VERMONT FORENSIC LABORATORY

7/16/15 ~~BLOOD ALCOHOL~~ VERIFICATION DATA REVIEW CHECKLIST

7/16/15 ~~AGENCY CASE#~~ LOT: FN0905304 ANALYST: CB

LAB #: N/A

TECHNICAL REVIEWER: RCM DATE: 7/16/15

- ☑ QC complete? See note below. RCM 7/16/15
- ☑ Pertinent standard lot numbers listed?
- ☑ Data package is complete?
- ☑ Transcribed data and calculations verified?
- ☑ Calibration and control results all within ± 10% (± 20% for STD A) of the known values?
- ☑ Calibration line correlation factor at least 0.99xx?
- ☑ Average error for components of the calibration line less than 10%?
- ☑ Timing mix chromatogram demonstrates appropriate identification of components and separation from ethanol?
- ☑ Surrogate compound concentrations all within 0.900 to 1.100 range?
- ☑ Statistical means of the continuing calibration check sample duplicate analysis all within ± 10% of the known value?
- ☑ Individual replicates within ± 5% of the statistical mean?
- NA Reported results are means of two or more analyses?
  1. In the event of QNS for 2 (two) analysis a notation must be made on the worksheet.
  2. In the event that more than 2 (two) results are used to determine the reported result a notation is made on the worksheet.

Comments: See memo from AB dated 7/16/15 RE aqueous ethanol standards. RCM 7/16/15

ADMINISTRATIVE REVIEWER: AB DATE: 7/16/15

- NA Agency Case # and Lab # and Evidence description match submission form?
- NA Submitting agency, investigator, suspect, CC all match submission form?
- NA Chain of Custody complete and dated appropriately?
- ☑ Are all pages numbered and initialed on the Examination Documents?
- ☑ Case number (agency or lab number) written on all pages of the case file?
- ☑ Appropriate review(s) have been completed?
- NA Is the exam end date documented in the paper case file consistent with the exam end date in LIMS?

Comments:

DIRECTOR REVIEWER: TGA DATE: 7/17/2015

- ☒ Does the report and associated paperwork meet administrative expectations?
- ☒ Have the appropriate reviews been completed?

Check Mark or X = pass, NA= Not Applicable

File Name = C:\Alcohol Data\VFL07152015\VFL07152015.SEQ
Version = 2
File Date = 7/15/2015 2:28:00 PM

Entry #	Raw File Name	Method File Name	Sample Name	Sample Wt.	Int. Std. Amount
1	VFL07152015.0001.raw	Blood Alc temp VFL.MET	BLANK	1.00	1.00
2	VFL07152015.0002.raw	Blood Alc temp VFL.MET	TMX	1.00	1.00
3	VFL07152015.0003.raw	Blood Alc temp VFL.MET	STD A	1.00	1.00
4	VFL07152015.0004.raw	Blood Alc temp VFL.MET	STD B	1.00	1.00
5	VFL07152015.0005.raw	Blood Alc temp VFL.MET	STD C	1.00	1.00
6	VFL07152015.0006.raw	Blood Alc temp VFL.MET	STD D	1.00	1.00
7	VFL07152015.0007.raw	Blood Alc temp VFL.MET	STD E	1.00	1.00
8	VFL07152015.0008.raw	Blood Alc temp VFL.MET	0.01 AQ	1.00	1.00
9	VFL07152015.0009.raw	Blood Alc temp VFL.MET	0.01 AQ	1.00	1.00
10	VFL07152015.0010.raw	Blood Alc temp VFL.MET	0.30 AQ	1.00	1.00
11	VFL07152015.0011.raw	Blood Alc temp VFL.MET	0.30 AQ	1.00	1.00
12	VFL07152015.0012.raw	Blood Alc temp VFL.MET	CCS	1.00	1.00
13	VFL07152015.0013.raw	Blood Alc temp VFL.MET	CCS	1.00	1.00
14	VFL07152015.0014.raw	Blood Alc temp VFL.MET	0.08 FN09051304	1.00	1.00
15	VFL07152015.0015.raw	Blood Alc temp VFL.MET	0.08 FN09051304	1.00	1.00
16	VFL07152015.0016.raw	Blood Alc temp VFL.MET	0.08 FN011712-02	1.00	1.00
17	VFL07152015.0017.raw	Blood Alc temp VFL.MET	CCS	1.00	1.00
18	VFL07152015.0018.raw	Blood Alc temp VFL.MET	CCS	1.00	1.00

TWO LEVELS OF ALTERNATE QC MATERIAL INCLUDED DUE TO INSUFFICIENT 0.08 g/100ml MATERIAL.
DB 7/16/15

LOT #S USED:

BLANK : BL-01162015
TMX : TMX-08112014
STD A: FN01131401
STD B: FN092710-01
STD C: FN05211402
STD D: FN032712-01
STD E: FN012712-01
CERILLIANT
IS: IS-06022015 A
0.01 AQ: FN080612-04
0.30 AQ : FN121510-01
CERILLIANT

DB 7/16/2015

FN09051304 PAGE 1 OF 20

File Name: C:\Methods\VFL07152015.CAL
Version: 7

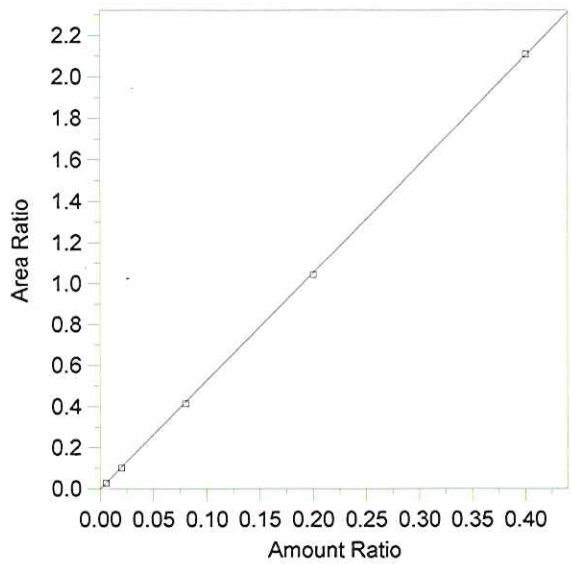
Creator:
Description:
Reason for change:

Internal standard calibration
No injection volume correction
No sample weight correction
Area reject threshold: 1500
Reference peak area reject threshold: 0
Amount units:
No default component

Method of calculating data point averages: Equal weight for all updates
No calibration update report

All levels are normal data points.

3 Ethanol



Expected retention time:	2.658 minutes
Search window:	0.1 minutes
Internal standard component:	7 (n-Propanol)
No retention time reference component	
Group number:	0
High alarm limit:	0
Low alarm limit:	0
Component constant:	0

Single peak quantification by area

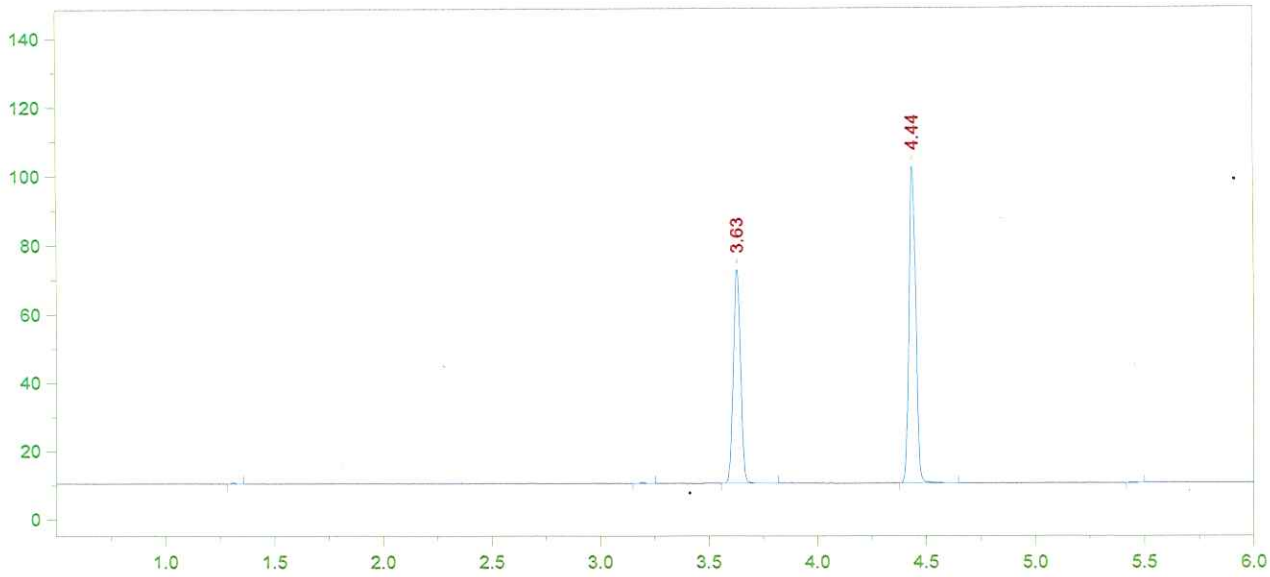
Y = 5.260264 X + 0

Linear fit with equal weighting, forced to origin

Coefficient of determination:	0.9999376
Average error:	1.982%
Average CF:	5.238526
RSD:	2.629%

Level	Amount	Response	Cal Factor	Error, %	Amount Ratio	Response Ratio	Source	Date and time
1	(0.0836)	(85146)	--	--	0.0836	85146	Manual	8/13/2014 9:33:12 AM
2	0.005	5161.531	1032306	3.633	0.005	0.0272569	C:\Alcohol Data\VFL07152015\VFL07152015.0003.BND	7/15/2015 3:35:12 PM
3	0.02	19921.65	996082.6	-3.277	0.02	0.1017582	C:\Alcohol Data\VFL07152015\VFL07152015.0004.BND	7/15/2015 3:52:42 PM
4	0.08	79207.95	990099.4	-1.894	0.08	0.4128506	C:\Alcohol Data\VFL07152015\VFL07152015.0005.BND	7/15/2015 4:06:45 PM
5	0.2	190180.1	950900.4	-0.816	0.2	1.043463	C:\Alcohol Data\VFL07152015\VFL07152015.0006.BND	7/15/2015 4:24:05 PM
6	0.4	416322	1040805	0.288	0.4	2.110155	C:\Alcohol Data\VFL07152015\VFL07152015.0007.BND	7/15/2015 4:38:02 PM

FN0909 1304 p. 2

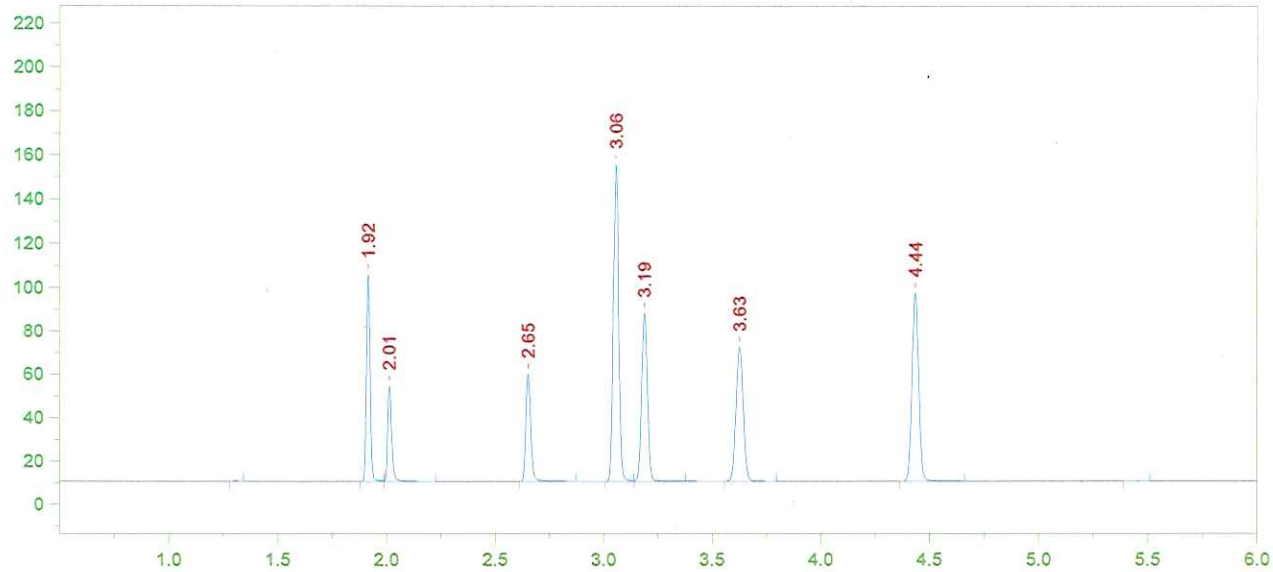


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 7:59:37 AM
Bound File Name = VFL07152015.0001.RAW
Sample Name = BLANK
Date Taken = 7/15/2015 3:04:53 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
3	3.63	t-Butanol	144256	0.9631
4	4.44	n-Propanol	196084	1.0000

AN09051304 p. 3

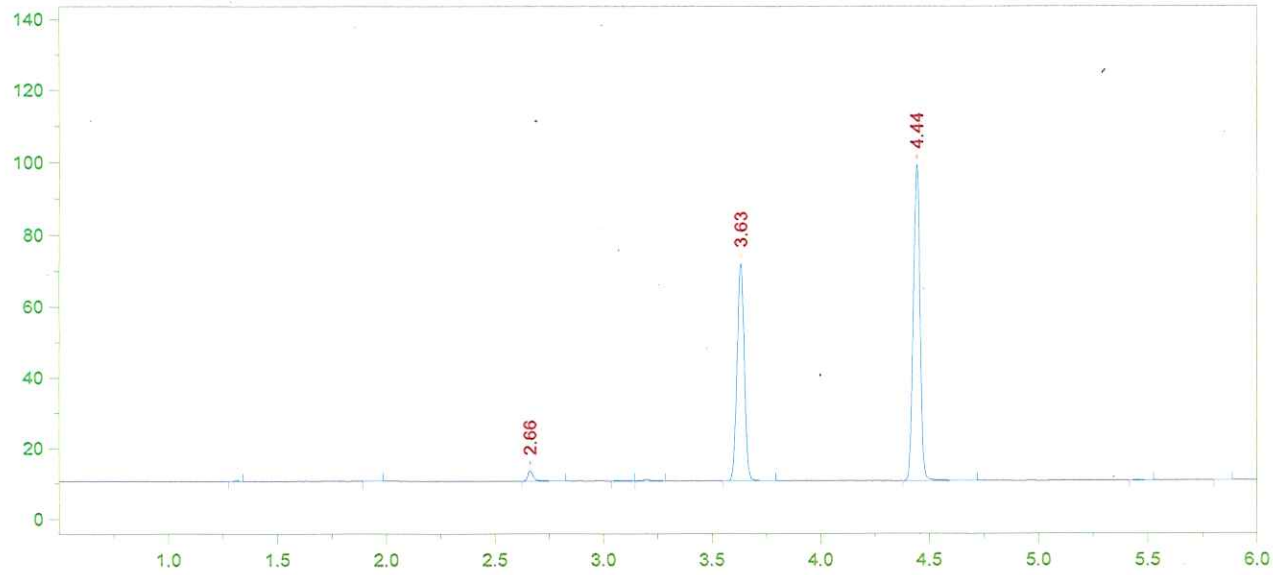


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 7:59:45 AM
Bound File Name = VFL07152015.0002.RAW
Sample Name = TMX
Date Taken = 7/15/2015 3:21:14 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	1.92	Acetaldehyde	111176	0.0695
3	2.01	Methanol	55756	0.1232
4	2.65	Ethanol	77180	0.0798
5	3.06	Acetone	248748	0.0657
6	3.19	Isopropanol	145641	0.0848
7	3.63	t-Butanol	142530	1.0149
8	4.44	n-Propanol	183853	1.0000

FN0909 1304 P-4

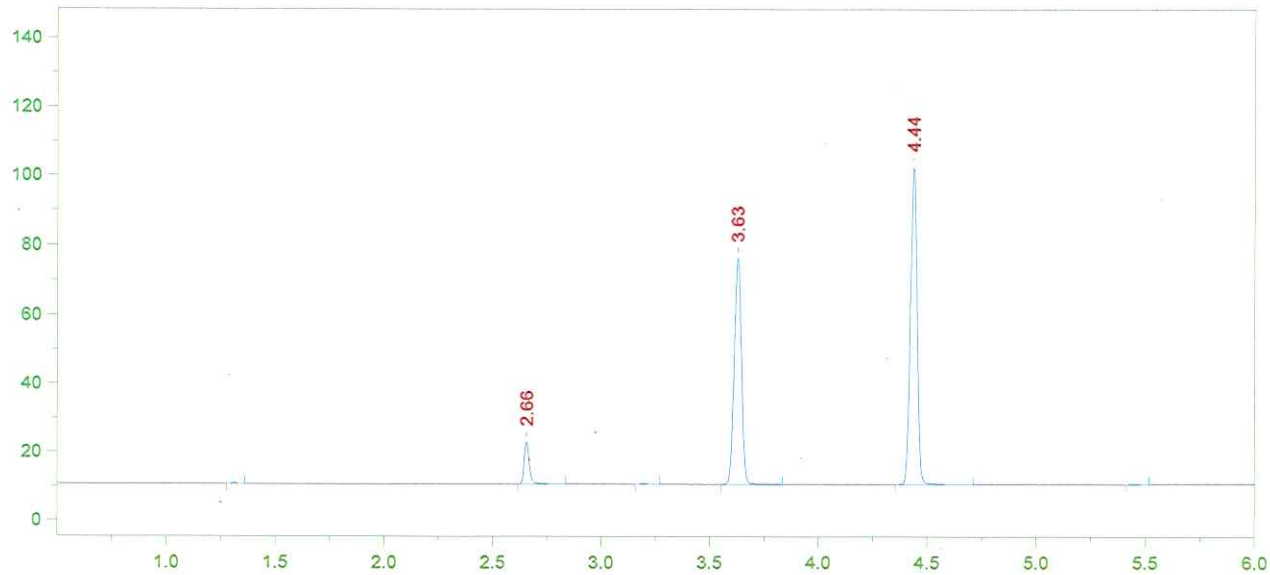


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 7:59:51 AM
Bound File Name = VFL07152015.0003.RAW
Sample Name = STD A
Date Taken = 7/15/2015 3:35:07 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
3	2.66	Ethanol	05162	0.0052
6	3.63	t-Butanol	141730	0.9798
7	4.44	n-Propanol	189366	1.0000

FN 09 051304 p. 5

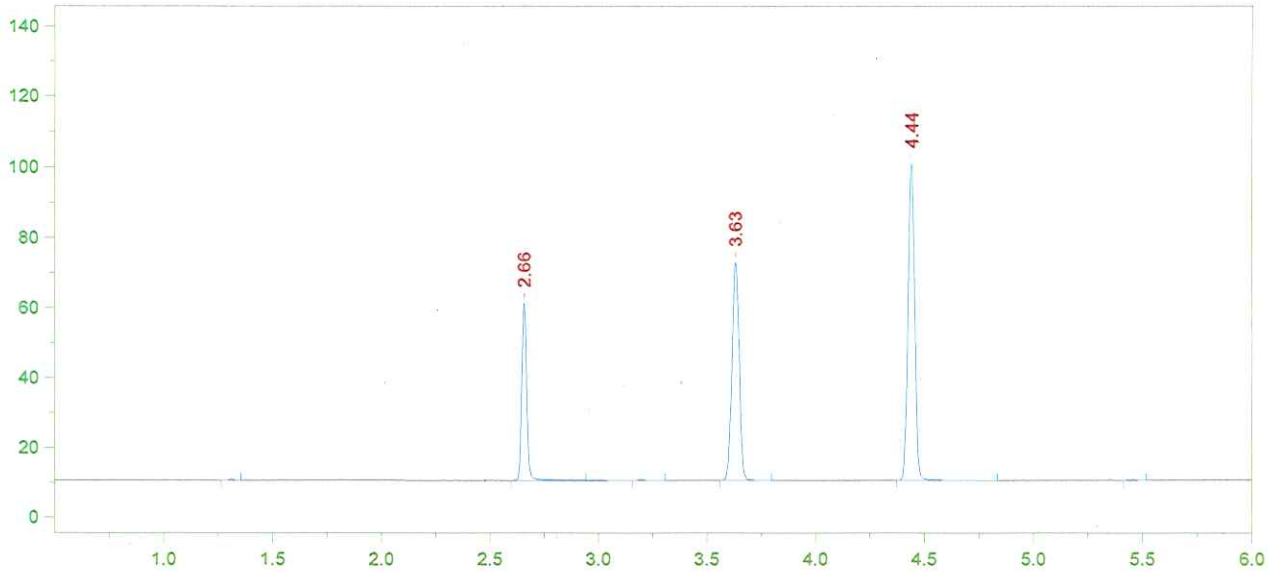


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 7:59:56 AM
Bound File Name = VFL07152015.0004.RAW
Sample Name = STD B
Date Taken = 7/15/2015 3:52:36 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	19922	0.0193
4	3.63	t-Butanol	152580	1.0203
5	4.44	n-Propanol	195774	1.0000

AN 09051304 p.6

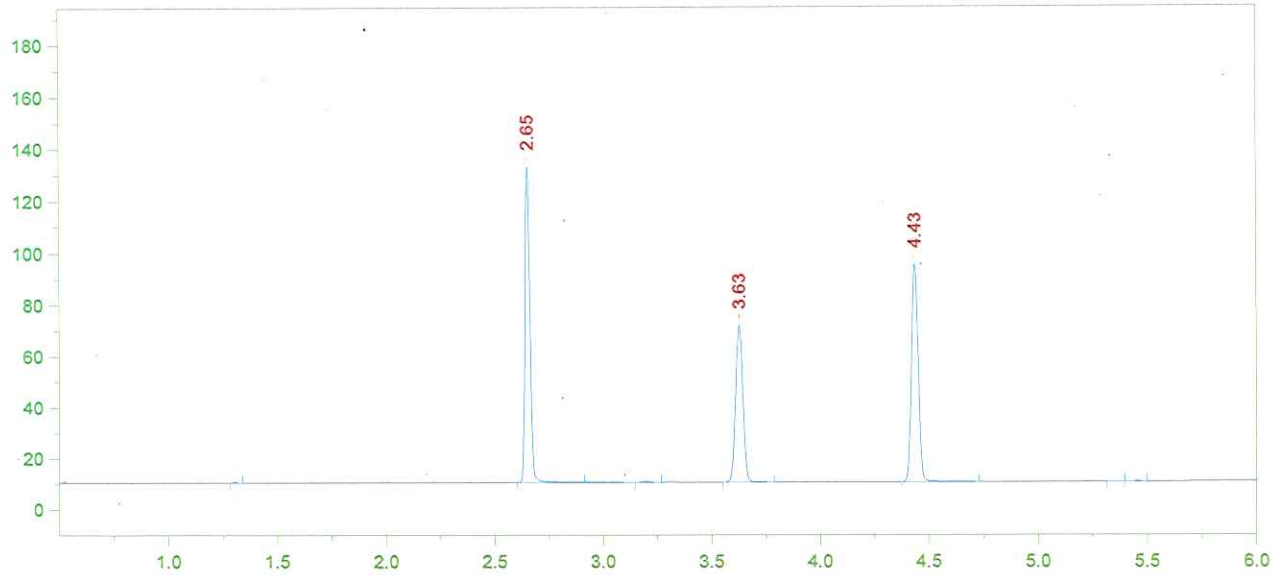


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 8:00:01 AM
Bound File Name = VFL07152015.0005.RAW
Sample Name = STD C
Date Taken = 7/15/2015 4:06:41 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	79208	0.0785
4	3.63	t-Butanol	144303	0.9846
5	4.44	n-Propanol	191856	1.0000

FN09051304 p.7

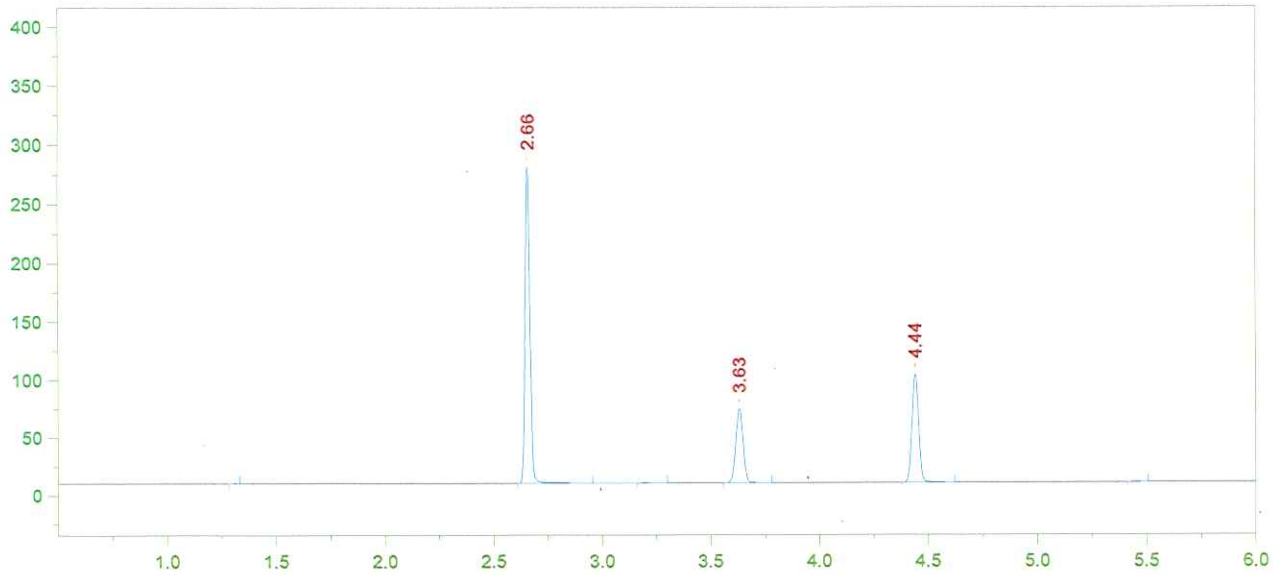


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 8:00:07 AM
Bound File Name = VFL07152015.0006.RAW
Sample Name = STD D
Date Taken = 7/15/2015 4:24:00 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	190180	0.1984
4	3.63	t-Butanol	141948	1.0196
5	4.43	n-Propanol	182259	1.0000

FN09091304 p. 8

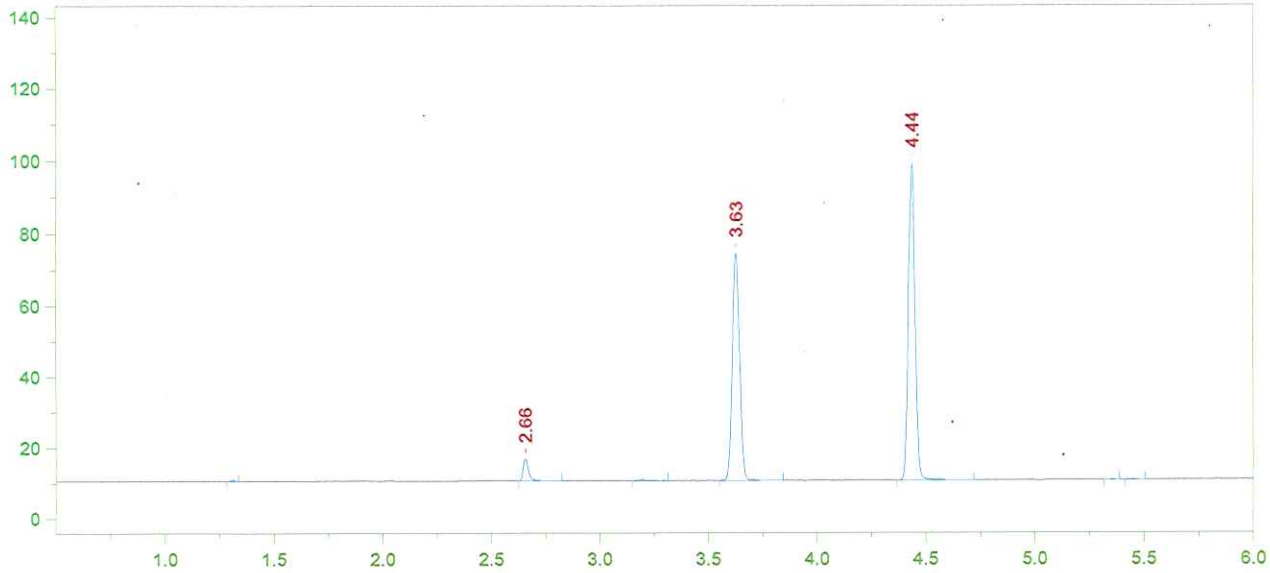


Format File Name = AlcoholVFL.FMT

Today's Date = 7/16/2015
Today's Time = 8:00:13 AM
Bound File Name = VFL07152015.0007.RAW
Sample Name = STD E
Date Taken = 7/15/2015 4:37:53 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	416322	0.4011
4	3.63	t-Butanol	147826	0.9809
5	4.44	n-Propanol	197295	1.0000

FN0905B04 p.9

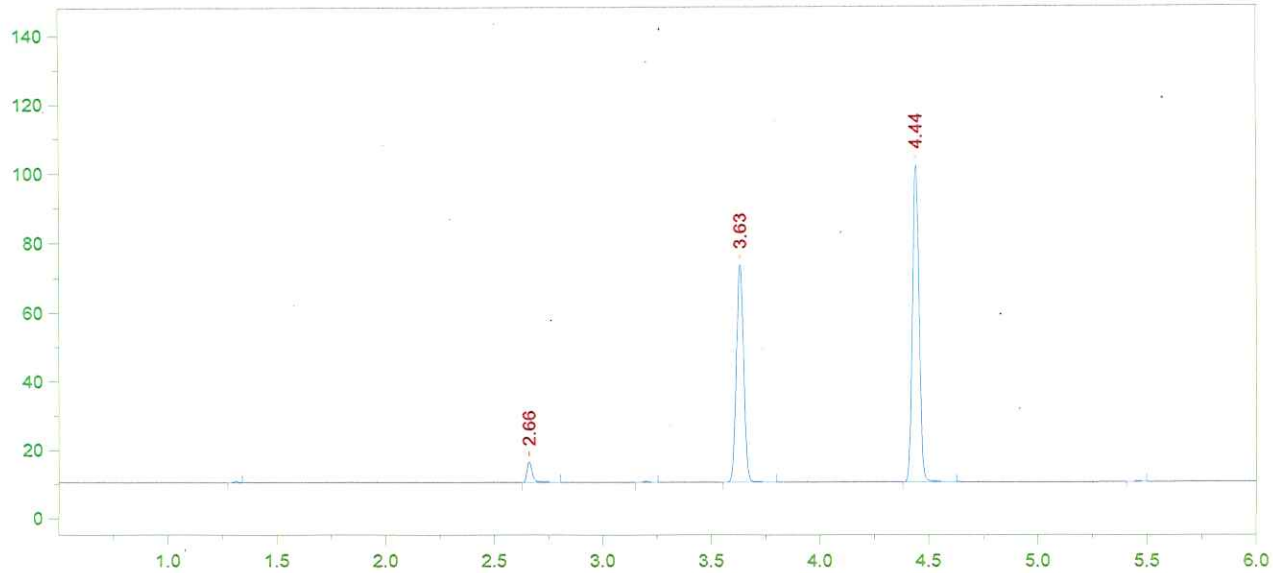


Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 4:55:29 PM
Bound File Name = VFL07152015.0008.RAW
Sample Name = 0.01 AQ
Date Taken = 7/15/2015 4:55:25 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	10371	0.0105
4	3.63	t-Butanol	147933	1.0320
5	4.44	n-Propanol	187659	1.0000

FN09051304 A10



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 5:09:09 PM
Bound File Name = VFL07152015.0009.RAW
Sample Name = 0.01 AQ
Date Taken = 7/15/2015 5:09:05 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	10007	0.0098
4	3.63	t-Butanol	146665	0.9867
5	4.44	n-Propanol	194597	1.0000

0.01 AQ MEAN: 0.0101 g/100mL ethanol

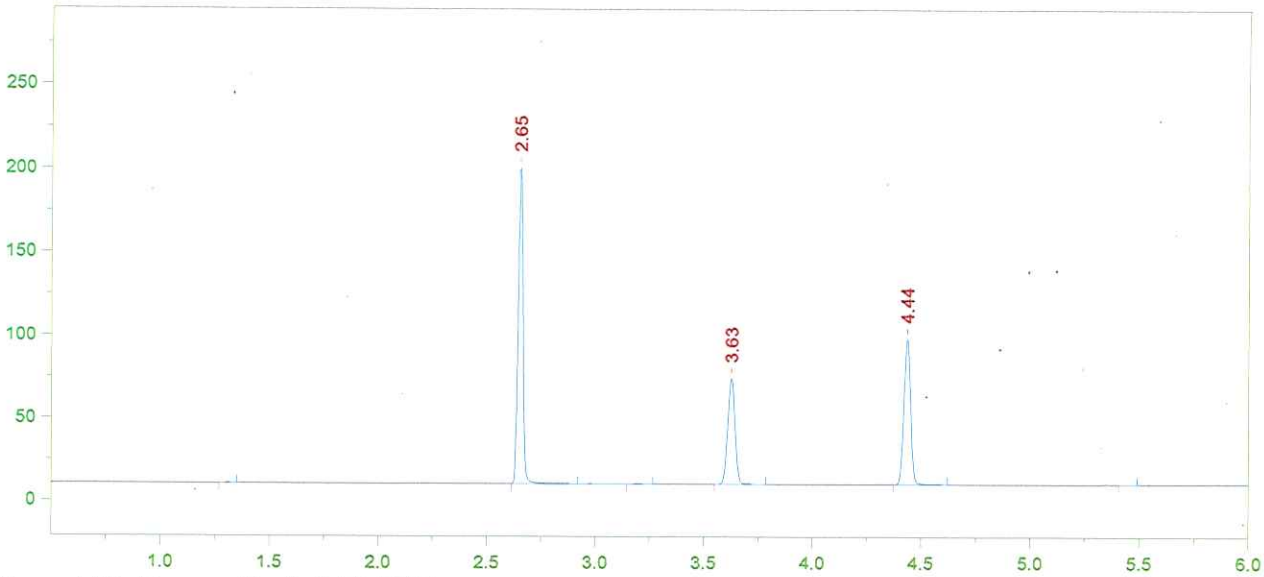
±5% : 0.0096 – 0.0106

Recovery: $\frac{0.010}{0.010} = 100\%$

7/16/15

FN 09 05 1304

p. 11

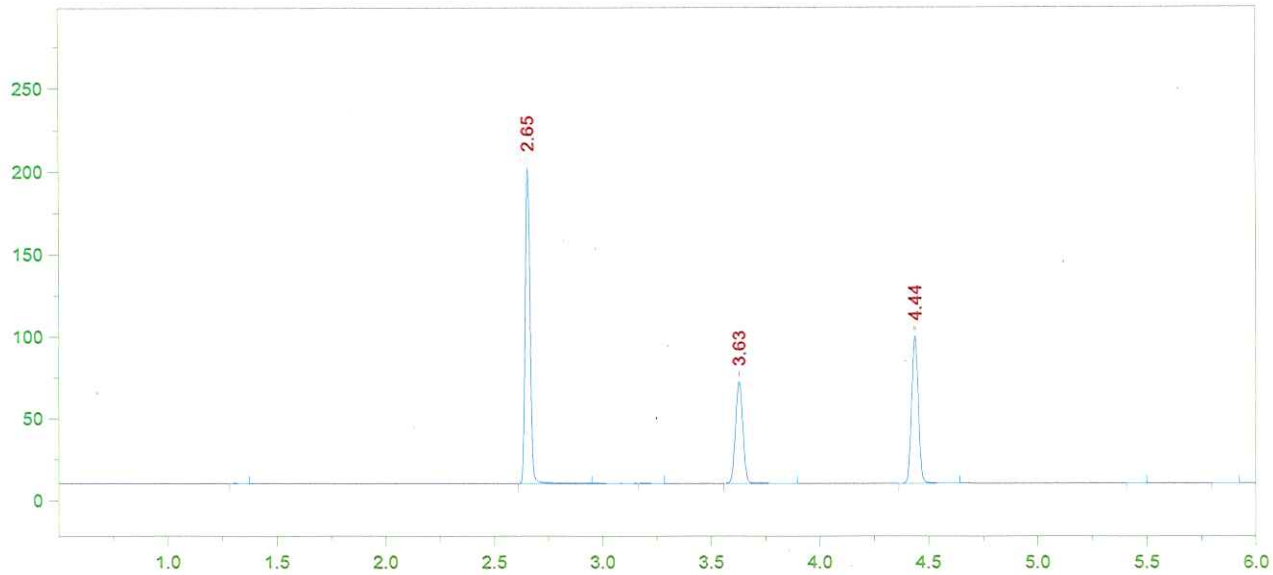


Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 5:26:56 PM
Bound File Name = VFL07152015.0010.RAW
Sample Name = 0.30 AQ
Date Taken = 7/15/2015 5:26:49 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	290841	0.2961
4	3.63	t-Butanol	148058	1.0379
5	4.44	n-Propanol	186743	1.0000

FN 09051204 P. 12 JS



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 5:40:43 PM
Bound File Name = VFL07152015.0011.RAW
Sample Name = 0.30 AQ
Date Taken = 7/15/2015 5:40:37 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	295221	0.2946
4	3.63	t-Butanol	144377	0.9921
5	4.44	n-Propanol	190513	1.0000

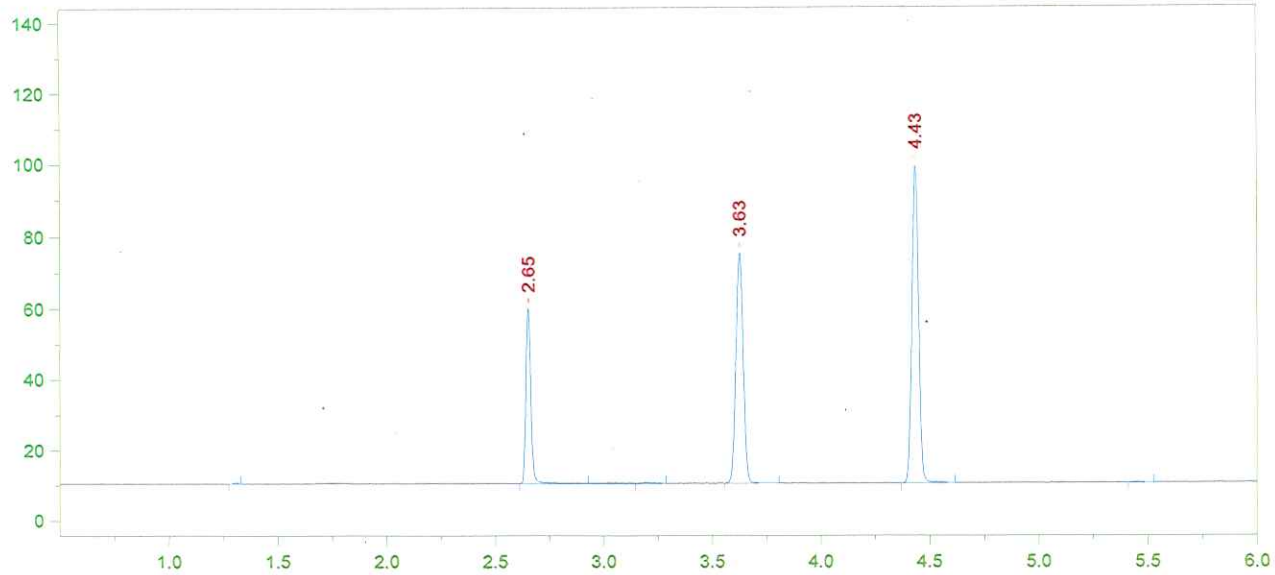
0.30 AQ MEAN: 0.2953 g/100ml ethanol

±5% : 0.2805 – 0.3100

Recovery: $\frac{0.295}{0.300}$ = 98.3%

[illegible] 7/16/15

FN 0905 1304 P-13

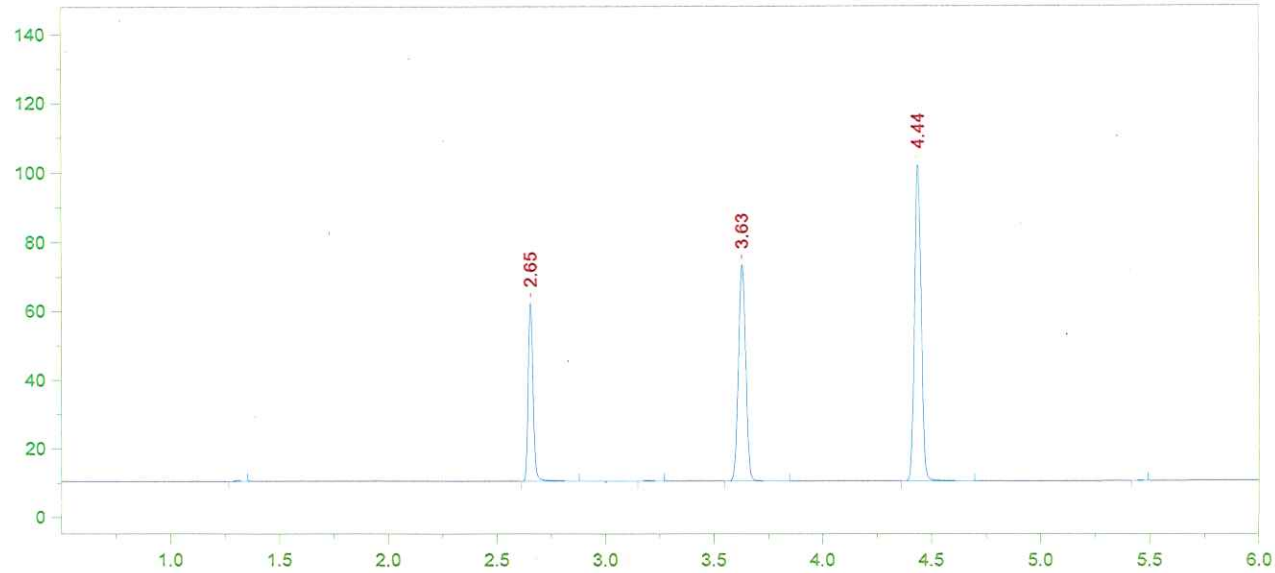


Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 5:58:19 PM
Bound File Name = VFL07152015.0012.RAW
Sample Name = CCS
Date Taken = 7/15/2015 5:58:14 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	77974	0.0783
4	3.63	t-Butanol	150335	1.0398
5	4.43	n-Propanol	189273	1.0000

FN 09 05 1304 p. 14



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 6:11:34 PM
Bound File Name = VFL07152015.0013.RAW
Sample Name = CCS
Date Taken = 7/15/2015 6:11:29 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	80671	0.0790
4	3.63	t-Butanol	145944	0.9841
5	4.44	n-Propanol	194136	1.0000

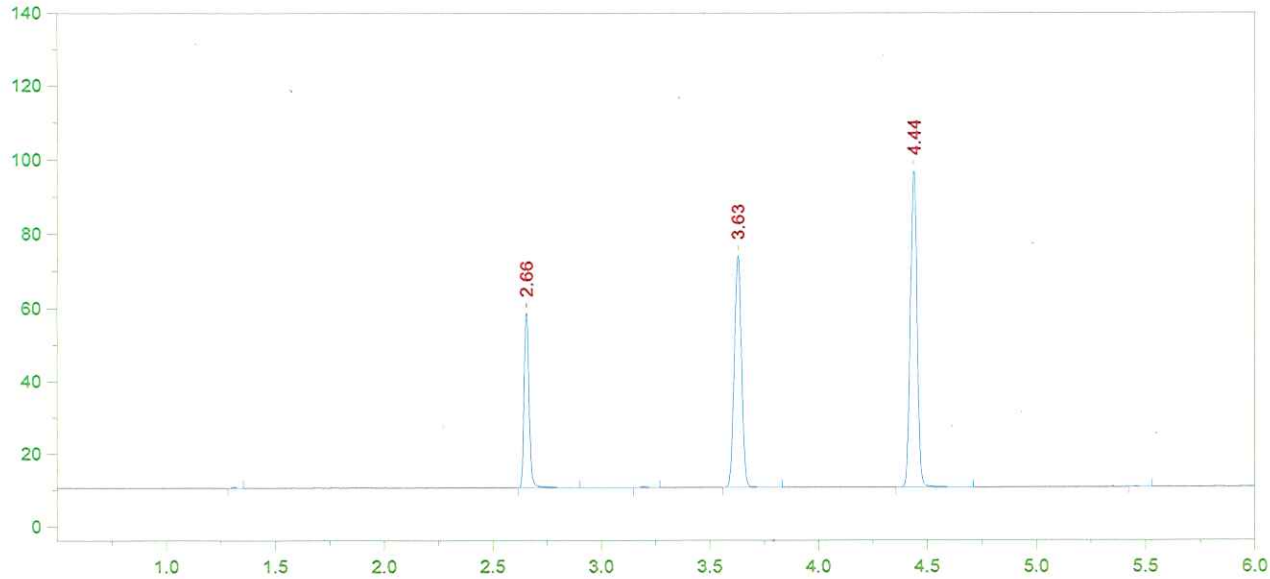
CCS MEAN: 0.0786 g/100ml ethanol

±5%: 0.0747 – 0.0825

Recovery: $\frac{0.078}{0.080}$ = 97.5%

DB 7/16/15

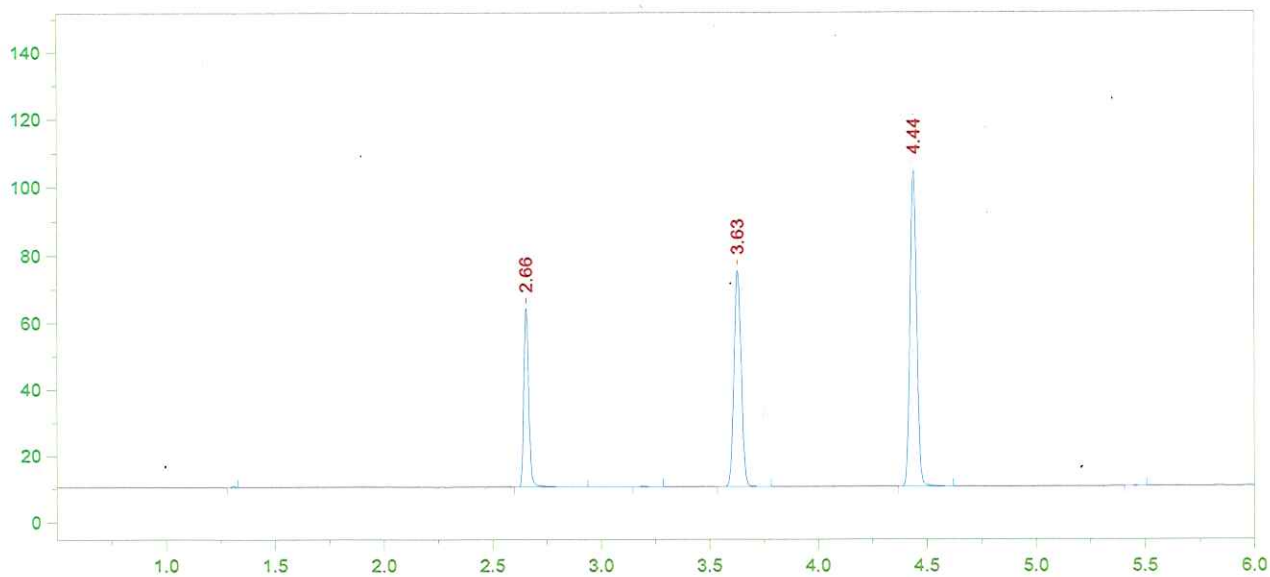
FN 09051304 p.15



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 6:29:45 PM
Bound File Name = VFL07152015.0014.RAW
Sample Name = 0.08 FN09051304
Date Taken = 7/15/2015 6:29:37 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	75641	0.0778
4	3.63	t-Butanol	146881	1.0399
5	4.44	n-Propanol	184900	1.0000



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 6:43:33 PM
Bound File Name = VFL07152015.0015.RAW
Sample Name = 0.08 FN09051304
Date Taken = 7/15/2015 6:43:28 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	84295	0.0800
4	3.63	t-Butanol	149959	0.9800
5	4.44	n-Propanol	200319	1.0000

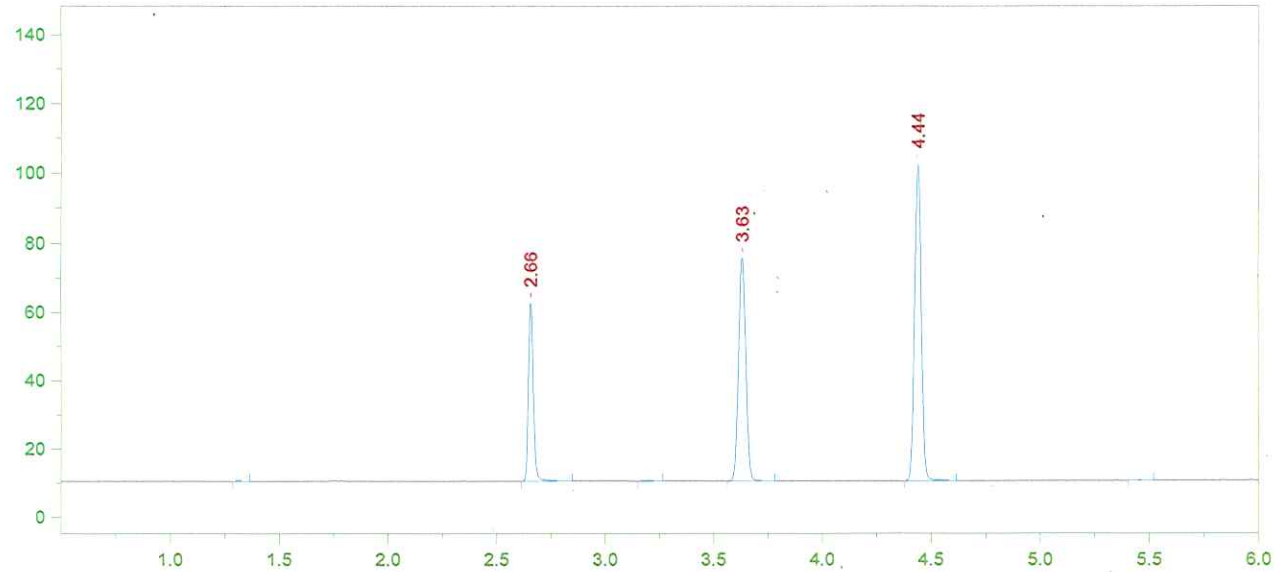
FN09051304 MEAN = 0.0789 g/100mL ethanol

± 5% = 0.0749 – 0.0828

TARGET VALUE: 0.080

Recovery: $\frac{0.079}{0.080}$ = 98.7%

DG 7/16/15



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 7:01:08 PM
Bound File Name = VFL07152015.0016.RAW
Sample Name = 0.08 FN011712-02
Date Taken = 7/15/2015 7:01:04 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

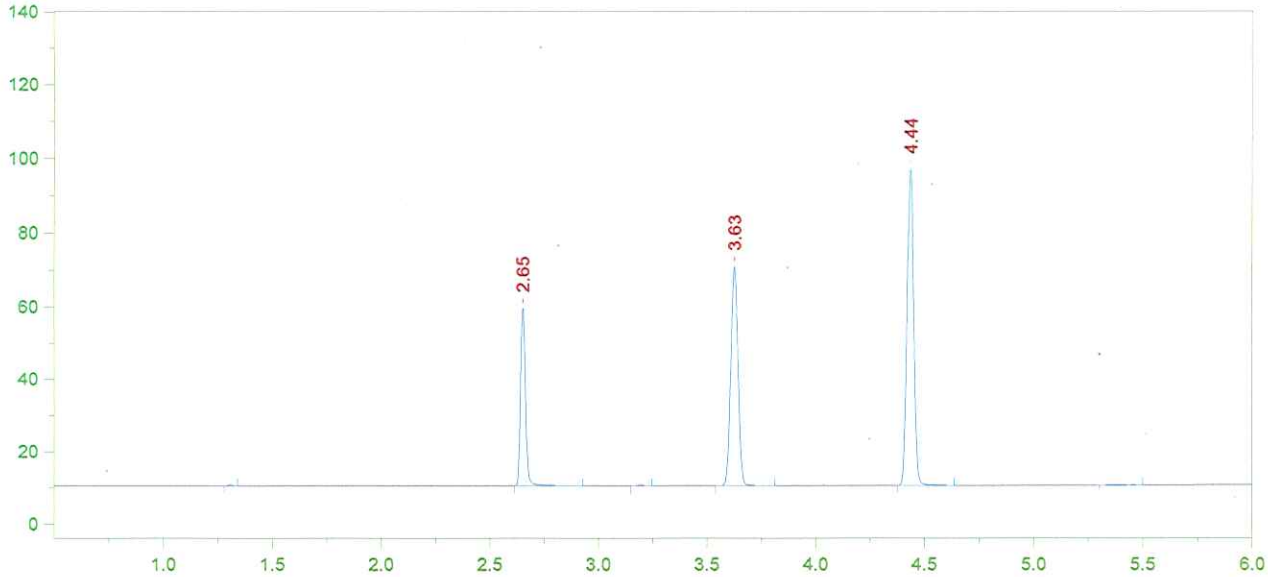
Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	80854	0.0788
4	3.63	t-Butanol	151189	1.0153
5	4.44	n-Propanol	194936	1.0000

CERILLIAN LOT FN011712-02 PREVIOUSLY VERIFIED; INCLUDED AS ADDITIONAL CHECK AT 0.08 g/100ml ETHANOL. ONE VIAL RUN DUE TO LIMITED QUANTITY. RECOVERY = $\frac{0.079}{0.080}$ = 98.7%

DJ 7/16/15

FN24051304

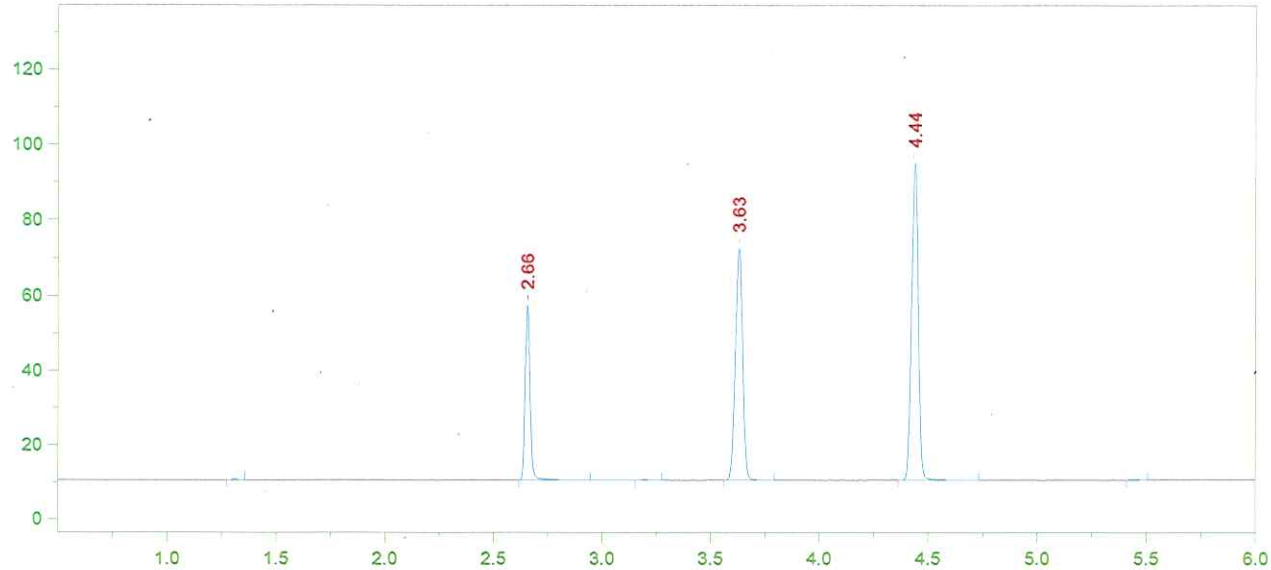
p 18



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 7:16:03 PM
Bound File Name = VFL07152015.0017.RAW
Sample Name = CCS
Date Taken = 7/15/2015 7:15:58 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.65	Ethanol	76822	0.0795
4	3.63	t-Butanol	139730	0.9953
5	4.44	n-Propanol	183787	1.0000



Format File Name = AlcoholVFL.FMT

Today's Date = 7/15/2015
Today's Time = 7:32:42 PM
Bound File Name = VFL07152015.0018.RAW
Sample Name = CCS
Date Taken = 7/15/2015 7:32:34 PM
VFL Headspace Alcohol
Method file = Blood Alc temp VFL.MET
Calibration file = VFL07152015.CAL
Calibration Version = 7

Peak Number	Ret Time (min)	Peak Name	Area	Amount % WT/VOL
2	2.66	Ethanol	73250	0.0777
4	3.63	t-Butanol	143477	1.0477
5	4.44	n-Propanol	179275	1.0000

CCS MEAN: 0.0786 g/100mL ethanol

±5% : 0.0747 - 0.0825

Recovery: $\frac{0.078}{0.080}$ = 97.5%

DS 7/16/15