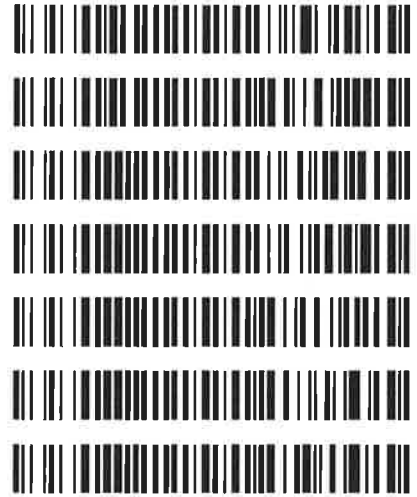


Worklist: 2672

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
M2018-3779	1	126070	AM 27 Blood THC Quant by LC-QQQ
M2018-4043	2	126071	AM 27 Blood THC Quant by LC-QQQ
P2018-2033	1	126072	AM 27 Blood THC Quant by LC-QQQ
P2018-2038	1	126073	AM 27 Blood THC Quant by LC-QQQ
P2018-2287	2	126074	AM 27 Blood THC Quant by LC-QQQ
P2018-2339	1	126075	AM 27 Blood THC Quant by LC-QQQ
P2018-2385	1	126076	AM 27 Blood THC Quant by LC-QQQ



AM# 27: Quantitation of THC and Metabolites in Blood by LC-MS/MS

R

Extraction Date: 09/04/18
Plate lot#: 0515037

Analyst: Sarah Pickle
Plate Expiration: 09/28/18

Mobile phase A: 0.1% Formic Acid in LCMS Water
MTBE
Blank Blood Lot: 361331-1
LCMS-QQQ ID: 59740

Mobile phase B: 0.1% Formic acid in Acetonitrile
LCMS Methanol
Hexane
Column: UCT Selectra DA 100 x 2.1mm 3um

Pre-Analytic:

- 1. Check levels of mobile phases and needle wash refill as needed. Ensure waste is not full.
- 2. Ensure correct column is installed and begin mobile phase flow allow to equilibrate ~ 30 minutes.
- 3. Create worklist: Data Path: _____

Analytic:

- 1. Remove standards, plate, controls, and samples from cold storage. Allow to reach room temperature.
- 2. Pipette **1000µL blood (calibrated pipette) Pipette ID: 3382167** in wells of analytical (standards) plate.
- 3. Place on shaking incubator at ambient temp., 900rpm for 15 minutes. *Shaker ID: 067105*
- 4. Pipette **500µL 0.1% formic acid in water** in wells of analytical plate.
- 5. Place on shaking incubator at ambient temp., 900rpm for 15 minutes.
- 6. Transfer **800µL of blood+acid** mixture to corresponding wells of SLE+ plate.
- 7. Apply positive pressure for approx. 10-15 seconds (or until no liquid remains on top of sorbent).
(Load at 85-100 PSI- Selector to the right) Manifold ID: 067104
- 8. Wait 5 minutes.
- 9. Add **2.25mL MTBE. (Add in 3 increments of 750uL)**
- 10. Wait 5 minutes.
- 11. Apply positive pressure for approx. 15 seconds. *(10-15 PSI- Selector to the left).*
- 12. Add **2.25mL Hexane. (Add in 3 increments of 750uL)**
- 13. Wait 5 minutes.
- 14. Apply positive pressure for approx. 15 seconds. *(10-15 PSI- Selector to the left).*
- 15. Remove plate containing eluate. Place on SPE Dry and evaporate to dryness at approx. 35°C.
SPE Dry ID: 067103
- 16. Reconstitute in **100µL 100% MeOH** and heat seal plate with foil. Place in autosampler and run worklist.

Post-Analytic

- 1. Create batch and process data.
Worklist path: 090418 THCQ SP Batch Name: 090418 THCQ SP worklist 2672
- 2. Make any necessary integration changes, Curve weighting of Linear 1/x with r^2 values ≥ 0.98 for each analyte
- 3. RT +/- 3% or 0.100 min, whichever is greater, +/- 20% Accuracy for greater than (+/- 30% for 10ng/ml or less).
Ion ratios must be within +/- 20% of the averaged calibrators
- 4. Case sample response for THC and OH-THC 3ng/mL (quantitative), Carboxy-THC: 10ng/mL (qualitative only) will be reported. Samples with a THC or OH-THC response over 50 ng/mL will be reported out as greater than 50 ng/mL.
- 5. Did all QCs pass for each analyte? Y / N
- 6. Enter QCs into control charting.
- 7. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS: *Curve range limited: Carboxy THC 10-250*

P



Idaho State Police Forensic Services

R

AM #27 Quantitative Analysis of THC and Metabolites in Blood by LCMS-QQQ

Analyst: Sarah Pickle
Extraction Date: 9/4/18
Worklist Number: 2672

<i>Reagent</i>	<i>Lot Number</i>	<i>Expiration Date</i>	<i>Date in Service</i>	<i>Date Out of Service</i>	<i>Initials</i>
ToxBox THC/THC Metabolite Plate	0515037	09/28/18			
Negative Blood	361331-1		12/27/17		
Methanol External Control Solution	WS020718	02/07/19	02/07/18		
Blood External Control Solution	090418	02/07/19	09/04/18		
Methyl Tert-Butyl Ether (MTBE) 99.9%	A0375555		6/26/17		
Hexanes (ACS)	101642		10/26/17		
Methanol (LCMS Grade)	177145		4/11/18		
0.1% Formic Acid in Water (Mobile Phase A)	180079		08/24/18		
0.1% Formic Acid in Acetonitrile (Mobile Phase B)	176190		2/6/18		
Needle Rinse--75% LCMS MeOH in LCMS Water	090418		09/04/18		

Methanol External Control Solution (Lot: WS020718)
10 ul of 1mg/mL THC, 100 ul of 100 ug/mL THC-OH, C-THC in 9790 ul MeOH

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>	<i>Expiration Date</i>
Methanol (LCMS)	Fisher	172516	
THC	Cerilliant	FE04231406	04/30/2019
C-THC	Cayman	0497429	02/08/2019
THC-OH	Cerilliant	FE01121503	01/31/2020
Prepared:	02/07/18		
Prepared By:	Tamara Salazar		
Expires:	02/07/19		

Blood External Control Solution (Lot: 090418)
100 ul of methanol external control solution was added to 9900 ul of blood.

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
Negative Blood	Hemostat	361331-1
Methanol External Control Solution		WS020718
Prepared:	09/04/18	
Prepared by:	Sarah Pickle	
Expires:	02/07/19	

B

Needle Rinse (75% LCMS MeOH in LCMS Water) (Lot: 090418)

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
MeOH (LCMS Grade)	Fisher	177145
Water (LCMS Grade)	Fisher	181370
Prepared:	09/04/18	
Prepared By:	Sarah Pickle	

PS

ISP FORENSICS - Pocatello Instrument # 59740

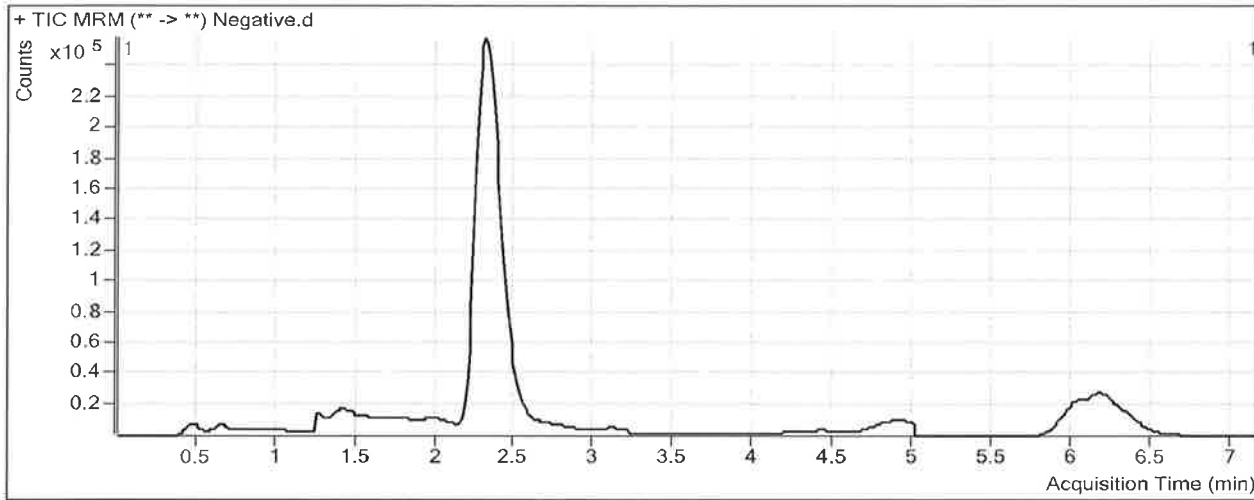
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:02 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 13:32 **Data File** Negative.d
Sample Type Sample **Sample Name** Negative
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H7 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-1

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.199	9627	2200331	0.0044	0.0000
THC-COOH	THC-COOH-D9	2.406	44096	584144	0.0755	1.0771

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

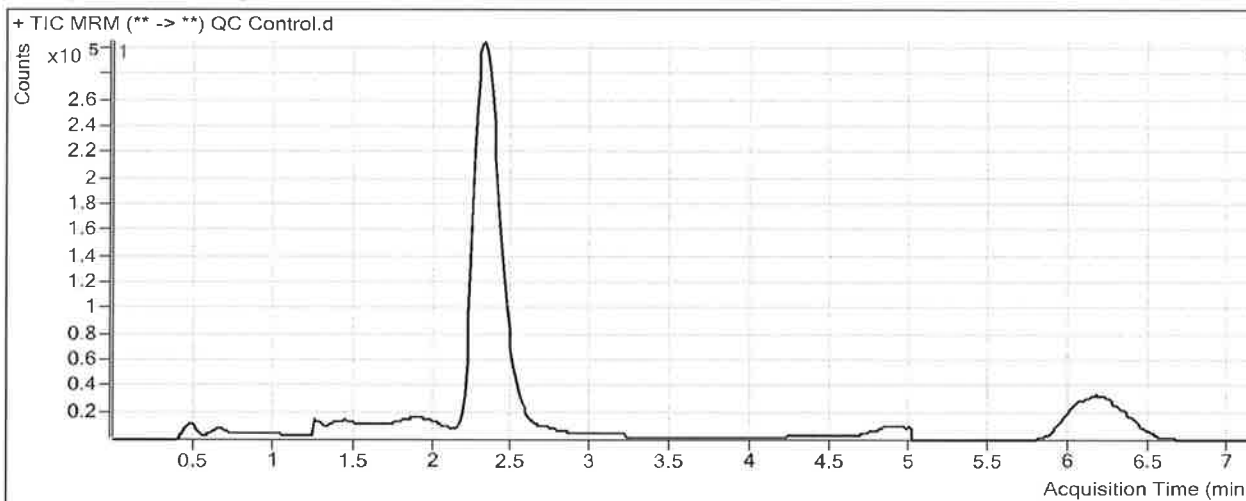
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Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:02 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 13:08 **Data File** QC Control.d
Sample Type Sample **Sample Name** QC Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-A8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	309235	2258819	0.1369	9.4510
THC-COOH	THC-COOH-D9	2.419	207508	614895	0.3375	10.9475
THC	THC-D3	6.172	99661	707070	0.1409	10.7733

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

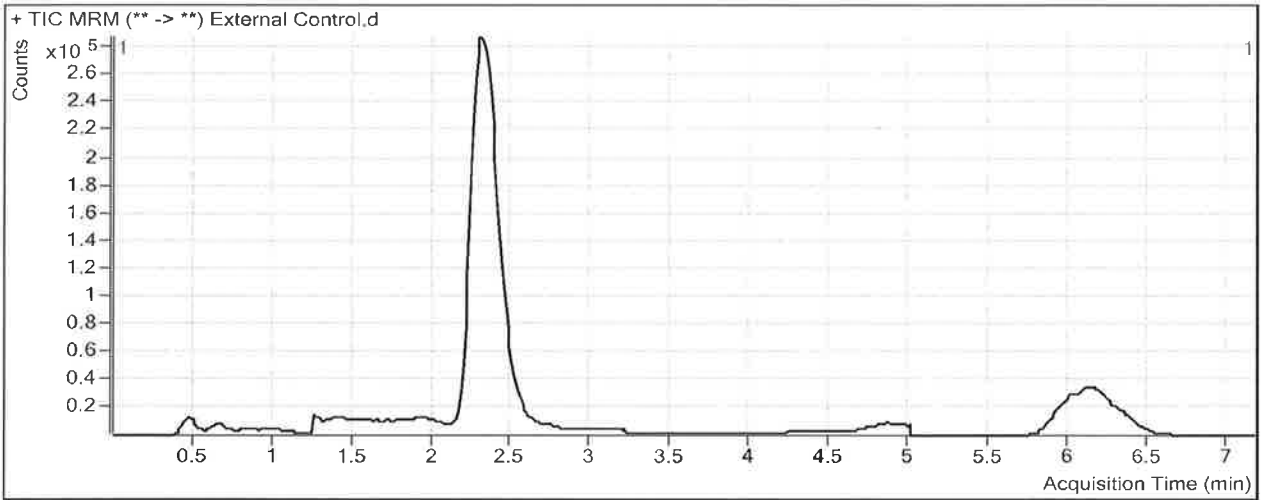
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Analysis Time 9/5/2018 2:44 PM **Analyst Name** ISPUser
Report Time 9/5/2018 2:45 PM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 2:44 PM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 13:56 **Data File** External Control.d
Sample Type Sample **Sample Name** External Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G7 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-1 + WS 020718

Sample Chromatogram



Results

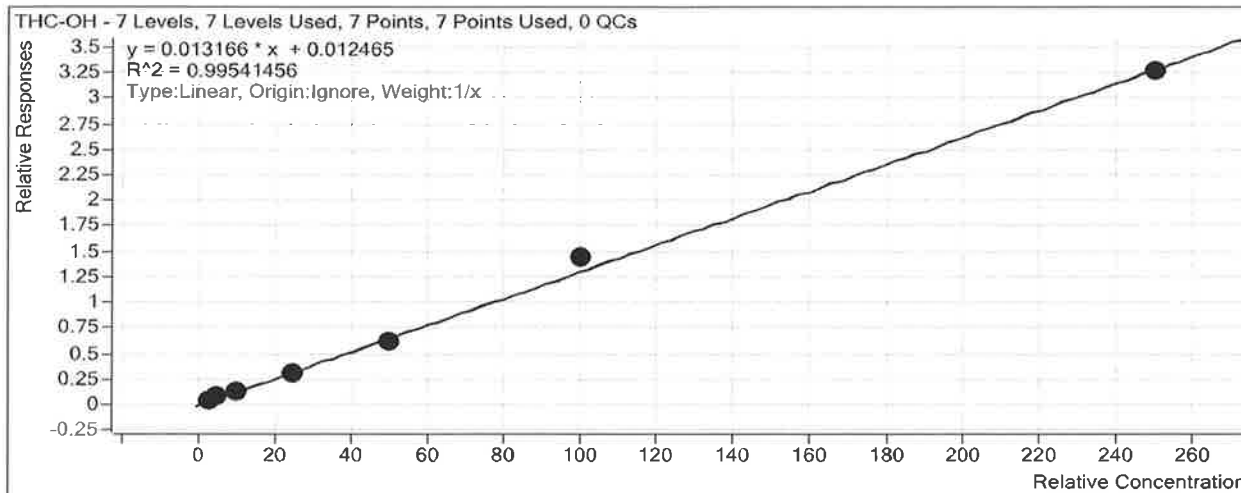
Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	324280	2147394	0.1510	10.5227
THC-COOH	THC-COOH-D9	2.406	233297	604275	0.3861	12.7788
THC	THC-D3	6.146	109680	697425	0.1573	12.0308

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist
2672 SP.batch.bin

Last Calib Update 9/5/2018 7:55 AM **Analyst Name** ISP TOX

Target Compound *THC-OH*
Internal Standard *THC-OH-D3*



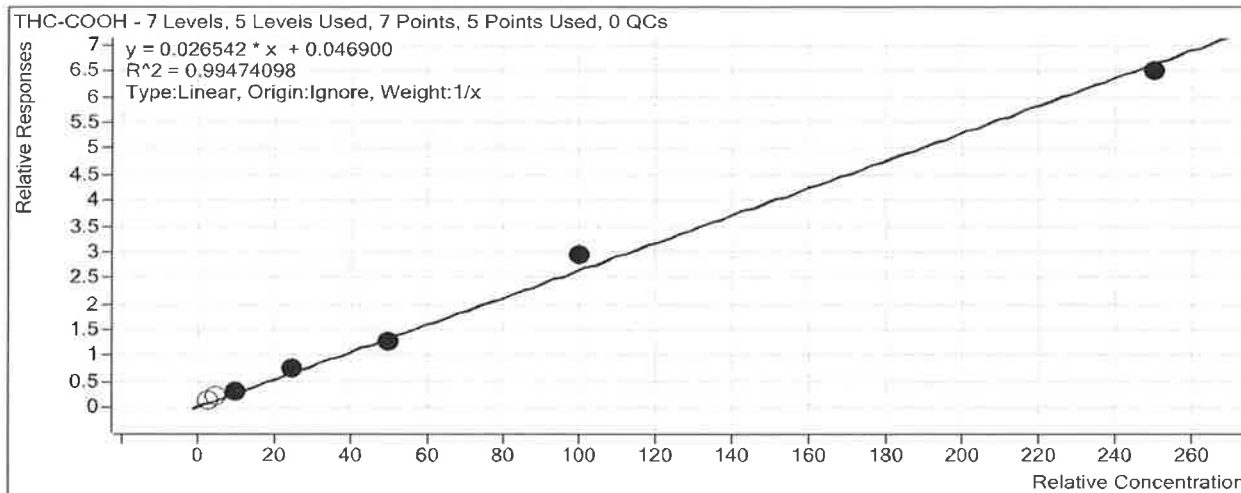
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	3.2	105.2
Cal 2	2	<input checked="" type="checkbox"/>	5	5.8	116.3
Cal 3	3	<input checked="" type="checkbox"/>	10	8.5	85.2
Cal 4	4	<input checked="" type="checkbox"/>	25	23.5	93.8
Cal 5	5	<input checked="" type="checkbox"/>	50	45.7	91.4
Cal 6	6	<input checked="" type="checkbox"/>	100	109.3	109.3
Cal 7	7	<input checked="" type="checkbox"/>	250	247.1	98.8

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist
2672 SP.batch.bin

Last Calib Update 9/5/2018 7:55 AM **Analyst Name** ISP TOX

Target Compound *THC-COOH*
Internal Standard *THC-COOH-D9*



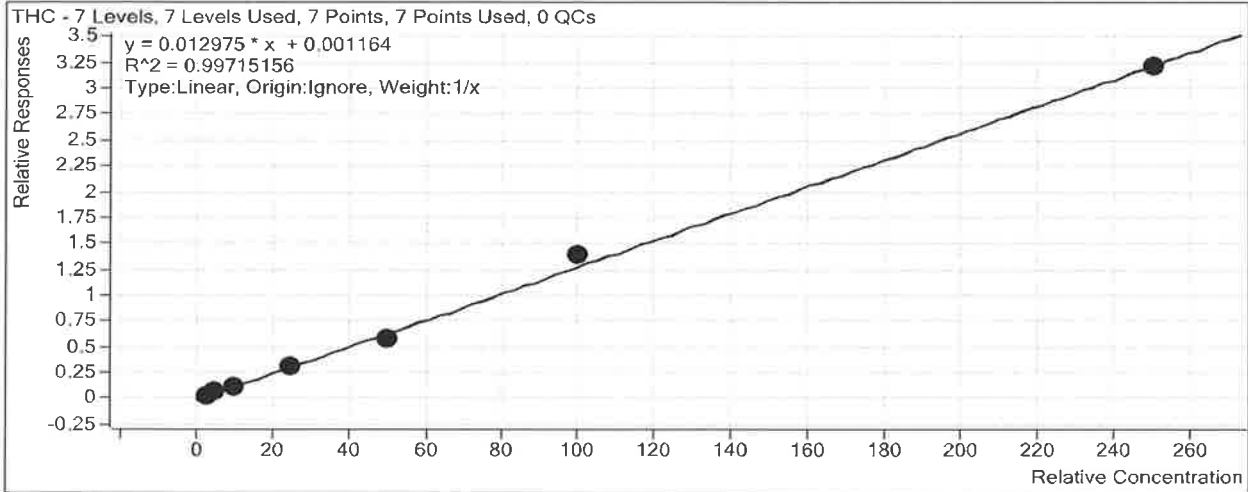
Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input type="checkbox"/>	3	4.1	136.2
Cal 2	2	<input type="checkbox"/>	5	6.7	133.1
Cal 3	3	<input checked="" type="checkbox"/>	10	9.3	93.4
Cal 4	4	<input checked="" type="checkbox"/>	25	26.8	107.3
Cal 5	5	<input checked="" type="checkbox"/>	50	46.3	92.6
Cal 6	6	<input checked="" type="checkbox"/>	100	109.5	109.5
Cal 7	7	<input checked="" type="checkbox"/>	250	243.0	97.2

ISP Forensics Calibration Curve Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist
2672 SP.batch.bin

Last Calib Update 9/5/2018 7:55 AM **Analyst Name** ISP TOX

Target Compound *THC*
Internal Standard *THC-D3*



Sample	Level	Enabled	Exp Conc	Final Conc	Accuracy
Cal 1	1	<input checked="" type="checkbox"/>	3	2.9	97.4
Cal 2	2	<input checked="" type="checkbox"/>	5	5.6	111.5
Cal 3	3	<input checked="" type="checkbox"/>	10	9.5	94.8
Cal 4	4	<input checked="" type="checkbox"/>	25	24.8	99.3
Cal 5	5	<input checked="" type="checkbox"/>	50	45.4	90.7
Cal 6	6	<input checked="" type="checkbox"/>	100	107.2	107.2
Cal 7	7	<input checked="" type="checkbox"/>	250	247.6	99.1

ISP FORENSICS - Pocatello Instrument # 59740

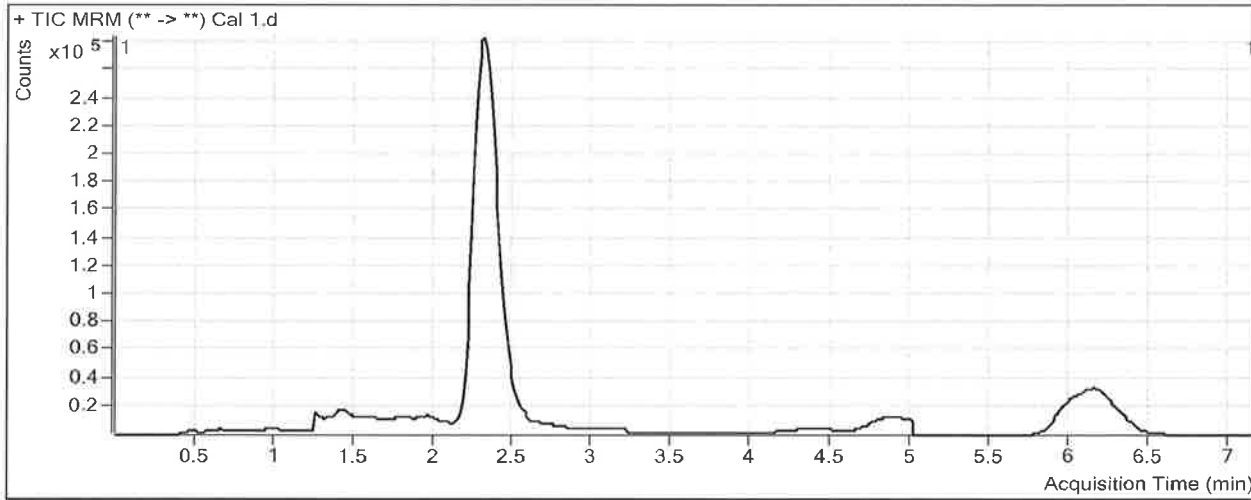
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:01 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 11:34 **Data File** Cal 1.d
Sample Type Calibration **Sample Name** Cal 1
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	118892	2200496	0.0540	3.1569
THC-COOH	THC-COOH-D9	2.406	95187	612773	0.1553	4.0855
THC	THC-D3	6.199	28767	736166	0.0391	2.9219

ISP FORENSICS - Pocatello Instrument # 59740

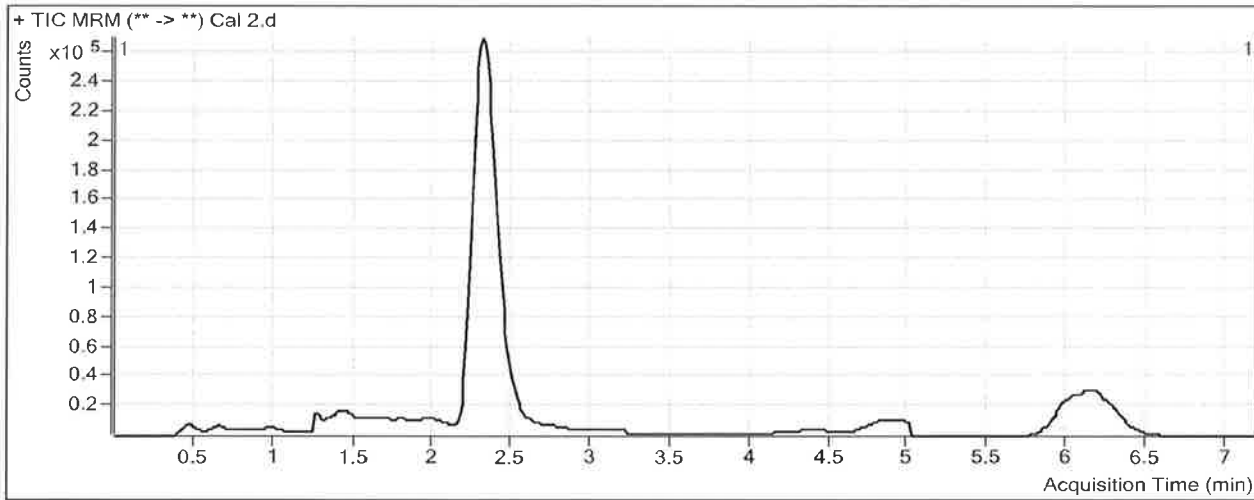
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISUser
Report Time 9/5/2018 8:01 AM **Reporter Name** ISUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 11:46 **Data File** Cal 2.d
Sample Type Calibration **Sample Name** Cal 2
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	180758	2030494	0.0890	5.8146
THC-COOH	THC-COOH-D9	2.406	129420	578825	0.2236	6.6570
THC	THC-D3	6.132	49187	668963	0.0735	5.5771

ISP FORENSICS - Pocatello Instrument # 59740

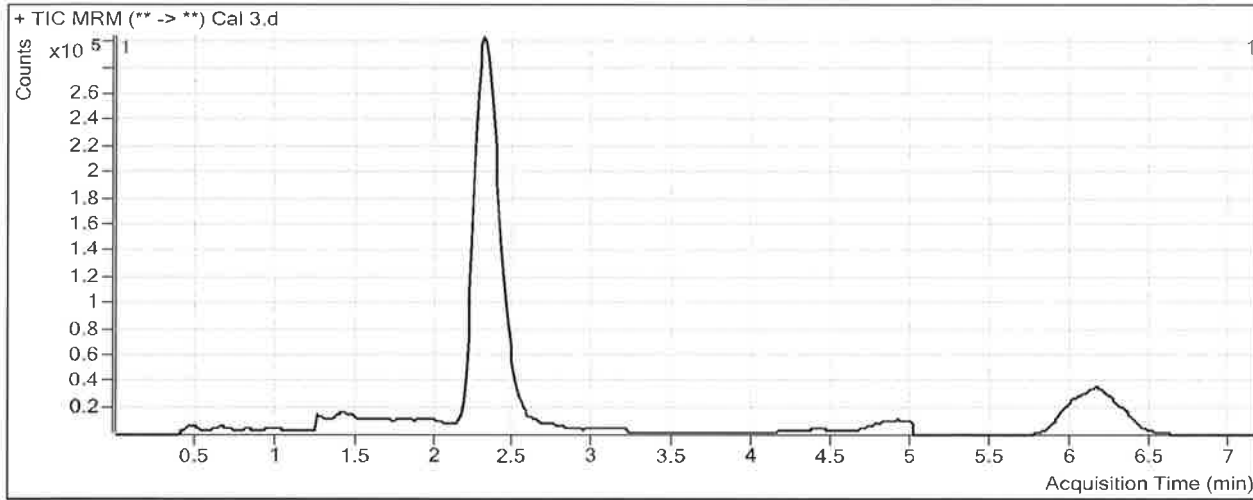
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:01 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 11:57 **Data File** Cal 3.d
Sample Type Calibration **Sample Name** Cal 3
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-F8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	271048	2174384	0.1247	8.5209
THC-COOH	THC-COOH-D9	2.406	183812	623668	0.2947	9.3371
THC	THC-D3	6.146	87667	706183	0.1241	9.4780

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

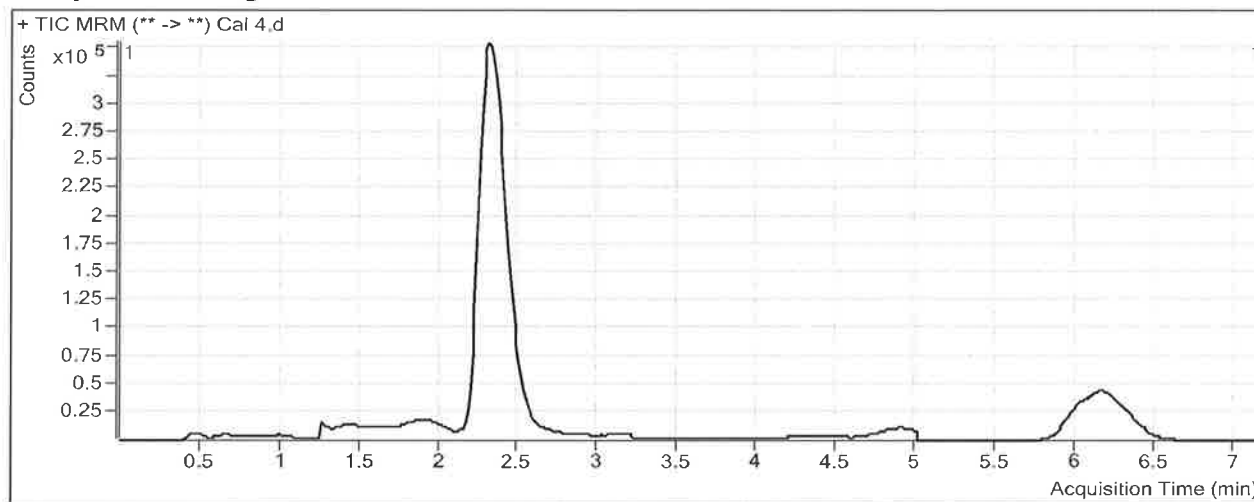
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Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISUser
Report Time 9/5/2018 8:01 AM **Reporter Name** ISUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 12:09 **Data File** Cal 4.d
Sample Type Calibration **Sample Name** Cal 4
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-E8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	692658	2156216	0.3212	23.4515
THC-COOH	THC-COOH-D9	2.406	458458	604140	0.7589	26.8238
THC	THC-D3	6.159	225160	696492	0.3233	24.8255

ISP FORENSICS - Pocatello Instrument # 59740

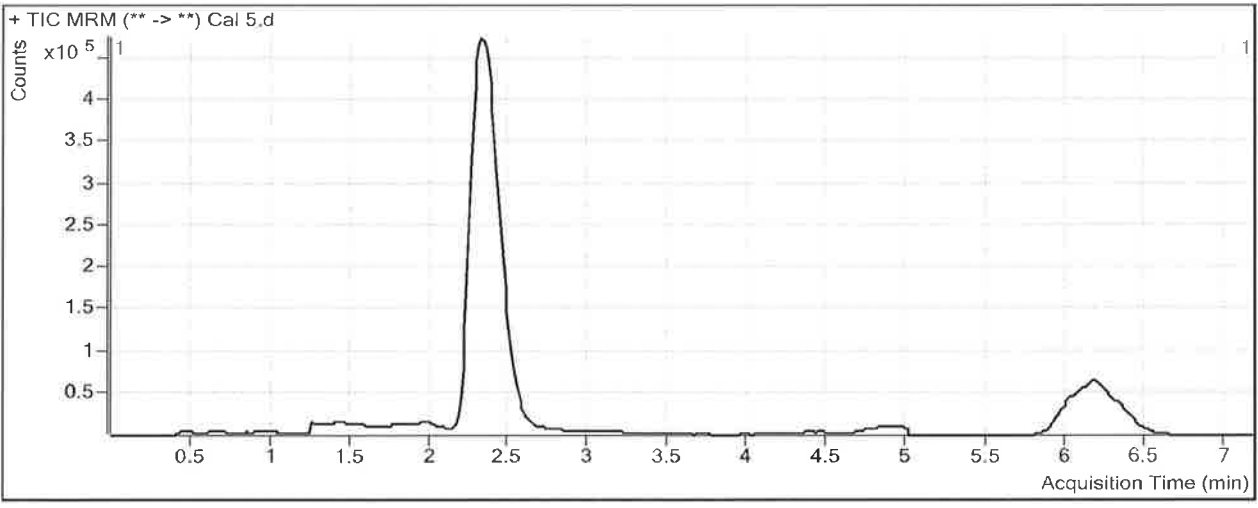
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:02 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 12:21 **Data File** Cal 5.d
Sample Type Calibration **Sample Name** Cal 5
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-D8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.319	1451197	2364089	0.6139	45.6757
THC-COOH	THC-COOH-D9	2.419	840505	658544	1.2763	46.3191
THC	THC-D3	6.186	455030	771561	0.5898	45.3629

ISP FORENSICS - Pocatello Instrument # 59740

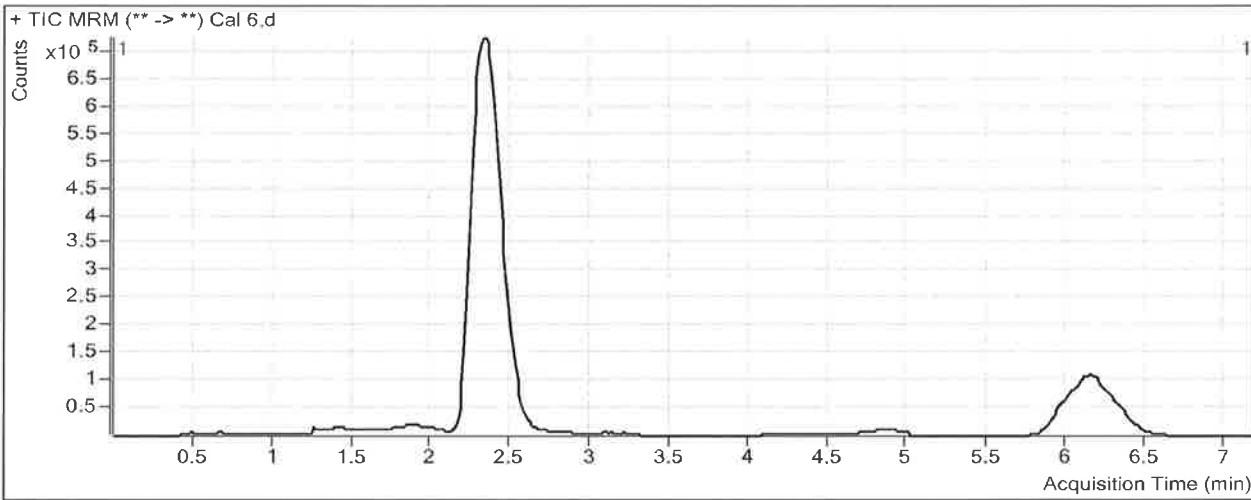
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:02 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 12:33 **Data File** Cal 6.d
Sample Type Calibration **Sample Name** Cal 6
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-C8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	3390570	2336526	1.4511	109.2666
THC-COOH	THC-COOH-D9	2.406	1812206	613744	2.9527	109.4789
THC	THC-D3	6.146	1096068	787367	1.3921	107.1978

ISP FORENSICS - Pocatello Instrument # 59740

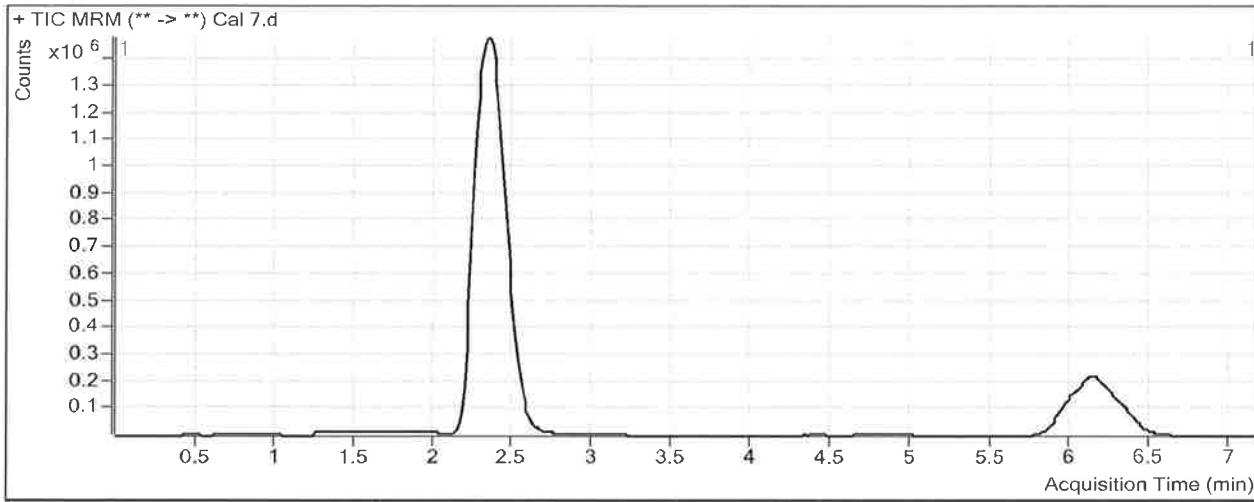
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\090418 THCQ TS\QuantResults\090418 THCQ worklist 2672 SP.batch.b
Analysis Time 9/5/2018 7:55 AM **Analyst Name** ISPUser
Report Time 9/5/2018 8:02 AM **Reporter Name** ISPUser
Last Calib Update 9/5/2018 7:55 AM **Batch State** Processed

Analysis Info

Acq Time 2018-09-04 12:45 **Data File** Cal 7.d
Sample Type Calibration **Sample Name** Cal 7
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-B8 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.305	8635674	2644053	3.2661	247.1139
THC-COOH	THC-COOH-D9	2.406	4575706	704200	6.4977	243.0411
THC	THC-D3	6.146	2692129	837552	3.2143	247.6368