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LABORATORY REPORT

May 4, 2016

Shane Lowe
CH2M Hill
1034 South Brentwood Blvd., Suite 2300
Richmond Heights, MO 63117

RE: EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund

Dear Shane:

Enclosed are the results of the samples submitted to our laboratory on April 26, 2016. For your reference, these analyses have been assigned our service request number P1602145.

All analyses were performed according to our laboratory's NELAP and DoD-ELAP-approved quality assurance program. The test results meet requirements of the current NELAP and DoD-ELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP and DoD-ELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. Results are intended to be considered in their entirety and apply only to the samples analyzed and reported herein.

If you have any questions, please call me at (805) 526-7161.

Respectfully submitted,

ALS | Environmental

By Kelly Horiuchi at 12:21 pm, May 04, 2016

Kelly Horiuchi
Laboratory Director

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Client: CH2M Hill Service Request No: P1602145
Project: EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund

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CASE NARRATIVE

The samples were received intact under chain of custody on April 26, 2016 and were stored in accordance with the analytical method requirements. Please refer to the sample acceptance check form for additional information. The results reported herein are applicable only to the condition of the samples at the time of sample receipt.

Volatile Organic Compound Analysis

The samples were analyzed in scan and SIM mode for volatile organic compounds in accordance with EPA Method TO-15 from the Compendium of Methods for the Determination of Toxic Organic Compounds in Ambient Air, Second Edition (EPA/625/R-96/010b), January, 1999. This procedure is described in laboratory SOP VOA-TO15. The analytical system was comprised of a gas chromatograph / mass spectrometer (GC/MS) interfaced to a whole-air preconcentrator. This method is included on the laboratory's NELAP and DoD-ELAP scope of accreditation, however it is not part of the AIHA-LAP accreditation. Any analytes flagged with an X are not included on the NELAP or DoD-ELAP accreditation.

The containers were cleaned, prior to sampling, down to the method reporting limit (MRL) reported for this project. Please note, projects which require reporting below the MRL could have results between the MRL and method detection limit (MDL) that are biased high.

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ALS Environmental – Simi Valley

CERTIFICATIONS, ACCREDITATIONS, AND REGISTRATIONS

Agency	Web Site	Number
AIHA	http://www.aihaaccreditedlabs.org	101661
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0694
DoD ELAP	http://www.pjlabs.com/search-accredited-labs	L15-398
Florida DOH (NELAP)	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E871020
Maine DHHS	http://www.maine.gov/dhhs/mecdc/environmental-health/water/dwp-services/labcert/labcert.htm	2014025
Minnesota DOH (NELAP)	http://www.health.state.mn.us/accreditation	977273
New Jersey DEP (NELAP)	http://www.nj.gov/dep/oqa/	CA009
New York DOH (NELAP)	http://www.wadsworth.org/labcert/elap/elap.html	11221
Oregon PHD (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	4068-003
Pennsylvania DEP	http://www.depweb.state.pa.us/labs	68-03307 (Registration)
Texas CEQ (NELAP)	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704413-15-6
Utah DOH (NELAP)	http://www.health.utah.gov/lab/labimp/certification/index.html	CA016272015-5
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C946

Analyses were performed according to our laboratory's NELAP and DoD-ELAP approved quality assurance program. A complete listing of specific NELAP and DoD-ELAP certified analytes can be found in the certifications section at www.alsglobal.com, or at the accreditation body's website.

Each of the certifications listed above have an explicit Scope of Accreditation that applies to specific matrices/methods/analytes; therefore, please contact the laboratory for information corresponding to a particular certification.

ALS ENVIRONMENTAL

DETAIL SUMMARY REPORT

Client: CH2M Hill
Service Request: P1602145
Project ID: EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund

Date Received: 4/26/2016
Time Received: 09:15

Client Sample ID	Lab Code	Matrix	Date Collected	Time Collected	Container ID	Pi1 (psig)	Pf1 (psig)	TO-15 - VOC Cans	TO-15 - VOC SIM
GM-SS-001-041916	P1602145-001	Air	4/19/2016	17:11	SC02069	-5.44	3.60	X	
GM-SS-002-041916	P1602145-002	Air	4/19/2016	17:14	SC00566	-0.63	3.70	X	
GM-SS-003-041916	P1602145-003	Air	4/19/2016	17:18	SC01493	-3.18	3.57	X	
GM-IA-007-041916	P1602145-004	Air	4/19/2016	17:41	AS00019	-4.75	3.64		X
GM-SS-019-041916	P1602145-005	Air	4/19/2016	14:17	SSC00345	-3.29	3.60	X	
GM-SS-020-041916	P1602145-006	Air	4/19/2016	16:29	SC01728	-4.20	3.76	X	
GM-IA-006-041916	P1602145-007	Air	4/19/2016	17:24	AC02130	-4.88	3.69		X
GM-CS-003-041916	P1602145-008	Air	4/19/2016	16:34	SC01973	-4.58	3.57		X

P1602145

USEPA CLP COC (LAB COPY)

DateShipped: 4/20/2016

CarrierName: FedEx

AirbillNo: 649211254933

CHAIN OF CUSTODY RECORD

Contact Name: Kaitlin Ma

Contact Phone: 917-273-8482

No: 5-042016-103154-0024

Lab: ALS Analytical Services

Lab Contact:

Lab Phone:

	Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
1	GM-SS-001-041916	16CN02-01	Sub Slab/ CH2M	Grab	TO 15(7)	5-23751 (NONE) (1)	GM-SS-001	04/19/2016 17:11	
2	GM-SS-002-041916	16CN02-02	Sub Slab/ CH2M	Grab	TO 15(7)	5-23752 (NONE) (1)	GM-SS-002	04/19/2016 17:14	
3	GM-SS-003-041916	16CN02-03	Sub Slab/ CH2M	Grab	TO 15(7)	5-23753 (NONE) (1)	GM-SS-003	04/19/2016 17:18	
4	GM-IA-007-041916	16CN02-54	Indoor Air/ CH2M	Grab	TO-15 SIM(7)	5-23707 (NONE) (1)	GM-IA-007	04/19/2016 17:41	

Special Instructions: Custody Seal Nos: 56989, 56990

Shipment for Case Complete? N

Samples Transferred From Chain of Custody #

Analysis Key: TO 15=TO-15 VOCs- (site-specific), TO-15 SIM=TO-15 VOCs SIM (site-specific)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	James F. Mallon CH2M	4/20/16 1300	4/21/16 0915		

P168 245

USEPA CLP COC (LAB COPY)
DateShipped: 4/20/2016
CarrierName: FedEx
AirbillNo: 649211254852

CHAIN OF CUSTODY RECORD

Contact Name: Kaitlin Ma
Contact Phone: 917-273-8482

No: 5-042016-104214-0025
Lab: ALS Analytical Services
Lab Contact:
Lab Phone:

	Sample Identifier	CLP Sample No.	Matrix/Sampler	Coll. Method	Analysis/Turnaround (Days)	Tag/Preservative/Bottles	Location	Collection Date/Time	For Lab Use Only
5	GM-SS-019-041916	16CN02-21	Sub Slab/ CH2M	Grab	TO 15(7)	5-23771 (NONE) (1)	GM-SS-019	04/19/2016 14:17	
6	GM-SS-020-041916	16CN02-22	Sub Slab/ CH2M	Grab	TO 15(7)	5-23772 (NONE) (1)	GM-SS-020	04/19/2016 16:29	
7	GM-IA-006-041916	16CN02-53	Indoor Air/ CH2M	Grab	TO-15 SIM(7)	5-23706 (NONE) (1)	GM-IA-006	04/19/2016 17:24	
8	GM-CS-003-041916	16CN02-90	Crawl Space/ CH2M	Grab	TO-15 SIM(7)	5-23743 (NONE) (1)	GM-CS-003	04/19/2016 16:34	

6 of 225

Special Instructions: Custody Seal Nos: 56991, 56992	Shipment for Case Complete? N
	Samples Transferred From Chain of Custody #

Analysis Key: TO 15=TO-15 VOCs- (site-specific), TO-15 SIM=TO-15 VOCs SIM (site-specific)

Items/Reason	Relinquished by (Signature and Organization)	Date/Time	Received by (Signature and Organization)	Date/Time	Sample Condition Upon Receipt
	James F. Mathis CH2M	4/20/16 1300	4/26/16 0915		

ALS Environmental
Sample Acceptance Check Form

Client: CH2M Hill Work order: P1602145

Project: EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund

Sample(s) received on: 4/26/16 Date opened: 4/26/16 by: KKELPE

Note: This form is used for all samples received by ALS. The use of this form for custody seals is strictly meant to indicate presence/absence and not as an indication of compliance or nonconformity. Thermal preservation and pH will only be evaluated either at the request of the client and/or as required by the method/SOP.

		Yes	No	N/A
1	Were **sample containers** properly marked with client sample ID?	☒	☐	☐
2	Did **sample containers** arrive in good condition?	☒	☐	☐
3	Were **chain-of-custody** papers used and filled out?	☒	☐	☐
4	Did **sample container labels** and/or tags agree with custody papers?	☒	☐	☐
5	Was **sample volume** received adequate for analysis?	☒	☐	☐
6	Are samples within specified holding times?	☒	☐	☐
7	Was proper **temperature** (thermal preservation) of cooler at receipt adhered to?	☐	☐	☒
8	Were **custody seals** on outside of cooler/Box/Container?	☒	☐	☐
	Location of seal(s)? sealing boxes Sealing Lid?	☒	☐	☐
	Were signature and date included?	☐	☒	☐
	Were seals intact?	☒	☐	☐
9	Do containers have appropriate **preservation**, according to method/SOP or Client specified information?	☐	☐	☒
	Is there a client indication that the submitted samples are **pH** preserved?	☐	☐	☒
	Were **VOA vials** checked for presence/absence of air bubbles?	☐	☐	☒
	Does the client/method/SOP require that the analyst check the sample pH and if necessary alter it?	☐	☐	☒
10	**Tubes:** Are the tubes capped and intact?	☐	☐	☒
11	**Badges:** Are the badges properly capped and intact?	☐	☐	☒
	Are dual bed badges separated and individually capped and intact?	☐	☐	☒

Lab Sample ID	Container Description	Required pH *	Received pH	Adjusted pH	VOA Headspace (Presence/Absence)	Receipt / Preservation Comments
P1602145-001.01	6.0 L Source Can					
P1602145-002.01	6.0 L Source Can					
P1602145-003.01	6.0 L Source Can					
P1602145-004.01	6.0 L Silonite Can					
P1602145-005.01	6.0 L Silonite Can					
P1602145-006.01	6.0 L Source Can					
P1602145-007.01	6.0 L Ambient Can					
P1602145-008.01	6.0 L Source Can					

Explain any discrepancies: (include lab sample ID numbers):

RSK - MEEPP, HCL (pH<2); RSK - CO2, (pH 5-8); Sulfur (pH>4)

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-001-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-001

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC02069

Initial Pressure (psig): -5.44 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.98

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.99	ND	0.39	
75-09-2	Methylene Chloride	ND	0.99	ND	0.29	
156-60-5	trans-1,2-Dichloroethene	ND	0.99	ND	0.25	
75-34-3	1,1-Dichloroethane	ND	0.99	ND	0.24	
156-59-2	cis-1,2-Dichloroethene	ND	0.99	ND	0.25	
71-55-6	1,1,1-Trichloroethane	ND	0.99	ND	0.18	
79-01-6	Trichloroethene	ND	0.99	ND	0.18	
127-18-4	Tetrachloroethene	**26**	0.99	**3.8**	0.15	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-002-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-002

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/29/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC00566

Initial Pressure (psig): -0.63 Final Pressure (psig): 3.70

Canister Dilution Factor: 1.31

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.66	ND	0.26	
75-09-2	Methylene Chloride	ND	0.66	ND	0.19	
156-60-5	trans-1,2-Dichloroethene	ND	0.66	ND	0.17	
75-34-3	1,1-Dichloroethane	ND	0.66	ND	0.16	
156-59-2	cis-1,2-Dichloroethene	ND	0.66	ND	0.17	
71-55-6	1,1,1-Trichloroethane	ND	0.66	ND	0.12	
79-01-6	Trichloroethene	ND	0.66	ND	0.12	
127-18-4	Tetrachloroethene	**24**	0.66	**3.6**	0.097	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-003-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-003

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/29/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC01493

Initial Pressure (psig): -3.18 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.59

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.80	ND	0.31	
75-09-2	Methylene Chloride	**16**	0.80	**4.6**	0.23	
156-60-5	trans-1,2-Dichloroethene	ND	0.80	ND	0.20	
75-34-3	1,1-Dichloroethane	ND	0.80	ND	0.20	
156-59-2	cis-1,2-Dichloroethene	ND	0.80	ND	0.20	
71-55-6	1,1,1-Trichloroethane	ND	0.80	ND	0.15	
79-01-6	Trichloroethene	**2.9**	0.80	**0.55**	0.15	
127-18-4	Tetrachloroethene	**25**	0.80	**3.8**	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-019-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-005

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/29/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SSC00345

Initial Pressure (psig): -3.29 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.60

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.80	ND	0.31	
75-09-2	Methylene Chloride	**2.9**	0.80	**0.84**	0.23	
156-60-5	trans-1,2-Dichloroethene	**1.3**	0.80	**0.32**	0.20	
75-34-3	1,1-Dichloroethane	ND	0.80	ND	0.20	
156-59-2	cis-1,2-Dichloroethene	**13**	0.80	**3.2**	0.20	
71-55-6	1,1,1-Trichloroethane	**2.0**	0.80	**0.36**	0.15	
79-01-6	Trichloroethene	**81**	0.80	**15**	0.15	
127-18-4	Tetrachloroethene	**2.7**	0.80	**0.40**	0.12	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-020-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-006

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/29/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes: 0.10 Liter(s)
Container ID: SC01728

Initial Pressure (psig): -4.20 Final Pressure (psig): 3.76

Canister Dilution Factor: 1.76

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.88	ND	0.34	
75-09-2	Methylene Chloride	**1.0**	0.88	**0.29**	0.25	
156-60-5	trans-1,2-Dichloroethene	**5.4**	0.88	**1.4**	0.22	
75-34-3	1,1-Dichloroethane	**1.3**	0.88	**0.33**	0.22	
156-59-2	cis-1,2-Dichloroethene	**130**	0.88	**33**	0.22	
71-55-6	1,1,1-Trichloroethane	**8.0**	0.88	**1.5**	0.16	
79-01-6	Trichloroethene	**340**	8.8	**64**	1.6	**D**
127-18-4	Tetrachloroethene	**2.6**	0.88	**0.39**	0.13	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.
D = The reported result is from a dilution.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P160428-MB

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.50	ND	0.20	
75-09-2	Methylene Chloride	ND	0.50	ND	0.14	
156-60-5	trans-1,2-Dichloroethene	ND	0.50	ND	0.13	
75-34-3	1,1-Dichloroethane	ND	0.50	ND	0.12	
156-59-2	cis-1,2-Dichloroethene	ND	0.50	ND	0.13	
71-55-6	1,1,1-Trichloroethane	ND	0.50	ND	0.092	
79-01-6	Trichloroethene	ND	0.50	ND	0.093	
127-18-4	Tetrachloroethene	ND	0.50	ND	0.074	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

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SURROGATE SPIKE RECOVERY RESULTS

Client: **CH2M Hill**
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Project ID: P1602145

Test Code: EPA TO-15
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date(s) Collected: 4/19/16
Analyst: Wida Ang Date(s) Received: 4/26/16
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/28 - 4/29/16
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 Percent Recovered	Toluene-d8 Percent Recovered	Bromofluorobenzene Percent Recovered	Acceptance Limits	Data Qualifier
Method Blank	P160428-MB	**103**	**98**	**104**	70-130	
Lab Control Sample	P160428-LCS	**100**	**94**	**106**	70-130	
GM-SS-001-041916	P1602145-001	**103**	**96**	**103**	70-130	
GM-SS-001-041916	P1602145-001DUP	**103**	**97**	**103**	70-130	
GM-SS-002-041916	P1602145-002	**103**	**96**	**103**	70-130	
GM-SS-003-041916	P1602145-003	**103**	**96**	**103**	70-130	
GM-SS-019-041916	P1602145-005	**103**	**97**	**103**	70-130	
GM-SS-020-041916	P1602145-006	**103**	**98**	**103**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P160428-LCS

Test Code: EPA TO-15 Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: NA
Analyst: Wida Ang Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	**Result µg/m³**	**% Recovery**	ALS Acceptance Limits	**Data Qualifier**
75-01-4	Vinyl Chloride	200	**212**	**106**	65-128	
75-09-2	Methylene Chloride	222	**188**	**85**	63-117	
156-60-5	trans-1,2-Dichloroethene	210	**215**	**102**	69-129	
75-34-3	1,1-Dichloroethane	212	**196**	**92**	66-122	
156-59-2	cis-1,2-Dichloroethene	218	**216**	**99**	65-125	
71-55-6	1,1,1-Trichloroethane	210	**205**	**98**	68-120	
79-01-6	Trichloroethene	216	**195**	**90**	71-121	
127-18-4	Tetrachloroethene	202	**176**	**87**	65-126	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **GM-SS-001-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-001DUP

Test Code: EPA TO-15 Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Date Received: 4/26/16
Analyst: Wida Ang Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC02069

Initial Pressure (psig): -5.44 Final Pressure (psig): 3.60

Canister Dilution Factor: 1.98

Compound	Sample Result µg/m³	Sample Result ppbV	**Duplicate Sample Result µg/m³**	**Duplicate Sample Result** ppbV	Average µg/m³	**% RPD**	RPD Limit	**Data Qualifier**
Vinyl Chloride	ND	ND	ND	ND	-	-	25	
Methylene Chloride	ND	ND	ND	ND	-	-	25	
trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
cis-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
1,1,1-Trichloroethane	ND	ND	ND	ND	-	-	25	
Trichloroethene	ND	ND	ND	ND	-	-	25	
Tetrachloroethene	25.9	3.81	25.8	3.81	25.85	**0.4**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Client: **CH2M Hill** ALS Project ID: P1602145

Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund**

Internal Standard Area and RT Summary

Test Code: EPA TO-15

Instrument ID: Tekmar AUTOCAN/Agilent 5973inert/6890N/MS8 Lab File ID: 04281624.D

Analyst: Wida Ang Date Analyzed: 4/28/16

Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 20:09

Test Notes:

		IS1 (BCM)		IS2 (DFB)		IS3 (CBZ)	
		AREA #	RT #	AREA #	RT #	AREA #	RT #
	24 Hour Standard	123636	8.81	600366	10.54	259212	14.57
	Upper Limit	173090	9.14	840512	10.87	362897	14.90
	Lower Limit	74182	8.48	360220	10.21	155527	14.24
	Client Sample ID						
01	Method Blank	116356	8.79	602785	10.53	247991	14.57
02	Lab Control Sample	126710	8.81	609269	10.54	261481	14.57
03	GM-SS-001-041916	117606	8.79	602478	10.53	248192	14.57
04	GM-SS-001-041916 (Lab Duplicate)	117293	8.78	597917	10.53	246363	14.57
05	GM-SS-002-041916	118680	8.80	608638	10.54	251459	14.57
06	GM-SS-003-041916	120563	8.80	615788	10.54	254098	14.57
07	GM-SS-019-041916	119010	8.80	608099	10.54	248884	14.57
08	GM-SS-020-041916	119035	8.80	610814	10.54	251716	14.57
09	GM-SS-020-041916 (Dilution)	118869	8.79	592091	10.53	244511	14.57
10							
11							
12							
13							
14							
15							
16							
17							
18							
19							
20							

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-IA-007-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-004

Test Code: EPA TO-15 SIM Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 4/26/16
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00019

Initial Pressure (psig): -4.75 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.84

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.046	ND	0.018	
75-09-2	Methylene Chloride	**0.40**	0.18	**0.12**	0.053	
156-60-5	trans-1,2-Dichloroethene	ND	0.046	ND	0.012	
75-34-3	1,1-Dichloroethane	ND	0.046	ND	0.011	
156-59-2	cis-1,2-Dichloroethene	**0.21**	0.046	**0.052**	0.012	
71-55-6	1,1,1-Trichloroethane	**0.10**	0.046	**0.019**	0.0084	
79-01-6	Trichloroethene	**3.3**	0.046	**0.62**	0.0086	
127-18-4	Tetrachloroethene	**0.41**	0.046	**0.061**	0.0068	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-IA-006-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-007

Test Code: EPA TO-15 SIM Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 4/26/16
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AC02130
Initial Pressure (psig): -4.88 Final Pressure (psig): 3.69

Canister Dilution Factor: 1.87

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.047	ND	0.018	
75-09-2	Methylene Chloride	**0.37**	0.19	**0.11**	0.054	
156-60-5	trans-1,2-Dichloroethene	ND	0.047	ND	0.012	
75-34-3	1,1-Dichloroethane	ND	0.047	ND	0.012	
156-59-2	cis-1,2-Dichloroethene	ND	0.047	ND	0.012	
71-55-6	1,1,1-Trichloroethane	**0.25**	0.047	**0.045**	0.0086	
79-01-6	Trichloroethene	ND	0.047	ND	0.0087	
127-18-4	Tetrachloroethene	**0.37**	0.047	**0.055**	0.0069	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **GM-CS-003-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-008

Test Code: EPA TO-15 SIM Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 4/26/16
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: SC01973
Initial Pressure (psig): -4.58 Final Pressure (psig): 3.57

Canister Dilution Factor: 1.81

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.045	ND	0.018	
75-09-2	Methylene Chloride	**0.84**	0.18	**0.24**	0.052	
156-60-5	trans-1,2-Dichloroethene	ND	0.045	ND	0.011	
75-34-3	1,1-Dichloroethane	ND	0.045	ND	0.011	
156-59-2	cis-1,2-Dichloroethene	**0.63**	0.045	**0.16**	0.011	
71-55-6	1,1,1-Trichloroethane	**0.57**	0.045	**0.10**	0.0083	
79-01-6	Trichloroethene	**3.2**	0.045	**0.59**	0.0084	
127-18-4	Tetrachloroethene	**0.68**	0.045	**0.10**	0.0067	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

RESULTS OF ANALYSIS

Client: **CH2M Hill**
Client Sample ID: **Method Blank** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P160428-MB

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:

Canister Dilution Factor: 1.00

CAS #	Compound	Result µg/m³	MRL µg/m³	Result ppbV	MRL ppbV	Data Qualifier
75-01-4	Vinyl Chloride	ND	0.025	ND	0.0098	
75-09-2	Methylene Chloride	ND	0.10	ND	0.029	
156-60-5	trans-1,2-Dichloroethene	ND	0.025	ND	0.0063	
75-34-3	1,1-Dichloroethane	ND	0.025	ND	0.0062	
156-59-2	cis-1,2-Dichloroethene	ND	0.025	ND	0.0063	
71-55-6	1,1,1-Trichloroethane	ND	0.025	ND	0.0046	
79-01-6	Trichloroethene	ND	0.025	ND	0.0047	
127-18-4	Tetrachloroethene	ND	0.025	ND	0.0037	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.
MRL = Method Reporting Limit - The minimum quantity of a target analyte that can be confidently determined by the referenced method.

ALS ENVIRONMENTAL

SURROGATE SPIKE RECOVERY RESULTS

Client: **CH2M Hill**
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Project ID: P1602145

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date(s) Collected: 4/19/16
Analyst: Cory Lewis Date(s) Received: 4/26/16
Sample Type: 6.0 L Summa Canister(s) Date(s) Analyzed: 4/28/16
Test Notes:

Client Sample ID	ALS Sample ID	1,2-Dichloroethane-d4 % Recovered	Toluene-d8 % Recovered	Bromofluorobenzene % Recovered	Acceptance Limits	Data Qualifier
Method Blank	P160428-MB	**104**	**104**	**93**	70-130	
Lab Control Sample	P160428-LCS	**105**	**98**	**98**	70-130	
GM-IA-007-041916	P1602145-004	**91**	**101**	**120**	70-130	
GM-IA-007-041916	P1602145-004DUP	**89**	**100**	**119**	70-130	
GM-IA-006-041916	P1602145-007	**91**	**100**	**125**	70-130	
GM-CS-003-041916	P1602145-008	**90**	**101**	**129**	70-130	

Surrogate percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly from the on-column percent recovery.

ALS ENVIRONMENTAL

LABORATORY CONTROL SAMPLE SUMMARY

Client: **CH2M Hill**
Client Sample ID: **Lab Control Sample** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P160428-LCS

Test Code: EPA TO-15 SIM Date Collected: NA
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: NA
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 0.125 Liter(s)
Test Notes:

CAS #	Compound	Spike Amount µg/m³	Result µg/m³	% Recovery	ALS Acceptance Limits	Data Qualifier
75-01-4	Vinyl Chloride	4.00	**3.80**	**95**	64-118	
75-09-2	Methylene Chloride	4.44	**4.13**	**93**	65-112	
156-60-5	trans-1,2-Dichloroethene	4.20	**3.87**	**92**	70-115	
75-34-3	1,1-Dichloroethane	4.24	**3.98**	**94**	66-117	
156-59-2	cis-1,2-Dichloroethene	4.36	**4.17**	**96**	72-115	
71-55-6	1,1,1-Trichloroethane	4.20	**3.82**	**91**	69-113	
79-01-6	Trichloroethene	4.32	**3.50**	**81**	70-112	
127-18-4	Tetrachloroethene	4.04	**3.43**	**85**	67-114	

Laboratory Control Sample percent recovery is verified and accepted based on the on-column result.
Reported results are shown in concentration units and as a result of the calculation, may vary slightly.

ALS ENVIRONMENTAL

LABORATORY DUPLICATE SUMMARY RESULTS

Client: **CH2M Hill**
Client Sample ID: **GM-IA-007-041916** ALS Project ID: P1602145
Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Sample ID: P1602145-004DUP

Test Code: EPA TO-15 SIM Date Collected: 4/19/16
Instrument ID: Tekmar AUTOCAN/Agilent 5973N/HP6890A/MS19 Date Received: 4/26/16
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Silonite Canister Volume(s) Analyzed: 1.00 Liter(s)
Test Notes:
Container ID: AS00019

Initial Pressure (psig): -4.75 Final Pressure (psig): 3.64

Canister Dilution Factor: 1.84

CAS #	Compound	Sample Result µg/m³	Sample Result ppbV	Duplicate Sample Result **µg/m³**	Duplicate Sample Result ppbV	Average µg/m³	% RPD	RPD Limit	Data Qualifier
75-01-4	Vinyl Chloride	ND	ND	ND	ND	-	-	25	
75-09-2	Methylene Chloride	0.405	0.117	0.403	0.116	0.404	**0.5**	25	
156-60-5	trans-1,2-Dichloroethene	ND	ND	ND	ND	-	-	25	
75-34-3	1,1-Dichloroethane	ND	ND	ND	ND	-	-	25	
156-59-2	cis-1,2-Dichloroethene	0.207	0.0521	0.208	0.0525	0.2075	**0.5**	25	
71-55-6	1,1,1-Trichloroethane	0.104	0.0190	0.103	0.0189	0.1035	**1**	25	
79-01-6	Trichloroethene	3.31	0.616	3.32	0.618	3.315	**0.3**	25	
127-18-4	Tetrachloroethene	0.412	0.0607	0.415	0.0612	0.4135	**0.7**	25	

ND = Compound was analyzed for, but not detected above the laboratory reporting limit.

Client: **CH2M Hill**

Client Project ID: **EPA Region 5/ Galen Myers Dump/Drum Salvage Superfund** ALS Project ID: P1602145

Internal Standard Area and RT Summary

Test Code: EPA TO-15 SIM
Instrument ID: Tekmar AUTOCAN/Agilent 5975Cinert/7890A/MS19 Lab File ID: 04281602.D
Analyst: Cory Lewis Date Analyzed: 4/28/16
Sample Type: 6.0 L Summa Canister(s) Time Analyzed: 08:49
Test Notes:

		IS1 (BCM)			IS2 (DFB)			IS3 (CBZ)		
		AREA	#	RT	AREA	#	RT	#	AREA	#	RT	#
	24 Hour Standard	18647		9.75	99523		11.70		20543		16.05	
	Upper Limit	26106		10.08	139332		12.03		28760		16.38	
	Lower Limit	11188		9.42	59714		11.37		12326		15.72	
	Client Sample ID											
01	Method Blank	17984		9.77	88771		11.71		19963		16.05	
02	Lab Control Sample	18238		9.75	98027		11.70		20112		16.05	
03	GM-IA-007-041916	24182		9.75	128599		11.70		27258		16.05	
04	GM-IA-007-041916 (Lab Duplicate)	24882		9.75	131592		11.71		27659		16.05	
05	GM-IA-006-041916	25197		9.75	134650		11.71		27588		16.05	
06	GM-CS-003-041916	25526		9.75	134605		11.71		27128		16.05	
07												
08												
09												
10												
11												
12												
13												
14												
15												
16												
17												
18												
19												
20												

IS1 (BCM) = Bromochloromethane
IS2 (DFB) = 1,4-Difluorobenzene
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = 140% of internal standard area
AREA LOWER LIMIT = 60% of internal standard area
RT UPPER LIMIT = 0.33 minutes of internal standard RT
RT LOWER LIMIT = 0.33 minutes of internal standard RT

# Column used to flag values outside QC limits with an I.
I = Internal standard not within the specified limits. See case narrative.

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281631.D
Acq On : 28 Apr 2016 23:56 Operator: WA
Sample : P1602145-001 (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 14:57:36 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WDA 5/2/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	117606	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	10.53	114	602478	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	248192	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	169739	12.917	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
57) Toluene-d8 (SS2)	12.77	98	575225	11.991	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 95.92%				
73) Bromofluorobenzene (SS3)	16.07	174	263307	12.874	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.96%				
Target Compounds							Qvalue
2) Propene	3.89	42	3673	N.D.			
3) Dichlorodifluoromethan...	3.99	85	21720	1.035	ng		96
4) Chloromethane	4.18	50	560	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	580	N.D.			
6) Vinyl Chloride	4.32	62	3708	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	5.02	94	1225	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.36	45	21764	2.778	ng		96
11) Acetonitrile	5.59	41	3405	N.D.			
12) Acrolein	5.71	56	2680	N.D.			
13) Acetone	5.85	58	25305	2.932	ng		99
14) Trichlorofluoromethane	6.00	101	10738	0.581	ng		92
15) 2-Propanol (Isopropanol)	6.13	45	12600	0.488	ng		95
16) Acrylonitrile	6.50	53	111	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	6.73	59	11412	N.D.			
19) Methylene Chloride	6.78	84	2094	N.D.			
20) 3-Chloro-1-propene (Al...	6.73	41	2166	N.D.			
21) Trichlorotrifluoroethane	7.06	151	2564	N.D.			
22) Carbon Disulfide	7.05	76	10816	N.D.			
23) trans-1,2-Dichloroethene	7.88	61	2439	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	7.88	73	820	N.D.			
26) Vinyl Acetate	8.00	86	2108	0.786	ng	#	79
27) 2-Butanone (MEK)	8.25	72	3460	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.	d		
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	8.84	61	17852	5.337	ng		96
31) n-Hexane	8.85	57	5337	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	9.29	72	628	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	9.82	97	1210	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.23	78	5811	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	10.48	84	14062	0.738	ng		99
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	11.23	57	18483	N.D.			

Data File: I:\MS08\Data\2016 04\28\04281631.D
Acq On : 28 Apr 2016 23:56 Operator: WA
Sample : P1602145-001 (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 14:57:36 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

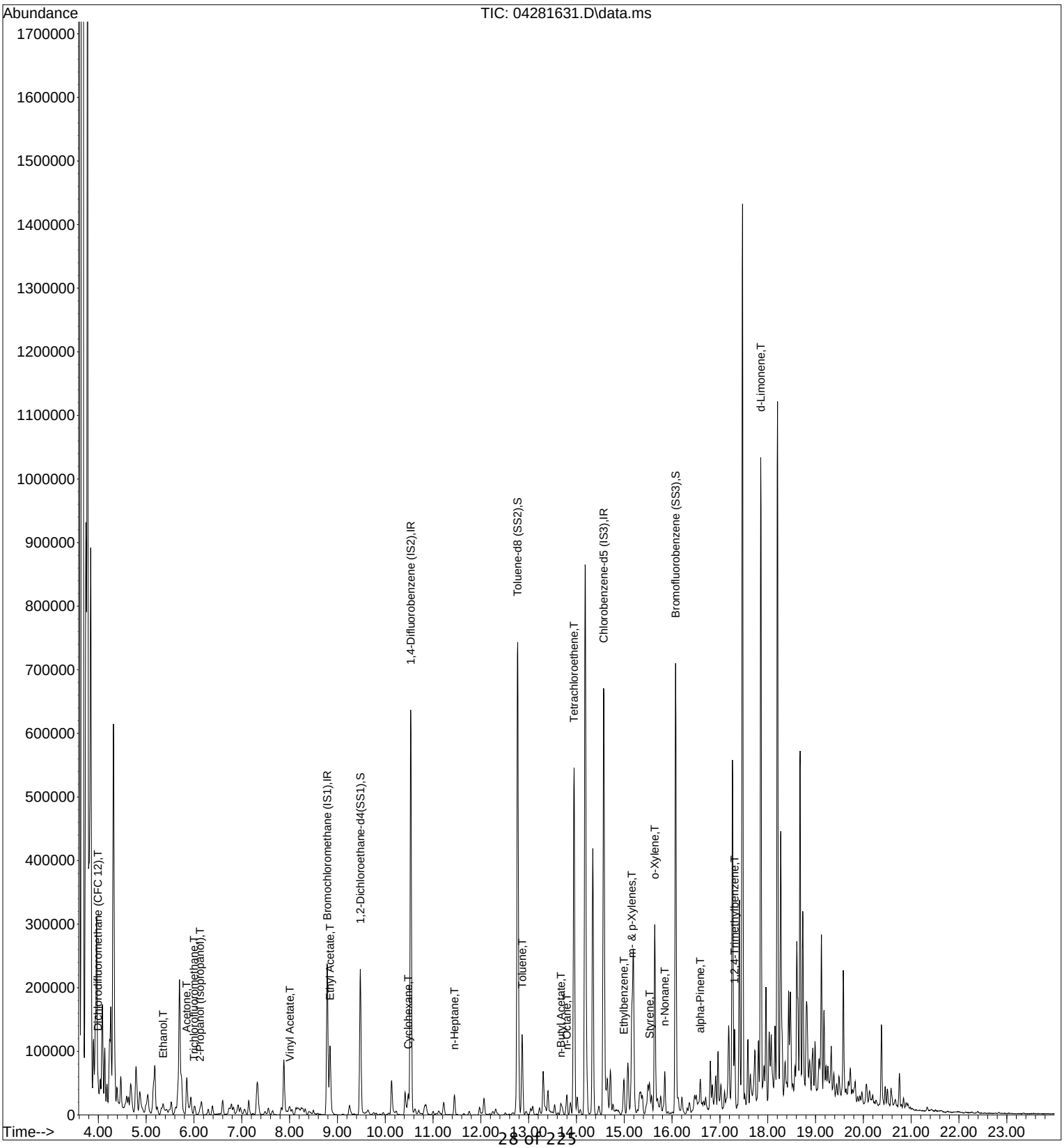
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D. d	
51) n-Heptane	11.45	71	8816	0.791 ng	96
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.97	58	4033	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.86	91	105187	1.833 ng	99
59) 2-Hexanone	13.08	43	7156	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.67	43	13941	0.590 ng	82
63) n-Octane	13.80	57	5807	0.594 ng	99
64) Tetrachloroethene	13.95	166	215494	13.058 ng	99
65) Chlorobenzene	14.65	112	8729	N.D.	
66) Ethylbenzene	14.99	91	45369	0.828 ng	98
67) m- & p-Xylenes	15.16	91	143650	3.296 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.53	104	26531	0.804 ng	96
70) o-Xylene	15.64	91	76945	1.680 ng	99
71) n-Nonane	15.85	43	23809	1.062 ng	99
72) 1,1,2,2-Tetrachloroethane	15.64	83	1885	N.D.	
74) Cumene	16.21	105	10845	N.D.	
75) alpha-Pinene	16.59	93	21032	0.707 ng	91
76) n-Propylbenzene	16.70	91	18239	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	16.84	105	19726	N.D.	
79) 1,3,5-Trimethylbenzene	16.91	105	16995	N.D.	
80) alpha-Methylstyrene	17.06	118	1501	N.D.	
81) 2-Ethyltoluene	17.10	105	16591	N.D.	
82) 1,2,4-Trimethylbenzene	17.31	105	54719	1.109 ng	88
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	17.47	91	706	N.D.	
85) 1,3-Dichlorobenzene	17.52	146	1709	N.D.	
86) 1,4-Dichlorobenzene	17.52	146	1709	N.D.	
87) sec-Butylbenzene	17.56	105	3740	N.D.	
88) 4-Isopropyltoluene (p-...	17.71	119	6565	N.D.	
89) 1,2,3-Trimethylbenzene	17.71	105	15429	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	17.85	68	241790	13.959 ng	99
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	19.46	180	680	N.D.	
95) Naphthalene	19.57	128	6206	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	17.31	119	7152	N.D.	
100) n-Butylbenzene	18.10	91	9540	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281631.D
Acq On : 28 Apr 2016 23:56 Operator: WA
Sample : P1602145-001 (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

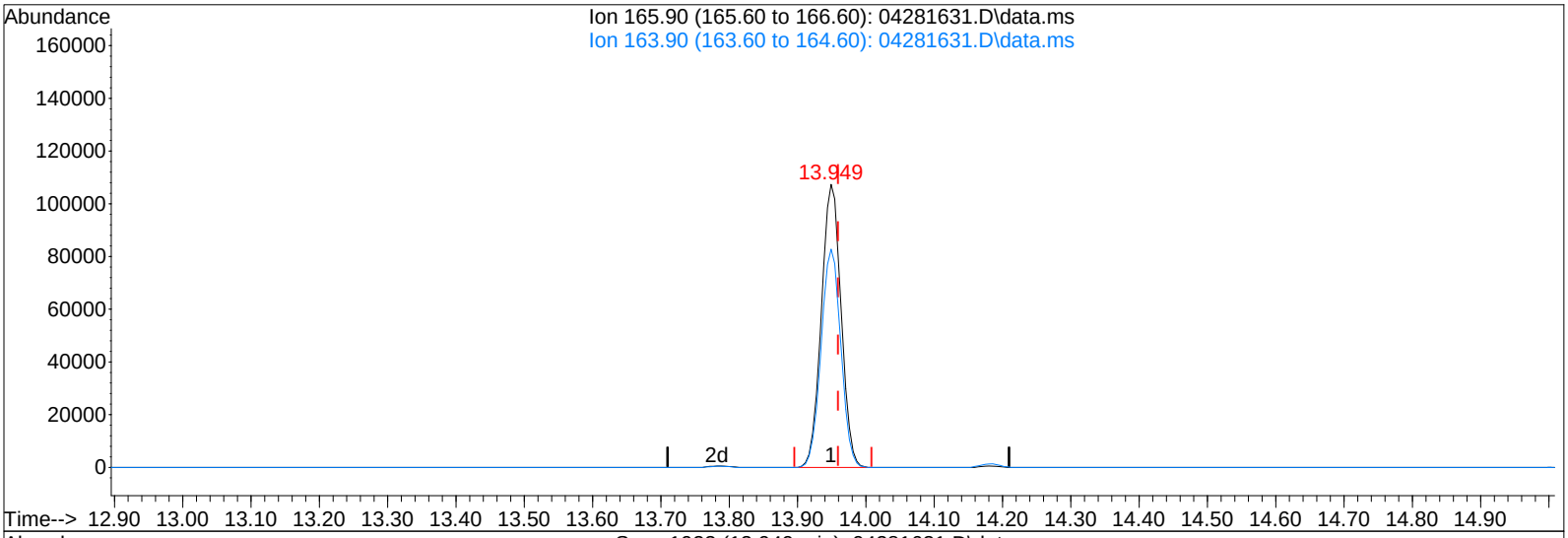
Quant Time: May 02 14:57:36 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

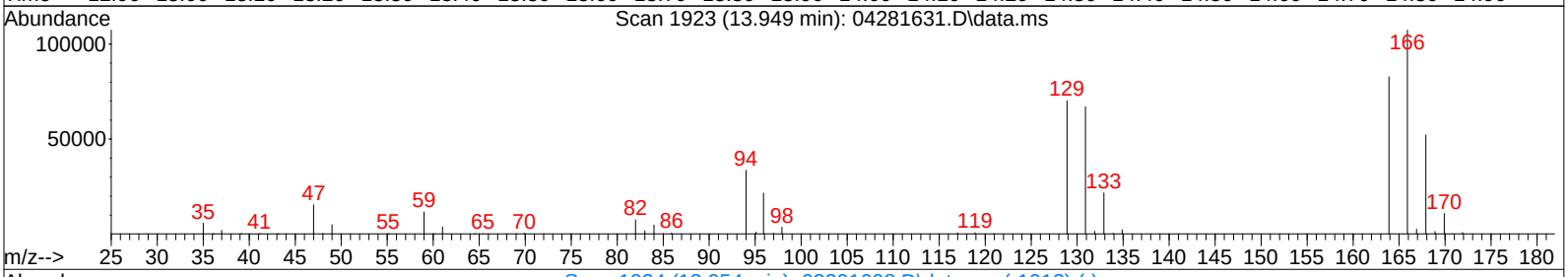


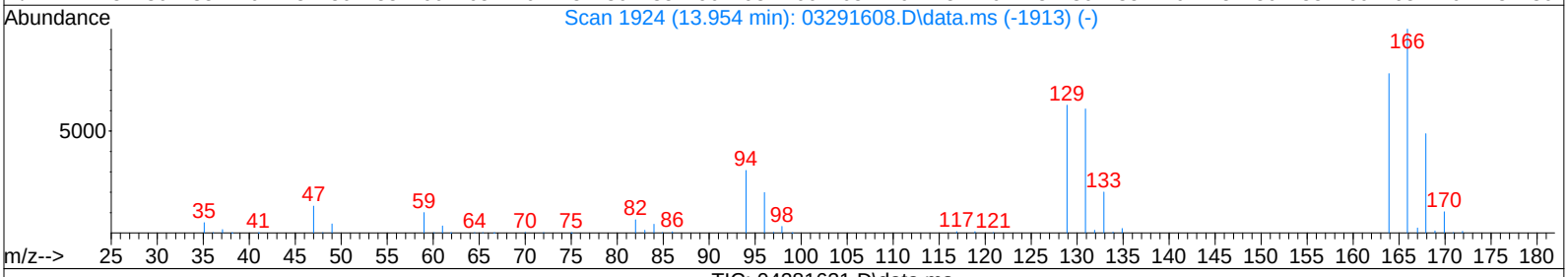
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281631.D
Acq On : 28 Apr 2016 23:56 Operator: WA
Sample : P1602145-001 (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 29 06:38:45 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281631.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 13.06ng

response 215494

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	77.44
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281633.D
Acq On : 29 Apr 2016 1:02 Operator: WA
Sample : P1602145-002 (1000mL)
Misc : S29-04131602
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 15:01:11 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016 5/2/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.80	130	118680	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	10.54	114	608638	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	251459	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	171491	12.932	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
57) Toluene-d8 (SS2)	12.77	98	584405	12.024	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.16%				
73) Bromofluorobenzene (SS3)	16.07	174	265580	12.817	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.56%				
Target Compounds							Qvalue
2) Propene	3.88	42	23260	2.195	ng	#	1
3) Dichlorodifluoromethan...	3.99	85	30715	1.450	ng		98
4) Chloromethane	4.20	50	4208	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	881	N.D.			
6) Vinyl Chloride	4.49	62	1198	N.D.			
7) 1,3-Butadiene	4.64	54	2173	N.D.			
8) Bromomethane	5.04	94	830	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.40	45	1350507	170.794	ng		99
11) Acetonitrile	5.57	41	25229	1.290	ng		97
12) Acrolein	5.71	56	7695	1.234	ng		93
13) Acetone	5.84	58	350928	40.300	ng	#	56
14) Trichlorofluoromethane	6.01	101	16276	0.873	ng		96
15) 2-Propanol (Isopropanol)	6.15	45	121357	4.656	ng		100
16) Acrylonitrile	6.34	53	2502	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	6.78	84	4106	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D. d			
21) Trichlorotrifluoroethane	7.06	151	4188	N.D.			
22) Carbon Disulfide	7.05	76	103355	2.282	ng		97
23) trans-1,2-Dichloroethene	0.00	61	0	N.D. d			
24) 1,1-Dichloroethane	7.91	63	545	N.D.			
25) Methyl tert-Butyl Ether	7.89	73	2688	N.D.			
26) Vinyl Acetate	0.00	86	0	N.D. d			
27) 2-Butanone (MEK)	8.24	72	29916	3.387	ng		95
28) cis-1,2-Dichloroethene	0.00	61	0	N.D. d			
29) Diisopropyl Ether	8.85	87	1099	N.D.			
30) Ethyl Acetate	8.84	61	36806	10.905	ng		95
31) n-Hexane	8.86	57	31538	1.824	ng		99
32) Chloroform	8.91	83	2842	N.D.			
34) Tetrahydrofuran (THF)	9.27	72	5895	0.847	ng	#	51
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	9.82	97	7195	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D. d			
40) 1-Butanol	0.00	56	0	N.D. d			
41) Benzene	10.23	78	43028	0.975	ng		99
42) Carbon Tetrachloride	10.37	117	2796	N.D.			
43) Cyclohexane	10.48	84	14766	0.767	ng		100
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	11.14	83	1495	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	11.16	88	1884	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			

Data File: I:\MS08\Data\2016 04\28\04281633.D
Acq On : 29 Apr 2016 1:02 Operator: WA
Sample : P1602145-002 (1000mL)
Misc : S29-04131602
ALS Vial : 3 Sample Multiplier: 1

Quant Time: May 02 15:01:11 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

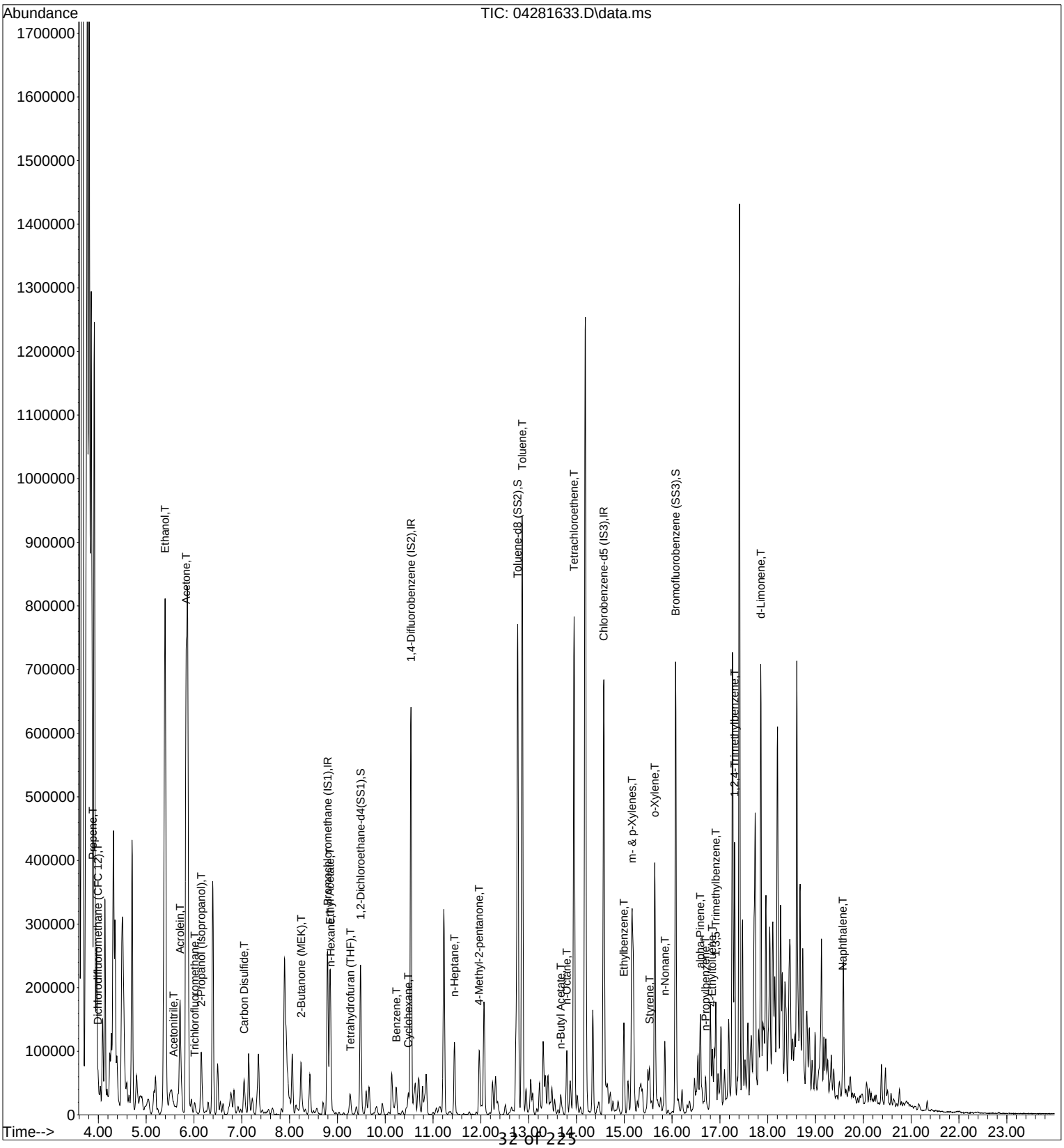
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	863	N.D.	
51) n-Heptane	11.45	71	30957	2.751 ng	98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.96	58	32630	3.321 ng	98
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.86	91	721243	12.406 ng	100
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.67	43	21431	0.895 ng	89
63) n-Octane	13.80	57	19395	1.959 ng	96
64) Tetrachloroethene	13.95	166	309811	18.529 ng	99
65) Chlorobenzene	14.65	112	7376	N.D.	
66) Ethylbenzene	14.99	91	125005	2.253 ng	99
67) m- & p-Xylenes	15.16	91	281846	6.383 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.53	104	36613	1.096 ng	98
70) o-Xylene	15.64	91	115611	2.491 ng	100
71) n-Nonane	15.85	43	40334	1.776 ng	99
72) 1,1,2,2-Tetrachloroethane	15.64	83	1968	N.D.	
74) Cumene	16.21	105	19101	N.D.	
75) alpha-Pinene	16.59	93	65192	2.163 ng	100
76) n-Propylbenzene	16.70	91	39083	0.544 ng	96
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	16.84	105	38794	0.672 ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	38994	0.773 ng	99
80) alpha-Methylstyrene	17.05	118	1421	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	17.31	105	184854	3.699 ng	88
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	17.41	91	1431	N.D.	
85) 1,3-Dichlorobenzene	17.46	146	780	N.D.	
86) 1,4-Dichlorobenzene	17.52	146	6970	N.D.	
87) sec-Butylbenzene	17.56	105	16357	N.D.	
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D. d	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	17.84	146	636	N.D.	
91) d-Limonene	17.85	68	159732	9.102 ng	98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	19.57	128	40944	0.569 ng	96
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	0.00	119	0	N.D. d	
100) n-Butylbenzene	0.00	91	0	N.D. d	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281633.D
Acq On : 29 Apr 2016 1:02 Operator: WA
Sample : P1602145-002 (1000mL)
Misc : S29-04131602
ALS Vial : 3 Sample Multiplier: 1

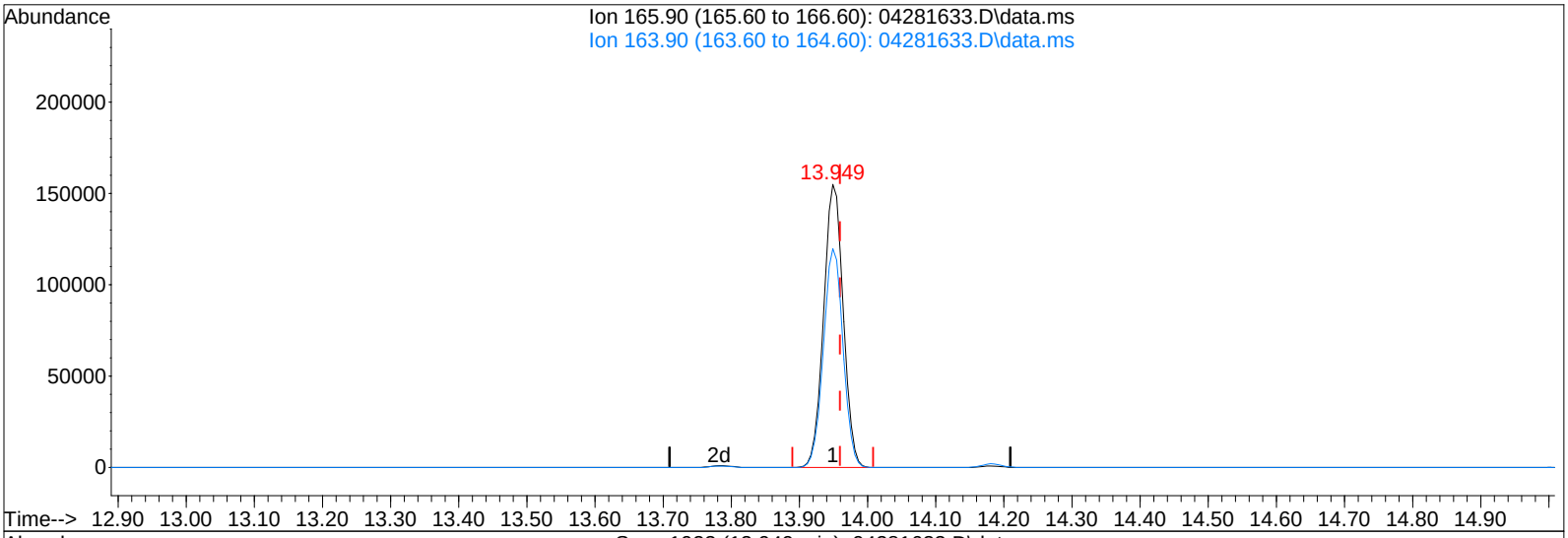
Quant Time: May 02 15:01:11 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

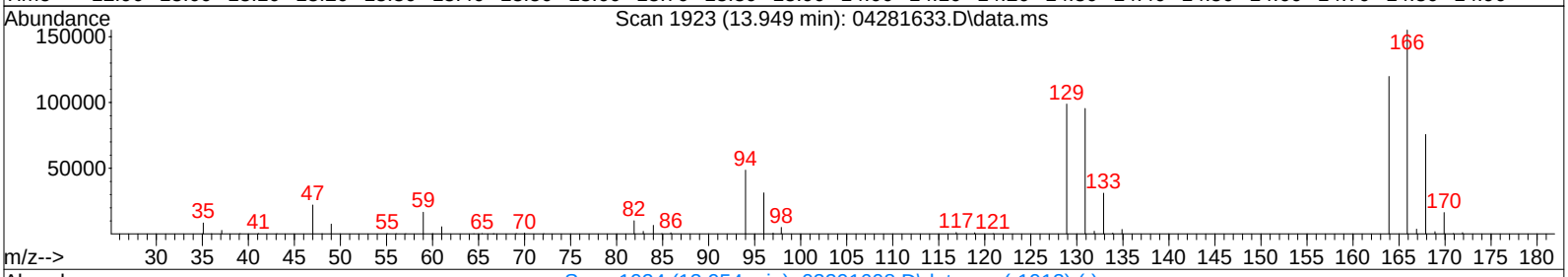


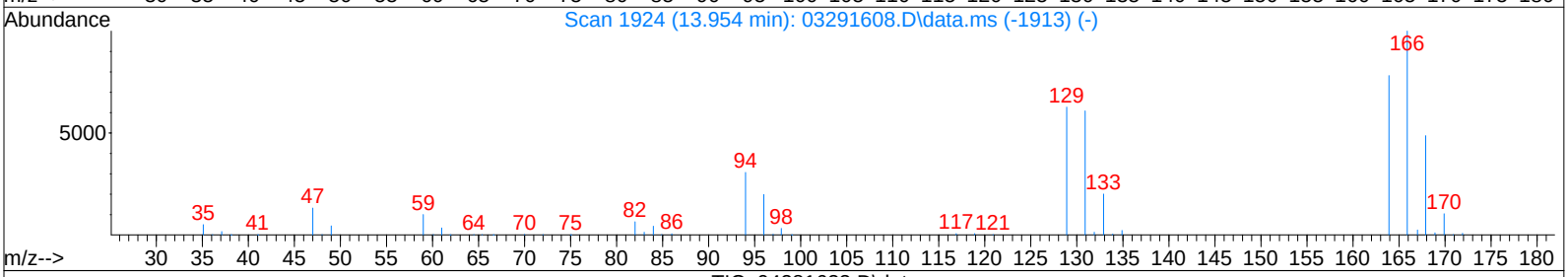
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281633.D
Acq On : 29 Apr 2016 1:02 Operator: WA
Sample : P1602145-002 (1000mL)
Misc : S29-04131602
ALS Vial : 3 Sample Multiplier: 1

Quant Time: Apr 29 06:38:49 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281633.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 18.53ng

response 309811

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	77.55
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 15:04:43 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 5/2/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.80	130	120563	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	10.54	114	615788	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	254098	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.49	65	172804	12.828	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.64%				
57) Toluene-d8 (SS2)	12.77	98	591553	12.045	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.32%				
73) Bromofluorobenzene (SS3)	16.07	174	269170	12.855	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
Target Compounds							Qvalue
2) Propene	3.88	42	21167	1.966	ng	#	1
3) Dichlorodifluoromethan...	3.99	85	21786	1.013	ng		97
4) Chloromethane	4.20	50	1424	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	756	N.D.			
6) Vinyl Chloride	4.32	62	4615	N.D.			
7) 1,3-Butadiene	4.61	54	1940	N.D.			
8) Bromomethane	5.04	94	1549	N.D.			
9) Chloroethane	5.17	64	5475	0.644	ng		93
10) Ethanol	5.41	45	2187895	272.375	ng		100
11) Acetonitrile	5.58	41	21535	1.084	ng		98
12) Acrolein	5.71	56	8896	1.404	ng		92
13) Acetone	5.84	58	526286m	59.493	ng		
14) Trichlorofluoromethane	6.02	101	13354	0.705	ng		97
15) 2-Propanol (Isopropanol)	6.15	45	603573	22.796	ng		94
16) Acrylonitrile	0.00	53	0	N.D. d			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D. d			
19) Methylene Chloride	6.79	84	119767	10.023	ng		99
20) 3-Chloro-1-propene (Al...	6.85	41	5005	N.D.			
21) Trichlorotrifluoroethane	7.08	151	3288	N.D.			
22) Carbon Disulfide	7.06	76	37744	0.820	ng		97
23) trans-1,2-Dichloroethene	7.90	61	4690	N.D.			
24) 1,1-Dichloroethane	7.94	63	808	N.D.			
25) Methyl tert-Butyl Ether	7.95	73	3748	N.D.			
26) Vinyl Acetate	8.02	86	12169	4.425	ng	#	66
27) 2-Butanone (MEK)	8.24	72	89385	9.962	ng		99
28) cis-1,2-Dichloroethene	0.00	61	0	N.D. d			
29) Diisopropyl Ether	0.00	87	0	N.D. d			
30) Ethyl Acetate	8.84	61	252966	73.777	ng		96
31) n-Hexane	8.87	57	100746	5.735	ng		99
32) Chloroform	8.92	83	5445	N.D.			
34) Tetrahydrofuran (THF)	9.27	72	17442	2.468	ng	#	90
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	9.59	62	16130	1.279	ng		98
38) 1,1,1-Trichloroethane	9.83	97	5009	N.D.			
39) Isopropyl Acetate	10.13	61	2514	N.D.			
40) 1-Butanol	0.00	56	0	N.D. d			
41) Benzene	10.23	78	30604	0.685	ng		97
42) Carbon Tetrachloride	10.38	117	1623	N.D.			
43) Cyclohexane	10.49	84	67929	3.489	ng		90
44) tert-Amyl Methyl Ether	10.76	73	601	N.D.			
45) 1,2-Dichloropropane	10.96	63	1938	N.D.			
46) Bromodichloromethane	11.14	83	2020	N.D.			
47) Trichloroethene	11.17	130	25442	1.851	ng		99
48) 1,4-Dioxane	11.16	88	568	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D. d			

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: May 02 15:04:43 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

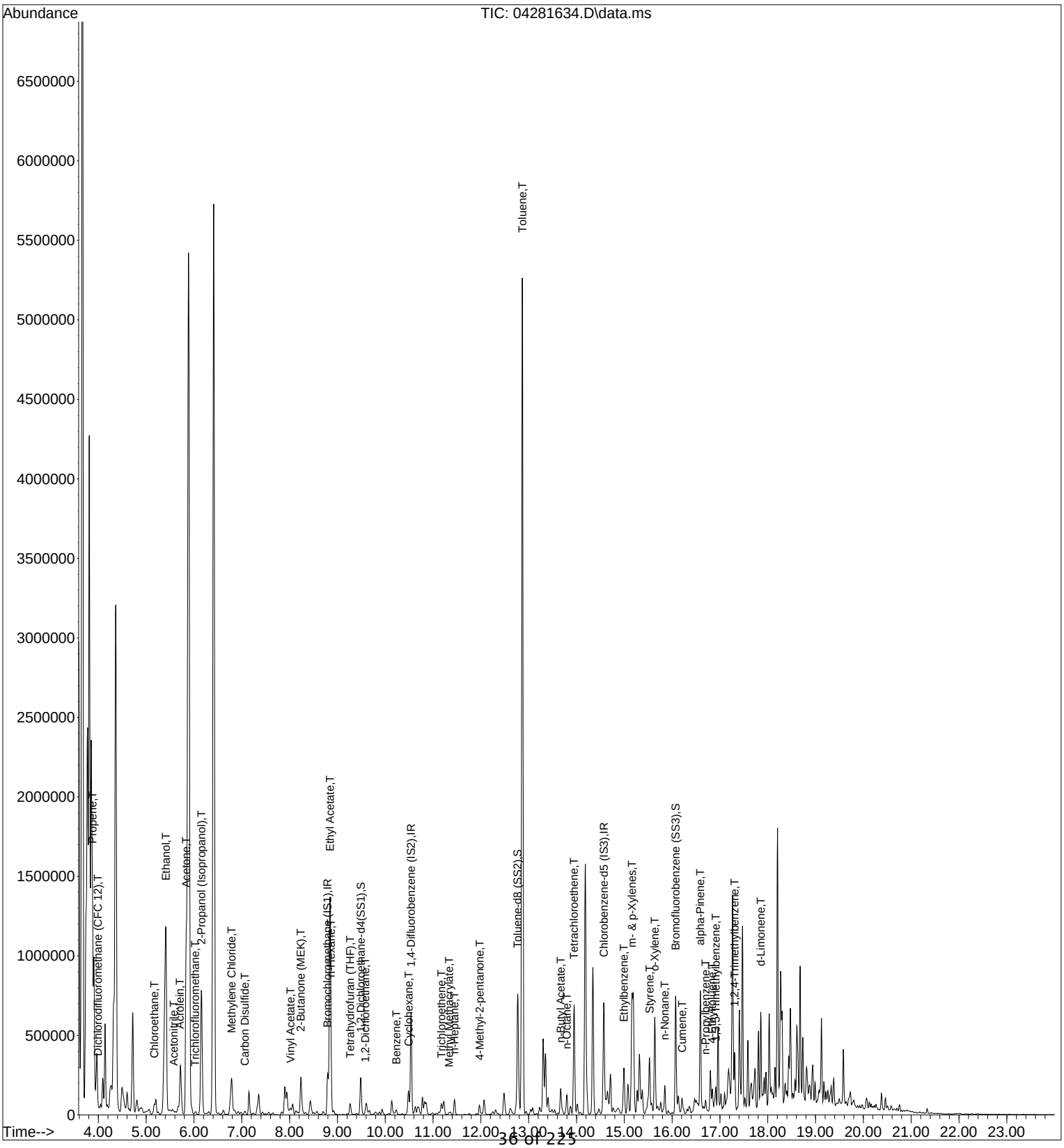
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	2712	0.506 ng	91
51) n-Heptane	11.45	71	26435	2.322 ng	99
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.97	58	19878	2.000 ng	98
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.87	91	4570485	77.799 ng	99
59) 2-Hexanone	0.00	43	0	N.D. d	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.67	43	123371	5.099 ng	95
63) n-Octane	13.80	57	23502	2.349 ng	99
64) Tetrachloroethene	13.95	166	270599	16.015 ng	99
65) Chlorobenzene	0.00	112	0	N.D. d	
66) Ethylbenzene	14.99	91	248673	4.435 ng	100
67) m- & p-Xylenes	15.16	91	638463	14.309 ng	100
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.53	104	200039	5.924 ng	98
70) o-Xylene	15.64	91	287559	6.132 ng	100
71) n-Nonane	15.85	43	62303	2.715 ng	99
72) 1,1,2,2-Tetrachloroethane	15.64	83	1986	N.D.	
74) Cumene	16.21	105	46273	0.733 ng	96
75) alpha-Pinene	16.59	93	337235	11.074 ng	100
76) n-Propylbenzene	16.70	91	58079	0.801 ng	96
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	16.84	105	61971	1.062 ng	99
79) 1,3,5-Trimethylbenzene	16.91	105	48053	0.943 ng	98
80) alpha-Methylstyrene	17.06	118	6140	N.D.	
81) 2-Ethyltoluene	0.00	105	0	N.D. d	
82) 1,2,4-Trimethylbenzene	17.31	105	161468	3.197 ng	91
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	17.43	91	1294	N.D.	
85) 1,3-Dichlorobenzene	17.45	146	635	N.D.	
86) 1,4-Dichlorobenzene	17.52	146	4474	N.D.	
87) sec-Butylbenzene	17.57	105	10396	N.D.	
88) 4-Isopropyltoluene (p-...	17.71	119	28623	N.D.	
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d	
90) 1,2-Dichlorobenzene	17.84	146	766	N.D.	
91) d-Limonene	17.85	68	141199	7.962 ng	85
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	19.57	128	14719	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	17.31	119	21545	N.D.	
100) n-Butylbenzene	18.12	91	16648	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

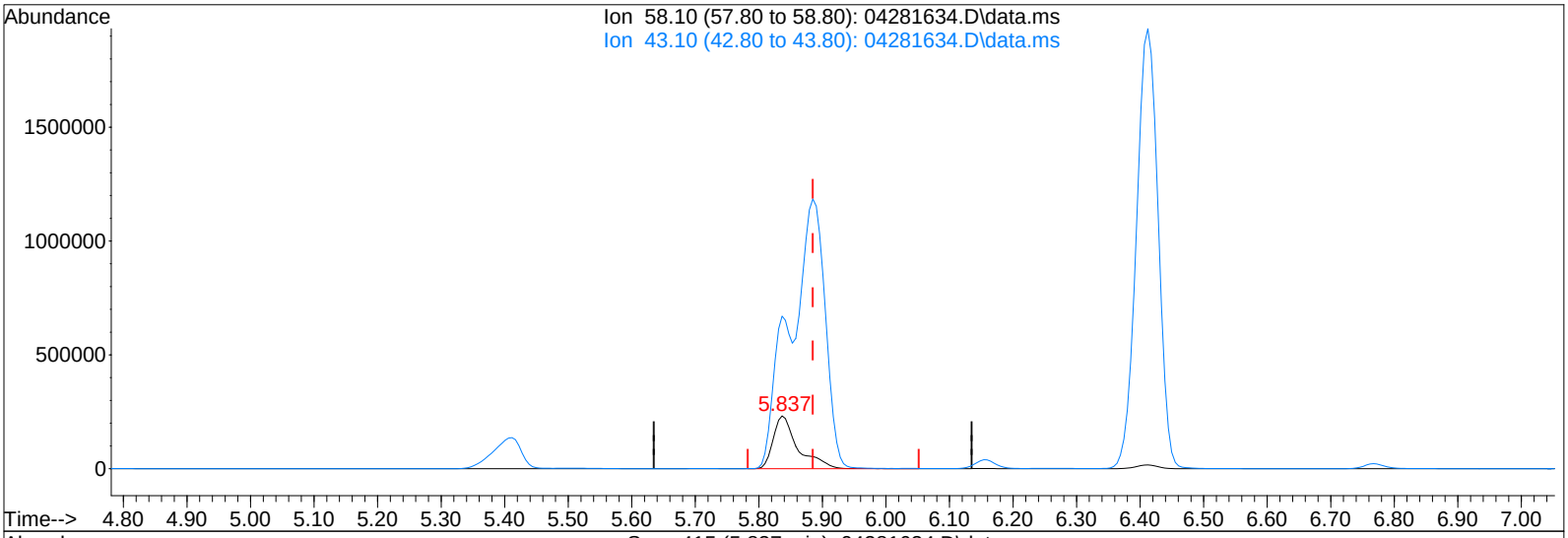
Quant Time: May 02 15:04:43 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

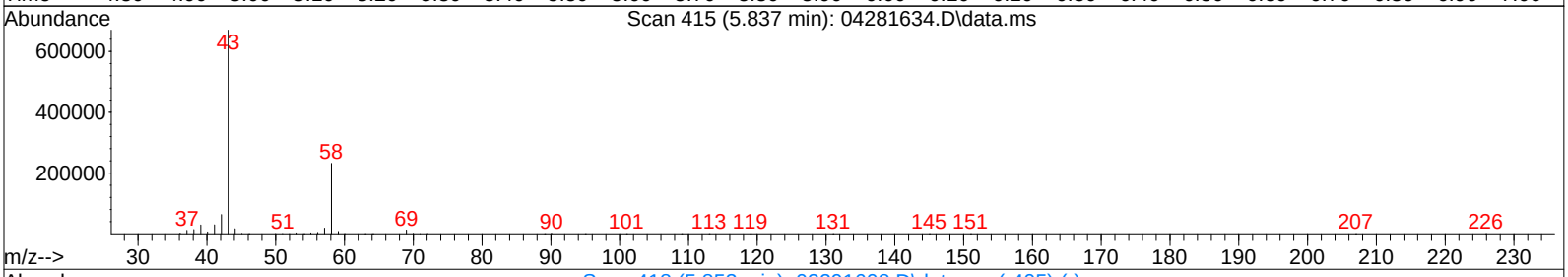


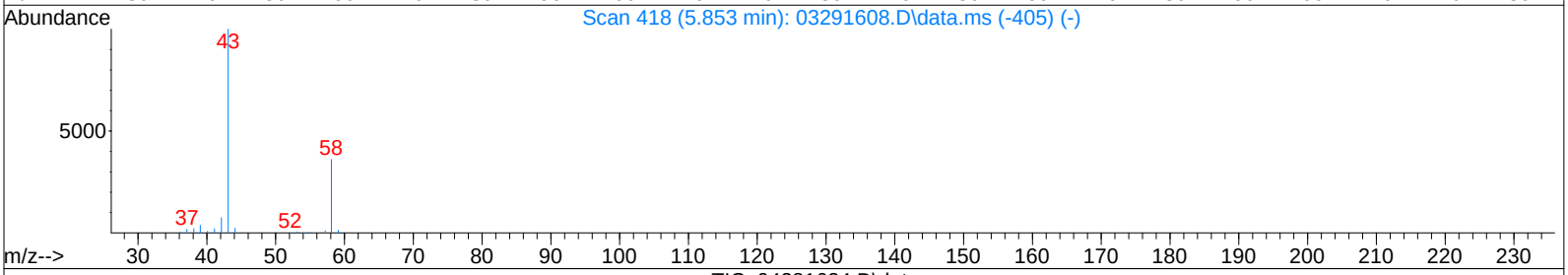
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 29 06:38:51 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281634.D\data.ms

(13) Acetone (T)

5.837min (-0.048) 70.31ng

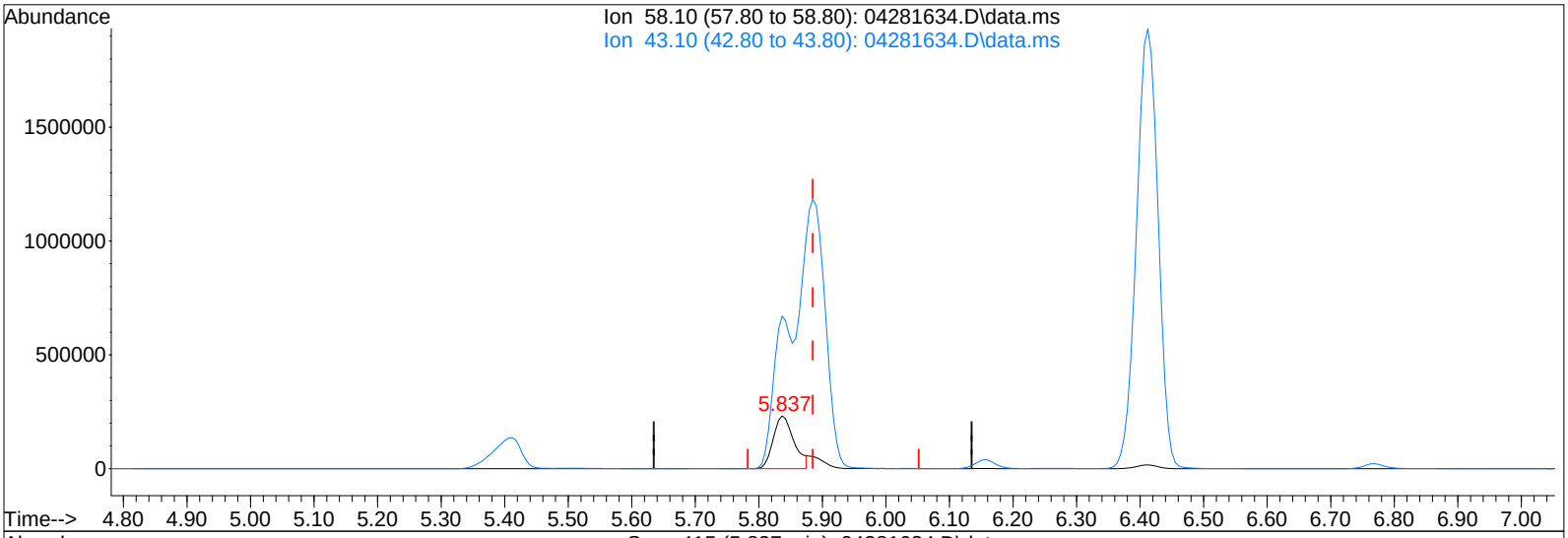
response 622013

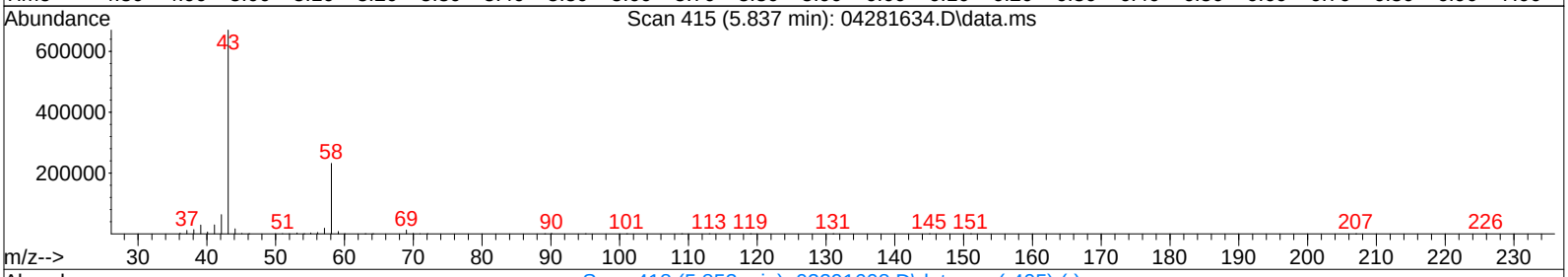
Ion	Exp%	Act%
58.10	100	100
43.10	281.00	244.19#
0.00	0.00	0.00
0.00	0.00	0.00

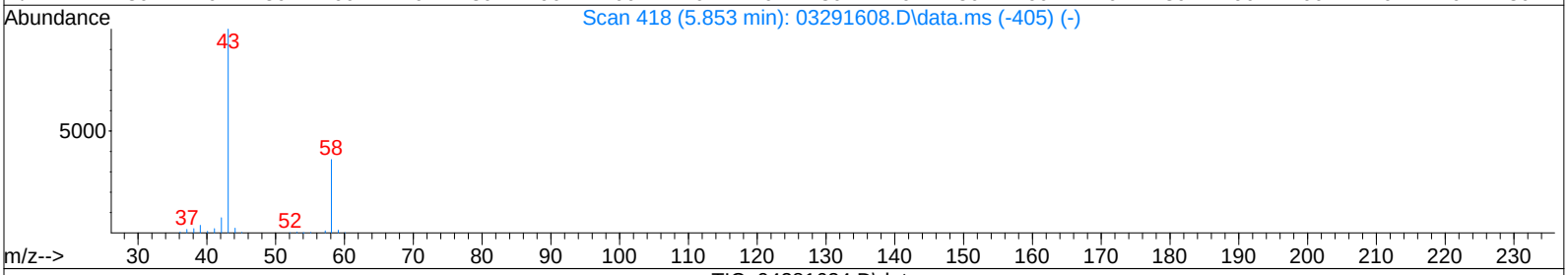
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 29 06:38:51 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281634.D\data.ms

(13) Acetone (T)

5.837min (-0.048) 59.49ng m

response 526286

Ion	Exp%	Act%
58.10	100	100
43.10	281.00	288.61
0.00	0.00	0.00
0.00	0.00	0.00

IPC

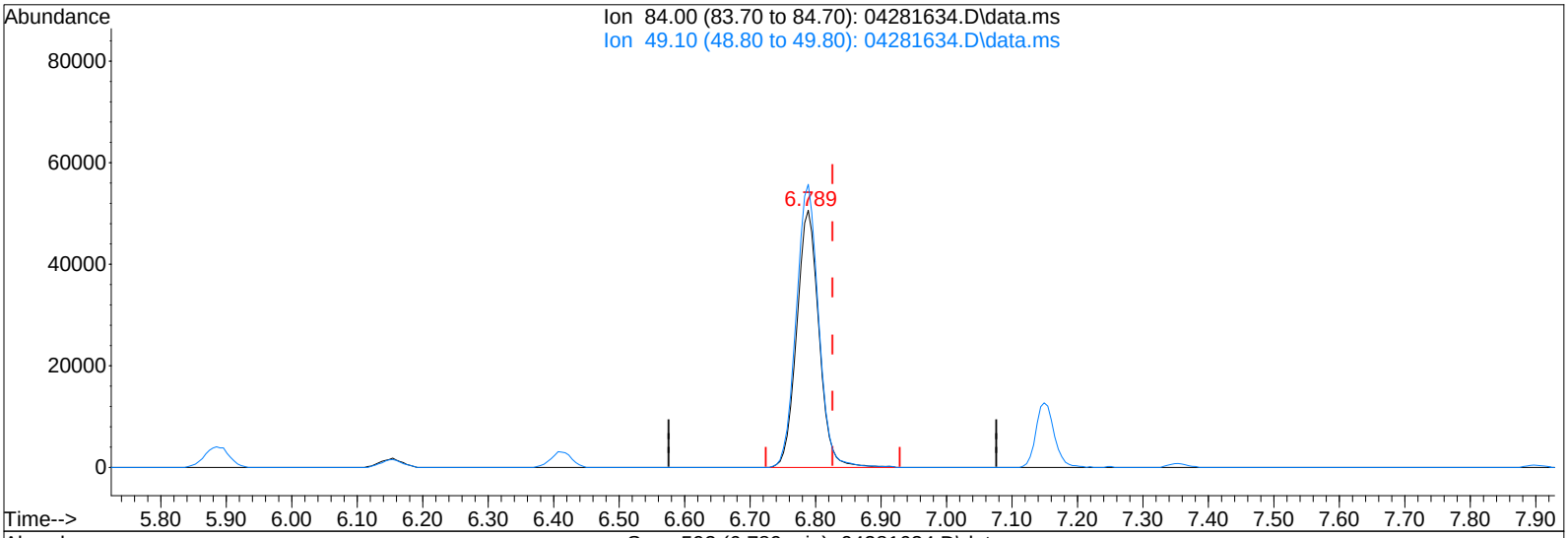
5/2/16

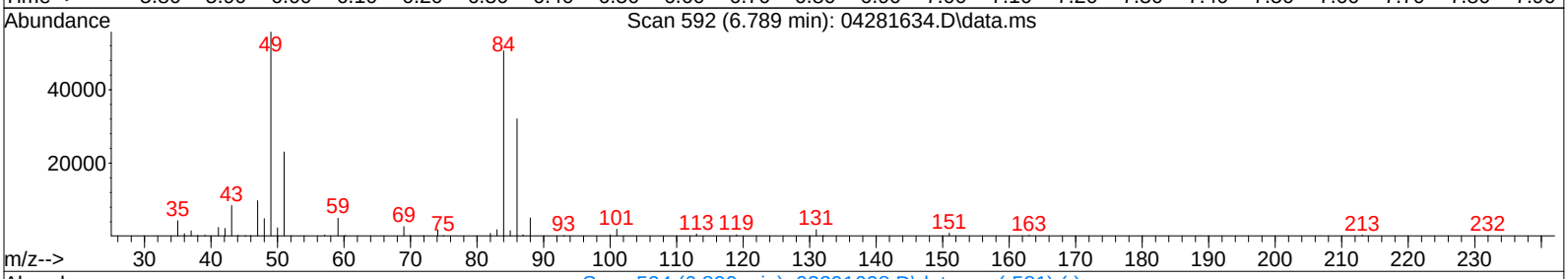
LH 5/3/16

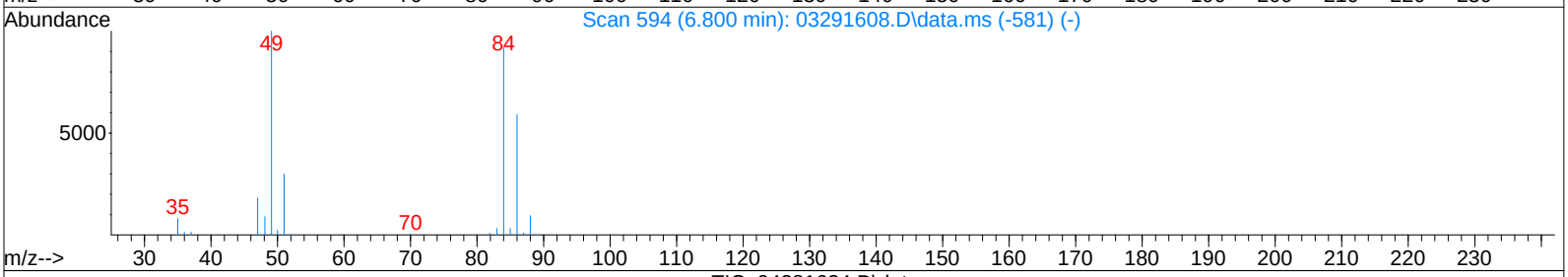
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 29 06:38:51 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281634.D\data.ms

(19) Methylene Chloride (T)

6.789min (-0.037) 10.02ng

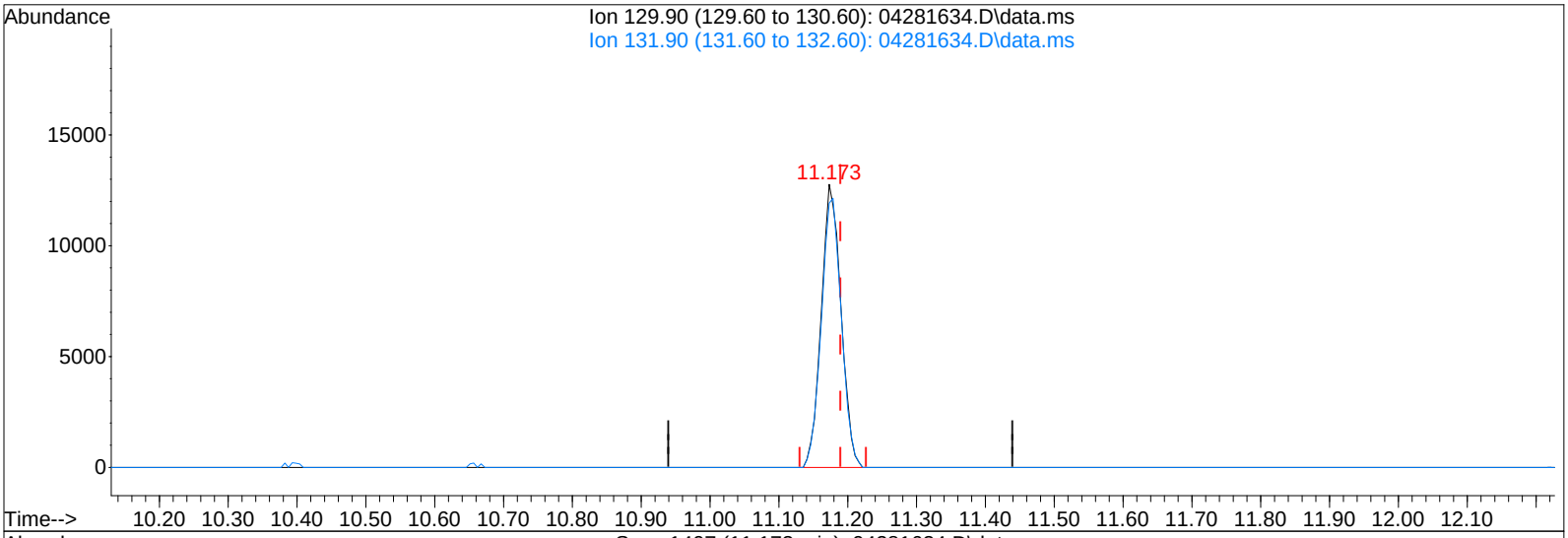
response 119767

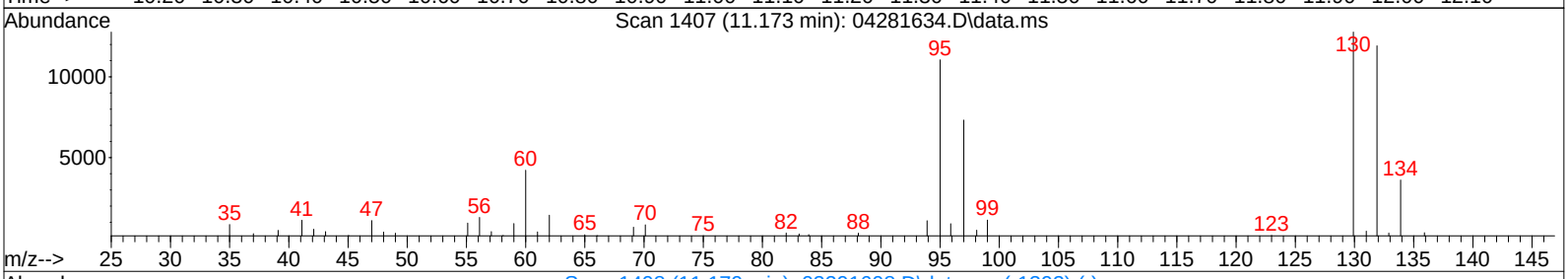
Ion	Exp%	Act%
84.00	100	100
49.10	109.90	110.69
0.00	0.00	0.00
0.00	0.00	0.00

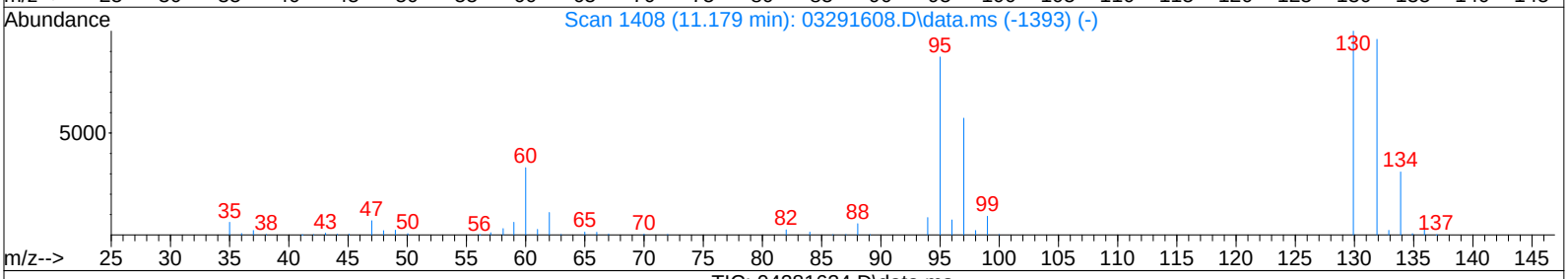
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 29 06:38:51 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281634.D\data.ms

(47) Trichloroethene (T)

11.173min (-0.016) 1.85ng

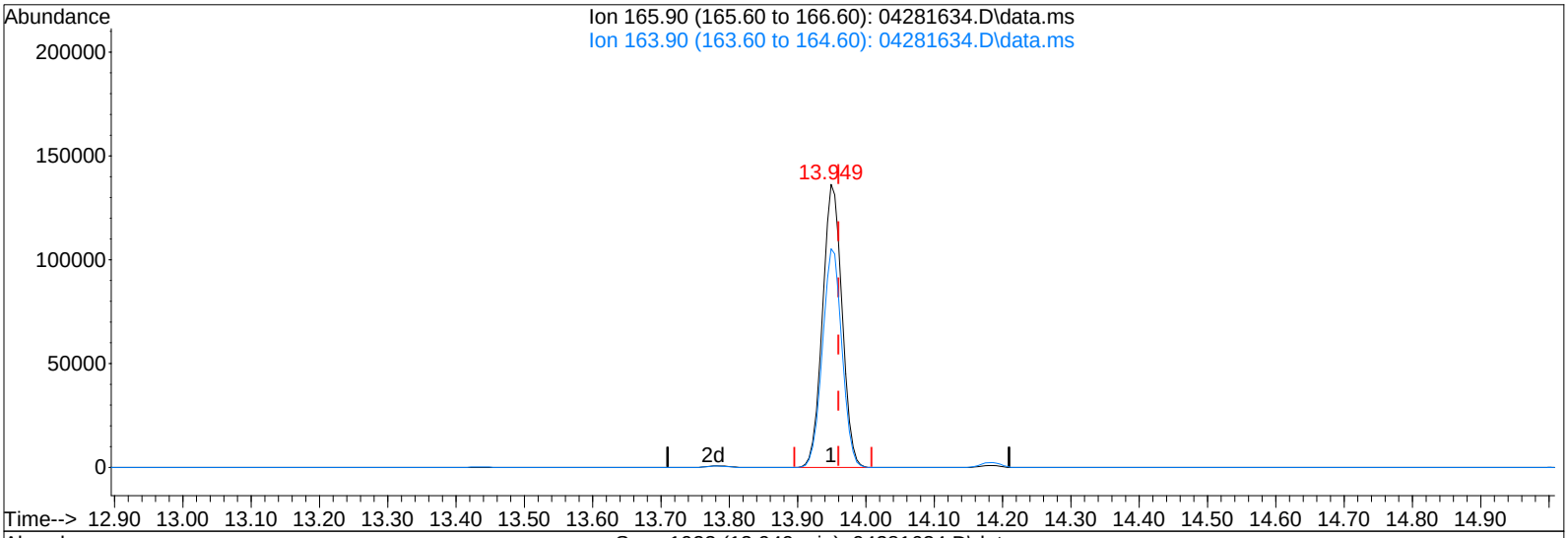
response 25442

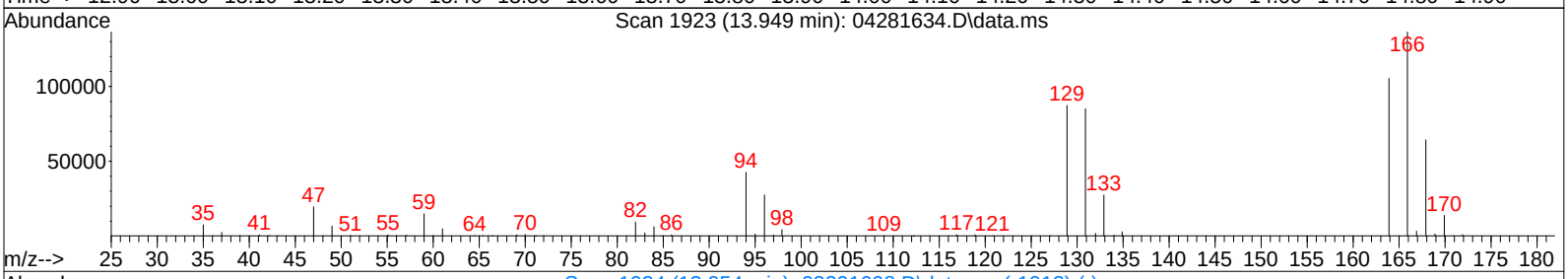
Ion	Exp%	Act%
129.90	100	100
131.90	96.10	96.71
0.00	0.00	0.00
0.00	0.00	0.00

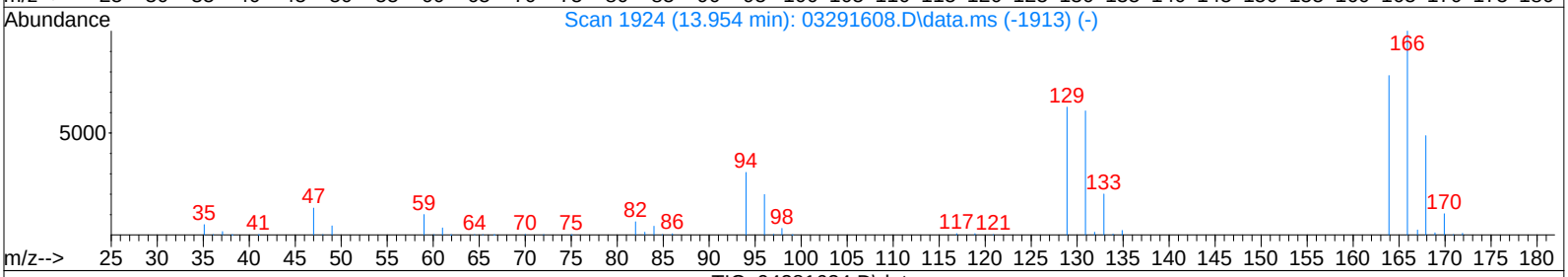
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281634.D
Acq On : 29 Apr 2016 1:34 Operator: WA
Sample : P1602145-003 (1000mL)
Misc : S29-04131602
ALS Vial : 7 Sample Multiplier: 1

Quant Time: Apr 29 06:38:51 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281634.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 16.02ng

response 270599

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	77.26
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 15:07:49 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

5/2/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.80	130	119010	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	10.54	114	608099	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	248884	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.49	65	170503	12.822	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.56%				
57) Toluene-d8 (SS2)	12.77	98	580659	12.070	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.56%				
73) Bromofluorobenzene (SS3)	16.07	174	265031	12.923	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
2) Propene	3.88	42	82880	7.799	ng		92
3) Dichlorodifluoromethan...	4.00	85	57657	2.715	ng		99
4) Chloromethane	4.20	50	1447	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	584	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	4.60	54	1185	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.37	45	285117	35.958	ng		100
11) Acetonitrile	5.59	41	8156	N.D.			
12) Acrolein	5.72	56	6056	0.969	ng		99
13) Acetone	5.84	58	1523832	174.507	ng	#	80
14) Trichlorofluoromethane	6.02	101	13417	0.718	ng		100
15) 2-Propanol (Isopropanol)	6.13	45	622400	23.813	ng		95
16) Acrylonitrile	6.36	53	820	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.80	84	21514	1.824	ng		97
20) 3-Chloro-1-propene (Al...	6.84	41	2044	N.D.			
21) Trichlorotrifluoroethane	7.07	151	3009	N.D.			
22) Carbon Disulfide	7.05	76	28570	0.629	ng		97
23) trans-1,2-Dichloroethene	7.70	61	10734	0.788	ng		97
24) 1,1-Dichloroethane	7.89	63	2708	N.D.			
25) Methyl tert-Butyl Ether	7.89	73	938	N.D.			
26) Vinyl Acetate	8.01	86	343896	126.675	ng	#	10
27) 2-Butanone (MEK)	8.24	72	51915	5.862	ng		98
28) cis-1,2-Dichloroethene	8.66	61	103089	7.820	ng		100
29) Diisopropyl Ether	8.84	87	3084	N.D.			
30) Ethyl Acetate	8.85	61	104548	30.889	ng		96
31) n-Hexane	8.86	57	71012	4.095	ng		99
32) Chloroform	8.92	83	17468	0.986	ng		99
34) Tetrahydrofuran (THF)	9.27	72	8078	1.158	ng	#	71
35) Ethyl tert-Butyl Ether	9.34	87	707	N.D.			
36) 1,2-Dichloroethane	9.59	62	11296	0.908	ng		97
38) 1,1,1-Trichloroethane	9.82	97	20320	1.236	ng		98
39) Isopropyl Acetate	0.00	61	0	N.D.	d		
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.23	78	20678	0.469	ng		99
42) Carbon Tetrachloride	10.37	117	1821	N.D.			
43) Cyclohexane	10.48	84	27182	1.414	ng		97
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	10.96	63	1929	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.	d		
47) Trichloroethene	11.17	130	688123	50.699	ng		99
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.	d		

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: May 02 15:07:49 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

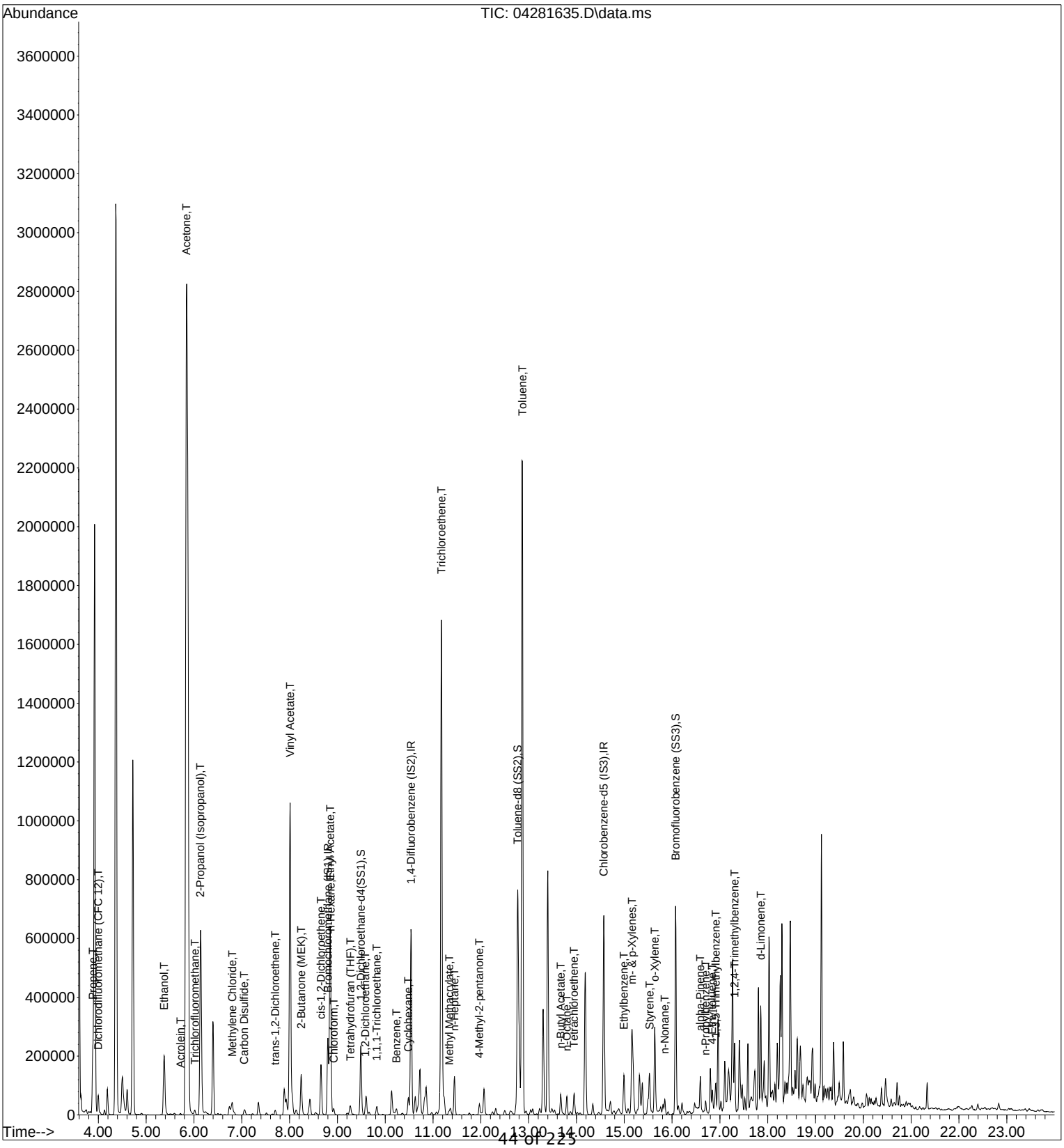
Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
50) Methyl Methacrylate	11.34	100	2399	0.453 ng	#	86
51) n-Heptane	11.45	71	36709	3.265 ng		100
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	11.97	58	11892	1.212 ng		97
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	12.87	91	1967350	34.190 ng		100
59) 2-Hexanone	0.00	43	0	N.D. d		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	13.67	43	52844	2.230 ng		95
63) n-Octane	13.80	57	12682	1.294 ng		95
64) Tetrachloroethene	13.95	166	27869	1.684 ng		100
65) Chlorobenzene	14.65	112	2871	N.D.		
66) Ethylbenzene	14.99	91	118368	2.155 ng		99
67) m- & p-Xylenes	15.16	91	260322	5.956 ng		99
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	15.53	104	79820	2.413 ng		99
70) o-Xylene	15.64	91	102158	2.224 ng		99
71) n-Nonane	15.85	43	17950	0.798 ng		92
72) 1,1,2,2-Tetrachloroethane	15.64	83	1029	N.D.		
74) Cumene	16.21	105	20654	N.D.		
75) alpha-Pinene	16.59	93	52995	1.777 ng		95
76) n-Propylbenzene	16.70	91	35172	0.495 ng		97
77) 3-Ethyltoluene	0.00	105	0	N.D. d		
78) 4-Ethyltoluene	16.84	105	39999	0.700 ng		99
79) 1,3,5-Trimethylbenzene	16.91	105	35261	0.707 ng		98
80) alpha-Methylstyrene	17.06	118	5085	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D. d		
82) 1,2,4-Trimethylbenzene	17.31	105	122293	2.472 ng		88
83) n-Decane	0.00	57	0	N.D. d		
84) Benzyl Chloride	17.53	91	2744	N.D.		
85) 1,3-Dichlorobenzene	17.46	146	786	N.D.		
86) 1,4-Dichlorobenzene	17.52	146	3044	N.D.		
87) sec-Butylbenzene	17.56	105	3867	N.D.		
88) 4-Isopropyltoluene (p-...	17.71	119	18673	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D. d		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	17.85	68	83142	4.787 ng		97
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	57	0	N.D. d		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	19.57	128	20870	N.D.		
96) n-Dodecane	0.00	57	0	N.D. d		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D. d		
99) tert-Butylbenzene	17.31	119	15539	N.D.		
100) n-Butylbenzene	18.11	91	12408	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

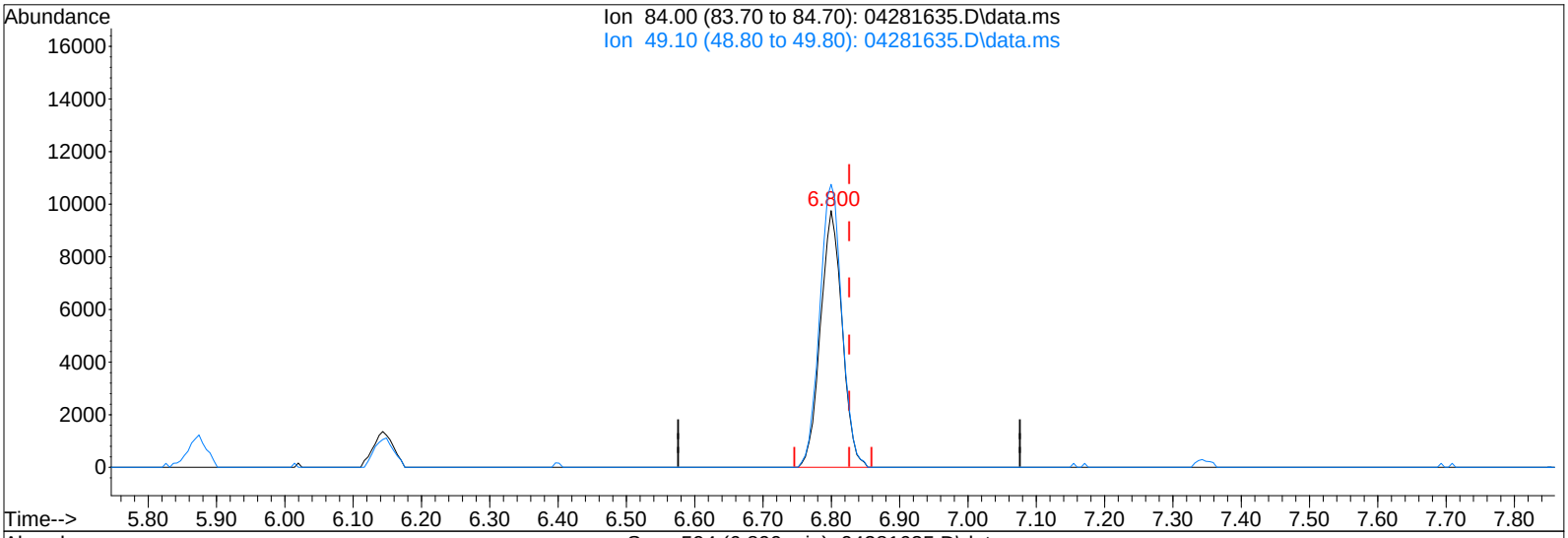
Quant Time: May 02 15:07:49 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

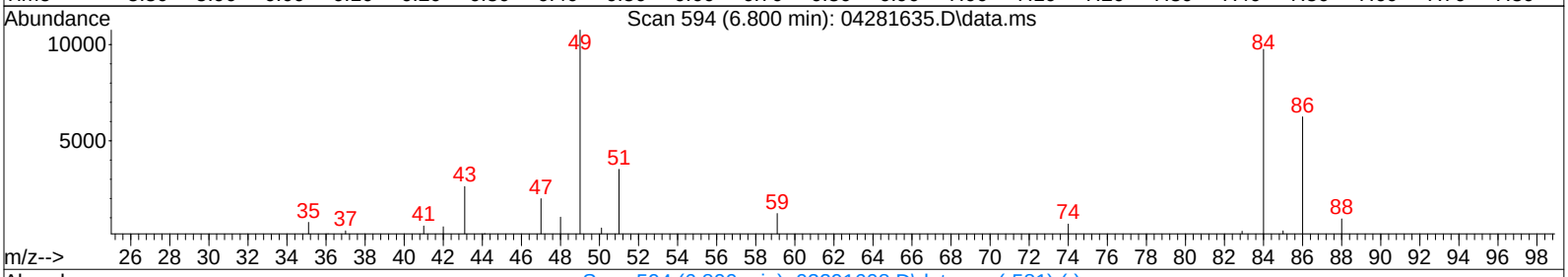


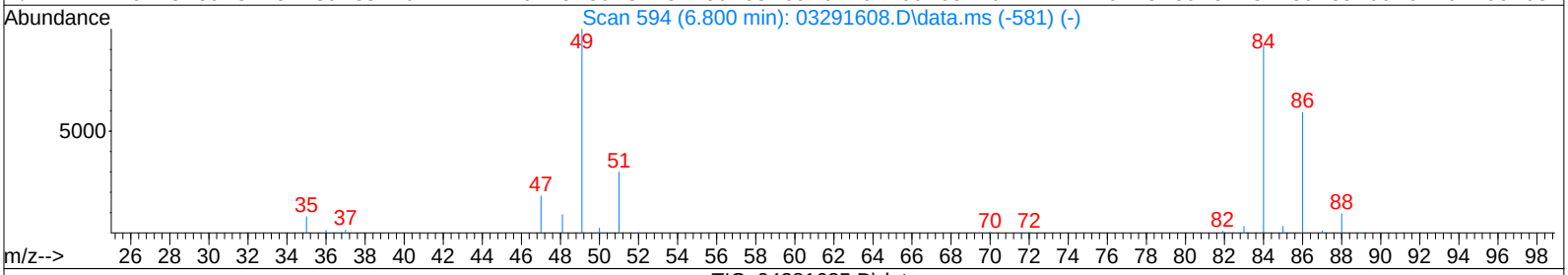
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(19) Methylene Chloride (T)

6.800min (-0.026) 1.82ng

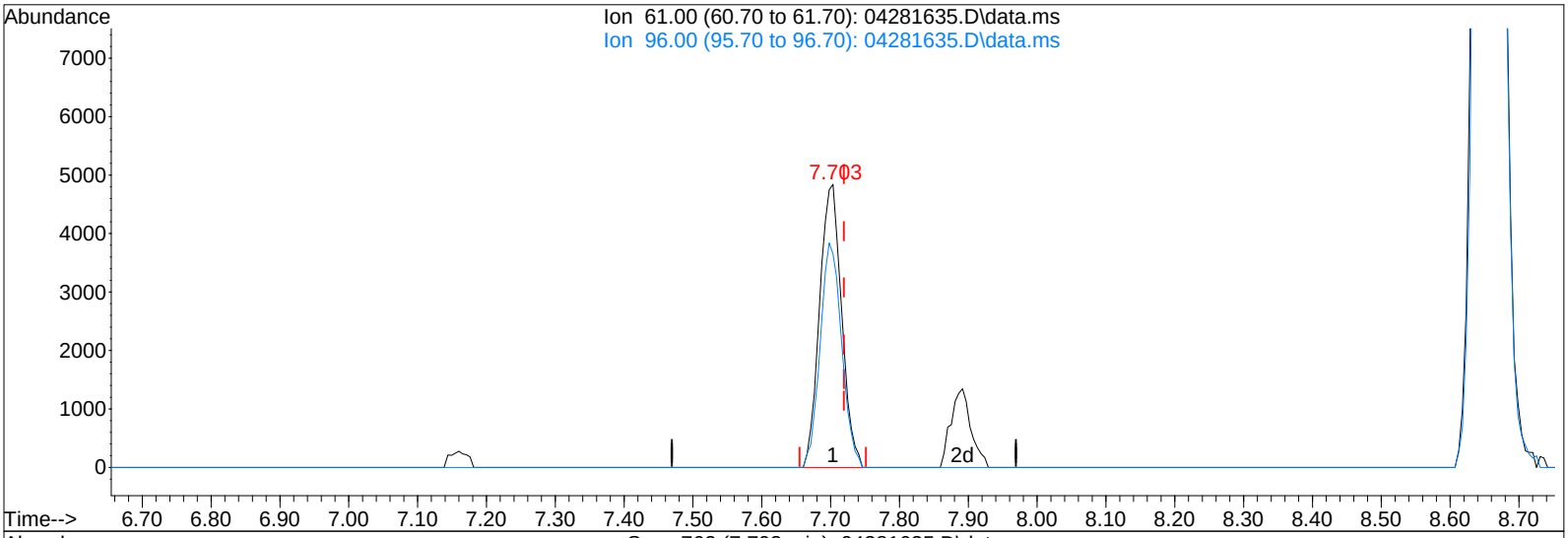
response 21514

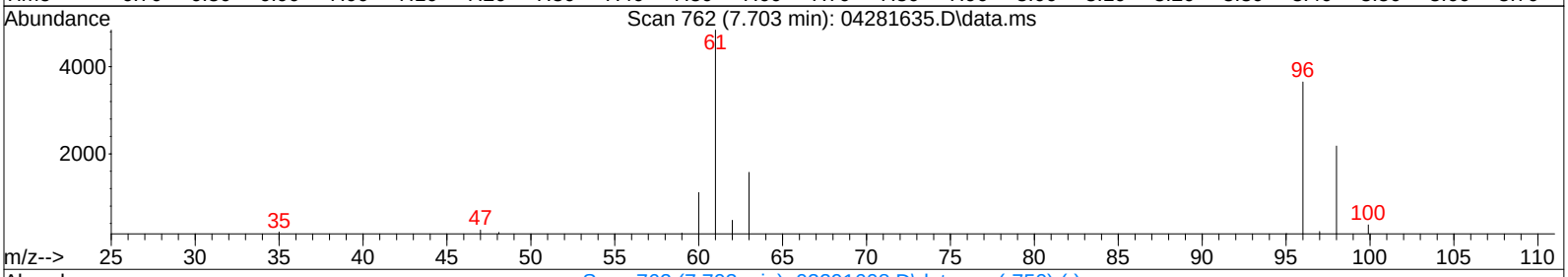
Ion	Exp%	Act%
84.00	100	100
49.10	109.90	112.89
0.00	0.00	0.00
0.00	0.00	0.00

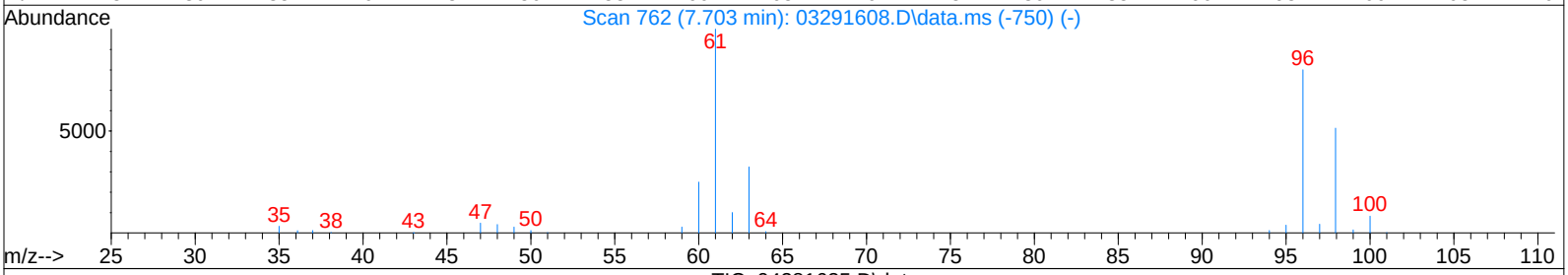
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(23) trans-1,2-Dichloroethene (T)

7.703min (-0.016) 0.79ng

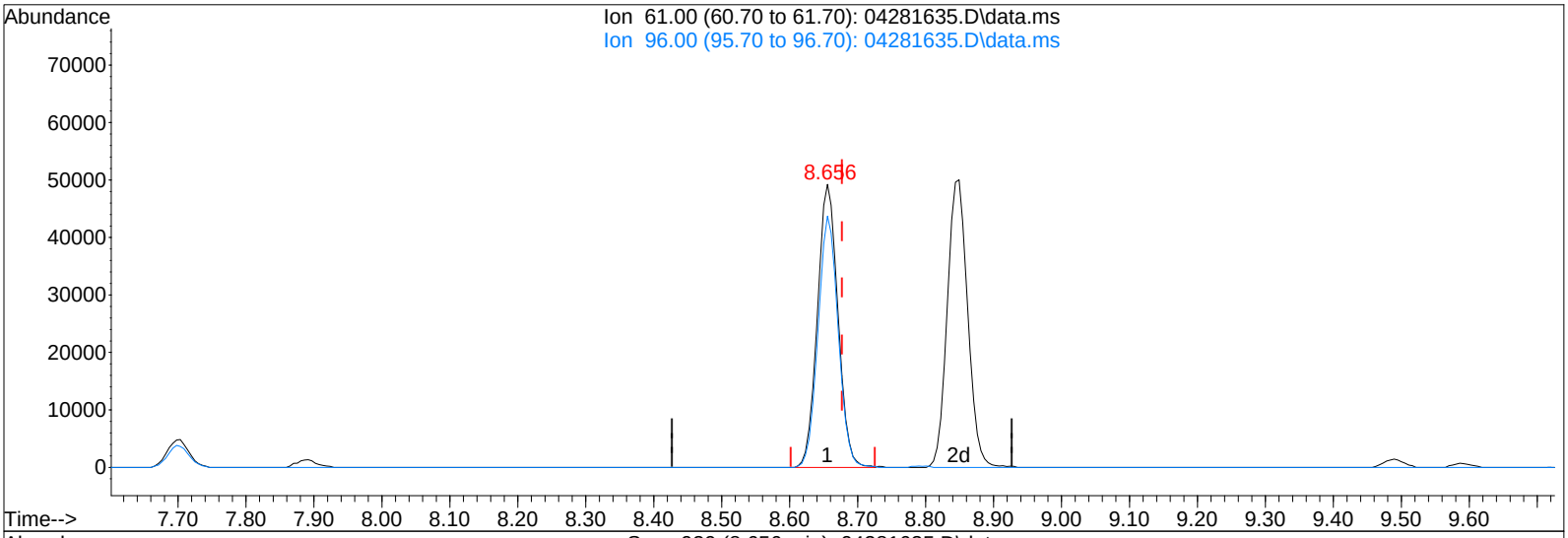
response 10734

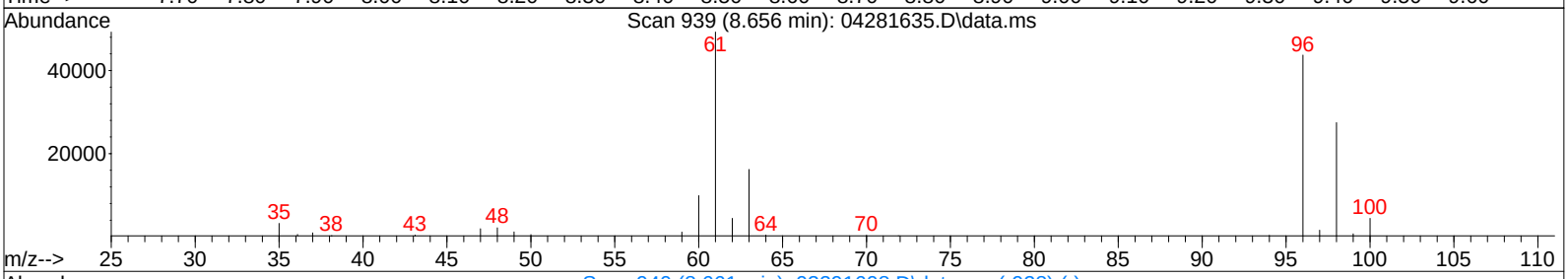
Ion	Exp%	Act%
61.00	100	100
96.00	80.30	77.70
0.00	0.00	0.00
0.00	0.00	0.00

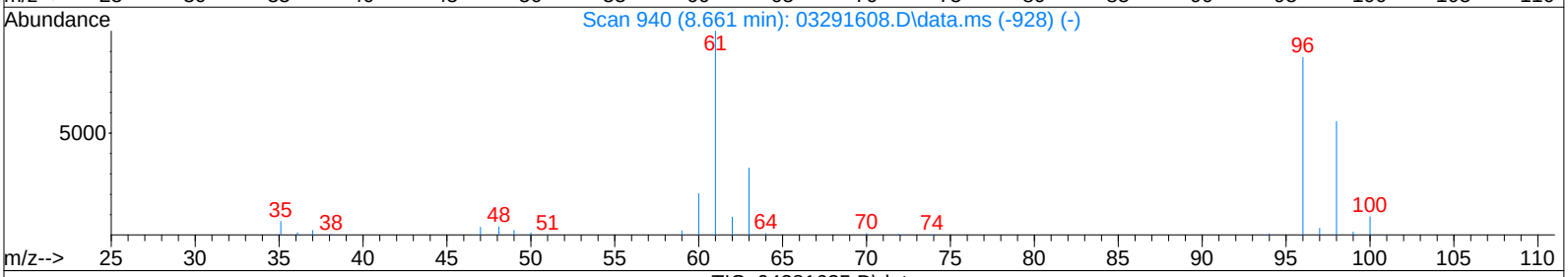
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(28) cis-1,2-Dichloroethene (T)

8.656min (-0.021) 7.82ng

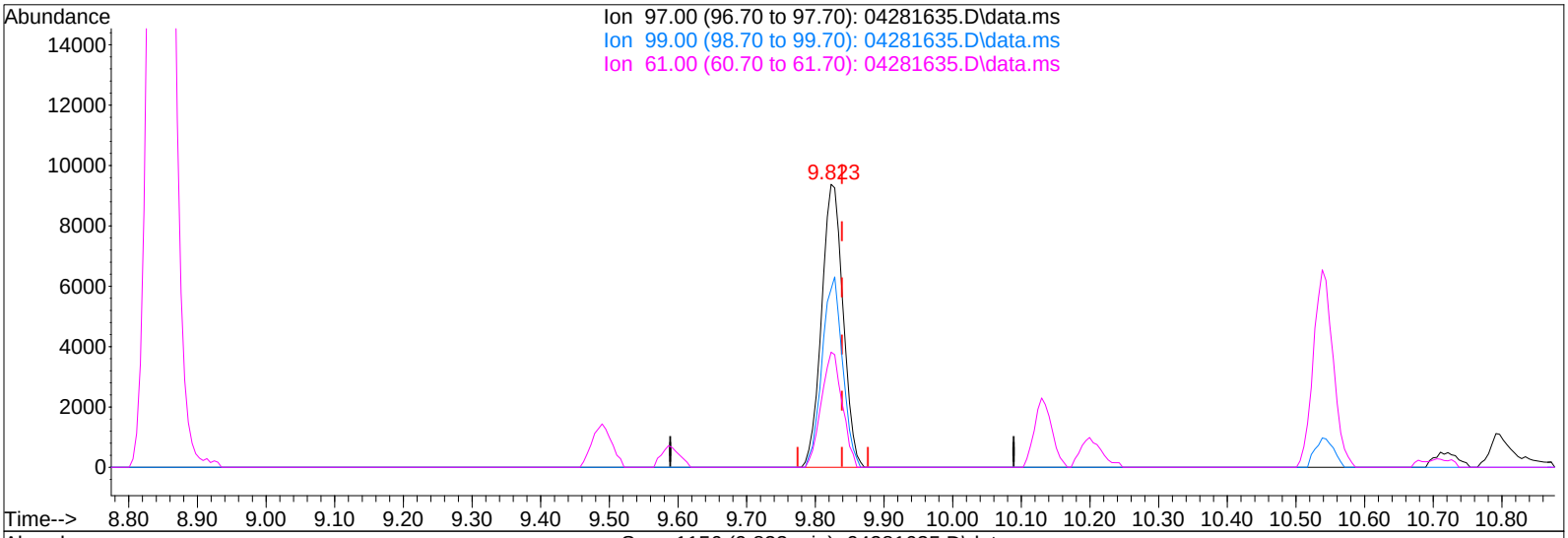
response 103089

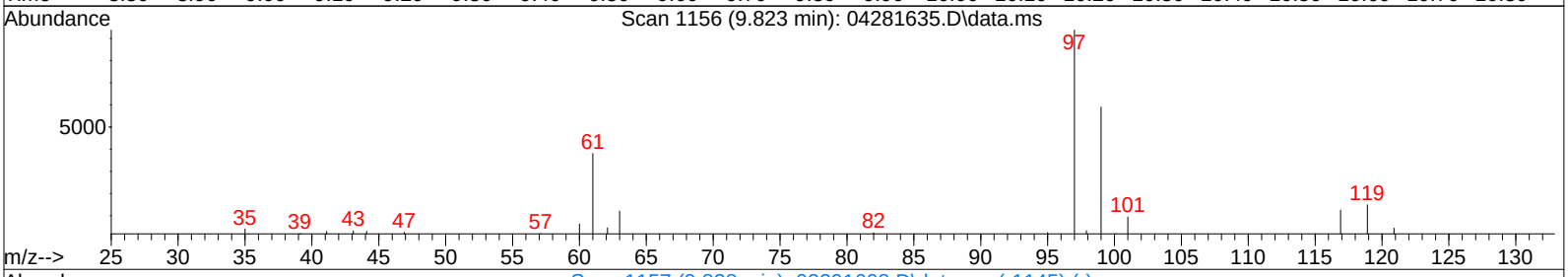
Ion	Exp%	Act%
61.00	100	100
96.00	87.60	87.66
0.00	0.00	0.00
0.00	0.00	0.00

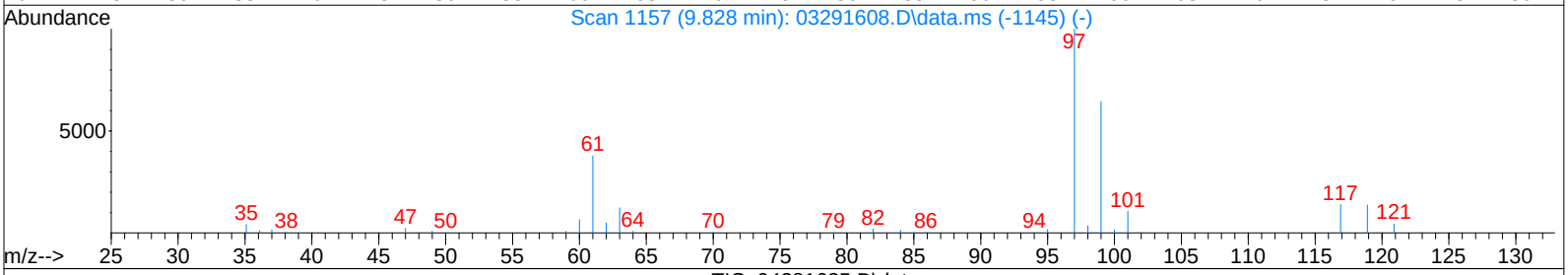
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(38) 1,1,1-Trichloroethane (T)

9.823min (-0.016) 1.24ng

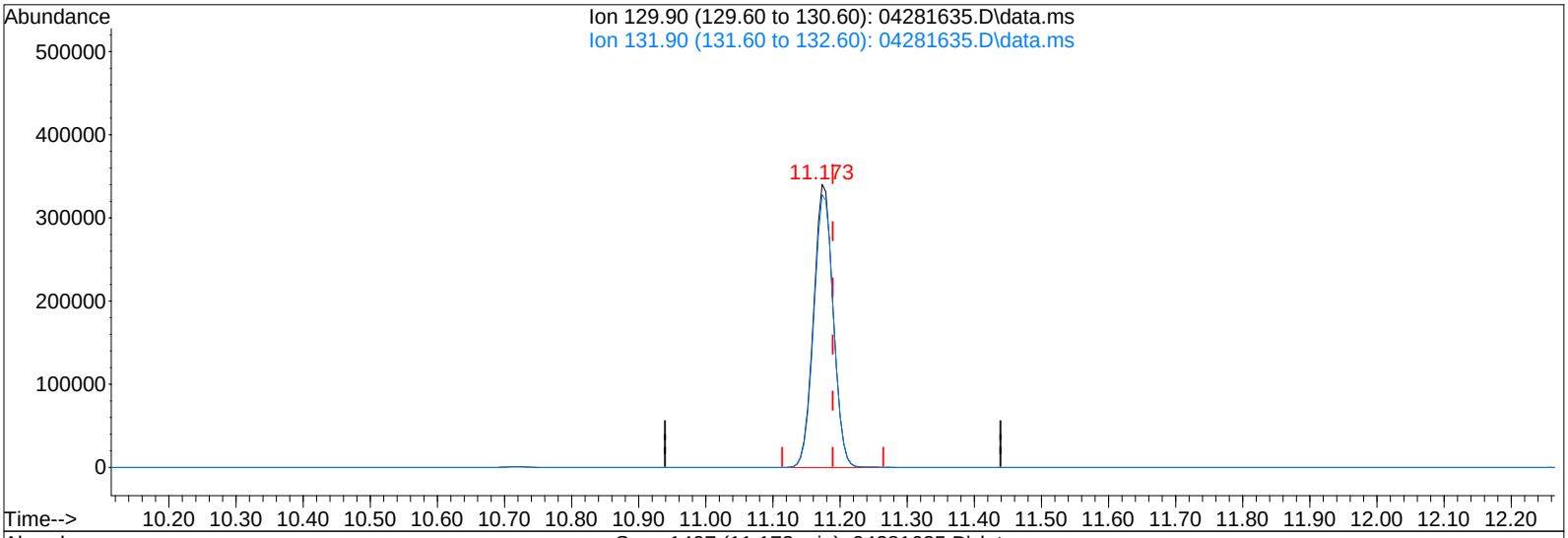
response 20320

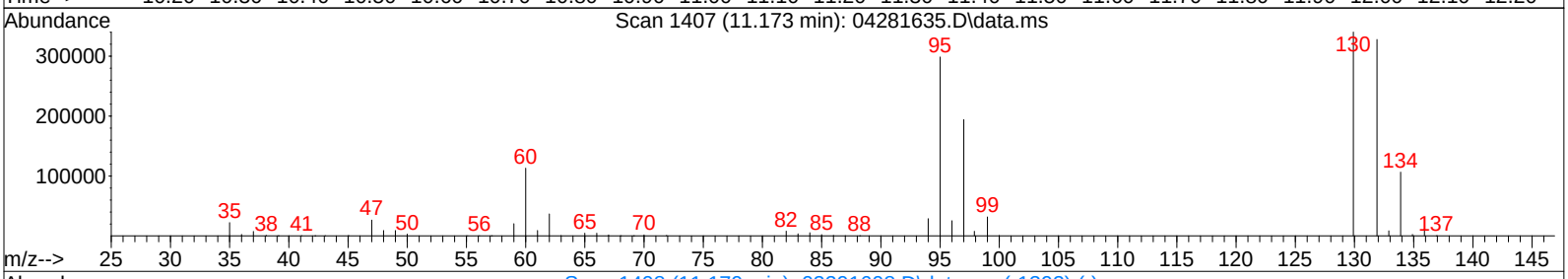
Ion	Exp%	Act%
97.00	100	100
99.00	64.50	64.15
61.00	37.50	39.69
0.00	0.00	0.00

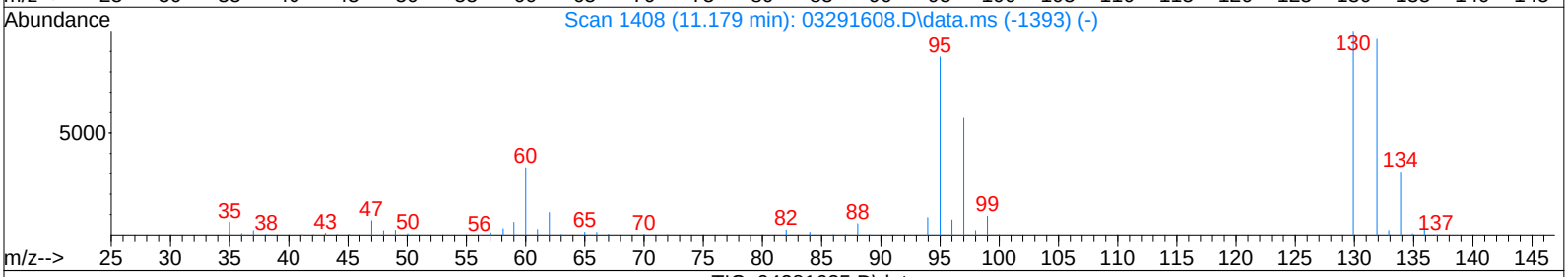
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(47) Trichloroethene (T)

11.173min (-0.016) 50.70ng

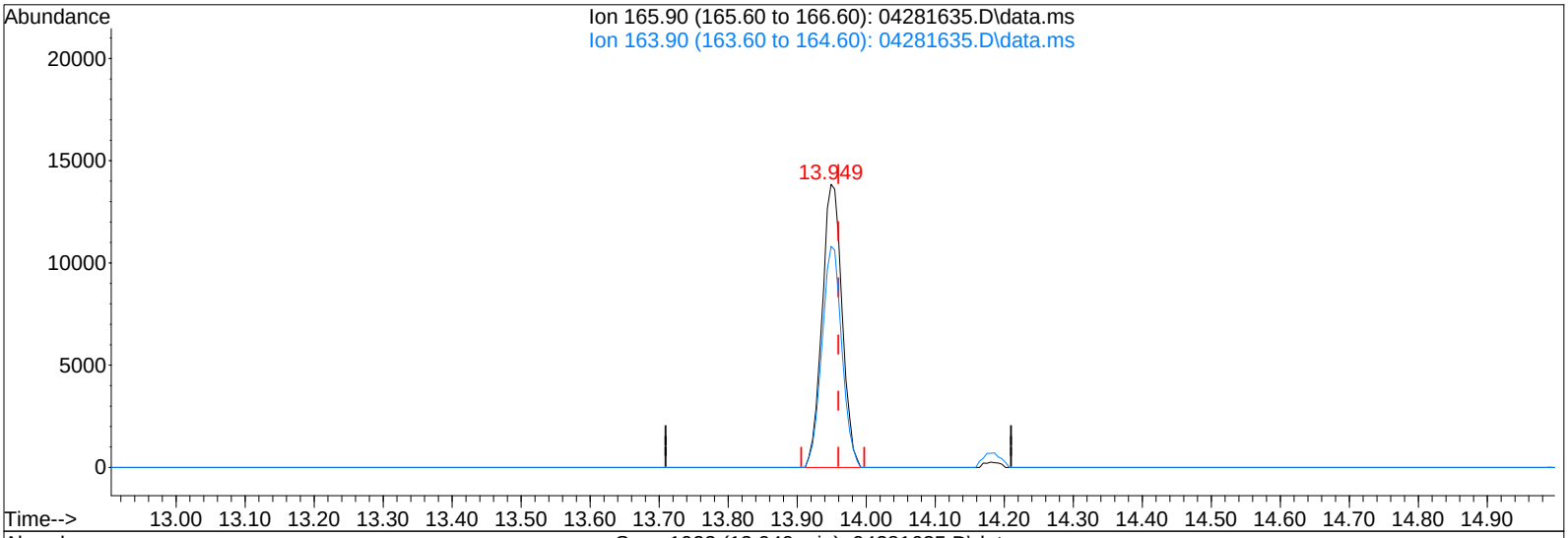
response 688123

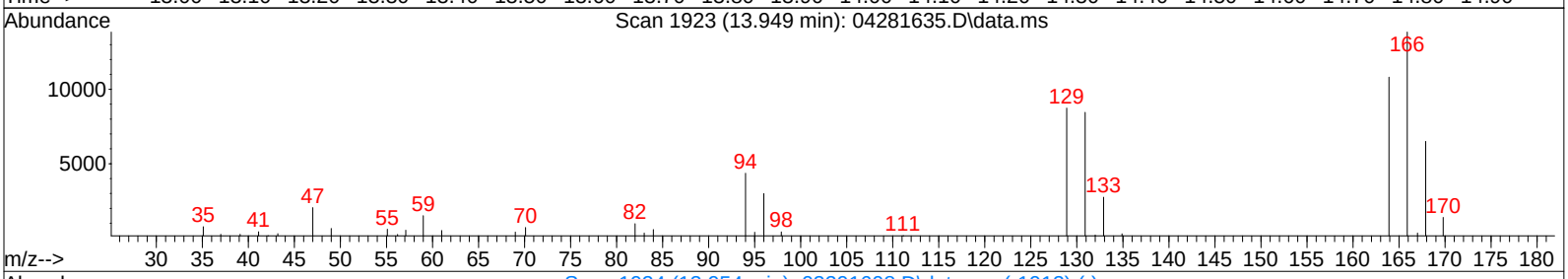
Ion	Exp%	Act%
129.90	100	100
131.90	96.10	96.78
0.00	0.00	0.00
0.00	0.00	0.00

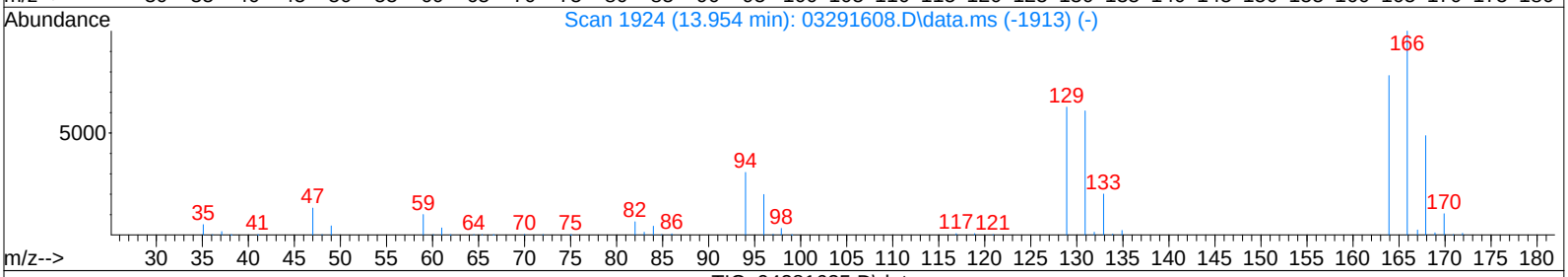
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281635.D
Acq On : 29 Apr 2016 2:07 Operator: WA
Sample : P1602145-005 (1000mL)
Misc : S29-04131602
ALS Vial : 8 Sample Multiplier: 1

Quant Time: Apr 29 06:38:53 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281635.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 1.68ng

response 27869

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	77.99
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 02 15:10:59 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016 5/2/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.80	130	119035	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	10.54	114	610814	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	251716	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	171283	12.878	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%				
57) Toluene-d8 (SS2)	12.77	98	594249	12.214	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.68%				
73) Bromofluorobenzene (SS3)	16.07	174	266793	12.862	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.88%				
Target Compounds							Qvalue
2) Propene	3.88	42	28653	2.696	ng	#	53
3) Dichlorodifluoromethan...	3.99	85	49778	2.343	ng		98
4) Chloromethane	4.18	50	905	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	529	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.36	45	138994	17.526	ng		99
11) Acetonitrile	5.58	41	1896	N.D.			
12) Acrolein	5.72	56	2218	N.D.			
13) Acetone	5.85	58	253528	29.028	ng	#	67
14) Trichlorofluoromethane	6.00	101	12188	0.652	ng		99
15) 2-Propanol (Isopropanol)	6.13	45	194448	7.438	ng		97
16) Acrylonitrile	6.35	53	170	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.	d		
19) Methylene Chloride	6.78	84	6712	0.569	ng		98
20) 3-Chloro-1-propene (Al...	6.83	41	811	N.D.			
21) Trichlorotrifluoroethane	7.06	151	2959	N.D.			
22) Carbon Disulfide	7.05	76	9488	N.D.			
23) trans-1,2-Dichloroethene	7.69	61	42171	3.095	ng		97
24) 1,1-Dichloroethane	7.88	63	13912	0.757	ng		98
25) Methyl tert-Butyl Ether	7.88	73	1631	N.D.			
26) Vinyl Acetate	8.00	86	84119	30.979	ng	#	14
27) 2-Butanone (MEK)	8.25	72	16828	1.900	ng		93
28) cis-1,2-Dichloroethene	8.64	61	989506	75.042	ng		100
29) Diisopropyl Ether	8.84	87	1044	N.D.			
30) Ethyl Acetate	8.85	61	40248	11.889	ng		92
31) n-Hexane	8.86	57	19095	1.101	ng		100
32) Chloroform	8.91	83	27803	1.569	ng		99
34) Tetrahydrofuran (THF)	9.28	72	2483	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	9.58	62	3065	N.D.			
38) 1,1,1-Trichloroethane	9.82	97	74735	4.527	ng		99
39) Isopropyl Acetate	10.13	61	1140	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.23	78	11362	N.D.			
42) Carbon Tetrachloride	10.37	117	1183	N.D.			
43) Cyclohexane	10.48	84	7356	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	10.97	63	901	N.D.			
46) Bromodichloromethane	11.12	83	5422	N.D.			
47) Trichloroethene	11.18	130	2597304	190.511	ng		99
48) 1,4-Dioxane	11.16	88	595	N.D.			
49) 2,2,4-Trimethylpentane...	11.23	57	22051	N.D.			

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 02 15:10:59 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

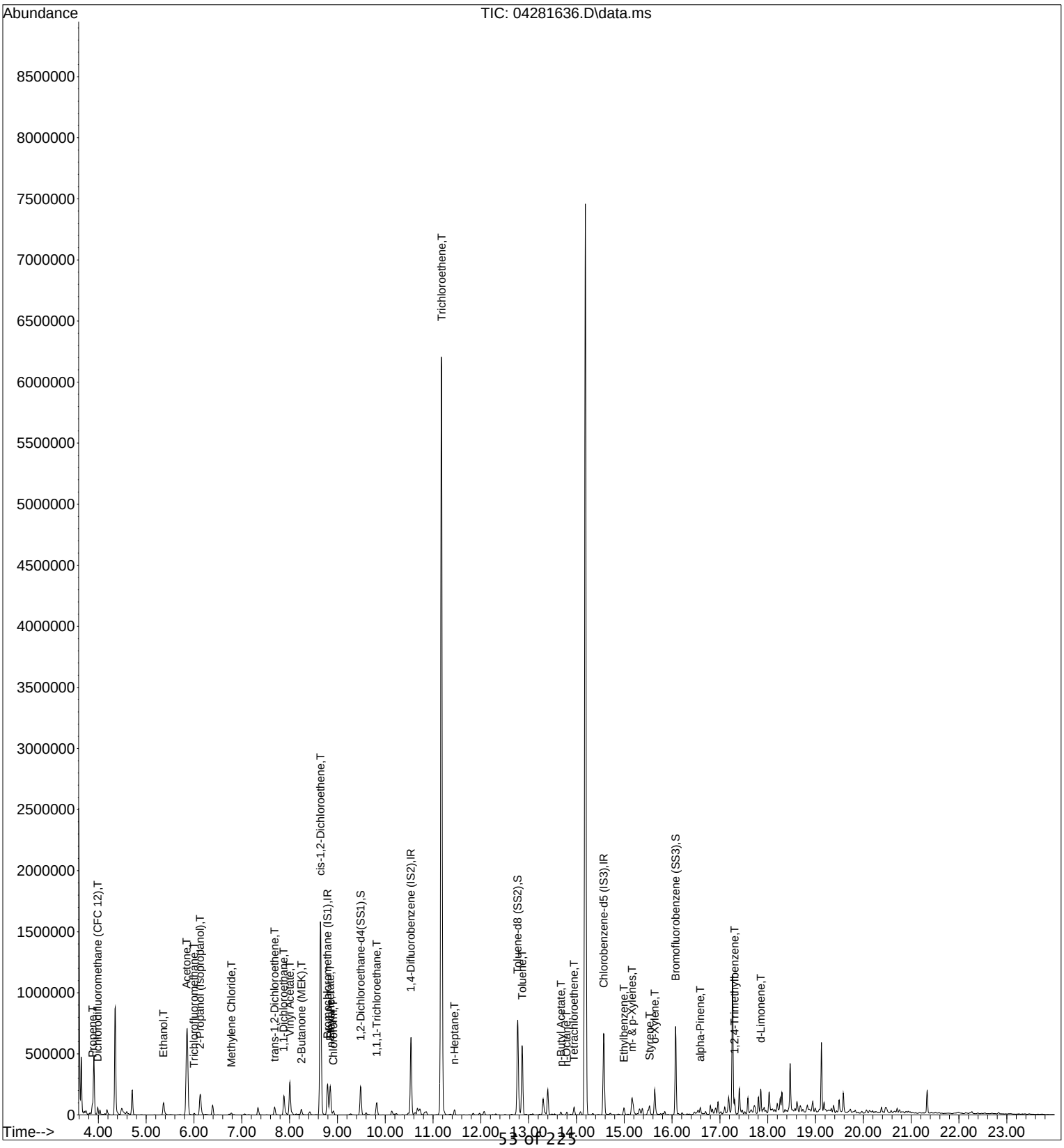
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	698	N.D.	
51) n-Heptane	11.45	71	11938	1.057 ng	98
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.97	58	4397	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.86	91	494254	8.493 ng	100
59) 2-Hexanone	13.08	43	5947	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.67	43	19183	0.800 ng	98
63) n-Octane	13.79	57	4646	0.469 ng	98
64) Tetrachloroethene	13.95	166	25026	1.495 ng	99
65) Chlorobenzene	14.62	112	1059	N.D.	
66) Ethylbenzene	14.99	91	50958	0.917 ng	98
67) m- & p-Xylenes	15.16	91	125959	2.850 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.53	104	42695	1.276 ng	99
70) o-Xylene	15.64	91	47468	1.022 ng	99
71) n-Nonane	15.85	43	9202	N.D.	
72) 1,1,2,2-Tetrachloroethane	15.64	83	1069	N.D.	
74) Cumene	16.21	105	8794	N.D.	
75) alpha-Pinene	16.59	93	24211	0.803 ng	95
76) n-Propylbenzene	16.70	91	17438	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	16.84	105	19594	N.D.	
79) 1,3,5-Trimethylbenzene	16.91	105	16422	N.D.	
80) alpha-Methylstyrene	17.06	118	2167	N.D.	
81) 2-Ethyltoluene	17.10	105	15477	N.D.	
82) 1,2,4-Trimethylbenzene	17.31	105	56669	1.133 ng	87
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	17.53	91	1359	N.D.	
85) 1,3-Dichlorobenzene	17.46	146	544	N.D.	
86) 1,4-Dichlorobenzene	17.52	146	1689	N.D.	
87) sec-Butylbenzene	17.56	105	2210	N.D.	
88) 4-Isopropyltoluene (p-...	17.71	119	19561	N.D.	
89) 1,2,3-Trimethylbenzene	17.71	105	15480	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	17.85	68	46824	2.665 ng	98
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	19.57	128	12067	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	17.31	119	7218	N.D.	
100) n-Butylbenzene	18.10	91	10420	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

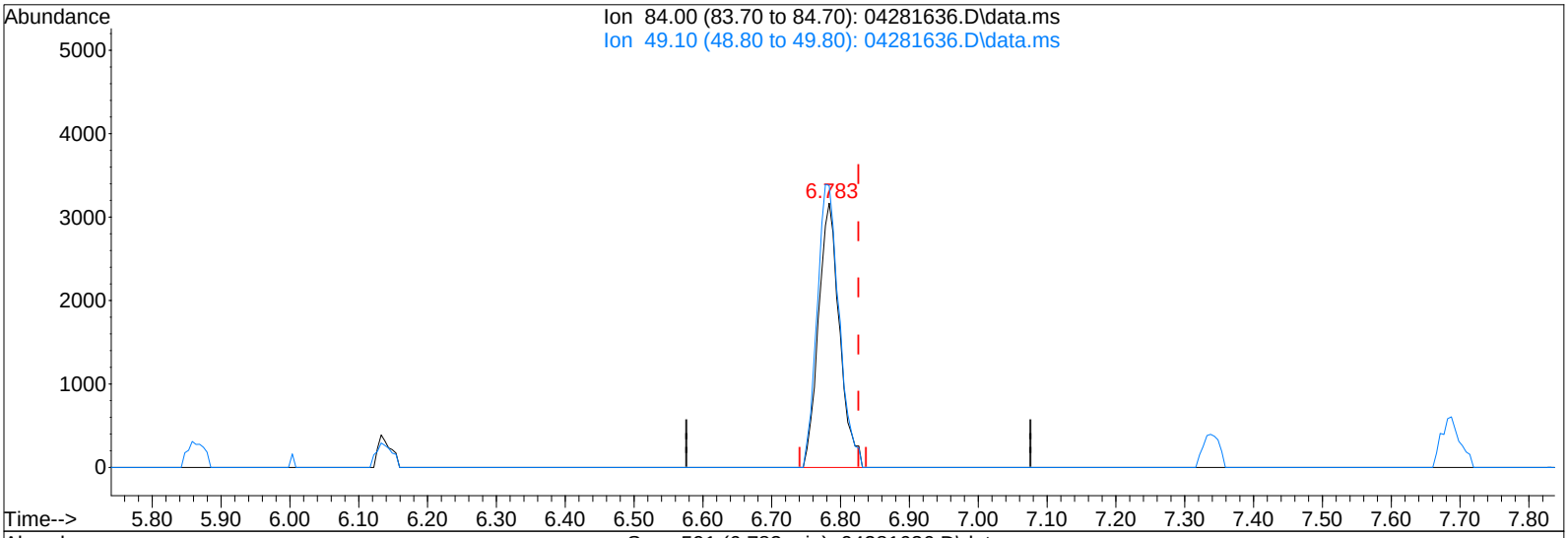
Quant Time: May 02 15:10:59 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

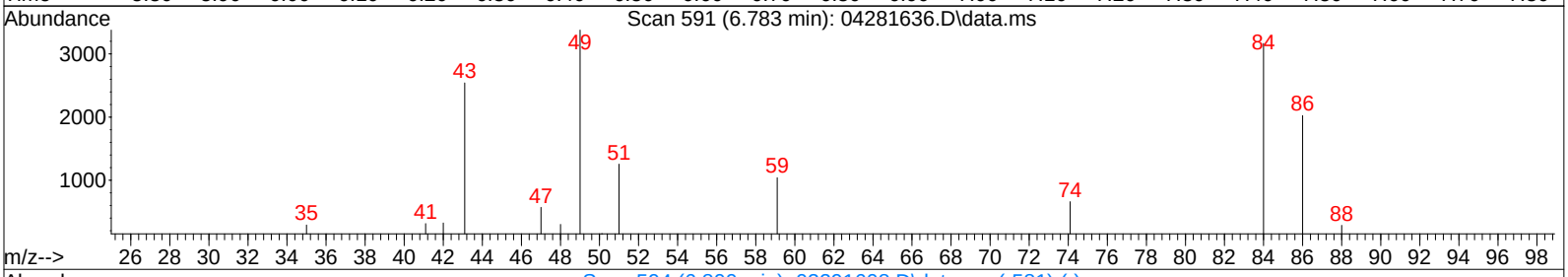


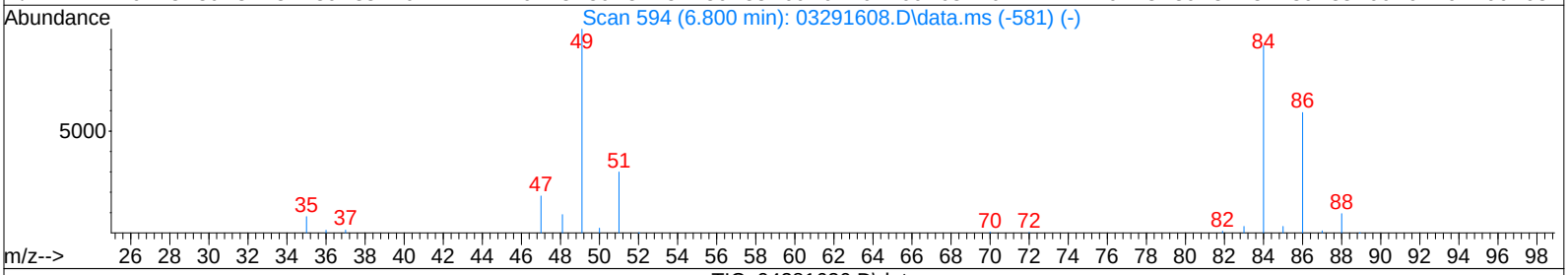
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(19) Methylene Chloride (T)

6.783min (-0.043) 0.57ng

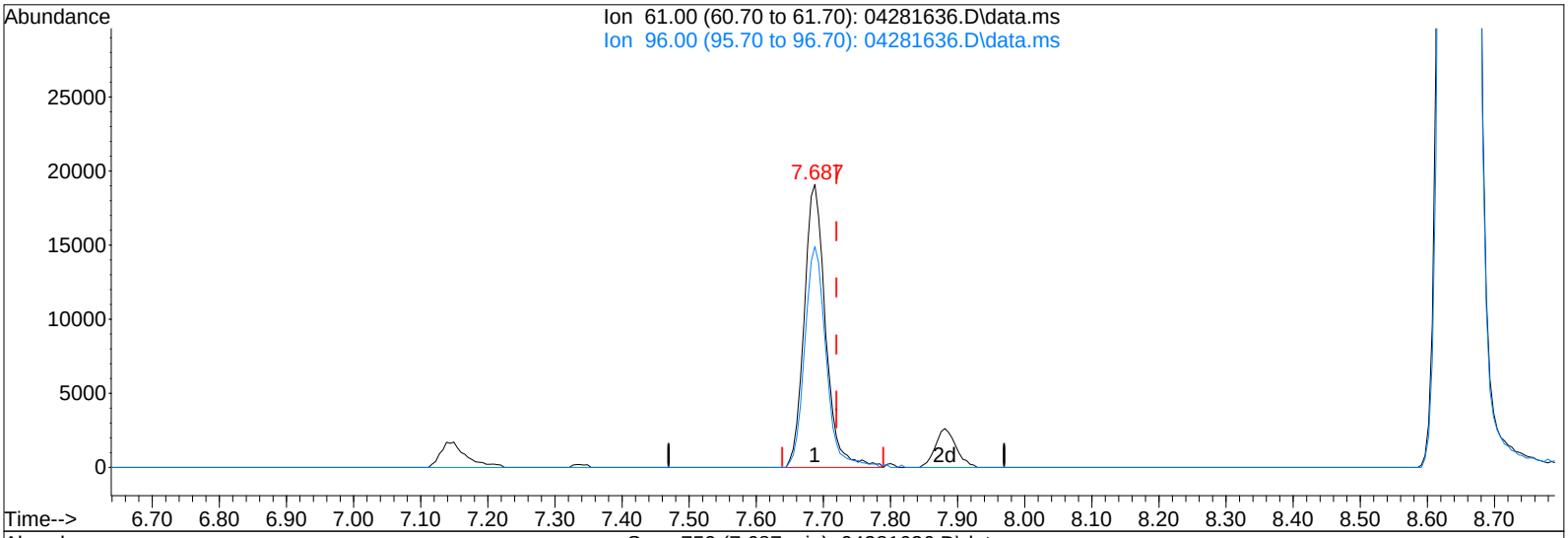
response 6712

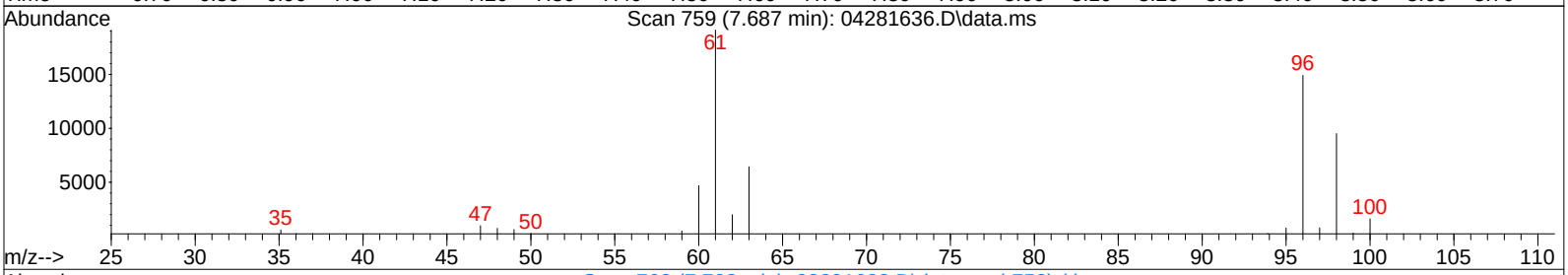
Ion	Exp%	Act%
84.00	100	100
49.10	109.90	112.41
0.00	0.00	0.00
0.00	0.00	0.00

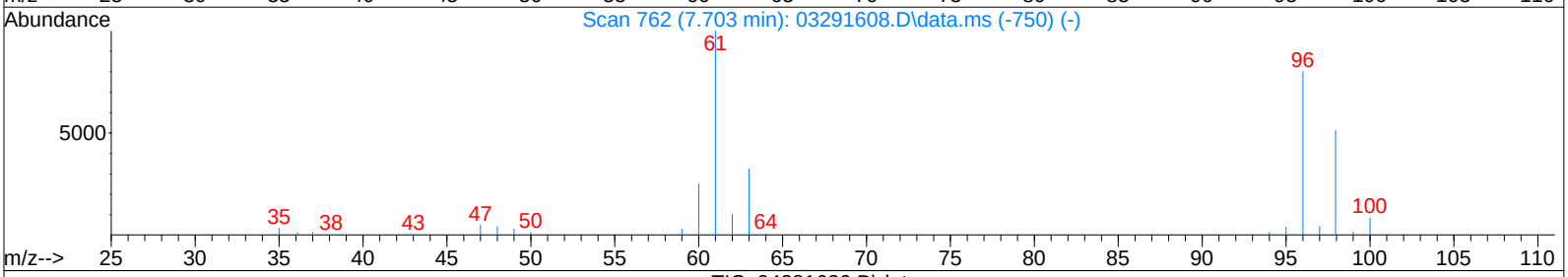
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(23) trans-1,2-Dichloroethene (T)

7.687min (-0.032) 3.10ng

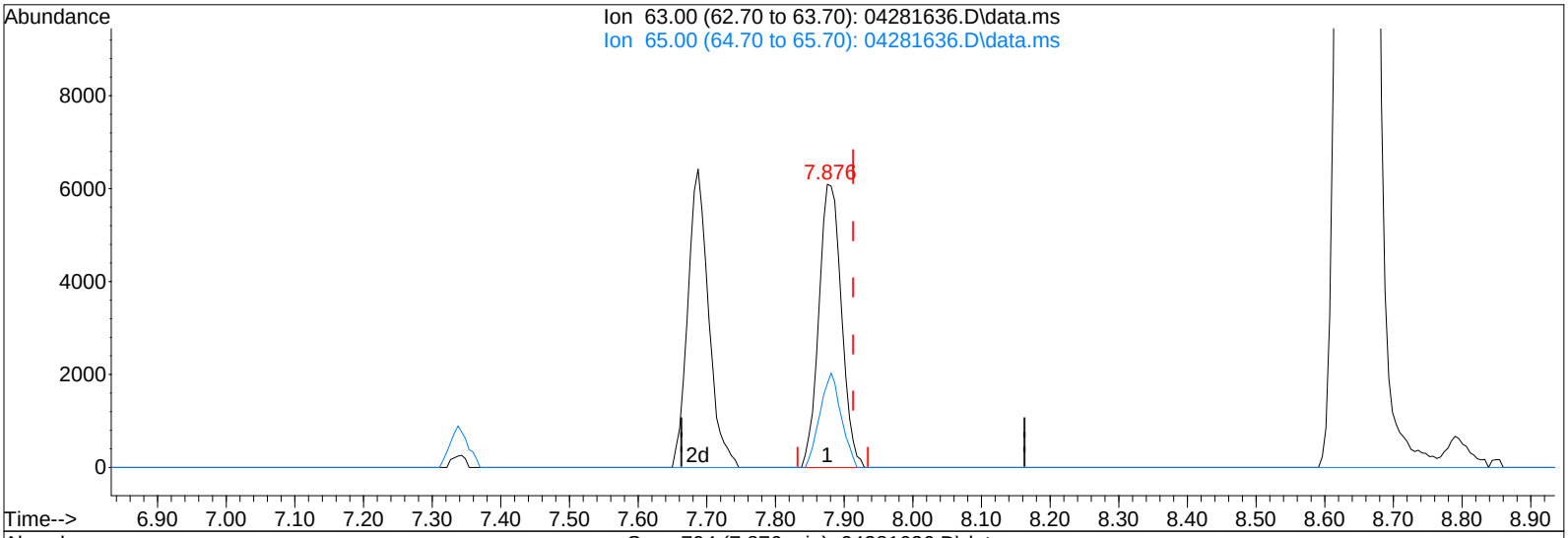
response 42171

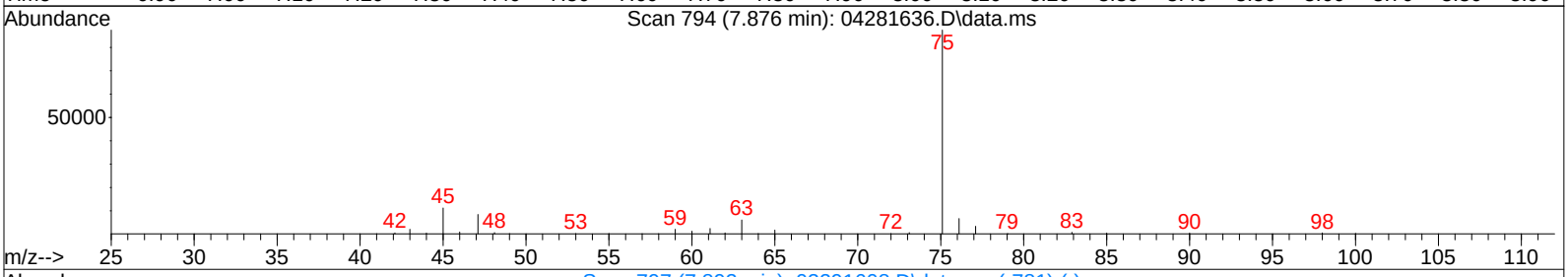
Ion	Exp%	Act%
61.00	100	100
96.00	80.30	78.01
0.00	0.00	0.00
0.00	0.00	0.00

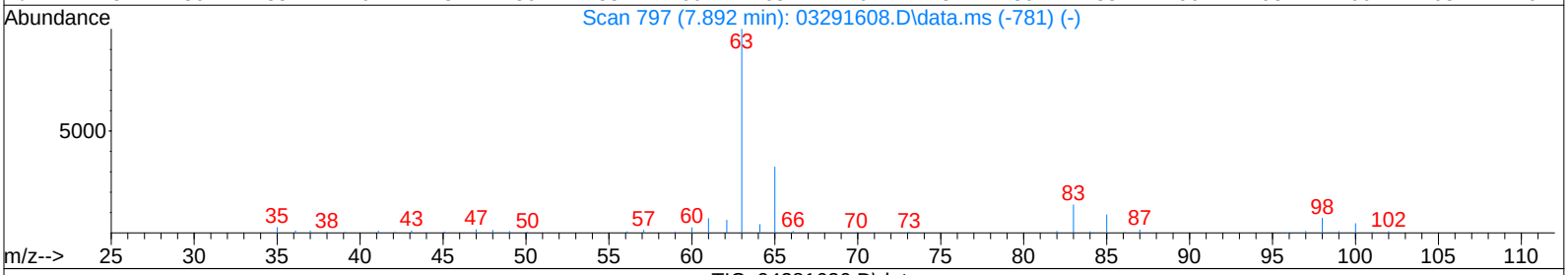
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(24) 1,1-Dichloroethane (T)

7.876min (-0.038) 0.76ng

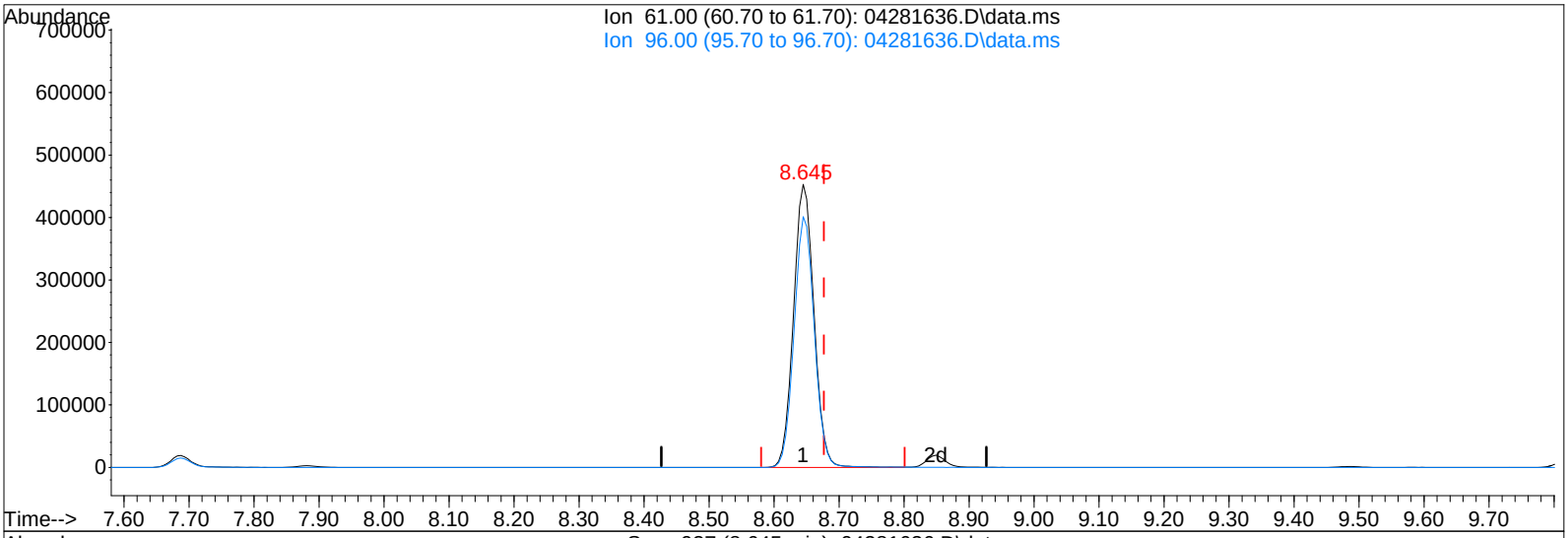
response 13912

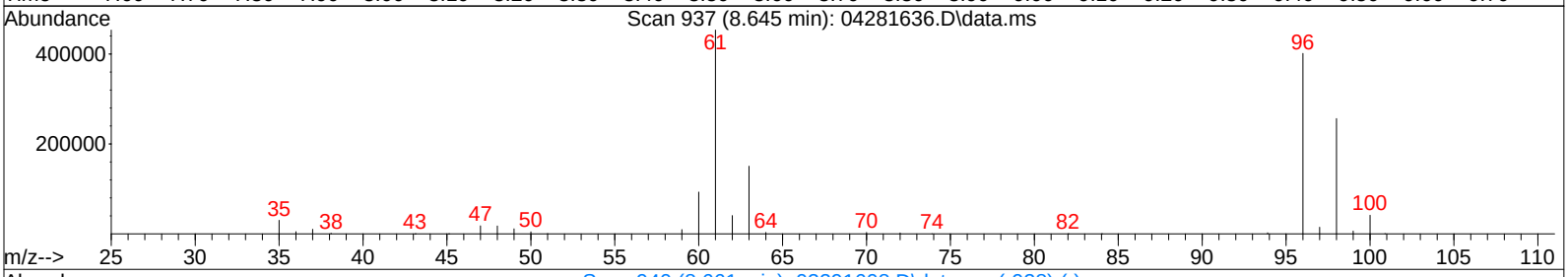
Ion	Exp%	Act%
63.00	100	100
65.00	32.40	31.30
0.00	0.00	0.00
0.00	0.00	0.00

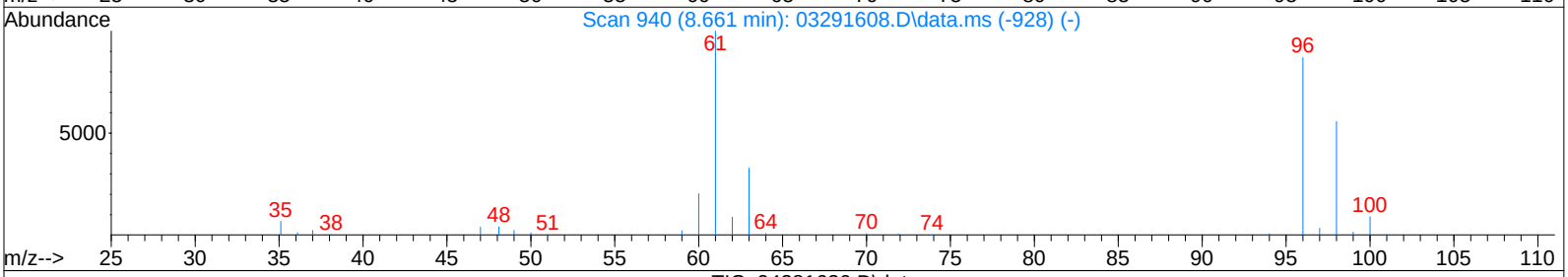
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(28) cis-1,2-Dichloroethene (T)

8.645min (-0.032) 75.04ng

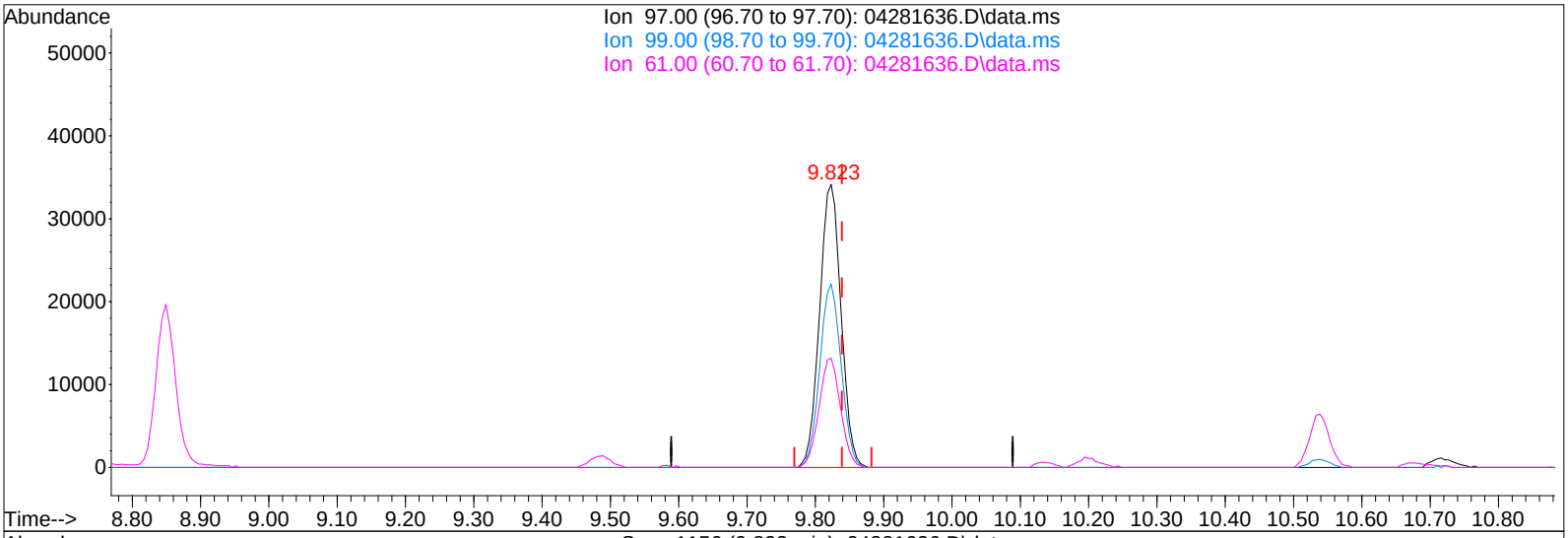
response 989506

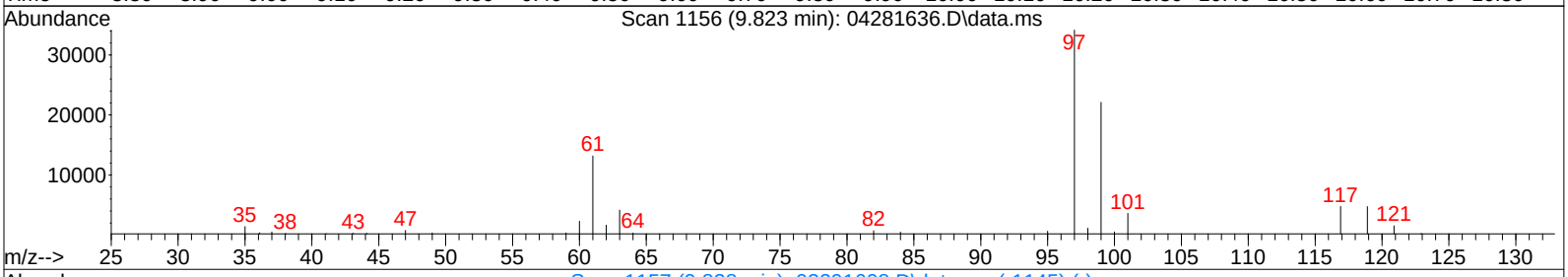
Ion	Exp%	Act%
61.00	100	100
96.00	87.60	88.02
0.00	0.00	0.00
0.00	0.00	0.00

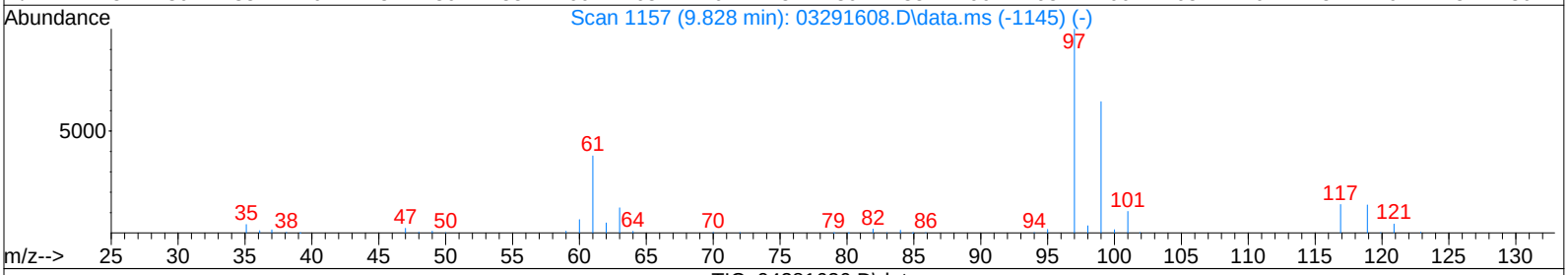
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(38) 1,1,1-Trichloroethane (T)

9.823min (-0.016) 4.53ng

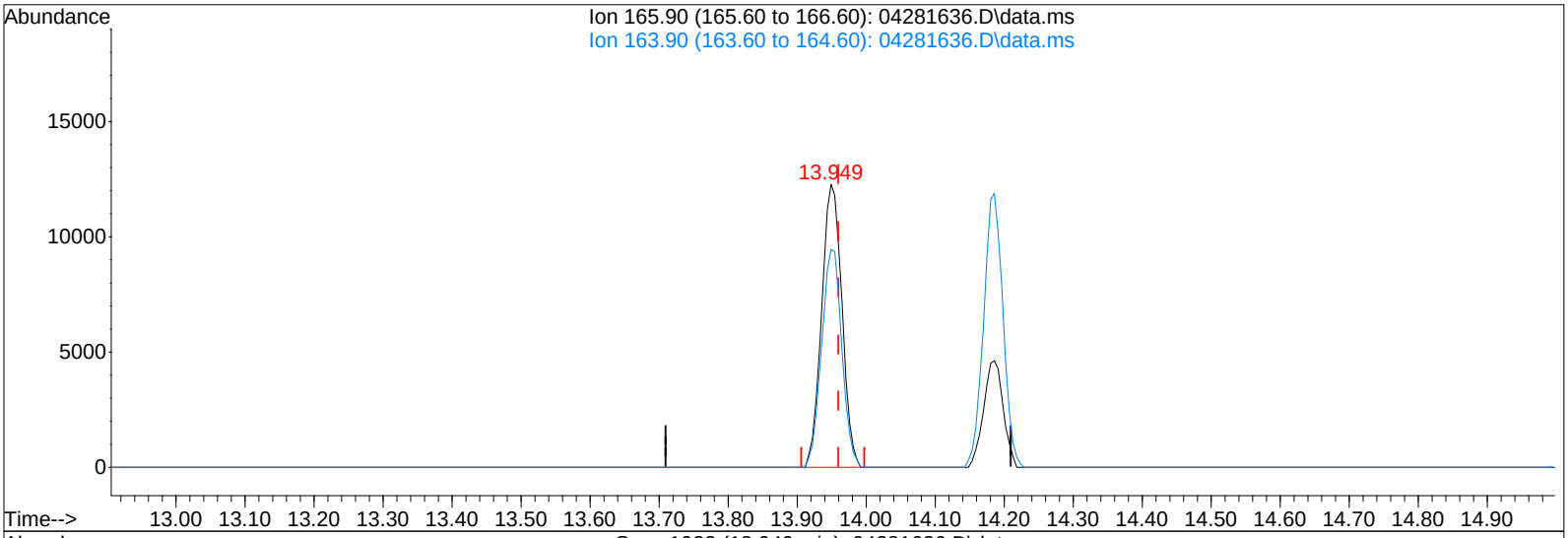
response 74735

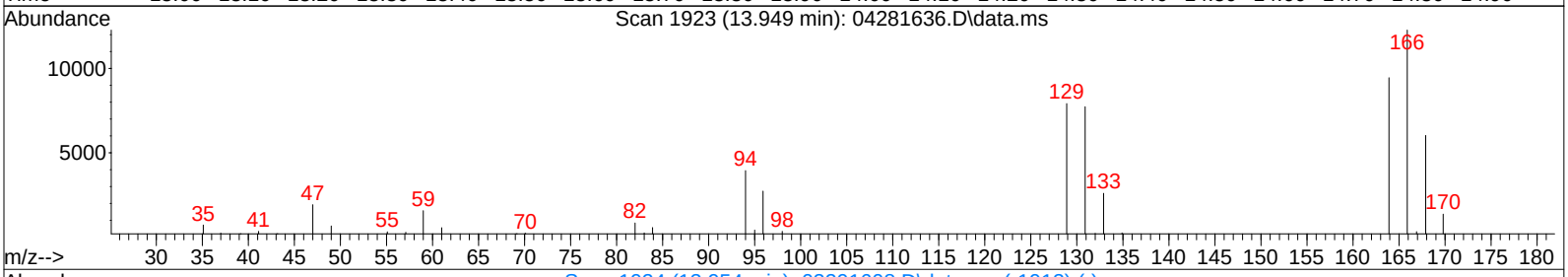
Ion	Exp%	Act%
97.00	100	100
99.00	64.50	64.40
61.00	37.50	38.61
0.00	0.00	0.00

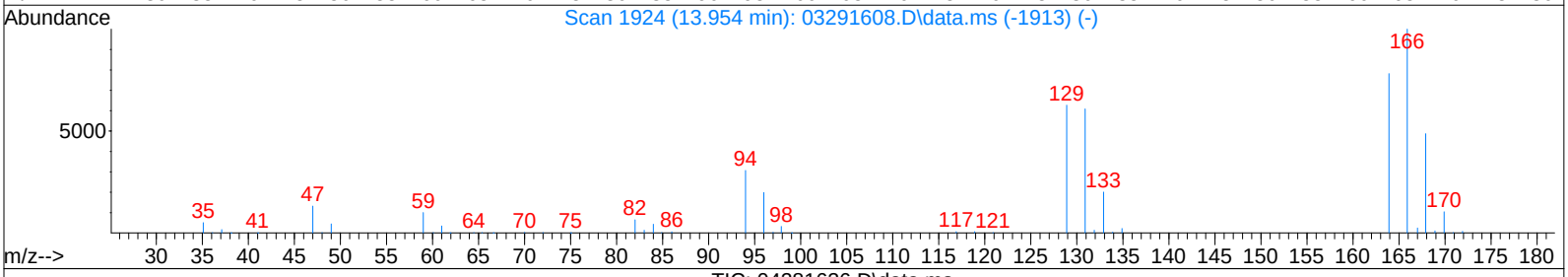
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281636.D
Acq On : 29 Apr 2016 2:39 Operator: WA
Sample : P1602145-006 (1000mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281636.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 1.50ng

response 25026

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	76.96
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281637.D
Acq On : 29 Apr 2016 3:12 Operator: WA
Sample : P1602145-006dil (100mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 02 15:11:47 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

5/2/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	118869	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	10.53	114	592091	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	244511	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	167263	12.593	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.72%				
57) Toluene-d8 (SS2)	12.77	98	578233	12.235	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.84%				
73) Bromofluorobenzene (SS3)	16.07	174	264634	13.134	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.04%				
Target Compounds							Qvalue
2) Propene	3.92	42	2439	N.D.			
3) Dichlorodifluoromethan...	4.00	85	4879	N.D.			
4) Chloromethane	0.00	50	0	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.			
6) Vinyl Chloride	0.00	62	0	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	0.00	94	0	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.36	45	14342	1.811	ng		96
11) Acetonitrile	0.00	41	0	N.D.			
12) Acrolein	0.00	56	0	N.D.	d		
13) Acetone	5.85	58	26593	3.049	ng	#	65
14) Trichlorofluoromethane	6.02	101	1061	N.D.			
15) 2-Propanol (Isopropanol)	6.13	45	28402	1.088	ng		98
16) Acrylonitrile	0.00	53	0	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	6.76	59	2138	N.D.			
19) Methylene Chloride	6.79	84	2384	N.D.			
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.			
21) Trichlorotrifluoroethane	0.00	151	0	N.D.			
22) Carbon Disulfide	7.08	76	2439	N.D.			
23) trans-1,2-Dichloroethene	7.70	61	4042	N.D.			
24) 1,1-Dichloroethane	7.88	63	1211	N.D.			
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.			
26) Vinyl Acetate	8.00	86	7684	2.834	ng	#	23
27) 2-Butanone (MEK)	8.25	72	1318	N.D.			
28) cis-1,2-Dichloroethene	8.64	61	101628	7.718	ng		98
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	8.85	61	3799	1.124	ng		85
31) n-Hexane	8.87	57	1807	N.D.			
32) Chloroform	8.91	83	2652	N.D.			
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	9.82	97	7441	0.465	ng		99
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	10.17	56	1634	N.D.			
41) Benzene	10.24	78	1186	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	10.48	84	558	N.D.			
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	11.17	83	2452	N.D.			
47) Trichloroethene	11.17	130	256149	19.383	ng		100
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	11.23	57	2135	N.D.			

Data File: I:\MS08\Data\2016 04\28\04281637.D
Acq On : 29 Apr 2016 3:12 Operator: WA
Sample : P1602145-006dil (100mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: May 02 15:11:47 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

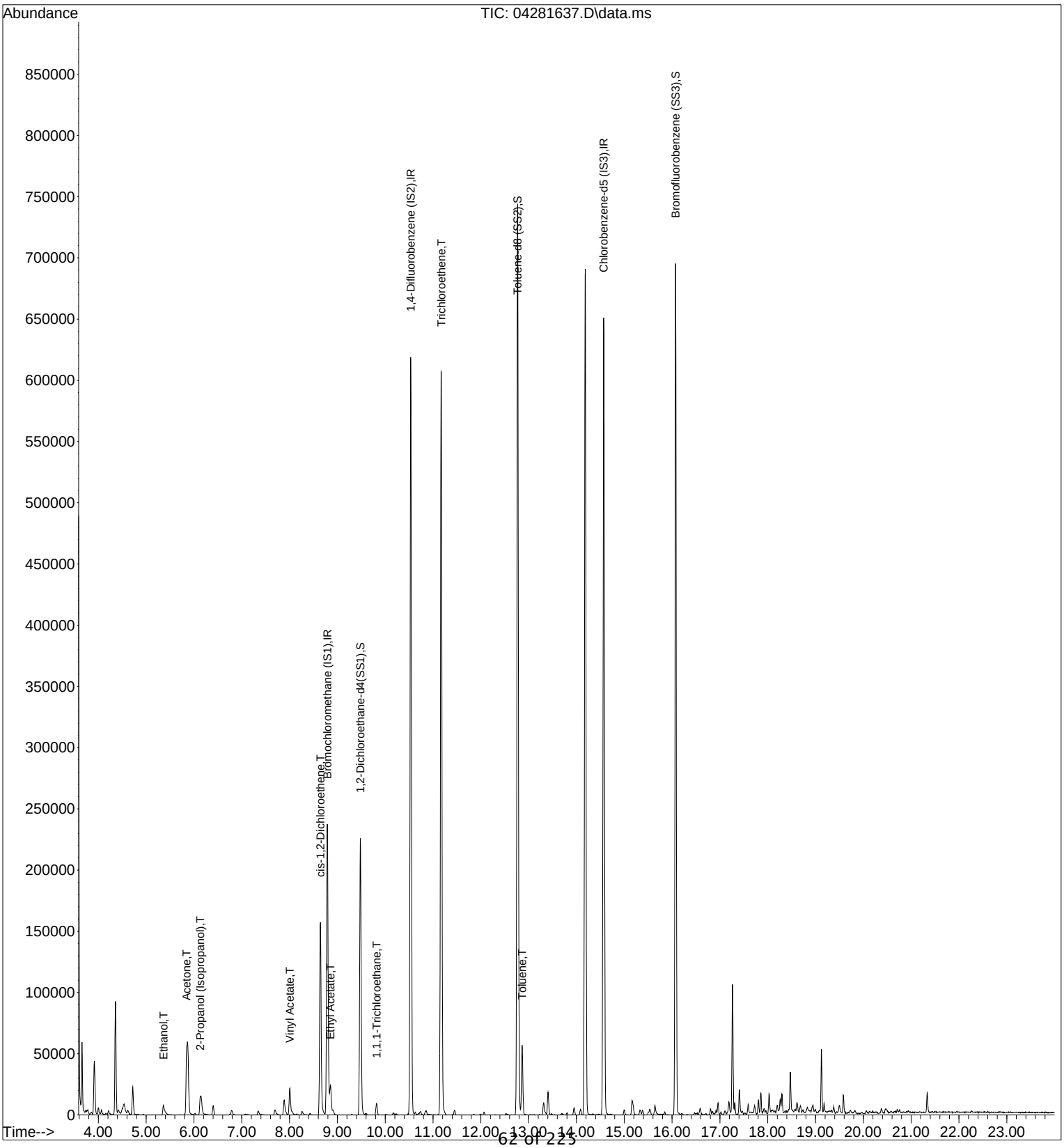
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D.	
51) n-Heptane	11.45	71	1098	N.D.	
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.86	91	50010	0.885 ng	99
59) 2-Hexanone	12.87	43	1160	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.70	43	1783	N.D.	
63) n-Octane	0.00	57	0	N.D.	
64) Tetrachloroethene	13.95	166	2723	N.D.	
65) Chlorobenzene	0.00	112	0	N.D.	
66) Ethylbenzene	14.99	91	4971	N.D.	
67) m- & p-Xylenes	15.17	91	12282	N.D.	
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.54	104	3832	N.D.	
70) o-Xylene	15.64	91	4528	N.D.	
71) n-Nonane	15.85	43	1052	N.D.	
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.	
74) Cumene	16.21	105	885	N.D.	
75) alpha-Pinene	16.59	93	2388	N.D.	
76) n-Propylbenzene	16.71	91	1598	N.D.	
77) 3-Ethyltoluene	16.80	105	3996	N.D.	
78) 4-Ethyltoluene	16.84	105	2076	N.D.	
79) 1,3,5-Trimethylbenzene	16.91	105	1777	N.D.	
80) alpha-Methylstyrene	17.26	118	1402	N.D.	
81) 2-Ethyltoluene	17.10	105	1497	N.D.	
82) 1,2,4-Trimethylbenzene	17.31	105	5330	N.D.	
83) n-Decane	17.41	57	7578	N.D.	
84) Benzyl Chloride	17.31	91	512	N.D.	
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.	
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.	
87) sec-Butylbenzene	17.72	105	1490	N.D.	
88) 4-Isopropyltoluene (p-...	17.72	119	1870	N.D.	
89) 1,2,3-Trimethylbenzene	17.72	105	1490	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	17.85	68	4334	N.D.	
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	18.61	57	2876	N.D.	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	19.58	128	1360	N.D.	
96) n-Dodecane	19.58	57	4859	N.D.	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	15.33	55	2443	N.D.	
99) tert-Butylbenzene	17.26	119	2330	N.D.	
100) n-Butylbenzene	18.11	91	941	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281637.D
Acq On : 29 Apr 2016 3:12 Operator: WA
Sample : P1602145-006dil (100mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

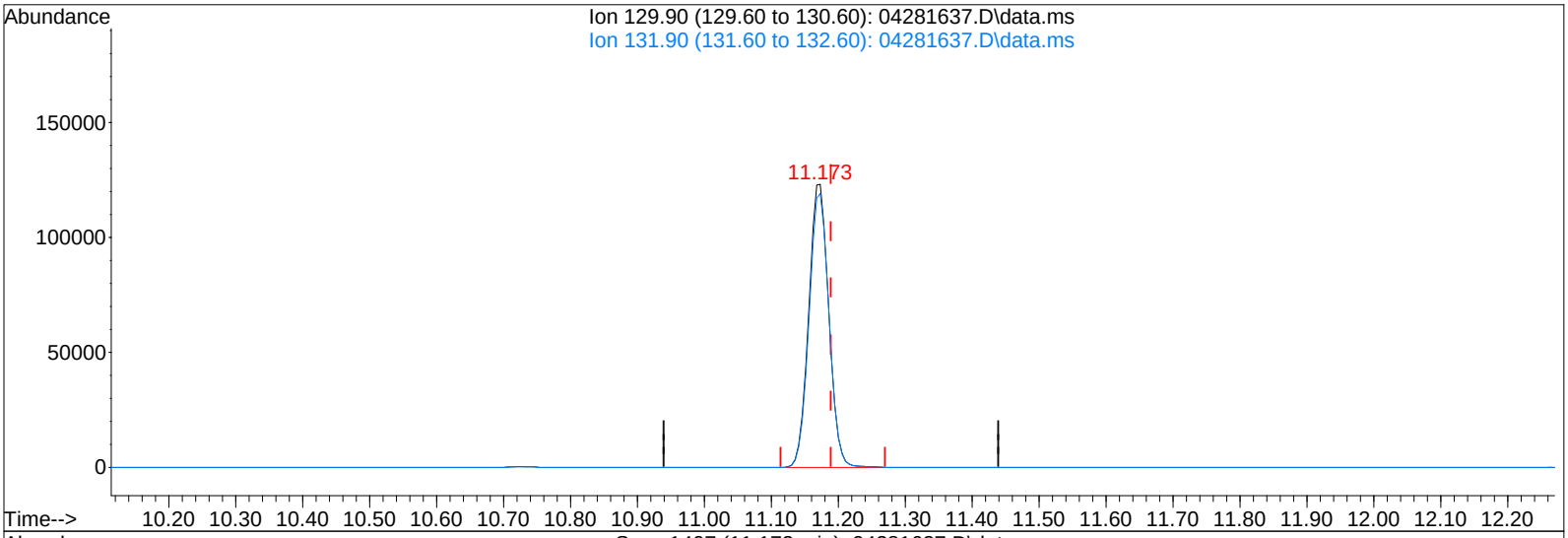
Quant Time: May 02 15:11:47 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

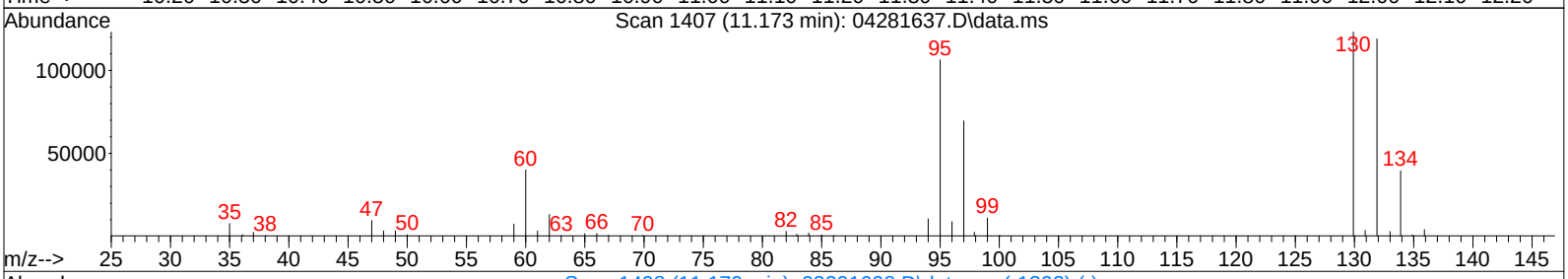


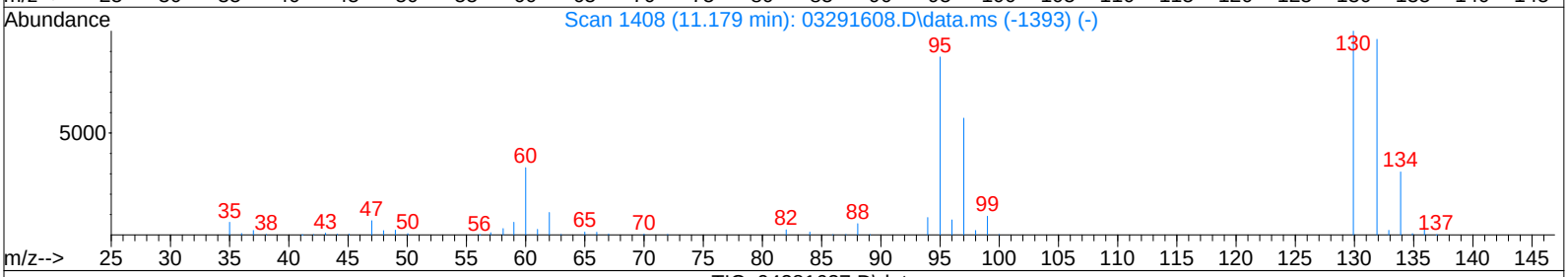
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281637.D
Acq On : 29 Apr 2016 3:12 Operator: WA
Sample : P1602145-006dil (100mL)
Misc : S29-04131602
ALS Vial : 9 Sample Multiplier: 1

Quant Time: Apr 29 06:38:56 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281637.D\data.ms

(47) Trichloroethene (T)

11.173min (-0.016) 19.38ng

response 256149

Ion	Exp%	Act%
129.90	100	100
131.90	96.10	96.25
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281627.D
Acq On : 28 Apr 2016 21:47 Operator: WA
Sample : MB2 R8042816 1000mL
Misc : S29-04131602 AS00703
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:37 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	116356	12.500	ng	-0.04
37) 1,4-Difluorobenzene (IS2)	10.53	114	602785	12.500	ng	-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	247991	12.500	ng	-0.01
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	9.48	65	167755	12.903	ng	-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.20%			
57) Toluene-d8 (SS2)	12.77	98	584910	12.203	ng	-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 97.60%			
73) Bromofluorobenzene (SS3)	16.07	174	266608	13.046	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.40%			
Target Compounds						Qvalue
2) Propene	0.00	42	0	N.D.		
3) Dichlorodifluoromethan...	0.00	85	0	N.D.		
4) Chloromethane	0.00	50	0	N.D.		
5) 1,2-Dichloro-1,1,2,2-t...	0.00	135	0	N.D.		
6) Vinyl Chloride	0.00	62	0	N.D.		
7) 1,3-Butadiene	0.00	54	0	N.D.		
8) Bromomethane	0.00	94	0	N.D.		
9) Chloroethane	0.00	64	0	N.D.		
10) Ethanol	5.40	45	663	N.D.		
11) Acetonitrile	0.00	41	0	N.D.		
12) Acrolein	0.00	56	0	N.D.		
13) Acetone	0.00	58	0	N.D.		
14) Trichlorofluoromethane	0.00	101	0	N.D.		
15) 2-Propanol (Isopropanol)	0.00	45	0	N.D.		
16) Acrylonitrile	0.00	53	0	N.D.		
17) 1,1-Dichloroethene	0.00	96	0	N.D.		
18) 2-Methyl-2-Propanol (t...	0.00	59	0	N.D.		
19) Methylene Chloride	6.79	84	2076	0.180	ng	93
20) 3-Chloro-1-propene (Al...	0.00	41	0	N.D.		
21) Trichlorotrifluoroethane	0.00	151	0	N.D.		
22) Carbon Disulfide	7.08	76	1794	N.D.		
23) trans-1,2-Dichloroethene	0.00	61	0	N.D.		
24) 1,1-Dichloroethane	0.00	63	0	N.D.		
25) Methyl tert-Butyl Ether	0.00	73	0	N.D.		
26) Vinyl Acetate	0.00	86	0	N.D.		
27) 2-Butanone (MEK)	0.00	72	0	N.D.		
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.		
29) Diisopropyl Ether	0.00	87	0	N.D.		
30) Ethyl Acetate	0.00	61	0	N.D.		
31) n-Hexane	0.00	57	0	N.D.		
32) Chloroform	0.00	83	0	N.D.		
34) Tetrahydrofuran (THF)	0.00	72	0	N.D.		
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.		
36) 1,2-Dichloroethane	0.00	62	0	N.D.		
38) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
39) Isopropyl Acetate	0.00	61	0	N.D.		
40) 1-Butanol	0.00	56	0	N.D.		
41) Benzene	0.00	78	0	N.D.		
42) Carbon Tetrachloride	0.00	117	0	N.D.		
43) Cyclohexane	0.00	84	0	N.D.		
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.		
45) 1,2-Dichloropropane	0.00	63	0	N.D.		
46) Bromodichloromethane	0.00	83	0	N.D.		
47) Trichloroethene	0.00	130	0	N.D.		
48) 1,4-Dioxane	0.00	88	0	N.D.		
49) 2,2,4-Trimethylpentane...	0.00	57	0	N.D.		

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281627.D
Acq On : 28 Apr 2016 21:47 Operator: WA
Sample : MB2 R8042816 1000mL
Misc : S29-04131602 AS00703
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:37 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

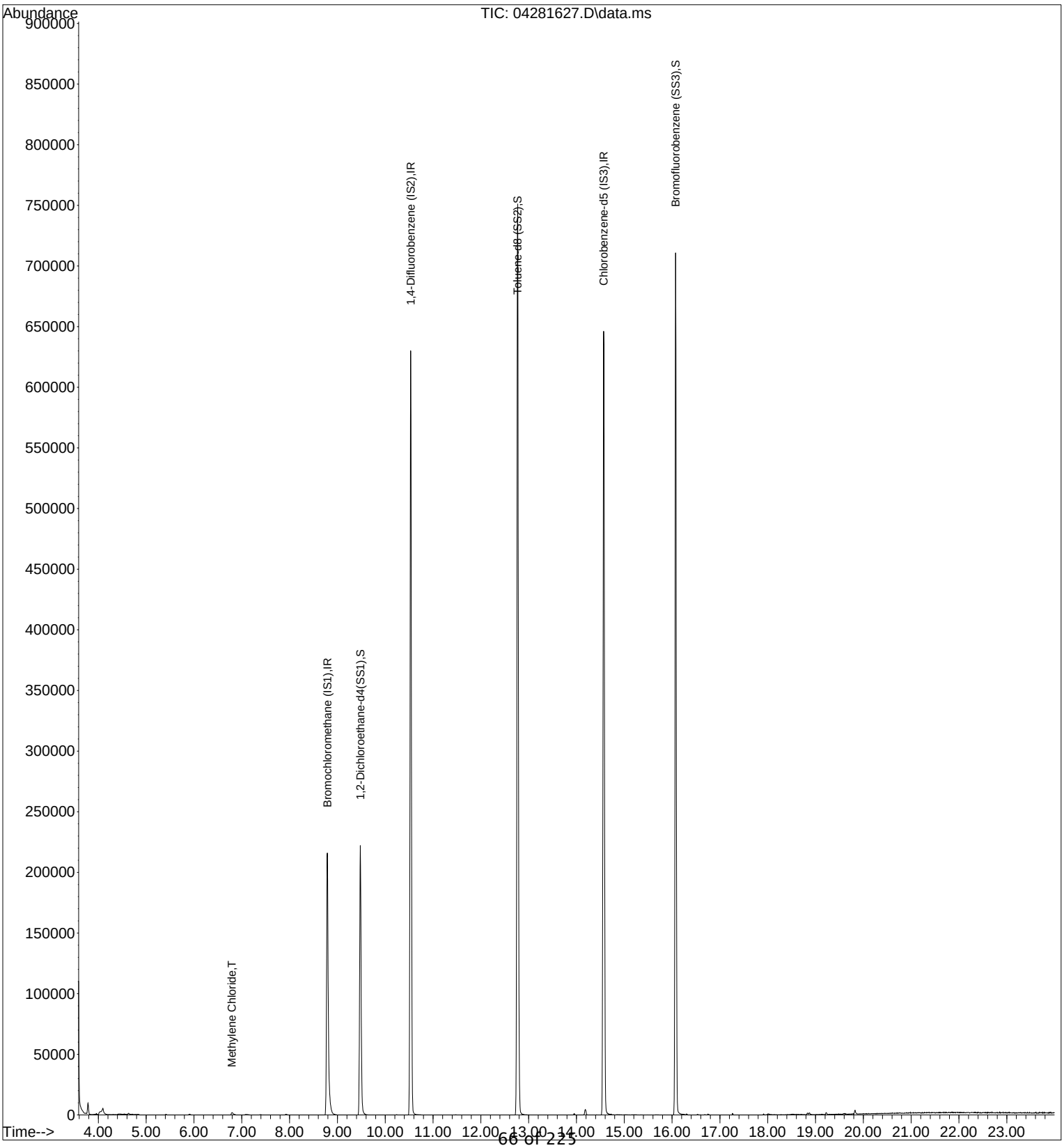
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D.		
51) n-Heptane	0.00	71	0	N.D.		
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
53) 4-Methyl-2-pentanone	0.00	58	0	N.D.		
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.		
58) Toluene	0.00	91	0	N.D.		
59) 2-Hexanone	0.00	43	0	N.D.		
60) Dibromochloromethane	0.00	129	0	N.D.		
61) 1,2-Dibromoethane	0.00	107	0	N.D.		
62) n-Butyl Acetate	0.00	43	0	N.D.		
63) n-Octane	0.00	57	0	N.D.		
64) Tetrachloroethene	13.94	166	524	N.D.		
65) Chlorobenzene	0.00	112	0	N.D.		
66) Ethylbenzene	14.86	91	919	N.D.		
67) m- & p-Xylenes	0.00	91	0	N.D.		
68) Bromoform	0.00	173	0	N.D.		
69) Styrene	0.00	104	0	N.D.		
70) o-Xylene	0.00	91	0	N.D.		
71) n-Nonane	0.00	43	0	N.D.		
72) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D.		
74) Cumene	0.00	105	0	N.D.		
75) alpha-Pinene	0.00	93	0	N.D.		
76) n-Propylbenzene	16.75	91	1039	N.D.		
77) 3-Ethyltoluene	0.00	105	0	N.D.		
78) 4-Ethyltoluene	0.00	105	0	N.D.		
79) 1,3,5-Trimethylbenzene	0.00	105	0	N.D.		
80) alpha-Methylstyrene	0.00	118	0	N.D.		
81) 2-Ethyltoluene	0.00	105	0	N.D.		
82) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
83) n-Decane	0.00	57	0	N.D.		
84) Benzyl Chloride	0.00	91	0	N.D.		
85) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
86) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
87) sec-Butylbenzene	0.00	105	0	N.D.		
88) 4-Isopropyltoluene (p-...	0.00	119	0	N.D.		
89) 1,2,3-Trimethylbenzene	0.00	105	0	N.D.		
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
91) d-Limonene	0.00	68	0	N.D.		
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.		
93) n-Undecane	0.00	57	0	N.D.		
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.		
95) Naphthalene	19.60	128	849	N.D.		
96) n-Dodecane	0.00	57	0	N.D.		
97) Hexachlorobutadiene	0.00	225	0	N.D.		
98) Cyclohexanone	0.00	55	0	N.D.		
99) tert-Butylbenzene	0.00	119	0	N.D.		
100) n-Butylbenzene	0.00	91	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281627.D
Acq On : 28 Apr 2016 21:47 Operator: WA
Sample : MB2 R8042816 1000mL
Misc : S29-04131602 AS00703
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:37 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281628.D
Acq On : 28 Apr 2016 22:19 Operator: WA
Sample : LCS2 R8042816 25ng
Misc : S29-04131602/S29-04281601 (5/26)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:39 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 4/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.81	130	126710	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.54	114	609269	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	261481	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.49	65	177593	12.544	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.32%				
57) Toluene-d8 (SS2)	12.78	98	595694	11.786	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.32%				
73) Bromofluorobenzene (SS3)	16.07	174	285091	13.231	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
Target Compounds							Qvalue
2) Propene	3.88	42	245038	21.656	ng		100
3) Dichlorodifluoromethan...	3.99	85	488618	21.610	ng		99
4) Chloromethane	4.19	50	359636	26.556	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	302416	23.462	ng		100
6) Vinyl Chloride	4.47	62	356598	26.559	ng		100
7) 1,3-Butadiene	4.65	54	280843	28.758	ng		100
8) Bromomethane	4.95	94	262357	25.638	ng		100
9) Chloroethane	5.17	64	218500	24.463	ng		100
10) Ethanol	5.40	45	977613	115.800	ng		100
11) Acetonitrile	5.59	41	492021	23.568	ng		100
12) Acrolein	5.71	56	167148	25.108	ng		99
13) Acetone	5.85	58	1056684	113.656	ng		99
14) Trichlorofluoromethane	6.01	101	433133	21.763	ng		99
15) 2-Propanol (Isopropanol)	6.15	45	1409960	50.667	ng		100
16) Acrylonitrile	6.35	53	374499	26.908	ng		100
17) 1,1-Dichloroethene	6.66	96	291522	26.585	ng		99
18) 2-Methyl-2-Propanol (t...	6.75	59	1492249	51.939	ng		98
19) Methylene Chloride	6.80	84	295795	23.555	ng		98
20) 3-Chloro-1-propene (Al...	6.91	41	394716	29.639	ng		99
21) Trichlorotrifluoroethane	7.07	151	279475	25.309	ng		100
22) Carbon Disulfide	7.05	76	976179	20.186	ng		100
23) trans-1,2-Dichloroethene	7.70	61	390683	26.937	ng		99
24) 1,1-Dichloroethane	7.89	63	480297	24.556	ng		100
25) Methyl tert-Butyl Ether	7.94	73	894995	25.207	ng		100
26) Vinyl Acetate	8.04	86	405240	140.201	ng	#	95
27) 2-Butanone (MEK)	8.25	72	205335	21.775	ng		99
28) cis-1,2-Dichloroethene	8.66	61	379087	27.008	ng		100
29) Diisopropyl Ether	8.85	87	249624	24.922	ng		97
30) Ethyl Acetate	8.85	61	192640	53.458	ng		99
31) n-Hexane	8.87	57	380382	20.602	ng		99
32) Chloroform	8.93	83	481342	25.516	ng		99
34) Tetrahydrofuran (THF)	9.26	72	200336	26.970	ng		100
35) Ethyl tert-Butyl Ether	9.33	87	385242	25.794	ng		99
36) 1,2-Dichloroethane	9.59	62	339122	25.591	ng		99
38) 1,1,1-Trichloroethane	9.83	97	422177	25.637	ng		100
39) Isopropyl Acetate	10.13	61	334102	54.444	ng		100
40) 1-Butanol	10.14	56	622452	59.897	ng		98
41) Benzene	10.24	78	1091373	24.693	ng		100
42) Carbon Tetrachloride	10.37	117	373478	27.336	ng		100
43) Cyclohexane	10.49	84	923484	47.942	ng		99
44) tert-Amyl Methyl Ether	10.76	73	872971	26.074	ng		100
45) 1,2-Dichloropropane	10.97	63	271358	25.670	ng		99
46) Bromodichloromethane	11.13	83	380690	27.932	ng		100
47) Trichloroethene	11.18	130	331402	24.370	ng		100
48) 1,4-Dioxane	11.15	88	256638	28.990	ng		100
49) 2,2,4-Trimethylpentane...	11.23	57	1222194	24.734	ng		100

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281628.D
Acq On : 28 Apr 2016 22:19 Operator: WA
Sample : LCS2 R8042816 25ng
Misc : S29-04131602/S29-04281601 (5/26)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:39 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

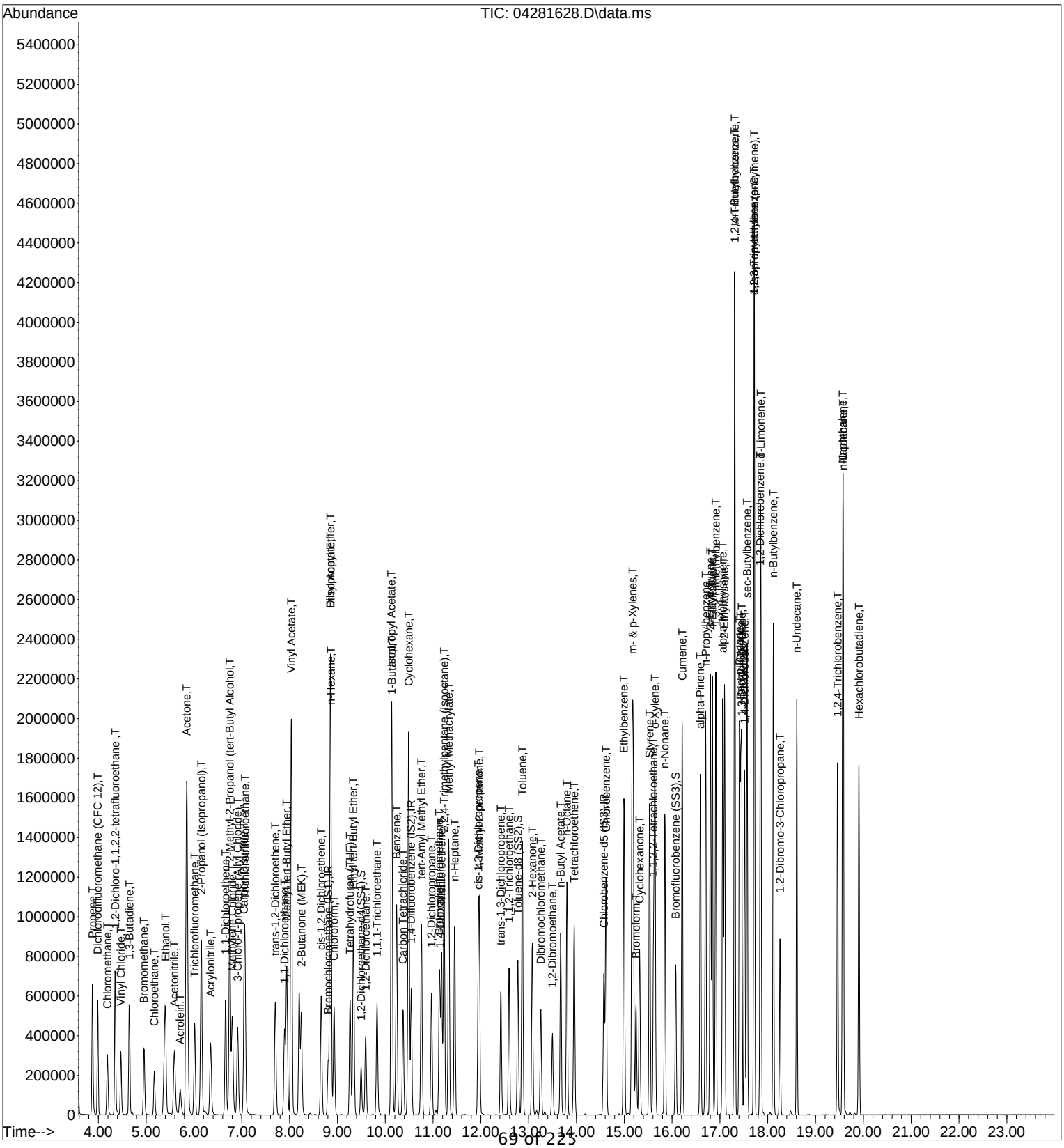
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	272474	51.342	ng	100
51) n-Heptane	11.45	71	271923	24.140	ng	100
52) cis-1,3-Dichloropropene	11.95	75	442322	26.574	ng	99
53) 4-Methyl-2-pentanone	11.97	58	271973	27.655	ng	99
54) trans-1,3-Dichloropropene	12.42	75	416138	28.035	ng	100
55) 1,1,2-Trichloroethane	12.59	97	293197	26.655	ng	99
58) Toluene	12.87	91	1205197	19.936	ng	100
59) 2-Hexanone	13.08	43	632539	26.635	ng	100
60) Dibromochloromethane	13.26	129	356731	28.108	ng	100
61) 1,2-Dibromoethane	13.50	107	336471	26.137	ng	100
62) n-Butyl Acetate	13.67	43	719941	28.913	ng	99
63) n-Octane	13.80	57	237521	23.071	ng	100
64) Tetrachloroethene	13.95	166	382624	22.006	ng	100
65) Chlorobenzene	14.62	112	854910	24.341	ng	100
66) Ethylbenzene	14.99	91	1421418	24.636	ng	100
67) m- & p-Xylenes	15.18	91	2205743	48.039	ng	100
68) Bromoform	15.25	173	330573	27.787	ng	99
69) Styrene	15.53	104	962371	27.695	ng	100
70) o-Xylene	15.64	91	1147089	23.770	ng	100
71) n-Nonane	15.85	43	557976	23.624	ng	100
72) 1,1,2,2-Tetrachloroethane	15.61	83	524977	24.743	ng	100
74) Cumene	16.21	105	1514253	23.323	ng	100
75) alpha-Pinene	16.59	93	778318	24.836	ng	99
76) n-Propylbenzene	16.70	91	1740759	23.321	ng	100
77) 3-Ethyltoluene	16.80	105	1539752	24.329	ng	100
78) 4-Ethyltoluene	16.84	105	1464438	24.392	ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	1265840	24.146	ng	100
80) alpha-Methylstyrene	17.06	118	725425	26.437	ng	100
81) 2-Ethyltoluene	17.10	105	1473983	24.010	ng	100
82) 1,2,4-Trimethylbenzene	17.31	105	1300249	25.020	ng	100
83) n-Decane	17.41	57	627152	23.661	ng	99
84) Benzyl Chloride	17.43	91	1154562	30.821	ng	100
85) 1,3-Dichlorobenzene	17.46	146	815051	25.613	ng	99
86) 1,4-Dichlorobenzene	17.52	146	803590	23.933	ng	100
87) sec-Butylbenzene	17.57	105	1690966	24.594	ng	100
88) 4-Isopropyltoluene (p-...	17.72	119	1638893	24.282	ng	100
89) 1,2,3-Trimethylbenzene	17.71	105	1347151	25.109	ng	100
90) 1,2-Dichlorobenzene	17.84	146	778237	25.295	ng	100
91) d-Limonene	17.85	68	485220	26.589	ng	99
92) 1,2-Dibromo-3-Chloropr...	18.26	157	296873	27.824	ng	98
93) n-Undecane	18.61	57	650560	23.917	ng	99
94) 1,2,4-Trichlorobenzene	19.46	180	630954	25.749	ng	99
95) Naphthalene	19.57	128	1862718	24.904	ng	100
96) n-Dodecane	19.58	57	626340	24.769	ng	100
97) Hexachlorobutadiene	19.91	225	392946	24.126	ng	99
98) Cyclohexanone	15.32	55	408216	26.211	ng	99
99) tert-Butylbenzene	17.31	119	1311817	24.491	ng	100
100) n-Butylbenzene	18.12	91	1313396	25.409	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281628.D
Acq On : 28 Apr 2016 22:19 Operator: WA
Sample : LCS2 R8042816 25ng
Misc : S29-04131602/S29-04281601 (5/26)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:39 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281632.D
Acq On : 29 Apr 2016 00:29 Operator: WA
Sample : P1602145-001dup (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 14:59:05 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016 5/2/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.78	130	117293	12.500	ng		-0.04
37) 1,4-Difluorobenzene (IS2)	10.53	114	597917	12.500	ng		-0.02
56) Chlorobenzene-d5 (IS3)	14.57	82	246363	12.500	ng		-0.01
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	168817	12.881	ng		-0.03
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.04%				
57) Toluene-d8 (SS2)	12.77	98	575696	12.090	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.72%				
73) Bromofluorobenzene (SS3)	16.07	174	262440	12.927	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.44%				
Target Compounds							Qvalue
2) Propene	3.88	42	3666	N.D.			
3) Dichlorodifluoromethan...	3.98	85	21812	1.042	ng		97
4) Chloromethane	4.17	50	528	N.D.			
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	562	N.D.			
6) Vinyl Chloride	4.31	62	3626	N.D.			
7) 1,3-Butadiene	0.00	54	0	N.D.			
8) Bromomethane	5.01	94	1142	N.D.			
9) Chloroethane	0.00	64	0	N.D.			
10) Ethanol	5.35	45	20002	2.560	ng		96
11) Acetonitrile	5.59	41	2739	N.D.			
12) Acrolein	5.71	56	2601	N.D.			
13) Acetone	5.84	58	24894	2.893	ng		96
14) Trichlorofluoromethane	6.00	101	10491	0.569	ng		95
15) 2-Propanol (Isopropanol)	6.13	45	11494	N.D.			
16) Acrylonitrile	6.50	53	55	N.D.			
17) 1,1-Dichloroethene	0.00	96	0	N.D.			
18) 2-Methyl-2-Propanol (t...	6.73	59	10201	N.D.			
19) Methylene Chloride	6.78	84	2027	N.D.			
20) 3-Chloro-1-propene (Al...	6.73	41	1953	N.D.			
21) Trichlorotrifluoroethane	7.06	151	2518	N.D.			
22) Carbon Disulfide	7.05	76	10532	N.D.			
23) trans-1,2-Dichloroethene	7.88	61	2297	N.D.			
24) 1,1-Dichloroethane	0.00	63	0	N.D.			
25) Methyl tert-Butyl Ether	7.88	73	895	N.D.			
26) Vinyl Acetate	8.00	86	1994	0.745	ng	#	85
27) 2-Butanone (MEK)	8.25	72	3432	N.D.			
28) cis-1,2-Dichloroethene	0.00	61	0	N.D.	d		
29) Diisopropyl Ether	0.00	87	0	N.D.			
30) Ethyl Acetate	8.84	61	17566	5.266	ng		94
31) n-Hexane	8.85	57	5420	N.D.			
32) Chloroform	0.00	83	0	N.D.			
34) Tetrahydrofuran (THF)	9.29	72	539	N.D.			
35) Ethyl tert-Butyl Ether	0.00	87	0	N.D.			
36) 1,2-Dichloroethane	0.00	62	0	N.D.			
38) 1,1,1-Trichloroethane	9.81	97	1206	N.D.			
39) Isopropyl Acetate	0.00	61	0	N.D.			
40) 1-Butanol	0.00	56	0	N.D.	d		
41) Benzene	10.23	78	5918	N.D.			
42) Carbon Tetrachloride	0.00	117	0	N.D.			
43) Cyclohexane	10.48	84	13892	0.735	ng		97
44) tert-Amyl Methyl Ether	0.00	73	0	N.D.			
45) 1,2-Dichloropropane	0.00	63	0	N.D.			
46) Bromodichloromethane	0.00	83	0	N.D.			
47) Trichloroethene	0.00	130	0	N.D.			
48) 1,4-Dioxane	0.00	88	0	N.D.			
49) 2,2,4-Trimethylpentane...	11.23	57	18412	N.D.			

Data File: I:\MS08\Data\2016 04\28\04281632.D
Acq On : 29 Apr 2016 00:29 Operator: WA
Sample : P1602145-001dup (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: May 02 14:59:05 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

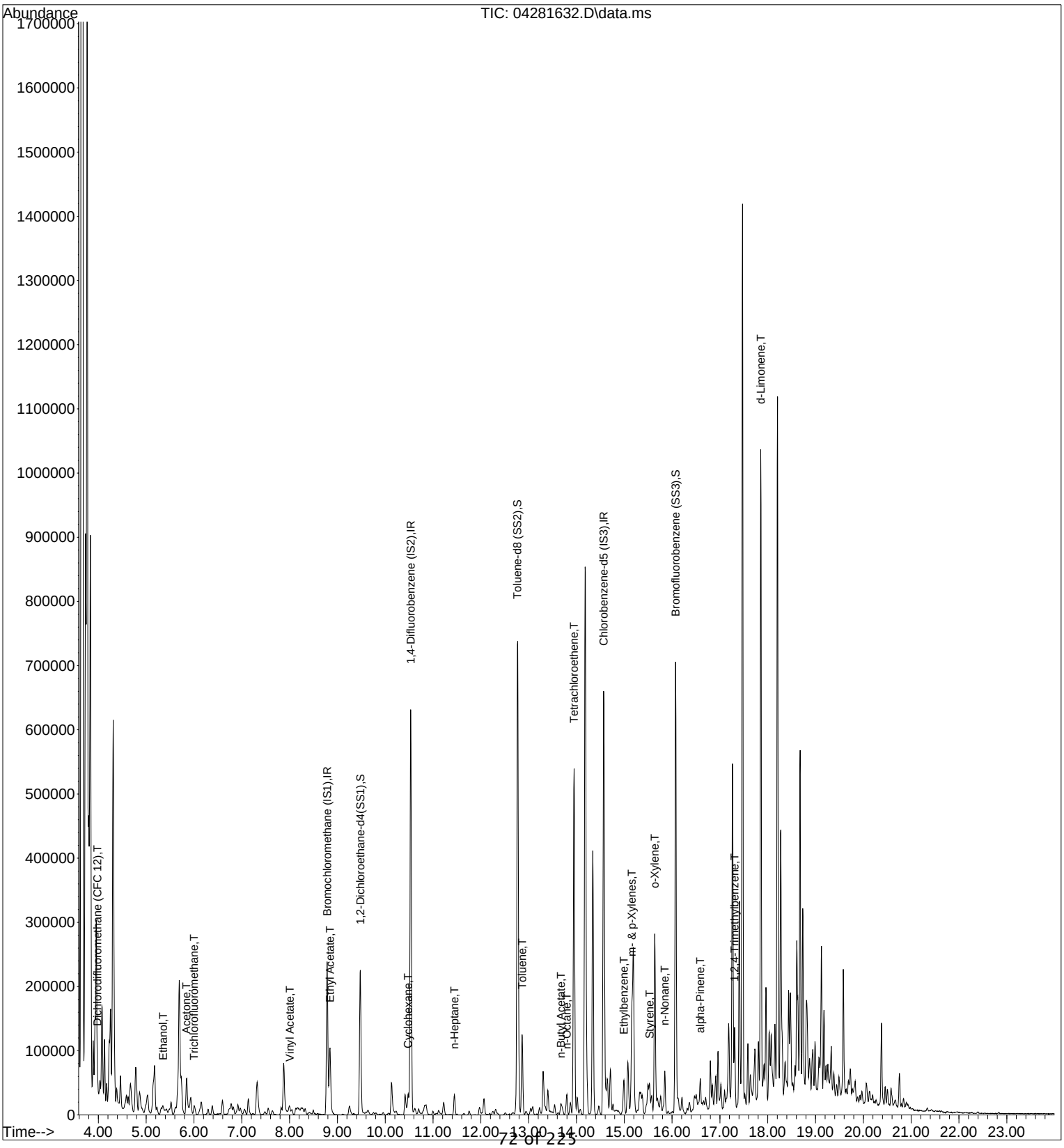
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	0.00	100	0	N.D. d	
51) n-Heptane	11.45	71	8638	0.781 ng	97
52) cis-1,3-Dichloropropene	0.00	75	0	N.D.	
53) 4-Methyl-2-pentanone	11.97	58	3882	N.D.	
54) trans-1,3-Dichloropropene	0.00	75	0	N.D.	
55) 1,1,2-Trichloroethane	0.00	97	0	N.D.	
58) Toluene	12.86	91	104090	1.827 ng	99
59) 2-Hexanone	13.09	43	7553	N.D.	
60) Dibromochloromethane	0.00	129	0	N.D.	
61) 1,2-Dibromoethane	0.00	107	0	N.D.	
62) n-Butyl Acetate	13.67	43	13481	0.575 ng	83
63) n-Octane	13.80	57	5934	0.612 ng	96
64) Tetrachloroethene	13.95	166	213535	13.035 ng	99
65) Chlorobenzene	14.65	112	8632	N.D.	
66) Ethylbenzene	14.99	91	44927	0.826 ng	98
67) m- & p-Xylenes	15.16	91	142531	3.295 ng	99
68) Bromoform	0.00	173	0	N.D.	
69) Styrene	15.53	104	25930	0.792 ng	95
70) o-Xylene	15.64	91	76476	1.682 ng	99
71) n-Nonane	15.85	43	22844	1.027 ng	99
72) 1,1,2,2-Tetrachloroethane	15.64	83	1920	N.D.	
74) Cumene	16.21	105	10823	N.D.	
75) alpha-Pinene	16.59	93	21171	0.717 ng	88
76) n-Propylbenzene	16.70	91	18018	N.D.	
77) 3-Ethyltoluene	0.00	105	0	N.D. d	
78) 4-Ethyltoluene	16.84	105	19317	N.D.	
79) 1,3,5-Trimethylbenzene	16.91	105	17005	N.D.	
80) alpha-Methylstyrene	17.06	118	1334	N.D.	
81) 2-Ethyltoluene	17.10	105	16184	N.D.	
82) 1,2,4-Trimethylbenzene	17.31	105	54861	1.120 ng	88
83) n-Decane	0.00	57	0	N.D. d	
84) Benzyl Chloride	17.47	91	1688	N.D.	
85) 1,3-Dichlorobenzene	17.52	146	1398	N.D.	
86) 1,4-Dichlorobenzene	17.52	146	1398	N.D.	
87) sec-Butylbenzene	17.57	105	3772	N.D.	
88) 4-Isopropyltoluene (p-...	17.71	119	6636	N.D.	
89) 1,2,3-Trimethylbenzene	17.71	105	15394	N.D.	
90) 1,2-Dichlorobenzene	0.00	146	0	N.D.	
91) d-Limonene	17.85	68	240663	13.997 ng	99
92) 1,2-Dibromo-3-Chloropr...	0.00	157	0	N.D.	
93) n-Undecane	0.00	57	0	N.D. d	
94) 1,2,4-Trichlorobenzene	0.00	180	0	N.D.	
95) Naphthalene	19.58	128	4384	N.D.	
96) n-Dodecane	0.00	57	0	N.D. d	
97) Hexachlorobutadiene	0.00	225	0	N.D.	
98) Cyclohexanone	0.00	55	0	N.D. d	
99) tert-Butylbenzene	17.31	119	7242	N.D.	
100) n-Butylbenzene	18.10	91	10441	N.D.	

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281632.D
Acq On : 29 Apr 2016 00:29 Operator: WA
Sample : P1602145-001dup (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

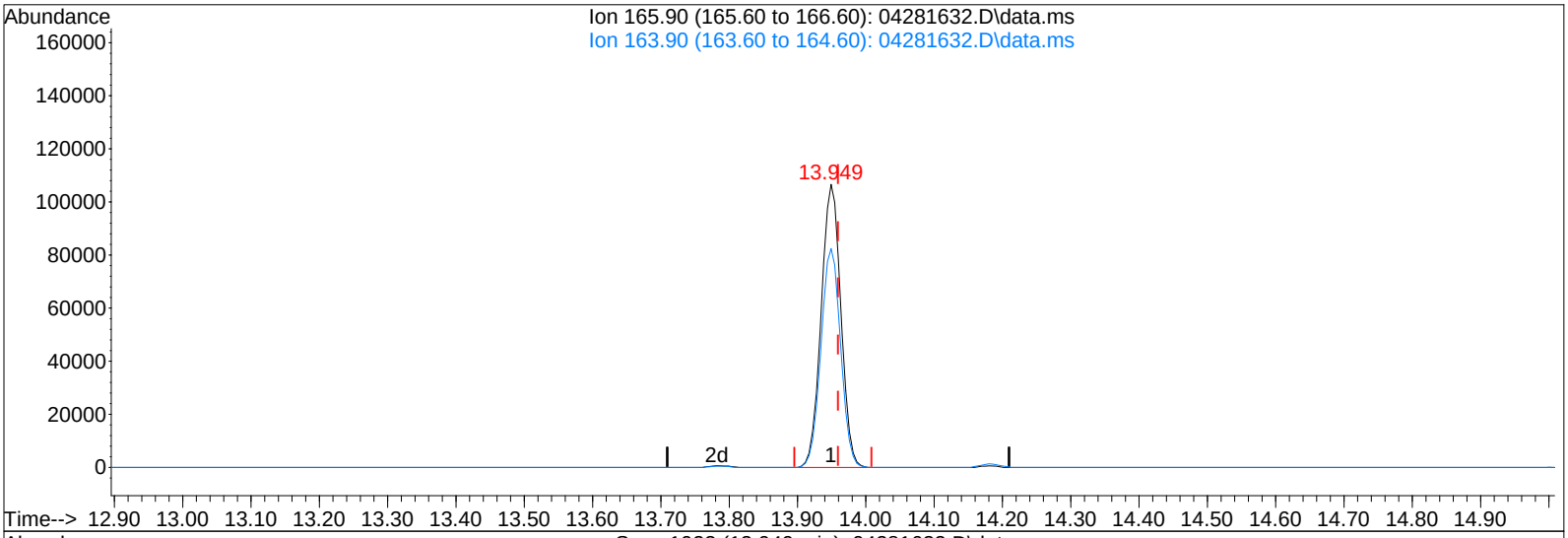
Quant Time: May 02 14:59:05 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

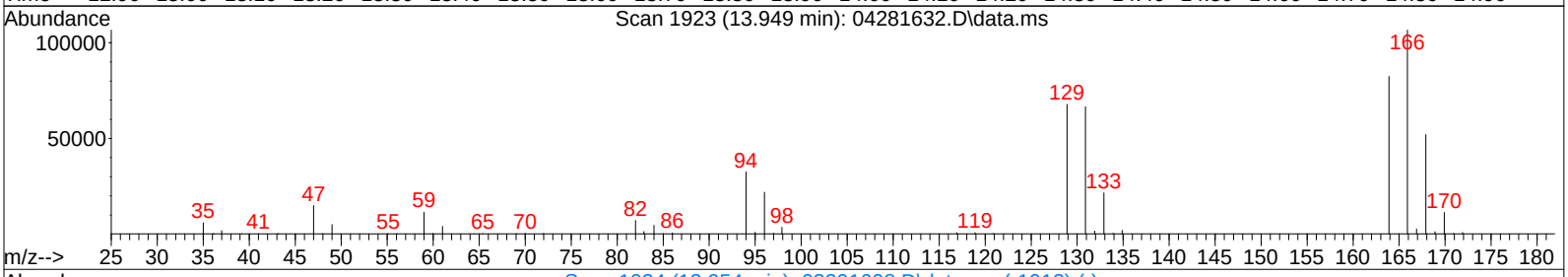


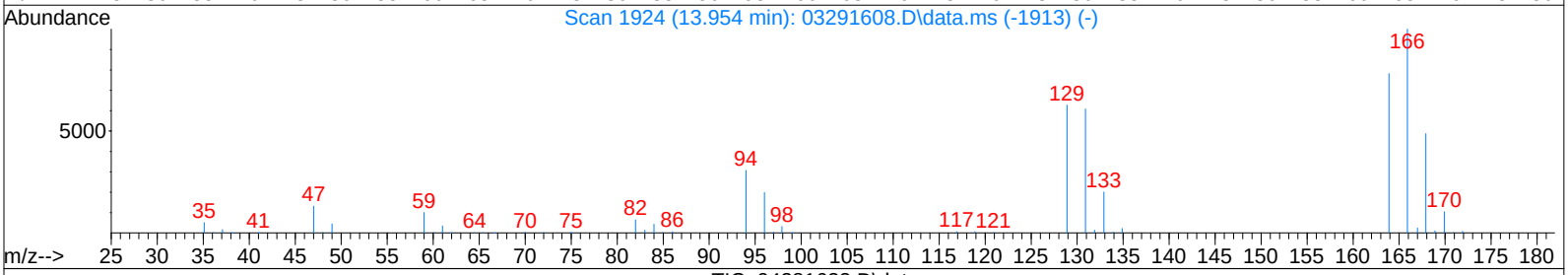
Quantitation Report (Qedit)

Data File: I:\MS08\Data\2016 04\28\04281632.D
Acq On : 29 Apr 2016 00:29 Operator: WA
Sample : P1602145-001dup (1000mL)
Misc : S29-04131602
ALS Vial : 2 Sample Multiplier: 1

Quant Time: Apr 29 06:38:47 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M







TIC: 04281632.D\data.ms

(64) Tetrachloroethene (T)

13.949min (-0.011) 13.03ng

response 213535

Ion	Exp%	Act%
165.90	100	100
163.90	78.00	77.42
0.00	0.00	0.00
0.00	0.00	0.00

Response Factor Report Instrument #MS08

Method Path : I:\MS08\Methods\
Method File : R8032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Mar 29 13:08:11 2016
Response Via : Initial Calibration

Calibration Files
0.08=03291602.D 0.10=03291603.D 0.20=03291604.D 0.40=03291605.D 1.0 =03291606.D 5.0 =03291607.D 25 =03291608.D
50 =03291609.D 100 =03291610.D

		Compound	0.08	0.10	0.20	0.40	1.0	5.0	25	50	100	Avg	%RSD
1)	IR	Bromochloromethane...	----------ISTD----------										
2)	T	Propene	1.339	1.209	1.059	1.096	1.096	1.004	1.092	1.023	1.129	1.116	9.21
3)	T	Dichlorodifluo...	2.181	2.534	2.212	2.058	2.391	2.136	2.340	2.172	2.053	2.231	7.20
4)	T	Chloromethane	1.279	1.297	1.200	1.051	1.535	1.328	1.629	1.505	1.200	1.336	13.94
5)	T	1,2-Dichloro-1...	1.268	1.374	1.200	1.158	1.339	1.187	1.329	1.313	1.276	1.272	5.92
6)	T	Vinyl Chloride	1.002	1.085	1.150	1.213	1.480	1.383	1.561	1.520	1.527	1.325	16.18
7)	T	1,3-Butadiene	0.970	0.864	0.715	0.738	1.082	0.923	1.129	1.125	1.124	0.963	17.12
8)	T	Bromomethane	0.912	0.902	0.853	0.882	1.135	1.011	1.182	1.122	1.086	1.009	12.43
9)	T	Chloroethane		0.859	0.803	0.795	0.956	0.853	0.981	0.920	0.882	0.881	7.66
10)	T	Ethanol	1.147	0.929	0.797	0.733	0.842	0.729	0.835	0.771	0.712	0.833	16.35
11)	T	Acetonitrile	2.274	2.229	1.993	1.901	2.067	1.910	2.142	2.043	1.977	2.059	6.44
12)	T	Acrolein		0.454	0.708	0.666	0.663	0.645	0.752	0.695	0.670	0.657	13.48
13)	T	Acetone				1.428	0.888	0.799	0.873	0.797	0.719	0.917	28.09
14)	T	Trichlorofluor...	2.017	2.111	1.954	1.872	2.051	1.856	2.022	1.923	1.863	1.963	4.67
15)	T	2-Propanol (Is...	2.914	3.108	2.802	2.556	2.790	2.573	2.969	2.753	2.241	2.745	9.42
16)	T	Acrylonitrile			0.990	1.129	1.455	1.395	1.614	1.540	1.488	1.373	16.63
17)	T	1,1-Dichloroet...	0.934	1.104	1.023	0.955	1.169	1.068	1.215	1.154	1.113	1.082	8.89
18)	T	2-Methyl-2-Pro...	2.813	3.152	2.686	2.551	2.958	2.737	3.155	2.934	2.523	2.834	8.26
19)	T	Methylene Chlo...				1.491	1.367	1.110	1.221	1.149	1.095	1.239	12.79
20)	T	3-Chloro-1-pro...	1.026	1.148	1.075	1.134	1.375	1.363	1.631	1.572	1.500	1.314	17.18
21)	T	Trichlorotrifl...	1.115	1.156	1.021	1.024	1.142	1.038	1.156	1.092	1.060	1.089	5.12
22)	T	Carbon Disulfide	5.572	6.403	4.668	4.133	4.613	4.171	4.749	4.443	4.184	4.771	15.83
23)	T	trans-1,2-Dich...	1.074	1.339	1.270	1.325	1.616	1.485	1.669	1.583	1.516	1.431	13.46
24)	T	1,1-Dichloroet...	1.965	2.090	1.793	1.790	2.051	1.867	2.020	1.933	1.857	1.930	5.71
25)	T	Methyl tert-Bu...	3.417	3.824	3.372	3.205	3.717	3.399	3.732	3.518	3.341	3.503	5.99
26)	T	Vinyl Acetate	0.184	0.230	0.254	0.277	0.299	0.307	0.350	0.338	0.328	0.285	19.17
27)	T	2-Butanone (MEK)	0.942	1.146	1.153	1.163	0.777	0.756	0.835	0.812	0.787	0.930	18.92
28)	T	cis-1,2-Dichlo...	1.206	1.377	1.263	1.277	1.502	1.398	1.553	1.479	1.407	1.385	8.49
29)	T	Diisopropyl Ether	0.975	1.086	0.945	0.934	1.065	0.969	1.024	0.969	0.927	0.988	5.79
30)	T	Ethyl Acetate	0.278	0.323	0.317	0.378	0.395	0.384	0.399	0.377	0.348	0.355	11.70
31)	T	n-Hexane	2.009	2.359	1.966	1.891	1.950	1.715	1.584	1.498	1.421	1.821	16.23
32)	T	Chloroform	1.897	2.045	1.745	1.687	1.959	1.780	1.966	1.872	1.799	1.861	6.30
33)	S	1,2-Dichloroet...	1.394	1.407	1.403	1.405	1.394	1.396	1.393	1.392	1.385	1.397	0.50
34)	T	Tetrahydrofura...	0.697	0.683	0.623	0.656	0.808	0.744	0.823	0.788	0.773	0.733	9.68
35)	T	Ethyl tert-But...	1.313	1.542	1.320	1.380	1.589	1.463	1.629	1.543	1.481	1.473	7.78
36)	T	1,2-Dichloroet...	1.256	1.415	1.246	1.202	1.383	1.265	1.386	1.335	1.278	1.307	5.71
37)	IR	1,4-Difluorobenzen...	----------ISTD----------										
38)	T	1,1,1-Trichlor...	0.333	0.329	0.311	0.302	0.363	0.335	0.375	0.356	0.337	0.338	6.97
39)	T	Isopropyl Acetate	0.125	0.121	0.115	0.117	0.138	0.129	0.137	0.130	0.120	0.126	6.61
40)	T	1-Butanol	0.206	0.176	0.176	0.192	0.217	0.219	0.263	0.246	0.224	0.213	13.88
41)	T	Benzene	1.113	1.084	0.848	0.813	0.927	0.829	0.883	0.855	0.809	0.907	12.65
42)	T	Carbon Tetrach...	0.254	0.281	0.258	0.244	0.301	0.282	0.315	0.303	0.286	0.280	8.63

3/29/16

Method Path : I:\MS08\Methods\
Method File : R8032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

43)	T	Cyclohexane	0.423	0.465	0.377	0.363	0.413	0.377	0.403	0.382	0.352	0.395	8.86
44)	T	tert-Amyl Meth...	0.665	0.715	0.630	0.613	0.733	0.676	0.762	0.720	0.668	0.687	7.16
45)	T	1,2-Dichloropr...	0.221	0.229	0.199	0.200	0.232	0.211	0.231	0.220	0.210	0.217	5.84
46)	T	Bromodichlorom...	0.239	0.277	0.244	0.237	0.297	0.284	0.328	0.314	0.296	0.280	11.89
47)	T	Trichloroethene	0.258	0.307	0.263	0.256	0.295	0.271	0.295	0.288	0.277	0.279	6.53
48)	T	1,4-Dioxane	0.149	0.152	0.168	0.168	0.201	0.190	0.212	0.204	0.191	0.182	12.77
49)	T	2,2,4-Trimethy...	1.055	1.115	0.983	0.956	1.076	0.978	1.065	1.000	0.897	1.014	6.80
50)	T	Methyl Methacr...				0.088	0.110	0.107	0.120	0.117	0.112	0.109	10.30
51)	T	n-Heptane	0.236	0.250	0.221	0.224	0.249	0.227	0.231	0.225	0.216	0.231	5.13
52)	T	cis-1,3-Dichlo...			0.276	0.285	0.351	0.342	0.397	0.382	0.358	0.341	13.43
53)	T	4-Methyl-2-pen...			0.160	0.182	0.211	0.205	0.233	0.220	0.202	0.202	12.11
54)	T	trans-1,3-Dich...			0.225	0.233	0.304	0.309	0.369	0.356	0.336	0.305	18.57
55)	T	1,1,2-Trichlor...	0.198	0.232	0.202	0.209	0.242	0.224	0.254	0.242	0.229	0.226	8.57
56)	IR	Chlorobenzene-d5 (...	----------ISTD----------										
57)	S	Toluene-d8 (SS2)	2.468	2.461	2.460	2.458	2.405	2.408	2.365	2.362	2.355	2.416	1.95
58)	T	Toluene	3.655	3.802	3.319	3.101	2.588	2.338	2.541	2.400	2.266	2.890	20.45
59)	T	2-Hexanone	0.964	1.091	1.109	1.193	1.186	1.119	1.275	1.187	1.093	1.135	7.77
60)	T	Dibromochlorom...	0.507	0.543	0.489	0.516	0.638	0.635	0.746	0.707	0.680	0.607	15.73
61)	T	1,2-Dibromoethane	0.518	0.582	0.543	0.556	0.664	0.632	0.714	0.679	0.651	0.615	11.06
62)	T	n-Butyl Acetate	0.995	1.022	1.030	1.100	1.293	1.266	1.440	1.343	1.226	1.190	13.41
63)	T	n-Octane	0.464	0.515	0.491	0.467	0.539	0.483	0.520	0.490	0.461	0.492	5.54
64)	T	Tetrachloroethene	0.818	0.890	0.771	0.777	0.883	0.799	0.883	0.842	0.818	0.831	5.52
65)	T	Chlorobenzene	1.720	1.880	1.576	1.550	1.759	1.587	1.783	1.668	1.588	1.679	6.78
66)	T	Ethylbenzene	2.805	2.930	2.576	2.504	2.931	2.672	2.998	2.796	2.612	2.758	6.37
67)	T	m- & p-Xylenes	2.278	2.390	2.067	2.023	2.333	2.089	2.353	2.189	2.033	2.195	6.69
68)	T	Bromoform	0.422	0.469	0.452	0.447	0.578	0.602	0.747	0.712	0.689	0.569	22.26
69)	T	Styrene	1.459	1.541	1.437	1.460	1.751	1.705	1.987	1.864	1.745	1.661	11.86
70)	T	o-Xylene	2.358	2.434	2.214	2.105	2.442	2.229	2.497	2.322	2.162	2.307	5.93
71)	T	n-Nonane	1.193	1.198	1.087	1.048	1.198	1.115	1.228	1.111	0.983	1.129	7.25
72)	T	1,1,2,2-Tetrac...	0.875	1.009	0.920	0.914	1.080	1.036	1.176	1.096	1.022	1.014	9.63
73)	S	Bromofluoroben...	1.026	1.004	1.018	1.027	1.035	1.042	1.044	1.042	1.032	1.030	1.26
74)	T	Cumene	3.231	3.394	2.931	2.769	3.265	3.000	3.370	3.115	2.856	3.104	7.31
75)	T	alpha-Pinene	1.458	1.611	1.358	1.353	1.543	1.476	1.674	1.562	1.449	1.498	7.27
76)	T	n-Propylbenzene	3.670	3.736	3.360	3.255	3.809	3.529	3.914	3.591	3.252	3.568	6.71
77)	T	3-Ethyltoluene	3.214	3.195	2.706	2.670	3.196	3.017	3.301	3.167	2.765	3.026	8.14
78)	T	4-Ethyltoluene	3.009	3.053	2.798	2.644	2.984	2.729	3.160	2.783	2.671	2.870	6.44
79)	T	1,3,5-Trimethy...	2.603	2.726	2.337	2.254	2.671	2.417	2.716	2.513	2.318	2.506	7.25
80)	T	alpha-Methylst...	1.079	1.150	1.160	1.151	1.402	1.365	1.602	1.492	1.403	1.312	13.88
81)	T	2-Ethyltoluene	3.080	3.131	2.764	2.684	3.123	2.855	3.189	2.920	2.667	2.935	6.92
82)	T	1,2,4-Trimethy...	2.570	2.564	2.297	2.230	2.623	2.439	2.773	2.562	2.300	2.484	7.23
83)	T	n-Decane	1.322	1.308	1.213	1.199	1.358	1.260	1.389	1.252	1.102	1.267	7.00
84)	T	Benzyl Chloride	1.492	1.498	1.349	1.376	1.750	1.907	2.415	2.261	2.068	1.791	22.02
85)	T	1,3-Dichlorobe...	1.558	1.615	1.402	1.354	1.583	1.451	1.686	1.568	1.475	1.521	7.07
86)	T	1,4-Dichlorobe...	1.712	1.821	1.508	1.426	1.618	1.490	1.733	1.621	1.516	1.605	8.17
87)	T	sec-Butylbenzene	3.358	3.517	3.133	2.941	3.542	3.250	3.603	3.285	2.953	3.287	7.45
88)	T	4-Isopropyltol...	3.132	3.478	2.986	2.936	3.487	3.227	3.622	3.307	2.864	3.227	8.32
89)	T	1,2,3-Trimethy...	2.565	2.730	2.324	2.289	2.771	2.533	2.864	2.646	2.361	2.565	8.07
90)	T	1,2-Dichlorobe...	1.503	1.538	1.379	1.296	1.548	1.419	1.632	1.511	1.411	1.471	6.99
91)	T	d-Limonene	0.761	0.865	0.765	0.812	0.932	0.912	1.037	0.943	0.824	0.872	10.52
92)	T	1,2-Dibromo-3-...	0.418	0.456	0.409	0.417	0.524	0.541	0.647	0.606	0.574	0.510	17.46
93)	T	n-Undecane	1.261	1.366	1.237	1.243	1.397	1.307	1.448	1.305	1.140	1.300	7.19
94)	T	1,2,4-Trichlor...	1.237	1.255	1.002	1.024	1.146	1.090	1.343	1.257	1.188	1.171	9.82

Method Path : I:\MS08\Methods\
Method File : R8032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

95)	T	Naphthalene	4.226	3.852	3.086	2.988	3.378	3.272	4.153	3.807	3.417	3.576	12.61
96)	T	n-Dodecane	1.223	1.258	1.181	1.209	1.205	1.179	1.375	1.223	1.025	1.209	7.50
97)	T	Hexachlorobuta...	0.788	0.835	0.736	0.676	0.814	0.751	0.847	0.797	0.764	0.779	6.85
98)	T	Cyclohexanone	0.709	0.732	0.693	0.698	0.735	0.726	0.863	0.801	0.744	0.745	7.33
99)	T	tert-Butylbenzene	2.608	2.719	2.461	2.281	2.747	2.494	2.813	2.599	2.324	2.561	7.25
100)	T	n-Butylbenzene	2.470	2.542	2.321	2.321	2.643	2.458	2.743	2.504	2.237	2.471	6.56

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

3/30/16

1ng/L Std. ID: S29-03251605
4ng/L Std. ID:
20ng/L Std. ID: S29-03251603
200ng/L Std. ID: S29-03251602
Dilution Factors: 5 50 250 1000

	Source Std.	Primary Working Standards				Working STD Conc.(ng/L):	4	4	4	4	20	200	200	200	200
						Injection (L):	0.020	0.025	0.050	0.100	0.050	0.025	0.125	0.25	0.50
Compounds	**mg/m³**	**200ng/L**	**20ng/L**	**4ng/L**	**1ng/L**	ICAL Points:	**0.08ng**	**0.1ng**	**0.2ng**	**0.4ng**	**1ng**	**5ng**	**25ng**	**50ng**	**100ng**
Propene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Dichlorodifluoromethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Chloromethane	0.98	196	19.6	3.92	0.98		0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
Freon-114	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Vinyl Chloride	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
1,3-Butadiene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
Bromomethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Chloroethane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Ethanol	5.06	1012	101.2	20.24	5.06		0.4048	0.506	1.012	2.024	5.06	25.30	126.50	253.0	506
Acetonitrile	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
Acrolein	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Acetone	5.37	1074	107.4	21.48	5.37		0.4296	0.537	1.074	2.148	5.37	26.85	134.25	268.5	537
Trichlorofluoromethane	0.99	198	19.8	3.96	0.99		0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Isopropanol	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
Acrylonitrile	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
1,1-Dichloroethene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
tert-Butanol	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
Methylene Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Allyl Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Trichlorotrifluoroethane	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Carbon Disulfide	0.98	196	19.6	3.92	0.98		0.0784	0.098	0.196	0.392	0.98	4.90	24.50	49.0	98
trans-1,2-Dichloroethene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
1,1-Dichloroethane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Methyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Vinyl Acetate	5.07	1014	101.4	20.28	5.07		0.4056	0.507	1.014	2.028	5.07	25.35	126.75	253.5	507
2-Butanone	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
cis-1,2-Dichloroethene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Diisopropyl Ether	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Ethyl Acetate	2.12	424	42.4	8.48	2.12		0.1696	0.212	0.424	0.848	2.12	10.60	53.00	106.0	212
n-Hexane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Chloroform	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Tetrahydrofuran	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
Ethyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,2-Dichloroethane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,1,1-Trichloroethane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Isopropyl Acetate	2.21	442	44.2	8.84	2.21		0.1768	0.221	0.442	0.884	2.21	11.05	55.25	110.5	221
1-Butanol	2.26	452	45.2	9.04	2.26		0.1808	0.226	0.452	0.904	2.26	11.30	56.50	113.0	226
Benzene	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
Carbon Tetrachloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Cyclohexane	2.09	418	41.8	8.36	2.09		0.1672	0.209	0.418	0.836	2.09	10.45	52.25	104.5	209
tert-Amyl Methyl Ether	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dichloropropane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Bromodichloromethane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Trichloroethene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
1,4-Dioxane	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
Isooctane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Methyl Methacrylate	2.08	416	41.6	8.32	2.08		0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208
n-Heptane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S29-03251605
4ng/L Std. ID:
20ng/L Std. ID: S29-03251603
200ng/L Std. ID: S29-03251602

Dilution Factors:		5	50	250	1000	Working STD Conc.(ng/L):	4	4	4	4	20	200	200	200	200
	Source Std.	Primary Working Standards				Injection (L):	0.020	0.025	0.050	0.100	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
cis-1,3-Dichloropropene	1.12	224	22.4	4.48	1.12		0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112

Primary Source Standards Concentrations (Working & Initial Calibration)

1ng/L Std. ID: S29-03251605
4ng/L Std. ID:
20ng/L Std. ID: S29-03251603
200ng/L Std. ID: S29-03251602
Dilution Factors: 5 50 250 1000

	Source Std.	Primary Working Standards				Working STD Conc.(ng/L):	4	4	4	4	20	200	200	200	200
						Injection (L):	0.020	0.025	0.050	0.100	0.050	0.025	0.125	0.25	0.50
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	ICAL Points:	0.08ng	0.1ng	0.2ng	0.4ng	1ng	5ng	25ng	50ng	100ng
4-Methyl-2-pentanone	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
trans-1,3-Dichloropropene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
1,1,2-Trichloroethane	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
Toluene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
2-Hexanone	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
Dibromochloromethane	1.10	220	22.0	4.40	1.10		0.0880	0.110	0.220	0.440	1.10	5.50	27.50	55.0	110
1,2-Dibromoethane	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
n-Butyl Acetate	1.11	222	22.2	4.44	1.11		0.0888	0.111	0.222	0.444	1.11	5.55	27.75	55.5	111
n-Octane	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Tetrachloroethene	0.99	198	19.8	3.96	0.99		0.0792	0.099	0.198	0.396	0.99	4.95	24.75	49.5	99
Chlorobenzene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Ethylbenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
m-&p-Xylene	2.08	416	41.6	8.32	2.08		0.1664	0.208	0.416	0.832	2.08	10.40	52.00	104.0	208
Bromoform	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Styrene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
o-Xylene	1.02	204	20.4	4.08	1.02		0.0816	0.102	0.204	0.408	1.02	5.10	25.50	51.0	102
n-Nonane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
1,1,2,2-Tetrachloroethane	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
Cumene	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
alpha-Pinene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
n-Propylbenzene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
3-Ethyltoluene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
4-Ethyltoluene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
1,3,5-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
alpha-Methylstyrene	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
2-Ethyltoluene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2,4-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
n-Decane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
Benzyl Chloride	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
1,3-Dichlorobenzene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108
1,4-Dichlorobenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
sec-Butylbenzene	1.06	212	21.2	4.24	1.06		0.0848	0.106	0.212	0.424	1.06	5.30	26.50	53.0	106
p-Isopropyltoluene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
1,2,3-Trimethylbenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dichlorobenzene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
d-Limonene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
1,2-Dibromo-3-chloropropane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
n-Undecane	1.01	202	20.2	4.04	1.01		0.0808	0.101	0.202	0.404	1.01	5.05	25.25	50.5	101
1,2,4-Trichlorobenzene	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Naphthalene	1.00	200	20.0	4.00	1.00		0.0800	0.100	0.200	0.400	1.00	5.00	25.00	50.0	100
n-Dodecane	1.04	208	20.8	4.16	1.04		0.0832	0.104	0.208	0.416	1.04	5.20	26.00	52.0	104
Hexachloro-1,3-butadiene	1.07	214	21.4	4.28	1.07		0.0856	0.107	0.214	0.428	1.07	5.35	26.75	53.5	107
Methacrylonitrile	1.03	206	20.6	4.12	1.03		0.0824	0.103	0.206	0.412	1.03	5.15	25.75	51.5	103
Cyclohexanone	1.12	224	22.4	4.48	1.12		0.0896	0.112	0.224	0.448	1.12	5.60	28.00	56.0	112
tert-Butylbenzene	1.05	210	21.0	4.20	1.05		0.0840	0.105	0.210	0.420	1.05	5.25	26.25	52.5	105
n-Butylbenzene	1.08	216	21.6	4.32	1.08		0.0864	0.108	0.216	0.432	1.08	5.40	27.00	54.0	108

Calibration Status Report Instrument #MS08

Method : I:\MS08\Methods\R8032916.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration

3/29/16

#	ID	Conc	ISTD Conc	Path\File
1	0.08	0	13	I:\MS08\Data\2016_03\29\03291602.D
2	0.10	0	13	I:\MS08\Data\2016_03\29\03291603.D
3	0.20	0	13	I:\MS08\Data\2016_03\29\03291604.D
4	0.40	0	13	I:\MS08\Data\2016_03\29\03291605.D
5	1.0	1	13	I:\MS08\Data\2016_03\29\03291606.D
6	5.0	5	13	I:\MS08\Data\2016_03\29\03291607.D
7	25	26	13	I:\MS08\Data\2016_03\29\03291608.D
8	50	52	13	I:\MS08\Data\2016_03\29\03291609.D
9	100	103	13	I:\MS08\Data\2016_03\29\03291610.D

#	ID	Update Time	Quant Time	Acquisition Time
1	0.08	Mar 29 12:19 2016	Mar 29 11:15 2016	29 Mar 2016 7:33
2	0.10	Mar 29 12:19 2016	Mar 29 11:15 2016	29 Mar 2016 8:05
3	0.20	Mar 29 12:19 2016	Mar 29 11:15 2016	29 Mar 2016 8:38
4	0.40	Mar 29 12:20 2016	Mar 29 11:15 2016	29 Mar 2016 9:10
5	1.0	Mar 29 12:20 2016	Mar 29 11:15 2016	29 Mar 2016 9:43
6	5.0	Mar 29 12:20 2016	Mar 29 11:15 2016	29 Mar 2016 10:15
7	25	Mar 29 12:20 2016	Mar 29 11:15 2016	29 Mar 2016 10:48
8	50	Mar 29 12:20 2016	Mar 29 12:01 2016	29 Mar 2016 11:20
9	100	Mar 29 12:21 2016	Mar 29 12:17 2016	29 Mar 2016 11:53

R8032916.M Tue Mar 29 13:14:18 2016

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291602.D
Acq On : 29 Mar 2016 7:33 Operator: WA
Sample : 0.08ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:22 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 3/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	148594	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.53	114	749312	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	291416	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	207207	11.057	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.48%				
57) Toluene-d8 (SS2)	12.77	98	719358	13.659	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 109.28%				
73) Bromofluorobenzene (SS3)	16.07	174	299101	13.029	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
Target Compounds							Qvalue
2) Propene	3.93	42	1312	0.087	ng		94
3) Dichlorodifluoromethan...	4.03	85	2074	0.077	ng	#	92
4) Chloromethane	4.24	50	1192	0.062	ng	#	42
5) 1,2-Dichloro-1,1,2,2-t...	4.38	135	1242	0.083	ng	#	43
6) Vinyl Chloride	4.52	62	953	0.046	ng	#	42
7) 1,3-Butadiene	4.69	54	978	0.069	ng		92
8) Bromomethane	4.99	94	867	0.073	ng		91
9) Chloroethane	5.20	64	744	0.070	ng	#	43
10) Ethanol	5.38	45	5519	0.550	ng		96
11) Acetonitrile	5.64	41	2206	0.087	ng		82
12) Acrolein	5.74	56	576	0.076	ng	#	63
13) Acetone	5.86	58	8905	0.816	ng	#	83
14) Trichlorofluoromethane	6.03	101	1899	0.082	ng		97
15) 2-Propanol (Isopropanol)	6.15	45	5792	0.174	ng		96
16) Acrylonitrile	6.38	53	134	0.008	ng		84
17) 1,1-Dichloroethene	6.68	96	950	0.077	ng		97
18) 2-Methyl-2-Propanol (t...	6.77	59	5591	0.158	ng		93
19) Methylene Chloride	6.79	84	3576	0.226	ng		96
20) 3-Chloro-1-propene (Al...	6.92	41	1054	0.064	ng	#	35
21) Trichlorotrifluoroethane	7.07	151	1145	0.098	ng		100
22) Carbon Disulfide	7.08	76	5193	0.089	ng	#	73
23) trans-1,2-Dichloroethene	7.71	61	1083	0.061	ng		92
24) 1,1-Dichloroethane	7.88	63	1943	0.084	ng	#	42
25) Methyl tert-Butyl Ether	7.96	73	3412	0.084	ng		93
26) Vinyl Acetate	8.05	86	885	0.242	ng	#	34
27) 2-Butanone (MEK)	8.27	72	959	0.119	ng	#	14
28) cis-1,2-Dichloroethene	8.65	61	1227	0.072	ng		100
29) Diisopropyl Ether	8.87	87	1001	0.086	ng	#	75
30) Ethyl Acetate	8.87	61	561	0.130	ng	#	8
31) n-Hexane	8.86	57	1987	0.092	ng	#	82
32) Chloroform	8.91	83	1930	0.088	ng		96
34) Tetrahydrofuran (THF)	9.29	72	676	0.078	ng		90
35) Ethyl tert-Butyl Ether	9.34	87	1311	0.078	ng	#	83
36) 1,2-Dichloroethane	9.58	62	1254	0.077	ng	#	4
38) 1,1,1-Trichloroethane	9.82	97	1643	0.082	ng		93
39) Isopropyl Acetate	10.15	61	1330	0.166	ng	#	89
40) 1-Butanol	10.18	56	2237	0.156	ng	#	75
41) Benzene	10.23	78	5924	0.111	ng		97
42) Carbon Tetrachloride	10.36	117	1314	0.080	ng		99
43) Cyclohexane	10.48	84	4244	0.184	ng		96
44) tert-Amyl Methyl Ether	10.76	73	3318	0.082	ng		96
45) 1,2-Dichloropropane	10.97	63	1114	0.086	ng		87
46) Bromodichloromethane	11.13	83	1227	0.074	ng		95
47) Trichloroethene	11.18	130	1276	0.084	ng		90
48) 1,4-Dioxane	11.17	88	774	0.071	ng	#	19
49) 2,2,4-Trimethylpentane...	11.23	57	5212	0.087	ng		98

Data File: I:\MS08\Data\2016 03\29\03291602.D
Acq On : 29 Mar 2016 7:33 Operator: WA
Sample : 0.08ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:22 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

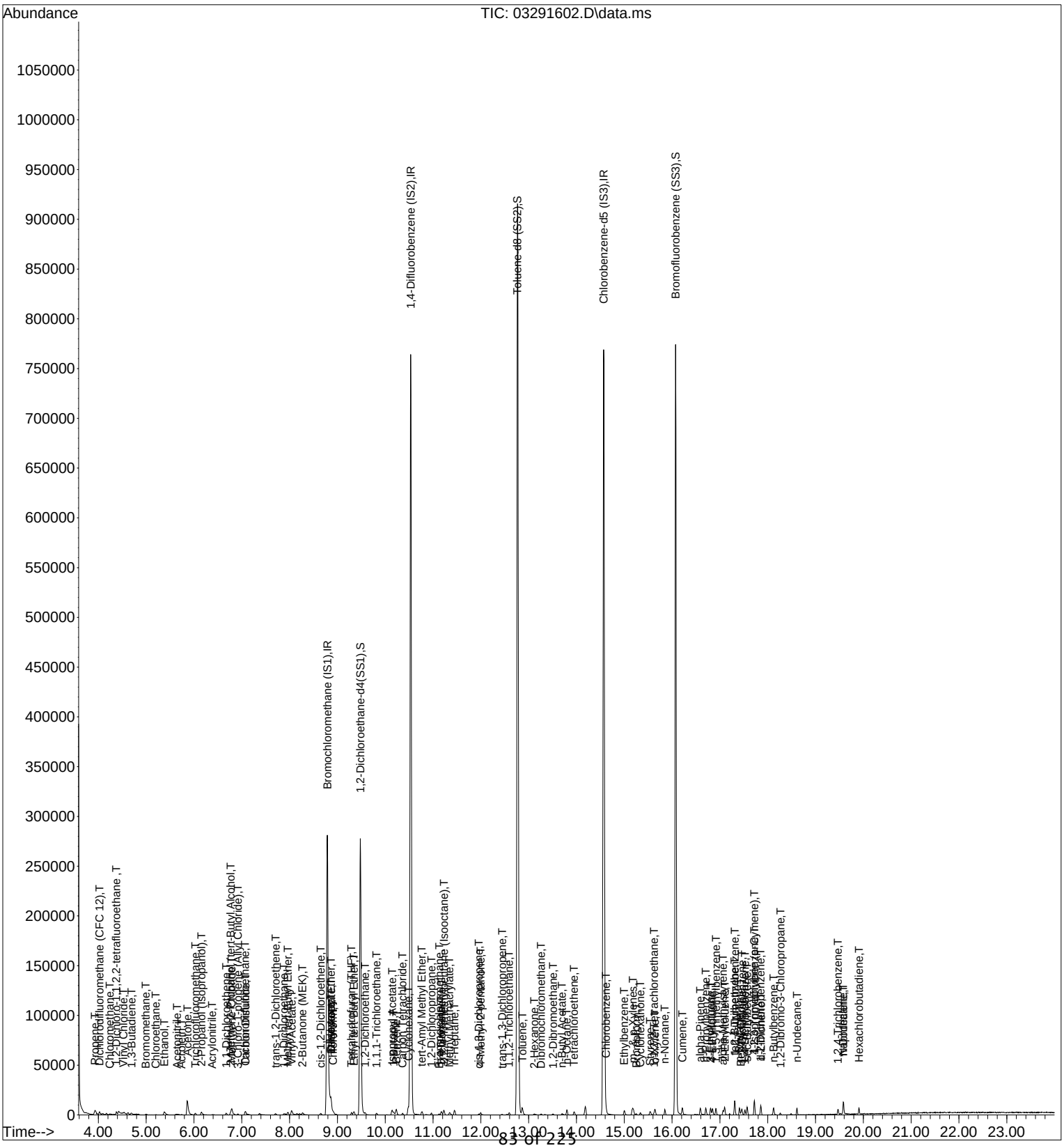
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	11.34	100	587	0.101	ng	#	51
51) n-Heptane	11.45	71	1212	0.093	ng	#	80
52) cis-1,3-Dichloropropene	11.96	75	1393	0.072	ng	#	43
53) 4-Methyl-2-pentanone	12.00	58	664	0.057	ng	#	37
54) trans-1,3-Dichloropropene	12.45	75	870	0.046	ng	#	42
55) 1,1,2-Trichloroethane	12.59	97	998	0.077	ng		95
58) Toluene	12.87	91	7158	0.148	ng		99
59) 2-Hexanone	13.12	43	1996	0.082	ng		90
60) Dibromochloromethane	13.26	129	1041	0.089	ng		94
61) 1,2-Dibromoethane	13.51	107	1033	0.086	ng		93
62) n-Butyl Acetate	13.70	43	2059	0.076	ng	#	75
63) n-Octane	13.80	57	891	0.087	ng		92
64) Tetrachloroethene	13.95	166	1510	0.103	ng		96
65) Chlorobenzene	14.62	112	3433	0.106	ng		94
66) Ethylbenzene	15.00	91	5494	0.104	ng		94
67) m- & p-Xylenes	15.18	91	8836	0.206	ng		94
68) Bromoform	15.25	173	842	0.076	ng	#	28
69) Styrene	15.54	104	2939	0.094	ng		95
70) o-Xylene	15.64	91	4486	0.099	ng		99
71) n-Nonane	15.85	43	2248	0.094	ng		87
72) 1,1,2,2-Tetrachloroethane	15.62	83	1631	0.080	ng		98
74) Cumene	16.21	105	6087	0.102	ng		97
75) alpha-Pinene	16.59	93	2801	0.099	ng	#	8
76) n-Propylbenzene	16.70	91	6844	0.099	ng		98
77) 3-Ethyltoluene	16.81	105	6234	0.112	ng		98
78) 4-Ethyltoluene	16.84	105	5892	0.109	ng		94
79) 1,3,5-Trimethylbenzene	16.92	105	5049	0.105	ng		91
80) alpha-Methylstyrene	17.06	118	2073	0.086	ng	#	81
81) 2-Ethyltoluene	17.10	105	5975	0.108	ng		97
82) 1,2,4-Trimethylbenzene	17.31	105	4985	0.104	ng		93
83) n-Decane	17.41	57	2490	0.096	ng		95
84) Benzyl Chloride	17.44	91	3005	0.076	ng		87
85) 1,3-Dichlorobenzene	17.46	146	3138	0.114	ng		100
86) 1,4-Dichlorobenzene	17.53	146	3352	0.115	ng		99
87) sec-Butylbenzene	17.57	105	6638	0.107	ng		97
88) 4-Isopropyltoluene (p-...	17.72	119	5841	0.097	ng		97
89) 1,2,3-Trimethylbenzene	17.72	105	4975	0.100	ng		96
90) 1,2-Dichlorobenzene	17.85	146	3000	0.112	ng		94
91) d-Limonene	17.86	68	1476	0.085	ng		96
92) 1,2-Dibromo-3-Chloropr...	18.27	157	810	0.084	ng	#	76
93) n-Undecane	18.61	57	2375	0.093	ng		96
94) 1,2,4-Trichlorobenzene	19.47	180	2400	0.118	ng		99
95) Naphthalene	19.58	128	7881	0.120	ng		93
96) n-Dodecane	19.58	57	2373	0.100	ng		96
97) Hexachlorobutadiene	19.91	225	1572	0.119	ng		100
98) Cyclohexanone	15.34	55	1482	0.095	ng		90
99) tert-Butylbenzene	17.31	119	5107	0.106	ng		97
100) n-Butylbenzene	18.12	91	4976	0.104	ng		94

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291602.D
Acq On : 29 Mar 2016 7:33 Operator: WA
Sample : 0.08ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:22 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291603.D
Acq On : 29 Mar 2016 8:05 Operator: WA
Sample : 0.10ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:23 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration 3/29/16
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	136468	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.53	114	696790	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	269984	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	192005	11.156	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.28%				
57) Toluene-d8 (SS2)	12.77	98	664351	13.616	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.96%				
73) Bromofluorobenzene (SS3)	16.07	174	271173	12.750	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.00%				
Target Compounds							Qvalue
2) Propene	3.93	42	1359	0.099	ng		85
3) Dichlorodifluoromethan...	4.03	85	2766	0.112	ng	#	87
4) Chloromethane	4.24	50	1388	0.079	ng	#	42
5) 1,2-Dichloro-1,1,2,2-t...	4.38	135	1545	0.113	ng	#	43
6) Vinyl Chloride	4.52	62	1184	0.062	ng	#	42
7) 1,3-Butadiene	4.68	54	1000	0.077	ng		96
8) Bromomethane	5.00	94	985	0.091	ng		97
9) Chloroethane	5.20	64	947	0.096	ng	#	43
10) Ethanol	5.38	45	5132	0.557	ng		92
11) Acetonitrile	5.64	41	2482	0.106	ng		72
12) Acrolein	5.74	56	530	0.076	ng	#	55
13) Acetone	5.86	58	10236	1.021	ng		88
14) Trichlorofluoromethane	6.03	101	2282	0.108	ng		95
15) 2-Propanol (Isopropanol)	6.15	45	7092	0.232	ng		98
16) Acrylonitrile	6.39	53	931	0.063	ng	#	68
17) 1,1-Dichloroethene	6.68	96	1290	0.114	ng		100
18) 2-Methyl-2-Propanol (t...	6.77	59	7193	0.221	ng		91
19) Methylene Chloride	6.79	84	3709	0.255	ng		95
20) 3-Chloro-1-propene (Al...	6.91	41	1354	0.089	ng	#	35
21) Trichlorotrifluoroethane	7.07	151	1363	0.127	ng		96
22) Carbon Disulfide	7.07	76	6851	0.128	ng	#	73
23) trans-1,2-Dichloroethene	7.70	61	1550	0.095	ng		97
24) 1,1-Dichloroethane	7.88	63	2373	0.111	ng		90
25) Methyl tert-Butyl Ether	7.97	73	4384	0.118	ng		89
26) Vinyl Acetate	8.04	86	1274	0.380	ng	#	41
27) 2-Butanone (MEK)	8.27	72	1339	0.181	ng	#	37
28) cis-1,2-Dichloroethene	8.65	61	1609	0.102	ng		100
29) Diisopropyl Ether	8.87	87	1280	0.120	ng	#	76
30) Ethyl Acetate	8.87	61	747	0.189	ng	#	8
31) n-Hexane	8.87	57	2679	0.134	ng	#	83
32) Chloroform	8.91	83	2389	0.119	ng		99
34) Tetrahydrofuran (THF)	9.30	72	761	0.096	ng	#	80
35) Ethyl tert-Butyl Ether	9.35	87	1768	0.114	ng		92
36) 1,2-Dichloroethane	9.59	62	1622	0.109	ng	#	41
38) 1,1,1-Trichloroethane	9.82	97	1891	0.101	ng		96
39) Isopropyl Acetate	10.14	61	1495	0.201	ng	#	81
40) 1-Butanol	10.18	56	2214	0.166	ng	#	74
41) Benzene	10.23	78	6706	0.135	ng		94
42) Carbon Tetrachloride	10.37	117	1692	0.111	ng		89
43) Cyclohexane	10.48	84	5421	0.253	ng		95
44) tert-Amyl Methyl Ether	10.76	73	4143	0.110	ng		95
45) 1,2-Dichloropropane	10.96	63	1339	0.111	ng		96
46) Bromodichloromethane	11.13	83	1652	0.107	ng		93
47) Trichloroethene	11.17	130	1760	0.124	ng		94
48) 1,4-Dioxane	11.17	88	913	0.090	ng		92
49) 2,2,4-Trimethylpentane...	11.23	57	6403	0.114	ng		100

Data File: I:\MS08\Data\2016 03\29\03291603.D
Acq On : 29 Mar 2016 8:05 Operator: WA
Sample : 0.10ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:23 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

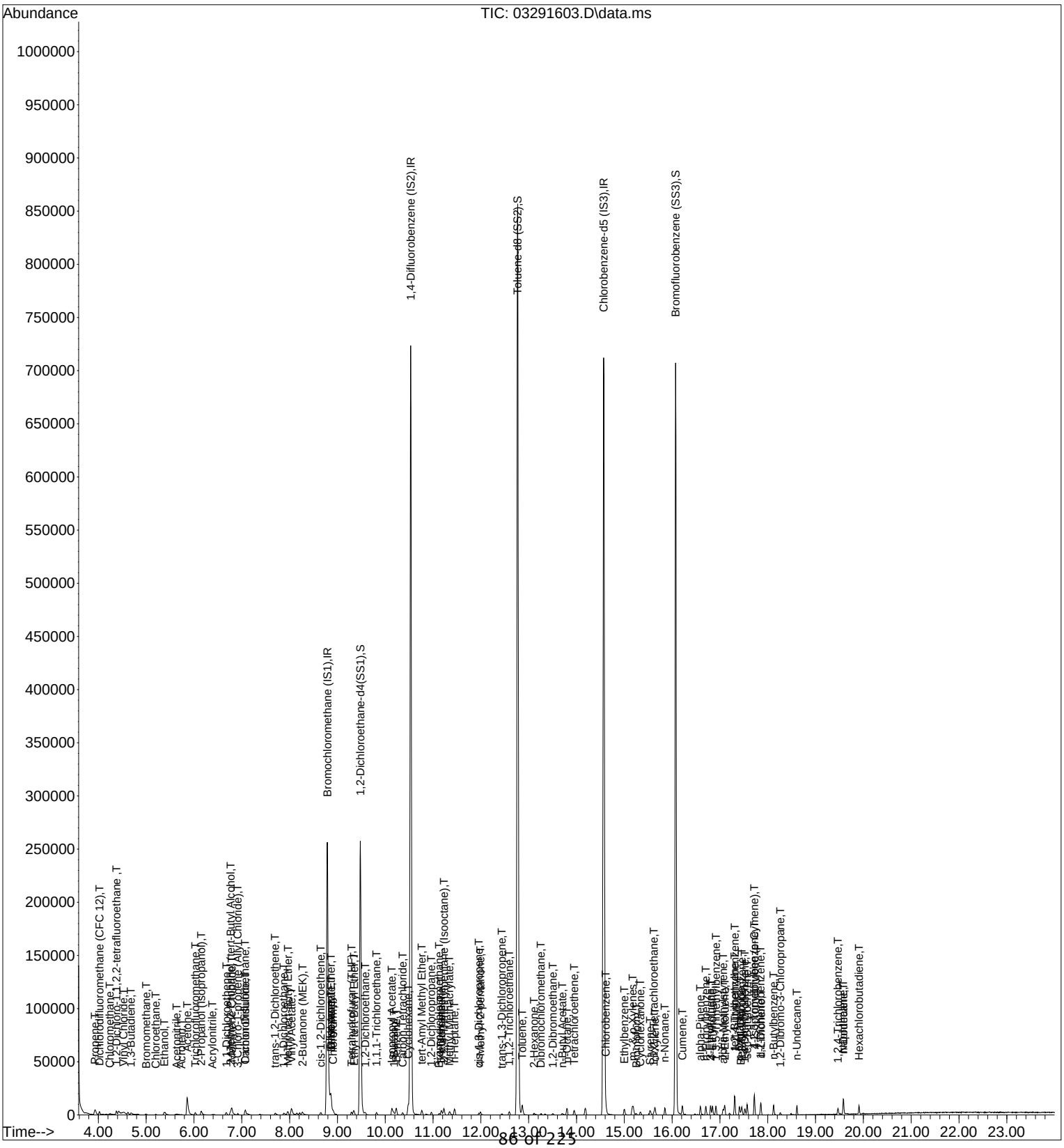
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	11.34	100	868	0.160	ng	#	86
51) n-Heptane	11.45	71	1489	0.122	ng	#	82
52) cis-1,3-Dichloropropene	11.96	75	1729	0.097	ng	#	43
53) 4-Methyl-2-pentanone	11.99	58	811	0.075	ng	#	40
54) trans-1,3-Dichloropropene	12.44	75	1127	0.064	ng	#	42
55) 1,1,2-Trichloroethane	12.59	97	1357	0.112	ng		92
58) Toluene	12.87	91	8622	0.192	ng		99
59) 2-Hexanone	13.12	43	2615	0.116	ng		79
60) Dibromochloromethane	13.25	129	1290	0.118	ng		95
61) 1,2-Dibromoethane	13.51	107	1346	0.122	ng		98
62) n-Butyl Acetate	13.71	43	2450	0.098	ng	#	75
63) n-Octane	13.80	57	1145	0.121	ng		99
64) Tetrachloroethene	13.95	166	1902	0.139	ng		92
65) Chlorobenzene	14.62	112	4345	0.145	ng		98
66) Ethylbenzene	15.00	91	6645	0.135	ng		93
67) m- & p-Xylenes	15.18	91	10736	0.271	ng		96
68) Bromoform	15.25	173	1083	0.105	ng	#	28
69) Styrene	15.54	104	3594	0.125	ng		91
70) o-Xylene	15.64	91	5362	0.128	ng		99
71) n-Nonane	15.85	43	2613	0.117	ng		95
72) 1,1,2,2-Tetrachloroethane	15.62	83	2179	0.115	ng		95
74) Cumene	16.21	105	7405	0.134	ng		95
75) alpha-Pinene	16.59	93	3583	0.137	ng		65
76) n-Propylbenzene	16.70	91	8069	0.125	ng		96
77) 3-Ethyltoluene	16.80	105	7176	0.139	ng		99
78) 4-Ethyltoluene	16.84	105	6924	0.139	ng		96
79) 1,3,5-Trimethylbenzene	16.92	105	6124	0.137	ng		96
80) alpha-Methylstyrene	17.07	118	2559	0.115	ng		87
81) 2-Ethyltoluene	17.10	105	7033	0.137	ng		96
82) 1,2,4-Trimethylbenzene	17.31	105	5759	0.130	ng		99
83) n-Decane	17.41	57	2854	0.119	ng		94
84) Benzyl Chloride	17.44	91	3495	0.095	ng		91
85) 1,3-Dichlorobenzene	17.46	146	3768	0.147	ng		99
86) 1,4-Dichlorobenzene	17.52	146	4130	0.153	ng		96
87) sec-Butylbenzene	17.57	105	8051	0.140	ng		97
88) 4-Isopropyltoluene (p-...	17.72	119	7511	0.134	ng		98
89) 1,2,3-Trimethylbenzene	17.72	105	6133	0.133	ng		96
90) 1,2-Dichlorobenzene	17.85	146	3555	0.143	ng		97
91) d-Limonene	17.86	68	1944	0.121	ng		97
92) 1,2-Dibromo-3-Chloropr...	18.26	157	1024	0.115	ng	#	74
93) n-Undecane	18.61	57	2979	0.125	ng		97
94) 1,2,4-Trichlorobenzene	19.47	180	2820	0.149	ng		96
95) Naphthalene	19.58	128	8320	0.137	ng		92
96) n-Dodecane	19.59	57	2826	0.129	ng		96
97) Hexachlorobutadiene	19.91	225	1929	0.157	ng		100
98) Cyclohexanone	15.34	55	1771	0.123	ng		89
99) tert-Butylbenzene	17.31	119	6167	0.138	ng		97
100) n-Butylbenzene	18.12	91	5930	0.133	ng		98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291603.D
Acq On : 29 Mar 2016 8:05 Operator: WA
Sample : 0.10ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:23 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291604.D
Acq On : 29 Mar 2016 8:38 Operator: WA
Sample : 0.20ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:24 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 3/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.78	130	149805	12.500	ng		-0.03
37) 1,4-Difluorobenzene (IS2)	10.53	114	758172	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	293260	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	210224	11.127	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.04%				
57) Toluene-d8 (SS2)	12.77	98	721525	13.614	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.88%				
73) Bromofluorobenzene (SS3)	16.07	174	298467	12.920	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 103.36%				
Target Compounds							Qvalue
2) Propene	3.92	42	2614	0.173	ng		88
3) Dichlorodifluoromethan...	4.01	85	5302	0.195	ng	#	90
4) Chloromethane	4.23	50	2818	0.146	ng		89
5) 1,2-Dichloro-1,1,2,2-t...	4.37	135	2962	0.197	ng		95
6) Vinyl Chloride	4.50	62	2756	0.132	ng		92
7) 1,3-Butadiene	4.68	54	1817	0.127	ng		90
8) Bromomethane	4.98	94	2044	0.171	ng		100
9) Chloroethane	5.19	64	1945	0.180	ng		89
10) Ethanol	5.36	45	9670	0.956	ng		94
11) Acetonitrile	5.63	41	4872	0.190	ng		84
12) Acrolein	5.73	56	1817	0.238	ng		76
13) Acetone	5.85	58	19862	1.805	ng		84
14) Trichlorofluoromethane	6.02	101	4637	0.200	ng		95
15) 2-Propanol (Isopropanol)	6.13	45	14038	0.418	ng		100
16) Acrylonitrile	6.35	53	2443	0.151	ng		97
17) 1,1-Dichloroethene	6.67	96	2624	0.211	ng		98
18) 2-Methyl-2-Propanol (t...	6.75	59	13455	0.377	ng		98
19) Methylene Chloride	6.78	84	5390	0.338	ng		98
20) 3-Chloro-1-propene (Al...	6.91	41	2783	0.167	ng		90
21) Trichlorotrifluoroethane	7.06	151	2643	0.224	ng		96
22) Carbon Disulfide	7.07	76	10964	0.186	ng		87
23) trans-1,2-Dichloroethene	7.69	61	3226	0.179	ng		97
24) 1,1-Dichloroethane	7.88	63	4470	0.191	ng		98
25) Methyl tert-Butyl Ether	7.95	73	8487	0.207	ng		95
26) Vinyl Acetate	8.03	86	3082	0.837	ng	#	86
27) 2-Butanone (MEK)	8.26	72	2957	0.365	ng	#	67
28) cis-1,2-Dichloroethene	8.65	61	3238	0.188	ng		96
29) Diisopropyl Ether	8.86	87	2445	0.209	ng	#	75
30) Ethyl Acetate	8.86	61	1610	0.370	ng		97
31) n-Hexane	8.87	57	4900	0.224	ng		99
32) Chloroform	8.91	83	4476	0.204	ng		99
34) Tetrahydrofuran (THF)	9.29	72	1523	0.175	ng	#	78
35) Ethyl tert-Butyl Ether	9.34	87	3323	0.195	ng		90
36) 1,2-Dichloroethane	9.58	62	3135	0.192	ng		97
38) 1,1,1-Trichloroethane	9.82	97	3881	0.191	ng		98
39) Isopropyl Acetate	10.13	61	3089	0.381	ng	#	90
40) 1-Butanol	10.16	56	4831	0.333	ng		89
41) Benzene	10.23	78	11419	0.212	ng		99
42) Carbon Tetrachloride	10.37	117	3374	0.203	ng		94
43) Cyclohexane	10.48	84	9563	0.410	ng		97
44) tert-Amyl Methyl Ether	10.76	73	7945	0.194	ng		96
45) 1,2-Dichloropropane	10.96	63	2532	0.193	ng		95
46) Bromodichloromethane	11.13	83	3168	0.188	ng		99
47) Trichloroethene	11.18	130	3287	0.213	ng		96
48) 1,4-Dioxane	11.16	88	2198	0.199	ng		96
49) 2,2,4-Trimethylpentane...	11.23	57	12277	0.202	ng		99

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291604.D
Acq On : 29 Mar 2016 8:38 Operator: WA
Sample : 0.20ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:24 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

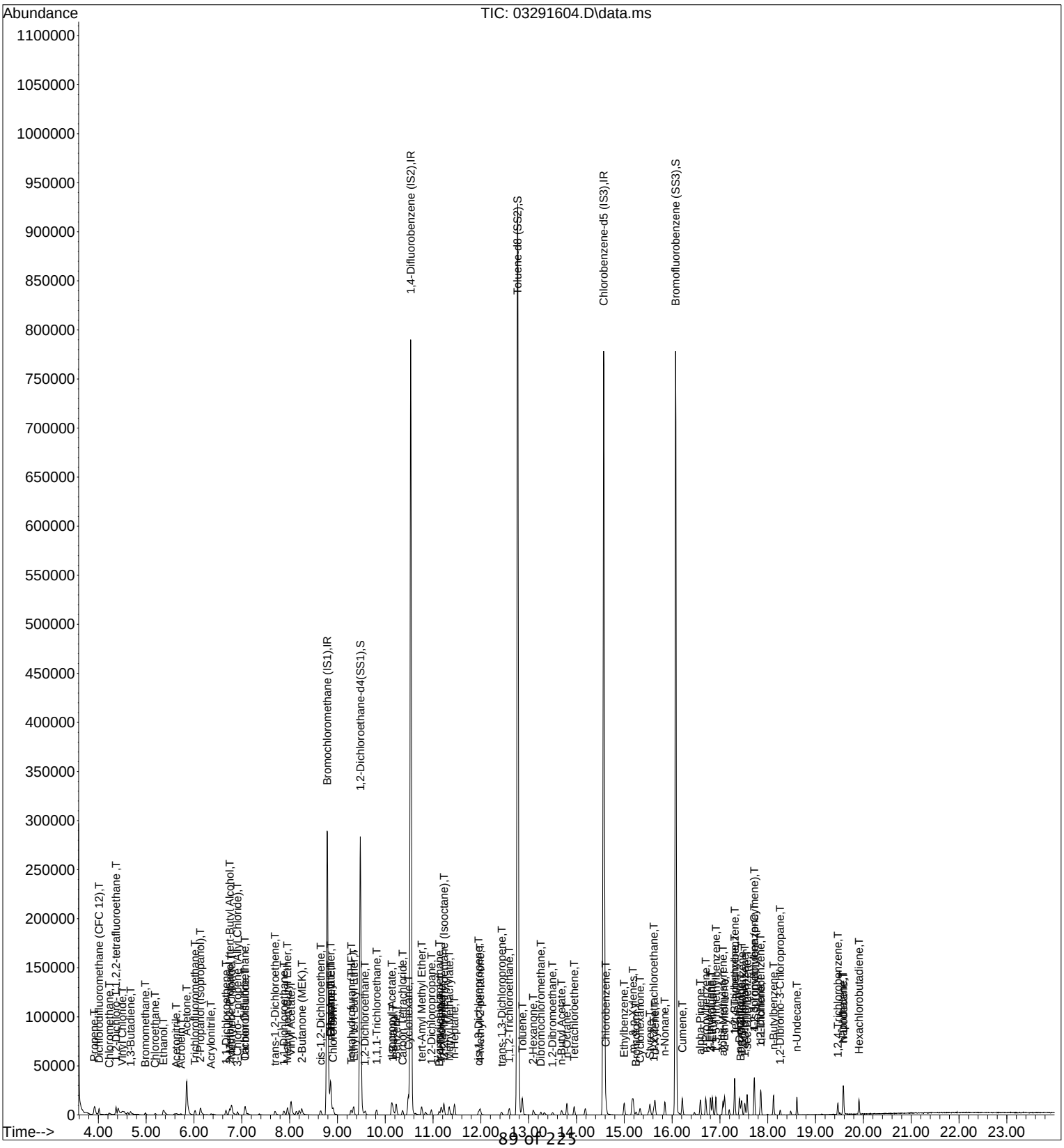
Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
50) Methyl Methacrylate	11.34	100	1825	0.309	ng	#	77
51) n-Heptane	11.45	71	2874	0.217	ng		96
52) cis-1,3-Dichloropropene	11.95	75	3744	0.192	ng		97
53) 4-Methyl-2-pentanone	11.99	58	2090	0.178	ng		84
54) trans-1,3-Dichloropropene	12.44	75	2925	0.152	ng		81
55) 1,1,2-Trichloroethane	12.59	97	2567	0.195	ng		96
58) Toluene	12.87	91	16353	0.335	ng		100
59) 2-Hexanone	13.09	43	5777	0.235	ng		91
60) Dibromochloromethane	13.25	129	2522	0.213	ng		97
61) 1,2-Dibromoethane	13.50	107	2727	0.227	ng		100
62) n-Butyl Acetate	13.69	43	5362	0.197	ng		93
63) n-Octane	13.80	57	2375	0.230	ng		93
64) Tetrachloroethene	13.95	166	3583	0.242	ng		98
65) Chlorobenzene	14.61	112	7912	0.243	ng		100
66) Ethylbenzene	15.00	91	12689	0.238	ng		97
67) m- & p-Xylenes	15.18	91	20169	0.468	ng		97
68) Bromoform	15.25	173	2270	0.203	ng		97
69) Styrene	15.54	104	7283	0.232	ng		99
70) o-Xylene	15.64	91	10596	0.233	ng		100
71) n-Nonane	15.85	43	5153	0.213	ng		95
72) 1,1,2,2-Tetrachloroethane	15.62	83	4315	0.210	ng		98
74) Cumene	16.21	105	13892	0.232	ng		97
75) alpha-Pinene	16.59	93	6564	0.231	ng		67
76) n-Propylbenzene	16.70	91	15767	0.226	ng		98
77) 3-Ethyltoluene	16.80	105	13207	0.236	ng		99
78) 4-Ethyltoluene	16.84	105	13787	0.254	ng		97
79) 1,3,5-Trimethylbenzene	16.92	105	11406	0.236	ng		100
80) alpha-Methylstyrene	17.06	118	5606	0.232	ng		92
81) 2-Ethyltoluene	17.10	105	13487	0.241	ng		96
82) 1,2,4-Trimethylbenzene	17.31	105	11209	0.233	ng		99
83) n-Decane	17.41	57	5748	0.221	ng		96
84) Benzyl Chloride	17.43	91	6838	0.172	ng		92
85) 1,3-Dichlorobenzene	17.46	146	7104	0.256	ng		100
86) 1,4-Dichlorobenzene	17.52	146	7432	0.254	ng		96
87) sec-Butylbenzene	17.57	105	15584	0.249	ng		98
88) 4-Isopropyltoluene (p-...	17.72	119	14012	0.230	ng		99
89) 1,2,3-Trimethylbenzene	17.72	105	11342	0.226	ng		99
90) 1,2-Dichlorobenzene	17.85	146	6921	0.256	ng		100
91) d-Limonene	17.85	68	3732	0.214	ng		98
92) 1,2-Dibromo-3-Chloropr...	18.26	157	1997	0.206	ng		90
93) n-Undecane	18.61	57	5863	0.227	ng		95
94) 1,2,4-Trichlorobenzene	19.47	180	4890	0.239	ng		98
95) Naphthalene	19.58	128	14482	0.219	ng		96
96) n-Dodecane	19.59	57	5765	0.242	ng		96
97) Hexachlorobutadiene	19.91	225	3695	0.277	ng		100
98) Cyclohexanone	15.33	55	3641	0.233	ng		98
99) tert-Butylbenzene	17.31	119	12123	0.250	ng		99
100) n-Butylbenzene	18.12	91	11761	0.244	ng		97

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291604.D
Acq On : 29 Mar 2016 8:38 Operator: WA
Sample : 0.20ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:24 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291605.D
Acq On : 29 Mar 2016 9:10 Operator: WA
Sample : 0.40ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:26 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016 3/29/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	152215	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.53	114	763539	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	297554	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	213872	11.141	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 89.12%				
57) Toluene-d8 (SS2)	12.77	98	731525	13.604	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 108.80%				
73) Bromofluorobenzene (SS3)	16.07	174	305593	13.037	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.32%				
Target Compounds							Qvalue
2) Propene	3.91	42	5500	0.358	ng		91
3) Dichlorodifluoromethan...	4.01	85	10022	0.363	ng	#	97
4) Chloromethane	4.22	50	5015	0.255	ng		94
5) 1,2-Dichloro-1,1,2,2-t...	4.37	135	5808	0.380	ng		99
6) Vinyl Chloride	4.50	62	5909	0.279	ng		97
7) 1,3-Butadiene	4.67	54	3808	0.262	ng		96
8) Bromomethane	4.98	94	4296	0.354	ng		96
9) Chloroethane	5.19	64	3911	0.357	ng		97
10) Ethanol	5.36	45	18076	1.760	ng		95
11) Acetonitrile	5.58	41	9445	0.363	ng		88
12) Acrolein	5.72	56	3473	0.449	ng		92
13) Acetone	5.84	58	37354	3.340	ng		86
14) Trichlorofluoromethane	6.02	101	9029	0.382	ng		98
15) 2-Propanol (Isopropanol)	6.13	45	26021	0.763	ng		98
16) Acrylonitrile	6.35	53	5666	0.344	ng		98
17) 1,1-Dichloroethene	6.67	96	4978	0.394	ng		94
18) 2-Methyl-2-Propanol (t...	6.73	59	25969	0.716	ng		95
19) Methylene Chloride	6.79	84	7844	0.484	ng		95
20) 3-Chloro-1-propene (Al...	6.91	41	5963	0.352	ng		90
21) Trichlorotrifluoroethane	7.07	151	5386	0.449	ng		97
22) Carbon Disulfide	7.06	76	19728	0.329	ng		91
23) trans-1,2-Dichloroethene	7.69	61	6843	0.374	ng		94
24) 1,1-Dichloroethane	7.88	63	9068	0.381	ng		96
25) Methyl tert-Butyl Ether	7.95	73	16390	0.394	ng		97
26) Vinyl Acetate	8.03	86	6845	1.831	ng	#	92
27) 2-Butanone (MEK)	8.25	72	6061	0.736	ng	#	77
28) cis-1,2-Dichloroethene	8.65	61	6653	0.379	ng		100
29) Diisopropyl Ether	8.85	87	4911	0.413	ng	#	80
30) Ethyl Acetate	8.85	61	3908	0.885	ng		92
31) n-Hexane	8.87	57	9579	0.431	ng		99
32) Chloroform	8.91	83	8791	0.393	ng		100
34) Tetrahydrofuran (THF)	9.28	72	3260	0.368	ng	#	90
35) Ethyl tert-Butyl Ether	9.34	87	7059	0.408	ng		99
36) 1,2-Dichloroethane	9.59	62	6147	0.370	ng		99
38) 1,1,1-Trichloroethane	9.82	97	7604	0.371	ng		98
39) Isopropyl Acetate	10.13	61	6321	0.774	ng		95
40) 1-Butanol	10.15	56	10579	0.725	ng		88
41) Benzene	10.23	78	22057	0.406	ng		99
42) Carbon Tetrachloride	10.37	117	6440	0.385	ng		98
43) Cyclohexane	10.48	84	18554	0.790	ng		99
44) tert-Amyl Methyl Ether	10.76	73	15575	0.378	ng		97
45) 1,2-Dichloropropane	10.96	63	5126	0.388	ng		99
46) Bromodichloromethane	11.12	83	6197	0.365	ng		99
47) Trichloroethene	11.17	130	6437	0.414	ng		100
48) 1,4-Dioxane	11.15	88	4420	0.398	ng		100
49) 2,2,4-Trimethylpentane...	11.23	57	24047	0.392	ng		98

Data File: I:\MS08\Data\2016 03\29\03291605.D
Acq On : 29 Mar 2016 9:10 Operator: WA
Sample : 0.40ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:26 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

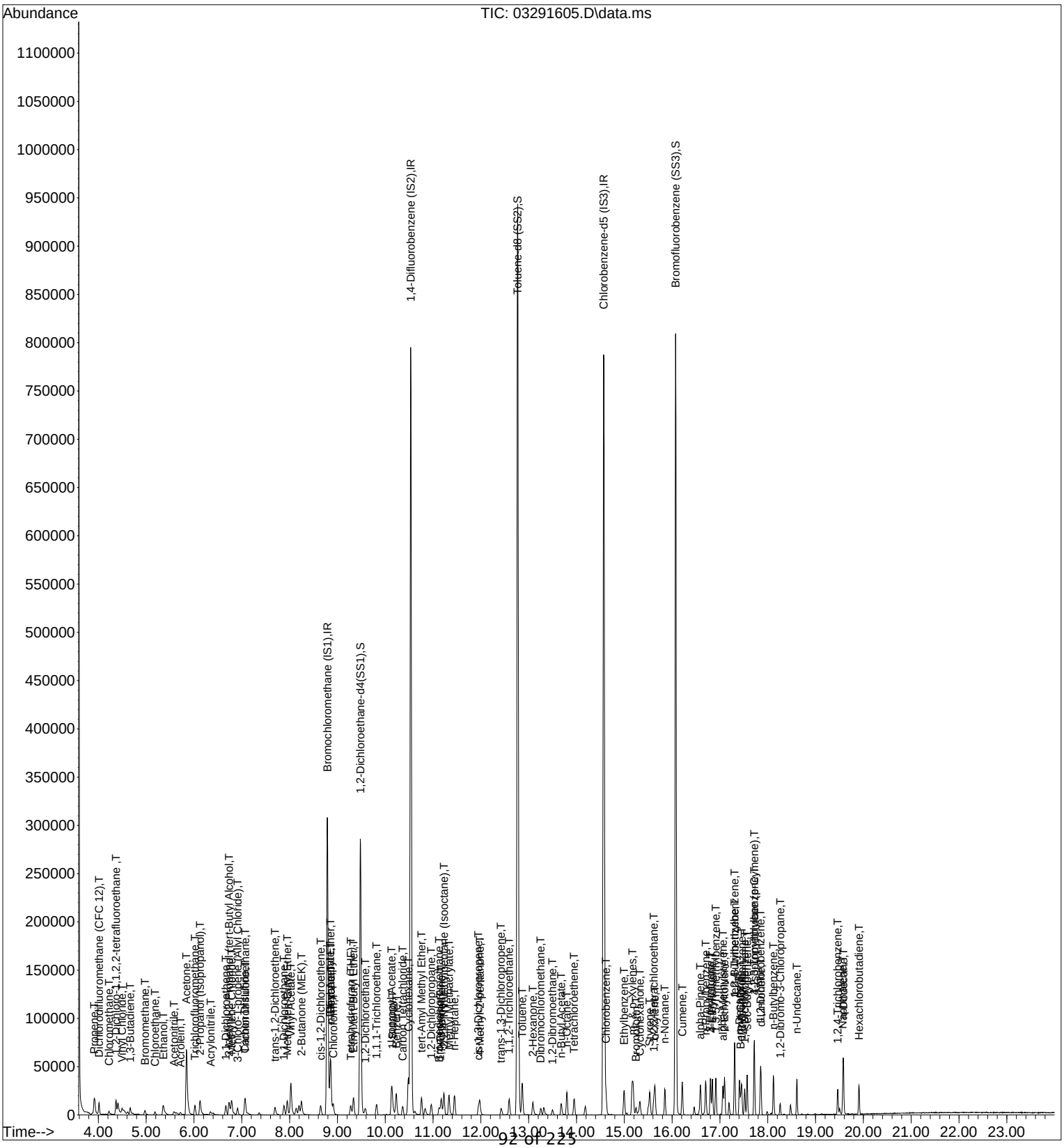
Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	4488	0.755 ng	96
51) n-Heptane	11.45	71	5853	0.439 ng	99
52) cis-1,3-Dichloropropene	11.95	75	7802	0.398 ng	95
53) 4-Methyl-2-pentanone	11.98	58	4805	0.406 ng	93
54) trans-1,3-Dichloropropene	12.42	75	6092	0.315 ng	98
55) 1,1,2-Trichloroethane	12.59	97	5357	0.405 ng	94
58) Toluene	12.86	91	31004	0.627 ng	99
59) 2-Hexanone	13.09	43	12604	0.506 ng	93
60) Dibromochloromethane	13.25	129	5400	0.450 ng	99
61) 1,2-Dibromoethane	13.50	107	5660	0.464 ng	97
62) n-Butyl Acetate	13.68	43	11621	0.420 ng	98
63) n-Octane	13.80	57	4576	0.438 ng	99
64) Tetrachloroethene	13.95	166	7322	0.487 ng	99
65) Chlorobenzene	14.62	112	15791	0.478 ng	97
66) Ethylbenzene	15.00	91	25034	0.462 ng	97
67) m- & p-Xylenes	15.17	91	40064	0.916 ng	97
68) Bromoform	15.25	173	4552	0.400 ng	97
69) Styrene	15.53	104	15016	0.472 ng	99
70) o-Xylene	15.64	91	20445	0.444 ng	96
71) n-Nonane	15.85	43	10081	0.411 ng	99
72) 1,1,2,2-Tetrachloroethane	15.62	83	8706	0.418 ng	99
74) Cumene	16.21	105	26632	0.439 ng	98
75) alpha-Pinene	16.59	93	13266	0.460 ng	65
76) n-Propylbenzene	16.70	91	30994	0.437 ng	98
77) 3-Ethyltoluene	16.80	105	26437	0.466 ng	99
78) 4-Ethyltoluene	16.84	105	26438	0.481 ng	99
79) 1,3,5-Trimethylbenzene	16.91	105	22324	0.454 ng	98
80) alpha-Methylstyrene	17.06	118	11292	0.460 ng	92
81) 2-Ethyltoluene	17.10	105	26574	0.469 ng	98
82) 1,2,4-Trimethylbenzene	17.31	105	22082	0.452 ng	100
83) n-Decane	17.41	57	11529	0.437 ng	96
84) Benzyl Chloride	17.43	91	14153	0.351 ng	97
85) 1,3-Dichlorobenzene	17.46	146	13926	0.494 ng	100
86) 1,4-Dichlorobenzene	17.52	146	14255	0.480 ng	99
87) sec-Butylbenzene	17.57	105	29680	0.467 ng	99
88) 4-Isopropyltoluene (p-...	17.72	119	27952	0.453 ng	98
89) 1,2,3-Trimethylbenzene	17.72	105	22664	0.446 ng	100
90) 1,2-Dichlorobenzene	17.85	146	13200	0.481 ng	100
91) d-Limonene	17.86	68	8036	0.455 ng	94
92) 1,2-Dibromo-3-Chloropr...	18.26	157	4127	0.420 ng	92
93) n-Undecane	18.61	57	11953	0.456 ng	98
94) 1,2,4-Trichlorobenzene	19.46	180	10144	0.488 ng	99
95) Naphthalene	19.57	128	28449	0.424 ng	98
96) n-Dodecane	19.59	57	11972	0.495 ng	97
97) Hexachlorobutadiene	19.91	225	6890	0.510 ng	99
98) Cyclohexanone	15.33	55	7444	0.469 ng	98
99) tert-Butylbenzene	17.31	119	22807	0.463 ng	99
100) n-Butylbenzene	18.12	91	23865	0.487 ng	95

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291605.D
Acq On : 29 Mar 2016 9:10 Operator: WA
Sample : 0.40ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251605 (4/23)
ALS Vial : 13 Sample Multiplier: 1

Quant Time: Mar 29 11:15:26 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291606.D
Acq On : 29 Mar 2016 9:43 Operator: WA
Sample : 1.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016 WA 3/29/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.79	130	142418	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.53	114	697523	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	276021	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	198586	11.056	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.48%				
57) Toluene-d8 (SS2)	12.77	98	663887	13.309	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.48%				
73) Bromofluorobenzene (SS3)	16.07	174	285612	13.135	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.12%				
Target Compounds							Qvalue
2) Propene	3.90	42	12856	0.894	ng		99
3) Dichlorodifluoromethan...	4.00	85	27241	1.053	ng		99
4) Chloromethane	4.21	50	17143	0.932	ng		97
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	15717	1.098	ng		99
6) Vinyl Chloride	4.49	62	16860	0.851	ng		98
7) 1,3-Butadiene	4.65	54	13067	0.962	ng		98
8) Bromomethane	4.97	94	12935	1.140	ng		98
9) Chloroethane	5.17	64	11003	1.073	ng		97
10) Ethanol	5.35	45	48517	5.048	ng		100
11) Acetonitrile	5.57	41	24023	0.986	ng		95
12) Acrolein	5.71	56	8086	1.116	ng		91
13) Acetone	5.84	58	54308	5.191	ng		98
14) Trichlorofluoromethane	6.01	101	23134	1.047	ng		100
15) 2-Propanol (Isopropanol)	6.12	45	66444	2.083	ng		97
16) Acrylonitrile	6.33	53	17073	1.109	ng		100
17) 1,1-Dichloroethene	6.66	96	14257	1.207	ng		97
18) 2-Methyl-2-Propanol (t...	6.72	59	70447	2.077	ng		98
19) Methylene Chloride	6.78	84	16819	1.108	ng		97
20) 3-Chloro-1-propene (Al...	6.91	41	16925	1.069	ng		96
21) Trichlorotrifluoroethane	7.07	151	14057	1.252	ng		99
22) Carbon Disulfide	7.06	76	51509	0.919	ng		97
23) trans-1,2-Dichloroethene	7.69	61	19513	1.141	ng		98
24) 1,1-Dichloroethane	7.88	63	24298	1.090	ng		99
25) Methyl tert-Butyl Ether	7.95	73	44468	1.143	ng		98
26) Vinyl Acetate	8.03	86	17279	4.939	ng	#	87
27) 2-Butanone (MEK)	8.24	72	9475	1.230	ng	#	82
28) cis-1,2-Dichloroethene	8.65	61	18312	1.116	ng		99
29) Diisopropyl Ether	8.85	87	13103	1.178	ng	#	90
30) Ethyl Acetate	8.85	61	9548	2.310	ng		97
31) n-Hexane	8.86	57	23108	1.112	ng		97
32) Chloroform	8.91	83	23880	1.142	ng		98
34) Tetrahydrofuran (THF)	9.27	72	9388	1.132	ng		99
35) Ethyl tert-Butyl Ether	9.33	87	19013	1.173	ng		98
36) 1,2-Dichloroethane	9.58	62	16547	1.064	ng		99
38) 1,1,1-Trichloroethane	9.82	97	20853	1.114	ng		99
39) Isopropyl Acetate	10.12	61	17043	2.285	ng		99
40) 1-Butanol	10.14	56	27331	2.049	ng		90
41) Benzene	10.23	78	57422	1.158	ng		100
42) Carbon Tetrachloride	10.37	117	18124	1.186	ng		100
43) Cyclohexane	10.48	84	48177	2.245	ng		99
44) tert-Amyl Methyl Ether	10.75	73	42550	1.131	ng		99
45) 1,2-Dichloropropane	10.96	63	13569	1.126	ng		99
46) Bromodichloromethane	11.12	83	17733	1.144	ng		100
47) Trichloroethene	11.17	130	16962	1.194	ng		100
48) 1,4-Dioxane	11.15	88	12085	1.191	ng		99
49) 2,2,4-Trimethylpentane...	11.23	57	61827	1.104	ng		100

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291606.D
Acq On : 29 Mar 2016 9:43 Operator: WA
Sample : 1.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

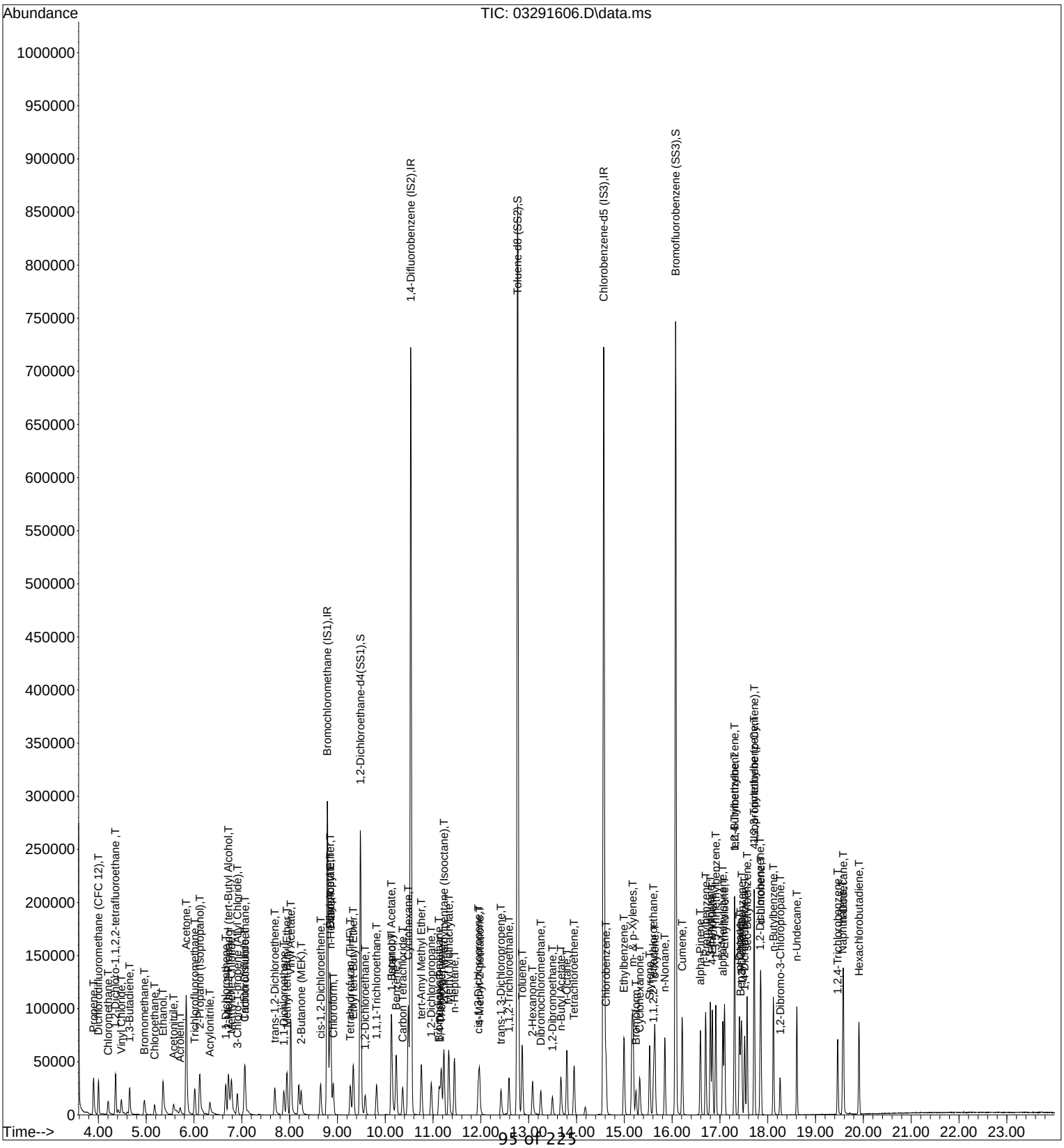
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	12734	2.345	ng	99
51) n-Heptane	11.45	71	14891	1.223	ng	99
52) cis-1,3-Dichloropropene	11.95	75	21915	1.223	ng	98
53) 4-Methyl-2-pentanone	11.97	58	12689	1.173	ng	95
54) trans-1,3-Dichloropropene	12.42	75	18133	1.026	ng	98
55) 1,1,2-Trichloroethane	12.59	97	14161	1.171	ng	99
58) Toluene	12.86	91	60013	1.308	ng	100
59) 2-Hexanone	13.08	43	29073	1.259	ng	95
60) Dibromochloromethane	13.25	129	15494	1.391	ng	100
61) 1,2-Dibromoethane	13.50	107	15680	1.385	ng	98
62) n-Butyl Acetate	13.67	43	31689	1.236	ng	99
63) n-Octane	13.80	57	12255	1.263	ng	96
64) Tetrachloroethene	13.95	166	19311	1.385	ng	100
65) Chlorobenzene	14.62	112	41556	1.355	ng	99
66) Ethylbenzene	14.99	91	67948	1.352	ng	99
67) m- & p-Xylenes	15.18	91	107169	2.643	ng	97
68) Bromoform	15.25	173	13668	1.296	ng	100
69) Styrene	15.53	104	41767	1.416	ng	99
70) o-Xylene	15.64	91	54994	1.287	ng	99
71) n-Nonane	15.85	43	26725	1.175	ng	100
72) 1,1,2,2-Tetrachloroethane	15.61	83	23858	1.234	ng	100
74) Cumene	16.21	105	72823	1.294	ng	98
75) alpha-Pinene	16.59	93	35090	1.313	ng	95
76) n-Propylbenzene	16.70	91	84099	1.279	ng	99
77) 3-Ethyltoluene	16.80	105	73394	1.394	ng	99
78) 4-Ethyltoluene	16.84	105	69193	1.357	ng	99
79) 1,3,5-Trimethylbenzene	16.91	105	61334	1.346	ng	99
80) alpha-Methylstyrene	17.06	118	31882	1.400	ng	92
81) 2-Ethyltoluene	17.10	105	71713	1.364	ng	100
82) 1,2,4-Trimethylbenzene	17.31	105	60247	1.329	ng	100
83) n-Decane	17.41	57	30295	1.237	ng	98
84) Benzyl Chloride	17.43	91	41726	1.115	ng	98
85) 1,3-Dichlorobenzene	17.46	146	37743	1.444	ng	99
86) 1,4-Dichlorobenzene	17.52	146	37513	1.360	ng	99
87) sec-Butylbenzene	17.57	105	82915	1.407	ng	99
88) 4-Isopropyltoluene (p-...	17.72	119	77002	1.344	ng	99
89) 1,2,3-Trimethylbenzene	17.71	105	63643	1.350	ng	99
90) 1,2-Dichlorobenzene	17.84	146	36579	1.437	ng	99
91) d-Limonene	17.85	68	21414	1.307	ng	99
92) 1,2-Dibromo-3-Chloropr...	18.26	157	12023	1.319	ng	94
93) n-Undecane	18.61	57	31164	1.282	ng	99
94) 1,2,4-Trichlorobenzene	19.46	180	26325	1.365	ng	99
95) Naphthalene	19.57	128	74602	1.197	ng	98
96) n-Dodecane	19.58	57	27668	1.232	ng	98
97) Hexachlorobutadiene	19.91	225	19231	1.534	ng	99
98) Cyclohexanone	15.32	55	18180	1.236	ng	99
99) tert-Butylbenzene	17.31	119	63685	1.393	ng	99
100) n-Butylbenzene	18.12	91	63041	1.387	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291606.D
Acq On : 29 Mar 2016 9:43 Operator: WA
Sample : 1.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291607.D
Acq On : 29 Mar 2016 10:15 Operator: WA
Sample : 5.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:29 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 3/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.80	130	149747	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.54	114	731532	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.57	82	292009	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.48	65	209053	11.069	ng		-0.01
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.56%				
57) Toluene-d8 (SS2)	12.77	98	703277	13.327	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.64%				
73) Bromofluorobenzene (SS3)	16.07	174	304289	13.228	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
Target Compounds							Qvalue
2) Propene	3.88	42	61940	4.098	ng		99
3) Dichlorodifluoromethan...	3.99	85	127916	4.705	ng		99
4) Chloromethane	4.19	50	77958	4.032	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	73233	4.867	ng		100
6) Vinyl Chloride	4.47	62	82857	3.979	ng		99
7) 1,3-Butadiene	4.64	54	58632	4.104	ng		100
8) Bromomethane	4.95	94	60572	5.078	ng		99
9) Chloroethane	5.16	64	51582	4.783	ng		99
10) Ethanol	5.37	45	221088	21.876	ng		99
11) Acetonitrile	5.57	41	116712	4.555	ng		99
12) Acrolein	5.70	56	41350	5.428	ng		100
13) Acetone	5.84	58	256909	23.353	ng		99
14) Trichlorofluoromethane	6.01	101	110084	4.739	ng		100
15) 2-Propanol (Isopropanol)	6.13	45	322172	9.605	ng		99
16) Acrylonitrile	6.33	53	86086	5.319	ng		99
17) 1,1-Dichloroethene	6.66	96	68433	5.509	ng		99
18) 2-Methyl-2-Propanol (t...	6.72	59	342616	9.607	ng		99
19) Methylene Chloride	6.78	84	71835	4.503	ng		100
20) 3-Chloro-1-propene (Al...	6.91	41	88181	5.295	ng		98
21) Trichlorotrifluoroethane	7.07	151	67147	5.686	ng		100
22) Carbon Disulfide	7.04	76	244834	4.155	ng		99
23) trans-1,2-Dichloroethene	7.69	61	94280	5.244	ng		99
24) 1,1-Dichloroethane	7.88	63	116329	4.963	ng		99
25) Methyl tert-Butyl Ether	7.93	73	213747	5.224	ng		98
26) Vinyl Acetate	8.03	86	93085	25.305	ng	#	88
27) 2-Butanone (MEK)	8.24	72	48478	5.984	ng		98
28) cis-1,2-Dichloroethene	8.65	61	89593	5.192	ng		99
29) Diisopropyl Ether	8.85	87	62659	5.357	ng	#	91
30) Ethyl Acetate	8.84	61	48816	11.232	ng		99
31) n-Hexane	8.86	57	106821	4.887	ng		99
32) Chloroform	8.92	83	114089	5.190	ng		100
34) Tetrahydrofuran (THF)	9.26	72	45435	5.210	ng		99
35) Ethyl tert-Butyl Ether	9.33	87	92004	5.400	ng		98
36) 1,2-Dichloroethane	9.58	62	79532	4.862	ng		99
38) 1,1,1-Trichloroethane	9.82	97	100977	5.146	ng		99
39) Isopropyl Acetate	10.12	61	83531	10.676	ng		99
40) 1-Butanol	10.13	56	144900	10.359	ng		95
41) Benzene	10.23	78	269135	5.174	ng		100
42) Carbon Tetrachloride	10.37	117	89165	5.562	ng		100
43) Cyclohexane	10.48	84	230658	10.248	ng		97
44) tert-Amyl Methyl Ether	10.75	73	205780	5.215	ng		100
45) 1,2-Dichloropropane	10.96	63	64833	5.129	ng		99
46) Bromodichloromethane	11.12	83	89022	5.478	ng		99
47) Trichloroethene	11.17	130	81771	5.489	ng		99
48) 1,4-Dioxane	11.14	88	59900	5.629	ng		100
49) 2,2,4-Trimethylpentane...	11.23	57	294785	5.018	ng		100

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291607.D
Acq On : 29 Mar 2016 10:15 Operator: WA
Sample : 5.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:29 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

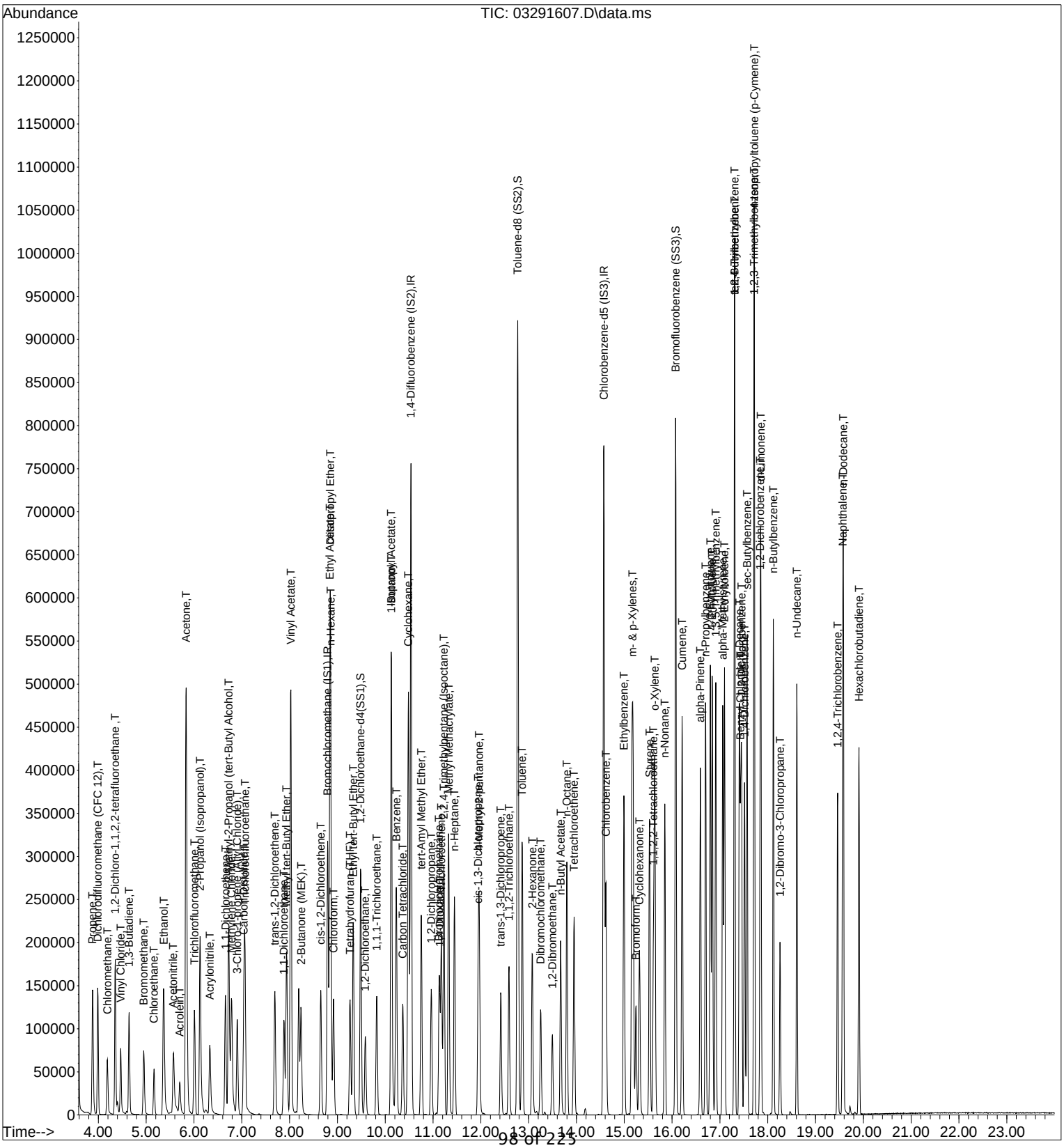
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	64930	11.401	ng	99
51) n-Heptane	11.45	71	71049	5.562	ng	99
52) cis-1,3-Dichloropropene	11.94	75	112079	5.966	ng	100
53) 4-Methyl-2-pentanone	11.96	58	64627	5.697	ng	98
54) trans-1,3-Dichloropropene	12.42	75	96705	5.220	ng	99
55) 1,1,2-Trichloroethane	12.59	97	68884	5.429	ng	100
58) Toluene	12.86	91	286713	5.905	ng	100
59) 2-Hexanone	13.08	43	145059	5.936	ng	99
60) Dibromochloromethane	13.25	129	81535	6.920	ng	100
61) 1,2-Dibromoethane	13.50	107	79037	6.600	ng	99
62) n-Butyl Acetate	13.67	43	164089	6.049	ng	99
63) n-Octane	13.80	57	58097	5.661	ng	99
64) Tetrachloroethene	13.95	166	92433	6.265	ng	99
65) Chlorobenzene	14.62	112	198359	6.115	ng	100
66) Ethylbenzene	14.99	91	327765	6.166	ng	100
67) m- & p-Xylenes	15.17	91	507603	11.831	ng	100
68) Bromoform	15.25	173	75207	6.743	ng	99
69) Styrene	15.53	104	215134	6.894	ng	100
70) o-Xylene	15.64	91	265540	5.873	ng	99
71) n-Nonane	15.85	43	131559	5.468	ng	99
72) 1,1,2,2-Tetrachloroethane	15.61	83	121017	5.917	ng	99
74) Cumene	16.21	105	353973	5.944	ng	100
75) alpha-Pinene	16.59	93	177535	6.279	ng	98
76) n-Propylbenzene	16.70	91	412237	5.927	ng	99
77) 3-Ethyltoluene	16.80	105	366475	6.579	ng	99
78) 4-Ethyltoluene	16.84	105	334635	6.202	ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	293555	6.087	ng	99
80) alpha-Methylstyrene	17.06	118	164250	6.819	ng	99
81) 2-Ethyltoluene	17.10	105	346800	6.236	ng	99
82) 1,2,4-Trimethylbenzene	17.31	105	296304	6.176	ng	99
83) n-Decane	17.41	57	148665	5.737	ng	99
84) Benzyl Chloride	17.43	91	240624	6.078	ng	99
85) 1,3-Dichlorobenzene	17.45	146	183020	6.618	ng	99
86) 1,4-Dichlorobenzene	17.52	146	182764	6.265	ng	100
87) sec-Butylbenzene	17.57	105	402405	6.455	ng	99
88) 4-Isopropyltoluene (p-...	17.72	119	376867	6.217	ng	99
89) 1,2,3-Trimethylbenzene	17.71	105	307716	6.170	ng	99
90) 1,2-Dichlorobenzene	17.84	146	177384	6.589	ng	100
91) d-Limonene	17.85	68	110823	6.395	ng	99
92) 1,2-Dibromo-3-Chloropr...	18.26	157	65686	6.811	ng	98
93) n-Undecane	18.61	57	154190	5.996	ng	98
94) 1,2,4-Trichlorobenzene	19.46	180	132386	6.488	ng	99
95) Naphthalene	19.57	128	382214	5.799	ng	99
96) n-Dodecane	19.58	57	143229	6.029	ng	99
97) Hexachlorobutadiene	19.91	225	93883	7.078	ng	100
98) Cyclohexanone	15.32	55	94934	6.099	ng	99
99) tert-Butylbenzene	17.31	119	305851	6.326	ng	100
100) n-Butylbenzene	18.12	91	310076	6.451	ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291607.D
Acq On : 29 Mar 2016 10:15 Operator: WA
Sample : 5.0ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251603 (4/23)
ALS Vial : 14 Sample Multiplier: 1

Quant Time: Mar 29 11:15:29 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291608.D
Acq On : 29 Mar 2016 10:48 Operator: WA
Sample : 25ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 11:15:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016 WA 3/29/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.81	130	149058	12.500	ng	0.00
37) 1,4-Difluorobenzene (IS2)	10.54	114	725607	12.500	ng	0.00
56) Chlorobenzene-d5 (IS3)	14.57	82	295886	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	9.49	65	207630	11.045	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.32%			
57) Toluene-d8 (SS2)	12.78	98	699881	13.088	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.72%			
73) Bromofluorobenzene (SS3)	16.08	174	308930	13.254	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 106.00%			
Target Compounds						Qvalue
2) Propene	3.87	42	335214	22.283	ng	100
3) Dichlorodifluoromethan...	3.98	85	697445	25.770	ng	100
4) Chloromethane	4.18	50	475885	24.725	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	407982	27.239	ng	100
6) Vinyl Chloride	4.46	62	465491	22.457	ng	100
7) 1,3-Butadiene	4.64	54	356633	25.079	ng	100
8) Bromomethane	4.95	94	352415	29.682	ng	100
9) Chloroethane	5.16	64	295294	27.505	ng	100
10) Ethanol	5.40	45	1259644	125.212	ng	100
11) Acetonitrile	5.59	41	651222	25.532	ng	100
12) Acrolein	5.71	56	239858	31.632	ng	100
13) Acetone	5.85	58	1397519	127.622	ng	100
14) Trichlorofluoromethane	6.01	101	596627	25.803	ng	100
15) 2-Propanol (Isopropanol)	6.15	45	1849671	55.399	ng	100
16) Acrylonitrile	6.35	53	495498	30.756	ng	100
17) 1,1-Dichloroethene	6.66	96	387711	31.358	ng	100
18) 2-Methyl-2-Propanol (t...	6.75	59	1965776	55.377	ng	100
19) Methylene Chloride	6.80	84	392987	24.747	ng	100
20) 3-Chloro-1-propene (Al...	6.91	41	524998	31.672	ng	100
21) Trichlorotrifluoroethane	7.07	151	372289	31.670	ng	100
22) Carbon Disulfide	7.05	76	1387566	23.657	ng	100
23) trans-1,2-Dichloroethene	7.70	61	527361	29.470	ng	100
24) 1,1-Dichloroethane	7.89	63	626308	26.843	ng	100
25) Methyl tert-Butyl Ether	7.94	73	1168136	28.680	ng	100
26) Vinyl Acetate	8.04	86	528459	144.322	ng	100
27) 2-Butanone (MEK)	8.25	72	266291	33.025	ng	99
28) cis-1,2-Dichloroethene	8.66	61	495528	28.850	ng	100
29) Diisopropyl Ether	8.85	87	329838	28.332	ng	100
30) Ethyl Acetate	8.85	61	251911	58.229	ng	100
31) n-Hexane	8.87	57	491091	22.570	ng	100
32) Chloroform	8.93	83	627064	28.658	ng	100
34) Tetrahydrofuran (THF)	9.26	72	250154	28.815	ng	100
35) Ethyl tert-Butyl Ether	9.33	87	509864	30.065	ng	100
36) 1,2-Dichloroethane	9.59	62	433954	26.653	ng	100
38) 1,1,1-Trichloroethane	9.83	97	559931	28.766	ng	100
39) Isopropyl Acetate	10.13	61	439054	56.575	ng	100
40) 1-Butanol	10.14	56	862640	62.176	ng	100
41) Benzene	10.24	78	1422567	27.570	ng	100
42) Carbon Tetrachloride	10.37	117	493279	31.023	ng	100
43) Cyclohexane	10.49	84	1222817	54.773	ng	100
44) tert-Amyl Methyl Ether	10.76	73	1149938	29.383	ng	100
45) 1,2-Dichloropropane	10.97	63	351541	28.035	ng	100
46) Bromodichloromethane	11.13	83	509203	31.591	ng	100
47) Trichloroethene	11.18	130	441584	29.887	ng	100
48) 1,4-Dioxane	11.15	88	333039	31.555	ng	100
49) 2,2,4-Trimethylpentane...	11.23	57	1592464	27.327	ng	100

Data File: I:\MS08\Data\2016 03\29\03291608.D
Acq On : 29 Mar 2016 10:48 Operator: WA
Sample : 25ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 11:15:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

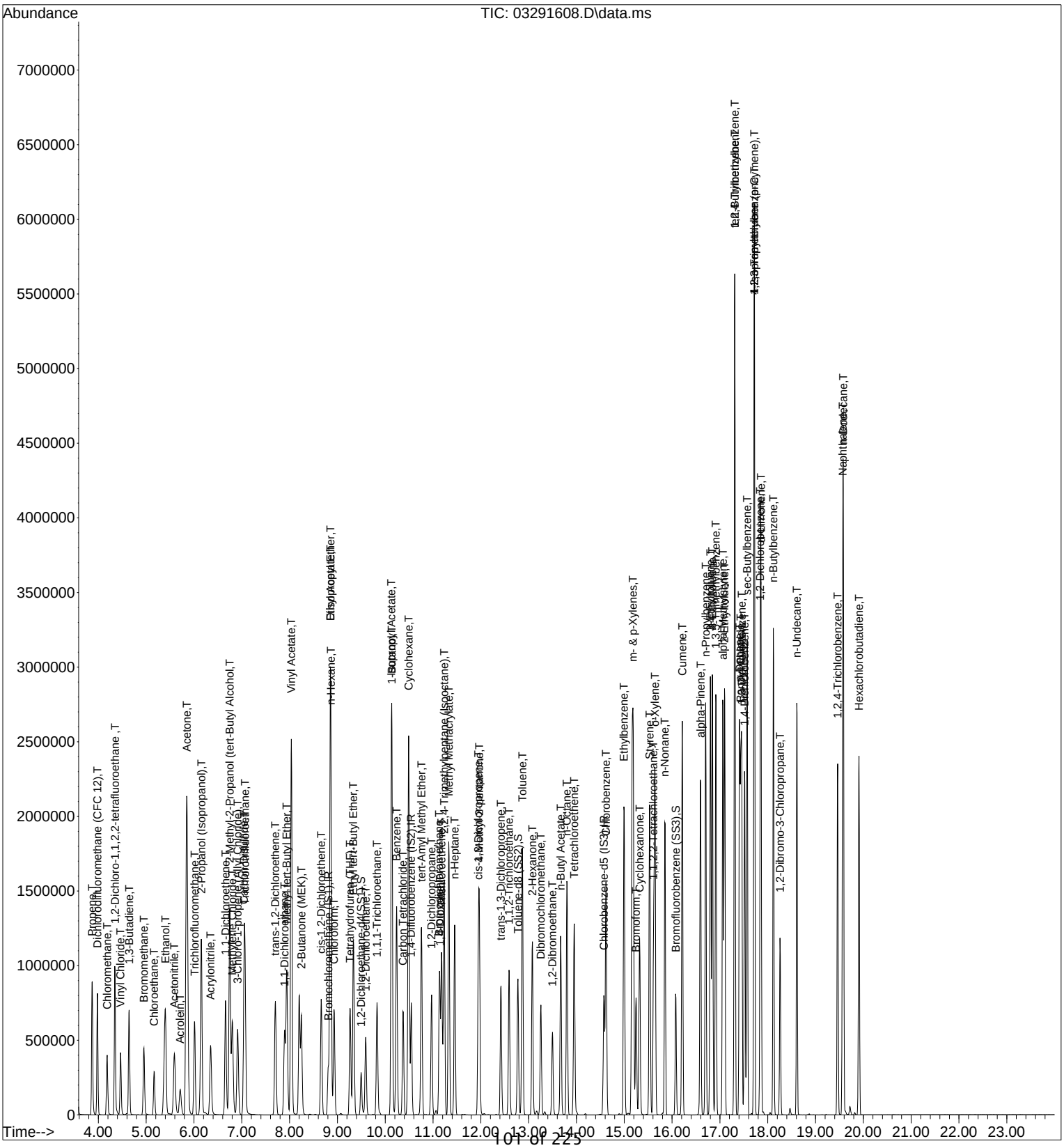
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	363389	64.331	ng	100
51) n-Heptane	11.45	71	359238	28.354	ng	100
52) cis-1,3-Dichloropropene	11.95	75	645374	34.634	ng	100
53) 4-Methyl-2-pentanone	11.97	58	365362	32.469	ng	100
54) trans-1,3-Dichloropropene	12.42	75	572800	31.171	ng	100
55) 1,1,2-Trichloroethane	12.59	97	386899	30.743	ng	100
58) Toluene	12.87	91	1579055	32.096	ng	100
59) 2-Hexanone	13.08	43	837791	33.835	ng	100
60) Dibromochloromethane	13.26	129	485752	40.685	ng	100
61) 1,2-Dibromoethane	13.50	107	451894	37.244	ng	100
62) n-Butyl Acetate	13.67	43	945897	34.411	ng	100
63) n-Octane	13.80	57	316985	30.483	ng	100
64) Tetrachloroethene	13.95	166	517216	34.597	ng	100
65) Chlorobenzene	14.62	112	1129294	34.359	ng	100
66) Ethylbenzene	14.99	91	1862920	34.585	ng	100
67) m- & p-Xylenes	15.18	91	2896803	66.633	ng	100
68) Bromoform	15.25	173	473194	41.868	ng	100
69) Styrene	15.53	104	1269972	40.165	ng	100
70) o-Xylene	15.64	91	1507045	32.896	ng	100
71) n-Nonane	15.85	43	733919	30.104	ng	100
72) 1,1,2,2-Tetrachloroethane	15.61	83	695875	33.577	ng	100
74) Cumene	16.21	105	2014301	33.382	ng	100
75) alpha-Pinene	16.60	93	1020267	35.610	ng	100
76) n-Propylbenzene	16.70	91	2316063	32.862	ng	100
77) 3-Ethyltoluene	16.80	105	2031760	35.999	ng	100
78) 4-Ethyltoluene	16.84	105	1963312	35.908	ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	1671429	34.205	ng	100
80) alpha-Methylstyrene	17.06	118	976668	40.017	ng	100
81) 2-Ethyltoluene	17.10	105	1962484	34.827	ng	100
82) 1,2,4-Trimethylbenzene	17.31	105	1706839	35.113	ng	100
83) n-Decane	17.41	57	830365	31.621	ng	100
84) Benzyl Chloride	17.43	91	1543228	38.472	ng	100
85) 1,3-Dichlorobenzene	17.46	146	1077338	38.446	ng	100
86) 1,4-Dichlorobenzene	17.52	146	1076925	36.433	ng	100
87) sec-Butylbenzene	17.57	105	2259849	35.775	ng	100
88) 4-Isopropyltoluene (p-...	17.72	119	2143604	34.899	ng	100
89) 1,2,3-Trimethylbenzene	17.72	105	1762676	34.880	ng	100
90) 1,2-Dichlorobenzene	17.84	146	1033265	37.879	ng	100
91) d-Limonene	17.86	68	638200	36.344	ng	100
92) 1,2-Dibromo-3-Chloropr...	18.26	157	398058	40.732	ng	100
93) n-Undecane	18.61	57	865209	33.206	ng	100
94) 1,2,4-Trichlorobenzene	19.46	180	826295	39.963	ng	100
95) Naphthalene	19.57	128	2457869	36.804	ng	100
96) n-Dodecane	19.58	57	846373	35.161	ng	100
97) Hexachlorobutadiene	19.91	225	536463	39.916	ng	100
98) Cyclohexanone	15.32	55	571892	36.259	ng	100
99) tert-Butylbenzene	17.31	119	1748092	35.680	ng	100
100) n-Butylbenzene	18.12	91	1753319	35.998	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291608.D
Acq On : 29 Mar 2016 10:48 Operator: WA
Sample : 25ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 11:15:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291609.D
Acq On : 29 Mar 2016 11:20 Operator: WA
Sample : 50ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:01:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 3/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.82	130	156014	12.500	ng		0.00
37) 1,4-Difluorobenzene (IS2)	10.55	114	754999	12.500	ng		0.00
56) Chlorobenzene-d5 (IS3)	14.57	82	311564	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.50	65	217135	11.035	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 88.32%				
57) Toluene-d8 (SS2)	12.78	98	736023	13.072	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.56%				
73) Bromofluorobenzene (SS3)	16.08	174	324614	13.226	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
Target Compounds							Qvalue
2) Propene	3.88	42	657706	41.771	ng		100
3) Dichlorodifluoromethan...	3.99	85	1355655	47.857	ng		100
4) Chloromethane	4.20	50	920543	45.696	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	844128	53.847	ng		100
6) Vinyl Chloride	4.47	62	948639	43.726	ng		100
7) 1,3-Butadiene	4.65	54	744292	50.006	ng		100
8) Bromomethane	4.97	94	700001	56.329	ng		100
9) Chloroethane	5.17	64	580175	51.632	ng		99
10) Ethanol	5.42	45	2434783	231.234	ng		100
11) Acetonitrile	5.61	41	1300134	48.701	ng		100
12) Acrolein	5.73	56	464048	58.469	ng		92
13) Acetone	5.87	58	2671237	233.061	ng		98
14) Trichlorofluoromethane	6.02	101	1188189	49.096	ng		100
15) 2-Propanol (Isopropanol)	6.18	45	3590069	102.730	ng		99
16) Acrylonitrile	6.36	53	990087	58.715	ng		100
17) 1,1-Dichloroethene	6.67	96	770806	59.563	ng		99
18) 2-Methyl-2-Propanol (t...	6.77	59	3826636	102.993	ng		98
19) Methylene Chloride	6.82	84	774313	46.585	ng		100
20) 3-Chloro-1-propene (Al...	6.92	41	1059427	61.063	ng		99
21) Trichlorotrifluoroethane	7.07	151	735707	59.796	ng		100
22) Carbon Disulfide	7.06	76	2716979	44.257	ng		100
23) trans-1,2-Dichloroethene	7.71	61	1047008	55.900	ng		100
24) 1,1-Dichloroethane	7.90	63	1254595	51.373	ng		100
25) Methyl tert-Butyl Ether	7.95	73	2304954	54.069	ng		100
26) Vinyl Acetate	8.05	86	1070555	279.333	ng	#	89
27) 2-Butanone (MEK)	8.26	72	542037	64.225	ng		97
28) cis-1,2-Dichloroethene	8.67	61	987820	54.947	ng		100
29) Diisopropyl Ether	8.86	87	653272	53.612	ng	#	93
30) Ethyl Acetate	8.86	61	498414	110.072	ng		99
31) n-Hexane	8.87	57	971966	42.678	ng		100
32) Chloroform	8.94	83	1249888	54.576	ng		100
34) Tetrahydrofuran (THF)	9.27	72	501905	55.237	ng		99
35) Ethyl tert-Butyl Ether	9.34	87	1010872	56.949	ng		99
36) 1,2-Dichloroethane	9.60	62	874740	51.330	ng		99
38) 1,1,1-Trichloroethane	9.83	97	1108602	54.737	ng		99
39) Isopropyl Acetate	10.13	61	868531	107.559	ng		96
40) 1-Butanol	10.16	56	1679133	116.314	ng		99
41) Benzene	10.24	78	2866026	53.382	ng		100
42) Carbon Tetrachloride	10.38	117	987282	59.675	ng		100
43) Cyclohexane	10.50	84	2411861	103.828	ng		98
44) tert-Amyl Methyl Ether	10.76	73	2262026	55.548	ng		100
45) 1,2-Dichloropropane	10.97	63	698567	53.541	ng		99
46) Bromodichloromethane	11.14	83	1015138	60.527	ng		99
47) Trichloroethene	11.18	130	896887	58.339	ng		99
48) 1,4-Dioxane	11.15	88	666040	60.650	ng		99
49) 2,2,4-Trimethylpentane...	11.23	57	3109157	51.277	ng		100

Data File: I:\MS08\Data\2016 03\29\03291609.D
Acq On : 29 Mar 2016 11:20 Operator: WA
Sample : 50ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:01:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

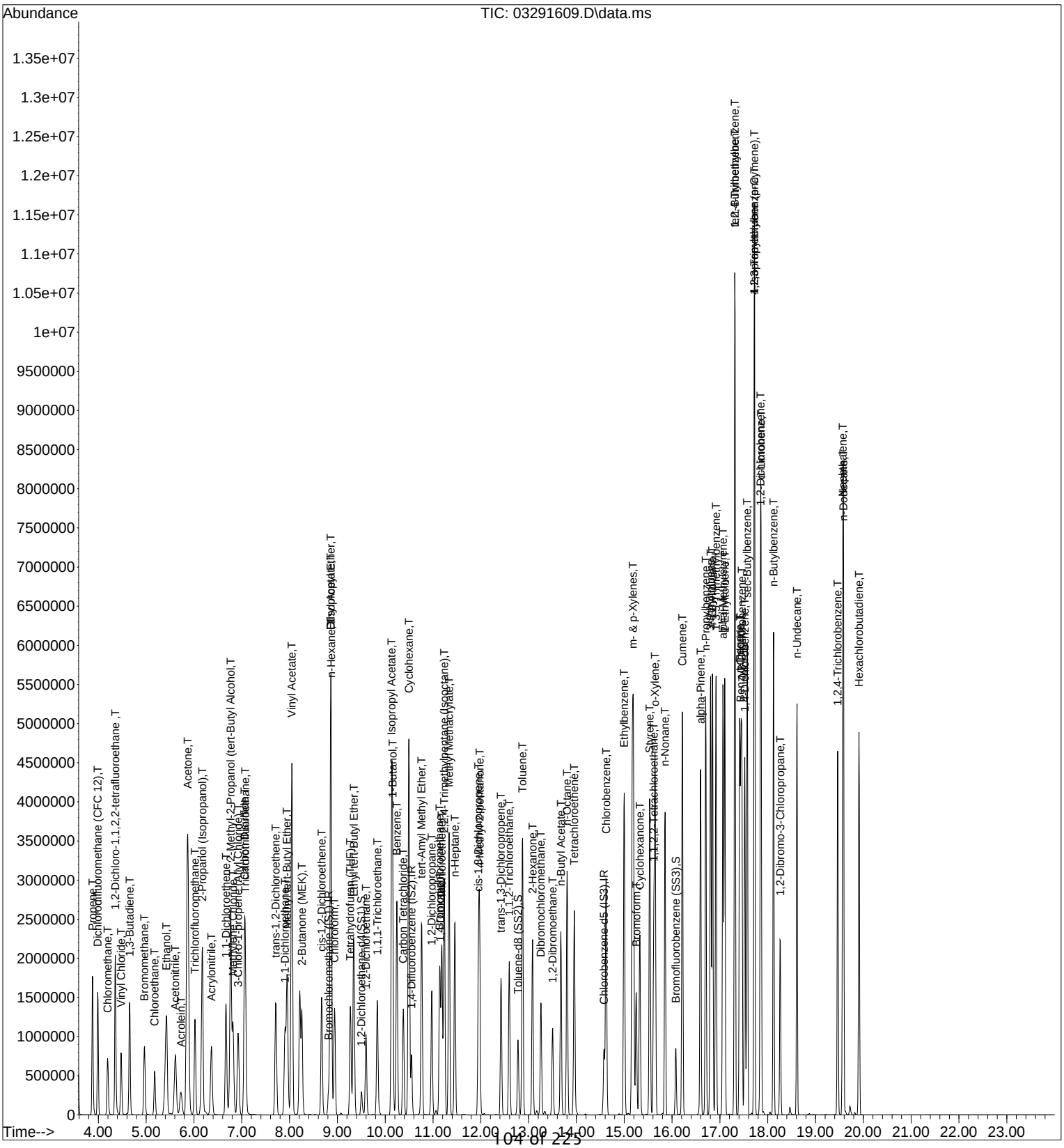
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	732701	124.661	ng	98
51) n-Heptane	11.46	71	726253	55.091	ng	99
52) cis-1,3-Dichloropropene	11.95	75	1292220	66.647	ng	100
53) 4-Methyl-2-pentanone	11.97	58	718647	61.378	ng	98
54) trans-1,3-Dichloropropene	12.42	75	1150717	60.182	ng	100
55) 1,1,2-Trichloroethane	12.59	97	767001	58.573	ng	100
58) Toluene	12.87	91	3140219	60.616	ng	99
59) 2-Hexanone	13.08	43	1642404	62.992	ng	99
60) Dibromochloromethane	13.26	129	968990	77.075	ng	99
61) 1,2-Dibromoethane	13.50	107	906037	70.916	ng	99
62) n-Butyl Acetate	13.67	43	1857802	64.184	ng	100
63) n-Octane	13.80	57	628496	57.399	ng	99
64) Tetrachloroethene	13.95	166	1038812	65.990	ng	100
65) Chlorobenzene	14.62	112	2224463	64.273	ng	100
66) Ethylbenzene	15.00	91	3658295	64.498	ng	100
67) m- & p-Xylenes	15.18	91	5674143	123.950	ng	100
68) Bromoform	15.25	173	950034	79.828	ng	99
69) Styrene	15.53	104	2508934	75.356	ng	100
70) o-Xylene	15.64	91	2951899	61.191	ng	99
71) n-Nonane	15.85	43	1398171	54.464	ng	98
72) 1,1,2,2-Tetrachloroethane	15.62	83	1366466	62.616	ng	99
74) Cumene	16.21	105	3921349	61.717	ng	99
75) alpha-Pinene	16.60	93	2005231	66.465	ng	99
76) n-Propylbenzene	16.70	91	4474804	60.298	ng	99
77) 3-Ethyltoluene	16.81	105	4104221	69.059	ng	99
78) 4-Ethyltoluene	16.84	105	3641521	63.250	ng	99
79) 1,3,5-Trimethylbenzene	16.92	105	3256767	63.294	ng	99
80) alpha-Methylstyrene	17.06	118	1915210	74.522	ng	99
81) 2-Ethyltoluene	17.10	105	3785261	63.795	ng	99
82) 1,2,4-Trimethylbenzene	17.31	105	3320485	64.871	ng	100
83) n-Decane	17.41	57	1575519	56.979	ng	99
84) Benzyl Chloride	17.43	91	3043633	72.059	ng	99
85) 1,3-Dichlorobenzene	17.46	146	2110625	71.529	ng	100
86) 1,4-Dichlorobenzene	17.52	146	2121764	68.169	ng	100
87) sec-Butylbenzene	17.57	105	4340228	65.251	ng	99
88) 4-Isopropyltoluene (p-...	17.72	119	4121734	63.727	ng	99
89) 1,2,3-Trimethylbenzene	17.72	105	3429024	64.439	ng	100
90) 1,2-Dichlorobenzene	17.85	146	2014836	70.146	ng	99
91) d-Limonene	17.86	68	1222316	66.106	ng	98
92) 1,2-Dibromo-3-Chloropr...	18.26	157	785252	76.309	ng	99
93) n-Undecane	18.61	57	1642003	59.847	ng	99
94) 1,2,4-Trichlorobenzene	19.46	180	1629222	74.830	ng	100
95) Naphthalene	19.57	128	4744538	67.470	ng	99
96) n-Dodecane	19.59	57	1585261	62.544	ng	98
97) Hexachlorobutadiene	19.91	225	1062358	75.068	ng	100
98) Cyclohexanone	15.33	55	1117481	67.284	ng	99
99) tert-Butylbenzene	17.31	119	3400552	65.915	ng	99
100) n-Butylbenzene	18.12	91	3369881	65.706	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291609.D
Acq On : 29 Mar 2016 11:20 Operator: WA
Sample : 50ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:01:55 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291610.D
Acq On : 29 Mar 2016 11:53 Operator: WA
Sample : 100ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:17:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016 3/29/16
Response via : Initial Calibration
DataAcq Meth:TO15.M

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.83	130	160666	12.500	ng		0.02
37) 1,4-Difluorobenzene (IS2)	10.55	114	797499	12.500	ng		0.01
56) Chlorobenzene-d5 (IS3)	14.58	82	324980	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.51	65	222578	10.984	ng		0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 87.84%				
57) Toluene-d8 (SS2)	12.78	98	765447	13.033	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.24%				
73) Bromofluorobenzene (SS3)	16.08	174	335400	13.101	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 104.80%				
Target Compounds							Qvalue
2) Propene	3.88	42	1494484	92.168	ng		99
3) Dichlorodifluoromethan...	3.99	85	2638717	90.454	ng		99
4) Chloromethane	4.20	50	1510976	72.833	ng		100
5) 1,2-Dichloro-1,1,2,2-t...	4.36	135	1689853	104.674	ng		99
6) Vinyl Chloride	4.49	62	1962234	87.826	ng		100
7) 1,3-Butadiene	4.66	54	1531954	99.947	ng		99
8) Bromomethane	4.97	94	1396392	109.114	ng		100
9) Chloroethane	5.19	64	1144556	98.908	ng		99
10) Ethanol	5.45	45	4628788	426.872	ng		100
11) Acetonitrile	5.63	41	2591656	94.269	ng		100
12) Acrolein	5.74	56	921443	112.738	ng		92
13) Acetone	5.88	58	4959398	420.171	ng		94
14) Trichlorofluoromethane	6.02	101	2371029	95.134	ng		100
15) 2-Propanol (Isopropanol)	6.20	45	6021017	167.303	ng		99
16) Acrylonitrile	6.39	53	1969625	113.422	ng		100
17) 1,1-Dichloroethene	6.68	96	1530547	114.847	ng		97
18) 2-Methyl-2-Propanol (t...	6.79	59	6776490	177.106	ng		99
19) Methylene Chloride	6.83	84	1520306	88.819	ng		98
20) 3-Chloro-1-propene (Al...	6.93	41	2082068	116.532	ng		99
21) Trichlorotrifluoroethane	7.08	151	1471637	116.147	ng		99
22) Carbon Disulfide	7.06	76	5270224	83.361	ng		99
23) trans-1,2-Dichloroethene	7.72	61	2065710	107.095	ng		99
24) 1,1-Dichloroethane	7.91	63	2482480	98.708	ng		100
25) Methyl tert-Butyl Ether	7.96	73	4509000	102.708	ng		100
26) Vinyl Acetate	8.06	86	2138298	541.777	ng	#	70
27) 2-Butanone (MEK)	8.27	72	1082964	124.604	ng		93
28) cis-1,2-Dichloroethene	8.68	61	1935135	104.523	ng		98
29) Diisopropyl Ether	8.87	87	1287372	102.591	ng	#	77
30) Ethyl Acetate	8.88	61	948626	203.432	ng		97
31) n-Hexane	8.88	57	1900109	81.016	ng		99
32) Chloroform	8.96	83	2473708	104.886	ng		100
34) Tetrahydrofuran (THF)	9.28	72	1013524	108.312	ng		97
35) Ethyl tert-Butyl Ether	9.35	87	1998848	109.348	ng		97
36) 1,2-Dichloroethane	9.61	62	1725294	98.310	ng		100
38) 1,1,1-Trichloroethane	9.84	97	2215287	103.550	ng		100
39) Isopropyl Acetate	10.15	61	1686118	197.682	ng	#	89
40) 1-Butanol	10.18	56	3230357	211.843	ng		99
41) Benzene	10.25	78	5731529	101.066	ng		99
42) Carbon Tetrachloride	10.39	117	1971023	112.787	ng		100
43) Cyclohexane	10.50	84	4692789	191.254	ng		96
44) tert-Amyl Methyl Ether	10.77	73	4431895	103.033	ng		99
45) 1,2-Dichloropropane	10.98	63	1405057	101.951	ng		99
46) Bromodichloromethane	11.14	83	2020636	114.059	ng		99
47) Trichloroethene	11.19	130	1820925	112.131	ng		99
48) 1,4-Dioxane	11.16	88	1319397	113.742	ng		98
49) 2,2,4-Trimethylpentane...	11.24	57	5893063	92.011	ng		99

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291610.D
Acq On : 29 Mar 2016 11:53 Operator: WA
Sample : 100ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:17:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

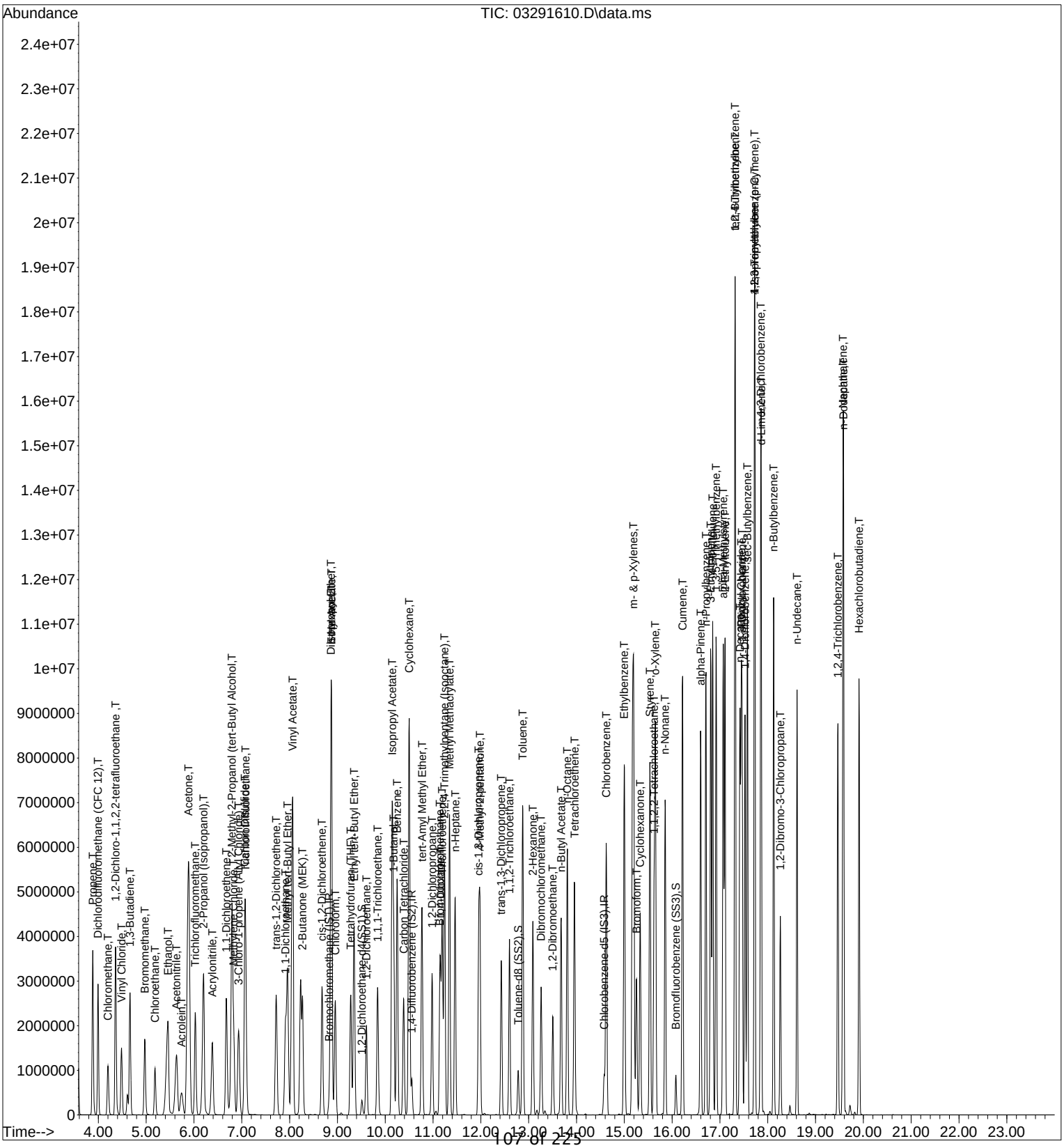
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.35	100	1480311	238.436	ng	94
51) n-Heptane	11.46	71	1477292	106.091	ng	99
52) cis-1,3-Dichloropropene	11.95	75	2558067	124.903	ng	99
53) 4-Methyl-2-pentanone	11.98	58	1393630	112.684	ng	96
54) trans-1,3-Dichloropropene	12.43	75	2292379	113.501	ng	100
55) 1,1,2-Trichloroethane	12.60	97	1534238	110.920	ng	99
58) Toluene	12.87	91	6184831	114.458	ng	98
59) 2-Hexanone	13.09	43	3154766	116.001	ng	98
60) Dibromochloromethane	13.26	129	1945484	148.359	ng	99
61) 1,2-Dibromoethane	13.50	107	1810424	135.852	ng	99
62) n-Butyl Acetate	13.68	43	3537913	117.184	ng	98
63) n-Octane	13.81	57	1235704	108.195	ng	97
64) Tetrachloroethene	13.96	166	2104740	128.183	ng	99
65) Chlorobenzene	14.62	112	4416434	122.340	ng	99
66) Ethylbenzene	15.00	91	7129204	120.503	ng	98
67) m- & p-Xylenes	15.19	91	10993961	230.246	ng	99
68) Bromoform	15.26	173	1916548	154.393	ng	99
69) Styrene	15.54	104	4900839	141.121	ng	99
70) o-Xylene	15.65	91	5733630	113.949	ng	98
71) n-Nonane	15.85	43	2580580	96.373	ng	95
72) 1,1,2,2-Tetrachloroethane	15.62	83	2657710	116.758	ng	99
74) Cumene	16.22	105	7499793	113.164	ng	98
75) alpha-Pinene	16.60	93	3879923	123.295	ng	99
76) n-Propylbenzene	16.71	91	8453456	109.207	ng	97
77) 3-Ethyltoluene	16.81	105	7474758	120.580	ng	98
78) 4-Ethyltoluene	16.85	105	7291914	121.426	ng	97
79) 1,3,5-Trimethylbenzene	16.92	105	6268038	116.789	ng	98
80) alpha-Methylstyrene	17.07	118	3758168	140.197	ng	98
81) 2-Ethyltoluene	17.11	105	7210686	116.508	ng	98
82) 1,2,4-Trimethylbenzene	17.32	105	6219768	116.497	ng	99
83) n-Decane	17.42	57	2894471	100.357	ng	96
84) Benzyl Chloride	17.45	91	5806463	131.795	ng	96
85) 1,3-Dichlorobenzene	17.46	146	4140700	134.535	ng	100
86) 1,4-Dichlorobenzene	17.53	146	4138886	127.487	ng	99
87) sec-Butylbenzene	17.57	105	8137169	117.284	ng	97
88) 4-Isopropyltoluene (p-...	17.73	119	7446973	110.386	ng	96
89) 1,2,3-Trimethylbenzene	17.73	105	6383351	115.006	ng	100
90) 1,2-Dichlorobenzene	17.85	146	3924783	131.000	ng	100
91) d-Limonene	17.87	68	2228057	115.524	ng	94
92) 1,2-Dibromo-3-Chloropr...	18.26	157	1552524	144.642	ng	98
93) n-Undecane	18.61	57	2993202	104.591	ng	96
94) 1,2,4-Trichlorobenzene	19.47	180	3211124	141.398	ng	100
95) Naphthalene	19.58	128	8884449	121.127	ng	98
96) n-Dodecane	19.59	57	2772614	104.873	ng	93
97) Hexachlorobutadiene	19.91	225	2124834	143.946	ng	100
98) Cyclohexanone	15.33	55	2166542	125.064	ng	98
99) tert-Butylbenzene	17.32	119	6343763	117.889	ng	98
100) n-Butylbenzene	18.12	91	6280468	117.401	ng	98

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291610.D
Acq On : 29 Mar 2016 11:53 Operator: WA
Sample : 100ng TO-15 ICAL Std
Misc : S29-03281601/S29-03251602 (4/23)
ALS Vial : 16 Sample Multiplier: 1

Quant Time: Mar 29 12:17:27 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 11:14:55 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291611.D
Acq On : 29 Mar 2016 12:25 Operator: WA
Sample : 25ng TO-15 ICV Std
Misc : S29-03281601/S29-03101601 (4/8)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 29 13:08:32 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 3/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	8.81	130	163028	12.500	ng	-0.02
37) 1,4-Difluorobenzene (IS2)	10.54	114	787533	12.500	ng	-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	328119	12.500	ng	0.00
System Monitoring Compounds						
33) 1,2-Dichloroethane-d4(...	9.49	65	224255	12.311	ng	-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 98.48%			
57) Toluene-d8 (SS2)	12.78	98	765656	12.073	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 96.56%			
73) Bromofluorobenzene (SS3)	16.08	174	344659	12.747	ng	0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 102.00%			
Target Compounds						Qvalue
2) Propene	3.88	42	315438	21.667	ng	100
3) Dichlorodifluoromethan...	3.99	85	611149	21.008	ng	100
4) Chloromethane	4.19	50	469043	26.920	ng	100
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	396372	23.901	ng	99
6) Vinyl Chloride	4.47	62	481810	27.891	ng	100
7) 1,3-Butadiene	4.65	54	366558	29.173	ng	100
8) Bromomethane	4.96	94	335908	25.513	ng	99
9) Chloroethane	5.17	64	277994	24.191	ng	100
10) Ethanol	5.40	45	1234902	113.691	ng	100
11) Acetonitrile	5.59	41	626349	23.319	ng	100
12) Acrolein	5.71	56	212185	24.773	ng	100
13) Acetone	5.85	58	1352923	113.102	ng	98
14) Trichlorofluoromethane	6.01	101	552511	21.577	ng	100
15) 2-Propanol (Isopropanol)	6.15	45	1794492	50.120	ng	98
16) Acrylonitrile	6.35	53	478058	26.697	ng	100
17) 1,1-Dichloroethene	6.66	96	370864	26.286	ng	100
18) 2-Methyl-2-Propanol (t...	6.75	59	1897279	51.325	ng	98
19) Methylene Chloride	6.80	84	379154	23.466	ng	100
20) 3-Chloro-1-propene (Al...	6.91	41	504481	29.442	ng	100
21) Trichlorotrifluoroethane	7.07	151	354395	24.944	ng	99
22) Carbon Disulfide	7.05	76	1236584	19.874	ng	100
23) trans-1,2-Dichloroethene	7.70	61	493506	26.446	ng	100
24) 1,1-Dichloroethane	7.90	63	609071	24.202	ng	100
25) Methyl tert-Butyl Ether	7.94	73	1130260	24.741	ng	100
26) Vinyl Acetate	8.04	86	518309	139.372	ng	99
27) 2-Butanone (MEK)	8.25	72	260791	21.495	ng	98
28) cis-1,2-Dichloroethene	8.66	61	479644	26.559	ng	99
29) Diisopropyl Ether	8.85	87	318960	24.751	ng	99
30) Ethyl Acetate	8.85	61	246080	53.075	ng	99
31) n-Hexane	8.87	57	491042	20.670	ng	99
32) Chloroform	8.93	83	607510	25.030	ng	100
34) Tetrahydrofuran (THF)	9.26	72	256654	26.855	ng	100
35) Ethyl tert-Butyl Ether	9.34	87	491681	25.587	ng	100
36) 1,2-Dichloroethane	9.59	62	419265	24.590	ng	99
38) 1,1,1-Trichloroethane	9.83	97	536378	25.199	ng	100
39) Isopropyl Acetate	10.13	61	430220	54.238	ng	97
40) 1-Butanol	10.14	56	806108	60.012	ng	99
41) Benzene	10.24	78	1402415	24.548	ng	100
42) Carbon Tetrachloride	10.37	117	476197	26.965	ng	100
43) Cyclohexane	10.49	84	1187357	47.688	ng	99
44) tert-Amyl Methyl Ether	10.76	73	1112691	25.711	ng	100
45) 1,2-Dichloropropane	10.97	63	344531	25.214	ng	99
46) Bromodichloromethane	11.13	83	483022	27.418	ng	100
47) Trichloroethene	11.18	130	426800	24.281	ng	100
48) 1,4-Dioxane	11.15	88	328870	28.740	ng	100
49) 2,2,4-Trimethylpentane...	11.23	57	1558884	24.407	ng	99

Data File: I:\MS08\Data\2016 03\29\03291611.D
Acq On : 29 Mar 2016 12:25 Operator: WA
Sample : 25ng TO-15 ICV Std
Misc : S29-03281601/S29-03101601 (4/8)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 29 13:08:32 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

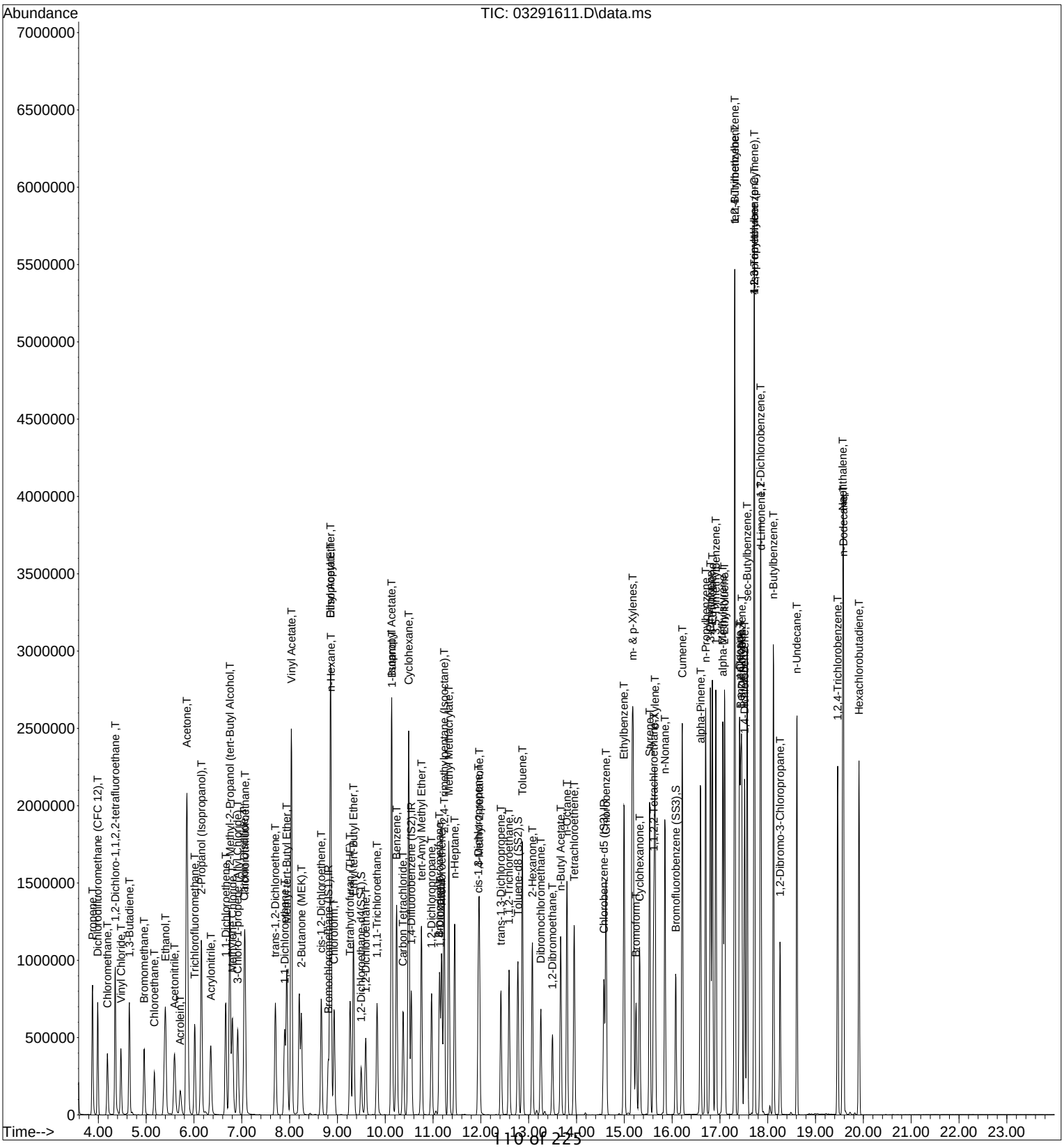
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	350272	51.062	ng	100
51) n-Heptane	11.45	71	350831	24.095	ng	100
52) cis-1,3-Dichloropropene	11.95	75	568444	26.421	ng	100
53) 4-Methyl-2-pentanone	11.97	58	352104	27.699	ng	99
54) trans-1,3-Dichloropropene	12.42	75	531703	27.713	ng	100
55) 1,1,2-Trichloroethane	12.59	97	374354	26.329	ng	100
58) Toluene	12.87	91	1547381	20.397	ng	100
59) 2-Hexanone	13.08	43	807852	27.109	ng	100
60) Dibromochloromethane	13.25	129	455900	28.626	ng	100
61) 1,2-Dibromoethane	13.50	107	434553	26.900	ng	100
62) n-Butyl Acetate	13.67	43	917160	29.353	ng	100
63) n-Octane	13.80	57	306531	23.728	ng	100
64) Tetrachloroethene	13.95	166	495549	22.713	ng	99
65) Chlorobenzene	14.62	112	1090665	24.746	ng	100
66) Ethylbenzene	14.99	91	1817804	25.108	ng	100
67) m- & p-Xylenes	15.18	91	2815990	48.874	ng	100
68) Bromoform	15.25	173	429716	28.785	ng	99
69) Styrene	15.53	104	1220266	27.985	ng	100
70) o-Xylene	15.64	91	1459059	24.094	ng	100
71) n-Nonane	15.85	43	704019	23.754	ng	99
72) 1,1,2,2-Tetrachloroethane	15.62	83	673292	25.289	ng	100
74) Cumene	16.21	105	1929818	23.687	ng	100
75) alpha-Pinene	16.60	93	981029	24.947	ng	100
76) n-Propylbenzene	16.70	91	2220346	23.705	ng	100
77) 3-Ethyltoluene	16.80	105	1936486	24.383	ng	100
78) 4-Ethyltoluene	16.84	105	1881110	24.969	ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	1609049	24.459	ng	100
80) alpha-Methylstyrene	17.06	118	895626	26.011	ng	100
81) 2-Ethyltoluene	17.10	105	1873303	24.318	ng	100
82) 1,2,4-Trimethylbenzene	17.31	105	1649983	25.302	ng	100
83) n-Decane	17.41	57	800940	24.081	ng	99
84) Benzyl Chloride	17.43	91	1467525	31.220	ng	100
85) 1,3-Dichlorobenzene	17.46	146	1044164	26.148	ng	100
86) 1,4-Dichlorobenzene	17.52	146	1029729	24.440	ng	99
87) sec-Butylbenzene	17.57	105	2146677	24.881	ng	100
88) 4-Isopropyltoluene (p-...	17.72	119	2070533	24.447	ng	100
89) 1,2,3-Trimethylbenzene	17.72	105	1704575	25.319	ng	100
90) 1,2-Dichlorobenzene	17.85	146	988208	25.597	ng	100
91) d-Limonene	17.86	68	595223	25.992	ng	99
92) 1,2-Dibromo-3-Chloropr...	18.26	157	378499	28.270	ng	100
93) n-Undecane	18.61	57	828218	24.265	ng	100
94) 1,2,4-Trichlorobenzene	19.46	180	786081	25.565	ng	100
95) Naphthalene	19.57	128	2298595	24.490	ng	100
96) n-Dodecane	19.59	57	819945	25.840	ng	100
97) Hexachlorobutadiene	19.91	225	501834	24.554	ng	100
98) Cyclohexanone	15.32	55	531882	27.215	ng	99
99) tert-Butylbenzene	17.31	119	1662675	24.737	ng	100
100) n-Butylbenzene	18.12	91	1670378	25.752	ng	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 03\29\03291611.D
Acq On : 29 Mar 2016 12:25 Operator: WA
Sample : 25ng TO-15 ICV Std
Misc : S29-03281601/S29-03101601 (4/8)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Mar 29 13:08:32 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



INITIAL CALIBRATION VERIFICATION CHECK SHEET

WA 3/29/16

Data File Name: **03291611.D** Acq. Method File: **TO15.M**

Data File Path: **I:\MS08\Data\2016_03\29** Sample Name: **25ng TO-15 ICV Std**

Operator: **WA** Misc Info: **S29-03281601/S29-03101601 (**

Date Acquired: **3/29/2016 12:25** Instrument Name: **Instrument #MS08**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
2)	**Propene**	**3.88**	**21.7**	**24.50**	89	**70**	**130**	*
3)	**Dichlorodifluoromethane (CFC 12**	**3.99**	**21.0**	**23.50**	89	**70**	**130**	*
4)	**Chloromethane**	**4.19**	**26.9**	**25.00**	108	**70**	**130**	*
5)	**1,2-Dichloro-1,1,2,2-tetrafluoroetl**	**4.35**	**23.9**	**25.50**	94	**70**	**130**	*
6)	**Vinyl Chloride**	**4.47**	**27.9**	**25.00**	112	**70**	**130**	*
7)	**1,3-Butadiene**	**4.65**	**29.2**	**25.75**	113	**70**	**130**	*
8)	**Bromomethane**	**4.96**	**25.5**	**25.25**	101	**70**	**130**	*
9)	**Chloroethane**	**5.17**	**24.2**	**25.00**	97	**70**	**130**	*
10)	**Ethanol**	**5.40**	**114**	**124.75**	91	**70**	**130**	*
11)	**Acetonitrile**	**5.59**	**23.3**	**26.50**	88	**70**	**130**	*
12)	**Acrolein**	**5.71**	**24.8**	**26.75**	93	**70**	**130**	*
13)	**Acetone**	**5.85**	**113**	**134.75**	84	**70**	**130**	*
14)	**Trichlorofluoromethane**	**6.01**	**21.6**	**27.00**	80	**70**	**130**	*
15)	**2-Propanol (Isopropanol)**	**6.15**	**50.1**	**52.25**	96	**70**	**130**	*
16)	**Acrylonitrile**	**6.35**	**26.7**	**26.50**	101	**70**	**130**	*
17)	**1,1-Dichloroethene**	**6.66**	**26.3**	**27.00**	97	**70**	**130**	*
18)	2-Methyl-2-Propanol (tert-Butyl Alc	6.75	51.3	50.00	103	**70**	**130**	*
19)	**Methylene Chloride**	**6.80**	**23.5**	**27.75**	85	**70**	**130**	*
20)	**3-Chloro-1-propene (Allyl Chlorid**	**6.91**	**29.4**	**27.25**	108	**70**	**130**	*
21)	**Trichlorotrifluoroethane**	**7.07**	**24.9**	**27.50**	91	**70**	**130**	*
22)	**Carbon Disulfide**	**7.05**	**19.9**	**26.25**	76	**70**	**130**	*
23)	**trans-1,2-Dichloroethene**	**7.70**	**26.4**	**26.25**	101	**70**	**130**	*
24)	**1,1-Dichloroethane**	**7.90**	**24.2**	**26.50**	91	**70**	**130**	*
25)	**Methyl tert-Butyl Ether**	**7.94**	**24.7**	**27.00**	91	**70**	**130**	*
26)	**Vinyl Acetate**	**8.04**	**139**	**129.75**	107	**70**	**130**	*
27)	**2-Butanone (MEK)**	**8.25**	**21.5**	**27.50**	78	**70**	**130**	*
28)	**cis-1,2-Dichloroethene**	**8.66**	**26.6**	**27.25**	98	**70**	**130**	*
29)	Diisopropyl Ether	8.85	24.8	27.00	92	**70**	**130**	*
30)	**Ethyl Acetate**	**8.85**	**53.1**	**53.50**	99	**70**	**130**	*
31)	**n-Hexane**	**8.87**	**20.7**	**26.50**	78	**70**	**130**	*
32)	**Chloroform**	**8.93**	**25.0**	**28.00**	89	**70**	**130**	*
34)	**Tetrahydrofuran (THF)**	**9.26**	**26.9**	**27.50**	98	**70**	**130**	*
35)	Ethyl tert-Butyl Ether	9.34	25.6	26.75	96	**70**	**130**	*
36)	**1,2-Dichloroethane**	**9.59**	**24.6**	**26.75**	92	**70**	**130**	*
38)	**1,1,1-Trichloroethane**	**9.83**	**25.2**	**26.25**	96	**70**	**130**	*
39)	Isopropyl Acetate	10.13	54.2	57.25	95	**70**	**130**	*
40)	1-Butanol	10.14	60.0	51.25	117	**70**	**130**	*
41)	**Benzene**	**10.24**	**24.5**	**28.25**	87	**70**	**130**	*
42)	**Carbon Tetrachloride**	**10.37**	**27.0**	**28.75**	94	**70**	**130**	*
43)	**Cyclohexane**	**10.49**	**47.7**	**53.00**	90	**70**	**130**	*
44)	tert-Amyl Methyl Ether	10.76	25.7	26.75	96	**70**	**130**	*
45)	**1,2-Dichloropropane**	**10.97**	**25.2**	**27.00**	93	**70**	**130**	*
46)	**Bromodichloromethane**	**11.13**	**27.4**	**27.25**	101	**70**	**130**	*
47)	**Trichloroethene**	**11.18**	**24.3**	**27.00**	90	**70**	**130**	*
48)	**1,4-Dioxane**	**11.15**	**28.7**	**26.25**	109	**70**	**130**	*
49)	2,2,4-Trimethylpentane (Isooctane)	11.23	24.4	26.75	91	**70**	**130**	*

INITIAL CALIBRATION VERIFICATION CHECK SHEET

Data File Name: **03291611.D** Acq. Method File: **TO15.M**
Data File Path: **I:\MS08\Data\2016_03\29** Sample Name: **25ng TO-15 ICV Std**
Operator: **WA** Misc Info: **S29-03281601/S29-03101601 (**
Date Acquired: **3/29/2016 12:25** Instrument Name: **Instrument #MS08**

#	Compound Name	Ret. Time	Amt. (ng)	Spike Amt.(ng)	% Rec.	Lower Limit	Upper Limit	* OR Fail
50)	**Methyl Methacrylate**	**11.33**	**51.1**	**52.75**	97	**70**	**130**	*
51)	**n-Heptane**	**11.45**	**24.1**	**27.00**	89	**70**	**130**	*
52)	**cis-1,3-Dichloropropene**	**11.95**	**26.4**	**26.00**	102	**70**	**130**	*
53)	**4-Methyl-2-pentanone**	**11.97**	**27.7**	**27.50**	101	**70**	**130**	*
54)	**trans-1,3-Dichloropropene**	**12.42**	**27.7**	**26.25**	106	**70**	**130**	*
55)	**1,1,2-Trichloroethane**	**12.59**	**26.3**	**27.00**	97	**70**	**130**	*
58)	**Toluene**	**12.87**	**20.4**	**27.25**	75	**70**	**130**	*
59)	**2-Hexanone**	**13.08**	**27.1**	**27.50**	99	**70**	**130**	*
60)	**Dibromochloromethane**	**13.25**	**28.6**	**27.50**	104	**70**	**130**	*
61)	**1,2-Dibromoethane**	**13.50**	**26.9**	**27.25**	99	**70**	**130**	*
62)	**n-Butyl Acetate**	**13.67**	**29.4**	**28.25**	104	**70**	**130**	*
63)	**n-Octane**	**13.80**	**23.7**	**26.25**	90	**70**	**130**	*
64)	**Tetrachloroethene**	**13.95**	**22.7**	**25.25**	90	**70**	**130**	*
65)	**Chlorobenzene**	**14.62**	**24.7**	**27.50**	90	**70**	**130**	*
66)	**Ethylbenzene**	**14.99**	**25.1**	**27.25**	92	**70**	**130**	*
67)	**m- & p-Xylenes**	**15.18**	**48.9**	**53.50**	91	**70**	**130**	*
68)	**Bromoform**	**15.25**	**28.8**	**28.50**	101	**70**	**130**	*
69)	**Styrene**	**15.53**	**28.0**	**27.75**	101	**70**	**130**	*
70)	**o-Xylene**	**15.64**	**24.1**	**26.25**	92	**70**	**130**	*
71)	**n-Nonane**	**15.85**	**23.8**	**25.50**	93	**70**	**130**	*
72)	**1,1,2,2-Tetrachloroethane**	**15.62**	**25.3**	**26.25**	96	**70**	**130**	*
74)	**Cumene**	**16.21**	**23.7**	**26.00**	91	**70**	**130**	*
75)	**alpha-Pinene**	**16.60**	**24.9**	**26.50**	94	**70**	**130**	*
76)	**n-Propylbenzene**	**16.70**	**23.7**	**25.50**	93	**70**	**130**	*
77)	3-Ethyltoluene	16.80	24.4	26.75	91	**70**	**130**	*
78)	**4-Ethyltoluene**	**16.84**	**25.0**	**26.75**	**93**	**70**	**130**	*
79)	**1,3,5-Trimethylbenzene**	**16.91**	**24.5**	**26.75**	**92**	**70**	**130**	*
80)	alpha-Methylstyrene	17.06	26.0	26.25	**99**	**70**	**130**	*
81)	2-Ethyltoluene	17.10	24.3	26.75	**91**	**70**	**130**	*
82)	**1,2,4-Trimethylbenzene**	**17.31**	**25.3**	**27.25**	**93**	**70**	**130**	*
83)	n-Decane	17.41	24.1	26.25	**92**	**70**	**130**	*
84)	**Benzyl Chloride**	**17.43**	**31.2**	**27.50**	**113**	**70**	**130**	*
85)	**1,3-Dichlorobenzene**	**17.46**	**26.1**	**28.50**	**92**	**70**	**130**	*
86)	**1,4-Dichlorobenzene**	**17.52**	**24.4**	**26.00**	**94**	**70**	**130**	*
87)	sec-Butylbenzene	17.57	24.9	27.25	**91**	**70**	**130**	*
88)	4-Isopropyltoluene (p-Cymene)	17.72	24.4	26.00	**94**	**70**	**130**	*
89)	1,2,3-Trimethylbenzene	17.72	25.3	26.50	**95**	**70**	**130**	*
90)	**1,2-Dichlorobenzene**	**17.85**	**25.6**	**27.50**	**93**	**70**	**130**	*
91)	**d-Limonene**	**17.86**	**26.0**	**26.25**	**99**	**70**	**130**	*
92)	**1,2-Dibromo-3-Chloropropane**	**18.26**	**28.3**	**27.25**	**104**	**70**	**130**	*
93)	n-Undecane	18.61	24.3	25.25	**96**	**70**	**130**	*
94)	**1,2,4-Trichlorobenzene**	**19.46**	**25.6**	**28.75**	**89**	**70**	**130**	*
95)	**Naphthalene**	**19.57**	**24.5**	**27.25**	**90**	**70**	**130**	*
96)	n-Dodecane	19.59	25.8	27.25	**95**	**70**	**130**	*
97)	**Hexachlorobutadiene**	**19.91**	**24.6**	**28.75**	**86**	**70**	**130**	*
98)	Cyclohexanone	15.32	27.2	27.50	99	**70**	**130**	*
99)	tert-Butylbenzene	17.31	24.7	26.75	92	**70**	**130**	*
100)	n-Butylbenzene	18.12	25.8	28.00	92	**70**	**130**	*

Bold = 75 Compound List
*** = Pass**

Evaluate Continuing Calibration Report

Data File: I:\MS08\Data\2016 04\28\04281624.D
Acq On : 28 Apr 2016 20:09 Operator: WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

WA 4/29/16

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	IR	Bromochloromethane (IS1)	1.000	1.000	0.0	83	-0.02
2	T	Propene	1.116	0.968	13.3	74	0.00
3	T	Dichlorodifluoromethane (CF	2.231	2.076	6.9	74	0.00
4	T	Chloromethane	1.336	1.398	-4.6	71	0.00
5	T	1,2-Dichloro-1,1,2,2-tetraf	1.272	1.202	5.5	75	0.00
6	T	Vinyl Chloride	1.325	1.435	-8.3	76	-0.01
7	T	1,3-Butadiene	0.963	1.124	-16.7	83	-0.01
8	T	Bromomethane	1.009	1.044	-3.5	73	-0.01
9	T	Chloroethane	0.881	0.882	-0.1	75	-0.01
10	T	Ethanol	0.833	0.786	5.6	78	-0.05
11	T	Acetonitrile	2.059	1.983	3.7	77	-0.04
12	T	Acrolein	0.657	0.672	-2.3	74	-0.03
13	T	Acetone	0.917	0.794	13.4	75	-0.03
14	T	Trichlorofluoromethane	1.963	1.821	7.2	75	0.00
15	T	2-Propanol (Isopropanol)	2.745	2.706	1.4	76	-0.05
16	T	Acrylonitrile	1.373	1.462	-6.5	75	-0.03
17	T	1,1-Dichloroethene	1.082	1.080	0.2	74	-0.01
18	T	2-Methyl-2-Propanol (tert-B	2.834	2.852	-0.6	75	-0.04
19	T	Methylene Chloride	1.239	1.087	12.3	74	-0.02
20	T	3-Chloro-1-propene (Allyl C	1.314	1.476	-12.3	75	-0.02
21	T	Trichlorotrifluoroethane	1.089	1.038	4.7	74	-0.01
22	T	Carbon Disulfide	4.771	4.235	11.2	74	-0.01
23	T	trans-1,2-Dichloroethene	1.431	1.523	-6.4	76	-0.02
24	T	1,1-Dichloroethane	1.930	1.846	4.4	76	-0.02
25	T	Methyl tert-Butyl Ether	3.503	3.394	3.1	75	-0.02
26	T	Vinyl Acetate	0.285	0.320	-12.3	76	-0.03
27	T	2-Butanone (MEK)	0.930	0.755	18.8	75	-0.02
28	T	cis-1,2-Dichloroethene	1.385	1.408	-1.7	75	-0.02
29	T	Diisopropyl Ether	0.988	0.946	4.3	77	-0.01
30	T	Ethyl Acetate	0.355	0.367	-3.4	76	-0.02
31	T	n-Hexane	1.821	1.519	16.6	80	-0.01
32	T	Chloroform	1.861	1.761	5.4	74	-0.03
33	S	1,2-Dichloroethane-d4(SS1)	1.397	1.404	-0.5	84	-0.02
34	T	Tetrahydrofuran (THF)	0.733	0.744	-1.5	75	-0.01
35	T	Ethyl tert-Butyl Ether	1.473	1.474	-0.1	75	-0.01
36	T	1,2-Dichloroethane	1.307	1.270	2.8	76	-0.02
37	IR	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	83	-0.01
38	T	1,1,1-Trichloroethane	0.338	0.337	0.3	74	-0.01
39	T	Isopropyl Acetate	0.126	0.125	0.8	76	-0.02
40	T	1-Butanol	0.213	0.240	-12.7	75	-0.04
41	T	Benzene	0.907	0.801	11.7	75	-0.01
42	T	Carbon Tetrachloride	0.280	0.289	-3.2	76	-0.01
43	T	Cyclohexane	0.395	0.369	6.6	76	-0.01
44	T	tert-Amyl Methyl Ether	0.687	0.686	0.1	74	-0.01
45	T	1,2-Dichloropropane	0.217	0.210	3.2	75	-0.01
46	T	Bromodichloromethane	0.280	0.295	-5.4	74	-0.01
47	T	Trichloroethene	0.279	0.264	5.4	74	-0.01
48	T	1,4-Dioxane	0.182	0.192	-5.5	75	-0.01
49	T	2,2,4-Trimethylpentane (Iso	1.014	0.974	3.9	76	0.00
50	T	Methyl Methacrylate	0.109	0.109	0.0	75	-0.02
51	T	n-Heptane	0.231	0.213	7.8	76	-0.01
52	T	cis-1,3-Dichloropropene	0.341	0.356	-4.4	74	0.00
53	T	4-Methyl-2-pentanone	0.202	0.211	-4.5	75	-0.01
54	T	trans-1,3-Dichloropropene	0.305	0.333	-9.2	75	0.00

Evaluate Continuing Calibration Report

Data File: I:\MS08\Data\2016 04\28\04281624.D
Acq On : 28 Apr 2016 20:09 Operator: WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
55	T	1,1,2-Trichloroethane	0.226	0.225	0.4	73	-0.01
56	IR	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	88	0.00
57	S	Toluene-d8 (SS2)	2.416	2.280	5.6	84	0.00
58	T	Toluene	2.890	2.161	25.2	75	0.00
59	T	2-Hexanone	1.135	1.081	4.8	74	-0.01
60	T	Dibromochloromethane	0.607	0.621	-2.3	73	0.00
61	T	1,2-Dibromoethane	0.615	0.598	2.8	73	0.00
62	T	n-Butyl Acetate	1.190	1.222	-2.7	74	-0.01
63	T	n-Octane	0.492	0.448	8.9	75	-0.01
64	T	Tetrachloroethene	0.831	0.737	11.3	73	0.00
65	T	Chlorobenzene	1.679	1.506	10.3	74	0.00
66	T	Ethylbenzene	2.758	2.543	7.8	74	0.00
67	T	m- & p-Xylenes	2.195	1.972	10.2	73	-0.02
68	T	Bromoform	0.569	0.614	-7.9	72	-0.01
69	T	Styrene	1.661	1.654	0.4	73	0.00
70	T	o-Xylene	2.307	2.105	8.8	74	-0.01
71	T	n-Nonane	1.129	1.047	7.3	75	0.00
72	T	1,1,2,2-Tetrachloroethane	1.014	0.987	2.7	74	-0.01
73	S	Bromofluorobenzene (SS3)	1.030	1.090	-5.8	91	0.00
74	T	Cumene	3.104	2.823	9.1	73	-0.01
75	T	alpha-Pinene	1.498	1.391	7.1	73	0.00
76	T	n-Propylbenzene	3.568	3.317	7.0	74	0.00
77	T	3-Ethyltoluene	3.026	2.829	6.5	75	0.00
78	T	4-Ethyltoluene	2.870	2.620	8.7	73	0.00
79	T	1,3,5-Trimethylbenzene	2.506	2.299	8.3	74	0.00
80	T	alpha-Methylstyrene	1.312	1.306	0.5	71	-0.01
81	T	2-Ethyltoluene	2.935	2.671	9.0	73	-0.01
82	T	1,2,4-Trimethylbenzene	2.484	2.336	6.0	74	0.00
83	T	n-Decane	1.267	1.182	6.7	75	-0.01
84	T	Benzyl Chloride	1.791	1.991	-11.2	72	-0.02
85	T	1,3-Dichlorobenzene	1.521	1.393	8.4	72	0.00
86	T	1,4-Dichlorobenzene	1.605	1.439	10.3	73	-0.01
87	T	sec-Butylbenzene	3.287	3.035	7.7	74	0.00
88	T	4-Isopropyltoluene (p-Cymen	3.227	3.067	5.0	74	0.00
89	T	1,2,3-Trimethylbenzene	2.565	2.415	5.8	74	-0.01
90	T	1,2-Dichlorobenzene	1.471	1.355	7.9	73	-0.01
91	T	d-Limonene	0.872	0.858	1.6	73	-0.01
92	T	1,2-Dibromo-3-Chloropropane	0.510	0.545	-6.9	74	0.00
93	T	n-Undecane	1.300	1.232	5.2	75	0.00
94	T	1,2,4-Trichlorobenzene	1.171	1.122	4.2	73	0.00
95	T	Naphthalene	3.576	3.446	3.6	73	0.00
96	T	n-Dodecane	1.209	1.122	7.2	71	0.00
97	T	Hexachlorobutadiene	0.779	0.699	10.3	72	0.00
98	T	Cyclohexanone	0.745	0.713	4.3	72	-0.01
99	T	tert-Butylbenzene	2.561	2.374	7.3	74	-0.01
100	T	n-Butylbenzene	2.471	2.315	6.3	74	0.00

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281624.D
Acq On : 28 Apr 2016 20:09 Operator: WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

4/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	8.81	130	123636	12.500	ng		-0.02
37) 1,4-Difluorobenzene (IS2)	10.54	114	600366	12.500	ng		-0.01
56) Chlorobenzene-d5 (IS3)	14.57	82	259212	12.500	ng		0.00
System Monitoring Compounds							
33) 1,2-Dichloroethane-d4(...	9.49	65	173589	12.566	ng		-0.02
Spiked Amount 12.500	Range 70 - 130		Recovery = 100.56%				
57) Toluene-d8 (SS2)	12.78	98	591114	11.798	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 94.40%				
73) Bromofluorobenzene (SS3)	16.07	174	282584	13.230	ng		0.00
Spiked Amount 12.500	Range 70 - 130		Recovery = 105.84%				
Target Compounds							Qvalue
2) Propene	3.88	42	246528	22.329	ng		100
3) Dichlorodifluoromethan...	3.99	85	513333	23.267	ng		100
4) Chloromethane	4.20	50	338819	25.641	ng		99
5) 1,2-Dichloro-1,1,2,2-t...	4.35	135	306174	24.344	ng		100
6) Vinyl Chloride	4.47	62	354897	27.090	ng		100
7) 1,3-Butadiene	4.65	54	294508	30.907	ng		100
8) Bromomethane	4.96	94	258251	25.864	ng		100
9) Chloroethane	5.17	64	220196	25.266	ng		100
10) Ethanol	5.40	45	983036	119.338	ng		99
11) Acetonitrile	5.59	41	500262	24.559	ng		100
12) Acrolein	5.71	56	177849	27.380	ng		99
13) Acetone	5.85	58	1054626	116.255	ng		100
14) Trichlorofluoromethane	6.02	101	445661	22.949	ng		99
15) 2-Propanol (Isopropanol)	6.15	45	1398675	51.512	ng		99
16) Acrylonitrile	6.35	53	372249	27.412	ng		100
17) 1,1-Dichloroethene	6.67	96	285871	26.717	ng		98
18) 2-Methyl-2-Propanol (t...	6.75	59	1473707	52.569	ng		98
19) Methylene Chloride	6.80	84	290261	23.689	ng		98
20) 3-Chloro-1-propene (Al...	6.91	41	394253	30.340	ng		99
21) Trichlorotrifluoroethane	7.07	151	277146	25.722	ng		99
22) Carbon Disulfide	7.05	76	1026210	21.748	ng		100
23) trans-1,2-Dichloroethene	7.70	61	399193	28.208	ng		98
24) 1,1-Dichloroethane	7.90	63	474791	24.878	ng		100
25) Methyl tert-Butyl Ether	7.94	73	881126	25.433	ng		100
26) Vinyl Acetate	8.04	86	401217	142.260	ng	#	94
27) 2-Butanone (MEK)	8.25	72	199840	21.720	ng		99
28) cis-1,2-Dichloroethene	8.66	61	372474	27.196	ng		99
29) Diisopropyl Ether	8.85	87	252559	25.842	ng		98
30) Ethyl Acetate	8.85	61	192305	54.692	ng		99
31) n-Hexane	8.87	57	390542	21.678	ng		100
32) Chloroform	8.93	83	465983	25.316	ng		100
34) Tetrahydrofuran (THF)	9.27	72	187725	25.901	ng		99
35) Ethyl tert-Butyl Ether	9.34	87	382582	26.252	ng		100
36) 1,2-Dichloroethane	9.59	62	329843	25.509	ng		99
38) 1,1,1-Trichloroethane	9.83	97	416534	25.669	ng		99
39) Isopropyl Acetate	10.13	61	332486	54.984	ng		99
40) 1-Butanol	10.14	56	650833	63.557	ng		99
41) Benzene	10.24	78	1067694	24.515	ng		100
42) Carbon Tetrachloride	10.38	117	374776	27.838	ng		100
43) Cyclohexane	10.49	84	927270	48.853	ng		99
44) tert-Amyl Methyl Ether	10.76	73	856379	25.958	ng		100
45) 1,2-Dichloropropane	10.97	63	264569	25.399	ng		100
46) Bromodichloromethane	11.13	83	378543	28.186	ng		99
47) Trichloroethene	11.18	130	327053	24.407	ng		99
48) 1,4-Dioxane	11.15	88	248443	28.480	ng		100
49) 2,2,4-Trimethylpentane...	11.23	57	1205198	24.752	ng		100

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281624.D
Acq On : 28 Apr 2016 20:09 Operator: WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

Quant Time: Apr 29 06:38:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M

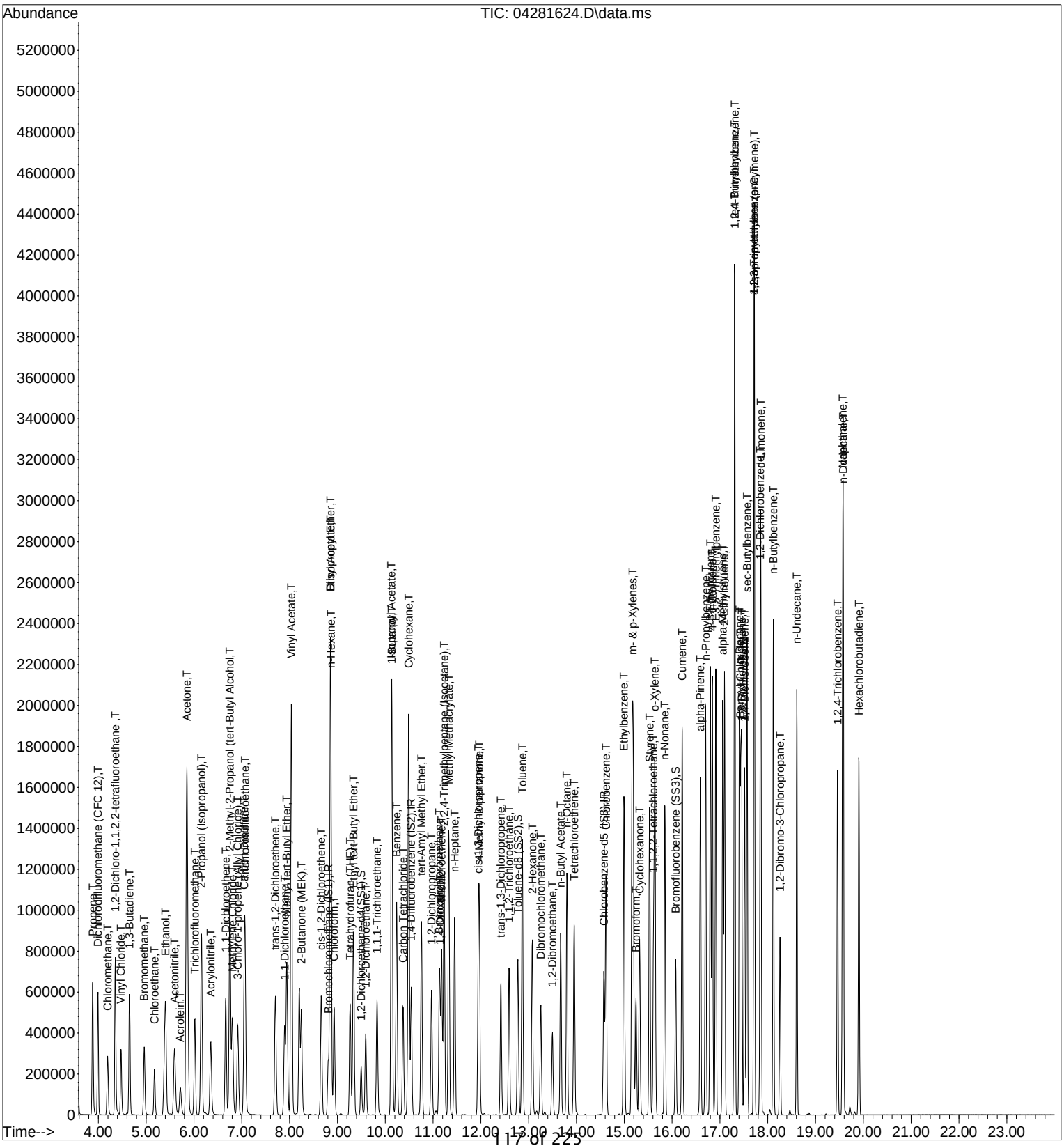
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
50) Methyl Methacrylate	11.33	100	271777	51.971	ng	99
51) n-Heptane	11.45	71	273038	24.598	ng	99
52) cis-1,3-Dichloropropene	11.95	75	479012	29.206	ng	99
53) 4-Methyl-2-pentanone	11.97	58	273244	28.196	ng	99
54) trans-1,3-Dichloropropene	12.42	75	428366	29.287	ng	100
55) 1,1,2-Trichloroethane	12.59	97	284302	26.229	ng	100
58) Toluene	12.87	91	1176432	19.630	ng	100
59) 2-Hexanone	13.08	43	622274	26.432	ng	99
60) Dibromochloromethane	13.26	129	354149	28.149	ng	99
61) 1,2-Dibromoethane	13.50	107	331447	25.972	ng	100
62) n-Butyl Acetate	13.67	43	703278	28.491	ng	100
63) n-Octane	13.80	57	238976	23.416	ng	99
64) Tetrachloroethene	13.95	166	378099	21.936	ng	99
65) Chlorobenzene	14.62	112	835290	23.990	ng	99
66) Ethylbenzene	14.99	91	1384361	24.204	ng	100
67) m- & p-Xylenes	15.18	91	2125979	46.707	ng	100
68) Bromoform	15.25	173	340485	28.871	ng	99
69) Styrene	15.53	104	926161	26.886	ng	100
70) o-Xylene	15.64	91	1113354	23.273	ng	100
71) n-Nonane	15.85	43	548077	23.408	ng	99
72) 1,1,2,2-Tetrachloroethane	15.61	83	511897	24.338	ng	100
74) Cumene	16.21	105	1478383	22.970	ng	100
75) alpha-Pinene	16.59	93	742814	23.911	ng	100
76) n-Propylbenzene	16.70	91	1719511	23.238	ng	100
77) 3-Ethyltoluene	16.80	105	1525535	24.315	ng	100
78) 4-Ethyltoluene	16.84	105	1426055	23.960	ng	100
79) 1,3,5-Trimethylbenzene	16.91	105	1239370	23.848	ng	100
80) alpha-Methylstyrene	17.06	118	697545	25.644	ng	100
81) 2-Ethyltoluene	17.10	105	1440301	23.667	ng	100
82) 1,2,4-Trimethylbenzene	17.31	105	1259294	24.444	ng	100
83) n-Decane	17.41	57	618959	23.557	ng	99
84) Benzyl Chloride	17.43	91	1114969	30.025	ng	100
85) 1,3-Dichlorobenzene	17.46	146	779893	24.722	ng	100
86) 1,4-Dichlorobenzene	17.52	146	783382	23.536	ng	100
87) sec-Butylbenzene	17.57	105	1667759	24.469	ng	100
88) 4-Isopropyltoluene (p-...	17.72	119	1590005	23.764	ng	100
89) 1,2,3-Trimethylbenzene	17.71	105	1301992	24.480	ng	100
90) 1,2-Dichlorobenzene	17.84	146	751794	24.650	ng	100
91) d-Limonene	17.85	68	462843	25.585	ng	99
92) 1,2-Dibromo-3-Chloropr...	18.26	157	293991	27.795	ng	99
93) n-Undecane	18.61	57	645143	23.926	ng	99
94) 1,2,4-Trichlorobenzene	19.46	180	604817	24.899	ng	100
95) Naphthalene	19.57	128	1786590	24.095	ng	100
96) n-Dodecane	19.58	57	605125	24.140	ng	100
97) Hexachlorobutadiene	19.91	225	387508	24.000	ng	99
98) Cyclohexanone	15.32	55	413906	26.809	ng	99
99) tert-Butylbenzene	17.31	119	1292521	24.342	ng	100
100) n-Butylbenzene	18.12	91	1296279	25.297	ng	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File: I:\MS08\Data\2016 04\28\04281624.D
Acq On : 28 Apr 2016 20:09 Operator: WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

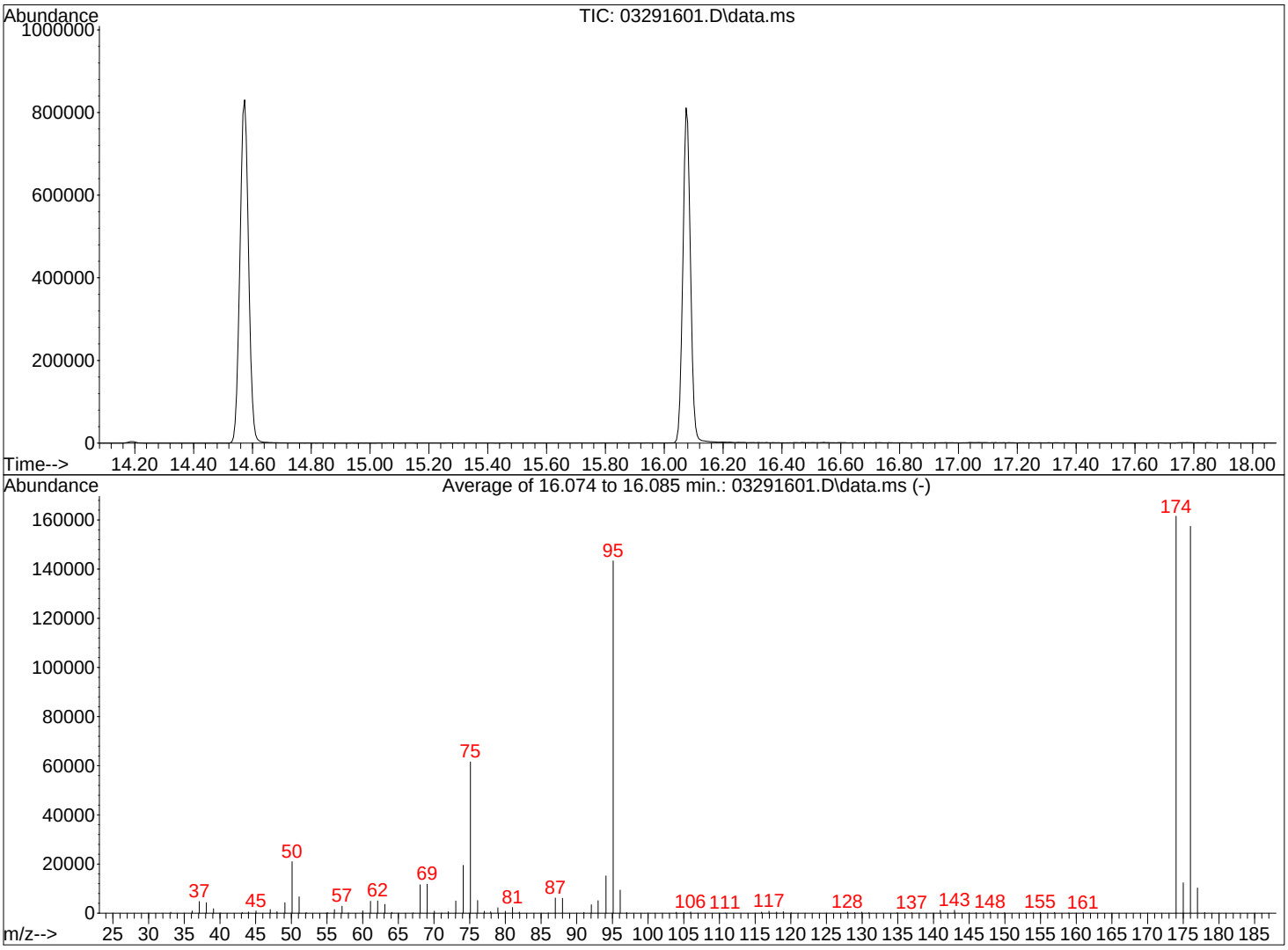
Quant Time: Apr 29 06:38:31 2016
Quant Method : I:\MS08\Methods\R8032916.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Tue Mar 29 13:08:11 2016
Response via : Initial Calibration
DataAcq Meth:TO15.M



Data Path : I:\MS08\Data\2016 03\29\
Data File : 03291601.D
Acq On : 29 Mar 2016 7:01
Operator : WA
Sample : BFB R8032916
Misc : S29-03281601
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS08\Methods\R8032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Mar 29 13:08:11 2016



AutoFind: Scans 2318, 2319, 2320; Background Corrected with Scan 2309

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	14.6	20962	PASS
75	95	30	66	43.0	61587	PASS
95	95	100	100	100.0	143352	PASS
96	95	5	9	6.6	9418	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	112.7	161557	PASS
175	174	4	9	7.7	12404	PASS
176	174	93	101	97.5	157461	PASS
177	176	5	9	6.5	10255	PASS

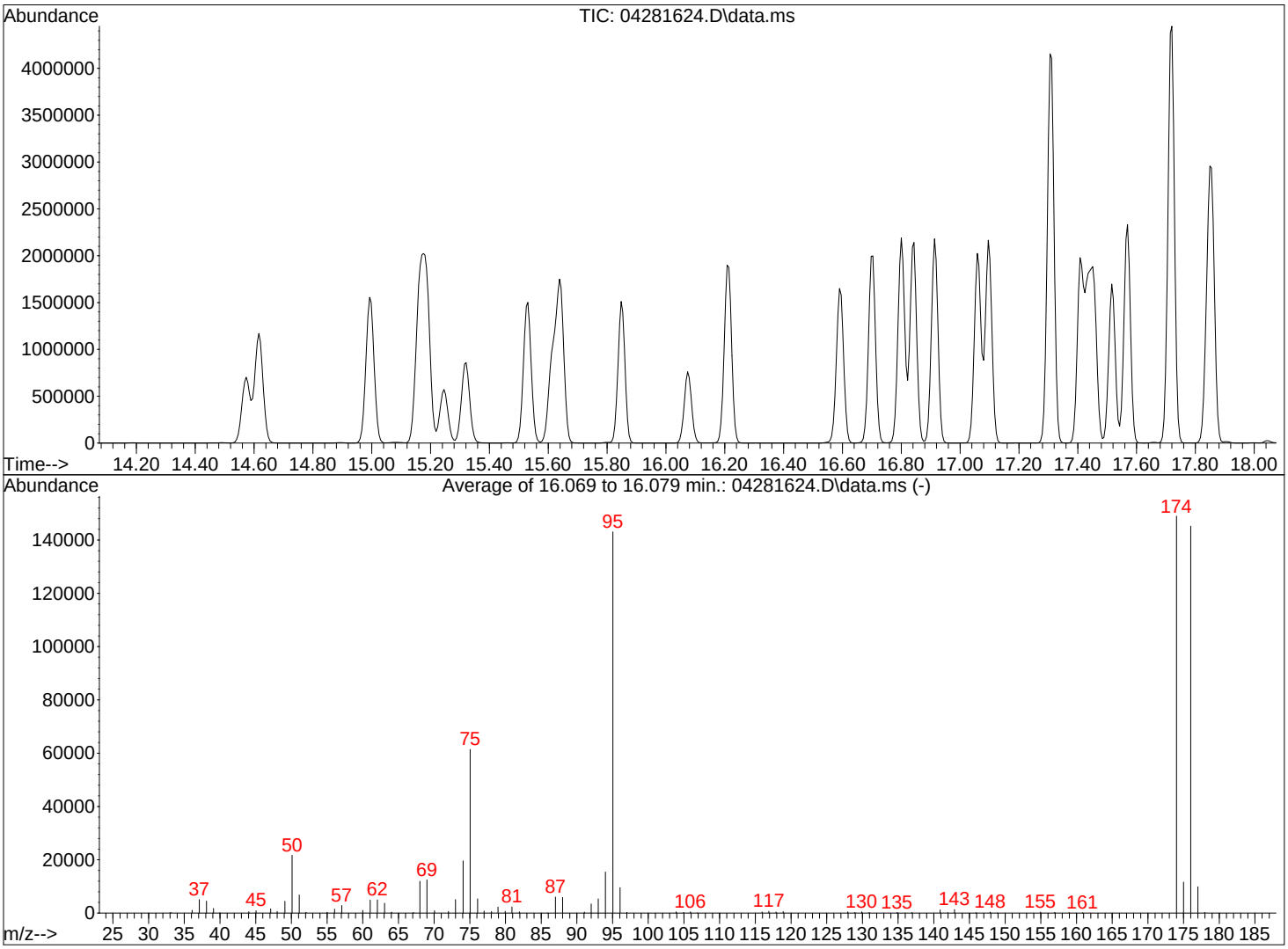
WA 3/29/16

Data Path : I:\MS08\Data\2016 04\28\
Data File : 04281624.D
Acq On : 28 Apr 2016 20:09
Operator : WA
Sample : CCV2 R8042816 25ng
Misc : S29-04131602/S29-04131606 (5/11)
ALS Vial : 1 Sample Multiplier: 1

Integration File: LSCINT.P

Method : I:\MS08\Methods\R8032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Tue Mar 29 13:08:11 2016

4/29/16



AutoFind: Scans 2317, 2318, 2319; Background Corrected with Scan 2306

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	15.2	21693	PASS
75	95	30	66	42.9	61419	PASS
95	95	100	100	100.0	143061	PASS
96	95	5	9	6.7	9591	PASS
173	174	0.00	2	0.0	0	PASS
174	95	50	120	104.1	148971	PASS
175	174	4	9	7.8	11604	PASS
176	174	93	101	97.5	145213	PASS
177	176	5	9	6.8	9858	PASS

Injection Log

Directory: I:\MS08\Data\2016_03\29\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	3/29/16 7:01	03291601.D	BFB R8032916	S29-03281601	WA	1	Passed
2	3/29/16 7:33	03291602.D	0.08ng TO-15 ICAL Std	S29-03281601/S29-03251605 (4/23)	WA	13	
3	3/29/16 8:05	03291603.D	0.10ng TO-15 ICAL Std	S29-03281601/S29-03251605 (4/23)	WA	13	
4	3/29/16 8:38	03291604.D	0.20ng TO-15 ICAL Std	S29-03281601/S29-03251605 (4/23)	WA	13	
5	3/29/16 9:10	03291605.D	0.40ng TO-15 ICAL Std	S29-03281601/S29-03251605 (4/23)	WA	13	
6	3/29/16 9:43	03291606.D	1.0ng TO-15 ICAL Std	S29-03281601/S29-03251603 (4/23)	WA	14	
7	3/29/16 10:15	03291607.D	5.0ng TO-15 ICAL Std	S29-03281601/S29-03251603 (4/23)	WA	14	
8	3/29/16 10:48	03291608.D	25ng TO-15 ICAL Std	S29-03281601/S29-03251602 (4/23)	WA	16	
9	3/29/16 11:20	03291609.D	50ng TO-15 ICAL Std	S29-03281601/S29-03251602 (4/23)	WA	16	
10	3/29/16 11:53	03291610.D	100ng TO-15 ICAL Std	S29-03281601/S29-03251602 (4/23)	WA	16	
11	3/29/16 12:25	03291611.D	25ng TO-15 ICV Std	S29-03281601/S29-03101601 (4/8)	WA	1	Passed all cmpds
12	3/29/16 12:57	03291612.D	25ng TO-15 ICV Std	S29-03281601/S29-03101601 (4/8)	WA	1	Passed all cmpds
	Saved as R8032916.M: good for low-level 75 compounds (see checklist for specific ranges)						
							WA 3/29/16

Injection Log

Directory: I:\MS08\Data\2016_04\28\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/28/16 20:09	04281624.D	CCV2 R8042816_25ng	S29-04131602/S29-04131606 (5/11)	WA	1	Passed
2	4/28/16 20:42	04281625.D	CCV2 R8042816_5ng	S29-04131602/S29-04131610 (5/11)	WA	16	
3	4/28/16 21:15	04281626.D	CCV2 C8042816_25ng	S29-04131602/S29-04121605 (5/11)	WA	15	
4	4/28/16 21:47	04281627.D	MB2 R8042816_1000mL	S29-04131602_AS00703	WA	1	Passed
5	4/28/16 22:19	04281628.D	LCS2 R8042816_25ng	S29-04131602/S29-04281601 (5/26)	WA	1	Passed
6	4/28/16 22:52	04281629.D	LCSD2 R8042816_25ng	S29-04131602/S29-04281601 (5/26)	WA	1	Passed
7	4/28/16 23:24	04281630.D	Blank	S29-04131602/S29-04281601 (5/26)	WA	1	
8	4/28/16 23:56	04281631.D	P1602145-001 (1000mL)	S29-04131602	WA	2	
9	4/29/16 0:29	04281632.D	P1602145-001dup (1000mL)	S29-04131602	WA	2	Passed for dup
10	4/29/16 1:02	04281633.D	P1602145-002 (1000mL)	S29-04131602	WA	3	
11	4/29/16 1:34	04281634.D	P1602145-003 (1000mL)	S29-04131602	WA	7	
12	4/29/16 2:07	04281635.D	P1602145-005 (1000mL)	S29-04131602	WA	8	
13	4/29/16 2:39	04281636.D	P1602145-006 (1000mL)	S29-04131602	WA	9	
14	4/29/16 3:12	04281637.D	P1602145-006dil (100mL)	S29-04131602	WA	9	
15	4/29/16 3:45	04281638.D	P1602185-001dil (250mL)	S29-04131602	WA	10	
16	4/29/16 4:17	04281639.D	xxP1602185-001dil (25mL)	S29-04131602	WA	10	not used
17	4/29/16 4:50	04281640.D	P1602146-005 (1000mL)	S29-04131602	WA	11	
18	4/29/16 5:22	04281641.D	P1602146-006 (1000mL)	S29-04131602	WA	13	
19	4/29/16 5:55	04281642.D	P1602146-007 (1000mL)	S29-04131602	WA	14	
	No Exception					WA 5/2/16	

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 11:53:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/29/16

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	24182	1000.000 pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.70	114	128599	1000.000 pg		-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	27258	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.52	65	47345	909.505 pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 90.95%			
33) Toluene-d8 (SS2)	14.14	98	138575	1004.279 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.43%			
45) Bromofluorobenzene (SS3)	17.55	174	82974	1196.786 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 119.68%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	75729	961.508 pg		100
3) Chloromethane	4.62	52	7328	365.785 pg		96
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	2936	35.073 pg		100
5) Vinyl Chloride	4.92	62	228	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D. d		
7) Bromomethane	5.45	94	896	30.250 pg		96
8) Chloroethane	5.68	64	357	N.D.		
9) Acrolein	6.24	56	15541	1135.350 pg		97
10) Acetone	6.37	58	929064	50791.334 pg	#	89
11) Trichlorofluoromethane	6.61	101	67559	1188.591 pg		100
12) 1,1-Dichloroethene	7.33	96	122	N.D.		
13) Methylene Chloride	7.46	84	7424	220.060 pg		93
14) Trichlorotrifluoroethane	7.79	151	7611	272.955 pg		99
15) trans-1,2-Dichloroethene	8.50	96	238	N.D.		
16) 1,1-Dichloroethane	8.71	63	352	N.D.		
17) Methyl tert-Butyl Ether	8.78	73	763	N.D.		
18) cis-1,2-Dichloroethene	9.59	96	3791	112.280 pg		99
19) Chloroform	9.88	83	40059	636.977 pg		100
21) 1,2-Dichloroethane	10.63	62	176261	3840.082 pg		99
22) 1,1,1-Trichloroethane	10.90	97	3159	56.332 pg		100
23) Benzene	11.36	78	74977	575.611 pg		100
24) Carbon Tetrachloride	11.51	117	14485	301.804 pg		99
26) 1,2-Dichloropropane	12.17	63	548	N.D.		
27) Bromodichloromethane	12.35	83	15744	315.055 pg		89
28) Trichloroethene	12.41	130	68544	1798.059 pg		99
29) 1,4-Dioxane	0.00	88	0	N.D. d		
30) cis-1,3-Dichloropropene	13.25	75	102	N.D.		
31) trans-1,3-Dichloropropene	13.72	75	485	N.D.		
32) 1,1,2-Trichloroethane	13.92	83	159	N.D.		
34) Toluene	14.24	91	643832	4555.506 pg		99
35) Dibromochloromethane	14.66	129	5000	142.784 pg		100
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	8197	223.714 pg		93
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.48	91	73700	551.088 pg		98
41) m,p-Xylene	16.64	91	137123	1322.394 pg		98
42) Styrene	17.01	104	93430	1311.022 pg		100
43) o-Xylene	17.12	106	26382	502.773 pg		96
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d		
46) 1,3,5-Trimethylbenzene	18.38	105	13603	125.559 pg		98
47) 1,2,4-Trimethylbenzene	18.77	105	46426	420.618 pg		90
48) 1,3-Dichlorobenzene	18.92	146	175	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	1956	29.896 pg		98
50) 1,2-Dichlorobenzene	19.31	146	815	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.94	182	192	N.D.		
53) Naphthalene	21.06	128	12447	95.073 pg		94

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 11:53:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

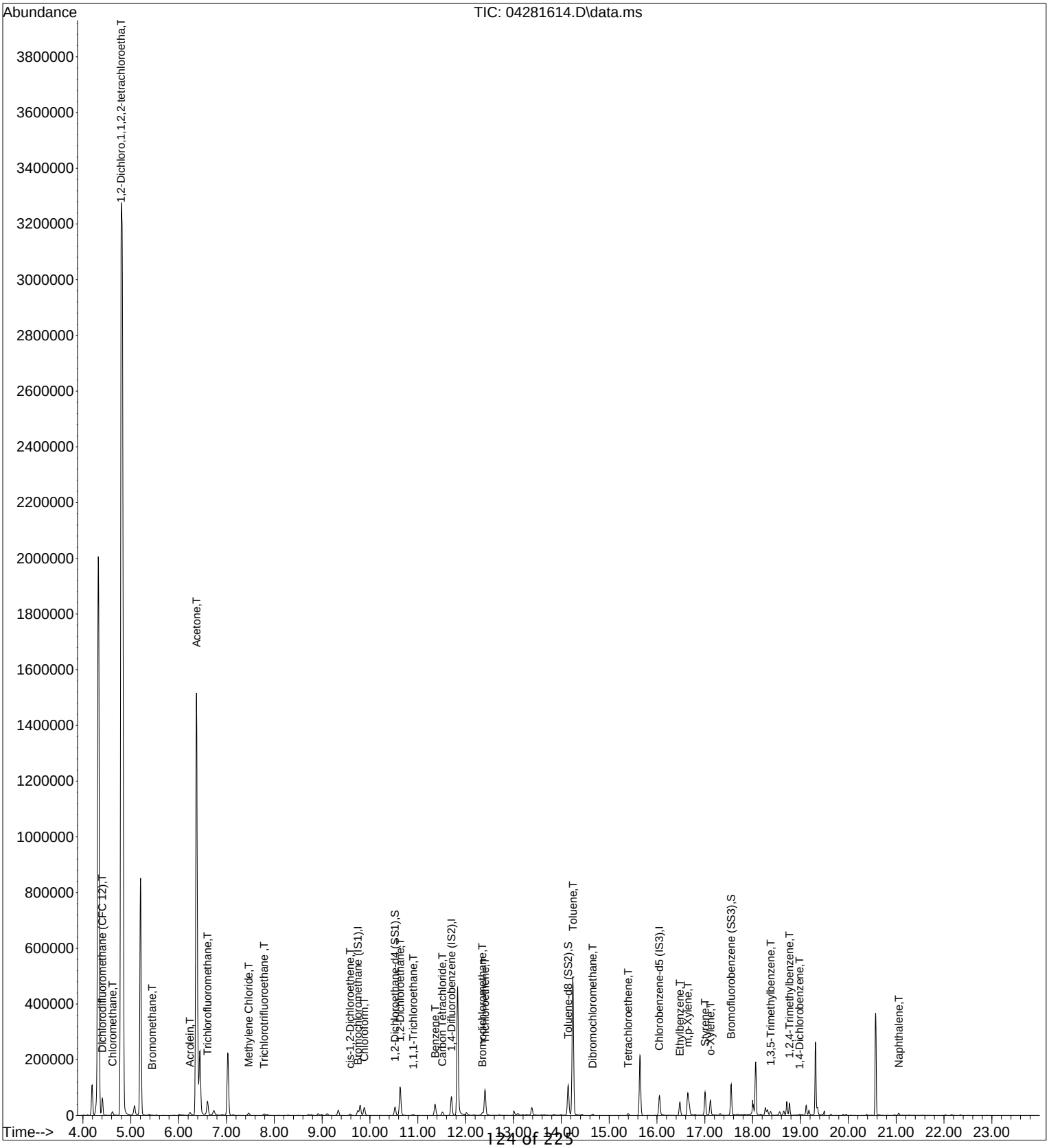
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.34	225	65	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

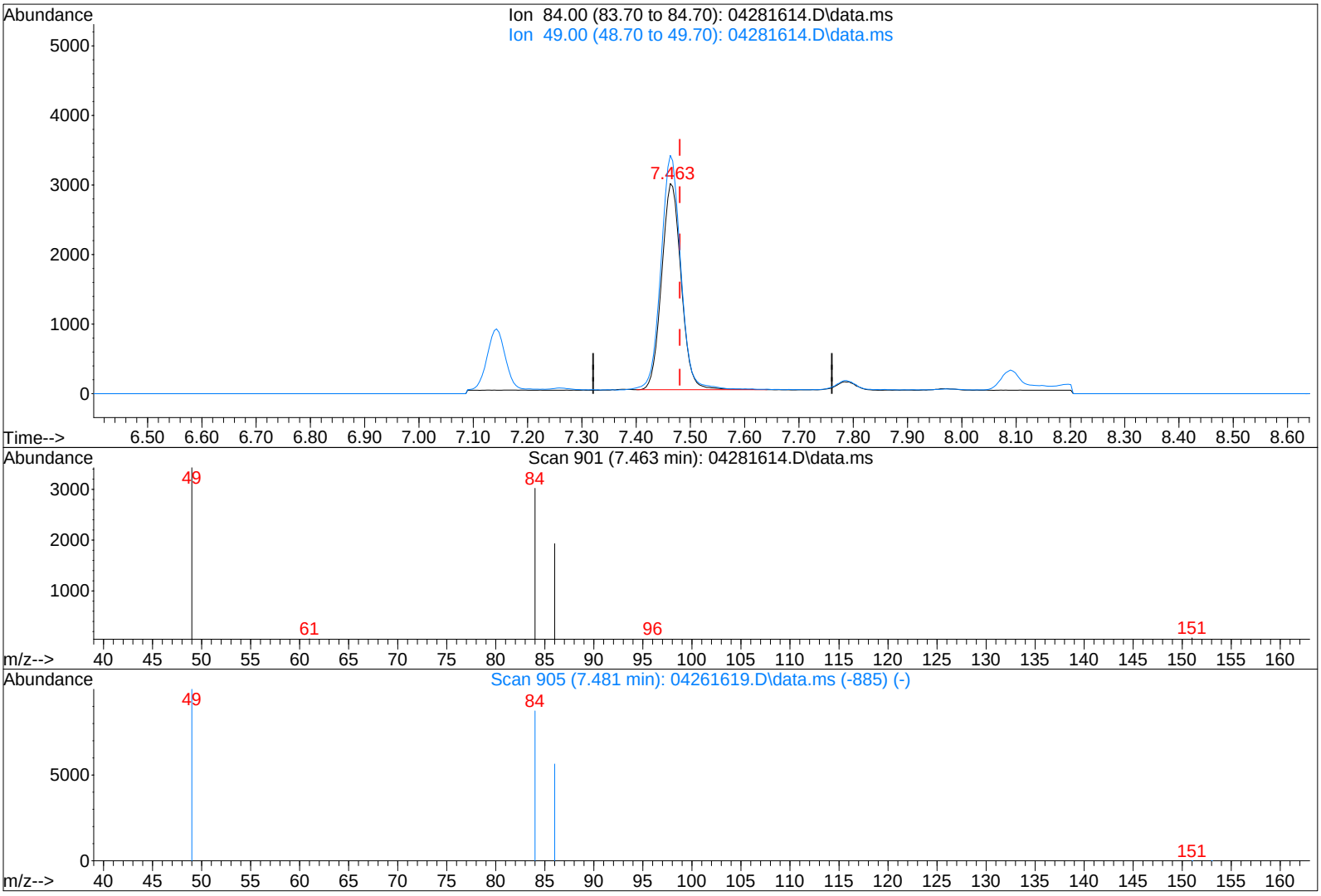
Quant Time: Apr 29 11:53:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281614.D\data.ms

(13) Methylene Chloride (T)

7.463min (-0.018) 220.06pg

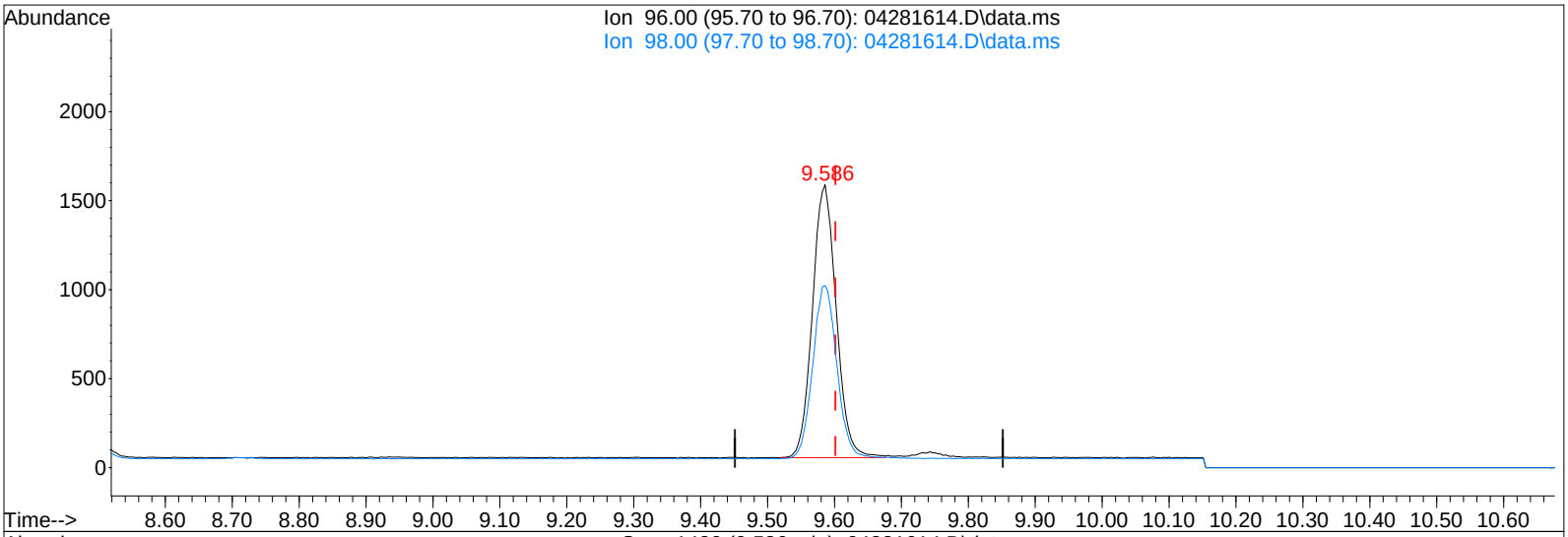
response 7424

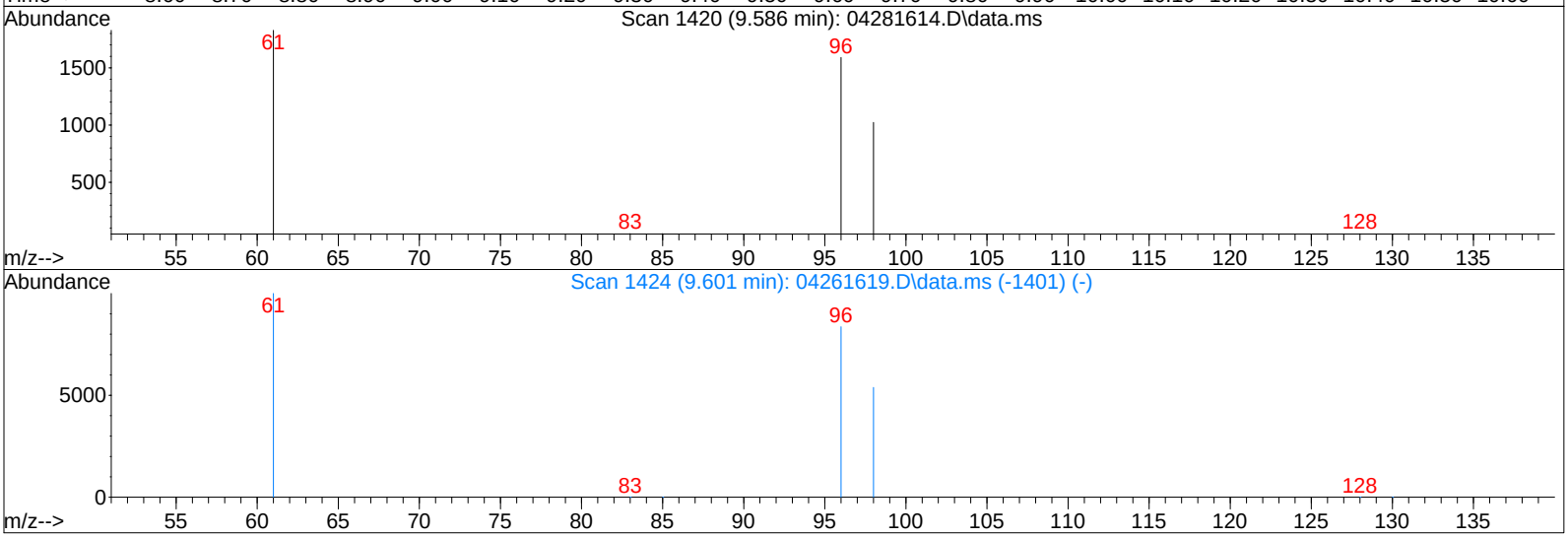
Ion	Exp%	Act%
84.00	100	100
49.00	107.70	115.49
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 04281614.D\data.ms

(18) cis-1,2-Dichloroethene (T)

9.586min (-0.016) 112.28pg

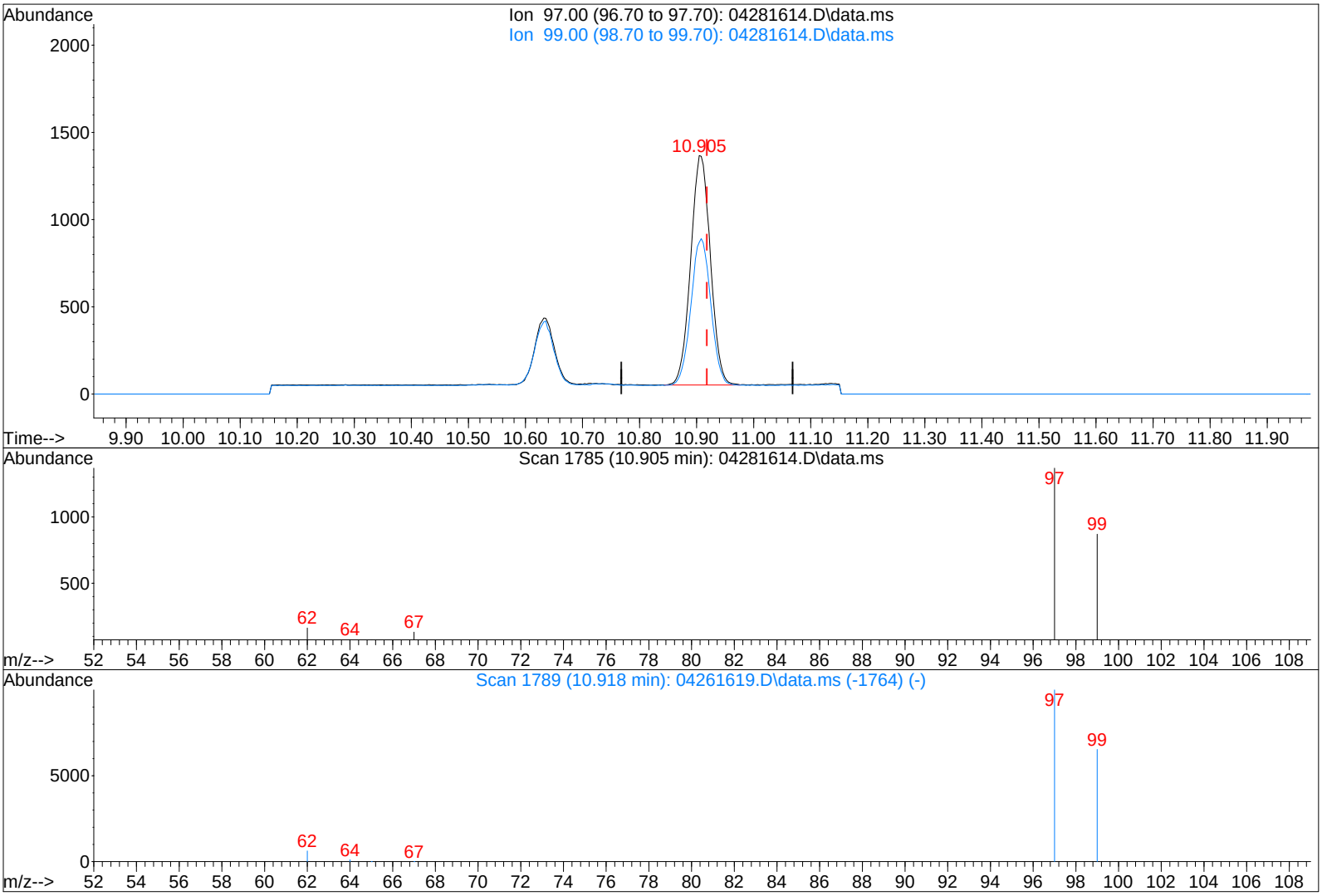
response 3791

Ion	Exp%	Act%
96.00	100	100
98.00	64.10	65.10
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281614.D\data.ms

(22) 1,1,1-Trichloroethane (T)

10.905min (-0.014) 56.33pg

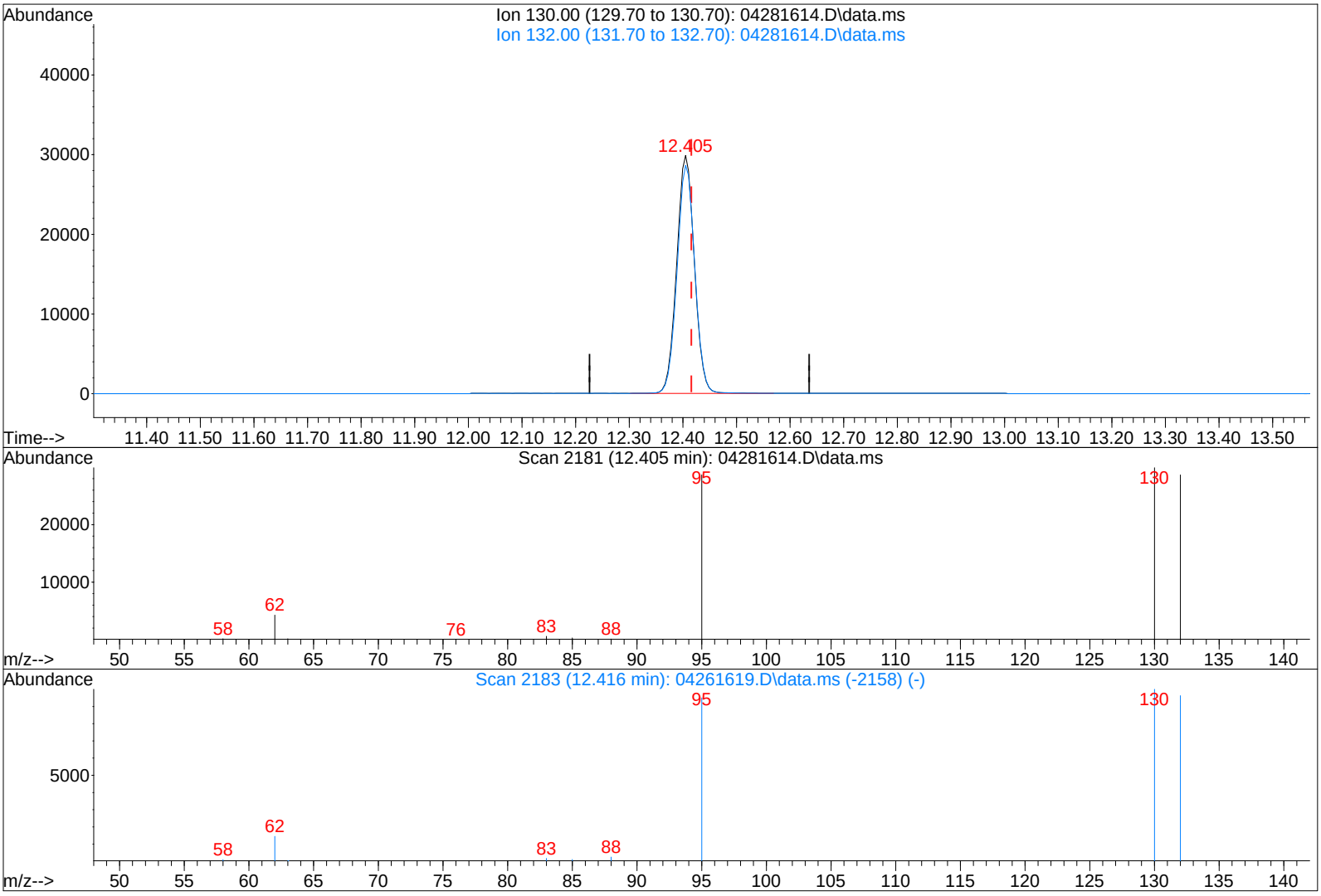
response 3159

Ion	Exp%	Act%
97.00	100	100
99.00	64.40	64.42
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281614.D\data.ms

(28) Trichloroethene (T)

12.405min (-0.011) 1798.06pg

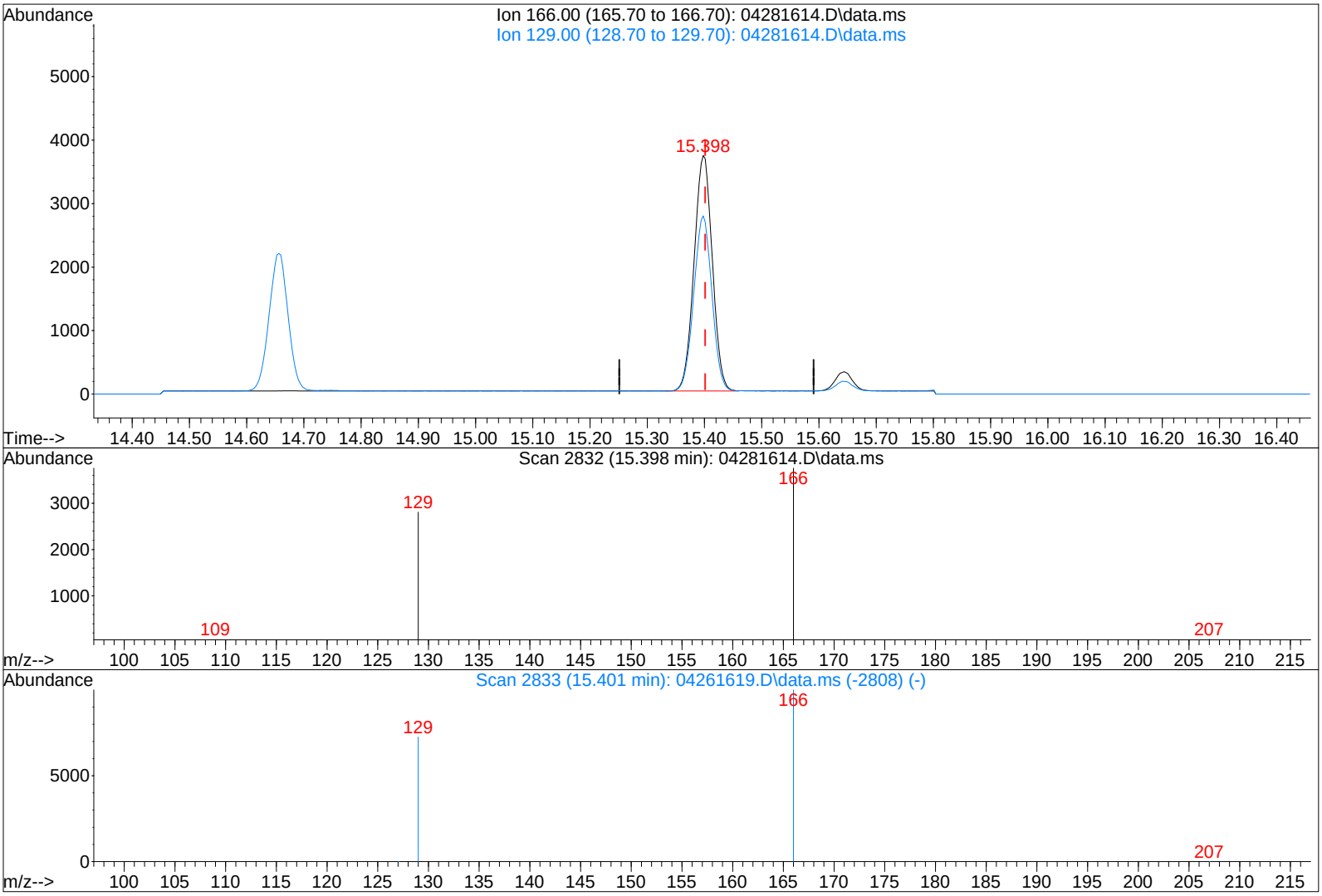
response 68544

Ion	Exp%	Act%
130.00	100	100
132.00	95.40	96.15
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281614.D Vial: 1
Acq On : 28 Apr 2016 16:59 Operator: CL
Sample : P1602145-004 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281614.D\data.ms

(37) Tetrachloroethene (T)

15.398min (-0.003) 223.71pg

response 8197

Ion	Exp%	Act%
166.00	100	100
129.00	79.80	74.06
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 12:14:47 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/29/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	25197	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	134650	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	27588	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	49146	906.072	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 90.61%			
33) Toluene-d8 (SS2)	14.14	98	144311	998.849	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 99.89%			
45) Bromofluorobenzene (SS3)	17.55	174	87923	1252.999	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 125.30%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	85023	1036.025	pg	100
3) Chloromethane	4.62	52	10543	505.066	pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	3863	44.288	pg	100
5) Vinyl Chloride	4.92	62	140	N.D.		
6) 1,3-Butadiene	5.11	54	19986	493.804	pg	99
7) Bromomethane	5.44	94	674	21.839	pg	99
8) Chloroethane	5.66	64	418	N.D.		
9) Acrolein	6.23	56	23502	1647.779	pg	99
10) Acetone	6.37	58	326041	17106.438	pg	95
11) Trichlorofluoromethane	6.59	101	31864	538.013	pg	100
12) 1,1-Dichloroethene	7.33	96	84	N.D.		
13) Methylene Chloride	7.46	84	7000	199.134	pg	92
14) Trichlorotrifluoroethane	7.79	151	7562	260.273	pg	99
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	8.71	63	1143	N.D.		
17) Methyl tert-Butyl Ether	0.00	73	0	N.D. d		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.88	83	10333	157.686	pg	97
21) 1,2-Dichloroethane	10.64	62	2002	41.859	pg	99
22) 1,1,1-Trichloroethane	10.91	97	7707	131.898	pg	100
23) Benzene	11.36	78	118067	869.907	pg	100
24) Carbon Tetrachloride	11.51	117	11711	234.177	pg	99
26) 1,2-Dichloropropane	12.17	63	319	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D. d		
28) Trichloroethene	12.41	130	455	N.D.		
29) 1,4-Dioxane	12.38	88	296	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	13.72	75	128	N.D.		
32) 1,1,2-Trichloroethane	13.92	83	465	N.D.		
34) Toluene	14.24	91	1758783	11885.229	pg	98
35) Dibromochloromethane	14.66	129	873	23.810	pg	99
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	7631	198.908	pg	93
39) Chlorobenzene	0.00	112	0	N.D. d		
40) Ethylbenzene	16.48	91	194414	1436.331	pg	98
41) m,p-Xylene	16.64	91	497719	4742.515	pg	98
42) Styrene	17.01	104	33201	460.308	pg	98
43) o-Xylene	17.12	106	90145	1697.382	pg	93
44) 1,1,2,2-Tetrachloroethane	17.05	83	470	N.D.		
46) 1,3,5-Trimethylbenzene	18.38	105	45235	412.537	pg	97
47) 1,2,4-Trimethylbenzene	18.77	105	223196	1997.962	pg	91
48) 1,3-Dichlorobenzene	18.92	146	60	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	1316	N.D.		
50) 1,2-Dichlorobenzene	19.31	146	226	N.D.		
51) 1,2-Dibromo-3-chloropr...	19.67	157	84	N.D.		
52) 1,2,4-Trichlorobenzene	20.91	182	67	N.D.		
53) Naphthalene	21.05	128	57049	430.543	pg	93

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 12:14:47 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

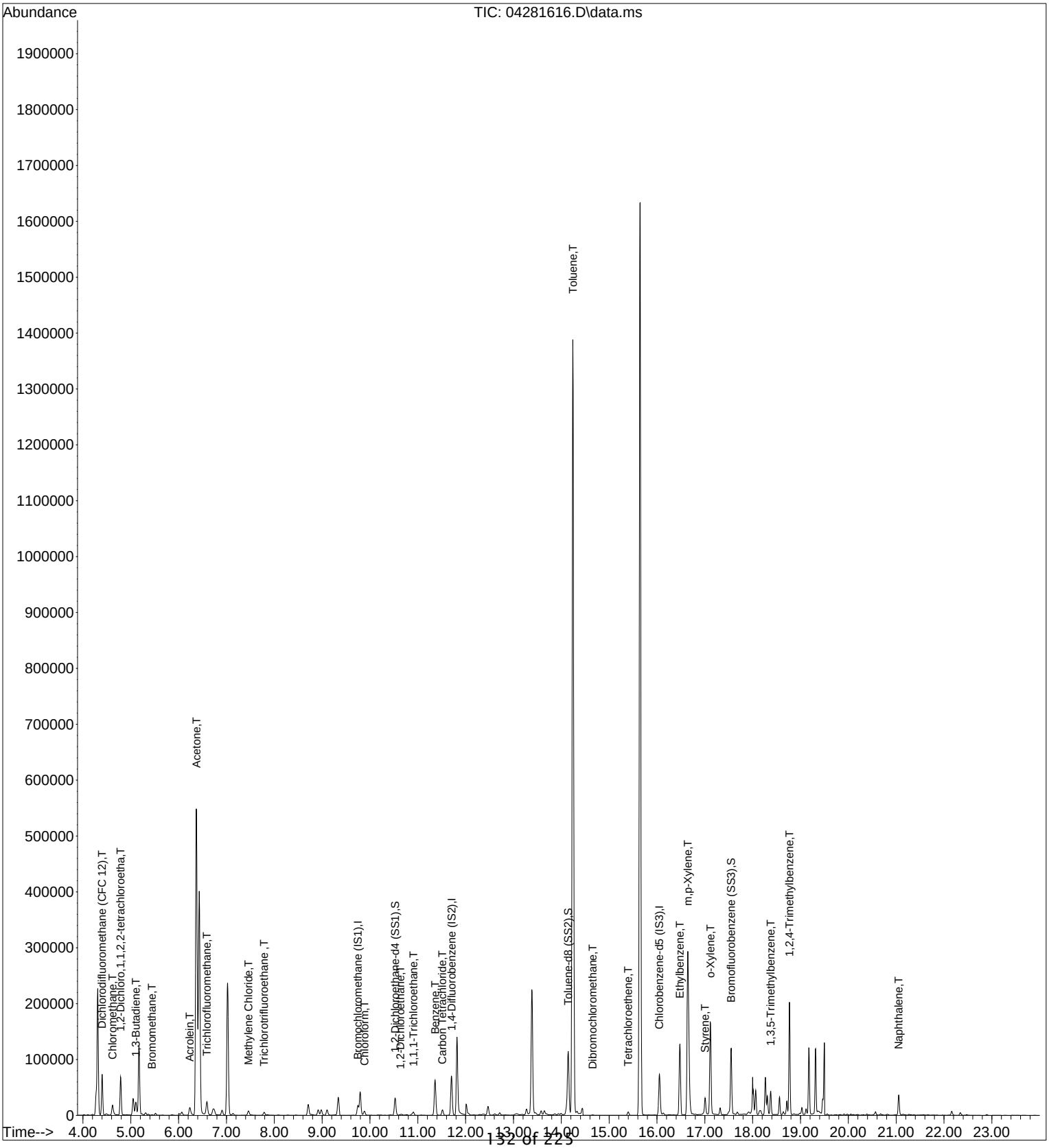
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

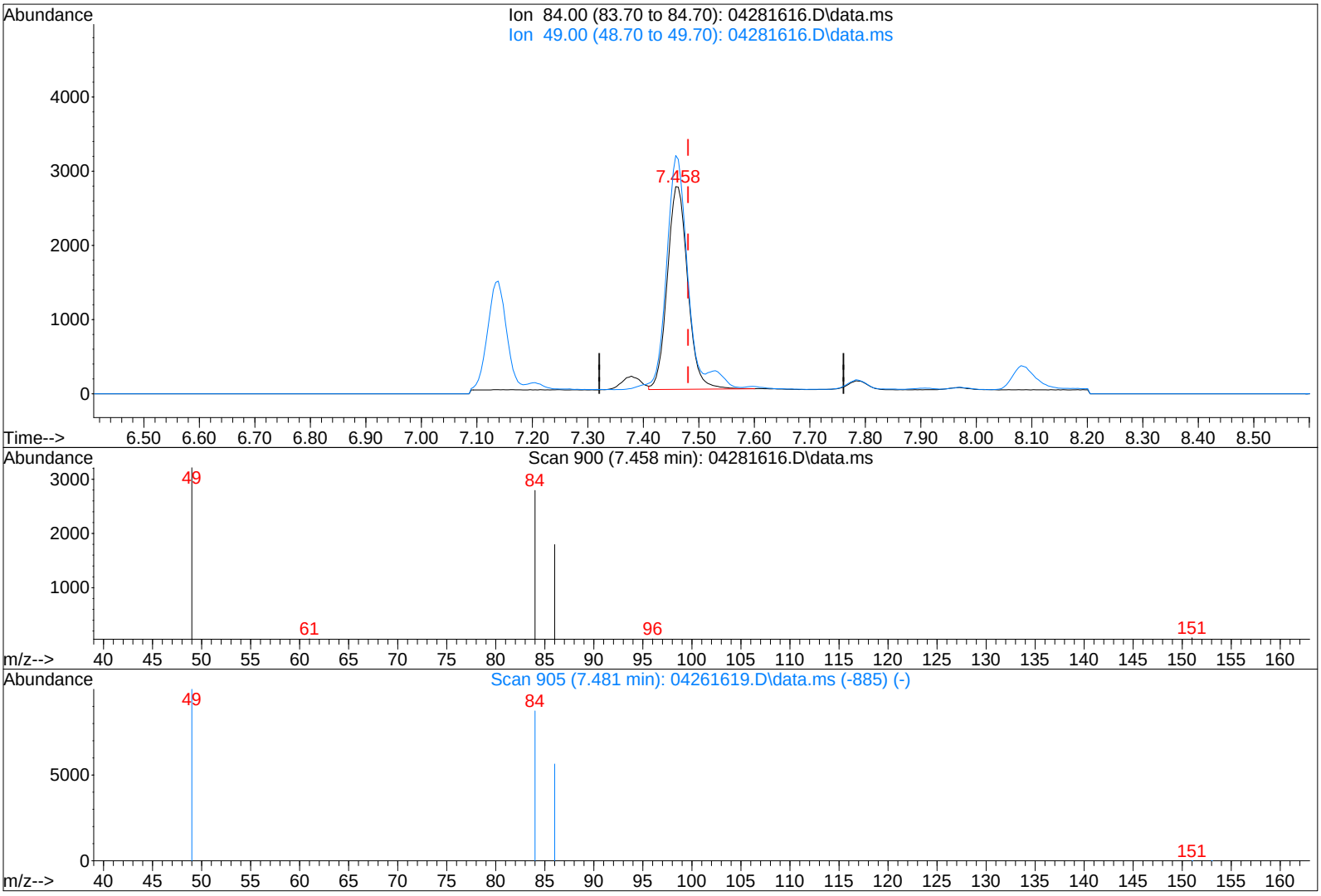
Quant Time: Apr 29 12:14:47 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:04 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281616.D\data.ms

(13) Methylene Chloride (T)

7.458min (-0.022) 199.13pg

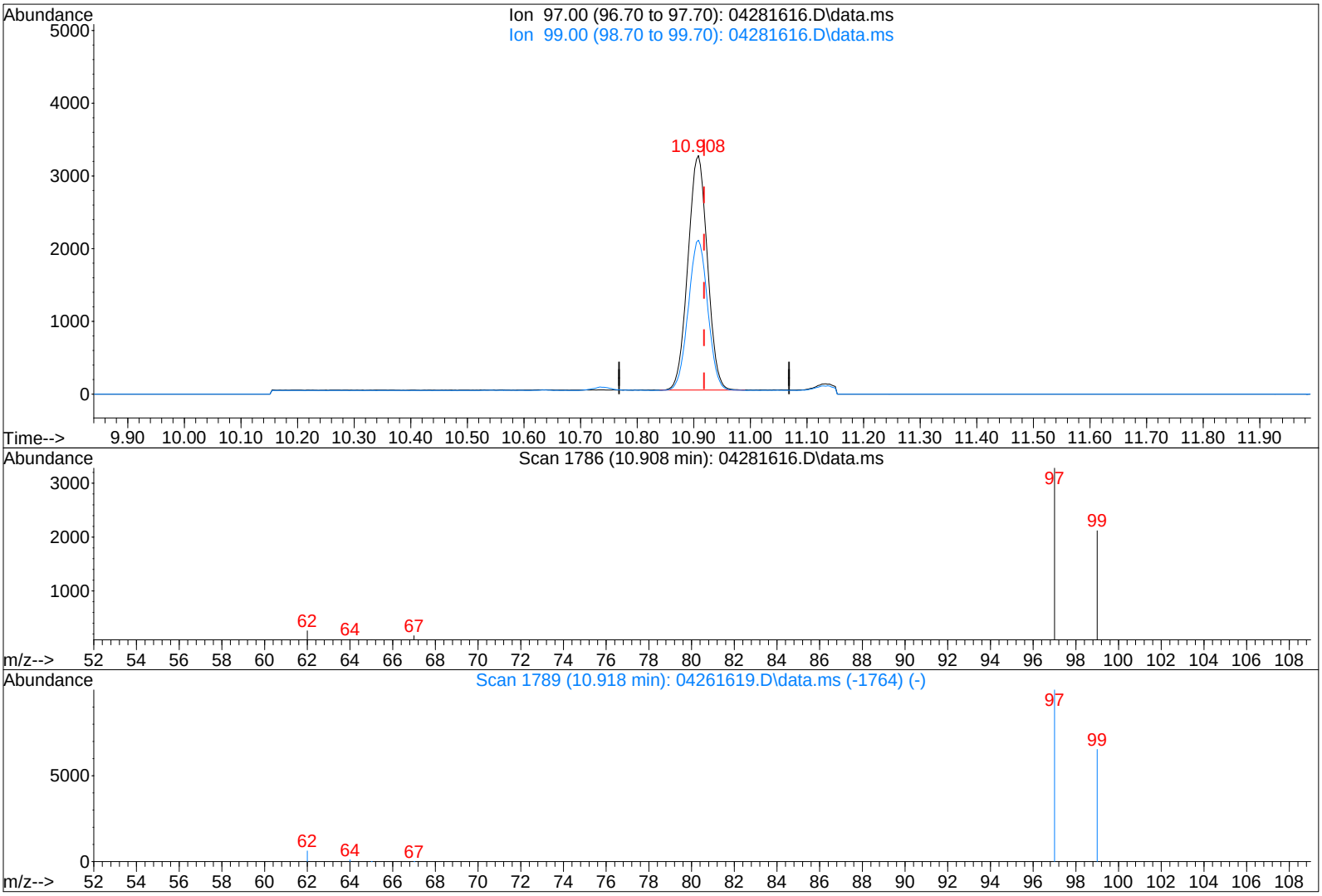
response 7000

Ion	Exp%	Act%
84.00	100	100
49.00	107.70	115.80
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:04 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281616.D\data.ms

(22) 1,1,1-Trichloroethane (T)

10.908min (-0.010) 131.90pg

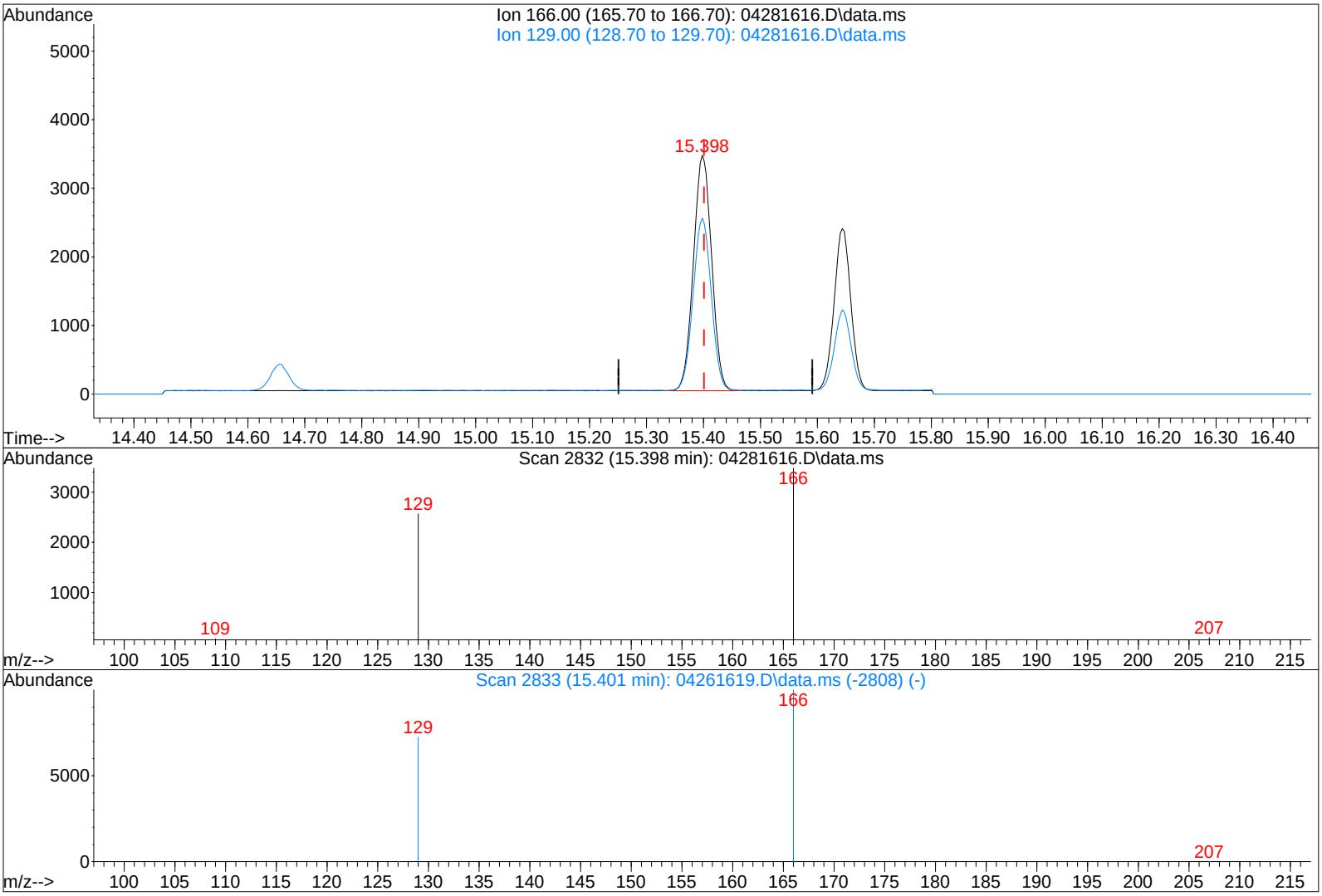
response 7707

Ion	Exp%	Act%
97.00	100	100
99.00	64.40	64.10
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281616.D Vial: 3
Acq On : 28 Apr 2016 18:02 Operator: CL
Sample : P1602145-007 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:04 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281616.D\data.ms

(37) Tetrachloroethene (T)

15.398min (-0.003) 198.91pg

response 7631

Ion	Exp%	Act%
166.00	100	100
129.00	79.80	73.24
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 12:16:07 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/29/16

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	25526	1000.000 pg		-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	134605	1000.000 pg		-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	27128	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	49652	903.602 pg		-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 90.36%			
33) Toluene-d8 (SS2)	14.14	98	145477	1007.256 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.73%			
45) Bromofluorobenzene (SS3)	17.55	174	88885	1288.188 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 128.82%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	2500793	30079.998 pg		98
3) Chloromethane	4.62	52	6541	309.310 pg	#	1
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	4195	47.475 pg	#	79
5) Vinyl Chloride	4.93	62	737	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D. d		
7) Bromomethane	5.45	94	1329	42.507 pg	#	45
8) Chloroethane	5.68	64	1599	74.130 pg		92
9) Acrolein	6.24	56	29654	2052.312 pg		96
10) Acetone	6.38	58	1101604	57053.061 pg		91
11) Trichlorofluoromethane	6.60	101	64502	1075.058 pg		99
12) 1,1-Dichloroethene	7.33	96	110	N.D.		
13) Methylene Chloride	7.46	84	16552	464.797 pg		86
14) Trichlorotrifluoroethane	7.79	151	8092	274.926 pg		99
15) trans-1,2-Dichloroethene	8.50	96	787	22.659 pg		96
16) 1,1-Dichloroethane	8.71	63	582	N.D.		
17) Methyl tert-Butyl Ether	8.77	73	1489	N.D.		
18) cis-1,2-Dichloroethene	9.59	96	12481	350.194 pg		100
19) Chloroform	9.88	83	29817	449.156 pg		95
21) 1,2-Dichloroethane	10.64	62	51108	1054.830 pg		99
22) 1,1,1-Trichloroethane	10.91	97	18515	312.782 pg		100
23) Benzene	11.36	78	207977	1512.606 pg		98
24) Carbon Tetrachloride	11.52	117	11874	234.376 pg		100
26) 1,2-Dichloropropane	12.17	63	1325	37.735 pg		98
27) Bromodichloromethane	12.36	83	8561	163.671 pg	#	77
28) Trichloroethene	12.41	130	69736	1747.704 pg		99
29) 1,4-Dioxane	0.00	88	0	N.D. d		
30) cis-1,3-Dichloropropene	13.24	75	181	N.D.		
31) trans-1,3-Dichloropropene	13.72	75	334	N.D.		
32) 1,1,2-Trichloroethane	14.01	83	77	N.D.		
34) Toluene	14.24	91	1365649	9231.654 pg		98
35) Dibromochloromethane	14.66	129	2405	65.615 pg		100
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	15.40	166	14470	377.297 pg		92
39) Chlorobenzene	16.10	112	2632	29.963 pg		97
40) Ethylbenzene	16.48	91	185330	1392.436 pg		98
41) m,p-Xylene	16.64	91	414451	4016.059 pg		98
42) Styrene	17.01	104	106797	1505.771 pg		99
43) o-Xylene	17.12	106	66987	1282.717 pg		96
44) 1,1,2,2-Tetrachloroethane	17.05	83	566	N.D.		
46) 1,3,5-Trimethylbenzene	18.38	105	34550	320.434 pg		97
47) 1,2,4-Trimethylbenzene	18.77	105	119172	1084.869 pg		90
48) 1,3-Dichlorobenzene	18.92	146	204	N.D.		
49) 1,4-Dichlorobenzene	18.98	146	4834	74.238 pg		99
50) 1,2-Dichlorobenzene	19.31	146	370	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	20.94	182	331	N.D.		
53) Naphthalene	21.06	128	21393	163.498 pg		93

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 12:16:07 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

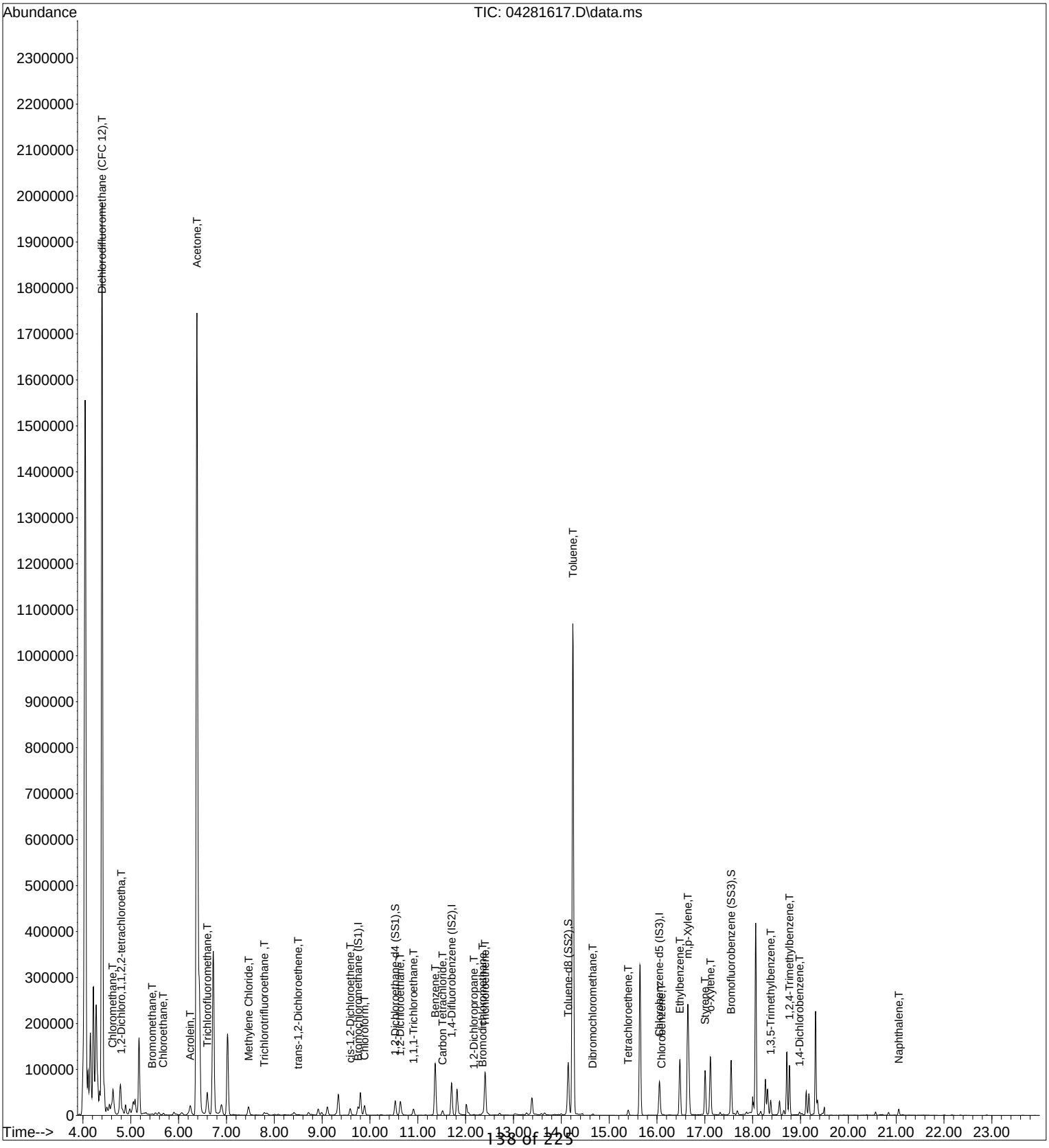
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

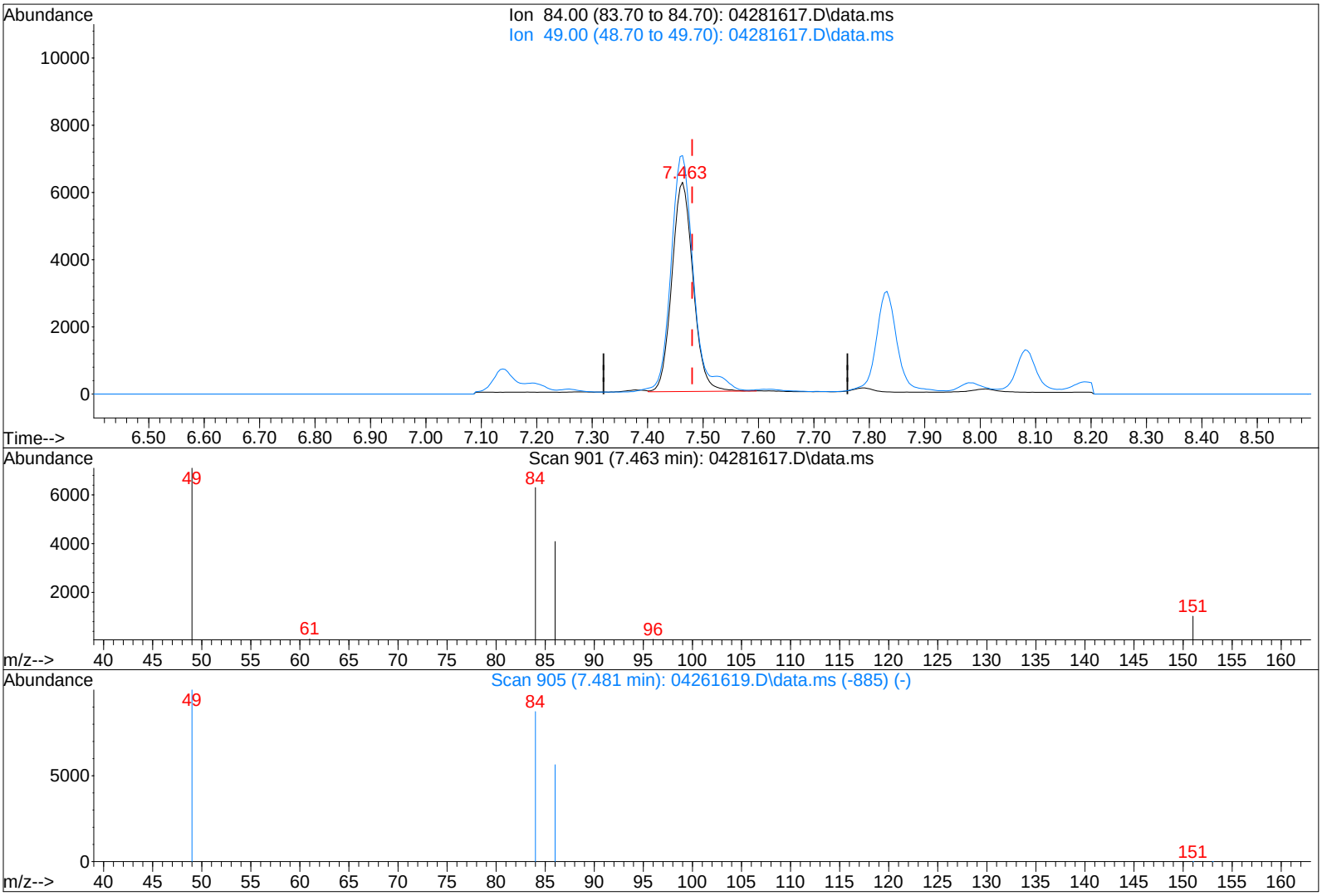
Quant Time: Apr 29 12:16:07 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281617.D\data.ms

(13) Methylene Chloride (T)

7.463min (-0.018) 464.80pg

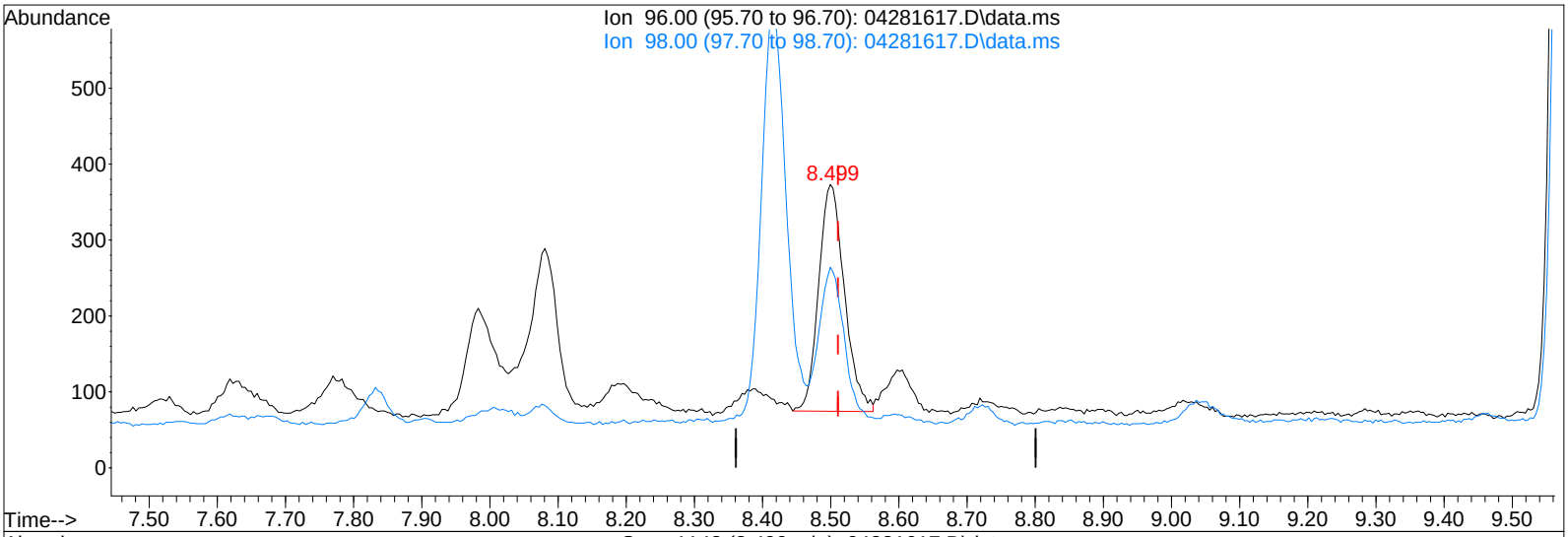
response 16552

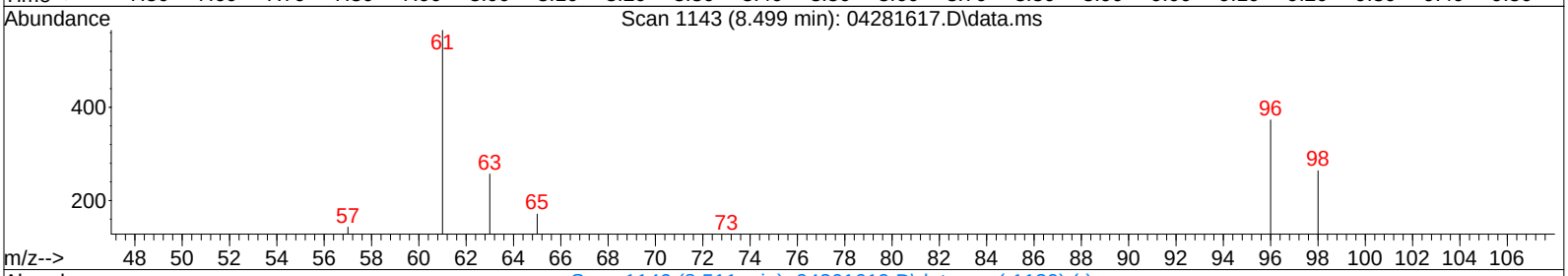
Ion	Exp%	Act%
84.00	100	100
49.00	107.70	122.14
0.00	0.00	0.00
0.00	0.00	0.00

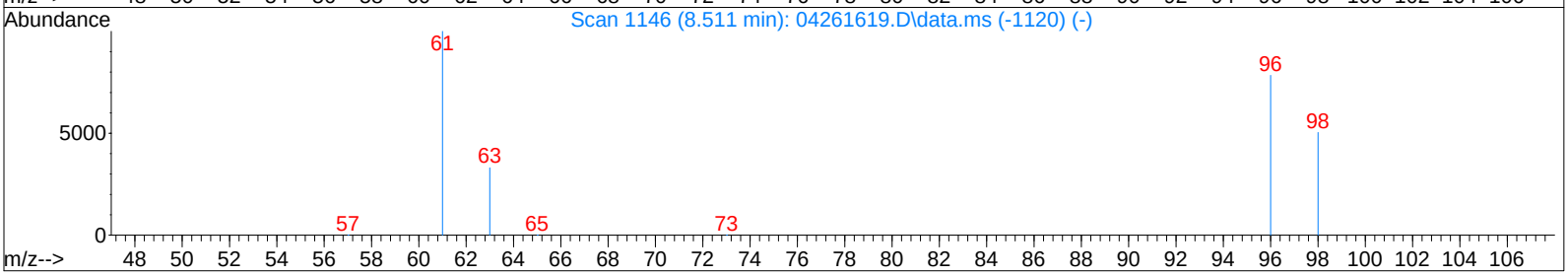
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04281617.D\data.ms

(15) trans-1,2-Dichloroethene (T)

8.499min (-0.012) 22.66pg

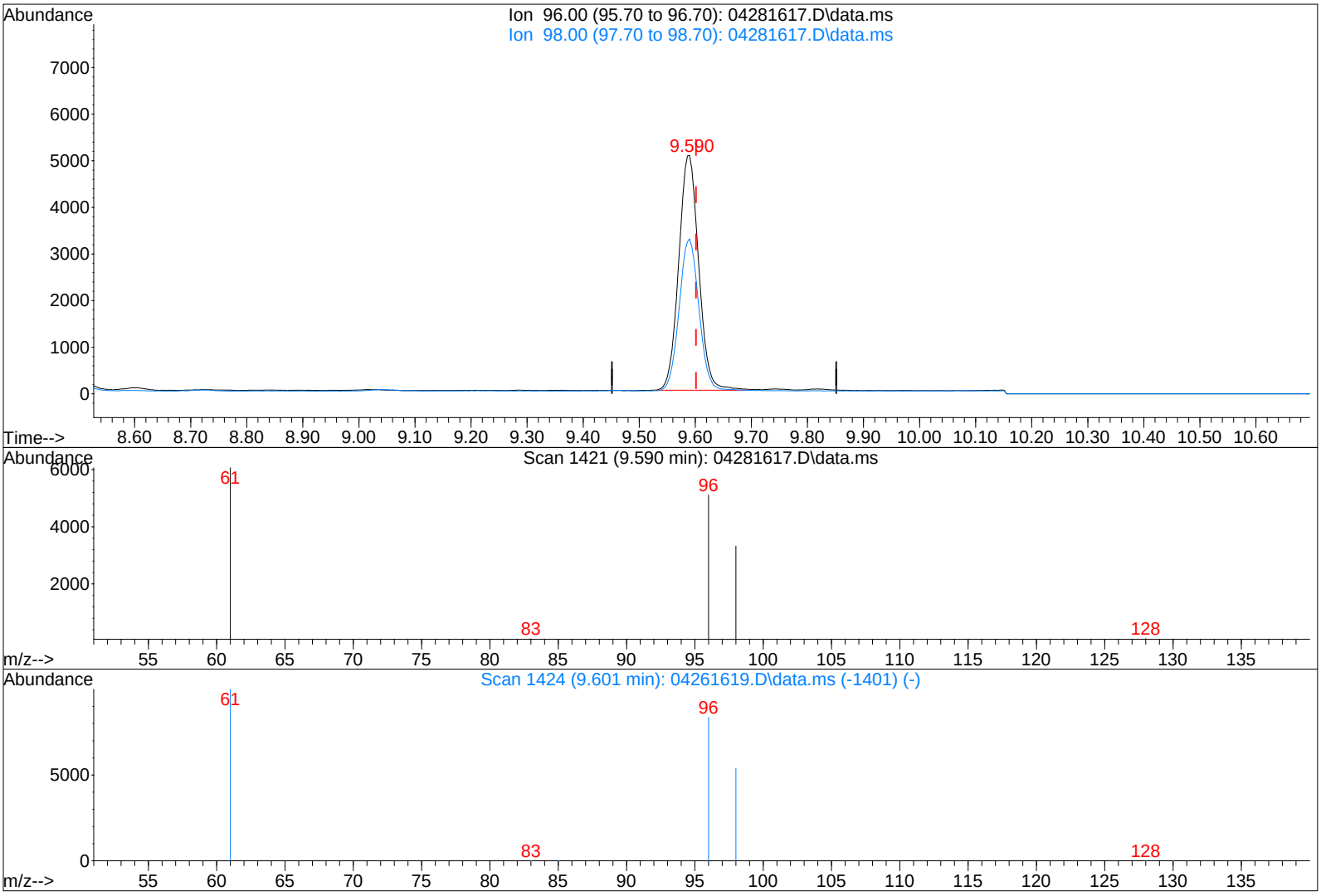
response 787

Ion	Exp%	Act%
96.00	100	100
98.00	61.70	64.68
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281617.D\data.ms

(18) cis-1,2-Dichloroethene (T)

9.590min (-0.012) 350.19pg

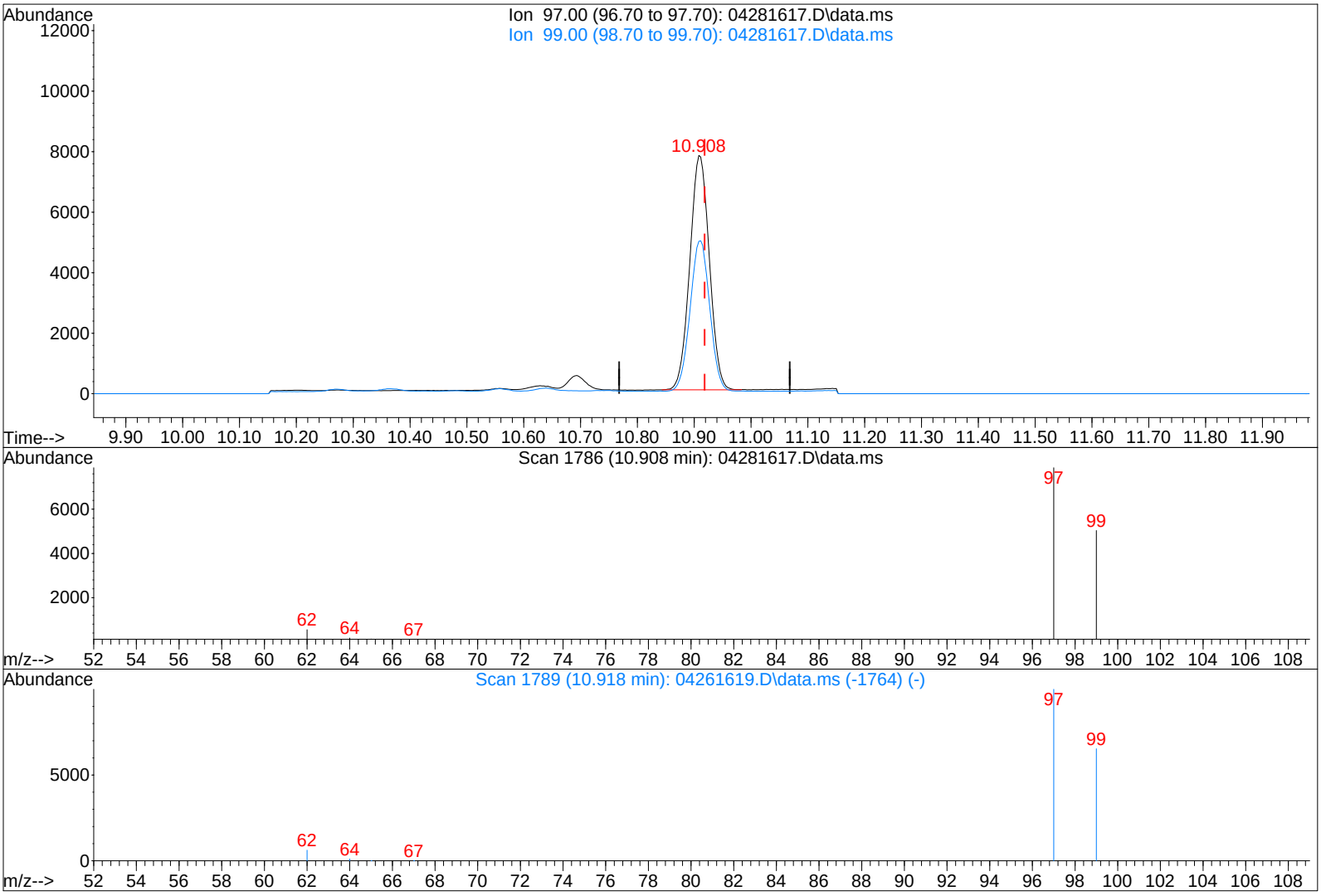
response 12481

Ion	Exp%	Act%
96.00	100	100
98.00	64.10	64.32
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281617.D\data.ms

(22) 1,1,1-Trichloroethane (T)

10.908min (-0.010) 312.78pg

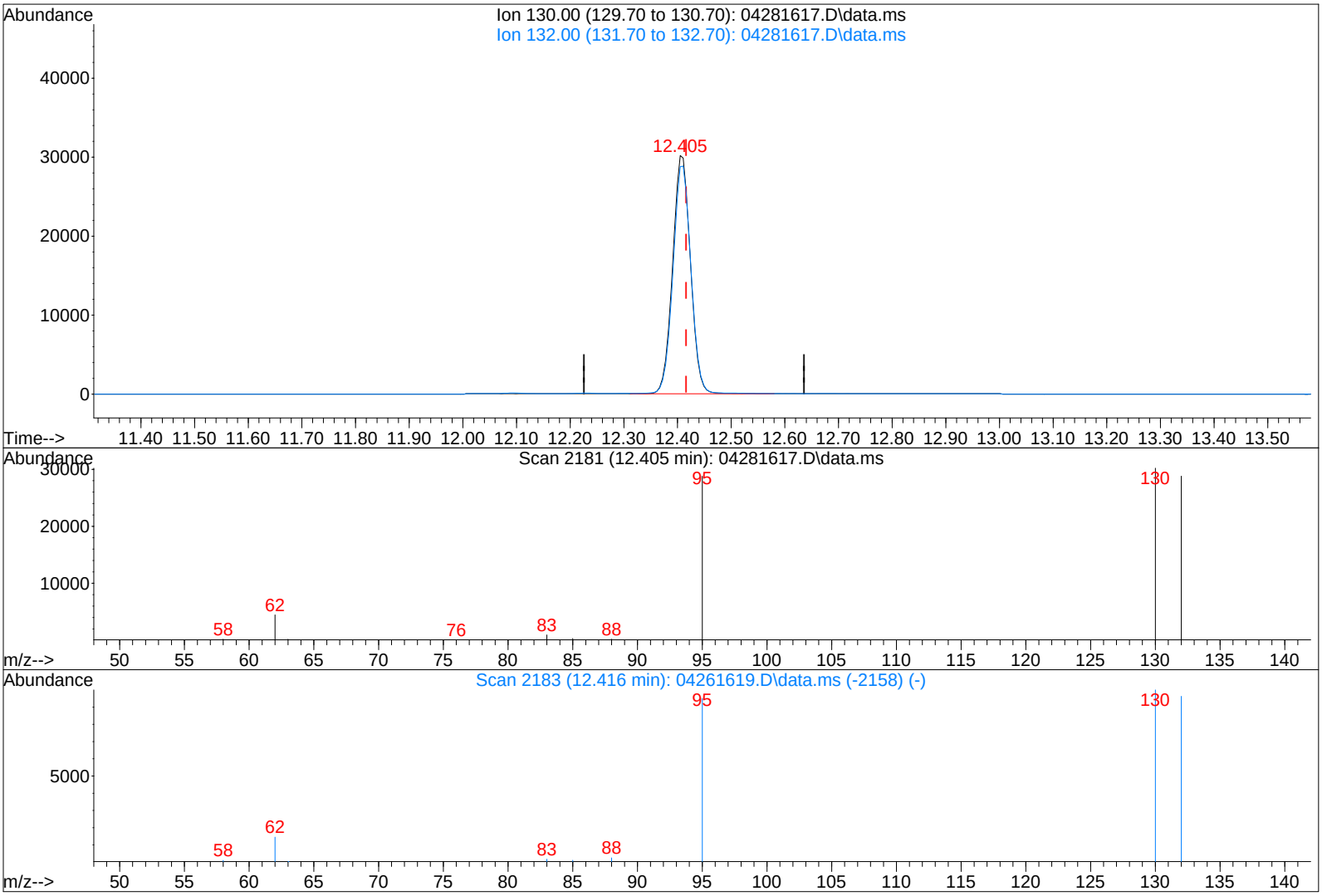
response 18515

Ion	Exp%	Act%
97.00	100	100
99.00	64.40	64.62
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281617.D\data.ms

(28) Trichloroethene (T)

12.405min (-0.011) 1747.70pg

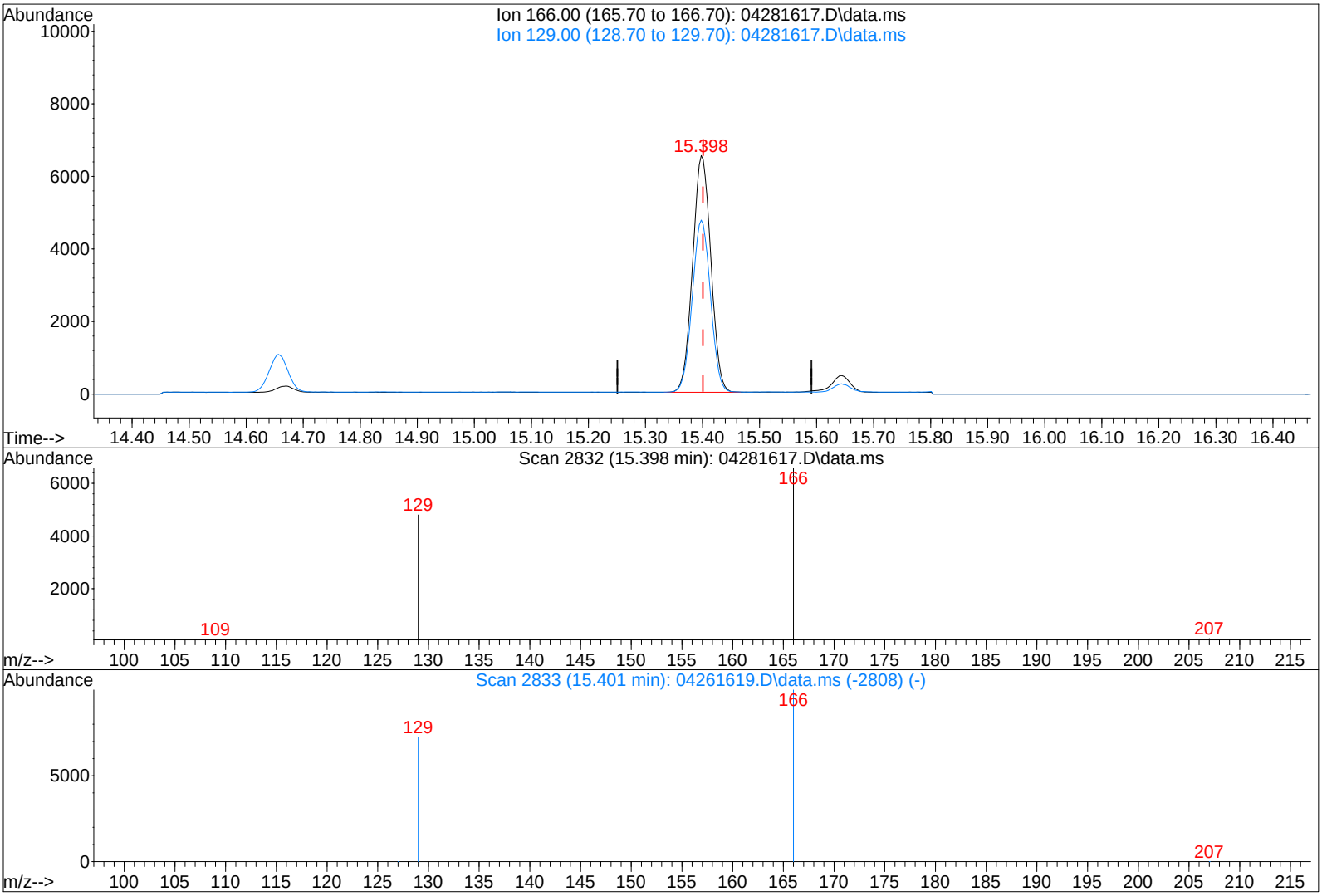
response 69736

Ion	Exp%	Act%
130.00	100	100
132.00	95.40	96.26
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281617.D Vial: 4
Acq On : 28 Apr 2016 18:34 Operator: CL
Sample : P1602145-008 (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281617.D\data.ms

(37) Tetrachloroethene (T)

15.398min (-0.003) 377.30pg

response 14470

Ion	Exp%	Act%
166.00	100	100
129.00	79.80	72.93
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281603.D Vial: 2
Acq On : 28 Apr 2016 9:21 Operator: CL
Sample : MB S19042816_1000mL Inst : MS19
Misc : S29-04191602

Quant Time: Apr 28 09:46:10 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/28/16

Internal Standards	R.T.	QIon	Response	Conc Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	17984	1000.000 pg		0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	88771	1000.000 pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	19963	1000.000 pg		0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	40205	1038.525 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 103.85%			
33) Toluene-d8 (SS2)	14.15	98	98494	1034.060 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 103.41%			
45) Bromofluorobenzene (SS3)	17.55	174	47316	931.860 pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 93.19%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.44	85	547	9.339 pg		99
3) Chloromethane	4.68	52	85	5.705 pg	#	78
4) 1,2-Dichloro,1,1,2,2-t...	0.00	85	0	N.D.		
5) Vinyl Chloride	0.00	62	0	N.D.		
6) 1,3-Butadiene	0.00	54	0	N.D.		
7) Bromomethane	5.50	94	94	N.D.		
8) Chloroethane	0.00	64	0	N.D.		
9) Acrolein	6.32	56	367	36.051 pg	#	51
10) Acetone	6.45	58	3162	232.440 pg	#	78
11) Trichlorofluoromethane	0.00	101	0	N.D.		
12) 1,1-Dichloroethene	0.00	96	0	N.D.		
13) Methylene Chloride	7.50	84	396	15.784 pg	#	78
14) Trichlorotrifluoroethane	0.00	151	0	N.D.		
15) trans-1,2-Dichloroethene	0.00	96	0	N.D.		
16) 1,1-Dichloroethane	0.00	63	0	N.D.		
17) Methyl tert-Butyl Ether	8.73	73	64	N.D.		
18) cis-1,2-Dichloroethene	0.00	96	0	N.D.		
19) Chloroform	9.89	83	973	20.804 pg		99
21) 1,2-Dichloroethane	0.00	62	0	N.D.		
22) 1,1,1-Trichloroethane	0.00	97	0	N.D.		
23) Benzene	11.37	78	2137	22.060 pg		97
24) Carbon Tetrachloride	0.00	117	0	N.D.		
26) 1,2-Dichloropropane	0.00	63	0	N.D.		
27) Bromodichloromethane	0.00	83	0	N.D.		
28) Trichloroethene	0.00	130	0	N.D.		
29) 1,4-Dioxane	0.00	88	0	N.D.		
30) cis-1,3-Dichloropropene	0.00	75	0	N.D.		
31) trans-1,3-Dichloropropene	0.00	75	0	N.D.		
32) 1,1,2-Trichloroethane	0.00	83	0	N.D.		
34) Toluene	14.25	91	607	6.222 pg		97
35) Dibromochloromethane	0.00	129	0	N.D.		
36) 1,2-Dibromoethane	0.00	107	0	N.D.		
37) Tetrachloroethene	0.00	166	0	N.D.		
39) Chlorobenzene	0.00	112	0	N.D.		
40) Ethylbenzene	0.00	91	0	N.D.		
41) m,p-Xylene	16.66	91	120	N.D.		
42) Styrene	17.03	104	54	N.D.		
43) o-Xylene	0.00	106	0	N.D.		
44) 1,1,2,2-Tetrachloroethane	17.13	83	55	N.D.		
46) 1,3,5-Trimethylbenzene	18.38	105	51	N.D.		
47) 1,2,4-Trimethylbenzene	0.00	105	0	N.D.		
48) 1,3-Dichlorobenzene	0.00	146	0	N.D.		
49) 1,4-Dichlorobenzene	0.00	146	0	N.D.		
50) 1,2-Dichlorobenzene	0.00	146	0	N.D.		
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.		
52) 1,2,4-Trichlorobenzene	0.00	182	0	N.D.		
53) Naphthalene	0.00	128	0	N.D.		

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281603.D Vial: 2
Acq On : 28 Apr 2016 9:21 Operator: CL
Sample : MB S19042816_1000mL Inst : MS19
Misc : S29-04191602

Quant Time: Apr 28 09:46:10 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

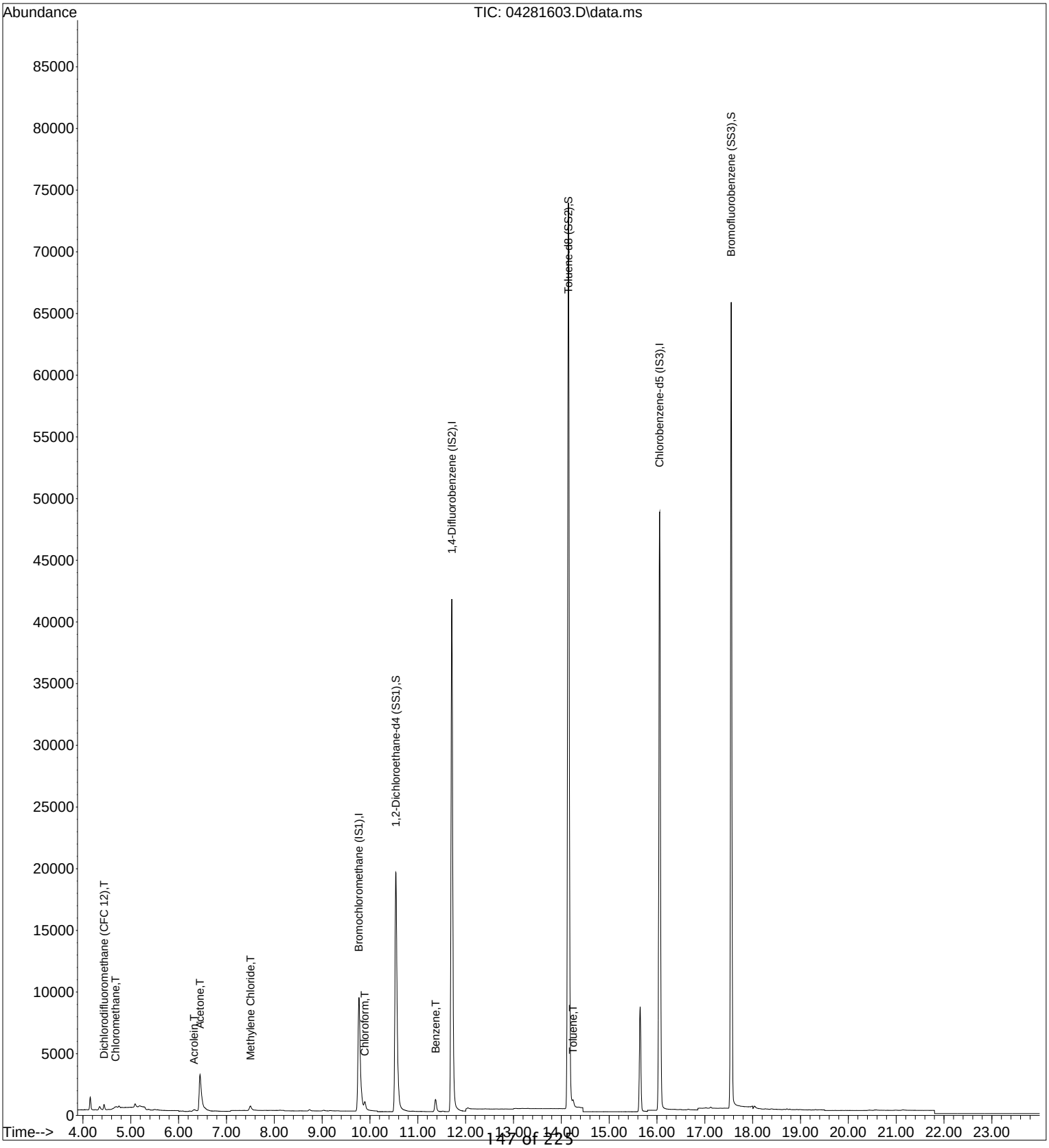
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	0.00	225	0	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281603.D Vial: 2
Acq On : 28 Apr 2016 9:21 Operator: CL
Sample : MB S19042816_1000mL Inst : MS19
Misc : S29-04191602

Quant Time: Apr 28 09:46:10 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281604.D Vial: 2
Acq On : 28 Apr 2016 9:52 Operator: CL
Sample : LCS S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 28 10:21:31 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/25/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	18238	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.70	114	98027	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	20112	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	41106	1047.011	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 104.70%			
33) Toluene-d8 (SS2)	14.14	98	102632	975.762	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.58%			
45) Bromofluorobenzene (SS3)	17.55	174	49903	975.528	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.55%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	26331	443.275	pg	100
3) Chloromethane	4.65	52	7428	491.617	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	26556	420.628	pg	100
5) Vinyl Chloride	4.94	62	25062	474.436	pg	99
6) 1,3-Butadiene	5.13	54	17255	589.000	pg	100
7) Bromomethane	5.46	94	10471	468.732	pg	100
8) Chloroethane	5.69	64	7329	475.550	pg	99
9) Acrolein	6.26	56	4921	476.671	pg	88
10) Acetone	6.39	58	35716	2588.939	pg	99
11) Trichlorofluoromethane	6.61	101	19582	456.795	pg	100
12) 1,1-Dichloroethene	7.34	96	11245	503.727	pg	99
13) Methylene Chloride	7.47	84	13149	516.786	pg	99
14) Trichlorotrifluoroethane	7.79	151	10403	494.679	pg	100
15) trans-1,2-Dichloroethene	8.51	96	11990	483.160	pg	98
16) 1,1-Dichloroethane	8.71	63	21910	497.010	pg	100
17) Methyl tert-Butyl Ether	8.79	73	32135	514.474	pg	100
18) cis-1,2-Dichloroethene	9.59	96	13271	521.157	pg	99
19) Chloroform	9.88	83	24562	517.848	pg	100
21) 1,2-Dichloroethane	10.64	62	17539	506.645	pg	100
22) 1,1,1-Trichloroethane	10.91	97	20198	477.564	pg	100
23) Benzene	11.36	78	53501	544.601	pg	100
24) Carbon Tetrachloride	11.51	117	17407	480.890	pg	100
26) 1,2-Dichloropropane	12.17	63	12029	470.408	pg	100
27) Bromodichloromethane	12.35	83	17405	456.917	pg	100
28) Trichloroethene	12.40	130	12727	437.978	pg	100
29) 1,4-Dioxane	12.38	88	9081	484.493	pg	99
30) cis-1,3-Dichloropropene	13.25	75	16121	446.790	pg	100
31) trans-1,3-Dichloropropene	13.77	75	14024	454.863	pg	100
32) 1,1,2-Trichloroethane	13.95	83	10520	467.803	pg	99
34) Toluene	14.24	91	48258	447.946	pg	100
35) Dibromochloromethane	14.66	129	12151	455.212	pg	100
36) 1,2-Dibromoethane	14.92	107	12549	467.157	pg	100
37) Tetrachloroethene	15.40	166	11962	428.287	pg	99
39) Chlorobenzene	16.10	112	31847	489.025	pg	100
40) Ethylbenzene	16.48	91	49090	497.491	pg	100
41) m,p-Xylene	16.66	91	79219	1035.425	pg	100
42) Styrene	17.01	104	26367	501.445	pg	100
43) o-Xylene	17.12	106	19601	506.269	pg	100
44) 1,1,2,2-Tetrachloroethane	17.09	83	21410	466.933	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	42368	530.019	pg	100
47) 1,2,4-Trimethylbenzene	18.77	105	42246	518.742	pg	100
48) 1,3-Dichlorobenzene	18.92	146	24204	500.680	pg	100
49) 1,4-Dichlorobenzene	18.98	146	23294	482.531	pg	100
50) 1,2-Dichlorobenzene	19.31	146	23167	485.425	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	6816	454.229	pg	100
52) 1,2,4-Trichlorobenzene	20.94	182	11237	425.778	pg	98
53) Naphthalene	21.06	128	40126	415.393	pg	99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281604.D Vial: 2
Acq On : 28 Apr 2016 9:52 Operator: CL
Sample : LCS S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 28 10:21:31 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

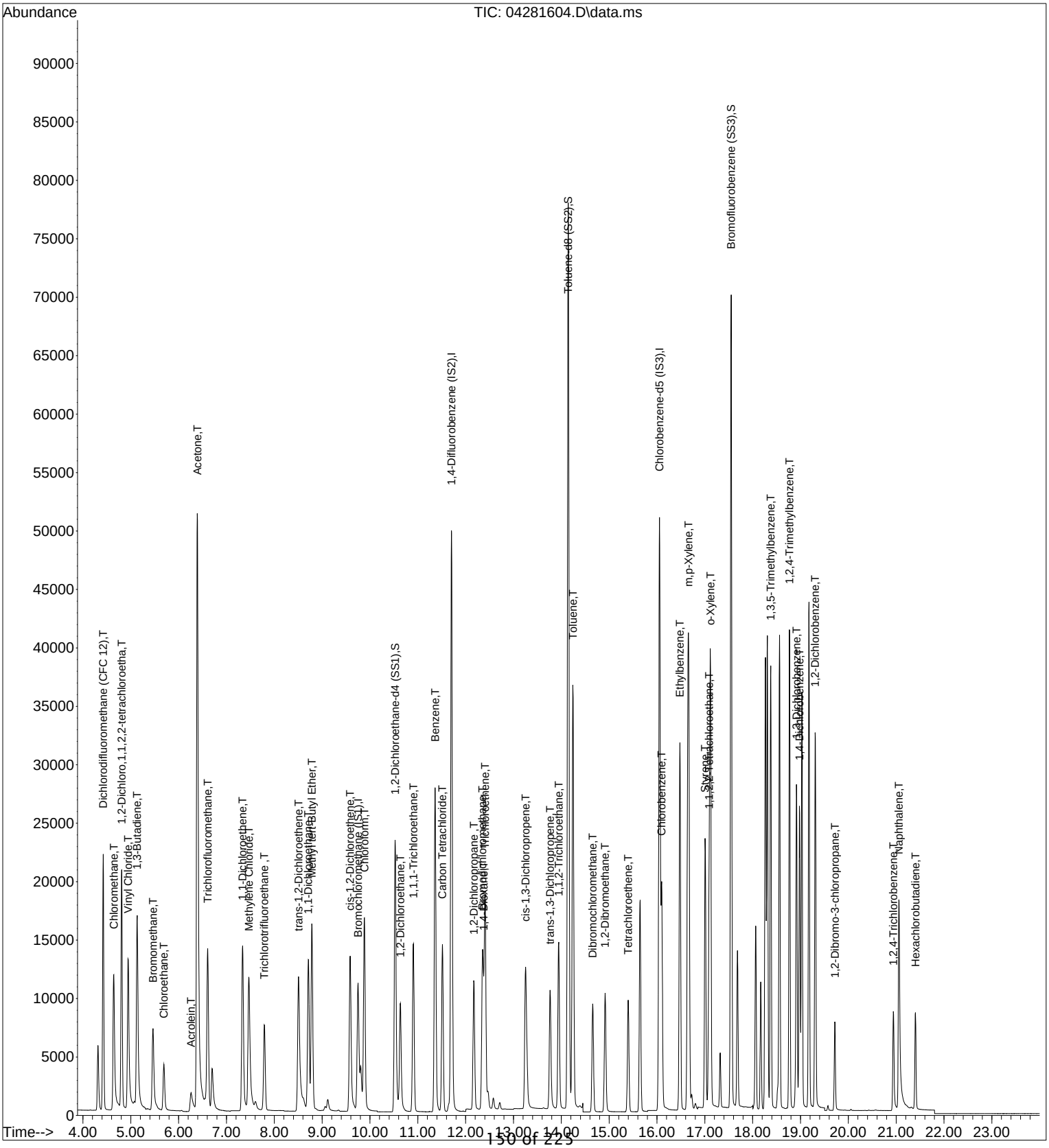
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	7975	450.774	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281604.D Vial: 2
Acq On : 28 Apr 2016 9:52 Operator: CL
Sample : LCS S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 28 10:21:31 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 11:55:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/29/16

Internal Standards	R.T.	QIon	Response	Conc Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	24882	1000.000 pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	131592	1000.000 pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	27659	1000.000 pg	0.00
System Monitoring Compounds					
20) 1,2-Dichloroethane-d4 ...	10.53	65	47707	890.677 pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 89.07%		
33) Toluene-d8 (SS2)	14.14	98	141016	998.725 pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 99.87%		
45) Bromofluorobenzene (SS3)	17.55	174	83958	1193.422 pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 119.34%		
Target Compounds					Qvalue
2) Dichlorodifluoromethan...	4.41	85	78799	972.340 pg	100
3) Chloromethane	4.62	52	6494	315.035 pg	96
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	2969	34.470 pg	100
5) Vinyl Chloride	4.93	62	243	N.D.	
6) 1,3-Butadiene	0.00	54	0	N.D. d	
7) Bromomethane	5.45	94	776	25.462 pg	96
8) Chloroethane	5.69	64	377	N.D.	
9) Acrolein	6.24	56	16000	1135.998 pg	97
10) Acetone	6.38	58	951386	50548.431 pg	92
11) Trichlorofluoromethane	6.61	101	69266	1184.340 pg	100
12) 1,1-Dichloroethene	7.33	96	117	N.D.	
13) Methylene Chloride	7.47	84	7610	219.227 pg	91
14) Trichlorotrifluoroethane	7.79	151	7666	267.193 pg	99
15) trans-1,2-Dichloroethene	8.50	96	233	N.D.	
16) 1,1-Dichloroethane	8.71	63	334	N.D.	
17) Methyl tert-Butyl Ether	8.78	73	714	N.D.	
18) cis-1,2-Dichloroethene	9.59	96	3931	113.151 pg	100
19) Chloroform	9.88	83	40887	631.852 pg	100
21) 1,2-Dichloroethane	10.63	62	180524	3822.312 pg	99
22) 1,1,1-Trichloroethane	10.91	97	3230	55.978 pg	100
23) Benzene	11.36	78	76591	571.460 pg	100
24) Carbon Tetrachloride	11.52	117	14896	301.636 pg	99
26) 1,2-Dichloropropane	12.17	63	557	N.D.	
27) Bromodichloromethane	12.35	83	16074	314.343 pg	87
28) Trichloroethene	12.41	130	70351	1803.487 pg	99
29) 1,4-Dioxane	0.00	88	0	N.D. d	
30) cis-1,3-Dichloropropene	13.24	75	108	N.D.	
31) trans-1,3-Dichloropropene	13.72	75	402	N.D.	
32) 1,1,2-Trichloroethane	13.92	83	152	N.D.	
34) Toluene	14.24	91	656424	4538.963 pg	99
35) Dibromochloromethane	14.66	129	5118	142.830 pg	100
36) 1,2-Dibromoethane	0.00	107	0	N.D.	
37) Tetrachloroethene	15.40	166	8457	225.561 pg	93
39) Chlorobenzene	0.00	112	0	N.D. d	
40) Ethylbenzene	16.48	91	75519	556.502 pg	98
41) m,p-Xylene	16.64	91	140594	1336.211 pg	98
42) Styrene	17.01	104	95171	1316.091 pg	100
43) o-Xylene	17.12	106	26823	503.766 pg	96
44) 1,1,2,2-Tetrachloroethane	0.00	83	0	N.D. d	
46) 1,3,5-Trimethylbenzene	18.38	105	13844	125.931 pg	98
47) 1,2,4-Trimethylbenzene	18.77	105	47475	423.886 pg	90
48) 1,3-Dichlorobenzene	18.92	146	172	N.D.	
49) 1,4-Dichlorobenzene	18.98	146	1982	29.854 pg	98
50) 1,2-Dichlorobenzene	19.31	146	825	N.D.	
51) 1,2-Dibromo-3-chloropr...	0.00	157	0	N.D.	
52) 1,2,4-Trichlorobenzene	20.94	182	204	N.D.	
53) Naphthalene	21.06	128	12771	96.134 pg	94

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 11:55:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

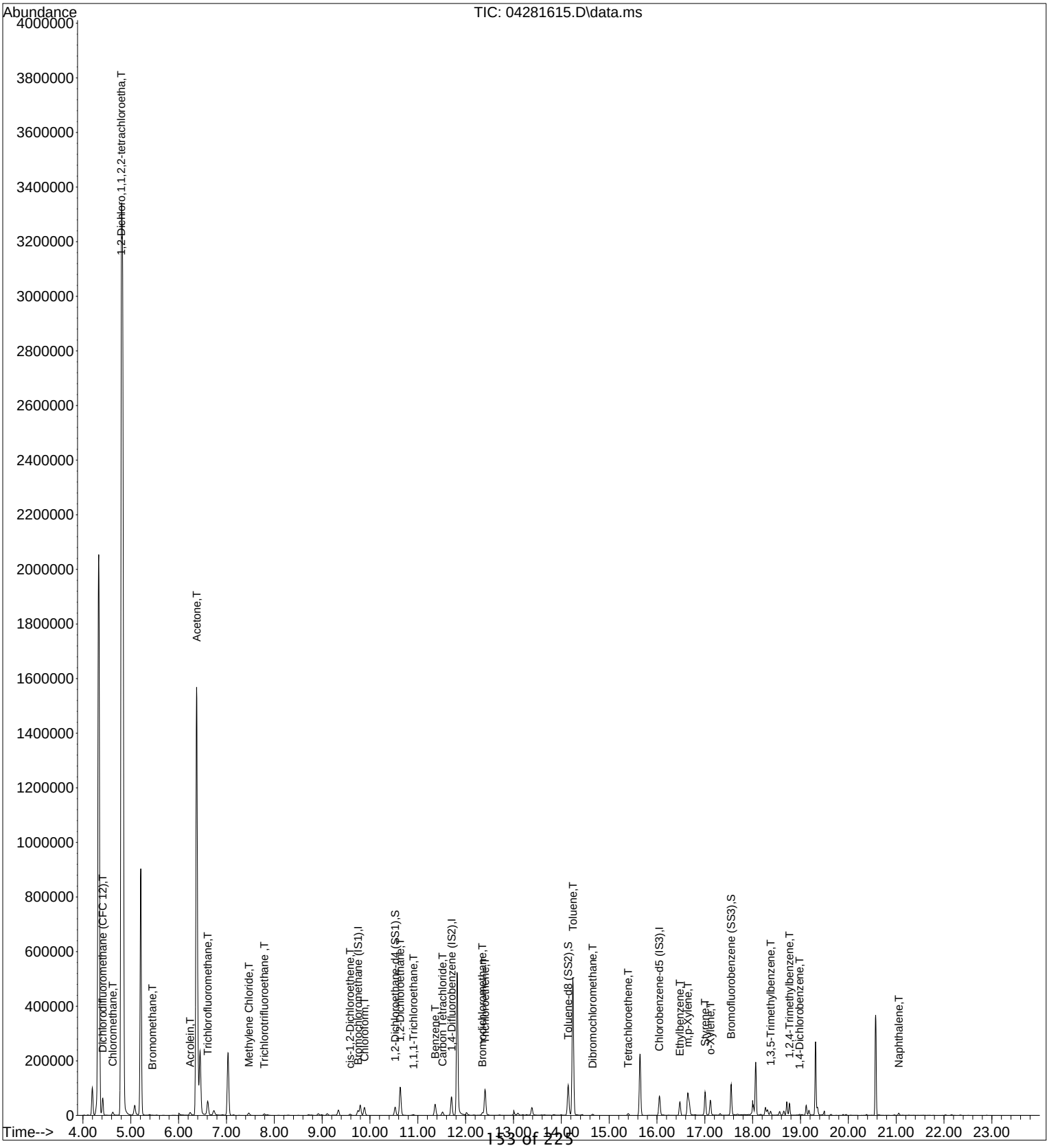
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.34	225	75	N.D.		

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

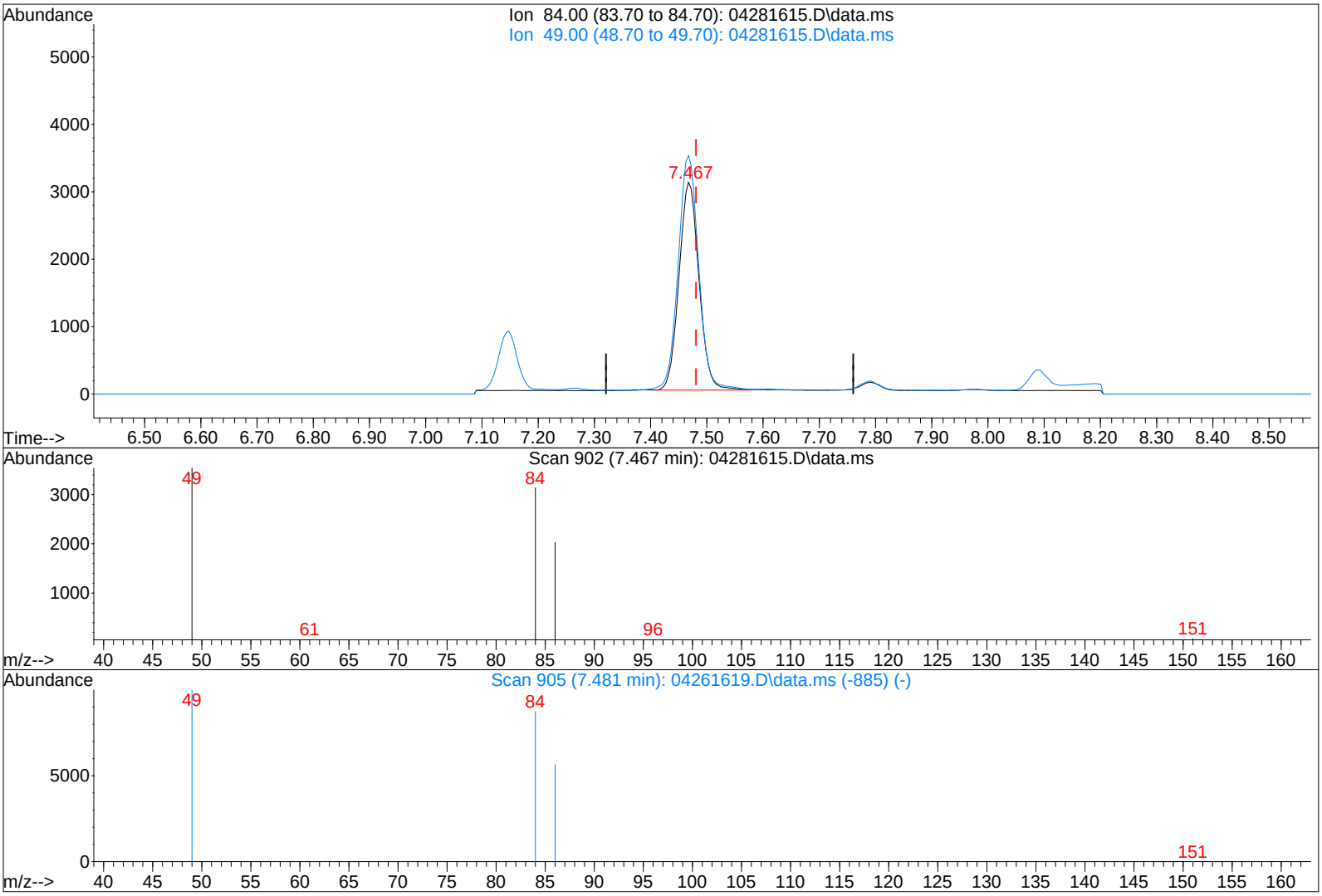
Quant Time: Apr 29 11:55:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281615.D\data.ms

(13) Methylene Chloride (T)

7.467min (-0.013) 219.23pg

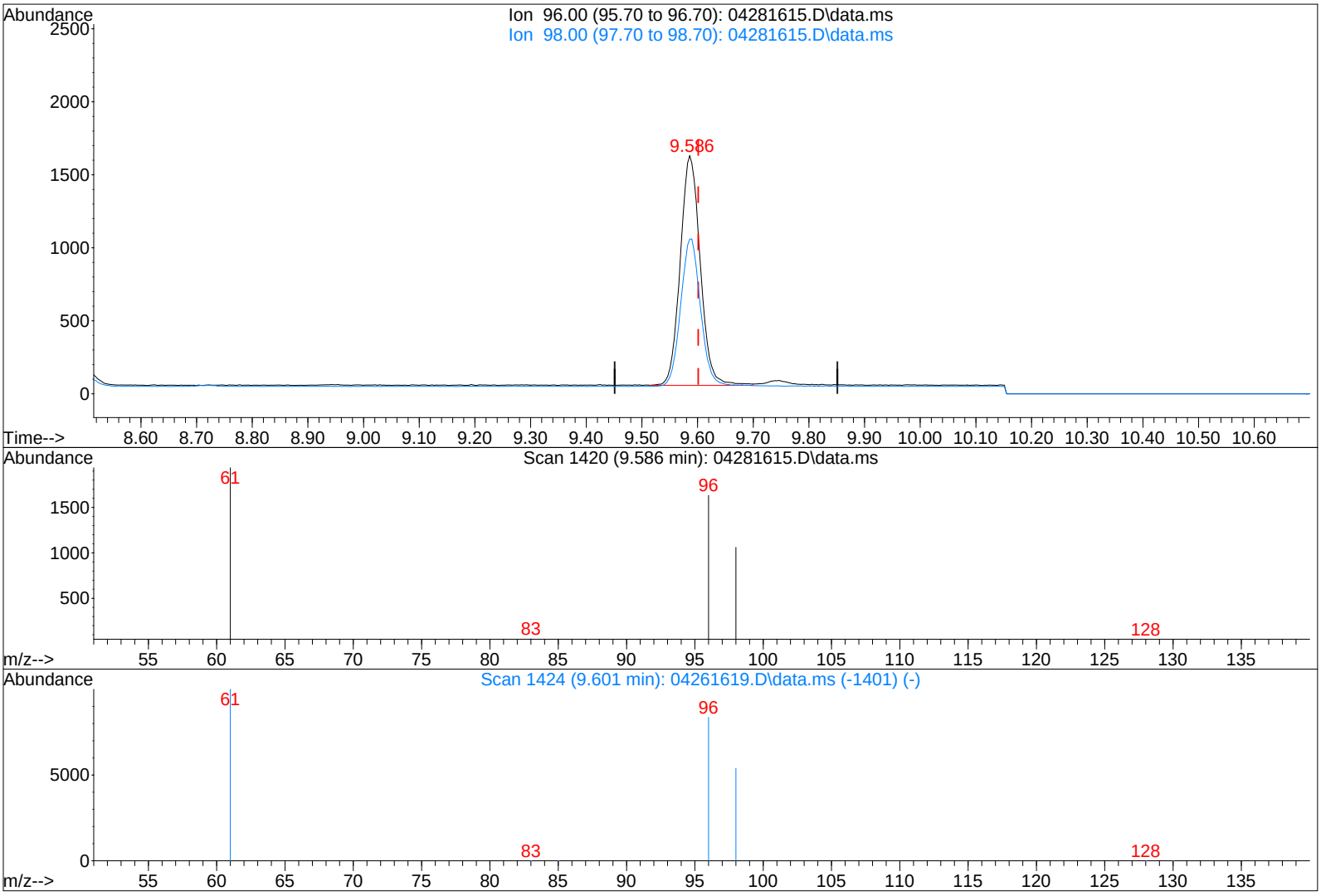
response 7610

Ion	Exp%	Act%
84.00	100	100
49.00	107.70	116.89
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281615.D\data.ms

(18) cis-1,2-Dichloroethene (T)

9.586min (-0.016) 113.15pg

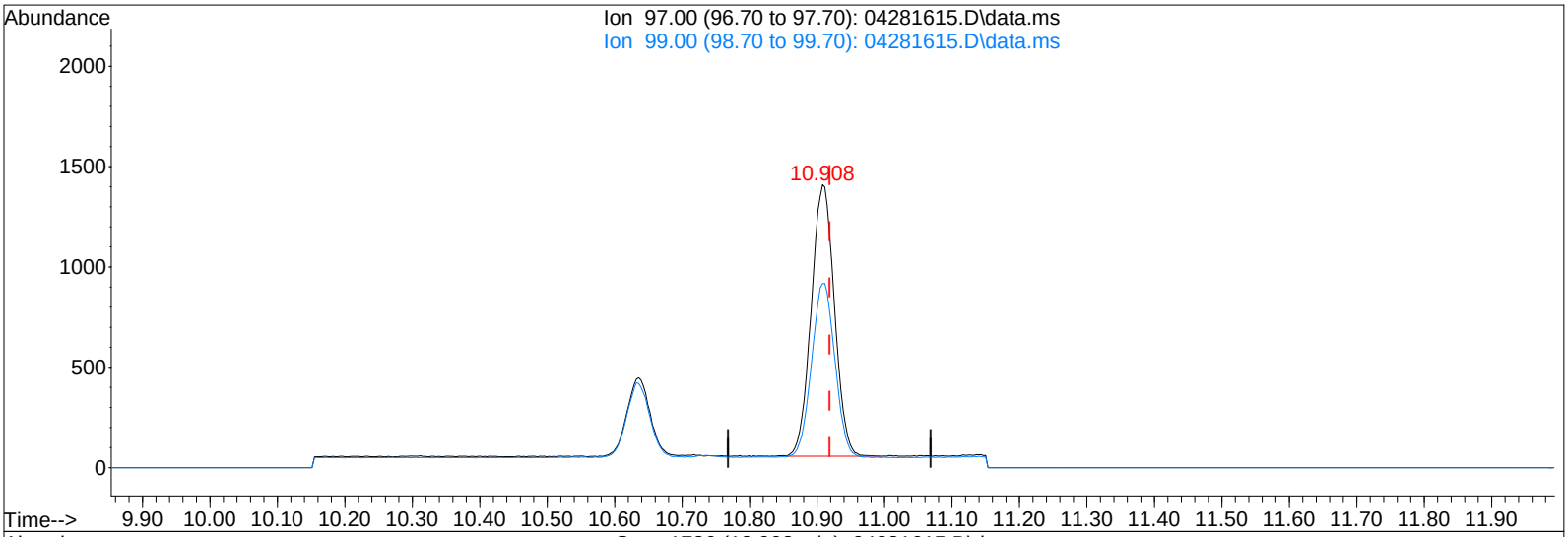
response 3931

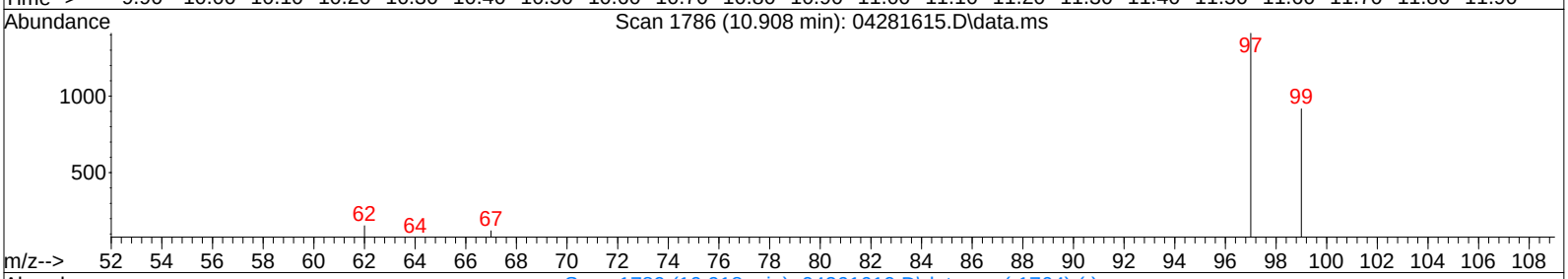
Ion	Exp%	Act%
96.00	100	100
98.00	64.10	63.85
0.00	0.00	0.00
0.00	0.00	0.00

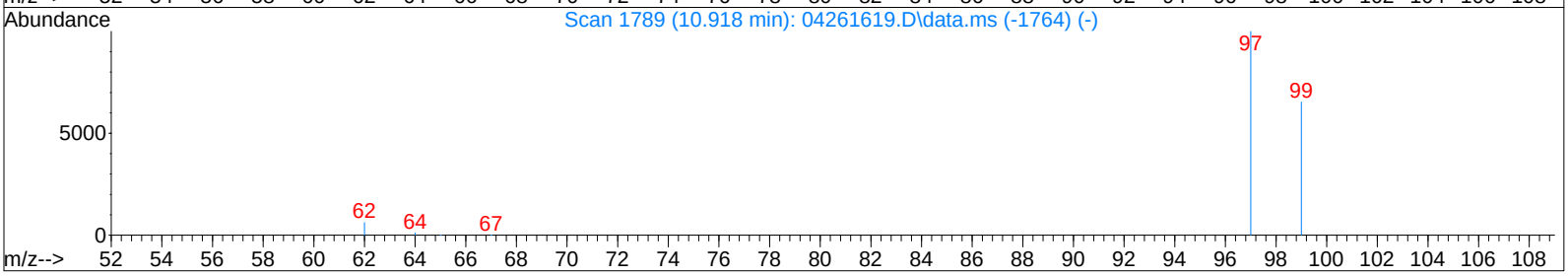
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04281615.D\data.ms

(22) 1,1,1-Trichloroethane (T)

10.908min (-0.010) 55.98pg

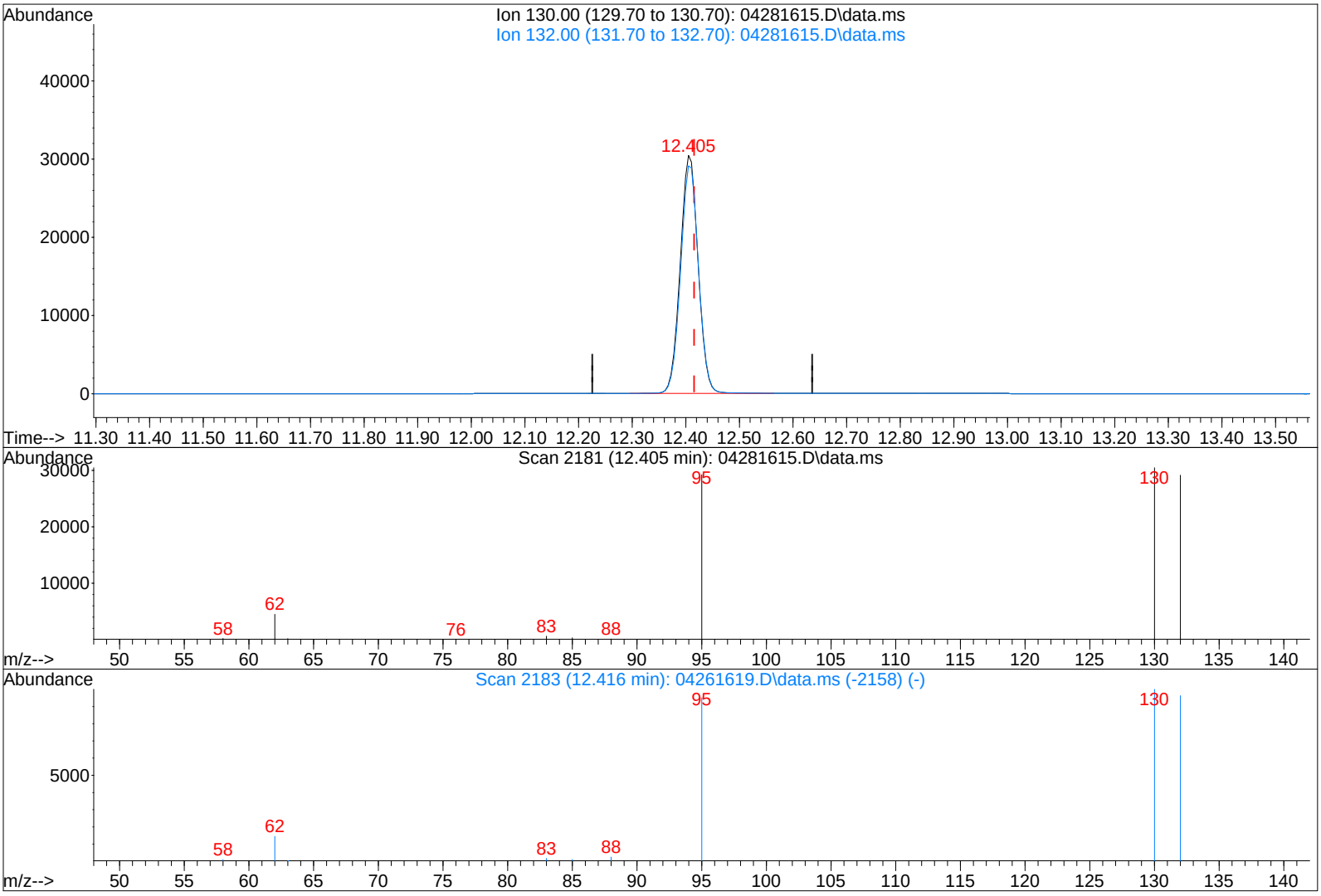
response 3230

Ion	Exp%	Act%
97.00	100	100
99.00	64.40	64.46
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281615.D\data.ms

(28) Trichloroethene (T)

12.405min (-0.011) 1803.49pg

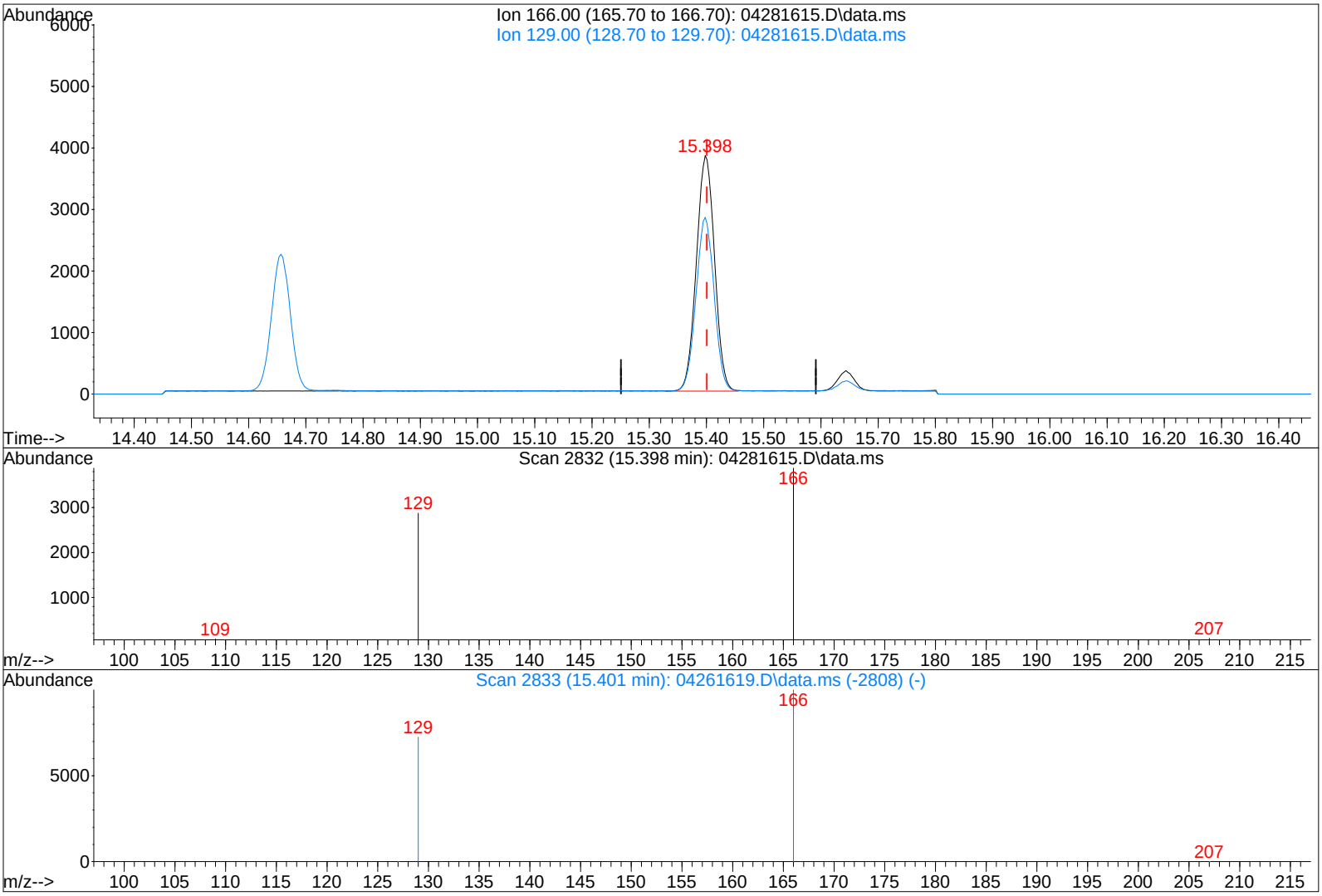
response 70351

Ion	Exp%	Act%
130.00	100	100
132.00	95.40	96.24
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\28\04281615.D Vial: 1
Acq On : 28 Apr 2016 17:31 Operator: CL
Sample : P1602145-004dup (1000mL) Inst : MS19
Misc : S29-04191602

Quant Time: Apr 29 07:30:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04281615.D\data.ms

(37) Tetrachloroethene (T)

15.398min (-0.003) 225.56pg

response 8457

Ion	Exp%	Act%
166.00	100	100
129.00	79.80	73.41
0.00	0.00	0.00
0.00	0.00	0.00

Response Factor Report MS19

Method Path : I:\MS19\METHODS\
Method File : S19042716.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Apr 27 11:03:51 2016
Response Via : Initial Calibration

CL 4/27/16

Calibration Files
10 =04261607.D 20 =04261608.D 50 =04261609.D 100 =04261610.D 500 =04261611.D 1000=04261612.D 2000=04261613.D
5000=04261614.D 10K =04261615.D 50K =04261619.D

		Compound	10	20	50	100	500	1000	2000	5000	10K	50K	Avg	%RSD
1)	I	Bromochloromethane...	----------	ISTD	----------									
2)	T	Dichlorodifluo...	3.564	4.209	3.494	3.110	3.145	3.683	3.158	2.919	2.810	2.478	3.257	15.19
3)	T	Chloromethane			1.133	0.971	0.871	0.982	0.808	0.695	0.623	0.545	0.828	24.11
4)	T	1,2-Dichloro,1...	3.909	4.713	3.819	3.358	3.386	3.885	3.239	2.917	2.764	2.628	3.462	18.31
5)	T	Vinyl Chloride	3.217	3.483	3.233	2.848	2.882	3.305	2.797	2.491	2.401	2.308	2.896	14.07
6)	T	1,3-Butadiene	1.024	1.524	1.319	1.203	1.759	2.173	1.849	1.722	1.664	1.826	1.606	21.37
7)	T	Bromomethane	1.410	1.514	1.312	1.157	1.164	1.366	1.157	1.067	1.107	0.993	1.225	13.63
8)	T	Chloroethane	0.818	1.055	0.889	0.804	0.818	0.967	0.834	0.773	0.759	0.732	0.845	11.80
9)	T	Acrolein	1.014	0.592	0.500	0.405	0.454	0.579	0.529	0.527	0.525	0.535	0.566	29.45
10)	T	Acetone			0.851	0.753	0.705	0.882	0.755	0.689	0.661		0.756	10.95
11)	T	Trichlorofluor...	2.509	3.005	2.544	2.253	2.302	2.658	2.256	2.060	2.002	1.915	2.350	14.19
12)	T	1,1-Dichloroet...	1.251	1.355	1.239	1.116	1.173	1.402	1.233	1.178	1.166	1.128	1.224	7.66
13)	T	Methylene Chlo...			1.790	1.532	1.370	1.569	1.346	1.234	1.189	1.130	1.395	15.95
14)	T	Trichlorotrifl...	1.250	1.425	1.179	1.064	1.076	1.260	1.098	1.042	1.036	1.101	1.153	10.86
15)	T	trans-1,2-Dich...	1.362	1.611	1.389	1.207	1.315	1.556	1.362	1.296	1.282	1.227	1.361	9.66
16)	T	1,1-Dichloroet...	2.611	3.004	2.544	2.295	2.369	2.758	2.365	2.168	2.082	1.976	2.417	13.11
17)	T	Methyl tert-Bu...	3.069	3.661	3.162	2.844	3.228	4.058	3.679	3.551	3.507	3.489	3.425	10.30
18)	T	cis-1,2-Dichlo...	1.395	1.544	1.350	1.244	1.354	1.636	1.449	1.367	1.338	1.286	1.396	8.46
19)	T	Chloroform			3.638	2.787	2.556	2.926	2.479	2.243	2.146	2.031	2.601	20.00
20)	S	1,2-Dichloroet...	2.240	2.244	2.235	2.232	2.256	2.169	2.104	2.059	2.034	1.954	2.153	5.01
21)	T	1,2-Dichloroet...	1.910	2.355	1.992	1.785	1.858	2.190	1.882	1.729	1.668	1.611	1.898	12.19
22)	T	1,1,1-Trichlor...	2.503	2.935	2.418	2.143	2.225	2.615	2.261	2.092	2.032	1.966	2.319	12.95
23)	T	Benzene		7.925	6.012	5.008	5.039	5.971	5.127	4.664	4.492	4.240	5.386	20.90
24)	T	Carbon Tetrach...	2.208	2.617	2.033	1.818	1.866	2.195	1.902	1.759	1.727	1.721	1.985	14.37
25)	I	1,4-Difluorobenzen...	----------	ISTD	----------									
26)	T	1,2-Dichloropr...	0.293	0.350	0.280	0.243	0.238	0.281	0.245	0.228	0.223	0.228	0.261	15.39
27)	T	Bromodichlorom...	0.440	0.518	0.414	0.357	0.350	0.412	0.362	0.341	0.334	0.358	0.389	14.83
28)	T	Trichloroethene	0.404	0.371	0.307	0.257	0.260	0.311	0.274	0.259	0.252	0.269	0.296	17.71
29)	T	1,4-Dioxane	0.195	0.220	0.177	0.159	0.160	0.218	0.198	0.192	0.189	0.203	0.191	10.95
30)	T	cis-1,3-Dichlo...	0.350	0.403	0.343	0.308	0.325	0.406	0.378	0.376	0.378	0.414	0.368	9.70
31)	T	trans-1,3-Dich...	0.262	0.321	0.281	0.252	0.277	0.357	0.338	0.343	0.347	0.368	0.315	13.56
32)	T	1,1,2-Trichlor...	0.258	0.302	0.247	0.214	0.208	0.248	0.217	0.203	0.197	0.199	0.229	14.74
33)	S	Toluene-d8 (SS2)	1.128	1.120	1.100	1.080	1.037	1.036	1.051	1.062	1.066	1.050	1.073	3.09
34)	T	Toluene	1.549	1.478	1.126	0.958	0.932	1.126	1.012	0.961	0.931	0.918	1.099	21.09
35)	T	Dibromochlorom...	0.278	0.335	0.276	0.239	0.238	0.291	0.265	0.260	0.261	0.280	0.272	10.20
36)	T	1,2-Dibromoethane	0.282	0.328	0.277	0.245	0.244	0.301	0.274	0.265	0.261	0.264	0.274	9.31
37)	T	Tetrachloroethene	0.305	0.357	0.290	0.254	0.247	0.298	0.270	0.265	0.266	0.298	0.285	11.29
38)	I	Chlorobenzene-d5 (...	----------	ISTD	----------									
39)	T	Chlorobenzene	3.328	3.883	3.290	2.937	2.952	3.674	3.328	3.175	3.046	2.768	3.238	10.59
40)	T	Ethylbenzene	4.426	5.117	4.272	3.900	4.426	5.953	5.630	5.483	5.215	4.641	4.906	13.66
41)	T	m,p-Xylene	3.083	3.607	3.042	2.871	3.652	4.979	4.552	4.306	4.085	3.866	3.804	18.19

Method Path : I:\MS19\METHODS\
Method File : S19042716.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)

42)	T	Styrene	1.881	2.167	1.883	1.819	2.338	3.344	3.248	3.256	3.163	3.046	2.614	24.91
43)	T	o-Xylene	1.577	1.768	1.526	1.470	1.854	2.497	2.287	2.170	2.063	2.038	1.925	17.89
44)	T	1,1,2,2-Tetrac...	2.376	2.608	2.216	2.062	2.102	2.701	2.389	2.227	2.108	2.010	2.280	10.28
45)	S	Bromofluoroben...	2.263	2.136	2.303	2.425	2.537	2.612	2.743	2.899	2.939	2.577	2.543	10.52
46)	T	1,3,5-Trimethy...	2.967	3.352	2.979	3.024	3.880	5.385	4.897	4.647	4.438	4.177	3.975	21.95
47)	T	1,2,4-Trimethy...	2.822	3.167	2.858	2.889	3.744	5.449	5.049	4.868	4.741	4.907	4.049	26.01
48)	T	1,3-Dichlorobe...	2.055	2.343	2.097	2.033	2.105	2.967	2.714	2.624	2.515	2.584	2.404	13.54
49)	T	1,4-Dichlorobe...	2.004	2.499	1.992	2.073	2.097	2.963	2.727	2.614	2.526	2.509	2.400	14.09
50)	T	1,2-Dichlorobe...	2.040	2.325	2.053	1.953	2.012	2.898	2.652	2.568	2.489	2.740	2.373	14.48
51)	T	1,2-Dibromo-3-...	0.497	0.609	0.541	0.559	0.576	0.939	0.916	0.935	0.946	0.943	0.746	27.07
52)	T	1,2,4-Trichlor...	1.125	1.215	1.017	0.924	0.833	1.537	1.524	1.587	1.608	1.753	1.312	24.95
53)	T	Naphthalene	4.016	3.975	3.064	3.079	3.146	6.220	6.177	6.143	6.036	6.174	4.803	30.36
54)	T	Hexachlorobuta...	0.835	0.979	0.786	0.708	0.625	0.993	0.930	0.937	0.945	1.059	0.880	15.63

(#) = Out of Range

Primary Source Standards Concentrations (Working & Initial Calibration)

CL 4/27/16

0.2ng/L Std. ID: S29-04251604 | 20ng/L Std. ID: S29-04131605
1ng/L Std. ID: S29-04251603 | 200ng/L Std. ID: S29-04131605
4ng/L Std. ID: S29-04251601

Dilution Factors: 5 | 50 | 250 | 1000 | 5000

Compounds	Source Std. mg/m³	Primary Working Standards 200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	Working STD Conc.(ng/L):	0.2	0.2	0.2	4	1	20	4	200	200	200
							Injection (L):	0.050	0.100	0.250	0.025	0.500	0.050	0.625	0.050	0.100	0.250
							ICAL Points:	0.01ng	0.02ng	0.05ng	0.1ng	0.5ng	1ng	2.5ng	10ng	20ng	50ng
Propene	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Dichlorodifluoromethane	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
Chloromethane	0.98	196	19.6	3.92	0.98	0.196		0.0098	0.0196	0.0490	0.098	0.490	0.98	2.450	9.80	19.6	49.0
Freon-114	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Vinyl Chloride	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
1,3-Butadiene	1.06	212	21.2	4.24	1.06	0.212		0.0106	0.0212	0.0530	0.106	0.530	1.06	2.650	10.60	21.2	53.0
Bromomethane	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
Chloroethane	1.01	202	20.2	4.04	1.01	0.202		0.0101	0.0202	0.0505	0.101	0.505	1.01	2.525	10.10	20.2	50.5
Ethanol	5.06	1012	101.2	20.24	5.06	1.012		0.0506	0.1012	0.2530	0.506	2.530	5.06	12.650	50.60	101.2	253.0
Acetonitrile	1.02	204	20.4	4.08	1.02	0.204		0.0102	0.0204	0.0510	0.102	0.510	1.02	2.550	10.20	20.4	51.0
Acrolein	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Acetone	5.37	1074	107.4	21.48	5.37	1.074		0.0537	0.1074	0.2685	0.537	2.685	5.37	13.425	53.70	107.4	268.5
Trichlorofluoromethane	0.99	198	19.8	3.96	0.99	0.198		0.0099	0.0198	0.0495	0.099	0.495	0.99	2.475	9.90	19.8	49.5
Isopropanol	2.09	418	41.8	8.36	2.09	0.418		0.0209	0.0418	0.1045	0.209	1.045	2.09	5.225	20.90	41.8	104.5
Acrylonitrile	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
1,1-Dichloroethene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
tert-Butanol	2.09	418	41.8	8.36	2.09	0.418		0.0209	0.0418	0.1045	0.209	1.045	2.09	5.225	20.90	41.8	104.5
Methylene Chloride	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Allyl Chloride	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Trichlorotrifluoroethane	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Carbon Disulfide	0.98	196	19.6	3.92	0.98	0.196		0.0098	0.0196	0.0490	0.098	0.490	0.98	2.450	9.80	19.6	49.0
trans-1,2-Dichloroethene	1.06	212	21.2	4.24	1.06	0.212		0.0106	0.0212	0.0530	0.106	0.530	1.06	2.650	10.60	21.2	53.0
1,1-Dichloroethane	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
Methyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
Vinyl Acetate	5.07	1014	101.4	20.28	5.07	1.014		0.0507	0.1014	0.2535	0.507	2.535	5.07	12.675	50.70	101.4	253.5
2-Butanone	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
cis-1,2-Dichloroethene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Diisopropyl Ether	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Ethyl Acetate	2.12	424	42.4	8.48	2.12	0.424		0.0212	0.0424	0.1060	0.212	1.060	2.12	5.300	21.20	42.4	106.0
n-Hexane	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
Chloroform	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Tetrahydrofuran	1.02	204	20.4	4.08	1.02	0.204		0.0102	0.0204	0.0510	0.102	0.510	1.02	2.550	10.20	20.4	51.0
Ethyl tert-Butyl Ether	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
1,2-Dichloroethane	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
1,1,1-Trichloroethane	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Isopropyl Acetate	2.21	442	44.2	8.84	2.21	0.442		0.0221	0.0442	0.1105	0.221	1.105	2.21	5.525	22.10	44.2	110.5
1-Butanol	2.26	452	45.2	9.04	2.26	0.452		0.0226	0.0452	0.1130	0.226	1.130	2.26	5.650	22.60	45.2	113.0
Benzene	1.11	222	22.2	4.44	1.11	0.222		0.0111	0.0222	0.0555	0.111	0.555	1.11	2.775	11.10	22.2	55.5
Carbon Tetrachloride	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Cyclohexane	2.09	418	41.8	8.36	2.09	0.418		0.0209	0.0418	0.1045	0.209	1.045	2.09	5.225	20.90	41.8	104.5
tert-Amyl Methyl Ether	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
1,2-Dichloropropane	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
Bromodichloromethane	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Trichloroethene	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
1,4-Dioxane	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
Isooctane	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Methyl Methacrylate	2.08	416	41.6	8.32	2.08	0.416		0.0208	0.0416	0.1040	0.208	1.040	2.08	5.200	20.80	41.6	104.0
n-Heptane	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5

Primary Source Standards Concentrations (Working & Initial Calibration)

0.2ng/L Std. ID: S29-04251604
1ng/L Std. ID: S29-04251603
4ng/L Std. ID: S29-04251601
20ng/L Std. ID: S29-04131605
200ng/L Std. ID: S29-04131605

Dilution Factors:		5	50	250	1000	5000	Working STD Conc.(ng/L):	0.2	0.2	0.2	4	1	20	4	200	200	200
	Source Std.	Primary Working Standards					Injection (L):	0.050	0.100	0.250	0.025	0.500	0.050	0.625	0.050	0.100	0.250
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	ICAL Points:	0.01ng	0.02ng	0.05ng	0.1ng	0.5ng	1ng	2.5ng	10ng	20ng	50ng
cis-1,3-Dichloropropene	1.12	224	22.4	4.48	1.12	0.224		0.0112	0.0224	0.0560	0.112	0.560	1.12	2.800	11.20	22.4	56.0

Primary Source Standards Concentrations (Working & Initial Calibration)

0.2ng/L Std. ID:	S29-04251604		20ng/L Std. ID:	S29-04131605	
1ng/L Std. ID:	S29-04251603		200ng/L Std. ID:	S29-04131605	
4ng/L Std. ID:	S29-04251601				

Dilution Factors:		5	50	250	1000	5000	Working STD Conc.(ng/L):	0.2	0.2	0.2	4	1	20	4	200	200	200
	Source Std.	Primary Working Standards					Injection (L):	0.050	0.100	0.250	0.025	0.500	0.050	0.625	0.050	0.100	0.250
Compounds	mg/m^3	200ng/L	20ng/L	4ng/L	1ng/L	0.2ng/L	ICAL Points:	0.01ng	0.02ng	0.05ng	0.1ng	0.5ng	1ng	2.5ng	10ng	20ng	50ng
4-Methyl-2-pentanone	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
trans-1,3-Dichloropropene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
1,1,2-Trichloroethane	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
Toluene	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
2-Hexanone	1.11	222	22.2	4.44	1.11	0.222		0.0111	0.0222	0.0555	0.111	0.555	1.11	2.775	11.10	22.2	55.5
Dibromochloromethane	1.10	220	22.0	4.40	1.10	0.220		0.0110	0.0220	0.0550	0.110	0.550	1.10	2.750	11.00	22.0	55.0
1,2-Dibromoethane	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
n-Butyl Acetate	1.11	222	22.2	4.44	1.11	0.222		0.0111	0.0222	0.0555	0.111	0.555	1.11	2.775	11.10	22.2	55.5
n-Octane	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Tetrachloroethene	0.99	198	19.8	3.96	0.99	0.198		0.0099	0.0198	0.0495	0.099	0.495	0.99	2.475	9.90	19.8	49.5
Chlorobenzene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Ethylbenzene	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
m-&p-Xylene	2.08	416	41.6	8.32	2.08	0.416		0.0208	0.0416	0.1040	0.208	1.040	2.08	5.200	20.80	41.6	104.0
Bromoform	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Styrene	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
o-Xylene	1.02	204	20.4	4.08	1.02	0.204		0.0102	0.0204	0.0510	0.102	0.510	1.02	2.550	10.20	20.4	51.0
n-Nonane	1.01	202	20.2	4.04	1.01	0.202		0.0101	0.0202	0.0505	0.101	0.505	1.01	2.525	10.10	20.2	50.5
1,1,2,2-Tetrachloroethane	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
Cumene	1.01	202	20.2	4.04	1.01	0.202		0.0101	0.0202	0.0505	0.101	0.505	1.01	2.525	10.10	20.2	50.5
alpha-Pinene	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
n-Propylbenzene	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
3-Ethyltoluene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
4-Ethyltoluene	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
1,3,5-Trimethylbenzene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
alpha-Methylstyrene	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
2-Ethyltoluene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
1,2,4-Trimethylbenzene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
n-Decane	1.01	202	20.2	4.04	1.01	0.202		0.0101	0.0202	0.0505	0.101	0.505	1.01	2.525	10.10	20.2	50.5
Benzyl Chloride	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
1,3-Dichlorobenzene	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0
1,4-Dichlorobenzene	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
sec-Butylbenzene	1.06	212	21.2	4.24	1.06	0.212		0.0106	0.0212	0.0530	0.106	0.530	1.06	2.650	10.60	21.2	53.0
p-Isopropyltoluene	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
1,2,3-Trimethylbenzene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
1,2-Dichlorobenzene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
d-Limonene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
1,2-Dibromo-3-chloropropane	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
n-Undecane	1.01	202	20.2	4.04	1.01	0.202		0.0101	0.0202	0.0505	0.101	0.505	1.01	2.525	10.10	20.2	50.5
1,2,4-Trichlorobenzene	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
Naphthalene	1.00	200	20.0	4.00	1.00	0.200		0.0100	0.0200	0.0500	0.100	0.500	1.00	2.500	10.00	20.0	50.0
n-Dodecane	1.04	208	20.8	4.16	1.04	0.208		0.0104	0.0208	0.0520	0.104	0.520	1.04	2.600	10.40	20.8	52.0
Hexachloro-1,3-butadiene	1.07	214	21.4	4.28	1.07	0.214		0.0107	0.0214	0.0535	0.107	0.535	1.07	2.675	10.70	21.4	53.5
Methacrylonitrile	1.03	206	20.6	4.12	1.03	0.206		0.0103	0.0206	0.0515	0.103	0.515	1.03	2.575	10.30	20.6	51.5
Cyclohexanone	1.12	224	22.4	4.48	1.12	0.224		0.0112	0.0224	0.0560	0.112	0.560	1.12	2.800	11.20	22.4	56.0
tert-Butylbenzene	1.05	210	21.0	4.20	1.05	0.210		0.0105	0.0210	0.0525	0.105	0.525	1.05	2.625	10.50	21.0	52.5
n-Butylbenzene	1.08	216	21.6	4.32	1.08	0.216		0.0108	0.0216	0.0540	0.108	0.540	1.08	2.700	10.80	21.6	54.0

Calibration Status Report MS19

Method : I:\MS19\METHODS\S19042716.M (RTE Integrator)
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration

CL 4/27/16

#	ID	Conc	ISTD Conc	Path\File
1	10	10	1000	I:\MS19\DATA\2016_04\26\04261607.D
2	20	20	1000	I:\MS19\DATA\2016_04\26\04261608.D
3	50	50	1000	I:\MS19\DATA\2016_04\26\04261609.D
4	100	100	1000	I:\MS19\DATA\2016_04\26\04261610.D
5	500	500	1000	I:\MS19\DATA\2016_04\26\04261611.D
6	1000	1000	1000	I:\MS19\DATA\2016_04\26\04261612.D
7	2000	2000	1000	I:\MS19\DATA\2016_04\26\04261613.D
8	5000	5000	1000	I:\MS19\DATA\2016_04\26\04261614.D
9	10K	10000	1000	I:\MS19\DATA\2016_04\26\04261615.D
10	50K	50000	1000	I:\MS19\DATA\2016_04\26\04261619.D

#	ID	Update Time	Quant Time	Acquisition Time
1	10	Apr 27 10:57 2016	Apr 27 08:09 2016	26 Apr 2016 12:42
2	20	Apr 27 10:58 2016	Apr 27 08:13 2016	26 Apr 2016 14:07
3	50	Apr 27 10:58 2016	Apr 27 08:16 2016	26 Apr 2016 14:39
4	100	Apr 27 10:58 2016	Apr 27 07:43 2016	26 Apr 2016 15:10
5	500	Apr 27 10:58 2016	Apr 27 08:23 2016	26 Apr 2016 15:42
6	1000	Apr 27 10:58 2016	Apr 27 08:46 2016	26 Apr 2016 16:13
7	2000	Apr 27 10:58 2016	Apr 27 08:53 2016	26 Apr 2016 16:45
8	5000	Apr 27 10:58 2016	Apr 27 08:56 2016	26 Apr 2016 17:16
9	10K	Apr 27 10:58 2016	Apr 27 09:02 2016	26 Apr 2016 17:48
10	50K	Apr 27 11:03 2016	Apr 27 10:56 2016	27 Apr 2016 10:14

S19042716.M Wed Apr 27 11:32:45 2016

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 08:09:08 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	18154	1000.000	pg		0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	84895	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	19150	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.54	65	40662	1334.380	pg		0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 133.44%#				
33) Toluene-d8 (SS2)	14.15	98	95777	1234.168	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 123.42%				
45) Bromofluorobenzene (SS3)	17.55	174	43340	991.993	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 99.20%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.44	85	647	12.387	pg		97
3) Chloromethane	4.67	52	283	23.127	pg	#	89
4) 1,2-Dichloro,1,1,2,2-t...	4.82	85	731	14.491	pg		99
5) Vinyl Chloride	4.97	62	584m	14.389	pg		
6) 1,3-Butadiene	5.18	54	197	8.400	pg	#	44
7) Bromomethane	5.49	94	256	12.967	pg		92
8) Chloroethane	5.72	64	150	11.654	pg	#	42
9) Acrolein	6.35	56	197m	22.793	pg		
10) Acetone	6.45	58	2517	181.333	pg	#	84
11) Trichlorofluoromethane	6.62	101	451	11.723	pg		98
12) 1,1-Dichloroethene	7.36	96	243	11.962	pg		95
13) Methylene Chloride	7.49	84	713	31.984	pg		94
14) Trichlorotrifluoroethane	7.81	151	245	12.042	pg		94
15) trans-1,2-Dichloroethene	8.53	96	262	11.807	pg		95
16) 1,1-Dichloroethane	8.73	63	493	13.972	pg		99
17) Methyl tert-Butyl Ether	8.82	73	585	10.781	pg		97
18) cis-1,2-Dichloroethene	9.60	96	271	11.870	pg	#	37
19) Chloroform	9.89	83	1667	40.704	pg		100
21) 1,2-Dichloroethane	10.65	62	364	13.046	pg		71
22) 1,1,1-Trichloroethane	10.91	97	468	12.917	pg		97
23) Benzene	11.37	78	1976	24.451	pg		99
24) Carbon Tetrachloride	11.51	117	433	13.767	pg		97
26) 1,2-Dichloropropane	12.18	63	261	14.349	pg		96
27) Bromodichloromethane	12.36	83	400	14.355	pg		97
28) Trichloroethene	12.42	130	353	14.656	pg		100
29) 1,4-Dioxane	12.41	88	179	11.957	pg		91
30) cis-1,3-Dichloropropene	13.26	75	333	11.984	pg		98
31) trans-1,3-Dichloropropene	13.78	75	238	9.957	pg		93
32) 1,1,2-Trichloroethane	13.96	83	230	13.661	pg		98
34) Toluene	14.25	91	1381	15.092	pg		99
35) Dibromochloromethane	14.66	129	260	12.193	pg		96
36) 1,2-Dibromoethane	14.92	107	256	11.780	pg		98
37) Tetrachloroethene	15.40	166	256	10.397	pg		98
39) Chlorobenzene	16.10	112	682	8.341	pg		90
40) Ethylbenzene	16.48	91	890	7.021	pg		99
41) m,p-Xylene	16.66	91	1228	12.396	pg		99
42) Styrene	17.02	104	389	5.579	pg		94
43) o-Xylene	17.12	106	308	6.047	pg		90
44) 1,1,2,2-Tetrachloroethane	17.10	83	455	8.768	pg		97
46) 1,3,5-Trimethylbenzene	18.38	105	591	5.763	pg		96
47) 1,2,4-Trimethylbenzene	18.77	105	562	5.336	pg		98
48) 1,3-Dichlorobenzene	18.92	146	425	6.735	pg		99
49) 1,4-Dichlorobenzene	18.99	146	403	6.295	pg		90
50) 1,2-Dichlorobenzene	19.31	146	418	6.678	pg		97
51) 1,2-Dibromo-3-chloropr...	19.72	157	99	5.167	pg		84
52) 1,2,4-Trichlorobenzene	20.95	182	224	6.227	pg		94
53) Naphthalene	21.11	128	769	5.836	pg	#	73

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 08:09:08 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

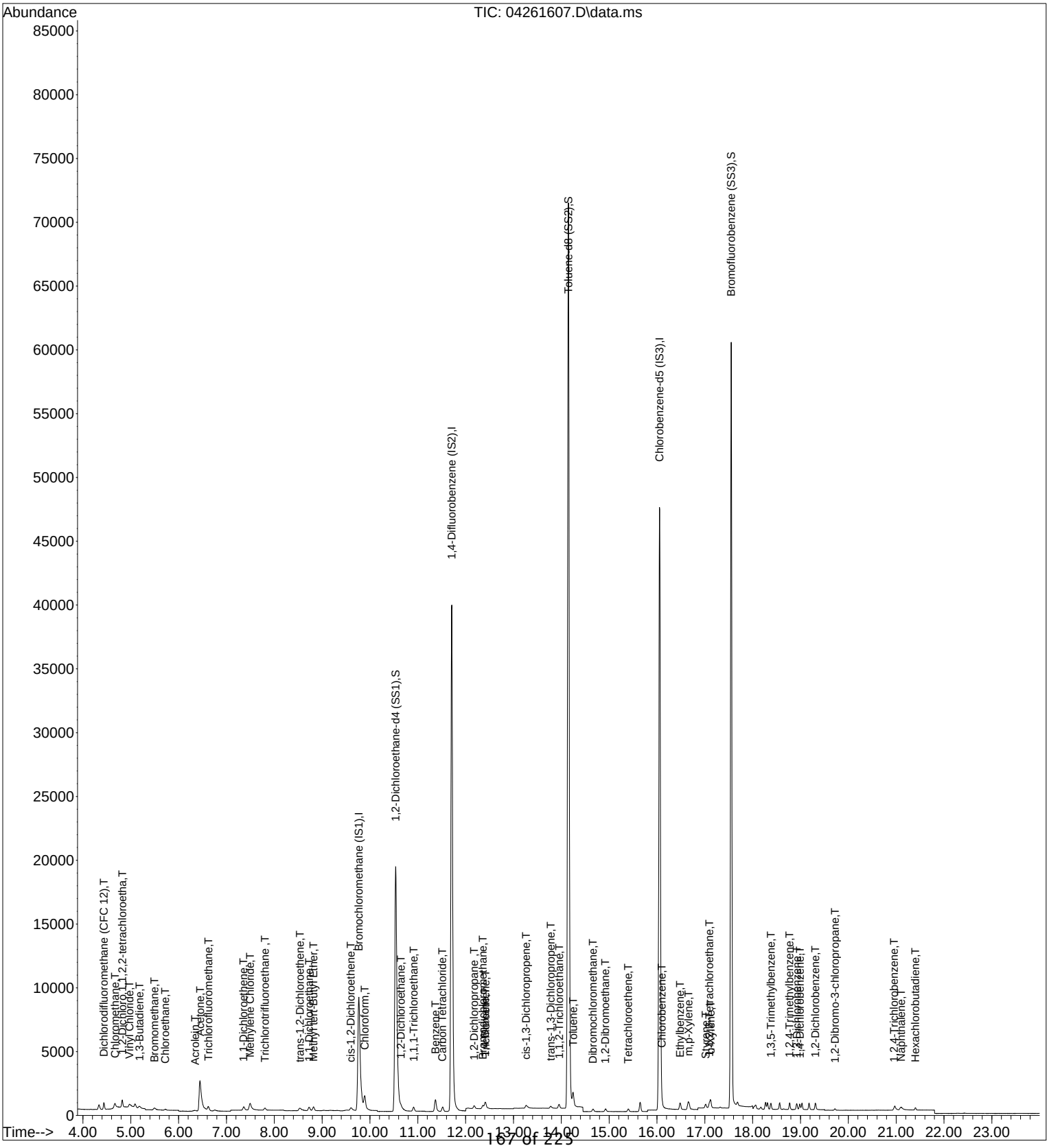
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	171	6.894	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

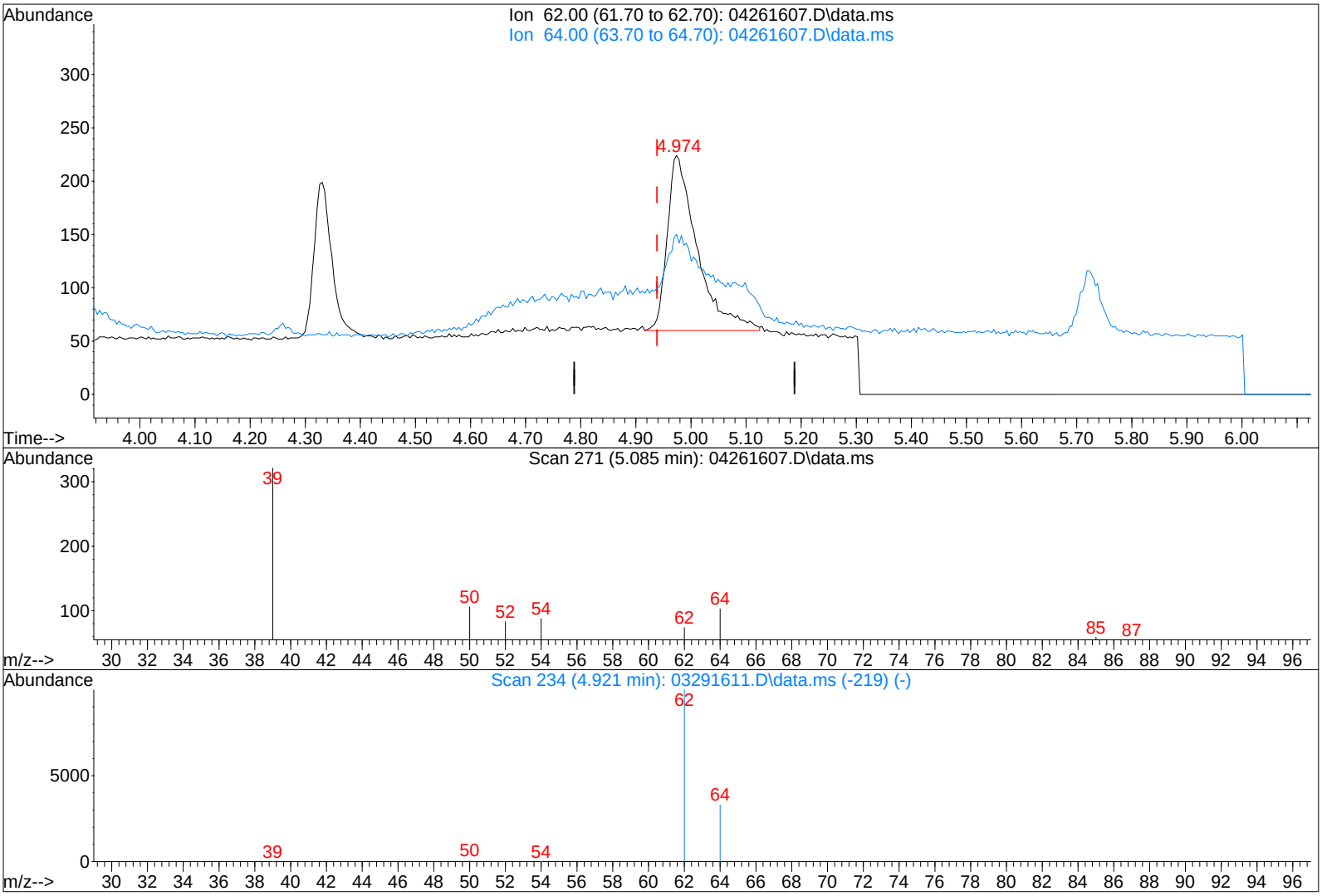
Quant Time: Apr 27 08:09:08 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 07:42:59 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261607.D\data.ms

(5) Vinyl Chloride (T)

4.974min (+0.036) 15.28pg

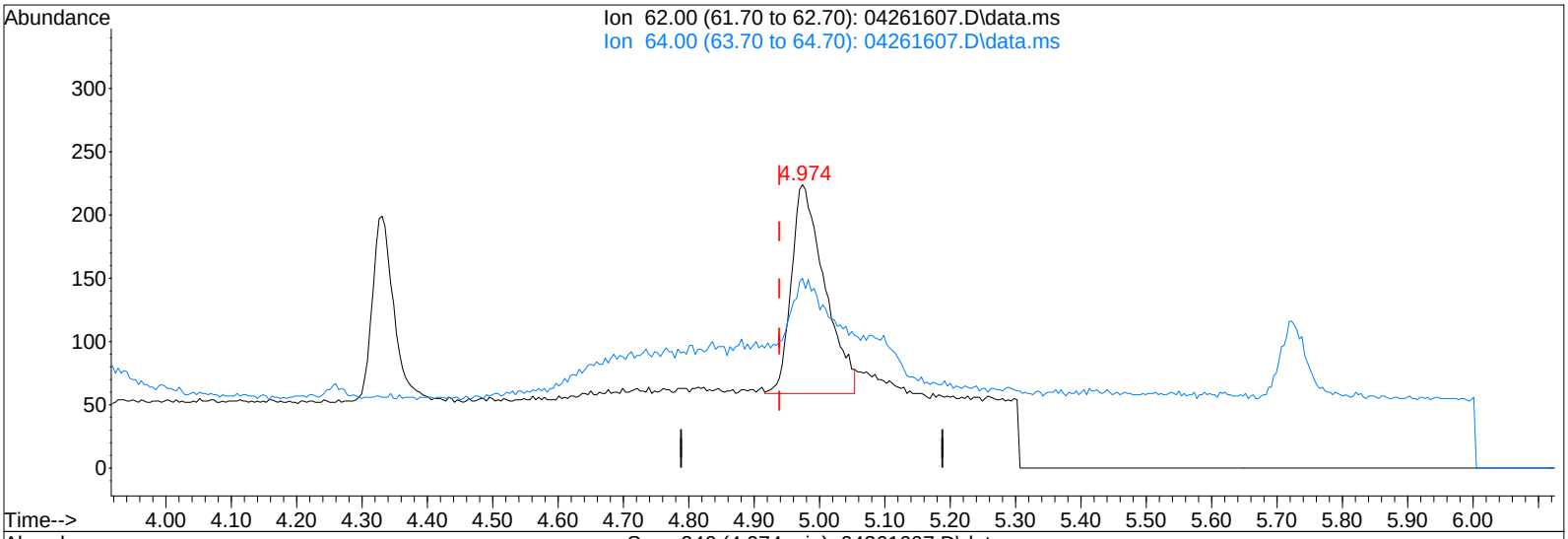
response 620

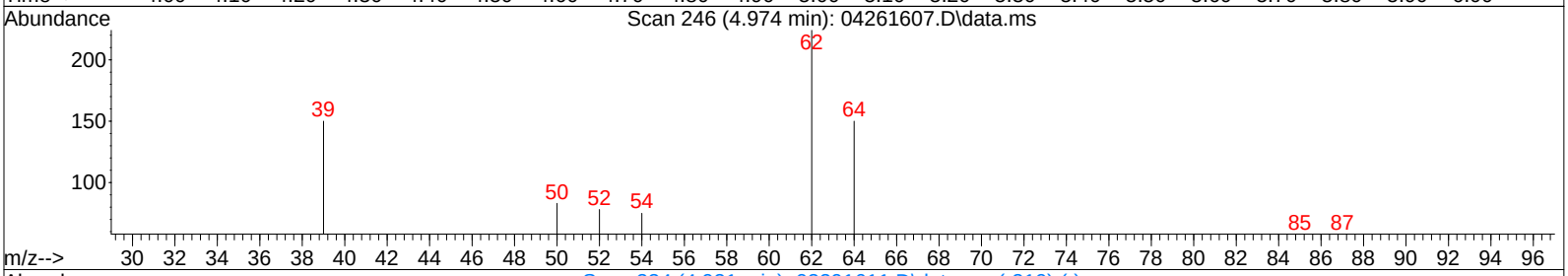
Ion	Exp%	Act%
62.00	100	100
64.00	32.80	30.97
0.00	0.00	0.00
0.00	0.00	0.00

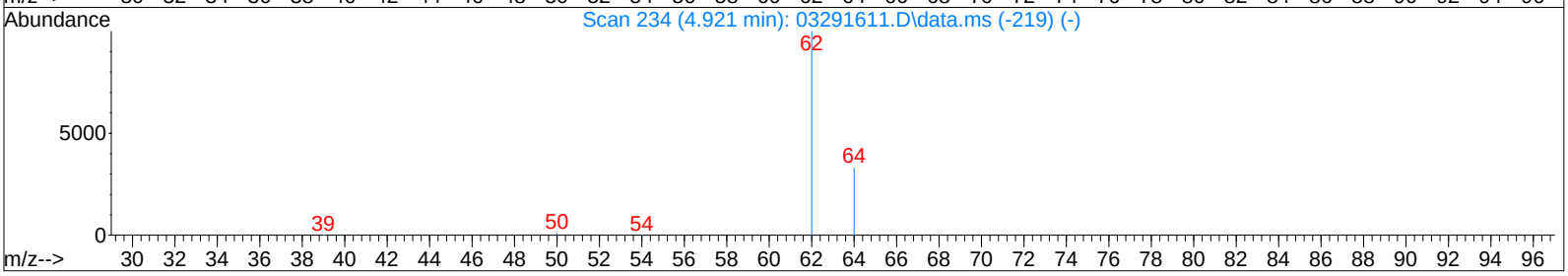
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 07:42:59 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04261607.D\data.ms

(5) Vinyl Chloride (T)

4.974min (+0.036) 14.39pg m

response 584

Ion	Exp%	Act%
62.00	100	100
64.00	32.80	32.88
0.00	0.00	0.00
0.00	0.00	0.00

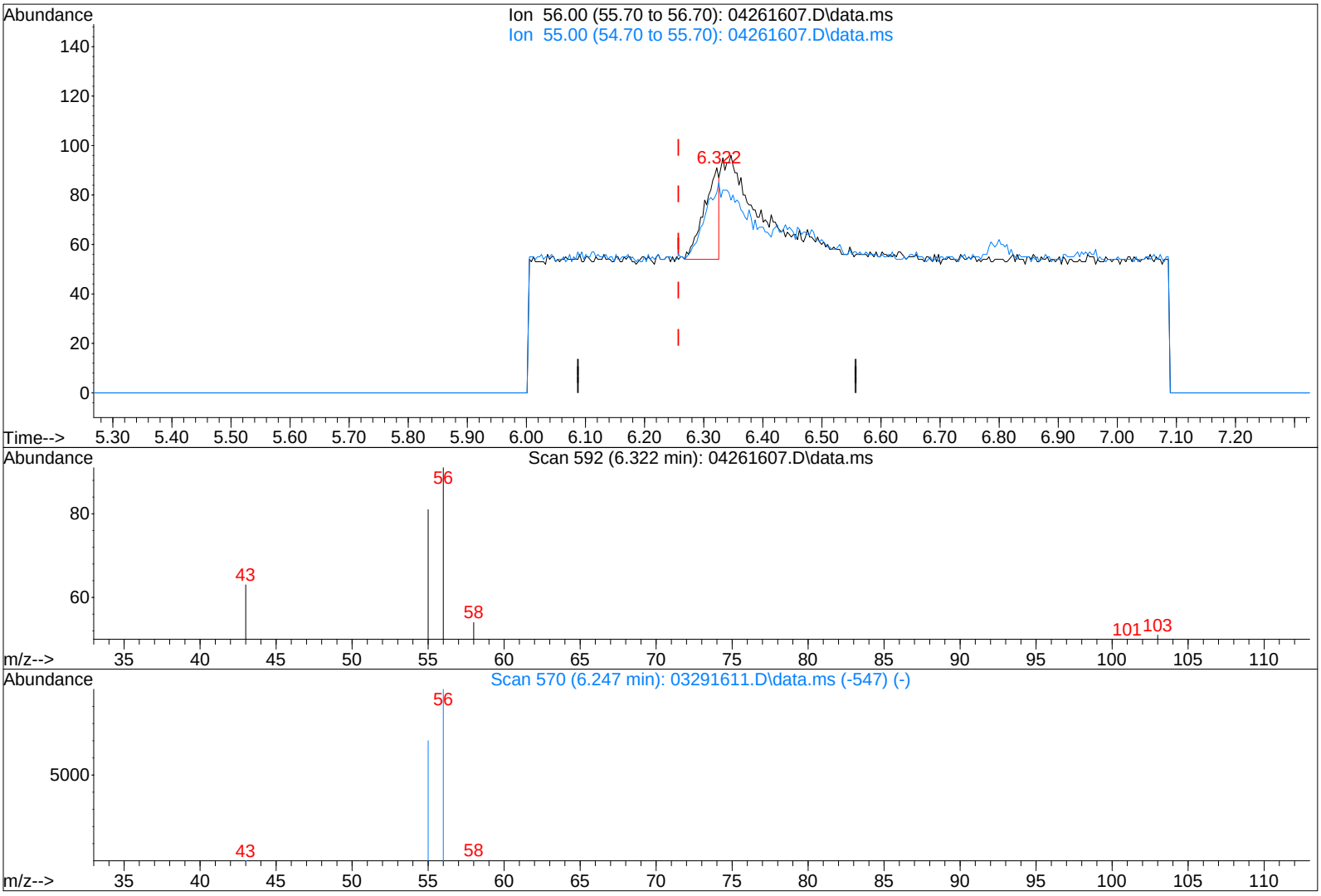
BLC

CL 4/27/16 VOA 5/3/16

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 07:42:59 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261607.D\data.ms

(9) Acrolein (T)

6.322min (+0.065) 7.52pg

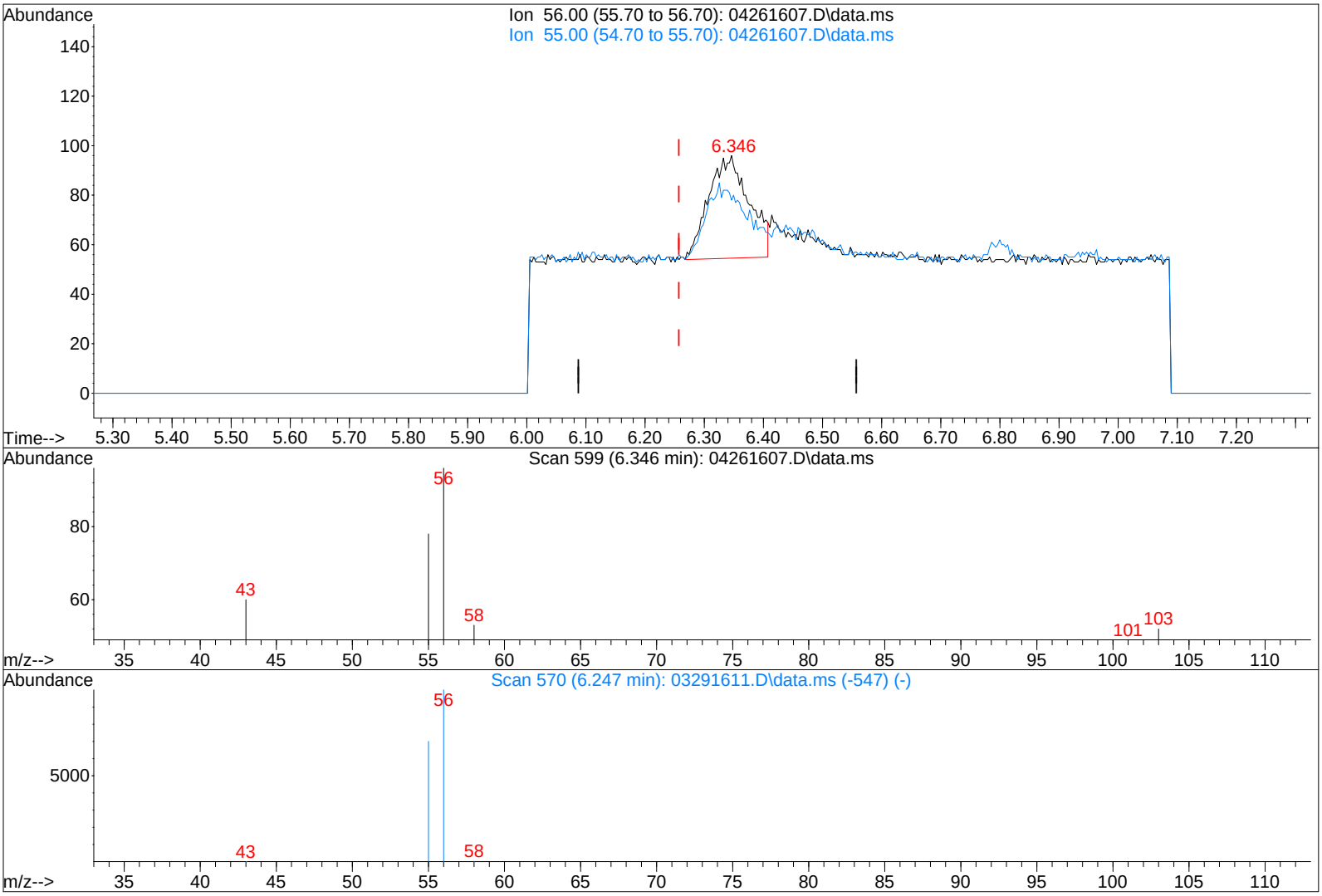
response 65

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261607.D Vial: 14
Acq On : 26 Apr 2016 12:42 Operator: CL
Sample : 10pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251604 (5/24)

Quant Time: Apr 27 07:42:59 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261607.D\data.ms

(9) Acrolein (T)

6.346min (+0.089) 22.79pg m

response 197

BLC

CL 4/27/16

5/3/16

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	0.00#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 08:13:35 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	17831	1000.000	pg		0.02
25) 1,4-Difluorobenzene (IS2)	11.71	114	83158	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	18715	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.54	65	40018	1337.035	pg		0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 133.70%#				
33) Toluene-d8 (SS2)	14.15	98	93115	1224.928	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 122.49%				
45) Bromofluorobenzene (SS3)	17.55	174	39979	936.333	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 93.63%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.45	85	1501	29.257	pg		100
3) Chloromethane	4.67	52	573	47.673	pg	#	80
4) 1,2-Dichloro,1,1,2,2-t...	4.83	85	1731	34.937	pg		99
5) Vinyl Chloride	4.97	62	1242	31.155	pg		86
6) 1,3-Butadiene	5.18	54	576	25.005	pg		93
7) Bromomethane	5.50	94	540	27.848	pg		97
8) Chloroethane	5.72	64	380	30.058	pg		67
9) Acrolein	6.35	56	226m	26.622	pg		
10) Acetone	6.45	58	2309	169.361	pg		98
11) Trichlorofluoromethane	6.62	101	1061	28.078	pg		100
12) 1,1-Dichloroethene	7.36	96	517	25.911	pg		90
13) Methylene Chloride	7.49	84	1080	49.324	pg		100
14) Trichlorotrifluoroethane	7.81	151	549	27.473	pg		99
15) trans-1,2-Dichloroethene	8.54	96	609m	27.943	pg		
16) 1,1-Dichloroethane	8.73	63	1114	32.143	pg		98
17) Methyl tert-Butyl Ether	8.82	73	1371	25.724	pg		100
18) cis-1,2-Dichloroethene	9.60	96	589	26.265	pg		99
19) Chloroform	9.89	83	3342	83.081	pg		100
21) 1,2-Dichloroethane	10.65	62	882	32.185	pg		96
22) 1,1,1-Trichloroethane	10.91	97	1078	30.293	pg		100
23) Benzene	11.37	78	3137	39.520	pg		100
24) Carbon Tetrachloride	11.52	117	1008	32.630	pg		98
26) 1,2-Dichloropropane	12.18	63	612	34.348	pg		98
27) Bromodichloromethane	12.36	83	921	33.743	pg		99
28) Trichloroethene	12.41	130	635	26.914	pg		100
29) 1,4-Dioxane	12.40	88	395	26.938	pg		98
30) cis-1,3-Dichloropropene	13.26	75	751	27.590	pg		96
31) trans-1,3-Dichloropropene	13.78	75	571	24.388	pg		93
32) 1,1,2-Trichloroethane	13.95	83	528	32.016	pg		98
34) Toluene	14.25	91	2581	28.796	pg		99
35) Dibromochloromethane	14.66	129	612	29.300	pg		99
36) 1,2-Dibromoethane	14.93	107	584	27.434	pg		99
37) Tetrachloroethene	15.40	166	588	24.379	pg		99
39) Chlorobenzene	16.10	112	1555	19.459	pg		97
40) Ethylbenzene	16.48	91	2011	16.233	pg		100
41) m,p-Xylene	16.66	91	2808	29.004	pg		100
42) Styrene	17.01	104	876	12.856	pg		99
43) o-Xylene	17.12	106	675	13.560	pg		92
44) 1,1,2,2-Tetrachloroethane	17.09	83	976	19.245	pg		99
46) 1,3,5-Trimethylbenzene	18.38	105	1305	13.021	pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	1233	11.979	pg		100
48) 1,3-Dichlorobenzene	18.92	146	947	15.356	pg		99
49) 1,4-Dichlorobenzene	18.98	146	982	15.697	pg		95
50) 1,2-Dichlorobenzene	19.31	146	931	15.220	pg		98
51) 1,2-Dibromo-3-chloropr...	19.73	157	237	12.656	pg		89
52) 1,2,4-Trichlorobenzene	20.96	182	473	13.454	pg		92
53) Naphthalene	21.10	128	1488	11.556	pg		96

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 08:13:35 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

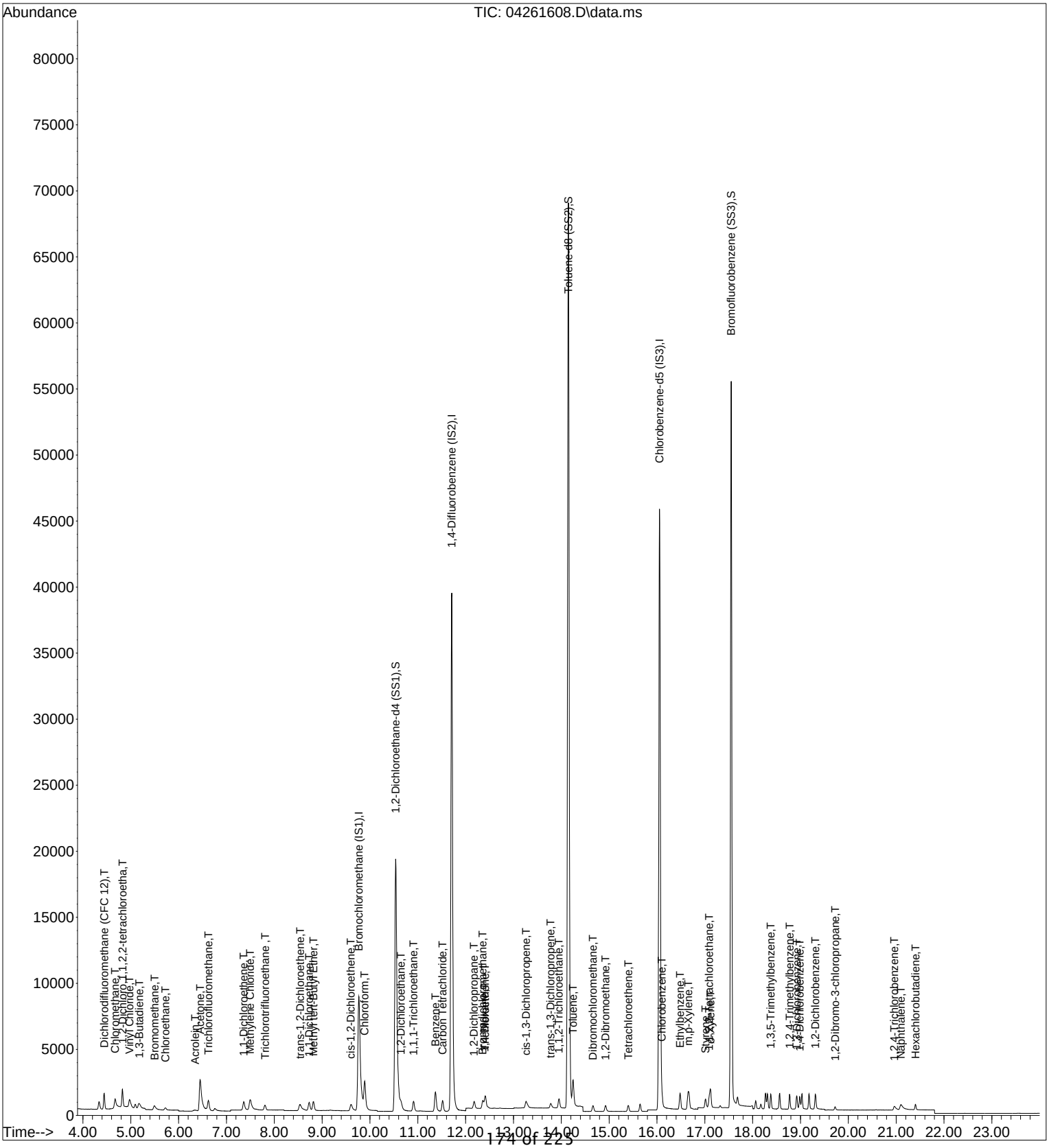
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	392	16.171	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

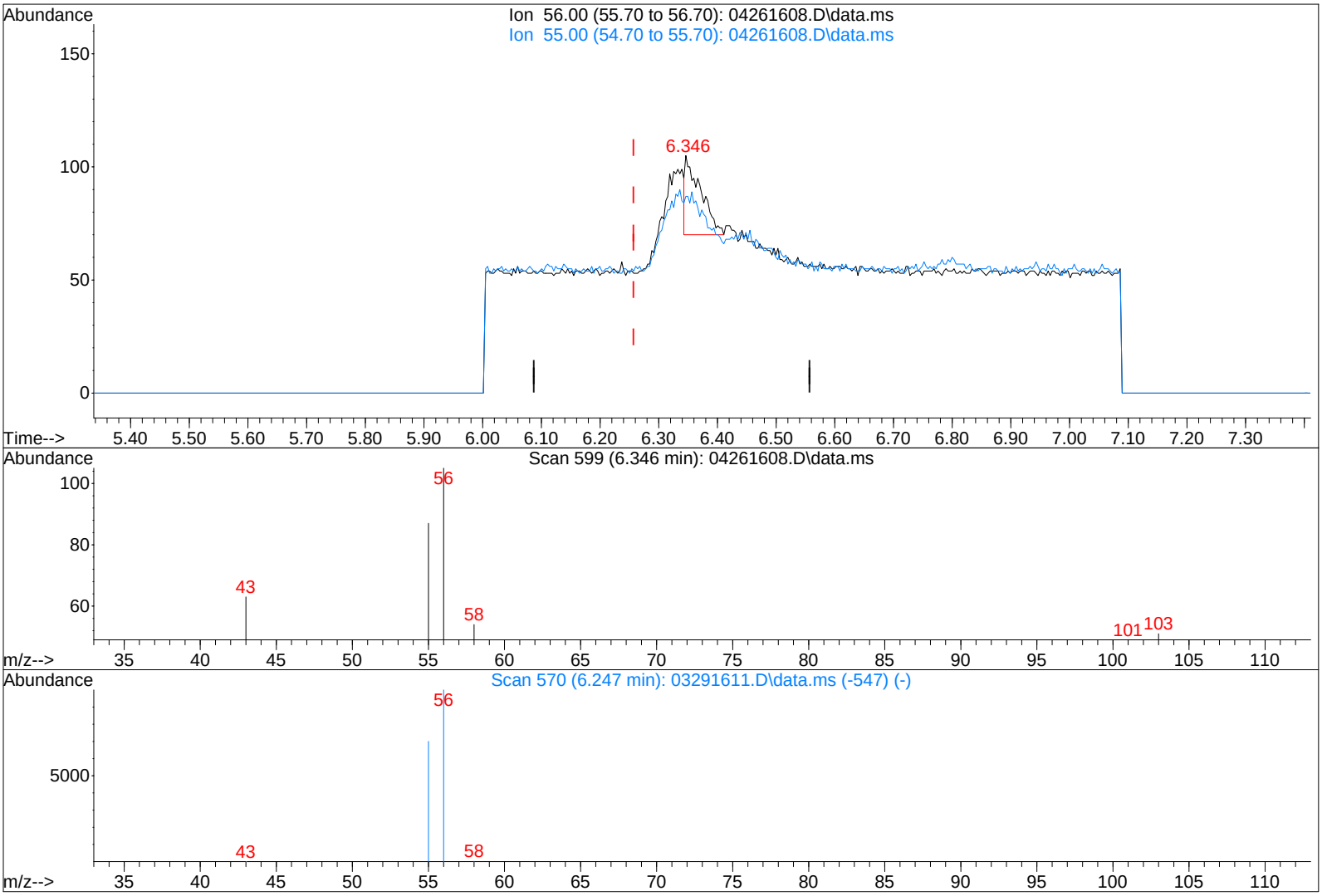
Quant Time: Apr 27 08:13:35 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:00 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261608.D\data.ms

(9) Acrolein (T)

6.346min (+0.089) 7.54pg

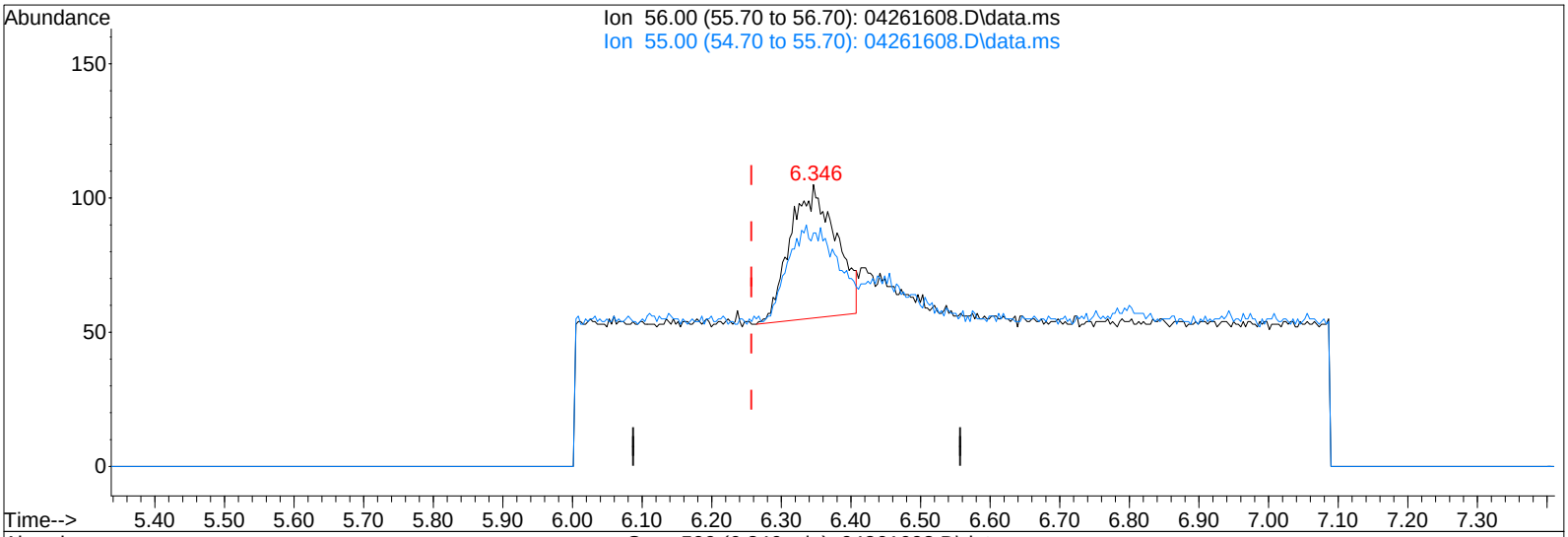
response 64

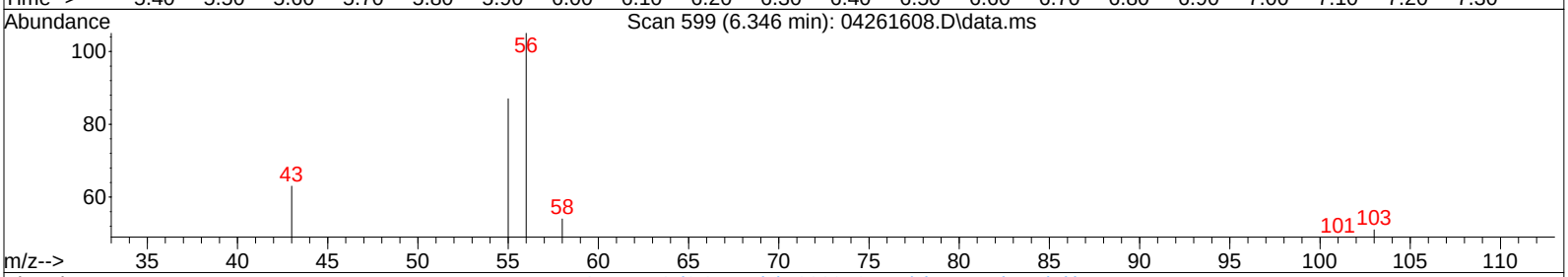
Ion	Exp%	Act%
56.00	100	100
55.00	67.20	128.13#
0.00	0.00	0.00
0.00	0.00	0.00

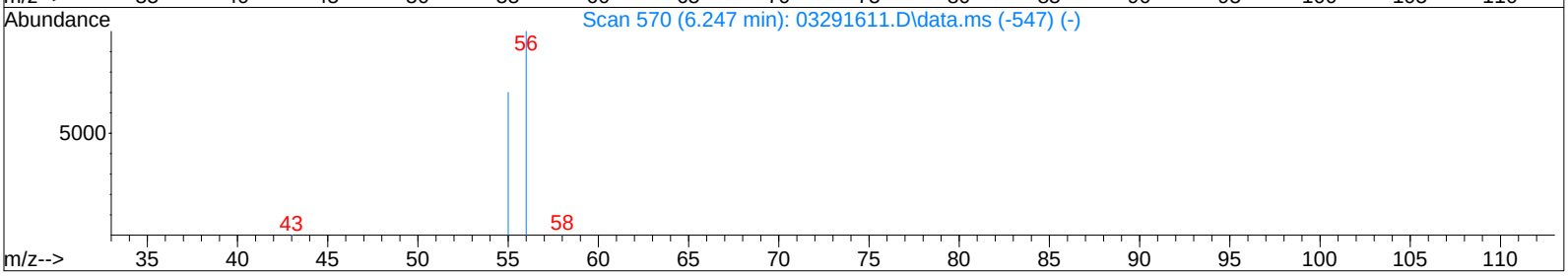
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:00 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04261608.D\data.ms

(9) Acrolein (T)

6.346min (+0.089) 26.62pg m

response 226

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	36.28#
0.00	0.00	0.00
0.00	0.00	0.00

BLC

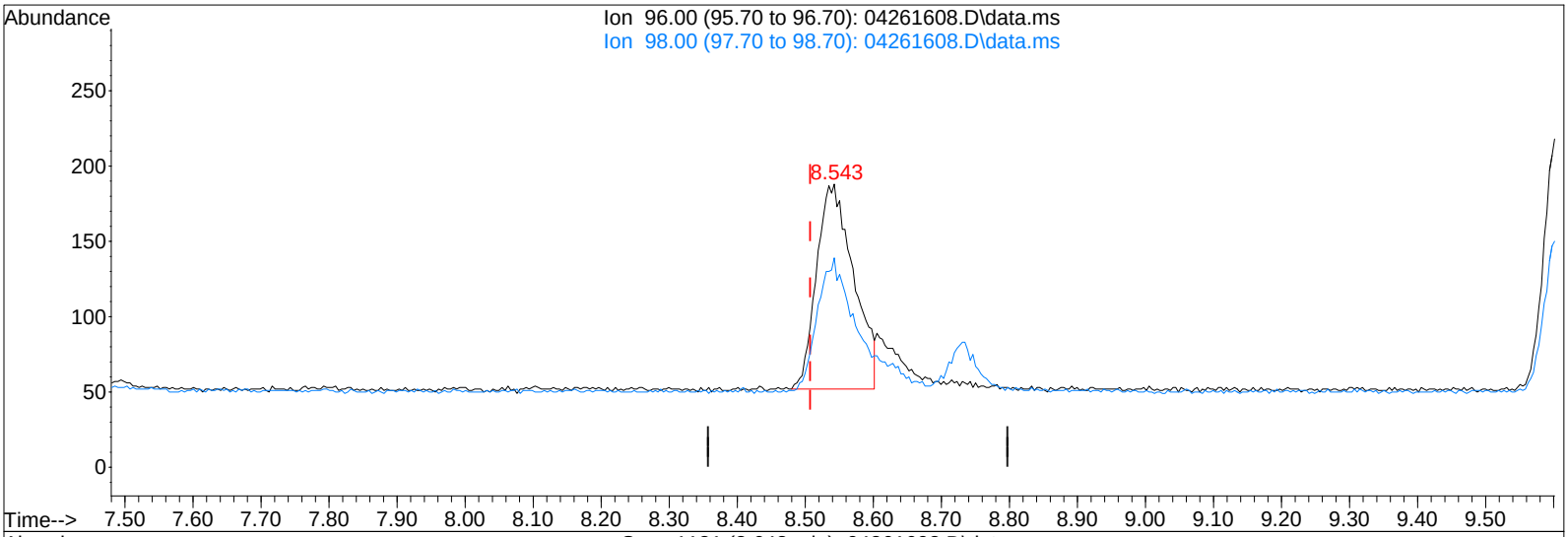
CL 4/27/16

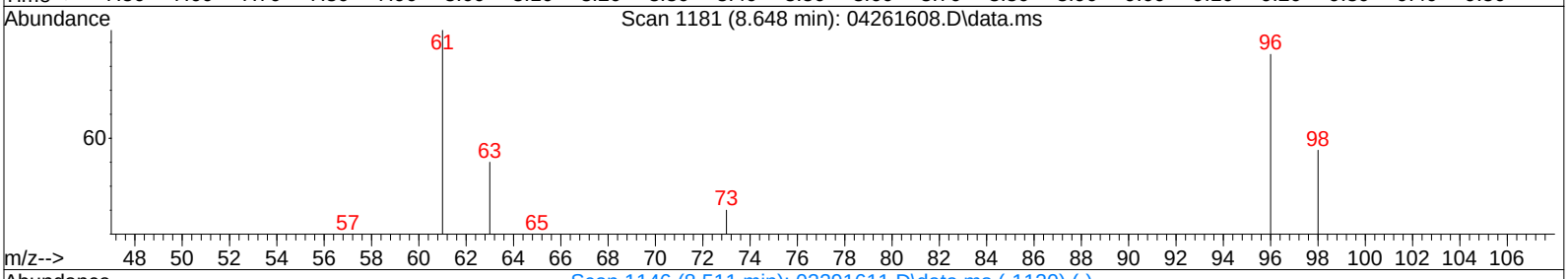
VOA 5/3/16

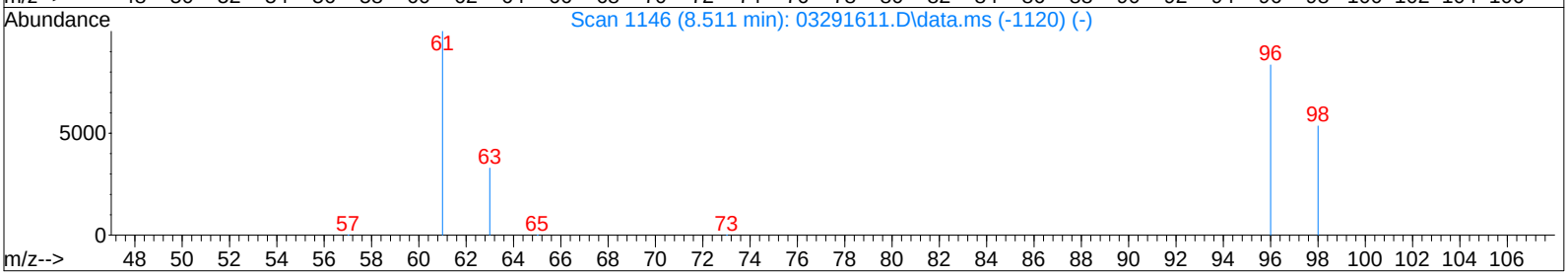
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:00 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04261608.D\data.ms

(15) trans-1,2-Dichloroethene (T)

8.543min (+0.035) 23.63pg

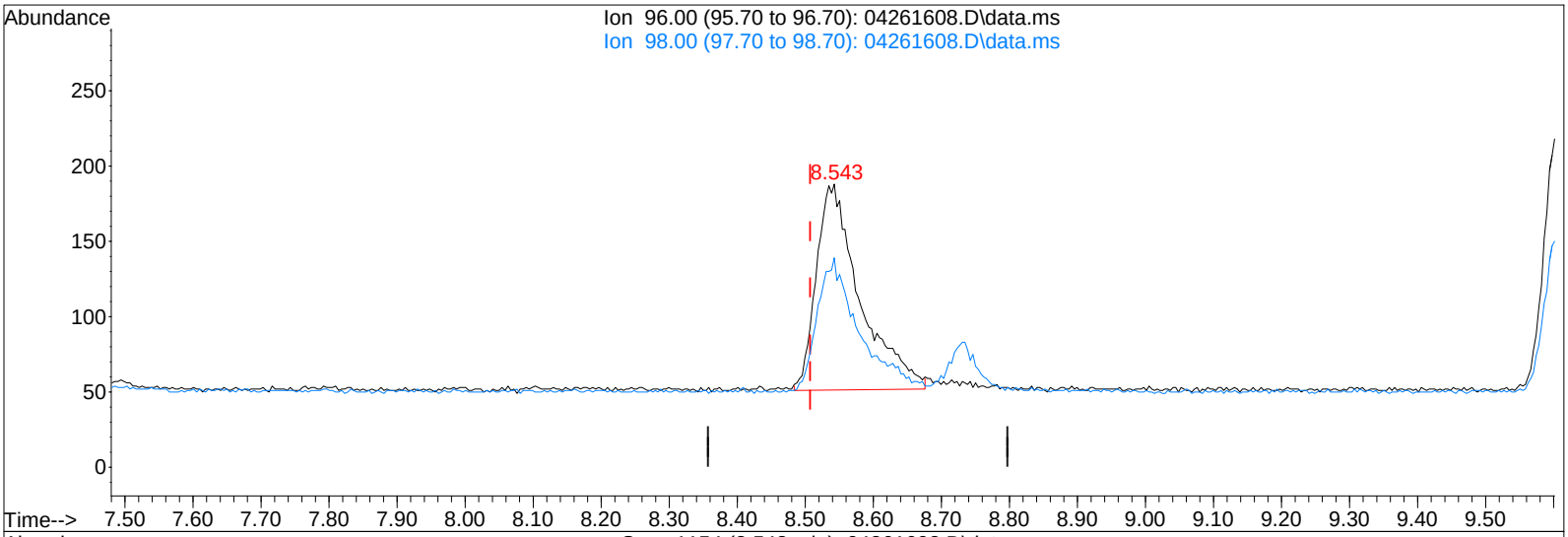
response 515

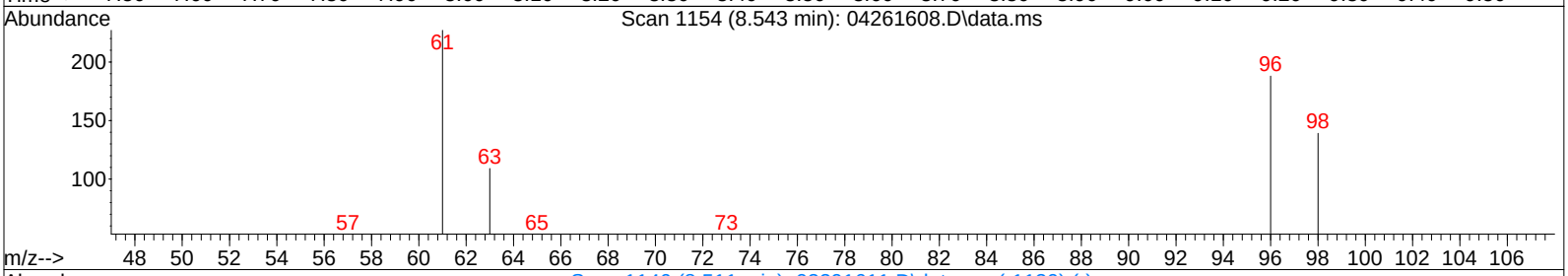
Ion	Exp%	Act%
96.00	100	100
98.00	61.70	22.52#
0.00	0.00	0.00
0.00	0.00	0.00

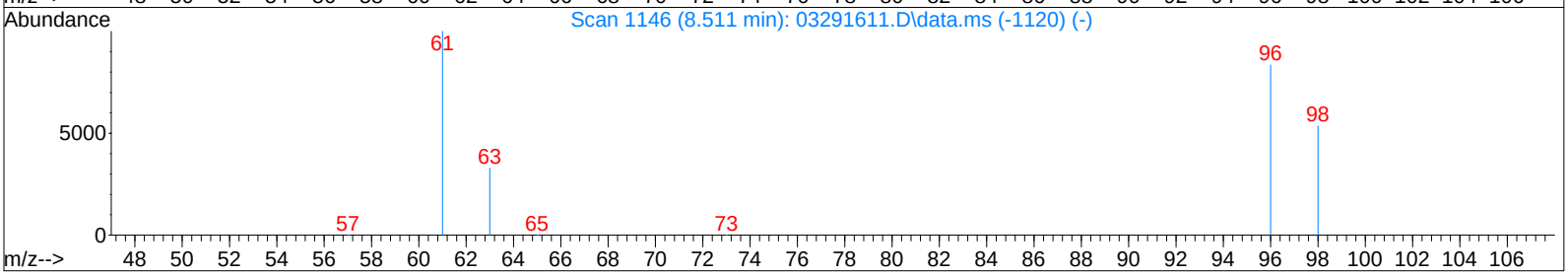
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261608.D Vial: 15
Acq On : 26 Apr 2016 14:07 Operator: CL
Sample : 20pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:00 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04261608.D\data.ms

(15) trans-1,2-Dichloroethene (T)

8.543min (+0.035) 27.94pg m

response 609

BLC

CL 4/27/16

WA 5/3/16

Ion	Exp%	Act%
96.00	100	100
98.00	61.70	19.05#
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261609.D Vial: 15
Acq On : 26 Apr 2016 14:39 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 08:16:25 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	18640	1000.000	pg		0.01
25) 1,4-Difluorobenzene (IS2)	11.71	114	89221	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	19797	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.54	65	41652	1331.230	pg		0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 133.12%#				
33) Toluene-d8 (SS2)	14.15	98	98147	1203.386	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 120.34%				
45) Bromofluorobenzene (SS3)	17.55	174	45595	1009.500	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 100.95%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.44	85	3256	60.710	pg		99
3) Chloromethane	4.67	52	1035	82.374	pg	#	87
4) 1,2-Dichloro,1,1,2,2-t...	4.82	85	3666	70.780	pg		100
5) Vinyl Chloride	4.97	62	3013	72.300	pg		99
6) 1,3-Butadiene	5.16	54	1303	54.110	pg		91
7) Bromomethane	5.49	94	1223	60.333	pg		100
8) Chloroethane	5.71	64	837	63.333	pg		96
9) Acrolein	6.32	56	499m	56.230	pg		
10) Acetone	6.44	58	4259	298.832	pg		96
11) Trichlorofluoromethane	6.62	101	2347	59.414	pg		99
12) 1,1-Dichloroethene	7.36	96	1236	59.256	pg		98
13) Methylene Chloride	7.50	84	1802	78.726	pg		83
14) Trichlorotrifluoroethane	7.80	151	1187	56.822	pg		99
15) trans-1,2-Dichloroethene	8.54	96	1372	60.219	pg		99
16) 1,1-Dichloroethane	8.73	63	2466	68.066	pg		99
17) Methyl tert-Butyl Ether	8.82	73	3094	55.532	pg		99
18) cis-1,2-Dichloroethene	9.60	96	1346	57.417	pg		99
19) Chloroform	9.89	83	3628	86.277	pg		100
21) 1,2-Dichloroethane	10.65	62	1949	68.034	pg		96
22) 1,1,1-Trichloroethane	10.91	97	2321	62.392	pg		100
23) Benzene	11.37	78	6220	74.958	pg		100
24) Carbon Tetrachloride	11.52	117	2046	63.357	pg		100
26) 1,2-Dichloropropane	12.18	63	1311	68.578	pg		99
27) Bromodichloromethane	12.36	83	1978	67.544	pg		99
28) Trichloroethene	12.41	130	1410	55.701	pg		99
29) 1,4-Dioxane	12.39	88	853	54.218	pg		98
30) cis-1,3-Dichloropropene	13.26	75	1716	58.759	pg		100
31) trans-1,3-Dichloropropene	13.78	75	1339	53.305	pg		100
32) 1,1,2-Trichloroethane	13.95	83	1156	65.332	pg		99
34) Toluene	14.25	91	5274	54.843	pg		99
35) Dibromochloromethane	14.66	129	1352	60.329	pg		99
36) 1,2-Dibromoethane	14.93	107	1321	57.837	pg		100
37) Tetrachloroethene	15.40	166	1279	49.425	pg		100
39) Chlorobenzene	16.10	112	3485	41.228	pg		99
40) Ethylbenzene	16.48	91	4440	33.881	pg		100
41) m,p-Xylene	16.66	91	6263	61.156	pg		100
42) Styrene	17.01	104	2013	27.929	pg		99
43) o-Xylene	17.12	106	1541	29.265	pg		97
44) 1,1,2,2-Tetrachloroethane	17.10	83	2194	40.897	pg		100
46) 1,3,5-Trimethylbenzene	18.38	105	3067	28.929	pg		100
47) 1,2,4-Trimethylbenzene	18.77	105	2942	27.019	pg		99
48) 1,3-Dichlorobenzene	18.92	146	2242	34.369	pg		99
49) 1,4-Dichlorobenzene	18.98	146	2070	31.280	pg		93
50) 1,2-Dichlorobenzene	19.31	146	2174	33.598	pg		98
51) 1,2-Dibromo-3-chloropr...	19.72	157	557	28.120	pg		93
52) 1,2,4-Trichlorobenzene	20.97	182	1047	28.154	pg		92
53) Naphthalene	21.09	128	3033	22.267	pg		100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261609.D Vial: 15
Acq On : 26 Apr 2016 14:39 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 08:16:25 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

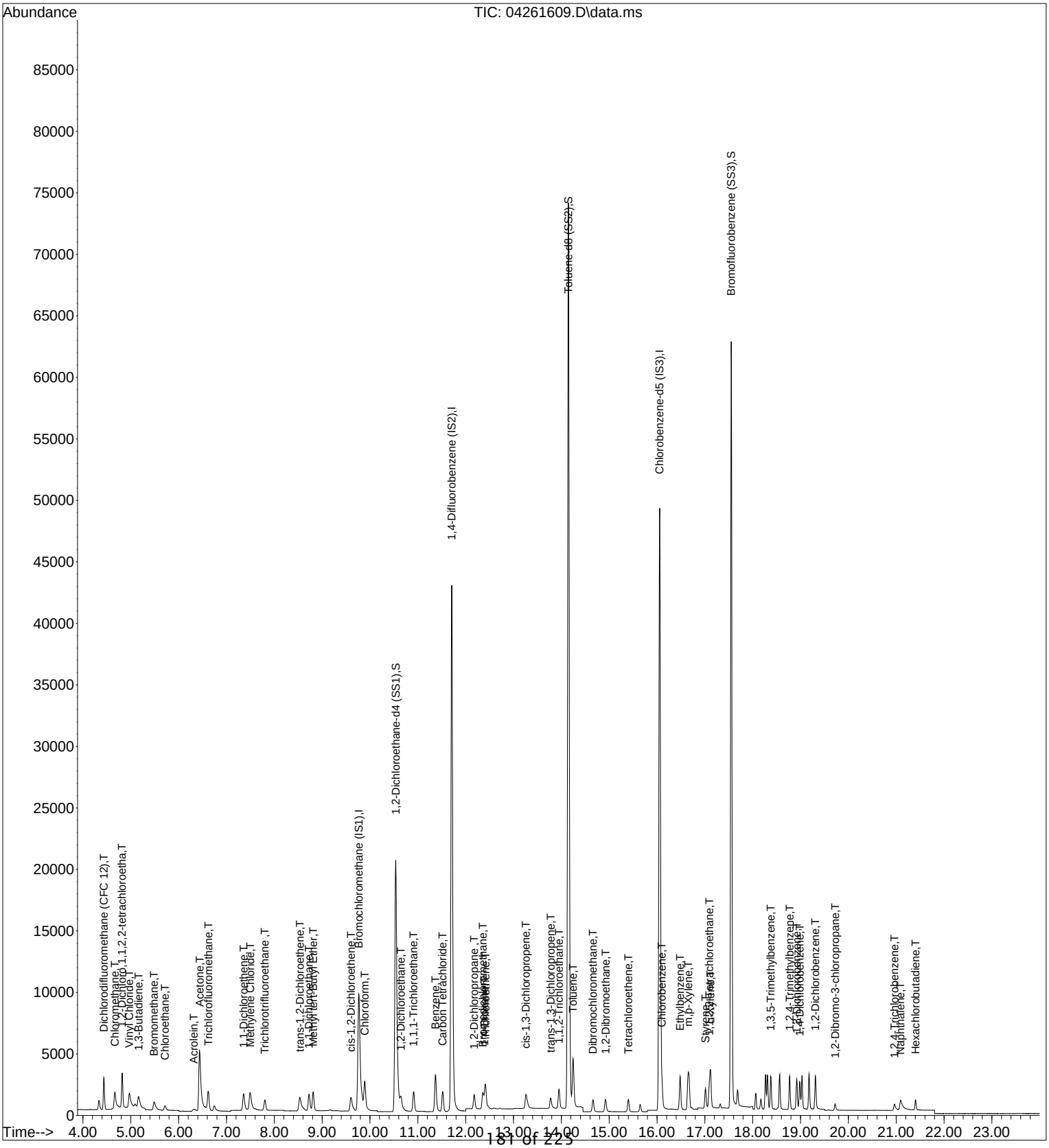
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	833	32.485	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261609.D Vial: 15
Acq On : 26 Apr 2016 14:39 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

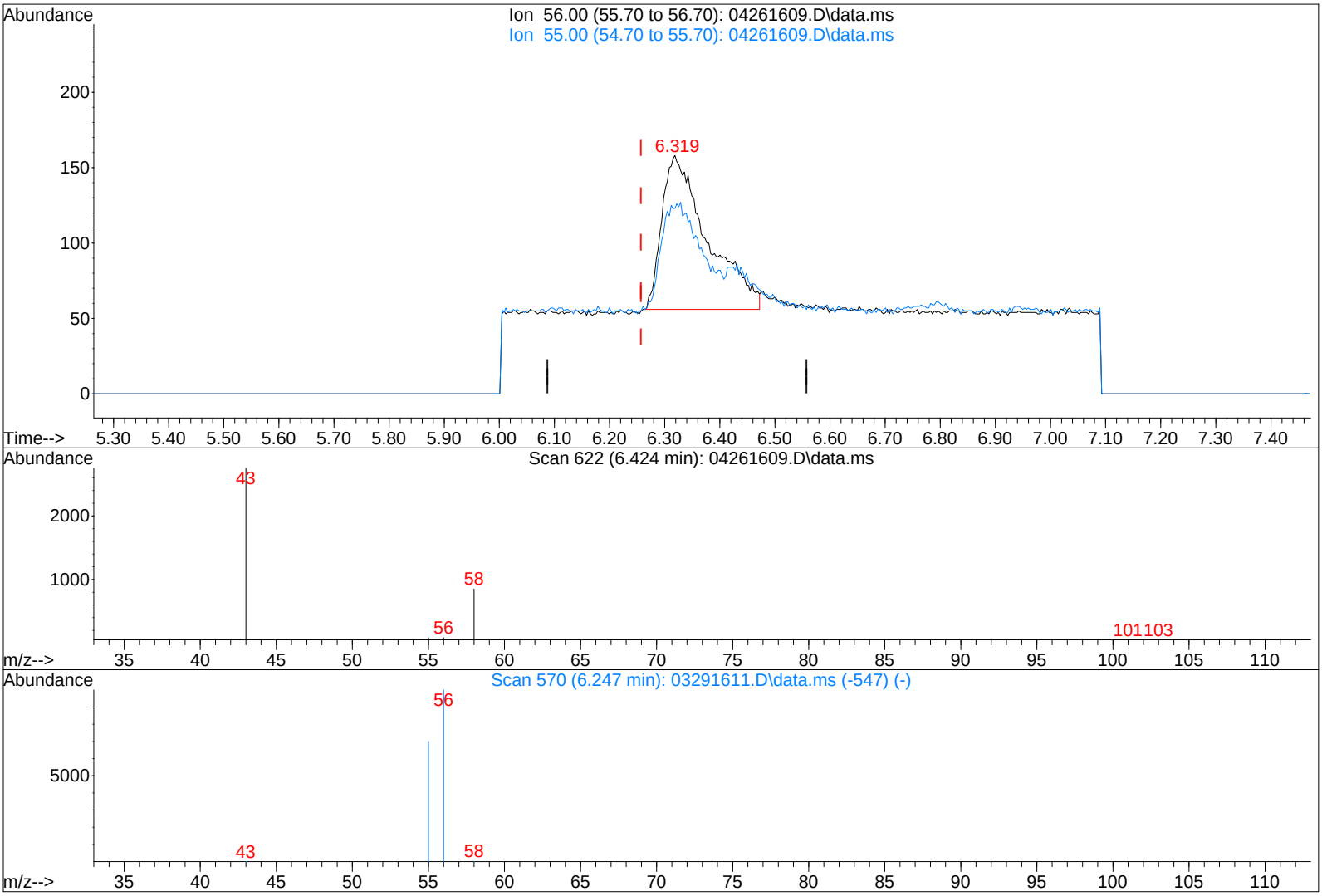
Quant Time: Apr 27 08:16:25 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261609.D Vial: 15
Acq On : 26 Apr 2016 14:39 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:01 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261609.D\data.ms

(9) Acrolein (T)

6.319min (+0.061) 65.81pg

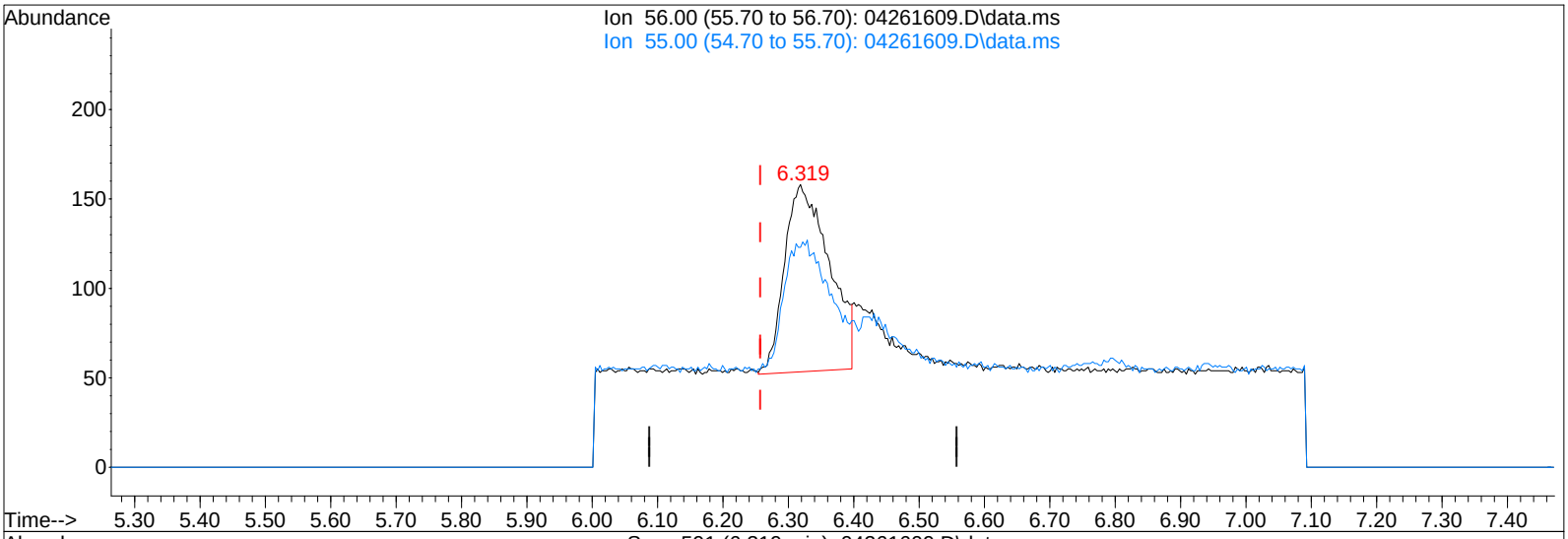
response 584

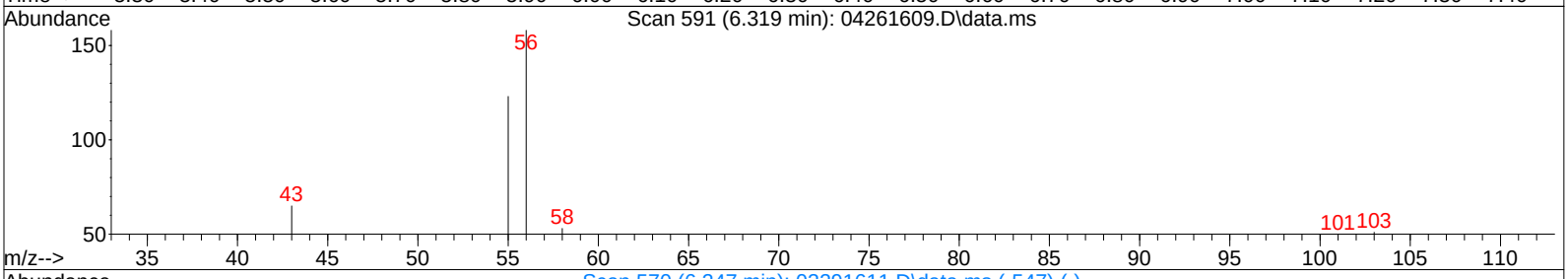
Ion	Exp%	Act%
56.00	100	100
55.00	67.20	57.53
0.00	0.00	0.00
0.00	0.00	0.00

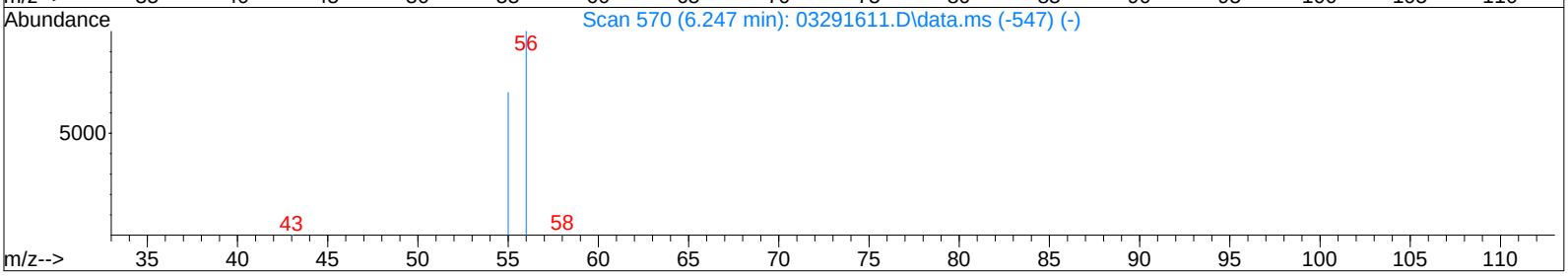
Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261609.D Vial: 15
Acq On : 26 Apr 2016 14:39 Operator: CL
Sample : 50pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:01 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M







TIC: 04261609.D\data.ms

(9) Acrolein (T)

6.319min (+0.061) 56.23pg m

response 499

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	67.33
0.00	0.00	0.00
0.00	0.00	0.00

BLC

CL 4/27/16

5/3/16

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261610.D Vial: 15
Acq On : 26 Apr 2016 15:10 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units		Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	20383	1000.000	pg		0.01
25) 1,4-Difluorobenzene (IS2)	11.71	114	101011	1000.000	pg		0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	21770	1000.000	pg		0.00
System Monitoring Compounds							
20) 1,2-Dichloroethane-d4 ...	10.53	65	45502	1329.920	pg		0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 132.99%#				
33) Toluene-d8 (SS2)	14.15	98	109114	1181.699	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 118.17%				
45) Bromofluorobenzene (SS3)	17.55	174	52794	1062.954	pg		0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 106.30%				
Target Compounds							Qvalue
2) Dichlorodifluoromethan...	4.43	85	6339	108.087	pg		100
3) Chloromethane	4.66	52	1939	141.126	pg	#	86
4) 1,2-Dichloro,1,1,2,2-t...	4.82	85	7050	124.475	pg		100
5) Vinyl Chloride	4.97	62	5805	127.385	pg		99
6) 1,3-Butadiene	5.16	54	2599	98.701	pg		99
7) Bromomethane	5.48	94	2359	106.422	pg		100
8) Chloroethane	5.71	64	1656	114.590	pg		97
9) Acrolein	6.30	56	883	90.992	pg		92
10) Acetone	6.43	58	8239	528.654	pg		99
11) Trichlorofluoromethane	6.62	101	4547	105.265	pg		100
12) 1,1-Dichloroethene	7.35	96	2433	106.668	pg		99
13) Methylene Chloride	7.49	84	3373	134.759	pg		98
14) Trichlorotrifluoroethane	7.80	151	2343	102.570	pg		100
15) trans-1,2-Dichloroethene	8.53	96	2608	104.681	pg		95
16) 1,1-Dichloroethane	8.72	63	4864	122.775	pg		100
17) Methyl tert-Butyl Ether	8.81	73	6086	99.893	pg		100
18) cis-1,2-Dichloroethene	9.60	96	2713	105.834	pg		100
19) Chloroform	9.89	83	6078	132.180	pg		100
21) 1,2-Dichloroethane	10.64	62	3820	121.943	pg		100
22) 1,1,1-Trichloroethane	10.91	97	4500	110.622	pg		99
23) Benzene	11.37	78	11330	124.864	pg		100
24) Carbon Tetrachloride	11.52	117	4002	113.329	pg		99
26) 1,2-Dichloropropane	12.18	63	2579	119.160	pg		99
27) Bromodichloromethane	12.36	83	3854	116.244	pg		99
28) Trichloroethene	12.41	130	2677	93.409	pg		99
29) 1,4-Dioxane	12.39	88	1733	97.296	pg		99
30) cis-1,3-Dichloropropene	13.26	75	3481	105.283	pg		100
31) trans-1,3-Dichloropropene	13.77	75	2725	95.818	pg		99
32) 1,1,2-Trichloroethane	13.95	83	2274	113.515	pg		99
34) Toluene	14.25	91	10165	93.366	pg		99
35) Dibromochloromethane	14.66	129	2660	104.841	pg		100
36) 1,2-Dibromoethane	14.92	107	2643	102.212	pg		99
37) Tetrachloroethene	15.40	166	2543	86.799	pg		99
39) Chlorobenzene	16.10	112	6841	73.595	pg		99
40) Ethylbenzene	16.48	91	8914	61.856	pg		100
41) m,p-Xylene	16.66	91	12999	115.427	pg		100
42) Styrene	17.01	104	4276	53.949	pg		99
43) o-Xylene	17.12	106	3264	56.368	pg		98
44) 1,1,2,2-Tetrachloroethane	17.09	83	4488	76.077	pg		99
46) 1,3,5-Trimethylbenzene	18.38	105	6847	58.730	pg		99
47) 1,2,4-Trimethylbenzene	18.77	105	6542	54.637	pg		99
48) 1,3-Dichlorobenzene	18.92	146	4780	66.634	pg		99
49) 1,4-Dichlorobenzene	18.98	146	4738	65.107	pg		99
50) 1,2-Dichlorobenzene	19.31	146	4550	63.945	pg		100
51) 1,2-Dibromo-3-chloropr...	19.72	157	1265	58.075	pg		95
52) 1,2,4-Trichlorobenzene	20.95	182	2091	51.131	pg		99
53) Naphthalene	21.08	128	6703	44.750	pg		99

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261610.D Vial: 15
Acq On : 26 Apr 2016 15:10 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

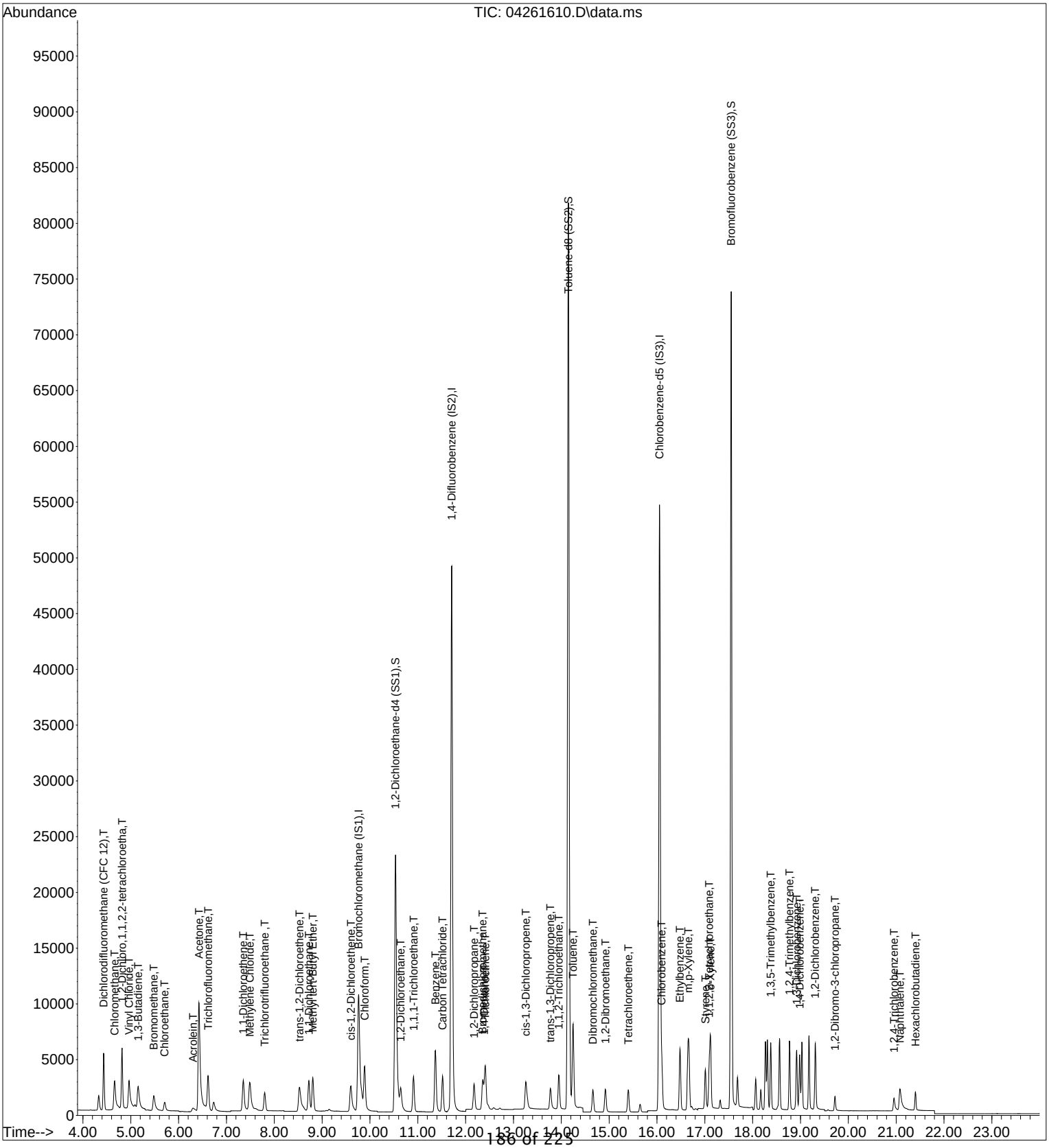
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	1649	58.479	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261610.D Vial: 15
Acq On : 26 Apr 2016 15:10 Operator: CL
Sample : 100pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251603 (5/24)

Quant Time: Apr 27 07:43:02 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261611.D Vial: 16
Acq On : 26 Apr 2016 15:42 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 27 08:23:09 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	20532	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.70	114	109325	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	22308	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.52	65	46313	1343.800	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 134.38%#			
33) Toluene-d8 (SS2)	14.14	98	113360	1134.320	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.43%			
45) Bromofluorobenzene (SS3)	17.55	174	56601	1112.120	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 111.21%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	32282	546.450	pg	100
3) Chloromethane	4.64	52	8758	632.806	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.80	85	35801	627.518	pg	100
5) Vinyl Chloride	4.94	62	29583	644.458	pg	99
6) 1,3-Butadiene	5.13	54	19144	721.746	pg	100
7) Bromomethane	5.46	94	11952	535.280	pg	100
8) Chloroethane	5.69	64	8485	582.873	pg	100
9) Acrolein	6.26	56	4988	510.279	pg	100
10) Acetone	6.39	58	38842	2474.202	pg	100
11) Trichlorofluoromethane	6.60	101	23391	537.579	pg	100
12) 1,1-Dichloroethene	7.33	96	12881	560.635	pg	100
13) Methylene Chloride	7.47	84	15193	602.589	pg	100
14) Trichlorotrifluoroethane	7.79	151	11928	518.383	pg	100
15) trans-1,2-Dichloroethene	8.51	96	14313	570.331	pg	100
16) 1,1-Dichloroethane	8.71	63	25288	633.674	pg	100
17) Methyl tert-Butyl Ether	8.79	73	34797	567.000	pg	100
18) cis-1,2-Dichloroethene	9.59	96	14868	575.791	pg	100
19) Chloroform	9.88	83	28081	606.252	pg	100
21) 1,2-Dichloroethane	10.64	62	20032	634.828	pg	100
22) 1,1,1-Trichloroethane	10.90	97	23528	574.185	pg	100
23) Benzene	11.36	78	57426	628.280	pg	100
24) Carbon Tetrachloride	11.51	117	20685	581.510	pg	100
26) 1,2-Dichloropropane	12.17	63	13676	583.834	pg	100
27) Bromodichloromethane	12.35	83	20497	571.212	pg	100
28) Trichloroethene	12.41	130	14645	472.149	pg	100
29) 1,4-Dioxane	12.38	88	9472	491.345	pg	100
30) cis-1,3-Dichloropropene	13.25	75	19872	555.323	pg	100
31) trans-1,3-Dichloropropene	13.77	75	16182	525.731	pg	100
32) 1,1,2-Trichloroethane	13.94	83	11956	551.441	pg	100
34) Toluene	14.24	91	53484	453.892	pg	100
35) Dibromochloromethane	14.66	129	14284	520.175	pg	100
36) 1,2-Dibromoethane	14.92	107	14261	509.569	pg	100
37) Tetrachloroethene	15.40	166	13357	421.239	pg	100
39) Chlorobenzene	16.10	112	35234	369.904	pg	100
40) Ethylbenzene	16.48	91	51832	350.998	pg	100
41) m,p-Xylene	16.66	91	84727	734.203	pg	100
42) Styrene	17.01	104	28162	346.745	pg	100
43) o-Xylene	17.12	106	21094	355.501	pg	100
44) 1,1,2,2-Tetrachloroethane	17.09	83	23446	387.852	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	45005	376.718	pg	100
47) 1,2,4-Trimethylbenzene	18.77	105	43426	353.933	pg	100
48) 1,3-Dichlorobenzene	18.92	146	25360	344.998	pg	100
49) 1,4-Dichlorobenzene	18.98	146	24554	329.269	pg	100
50) 1,2-Dichlorobenzene	19.31	146	24007	329.253	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	6687	299.588	pg	100
52) 1,2,4-Trichlorobenzene	20.95	182	9666	230.661	pg	100
53) Naphthalene	21.06	128	35088	228.604	pg	100

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261611.D Vial: 16
Acq On : 26 Apr 2016 15:42 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 27 08:23:09 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

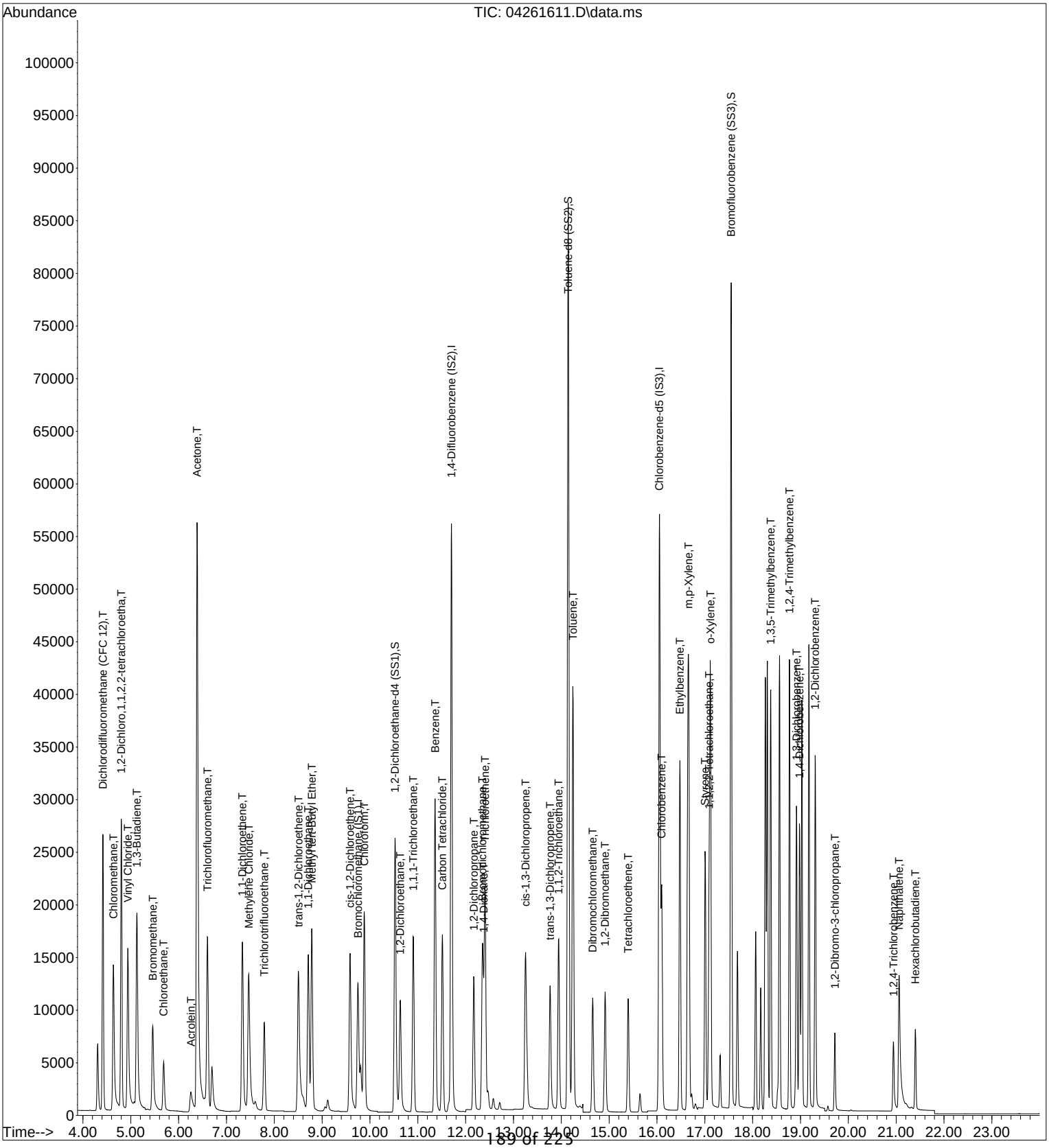
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	7454	257.969	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261611.D Vial: 16
Acq On : 26 Apr 2016 15:42 Operator: CL
Sample : 500pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 27 08:23:09 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261612.D Vial: 9
Acq On : 26 Apr 2016 16:13 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:46:55 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	18922	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.70	114	102445	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	20624	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.52	65	41050	1292.436	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 129.24%			
33) Toluene-d8 (SS2)	14.14	98	106125	1133.240	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.32%			
45) Bromofluorobenzene (SS3)	17.55	174	53871	1144.908	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 114.49%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.41	85	69694	1280.117	pg	100
3) Chloromethane	4.63	52	18207	1427.475	pg	92
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	75710	1439.954	pg	100
5) Vinyl Chloride	4.92	62	62543	1478.412	pg	99
6) 1,3-Butadiene	5.12	54	43588	1783.129	pg	100
7) Bromomethane	5.45	94	25841	1255.780	pg	99
8) Chloroethane	5.68	64	18482	1377.639	pg	99
9) Acrolein	6.24	56	11728m	1301.875	pg	
10) Acetone	6.38	58	89626	6194.866	pg	97
11) Trichlorofluoromethane	6.60	101	49794	1241.753	pg	100
12) 1,1-Dichloroethene	7.33	96	28394	1340.977	pg	99
13) Methylene Chloride	7.46	84	32056	1379.595	pg	98
14) Trichlorotrifluoroethane	7.79	151	25742	1213.919	pg	100
15) trans-1,2-Dichloroethene	8.50	96	31210	1349.443	pg	99
16) 1,1-Dichloroethane	8.71	63	54279	1475.869	pg	100
17) Methyl tert-Butyl Ether	8.78	73	80626	1425.543	pg	100
18) cis-1,2-Dichloroethene	9.58	96	33122	1391.852	pg	100
19) Chloroform	9.88	83	59245	1387.896	pg	100
21) 1,2-Dichloroethane	10.63	62	43518	1496.459	pg	100
22) 1,1,1-Trichloroethane	10.90	97	50970	1349.727	pg	100
23) Benzene	11.36	78	125403	1488.732	pg	100
24) Carbon Tetrachloride	11.51	117	44863	1368.528	pg	100
26) 1,2-Dichloropropane	12.17	63	30185	1375.149	pg	100
27) Bromodichloromethane	12.35	83	45159	1343.013	pg	100
28) Trichloroethene	12.41	130	32837	1129.748	pg	100
29) 1,4-Dioxane	12.37	88	24103	1334.273	pg	99
30) cis-1,3-Dichloropropene	13.25	75	46570	1388.797	pg	100
31) trans-1,3-Dichloropropene	13.76	75	39108	1355.895	pg	99
32) 1,1,2-Trichloroethane	13.94	83	26676	1312.994	pg	99
34) Toluene	14.24	91	121074	1096.500	pg	100
35) Dibromochloromethane	14.66	129	32842	1276.315	pg	100
36) 1,2-Dibromoethane	14.91	107	33005	1258.524	pg	100
37) Tetrachloroethene	15.40	166	30187	1015.941	pg	100
39) Chlorobenzene	16.10	112	81069	920.598	pg	100
40) Ethylbenzene	16.48	91	128916	944.280	pg	100
41) m,p-Xylene	16.66	91	213581	2001.911	pg	100
42) Styrene	17.01	104	74492	992.074	pg	100
43) o-Xylene	17.12	106	52529	957.566	pg	99
44) 1,1,2,2-Tetrachloroethane	17.09	83	55706	996.751	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	115500	1045.744	pg	99
47) 1,2,4-Trimethylbenzene	18.77	105	116867	1030.269	pg	100
48) 1,3-Dichlorobenzene	18.92	146	66089	972.488	pg	99
49) 1,4-Dichlorobenzene	18.98	146	64172	930.812	pg	99
50) 1,2-Dichlorobenzene	19.31	146	63952	948.709	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	20138	975.881	pg	95
52) 1,2,4-Trichlorobenzene	20.94	182	32966	850.907	pg	100
53) Naphthalene	21.06	128	128279	903.998	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261612.D Vial: 9
Acq On : 26 Apr 2016 16:13 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:46:55 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

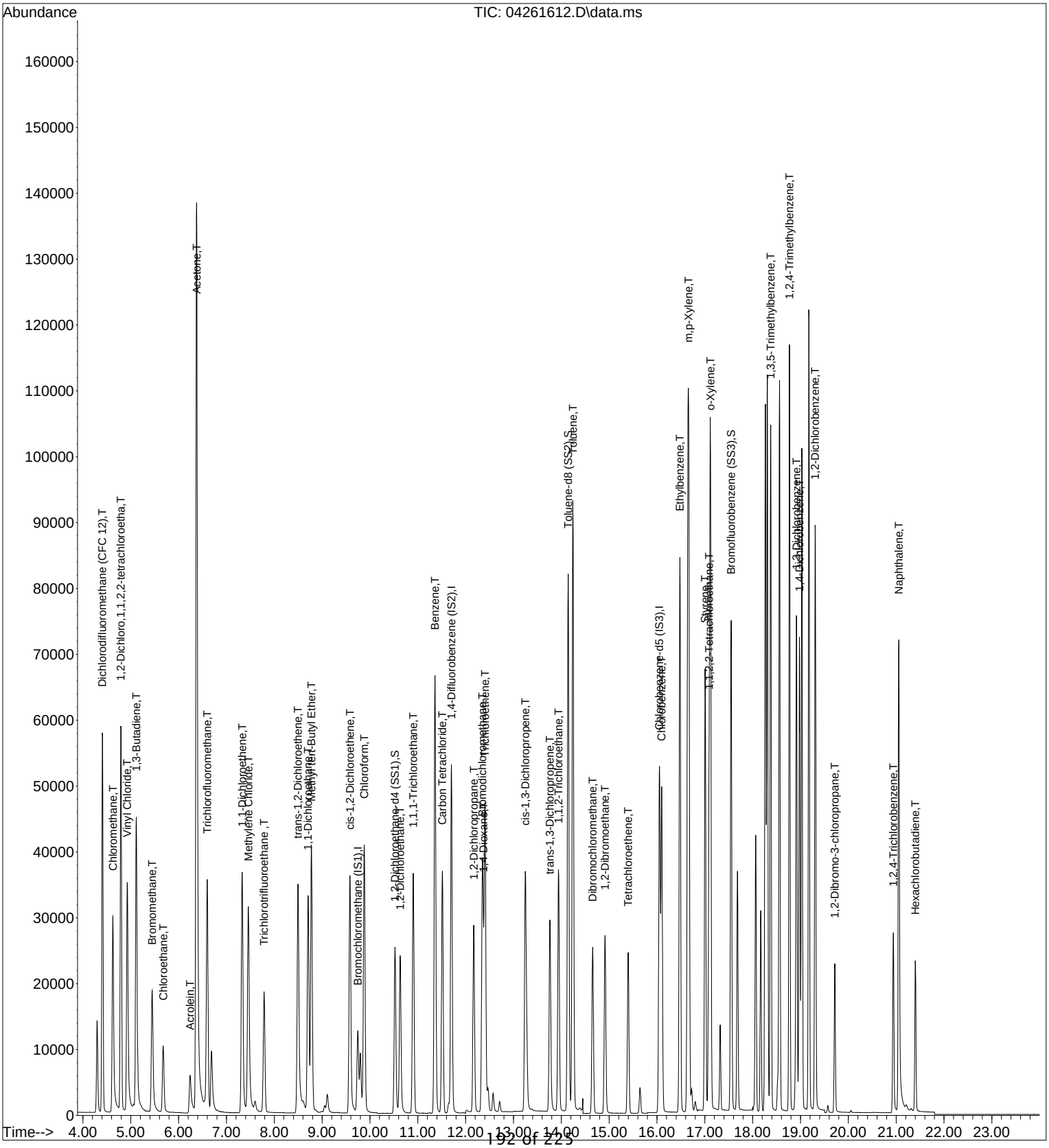
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	21920	820.554	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261612.D Vial: 9
Acq On : 26 Apr 2016 16:13 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

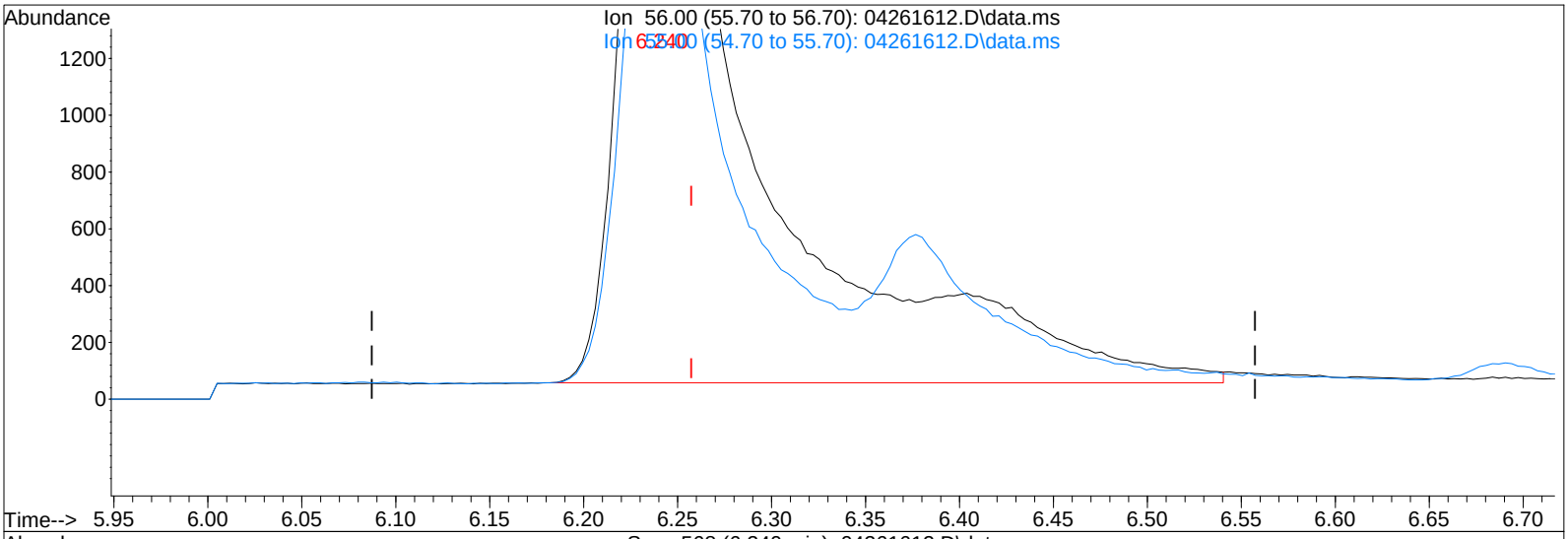
Quant Time: Apr 27 08:46:55 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

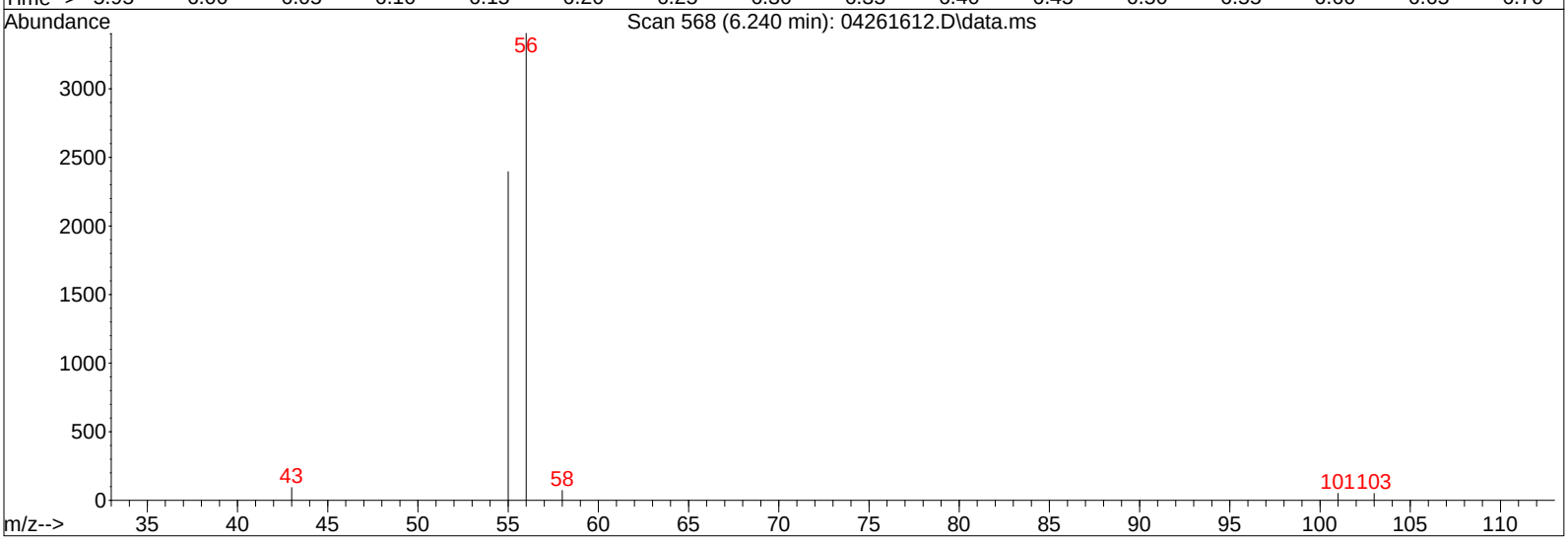


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261612.D Vial: 9
Acq On : 26 Apr 2016 16:13 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 04261612.D\data.ms

(9) Acrolein (T)

6.240min (-0.017) 1478.93pg

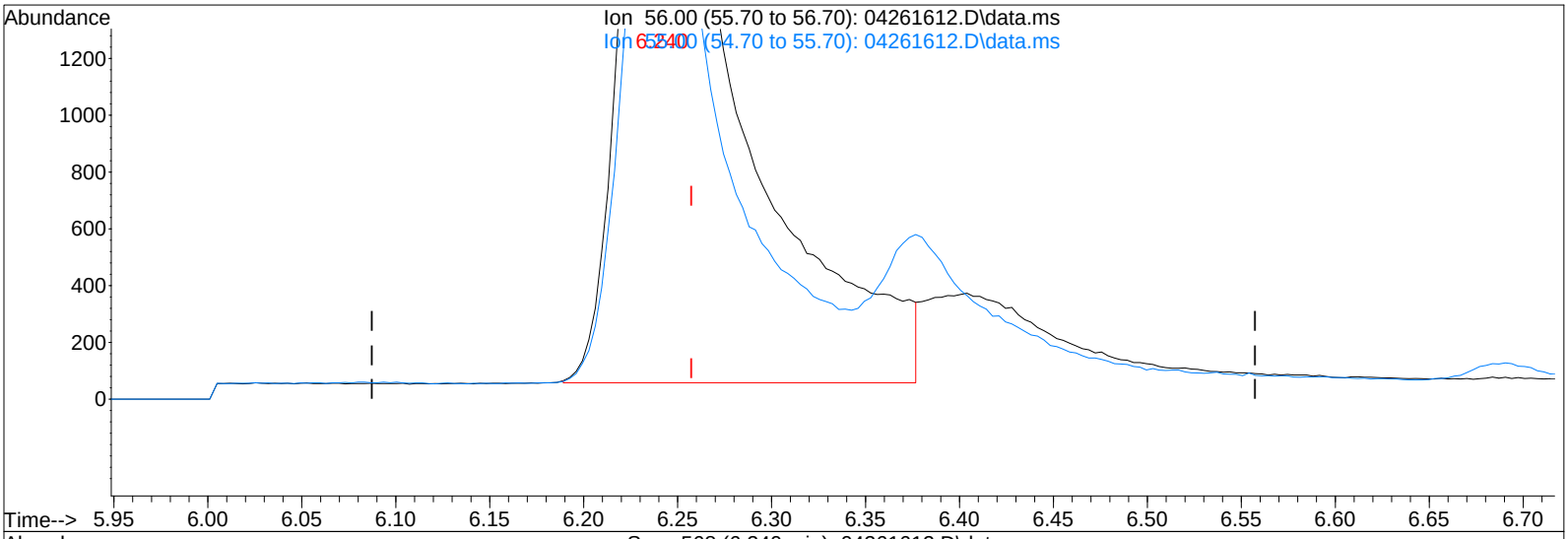
response 13323

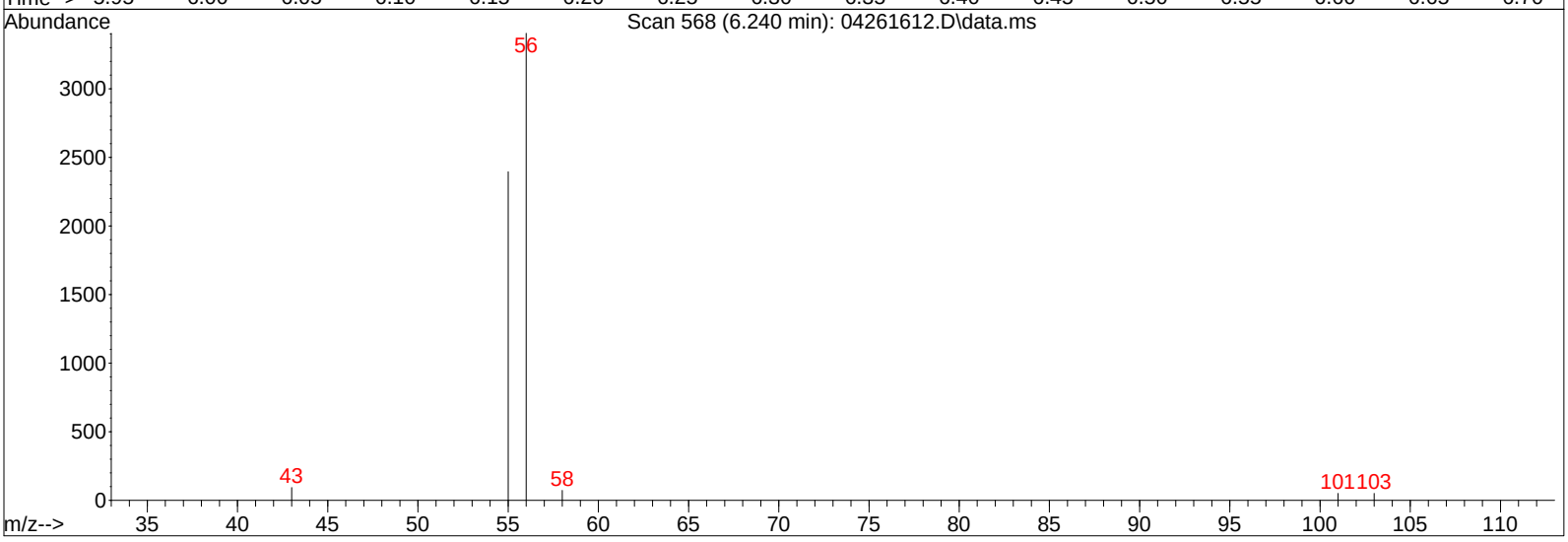
Ion	Exp%	Act%
56.00	100	100
55.00	67.20	58.99
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261612.D Vial: 9
Acq On : 26 Apr 2016 16:13 Operator: CL
Sample : 1000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:03 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 04261612.D\data.ms

(9) Acrolein (T)

6.240min (-0.017) 1301.87pg m

response 11728

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	67.01
0.00	0.00	0.00
0.00	0.00	0.00

IPC

CL 4/27/16

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261613.D Vial: 9
Acq On : 26 Apr 2016 16:45 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:53:01 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	21883	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.70	114	117773	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	23661	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.52	65	46032	1253.187	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 125.32%			
33) Toluene-d8 (SS2)	14.14	98	123760	1149.555	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 114.95%			
45) Bromofluorobenzene (SS3)	17.55	174	64902	1202.301	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 120.23%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	138221	2195.272	pg	100
3) Chloromethane	4.62	52	34673	2350.615	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	146018	2401.387	pg	100
5) Vinyl Chloride	4.92	62	122407	2501.976	pg	99
6) 1,3-Butadiene	5.11	54	85774	3034.112	pg	100
7) Bromomethane	5.44	94	50655	2128.565	pg	99
8) Chloroethane	5.67	64	36885	2377.368	pg	99
9) Acrolein	6.23	56	24774m	2377.943	pg	
10) Acetone	6.37	58	177466	10606.527	pg	96
11) Trichlorofluoromethane	6.59	101	97756	2107.957	pg	100
12) 1,1-Dichloroethene	7.33	96	57736	2357.772	pg	98
13) Methylene Chloride	7.46	84	63628	2367.831	pg	97
14) Trichlorotrifluoroethane	7.79	151	51902	2116.370	pg	100
15) trans-1,2-Dichloroethene	8.50	96	63195	2362.673	pg	98
16) 1,1-Dichloroethane	8.71	63	107665	2531.340	pg	100
17) Methyl tert-Butyl Ether	8.77	73	169080	2584.983	pg	99
18) cis-1,2-Dichloroethene	9.58	96	67852	2465.467	pg	100
19) Chloroform	9.88	83	116072	2351.217	pg	100
21) 1,2-Dichloroethane	10.63	62	86508	2572.246	pg	100
22) 1,1,1-Trichloroethane	10.90	97	101922	2333.777	pg	100
23) Benzene	11.36	78	249074	2556.803	pg	100
24) Carbon Tetrachloride	11.51	117	89923	2371.901	pg	100
26) 1,2-Dichloropropane	12.17	63	60525	2398.493	pg	99
27) Bromodichloromethane	12.35	83	91114	2357.035	pg	100
28) Trichloroethene	12.41	130	66561	1991.971	pg	100
29) 1,4-Dioxane	12.37	88	50487	2431.074	pg	97
30) cis-1,3-Dichloropropene	13.25	75	99770	2588.079	pg	100
31) trans-1,3-Dichloropropene	13.76	75	85221	2570.112	pg	99
32) 1,1,2-Trichloroethane	13.94	83	53733	2300.531	pg	98
34) Toluene	14.24	91	250205	1971.055	pg	100
35) Dibromochloromethane	14.66	129	68643	2320.436	pg	100
36) 1,2-Dibromoethane	14.91	107	68981	2288.001	pg	100
37) Tetrachloroethene	15.40	166	62903	1841.470	pg	99
39) Chlorobenzene	16.10	112	168494	1667.782	pg	100
40) Ethylbenzene	16.48	91	279760	1786.156	pg	99
41) m,p-Xylene	16.65	91	448019	3660.315	pg	99
42) Styrene	17.01	104	166003	1927.037	pg	100
43) o-Xylene	17.12	106	110398	1754.166	pg	97
44) 1,1,2,2-Tetrachloroethane	17.09	83	113052	1763.205	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	240988	1901.860	pg	98
47) 1,2,4-Trimethylbenzene	18.77	105	248472	1909.308	pg	99
48) 1,3-Dichlorobenzene	18.92	146	138730	1779.365	pg	99
49) 1,4-Dichlorobenzene	18.98	146	135490	1713.024	pg	99
50) 1,2-Dichlorobenzene	19.31	146	134294	1736.503	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	45065	1903.530	pg	89
52) 1,2,4-Trichlorobenzene	20.94	182	74986	1687.080	pg	99
53) Naphthalene	21.05	128	292314	1795.566	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261613.D Vial: 9
Acq On : 26 Apr 2016 16:45 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:53:01 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

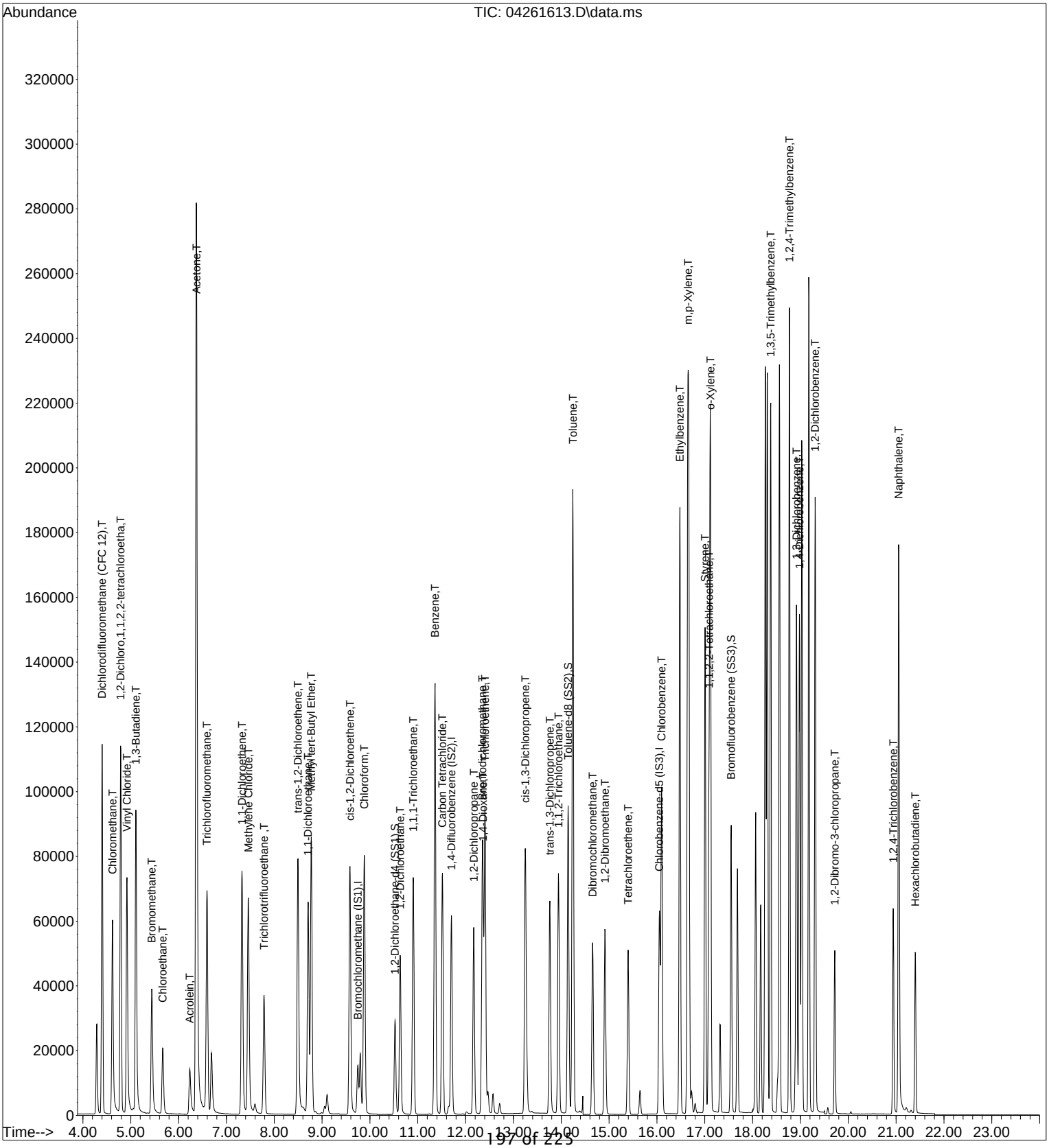
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	47109	1537.129	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261613.D Vial: 9
Acq On : 26 Apr 2016 16:45 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

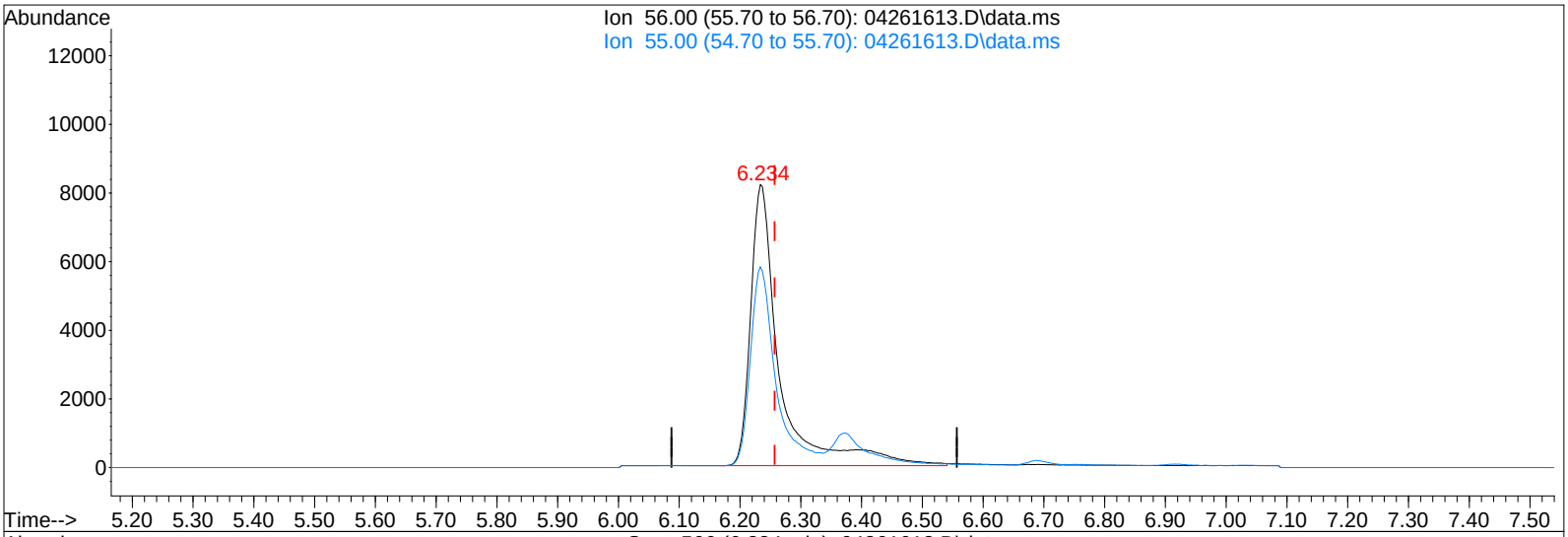
Quant Time: Apr 27 08:53:01 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

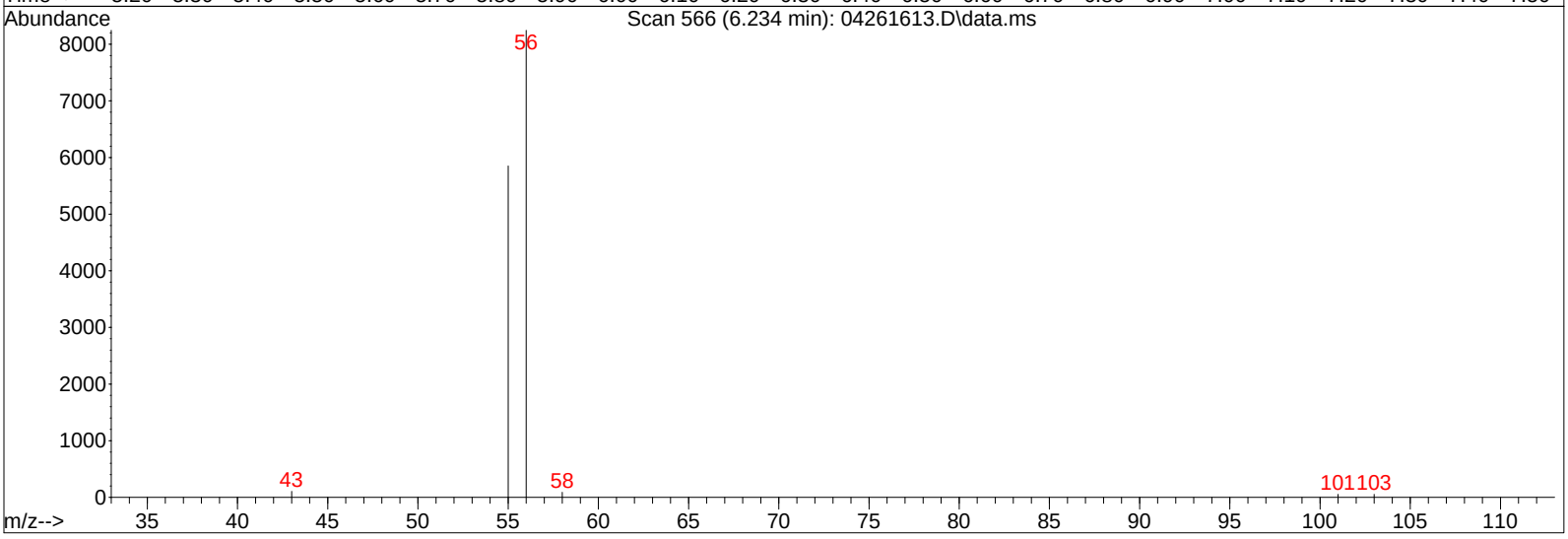


Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261613.D Vial: 9
Acq On : 26 Apr 2016 16:45 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:04 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 04261613.D\data.ms

(9) Acrolein (T)

6.234min (-0.024) 2626.74pg

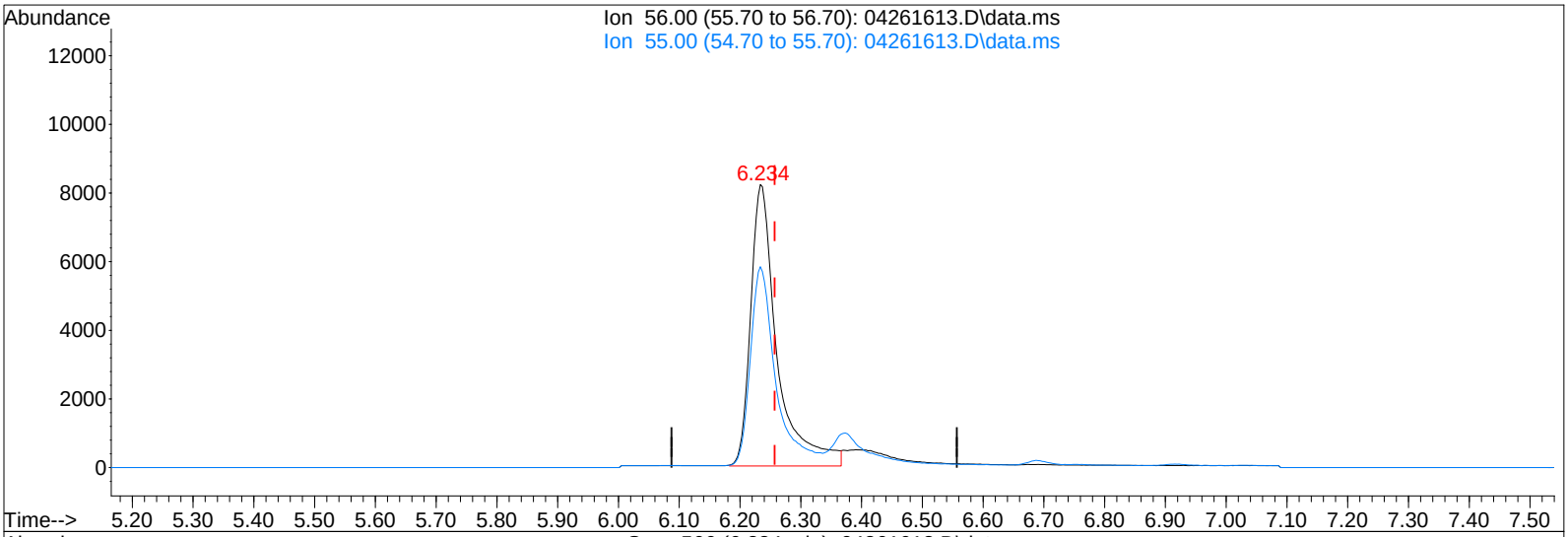
response 27366

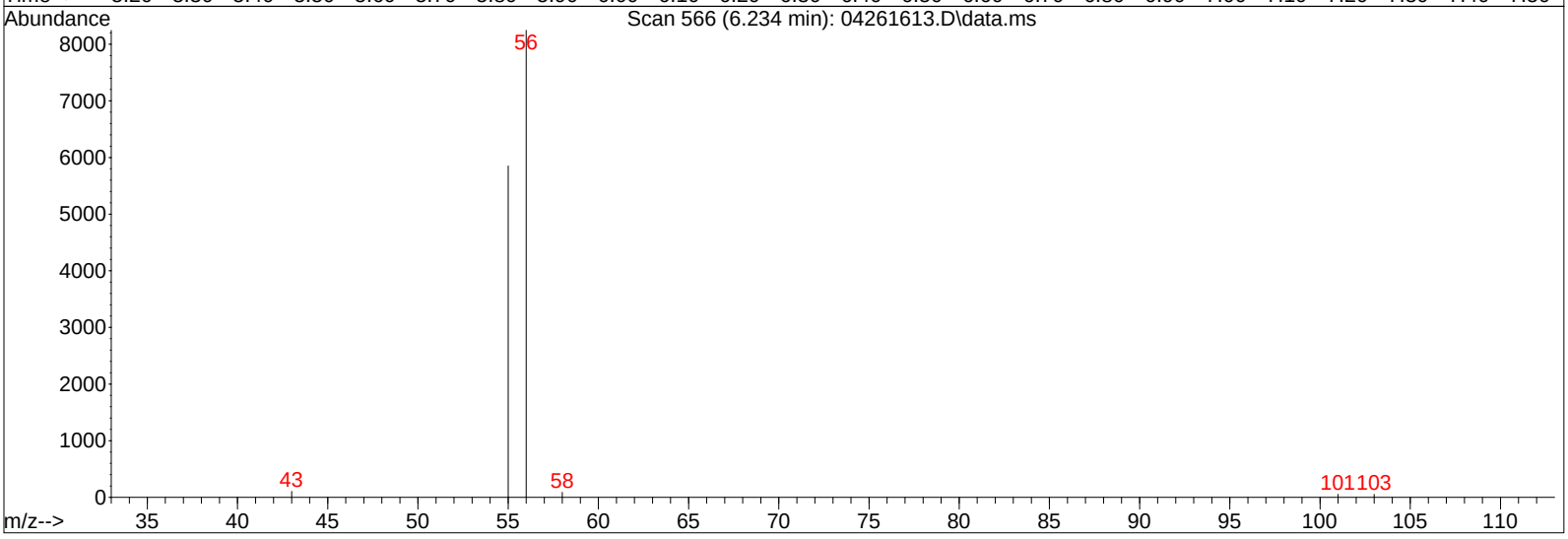
Ion	Exp%	Act%
56.00	100	100
55.00	67.20	61.62
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261613.D Vial: 9
Acq On : 26 Apr 2016 16:45 Operator: CL
Sample : 2000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:04 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M





TIC: 04261613.D\data.ms

(9) Acrolein (T)

6.234min (-0.024) 2377.94pg m

response 24774

IPC

CL 4/27/16

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	68.07
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261614.D Vial: 9
Acq On : 26 Apr 2016 17:16 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:56:20 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	23009	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.70	114	123188	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	25018	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	47377	1226.684	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 122.67%			
33) Toluene-d8 (SS2)	14.14	98	130836	1161.860	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 116.19%			
45) Bromofluorobenzene (SS3)	17.55	174	72518	1270.520	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 127.05%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	335813	5072.487	pg	100
3) Chloromethane	4.61	52	78405	5055.255	pg	94
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	345609	5405.674	pg	100
5) Vinyl Chloride	4.92	62	286564	5570.674	pg	99
6) 1,3-Butadiene	5.10	54	210020	7065.545	pg	100
7) Bromomethane	5.44	94	122808	4907.952	pg	100
8) Chloroethane	5.66	64	89795	5504.373	pg	99
9) Acrolein	6.23	56	64844m	5919.490	pg	
10) Acetone	6.37	58	425658	24195.130	pg	94
11) Trichlorofluoromethane	6.59	101	234650	4812.247	pg	100
12) 1,1-Dichloroethene	7.32	96	144978	5630.751	pg	97
13) Methylene Chloride	7.46	84	153366	5428.009	pg	97
14) Trichlorotrifluoroethane	7.79	151	129433	5019.515	pg	100
15) trans-1,2-Dichloroethene	8.50	96	158090	5621.271	pg	97
16) 1,1-Dichloroethane	8.71	63	259405	5800.474	pg	100
17) Methyl tert-Butyl Ether	8.77	73	428993	6237.704	pg	99
18) cis-1,2-Dichloroethene	9.58	96	168316	5816.626	pg	100
19) Chloroform	9.89	83	276056	5318.284	pg	100
21) 1,2-Dichloroethane	10.63	62	208898	5907.443	pg	99
22) 1,1,1-Trichloroethane	10.91	97	247916	5398.899	pg	100
23) Benzene	11.36	78	595594	5814.713	pg	100
24) Carbon Tetrachloride	11.52	117	218592	5483.642	pg	100
26) 1,2-Dichloropropane	12.17	63	147682	5595.109	pg	99
27) Bromodichloromethane	12.35	83	224976	5564.093	pg	100
28) Trichloroethene	12.41	130	164356	4702.471	pg	100
29) 1,4-Dioxane	12.37	88	127652	5876.566	pg	96
30) cis-1,3-Dichloropropene	13.25	75	259375	6432.547	pg	100
31) trans-1,3-Dichloropropene	13.76	75	225759	6509.204	pg	99
32) 1,1,2-Trichloroethane	13.94	83	131450	5380.528	pg	97
34) Toluene	14.24	91	621355	4679.719	pg	99
35) Dibromochloromethane	14.66	129	176441	5702.301	pg	100
36) 1,2-Dibromoethane	14.91	107	174754	5541.550	pg	100
37) Tetrachloroethene	15.40	166	161554	4521.561	pg	97
39) Chlorobenzene	16.10	112	425003	3978.573	pg	100
40) Ethylbenzene	16.48	91	720180	4348.659	pg	98
41) m,p-Xylene	16.65	91	1120455	8657.588	pg	98
42) Styrene	17.01	104	439921	4829.802	pg	100
43) o-Xylene	17.12	106	276812	4159.824	pg	96
44) 1,1,2,2-Tetrachloroethane	17.09	83	278595	4109.400	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	604514	4512.009	pg	97
47) 1,2,4-Trimethylbenzene	18.77	105	633240	4602.008	pg	98
48) 1,3-Dichlorobenzene	18.92	146	354466	4299.815	pg	100
49) 1,4-Dichlorobenzene	18.98	146	343273	4104.653	pg	99
50) 1,2-Dichlorobenzene	19.31	146	343736	4203.629	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	121680	4860.938	pg	86
52) 1,2,4-Trichlorobenzene	20.94	182	206471	4393.342	pg	98
53) Naphthalene	21.05	128	768456	4464.280	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261614.D Vial: 9
Acq On : 26 Apr 2016 17:16 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 08:56:20 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

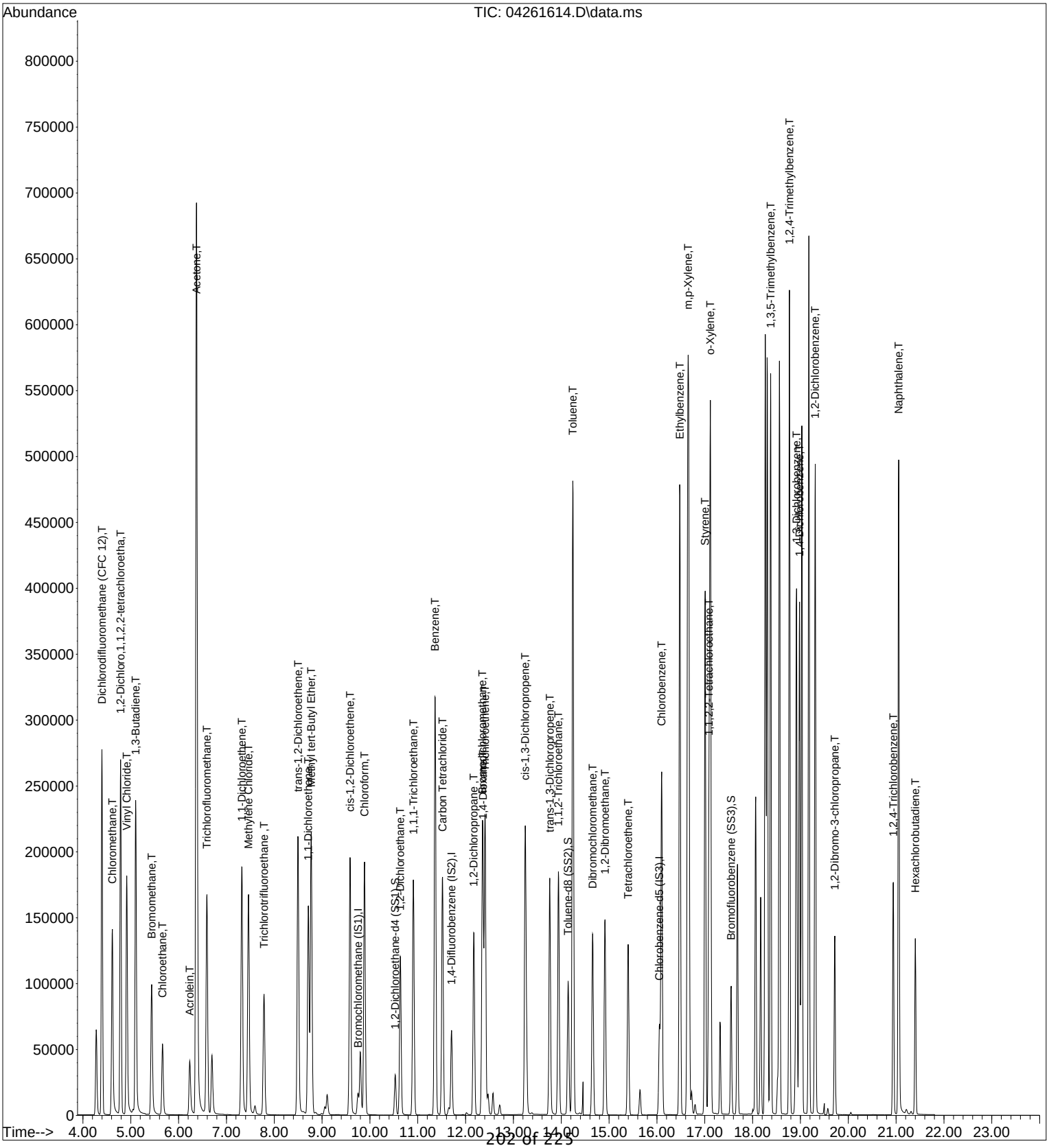
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	125380	3869.146	pg	100

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261614.D Vial: 9
Acq On : 26 Apr 2016 17:16 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

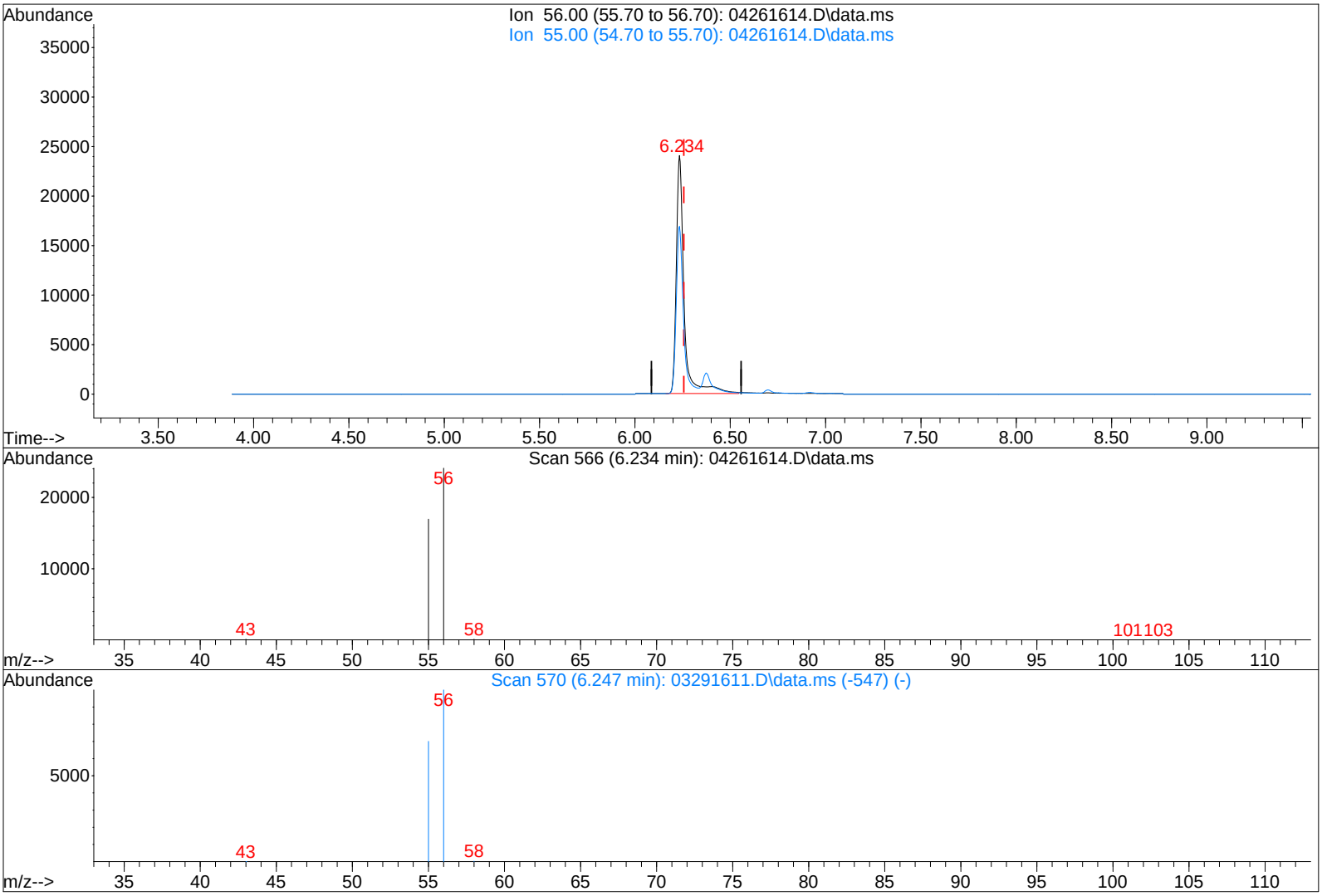
Quant Time: Apr 27 08:56:20 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261614.D Vial: 9
Acq On : 26 Apr 2016 17:16 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261614.D\data.ms

(9) Acrolein (T)

6.234min (-0.024) 6248.13pg

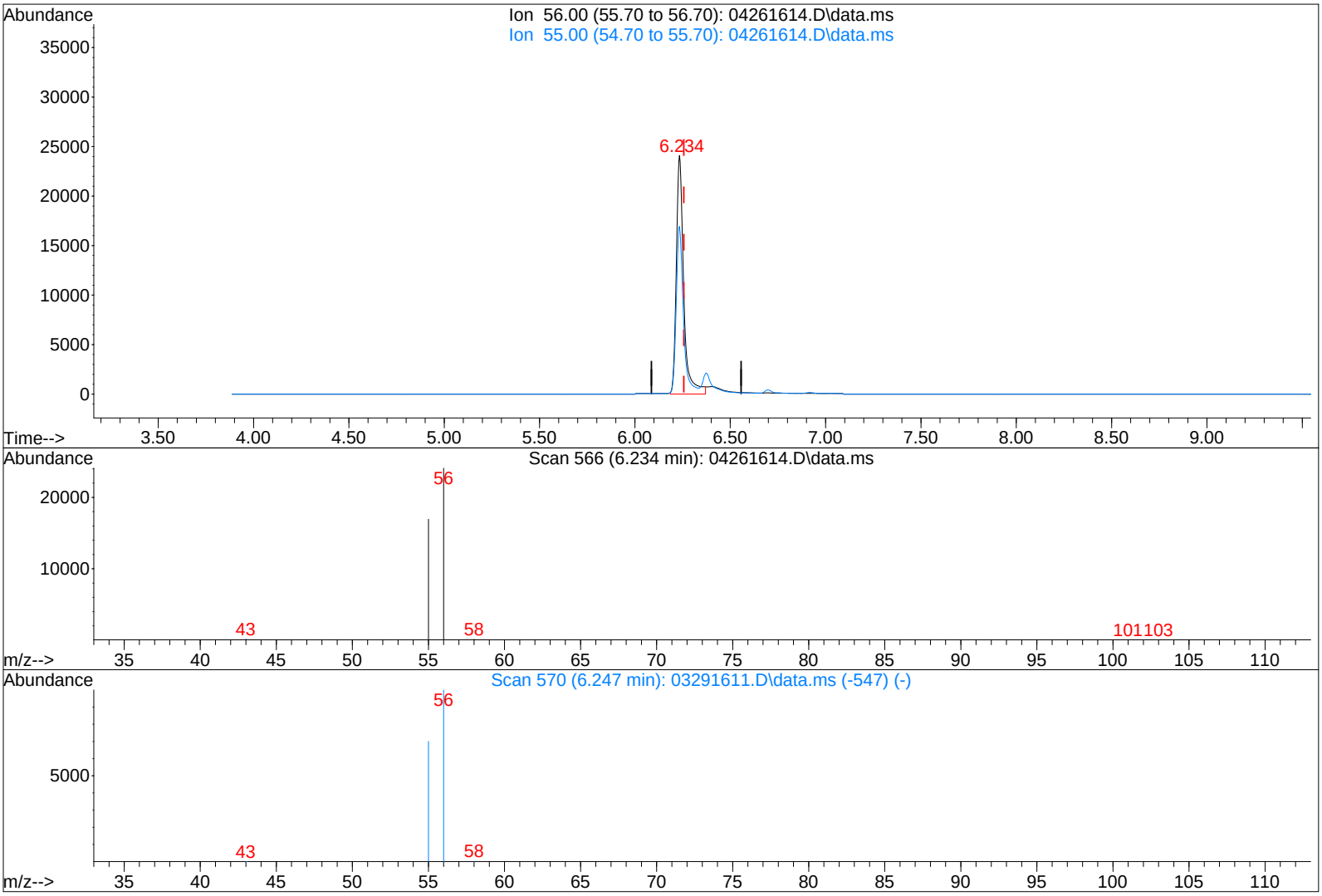
response 68444

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	64.68
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261614.D Vial: 9
Acq On : 26 Apr 2016 17:16 Operator: CL
Sample : 5000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:05 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261614.D\data.ms

(9) Acrolein (T)

6.234min (-0.024) 5919.49pg m

response 64844

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	68.27
0.00	0.00	0.00
0.00	0.00	0.00

BLC

CL 4/27/16

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261615.D Vial: 9
Acq On : 26 Apr 2016 17:48 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 09:02:33 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.76	130	24128	1000.000	pg	0.00
25) 1,4-Difluorobenzene (IS2)	11.71	114	130153	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	27035	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	49072	1211.645	pg	0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 121.17%			
33) Toluene-d8 (SS2)	14.14	98	138736	1166.085	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 116.61%			
45) Bromofluorobenzene (SS3)	17.55	174	79459	1288.265	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 128.83%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.40	85	678091	9767.600	pg	99
3) Chloromethane	4.61	52	147256	9054.171	pg	94
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	686928	10245.955	pg	100
5) Vinyl Chloride	4.92	62	579210	10737.386	pg	99
6) 1,3-Butadiene	5.11	54	425568	13653.073	pg	98
7) Bromomethane	5.44	94	267027	10176.660	pg	99
8) Chloroethane	5.67	64	185021	10815.663	pg	100
9) Acrolein	6.24	56	135427m	11789.521	pg	
10) Acetone	6.38	58	855838	46391.151	pg	94
11) Trichlorofluoromethane	6.60	101	478266	9353.481	pg	100
12) 1,1-Dichloroethene	7.33	96	301010	11148.631	pg	96
13) Methylene Chloride	7.47	84	309845	10457.609	pg	96
14) Trichlorotrifluoroethane	7.79	151	269941	9983.021	pg	99
15) trans-1,2-Dichloroethene	8.50	96	327770	11114.136	pg	97
16) 1,1-Dichloroethane	8.72	63	522391	11139.283	pg	100
17) Methyl tert-Butyl Ether	8.77	73	888474	12319.574	pg	99
18) cis-1,2-Dichloroethene	9.59	96	345553	11387.720	pg	100
19) Chloroform	9.89	83	553963	10177.276	pg	100
21) 1,2-Dichloroethane	10.64	62	422647	11397.760	pg	99
22) 1,1,1-Trichloroethane	10.91	97	504992	10487.248	pg	100
23) Benzene	11.36	78	1203151	11201.458	pg	100
24) Carbon Tetrachloride	11.52	117	450116	10768.015	pg	100
26) 1,2-Dichloropropane	12.18	63	304452	10917.271	pg	99
27) Bromodichloromethane	12.36	83	465005	10885.040	pg	100
28) Trichloroethene	12.41	130	337702	9145.098	pg	100
29) 1,4-Dioxane	12.37	88	265986	11589.614	pg	95
30) cis-1,3-Dichloropropene	13.25	75	550691	12926.385	pg	100
31) trans-1,3-Dichloropropene	13.76	75	483534	13195.445	pg	99
32) 1,1,2-Trichloroethane	13.94	83	268663	10408.458	pg	97
34) Toluene	14.24	91	1271777	9065.780	pg	99
35) Dibromochloromethane	14.66	129	373986	11439.846	pg	100
36) 1,2-Dibromoethane	14.91	107	363627	10913.761	pg	99
37) Tetrachloroethene	15.40	166	343205	9091.562	pg	96
39) Chlorobenzene	16.10	112	881012	7632.089	pg	100
40) Ethylbenzene	16.48	91	1480448	8272.441	pg	98
41) m,p-Xylene	16.66	91	2296859	16423.398	pg	97
42) Styrene	17.01	104	923509	9382.574	pg	100
43) o-Xylene	17.12	106	568946	7912.020	pg	95
44) 1,1,2,2-Tetrachloroethane	17.09	83	569830	7778.155	pg	99
46) 1,3,5-Trimethylbenzene	18.38	105	1247756	8618.257	pg	96
47) 1,2,4-Trimethylbenzene	18.77	105	1332938	8964.276	pg	97
48) 1,3-Dichlorobenzene	18.92	146	734185	8241.512	pg	100
49) 1,4-Dichlorobenzene	18.98	146	717191	7935.929	pg	99
50) 1,2-Dichlorobenzene	19.31	146	720083	8149.072	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	265866	9828.560	pg	83
52) 1,2,4-Trichlorobenzene	20.94	182	452157	8903.308	pg	97
53) Naphthalene	21.05	128	1631829	8772.699	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261615.D Vial: 9
Acq On : 26 Apr 2016 17:48 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 09:02:33 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

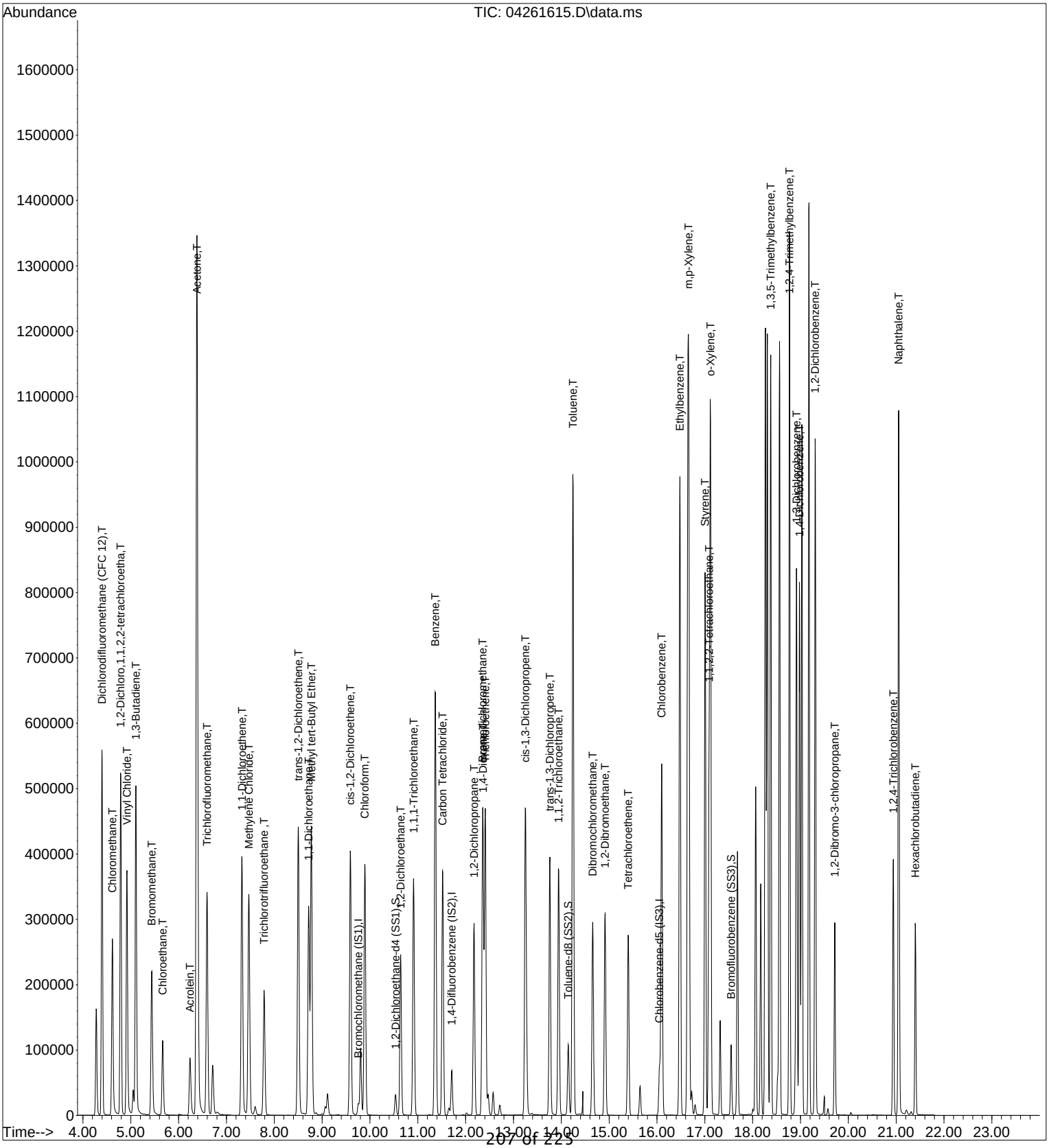
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	273423	7808.148	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261615.D Vial: 9
Acq On : 26 Apr 2016 17:48 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

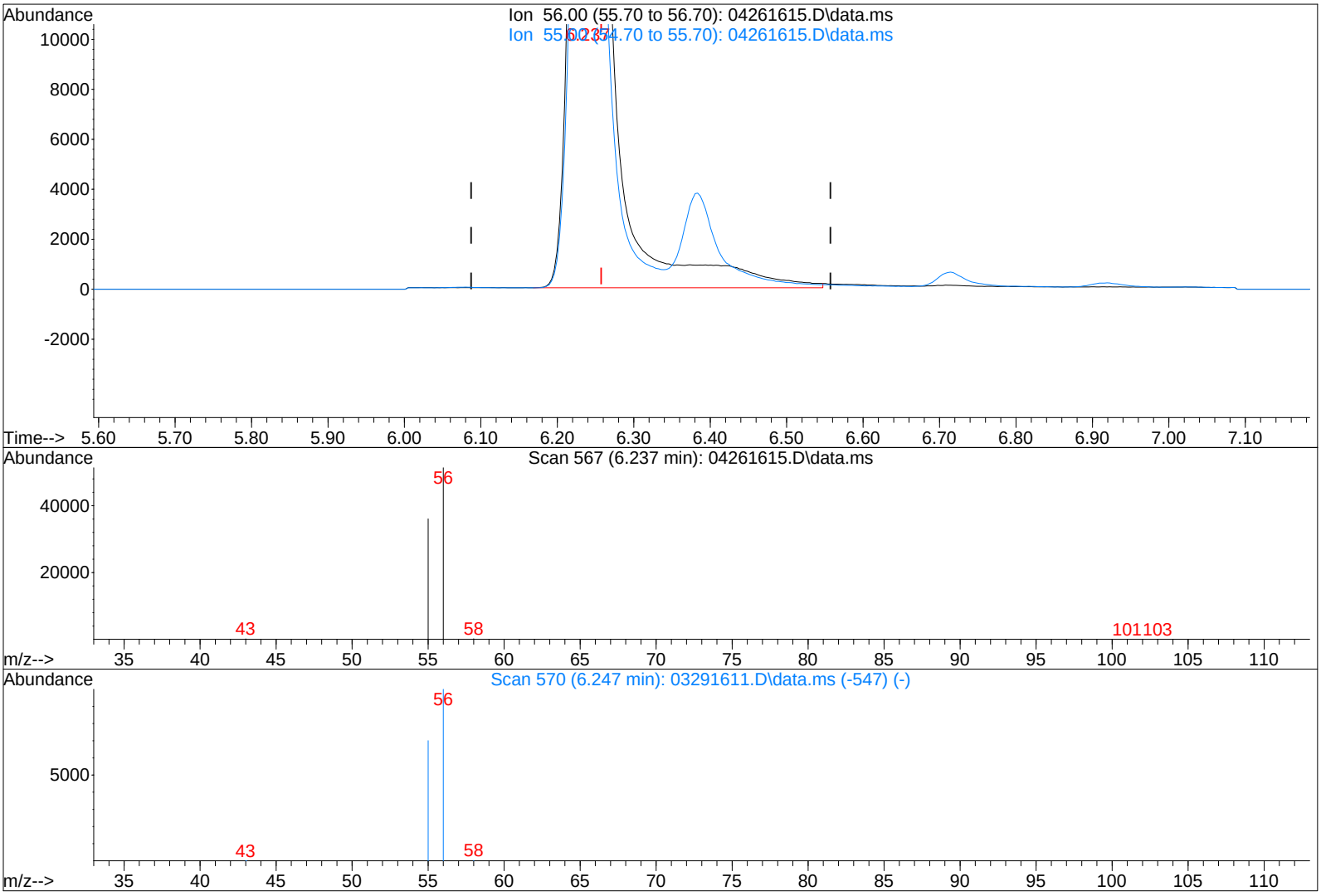
Quant Time: Apr 27 09:02:33 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261615.D Vial: 9
Acq On : 26 Apr 2016 17:48 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:06 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261615.D\data.ms

(9) Acrolein (T)

6.237min (-0.020) 12296.00pg

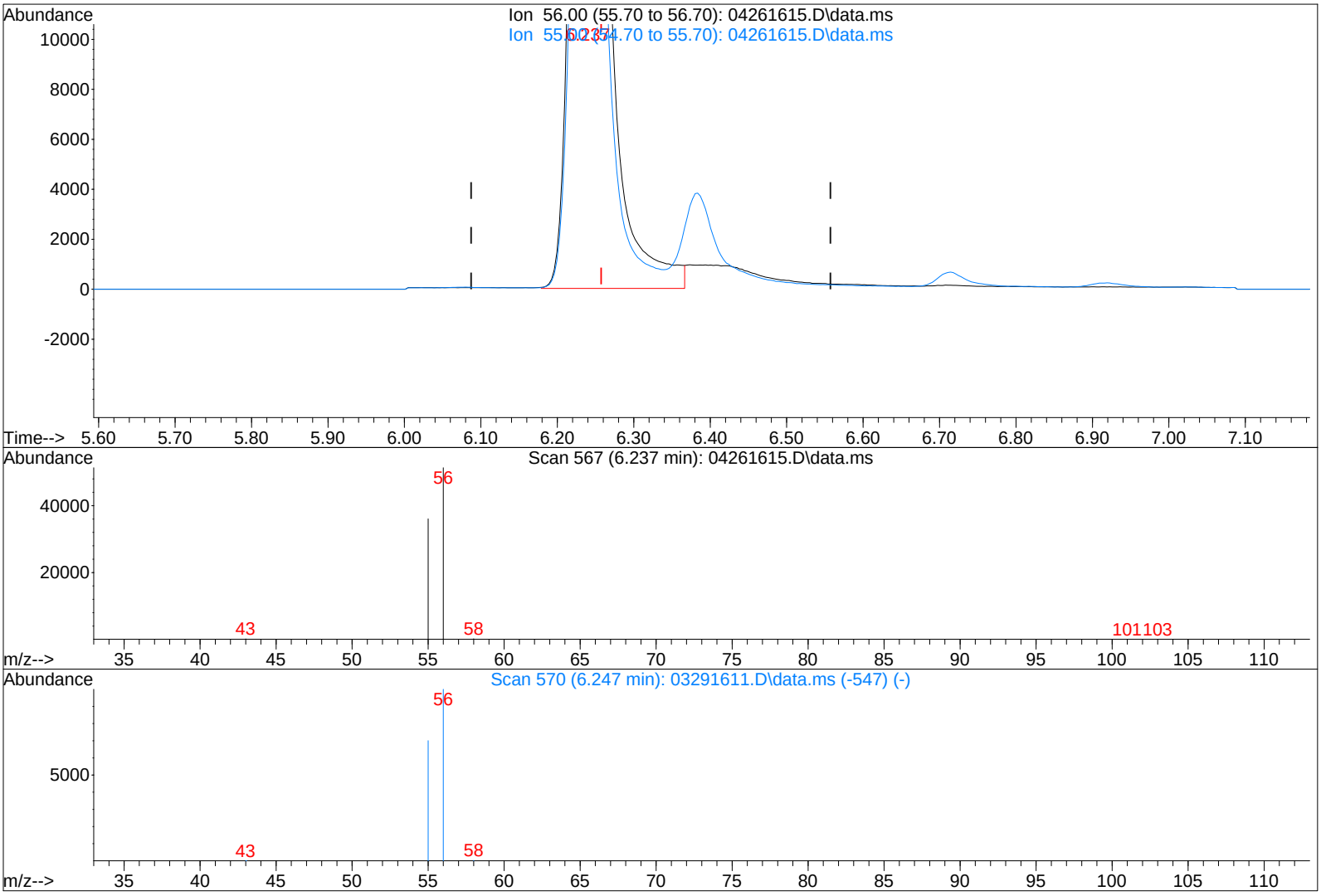
response 141245

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	66.46
0.00	0.00	0.00
0.00	0.00	0.00

Quantitation Report (Qedit)

Data File : I:\MS19\DATA\2016 04\26\04261615.D Vial: 9
Acq On : 26 Apr 2016 17:48 Operator: CL
Sample : 10000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131609 (5/12)

Quant Time: Apr 27 07:43:06 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 07:42:07 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



TIC: 04261615.D\data.ms

(9) Acrolein (T)

6.237min (-0.020) 11789.52pg m

response 135427

Ion	Exp%	Act%
56.00	100	100
55.00	67.20	69.31
0.00	0.00	0.00
0.00	0.00	0.00

IPC

CL 4/27/16

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261619.D Vial: 11
Acq On : 27 Apr 2016 10:14 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131606 (5/12)

Quant Time: Apr 27 10:56:49 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 09:30:03 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.77	130	26217	1000.000	pg	-0.01
25) 1,4-Difluorobenzene (IS2)	11.72	114	135145	1000.000	pg	0.00
38) Chlorobenzene-d5 (IS3)	16.05	54	31513	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.54	65	51231	912.265	pg	-0.01
Spiked Amount 1000.000	Range 70 - 130		Recovery = 91.23%			
33) Toluene-d8 (SS2)	14.15	98	141897	979.404	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.94%			
45) Bromofluorobenzene (SS3)	17.55	174	81220	1027.693	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 102.77%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.39	85	3248563	35329.741	pg	98
3) Chloromethane	4.61	52	699844	26771.226	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.79	85	3513466	35962.564	pg	98
5) Vinyl Chloride	4.92	62	3026043	36954.945	pg	100
6) 1,3-Butadiene	5.11	54	2537294	61181.200	pg	99
7) Bromomethane	5.44	94	1301914	37331.685	pg	99
8) Chloroethane	5.67	64	968790	40058.262	pg	100
9) Acrolein	6.25	56	750595	49699.758	pg	97
10) Acetone	6.41	58	4824575	226468.825	pg #	87
11) Trichlorofluoromethane	6.59	101	2485248	37054.337	pg	99
12) 1,1-Dichloroethene	7.33	96	1581729	44654.102	pg	95
13) Methylene Chloride	7.48	84	1599533	39086.151	pg	92
14) Trichlorotrifluoroethane	7.78	151	1558655	51301.924	pg	99
15) trans-1,2-Dichloroethene	8.51	96	1704578	43415.139	pg	97
16) 1,1-Dichloroethane	8.73	63	2693466	39055.799	pg	99
17) Methyl tert-Butyl Ether	8.78	73	4801805	53590.165	pg	100
18) cis-1,2-Dichloroethene	9.60	96	1803476	44755.047	pg	99
19) Chloroform	9.91	83	2848678	37854.476	pg	100
21) 1,2-Dichloroethane	10.65	62	2217184	40911.000	pg	99
22) 1,1,1-Trichloroethane	10.92	97	2653902	39983.552	pg	99
23) Benzene	11.37	78	6169496	37619.791	pg	100
24) Carbon Tetrachloride	11.53	117	2436379	42726.341	pg	99
26) 1,2-Dichloropropane	12.18	63	1614684	41459.344	pg	99
27) Bromodichloromethane	12.36	83	2587329	48838.228	pg	99
28) Trichloroethene	12.42	130	1873338	46288.265	pg	99
29) 1,4-Dioxane	12.37	88	1482443	50089.772	pg	95
30) cis-1,3-Dichloropropene	13.25	75	3132058	55155.209	pg	99
31) trans-1,3-Dichloropropene	13.76	75	2663221	55142.710	pg	98
32) 1,1,2-Trichloroethane	13.95	83	1412658	41142.446	pg	97
34) Toluene	14.25	91	6513505	40355.235	pg	95
35) Dibromochloromethane	14.66	129	2078362	50219.514	pg	99
36) 1,2-Dibromoethane	14.92	107	1909968	46371.151	pg	99
37) Tetrachloroethene	15.40	166	1994108	45683.724	pg	92
39) Chlorobenzene	16.10	112	4666290	42793.608	pg	98
40) Ethylbenzene	16.48	91	7677717	46703.738	pg	93
41) m,p-Xylene	16.66	91	12669016	99576.254	pg	92
42) Styrene	17.01	104	5182594	57639.158	pg	100
43) o-Xylene	17.12	106	3276141	48942.404	pg	89
44) 1,1,2,2-Tetrachloroethane	17.09	83	3167096	40684.078	pg	98
46) 1,3,5-Trimethylbenzene	18.38	105	6844221	51266.389	pg	91
47) 1,2,4-Trimethylbenzene	18.77	105	8041028	59583.785	pg	93
48) 1,3-Dichlorobenzene	18.92	146	4396528	53198.280	pg	98
49) 1,4-Dichlorobenzene	18.98	146	4150846	50729.969	pg	97
50) 1,2-Dichlorobenzene	19.31	146	4619622	57134.861	pg	97
51) 1,2-Dibromo-3-chloropr...	19.72	157	1545928	59341.675	pg	82
52) 1,2,4-Trichlorobenzene	20.94	182	2872297	61981.966	pg	96
53) Naphthalene	21.06	128	9727696	60619.373	pg	92

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261619.D Vial: 11
Acq On : 27 Apr 2016 10:14 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131606 (5/12)

Quant Time: Apr 27 10:56:49 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 09:30:03 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

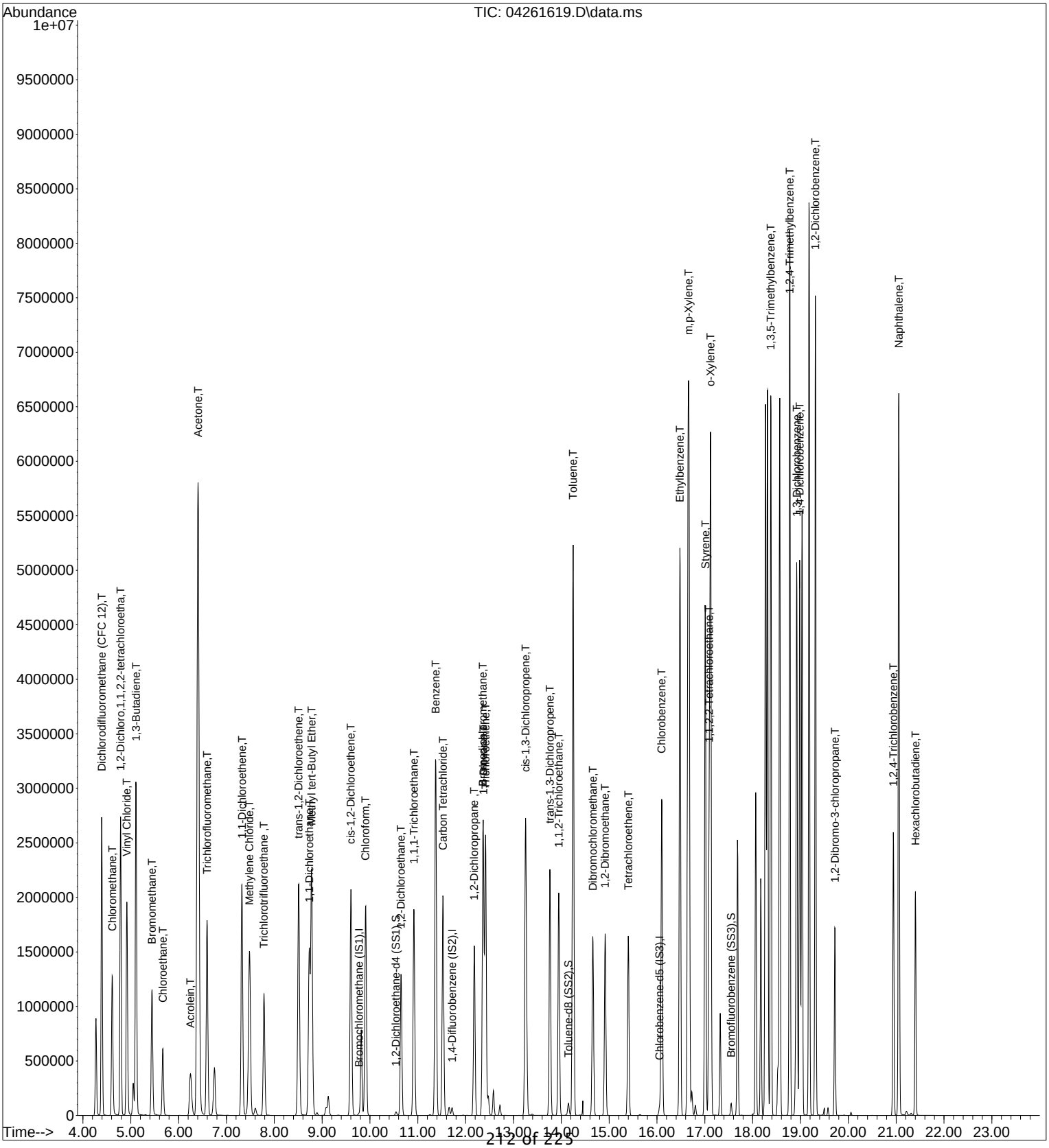
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	1784981	57541.771	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261619.D Vial: 11
Acq On : 27 Apr 2016 10:14 Operator: CL
Sample : 50000pg TO15SIM ICAL STD Inst : MS19
Misc : S29-04191602/S29-04131606 (5/12)

Quant Time: Apr 27 10:56:49 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 09:30:03 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261620.D Vial: 12
Acq On : 27 Apr 2016 10:46 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 27 11:10:43 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/27/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	23856	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.70	114	127899	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	25426	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.53	65	49545	964.774	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 96.48%			
33) Toluene-d8 (SS2)	14.14	98	133489	972.714	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.27%			
45) Bromofluorobenzene (SS3)	17.55	174	73630	1138.532	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 113.85%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	32977	424.420	pg	100
3) Chloromethane	4.64	52	9123	461.607	pg	92
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	32359	391.841	pg	100
5) Vinyl Chloride	4.94	62	30969	448.197	pg	99
6) 1,3-Butadiene	5.13	54	23643	616.996	pg	94
7) Bromomethane	5.46	94	14376	491.987	pg	99
8) Chloroethane	5.69	64	9472	469.865	pg	99
9) Acrolein	6.26	56	7237	535.925	pg	89
10) Acetone	6.39	58	45127	2500.777	pg	100
11) Trichlorofluoromethane	6.61	101	24732	441.065	pg	100
12) 1,1-Dichloroethene	7.34	96	14807	507.087	pg	98
13) Methylene Chloride	7.47	84	16446	494.149	pg	100
14) Trichlorotrifluoroethane	7.79	151	14633	531.959	pg	99
15) trans-1,2-Dichloroethene	8.50	96	16016	493.407	pg	99
16) 1,1-Dichloroethane	8.71	63	27435	475.781	pg	100
17) Methyl tert-Butyl Ether	8.79	73	44349	542.811	pg	99
18) cis-1,2-Dichloroethene	9.59	96	17249	517.855	pg	100
19) Chloroform	9.88	83	29787	480.114	pg	100
21) 1,2-Dichloroethane	10.64	62	21663	478.407	pg	100
22) 1,1,1-Trichloroethane	10.90	97	25507	461.065	pg	100
23) Benzene	11.36	78	63255	492.256	pg	100
24) Carbon Tetrachloride	11.51	117	22063	465.979	pg	99
26) 1,2-Dichloropropane	12.17	63	15046	450.967	pg	100
27) Bromodichloromethane	12.35	83	21271	427.986	pg	100
28) Trichloroethene	12.40	130	17212	453.980	pg	100
29) 1,4-Dioxane	12.38	88	12495	510.938	pg	98
30) cis-1,3-Dichloropropene	13.25	75	21535	457.441	pg	100
31) trans-1,3-Dichloropropene	13.77	75	19212	477.595	pg	97
32) 1,1,2-Trichloroethane	13.95	83	13127	447.395	pg	99
34) Toluene	14.24	91	65896	468.806	pg	97
35) Dibromochloromethane	14.66	129	15779	453.065	pg	100
36) 1,2-Dibromoethane	14.92	107	16639	474.744	pg	99
37) Tetrachloroethene	15.40	166	16998	466.452	pg	94
39) Chlorobenzene	16.10	112	42749	519.237	pg	100
40) Ethylbenzene	16.48	91	69167	554.457	pg	99
41) m,p-Xylene	16.66	91	108415	1120.872	pg	99
42) Styrene	17.01	104	37770	568.181	pg	98
43) o-Xylene	17.12	106	26692	545.332	pg	97
44) 1,1,2,2-Tetrachloroethane	17.09	83	26006	448.630	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	57837	572.317	pg	98
47) 1,2,4-Trimethylbenzene	18.77	105	58767	570.790	pg	100
48) 1,3-Dichlorobenzene	18.92	146	33990	556.163	pg	100
49) 1,4-Dichlorobenzene	18.98	146	33845	554.565	pg	99
50) 1,2-Dichlorobenzene	19.31	146	32523	539.039	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	9840	518.701	pg	89
52) 1,2,4-Trichlorobenzene	20.94	182	20025	600.182	pg	98
53) Naphthalene	21.06	128	71002	581.408	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261620.D Vial: 12
Acq On : 27 Apr 2016 10:46 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 27 11:10:43 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

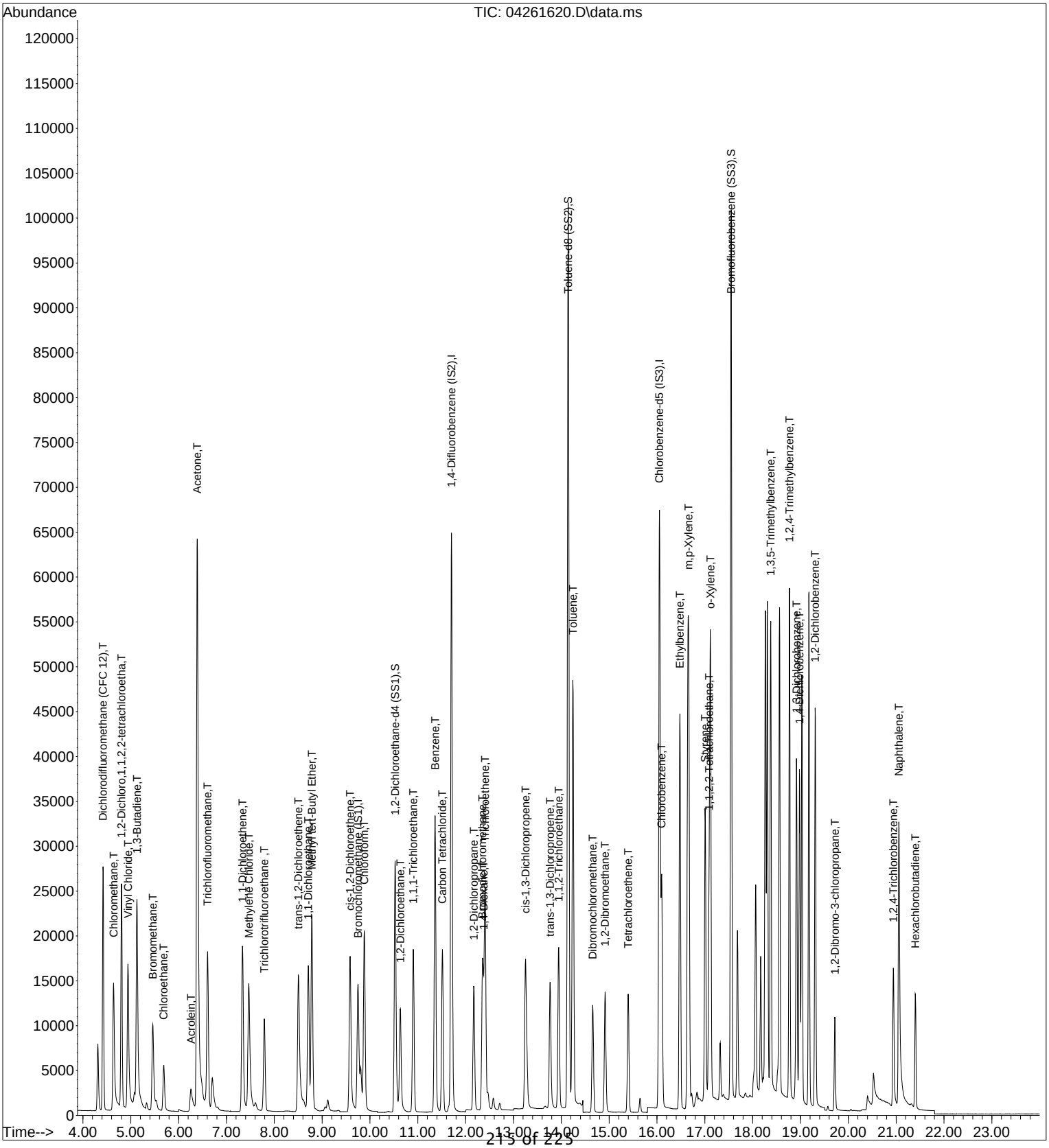
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	12547	560.977	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\26\04261620.D Vial: 12
Acq On : 27 Apr 2016 10:46 Operator: CL
Sample : 500pg TO15SIM ICV Inst : MS19
Misc : S29-04191602/S29-04141605 (5/13)

Quant Time: Apr 27 11:10:43 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



Data File Name: 04261620.D
Data File Path: I:\MS19\DATA\2016_04\26\
Operator: CL
Instrument Name: MS19
Sample Name: 500pg TO15SIM ICV
Misc Info: S29-04191602/S29-04141605 (5/13)
Date Acquired: 4/27/16 10:46
Acq. Method File: TO15SIM.M

CL 5/3/16

#	Compound Name	Ret. Time	Amount Spiked (pg)	Amount Found (pg)	Percent Recovery	Lower Limit	Upper Limit	Flag
2)	Dichlorodifluoromethane (CFC 12)	4.42	470.0	424.4	90.3	70	130	*
3)	Chloromethane	4.64	500.0	461.6	92.3	70	130	*
4)	*1,2-Dichloro,1,1,2,2-tetrachloroetha*	4.81	510.0	391.8	76.8	70	130	*
5)	Vinyl Chloride	4.94	500.0	448.2	89.6	70	130	*
6)	*1,3-Butadiene*	5.13	515.0	617.0	119.8	70	130	*
7)	Bromomethane	5.46	505.0	492.0	97.4	70	130	*
8)	Chloroethane	5.69	500.0	469.9	94.0	70	130	*
9)	*Acrolein*	6.26	535.0	535.9	100.2	70	130	*
10)	Acetone	6.39	2695.0	2500.8	92.8	70	130	*
11)	Trichlorofluoromethane	6.61	540.0	441.1	81.7	70	130	*
12)	1,1-Dichloroethene	7.34	540.0	507.1	93.9	70	130	*
13)	Methylene Chloride	7.47	555.0	494.1	89.0	70	130	*
14)	Trichlorotrifluoroethane	7.79	550.0	532.0	96.7	70	130	*
15)	trans-1,2-Dichloroethene	8.50	525.0	493.4	94.0	70	130	*
16)	1,1-Dichloroethane	8.71	530.0	475.8	89.8	70	130	*
17)	Methyl tert-Butyl Ether	8.79	540.0	542.8	100.5	70	130	*
18)	cis-1,2-Dichloroethene	9.59	545.0	517.9	95.0	70	130	*
19)	Chloroform	9.88	560.0	480.1	85.7	70	130	*
21)	1,2-Dichloroethane	10.64	535.0	478.4	89.4	70	130	*
22)	1,1,1-Trichloroethane	10.90	525.0	461.1	87.8	70	130	*
25)	Benzene	11.36	565.0	492.3	87.1	70	130	*
24)	Carbon Tetrachloride	11.51	575.0	466.0	81.0	70	130	*
26)	1,2-Dichloropropane	12.17	540.0	451.0	83.5	70	130	*
27)	Bromodichloromethane	12.35	545.0	428.0	78.5	70	130	*
28)	Trichloroethene	12.40	540.0	454.0	84.1	70	130	*
29)	1,4-Dioxane	12.38	525.0	510.9	97.3	70	130	*
30)	cis-1,3-Dichloropropene	13.25	520.0	457.4	88.0	70	130	*
31)	trans-1,3-Dichloropropene	13.77	525.0	477.6	91.0	70	130	*
32)	1,1,2-Trichloroethane	13.95	540.0	447.4	82.9	70	130	*
34)	Toluene	14.14	545.0	468.8	86.0	70	130	*
35)	*Dibromochloromethane*	14.66	550.0	453.1	82.4	70	130	*
36)	1,2-Dibromoethane	14.92	545.0	474.7	87.1	70	130	*
37)	Tetrachloroethene	15.40	505.0	495.0	98.0	70	130	*
39)	Chlorobenzene	16.10	550.0	519.2	94.4	70	130	*
40)	Ethylbenzene	16.48	545.0	554.5	101.7	70	130	*
41)	m,p-Xylene	16.66	1070.0	1120.9	104.8	70	130	*
42)	*Styrene*	17.01	555.0	568.2	102.4	70	130	*
43)	o-Xylene	17.12	525.0	545.3	103.9	70	130	*
44)	1,1,2,2-Tetrachloroethane	17.09	525.0	448.6	85.5	70	130	*
46)	*1,3,5-Trimethylbenzene*	18.38	535.0	572.3	107.0	70	130	*
47)	*1,2,4-Trimethylbenzene*	18.77	545.0	570.8	104.7	70	130	*
48)	1,3-Dichlorobenzene	18.92	570.0	556.2	97.6	70	130	*
49)	1,4-Dichlorobenzene	18.98	520.0	554.6	106.6	70	130	*
50)	1,2-Dichlorobenzene	19.31	550.0	539.0	98.0	70	130	*
51)	*1,2-Dibromo-3-chloropropane*	19.72	545.0	518.7	95.2	70	130	*
52)	1,2,4-Trichlorobenzene	20.94	575.0	600.2	104.4	70	130	*
53)	Naphthalene	19.31	545.0	581.4	106.7	70	130	*
54)	Hexachlorobutadiene	21.40	575.0	561.0	97.6	70	130	*

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2016 04\28\04281602.D Vial: 16
Acq On : 28 Apr 2016 8:49 Operator: CL
Sample : CCV S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 28 09:23:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

		Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)
1	I	Bromochloromethane (IS1)	1.000	1.000	0.0	91	-0.02
2	T	Dichlorodifluoromethane (CF	3.257	3.150	3.3	91	0.03
3	T	Chloromethane	0.828	0.833	-0.6	87	0.03
4	T	1,2-Dichloro,1,1,2,2-tetrac	3.462	3.434	0.8	92	0.02
5	T	Vinyl Chloride	2.896	2.898	-0.1	91	0.02
6	T	1,3-Butadiene	1.606	1.992	-24.0	103	0.02
7	T	Bromomethane	1.225	1.197	2.3	93	0.02
8	T	Chloroethane	0.845	0.841	0.5	93	0.02
9	T	Acrolein	0.566	0.563	0.5	113	0.01
10	T	Acetone	0.756	0.714	5.6	92	-0.02
11	T	Trichlorofluoromethane	2.350	2.295	2.3	91	0.01
12	T	1,1-Dichloroethene	1.224	1.190	2.8	92	0.00
13	T	Methylene Chloride	1.395	1.357	2.7	90	-0.01
14	T	Trichlorotrifluoroethane	1.153	1.088	5.6	92	0.00
15	T	trans-1,2-Dichloroethene	1.361	1.328	2.4	92	0.00
16	T	1,1-Dichloroethane	2.417	2.352	2.7	90	-0.02
17	T	Methyl tert-Butyl Ether	3.425	3.445	-0.6	97	0.00
18	T	cis-1,2-Dichloroethene	1.396	1.369	1.9	92	-0.02
19	T	Chloroform	2.601	2.540	2.3	90	-0.03
20	S	1,2-Dichloroethane-d4 (SS1)	2.153	2.247	-4.4	90	-0.02
21	T	1,2-Dichloroethane	1.898	1.832	3.5	90	-0.02
22	T	1,1,1-Trichloroethane	2.319	2.202	5.0	90	-0.01
23	T	Benzene	5.386	5.090	5.5	92	-0.01
24	T	Carbon Tetrachloride	1.985	1.848	6.9	90	-0.01
25	I	1,4-Difluorobenzene (IS2)	1.000	1.000	0.0	91	-0.01
26	T	1,2-Dichloropropane	0.261	0.235	10.0	90	-0.01
27	T	Bromodichloromethane	0.389	0.342	12.1	89	-0.01
28	T	Trichloroethene	0.296	0.256	13.5	90	-0.01
29	T	1,4-Dioxane	0.191	0.164	14.1	93	0.00
30	T	cis-1,3-Dichloropropene	0.368	0.334	9.2	94	0.00
31	T	trans-1,3-Dichloropropene	0.315	0.287	8.9	94	0.00
32	T	1,1,2-Trichloroethane	0.229	0.204	10.9	89	0.00
33	S	Toluene-d8 (SS2)	1.073	1.046	2.5	92	0.00
34	T	Toluene	1.099	0.935	14.9	91	0.00
35	T	Dibromochloromethane	0.272	0.233	14.3	89	0.00
36	T	1,2-Dibromoethane	0.274	0.241	12.0	90	0.00
37	T	Tetrachloroethene	0.285	0.246	13.7	91	0.00
38	I	Chlorobenzene-d5 (IS3)	1.000	1.000	0.0	92	0.00
39	T	Chlorobenzene	3.238	2.897	10.5	90	0.00
40	T	Ethylbenzene	4.906	4.542	7.4	95	0.00
41	T	m,p-Xylene	3.804	3.676	3.4	93	0.00
42	T	Styrene	2.614	2.359	9.8	93	0.00
43	T	o-Xylene	1.925	1.851	3.8	92	0.00
44	T	1,1,2,2-Tetrachloroethane	2.280	2.010	11.8	88	0.00
45	S	Bromofluorobenzene (SS3)	2.543	2.524	0.7	92	0.00
46	T	1,3,5-Trimethylbenzene	3.975	3.804	4.3	90	0.00
47	T	1,2,4-Trimethylbenzene	4.049	3.668	9.4	90	0.00
48	T	1,3-Dichlorobenzene	2.404	2.028	15.6	89	0.00
49	T	1,4-Dichlorobenzene	2.400	1.984	17.3	87	0.00
50	T	1,2-Dichlorobenzene	2.373	1.925	18.9	88	0.00
51	T	1,2-Dibromo-3-chloropropane	0.746	0.554	25.7	88	0.00
52	T	1,2,4-Trichlorobenzene	1.312	0.841	35.9#	93	0.00
53	T	Naphthalene	4.803	3.148	34.5#	92	0.00
54	T	Hexachlorobutadiene	0.880	0.621	29.4	92	0.00

Evaluate Continuing Calibration Report

Data File : I:\MS19\DATA\2016 04\28\04281602.D Vial: 16
Acq On : 28 Apr 2016 8:49 Operator: CL
Sample : CCV S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 28 09:23:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

Min. RRF : 0.000 Min. Rel. Area : 50% Max. R.T. Dev 0.33min
Max. RRF Dev : 30% Max. Rel. Area : 200%

Compound	AvgRF	CCRF	%Dev	Area%	Dev(min)

(#) = Out of Range SPCC's out = 0 CCC's out = 0

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281602.D Vial: 16
Acq On : 28 Apr 2016 8:49 Operator: CL
Sample : CCV S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 28 09:23:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

CL 4/28/16

Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
1) Bromochloromethane (IS1)	9.75	130	18647	1000.000	pg	-0.02
25) 1,4-Difluorobenzene (IS2)	11.70	114	99523	1000.000	pg	-0.01
38) Chlorobenzene-d5 (IS3)	16.05	54	20543	1000.000	pg	0.00
System Monitoring Compounds						
20) 1,2-Dichloroethane-d4 ...	10.52	65	41908	1044.026	pg	-0.02
Spiked Amount 1000.000	Range 70 - 130		Recovery = 104.40%			
33) Toluene-d8 (SS2)	14.14	98	104098	974.823	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 97.48%			
45) Bromofluorobenzene (SS3)	17.55	174	51854	992.400	pg	0.00
Spiked Amount 1000.000	Range 70 - 130		Recovery = 99.24%			
Target Compounds						Qvalue
2) Dichlorodifluoromethan...	4.42	85	29372	483.623	pg	100
3) Chloromethane	4.64	52	7608	492.486	pg	93
4) 1,2-Dichloro,1,1,2,2-t...	4.81	85	32978	510.891	pg	100
5) Vinyl Chloride	4.94	62	27018	500.246	pg	99
6) 1,3-Butadiene	5.13	54	19688	657.310	pg	99
7) Bromomethane	5.46	94	11162	488.704	pg	100
8) Chloroethane	5.69	64	7920	502.626	pg	99
9) Acrolein	6.26	56	5618	532.250	pg	89
10) Acetone	6.39	58	35769	2535.911	pg	99
11) Trichlorofluoromethane	6.61	101	21179	483.212	pg	100
12) 1,1-Dichloroethene	7.33	96	11867	519.930	pg	99
13) Methylene Chloride	7.47	84	13660	525.094	pg	99
14) Trichlorotrifluoroethane	7.79	151	10954	509.455	pg	100
15) trans-1,2-Dichloroethene	8.50	96	13126	517.336	pg	100
16) 1,1-Dichloroethane	8.71	63	22805	505.966	pg	99
17) Methyl tert-Butyl Ether	8.79	73	33730	528.166	pg	100
18) cis-1,2-Dichloroethene	9.58	96	13659	524.629	pg	99
19) Chloroform	9.88	83	25344	522.615	pg	100
21) 1,2-Dichloroethane	10.63	62	17935	506.721	pg	100
22) 1,1,1-Trichloroethane	10.90	97	21147	489.035	pg	100
23) Benzene	11.36	78	52673	524.412	pg	100
24) Carbon Tetrachloride	11.51	117	18606	502.740	pg	100
26) 1,2-Dichloropropane	12.17	63	12264	472.389	pg	100
27) Bromodichloromethane	12.35	83	18191	470.373	pg	100
28) Trichloroethene	12.40	130	13140	445.394	pg	100
29) 1,4-Dioxane	12.38	88	8801	462.496	pg	99
30) cis-1,3-Dichloropropene	13.25	75	18592	507.528	pg	100
31) trans-1,3-Dichloropropene	13.77	75	15263	487.608	pg	99
32) 1,1,2-Trichloroethane	13.94	83	10656	466.727	pg	100
34) Toluene	14.24	91	48833	446.469	pg	100
35) Dibromochloromethane	14.66	129	12768	471.137	pg	100
36) 1,2-Dibromoethane	14.92	107	12847	471.061	pg	100
37) Tetrachloroethene	15.40	166	12131	427.809	pg	99
39) Chlorobenzene	16.10	112	31844	478.720	pg	100
40) Ethylbenzene	16.48	91	48989	486.051	pg	100
41) m,p-Xylene	16.66	91	78532	1004.911	pg	100
42) Styrene	17.01	104	26174	487.331	pg	100
43) o-Xylene	17.12	106	19388	490.261	pg	99
44) 1,1,2,2-Tetrachloroethane	17.09	83	20645	440.802	pg	100
46) 1,3,5-Trimethylbenzene	18.38	105	40634	497.662	pg	100
47) 1,2,4-Trimethylbenzene	18.77	105	39185	471.061	pg	99
48) 1,3-Dichlorobenzene	18.92	146	22499	455.646	pg	99
49) 1,4-Dichlorobenzene	18.98	146	21398	433.956	pg	99
50) 1,2-Dichlorobenzene	19.31	146	21161	434.090	pg	100
51) 1,2-Dibromo-3-chloropr...	19.72	157	5916	385.980	pg	99
52) 1,2,4-Trichlorobenzene	20.94	182	8989	333.454	pg	100
53) Naphthalene	21.06	128	32333	327.695	pg	98

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281602.D Vial: 16
Acq On : 28 Apr 2016 8:49 Operator: CL
Sample : CCV S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 28 09:23:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M

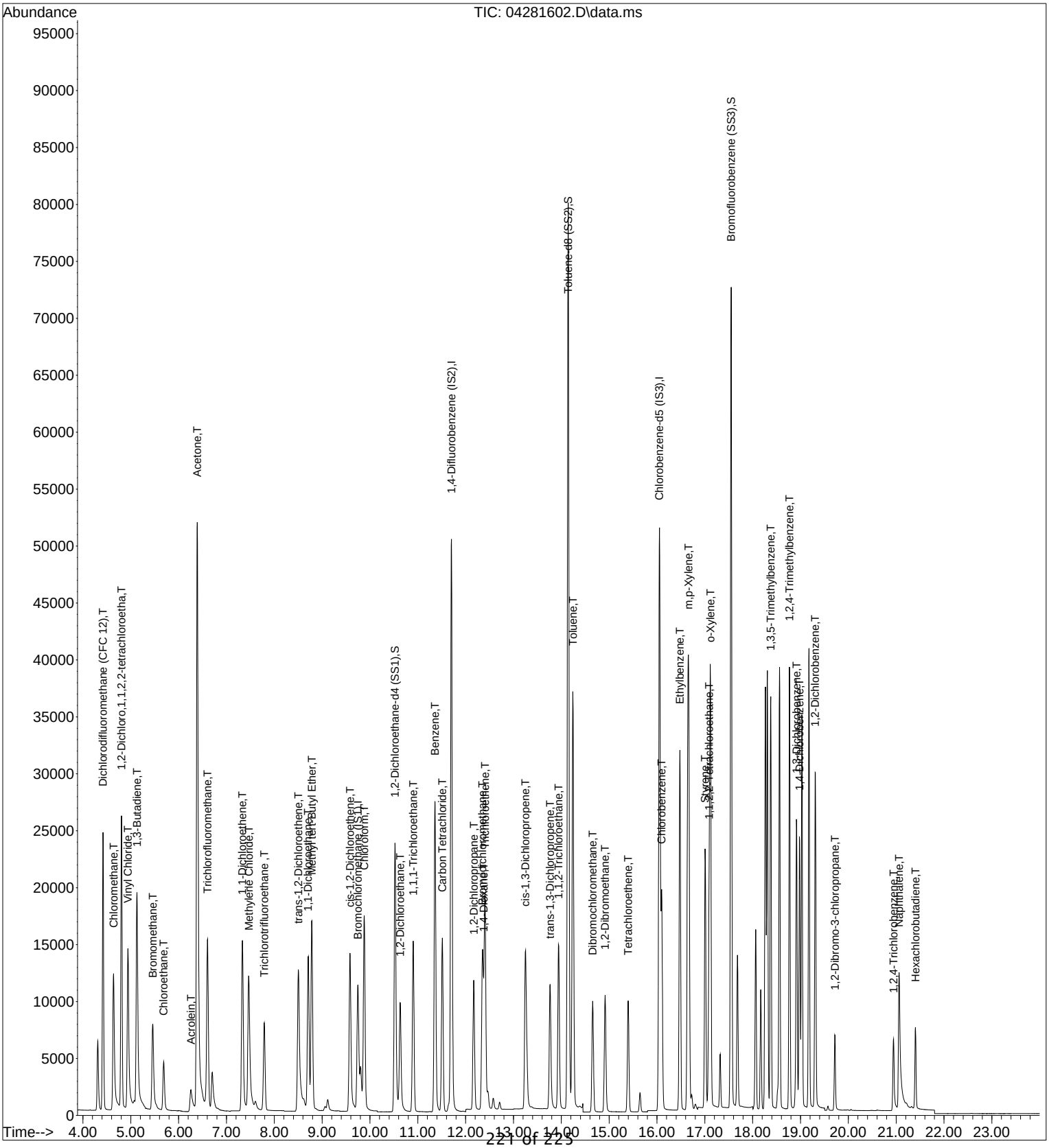
Internal Standards	R.T.	QIon	Response	Conc	Units	Dev(Min)
54) Hexachlorobutadiene	21.40	225	6823	377.568	pg	99

(#) = qualifier out of range (m) = manual integration (+) = signals summed

Quantitation Report (QT Reviewed)

Data File : I:\MS19\DATA\2016 04\28\04281602.D Vial: 16
Acq On : 28 Apr 2016 8:49 Operator: CL
Sample : CCV S19042816 500pg Inst : MS19
Misc : S29-04191602/S29-04251601 (5/24)

Quant Time: Apr 28 09:23:15 2016
Quant Method : I:\MS19\METHODS\S19042716.M
Quant Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
QLast Update : Wed Apr 27 11:03:51 2016
Response via : Initial Calibration
DataAcq Meth:TO15SIM.M



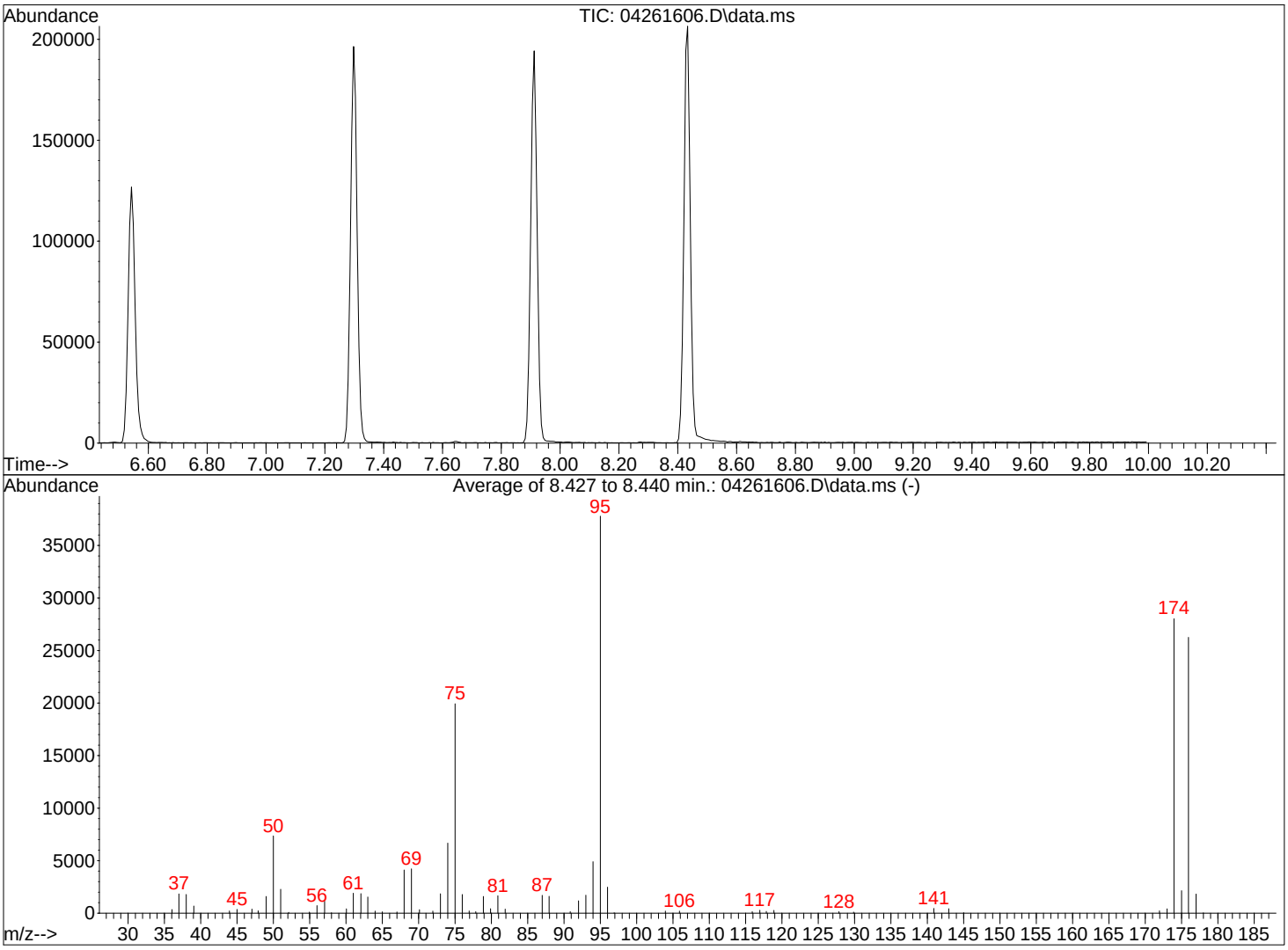
BFB

Data Path : I:\MS19\DATA\2016 04\26\
Data File : 04261606.D
Acq On : 26 Apr 2016 12:12
Operator : CL
Sample : BFB S19042616
Misc : S29-04191602
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19032916.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Mar 30 08:03:56 2016

CL 4/26/16



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

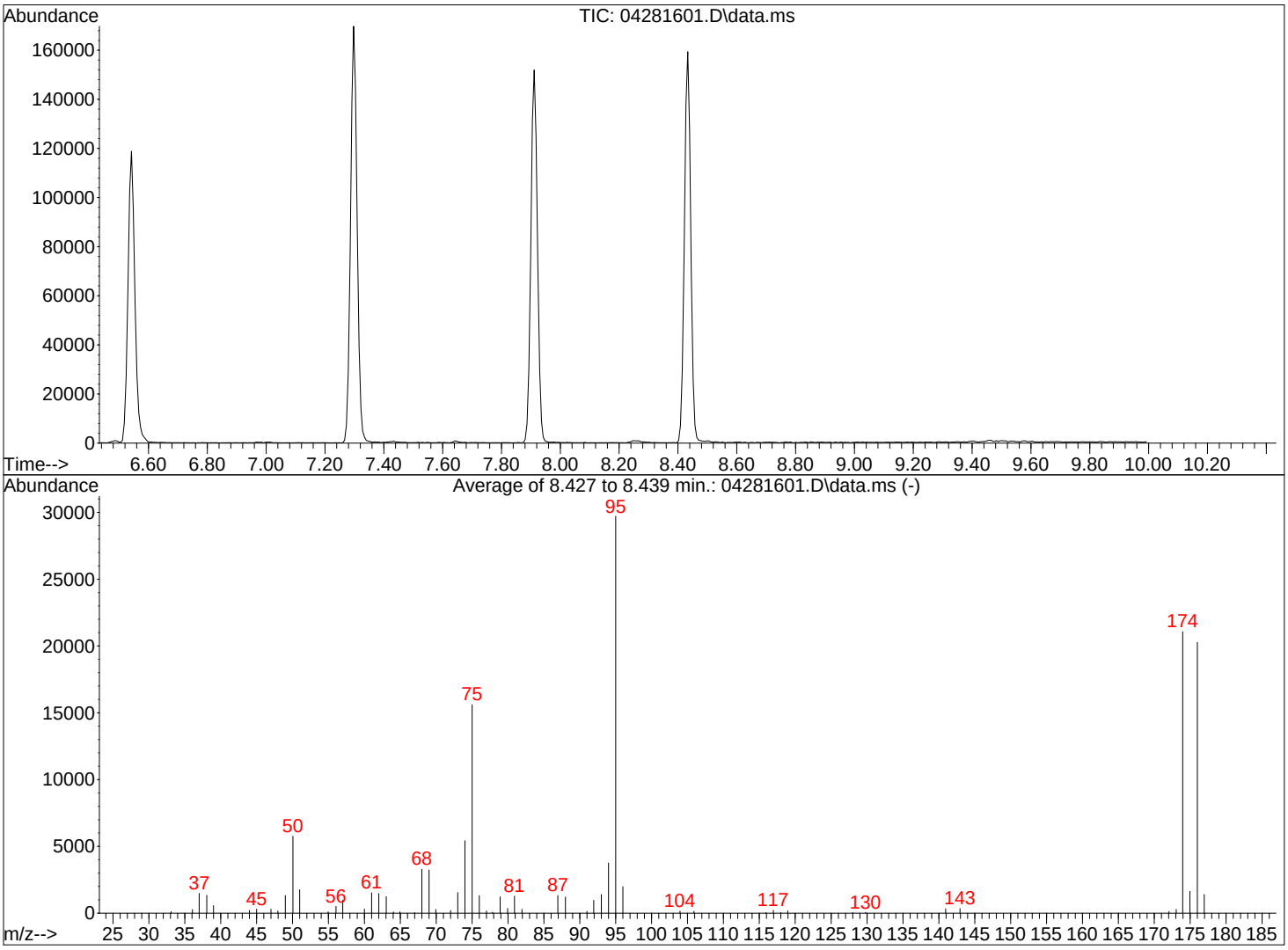
Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.5	7351	PASS
75	95	30	66	52.7	19931	PASS
95	95	100	100	100.0	37789	PASS
96	95	5	9	6.6	2476	PASS
173	174	0.00	2	1.5	413	PASS
174	95	50	120	74.2	28024	PASS
175	174	4	9	7.7	2145	PASS
176	174	93	101	93.7	26259	PASS
177	176	5	9	6.9	1825	PASS

Data Path : I:\MS19\DATA\2016 04\28\
Data File : 04281601.D
Acq On : 28 Apr 2016 8:27
Operator : CL
Sample : BFB S19042816
Misc : S29-04191602
ALS Vial : 2 Sample Multiplier: 1

Integration File: rteint.p

Method : I:\MS19\METHODS\S19042716.M
Title : EPA TO-15 per SOP VOA-TO15 (CASS TO-15/GC-MS)
Last Update : Wed Apr 27 11:03:51 2016

CL 4/28/16



AutoFind: Scans 707, 708, 709; Background Corrected with Scan 701

Target Mass	Rel. to Mass	Lower Limit%	Upper Limit%	Rel. Abn%	Raw Abn	Result Pass/Fail
50	95	8	40	19.4	5758	PASS
75	95	30	66	52.5	15596	PASS
95	95	100	100	100.0	29715	PASS
96	95	5	9	6.7	1989	PASS
173	174	0.00	2	1.4	289	PASS
174	95	50	120	70.9	21069	PASS
175	174	4	9	7.7	1632	PASS
176	174	93	101	96.3	20283	PASS
177	176	5	9	6.9	1404	PASS

Injection Log

Directory: I:\MS19\DATA\2016_04\26\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/26/16 8:26	04261601.D	BFB S19042616	S29-04191602	CL	2	Not Used
2	4/26/16 8:57	04261602.D	Blank	S29-04191602	CL	2	
3	4/26/16 9:30	04261603.D	10pg TO15SIM ICAL STD	S29-04191602/S29-04251604 (5/24)	CL	14	Not Used
4	4/26/16 10:44	04261604.D	Blank (After Quick Tune)	S29-04191602	CL	2	
5	4/26/16 11:40	04261605.D	Blank	S29-04191602	CL	2	
6	4/26/16 12:12	04261606.D	BFB S19042616	S29-04191602	CL	2	Pass
7	4/26/16 12:42	04261607.D	10pg TO15SIM ICAL STD	S29-04191602/S29-04251604 (5/24)	CL	14	
8	4/26/16 14:07	04261608.D	20pg TO15SIM ICAL STD	S29-04191602/S29-04251603 (5/24)	CL	15	
9	4/26/16 14:39	04261609.D	50pg TO15SIM ICAL STD	S29-04191602/S29-04251603 (5/24)	CL	15	
10	4/26/16 15:10	04261610.D	100pg TO15SIM ICAL STD	S29-04191602/S29-04251603 (5/24)	CL	15	
11	4/26/16 15:42	04261611.D	500pg TO15SIM ICAL STD	S29-04191602/S29-04251601 (5/24)	CL	16	
12	4/26/16 16:13	04261612.D	1000pg TO15SIM ICAL STD	S29-04191602/S29-04131609 (5/12)	CL	9	
13	4/26/16 16:45	04261613.D	2000pg TO15SIM ICAL STD	S29-04191602/S29-04131609 (5/12)	CL	9	
14	4/26/16 17:16	04261614.D	5000pg TO15SIM ICAL STD	S29-04191602/S29-04131609 (5/12)	CL	9	
15	4/26/16 17:48	04261615.D	10000pg TO15SIM ICAL STD	S29-04191602/S29-04131609 (5/12)	CL	9	
16	4/26/16 18:19	04261616.D	xx50000pg TO15SIM ICAL STDxx	S29-04191602/S29-04131605 (5/12)	CL	13	Not Used
17	4/26/16 18:50	04261617.D	xx500pg TO15SIM ICVxx	S29-04191602/S29-04141606 (5/13)	CL	2	Not Used
18	4/26/16 19:22	04261618.D	500pg TO15SIM ICV	S29-04191602/S29-04141605 (5/13)	CL	12	Not Used
19	4/27/16 10:14	04261619.D	50000pg TO15SIM ICAL STD	S29-04191602/S29-04131606 (5/12)	CL	11	
20	4/27/16 10:46	04261620.D	500pg TO15SIM ICV	S29-04191602/S29-04141605 (5/13)	CL	12	Pass
				CL 4/27/16			

Injection Log

Directory: I:\MS19\DATA\2016_04\28\

	Date/Time	File Name	Sample ID	Misc Info	Operator	Vial	Comment
1	4/28/16 8:27	04281601.D	BFB S19042816	S29-04191602	CL	2	Pass
2	4/28/16 8:49	04281602.D	CCV S19042816_500pg	S29-04191602/S29-04251601 (5/24)	CL	16	Pass
3	4/28/16 9:21	04281603.D	MB S19042816_1000mL	S29-04191602	CL	2	Pass
4	4/28/16 9:52	04281604.D	LCS S19042816_500pg	S29-04191602/S29-04141605 (5/13)	CL	2	Pass
5	4/28/16 10:23	04281605.D	LCSD S19042816_500pg	S29-04191602/S29-04141605 (5/13)	CL	2	Pass
6	4/28/16 11:59	04281606.D	P1602143-002 (1000mL)	S29-04191602	CL	1	
7	4/28/16 12:31	04281607.D	P1602143-003 (1000mL)	S29-04191602	CL	3	
8	4/28/16 13:02	04281608.D	P1602143-004 (1000mL)	S29-04191602	CL	4	
9	4/28/16 13:34	04281609.D	P1602143-007 (1000mL)	S29-04191602	CL	5	
10	4/28/16 14:06	04281610.D	P1602143-008 (1000mL)	S29-04191602	CL	6	
11	4/28/16 14:38	04281611.D	P1602144-003 (1000mL)	S29-04191602	CL	7	
12	4/28/16 15:09	04281612.D	P1602144-004 (1000mL)	S29-04191602	CL	8	
13	4/28/16 16:28	04281613.D	Blank	S29-04191602	CL	2	
14	4/28/16 16:59	04281614.D	P1602145-004 (1000mL)	S29-04191602	CL	1	
15	4/28/16 17:31	04281615.D	P1602145-004dup (1000mL)	S29-04191602	CL	1	Pass for Dup
16	4/28/16 18:02	04281616.D	P1602145-007 (1000mL)	S29-04191602	CL	3	
17	4/28/16 18:34	04281617.D	P1602145-008 (1000mL)	S29-04191602	CL	4	
18	4/28/16 19:05	04281618.D	P1602146-001 (1000mL)	S29-04191602	CL	5	
19	4/28/16 19:37	04281619.D	P1602146-002 (1000mL)	S29-04191602	CL	6	
20	4/28/16 20:09	04281620.D	P1602146-003 (1000mL)	S29-04191602	CL	7	
21	4/28/16 20:41	04281621.D	P1602146-004 (1000mL)	S29-04191602	CL	8	
22	4/28/16 21:12	04281622.D	Blank	S29-04191602	CL	2	
23	4/28/16 21:44	04281623.D	P1602146-008 (1000mL)	S29-04191602	CL	9	
24	4/28/16 22:15	04281624.D	P1602147-003 (1000mL)	S29-04191602	CL	10	
25	4/28/16 22:47	04281625.D	P1602147-004 (1000mL)	S29-04191602	CL	11	
26	4/28/16 23:19	04281626.D	P1602147-009 (1000mL)	S29-04191602	CL	12	
27	4/28/16 23:51	04281627.D	P1602147-010 (1000mL)	S29-04191602	CL	13	
28	4/29/16 0:22	04281628.D	Blank	S29-04191602	CL	2	
29	4/29/16 4:05	04281629.D	Blank	S29-04191602	CL	2	
				CL 4/29/16			