

## Cover Page

**Order ID :** P3845

**Project ID :** NJ Waste Water PT

**Client :** Chemtech Consulting Group

### Lab Sample Number

P3845-01  
P3845-02  
P3845-03  
P3845-04  
P3845-05  
P3845-06  
P3845-07  
P3845-08  
P3845-09  
P3845-10  
P3845-11  
P3845-12  
P3845-13  
P3845-14  
P3845-15  
P3845-16  
P3845-17  
P3845-18  
P3845-19  
P3845-20  
P3845-21  
P3845-22

### Client Sample Number

PT-VOA-WP  
PT-VOA-WP  
PT-BN-WP  
PT-BN-WP  
PT-BN-WP  
PT-ACIDS-WP  
PT-ACIDS-WP  
PT-ACIDS-WP  
PT-PEST-WP  
PT-PEST-WP  
PT-CHLR-WP  
PT-CHLR-WP  
PT-TXP-WP  
PT-TXP-WP  
PT-PCBW-WP  
PT-PCBW-WP  
PT-HERB-WP  
RR-GAS-WP  
RR-DIES-WP  
RR-8011-WP  
RR-PAH-WP  
RR-TRIAZINE-WP

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : \_\_\_\_\_

Date: 10/21/2024

NYDOH CERTIFICATION NO - 11376

NJDEP CERTIFICATION NO - 20012

## DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following "Results Qualifiers" are used:

|       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Value | If the result is a value greater than or equal to the detection limit, report the value                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| U     | Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. "10 U". This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.                                                                                                                                                                                                                                 |
| ND    | Indicates the analyte was analyzed for, but not detected                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| J     | Indicates an estimated value. This flag is used:<br>(1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.)<br>(2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others. |
| B     | Indicates the analyte was found in the blank as well as the sample report as "12 B".                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| E     | Indicates the analyte 's concentration exceeds the calibrated range of the instrument for that specific analysis.                                                                                                                                                                                                                                                                                                                                                                                                                         |
| D     | This flag identifies all compounds identified in an analysis at a secondary dilution factor.                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| P     | This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a "P".                                                                                                                                                                                                                                                                                                                        |
| N     | This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.                                                                                                                                                                                                                  |
| A     | This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Q     | Indicates the LCS did not meet the control limits requirements                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |

## APPENDIX A

### QA REVIEW GENERAL DOCUMENTATION

Project #: P3845

Completed

For thorough review, the report must have the following:

#### GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

#### COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

#### CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

#### ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: PATEL VAISHALI

Date: 10/21/2024

## LAB CHRONICLE

|                 |                           |                   |                     |
|-----------------|---------------------------|-------------------|---------------------|
| <b>OrderID:</b> | P3845                     | <b>OrderDate:</b> | 9/5/2024 2:19:00 PM |
| <b>Client:</b>  | Chemtech Consulting Group | <b>Project:</b>   | NJ Waste Water PT   |
| <b>Contact:</b> | QA Officer                | <b>Location:</b>  | QA Office,VOA Lab   |

| LabID             | ClientID            | Matrix       | Test                    | Method | Sample Date     | Prep Date | Anal Date | Received        |
|-------------------|---------------------|--------------|-------------------------|--------|-----------------|-----------|-----------|-----------------|
| <b>P3845-18</b>   | <b>RR-GAS-WP</b>    | <b>Water</b> |                         |        | <b>09/03/24</b> |           |           | <b>09/05/24</b> |
|                   |                     |              | Gasoline Range Organics | 8015D  |                 |           | 09/09/24  |                 |
|                   |                     |              | Gasoline Range Organics | 8015D  |                 |           | 09/11/24  |                 |
| <b>P3845-18RE</b> | <b>RR-GAS-WP</b>    | <b>Water</b> |                         |        | <b>09/03/24</b> |           |           | <b>09/05/24</b> |
|                   |                     |              | Gasoline Range Organics | 8015D  |                 |           | 09/09/24  |                 |
|                   |                     |              | Gasoline Range Organics | 8015D  |                 |           | 09/11/24  |                 |
| <b>P3845-19</b>   | <b>RR-DIES-WP</b>   | <b>Water</b> |                         |        | <b>09/03/24</b> |           |           | <b>09/05/24</b> |
|                   |                     |              | Diesel Range Organics   | 8015D  |                 | 09/09/24  | 09/10/24  |                 |
| <b>P3845-20</b>   | <b>RR-8011-WP</b>   | <b>WATER</b> |                         |        | <b>09/03/24</b> |           |           | <b>09/05/24</b> |
|                   |                     |              | VOCGC Group 1           | 8011   |                 | 09/11/24  | 09/11/24  |                 |
| <b>P3845-20DL</b> | <b>RR-8011-WPDL</b> | <b>WATER</b> |                         |        | <b>09/03/24</b> |           |           | <b>09/05/24</b> |
|                   |                     |              | VOCGC Group 1           | 8011   |                 | 09/11/24  | 09/11/24  |                 |



# QC SUMMARY



284 Sheffield Street, Mountainside, New Jersey 07092, Phone : 908 789 8900,  
Fax : 908 789 8922

**WATER DIESEL RANGE ORGANICS SURROGATE RECOVERY**

Lab Name: Chemtech Client: Chemtech Consulting Group

Lab Code: CHEM Case No.: P3845 SAS No.: P3845 SDG No.: P3845

| EPA<br>SAMPLE NO. | S1<br><br>TETRACOSANE-d50 | S2 | S3 | S4 | TOT<br><br>OUT |
|-------------------|---------------------------|----|----|----|----------------|
| PIBLK-FF014469.D  | 106                       |    |    |    | 0              |
| PIBLK-FF014476.D  | 81                        |    |    |    | 0              |
| RR-DIES-WP        | 78                        |    |    |    | 0              |
| PB163245BL        | 71                        |    |    |    | 0              |
| PB163245BS        | 86                        |    |    |    | 0              |

**QC LIMITS**

TETRACOSANE-d50

For Water : 29-130

For Soil : 37-130

# Column to be used to flag recovery values

\* Values outside of contract required QC limits

D Surrogate Diluted Out

**WATER DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE**

**Lab Name:** Chemtech **Client:** Chemtech Consulting Group  
**Lab Code:** CHEM **Cas No:** P3845 **SAS No :** P3845 **SDG No:** P3845  
**Matrix Spike - EPA Sample No :** PB163245BS **Datafile:** FF014474.D

| COMPOUND | SPIKE<br>ADDED<br>ug/L | CONCENTRATION<br>ug/L | LCS/LCSD<br>CONCENTRATION<br>ug/L | % REC | QC LIMITS |
|----------|------------------------|-----------------------|-----------------------------------|-------|-----------|
| DRO      | 200                    | 0                     | 194                               | 97    | 78-117    |

**WATER DIESEL RANGE ORGANICS LABORATORY CONTROL SPIKE/LABORATORY CONTROL SPIKE DUPLICATE**

**Lab Name:** Chemtech **Client:** Chemtech Consulting Group  
**Lab Code:** CHEM **Cas No:** P3845 **SAS No :** P3845 **SDG No:** P3845  
**Matrix Spike - EPA Sample No :** PB163245BS **Datafile:** FG014189.D

| COMPOUND | SPIKE<br>ADDED<br>ug/L | CONCENTRATION<br>ug/L | LCS/LCSD<br>CONCENTRATION<br>ug/L | % REC | QC LIMITS |
|----------|------------------------|-----------------------|-----------------------------------|-------|-----------|
| DRO      | 200                    | 0                     | 219                               | 110   | 78-117    |

4B  
METHOD BLANK SUMMARY

EPA SAMPLE NO.

PB163245BL

Lab Name: CHEMTECH

Contract: CHEM02

Lab Code: CHEM Case No.: P3845

SAS No.: P3845 SDG NO.: P3845

Lab File ID: FF014473.D

Lab Sample ID: PB163245BL

Instrument ID: FF

Date Extracted: 09/10/2024

Matrix: (soil/water) Water

Date Analyzed: 09/10/24

Level: (low/med) low

Time Analyzed: 9:11

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

| EPA<br>SAMPLE NO. | LAB<br>SAMPLE ID | LAB<br>FILE ID | DATE<br>ANALYZED |
|-------------------|------------------|----------------|------------------|
| PB163245BS        | PB163245BS       | FF014474.D     | 09/10/24         |
| RR-DIES-WP        | P3845-19         | FF014475.D     | 09/10/24         |

COMMENTS: \_\_\_\_\_  
\_\_\_\_\_



# SAMPLE DATA

## Report of Analysis

|                    |                           |                    |                       |
|--------------------|---------------------------|--------------------|-----------------------|
| Client:            | Chemtech Consulting Group | Date Collected:    | 09/03/24              |
| Project:           | NJ Waste Water PT         | Date Received:     | 09/05/24              |
| Client Sample ID:  | RR-DIES-WP                | SDG No.:           | P3845                 |
| Lab Sample ID:     | P3845-19                  | Matrix:            | Water                 |
| Analytical Method: | 8015D DRO                 | % Solid:           | 0                     |
| Sample Wt/Vol:     | 1000                      | Units:             | mL                    |
| Soil Aliquot Vol:  |                           |                    | uL                    |
| Extraction Type:   |                           | Test:              | Diesel Range Organics |
| GPC Factor :       |                           | Injection Volume : |                       |
| Prep Method :      | SW3510                    |                    |                       |

|                   |           |                |                |               |
|-------------------|-----------|----------------|----------------|---------------|
| File ID/Qc Batch: | Dilution: | Prep Date      | Date Analyzed  | Prep Batch ID |
| FF014475.D        | 5         | 09/09/24 08:00 | 09/10/24 10:09 | PB163245      |

| CAS Number        | Parameter       | Conc. | Qualifier | MDL      | LOQ / CRQL | Units   |
|-------------------|-----------------|-------|-----------|----------|------------|---------|
| <b>TARGETS</b>    |                 |       |           |          |            |         |
| DRO               | DRO             | 2200  |           | 50.0     | 250        | ug/L    |
| <b>SURROGATES</b> |                 |       |           |          |            |         |
| 16416-32-3        | Tetracosane-d50 | 3.13  |           | 29 - 130 | 78%        | SPK: 20 |

### Comments:

U = Not Detected

LOQ = Limit of Quantitation

MDL = Method Detection Limit

LOD = Limit of Detection

E = Value Exceeds Calibration Range

P = Indicates >25% difference for detected concentrations between the two GC columns

Q = indicates LCS control criteria did not meet requirements

M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value

B = Analyte Found in Associated Method Blank

N = Presumptive Evidence of a Compound

\* = Values outside of QC limits

D = Dilution

S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.

() = Laboratory InHouse Limit

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014475.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 10:09  
Operator : YP\AJ  
Sample : P3845-19 5X  
Misc :  
ALS Vial : 14 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
RR-DIES-WP

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:16 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units  |
|-------------------------------|--------|----------|-------------|
| -----                         |        |          |             |
| System Monitoring Compounds   |        |          |             |
| 9) S TETRACOSANE-d50 (SURR... | 14.900 | 369155   | 3.128 ug/ml |
| Target Compounds              |        |          |             |
| -----                         |        |          |             |

(f)=RT Delta > 1/2 Window

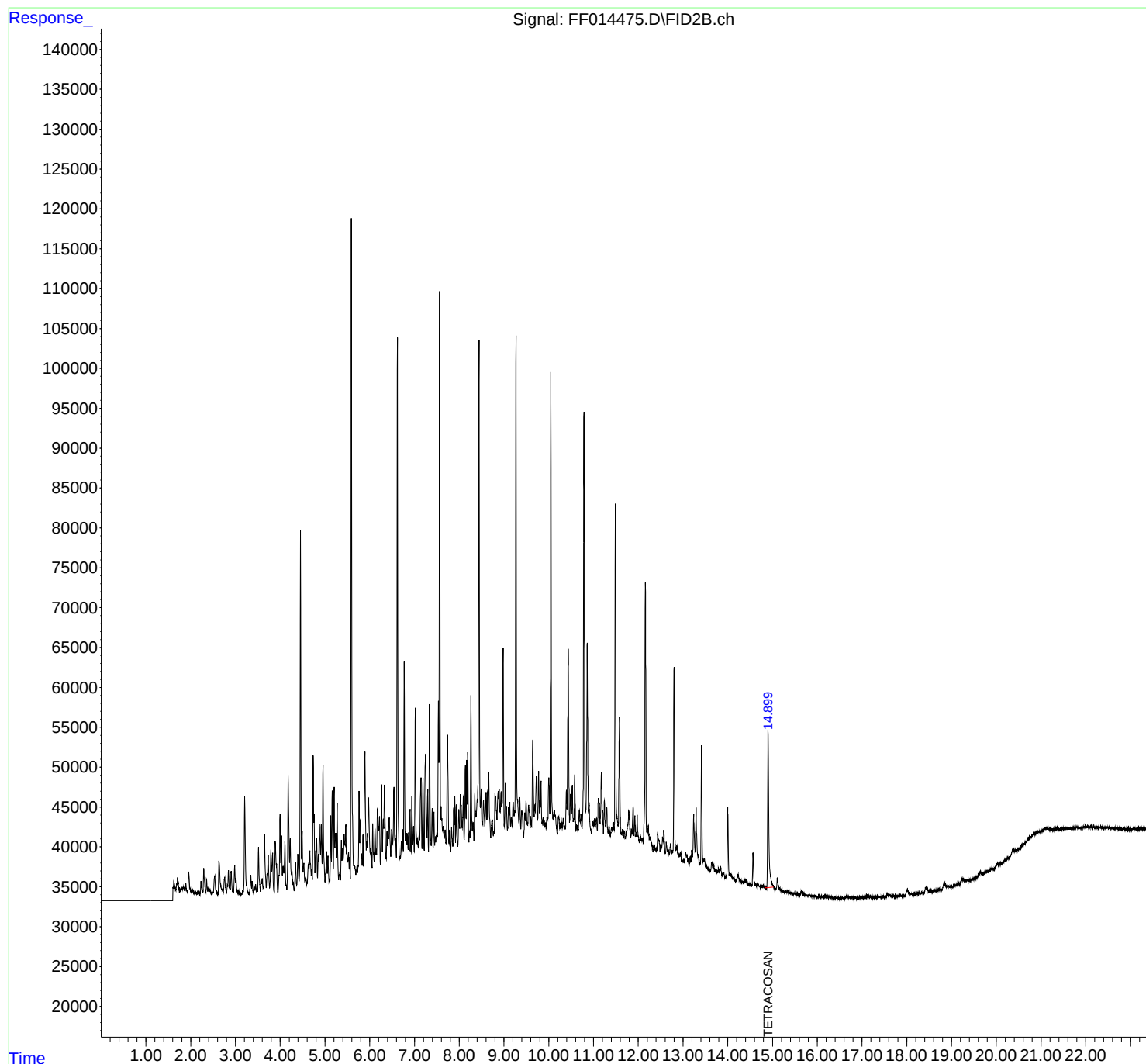
(m)=manual int.

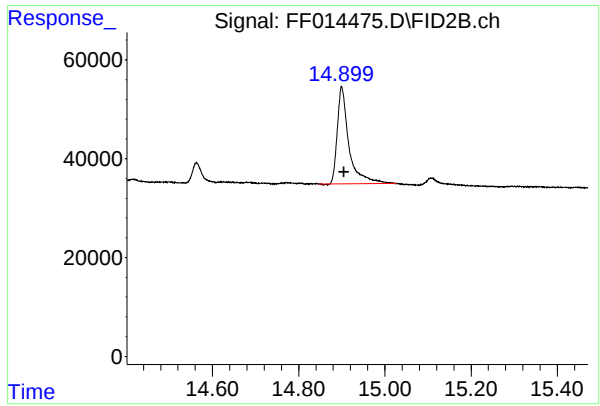
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014475.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 10:09  
Operator : YP\AJ  
Sample : P3845-19 5X  
Misc :  
ALS Vial : 14 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
RR-DIES-WP

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:16 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.900 min  
Delta R.T.: -0.005 min  
Response: 369155  
Conc: 3.13 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
RR-DIES-WP

rteres

## Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014475.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 10:09  
Sample : P3845-19 5X  
Misc :  
ALS Vial : 14 Sample Multiplier: 1

Integration File: Sample.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br># | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-----------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1         | 4.344       | 4.311        | 4.372      | VV       | 4185           | 78787        | 5.87%          | 0.139%        |
| 2         | 4.395       | 4.372        | 4.420      | VV       | 5200           | 94368        | 7.03%          | 0.166%        |
| 3         | 4.454       | 4.420        | 4.478      | VV       | 45875          | 558602       | 41.62%         | 0.983%        |
| 4         | 4.491       | 4.478        | 4.511      | VV       | 8075           | 106895       | 7.96%          | 0.188%        |
| 5         | 4.529       | 4.511        | 4.554      | VV       | 4096           | 77796        | 5.80%          | 0.137%        |
| 6         | 4.576       | 4.554        | 4.594      | VV       | 2184           | 45768        | 3.41%          | 0.081%        |
| 7         | 4.629       | 4.594        | 4.643      | VV       | 3937           | 83237        | 6.20%          | 0.147%        |
| 8         | 4.662       | 4.643        | 4.694      | VV       | 5571           | 123125       | 9.17%          | 0.217%        |
| 9         | 4.706       | 4.694        | 4.719      | VV       | 3299           | 42140        | 3.14%          | 0.074%        |
| 10        | 4.738       | 4.719        | 4.752      | VV       | 17586          | 207281       | 15.44%         | 0.365%        |
| 11        | 4.758       | 4.752        | 4.777      | VV       | 10235          | 105854       | 7.89%          | 0.186%        |
| 12        | 4.795       | 4.777        | 4.802      | VV       | 5660           | 71591        | 5.33%          | 0.126%        |
| 13        | 4.814       | 4.802        | 4.834      | VV       | 7185           | 101126       | 7.53%          | 0.178%        |
| 14        | 4.851       | 4.834        | 4.860      | VV       | 5219           | 63476        | 4.73%          | 0.112%        |
| 15        | 4.876       | 4.860        | 4.902      | VV       | 9010           | 170502       | 12.70%         | 0.300%        |
| 16        | 4.917       | 4.902        | 4.939      | VV       | 9024           | 145325       | 10.83%         | 0.256%        |
| 17        | 4.956       | 4.939        | 5.001      | VV       | 16431          | 271225       | 20.21%         | 0.477%        |
| 18        | 5.035       | 5.001        | 5.052      | VV       | 5562           | 107499       | 8.01%          | 0.189%        |
| 19        | 5.067       | 5.052        | 5.097      | VV       | 4981           | 90415        | 6.74%          | 0.159%        |
| 20        | 5.130       | 5.097        | 5.144      | VV       | 10059          | 138899       | 10.35%         | 0.244%        |
| 21        | 5.162       | 5.144        | 5.187      | VV       | 13206          | 209160       | 15.58%         | 0.368%        |
| 22        | 5.206       | 5.187        | 5.221      | VV       | 13636          | 173899       | 12.96%         | 0.306%        |
| 23        | 5.241       | 5.221        | 5.257      | VV       | 7884           | 145344       | 10.83%         | 0.256%        |
| 24        | 5.273       | 5.257        | 5.307      | VV       | 11656          | 182842       | 13.62%         | 0.322%        |
| 25        | 5.321       | 5.307        | 5.327      | VV       | 2599           | 30037        | 2.24%          | 0.053%        |
| 26        | 5.333       | 5.327        | 5.347      | VV       | 2719           | 29344        | 2.19%          | 0.052%        |
| 27        | 5.368       | 5.347        | 5.381      | VV       | 7009           | 99738        | 7.43%          | 0.176%        |
| 28        | 5.392       | 5.381        | 5.408      | VV       | 6042           | 82827        | 6.17%          | 0.146%        |
| 29        | 5.430       | 5.408        | 5.451      | VV       | 7703           | 164344       | 12.25%         | 0.289%        |
| 30        | 5.466       | 5.451        | 5.482      | VV       | 8956           | 133430       | 9.94%          | 0.235%        |
| 31        | 5.489       | 5.482        | 5.516      | VV       | 5708           | 102374       | 7.63%          | 0.180%        |
| 32        | 5.529       | 5.516        | 5.543      | VV       | 5462           | 75336        | 5.61%          | 0.133%        |
| 33        | 5.553       | 5.543        | 5.567      | VV       | 4881           | 55246        | 4.12%          | 0.097%        |
| 34        | 5.590       | 5.567        | 5.654      | VV       | 84989          | 1119498      | 83.41%         | 1.971%        |
| 35        | 5.664       | 5.654        | 5.692      | VV       | 3846           | 76373        | 5.69%          | 0.134%        |
| 36        | 5.717       | 5.692        | 5.729      | VV       | 3824           | 73321        | 5.46%          | 0.129%        |

|    |       |       |       |    | rteres |        |        |        |
|----|-------|-------|-------|----|--------|--------|--------|--------|
| 37 | 5.763 | 5.729 | 5.777 | VV | 13190  | 198380 | 14.78% | 0.349% |
| 38 | 5.792 | 5.777 | 5.809 | VV | 9606   | 147387 | 10.98% | 0.259% |
| 39 | 5.817 | 5.809 | 5.833 | VV | 5338   | 66054  | 4.92%  | 0.116% |
| 40 | 5.850 | 5.833 | 5.864 | VV | 7688   | 105079 | 7.83%  | 0.185% |
| 41 | 5.894 | 5.864 | 5.925 | VV | 18088  | 390725 | 29.11% | 0.688% |
| 42 | 5.934 | 5.925 | 5.942 | VV | 6865   | 66217  | 4.93%  | 0.117% |
| 43 | 5.953 | 5.942 | 5.958 | VV | 7818   | 71636  | 5.34%  | 0.126% |
| 44 | 5.975 | 5.958 | 6.009 | VV | 12282  | 273241 | 20.36% | 0.481% |
| 45 | 6.018 | 6.009 | 6.030 | VV | 5935   | 71646  | 5.34%  | 0.126% |
| 46 | 6.037 | 6.030 | 6.052 | VV | 5557   | 62087  | 4.63%  | 0.109% |
| 47 | 6.068 | 6.052 | 6.099 | VV | 9112   | 171852 | 12.80% | 0.302% |
| 48 | 6.120 | 6.099 | 6.138 | VV | 8521   | 156130 | 11.63% | 0.275% |
| 49 | 6.147 | 6.138 | 6.156 | VV | 5670   | 59039  | 4.40%  | 0.104% |
| 50 | 6.175 | 6.156 | 6.196 | VV | 10910  | 215175 | 16.03% | 0.379% |
| 51 | 6.219 | 6.196 | 6.240 | VV | 10019  | 206837 | 15.41% | 0.364% |
| 52 | 6.265 | 6.240 | 6.284 | VV | 13979  | 221665 | 16.52% | 0.390% |
| 53 | 6.305 | 6.284 | 6.315 | VV | 9684   | 153373 | 11.43% | 0.270% |
| 54 | 6.331 | 6.315 | 6.371 | VV | 13974  | 303759 | 22.63% | 0.535% |
| 55 | 6.387 | 6.371 | 6.398 | VV | 8204   | 107655 | 8.02%  | 0.189% |
| 56 | 6.411 | 6.398 | 6.420 | VV | 7953   | 97994  | 7.30%  | 0.172% |
| 57 | 6.437 | 6.420 | 6.472 | VV | 9839   | 242633 | 18.08% | 0.427% |
| 58 | 6.491 | 6.472 | 6.514 | VV | 8378   | 183886 | 13.70% | 0.324% |
| 59 | 6.541 | 6.514 | 6.563 | VV | 13693  | 270567 | 20.16% | 0.476% |
| 60 | 6.569 | 6.563 | 6.597 | VV | 7321   | 136050 | 10.14% | 0.239% |
| 61 | 6.619 | 6.597 | 6.669 | VV | 70021  | 938250 | 69.91% | 1.651% |
| 62 | 6.679 | 6.669 | 6.688 | VV | 5013   | 53712  | 4.00%  | 0.095% |
| 63 | 6.710 | 6.688 | 6.723 | VV | 6868   | 123200 | 9.18%  | 0.217% |
| 64 | 6.739 | 6.723 | 6.752 | VV | 8371   | 118955 | 8.86%  | 0.209% |
| 65 | 6.772 | 6.752 | 6.794 | VV | 29478  | 403752 | 30.08% | 0.711% |
| 66 | 6.804 | 6.794 | 6.815 | VV | 8220   | 101005 | 7.53%  | 0.178% |
| 67 | 6.821 | 6.815 | 6.834 | VV | 7843   | 84665  | 6.31%  | 0.149% |
| 68 | 6.845 | 6.834 | 6.858 | VV | 7880   | 100713 | 7.50%  | 0.177% |
| 69 | 6.873 | 6.858 | 6.887 | VV | 7933   | 117873 | 8.78%  | 0.207% |
| 70 | 6.901 | 6.887 | 6.924 | VV | 10894  | 178707 | 13.32% | 0.315% |
| 71 | 6.943 | 6.924 | 6.964 | VV | 12500  | 209389 | 15.60% | 0.369% |
| 72 | 6.980 | 6.964 | 6.995 | VV | 8815   | 139406 | 10.39% | 0.245% |
| 73 | 7.019 | 6.995 | 7.057 | VV | 23623  | 431502 | 32.15% | 0.760% |
| 74 | 7.067 | 7.057 | 7.084 | VV | 7282   | 112521 | 8.38%  | 0.198% |
| 75 | 7.109 | 7.084 | 7.119 | VV | 7895   | 147801 | 11.01% | 0.260% |
| 76 | 7.147 | 7.119 | 7.169 | VV | 14782  | 327901 | 24.43% | 0.577% |
| 77 | 7.191 | 7.169 | 7.220 | VV | 14831  | 295926 | 22.05% | 0.521% |
| 78 | 7.251 | 7.220 | 7.282 | VV | 17838  | 460459 | 34.31% | 0.810% |
| 79 | 7.296 | 7.282 | 7.314 | VV | 13411  | 183095 | 13.64% | 0.322% |
| 80 | 7.338 | 7.314 | 7.375 | VV | 24096  | 446200 | 33.25% | 0.785% |
| 81 | 7.398 | 7.375 | 7.419 | VV | 11061  | 221731 | 16.52% | 0.390% |
| 82 | 7.436 | 7.419 | 7.454 | VV | 10585  | 173732 | 12.94% | 0.306% |
| 83 | 7.465 | 7.454 | 7.476 | VV | 7484   | 95301  | 7.10%  | 0.168% |
| 84 | 7.503 | 7.476 | 7.514 | VV | 8125   | 171273 | 12.76% | 0.301% |
| 85 | 7.537 | 7.514 | 7.547 | VV | 24524  | 323382 | 24.10% | 0.569% |
| 86 | 7.564 | 7.547 | 7.587 | VV | 75816  | 903563 | 67.32% | 1.590% |
| 87 | 7.596 | 7.587 | 7.610 | VV | 11199  | 139868 | 10.42% | 0.246% |
| 88 | 7.613 | 7.610 | 7.628 | VV | 9814   | 102412 | 7.63%  | 0.180% |
| 89 | 7.640 | 7.628 | 7.664 | VV | 8823   | 178444 | 13.30% | 0.314% |

|     |       |       |       |    |        |         |         |        |
|-----|-------|-------|-------|----|--------|---------|---------|--------|
|     |       |       |       |    | rteres |         |         |        |
| 90  | 7.687 | 7.664 | 7.707 | VV | 8356   | 196639  | 14.65%  | 0.346% |
| 91  | 7.738 | 7.707 | 7.772 | VV | 20240  | 483236  | 36.01%  | 0.851% |
| 92  | 7.788 | 7.772 | 7.812 | VV | 8351   | 174253  | 12.98%  | 0.307% |
| 93  | 7.830 | 7.812 | 7.859 | VV | 8645   | 201578  | 15.02%  | 0.355% |
| 94  | 7.878 | 7.859 | 7.890 | VV | 11106  | 166850  | 12.43%  | 0.294% |
| 95  | 7.903 | 7.890 | 7.918 | VV | 12645  | 175825  | 13.10%  | 0.309% |
| 96  | 7.933 | 7.918 | 7.970 | VV | 11533  | 259461  | 19.33%  | 0.457% |
| 97  | 7.994 | 7.970 | 8.010 | VV | 10875  | 213865  | 15.94%  | 0.376% |
| 98  | 8.029 | 8.010 | 8.066 | VV | 12856  | 363521  | 27.09%  | 0.640% |
| 99  | 8.092 | 8.066 | 8.111 | VV | 12496  | 266570  | 19.86%  | 0.469% |
| 100 | 8.138 | 8.111 | 8.153 | VV | 16511  | 290645  | 21.66%  | 0.512% |
| 101 | 8.168 | 8.153 | 8.180 | VV | 17131  | 222876  | 16.61%  | 0.392% |
| 102 | 8.193 | 8.180 | 8.218 | VV | 18064  | 278311  | 20.74%  | 0.490% |
| 103 | 8.231 | 8.218 | 8.241 | VV | 8145   | 109513  | 8.16%   | 0.193% |
| 104 | 8.263 | 8.241 | 8.293 | VV | 25223  | 437276  | 32.58%  | 0.770% |
| 105 | 8.309 | 8.293 | 8.330 | VV | 9270   | 189502  | 14.12%  | 0.334% |
| 106 | 8.349 | 8.330 | 8.379 | VV | 13095  | 308109  | 22.96%  | 0.542% |
| 107 | 8.444 | 8.379 | 8.476 | VV | 69849  | 1296155 | 96.58%  | 2.281% |
| 108 | 8.492 | 8.476 | 8.510 | VV | 13444  | 237665  | 17.71%  | 0.418% |
| 109 | 8.517 | 8.510 | 8.527 | VV | 9474   | 91258   | 6.80%   | 0.161% |
| 110 | 8.543 | 8.527 | 8.574 | VV | 12175  | 296189  | 22.07%  | 0.521% |
| 111 | 8.598 | 8.574 | 8.613 | VV | 13079  | 257655  | 19.20%  | 0.454% |
| 112 | 8.625 | 8.613 | 8.640 | VV | 13122  | 182589  | 13.60%  | 0.321% |
| 113 | 8.661 | 8.640 | 8.705 | VV | 15605  | 436984  | 32.56%  | 0.769% |
| 114 | 8.735 | 8.705 | 8.760 | VV | 9646   | 285087  | 21.24%  | 0.502% |
| 115 | 8.774 | 8.760 | 8.782 | VV | 8204   | 108667  | 8.10%   | 0.191% |
| 116 | 8.802 | 8.782 | 8.811 | VV | 13030  | 190840  | 14.22%  | 0.336% |
| 117 | 8.817 | 8.811 | 8.845 | VV | 12547  | 229650  | 17.11%  | 0.404% |
| 118 | 8.871 | 8.845 | 8.881 | VV | 13235  | 257683  | 19.20%  | 0.454% |
| 119 | 8.895 | 8.881 | 8.914 | VV | 13529  | 240295  | 17.90%  | 0.423% |
| 120 | 8.936 | 8.914 | 8.950 | VV | 13198  | 262319  | 19.55%  | 0.462% |
| 121 | 8.983 | 8.950 | 9.009 | VV | 31227  | 600912  | 44.77%  | 1.058% |
| 122 | 9.035 | 9.009 | 9.049 | VV | 14207  | 277117  | 20.65%  | 0.488% |
| 123 | 9.057 | 9.049 | 9.076 | VV | 11343  | 163632  | 12.19%  | 0.288% |
| 124 | 9.104 | 9.076 | 9.117 | VV | 11233  | 241906  | 18.02%  | 0.426% |
| 125 | 9.130 | 9.117 | 9.150 | VV | 11877  | 207120  | 15.43%  | 0.365% |
| 126 | 9.162 | 9.150 | 9.180 | VV | 9936   | 172312  | 12.84%  | 0.303% |
| 127 | 9.207 | 9.180 | 9.227 | VV | 11854  | 300512  | 22.39%  | 0.529% |
| 128 | 9.269 | 9.227 | 9.335 | VV | 70282  | 1342095 | 100.00% | 2.362% |
| 129 | 9.355 | 9.335 | 9.378 | VV | 12477  | 273881  | 20.41%  | 0.482% |
| 130 | 9.399 | 9.378 | 9.439 | VV | 10817  | 343600  | 25.60%  | 0.605% |
| 131 | 9.467 | 9.439 | 9.479 | VV | 10573  | 223995  | 16.69%  | 0.394% |
| 132 | 9.495 | 9.479 | 9.523 | VV | 12032  | 278929  | 20.78%  | 0.491% |
| 133 | 9.552 | 9.523 | 9.586 | VV | 11500  | 386303  | 28.78%  | 0.680% |
| 134 | 9.599 | 9.586 | 9.617 | VV | 10113  | 173895  | 12.96%  | 0.306% |
| 135 | 9.645 | 9.617 | 9.677 | VV | 19682  | 486108  | 36.22%  | 0.856% |
| 136 | 9.690 | 9.677 | 9.701 | VV | 11551  | 156191  | 11.64%  | 0.275% |
| 137 | 9.728 | 9.701 | 9.751 | VV | 15222  | 383371  | 28.57%  | 0.675% |
| 138 | 9.776 | 9.751 | 9.793 | VV | 15772  | 309661  | 23.07%  | 0.545% |
| 139 | 9.806 | 9.793 | 9.815 | VV | 12094  | 155253  | 11.57%  | 0.273% |
| 140 | 9.829 | 9.815 | 9.850 | VV | 14580  | 252344  | 18.80%  | 0.444% |
| 141 | 9.873 | 9.850 | 9.888 | VV | 9962   | 212996  | 15.87%  | 0.375% |

| rteres |        |        |        |    |       |         |        |        |
|--------|--------|--------|--------|----|-------|---------|--------|--------|
| 142    | 9.898  | 9.888  | 9.920  | VV | 9240  | 172850  | 12.88% | 0.304% |
| 143    | 9.931  | 9.920  | 9.942  | VV | 9323  | 121487  | 9.05%  | 0.214% |
| 144    | 9.960  | 9.942  | 9.970  | VV | 9968  | 161421  | 12.03% | 0.284% |
| 145    | 10.005 | 9.970  | 10.026 | VV | 14964 | 407062  | 30.33% | 0.716% |
| 146    | 10.049 | 10.026 | 10.095 | VV | 65878 | 1052520 | 78.42% | 1.853% |
| 147    | 10.117 | 10.095 | 10.123 | VV | 10726 | 171013  | 12.74% | 0.301% |
| 148    | 10.130 | 10.123 | 10.145 | VV | 10790 | 142120  | 10.59% | 0.250% |
| 149    | 10.153 | 10.145 | 10.198 | VV | 10252 | 284736  | 21.22% | 0.501% |
| 150    | 10.218 | 10.198 | 10.250 | VV | 10131 | 292986  | 21.83% | 0.516% |
| 151    | 10.279 | 10.250 | 10.303 | VV | 9602  | 288862  | 21.52% | 0.508% |
| 152    | 10.322 | 10.303 | 10.345 | VV | 9884  | 230904  | 17.20% | 0.406% |
| 153    | 10.351 | 10.345 | 10.357 | VV | 8903  | 65772   | 4.90%  | 0.116% |
| 154    | 10.358 | 10.357 | 10.370 | VV | 8956  | 69944   | 5.21%  | 0.123% |
| 155    | 10.396 | 10.370 | 10.409 | VV | 13438 | 255200  | 19.02% | 0.449% |
| 156    | 10.437 | 10.409 | 10.466 | VV | 31136 | 653099  | 48.66% | 1.150% |
| 157    | 10.490 | 10.466 | 10.509 | VV | 12849 | 286508  | 21.35% | 0.504% |
| 158    | 10.528 | 10.509 | 10.548 | VV | 14037 | 274860  | 20.48% | 0.484% |
| 159    | 10.582 | 10.548 | 10.608 | VV | 15374 | 403808  | 30.09% | 0.711% |
| 160    | 10.625 | 10.608 | 10.657 | VV | 9068  | 255580  | 19.04% | 0.450% |
| 161    | 10.684 | 10.657 | 10.705 | VV | 10955 | 280428  | 20.89% | 0.494% |
| 162    | 10.720 | 10.705 | 10.744 | VV | 10350 | 222364  | 16.57% | 0.391% |
| 163    | 10.788 | 10.744 | 10.827 | VV | 60734 | 1099785 | 81.95% | 1.936% |
| 164    | 10.860 | 10.827 | 10.890 | VV | 31898 | 690792  | 51.47% | 1.216% |
| 165    | 10.903 | 10.890 | 10.953 | VV | 11525 | 366610  | 27.32% | 0.645% |
| 166    | 10.981 | 10.953 | 11.012 | VV | 9422  | 319539  | 23.81% | 0.562% |
| 167    | 11.025 | 11.012 | 11.043 | VV | 9892  | 173264  | 12.91% | 0.305% |
| 168    | 11.066 | 11.043 | 11.088 | VV | 9886  | 250922  | 18.70% | 0.442% |
| 169    | 11.112 | 11.088 | 11.126 | VV | 12442 | 257249  | 19.17% | 0.453% |
| 170    | 11.129 | 11.126 | 11.148 | VV | 11839 | 138414  | 10.31% | 0.244% |
| 171    | 11.178 | 11.148 | 11.223 | VV | 15644 | 518161  | 38.61% | 0.912% |
| 172    | 11.243 | 11.223 | 11.278 | VV | 12157 | 326403  | 24.32% | 0.575% |
| 173    | 11.296 | 11.278 | 11.334 | VV | 11199 | 313802  | 23.38% | 0.552% |
| 174    | 11.348 | 11.334 | 11.377 | VV | 8964  | 215469  | 16.05% | 0.379% |
| 175    | 11.404 | 11.377 | 11.422 | VV | 8691  | 227220  | 16.93% | 0.400% |
| 176    | 11.441 | 11.422 | 11.461 | VV | 9464  | 208258  | 15.52% | 0.367% |
| 177    | 11.490 | 11.461 | 11.551 | VV | 49230 | 968715  | 72.18% | 1.705% |
| 178    | 11.582 | 11.551 | 11.625 | VV | 22605 | 582955  | 43.44% | 1.026% |
| 179    | 11.647 | 11.625 | 11.667 | VV | 8579  | 204413  | 15.23% | 0.360% |
| 180    | 11.690 | 11.667 | 11.707 | VV | 8285  | 190073  | 14.16% | 0.335% |
| 181    | 11.788 | 11.707 | 11.827 | VV | 10920 | 637124  | 47.47% | 1.121% |
| 182    | 11.845 | 11.827 | 11.862 | VV | 8575  | 167814  | 12.50% | 0.295% |
| 183    | 11.886 | 11.862 | 11.908 | VV | 11349 | 265859  | 19.81% | 0.468% |
| 184    | 11.926 | 11.908 | 11.954 | VV | 10289 | 243246  | 18.12% | 0.428% |
| 185    | 11.976 | 11.954 | 12.024 | VV | 10382 | 349314  | 26.03% | 0.615% |
| 186    | 12.046 | 12.024 | 12.068 | VV | 7820  | 196122  | 14.61% | 0.345% |
| 187    | 12.092 | 12.068 | 12.114 | VV | 7494  | 197205  | 14.69% | 0.347% |
| 188    | 12.160 | 12.114 | 12.194 | VV | 39547 | 793173  | 59.10% | 1.396% |
| 189    | 12.197 | 12.194 | 12.207 | VV | 8334  | 66252   | 4.94%  | 0.117% |
| 190    | 12.224 | 12.207 | 12.252 | VV | 8977  | 222537  | 16.58% | 0.392% |
| 191    | 12.266 | 12.252 | 12.332 | VV | 7573  | 329877  | 24.58% | 0.581% |
| 192    | 12.353 | 12.332 | 12.385 | VV | 6719  | 197453  | 14.71% | 0.348% |
| 193    | 12.388 | 12.385 | 12.401 | VV | 6134  | 60514   | 4.51%  | 0.107% |
| 194    | 12.435 | 12.401 | 12.486 | VV | 7875  | 350179  | 26.09% | 0.616% |

|     |        |        |        |    |        |        |        |        |
|-----|--------|--------|--------|----|--------|--------|--------|--------|
|     |        |        |        |    | rteres |        |        |        |
| 195 | 12.499 | 12.486 | 12.512 | VV | 6575   | 96952  | 7.22%  | 0.171% |
| 196 | 12.519 | 12.512 | 12.523 | VV | 6537   | 43519  | 3.24%  | 0.077% |
| 197 | 12.542 | 12.523 | 12.556 | VV | 7594   | 141349 | 10.53% | 0.249% |
| 198 | 12.571 | 12.556 | 12.606 | VV | 8508   | 209975 | 15.65% | 0.370% |
| 199 | 12.627 | 12.606 | 12.652 | VV | 7006   | 172269 | 12.84% | 0.303% |
| 200 | 12.656 | 12.652 | 12.670 | VV | 6008   | 61551  | 4.59%  | 0.108% |
| 201 | 12.679 | 12.670 | 12.694 | VV | 5842   | 82605  | 6.15%  | 0.145% |
| 202 | 12.725 | 12.694 | 12.747 | VV | 6788   | 193380 | 14.41% | 0.340% |
| 203 | 12.763 | 12.747 | 12.771 | VV | 5965   | 84000  | 6.26%  | 0.148% |
| 204 | 12.800 | 12.771 | 12.850 | VV | 28907  | 568558 | 42.36% | 1.001% |
| 205 | 12.862 | 12.850 | 12.885 | VV | 6450   | 127867 | 9.53%  | 0.225% |
| 206 | 12.890 | 12.885 | 12.913 | VV | 5737   | 92114  | 6.86%  | 0.162% |
| 207 | 12.924 | 12.913 | 12.932 | VV | 5387   | 57285  | 4.27%  | 0.101% |
| 208 | 12.939 | 12.932 | 12.975 | VV | 5521   | 135741 | 10.11% | 0.239% |
| 209 | 12.979 | 12.975 | 13.006 | VV | 4719   | 83927  | 6.25%  | 0.148% |
| 210 | 13.019 | 13.006 | 13.034 | VV | 4715   | 78242  | 5.83%  | 0.138% |
| 211 | 13.054 | 13.034 | 13.078 | VV | 5712   | 137749 | 10.26% | 0.242% |
| 212 | 13.091 | 13.078 | 13.110 | VV | 5386   | 98695  | 7.35%  | 0.174% |
| 213 | 13.121 | 13.110 | 13.141 | VV | 4930   | 86267  | 6.43%  | 0.152% |
| 214 | 13.162 | 13.141 | 13.178 | VV | 5184   | 104976 | 7.82%  | 0.185% |
| 215 | 13.194 | 13.178 | 13.209 | VV | 5954   | 100940 | 7.52%  | 0.178% |
| 216 | 13.237 | 13.209 | 13.270 | VV | 10476  | 270117 | 20.13% | 0.475% |
| 217 | 13.292 | 13.270 | 13.380 | VV | 11431  | 421412 | 31.40% | 0.742% |
| 218 | 13.412 | 13.380 | 13.445 | VV | 19141  | 354561 | 26.42% | 0.624% |
| 219 | 13.452 | 13.445 | 13.461 | VV | 4743   | 44173  | 3.29%  | 0.078% |
| 220 | 13.477 | 13.461 | 13.501 | VV | 5038   | 110557 | 8.24%  | 0.195% |
| 221 | 13.518 | 13.501 | 13.539 | VV | 4285   | 91428  | 6.81%  | 0.161% |
| 222 | 13.542 | 13.539 | 13.566 | VV | 3893   | 60508  | 4.51%  | 0.107% |
| 223 | 13.580 | 13.566 | 13.604 | VV | 3716   | 79328  | 5.91%  | 0.140% |
| 224 | 13.642 | 13.604 | 13.671 | VV | 4501   | 160042 | 11.92% | 0.282% |
| 225 | 13.682 | 13.671 | 13.709 | VV | 4050   | 86612  | 6.45%  | 0.152% |
| 226 | 13.723 | 13.709 | 13.745 | VV | 3606   | 71687  | 5.34%  | 0.126% |
| 227 | 13.764 | 13.745 | 13.776 | VV | 3443   | 62707  | 4.67%  | 0.110% |
| 228 | 13.796 | 13.776 | 13.814 | VV | 3720   | 78988  | 5.89%  | 0.139% |
| 229 | 13.836 | 13.814 | 13.880 | VV | 3985   | 134603 | 10.03% | 0.237% |
| 230 | 13.885 | 13.880 | 13.890 | VV | 2921   | 16068  | 1.20%  | 0.028% |
| 231 | 13.905 | 13.890 | 13.948 | VV | 3169   | 100818 | 7.51%  | 0.177% |
| 232 | 13.968 | 13.948 | 13.972 | VV | 2798   | 38830  | 2.89%  | 0.068% |
| 233 | 13.999 | 13.972 | 14.044 | VV | 11418  | 232593 | 17.33% | 0.409% |
| 234 | 14.055 | 14.044 | 14.071 | VV | 3046   | 48678  | 3.63%  | 0.086% |
| 235 | 14.082 | 14.071 | 14.104 | VV | 2907   | 54671  | 4.07%  | 0.096% |
| 236 | 14.108 | 14.104 | 14.127 | VV | 2614   | 33591  | 2.50%  | 0.059% |
| 237 | 14.138 | 14.127 | 14.170 | VV | 2543   | 61052  | 4.55%  | 0.107% |
| 238 | 14.174 | 14.170 | 14.195 | VV | 2189   | 31442  | 2.34%  | 0.055% |
| 239 | 14.230 | 14.195 | 14.280 | VV | 2993   | 128802 | 9.60%  | 0.227% |
| 240 | 14.284 | 14.280 | 14.288 | VV | 2252   | 10411  | 0.78%  | 0.018% |
| 241 | 14.296 | 14.288 | 14.324 | VV | 2302   | 45801  | 3.41%  | 0.081% |
| 242 | 14.328 | 14.324 | 14.345 | VV | 2120   | 26482  | 1.97%  | 0.047% |
| 243 | 14.362 | 14.345 | 14.385 | VV | 2307   | 50590  | 3.77%  | 0.089% |
| 244 | 14.388 | 14.385 | 14.403 | VV | 2232   | 23914  | 1.78%  | 0.042% |
| 245 | 14.413 | 14.403 | 14.458 | VV | 2260   | 65056  | 4.85%  | 0.115% |
| 246 | 14.471 | 14.458 | 14.481 | VV | 1787   | 24175  | 1.80%  | 0.043% |

|     |        |        |        |    | rteres |        |        |        |
|-----|--------|--------|--------|----|--------|--------|--------|--------|
| 247 | 14.500 | 14.481 | 14.531 | VV | 1792   | 50146  | 3.74%  | 0.088% |
| 248 | 14.563 | 14.531 | 14.616 | VV | 5713   | 140952 | 10.50% | 0.248% |
| 249 | 14.626 | 14.616 | 14.662 | VV | 1829   | 47040  | 3.50%  | 0.083% |
| 250 | 14.668 | 14.662 | 14.671 | VV | 1612   | 8339   | 0.62%  | 0.015% |
| 251 | 14.679 | 14.671 | 14.682 | VV | 1709   | 11075  | 0.83%  | 0.019% |
| 252 | 14.687 | 14.682 | 14.710 | VV | 1715   | 25354  | 1.89%  | 0.045% |
| 253 | 14.715 | 14.710 | 14.748 | VV | 1549   | 33258  | 2.48%  | 0.059% |
| 254 | 14.771 | 14.748 | 14.790 | VV | 1627   | 38023  | 2.83%  | 0.067% |
| 255 | 14.794 | 14.790 | 14.814 | VV | 1471   | 21643  | 1.61%  | 0.038% |
| 256 | 14.820 | 14.814 | 14.867 | VV | 1446   | 42946  | 3.20%  | 0.076% |
| 257 | 14.900 | 14.867 | 15.081 | VV | 21098  | 545049 | 40.61% | 0.959% |
| 258 | 15.108 | 15.081 | 15.195 | VV | 2598   | 104430 | 7.78%  | 0.184% |
| 259 | 15.200 | 15.195 | 15.225 | VV | 1045   | 17647  | 1.31%  | 0.031% |
| 260 | 15.231 | 15.225 | 15.245 | VV | 964    | 10768  | 0.80%  | 0.019% |
| 261 | 15.250 | 15.245 | 15.275 | VV | 936    | 14909  | 1.11%  | 0.026% |
| 262 | 15.294 | 15.275 | 15.324 | VV | 938    | 25083  | 1.87%  | 0.044% |
| 263 | 15.331 | 15.324 | 15.334 | VV | 832    | 4580   | 0.34%  | 0.008% |
| 264 | 15.339 | 15.334 | 15.350 | VV | 858    | 7966   | 0.59%  | 0.014% |
| 265 | 15.354 | 15.350 | 15.379 | VV | 894    | 13333  | 0.99%  | 0.023% |
| 266 | 15.391 | 15.379 | 15.396 | VV | 749    | 7011   | 0.52%  | 0.012% |
| 267 | 15.408 | 15.396 | 15.431 | VV | 731    | 14382  | 1.07%  | 0.025% |
| 268 | 15.443 | 15.431 | 15.465 | VV | 684    | 13155  | 0.98%  | 0.023% |
| 269 | 15.487 | 15.465 | 15.508 | VV | 707    | 16277  | 1.21%  | 0.029% |
| 270 | 15.513 | 15.508 | 15.524 | VV | 731    | 6583   | 0.49%  | 0.012% |
| 271 | 15.527 | 15.524 | 15.566 | VV | 718    | 15036  | 1.12%  | 0.026% |
| 272 | 15.577 | 15.566 | 15.607 | VV | 578    | 11966  | 0.89%  | 0.021% |
| 273 | 15.641 | 15.607 | 15.728 | VV | 890    | 47040  | 3.50%  | 0.083% |
| 274 | 15.735 | 15.728 | 15.748 | VV | 490    | 5439   | 0.41%  | 0.010% |
| 275 | 15.754 | 15.748 | 15.831 | VV | 427    | 19048  | 1.42%  | 0.034% |
| 276 | 15.844 | 15.831 | 15.858 | VV | 426    | 5872   | 0.44%  | 0.010% |
| 277 | 15.868 | 15.858 | 15.881 | VV | 371    | 4597   | 0.34%  | 0.008% |
| 278 | 15.888 | 15.881 | 15.895 | VV | 360    | 2987   | 0.22%  | 0.005% |
| 279 | 15.906 | 15.895 | 15.933 | VV | 389    | 7432   | 0.55%  | 0.013% |
| 280 | 15.937 | 15.933 | 15.958 | VV | 326    | 4572   | 0.34%  | 0.008% |
| 281 | 16.025 | 15.958 | 16.039 | VV | 343    | 12656  | 0.94%  | 0.022% |
| 282 | 16.040 | 16.039 | 16.047 | VV | 282    | 1199   | 0.09%  | 0.002% |
| 283 | 16.061 | 16.047 | 16.086 | VV | 288    | 5570   | 0.41%  | 0.010% |
| 284 | 16.092 | 16.086 | 16.120 | VV | 377    | 4716   | 0.35%  | 0.008% |
| 285 | 16.146 | 16.120 | 16.159 | VV | 397    | 6288   | 0.47%  | 0.011% |
| 286 | 16.166 | 16.159 | 16.193 | VV | 336    | 5756   | 0.43%  | 0.010% |
| 287 | 16.197 | 16.193 | 16.235 | VV | 223    | 5491   | 0.41%  | 0.010% |
| 288 | 16.241 | 16.235 | 16.255 | VV | 217    | 2269   | 0.17%  | 0.004% |
| 289 | 16.269 | 16.255 | 16.314 | VV | 291    | 6997   | 0.52%  | 0.012% |
| 290 | 16.320 | 16.314 | 16.347 | VV | 196    | 2765   | 0.21%  | 0.005% |
| 291 | 16.358 | 16.347 | 16.376 | VV | 158    | 1957   | 0.15%  | 0.003% |
| 292 | 16.380 | 16.376 | 16.395 | VV | 165    | 1299   | 0.10%  | 0.002% |
| 293 | 16.399 | 16.395 | 16.421 | VV | 136    | 1505   | 0.11%  | 0.003% |
| 294 | 16.425 | 16.421 | 16.432 | VV | 113    | 663    | 0.05%  | 0.001% |
| 295 | 16.437 | 16.432 | 16.446 | VV | 167    | 969    | 0.07%  | 0.002% |
| 296 | 16.455 | 16.446 | 16.461 | VV | 148    | 1224   | 0.09%  | 0.002% |
| 297 | 16.465 | 16.461 | 16.481 | VV | 178    | 1540   | 0.11%  | 0.003% |
| 298 | 16.485 | 16.481 | 16.509 | VV | 132    | 1512   | 0.11%  | 0.003% |
| 299 | 16.510 | 16.509 | 16.537 | VV | 137    | 966    | 0.07%  | 0.002% |

|     |        |        |        |                         |       |          |       |        |  |
|-----|--------|--------|--------|-------------------------|-------|----------|-------|--------|--|
|     |        |        |        |                         | rters |          |       |        |  |
| 300 | 16.551 | 16.537 | 16.562 | VV                      | 138   | 1252     | 0.09% | 0.002% |  |
| 301 | 16.565 | 16.562 | 16.593 | VV                      | 128   | 1676     | 0.12% | 0.003% |  |
| 302 | 16.598 | 16.593 | 16.604 | VV                      | 119   | 485      | 0.04% | 0.001% |  |
| 303 | 16.615 | 16.604 | 16.618 | VV                      | 107   | 634      | 0.05% | 0.001% |  |
| 304 | 16.652 | 16.618 | 16.658 | VV                      | 325   | 5160     | 0.38% | 0.009% |  |
| 305 | 16.660 | 16.658 | 16.666 | VV                      | 286   | 1260     | 0.09% | 0.002% |  |
| 306 | 16.667 | 16.666 | 16.729 | VV                      | 293   | 7356     | 0.55% | 0.013% |  |
| 307 | 16.736 | 16.729 | 16.761 | VV                      | 181   | 3099     | 0.23% | 0.005% |  |
| 308 | 16.792 | 16.761 | 16.823 | VV                      | 285   | 6772     | 0.50% | 0.012% |  |
| 309 | 16.835 | 16.823 | 16.854 | VV                      | 192   | 2711     | 0.20% | 0.005% |  |
| 310 | 16.856 | 16.854 | 16.871 | VV                      | 185   | 1346     | 0.10% | 0.002% |  |
| 311 | 16.873 | 16.871 | 16.898 | VV                      | 194   | 1853     | 0.14% | 0.003% |  |
| 312 | 16.903 | 16.898 | 16.910 | PV                      | 115   | 667      | 0.05% | 0.001% |  |
| 313 | 16.916 | 16.910 | 16.926 | VV                      | 127   | 983      | 0.07% | 0.002% |  |
| 314 | 16.931 | 16.926 | 16.937 | VV                      | 123   | 431      | 0.03% | 0.001% |  |
| 315 | 16.958 | 16.937 | 16.971 | VV                      | 137   | 1851     | 0.14% | 0.003% |  |
| 316 | 16.975 | 16.971 | 16.989 | VV                      | 102   | 669      | 0.05% | 0.001% |  |
| 317 | 16.996 | 16.989 | 17.001 | VV                      | 102   | 406      | 0.03% | 0.001% |  |
| 318 | 17.022 | 17.001 | 17.057 | VV                      | 139   | 1568     | 0.12% | 0.003% |  |
| 319 | 17.066 | 17.057 | 17.092 | VV                      | 70    | 884      | 0.07% | 0.002% |  |
| 320 | 17.119 | 17.092 | 17.142 | VV                      | 287   | 6186     | 0.46% | 0.011% |  |
| 321 | 17.145 | 17.142 | 17.180 | VV                      | 241   | 2220     | 0.17% | 0.004% |  |
|     |        |        |        | Sum of corrected areas: |       | 56812676 |       |        |  |

FF081624.M Wed Sep 11 02:07:19 2024



# CALIBRATION SUMMARY

**DIESEL RANGE ORGANICS INITIAL CALIBRATION SUMMARY**

Lab Name: Chemtech Contract: CHEM02  
 ProjectID: NJ Waste Water PT  
 Lab Code: CHEM Case No.: P3845 SAS No.: P3845 SDG No.: P3845

| Calibration Sequence : FF081624 |            | Test : Diesel Range Organics |                 |
|---------------------------------|------------|------------------------------|-----------------|
| Concentration (PPM)             | Area Count | Reference Factor             | File ID         |
| 1000                            | 127092762  | 127093                       | FF014428.D      |
| 500                             | 61256107   | 122512                       | FF014429.D      |
| 200                             | 24948959   | 124745                       | FF014430.D      |
| 100                             | 12726763   | 127268                       | FF014431.D      |
| 50                              | 7061027    | 141221                       | FF014432.D      |
| AVG RF : 128568                 |            | % RSD : 5.706                | AVG RT : 14.906 |

**DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY**

**50 PPM TRPH STD**

Lab Name: Chemtech Contract: CHEM02  
ProjectID: NJ Waste Water PT  
Lab Code: CHEM Case No.: P3845 SAS No.: P3845 SDG No.: P3845  
DataFile: FF014470.D Analyst Name: YP\AJ Analyst Date: 09-10-2024

| Conc. (PPM) | Area Count | RF     | Average RF | %D    |
|-------------|------------|--------|------------|-------|
| 500         | 61539724   | 123079 | 128568     | 4.269 |

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
 Data File : FF014470.D  
 Signal(s) : FID2B.ch  
 Acq On : 10 Sep 2024 07:39  
 Operator : YP\AJ  
 Sample : 50 PPM TRPH STD  
 Misc :  
 ALS Vial : 53 Sample Multiplier: 1

Instrument :  
 FID\_F  
 ClientSampleId :  
 50 PPM TRPH STD

Integration File: autoint1.e  
 Quant Time: Sep 11 01:30:38 2024  
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
 Quant Title :  
 QLast Update : Fri Aug 16 11:11:51 2024  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 1uL  
 Signal Phase : Rxi-1ms  
 Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.899 | 5505457  | 46.644 ug/ml |
| Target Compounds              |        |          |              |
| 2) N-DECANE                   | 4.452  | 6018972  | 48.772 ug/ml |
| 3) N-DODECANE                 | 6.619  | 6086428  | 49.095 ug/ml |
| 4) N-TETRADECANE              | 8.445  | 6145787  | 48.954 ug/ml |
| 5) N-HEXADECANE               | 10.051 | 6194735  | 50.126 ug/ml |
| 6) N-OCTADECANE               | 11.493 | 6348886  | 48.857 ug/ml |
| 7) N-EICOSANE                 | 12.803 | 6423182  | 47.581 ug/ml |
| 8) N-DOCOSANE                 | 14.000 | 6216614  | 47.251 ug/ml |
| 10) N-TETRACOSANE             | 15.103 | 6158316  | 46.535 ug/ml |
| 11) N-HEXACOSANE              | 16.122 | 6048634  | 46.106 ug/ml |
| 12) N-OCTACOSANE              | 17.072 | 5898170  | 45.675 ug/ml |
| -----                         |        |          |              |

(f)=RT Delta > 1/2 Window

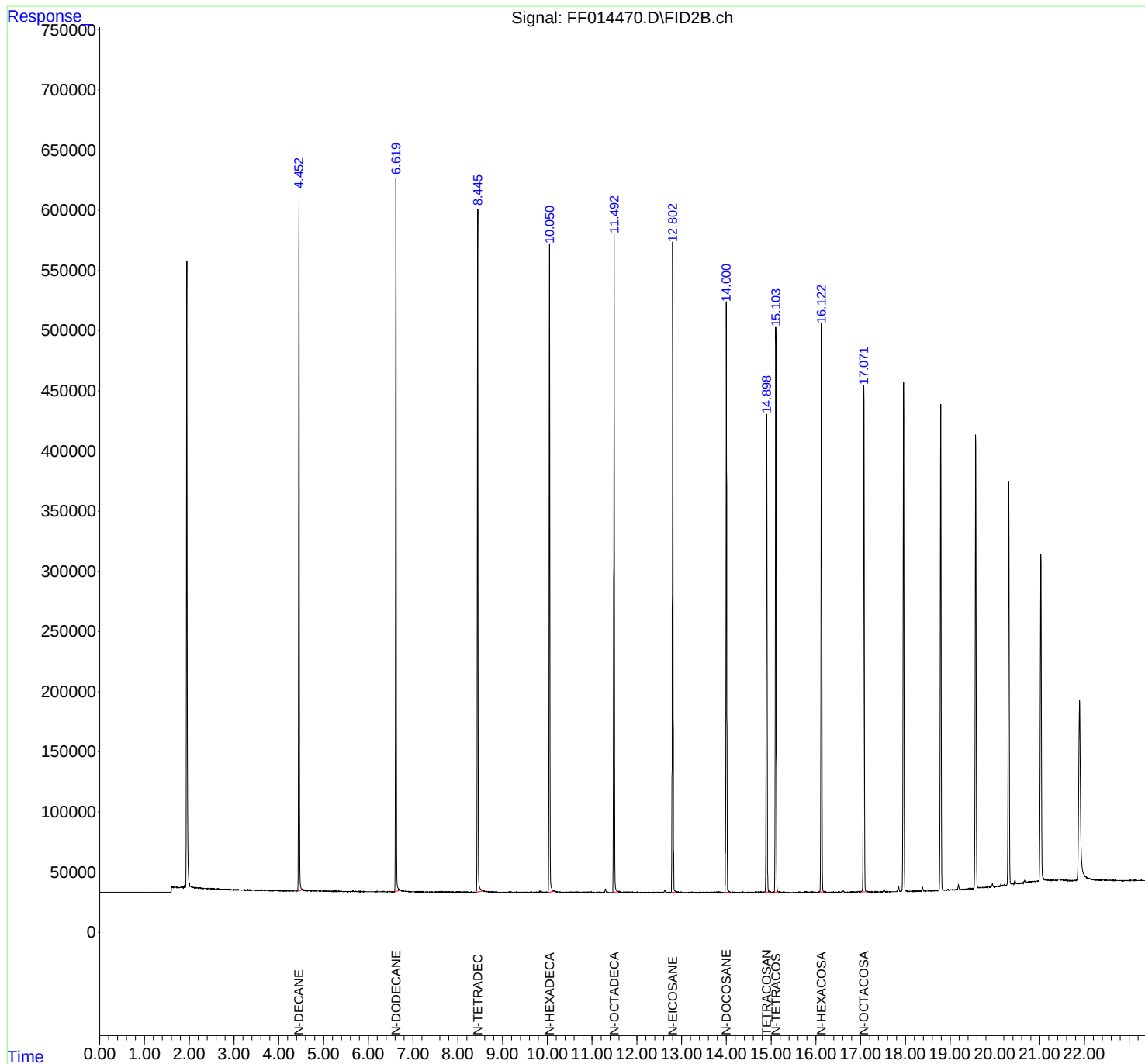
(m)=manual int.

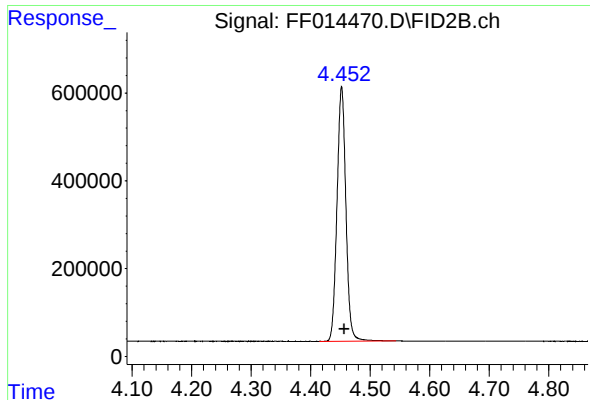
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014470.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 07:39  
Operator : YP\AJ  
Sample : 50 PPM TRPH STD  
Misc :  
ALS Vial : 53 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD

Integration File: autoint1.e  
Quant Time: Sep 11 01:30:38 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

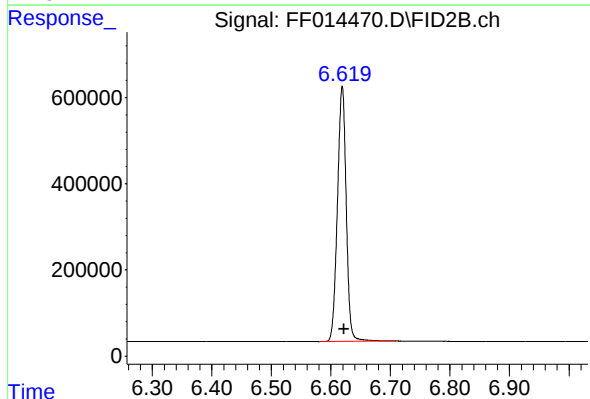




#2 N-DECANE

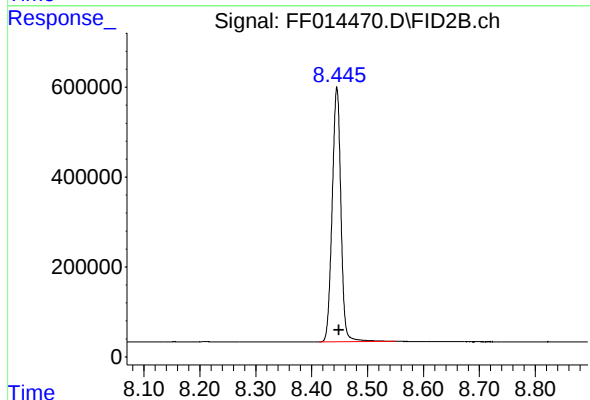
R.T.: 4.452 min  
Delta R.T.: -0.004 min  
Response: 6018972  
Conc: 48.77 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



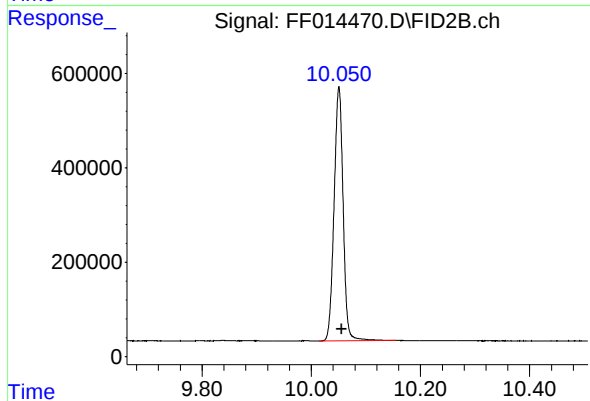
#3 N-DODECANE

R.T.: 6.619 min  
Delta R.T.: -0.003 min  
Response: 6086428  
Conc: 49.09 ug/ml



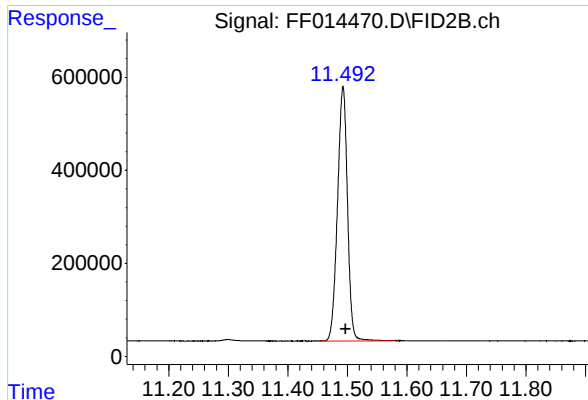
#4 N-TETRADECANE

R.T.: 8.445 min  
Delta R.T.: -0.004 min  
Response: 6145787  
Conc: 48.95 ug/ml



#5 N-HEXADECANE

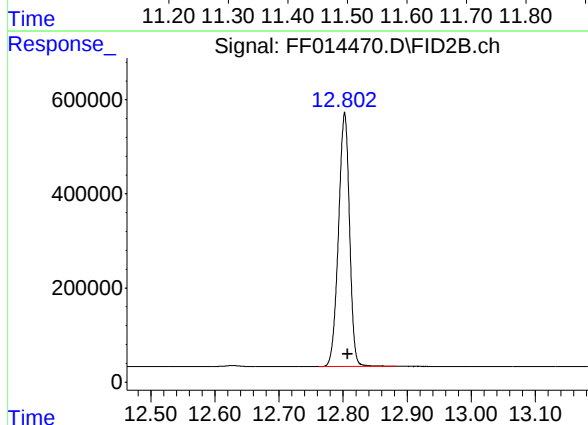
R.T.: 10.051 min  
Delta R.T.: -0.005 min  
Response: 6194735  
Conc: 50.13 ug/ml



#6 N-OCTADECANE

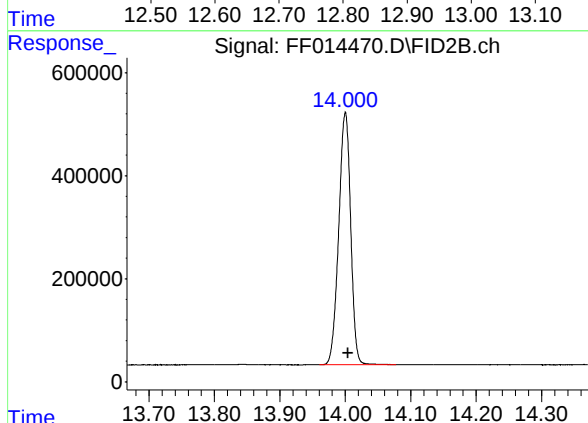
R.T.: 11.493 min  
Delta R.T.: -0.004 min  
Response: 6348886  
Conc: 48.86 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



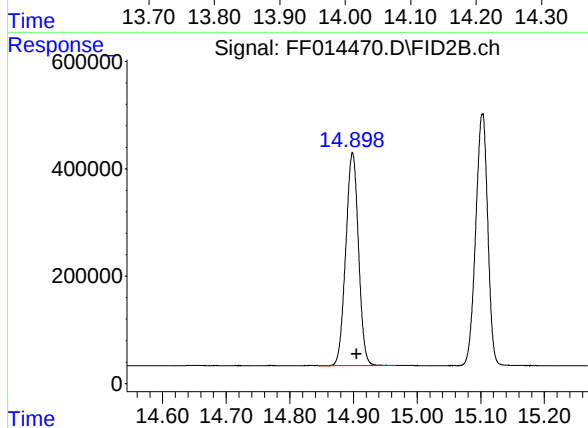
#7 N-EICOSANE

R.T.: 12.803 min  
Delta R.T.: -0.004 min  
Response: 6423182  
Conc: 47.58 ug/ml



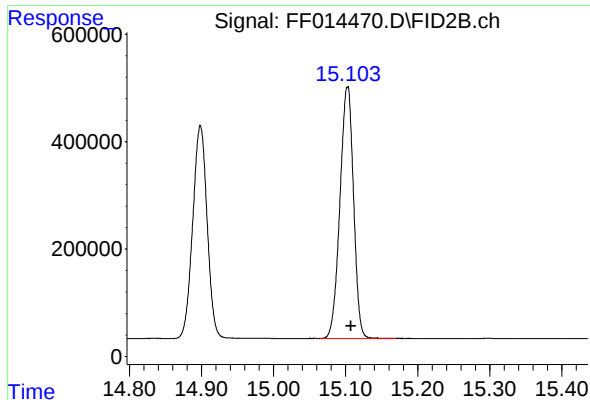
#8 N-DOCOSANE

R.T.: 14.000 min  
Delta R.T.: -0.004 min  
Response: 6216614  
Conc: 47.25 ug/ml



#9 TETRACOSANE-d50 (SURROGATE)

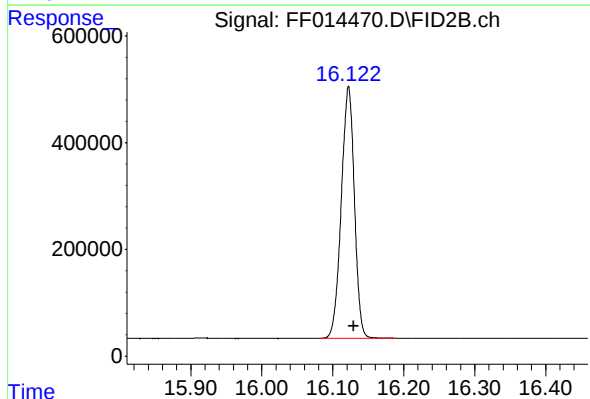
R.T.: 14.899 min  
Delta R.T.: -0.006 min  
Response: 5505457  
Conc: 46.64 ug/ml



#10 N-TETRACOSANE

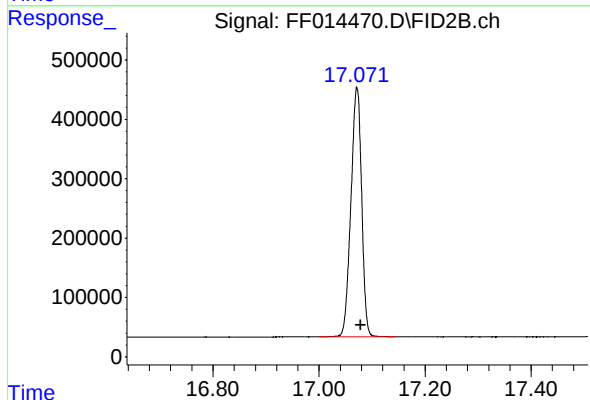
R.T.: 15.103 min  
Delta R.T.: -0.005 min  
Response: 6158316  
Conc: 46.53 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



#11 N-HEXACOSANE

R.T.: 16.122 min  
Delta R.T.: -0.007 min  
Response: 6048634  
Conc: 46.11 ug/ml



#12 N-OCTACOSANE

R.T.: 17.072 min  
Delta R.T.: -0.007 min  
Response: 5898170  
Conc: 45.67 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014470.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 07:39  
Sample : 50 PPM TRPH STD  
Misc :  
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 4.452       | 4.414        | 4.543      | BB       | 579948         | 6018972      | 93.71%         | 8.977%        |
| 2                       | 6.619       | 6.580        | 6.709      | BB       | 592654         | 6086428      | 94.76%         | 9.078%        |
| 3                       | 8.445       | 8.413        | 8.551      | BB       | 566953         | 6145787      | 95.68%         | 9.167%        |
| 4                       | 10.051      | 10.014       | 10.155     | BB       | 538478         | 6194735      | 96.44%         | 9.240%        |
| 5                       | 11.493      | 11.453       | 11.582     | BB       | 546662         | 6348886      | 98.84%         | 9.470%        |
| 6                       | 12.803      | 12.763       | 12.883     | BB       | 540027         | 6423182      | 100.00%        | 9.580%        |
| 7                       | 14.000      | 13.960       | 14.078     | BB       | 490239         | 6216614      | 96.78%         | 9.272%        |
| 8                       | 14.899      | 14.846       | 14.967     | BB       | 397097         | 5505457      | 85.71%         | 8.212%        |
| 9                       | 15.103      | 15.063       | 15.170     | BB       | 467658         | 6158316      | 95.88%         | 9.185%        |
| 10                      | 16.122      | 16.081       | 16.189     | BB       | 472589         | 6048634      | 94.17%         | 9.022%        |
| 11                      | 17.072      | 17.000       | 17.145     | BB       | 418603         | 5898170      | 91.83%         | 8.797%        |
| Sum of corrected areas: |             |              |            |          |                | 67045180     |                |               |

FF081624.M Wed Sep 11 01:54:31 2024

**DIESEL RANGE ORGANICS CONTINUING CALIBRATION SUMMARY**

**50 PPM TRPH STD**

Lab Name: Chemtech Contract: CHEM02  
ProjectID: NJ Waste Water PT  
Lab Code: CHEM Case No.: P3845 SAS No.: P3845 SDG No.: P3845  
DataFile: FF014477.D Analyst Name: YP\AJ Analyst Date: 09-10-2024

| Conc. (PPM) | Area Count | RF     | Average RF | %D    |
|-------------|------------|--------|------------|-------|
| 500         | 62646393   | 125293 | 128568     | 2.547 |

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
 Data File : FF014477.D  
 Signal(s) : FID2B.ch  
 Acq On : 10 Sep 2024 12:08  
 Operator : YP\AJ  
 Sample : 50 PPM TRPH STD  
 Misc :  
 ALS Vial : 53 Sample Multiplier: 1

Instrument :  
 FID\_F  
 ClientSampleId :  
 50 PPM TRPH STD

Integration File: autoint1.e  
 Quant Time: Sep 11 01:31:27 2024  
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
 Quant Title :  
 QLast Update : Fri Aug 16 11:11:51 2024  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 1uL  
 Signal Phase : Rxi-1ms  
 Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.900 | 5610528  | 47.534 ug/ml |
| Target Compounds              |        |          |              |
| 2) N-DECANE                   | 4.453  | 6073216  | 49.211 ug/ml |
| 3) N-DODECANE                 | 6.620  | 6173927  | 49.800 ug/ml |
| 4) N-TETRADECANE              | 8.446  | 6242598  | 49.726 ug/ml |
| 5) N-HEXADECANE               | 10.052 | 6304219  | 51.012 ug/ml |
| 6) N-OCTADECANE               | 11.493 | 6473464  | 49.816 ug/ml |
| 7) N-EICOSANE                 | 12.803 | 6547542  | 48.503 ug/ml |
| 8) N-DOCOSANE                 | 14.001 | 6336890  | 48.166 ug/ml |
| 10) N-TETRACOSANE             | 15.103 | 6276981  | 47.431 ug/ml |
| 11) N-HEXACOSANE              | 16.123 | 6178677  | 47.098 ug/ml |
| 12) N-OCTACOSANE              | 17.072 | 6038879  | 46.764 ug/ml |
| -----                         |        |          |              |

(f)=RT Delta > 1/2 Window

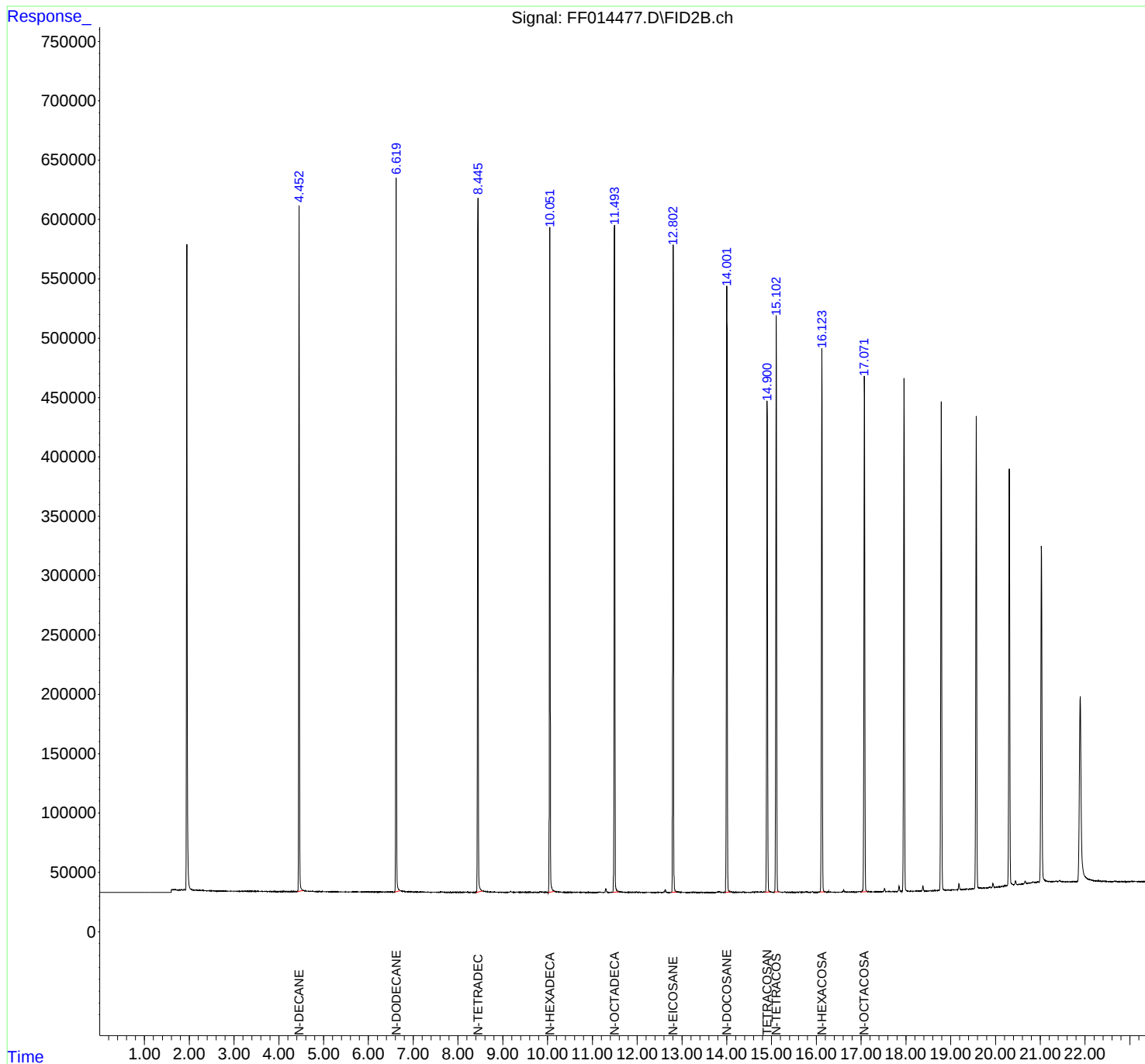
(m)=manual int.

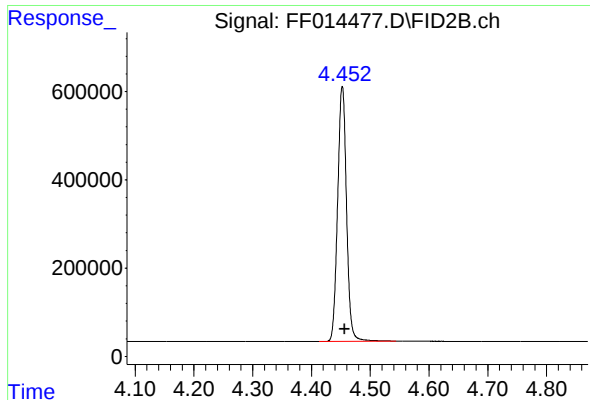
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014477.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 12:08  
Operator : YP\AJ  
Sample : 50 PPM TRPH STD  
Misc :  
ALS Vial : 53 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:27 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

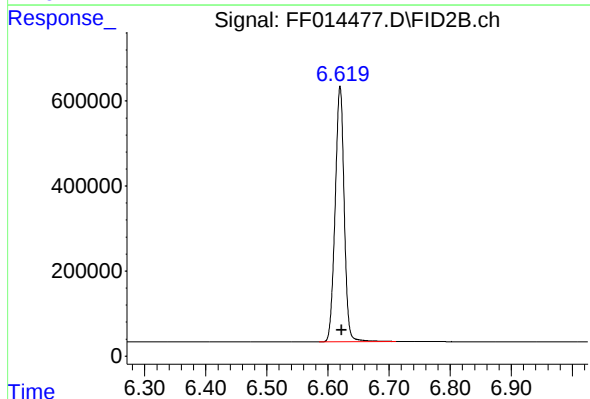




#2 N-DECANE

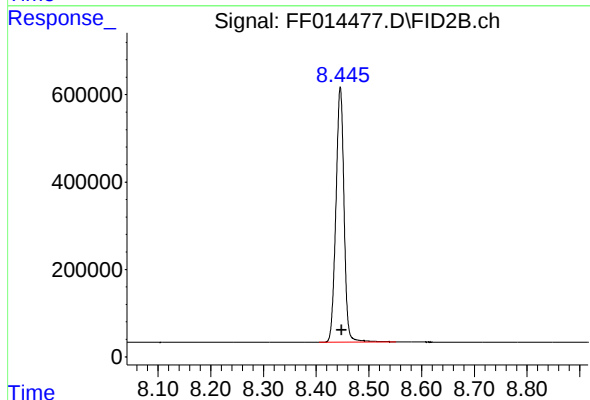
R.T.: 4.453 min  
Delta R.T.: -0.004 min  
Response: 6073216  
Conc: 49.21 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



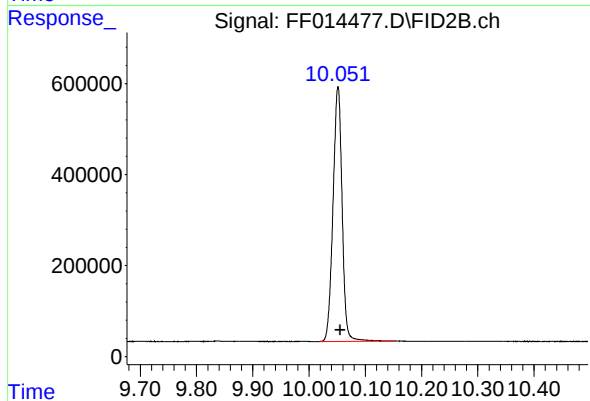
#3 N-DODECANE

R.T.: 6.620 min  
Delta R.T.: -0.002 min  
Response: 6173927  
Conc: 49.80 ug/ml



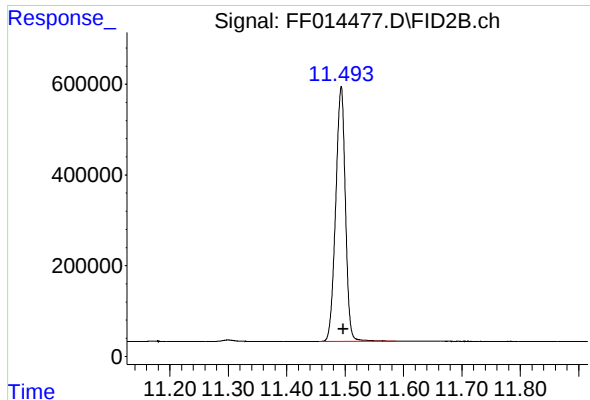
#4 N-TETRADECANE

R.T.: 8.446 min  
Delta R.T.: -0.003 min  
Response: 6242598  
Conc: 49.73 ug/ml



#5 N-HEXADECANE

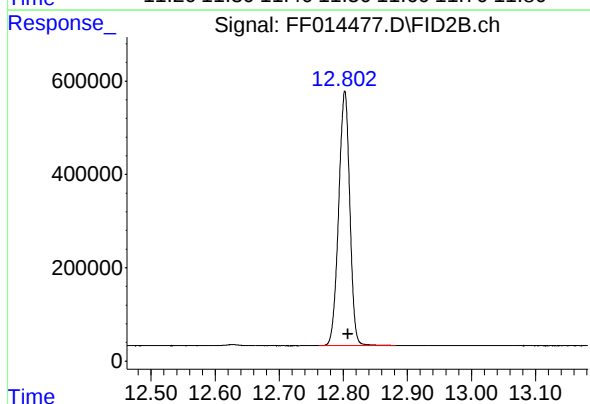
R.T.: 10.052 min  
Delta R.T.: -0.004 min  
Response: 6304219  
Conc: 51.01 ug/ml



#6 N-OCTADECANE

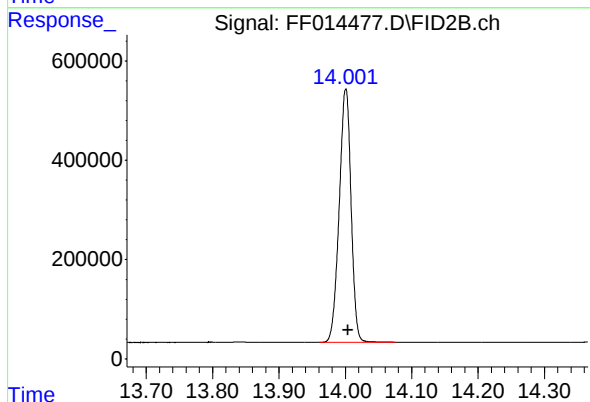
R.T.: 11.493 min  
Delta R.T.: -0.004 min  
Response: 6473464  
Conc: 49.82 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



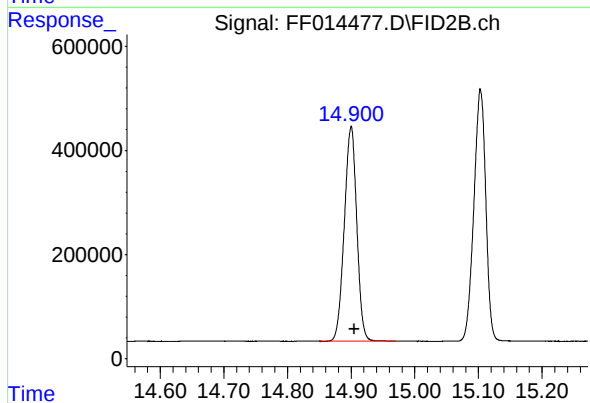
#7 N-EICOSANE

R.T.: 12.803 min  
Delta R.T.: -0.005 min  
Response: 6547542  
Conc: 48.50 ug/ml



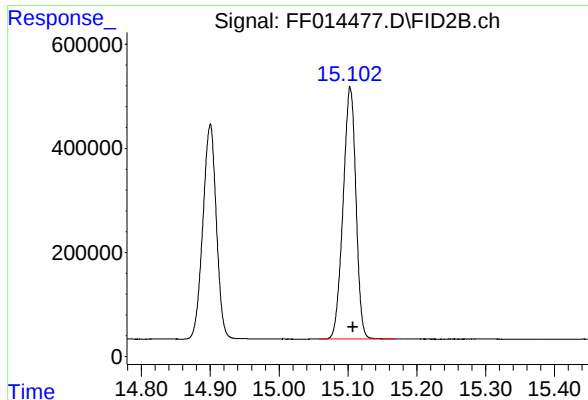
#8 N-DOCOSANE

R.T.: 14.001 min  
Delta R.T.: -0.003 min  
Response: 6336890  
Conc: 48.17 ug/ml



#9 TETRACOSANE-d50 (SURROGATE)

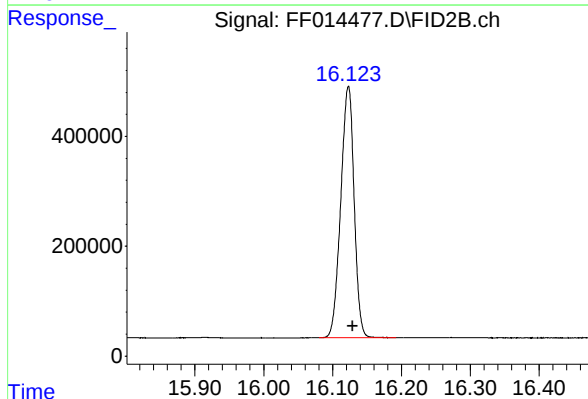
R.T.: 14.900 min  
Delta R.T.: -0.005 min  
Response: 5610528  
Conc: 47.53 ug/ml



#10 N-TETRACOSANE

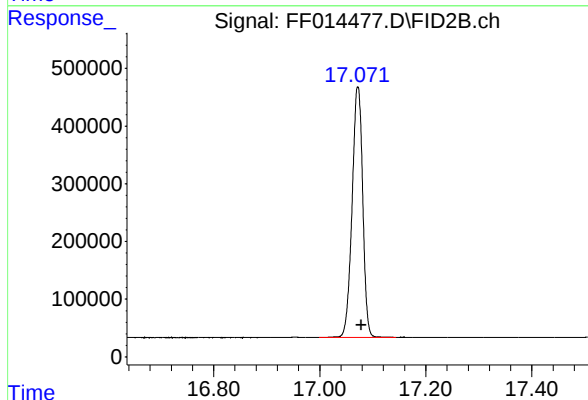
R.T.: 15.103 min  
Delta R.T.: -0.004 min  
Response: 6276981  
Conc: 47.43 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
50 PPM TRPH STD



#11 N-HEXACOSANE

R.T.: 16.123 min  
Delta R.T.: -0.006 min  
Response: 6178677  
Conc: 47.10 ug/ml



#12 N-OCTACOSANE

R.T.: 17.072 min  
Delta R.T.: -0.007 min  
Response: 6038879  
Conc: 46.76 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014477.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 12:08  
Sample : 50 PPM TRPH STD  
Misc :  
ALS Vial : 53 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 4.453       | 4.413        | 4.544      | BB       | 577662         | 6073216      | 92.76%         | 8.898%        |
| 2                       | 6.620       | 6.585        | 6.711      | BB       | 601009         | 6173927      | 94.29%         | 9.045%        |
| 3                       | 8.446       | 8.405        | 8.551      | BB       | 584693         | 6242598      | 95.34%         | 9.146%        |
| 4                       | 10.052      | 10.018       | 10.155     | BB       | 560656         | 6304219      | 96.28%         | 9.236%        |
| 5                       | 11.493      | 11.455       | 11.587     | BB       | 562852         | 6473464      | 98.87%         | 9.484%        |
| 6                       | 12.803      | 12.762       | 12.882     | BB       | 545344         | 6547542      | 100.00%        | 9.592%        |
| 7                       | 14.001      | 13.960       | 14.076     | BB       | 510744         | 6336890      | 96.78%         | 9.284%        |
| 8                       | 14.900      | 14.850       | 14.970     | BB       | 413811         | 5610528      | 85.69%         | 8.220%        |
| 9                       | 15.103      | 15.058       | 15.170     | BB       | 481854         | 6276981      | 95.87%         | 9.196%        |
| 10                      | 16.123      | 16.080       | 16.192     | BB       | 457351         | 6178677      | 94.37%         | 9.052%        |
| 11                      | 17.072      | 16.999       | 17.144     | BB       | 433710         | 6038879      | 92.23%         | 8.847%        |
| Sum of corrected areas: |             |              |            |          |                | 68256919     |                |               |

FF081624.M Wed Sep 11 01:56:19 2024

### Analytical Sequence

Client: Chemtech Consulting Group

SDG No.: P3845

Project: NJ Waste Water PT

Instrument ID: FID\_F

GC Column: RXI-1MS ID: 0.18 (mm)

THE ANALYTICAL SEQUENCE OF PERFORMANCE EVALUATION MIXTURES, BLANKS, SAMPLES,  
AND STANDARDS IS GIVEN BELOW:

| MEAN SUROGATE RT FROM INITIAL CALIBRATION 14.906 |                  |                           |            |        |   |
|--------------------------------------------------|------------------|---------------------------|------------|--------|---|
| EPA<br>SAMPLE NO.                                | LAB<br>SAMPLE ID | DATE AND TIME<br>ANALYZED | DATAFILE   | RT     | # |
| PIBLK01                                          | LBLK01           | 10 Sep 2024 07:10         | FF014469.D | 14.897 |   |
| 50 PPM TRPH STD                                  | 50 PPM TRPH STD  | 10 Sep 2024 07:39         | FF014470.D | 14.899 |   |
| PB163245BL                                       | PB163245BL       | 10 Sep 2024 09:11         | FF014473.D | 14.902 |   |
| PB163245BS                                       | PB163245BS       | 10 Sep 2024 09:40         | FF014474.D | 14.896 |   |
| RR-DIES-WP                                       | P3845-19         | 10 Sep 2024 10:09         | FF014475.D | 14.820 |   |
| PIBLK02                                          | LBLK02           | 10 Sep 2024 11:38         | FF014476.D | 14.899 |   |
| 50 PPM TRPH STD                                  | 50 PPM TRPH STD  | 10 Sep 2024 12:08         | FF014477.D | 14.900 |   |



# QC SAMPLE DATA

## Report of Analysis

|                    |                           |           |                    |                       |           |
|--------------------|---------------------------|-----------|--------------------|-----------------------|-----------|
| Client:            | Chemtech Consulting Group |           | Date Collected:    |                       |           |
| Project:           | NJ Waste Water PT         |           | Date Received:     |                       |           |
| Client Sample ID:  | PB163245BL                |           | SDG No.:           | P3845                 |           |
| Lab Sample ID:     | PB163245BL                |           | Matrix:            | Water                 |           |
| Analytical Method: | 8015D DRO                 |           | % Solid:           | 0                     | Decanted: |
| Sample Wt/Vol:     | 1000                      | Units: mL | Final Vol:         | 1                     | mL        |
| Soil Aliquot Vol:  |                           | uL        | Test:              | Diesel Range Organics |           |
| Extraction Type:   |                           |           | Injection Volume : |                       |           |
| GPC Factor :       |                           | PH :      |                    |                       |           |
| Prep Method :      | SW3510                    |           |                    |                       |           |

|                   |           |                |               |               |
|-------------------|-----------|----------------|---------------|---------------|
| File ID/Qc Batch: | Dilution: | Prep Date      | Date Analyzed | Prep Batch ID |
| FF014473.D        | 1         | 09/09/24 08:00 | 09/10/24 9:11 | PB163245      |

| CAS Number        | Parameter       | Conc. | Qualifier | MDL      | LOQ / CRQL | Units   |
|-------------------|-----------------|-------|-----------|----------|------------|---------|
| <b>TARGETS</b>    |                 |       |           |          |            |         |
| DRO               | DRO             | 10.0  | U         | 10.0     | 50.0       | ug/L    |
| <b>SURROGATES</b> |                 |       |           |          |            |         |
| 16416-32-3        | Tetracosane-d50 | 14.3  |           | 29 - 130 | 71%        | SPK: 20 |

### Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 E = Value Exceeds Calibration Range  
 P = Indicates >25% difference for detected concentrations between the two GC columns  
 Q = indicates LCS control criteria did not meet requirements  
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 N = Presumptive Evidence of a Compound  
 \* = Values outside of QC limits  
 D = Dilution  
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.  
 () = Laboratory InHouse Limit

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014473.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 09:11  
Operator : YP\AJ  
Sample : PB163245BL  
Misc :  
ALS Vial : 11 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BL

Integration File: autoint1.e  
Quant Time: Sep 11 01:30:58 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.902 | 1686496  | 14.288 ug/ml |
| Target Compounds              |        |          |              |
| -----                         |        |          |              |

(f)=RT Delta > 1/2 Window

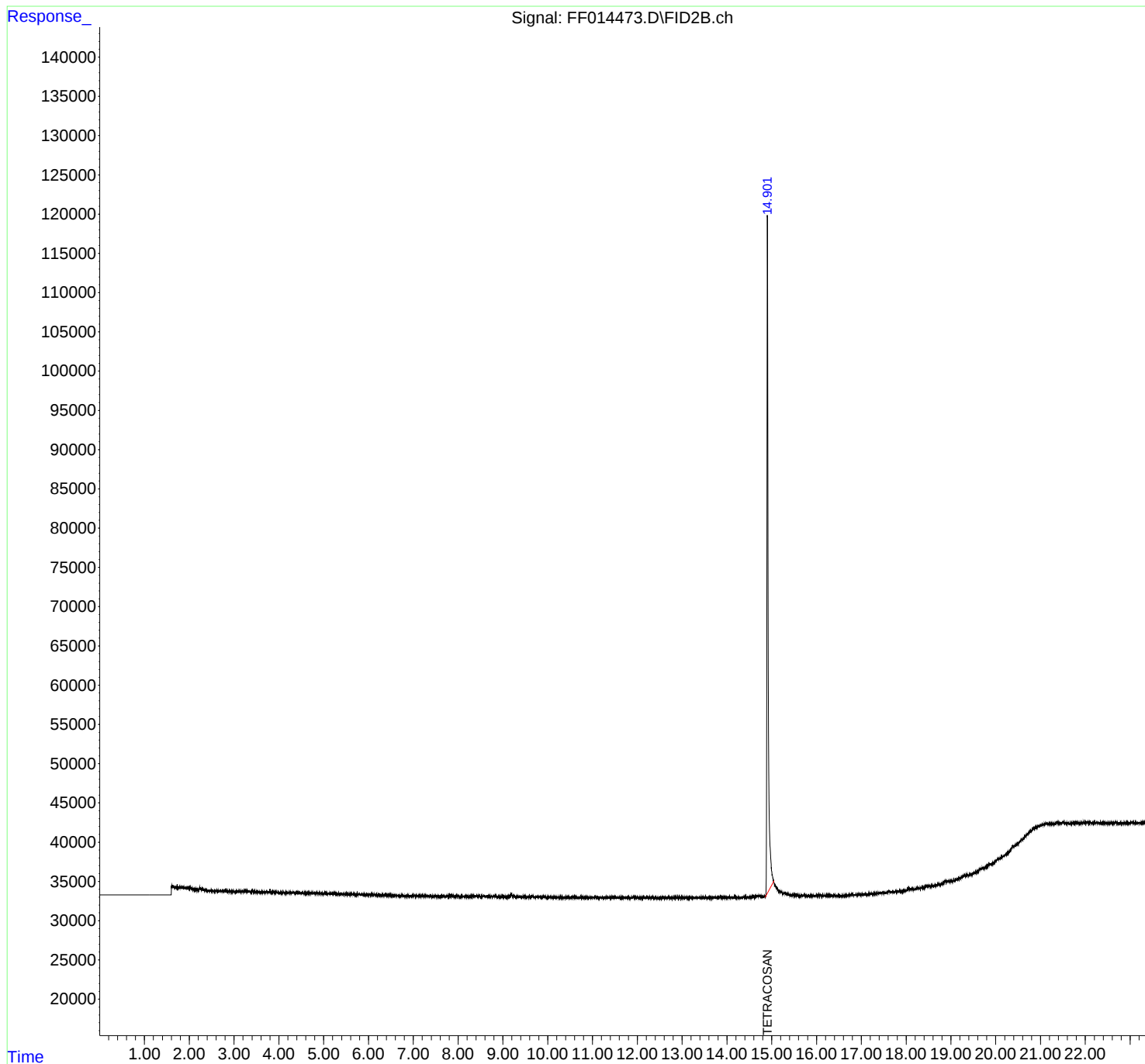
(m)=manual int.

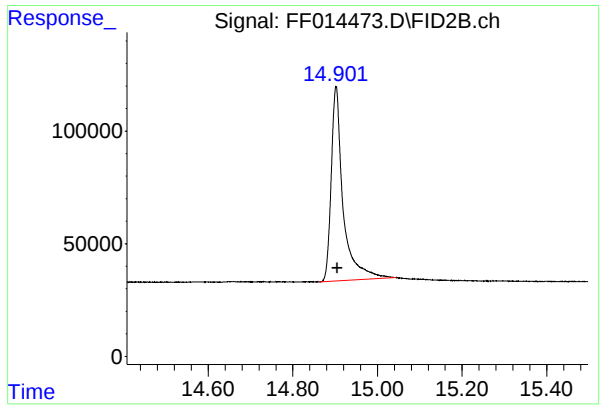
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014473.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 09:11  
Operator : YP\AJ  
Sample : PB163245BL  
Misc :  
ALS Vial : 11 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BL

Integration File: autoint1.e  
Quant Time: Sep 11 01:30:58 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.902 min  
Delta R.T.: -0.003 min  
Response: 1686496  
Conc: 14.29 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BL

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014473.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 09:11  
Sample : PB163245BL  
Misc :  
ALS Vial : 11 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 14.902      | 14.862       | 15.044     | BB       | 86171          | 1686496      | 100.00%        | 100.000%      |
| Sum of corrected areas: |             |              |            |          |                | 1686496      |                |               |

FF081624.M Wed Sep 11 01:55:16 2024

## Report of Analysis

|                    |                           |                    |                       |
|--------------------|---------------------------|--------------------|-----------------------|
| Client:            | Chemtech Consulting Group | Date Collected:    | 09/10/24              |
| Project:           | NJ Waste Water PT         | Date Received:     | 09/10/24              |
| Client Sample ID:  | PIBLK-FF014469.D          | SDG No.:           | P3845                 |
| Lab Sample ID:     | I.BLK-FF014469.D          | Matrix:            | Water                 |
| Analytical Method: | 8015D DRO                 | % Solid:           | 0                     |
| Sample Wt/Vol:     | 1000                      | Units:             | mL                    |
| Soil Aliquot Vol:  |                           |                    | uL                    |
| Extraction Type:   |                           | Test:              | Diesel Range Organics |
| GPC Factor :       |                           | Injection Volume : |                       |
| Prep Method :      | SW3510                    |                    |                       |

|                   |           |           |               |               |
|-------------------|-----------|-----------|---------------|---------------|
| File ID/Qc Batch: | Dilution: | Prep Date | Date Analyzed | Prep Batch ID |
| FF014469.D        | 1         |           | 09/10/24      | FF091024      |

| CAS Number        | Parameter       | Conc. | Qualifier | MDL      | LOQ / CRQL | Units   |
|-------------------|-----------------|-------|-----------|----------|------------|---------|
| <b>TARGETS</b>    |                 |       |           |          |            |         |
| DRO               | DRO             | 10.0  | U         | 10.0     | 50.0       | ug/L    |
| <b>SURROGATES</b> |                 |       |           |          |            |         |
| 16416-32-3        | Tetracosane-d50 | 21.3  |           | 29 - 130 | 106%       | SPK: 20 |

### Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 E = Value Exceeds Calibration Range  
 P = Indicates >25% difference for detected concentrations between the two GC columns  
 Q = indicates LCS control criteria did not meet requirements  
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 N = Presumptive Evidence of a Compound  
 \* = Values outside of QC limits  
 D = Dilution  
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.  
 () = Laboratory InHouse Limit

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014469.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 07:10  
Operator : YP\AJ  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

Integration File: autoint1.e  
Quant Time: Sep 11 01:30:33 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.897 | 2510054  | 21.266 ug/ml |

Target Compounds

-----

(f)=RT Delta > 1/2 Window

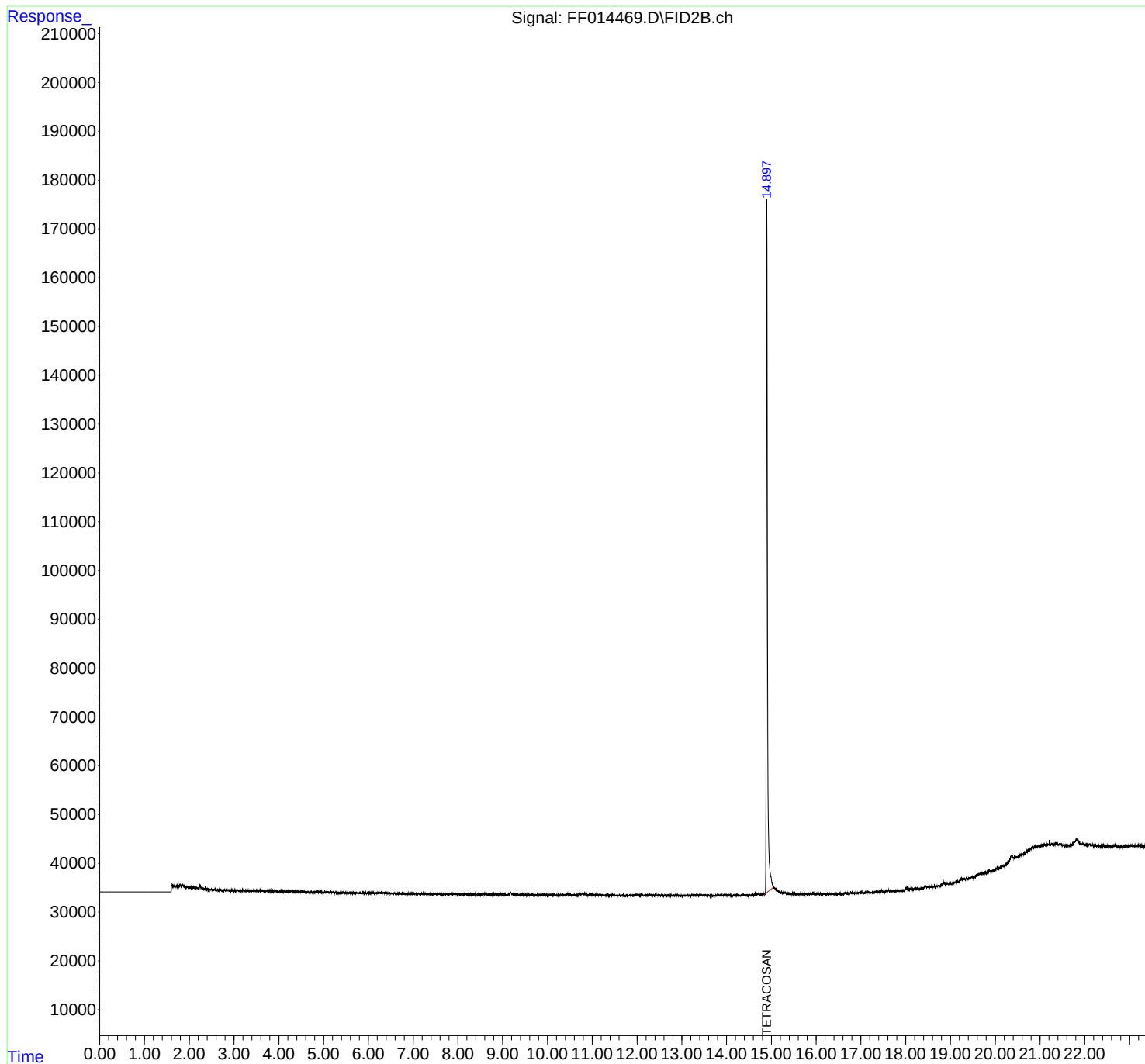
(m)=manual int.

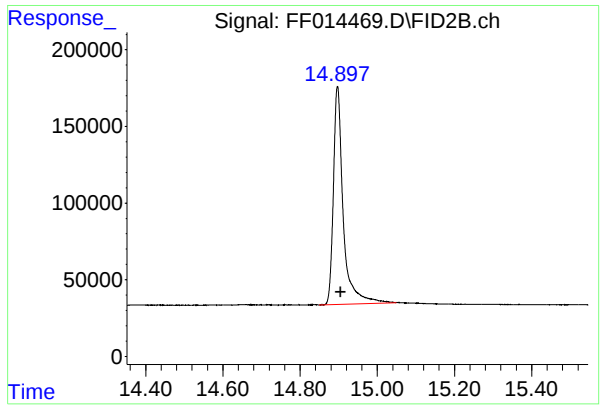
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014469.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 07:10  
Operator : YP\AJ  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

Integration File: autoint1.e  
Quant Time: Sep 11 01:30:33 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.897 min  
Delta R.T.: -0.008 min  
Response: 2510054  
Conc: 21.27 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014469.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 07:10  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 14.897      | 14.849       | 15.048     | BB       | 142106         | 2510054      | 100.00%        | 100.000%      |
| Sum of corrected areas: |             |              |            |          |                | 2510054      |                |               |

FF081624.M Wed Sep 11 01:54:06 2024

## Report of Analysis

|                    |                           |                    |                       |
|--------------------|---------------------------|--------------------|-----------------------|
| Client:            | Chemtech Consulting Group | Date Collected:    | 09/10/24              |
| Project:           | NJ Waste Water PT         | Date Received:     | 09/10/24              |
| Client Sample ID:  | PIBLK-FF014476.D          | SDG No.:           | P3845                 |
| Lab Sample ID:     | I.BLK-FF014476.D          | Matrix:            | Water                 |
| Analytical Method: | 8015D DRO                 | % Solid:           | 0                     |
| Sample Wt/Vol:     | 1000                      | Units:             | mL                    |
| Soil Aliquot Vol:  |                           |                    | uL                    |
| Extraction Type:   |                           | Test:              | Diesel Range Organics |
| GPC Factor :       |                           | Injection Volume : |                       |
| Prep Method :      | SW3510                    |                    |                       |

|                   |           |           |               |               |
|-------------------|-----------|-----------|---------------|---------------|
| File ID/Qc Batch: | Dilution: | Prep Date | Date Analyzed | Prep Batch ID |
| FF014476.D        | 1         |           | 09/10/24      | FF091024      |

| CAS Number        | Parameter       | Conc. | Qualifier | MDL      | LOQ / CRQL | Units   |
|-------------------|-----------------|-------|-----------|----------|------------|---------|
| <b>TARGETS</b>    |                 |       |           |          |            |         |
| DRO               | DRO             | 10.0  | U         | 10.0     | 50.0       | ug/L    |
| <b>SURROGATES</b> |                 |       |           |          |            |         |
| 16416-32-3        | Tetracosane-d50 | 16.2  |           | 29 - 130 | 81%        | SPK: 20 |

### Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 E = Value Exceeds Calibration Range  
 P = Indicates >25% difference for detected concentrations between the two GC columns  
 Q = indicates LCS control criteria did not meet requirements  
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 N = Presumptive Evidence of a Compound  
 \* = Values outside of QC limits  
 D = Dilution  
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.  
 () = Laboratory InHouse Limit

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014476.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 11:38  
Operator : YP\AJ  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:22 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.899 | 1916468  | 16.237 ug/ml |
| Target Compounds              |        |          |              |
| -----                         |        |          |              |

(f)=RT Delta > 1/2 Window

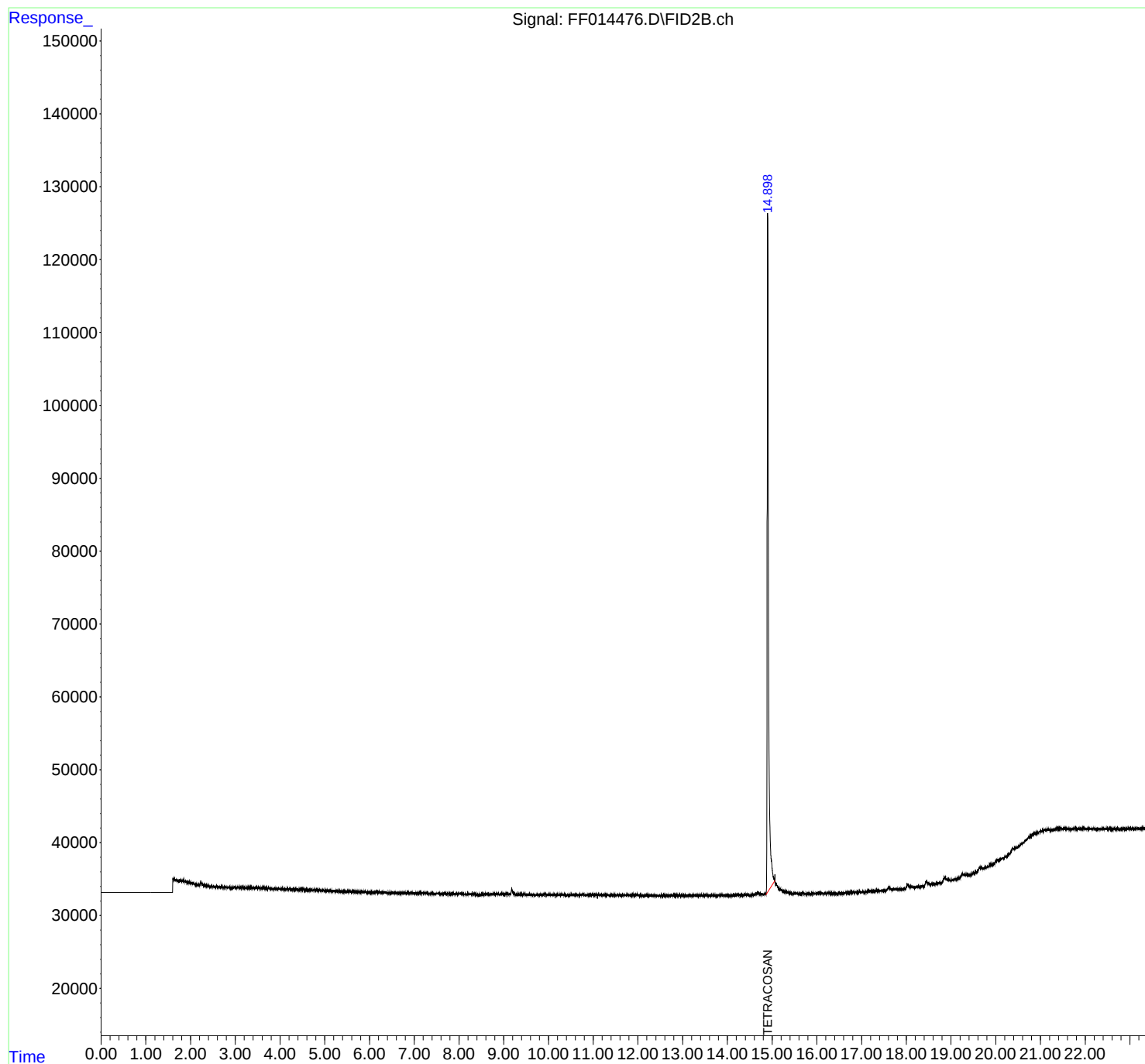
(m)=manual int.

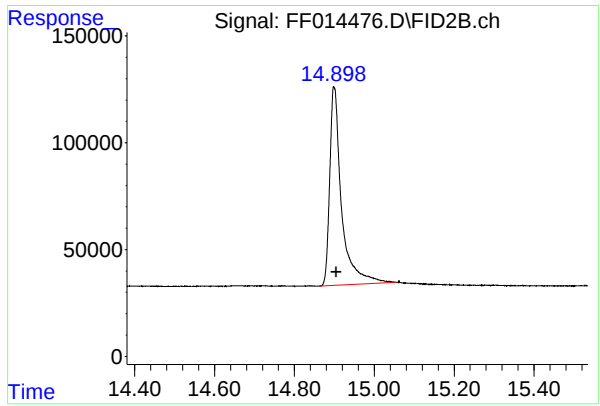
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014476.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 11:38  
Operator : YP\AJ  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:22 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um





#9 TETRACOSANE-d50 (SURROGATE)

R.T.: 14.899 min  
Delta R.T.: -0.006 min  
Response: 1916468  
Conc: 16.24 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
I.BLK

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014476.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 11:38  
Sample : I.BLK  
Misc :  
ALS Vial : 52 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 14.899      | 14.862       | 15.054     | BB       | 92858          | 1916468      | 100.00%        | 100.000%      |
| Sum of corrected areas: |             |              |            |          |                | 1916468      |                |               |

FF081624.M Wed Sep 11 01:55:53 2024

## Report of Analysis

|                    |                           |           |                    |                       |           |
|--------------------|---------------------------|-----------|--------------------|-----------------------|-----------|
| Client:            | Chemtech Consulting Group |           | Date Collected:    |                       |           |
| Project:           | NJ Waste Water PT         |           | Date Received:     |                       |           |
| Client Sample ID:  | PB163245BS                |           | SDG No.:           | P3845                 |           |
| Lab Sample ID:     | PB163245BS                |           | Matrix:            | Water                 |           |
| Analytical Method: | 8015D DRO                 |           | % Solid:           | 0                     | Decanted: |
| Sample Wt/Vol:     | 1000                      | Units: mL | Final Vol:         | 1                     | mL        |
| Soil Aliquot Vol:  |                           | uL        | Test:              | Diesel Range Organics |           |
| Extraction Type:   |                           |           | Injection Volume : |                       |           |
| GPC Factor :       |                           | PH :      |                    |                       |           |
| Prep Method :      | SW3510                    |           |                    |                       |           |

|                   |           |                |               |               |
|-------------------|-----------|----------------|---------------|---------------|
| File ID/Qc Batch: | Dilution: | Prep Date      | Date Analyzed | Prep Batch ID |
| FF014474.D        | 1         | 09/09/24 08:00 | 09/10/24 9:40 | PB163245      |

| CAS Number        | Parameter       | Conc. | Qualifier | MDL      | LOQ / CRQL | Units   |
|-------------------|-----------------|-------|-----------|----------|------------|---------|
| <b>TARGETS</b>    |                 |       |           |          |            |         |
| DRO               | DRO             | 194   |           | 10.0     | 50.0       | ug/L    |
| <b>SURROGATES</b> |                 |       |           |          |            |         |
| 16416-32-3        | Tetracosane-d50 | 17.2  |           | 29 - 130 | 86%        | SPK: 20 |

### Comments:

U = Not Detected  
 LOQ = Limit of Quantitation  
 MDL = Method Detection Limit  
 LOD = Limit of Detection  
 E = Value Exceeds Calibration Range  
 P = Indicates >25% difference for detected concentrations between the two GC columns  
 Q = indicates LCS control criteria did not meet requirements  
 M = MS/MSD acceptance criteria did not meet requirements

J = Estimated Value  
 B = Analyte Found in Associated Method Blank  
 N = Presumptive Evidence of a Compound  
 \* = Values outside of QC limits  
 D = Dilution  
 S = Indicates estimated value where valid five-point calibration was not performed prior to analyte detection in sample.  
 () = Laboratory InHouse Limit

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
 Data File : FF014474.D  
 Signal(s) : FID2B.ch  
 Acq On : 10 Sep 2024 09:40  
 Operator : YP\AJ  
 Sample : PB163245BS  
 Misc :  
 ALS Vial : 12 Sample Multiplier: 1

Instrument :  
 FID\_F  
 ClientSampleId :  
 PB163245BS

Integration File: autoint1.e  
 Quant Time: Sep 11 01:31:05 2024  
 Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
 Quant Title :  
 QLast Update : Fri Aug 16 11:11:51 2024  
 Response via : Initial Calibration  
 Integrator: ChemStation

Volume Inj. : 1uL  
 Signal Phase : Rxi-1ms  
 Signal Info : 20mx0.18mmx0.18um

| Compound                      | R.T.   | Response | Conc Units   |
|-------------------------------|--------|----------|--------------|
| -----                         |        |          |              |
| System Monitoring Compounds   |        |          |              |
| 9) S TETRACOSANE-d50 (SURR... | 14.896 | 2026509  | 17.169 ug/ml |
| Target Compounds              |        |          |              |
| 2) N-DECANE                   | 4.452  | 2349583  | 19.039 ug/ml |
| 3) N-DODECANE                 | 6.618  | 2445430  | 19.725 ug/ml |
| 4) N-TETRADECANE              | 8.444  | 2401174  | 19.127 ug/ml |
| 5) N-HEXADECANE               | 10.049 | 2458754  | 19.895 ug/ml |
| 6) N-OCTADECANE               | 11.492 | 2609179  | 20.079 ug/ml |
| 7) N-EICOSANE                 | 12.800 | 2587007  | 19.164 ug/ml |
| 8) N-DOCOSANE                 | 13.998 | 2562975  | 19.481 ug/ml |
| 10) N-TETRACOSANE             | 15.099 | 2561891  | 19.359 ug/ml |
| 11) N-HEXACOSANE              | 16.120 | 2496850  | 19.032 ug/ml |
| 12) N-OCTACOSANE              | 17.068 | 2432811  | 18.839 ug/ml |
| -----                         |        |          |              |

(f)=RT Delta > 1/2 Window

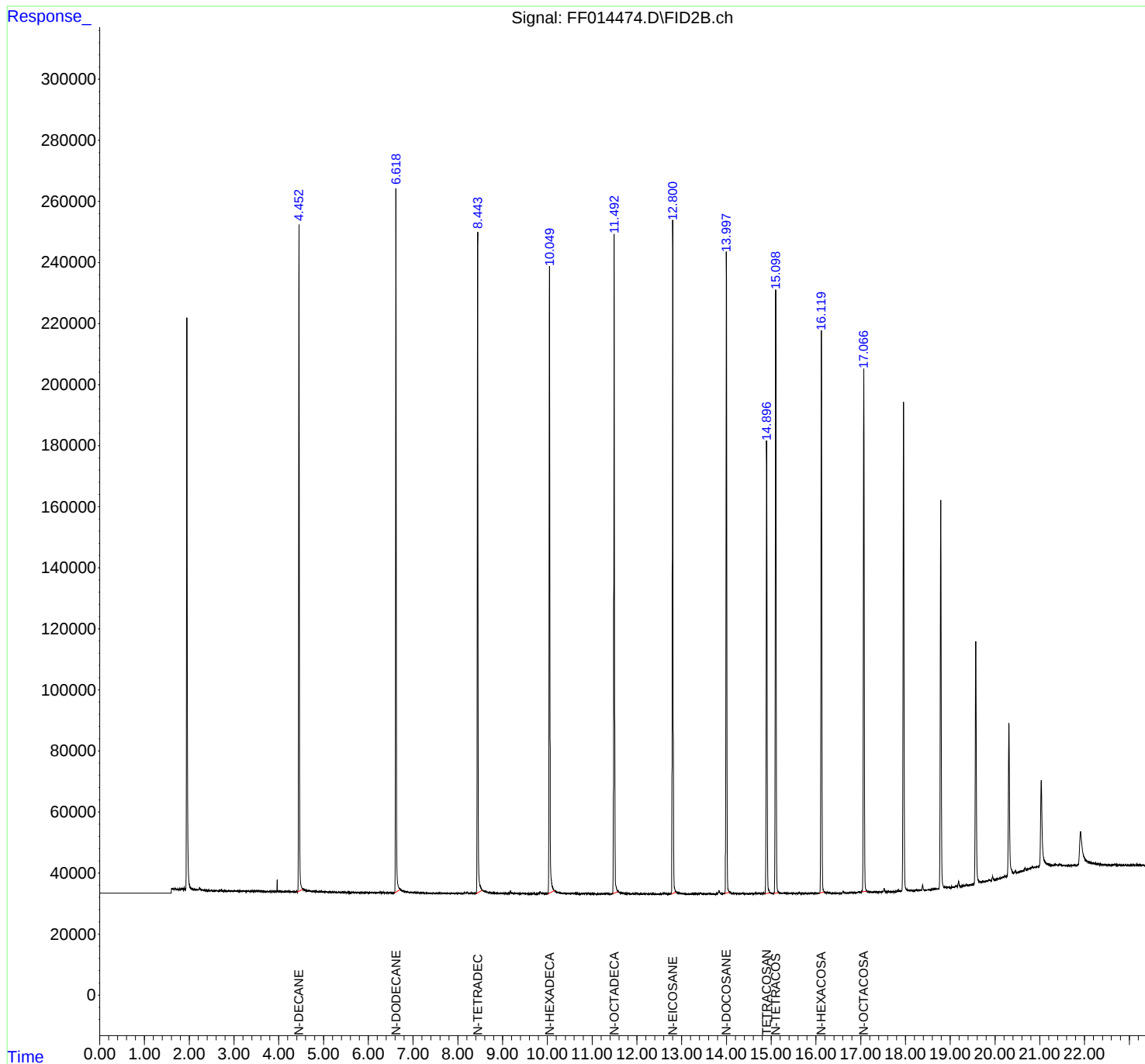
(m)=manual int.

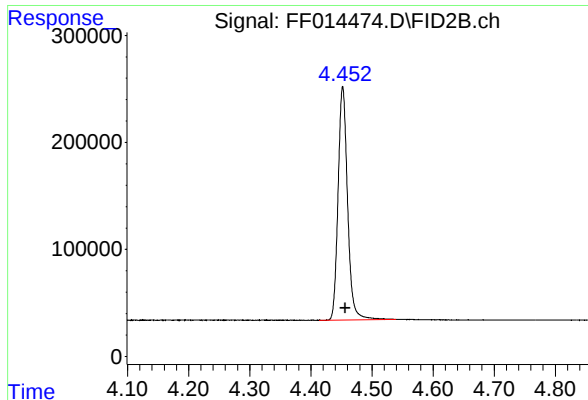
Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014474.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 09:40  
Operator : YP\AJ  
Sample : PB163245BS  
Misc :  
ALS Vial : 12 Sample Multiplier: 1

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BS

Integration File: autoint1.e  
Quant Time: Sep 11 01:31:05 2024  
Quant Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Quant Title :  
QLast Update : Fri Aug 16 11:11:51 2024  
Response via : Initial Calibration  
Integrator: ChemStation

Volume Inj. : 1uL  
Signal Phase : Rxi-1ms  
Signal Info : 20mx0.18mmx0.18um

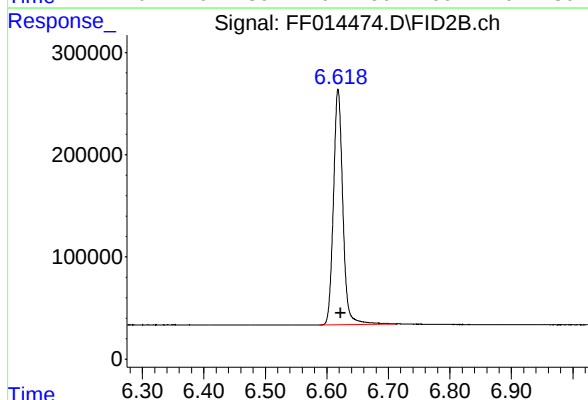




#2 N-DECANE

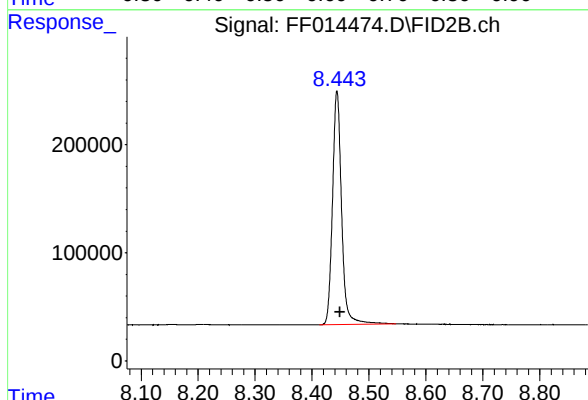
R.T.: 4.452 min  
Delta R.T.: -0.004 min  
Response: 2349583  
Conc: 19.04 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BS



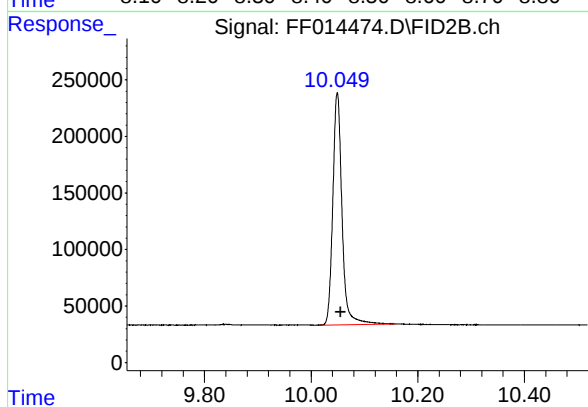
#3 N-DODECANE

R.T.: 6.618 min  
Delta R.T.: -0.004 min  
Response: 2445430  
Conc: 19.73 ug/ml



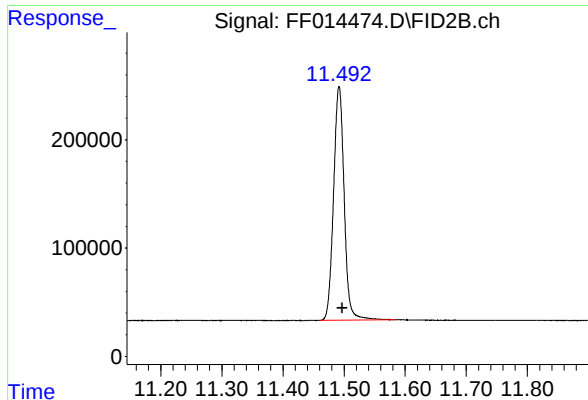
#4 N-TETRADECANE

R.T.: 8.444 min  
Delta R.T.: -0.005 min  
Response: 2401174  
Conc: 19.13 ug/ml



#5 N-HEXADECANE

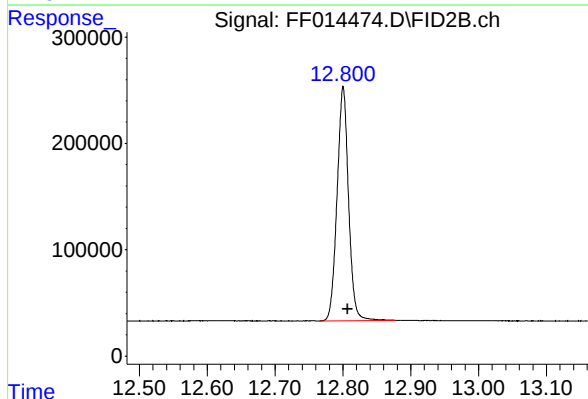
R.T.: 10.049 min  
Delta R.T.: -0.006 min  
Response: 2458754  
Conc: 19.90 ug/ml



#6 N-OCTADECANE

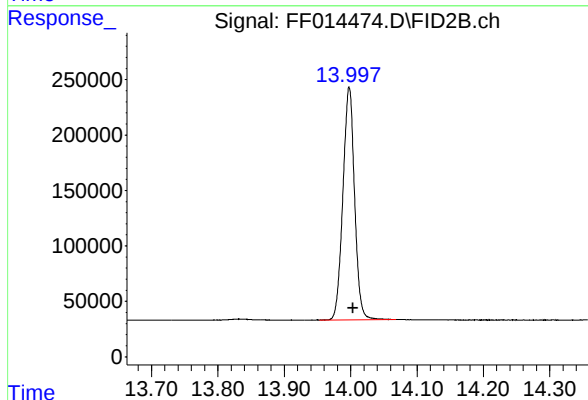
R.T.: 11.492 min  
Delta R.T.: -0.005 min  
Response: 2609179  
Conc: 20.08 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BS



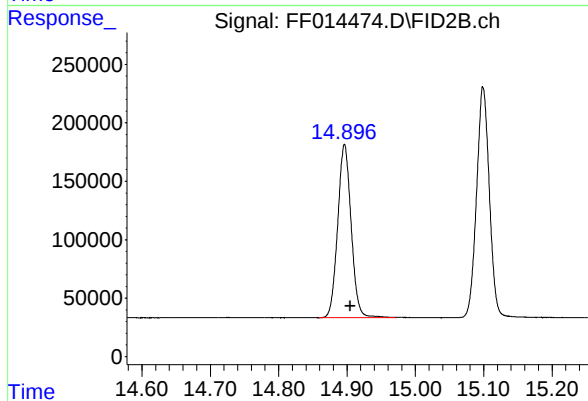
#7 N-EICOSANE

R.T.: 12.800 min  
Delta R.T.: -0.007 min  
Response: 2587007  
Conc: 19.16 ug/ml



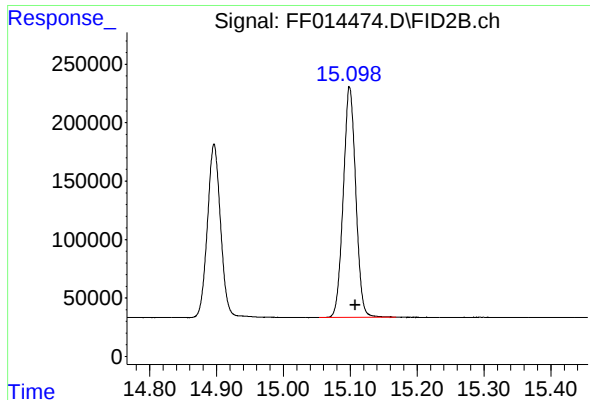
#8 N-DOCOSANE

R.T.: 13.998 min  
Delta R.T.: -0.006 min  
Response: 2562975  
Conc: 19.48 ug/ml



#9 TETRACOSANE-d50 (SURROGATE)

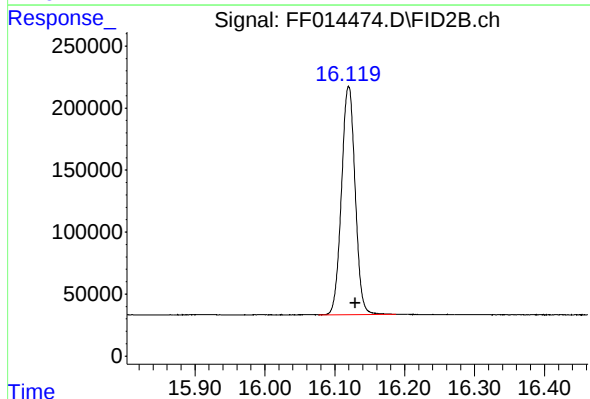
R.T.: 14.896 min  
Delta R.T.: -0.009 min  
Response: 2026509  
Conc: 17.17 ug/ml



#10 N-TETRACOSANE

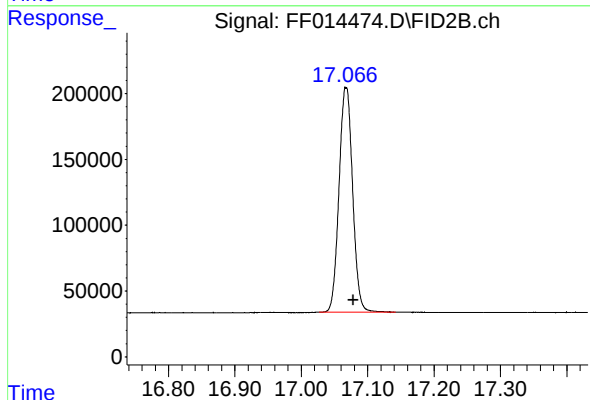
R.T.: 15.099 min  
Delta R.T.: -0.009 min  
Response: 2561891  
Conc: 19.36 ug/ml

Instrument :  
FID\_F  
ClientSampleId :  
PB163245BS



#11 N-HEXACOSANE

R.T.: 16.120 min  
Delta R.T.: -0.009 min  
Response: 2496850  
Conc: 19.03 ug/ml



#12 N-OCTACOSANE

R.T.: 17.068 min  
Delta R.T.: -0.011 min  
Response: 2432811  
Conc: 18.84 ug/ml

rteres

Area Percent Report

Data Path : Z:\pestpcbsrv\HPCHEM1\FID\_F\Data\FF091024\  
Data File : FF014474.D  
Signal(s) : FID2B.ch  
Acq On : 10 Sep 2024 09:40  
Sample : PB163245BS  
Misc :  
ALS Vial : 12 Sample Multiplier: 1

Integration File: autoint1.e

Method : Z:\pestpcbsrv\HPCHEM1\FID\_F\Method\FF081624.M  
Title :

Signal : FID2B.ch

| peak<br>#               | R.T.<br>min | Start<br>min | End<br>min | PK<br>TY | peak<br>height | peak<br>area | peak<br>% max. | % of<br>total |
|-------------------------|-------------|--------------|------------|----------|----------------|--------------|----------------|---------------|
| 1                       | 4.452       | 4.413        | 4.539      | BB       | 218424         | 2349583      | 90.05%         | 8.724%        |
| 2                       | 6.618       | 6.588        | 6.713      | BB       | 230406         | 2445430      | 93.72%         | 9.080%        |
| 3                       | 8.444       | 8.412        | 8.548      | BB       | 216333         | 2401174      | 92.03%         | 8.916%        |
| 4                       | 10.049      | 10.015       | 10.159     | BB       | 205364         | 2458754      | 94.23%         | 9.129%        |
| 5                       | 11.492      | 11.459       | 11.585     | BB       | 215969         | 2609179      | 100.00%        | 9.688%        |
| 6                       | 12.800      | 12.765       | 12.878     | BB       | 219866         | 2587007      | 99.15%         | 9.606%        |
| 7                       | 13.998      | 13.953       | 14.068     | BB       | 209017         | 2562975      | 98.23%         | 9.516%        |
| 8                       | 14.896      | 14.859       | 14.972     | BB       | 148396         | 2026509      | 77.67%         | 7.524%        |
| 9                       | 15.099      | 15.053       | 15.168     | BB       | 196752         | 2561891      | 98.19%         | 9.512%        |
| 10                      | 16.120      | 16.078       | 16.188     | BB       | 183966         | 2496850      | 95.69%         | 9.271%        |
| 11                      | 17.068      | 17.027       | 17.143     | BB       | 170209         | 2432811      | 93.24%         | 9.033%        |
| Sum of corrected areas: |             |              |            |          |                | 26932162     |                |               |

FF081624.M Wed Sep 11 01:55:35 2024



Instrument ID: FID\_F

**Daily Analysis Runlog For Sequence/QC Batch ID # FF081624**

|                                                                                                    |                                         |                   |                               |
|----------------------------------------------------------------------------------------------------|-----------------------------------------|-------------------|-------------------------------|
| Review By                                                                                          | yogesh                                  | Review On         | 8/16/2024 11:25:39 AM         |
| Supervise By                                                                                       | Ankita                                  | Supervise On      | 8/19/2024 9:59:48 AM          |
| SubDirectory                                                                                       | FF081624                                | HP Acquire Method | HP Processing Method FF081624 |
| <b>STD. NAME</b>                                                                                   | <b>STD REF.#</b>                        |                   |                               |
| Tune/Reschk<br>Initial Calibration Stds                                                            | PP23611,PP23613,PP23614,PP23615,PP23616 |                   |                               |
| CCC<br>Internal Standard/PEM<br>ICV/I.BLK<br>Surrogate Standard<br>MS/MSD Standard<br>LCS Standard | PP23612,PP23617                         |                   |                               |

| Sr# | SampleId     | Data File Name | Date-Time            | Operator | Status |
|-----|--------------|----------------|----------------------|----------|--------|
| 1   | MECL2        | FF014426.D     | 16 Aug 2024 06:48    | YP\AJ    | Ok     |
| 2   | I.BLK        | FF014427.D     | 16 Aug 2024 07:17    | YP\AJ    | Ok     |
| 3   | 100 TRPH STD | FF014428.D     | 16 Aug 2024 07:46 am | YP\AJ    | Ok     |
| 4   | 50 TRPH STD  | FF014429.D     | 16 Aug 2024 08:16 am | YP\AJ    | Ok     |
| 5   | 20 TRPH STD  | FF014430.D     | 16 Aug 2024 08:47 am | YP\AJ    | Ok     |
| 6   | 10 TRPH STD  | FF014431.D     | 16 Aug 2024 10:18 am | YP\AJ    | Ok     |
| 7   | 5 TRPH STD   | FF014432.D     | 16 Aug 2024 10:50 am | YP\AJ    | Ok     |
| 8   | FF081624ICV  | FF014433.D     | 16 Aug 2024 11:20    | YP\AJ    | Ok     |

M : Manual Integration

Instrument ID: FID\_F

**Daily Analysis Runlog For Sequence/QC Batch ID # FF091024**

|                                                                    |                                         |                   |                               |
|--------------------------------------------------------------------|-----------------------------------------|-------------------|-------------------------------|
| Review By                                                          | yogesh                                  | Review On         | 9/10/2024 11:15:53 AM         |
| Supervise By                                                       | Ankita                                  | Supervise On      | 9/11/2024 11:23:30 AM         |
| SubDirectory                                                       | FF091024                                | HP Acquire Method | HP Processing Method FG081624 |
| <b>STD. NAME</b>                                                   | <b>STD REF.#</b>                        |                   |                               |
| Tune/Reschk<br>Initial Calibration Stds                            | PP23611,PP23613,PP23614,PP23615,PP23616 |                   |                               |
| CCC<br>Internal Standard/PEM                                       | PP23613                                 |                   |                               |
| ICV/I.BLK<br>Surrogate Standard<br>MS/MSD Standard<br>LCS Standard | PP23612,PP23617                         |                   |                               |

| Sr# | SampleId        | Data File Name | Date-Time         | Operator | Status   |
|-----|-----------------|----------------|-------------------|----------|----------|
| 1   | MECL2           | FF014468.D     | 10 Sep 2024 06:41 | YP\AJ    | Ok       |
| 2   | I.BLK           | FF014469.D     | 10 Sep 2024 07:10 | YP\AJ    | Ok       |
| 3   | 50 PPM TRPH STD | FF014470.D     | 10 Sep 2024 07:39 | YP\AJ    | Ok       |
| 4   | RT MARKER       | FF014471.D     | 10 Sep 2024 08:08 | YP\AJ    | Ok       |
| 5   | P3845-19        | FF014472.D     | 10 Sep 2024 08:42 | YP\AJ    | Dilution |
| 6   | PB163245BL      | FF014473.D     | 10 Sep 2024 09:11 | YP\AJ    | Ok       |
| 7   | PB163245BS      | FF014474.D     | 10 Sep 2024 09:40 | YP\AJ    | Ok       |
| 8   | P3845-19        | FF014475.D     | 10 Sep 2024 10:09 | YP\AJ    | Ok       |
| 9   | I.BLK           | FF014476.D     | 10 Sep 2024 11:38 | YP\AJ    | Ok       |
| 10  | 50 PPM TRPH STD | FF014477.D     | 10 Sep 2024 12:08 | YP\AJ    | Ok       |

M : Manual Integration

Instrument ID: FID\_F

**Daily Analysis Runlog For Sequence/QC Batch ID # FF081624**

|              |          |                   |                               |
|--------------|----------|-------------------|-------------------------------|
| Review By    | yogesh   | Review On         | 8/16/2024 11:25:39 AM         |
| Supervise By | Ankita   | Supervise On      | 8/19/2024 9:59:48 AM          |
| SubDirectory | FF081624 | HP Acquire Method | HP Processing Method FF081624 |

| STD. NAME                                                                                          | STD REF.#                               |
|----------------------------------------------------------------------------------------------------|-----------------------------------------|
| Tune/Reschk<br>Initial Calibration Stds                                                            | PP23611,PP23613,PP23614,PP23615,PP23616 |
| CCC<br>Internal Standard/PEM<br>ICV/I.BLK<br>Surrogate Standard<br>MS/MSD Standard<br>LCS Standard | PP23612,PP23617                         |

| Sr# | SampleID     | ClientID | Data File Name | Date-Time            | Comment | Operator | Status |
|-----|--------------|----------|----------------|----------------------|---------|----------|--------|
| 1   | MECL2        |          | FF014426.D     | 16 Aug 2024 06:48    |         | YP\AJ    | Ok     |
| 2   | I.BLK        |          | FF014427.D     | 16 Aug 2024 07:17    |         | YP\AJ    | Ok     |
| 3   | 100 TRPH STD |          | FF014428.D     | 16 Aug 2024 07:46 am |         | YP\AJ    | Ok     |
| 4   | 50 TRPH STD  |          | FF014429.D     | 16 Aug 2024 08:16 am |         | YP\AJ    | Ok     |
| 5   | 20 TRPH STD  |          | FF014430.D     | 16 Aug 2024 08:47 am |         | YP\AJ    | Ok     |
| 6   | 10 TRPH STD  |          | FF014431.D     | 16 Aug 2024 10:18 am |         | YP\AJ    | Ok     |
| 7   | 5 TRPH STD   |          | FF014432.D     | 16 Aug 2024 10:50 am |         | YP\AJ    | Ok     |
| 8   | FF081624ICV  |          | FF014433.D     | 16 Aug 2024 11:20    |         | YP\AJ    | Ok     |

M : Manual Integration

Instrument ID: FID\_F

**Daily Analysis Runlog For Sequence/QC Batch ID # FF091024**

|              |          |                   |                               |
|--------------|----------|-------------------|-------------------------------|
| Review By    | yogesh   | Review On         | 9/10/2024 11:15:53 AM         |
| Supervise By | Ankita   | Supervise On      | 9/11/2024 11:23:30 AM         |
| SubDirectory | FF091024 | HP Acquire Method | HP Processing Method FG081624 |

| STD. NAME                                                          | STD REF.#                               |
|--------------------------------------------------------------------|-----------------------------------------|
| Tune/Reschk<br>Initial Calibration Stds                            | PP23611,PP23613,PP23614,PP23615,PP23616 |
| CCC<br>Internal Standard/PEM                                       | PP23613                                 |
| ICV/I.BLK<br>Surrogate Standard<br>MS/MSD Standard<br>LCS Standard | PP23612,PP23617                         |

| Sr# | SampleID        | ClientID | Data File Name | Date-Time         | Comment          | Operator | Status   |
|-----|-----------------|----------|----------------|-------------------|------------------|----------|----------|
| 1   | MECL2           |          | FF014468.D     | 10 Sep 2024 06:41 |                  | YP\AJ    | Ok       |
| 2   | I.BLK           |          | FF014469.D     | 10 Sep 2024 07:10 |                  | YP\AJ    | Ok       |
| 3   | 50 PPM TRPH STD |          | FF014470.D     | 10 Sep 2024 07:39 |                  | YP\AJ    | Ok       |
| 4   | RT MARKER       |          | FF014471.D     | 10 Sep 2024 08:08 |                  | YP\AJ    | Ok       |
| 5   | P3845-19        |          | FF014472.D     | 10 Sep 2024 08:42 | Need 5X dilution | YP\AJ    | Dilution |
| 6   | PB163245BL      |          | FF014473.D     | 10 Sep 2024 09:11 |                  | YP\AJ    | Ok       |
| 7   | PB163245BS      |          | FF014474.D     | 10 Sep 2024 09:40 |                  | YP\AJ    | Ok       |
| 8   | P3845-19        |          | FF014475.D     | 10 Sep 2024 10:09 |                  | YP\AJ    | Ok       |
| 9   | I.BLK           |          | FF014476.D     | 10 Sep 2024 11:38 |                  | YP\AJ    | Ok       |
| 10  | 50 PPM TRPH STD |          | FF014477.D     | 10 Sep 2024 12:08 |                  | YP\AJ    | Ok       |

M : Manual Integration

|                           |                                                       |                                                   |                                     |
|---------------------------|-------------------------------------------------------|---------------------------------------------------|-------------------------------------|
| <b>SOP ID:</b>            | M3510C,3580A-Extraction DRO-12                        |                                                   |                                     |
| <b>Clean Up SOP #:</b>    | N/A                                                   | <b>Extraction Start Date :</b>                    | 09/09/2024                          |
| <b>Matrix :</b>           | Water                                                 | <b>Extraction Start Time :</b>                    | 10:07                               |
| <b>Weigh By:</b>          | N/A                                                   | <b>Extraction By:</b>                             | RS                                  |
| <b>Balance check:</b>     | N/A                                                   | <b>Filter By:</b>                                 | RS                                  |
| <b>Balance ID:</b>        | N/A                                                   | <b>pH Meter ID:</b>                               | N/A                                 |
| <b>pH Strip Lot#:</b>     | E3574                                                 | <b>Hood ID:</b>                                   | 4,6,7                               |
| <b>Extraction Method:</b> | <input checked="" type="checkbox"/> Separatory Funnel | <input type="checkbox"/> Continuous Liquid/Liquid | <input type="checkbox"/> Sonication |
|                           |                                                       | <input type="checkbox"/> Waste Dilution           | <input type="checkbox"/> Soxhlet    |
|                           |                                                       | <b>Extraction End Date :</b>                      | 09/09/2024                          |
|                           |                                                       | <b>Extraction End Time :</b>                      | 15:10                               |
|                           |                                                       | <b>Concentration By:</b>                          | EH                                  |
|                           |                                                       | <b>Supervisor By :</b>                            | rajesh                              |

| Standard Name | MLS USED | Concentration ug/mL | STD REF. # FROM LOG |
|---------------|----------|---------------------|---------------------|
| Spike Sol 1   | 1.0ML    | 20 PPM              | PP23454             |
| Surrogate     | 1.0ML    | 20 PPM              | PP23518             |
| N/A           | N/A      | N/A                 | N/A                 |
| N/A           | N/A      | N/A                 | N/A                 |
| N/A           | N/A      | N/A                 | N/A                 |

| Chemical Used      | ML/SAMPLE USED | Lot Number |
|--------------------|----------------|------------|
| Methylene Chloride | N/A            | E3790      |
| Baked Na2SO4       | N/A            | EP2532     |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |
| N/A                | N/A            | N/A        |

**Extraction Conformance/Non-Conformance Comments:**

1.5 ML Vial lot# 2210673.

|                             |                |                           |          |
|-----------------------------|----------------|---------------------------|----------|
| <b>KD Bath ID:</b>          | Water bath -01 | <b>Envap ID:</b>          | NEVAP-02 |
| <b>KD Bath Temperature:</b> | 60 °C          | <b>Envap Temperature:</b> | 40 °C    |

| Date / Time | Prepped Sample Relinquished By/Location | Received By/Location |
|-------------|-----------------------------------------|----------------------|
| 09/09/24    | RP (Ext Lab)                            | AJ/EST PMA Lab       |
| 15:15       | Preparation Group                       | Analysis Group       |

Analytical Method: M3510C,3580A-Extraction DRO-12

Concentration Date: 09/09/2024

| Sample ID  | Client Sample ID | Test                     | g / <u>ml</u> | PH | Surr/Spike By: |            | Final Vol.<br>(mL) | JarID | Comments | Prep<br>Pos |
|------------|------------------|--------------------------|---------------|----|----------------|------------|--------------------|-------|----------|-------------|
|            |                  |                          |               |    | AddedBy        | VerifiedBy |                    |       |          |             |
| PB163245BL | PB163245BL       | Diesel Range<br>Organics | 1000          | 6  | RUPESH         | rajesh     | 1                  |       |          | SEP-10      |
| PB163245BS | PB163245BS       | Diesel Range<br>Organics | 1000          | 6  | RUPESH         | rajesh     | 1                  |       |          | 11          |
| P3845-19   | RR-DIES-WP       | Diesel Range<br>Organics | 1000          | 6  | RUPESH         | rajesh     | 1                  |       |          | 12          |

\* Extracts relinquished on the same date as received.

2  
319124

10/09/24

WORKLIST(Hardcopy Internal Chain)

WorkList Name : P3845D      WorkList ID : 183302      Department : Extraction      Date : 09-09-2024 10:03:01

| Sample   | Customer Sample | Matrix | Test                  | Preservative | Customer | Raw Sample Storage Location | Collect Date | Method |
|----------|-----------------|--------|-----------------------|--------------|----------|-----------------------------|--------------|--------|
| P3845-19 | RR-DIES-WP      | Water  | Diesel Range Organics | Cool 4 deg C | CHEM02   | QA Of                       | 09/03/2024   | 8015D  |

Date/Time 09/09/24 10:05  
Raw Sample Received by: RJ (Ext 204)  
Raw Sample Relinquished by: RM 8M

Date/Time 09/09/24 10:20  
Raw Sample Received by: RM 8M  
Raw Sample Relinquished by: RJ (Ext 104)

### Prep Standard - Chemical Standard Summary

**Order ID :** P3845  
**Test :** Diesel Range Organics

**Prepbatch ID :** PB163245,  
**Sequence ID/Qc Batch ID:** FF091024,

**Standard ID :**  
EP2532,PP23454,PP23518,PP23611,PP23612,PP23613,PP23614,PP23615,PP23616,PP23617,

**Chemical ID :**  
E3551,E3759,E3768,E3787,E3790,P11950,P11960,P13103,P13107,P13206,P13207,P13208,P13209,P13210,P13211,  
P13217,P13218,

## Extractions STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>          | <u>NO.</u>             | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u>                      | <u>PipetteID</u> | <u>Supervised By</u>              |
|------------------|----------------------|------------------------|------------------|------------------------|--------------------|-------------------------------------|------------------|-----------------------------------|
| 3923             | Baked Sodium Sulfate | <a href="#">EP2532</a> | 08/30/2024       | 01/03/2025             | Rajesh Parikh      | Extraction_SC<br>ALE_2<br>(EX-SC-2) | None             | RUPESHKUMAR<br>SHAH<br>08/30/2024 |

**FROM** 4000.00000gram of E3551 = Final Quantity: 4000.000 gram

| <u>Recipe ID</u> | <u>NAME</u>                           | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>         |
|------------------|---------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|------------------------------|
| 3609             | 20 PPM DRO SPIKE SOLUTION<br>(RESTEK) | <a href="#">PP23454</a> | 06/10/2024       | 12/08/2024             | Yogesh Patel       | None           | None             | Ankita Jodhani<br>06/12/2024 |

**FROM** 1.00000ml of P11950 + 1.00000ml of P11960 + 48.00000ml of E3759 = Final Quantity: 50.000 ml



| <u>Recipe ID</u>                                                                                                                                      | <u>NAME</u>                         | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>         |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|------------------------------|
| 147                                                                                                                                                   | 20 PPM DRO Surrogate Spike Solution | <a href="#">PP23518</a> | 07/15/2024       | 01/08/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani<br>07/16/2024 |
| <b>FROM</b> 1.00000ml of P13206 + 1.00000ml of P13207 + 1.00000ml of P13208 + 1.00000ml of P13209 + 196.00000ml of E3768 = Final Quantity: 200.000 ml |                                     |                         |                  |                        |                    |                |                  |                              |

| <u>Recipe ID</u> | <u>NAME</u>                                                                                                      | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u>         |
|------------------|------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|------------------------------|
| 433              | 100/100 PPM DRO (Restek)                                                                                         | <a href="#">PP23611</a> | 08/14/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani<br>08/19/2024 |
| <u>FROM</u>      | 1.00000ml of P13103 + 1.00000ml of P13107 + 1.00000ml of P13210 + 7.00000ml of E3787 = Final Quantity: 10.000 ml |                         |                  |                        |                    |                |                  |                              |

## Pest/Pcb STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>               | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|---------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3796             | 100/100 PPM DRO STD (CPI) | <a href="#">PP23612</a> | 08/14/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                           |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 1.00000ml of P13211 + 1.00000ml of P13217 + 1.00000ml of P13218 + 7.00000ml of E3787 = Final Quantity: 10.000 ml

| <u>Recipe ID</u> | <u>NAME</u>                 | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-----------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 435              | 50 PPM ICC DRO STD (Restek) | <a href="#">PP23613</a> | 08/15/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                             |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 0.50000ml of E3787 + 0.50000ml of PP23611 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>                 | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-----------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 437              | 20 PPM ICC DRO STD (Restek) | <a href="#">PP23614</a> | 08/15/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                             |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 0.80000ml of E3787 + 0.20000ml of PP23611 = Final Quantity: 1.000 ml

| <u>Recipe ID</u> | <u>NAME</u>                 | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|-----------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 438              | 10 PPM ICC DRO STD (Restek) | <a href="#">PP23615</a> | 08/15/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                             |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 0.90000ml of E3787 + 0.10000ml of PP23611 = Final Quantity: 1.000 ml

## Pest/Pcb STANDARD PREPARATION LOG

| <u>Recipe ID</u> | <u>NAME</u>                | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|----------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 439              | 5 PPM ICC DRO STD (Restek) | <a href="#">PP23616</a> | 08/15/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                            |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 0.90000ml of E3787 + 0.10000ml of PP23613 = Final Quantity: 1.000 ml

| <u>Recipe ID</u> | <u>NAME</u>              | <u>NO.</u>              | <u>Prep Date</u> | <u>Expiration Date</u> | <u>Prepared By</u> | <u>ScaleID</u> | <u>PipetteID</u> | <u>Supervised By</u> |
|------------------|--------------------------|-------------------------|------------------|------------------------|--------------------|----------------|------------------|----------------------|
| 3797             | 50 PPM DRO ICV STD (CPI) | <a href="#">PP23617</a> | 08/15/2024       | 02/13/2025             | Yogesh Patel       | None           | None             | Ankita Jodhani       |
|                  |                          |                         |                  |                        |                    |                |                  | 08/19/2024           |

**FROM** 0.50000ml of E3787 + 0.50000ml of PP23612 = Final Quantity: 1.000 ml

## CHEMICAL RECEIPT LOG BOOK

| Supplier                    | ItemCode / ItemName                                    | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-----------------------------|--------------------------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| PCI Scientific Supply, Inc. | PC19631-100 / SODIUM SULFATE, ANHYDROUS, PEST GRADE, 1 | 313201 | 01/03/2025      | 01/03/2024 / Rajesh     | 07/20/2023 / Rajesh         | E3551          |

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L) | 24D1962005 | 12/08/2024      | 06/08/2024 / Rajesh     | 05/31/2024 / Rajesh         | E3759          |

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L) | 24E2462004 | 01/08/2025      | 07/08/2024 / Rajesh     | 06/21/2024 / Rajesh         | E3768          |

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L) | 24G0862022 | 02/13/2025      | 08/13/2024 / Rajesh     | 08/07/2024 / Rajesh         | E3787          |

| Supplier         | ItemCode / ItemName                                         | Lot #      | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|------------------|-------------------------------------------------------------|------------|-----------------|-------------------------|-----------------------------|----------------|
| Seidler Chemical | BA-9644-A4 / Methylene Chloride,U-Resi, Cycle-Tainer (215L) | 24G0862022 | 02/26/2025      | 08/26/2024 / Rajesh     | 08/07/2024 / Rajesh         | E3790          |

| Supplier | ItemCode / ItemName           | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31266 / Florida TRPH Standard | A0186840 | 12/10/2024      | 06/10/2024 / yogesh     | 07/11/2022 / Yogesh         | P11950         |

## CHEMICAL RECEIPT LOG BOOK

| Supplier | ItemCode / ItemName           | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31266 / Florida TRPH Standard | A0186840 | 12/10/2024      | 06/10/2024 / yogesh     | 07/11/2022 / Yogesh         | P11960         |

| Supplier | ItemCode / ItemName           | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31266 / Florida TRPH Standard | A0204859 | 02/14/2025      | 08/14/2024 / yogesh     | 01/12/2024 / Yogesh         | P13103         |

| Supplier | ItemCode / ItemName           | Lot #    | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|----------|-------------------------------|----------|-----------------|-------------------------|-----------------------------|----------------|
| Restek   | 31266 / Florida TRPH Standard | A0204859 | 02/14/2025      | 08/14/2024 / yogesh     | 01/12/2024 / Yogesh         | P13107         |

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 01/15/2025      | 07/15/2024 / yogesh     | 01/17/2024 / Ankita         | P13206         |

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 01/15/2025      | 07/15/2024 / yogesh     | 01/17/2024 / Ankita         | P13207         |

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 01/15/2025      | 07/15/2024 / yogesh     | 01/17/2024 / Ankita         | P13208         |

## CHEMICAL RECEIPT LOG BOOK

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 01/15/2025      | 07/15/2024 / yogesh     | 01/17/2024 / Ankita         | P13209         |

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 02/14/2025      | 08/14/2024 / yogesh     | 01/17/2024 / Ankita         | P13210         |

| Supplier                 | ItemCode / ItemName                   | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|--------------------------|---------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| Absolute Standards, Inc. | 72072 / n-Tetracosane-d50, 1000 ug/ml | 101122 | 02/14/2025      | 08/14/2024 / yogesh     | 01/17/2024 / Ankita         | P13211         |

| Supplier          | ItemCode / ItemName                                     | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-------------------|---------------------------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| CPI International | Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml | 514983 | 02/14/2025      | 08/14/2024 / yogesh     | 01/31/2024 / Ankita         | P13217         |

| Supplier          | ItemCode / ItemName                                     | Lot #  | Expiration Date | Date Opened / Opened By | Received Date / Received By | Chemtech Lot # |
|-------------------|---------------------------------------------------------|--------|-----------------|-------------------------|-----------------------------|----------------|
| CPI International | Z-110400-05-01 / TRPH Standard (C8-C40), 500 mg/L, 1 ml | 514983 | 02/14/2025      | 08/14/2024 / yogesh     | 01/31/2024 / Ankita         | P13218         |



**PRODUCTOS  
QUÍMICOS  
MONTERREY, S.A. DE C.V.**

MIRADOR 201, COL. MIRADOR  
MONTERREY, N.L. MEXICO  
CP 64070  
TEL +52 81 13 52 57 57  
www.pqm.com.mx

## CERTIFICATE OF ANALYSIS

|                        |                                   |               |                                 |
|------------------------|-----------------------------------|---------------|---------------------------------|
| PRODUCT :              | SODIUM SULFATE CRYSTALS ANHYDROUS |               |                                 |
| QUALITY :              | ACS (CODE RMB3375)                | FORMULA :     | Na <sub>2</sub> SO <sub>4</sub> |
| SPECIFICATION NUMBER : | 6399                              | RELEASE DATE: | ABR/21/2023                     |
| LOT NUMBER :           | 313201                            |               |                                 |

| TEST                                     | SPECIFICATIONS | LOT VALUES  |
|------------------------------------------|----------------|-------------|
| Assay (Na <sub>2</sub> SO <sub>4</sub> ) | Min. 99.0%     | 99.7 %      |
| pH of a 5% solution at 25°C              | 5.2 - 9.2      | 6.1         |
| Insoluble matter                         | Max. 0.01%     | 0.005 %     |
| Loss on ignition                         | Max. 0.5%      | 0.1 %       |
| Chloride (Cl)                            | Max. 0.001%    | <0.001 %    |
| Nitrogen compounds (as N)                | Max. 5 ppm     | <5 ppm      |
| Phosphate (PO <sub>4</sub> )             | Max. 0.001%    | <0.001 %    |
| Heavy metals (as Pb)                     | Max. 5 ppm     | <5 ppm      |
| Iron (Fe)                                | Max. 0.001%    | <0.001 %    |
| Calcium (Ca)                             | Max. 0.01%     | 0.002 %     |
| Magnesium (Mg)                           | Max. 0.005%    | 0.001 %     |
| Potassium (K)                            | Max. 0.008%    | 0.003 %     |
| Extraction-concentration suitability     | Passes test    | Passes test |
| Appearance                               | Passes test    | Passes test |
| Identification                           | Passes test    | Passes test |
| Solubility and foreign matter            | Passes test    | Passes test |
| Retained on US Standard No. 10 sieve     | Max. 1%        | 0.1 %       |
| Retained on US Standard No. 60 sieve     | Min. 94%       | 97.3 %      |
| Through US Standard No. 60 sieve         | Max. 5%        | 2.5 %       |
| Through US Standard No. 100 sieve        | Max. 10%       | 0.1 %       |

### COMMENTS

QC: PhC Irma Belmares

If you need further details, please call our factory or contact our local distributor.

Recd. by R3 on 7/24/23 E 3551

RC-02-01, Ed. 3

Methylene Chloride  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis  
(dichloromethane)



Material No.: 9266-A4  
Batch No.: 24D1962005  
Manufactured Date: 2024-03-16  
Expiration Date: 2025-06-15  
Revision No.: 0

## Certificate of Analysis

| Test                                                                                       | Specification          | Result   |
|--------------------------------------------------------------------------------------------|------------------------|----------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)                       | $\leq 5$               | < 1      |
| ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)                       | $\leq 10$              | 8        |
| Assay ( $\text{CH}_2\text{Cl}_2$ ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$         | 99.9 %   |
| Color (APHA)                                                                               | $\leq 10$              | 5        |
| Residue after Evaporation                                                                  | $\leq 1.0 \text{ ppm}$ | 0.1 ppm  |
| Titration Acid ( $\mu\text{eq/g}$ )                                                        | $\leq 0.3$             | < 0.1    |
| Chloride (Cl)                                                                              | $\leq 10 \text{ ppm}$  | < 5 ppm  |
| Water (by KF, coulometric)                                                                 | $\leq 0.02 \%$         | < 0.01 % |

For Laboratory, Research, or Manufacturing Use  
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC  
Manufacturer source batch: MG24C16563

E 3759

Jamie Croak  
Director Quality Operations, Bioscience Production

Methylene Chloride  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis  
(dichloromethane)



Material No.: 9266-A4  
Batch No.: 24E2462004  
Manufactured Date: 2024-04-10  
Expiration Date: 2025-07-10  
Revision No.: 0

## Certificate of Analysis

| Test                                                                                       | Specification          | Result   |
|--------------------------------------------------------------------------------------------|------------------------|----------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)                       | $\leq 5$               | 3        |
| ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)                       | $\leq 10$              | 3        |
| Assay ( $\text{CH}_2\text{Cl}_2$ ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$         | 100.0 %  |
| Color (APHA)                                                                               | $\leq 10$              | 5        |
| Residue after Evaporation                                                                  | $\leq 1.0 \text{ ppm}$ | 0.1 ppm  |
| Titration Acid ( $\mu\text{eq/g}$ )                                                        | $\leq 0.3$             | < 0.1    |
| Chloride (Cl)                                                                              | $\leq 10 \text{ ppm}$  | 5 ppm    |
| Water (by KF, coulometric)                                                                 | $\leq 0.02 \%$         | < 0.01 % |

For Laboratory, Research, or Manufacturing Use  
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC  
Manufacturer source batch: MG24D10725

E 3768

Jamie Croak  
Director Quality Operations, Bioscience Production

For questions on this Certificate of Analysis please contact Technical Services at 855.282.6867 or +1.610.386.1700

Avantor Performance Materials, LLC

100 Matsonford Rd, Suite 200, Radnor, PA 19087, U.S.A. Phone 610.386.1700

Methylene Chloride  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis  
(dichloromethane)



Material No.: 9266-A4  
Batch No.: 24G0862022  
Manufactured Date: 2024-06-05  
Expiration Date: 2025-09-04  
Revision No.: 0

## Certificate of Analysis

| Test                                                                                             | Specification  | Result   |
|--------------------------------------------------------------------------------------------------|----------------|----------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)                             | $\leq 5$       | 3        |
| ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)                             | $\leq 10$      | 4        |
| Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$ | 100.0 %  |
| Color (APHA)                                                                                     | $\leq 10$      | 5        |
| Residue after Evaporation                                                                        | $\leq 1.0$ ppm | 0.3 ppm  |
| Titration Acid ( $\mu$ eq/g)                                                                     | $\leq 0.3$     | < 0.1    |
| Chloride (Cl)                                                                                    | $\leq 10$ ppm  | < 5 ppm  |
| Water (by KF, coulometric)                                                                       | $\leq 0.02 \%$ | < 0.01 % |

For Laboratory, Research, or Manufacturing Use  
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC  
Manufacturer source batch: MG24F05012

E 3787

Jamie Croak  
Director Quality Operations, Bioscience Production

Methylene Chloride  
ULTRA RESI-ANALYZED  
For Organic Residue Analysis  
(dichloromethane)



Material No.: 9266-A4  
Batch No.: 24G0862022  
Manufactured Date: 2024-06-05  
Expiration Date: 2025-09-04  
Revision No.: 0

## Certificate of Analysis

| Test                                                                                             | Specification  | Result   |
|--------------------------------------------------------------------------------------------------|----------------|----------|
| FID-Sensitive Impurities (as 2-Octanol) Single Impurity Peak (ng/mL)                             | $\leq 5$       | 3        |
| ECD Sensitive Impurities (as Heptachlor Epoxide) Single Peak (pg/mL)                             | $\leq 10$      | 4        |
| Assay (CH <sub>2</sub> Cl <sub>2</sub> ) (by GC, exclusive of preservative, corrected for water) | $\geq 99.8 \%$ | 100.0 %  |
| Color (APHA)                                                                                     | $\leq 10$      | 5        |
| Residue after Evaporation                                                                        | $\leq 1.0$ ppm | 0.3 ppm  |
| Titration Acid ( $\mu$ eq/g)                                                                     | $\leq 0.3$     | < 0.1    |
| Chloride (Cl)                                                                                    | $\leq 10$ ppm  | < 5 ppm  |
| Water (by KF, coulometric)                                                                       | $\leq 0.02 \%$ | < 0.01 % |

For Laboratory, Research, or Manufacturing Use  
MEETS SPECIFICATIONS WITHIN THE EXPIRATION PERIOD

Country of Origin: USA  
Packaging Site: Phillipsburg Mfg Ctr & DC  
Manufacturer source batch: MG24F05012

E 3790

Jamie Croak  
Director Quality Operations, Bioscience Production



# CERTIFIED REFERENCE MATERIAL

110 Benner Circle

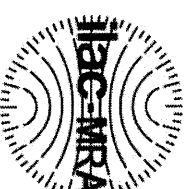
Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

## Certificate of Analysis



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

Catalog No. : 31266

Lot No.: A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : July 31, 2029

Storage: 25°C nominal

Handling: Sonicate prior to use.

Ship: Ambient

### CERTIFIED VALUES

| Elution Order | Compound                                            | Grav. Conc.<br>(weight/volume) | Expanded Uncertainty<br>(95% C.L.; K=2)  |                                                |
|---------------|-----------------------------------------------------|--------------------------------|------------------------------------------|------------------------------------------------|
| 1             | n-Octane (C8)<br>CAS # 111-65-9<br>Purity 99%       | 505.0 µg/mL                    | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 2             | n-Decane (C10)<br>CAS # 124-18-5<br>Purity 99%      | 503.0 µg/mL                    | +/- 2.9877<br>+/- 12.4968<br>+/- 14.9795 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 3             | n-Dodecane (C12)<br>CAS # 112-40-3<br>Purity 99%    | 503.5 µg/mL                    | +/- 2.9906<br>+/- 12.5092<br>+/- 14.9944 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 4             | n-Tetradecane (C14)<br>CAS # 629-59-4<br>Purity 99% | 505.0 µg/mL                    | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 5             | n-Hexadecane (C16)<br>CAS # 544-76-3<br>Purity 98%  | 504.7 µg/mL                    | +/- 2.9978<br>+/- 12.5390<br>+/- 15.0301 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 6             | n-Octadecane (C18)<br>CAS # 593-45-3<br>Purity 97%  | 504.4 µg/mL                    | +/- 2.9960<br>+/- 12.5316<br>+/- 15.0212 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |
| 7             | n-Eicosane (C20)<br>CAS # 112-95-8<br>Purity 99%    | 503.5 µg/mL                    | +/- 2.9906<br>+/- 12.5092<br>+/- 14.9944 | µg/mL<br>Gravimetric<br>Unstressed<br>Stressed |

P11948  
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|    |                                                                          |                  |             |                                          |                         |                                       |
|----|--------------------------------------------------------------------------|------------------|-------------|------------------------------------------|-------------------------|---------------------------------------|
| 8  | n-Docosane (C22)<br><b>CAS #</b> 629-97-0<br><b>Purity</b> 99%           | (Lot MKCL8918)   | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 9  | n-Tetracosane (C24)<br><b>CAS #</b> 646-31-1<br><b>Purity</b> 99%        | (Lot MKCN2863)   | 503.5 µg/mL | +/- 2.9906<br>+/- 12.5092<br>+/- 14.9944 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 10 | n-Hexacosane (C26)<br><b>CAS #</b> 630-01-3<br><b>Purity</b> 99%         | (Lot MKCD4540)   | 504.0 µg/mL | +/- 2.9936<br>+/- 12.5216<br>+/- 15.0093 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 11 | n-Octacosane (C28)<br><b>CAS #</b> 630-02-4<br><b>Purity</b> 99%         | (Lot BCCG0084)   | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 12 | n-Triacontane (C30)<br><b>CAS #</b> 638-68-6<br><b>Purity</b> 99%        | (Lot MKCN9321)   | 505.0 µg/mL | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 13 | n-Dotriacontane (C32)<br><b>CAS #</b> 544-85-4<br><b>Purity</b> 99%      | (Lot BCBW0661)   | 505.0 µg/mL | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 14 | n-Tetratriacontane (C34)<br><b>CAS #</b> 14167-59-0<br><b>Purity</b> 99% | (Lot OML4N)      | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 15 | n-Hexatriacontane (C36)<br><b>CAS #</b> 630-06-8<br><b>Purity</b> 99%    | (Lot U25B014)    | 504.0 µg/mL | +/- 2.9936<br>+/- 12.5216<br>+/- 15.0093 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 16 | n-Octatriacontane (C38)<br><b>CAS #</b> 7194-85-6<br><b>Purity</b> 97%   | (Lot 0000127235) | 504.4 µg/mL | +/- 2.9960<br>+/- 12.5316<br>+/- 15.0212 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 17 | n-Tetracontane (C40)<br><b>CAS #</b> 4181-95-7<br><b>Purity</b> 98%      | (Lot PADGI)      | 504.7 µg/mL | +/- 2.9978<br>+/- 12.5390<br>+/- 15.0301 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |

**Solvent:** Hexane  
**CAS #** 110-54-3  
**Purity** 99%

**Column:**

30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

**Carrier Gas:**

hydrogen-constant pressure 10 psi.

**Temp. Program:**

40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**

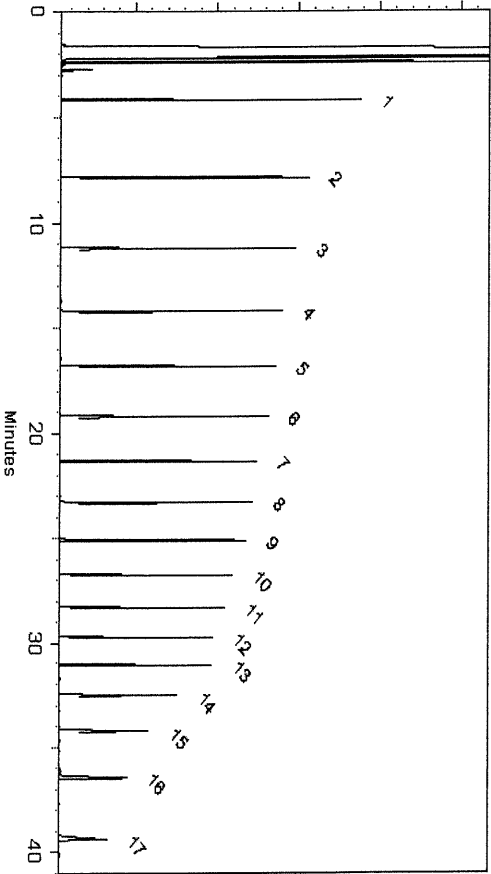
250°C

**Det. Temp:**

330°C

**Det. Type:**

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Brittany Federinko*

Brittany Federinko - Operations Tech I

Date Mixed: 29-Jun-2022

Balance: 1128360905

*Christie Mills*

Christie Mills - Operations Tech II - ARM QC

Date Passed: 01-Jul-2022

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-US](http://www.restek.com/Contact-US) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

| Label Conditions                                          | Standard Conditions | Non-Standard Conditions |
|-----------------------------------------------------------|---------------------|-------------------------|
| 25°C Nominal (Room Temperature)                           | < 60°C              | ≥ 60°C up to 7 days     |
| 10°C or colder (Refrigerate)                              | < 40°C              | ≥ 40°C up to 7 days     |
| 0°C or colder (Freezer)<br>-20°C or colder (Deep Freezer) | < 25°C              | ≥ 25°C up to 7 days     |

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-US](http://www.restek.com/Contact-US).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



# CERTIFIED REFERENCE MATERIAL

110 Benner Circle

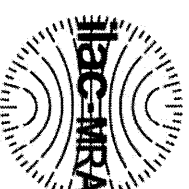
Bellefonte, PA 16823-8812

Tel: (800)356-1688

Fax: (814)353-1309

www.restek.com

## Certificate of Analysis



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

Catalog No. : 31266

Lot No.: A0186840

Description : Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

Container Size : 2 mL

Pkg Amt: > 1 mL

Expiration Date : July 31, 2029

Storage: 25°C nominal

Handling: Sonicate prior to use.

Ship: Ambient

### CERTIFIED VALUES

| Elution Order | Compound                                            | Grav. Conc.<br>(weight/volume) | Expanded Uncertainty<br>(95% C.L.; K=2)                    |                                                  |
|---------------|-----------------------------------------------------|--------------------------------|------------------------------------------------------------|--------------------------------------------------|
| 1             | n-Octane (C8)<br>CAS # 111-65-9<br>Purity 99%       | 505.0 µg/mL                    | +/- 2.9995 µg/mL<br>+/- 12.5465 µg/mL<br>+/- 15.0390 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 2             | n-Decane (C10)<br>CAS # 124-18-5<br>Purity 99%      | 503.0 µg/mL                    | +/- 2.9877 µg/mL<br>+/- 12.4968 µg/mL<br>+/- 14.9795 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 3             | n-Dodecane (C12)<br>CAS # 112-40-3<br>Purity 99%    | 503.5 µg/mL                    | +/- 2.9906 µg/mL<br>+/- 12.5092 µg/mL<br>+/- 14.9944 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 4             | n-Tetradecane (C14)<br>CAS # 629-59-4<br>Purity 99% | 505.0 µg/mL                    | +/- 2.9995 µg/mL<br>+/- 12.5465 µg/mL<br>+/- 15.0390 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 5             | n-Hexadecane (C16)<br>CAS # 544-76-3<br>Purity 98%  | 504.7 µg/mL                    | +/- 2.9978 µg/mL<br>+/- 12.5390 µg/mL<br>+/- 15.0301 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 6             | n-Octadecane (C18)<br>CAS # 593-45-3<br>Purity 97%  | 504.4 µg/mL                    | +/- 2.9960 µg/mL<br>+/- 12.5316 µg/mL<br>+/- 15.0212 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |
| 7             | n-Eicosane (C20)<br>CAS # 112-95-8<br>Purity 99%    | 503.5 µg/mL                    | +/- 2.9906 µg/mL<br>+/- 12.5092 µg/mL<br>+/- 14.9944 µg/mL | Gravimetric Unstressed<br>Unstressed<br>Stressed |

P11948 } 7.8  
P11962 } 07/11/16

|    |                                                                          |                  |             |                                          |                         |                                       |
|----|--------------------------------------------------------------------------|------------------|-------------|------------------------------------------|-------------------------|---------------------------------------|
| 8  | n-Docosane (C22)<br><b>CAS #</b> 629-97-0<br><b>Purity</b> 99%           | (Lot MKCL8918)   | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 9  | n-Tetracosane (C24)<br><b>CAS #</b> 646-31-1<br><b>Purity</b> 99%        | (Lot MKCN2863)   | 503.5 µg/mL | +/- 2.9906<br>+/- 12.5092<br>+/- 14.9944 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 10 | n-Hexacosane (C26)<br><b>CAS #</b> 630-01-3<br><b>Purity</b> 99%         | (Lot MKCD4540)   | 504.0 µg/mL | +/- 2.9936<br>+/- 12.5216<br>+/- 15.0093 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 11 | n-Octacosane (C28)<br><b>CAS #</b> 630-02-4<br><b>Purity</b> 99%         | (Lot BCCG0084)   | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 12 | n-Triacontane (C30)<br><b>CAS #</b> 638-68-6<br><b>Purity</b> 99%        | (Lot MKCN9321)   | 505.0 µg/mL | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 13 | n-Dotriacontane (C32)<br><b>CAS #</b> 544-85-4<br><b>Purity</b> 99%      | (Lot BCBW0661)   | 505.0 µg/mL | +/- 2.9995<br>+/- 12.5465<br>+/- 15.0390 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 14 | n-Tetratriacontane (C34)<br><b>CAS #</b> 14167-59-0<br><b>Purity</b> 99% | (Lot OML4N)      | 504.5 µg/mL | +/- 2.9966<br>+/- 12.5340<br>+/- 15.0241 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 15 | n-Hexatriacontane (C36)<br><b>CAS #</b> 630-06-8<br><b>Purity</b> 99%    | (Lot U25B014)    | 504.0 µg/mL | +/- 2.9936<br>+/- 12.5216<br>+/- 15.0093 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 16 | n-Octatriacontane (C38)<br><b>CAS #</b> 7194-85-6<br><b>Purity</b> 97%   | (Lot 0000127235) | 504.4 µg/mL | +/- 2.9960<br>+/- 12.5316<br>+/- 15.0212 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |
| 17 | n-Tetracontane (C40)<br><b>CAS #</b> 4181-95-7<br><b>Purity</b> 98%      | (Lot PADGI)      | 504.7 µg/mL | +/- 2.9978<br>+/- 12.5390<br>+/- 15.0301 | µg/mL<br>µg/mL<br>µg/mL | Gravimetric<br>Unstressed<br>Stressed |

**Solvent:** Hexane  
**CAS #** 110-54-3  
**Purity** 99%

**Column:**

30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

**Carrier Gas:**

hydrogen-constant pressure 10 psi.

**Temp. Program:**

40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

**Inj. Temp:**

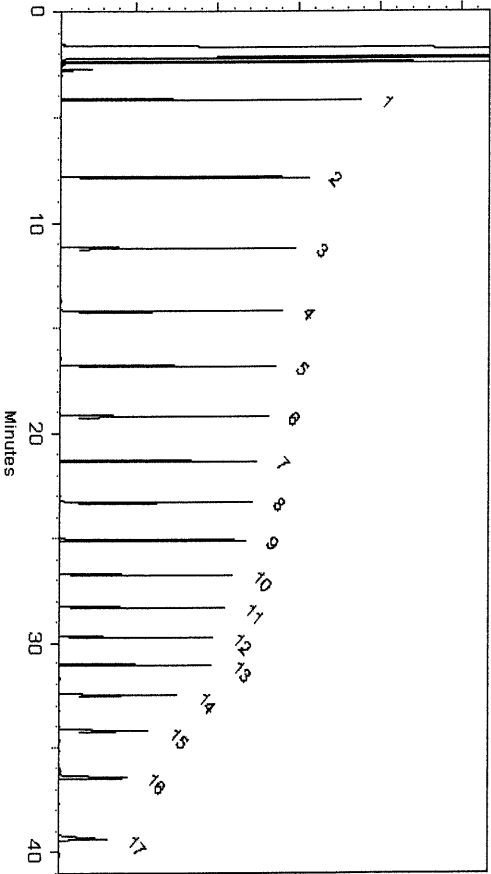
250°C

**Det. Temp:**

330°C

**Det. Type:**

FID



This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

*Brittany Federinko*  
**Brittany Federinko - Operations Tech I**

**Date Mixed:** 29-Jun-2022

**Balance:** 1128360905

*Christie Mills*  
**Christie Mills - Operations Tech II - ARM QC**

**Date Passed:** 01-Jul-2022

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

General Certified Reference Material Notes

Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/μECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified combined stressed uncertainty value ( includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ stressed} = k \sqrt{U_{gravimetric}^2 + U_{homogeneity}^2 + U_{storage\ stability}^2 + U_{shipping\ stability}^2}$$

k is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- It is important to note that the shipping stability uncertainty was obtained under temperature extremes for specific time intervals; therefore, the certified combined stressed uncertainty value should only be applied to the product if it was stored at non-standard temperature conditions up to and including 7 days. Contact Restek Technical Service at [www.restek.com/Contact-US](http://www.restek.com/Contact-US) for use recommendations if your shipment was in-transit for more than 7 days at non-standard temperature conditions.
- Apply the certified combined unstressed uncertainty value if the product was received under standard shipping conditions. Apply the certified combined stressed uncertainty value if the product was received under non-standard conditions as specified below.

| Label Conditions                                          | Standard Conditions | Non-Standard Conditions |
|-----------------------------------------------------------|---------------------|-------------------------|
| 25°C Nominal (Room Temperature)                           | < 60°C              | ≥ 60°C up to 7 days     |
| 10°C or colder (Refrigerate)                              | < 40°C              | ≥ 40°C up to 7 days     |
| 0°C or colder (Freezer)<br>-20°C or colder (Deep Freezer) | < 25°C              | ≥ 25°C up to 7 days     |

- Separate (not combined) uncertainty values for gravimetric uncertainty are also displayed on the certificate, if needed, separate homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty values are available by contacting Restek Technical Service at [www.restek.com/Contact-US](http://www.restek.com/Contact-US).
- The packaged amount is the minimum sample size for which uncertainty is valid. The ampules are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampules. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.



110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

*chromatographic plus*



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 31266 **Lot No.:** A0204859

**Description :** Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

**Container Size :** 2 mL **Pkg Amt:** > 1 mL

**Expiration Date :** December 31, 2030 **Storage:** 25°C nominal

**Handling:** Sonicate prior to use. **Ship:** Ambient

P13103 } Y.P.  
↓  
P13112 } 01/12/2024

### CERTIFIED VALUES

| Elution Order | Compound                 | CAS #      | Lot #      | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|--------------------------|------------|------------|--------|-----------------------------|----------------------------------------|
| 1             | n-Octane (C8)            | 111-65-9   | SHBP9758   | 99%    | 504.4 µg/mL                 | +/- 13.0305                            |
| 2             | n-Decane (C10)           | 124-18-5   | SHBQ1342   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 3             | n-Dodecane (C12)         | 112-40-3   | SHBP7054   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 4             | n-Tetradecane (C14)      | 629-59-4   | STBK5437   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 5             | n-Hexadecane (C16)       | 544-76-3   | SHBP8192   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 6             | n-Octadecane (C18)       | 593-45-3   | UE5NG      | 98%    | 504.1 µg/mL                 | +/- 13.0230                            |
| 7             | n-Eicosane (C20)         | 112-95-8   | MKCN8767   | 97%    | 504.0 µg/mL                 | +/- 13.0204                            |
| 8             | n-Docosane (C22)         | 629-97-0   | MKQC3882   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 9             | n-Tetracosane (C24)      | 646-31-1   | MKQC8345   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 10            | n-Hexacosane (C26)       | 630-01-3   | MKQC4814   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 11            | n-Octacosane (C28)       | 630-02-4   | BCCG0084   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 12            | n-Triacontane (C30)      | 638-68-6   | MKQC9436   | 97%    | 504.0 µg/mL                 | +/- 13.0204                            |
| 13            | n-Dotriacontane (C32)    | 544-85-4   | BCBW0661   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 14            | n-Tetratriacontane (C34) | 14167-59-0 | OML4N      | 99%    | 504.4 µg/mL                 | +/- 13.0305                            |
| 15            | n-Hexatriacontane (C36)  | 630-06-8   | Z27H018    | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 16            | n-Octatriacontane (C38)  | 7194-85-6  | 0000145137 | 96%    | 503.8 µg/mL                 | +/- 13.0152                            |
| 17            | n-Tetracontane (C40)     | 4181-95-7  | OKEGA      | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |

**Solvent:** Hexane  
**CAS #** 110-54-3  
**Purity** 99%

## Quality Confirmation Test

**Column:**  
30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

**Carrier Gas:**  
hydrogen-constant pressure 10 psi.

**Temp. Program:**  
40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

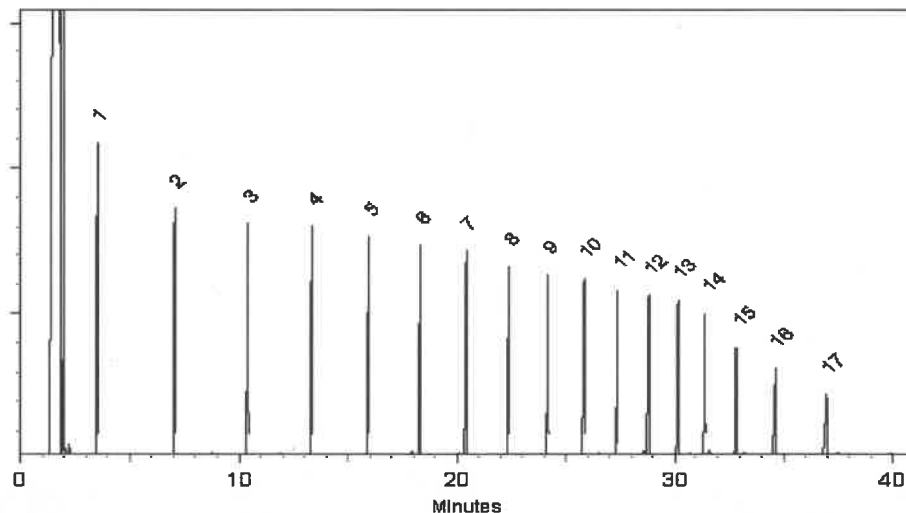
**Inj. Temp:**  
250°C

**Det. Temp:**  
330°C

**Det. Type:**  
FID

**Split Vent:**  
2 ml/min.

**Inj. Vol**  
1µl

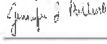


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
Dakota Parson - Operations Technician I

**Date Mixed:** 29-Nov-2023

**Balance Serial #** B442140311

  
Jennifer Pollino - Operations Tech III - ARM QC

**Date Passed:** 01-Dec-2023

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ $\mu$ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

$k$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





110 Benner Circle  
Bellefonte, PA 16823-8812  
Tel: 1-814-353-1300  
Fax: 1-814-353-1309

www.restek.com

## CERTIFIED REFERENCE MATERIAL

# Certificate of Analysis

chromatographic plus



### FOR LABORATORY USE ONLY-READ SDS PRIOR TO USE.

*This Reference Material is intended for Laboratory Use Only as a standard for the qualitative and/or quantitative determination of the analyte(s) listed.*

**Catalog No. :** 31266 **Lot No.:** A0204859

**Description :** Florida TRPH Standard

Florida TRPH Standard 500µg/mL, Hexane, 1mL/ampul

**Container Size :** 2 mL **Pkg Amt:** > 1 mL

**Expiration Date :** December 31, 2030 **Storage:** 25°C nominal

**Handling:** Sonicate prior to use. **Ship:** Ambient

P13103 } Y.P.  
↓  
P13112 } 01/12/2024

### CERTIFIED VALUES

| Elution Order | Compound                 | CAS #      | Lot #      | Purity | Grav. Conc. (weight/volume) | Expanded Uncertainty * (95% C.L.; K=2) |
|---------------|--------------------------|------------|------------|--------|-----------------------------|----------------------------------------|
| 1             | n-Octane (C8)            | 111-65-9   | SHBP9758   | 99%    | 504.4 µg/mL                 | +/- 13.0305                            |
| 2             | n-Decane (C10)           | 124-18-5   | SHBQ1342   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 3             | n-Dodecane (C12)         | 112-40-3   | SHBP7054   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 4             | n-Tetradecane (C14)      | 629-59-4   | STBK5437   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 5             | n-Hexadecane (C16)       | 544-76-3   | SHBP8192   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 6             | n-Octadecane (C18)       | 593-45-3   | UE5NG      | 98%    | 504.1 µg/mL                 | +/- 13.0230                            |
| 7             | n-Eicosane (C20)         | 112-95-8   | MKCN8767   | 97%    | 504.0 µg/mL                 | +/- 13.0204                            |
| 8             | n-Docosane (C22)         | 629-97-0   | MKCQ3882   | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |
| 9             | n-Tetracosane (C24)      | 646-31-1   | MKCQ8345   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 10            | n-Hexacosane (C26)       | 630-01-3   | MKCQ4814   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 11            | n-Octacosane (C28)       | 630-02-4   | BCCG0084   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 12            | n-Triacontane (C30)      | 638-68-6   | MKCQ9436   | 97%    | 504.0 µg/mL                 | +/- 13.0204                            |
| 13            | n-Dotriacontane (C32)    | 544-85-4   | BCBW0661   | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 14            | n-Tetratriacontane (C34) | 14167-59-0 | OML4N      | 99%    | 504.4 µg/mL                 | +/- 13.0305                            |
| 15            | n-Hexatriacontane (C36)  | 630-06-8   | Z27H018    | 99%    | 504.0 µg/mL                 | +/- 13.0201                            |
| 16            | n-Octatriacontane (C38)  | 7194-85-6  | 0000145137 | 96%    | 503.8 µg/mL                 | +/- 13.0152                            |
| 17            | n-Tetracontane (C40)     | 4181-95-7  | OKEGA      | 99%    | 503.6 µg/mL                 | +/- 13.0098                            |

**Solvent:** Hexane  
**CAS #** 110-54-3  
**Purity** 99%

## Quality Confirmation Test

**Column:**  
30m x 0.25mm x 0.25µm  
Rtx-5 (cat.#10223)

**Carrier Gas:**  
hydrogen-constant pressure 10 psi.

**Temp. Program:**  
40°C (hold 2 min.) to 330°C  
@ 10°C/min. (hold 10 min.)

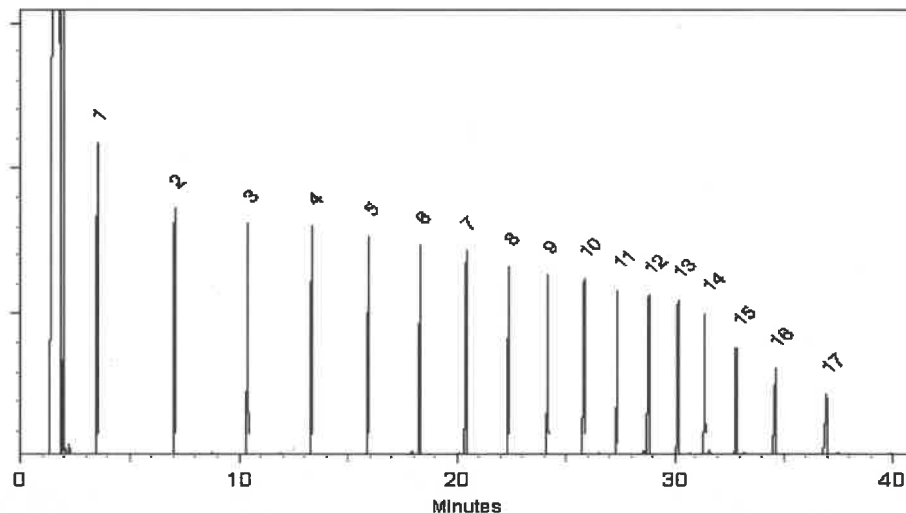
**Inj. Temp:**  
250°C

**Det. Temp:**  
330°C

**Det. Type:**  
FID

**Split Vent:**  
2 ml/min.

**Inj. Vol**  
1µl

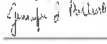


This chromatogram represents a general set of testing conditions chosen for product acceptance. For optimal results in your lab, conditions should be adjusted for your specific instrument, method, and application.

  
Dakota Parson - Operations Technician I

**Date Mixed:** 29-Nov-2023

**Balance Serial #** B442140311

  
Jennifer Pollino - Operations Tech III - ARM QC

**Date Passed:** 01-Dec-2023

Manufactured under Restek's ISO 9001:2015  
Registered Quality System  
Certificate #FM 80397

## General Certified Reference Material Notes

### Expiration Notes:

- Expiration date valid for unopened ampul stored in compliance with the recommended conditions.
- Uncertainty, concentration, and expiration of the CRM are based on the unopened product being stored according to the recommended condition found in the storage field.

### Purity Notes:

- Purity and/or chemical identity are determined by one or more of the following techniques: GC/FID, HPLC, GC/ $\mu$ ECD, GC/MS, LC/MS, RI, and/or melting point.
- Compounds with a listed purity of less than 99% have been weight corrected to compensate for impurities and/or salts. A correction factor is used to calculate the amount of compound necessary to achieve the desired concentration of the parent compound in solution.
- Purity of isomeric compounds is reported as the sum of the isomers.
- Purity values are rounded to the nearest whole number.

### Certified Uncertainty Value Notes:

- The uncertainties are determined in accordance with ISO 17034 and Guide 35. The certified expanded uncertainty value includes gravimetric uncertainty, homogeneity between-ampul uncertainty, storage stability uncertainty and shipping stability uncertainty and were combined using the following formula:

$$U_{combined\ uncertainty} = k \sqrt{u_{gravimetric}^2 + u_{homogeneity}^2 + u_{storage\ stability}^2 + u_{shipping\ stability}^2}$$

$k$  is a coverage factor of 2, which gives a level of confidence of approximately 95%.

- The packaged amount is the minimum sample size for which uncertainty is valid. The ampuls are over-filled to ensure that the minimum packaged amount can be sufficiently transferred.

### Manufacturing Notes:

- Concentration is based upon gravimetric preparation using either a balance whose calibration has been verified daily using NIST traceable weights, and/or dilutions with Class A glassware.

### Handling Notes:

- Stability of the unopened product, when stored in compliance with the recommended conditions, is guaranteed through the expiration displayed on the product label and certificate. Contact Restek for additional opened product stability information, with the knowledge/understanding that open product stability is subject to the specific handling and environmental conditions to which the product is exposed. For your convenience Restek supplies deactivated vials with most standards packed in 2mL ampuls. Larger volume deactivated vials are available through Restek as a custom ordered item. Additionally, Restek sells DMDCS for the purpose of glassware deactivation as catalog number 31861, which includes complete instructions.
- If any undissolved material is visible inside the ampul, sonicate the unopened ampul until the material is completely dissolved.





Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

72072  
101122  
n-Tetracosane-d50

Solvent(s):  
Methylene chloride

Lot#  
105345

Expiration Date:  
Recommended Storage:  
Nominal Concentration (µg/mL):  
NIST Test ID#:

101132  
Ambient (20 °C)  
1000  
6UTB

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

Weight(s) shown below were combined and diluted to (mL):

200.0

| Compound | RM# | Lot Number | Nominal Conc (µg/mL) | Purity (%) | Purity Uncertainty (%D) | Assay | Target Weight(g) | Actual Weight(g) | Actual Conc (µg/mL) | Expanded Uncertainty (+/-) (µg/mL) | SDS Information                        |      |                |
|----------|-----|------------|----------------------|------------|-------------------------|-------|------------------|------------------|---------------------|------------------------------------|----------------------------------------|------|----------------|
|          |     |            |                      |            |                         |       |                  |                  |                     |                                    | (Solvent Safety Info. On Attached pg.) | CAS# | OSHA PEL (TWA) |

1. n-Tetracosane-d50

2072 PR-26606

1000

98.7

0.2

99.0

0.20471

0.20482

1000.6

4.1

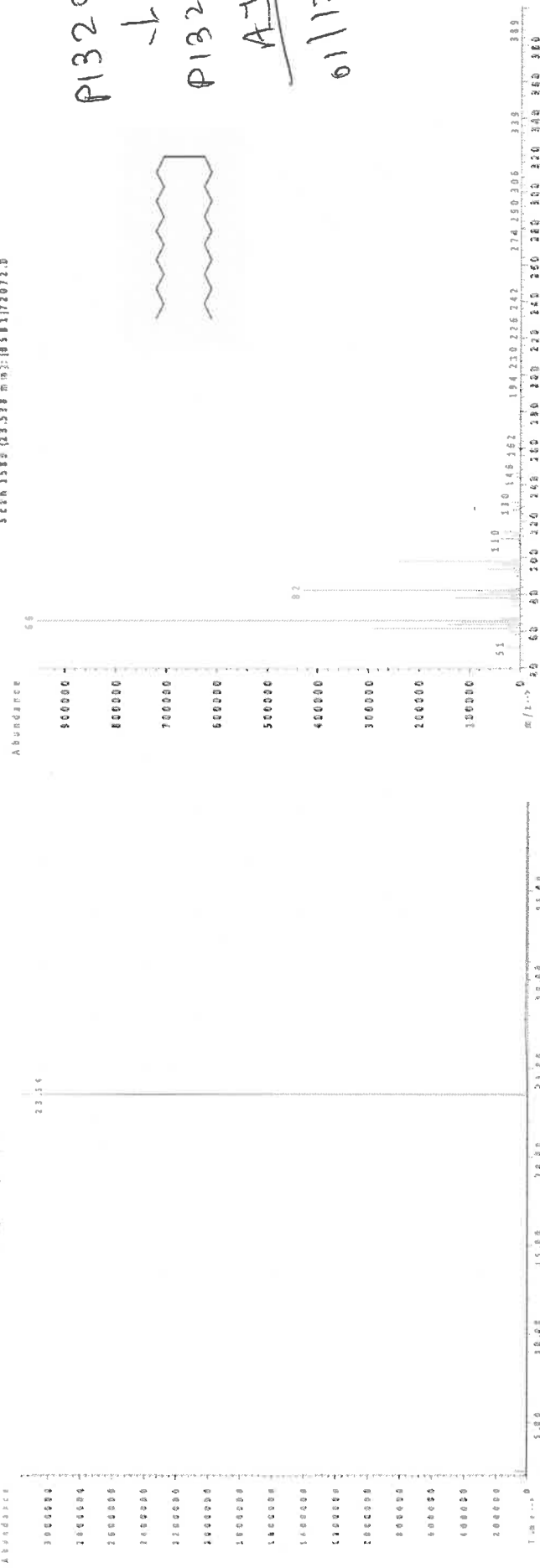
16416-32-3

N/A

N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.

FIGURE 1: 101122-2



The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.  
Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).  
Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.  
All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.  
Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

72072  
101122  
n-Tetracosane-d50

Solvent(s):  
Methylene chloride

Lot#  
105345

Expiration Date:  
Recommended Storage:  
Nominal Concentration (µg/mL):  
NIST Test ID#:

101132  
Ambient (20 °C)  
1000  
6UTB

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

Weight(s) shown below were combined and diluted to (mL):

200.0

| Compound | RM# | Lot Number | Nominal Conc (µg/mL) | Purity (%) | Uncertainty (%D) | Assay | Target Weight(g) | Actual Weight(g) | Actual Conc (µg/mL) | Expanded Uncertainty (+/-) (µg/mL) | SDS Information                        |      |                |
|----------|-----|------------|----------------------|------------|------------------|-------|------------------|------------------|---------------------|------------------------------------|----------------------------------------|------|----------------|
|          |     |            |                      |            |                  |       |                  |                  |                     |                                    | (Solvent Safety Info. On Attached pg.) | CAS# | OSHA PEL (TWA) |

1. n-Tetracosane-d50

2072 PR-26606

1000

98.7

0.2

99.0

0.20471

0.20482

1000.6

4.1

16416-32-3

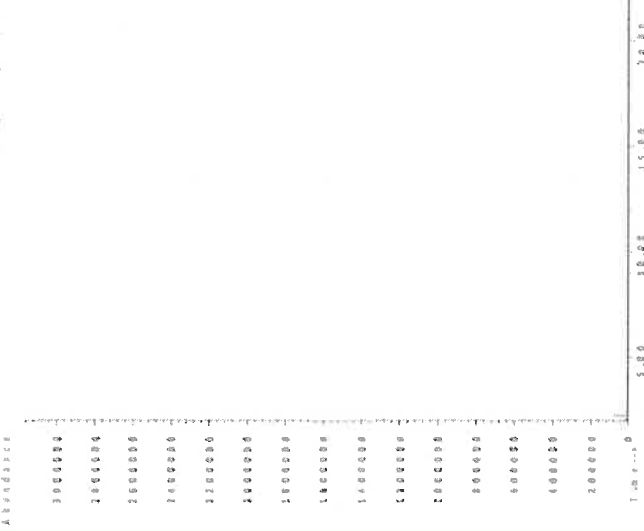
N/A

N/A

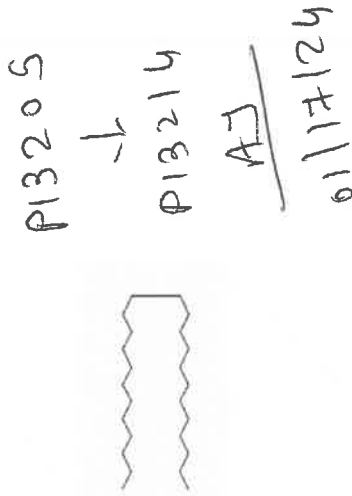
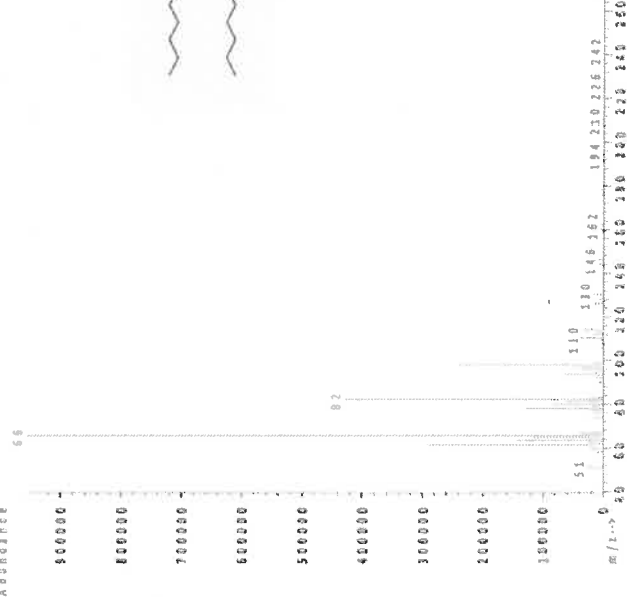
N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.

FIGURE 1: 72072.D



Scan 1589 (3.538 min.): 050172072.D



• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.  
• Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).  
• Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.  
• All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.  
• Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

72072  
101122  
n-Tetracosane-d50

Solvent(s):  
Methylene chloride

Lot#  
105345

Expiration Date:  
Recommended Storage:  
Nominal Concentration (µg/mL):  
NIST Test ID#:

101132  
Ambient (20 °C)  
1000  
6UTB

Weight(s) shown below were combined and diluted to (mL):

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

200.0

| Compound | RM# | Lot Number | Nominal Conc (µg/mL) | Purity (%) | Uncertainty (%D) | Assay | Target Weight(g) | Actual Weight(g) | Actual Conc (µg/mL) | Expanded Uncertainty (+/-) (µg/mL) | SDS Information                        |      |                |
|----------|-----|------------|----------------------|------------|------------------|-------|------------------|------------------|---------------------|------------------------------------|----------------------------------------|------|----------------|
|          |     |            |                      |            |                  |       |                  |                  |                     |                                    | (Solvent Safety Info. On Attached pg.) | CAS# | OSHA PEL (TWA) |

1. n-Tetracosane-d50

2072 PR-26606

1000

98.7

0.2

99.0

0.20471

0.20482

1000.6

4.1

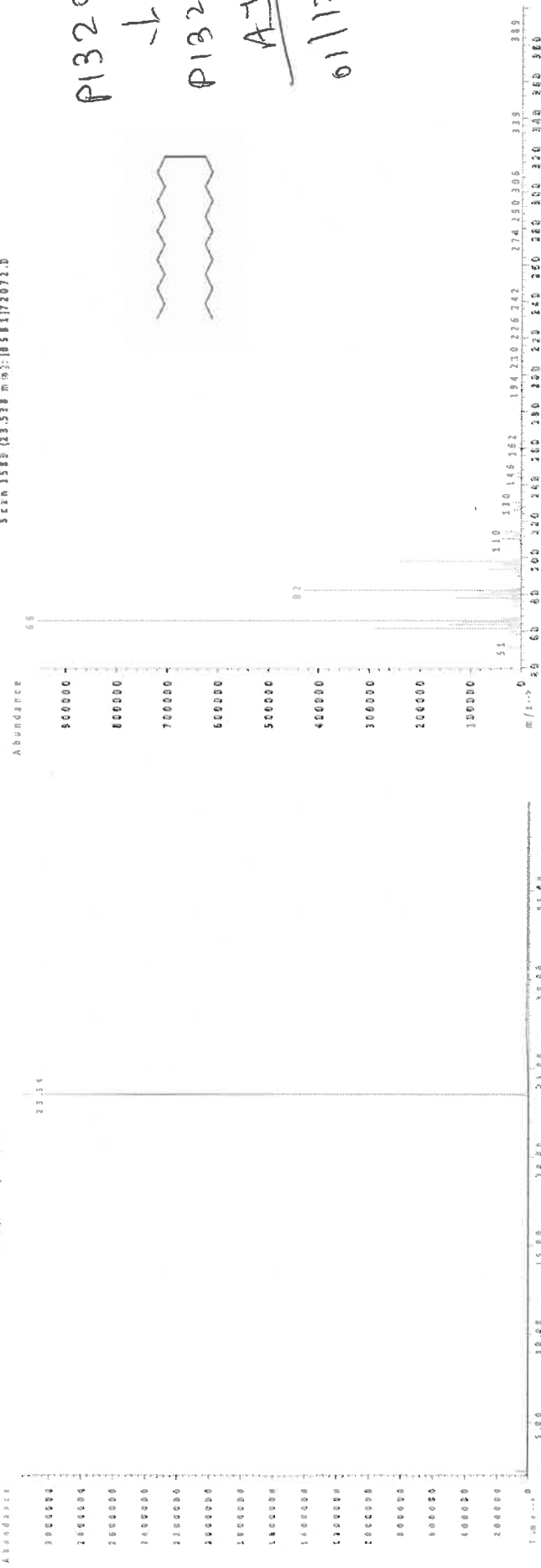
16416-32-3

N/A

N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.

FIGURE 1: 101122-2



The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.  
Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).  
Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.  
All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.  
Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



# CERTIFIED WEIGHT REPORT

|                     |  |
|---------------------|--|
| <b>Part Number:</b> |  |
| <b>Lot Number:</b>  |  |
| <b>Description:</b> |  |

**72072**  
**101122**  
**n-Tetracosane-d50**

|                    |             |
|--------------------|-------------|
| <b>Solvent(s):</b> | <b>Lot#</b> |
| Methylene chloride | 105345      |

|                                 |        |
|---------------------------------|--------|
| Formulated By: Prashant Chauhan | 101122 |
|---------------------------------|--------|

|                      |                 |
|----------------------|-----------------|
| Expiration Date:     | 101132          |
| Recommended Storage: | Ambient (20 °C) |

**Nominal Concentration ( $\mu\text{g/mL}$ ):**  
**NIST Test ID#:**

**Weight(s) shown below were combined and diluted to (mL):**

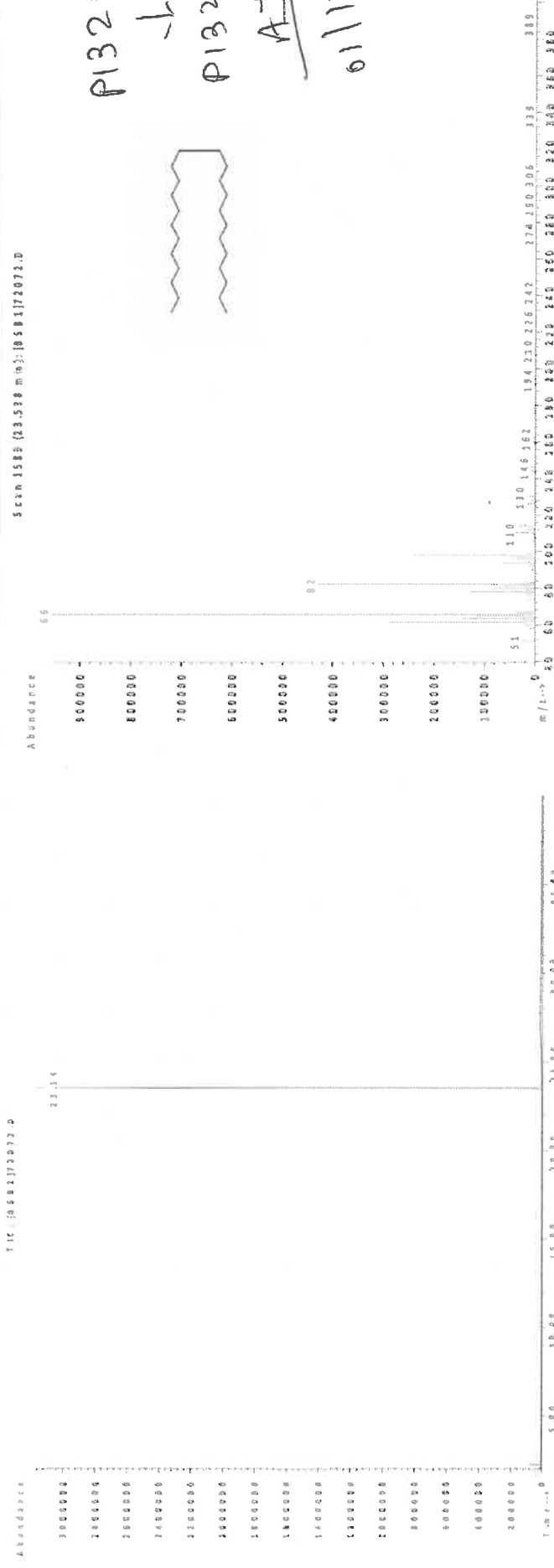
5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

## SDS Information

| Uncertainty   | (Solvent Safety Info. On Attached pg.) | CAS# | QSHA PEL (TWA) | LD50 |
|---------------|----------------------------------------|------|----------------|------|
| (+/-) (µg/mL) |                                        |      |                |      |

[illegible]

**Method GC8MSD-3.M:** Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.



• The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.

- Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).
- Standards are certified ( $\pm$ ) 0.5% of the stated value, unless otherwise stated.

- All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.

• Uncertainty Reference: Taylor, B.N. and Kuyatt, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Results," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

72072  
101122  
n-Tetracosane-d50

Solvent(s):  
Methylene chloride

Lot#  
105345

Expiration Date:  
Recommended Storage:  
Nominal Concentration (µg/mL):  
NIST Test ID#:

101132  
Ambient (20 °C)  
1000  
6UTB

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

Weight(s) shown below were combined and diluted to (mL):

200.0

| Compound | RM# | Lot Number | Nominal Conc (µg/mL) | Purity (%) | Uncertainty (%D) | Assay | Target Weight(g) | Actual Weight(g) | Actual Conc (µg/mL) | Expanded Uncertainty (+/-) (µg/mL) | SDS Information                        |      |                |
|----------|-----|------------|----------------------|------------|------------------|-------|------------------|------------------|---------------------|------------------------------------|----------------------------------------|------|----------------|
|          |     |            |                      |            |                  |       |                  |                  |                     |                                    | (Solvent Safety Info. On Attached pg.) | CAS# | OSHA PEL (TWA) |

1. n-Tetracosane-d50

2072 PR-26606

1000

98.7

0.2

99.0

0.20471

0.20482

1000.6

4.1

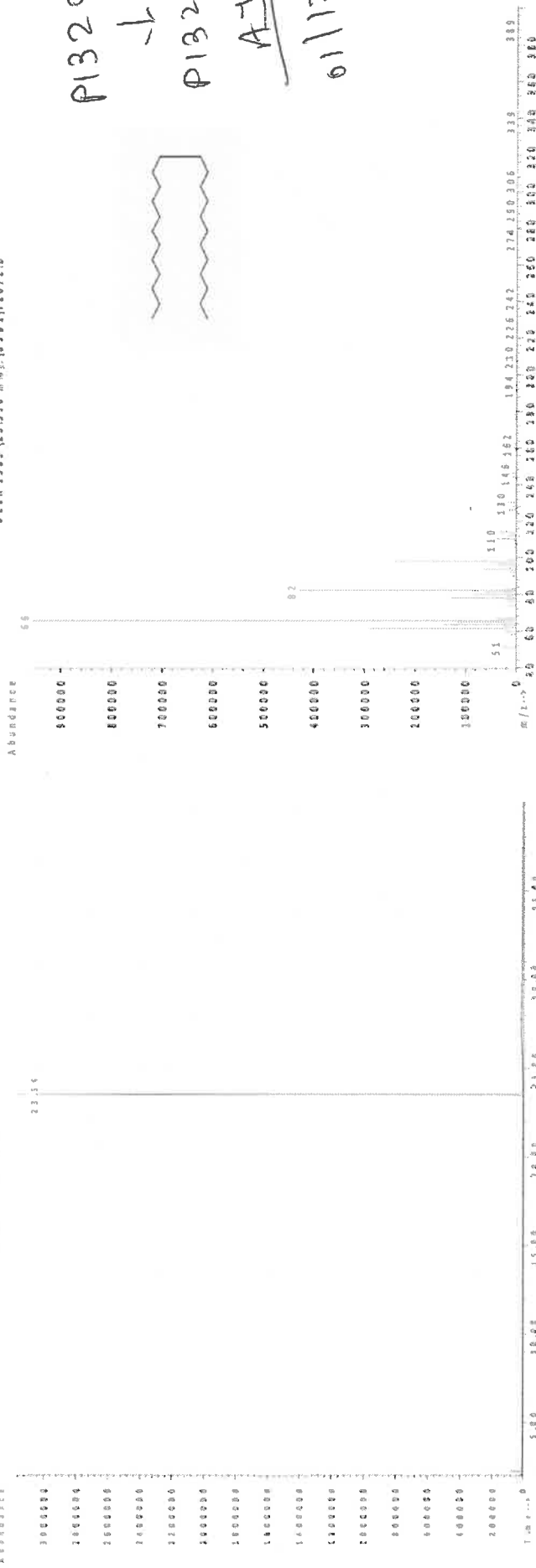
16416-32-3

N/A

N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.

101122



P13205  
↓  
P13214  
A3  
61/17/24

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.  
Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).  
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All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.  
Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



Certified Reference Material CRM



CERTIFIED WEIGHT REPORT

Part Number:  
Lot Number:  
Description:

72072  
101122  
n-Tetracosane-d50

Solvent(s):  
Methylene chloride

Lot#  
105345

Expiration Date:  
Recommended Storage:  
Nominal Concentration (µg/mL):  
NIST Test ID#:

101132  
Ambient (20 °C)  
1000  
6UTB

Weight(s) shown below were combined and diluted to (mL):

5E-05 Balance Uncertainty  
0.058 Flask Uncertainty

200.0

| Compound | RM# | Lot Number | Nominal Conc (µg/mL) | Purity (%) | Uncertainty (%D) | Assay | Target Weight(g) | Actual Weight(g) | Actual Conc (µg/mL) | Expanded Uncertainty (+/-) (µg/mL) | SDS Information                        |      |                |
|----------|-----|------------|----------------------|------------|------------------|-------|------------------|------------------|---------------------|------------------------------------|----------------------------------------|------|----------------|
|          |     |            |                      |            |                  |       |                  |                  |                     |                                    | (Solvent Safety Info. On Attached pg.) | CAS# | OSHA PEL (TWA) |

1. n-Tetracosane-d50

2072 PR-26606

1000

98.7

0.2

99.0

0.20471

0.20482

1000.6

4.1

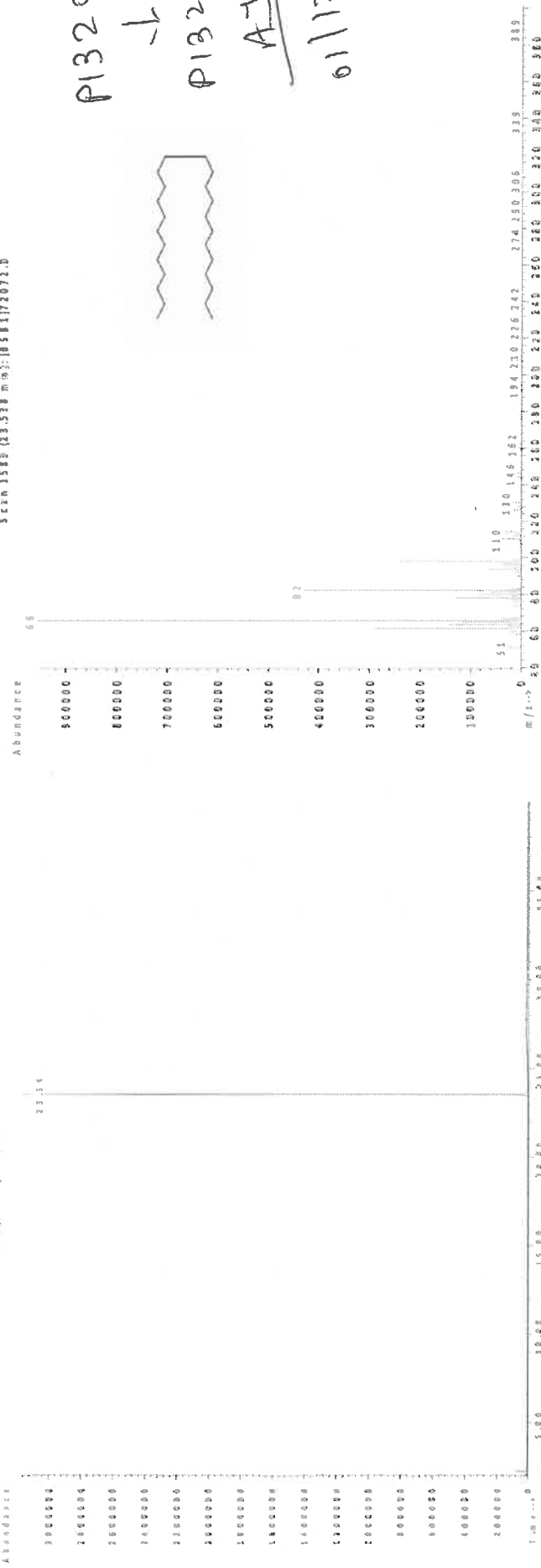
16416-32-3

N/A

N/A

Method GC8MSD-3.M: Column:SPB-5 (30m X 0.25mm ID X 0.25µm film thickness) Temp 1 = 50°C (1min.), Temp 2 = 300°C (9min.), Rate = 10°C/min., Injector B= 250°C, Detector B = 275°C, Split Ratio = 100:1, Scan Rate = 2. Analysis performed by: Candice Warren.

FIGURE 1: 101122-2



P13205  
↓  
P13214  
A3  
61/17/24

The certified value is the concentration calculated from gravimetric and volumetric measurements unless otherwise stated.  
Standards are prepared gravimetrically using balances that are calibrated with weights traceable to NIST (see above).  
Standards are certified (+/-) 0.5% of the stated value, unless otherwise stated.  
All Standards, after opening ampule, should be stored with caps tight and under appropriate laboratory conditions.  
Uncertainty Reference: Taylor, B.N. and Kuyat, C.E., "Guidelines for Evaluating and Expressing the Uncertainty of NIST Measurement Result," NIST Technical Note 1297, U.S. Government Printing Office, Washington, DC, (1994).



5580 Skylane Blvd  
Santa Rosa, CA 95403

Manufacturer's Quality System  
Audited & Registered  
by TUV USA to ISO 9001:2015

(707)525-5788  
(800)878-7654 Toll Free  
(707)545-7901 Fax

Date Received: \_\_\_\_\_

## Certificate of Analysis

Page 1 of 1

Catalog No.: Lot No.: Storage:

Z-110400-05 514983 ≤ -10 Degrees C

Solvent:

Hexane

Exp. Date:

11/20/2028

Description:

TRPH Standard (C8-C40), 500 mg/L, 1 ml

-01

### Compound

CAS No.

Purity (%)

Compound Lot No.

Concentration, mg/L

decane (C10)

124-18-5

99.7

415.7.2P

498.5 ± 6.92

docosane (C22)

629-97-0

98.8

420.9.1P

499.4 ± 6.93

dodecane (C12)

112-40-3

99.7

416.9.3P

502 ± 6.97

dotriacontane (C32)

544-85-4

97

425.9.2.2P

499.6 ± 8.53

eicosane (C20)

112-95-8

99.8

419.7.1P

501 ± 6.95

hexacosane (C26)

630-01-3

99.3

422.7.2.1P

501 ± 6.95

hexatriacontane (C36)

630-06-8

98

427.29.1.1P

499.3 ± 8.53

n-hexadecane (C16)

544-76-3

99.45

368.27.1.1P

498.7 ± 6.91

octacosane (C28)

630-02-4

99.1

423.24.1P

500.5 ± 6.95

n-octadecane (C18)

593-45-3

99.5

418.29.1P

499.5 ± 6.92

octane (C8)

111-65-9

99.4

385.7.2.1P

498.5 ± 6.92

octatriacontane (C38)

7194-85-6

95

428.1.2P

500.2 ± 6.94

tetracontane (C40)

4181-95-7

97

429.7.2P

499.6 ± 6.93

n-tetracosane (C24)

646-31-1

99.5

421.7.1P

499.5 ± 6.93

n-tetradecane (C14)

629-59-4

99.3

417.9.1P

500 ± 6.94

tetatriacontane (C34)

14167-59-0

96.1

426.7.2.2P

499.7 ± 8.53

triacontane (C30)

638-68-6

99.5

424.7.1.1P

500 ± 6.94

Let the standard warm to room temperature and sonicate before opening.

P13215

↓

P13224

AJ  
01131124

\*Not a certified value

*Andrea Schaible*

Andrea Schaible  
Chemist

Certified By: \_\_\_\_\_

All weights are traceable through N. I. S. T. Test No. 822/264157-00.  
Concentration (correct for purity) and uncertainty (95% confidence) values  
listed are determined gravimetrically.



5580 Skyline Blvd  
Santa Rosa, CA 95403  
(707)525-5788  
(800)878-7654 Toll Free  
(707)545-7901 Fax

Manufacturer's Quality System  
Audited & Registered  
by TUV USA to ISO 9001:2015

Date Received: \_\_\_\_\_

## Certificate of Analysis

Page 1 of 1

| Catalog No.:           | Lot No.: | Storage:        | Solvent:   | Exp. Date: | Description:                           |                     |
|------------------------|----------|-----------------|------------|------------|----------------------------------------|---------------------|
| Z-110400-05            | 514983   | ≤ -10 Degrees C | Hexane     | 11/20/2028 | TRPH Standard (C8-C40), 500 mg/L, 1 ml |                     |
| -01                    |          |                 |            |            |                                        |                     |
| Compound               |          |                 | CAS No.    | Purity (%) | Compound Lot No.                       | Concentration, mg/L |
| decane (C10)           |          |                 | 124-18-5   | 99.7       | 415.7.2P                               | 498.5 ± 6.92        |
| docosane (C22)         |          |                 | 629-97-0   | 98.8       | 420.9.1P                               | 499.4 ± 6.93        |
| dodecane (C12)         |          |                 | 112-40-3   | 99.7       | 416.9.3P                               | 502 ± 6.97          |
| dotriacontane (C32)    |          |                 | 544-85-4   | 97         | 425.9.2.2P                             | 499.6 ± 8.53        |
| eicosane (C20)         |          |                 | 112-95-8   | 99.8       | 419.7.1P                               | 501 ± 6.95          |
| hexacosane (C26)       |          |                 | 630-01-3   | 99.3       | 422.7.2.1P                             | 501 ± 6.95          |
| hexatriacontane (C36)  |          |                 | 630-06-8   | 98         | 427.29.1.1P                            | 499.3 ± 8.53        |
| n-hexadecane (C16)     |          |                 | 544-76-3   | 99.45      | 368.27.1.1P                            | 498.7 ± 6.91        |
| octacosane (C28)       |          |                 | 630-02-4   | 99.1       | 423.24.1P                              | 500.5 ± 6.95        |
| n-octadecane (C18)     |          |                 | 593-45-3   | 99.5       | 418.29.1P                              | 499.5 ± 6.92        |
| octane (C8)            |          |                 | 111-65-9   | 99.4       | 385.7.2.1P                             | 498.5 ± 6.92        |
| octatriacontane (C38)  |          |                 | 7194-85-6  | 95         | 428.1.2P                               | 500.2 ± 6.94        |
| tetracontane (C40)     |          |                 | 4181-95-7  | 97         | 429.7.2P                               | 499.6 ± 6.93        |
| n-tetracosane (C24)    |          |                 | 646-31-1   | 99.5       | 421.7.1P                               | 499.5 ± 6.93        |
| n-tetradecane (C14)    |          |                 | 629-59-4   | 99.3       | 417.9.1P                               | 500 ± 6.94          |
| tetratriacontane (C34) |          |                 | 14167-59-0 | 96.1       | 426.7.2.2P                             | 499.7 ± 8.53        |
| triacontane (C30)      |          |                 | 638-68-6   | 99.5       | 424.7.1.1P                             | 500 ± 6.94          |

P 13215

↓

P 13224

AJ  
01131124

\*Not a certified value

Let the standard warm to room temperature and sonicate before opening.

*Andrea Schaible*

Andrea Schaible  
Chemist

Certified By: \_\_\_\_\_

All weights are traceable through N. I. S. T. Test No. 822/264157-00.  
Concentration (correct for purity) and uncertainty (95% confidence) values  
listed are determined gravimetrically.



# SHIPPING DOCUMENTS

# Packing List

6390 Joyce Dr., #100  
Golden, CO 80403

Tel: +1-303-940-0033  
Fax: +1-303-940-0043  
info@phenova.com  
www.phenova.com

For terms and conditions of your order, please visit:  
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| Date       | Order # |
|------------|---------|
| 09/03/2024 | 318988  |



## Ship To

Chemtech - NJ  
ATTN: Sohil Jodhani  
284 Sheffield St., #1  
Mountainside, NJ 07092  
USA

Received by: SJ  
9/5/2024  
9:50

| Customer PO # | Terms  | PT Acct # | Customer # | Ship Via      | F.O.B.     |
|---------------|--------|-----------|------------|---------------|------------|
| 240802-01     | Net 30 | ZCM-100   | 1500470    | FedEx 2nd Day | Golden, CO |

| Qty Ordered | Qty Shipped | Qty Backorder | Part Number  | Part Description                         | Study Number | Lot Number |
|-------------|-------------|---------------|--------------|------------------------------------------|--------------|------------|
|             |             |               | PT-TMSET-WP  | WP Trace Metals Set : (TM1, HG and SNTI) |              |            |
| 1           | 1           | 0             | PT-TM1-WP    | WP Trace Metals 1                        | WP0924       | 8259-04    |
| 1           | 1           | 0             | PT-HG-WP     | WP Mercury                               | WP0924       | 8259-05    |
| 1           | 1           | 0             | PT-SNTI-WP   | WP Tin & Titanium                        | WP0924       | 8259-38    |
| 1           | 1           | 0             | PT-CR6-WP    | WP Hexavalent Chromium                   | WP0924       | 8259-06    |
| 1           | 1           | 0             | PT-DEM-WP    | WP Demand                                | WP0924       | 8259-07    |
|             |             |               | PT-MINSET-WP | WP Minerals Set : (MIN1, MIN2 and COND)  |              |            |
| 1           | 1           | 0             | PT-MIN1-WP   | WP Minerals 1 Only                       | WP0924       | 8259-08    |
| 1           | 1           | 0             | PT-MIN2-WP   | WP Minerals 2 Only                       | WP0924       | 8259-102   |
| 1           | 1           | 0             | PT-COND-WP   | WP Conductivity Only                     | WP0924       | 8259-72    |
| 1           | 1           | 0             | PT-SOL-WP    | WP Solids                                | WP0924       | 8259-09    |
|             |             |               | PT-NUTSET-WP | WP Nutrients Set : (NUT1, NUT2 and NUT3) |              |            |
| 1           | 1           | 0             | PT-NUT1-WP   | WP NUT1 Simple Nutrients Only            | WP0924       | 8259-10    |
| 1           | 1           | 0             | PT-NUT2-WP   | WP NUT2 - Complex Nutrients              | WP0924       | 8259-11    |
| 1           | 1           | 0             | PT-NUT3-WP   | WP NUT3 - Nitrite Only                   | WP0924       | 8259-69    |
| 1           | 1           | 0             | PT-OGR1L-WP  | WP Oil and Grease 1L                     | WP0924       | 8259-103   |
| 1           | 1           | 0             | PT-CL-WP     | WP Residual Chlorine                     | WP0924       | 8259-13    |
| 1           | 1           | 0             | PT-PH-WP     | WP pH                                    | WP0924       | 8259-15    |
| 1           | 1           | 0             | PT-CN-WP     | WP Cyanide                               | WP0924       | 8259-14    |
| 1           | 1           | 0             | PT-PHEN-WP   | WP Phenolics                             | WP0924       | 8259-16    |

# Packing List

6390 Joyce Dr., #100  
Golden, CO 80403

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Fax: +1-303-940-0043  
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For terms and conditions of your order, please visit:  
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| Date       | Order # |
|------------|---------|
| 09/03/2024 | 318988  |



## Ship To

Chemtech - NJ  
ATTN: Sohil Jodhani  
284 Sheffield St., #1  
Mountainside, NJ 07092  
USA

Received by: SJ  
9/5/2024  
9:50

| Customer PO # | Terms  | PT Acct # | Customer # | Ship Via      | F.O.B.     |
|---------------|--------|-----------|------------|---------------|------------|
| 240802-01     | Net 30 | ZCM-100   | 1500470    | FedEx 2nd Day | Golden, CO |

| Qty Ordered | Qty Shipped | Qty Backorder | Part Number    | Part Description           | Study Number | Lot Number |
|-------------|-------------|---------------|----------------|----------------------------|--------------|------------|
| 1           | 1           | 0             | PT-S2-WP       | WP Sulfide                 | WP0924       | 8259-22    |
| 1           | 1           | 0             | PT-SSOL-WP     | WP Settleable Solids       | WP0924       | 8259-17    |
| 1           | 1           | 0             | PT-VSOL-WP     | WP Volatile Solids         | WP0924       | 8259-18    |
| 1           | 1           | 0             | PT-TURB-WP     | WP Turbidity               | WP0924       | 8259-20    |
| 1           | 1           | 0             | PT-SIO2-WP     | WP Silica                  | WP0924       | 8259-21    |
| 1           | 1           | 0             | PT-COL-WP      | WP Color                   | WP0924       | 8259-51    |
| 1           | 1           | 0             | PT-VOA-WP      | WP Volatiles               | WP0924       | 8259-26    |
| 1           | 1           | 0             | PT-BN-WP       | WP Base Neutrals           | WP0924       | 8259-27    |
| 1           | 1           | 0             | PT-ACIDS-WP    | WP Acids                   | WP0924       | 8259-28    |
| 1           | 1           | 0             | PT-PEST-WP     | WP Pesticides              | WP0924       | 8259-29    |
| 1           | 1           | 0             | PT-CHLR-WP     | WP Chlordane               | WP0924       | 8259-30    |
| 1           | 1           | 0             | PT-TXP-WP      | WP Toxaphene               | WP0924       | 8259-31    |
| 1           | 1           | 0             | PT-PCBW-WP     | WP PCBs in Water           | WP0924       | 8259-32    |
| 1           | 1           | 0             | PT-HERB-WP     | WP Herbicides              | WP0924       | 8259-36    |
| 1           | 1           | 0             | RR-TPH1L-WP    | WP TPH 1L                  | R39151       | R39151-104 |
| 1           | 1           | 0             | RR-PAH-WP      | WP PAH-Low Level           | R39151       | R39151-37  |
| 1           | 1           | 0             | RR-GAS-WP      | WP Gasoline Range Organics | R39151       | R39151-62  |
| 1           | 1           | 0             | RR-DIES-WP     | WP Diesel Range Organics   | R39151       | R39151-63  |
| 1           | 1           | 0             | RR-8011-WP     | WP EDB/DBCP/TCP            | R39151       | R39151-98  |
| 1           | 1           | 0             | RR-TRIAZINE-WP | WP Triazine Pesticides     | R39151       | R39151-108 |



284 Sheffield Street, Mountainside NJ 07092 (908)-789-8900 Fax : 908 789 8922

### Laboratory Certification

| Certified By         | License No.      |
|----------------------|------------------|
|                      |                  |
| CAS EPA CLP Contract | 68HERH20D0011    |
|                      |                  |
| Connecticut          | PH-0830          |
|                      |                  |
| DOD ELAP (L-A-B)     | L2219            |
|                      |                  |
| Maine                | 2024021          |
|                      |                  |
| Maryland             | 296              |
|                      |                  |
| New Hampshire        | 255423           |
|                      |                  |
| New Jersey           | 20012            |
|                      |                  |
| New York             | 11376            |
|                      |                  |
| Pennsylvania         | 68-00548         |
|                      |                  |
| Soil Permit          | 525-24-234-08441 |
|                      |                  |
| Texas                | T104704488       |