

BWylee

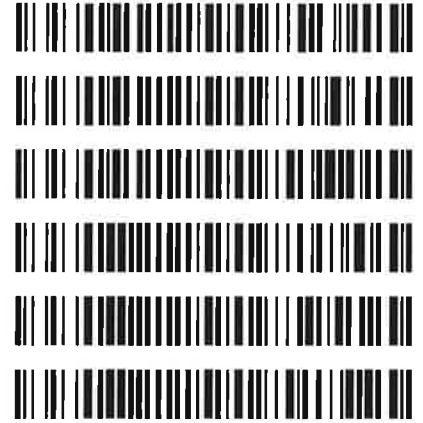
BS

4/30/2018

[Signature]

Worklist: 2359

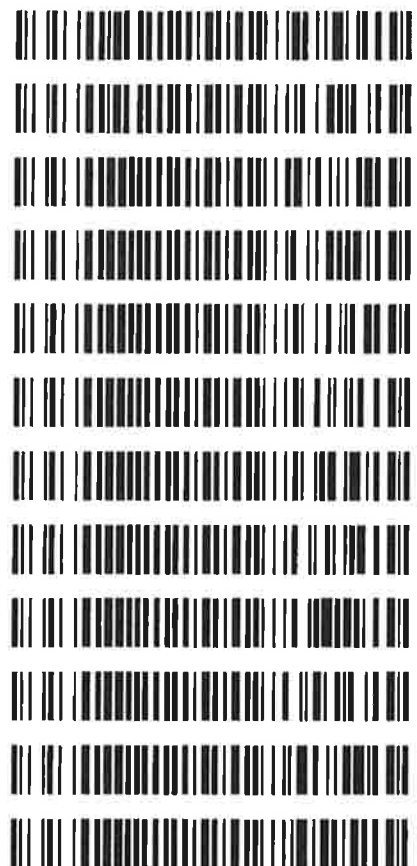
<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
M2018-1364	5	114446	AM 27 Blood THC Quant by LC-QQQ
M2018-1416	1	114447	AM 27 Blood THC Quant by LC-QQQ
M2018-1659	3	114448	AM 27 Blood THC Quant by LC-QQQ
P2018-0856	1	114449	AM 27 Blood THC Quant by LC-QQQ
P2018-0889	1	114450	AM 27 Blood THC Quant by LC-QQQ
P2018-0957	1	114451	AM 27 Blood THC Quant by LC-QQQ



B 4/30/2018 P

Worklist: 2360

<u>LAB CASE</u>	<u>ITEM</u>	<u>TASK ID</u>	<u>DESCRIPTION</u>
M2018-1507	1	114455	AM 27 Blood THC Quant by LC-QQQ
M2018-1693	2	114454	AM 27 Blood THC Quant by LC-QQQ
P2018-0772	1	114453	AM 27 Blood THC Quant by LC-QQQ
P2018-1025	1	114452	AM 27 Blood THC Quant by LC-QQQ
P2018-1030	1	114445	AM 27 Blood THC Quant by LC-QQQ
P2018-1031	1	114444	AM 27 Blood THC Quant by LC-QQQ
P2018-1032	1	114443	AM 27 Blood THC Quant by LC-QQQ
P2018-1041	1	114442	AM 27 Blood THC Quant by LC-QQQ
P2018-1056	1	114441	AM 27 Blood THC Quant by LC-QQQ
P2018-1097	1	114440	AM 27 Blood THC Quant by LC-QQQ
P2018-1102	1	114439	AM 27 Blood THC Quant by LC-QQQ
P2018-1108	1	114438	AM 27 Blood THC Quant by LC-QQQ



Worklists: 2359 and 2360

TS
D

Quantitation of THC and Metabolites in Blood by LC-MS/MS

Extraction Date: 04/30/18

Analyst: Sarah Pickle and Tamara Salazar

Plate lot#: 0515037

Plate Expiration: 09/28/18

Mobile phase A: 0.1% Formic Acid in LCMS Water
MTBE

Mobile phase B: 0.1% Formic acid in Acetonitrile
LCMS Methanol Hexane

Blank Blood Lot: 361331-2

Column: UCT Selectra DA 100 x 2.1mm 3um

LCMS-QQQ ID: 59740

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:

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.

Analysis was performed with Sarah Pickle acting as the primary analyst. Tamara Salazar witnessed and approved of all methods performed. - TS

Post-Analytic

- 1. Create batch and process data.
Worklist path: *043018 TS SP THC Quant*
Batch Name: *043018THCQ wklst 2360 SP*
- 2. Make any necessary integration changes, r^2 values ≥ 0.98 for each analyte.
- 3. Did all QCs pass for each analyte? Y / N Enter QCs into control charting?
- 4. Central File Packet to include: LIMS Worklist, Method Checklist, Calibration and Control Reports

COMMENTS:

Curve Range Limited: THC-COOH: 5-250



Idaho State Police Forensic Services

TS
R

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

Analyst: Sarah Pickle and Tamara Salazar - TS
 Extraction Date: 4/30/18
 Worklist Number: 2360 and 2359 - TS

Reagent	Lot Number	Expiration Date	Date in Service	Date Out of Service	Initials
ToxBox THC/THC Metabolite Plate	0515037	09/28/18			
Negative Blood	361331-2		12/27/17		
Methanol External Control Solution	WS020718	02/07/19	02/07/18		
Blood External Control Solution	020718	02/07/19	02/07/18		
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)	166541		6/26/17		
0.1% Formic Acid in Acetonitrile (Mobile Phase B)	176190		2/6/18		
Needle Rinse--75% LCMS MeOH in LCMS Water	042418		04/24/18		

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

Component	Source	Source Lot Number	Expiration Date
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: 020718)
 100 ul of methanol external control solution was added to 9900 ul of blood.

Component	Source	Source Lot Number
Negative Blood	Hemostat	361331-2
Methanol External Control Solution		WS020718
Prepared:	02/07/18	
Prepared by:	Tamara Salazar	
Expires:	02/07/19	

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Needle Rinse (75% LCMS MeOH in LCMS Water) (Lot: 042418)

<i>Component</i>	<i>Source</i>	<i>Source Lot Number</i>
MeOH (LCMS Grade)	Fisher	177145
Water (LCMS Grade)	Fisher	177528
Prepared:	04/24/18	
Prepared By:	Tamara Salazar	

ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

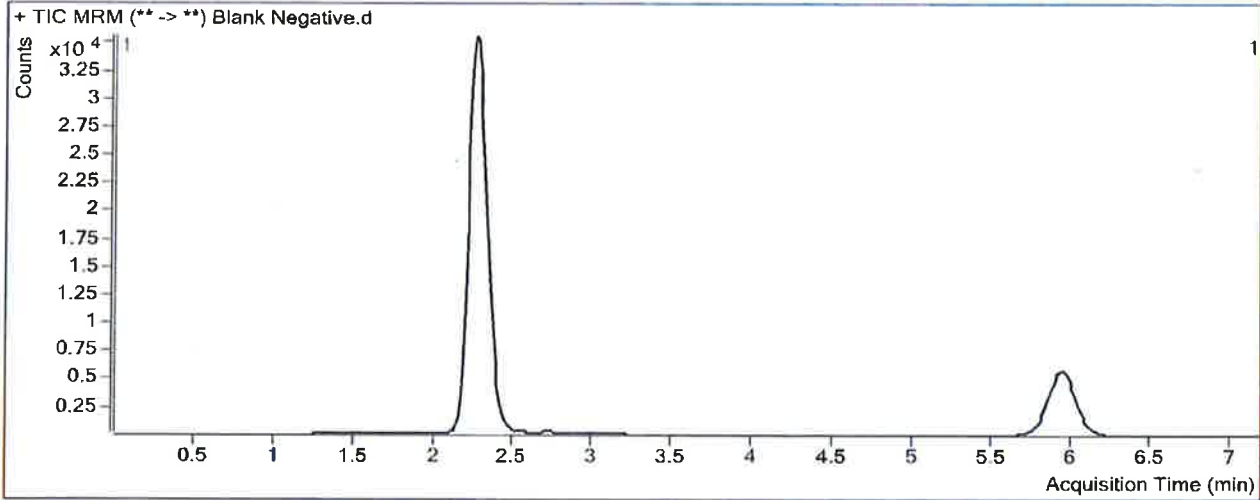
TS
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Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 14:36 **Data File** Blank Negative.d
Sample Type Sample **Sample Name** Blank Negative
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position Vial 2 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



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ISP FORENSICS - Pocatello Instrument # 59740

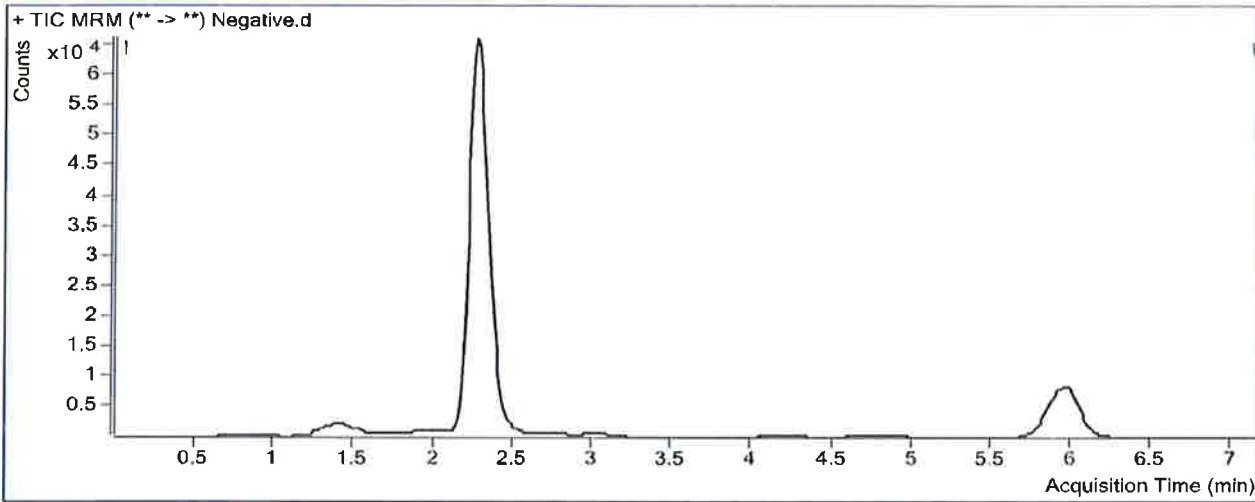
Cannabinoids Analysis Report

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Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 14:48 **Data File** Negative.d
Sample Type Sample **Sample Name** Negative
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H5 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-2

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.105	1369	422930	0.0032	1.2134
THC-COOH	THC-COOH-D9	2.339	6360	119831	0.0531	0.3210

ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

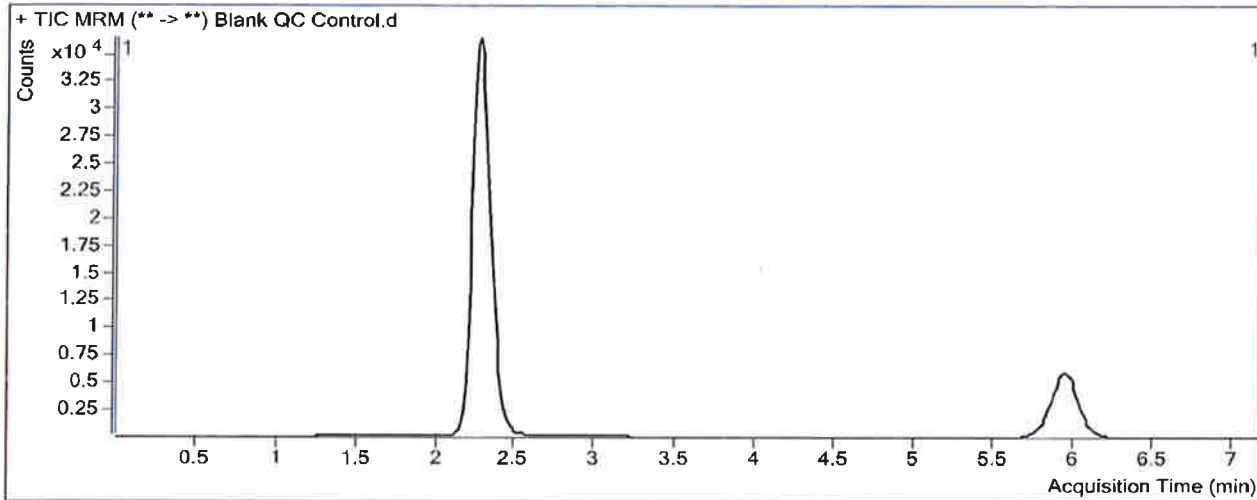
TS
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Report Time 5/1/2018 1:40 PM **Reporter Name** ISUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 14:13 **Data File** Blank QC Control.d
Sample Type Sample **Sample Name** Blank QC Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position Vial 2 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



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ISP FORENSICS - Pocatello Instrument # 59740

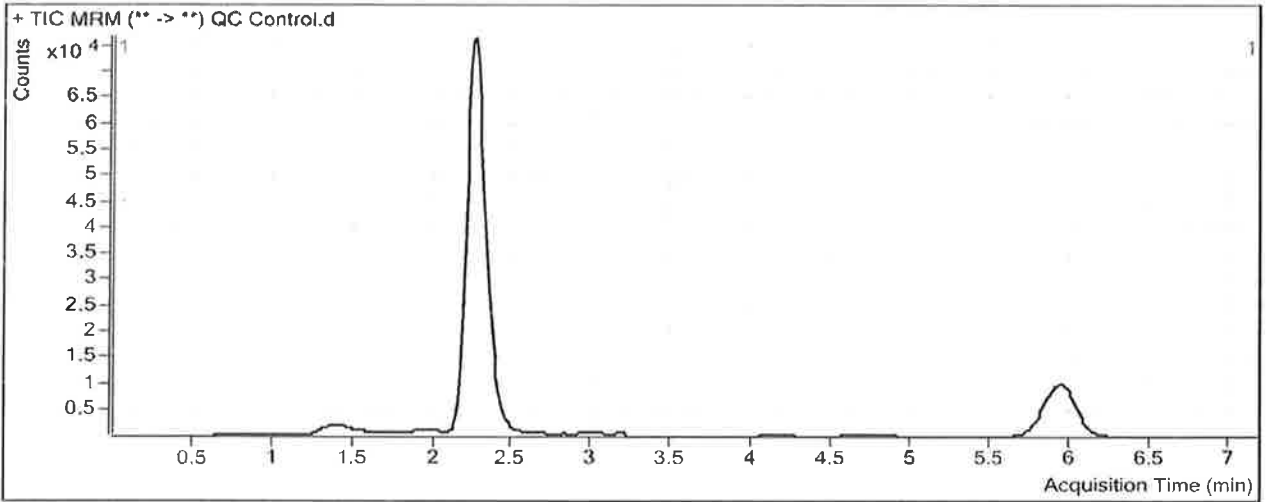
Cannabinoids Analysis Report

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Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 14:25 **Data File** QC Control.d
Sample Type Sample **Sample Name** QC Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-A6 **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	2.265	34108	453582	0.0752	7.7827
THC-COOH	THC-COOH-D9	2.352	24720	126740	0.1950	7.5227
THC	THC-D3	5.972	10627	123972	0.0857	8.1223

ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

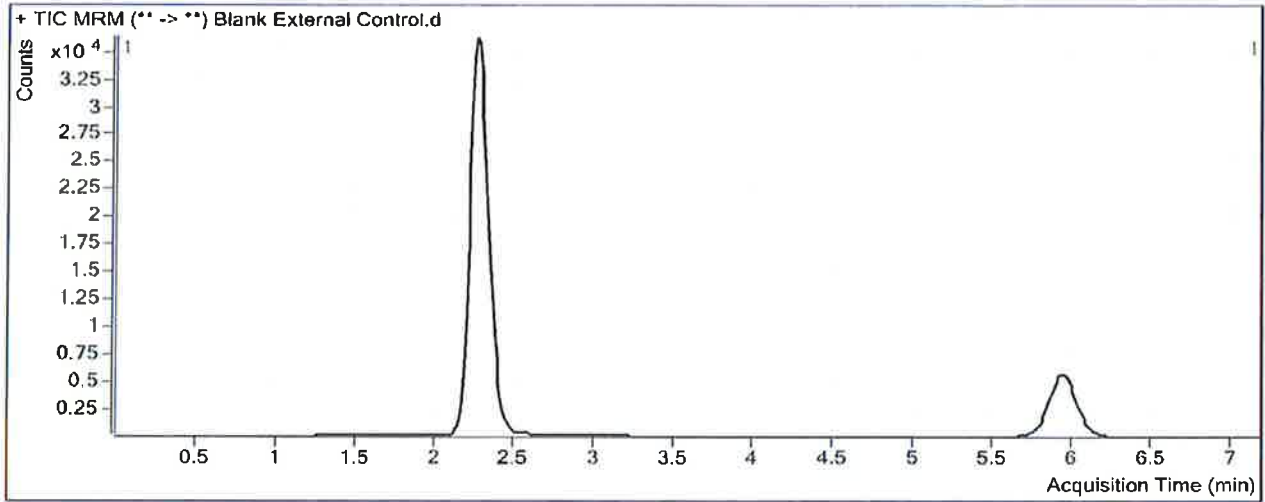
TS
P

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Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed


Analysis Info

Acq Time 2018-04-30 15:00 **Data File** Blank External Control.d
Sample Type Sample **Sample Name** Blank External Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position Vial 2 **Sample Info**
Inj Vol -1 **Comment**

Sample Chromatogram



ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

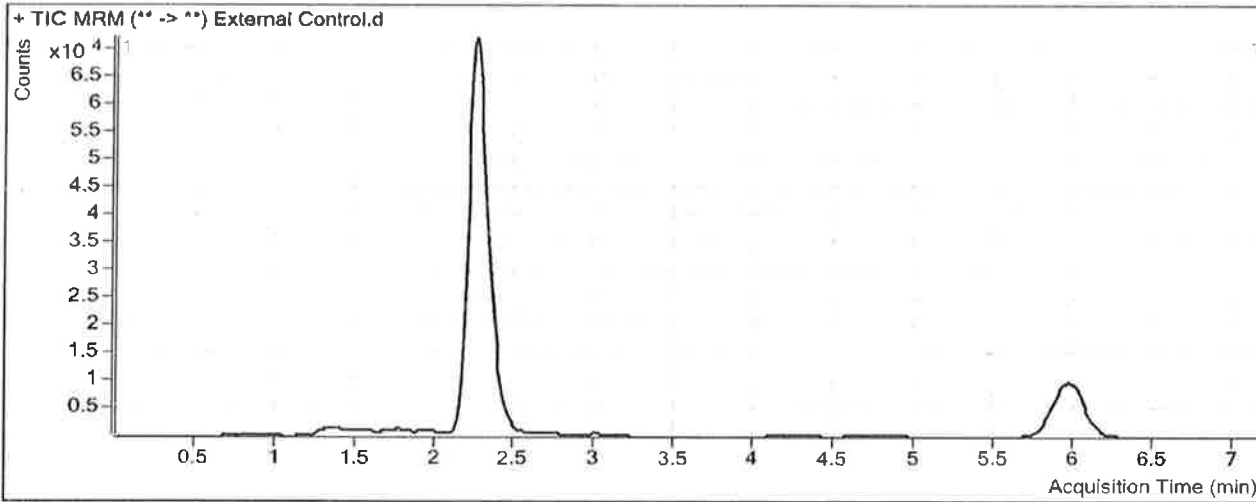
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Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 15:12 **Data File** External Control.d
Sample Type Sample **Sample Name** External Control
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G5 **Sample Info**
Inj Vol -1 **Comment** Hemostat 361331-2 + WS 020718

Sample Chromatogram



Results

Compound	ISTD Compound	RT	Response	ISTD Resp	Resp Ratio	Final Conc
THC-OH	THC-OH-D3	2.265	30971	433464	0.0715	7.4406
THC-COOH	THC-COOH-D9	2.365	25794	116987	0.2205	8.8131
THC	THC-D3	5.999	11704	121854	0.0960	9.0234

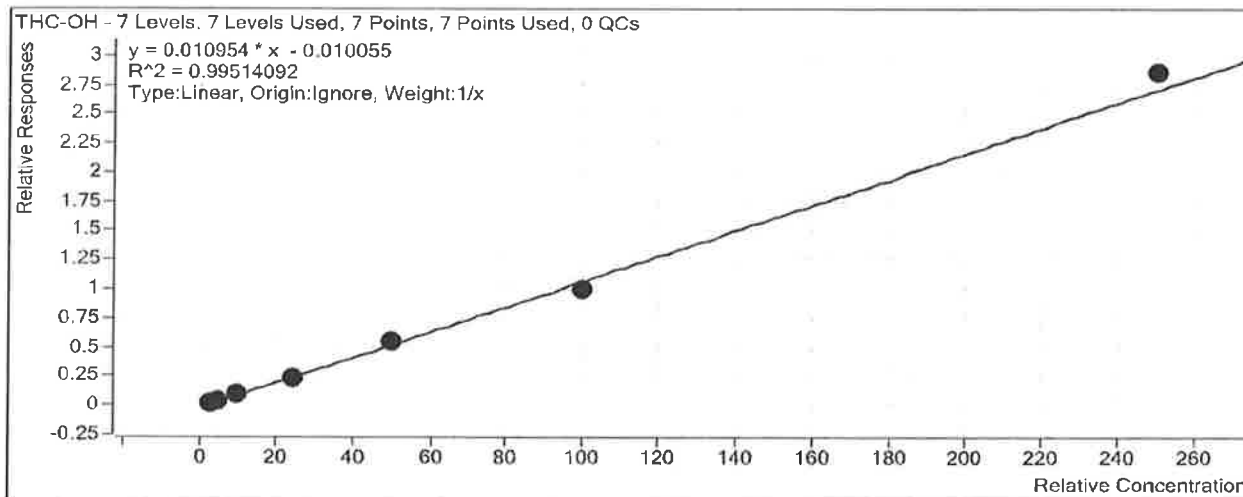
ISP FORENSICS Calibration Curve Report

TS
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wkst 2360 SP.batch.bin

Last Calib Update 5/1/2018 7:53 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	3.5	117.1
Cal 2	2	<input checked="" type="checkbox"/>	5	5.4	107.6
Cal 3	3	<input checked="" type="checkbox"/>	10	9.2	92.2
Cal 4	4	<input checked="" type="checkbox"/>	25	21.6	86.4
Cal 5	5	<input checked="" type="checkbox"/>	50	50.2	100.4
Cal 6	6	<input checked="" type="checkbox"/>	100	91.8	91.8
Cal 7	7	<input checked="" type="checkbox"/>	250	261.3	104.5

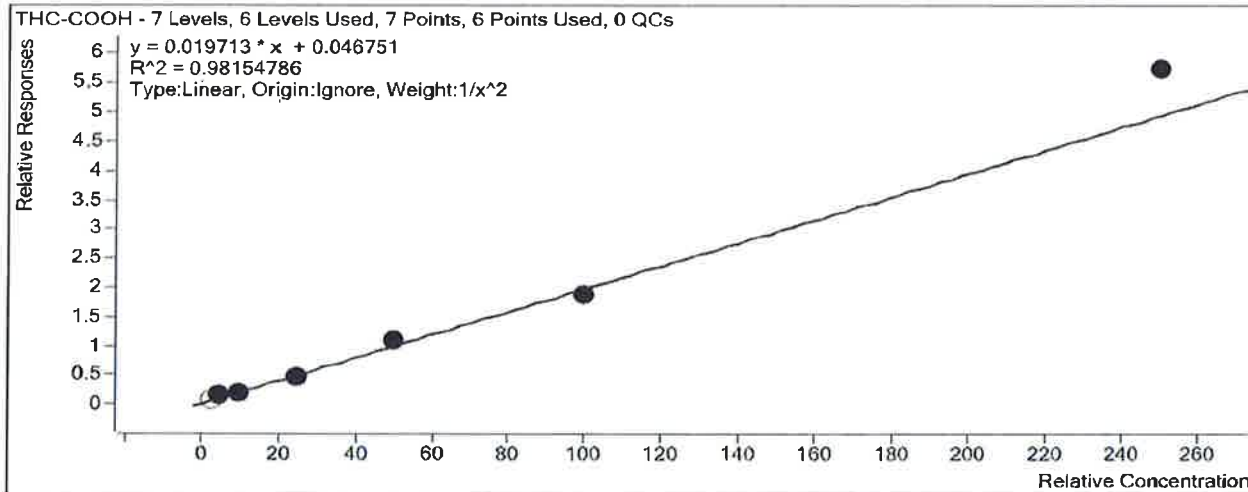
ISP FORENSICS Calibration Curve Report

TS
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Batch Data Path C:\MassHunter\Data\2018\THC Quant\043018 TS SP THC Quant\QuantResults\043018 THCQ
wk1st 2360 SP.batch.bin

Last Calib Update 5/1/2018 7:53 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	3.0	99.1
Cal 2	2	<input checked="" type="checkbox"/>	5	5.3	106.8
Cal 3	3	<input checked="" type="checkbox"/>	10	9.0	90.2
Cal 4	4	<input checked="" type="checkbox"/>	25	21.8	87.0
Cal 5	5	<input checked="" type="checkbox"/>	50	53.3	106.7
Cal 6	6	<input checked="" type="checkbox"/>	100	94.0	94.0
Cal 7	7	<input checked="" type="checkbox"/>	250	288.1	115.2

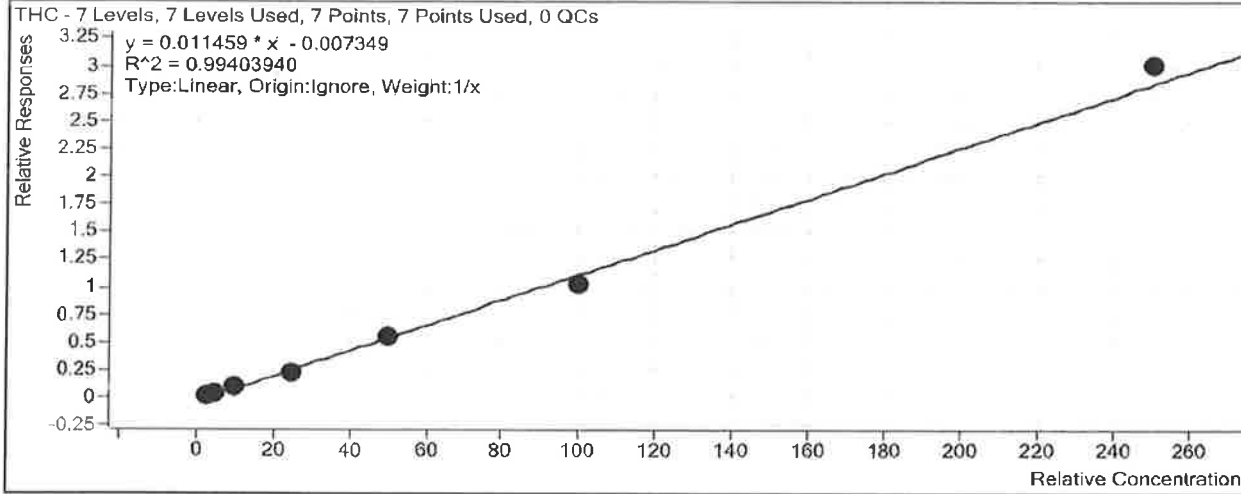
ISP FORENSICS Calibration Curve Report

TS
[Signature]

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wk1st 2360 SP.batch.bin

Last Calib Update 5/1/2018 7:53 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	3.5	117.1
Cal 2	2	<input checked="" type="checkbox"/>	5	5.3	106.7
Cal 3	3	<input checked="" type="checkbox"/>	10	9.5	95.1
Cal 4	4	<input checked="" type="checkbox"/>	25	21.3	85.2
Cal 5	5	<input checked="" type="checkbox"/>	50	50.2	100.5
Cal 6	6	<input checked="" type="checkbox"/>	100	90.4	90.4
Cal 7	7	<input checked="" type="checkbox"/>	250	262.7	105.1

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

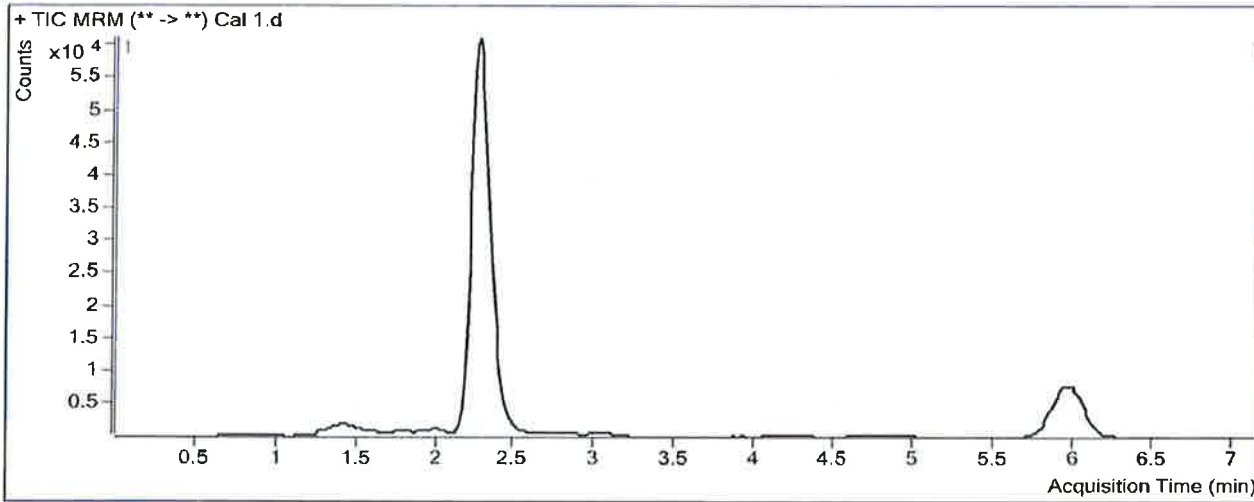
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Report Time 5/1/2018 1:39 PM **Reporter Name** ISUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 12:50 **Data File** Cal 1.d
Sample Type Calibration **Sample Name** Cal 1
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-H6 **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	2.279	10769	379022	0.0284	3.5116
THC-COOH	THC-COOH-D9	2.365	11601	110090	0.1054	2.9737
THC	THC-D3	5.985	3445	104709	0.0329	3.5123

TS 

ISP FORENSICS - Pocatello Instrument # 59740

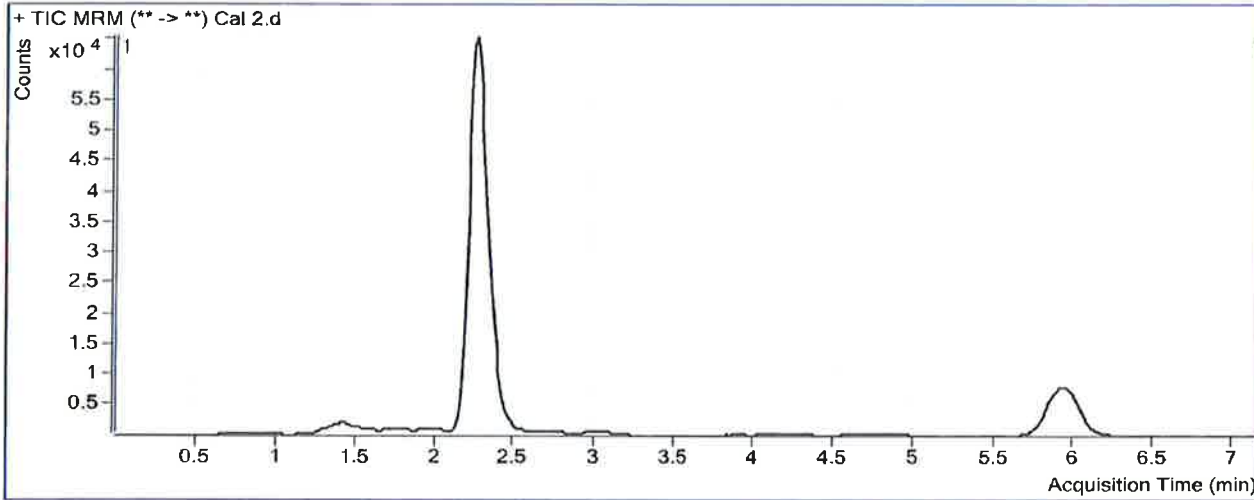
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\043018 TS SP THC Quant\QuantResults\043018 THCQ wk1st 2360 SP.bi
Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:39 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 13:02 **Data File** Cal 2.d
Sample Type Calibration **Sample Name** Cal 2
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-G6 **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	2.265	19145	391605	0.0489	5.3810
THC-COOH	THC-COOH-D9	2.365	16998	111811	0.1520	5.3403
THC	THC-D3	5.985	5584	103864	0.0538	5.3332

ISP FORENSICS - Pocatello Instrument # 59740
Cannabinoids Analysis Report

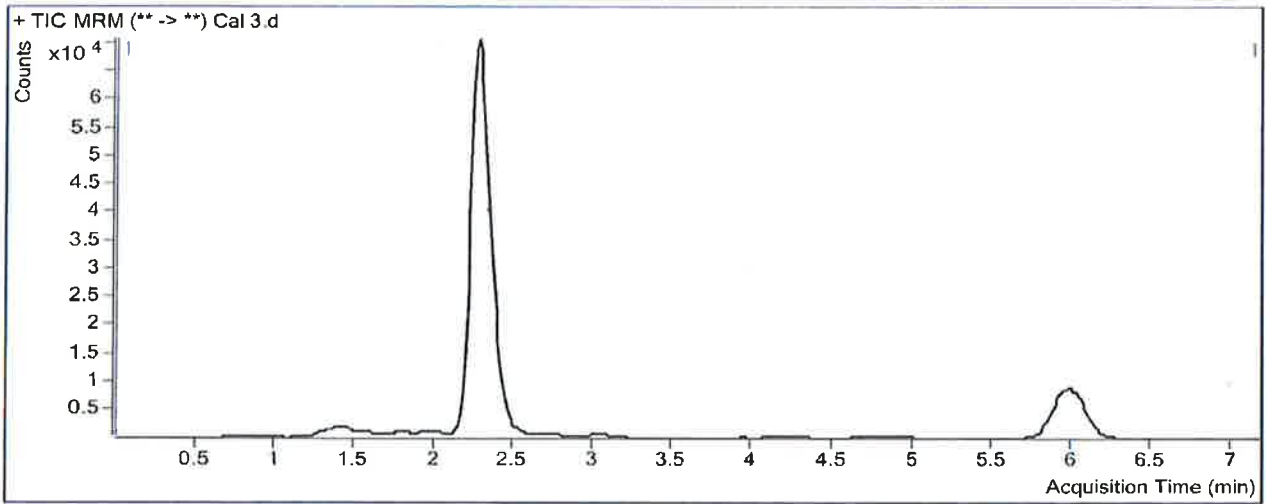
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Batch Data Path C:\MassHunter\Data\2018\THC Quant\043018 TS SP THC Quant\QuantResults\043018 THCQ wk1st 2360 SP.b
Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:39 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 13:13 **Data File** Cal 3.d
Sample Type Calibration **Sample Name** Cal 3
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-F6 **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	2.279	37533	412866	0.0909	9.2169
THC-COOH	THC-COOH-D9	2.379	26526	118101	0.2246	9.0223
THC	THC-D3	6.039	11008	108365	0.1016	9.5068

TS 

ISP FORENSICS - Pocatello Instrument # 59740

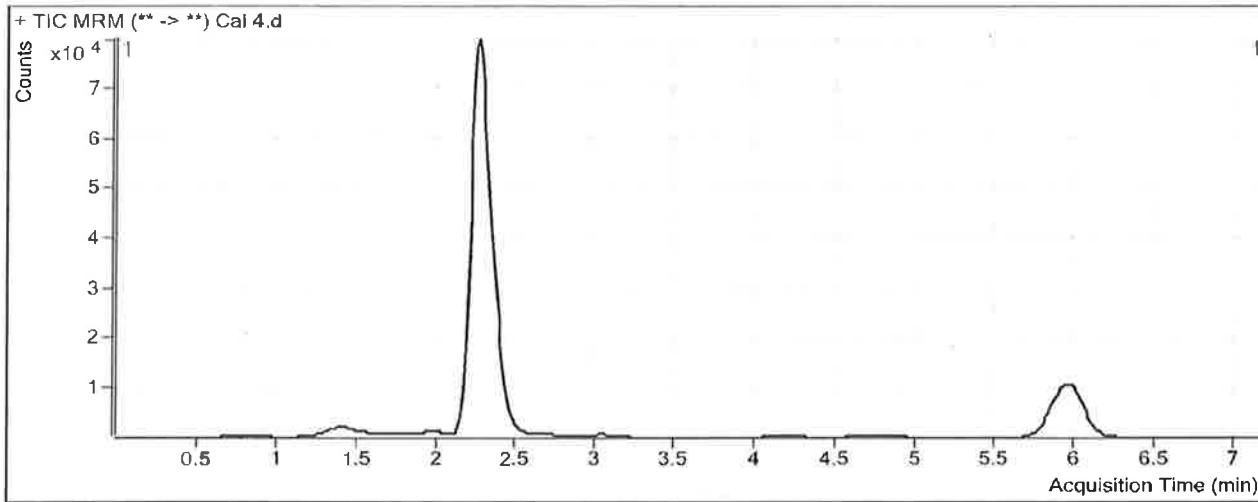
Cannabinoids Analysis Report

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Report Time 5/1/2018 1:39 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 13:25 **Data File** Cal 4.d
Sample Type Calibration **Sample Name** Cal 4
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-E6 **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	2.265	93876	414162	0.2267	21.6101
THC-COOH	THC-COOH-D9	2.365	54801	115198	0.4757	21.7602
THC	THC-D3	5.985	26125	110357	0.2367	21.3012

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

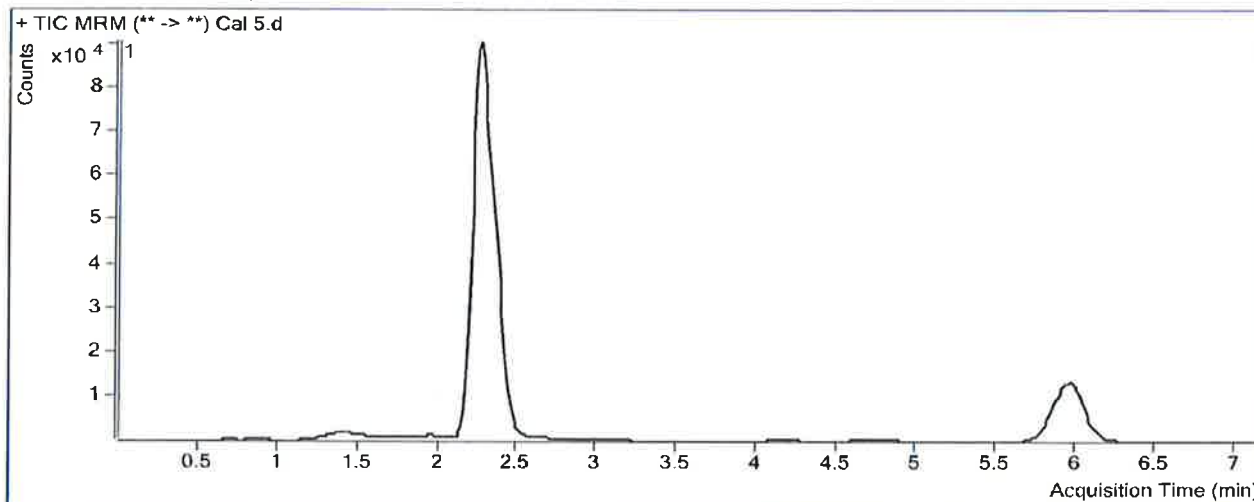
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Report Time 5/1/2018 1:39 PM **Reporter Name** ISUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 13:37 **Data File** Cal 5.d
Sample Type Calibration **Sample Name** Cal 5
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-D6 **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	2.265	199327	369143	0.5400	50.2119
THC-COOH	THC-COOH-D9	2.365	113275	103129	1.0984	53.3473
THC	THC-D3	5.972	54726	96286	0.5684	50.2436

ISP FORENSICS - Pocatello Instrument # 59740

Cannabinoids Analysis Report

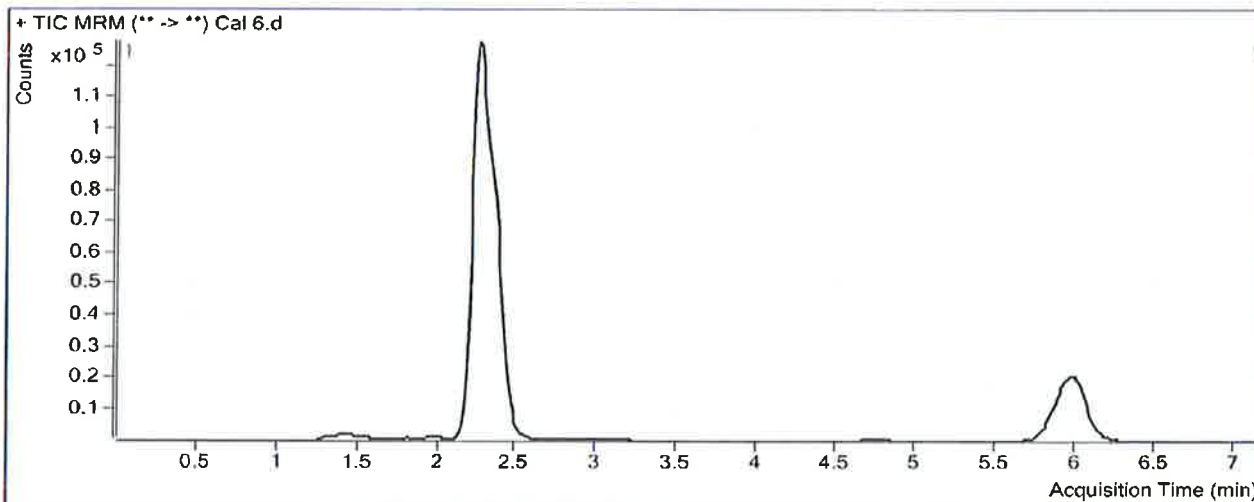
TS
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Batch Data Path C:\MassHunter\Data\2018\THC Quant\043018 TS SP THC Quant\QuantResults\043018 THCQ wklist 2360 SP.bi
Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 13:49 **Data File** Cal 6.d
Sample Type Calibration **Sample Name** Cal 6
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-C6 **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	2.265	400856	402765	0.9953	91.7749
THC-COOH	THC-COOH-D9	2.365	210163	110642	1.8995	93.9854
THC	THC-D3	5.985	111651	108521	1.0288	90.4290

TS PS

ISP FORENSICS - Pocatello Instrument # 59740

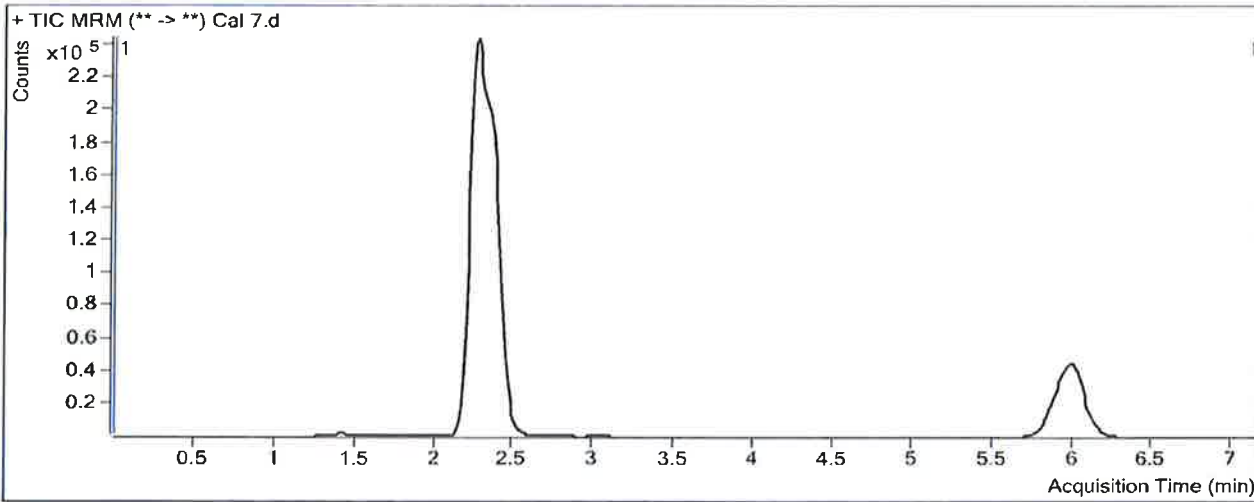
Cannabinoids Analysis Report

Batch Data Path C:\MassHunter\Data\2018\THC Quant\043018 TS SP THC Quant\QuantResults\043018 THCQ wk1st 2360 SP.bi
Analysis Time 5/1/2018 7:53 AM **Analyst Name** ISPUser
Report Time 5/1/2018 1:40 PM **Reporter Name** ISPUser
Last Calib Update 5/1/2018 7:53 AM **Batch State** Processed

Analysis Info

Acq Time 2018-04-30 14:01 **Data File** Cal 7.d
Sample Type Calibration **Sample Name** Cal 7
Dilution 1 **Acq Method** THC Quant 051517 workingmm.m
Position P1-B6 **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	2.265	1132135	396935	2.8522	261.2934
THC-COOH	THC-COOH-D9	2.365	595916	104062	5.7265	288.1234
THC	THC-D3	5.985	313173	104303	3.0025	262.6739