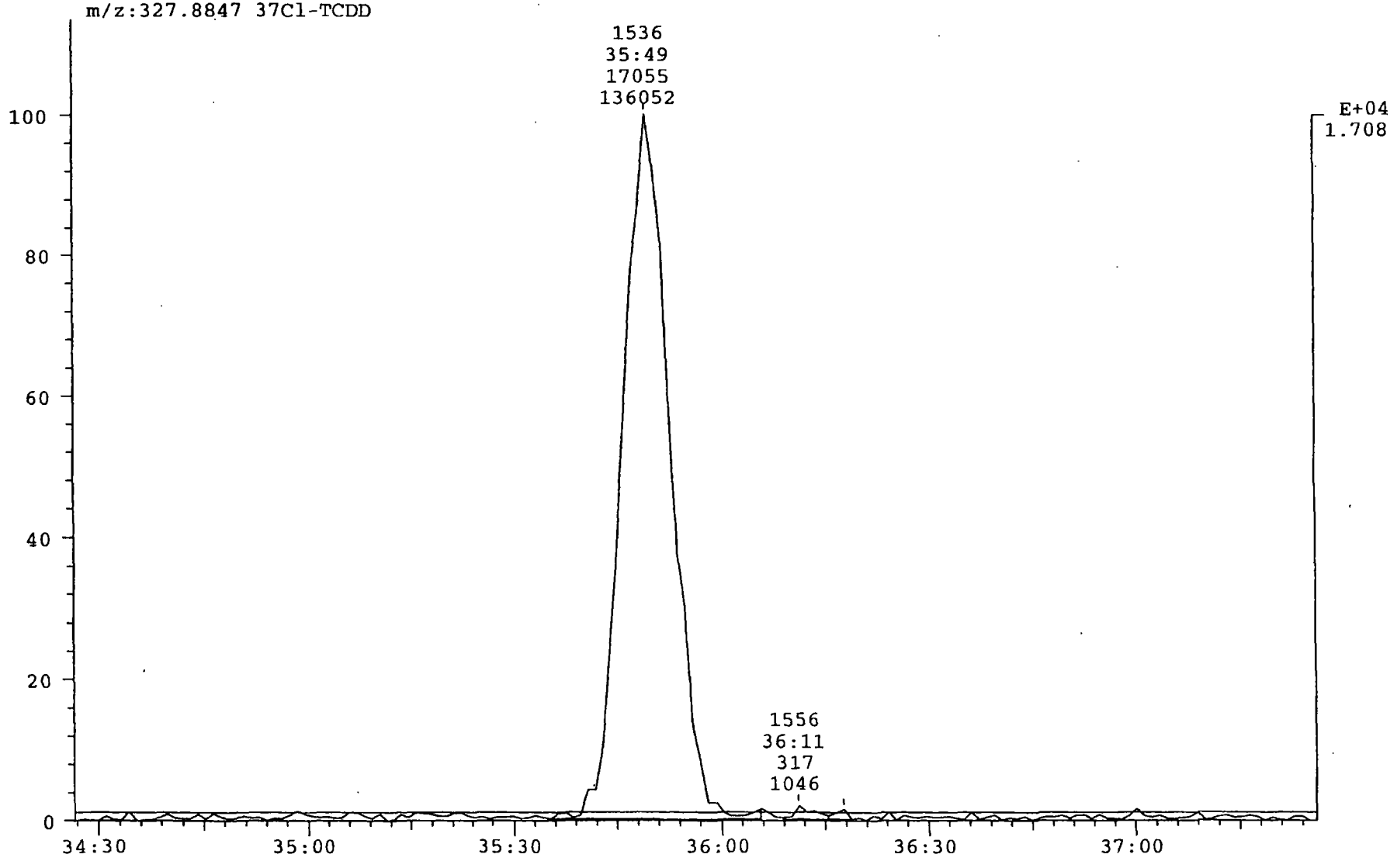



675

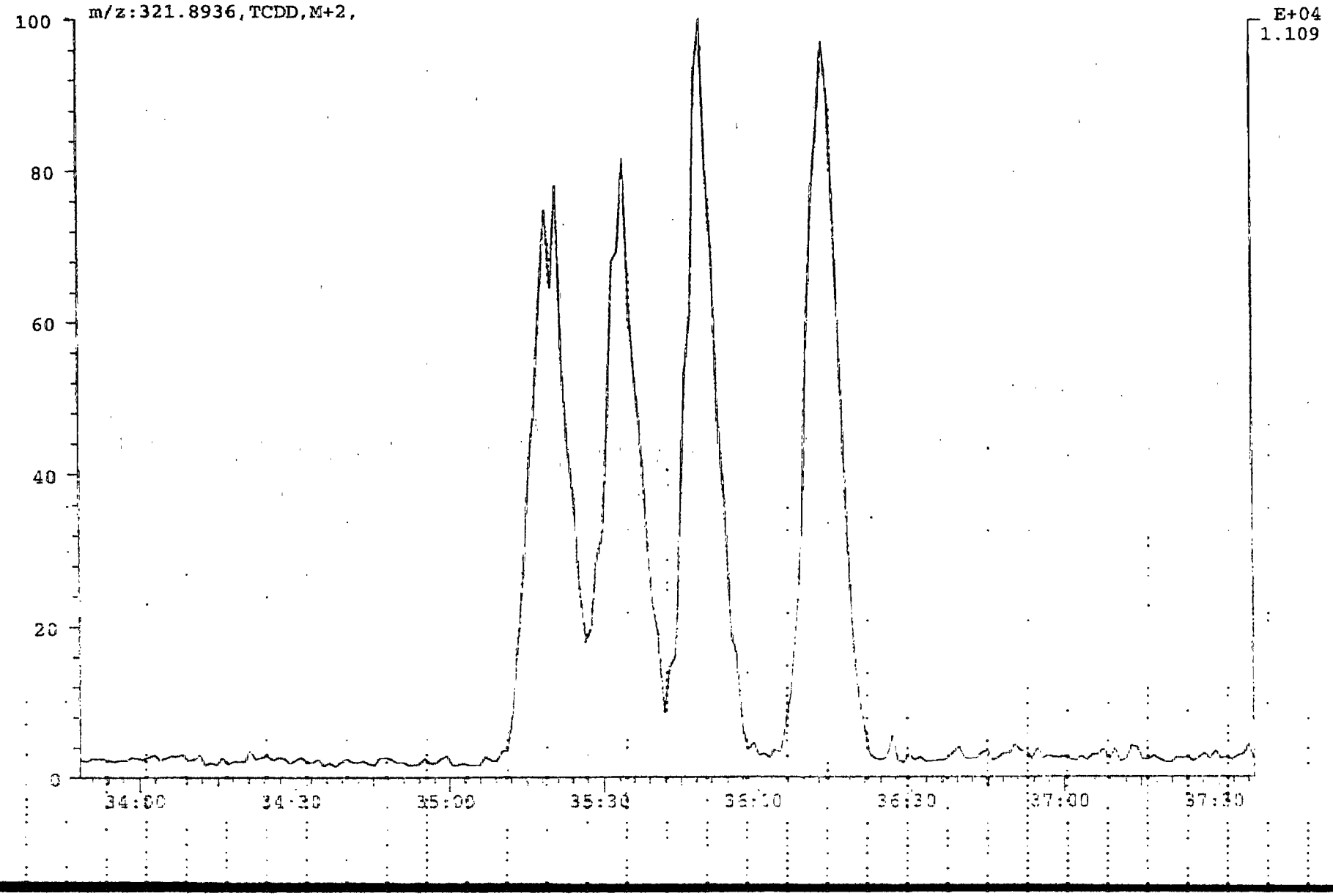
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1452 > 1617 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



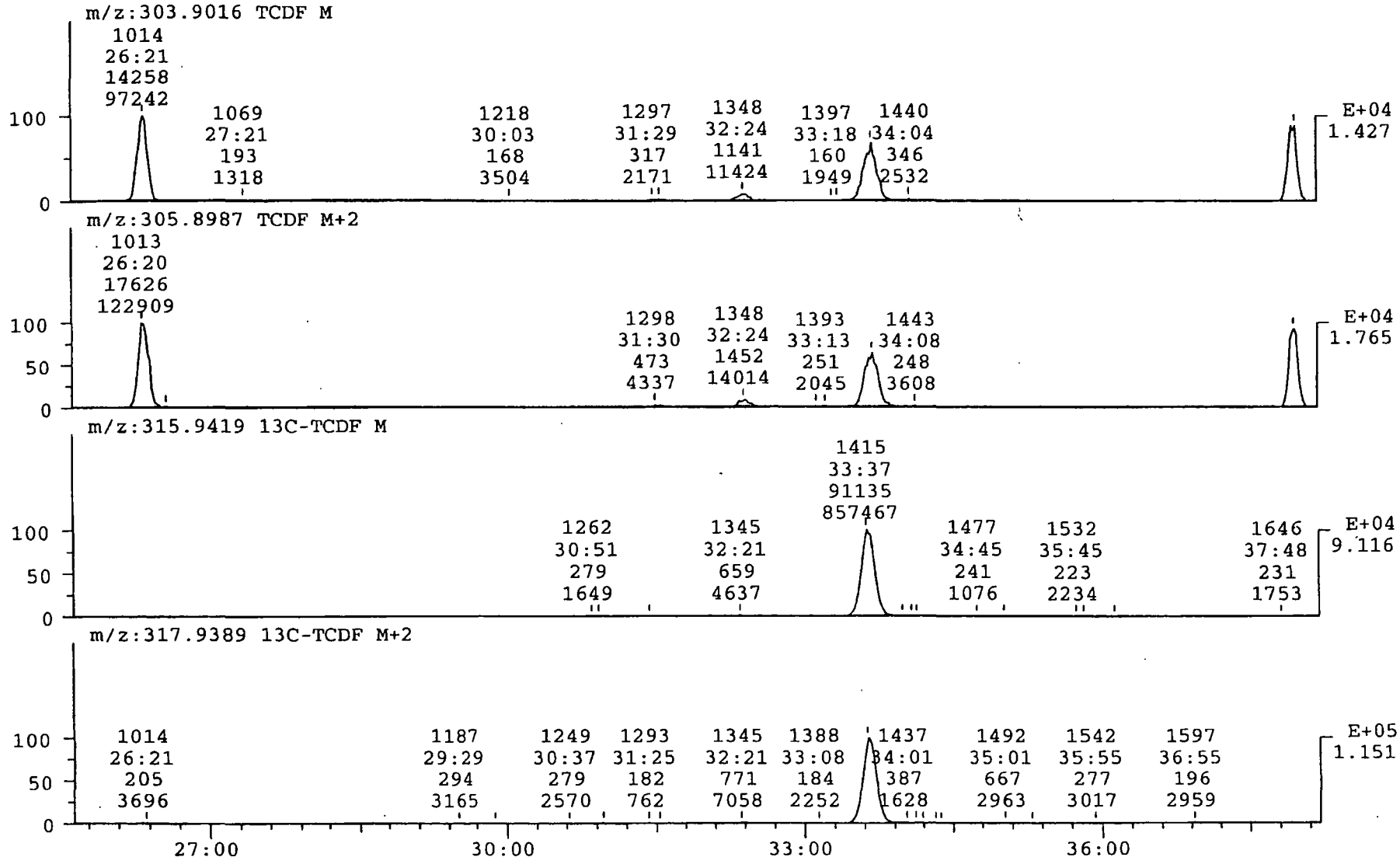
```
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1460 > 1625          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 3.0
Disp:  Height  Area
```



CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1425 > 1635 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 5 Label : 0, 2.5
Disp: Height Area

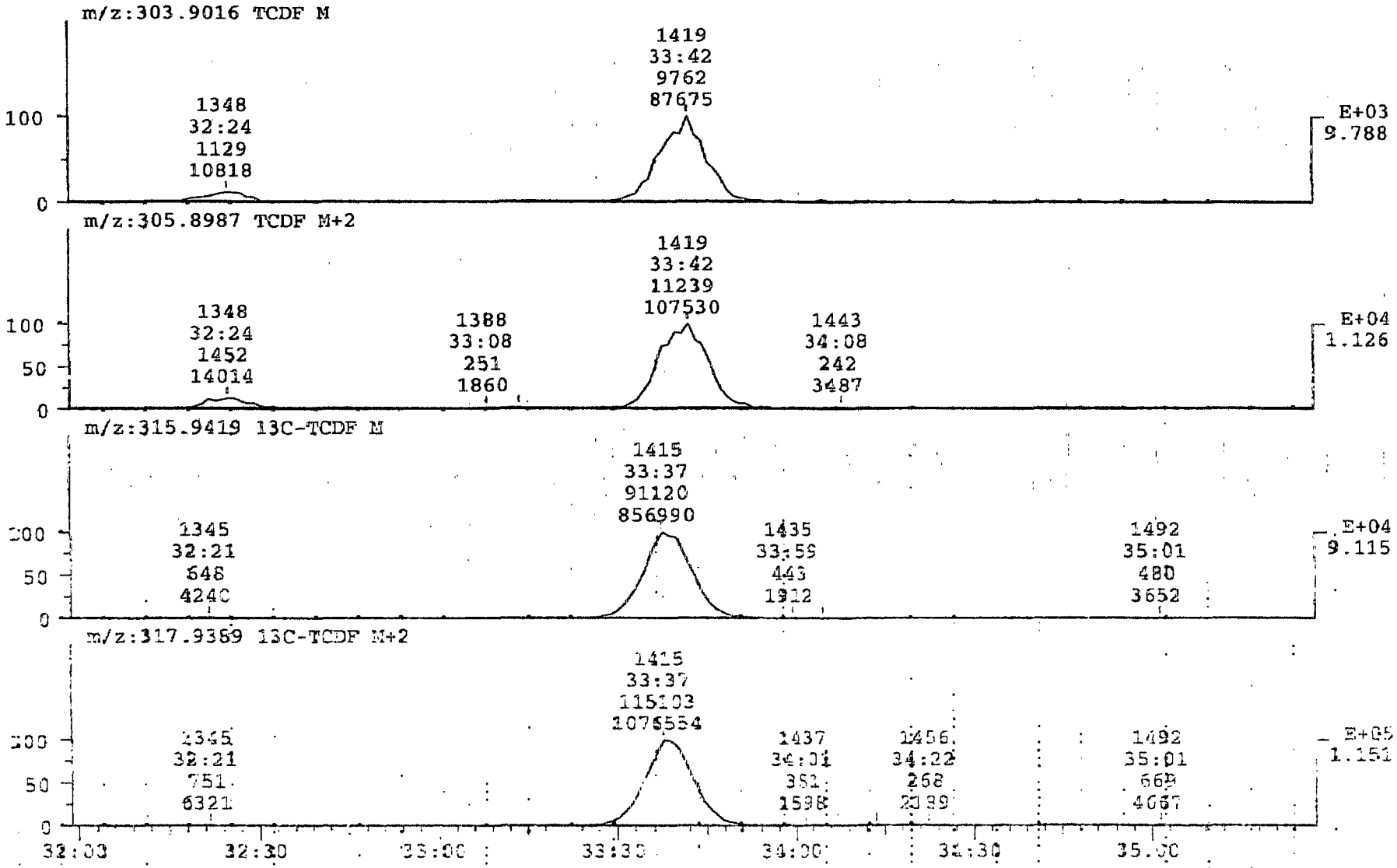


CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 975 > 1667 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

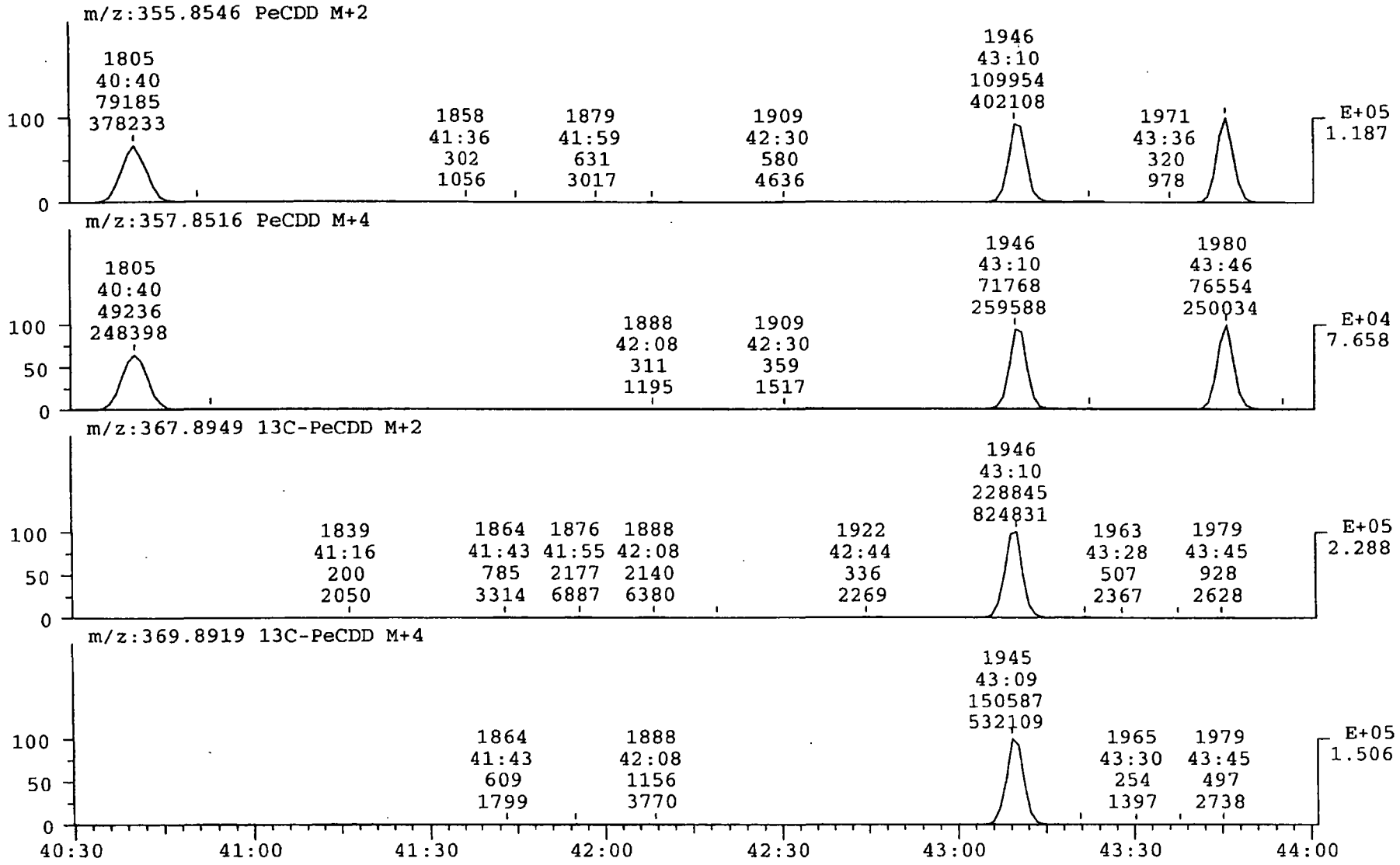



679

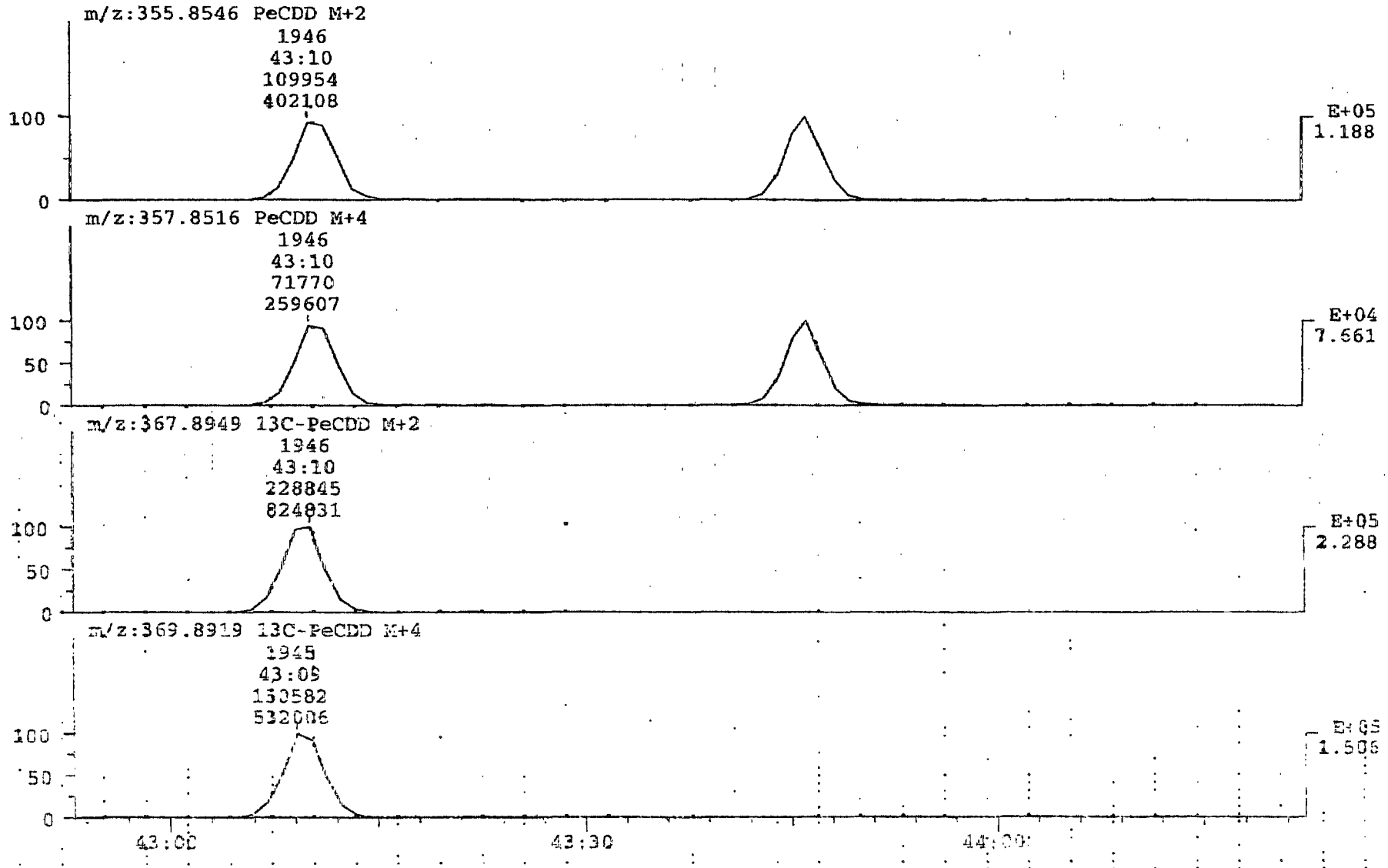
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1324 > 1516 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



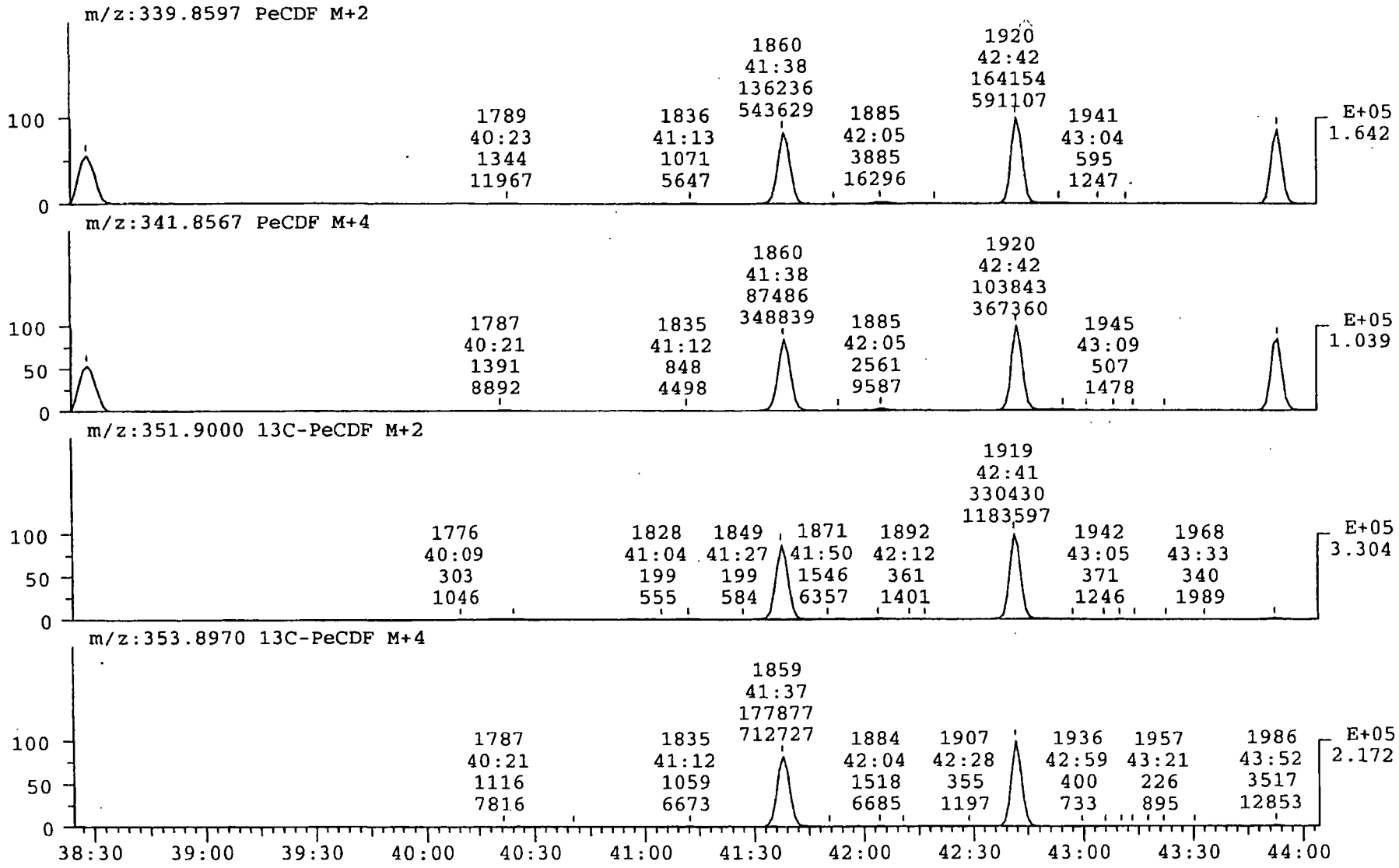
```
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville              Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   1000 > 3500         Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3              Label :  -2, 3.0
Disp:  Height  Area
```



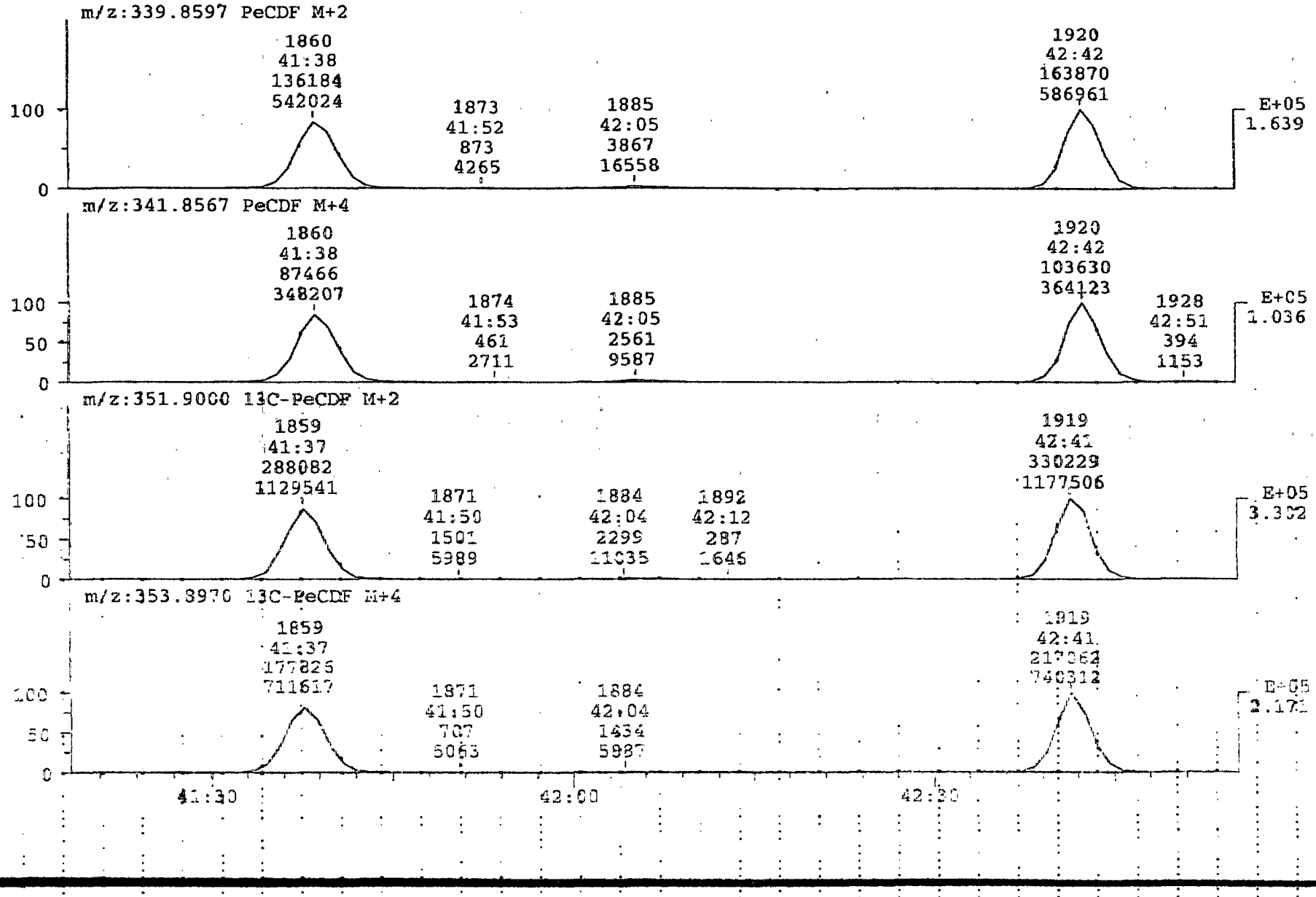
```
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3       1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05   2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville              Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   1945 > 1955         Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3              Label :  2, 3.0
Disp:  Height  Area
```



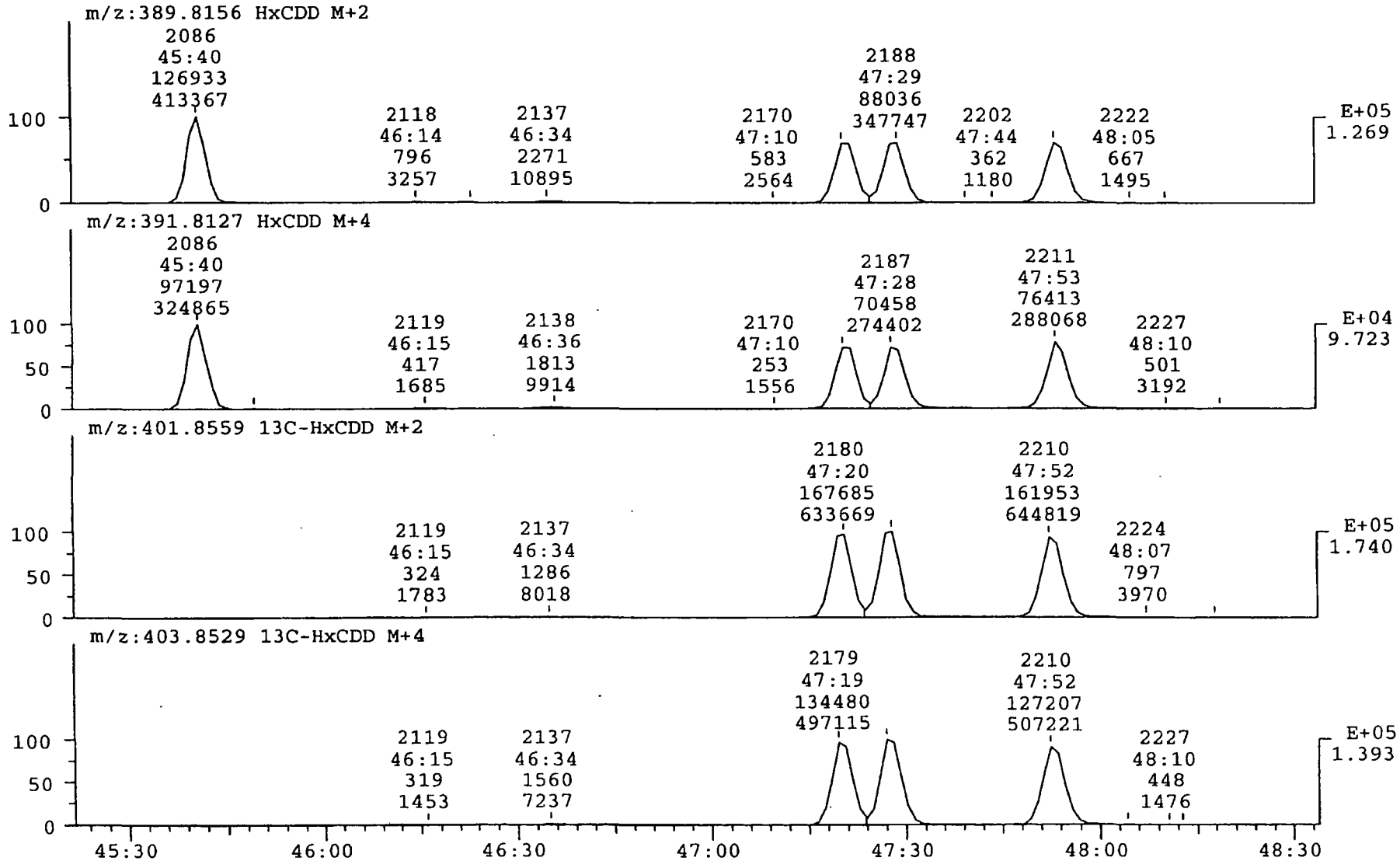
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1677 > 1997 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



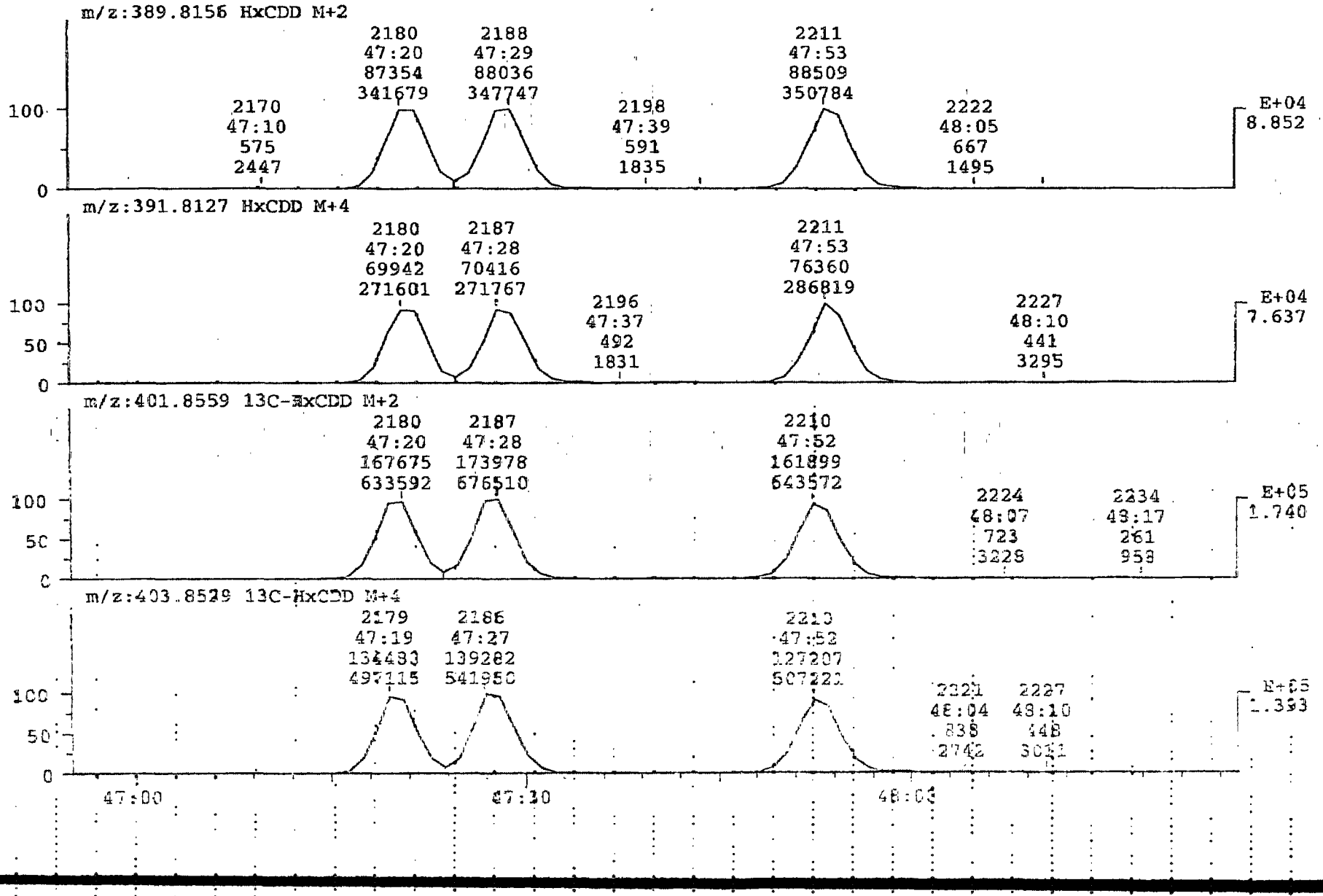
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1841 > 1932 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



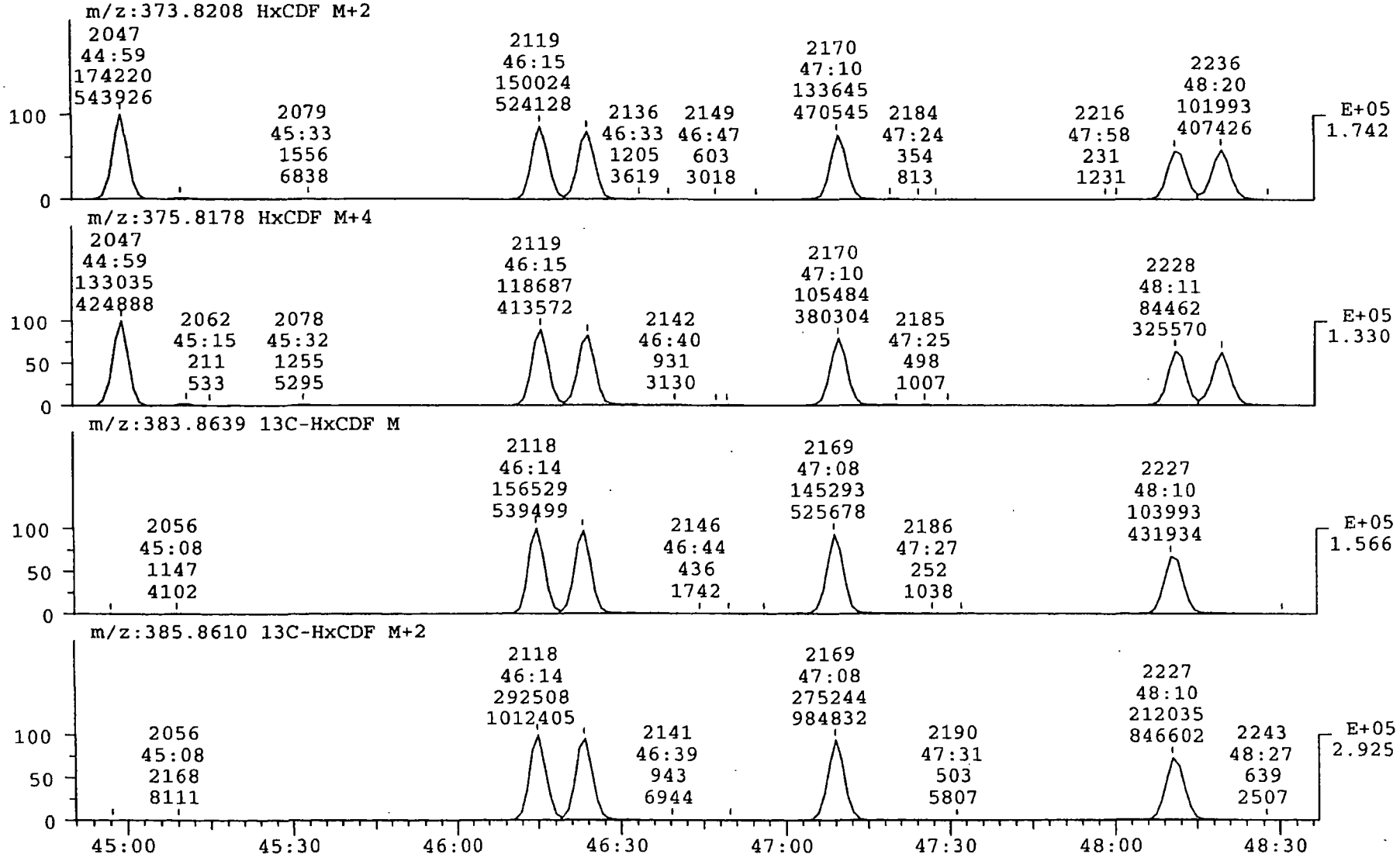
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2068 > 2249 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



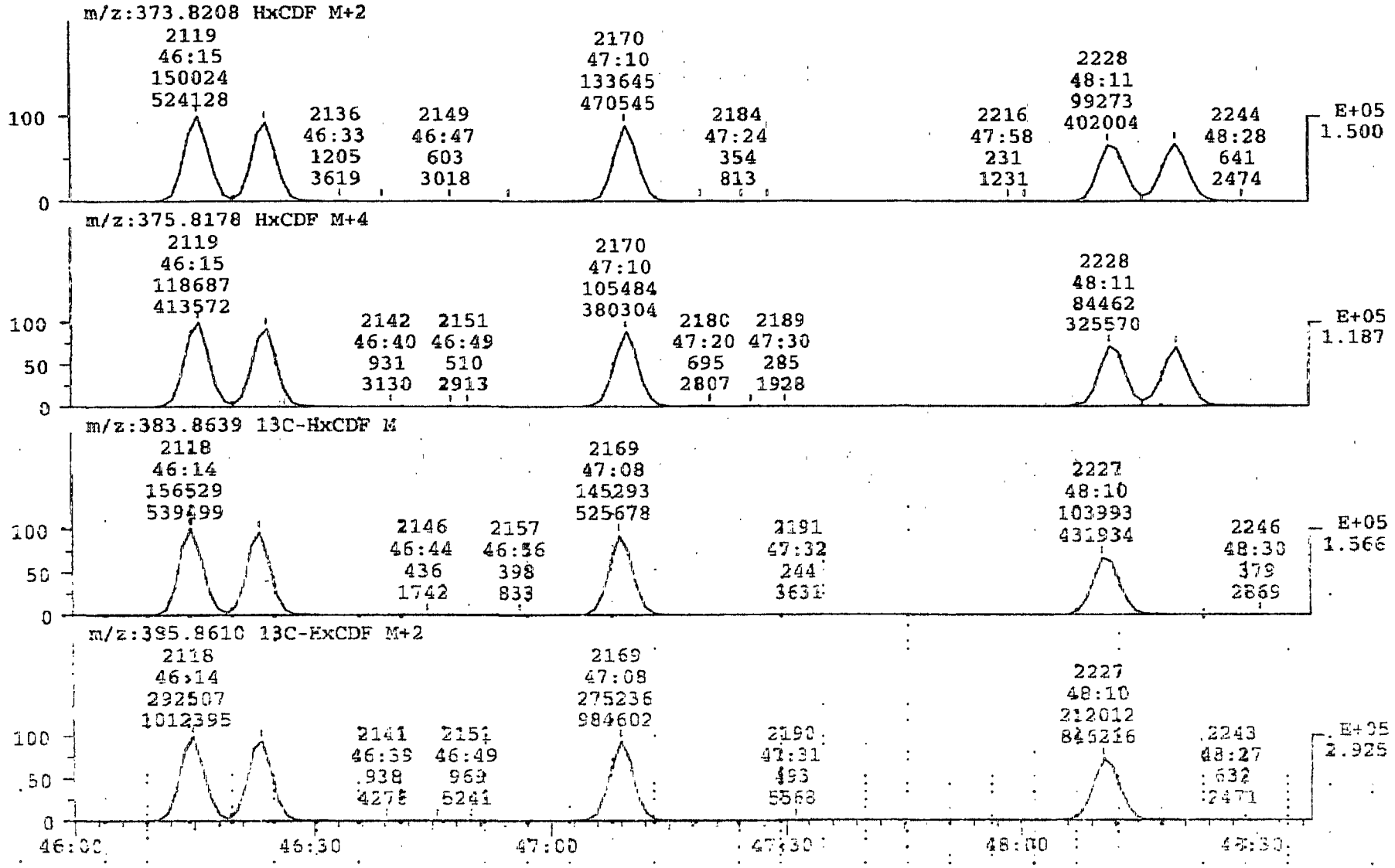
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2156 > 2241 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



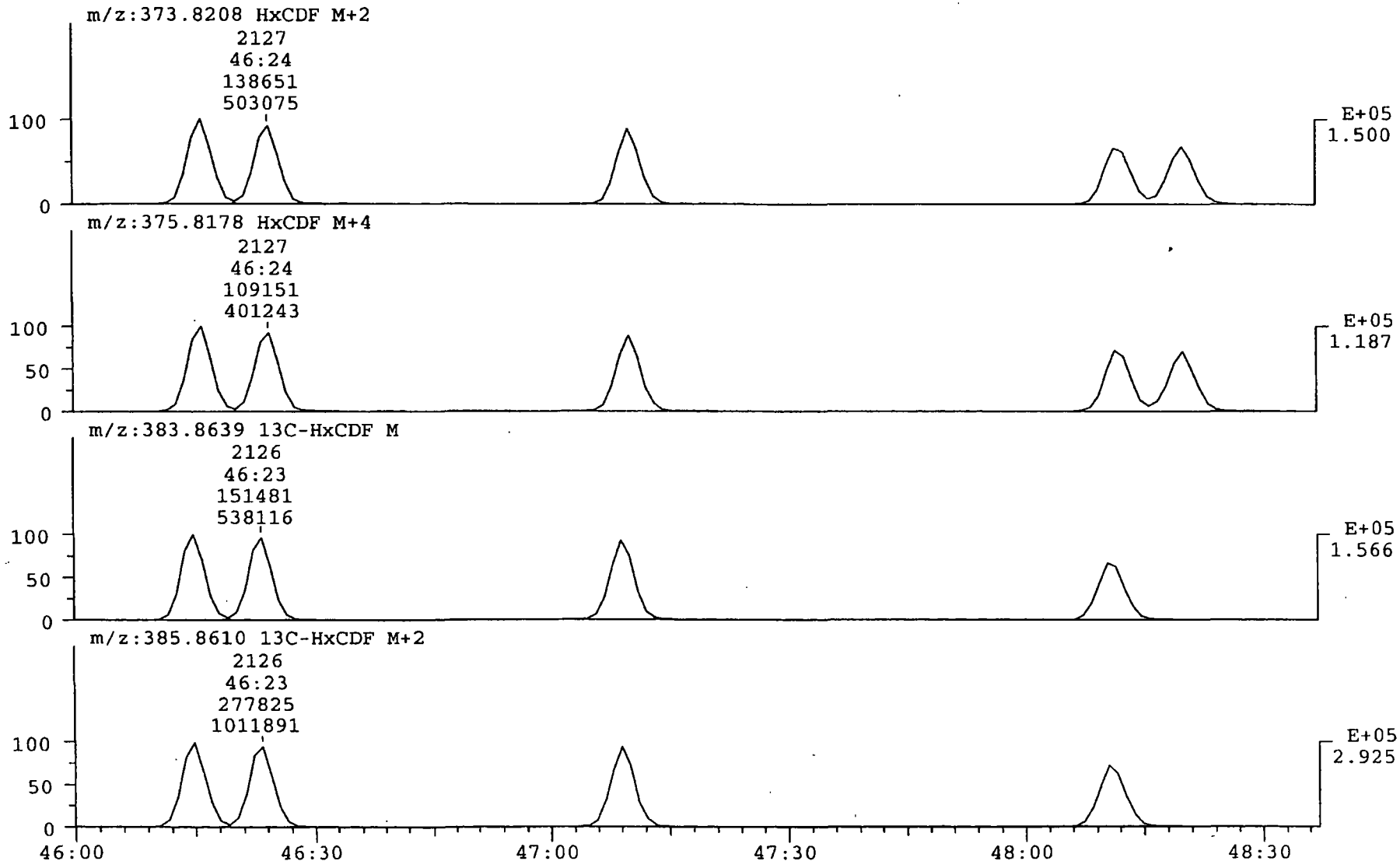
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2039 > 2252 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



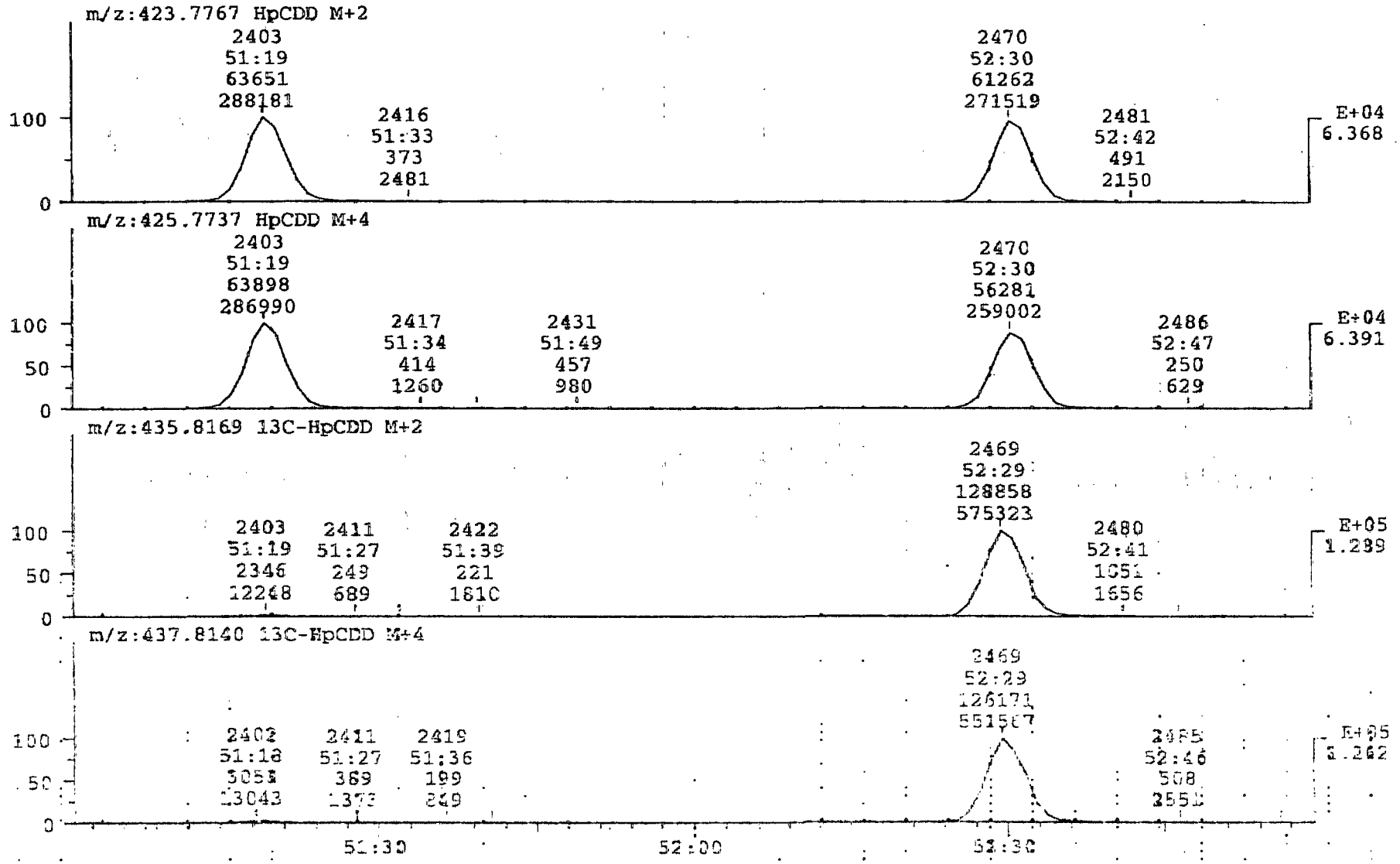
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2104 > 2252 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



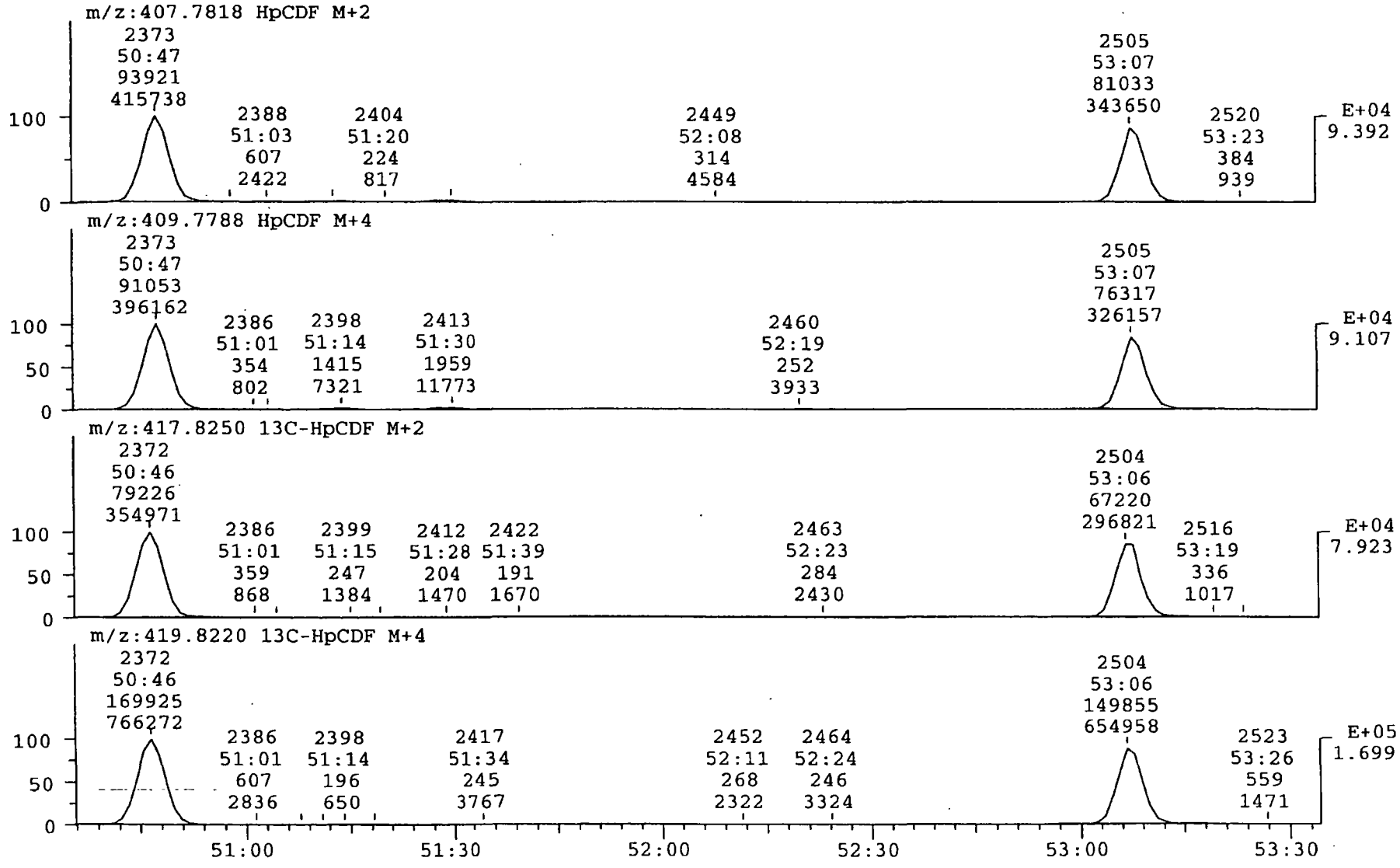
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2123 > 2133 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



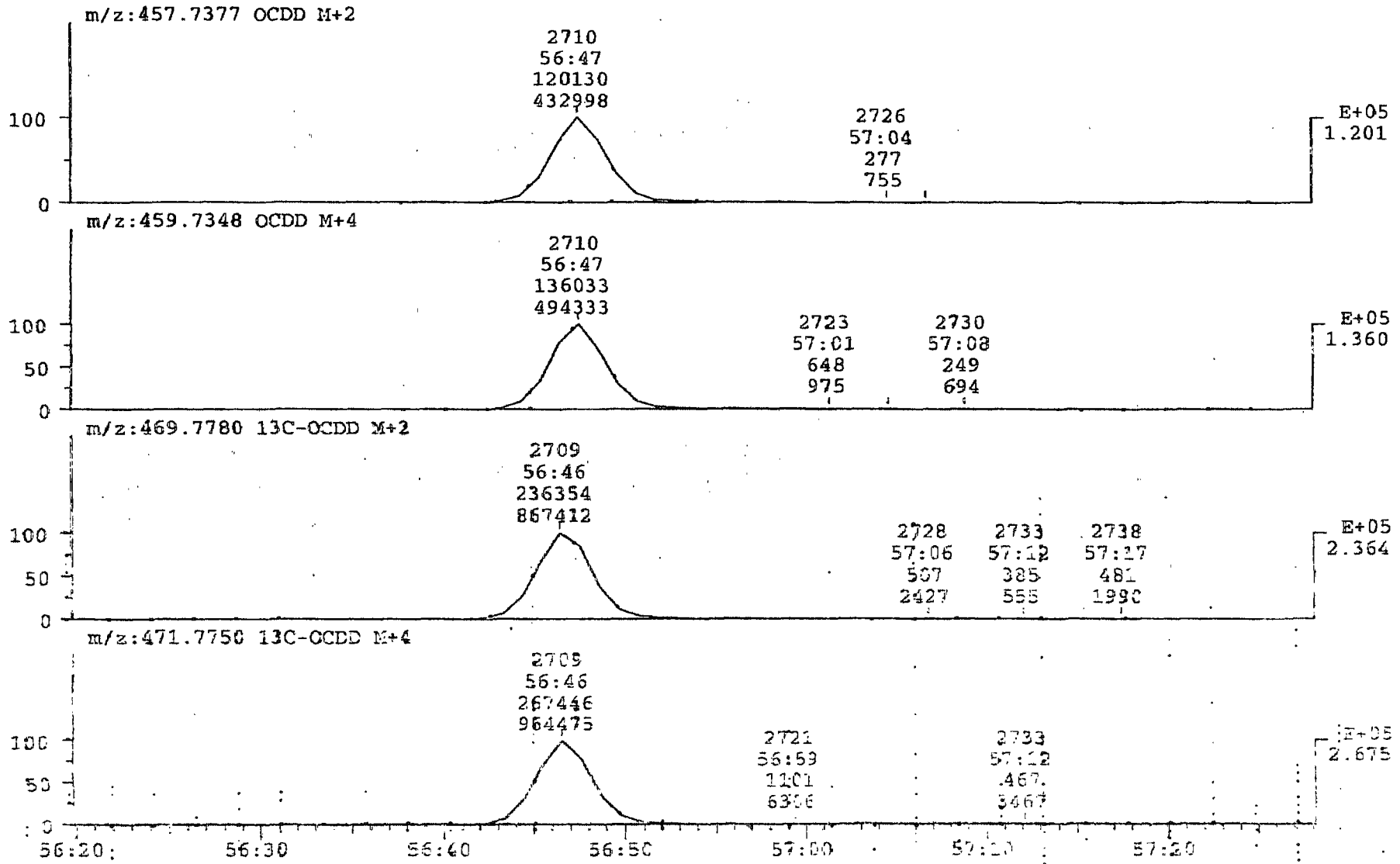
CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1 > 3000 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t031005s1 05-Oct-03 Elapse: 46:07 2111
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2362 > 2530 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2684 > 2748 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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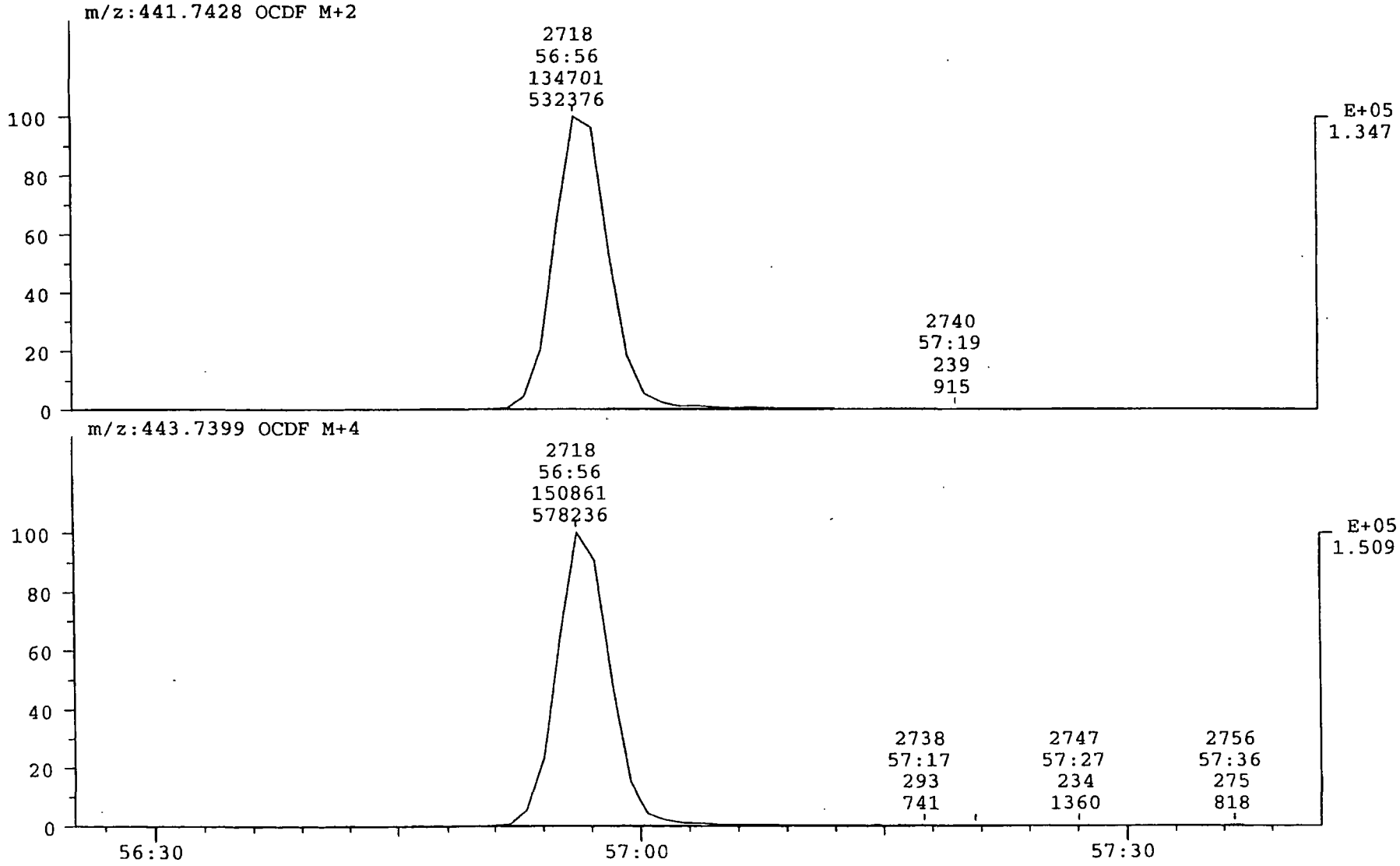
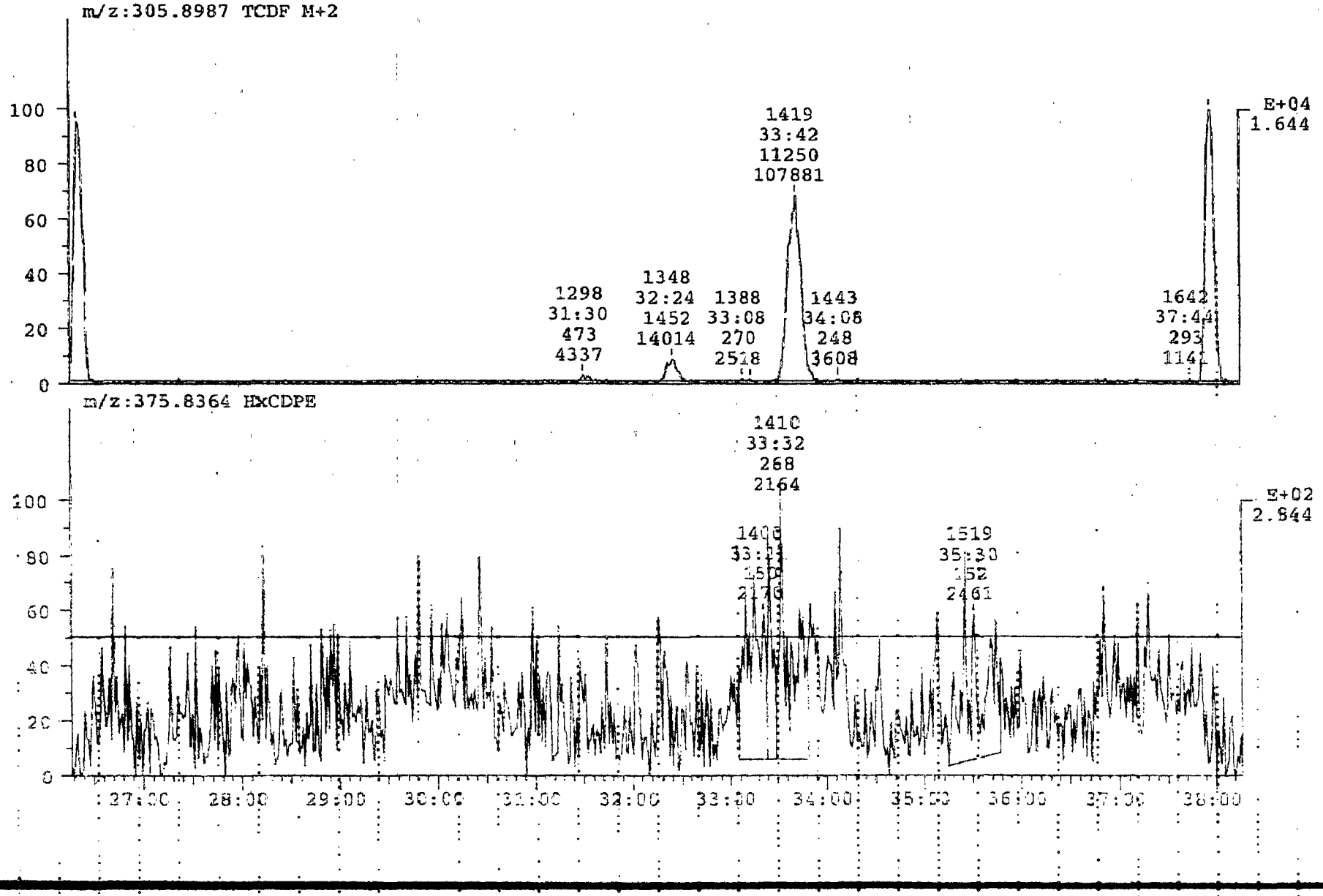
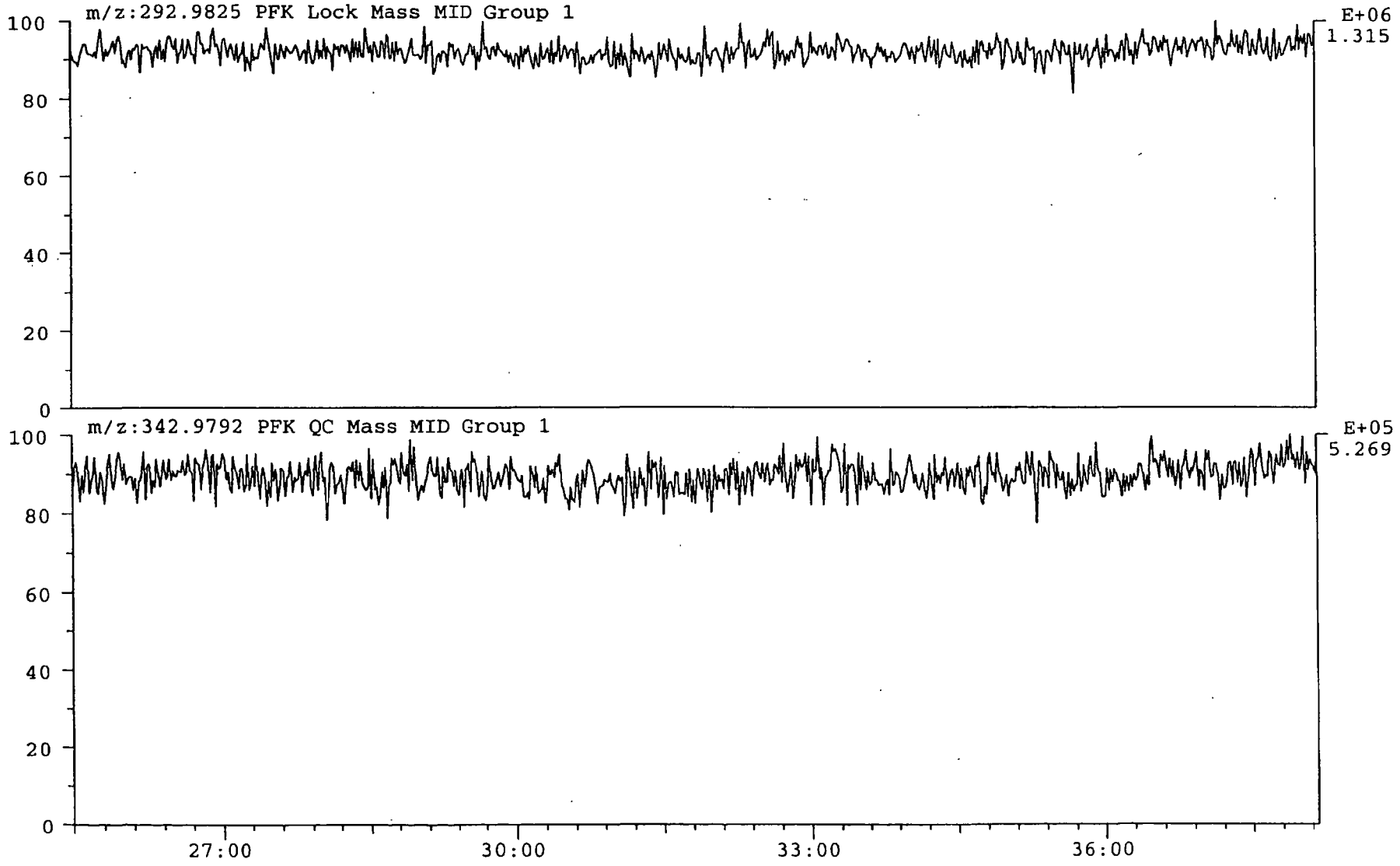
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2689 > 2761          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  -2, 3.0
Disp:  Height  Area
```



CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 1009 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  t031005s1                              05-Oct-03   Elapse:   08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :   08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Ver/Win
Oper:  PMP           Client:  STL Knoxville               Inlet :   GC     Vial   1
Peak:  100.00  ppm     Label wndw:   966 > 1665           Masses:   293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :   0, 0.0
```



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CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP            Client:  STL Knoxville              Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   1677 > 1941         Masses:  293 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3              Label :  -2, 3.0
Disp:  Height  Area
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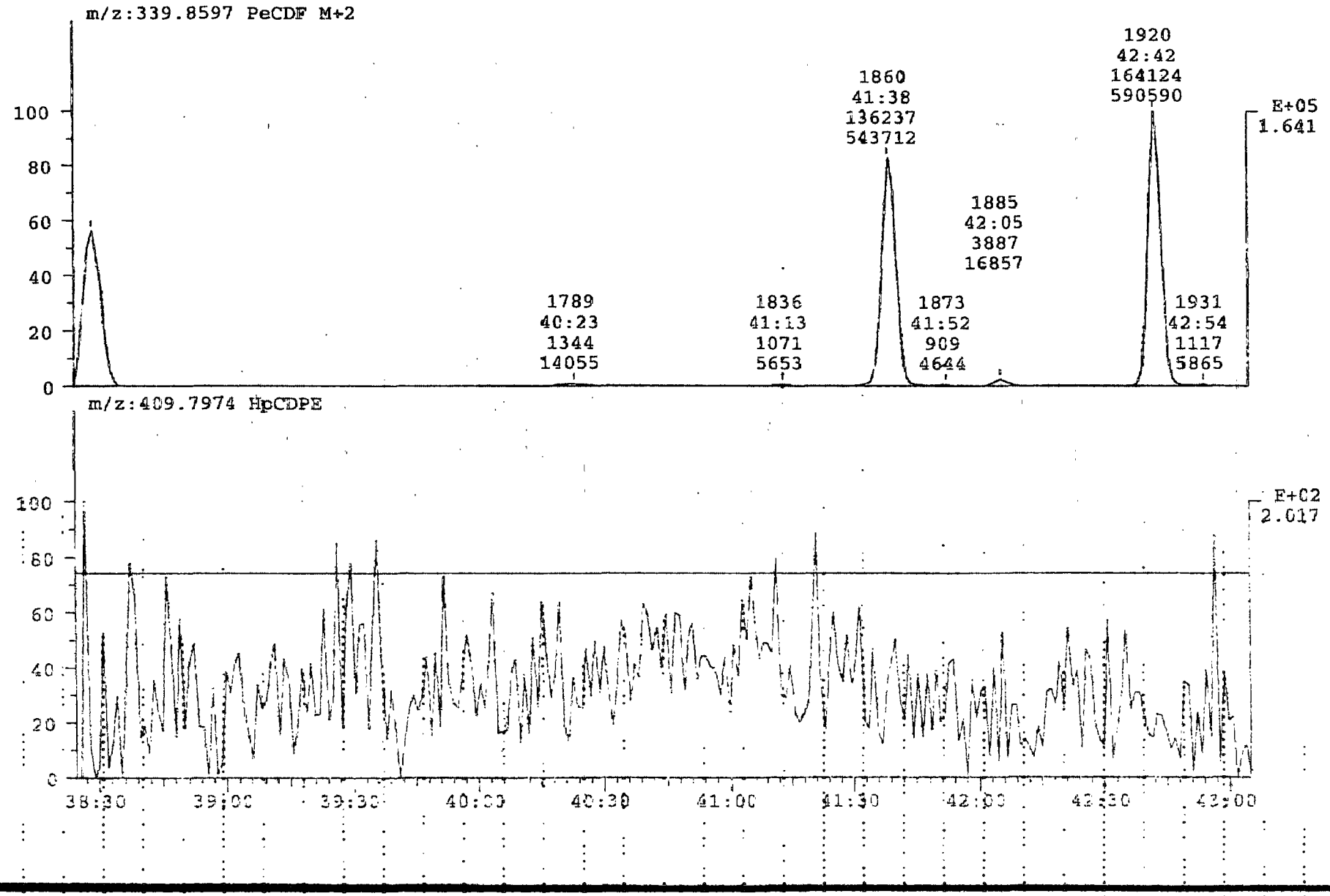

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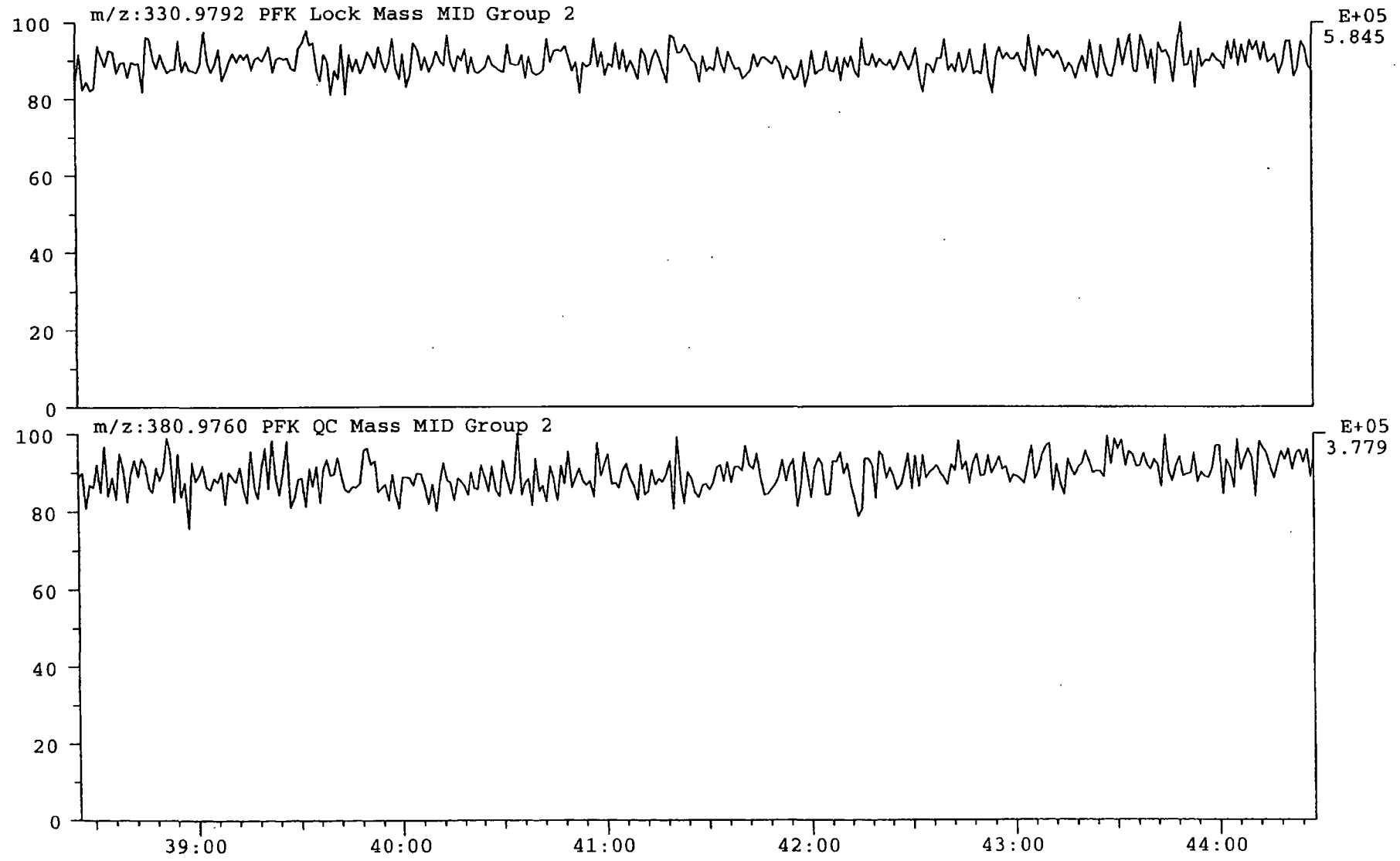
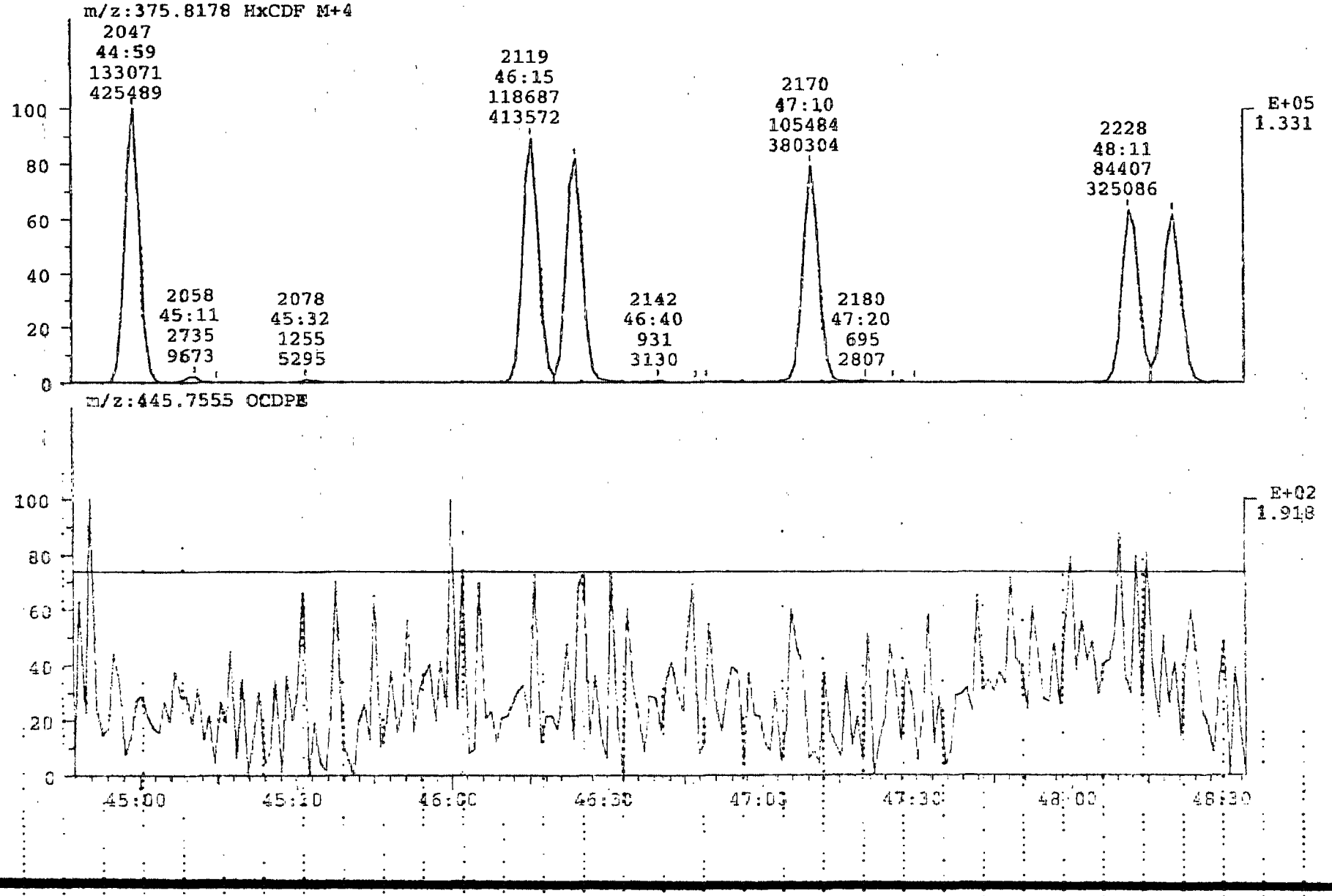
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   1678 > 2019          Masses:  293 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
```



CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2036 > 2249 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP           Client:  STL Knoxville               Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2036 > 2249          Masses:  293 > 514
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  0, 0.0
Disp:  Height  Area
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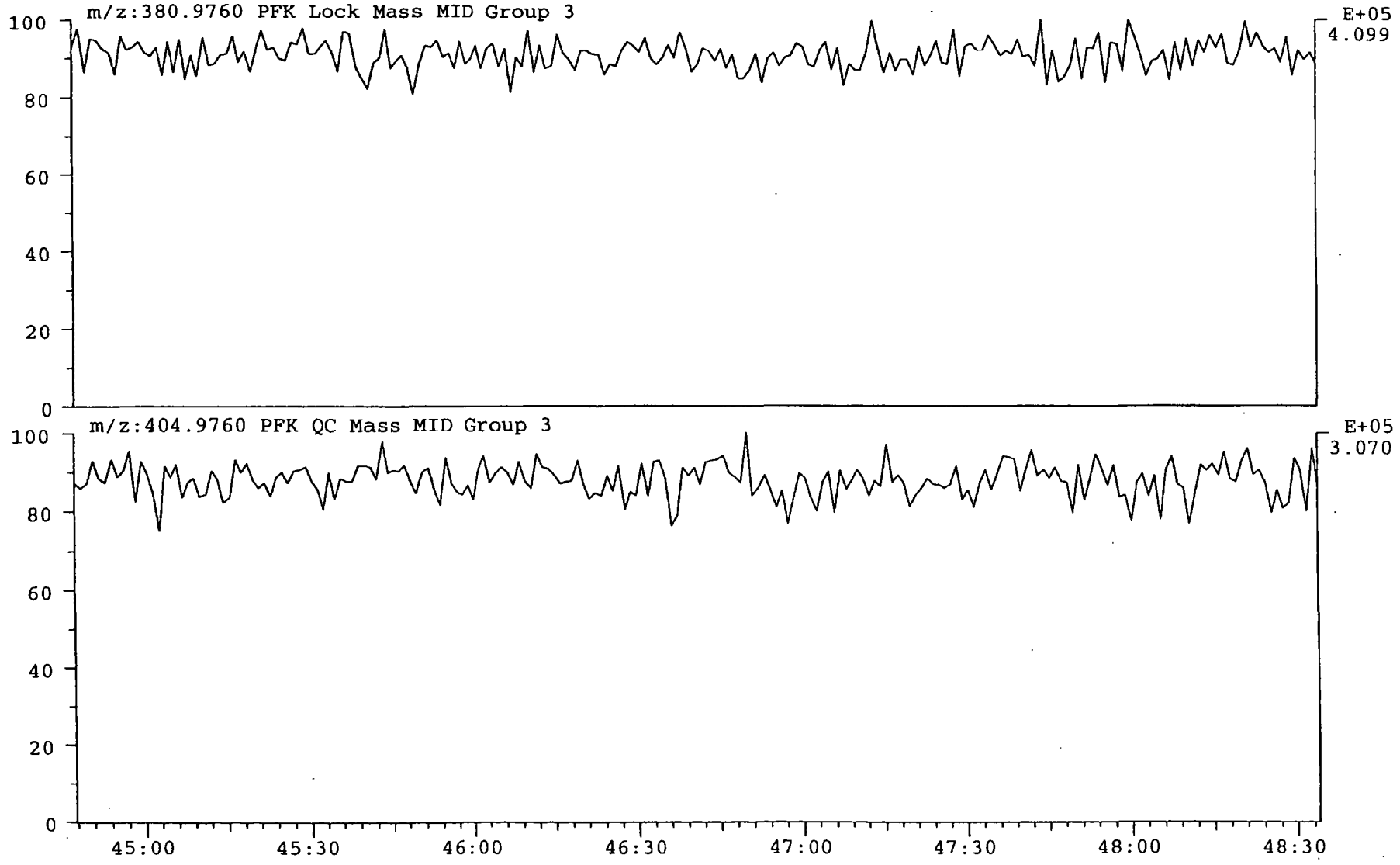
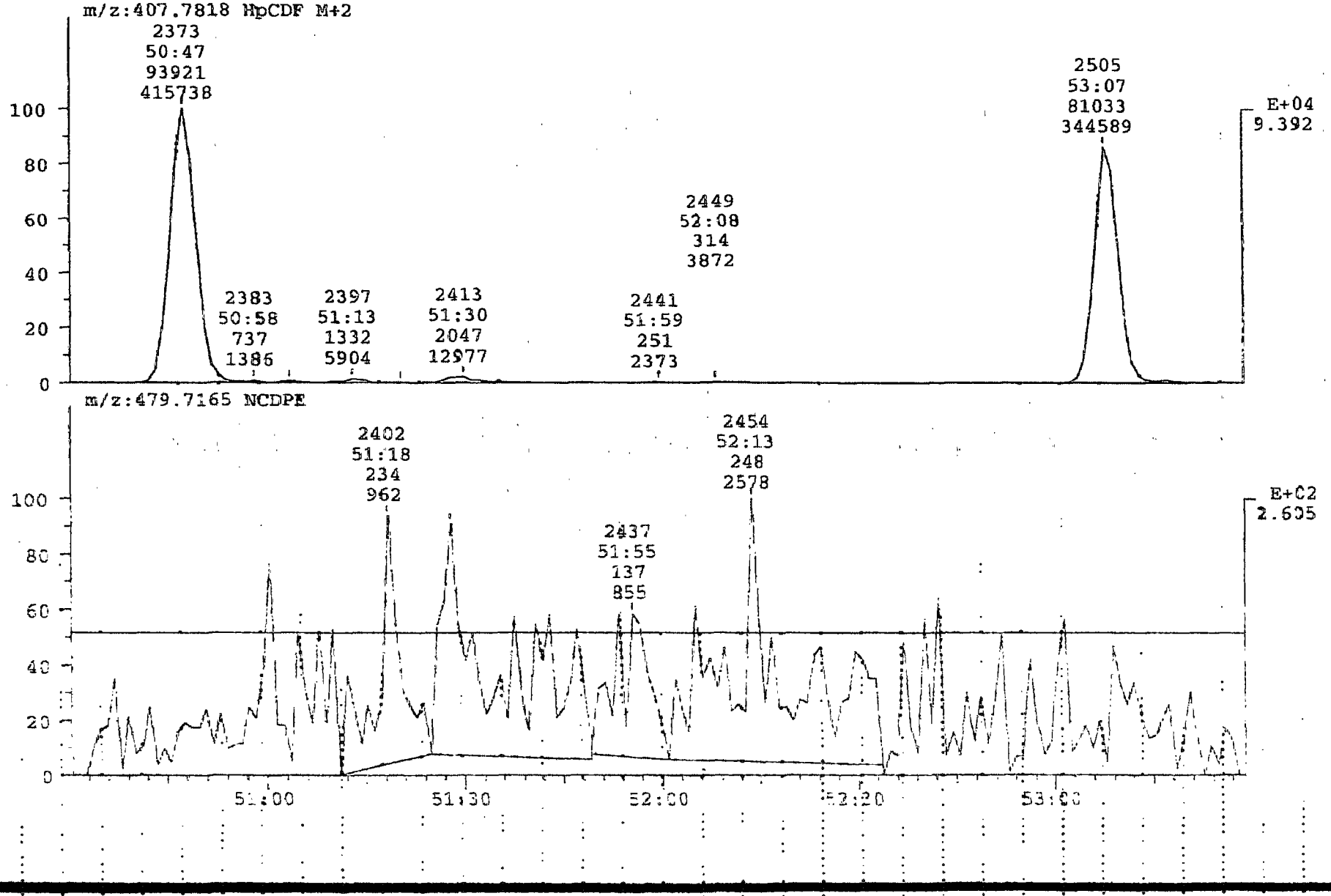


CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2357 > 2525 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP           Client:  STL Knoxville               Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2357 > 2525          Masses:  293 > 514
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 2.5
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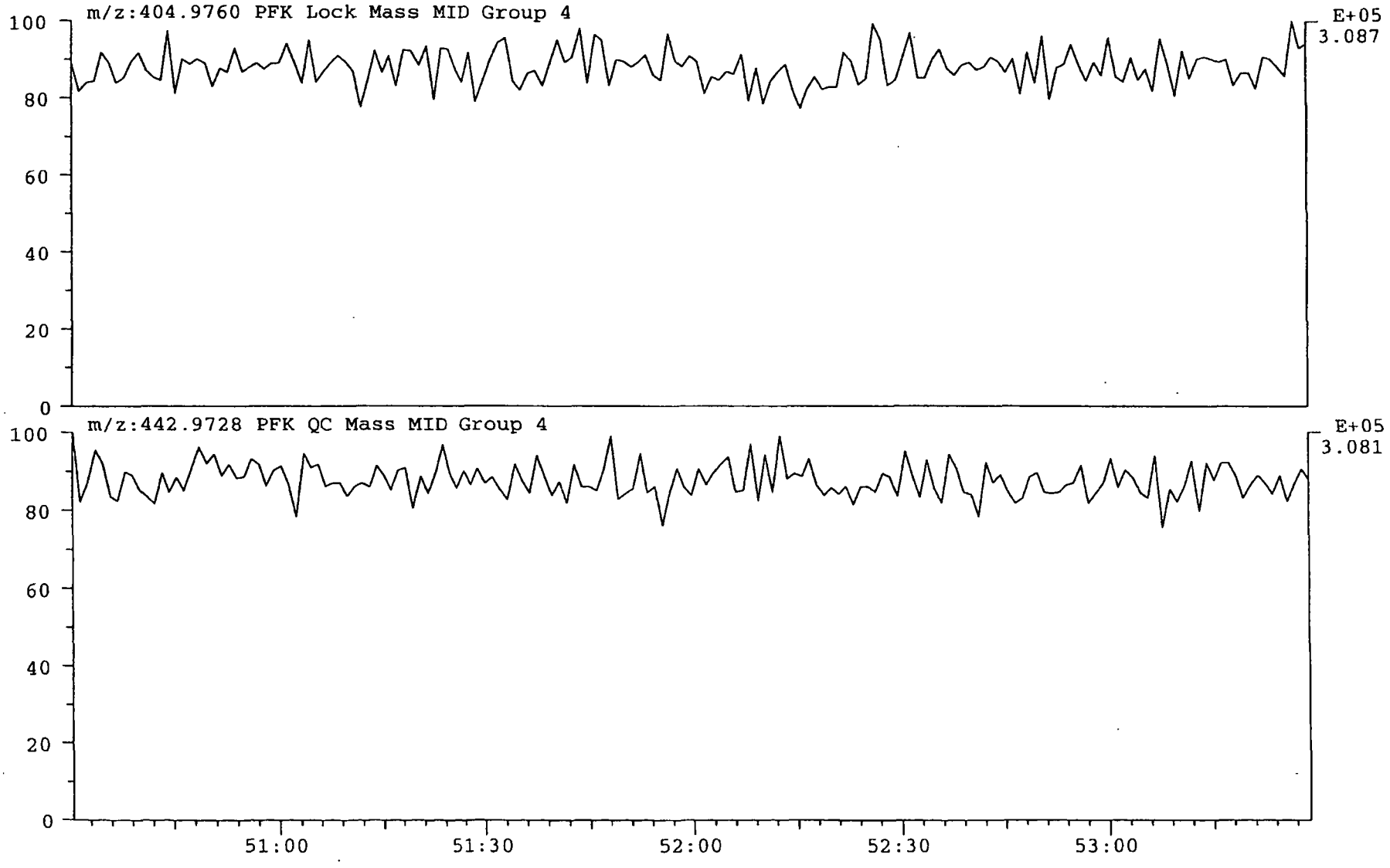
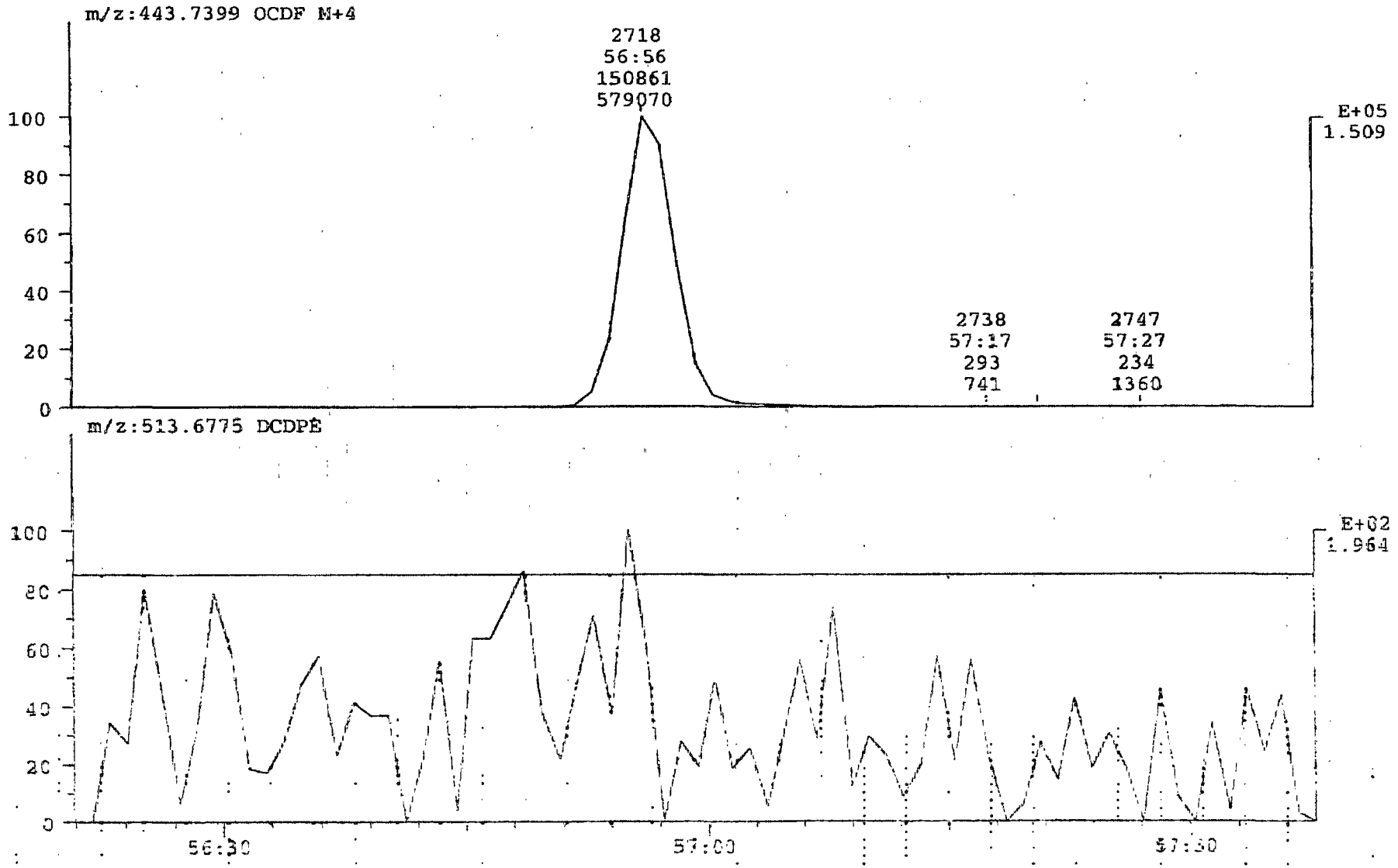


CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 2685 > 2757 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



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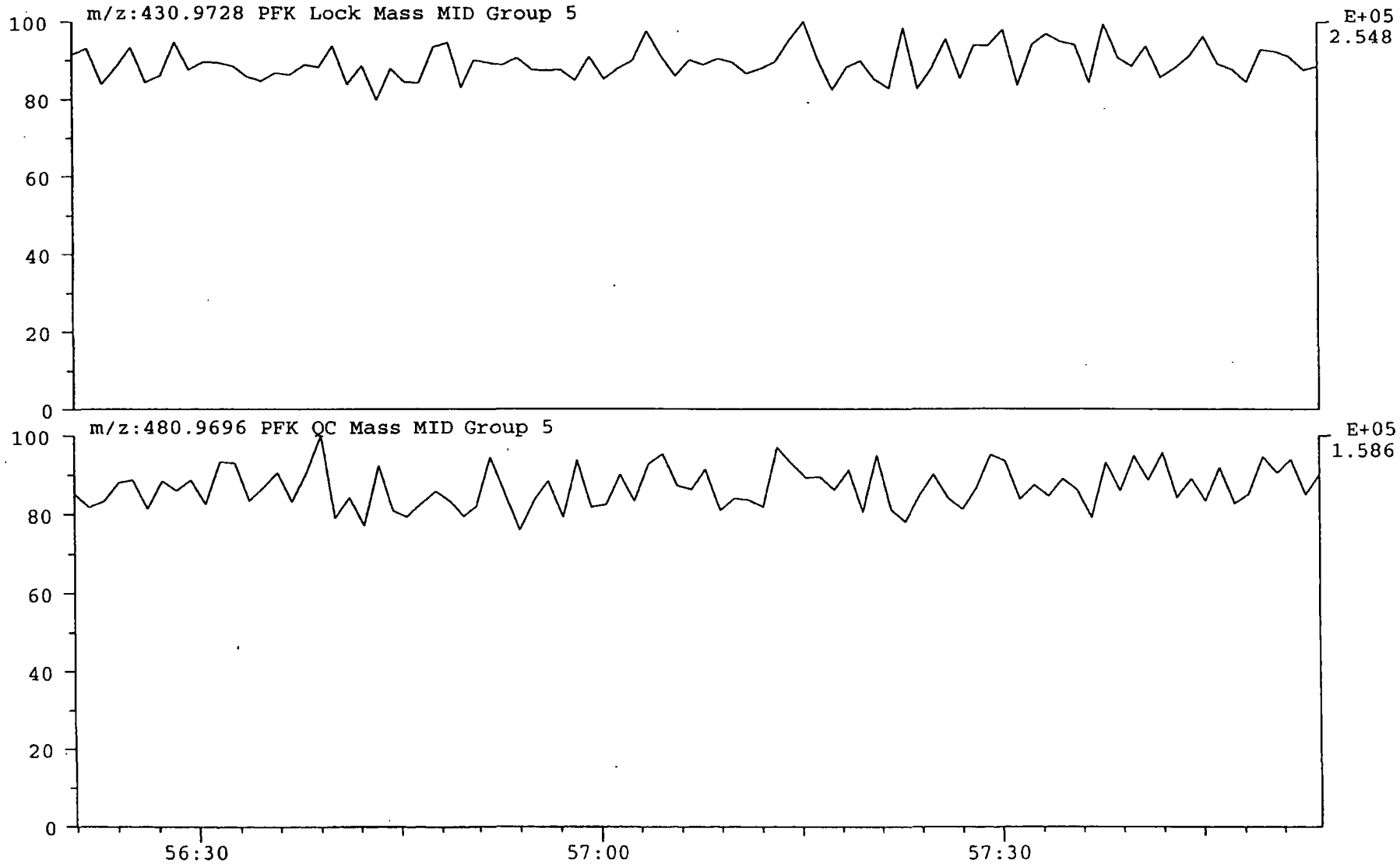
CHRO:  t031005s1                              05-Oct-03   Elapse:  08:00.3        1
Samp:  Vial 1 WO=2553:86 Meth=F8 Dil=1                    Start :  08:59:05    2821
Comm:  Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver/Win
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   2685 > 2772          Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :  0, 3.0
Disp:  Height  Area
```



CHRO: t031005s1 05-Oct-03 Elapse: 08:00.3 1
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 198 > 2919 Masses: 293 > 514
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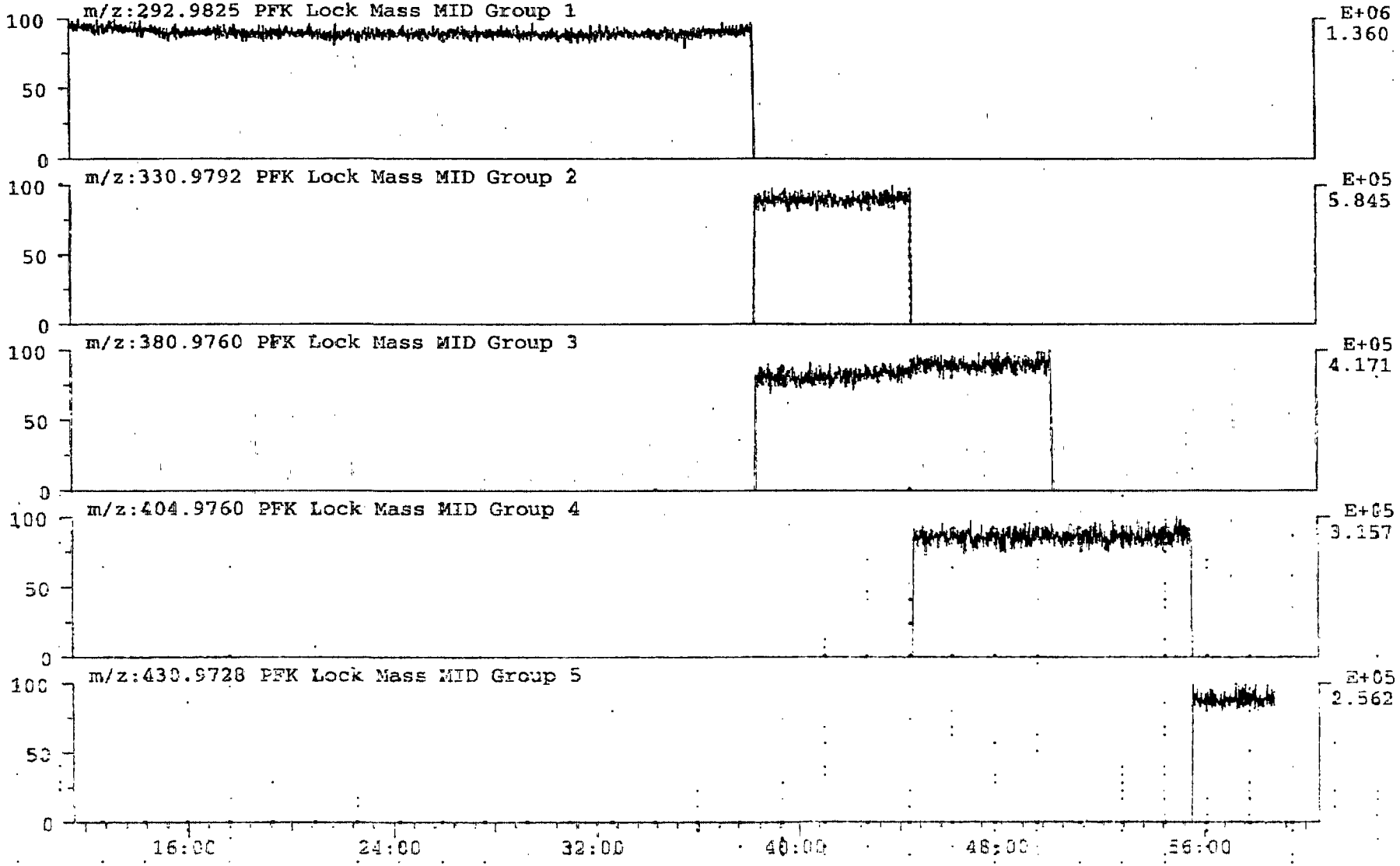

```
Instrument internet name  -  mat95s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis2ms
ICIS Version 8.2.1


ICL Version: 10.500
File name: t031005s1
Study: Ver/Win
Sample: WO=2553:86 Meth=F8 Dil=1
Amount:    0.0
Volume:    0.0
Operator: PMP
Client: STL Knoxville
Comments: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Injected volume:    2.0
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
File 9 of list 031004
  ICL procedure: sleep6x
  ICIS procedure: tstdw $
  MID procedure: epa1613

  MID Remarks:  Tetra-Octa PCDD/F EPA Method 8290/1613B

  Mid Set Up Parameter:
   Measure/lock ratio         1
   Damping Relay          FALSE
   Width first lock        0.20 amu
   Electric jump time        10 ms
   Magnetic jump time        60 ms
   Offset                   100 cts
   Electric range           300 %
   Sweep peak width        3.00
   MID mode               Lock mode
   Acq mode               Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    30:18 min    38:18 min     1.00 sec
  # 2   38:18 min     6:12 min    44:30 min     1.00 sec
  # 3   44:30 min     5:29 min    50:00 min     1.00 sec
  # 4   50:00 min     5:30 min    55:30 min     1.00 sec
  # 5   55:30 min     3:29 min    59:00 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92
   Window # 2
        mass F  int  gr  time (ms)
    330.9792 1   10   1      8.19
    339.8597      1   1     91.48
```

| | | | | |
|---|---|---|---|---|
| 341.8567 | | 1 | 1 | 91.48 |
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | 1 | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | 1 | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | 1 | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |

```
Loop clean w slvnt A (LC):      0 times
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume   (Y):    0.0 ul
2nd Injection volume  (I):    0.0 ul
Air volume of 2nd inj (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:         270 deg                        300 deg max
  Transfer Line:    290 deg                        300 deg max
  Column:           140 deg at    0.0 minutes      330 deg max
                    140 deg at    3.0 minutes
                    210 deg at    6.5 minutes
                    210 deg at   34.5 minutes
                    280 deg at   44.5 minutes
                    280 deg at   51.0 minutes
                    325 deg at   60.0 minutes
  Inlet    :
  Pressure        18.0 psi
  Splitless mode
  Purge time       1.5 min
  Purge flow      40.0 mL/min

   Gas saver is on
   Saver time       3.0 min
   Saver flow      15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8431.0000 |
| BDEV | 8288.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 308.0000 | FVINLET | 818.0000 |
| FVSRC | 927.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4608 | HVANAL | 977.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4764.3420 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2840.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |

| | | | | | |
|---|---|---|---|---|---|
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9100 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 08:59:05.7

Autosampler has injected sample from vial 1
Analysis stopped at: 05-Oct-03 09:57:52.6 (run time 58.77 minutes)
Analysis stopped because MID run finished

QUAN: t031005s1.q0 Entries: 79

Data file(s) used
File: t031005s1 05-Oct-03
Samp: Vial 1 WO=2553:86 Meth=F8 Dil=1 Start : 08:59:05 2821
Comm: Inst=m2a/499396 Batch=20031005s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver/Win
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 35:21 | 53724. | 6459. | 35:08 | 35:26 | 90. | 2 | 3.0 |
| 319.8805 | 35:33 | 54754. | 6503. | 35:26 | 35:41 | 90. | 2 | 3.0 |
| 319.8805 | 35:50 | 63964. | 8240. | 35:41 | 36:03 | 90. | 2 | 3.0 |
| 319.8805 | 36:14 | 62339. | 7551. | 36:03 | 36:25 | 90. | 2 | 3.0 |
| 321.8775 | 35:21 | 69209. | 8461. | 35:05 | 35:26 | 80. | 2 | 3.0 |
| 321.8775 | 35:34 | 68619. | 8849. | 35:26 | 35:41 | 80. | 2 | 3.0 |
| 321.8775 | 35:49 | 76228. | 10883. | 35:41 | 36:02 | 80. | 2 | 3.0 |
| 321.8775 | 36:13 | 79247. | 10547. | 36:02 | 36:28 | 80. | 2 | 3.0 |
| 331.9202 | 35:16 | 570401. | 63017. | 35:00 | 35:30 | 105. | 2 | 3.0 |
| 331.9202 | 35:47 | 586661. | 74714. | 35:35 | 36:03 | 105. | 2 | 3.0 |
| 333.9171 | 35:17 | 695583. | 81332. | 35:01 | 35:30 | 124. | 2 | 3.0 |
| 333.9171 | 35:47 | 734577. | 93676. | 35:36 | 36:03 | 124. | 2 | 3.0 |
| 327.8683 | 35:49 | 136052. | 17055. | 35:35 | 36:05 | 63. | 2 | 3.0 |
| 303.8864 | 33:42 | 87675. | 9762. | 33:25 | 33:58 | 65. | 2 | 3.0 |
| 305.8834 | 33:42 | 107530. | 11239. | 33:25 | 33:57 | 60. | 2 | 3.0 |
| 315.9261 | 33:37 | 856990. | 91120. | 33:21 | 33:54 | 74. | 2 | 3.0 |
| 317.9230 | 33:37 | 1076554. | 115103. | 33:21 | 33:54 | 72. | 2 | 3.0 |
| 355.8368 | 43:10 | 402108. | 109954. | 43:03 | 43:18 | 81. | 2 | 3.0 |
| 357.8337 | 43:10 | 259607. | 71770. | 43:04 | 43:17 | 87. | 2 | 3.0 |
| 367.8765 | 43:10 | 824831. | 228845. | 43:03 | 43:19 | 63. | 2 | 3.0 |
| 369.8734 | 43:09 | 532006. | 150582. | 43:03 | 43:18 | 69. | 2 | 3.0 |
| 339.8427 | 41:38 | 542024. | 136184. | 41:27 | 41:49 | 76. | 2 | 3.0 |
| 339.8427 | 42:42 | 586961. | 163870. | 42:35 | 42:55 | 76. | 2 | 3.0 |
| 341.8396 | 41:38 | 348207. | 87466. | 41:28 | 41:49 | 61. | 2 | 3.0 |
| 341.8396 | 42:42 | 364123. | 103630. | 42:37 | 42:48 | 61. | 2 | 3.0 |
| 351.8824 | 41:37 | 1129541. | 288082. | 41:25 | 41:49 | 83. | 2 | 3.0 |
| 351.8824 | 42:41 | 1177506. | 330229. | 42:34 | 42:54 | 83. | 2 | 3.0 |
| 353.8793 | 41:37 | 711617. | 177826. | 41:26 | 41:47 | 68. | 2 | 3.0 |
| 353.8793 | 42:41 | 740312. | 217062. | 42:34 | 42:55 | 68. | 2 | 3.0 |
| 389.7961 | 47:20 | 341679. | 87354. | 47:15 | 47:24 | 104. | 2 | 3.0 |
| 389.7961 | 47:29 | 347747. | 88036. | 47:24 | 47:37 | 104. | 2 | 3.0 |
| 389.7961 | 47:53 | 350784. | 88509. | 47:46 | 48:03 | 104. | 2 | 3.0 |
| 391.7931 | 47:20 | 271601. | 69942. | 47:15 | 47:24 | 92. | 2 | 3.0 |
| 391.7931 | 47:28 | 271767. | 70416. | 47:24 | 47:36 | 92. | 2 | 3.0 |
| 391.7931 | 47:53 | 286819. | 76360. | 47:42 | 48:06 | 92. | 2 | 3.0 |
| 401.8358 | 47:20 | 633592. | 167675. | 47:13 | 47:23 | 67. | 2 | 3.0 |
| 401.8358 | 47:28 | 676510. | 173978. | 47:23 | 47:42 | 67. | 2 | 3.0 |
| 401.8358 | 47:52 | 643572. | 161899. | 47:42 | 48:05 | 67. | 2 | 3.0 |
| 403.8327 | 47:19 | 497115. | 134480. | 47:12 | 47:23 | 81. | 2 | 3.0 |
| 403.8327 | 47:27 | 541950. | 139282. | 47:23 | 47:42 | 81. | 2 | 3.0 |
| 403.8327 | 47:52 | 507221. | 127207. | 47:45 | 48:03 | 81. | 2 | 3.0 |
| 373.8021 | 46:15 | 524128. | 150024. | 46:03 | 46:20 | 69. | 2 | 3.0 |
| 373.8021 | 46:24 | 503075. | 138651. | 46:20 | 46:31 | 69. | 2 | 3.0 |
| 373.8021 | 47:10 | 470545. | 133645. | 46:58 | 47:18 | 69. | 2 | 3.0 |
| 373.8021 | 48:11 | 402004. | 99273. | 48:05 | 48:15 | 69. | 2 | 3.0 |
| 373.8021 | 48:20 | 407426. | 101993. | 48:15 | 48:27 | 69. | 2 | 3.0 |
| 375.7990 | 46:15 | 413572. | 118687. | 46:08 | 46:20 | 68. | 2 | 3.0 |
| 375.7990 | 46:24 | 401243. | 109151. | 46:20 | 46:37 | 68. | 2 | 3.0 |
| 375.7990 | 47:10 | 380304. | 105484. | 46:59 | 47:17 | 68. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 375.7990 | 48:11 | 325570. | 84462. | 48:05 | 48:15 | 68. | 2 | 3.0 |
| 375.7990 | 48:20 | 330531. | 82779. | 48:15 | 48:36 | 68. | 2 | 3.0 |
| 383.8447 | 46:14 | 539499. | 156529. | 46:06 | 46:19 | 81. | 2 | 3.0 |
| 383.8447 | 46:23 | 538116. | 151481. | 46:19 | 46:39 | 81. | 2 | 3.0 |
| 383.8447 | 47:09 | 525678. | 145293. | 46:57 | 47:24 | 81. | 2 | 3.0 |
| 383.8447 | 48:10 | 431934. | 103993. | 48:03 | 48:23 | 81. | 2 | 3.0 |
| 385.8417 | 46:14 | 1012395. | 292507. | 46:06 | 46:19 | 124. | 2 | 3.0 |
| 385.8417 | 46:23 | 1011891. | 277825. | 46:19 | 46:34 | 124. | 2 | 3.0 |
| 385.8417 | 47:09 | 984602. | 275236. | 46:56 | 47:24 | 124. | 2 | 3.0 |
| 385.8417 | 48:10 | 846216. | 212012. | 48:04 | 48:25 | 124. | 2 | 3.0 |
| 423.7555 | 51:19 | 288181. | 63651. | 51:13 | 51:32 | 73. | 2 | 3.0 |
| 423.7555 | 52:30 | 271519. | 61262. | 52:14 | 52:41 | 73. | 2 | 3.0 |
| 425.7524 | 51:19 | 286989. | 63898. | 51:08 | 51:32 | 52. | 2 | 3.0 |
| 425.7524 | 52:30 | 259002. | 56281. | 52:14 | 52:45 | 52. | 2 | 3.0 |
| 435.7951 | 52:29 | 575323. | 128858. | 52:21 | 52:40 | 60. | 2 | 3.0 |
| 437.7921 | 52:29 | 551567. | 126171. | 52:21 | 52:42 | 58. | 2 | 3.0 |
| 407.7614 | 50:47 | 415738. | 93921. | 50:38 | 50:57 | 71. | 2 | 3.0 |
| 407.7614 | 53:07 | 343650. | 81033. | 53:00 | 53:20 | 71. | 2 | 3.0 |
| 409.7583 | 50:47 | 396162. | 91053. | 50:41 | 50:59 | 65. | 2 | 3.0 |
| 409.7583 | 53:07 | 326157. | 76317. | 52:56 | 53:23 | 65. | 2 | 3.0 |
| 417.8041 | 50:46 | 354971. | 79226. | 50:35 | 50:59 | 58. | 2 | 3.0 |
| 417.8041 | 53:06 | 296821. | 67220. | 52:59 | 53:18 | 58. | 2 | 3.0 |
| 419.8010 | 50:46 | 766271. | 169925. | 50:38 | 50:59 | 57. | 2 | 3.0 |
| 419.8010 | 53:06 | 654958. | 149855. | 52:59 | 53:22 | 57. | 2 | 3.0 |
| 457.7148 | 56:47 | 432998. | 120130. | 56:41 | 57:02 | 62. | 2 | 3.0 |
| 459.7118 | 56:47 | 494333. | 136033. | 56:40 | 57:00 | 65. | 2 | 3.0 |
| 469.7545 | 56:46 | 867412. | 236353. | 56:39 | 57:02 | 61. | 2 | 3.0 |
| 471.7514 | 56:46 | 964475. | 267446. | 56:40 | 56:58 | 77. | 2 | 3.0 |
| 441.7207 | 56:56 | 532376. | 134701. | 56:49 | 57:12 | 61. | 2 | 3.0 |
| 443.7177 | 56:56 | 578236. | 150861. | 56:45 | 57:12 | 69. | 2 | 3.0 |

# Standards Data
# DB-225 Column

# STL Knoxville Dioxin GC/MS Initial Calibration Data Review / Narrative Checklist
## Method: 1613B - KNOX-ID-0004-R1

| PFK Date/Time: | 11/19/02 14:57 | Inst: | UT905 | Win Filename: | ~~f021119w2 NA~~ USD 11/21/02 | Col Perf Filename: | f021119w2 |
|---|---|---|---|---|---|---|---|

| CS1 Filename | CS2 Filename | CS3 Filename | CS4 Filename | CS5 Filename |
|---|---|---|---|---|
| f021119i1 | f021119i2 | f021119i3 | f021119i4 | f021119i5 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented before beginning the initial calibration? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | ✓ | | | | ✓ |
| 5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 6. Were the five calibration standard solutions, at the concentrations specified in the SOP, analyzed? | | ✓ | | | ✓ |
| 7. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula. | | ✓ | | | ✓ |
| 9. Are %RSD ≤20% for all unlabeled native analytes except 1,2,3,7,8,9-HxCDD and OCDF? | | ✓ | | | ✓ |
| 10. Are %RSD ≤35% for 1,2,3,7,8,9-HxCDD and OCDF and all labeled internal standards ? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | | ✓ | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard. | | ✓ | | | ✓ |

| Analyst: [signature] | Date: 11/21/02 | 2nd Level Reviewer : VMK | Date: 11-22-02 |
|---|---|---|---|
| Comments: | | Comments: | |

Note: RRT for $Cl^{37}$ does not apply. per EPA

# STL Knoxville Specialty Organics GC/MS Initial Calibration Data Review / Narrative Checklist

## Methods: 8290/23 - KNOX-ID-0003, Rev. 5

| PFK Date/Time: | 11/19/02 14:37 | Inst: | HRMS | Win Filename: | NA | Col Perf Filename: | f021119w2 |
|---|---|---|---|---|---|---|---|

| CS1 Filename | CS2 Filename | CS3 Filename | CS4 Filename | CS5 Filename |
|---|---|---|---|---|
| f021119i1 | f021119i2 | f021119i3 | f021119i4 | f021119i5 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented before beginning the initial calibration? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | ✓ | | | | ✓ |
| 5. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 6. Were the five calibration standard solutions, at the concentrations specified in the SOP, analyzed? | | ✓ | | | ✓ |
| 7. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound, quantitation ions, and formula. | | ✓ | | | ✓ |
| 9. Are %RSD ≤20% for all unlabeled native analytes? | | ✓ | | | ✓ |
| 10. Are %RSD ≤30% for all labeled internal standards? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the specified control limits? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | | ✓ | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the ICAL folder contain **complete** data in the following order? Data review checklist, a **complete** runlog, Avg. %RSD summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation, and Total RIC, EICP's and manual integration - for window and all standards, in order from low to high standard. | | ✓ | | | ✓ |

| Analyst: | Date: | 2nd Level Reviewer : | Date: |
|---|---|---|---|
| Comments: | | Comments: | |

## Skerlich, Melissa

**From:** Thal, David
**Sent:** Friday, November 01, 2002 12:49 PM
**To:** Khounlavong, V; Gobich, Dan; Nordquist, Jon; Skerlich, Melissa; Meehan, Nena; Mills, Shell; Parsly, Trish
**Subject:** FW: RRT for 2,3,7,8-TCDF

... From the horse's mouth.

-----Original Message-----
From: Dale Rushneck [mailto:dale.rushneck@attbi.com]
Sent: Friday, November 01, 2002 12:19 PM
To: Thal, David
Subject: Re: RRT for 2,3,7,8-TCDF

Hi David

To use your words, it goes without saying that the RRT requirements in Table 2 apply to the DB-5 column only.

It is strange that nowhere in the method do we specify that the requirements in Table 2 apply to the DB-5 column only. It's likely because everyone understands that you analyze all seventeen 2,3,7,8- congeners on DB-5 but only 2,3,7,8-TCDF on DB-225 so, if there are specs for all seventeen 2,3,7,8- congeners, why would you apply them to the 2,3,7,8- furan only. Somewhat like forgetting to tell you to turn on the mass spectrometer.

I've added the oversight to my list of fixes for M 1613. There's no plan to revise M 1613 at present but, if we do; we'll footnote Table 2 to state that the specs apply to the DB-5 column.

Thanks

Dale

dale.rushneck@attbi.com
Phone: 970-223-2013
Fax: 970-223-2008

----- Original Message -----
From: <dthal@stl-inc.com>
To: <dale.rushneck@attbi.com>
Sent: Friday, November 01, 2002 9:45 AM

Hi Dale,

I wonder if you could check our thinking here.

Is it safe to say that the relative retention time windows shown in Table 2 of 1613B apply to the DB-5 column only, and not to a DB-225 TCDF confirmation? (Our DB-225 analysis does meet the 15 minute minimum requirement, but doesn't meet the Table 2 requirements.) Although it doesn't seem to be exploit in the method, we think it goes without saying, that those criteria can only be applied to the DB-5. (Please forgive if this seems trivial or legalistic. We have to answer to some very rigid auditors.)

Your help is always appreciated.

DT

David Thal

Specialty Organics Manager

Severn Trent Knoxville

5815 Middlebrook Pike

Knoxville, Tennessee 37921

Phone 865 291 3000

Facsimile 865 584 4315

Mobile 865 548 7631

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F by EPA Method 1613B - DB-225*

**Date:** 11/19/02 3:49:05PM

**Method:** DX1613_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| CS2: | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| CS3: | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| CS4: | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| CS5: | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Response Factors**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | %Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.169 | 1.075 | 1.033 | 1.012 | 1.020 | 1.062 | 6.1 | 20.0 | True |
| 2,3,7,8-TCDF | 1.095 | 0.886 | 0.905 | 0.882 | 0.925 | 0.939 | 9.3 | 30.0 | True |
| 37Cl4-2,3,7,8-TCDD | 1.236 | 1.123 | 1.087 | 1.061 | 1.123 | 1.126 | 5.9 | 35.0 | True |
| 13C-2,3,7,8-TCDD | 1.137 | 1.099 | 1.076 | 1.086 | 1.087 | 1.097 | 2.2 | 35.0 | True |
| 13C-2,3,7,8-TCDF | 1.551 | 1.492 | 1.439 | 1.407 | 1.416 | 1.461 | 4.1 | 35.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | | |

WSD 11/21/02

VMK 11.21.02

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***TCDD/F by EPA Method 1613B - DB-225***

SEVERN TRENT SERVICES

**Date:** 11/19/02 3:49:05PM

**Method:** DX1613_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| **CS2:** | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| **CS3:** | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| **CS4:** | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| **CS5:** | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Ion Abundance Ratios**

| Analyte | M/Z's | CS1 | CS2 | CS3 | CS4 | CS5 | Ratio Limits | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.70 | 0.77 | 0.80 | 0.77 | 0.77 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.74 | 0.86 | 0.79 | 0.77 | 0.77 | 0.65-0.89 | True |
| 37Cl4-2,3,7,8-TCDD | M | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.80 | 0.78 | 0.80 | 0.79 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.78 | 0.79 | 0.79 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.80 | 0.82 | 0.81 | 0.80 | 0.80 | 0.65-0.89 | True |

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F by EPA Method 1613B - DB-225*

SEVERN TRENT

**Date:** 11/19/02 3:49:05PM

**Method:** DX1613_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| CS2: | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| CS3: | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| CS4: | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| CS5: | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.001 | 1.001 | 1.002 | 1.001 | 0.999-1.002 | True |
| 2,3,7,8-TCDF | 1.002 | 1.002 | 1.001 | 1.001 | 1.001 | 0.999-1.003 | True |
| 37Cl4-2,3,7,8-TCDD | 0.980 | 0.979 | 0.980 | 0.980 | 0.980 | 0.989-1.052 | False * |
| 13C-2,3,7,8-TCDD | 0.979 | 0.979 | 0.979 | 0.978 | 0.979 | 0.976-1.043 | True |
| 13C-2,3,7,8-TCDF | 1.081 | 1.080 | 1.082 | 1.081 | 1.082 | 0.923-1.103 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000-1.000 | True |

* RRT limits for $Cl^{37}$ from totals Rtx-5 analysis does not apply to DB-225 column.

STL - Knoxville

# IsoCalc Initial Calibration Report

***TCDD/F by EPA Method 8290 - DB-225***

SEVERN TRENT SERVICES

**Date:** 11/19/02 3:49:05PM

**Method:** DX8290_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| **CS2:** | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| **CS3:** | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| **CS4:** | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| **CS5:** | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Response Factors**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.169 | 1.075 | 1.033 | 1.012 | 1.020 | 1.062 | 6.1 | 20.0 | True |
| 2,3,7,8-TCDF | 1.095 | 0.886 | 0.905 | 0.882 | 0.925 | 0.939 | 9.5 | 20.0 | True |
| 37Cl4-2,3,7,8-TCDD | 1.236 | 1.123 | 1.087 | 1.061 | 1.123 | 1.126 | 5.9 | 30.0 | True |
| 13C-2,3,7,8-TCDD | 1.137 | 1.099 | 1.076 | 1.086 | 1.087 | 1.097 | 2.2 | 30.0 | True |
| 13C-2,3,7,8-TCDF | 1.551 | 1.492 | 1.439 | 1.407 | 1.416 | 1.461 | 4.1 | 30.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | | |

MSD 11/21/02

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F by EPA Method 8290 - DB-225*

720

SEATRN TRENT

Date: 11/19/02 3:49:05PM

Method: DX8290_Conf

Instrument: M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| CS2: | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| CS3: | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| CS4: | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| CS5: | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

## Ion Abundance Ratios

| Analyte | M/Z's | CS1 | CS2 | CS3 | CS4 | CS5 | Ratio Limits | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.70 | 0.77 | 0.80 | 0.77 | 0.77 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.74 | 0.86 | 0.79 | 0.77 | 0.77 | 0.65-0.89 | True |
| 37Cl4-2,3,7,8-TCDD | M | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.80 | 0.78 | 0.80 | 0.79 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.78 | 0.79 | 0.79 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.80 | 0.82 | 0.81 | 0.80 | 0.80 | 0.65-0.89 | True |

**STL - Knoxville**

# IsoCalc Initial Calibration Report

***TCDD/F by EPA Method 8290 - DB-225***

SEVERN TRENT SERVICES

**Date:** 11/19/02 3:49:05PM

**Method:** DX8290_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| **CS2:** | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| **CS3:** | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| **CS4:** | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| **CS5:** | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.001 | 1.001 | 1.002 | 1.001 | - | |
| 2,3,7,8-TCDF | 1.002 | 1.002 | 1.001 | 1.001 | 1.001 | - | |
| 37Cl4-2,3,7,8-TCDD | 0.980 | 0.979 | 0.980 | 0.980 | 0.980 | - | |
| 13C-2,3,7,8-TCDD | 0.979 | 0.979 | 0.979 | 0.978 | 0.979 | - | |
| 13C-2,3,7,8-TCDF | 1.081 | 1.080 | 1.082 | 1.081 | 1.082 | - | |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |

STL - Knoxville

# IsoCalc Initial Calibration Report

*TCDD/F by EPA Method 23 - DB-225*

SEVERN TRENT

Date: 11/19/02 3:49:05PM

Method: DX23_Conf

Instrument: M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| CS2: | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| CS3: | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| CS4: | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| CS5: | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

Response Factors

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | Mean RF | %RSD | Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.169 | 1.075 | 1.033 | 1.012 | 1.020 | 1.062 | 6.1 | 20.0 | True |
| 2,3,7,8-TCDF | 1.095 | 0.886 | 0.905 | 0.882 | 0.925 | 0.938 | 9.5 | 20.0 | True |
| 37Cl4-2,3,7,8-TCDD | 1.236 | 1.123 | 1.087 | 1.061 | 1.123 | 1.126 | 5.9 | 30.0 | True |
| 13C-2,3,7,8-TCDD | 1.137 | 1.099 | 1.076 | 1.086 | 1.087 | 1.097 | 2.2 | 30.0 | True |
| 13C-2,3,7,8-TCDF | 1.551 | 1.492 | 1.439 | 1.407 | 1.416 | 1.461 | 4.1 | 30.0 | True |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | 0.0 | | |

MSD 11/21/02

VMC 11/22/02

**STL - Knoxville** **IsoCalc Initial Calibration Report**

***TCDD/F by EPA Method 23 - DB-225***

SEVERN TRENT SERVICES

**Date:** 11/19/02 3:49:05PM

**Method:** DX23_Conf

**Instrument:** M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| **CS1:** | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| **CS2:** | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| **CS3:** | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| **CS4:** | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| **CS5:** | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

| | | Ion Abundance Ratios | | | | | | |
|---|---|---|---|---|---|---|---|---|
| **Analyte** | **M/Z's** | **CS1** | **CS2** | **CS3** | **CS4** | **CS5** | **Ratio Limits** | **Valid?** |
| 2,3,7,8-TCDD | M/M+2 | 0.70 | 0.77 | 0.80 | 0.77 | 0.77 | 0.65-0.89 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.74 | 0.86 | 0.79 | 0.77 | 0.77 | 0.65-0.89 | True |
| 37Cl4-2,3,7,8-TCDD | M | 0.00 | 0.00 | 0.00 | 0.00 | 0.00 | | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.80 | 0.78 | 0.80 | 0.79 | 0.65-0.89 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.78 | 0.79 | 0.79 | 0.79 | 0.78 | 0.65-0.89 | True |
| 13C-1,2,3,4-TCDD | M/M+2 | 0.80 | 0.82 | 0.81 | 0.80 | 0.80 | 0.65-0.89 | True |

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# IsoCalc Initial Calibration Report

*TCDD/F by EPA Method 23 - DB-225*

STL TRENT

Date: 11/19/02 3:49:05PM

Method: DX23_Conf

Instrument: M3C

| Level | Filename | Analysis Date/Time |
|---|---|---|
| CS1: | /20021119i/021119i1.d | 11/19/02 3:49:05PM |
| CS2: | /20021119i/021119i2.d | 11/19/02 4:20:22PM |
| CS3: | /20021119i/021119i3.d | 11/19/02 4:51:38PM |
| CS4: | /20021119i/021119i4.d | 11/19/02 5:22:54PM |
| CS5: | /20021119i/021119i5.d | 11/19/02 5:54:09PM |

**Relative Retention Time**

| Analyte | CS1 | CS2 | CS3 | CS4 | CS5 | RRT Limits | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 1.001 | 1.001 | 1.001 | 1.002 | 1.001 | - | |
| 2,3,7,8-TCDF | 1.002 | 1.002 | 1.001 | 1.001 | 1.001 | - | |
| 37Cl4-2,3,7,8-TCDD | 0.980 | 0.979 | 0.980 | 0.980 | 0.980 | - | |
| 13C-2,3,7,8-TCDD | 0.979 | 0.979 | 0.979 | 0.978 | 0.979 | - | |
| 13C-2,3,7,8-TCDF | 1.081 | 1.080 | 1.082 | 1.081 | 1.082 | - | |
| 13C-1,2,3,4-TCDD | 1.000 | 1.000 | 1.000 | 1.000 | 1.000 | - | |

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# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B - DB-225*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS1 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20021119i/021119i1.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 65988 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 11/19/02 15:49 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M3C | **Extract Vol** | | **Method** | DX1613_Conf |
| **Analyst** | MAS | **Diluton Factor** | 1.00 | **Code** | L1c |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9020** | **305.8990** | **303.9020** | **305.8990** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 93 | 110 | 37 | 44 | 0.84 | / | |
| | 2,3,7,8-TCDF | 18:21 | 00:00 | 0 | 3386 | 4572 | ✓ 574 | 794 | 0.74 | MVB/ABB | M |
| **316** | | | | | **315.9420** | **317.9390** | **315.9420** | **317.9390** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 193 | 160 | 77 | 64 | 1.20 * | / | |
| | 13C-2,3,7,8-TCDF | 18:19 | 00:00 | 0 | 637531 | 815817 | ✓ 128361 | 163688 | 0.78 | AVV/ABV | D |
| **320** | | | | | **319.8970** | **321.8940** | **319.8970** | **321.8940** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 93 | 133 | 37 | 53 | 0.70 | / | |
| | 2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 2561 | 3664 | ✓ 566 | 761 | 0.70 | ABB/MBB | |
| **328** | | | | | **327.8850** | | **327.8850** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | | 50 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 5791 | ✓ | 1275 | | | MBV | |
| **332** | | | | | **331.9370** | **333.9340** | **331.9370** | **333.9340** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 133 | 74 | 53 | 1.40 * | / | |
| | 13C-2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 470001 | 595239 | ✓ 95074 | 121645 | 0.79 | ABV/ABV | M |
| | 13C-1,2,3,4-TCDD | 16:57 | 00:00 | 0 | 415857 | 521014 | ✓ 86432 | 113850 | 0.80 | AVV/AVV | M |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B - DB-225*

SEVERN TRENT

| | | | | | |
|---|---|---|---|---|---|
| Workorder | 2427:46CS2 | Prep Batch | | Lot No | |
| Data File | /20021119i/021119i2.d | Prep Date | | SDG No | |
| IDB ID | 65990 | Prep Exp Date | | Date Received | |
| Analysis Date | 11/19/02 16:20 | Matrix | UNKNOWN | Date Sampled | |
| Anal Exp Date | | Initial Wt/Vol | | Lims Test Code | |
| Instrument | M3C | Extract Vol | | Method | DX1613_Conf |
| Analyst | MAS | Diluton Factor | 1.00 | Code | 1Fr |

View Small Peaks? False  View Deleted Peaks? False

| Mass | Peak Name | RT | Dred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9020** | **305.8990** | **303.9020** | **305.8990** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 80 | 90 | 32 | 36 | 0.89 | / | |
| | 2,3,7,8-TCDF | 18:20 | 00:00 | 0 | 9846 | 11428 ✓ | 1886 | 2102 | 0.86 | AAB/AAB | M |
| **316** | | | | | **315.9420** | **317.9390** | **315.9420** | **317.9390** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 165 | 69 | 66 | 1.05 * | / | |
| | 13C-2,3,7,8-TCDF | 18:18 | 00:00 | 0 | 529459 | 670485 ✓ | 106884 | 134390 | 0.79 | AVV/AVV | |
| **320** | | | | | **319.8970** | **321.8940** | **319.8970** | **321.8940** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 180 | 55 | 72 | 0.76 | / | |
| | 2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 8295 | 10704 ✓ | 1792 | 3148 | 0.77 | AAB/AAB | |
| **328** | | | | | **327.8850** | | **327.8850** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 140 | | 56 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 18058 ✓ | | 3607 | | | AAB | |
| **332** | | | | | **331.9370** | **333.9340** | **331.9370** | **333.9340** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 150 | 67 | 60 | 1.12 * | / | |
| | 13C-2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 393145 | 490740 ✓ | 85411 | 105419 | 0.80 | ABV/ABV | M |
| | 13C-1,2,3,4-TCDD | 16:57 | 00:00 | 0 | 361977 | 442102 ✓ | 73603 | 89128 | 0.82 | AVV/AVV | M |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not Reported O = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from cent = peak outside first/last X = peak has dup match

Printed: 11/21/02 14:30

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B - DB-225*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS3 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20021119i/021119i3.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 65991 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 11/19/02 16:51 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M3C | **Extract Vol** | | **Method** | DX1613_Conf |
| **Analyst** | MAS | **Diluton Factor** | 1.00 | **Code** | L1c |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9020** | **305.8990** | **303.9020** | **305.8990** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 85 | 98 | 34 | 39 | 0.87 | / | |
| | 2,3,7,8-TCDF | 18:21 | 00:00 | 0 | 48739 | 61607 ✓ | 9656 | 11439 | 0.79 | ABB/ABB | M |
| **316** | | | | | **315.9420** | **317.9390** | **315.9420** | **317.9390** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 205 | 170 | 82 | 68 | 1.21 * | / | |
| | 13C-2,3,7,8-TCDF | 18:20 | 00:00 | 0 | 539444 | 680160 ✓ | 109628 | 141437 | 0.79 | AVV/AVV | D |
| **320** | | | | | **319.8970** | **321.8940** | **319.8970** | **321.8940** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 210 | 69 | 84 | 0.82 | / | |
| | 2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 41950 | 52311 ✓ | 8266 | 11451 | 0.80 | ABB/ABB | |
| | Unidentified | 17:57 | 00:00 | 0 | 3388 | 2092 | 1075 | 611 | 1.62 * | ABB/ABB | RT |
| **328** | | | | | **327.8850** | | **327.8850** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 133 | | 53 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 92180 ✓ | | 19699 | | | ABV | |
| **332** | | | | | **331.9370** | **333.9340** | **331.9370** | **333.9340** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 193 | 148 | 77 | 59 | 1.31 * | / | |
| | 13C-2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 401265 | 511182 ✓ | 87065 | 109726 | 0.78 | ABV/ABV | M |
| | 13C-1,2,3,4-TCDD | 16:57 | 00:00 | 0 | 378535 | 469283 ✓ | 80713 | 99516 | 0.81 | AVV/AVV | M |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## TCDD/F by EPA Method 1613B - DB-225

| | | | | | |
|---|---|---|---|---|---|
| Workorder | 2427:46CS4 | Prep Batch | | Lot No | |
| Data File | /200211191/02111914.d | Prep Date | | SDG No | |
| IDB ID | 65992 | Prep Exp Date | | Date Received | |
| Analysis Date | 11/19/02 17:22 | Matrix | UNKNOWN | Date Sampled | |
| Anal Exp Date | | Initial Wt/Vol | | Lims Test Code | |
| Instrument | M3C | Extract Vol | | Method | DX1613_Cond |
| Analyst | MAS | Diluton Factor | 1.00 | Code | Lic |

View Small Peaks? False  View deleted peaks? False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9020** | **305.8990** | **303.9020** | **305.8990** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 105 | 125 | 42 | 50 | 0.84 | / | |
| | 2,3,7,8-TCDF | 18:20 | 00:00 | 0 | 177694 | 230732 ✓ | 34412 | 45784 | 0.77 | AVV/AVV | K |
| **316** | | | | | **315.9420** | **317.9390** | **315.9420** | **317.9390** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 200 | 185 | 80 | 74 | 1.08 * | / | |
| | 13C-2,3,7,8-TCDF | 18:19 | 00:00 | 0 | 510923 | 647304 ✓ | 101951 | 129738 | 0.79 | AVV/AVV | D |
| **320** | | | | | **319.8970** | **321.8940** | **319.8970** | **321.8940** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 198 | 69 | 79 | 0.87 | / | |
| | 2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 157072 | 204644 ✓ | 32452 | 44359 | 0.77 | AVV/AVV | M |
| | Unidentified | 17:56 | 00:00 | 0 | 1379 | 4679 | 727 | 1489 | 0.29 * | AVV/AVV | R |
| **328** | | | | | **327.8850** | | **327.8850** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | | 50 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 16:37 | 00:00 | 0 | 349420 ✓ | | 72154 | | | AVV | |
| **332** | | | | | **331.9370** | **333.9340** | **331.9370** | **333.9340** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 158 | 155 | 63 | 62 | 1.02 * | / | |
| | 13C-2,3,7,8-TCDD | 16:35 | 00:00 | 0 | 396783 | 497176 ✓ | 80778 | 102894 | 0.80 | AVV/AVV | M |
| | 13C-1,2,3,4-TCDD | 16:57 | 00:00 | 0 | 365343 | 457733 ✓ | 73662 | 96520 | 0.80 | AVV/AVV | M |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from cal W = peak outside first/last X = peak has dup match

**STL - Knoxville**

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B - DB-225*

SEVERN TRENT SERVICES

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2427:46CS5 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20021119i/021119i5.d | **Prep Date** | | **SDG No** | |
| **IDB ID** | 65993 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 11/19/02 17:54 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M3C | **Extract Vol** | | **Method** | DX1613_Conf |
| **Analyst** | MAS | **Diluton Factor** | 1.00 | **Code** | L1c |

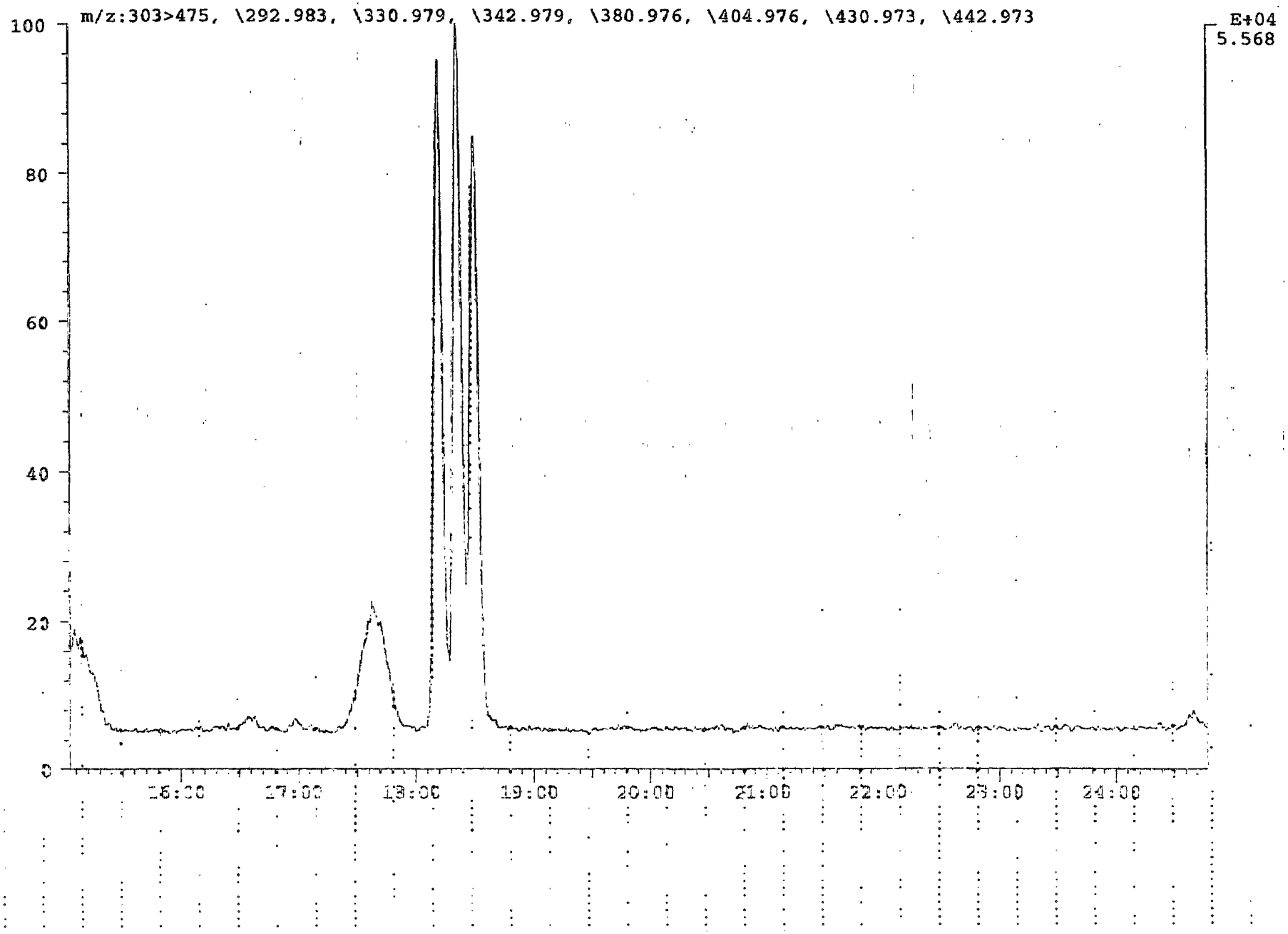
**View Small Peaks?** False **View deleted peaks?** False

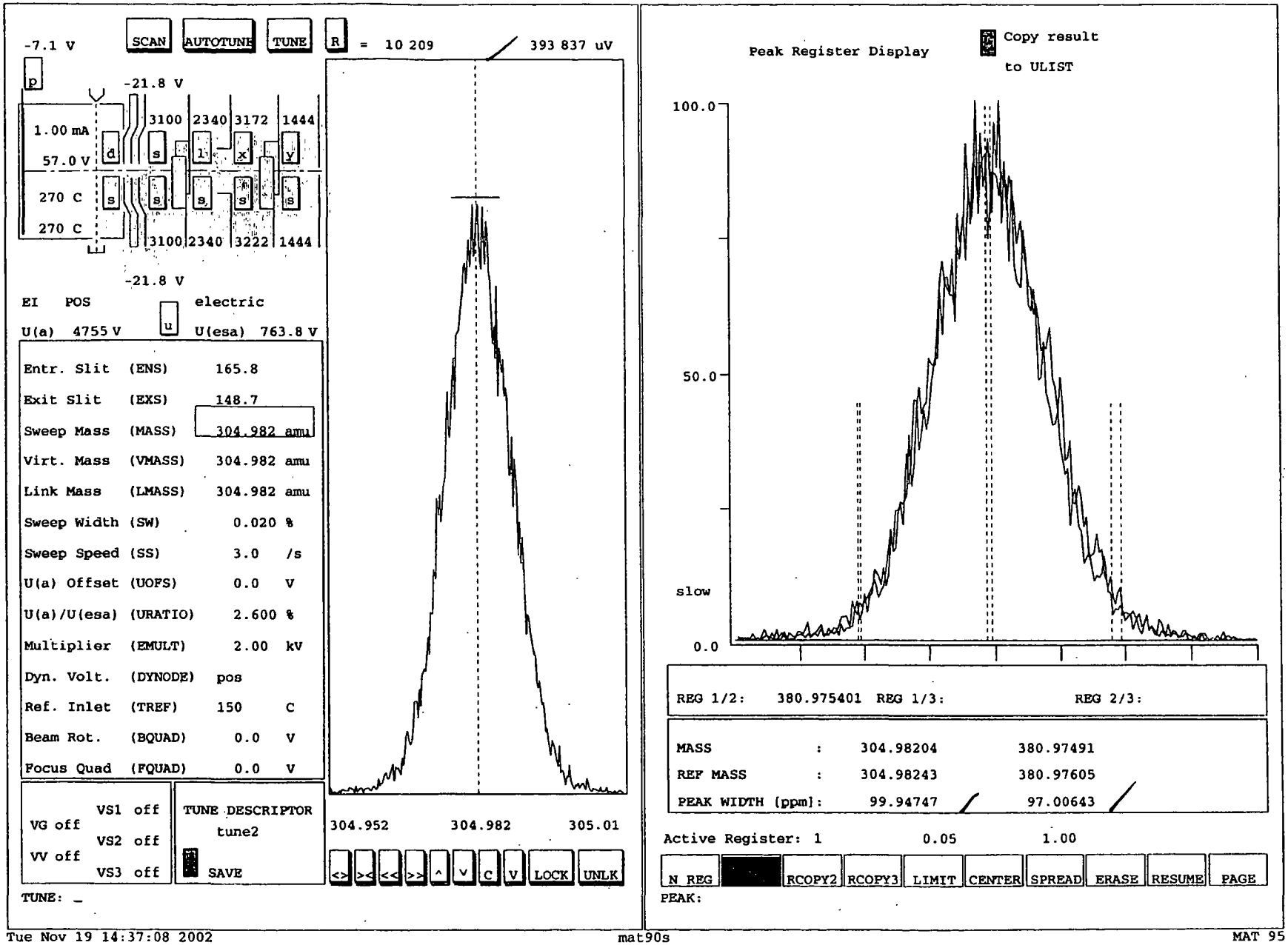
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9020** | **305.8990** | **303.9020** | **305.8990** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 143 | 66 | 57 | 1.16 * | / | |
| | 2,3,7,8-TCDF | 18:20 | 00:00 | 0 | 905909 | 1182708 ✓ | 183137 | 240163 | 0.77 | AVV/AVV | M |
| **316** | | | | | **315.9420** | **317.9390** | **315.9420** | **317.9390** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 175 | 64 | 70 | 0.91 * | / | |
| | 13C-2,3,7,8-TCDF | 18:19 | 00:00 | 0 | 495995 | 632792 ✓ | 97361 | 128489 | 0.78 | AVV/ABV | |
| **320** | | | | | **319.8970** | **321.8940** | **319.8970** | **321.8940** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 208 | 220 | 83 | 88 | 0.94 * | / | |
| | 2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 770296 | 997190 ✓ | 160629 | 209226 | 0.77 | ABV/ABV | |
| **328** | | | | | **327.8850** | | **327.8850** | | | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | | 57 | | | | |
| | 37Cl4-2,3,7,8-TCDD | 16:36 | 00:00 | 0 | 1790641 ✓ | | 374394 | | | ABV | |
| **332** | | | | | **331.9370** | **333.9340** | **331.9370** | **333.9340** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 178 | 183 | 71 | 73 | 0.97 * | / | |
| | 13C-2,3,7,8-TCDD | 16:35 | 00:00 | 0 | 382725 | 483576 ✓ | 80325 | 101406 | 0.79 | ABV/ABV | M |
| | 13C-1,2,3,4-TCDD | 16:56 | 00:00 | 0 | 354553 | 442481 ✓ | 76743 | 95130 | 0.80 | AVV/AVV | M |

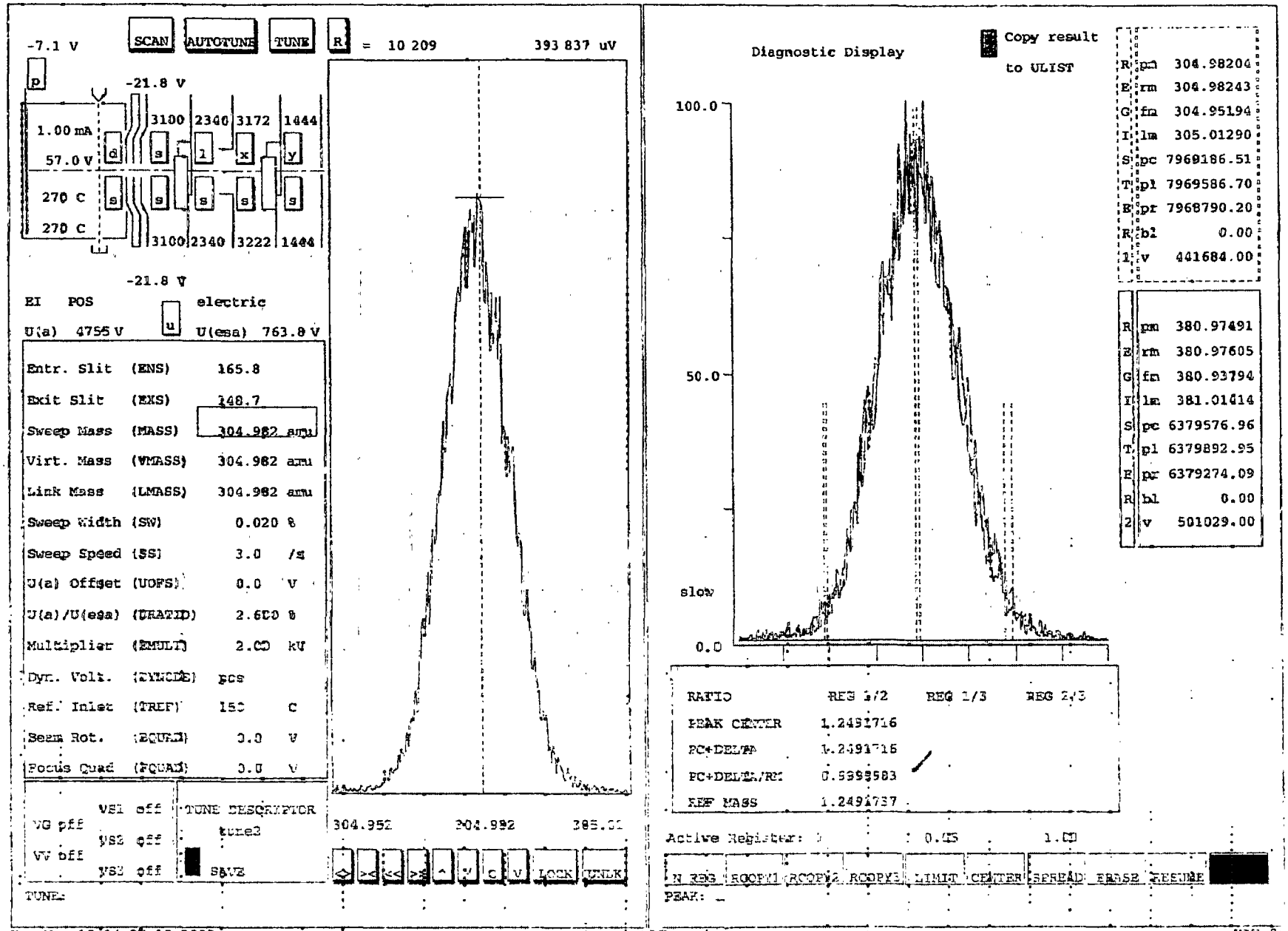
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: f021119w2 19-Nov-02 Elapse: 18:33.2 593
Samp: Vial 1 WO=1009:59 Meth=INc Dil=1 Start : 14:39:15 1152
Comm: Inst=m3c/2366222 Batch=20021119wi Ccal=20021016i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: MSD Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 396 > 943 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

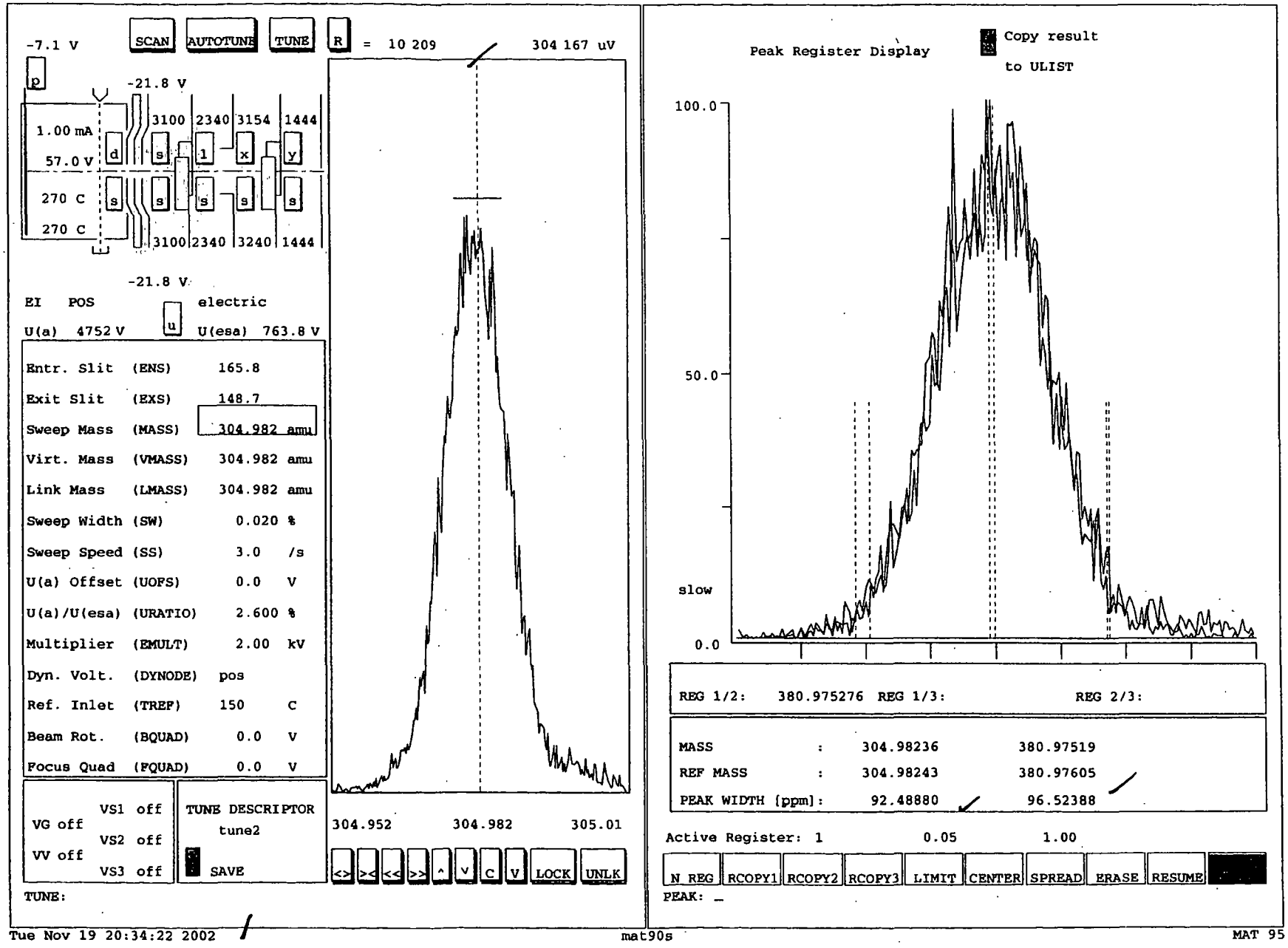
Jul, Calc MSD 11-19-02
QC VMIC 11.21.02

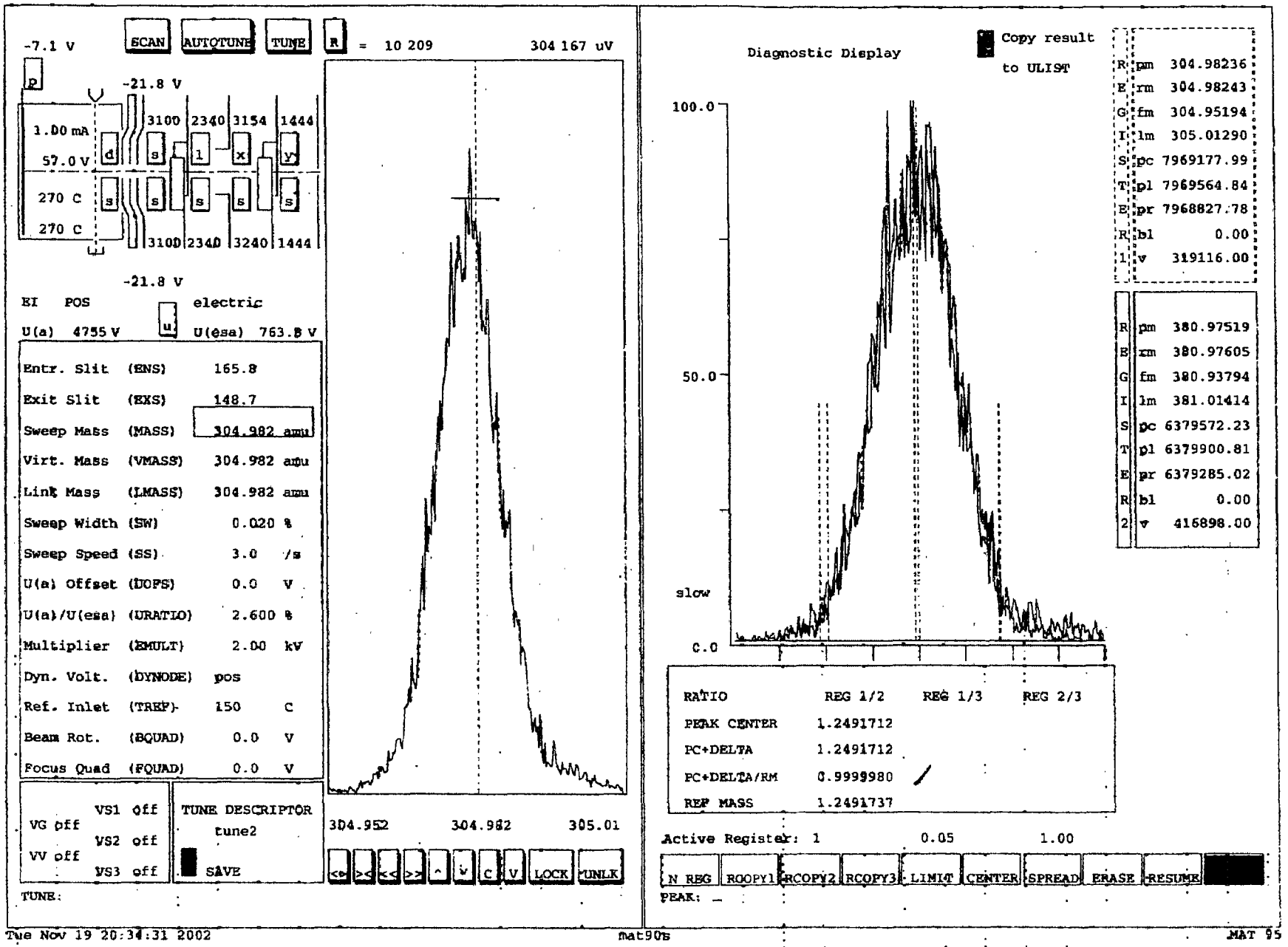



-7.1 V
SCAN
AUTOTUNE
TUNE
R
= 10 209
393 837 uV
-21.8 V
1.00 mA
57.0 V
270 C
270 C
3100 2340 3172 1444
3100 2340 3222 1444
-21.8 V
EI POS
electric
U(a) 4755 V
U(esa) 763.8 V
Entr. Slit (ENS) 165.8
Exit Slit (EXS) 148.7
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 0.0 V
U(a)/U(esa) (URATIO) 2.600 %
Multiplier (EMULT) 2.00 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VS1 off
VS2 off
VV off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE: _
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975401 REG 1/3: REG 2/3:
MASS : 304.98204 380.97491
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 99.94747 97.00643
Active Register: 1 0.05 1.00
N REG
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PAGE
PEAK:
Tue Nov 19 14:37:08 2002
mat90s
MAT 95

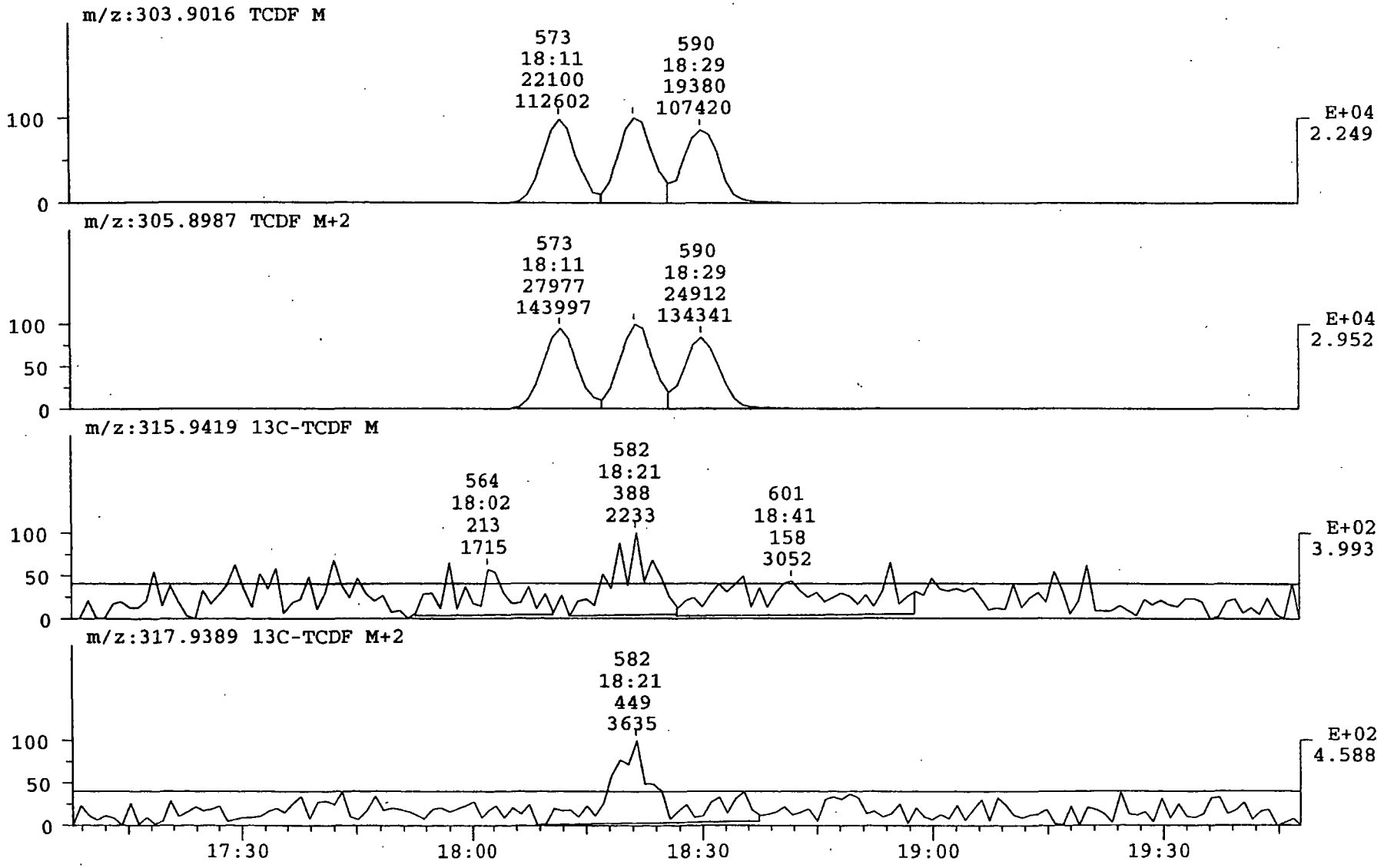


-7.1 V
SCAN
AUTOTUNE
TUNE
R = 10 209
393 837 uV
-21.8 V
1.00 mA
57.0 V
270 C
270 C
3100 2340 3172 1444
3100 2340 3222 1444
-21.8 V
EI POS
electric
U(a) 4755 V
U(esa) 763.8 V
Entr. Slit (ENS) 165.8
Exit Slit (EXS) 148.7
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 0.0 V
U(a)/U(esa) (URATIO) 2.600 %
Multiplier (EMULT) 2.00 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (EQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VS1 off
VS2 off
VV off
VS3 off
TUNE DESCRIPTOR
tune3
SAVE
304.952
304.992
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
R pm 304.98204
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969186.51
T pl 7969586.70
E pr 7968790.20
R bl 0.00
1 v 441684.00
R pm 380.97491
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379576.96
T pl 6379892.95
E pr 6379274.09
R bl 0.00
2 v 501029.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491716
PC+DELTA 1.2491716
PC+DELTA/RM 0.9999583
REF MASS 1.2491737
Active Register: 1 0.05 1.00
N REG RCOPY1 RCOPY2 RCOPY3 LIMIT CENTER SPREAD ERASE RESUME
PEAK:
Tue Nov 19 14:37:18 2002

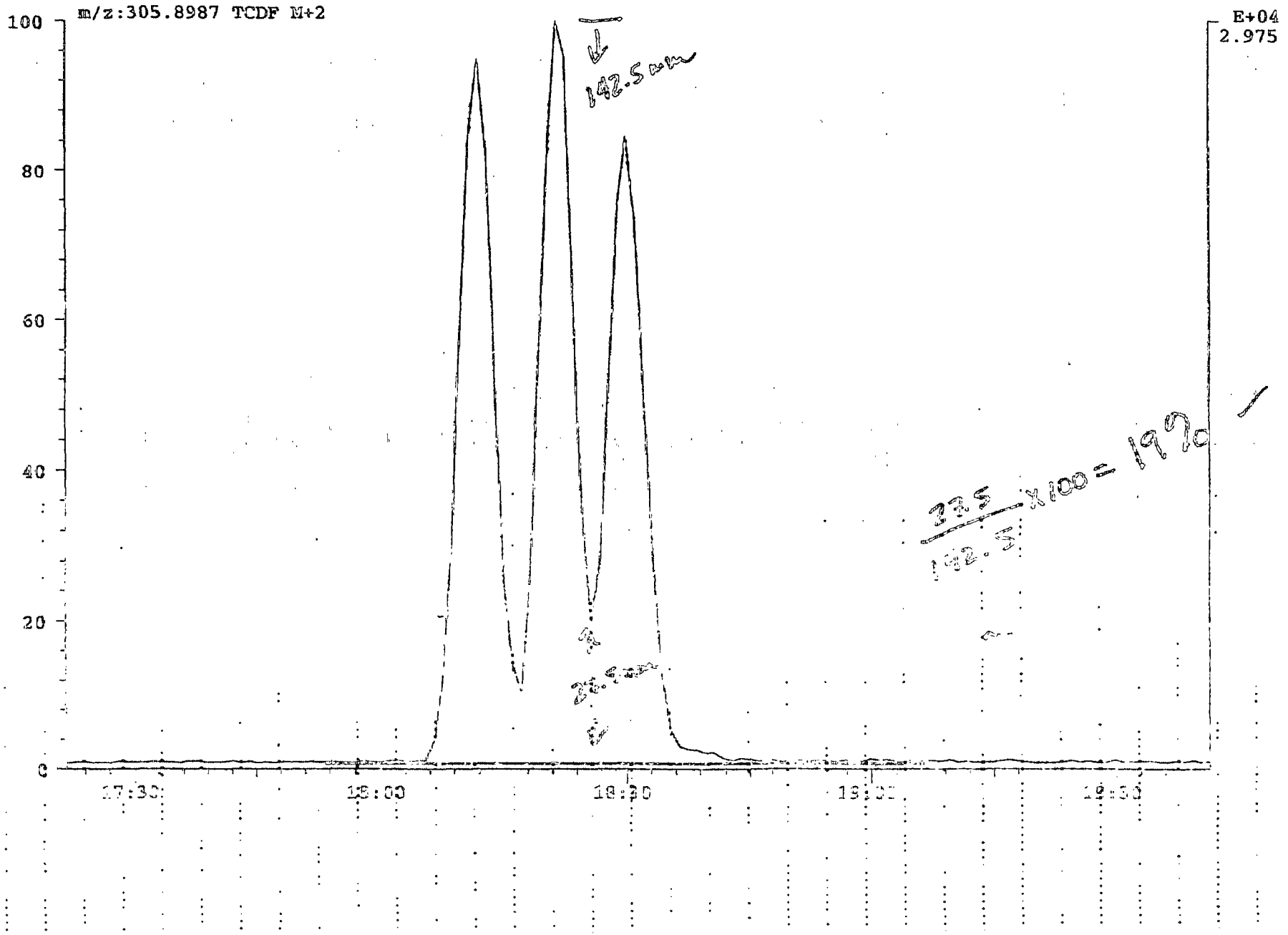

-7.1 V
SCAN
AUTOTUNE
TUNE
R
= 10 209
304 167 uV
p
-21.8 V
1.00 mA
57.0 V
270 C
270 C
3100 2340 3154 1444
3100 2340 3240 1444
d
s
l
x
y
-21.8 V
EI POS
electric
U(a) 4752 V
U(esa) 763.8 V
Entr. Slit (ENS) 165.8
Exit Slit (EXS) 148.7
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 0.0 V
U(a)/U(esa) (URATIO) 2.600 %
Multiplier (EMULT) 2.00 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VS1 off
VS2 off
VV off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
<>
><
<<
>>
^
v
C
V
LOCK
UNLK
TUNE:
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975276 REG 1/3: REG 2/3:
MASS : 304.98236 380.97519
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 92.48880 96.52388
Active Register: 1 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Tue Nov 19 20:34:22 2002
mat90s
MAT 95


-7.1 V
SCAN
AUTOTUNE
TUNE
R
= 10 209
304 167 uV
-21.8 V
1.00 mA
57.0 V
270 C
270 C
3100
2340
3154
1444
-21.8 V
EI POS
electric
U(a) 4755 V
U(esa) 763.8 V
Entr. Slit (ENS) 165.8
Exit Slit (EXS) 148.7
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 0.0 V
U(a)/U(esa) (URATIO) 2.600 %
Multiplier (EMULT) 2.00 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result
to ULIST
100.0
50.0
0.0
slow
R pm 304.98236
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969177.99
T pl 7969564.84
E pr 7968827.78
R bl 0.00
1 v 319116.00
R pm 380.97519
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379572.23
T pl 6379900.81
E pr 6379285.02
R bl 0.00
2 v 416898.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491712
PC+DELTA 1.2491712
PC+DELTA/RM 0.9999980
REF MASS 1.2491737
Active Register: 1 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK:
Tue Nov 19 20:34:31 2002
mat90s
MAT 95

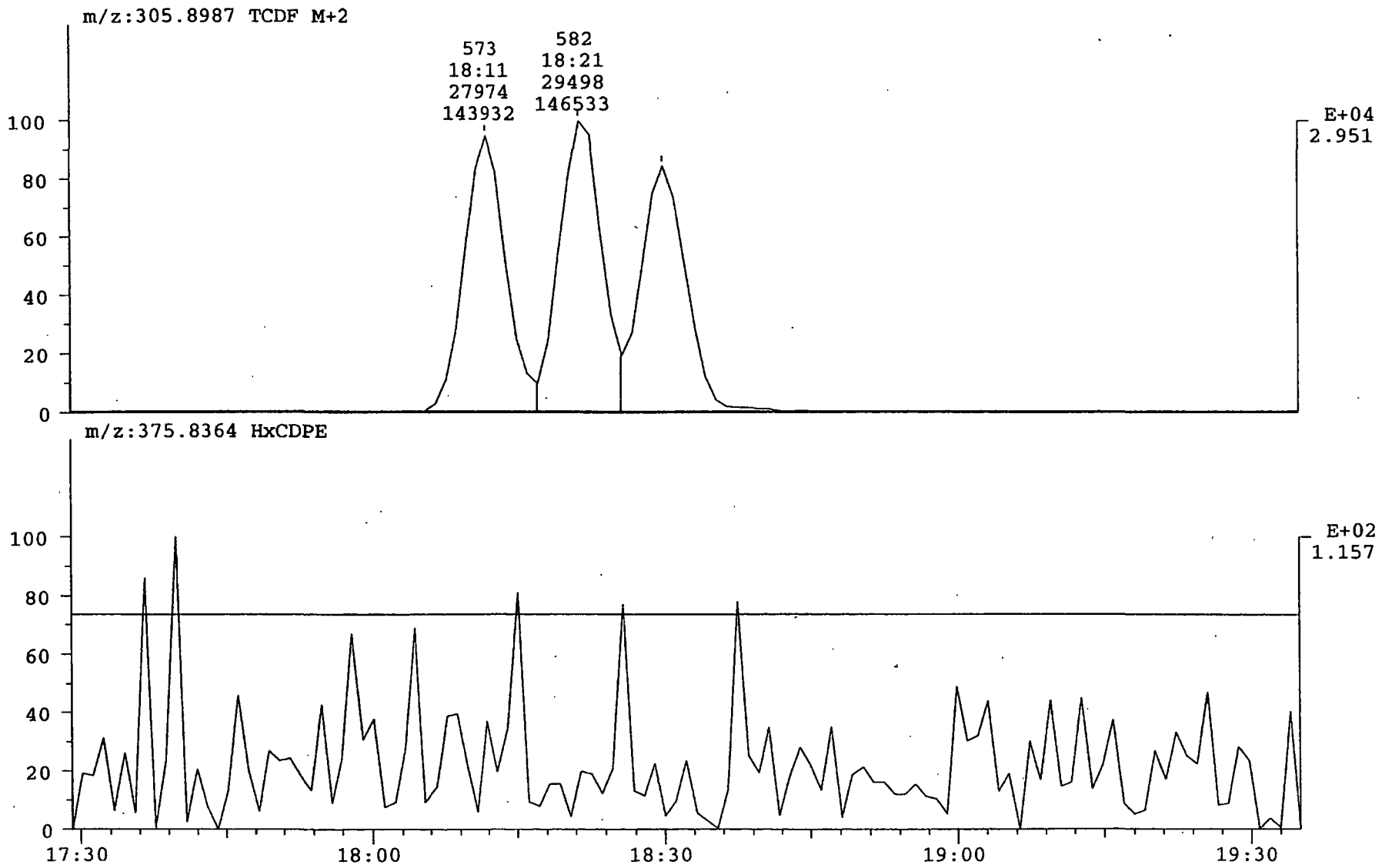
CHRO: f021119w2 19-Nov-02 Elapse: 18:33.2 593
Samp: Vial 1 WO=1009:59 Meth=INc Dil=1 Start : 14:39:15 1152
Comm: Inst=m3c/2366222 Batch=20021119w1 Ccal=20021016i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: MSD Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



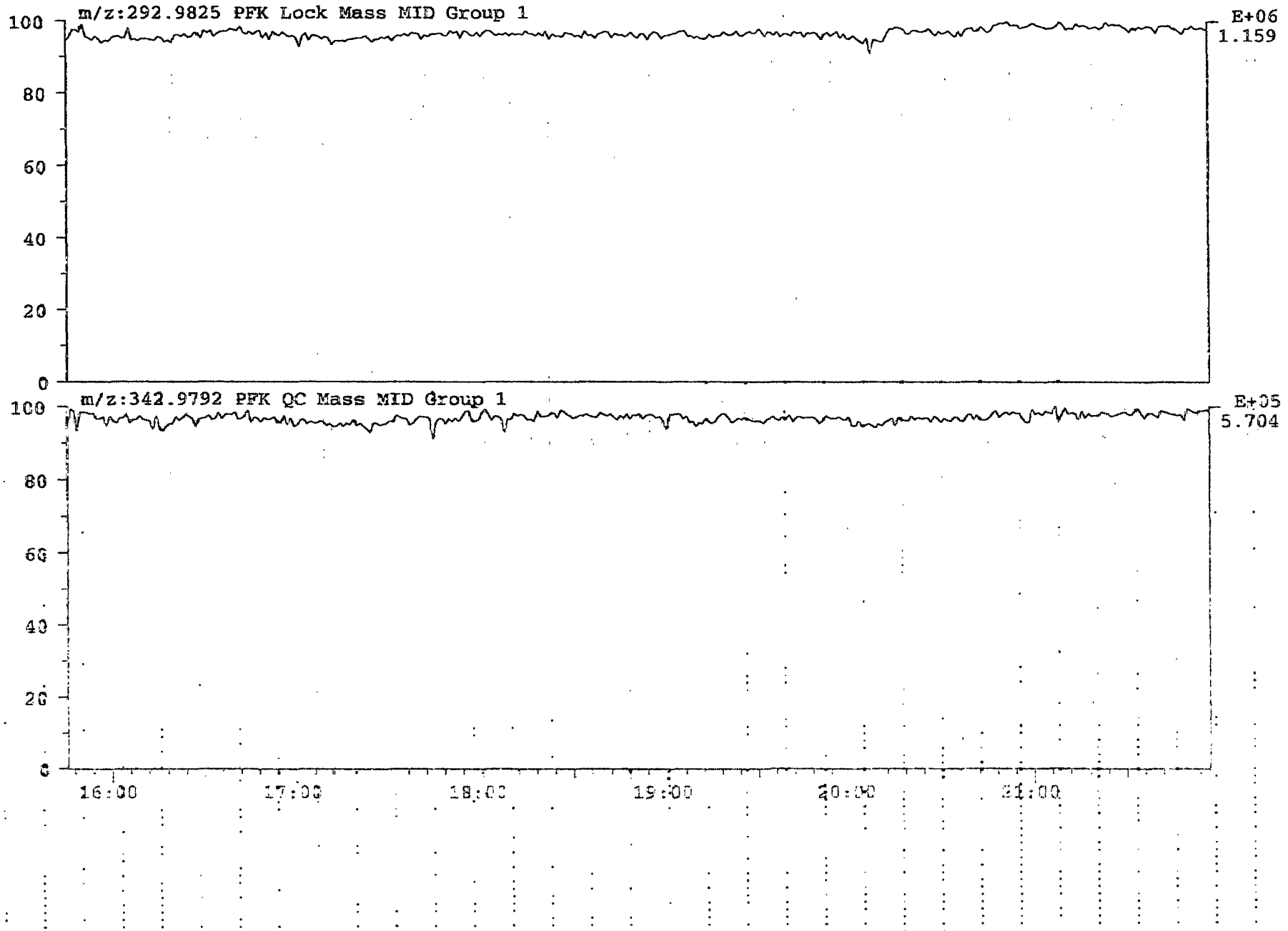
CHRO: f021119w2 19-Nov-02 Elapse: 18:33.2 593
Samp: Vial 1 WO=1009:59 Meth=LNc Dil=1 Start : 14:39:15 1152
Comm: Inst=m3c/2366222 Batch=20021119w1 Ccal=20021016i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: MSD Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 526 > 657 Masses: 293 > 376
Area: 0, 0.50, 0 Baseline : 100, 3 Label : 0, 2.5



```
CHRO:  f021119w2                              19-Nov-02   Elapse:  18:33.2      593
Samp:  Vial 1 WO=1009:59 Meth=INc Dil=1                   Start :  14:39:15    1152
Comm:  Inst=m3c/2366222 Batch=20021119w1 Ccal=20021016i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Col Perf
Oper:  MSD          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   533 > 651            Masses:  293 > 376
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  -3, 2.5
Disp:  Height  Area
```



CHRO: f021119w2 19-Nov-02 Elapse: 18:33.2 593
Samp: Vial 1 WO=1009:59 Meth=LNc Dil=1 Start : 14:39:15 1152
Comm: Inst=m3c/2366222 Batch=20021119w1 Ccal=20021016i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: MSD Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119w2
Study: Col Perf
Sample: WO=1009:59 Meth=INc Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119w1 Ccal=20021016i
Injected volume:  2.00
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 1 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fwin $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start         Measure       End         Cycletime
  # 1    8:00 min    20:30 min    28:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | |
|---|---|---|---|
| Injector: | 270 deg | | 270 deg max |
| Transfer Line: | 220 deg | | 230 deg max |
| Column: | 140 deg at | 0.0 minutes | 230 deg max |
| | 140 deg at | 2.0 minutes | |
| | 200 deg at | 5.0 minutes | |
| | 230 deg at | 20.0 minutes | |
| | 230 deg at | 28.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 600.9615 | FSLOPE | 36000000.0000 |
| FVANAL | 127.0000 | FVINLET | 382.0000 | FVSRC | 456.0000 |
| FWIN | 0.7000 | GCTC | 140.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 156.0000 | HCURR | 0.0000 |
| HVANAL | 969.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 269.8026 | ISTC | 279.1904 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 304.9824 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 200.0000 |
| NSAM | 200.0000 | NSCAN | 2573.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 2.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

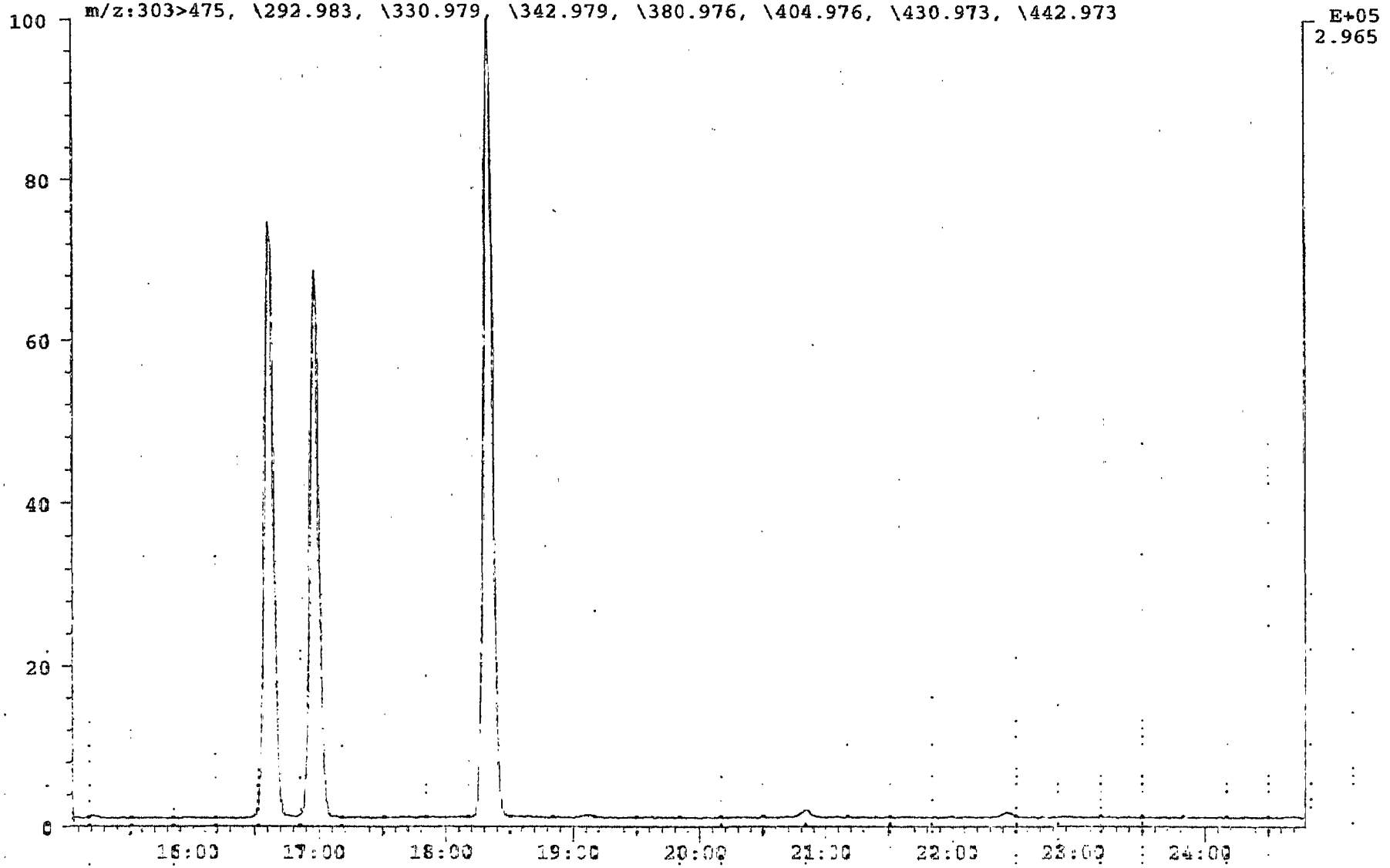
Analysis started at: 19-Nov-02 14:39:15.2

Autosampler has injected sample from vial 1
MID Time Window 1: Resolution is 10463
Analysis stopped at: 19-Nov-02 15:07:48.1 (run time 28.53 minutes)
Analysis stopped because MID run finished

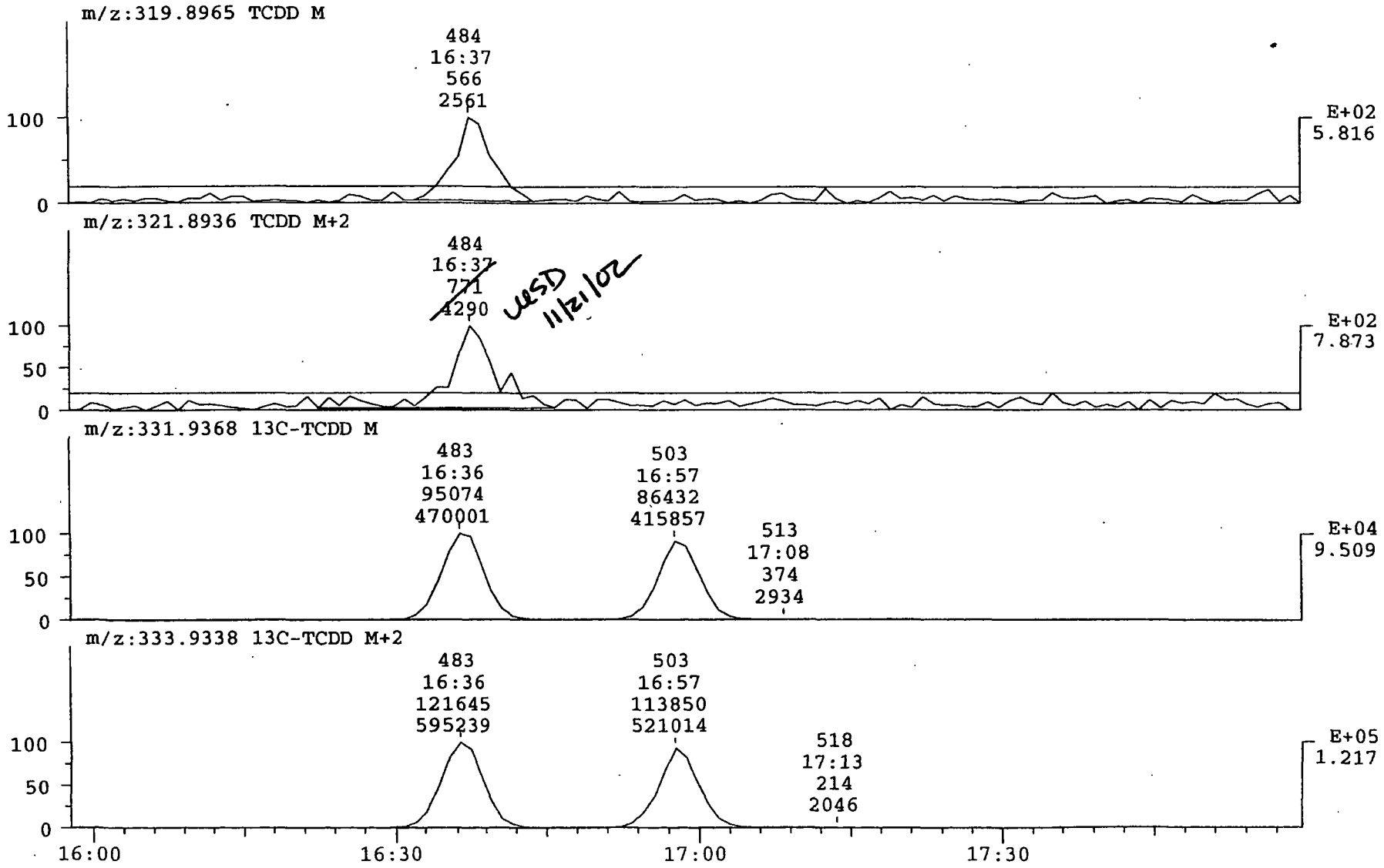
CHRO: f02111911 19-Nov-02
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM
Oper: MSD Client: STL Knoxville
Peak: 100.00 ppm Label wndw: 396 > 943
Area: 5, 0.50, 0 Baseline : 100, 3
Disp: Height Area

Elapse: 18:33.7 593
Start : 15:49:05 1152
Study : ICAL CS1
Inlet : GC Vial 7
Masses: 293 > 376
Label : 0, 0.0

Just MSD 11/21/02
& Calc
QC VHIC 11.21.02

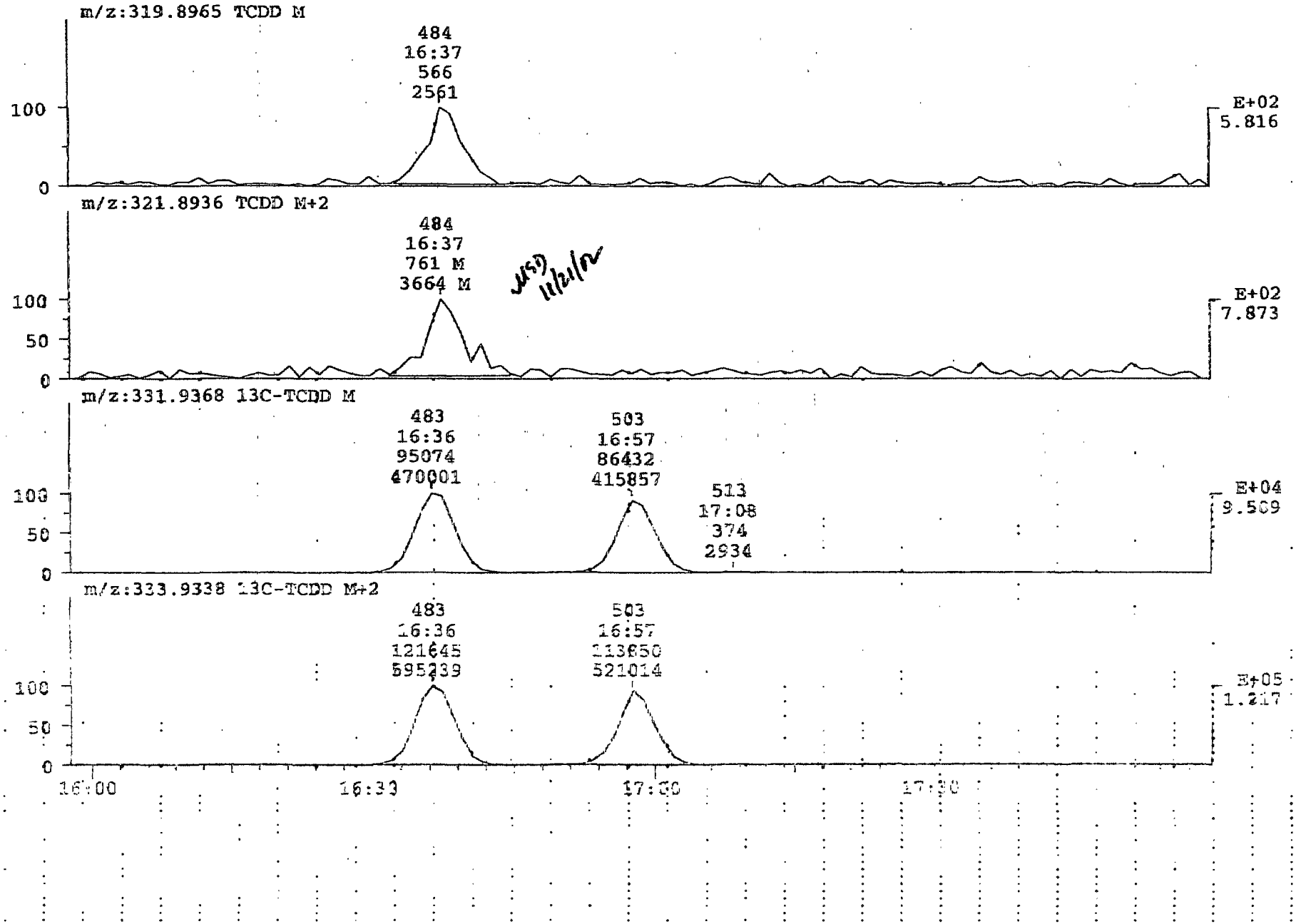


CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

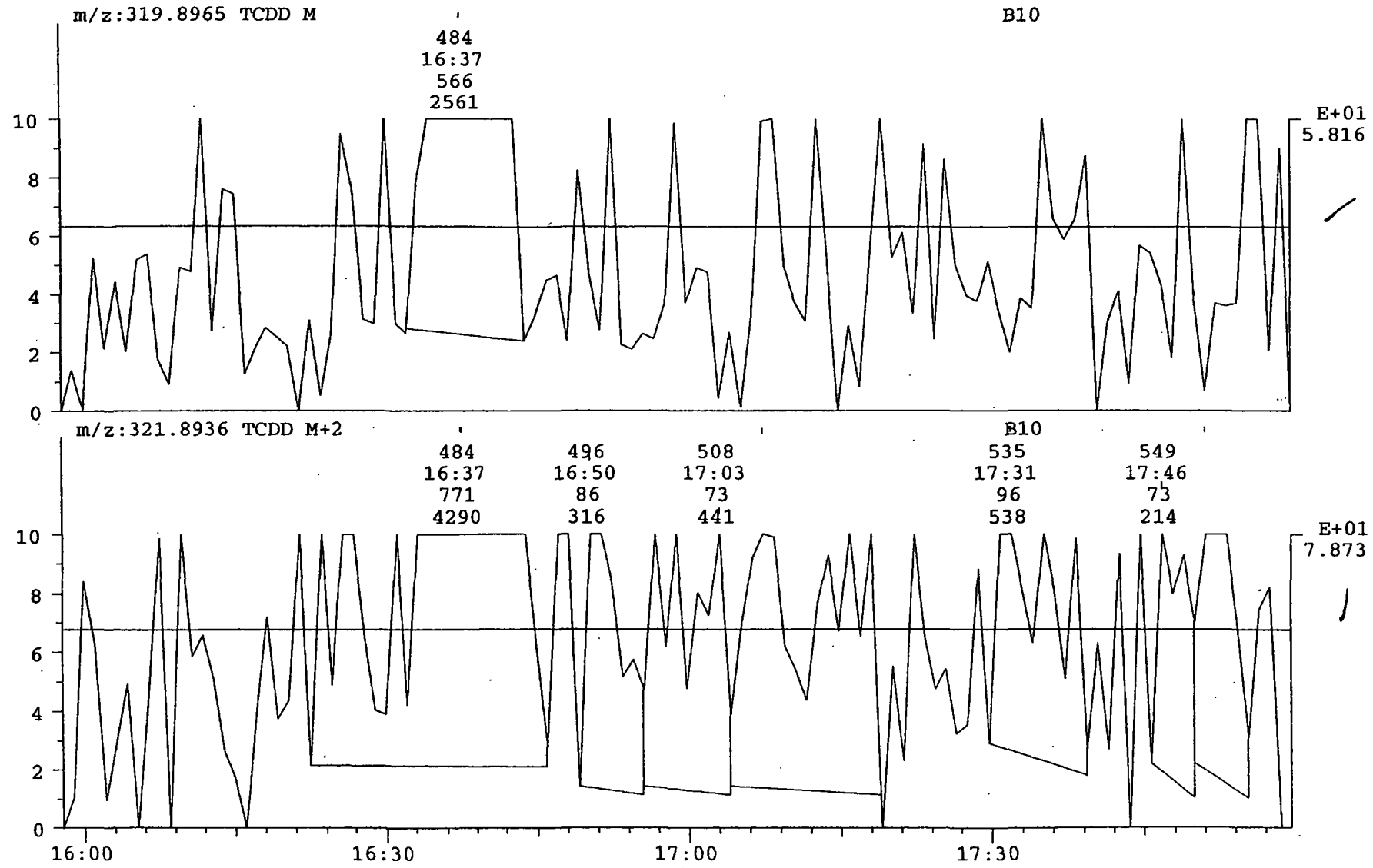



MSD 11/21/02

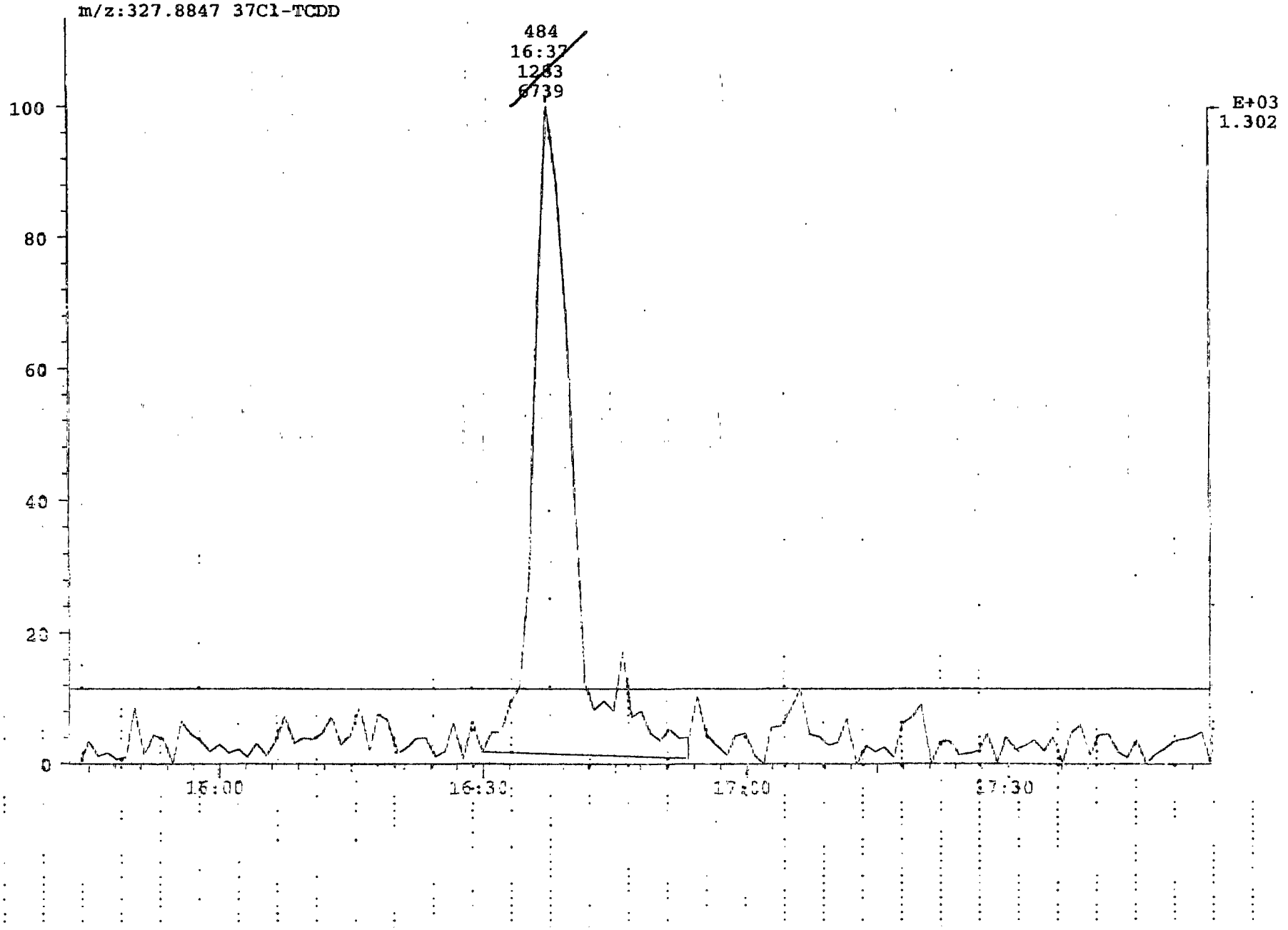
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0,50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



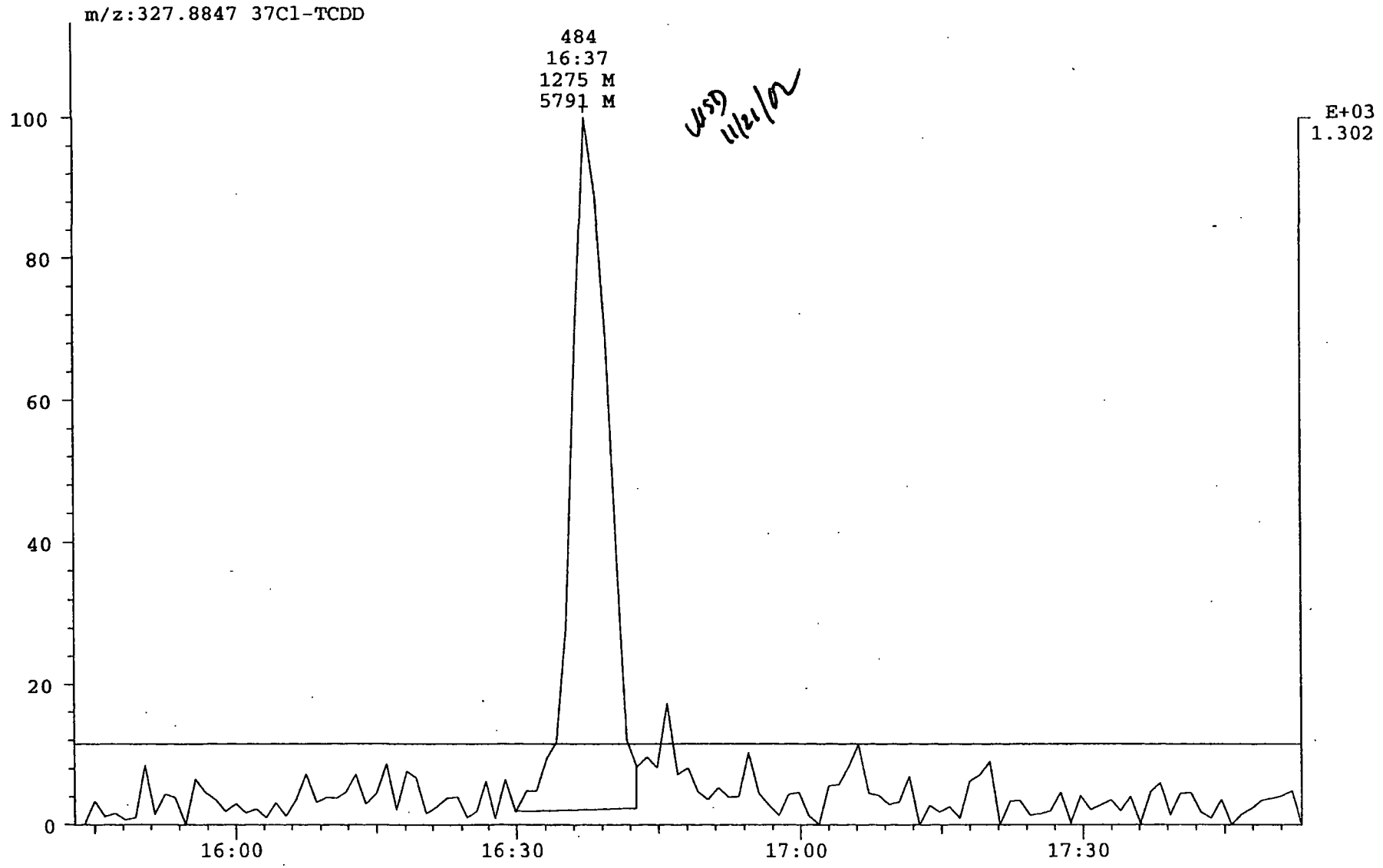
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



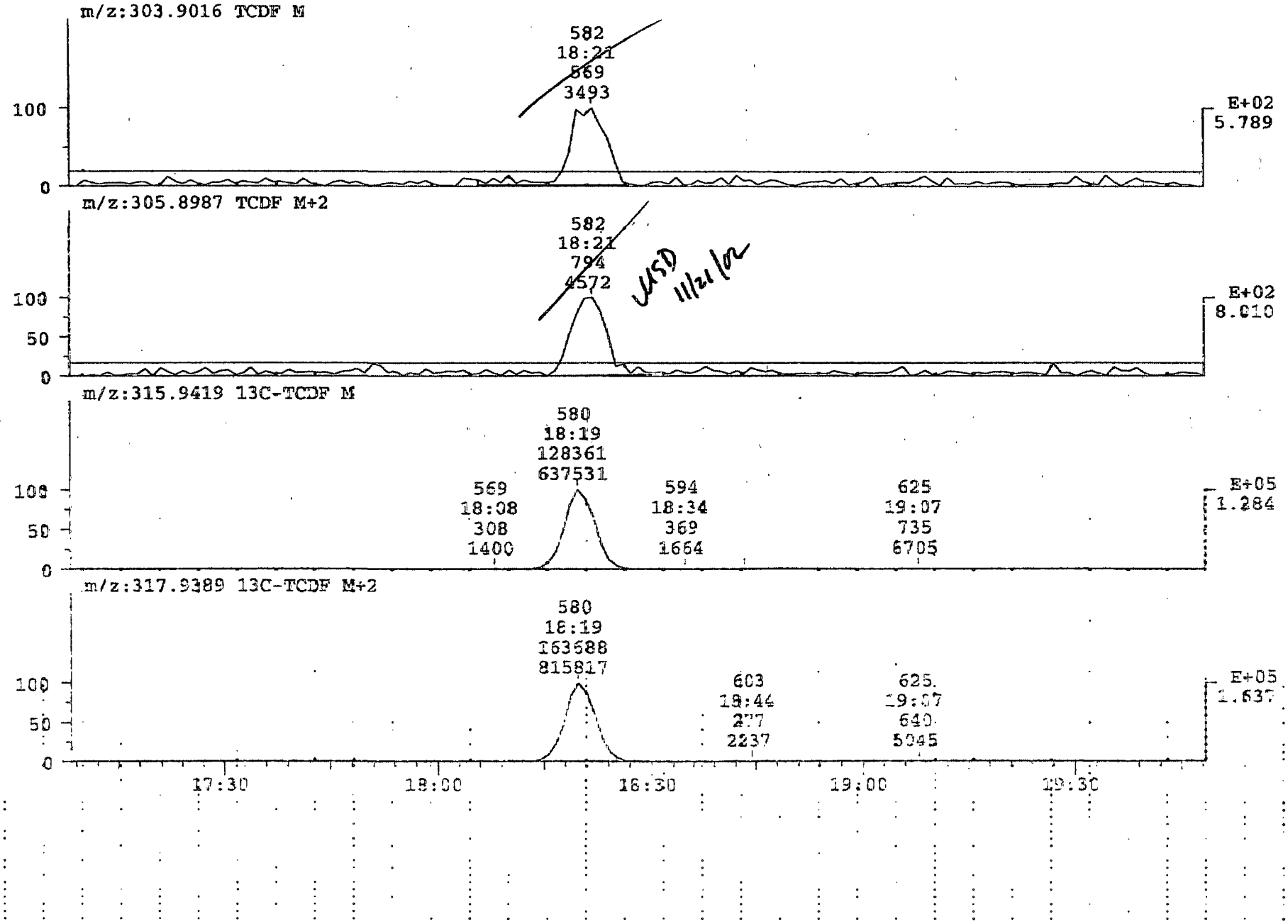
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



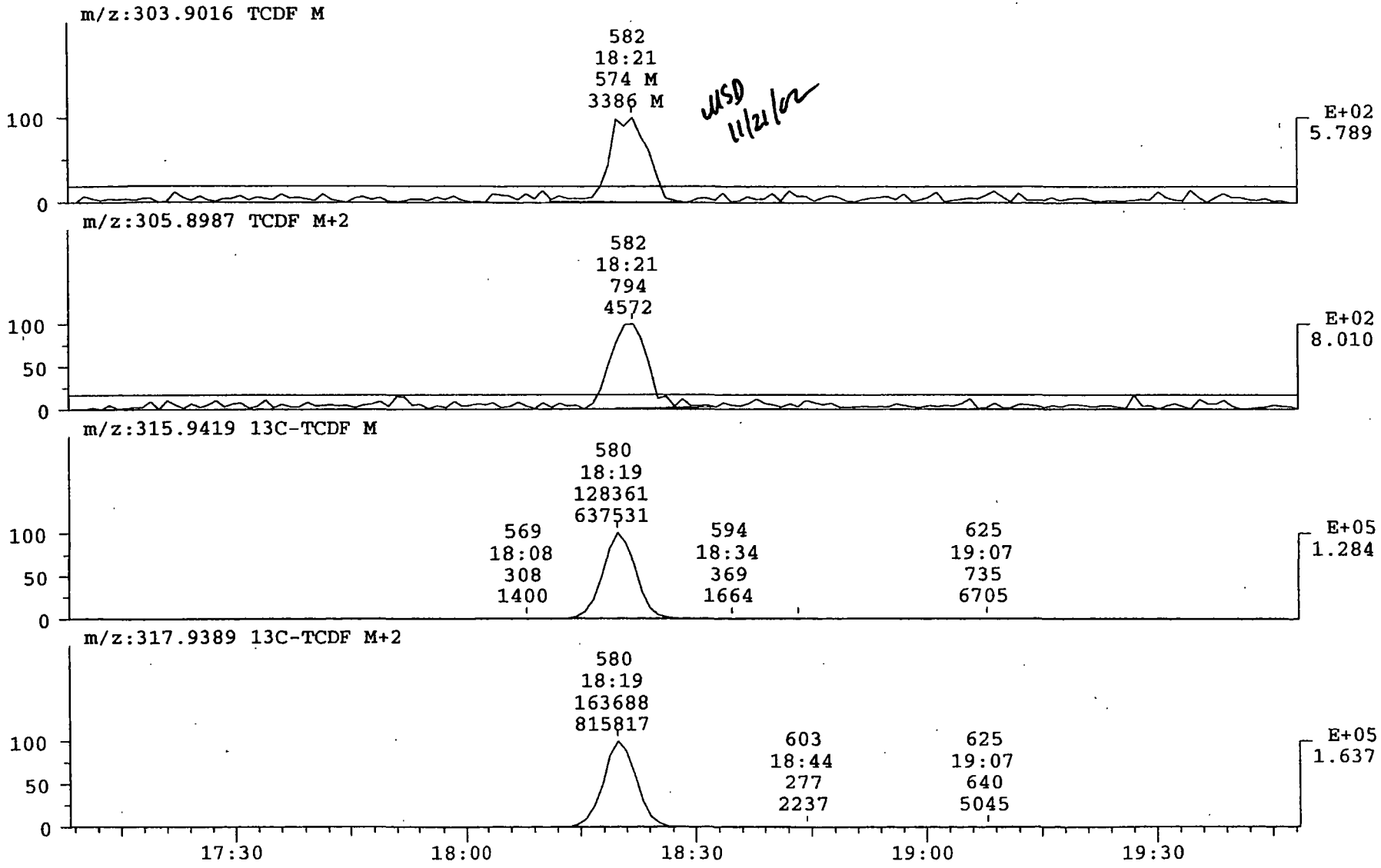
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



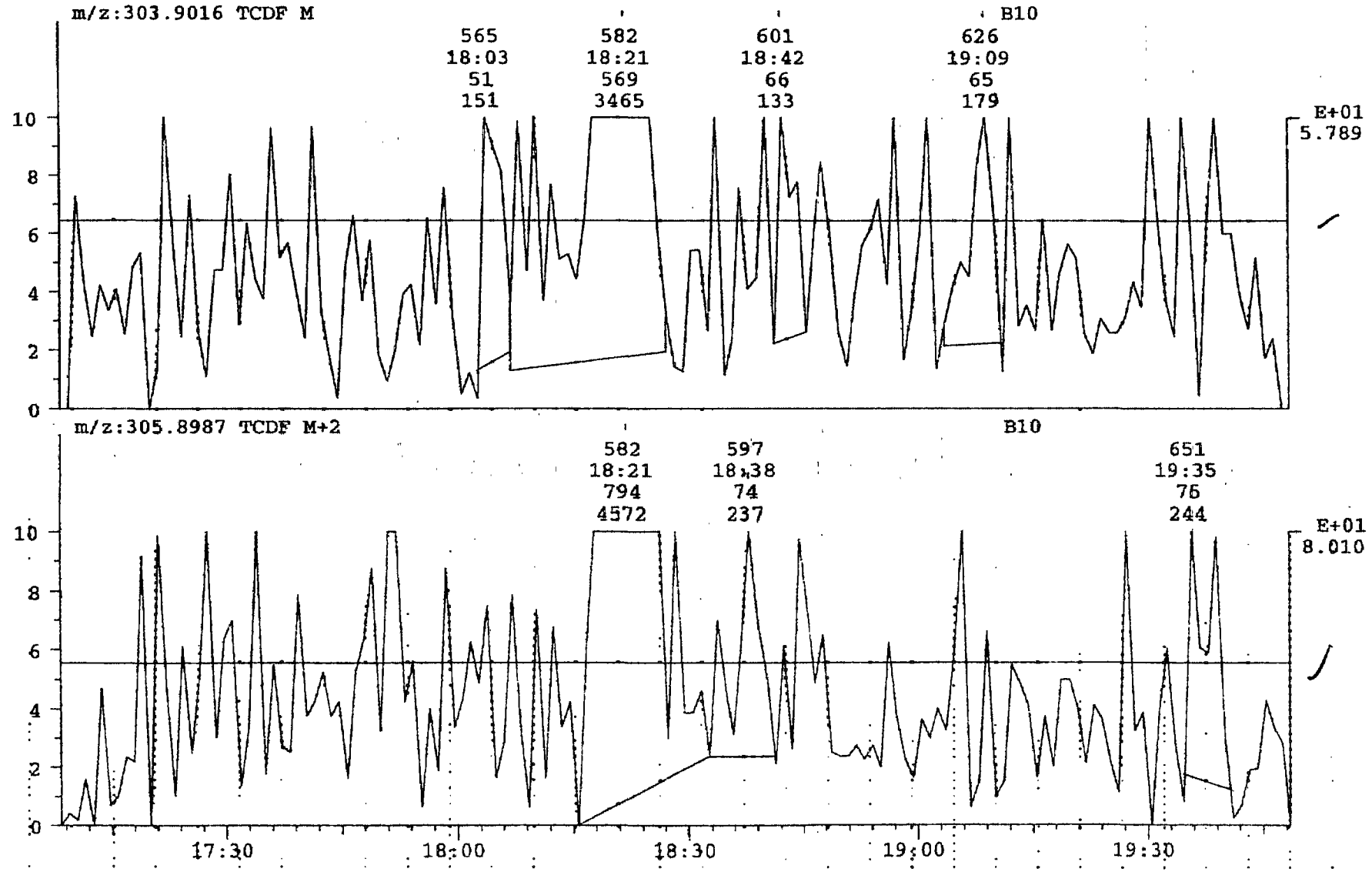
CHRO: f02111911 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15~ Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



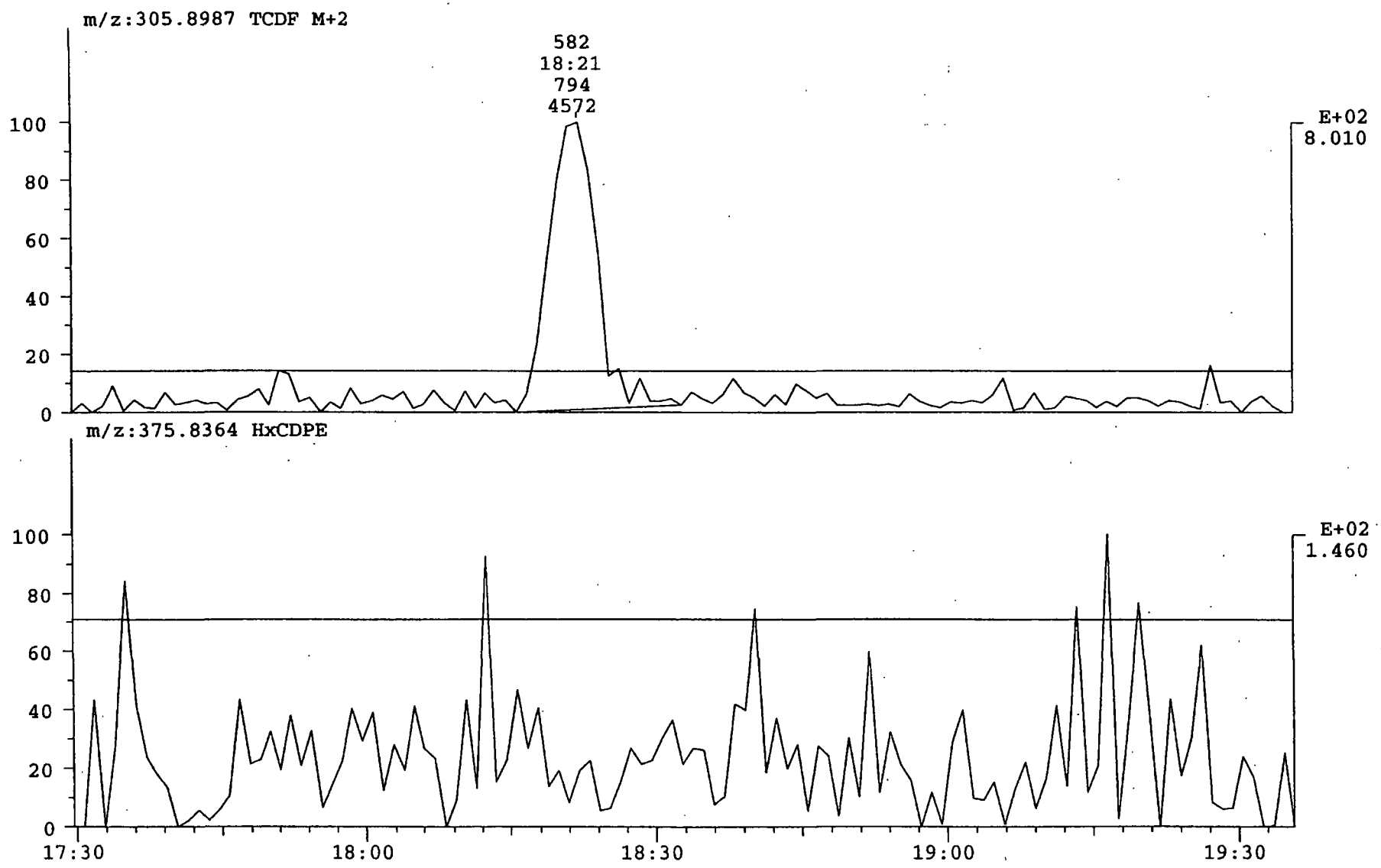
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



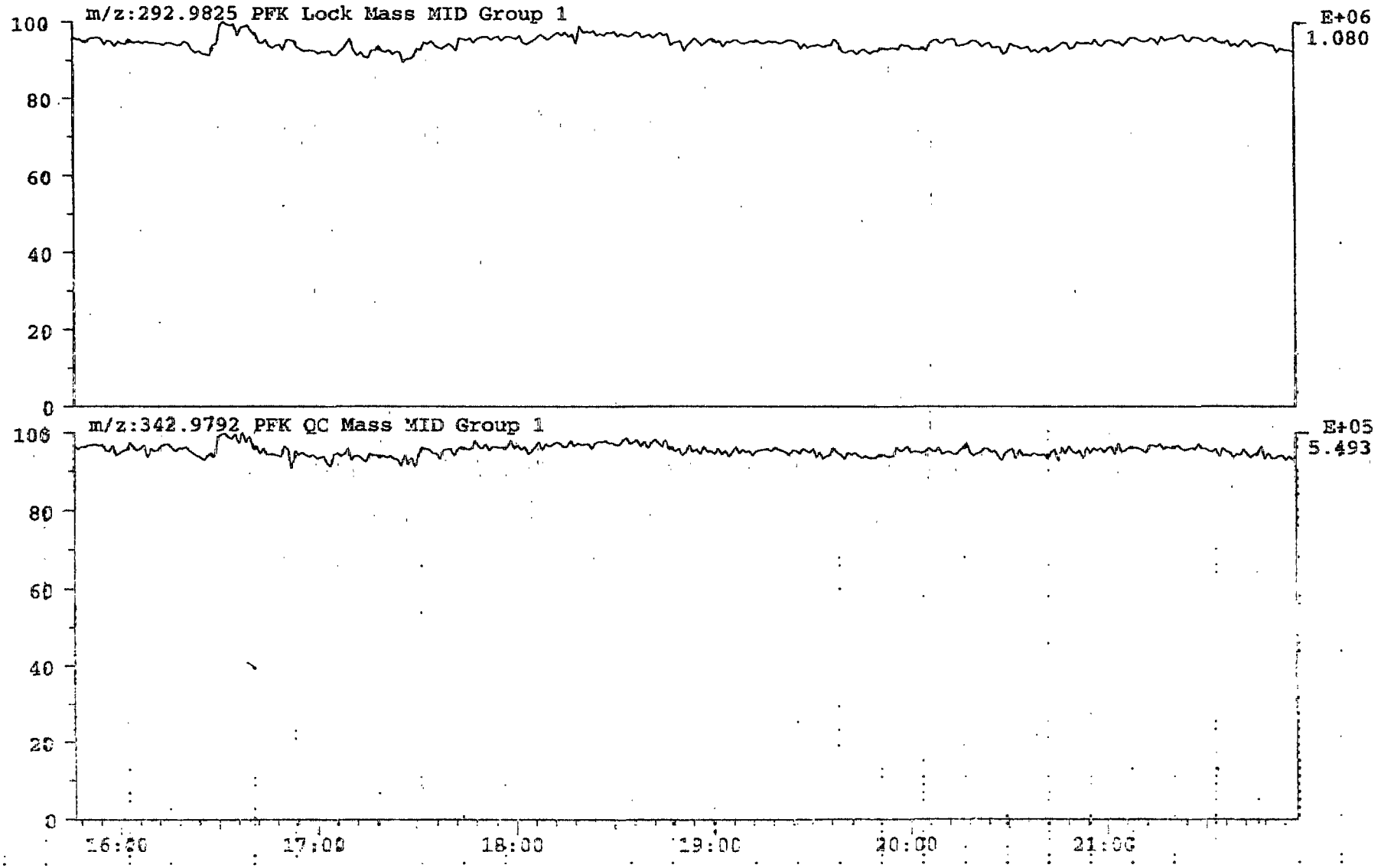
CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



CHRO: f021119i1 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 533 > 651 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 2.5
Disp: Height Area



CHRO: f02111911 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
Oper: MSD Client: STL Knoxville Inlet : GC Vial 7
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119i1
Study: ICAL CS1
Sample: WO=2427:46CS1 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Injected volume:  2.00
Sample from Vial 7
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 3 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start         Measure       End        Cycletime
  # 1    8:00 min   20:30 min   28:30 min    1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 28.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 133.0000 | FVINLET | 386.0000 | FVSRC | 628.0000 |
| FWIN | 0.7000 | GCTC | 190.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 964.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 269.8026 | ISTC | 281.5130 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 19-Nov-02 15:49:05.8

Autosampler has injected sample from vial 7
MID Time Window 1: Resolution is 9155
Analysis stopped at: 19-Nov-02 16:17:38.9 (run time 28.53 minutes)
Analysis stopped because MID run finished

UAN: f02111911.q0 Entries: 20

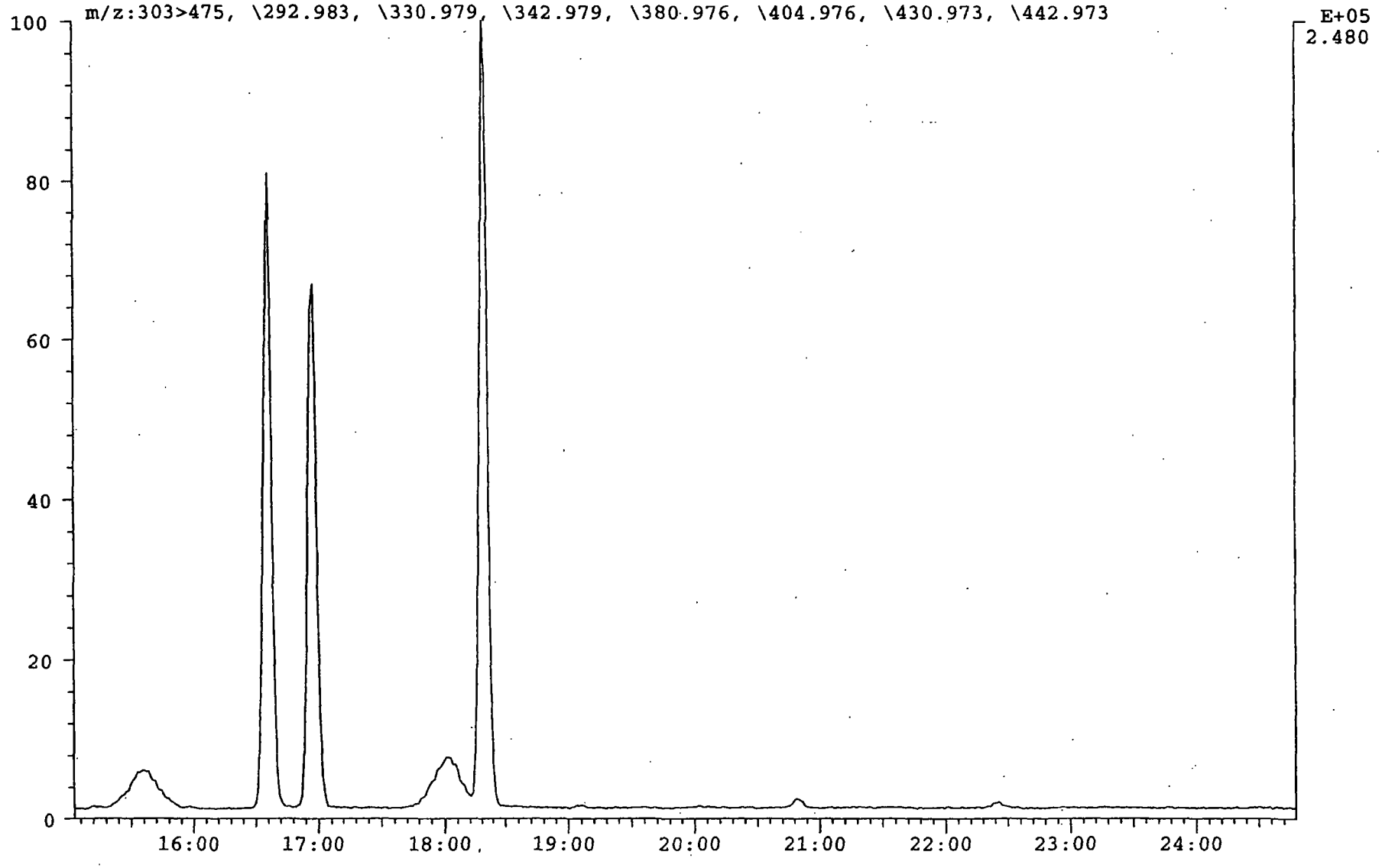
ata file(s) used
ile: f021119i1 19-Nov-02
amp: Vial 7 WO=2427:46CS1 Meth=L1c Dil=1 Start : 15:49:05 1152
omm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
ode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS1
per: MSD Client: STL Knoxville Inlet : GC Vial 7

isp: CHRO
mount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
esponse factors from quantitation file

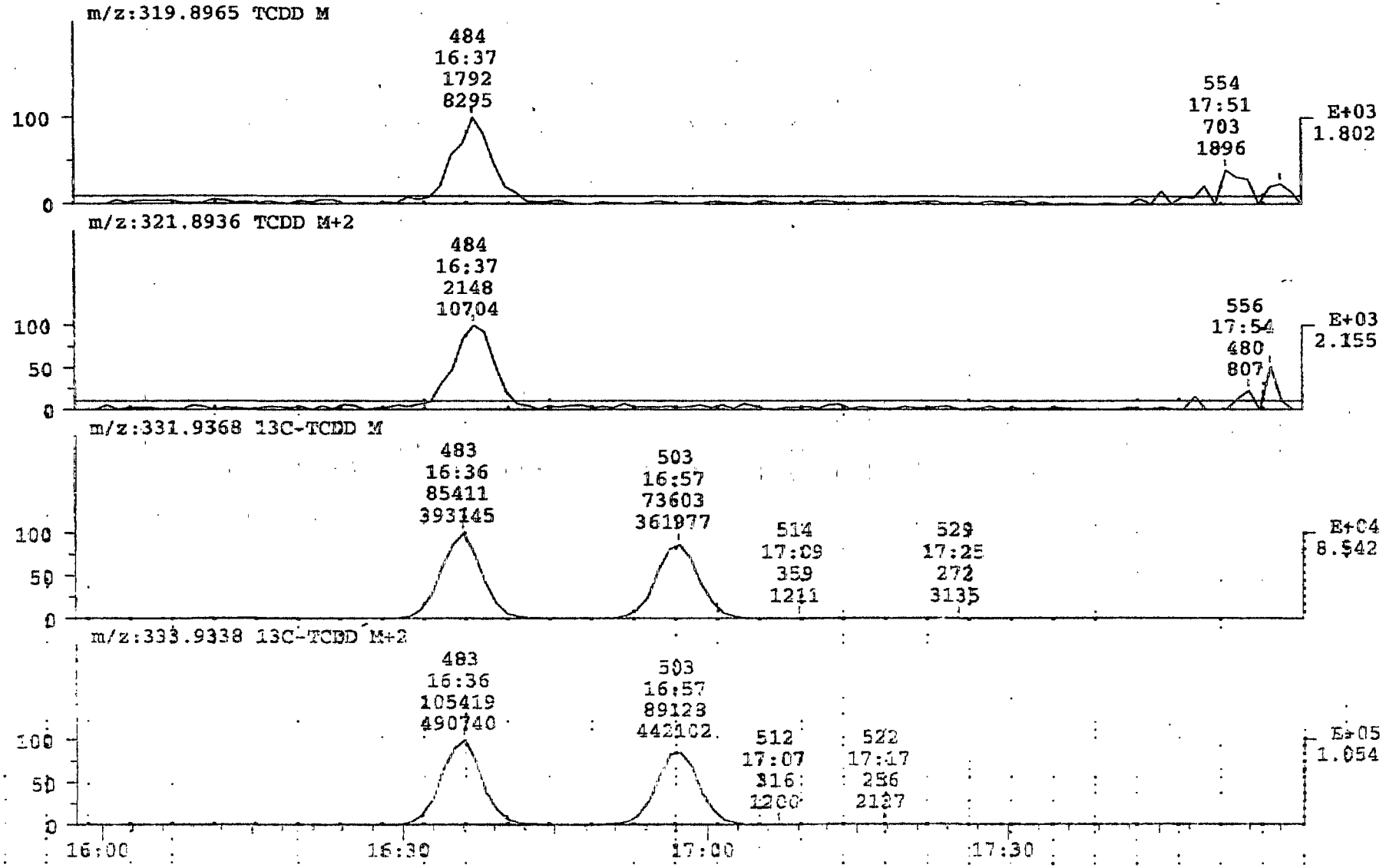
| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 19.8805 | 16:37 | 2561. | 566. | 16:32 | 16:43 | 37. | 2 | 3.0 |
| 21.8775 | 16:37 | 3664. | 761. | 16:32 | 16:44 | 53. | 2 | 3.0 |
| 31.9202 | 16:36 | 470001. | 95074. | 16:24 | 16:48 | 74. | 2 | 3.0 |
| 31.9202 | 16:57 | 415857. | 86432. | 16:48 | 17:06 | 74. | 2 | 3.0 |
| 31.9202 | 17:08 | 2934. | 374. | 17:06 | 17:24 | 74. | 2 | 3.0 |
| 33.9171 | 16:36 | 595239. | 121645. | 16:28 | 16:49 | 93. | 2 | 3.0 |
| 33.9171 | 16:57 | 521014. | 113850. | 16:49 | 17:11 | 53. | 2 | 3.0 |
| 27.8683 | 16:37 | 5791. | 1275. | 16:29 | 16:42 | 50. | 2 | 3.0 |
| 27.8683 | 16:37 | 5791. | 1275. | 16:29 | 16:42 | 50. | 2 | 3.0 |
| 03.8864 | 18:21 | 3386. | 574. | 18:11 | 18:29 | 37. | 2 | 3.0 |
| 03.8864 | 18:21 | 3386. | 574. | 18:11 | 18:29 | 37. | 2 | 3.0 |
| 05.8834 | 18:21 | 4572. | 794. | 18:15 | 18:32 | 44. | 2 | 3.0 |
| 15.9261 | 18:08 | 1400. | 308. | 18:02 | 18:11 | 77. | 2 | 3.0 |
| 15.9261 | 18:19 | 637531. | 128361. | 18:11 | 18:33 | 77. | 2 | 3.0 |
| 15.9261 | 18:34 | 1664. | 369. | 18:33 | 18:41 | 77. | 2 | 3.0 |
| 15.9261 | 18:43 | 1070. | 256. | 18:41 | 18:48 | 77. | 2 | 3.0 |
| 15.9261 | 19:07 | 6705. | 735. | 18:51 | 19:24 | 77. | 2 | 3.0 |
| 17.9230 | 18:19 | 815817. | 163688. | 18:05 | 18:35 | 64. | 2 | 3.0 |
| 17.9230 | 18:44 | 2237. | 277. | 18:43 | 18:59 | 64. | 2 | 3.0 |
| 17.9230 | 19:07 | 5045. | 640. | 18:59 | 19:21 | 64. | 2 | 3.0 |

CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 396 > 943 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

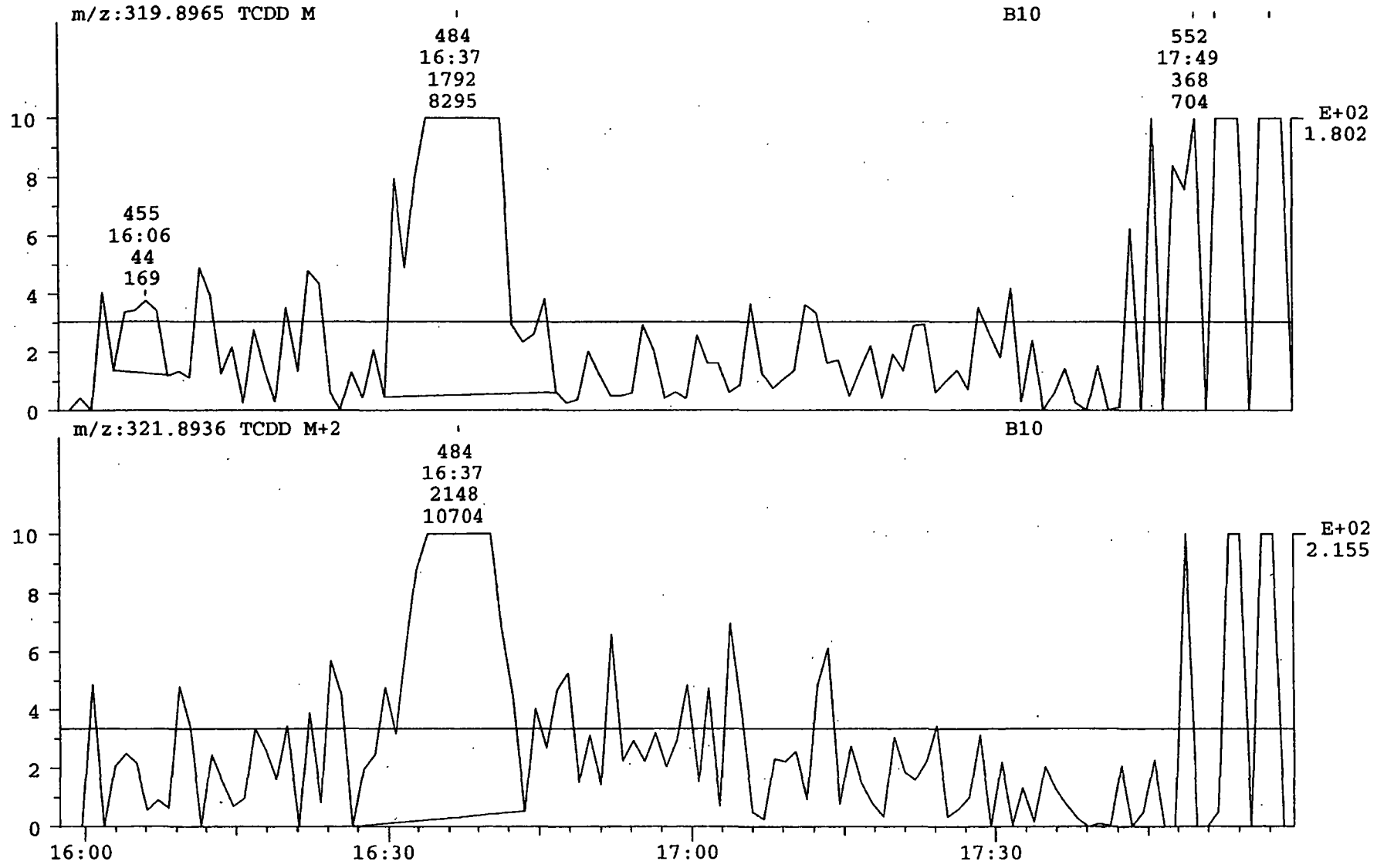
Just, Calc MSD 11/21/02
QC VMIC 11.21.02



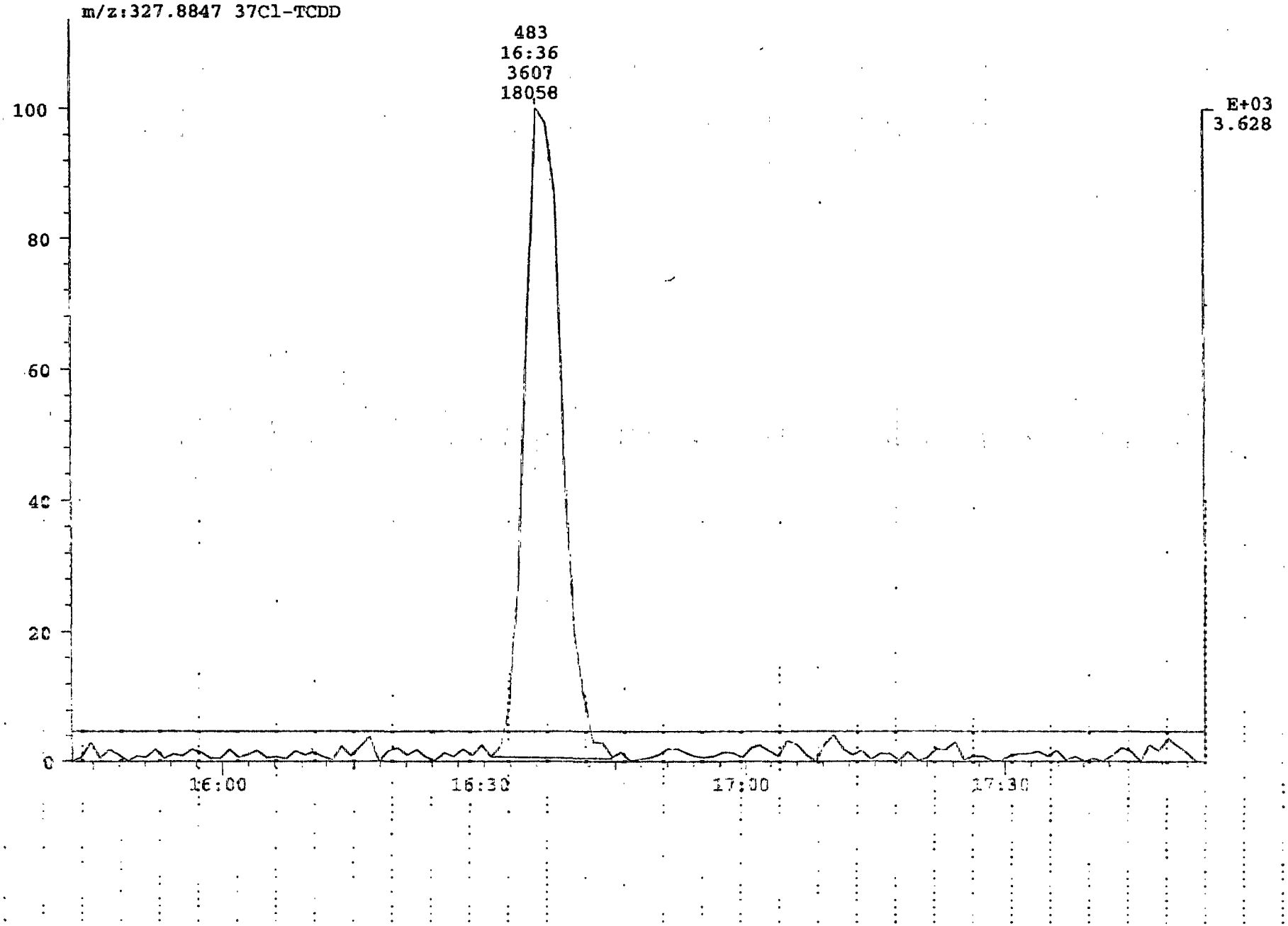
CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



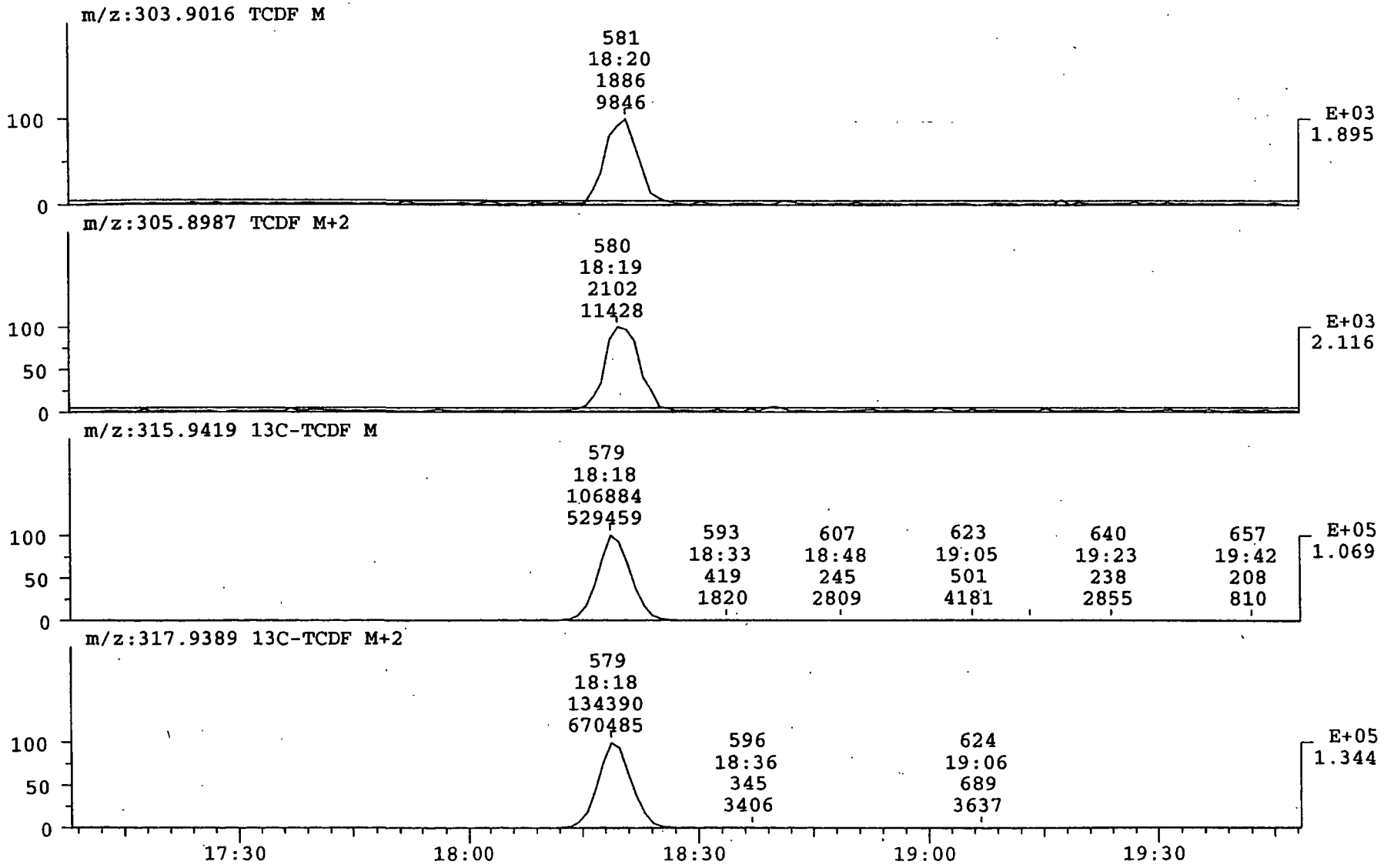
CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



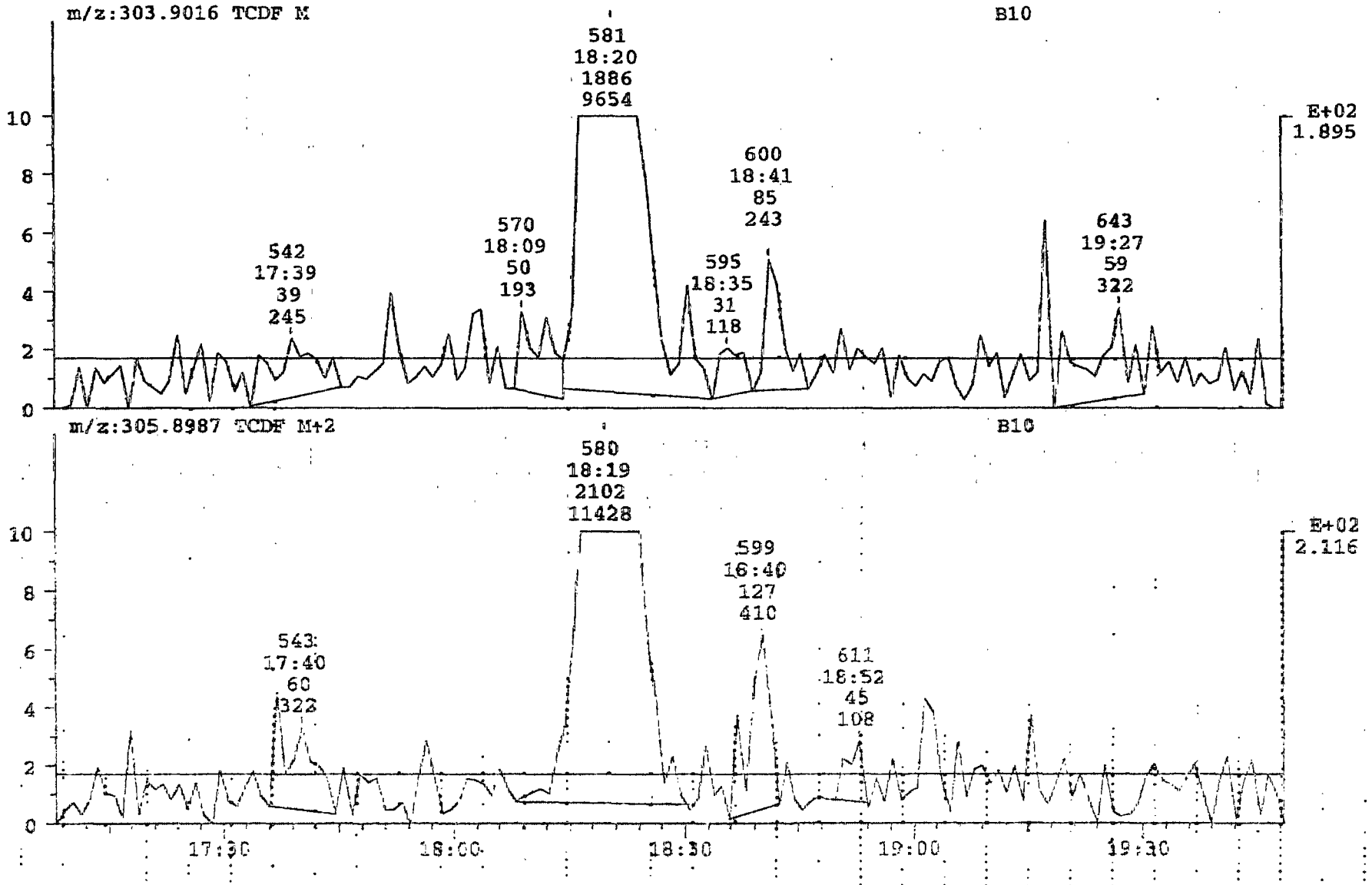
CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



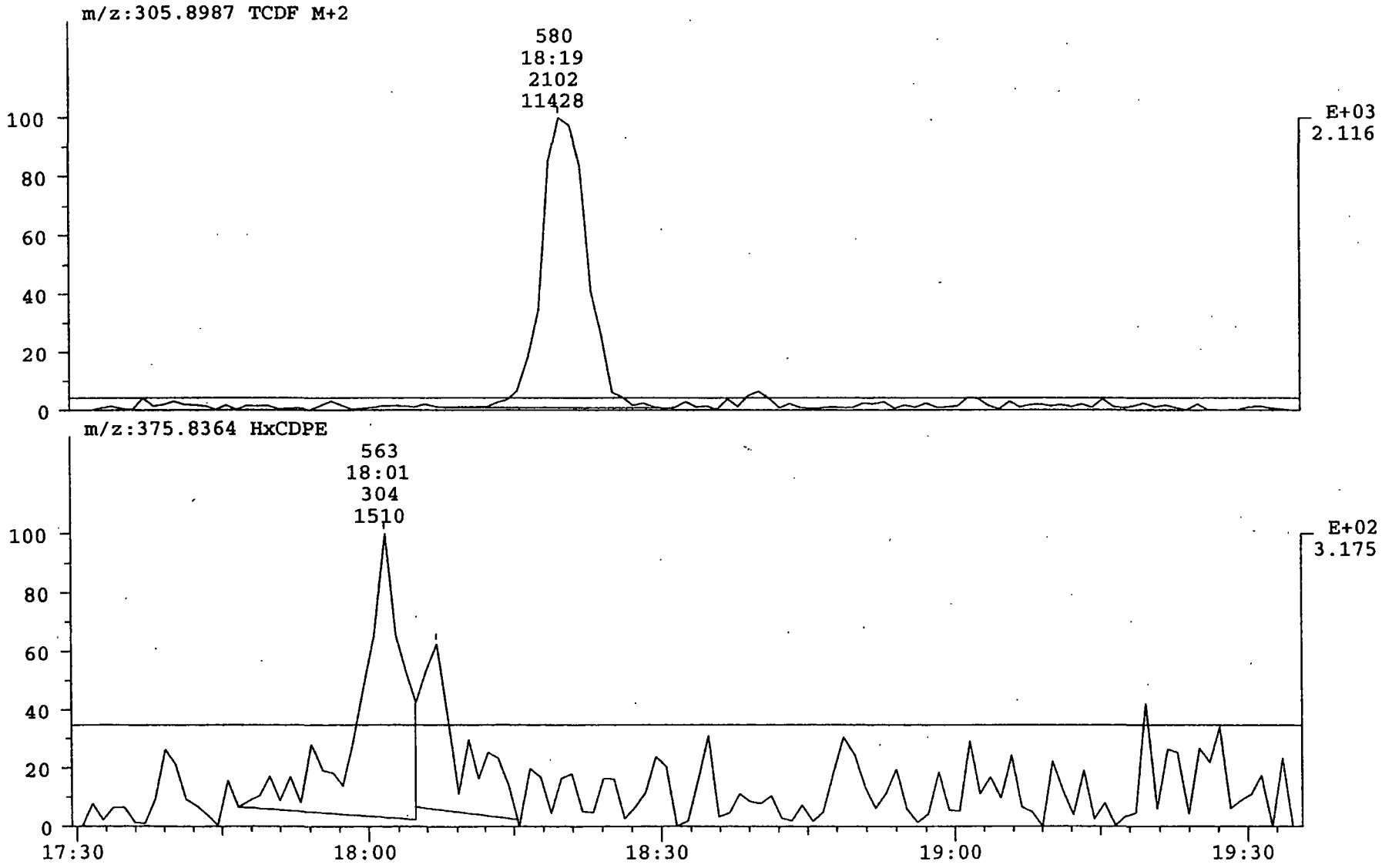
CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



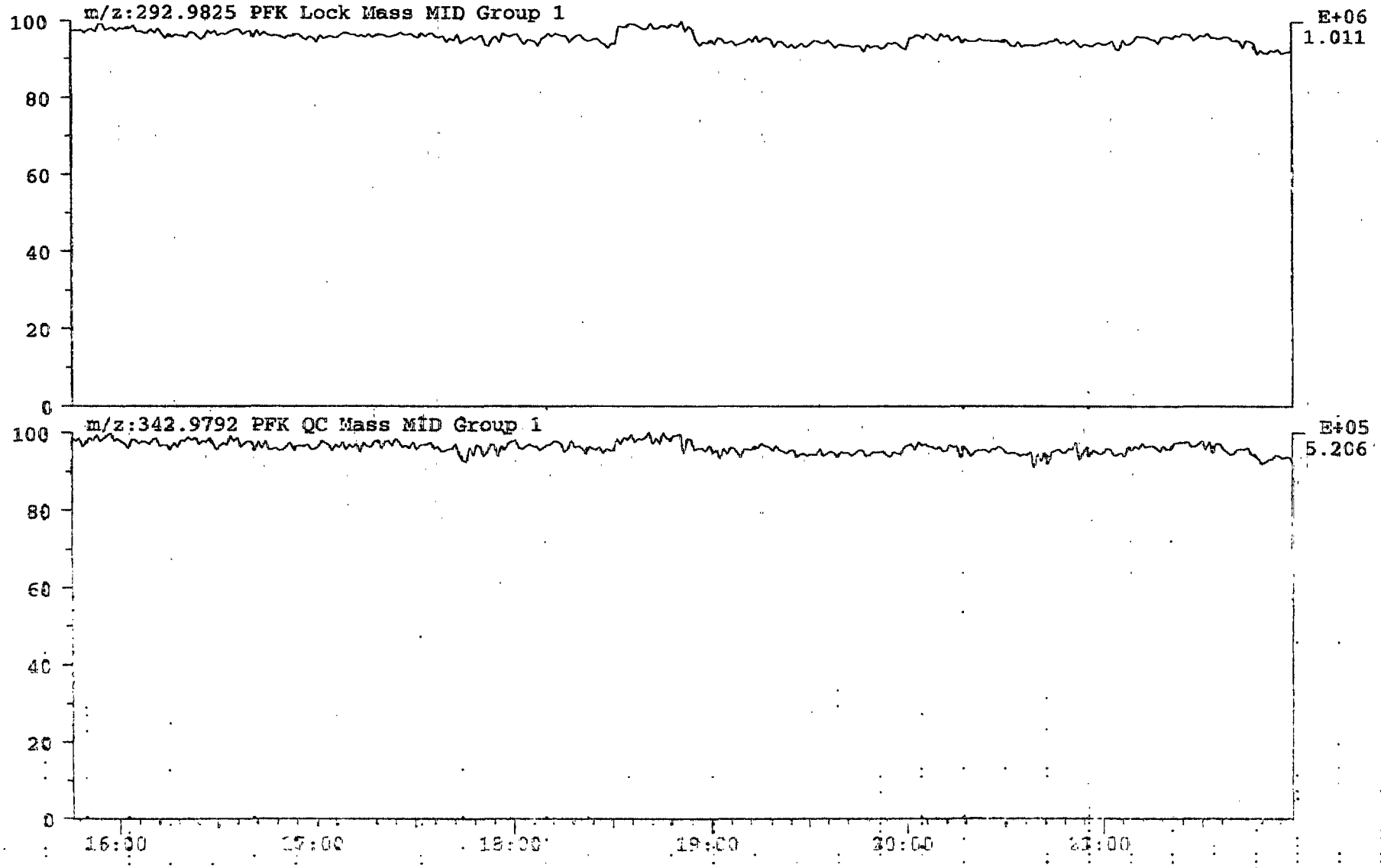
CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 1.0
Disp: Height Area



CHRO: f021119i2 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 533 > 651 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 2.5
Disp: Height Area



CHRO: f02111912 19-Nov-02 Elapse: 18:33.7 593
Samp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
Oper: MSD Client: STL Knoxville Inlet : GC Vial 8
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119i2
Study: ICAL CS2
Sample: WO=2427:46CS2 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Injected volume:  2.00
Sample from Vial 8
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 4 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    20:30 min    28:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):      3 times
   Slvnt B cln before inj  (L):      0 times
   Sample rinse cycles     (R):      0 times
   Syringe filling volume  (F):    1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 28.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 105.0000 | FVINLET | 385.0000 | FVSRC | 257.0000 |
| FWIN | 0.7000 | GCTC | 191.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 966.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 271.3713 | ISTC | 274.6712 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1154.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 19-Nov-02 16:20:22.6

Autosampler has injected sample from vial 8
MID Time Window 1: Resolution is 9155
Analysis stopped at: 19-Nov-02 16:48:56.1 (run time 28.54 minutes)
Analysis stopped because MID run finished

)UAN: f021119i2.q0 Entries: 11

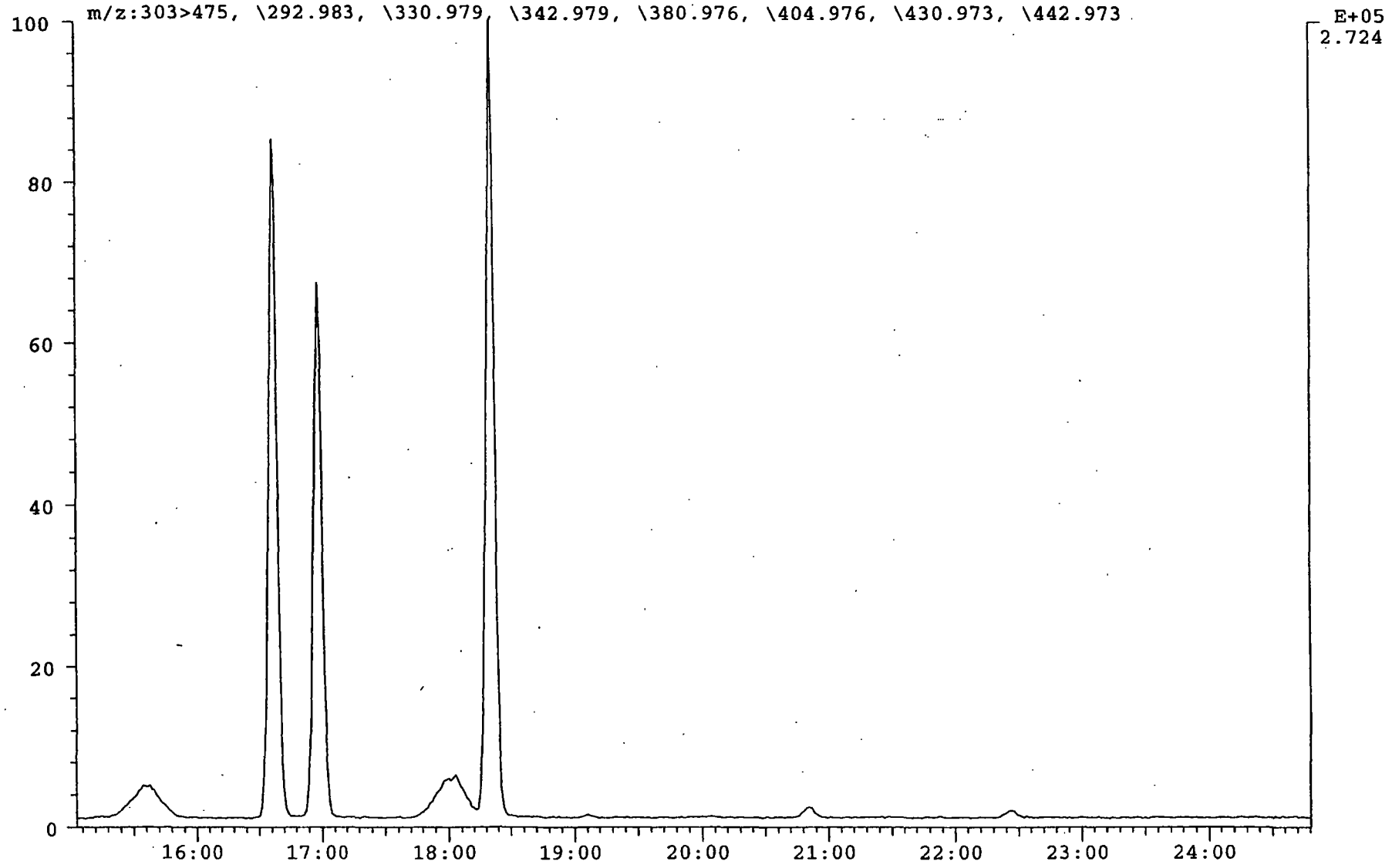
)ata file(s) used
'ile: f021119i2 19-Nov-02
)amp: Vial 8 WO=2427:46CS2 Meth=L1c Dil=1 Start : 16:20:22 1152
:omm: Inst=m3c/2366222 Batch=20021119i Cal=METHOD
)ode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS2
)per: MSD Client: STL Knoxville Inlet : GC Vial 8

)isp: CHRO
)mount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
)esponse factors from quantitation file

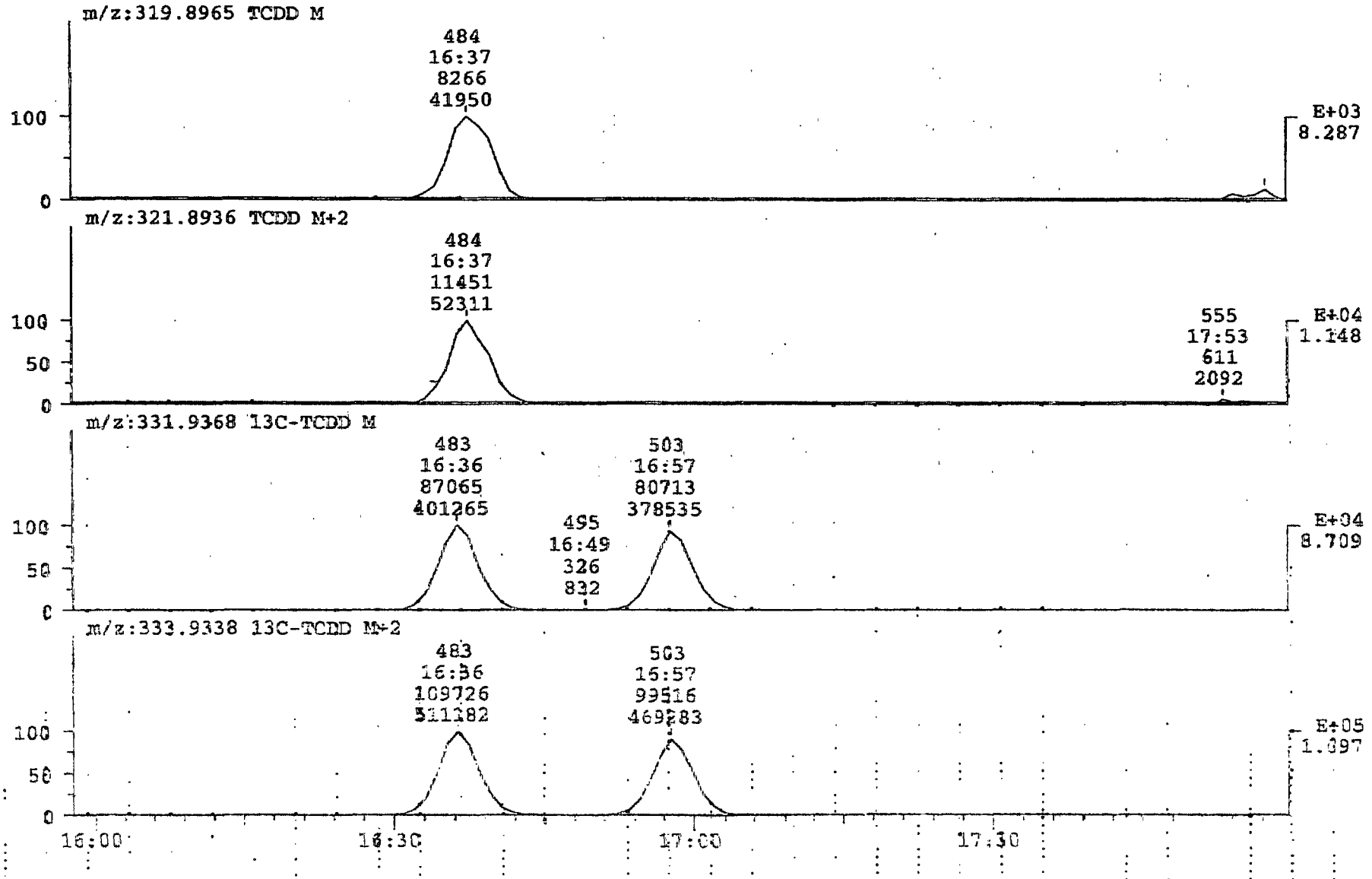
| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| )19.8805 | 16:37 | 8295. | 1792. | 16:29 | 16:46 | 55. | 2 | 3.0 |
| )21.8775 | 16:37 | 10704. | 2148. | 16:26 | 16:43 | 72. | 2 | 3.0 |
| )31.9202 | 16:36 | 393145. | 85411. | 16:22 | 16:46 | 67. | 2 | 3.0 |
| )31.9202 | 16:57 | 361977. | 73603. | 16:46 | 17:06 | 67. | 2 | 3.0 |
| )33.9171 | 16:36 | 490740. | 105419. | 16:22 | 16:47 | 60. | 2 | 3.0 |
| )33.9171 | 16:57 | 442102. | 89128. | 16:47 | 17:04 | 60. | 2 | 3.0 |
| )27.8683 | 16:36 | 18058. | 3607. | 16:30 | 16:44 | 56. | 2 | 3.0 |
| )03.8864 | 18:20 | 9846. | 1886. | 18:08 | 18:33 | 32. | 2 | 3.0 |
| )05.8834 | 18:19 | 11428. | 2102. | 18:08 | 18:30 | 36. | 2 | 3.0 |
| )15.9261 | 18:18 | 529459. | 106884. | 18:02 | 18:32 | 69. | 2 | 3.0 |
| )17.9230 | 18:18 | 670485. | 134390. | 18:02 | 18:32 | 66. | 2 | 3.0 |

CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 396 > 943 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

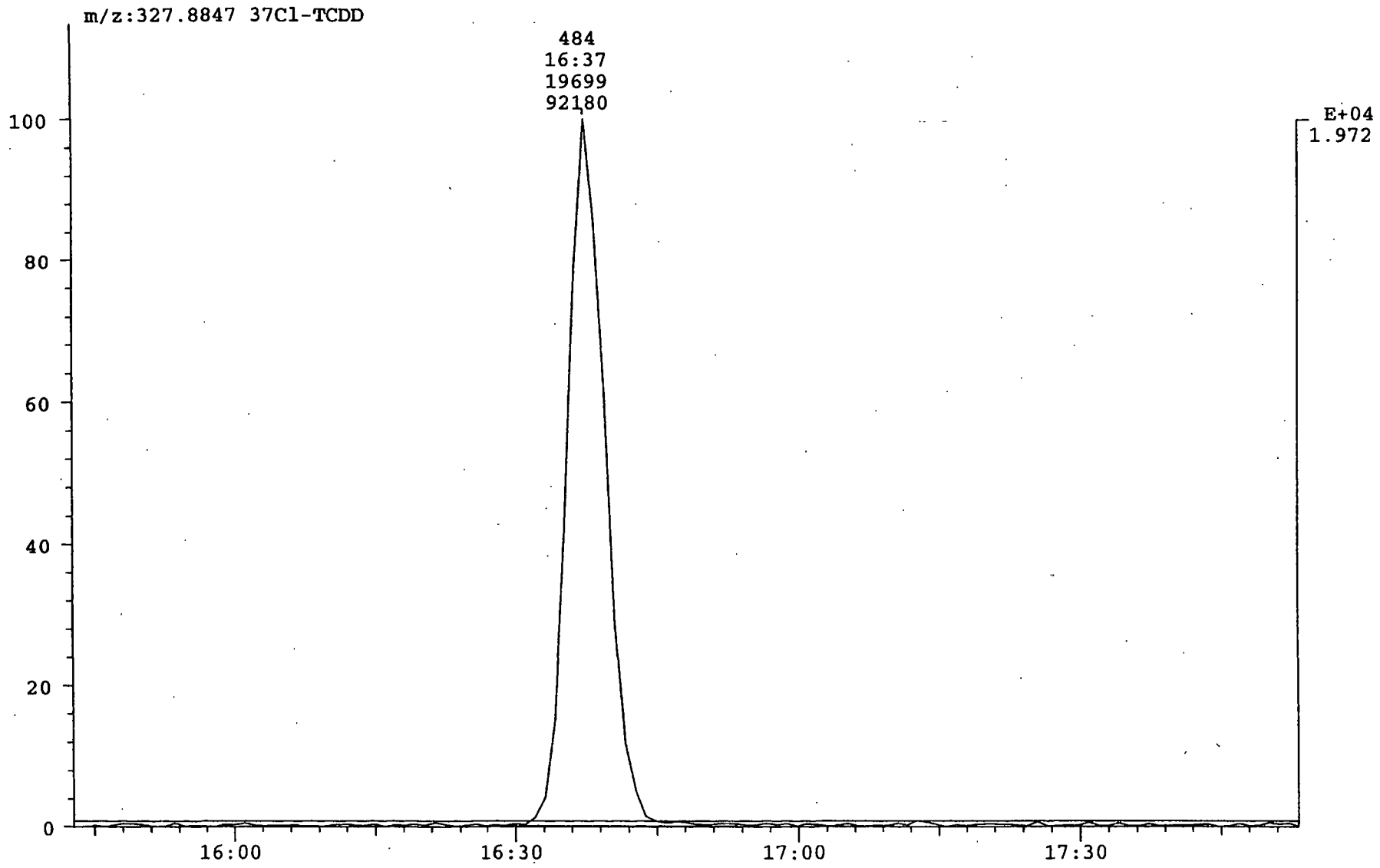
Init, Calc MSD 11/21/02 MSD11/21/02
QC JMK 11-21-02



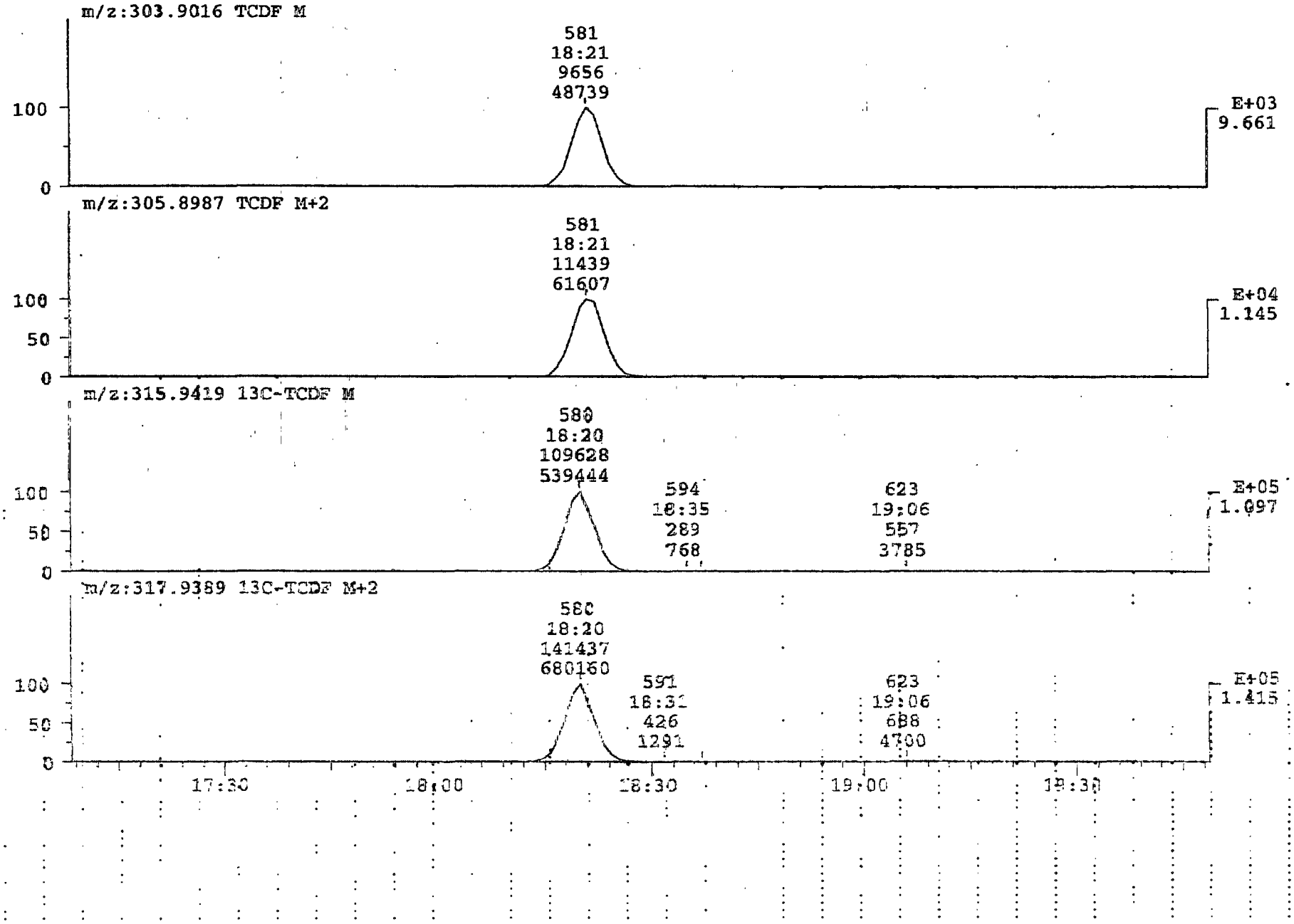
CHRO: f02111913 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



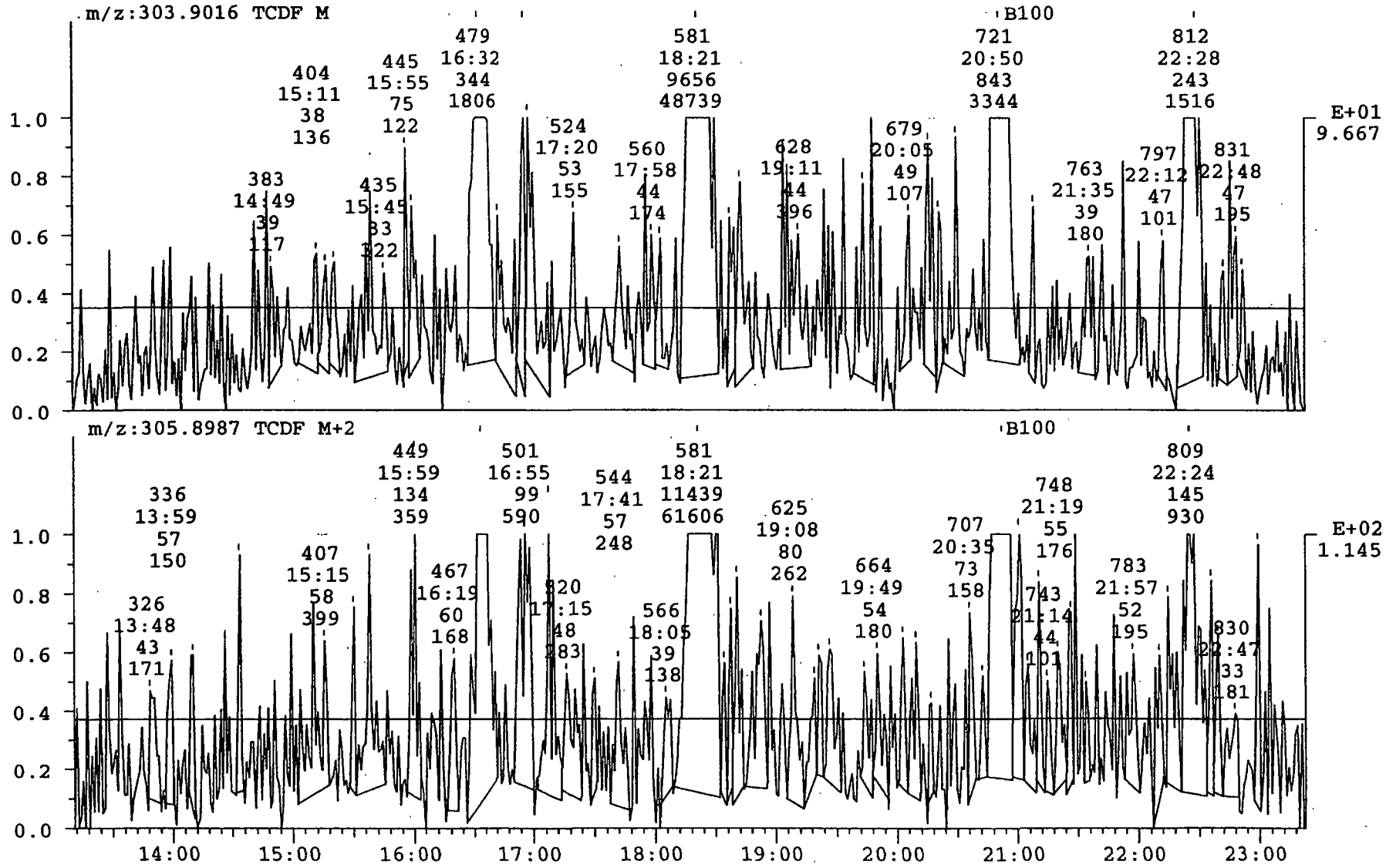
CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



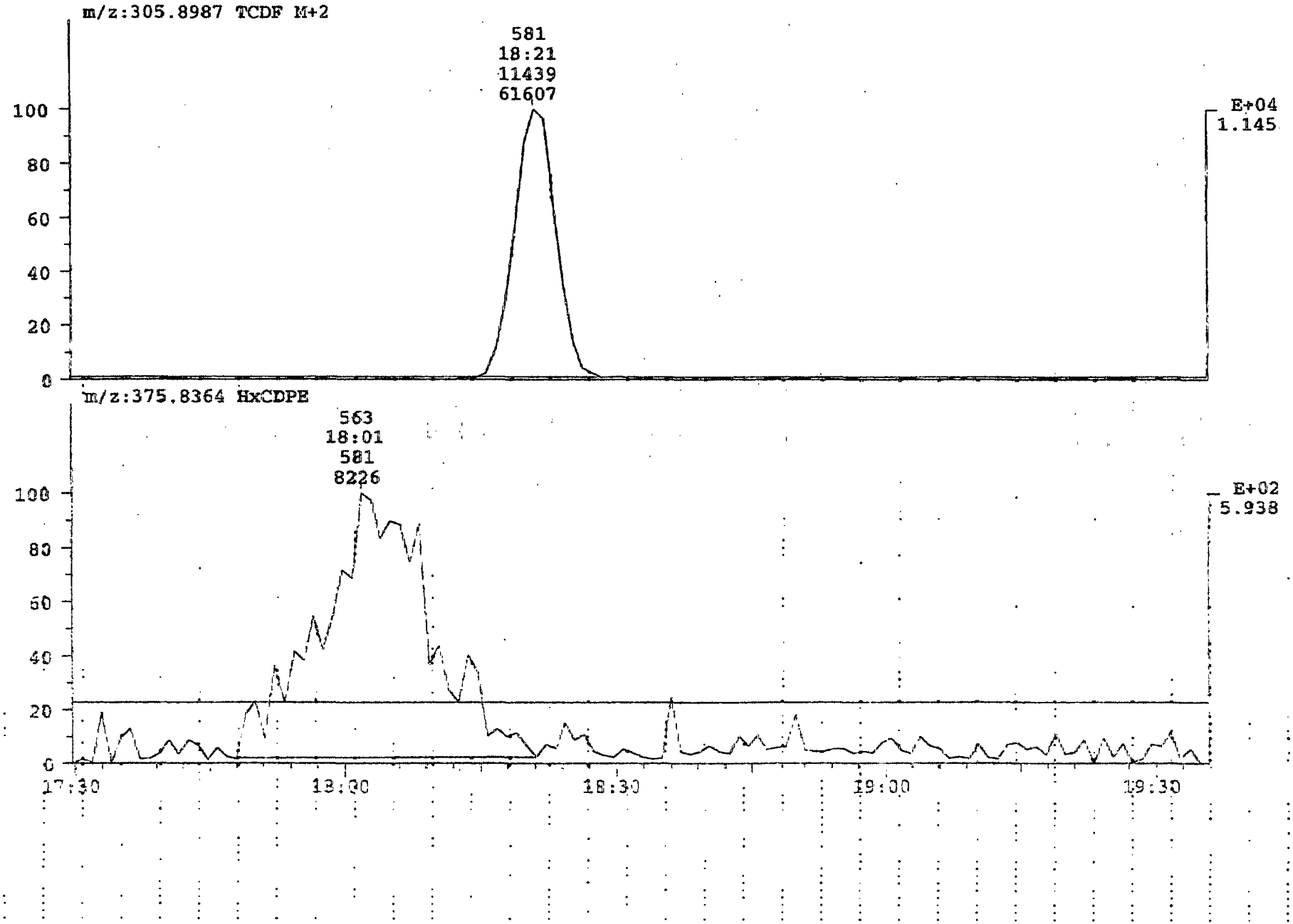
CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



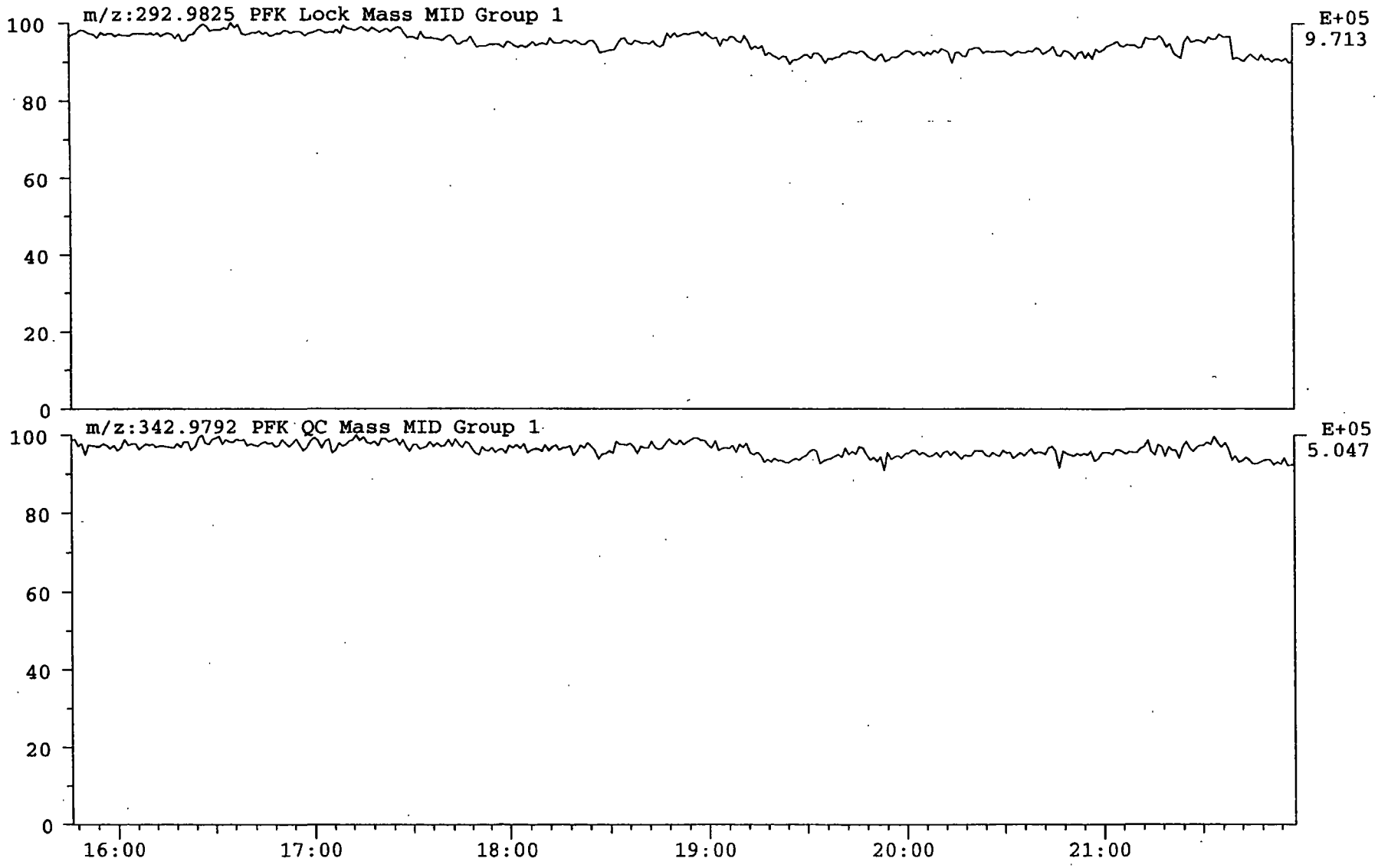
CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 291 > 863 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 533 > 651 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 2.5
Disp: Height Area



CHRO: f021119i3 19-Nov-02 Elapse: 18:33.9 593
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119i3
Study: ICAL CS3
Sample: WO=2427:46CS3 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Injected volume:  2.00
Sample from Vial 9
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 5 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio          1
   Damping Relay            TRUE
   Width first lock      0.20 amu
   Electric jump time      10 ms
   Magnetic jump time      60 ms
   Offset                 100 cts
   Electric range         300 %
   Sweep peak width      3.00
   MID mode             Lock mode
   Acq mode             Cent mode

  Mid Time Windows:
        Start         Measure       End        Cycletime
  # 1    8:00 min    20:30 min    28:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | |
|---|---|---|---|
| Injector: | 270 deg | | 270 deg max |
| Transfer Line: | 220 deg | | 230 deg max |
| Column: | 140 deg at | 0.0 minutes | 230 deg max |
| | 140 deg at | 2.0 minutes | |
| | 200 deg at | 5.0 minutes | |
| | 230 deg at | 20.0 minutes | |
| | 230 deg at | 28.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 135.0000 | FVINLET | 385.0000 | FVSRC | 739.0000 |
| FWIN | 0.7000 | GCTC | 190.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 967.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 271.3713 | ISTC | 276.3002 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1154.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 19-Nov-02 16:51:38.1

Autosampler has injected sample from vial 9
MID Time Window 1: Resolution is 8138
Analysis stopped at: 19-Nov-02 17:20:10.9 (run time 28.53 minutes)
Analysis stopped because MID run finished

QUAN: f021119i3.q0 Entries: 20

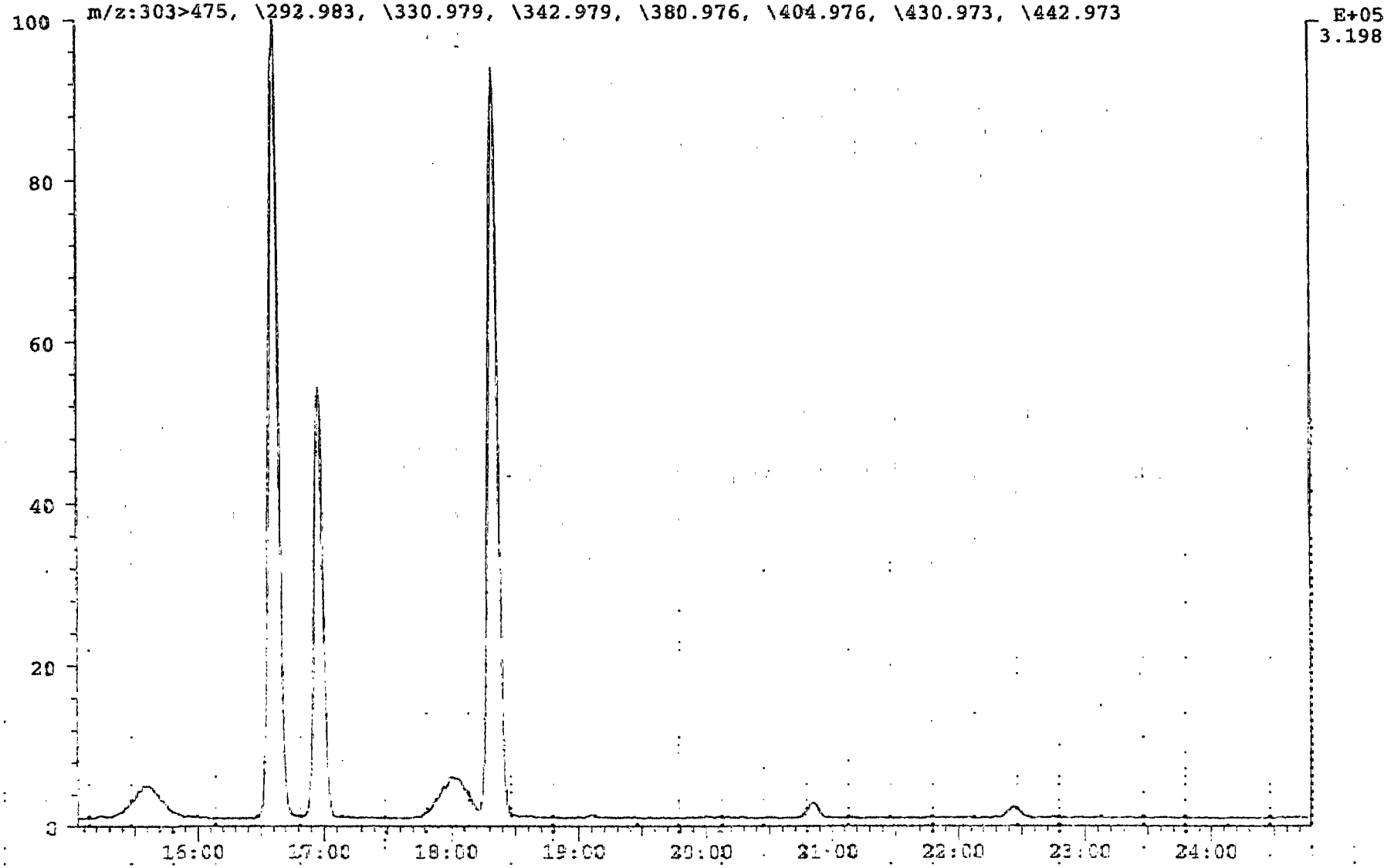
Data file(s) used
File: f021119i3 19-Nov-02
Samp: Vial 9 WO=2427:46CS3 Meth=L1c Dil=1 Start : 16:51:38 1151
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS3
Oper: MSD Client: STL Knoxville Inlet : GC Vial 9

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

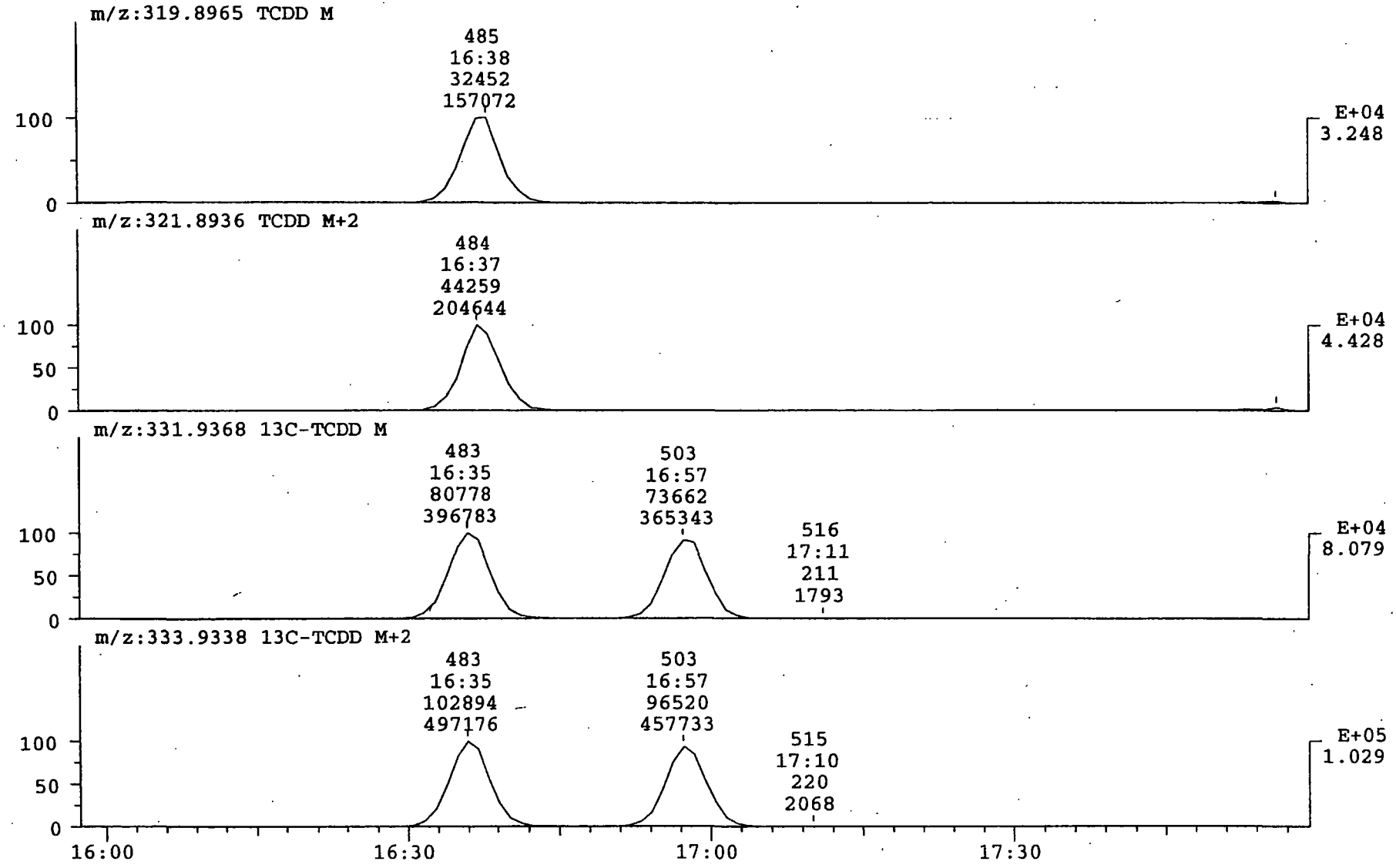
| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 16:37 | 41950. | 8266. | 16:31 | 16:50 | 69. | 2 | 3.0 |
| 319.8805 | 17:57 | 3388. | 1075. | 17:52 | 17:59 | 69. | 2 | 3.0 |
| 321.8775 | 16:37 | 52311. | 11451. | 16:32 | 16:47 | 84. | 2 | 3.0 |
| 321.8775 | 17:53 | 2092. | 611. | 17:52 | 17:59 | 84. | 2 | 3.0 |
| 331.9202 | 16:36 | 401265. | 87065. | 16:25 | 16:47 | 77. | 2 | 3.0 |
| 331.9202 | 16:49 | 832. | 326. | 16:47 | 16:50 | 77. | 2 | 3.0 |
| 331.9202 | 16:57 | 378535. | 80713. | 16:50 | 17:13 | 77. | 2 | 3.0 |
| 333.9171 | 16:36 | 511182. | 109726. | 16:25 | 16:48 | 59. | 2 | 3.0 |
| 333.9171 | 16:57 | 469283. | 99516. | 16:48 | 17:13 | 59. | 2 | 3.0 |
| 327.8683 | 16:37 | 92180. | 19699. | 16:28 | 16:53 | 53. | 2 | 3.0 |
| 303.8864 | 18:21 | 48739. | 9656. | 18:12 | 18:31 | 34. | 2 | 3.0 |
| 305.8834 | 18:21 | 61607. | 11439. | 18:09 | 18:31 | 39. | 2 | 3.0 |
| 315.9261 | 18:20 | 539444. | 109628. | 18:04 | 18:32 | 82. | 2 | 3.0 |
| 315.9261 | 18:35 | 768. | 289. | 18:32 | 18:36 | 82. | 2 | 3.0 |
| 315.9261 | 18:37 | 1909. | 340. | 18:36 | 18:45 | 82. | 2 | 3.0 |
| 315.9261 | 19:06 | 3785. | 557. | 18:50 | 19:11 | 82. | 2 | 3.0 |
| 317.9230 | 18:20 | 680160. | 141437. | 18:04 | 18:30 | 68. | 2 | 3.0 |
| 317.9230 | 18:31 | 1291. | 426. | 18:30 | 18:35 | 68. | 2 | 3.0 |
| 317.9230 | 18:37 | 2941. | 224. | 18:35 | 18:53 | 68. | 2 | 3.0 |
| 317.9230 | 19:06 | 4700. | 688. | 19:00 | 19:22 | 68. | 2 | 3.0 |

CHRO: f02111914 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 396 > 943 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

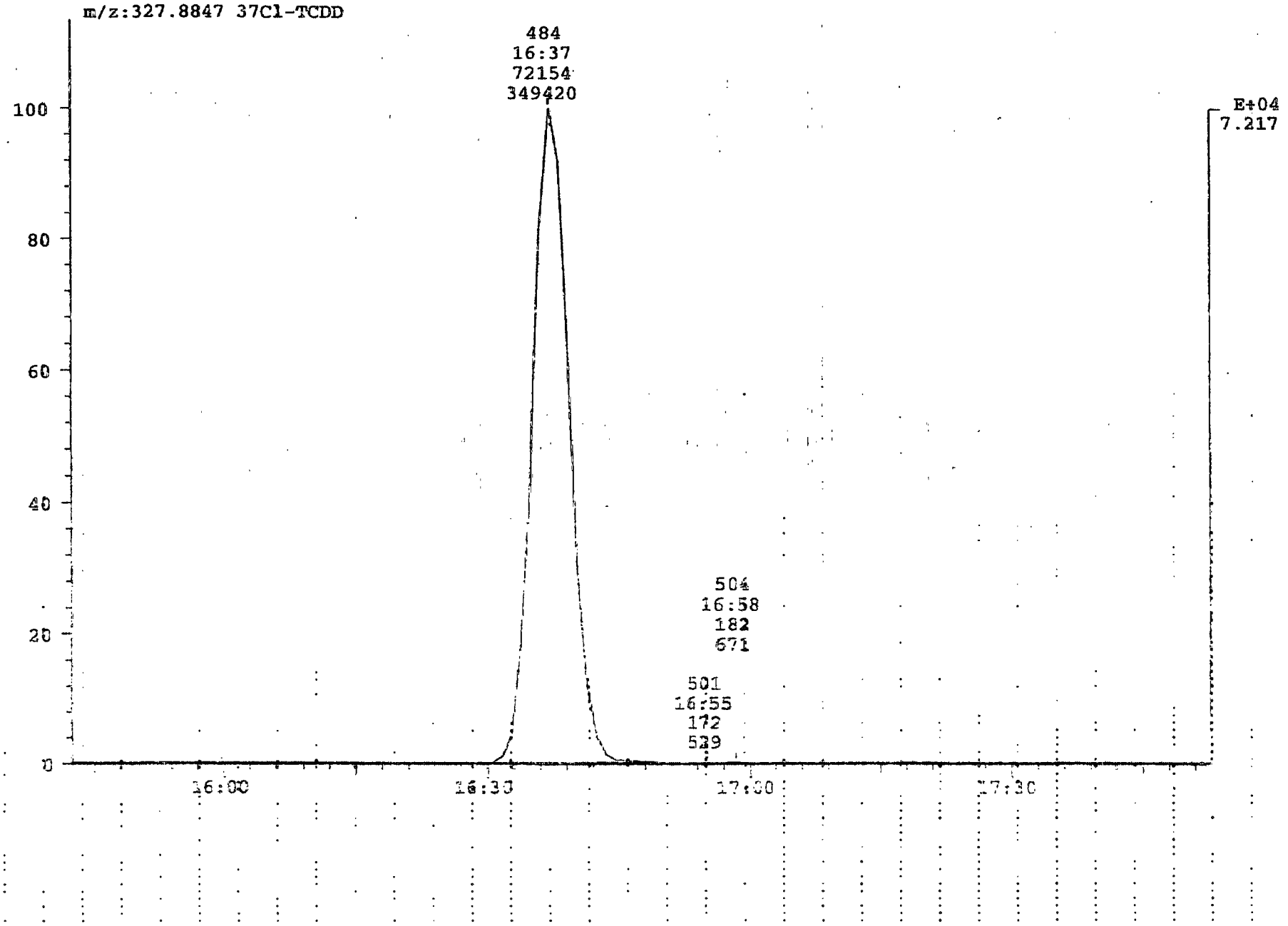
Inst, Calc MSD 11/21/02
QC VHK 11-21-02



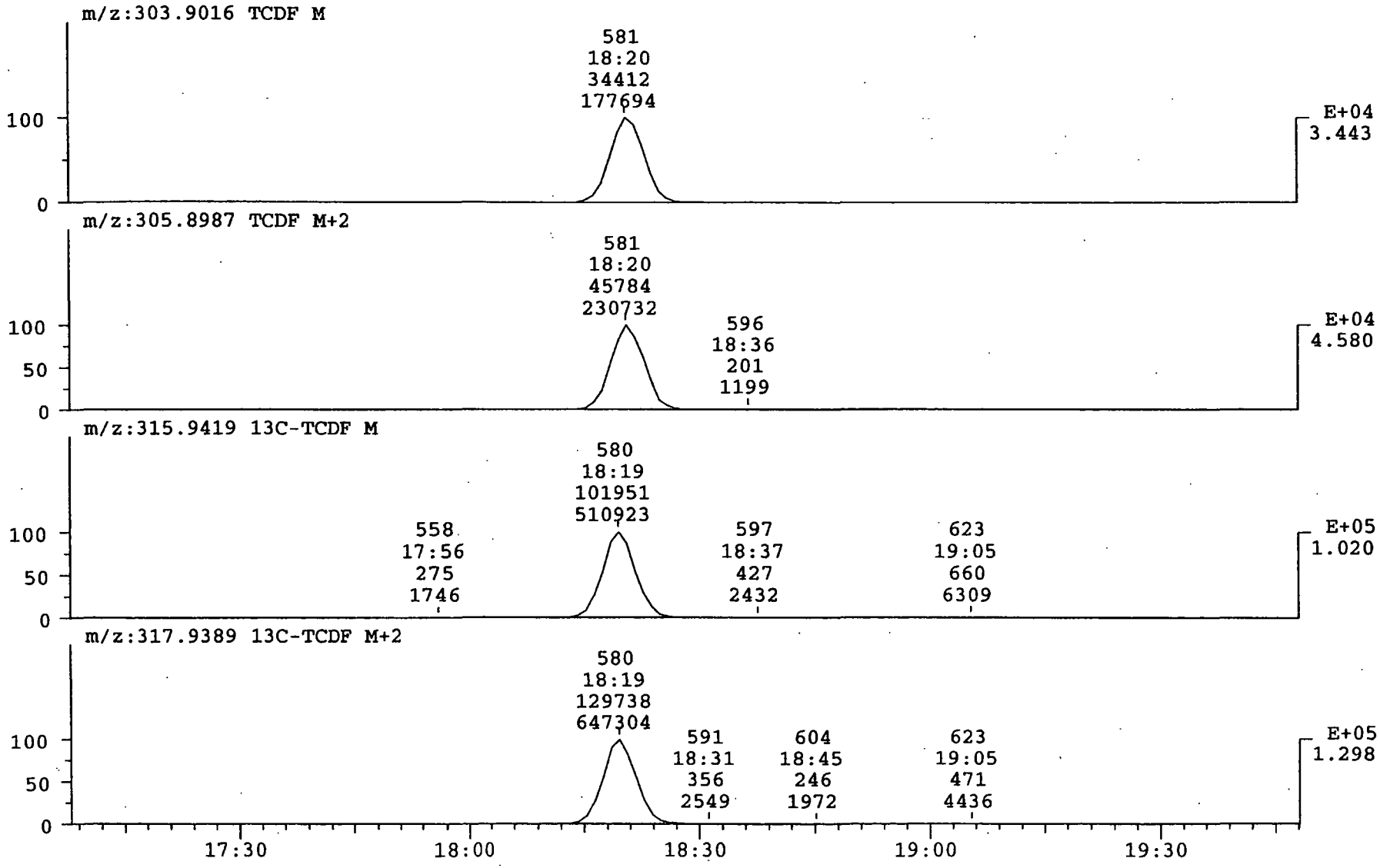
CHRO: f021119i4 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



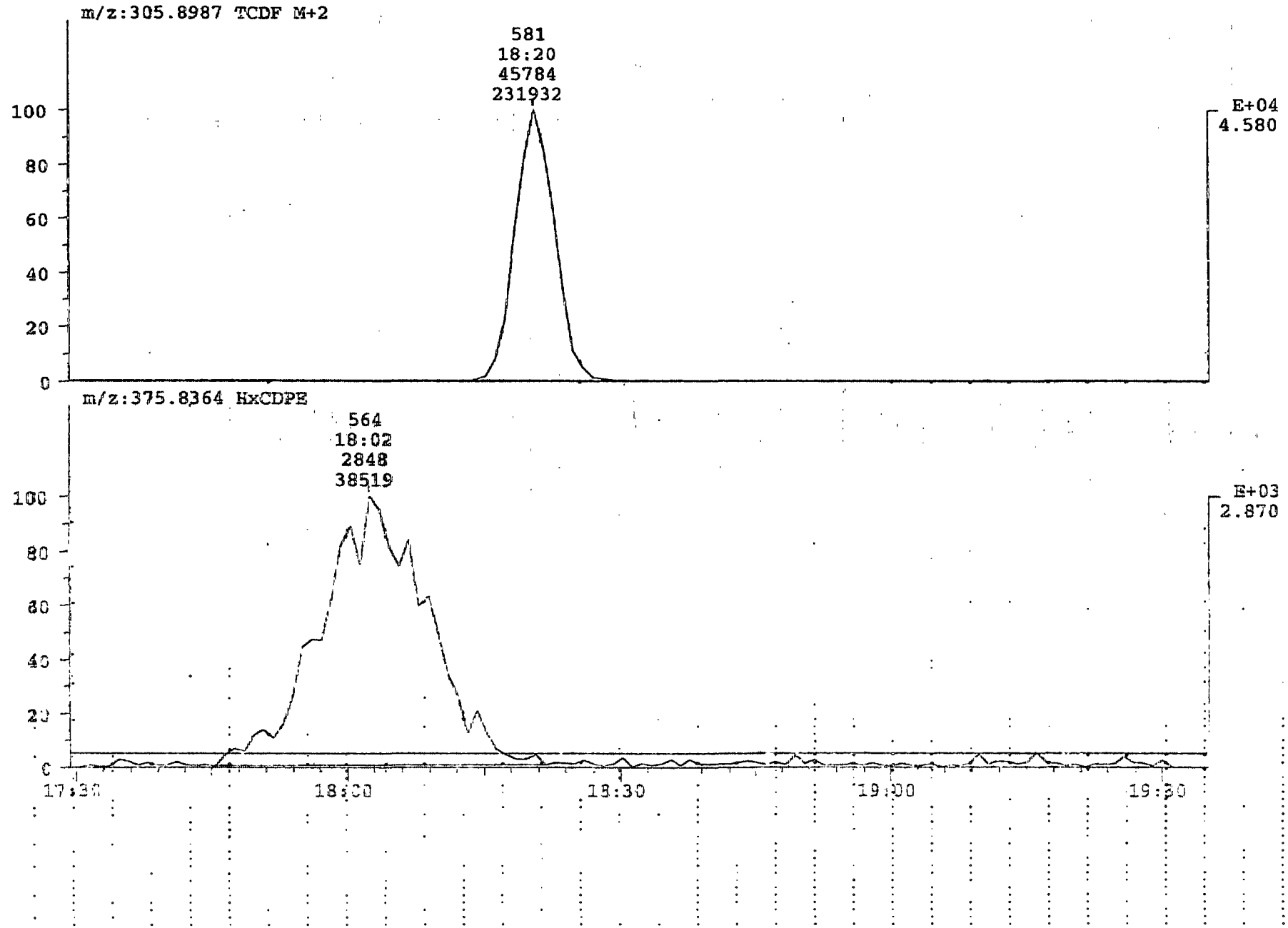
CHRO: f021119i4 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



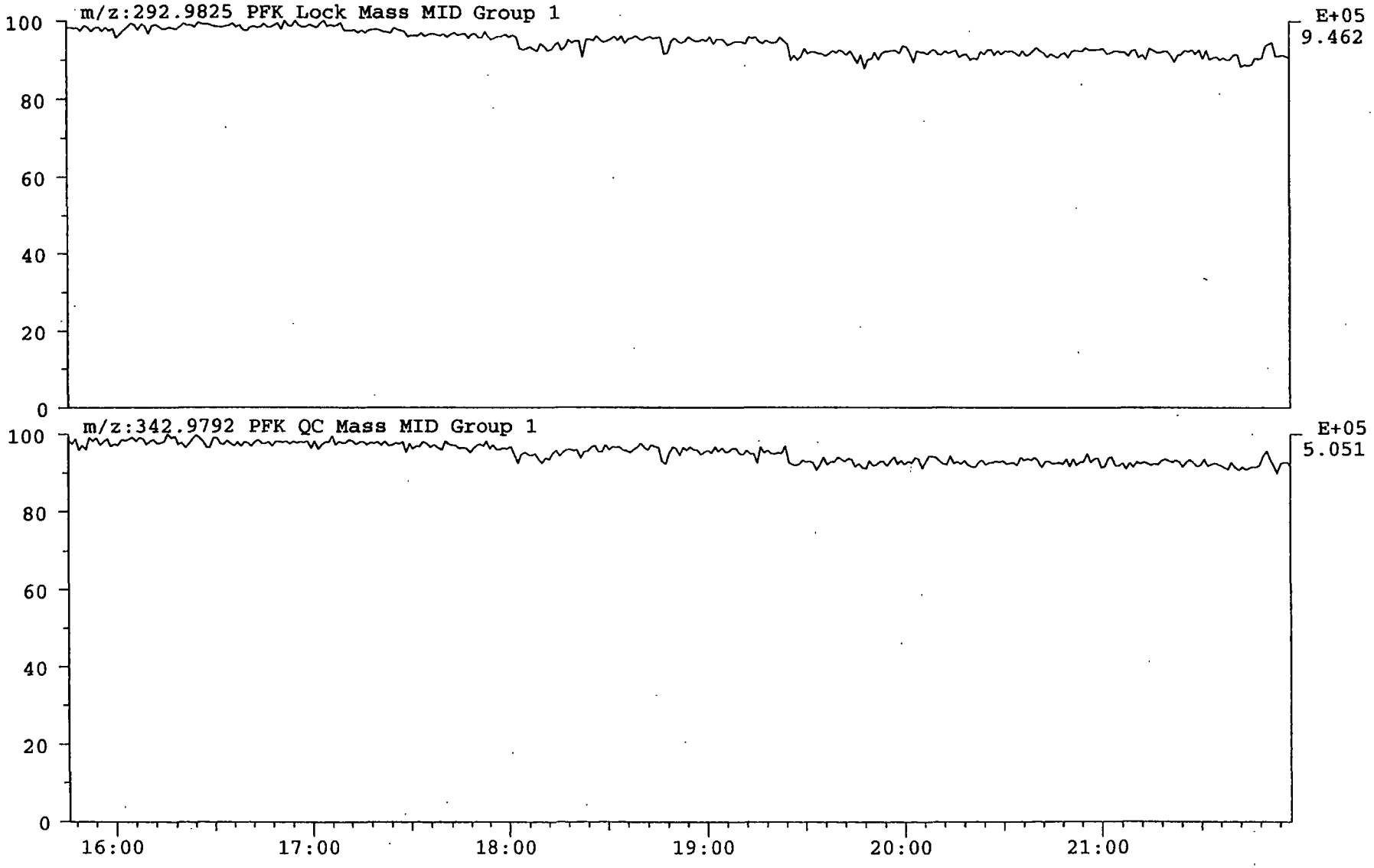
CHRO: f021119i4 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: f021119i4 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 533 > 651 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -3, 2.5
Disp: Height Area



CHRO: f021119i4 19-Nov-02 Elapse: 18:33.4 593
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119i4
Study: ICAL CS4
Sample: WO=2427:46CS4 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Injected volume:  2.00
Sample from Vial 10
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 6 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio          1
   Damping Relay            TRUE
   Width first lock         0.20 amu
   Electric jump time         10 ms
   Magnetic jump time         60 ms
   Offset                    100 cts
   Electric range            300 %
   Sweep peak width         3.00
   MID mode               Lock mode
   Acq mode               Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    20:30 min    28:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg | at | 0.0 minutes | 230 deg max |
| | 140 deg | at | 2.0 minutes | |
| | 200 deg | at | 5.0 minutes | |
| | 230 deg | at | 20.0 minutes | |
| | 230 deg | at | 28.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 111.0000 | FVINLET | 386.0000 | FVSRC | 409.0000 |
| FWIN | 0.7000 | GCTC | 202.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 966.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 271.3713 | ISTC | 274.8479 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1153.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 19-Nov-02 17:22:54.8

Autosampler has injected sample from vial 10
MID Time Window 1: Resolution is 8138
Analysis stopped at: 19-Nov-02 17:51:27.4 (run time 28.53 minutes)
Analysis stopped because MID run finished

QUAN: f021119i4.q0 Entries: 24

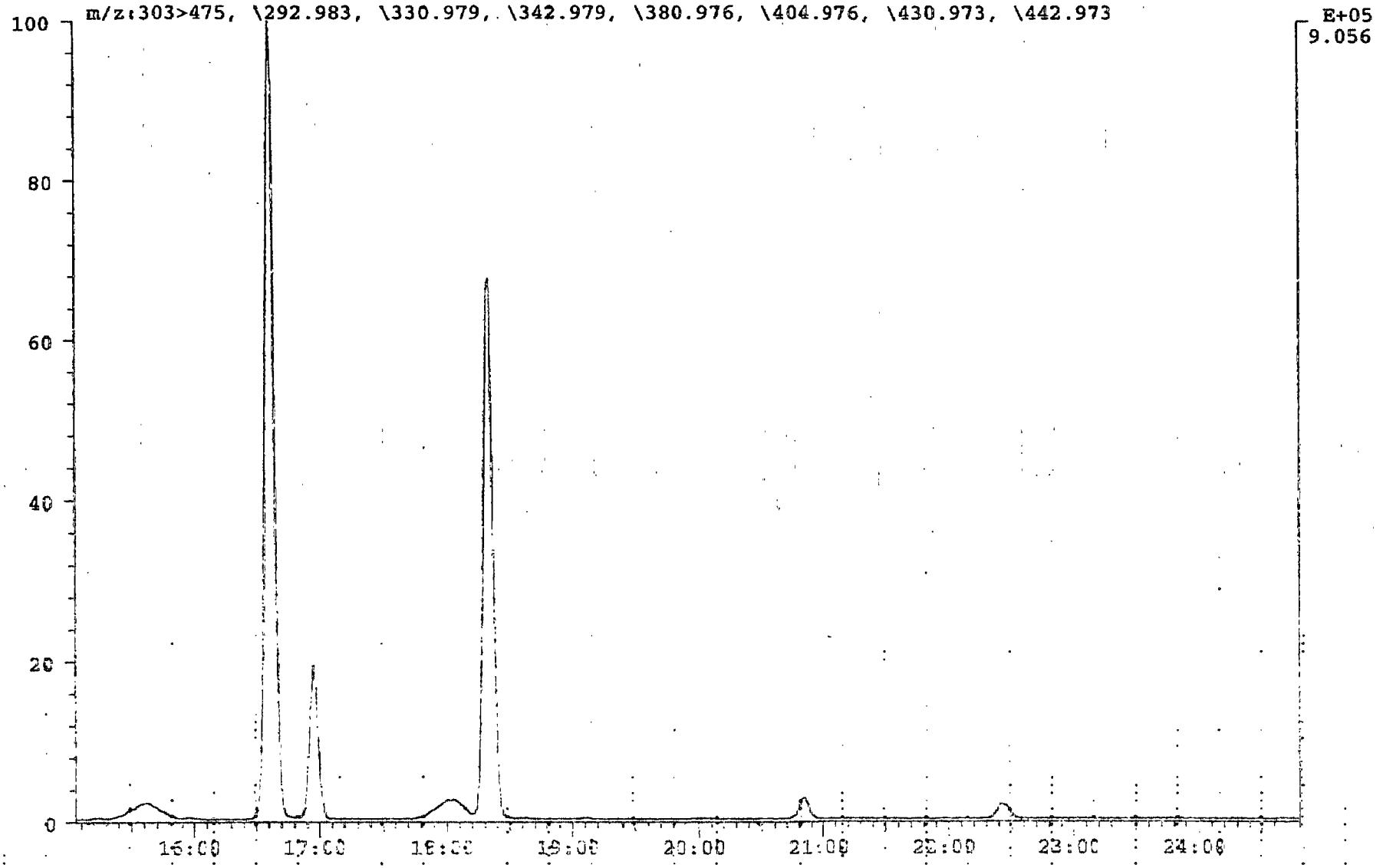
Data file(s) used
File: f021119i4 19-Nov-02
Samp: Vial 10 WO=2427:46CS4 Meth=L1c Dil=1 Start : 17:22:54 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS4
Oper: MSD Client: STL Knoxville Inlet : GC Vial 10

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

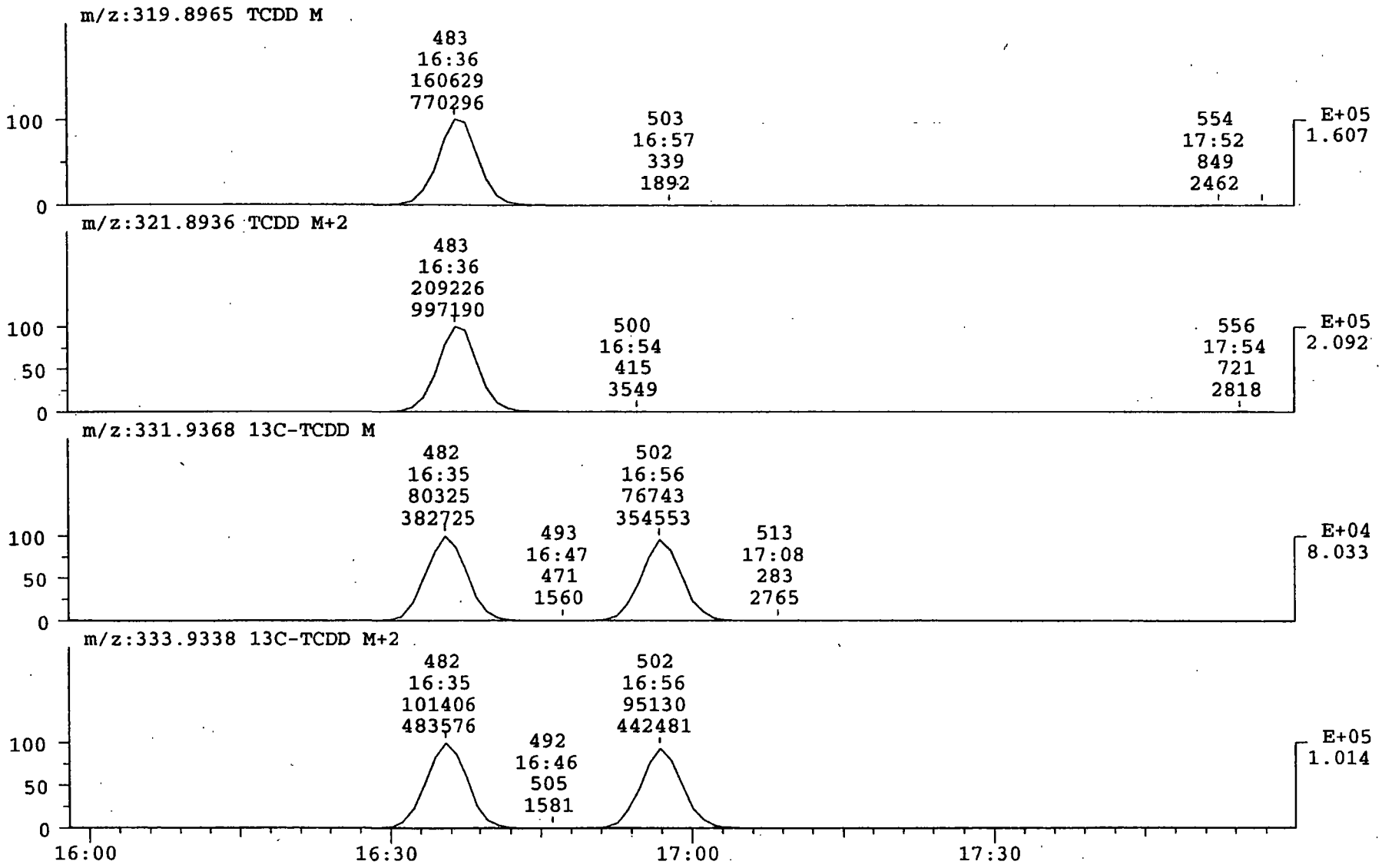
| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 16:38 | 157072. | 32452. | 16:29 | 16:54 | 69. | 2 | 3.0 |
| 319.8805 | 17:56 | 1379. | 727. | 17:53 | 17:57 | 69. | 2 | 3.0 |
| 321.8775 | 16:37 | 204644. | 44259. | 16:29 | 16:53 | 79. | 2 | 3.0 |
| 321.8775 | 17:56 | 4679. | 1489. | 17:51 | 17:58 | 79. | 2 | 3.0 |
| 331.9202 | 16:35 | 396783. | 80778. | 16:26 | 16:46 | 63. | 2 | 3.0 |
| 331.9202 | 16:57 | 365343. | 73662. | 16:46 | 17:05 | 63. | 2 | 3.0 |
| 331.9202 | 17:11 | 1793. | 211. | 17:05 | 17:15 | 63. | 2 | 3.0 |
| 333.9171 | 16:35 | 497176. | 102894. | 16:27 | 16:49 | 62. | 2 | 3.0 |
| 333.9171 | 16:57 | 457733. | 96520. | 16:49 | 17:09 | 62. | 2 | 3.0 |
| 333.9171 | 17:10 | 2068. | 220. | 17:09 | 17:26 | 62. | 2 | 3.0 |
| 327.8683 | 16:37 | 349420. | 72154. | 16:29 | 16:52 | 50. | 2 | 3.0 |
| 327.8683 | 16:55 | 529. | 172. | 16:52 | 16:56 | 50. | 2 | 3.0 |
| 327.8683 | 16:58 | 671. | 182. | 16:56 | 17:02 | 50. | 2 | 3.0 |
| 303.8864 | 18:20 | 177694. | 34412. | 18:04 | 18:36 | 42. | 2 | 3.0 |
| 305.8834 | 18:20 | 230732. | 45784. | 18:11 | 18:31 | 50. | 2 | 3.0 |
| 305.8834 | 18:36 | 1199. | 201. | 18:31 | 18:42 | 50. | 2 | 3.0 |
| 315.9261 | 17:56 | 1746. | 275. | 17:48 | 18:04 | 80. | 2 | 3.0 |
| 315.9261 | 18:19 | 510923. | 101951. | 18:04 | 18:35 | 80. | 2 | 3.0 |
| 315.9261 | 18:37 | 2432. | 427. | 18:35 | 18:46 | 80. | 2 | 3.0 |
| 315.9261 | 19:05 | 6309. | 660. | 18:49 | 19:19 | 80. | 2 | 3.0 |
| 317.9230 | 18:19 | 647304. | 129738. | 18:03 | 18:30 | 74. | 2 | 3.0 |
| 317.9230 | 18:31 | 2549. | 356. | 18:30 | 18:39 | 74. | 2 | 3.0 |
| 317.9230 | 18:45 | 1972. | 246. | 18:39 | 18:55 | 74. | 2 | 3.0 |
| 317.9230 | 19:05 | 4436. | 471. | 18:55 | 19:21 | 74. | 2 | 3.0 |

CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 396 > 943 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

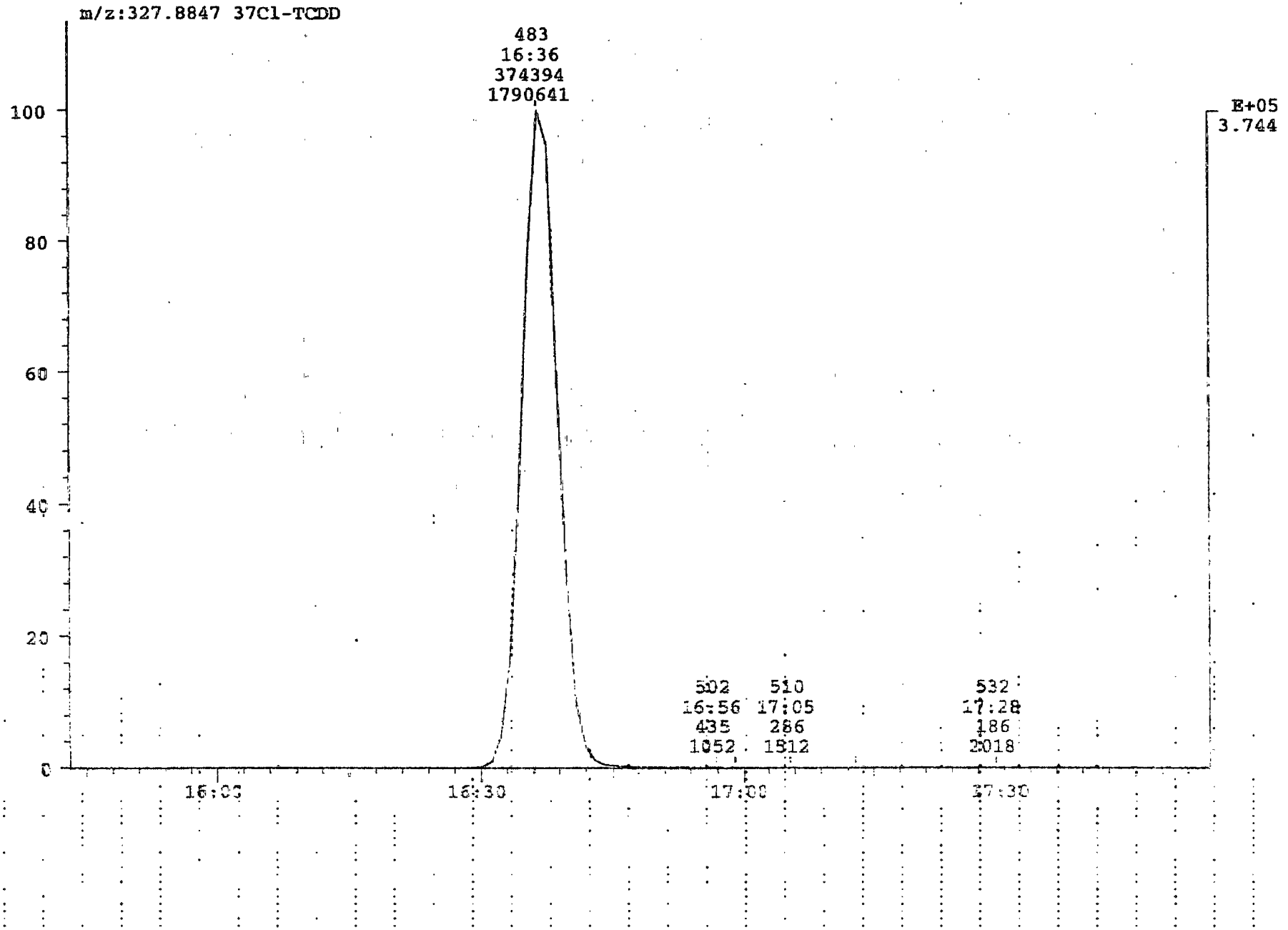
Just, Calc MSD 11/21/02
QC VNK 11.21.02



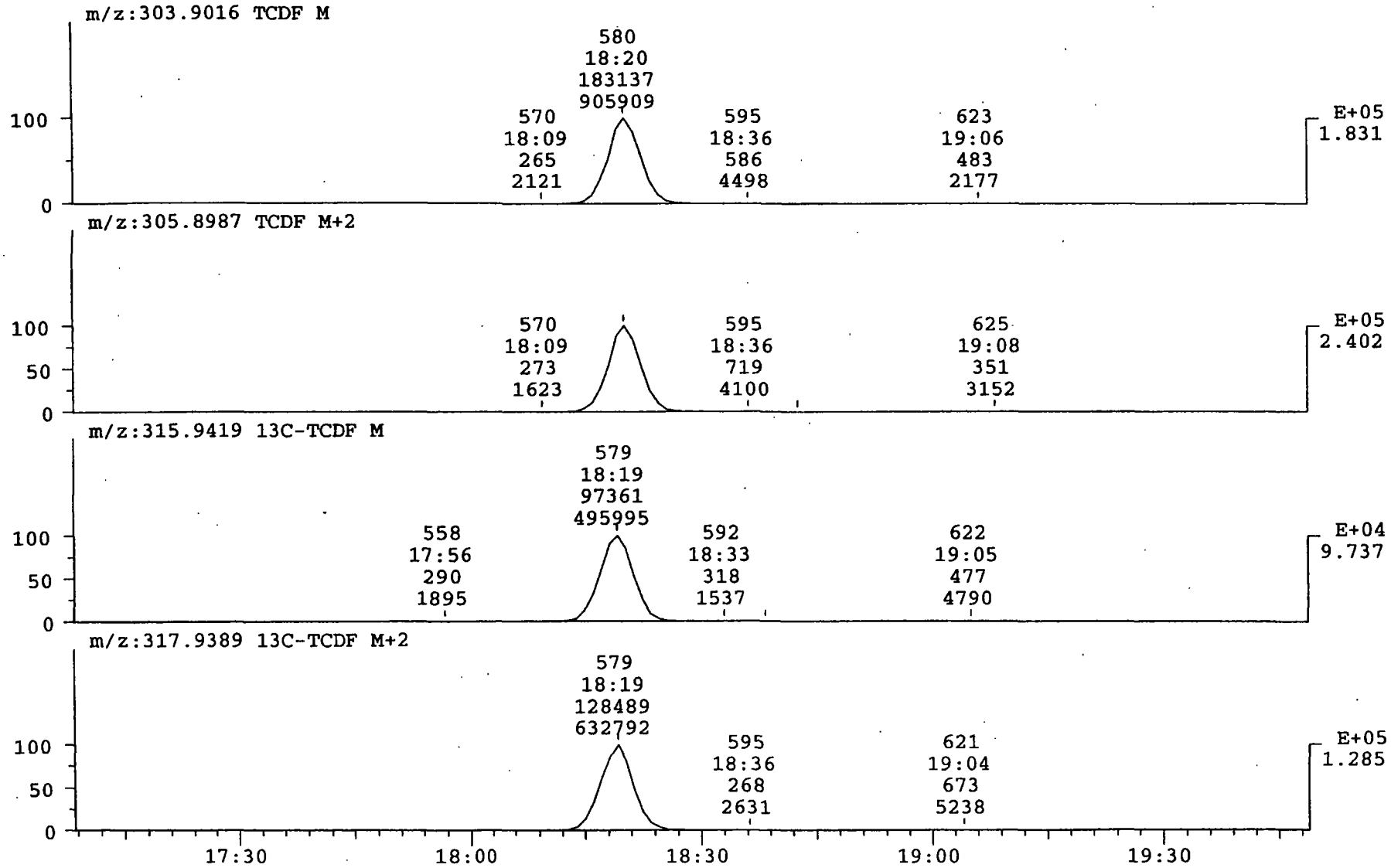
CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 447 > 561 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



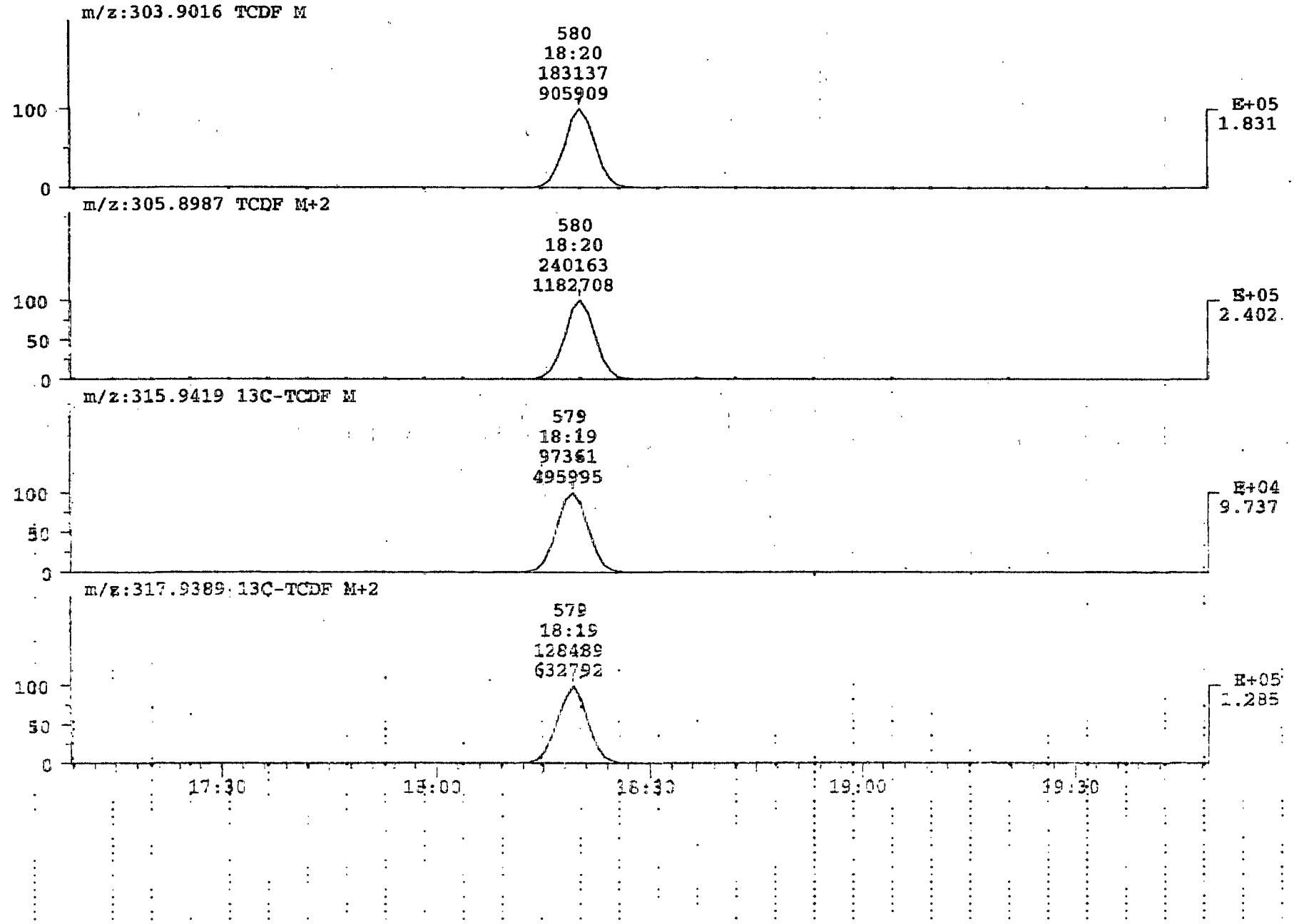
CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 433 > 555 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



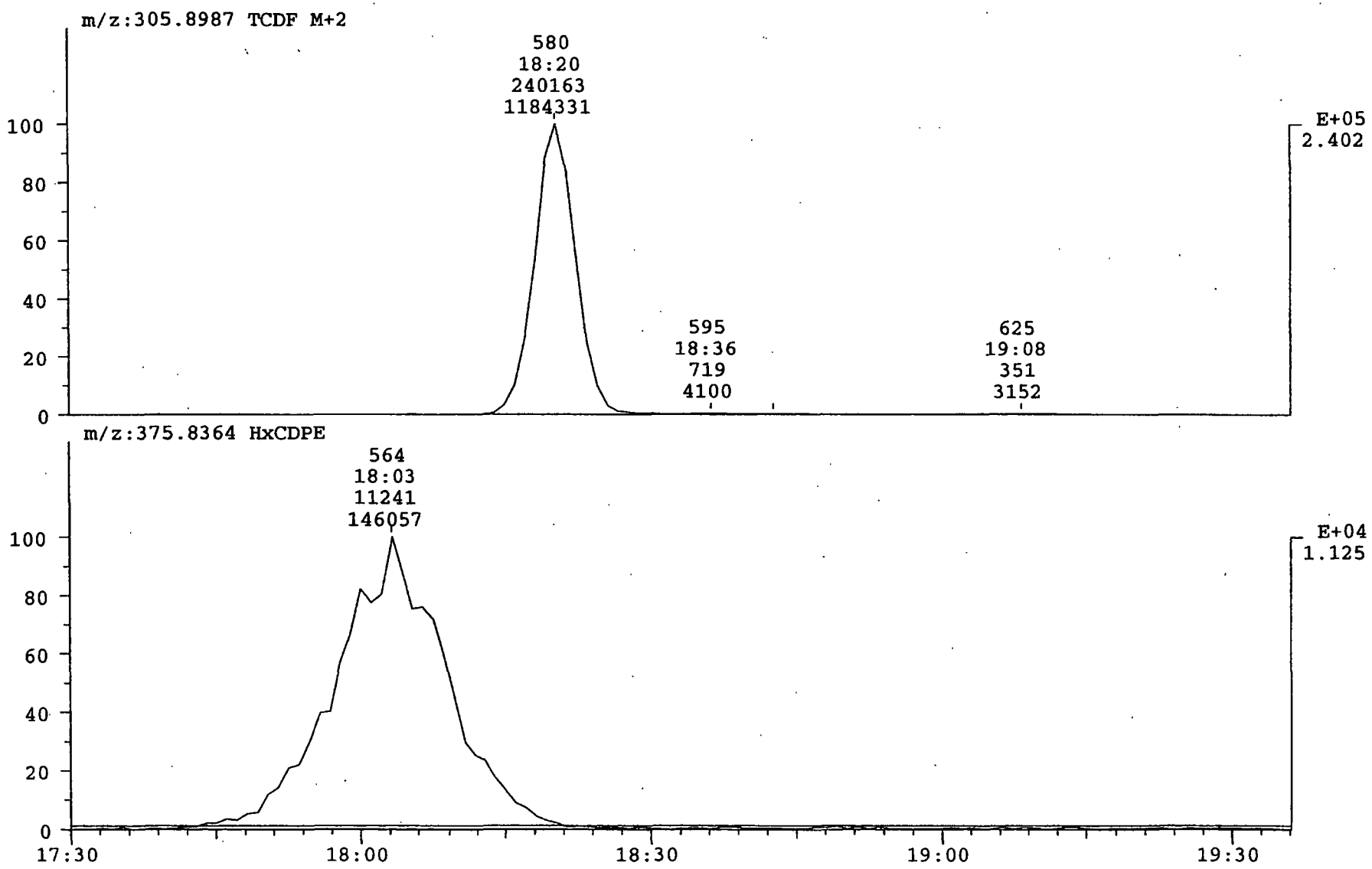
CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



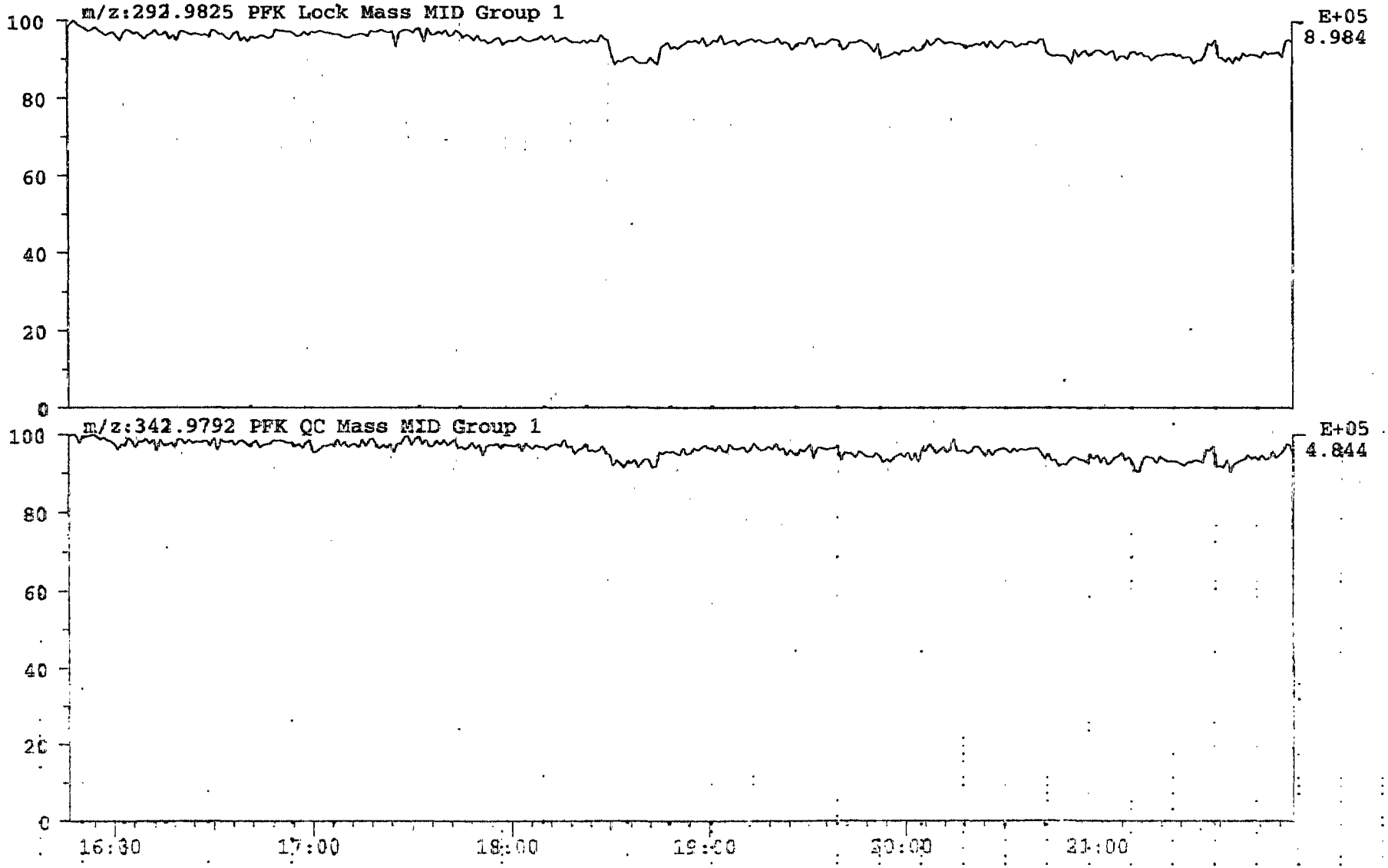
CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 513 > 663 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



```
CHRO:  f021119i5                              19-Nov-02   Elapse:  18:34.2      593
Samp:  Vial 11 WO=2427:46CS5 Meth=L1c Dil=1               Start :  17:54:09    1152
Comm:  Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  ICAL CS5
Oper:  MSD          Client:  STL Knoxville                Inlet :  GC     Vial  11
Peak:  100.00  ppm     Label wndw:   533 > 651            Masses:  293 > 376
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  -3, 2.5
Disp:  Height  Area
```



CHRO: f021119i5 19-Nov-02 Elapse: 18:34.2 593
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11
Peak: 100.00 ppm Label wndw: 436 > 784 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f021119i5
Study: ICAL CS5
Sample: WO=2427:46CS5 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: MSD
Client: STL Knoxville
Comments: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Injected volume:  2.00
Sample from Vial 11
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 7 of list 021119ical
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start        Measure       End        Cycletime
  # 1    8:00 min   20:30 min   28:30 min    1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1    1   1     69.63
    303.9016      1   1     69.63
    305.8987      1   1     69.63
    315.9419      1   1     69.63
    317.9389      1   1     69.63
    319.8965      1   1     69.63
    321.8936      1   1     69.63
    327.8847      1   1     69.63
    331.9368      1   1     69.63
    333.9338      1   1     69.63
    342.9792 c    1   1     69.63
    375.8364      1   1     69.63

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg | at | 0.0 minutes | 230 deg max |
| | 140 deg | at | 2.0 minutes | |
| | 200 deg | at | 5.0 minutes | |
| | 230 deg | at | 20.0 minutes | |
| | 230 deg | at | 28.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 994.8605 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -21.7750 | DRAWC | 0.0000 | DRAWS | 0.0000 |
| ECORR | 1.0009 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9997 | EDACR | 20.0000 | EDACZ | 2672.5000 |
| ELEN | 56.9750 | EMULT | 2.0000 | ENS | 165.8000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 148.7097 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 127.0000 | FVINLET | 383.0000 | FVSRC | 387.0000 |
| FWIN | 0.7000 | GCTC | 192.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 964.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4754.5740 |
| IST | 272.9399 | ISTC | 273.0621 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 2340.0000 |
| LENSS | 0.0000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3684040.5208 | MDACR | 20.0000 | MRANGE | 994.8605 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1154.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -7.1250 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10209.4114 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 3100.0000 | SHIELDS | 0.0000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 0.0000 | URATIO | 2.6000 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 3197.0000 | XLENSS | 25.4000 | YLENS | 1444.0000 |
| YLENSS | 0.0000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 19-Nov-02 17:54:09.4

Autosampler has injected sample from vial 11
MID Time Window 1: Resolution is 8138
Analysis stopped at: 19-Nov-02 18:22:42.8 (run time 28.54 minutes)
Analysis stopped because MID run finished

QUAN: f021119i5.q0 Entries: 11

Data file(s) used
File: f021119i5 19-Nov-02
Samp: Vial 11 WO=2427:46CS5 Meth=L1c Dil=1 Start : 17:54:09 1152
Comm: Inst=m3c/2366222 Batch=20021119i Ccal=METHOD
Mode: EI +VE +LMR ESCAN LR NRM Study : ICAL CS5
Oper: MSD Client: STL Knoxville Inlet : GC Vial 11

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 16:36 | 770296. | 160629. | 16:26 | 16:52 | 83. | 2 | 3.0 |
| 321.8775 | 16:36 | 997190. | 209226. | 16:28 | 16:52 | 88. | 2 | 3.0 |
| 331.9202 | 16:35 | 382725. | 80325. | 16:24 | 16:45 | 71. | 2 | 3.0 |
| 331.9202 | 16:56 | 354553. | 76743. | 16:49 | 17:05 | 71. | 2 | 3.0 |
| 333.9171 | 16:35 | 483576. | 101406. | 16:26 | 16:44 | 73. | 2 | 3.0 |
| 333.9171 | 16:56 | 442481. | 95130. | 16:48 | 17:12 | 73. | 2 | 3.0 |
| 327.8683 | 16:36 | 1790641. | 374394. | 16:29 | 16:52 | 57. | 2 | 3.0 |
| 303.8864 | 18:20 | 905909. | 183137. | 18:11 | 18:33 | 66. | 2 | 3.0 |
| 305.8834 | 18:20 | 1182708. | 240163. | 18:10 | 18:33 | 57. | 2 | 3.0 |
| 315.9261 | 18:19 | 495995. | 97361. | 18:03 | 18:28 | 64. | 2 | 3.0 |
| 317.9230 | 18:19 | 632792. | 128489. | 18:04 | 18:33 | 70. | 2 | 3.0 |

# STL Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
## Method: 1613B - KNOX-ID-0004-R3

| Start PFK: | 22:10 | VER Filename: | F031006S3 | Win Filename: | NA | Inst: | MAT90S |
|---|---|---|---|---|---|---|---|
| End PFK: | 08:07 | | | Col Perf Filename: | F031006w3 | ICAL Date: | 11-19-02 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented at both the beginning and end of the 12 hour shift? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10.000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | ✓ | | | | ✓ |
| 6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 7. Was the continuing calibration performed at the beginning of the 12 hour period after successful mass resolution and GC resolution performance check? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 22), and formula (Section 10.2.6)? | | ✓ | | | ✓ |
| 9. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs? | | ✓ | | | ✓ |
| 10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | ✓ | | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the CCAL folder contain **complete** data in the following order: Data review checklist, a **complete** runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards? | | ✓ | | | ✓ |

| Analyst: DNW | Date: 10-6-03 | 2nd Level Reviewer: MW | Date: 10-7-03 |
|---|---|---|---|
| Comments: | | Comments: | |

# STL Knoxville Dioxin GC/MS Continuing Calibration Review / Narrative Checklist
## Method: 8290 - KNOX-ID-0004-R3

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Start PFK: | 22:10 | VER Filename: | F03100692 | Win Filename: | NA | Inst: | MAT903 |
| End PFK: | 08:07 | VER Filename: | F03100751 | Col Perf Filename: | F03100603 | ICAL Date: | 11-19-02 |

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Was the mass resolution documented at both the beginning and end of the 12 hour shift? | | ✓ | | | ✓ |
| 2. Was the instrument resolution >10,000 (<100 ppm) on PFK m/z 304.9824 and m/z 380.9760 (at reduced voltage)? | | ✓ | | | ✓ |
| 3. Was the measured exact mass of m/z 380.9760 (PFK) within 5 ppm at reduced accelerating voltage? | | ✓ | | | ✓ |
| 4. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 5. Was the Window Defining Mixture analyzed and the MID switchpoints set to encompass the retention time windows of each congener group? | ✓ | | | | ✓ |
| 6. Was the Column Performance solution analyzed and the %Valley ≤25 for separation between 2378-TCDD/F and the closest eluting non-2378 isomer? | | ✓ | | | ✓ |
| 7. Were continuing calibrations performed at the beginning and end of the 12-hour period, with successful mass resolution and GC resolution performance checks? | | ✓ | | | ✓ |
| 8. Were the response factors calculated for each labeled standard and unlabeled native analyte using the SOP specified reference compound (Table 3), quantitation ions (Table 22), and formula (Section 10.2.6)? | | ✓ | | | ✓ |
| 9. Are the measured RRFs for each compound within the specified control limits in Table 7 for all PCDDs/PCDFs? | | ✓ | | | ✓ |
| 10. Are the relative retention times of all PCDDs/PCDFs and all labeled compounds within the limits specified in Table 3? | | ✓ | | | ✓ |
| 11. Are all S/N ratios ≥10 for the GC signals in each EICP (extracted ion chromatographic profile) including internal standards? | | ✓ | | | ✓ |
| 12. Are the ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22 of the SOP? | | ✓ | | | ✓ |
| 13. If manual integrations were performed, are they clearly identified, initialed and dated? | ✓ | | | | ✓ |
| 14. If criteria were not met, was a NCM generated, approved by supervisor, and copy included in folder? | ✓ | | | | ✓ |
| 15. Does the CCAL folder contain complete data in the following order: Data review checklist, a complete runlog, CCAL summary, Ratio summary, Calculation summary, PFK resolution/peak match documentation; Total RIC, EICP's and manual integration - for window and all standards? | | ✓ | | | ✓ |
| 16. | | | | | |

| | | | |
|---|---|---|---|
| Analyst: PNP | Date: 10-6-03 | 2nd Level Reviewer : BKW | Date: 10-7-03 |
| Comments: | | Comments: | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

# STL KNOXVILLE
## SPECIALTY ORGANICS INSTRUMENT MAT 90S RUN LOG

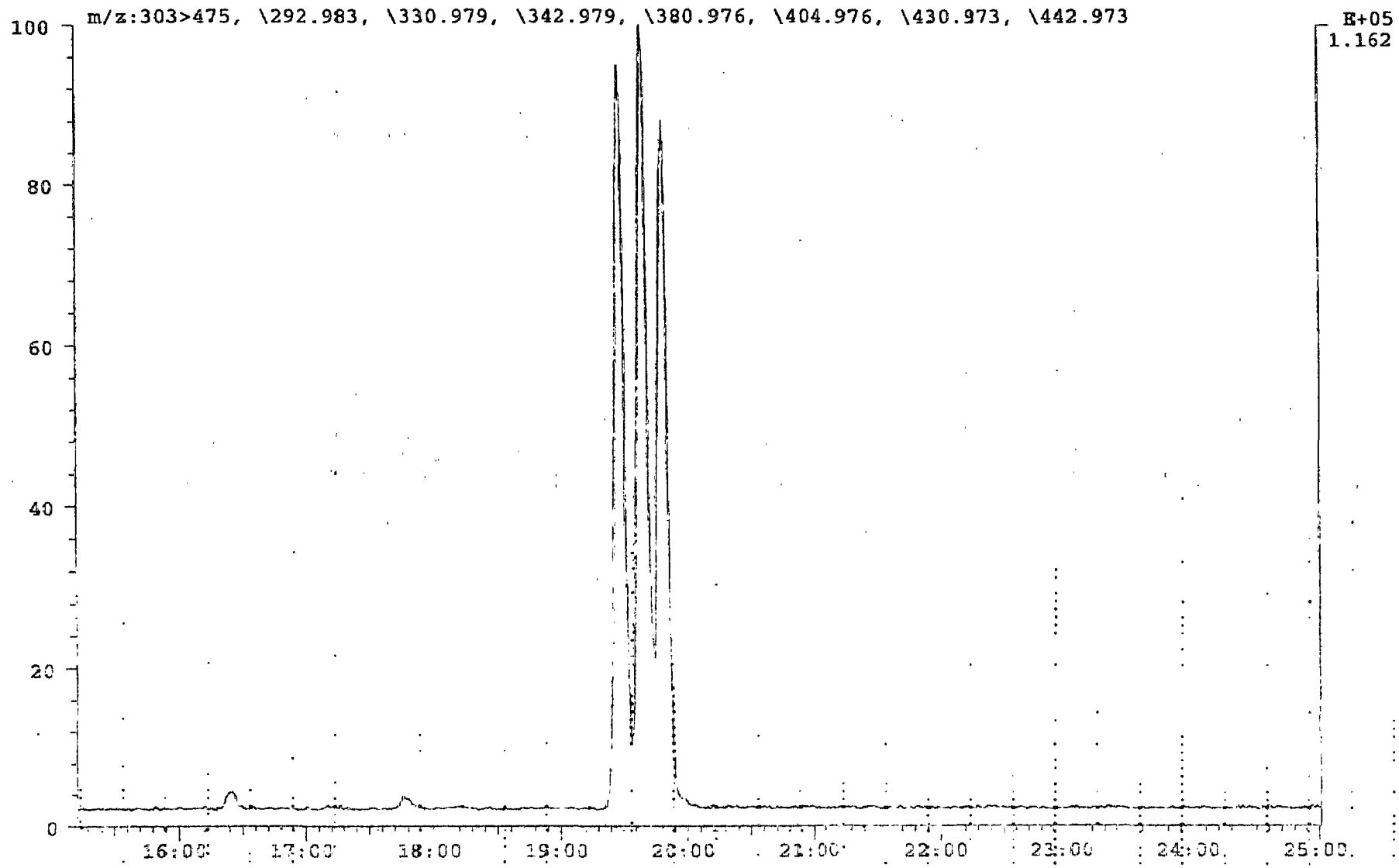
| Date | Time | Opr | Sample ID | Filename | Code | Matrix | Type | Tape | Lot#/Comments |
|---|---|---|---|---|---|---|---|---|---|
| 10-06-03 | 22:10 | PMP | PFK | — | OK | — | Res | | Mass Res Chk |
| 10-06-03 | 22:12 | PMP | 1009:59 | F031006W3 | OK | — | Cal Ver | | Cal Ver |
| 10-06-03 | 22:46 | PMP | 2553:86 | F031006W3 PMP 10-6-03 | OK | — | Ver | | Ver |
| 10-6-03 | 23:19 | PMP | Nonane | fr | OK | — | QC | | flush |
| 10-6-03 | 23:39 | PMP | FIJDV1AA | ffijdvba | OK | H2O | QC | | System Blk |
| 10-7-03 | 00:13 | PMP | FT63N1AF | ff t63n | OK | SOLID | SAM | | H3G280117-001 |
| 10-7-03 | 00:46 | PMP | FT64L1AF | ff t64l | OK | SOLID | SAM | | 1 -009 |
| 10-7-03 | 01:19 | PMP | FX1WF1AD | FFx1wf | OK | SOLID | SAM | | H3I100253-001 |
| 10-7-03 | 01:58 | PMP | FX1WH1AF | ffx1wh | OK | SOLID | SAM | | 002 |
| 10-7-03 | 02:32 | PMP | FX1WJ1AH | ffx1wj | OK | SOLID | SAM | | 003 |
| 10-7-03 | 03:05 | PMP | FOZFN1AE | ff0zfn | OK | SOLID | SAM | | H3I240193-001 |
| 10-7-03 | 03:39 | PMP | FO5A01AD | ff05a0 | OK | SOLID | SAM | | H3I250135-001 |
| 10-7-03 | 04:12 | PMP | FO5A91AD | ff05a9 | OK | SOLID | SAM | | 003 |
| 10-7-03 | 04:45 | PMP | Nonane | fr | OK | — | QC | | flush |
| ~~10-7-03~~ | | ~~PMP~~ | ~~2553:86~~ | ~~F031007S1~~ PMP 10-7-03 | | — | ~~Ver~~ | | ~~Ver~~ |
| 10-7-03 | 05:01 | PMP | Nonane | frinse | OK | — | QC | | flush |
| 10-7-03 | 05:34 | PMP | FO5EK1AA | ff05eka | OK | H2O | SAM | | |
| 10-7-03 | 06:07 | PMP | Nonane | fr | OK | — | QC | | flush |
| 10-7-03 | 07:33 | PMP | 2553:66 | F031007S1 | OK | — | Ver | | Ver |
| 10-7-03 | 08:07 | OAW | PFK | — | OK | — | Res | | Mass Res Check |

Read and Understood by:

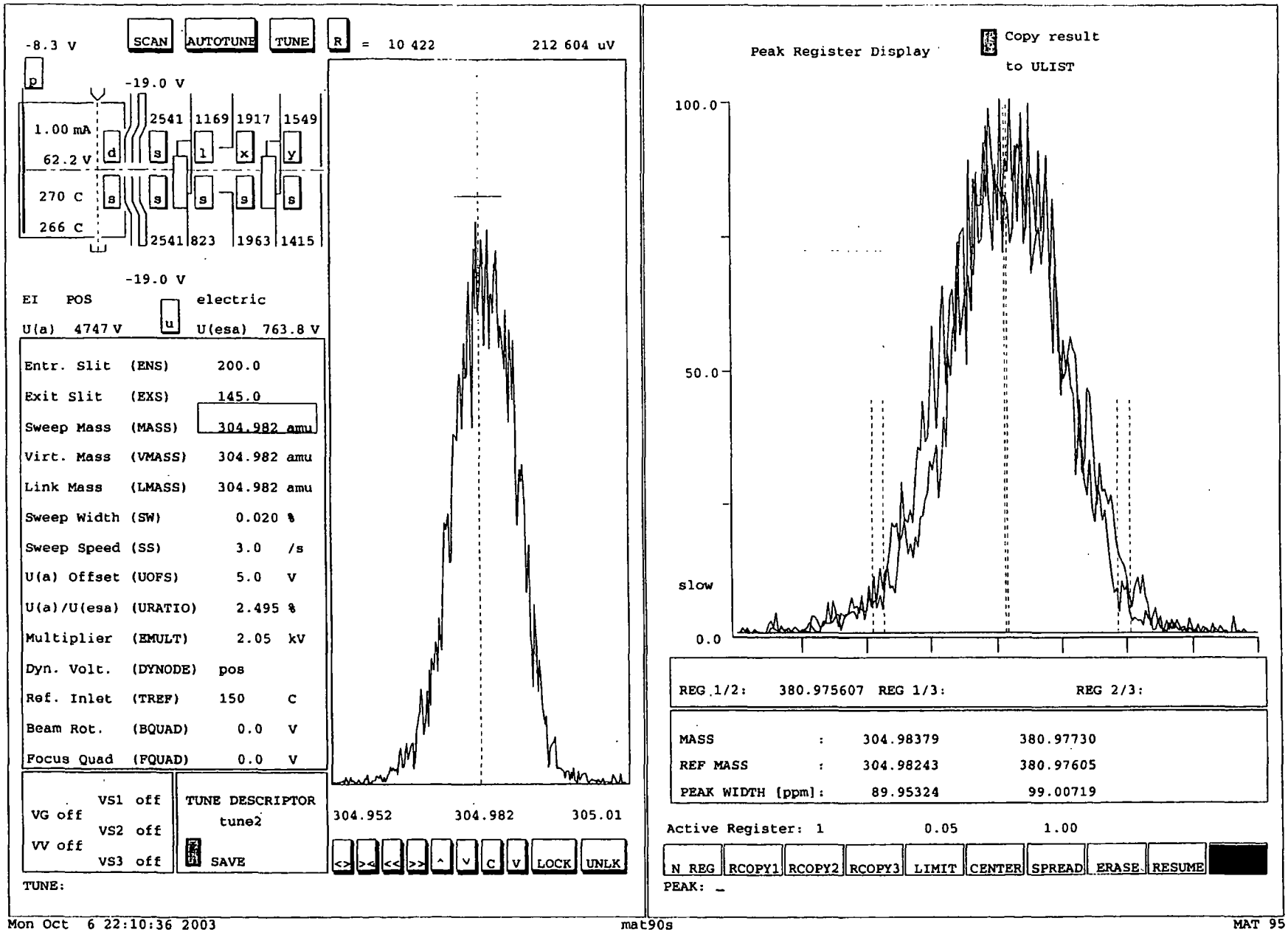
_____ Date: _____

CHRO: f031006w3 06-Oct-03 Elapse: 19:40.2 652
Samp: Vial 3 WO=1009:59 Meth=L1c Dil=1 Start : 22:12:45 1258
Comm: Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: PMP Client: STL Knoxville Inlet : GC Vial 3
Peak: 100.00 ppm Label wndw: 403 > 950 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int / Calc Prev 10-06-03
QC [illegible] 10-7-03




804


-8.3 V
SCAN
AUTOTUNE
TUNE
R
= 10 422
212 604 uV
p
-19.0 V
1.00 mA
62.2 V
270 C
266 C
2541 1169 1917 1549
d s l x y
s s s s s
2541 823 1963 1415
-19.0 V
EI POS
electric
U(a) 4747 V
u
U(esa) 763.8 V
Entr. Slit (ENS) 200.0
Exit Slit (EXS) 145.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.495 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VS1 off
VS2 off
VV off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
<> >< << >> ^ v C v LOCK UNLK
TUNE:
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975607 REG 1/3: REG 2/3:
MASS : 304.98379 380.97730
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 89.95324 99.00719
Active Register: 1 0.05 1.00
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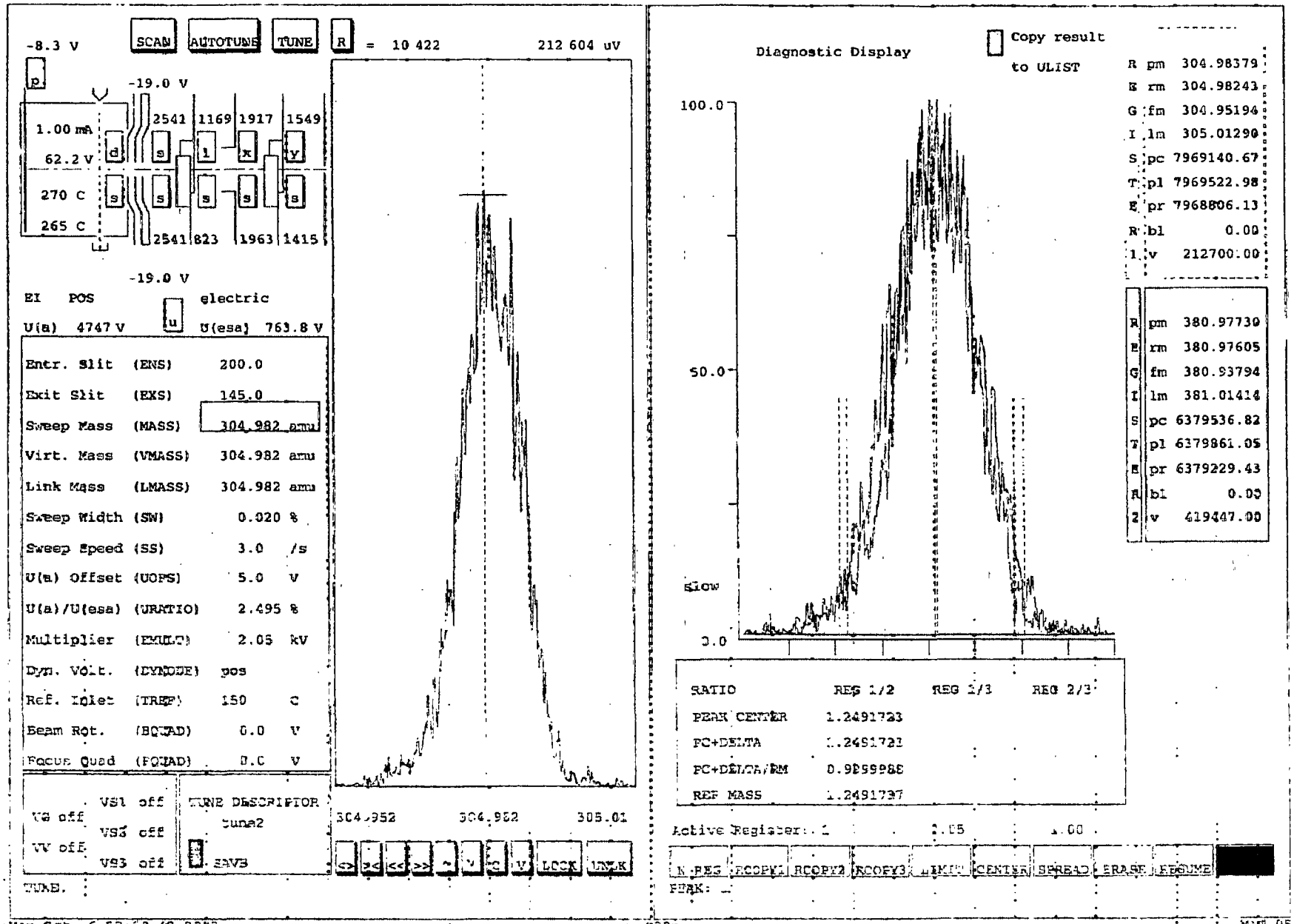
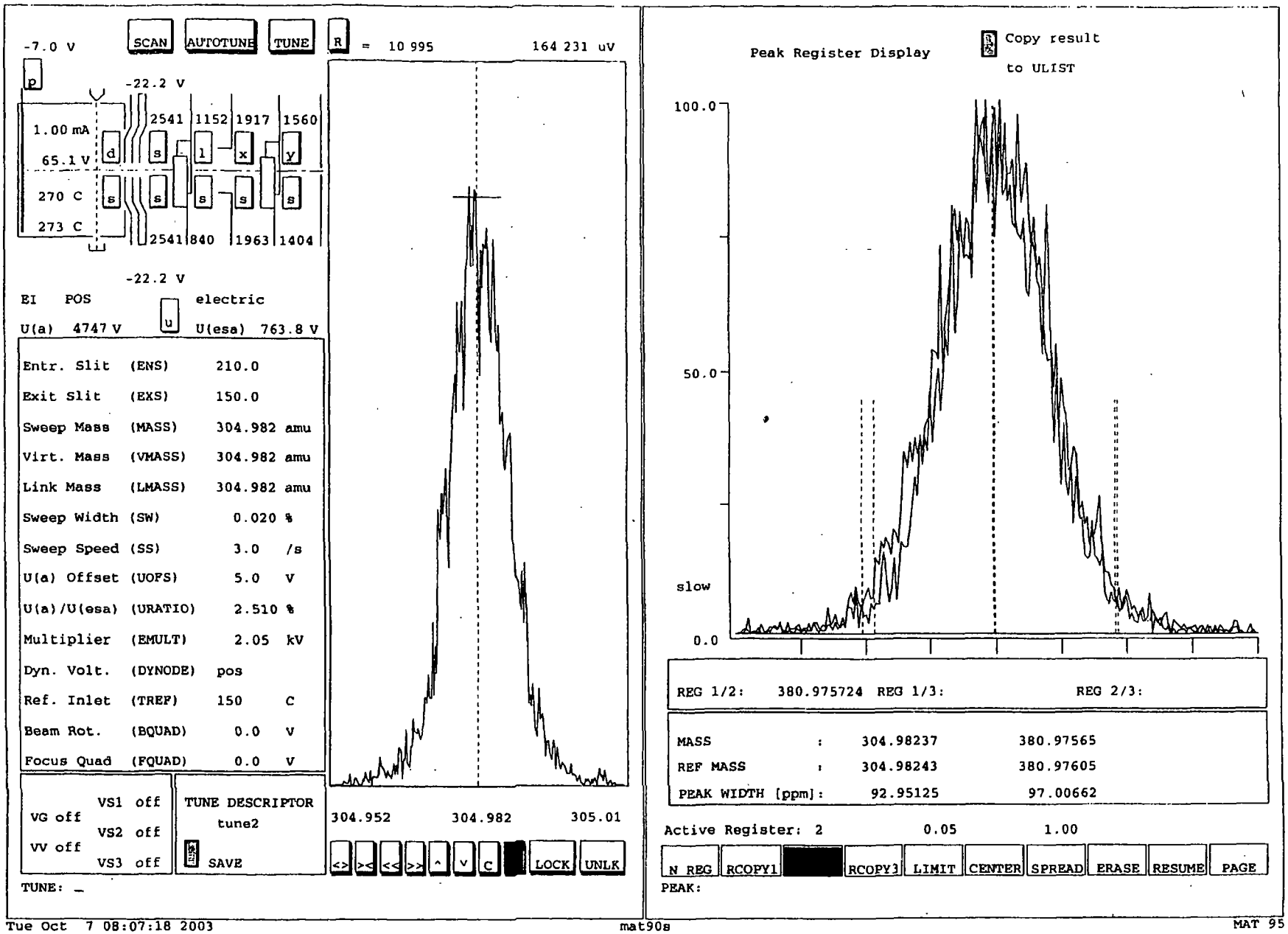
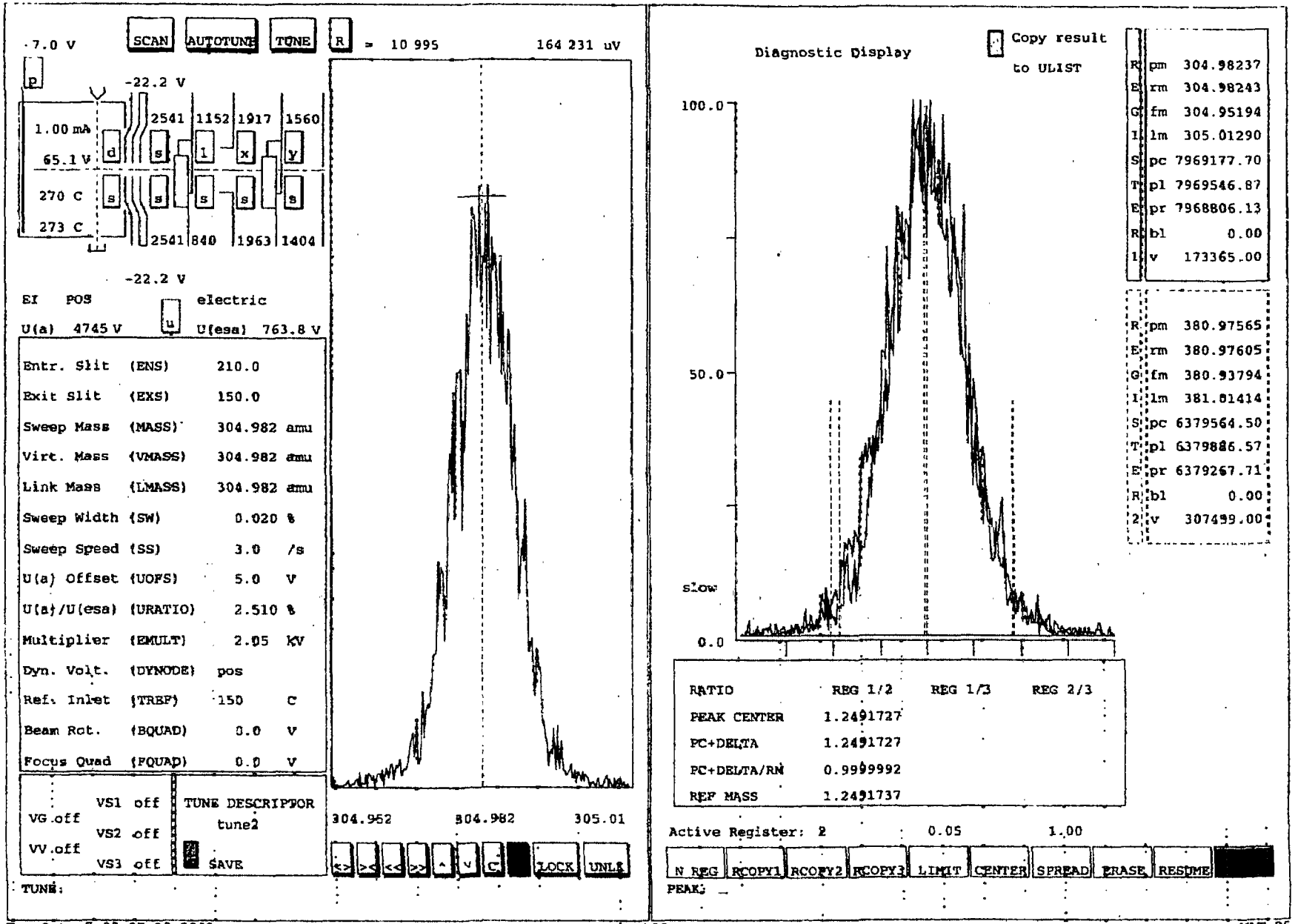
PEAK: _
Mon Oct 6 22:10:36 2003
mat90s
MAT 95

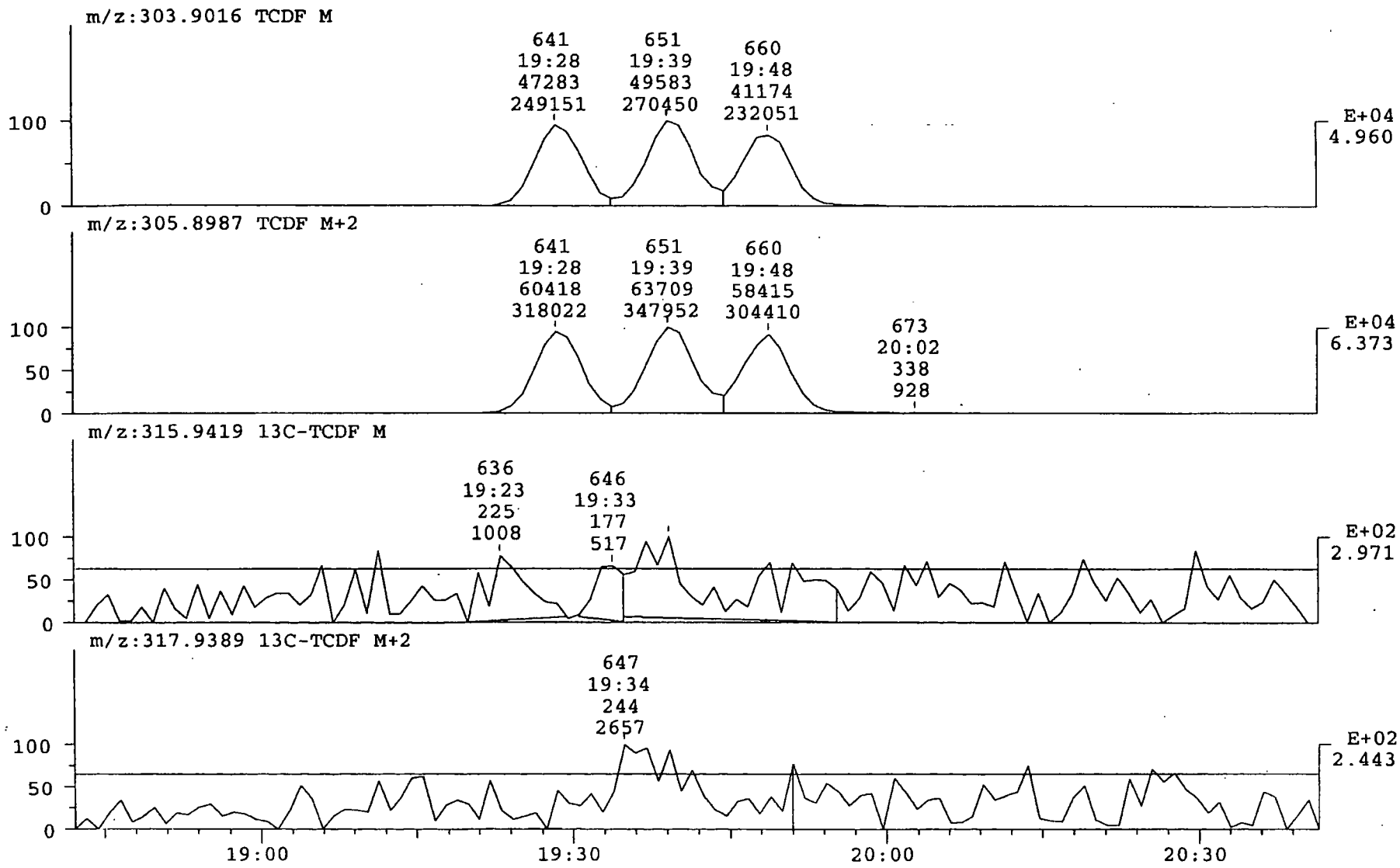


-8.3 V
SCAN
AUTOTUNE
TUNE
R = 10 422
212 604 uV
p
-19.0 V
1.00 mA
62.2 V
270 C
265 C
2541 1169 1917 1549
2541 823 1963 1415
-19.0 V
EI POS
electric
U(a) 4747 V
U(esa) 763.8 V
Entr. Slit (ENS) 200.0
Exit Slit (EXS) 145.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.495 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
TUNE.
304.952
304.982
305.01
LOCK
UNLK
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
R pm 304.98379
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969140.67
T pl 7969522.98
E pr 7968806.13
R bl 0.00
1 v 212700.00
R pm 380.97730
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379536.82
T pl 6379861.05
E pr 6379229.43
R bl 0.00
2 v 419447.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491723
PC+DELTA 1.2491723
PC+DELTA/RM 0.9999988
REF MASS 1.2491737
Active Register: 1 2.05 1.00
K REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK:
Mon Oct 6 22:10:42 2003
mat90s
MAT 95

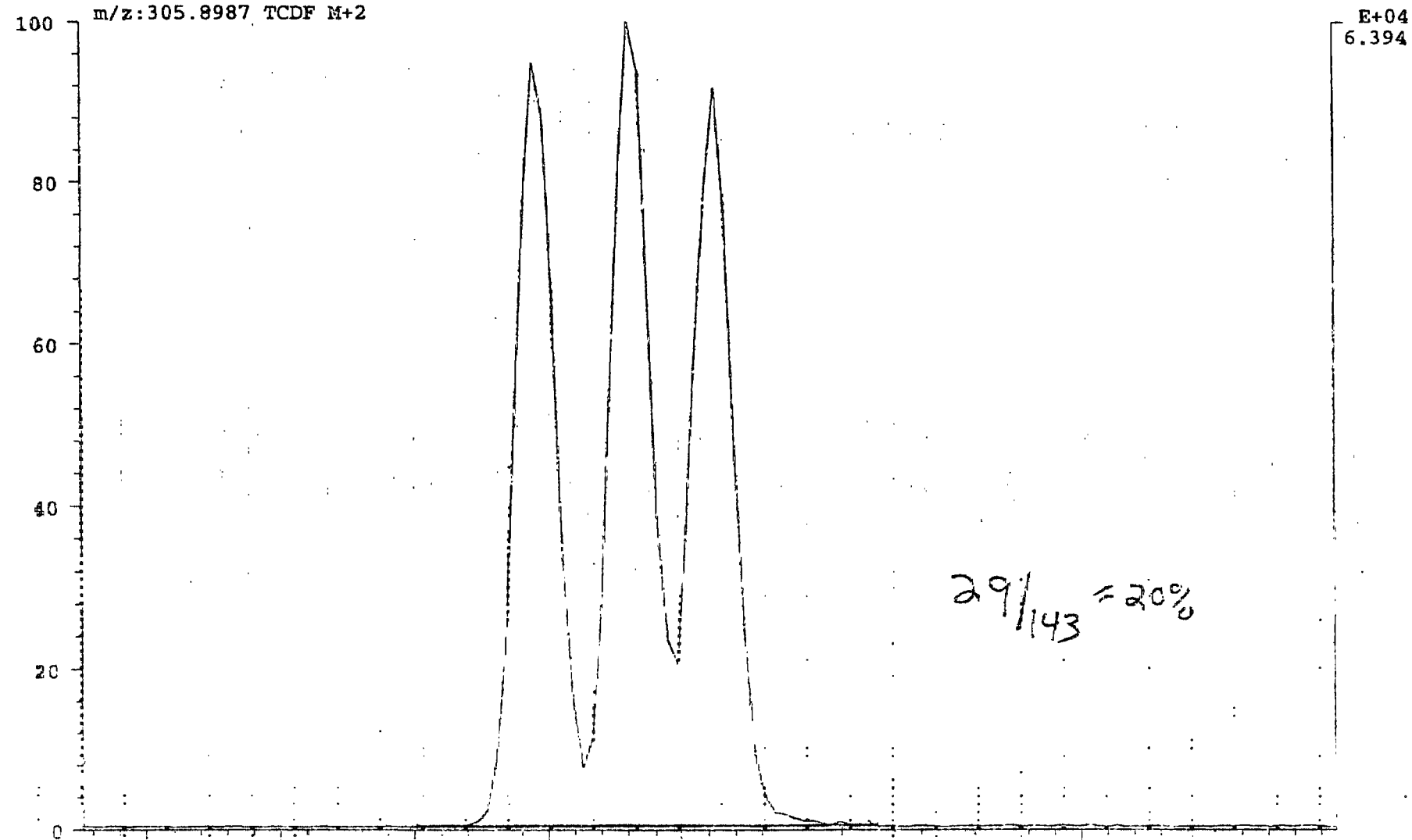

-7.0 V
SCAN
AUTOTUNE
TUNE
R
= 10 995
164 231 uV
-22.2 V
1.00 mA
65.1 V
270 C
273 C
2541 1152 1917 1560
2541 840 1963 1404
-22.2 V
EI POS
electric
U(a) 4747 V
U(esa) 763.8 V
Entr. Slit (ENS) 210.0
Exit Slit (EXS) 150.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.510 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
LOCK
UNLK
TUNE: _
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975724 REG 1/3: REG 2/3:
MASS : 304.98237 380.97565
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm]: 92.95125 97.00662
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PAGE
PEAK:
Tue Oct 7 08:07:18 2003
mat90s
MAT 95


-7.0 V
SCAN
AUTOTUNE
TUNE
R
= 10 995
164 231 uV
p
-22.2 V
2541 1152 1917 1560
1.00 mA
65.1 V
270 C
273 C
2541 840 1963 1404
-22.2 V
EI POS
electric
U(a) 4745 V
U(esa) 763.8 V
Entr. Slit (ENS) 210.0
Exit Slit (EXS) 150.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.510 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952 304.982 305.01
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
Rpm 304.98237
Erm 304.98243
Gfm 304.95194
Ilm 305.01290
Spc 7969177.70
Tpl 7969546.87
Epr 7968806.13
Rbl 0.00
1v 173365.00
Rpm 380.97565
Erm 380.97605
Gfm 380.93794
Ilm 381.01414
Spc 6379564.50
Tpl 6379886.57
Epr 6379267.71
Rbl 0.00
2v 307499.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491727
PC+DELTA 1.2491727
PC+DELTA/RM 0.9999992
REF MASS 1.2491737
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK:
Tue Oct 7 08:07:30 2003
mat90s
MAT 95

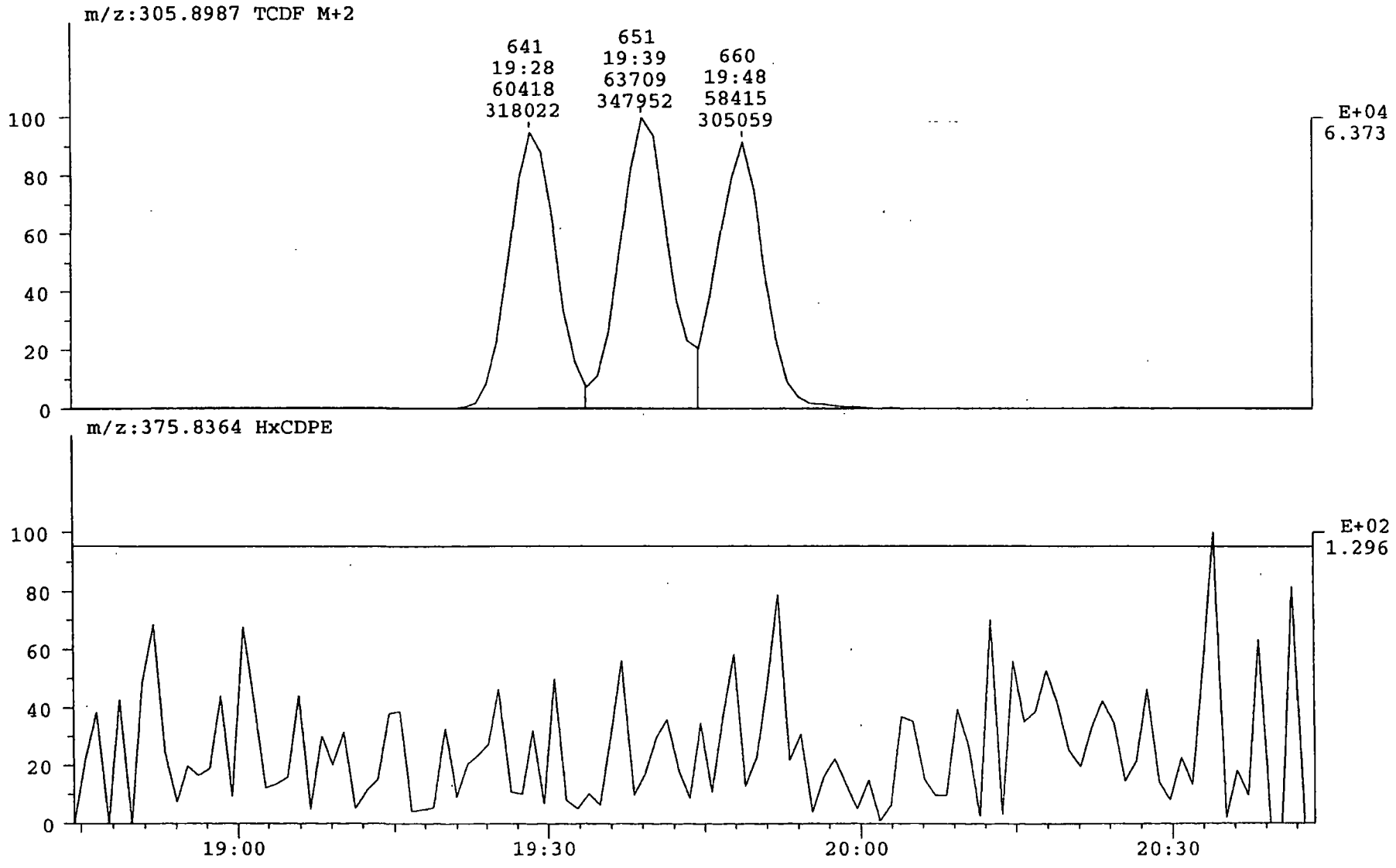
```
CHRO:  f031006w3                              06-Oct-03   Elapse:   19:40.2      652
Samp:  Vial 3 WO=1009:59 Meth=L1c Dil=1                   Start :   22:12:45    1258
Comm:  Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :   Col Perf
Oper:  PMP          Client:  STL Knoxville                Inlet :   GC     Vial   3
Peak:  100.00  ppm     Label wndw:   598 > 709            Masses:   293 > 376
Area:  5, 0.50, 15     Baseline  :   100, 3               Label :   -2, 3.0
Disp:  Height  Area
```



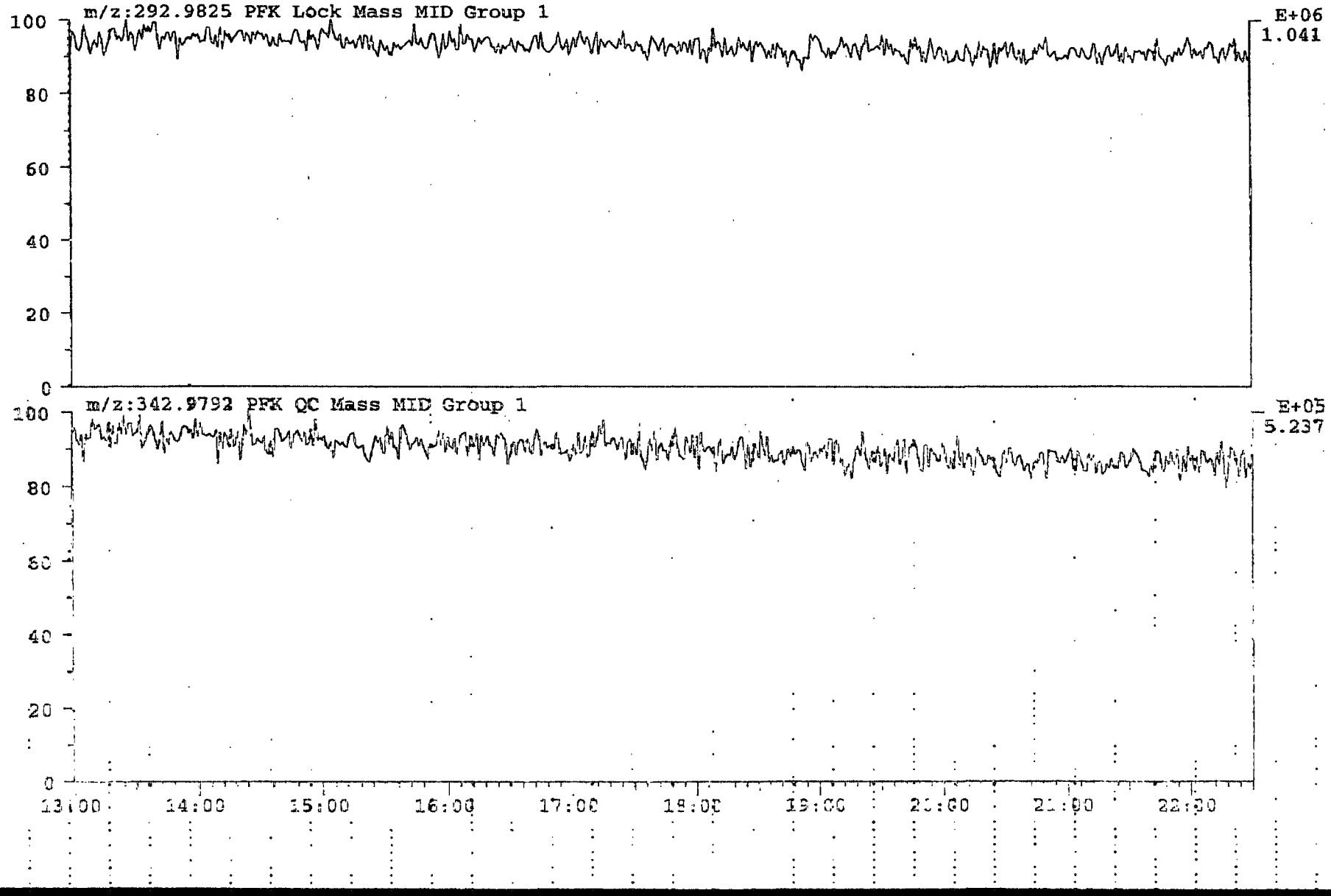
CHRO: f031006w3 06-Oct-03 Elapse: 19:40.2 652
Samp: Vial 3 WO=1009:59 Meth=L1c Dil=1 Start : 22:12:45 1258
Comm: Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: PMP Client: STL Knoxville Inlet : GC Vial 3
Peak: 100.00 ppm Label wndw: 594 > 725 Masses: 293 > 376
Area: 0, 0.50, 0 Baseline : 100, 3 Label : 0, 2.5



CHRO: f031006w3 06-Oct-03 Elapse: 19:40.2 652
Samp: Vial 3 WO=1009:59 Meth=L1c Dil=1 Start : 22:12:45 1258
Comm: Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: PMP Client: STL Knoxville Inlet : GC Vial 3
Peak: 100.00 ppm Label wndw: 600 > 711 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: f031006w3 06-Oct-03 Elapse: 19:40.2 652
Samp: Vial 3 WO=1009:59 Meth=L1c Dil=1 Start : 22:12:45 1258
Comm: Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Col Perf
Oper: PMP Client: STL Knoxville Inlet : GC Vial 3
Peak: 100.00 ppm Label wndw: 279 > 810 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0




812

```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f031006w3
Study: Col Perf
Sample: WO=1009:59 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: STL Knoxville
Comments: Inst=m3c/3131063 Batch=20031006w3 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 3
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 1 of list 031006b
  ICL procedure: sleep 6
  ICIS procedure: fwin $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start         Measure       End        Cycletime
  # 1    8:00 min    22:30 min    30:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 30.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -19.0000 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7959177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3301.5000 |
| ELEN | 62.2250 | EMULT | 2.0500 | ENS | 200.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 145.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 600.9615 | FSLOPE | 36000000.0000 |
| FVANAL | 150.0000 | FVINLET | 410.0000 | FVSRC | 590.0000 |
| FWIN | 0.7000 | GCTC | 140.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 156.0000 | HCURR | 0.0000 |
| HVANAL | 1049.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4747.2480 |
| IST | 265.0968 | ISTC | 226.5150 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -173.2000 | LKM | 304.9824 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 200.0000 |
| NSAM | 200.0000 | NSCAN | 4226.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -8.3000 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10422.1566 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 2.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.4950 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -67.4000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 06-Oct-03 22:12:45.4

Autosampler has injected sample from vial 3
MID Time Window 1: Resolution is 9155
Analysis stopped at: 06-Oct-03 22:43:19.1 (run time 30.54 minutes)
Analysis stopped because MID run finished

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**TCDD/F by EPA Method 8290 - DB-225**

**CCAL ID:** 4444 - Y031006S3 **ICAL Date:** 11/19/02

**CCAL Filename:** f031006s3 **Method:** INC - DM8290_Cont

**CCAL Sample ID:** 2553:86 **Instrument:** M3C

**CCAL Result Dir:** /20031006s3/y031006s3.d **Column SN:** 3131063

**CCAL Date/Time:** 10/06/03 22:46 **Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | m/z's Forming Ratio | Ion Abund Ratio | QC Limits | Calc Conc (ng/mL) | ICAL RF | CCAL RF | %D | QC Limit | Valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.80 | 0.65-0.89 | 8.6 | 1.062 | 0.913 | -14.0 | 20.0 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.79 | 0.65-0.89 | 9.9 | 0.939 | 0.930 | -0.9 | 20.0 | True |
| 37Cl4-2,3,7,8-TCDD | M | | - | 9.3 | 1.126 | 1.045 | -7.2 | 30.0 | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.78 | 0.65-0.89 | 99 | 1.097 | 1.089 | 0.8 | 30.0 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.78 | 0.65-0.89 | 91 | 1.461 | 1.336 | -8.6 | 30.0 | True |

Prep 10-06-03

BBW 10-7-03

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**TCDD/F by EPA Method 8290 - DB-225**

**CCAL ID:** 4444 - Y031006S3 **ICAL Date:** 11/19/02

**CCAL Filename:** f031006s3 **Method:** INc - DX8290_Conf

**CCAL Sample ID:** 2553:86 **Instrument:** M3C

**CCAL Result Dir:** /20031006s3/y031006s3.d **Column SN:** 3131063

**CCAL Date/Time:** 10/06/03 22:46 **Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | ICAL RT | CCAL RT | RT Diff | ICAL RRT | CCAL RRT | RRT QC Limit | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 16:37 | 17:55 | 78 | 1.001 | 1.001 | - | |
| 2,3,7,8-TCDF | 18:20 | 19:43 | 83 | 1.001 | 1.002 | - | |
| 37Cl4-2,3,7,8-TCDD | 16:37 | 17:55 | 78 | 0.980 | 0.983 | - | |
| 13C-2,3,7,8-TCDD | 16:36 | 17:54 | 78 | 0.979 | 0.982 | - | |
| 13C-2,3,7,8-TCDF | 18:19 | 19:41 | 82 | 1.081 | 1.080 | - | |

STL - Knoxville

# IsoCalc Continuing Calibration Report

## TCDD/F by EPA Method 1613B - DB-225

**CCAL ID:** 4443 - Y031006S3 **ICAL Date:** 11/19/02

**CCAL Filename:** f031006s3 **Method:** L1c - DX1613_Conf

**CCAL Sample ID:** 2553:86 **Instrument:** M3C

**CCAL Result Dir:** /20031006s3/y031006s3.d **Column SN:** 3131063

**CCAL Date/Time:** 10/06/03 22:46 **Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | m/z's Forming Ratio | Ion Abund. Ratio | QC Limits | Calb RF | Std Conc (ng/mL) | Calc Conc (ng/mL) | Conc QC Limit (ng/mL) | Valid? |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.80 | 0.65-0.89 | 0.913 | 10 | 8.6 | 8.2-12.3 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.79 | 0.65-0.89 | 0.930 | 10 | 9.9 | 8.6-11.6 | True |
| 37Cl4-2,3,7,8-TCDD | M | | - | 1.045 | 10 | 8.3 | 8.8-12.1 | True |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.78 | 0.65-0.89 | 1.089 | 100 | 99 | 85-117 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.78 | 0.65-0.89 | 1.336 | 100 | 91 | 76-133 | True |

Prep 10.06.03

10-7-03

**STL - Knoxville** **IsoCalc Continuing Calibration Report**

**TCDD/F by EPA Method 1613B - DB-225**

**CCAL ID:** 4443 - Y031006S3 **ICAL Date:** 11/19/02

**CCAL Filename:** f031006s3 **Method:** L1c - DX1613_Conf

**CCAL Sample ID:** 2553:86 **Instrument:** M3C

**CCAL Result Dir:** /20031006s3/y031006s3.d **Column SN:** 3131063

**CCAL Date/Time:** 10/06/03 22:46 **Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | ICAL RT | CCAL RT | RT Diff | ICAL RRT | CCAL RRT | RRT QC Limit | Valid? | |
|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 16:37 | 17:55 | 78 | 1.001 | 1.001 | 0.999-1.002 | True | |
| 2,3,7,8-TCDF | 18:20 | 19:43 | 83 | 1.001 | 1.002 | 0.999-1.003 | True | |
| 37Cl4-2,3,7,8-TCDD | 16:37 | 17:55 | 78 | 0.980 | 0.983 | 0.989-1.052 | ~~False~~ | NA |
| 13C-2,3,7,8-TCDD | 16:36 | 17:54 | 78 | 0.979 | 0.982 | 0.976-1.043 | True | PMP |
| 13C-2,3,7,8-TCDF | 18:19 | 19:41 | 82 | 1.081 | 1.080 | 0.923-1.103 | True | 10-06-03 |

**STL - Knoxville**

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B -- DB-225*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031006s3/y031006s3. | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71200 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/06/03 22:46 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M3C | **Extract Vol** | | **Method** | [illegible] |
| **Analyst** | PMP | **Dilution Factor** | 1.00 | **Code** | [illegible] |

**View Small Peaks?** False **View deleted peaks?** False

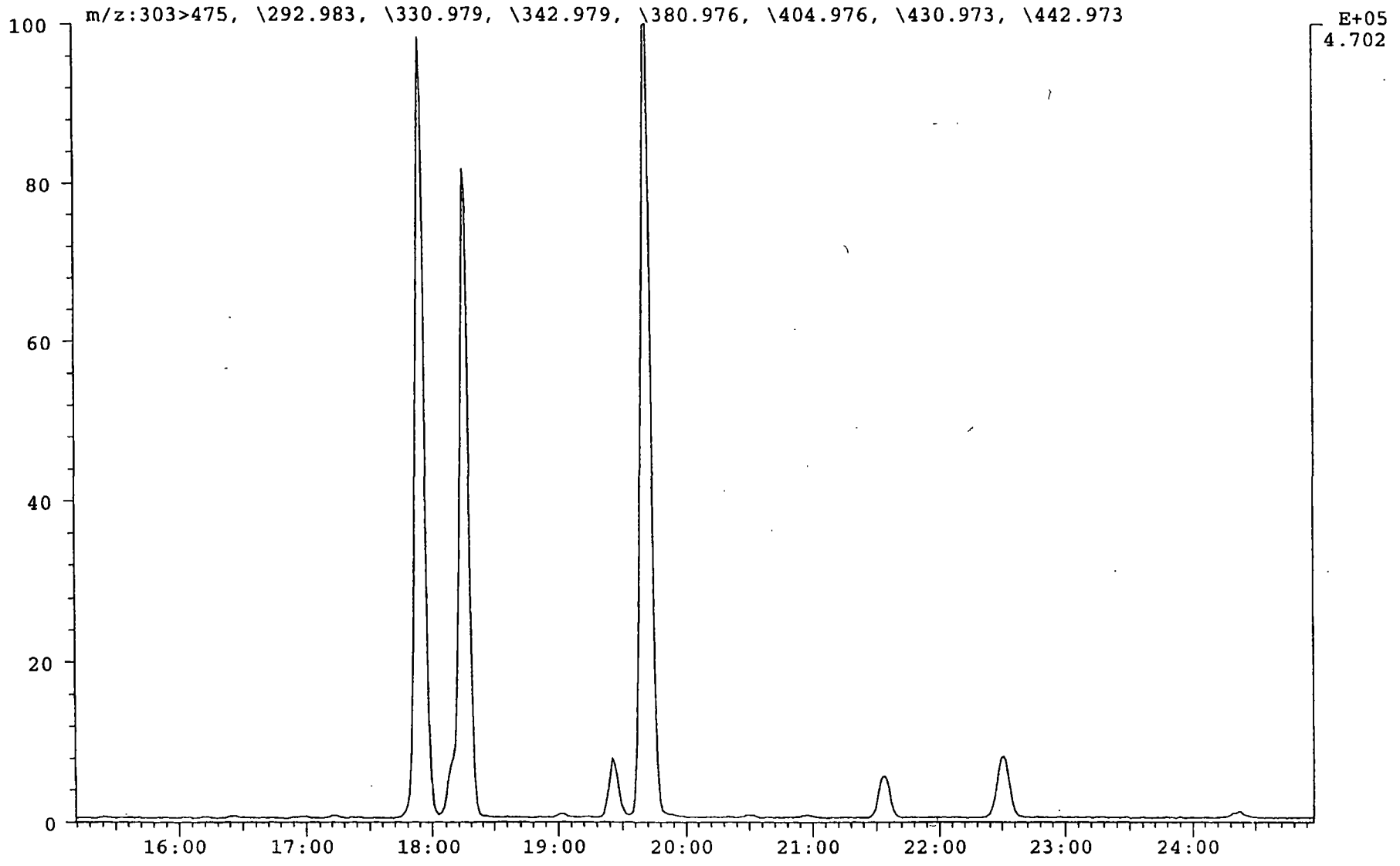
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | |
| Noise | | 00:00 | 00:00 | 0 | 108 | 125 | 43 | 56 | 0.86 | / |
| 2,3,7,8-TCDF | | 19:43 | 19:42 | 1 | 97265 | 122754 | 17560 | 22044 | 0.79 | AVV/AVV |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | |
| Noise | | 00:00 | 00:00 | 0 | 183 | 203 | 73 | 81 | 0.90 * | / |
| 13C-2,3,7,8-TCDF | | 19:41 | 19:41 | 0 | 1039777 | 1325128 | 190250 | 246638 | 0.79 | AVV/AVV |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | |
| Noise | | 00:00 | 00:00 | 0 | 143 | 133 | 57 | 53 | 1.08 * | / |
| 2,3,7,8-TCDD | | 17:55 | 17:54 | 1 | 78447 | 97560 | 16132 | 19768 | 0.80 | ABV/ABV |
| Unidentified | | 18:08 | 00:00 | 0 | 64994 | 82927 | 12559 | 16082 | 0.78 | AVV/AVV |
| Unidentified | | 18:15 | 00:00 | 0 | 69801 | 92038 | 13553 | 17931 | 0.76 | AVV/AVB |
| **328** | | | | | **327.8847** | | **327.8847** | | | |
| Noise | | 00:00 | 00:00 | 0 | 123 | | 49 | | | |
| 37Cl4-2,3,7,8-TCDD | | 17:55 | 17:54 | 1 | 184997 | | 36763 | | | ABV D |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.88** | |
| Noise | | 00:00 | 00:00 | 0 | 178 | 135 | 71 | 54 | 1.31 * | / |
| 13C-2,3,7,8-TCDD | | 17:54 | 17:53 | 1 | 843453 | 1084203 | 173504 | 228577 | 0.78 | ABV/ABV |
| 13C-1,2,3,4-TCDD | | 18:14 | 18:15 | -1 | 782258 | 988535 | 156165 | 201911 | 0.79 | AVV/AVV |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last K = peak has dup match

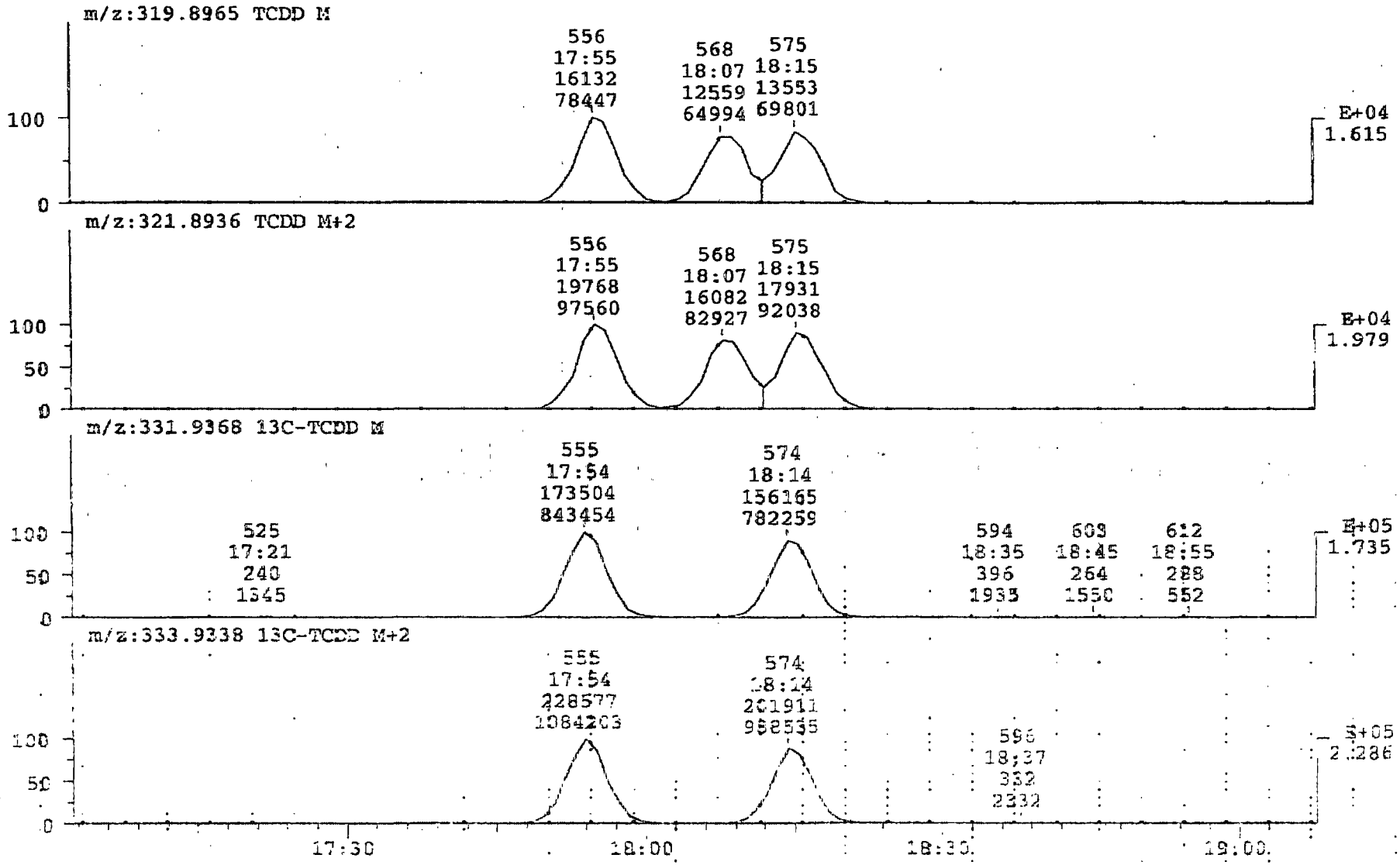
Printed: 10/06/03 23:26

Int/Calc PMP 10-6-03
QC BKW 10-7-03

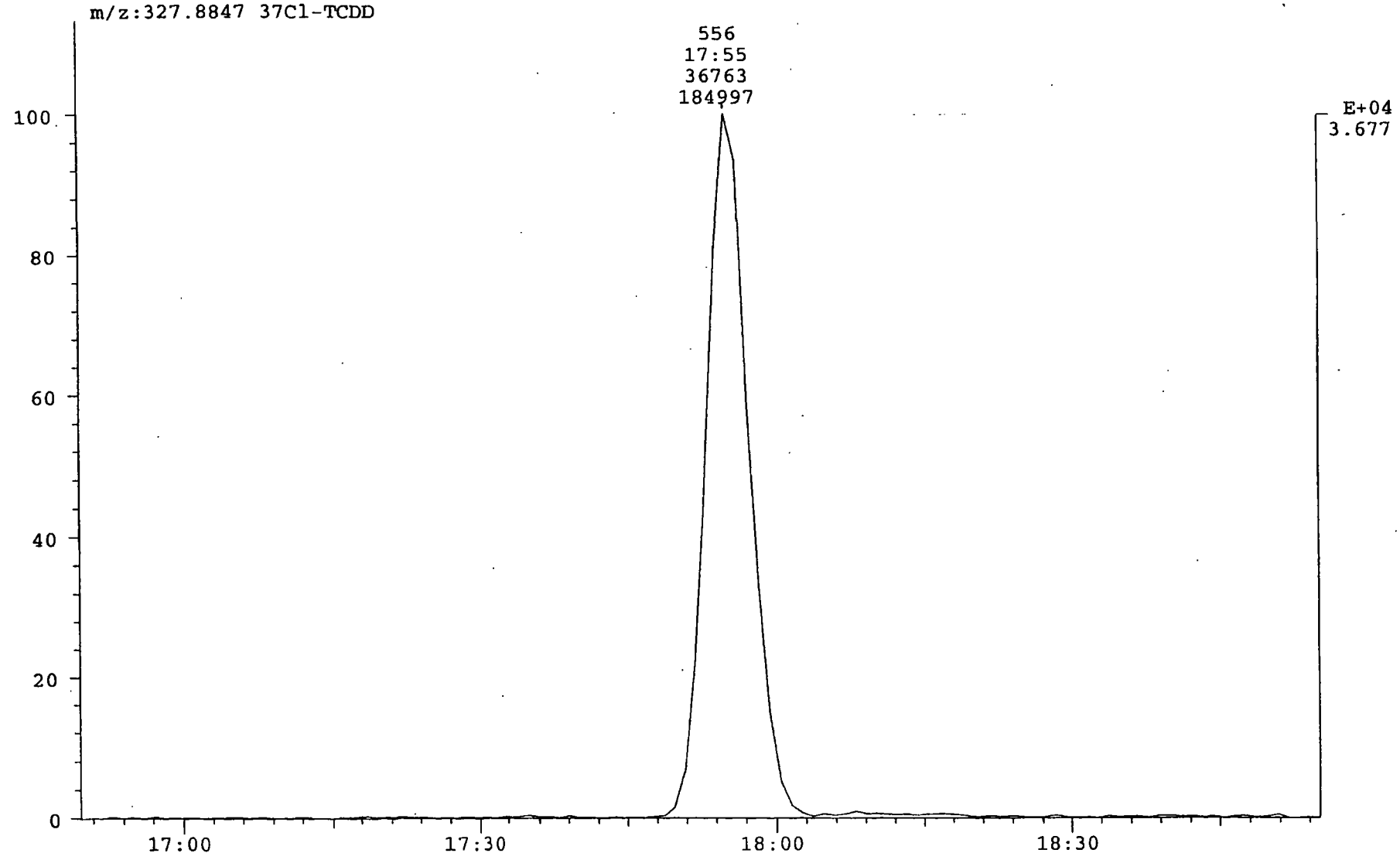
```
CHRO:  f031006s3                              06-Oct-03   Elapse:  19:37.8      652
Samp:  Vial 1 WO=2553:86 Meth=L1c Dil=1                   Start :  22:46:00     1261
Comm:  Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver Std
Oper:  PMP            Client:  STL Knoxville              Inlet :  GC     Vial   1
Peak:  100.00  ppm      Label wndw:   403 > 950           Masses:  293 > 376
Area:  5, 0.50, 0       Baseline  :   100, 3             Label :  0, 0.0
Disp:  Height  Area
```



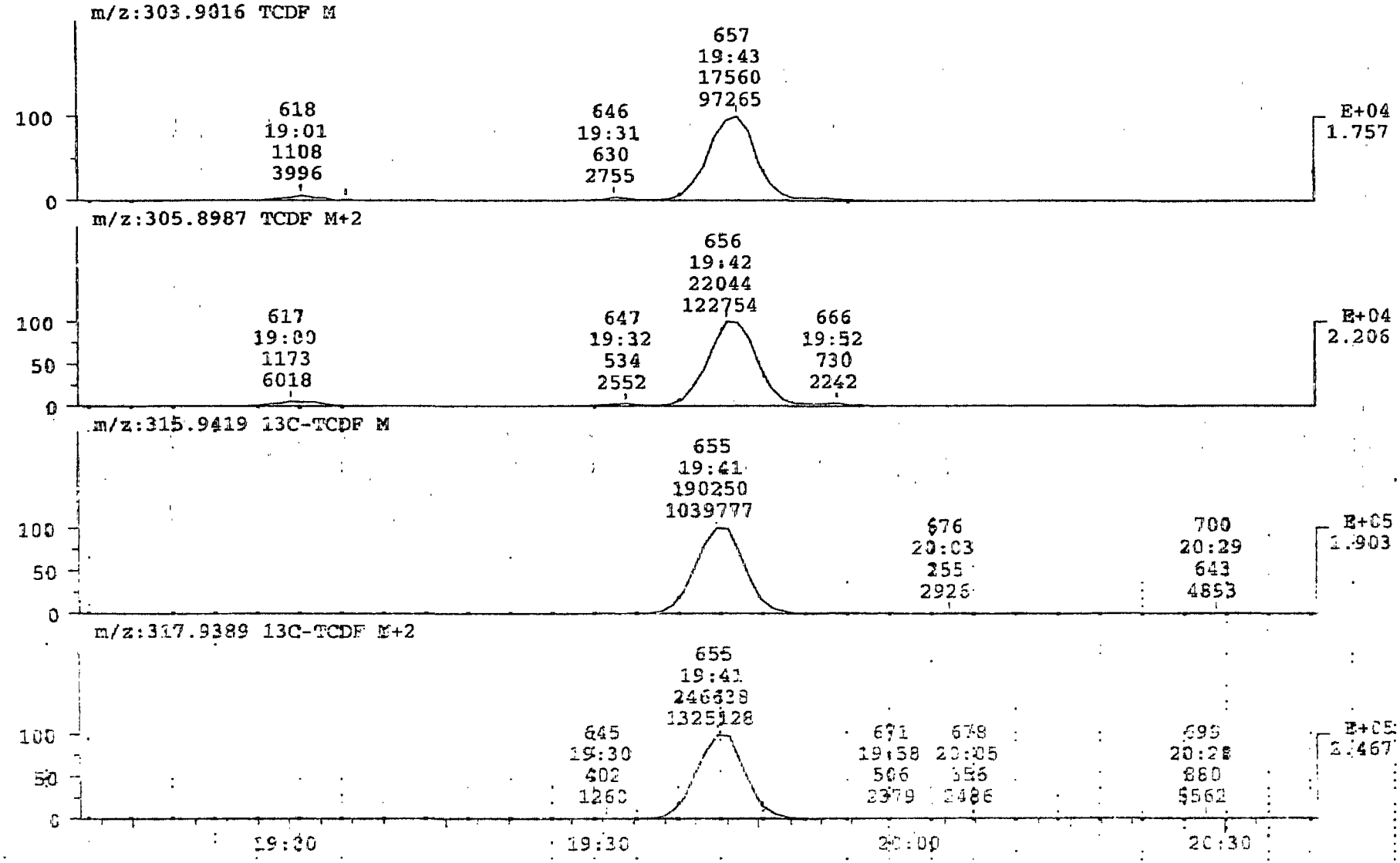
CHRO: f031006s3 06-Oct-03 Elapse: 19:37.8 652
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 507 > 624 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



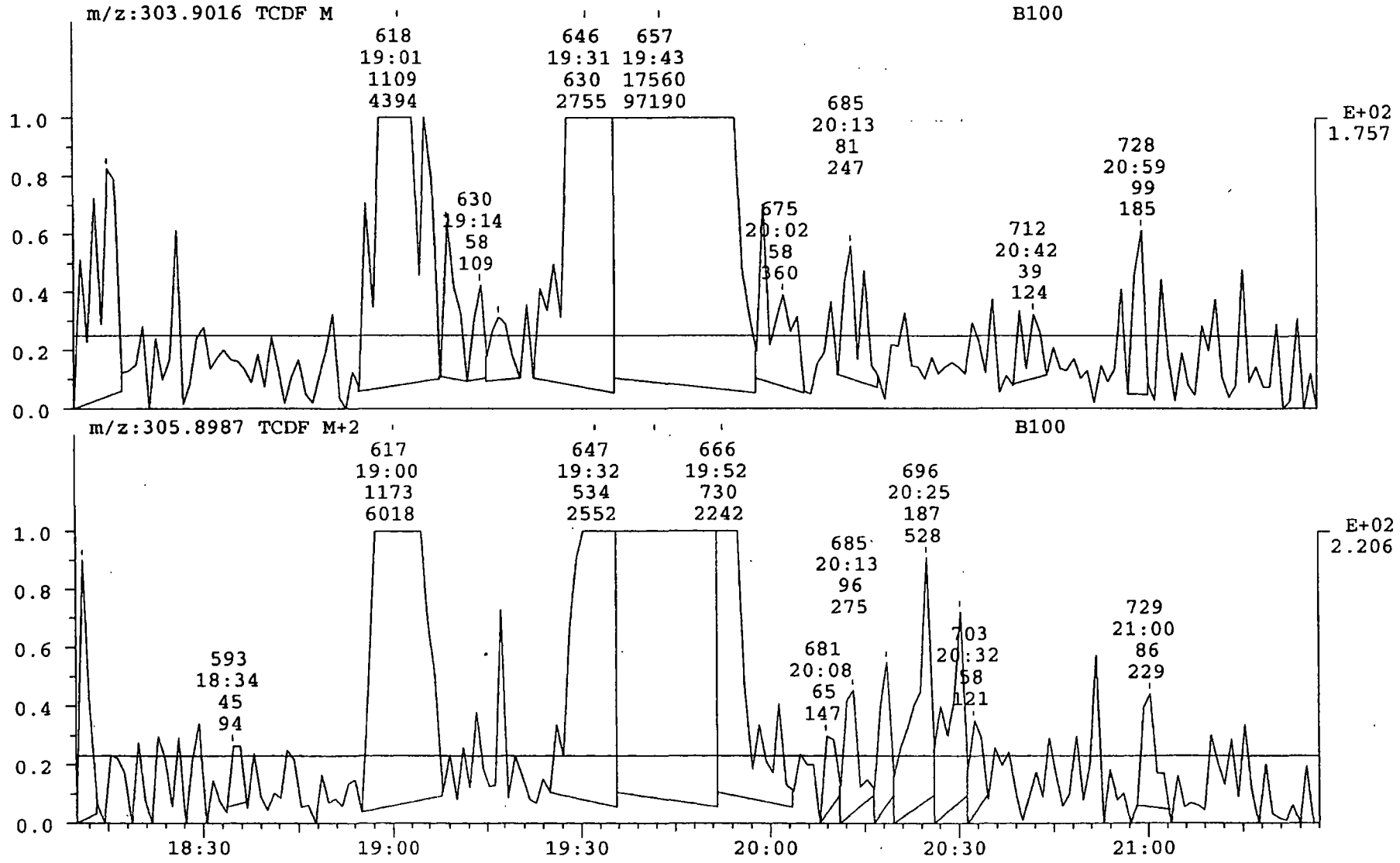
CHRO: f031006s3 06-Oct-03 Elapse: 19:37.8 652
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 495 > 612 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area



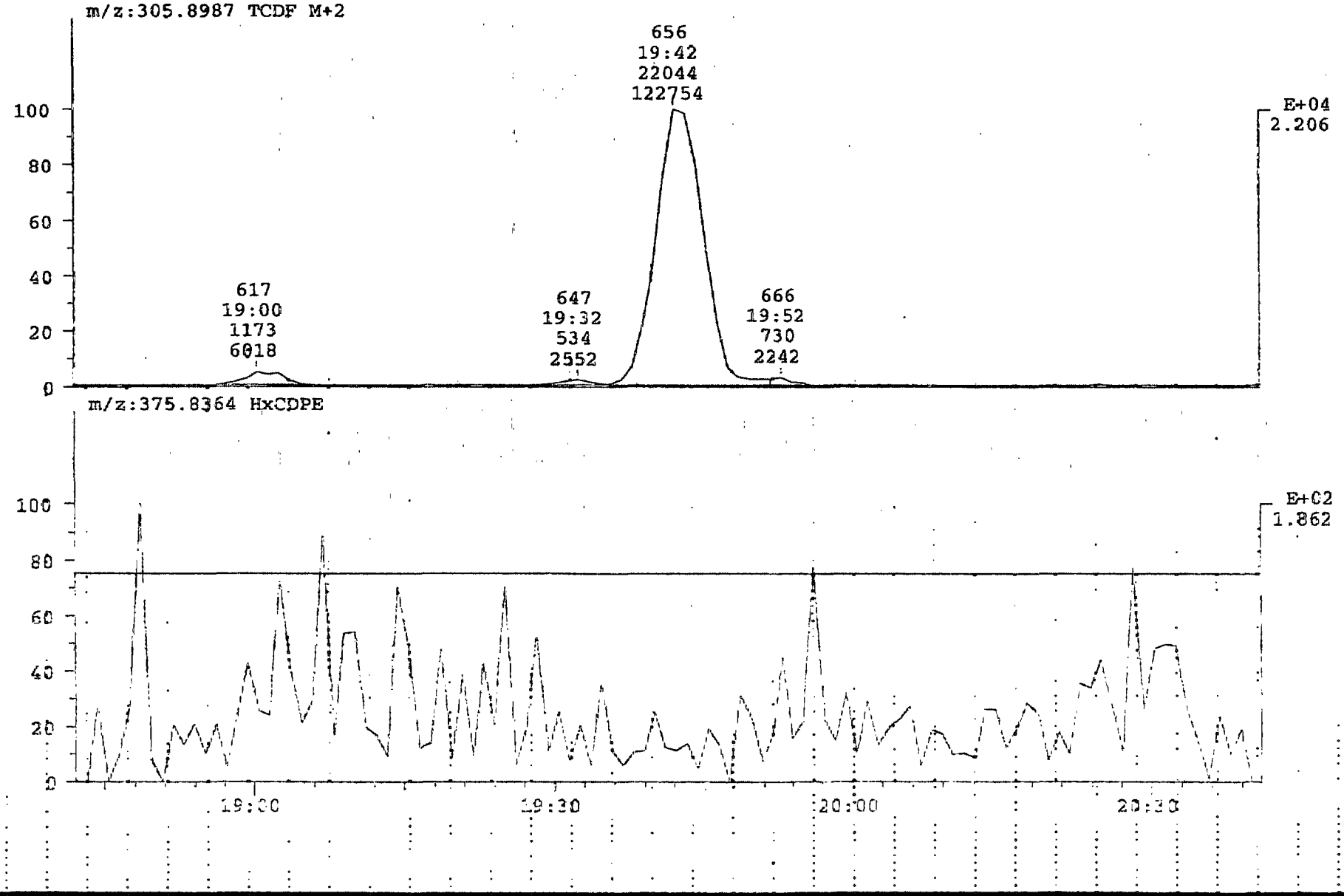
CHRO: f031006s3 06-Oct-03 Elapse: 19:37.8 652
Samp: Vial 1 WC=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 598 > 709 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  f031006s3                              06-Oct-03   Elapse:  19:37.8     652
Samp:  Vial 1 WO=2553:86 Meth=L1c Dil=1                   Start :  22:46:00    1261
Comm:  Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver Std
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   570 > 754            Masses:  293 > 376
Area:  5, 0.50, 0      Baseline  :   100, 3               Label :  -2, 1.0
Disp:  Height  Area
```

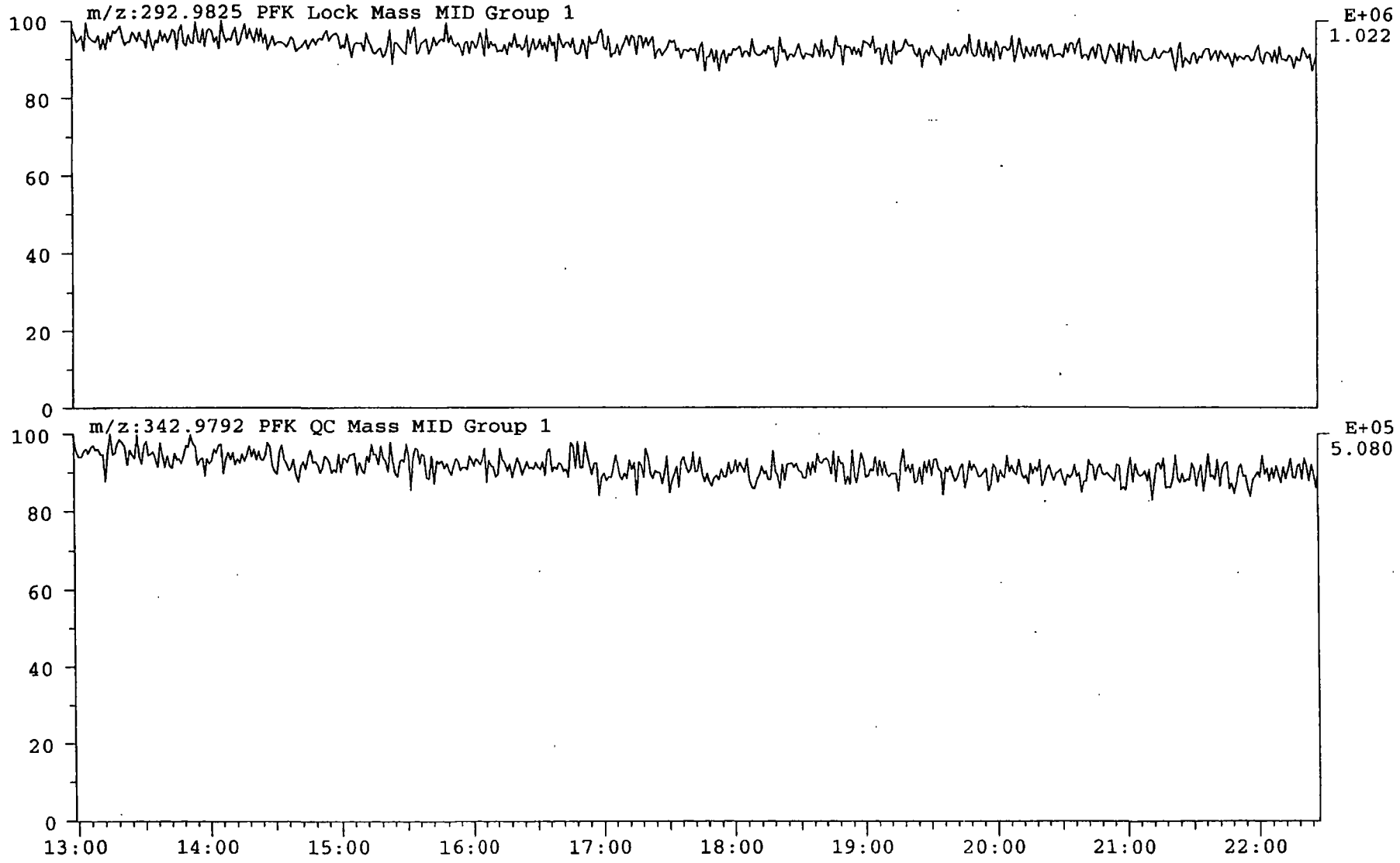


CHRO: f031006s3 06-Oct-03 Elapse: 19:37.8 652
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 600 > 711 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area




826

CHRO: f031006s3 06-Oct-03 Elapse: 19:37.8 652
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 279 > 810 Masses: 293 > 376
Area: 0, 0.00, 0 Baseline : 0, 3 Label : 0, 0.0



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f031006s3
Study: Ver Std
Sample: WO=2553:86 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: STL Knoxville
Comments: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
File 2 of list 031006b
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start          Measure       End         Cycletime
  # 1    8:00 min    22:30 min    30:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 l   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | |
|---|---|---|---|
| Injector: | 270 deg | | 270 deg max |
| Transfer Line: | 220 deg | | 230 deg max |
| Column: | 140 deg at | 0.0 minutes | 230 deg max |
| | 140 deg at | 2.0 minutes | |
| | 200 deg at | 5.0 minutes | |
| | 230 deg at | 20.0 minutes | |
| | 230 deg at | 30.5 minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -19.0000 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3301.5000 |
| ELEN | 62.2250 | EMULT | 2.0500 | ENS | 200.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 145.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 300.4808 | FSLOPE | 36000000.0000 |
| FVANAL | 143.0000 | FVINLET | 419.0000 | FVSRC | 621.0000 |
| FWIN | 0.7000 | GCTC | 185.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 208.0000 | HCURR | 0.0000 |
| HVANAL | 1049.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4747.2480 |
| IST | 269.8026 | ISTC | 208.3731 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -173.2000 | LKM | 292.9825 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 1.0000 |
| NSAM | 100.0000 | NSCAN | 1260.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -8.3000 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10422.1566 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 3.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.6021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.4950 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -67.4000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 06-Oct-03 22:46:00.5

Autosampler has injected sample from vial 1
MID Time Window 1: Resolution is 9154
Analysis stopped at: 06-Oct-03 23:16:33.8 (run time 30.54 minutes)
Analysis stopped because MID run finished

QUAN: f031006s3.q0 Entries: 15

Data file(s) used
File: f031006s3 06-Oct-03
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 22:46:00 1261
Comm: Inst=m3c/3131063 Batch=20031006s3 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 17:55 | 78447. | 16132. | 17:48 | 18:02 | 57. | 2 | 3.0 |
| 319.8805 | 18:08 | 64994. | 12559. | 18:02 | 18:12 | 57. | 2 | 3.0 |
| 319.8805 | 18:15 | 69801. | 13553. | 18:12 | 18:31 | 57. | 2 | 3.0 |
| 321.8775 | 17:55 | 97560. | 19768. | 17:41 | 18:01 | 53. | 2 | 3.0 |
| 321.8775 | 18:08 | 82927. | 16082. | 18:01 | 18:12 | 53. | 2 | 3.0 |
| 321.8775 | 18:15 | 92038. | 17931. | 18:12 | 18:31 | 53. | 2 | 3.0 |
| 331.9202 | 17:54 | 843453. | 173504. | 17:43 | 18:06 | 71. | 2 | 3.0 |
| 331.9202 | 18:14 | 782258. | 156165. | 18:06 | 18:30 | 71. | 2 | 3.0 |
| 333.9171 | 17:54 | 1084203. | 228577. | 17:44 | 18:02 | 54. | 2 | 3.0 |
| 333.9171 | 18:14 | 988535. | 201911. | 18:02 | 18:30 | 54. | 2 | 3.0 |
| 327.8683 | 17:55 | 184997. | 36763. | 17:42 | 18:03 | 49. | 2 | 3.0 |
| 303.8864 | 19:43 | 97265. | 17560. | 19:35 | 19:59 | 43. | 2 | 3.0 |
| 305.8834 | 19:42 | 122754. | 22044. | 19:35 | 19:51 | 50. | 2 | 3.0 |
| 315.9261 | 19:41 | 1039777. | 190250. | 19:25 | 19:57 | 73. | 2 | 3.0 |
| 317.9230 | 19:41 | 1325128. | 246638. | 19:31 | 19:54 | 81. | 2 | 3.0 |

STL - Knoxville

# IsoCalc Continuing Calibration Report

## TCDD/F by EPA Method 8290 - DB-225

**CCAL ID:** 4451 - Y031007S1
**CCAL Filename:** f031007s1
**CCAL Sample ID:** 2553:86
**CCAL Result Dir:** /20031007s1/y031007s1.d
**CCAL Date/Time:** 10/07/03 07:33

**ICAL Date:** 11/19/02
**Method:** INc - DX8290_Conf
**Instrument:** M3C
**Column SN:** 3131063
**Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | m/z's Forming Ratio | Ion Abund Ratio | QC Limits | Calc Conc (ng/mL) | ICAL RF | CCAA RF | %D | QC Limit | valid? |
|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | M/M+2 | 0.79 | 0.65-0.89 | 9.1 | 1.062 | 0.964 | 9.2 | 20.0 | True |
| 2,3,7,8-TCDF | M/M+2 | 0.77 | 0.65-0.89 | 9.8 | 0.939 | 0.918 | -2.3 | 20.0 | True |
| 37Cl4-2,3,7,8-TCDD | M | | - | 9.2 | 1.126 | 1.041 | -7.6 | 30.0 | |
| 13C-2,3,7,8-TCDD | M/M+2 | 0.79 | 0.65-0.89 | 98 | 1.097 | 1.079 | -1.6 | 30.0 | True |
| 13C-2,3,7,8-TCDF | M/M+2 | 0.77 | 0.65-0.89 | 92 | 1.461 | 1.338 | 8.5 | 30.0 | True |

BKW 10-7-03

VMK 10-7-03

**STL - Knoxville**

# IsoCalc Continuing Calibration Report

## TCDD/F by EPA Method 8290 - DB-225

**CCAL ID:** 4451 - Y031007S1
**CCAL Filename:** f031007s1
**CCAL Sample ID:** 2553:86
**CCAL Result Dir:** /20031007s1/y031007s1.d
**CCAL Date/Time:** 10/07/03 07:33

**ICAL Date:** 11/19/02
**Method:** INc - DX8290_Conf
**Instrument:** M3C
**Column SN:** 3131063
**Column Desc:** DB-225 30m x 0.32mm ID x 0.25um

| Analytes | ICAL RT | CCAL RT | RT Diff | ICAL RRT | CCAL RRT | RRT QC Limit | Valid? |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 16:37 | 17:56 | 79 | 1.001 | 1.001 | - | |
| 2,3,7,8-TCDF | 18:20 | 19:43 | 83 | 1.001 | 1.001 | - | |
| 37Cl4-2,3,7,8-TCDD | 16:37 | 17:57 | 80 | 0.980 | 0.984 | - | |
| 13C-2,3,7,8-TCDD | 16:36 | 17:55 | 79 | 0.979 | 0.982 | - | |
| 13C-2,3,7,8-TCDF | 18:19 | 19:42 | 83 | 1.081 | 1.079 | - | |

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *TCDD/F by EPA Method 1613B - DB-225*

IsoCalc

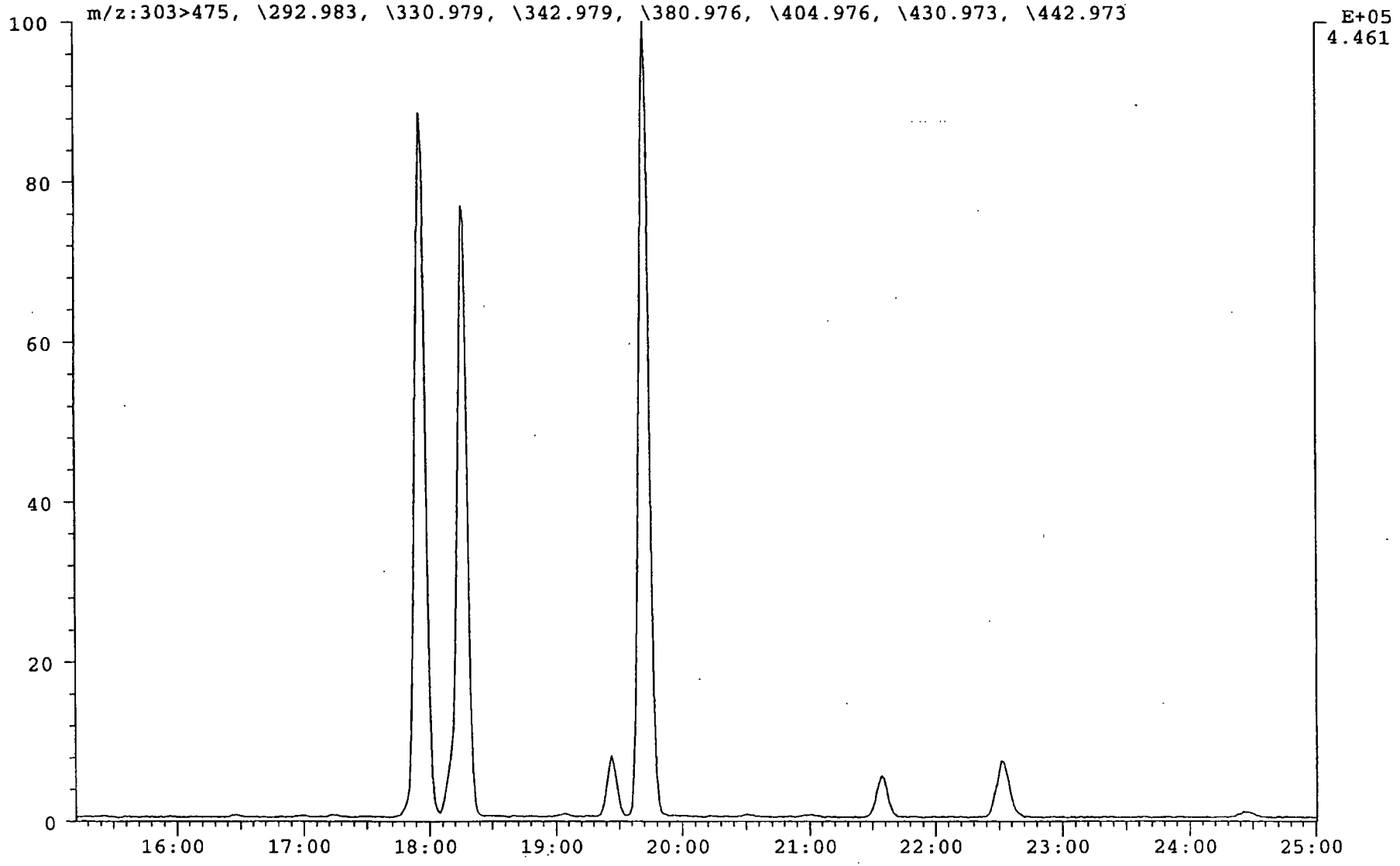
| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | 2553:86 | **Prep Batch** | | **Lot No** | |
| **Data File** | /20031007a1/y031007a1. | **Prep Date** | | **SDG No** | |
| **Analysis ID** | 71210 | **Prep Exp Date** | | **Date Received** | |
| **Analysis Date** | 10/07/03 07:33 | **Matrix** | UNKNOWN | **Date Sampled** | |
| **Anal Exp Date** | | **Initial Wt/Vol** | | **Lims Test Code** | |
| **Instrument** | M3C | **Extract Vol** | | **Method** | DX1613 Conf |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | Lic |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

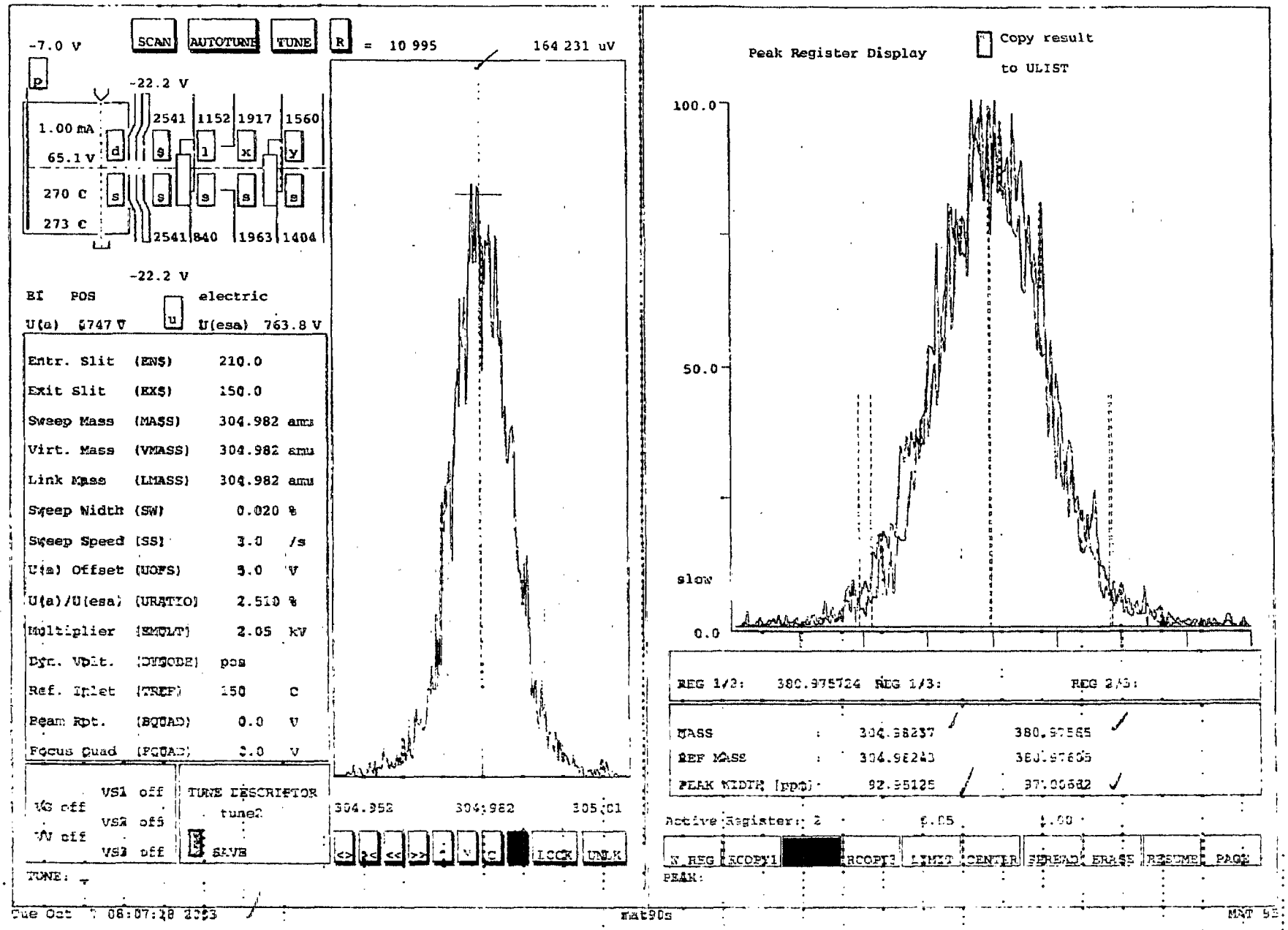
| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 120 | 153 | 48 | 61 | 0.79 | / |
| | 2,3,7,8-TCDF | 19:43 | 19:43 | 0 | 89188 | 116136 ✓ | 16570 | 21314 | 0.77 | ABV/ABB |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 155 | 153 | 62 | 61 | 1.02 * | / |
| | 13C-2,3,7,8-TCDF | 19:42 | 19:42 | 0 | 975034 | 1262343 ✓ | 176837 | 236703 ✓ | 0.77 | AVV/AVV |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 123 | 130 | 49 | 53 | 0.94 * | / |
| | 2,3,7,8-TCDD | 17:56 | 17:55 | 1 | 76667 | 97328 | 14712 | 17788 | 0.79 | AVV/AVV |
| | Unidentified | 18:09 | 00:00 | 0 | 62456 | 79466 | 12546 | 15995 | 0.79 | AVV/AVV |
| | Unidentified | 18:17 | 00:00 | 0 | 68242 | 88696 | 11632 | 15704 | 0.77 | AVB/AVV |
| **328** | | | | | **327.8847** | | **327.8847** | | | |
| | Noise | 00:00 | 00:00 | 0 | 123 | | 49 | | | |
| | 37Cl4-2,3,7,8-TCDD | 17:57 | 17:55 | 2 | 174112 ✓ | | 32031 | | | ABV |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 198 | 160 | 79 | 64 | 1.23 * | / |
| | 13C-2,3,7,8-TCDD | 17:55 | 17:54 | 1 | 797839 | 1007056 ✓ | 147392 | 190459 ✓ | 0.79 | ABV/ABV |
| | 13C-1,2,3,4-TCDD | 18:15 | 18:16 | -1 | 740497 | 932215 ✓ | 141135 | 176844 | 0.79 | AVV/AVV |

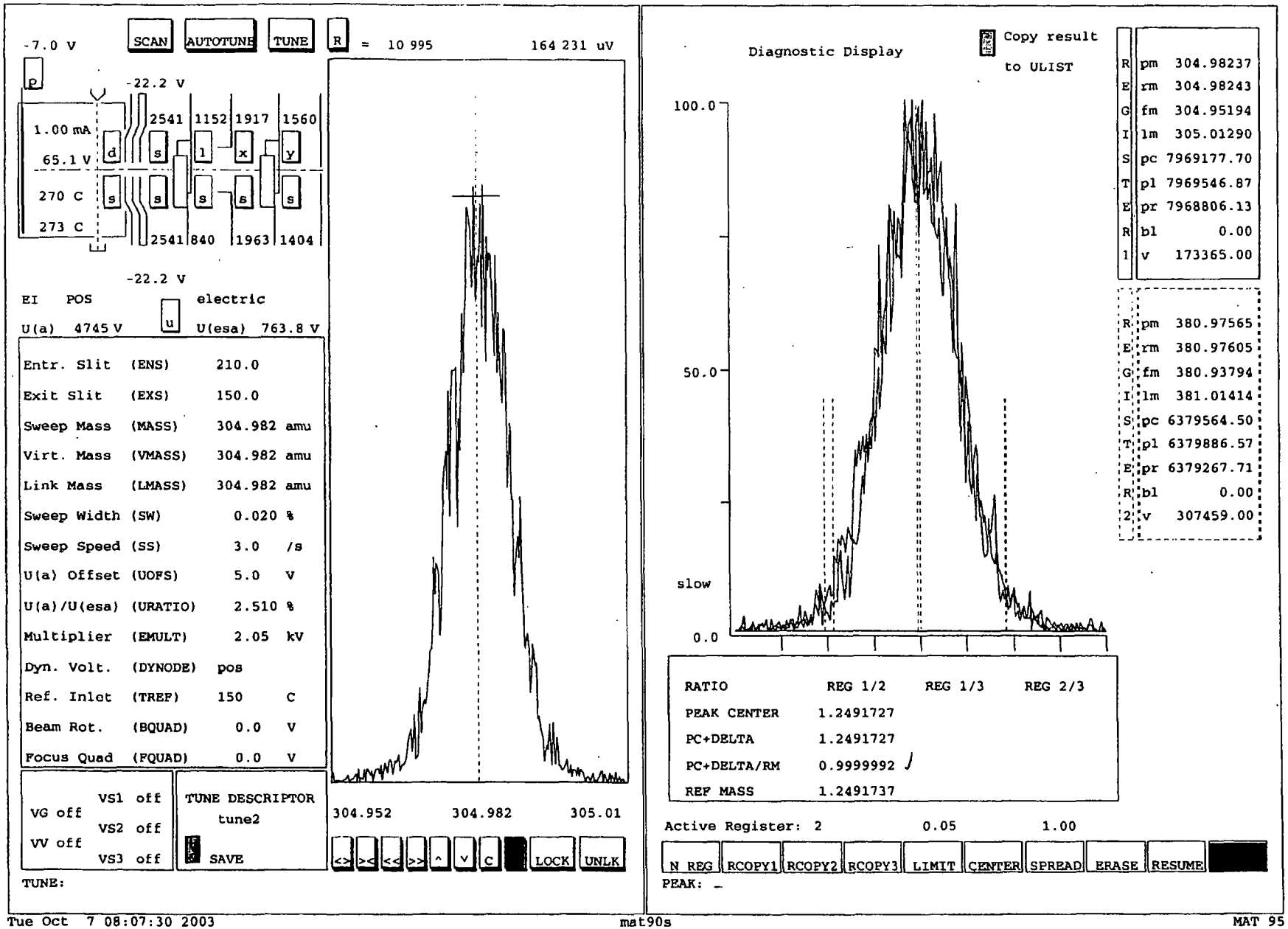
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 403 > 950 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

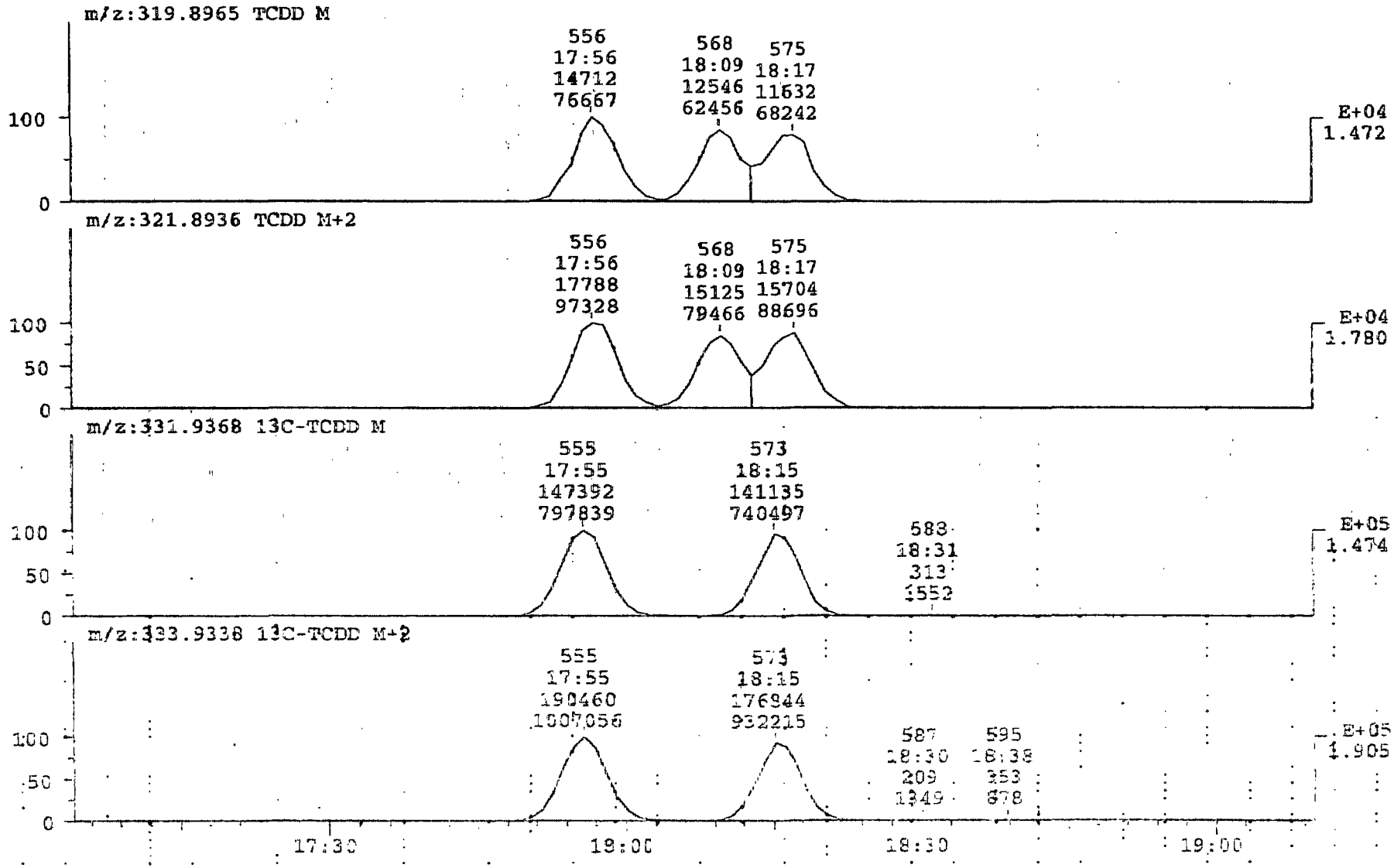
Int/Calc [illegible] 10-7-03
QC VMK 10-7-03




-7.0 V
SCAN
AUTOTUNE
TUNE
R
= 10 995
164 231 uV
-22.2 V
1.00 mA
65.1 V
270 C
273 C
2541 1152 1917 1560
2541 840 1963 1404
-22.2 V
BI POS
electric
U(a) 6747 V
U(esa) 763.8 V
Entr. Slit (EN$) 210.0
Exit Slit (EX$) 150.0
Sweep Mass (MA$S) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.510 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYSCODE) pos
Ref. Inlet (TREF) 150 C
Beam Rpt. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.958
304.982
305.01
LOCK
UNLK
TUNE:
Peak Register Display
Copy result
to ULIST
100.0
50.0
slow
0.0
REG 1/2: 380.975724 REG 1/3: REG 2/3:
MASS : 304.98237 380.97565
REF MASS : 304.98243 380.97605
PEAK WIDTH [ppm] : 92.95125 97.00682
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
LIMIT
CENTER
SPREAD
ERASE
RESUME
PAGE
PEAK:
Tue Oct 08:07:18 1993
mat90s
MAT 93

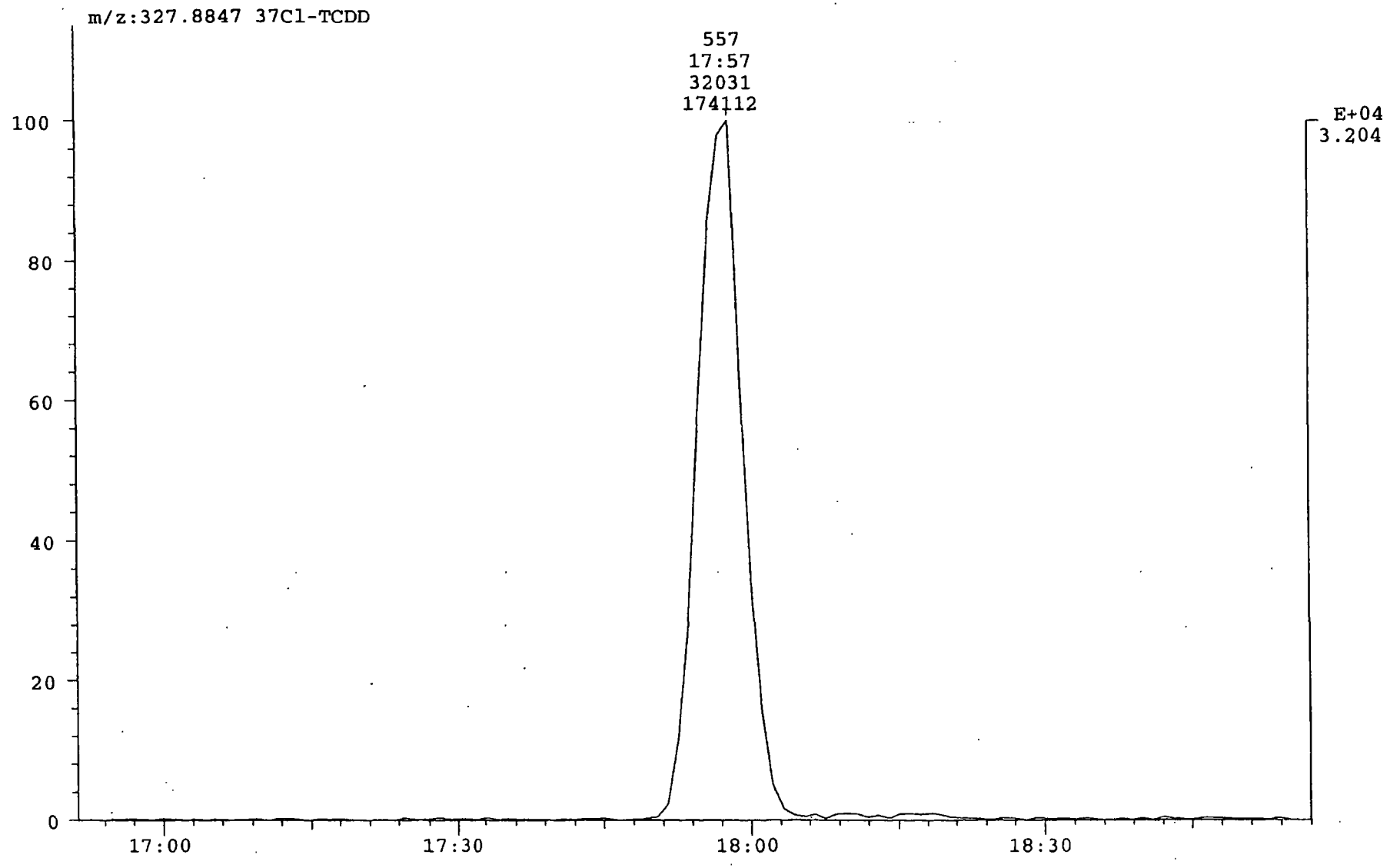

-7.0 V
SCAN
AUTOTUNE
TUNE
R
= 10 995
164 231 uV
p
-22.2 V
1.00 mA
65.1 V
270 C
273 C
2541 1152 1917 1560
2541 840 1963 1404
d
s
l
x
y
-22.2 V
EI POS
electric
U(a) 4745 V
U(esa) 763.8 V
Entr. Slit (ENS) 210.0
Exit Slit (EXS) 150.0
Sweep Mass (MASS) 304.982 amu
Virt. Mass (VMASS) 304.982 amu
Link Mass (LMASS) 304.982 amu
Sweep Width (SW) 0.020 %
Sweep Speed (SS) 3.0 /s
U(a) Offset (UOFS) 5.0 V
U(a)/U(esa) (URATIO) 2.510 %
Multiplier (EMULT) 2.05 kV
Dyn. Volt. (DYNODE) pos
Ref. Inlet (TREF) 150 C
Beam Rot. (BQUAD) 0.0 V
Focus Quad (FQUAD) 0.0 V
VG off
VV off
VS1 off
VS2 off
VS3 off
TUNE DESCRIPTOR
tune2
SAVE
304.952
304.982
305.01
<>
><
<<
>>
^
v
C
LOCK
UNLK
TUNE:
Diagnostic Display
Copy result
to ULIST
100.0
50.0
slow
0.0
R pm 304.98237
E rm 304.98243
G fm 304.95194
I lm 305.01290
S pc 7969177.70
T pl 7969546.87
E pr 7968806.13
R bl 0.00
1 v 173365.00
R pm 380.97565
E rm 380.97605
G fm 380.93794
I lm 381.01414
S pc 6379564.50
T pl 6379886.57
E pr 6379267.71
R bl 0.00
2 v 307459.00
RATIO REG 1/2 REG 1/3 REG 2/3
PEAK CENTER 1.2491727
PC+DELTA 1.2491727
PC+DELTA/RM 0.9999992
REF MASS 1.2491737
Active Register: 2 0.05 1.00
N REG
RCOPY1
RCOPY2
RCOPY3
LIMIT
CENTER
SPREAD
ERASE
RESUME
PEAK: _
Tue Oct 7 08:07:30 2003
mat90s
MAT 95

CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 507 > 624 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

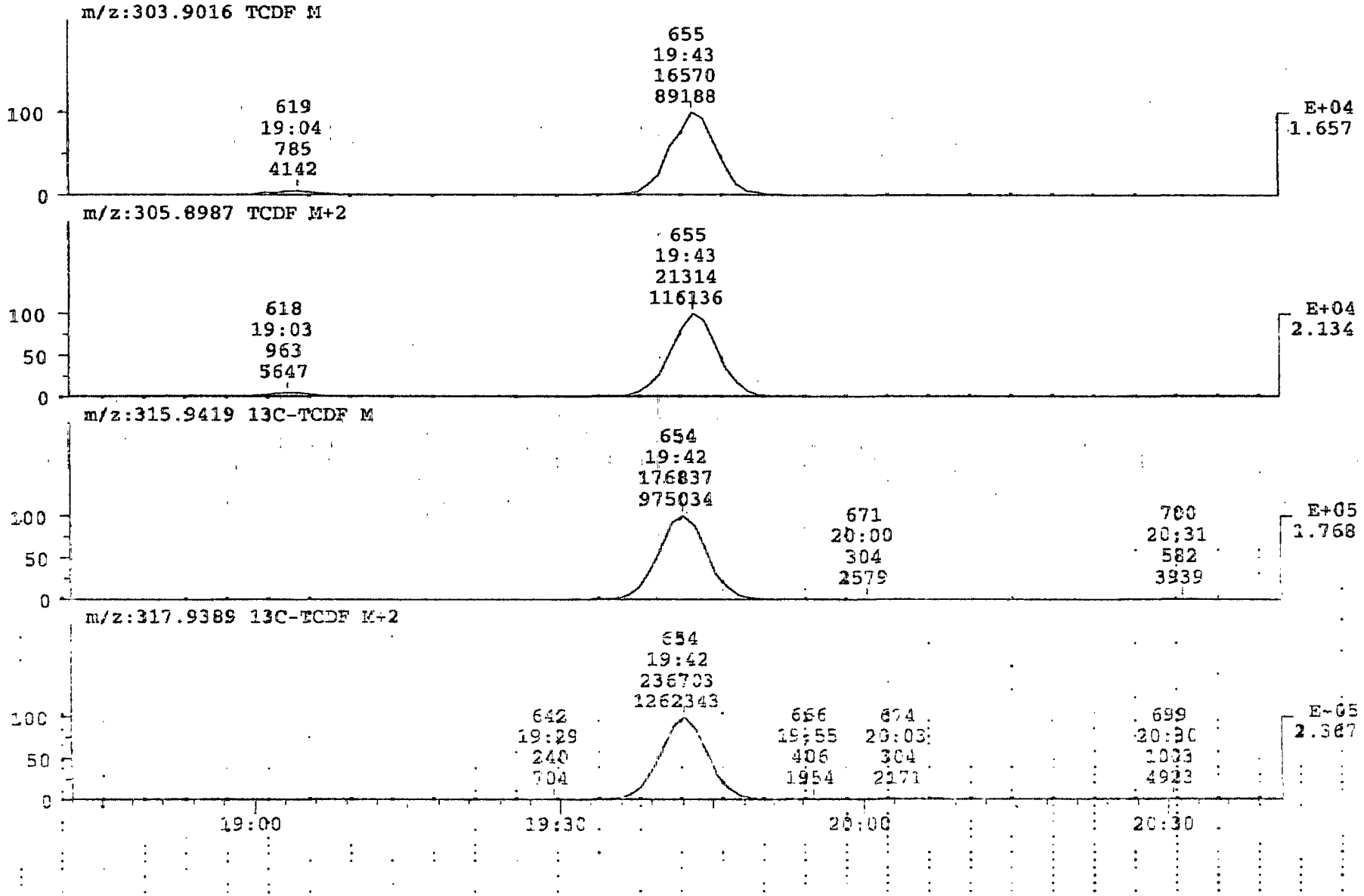



838

CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 495 > 612 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 2, 3.0
Disp: Height Area

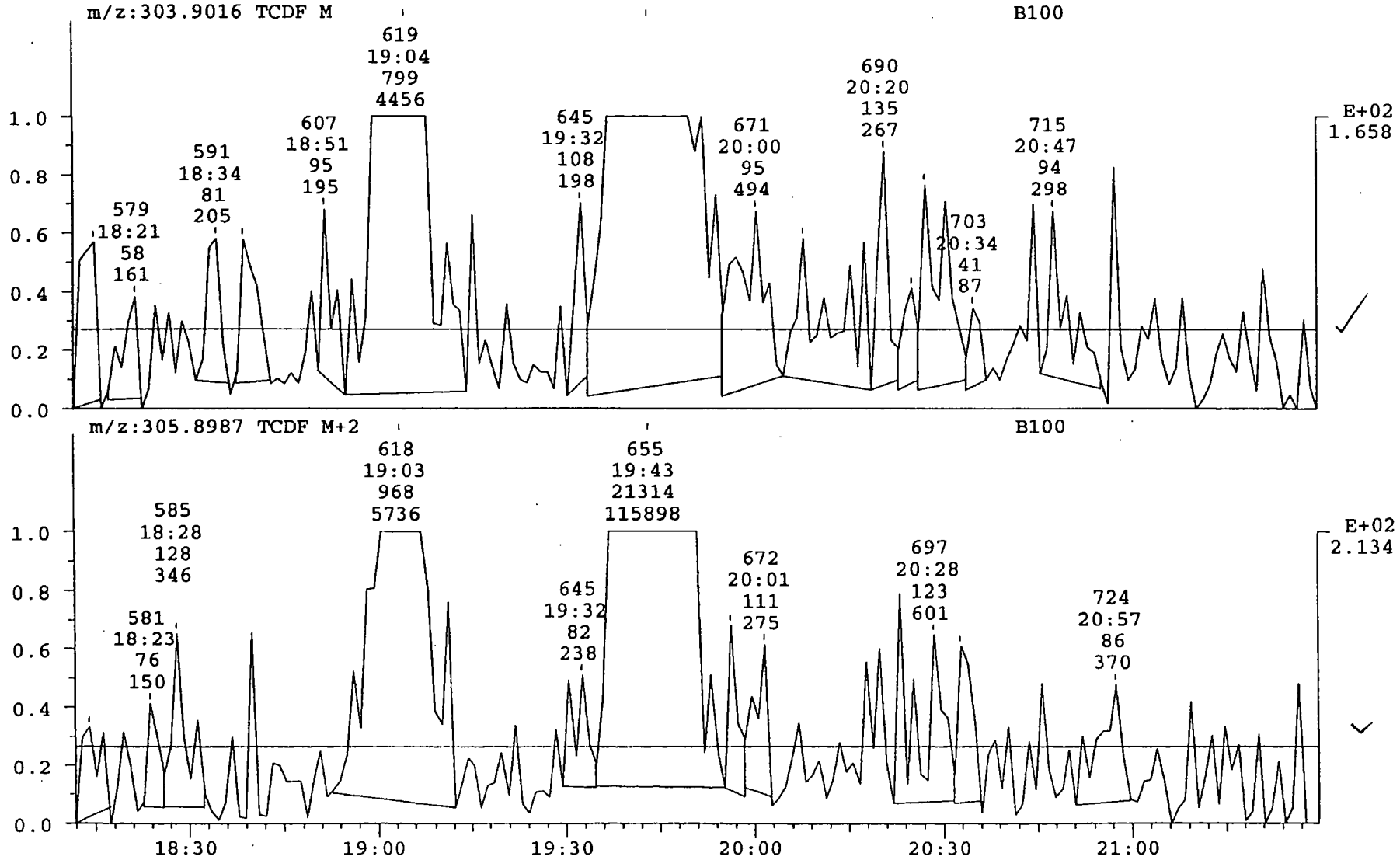


CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 598 > 709 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

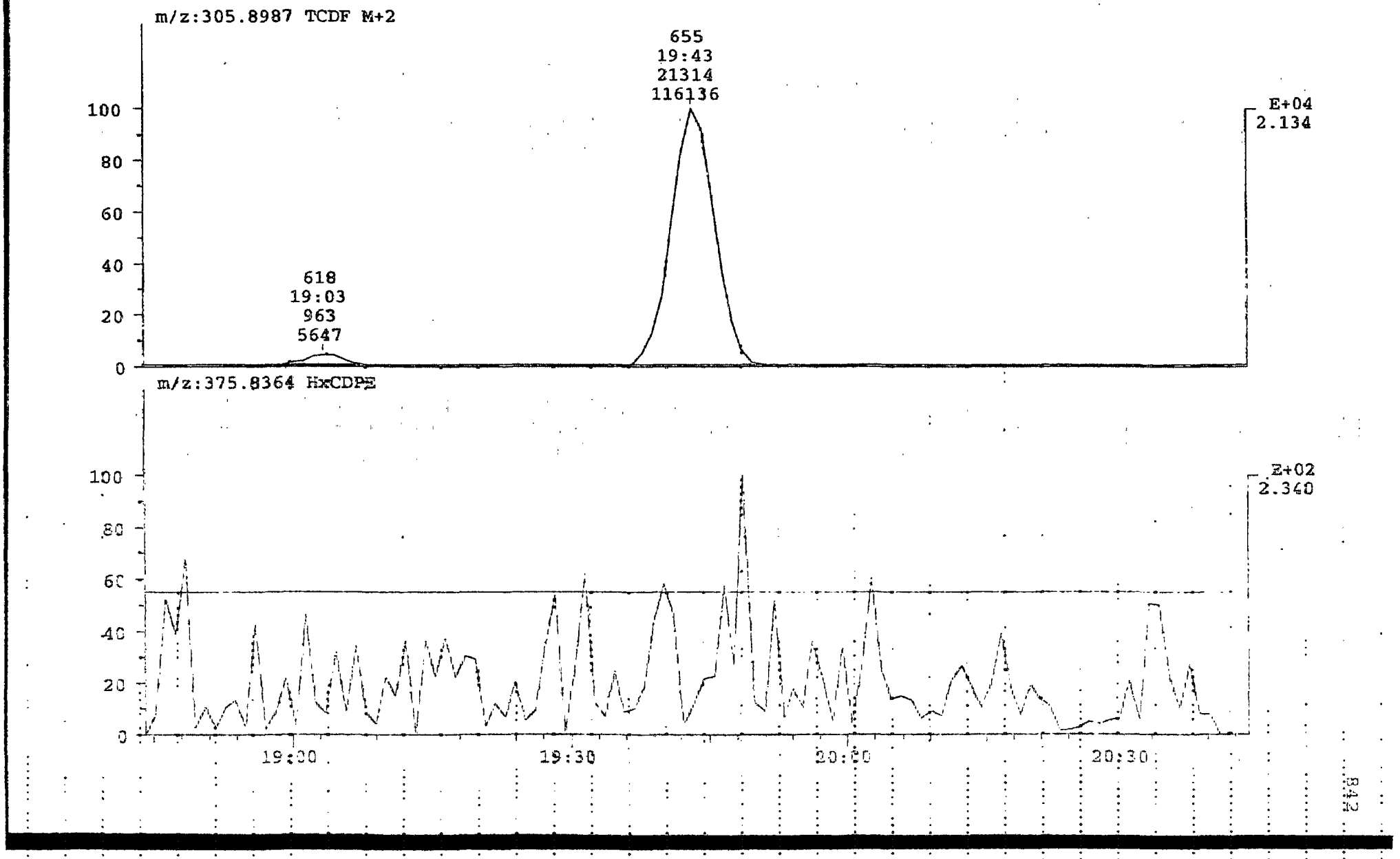



R40

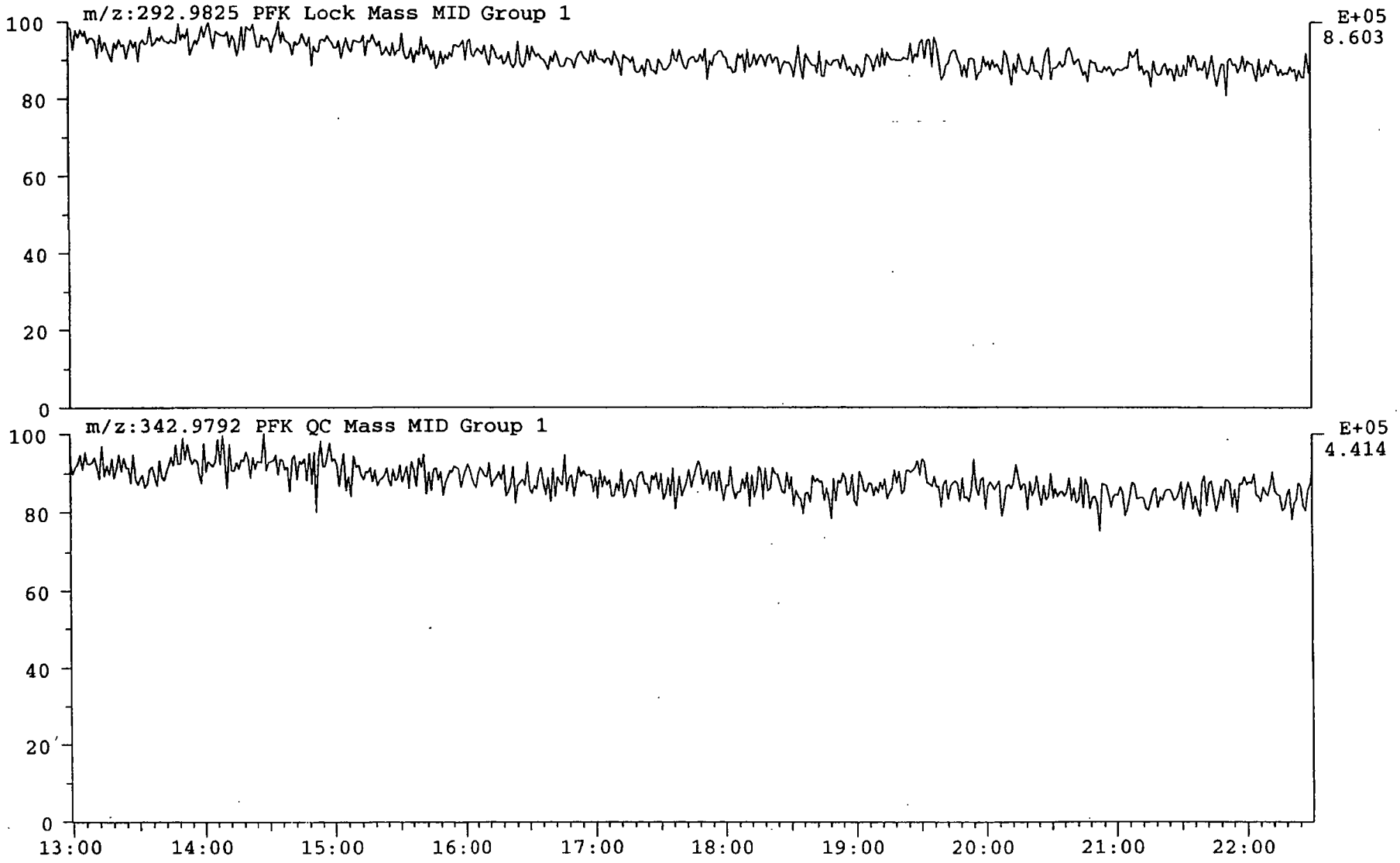
CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 570 > 754 Masses: 293 > 376
Area: 5, 0.50, 0 Baseline : 100, 3 Label : -2, 1.0
Disp: Height Area



CHRO: f031007s1 07-Oct-03 Elapse: 19:37.9 650
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1
Peak: 100.00 ppm Label wndw: 600 > 711 Masses: 293 > 376
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  f031007s1                              07-Oct-03   Elapse:  19:37.9      650
Samp:  Vial 1 WO=2553:86 Meth=L1c Dil=1                   Start :  07:33:36    1258
Comm:  Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode:  EI +VE +LMR  ESCAN LR NRM                          Study :  Ver Std
Oper:  PMP          Client:  STL Knoxville                Inlet :  GC     Vial   1
Peak:  100.00  ppm     Label wndw:   279 > 810             Masses:  293 > 376
Area:  0, 0.00, 0      Baseline  :   0, 3                 Label :  0, 0.0
```



```
Instrument internet name  -  mat90s
Instrument model          -  MAT 95
Instrument serial number  -  000000
Workstation internet name -  icis4ms
ICIS Version 8.2.1

ICL Version: 10.716
File name: f031007s1
Study: Ver Std
Sample: WO=2553:86 Meth=L1c Dil=1
Amount:  0.00
Volume:  0.00
Operator: PMP
Client: STL Knoxville
Comments: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Injected volume:  2.00
Sample from Vial 1
Analysis will stop when MID run finishes
Tune file name: tune2
Mcal file name: mcal1.cal
Single File
  ICL procedure: sleep 6
  ICIS procedure: fstd $
  MID procedure: db225

  MID Remarks:  DB-225 TCDF EPA Method 8290/1613B - 06/08/98

  Mid Set Up Parameter:
   Measure/lock ratio        1
   Damping Relay          TRUE
   Width first lock       0.20 amu
   Electric jump time       10 ms
   Magnetic jump time       60 ms
   Offset                  100 cts
   Electric range          300 %
   Sweep peak width       3.00
   MID mode              Lock mode
   Acq mode              Cent mode

  Mid Time Windows:
        Start          Measure        End          Cycletime
  # 1    8:00 min    22:30 min    30:30 min     1.00 sec

  Mid Masses:
   Window # 1
        mass F  int  gr  time (ms)
    292.9825 1   10   1      8.19
    303.9016      1   1     81.92
    305.8987      1   1     81.92
    315.9419      1   1     81.92
    317.9389      1   1     81.92
    319.8965      1   1     81.92
    321.8936      1   1     81.92
    327.8847      1   1     81.92
    331.9368      1   1     81.92
    333.9338      1   1     81.92
    342.9792 c   10   1      8.19
    375.8364      1   1     81.92

  Auto Sampler descriptor: 2ul_v403
   Normal Injection
   Injector A
   Slvnt A cln before inj  (K):     3 times
   Slvnt B cln before inj  (L):     0 times
   Sample rinse cycles     (R):     0 times
   Syringe filling volume  (F):   1.0 ul
```

| | | | |
|---|---|---|---|
| Pullup delay time | (D): | 4 | sec |
| Sample pullup count | (P): | 2 | times |
| Sample pullup speed | (E): | 1.0 | ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 | ul |
| Air after pre inj cln | (G): | 2.0 | ul |
| Sample volume | (V): | 2.0 | ul |
| Sample air volume | (A): | 2.0 | ul |
| Injection speed | (S): | 1.0 | ul/sec |
| Pre Inj. wait time | (W): | 10 | sec |
| Post Inj. hold time | (H): | 3 | sec |
| Solvent A clean cycles | (C): | 15 | times |
| Solvent B clean cycles | (B): | 0 | times |
| Loop clean w slvnt A | (LC): | 0 | times |
| Loop clean w slvnt B | (LB): | 0 | times |
| Standard sample volume | (X): | 0.0 | ul |
| Standard air volume | (Y): | 0.0 | ul |
| 2nd Injection volume | (I): | 0.0 | ul |
| Air volume of 2nd inj | (J): | 0.0 | ul |
| Time btwn 2 injections | (T): | 0 | sec |

GC descriptor : db225

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 270 deg max |
| Transfer Line: | 220 deg | | | 230 deg max |
| Column: | 140 deg at | 0.0 | minutes | 230 deg max |
| | 140 deg at | 2.0 | minutes | |
| | 200 deg at | 5.0 | minutes | |
| | 230 deg at | 20.0 | minutes | |
| | 230 deg at | 30.5 | minutes | |

Inlet : Splitless mode
Purge time 1.5 min
Purge flow 40.0 ml/min
Gas saver is on
Saver time 3.0 min
Saver flow 15.0 ml/min
Column : Constant Flow 1.2 ml
Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0215 | BCORRS | 0.0120 | BFM | 2.0000 |
| BLM | 996.0562 | BMASS | 304.9824 | BQUAD | 0.0000 |
| CAPIL | 0.0000 | CAPTEMP | 359.9988 | CAPTSET | 200.0000 |
| CCURR | 0.0000 | CORONA | 64.7130 | CYCLE | 0.0000 |
| DELAY | 0.0000 | DITEMP | 399.9996 | DITSET | 0.0000 |
| DRAW | -22.1750 | DRAWC | 1.0000 | DRAWS | -0.0050 |
| ECORR | 0.9994 | ECURR | 1.0000 | EDAC | 7969177.0000 |
| EDACG | 0.9996 | EDACR | 20.0000 | EDACZ | 3280.0000 |
| ELEN | 65.0500 | EMULT | 2.0500 | ENS | 210.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 150.0000 | FDMA | 18000000.0000 |
| FLENS | 1.0000 | FM | 20.0000 | FMII | 50.0000 |
| FQUAD | 0.0000 | FREQ | 600.9615 | FSLOPE | 36000000.0000 |
| FVANAL | 122.0000 | FVINLET | 411.0000 | FVSRC | 757.0000 |
| FWIN | 0.7000 | GCTC | 219.0000 | GCTI | 270.0000 |
| GCTL | 220.0000 | HACCU | 156.0000 | HCURR | 0.0000 |
| HVANAL | 1025.0000 | HVSRC | 0.0000 | ICAL0 | 0.0011 |
| ICAL1 | 0.4030 | ICAL2 | 0.5865 | IONEN | 4747.2480 |
| IST | 280.7830 | ISTC | 228.7866 | ISTCKP | 5.0000 |
| ISTCTD | 1.0000 | ISTCTN | 2.0000 | ISTCTS | 60.0000 |
| ISTCTV | 3.0000 | ISTS | 270.0000 | LENS | 996.0000 |
| LENSS | -155.6000 | LKM | 304.9824 | LM | 800.0000 |
| LMASS | 304.9824 | LMII | 500.0000 | MASS | 304.9824 |
| MDAC | 3679959.2595 | MDACR | 20.0000 | MRANGE | 996.0562 |
| MSFM | 2.0000 | MSLM | 3790.0000 | NPEAK | 200.0000 |
| NSAM | 200.0000 | NSCAN | 3293.0000 | NSMAX | 8.0000 |

| | | | | | |
|---|---|---|---|---|---|
| NSMIN | 2.0000 | OCT | -2.0000 | PSAM | 10.0000 |
| PUSHER | -6.9750 | RDRAW | 0.0000 | RDRAWC | 0.0000 |
| RECURR | 0.0000 | RELEN | 0.0000 | RES | 10994.8375 |
| RFAMP | 799.9987 | RFCUR | 100.0110 | RPUSHER | 0.0000 |
| RWIN | 2.0000 | SACCU | 2.0000 | SCIDLE | 1.0000 |
| SHIELD | 2541.0000 | SHIELDS | 0.2000 | SHIGH | 180.0000 |
| SKIM | 7.0000 | SLOW | 60.0000 | SPRAY | 8.0000 |
| SS | 3.0000 | SW | 0.0500 | TANAL | 0.0000 |
| TCURR | 0.0000 | TD | 1.0000 | THRESH | 5.0000 |
| TIS | 0.2000 | TREF | 150.0000 | TS | 1.8021 |
| TSAM | 200.0000 | TSET | 0.0000 | TUBEL | 0.0000 |
| UOFS | 5.0000 | URATIO | 2.5100 | USERVAR | 0.0000 |
| VAPTEMP | 599.9997 | VAPTSET | 400.0000 | VMASS | 304.9824 |
| XLENS | 1940.0000 | XLENSS | 22.6000 | YLENS | 1482.0000 |
| YLENSS | -77.8000 | | | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 07-Oct-03 07:33:36.4

Autosampler has injected sample from vial 1
MID Time Window 1: Resolution is 9155
Analysis stopped at: 07-Oct-03 08:04:09.7 (run time 30.54 minutes)
Analysis stopped because MID run finished

QUAN: f031007s1.q0 Entries: 15

Data file(s) used
File: f031007s1 07-Oct-03
Samp: Vial 1 WO=2553:86 Meth=L1c Dil=1 Start : 07:33:36 1258
Comm: Inst=m3c/3131063 Batch=20031007s1 Ccal=20021119i
Mode: EI +VE +LMR ESCAN LR NRM Study : Ver Std
Oper: PMP Client: STL Knoxville Inlet : GC Vial 1

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 17:56 | 76667. | 14712. | 17:40 | 18:04 | 49. | 2 | 3.0 |
| 319.8805 | 18:09 | 62456. | 12546. | 18:04 | 18:13 | 49. | 2 | 3.0 |
| 319.8805 | 18:17 | 68242. | 11632. | 18:13 | 18:27 | 49. | 2 | 3.0 |
| 321.8775 | 17:56 | 97328. | 17788. | 17:40 | 18:03 | 52. | 2 | 3.0 |
| 321.8775 | 18:09 | 79466. | 15125. | 18:03 | 18:13 | 52. | 2 | 3.0 |
| 321.8775 | 18:17 | 88696. | 15704. | 18:13 | 18:33 | 52. | 2 | 3.0 |
| 331.9202 | 17:55 | 797839. | 147392. | 17:41 | 18:04 | 79. | 2 | 3.0 |
| 331.9202 | 18:15 | 740497. | 141135. | 18:04 | 18:29 | 79. | 2 | 3.0 |
| 333.9171 | 17:55 | 1007056. | 190459. | 17:45 | 18:05 | 64. | 2 | 3.0 |
| 333.9171 | 18:15 | 932215. | 176844. | 18:05 | 18:28 | 64. | 2 | 3.0 |
| 327.8683 | 17:57 | 174112. | 32031. | 17:48 | 18:07 | 49. | 2 | 3.0 |
| 303.8864 | 19:43 | 89188. | 16570. | 19:30 | 19:59 | 48. | 2 | 3.0 |
| 305.8834 | 19:43 | 116136. | 21314. | 19:29 | 19:55 | 61. | 2 | 3.0 |
| 315.9261 | 19:42 | 975034. | 176837. | 19:26 | 19:58 | 62. | 2 | 3.0 |
| 317.9230 | 19:42 | 1262343. | 236703. | 19:30 | 19:53 | 61. | 2 | 3.0 |

# Raw QC Data

## METHOD BLANK REPORT

### Trace Level Organic Compounds

**Client Lot #...:** H3I100253 **Work Order #...:** F1EPV1AA **Matrix.....:** SOLID
**MB Lot-Sample #:** H3I300000-193

**Prep Date.....:** 09/30/03
**Analysis Date..:** 10/05/03 **Prep Batch #...:** 3273193
**Dilution Factor:** 1

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| 2,3,7,8-TCDD | ND | 0.31 | pg/g | SW846 8290 |
| Total TCDD | ND | 0.31 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total PeCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | ND | 0.17 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | ND | 0.20 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| Total HxCDD | ND | 0.18 | pg/g | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| Total HpCDD | ND | 0.28 | pg/g | SW846 8290 |
| **OCDD** | **0.68 Q,J** | **0.39** | **pg/g** | **SW846 8290** |
| 2,3,7,8-TCDF | ND | 0.28 | pg/g | SW846 8290 |
| Total TCDF | ND | 0.28 | pg/g | SW846 8290 |
| 1,2,3,7,8-PeCDF | ND | 0.14 | pg/g | SW846 8290 |
| 2,3,4,7,8-PeCDF | ND | 0.11 | pg/g | SW846 8290 |
| Total PeCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | ND | 0.12 | pg/g | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 0.17 | pg/g | SW846 8290 |
| Total HxCDF | ND | 0.13 | pg/g | SW846 8290 |
| **1,2,3,4,6,7,8-HpCDF** | **0.30 Q,J** | **0.18** | **pg/g** | **SW846 8290** |
| **1,2,3,4,7,8,9-HpCDF** | **0.44 Q,J** | **0.21** | **pg/g** | **SW846 8290** |
| **Total HpCDF** | **0.75 Q,J** | **0.19** | **pg/g** | **SW846 8290** |
| OCDF | ND | 0.37 | pg/g | SW846 8290 |

(Continued on next page)

# METHOD BLANK REPORT

## Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AA Matrix.....: SOLID

| PARAMETER | RESULT | DETECTION LIMIT | UNITS | METHOD |
|---|---|---|---|---|
| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS | | |
| 13C-2,3,7,8-TCDD | 75 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDD | 92 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDD | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDD | 72 | (40 - 135) | | |
| 13C-OCDD | 46 | (40 - 135) | | |
| 13C-2,3,7,8-TCDF | 77 | (40 - 135) | | |
| 13C-1,2,3,7,8-PeCDF | 72 | (40 - 135) | | |
| 13C-2,3,4,7,8-PeCDF | 80 | (40 - 135) | | |
| 13C-1,2,3,4,7,8-HxCDF | 89 | (40 - 135) | | |
| 13C-1,2,3,6,7,8-HxCDF | 83 | (40 - 135) | | |
| 13C-2,3,4,6,7,8-HxCDF | 76 | (40 - 135) | | |
| 13C-1,2,3,7,8,9-HxCDF | 78 | (40 - 135) | | |
| 13C-1,2,3,4,6,7,8-HpCDF | 69 | (40 - 135) | | |
| 13C-1,2,3,4,7,8,9-HpCDF | 76 | (40 - 135) | | |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Q Estimated maximum possible concentration (EMPC).

J Estimated result. Result is less than the reporting limit.

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AA | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvb.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71193 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/5/2003 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Analysis Time** | 00:46 | **Initial Wt/Vol** | 10.0 | **Lims Test Code** | XXA11IN01 |
| **Anal Exp Date** | 11/14/03 | **Extract Vol** | 20 | **Method** | DX8290_2 |
| **Instrument** | M2A | **Dil Factor** | 1.0 | **Code** | IN2 |
| **Analyst** | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | | | | 1.095 | | | | ND | | 0.307 |
| Total TCDD | | | | 1.095 | | | | ND | | 0.307 |
| 2,3,7,8-TCDF | | | | 1.017 | | | | ND | | 0.285 |
| Total TCDF | | | | 1.017 | | | | ND | | 0.285 |
| 1,2,3,7,8-PeCDD | | | | 0.984 | | | | ND | | 0.181 |
| Total PeCDD | | | | 0.984 | | | | ND | | 0.181 |
| 1,2,3,7,8-PeCDF | | | | 0.970 | | | | ND | | 0.140 |
| 2,3,4,7,8-PeCDF | | | | 1.035 | | | | ND | | 0.109 |
| Total PeCDF | | | | 1.003 | | | | ND | | 0.123 |
| 1,2,3,4,7,8-HxCDD | | | | 1.111 | | | | ND | | 0.170 |
| 1,2,3,6,7,8-HxCDD | | | | 1.026 | | | | ND | | 0.204 |
| 1,2,3,7,8,9-HxCDD | | | | 1.109 | | | | ND | | 0.179 |
| Total HxCDD | | | | 1.082 | | | | ND | | 0.183 |
| 1,2,3,4,7,8-HxCDF | | | | 1.226 | | | | ND | | 0.115 |
| 1,2,3,6,7,8-HxCDF | | | | 1.197 | | | | ND | | 0.118 |
| 2,3,4,6,7,8-HxCDF | | | | 1.155 | | | | ND | | 0.134 |
| 1,2,3,7,8,9-HxCDF | | | | 1.236 | | | | ND | | 0.169 |
| Total HxCDF | | | | 1.204 | | | | ND | | 0.131 |
| 1,2,3,4,6,7,8-HpCDD | | | | 0.986 | | | | ND | | 0.277 |
| Total HpCDD | | | | 0.986 | | | | ND | | 0.277 |
| 1,2,3,4,6,7,8-HpCDF | 50:51 | 2007 | 345 | 1.512 | | 3.042995 | | 0.304299 | QJ | 0.182 |
| 1,2,3,4,7,8,9-HpCDF | 53:08 | 2430 | 418 | 1.426 | | 4.437285 | | 0.443729 | QJ | 0.209 |
| Total HpCDF | | | | 1.469 | | 7.480280 | | 0.748028 | QJ | 0.195 |
| OCDD | 56:45 | 1803 | 643 | 1.075 | | 6.814374 | | 0.681437 | QJ | 0.391 |
| OCDF | | | | 1.135 | | | | ND | | 0.370 |
| 13C-2,3,7,8-TCDD | 35:46 | 644934 | 79677 | 1.083 | 1000 | 754.141170 | 75.41 | 75.414117 | | 0.813 |
| 13C-2,3,7,8-TCDF | 33:39 | 933062 | 98338 | 1.527 | 1000 | 773.688266 | 77.37 | 77.368827 | | 0.280 |
| 13C-1,2,3,7,8-PeCDD | 43:08 | 592953 | 164214 | 0.958 | 1000 | 783.250726 | 78.33 | 78.325073 | | 0.351 |
| 13C-1,2,3,7,8-PeCDF | 41:37 | 806357 | 203122 | 1.427 | 1000 | 715.428253 | 71.54 | 71.542825 | | 0.261 |
| 13C-2,3,4,7,8-PeCDF | 42:41 | 871292 | 244543 | 1.384 | 1000 | 797.048993 | 79.70 | 79.704899 | | 0.269 |
| 13C-1,2,3,4,7,8-HxCDD | 47:19 | 534872 | 152255 | 0.941 | 1000 | 918.048802 | 91.80 | 91.804880 | | 0.259 |
| 13C-1,2,3,6,7,8-HxCDD | 47:28 | 518364 | 137395 | 1.078 | 1000 | 776.680990 | 77.67 | 77.668099 | | 0.226 |
| 13C-1,2,3,4,7,8-HxCDF | 46:13 | 709662 | 196654 | 1.283 | 1000 | 893.001451 | 89.30 | 89.300145 | | 0.178 |
| 13C-1,2,3,6,7,8-HxCDF | 46:22 | 718947 | 196667 | 1.406 | 1000 | 825.857581 | 82.59 | 82.585758 | | 0.163 |
| 13C-2,3,4,6,7,8-HxCDF | 47:08 | 613475 | 178819 | 1.301 | 1000 | 761.613516 | 76.16 | 76.161352 | | 0.176 |
| 13C-1,2,3,7,8,9-HxCDF | 48:10 | 534797 | 132616 | 1.105 | 1000 | 781.246571 | 78.12 | 78.124657 | | 0.207 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:29 | 430506 | 99796 | 0.970 | 1000 | 716.745427 | 71.67 | 71.674543 | | 0.189 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:46 | 436172 | 94481 | 1.017 | 1000 | 692.544912 | 69.25 | 69.254491 | | 0.203 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:06 | 384115 | 87061 | 0.812 | 1000 | 763.852214 | 76.39 | 76.385221 | | 0.254 |
| 13C-OCDD | 56:45 | 492449 | 128449 | 0.856 | 2000 | 929.560066 | 46.48 | 92.956007 | | 0.206 |
| 13C-1,2,3,4-TCDD | 35:17 | 1579868 | 180091 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.880 |
| 13C-1,2,3,7,8,9-HxCDD | 47:52 | 1238474 | 332234 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.244 |

BJW 10-6-03
MSD 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AA | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvb.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71193 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/05/03 00:46 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA1IIN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Dilution Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 135 | 150 | 54 | 60 | 0.90 * | / | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 205 | 180 | 82 | 72 | 1.14 * | / | |
| 13C-2,3,7,8-TCDF | | 33:39 | 33:39 | 0 | 412365 | 520697 | 42766 | 55572 | 0.79 | ABV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 125 | 143 | 50 | 57 | 0.88 | / | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| Noise | | 00:00 | 00:00 | 0 | 505 | 288 | 202 | 115 | 1.76 * | / | |
| 13C-1,2,3,4-TCDD | | 35:17 | 35:17 | 0 | 713357 | 866511 | 81157 | 98994 | 0.82 | ABV/ABV | |
| 13C-2,3,7,8-TCDD | | 35:46 | 35:46 | 0 | 286825 | 358109 | 34363 | 45314 | 0.80 | AVB/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 128 | 148 | 51 | 59 | 0.86 * | / | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 175 | 160 | 70 | 64 | 1.09 * | / | |
| 13C-1,2,3,7,8-PeCDF | | 41:37 | 41:37 | 0 | 491916 | 314441 | 122034 | 81088 | 1.56 | ABV/ABV | |
| 13C-2,3,4,7,8-PeCDF | | 42:41 | 42:41 | 0 | 529102 | 342190 | 150871 | 93672 | 1.55 | ABB/AVV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 155 | 138 | 62 | 55 | 1.13 * | / | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| Noise | | 00:00 | 00:00 | 0 | 153 | 160 | 61 | 60 | 1.02 * | / | |
| 13C-1,2,3,7,8-PeCDD | | 43:08 | 43:08 | 0 | 364516 | 228437 | 99492 | 64722 | 1.60 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| Noise | | 00:00 | 00:00 | 0 | 138 | 140 | 55 | 56 | 0.98 * | / | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| Noise | | 00:00 | 00:00 | 0 | 190 | 190 | 76 | 76 | 1.00 * | / | |
| 13C-1,2,3,4,7,8-HxCDF | | 46:13 | 46:14 | -1 | 250185 | 459477 | 69056 | 127598 | 0.54 | ABV/ABV | |
| 13C-1,2,3,6,7,8-HxCDF | | 46:22 | 46:23 | -1 | 255569 | 463378 | 66668 | 129999 | 0.55 | AVV/AVB | |
| 13C-2,3,4,6,7,8-HxCDF | | 47:08 | 47:08 | 0 | 215186 | 398289 | 63588 | 115231 | 0.54 | AVV/AVV | |
| 13C-1,2,3,7,8,9-HxCDF | | 48:10 | 48:10 | 0 | 184215 | 350582 | 46584 | 86032 | 0.53 | ABB/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| Noise | | 00:00 | 00:00 | 0 | 145 | 143 | 58 | 57 | 1.02 * | / | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| Noise | | 00:00 | 00:00 | 0 | 205 | 200 | 82 | 80 | 1.03 * | / | |
| 13C-1,2,3,4,7,8-HxCDD | | 47:19 | 47:19 | 0 | 301750 | 233122 | 84886 | 67369 | 1.29 | ABV/ABV | |
| 13C-1,2,3,6,7,8-HxCDD | | 47:28 | 47:26 | 2 | 293093 | 225271 | 76082 | 61312 | 1.30 | AVB/AVV | |
| 13C-1,2,3,7,8,9-HxCDD | | 47:52 | 47:52 | 0 | 687691 | 550783 | 185711 | 146523 | 1.25 | ABV/AVV | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| Noise | | 00:00 | 00:00 | 0 | 130 | 130 | 52 | 52 | 1.00 | / | |
| 1,2,3,4,6,7,8-HpCDF | | 50:51 | 50:47 | 4 | 2382 | 984 | 482 | 169 | 2.42 * | ABB/ABB | RM |
| 1,2,3,4,7,8,9-HpCDF | | 53:08 | 53:07 | 1 | 1239 | 1576 | 213 | 426 | 0.79 * | MVV/MVV | RTXM |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| Noise | | 00:00 | 00:00 | 0 | 163 | 180 | 65 | 72 | 0.90 * | / | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported & = peak less than 0.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

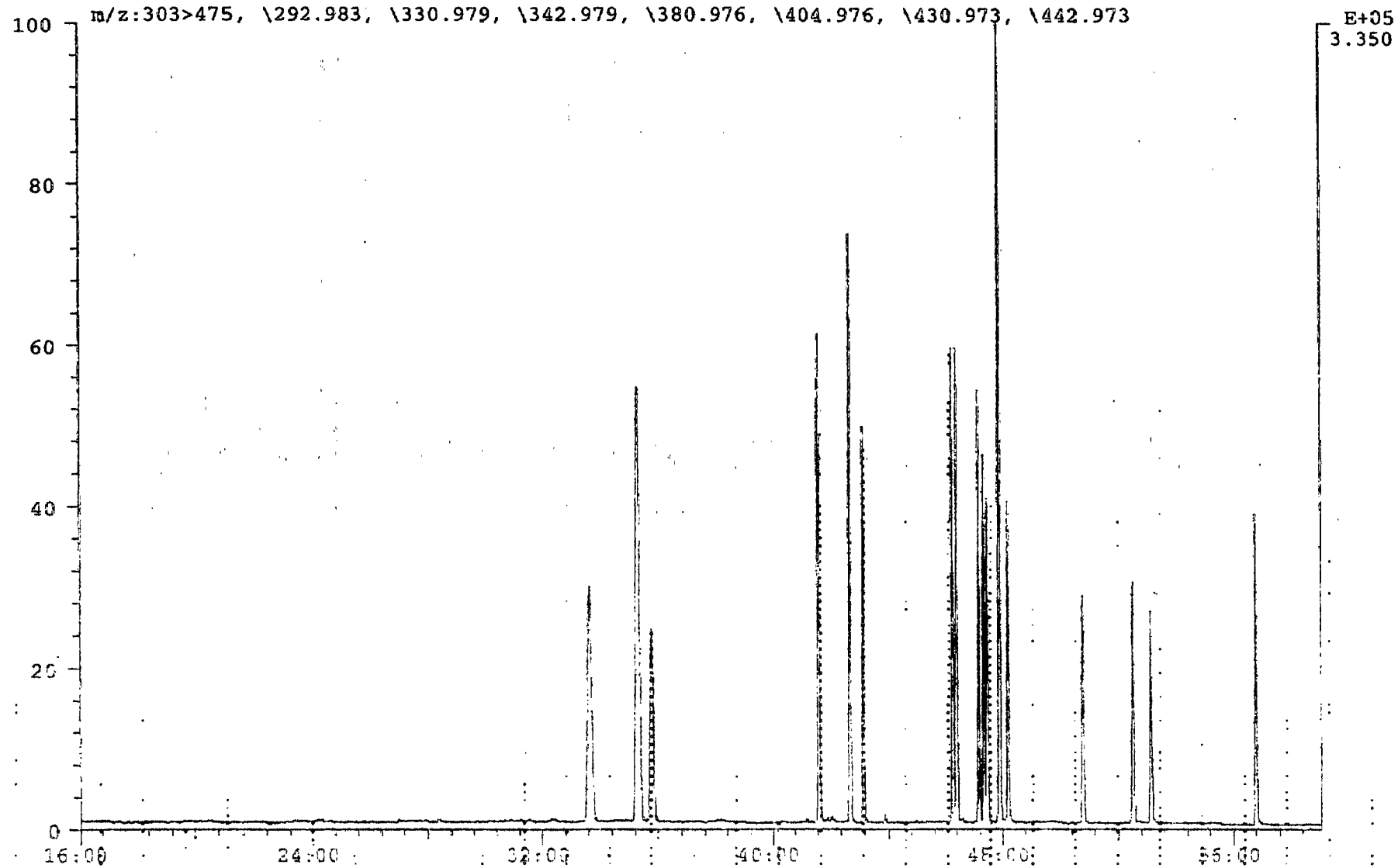
| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AA | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvb.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71193 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/05/03 00:46 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |
| | | **View Small Peaks?** | False | **View deleted peaks?** | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:46 | 50:45 | 1 | 134537 | 301635 | 30445 | 64036 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:06 | 53:06 | 0 | 120393 | 263722 | 27897 | 59164 | 0.46 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 130 | 57 | 52 | 1.10 | / | |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 153 | 61 | 61 | 1.00 | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:29 | 52:29 | 0 | 218939 | 211567 | 49361 | 50435 | 1.03 | AVV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 145 | 50 | 58 | 0.86 | / | |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 128 | 57 | 51 | 1.12 * | / | |
| | OCDD | 56:45 | 56:47 | -2 | 1013 | 954 | 207 | 340 | 1.06 * | MBB/ABB | RM |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 168 | 50 | 67 | 0.75 * | / | |
| | 13C-OCDD | 56:45 | 56:46 | -1 | 230351 | 262098 | 59315 | 69134 | 0.88 | ABV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

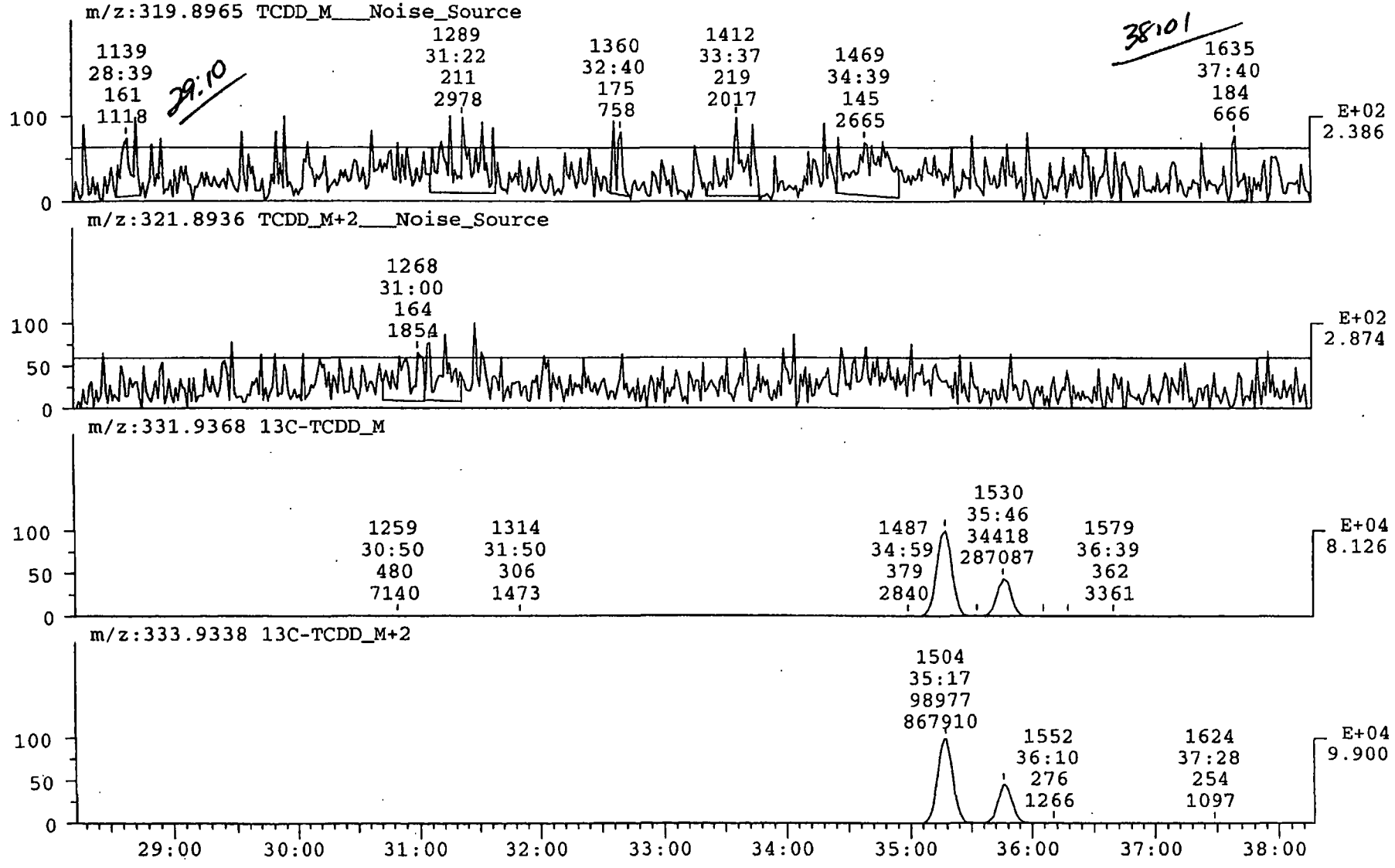
CHRO: tf1epvb 05-Oct-03 Elapse: 38:24 1673
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 441 > 2831 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Int PMP 10-05-03
Calc BTW 10-6-03
QC Rev MSD 10/7/03

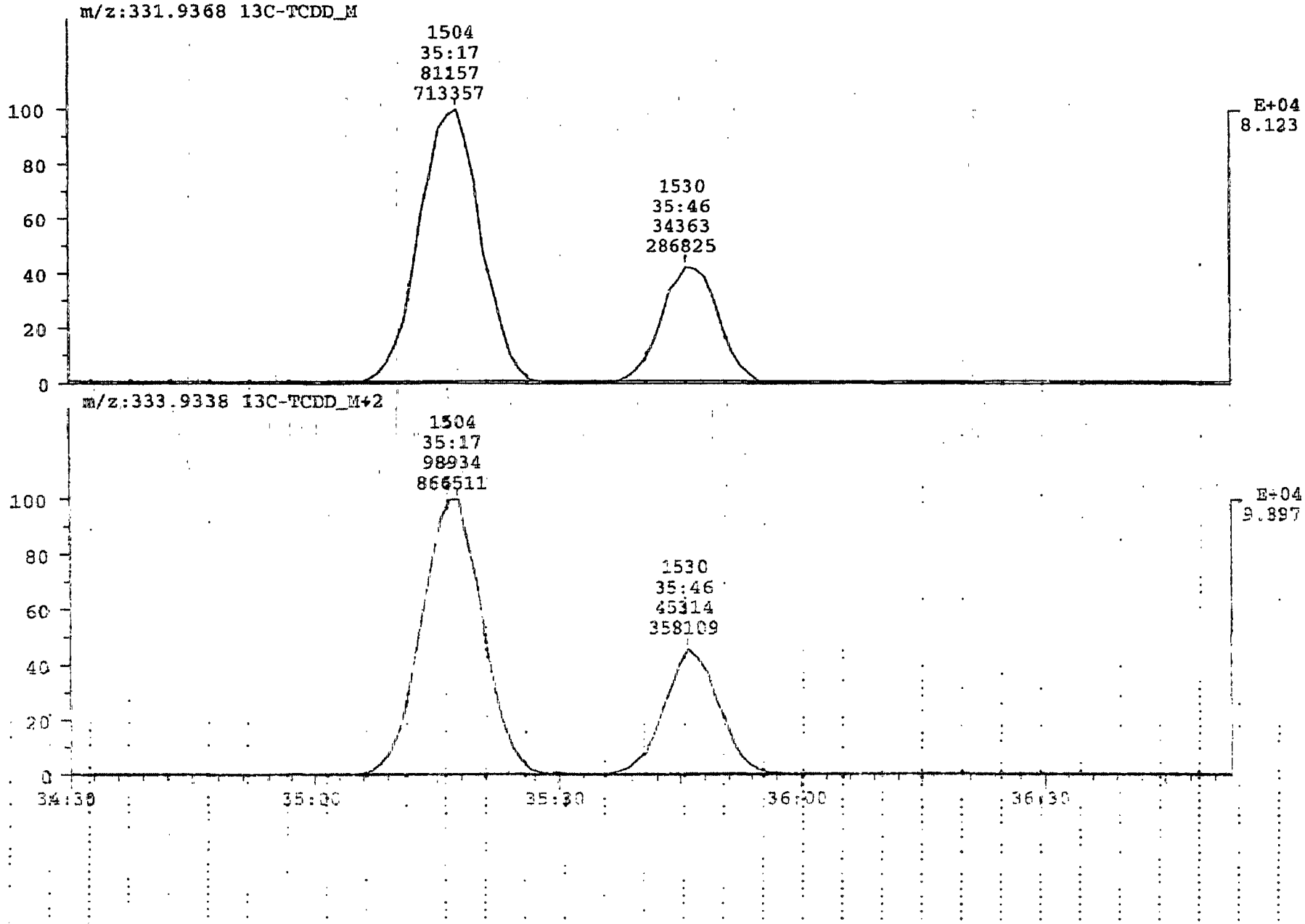



851

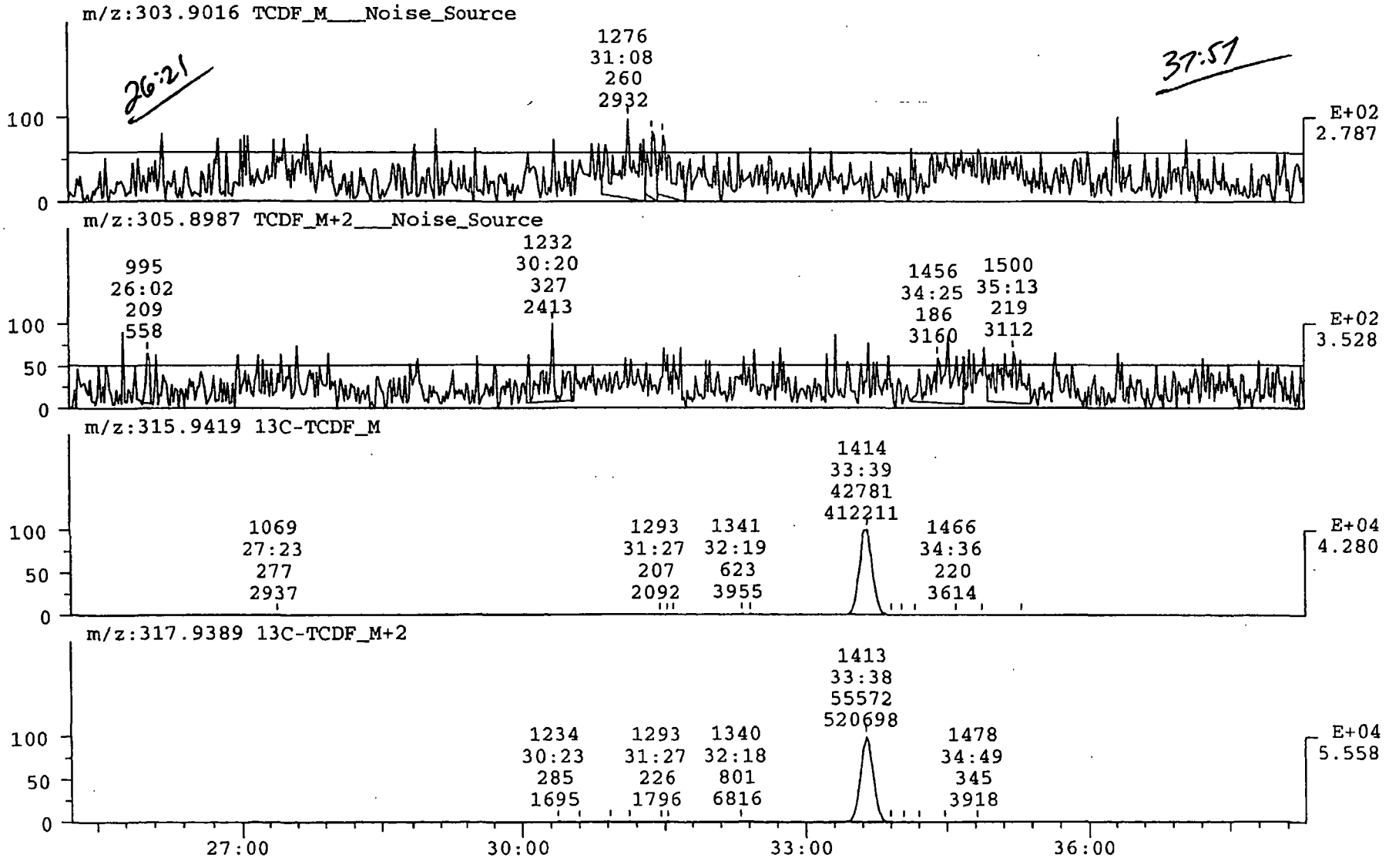
CHRO: tf1epvb 05-Oct-03 Elapse: 38:24 1673
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1115 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



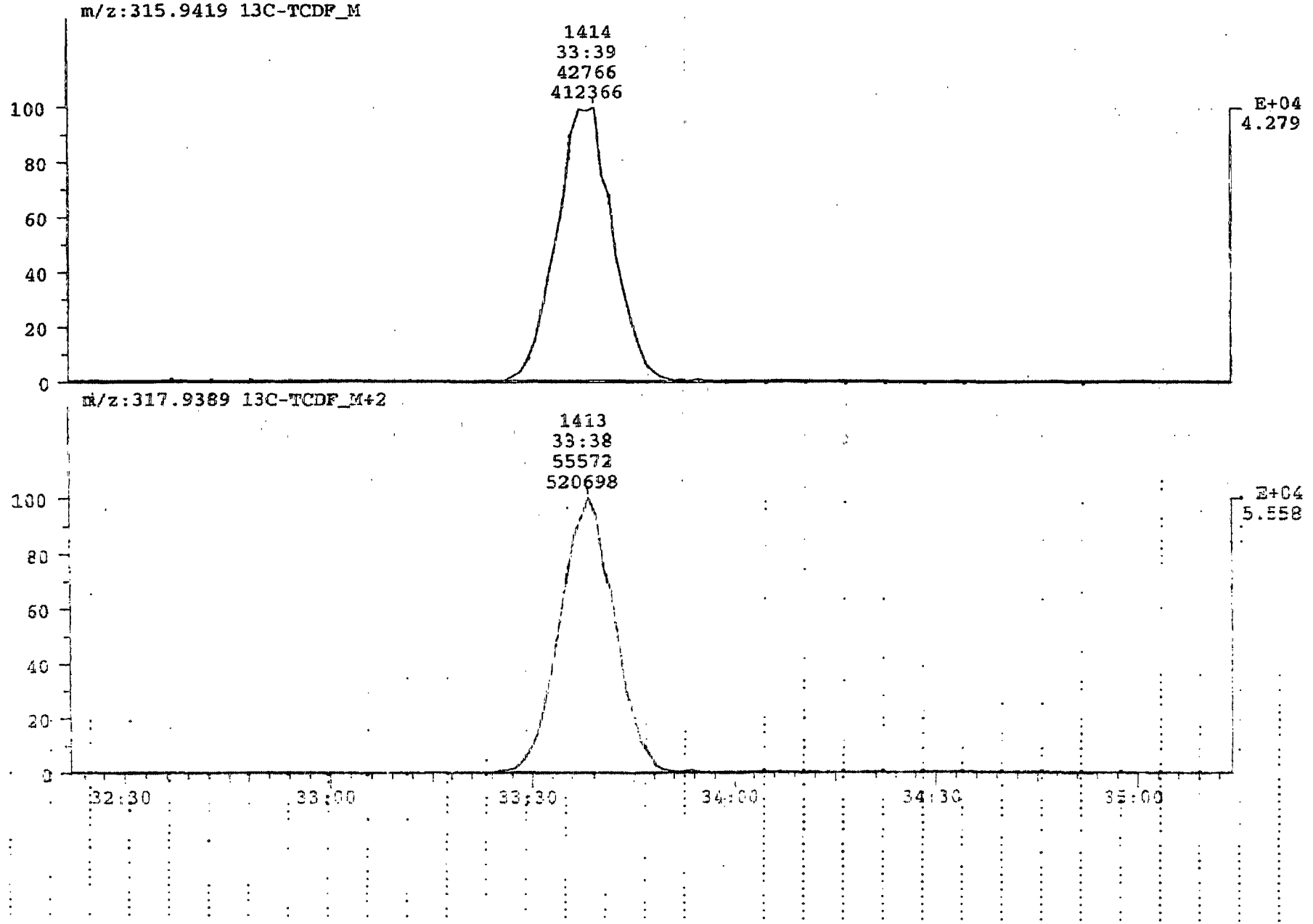
CHRO: tf1epvb 05-Oct-03 Elapse: 35:40 1525
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1460 > 1591 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tf1epvb 05-Oct-03 Elapse: 35:40 1525
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 950 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

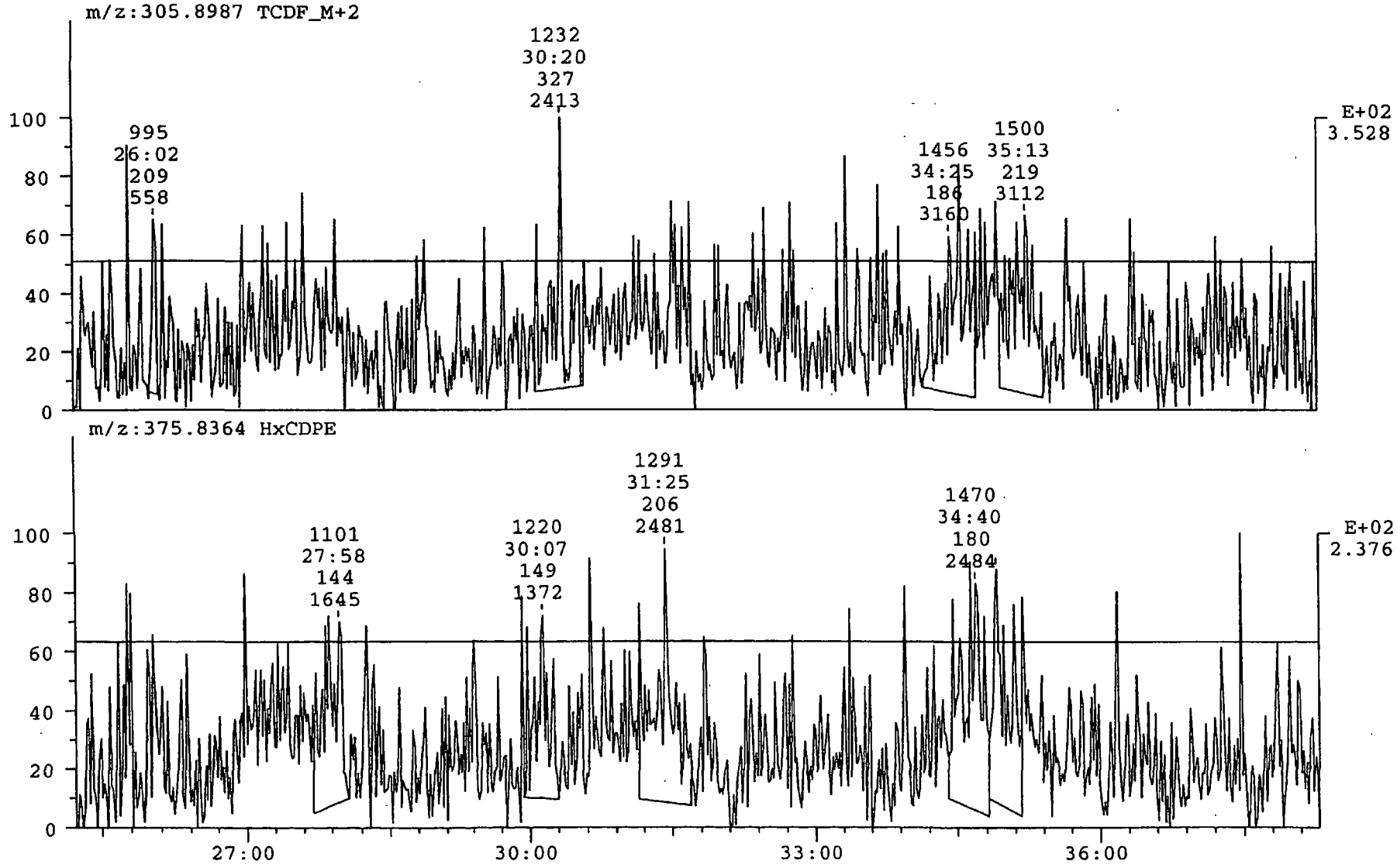


CHRO: tf1epvb 05-Oct-03 Elapse: 33:44 1419
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1343 > 1501 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

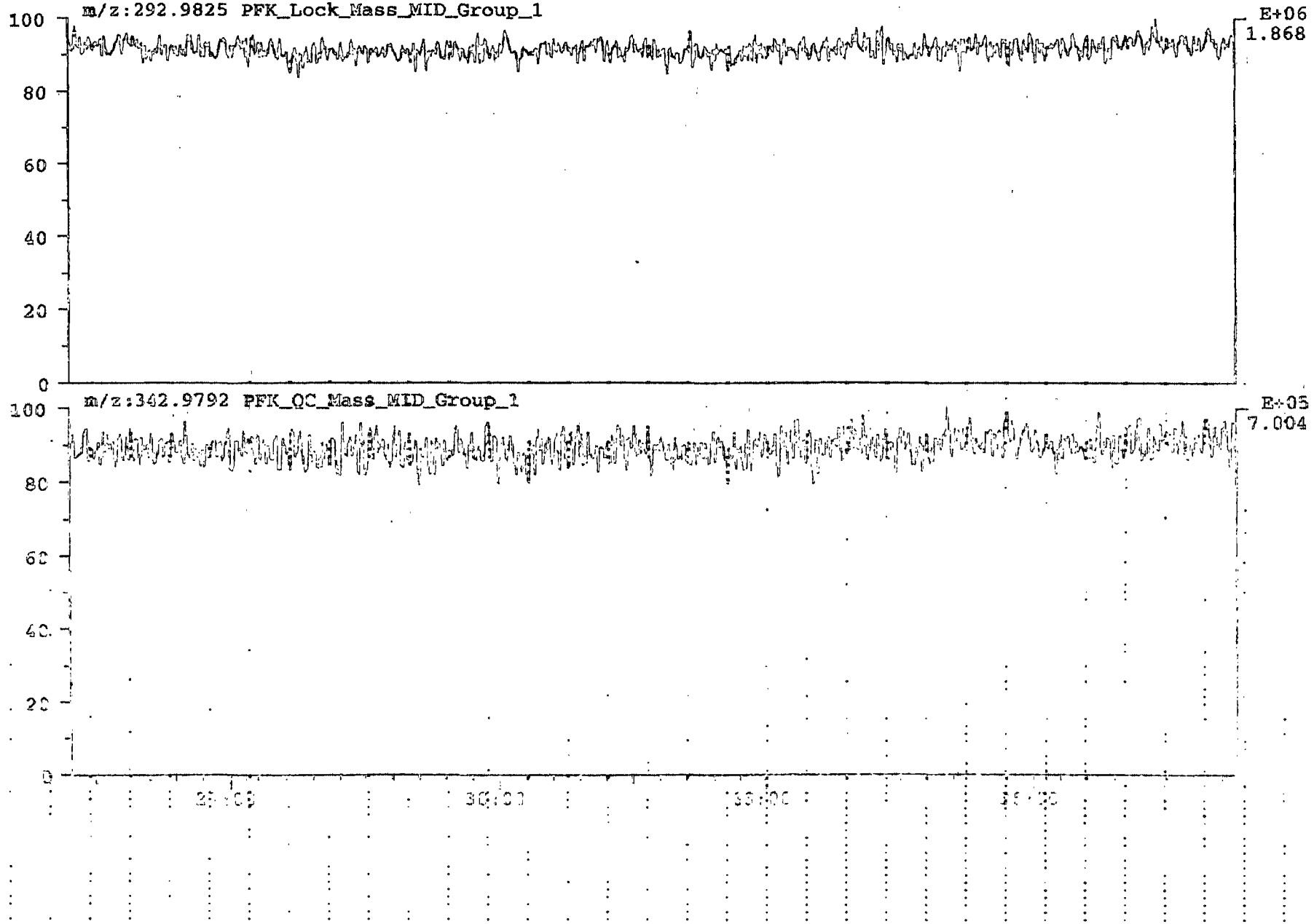



858

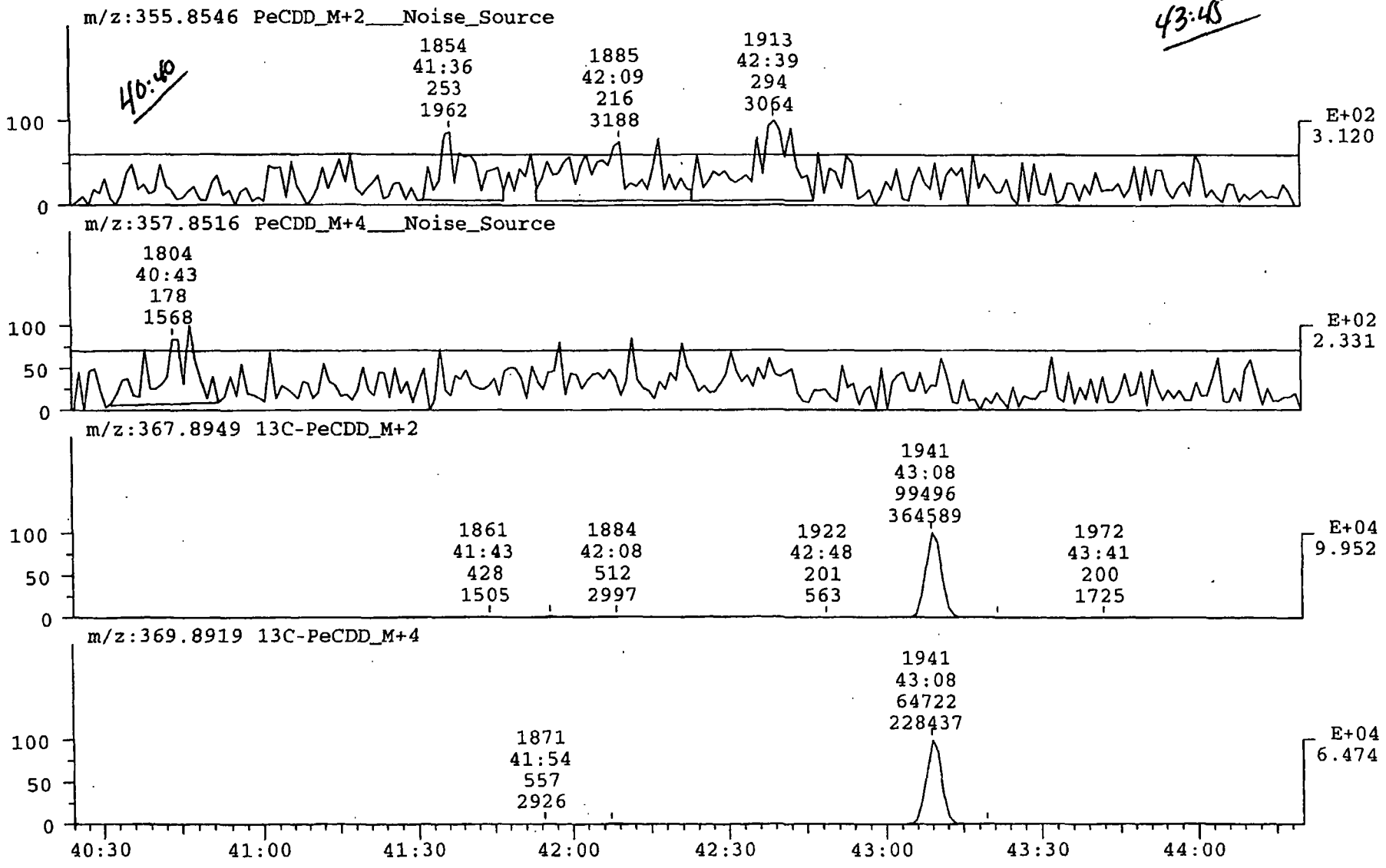
CHRO: tf1epvb 05-Oct-03 Elapse: 33:44 1419
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 950 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



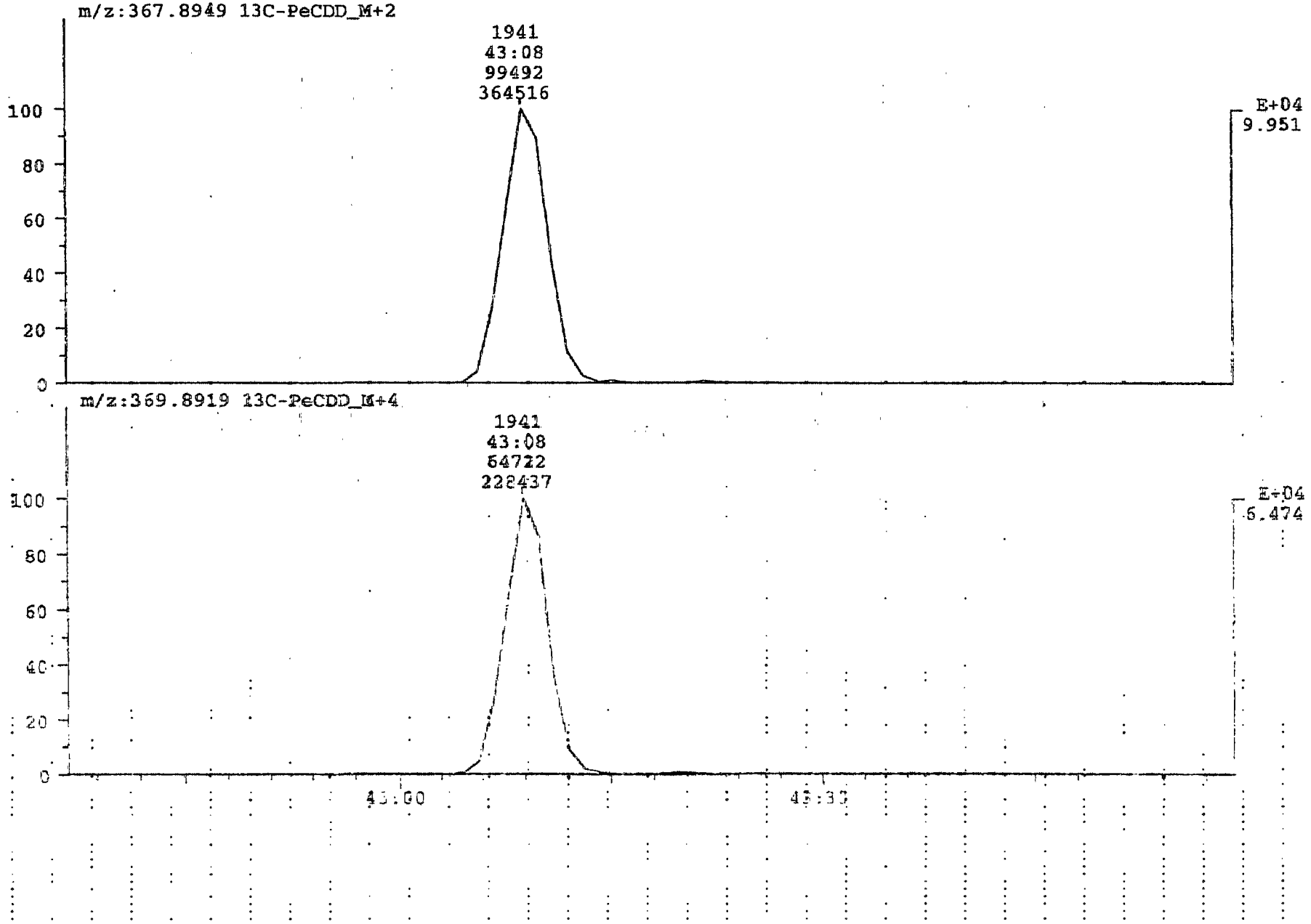
```
CHRO:  tf1epvb                                  05-Oct-03   Elapse:  33:44      1419
Samp:  Vial 35 WC=f1epv1aa Meth=IN2 Dil=1                   Start :  00:46:07   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                           Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I300000-193B                 Inlet :  GC     Vial 35
Peak:  100.00  ppm     Label wndw:   950 > 1668             Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



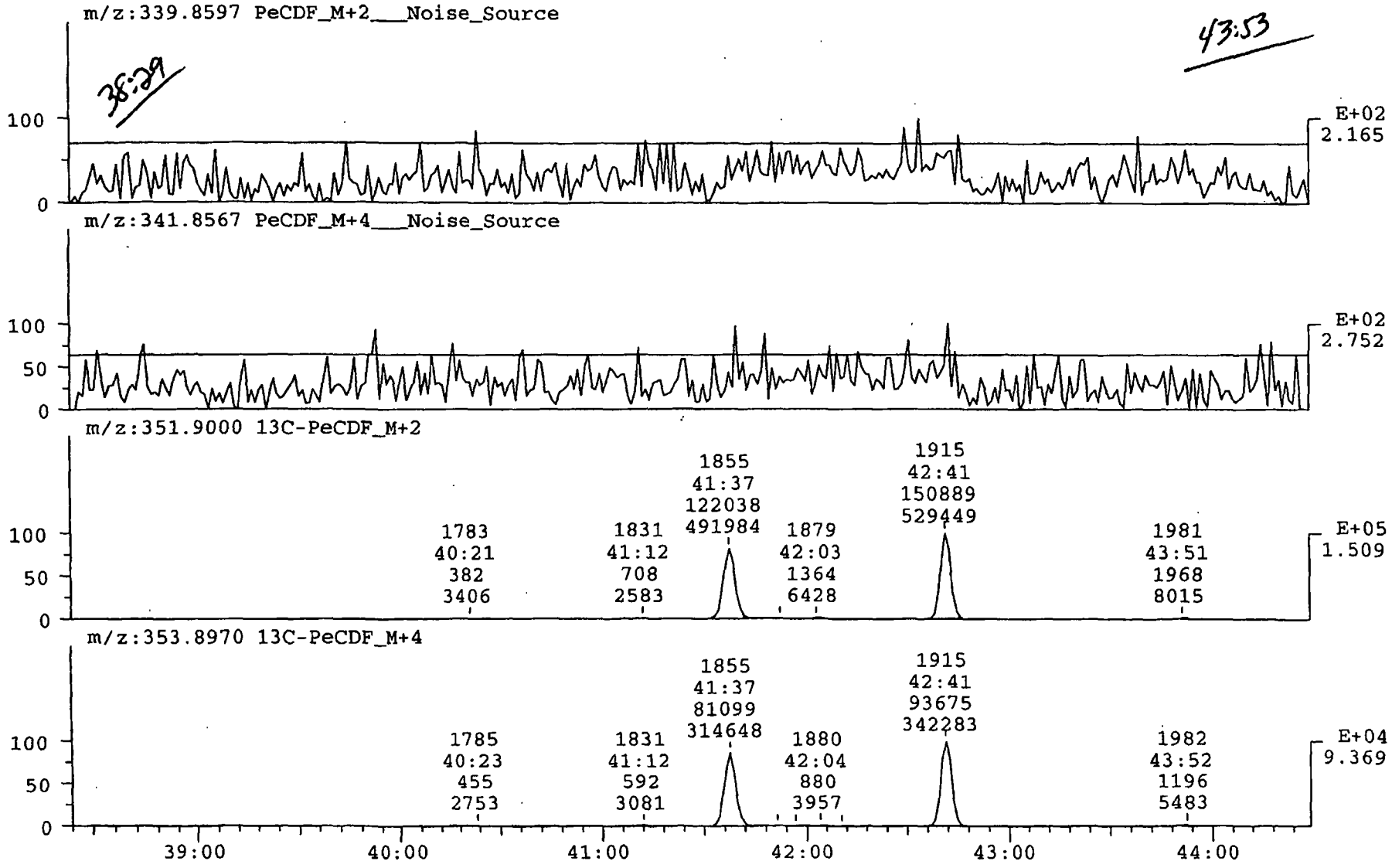
CHRO: tf1epvb 05-Oct-03 Elapse: 33:44 1419
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1786 > 2008 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



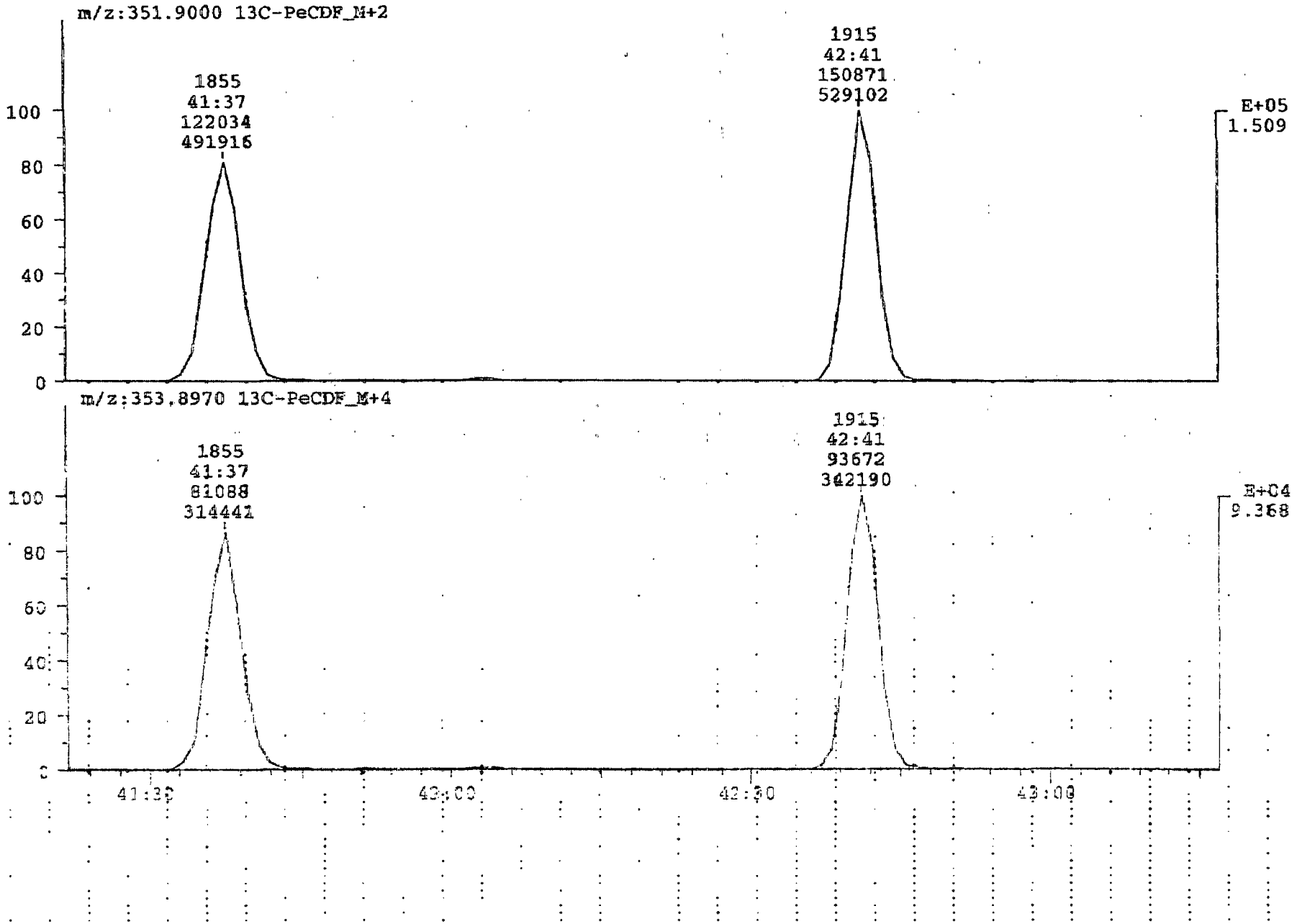
CHRO: tf1epvb 05-Oct-03 Elapse: 43:15 1947
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1911 > 1988 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



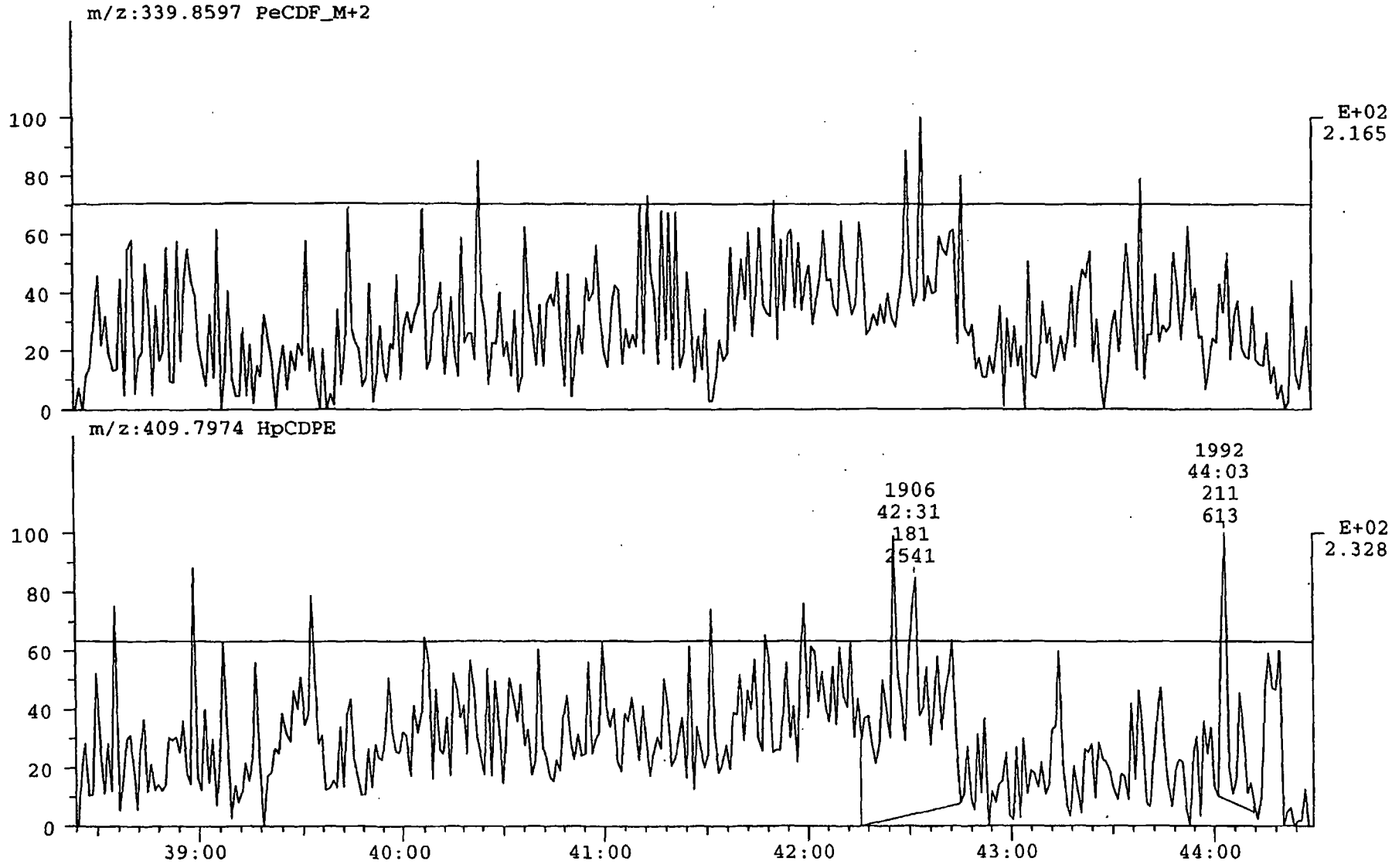
CHRO: tf1epvb 05-Oct-03 Elapse: 43:15 1947
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1673 > 2016 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



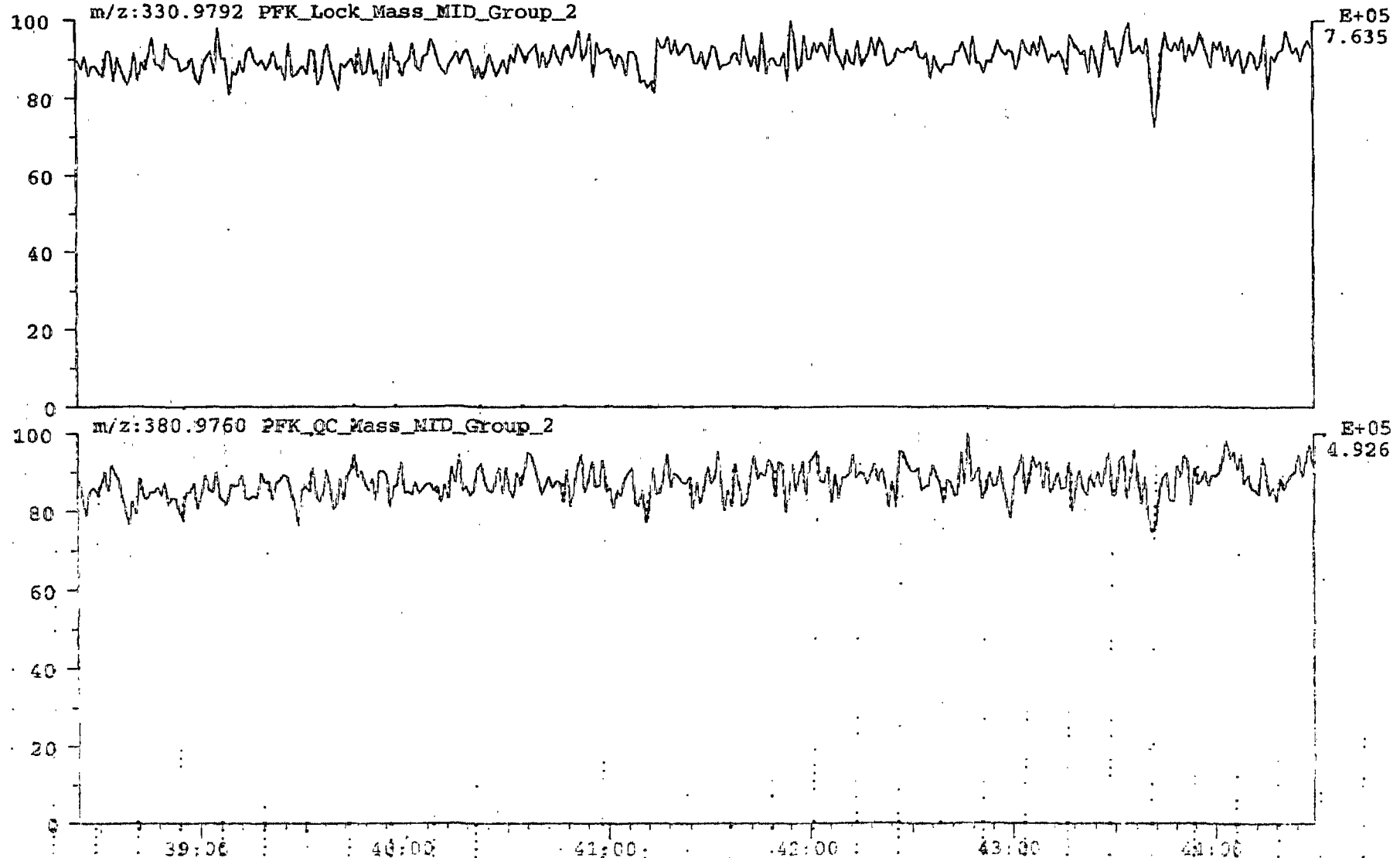
CHRO: tf1epvb 05-Oct-03 Elapse: 42:19 1894
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1840 > 1949 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



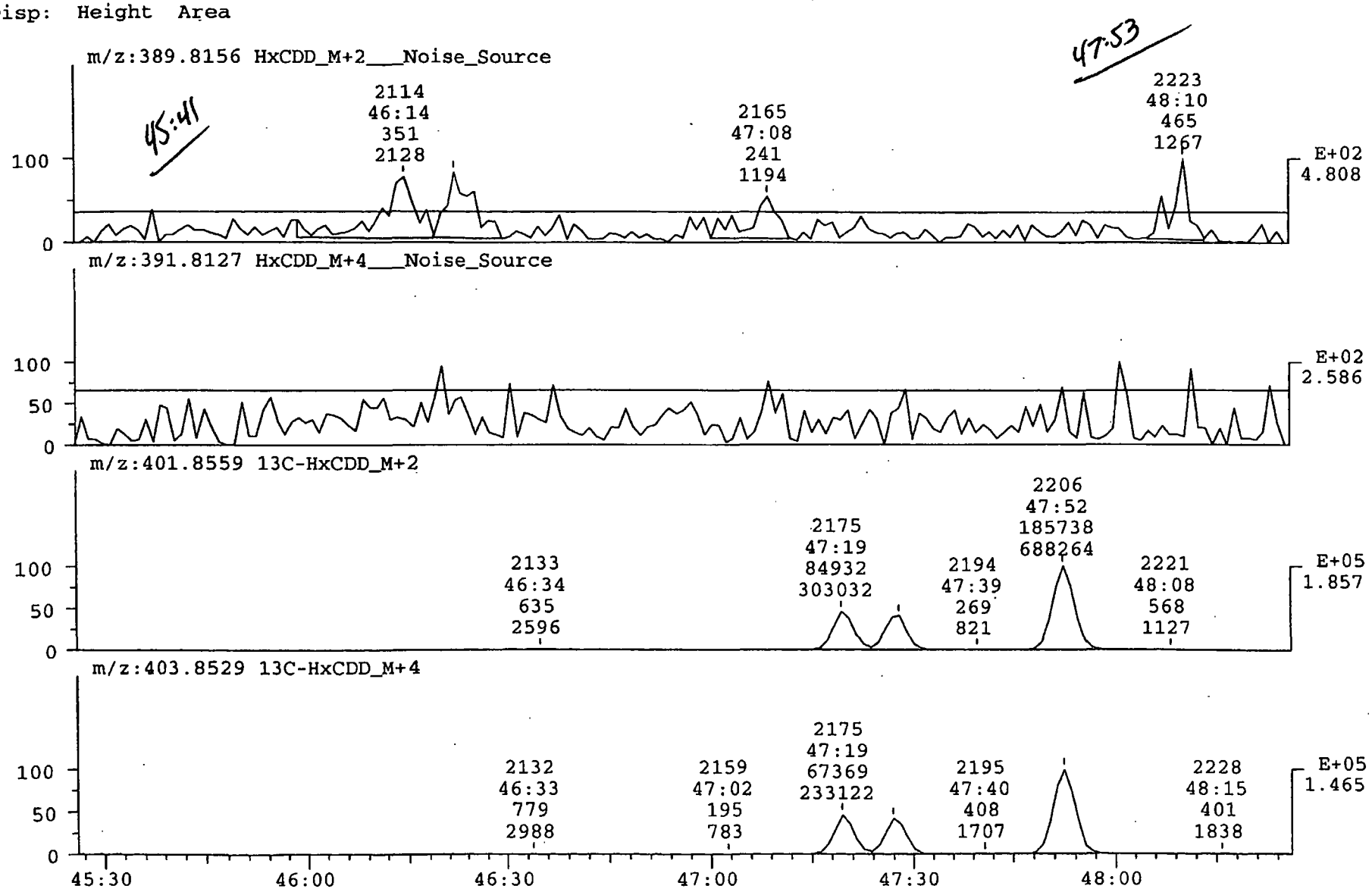
CHRO: tf1epvb 05-Oct-03 Elapse: 42:19 1894
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1673 > 2016 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



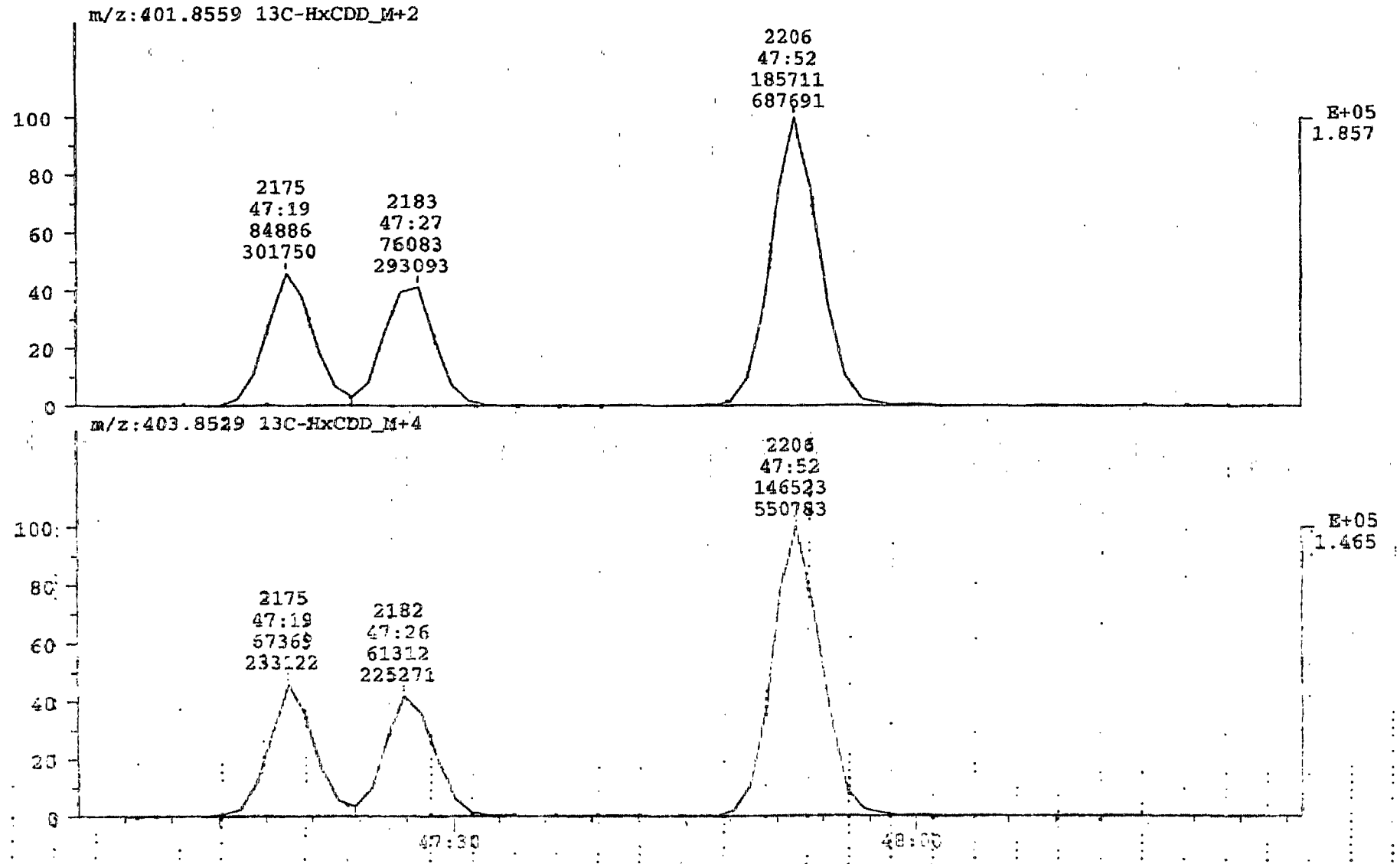
CHRO: tf1epvb 05-Oct-03 Elapse: 42:19 1894
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 1673 > 2016 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



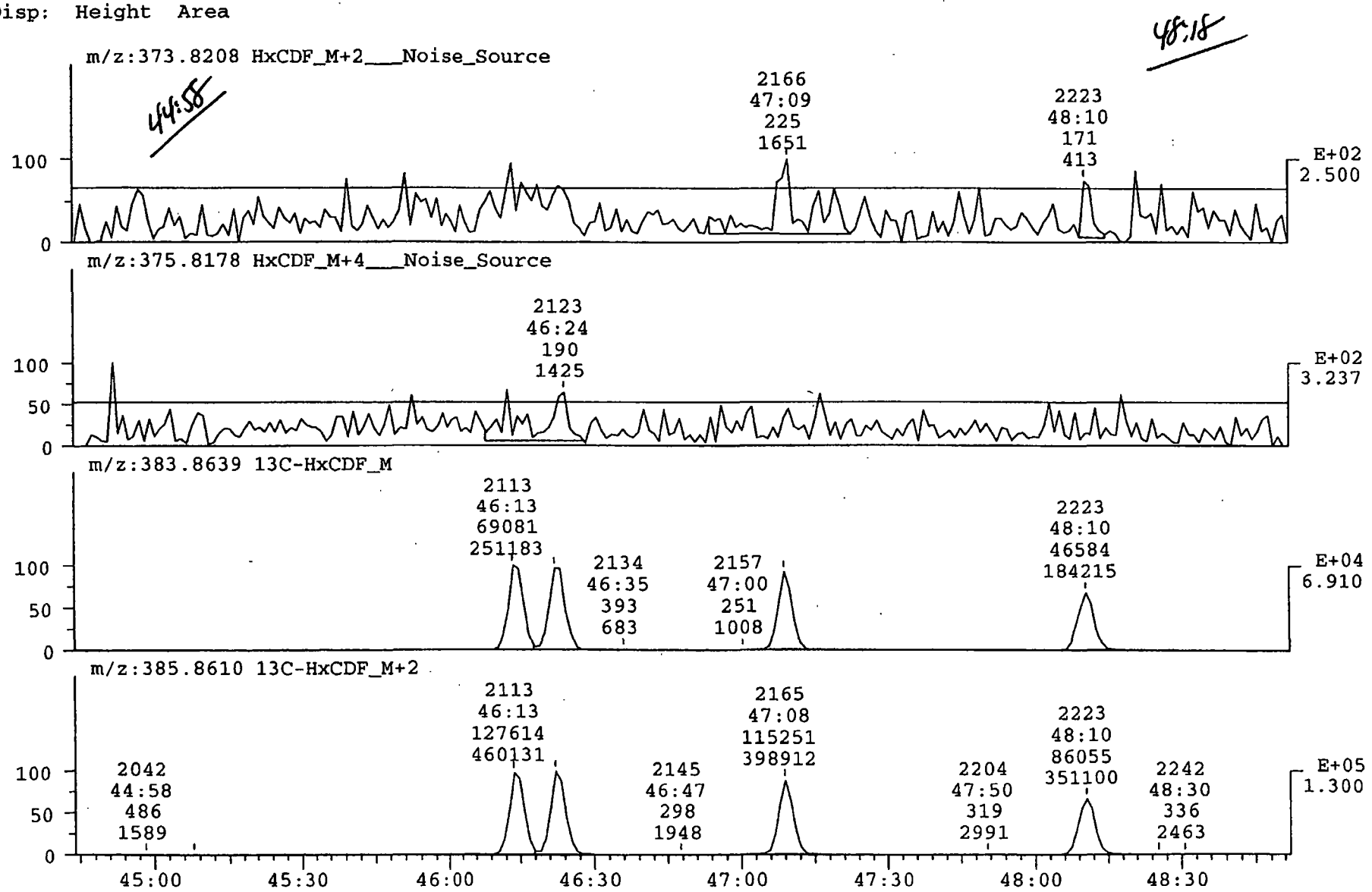
CHRO: tf1epvb 05-Oct-03 Elapse: 42:19 1894
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2068 > 2238 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



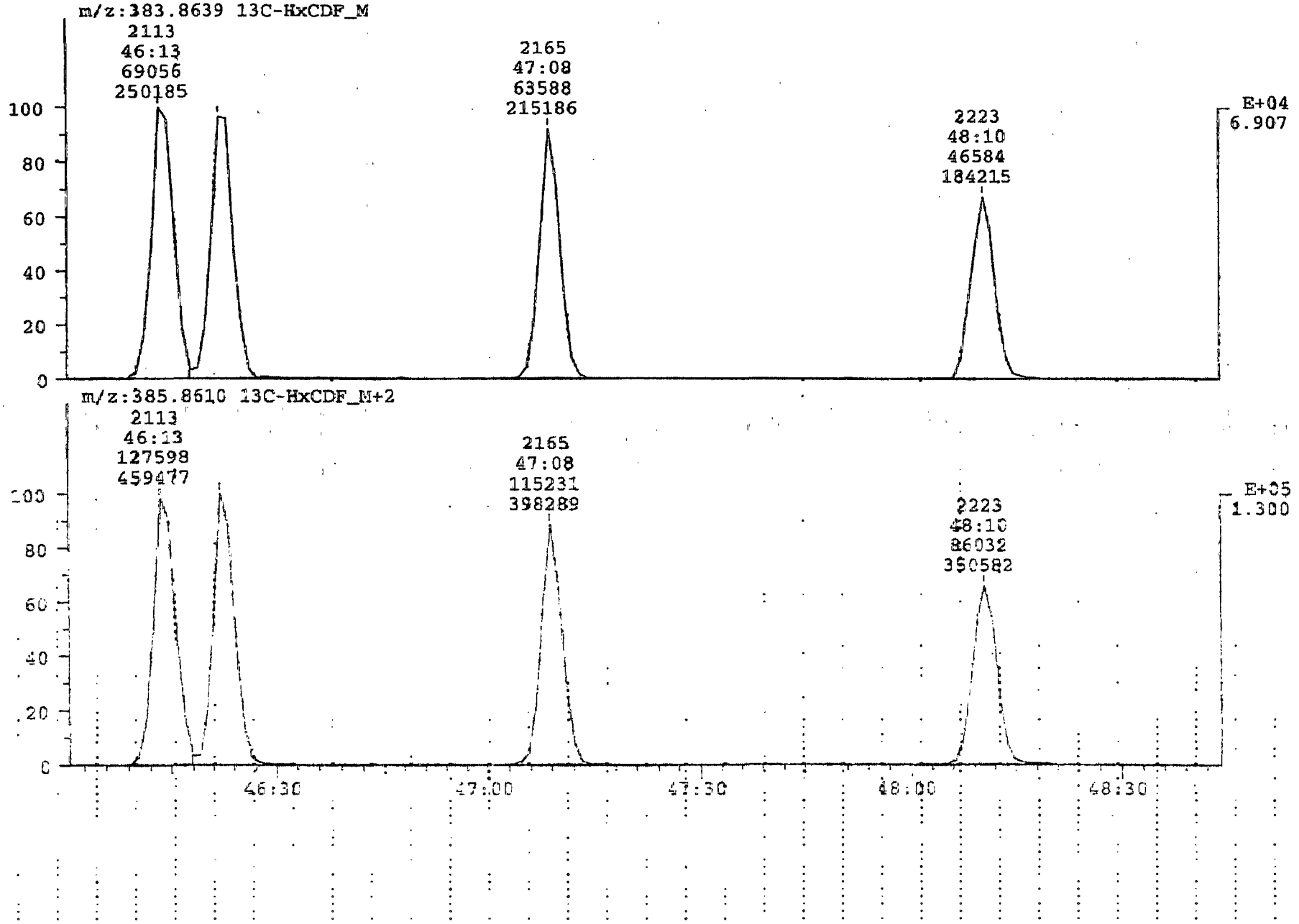
CHRO: tf1epvb 05-Oct-03 Elapse: 47:44 2199
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2162 > 2237 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



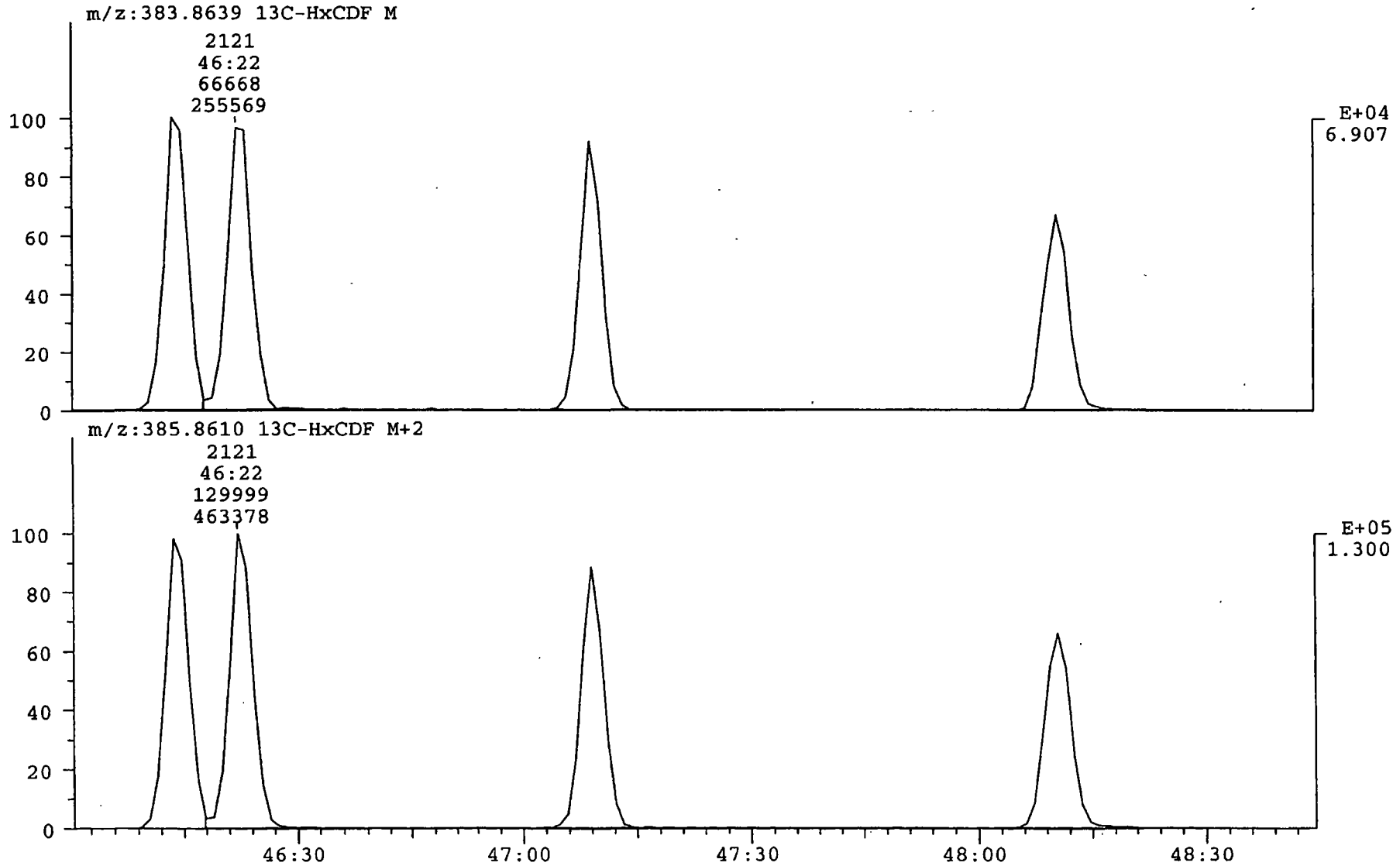
CHRO: tf1epvb 05-Oct-03 Elapse: 47:44 2199
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2029 > 2262 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



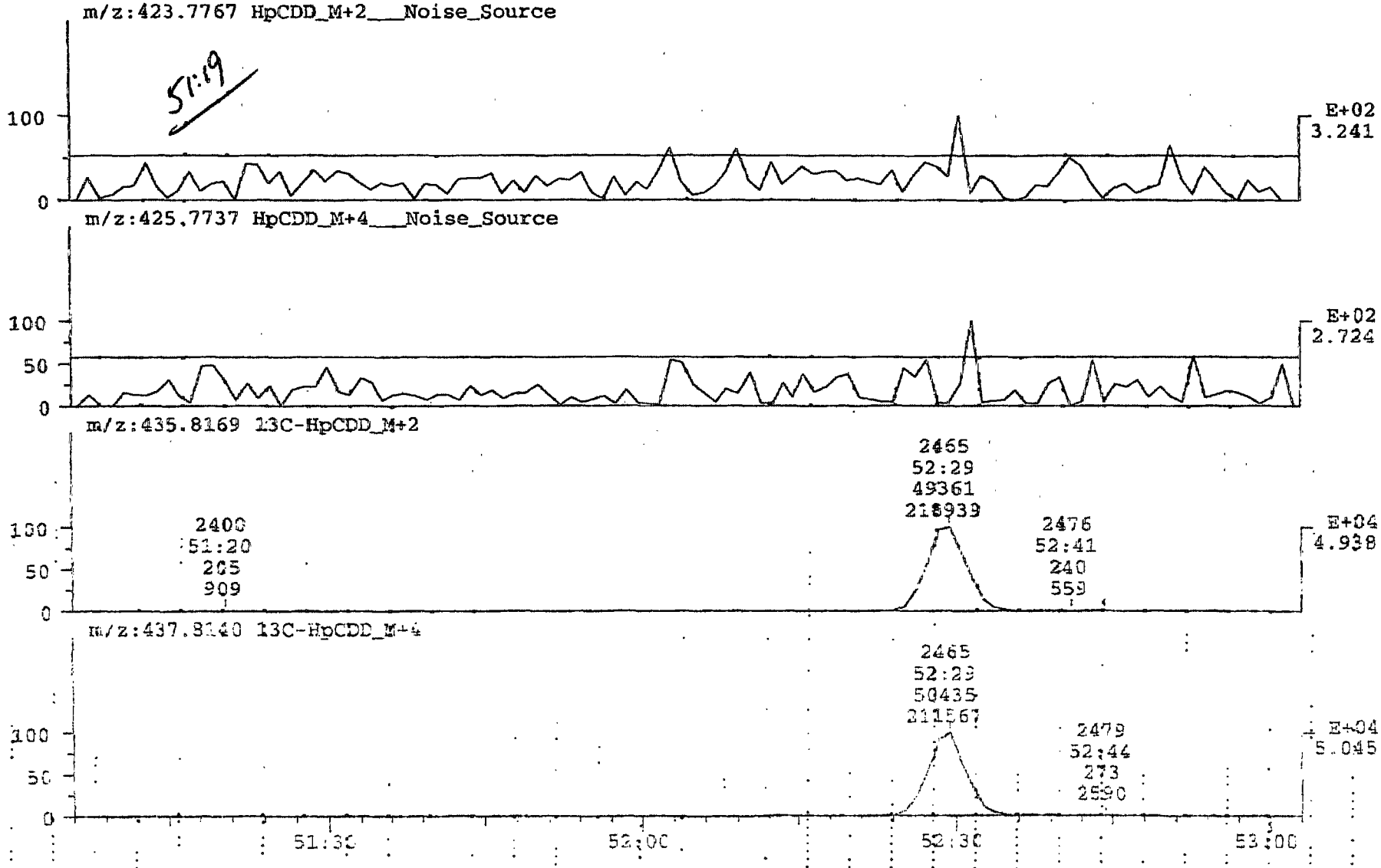
CHRO: tf1epvb 05-Oct-03 Elapse: 47:21 2177
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2101 > 2255 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tf1epvb 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2116 > 2126 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

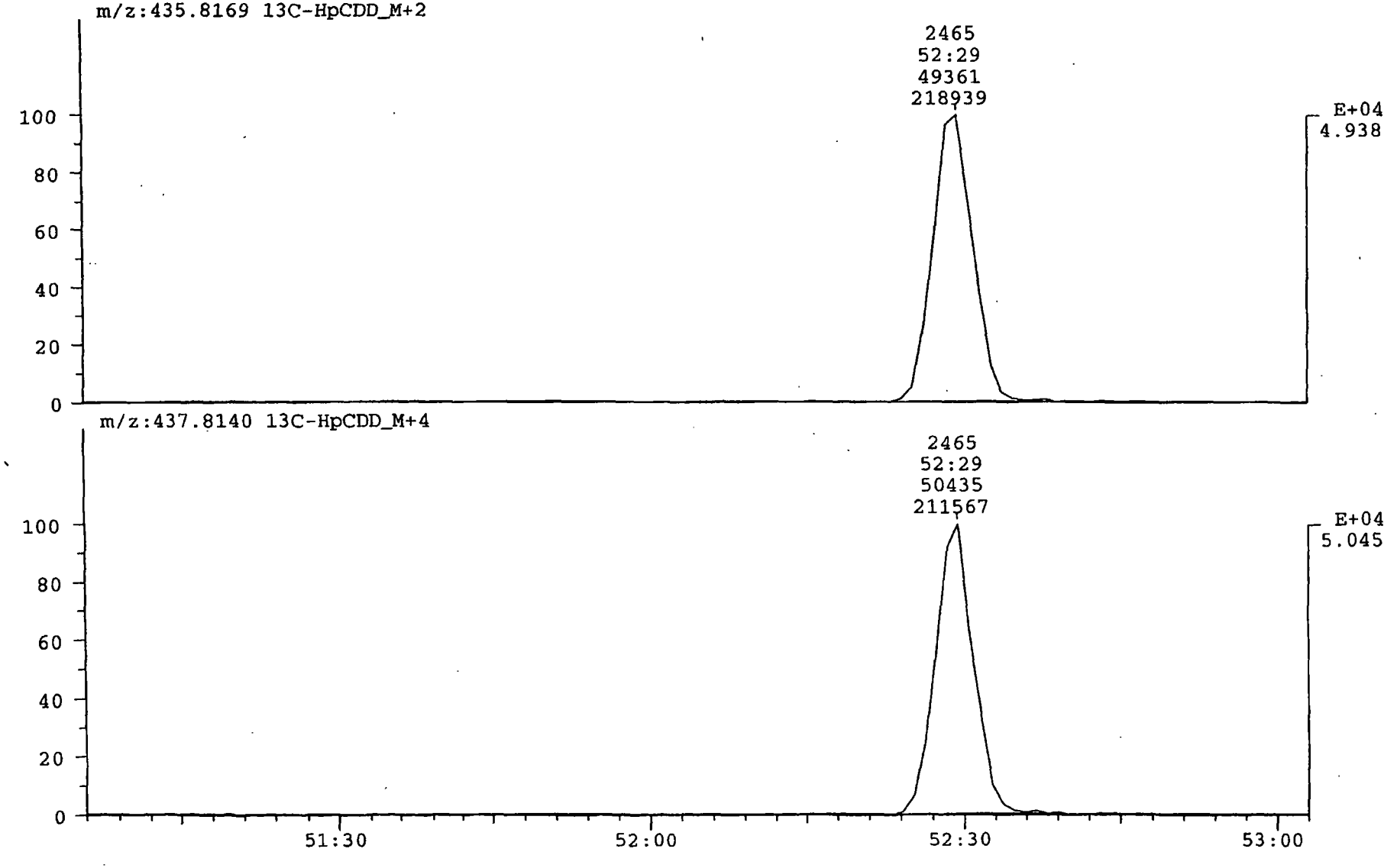


CHRO: tf1epvb 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2386 > 2497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

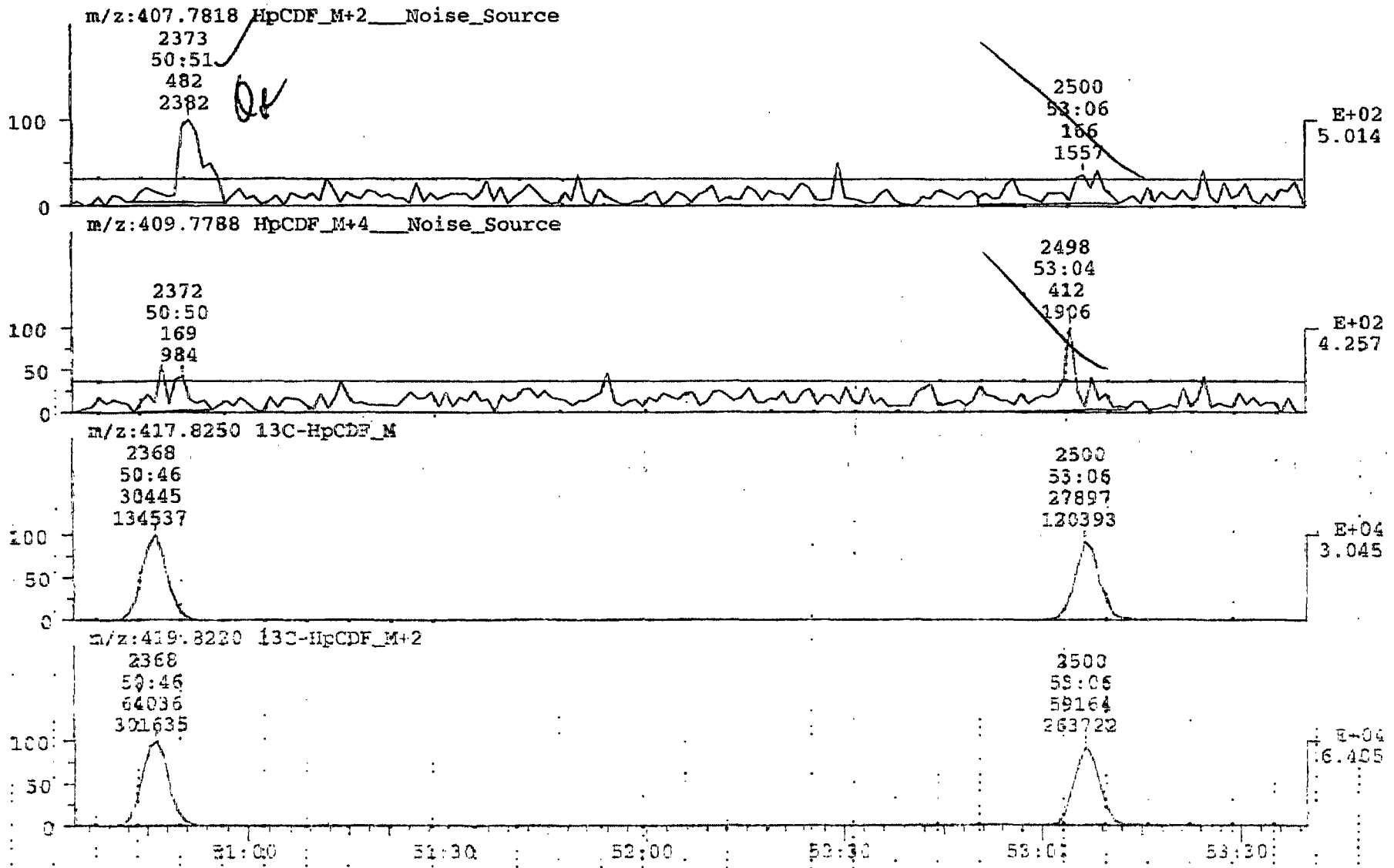



872

CHRO: tf1epvb 05-Oct-03 Elapse: 46:30 2129
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2386 > 2497 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

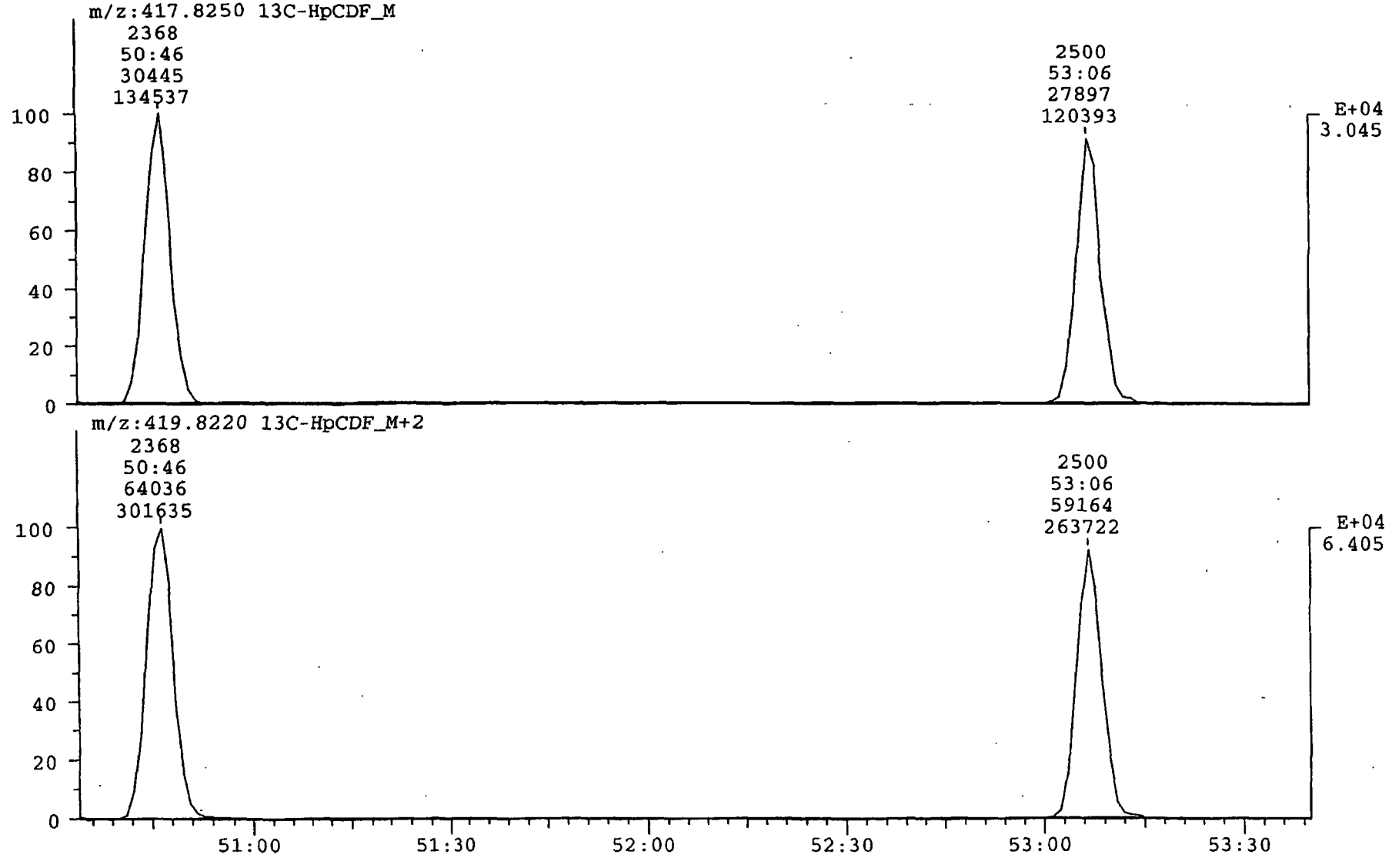


CHRO: tf1epvb 05-Oct-03 Elapse: 52:07 2444
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

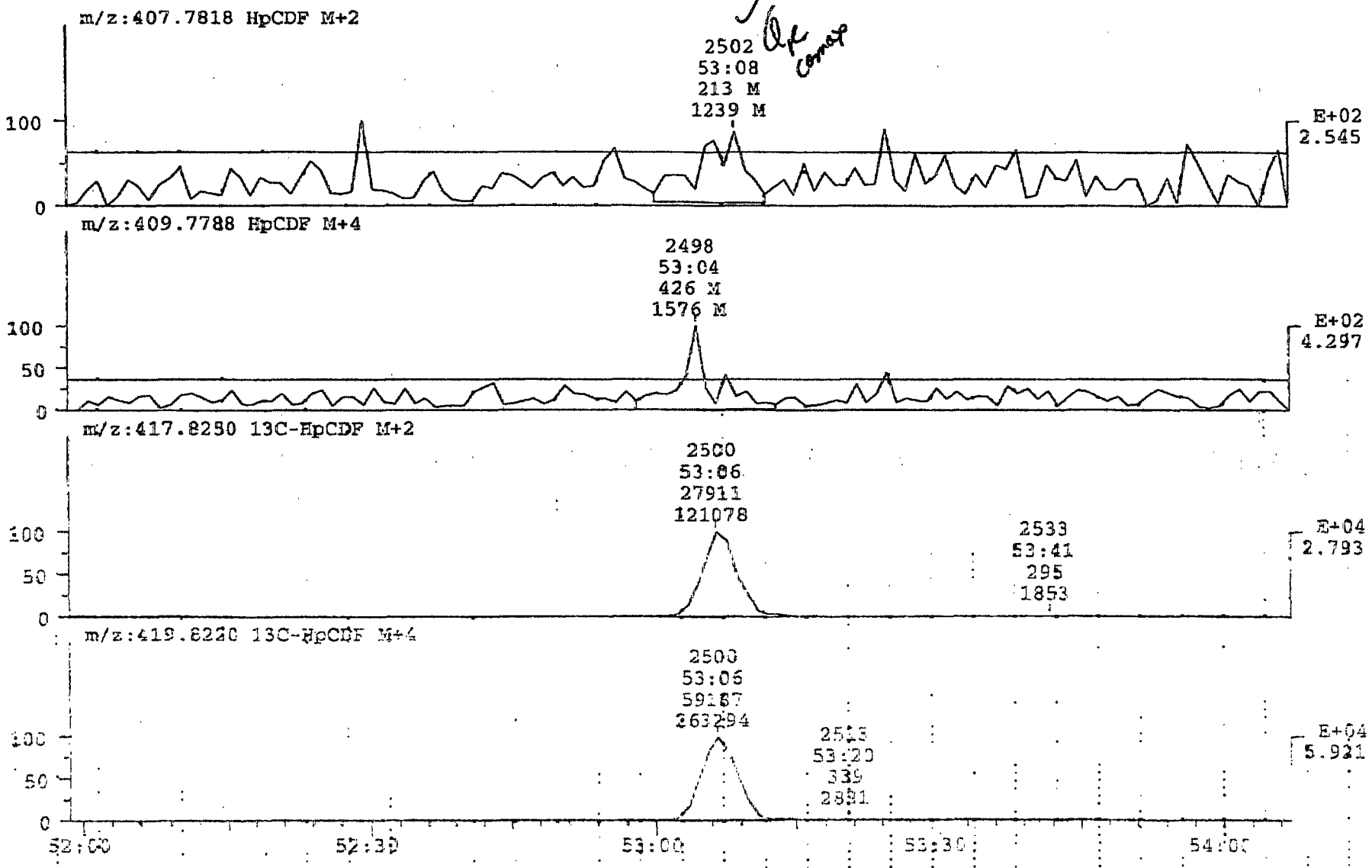



874

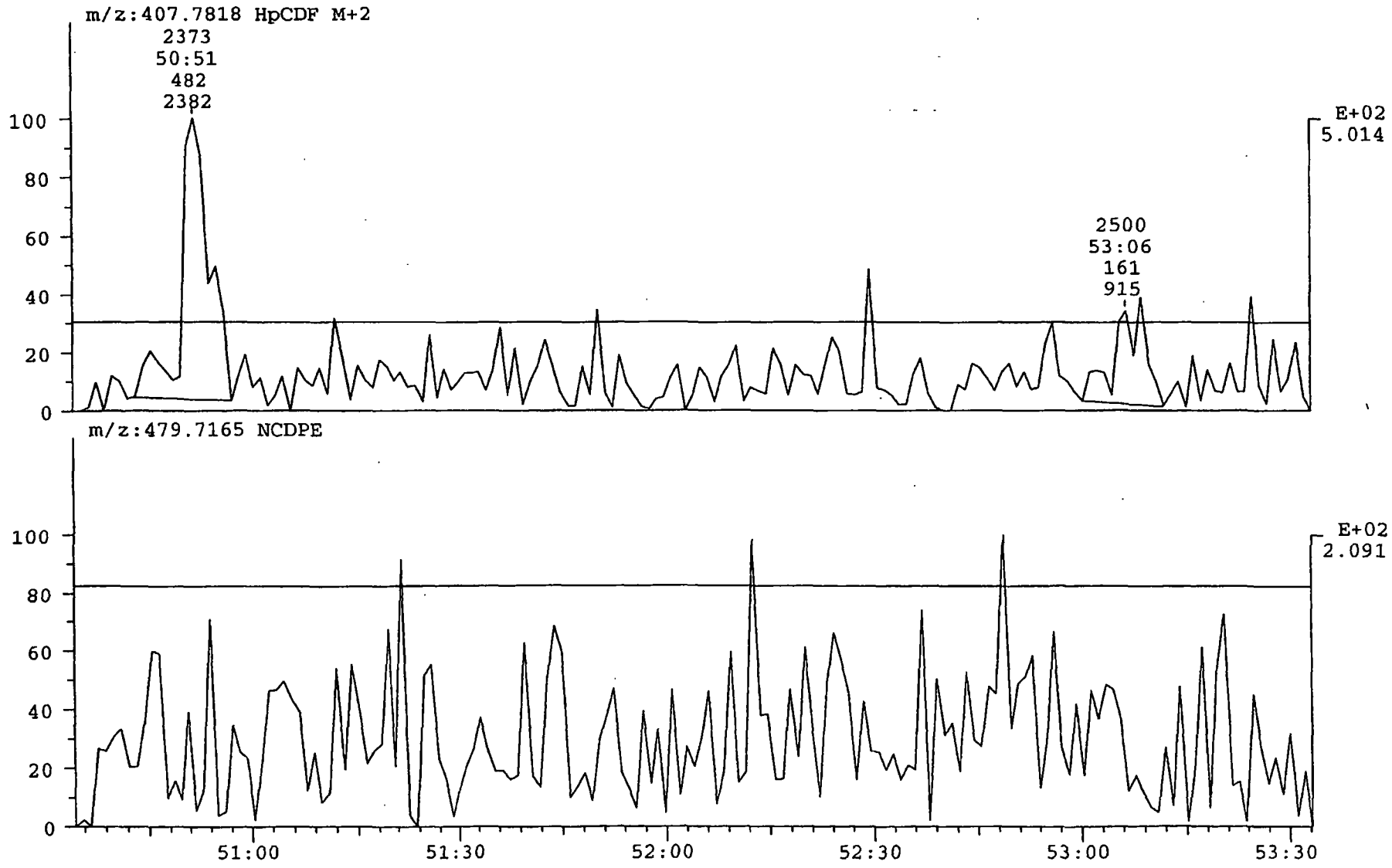
CHRO: tf1epvb 05-Oct-03 Elapse: 52:07 2444
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



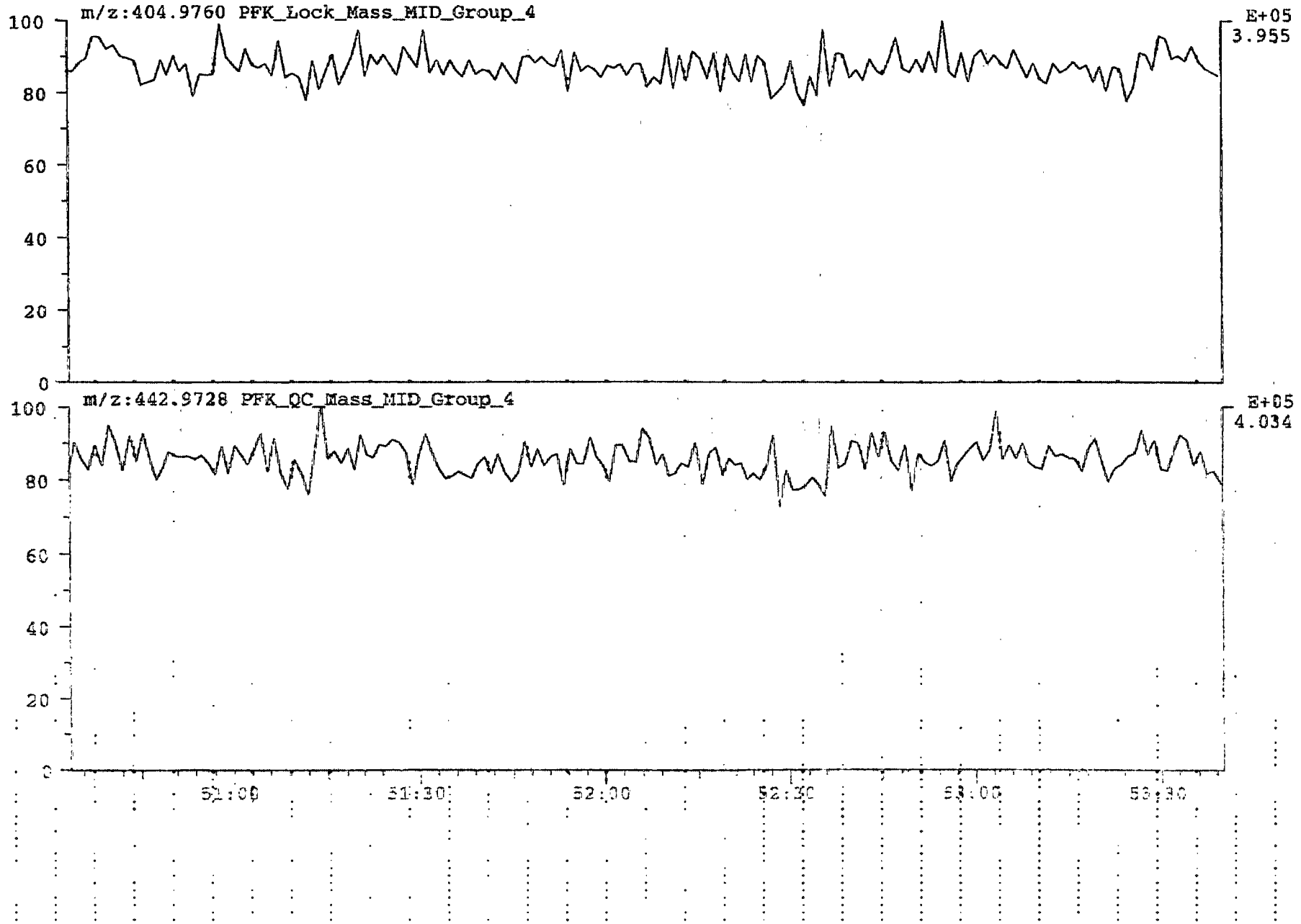
CHRO: tf1epvb 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2436 > 2557 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area



```
CHRO:  tf1epvb                                  05-Oct-03   Elapse:   46:11      2111
Samp:  Vial 35 WO=f1epv1aa Meth=IN2 Dil=1                   Start :   00:46:07   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP            Client:  H3I300000-193B               Inlet :   GC     Vial 35
Peak:  100.00  ppm      Label wndw:   2357 > 2525           Masses:   293 > 514
Area:  5, 0.50, 0       Baseline  :   100, 3                Label :   -2, 3.0
Disp:  Height  Area
```

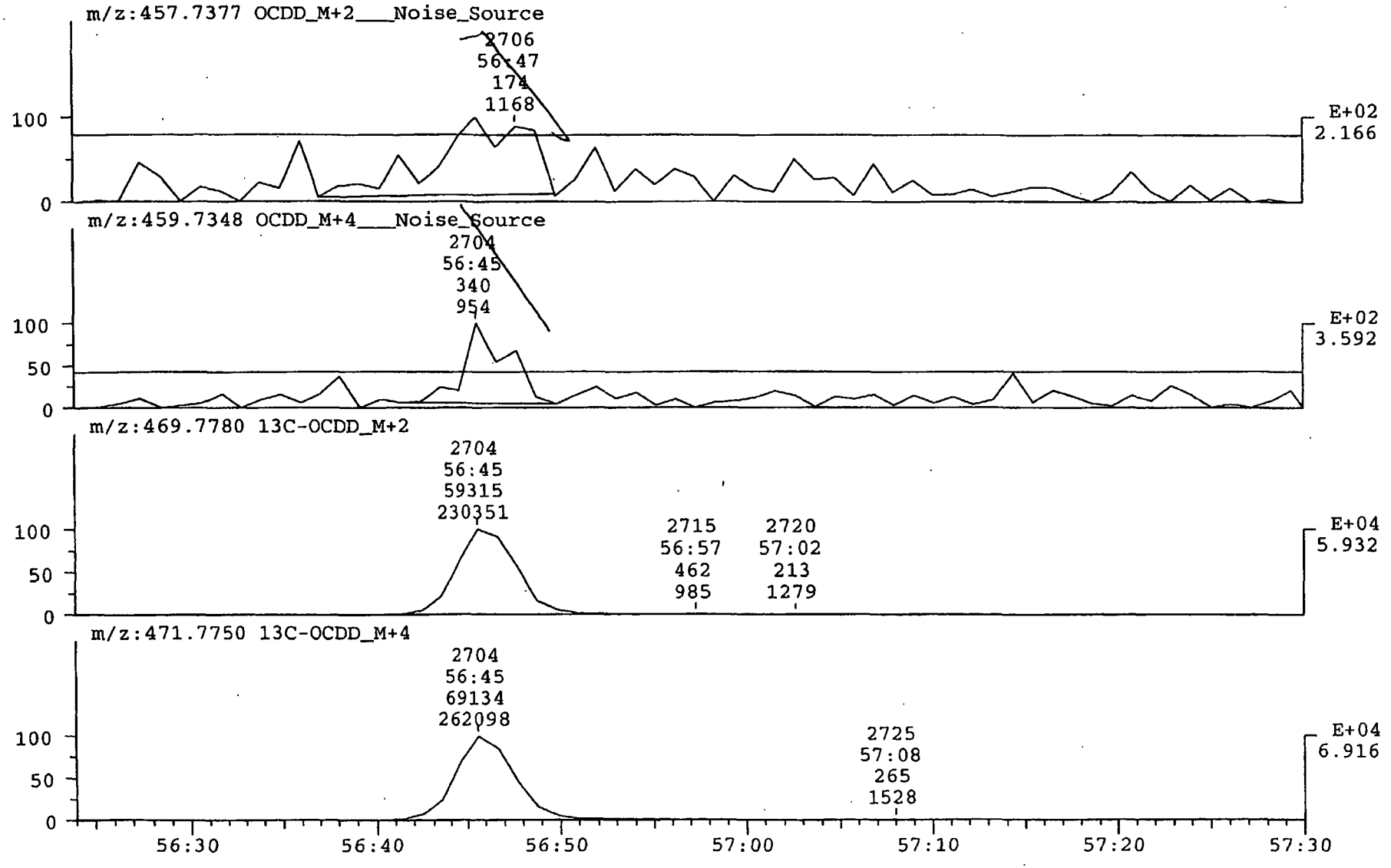


CHRO: tf1epvb 05-Oct-03 Elapse: 52:07 2444
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

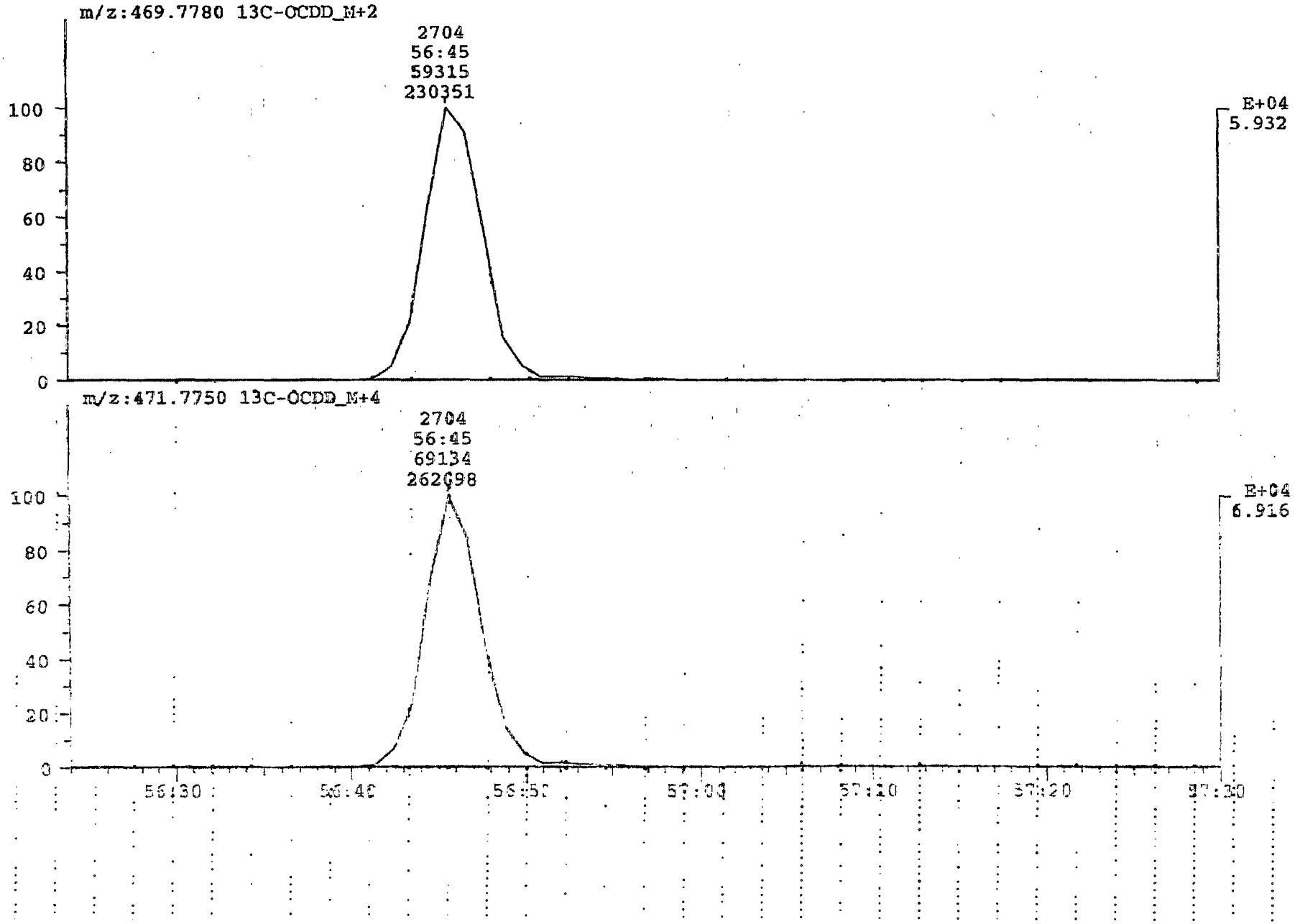



878

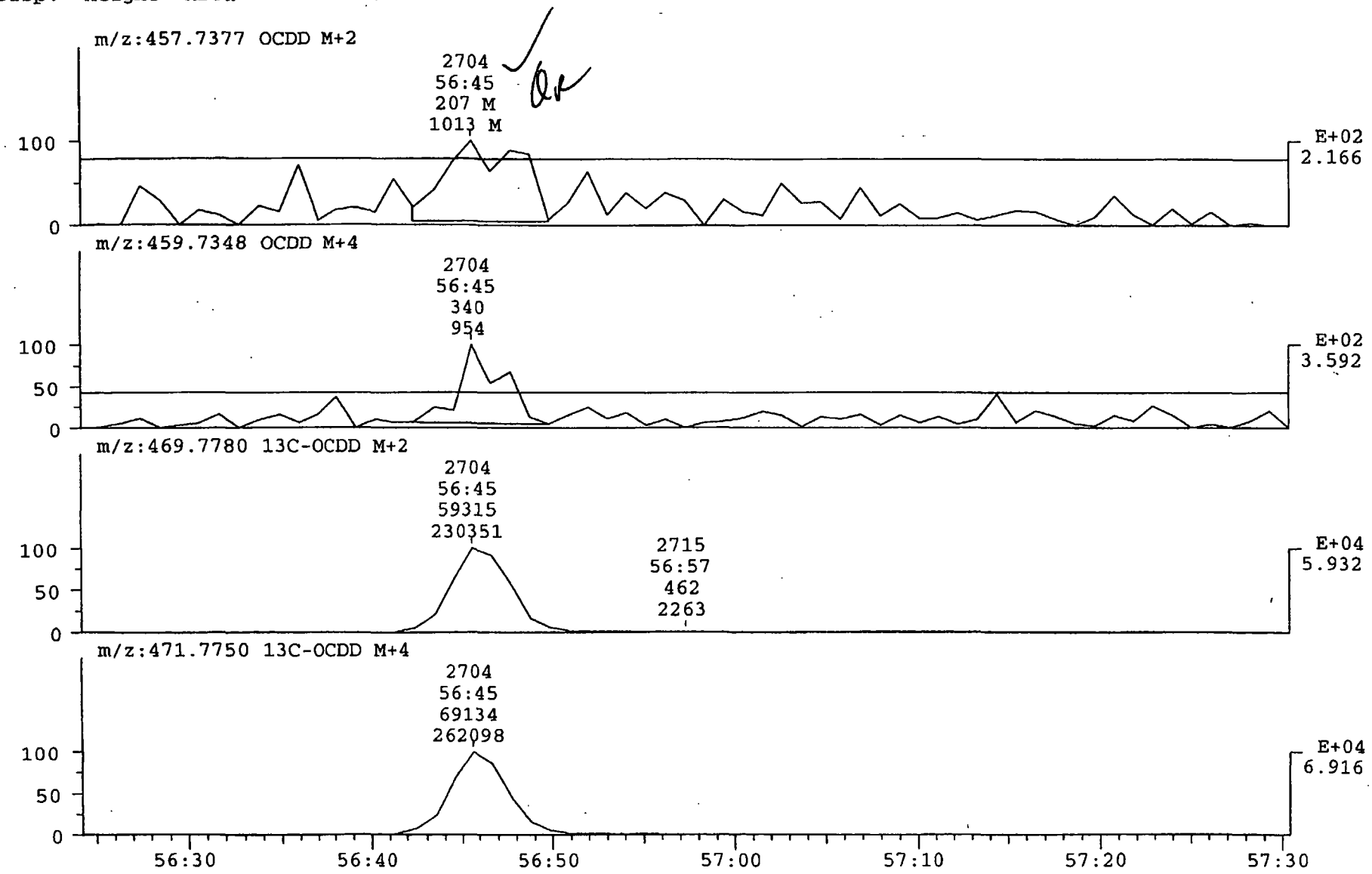
CHRO: tf1epvb 05-Oct-03 Elapse: 56:54 2712
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2684 > 2746 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tf1epvb 05-Oct-03 Elapse: 56:54 2712
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2684 > 2746 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

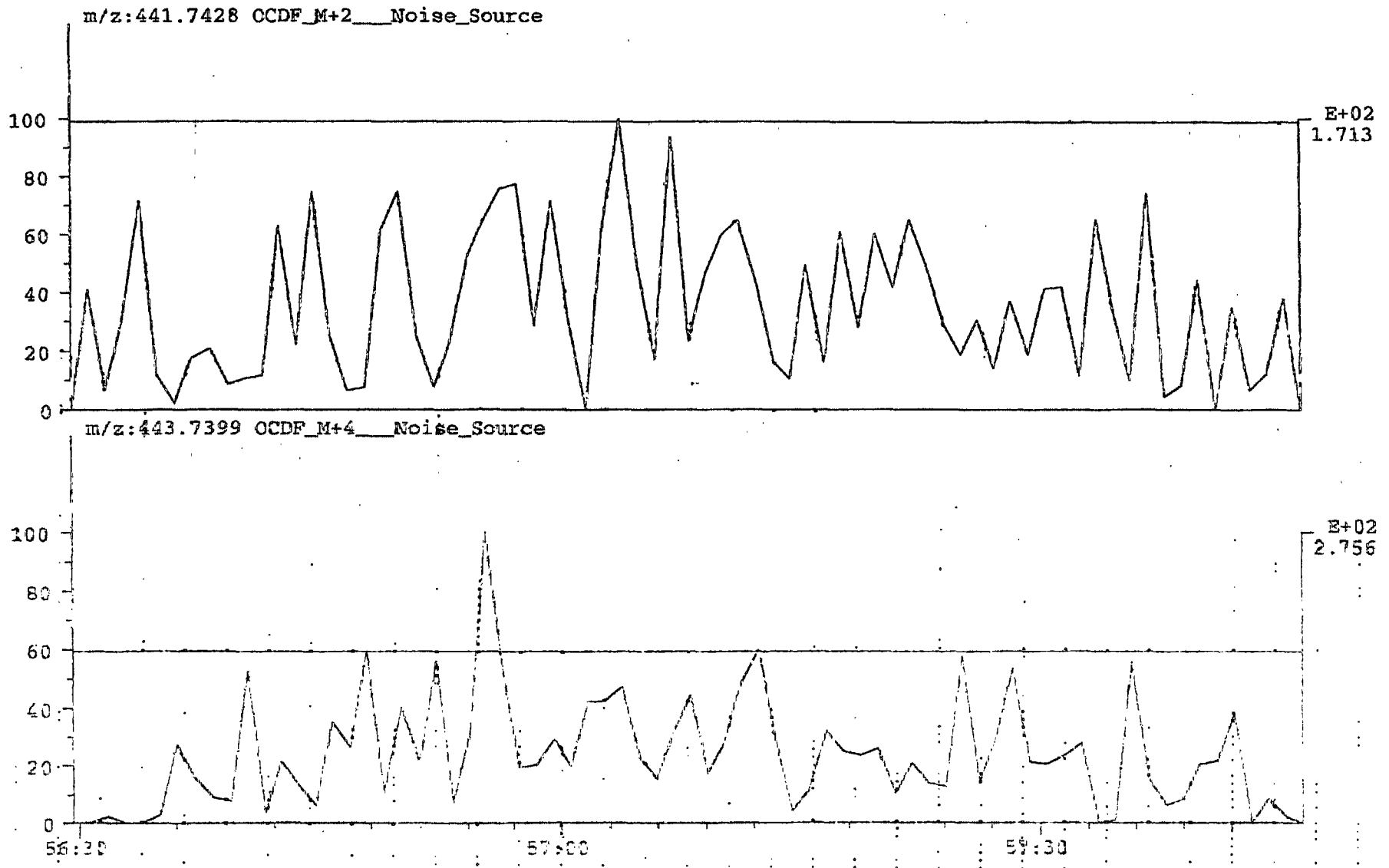


CHRO: tf1epvb 05-Oct-03 Elapse: 46:11 2111
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2684 > 2746 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -3, 3.0
Disp: Height Area

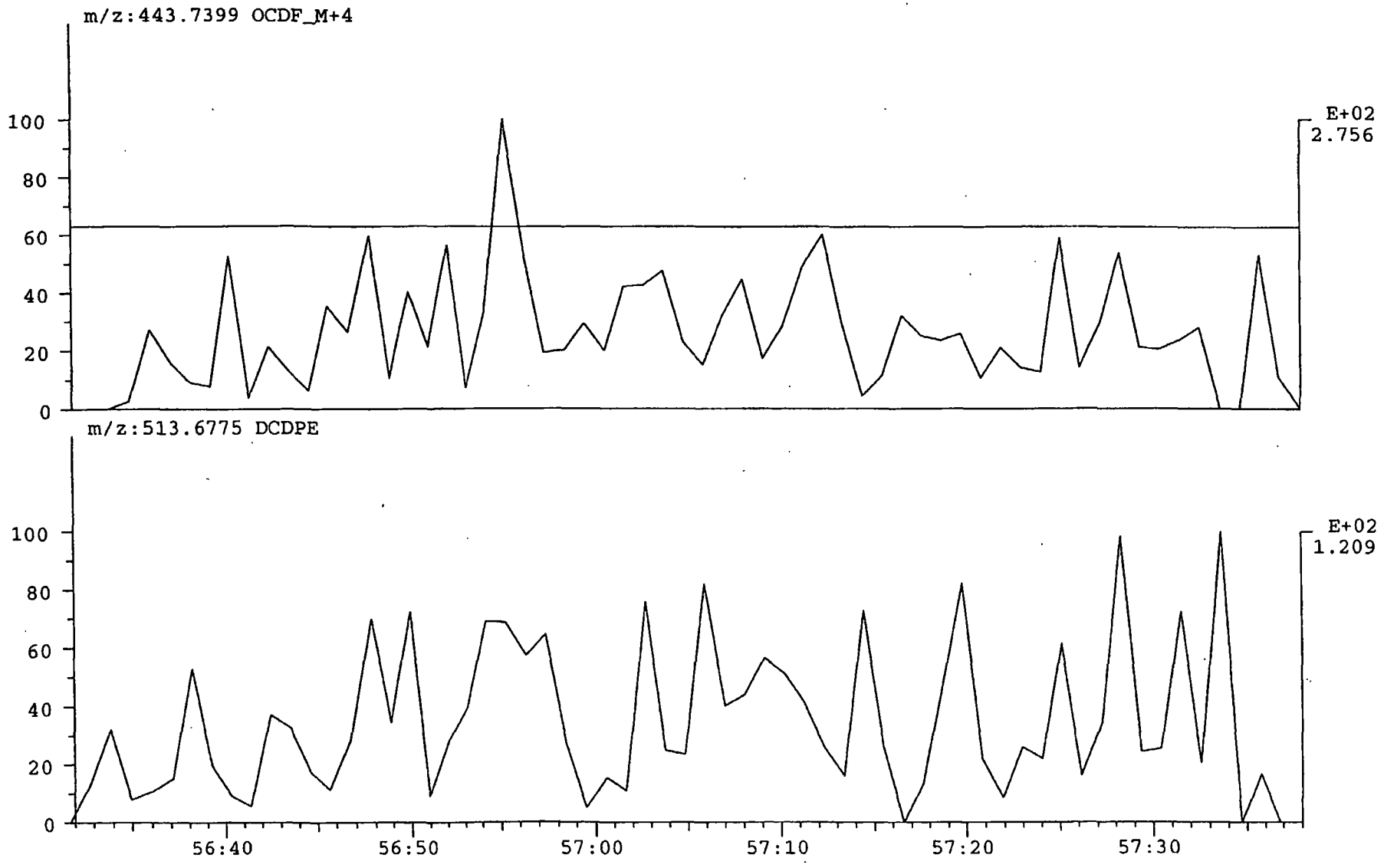



881

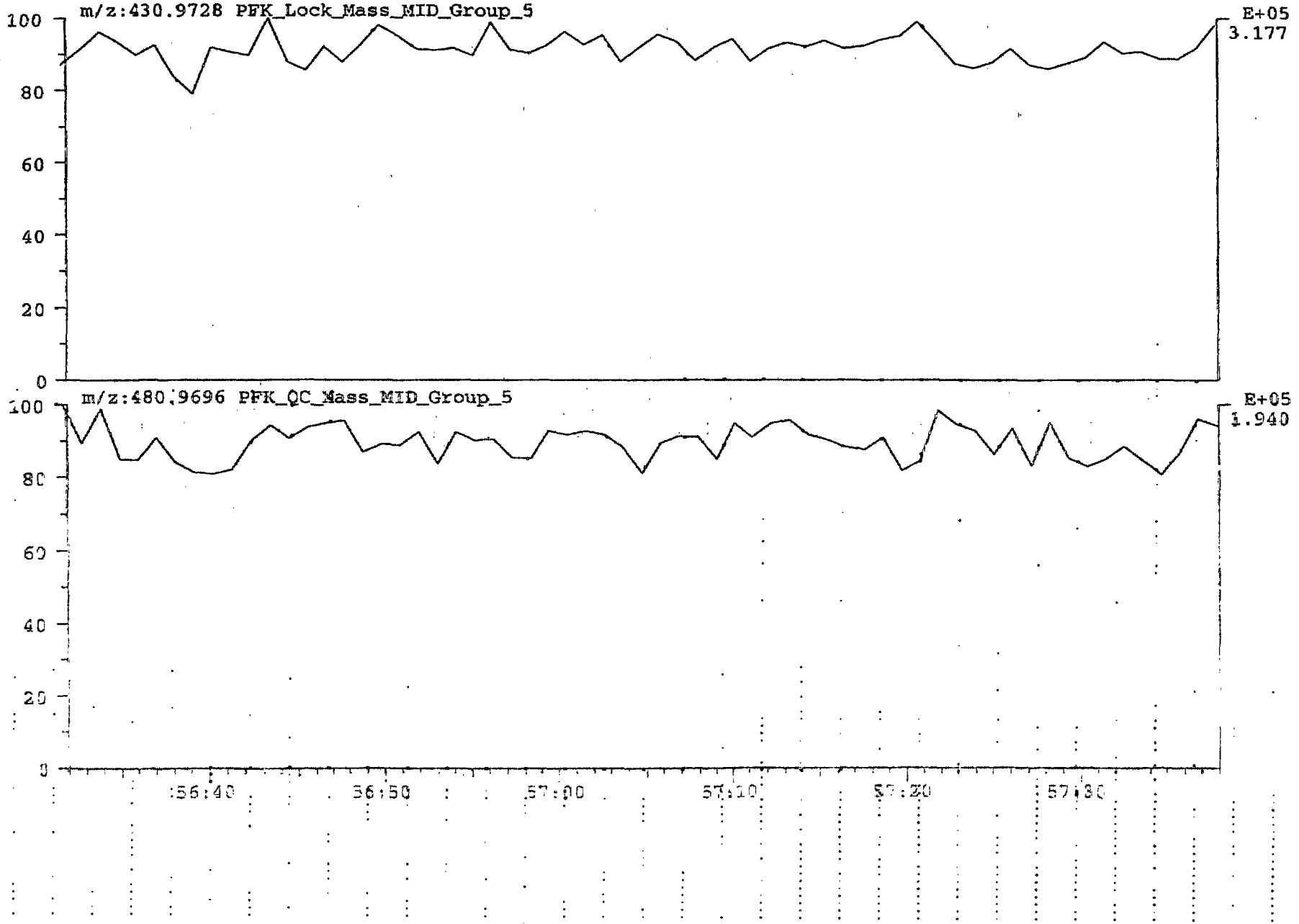
CHRO: tf1epvb 05-Oct-03 Elapse: 57:04 2722
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2689 > 2761 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  tf1epvb                                  05-Oct-03   Elapse:   57:01      2719
Samp:  Vial 35 WO=f1epv1aa Meth=IN2 Dil=1                   Start :   00:46:07   2831
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP           Client:   H3I300000-193B               Inlet :   GC     Vial 35
Peak:  100.00  ppm     Label wndw:   2691 > 2753            Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :   -2, 3.0
Disp:  Height  Area
```



CHRO: tf1epvb 05-Oct-03 Elapse: 57:01 2719
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35
Peak: 100.00 ppm Label wndw: 2691 > 2753 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tf1epvb
Study: 3273193 (10.0g)
Sample: WO=f1epv1aa Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I300000-193B
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 35
Analysis will stop when MID run finishes
Tune file name: tune2
File 1 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:
Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

```
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume   (Y):    0.0 ul
2nd Injection volume  (I):    0.0 ul
Air volume of 2nd inj (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:        270 deg                          300 deg max
  Transfer Line:   290 deg                          300 deg max
  Column:          140 deg at    0.0 minutes        330 deg max
                   140 deg at    3.0 minutes
                   210 deg at    6.5 minutes
                   210 deg at   34.5 minutes
                   280 deg at   44.5 minutes
                   280 deg at   51.0 minutes
                   325 deg at   60.0 minutes
  Inlet    :
  Pressure       18.0 psi
  Splitless mode
  Purge time      1.5 min
  Purge flow     40.0 mL/min

   Gas saver is on
   Saver time      3.0 min
   Saver flow     15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8444.0000 |
| BDEV | 8281.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 600.9615 |
| FSLOPE | 36000000.0000 | FVANAL | 295.0000 | FVINLET | 798.0000 |
| FVSRC | 938.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 156.0000 |
| HCURR | 1.4314 | HVANAL | 980.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4766.7840 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 292.9825 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 200.0000 | NSAM | 200.0000 | NSCAN | 69.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 2.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9800 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 00:46:07.8

Autosampler has injected sample from vial 35
Analysis stopped at: 05-Oct-03 01:45:09.8 (run time 59.03 minutes)
Analysis stopped because MID run finished

QUAN: tf1epvb.q0 Entries: 76

Data file(s) used
File: tf1epvb 05-Oct-03
Samp: Vial 35 WO=f1epv1aa Meth=IN2 Dil=1 Start : 00:46:07 2831
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I300000-193B Inlet : GC Vial 35

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 34:48 | 1656. | 150. | 34:41 | 35:01 | 50. | 1 | 1.0 |
| 321.8775 | 31:13 | 1574. | 226. | 31:06 | 31:25 | 57. | 1 | 1.0 |
| 331.9202 | 35:17 | 713357. | 81157. | 35:03 | 35:30 | 202. | 2 | 3.0 |
| 331.9202 | 35:46 | 286825. | 34363. | 35:30 | 36:01 | 202. | 2 | 3.0 |
| 333.9171 | 35:17 | 866511. | 98934. | 35:01 | 35:34 | 115. | 2 | 3.0 |
| 333.9171 | 35:46 | 358109. | 45314. | 35:34 | 36:02 | 115. | 2 | 3.0 |
| 303.8864 | 27:44 | 1408. | 200. | 27:35 | 27:49 | 54. | 1 | 1.0 |
| 305.8834 | 34:54 | 1573. | 232. | 34:47 | 34:59 | 60. | 1 | 1.0 |
| 315.9261 | 33:39 | 412365. | 42766. | 33:23 | 33:55 | 82. | 2 | 3.0 |
| 317.9230 | 33:38 | 520697. | 55572. | 33:22 | 33:51 | 72. | 2 | 3.0 |
| 355.8368 | 42:39 | 2294. | 294. | 42:31 | 42:46 | 62. | 1 | 1.0 |
| 357.8337 | 40:46 | 1068. | 214. | 40:39 | 40:49 | 55. | 1 | 1.0 |
| 367.8765 | 43:08 | 364516. | 99492. | 43:01 | 43:19 | 61. | 2 | 3.0 |
| 369.8734 | 43:08 | 228437. | 64722. | 43:03 | 43:17 | 60. | 2 | 3.0 |
| 339.8427 | 41:55 | 893. | 118. | 41:51 | 42:02 | 51. | 1 | 1.0 |
| 341.8396 | 42:01 | 872. | 137. | 41:51 | 42:02 | 59. | 1 | 1.0 |
| 351.8824 | 41:37 | 491916. | 122034. | 41:29 | 41:47 | 70. | 2 | 3.0 |
| 351.8824 | 42:41 | 529102. | 150871. | 42:34 | 42:56 | 70. | 2 | 3.0 |
| 353.8793 | 41:37 | 314441. | 81088. | 41:29 | 41:48 | 64. | 2 | 3.0 |
| 353.8793 | 42:41 | 342190. | 93672. | 42:25 | 42:57 | 64. | 2 | 3.0 |
| 389.7961 | 46:14 | 1877. | 351. | 46:04 | 46:19 | 58. | 1 | 1.0 |
| 391.7931 | 46:20 | 949. | 220. | 46:15 | 46:25 | 57. | 1 | 1.0 |
| 401.8358 | 47:19 | 301750. | 84886. | 47:14 | 47:23 | 82. | 2 | 3.0 |
| 401.8358 | 47:28 | 293093. | 76083. | 47:23 | 47:42 | 82. | 2 | 3.0 |
| 401.8358 | 47:52 | 687691. | 185711. | 47:42 | 48:07 | 82. | 2 | 3.0 |
| 403.8327 | 47:19 | 233122. | 67369. | 47:07 | 47:23 | 80. | 2 | 3.0 |
| 403.8327 | 47:26 | 225271. | 61312. | 47:23 | 47:36 | 80. | 2 | 3.0 |
| 403.8327 | 47:52 | 550783. | 146523. | 47:43 | 48:08 | 80. | 2 | 3.0 |
| 373.8021 | 46:23 | 1429. | 152. | 46:14 | 46:28 | 55. | 1 | 1.0 |
| 375.7990 | 46:24 | 703. | 190. | 46:17 | 46:28 | 56. | 1 | 1.0 |
| 383.8447 | 46:13 | 250185. | 69056. | 46:08 | 46:17 | 76. | 2 | 3.0 |
| 383.8447 | 46:22 | 255569. | 66668. | 46:17 | 46:38 | 76. | 2 | 3.0 |
| 383.8447 | 47:08 | 215186. | 63588. | 46:53 | 47:24 | 76. | 2 | 3.0 |
| 383.8447 | 48:10 | 184215. | 46584. | 48:03 | 48:26 | 76. | 2 | 3.0 |
| 385.8417 | 46:13 | 459477. | 127598. | 46:00 | 46:17 | 76. | 2 | 3.0 |
| 385.8417 | 46:22 | 463378. | 129999. | 46:17 | 46:38 | 76. | 2 | 3.0 |
| 385.8417 | 47:08 | 398289. | 115231. | 46:53 | 47:24 | 76. | 2 | 3.0 |
| 385.8417 | 48:10 | 350582. | 86032. | 47:59 | 48:23 | 76. | 2 | 3.0 |
| 423.7555 | 52:24 | 869. | 102. | 52:13 | 52:25 | 57. | 1 | 1.0 |
| 425.7524 | 52:02 | 374. | 139. | 52:01 | 52:07 | 52. | 1 | 1.0 |
| 435.7951 | 52:29 | 218939. | 49361. | 52:13 | 52:39 | 61. | 2 | 3.0 |
| 437.7921 | 52:29 | 211567. | 50435. | 52:16 | 52:41 | 61. | 2 | 3.0 |
| 407.7614 | 50:51 | 2099. | 482. | 50:48 | 50:57 | 52. | 1 | 1.0 |
| 409.7583 | 53:04 | 1013. | 412. | 52:58 | 53:06 | 52. | 1 | 1.0 |
| 417.8041 | 50:46 | 134537. | 30445. | 50:39 | 51:02 | 65. | 2 | 3.0 |
| 417.8041 | 53:06 | 120393. | 27897. | 52:56 | 53:22 | 65. | 2 | 3.0 |
| 419.8010 | 50:46 | 301635. | 64036. | 50:34 | 51:02 | 72. | 2 | 3.0 |
| 419.8010 | 53:06 | 263722. | 59164. | 52:51 | 53:22 | 72. | 2 | 3.0 |
| 457.7148 | 56:45 | 956. | 199. | 56:42 | 56:49 | 57. | 1 | 1.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| | | | | | | | 890 |
| 459.7118 | 56:45 | 954. | 340. | 56:41 | 56:49 | 51. 1 | 1.0 |
| 469.7545 | 56:45 | 230351. | 59315. | 56:33 | 56:56 | 50. 2 | 3.0 |
| 471.7514 | 56:45 | 262098. | 69134. | 56:37 | 57:01 | 67. 2 | 3.0 |
| 441.7207 | 56:57 | 516. | 127. | 56:52 | 56:58 | 50. 1 | 1.0 |
| 443.7177 | 56:55 | 505. | 256. | 56:53 | 56:57 | 58. 1 | 1.0 |
| 407.7614 | 50:51 | 2382. | 482. | 50:43 | 50:57 | 52. 2 | 3.0 |
| 407.7614 | 53:06 | 1557. | 166. | 52:50 | 53:11 | 52. 2 | 3.0 |
| 409.7583 | 50:50 | 984. | 169. | 50:43 | 50:55 | 52. 2 | 3.0 |
| 409.7583 | 53:04 | 1906. | 412. | 52:48 | 53:13 | 52. 2 | 3.0 |
| 417.8041 | 50:46 | 134537. | 30445. | 50:39 | 51:02 | 65. 2 | 3.0 |
| 417.8041 | 53:06 | 120393. | 27897. | 52:56 | 53:22 | 65. 2 | 3.0 |
| 419.8010 | 50:46 | 301635. | 64036. | 50:34 | 51:02 | 72. 2 | 3.0 |
| 419.8010 | 53:06 | 263722. | 59164. | 52:51 | 53:22 | 72. 2 | 3.0 |
| 407.7614 | 53:08 | 1239. | 213. | 53:00 | 53:11 | 54. 3 | 3.0 |
| 409.7583 | 53:04 | 1576. | 426. | 52:58 | 53:13 | 52. 3 | 3.0 |
| 457.7148 | 56:47 | 1168. | 174. | 56:37 | 56:49 | 57. 2 | 3.0 |
| 459.7118 | 56:45 | 954. | 340. | 56:41 | 56:49 | 51. 2 | 3.0 |
| 469.7545 | 56:45 | 230351. | 59315. | 56:33 | 56:56 | 50. 2 | 3.0 |
| 469.7545 | 56:57 | 985. | 462. | 56:56 | 56:59 | 50. 2 | 3.0 |
| 469.7545 | 57:02 | 1279. | 213. | 56:59 | 57:11 | 50. 2 | 3.0 |
| 471.7514 | 56:45 | 262098. | 69134. | 56:37 | 57:01 | 67. 2 | 3.0 |
| 471.7514 | 57:08 | 1528. | 265. | 57:01 | 57:13 | 67. 2 | 3.0 |
| 457.7148 | 56:45 | 1013. | 207. | 56:42 | 56:49 | 57. 3 | 3.0 |
| 459.7118 | 56:45 | 954. | 340. | 56:41 | 56:49 | 51. 3 | 3.0 |
| 469.7545 | 56:45 | 230351. | 59315. | 56:33 | 56:56 | 50. 3 | 3.0 |
| 469.7545 | 56:57 | 2263. | 462. | 56:56 | 57:11 | 50. 3 | 3.0 |
| 471.7514 | 56:45 | 262098. | 69134. | 56:37 | 57:01 | 67. 3 | 3.0 |

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | METHOD |
|---|---|---|---|
| 2,3,7,8-TCDD | 97 | (70 - 115) | SW846 8290 |
| 1,2,3,7,8-PeCDD | 98 | (76 - 113) | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 94 | (68 - 120) | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 100 | (76 - 114) | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 75 | (62 - 123) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 92 | (74 - 109) | SW846 8290 |
| OCDD | 91 B | (75 - 112) | SW846 8290 |
| 2,3,7,8-TCDF | 98 | (75 - 115) | SW846 8290 |
| 1,2,3,7,8-PeCDF | 105 | (75 - 117) | SW846 8290 |
| 2,3,4,7,8-PeCDF | 101 | (63 - 126) | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 97 | (78 - 114) | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 96 | (78 - 114) | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 95 | (74 - 112) | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 93 | (60 - 130) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 93 B | (72 - 111) | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 97 B | (60 - 125) | SW846 8290 |
| OCDF | 125 | (69 - 128) | SW846 8290 |

(Continued on next page)

## LABORATORY CONTROL SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193

| INTERNAL STANDARD | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 77 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 60 | (40 - 135) |
| 13C-OCDD | 29 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 72 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 68 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 91 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 83 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 71 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 65 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 63 | (40 - 135) |

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

## LABORATORY CONTROL SAMPLE DATA REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: F1EPV1AC Matrix.....: SOLID
LCS Lot-Sample#: H3I300000-193
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1

| PARAMETER | SPIKE AMOUNT | MEASURED AMOUNT | UNITS | PERCENT RECOVERY | METHOD |
|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 20.0 | 19.4 | pg/g | 97 | SW846 8290 |
| 1,2,3,7,8-PeCDD | 100 | 98.0 | pg/g | 98 | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 100 | 94.4 | pg/g | 94 | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 100 | 100 | pg/g | 100 | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 100 | 74.8 | pg/g | 75 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 100 | 91.7 | pg/g | 92 | SW846 8290 |
| OCDD | 200 | 182 B | pg/g | 91 | SW846 8290 |
| 2,3,7,8-TCDF | 20.0 | 19.7 | pg/g | 98 | SW846 8290 |
| 1,2,3,7,8-PeCDF | 100 | 105 | pg/g | 105 | SW846 8290 |
| 2,3,4,7,8-PeCDF | 100 | 101 | pg/g | 101 | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 100 | 97.3 | pg/g | 97 | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 100 | 96.0 | pg/g | 96 | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 100 | 94.5 | pg/g | 95 | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 100 | 92.9 | pg/g | 93 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 100 | 93.5 B | pg/g | 93 | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 100 | 96.6 B | pg/g | 97 | SW846 8290 |
| OCDF | 200 | 249 | pg/g | 125 | SW846 8290 |

(Continued on next page)

## LABORATORY CONTROL SAMPLE DATA REPORT

### Trace Level Organic Compounds

**Client Lot #...:** H3I100253 **Work Order #...:** F1EPV1AC **Matrix.....:** SOLID
**LCS Lot-Sample#:** H3I300000-193

| INTERNAL STANDARD | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 71 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 77 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 83 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 60 | (40 - 135) |
| 13C-OCDD | 29 * | (40 - 135) |
| 13C-2,3,7,8-TCDF | 72 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 68 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 75 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 91 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 83 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 71 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 65 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 63 | (40 - 135) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AC | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvc.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71194 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/5/2003 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Analysis Time** | 07:56 | **Initial Wt/Vol** | 10.0 | **Lims Test Code** | XXA11IN01 |
| **Anal Exp Date** | 11/14/03 | **Extract Vol** | 20 | **Method** | DX8290_2 |
| **Instrument** | M2A | **Dil Factor** | 1.0 | **Code** | IN2 |
| **Analyst** | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:55 | 128080 | 15427 | 1.095 | 200.0 | 193.504940 | 96.75 | 19.350494 | | 0.320 |
| Total TCDD | | | | 1.095 | | 193.504940 | | 19.350494 | | 0.320 |
| 2,3,7,8-TCDF | 33:47 | 174419 | 19013 | 1.017 | 200.0 | 196.840248 | 98.42 | 19.684025 | | 0.293 |
| Total TCDF | | 4200 | 673 | 1.017 | | 201.580387 | | 20.158039 | Q | 0.293 |
| 1,2,3,7,8-PeCDD | 43:17 | 566407 | 156448 | 0.984 | 1000 | 980.181903 | 98.02 | 98.018190 | | 0.174 |
| Total PeCDD | | | | 0.984 | | 980.181903 | | 98.018190 | | 0.174 |
| 1,2,3,7,8-PeCDF | 41:45 | 785977 | 193797 | 0.970 | 1000 | 1054.50264 | 105.45 | 105.450264 | | 0.128 |
| 2,3,4,7,8-PeCDF | 42:48 | 853867 | 233935 | 1.035 | 1000 | 1006.98301 | 100.70 | 100.698301 | | 0.103 |
| Total PeCDF | | 18795 | 3647 | 1.003 | | 2085.10334 | | 208.510334 | Q | 0.115 |
| 1,2,3,4,7,8-HxCDD | 47:28 | 515085 | 137470 | 1.111 | 1000 | 943.535411 | 94.35 | 94.353541 | | 0.211 |
| 1,2,3,6,7,8-HxCDD | 47:35 | 506833 | 132664 | 1.026 | 1000 | 1004.22098 | 100.42 | 100.422098 | | 0.242 |
| 1,2,3,7,8,9-HxCDD | 47:59 | 407757 | 103373 | 1.109 | 1000 | 747.638114 | 74.76 | 74.763811 | | 0.218 |
| Total HxCDD | | | | 1.082 | | 2695.39451 | | 269.539451 | | 0.223 |
| 1,2,3,4,7,8-HxCDF | 46:22 | 768221 | 217369 | 1.226 | 1000 | 973.391526 | 97.34 | 97.339153 | | 0.127 |
| 1,2,3,6,7,8-HxCDF | 46:30 | 747949 | 210859 | 1.197 | 1000 | 959.751833 | 95.98 | 95.975183 | | 0.131 |
| 2,3,4,6,7,8-HxCDF | 47:16 | 644332 | 180398 | 1.155 | 1000 | 945.161122 | 94.52 | 94.516112 | | 0.149 |
| 1,2,3,7,8,9-HxCDF | 48:17 | 495598 | 120639 | 1.236 | 1000 | 929.486472 | 92.95 | 92.948647 | | 0.215 |
| Total HxCDF | | 5163 | 1371 | 1.204 | | 3815.19897 | | 381.519897 | Q | 0.149 |
| 1,2,3,4,6,7,8-HpCDD | 52:37 | 287898 | 64495 | 0.986 | 1000 | 916.717658 | 91.67 | 91.671766 | | 0.382 |
| Total HpCDD | | 7034 | 1487 | 0.986 | | 939.115392 | | 93.911539 | Q | 0.382 |
| 1,2,3,4,6,7,8-HpCDF | 50:54 | 510666 | 114509 | 1.512 | 1000 | 934.640910 | 93.46 | 93.464091 | B | 0.250 |
| 1,2,3,4,7,8,9-HpCDF | 53:15 | 389424 | 85010 | 1.426 | 1000 | 965.978463 | 96.60 | 96.597846 | B | 0.330 |
| Total HpCDF | | 8877 | 3054 | 1.469 | | 1919.38374 | | 191.938374 | QB | 0.285 |
| OCDD | 56:54 | 266021 | 70311 | 1.075 | 2000 | 1823.91558 | 91.20 | 182.391558 | B | 0.822 |
| OCDF | 57:02 | 384178 | 102734 | 1.135 | 2000 | 2492.98985 | 124.65 | 249.298985 | | 0.729 |
| 13C-2,3,7,8-TCDD | 35:53 | 604445 | 73510 | 1.083 | 1000 | 705.448082 | 70.54 | 70.544808 | | 0.465 |
| 13C-2,3,7,8-TCDF | 33:45 | 870915 | 88053 | 1.527 | 1000 | 720.779072 | 72.08 | 72.077907 | | 0.282 |
| 13C-1,2,3,7,8-PeCDD | 43:16 | 587045 | 159137 | 0.958 | 1000 | 773.967669 | 77.40 | 77.396767 | | 0.345 |
| 13C-1,2,3,7,8-PeCDF | 41:44 | 768536 | 195699 | 1.427 | 1000 | 680.571616 | 68.06 | 68.057162 | | 0.220 |
| 13C-2,3,4,7,8-PeCDF | 42:47 | 819121 | 226565 | 1.384 | 1000 | 747.894331 | 74.79 | 74.789433 | | 0.227 |
| 13C-1,2,3,4,7,8-HxCDD | 47:26 | 491347 | 136249 | 0.941 | 1000 | 950.933950 | 95.09 | 95.093395 | | 0.306 |
| 13C-1,2,3,6,7,8-HxCDD | 47:34 | 492094 | 128861 | 1.078 | 1000 | 831.384746 | 83.14 | 83.138475 | | 0.267 |
| 13C-1,2,3,4,7,8-HxCDF | 46:21 | 643596 | 181216 | 1.283 | 1000 | 913.187776 | 91.32 | 91.318778 | | 0.173 |
| 13C-1,2,3,6,7,8-HxCDF | 46:29 | 650909 | 180176 | 1.406 | 1000 | 843.091478 | 84.31 | 84.309148 | | 0.158 |
| 13C-2,3,4,6,7,8-HxCDF | 47:16 | 590091 | 163625 | 1.301 | 1000 | 826.043472 | 82.60 | 82.604347 | | 0.170 |
| 13C-1,2,3,7,8,9-HxCDF | 48:17 | 431509 | 106150 | 1.105 | 1000 | 710.779935 | 71.08 | 71.077994 | | 0.200 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:36 | 318472 | 72424 | 0.970 | 1000 | 597.864982 | 59.79 | 59.786498 | | 0.200 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:53 | 361265 | 78057 | 1.017 | 1000 | 646.788349 | 64.68 | 64.678835 | | 0.191 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 282726 | 62732 | 0.812 | 1000 | 633.957236 | 63.40 | 63.395724 | | 0.239 |
| 13C-OCDD | 56:53 | 271449 | 71925 | 0.856 | 2000 | 577.764141 | 28.89 | 57.776414 | | 0.238 |
| 13C-1,2,3,4-TCDD | 35:22 | 1582887 | 176808 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.503 |
| 13C-1,2,3,7,8,9-HxCDD | 47:58 | 1098350 | 277726 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.288 |

MSD 10/7/03
BMW 10-6-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AC | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvc.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71194 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/05/03 07:56 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Dilution Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration Flags |
|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 138 | 50 | 55 | 0.91 * | / |
| | Unidentified | 32:32 | 00:00 | 0 | 2540 | 2373 | 621 | 380 | 1.07 * | ABB/ABB RT |
| | 2,3,7,8-TCDF | 33:47 | 33:47 | 0 | 76393 | 98026 | 8594 | 10419 | 0.78 | AVV/AVV |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 190 | 198 | 76 | 76 | 1.00 * | / |
| | 13C-2,3,7,8-TCDF | 33:45 | 33:45 | 0 | 383889 | 487026 | 38494 | 49559 | 0.79 | AVV/ABV |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 128 | 130 | 51 | 52 | 0.98 * | / |
| | 2,3,7,8-TCDD | 35:55 | 35:54 | 1 | 55896 | 72184 | 7326 | 8101 | 0.77 | ABB/ABB |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | |
| | Noise | 00:00 | 00:00 | 0 | 265 | 180 | 106 | 72 | 1.47 * | / |
| | 13C-1,2,3,4-TCDD | 35:22 | 35:23 | -1 | 705908 | 876979 | 77153 | 99655 | 0.80 | ABV/ABV |
| | 13C-2,3,7,8-TCDD | 35:53 | 35:52 | 1 | 272080 | 332365 | 33591 | 39919 | 0.82 | AVV/AVV |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | |
| | Noise | 00:00 | 00:00 | 0 | 120 | 123 | 48 | 49 | 0.98 * | / |
| | 1,2,3,7,8-PeCDF | 41:45 | 41:44 | 1 | 481097 | 304880 | 116926 | 76871 | 1.58 | ABV/ABV |
| | Unidentified | 41:59 | 00:00 | 0 | 4412 | 2210 | 743 | 570 | 2.00 * | AVV/AVV R |
| | Unidentified | 42:11 | 00:00 | 0 | 7864 | 5296 | 1291 | 903 | 1.48 | AVV/AVV |
| | 2,3,4,7,8-PeCDF | 42:48 | 42:48 | 0 | 517908 | 335959 | 141542 | 92393 | 1.54 | ABV/ABV |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8870** | **1.32-1.78** | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 143 | 54 | 57 | 0.95 * | / |
| | 13C-1,2,3,7,8-PeCDF | 41:44 | 41:43 | 1 | 471228 | 297308 | 119125 | 76974 | 1.58 | ABV/ABV |
| | Unidentified | 42:09 | 00:00 | 0 | 6905 | 4352 | 1295 | 1049 | 1.59 | AVB/AVV |
| | 13C-2,3,4,7,8-PeCDF | 42:47 | 42:47 | 0 | 501987 | 317134 | 139189 | 87376 | 1.58 | AVV/ABV |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 128 | 58 | 51 | 1.14 * | / |
| | 1,2,3,7,8-PeCDD | 43:17 | 43:15 | 2 | 347316 | 219091 | 93911 | 62537 | 1.59 | ABV/ABB |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 155 | 55 | 62 | 0.89 * | / |
| | 13C-1,2,3,7,8-PeCDD | 43:16 | 43:14 | 2 | 358493 | 228552 | 98607 | 60530 | 1.57 | ABV/ABV |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 148 | 54 | 59 | 0.92 * | / |
| | 1,2,3,4,7,8-HxCDF | 46:22 | 46:22 | 0 | 426420 | 341801 | 121401 | 95968 | 1.25 | ABV/ABV |
| | 1,2,3,6,7,8-HxCDF | 46:30 | 46:30 | 0 | 412499 | 335450 | 118299 | 92560 | 1.23 | AVV/AVV |
| | Unidentified | 46:47 | 00:00 | 0 | 595 | 1460 | 257 | 297 | 0.41 * | AVV/AVB RT |
| | 2,3,4,6,7,8-HxCDF | 47:16 | 47:16 | 0 | 357280 | 287052 | 99020 | 81378 | 1.24 | ABV/ABV |
| | Unidentified | 47:28 | 00:00 | 0 | 2263 | 3293 | 502 | 395 | 0.69 * | AVV/AVB RT |
| | 1,2,3,7,8,9-HxCDF | 48:17 | 48:18 | -1 | 275596 | 220002 | 66559 | 54080 | 1.25 | ABB/ABV |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.99** | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 163 | 58 | 65 | 0.89 * | / |
| | 13C-1,2,3,4,7,8-HxCDF | 46:21 | 46:21 | 0 | 222971 | 420625 | 61567 | 119649 | 0.53 | ABV/ABV |
| | 13C-1,2,3,6,7,8-HxCDF | 46:29 | 46:30 | -1 | 227792 | 423117 | 63687 | 116489 | 0.54 | AVV/AVV |
| | 13C-2,3,4,6,7,8-HxCDF | 47:16 | 47:15 | 1 | 204259 | 385832 | 55523 | 108102 | 0.53 | ABV/ABV |

Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | F1EPV1AC | **Prep Batch** | 3273193 | **Lot No** | H3I300000-193 |
| **Data File** | /20031004s1/tf1epvc.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71194 | **Prep Exp Date** | 10/19/03 | **Date Received** | 09/30/03 |
| **Analysis Date** | 10/05/03 07:56 | **Matrix** | SOLID | **Date Sampled** | 09/19/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

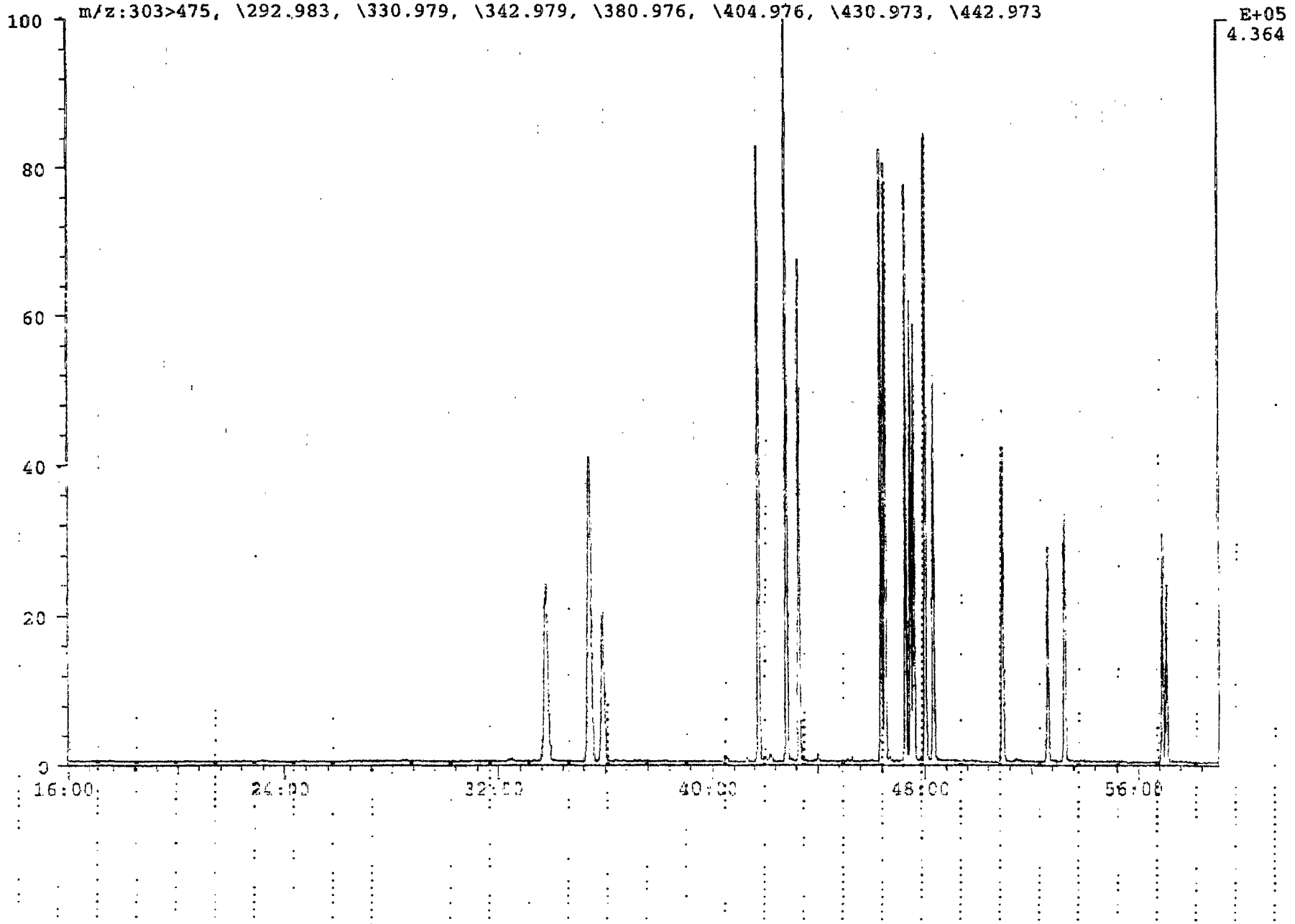
**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:17 | 48:17 | 0 | 151680 | 279829 | 36829 | 69321 | 0.54 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 140 | 72 | 56 | 1.29 | / | |
| | 1,2,3,4,7,8-HxCDD | 47:28 | 47:27 | 1 | 285041 | 230044 | 76370 | 61100 | 1.24 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:35 | 47:34 | 1 | 281226 | 225607 | 75351 | 57313 | 1.25 | AVB/AVV | |
| | 1,2,3,7,8,9-HxCDD | 47:59 | 48:00 | -1 | 228422 | 179335 | 56637 | 46736 | 1.27 | ABB/AVV | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 208 | 193 | 83 | 77 | 1.08 | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:26 | 47:26 | 0 | 273609 | 217738 | 75235 | 61014 | 1.26 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:34 | 47:33 | 1 | 275791 | 216303 | 71430 | 57431 | 1.28 | AVV/AVB | |
| | 13C-1,2,3,7,8,9-HxCDD | 47:58 | 47:59 | -1 | 604964 | 493386 | 152582 | 125144 | 1.23 | ABV/ABB | |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 153 | 57 | 61 | 0.93 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:54 | 50:54 | 0 | 258939 | 251727 | 55943 | 58566 | 1.03 | ABV/ABV | M |
| | Unidentified | 51:17 | 00:00 | 0 | 829 | 2638 | 397 | 441 | 0.31 * | AVV/AVV | RT |
| | Unidentified | 51:35 | 00:00 | 0 | 2855 | 3499 | 976 | 852 | 0.82 * | ABV/AVV | R |
| | Unidentified | 51:45 | 00:00 | 0 | 1085 | 809 | 314 | 177 | 1.34 * | AVB/AVB | R |
| | 1,2,3,4,7,8,9-HpCDF | 53:15 | 53:15 | 0 | 201353 | 188071 | 43660 | 41350 | 1.07 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 133 | 55 | 53 | 1.04 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:53 | 50:52 | 1 | 111761 | 249504 | 24095 | 53962 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:14 | 53:14 | 0 | 89832 | 192894 | 19822 | 42910 | 0.47 | ABB/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 113 | 64 | 45 | 1.42 * | / | |
| | Unidentified | 51:25 | 00:00 | 0 | 3586 | 4379 | 758 | 696 | 0.82 * | ABB/ABB | R |
| | 1,2,3,4,6,7,8-HpCDD | 52:37 | 52:38 | -1 | 146731 | 141167 | 33626 | 30869 | 1.04 | ABV/ABB | |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 125 | 145 | 50 | 58 | 0.86 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:36 | 52:37 | -1 | 165681 | 152791 | 39321 | 33103 | 1.08 | ABV/ABB | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 163 | 54 | 65 | 0.83 | / | |
| | OCDF | 57:02 | 57:04 | -2 | 180306 | 203872 | 47923 | 54811 | 0.88 | ABV/AVV | |
| | Unidentified | 57:15 | 00:00 | 0 | 1714 | 842 | 253 | 260 | 2.04 * | AVB/AVV | RT |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 170 | 148 | 68 | 59 | 1.15 * | / | |
| | OCDD | 56:54 | 56:54 | 0 | 126358 | 139663 | 33122 | 37189 | 0.90 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 130 | 153 | 52 | 61 | 0.85 | / | |
| | 13C-OCDD | 56:53 | 56:53 | 0 | 130918 | 140531 | 35075 | 36850 | 0.93 | ABV/ABV | |

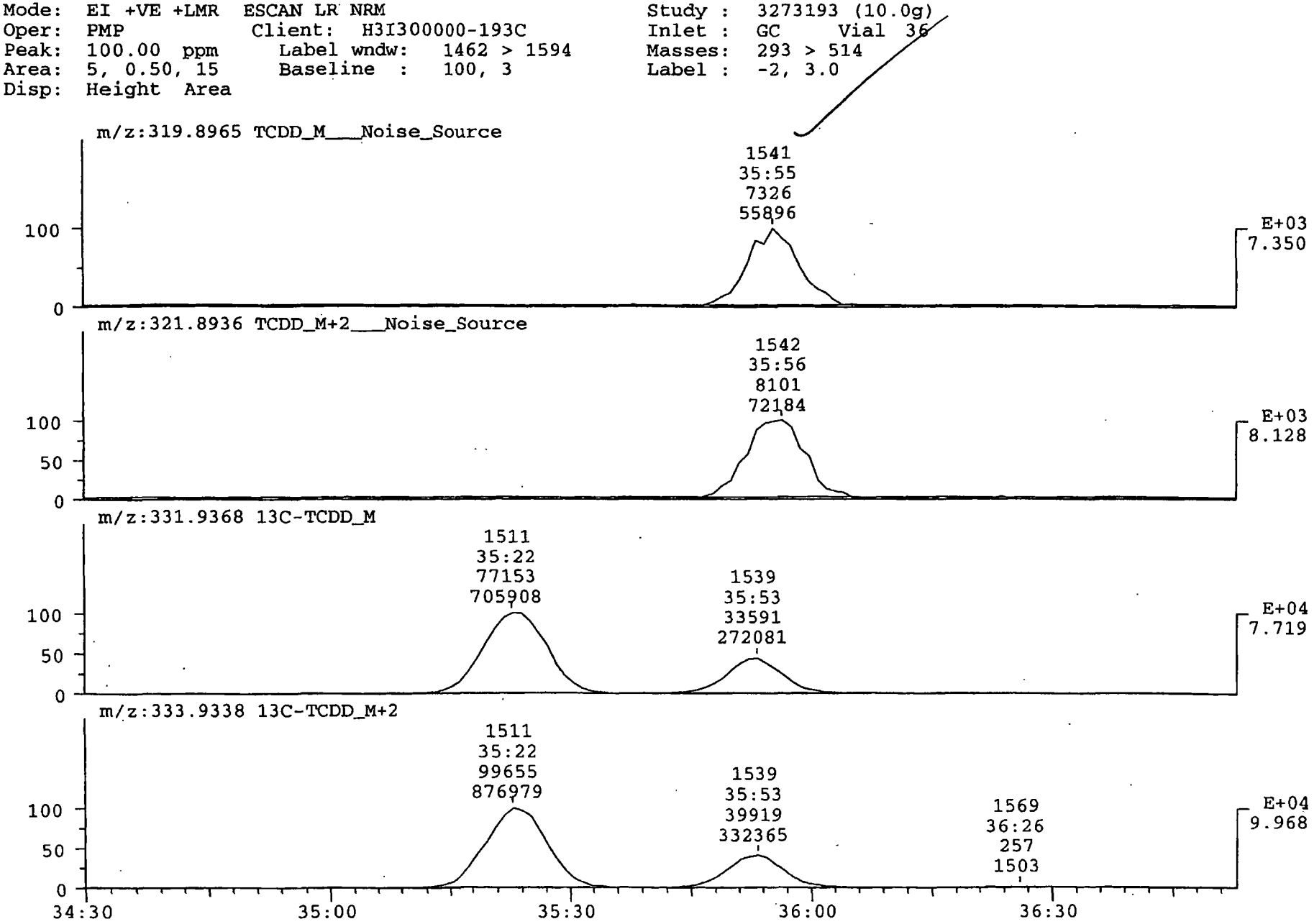
Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tf1epvc 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 442 > 2834 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

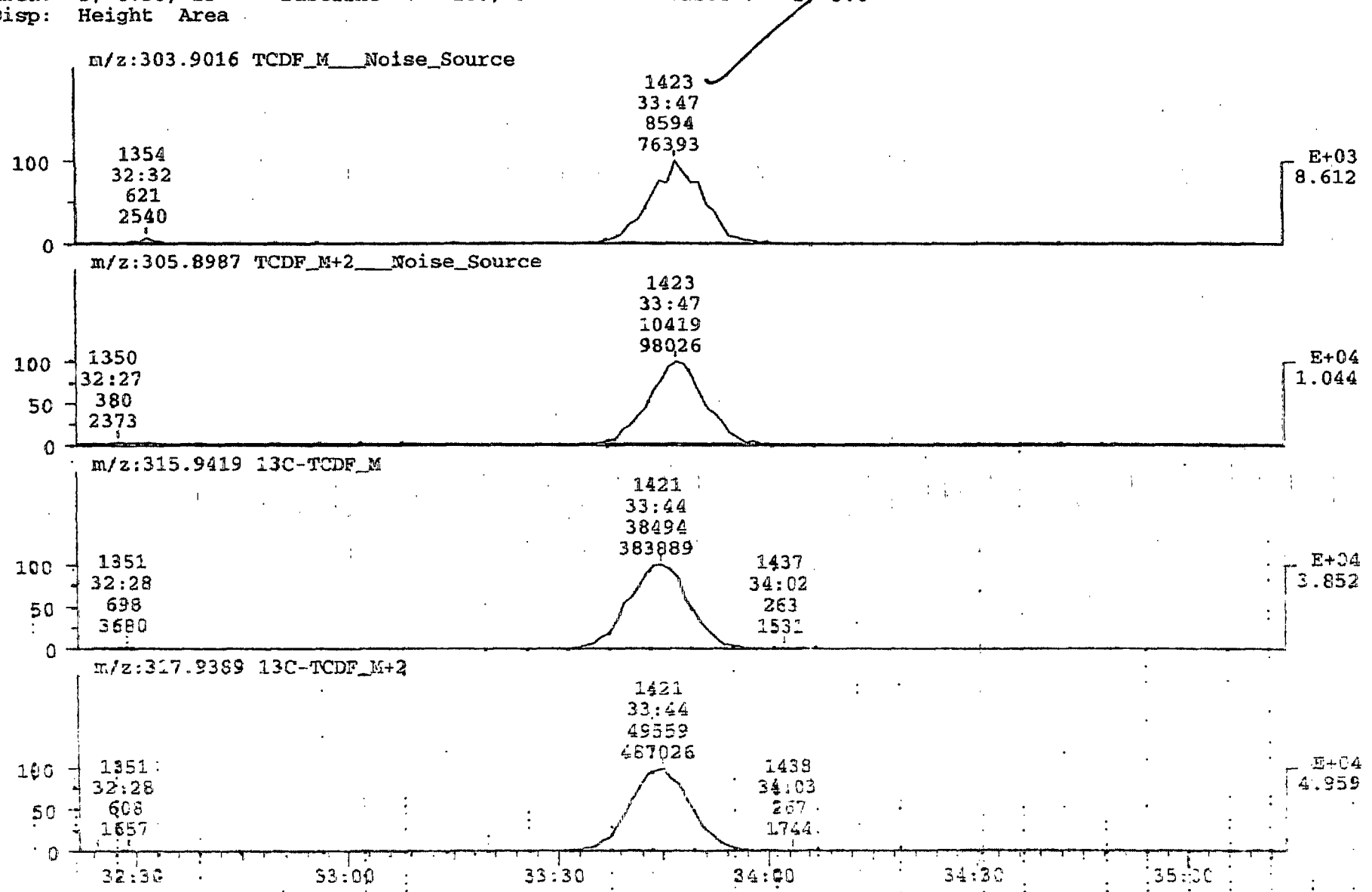
Just MSD 10/6/03
Calc OKW 10-6-03
QC Rev MSD 10/7/03



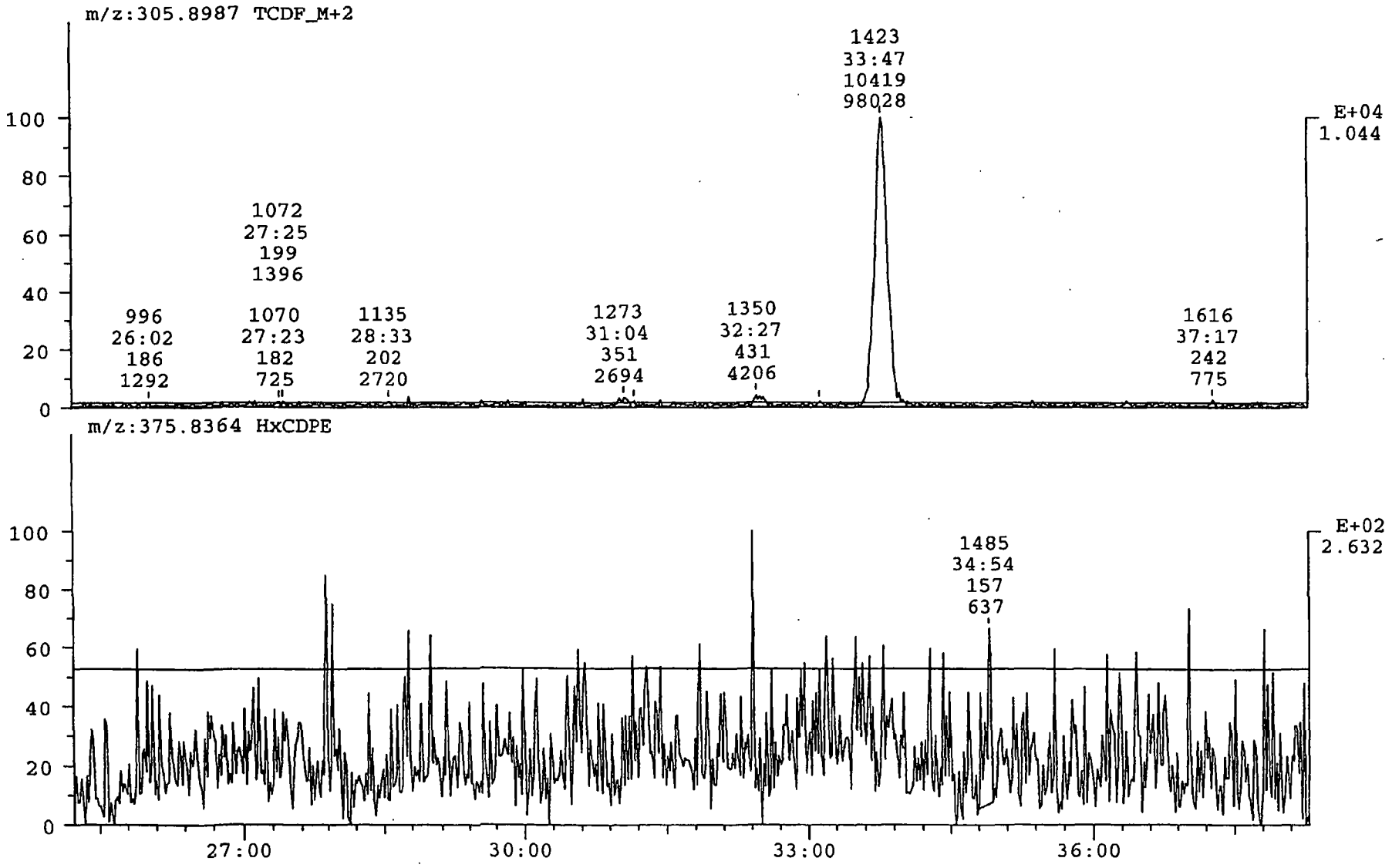
CHRO: tf1epvc 05-Oct-03 Elapse: 35:41 1528
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1462 > 1594 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



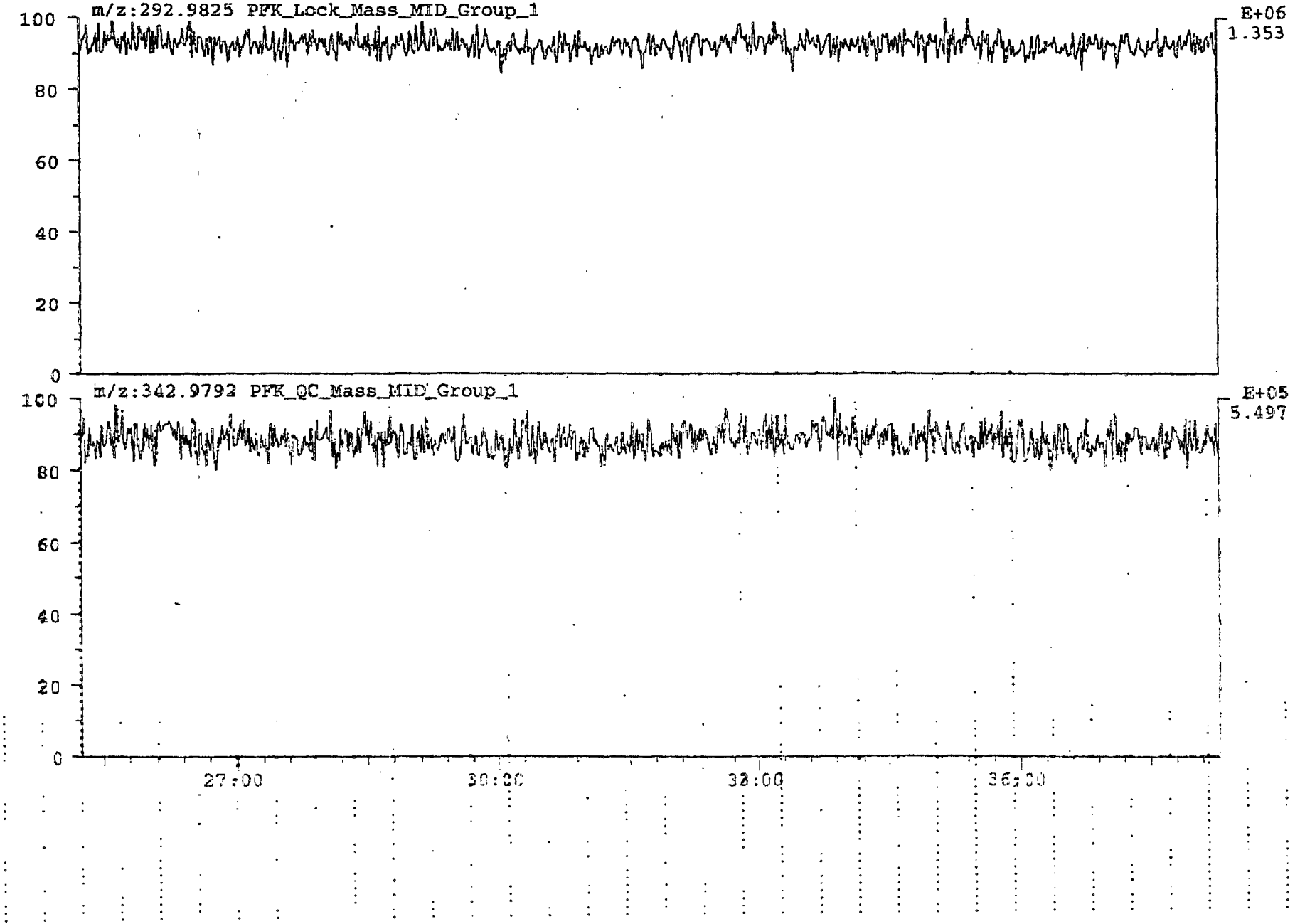
CHRO: tf1epvc 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H31300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1345 > 1503 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2 3.0
Disp: Height Area



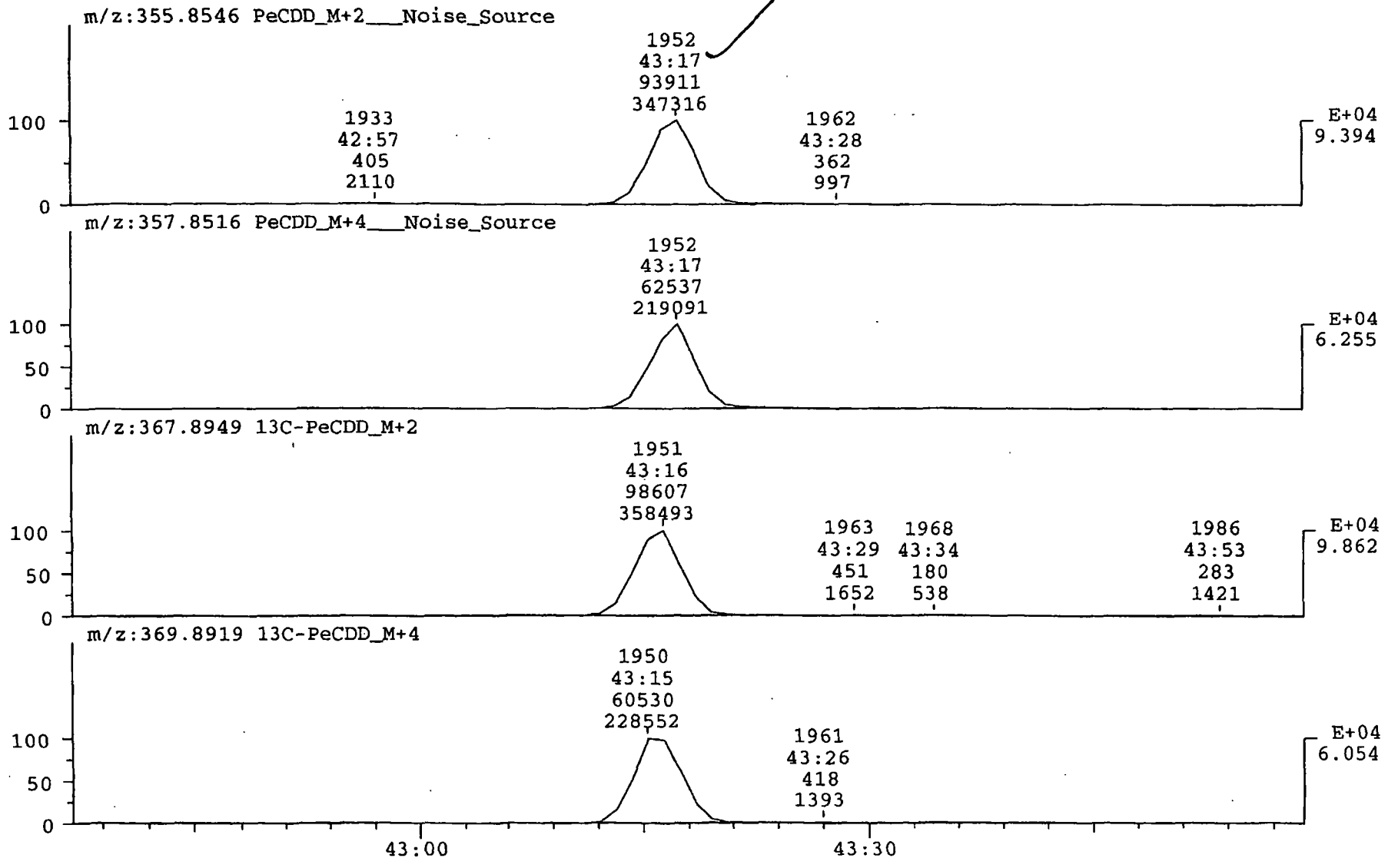
CHRO: tf1epvc 05-Oct-03 Elapse: 33:48 1424
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 951 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



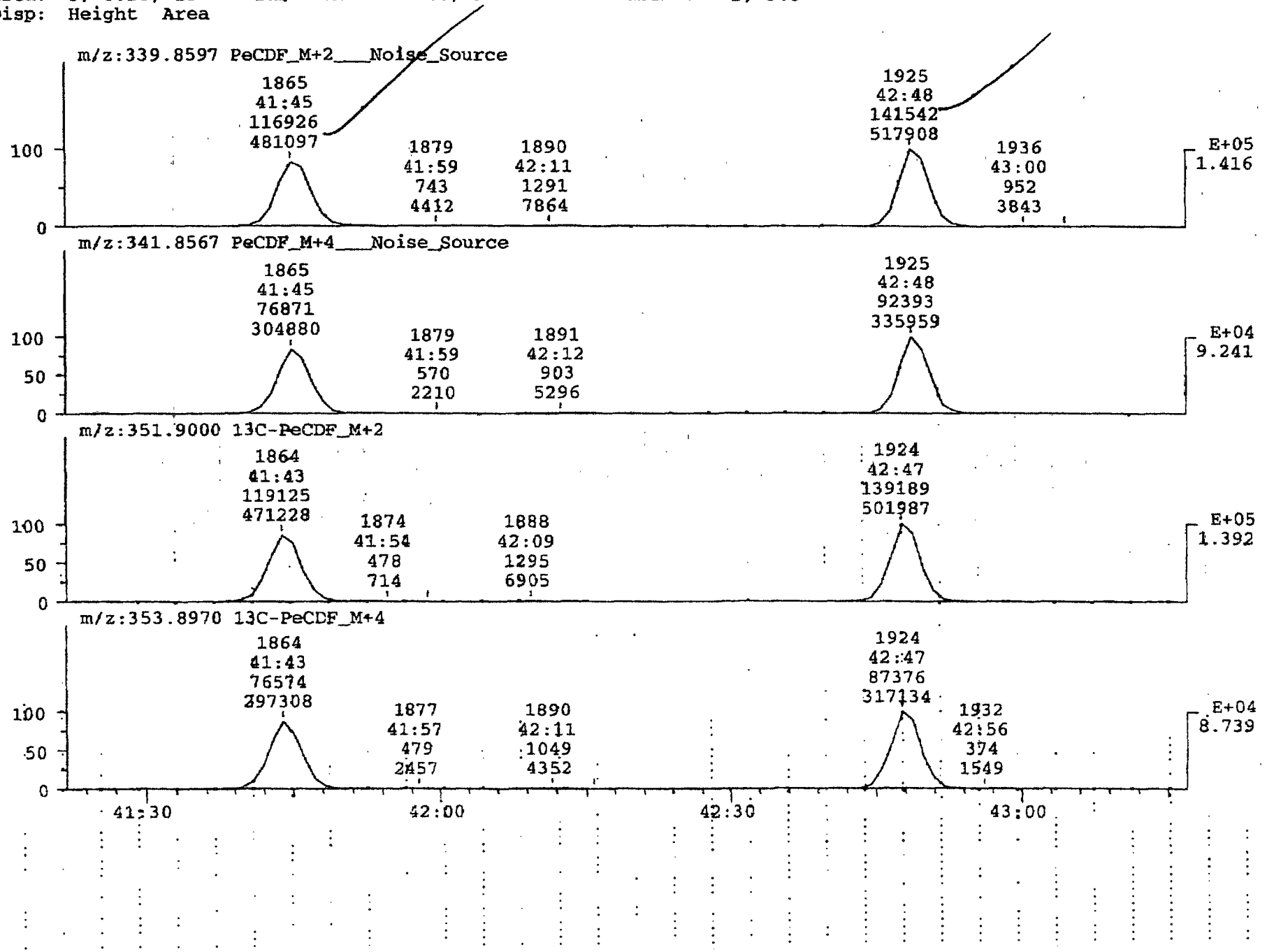
```
CHRO:  tf1epvc                                  05-Oct-03   Elapse:   33:48       1424
Samp:  Vial 36 WO=f1epv1ac Meth=IN2 Dil=1                   Start :   07:56:29    2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :   3273193 (10.0g)
Oper:  PMP            Client:  H3I300000-193C               Inlet :   GC      Vial 36
Peak:  100.00  ppm      Label wndw:   951 > 1671            Masses:   293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :   0, 0.0
Disp:  Height  Area
```



CHRO: tf1epvc 05-Oct-03 Elapse: 43:15 1950
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1914 > 1991 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2 3.0
Disp: Height Area

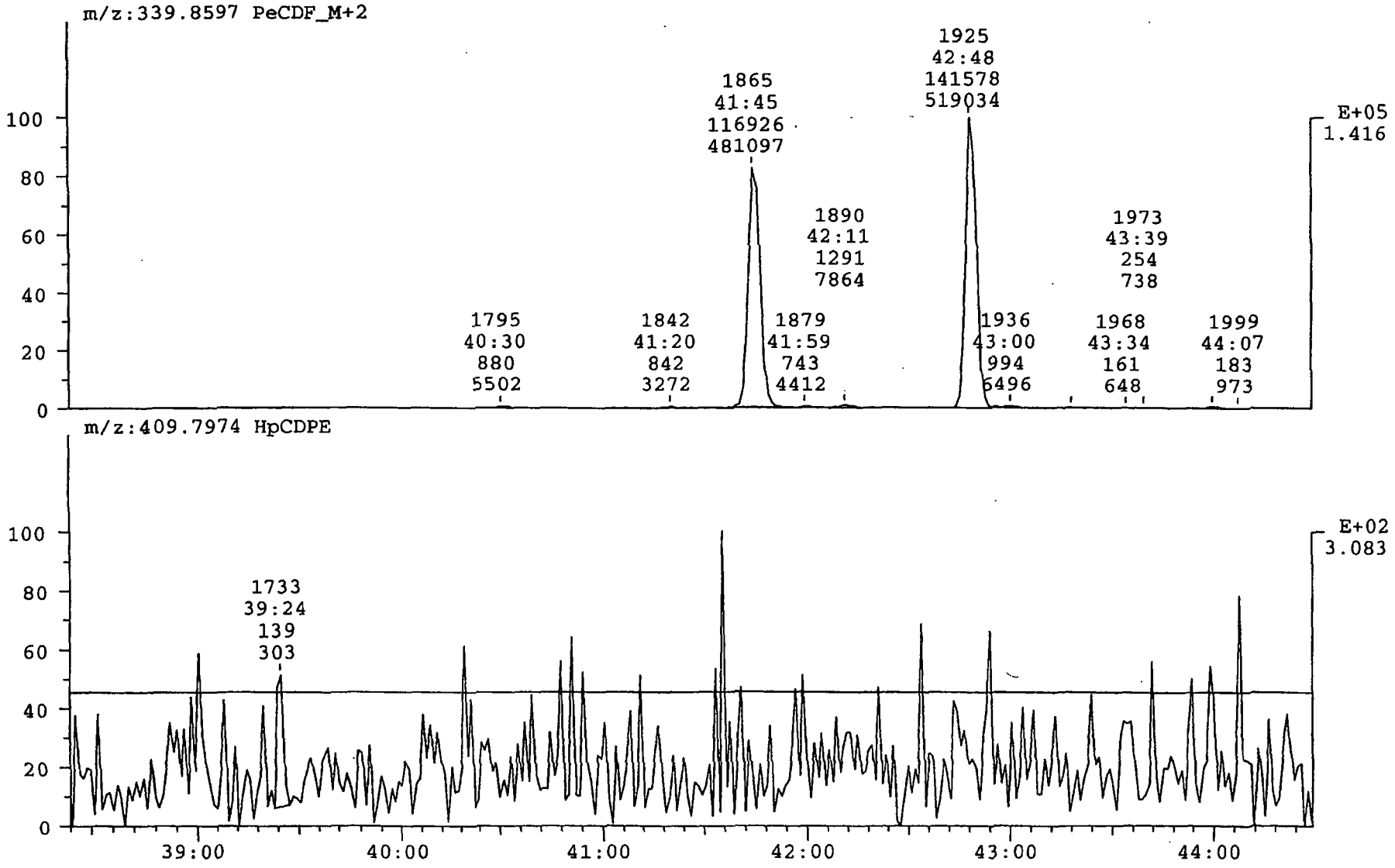


CHRO: tf1epvc 05-Oct-03 Elapse: 42:19 1897
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1843 > 1952 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

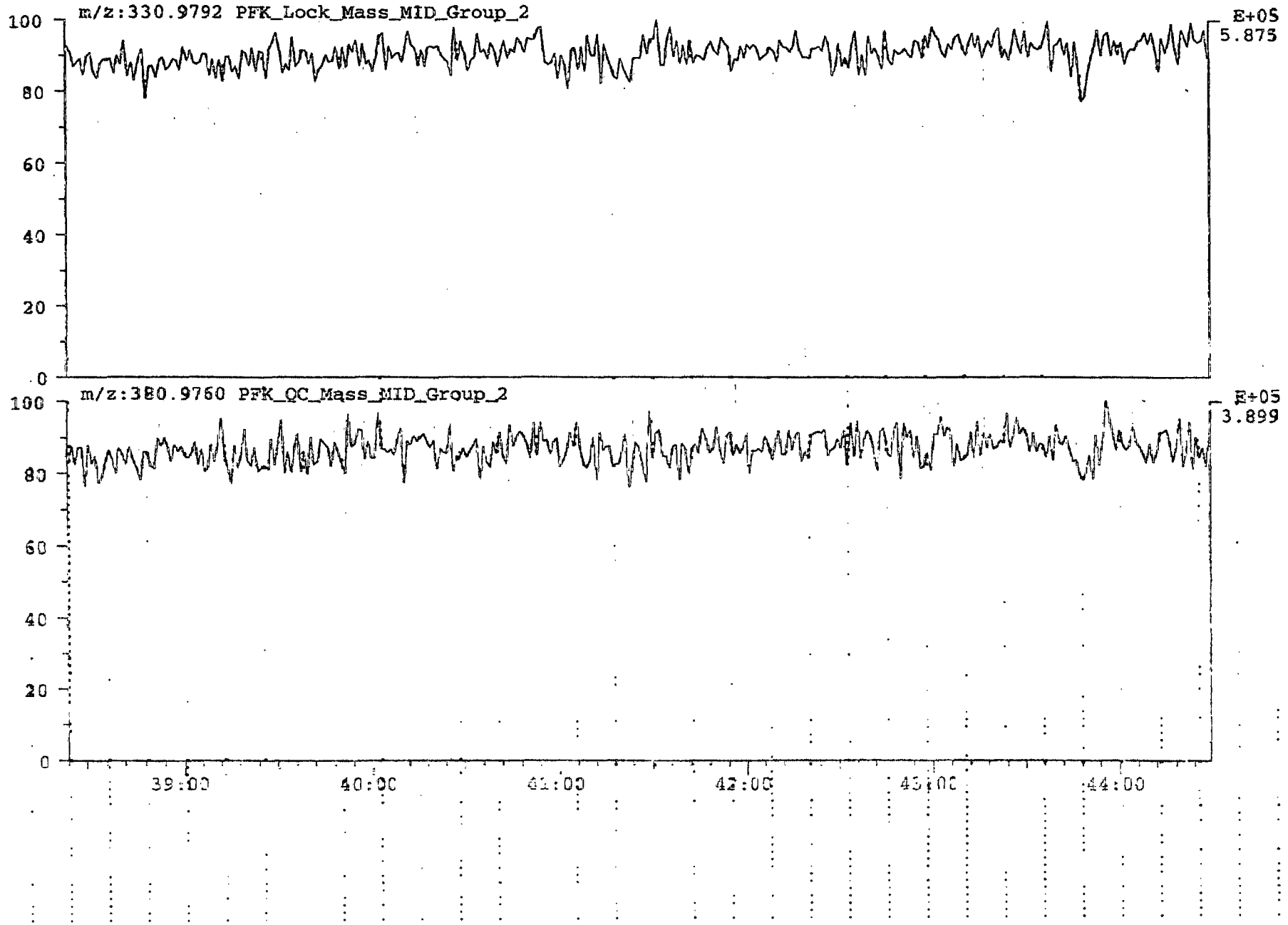



904

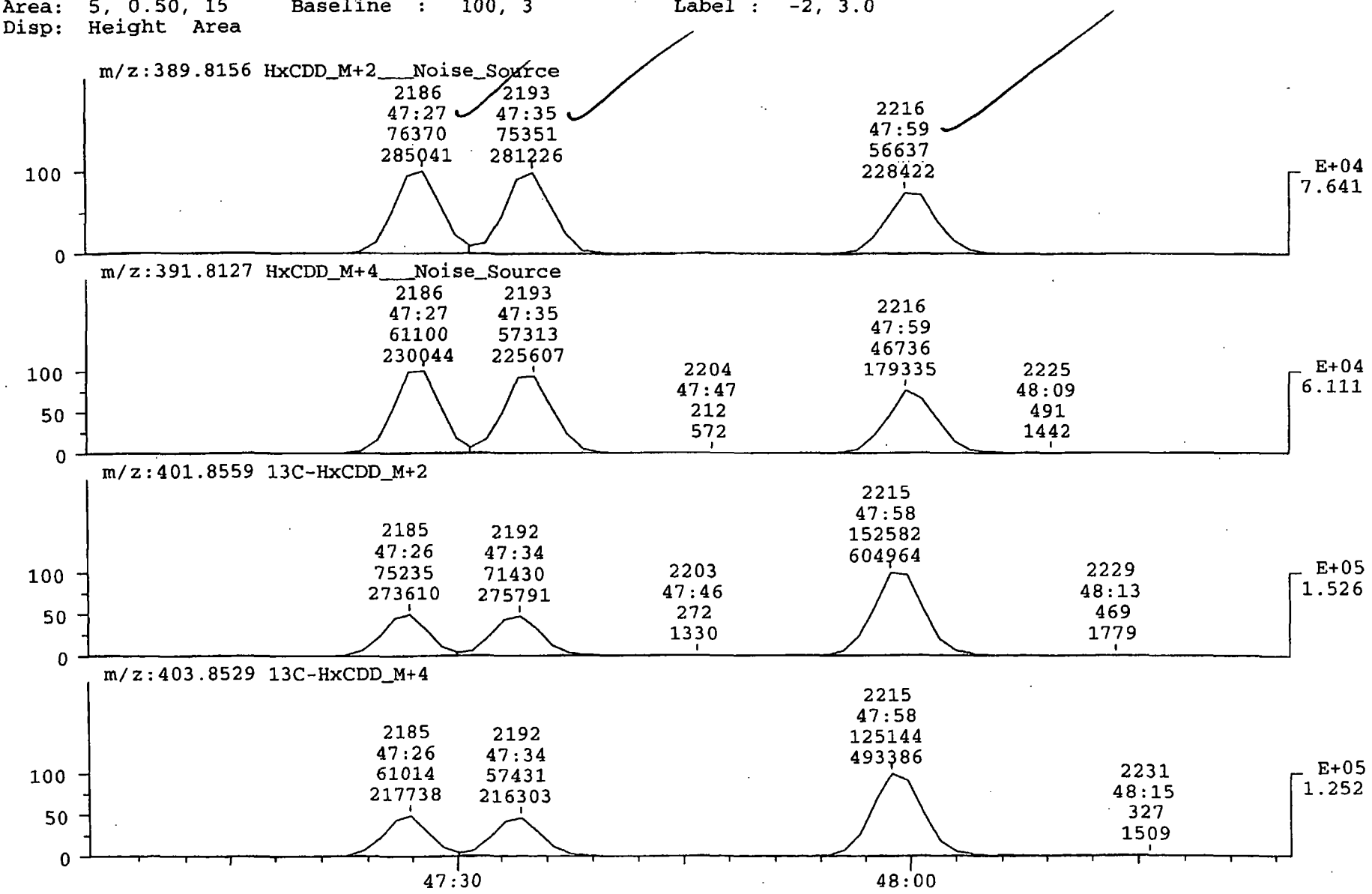
CHRO: tf1epvc 05-Oct-03 Elapse: 42:47 1924
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1676 > 2019 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



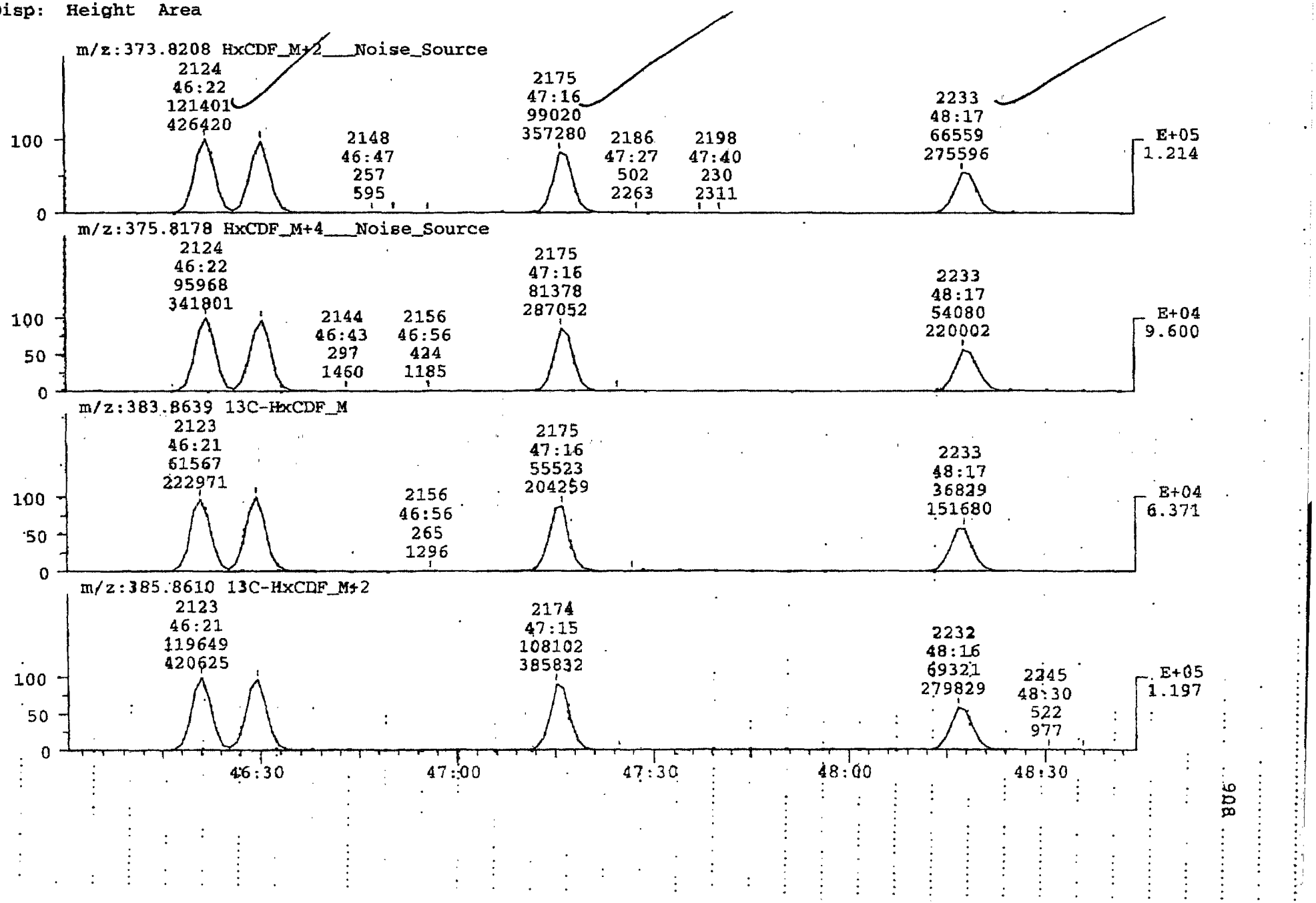
CHRO: tf1epvc 05-Oct-03 Elapse: 42:47 1924
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 1676 > 2019 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



CHRO: tf1epvc 05-Oct-03 Elapse: 47:44 2202
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2165 > 2240 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

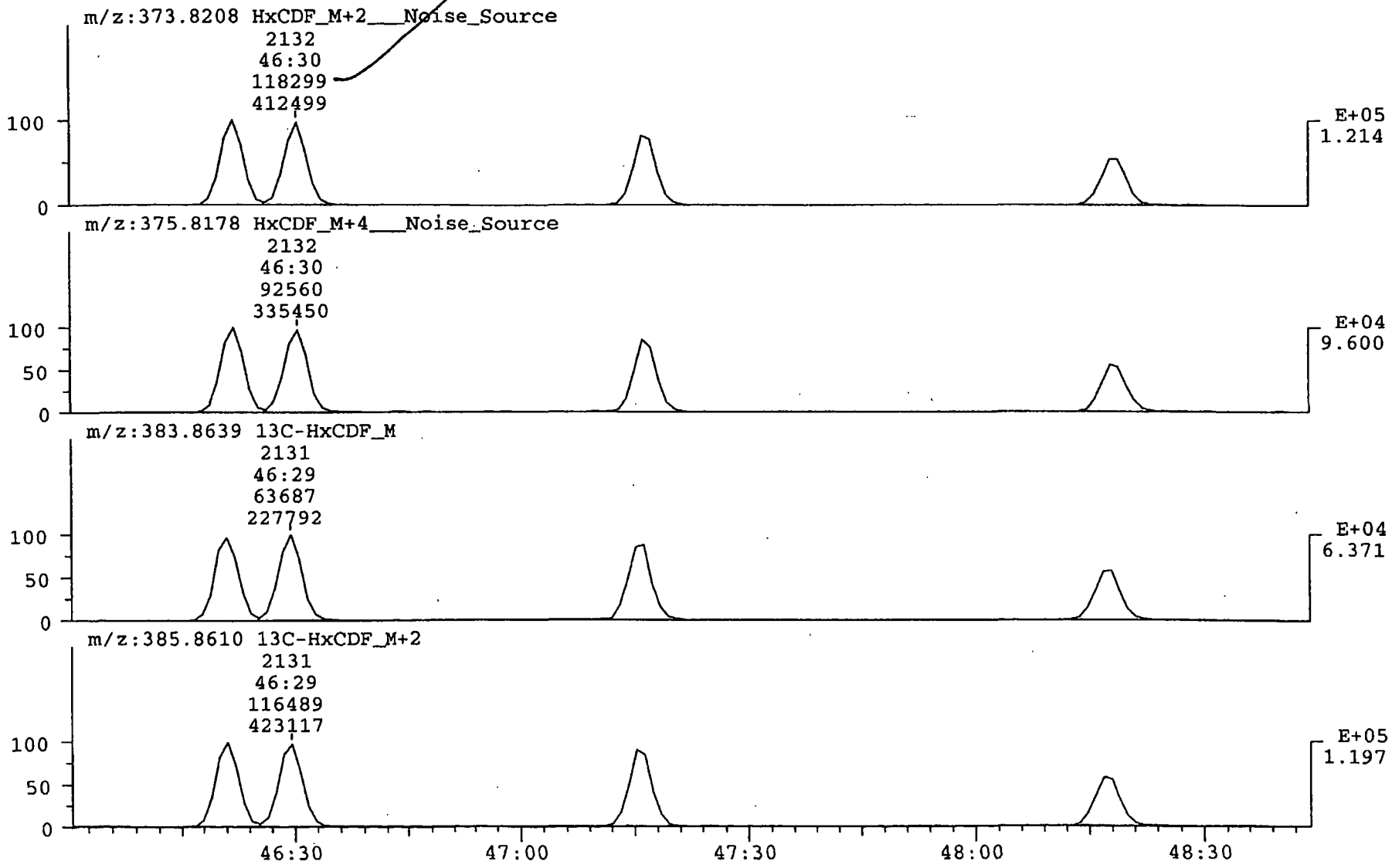


CHRO: tf1epvc 05-Oct-03 Elapse: 47:21 2180
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2104 > 2258 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

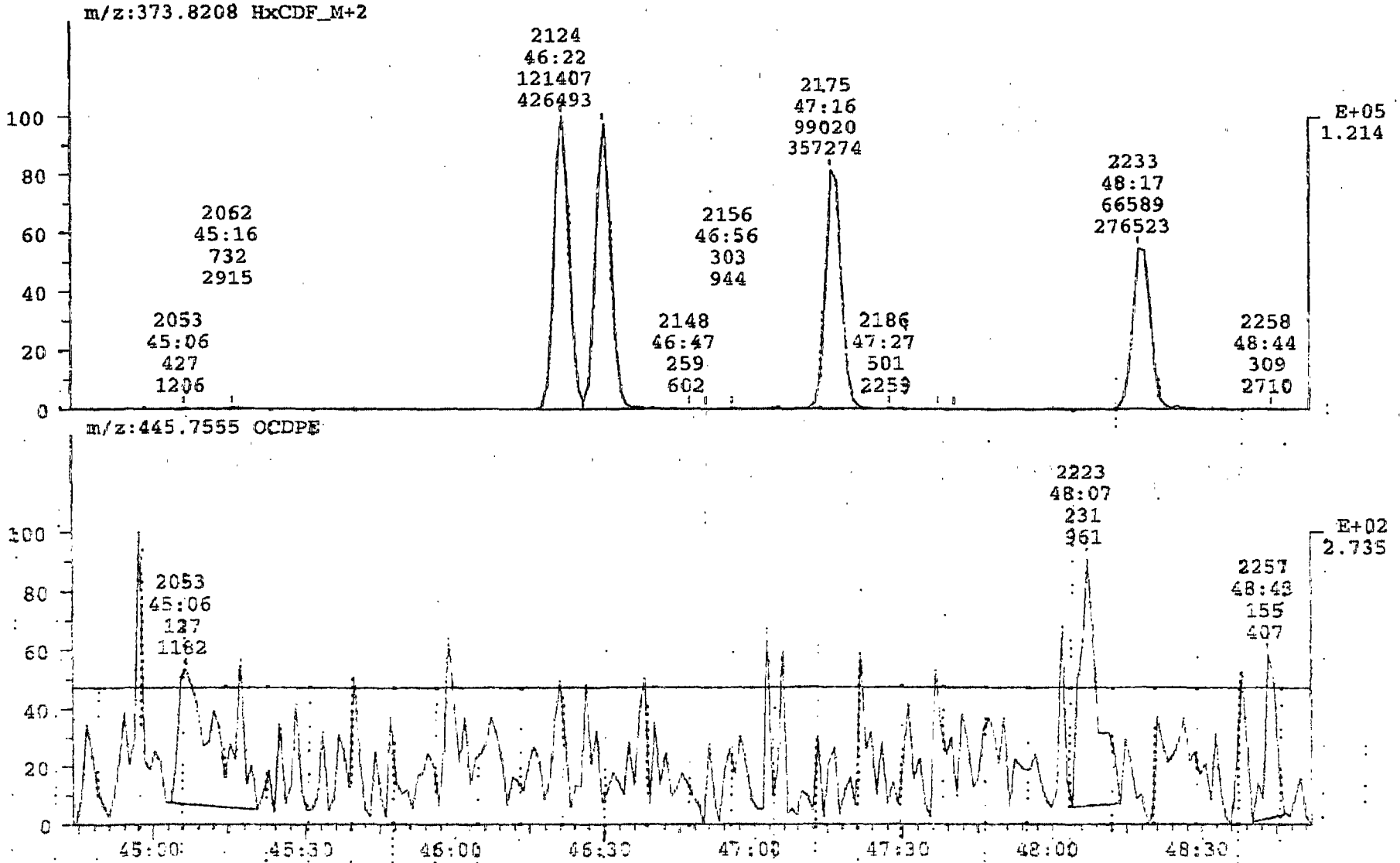



908

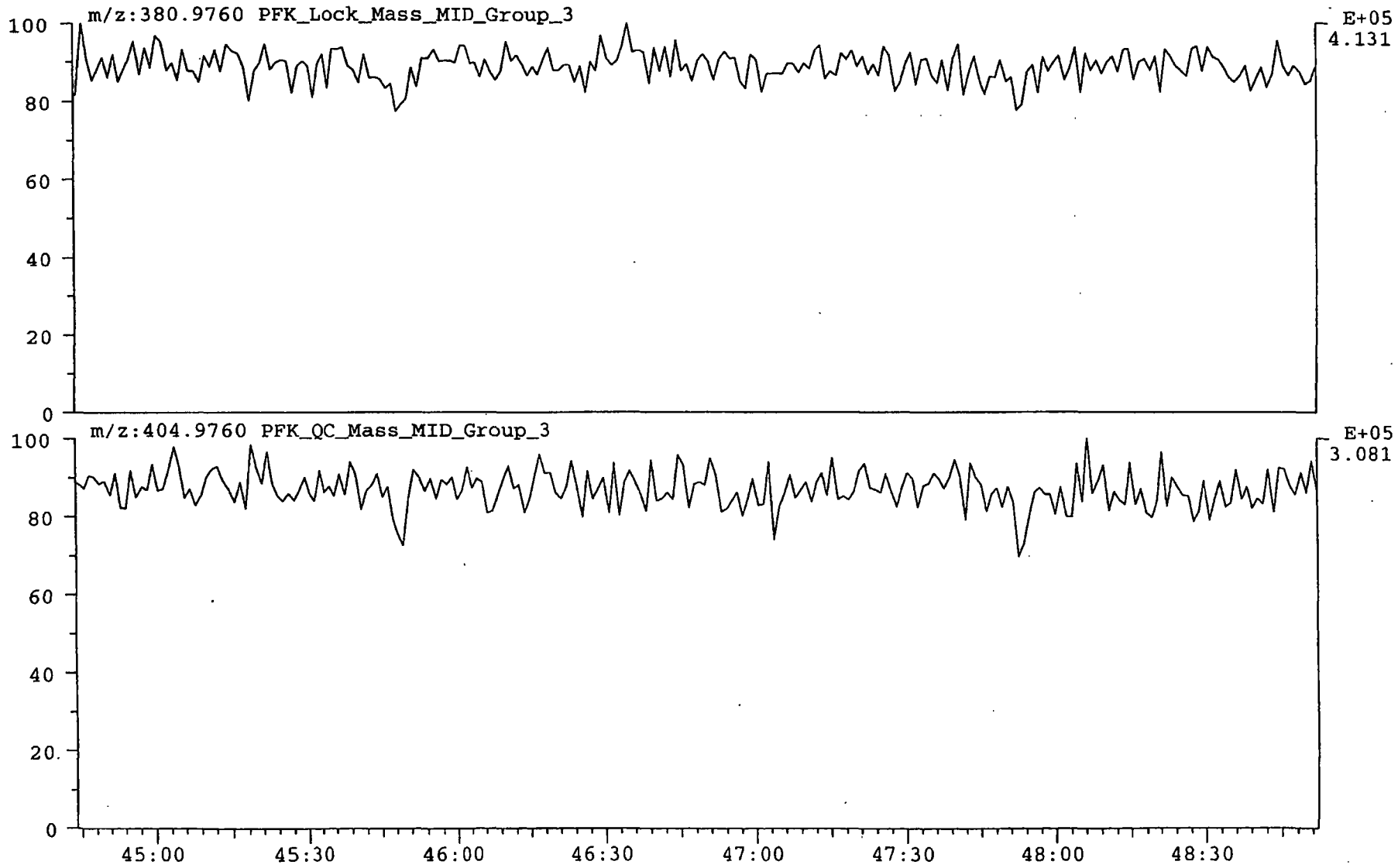
CHRO: tf1epvc 05-Oct-03 Elapse: 46:30 2132
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2128 > 2136 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



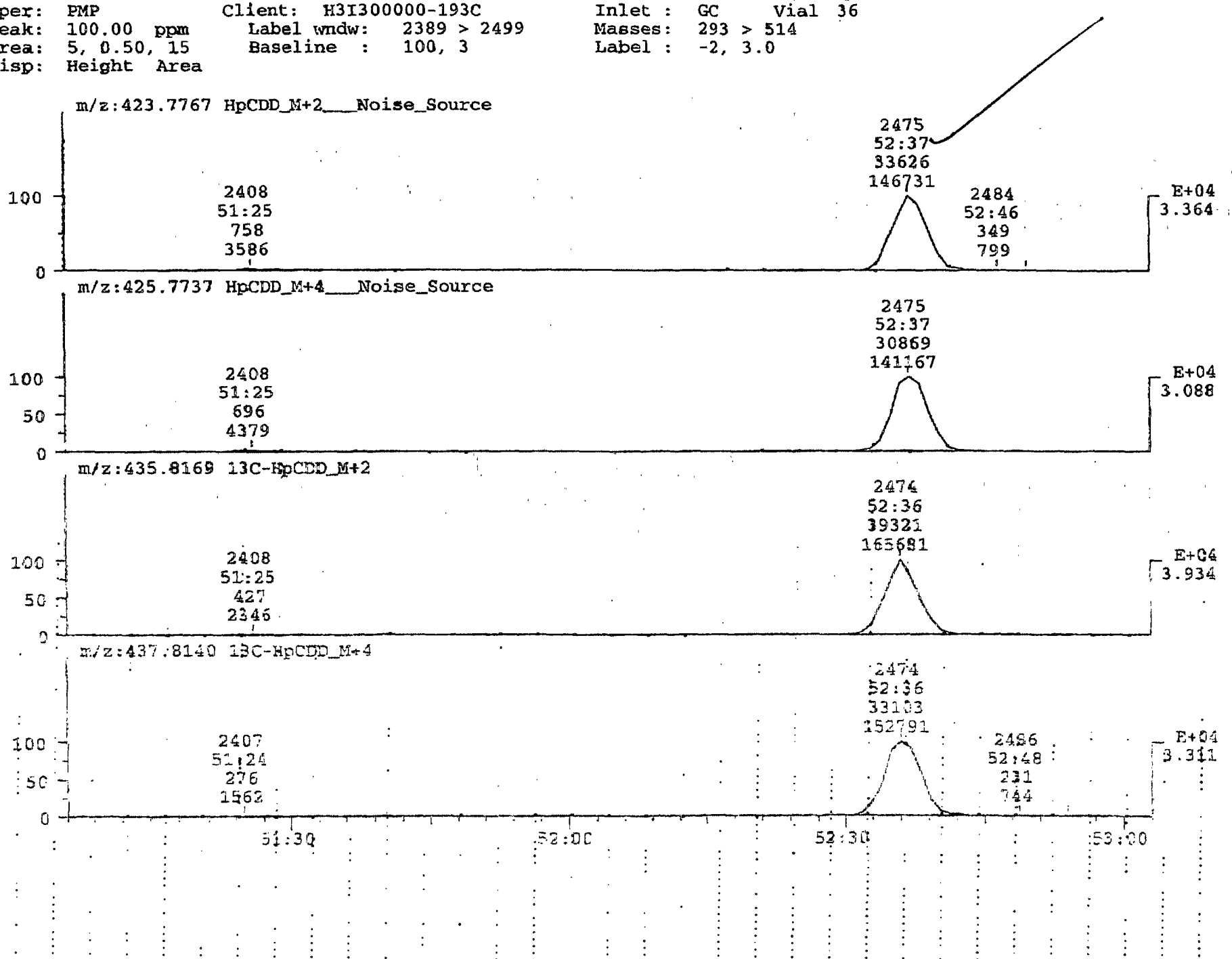
CHRO: tf1epvc 05-Oct-03 Elapse: 48:17 2233
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



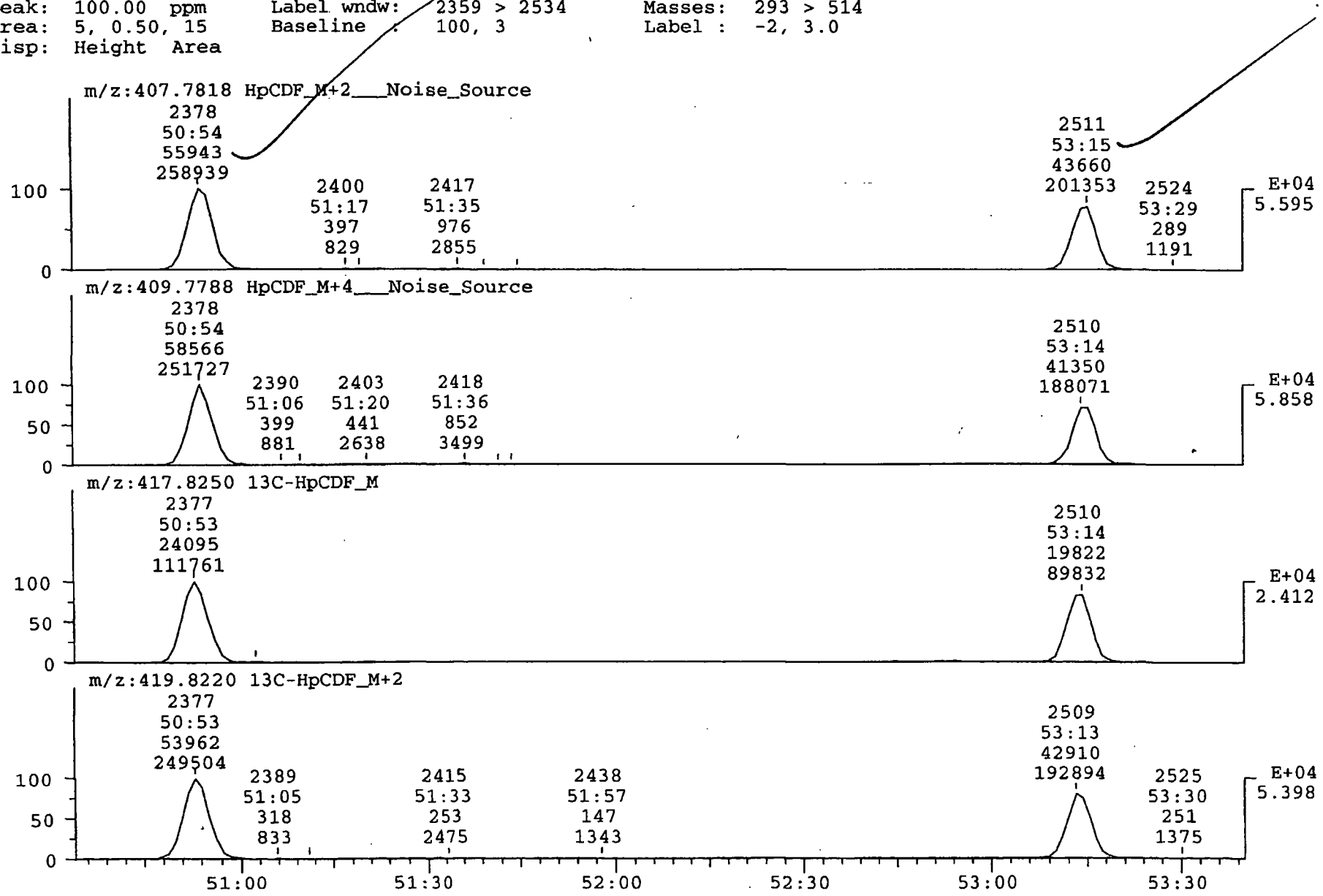
```
CHRO:  tf1epvc                                  05-Oct-03   Elapse:  48:17      2233
Samp:  Vial 36 WO=f1epv1ac Meth=IN2 Dil=1                   Start :  07:56:29   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I300000-193C                 Inlet :  GC     Vial 36
Peak:  100.00  ppm     Label wndw:   2032 > 2265            Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3                 Label :  0, 0.0
Disp:  Height  Area
```



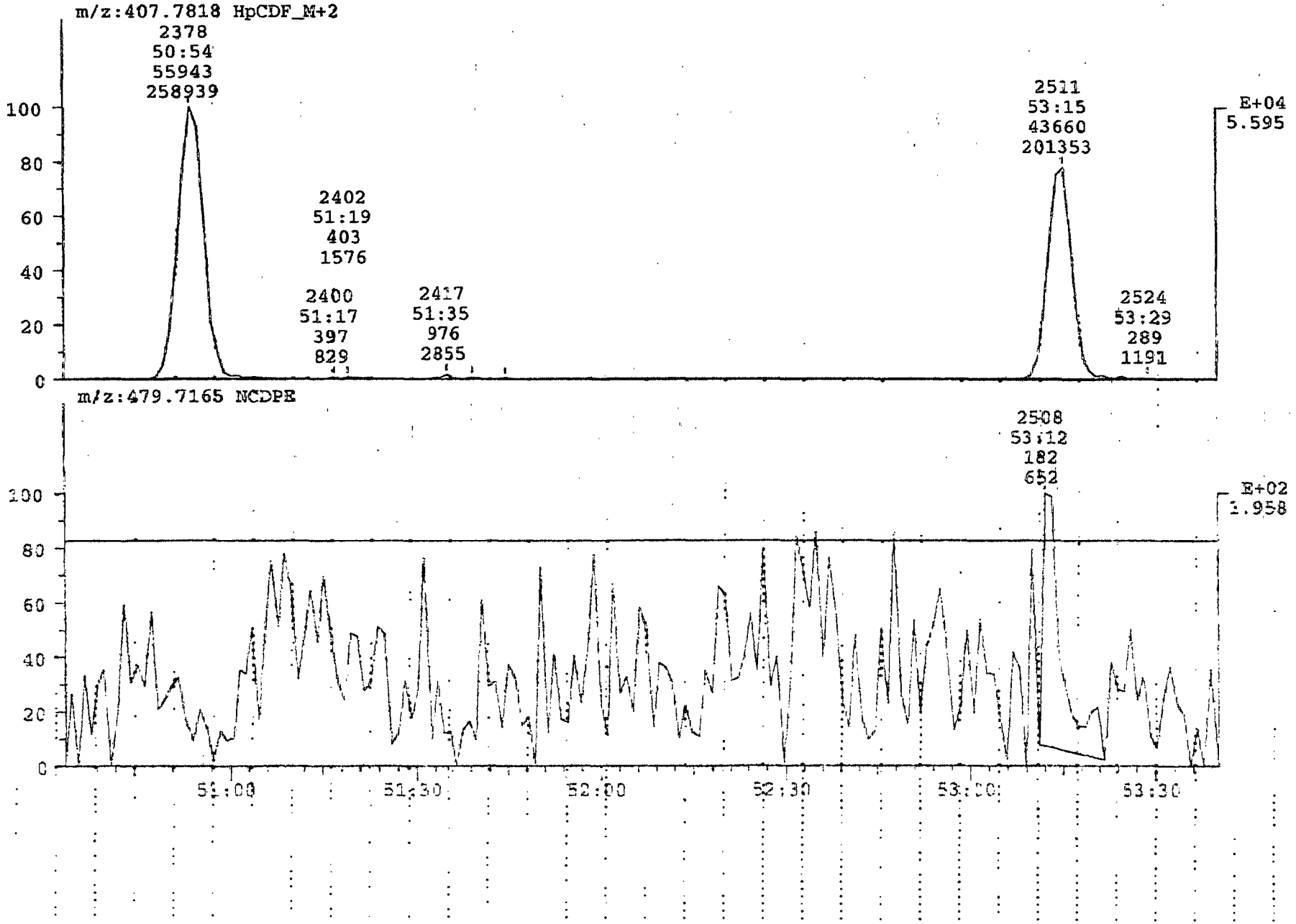
CHRO: tf1epvc 05-Oct-03 Elapse: 52:37 2475
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2389 > 2499 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



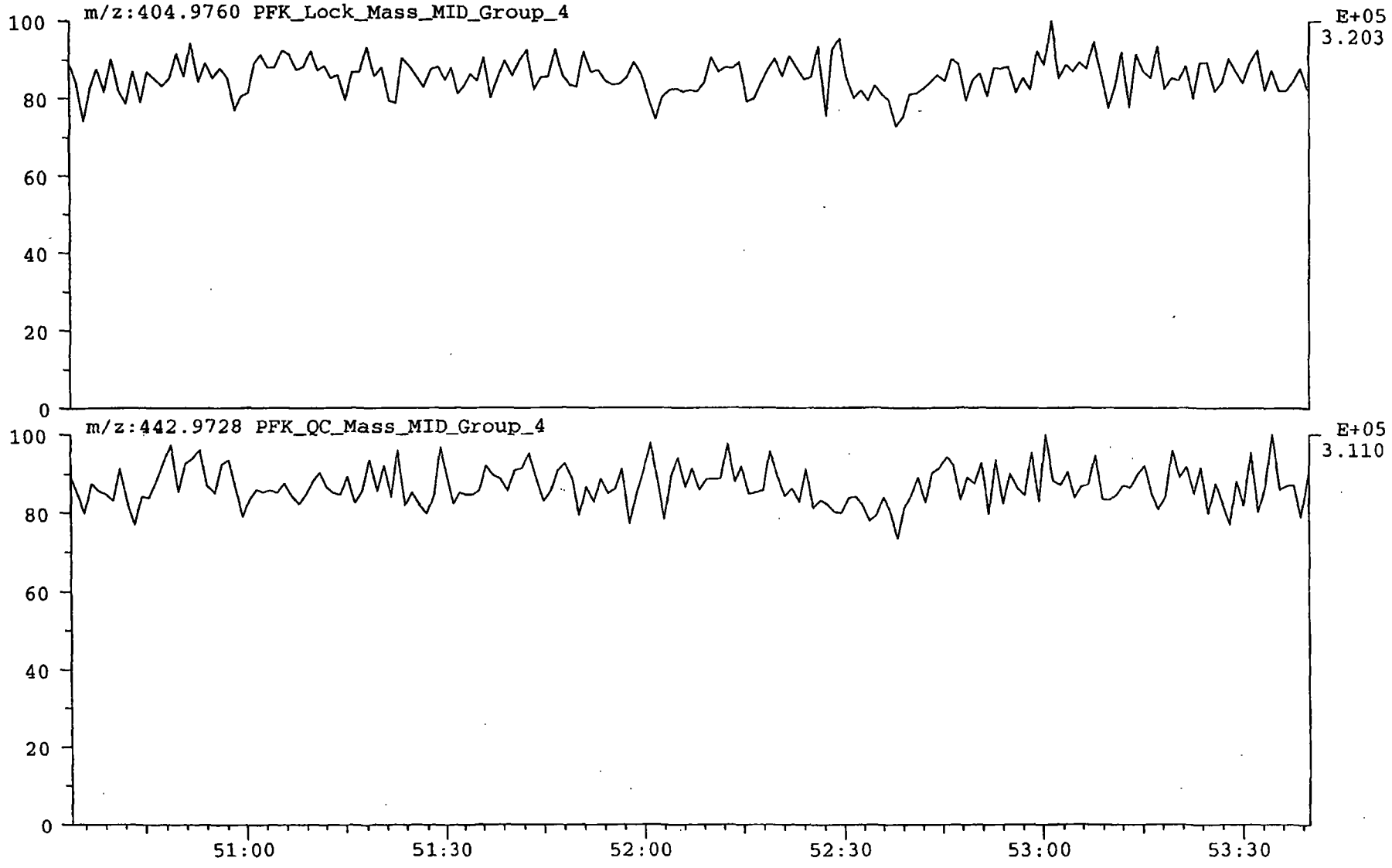
CHRO: tf1epvc 05-Oct-03 Elapse: 53:14 2510
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2359 > 2534 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



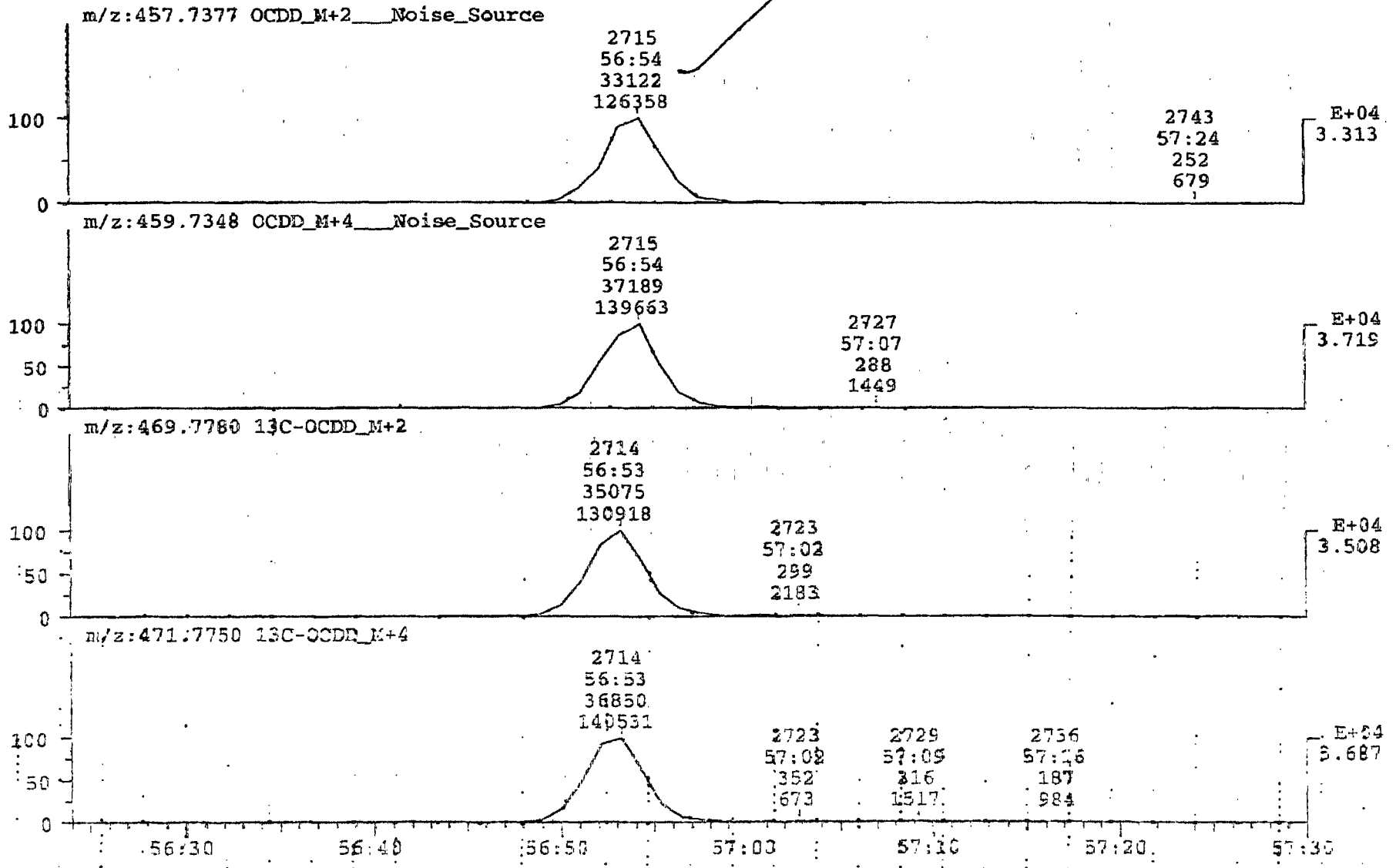
CHRO: tf1epvc 05-Oct-03 Elapse: 53:14 2510
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2359 > 2534 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



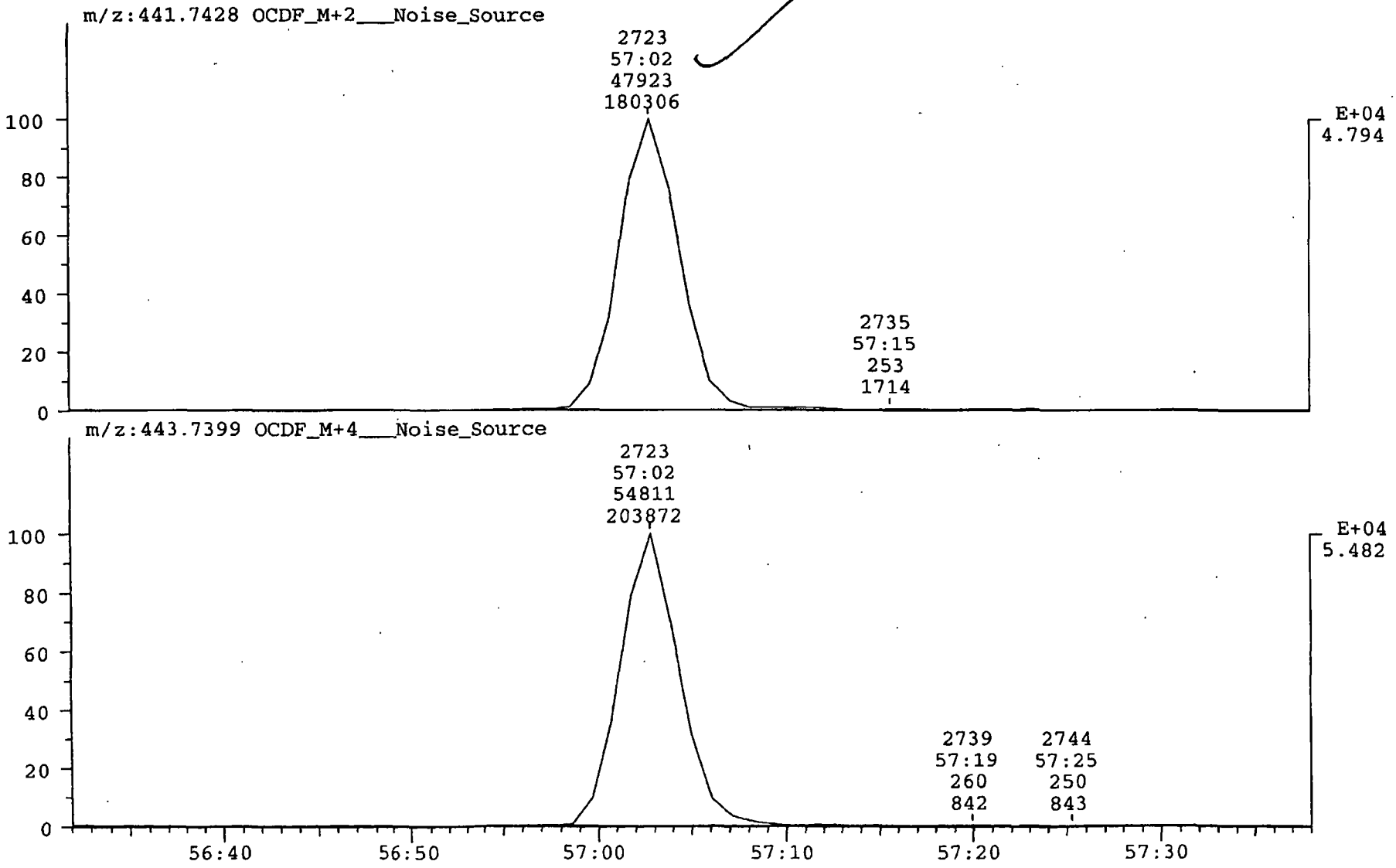
```
CHRO:  tf1epvc                              05-Oct-03   Elapse:   53:14      2510
Samp:  Vial 36 WO=f1epv1ac Meth=IN2 Dil=1               Start :   07:56:29   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                        Study :   3273193 (10.0g)
Oper:  PMP          Client:  H3I300000-193C             Inlet :   GC     Vial 36
Peak:  100.00  ppm    Label wndw:   2359 > 2534          Masses:   293 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3              Label :   0, 0.0
Disp:  Height  Area
```



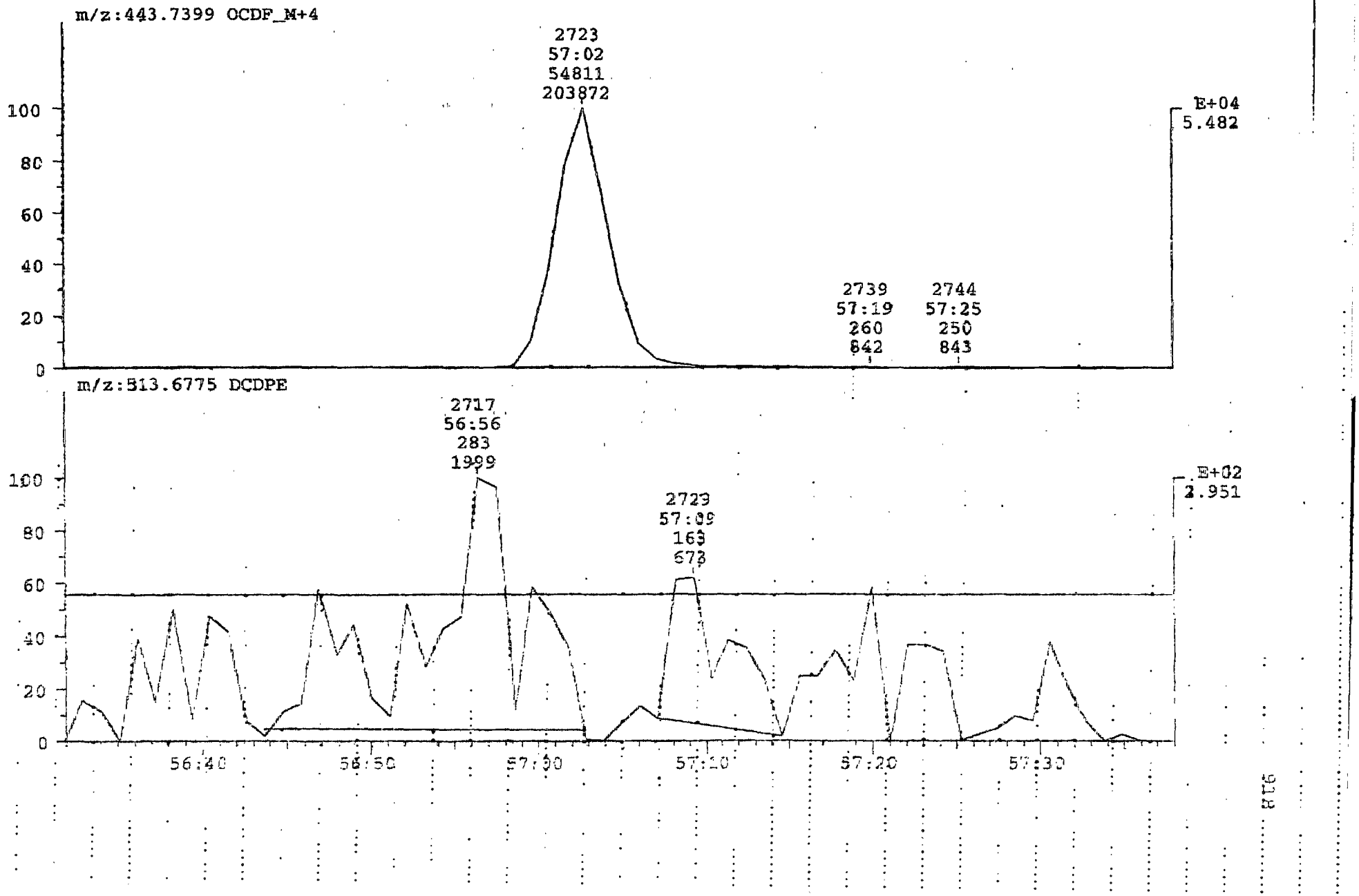
CHRO: tf1epvc 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2687 > 2748 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2 3.0
Disp: Height Area



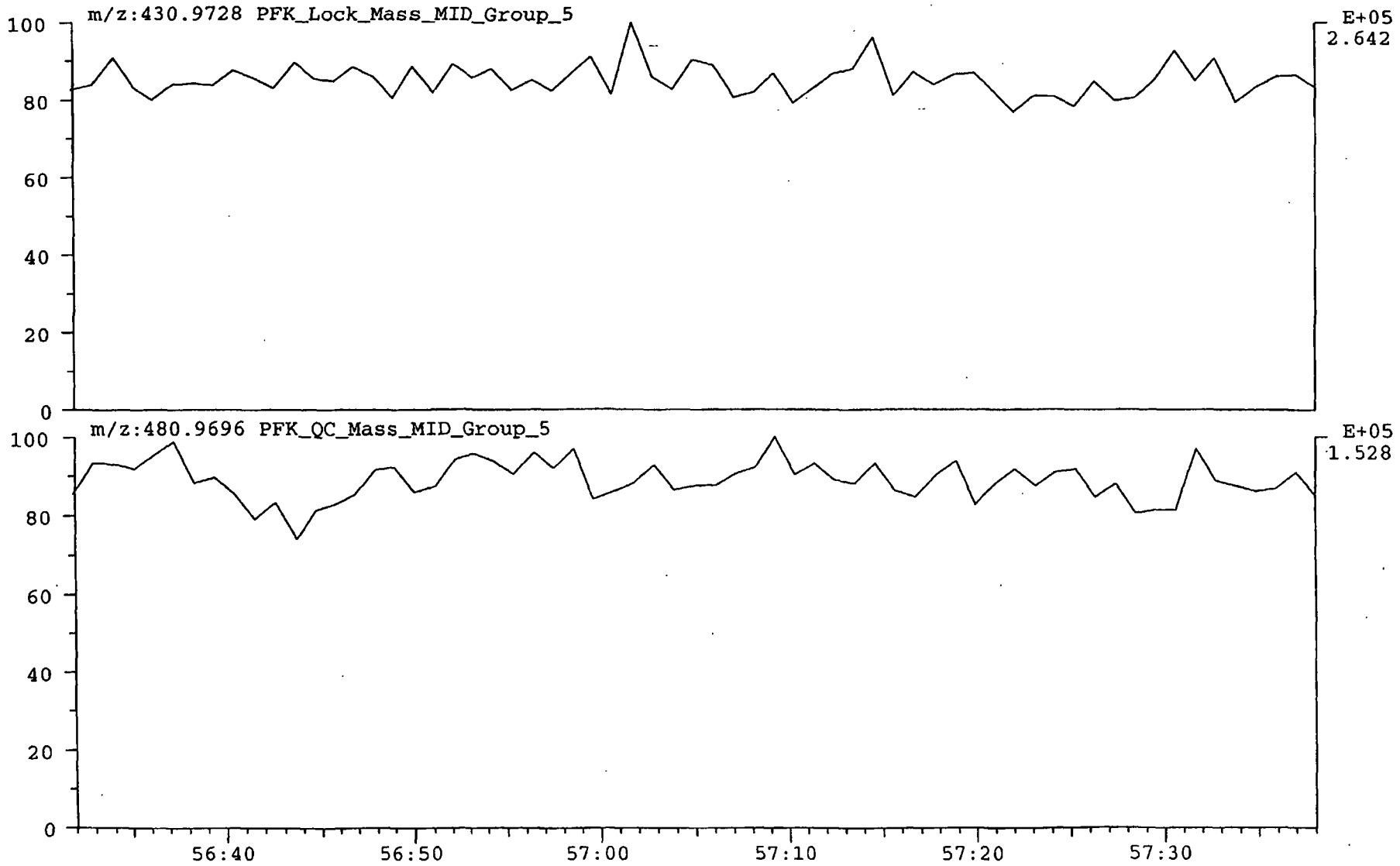
CHRO: tf1epvc 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tf1epvc 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tf1epvc 05-Oct-03 Elapse: 57:01 2722
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tf1epvc
Study: 3273193 (10.0g)
Sample: WO=f1epv1ac Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I300000-193C
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 36
Analysis will stop when MID run finishes
Tune file name: tune2
File 8 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

| | | |
|---|---|---|
| Injector A | | |
| Normal Injection | | |
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

Loop clean w slvnt B (LB): 0 times
Standard sample volume(X): 0.0 ul
Standard air volume (Y): 0.0 ul
2nd Injection volume (I): 0.0 ul
Air volume of 2nd inj (J): 0.0 ul
Time btwn 2 injections(T): 0 sec

GC descriptor : epa1613

| | | | | |
|---|---|---|---|---|
| Injector: | 270 deg | | | 300 deg max |
| Transfer Line: | 290 deg | | | 300 deg max |
| Column: | 140 deg at | 0.0 | minutes | 330 deg max |
| | 140 deg at | 3.0 | minutes | |
| | 210 deg at | 6.5 | minutes | |
| | 210 deg at | 34.5 | minutes | |
| | 280 deg at | 44.5 | minutes | |
| | 280 deg at | 51.0 | minutes | |
| | 325 deg at | 60.0 | minutes | |

Inlet :
Pressure 18.0 psi
Splitless mode
Purge time 1.5 min
Purge flow 40.0 mL/min

Gas saver is on
Saver time 3.0 min
Saver flow 15.0 mL/min

Stabilize time 0.5 minutes

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8422.0000 |
| BDEV | 8279.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 295.0000 | FVINLET | 809.0000 |
| FVSRC | 936.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4118 | HVANAL | 974.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4764.3420 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 330.9792 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 1968.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.9000 | TCURR | 0.8594 | TD | 1.0000 |
| *THRESH* | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 07:56:29.1

Autosampler has injected sample from vial 36
Analysis stopped at: 05-Oct-03 08:55:31.2 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: tf1epvc.q0 Entries: 231

Data file(s) used
File: tf1epvc 05-Oct-03
Samp: Vial 36 WO=f1epv1ac Meth=IN2 Dil=1 Start : 07:56:29 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I300000-193C Inlet : GC Vial 36

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 35:55 | 56232. | 7341. | 35:44 | 36:07 | 51. | 1 | 1.0 |
| 321.8775 | 35:56 | 72214. | 8123. | 35:43 | 36:07 | 52. | 1 | 1.0 |
| 331.9202 | 35:22 | 705908. | 77153. | 35:08 | 35:39 | 106. | 2 | 3.0 |
| 331.9202 | 35:53 | 272080. | 33591. | 35:40 | 36:09 | 106. | 2 | 3.0 |
| 333.9171 | 35:22 | 876979. | 99655. | 35:08 | 35:38 | 72. | 2 | 3.0 |
| 333.9171 | 35:53 | 332365. | 39919. | 35:38 | 36:09 | 72. | 2 | 3.0 |
| 319.8805 | 35:55 | 55896. | 7326. | 35:44 | 36:07 | 63. | 2 | 3.0 |
| 321.8775 | 35:56 | 72184. | 8101. | 35:40 | 36:13 | 71. | 2 | 3.0 |
| 303.8864 | 33:47 | 76610. | 8616. | 33:34 | 34:01 | 50. | 1 | 1.0 |
| 305.8834 | 33:47 | 97812. | 10419. | 33:34 | 34:03 | 55. | 1 | 1.0 |
| 315.9261 | 33:45 | 383889. | 38494. | 33:28 | 34:00 | 76. | 2 | 3.0 |
| 317.9230 | 33:45 | 487026. | 49559. | 33:28 | 34:01 | 76. | 2 | 3.0 |
| 303.8864 | 33:47 | 76393. | 8594. | 33:30 | 34:03 | 56. | 2 | 3.0 |
| 305.8834 | 33:47 | 98026. | 10419. | 33:30 | 34:03 | 72. | 2 | 3.0 |
| 355.8368 | 43:17 | 348614. | 93928. | 43:12 | 43:30 | 58. | 1 | 1.0 |
| 357.8337 | 43:17 | 218560. | 62541. | 43:11 | 43:29 | 51. | 1 | 1.0 |
| 367.8765 | 43:16 | 358493. | 98607. | 43:10 | 43:27 | 55. | 2 | 3.0 |
| 369.8734 | 43:15 | 228552. | 60530. | 43:10 | 43:25 | 62. | 2 | 3.0 |
| 355.8368 | 43:17 | 347316. | 93911. | 43:12 | 43:25 | 64. | 2 | 3.0 |
| 357.8337 | 43:17 | 219091. | 62537. | 43:06 | 43:33 | 49. | 2 | 3.0 |
| 339.8427 | 42:48 | 518155. | 141578. | 42:43 | 42:57 | 48. | 1 | 1.0 |
| 341.8396 | 42:48 | 336116. | 92398. | 42:38 | 43:04 | 49. | 1 | 1.0 |
| 351.8824 | 41:44 | 471228. | 119125. | 41:34 | 41:53 | 54. | 2 | 3.0 |
| 351.8824 | 42:47 | 501987. | 139189. | 42:31 | 43:03 | 54. | 2 | 3.0 |
| 353.8793 | 41:44 | 297308. | 76574. | 41:35 | 41:53 | 57. | 2 | 3.0 |
| 353.8793 | 42:47 | 317134. | 87376. | 42:39 | 42:55 | 57. | 2 | 3.0 |
| 339.8427 | 41:45 | 481097. | 116926. | 41:35 | 41:55 | 53. | 2 | 3.0 |
| 341.8396 | 41:45 | 304880. | 76871. | 41:31 | 41:56 | 46. | 2 | 3.0 |
| 339.8427 | 42:48 | 517908. | 141542. | 42:38 | 42:57 | 53. | 2 | 3.0 |
| 341.8396 | 42:48 | 335959. | 92393. | 42:38 | 43:04 | 46. | 2 | 3.0 |
| 389.7961 | 47:28 | 285461. | 76414. | 47:21 | 47:31 | 72. | 1 | 1.0 |
| 391.7931 | 47:28 | 230201. | 61110. | 47:18 | 47:31 | 56. | 1 | 1.0 |
| 401.8358 | 47:26 | 273609. | 75235. | 47:17 | 47:30 | 83. | 2 | 3.0 |
| 401.8358 | 47:34 | 275791. | 71430. | 47:30 | 47:42 | 83. | 2 | 3.0 |
| 401.8358 | 47:58 | 604964. | 152582. | 47:51 | 48:11 | 83. | 2 | 3.0 |
| 403.8327 | 47:26 | 217738. | 61014. | 47:17 | 47:30 | 77. | 2 | 3.0 |
| 403.8327 | 47:34 | 216303. | 57431. | 47:30 | 47:43 | 77. | 2 | 3.0 |
| 403.8327 | 47:58 | 493386. | 125144. | 47:51 | 48:11 | 77. | 2 | 3.0 |
| 389.7961 | 47:28 | 285041. | 76370. | 47:21 | 47:31 | 119. | 2 | 3.0 |
| 391.7931 | 47:28 | 230044. | 61100. | 47:18 | 47:31 | 57. | 2 | 3.0 |
| 389.7961 | 47:35 | 281226. | 75351. | 47:31 | 47:46 | 119. | 2 | 3.0 |
| 391.7931 | 47:35 | 225607. | 57313. | 47:31 | 47:46 | 57. | 2 | 3.0 |
| 389.7961 | 47:59 | 228422. | 56637. | 47:53 | 48:13 | 119. | 2 | 3.0 |
| 391.7931 | 47:59 | 179335. | 46736. | 47:50 | 48:07 | 57. | 2 | 3.0 |
| 373.8021 | 46:22 | 426493. | 121407. | 46:14 | 46:26 | 54. | 1 | 1.0 |
| 375.7990 | 46:22 | 342096. | 95995. | 46:15 | 46:26 | 59. | 1 | 1.0 |
| 383.8447 | 46:21 | 222971. | 61567. | 46:12 | 46:25 | 58. | 2 | 3.0 |
| 383.8447 | 46:29 | 227792. | 63687. | 46:25 | 46:45 | 58. | 2 | 3.0 |
| 383.8447 | 47:16 | 204259. | 55523. | 47:06 | 47:25 | 58. | 2 | 3.0 |

| | | | | | | | | 925 |
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| 383.8447 | 48:17 | 151680. | 36829. | 48:10 | 48:33 | 58. | 2 | 3.0 |
| 385.8417 | 46:21 | 420625. | 119649. | 46:07 | 46:25 | 65. | 2 | 3.0 |
| 385.8417 | 46:29 | 423117. | 116489. | 46:25 | 46:45 | 65. | 2 | 3.0 |
| 385.8417 | 47:15 | 385832. | 108102. | 47:03 | 47:23 | 65. | 2 | 3.0 |
| 385.8417 | 48:16 | 279829. | 69321. | 48:10 | 48:29 | 65. | 2 | 3.0 |
| 373.8021 | 46:22 | 426420. | 121401. | 46:15 | 46:26 | 56. | 2 | 3.0 |
| 375.7990 | 46:22 | 341801. | 95968. | 46:15 | 46:26 | 76. | 2 | 3.0 |
| 373.8021 | 46:30 | 412499. | 118299. | 46:26 | 46:46 | 56. | 2 | 3.0 |
| 375.7990 | 46:30 | 335450. | 92560. | 46:26 | 46:40 | 76. | 2 | 3.0 |
| 373.8021 | 47:16 | 357280. | 99020. | 47:01 | 47:24 | 56. | 2 | 3.0 |
| 375.7990 | 47:16 | 287052. | 81378. | 47:04 | 47:22 | 76. | 2 | 3.0 |
| 373.8021 | 48:17 | 275596. | 66559. | 48:08 | 48:32 | 56. | 2 | 3.0 |
| 375.7990 | 48:17 | 220002. | 54080. | 48:08 | 48:33 | 76. | 2 | 3.0 |
| 423.7555 | 52:37 | 146500. | 33626. | 52:28 | 52:45 | 64. | 1 | 1.0 |
| 425.7524 | 52:37 | 140820. | 30869. | 52:30 | 52:47 | 45. | 1 | 1.0 |
| 423.7555 | 52:37 | 146731. | 33626. | 52:23 | 52:45 | 64. | 2 | 3.0 |
| 425.7524 | 52:37 | 141167. | 30869. | 52:30 | 52:49 | 45. | 2 | 3.0 |
| 435.7951 | 52:36 | 165681. | 39321. | 52:25 | 52:51 | 50. | 2 | 3.0 |
| 437.7921 | 52:36 | 152791. | 33103. | 52:29 | 52:47 | 58. | 2 | 3.0 |
| 407.7614 | 50:54 | 258751. | 55943. | 50:45 | 51:10 | 57. | 1 | 1.0 |
| 409.7583 | 50:54 | 251727. | 58566. | 50:44 | 51:05 | 61. | 1 | 1.0 |
| 407.7614 | 50:54 | 258939. | 55943. | 50:42 | 51:10 | 57. | 2 | 3.0 |
| 409.7583 | 50:54 | 251727. | 58566. | 50:44 | 51:05 | 61. | 2 | 3.0 |
| 407.7614 | 53:15 | 201353. | 43660. | 53:03 | 53:25 | 57. | 2 | 3.0 |
| 409.7583 | 53:14 | 188071. | 41350. | 53:04 | 53:30 | 61. | 2 | 3.0 |
| 417.8041 | 50:53 | 111761. | 24095. | 50:44 | 51:00 | 55. | 2 | 3.0 |
| 417.8041 | 53:14 | 89832. | 19822. | 53:06 | 53:27 | 55. | 2 | 3.0 |
| 419.8010 | 50:53 | 249504. | 53962. | 50:45 | 51:04 | 53. | 2 | 3.0 |
| 419.8010 | 53:13 | 192894. | 42910. | 53:05 | 53:29 | 53. | 2 | 3.0 |
| 457.7148 | 56:54 | 126358. | 33122. | 56:47 | 57:10 | 68. | 1 | 1.0 |
| 459.7118 | 56:54 | 139663. | 37189. | 56:46 | 57:05 | 59. | 1 | 1.0 |
| 457.7148 | 56:54 | 126358. | 33122. | 56:47 | 57:10 | 68. | 2 | 3.0 |
| 459.7118 | 56:54 | 139663. | 37189. | 56:46 | 57:05 | 59. | 2 | 3.0 |
| 469.7545 | 56:53 | 130918. | 35075. | 56:45 | 57:01 | 52. | 2 | 3.0 |
| 471.7514 | 56:53 | 140531. | 36850. | 56:45 | 57:01 | 61. | 2 | 3.0 |
| 441.7207 | 57:02 | 180306. | 47923. | 56:55 | 57:13 | 54. | 1 | 1.0 |
| 443.7177 | 57:02 | 203166. | 54811. | 56:55 | 57:17 | 65. | 1 | 1.0 |
| 441.7207 | 57:02 | 180306. | 47923. | 56:55 | 57:13 | 54. | 2 | 3.0 |
| 443.7177 | 57:02 | 203872. | 54811. | 56:46 | 57:17 | 65. | 2 | 3.0 |
| 319.8805 | 35:55 | 55896. | 7326. | 35:44 | 36:07 | 63. | 2 | 3.0 |
| 321.8775 | 35:56 | 72184. | 8101. | 35:40 | 36:13 | 71. | 2 | 3.0 |
| 331.9202 | 35:22 | 705908. | 77153. | 35:08 | 35:39 | 106. | 2 | 3.0 |
| 331.9202 | 35:53 | 272080. | 33591. | 35:40 | 36:09 | 106. | 2 | 3.0 |
| 333.9171 | 35:22 | 876979. | 99655. | 35:08 | 35:38 | 72. | 2 | 3.0 |
| 333.9171 | 35:53 | 332365. | 39919. | 35:38 | 36:09 | 72. | 2 | 3.0 |
| 333.9171 | 36:26 | 1503. | 257. | 36:16 | 36:34 | 72. | 2 | 3.0 |
| 303.8864 | 32:32 | 2540. | 621. | 32:23 | 32:39 | 56. | 2 | 3.0 |
| 303.8864 | 33:47 | 76393. | 8594. | 33:30 | 34:03 | 56. | 2 | 3.0 |
| 305.8834 | 32:27 | 2373. | 380. | 32:24 | 32:35 | 72. | 2 | 3.0 |
| 305.8834 | 33:47 | 98026. | 10419. | 33:30 | 34:03 | 72. | 2 | 3.0 |
| 315.9261 | 32:28 | 3680. | 698. | 32:22 | 32:35 | 76. | 2 | 3.0 |
| 315.9261 | 33:45 | 383889. | 38494. | 33:28 | 34:00 | 76. | 2 | 3.0 |
| 315.9261 | 34:02 | 1531. | 263. | 34:00 | 34:11 | 76. | 2 | 3.0 |
| 317.9230 | 32:24 | 1206. | 384. | 32:22 | 32:26 | 76. | 2 | 3.0 |
| 317.9230 | 32:28 | 1657. | 608. | 32:26 | 32:33 | 76. | 2 | 3.0 |
| 317.9230 | 33:45 | 487026. | 49559. | 33:28 | 34:01 | 76. | 2 | 3.0 |
| 317.9230 | 34:03 | 1744. | 267. | 34:02 | 34:16 | 76. | 2 | 3.0 |
| 355.8368 | 43:17 | 347316. | 93911. | 43:12 | 43:25 | 64. | 2 | 3.0 |
| 357.8337 | 43:17 | 219091. | 62537. | 43:06 | 43:33 | 49. | 2 | 3.0 |
| 367.8765 | 43:16 | 358493. | 98607. | 43:10 | 43:27 | 55. | 2 | 3.0 |
| 369.8734 | 43:15 | 228552. | 60530. | 43:10 | 43:25 | 62. | 2 | 3.0 |
| 339.8427 | 41:45 | 481097. | 116926. | 41:35 | 41:55 | 53. | 2 | 3.0 |
| 339.8427 | 41:59 | 4412. | 743. | 41:55 | 42:07 | 53. | 2 | 3.0 |
| 339.8427 | 42:11 | 7864. | 1291. | 42:07 | 42:27 | 53. | 2 | 3.0 |
| 339.8427 | 42:48 | 517908. | 141542. | 42:38 | 42:57 | 53. | 2 | 3.0 |
| 339.8427 | 43:00 | 3843. | 952. | 42:57 | 43:03 | 53. | 2 | 3.0 |

| | | | | | | | | |
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| 339.8427 | 43:04 | 1769. | 322. | 43:03 | 43:16 | 53. | 2 | 3.0 |
| 341.8396 | 41:45 | 304880. | 76871. | 41:31 | 41:56 | 46. | 2 | 3.0 |
| 341.8396 | 41:59 | 2210. | 570. | 41:56 | 42:06 | 46. | 2 | 3.0 |
| 341.8396 | 42:12 | 5296. | 903. | 42:06 | 42:28 | 46. | 2 | 3.0 |
| 341.8396 | 42:48 | 335959. | 92393. | 42:38 | 43:04 | 46. | 2 | 3.0 |
| 351.8824 | 41:44 | 471228. | 119125. | 41:34 | 41:53 | 54. | 2 | 3.0 |
| 351.8824 | 41:54 | 714. | 478. | 41:53 | 41:55 | 54. | 2 | 3.0 |
| 351.8824 | 41:58 | 2706. | 756. | 41:55 | 42:03 | 54. | 2 | 3.0 |
| 351.8824 | 42:09 | 6905. | 1295. | 42:03 | 42:23 | 54. | 2 | 3.0 |
| 351.8824 | 42:47 | 501987. | 139189. | 42:31 | 43:03 | 54. | 2 | 3.0 |
| 353.8793 | 41:44 | 297308. | 76574. | 41:35 | 41:53 | 57. | 2 | 3.0 |
| 353.8793 | 41:57 | 2457. | 479. | 41:53 | 42:05 | 57. | 2 | 3.0 |
| 353.8793 | 42:11 | 4352. | 1049. | 42:05 | 42:13 | 57. | 2 | 3.0 |
| 353.8793 | 42:15 | 620. | 172. | 42:13 | 42:19 | 57. | 2 | 3.0 |
| 353.8793 | 42:47 | 317134. | 87376. | 42:39 | 42:55 | 57. | 2 | 3.0 |
| 353.8793 | 42:56 | 1549. | 374. | 42:55 | 43:05 | 57. | 2 | 3.0 |
| 389.7961 | 47:28 | 285041. | 76370. | 47:21 | 47:31 | 119. | 2 | 3.0 |
| 389.7961 | 47:35 | 281226. | 75351. | 47:31 | 47:46 | 119. | 2 | 3.0 |
| 389.7961 | 47:59 | 228422. | 56637. | 47:53 | 48:13 | 119. | 2 | 3.0 |
| 391.7931 | 47:28 | 230044. | 61100. | 47:18 | 47:31 | 57. | 2 | 3.0 |
| 391.7931 | 47:35 | 225607. | 57313. | 47:31 | 47:46 | 57. | 2 | 3.0 |
| 391.7931 | 47:47 | 572. | 212. | 47:46 | 47:50 | 57. | 2 | 3.0 |
| 391.7931 | 47:59 | 179335. | 46736. | 47:50 | 48:07 | 57. | 2 | 3.0 |
| 391.7931 | 48:09 | 1442. | 491. | 48:07 | 48:13 | 57. | 2 | 3.0 |
| 401.8358 | 47:26 | 273609. | 75235. | 47:17 | 47:30 | 83. | 2 | 3.0 |
| 401.8358 | 47:34 | 275791. | 71430. | 47:30 | 47:42 | 83. | 2 | 3.0 |
| 401.8358 | 47:46 | 1330. | 272. | 47:42 | 47:51 | 83. | 2 | 3.0 |
| 401.8358 | 47:58 | 604964. | 152582. | 47:51 | 48:11 | 83. | 2 | 3.0 |
| 401.8358 | 48:13 | 1779. | 469. | 48:11 | 48:20 | 83. | 2 | 3.0 |
| 403.8327 | 47:26 | 217738. | 61014. | 47:17 | 47:30 | 77. | 2 | 3.0 |
| 403.8327 | 47:34 | 216303. | 57431. | 47:30 | 47:43 | 77. | 2 | 3.0 |
| 403.8327 | 47:58 | 493386. | 125144. | 47:51 | 48:11 | 77. | 2 | 3.0 |
| 403.8327 | 48:15 | 1509. | 327. | 48:11 | 48:19 | 77. | 2 | 3.0 |
| 373.8021 | 46:22 | 426420. | 121401. | 46:15 | 46:26 | 56. | 2 | 3.0 |
| 373.8021 | 46:30 | 412499. | 118299. | 46:26 | 46:46 | 56. | 2 | 3.0 |
| 373.8021 | 46:47 | 595. | 257. | 46:46 | 46:49 | 56. | 2 | 3.0 |
| 373.8021 | 46:50 | 890. | 222. | 46:49 | 46:55 | 56. | 2 | 3.0 |
| 373.8021 | 46:56 | 940. | 302. | 46:55 | 47:01 | 56. | 2 | 3.0 |
| 373.8021 | 47:16 | 357280. | 99020. | 47:01 | 47:24 | 56. | 2 | 3.0 |
| 373.8021 | 47:28 | 2263. | 502. | 47:24 | 47:32 | 56. | 2 | 3.0 |
| 373.8021 | 47:37 | 1193. | 262. | 47:32 | 47:38 | 56. | 2 | 3.0 |
| 373.8021 | 47:40 | 2311. | 230. | 47:38 | 47:56 | 56. | 2 | 3.0 |
| 373.8021 | 48:17 | 275596. | 66559. | 48:08 | 48:32 | 56. | 2 | 3.0 |
| 375.7990 | 46:22 | 341801. | 95968. | 46:15 | 46:26 | 76. | 2 | 3.0 |
| 375.7990 | 46:30 | 335450. | 92560. | 46:26 | 46:40 | 76. | 2 | 3.0 |
| 375.7990 | 46:43 | 1460. | 297. | 46:40 | 46:51 | 76. | 2 | 3.0 |
| 375.7990 | 46:56 | 1185. | 424. | 46:51 | 46:59 | 76. | 2 | 3.0 |
| 375.7990 | 47:16 | 287052. | 81378. | 47:04 | 47:22 | 76. | 2 | 3.0 |
| 375.7990 | 47:24 | 3293. | 395. | 47:22 | 47:39 | 76. | 2 | 3.0 |
| 375.7990 | 48:17 | 220002. | 54080. | 48:08 | 48:33 | 76. | 2 | 3.0 |
| 383.8447 | 46:21 | 222971. | 61567. | 46:12 | 46:25 | 58. | 2 | 3.0 |
| 383.8447 | 46:29 | 227792. | 63687. | 46:25 | 46:45 | 58. | 2 | 3.0 |
| 383.8447 | 46:56 | 1296. | 265. | 46:47 | 46:58 | 58. | 2 | 3.0 |
| 383.8447 | 47:16 | 204259. | 55523. | 47:06 | 47:25 | 58. | 2 | 3.0 |
| 383.8447 | 47:26 | 1454. | 216. | 47:25 | 47:36 | 58. | 2 | 3.0 |
| 383.8447 | 48:17 | 151680. | 36829. | 48:10 | 48:33 | 58. | 2 | 3.0 |
| 385.8417 | 46:21 | 420625. | 119649. | 46:07 | 46:25 | 65. | 2 | 3.0 |
| 385.8417 | 46:29 | 423117. | 116489. | 46:25 | 46:45 | 65. | 2 | 3.0 |
| 385.8417 | 47:15 | 385832. | 108102. | 47:03 | 47:23 | 65. | 2 | 3.0 |
| 385.8417 | 47:24 | 2120. | 647. | 47:23 | 47:33 | 65. | 2 | 3.0 |
| 385.8417 | 48:16 | 279829. | 69321. | 48:10 | 48:29 | 65. | 2 | 3.0 |
| 385.8417 | 48:30 | 977. | 522. | 48:29 | 48:32 | 65. | 2 | 3.0 |
| 385.8417 | 48:35 | 1249. | 337. | 48:32 | 48:40 | 65. | 2 | 3.0 |
| 423.7555 | 51:25 | 3586. | 758. | 51:21 | 51:35 | 64. | 2 | 3.0 |
| 423.7555 | 52:37 | 146731. | 33626. | 52:23 | 52:45 | 64. | 2 | 3.0 |
| 423.7555 | 52:46 | 799. | 349. | 52:45 | 52:48 | 64. | 2 | 3.0 |

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| 423.7555 | 52:49 | 1129. | 197. | 52:48 | 52:58 | 64. | 2 3.0 |
| 425.7524 | 51:25 | 4379. | 696. | 51:21 | 51:36 | 45. | 2 3.0 |
| 425.7524 | 52:37 | 141167. | 30869. | 52:30 | 52:49 | 45. | 2 3.0 |
| 435.7951 | 51:25 | 2346. | 427. | 51:19 | 51:35 | 50. | 2 3.0 |
| 435.7951 | 52:36 | 165681. | 39321. | 52:25 | 52:51 | 50. | 2 3.0 |
| 437.7921 | 51:24 | 1562. | 276. | 51:20 | 51:31 | 58. | 2 3.0 |
| 437.7921 | 52:36 | 152791. | 33103. | 52:29 | 52:47 | 58. | 2 3.0 |
| 437.7921 | 52:48 | 744. | 231. | 52:47 | 52:53 | 58. | 2 3.0 |
| 437.7921 | 52:54 | 884. | 275. | 52:53 | 52:58 | 58. | 2 3.0 |
| 407.7614 | 50:54 | 258939. | 55943. | 50:42 | 51:10 | 57. | 2 3.0 |
| 407.7614 | 51:17 | 829. | 397. | 51:14 | 51:18 | 57. | 2 3.0 |
| 407.7614 | 51:19 | 1576. | 403. | 51:18 | 51:25 | 57. | 2 3.0 |
| 407.7614 | 51:35 | 2855. | 976. | 51:25 | 51:37 | 57. | 2 3.0 |
| 407.7614 | 51:39 | 997. | 349. | 51:37 | 51:41 | 57. | 2 3.0 |
| 407.7614 | 51:45 | 1085. | 314. | 51:41 | 51:50 | 57. | 2 3.0 |
| 407.7614 | 53:15 | 201353. | 43660. | 53:03 | 53:25 | 57. | 2 3.0 |
| 407.7614 | 53:29 | 1191. | 289. | 53:25 | 53:33 | 57. | 2 3.0 |
| 409.7583 | 50:54 | 251727. | 58566. | 50:44 | 51:05 | 61. | 2 3.0 |
| 409.7583 | 51:06 | 881. | 399. | 51:05 | 51:08 | 61. | 2 3.0 |
| 409.7583 | 51:10 | 1011. | 332. | 51:08 | 51:14 | 61. | 2 3.0 |
| 409.7583 | 51:20 | 2638. | 441. | 51:14 | 51:31 | 61. | 2 3.0 |
| 409.7583 | 51:36 | 3499. | 852. | 51:31 | 51:39 | 61. | 2 3.0 |
| 409.7583 | 51:41 | 552. | 209. | 51:39 | 51:42 | 61. | 2 3.0 |
| 409.7583 | 51:44 | 809. | 177. | 51:42 | 51:49 | 61. | 2 3.0 |
| 409.7583 | 53:14 | 188071. | 41350. | 53:04 | 53:30 | 61. | 2 3.0 |
| 417.8041 | 50:53 | 111761. | 24095. | 50:44 | 51:00 | 55. | 2 3.0 |
| 417.8041 | 51:02 | 2000. | 414. | 51:00 | 51:16 | 55. | 2 3.0 |
| 417.8041 | 53:14 | 89832. | 19822. | 53:06 | 53:27 | 55. | 2 3.0 |
| 419.8010 | 50:53 | 249504. | 53962. | 50:45 | 51:04 | 53. | 2 3.0 |
| 419.8010 | 51:05 | 833. | 318. | 51:04 | 51:08 | 53. | 2 3.0 |
| 419.8010 | 51:11 | 1501. | 163. | 51:08 | 51:22 | 53. | 2 3.0 |
| 419.8010 | 51:33 | 2475. | 253. | 51:22 | 51:49 | 53. | 2 3.0 |
| 419.8010 | 51:57 | 1343. | 147. | 51:53 | 52:12 | 53. | 2 3.0 |
| 419.8010 | 53:13 | 192894. | 42910. | 53:05 | 53:29 | 53. | 2 3.0 |
| 419.8010 | 53:30 | 1375. | 251. | 53:29 | 53:38 | 53. | 2 3.0 |
| 457.7148 | 56:54 | 126358. | 33122. | 56:47 | 57:10 | 68. | 2 3.0 |
| 457.7148 | 57:24 | 679. | 252. | 57:21 | 57:26 | 68. | 2 3.0 |
| 459.7118 | 56:54 | 139663. | 37189. | 56:46 | 57:05 | 59. | 2 3.0 |
| 459.7118 | 57:07 | 1449. | 288. | 57:05 | 57:17 | 59. | 2 3.0 |
| 469.7545 | 56:53 | 130918. | 35075. | 56:45 | 57:01 | 52. | 2 3.0 |
| 469.7545 | 57:02 | 2183. | 299. | 57:01 | 57:18 | 52. | 2 3.0 |
| 471.7514 | 56:53 | 140531. | 36850. | 56:45 | 57:01 | 61. | 2 3.0 |
| 471.7514 | 57:02 | 673. | 352. | 57:01 | 57:05 | 61. | 2 3.0 |
| 471.7514 | 57:09 | 1517. | 316. | 57:05 | 57:14 | 61. | 2 3.0 |
| 471.7514 | 57:16 | 984. | 187. | 57:15 | 57:26 | 61. | 2 3.0 |
| 441.7207 | 57:02 | 180306. | 47923. | 56:55 | 57:13 | 54. | 2 3.0 |
| 441.7207 | 57:15 | 1714. | 253. | 57:13 | 57:26 | 54. | 2 3.0 |
| 443.7177 | 57:02 | 203872. | 54811. | 56:46 | 57:17 | 65. | 2 3.0 |
| 443.7177 | 57:20 | 842. | 260. | 57:17 | 57:23 | 65. | 2 3.0 |
| 443.7177 | 57:25 | 843. | 250. | 57:23 | 57:28 | 65. | 2 3.0 |

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1 % Moisture.....:

| PARAMETER | PERCENT RECOVERY | RECOVERY LIMITS | RPD | RPD LIMITS | METHOD |
|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 104 | (70 - 116) | | | SW846 8290 |
| | 109 | (70 - 116) | 4.2 | (0-20) | SW846 8290 |
| 1,2,3,7,8-PeCDD | 102 | (75 - 113) | | | SW846 8290 |
| | 110 | (75 - 113) | 6.5 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 98 | (62 - 130) | | | SW846 8290 |
| | 100 | (62 - 130) | 2.1 | (0-20) | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 111 | (75 - 114) | | | SW846 8290 |
| | 135 a | (75 - 114) | 12 | (0-20) | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 104 | (59 - 128) | | | SW846 8290 |
| | 110 | (59 - 128) | 4.4 | (0-20) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 113 | (40 - 154) | | | SW846 8290 |
| | 159 a | (40 - 154) | 18 | (0-20) | SW846 8290 |
| OCDD | 97 B | (33 - 154) | | | SW846 8290 |
| | 116 B | (33 - 154) | 12 | (0-20) | SW846 8290 |
| 2,3,7,8-TCDF | 107 | (65 - 130) | | | SW846 8290 |
| | 112 | (65 - 130) | 4.8 | (0-20) | SW846 8290 |
| 1,2,3,7,8-PeCDF | 108 | (67 - 123) | | | SW846 8290 |
| | 108 | (67 - 123) | 0.09 | (0-20) | SW846 8290 |
| 2,3,4,7,8-PeCDF | 102 | (62 - 126) | | | SW846 8290 |
| | 103 | (62 - 126) | 1.4 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 97 | (74 - 114) | | | SW846 8290 |
| | 100 | (74 - 114) | 3.0 | (0-20) | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 98 Q | (66 - 114) | | | SW846 8290 |
| | 100 Q | (66 - 114) | 2.3 | (0-20) | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 100 | (65 - 118) | | | SW846 8290 |
| | 99 | (65 - 118) | 0.86 | (0-20) | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | 95 | (60 - 130) | | | SW846 8290 |
| | 94 | (60 - 130) | 0.58 | (0-20) | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 95 B | (51 - 133) | | | SW846 8290 |
| | 105 B | (51 - 133) | 8.6 | (0-20) | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 95 B | (60 - 125) | | | SW846 8290 |
| | 97 B | (60 - 125) | 2.6 | (0-20) | SW846 8290 |
| OCDF | 108 | (52 - 137) | | | SW846 8290 |
| | 113 | (52 - 137) | 4.5 | (0-20) | SW846 8290 |

(Continued on next page)

## MATRIX SPIKE SAMPLE EVALUATION REPORT

### Trace Level Organic Compounds

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ2AC-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ2AD-MSD

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 101 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-OCDD | 81 | (40 - 135) |
| | 81 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 88 | (40 - 135) |
| | 91 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 92 | (40 - 135) |
| | 95 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 92 | (40 - 135) |
| | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| | 92 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 85 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 93 | (40 - 135) |
| | 97 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 87 | (40 - 135) |
| | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 101 | (40 - 135) |
| | 105 | (40 - 135) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Q Estimated maximum possible concentration (EMPC).

## MATRIX SPIKE SAMPLE DATA REPORT

### Trace Level Organic Compounds

Client Lot #...: H3I100253 Work Order #...: FX1WJ2AC-MS Matrix.....: SOLID
MS Lot-Sample #: H3I100253-003 FX1WJ2AD-MSD
Date Sampled...: 09/09/03 Date Received..: 09/10/03
Prep Date.....: 09/30/03 Analysis Date..: 10/05/03
Prep Batch #...: 3273193
Dilution Factor: 1 % Moisture.....:

| PARAMETER | SAMPLE AMOUNT | SPIKE AMT | MEASRD AMOUNT | UNITS | PERCNT RECVRY | RPD | METHOD |
|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 3.0 | 20.0 | 23.7 | pg/g | 104 | | SW846 8290 |
| | 3.0 | 20.0 | 24.7 | pg/g | 109 | 4.2 | SW846 8290 |
| 1,2,3,7,8-PeCDD | 16 | 100 | 118 | pg/g | 102 | | SW846 8290 |
| | 16 | 100 | 126 | pg/g | 110 | 6.5 | SW846 8290 |
| 1,2,3,4,7,8-HxCDD | 7.1 | 100 | 105 | pg/g | 98 | | SW846 8290 |
| | 7.1 | 100 | 107 | pg/g | 100 | 2.1 | SW846 8290 |
| 1,2,3,6,7,8-HxCDD | 69 | 100 | 180 | pg/g | 111 | | SW846 8290 |
| | 69 | 100 | 204 | pg/g | 135 a | 12 | SW846 8290 |
| 1,2,3,7,8,9-HxCDD | 30 | 100 | 134 | pg/g | 104 | | SW846 8290 |
| | 30 | 100 | 140 | pg/g | 110 | 4.4 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDD | 120 | 100 | 229 | pg/g | 113 | | SW846 8290 |
| | 120 | 100 | 275 | pg/g | 159 a | 18 | SW846 8290 |
| OCDD | 98 | 200 | 292 | pg/g | 97 B | | SW846 8290 |
| | 98 | 200 | 330 | pg/g | 116 B | 12 | SW846 8290 |
| 2,3,7,8-TCDF | 2.4 | 20.0 | 21.4 | pg/g | 107 | | SW846 8290 |
| | 2.4 | 20.0 | 22.5 | pg/g | 112 | 4.8 | SW846 8290 |
| 1,2,3,7,8-PeCDF | 1.4 | 100 | 110 | pg/g | 108 | | SW846 8290 |
| | 1.4 | 100 | 110 | pg/g | 108 | 0.09 | SW846 8290 |
| 2,3,4,7,8-PeCDF | 1.9 | 100 | 104 | pg/g | 102 | | SW846 8290 |
| | 1.9 | 100 | 105 | pg/g | 103 | 1.4 | SW846 8290 |
| 1,2,3,4,7,8-HxCDF | 4.9 | 100 | 102 | pg/g | 97 | | SW846 8290 |
| | 4.9 | 100 | 105 | pg/g | 100 | 3.0 | SW846 8290 |
| 1,2,3,6,7,8-HxCDF | 3.4 | 100 | 101 | pg/g | 98 Q | | SW846 8290 |
| | 3.4 | 100 | 103 | pg/g | 100 Q | 2.3 | SW846 8290 |
| 2,3,4,6,7,8-HxCDF | 1.6 | 100 | 101 | pg/g | 100 | | SW846 8290 |
| | 1.6 | 100 | 101 | pg/g | 99 | 0.86 | SW846 8290 |
| 1,2,3,7,8,9-HxCDF | ND | 100 | 94.6 | pg/g | 95 | | SW846 8290 |
| | ND | 100 | 94.0 | pg/g | 94 | 0.58 | SW846 8290 |
| 1,2,3,4,6,7,8-HpCDF | 18 | 100 | 113 | pg/g | 95 B | | SW846 8290 |
| | 18 | 100 | 124 | pg/g | 105 B | 8.6 | SW846 8290 |
| 1,2,3,4,7,8,9-HpCDF | 1.1 | 100 | 95.9 | pg/g | 95 B | | SW846 8290 |
| | 1.1 | 100 | 98.4 | pg/g | 97 B | 2.6 | SW846 8290 |
| OCDF | 7.0 | 200 | 223 | pg/g | 108 | | SW846 8290 |
| | 7.0 | 200 | 234 | pg/g | 113 | 4.5 | SW846 8290 |

(Continued on next page)

## MATRIX SPIKE SAMPLE DATA REPORT

### Trace Level Organic Compounds

**Client Lot #...:** H3I100253 **Work Order #...:** FX1WJ2AC-MS **Matrix.....:** SOLID
**MS Lot-Sample #:** H3I100253-003 FX1WJ2AD-MSD

| INTERNAL STANDARDS | PERCENT RECOVERY | RECOVERY LIMITS |
|---|---|---|
| 13C-2,3,7,8-TCDD | 90 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDD | 101 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDD | 95 | (40 - 135) |
| | 103 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDD | 84 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDD | 91 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-OCDD | 81 | (40 - 135) |
| | 81 | (40 - 135) |
| 13C-2,3,7,8-TCDF | 90 | (40 - 135) |
| | 94 | (40 - 135) |
| 13C-1,2,3,7,8-PeCDF | 88 | (40 - 135) |
| | 91 | (40 - 135) |
| 13C-2,3,4,7,8-PeCDF | 92 | (40 - 135) |
| | 95 | (40 - 135) |
| 13C-1,2,3,4,7,8-HxCDF | 92 | (40 - 135) |
| | 101 | (40 - 135) |
| 13C-1,2,3,6,7,8-HxCDF | 84 | (40 - 135) |
| | 92 | (40 - 135) |
| 13C-2,3,4,6,7,8-HxCDF | 85 | (40 - 135) |
| | 93 | (40 - 135) |
| 13C-1,2,3,7,8,9-HxCDF | 93 | (40 - 135) |
| | 97 | (40 - 135) |
| 13C-1,2,3,4,6,7,8-HpCDF | 87 | (40 - 135) |
| | 90 | (40 - 135) |
| 13C-1,2,3,4,7,8,9-HpCDF | 101 | (40 - 135) |
| | 105 | (40 - 135) |

**NOTE(S):**

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

B Method blank contamination. The associated method blank contains the target analyte at a reportable level.

Q Estimated maximum possible concentration (EMPC).

**STL - Knoxville**

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AC | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2s.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71224 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/5/2003 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Analysis Time** | 04:59 | **Initial Wt/Vol** | 10.0 | **Lims Test Code** | XXA11IN01 |
| **Anal Exp Date** | 11/14/03 | **Extract Vol** | 20 | **Method** | DX8290_2 |
| **Instrument** | M2A | **Dil Factor** | 1.0 | **Code** | IN2 |
| **Analyst** | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:58 | 255602 | 30314 | 1.095 | 200.0 | 237.197066 | 118.60 | 23.719707 | | 0.231 |
| Total TCDD | | | | 1.095 | | 237.197066 | | 23.719707 | | 0.231 |
| 2,3,7,8-TCDF | 33:49 | 302261 | 29913 | 1.017 | 200.0 | 214.312915 | 107.16 | 21.431291 | | 0.219 |
| Total TCDF | | | | 1.017 | | 214.312915 | | 21.431291 | | 0.219 |
| 1,2,3,7,8-PeCDD | 43:18 | 1138460 | 300660 | 0.984 | 1000 | 1180.76558 | 118.08 | 118.076558 | | 0.142 |
| Total PeCDD | | | | 0.984 | | 1180.76558 | | 118.076558 | | 0.142 |
| 1,2,3,7,8-PeCDF | 41:46 | 1345785 | 334036 | 0.970 | 1000 | 1096.40318 | 109.64 | 109.640318 | | 0.105 |
| 2,3,4,7,8-PeCDF | 42:50 | 1387373 | 398368 | 1.035 | 1000 | 1039.73739 | 103.97 | 103.973739 | | 0.086 |
| Total PeCDF | | | | 1.003 | | 2136.14058 | | 213.614058 | | 0.095 |
| 1,2,3,4,7,8-HxCDD | 47:30 | 1066262 | 280821 | 1.111 | 1000 | 1052.77558 | 105.28 | 105.277558 | | 0.116 |
| 1,2,3,6,7,8-HxCDD | 47:37 | 1714278 | 457831 | 1.026 | 1000 | 1804.03916 | 180.40 | 180.403916 | | 0.129 |
| 1,2,3,7,8,9-HxCDD | 48:01 | 1368869 | 356800 | 1.109 | 1000 | 1342.87053 | 134.29 | 134.287053 | | 0.118 |
| Total HxCDD | | | | 1.082 | | 4199.68527 | | 419.968527 | | 0.121 |
| 1,2,3,4,7,8-HxCDF | 46:24 | 1507491 | 413937 | 1.226 | 1000 | 1015.92038 | 101.59 | 101.592038 | | 0.087 |
| 1,2,3,6,7,8-HxCDF | 46:32 | 1458646 | 382095 | 1.197 | 1000 | 1009.15142 | 100.92 | 100.915142 | Q | 0.091 |
| 2,3,4,6,7,8-HxCDF | 47:19 | 1329710 | 363710 | 1.155 | 1000 | 1014.17422 | 101.42 | 101.417422 | | 0.098 |
| 1,2,3,7,8,9-HxCDF | 48:19 | 1221024 | 308131 | 1.236 | 1000 | 945.839113 | 94.58 | 94.583911 | | 0.100 |
| Total HxCDF | | | | 1.204 | | 3984.88513 | | 398.488513 | Q | 0.095 |
| 1,2,3,4,6,7,8-HpCDD | 52:38 | 2029579 | 470723 | 0.986 | 1000 | 2286.70686 | 228.67 | 228.670686 | | 0.103 |
| Total HpCDD | | | | 0.986 | | 2286.70686 | | 228.670686 | | 0.163 |
| 1,2,3,4,6,7,8-HpCDF | 50:55 | 1543280 | 325548 | 1.512 | 1000 | 1134.89449 | 113.49 | 113.489449 | B | 0.124 |
| 1,2,3,4,7,8,9-HpCDF | 53:17 | 1142716 | 246587 | 1.426 | 1000 | 958.537844 | 95.85 | 95.853784 | B | 0.139 |
| Total HpCDF | | | | 1.469 | | 2093.43234 | | 209.343234 | B | 0.131 |
| OCDD | 56:56 | 2227776 | 582129 | 1.075 | 2000 | 2916.11859 | 145.81 | 291.611859 | B | 0.166 |
| OCDF | 57:04 | 1802009 | 487680 | 1.135 | 2000 | 2232.49155 | 111.62 | 223.249155 | | 0.172 |
| 13C-2,3,7,8-TCDD | 35:54 | 984062 | 117401 | 1.083 | 1000 | 900.345633 | 90.03 | 90.034563 | | 0.495 |
| 13C-2,3,7,8-TCDF | 33:45 | 1386212 | 138879 | 1.527 | 1000 | 899.362106 | 89.94 | 89.936211 | | 0.267 |
| 13C-1,2,3,7,8-PeCDD | 43:17 | 979498 | 262006 | 0.958 | 1000 | 1012.35659 | 101.24 | 101.235659 | | 0.257 |
| 13C-1,2,3,7,8-PeCDF | 41:45 | 1265632 | 317900 | 1.427 | 1000 | 878.608896 | 87.86 | 87.860890 | | 0.202 |
| 13C-2,3,4,7,8-PeCDF | 42:49 | 1288990 | 366972 | 1.384 | 1000 | 922.614471 | 92.26 | 92.261447 | | 0.208 |
| 13C-1,2,3,4,7,8-HxCDD | 47:28 | 911582 | 242546 | 0.941 | 1000 | 948.210522 | 94.82 | 94.821052 | | 0.201 |
| 13C-1,2,3,6,7,8-HxCDD | 47:36 | 926505 | 236609 | 1.078 | 1000 | 841.295828 | 84.13 | 84.129583 | | 0.175 |
| 13C-1,2,3,4,7,8-HxCDF | 46:23 | 1210068 | 331212 | 1.283 | 1000 | 922.791350 | 92.28 | 92.279135 | | 0.091 |
| 13C-1,2,3,6,7,8-HxCDF | 46:31 | 1207260 | 323847 | 1.406 | 1000 | 840.431303 | 84.04 | 84.043130 | | 0.083 |
| 13C-2,3,4,6,7,8-HxCDF | 47:18 | 1134905 | 310486 | 1.301 | 1000 | 853.867350 | 85.39 | 85.386735 | | 0.090 |
| 13C-1,2,3,7,8,9-HxCDF | 48:18 | 1044966 | 268405 | 1.105 | 1000 | 925.112282 | 92.51 | 92.511228 | | 0.106 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 898270 | 205017 | 0.970 | 1000 | 906.328720 | 90.63 | 90.632872 | | 0.127 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 899131 | 195331 | 1.017 | 1000 | 865.179572 | 86.52 | 86.517957 | | 0.133 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:15 | 836064 | 183634 | 0.812 | 1000 | 1007.58275 | 100.76 | 100.758275 | | 0.167 |
| 13C-OCDD | 56:55 | 1421816 | 384795 | 0.856 | 2000 | 1626.49495 | 81.32 | 162.649495 | | 0.143 |
| 13C-1,2,3,4-TCDD | 35:24 | 2019163 | 229335 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.536 |
| 13C-1,2,3,7,8,9-HxCDD | 48:00 | 2043590 | 542093 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.189 |

BJW 10-7-03

VNK 10-7-03

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AC | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2s.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71224 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 04:59 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 165 | 58 | 66 | 0.88 | / | |
| | 2,3,7,8-TCDF | 33:49 | 33:48 | 1 | 133454 | 168807 | 14156 | 15757 | 0.79 | ABV/ABV | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 273 | 185 | 109 | 74 | 1.47 * | / | |
| | 13C-2,3,7,8-TCDF | 33:45 | 33:46 | -1 | 614003 | 772209 | 62903 | 75976 | 0.80 | ABV/AVV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 145 | 153 | 58 | 61 | 0.95 * | / | |
| | 2,3,7,8-TCDD | 35:58 | 35:55 | 3 | 106309 | 149293 | 12492 | 17822 | 0.71 | AVB/AVB | M |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 468 | 59 | 187 | 0.32 * | / | |
| | 13C-1,2,3,4-TCDD | 35:24 | 35:24 | 0 | 906458 | 1112705 | 104402 | 124933 | 0.81 | AVV/ABV | |
| | 13C-2,3,7,8-TCDD | 35:54 | 35:53 | 1 | 435314 | 548748 | 51547 | 65854 | 0.79 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 173 | 153 | 69 | 61 | 1.13 * | / | |
| | 1,2,3,7,8-PeCDF | 41:46 | 41:46 | 0 | 816719 | 529066 | 201702 | 132334 | 1.54 | ABV/ABV | |
| | 2,3,4,7,8-PeCDF | 42:50 | 42:50 | 0 | 838465 | 548908 | 241105 | 157263 | 1.53 | ABV/ABV | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 150 | 72 | 60 | 1.20 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:45 | 41:45 | 0 | 773795 | 491837 | 192783 | 125117 | 1.57 | AVV/ABV | |
| | 13C-2,3,4,7,8-PeCDF | 42:49 | 42:49 | 0 | 780830 | 508160 | 220740 | 146232 | 1.54 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 183 | 74 | 73 | 1.01 * | / | |
| | 1,2,3,7,8-PeCDD | 43:18 | 43:17 | 1 | 687735 | 450725 | 179570 | 121090 | 1.53 | ABV/ABV | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 120 | 65 | 48 | 1.35 | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:17 | 43:16 | 1 | 596482 | 383016 | 159165 | 102841 | 1.56 | ABV/AVV | M |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 183 | 170 | 73 | 68 | 1.07 | / | |
| | 1,2,3,4,7,8-HxCDF | 46:24 | 46:23 | 1 | 838225 | 669266 | 231369 | 182568 | 1.25 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDF | 46:32 | 46:31 | 1 | 798840 | 659806 | 210396 | 171699 | 1.21 | AVV/AVV | |
| | 2,3,4,6,7,8-HxCDF | 47:19 | 47:17 | 2 | 734246 | 595464 | 201410 | 162300 | 1.23 | AVV/AVV | |
| | 1,2,3,7,8,9-HxCDF | 48:19 | 48:20 | -1 | 672691 | 548333 | 166389 | 141742 | 1.23 | ABV/ABV | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 148 | 170 | 59 | 68 | 0.87 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:23 | 46:22 | 1 | 426491 | 783577 | 118626 | 212586 | 0.54 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:31 | 46:31 | 0 | 415742 | 791518 | 111225 | 212622 | 0.53 | AVB/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:18 | 47:16 | 2 | 402168 | 732737 | 108575 | 201911 | 0.55 | ABV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:18 | 48:19 | -1 | 369260 | 675706 | 92408 | 175997 | 0.55 | ABV/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 163 | 150 | 65 | 60 | 1.08 | / | |
| | 1,2,3,4,7,8-HxCDD | 47:30 | 47:29 | 1 | 588192 | 478070 | 155822 | 124999 | 1.23 | ABV/AVV | |
| | 1,2,3,6,7,8-HxCDD | 47:37 | 47:36 | 1 | 951228 | 763050 | 254986 | 202845 | 1.25 | AVV/AVV | |
| | 1,2,3,7,8,9-HxCDD | 48:01 | 48:02 | -1 | 757420 | 611449 | 197007 | 159793 | 1.24 | AVV/ABV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

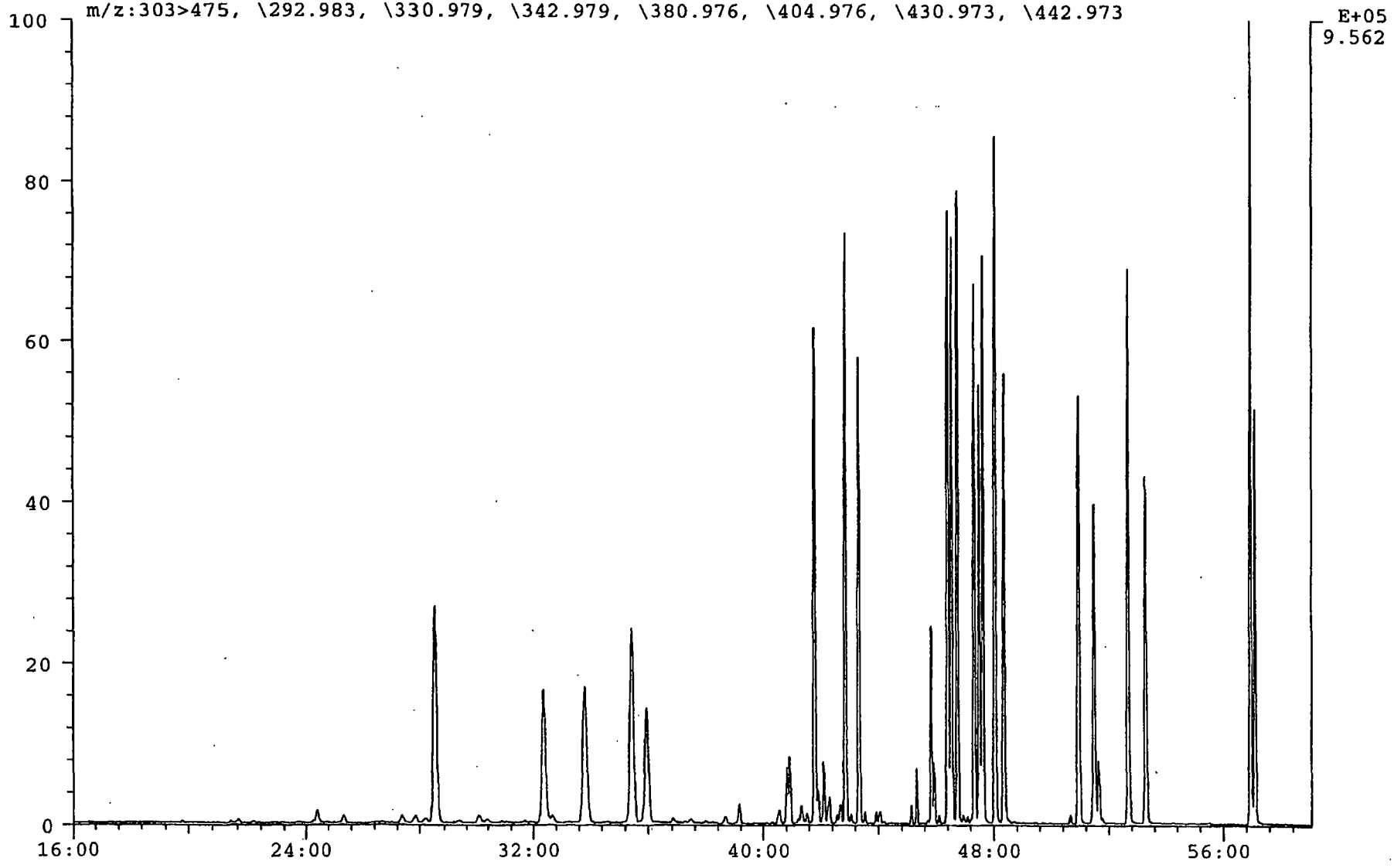
| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WJ2AC | Prep Batch | 3273193 | Lot No | H3I100253-003 |
| Data File | /20031004s1/tfx1wj2s.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71224 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/05/03 04:59 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Anal Exp Date | 11/14/03 | Initial Wt/Vol | 10.0 g | Lims Test Code | XXA11IN01 |
| Instrument | M2A | Extract Vol | 20 uL | Method | DX8290_2 |
| Analyst | PMP | Diluton Factor | 1.00 | Code | IN2 |
| | | View Small Peaks? | False | View deleted peaks? | False |

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 390 | | | | | 389.8156 | 391.8127 | 389.8156 | 391.8127 | 1.05-1.43 | | |
| 402 | | | | | 401.8559 | 403.8529 | 401.8559 | 403.8529 | 1.05-1.42 | | |
| | Noise | 00:00 | 00:00 | 0 | 205 | 308 | 82 | 123 | 0.67 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:28 | 47:28 | 0 | 511254 | 400328 | ✓ 137626 | 104920 | 1.28 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:36 | 47:35 | 1 | 522885 | 403620 | ✓ 131482 | 105127 | 1.30 | AVV/AVB | |
| | 13C-1,2,3,7,8,9-HxCDD | 48:00 | 48:01 | -1 | 1140970 | 902620 | ✓ 303981 | 238112 | 1.26 | ABV/ABV | |
| 408 | | | | | 407.7818 | 409.7788 | 407.7818 | 409.7788 | 0.88-1.20 | | |
| | Noise | 00:00 | 00:00 | 0 | 180 | 185 | 72 | 74 | 0.97 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:55 | 50:56 | -1 | 782833 | 760447 | ✓ 163759 | 161789 | 1.03 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 53:17 | 53:17 | 0 | 583503 | 559213 | ✓ 126919 | 119668 | 1.04 | ABV/ABV | M |
| 418 | | | | | 417.8250 | 419.8220 | 417.8250 | 419.8220 | 0.37-0.51 | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 173 | 78 | 69 | 1.13 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 50:54 | 0 | 279720 | 619411 | ✓ 61559 | 133772 | 0.45 | ABV/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:15 | 53:16 | -1 | 257990 | 578074 | ✓ 57074 | 126560 | 0.45 | ABV/ABV | |
| 424 | | | | | 423.7767 | 425.7737 | 423.7767 | 425.7737 | 0.88-1.20 | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 180 | 60 | 72 | 0.83 * | / | |
| | 1,2,3,4,6,7,8-HpCDD | 52:38 | 52:39 | -1 | 1029902 | 995677 | ✓ 233862 | 236861 | 1.03 | ABV/ABB | |
| 436 | | | | | 435.8169 | 437.8140 | 435.8169 | 437.8140 | 0.88-1.20 | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 150 | 74 | 60 | 1.23 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 52:38 | -1 | 462478 | 435792 | ✓ 102720 | 102297 | 1.06 | ABV/ABV | |
| 442 | | | | | 441.7428 | 443.7399 | 441.7428 | 443.7399 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 183 | 193 | 73 | 77 | 0.95 | / | |
| | OCDF | 57:04 | 57:06 | -2 | 862970 | 939039 | ✓ 231719 | 255961 | 0.92 | ABV/ABV | |
| 458 | | | | | 457.7377 | 459.7348 | 457.7377 | 459.7348 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 143 | 200 | 57 | 80 | 0.71 * | / | |
| | OCDD | 56:56 | 56:56 | 0 | 1051421 | 1176355 | ✓ 276636 | 305493 | 0.89 | ABV/ABV | M |
| 470 | | | | | 469.7780 | 471.7750 | 469.7780 | 471.7750 | 0.76-1.02 | | |
| | Noise | 00:00 | 00:00 | 0 | 128 | 205 | 51 | 82 | 0.62 * | / | |
| | 13C-OCDD | 56:55 | 56:55 | 0 | 671541 | 750275 | ✓ 183337 | 201458 | 0.90 | ABV/ABV | |

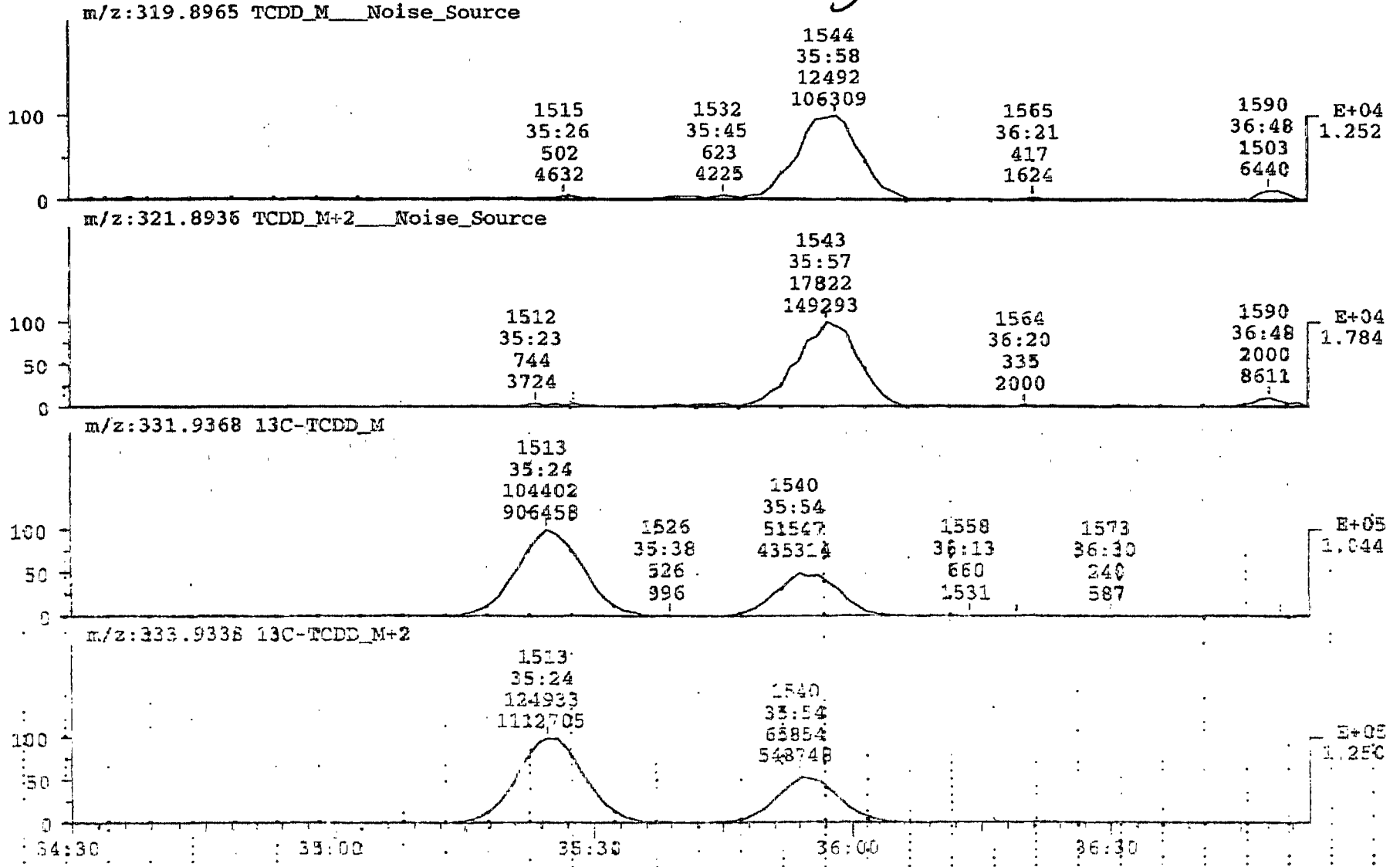
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tfx1wj2s 05-Oct-03 Elapse: 42:57 1933
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 442 > 2834 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Jwt MSD 10/6/03
Calc BFW 10-7-03
QC VMK 10-7-03
Rev'd 10-7-03

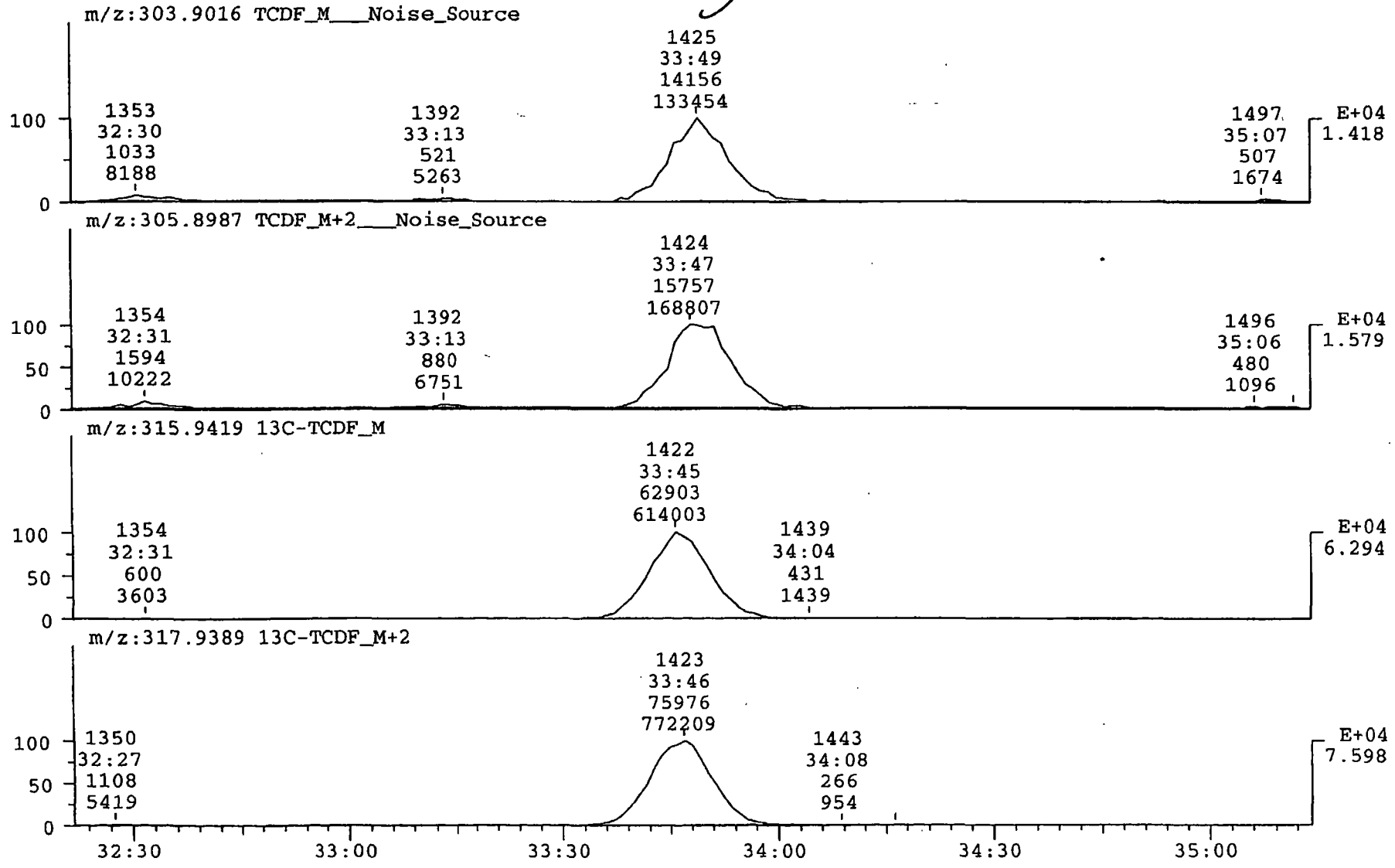


CHRO: tfx1wj2s 05-Oct-03 Elapse: 35:41 1528
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1463 > 1594 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

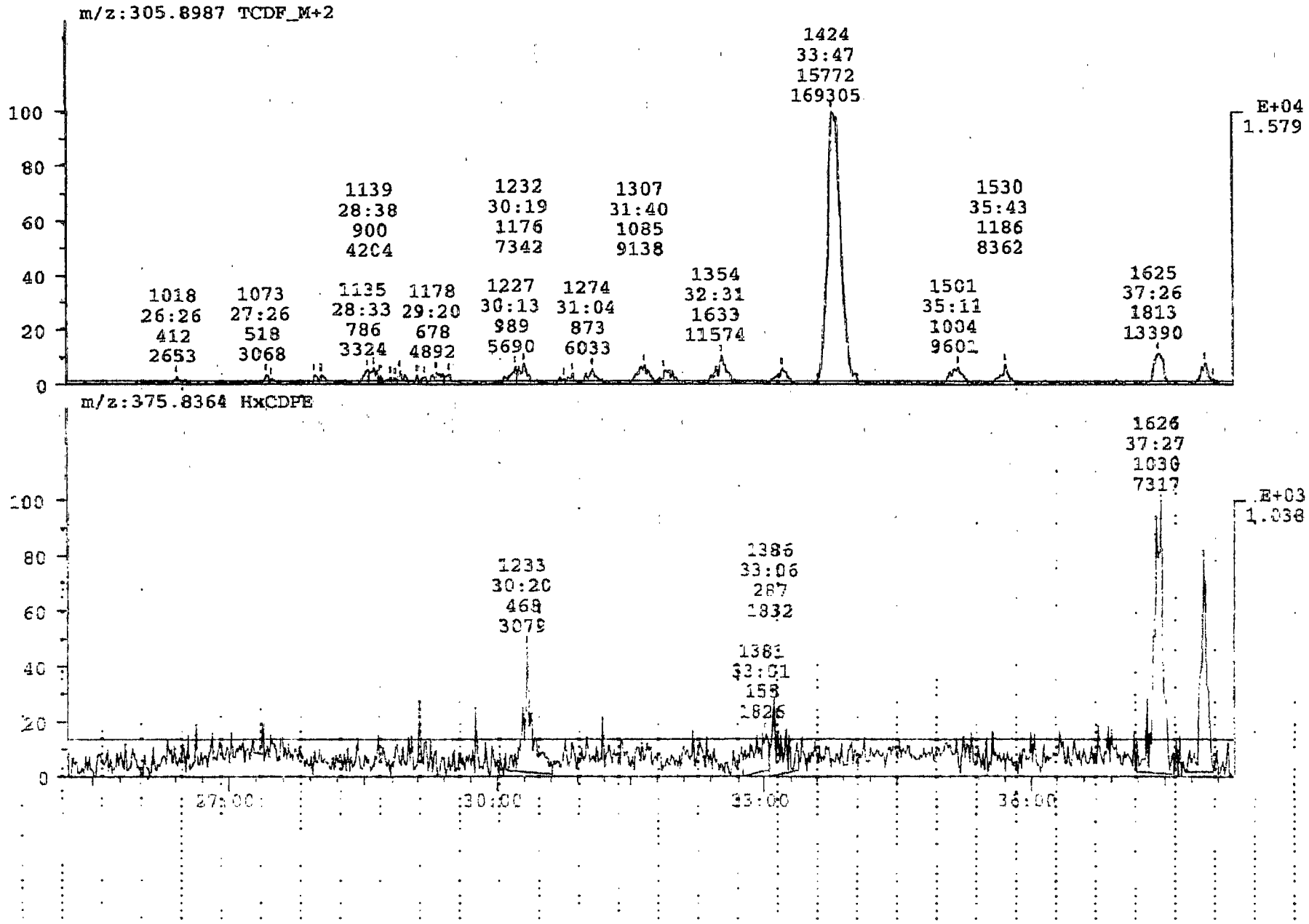



936

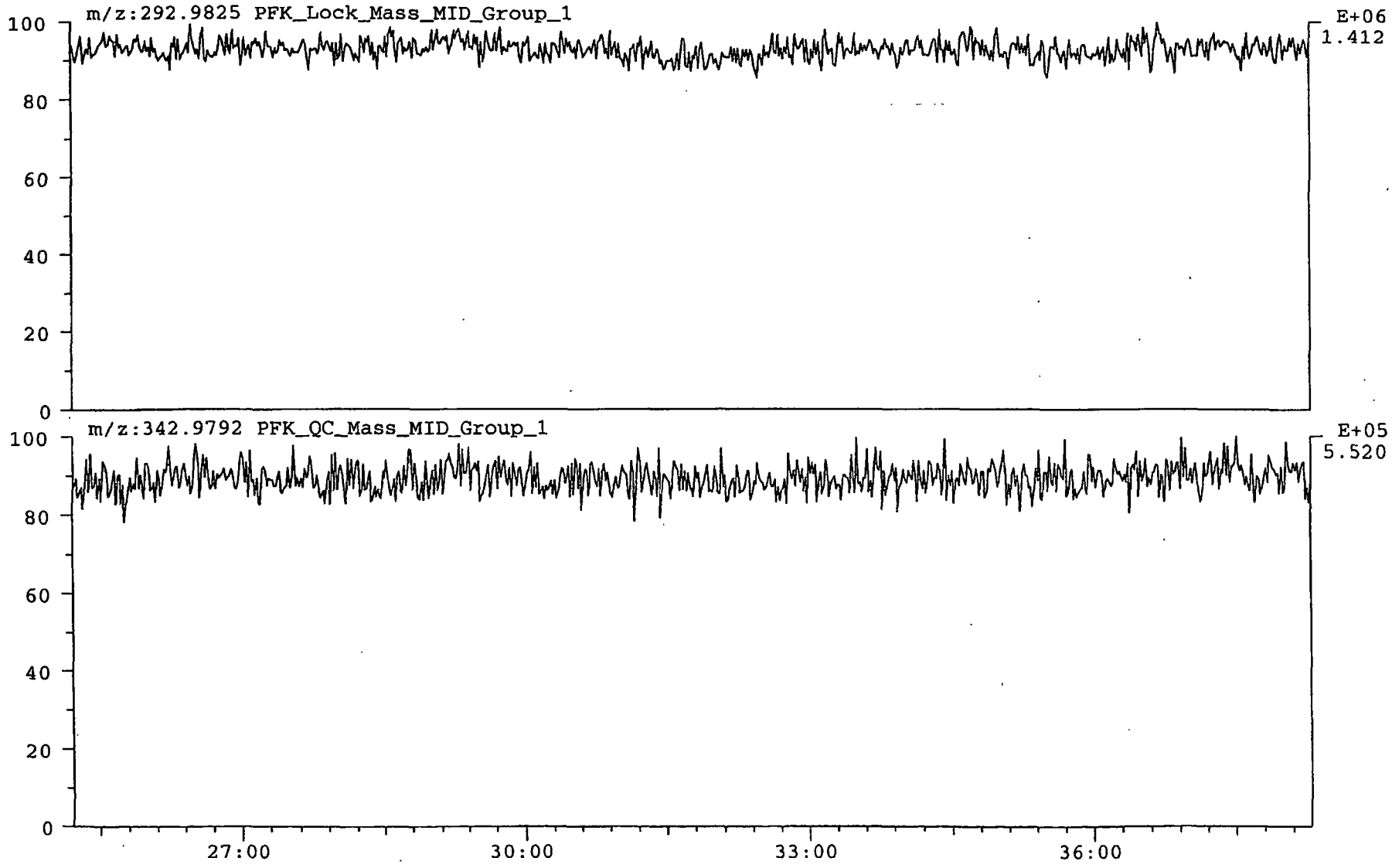
CHRO: tfx1wj2s 05-Oct-03 Elapse: 33:44 1421
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1345 > 1503 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



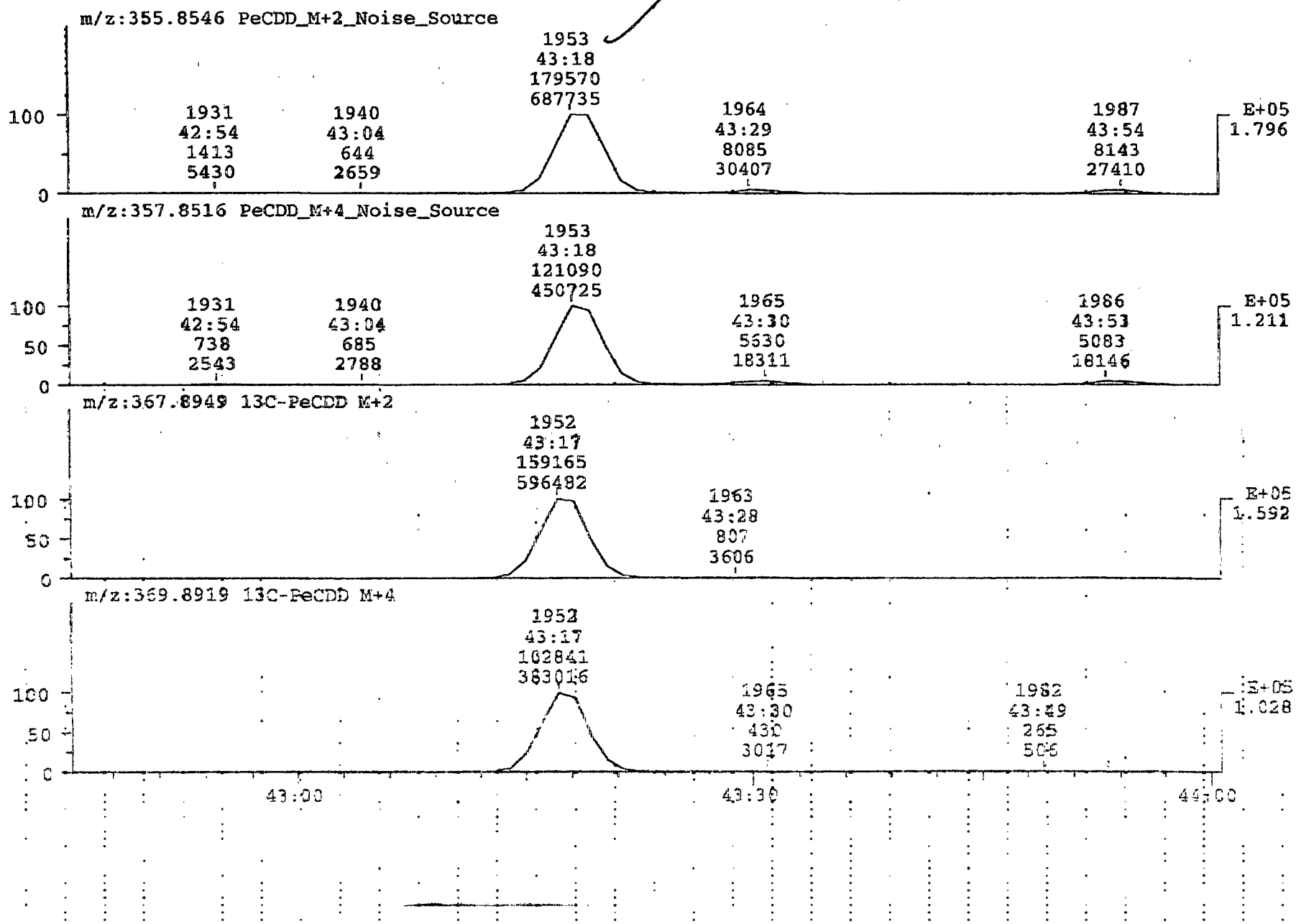
CHRO: tfx1wj2s 05-Oct-03 Elapse: 33:47 1424
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 951 > 1671 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



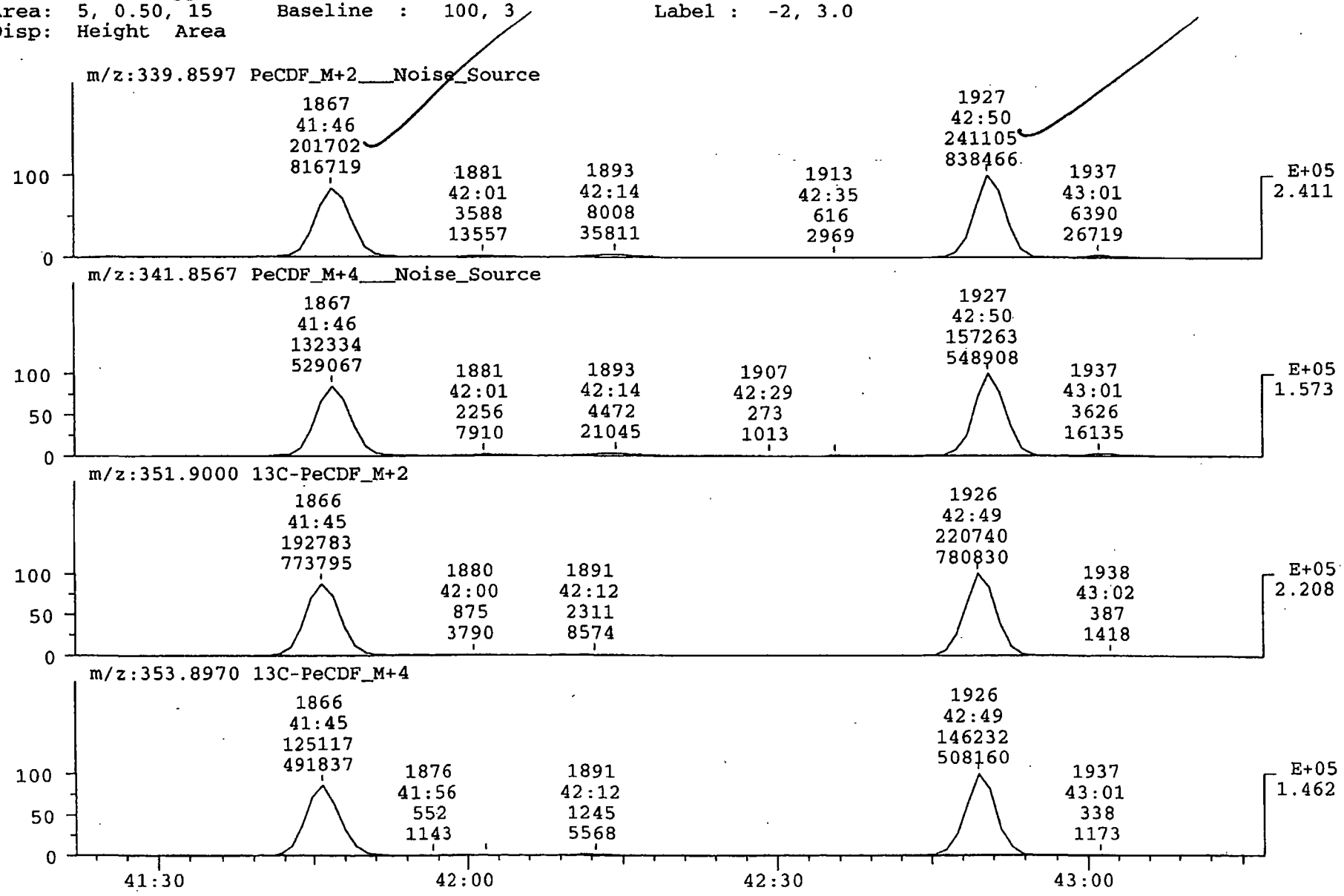
```
CHRO:  tfx1wj2s                              05-Oct-03   Elapse:   33:47      1424
Samp:  Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1                Start :   04:59:49   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                        Study :   3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003S             Inlet :   GC     Vial  27
Peak:  100.00  ppm     Label wndw:   951 > 1671          Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :   0, 0.0
Disp:  Height  Area
```



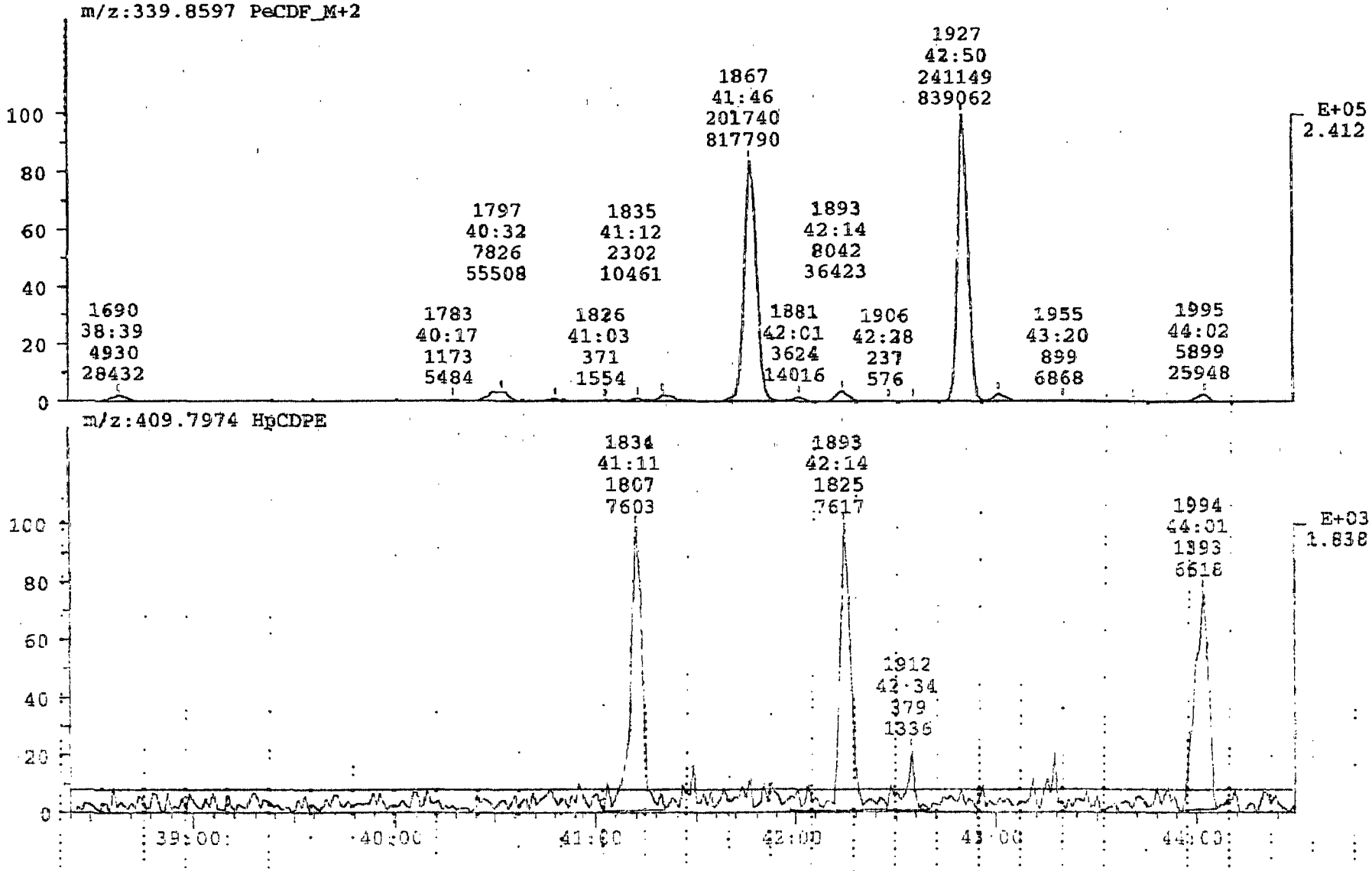
CHRO: tfx1wj2s 05-Oct-03 Elapse: 56:58 2719
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1922 > 1993 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



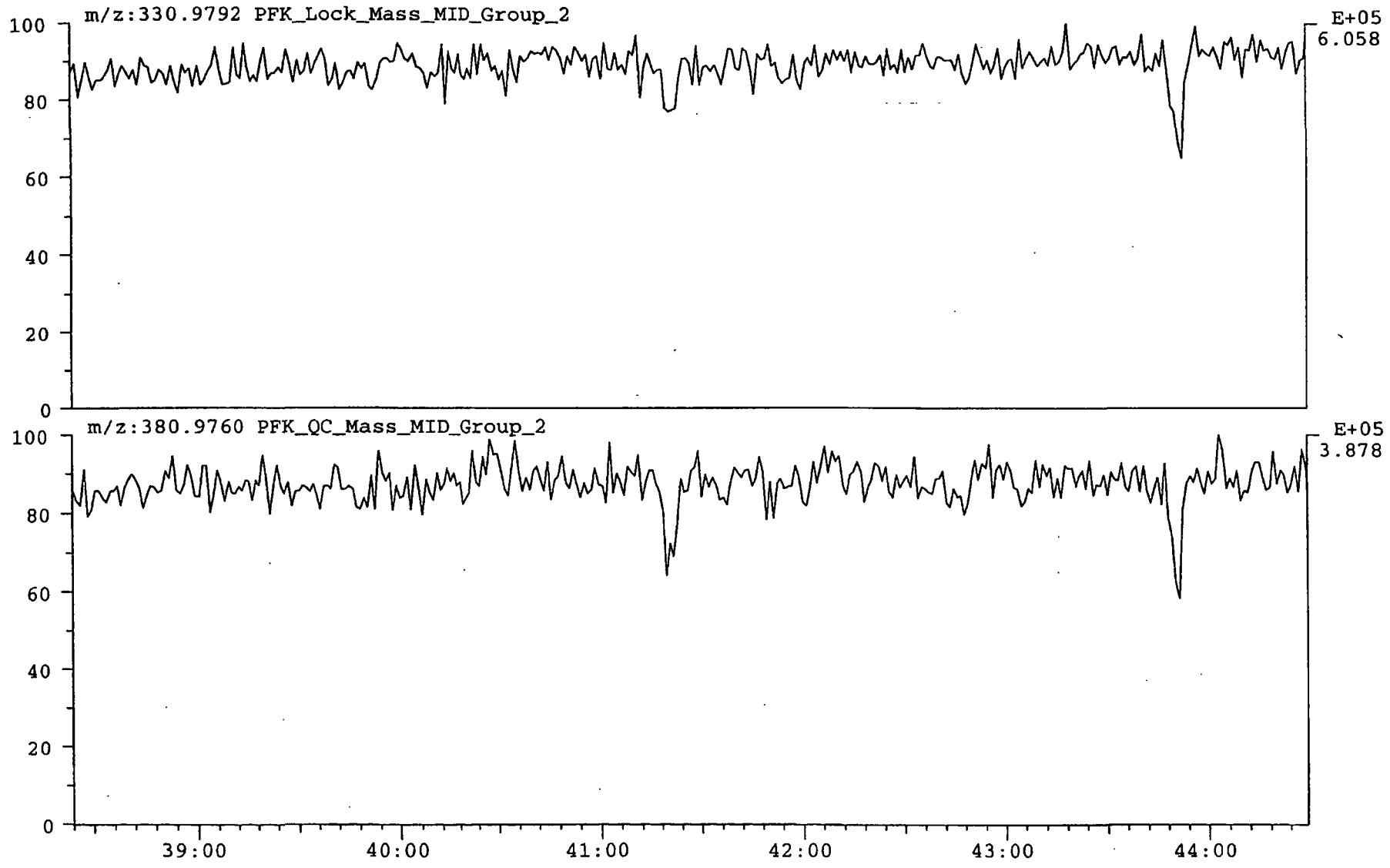
CHRO: tfx1wj2s 05-Oct-03 Elapse: 42:18 1897
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1844 > 1952 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



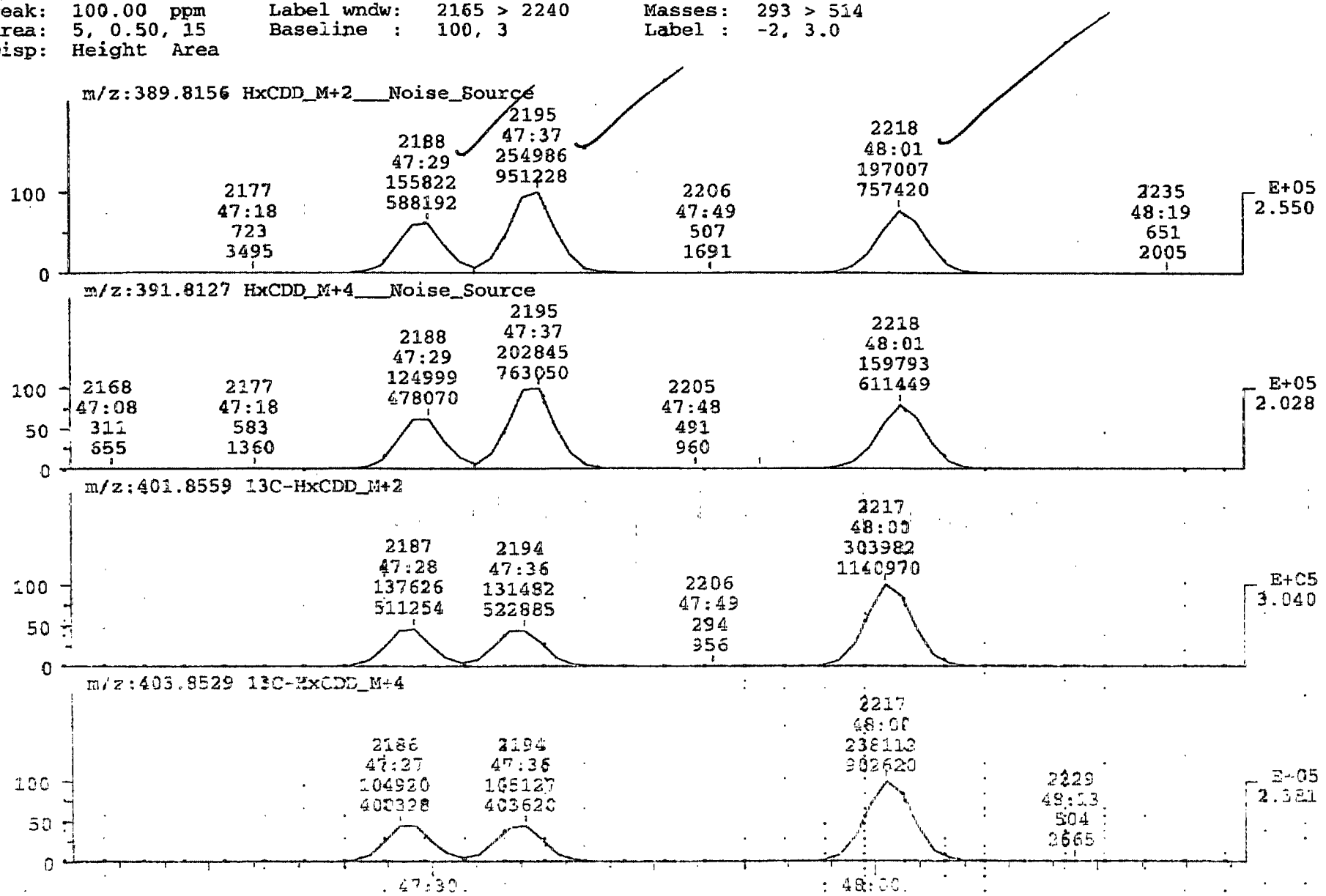
CHRO: tfx1wj2s 05-Oct-03 Elapse: 42:48 1925
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



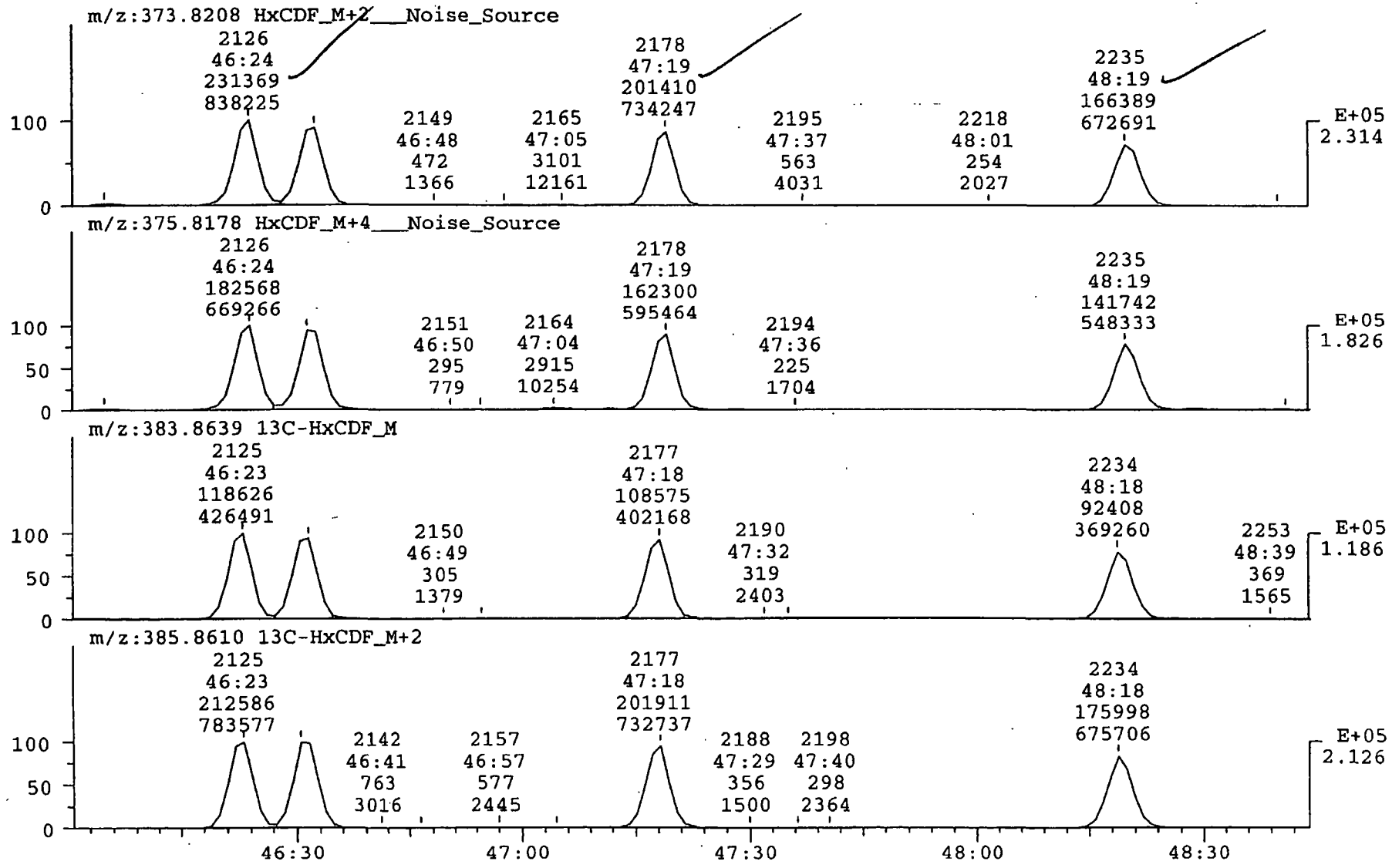
CHRO: tfx1wj2s 05-Oct-03 Elapse: 42:48 1925
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 1676 > 2020 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



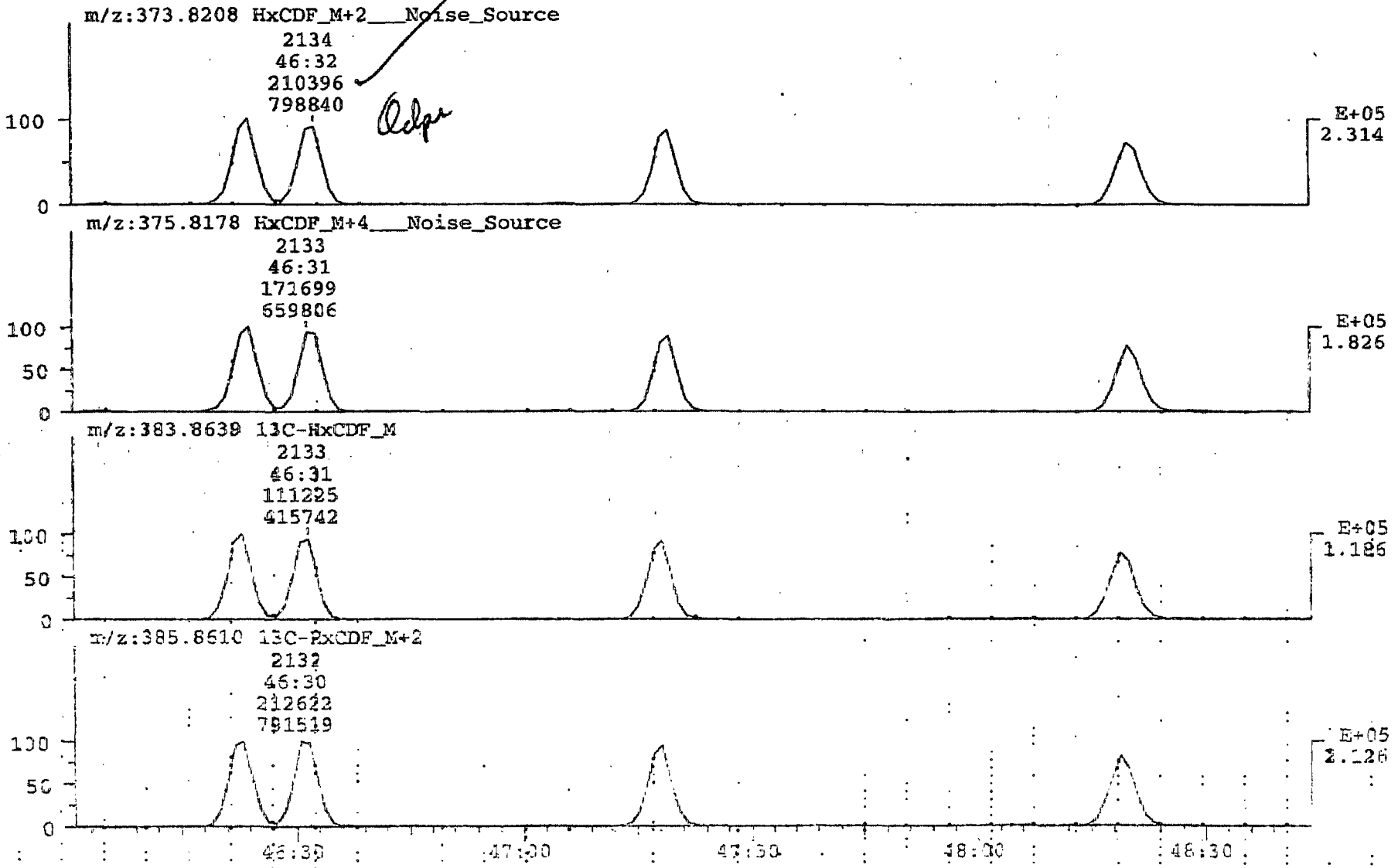
CHRO: tfx1wj2s 05-Oct-03 Elapse: 47:44 2202
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2165 > 2240 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



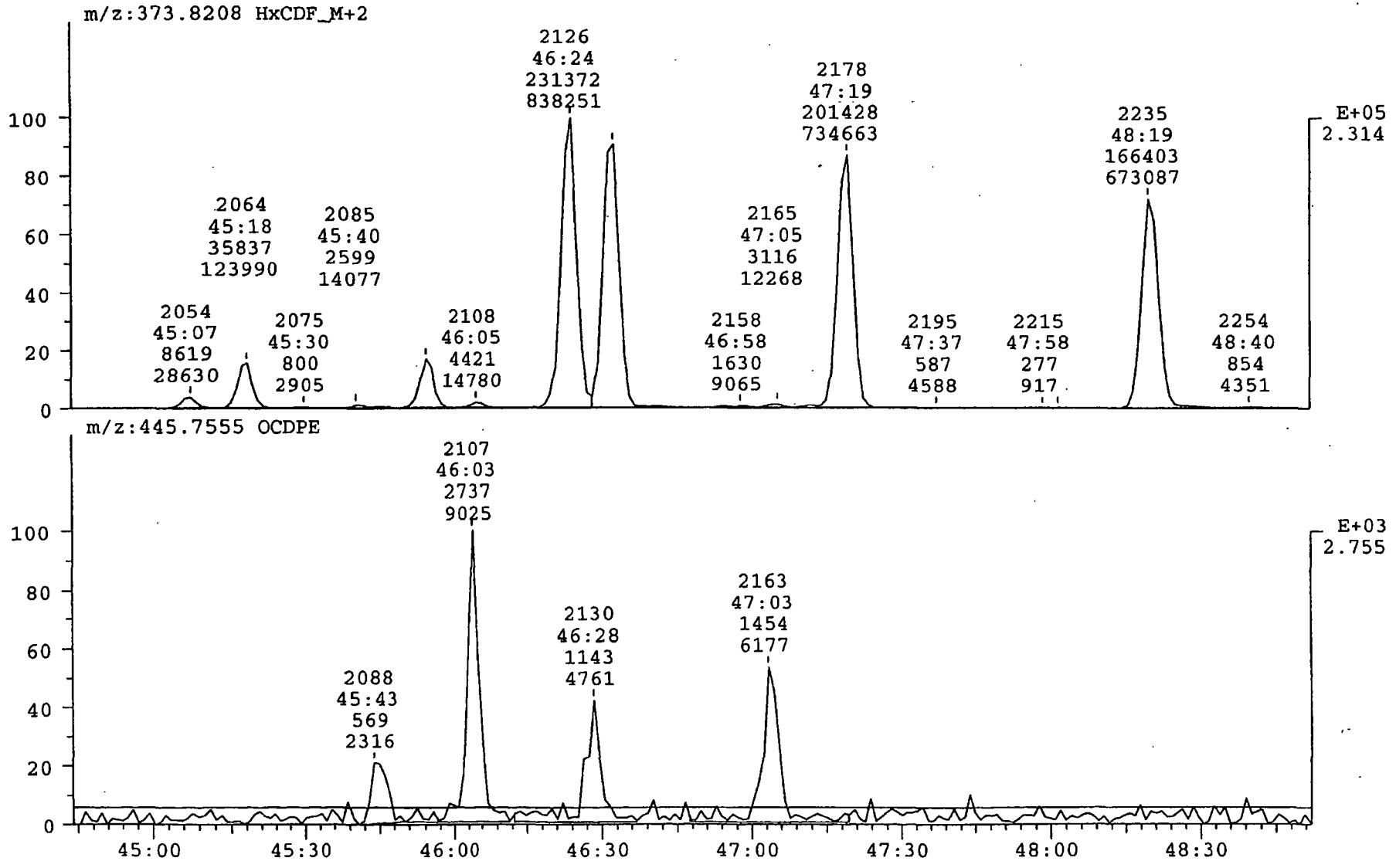
CHRO: tfx1wj2s 05-Oct-03 Elapse: 47:22 2181
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2104 > 2258 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



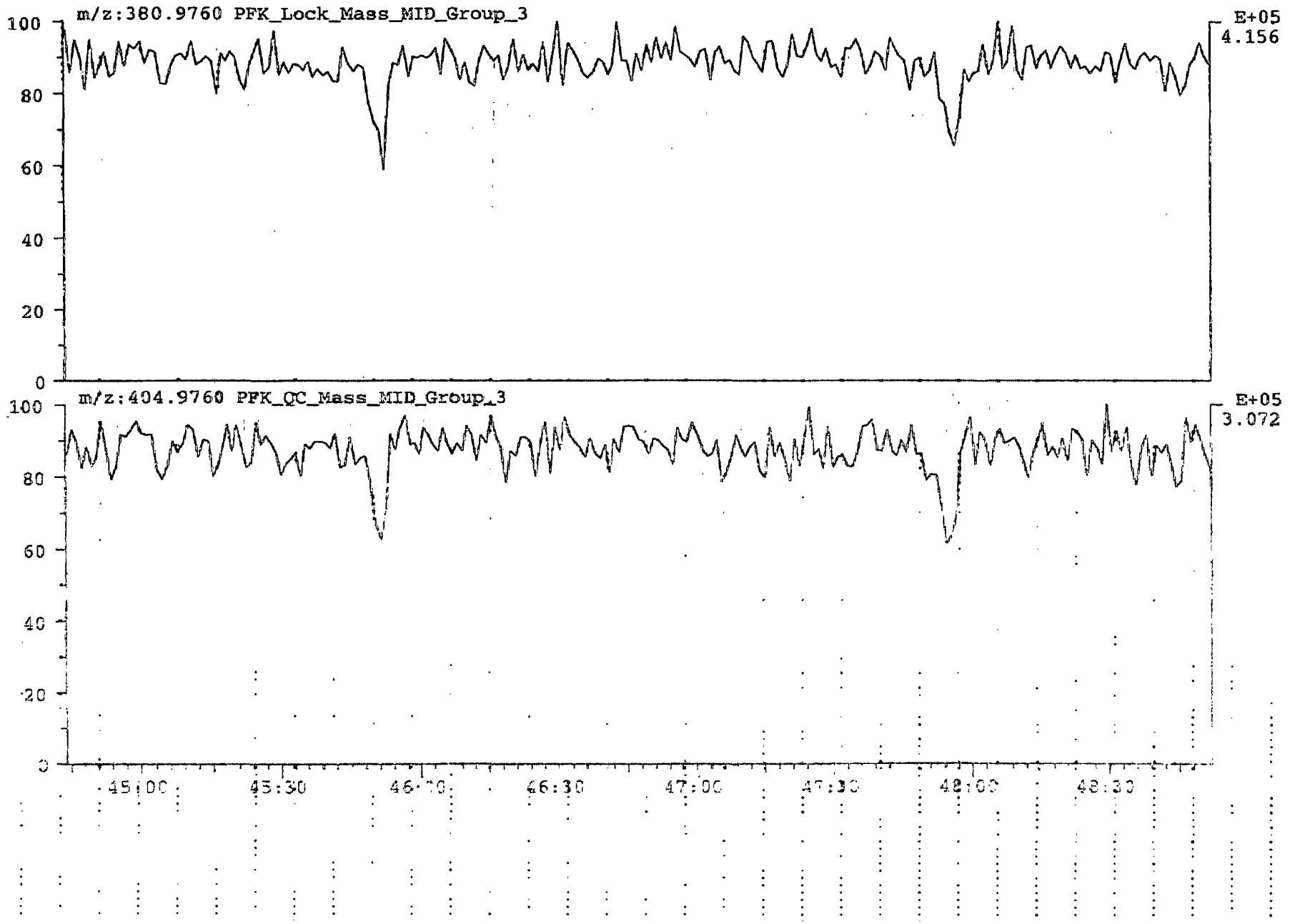
CHRO: tfx1wj2s 05-Oct-03 Elapse: 46:31 2133
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2129 > 2137 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



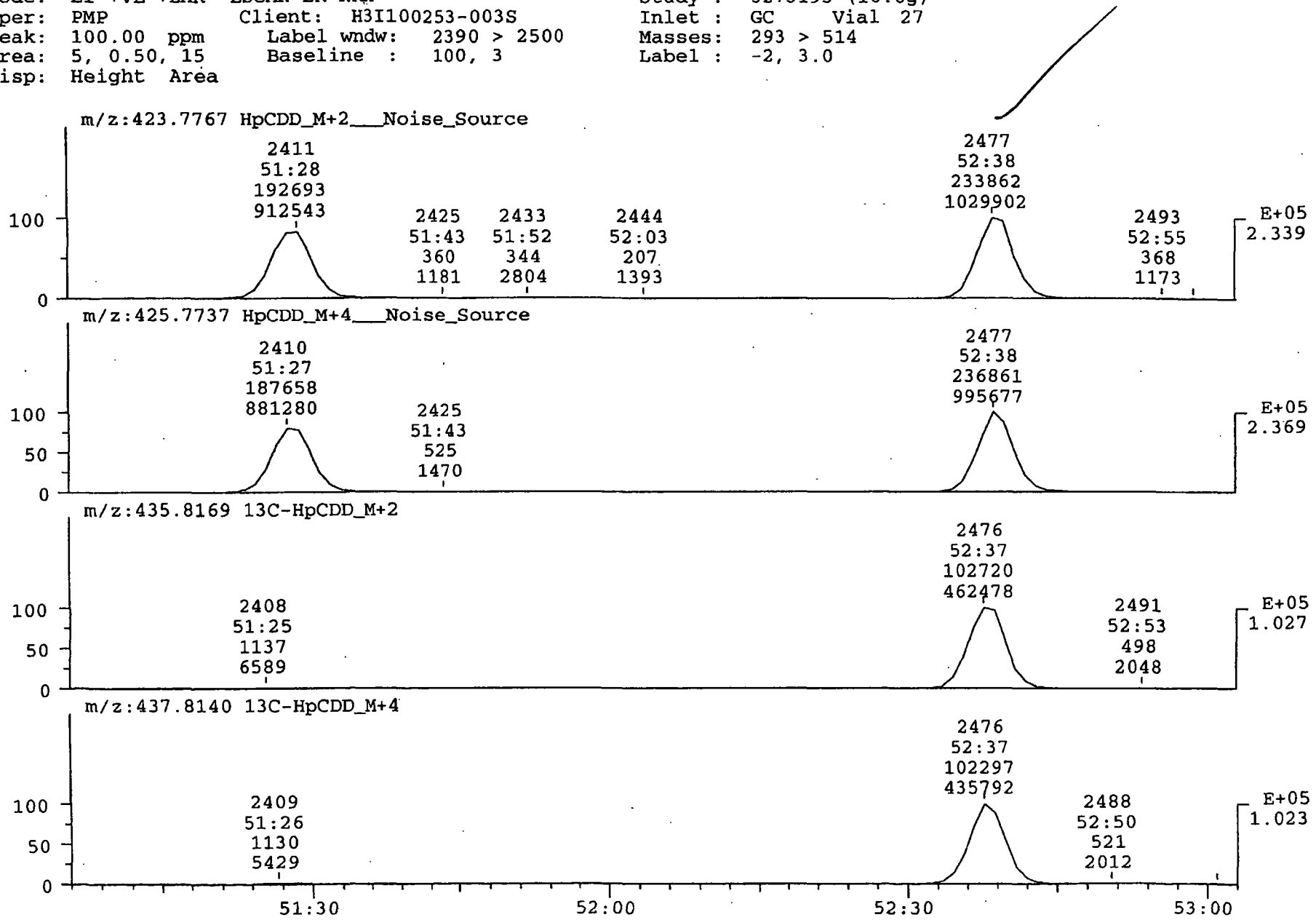
CHRO: tfx1wj2s 05-Oct-03 Elapse: 48:17 2233
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



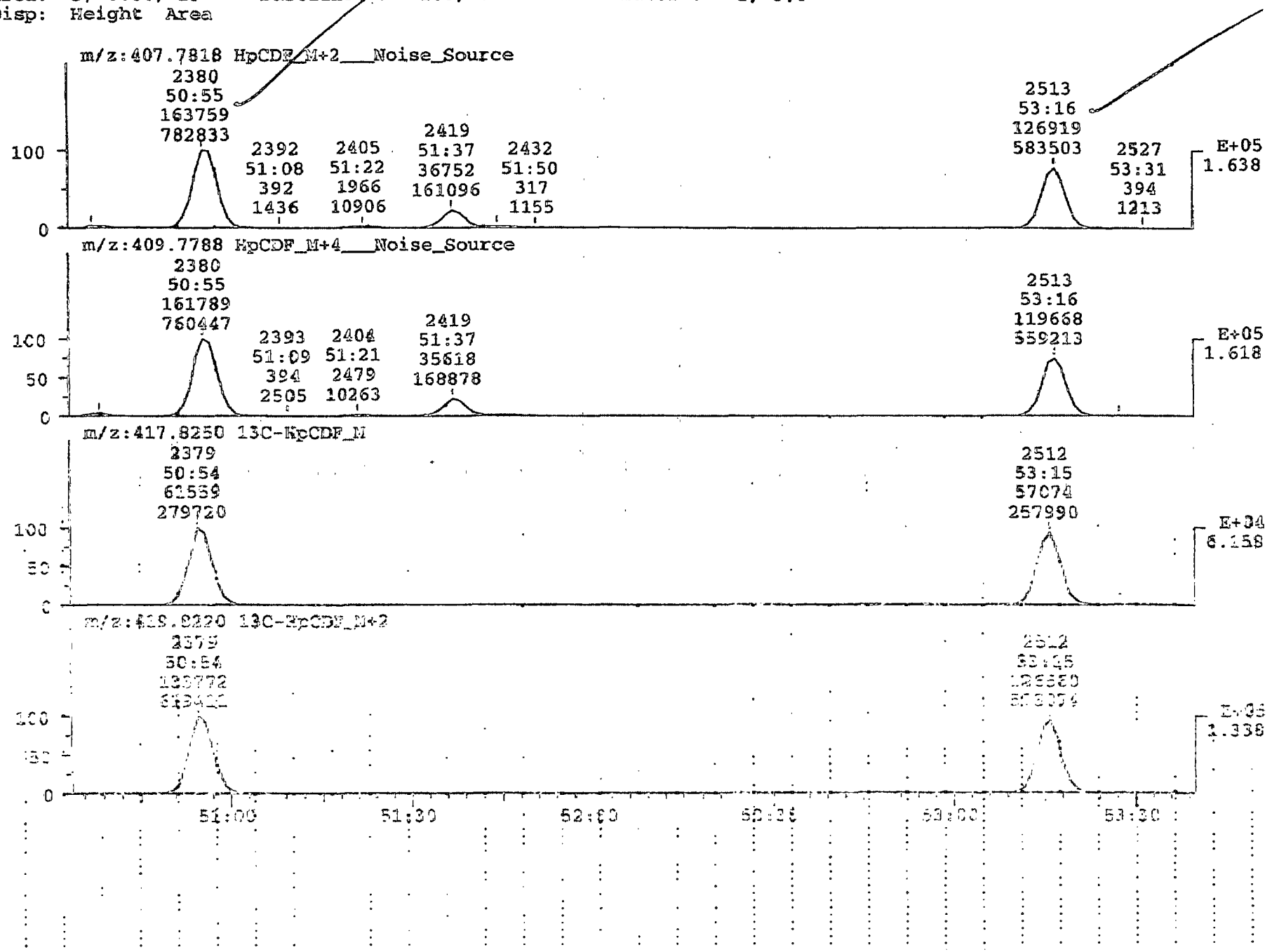
CHRO: tfx1wj2s 05-Oct-03 Elapse: 48:17 2233
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR MRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2032 > 2265 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



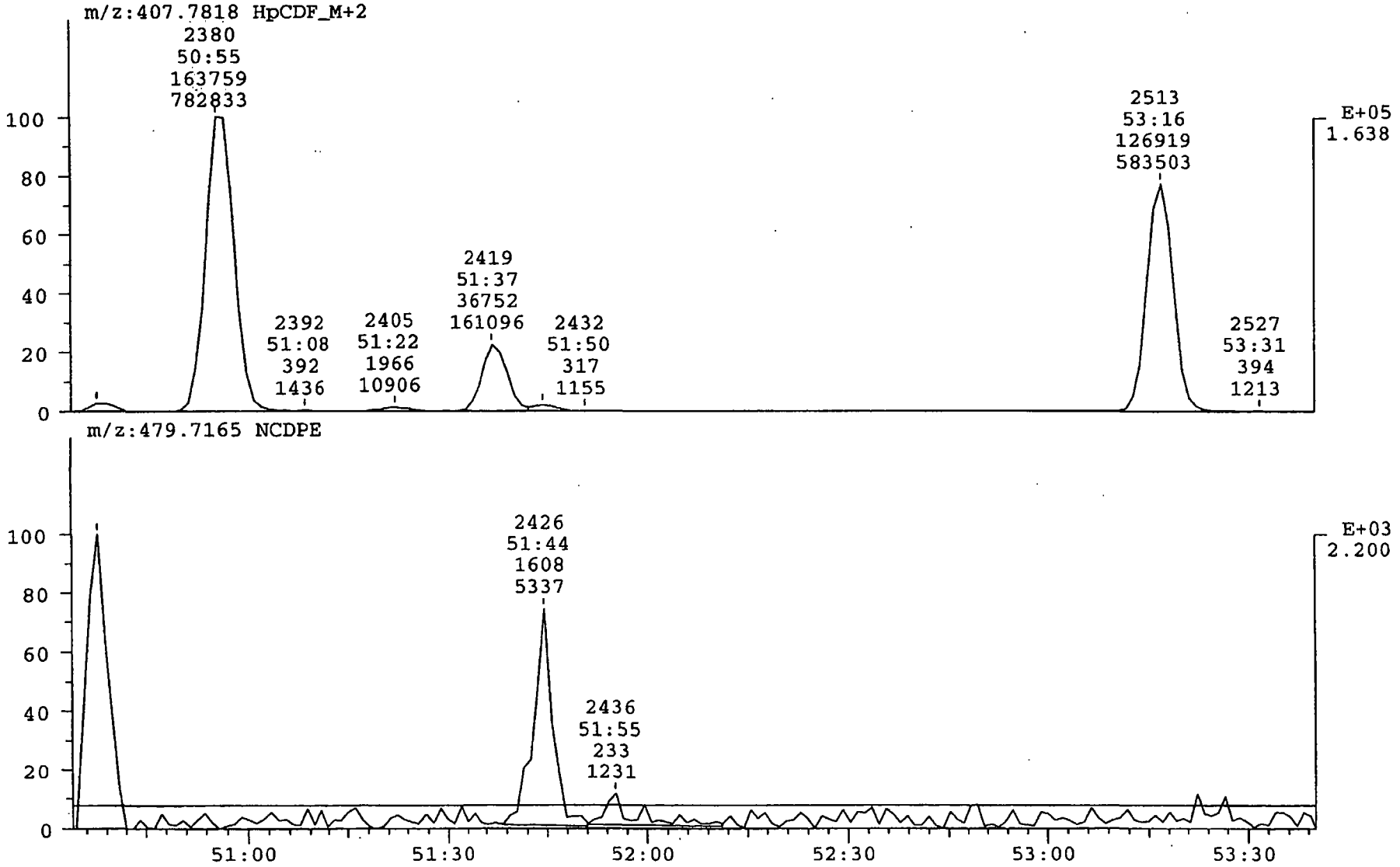
CHRO: tfx1wj2s 05-Oct-03 Elapse: 52:36 2475
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2390 > 2500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



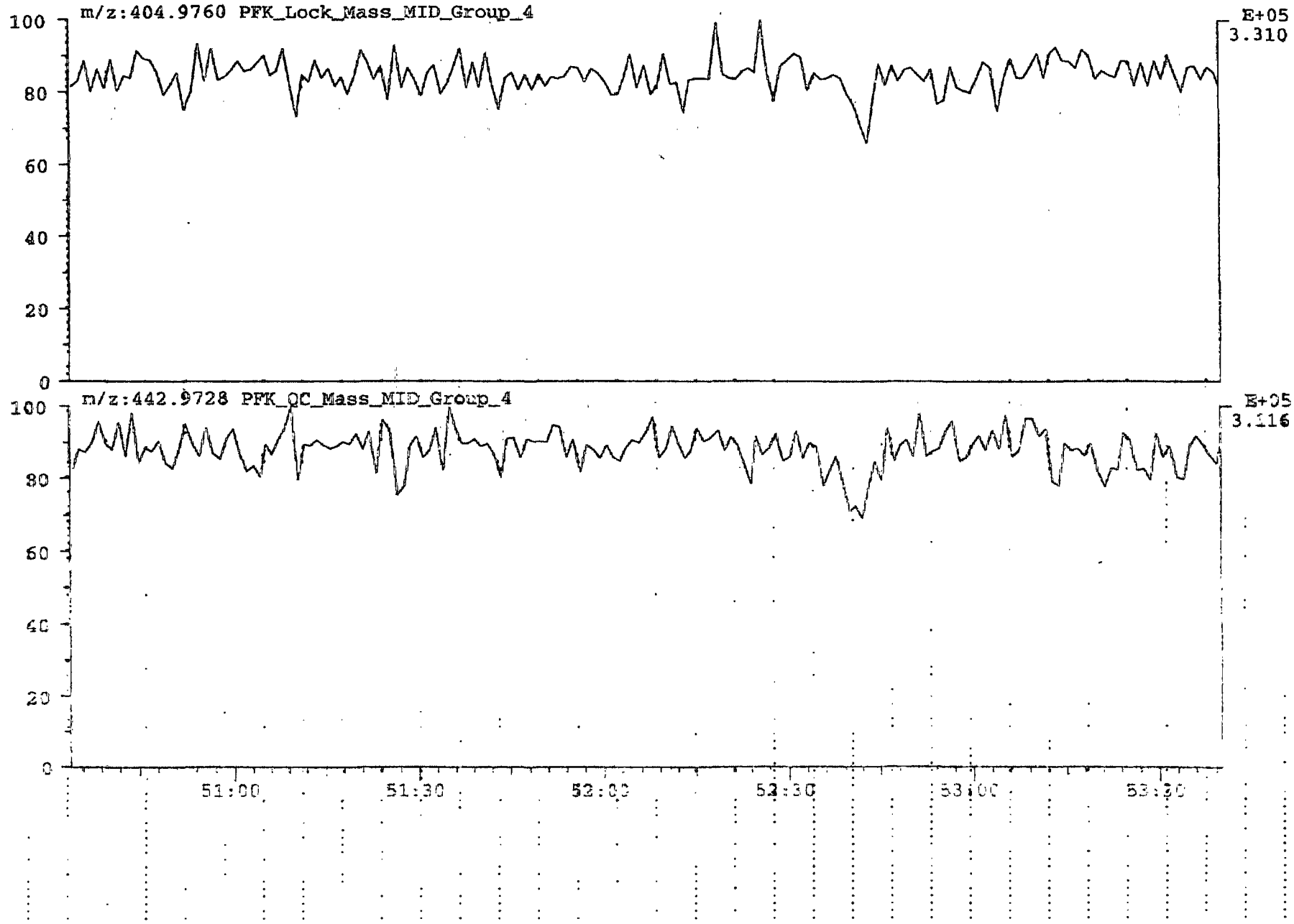
```
CHRO:  tfx1wj2s                              05-Oct-03   Elapse:  53:13      2510
Samp:  Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1                Start :  04:59:49   2834
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                         Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003S              Inlet :  GC     Vial 27
Peak:  100.00 ppm     Label wndw:  2360 > 2535           Masses:  293 > 514
Area:  5, 0.50, 15    Baseline :   100, 3                Label :  -2, 3.0
Disp:  Height  Area
```

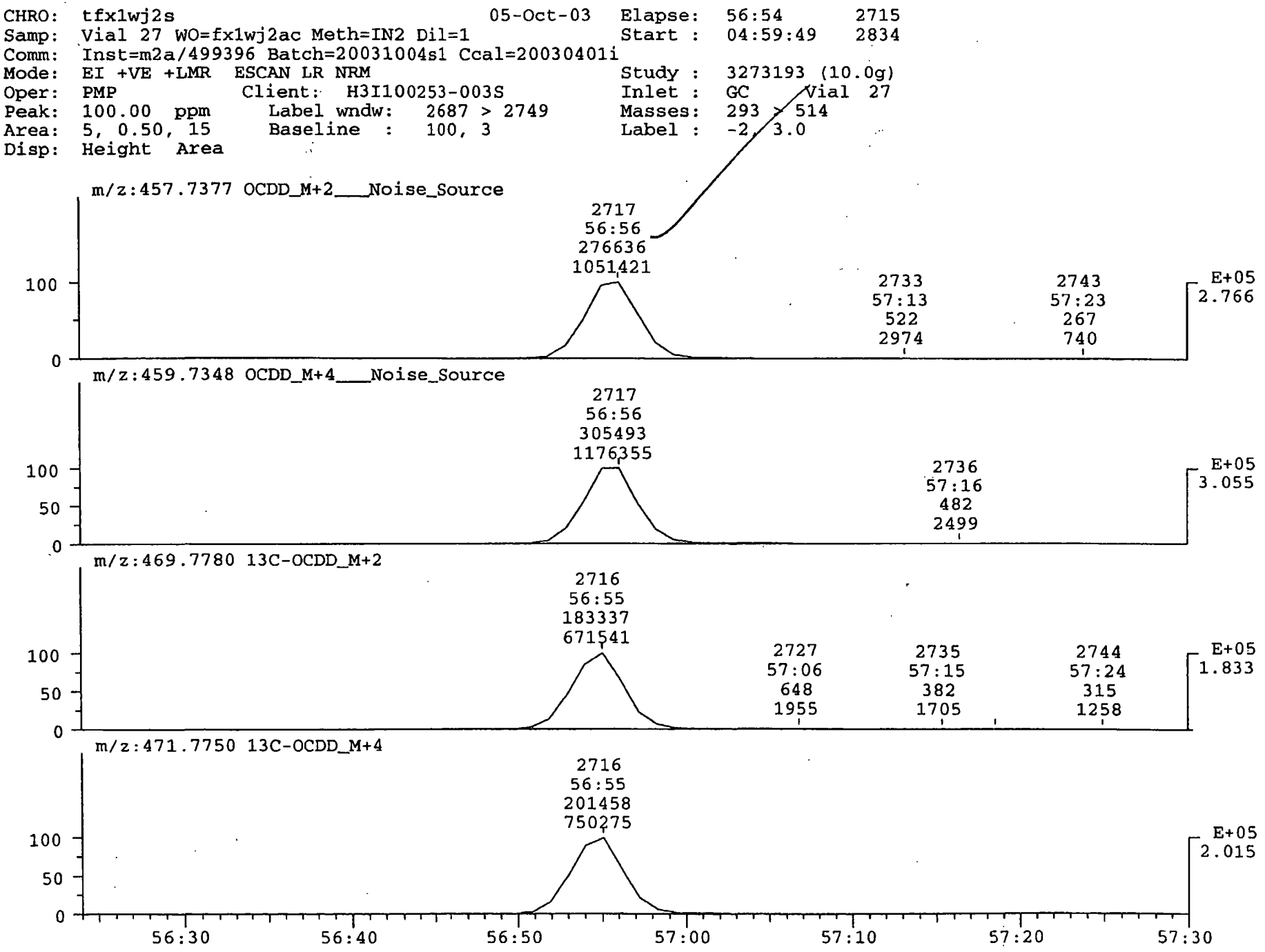


CHRO: tfx1wj2s 05-Oct-03 Elapse: 53:13 2510
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

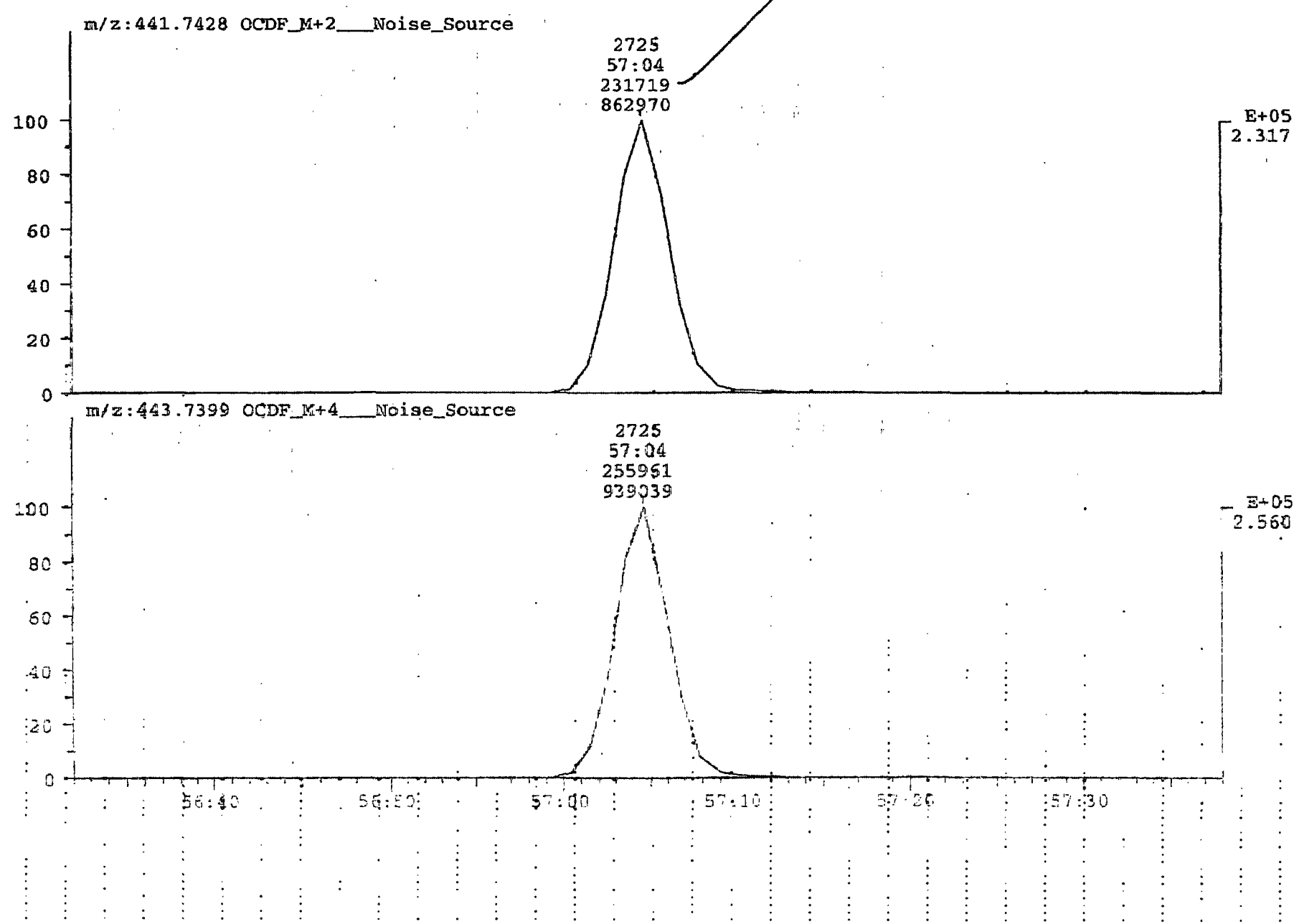


CHRO: tfx1wj2s 05-Oct-03 Elapse: 53:13 2510
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2360 > 2535 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

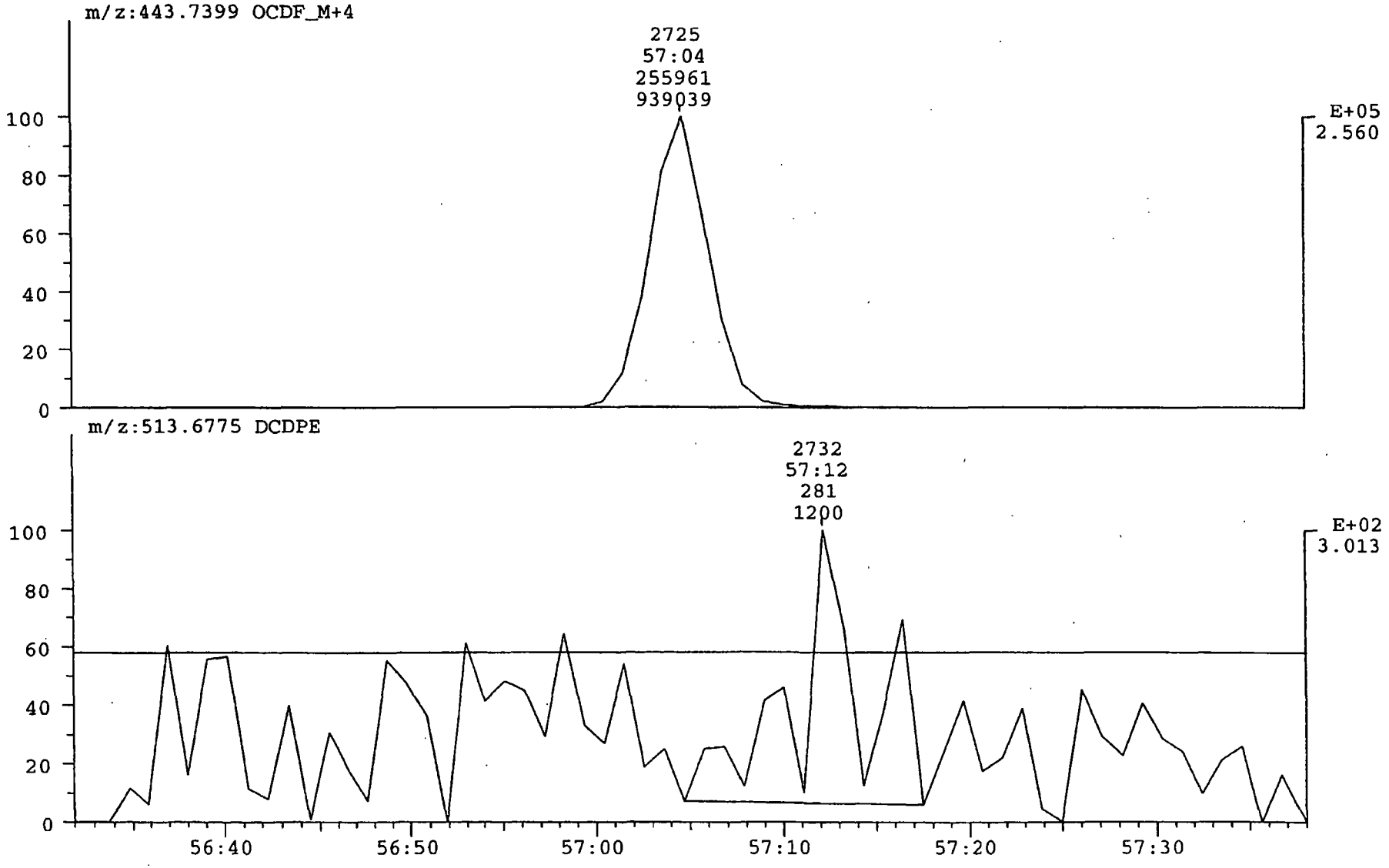



CHRO: tfx1wj2s 05-Oct-03 Elapse: 56:54 2715
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2687 > 2749 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area
m/z:457.7377 OCDD_M+2___Noise_Source
2717
56:56
276636
1051421
2733
57:13
522
2974
2743
57:23
267
740
E+05
2.766
m/z:459.7348 OCDD_M+4___Noise_Source
2717
56:56
305493
1176355
2736
57:16
482
2499
E+05
3.055
m/z:469.7780 13C-OCDD_M+2
2716
56:55
183337
671541
2727
57:06
648
1955
2735
57:15
382
1705
2744
57:24
315
1258
E+05
1.833
m/z:471.7750 13C-OCDD_M+4
2716
56:55
201458
750275
E+05
2.015
100
50
0
56:30
56:40
56:50
57:00
57:10
57:20
57:30

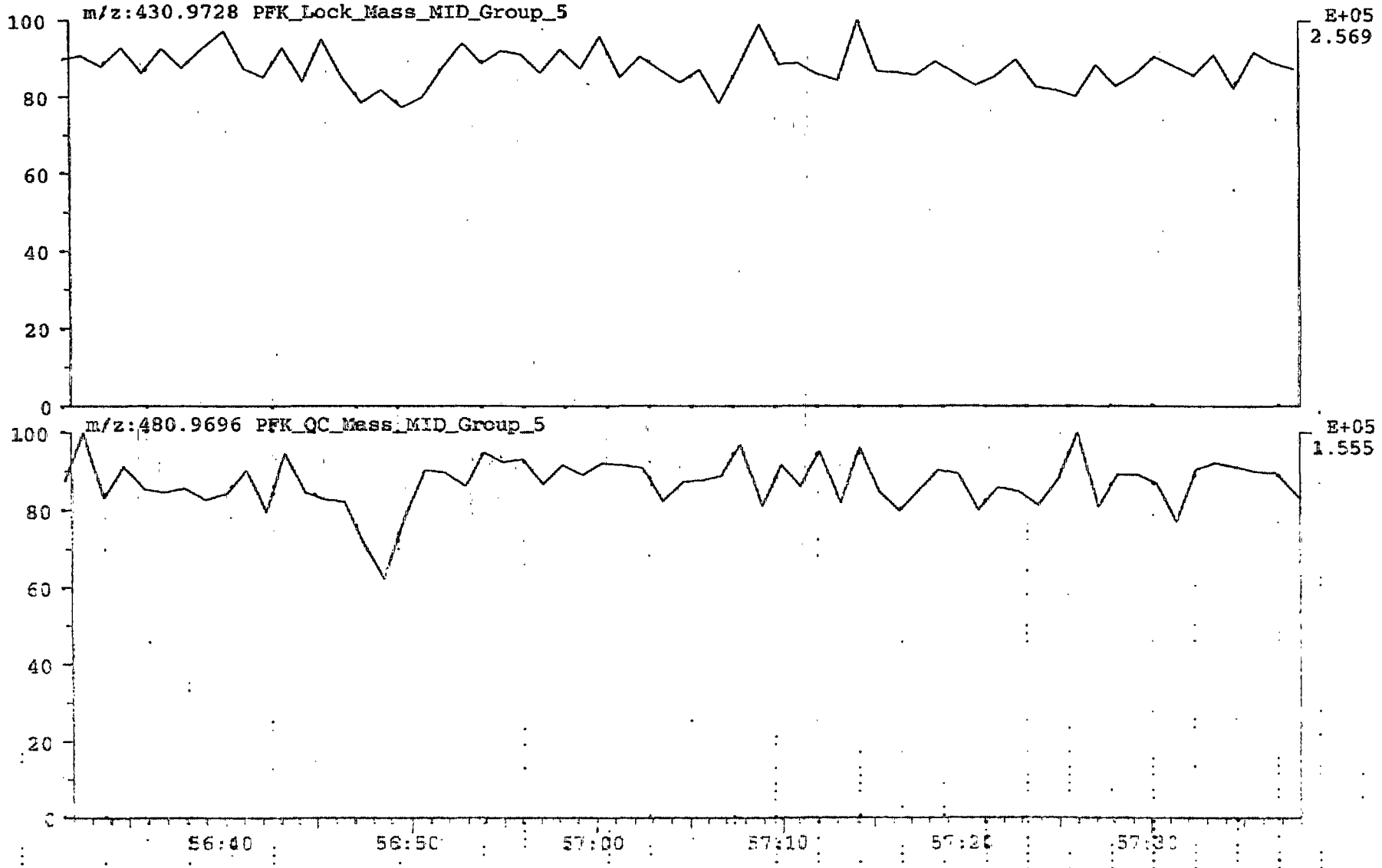
CHRO: tfx1wj2s 05-Oct-03 Elapse: 57:02 2723
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3, 0
Disp: Height Area



CHRO: tfx1wj2s 05-Oct-03 Elapse: 57:02 2723
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



CHRO: tfx1wj2s 05-Oct-03 Elapse: 57:02 2723
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27
Peak: 100.00 ppm Label wndw: 2694 > 2756 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tfx1wj2s
Study: 3273193 (10.0g)
Sample: WO=fx1wj2ac Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I100253-003S
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 27
Analysis will stop when MID run finishes
Tune file name: tune2
File 5 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

```
Loop clean w slvnt B (LB):      0 times
Standard sample volume(X):    0.0 ul
Standard air volume   (Y):    0.0 ul
2nd Injection volume  (I):    0.0 ul
Air volume of 2nd inj (J):    0.0 ul
Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:        270 deg                          300 deg max
  Transfer Line:   290 deg                          300 deg max
  Column:          140 deg at    0.0 minutes        330 deg max
                   140 deg at    3.0 minutes
                   210 deg at    6.5 minutes
                   210 deg at   34.5 minutes
                   280 deg at   44.5 minutes
                   280 deg at   51.0 minutes
                   325 deg at   60.0 minutes
  Inlet    :
  Pressure        18.0 psi
  Splitless mode
  Purge time       1.5 min
  Purge flow      40.0 mL/min

   Gas saver is on
   Saver time       3.0 min
   Saver flow      15.0 mL/min

  Stabilize time   0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8431.0000 |
| BDEV | 8280.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 285.0000 | FVINLET | 814.0000 |
| FVSRC | 927.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.4118 | HVANAL | 980.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4764.3420 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2840.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8100 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 04:59:49.0

Autosampler has injected sample from vial 27
Analysis stopped at: 05-Oct-03 05:58:51.0 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: tfx1wj2s.q0 Entries: 276

Data file(s) used
File: tfx1wj2s 05-Oct-03
Samp: Vial 27 WO=fx1wj2ac Meth=IN2 Dil=1 Start : 04:59:49 2834
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 27

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 35:58 | 106989. | 12536. | 35:47 | 36:09 | 58. | 1 | 1.0 |
| 321.8775 | 35:57 | 150477. | 17860. | 35:41 | 36:12 | 61. | 1 | 1.0 |
| 331.9202 | 35:24 | 906458. | 104402. | 35:08 | 35:37 | 59. | 2 | 3.0 |
| 331.9202 | 35:54 | 435314. | 51547. | 35:41 | 36:10 | 59. | 2 | 3.0 |
| 333.9171 | 35:24 | 1112705. | 124933. | 35:10 | 35:41 | 187. | 2 | 3.0 |
| 333.9171 | 35:54 | 548748. | 65854. | 35:43 | 36:10 | 187. | 2 | 3.0 |
| 319.8805 | 35:58 | 106309. | 12492. | 35:47 | 36:12 | 68. | 2 | 3.0 |
| 321.8775 | 35:57 | 149293. | 17822. | 35:41 | 36:11 | 69. | 2 | 3.0 |
| 303.8864 | 33:49 | 133619. | 14161. | 33:37 | 34:05 | 58. | 1 | 1.0 |
| 305.8834 | 33:48 | 169305. | 15772. | 33:32 | 34:04 | 66. | 1 | 1.0 |
| 315.9261 | 33:45 | 614003. | 62903. | 33:29 | 34:01 | 109. | 2 | 3.0 |
| 317.9230 | 33:46 | 772209. | 75976. | 33:30 | 34:03 | 74. | 2 | 3.0 |
| 303.8864 | 33:49 | 133454. | 14156. | 33:37 | 34:05 | 65. | 2 | 3.0 |
| 305.8834 | 33:48 | 168807. | 15757. | 33:32 | 34:04 | 100. | 2 | 3.0 |
| 355.8368 | 43:18 | 687715. | 179568. | 43:10 | 43:25 | 74. | 1 | 1.0 |
| 357.8337 | 43:18 | 451492. | 121135. | 43:09 | 43:26 | 73. | 1 | 1.0 |
| 367.8765 | 43:17 | 596482. | 159165. | 43:11 | 43:25 | 65. | 2 | 3.0 |
| 369.8734 | 43:17 | 382999. | 102840. | 43:01 | 43:25 | 48. | 2 | 3.0 |
| 355.8368 | 43:18 | 687735. | 179570. | 43:10 | 43:25 | 107. | 2 | 3.0 |
| 357.8337 | 43:18 | 450725. | 121090. | 43:09 | 43:26 | 79. | 2 | 3.0 |
| 339.8427 | 42:50 | 839062. | 241149. | 42:43 | 42:57 | 69. | 1 | 1.0 |
| 341.8396 | 42:50 | 549303. | 157292. | 42:41 | 42:57 | 61. | 1 | 1.0 |
| 351.8824 | 41:45 | 773795. | 192783. | 41:29 | 41:56 | 72. | 2 | 3.0 |
| 351.8824 | 42:49 | 780830. | 220740. | 42:41 | 43:00 | 72. | 2 | 3.0 |
| 353.8793 | 41:45 | 491837. | 125117. | 41:37 | 41:55 | 60. | 2 | 3.0 |
| 353.8793 | 42:49 | 508160. | 146232. | 42:33 | 42:59 | 60. | 2 | 3.0 |
| 339.8427 | 41:46 | 816719. | 201702. | 41:36 | 41:55 | 73. | 2 | 3.0 |
| 341.8396 | 41:46 | 529066. | 132334. | 41:34 | 41:57 | 53. | 2 | 3.0 |
| 339.8427 | 42:50 | 838465. | 241105. | 42:43 | 42:57 | 73. | 2 | 3.0 |
| 341.8396 | 42:50 | 548908. | 157263. | 42:41 | 42:57 | 53. | 2 | 3.0 |
| 389.7961 | 46:44 | 1676407. | 415347. | 46:35 | 46:51 | 65. | 1 | 1.0 |
| 391.7931 | 46:43 | 1366543. | 334348. | 46:35 | 46:51 | 60. | 1 | 1.0 |
| 401.8358 | 47:28 | 511254. | 137626. | 47:22 | 47:32 | 82. | 2 | 3.0 |
| 401.8358 | 47:36 | 522885. | 131482. | 47:32 | 47:45 | 82. | 2 | 3.0 |
| 401.8358 | 48:00 | 1140970. | 303981. | 47:51 | 48:16 | 82. | 2 | 3.0 |
| 403.8327 | 47:27 | 400328. | 104920. | 47:22 | 47:32 | 123. | 2 | 3.0 |
| 403.8327 | 47:36 | 403620. | 105127. | 47:32 | 47:49 | 123. | 2 | 3.0 |
| 403.8327 | 48:00 | 902620. | 238112. | 47:53 | 48:12 | 123. | 2 | 3.0 |
| 389.7961 | 47:30 | 588192. | 155822. | 47:21 | 47:33 | 65. | 2 | 3.0 |
| 391.7931 | 47:30 | 478070. | 124999. | 47:21 | 47:33 | 61. | 2 | 3.0 |
| 389.7961 | 47:37 | 951228. | 254986. | 47:33 | 47:47 | 65. | 2 | 3.0 |
| 391.7931 | 47:37 | 763050. | 202845. | 47:33 | 47:47 | 61. | 2 | 3.0 |
| 389.7961 | 48:01 | 757420. | 197007. | 47:54 | 48:16 | 65. | 2 | 3.0 |
| 391.7931 | 48:01 | 611449. | 159793. | 47:54 | 48:17 | 61. | 2 | 3.0 |
| 373.8021 | 46:24 | 838251. | 231372. | 46:14 | 46:28 | 73. | 1 | 1.0 |
| 375.7990 | 46:24 | 668898. | 182559. | 46:14 | 46:27 | 68. | 1 | 1.0 |
| 383.8447 | 46:23 | 426491. | 118626. | 46:15 | 46:27 | 59. | 2 | 3.0 |
| 383.8447 | 46:31 | 415742. | 111225. | 46:27 | 46:44 | 59. | 2 | 3.0 |
| 383.8447 | 47:18 | 402168. | 108575. | 47:07 | 47:24 | 59. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 383.8447 | 48:18 | 369260. | 92408. | 48:05 | 48:34 | 59. | 2 | 3.0 |
| 385.8417 | 46:23 | 783577. | 212586. | 46:12 | 46:27 | 68. | 2 | 3.0 |
| 385.8417 | 46:30 | 791518. | 212622. | 46:27 | 46:39 | 68. | 2 | 3.0 |
| 385.8417 | 47:18 | 732737. | 201911. | 47:06 | 47:27 | 68. | 2 | 3.0 |
| 385.8417 | 48:18 | 675706. | 175997. | 48:12 | 48:34 | 68. | 2 | 3.0 |
| 373.8021 | 46:24 | 838225. | 231369. | 46:14 | 46:28 | 87. | 2 | 3.0 |
| 375.7990 | 46:24 | 669266. | 182568. | 46:10 | 46:27 | 72. | 2 | 3.0 |
| 373.8021 | 46:32 | 798840. | 210396. | 46:28 | 46:47 | 87. | 2 | 3.0 |
| 375.7990 | 46:31 | 659806. | 171699. | 46:27 | 46:47 | 72. | 2 | 3.0 |
| 373.8021 | 47:19 | 734246. | 201410. | 47:08 | 47:31 | 87. | 2 | 3.0 |
| 375.7990 | 47:19 | 595464. | 162300. | 47:07 | 47:34 | 72. | 2 | 3.0 |
| 373.8021 | 48:19 | 672691. | 166389. | 48:12 | 48:32 | 87. | 2 | 3.0 |
| 375.7990 | 48:19 | 548333. | 141742. | 48:10 | 48:35 | 72. | 2 | 3.0 |
| 423.7555 | 52:38 | 1029902. | 233862. | 52:31 | 52:53 | 60. | 1 | 1.0 |
| 425.7524 | 52:38 | 995677. | 236861. | 52:31 | 52:52 | 72. | 1 | 1.0 |
| 423.7555 | 52:38 | 1029902. | 233862. | 52:31 | 52:53 | 60. | 2 | 3.0 |
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| 435.7951 | 52:37 | 462478. | 102720. | 52:21 | 52:51 | 74. | 2 | 3.0 |
| 437.7921 | 52:37 | 435792. | 102297. | 52:25 | 52:49 | 60. | 2 | 3.0 |
| 407.7614 | 50:55 | 782833. | 163759. | 50:49 | 51:06 | 72. | 1 | 1.0 |
| 409.7583 | 50:55 | 760447. | 161789. | 50:48 | 51:06 | 74. | 1 | 1.0 |
| 407.7614 | 50:55 | 782833. | 163759. | 50:49 | 51:06 | 72. | 2 | 3.0 |
| 409.7583 | 50:55 | 760447. | 161789. | 50:48 | 51:06 | 74. | 2 | 3.0 |
| 407.7614 | 53:17 | 583503. | 126919. | 53:04 | 53:28 | 72. | 2 | 3.0 |
| 409.7583 | 53:17 | 559213. | 119668. | 53:08 | 53:26 | 74. | 2 | 3.0 |
| 417.8041 | 50:54 | 279720. | 61559. | 50:43 | 51:10 | 78. | 2 | 3.0 |
| 417.8041 | 53:15 | 257990. | 57074. | 53:04 | 53:25 | 78. | 2 | 3.0 |
| 419.8010 | 50:54 | 619411. | 133772. | 50:47 | 51:10 | 69. | 2 | 3.0 |
| 419.8010 | 53:15 | 578074. | 126560. | 53:05 | 53:31 | 69. | 2 | 3.0 |
| 457.7148 | 56:56 | 1051421. | 276636. | 56:48 | 57:10 | 57. | 1 | 1.0 |
| 459.7118 | 56:56 | 1176355. | 305493. | 56:48 | 57:12 | 80. | 1 | 1.0 |
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| 319.8805 | 35:45 | 4225. | 623. | 35:36 | 35:47 | 68. | 2 | 3.0 |
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| 319.8805 | 36:48 | 6440. | 1503. | 36:42 | 36:52 | 68. | 2 | 3.0 |
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| 321.8775 | 35:28 | 1847. | 702. | 35:26 | 35:32 | 69. | 2 | 3.0 |
| 321.8775 | 35:57 | 149293. | 17822. | 35:41 | 36:11 | 69. | 2 | 3.0 |
| 321.8775 | 36:20 | 2000. | 335. | 36:12 | 36:25 | 69. | 2 | 3.0 |
| 321.8775 | 36:48 | 8611. | 2000. | 36:44 | 36:52 | 69. | 2 | 3.0 |
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| 331.9202 | 35:54 | 435314. | 51547. | 35:41 | 36:10 | 59. | 2 | 3.0 |
| 331.9202 | 36:13 | 1531. | 660. | 36:12 | 36:17 | 59. | 2 | 3.0 |
| 331.9202 | 36:19 | 1418. | 312. | 36:17 | 36:26 | 59. | 2 | 3.0 |
| 331.9202 | 36:30 | 587. | 240. | 36:27 | 36:33 | 59. | 2 | 3.0 |
| 331.9202 | 36:49 | 783. | 254. | 36:45 | 36:51 | 59. | 2 | 3.0 |
| 333.9171 | 35:24 | 1112705. | 124933. | 35:10 | 35:41 | 187. | 2 | 3.0 |
| 333.9171 | 35:54 | 548748. | 65854. | 35:43 | 36:10 | 187. | 2 | 3.0 |
| 303.8864 | 32:30 | 8188. | 1033. | 32:23 | 32:42 | 65. | 2 | 3.0 |
| 303.8864 | 33:13 | 5263. | 521. | 32:56 | 33:27 | 65. | 2 | 3.0 |
| 303.8864 | 33:49 | 133454. | 14156. | 33:37 | 34:05 | 65. | 2 | 3.0 |
| 303.8864 | 35:07 | 1674. | 507. | 35:05 | 35:11 | 65. | 2 | 3.0 |
| 305.8834 | 32:31 | 10222. | 1594. | 32:23 | 32:39 | 100. | 2 | 3.0 |
| 305.8834 | 33:13 | 6751. | 880. | 33:02 | 33:21 | 100. | 2 | 3.0 |
| 305.8834 | 33:48 | 168807. | 15757. | 33:32 | 34:04 | 100. | 2 | 3.0 |
| 305.8834 | 35:06 | 1096. | 480. | 35:03 | 35:07 | 100. | 2 | 3.0 |

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| 315.9261 | 32:31 | 3603. | 600. | 32:22 | 32:37 | 109. | 2 | 3.0 |
| 315.9261 | 33:45 | 614003. | 62903. | 33:29 | 34:01 | 109. | 2 | 3.0 |
| 315.9261 | 34:04 | 1439. | 431. | 34:01 | 34:08 | 109. | 2 | 3.0 |
| 317.9230 | 32:27 | 5419. | 1108. | 32:23 | 32:36 | 74. | 2 | 3.0 |
| 317.9230 | 33:46 | 772209. | 75976. | 33:30 | 34:03 | 74. | 2 | 3.0 |
| 317.9230 | 34:08 | 954. | 266. | 34:06 | 34:13 | 74. | 2 | 3.0 |
| 317.9230 | 34:16 | 753. | 237. | 34:13 | 34:18 | 74. | 2 | 3.0 |
| 355.8368 | 42:54 | 5430. | 1413. | 42:47 | 43:00 | 89. | 2 | 3.0 |
| 355.8368 | 43:04 | 2659. | 644. | 43:00 | 43:09 | 89. | 2 | 3.0 |
| 355.8368 | 43:18 | 687735. | 179570. | 43:10 | 43:25 | 89. | 2 | 3.0 |
| 355.8368 | 43:29 | 30407. | 8085. | 43:25 | 43:43 | 89. | 2 | 3.0 |
| 355.8368 | 43:54 | 27410. | 8143. | 43:48 | 43:58 | 89. | 2 | 3.0 |
| 357.8337 | 42:54 | 2543. | 738. | 42:49 | 42:59 | 79. | 2 | 3.0 |
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| 357.8337 | 43:18 | 450725. | 121090. | 43:09 | 43:26 | 79. | 2 | 3.0 |
| 357.8337 | 43:31 | 18311. | 5630. | 43:26 | 43:36 | 79. | 2 | 3.0 |
| 357.8337 | 43:53 | 18146. | 5083. | 43:49 | 43:59 | 79. | 2 | 3.0 |
| 367.8765 | 43:17 | 596482. | 159165. | 43:11 | 43:25 | 67. | 2 | 3.0 |
| 367.8765 | 43:28 | 3606. | 807. | 43:25 | 43:35 | 67. | 2 | 3.0 |
| 369.8734 | 43:17 | 383016. | 102841. | 43:01 | 43:25 | 48. | 2 | 3.0 |
| 369.8734 | 43:31 | 3017. | 430. | 43:25 | 43:43 | 48. | 2 | 3.0 |
| 369.8734 | 43:49 | 506. | 265. | 43:48 | 43:51 | 48. | 2 | 3.0 |
| 369.8734 | 43:53 | 881. | 245. | 43:51 | 43:58 | 48. | 2 | 3.0 |
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| 339.8427 | 42:01 | 13557. | 3588. | 41:55 | 42:08 | 73. | 2 | 3.0 |
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| 339.8427 | 42:35 | 2969. | 616. | 42:26 | 42:41 | 73. | 2 | 3.0 |
| 339.8427 | 42:50 | 838465. | 241105. | 42:43 | 42:57 | 73. | 2 | 3.0 |
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| 341.8396 | 42:14 | 21045. | 4472. | 42:07 | 42:22 | 53. | 2 | 3.0 |
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| 351.8824 | 42:49 | 780830. | 220740. | 42:41 | 43:00 | 72. | 2 | 3.0 |
| 351.8824 | 43:02 | 1418. | 387. | 43:00 | 43:10 | 72. | 2 | 3.0 |
| 353.8793 | 41:45 | 491837. | 125117. | 41:37 | 41:55 | 60. | 2 | 3.0 |
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| 353.8793 | 42:12 | 5568. | 1245. | 42:03 | 42:19 | 60. | 2 | 3.0 |
| 353.8793 | 42:49 | 508160. | 146232. | 42:33 | 42:59 | 60. | 2 | 3.0 |
| 353.8793 | 43:01 | 1173. | 338. | 42:59 | 43:05 | 60. | 2 | 3.0 |
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| 389.7961 | 47:30 | 588192. | 155822. | 47:21 | 47:33 | 65. | 2 | 3.0 |
| 389.7961 | 47:37 | 951228. | 254986. | 47:33 | 47:47 | 65. | 2 | 3.0 |
| 389.7961 | 47:49 | 1691. | 507. | 47:47 | 47:54 | 65. | 2 | 3.0 |
| 389.7961 | 48:01 | 757420. | 197007. | 47:54 | 48:16 | 65. | 2 | 3.0 |
| 389.7961 | 48:19 | 2005. | 651. | 48:16 | 48:23 | 65. | 2 | 3.0 |
| 391.7931 | 47:08 | 655. | 311. | 47:06 | 47:10 | 61. | 2 | 3.0 |
| 391.7931 | 47:18 | 1360. | 583. | 47:16 | 47:21 | 61. | 2 | 3.0 |
| 391.7931 | 47:30 | 478070. | 124999. | 47:21 | 47:33 | 61. | 2 | 3.0 |
| 391.7931 | 47:37 | 763050. | 202845. | 47:33 | 47:47 | 61. | 2 | 3.0 |
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| 391.7931 | 47:52 | 758. | 306. | 47:50 | 47:54 | 61. | 2 | 3.0 |
| 391.7931 | 48:01 | 611449. | 159793. | 47:54 | 48:17 | 61. | 2 | 3.0 |
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| 401.8358 | 47:36 | 522885. | 131482. | 47:32 | 47:45 | 82. | 2 | 3.0 |
| 401.8358 | 47:49 | 956. | 294. | 47:45 | 47:51 | 82. | 2 | 3.0 |
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| 403.8327 | 48:13 | 2665. | 504. | 48:12 | 48:23 | 123. | 2 | 3.0 |
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| 373.8021 | 46:24 | 838225. | 231369. | 46:14 | 46:28 | 87. | 2 | 3.0 |
| 373.8021 | 46:32 | 798840. | 210396. | 46:28 | 46:47 | 87. | 2 | 3.0 |
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| 373.8021 | 47:19 | 734246. | 201410. | 47:08 | 47:31 | 87. | 2 | 3.0 |
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| 373.8021 | 48:01 | 2027. | 254. | 47:57 | 48:11 | 87. | 2 | 3.0 |
| 373.8021 | 48:19 | 672691. | 166389. | 48:12 | 48:32 | 87. | 2 | 3.0 |
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| 375.7990 | 47:19 | 595464. | 162300. | 47:07 | 47:34 | 72. | 2 | 3.0 |
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| 375.7990 | 48:19 | 548333. | 141742. | 48:10 | 48:35 | 72. | 2 | 3.0 |
| 375.7990 | 48:41 | 3008. | 643. | 48:36 | 48:44 | 72. | 2 | 3.0 |
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| 383.8447 | 46:31 | 415742. | 111225. | 46:27 | 46:44 | 59. | 2 | 3.0 |
| 383.8447 | 46:49 | 1379. | 305. | 46:44 | 46:53 | 59. | 2 | 3.0 |
| 383.8447 | 46:54 | 1293. | 355. | 46:53 | 47:00 | 59. | 2 | 3.0 |
| 383.8447 | 47:18 | 402168. | 108575. | 47:07 | 47:24 | 59. | 2 | 3.0 |
| 383.8447 | 47:32 | 2403. | 319. | 47:24 | 47:34 | 59. | 2 | 3.0 |
| 383.8447 | 47:35 | 1955. | 203. | 47:34 | 47:51 | 59. | 2 | 3.0 |
| 383.8447 | 48:18 | 369260. | 92408. | 48:05 | 48:34 | 59. | 2 | 3.0 |
| 383.8447 | 48:39 | 1565. | 369. | 48:35 | 48:44 | 59. | 2 | 3.0 |
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| 385.8417 | 46:30 | 791518. | 212622. | 46:27 | 46:39 | 68. | 2 | 3.0 |
| 385.8417 | 46:41 | 3016. | 763. | 46:39 | 46:45 | 68. | 2 | 3.0 |
| 385.8417 | 46:46 | 1195. | 486. | 46:45 | 46:49 | 68. | 2 | 3.0 |
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| 385.8417 | 47:04 | 1069. | 267. | 47:00 | 47:06 | 68. | 2 | 3.0 |
| 385.8417 | 47:18 | 732737. | 201911. | 47:06 | 47:27 | 68. | 2 | 3.0 |
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| 423.7555 | 52:03 | 1393. | 207. | 51:59 | 52:12 | 60. | 2 | 3.0 |
| 423.7555 | 52:38 | 1029902. | 233862. | 52:31 | 52:53 | 60. | 2 | 3.0 |
| 423.7555 | 52:55 | 1173. | 368. | 52:53 | 52:57 | 60. | 2 | 3.0 |
| 423.7555 | 52:58 | 914. | 287. | 52:57 | 53:03 | 60. | 2 | 3.0 |
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| 435.7951 | 52:53 | 2048. | 498. | 52:51 | 53:02 | 74. | 2 | 3.0 |
| 437.7921 | 51:26 | 5429. | 1130. | 51:22 | 51:42 | 60. | 2 | 3.0 |
| 437.7921 | 52:37 | 435792. | 102297. | 52:35 | 52:49 | 60. | 2 | 3.0 |
| 437.7921 | 52:50 | 2012. | 521. | 52:49 | 52:57 | 60. | 2 | 3.0 |
| 437.7921 | 53:01 | 530. | 189. | 52:57 | 53:02 | 60. | 2 | 3.0 |
| 407.7614 | 50:37 | 19421. | 4555. | 50:34 | 50:44 | 72. | 2 | 3.0 |
| 407.7614 | 50:55 | 782833. | 163759. | 50:49 | 51:06 | 72. | 2 | 3.0 |
| 407.7614 | 51:08 | 1436. | 392. | 51:06 | 51:12 | 72. | 2 | 3.0 |
| 407.7614 | 51:22 | 10906. | 1966. | 51:12 | 51:28 | 72. | 2 | 3.0 |
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| 407.7614 | 51:51 | 1155. | 317. | 51:49 | 52:00 | 72. | 2 3.0 |
| 407.7614 | 53:17 | 583503. | 126919. | 53:04 | 53:28 | 72. | 2 3.0 |
| 407.7614 | 53:31 | 1213. | 394. | 53:28 | 53:32 | 72. | 2 3.0 |
| 409.7583 | 50:38 | 19905. | 5180. | 50:34 | 50:44 | 74. | 2 3.0 |
| 409.7583 | 50:55 | 760447. | 161789. | 50:48 | 51:06 | 74. | 2 3.0 |
| 409.7583 | 51:09 | 2505. | 394. | 51:06 | 51:16 | 74. | 2 3.0 |
| 409.7583 | 51:21 | 10263. | 2479. | 51:16 | 51:28 | 74. | 2 3.0 |
| 409.7583 | 51:37 | 168878. | 35618. | 51:28 | 51:53 | 74. | 2 3.0 |
| 409.7583 | 53:17 | 559213. | 119668. | 53:08 | 53:26 | 74. | 2 3.0 |
| 409.7583 | 53:27 | 1609. | 354. | 53:26 | 53:36 | 74. | 2 3.0 |
| 417.8041 | 50:54 | 279720. | 61559. | 50:43 | 51:10 | 78. | 2 3.0 |
| 417.8041 | 53:15 | 257990. | 57074. | 53:04 | 53:25 | 78. | 2 3.0 |
| 417.8041 | 53:27 | 923. | 270. | 53:25 | 53:30 | 78. | 2 3.0 |
| 419.8010 | 50:54 | 619411. | 133772. | 50:47 | 51:10 | 69. | 2 3.0 |
| 419.8010 | 53:15 | 578074. | 126560. | 53:05 | 53:31 | 69. | 2 3.0 |
| 457.7148 | 56:56 | 1051421. | 276636. | 56:48 | 57:10 | 57. | 2 3.0 |
| 457.7148 | 57:13 | 2974. | 522. | 57:10 | 57:20 | 57. | 2 3.0 |
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| 459.7118 | 56:56 | 1176355. | 305493. | 56:48 | 57:12 | 80. | 2 3.0 |
| 459.7118 | 57:16 | 2499. | 482. | 57:14 | 57:28 | 80. | 2 3.0 |
| 469.7545 | 56:55 | 671541. | 183337. | 56:47 | 57:05 | 51. | 2 3.0 |
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| 469.7545 | 57:18 | 1038. | 241. | 57:17 | 57:22 | 51. | 2 3.0 |
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| 471.7514 | 56:55 | 750275. | 201458. | 56:47 | 57:11 | 82. | 2 3.0 |
| 441.7207 | 57:04 | 862970. | 231719. | 56:53 | 57:20 | 73. | 2 3.0 |
| 443.7177 | 57:04 | 939039. | 255961. | 56:57 | 57:20 | 77. | 2 3.0 |

STL - Knoxville

# IsoCalc Preliminary Sample Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| Workorder | FX1WJ2AD | Prep Batch | 3273193 | Lot No | H3I100253-003 |
| Data File | /20031004s1/tfx1wj2d.d | Prep Date | 09/30/03 | SDG No | |
| Analysis ID | 71225 | Prep Exp Date | 10/09/03 | Date Received | 09/10/03 |
| Analysis Date | 10/5/2003 | Matrix | SOLID | Date Sampled | 09/09/03 |
| Analysis Time | 06:03 | Initial Wt/Vol | 10.0 | Lims Test Code | XXA11IN01 |
| Anal Exp Date | 11/14/03 | Extract Vol | 20 | Method | DX8290_2 |
| Instrument | M2A | Dil Factor | 1.0 | Code | IN2 |
| Analyst | PMP | | | | |

| Analyte | RT | Area | Height | RF | Std Amt | Amount | Rec | Conc (pg/g) | | DL (pg/g) |
|---|---|---|---|---|---|---|---|---|---|---|
| 2,3,7,8-TCDD | 35:57 | 294163 | 35427 | 1.095 | 200.0 | 247.441270 | 123.72 | 24.744127 | | 0.206 |
| Total TCDD | | | | 1.095 | | 247.441270 | | 24.744127 | | 0.206 |
| 2,3,7,8-TCDF | 33:49 | 352880 | 34845 | 1.017 | 200.0 | 224.760282 | 112.38 | 22.476028 | | 0.218 |
| Total TCDF | | | | 1.017 | | 224.760282 | | 22.476028 | | 0.218 |
| 1,2,3,7,8-PeCDD | 43:19 | 1319067 | 354490 | 0.984 | 1000 | 1259.73026 | 125.97 | 125.973026 | | 0.136 |
| Total PeCDD | | | | 0.984 | | 1259.73026 | | 125.973026 | | 0.136 |
| 1,2,3,7,8-PeCDF | 41:46 | 1491720 | 368603 | 0.970 | 1000 | 1095.32129 | 109.53 | 109.532129 | | 0.108 |
| 2,3,4,7,8-PeCDF | 42:50 | 1542951 | 428470 | 1.035 | 1000 | 1054.22069 | 105.42 | 105.422069 | | 0.091 |
| Total PeCDF | | | | 1.003 | | 2149.54198 | | 214.954198 | | 0.099 |
| 1,2,3,4,7,8-HxCDD | 47:29 | 1169999 | 318841 | 1.111 | 1000 | 1074.71109 | 107.47 | 107.471109 | | 0.127 |
| 1,2,3,6,7,8-HxCDD | 47:37 | 2136350 | 571893 | 1.026 | 1000 | 2039.56278 | 203.96 | 203.956278 | | 0.136 |
| 1,2,3,7,8,9-HxCDD | 48:01 | 1558230 | 390804 | 1.109 | 1000 | 1404.08109 | 140.41 | 140.408109 | | 0.127 |
| Total HxCDD | | | | 1.082 | | 4518.35496 | | 451.835496 | | 0.130 |
| 1,2,3,4,7,8-HxCDF | 46:23 | 1681984 | 464704 | 1.226 | 1000 | 1046.73243 | 104.67 | 104.673243 | | 0.098 |
| 1,2,3,6,7,8-HxCDF | 46:32 | 1608739 | 439040 | 1.197 | 1000 | 1033.09216 | 103.31 | 103.309216 | Q | 0.104 |
| 2,3,4,6,7,8-HxCDF | 47:19 | 1415051 | 388798 | 1.155 | 1000 | 1005.45568 | 100.55 | 100.545568 | | 0.118 |
| 1,2,3,7,8,9-HxCDF | 48:20 | 1261453 | 303954 | 1.236 | 1000 | 940.160985 | 94.02 | 94.016099 | | 0.142 |
| Total HxCDF | | | | 1.204 | | 4025.44126 | | 402.544126 | Q | 0.113 |
| 1,2,3,4,6,7,8-HpCDD | 52:38 | 2478729 | 587091 | 0.986 | 1000 | 2752.49836 | 275.25 | 275.249836 | | 0.162 |
| Total HpCDD | | | | 0.986 | | 2752.49836 | | 275.249836 | | 0.162 |
| 1,2,3,4,6,7,8-HpCDF | 50:55 | 1731875 | 373932 | 1.512 | 1000 | 1236.88373 | 123.69 | 123.688373 | B | 0.099 |
| 1,2,3,4,7,8,9-HpCDF | 53:16 | 1205098 | 274800 | 1.426 | 1000 | 984.264027 | 98.43 | 98.426403 | B | 0.115 |
| Total HpCDF | | | | 1.469 | | 2221.14776 | | 222.114776 | B | 0.106 |
| OCDD | 56:56 | 2475190 | 666844 | 1.075 | 2000 | 3299.12030 | 164.96 | 329.912030 | B | 0.179 |
| OCDF | 57:04 | 1851713 | 493880 | 1.135 | 2000 | 2335.94436 | 116.80 | 233.594436 | | 0.156 |
| 13C-2,3,7,8-TCDD | 35:54 | 1085634 | 132994 | 1.083 | 1000 | 927.677397 | 92.77 | 92.767740 | | 0.477 |
| 13C-2,3,7,8-TCDF | 33:45 | 1543133 | 153423 | 1.527 | 1000 | 935.050416 | 93.51 | 93.505042 | | 0.216 |
| 13C-1,2,3,7,8-PeCDD | 43:17 | 1063748 | 288018 | 0.958 | 1000 | 1026.82268 | 102.68 | 102.682268 | | 0.231 |
| 13C-1,2,3,7,8-PeCDF | 41:45 | 1404261 | 358772 | 1.427 | 1000 | 910.463882 | 91.05 | 91.046388 | | 0.181 |
| 13C-2,3,4,7,8-PeCDF | 42:49 | 1413841 | 396361 | 1.384 | 1000 | 945.144091 | 94.51 | 94.514409 | | 0.186 |
| 13C-1,2,3,4,7,8-HxCDD | 47:28 | 979854 | 272652 | 0.941 | 1000 | 1031.09024 | 103.11 | 103.109024 | | 0.131 |
| 13C-1,2,3,6,7,8-HxCDD | 47:36 | 1021287 | 275580 | 1.078 | 1000 | 938.155970 | 93.82 | 93.815597 | | 0.114 |
| 13C-1,2,3,4,7,8-HxCDF | 46:22 | 1310391 | 376122 | 1.283 | 1000 | 1010.92960 | 101.09 | 101.092960 | | 0.117 |
| 13C-1,2,3,6,7,8-HxCDF | 46:31 | 1300630 | 361388 | 1.406 | 1000 | 915.970423 | 91.60 | 91.597042 | | 0.107 |
| 13C-2,3,4,6,7,8-HxCDF | 47:17 | 1218216 | 329152 | 1.301 | 1000 | 927.217185 | 92.72 | 92.721718 | | 0.116 |
| 13C-1,2,3,7,8,9-HxCDF | 48:18 | 1085856 | 256261 | 1.105 | 1000 | 972.502658 | 97.25 | 97.250266 | | 0.136 |
| 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 913209 | 208393 | 0.970 | 1000 | 932.127465 | 93.21 | 93.212747 | | 0.105 |
| 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 925809 | 206858 | 1.017 | 1000 | 901.220285 | 90.12 | 90.122029 | | 0.104 |
| 13C-1,2,3,4,7,8,9-HpCDF | 53:15 | 858660 | 189435 | 0.812 | 1000 | 1046.86024 | 104.69 | 104.686024 | | 0.130 |
| 13C-OCDD | 56:54 | 1396328 | 376591 | 0.856 | 2000 | 1615.93186 | 80.80 | 161.593186 | | 0.124 |
| 13C-1,2,3,4-TCDD | 35:25 | 2161945 | 244211 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.516 |
| 13C-1,2,3,7,8,9-HxCDD | 48:00 | 2020075 | 529107 | 1.000 | 2000 | 2000.00000 | 100.00 | 200.000000 | | 0.123 |

BJW 10-7-03

VAK 10-7-03

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# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AD | **Prep Batch** | 3273193 | **Lot No** | H3I100253-003 |
| **Data File** | /20031004s1/tfx1wj2d.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71225 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 06:03 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **304** | | | | | **303.9016** | **305.8987** | **303.9016** | **305.8987** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 165 | 175 | 66 | 70 | 0.94 * | / | |
| | 2,3,7,8-TCDF | 33:49 | 33:49 | 0 | 154707 | 198173 ✓ | 15331 | 19514 | 0.78 | ABV/ABV | |
| **316** | | | | | **315.9419** | **317.9389** | **315.9419** | **317.9389** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 233 | 170 | 93 | 68 | 1.37 * | / | |
| | 13C-2,3,7,8-TCDF | 33:45 | 33:47 | -2 | 676484 | 866649 ✓ | 66277 | 87146 | 0.78 | AVV/ABV | |
| **320** | | | | | **319.8965** | **321.8936** | **319.8965** | **321.8936** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 153 | 148 | 61 | 59 | 1.03 * | / | |
| | 2,3,7,8-TCDD | 35:57 | 35:56 | 1 | 130030 | 164133 ✓ | 15947 | 19480 | 0.79 | AVV/AVB | |
| **332** | | | | | **331.9368** | **333.9338** | **331.9368** | **333.9338** | **0.65-0.89** | | |
| | Noise | 00:00 | 00:00 | 0 | 325 | 305 | 130 | 122 | 1.07 * | / | |
| | 13C-1,2,3,4-TCDD | 35:25 | 35:25 | 0 | 973250 | 1188695 ✓ | 108789 | 135422 | 0.82 | ABV/ABV | |
| | 13C-2,3,7,8-TCDD | 35:54 | 35:54 | 0 | 490122 | 595512 ✓ | 58578 | 74416 | 0.82 | AVV/AVV | |
| **340** | | | | | **339.8597** | **341.8567** | **339.8597** | **341.8567** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 195 | 180 | 78 | 72 | 1.08 * | / | |
| | 1,2,3,7,8-PeCDF | 41:46 | 41:46 | 0 | 895540 | 596180 ✓ | 220620 | 147983 | 1.50 | ABV/ABV | |
| | 2,3,4,7,8-PeCDF | 42:50 | 42:50 | 0 | 940073 | 602878 ✓ | 258080 | 170390 | 1.56 | ABV/ABV | |
| **352** | | | | | **351.9000** | **353.8970** | **351.9000** | **353.8970** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 168 | 148 | 67 | 59 | 1.14 * | / | |
| | 13C-1,2,3,7,8-PeCDF | 41:45 | 41:45 | 0 | 861761 | 542500 ✓ | 221388 | 137384 | 1.59 | ABV/ABV | |
| | Unidentified | 42:12 | 00:00 | 0 | 10321 | 4924 | 2357 | 1083 | 2.10 * | AVB/AVB | R |
| | 13C-2,3,4,7,8-PeCDF | 42:49 | 42:49 | 0 | 868167 | 545674 ✓ | 240465 | 155896 | 1.59 | ABV/ABV | |
| **356** | | | | | **355.8546** | **357.8516** | **355.8546** | **357.8516** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 193 | 193 | 77 | 77 | 1.00 * | / | |
| | 1,2,3,7,8-PeCDD | 43:19 | 43:17 | 2 | 801193 | 517874 ✓ | 212955 | 141535 | 1.55 | ABV/ABV | |
| **368** | | | | | **367.8949** | **369.8919** | **367.8949** | **369.8919** | **1.32-1.78** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 120 | 60 | 48 | 1.25 * | / | |
| | 13C-1,2,3,7,8-PeCDD | 43:17 | 43:16 | 1 | 654027 | 409721 ✓ | 178211 | 109807 | 1.60 | ABV/ABV | |
| **374** | | | | | **373.8208** | **375.8178** | **373.8208** | **375.8178** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 228 | 223 | 91 | 89 | 1.02 * | / | |
| | 1,2,3,4,7,8-HxCDF | 46:23 | 46:23 | 0 | 936136 | 745848 ✓ | 258411 | 206293 | 1.26 | ABV/ABV | |
| | 1,2,3,6,7,8-HxCDF | 46:32 | 46:31 | 1 | 889557 | 719182 ✓ | 244224 | 194816 | 1.24 | AVV/AVV | |
| | 2,3,4,6,7,8-HxCDF | 47:19 | 47:17 | 2 | 784547 | 630504 ✓ | 215506 | 173292 | 1.24 | AVV/AVV | |
| | 1,2,3,7,8,9-HxCDF | 48:20 | 48:20 | 0 | 698784 | 562669 ✓ | 167823 | 136131 | 1.24 | ABV/ABV | |
| **384** | | | | | **383.8639** | **385.8610** | **383.8639** | **385.8610** | **0.43-0.59** | | |
| | Noise | 00:00 | 00:00 | 0 | 210 | 188 | 84 | 75 | 1.12 * | / | |
| | 13C-1,2,3,4,7,8-HxCDF | 46:22 | 46:22 | 0 | 456461 | 853930 ✓ | 131503 | 244619 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDF | 46:31 | 46:31 | 0 | 447100 | 853530 ✓ | 125302 | 236086 | 0.52 | AVV/AVV | |
| | 13C-2,3,4,6,7,8-HxCDF | 47:17 | 47:16 | 1 | 420362 | 797854 ✓ | 113515 | 215637 | 0.53 | ABV/ABV | |
| | 13C-1,2,3,7,8,9-HxCDF | 48:18 | 48:19 | -1 | 371385 | 714471 ✓ | 88003 | 168258 | 0.52 | ABB/ABV | |
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 200 | 185 | 80 | 74 | 1.08 | / | |
| | 1,2,3,4,7,8-HxCDD | 47:29 | 47:28 | 1 | 647841 | 522158 ✓ | 174683 | 144158 | 1.24 | AVV/ABV | |
| | 1,2,3,6,7,8-HxCDD | 47:37 | 47:35 | 2 | 1176610 | 959740 ✓ | 316157 | 255736 | 1.23 | AVV/AVV | |

Notes:
R = ratio is oustide limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

STL - Knoxville

# IsoCalc Preliminary Peak Report

## *PCDD/PCDF by EPA Method 8290 w/15 IS's*

IsoCalc

| | | | | | |
|---|---|---|---|---|---|
| **Workorder** | FX1WJ2AD | **Prep Batch** | 3273193 | **Lot No** | H3I100353-003 |
| **Data File** | /20031004s1/tfx1wj2d.d | **Prep Date** | 09/30/03 | **SDG No** | |
| **Analysis ID** | 71225 | **Prep Exp Date** | 10/09/03 | **Date Received** | 09/10/03 |
| **Analysis Date** | 10/05/03 06:03 | **Matrix** | SOLID | **Date Sampled** | 09/09/03 |
| **Anal Exp Date** | 11/14/03 | **Initial Wt/Vol** | 10.0 g | **Lims Test Code** | XXA11IN01 |
| **Instrument** | M2A | **Extract Vol** | 20 uL | **Method** | DX8290_2 |
| **Analyst** | PMP | **Diluton Factor** | 1.00 | **Code** | IN2 |

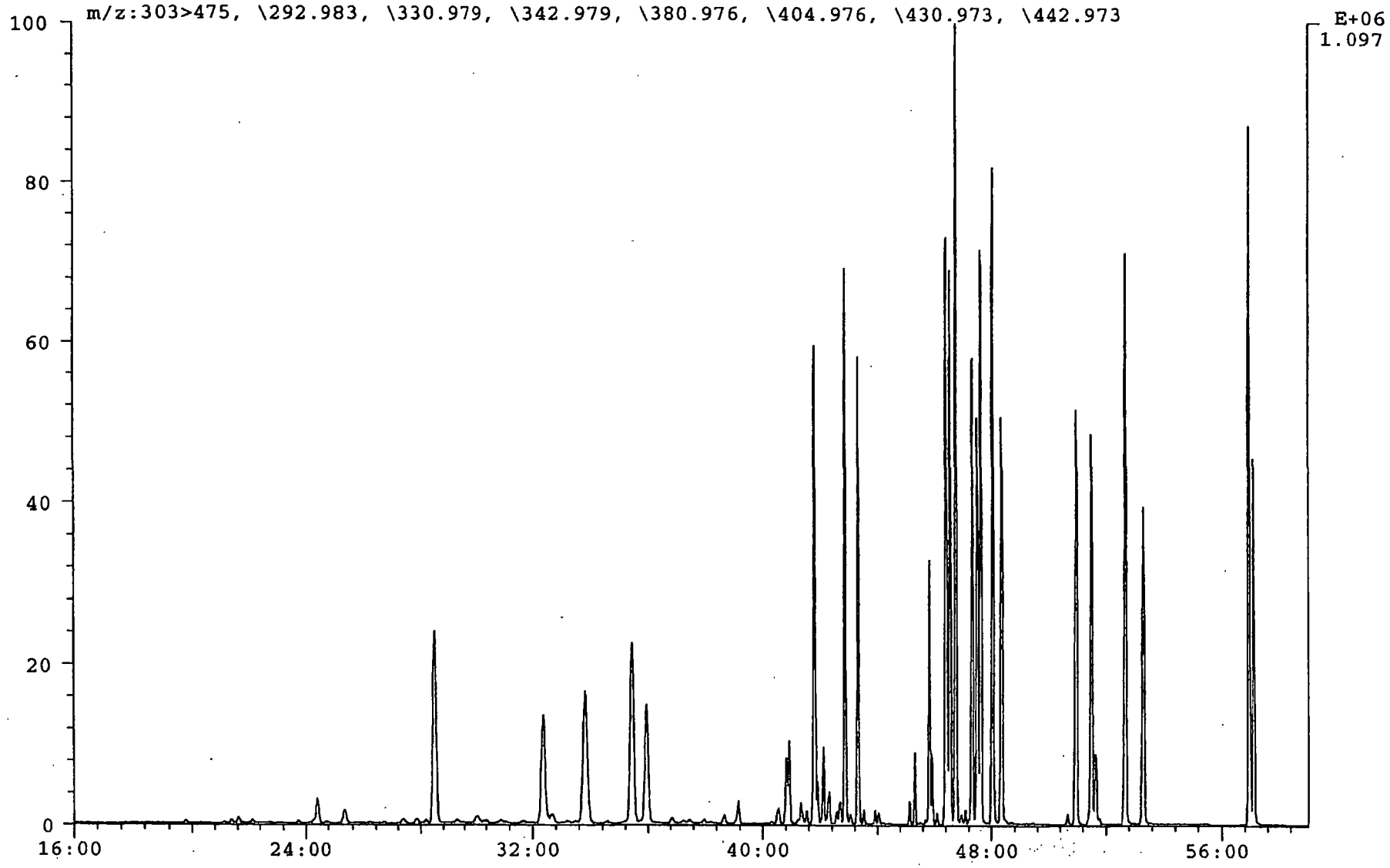
**View Small Peaks?** False **View deleted peaks?** False

| Mass | Peak Name | RT | Pred RT | Δ | Area 1 | Area 2 | Height1 | Height2 | Ratio | Integration | Flags |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **390** | | | | | **389.8156** | **391.8127** | **389.8156** | **391.8127** | **1.05-1.43** | | |
| | 1,2,3,7,8,9-HxCDD | 48:01 | 48:01 | 0 | 860024 | 698206 ✓ | 213594 | 177210 | 1.23 | AVV/ABV | |
| **402** | | | | | **401.8559** | **403.8529** | **401.8559** | **403.8529** | **1.05-1.43** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 165 | 64 | 66 | 0.97 * | / | |
| | 13C-1,2,3,4,7,8-HxCDD | 47:28 | 47:27 | 1 | 550217 | 429637 ✓ | 156913 | 115739 | 1.28 | ABV/ABV | |
| | 13C-1,2,3,6,7,8-HxCDD | 47:36 | 47:34 | 2 | 562932 | 458355 ✓ | 154357 | 121223 | 1.23 | AVV/AVV | |
| | 13C-1,2,3,7,8,9-HxCDD | 48:00 | 48:00 | 0 | 1121022 | 899053 ✓ | 293273 | 235834 | 1.25 | AVV/ABV | |
| | Unidentified | 48:14 | 00:00 | 0 | 3637 | 6054 | 643 | 949 | 0.60 * | AVB/AVB | RT |
| **408** | | | | | **407.7818** | **409.7788** | **407.7818** | **409.7788** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 150 | 160 | 60 | 64 | 0.94 | / | |
| | 1,2,3,4,6,7,8-HpCDF | 50:55 | 50:56 | -1 | 896227 | 835648 ✓ | 192087 | 181845 | 1.07 | ABV/ABV | M |
| | 1,2,3,4,7,8,9-HpCDF | 53:16 | 53:16 | 0 | 618449 | 586649 ✓ | 140616 | 134104 | 1.05 | ABV/ABV | M |
| **418** | | | | | **417.8250** | **419.8220** | **417.8250** | **419.8220** | **0.37-0.51** | | |
| | Noise | 00:00 | 00:00 | 0 | 140 | 140 | 56 | 56 | 1.00 * | / | |
| | 13C-1,2,3,4,6,7,8-HpCDF | 50:54 | 50:54 | 0 | 299285 | 626524 ✓ | 65978 | 140880 | 0.48 | ABB/ABV | |
| | 13C-1,2,3,4,7,8,9-HpCDF | 53:15 | 53:15 | 0 | 262081 | 596579 ✓ | 58345 | 131090 | 0.44 | ABV/ABV | |
| **424** | | | | | **423.7767** | **425.7737** | **423.7767** | **425.7737** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 160 | 173 | 64 | 69 | 0.93 | / | |
| | 1,2,3,4,6,7,8-HpCDD | 52:38 | 52:39 | -1 | 1262535 | 1216194 ✓ | 296634 | 290457 | 1.04 | ABV/ABV | |
| **436** | | | | | **435.8169** | **437.8140** | **435.8169** | **437.8140** | **0.88-1.20** | | |
| | Noise | 00:00 | 00:00 | 0 | 133 | 138 | 53 | 55 | 0.96 | / | |
| | Unidentified | 51:26 | 00:00 | 0 | 5576 | 5819 | 1317 | 1041 | 0.96 | ABB/ABB | |
| | 13C-1,2,3,4,6,7,8-HpCDD | 52:37 | 52:38 | -1 | 470038 | 443171 ✓ | 105881 | 102512 | 1.06 | AVV/ABV | |
| **442** | | | | | **441.7428** | **443.7399** | **441.7428** | **443.7399** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 135 | 198 | 54 | 79 | 0.68 * | / | |
| | OCDF | 57:04 | 57:06 | -2 | 886912 | 964801 ✓ | 234769 | 259111 | 0.92 | AVV/ABV | XM |
| **458** | | | | | **457.7377** | **459.7348** | **457.7377** | **459.7348** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 185 | 178 | 74 | 71 | 1.04 * | / | |
| | OCDD | 56:56 | 56:56 | 0 | 1173031 | 1302159 ✓ | 317099 | 349745 | 0.90 | ABV/ABV | M |
| **470** | | | | | **469.7780** | **471.7750** | **469.7780** | **471.7750** | **0.76-1.02** | | |
| | Noise | 00:00 | 00:00 | 0 | 138 | 143 | 55 | 57 | 0.96 | / | |
| | 13C-OCDD | 56:54 | 56:55 | -1 | 662435 | 733893 ✓ | 180169 | 196422 | 0.90 | ABV/ABV | |

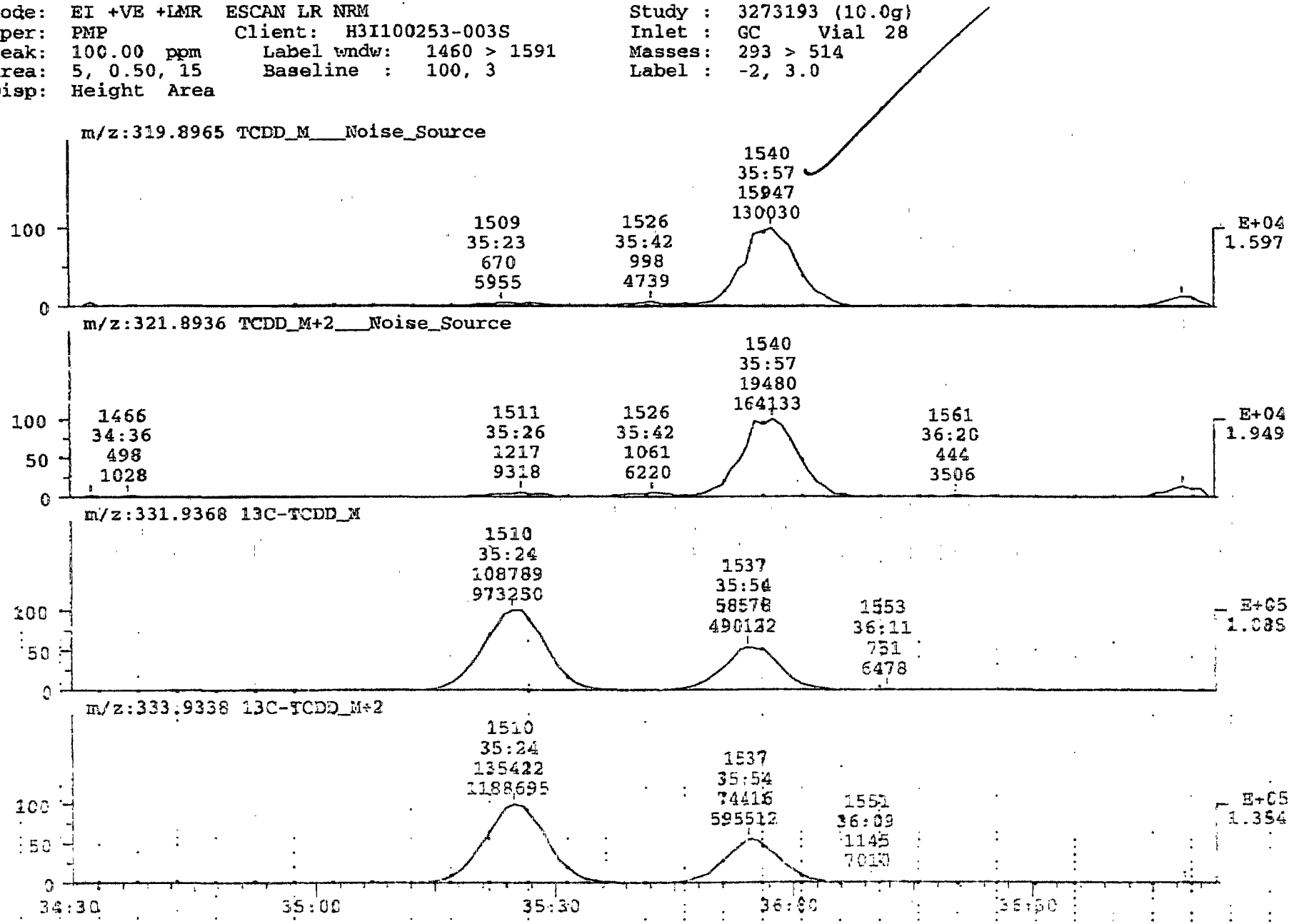
Notes:
R = ratio is outside limits M = data changed manually N = Peak not reported S = peak less than 2.5x S/N
T = peak outside RT delta D = peak shifted from ccal W = peak outside first/last X = peak has dup match

CHRO: tfx1wj2d 05-Oct-03 Elapse: 57:06 2723
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003 SD Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 441 > 2830 Masses: 293 > 514
Area: 5, 0.50, 0 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area

Just MSD 10/6/03
Calc BW 10-7-03
QC VMK 10-7-03
Revd CS 10.7.03

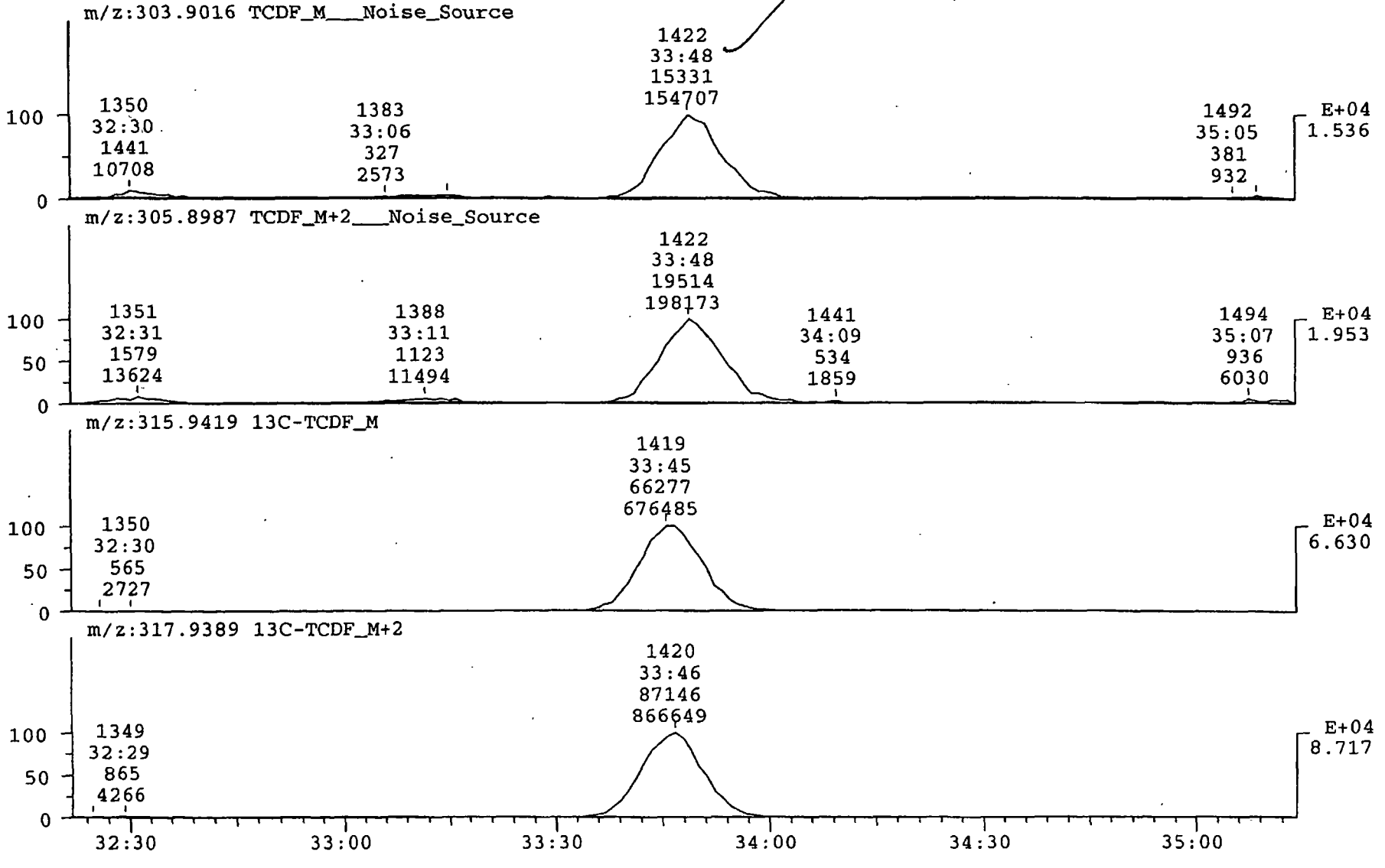


CHRO: tfx1wj2d 05-Oct-03 Elapse: 35:41 1525
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 1460 > 1591 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area

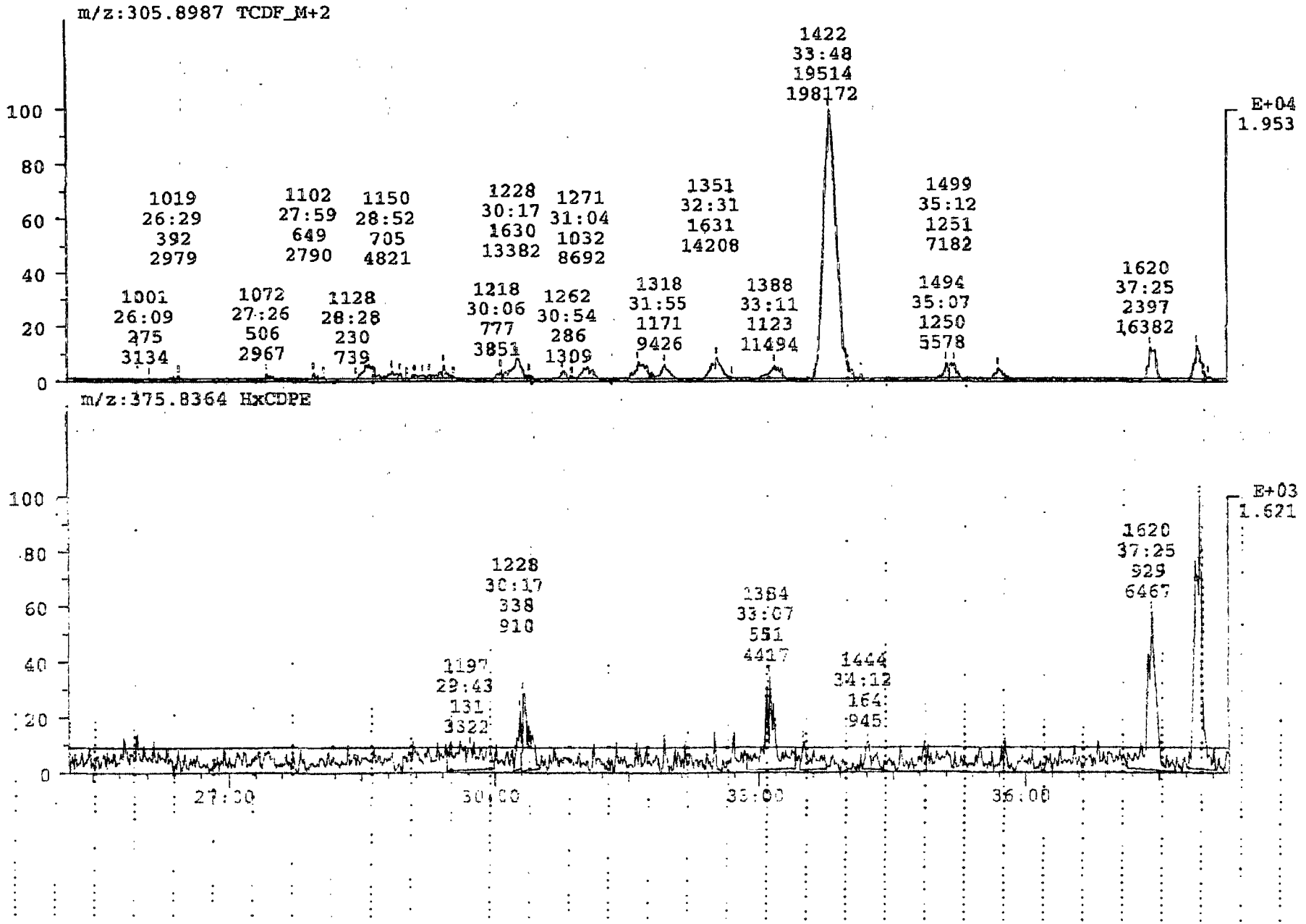



970

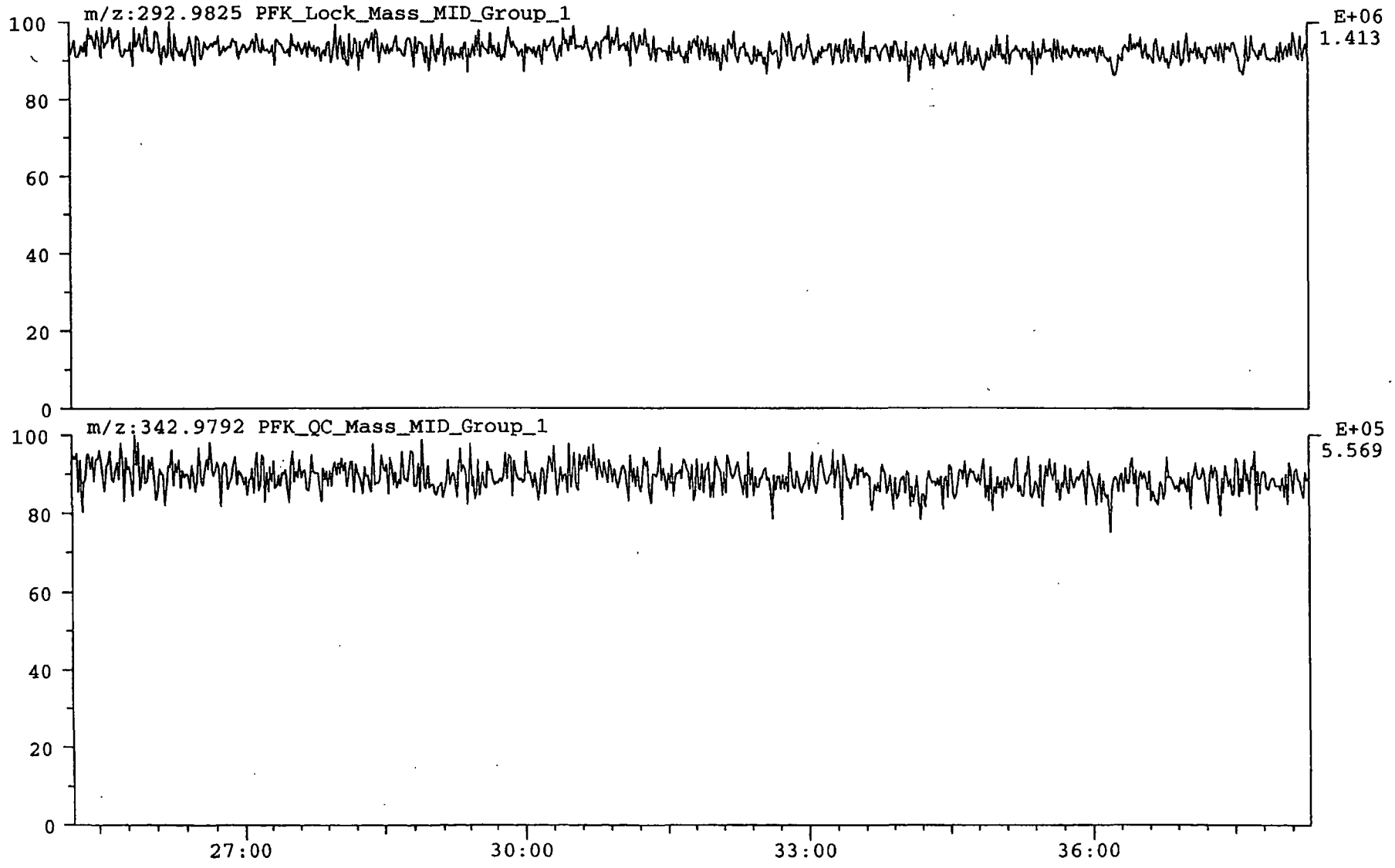
CHRO: tfx1wj2d 05-Oct-03 Elapse: 33:44 1418
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 1342 > 1500 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



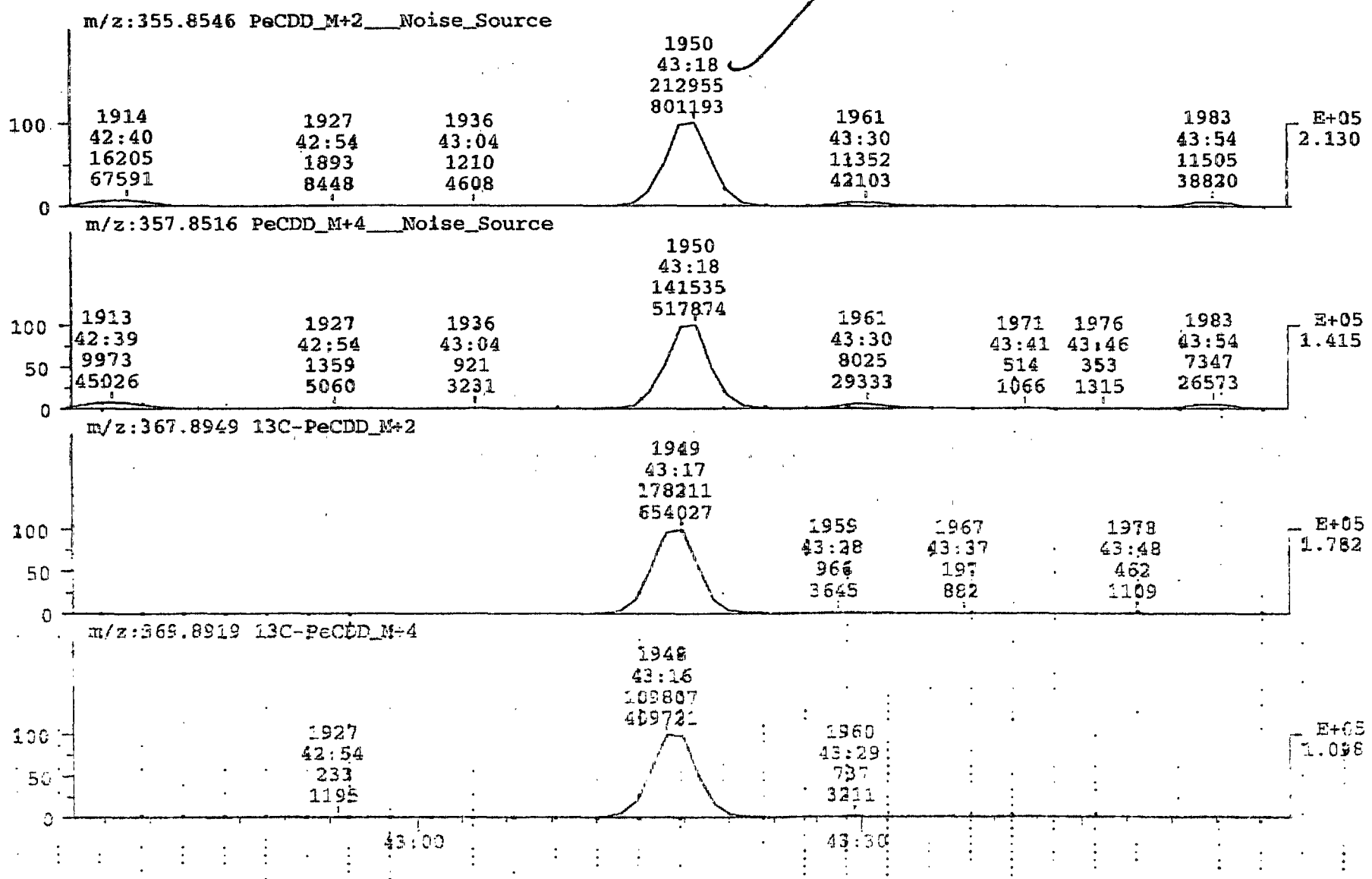
CHRO: tfx1wj2d 05-Oct-03 Elapse: 33:47 1421
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 950 > 1668 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



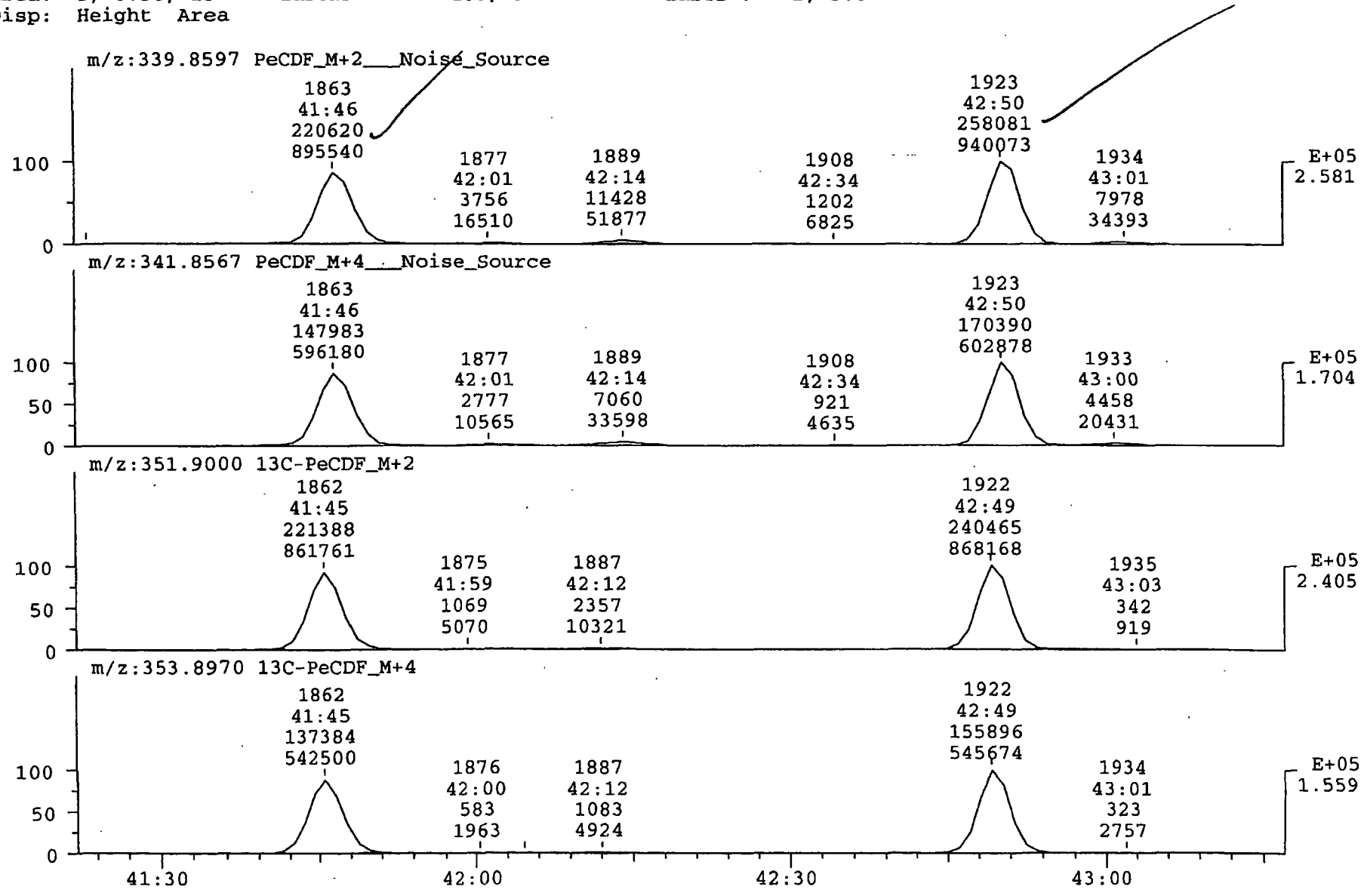
```
CHRO:  tfx1wj2d                              05-Oct-03   Elapse:   33:47      1421
Samp:  Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1                Start :   06:03:38   2830
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                        Study :   3273193 (10.0g)
Oper:  PMP           Client:  H3I100253-003S            Inlet :   GC     Vial  28
Peak:  100.00  ppm     Label wndw:   950 > 1668          Masses:   293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3             Label :   0, 0.0
Disp:  Height  Area
```



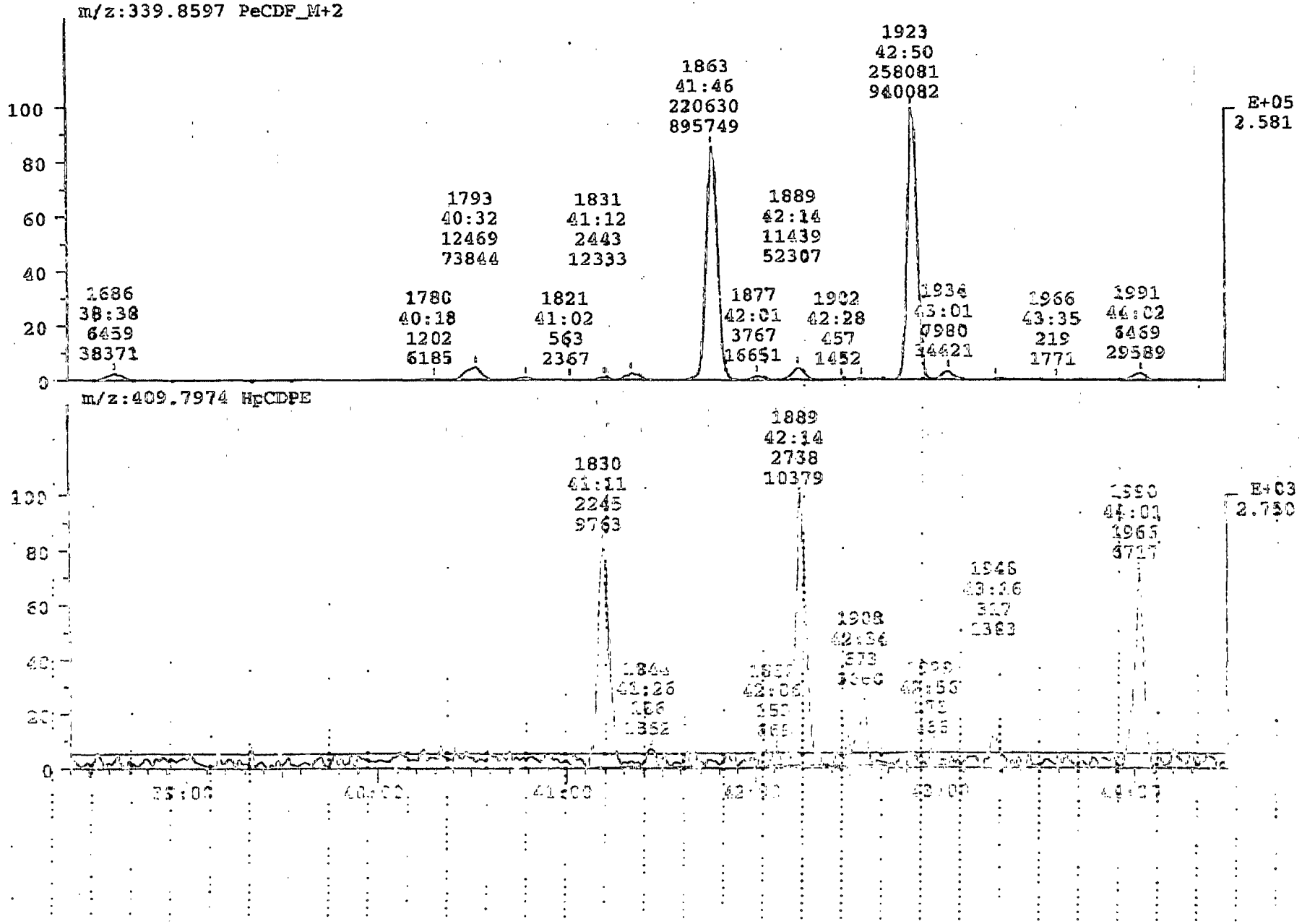
CHRO: tfx1wj2d 05-Oct-03 Elapse: 43:14 1946
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 1910 > 1988 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3, 0
Disp: Height Area



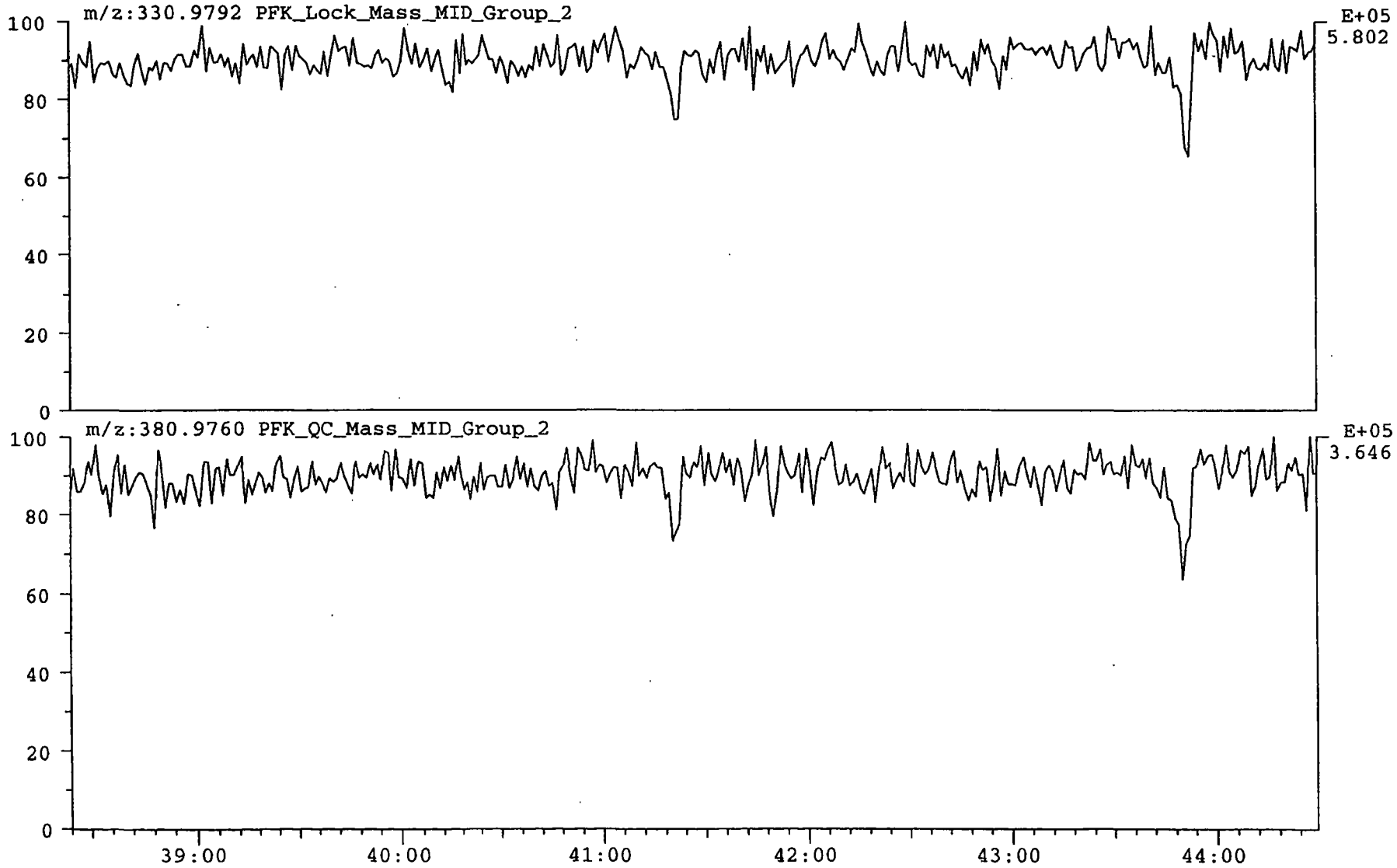
CHRO: tfx1wj2d 05-Oct-03 Elapse: 42:19 1894
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 1840 > 1948 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



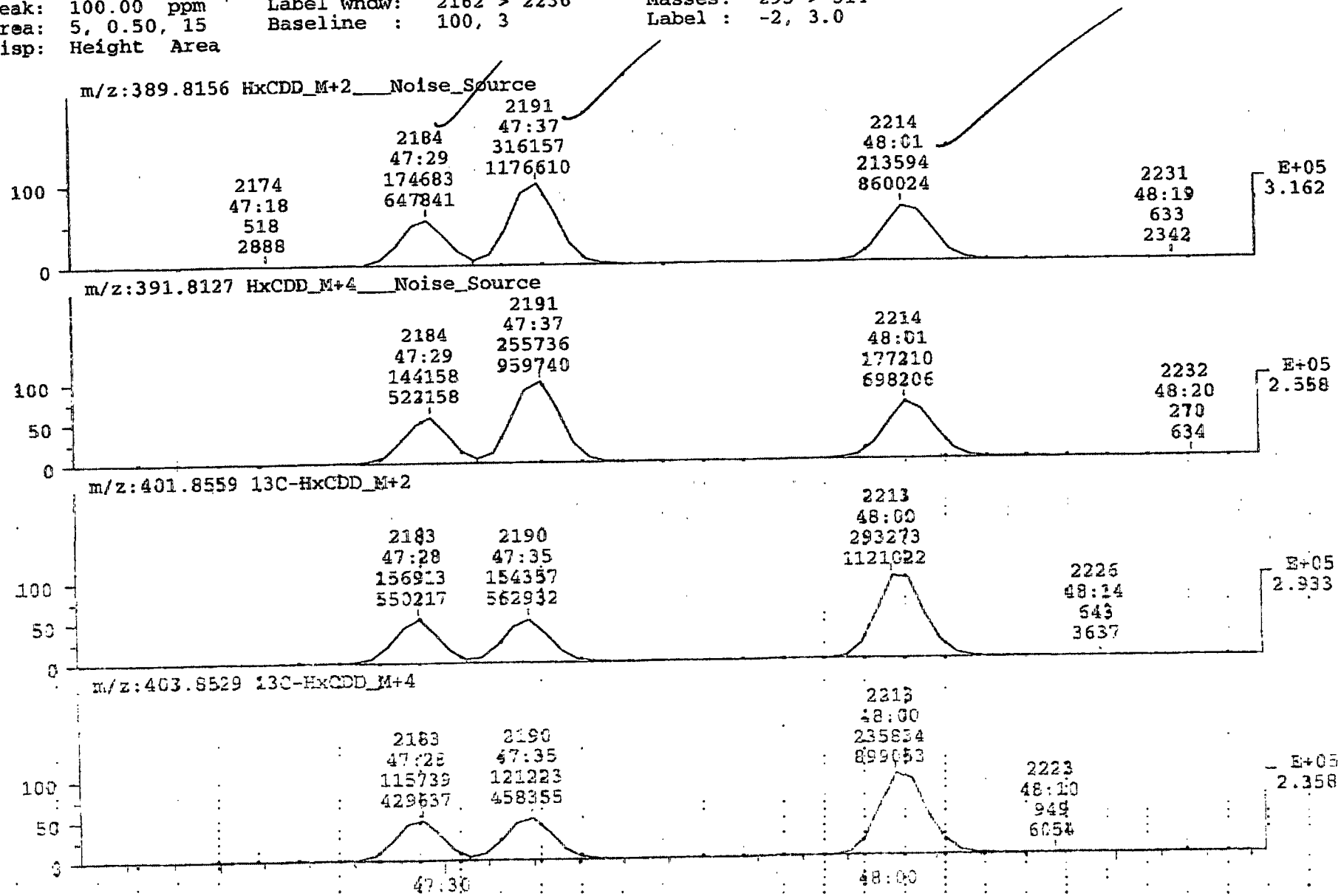
```
CHRO:  tfx1wj2d                                  05-Oct-03   Elapse:  42:48      1921
Samp:  Vial 28 WC=fx1wj2ad Meth=IN2 Dil=1                    Start :  06:03:38   2830
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP            Client:  H3I100253-003S               Inlet :  GC     Vial 28
Peak:  100.00  ppm      Label wndw:   1672 > 2016           Masses:  293 > 514
Area:  5, 0.50, 15      Baseline  :   100, 3                Label :  -2, 3.0
Disp:  Height  Area
```



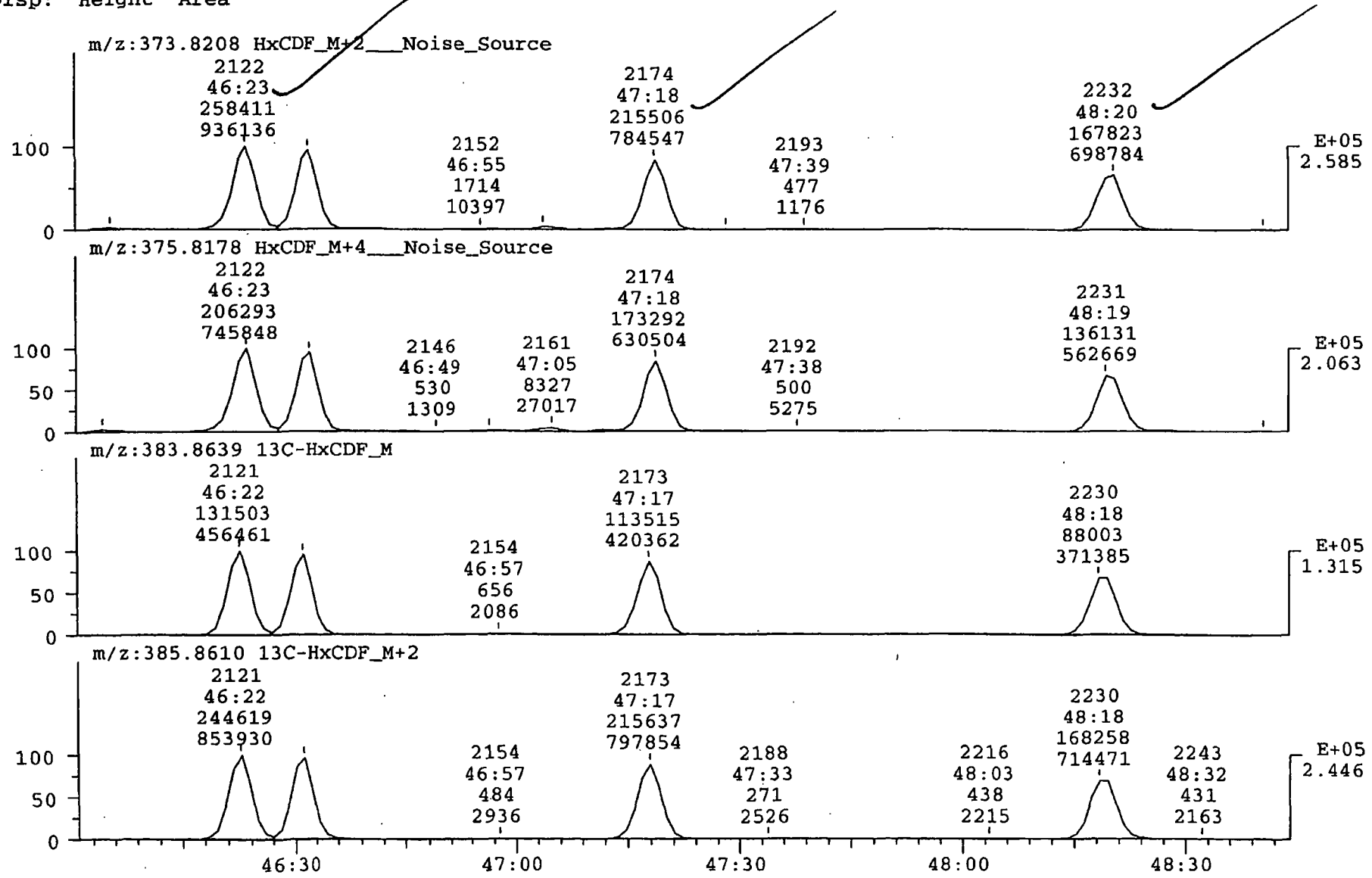
CHRO: tfx1wj2d 05-Oct-03 Elapse: 42:48 1921
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 1672 > 2016 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



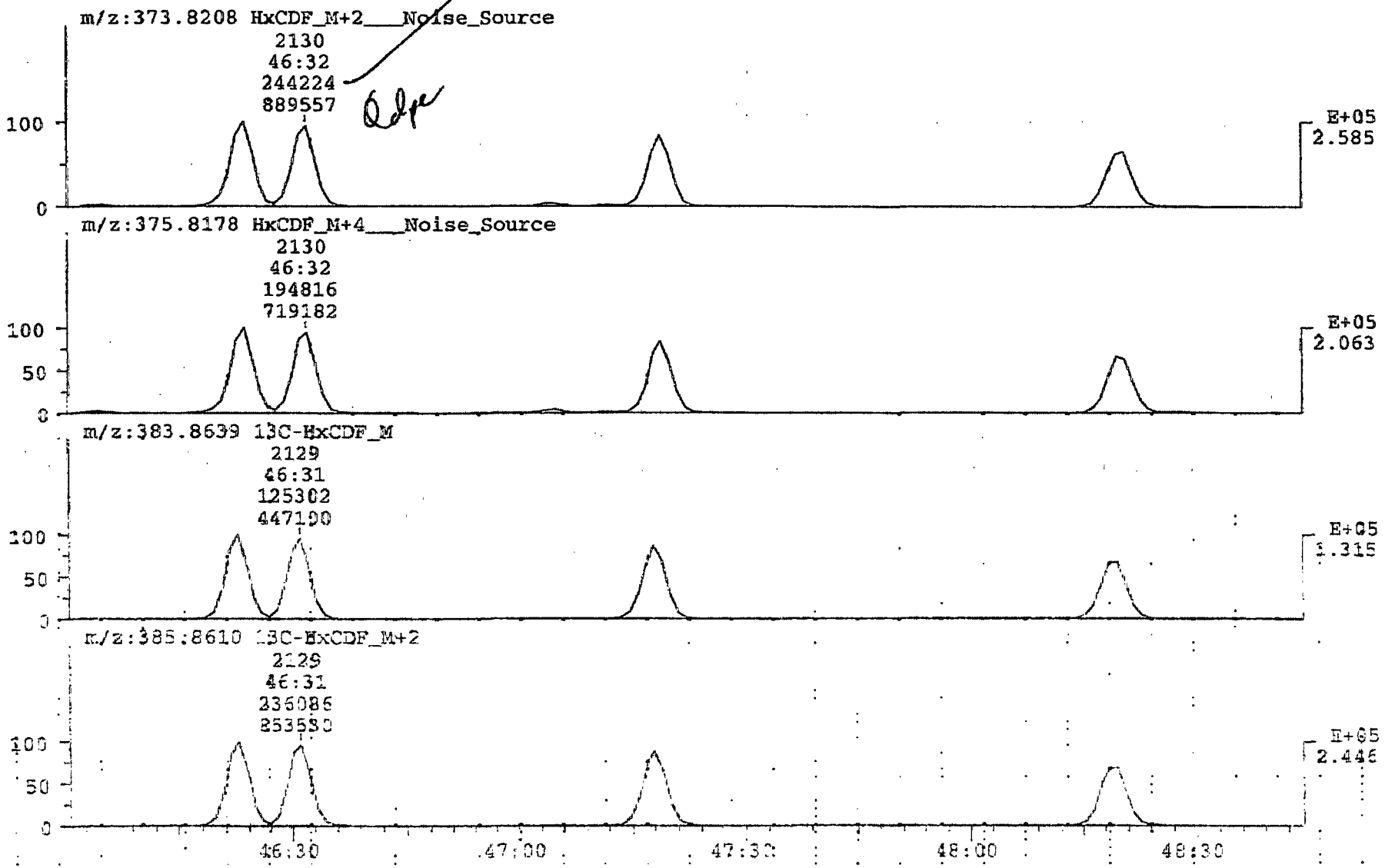
CHRO: tfx1wj2d 05-Oct-03 Elapse: 47:45 2199
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2162 > 2236 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



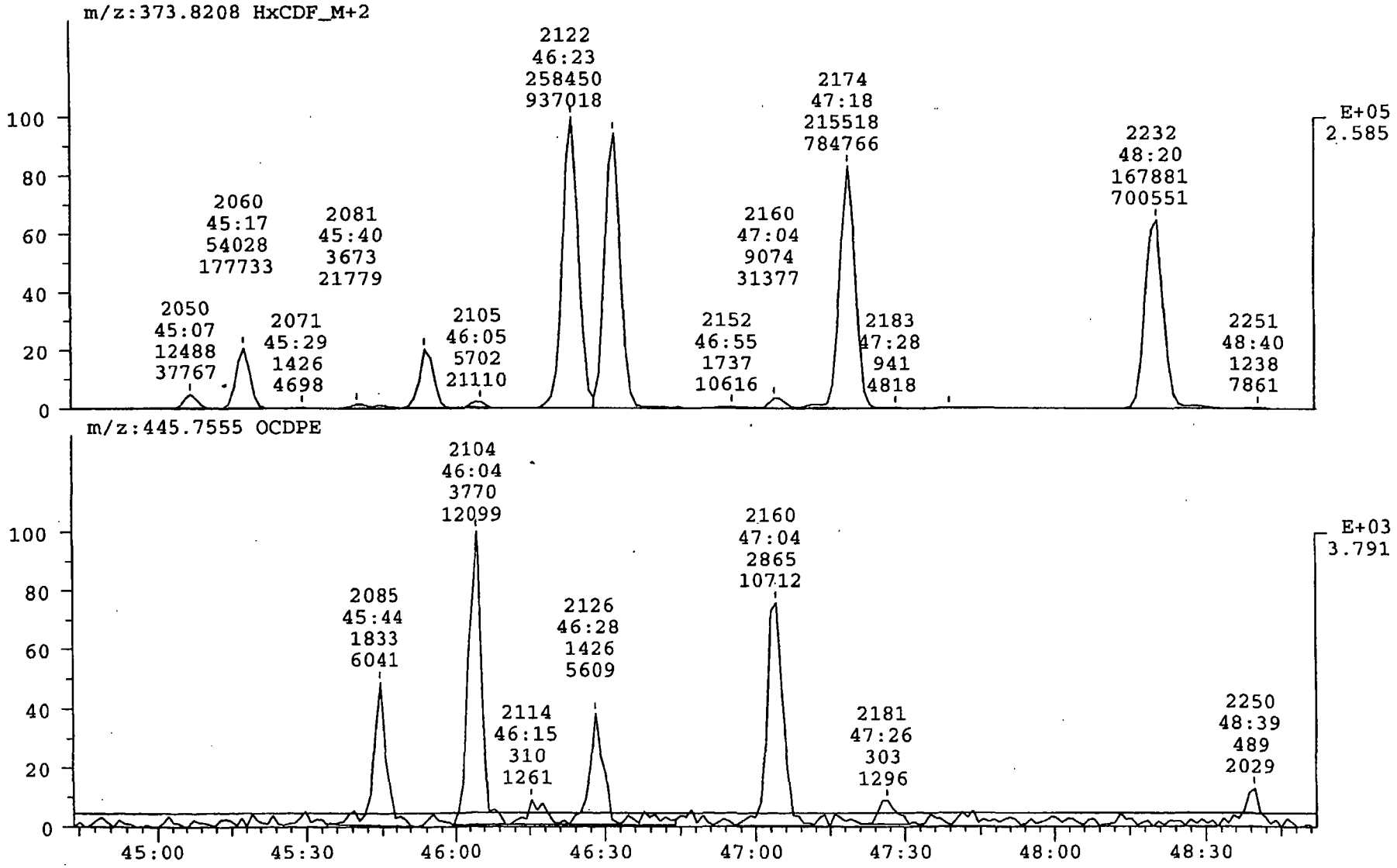
CHRO: tfx1wj2d 05-Oct-03 Elapse: 47:22 2177
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2101 > 2254 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



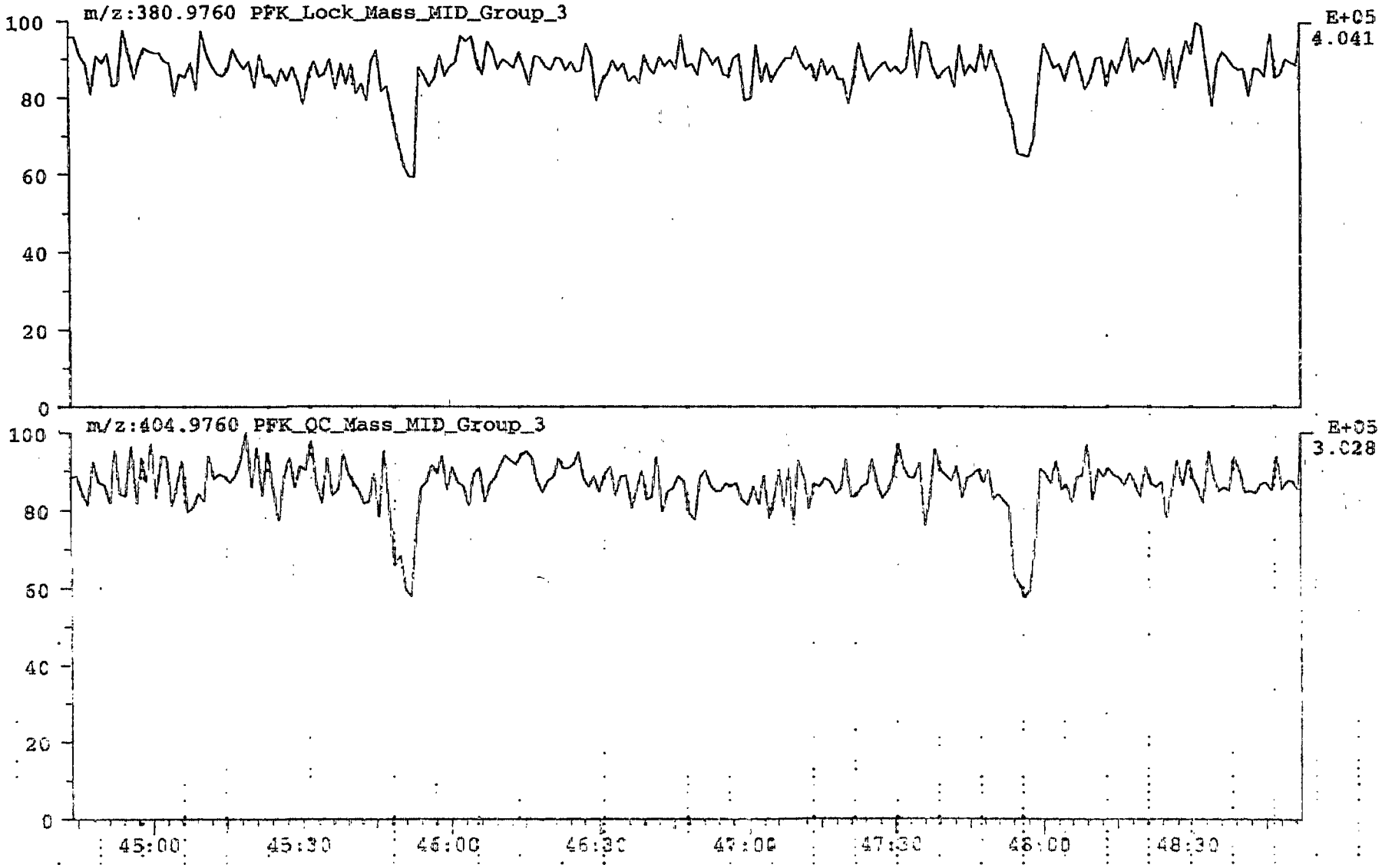
CHRO: tfx1wj2d 05-Oct-03 Elapse: 46:31 2129
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2125 > 2133 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



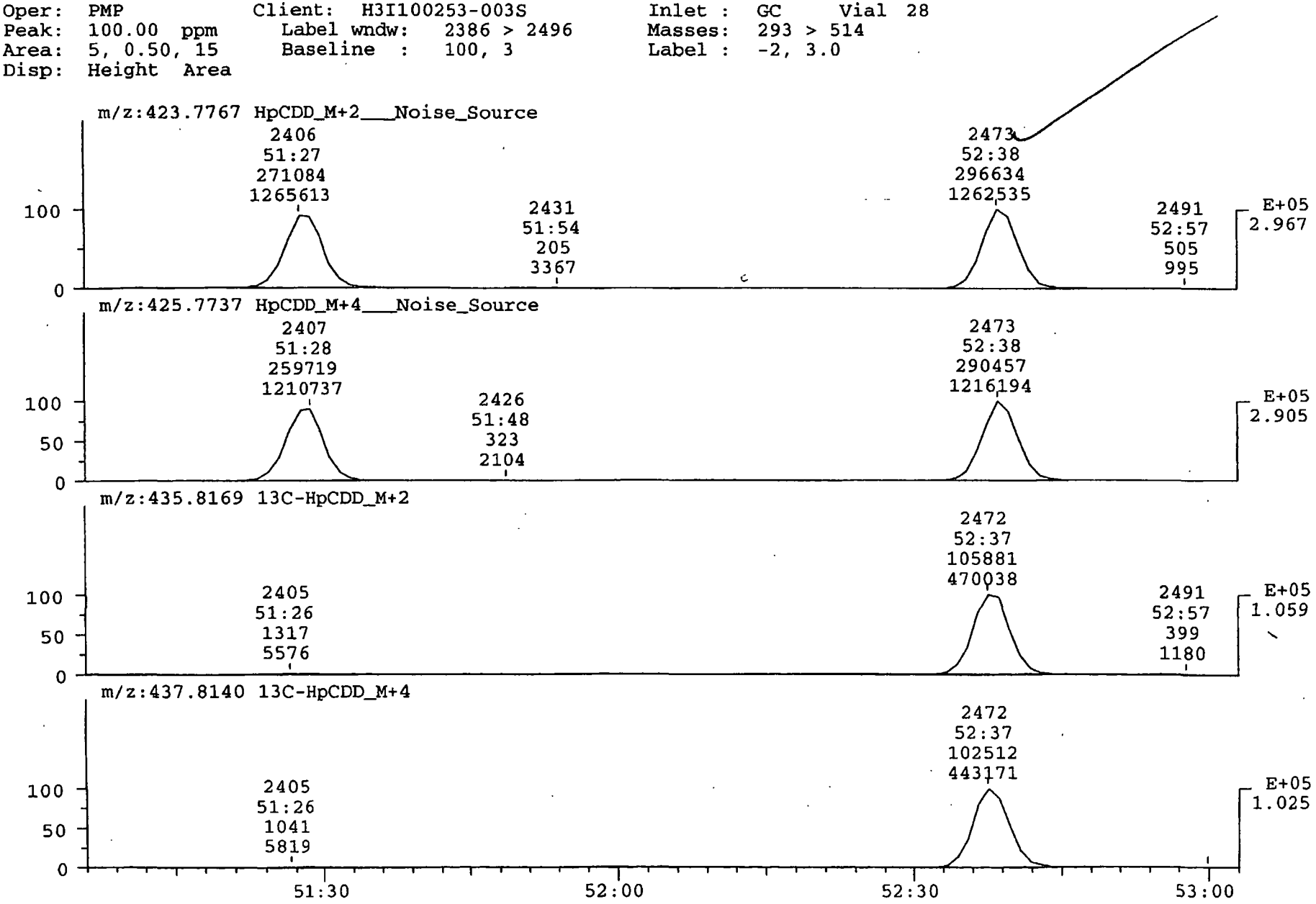
CHRO: tfx1wj2d 05-Oct-03 Elapse: 48:18 2230
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2028 > 2262 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



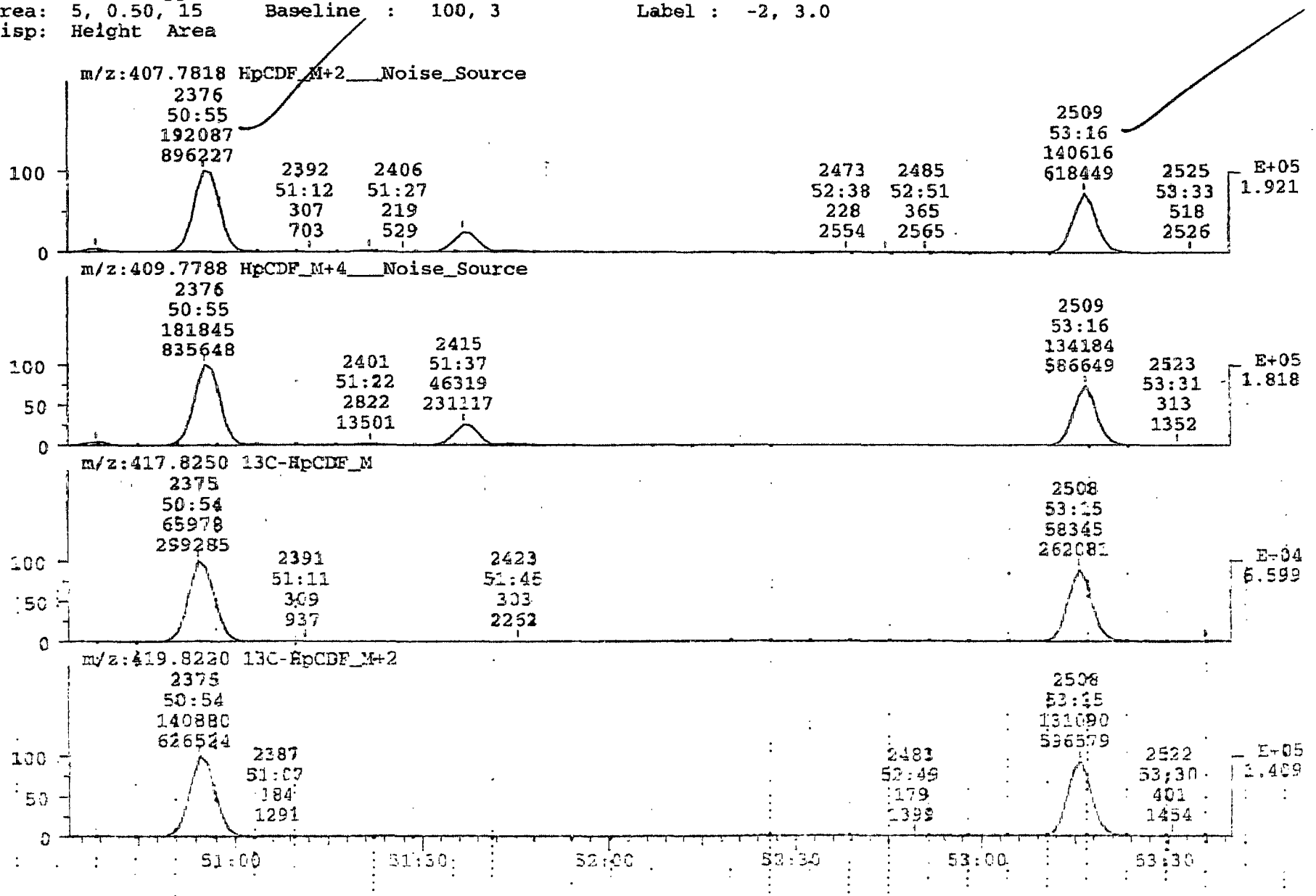
```
CHRO:  tfx1wj2d                              05-Oct-03   Elapse:  48:18      2230
Samp:  Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1                Start :  06:03:38   2830
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                         Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003S              Inlet :  GC     Vial  28
Peak:  100.00  ppm     Label wndw:   2028 > 2262         Masses:  293 > 514
Area:  5, 0.50, 15     Baseline  :   100, 3              Label :  0, 0.0
Disp:  Height  Area
```



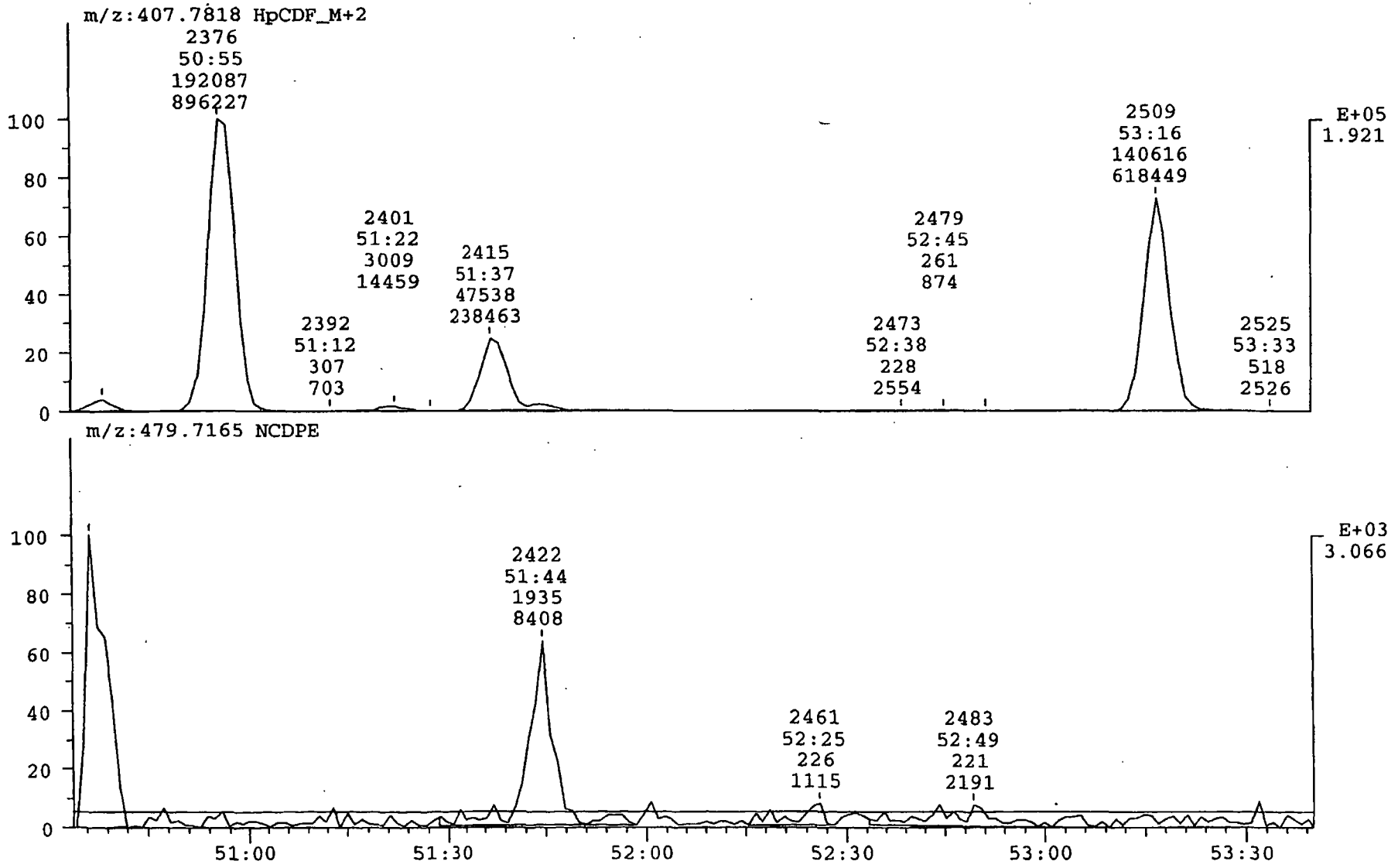
CHRO: tfx1wj2d 05-Oct-03 Elapse: 52:36 2471
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2386 > 2496 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



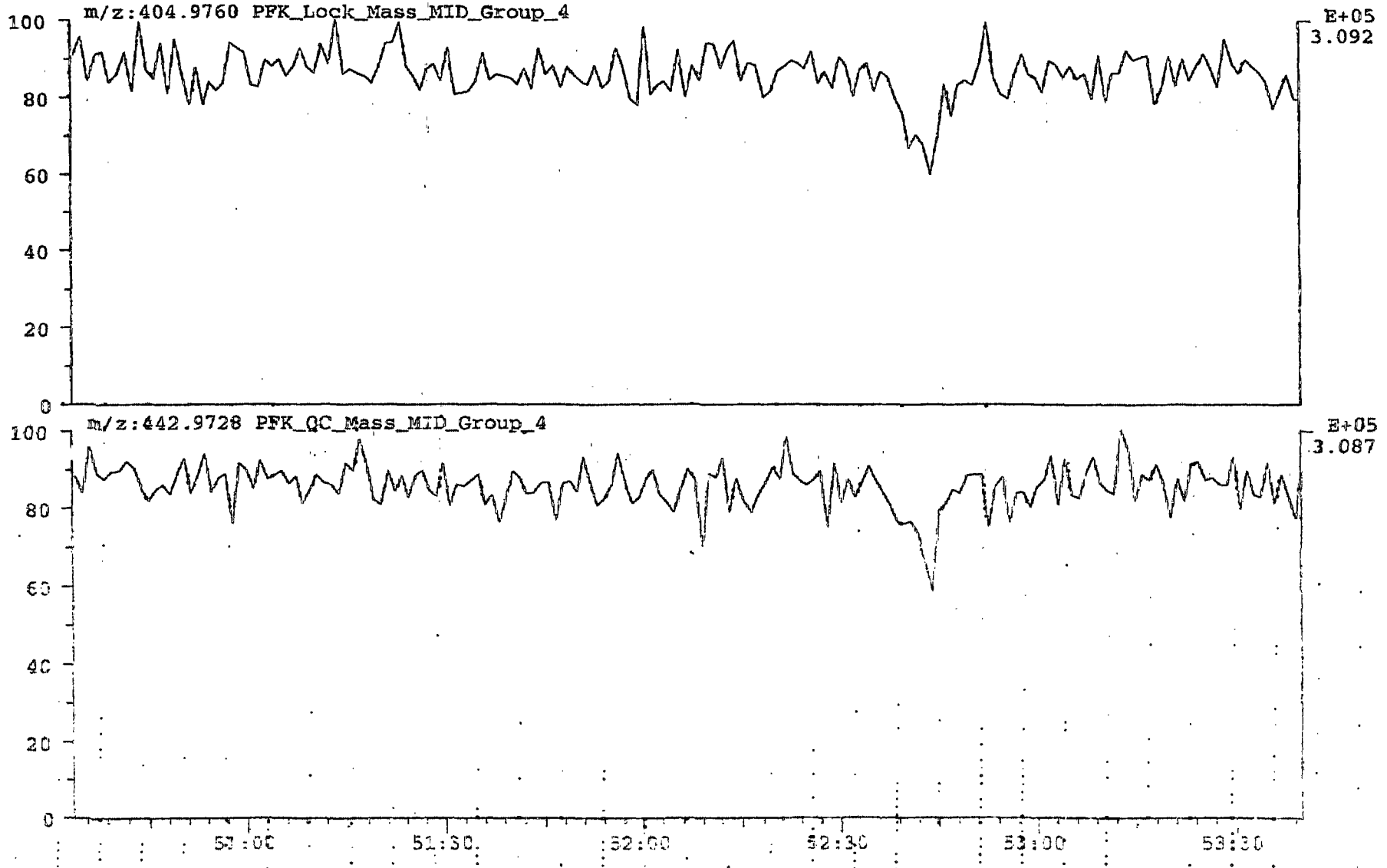
CHRO: tfx1wj2d 05-Oct-03 Elapse: 53:13 2506
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



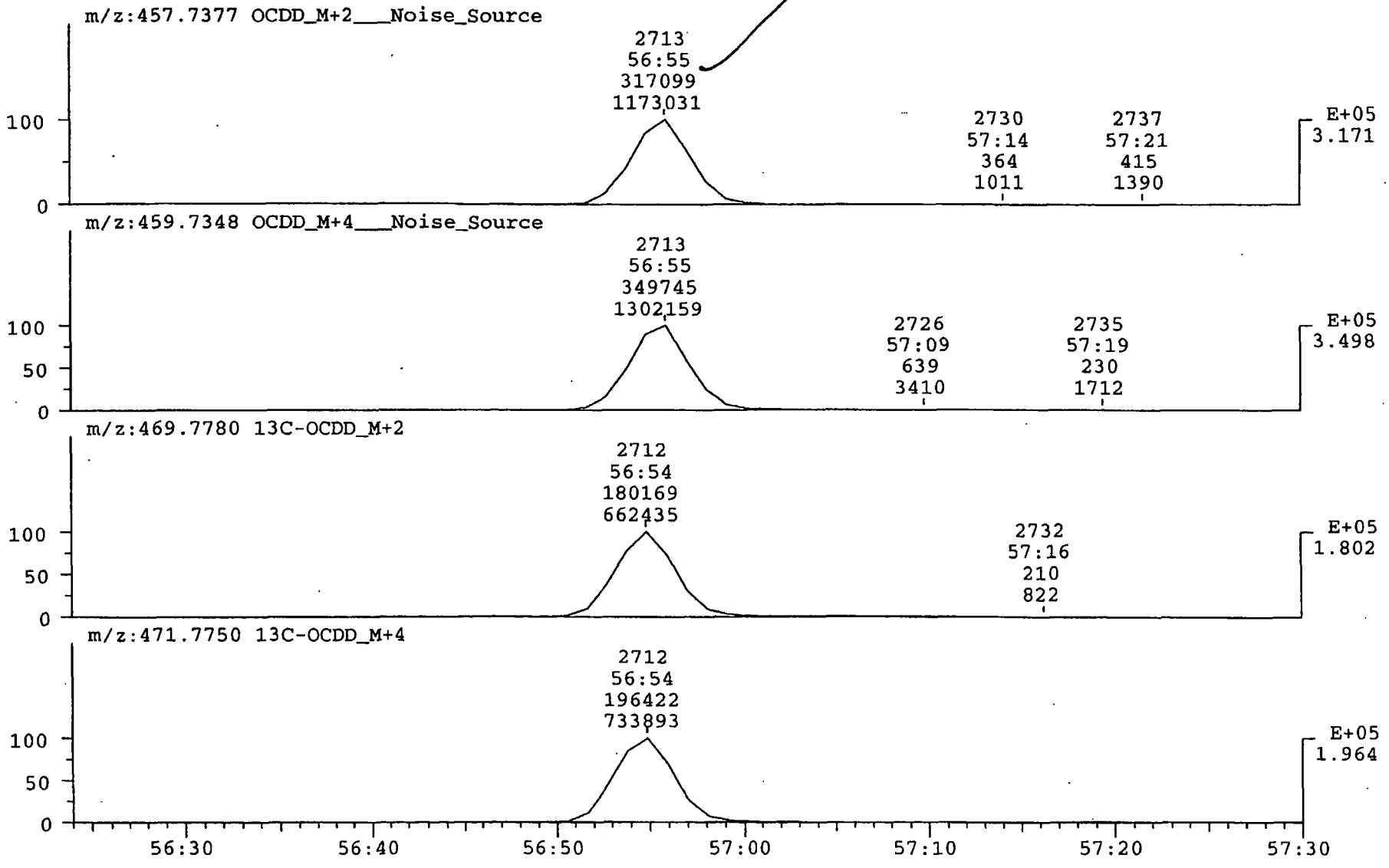
CHRO: tfx1wj2d 05-Oct-03 Elapse: 53:13 2506
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



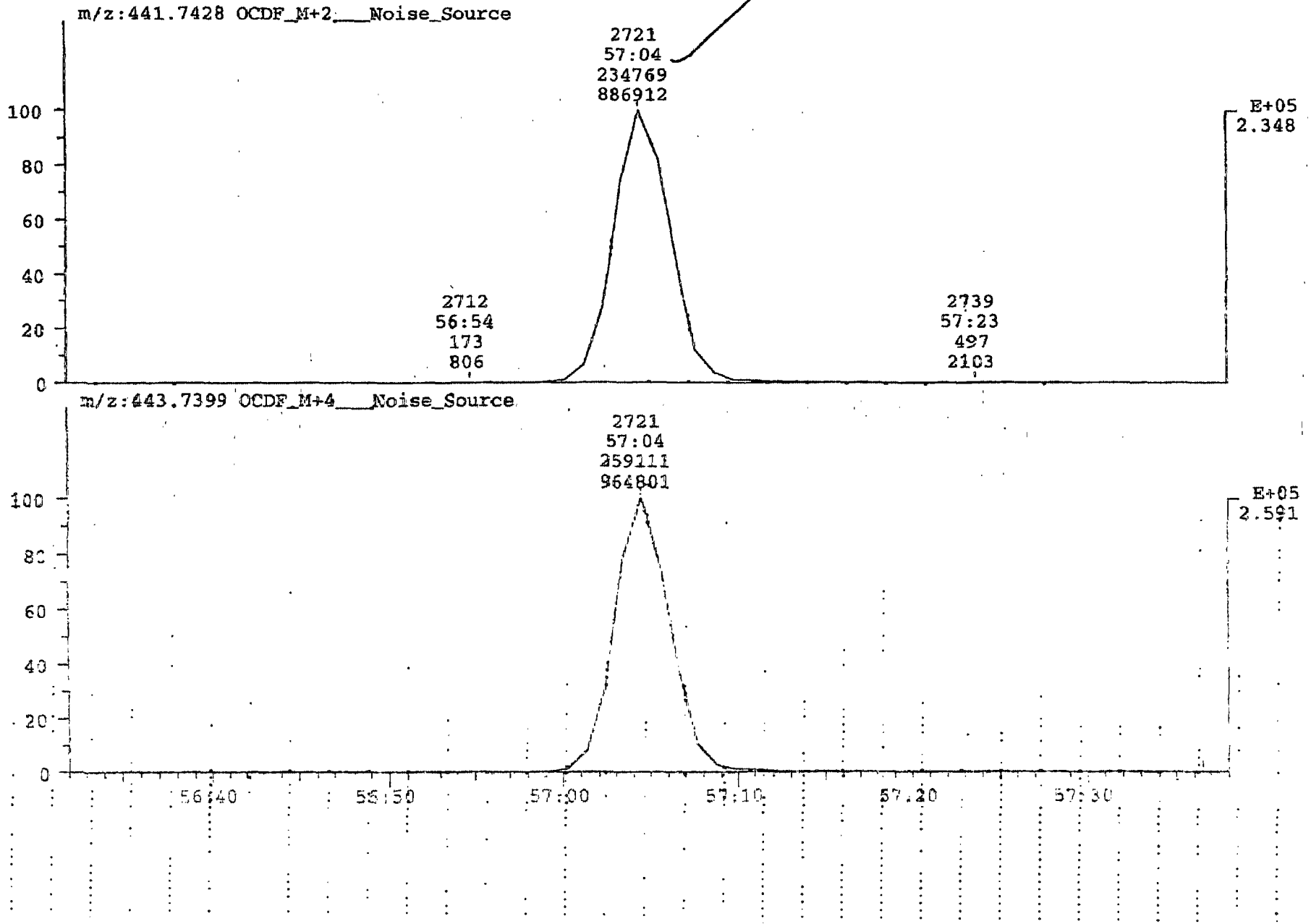
CHRO: tfx1wj2d 05-Oct-03 Elapse: 53:13 2506
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2356 > 2531 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



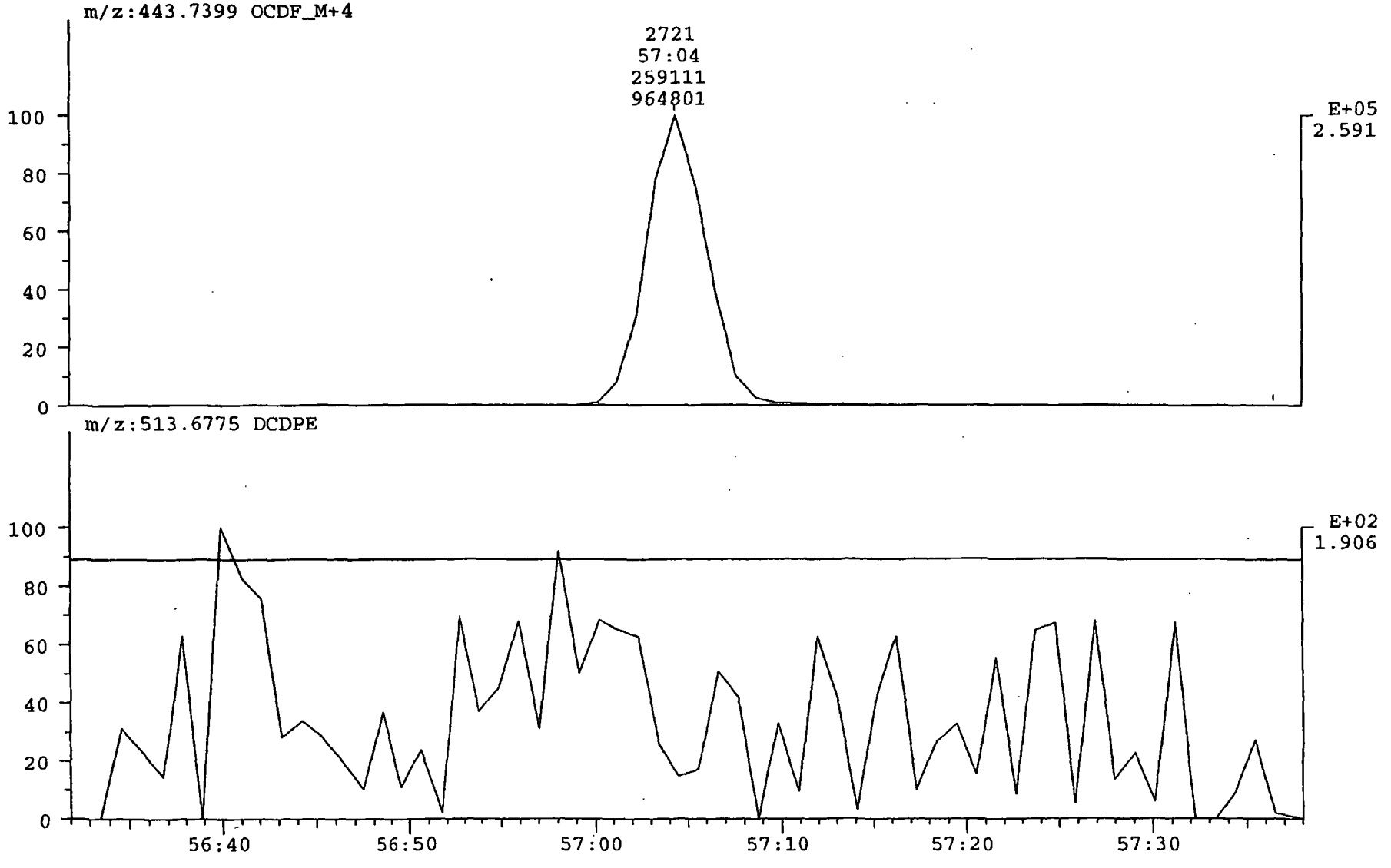
CHRO: tfx1wj2d 05-Oct-03 Elapse: 56:53 2711
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2683 > 2745 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



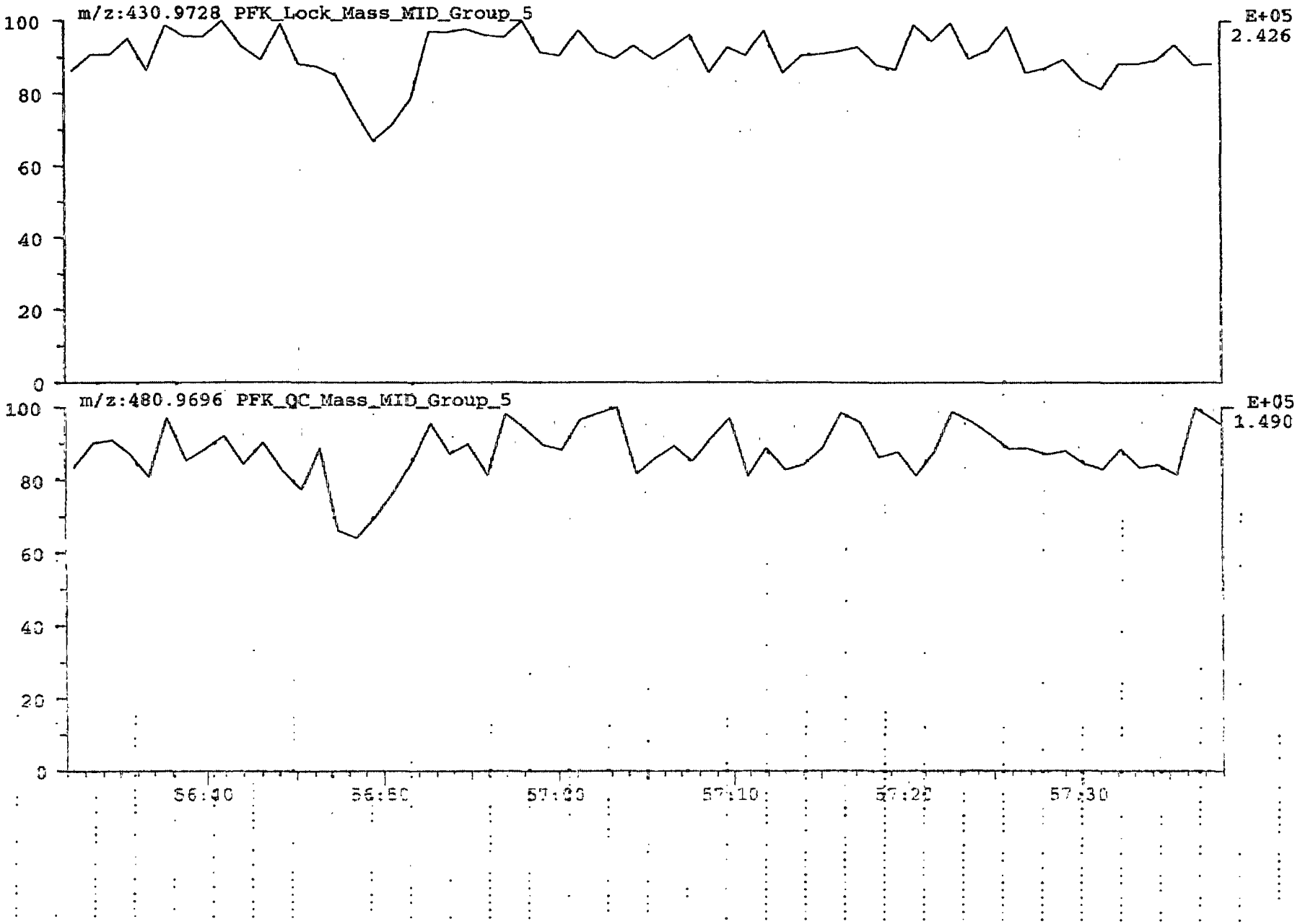
CHRO: tfx1wj2d 05-Oct-03 Elapse: 57:02 2719
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2691 > 2752 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : -2, 3.0
Disp: Height Area



```
CHRO:  tfx1wj2d                                  05-Oct-03   Elapse:  57:02      2719
Samp:  Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1                    Start :  06:03:38   2830
Comm:  Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode:  EI +VE +LMR  ESCAN LR NRM                            Study :  3273193 (10.0g)
Oper:  PMP          Client:  H3I100253-003S                  Inlet :  GC     Vial 28
Peak:  100.00 ppm     Label wndw:   2691 > 2752              Masses:  293 > 514
Area:  5, 0.50, 15    Baseline  :   100, 3                   Label :  -2, 3.0
Disp:  Height  Area
```



CHRO: tfx1wj2d 05-Oct-03 Elapse: 57:02 2719
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (10.0g)
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28
Peak: 100.00 ppm Label wndw: 2691 > 2752 Masses: 293 > 514
Area: 5, 0.50, 15 Baseline : 100, 3 Label : 0, 0.0
Disp: Height Area



Instrument internet name - mat95s
Instrument model - MAT 95
Instrument serial number - 000000
Workstation internet name - icis2ms
ICIS Version 8.2.1

ICL Version: 10.500
File name: tfx1wj2d
Study: 3273193 (10.0g)
Sample: WO=fx1wj2ad Meth=IN2 Dil=1
Amount: 0.0
Volume: 0.0
Operator: PMP
Client: H3I100253-003S
Comments: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Injected volume: 2.0
Sample from Vial 28
Analysis will stop when MID run finishes
Tune file name: tune2
File 6 of list 031004
ICL procedure: sleep6x
MID procedure: epa1613

MID Remarks: Tetra-Octa PCDD/F EPA Method 8290/1613B

Mid Set Up Parameter:

| | |
|---|---|
| Measure/lock ratio | 1 |
| Damping Relay | FALSE |
| Width first lock | 0.20 amu |
| Electric jump time | 10 ms |
| Magnetic jump time | 60 ms |
| Offset | 100 cts |
| Electric range | 300 % |
| Sweep peak width | 3.00 |
| MID mode | Lock mode |
| Acq mode | Cent mode |

Mid Time Windows:

| | Start | Measure | End | Cycletime |
|---|---|---|---|---|
| # 1 | 8:00 min | 30:18 min | 38:18 min | 1.00 sec |
| # 2 | 38:18 min | 6:12 min | 44:30 min | 1.00 sec |
| # 3 | 44:30 min | 5:29 min | 50:00 min | 1.00 sec |
| # 4 | 50:00 min | 5:30 min | 55:30 min | 1.00 sec |
| # 5 | 55:30 min | 3:29 min | 59:00 min | 1.00 sec |

Mid Masses:

Window # 1

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 292.9825 | 1 | 10 | 1 | 8.19 |
| 303.9016 | | 1 | 1 | 81.92 |
| 305.8987 | | 1 | 1 | 81.92 |
| 315.9419 | | 1 | 1 | 81.92 |
| 317.9389 | | 1 | 1 | 81.92 |
| 319.8965 | | 1 | 1 | 81.92 |
| 321.8936 | | 1 | 1 | 81.92 |
| 327.8847 | | 1 | 1 | 81.92 |
| 331.9368 | | 1 | 1 | 81.92 |
| 333.9338 | | 1 | 1 | 81.92 |
| 342.9792 | c | 10 | 1 | 8.19 |
| 375.8364 | | 1 | 1 | 81.92 |

Window # 2

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 330.9792 | 1 | 10 | 1 | 8.19 |
| 339.8597 | | 1 | 1 | 91.48 |
| 341.8567 | | 1 | 1 | 91.48 |

| | | | | |
|---|---|---|---|---|
| 351.9000 | | 1 | 1 | 91.48 |
| 353.8970 | | 1 | 1 | 91.48 |
| 355.8546 | | 1 | 1 | 91.48 |
| 357.8516 | | 1 | 1 | 91.48 |
| 367.8949 | | 1 | 1 | 91.48 |
| 369.8919 | | 1 | 1 | 91.48 |
| 380.9760 | c | 10 | 1 | 8.19 |
| 409.7974 | | 1 | 1 | 91.48 |

Window # 3

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 373.8208 | | 1 | 1 | 91.48 |
| 375.8178 | | 1 | 1 | 91.48 |
| 380.9760 | l | 10 | 1 | 8.19 |
| 383.8639 | | 1 | 1 | 91.48 |
| 385.8610 | | 1 | 1 | 91.48 |
| 389.8156 | | 1 | 1 | 91.48 |
| 391.8127 | | 1 | 1 | 91.48 |
| 401.8559 | | 1 | 1 | 91.48 |
| 403.8529 | | 1 | 1 | 91.48 |
| 404.9760 | c | 10 | 1 | 8.19 |
| 445.7555 | | 1 | 1 | 91.48 |

Window # 4

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 404.9760 | l | 10 | 1 | 8.19 |
| 407.7818 | | 1 | 1 | 91.48 |
| 409.7788 | | 1 | 1 | 91.48 |
| 417.8250 | | 1 | 1 | 91.48 |
| 419.8220 | | 1 | 1 | 91.48 |
| 423.7767 | | 1 | 1 | 91.48 |
| 425.7737 | | 1 | 1 | 91.48 |
| 435.8169 | | 1 | 1 | 91.48 |
| 437.8140 | | 1 | 1 | 91.48 |
| 442.9728 | c | 10 | 1 | 8.19 |
| 479.7165 | | 1 | 1 | 91.48 |

Window # 5

| mass | F | int | gr | time (ms) |
|---|---|---|---|---|
| 430.9728 | l | 10 | 1 | 10.92 |
| 441.7428 | | 1 | 1 | 120.15 |
| 443.7399 | | 1 | 1 | 120.15 |
| 457.7377 | | 1 | 1 | 120.15 |
| 459.7348 | | 1 | 1 | 120.15 |
| 469.7780 | | 1 | 1 | 120.15 |
| 471.7750 | | 1 | 1 | 120.15 |
| 480.9696 | c | 10 | 1 | 10.92 |
| 513.6775 | | 1 | 1 | 120.15 |

Auto Sampler descriptor: pcdd2ul

Injector A

Normal Injection

| | | |
|---|---|---|
| Slvnt A cln before inj | (K): | 3 times |
| Slvnt B cln before inj | (L): | 0 times |
| Sample rinse cycles | (R): | 0 times |
| Syringe filling volume | (F): | 1.0 ul |
| Pullup delay time | (D): | 4 sec |
| Sample pullup speed | (E): | 5.0 ul/sec |
| Slvnt aftr pre inj cln | (U): | 0.0 ul |
| Air after pre inj cln | (G): | 2.0 ul |
| Sample volume | (V): | 2.0 ul |
| Sample air volume | (A): | 2.0 ul |
| Sample pullup count | (P): | 2 times |
| Injection speed | (S): | 10.0 ul/sec |
| Injection wait time | (W): | 10 sec |
| Injection hold time | (H): | 3 sec |
| Solvent A clean cycles | (C): | 15 times |
| Solvent B clean cycles | (B): | 20 times |
| Loop clean w slvnt A | (LC): | 0 times |

```
 Loop clean w slvnt B (LB):      0 times
 Standard sample volume(X):    0.0 ul
 Standard air volume   (Y):    0.0 ul
 2nd Injection volume  (I):    0.0 ul
 Air volume of 2nd inj (J):    0.0 ul
 Time btwn 2 injections(T):      0 sec

GC descriptor :  epa1613
  Injector:          270 deg                        300 deg max
  Transfer Line:     290 deg                        300 deg max
  Column:            140 deg at    0.0 minutes      330 deg max
                     140 deg at    3.0 minutes
                     210 deg at    6.5 minutes
                     210 deg at   34.5 minutes
                     280 deg at   44.5 minutes
                     280 deg at   51.0 minutes
                     325 deg at   60.0 minutes
  Inlet    :
  Pressure         18.0 psi
  Splitless mode
  Purge time        1.5 min
  Purge flow       40.0 mL/min

   Gas saver is on
   Saver time        3.0 min
   Saver flow       15.0 mL/min

  Stabilize time    0.5 minutes
```

ICL Parameters

| | | | | | |
|---|---|---|---|---|---|
| BCORRL | 0.0250 | BCORRS | 0.0130 | BCURR | 8428.0000 |
| BDEV | 8271.0000 | BFM | 2.0000 | BLM | 1040.1704 |
| BMASS | 304.9824 | BQUAD | 2.3000 | CAPIL | 0.0000 |
| CAPTEMP | 359.9988 | CAPTSET | 200.0000 | CCURR | 3.3647 |
| CORONA | 100.0000 | CYCLE | 0.0000 | DELAY | 0.0000 |
| DITEMP | 0.7814 | DITSET | 0.0000 | DRAW | -24.3250 |
| DRAWC | 1.0000 | DRAWS | 0.0100 | ECORR | 1.0005 |
| ECURR | 1.0000 | EDAC | 7969177.0000 | EDACG | 0.9996 |
| EDACR | 20.0000 | EDACZ | 3450.0000 | ELEN | 55.7250 |
| EMULT | 2.3500 | ENS | 162.3264 | ENW | 600.0000 |
| ERATIO | 1.0000 | ESA | 763.8000 | ESICUR | 10.0011 |
| ESIPAR | 0.0000 | EXS | 187.3427 | EXW | 600.0000 |
| FDMA | 18000000.0000 | FLENS | 1.0000 | FM | 20.0000 |
| FMII | 50.0000 | FQUAD | 6.6000 | FREQ | 300.4808 |
| FSLOPE | 36000000.0000 | FVANAL | 296.0000 | FVINLET | 800.0000 |
| FVSRC | 939.0000 | FWIN | 0.7000 | GCTC | 140.0000 |
| GCTI | 270.0000 | GCTL | 290.0000 | HACCU | 208.0000 |
| HCURR | 1.3922 | HVANAL | 981.0000 | HVSRC | 0.0000 |
| ICAL0 | 0.0011 | ICAL1 | 0.4030 | ICAL2 | 0.5865 |
| IONEN | 4764.3420 | IST | 269.8026 | ISTC | 0.0000 |
| ISTCKP | 5.0000 | ISTCTD | 1.0000 | ISTCTN | 2.0000 |
| ISTCTS | 60.0000 | ISTCTV | 3.0000 | ISTS | 270.0000 |
| LENS | 2205.0000 | LENSS | -15.2000 | LKM | 430.9728 |
| LM | 800.0000 | LMASS | 304.9824 | LMII | 500.0000 |
| MASS | 304.9824 | MDAC | 3472739.3520 | MDACR | 20.0000 |
| MRANGE | 1040.1704 | MSFM | 2.0000 | MSLM | 3790.0000 |
| NPEAK | 1.0000 | NSAM | 100.0000 | NSCAN | 2840.0000 |
| NSMAX | 8.0000 | NSMIN | 2.0000 | OCT | -2.0000 |
| PSAM | 10.0000 | PUSHER | -10.4750 | RDRAW | 0.0000 |
| RDRAWC | 0.0000 | RECURR | 0.0000 | RELEN | 0.0000 |
| RES | 10314.6664 | RFAMP | 799.9987 | RFCUR | 100.0110 |
| RPUSHER | 0.0000 | RWIN | 2.0000 | SACCU | 3.0000 |
| SCIDLE | 1.0000 | SHIELD | 2906.0000 | SHIELDS | 0.4000 |
| SHIGH | 180.0000 | SKIM | 7.0000 | SLOW | 60.0000 |

| | | | | | |
|---|---|---|---|---|---|
| SPRAY | 8.0000 | SS | 3.0000 | SW | 0.0500 |
| TANAL | 360.8100 | TCURR | 0.8594 | TD | 1.0000 |
| THRESH | 5.0000 | TIS | 0.2000 | TREF | 150.2000 |
| TS | 1.6021 | TSAM | 200.0000 | TSET | 0.0000 |
| TUBEL | 0.0000 | UOFS | 5.0000 | URATIO | 2.0850 |
| USERVAR | 0.0000 | VAPTEMP | 599.9997 | VAPTSET | 400.0000 |
| VMASS | 304.9824 | XLENS | 1789.0000 | XLENSS | -54.2000 |
| YLENS | 3670.0000 | YLENSS | -54.8000 | | |

Scantype is electric
Sourcemode is EI POS

Analysis started at: 05-Oct-03 06:03:38.8

Autosampler has injected sample from vial 28
Analysis stopped at: 05-Oct-03 07:02:40.4 (run time 59.02 minutes)
Analysis stopped because MID run finished

QUAN: tfx1wj2d.q0 Entries: 255

Data file(s) used
File: tfx1wj2d 05-Oct-03
Samp: Vial 28 WO=fx1wj2ad Meth=IN2 Dil=1 Start : 06:03:38 2830
Comm: Inst=m2a/499396 Batch=20031004s1 Ccal=20030401i
Mode: EI +VE +LMR ESCAN LR NRM Study : 3273193 (1
Oper: PMP Client: H3I100253-003S Inlet : GC Vial 28

Disp: CHRO
Amount = (area * ref amnt) / (ref area * response factor); amount = f(reponse)
Response factors from quantitation file

| Quan Masses | Actual Time | Area | Height | Peak Beginn | Peak End | Noise Value | La Pe | Lab Fac |
|---|---|---|---|---|---|---|---|---|
| 319.8805 | 35:57 | 130703. | 15985. | 35:45 | 36:09 | 61. | 1 | 1.0 |
| 321.8775 | 35:57 | 164309. | 19487. | 35:45 | 36:09 | 59. | 1 | 1.0 |
| 331.9202 | 35:25 | 973250. | 108789. | 35:09 | 35:41 | 130. | 2 | 3.0 |
| 331.9202 | 35:54 | 490122. | 58578. | 35:41 | 36:05 | 130. | 2 | 3.0 |
| 333.9171 | 35:25 | 1188695. | 135422. | 35:10 | 35:39 | 122. | 2 | 3.0 |
| 333.9171 | 35:54 | 595512. | 74416. | 35:39 | 36:07 | 122. | 2 | 3.0 |
| 319.8805 | 35:57 | 130030. | 15947. | 35:45 | 36:14 | 76. | 2 | 3.0 |
| 321.8775 | 35:57 | 164133. | 19480. | 35:45 | 36:09 | 68. | 2 | 3.0 |
| 303.8864 | 33:49 | 155241. | 15347. | 33:32 | 34:05 | 66. | 1 | 1.0 |
| 305.8834 | 33:49 | 198172. | 19514. | 33:35 | 34:05 | 70. | 1 | 1.0 |
| 315.9261 | 33:45 | 676484. | 66277. | 33:29 | 34:02 | 93. | 2 | 3.0 |
| 317.9230 | 33:46 | 866649. | 87146. | 33:31 | 34:03 | 68. | 2 | 3.0 |
| 303.8864 | 33:49 | 154707. | 15331. | 33:32 | 34:05 | 95. | 2 | 3.0 |
| 305.8834 | 33:49 | 198173. | 19514. | 33:35 | 34:05 | 83. | 2 | 3.0 |
| 355.8368 | 43:19 | 801306. | 212963. | 43:12 | 43:26 | 77. | 1 | 1.0 |
| 357.8337 | 43:19 | 517874. | 141535. | 43:07 | 43:25 | 77. | 1 | 1.0 |
| 367.8765 | 43:17 | 654027. | 178211. | 43:08 | 43:25 | 60. | 2 | 3.0 |
| 369.8734 | 43:16 | 409721. | 109807. | 43:07 | 43:25 | 48. | 2 | 3.0 |
| 355.8368 | 43:19 | 801193. | 212955. | 43:12 | 43:26 | 117. | 2 | 3.0 |
| 357.8337 | 43:19 | 517874. | 141535. | 43:07 | 43:25 | 64. | 2 | 3.0 |
| 339.8427 | 42:50 | 940082. | 258081. | 42:42 | 42:57 | 78. | 1 | 1.0 |
| 341.8396 | 42:50 | 603120. | 170403. | 42:40 | 42:57 | 72. | 1 | 1.0 |
| 351.8824 | 41:45 | 861761. | 221388. | 41:36 | 41:57 | 67. | 2 | 3.0 |
| 351.8824 | 42:49 | 868167. | 240465. | 42:38 | 43:02 | 67. | 2 | 3.0 |
| 353.8793 | 41:45 | 542500. | 137384. | 41:37 | 41:57 | 59. | 2 | 3.0 |
| 353.8793 | 42:49 | 545674. | 155896. | 42:37 | 42:56 | 59. | 2 | 3.0 |
| 339.8427 | 41:46 | 895540. | 220620. | 41:36 | 41:55 | 93. | 2 | 3.0 |
| 341.8396 | 41:46 | 596180. | 147983. | 41:33 | 41:57 | 84. | 2 | 3.0 |
| 339.8427 | 42:50 | 940073. | 258080. | 42:42 | 42:57 | 93. | 2 | 3.0 |
| 341.8396 | 42:50 | 602878. | 170390. | 42:41 | 42:57 | 84. | 2 | 3.0 |
| 389.7961 | 46:43 | 2422720. | 607591. | 46:35 | 46:51 | 80. | 1 | 1.0 |
| 391.7931 | 46:43 | 1947447. | 484362. | 46:35 | 46:52 | 74. | 1 | 1.0 |
| 401.8358 | 47:28 | 550217. | 156913. | 47:21 | 47:31 | 64. | 2 | 3.0 |
| 401.8358 | 47:36 | 562932. | 154357. | 47:31 | 47:50 | 64. | 2 | 3.0 |
| 401.8358 | 48:00 | 1121022. | 293273. | 47:50 | 48:11 | 64. | 2 | 3.0 |
| 403.8327 | 47:28 | 429637. | 115739. | 47:22 | 47:31 | 66. | 2 | 3.0 |
| 403.8327 | 47:36 | 458355. | 121223. | 47:31 | 47:51 | 66. | 2 | 3.0 |
| 403.8327 | 48:00 | 899053. | 235834. | 47:54 | 48:07 | 66. | 2 | 3.0 |
| 389.7961 | 47:29 | 647841. | 174683. | 47:23 | 47:32 | 73. | 2 | 3.0 |
| 391.7931 | 47:29 | 522158. | 144158. | 47:23 | 47:32 | 91. | 2 | 3.0 |
| 389.7961 | 47:37 | 1176610. | 316157. | 47:32 | 47:53 | 73. | 2 | 3.0 |
| 391.7931 | 47:37 | 959740. | 255736. | 47:32 | 47:53 | 91. | 2 | 3.0 |
| 389.7961 | 48:01 | 860024. | 213594. | 47:54 | 48:15 | 73. | 2 | 3.0 |
| 391.7931 | 48:01 | 698206. | 177210. | 47:54 | 48:17 | 91. | 2 | 3.0 |
| 373.8021 | 46:23 | 936651. | 258450. | 46:15 | 46:28 | 91. | 1 | 1.0 |
| 375.7990 | 46:23 | 745848. | 206293. | 46:14 | 46:28 | 89. | 1 | 1.0 |
| 383.8447 | 46:22 | 456461. | 131503. | 46:14 | 46:27 | 84. | 2 | 3.0 |
| 383.8447 | 46:31 | 447100. | 125302. | 46:27 | 46:47 | 84. | 2 | 3.0 |
| 383.8447 | 47:17 | 420362. | 113515. | 47:07 | 47:33 | 84. | 2 | 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 383.8447 | 48:18 | 371385. | 88003. | 48:11 | 48:34 | 84. | 2 | 3.0 |
| 385.8417 | 46:22 | 853930. | 244619. | 46:15 | 46:27 | 75. | 2 | 3.0 |
| 385.8417 | 46:31 | 853530. | 236086. | 46:27 | 46:47 | 75. | 2 | 3.0 |
| 385.8417 | 47:17 | 797854. | 215637. | 47:05 | 47:31 | 75. | 2 | 3.0 |
| 385.8417 | 48:18 | 714471. | 168258. | 48:09 | 48:31 | 75. | 2 | 3.0 |
| 373.8021 | 46:23 | 936136. | 258411. | 46:15 | 46:28 | 100. | 2 | 3.0 |
| 375.7990 | 46:23 | 745848. | 206293. | 46:14 | 46:28 | 99. | 2 | 3.0 |
| 373.8021 | 46:32 | 889557. | 244224. | 46:28 | 46:48 | 100. | 2 | 3.0 |
| 375.7990 | 46:32 | 719182. | 194816. | 46:28 | 46:47 | 99. | 2 | 3.0 |
| 373.8021 | 47:19 | 784547. | 215506. | 47:08 | 47:26 | 100. | 2 | 3.0 |
| 375.7990 | 47:19 | 630504. | 173292. | 47:08 | 47:30 | 99. | 2 | 3.0 |
| 373.8021 | 48:20 | 698784. | 167823. | 48:13 | 48:34 | 100. | 2 | 3.0 |
| 375.7990 | 48:19 | 562669. | 136131. | 48:11 | 48:33 | 99. | 2 | 3.0 |
| 423.7555 | 51:27 | 1265613. | 271084. | 51:19 | 51:43 | 64. | 1 | 1.0 |
| 425.7524 | 52:38 | 1216194. | 290457. | 52:30 | 52:54 | 69. | 1 | 1.0 |
| 423.7555 | 52:38 | 1262535. | 296634. | 52:30 | 52:54 | 64. | 2 | 3.0 |
| 425.7524 | 52:38 | 1216194. | 290457. | 52:30 | 52:54 | 69. | 2 | 3.0 |
| 435.7951 | 52:37 | 470038. | 105881. | 52:21 | 52:53 | 53. | 2 | 3.0 |
| 437.7921 | 52:37 | 443171. | 102512. | 52:29 | 52:51 | 55. | 2 | 3.0 |
| 407.7614 | 50:55 | 896227. | 192087. | 50:48 | 51:11 | 60. | 1 | 1.0 |
| 409.7583 | 50:55 | 835648. | 181845. | 50:47 | 51:11 | 64. | 1 | 1.0 |
| 407.7614 | 50:55 | 896227. | 192087. | 50:48 | 51:11 | 60. | 2 | 3.0 |
| 409.7583 | 50:55 | 835648. | 181845. | 50:47 | 51:11 | 64. | 2 | 3.0 |
| 407.7614 | 53:16 | 618449. | 140616. | 53:08 | 53:29 | 60. | 2 | 3.0 |
| 409.7583 | 53:16 | 586649. | 134184. | 53:07 | 53:28 | 64. | 2 | 3.0 |
| 417.8041 | 50:54 | 299285. | 65978. | 50:45 | 51:10 | 56. | 2 | 3.0 |
| 417.8041 | 53:15 | 262081. | 58345. | 53:08 | 53:25 | 56. | 2 | 3.0 |
| 419.8010 | 50:54 | 626524. | 140880. | 50:47 | 51:06 | 56. | 2 | 3.0 |
| 419.8010 | 53:15 | 596579. | 131090. | 53:06 | 53:29 | 56. | 2 | 3.0 |
| 457.7148 | 56:56 | 1173031. | 317099. | 56:48 | 57:12 | 74. | 1 | 1.0 |
| 459.7118 | 56:56 | 1302159. | 349745. | 56:49 | 57:06 | 71. | 1 | 1.0 |
| 457.7148 | 56:56 | 1173031. | 317099. | 56:48 | 57:12 | 74. | 2 | 3.0 |
| 459.7118 | 56:56 | 1302159. | 349745. | 56:49 | 57:06 | 71. | 2 | 3.0 |
| 469.7545 | 56:54 | 662435. | 180169. | 56:48 | 57:10 | 55. | 2 | 3.0 |
| 471.7514 | 56:54 | 733893. | 196422. | 56:48 | 57:10 | 57. | 2 | 3.0 |
| 441.7207 | 57:04 | 886912. | 234769. | 56:58 | 57:20 | 54. | 1 | 1.0 |
| 443.7177 | 57:04 | 963922. | 259111. | 56:58 | 57:20 | 79. | 1 | 1.0 |
| 441.7207 | 57:04 | 886912. | 234769. | 56:58 | 57:20 | 54. | 2 | 3.0 |
| 443.7177 | 57:04 | 964801. | 259111. | 56:50 | 57:20 | 79. | 2 | 3.0 |
| 319.8805 | 35:23 | 5955. | 670. | 35:18 | 35:35 | 76. | 2 | 3.0 |
| 319.8805 | 35:42 | 4739. | 998. | 35:35 | 35:45 | 76. | 2 | 3.0 |
| 319.8805 | 35:57 | 130030. | 15947. | 35:45 | 36:14 | 76. | 2 | 3.0 |
| 319.8805 | 36:49 | 11079. | 2116. | 36:41 | 36:53 | 76. | 2 | 3.0 |
| 321.8775 | 34:32 | 1028. | 540. | 34:30 | 34:35 | 68. | 2 | 3.0 |
| 321.8775 | 34:37 | 1028. | 498. | 34:35 | 34:39 | 68. | 2 | 3.0 |
| 321.8775 | 35:26 | 9318. | 1217. | 35:14 | 35:35 | 68. | 2 | 3.0 |
| 321.8775 | 35:42 | 6220. | 1061. | 35:35 | 35:45 | 68. | 2 | 3.0 |
| 321.8775 | 35:57 | 164133. | 19480. | 35:45 | 36:09 | 68. | 2 | 3.0 |
| 321.8775 | 36:20 | 3506. | 444. | 36:14 | 36:34 | 68. | 2 | 3.0 |
| 321.8775 | 36:49 | 13165. | 2691. | 36:42 | 36:53 | 68. | 2 | 3.0 |
| 331.9202 | 35:25 | 973250. | 108789. | 35:09 | 35:41 | 130. | 2 | 3.0 |
| 331.9202 | 35:54 | 490122. | 58578. | 35:41 | 36:05 | 130. | 2 | 3.0 |
| 331.9202 | 36:12 | 6478. | 751. | 36:05 | 36:21 | 130. | 2 | 3.0 |
| 333.9171 | 35:25 | 1188695. | 135422. | 35:10 | 35:39 | 122. | 2 | 3.0 |
| 333.9171 | 35:54 | 595512. | 74416. | 35:39 | 36:07 | 122. | 2 | 3.0 |
| 333.9171 | 36:09 | 7010. | 1145. | 36:07 | 36:19 | 122. | 2 | 3.0 |
| 333.9171 | 36:49 | 3346. | 771. | 36:45 | 36:53 | 122. | 2 | 3.0 |
| 303.8864 | 32:30 | 10708. | 1441. | 32:21 | 32:43 | 95. | 2 | 3.0 |
| 303.8864 | 33:06 | 2573. | 327. | 32:50 | 33:07 | 95. | 2 | 3.0 |
| 303.8864 | 33:15 | 6244. | 611. | 33:07 | 33:23 | 95. | 2 | 3.0 |
| 303.8864 | 33:49 | 154707. | 15331. | 33:32 | 34:05 | 95. | 2 | 3.0 |
| 303.8864 | 35:05 | 932. | 381. | 35:04 | 35:07 | 95. | 2 | 3.0 |
| 303.8864 | 35:08 | 2125. | 584. | 35:07 | 35:14 | 95. | 2 | 3.0 |
| 305.8834 | 32:31 | 13624. | 1579. | 32:22 | 32:47 | 83. | 2 | 3.0 |
| 305.8834 | 33:11 | 11494. | 1123. | 32:55 | 33:23 | 83. | 2 | 3.0 |
| 305.8834 | 33:49 | 198173. | 19514. | 33:35 | 34:05 | 83. | 2 | 3.0 |

| | | | | | | | |
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| 305.8834 | 34:09 | 1859. | 534. | 34:07 | 34:21 | 83. | 2 3.0 |
| 305.8834 | 35:07 | 6030. | 936. | 34:58 | 35:14 | 83. | 2 3.0 |
| 315.9261 | 32:26 | 1805. | 530. | 32:21 | 32:28 | 93. | 2 3.0 |
| 315.9261 | 32:30 | 2727. | 565. | 32:28 | 32:37 | 93. | 2 3.0 |
| 315.9261 | 33:45 | 676484. | 66277. | 33:29 | 34:02 | 93. | 2 3.0 |
| 317.9230 | 32:24 | 2323. | 849. | 32:21 | 32:27 | 68. | 2 3.0 |
| 317.9230 | 32:29 | 4266. | 865. | 32:27 | 32:37 | 68. | 2 3.0 |
| 317.9230 | 33:46 | 866649. | 87146. | 33:31 | 34:03 | 68. | 2 3.0 |
| 355.8368 | 43:19 | 801193. | 212955. | 43:12 | 43:26 | 117. | 2 3.0 |
| 357.8337 | 43:19 | 517874. | 141535. | 43:07 | 43:25 | 64. | 2 3.0 |
| 367.8765 | 43:17 | 654027. | 178211. | 43:08 | 43:25 | 60. | 2 3.0 |
| 369.8734 | 43:16 | 409721. | 109807. | 43:07 | 43:25 | 48. | 2 3.0 |
| 339.8427 | 41:23 | 2013. | 1435. | 41:22 | 41:25 | 93. | 2 3.0 |
| 339.8427 | 41:46 | 895540. | 220620. | 41:36 | 41:55 | 93. | 2 3.0 |
| 339.8427 | 42:01 | 16510. | 3756. | 41:55 | 42:08 | 93. | 2 3.0 |
| 339.8427 | 42:14 | 51877. | 11428. | 42:08 | 42:21 | 93. | 2 3.0 |
| 339.8427 | 42:34 | 6825. | 1202. | 42:24 | 42:40 | 93. | 2 3.0 |
| 339.8427 | 42:50 | 940073. | 258080. | 42:42 | 42:57 | 93. | 2 3.0 |
| 339.8427 | 43:02 | 34393. | 7978. | 42:57 | 43:12 | 93. | 2 3.0 |
| 341.8396 | 41:46 | 596180. | 147983. | 41:33 | 41:57 | 84. | 2 3.0 |
| 341.8396 | 42:01 | 10565. | 2777. | 41:57 | 42:06 | 84. | 2 3.0 |
| 341.8396 | 42:14 | 33598. | 7060. | 42:07 | 42:20 | 84. | 2 3.0 |
| 341.8396 | 42:34 | 4635. | 921. | 42:21 | 42:40 | 84. | 2 3.0 |
| 341.8396 | 42:50 | 602878. | 170390. | 42:41 | 42:57 | 84. | 2 3.0 |
| 341.8396 | 43:00 | 20431. | 4458. | 42:57 | 43:12 | 84. | 2 3.0 |
| 351.8824 | 41:45 | 861761. | 221388. | 41:36 | 41:57 | 67. | 2 3.0 |
| 351.8824 | 41:59 | 5070. | 1069. | 41:57 | 42:08 | 67. | 2 3.0 |
| 351.8824 | 42:12 | 10321. | 2357. | 42:08 | 42:25 | 67. | 2 3.0 |
| 351.8824 | 42:49 | 868167. | 240465. | 42:38 | 43:02 | 67. | 2 3.0 |
| 351.8824 | 43:03 | 919. | 342. | 43:02 | 43:07 | 67. | 2 3.0 |
| 353.8793 | 41:45 | 542500. | 137384. | 41:37 | 41:57 | 59. | 2 3.0 |
| 353.8793 | 42:00 | 1963. | 583. | 41:57 | 42:03 | 59. | 2 3.0 |
| 353.8793 | 42:04 | 985. | 407. | 42:03 | 42:08 | 59. | 2 3.0 |
| 353.8793 | 42:12 | 4924. | 1083. | 42:08 | 42:20 | 59. | 2 3.0 |
| 353.8793 | 42:49 | 545674. | 155896. | 42:37 | 42:56 | 59. | 2 3.0 |
| 353.8793 | 43:02 | 2757. | 323. | 42:56 | 43:11 | 59. | 2 3.0 |
| 389.7961 | 47:19 | 2888. | 518. | 47:11 | 47:23 | 73. | 2 3.0 |
| 389.7961 | 47:29 | 647841. | 174683. | 47:23 | 47:32 | 73. | 2 3.0 |
| 389.7961 | 47:37 | 1176610. | 316157. | 47:32 | 47:53 | 73. | 2 3.0 |
| 389.7961 | 48:01 | 860024. | 213594. | 47:54 | 48:15 | 73. | 2 3.0 |
| 389.7961 | 48:19 | 2342. | 633. | 48:15 | 48:21 | 73. | 2 3.0 |
| 391.7931 | 47:29 | 522158. | 144158. | 47:23 | 47:32 | 91. | 2 3.0 |
| 391.7931 | 47:37 | 959740. | 255736. | 47:32 | 47:53 | 91. | 2 3.0 |
| 391.7931 | 48:01 | 698206. | 177210. | 47:54 | 48:17 | 91. | 2 3.0 |
| 391.7931 | 48:20 | 634. | 270. | 48:18 | 48:21 | 91. | 2 3.0 |
| 401.8358 | 47:28 | 550217. | 156913. | 47:21 | 47:31 | 64. | 2 3.0 |
| 401.8358 | 47:36 | 562932. | 154357. | 47:31 | 47:50 | 64. | 2 3.0 |
| 401.8358 | 48:00 | 1121022. | 293273. | 47:50 | 48:11 | 64. | 2 3.0 |
| 401.8358 | 48:14 | 3637. | 643. | 48:11 | 48:21 | 64. | 2 3.0 |
| 403.8327 | 47:28 | 429637. | 115739. | 47:22 | 47:31 | 66. | 2 3.0 |
| 403.8327 | 47:36 | 458355. | 121223. | 47:31 | 47:51 | 66. | 2 3.0 |
| 403.8327 | 48:00 | 899053. | 235834. | 47:54 | 48:07 | 66. | 2 3.0 |
| 403.8327 | 48:11 | 6054. | 949. | 48:07 | 48:21 | 66. | 2 3.0 |
| 373.8021 | 46:05 | 18578. | 5494. | 46:01 | 46:08 | 100. | 2 3.0 |
| 373.8021 | 46:23 | 936136. | 258411. | 46:15 | 46:28 | 100. | 2 3.0 |
| 373.8021 | 46:32 | 889557. | 244224. | 46:28 | 46:48 | 100. | 2 3.0 |
| 373.8021 | 46:55 | 10397. | 1714. | 46:51 | 47:00 | 100. | 2 3.0 |
| 373.8021 | 47:04 | 31238. | 9055. | 47:00 | 47:08 | 100. | 2 3.0 |
| 373.8021 | 47:19 | 784547. | 215506. | 47:08 | 47:26 | 100. | 2 3.0 |
| 373.8021 | 47:28 | 4766. | 935. | 47:26 | 47:37 | 100. | 2 3.0 |
| 373.8021 | 47:39 | 1176. | 477. | 47:37 | 47:41 | 100. | 2 3.0 |
| 373.8021 | 48:20 | 698784. | 167823. | 48:13 | 48:34 | 100. | 2 3.0 |
| 373.8021 | 48:40 | 4497. | 1022. | 48:34 | 48:43 | 100. | 2 3.0 |
| 375.7990 | 46:04 | 14708. | 5008. | 46:01 | 46:08 | 99. | 2 3.0 |
| 375.7990 | 46:23 | 745848. | 206293. | 46:14 | 46:28 | 99. | 2 3.0 |
| 375.7990 | 46:32 | 719182. | 194816. | 46:28 | 46:47 | 99. | 2 3.0 |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 375.7990 | 46:49 | 1309. | 530. | 46:47 | 46:50 | 99. | 2 | 3.0 |
| 375.7990 | 46:56 | 8994. | 1685. | 46:50 | 47:00 | 99. | 2 | 3.0 |
| 375.7990 | 47:05 | 27017. | 8327. | 47:00 | 47:08 | 99. | 2 | 3.0 |
| 375.7990 | 47:19 | 630504. | 173293. | 47:08 | 47:30 | 99. | 2 | 3.0 |
| 375.7990 | 47:38 | 5275. | 500. | 47:30 | 47:54 | 99. | 2 | 3.0 |
| 375.7990 | 48:19 | 562669. | 136131. | 48:11 | 48:33 | 99. | 2 | 3.0 |
| 375.7990 | 48:40 | 3679. | 703. | 48:33 | 48:43 | 99. | 2 | 3.0 |
| 383.8447 | 46:22 | 456461. | 131503. | 46:14 | 46:27 | 84. | 2 | 3.0 |
| 383.8447 | 46:31 | 447100. | 125302. | 46:27 | 46:47 | 84. | 2 | 3.0 |
| 383.8447 | 46:57 | 2086. | 656. | 46:52 | 47:06 | 84. | 2 | 3.0 |
| 383.8447 | 47:17 | 420362. | 113515. | 47:07 | 47:33 | 84. | 2 | 3.0 |
| 383.8447 | 48:18 | 371385. | 88003. | 48:11 | 48:34 | 84. | 2 | 3.0 |
| 385.8417 | 46:22 | 853930. | 244619. | 46:15 | 46:27 | 75. | 2 | 3.0 |
| 385.8417 | 46:31 | 853530. | 236086. | 46:27 | 46:47 | 75. | 2 | 3.0 |
| 385.8417 | 46:57 | 2936. | 484. | 46:51 | 47:05 | 75. | 2 | 3.0 |
| 385.8417 | 47:17 | 797854. | 215637. | 47:05 | 47:31 | 75. | 2 | 3.0 |
| 385.8417 | 47:33 | 2526. | 271. | 47:31 | 47:46 | 75. | 2 | 3.0 |
| 385.8417 | 48:03 | 2215. | 438. | 47:55 | 48:04 | 75. | 2 | 3.0 |
| 385.8417 | 48:18 | 714471. | 168258. | 48:09 | 48:31 | 75. | 2 | 3.0 |
| 385.8417 | 48:32 | 2163. | 431. | 48:31 | 48:40 | 75. | 2 | 3.0 |
| 423.7555 | 51:27 | 1265613. | 271084. | 51:19 | 51:43 | 64. | 2 | 3.0 |
| 423.7555 | 51:54 | 3367. | 205. | 51:46 | 52:06 | 64. | 2 | 3.0 |
| 423.7555 | 52:38 | 1262535. | 296634. | 52:30 | 52:54 | 64. | 2 | 3.0 |
| 423.7555 | 52:57 | 995. | 505. | 52:54 | 52:58 | 64. | 2 | 3.0 |
| 425.7524 | 51:28 | 1210737. | 259719. | 51:13 | 51:44 | 69. | 2 | 3.0 |
| 425.7524 | 51:48 | 2104. | 323. | 51:44 | 51:54 | 69. | 2 | 3.0 |
| 425.7524 | 52:38 | 1216194. | 290457. | 52:30 | 52:54 | 69. | 2 | 3.0 |
| 435.7951 | 51:26 | 5576. | 1317. | 51:20 | 51:32 | 53. | 2 | 3.0 |
| 435.7951 | 52:37 | 470038. | 105881. | 52:21 | 52:53 | 53. | 2 | 3.0 |
| 435.7951 | 52:57 | 1180. | 399. | 52:56 | 53:03 | 53. | 2 | 3.0 |
| 437.7921 | 51:26 | 5819. | 1041. | 51:19 | 51:39 | 55. | 2 | 3.0 |
| 437.7921 | 52:37 | 443171. | 102512. | 52:29 | 52:51 | 55. | 2 | 3.0 |
| 437.7921 | 52:59 | 1294. | 293. | 52:51 | 53:03 | 55. | 2 | 3.0 |
| 407.7614 | 50:38 | 29248. | 7616. | 50:34 | 50:44 | 60. | 2 | 3.0 |
| 407.7614 | 50:55 | 896227. | 192087. | 50:48 | 51:11 | 60. | 2 | 3.0 |
| 407.7614 | 51:12 | 703. | 307. | 51:11 | 51:15 | 60. | 2 | 3.0 |
| 407.7614 | 51:22 | 14459. | 3009. | 51:15 | 51:26 | 60. | 2 | 3.0 |
| 407.7614 | 51:27 | 529. | 219. | 51:26 | 51:29 | 60. | 2 | 3.0 |
| 407.7614 | 51:37 | 238463. | 47538. | 51:29 | 51:53 | 60. | 2 | 3.0 |
| 407.7614 | 52:38 | 2554. | 228. | 52:22 | 52:42 | 60. | 2 | 3.0 |
| 407.7614 | 52:45 | 874. | 261. | 52:42 | 52:48 | 60. | 2 | 3.0 |
| 407.7614 | 52:51 | 2565. | 365. | 52:48 | 53:07 | 60. | 2 | 3.0 |
| 407.7614 | 53:16 | 618449. | 140616. | 53:08 | 53:29 | 60. | 2 | 3.0 |
| 407.7614 | 53:33 | 2526. | 518. | 53:29 | 53:38 | 60. | 2 | 3.0 |
| 409.7583 | 50:38 | 24351. | 6193. | 50:34 | 50:44 | 64. | 2 | 3.0 |
| 409.7583 | 50:55 | 835648. | 181845. | 50:47 | 51:11 | 64. | 2 | 3.0 |
| 409.7583 | 51:22 | 13501. | 2822. | 51:14 | 51:26 | 64. | 2 | 3.0 |
| 409.7583 | 51:37 | 231117. | 46319. | 51:26 | 51:53 | 64. | 2 | 3.0 |
| 409.7583 | 53:16 | 586649. | 134184. | 53:07 | 53:28 | 64. | 2 | 3.0 |
| 409.7583 | 53:31 | 1352. | 313. | 53:28 | 53:36 | 64. | 2 | 3.0 |
| 417.8041 | 50:54 | 299285. | 65978. | 50:45 | 51:10 | 56. | 2 | 3.0 |
| 417.8041 | 51:11 | 937. | 309. | 51:10 | 51:19 | 56. | 2 | 3.0 |
| 417.8041 | 51:45 | 2262. | 303. | 51:35 | 52:01 | 56. | 2 | 3.0 |
| 417.8041 | 53:15 | 262081. | 58345. | 53:08 | 53:25 | 56. | 2 | 3.0 |
| 417.8041 | 53:36 | 2144. | 304. | 53:25 | 53:39 | 56. | 2 | 3.0 |
| 419.8010 | 50:54 | 626524. | 140880. | 50:47 | 51:06 | 56. | 2 | 3.0 |
| 419.8010 | 51:07 | 1291. | 184. | 51:06 | 51:23 | 56. | 2 | 3.0 |
| 419.8010 | 52:49 | 1399. | 179. | 52:40 | 53:01 | 56. | 2 | 3.0 |
| 419.8010 | 53:15 | 596579. | 131090. | 53:06 | 53:29 | 56. | 2 | 3.0 |
| 419.8010 | 53:30 | 1454. | 401. | 53:29 | 53:39 | 56. | 2 | 3.0 |
| 457.7148 | 56:56 | 1173031. | 317099. | 56:48 | 57:12 | 74. | 2 | 3.0 |
| 457.7148 | 57:14 | 1011. | 364. | 57:13 | 57:18 | 74. | 2 | 3.0 |
| 457.7148 | 57:21 | 1390. | 415. | 57:18 | 57:23 | 74. | 2 | 3.0 |
| 459.7118 | 56:56 | 1302159. | 349745. | 56:49 | 57:06 | 71. | 2 | 3.0 |
| 459.7118 | 57:09 | 3410. | 639. | 57:06 | 57:16 | 71. | 2 | 3.0 |
| 459.7118 | 57:19 | 1712. | 230. | 57:16 | 57:28 | 71. | 2 | 3.0 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 469.7545 | 56:54 | 662435. | 180169. | 56:48 | 57:10 | 55. | 2 3.0 |
| 469.7545 | 57:16 | 822. | 210. | 57:15 | 57:20 | 55. | 2 3.0 |
| 471.7514 | 56:54 | 733893. | 196422. | 56:48 | 57:10 | 57. | 2 3.0 |
| 441.7207 | 56:54 | 806. | 173. | 56:50 | 56:58 | 54. | 2 3.0 |
| 441.7207 | 57:04 | 886912. | 234769. | 56:58 | 57:20 | 54. | 2 3.0 |
| 441.7207 | 57:23 | 2103. | 497. | 57:22 | 57:30 | 54. | 2 3.0 |
| 443.7177 | 57:04 | 964801. | 259111. | 56:50 | 57:20 | 79. | 2 3.0 |
| 443.7177 | 57:36 | 1562. | 278. | 57:28 | 57:37 | 79. | 2 3.0 |

# Miscellaneous Data

**STL Knoxville Dioxin GC/MS Data Review / Narrative Checklist** LOT # H3I100253
**Method: 8290 - KNOX-ID-0004-R3**


DCG 10-703

Batch Number: 3293064 3273193

| Review Items | N/As | Yes | No | Why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| **A. Initial Calibration** | | | | | |
| 1. Was the correct ICAL used for quantitation? (Check 1-2 compounds for batch by manually calculating concentration using the ICAL avg. RF.) | | ✓ | | | ✓ |
| **B. Continuing Calibration** | | | | | |
| 1. Has a Continuing Calibration Checklist been completed for each analytical batch? | | ✓ | | | ✓ |
| **C. Client Sample AND QC Sample Results** | | ✓ | | | |
| 1. Were all special project requirements met? | | ✓ | | | ✓ |
| 2. Were the header information, prep factors, and dilution factors verified? | | ✓ | | | ✓ |
| 3. Was date/time of analysis verified between analysis header and logbook as correct? | | ✓ | | | ✓ |
| 4. Sample analyses done within preparation and analytical holding time (HT)?<br>*If no, list samples:* _____ | | ✓ | | ☐ HT expired upon receipt.<br>☐* Client requested analysis after HT expired.<br>☐ Re-extraction done after HT expired.<br>☐ See Comment no. _____. | ✓ |
| 5. Are internal standards within QC limits specified in Table 13?<br>*If no, list samples and reason (e.g.,* **surl***):*<br>Sample / Reason / Sample / Reason<br>LCS / low<br>002 / low | | | ✓ | ☐* **[sup]** Ion suppression due to matrix.<br>☐* **[low]** Low recovery. S/N >10 and EDL<ML.<br>☐ **[sam]** Not enough sample to re-extract.<br>☐ **[dil]** Dilution showed acceptable %R.<br>☐ **[mtx]** Obvious matrix interference. Further cleanup not possible.<br>☐* **[unk]** At client's request, data was flagged as estimated and released without further investigation.<br>☐ **[com]** See Comment no. _____. | ✓ |
| 6. Were the following qualitative criteria met for all reported PCDD/Fs:<br>• All 2378 isomers within the RRT limits specified in Table 3 and both ions maximized within ±2 seconds.<br>• All non-2378 isomers within established RT windows and both ions maximized within ±2 seconds.<br>• The ion abundance ratios for all labeled and unlabeled analytes within the control limits specified in Table 22.<br>• All peaks ≥2.5 S/N.<br>• No corresponding peak at PCDPE mass. | | ✓ | | | ✓ |
| 7. Were peaks ≥2.5 S/N, which did not meet the above criteria, properly calculated and reported as EMPCs? | | ✓ | | | ✓ |
| 8. Were all positive 2378-TCDF hits confirmed by analysis on DB-225? | | ✓ | | | ✓ |
| 9. Are positive results within calibration range?<br>*If no, list samples:* _____ | | ✓ | | ☐ OCDD/F or non-2378 exceeded calibration range<br>☐ Sample extracted at lowest possible volume | ✓ |
| 11. If manual integrations were performed, are they clearly identified, initialed and dated? | | ✓ | | | ✓ |
| 12. Final report acceptable? (Results correct, DLs calculated correctly, units correct, IS %R correct, appropriate flags used, dilution factor correct, and extraction/ analysis dates correct.) | | ✓ | | | ✓ |
| 13. Was a narrative prepared and all deviations noted? | | ✓ | | | ✓ |

* Such action must be taken in consultation with client.

**STL Knoxville Dioxin GC/MS Data Review / Narrative Checklist** **LOT #** H3I100253
**Method: 8290 - KNOX-ID-0004-R3**



| D. Preparation/Matrix QC | N/A | Yes | No | [illegible] | [illegible] Level |
|---|---|---|---|---|---|
| 1. LCS(OPR) done per prep batch and all analytes within the limits specified in QuantIMS reference data? *If no, list LCS(OPR) ID:* _____ | | ✓ | | ☐* Reanalysis not possible-insufficient sample. ☐ LCS %R high and affected analyte(s) were <ML in associated samples. ☐ See Comment no. | ✓ |
| 2. Method blank done per prep batch and method blank or instrument blank analyzed with each sequence? | | ✓ | | | ✓ |
| 3. Method blank internal standard recoveries within QC limits? *If no, list blank ID:* | | ✓ | | ☐* Internal standards are high and blank demonstrates that analysis is free of contaminants. ☐* Sample internal standards OK and there is no analytes >ML in samples associated with blank. | ✓ |
| 4. Are all analytes present in the method blank ≤ ML? *If no, list blank ID:* _____ | | ✓ | | ☐ Sample results are > 20x higher than blank. ☐* There is no analyte > RL in the samples associated with method blank. ☐* Reanalysis not possible-insufficient sample | ✓ |
| 4. MS/MSD done per batch and are all recoveries and RPDs within laboratory generated QC limits? *If no, list MS/MSD ID:* 03MSD | | | ✓ | ☒ LCS showed acceptable results indicating sample matrix effects. ☐ LCS showed acceptable results. High native analyte concentration relative to spike level. ☐ LCS showed acceptable results. RPD out due to lack of sample homogeneity. ☐ See Comment no. | ✓ |
| E. Other | | | | | |
| 1. Are all nonconformances documented appropriately and copy included with deliverable? | ✓ | | | | ✓ |

| Analyst: DCS | Date: 10/7/03 | Analyst: VMK | Date: 10/7/03 |
|---|---|---|---|
| Comments: | | Comments: | |

* Such action must be taken in consultation with client.

**STL Knoxville** **Specialty Organics Prep Batch Review/Checklist** **Batch #** 3178193 1003

☒ KNOX-ID-0004, rev. 3 (PCDD/F extraction) ☐ KNOX-ID-0013, rev. 2 (PCB extraction) ☐ KNOX-ID-0014, rev. 1 (Pesticides extraction) ☐ KNOX-ID-0016, rev. 2 (LR-SIM PAH extraction) ☐ KNOX-ID-0017, rev. 1 (filters & XAD)

| *Review Items* | N/A | Yes | No | If No, why is data reportable? | 2nd Level |
|---|---|---|---|---|---|
| 1. Does the batch contain no more than 20 field samples? (Excluding MB, LCS, LCSD, MS, & MSD) | | ✓ | | | ✓ |
| 2. Were the samples extracted by the proper method? | | ✓ | | | ✓ |
| 3. Were the samples extracted within the required holding times? | | ✓ | | | ✓ |
| 4. For waters by 1613B, if visible solids were present, were solids determined to be ≤ 1%? | ✓ | | | | ✓ |
| 5. Were all project specific requirements met as noted on the Lot Checklists and Sample Worksheets? | | ✓ | | | ✓ |
| 6. Were all required QC samples prepared & extracted with the batch at method required frequency? | | ✓ | | | ✓ |
| 7. Were MS Run# properly assigned and samples entered on QC tracking Sheet? | | ✓ | | | ✓ |
| 8. Were samples requested properly and request form completed, signed, and dated? | | ✓ | | | ✓ |
| 9. Were the correct weights and volumes entered in Quantims for all samples? | | ✓ | | | ✓ |
| 10. Were the internal standards properly spiked and the spikes verified? Were the spike solution ID and spike volumes entered correctly and verified? | | ✓ | | | ✓ |
| 11. Were alternate standards properly spiked and the spikes verified? Were the spike solution ID and spike volumes entered correctly and verified? | ✓ | | | | ✓ |
| 12. Were all cleanup steps properly documented by initials and date? | | ✓ | | | ✓ |
| 13. Was the final volume checked and verified against the supplemental benchsheet and Quantims? | | ✓ | | | ✓ |
| 14. Are the final extracts free of water, precipitates, multiple phases, and color? | | ✓ | | | ✓ |
| 15. Were all appropriate notes and observations recorded on the prep benchsheet and in Quantims? | | ✓ | | | ✓ |
| 16. Were all Quantims batch information completed including;<br>• Batch reviewed<br>• Correct volumes entered<br>• Correct completion date entered<br>• Samples released | | ✓ | | | ✓ |
| 17. Does the prep batch paperwork package contain all required documentation which has been properly and completely filled out, including;<br>• Prep Benchsheet<br>• Supplemental Benchsheet<br>• Standard concentration forms or copies of logbook pages, for all IS, RS, SS, CS, Native and Alternate standards.<br>• Lot Checklists for all lots in the batch<br>• Sample worksheets for all samples in the batch in proper order as recorded on tracking sheet | | ✓ | | | ✓ |
| 18. Are all nonconformances documented appropriately and copy included with deliverable? | ✓ | | | | ✓ |

| Analyst: [signature] | Date: 10/3/03 | 2nd Level Reviewer : | Date: [signature] 10/03/03 |
|---|---|---|---|
| **Comments:** | | **Comments:** | |

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/03/03
Time: 8:30:28

| LEV 1 | LEV 2 | | LEV 1 | LEV 2 | |
|---|---|---|---|---|---|
| Y | Y | Blank | Y | Y | Weights/Volumes |
| Y | Y | Check | Y | Y | Spike & Surrogate Worksheet |
| Y | Y | MS/MSD | — | Y | Vial contains correct volume |
| | | | Y | Y | Labels, greenbars, worksheets |
| | | | — | — | computer batch: correct & all match<br>Anomalies to Extraction Method |

Y Expanded Deliverable
Y COC Completed
Y Bench Sheet Copied
Y Package Submitted to AnalyticalGroup
Y Bench Sheet Copied per COC

Extractionist: 400856 Alan Sudderth
044305 David R. McNeil

Concentrationist: UI3451 Susan D. Oxendine

**********
* QC BATCH: 3273193 *
**********

PREP DATE: 9/30/03 18:00
COMP DATE: 10/03/03 11:00

Reviewer/Date: SUDDERTA / 10/03/03

Dioxins/Furans, HRGC/HRMS (8290)
SOXHLET (NONE,Na2SO4)

| EXTR EXPR | ANL DUE | LOT#,MSRUN#/ WORK ORDER | TEST FLGS | EXT | MTH | MATRIX | INIT/FIN WT/VOL | INIT | PH"S ADJ1 | ADJ2 | SOLVENTS EXTRACTION | VOL | EXCHANGE | VOL | SPIKE STANDARD/ SURROGATE ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/09/03 | 9/29/03 | H3I100253-001 FX1WF-2-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 24 | | | | | | | | | | | | | |
| 10/09/03 | 9/29/03 | H3I100253-002 FX1WH-2-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 25. | | | | | | | | | | | | | |
| 10/09/03 | 9/29/03 | H3I100253-003 FX1WJ-2-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 26 | | | | | | | | | | | | | |
| 10/09/03 | 9/29/03 | H3I100253-003 FX1WJ-2-ACS | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:81 1.0ML NATIVE<br>2553:77 1.0ML HR 13C |
| COMMENTS: | | 27 | | | | | | | | | | | | | |
| 10/09/03 | 9/29/03 | H3I100253-003 FX1WJ-2-ADD | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:81 1.0ML NATIVE<br>2553:77 1.0ML HR 13C |
| COMMENTS: | | 28 | | | | | | | | | | | | | |
| 10/02/03 | 10/03/03 | H3I150133-001 F0CQ7-2-AC | | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 29 | | | | | | | | | | | | | |
| 10/19/03 | 10/13/03 | H3I240193-001 F02RN-1-AA | | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 30 | | | | | | | | | | | | | |

RQC058

Severn Trent Laboratories, Inc.
EXTRACTION BENCH WORKSHEET

Run Date: 10/03/03
Time: 8:30:28

**QC BATCH: 3273193**

PREP DATE: 9/30/03 18:00
COMP DATE: 10/03/03 11:00

| EXTR EXPR | ANL DUE | LOT#,MSRUN#/ WORK ORDER | TEST FLGS | EXT | MTH | MATRIX | INIT/FIN WT/VOL | INIT | PH"S ADJI | ADJ2 | SOLVENTS EXTRACTION | VOL | EXCHANGE | VOL | SPIKE STANDARD/ SURROGATE ID |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/22/03 | 10/23/03 | H3I250135-001 F05A0-1-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 31 | | | | | | | | | | | | | |
| 10/23/03 | 10/23/03 | H3I250135-002 F05A6-1-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 32 | | | | | | | | | | | | | |
| 10/23/03 | 10/23/03 | H3I250135-003 F05A9-1-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 33 | | | | | | | | | | | | | |
| 10/23/03 | 10/23/03 | H3I250135-004 F05CA-1-AA | D | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 34 | | | | | | | | | | | | | |
| 10/19/03 | 0/00/00 | H3I300000-193 F1EPV-1-AAB | | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:77 1.0ML HR 13C |
| COMMENTS: | | 35 | | | | | | | | | | | | | |
| 10/19/03 | 0/00/00 | H3I300000-193 F1EPV-1-ACC | | 11 | IN | SOLID | 10.0g 20.00uL | NA | NA | NA | TOLUENE | 350.0 | HEXANE | 10.0 | 2553:81 1.0ML NATIVE<br>2553:77 1.0ML HR 13C |
| COMMENTS: | | 36 | | | | | | | | | | | | | |

MS RUN # 3273064

R = RUSH C = CLP
E = EPA 600 D = EXP.DEL)
M = CLIENT REQ MS/MSD

NUMBER OF WORK ORDERS IN BATCH: 13

1005

**STL Knoxville**

***Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group***

**QC Batch No** 3273193 Relinquished to GC/MS By: S. Oxendine Date: 10/3/03

Received in GC/MS By: JMC Date: 10/3/03

| | Work Order Number | | Column: DB-5 or RTX-5 | | | | Column: DB-5 or RTX-5 | | | | Column: DB-225 or RTX-225 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Date | Instrument | Analyst | Code | Date | Instrument | Analyst | Code | Date | Instrument | Analyst | Code | |
| 18 | FX1WF2AA | | 10-05-03 | MAT95S | PMP | OK | | | | | 10-7-03 | MAT 90S | PMP | OK | IAD |
| 19 | FX1WH2AA | | " | " | " | OK | | | | | " | MAT 90S | " | OK | IAF |
| 20 | FX1WJ2AA | | " | " | " | OK | | | | | " | MAT 90S | " | OK | IAH |
| | FX1WJ2AD | D | " | " | " | OK | | | | | | — | | | |
| | FX1WJ2AC | S | " | " | " | OK | | | | | | — | | | |
| | F0CQ72AC | | 10/6/03 | MAT95S | MSD | OK* | | | | | | — | | | |
| 21 | F02FN1AA | | 10/6/03 | MAT95S | MSD | OK* | | | | | 10-7-03 | MAT 90S | PMP | OK | IAE |
| 22 | F05A01AA /2AA | | 10/6/03 | MAT95S | MSD | OK/DL | | MAT95S | | 1/5 | | ~~MAT 90S~~ | | | IAD PMP 10-6-03 |
| | F05A61AA | | " | " | " | CS | | MAT95S | | | | — | | | |
| 23 | F05A91AA /2AA | | " | " | " | OK/DL | | MAT95S | | 1/5 | 10-7-03 | MAT 90S | PMP | OK | IAD |
| | F05CA1AA | | " | " | " | CS | | MAT95S | | | | — | | | |
| | F1EPV1AA | B | 10-05-03 | MAT95S | PMP | OK | | | | | | — | | | |
| | F1EPV1AC | C | " | " | " | OK | | | | | | — | | | |

Comments:

$^{13}$C OCDD Daily RF 0.681

● 23785 only

**STL Knoxville**

***Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group***

QC Batch No: 3273193 Internal Std. Spiked By: AV Verified By: DH

Native LCS/D Spiked By: ALS Verified By: DH

Native MS/D Spiked By: AV Verified By: DH

| Work Order Number | | Filtered Y/N? | Vol of Sampling Surrogate (uL) | Soxhlet Started (Date/Time) | Soxhlet Finished (Date/Time | Blow Down (Initial/Date) | Recovery Standard (Book:Page) | Recovery Std Vol (uL) | Vol Delivered (uL) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|
| FX1WF2AA | | | | 9-30-03 18:00 | 10-1-03 10:00 | SDO 10/3/03 | 2553:85 | 20 | 20 | |
| FX1WH2AA | | | | | | | | | | |
| FX1WJ2AA | | | | | | | | | | |
| FX1WJ2AD | D | | | | | | | | | |
| FX1WJ2AC | S | | | | | | | | | |
| F0CQ72AC | | | | | | | | | | |
| F02FN1AA | | | | | | | | | | |
| F05A01AA | | | | | | | | | | |
| F05A61AA | | | | | | | | | | |
| F05A91AA | | | | | | | | | | |
| F05CA1AA | | | | | | | | | | |
| F1EPV1AA | B | | | | | | | | | |
| F1EPV1AC | C | | | | | | | | | |
| | | | | | | | | | | |
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| | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |

Comments:

Volume of Alt Standard: NA

Split Ratios: Post I.S. 1

Post F.C. NA

Post C.S.

Post R.S. V

Blk Matrix: Sodium Sulfate W.B. Temp 52.1°C

1007

## STL Knoxville

### Specialty Organics Group - Sample Tracking Sheet - Organic Preparation Group

QC Batch No: 3273193 Cleanup Std. Spiked By: _____ Verified By: _____

| Work Order Number | | Cleanup Spike (Book:Page) | Cleanup Spike Volume (uL) | SilicaGel Alumina Col. (Initial/Date) | Acid/Base Wash (Initial/Date) | Carbon Column (Initial/Date) | Florisil Column (Initial/Date) | Mercury Cleanup (Initial/Date) | TBA Cleanup (Initial/Date) | Other Cleanup (Initial/Date) | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|
| FX1WF2AA | | | | CA 10/02/03 | | JCA 1902/03 | | | | | |
| FX1WH2AA | | | | | | | | | | | |
| FX1WJ2AA | | | | | | | | | | | |
| FX1WJ2AD | D | | | | | | | | | | |
| FX1WJ2AC | S | | | | | | | | | | |
| F0CQ72AC | | | | | | | | | | | |
| F02FN1AA | | | | | | | | | | | |
| F05A01AA | | | | | | | | | | | |
| F05A61AA | | | | | | | | | | | |
| F05A91AA | | | | | | | | | | | |
| F05CA1AA | | | | | | | | | | | |
| F1EPV1AA | B | | | | | | | | | | |
| F1EPV1AC | C | | | | | | | | | | |
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Comments: _____

**STL Knoxville**

*Specialty Organics Group - Sample Tracking Sheet - GC/MS Analysis Group*

QC Batch #: 3273193

Lot Numbers in this Batch:

H3I100253
H3I150133
H3I240193
H3I250135
H3I300000

STL Knoxville
Methods 8290 and 1613B
HRMS Dioxin/Furan Spike Solution Concentrations

| Internal Standards | Spike Solution ID: (Book: pg. No.) Concentration |
|---|---|
| $^{13}$C-2,3,7,8-TCDD | 2553:77 1.0ng/ml |
| $^{13}$C-1,2,3,7,8-PECDD | |
| $^{13}$C-1,2,3,4,7,8,-HxCDD | |
| $^{13}$C-1,2,3,6,7,8-HxCDD | |
| $^{13}$C-1,2,3,4,6,7,8,-HpCDD | |
| $^{13}$C-OCDD | 2.0ng/ml |
| $^{13}$C-2,3,7,8-TCDF | 1.0ng/ml |
| $^{13}$C-1,2,3,7,8-PeCDF | |
| $^{13}$C-2,3,4,7,8-PeCDF | |
| $^{13}$C-1,2,3,4,7,8-HxCDF | |
| $^{13}$C-1,2,3,6,7,8-HxCDF | |
| $^{13}$C-1,2,3,7,8,9-HxCDF | |
| $^{13}$C-2,3,4,6,7,8-HxCDF | |
| $^{13}$C-1,2,3,4,6,7,8-HpCDF | |
| $^{13}$C-1,2,3,4,7,8,9-HpCDF | |

| Native Standards | Spike Solution ID: (Book: pg. No.) Concentration |
|---|---|
| 2,3,7,8-TCDD | 2553:81 0.20ng/ml |
| 2,3,7,8-TCDF | |
| 1,2,3,7,8-PeCDD | 1.0ng/ml |
| 1,2,3,7,8-PeCDF | |
| 2,3,4,7,8-PeCDF | |
| 1,2,3,4,7,8-HxCDD | |
| 1,2,3,6,7,8-HxCDD | |
| 1,2,3,7,8,9-HxCDD | |
| 1,2,3,4,7,8-HxCDF | |
| 1,2,3,6,7,8-HxCDF | |
| 1,2,3,7,8,9-HxCDF | |
| 2,3,4,6,7,8-HxCDF | |
| 1,2,3,4,6,7,8-HpCDD | |
| 1,2,3,4,6,7,8-HpCDF | |
| 1,2,3,4,7,8,9-HpCDF | |
| OCDD | 2.0ng/ml |
| OCDF | |

| Recovery Standards | Spike Solution ID: (Book: pg. No.) Concentration |
|---|---|
| $^{13}$C-1,2,3,4-TCDD | 2552:85 0.10ng/ul |
| $^{13}$C-1,2,3,7,8,9-HxCDD | |

| Clean-up Standard | Spike Solution ID: (Book: pg. No.) Concentration |
|---|---|
| $^{37}$Cl-2,3,7,8-TCDD | NA 0.20ng/ml |

# Sample Receipt Documentation

# STL Knoxville

5815 Middlebrook Pike • Knoxville, TN 37921-5947
Phone: (865) 291-3000 • Fax: (865) 584-4315
Receiving: (865) 291-3031

#3I100253

## ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No.
Page 1 of 1

Project Name/No. [1] St. Louis Army Ammunition Plant (SLAAP)
Sample Team Members [2] Steve Bryant
Profit Center No. [3]
Project Manager [4]
Purchase Order No. [6]
Required Report Date [11]

Samples Shipment Date [7] 9/9/03
Lab Destination [8] Knoxville, TN
Lab Contact [9] Jamie McKinney
Project Contact / Phone [12] Steve Bryant 913/236-8006
Carrier / Waybill No. [13] FedEx/835872895102

Bill to: [5] TechLaw Inc.
6400 Glenwood, Suite 212
Overland Park, KS 66202
Attn: Steve Bryant
Report to: [10] same as "Bill to"

White: To accompany samples
Yellow: Field copy

**ONE CONTAINER PER LINE**

| Sample [14] Number | Sample [15] Type | Date/Time [16] Collected | Container [17] Type | Sample [18] Volume | Pre- [19] servative | Requested Testing [20] Program | Condition on Receipt [21] Lab use only |
|---|---|---|---|---|---|---|---|
| 090903-1 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Custody seals intact (Y) N NA |
| 090903-2 | Transite* | 9/9/03 930 | 8 oz glass | ~100g. | 4°C | PCBs 8082 PCDD/DFs 8290 | Temperature received at 3°C |
| 090903-3** | Transite* | 9/9/03 1530 | 8 oz glass | ~100g | 4°C | PCBs 8082 PCDD/DFs 8290 | Received by ADF Date 09-10-03 |
| | | | | | | | Number of packages ADF 09-10 935-1 |
| | | | | | | | Tracking # 835872895102 ADF 09-10-03 |
| | | Shipment complete | | | | | |

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: [26]
Normal ☒ Rush ☐

QC Level: [27]
I. ☐ II. ☐ III. ☒ Project Specific (specify):

1. Relinquished by [28] (Signature / Affiliation) [illegible] / Techlaw — Date: 9/9/03 Time: 1745
1. Received by [28] (Signature / Affiliation) [illegible] — Date: 09-10-03 Time: 09:30
1. Relinquished by (Signature / Affiliation) — Date: Time:
1. Received by (Signature / Affiliation) — Date: Time:

Comments: [29]
*Transite is an asbestos-containing material
**090903-3 includes extra volumes for MS/MSD

1013

# STL KNOXVILLE
## SAMPLE RECEIPT/CONDITION UPON RECEIPT ANOMALY CHECKLIST

CLIENT: Techlaw Inc. PROJECT: SLAAP Lot No.: ~~#36~~ #3F100253 MF# 9-10-03

TO BE COMPLETED BY SAMPLE RECEIPT ASSOCIATE:

| 1. Sample Receipt: | YES | NO | NA |
|---|---|---|---|
| a. Do sample container labels match COC? (IDs, Dates, Times) | ✓ | | |
| b. Is the cooler temperature within acceptance limits? (NOTE: North Carolina, 1668, 1613B: 0-4°C; VOST: 10°C) | ✓ | | |
| c. Were samples received with correct chemical preservative (excluding Encore)? | | | ✓ |
| d. Were custody seals present/intact on cooler and/or containers? | ✓ | | |
| e. Were all of the samples listed on the COC received? | ✓ | | |
| f. Were all of the sample containers received intact? | ✓ | | |
| g. Were containers received for VOAs received without headspace? | | | ✓ |
| h. Were samples received in the appropriate containers? | ✓ | | |
| i. Did you check for residual chlorine, if necessary? | | | ✓ |
| j. Were samples received within 1/2 of the holding time? | ✓ | | |
| k. Were samples screened for radioactivity? | | | ✓ |
| l. For aqueous samples for SOG tests (i.e., 1613B, 1668A, 8290, LR PAHs), does the sample(s) have visible solids present? | | | ✓ |
| If yes, was SOG staff notified? | | | ✓ |
| m. Were client's sample documents (RFA/COC) received? | ✓ | | |
| n. Has the RFA/COC been relinquished? (Signed, Dated, Timed) | ✓ | | |
| o. Are test/parameters listed for each sample? | ✓ | | |
| p. Is the matrix of the samples noted? | ✓ | | |
| q. Is the date/time of sample collection noted? | ✓ | | |
| r. Is the client and project name/No. identified? | ✓ | | |
| s. Was the sampler identified on the RFA/COC? | ✓ | | |

SAMPLE RECEIVING ASSOCIATE: Andrew D. Flores DATE: 09-10-03

TO BE COMPLETED BY PROJECT MANAGER :

| 1. Project manager "Sample Greet": | YES | NO | NA |
|---|---|---|---|
| a. Quote number to be logged-in under 52982 | | | |
| b. Informed Login associates of special instructions ? | | | X |

PROJECT MANAGER : JM DATE: 9/12/03

| Client Sample ID | Analysis Requested | Condition (see legend) | Comments/Action |
|---|---|---|---|
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |
| | | | |

☐ Client informed on _____ by _____. Person contacted: _____.

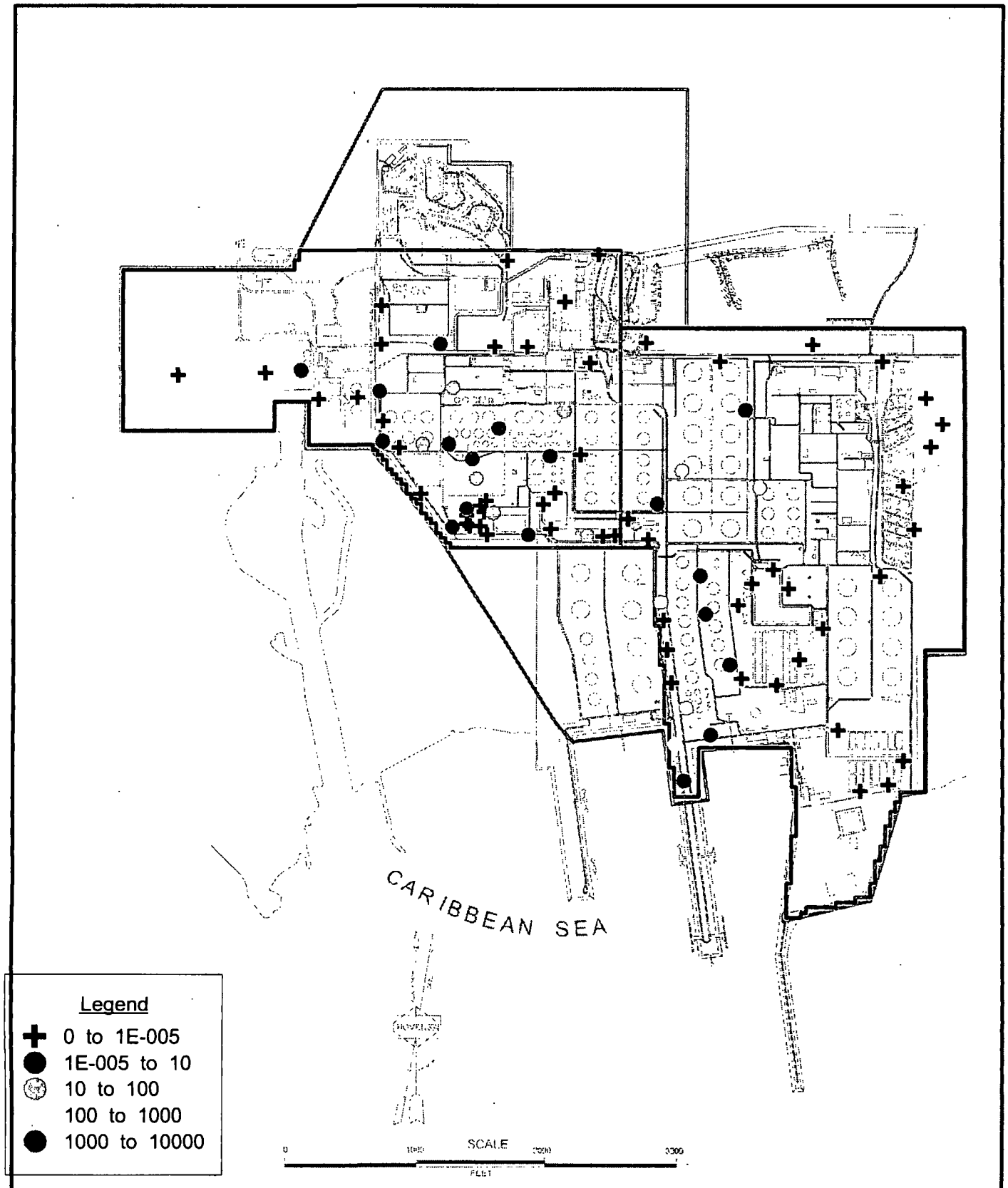
☐ Noted actions in comments section above.

☐ No action necessary; process as is.

Project Manager: _____ Date: _____



QA026R12.doc, 8/11/03




File Name: Por_figs
Date: TEXobs.P9/24/03
Drafter: 27-2000DRB
Approved: DRB

Figure 12b. Observed Dissolved TEX Concentrations from Summer 2000 Sampling (ppb).

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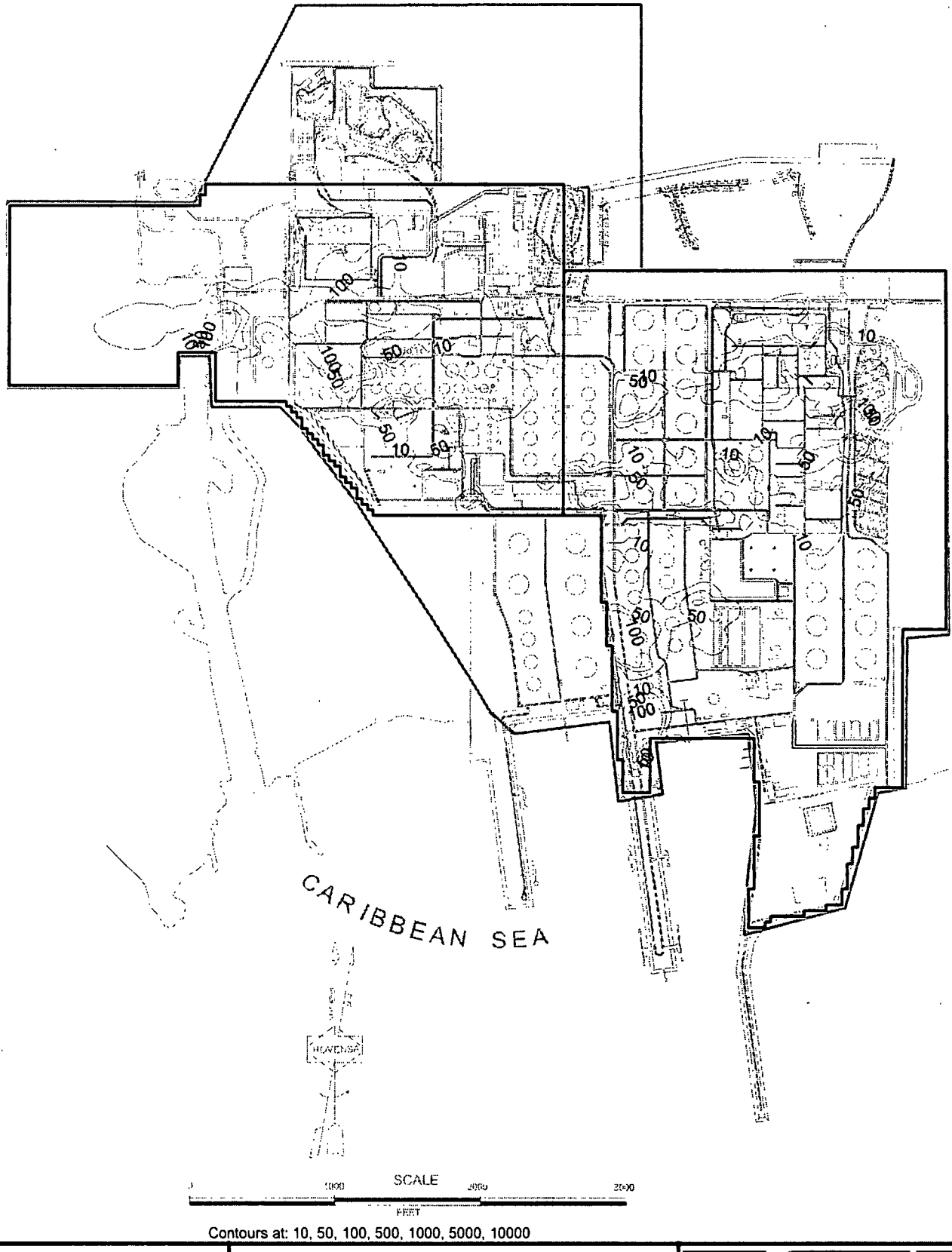


| | |
|---|---|
| File Name: | Por_figs |
| Date: | 9/24/03 |
| Drafter: | DRB |
| Approved: | DRB |

Figure 13a. Model predicted benzene distribution in summer 2000 (ppb).

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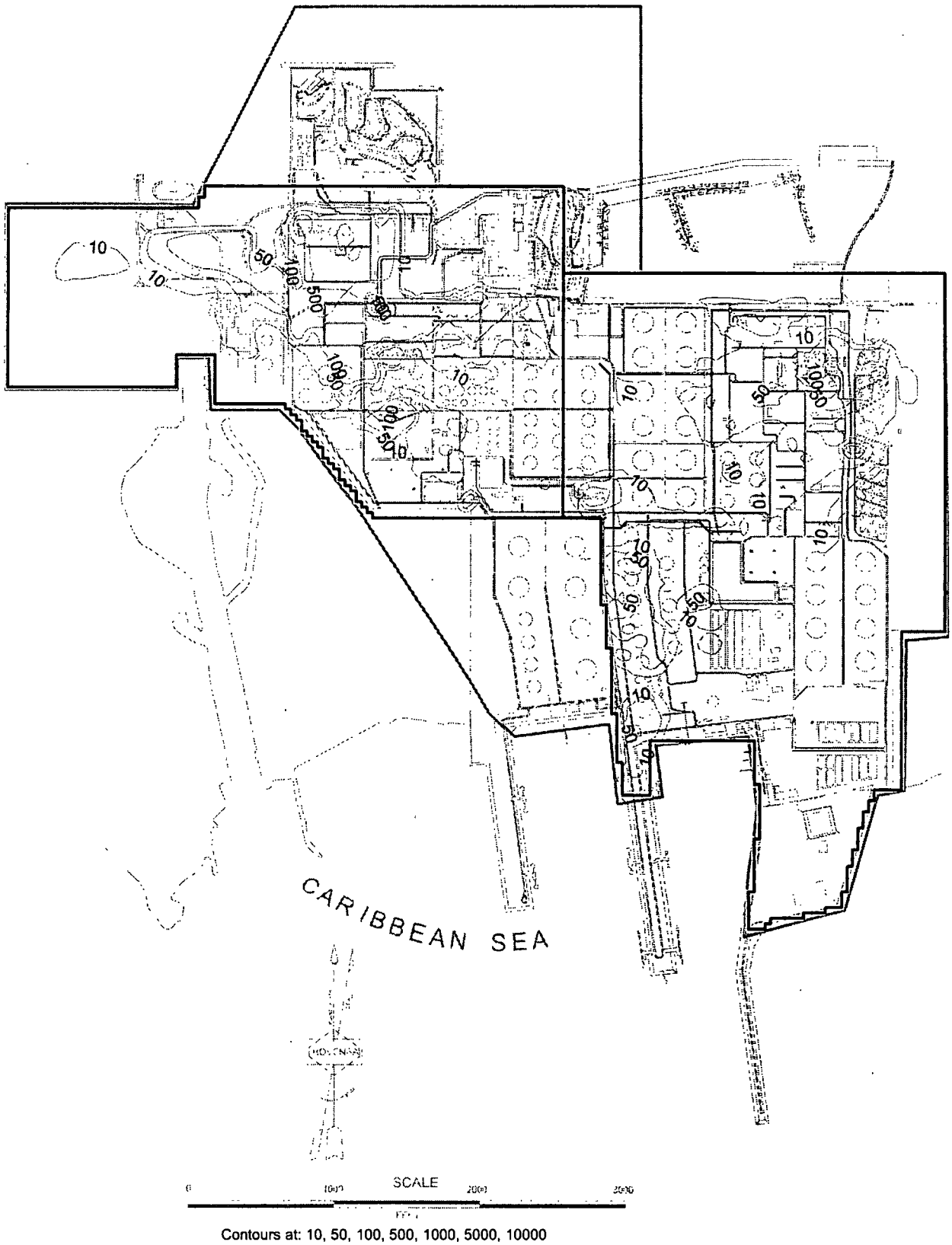


File Name: Por_figs
Date: TEX_2000 9/24/03
Drafter: 27-2000 DRB
Approved: DRB

Figure 13b. Model Predicted TEX Distribution in Summer 2000 (ppb).

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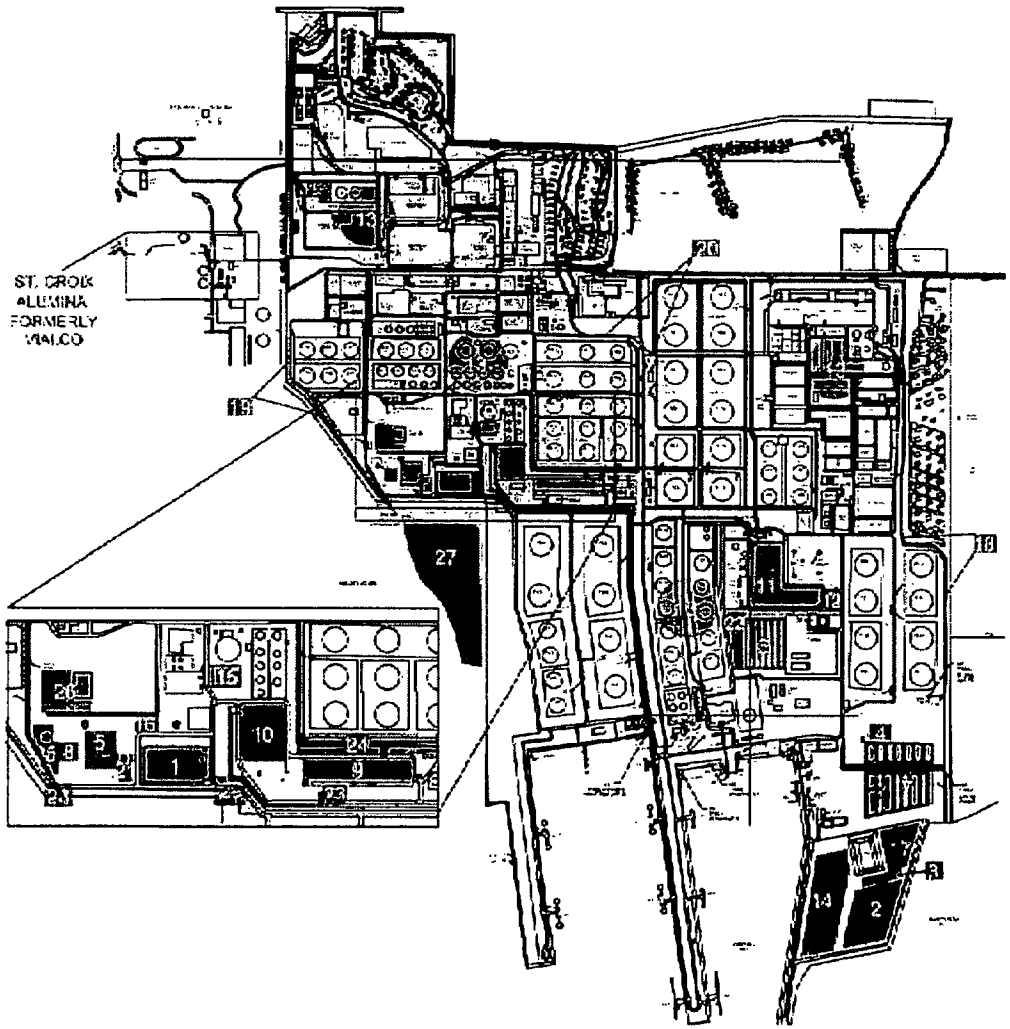


| SWMU NO. | DESCRIPTION |
|---|---|
| 1 | CONSTRUCTION LANDFILL 1 |
| 2 | CONSTRUCTION LANDFILL 2 |
| 3 | ASBESTOS STAGING AREA |
| 4 | CONSTRUCTION LANDFILL 3 |
| 5 | LANDFARM 1 |
| 6 | LANDFARM 2 |
| 7 | LANDFARM 3 |
| 8 | INCINERATOR (CLOSED) |
| 9 | WASTEWATER LAGOON 1 |
| 10 | WASTEWATER LAGOON 2 |
| 11 | WASTEWATER LAGOON 3 |
| 12 | SLOP OIL TANK |
| 13 | PROCESS SEWERS (THROUGHOUT FACILITY) |
| 14 | SETTLING BASIN |
| 15 | SPENT CATALYST STAGING AREA |
| 16 | BUNDLE WASH & FLARE 2 & 3 & O. DRUMS |
| 17 | SALVAGE YARD |
| 18 | EAST STORMDRAIN CANAL |
| 19 | WEST STORMDRAIN CANAL |
| 20 | MAIN STORMDRAIN CANAL |
| 21 | FLARE 3 LOWPOINT DRAINS & STRUCTURES |
| 22 | OILY WATER SEWERS PIPING BETWEEN LAGOON 3 & LF-2 |
| 23 | LAGOON 1 ; AREA U/G OWS PIPING |
| 24 | LAGOON 1 NORTHERN DRAINAGE DITCH |
| 25 | CONSTRUCTION DEBRIS BURIAL AREA |
| 26 | FIRE TRAINING GROUNDS AREA |
| 27 | LAGOON NO 1 DREDGE SPOIL AREA |
| 28 | AREA C |
| 29 | ABANDONED UNDERGROUND CULVERTS |

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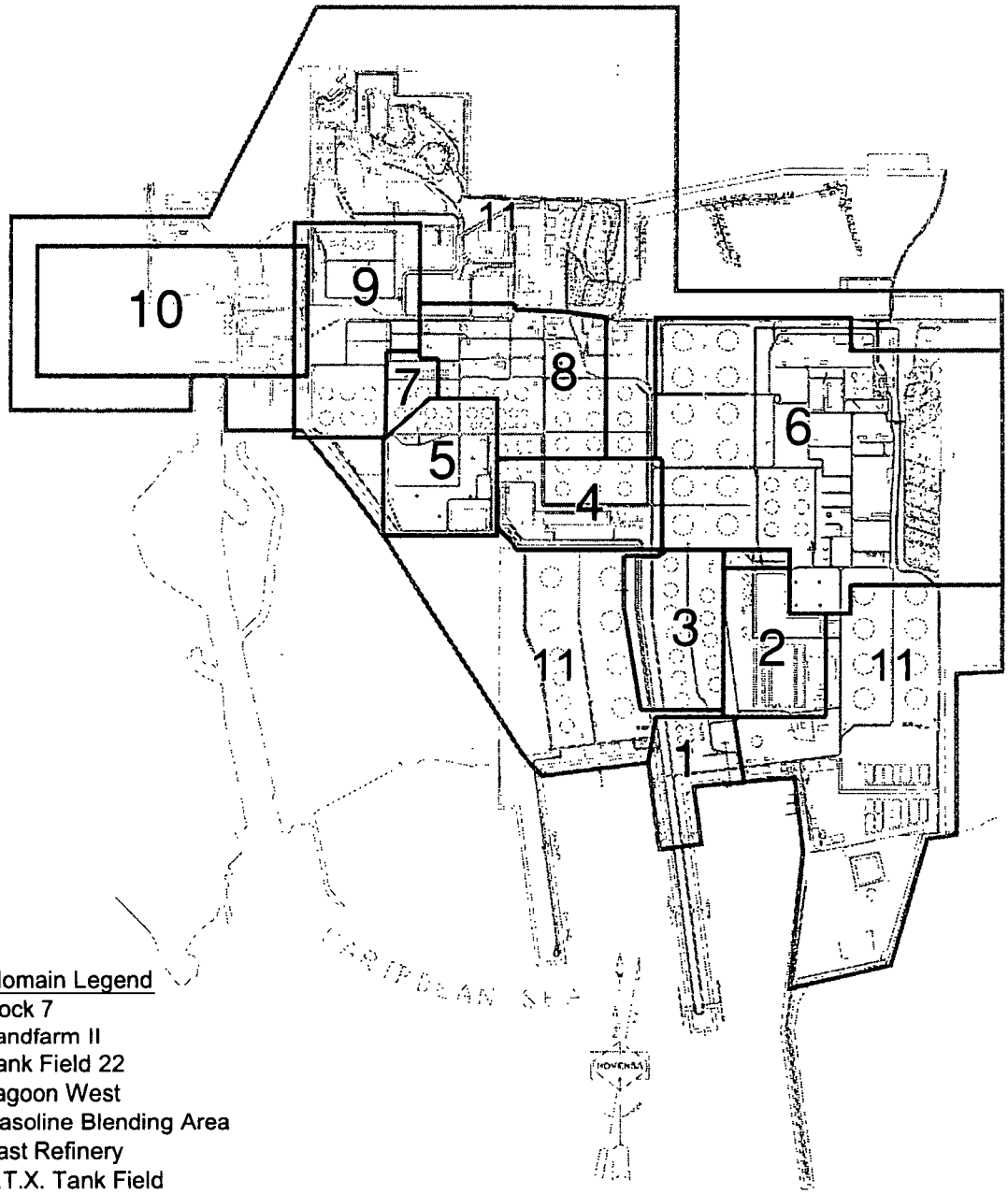
Figure 14. Location of SWMUs.

File Name: Attach_1.ppt
Date: 7/24/03
Drafter: HOV
Approved: DRB




Subdomain Legend

1 Dock 7
2 Landfarm II
3 Tank Field 22
4 Lagoon West
5 Gasoline Blending Area
6 East Refinery
7 B.T.X. Tank Field
8 West Refinery
9 SCPC/West Fence
10 St. Croix Alumina L.L.C. Area
11 Other Areas in SW Model

| | |
|---|---|
| File Name: | Por_figs |
| Date: | 9/24/03 |
| Drafter: | DRB |
| Approved: | DRB |

Figure 15. Subdomain Locations.

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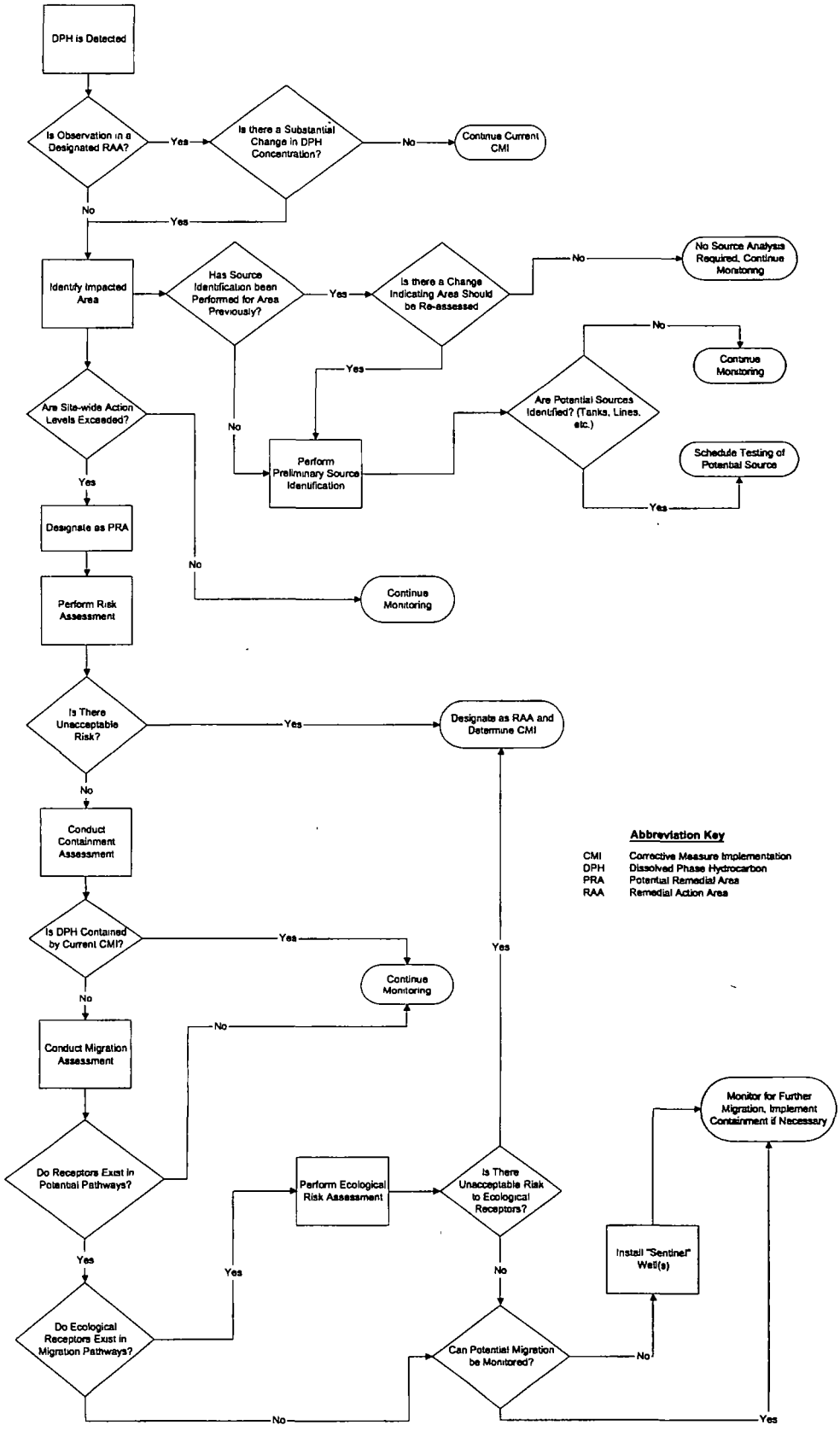


| | |
|---|---|
| File Name: | Fig3_1_revised_.ppt |
| Date: | 08-29-02 |
| Drafter: | DRB |
| Approved: | DRB |

Figure 16. DPH corrective measure assessment: Guidelines for implementation.

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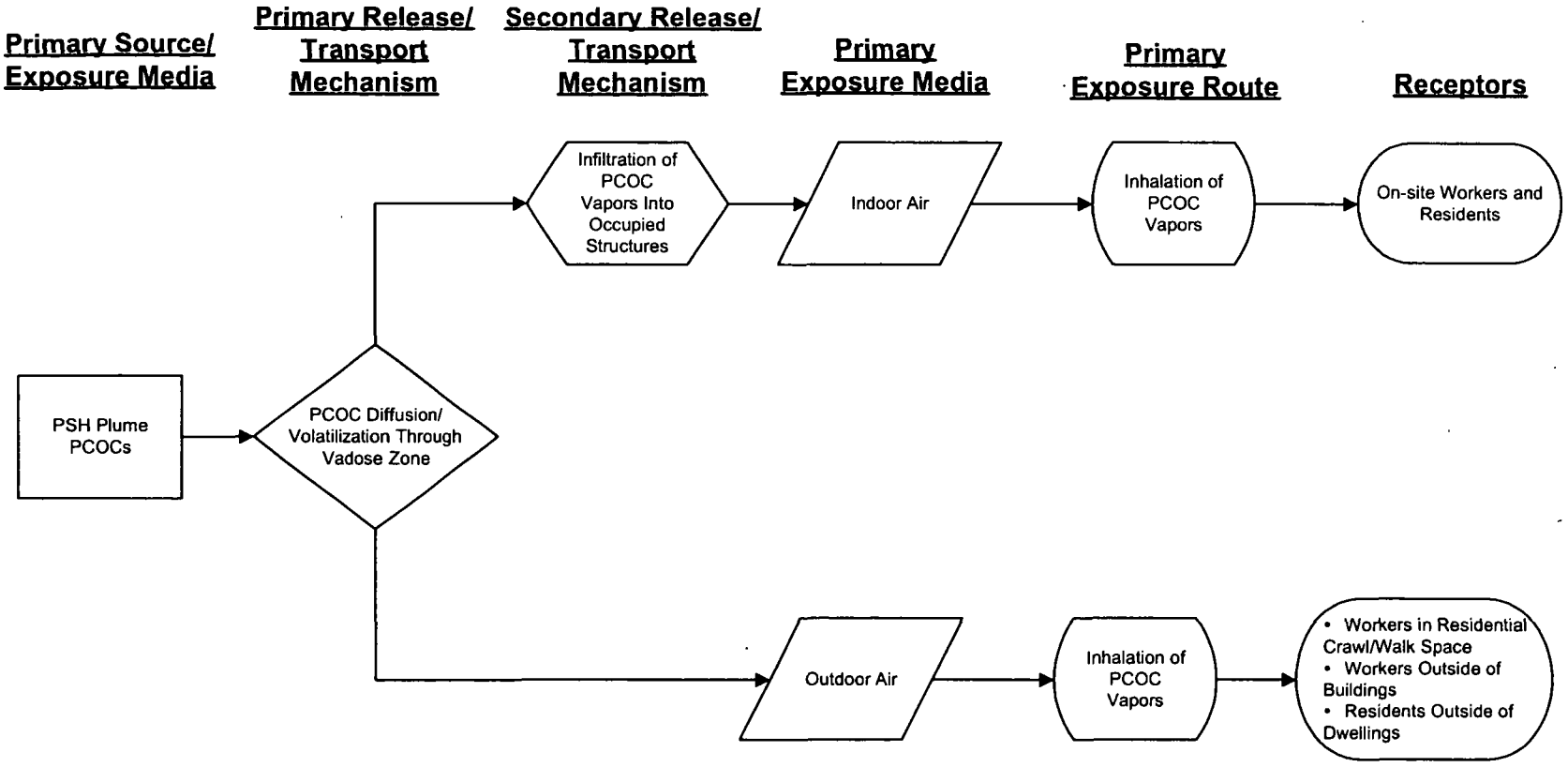


PCOC = Potential Constituent of Concern

File Name: Figureslsc
Date: 9/18/03
Drafter: db
Approved: DRB

Figure 17. AOC #1, Conceptual Site Model for Human Health Exposure to PSH vapors.

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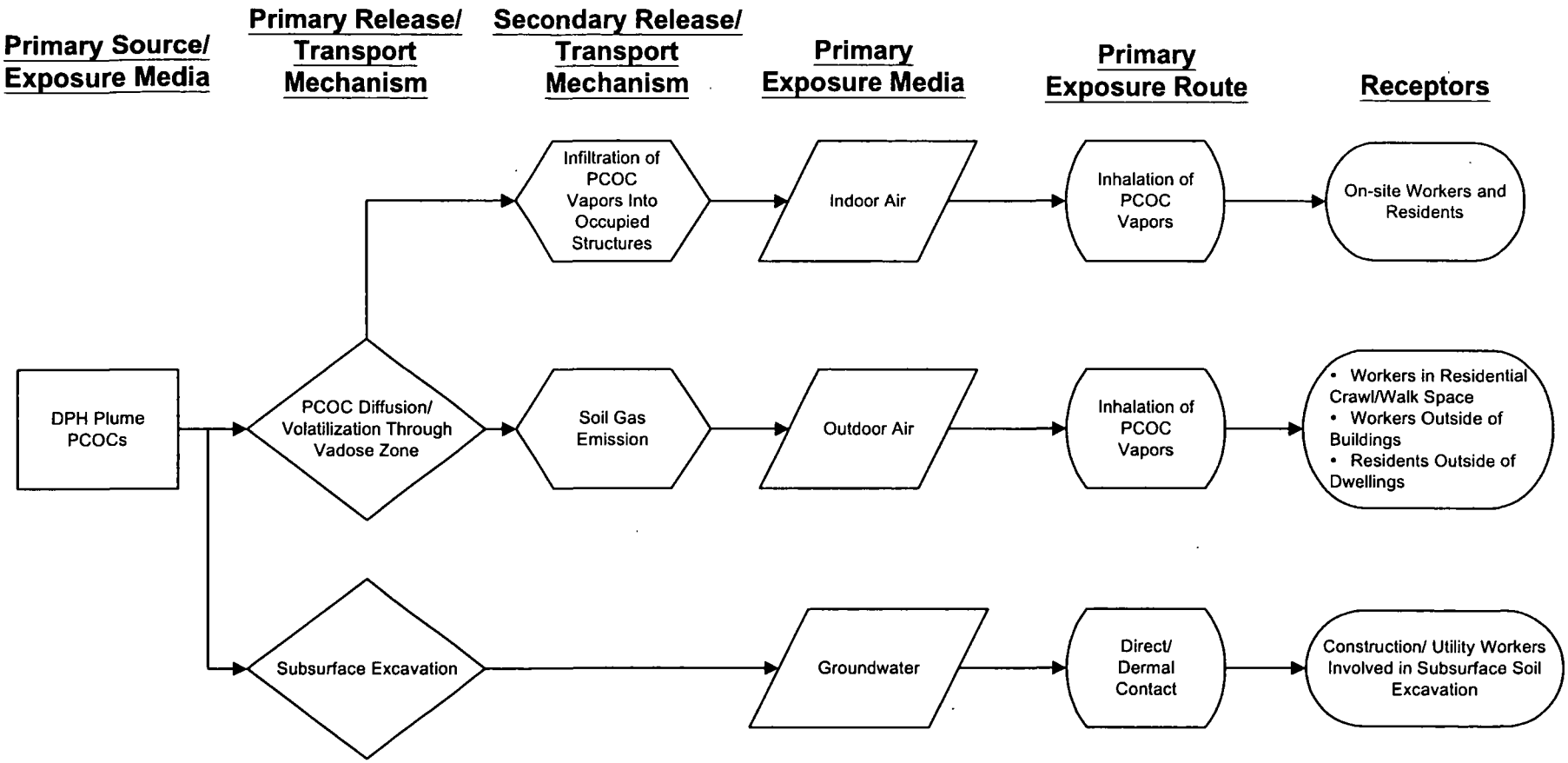


PCOC = Potential Constituent of Concern

File Name: Figureslsc
Date: 9/18/03
Drafter: db
Approved: DRB

Figure 18. AOC #2, and #3 Conceptual Site Model for Human Health Exposure to Dissolved Constituents.

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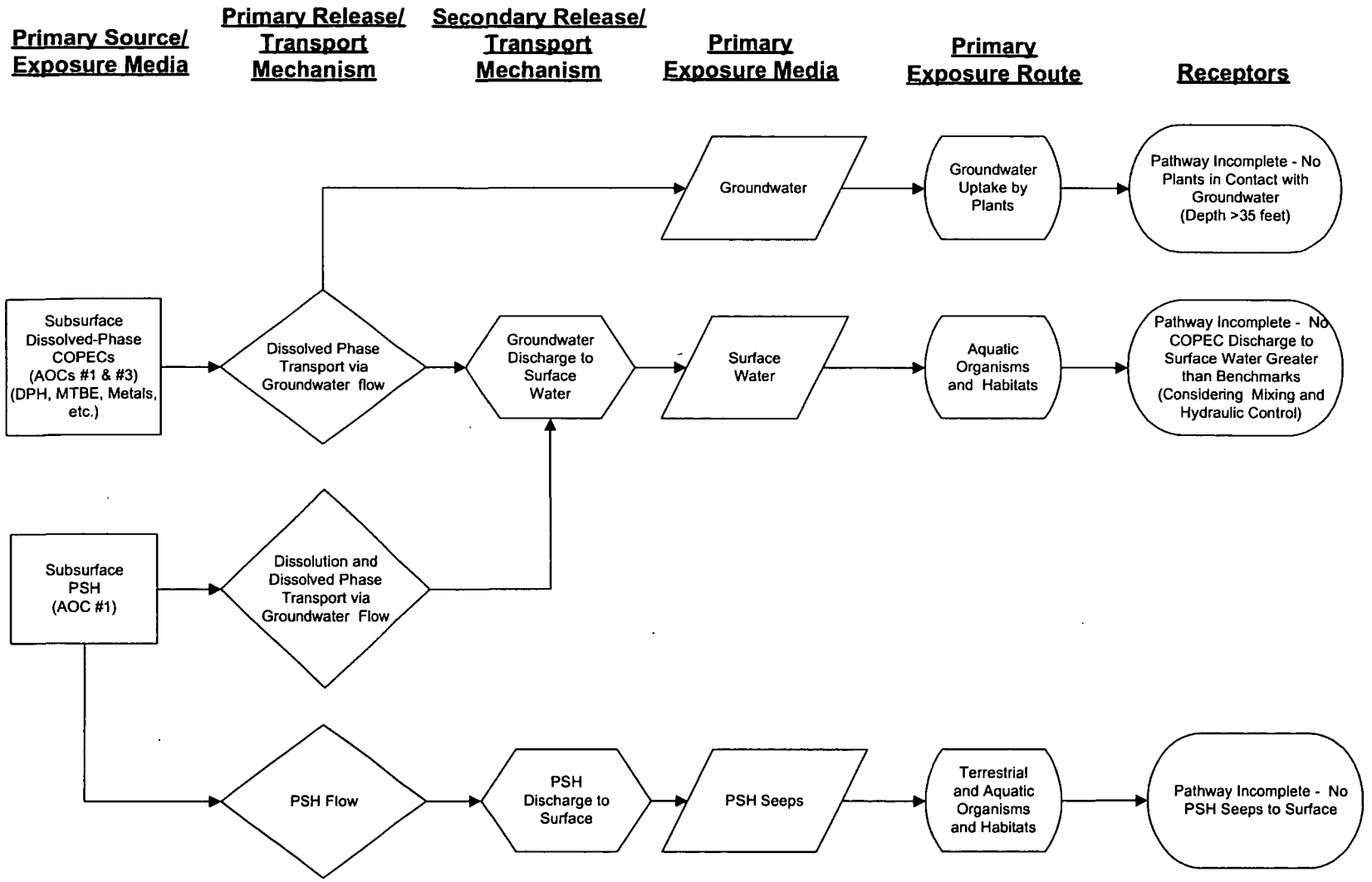


COPEC = Constituent of Potential Ecological Concern

File Name: Figureslsc
Date: 9/18/03
Drafter: db
Approved: DRB

Figure 19. AOC #1, #2 and #3 Conceptual Site Model for Ecological Exposure.

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# Attachment

# Attachment 1 Description of Solid Waste Management Units (SWMUs) located at the HOVENSA refinery

The following is a summary of Solid Waste Management Units (SWMUs) located at the HOVENSA refinery from the September 26, 2000 Documentation of Environmental Indicator Determination RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA750).

**SWMU 1, Construction Landfill 1 (closed):** No further action required per November 1, 1999 RCRA operating permit with exception of areas around wells CL1-2 and CL1-6, which are addressed as part of SWMU 29 and the Corrective Measures Management Unit (CMMU) #1 corrective measures study.

**SWMU 2, Construction Landfill 2 (closed):** Chromium has been detected in shoreline wells at SWMU #2, in the southeast portion of the facility. Commencing in 1997, EPA required three years of semi-annual groundwater monitoring to determine if the chromium levels decreased. Recent results [March and September 1999] have still recorded elevated concentrations [wells CL2-2 (160 µg/L), CL2-3 (194 µg/L), CL2-4 (174 µg/L), and CL2-5 (99.8 µg/L)] above the health based concentration level (HBCL) for chromium. HOVENSA maintains the detections are due to leaching from the stainless steel casings and screens in those wells. EPA has recently approved a program, as part of the CMS for SWMU #2, to replace those stainless steel wells with PVC wells, and then monitor those new PVC wells for three years. However, groundwater is not utilized for any purposes downgradient of this SWMU, and between 1997 and 2000, the chromium measured in the groundwater in SWMU #2 wells has been detected at concentrations less than ten times its HBCL, indicating any discharges to the surface waters of the Caribbean Sea would be **"insignificant"**, as discussed under question 5 below.

**SWMU 3, Asbestos Staging Area:** The 1988 RFA did not indicate suspected releases and there have been no subsequent releases. Therefore, no corrective action required.

**SWMU 4, Construction Landfill 3 (closed):** Approximately 5200 cubic yards of spent catalyst material were disposed of in this landfill as a non-hazardous solid waste [it was not listed when disposed of, and reportedly passed EP Toxicity testing at that time]. Subsequently, effective February 1999, that material became classified as a newly listed hazardous waste (K171 & K172); however, per EPA requirements, material that has been disposed prior to being listed as a hazardous waste can remain in the ground. If it is subsequently excavated, however, it must be managed as a hazardous waste. In June 1999 the buried catalyst material was sampled for all inorganic and organic constituents given in 40 CFR Part 268.40, the Land Disposal Treatment Standards for K171 & K172. Nickel and vanadium were found to exceed their 40 CFR Part 268.40 regulatory limits (11 mg/l TCLP and 1.6 mg/L TCLP, respectively). In October 1999 groundwater was sampled for all inorganic and organic constituents given in 40 CFR Part 268.40. Antimony, nickel, and vanadium (but no organics) were detected in the groundwater in wells immediately south of SWMU#4 at concentrations above their respective HBCL. However, the concentrations were less than ten times their respective HBCL, indicating any discharges to the surface waters of the Caribbean Sea, located approximately 1500 feet to the south, would be **"insignificant"**, as discussed under question 5 below. The CMS for SWMU #4 included an evaluation of risk, and concluded that no unacceptable human health or ecological risks are posed by the contaminated groundwater and/or leaving the buried spent catalyst material in place. The proposed CMI remedy includes an initial 5 years of semi-annual groundwater monitoring of 7 downgradient wells for antimony, nickel, vanadium, and in addition, arsenic and benzene, which although not detected above their HBCLs, are also hazardous constituents for the spent catalyst listed wastes K171 & K172. In addition, the proposed CMI includes ongoing institutional controls. Theses releases are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 5, Landfarm I (closed):** Is a closed hazardous waste management unit subject to 40 CFR Part 264 Subpart F and G groundwater monitoring (and corrective action if necessary), and closure/post-closure requirements under the 1990 Post-Closure Permit. Semi-annual groundwater monitoring of 8 wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 6, Landfarm II:** Consists of operating Landfarm II, a regulated hazardous waste management unit for treatment/disposal of hazardous waste. The unit is subject to 40 CFR Part 264 Subpart F groundwater monitoring and corrective action requirements under Module X of facility's 1999 RCRA Operating Permit. Semi-annual groundwater monitoring of wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 7, Landfarm III:** Consists of operating Landfarm III, a regulated hazardous waste management unit for treatment/disposal of hazardous waste. The unit is subject to 40 CFR Part 264 Subpart F groundwater monitoring and corrective action requirements under Module X of facility's 1999 RCRA Operating Permit. Semi-annual groundwater monitoring of wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 8, Incinerator (closed):** Consists of the former Non-Hazardous Incinerator, which has been removed. The 1988 RFA did not indicate any suspected releases, nor have subsequent releases been documented. No corrective action is required.

**SWMU 9, Wastewater Lagoon 1:** Consists of Surface Impoundment 1, a wastewater treatment lagoon, which formerly operated as an interim status hazardous waste management unit, but is no longer authorized to manage hazardous waste. The unit is subject to 40 CFR Part 264 Subpart F groundwater monitoring and corrective action requirements under Module X of facility's 1999 RCRA Operating Permit. Semi-annual groundwater monitoring of wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 10, Wastewater Lagoon 2:** Consists of Surface Impoundment 2, a wastewater treatment lagoon, which formerly operated as an interim status hazardous waste management unit, but is no longer authorized to manage hazardous waste. The unit is subject to 40 CFR Part 264 Subpart F groundwater monitoring and corrective action requirements under Module X of facility's 1999 RCRA Operating Permit. Semi-annual groundwater monitoring of wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other

SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 11, Wastewater Lagoon 3:** Consists of Surface Impoundment 3, a wastewater treatment lagoon, which formerly operated as an interim status hazardous waste management unit, but is no longer authorized to manage hazardous waste. The unit is subject to 40 CFR Part 264 Subpart F groundwater monitoring and corrective action requirements under Module X of facility's 1999 RCRA Operating Permit. Semi-annual groundwater monitoring of wells surrounding this unit have recorded detections of hazardous constituents; however, through "outside source demonstrations" reviewed and approved by EPA, pursuant to Part 264 procedures, those detections have been ascribed to releases from other SWMUs or AOCs at the facility. Those releases are being dealt with under the facility's 1999 RCRA Operating Permit, and are located within the "existing area of contaminated groundwater". Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 12, Slop Oil Tank:** Consists of Recoverable Oil Tanks which accumulate oil recovered from the Facility's oil/water separators. The recovered oil is then recycled back to the facility's process streams. The 1988 RFA did not indicate any suspected releases and no RFI was required under the Facility operating permit. There have been no subsequent releases, and no corrective action is required.

**SWMU 13, Process Sewers (Throughout Facility):** Consists of Oily-Water Sewer Lines. Releases, if they occur, are reported to EPA and addressed as described in the Permit. No RFI or other corrective action is required.

**SWMU 14, Settling Basin:** Consists of the former Ballast Water Settling Basin, which was subsequently filled with construction debris and other solid waste material, including spent sandblasting material (which has a high lead content). Elevated lead concentrations were found in soils and a RFI and Corrective Measures Study (CMS) were completed. A Corrective Measures Investigation (CMI) was required and a CMI remedy was approved, which included an initial 1 year of semi-annual groundwater sampling for all RCRA metals; followed by 2 years of semiannual sampling for any constituents found above their HBCLs ( i.e., lead and chromium). [Both were less than ten times their respective HBCL, indicating any discharges to the surface waters of the Caribbean Sea would be **"insignificant"**, as discussed under question 5 below.] During those subsequent 2 years, i.e. 4 semi-annual sample events (March 1998 - September 1999), both lead and chromium concentrations in the groundwater were below their respective HBCLs. Groundwater is not utilized for any purposes downgradient of this SWMU.

**SWMU 15, Spent Catalyst Staging Area:** Consists of an area for temporary storage of used catalyst material prior to recycling or disposal. An RFI was completed, no releases were detected, and no further corrective action is required.

**SWMU 16, Bundle Wash Area & Flares 2 & 3 Knock-out Drums:** Groundwater underlying SWMU #16 contained phased separated hydrocarbon and dissolved benzene plumes. An RFI and CMS were completed, and CMI remedy approved. CMS activities have included collection of potentiometric and fluid level data. Recent data is contained in the bi-monthly progress report for February-March 2000.

**SWMU 17, Salvage Yard:** The salvage yard is used to accumulate miscellaneous metal equipment. The 1988 RFA did not indicate any suspected releases, nor have subsequent release been detected. Therefore, no corrective action is required.

**SWMU 18, East Stormdrain Canal:** Consists of the East Stormwater Drainage Canal. As per the Permit, no RFI or other corrective action is required for this SWMU. The basis for this determination is

that the original sources of any releases from the drainage canal are:

(i) releases from other units which already have been identified as SWMUs, or if not, will be pursuant to requirements of the facility's 1999 RCRA Operating Permit.

(ii) non-point source releases (i.e., releases other than those through permitted outfalls under the Clean Water Act) from drainage canals will be dealt with under AOCs #1 and #2, as discussed below; or

(iii) releases from specific locales in drainage canals which have been, or will be, confirmed as definite release sites and will be designated as separate SWMUs.

**SWMU 19, West Stormdrain Canal:** Consists of West Stormwater Drainage Canal. As per the Permit, no RFI or other corrective action is required for this SWMU. The basis for this determination is discussed under SWMU #18 above.

**SWMU 20, Main Stormdrain Canal:** Consists of Main Stormwater Drainage Canal. As per the Permit, no RFI or other corrective action is required for this SWMU. The basis for this determination is discussed under SWMU #18 above.

**SWMU 21, Flare 3 Lowpoint Drains & Structures:** This SWMU drains condensed liquids from the base of the Flare No. 3 stack into a curbed concrete pad from which historic releases to soils and groundwater have been documented. An RFI and CMS were completed. A CMI remedy was also approved, and is being implemented. The remedy being implemented is vacuum enhanced recovery (VER).

**SWMU 22, Oily Water Sewers Piping between Lagoon 3 and Landfarm 2:** This SWMU consists of that portion of the oily water sewer (OWS) lines between Surface impoundment 3 and Landfarm 2 where confirmed releases from the process sewers have occurred. A final RFI report was approved by EPA in 1997. Further assessment is not required for this SWMU, subject to no further releases from the OWS line, or expansion of the PSH plume. Either would trigger resumed investigation. Under interim corrective measures, wells are pumped to contain contaminants. In addition, SWMU 22 VER pilot tests have commenced, and recovery operations will continue until PSH levels decrease significantly in area wells.

**SWMU 23, Lagoon 1; Area Underground Oily Water Sewer Piping:** SWMU 23 consists of a portion of the OWS lines located on the south side of Surface Impoundment 1, and is a location of confirmed past releases. An RFI was completed, and the CMS is currently in progress which includes soil and groundwater sampling. In addition, enhanced fluid recovery (EFR) pumping and use of oxygen release compounds (ORC) at locations CL23-1 and CL23-2 have reduced dissolved volatile constituents in groundwater. No further action at these wells is proposed by HOVENSA under the CMS for SWMU 23. Ongoing EFR using a vacuum truck at well LW-5A is in progress, and will be evaluated after the 6-month trial. A decreasing trend in concentration was documented at LW-5A during the September 1999 and February 2000 sampling events.

**SWMU 24, Lagoon 1 Northern Drainage Ditch:** Consists of the Above Ground Drainage Ditch adjacent to the north side of Surface Impoundment 1, and is a location where several confirmed releases occurred. Implementation of the CMS is currently in progress. Ongoing interim corrective measures include vacuum truck pumping of wells CL24-3 and CL24-4 to remove PSH. Wells 650 and 271 are also vacuum pumped. A VER pilot test will be completed for SWMU 24.

**SWMU 25, Construction Debris Burial Area:** Consists of the Construction Debris Burial Area located near Flare No. 1, and is an area where construction debris and other solid waste has been buried in the past. An RFI has been completed and approved by EPA. A CMS and, if required, a CMI would be implemented for SWMU 25. Implementation of the CMS for SWMU 25 is in progress. HOVENSA continues to vacuum pump well CL25-4 with a vacuum truck as part of the interim corrective measures for this unit, and pumps well WD-2 via a submersible pump. Pumping will continue until product thicknesses decrease to residual levels, or the VER pilot test is initiated.

**SWMU 26, Fire Training Grounds Area:** Consists of the Fire Fighting Training Area and associated structures. An RFI has been completed and approved by EPA. A CMS and, if required, a CMI would be implemented for SWMU 26. Implementation of the CMS for SWMU 26 is in progress. HOVENSA continues to vacuum pump well CL25-4 with a vacuum truck as part of the interim corrective measures for this unit, and pumps well WD-2 via a submersible pump. Pumping will continue until product thicknesses decrease to residual levels, or the VER pilot test is initiated.

**SWMU 27, Lagoon No. 1 Dredge Spoil Area:** Consists of an off-site area where non-hazardous wastewater treatment sludges from Surface Impoundment 1 were formerly disposed. An RFI was conducted. A total of 25 soil borings and 9 shallow wells were installed. Elevated total petroleum hydrocarbon (TPH) concentrations were detected in surface and shallow subsurface soils. Groundwater, which is very shallow at this SWMU was analyzed for the "Skinner List" of constituents, broad list of organic and inorganic constituents associated with petroleum refining activities. No constituents were measured in the groundwater at concentrations exceeding their respective HBCLs. Nevertheless, EPA did not fully approve the CMS' conclusion that natural attenuation is an effective remedy for constituents at SWMU 27. The final remedy has not yet been determined. However, as an Interim Corrective Measure, EPA required five years of annual soil sampling at several locations to confirm the effectiveness of natural attenuation. Three sampling events have been conducted since January 1998, and the results appear to indicate a decrease in soil TPH concentrations, but not at all sample locations.

**SWMU 28, Area C:** Consists of an area outside the southwestern corner of the Facility in the Krause Lagoon potentially impacted by overland flow and/or non-permitted discharges from the West Side Drainage Canal. An RFI was completed and approved, and no further corrective action is required.

**SWMU 29, Abandoned Underground Culverts:** Consists of Abandoned Underground Culverts leading to former Outfall No. 5, and is an on-site area where releases of PSH have been observed. An RFI and CMS were completed. A CMI workplan was approved in November 1999. HOVENSA is currently performing interim corrective measures at the SWMU 29 area consisting of PSH and groundwater recovery. Measures include vacuuming gauging points PB-N and PB-S to remove fluids from the plugged and abandoned underground culverts and EFR of well CL1-6. The frequency of vacuuming and EFR was recently changed from weekly to monthly. The CMI remedy for this SWMU is being implemented, and fluid recovery is ongoing at well 560.

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