eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Terri Choy
AECOM
1001 Bishop Street
Honolulu HI 96813

Generated 2/7/2023 5:57 PM

JOB DESCRIPTION

Red Hill - AFFF Assessment Sampling

JOB NUMBER

580-122948-1

Eurofins Seattle
5755 8th Street East
Tacoma WA 98424

See page two for job notes and contact information.

my EOL

Eurofins Seattle

Job Notes

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The data in the report relate to the field sample(s) as received by the laboratory and associated QC. All results have been reviewed and have been found to be compliant with laboratory and accreditation requirements, with the exception of the noted deviation(s). For questions, please contact the Project Manager.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing Northwest, LLC Project Manager.

Authorization

M. Elaine Walker

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Authorized for release by
Marie E Walker, Senior Project Manager
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Table of Contents

Definitions/Glossary

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
M	Manual integrated compound.
Q	One or more quality control criteria failed.
U	Undetected at the Limit of Detection.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

CASE NARRATIVE
Client: AECOM
Project: Red Hill - AFFF Assessment Sampling
Report Number: 580-122948-1

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT

Two samples were received on 2/2/2023 12:05 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 6.0º C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

GLYCOLS

Samples AF-RHMW04-WGN01LF-2301W4 (580-122948-1) and AF-RHMW06-WGN01LF-2301W4 (580-122948-2) were analyzed for glycols in accordance with EPA SW-846 Method 8015B - DAI. The samples were analyzed on 02/06/2023.

The continuing calibration verification (CCV) associated with batch 680-762138 recovered above the upper control limit for 2-(2-Butoxyethoxy)ethanol. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data has been reported. The associated sample is impacted: (CCV 680-762138/23).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Detection Summary

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW04-WGN01LF-2301W4 — Lab Sample ID: 580-122948-1

No Detections.

Client Sample ID: AF-RHMW06-WGN01LF-2301W4 — Lab Sample ID: 580-122948-2

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW04-WGN01LF-2301W4
Lab Sample ID: 580-122948-1

Date Collected: 01/26/23 10:00
Matrix: Water
Date Received: 02/02/23 12:05

Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M Q	5.0	1.1	mg/L			02/06/23 20:02	1

Client Sample ID: AF-RHMW06-WGN01LF-2301W4
Lab Sample ID: 580-122948-2

Date Collected: 01/26/23 12:20
Matrix: Water
Date Received: 02/02/23 12:05

Method: SW846 8015C GLY - Glycols- Direct Injection (GC/FID)

Analyte	Result	Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M Q	5.0	1.1	mg/L			02/06/23 20:25	1

Default Detection Limits

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Method: 8015C GLY - Glycols- Direct Injection (GC/FID)

Analyte	LOQ	DL	Units
2-(2-Butoxyethoxy)ethanol	5.0	1.1	mg/L

QC Sample Results

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Method: 8015C GLY - Glycols- Direct Injection (GC/FID)

Lab Sample ID: MB 680-762138/10
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 762138

Analyte	MB Result	MB Qualifier	LOQ	DL	Unit	D	Prepared	Analyzed	Dil Fac
2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	1.1	mg/L			02/06/23 16:57	1

Lab Sample ID: LCS 680-762138/1006
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 762138

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
2-(2-Butoxyethoxy)ethanol			20.0	18.5		mg/L		92	50 - 150		

Lab Sample ID: LCSD 680-762138/7
Client Sample ID: Lab Control Sample Dup
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 762138

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-(2-Butoxyethoxy)ethanol			20.0	22.2		mg/L		111	50 - 150	18	50

QC Association Summary

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

GC Semi VOA

Analysis Batch: 762138

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
580-122948-1	AF-RHMW04-WGN01LF-2301W4	Total/NA	Water	8015C GLY	
580-122948-2	AF-RHMW06-WGN01LF-2301W4	Total/NA	Water	8015C GLY	
MB 680-762138/10	Method Blank	Total/NA	Water	8015C GLY	
LCS 680-762138/1006	Lab Control Sample	Total/NA	Water	8015C GLY	
LCSD 680-762138/7	Lab Control Sample Dup	Total/NA	Water	8015C GLY	

Lab Chronicle

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Client Sample ID: AF-RHMW04-WGN01LF-2301W4
Lab Sample ID: 580-122948-1

Date Collected: 01/26/23 10:00
Matrix: Water
Date Received: 02/02/23 12:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	762138	JCK	EET SAV	02/06/23 20:02

Client Sample ID: AF-RHMW06-WGN01LF-2301W4
Lab Sample ID: 580-122948-2

Date Collected: 01/26/23 12:20
Matrix: Water
Date Received: 02/02/23 12:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8015C GLY		1	762138	JCK	EET SAV	02/06/23 20:25

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: AECOM

Job ID: 580-122948-1

Project/Site: Red Hill - AFFF Assessment Sampling

Laboratory: Eurofins Savannah

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
ANAB	Dept. of Defense ELAP	L2463	09-22-24

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
8015C GLY		Water	2-(2-Butoxyethoxy)ethanol

Method Summary

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Method	Method Description	Protocol	Laboratory
8015C GLY	Glycols- Direct Injection (GC/FID)	SW846	EET SAV

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Sample Summary

Client: AECOM
Job ID: 580-122948-1
Project/Site: Red Hill - AFFF Assessment Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-122948-1	AF-RHMW04-WGN01LF-2301W4	Water	01/26/23 10:00	02/02/23 12:05
580-122948-2	AF-RHMW06-WGN01LF-2301W4	Water	01/26/23 12:20	02/02/23 12:05

GC SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Instrument ID: CVGG2 Analysis Batch Number: 761417

Lab Sample ID: IC 680-761417/2 Client Sample ID:

Date Analyzed: 01/31/23 16:10 Lab File ID: GA31009.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.61	Baseline Smoothing	SWK1	02/01/23 12:15

Lab Sample ID: ICIS 680-761417/5 Client Sample ID:

Date Analyzed: 01/31/23 17:20 Lab File ID: GA31012.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.60	Baseline Smoothing	SWK1	02/01/23 12:16

Lab Sample ID: IC 680-761417/6 Client Sample ID:

Date Analyzed: 01/31/23 17:43 Lab File ID: GA31013.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.60	Baseline Smoothing	SWK1	02/01/23 12:16
Ethylene glycol	6.85	Baseline Smoothing	SWK1	02/01/23 12:16

Lab Sample ID: IC 680-761417/7 Client Sample ID:

Date Analyzed: 01/31/23 18:07 Lab File ID: GA31014.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.60	Baseline Smoothing	SWK1	02/01/23 12:16
Ethylene glycol	6.85	Baseline Smoothing	SWK1	02/01/23 12:16

GC SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Instrument ID: CVGG2 Analysis Batch Number: 761417

Lab Sample ID: IC 680-761417/8 Client Sample ID:

Date Analyzed: 01/31/23 18:30 Lab File ID: GA31015.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.61	Baseline Smoothing	SWK1	02/01/23 12:17
Ethylene glycol	6.87	Baseline Smoothing	SWK1	02/01/23 12:17

GC SEMI VOA MANUAL INTEGRATION SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Instrument ID: CVGG2 Analysis Batch Number: 762138

Lab Sample ID: CCVIS 680-762138/6 Client Sample ID:

Date Analyzed: 02/06/23 15:24 Lab File ID: GB06006.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
Propylene glycol	6.60	Incomplete Integration	SK9U	02/06/23 19:02

Lab Sample ID: MB 680-762138/10 Client Sample ID:

Date Analyzed: 02/06/23 16:57 Lab File ID: GB06010.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-(2-Butoxyethoxy)ethanol		Invalid Compound ID	SWK1	02/07/23 11:22

Lab Sample ID: 580-122948-1 Client Sample ID: AF-RHMW04-WGN01LF-2301W4

Date Analyzed: 02/06/23 20:02 Lab File ID: GB06018.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-(2-Butoxyethoxy)ethanol		Invalid Compound ID	SWK1	02/07/23 11:24

Lab Sample ID: 580-122948-2 Client Sample ID: AF-RHMW06-WGN01LF-2301W4

Date Analyzed: 02/06/23 20:25 Lab File ID: GB06019.D GC Column: J&W DB WAX ID: 0.45(mm)

COMPOUND NAME	RETENTION TIME	MANUAL INTEGRATION		
		REASON	ANALYST	DATE
2-(2-Butoxyethoxy)ethanol		Invalid Compound ID	SWK1	02/07/23 11:24

REAGENT TRACEABILITY SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Reagent ID	Exp Date	Prep Date	Dilutant Used	Reagent Final Volume	Parent Reagent		Analyte	Concentration
					Reagent ID	Volume Added		
SG_Gly_CAL_00052	06/30/23		o2si, Lot 480919		(Purchased Reagent)		2,2'-Oxybisethanol	2000 ug/mL
							2-(2-Butoxyethoxy)ethanol	2000 ug/mL
							2-Butoxyethanol	2000 ug/mL
							4-Hydroxy-4-methyl-2-pentanone	2000 ug/mL
							Dipropylene Glycol Methyl Ether	2000 ug/mL
							Ethanol, 2-propoxy	2000 ug/mL
							Ethylene glycol	2000 ug/mL
							Propylene glycol	2000 ug/mL
							Tetraethylene Glycol	4000 ug/mL
							Triethylene Glycol	2000 ug/mL
SG_GLY_ISTD_00105	07/11/23		Agilent, Lot 0006720623		(Purchased Reagent)		n-Heptyl Alcohol	5000 ug/mL
SG_GlyICV_00052	06/30/23		o2si, Lot 454407		(Purchased Reagent)		2-(2-Butoxyethoxy)ethanol	2000 ug/mL

Reagent

SG_Gly_CAL_00052

ISO/IEC 17025 Accredited
Chemical Testing Lab
Cert. No. 3031.01

o2si smart solutions®

ISO 17034 Accredited
Reference Material Producer
Cert. No. 3031.02

Rev 0

Certificate of Analysis

Catalog No.	Lot No.	Storage	Solvent	Date Received	Exp. Date
G34-120070-04	480919	≤ -10 °C	P/T Methanol	_____	2-May-2024

Description:
ISO 17034 -Custom Volatiles Mix,105-12, 2000 & 4,000 mg/L, 1 mL

Container:
1 ml Ampule, Amber Glass

Certified Values:

The certified value is based on gravimetric and volumetric preparation of this Certified Reference Material (CRM). This CRM has been confirmed by GC/MS, GC, HPLC, UPLC/HRAM-MS, UV/VIS, Enzymatic, and/or wet chemistry techniques using internally developed method(s) against independent source(s). The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2. The purity of neat materials not traceable to an ISO 17034:2016 accredited Reference Material Provider is traceable to internal analysis by GC, GC/MS, HPLC, Enzymatic, or wet chemistry techniques and compared to a National Metrological Institute such as NIST where feasible.

Compound	CAS No.	Purity (%)	Neat Material Lot No.	Concentration	
2-butoxyethanol	111-76-2	99.6	311.9.2P	1986 ± 100	mg/L
diethylene glycol butyl ether	112-34-5	99.8	2323.7.2P	2008 ± 100	mg/L
propyl cellosolve	2807-30-9	99.9	1570.7.2P	1980 ± 100	mg/L
dipropylene glycol monomethyl ether	34590-94-8	99.7	2333.7.2P	2014 ± 100	mg/L
ethylene glycol	107-21-1	100	307.201.1P	1968 ± 99	mg/L
di(ethylene glycol)	111-46-6	99.5	309.7.2P	1994 ± 100	mg/L
tri(ethylene glycol)	112-27-6	99.9	310.7.2.1.1P	1974 ± 110	mg/L
4-Hydroxy-4-methyl-2-pentanone	123-42-2	98	2334.286.1P	1991 ± 110	mg/L
1,2-propanediol	57-55-6	99.5	306.9.3P	1998 ± 100	mg/L
tetraethylene glycol	112-60-7	98	3754.7.1P	3959 ± 200	mg/L

Intended Uses:

This CRM is intended for use as a calibration standard or a quality control standard for chromatography equipment such as GC, GC/MS, HPLC, and HPLC/MS. It may also be used for various USEPA, NIOSH and ASTM methods.

Recommended storage container for ampuled products after opening is a 12 mm x 32 mm amber vial with screw cap Teflon lined silicon septum. The modeled % change per day can be calculated using the following:

Certificate of Analysis

Catalog No. G34-120070-04 **Lot No.** 480919 **Expiration Date** 2 -May-2024

$$\% \text{ Change} = 116192x^{-2.578} + 40.383e^{-0.03y}$$

where x = boiling point of the most volatile analyte in the mix (in degrees K)
y = boiling point of the solvent (in degrees K)

This model assumes the container is stored at -10 °C and is unopened during storage. The user should determine what the acceptable error for their process is and calculate the maximum number of days the opened ampule should be stored.

Method of Preparation:

This standard was prepared gravimetrically using balances calibrated with National Institute of Standards and Technology (NIST) traceable weights (NIST Test Numbers 822/273070-06, 822/275141-07, 822/278993-10). Only calibrated Class A volumetric glassware and/or calibrated syringes were used to prepare this standard. Raw materials may have been checked for stoichiometry and purity prior to use. This standard has been analyzed against an independent source.

Packaging and Storage:

The solution should be stored according to the following storage requirements: ≤ -10 °C
Once the product is opened, it should be transferred to a vial with minimum head space if the product was received in a sealed ampule.

Glassware Calibration:

Only Class A glassware and/or calibrated syringes are used in the manufacture and quality control of standards. All glassware is calibrated using NIST traceable weights.

Weights and Balance Calibration:

Weights used to perform daily checks on balances are calibrated annually by the State of South Carolina Department of Agriculture Metrology Laboratory and are traceable to NIST. Balances are checked daily in accordance to procedure O2-LB-G-002. Balances are calibrated annually by an ISO/IEC 17025:2017 accredited metrology service.

Homogeneity:

Homogeneity has been established in accordance with internal procedure O2-QS-011 and has a maximum uncertainty of 0.1%. This is consistent with the intended use of this CRM. The homogeneity of this product has been confirmed by procedures consistent with ISO/IEC 17025:2017 and ISO 17034:2016. The homogeneity of this CRM is valid for sample sub-sizes that the end user can quantitatively reproduce.

Hazardous Information:

Refer to MSDS.

Calculation of Uncertainty:

The following equations are used to calculate the value of the expanded uncertainty:
$u = ku_c$ u = Expanded Uncertainty, k = the coverage factor at the 95% confidence level, k = 2, u_c = the combined uncertainty
$u_c = (u_{char}^2 + u_{tran}^2 + u_{homo}^2 + u_{lts}^2)^{1/2}$ where u_i are the individual uncertainty components for manufacturing, transportation, homogeneity, and shelf life. While no significant uncertainty was detected in the replicates, a minimum contribution to

Manufactured By:	Certified By:	Released By:
Brian Stokes		Susan Mathews
3 -May-2022	14 -Jun-2022	14 -Jun-2022
Production Chemist I	**Quality Control Chemist I**	**Quality Control Team Lead**

7290B Investment Drive • North Charleston, SC 29418
Phone: 866.272.0932 • Fax: 866.509.5146 www.o2si.com

Certificate of Analysis

Catalog No. G34-120070-04 **Lot No.** 480919 **Expiration Date** 2 -May-2024

uncertainty was added for homogeneity and long term stability as described in ISO Guide 35:2017.

Expiration Information:

The stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. These tests include the effect of temperature and packaging on the product. Studies on the short term instability have determined no contribution to instability as observed on the concentration under controlled transportation conditions. This standard is guaranteed until 2-May-2024

Quality Standard Documentation:

- ISO/IEC 17025:2017 "General Requirements for the Competence of Testing and Calibration" - Chemical Testing - Accredited A2LA Certificate Number 3031.01
- ISO 17034:2016 "General Requirements for the Competence of Reference Material Producers" - Reference Material Production - Accredited A2LA Certificate Number 3031.02

Manufactured By:	Certified By:	Released By:
Brian Stokes		Susan Mat
Brian Stokes	Tyler Sherman	Susan Mathews
3 -May-2022	14 -Jun-2022	14 -Jun-2022
Production Chemist I	**Quality Control Chemist I**	**Quality Control Team Lead**

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Phone: 866.272.0932 • Fax: 866.509.5146 www.o2si.com

Reagent

SG_GLY_ISTD_00105

Agilent

Trusted Answers

ISO 17034

Reference Material Certificate

Product Information Sheet

Product Name: Custom Standard

Product Number: CUS-6046

Storage Conditions: Store at Room Temperature (15° to 30°C).

Lot Number: 0006720623

Lot Issue Date: 15-Dec-2022

Expiration Date: 31-Jan-2025

Component Name	CERTIFIED VALUES Concentration		Expanded Uncertainty	CAS#	Analyte Lot
n-heptanol	5001	±	25 µg/mL	000111-70-6	RM04540

Matrix: methanol (methyl alcohol)

Description:
This document is prepared in accordance with ISO 17034 and Guide 31. This analytical reference material standard was manufactured and verified in accordance with an ISO 9001 registered quality system and analyte concentrations were verified by an ISO 17025 accredited laboratory. The concentration and uncertainty value at the 95% confidence level for each analyte, determined gravimetrically, is listed above.

Traceability:
The balances used for these measurements are calibrated with weights traceable to NIST in compliance with ANSI/NCSL Z540.3, ISO 9001, ISO 17025, and ISO 17034. Calibrated Class A glassware is used for volumetric measurements. Thermometers are calibrated against a NIST traceable thermometer in accordance with NIST Special Publication 1088.

Homogeneity:
This analytical reference standard was unitized according to an in-house procedure and is guaranteed to be homogeneous. There is no minimum sub-sample size required.

Instructions for Use:
Sample aliquots for analysis should be withdrawn at 20°C to 25°C immediately after opening the container and should be processed without delay for the certified values to be valid within the stated uncertainties.

Safety:
Refer to the Safety Data Sheet on www.agilent.com for information regarding this analytical reference material.

Intended Use:
This analytical reference standard is intended for the preparation of working reference samples for use in routine laboratory analyses, calibration of instruments, validation of analytical methods, assessments of measurement methods, and continuing calibration verification.

Expiration of Certification:
The certification of this analytical reference standard is valid until the expiration date specified above, provided the material is handled and stored in accordance with the instructions given in this certificate. This certification is nullified if the material is damaged, contaminated, or otherwise modified.

Agilent

Trusted Answers

Maintenance of Certification:
If substantive changes are noted that affect the certification before the expiration of this certificate, Agilent will notify the purchaser.

Sample lot approver:

Monica Bourgeois
QMS Representative

ANAB
ANSI National Accreditation Board
ACCREDITED
ISO 17034
REFERENCE MATERIAL PRODUCER

ISO 17034 Cert
No. AR-1936

RM was produced in accordance with the TUV/SUD registered ISO 9001:2015 Quality Management System. Cert# 951215321

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www.agilent.com/quality/
CSD-QA-015.1

ISO 17025

Reagent

SG_GlyICV_00052

ISO/IEC 17025 Accredited
Chemical Testing Lab
Cert. No. 3031.01

o2si smart solutions®

ISO 17034 Accredited
Reference Material Producer
Cert. No. 3031.02

Rev 0

Certificate of Analysis

Catalog No.	Lot No.	Storage	Solvent	Date Received	Exp. Date
G34-120070-04-SS	454407	≤ -10 °C	P/T Methanol		1-Jul-2023

Description:
ISO 17034 -Custom Volatiles Mix,105-12, Second Source, 2000 & 4,000 mg/L, 1 mL

Container:
1 ml Ampule, Amber Glass

Certified Values:

The certified value is based on gravimetric and volumetric preparation of this Certified Reference Material (CRM). This CRM has been confirmed by GC/MS, GC, HPLC, UPLC/HRAM-MS, UV/VIS, Enzymatic, and/or wet chemistry techniques using internally developed method(s) against independent source(s). The uncertainty value is calculated for a 95% confidence interval with a *k* value of 2. The purity of neat materials not traceable to an ISO 17034:2016 accredited Reference Material Provider is traceable to internal analysis by GC, GC/MS, HPLC, Enzymatic, or wet chemistry techniques and compared to a National Metrological Institute such as NIST where feasible.

Compound	CAS No.	Purity (%)	Neat Material Lot No.	Concentration	
2-butoxyethanol	111-76-2	99.5	311.7.1.1S	1994 ± 100	mg/L
diethylene glycol butyl ether	112-34-5	99.8	2323.7.2.1S	1992 ± 100	mg/L
2-propoxyethanol	2807-30-9	99.5	1570.7.1S	1998 ± 110	mg/L
dipropylene glycol monomethyl ether	34590-94-8	99.7	2333.7.2.1S	1998 ± 100	mg/L
ethylene glycol	107-21-1	100	307.201.1.1S	2016 ± 100	mg/L
di(ethylene glycol)	111-46-6	99.9	309.7.1.1S	1998 ± 100	mg/L
tri(ethylene glycol)	112-27-6	99.9	310.7.3.1S	2010 ± 100	mg/L
4-Hydroxy-4-methyl-2-pentanone	123-42-2	98	2334.286.1.1S	2003 ± 110	mg/L
1,2-propanediol	57-55-6	99.6	306.370.1.1S	2004 ± 110	mg/L
tetraethylene glycol	112-60-7	98	3754.7.1.1S	4049 ± 200	mg/L

Intended Uses:

This CRM is intended for use as a calibration standard or a quality control standard for chromatography equipment such as GC, GC/MS, HPLC, and HPLC/MS. It may also be used for various USEPA, NIOSH and ASTM methods.

Recommended storage container for ampuled products after opening is a 12 mm x 32 mm amber vial with screw cap Teflon lined silicon septum. The modeled % change per day can be calculated using the following:

Certificate of Analysis

Catalog No. G34-120070-04-SS **Lot No.** 454407 **Expiration Date** 1 -Jul-2023

$$\% \text{ Change} = 116192x^{-2.578} + 40.383e^{-0.03y}$$

where x = boiling point of the most volatile analyte in the mix (in degrees K)
y = boiling point of the solvent (in degrees K)

This model assumes the container is stored at -10 °C and is unopened during storage. The user should determine what the acceptable error for their process is and calculate the maximum number of days the opened ampule should be stored.

Method of Preparation:

This standard was prepared gravimetrically using balances calibrated with National Institute of Standards and Technology (NIST) traceable weights (NIST Test Numbers 822/273070-06, 822/275141-07, 822/278993-10). Only calibrated Class A volumetric glassware and/or calibrated syringes were used to prepare this standard. Raw materials may have been checked for stoichiometry and purity prior to use. This standard has been analyzed against an independent source.

Packaging and Storage:

The solution should be stored according to the following storage requirements: ≤ -10 °C
Once the product is opened, it should be transferred to a vial with minimum head space if the product was received in a sealed ampule.

Glassware Calibration:

Only Class A glassware and/or calibrated syringes are used in the manufacture and quality control of standards. All glassware is calibrated using NIST traceable weights.

Weights and Balance Calibration:

Weights used to perform daily checks on balances are calibrated annually by the State of South Carolina Department of Agriculture Metrology Laboratory and are traceable to NIST. Balances are checked daily in accordance to procedure O2-LB-G-002. Balances are calibrated annually by an ISO/IEC 17025:2017 accredited metrology service.

Homogeneity:

Homogeneity has been established in accordance with internal procedure O2-QS-011 and has a maximum uncertainty of 0.1%. This is consistent with the intended use of this CRM. The homogeneity of this product has been confirmed by procedures consistent with ISO/IEC 17025:2017 and ISO 17034:2016. The homogeneity of this CRM is valid for sample sub-sizes that the end user can quantitatively reproduce.

Hazardous Information:

Refer to MSDS.

Calculation of Uncertainty:

The following equations are used to calculate the value of the expanded uncertainty:
$u = ku_c$ u = Expanded Uncertainty, k = the coverage factor at the 95% confidence level, k = 2, u_c = the combined uncertainty
$u_c = (u_{char}^2 + u_{tran}^2 + u_{homo}^2 + u_{lts}^2)^{1/2}$ where u_i are the individual uncertainty components for manufacturing, transportation, homogeneity, and shelf life. While no significant uncertainty was detected in the replicates, a minimum contribution to

Manufactured By:	Certified By:	Released By:
Jared Ball	Claire Desrochers	Susan Mathews
1 -Jul-2021	7 -Jul-2021	8 -Jul-2021
Production Chemist I	**Quality Control Chemist I**	**Quality Control Team Lead**

7290B Investment Drive • North Charleston, SC 29418
Phone: 866.272.0932 • Fax: 866.509.5146 www.o2si.com

Certificate of Analysis

Catalog No. G34-120070-04-SS **Lot No.** 454407 **Expiration Date** 1 -Jul-2023

uncertainty was added for homogeneity and long term stability as described in ISO Guide 35:2017.

Expiration Information:

The stability of this product is based upon rigorous short term and long term testing of the solution for the certified value. These tests include the effect of temperature and packaging on the product. Studies on the short term instability have determined no contribution to instability as observed on the concentration under controlled transportation conditions. This standard is guaranteed until 1-Jul-2023

Quality Standard Documentation:

- ISO/IEC 17025:2017 "General Requirements for the Competence of Testing and Calibration" - Chemical Testing - Accredited A2LA Certificate Number 3031.01
- ISO 17034:2016 "General Requirements for the Competence of Reference Material Producers" - Reference Material Production - Accredited A2LA Certificate Number 3031.02

Manufactured By:	Certified By:	Released By:
Jared Ball	Claire Desrochers	Susan Mathews
1 -Jul-2021	7 -Jul-2021	8 -Jul-2021
Production Chemist I	**Quality Control Chemist I**	**Quality Control Team Lead**

7290B Investment Drive • North Charleston, SC 29418
Phone: 866.272.0932 • Fax: 866.509.5146 www.o2si.com

Method 8015C - DAI Glycols

Glycols -Direct Injection (GC/FID) - Method 8015C

FORM III
GC SEMI VOA LAB CONTROL SAMPLE RECOVERY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Matrix: Water Level: Low Lab File ID: -GB06006-LCS.d

Lab ID: LCS 680-762138/1006 Client ID:

COMPOUND	SPIKE ADDED (mg/L)	LCS CONCENTRATION (mg/L)	LCS % REC	QC LIMITS REC	#
2-(2-Butoxyethoxy)ethanol	20.0	18.5	92	50-150	

Column to be used to flag recovery and RPD values

FORM III 8015C GLY

FORM III
GC SEMI VOA LAB CONTROL SAMPLE DUPLICATE RECOVERY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Matrix: Water Level: Low Lab File ID: GB06007.D

Lab ID: LCSD 680-762138/7 Client ID:

COMPOUND	SPIKE ADDED (mg/L)	LCSD CONCENTRATION (mg/L)	LCSD % REC	% RPD	QC LIMITS		#
					RPD	REC	
2-(2-Butoxyethoxy)ethanol	20.0	22.2	111	18	50	50-150	

Column to be used to flag recovery and RPD values

FORM III 8015C GLY

FORM IV
GC SEMI VOA METHOD BLANK SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: MB 680-762138/10

Matrix: Water Date Extracted:

Lab File ID:(1) GB06010.D Lab File ID:(2)

Date Analyzed:(1) 02/06/2023 16:57 Date Analyzed:(2)

Instrument ID:(1) CVGG2 Instrument ID:(2)

GC Column:(1) J&W DB WAX ID: 0.45(mm) GC Column:(2) ID:

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

CLIENT SAMPLE ID	LAB SAMPLE ID	DATE ANALYZED 1	DATE ANALYZED 2
	LCS 680-762138/1006	02/06/2023 15:24	
	LCSD 680-762138/7	02/06/2023 15:47	
AF-RHMW04-WGN01LF-2301W4	580-122948-1	02/06/2023 20:02	
AF-RHMW06-WGN01LF-2301W4	580-122948-2	02/06/2023 20:25	

FORM VIII
GC SEMI VOA INTERNAL STANDARD AREA AND RETENTION TIME SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Sample No.: CCVIS 680-762138/6 Date Analyzed: 02/06/2023 15:24

Instrument ID: CVGG2 GC Column: J&W DB WAX ID: 0.45(mm)

Lab File ID (Standard): GB06006.D Heated Purge: (Y/N) N

Calibration ID: 89543

		nHPA					
		AREA #	RT #	#	RT #	#	RT #
12/24 HOUR STD		4725730	4.49				
UPPER LIMIT		9451460	4.99				
LOWER LIMIT		2362865	3.99				
LAB SAMPLE ID	CLIENT SAMPLE ID						
LCS 680-762138/1006		4725730	4.49				
LCSD 680-762138/7		3276281	4.49				
MB 680-762138/10		6075285	4.48				
580-122948-1	AF-RHMW04-WGN01LF-2 301W4	4785855	4.48				
580-122948-2	AF-RHMW06-WGN01LF-2 301W4	5757895	4.49				
CCV 680-762138/23		3589610	4.49				

nHPA = n-Heptyl Alcohol

Area Limit = 50%-200% of internal standard area
RT Limit = ± 0.5 minutes of internal standard RT

Column used to flag values outside QC limits

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Savannah
Job No.: 580-122948-1
SDG No.:
Client Sample ID: AF-RHMW04-WGN01LF-2301W4
Lab Sample ID: 580-122948-1
Matrix: Water
Lab File ID: GB06018.D
Analysis Method: 8015C GLY
Date Collected: 01/26/2023 10:00
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 02/06/2023 20:02
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: J&W DB WAX ID: 0.45(mm)
% Moisture: % Solids:
GPC Cleanup:(Y/N) N
Cleanup Factor:
Analysis Batch No.: 762138
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
112-34-5	2-(2-Butoxyethoxy)ethanol	3.0	U M Q	5.0	3.0	1.1

Eurofins Savannah
Target Compound Quantitation Report

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06018.D				
Lims ID:	580-122948-A-1				
Client ID:	AF-RHMW04-WGN01LF-2301W4				
Sample Type:	Client				
Inject. Date:	06-Feb-2023 20:02:31	ALS Bottle#:	0	Worklist Smp#:	18
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	680-0083679-018				
Operator ID:		Instrument ID:	CVGG2		
Method:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m				
Limit Group:	8015C_DAI				
Last Update:	07-Feb-2023 11:25:42	Calib Date:	31-Jan-2023 18:30:20		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D				
Column 1 :	J&W DB WAX (0.45 mm)		Det: GC FID2B		
Process Host:	CTX1635				

First Level Reviewer: SWK1 Date: 07-Feb-2023 11:24:16

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
* 4 n-Heptyl Alcohol					
4.482	4.489	-0.007	4785855	50.0	

QC Flag Legend

Processing Flags

Reagents:

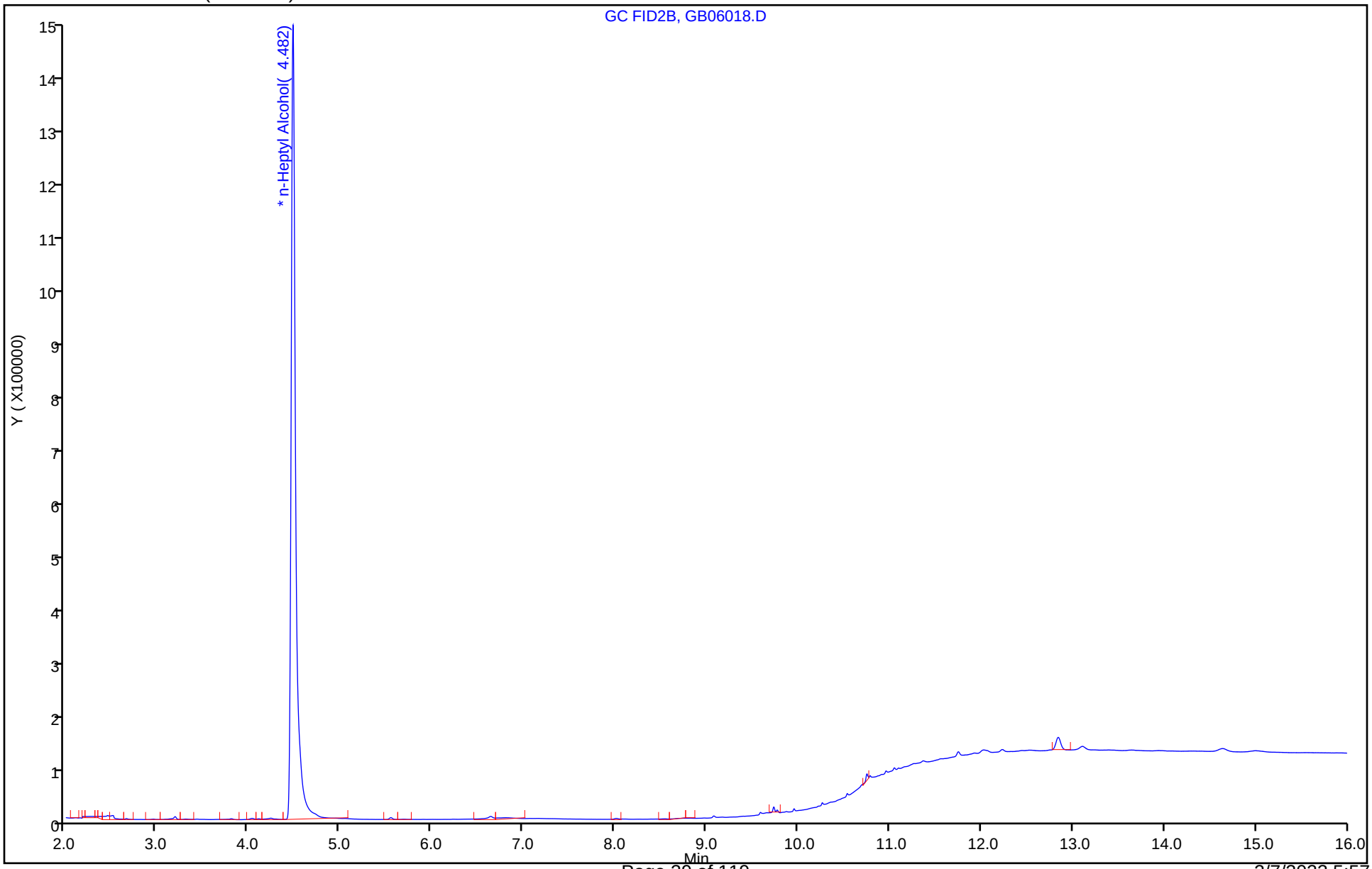
SG_GLY_ISTD_00105 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 07-Feb-2023 11:26:07 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06018.D				
Injection Date:	06-Feb-2023 20:02:31	Instrument ID:	CVGG2	Operator ID:	
Lims ID:	580-122948-A-1	Lab Sample ID:	680-122948-1	Worklist Smp#:	18
Client ID:	AF-RHMW04-WGN01LF-2301W4				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Savannah
Job No.: 580-122948-1
SDG No.:
Client Sample ID: AF-RHMW06-WGN01LF-2301W4
Lab Sample ID: 580-122948-2
Matrix: Water
Lab File ID: GB06019.D
Analysis Method: 8015C GLY
Date Collected: 01/26/2023 12:20
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 02/06/2023 20:25
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: J&W DB WAX ID: 0.45(mm)
% Moisture: % Solids:
GPC Cleanup:(Y/N) N
Cleanup Factor:
Analysis Batch No.: 762138
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
112-34-5	2-(2-Butoxyethoxy)ethanol	3.0	U M Q	5.0	3.0	1.1

Eurofins Savannah
Target Compound Quantitation Report

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06019.D				
Lims ID:	580-122948-A-2				
Client ID:	AF-RHMW06-WGN01LF-2301W4				
Sample Type:	Client				
Inject. Date:	06-Feb-2023 20:25:49	ALS Bottle#:	0	Worklist Smp#:	19
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	680-0083679-019				
Operator ID:		Instrument ID:	CVGG2		
Method:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m				
Limit Group:	8015C_DAI				
Last Update:	07-Feb-2023 11:25:42	Calib Date:	31-Jan-2023 18:30:20		
Integrator:	Falcon				
Quant Method:	Internal Standard	Quant By:	Initial Calibration		
Last ICal File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D				
Column 1 :	J&W DB WAX (0.45 mm)		Det: GC FID2B		
Process Host:	CTX1635				

First Level Reviewer: SWK1 Date: 07-Feb-2023 11:24:19

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	OnCol Amt ug/ml	Flags
* 4 n-Heptyl Alcohol					
4.487	4.489	-0.002	5757895	50.0	

QC Flag Legend

Processing Flags

Reagents:

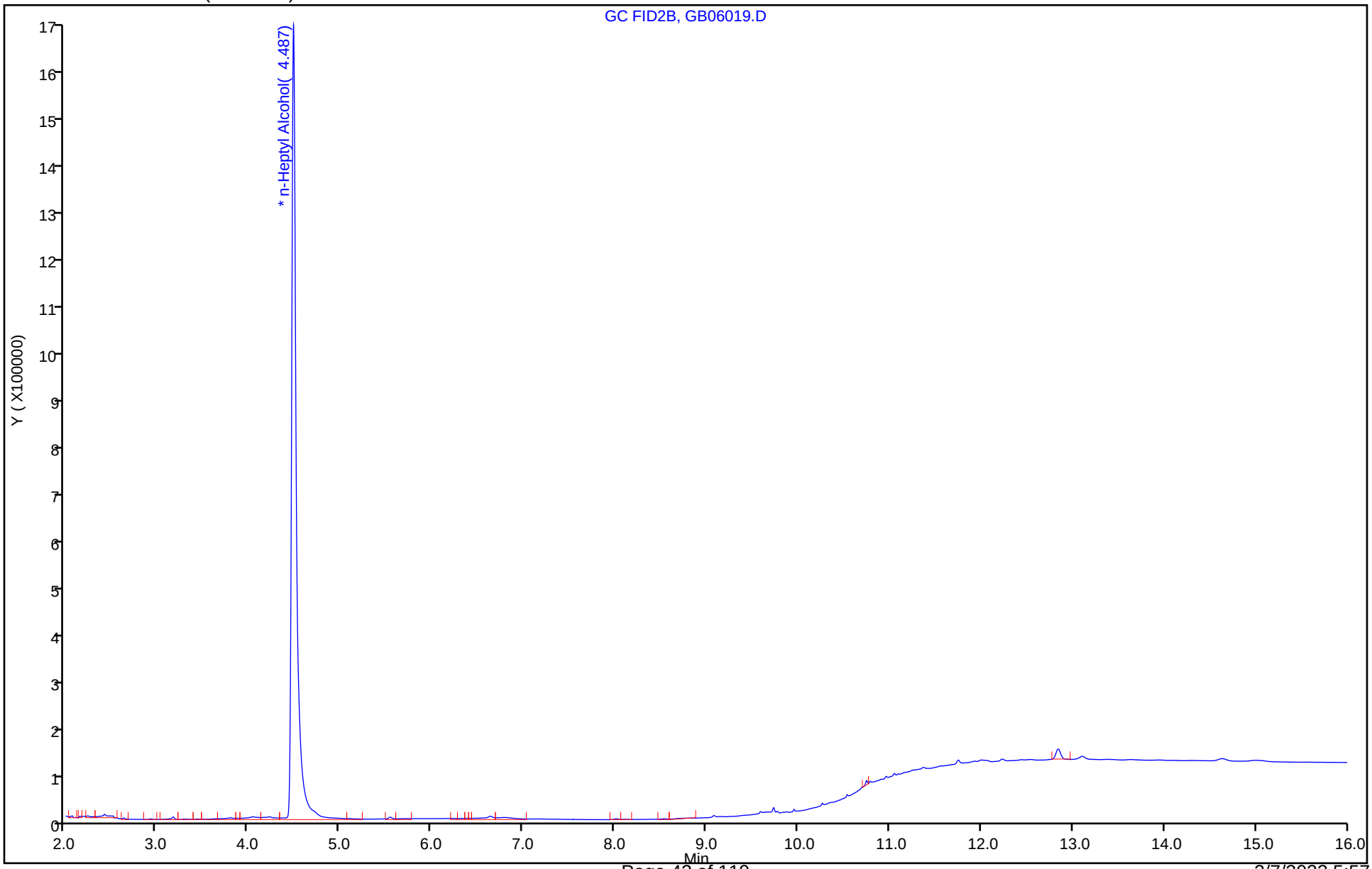
SG_GLY_ISTD_00105 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 07-Feb-2023 11:26:07 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06019.D				
Injection Date:	06-Feb-2023 20:25:49	Instrument ID:	CVGG2	Operator ID:	
Lims ID:	580-122948-A-2	Lab Sample ID:	680-122948-2	Worklist Smp#:	19
Client ID:	AF-RHMW06-WGN01LF-2301W4				
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

FORM VI
GC SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
CURVE EVALUATION

Lab Name: Eurofins Savannah Job No.: 580-122948-1 Analy Batch No.: 761417

SDG No.:

Instrument ID: CVGG2 GC Column: J&W DB WAX ID: 0.45(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/31/2023 16:10 Calibration End Date: 01/31/2023 18:30 Calibration ID: 89543

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 680-761417/8	GA31015.D
Level 2	IC 680-761417/7	GA31014.D
Level 3	IC 680-761417/6	GA31013.D
Level 4	ICIS 680-761417/5	GA31012.D
Level 5	IC 680-761417/4	GA31011.D
Level 6	IC 680-761417/3	GA31010.D
Level 7	IC 680-761417/2	GA31009.D

ANALYTE	RRF					CURVE TYPE	COEFFICIENT			#	MIN RRF	%RSD /RSE	#	MAX %RSD /RSE	R^2 OR COD	#	MIN R^2 OR COD
	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5		B	M1	M2								
Ethanol, 2-propoxy	1.4382 +++++	0.9582 0.5582	0.9173	0.7700	0.6300	Qua	1.9703	0.6650	-0.001274						0.9990		0.9900
4-Hydroxy-4-methyl-2-pentanone	1.4283 +++++	0.8880 0.5383	0.8535	0.7424	0.5919	Qua	1.9833	0.6140	-0.000967						0.9990		0.9900
2-Butoxyethanol	1.5807 +++++	1.0832 0.6151	1.0099	0.8770	0.6937	Qua	2.2671	0.7374	-0.001464						0.9990		0.9900
Dipropylene Glycol Methyl Ether	0.1078 +++++	0.0692 0.0432	0.0616	0.0535	0.0452	Lin2	0.1271	0.0448							0.9950		0.9900
Propylene glycol	0.4019 +++++	0.3191 0.1712	0.2047	0.1598	0.1777	Qua	0.4914	0.1582	0.0000862						0.9980		0.9900
Ethylene glycol	1.1726 +++++	0.8064 0.3726	0.4948	0.3998	0.4021	Qua	1.5785	0.3634	-0.000056						0.9980		0.9900
2-(2-Butoxyethoxy)ethanol	1.2656 +++++	0.7973 0.4776	0.6815	0.6023	0.4981	Lin2	1.5599	0.4916							0.9950		0.9900
2,2'-Oxybisethanol	0.5099 +++++	0.4520 0.2438	0.2629	0.2248	0.2586	Qua	0.4836	0.2393	0.0000057						0.9970		0.9900
Triethylene Glycol	0.4321 +++++	0.4323 0.2392	0.2469	0.2299	0.2511	Qua	0.4070	0.2365	-0.000007						0.9980		0.9900
Tetraethylene Glycol	0.4762 +++++	0.4518 0.2488	0.2619	0.2396	0.2616	Qua	0.9240	0.2453	-0.000002						0.9980		0.9900

Note: The M1 coefficient is the same as Ave RRF for an Ave curve type. RSD is calculated for Ave curve types. RSE is used for all other types.

FORM VI
GC SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
RESPONSE AND CONCENTRATION

Lab Name: Eurofins Savannah Job No.: 580-122948-1 Analy Batch No.: 761417

SDG No.:

Instrument ID: CVGG2 GC Column: J&W DB WAX ID: 0.45(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/31/2023 16:10 Calibration End Date: 01/31/2023 18:30 Calibration ID: 89543

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 680-761417/8	GA31015.D
Level 2	IC 680-761417/7	GA31014.D
Level 3	IC 680-761417/6	GA31013.D
Level 4	ICIS 680-761417/5	GA31012.D
Level 5	IC 680-761417/4	GA31011.D
Level 6	IC 680-761417/3	GA31010.D
Level 7	IC 680-761417/2	GA31009.D

ANALYTE	IS REF	CURVE TYPE	RESPONSE					CONCENTRATION (UG/ML)				
			LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5	LVL 1 LVL 6	LVL 2 LVL 7	LVL 3	LVL 4	LVL 5
Ethanol, 2-propoxy	nHPA	Qua	217199 +++++	395229 4966455	747201	1481144	2998970	2.00 +++++	5.00 100	10.0	20.0	50.0
4-Hydroxy-4-methyl-2-pentanone	nHPA	Qua	215694 +++++	366266 4789015	695234	1428079	2817730	2.00 +++++	5.00 100	10.0	20.0	50.0
2-Butoxyethanol	nHPA	Qua	238714 +++++	446752 5472021	822590	1687009	3302160	2.00 +++++	5.00 100	10.0	20.0	50.0
Dipropylene Glycol Methyl Ether	nHPA	Lin2	16283 +++++	28539 384460	50136	102970	215230	2.00 +++++	5.00 100	10.0	20.0	50.0
Propylene glycol	nHPA	Qua	60701 +++++	131630 1523404	166728	307358	845966	2.00 +++++	5.00 100	10.0	20.0	50.0
Ethylene glycol	nHPA	Qua	177078 +++++	332582 3315102	403080	768953	1914058	2.00 +++++	5.00 100	10.0	20.0	50.0
2-(2-Butoxyethoxy)ethanol	nHPA	Lin2	191136 +++++	328863 4248929	555129	1158542	2371277	2.00 +++++	5.00 100	10.0	20.0	50.0
2,2'-Oxybisethanol	nHPA	Qua	77003 +++++	186446 2169212	214186	432419	1231191	2.00 +++++	5.00 100	10.0	20.0	50.0
Triethylene Glycol	nHPA	Qua	65259 +++++	178287 2128032	201150	442202	1195495	2.00 +++++	5.00 100	10.0	20.0	50.0
Tetraethylene Glycol	nHPA	Qua	143818 +++++	372712 4427733	426730	921584	2490752	4.00 +++++	10.0 200	20.0	40.0	100

Curve Type Legend

Lin2 = Linear 1/conc^2 ISTD
Qua = Quadratic ISTD

FORM VI
GC SEMI VOA BY INTERNAL STANDARD - INITIAL CALIBRATION DATA
READBACK PERCENT ERROR

Lab Name: Eurofins Savannah Job No.: 580-122948-1 Analy Batch No.: 761417

SDG No.:

Instrument ID: CVGG2 GC Column: J&W DB WAX ID: 0.45(mm) Heated Purge: (Y/N) N

Calibration Start Date: 01/31/2023 16:10 Calibration End Date: 01/31/2023 18:30 Calibration ID: 89543

Calibration Files

LEVEL:	LAB SAMPLE ID:	LAB FILE ID:
Level 1	IC 680-761417/8	GA31015.D
Level 2	IC 680-761417/7	GA31014.D
Level 3	IC 680-761417/6	GA31013.D
Level 4	ICIS 680-761417/5	GA31012.D
Level 5	IC 680-761417/4	GA31011.D
Level 6	IC 680-761417/3	GA31010.D
Level 7	IC 680-761417/2	GA31009.D

ANALYTE	PERCENT ERROR						PERCENT ERROR LIMIT					
	LVL 1 # LVL 7 #	LVL 2 #	LVL 3 #	LVL 4 #	LVL 5 #	LVL 6 #	LVL 1 LVL 7	LVL 2	LVL 3	LVL 4	LVL 5	LVL 6
Dipropylene Glycol Methyl Ether	-1.1 -6.3	-2.2	9.1	5.4	-4.7	+++++	20 20	20	20	20	20	
2-(2-Butoxyethoxy)ethanol	-1.2 -6.0	-1.3	6.9	6.6	-5.0	+++++	20 20	20	20	20	20	

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31009.D
Lims ID: ic g7
Client ID:
Sample Type: IC Calib Level: 7
Inject. Date: 31-Jan-2023 16:10:20 ALS Bottle#: 0 Worklist Smp#: 2
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-002
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:17 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:15:54

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.106	3.115	-0.009	4966455	100.0	100.2	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.692	3.705	-0.013	4789015	100.0	100.3	
3 2-Butoxyethanol							
	4.017	4.020	-0.003	5472021	100.0	100.3	
* 4 n-Heptyl Alcohol							
	4.501	4.493	0.008	4448338	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.443	5.450	-0.007	384460	100.0	93.7	
6 Propylene glycol							M
	6.605	6.602	0.003	1523404	100.0	99.7	M
7 Ethylene glycol							
	6.844	6.859	-0.015	3315102	100.0	99.7	
8 2-(2-Butoxyethoxy)ethanol							
	8.749	8.749	0.000	4248929	100.0	94.0	
9 2,2'-Oxybisethanol							
	9.737	9.735	0.002	2169212	100.0	99.6	
10 Triethylene Glycol							
	10.752	10.751	0.001	2128032	100.0	99.7	
11 Tetraethylene Glycol							
	12.012	12.009	0.003	4427733	200.0	199.5	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added: 50.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added: 10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:18:17 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31009.D

Injection Date: 31-Jan-2023 16:10:20 Instrument ID: CVGG2 Operator ID:

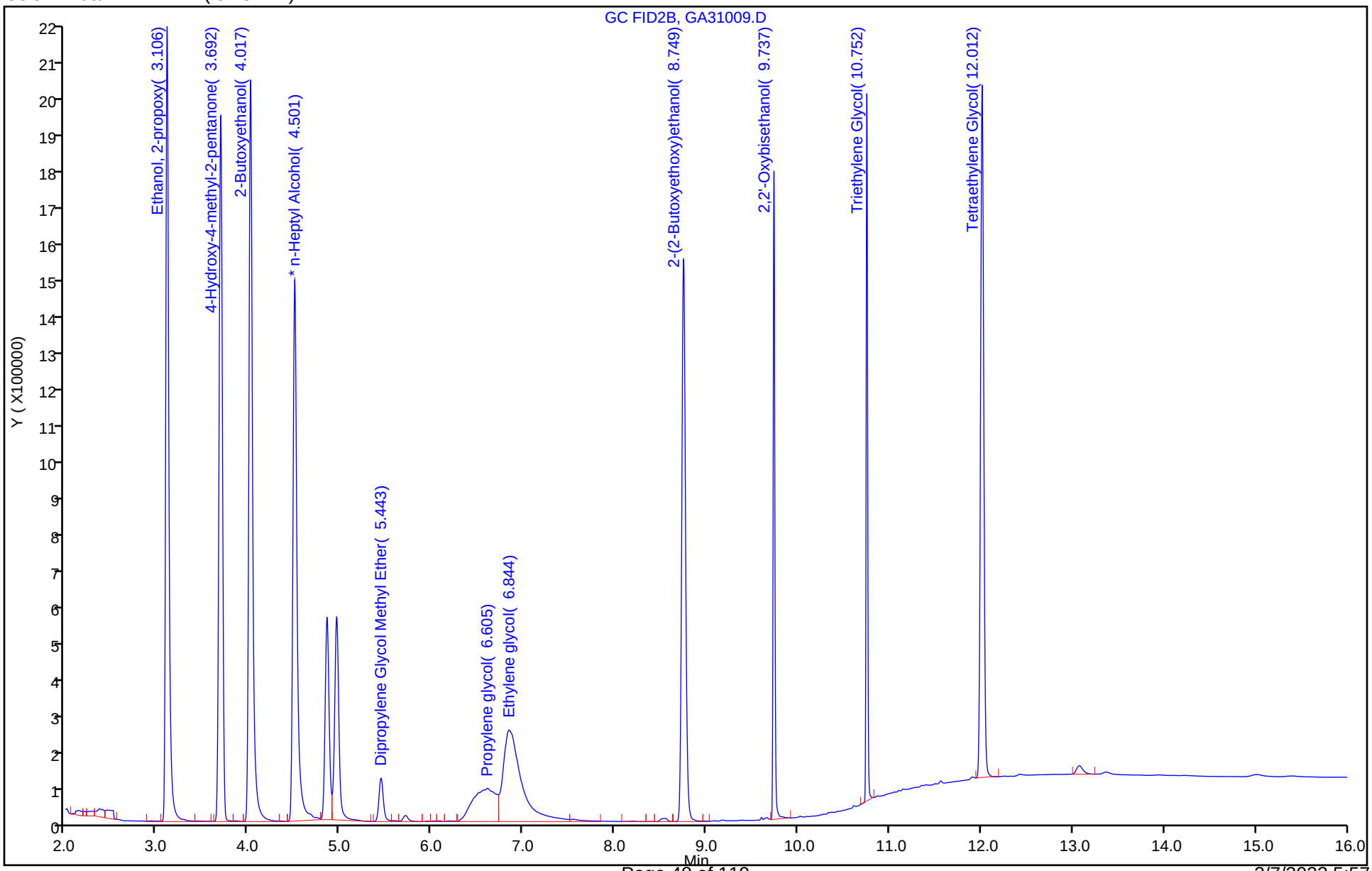
Lims ID: ic g7 Worklist Smp#: 2

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

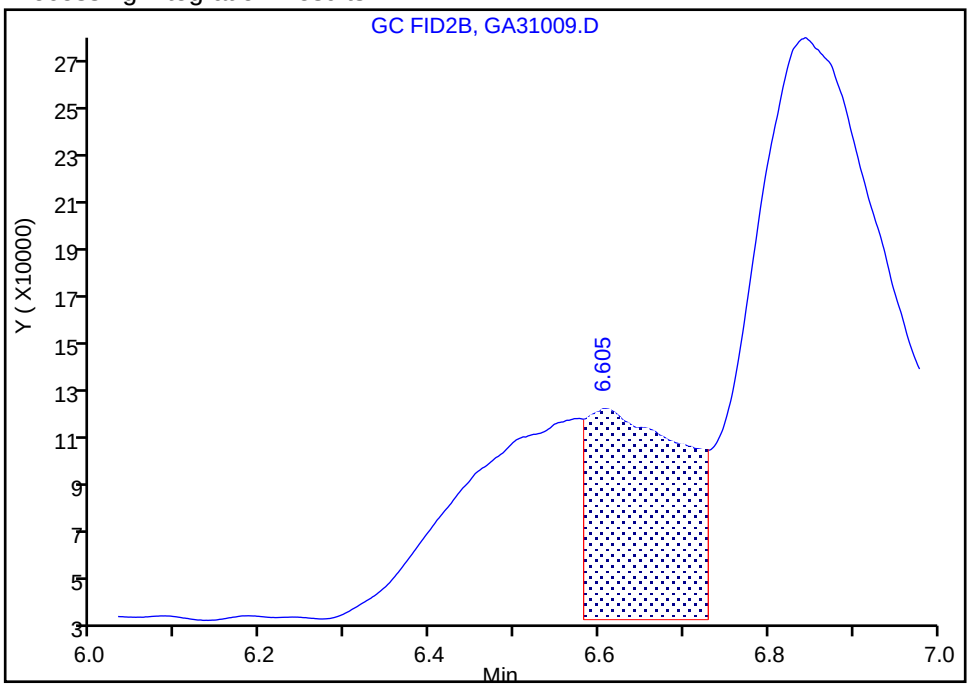
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31009.D				
Injection Date:	31-Jan-2023 16:10:20	Instrument ID:	CVGG2		
Lims ID:	ic g7				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	2
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

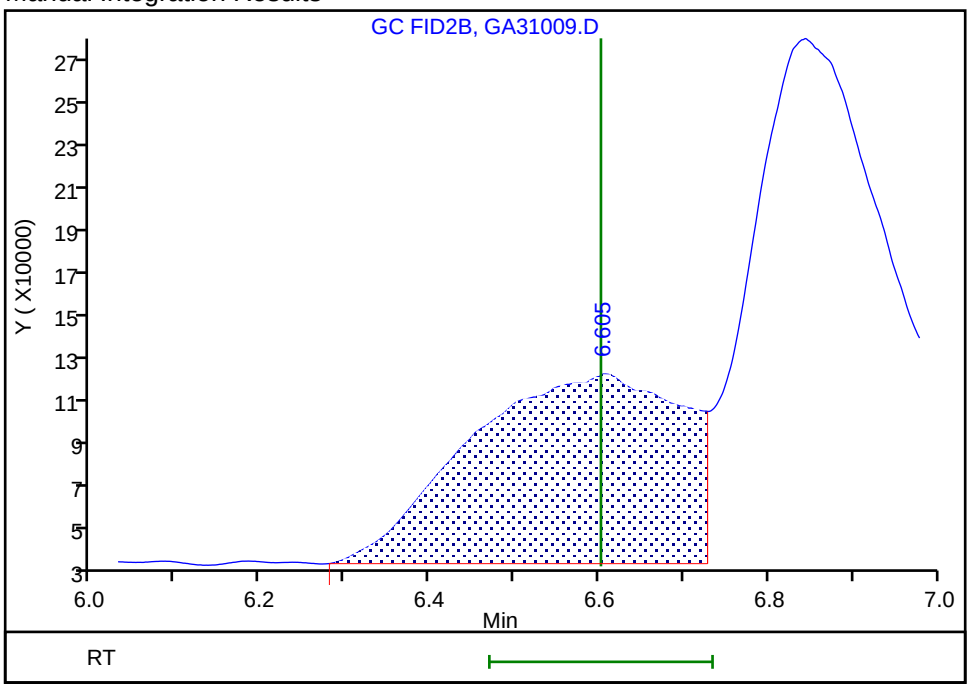
Processing Integration Results

RT: 6.60
Area: 692727
Amount: 63.697631
Amount Units: ug/ml



Manual Integration Results

RT: 6.60
Area: 1523404
Amount: 99.725682
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:15:47

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31010.D
Lims ID: ic g6
Client ID:
Sample Type: IC Calib Level: 6
Inject. Date: 31-Jan-2023 16:33:44 ALS Bottle#: 0 Worklist Smp#: 3
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-003
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:18 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.109	3.115	-0.006	2696316	80.0	51.0	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.698	3.705	-0.007	2533759	80.0	50.6	
3 2-Butoxyethanol							
	4.018	4.020	-0.002	3009271	80.0	51.4	
* 4 n-Heptyl Alcohol							
	4.497	4.493	0.004	4142709	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.447	5.450	-0.003	198795	80.0	50.7	
6 Propylene glycol							
	6.598	6.602	-0.004	867996	80.0	61.1	
7 Ethylene glycol							
	6.865	6.859	0.006	1916855	80.0	59.9	
8 2-(2-Butoxyethoxy)ethanol							
	8.749	8.749	0.000	2209469	80.0	51.1	
9 2,2'-Oxybisethanol							
	9.737	9.735	0.002	1262199	80.0	61.6	
10 Triethylene Glycol							
	10.752	10.751	0.001	1203391	80.0	59.8	
11 Tetraethylene Glycol							
	12.011	12.009	0.002	2479986	160.0	118.4	

Reagents:

SG_Gly_CAL_00052 Amount Added: 40.00 Units: uL
SG_GLY_ISTD_00105 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Feb-2023 12:18:18 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31010.D

Injection Date: 31-Jan-2023 16:33:44 Instrument ID: CVGG2 Operator ID:

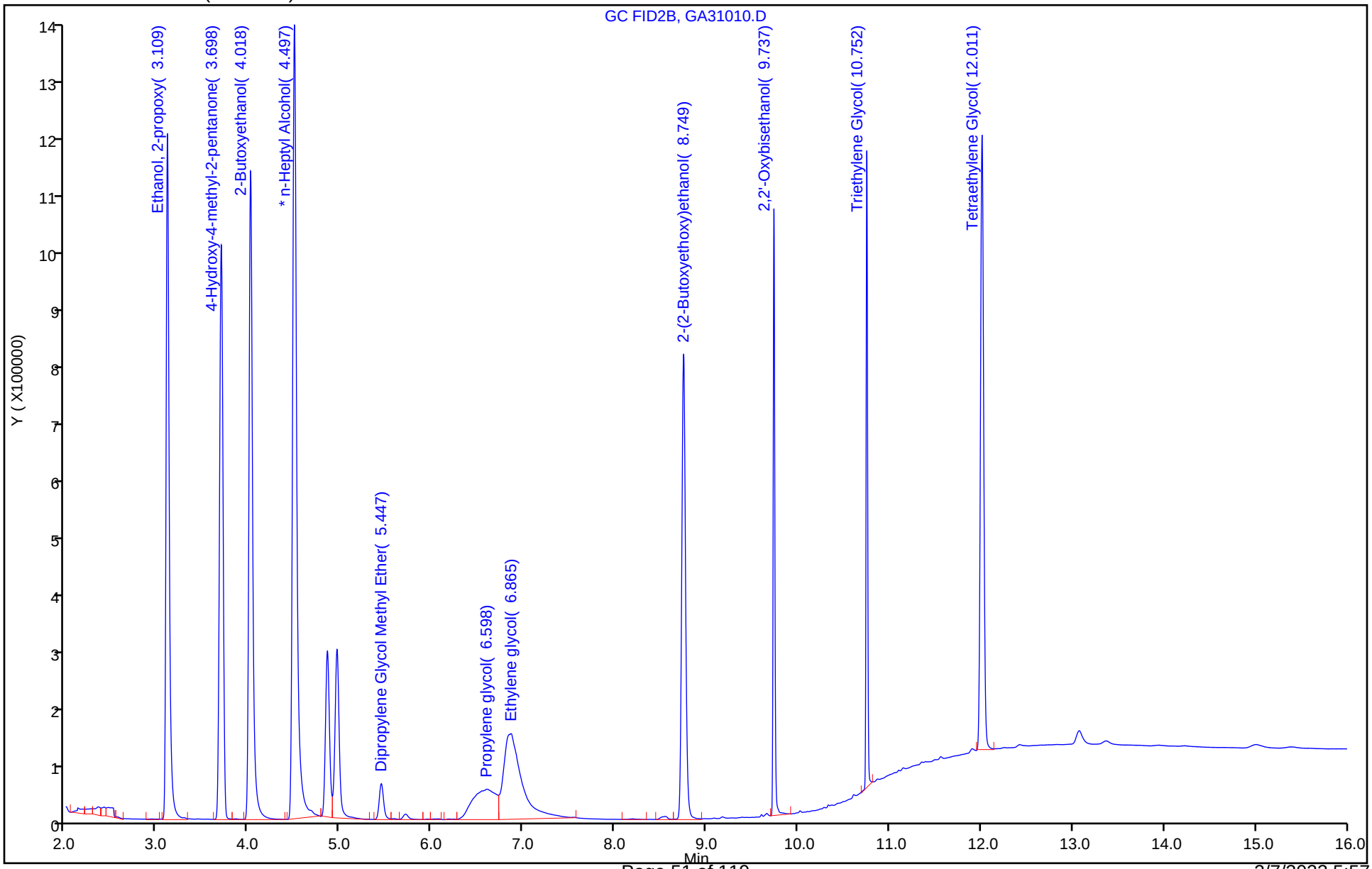
Lims ID: ic g6 Worklist Smp#: 3

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31011.D
Lims ID: ic g5
Client ID:
Sample Type: IC Calib Level: 5
Inject. Date: 31-Jan-2023 16:57:00 ALS Bottle#: 0 Worklist Smp#: 4
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-004
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:18 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.111	3.115	-0.004	2998970	50.0	49.0	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.700	3.705	-0.005	2817730	50.0	48.7	
3 2-Butoxyethanol							
	4.019	4.020	-0.001	3302160	50.0	48.7	
* 4 n-Heptyl Alcohol							
	4.496	4.493	0.003	4760307	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.448	5.450	-0.002	215230	50.0	47.6	
6 Propylene glycol							
	6.604	6.602	0.002	845966	50.0	51.6	
7 Ethylene glycol							
	6.848	6.859	-0.011	1914058	50.0	51.4	
8 2-(2-Butoxyethoxy)ethanol							
	8.748	8.749	-0.001	2371277	50.0	47.5	
9 2,2'-Oxybisethanol							
	9.737	9.735	0.002	1231191	50.0	52.0	
10 Triethylene Glycol							
	10.752	10.751	0.001	1195495	50.0	51.5	
11 Tetraethylene Glycol							
	12.011	12.009	0.002	2490752	100.0	103.0	

Reagents:

SG_Gly_CAL_00052 Amount Added: 25.00 Units: uL
SG_GLY_ISTD_00105 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 01-Feb-2023 12:18:19 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31011.D

Injection Date: 31-Jan-2023 16:57:00 Instrument ID: CVGG2 Operator ID:

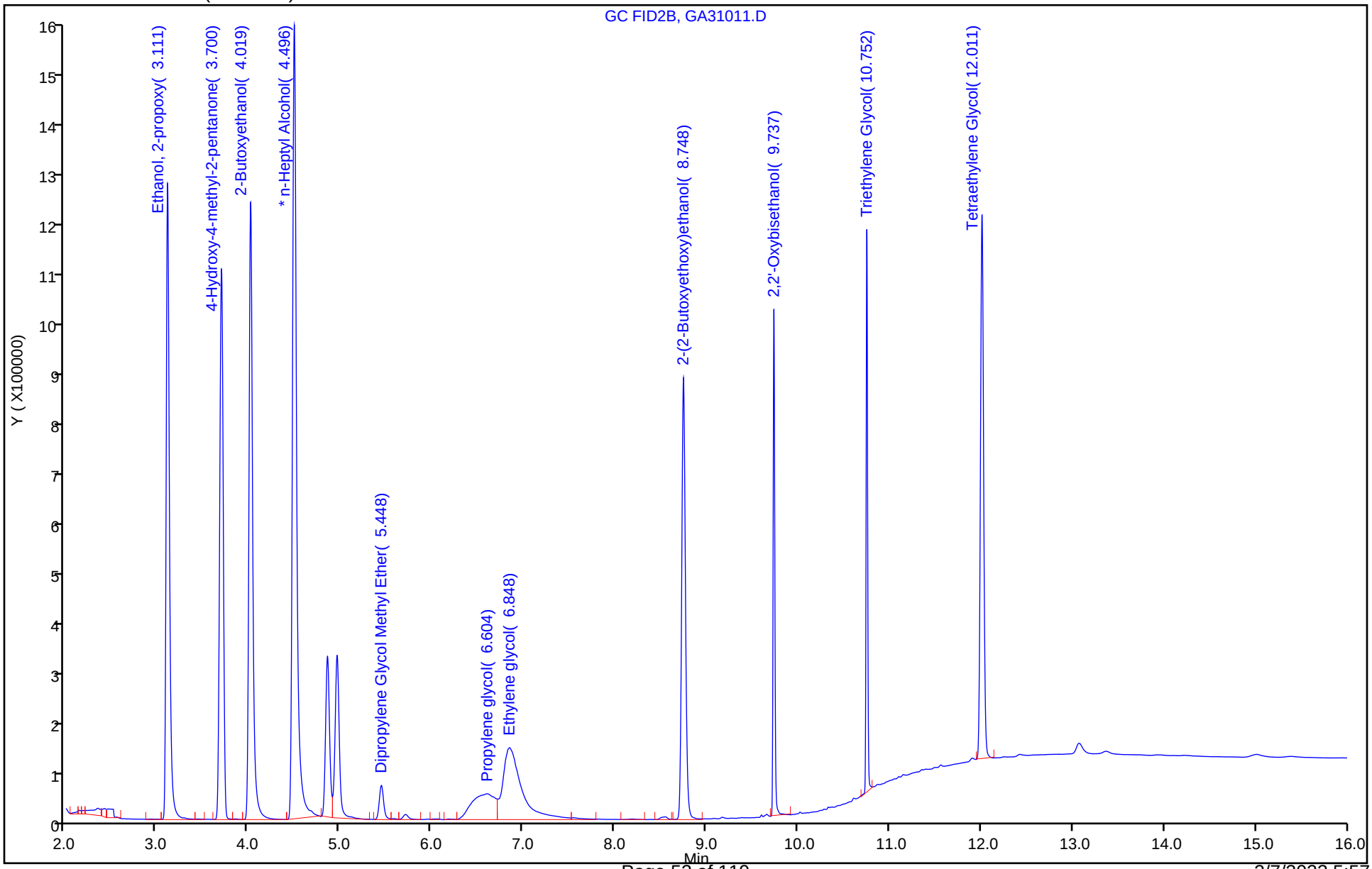
Lims ID: ic g5 Worklist Smp#: 4

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31012.D
Lims ID: icis g4
Client ID:
Sample Type: ICIS Calib Level: 4
Inject. Date: 31-Jan-2023 17:20:19 ALS Bottle#: 0 Worklist Smp#: 5
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-005
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:19 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:16:13

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.115	3.115	0.000	1481144	20.0	21.0	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.705	3.705	0.000	1428079	20.0	21.7	
3 2-Butoxyethanol							
	4.020	4.020	0.000	1687009	20.0	21.6	
* 4 n-Heptyl Alcohol							
	4.493	4.493	0.000	4808813	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.450	5.450	0.000	102970	20.0	21.1	
6 Propylene glycol							M
	6.602	6.602	0.000	307358	20.0	16.9	M
7 Ethylene glycol							
	6.859	6.859	0.000	768953	20.0	17.7	
8 2-(2-Butoxyethoxy)ethanol							
	8.749	8.749	0.000	1158542	20.0	21.3	
9 2,2'-Oxybisethanol							
	9.735	9.735	0.000	432419	20.0	16.8	
10 Triethylene Glycol							
	10.751	10.751	0.000	442202	20.0	17.7	
11 Tetraethylene Glycol							
	12.009	12.009	0.000	921584	40.0	35.3	

QC Flag Legend
Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:18:19 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31012.D

Injection Date: 31-Jan-2023 17:20:19 Instrument ID: CVGG2 Operator ID:

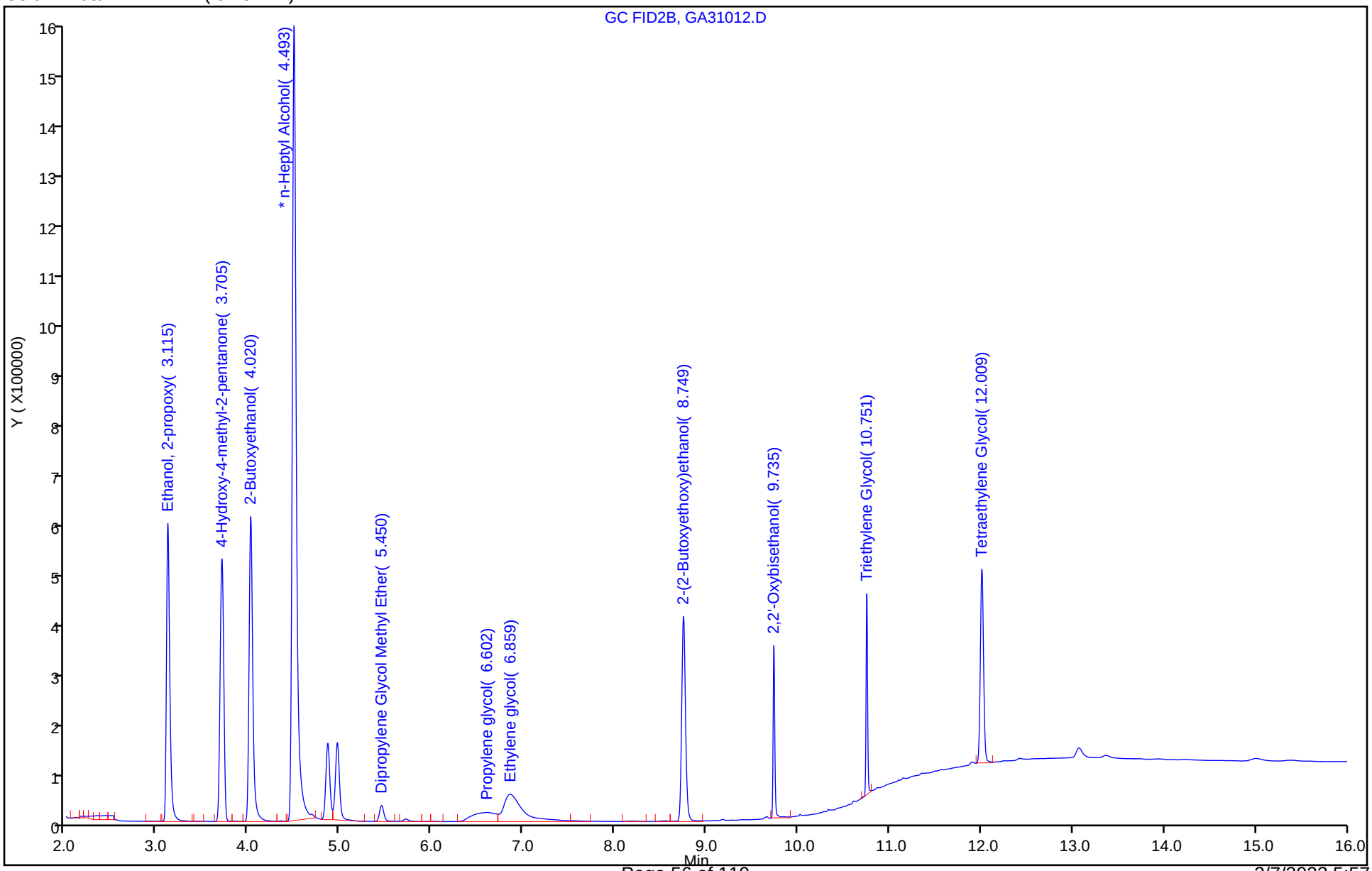
Lims ID: icis g4 Worklist Smp#: 5

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

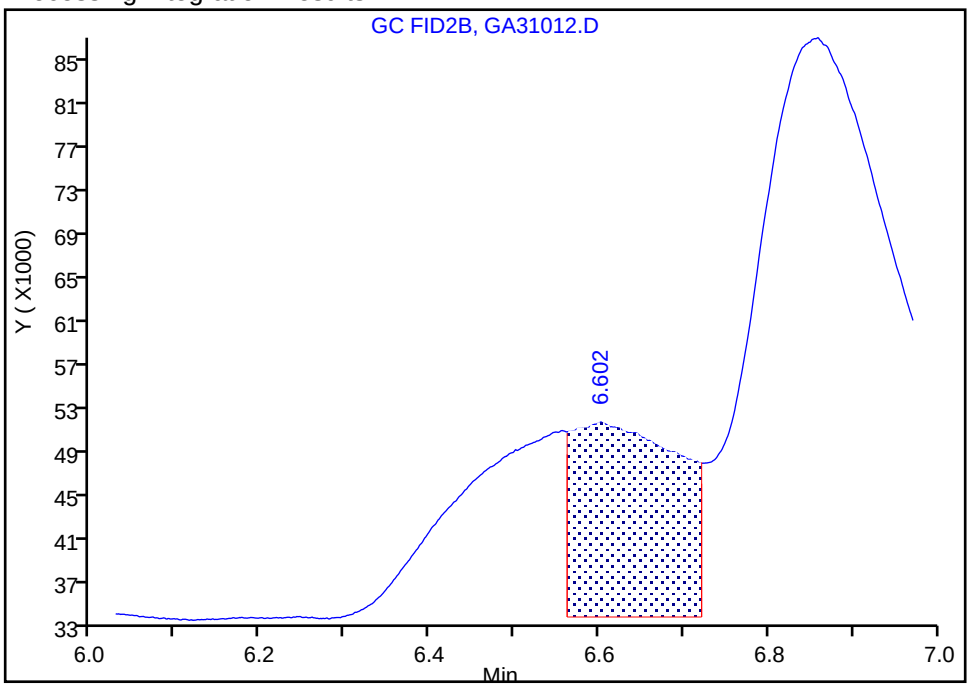
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31012.D				
Injection Date:	31-Jan-2023 17:20:19	Instrument ID:	CVGG2		
Lims ID:	icis g4				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	5
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

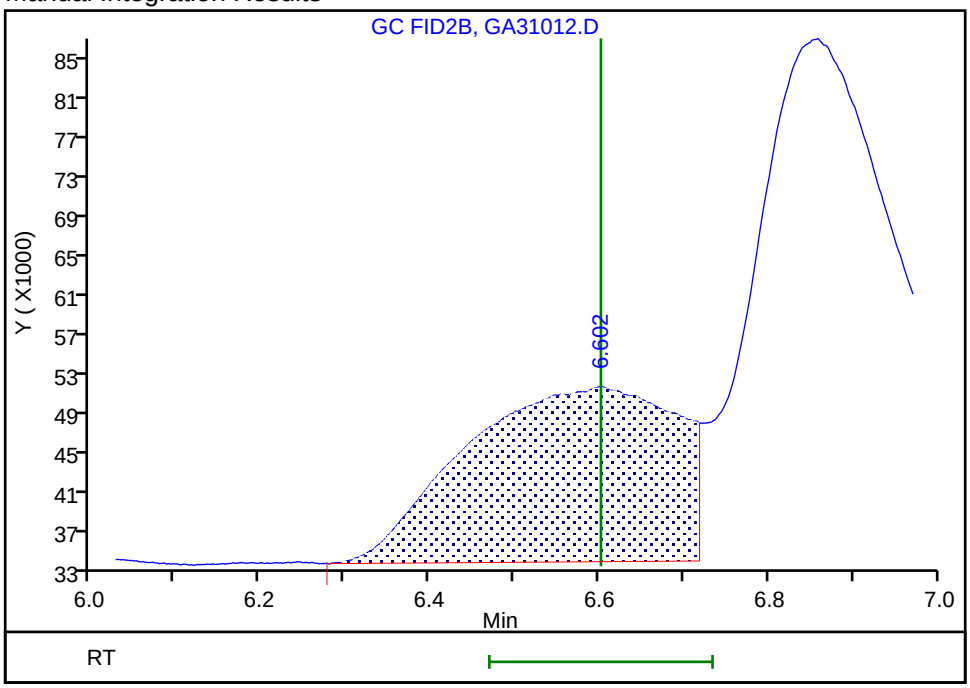
Processing Integration Results

RT: 6.60
Area: 155832
Amount: 11.950885
Amount Units: ug/ml



Manual Integration Results

RT: 6.60
Area: 307358
Amount: 16.940506
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:16:10

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31013.D
Lims ID: ic g3
Client ID:
Sample Type: IC Calib Level: 3
Inject. Date: 31-Jan-2023 17:43:43 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-006
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:20 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:16:32

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.112	3.115	-0.003	747201	10.0	11.1	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.703	3.705	-0.002	695234	10.0	10.9	
3 2-Butoxyethanol							
	4.018	4.020	-0.002	822590	10.0	10.9	
* 4 n-Heptyl Alcohol							
	4.492	4.493	-0.001	4072778	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.448	5.450	-0.002	50136	10.0	10.9	
6 Propylene glycol							M
	6.595	6.602	-0.007	166728	10.0	9.78	M
7 Ethylene glycol							M
	6.852	6.859	-0.007	403080	10.0	9.29	M
8 2-(2-Butoxyethoxy)ethanol							
	8.749	8.749	0.000	555129	10.0	10.7	
9 2,2'-Oxybisethanol							
	9.736	9.735	0.001	214186	10.0	8.97	
10 Triethylene Glycol							
	10.751	10.751	0.000	201150	10.0	8.72	
11 Tetraethylene Glycol							
	12.010	12.009	0.001	426730	20.0	17.6	

QC Flag Legend
Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added: 5.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added: 10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:18:20 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31013.D

Injection Date: 31-Jan-2023 17:43:43 Instrument ID: CVGG2 Operator ID:

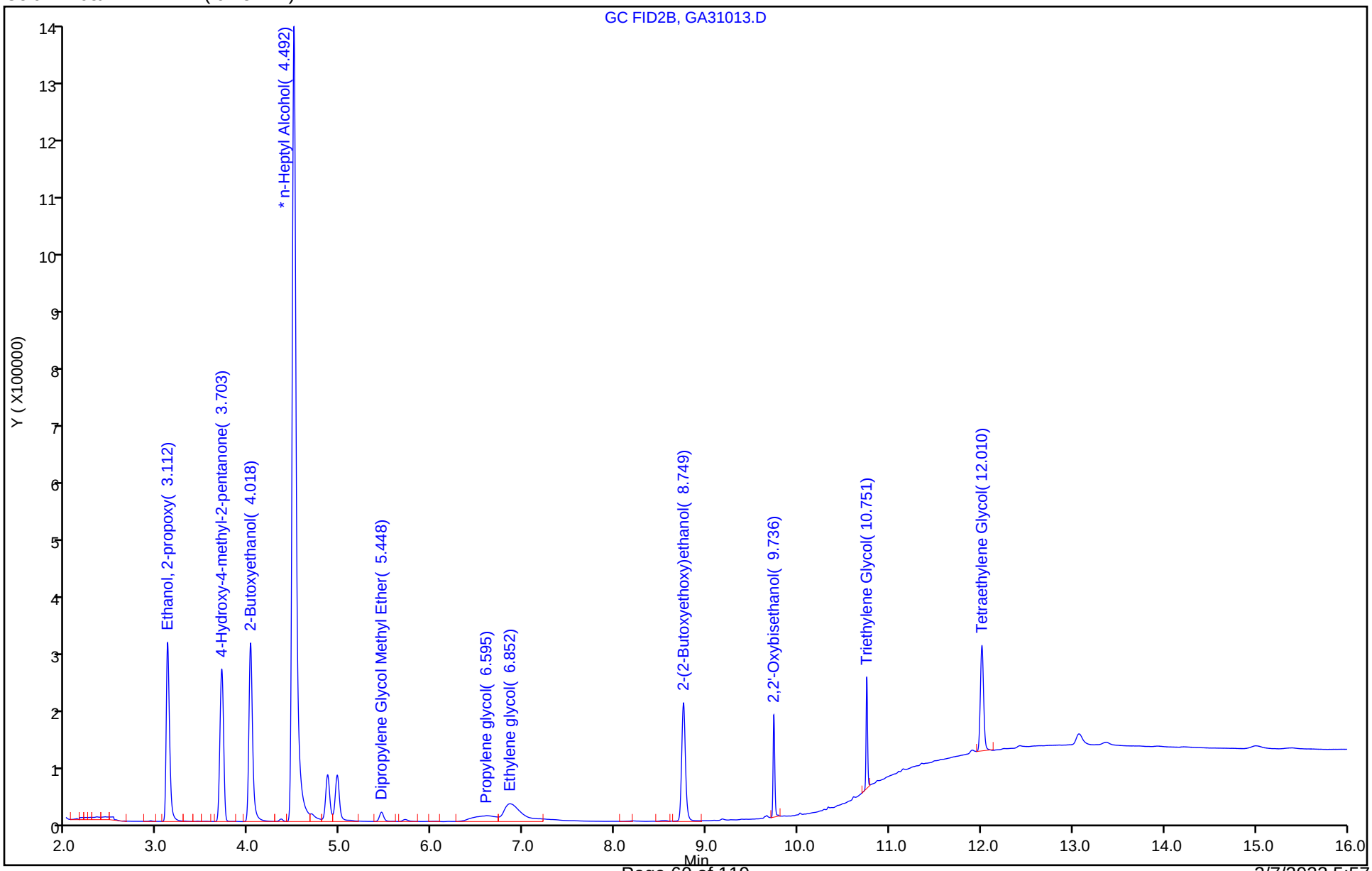
Lims ID: ic g3 Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

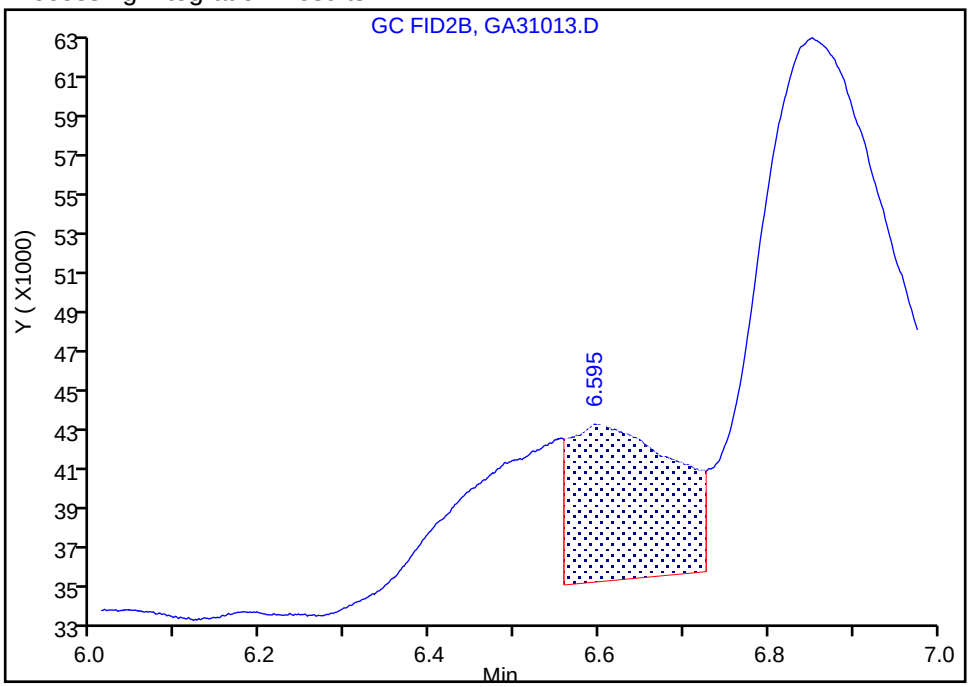
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31013.D				
Injection Date:	31-Jan-2023 17:43:43	Instrument ID:	CVGG2		
Lims ID:	ic g3				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

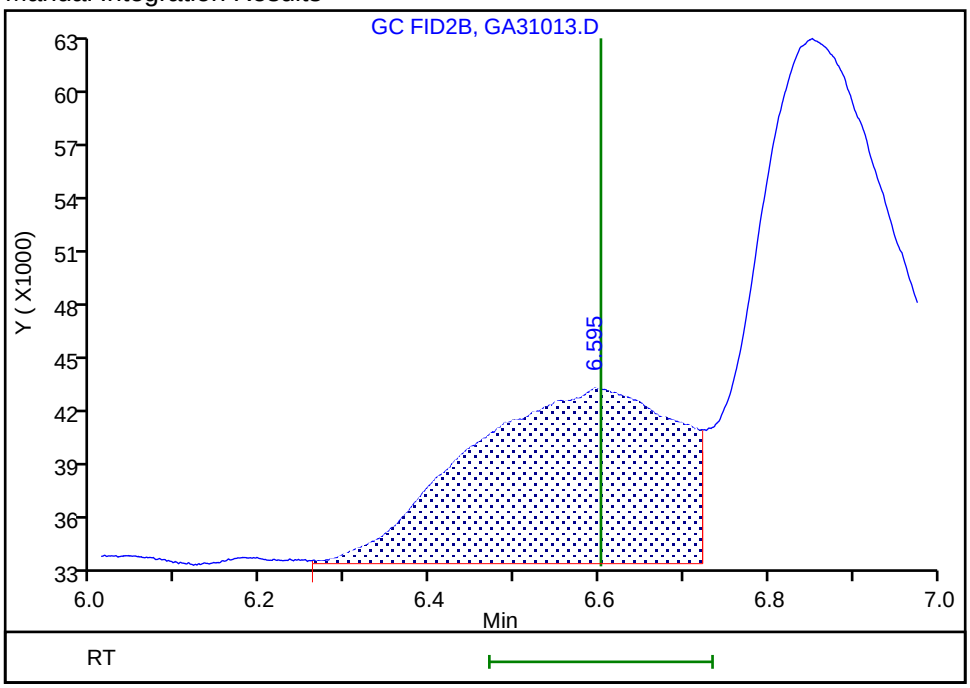
Processing Integration Results

RT: 6.59
Area: 67645
Amount: 5.655825
Amount Units: ug/ml



Manual Integration Results

RT: 6.59
Area: 166728
Amount: 9.781358
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:16:30

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins Savannah

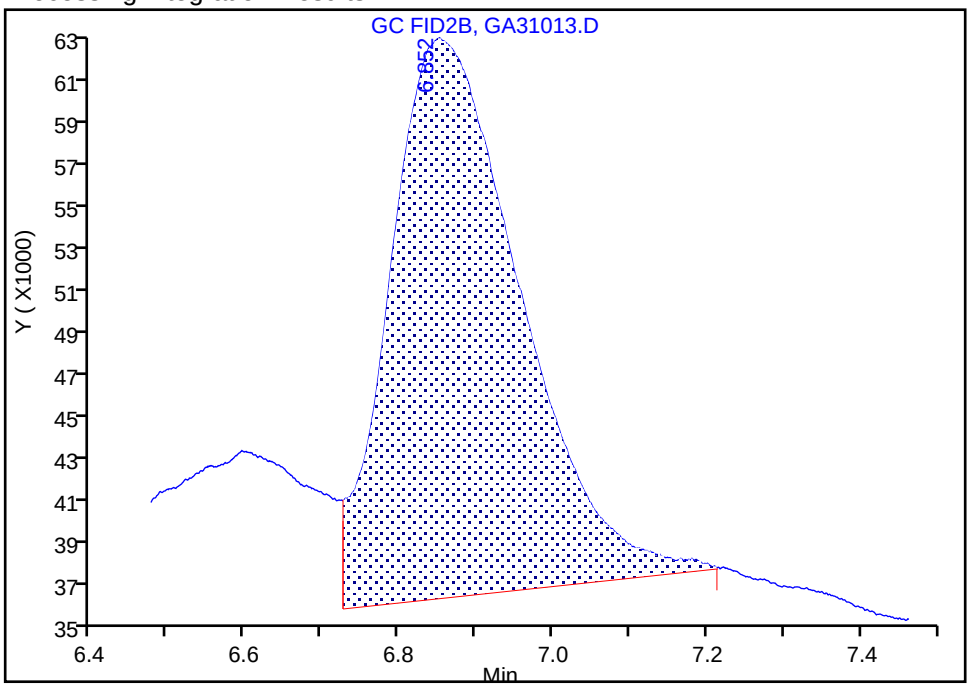
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31013.D				
Injection Date:	31-Jan-2023 17:43:43	Instrument ID:	CVGG2		
Lims ID:	ic g3				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

7 Ethylene glycol, CAS: 107-21-1

Signal: 1

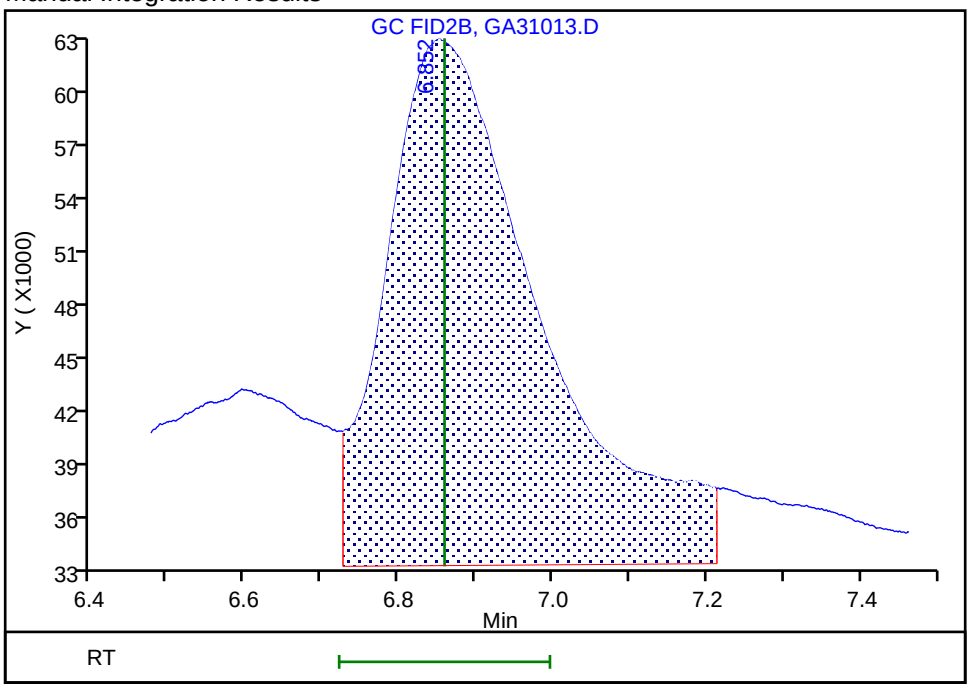
Processing Integration Results

RT: 6.85
Area: 308880
Amount: 9.474281
Amount Units: ug/ml



Manual Integration Results

RT: 6.85
Area: 403080
Amount: 9.287893
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:16:30
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31014.D
Lims ID: ic g2
Client ID:
Sample Type: IC Calib Level: 2
Inject. Date: 31-Jan-2023 18:07:01 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-007
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:21 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:16:54

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.108	3.115	-0.007	395229	5.00	4.28	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.696	3.705	-0.009	366266	5.00	4.03	
3 2-Butoxyethanol							
	4.016	4.020	-0.004	446752	5.00	4.31	
* 4 n-Heptyl Alcohol							
	4.494	4.493	0.001	4124530	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.444	5.450	-0.006	28539	5.00	4.89	
6 Propylene glycol							M
	6.602	6.602	0.000	131630	5.00	6.95	M
7 Ethylene glycol							M
	6.848	6.859	-0.011	332582	5.00	6.76	M
8 2-(2-Butoxyethoxy)ethanol							
	8.749	8.749	0.000	328863	5.00	4.94	
9 2,2'-Oxybisethanol							
	9.736	9.735	0.001	186446	5.00	7.42	
10 Triethylene Glycol							
	10.752	10.751	0.001	178287	5.00	7.42	
11 Tetraethylene Glycol							
	12.011	12.009	0.002	372712	10.0	14.7	

QC Flag Legend
Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added: 2.50	Units: uL	
SG_GLY_ISTD_00105	Amount Added: 10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:18:21 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31014.D

Injection Date: 31-Jan-2023 18:07:01 Instrument ID: CVGG2 Operator ID:

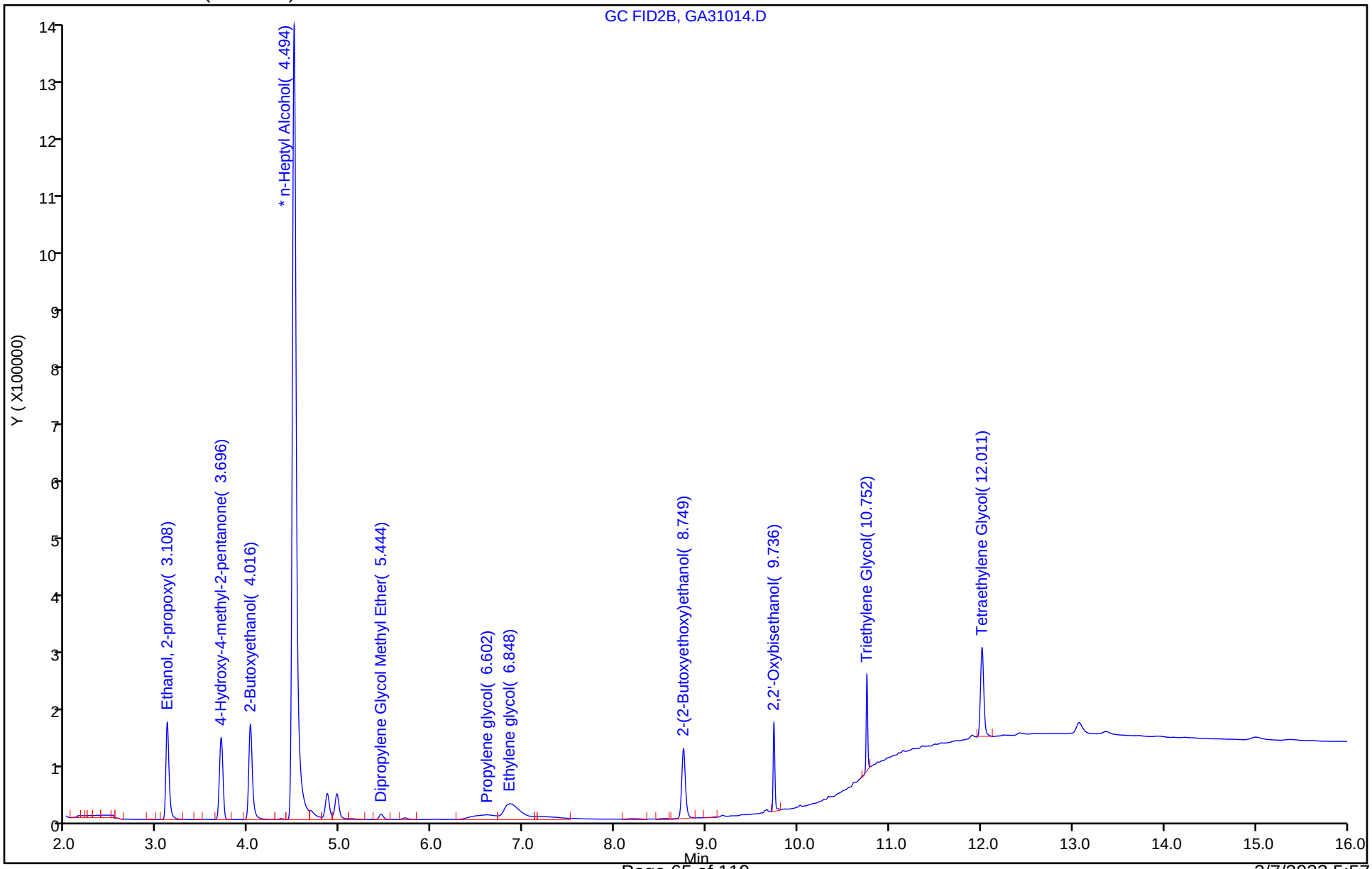
Lims ID: ic g2 Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Eurofins Savannah

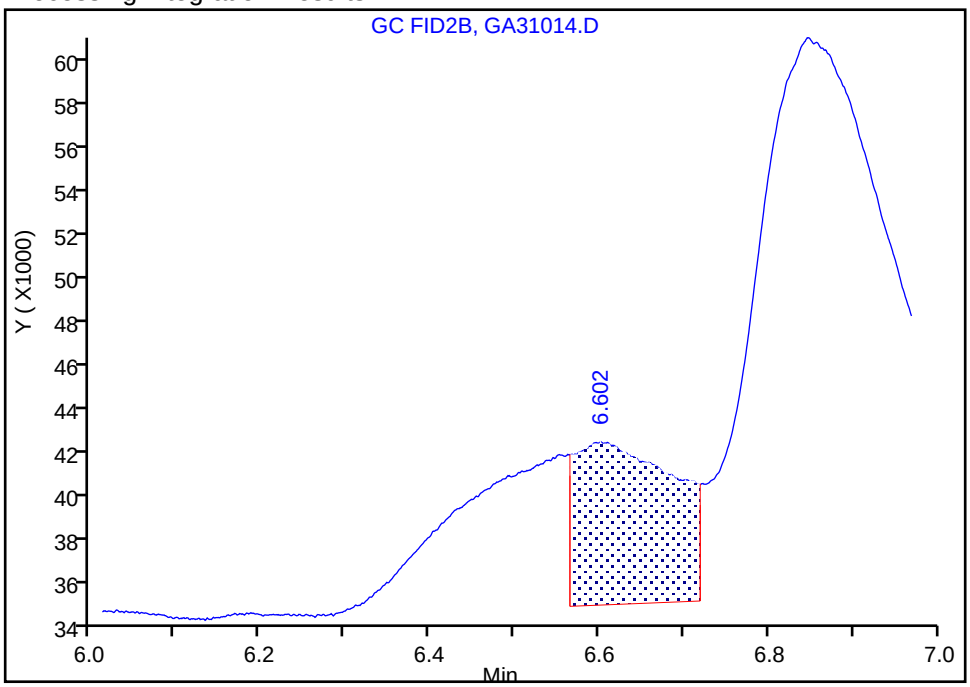
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31014.D				
Injection Date:	31-Jan-2023 18:07:01	Instrument ID:	CVGG2		
Lims ID:	ic g2				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

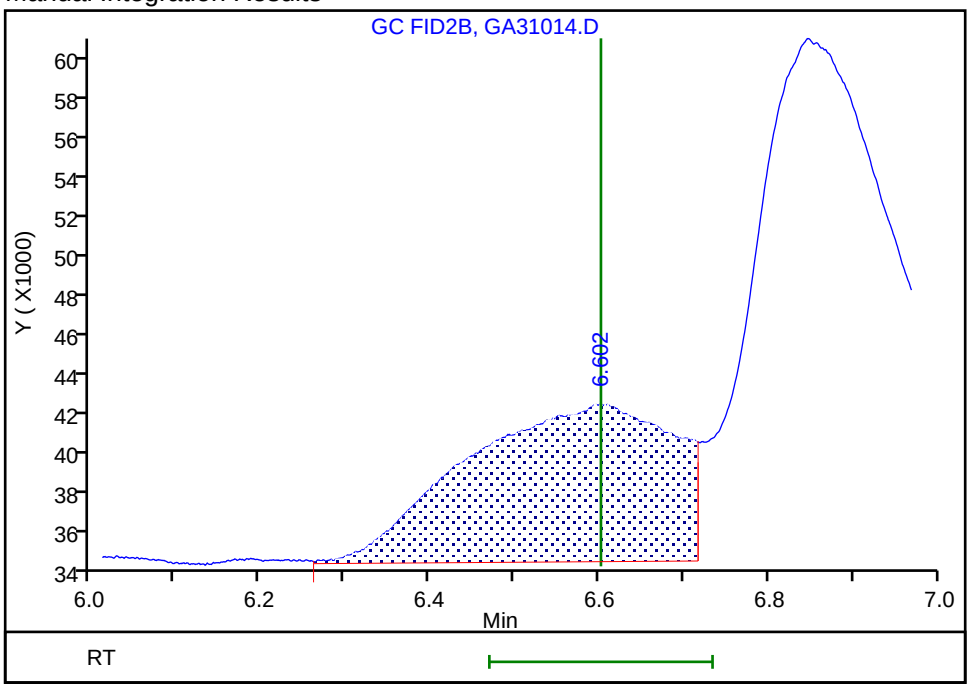
Processing Integration Results

RT: 6.60
Area: 59558
Amount: 4.396829
Amount Units: ug/ml



Manual Integration Results

RT: 6.60
Area: 131630
Amount: 6.954920
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:16:52
Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

Eurofins Savannah

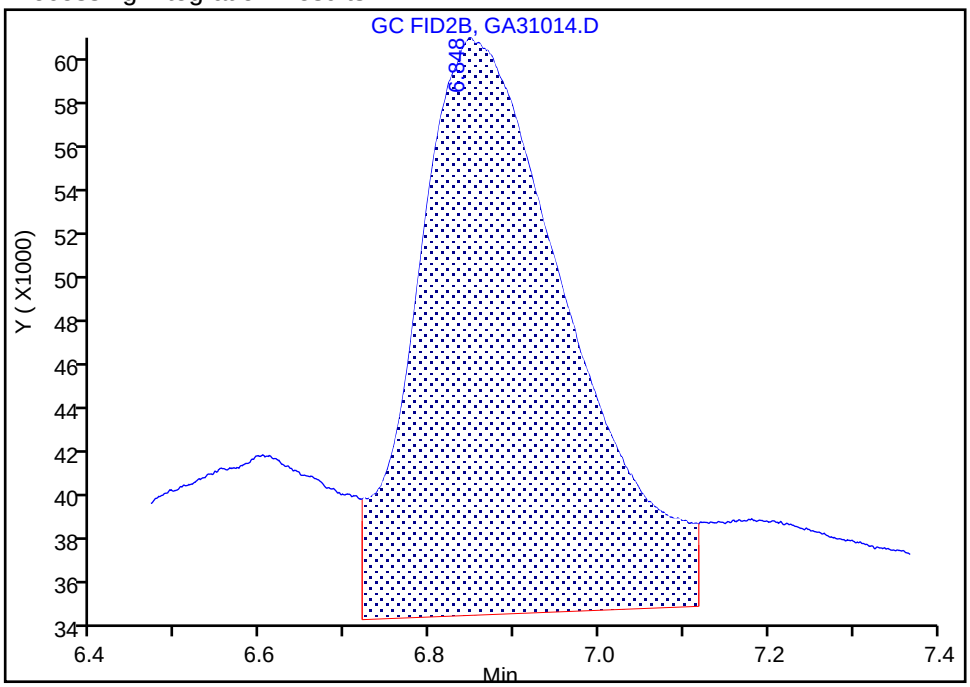
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31014.D				
Injection Date:	31-Jan-2023 18:07:01	Instrument ID:	CVGG2		
Lims ID:	ic g2				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	7
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

7 Ethylene glycol, CAS: 107-21-1

Signal: 1

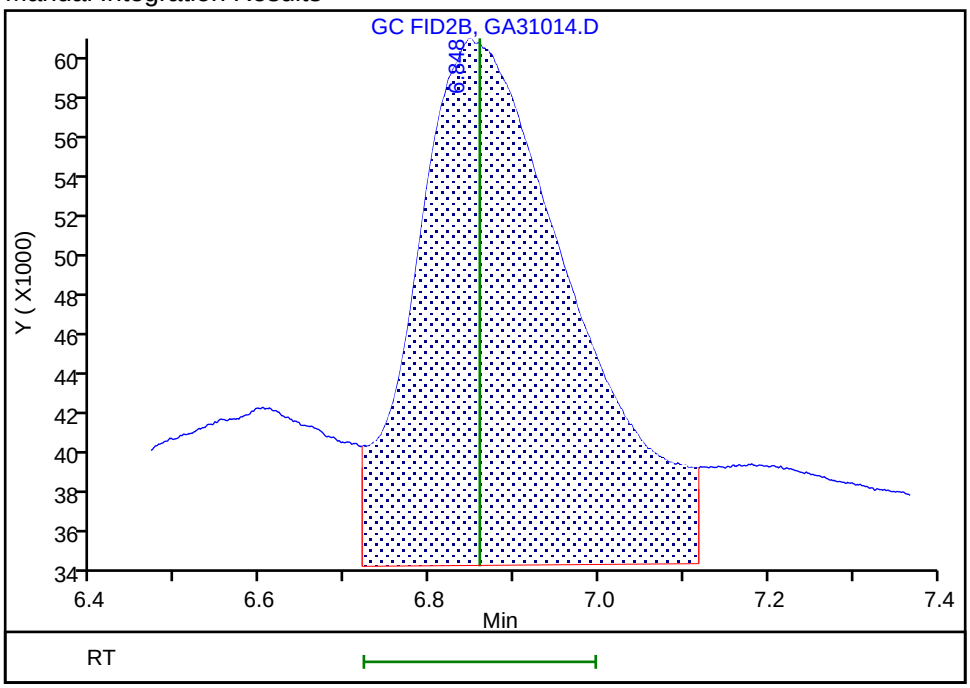
Processing Integration Results

RT: 6.85
Area: 313271
Amount: 9.112271
Amount Units: ug/ml



Manual Integration Results

RT: 6.85
Area: 332582
Amount: 6.758729
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:16:52

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D
Lims ID: ic g1
Client ID:
Sample Type: IC Calib Level: 1
Inject. Date: 31-Jan-2023 18:30:20 ALS Bottle#: 0 Worklist Smp#: 8
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-008
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:18:21 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:17:18

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.118	3.115	0.003	217199	2.00	1.37	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.713	3.705	0.008	215694	2.00	1.43	
3 2-Butoxyethanol							
	4.021	4.020	0.001	238714	2.00	1.22	
* 4 n-Heptyl Alcohol							
	4.488	4.493	-0.005	3775471	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.451	5.450	0.001	16283	2.00	1.98	
6 Propylene glycol							M
	6.608	6.602	0.006	60701	2.00	1.97	M
7 Ethylene glycol							M
	6.868	6.859	0.009	177078	2.00	2.11	M
8 2-(2-Butoxyethoxy)ethanol							
	8.748	8.749	-0.001	191136	2.00	1.98	
9 2,2'-Oxybisethanol							
	9.738	9.735	0.003	77003	2.00	2.24	
10 Triethylene Glycol							
	10.753	10.751	0.002	65259	2.00	1.93	
11 Tetraethylene Glycol							
	12.013	12.009	0.004	143818	4.00	4.00	

QC Flag Legend
Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added: 1.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added: 10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:18:22 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Injection Date: 31-Jan-2023 18:30:20 Instrument ID: CVGG2 Operator ID:

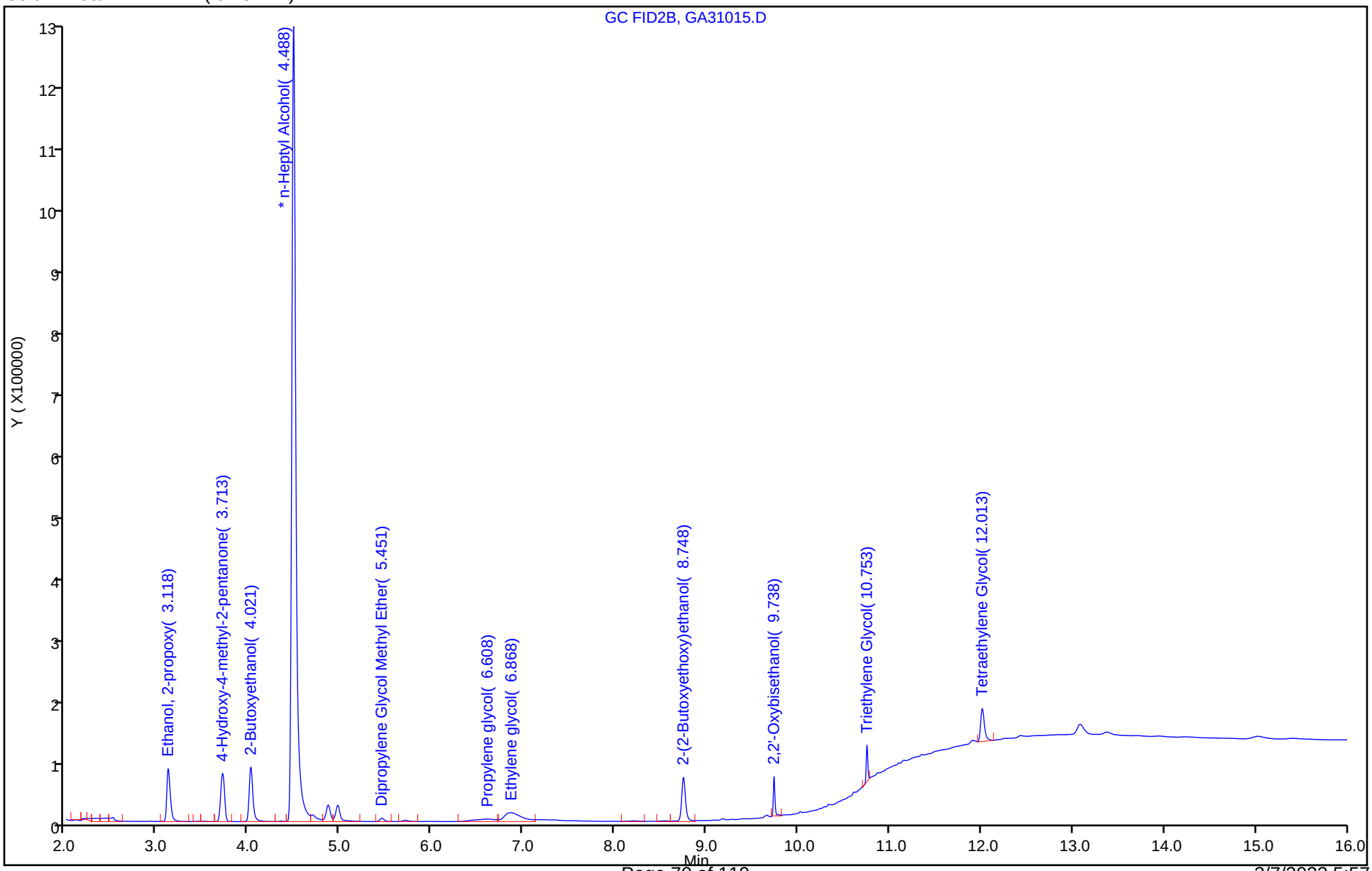
Lims ID: ic g1 Worklist Smp#: 8

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

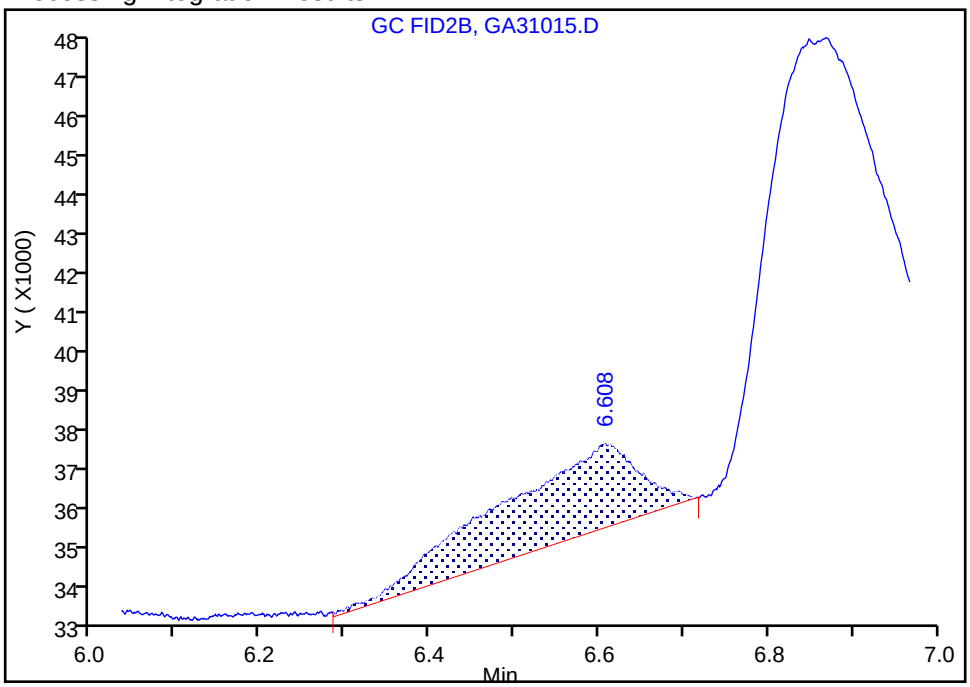
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D				
Injection Date:	31-Jan-2023 18:30:20	Instrument ID:	CVGG2		
Lims ID:	ic g1				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

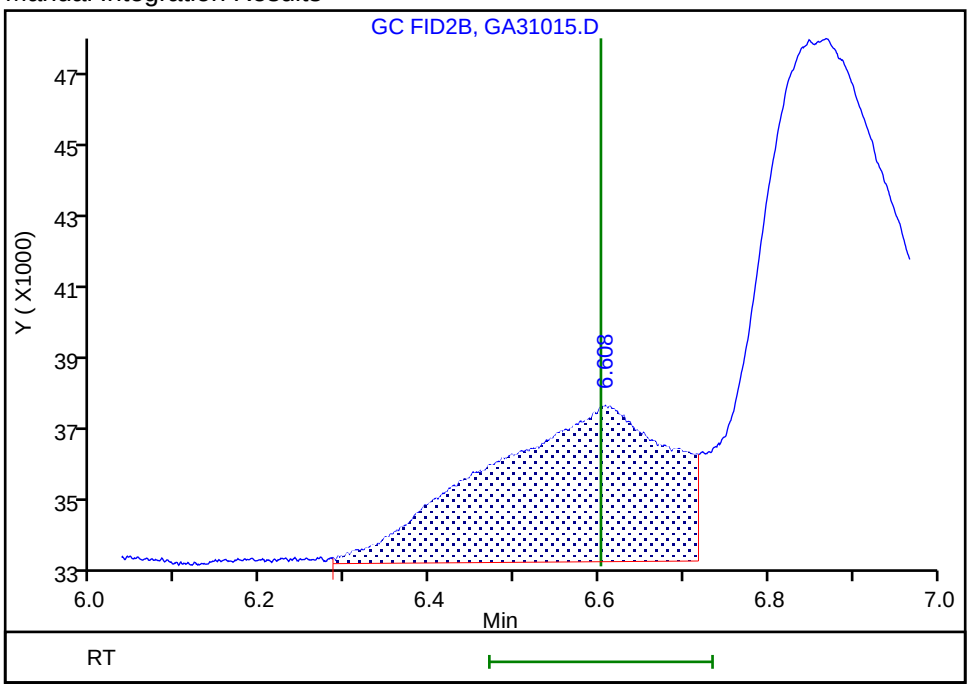
Processing Integration Results

RT: 6.61
Area: 24267
Amount: 1.698866
Amount Units: ug/ml



Manual Integration Results

RT: 6.61
Area: 60701
Amount: 1.973375
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:17:15

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Manual Integration/User Assign Peak Report

Eurofins Savannah

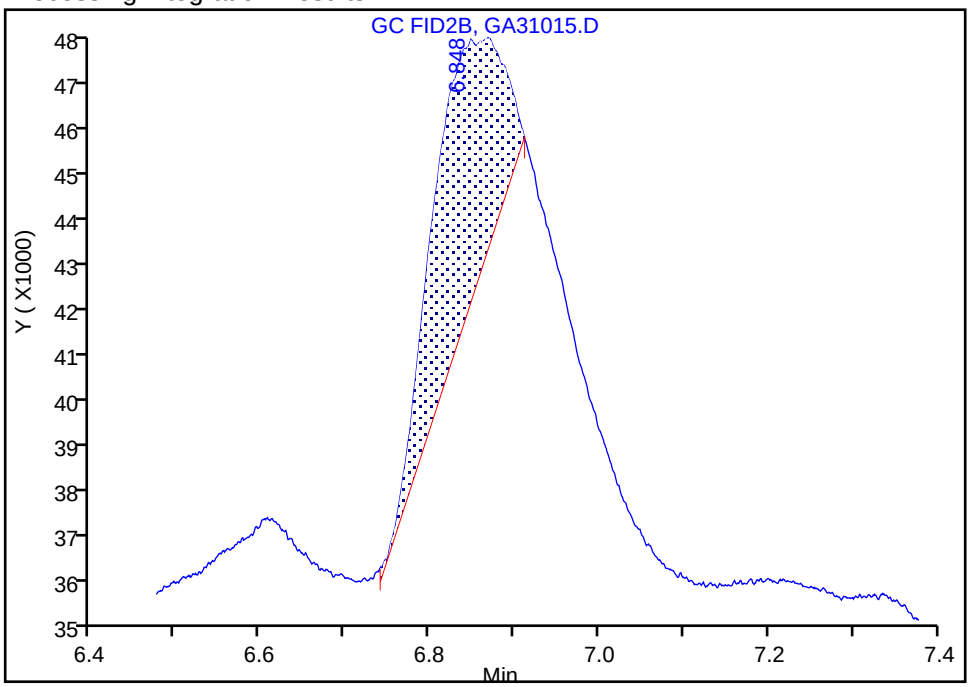
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D				
Injection Date:	31-Jan-2023 18:30:20	Instrument ID:	CVGG2		
Lims ID:	ic g1				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	8
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

7 Ethylene glycol, CAS: 107-21-1

Signal: 1

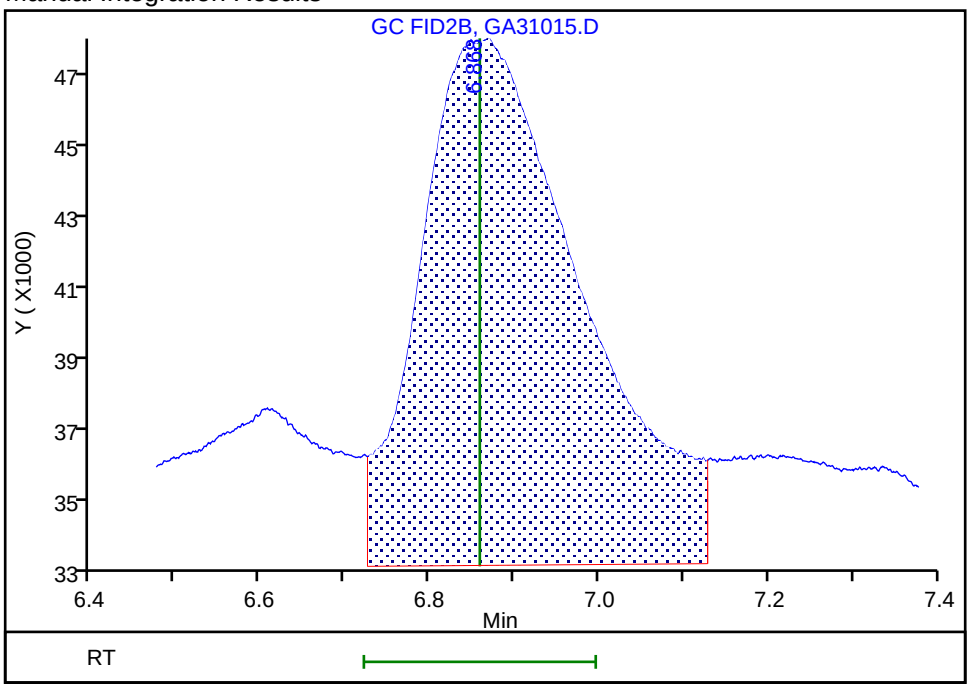
Processing Integration Results

RT: 6.85
Area: 30098
Amount: 0.941310
Amount Units: ug/ml



Manual Integration Results

RT: 6.87
Area: 177078
Amount: 2.110506
Amount Units: ug/ml



Reviewer: SWK1, 01-Feb-2023 12:17:15

Audit Action: Assigned New Baseline Audit Reason: Baseline Smoothing

Calibration / Ethanol, 2-propoxy

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

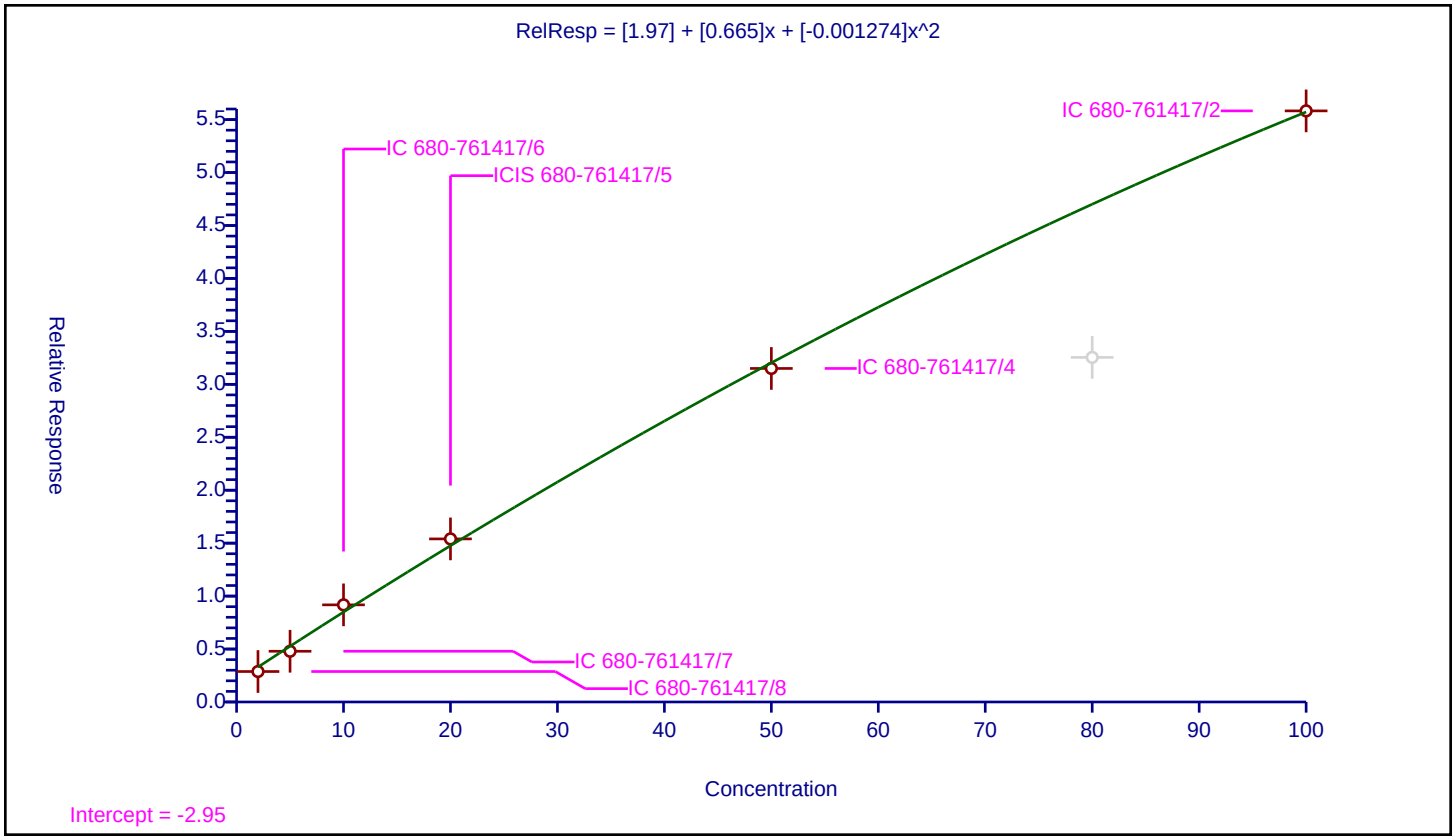
Curve Coefficients

Intercept:	1.97
Slope:	0.665
Second Order:	-0.001274

Error Coefficients

Standard Error:	3490000
Relative Standard Error:	21.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	2.876449	50.0	3775471.0	1.438225	Y
2	IC 680-761417/7	5.0	4.7912	50.0	4124530.0	0.95824	Y
3	IC 680-761417/6	10.0	9.173112	50.0	4072778.0	0.917311	Y
4	ICIS 680-761417/5	20.0	15.400308	50.0	4808813.0	0.770015	Y
5	IC 680-761417/4	50.0	31.499754	50.0	4760307.0	0.629995	Y
6	IC 680-761417/3	80.0	32.542909	50.0	4142709.0	0.406786	N
7	IC 680-761417/2	100.0	55.823714	50.0	4448338.0	0.558237	Y



2/7/2023 5:57 PM

Calibration / 4-Hydroxy-4-methyl-2-pentanone

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

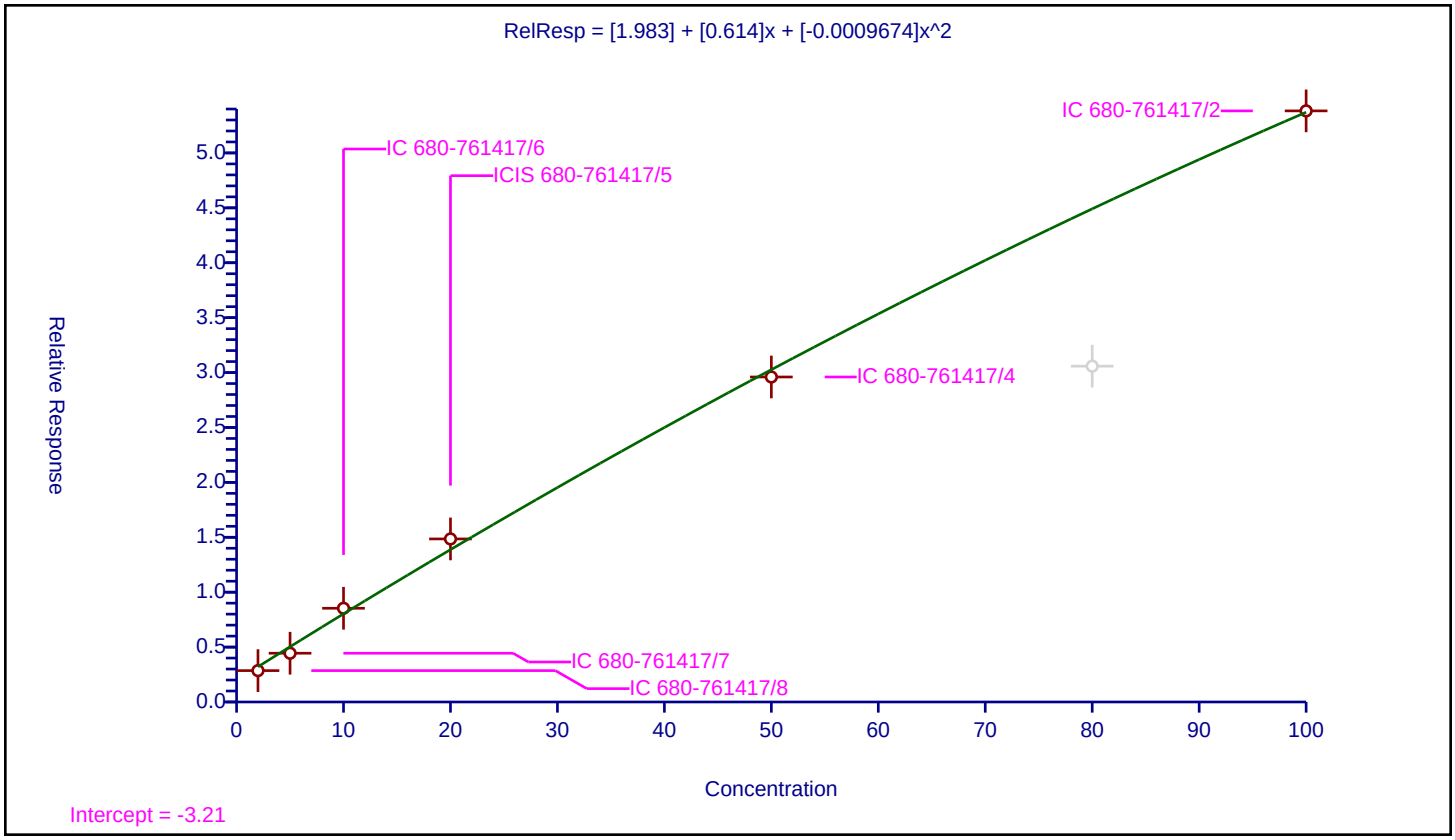
Curve Coefficients

Intercept:	1.983
Slope:	0.614
Second Order:	-0.0009674

Error Coefficients

Standard Error:	3350000
Relative Standard Error:	21.3
Correlation Coefficient:	0.997
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	2.856518	50.0	3775471.0	1.428259	Y
2	IC 680-761417/7	5.0	4.440094	50.0	4124530.0	0.888019	Y
3	IC 680-761417/6	10.0	8.535133	50.0	4072778.0	0.853513	Y
4	ICIS 680-761417/5	20.0	14.84856	50.0	4808813.0	0.742428	Y
5	IC 680-761417/4	50.0	29.596095	50.0	4760307.0	0.591922	Y
6	IC 680-761417/3	80.0	30.580944	50.0	4142709.0	0.382262	N
7	IC 680-761417/2	100.0	53.829262	50.0	4448338.0	0.538293	Y



2/7/2023 5:57 PM

Calibration / 2-Butoxyethanol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

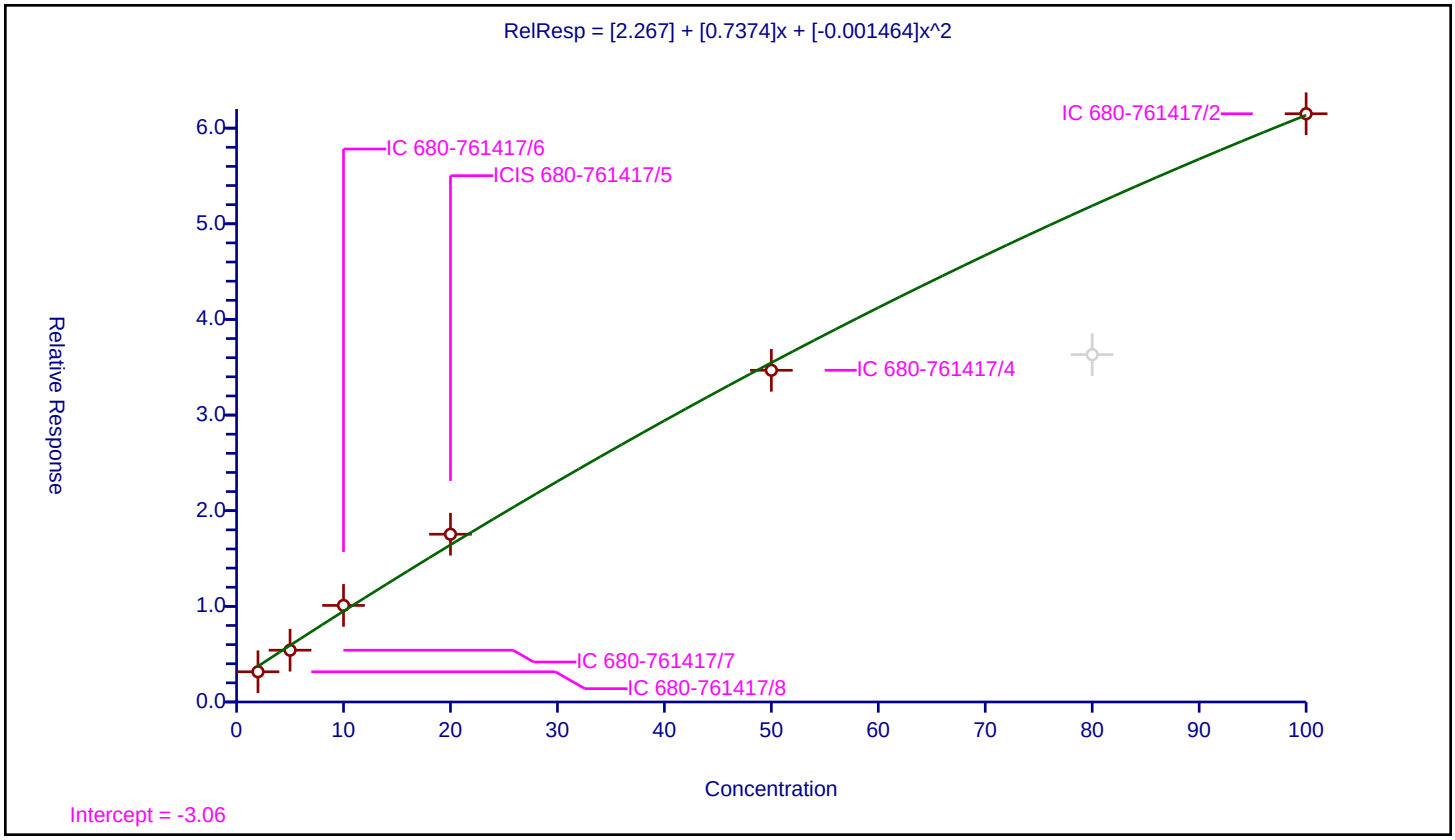
Curve Coefficients

Intercept:	2.267
Slope:	0.7374
Second Order:	-0.001464

Error Coefficients

Standard Error:	3860000
Relative Standard Error:	25.0
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.999

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	3.16138	50.0	3775471.0	1.58069	Y
2	IC 680-761417/7	5.0	5.415793	50.0	4124530.0	1.083159	Y
3	IC 680-761417/6	10.0	10.098635	50.0	4072778.0	1.009864	Y
4	ICIS 680-761417/5	20.0	17.540805	50.0	4808813.0	0.87704	Y
5	IC 680-761417/4	50.0	34.684318	50.0	4760307.0	0.693686	Y
6	IC 680-761417/3	80.0	36.320087	50.0	4142709.0	0.454001	N
7	IC 680-761417/2	100.0	61.506354	50.0	4448338.0	0.615064	Y



2/7/2023 5:57 PM

Calibration / Dipropylene Glycol Methyl Ether

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

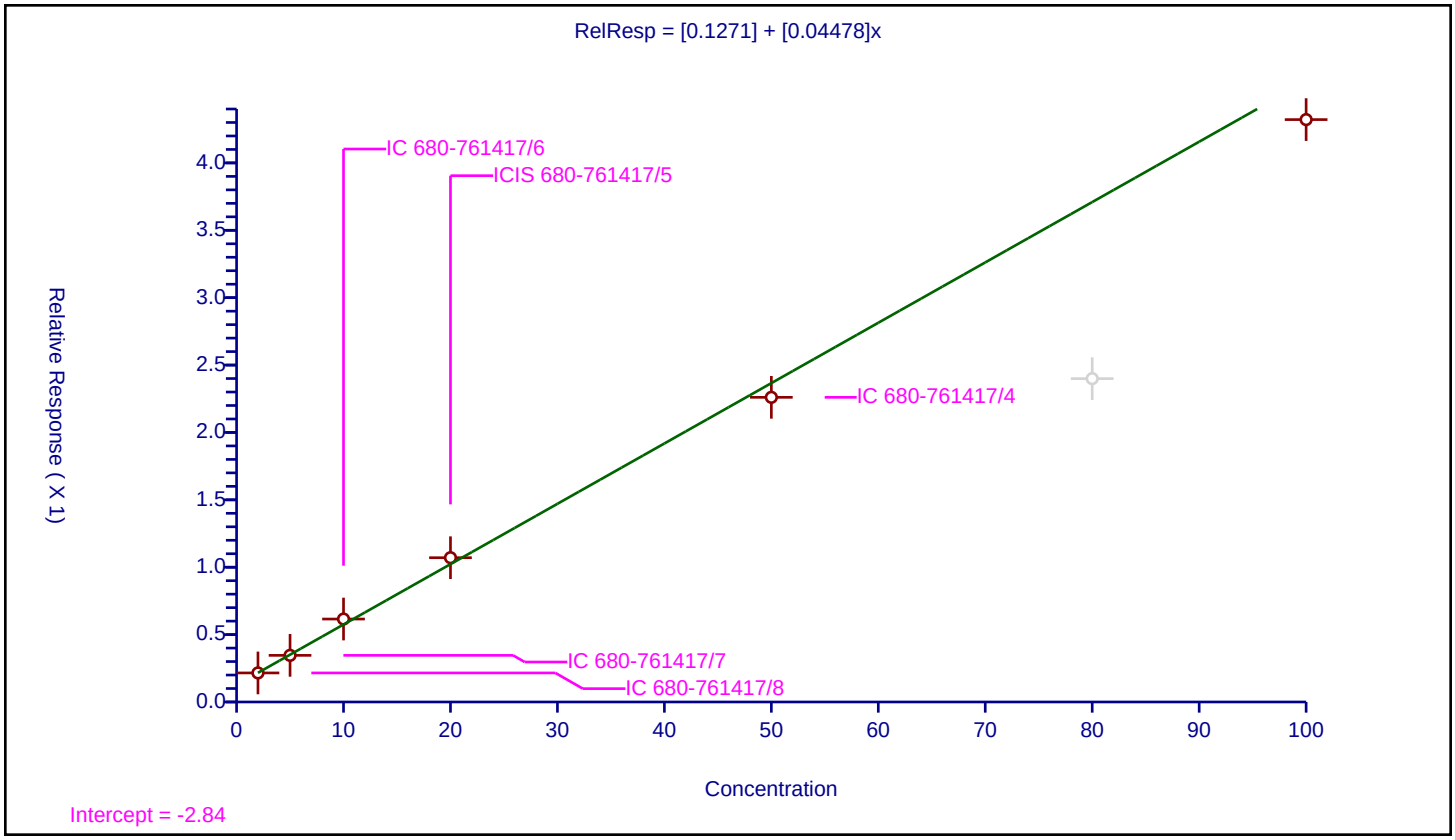
Curve Coefficients

Intercept:	0.1271
Slope:	0.04478

Error Coefficients

Standard Error:	228000
Relative Standard Error:	6.7
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	0.215642	50.0	3775471.0	0.107821	Y
2	IC 680-761417/7	5.0	0.345967	50.0	4124530.0	0.069193	Y
3	IC 680-761417/6	10.0	0.615501	50.0	4072778.0	0.06155	Y
4	ICIS 680-761417/5	20.0	1.070638	50.0	4808813.0	0.053532	Y
5	IC 680-761417/4	50.0	2.260674	50.0	4760307.0	0.045213	Y
6	IC 680-761417/3	80.0	2.399336	50.0	4142709.0	0.029992	N
7	IC 680-761417/2	100.0	4.321389	50.0	4448338.0	0.043214	Y



2/7/2023 5:57 PM

Calibration / Propylene glycol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

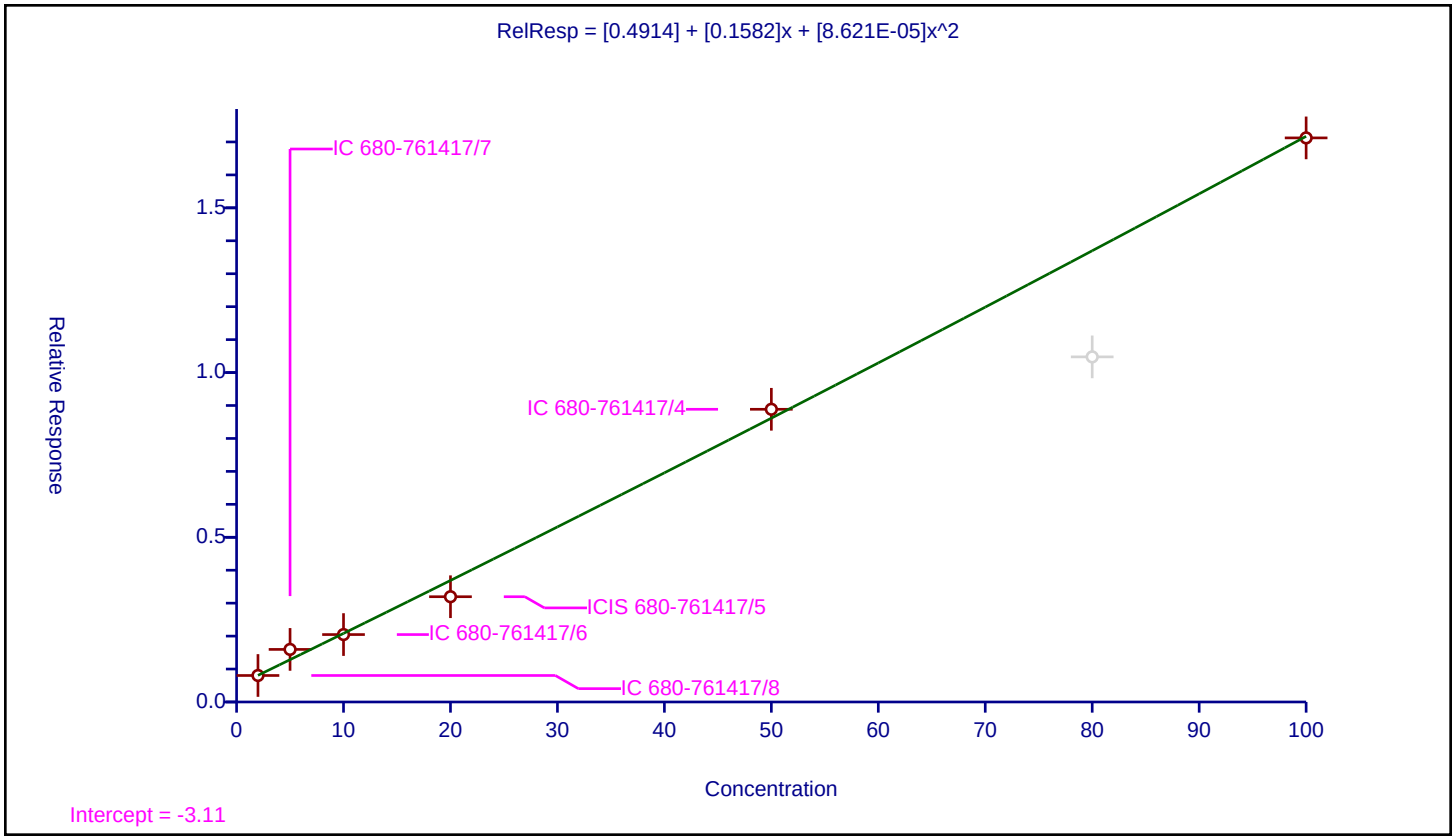
Curve Coefficients

Intercept:	0.4914
Slope:	0.1582
Second Order:	8.621E-05

Error Coefficients

Standard Error:	1030000
Relative Standard Error:	24.4
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	0.803886	50.0	3775471.0	0.401943	Y
2	IC 680-761417/7	5.0	1.595697	50.0	4124530.0	0.319139	Y
3	IC 680-761417/6	10.0	2.046858	50.0	4072778.0	0.204686	Y
4	ICIS 680-761417/5	20.0	3.195778	50.0	4808813.0	0.159789	Y
5	IC 680-761417/4	50.0	8.885624	50.0	4760307.0	0.177712	Y
6	IC 680-761417/3	80.0	10.476188	50.0	4142709.0	0.130952	N
7	IC 680-761417/2	100.0	17.123294	50.0	4448338.0	0.171233	Y



Calibration / Ethylene glycol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

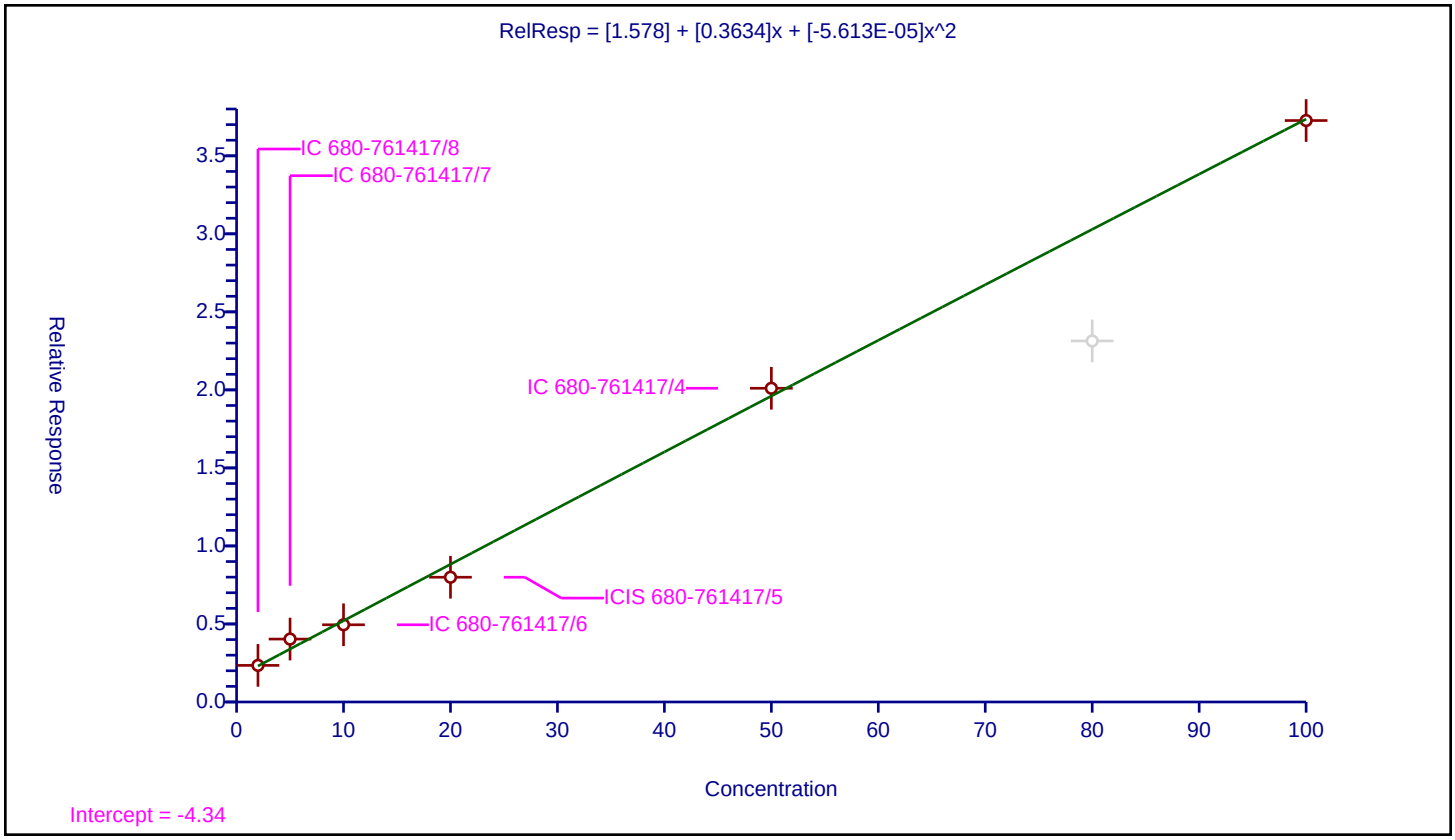
Curve Coefficients

Intercept:	1.578
Slope:	0.3634
Second Order:	-5.613E-05

Error Coefficients

Standard Error:	2280000
Relative Standard Error:	22.0
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	2.345111	50.0	3775471.0	1.172556	Y
2	IC 680-761417/7	5.0	4.031756	50.0	4124530.0	0.806351	Y
3	IC 680-761417/6	10.0	4.948465	50.0	4072778.0	0.494847	Y
4	ICIS 680-761417/5	20.0	7.995247	50.0	4808813.0	0.399762	Y
5	IC 680-761417/4	50.0	20.104355	50.0	4760307.0	0.402087	Y
6	IC 680-761417/3	80.0	23.135284	50.0	4142709.0	0.289191	N
7	IC 680-761417/2	100.0	37.262254	50.0	4448338.0	0.372623	Y



Calibration / 2-(2-Butoxyethoxy)ethanol

Curve Type:	Linear
Weighting:	Conc_Sq
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

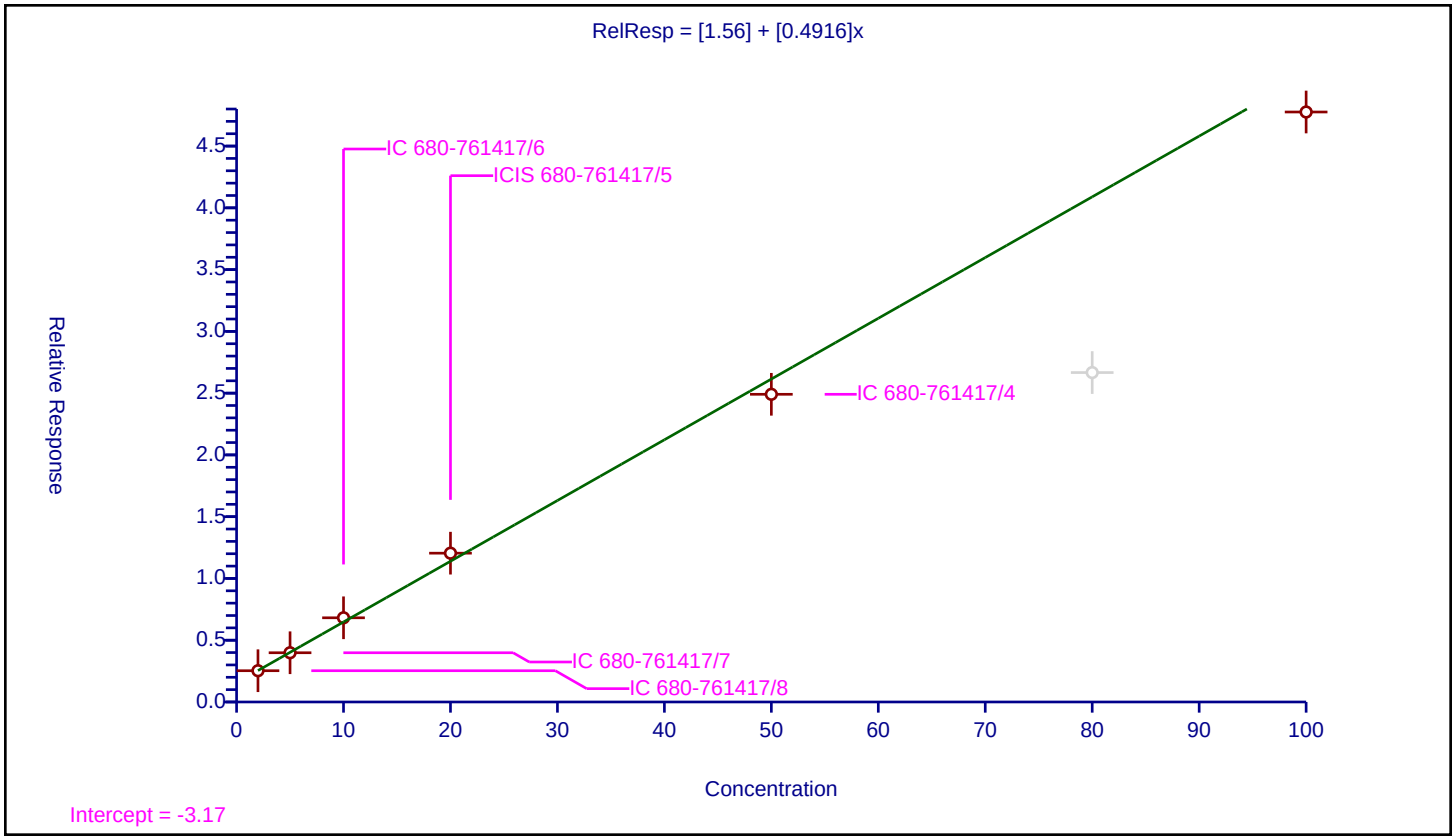
Curve Coefficients

Intercept:	1.56
Slope:	0.4916

Error Coefficients

Standard Error:	2520000
Relative Standard Error:	6.3
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.995

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	2.531287	50.0	3775471.0	1.265643	Y
2	IC 680-761417/7	5.0	3.986672	50.0	4124530.0	0.797334	Y
3	IC 680-761417/6	10.0	6.815115	50.0	4072778.0	0.681511	Y
4	ICIS 680-761417/5	20.0	12.046029	50.0	4808813.0	0.602301	Y
5	IC 680-761417/4	50.0	24.906765	50.0	4760307.0	0.498135	Y
6	IC 680-761417/3	80.0	26.666959	50.0	4142709.0	0.333337	N
7	IC 680-761417/2	100.0	47.758612	50.0	4448338.0	0.477586	Y



Calibration / 2,2'-Oxybisethanol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

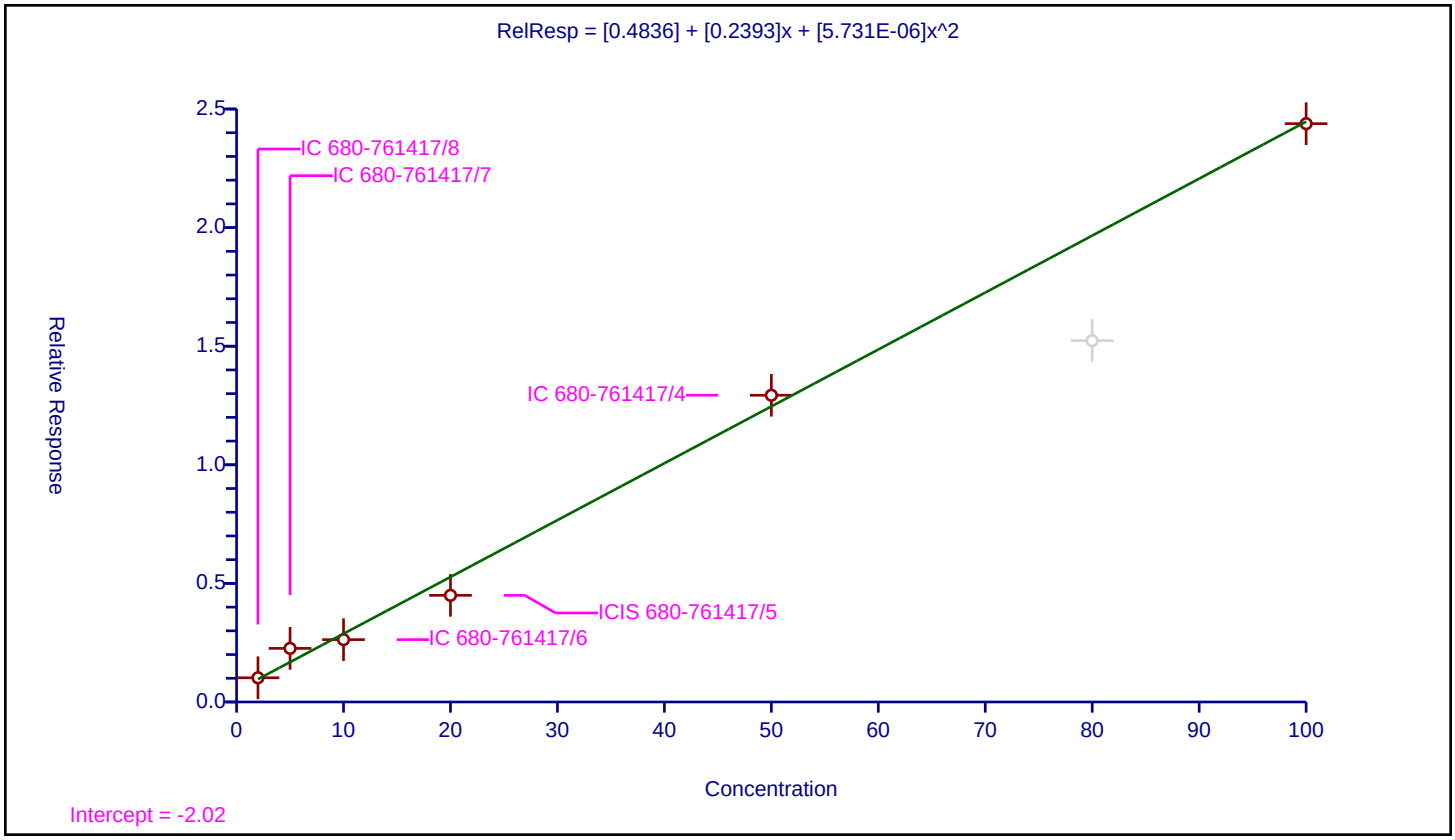
Curve Coefficients

Intercept:	0.4836
Slope:	0.2393
Second Order:	5.731E-06

Error Coefficients

Standard Error:	1470000
Relative Standard Error:	31.0
Correlation Coefficient:	0.995
Coefficient of Determination (Adjusted):	0.997

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	1.01978	50.0	3775471.0	0.50989	Y
2	IC 680-761417/7	5.0	2.260209	50.0	4124530.0	0.452042	Y
3	IC 680-761417/6	10.0	2.629483	50.0	4072778.0	0.262948	Y
4	ICIS 680-761417/5	20.0	4.49611	50.0	4808813.0	0.224805	Y
5	IC 680-761417/4	50.0	12.931845	50.0	4760307.0	0.258637	Y
6	IC 680-761417/3	80.0	15.233981	50.0	4142709.0	0.190425	N
7	IC 680-761417/2	100.0	24.382275	50.0	4448338.0	0.243823	Y



2/7/2023 5:57 PM

Calibration / Triethylene Glycol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

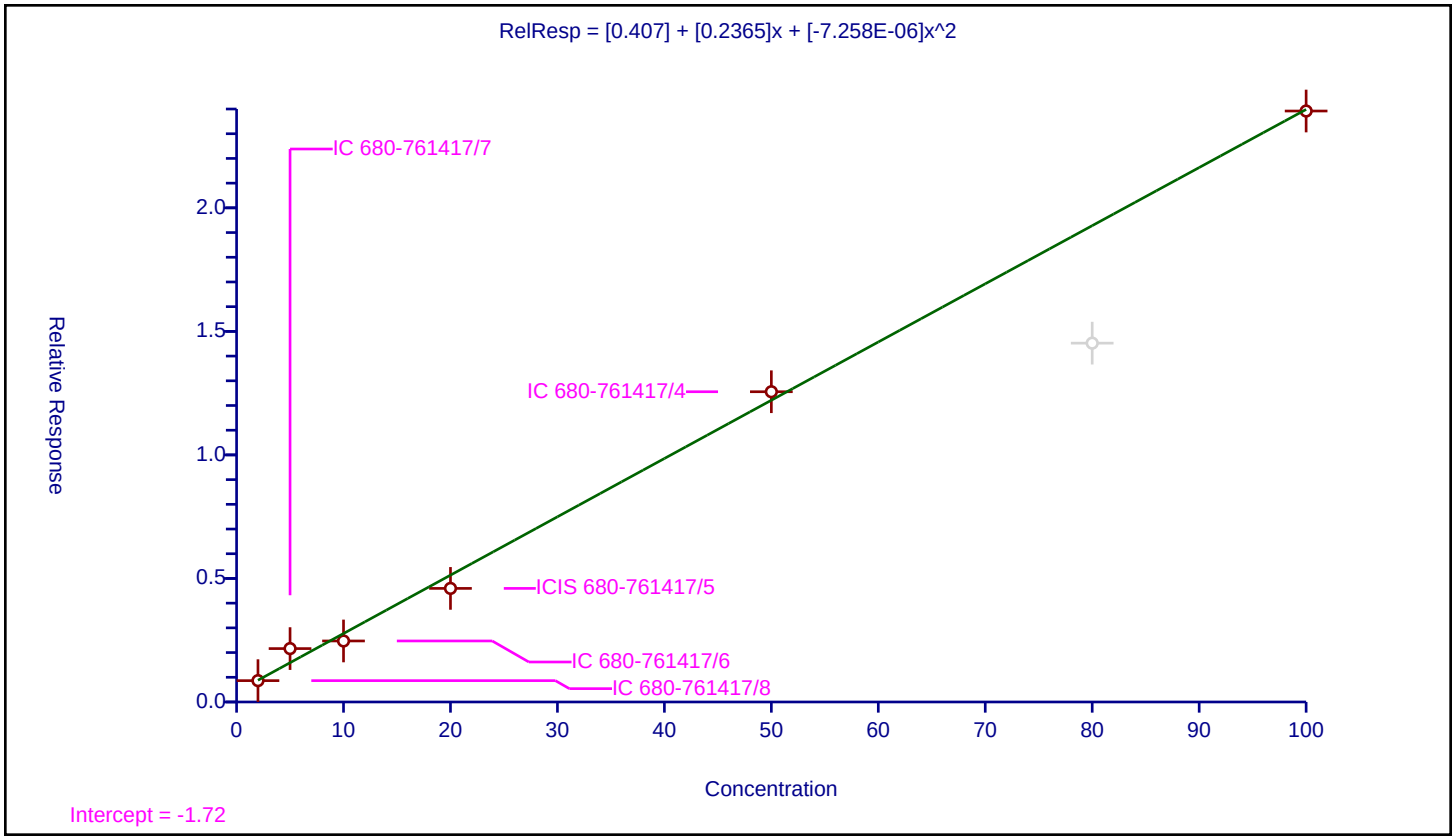
Curve Coefficients

Intercept:	0.407
Slope:	0.2365
Second Order:	-7.258E-06

Error Coefficients

Standard Error:	1440000
Relative Standard Error:	29.7
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	2.0	0.86425	50.0	3775471.0	0.432125	Y
2	IC 680-761417/7	5.0	2.161301	50.0	4124530.0	0.43226	Y
3	IC 680-761417/6	10.0	2.469445	50.0	4072778.0	0.246944	Y
4	ICIS 680-761417/5	20.0	4.597829	50.0	4808813.0	0.229891	Y
5	IC 680-761417/4	50.0	12.556911	50.0	4760307.0	0.251138	Y
6	IC 680-761417/3	80.0	14.524204	50.0	4142709.0	0.181553	N
7	IC 680-761417/2	100.0	23.919405	50.0	4448338.0	0.239194	Y



Calibration / Tetraethylene Glycol

Curve Type:	Quadratic
Weighting:	None
Origin:	None
Dependency:	Response
Calib Mode:	ISTD
Response Base:	AREA
RF Rounding:	0

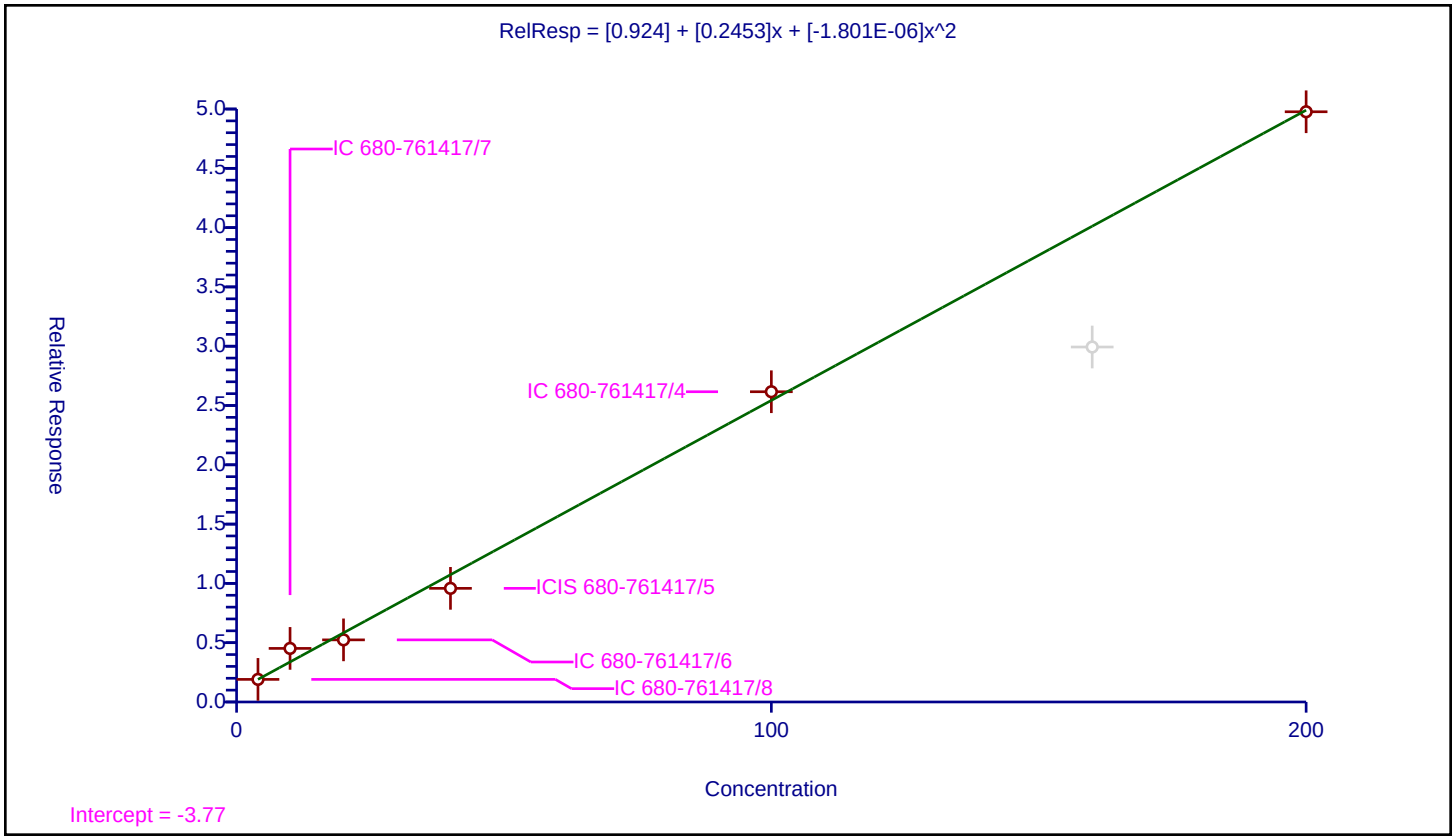
Curve Coefficients

Intercept:	0.924
Slope:	0.2453
Second Order:	-1.801E-06

Error Coefficients

Standard Error:	3000000
Relative Standard Error:	28.6
Correlation Coefficient:	0.996
Coefficient of Determination (Adjusted):	0.998

ID	Level	Concentration	Rel. Resp.	IS Amount	IS Response	RRF	Used
1	IC 680-761417/8	4.0	1.904637	50.0	3775471.0	0.476159	Y
2	IC 680-761417/7	10.0	4.518236	50.0	4124530.0	0.451824	Y
3	IC 680-761417/6	20.0	5.238808	50.0	4072778.0	0.26194	Y
4	ICIS 680-761417/5	40.0	9.58224	50.0	4808813.0	0.239556	Y
5	IC 680-761417/4	100.0	26.161674	50.0	4760307.0	0.261617	Y
6	IC 680-761417/3	160.0	29.931936	50.0	4142709.0	0.187075	N
7	IC 680-761417/2	200.0	49.768397	50.0	4448338.0	0.248842	Y



2/7/2023 5:57 PM

FORM VII
GC SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: ICV 680-761417/9 Calibration Date: 01/31/2023 18:53

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GA31016.D Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethanol, 2-propoxy	Qua		0.7205		19.4	20.0	-2.9	20.0
4-Hydroxy-4-methyl-2-pentanone	Qua		0.6731		19.3	20.0	-3.6	20.0
2-Butoxyethanol	Qua		0.8216		20.0	20.0	0.0	20.0
Dipropylene Glycol Methyl Ether	Lin2		0.0498		19.4	20.0	-3.0	20.0
Propylene glycol	Qua		0.1959		21.4	20.0	7.0	20.0
Ethylene glycol	Qua		0.4941		22.9	20.0	14.7	20.0
2-(2-Butoxyethoxy)ethanol	Lin2		0.5623		19.7	20.0	-1.5	20.0
2,2'-Oxybisethanol	Qua		0.2670		20.3	20.0	1.4	20.0
Triethylene Glycol	Qua		0.2717		21.3	20.0	6.4	20.0
Tetraethylene Glycol	Qua		0.2784		41.7	40.0	4.1	20.0

FORM VII
GC SEMI VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: ICV 680-761417/9 Calibration Date: 01/31/2023 18:53

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GA31016.D

Analyte	RT	RT WINDOW	
		FROM	TO
Ethanol, 2-propoxy	3.11	3.05	3.18
4-Hydroxy-4-methyl-2-pentanone	3.70	3.63	3.78
2-Butoxyethanol	4.02	3.94	4.10
Dipropylene Glycol Methyl Ether	5.45	5.34	5.56
Propylene glycol	6.61	6.47	6.73
Ethylene glycol	6.85	6.72	7.00
2-(2-Butoxyethoxy)ethanol	8.75	8.57	8.92
2,2'-Oxybisethanol	9.74	9.54	9.93
Triethylene Glycol	10.75	10.54	10.97
Tetraethylene Glycol	12.01	11.77	12.25

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31016.D
Lims ID: icv gly
Client ID:
Sample Type: CCV
Inject. Date: 31-Jan-2023 18:53:46 ALS Bottle#: 0 Worklist Smp#: 9
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083575-009
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 01-Feb-2023 12:29:57 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1622

First Level Reviewer: SWK1 Date: 01-Feb-2023 12:25:23

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.109	3.115	-0.006	1254164	20.0	19.4	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.699	3.705	-0.006	1171657	20.0	19.3	
3 2-Butoxyethanol							
	4.016	4.020	-0.004	1430145	20.0	20.0	
* 4 n-Heptyl Alcohol							
	4.493	4.493	0.000	4351971	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.446	5.450	-0.004	86706	20.0	19.4	
6 Propylene glycol							
	6.606	6.602	0.004	340962	20.0	21.4	
7 Ethylene glycol							
	6.854	6.859	-0.005	860184	20.0	22.9	
8 2-(2-Butoxyethoxy)ethanol							
	8.748	8.749	-0.001	978761	20.0	19.7	
9 2,2'-Oxybisethanol							
	9.736	9.735	0.001	464740	20.0	20.3	
10 Triethylene Glycol							
	10.751	10.751	0.000	473008	20.0	21.3	
11 Tetraethylene Glycol							
	12.008	12.009	-0.001	969331	40.0	41.7	

QC Flag Legend
Processing Flags

Reagents:

SG_GlyICV_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 01-Feb-2023 12:29:57 Chrom Revision: 2.3 28-Jan-2023 14:03:14

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31016.D

Injection Date: 31-Jan-2023 18:53:46 Instrument ID: CVGG2 Operator ID:

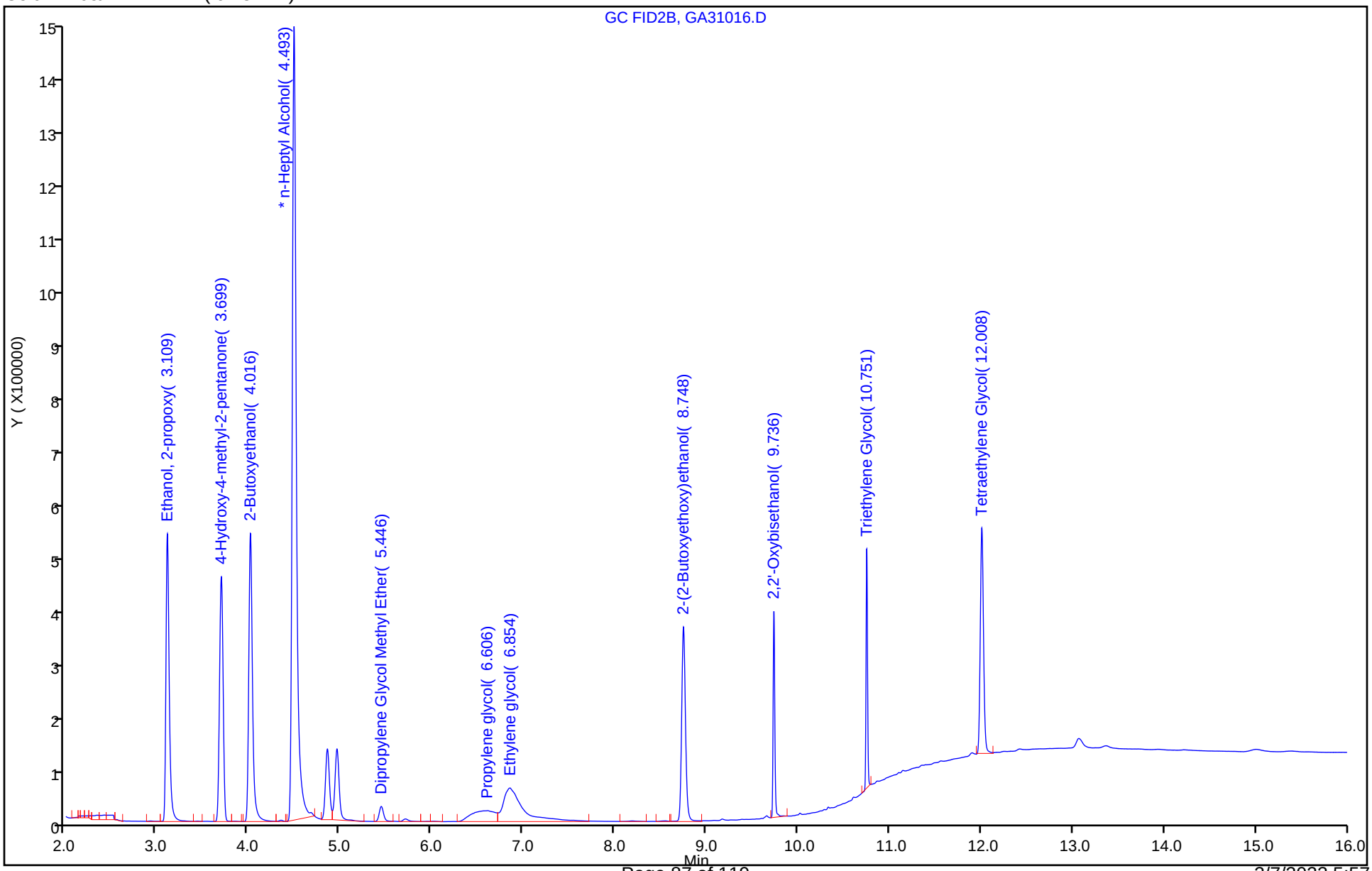
Lims ID: icv gly Worklist Smp#: 9

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

FORM VII
GC SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: CCVIS 680-762138/6 Calibration Date: 02/06/2023 15:24

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GB06006.D Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethanol, 2-propoxy	Qua		0.6470		17.1	20.0	-14.7	20.0
4-Hydroxy-4-methyl-2-pentanone	Qua		0.6233		17.6	20.0	-12.2	20.0
2-Butoxyethanol	Qua		0.7153		16.9	20.0	-15.5	20.0
Dipropylene Glycol Methyl Ether	Lin2		0.0469		18.1	20.0	-9.4	20.0
Propylene glycol	Qua		0.1877		20.4	20.0	2.0	20.0
Ethylene glycol	Qua		0.3785		16.5	20.0	-17.3	20.0
2-(2-Butoxyethoxy)ethanol	Lin2		0.5327		18.5	20.0	-7.5	20.0
2,2'-Oxybisethanol	Qua		0.2627		19.9	20.0	-0.4	20.0
Triethylene Glycol	Qua		0.2572		20.0	20.0	0.2	20.0
Tetraethylene Glycol	Qua		0.2685		40.0	40.0	0.1	20.0

FORM VII
GC SEMI VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: CCVIS 680-762138/6 Calibration Date: 02/06/2023 15:24

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GB06006.D

Analyte	RT	RT WINDOW	
		FROM	TO
Ethanol, 2-propoxy	3.11	3.04	3.17
4-Hydroxy-4-methyl-2-pentanone	3.70	3.62	3.77
2-Butoxyethanol	4.01	3.93	4.09
Dipropylene Glycol Methyl Ether	5.44	5.33	5.55
Propylene glycol	6.60	6.46	6.73
Ethylene glycol	6.84	6.71	6.98
2-(2-Butoxyethoxy)ethanol	8.74	8.57	8.92
2,2'-Oxybisethanol	9.73	9.54	9.93
Triethylene Glycol	10.75	10.54	10.97
Tetraethylene Glycol	12.01	11.77	12.25

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06006.D
Lims ID: ccvis
Client ID:
Sample Type: CCVIS
Inject. Date: 06-Feb-2023 15:24:02 ALS Bottle#: 0 Worklist Smp#: 6
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083679-006
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 07-Feb-2023 11:26:08 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1635

First Level Reviewer: SK9U Date: 06-Feb-2023 19:02:11

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.106	3.106	0.000	1222943	20.0	17.1	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.696	3.696	0.000	1178181	20.0	17.6	
3 2-Butoxyethanol							
	4.012	4.012	0.000	1352065	20.0	16.9	
* 4 n-Heptyl Alcohol							
	4.489	4.489	0.000	4725730	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.440	5.440	0.000	88681	20.0	18.1	
6 Propylene glycol							M
	6.596	6.596	0.000	354882	20.0	20.4	M
7 Ethylene glycol							
	6.842	6.842	0.000	715558	20.0	16.5	
8 2-(2-Butoxyethoxy)ethanol							
	8.742	8.742	0.000	1006894	20.0	18.5	
9 2,2'-Oxybisethanol							
	9.734	9.734	0.000	496530	20.0	19.9	
10 Triethylene Glycol							
	10.750	10.750	0.000	486134	20.0	20.0	
11 Tetraethylene Glycol							
	12.005	12.005	0.000	1015155	40.0	40.0	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 07-Feb-2023 11:26:09 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06006.D

Injection Date: 06-Feb-2023 15:24:02 Instrument ID: CVGG2 Operator ID:

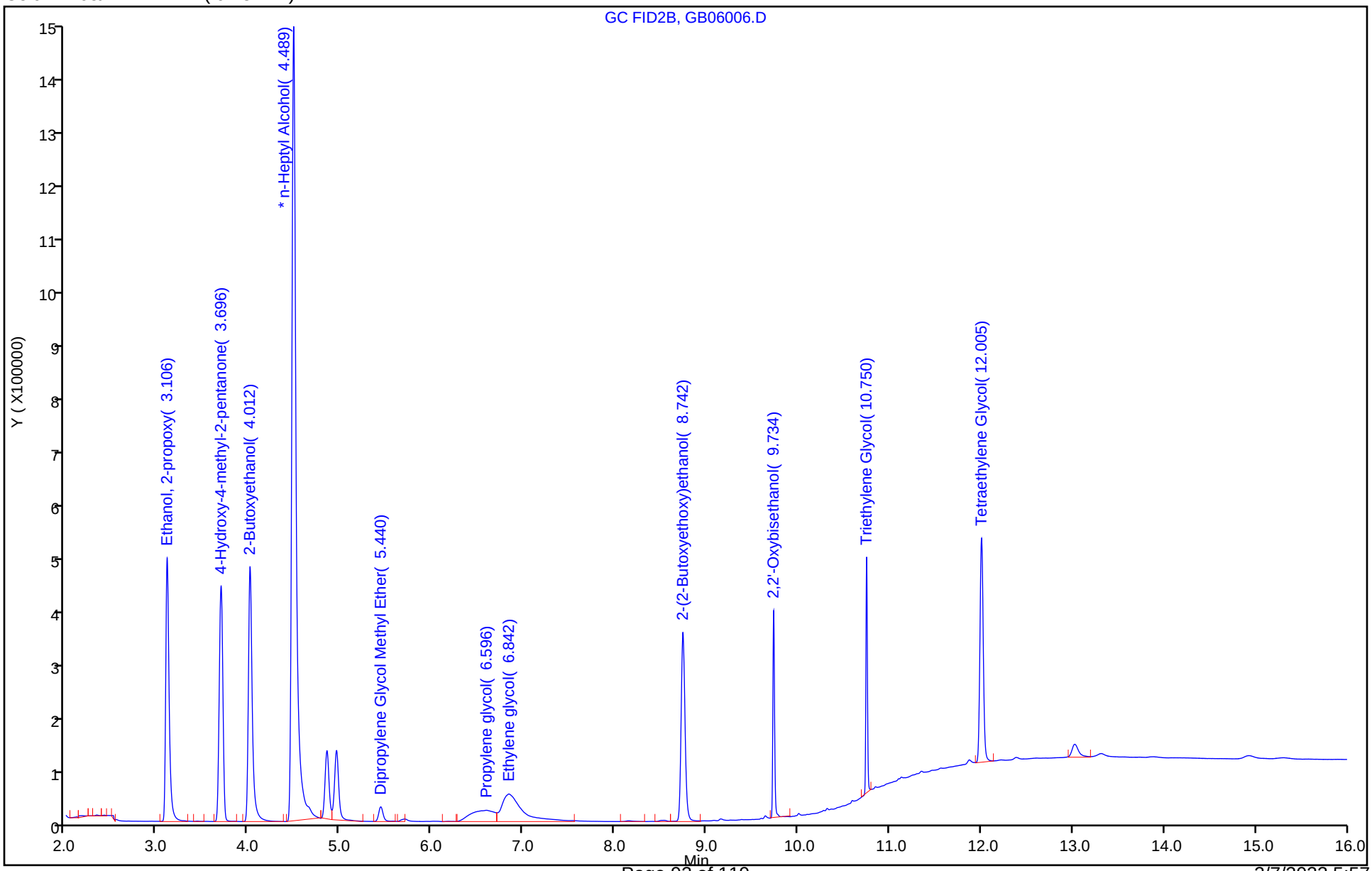
Lims ID: ccvis Worklist Smp#: 6

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

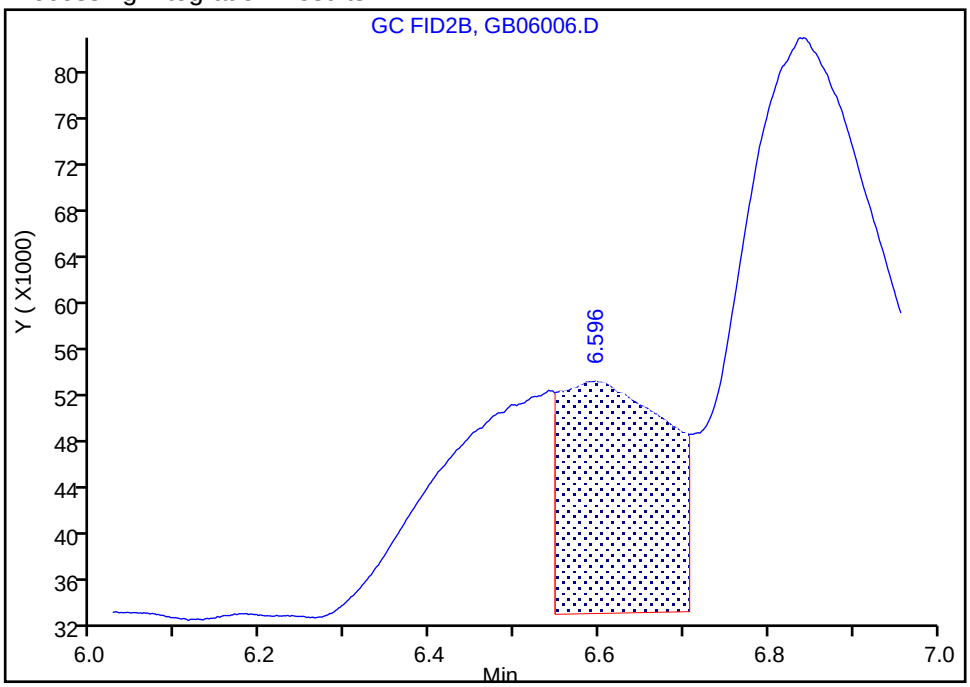
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06006.D				
Injection Date:	06-Feb-2023 15:24:02	Instrument ID:	CVGG2		
Lims ID:	ccvis				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	6
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

6 Propylene glycol, CAS: 57-55-6

Signal: 1

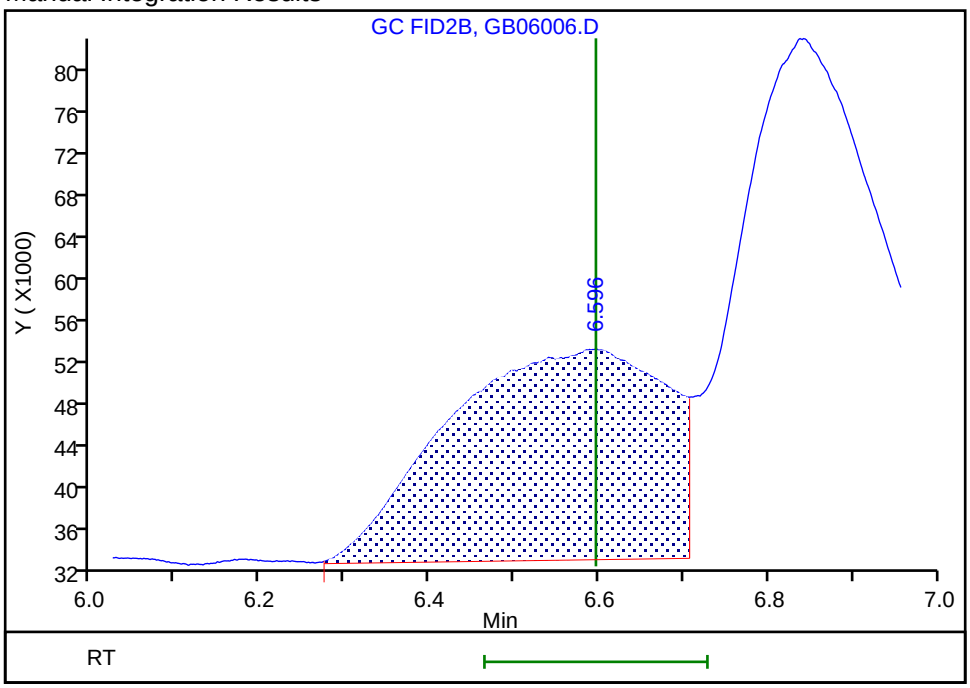
Processing Integration Results

RT: 6.60
Area: 171881
Amount: 8.352226
Amount Units: ug/ml



Manual Integration Results

RT: 6.60
Area: 354882
Amount: 20.404023
Amount Units: ug/ml



Reviewer: SK9U, 06-Feb-2023 19:02:07

Audit Action: Manually Integrated Audit Reason: Incomplete Integration

FORM VII
GC SEMI VOA CONTINUING CALIBRATION DATA

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: CCV 680-762138/23 Calibration Date: 02/06/2023 21:58

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GB06023.D Conc. Units: mg/L

ANALYTE	CURVE TYPE	AVE RRF	RRF	MIN RRF	CALC AMOUNT	SPIKE AMOUNT	%D	MAX %D
Ethanol, 2-propoxy	Qua		0.7379		20.0	20.0	-0.0	20.0
4-Hydroxy-4-methyl-2-pentanone	Qua		0.7688		22.6	20.0	13.1	20.0
2-Butoxyethanol	Qua		0.7746		18.6	20.0	-6.9	20.0
Dipropylene Glycol Methyl Ether	Lin2		0.0687		27.8	20.0	39.2*	20.0
Propylene glycol	Qua		0.3109		35.5	20.0	77.6*	20.0
Ethylene glycol	Qua		0.6764		33.1	20.0	65.3*	20.0
2-(2-Butoxyethoxy)ethanol	Lin2		0.7606		27.8	20.0	38.9*	20.0
2,2'-Oxybisethanol	Qua		0.3159		24.4	20.0	21.8*	20.0
Triethylene Glycol	Qua		0.1755		13.1	20.0	-34.4*	20.0
Tetraethylene Glycol	Qua		0.0543		5.09	40.0	-87.3*	20.0

FORM VII
GC SEMI VOA CONTINUING CALIBRATION RETENTION TIME SUMMARY

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Lab Sample ID: CCV 680-762138/23 Calibration Date: 02/06/2023 21:58

Instrument ID: CVGG2 Calib Start Date: 01/31/2023 16:10

GC Column: J&W DB WAX ID: 0.45(mm) Calib End Date: 01/31/2023 18:30

Lab File ID: GB06023.D

Analyte	RT	RT WINDOW	
		FROM	TO
Ethanol, 2-propoxy	3.11	3.05	3.17
4-Hydroxy-4-methyl-2-pentanone	3.70	3.63	3.77
2-Butoxyethanol	4.02	3.94	4.10
Dipropylene Glycol Methyl Ether	5.45	5.34	5.55
Propylene glycol	6.58	6.45	6.72
Ethylene glycol	6.85	6.71	6.99
2-(2-Butoxyethoxy)ethanol	8.74	8.57	8.92
2,2'-Oxybisethanol	9.74	9.54	9.93
Triethylene Glycol	10.76	10.54	10.97
Tetraethylene Glycol	12.03	11.79	12.27

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06023.D
Lims ID: ccv g4
Client ID:
Sample Type: CCV
Inject. Date: 06-Feb-2023 21:58:41 ALS Bottle#: 0 Worklist Smp#: 23
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083679-023
Operator ID: Instrument ID: CVGG2
Sublist: chrom-8015_GLY_VGG*sub2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 07-Feb-2023 11:26:10 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1635

First Level Reviewer: SWK1 Date: 07-Feb-2023 11:25:04

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.111	3.111	0.000	1059477	20.0	20.0	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.700	3.700	0.000	1103908	20.0	22.6	
3 2-Butoxyethanol							
	4.015	4.015	0.000	1112241	20.0	18.6	
* 4 n-Heptyl Alcohol							M
	4.489	4.489	0.000	3589610	50.0	50.0	M
5 Dipropylene Glycol Methyl Ether							
	5.445	5.445	0.000	98617	20.0	27.8	
6 Propylene glycol							
	6.584	6.584	0.000	446443	20.0	35.5	
7 Ethylene glycol							
	6.850	6.850	0.000	971173	20.0	33.1	
8 2-(2-Butoxyethoxy)ethanol							
	8.742	8.742	0.000	1092172	20.0	27.8	
9 2,2'-Oxybisethanol							
	9.738	9.738	0.000	453512	20.0	24.4	
10 Triethylene Glycol							
	10.755	10.755	0.000	252037	20.0	13.1	
11 Tetraethylene Glycol							
	12.025	12.025	0.000	155977	40.0	5.09	

QC Flag Legend
Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 07-Feb-2023 11:26:10 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06023.D

Injection Date: 06-Feb-2023 21:58:41 Instrument ID: CVGG2 Operator ID:

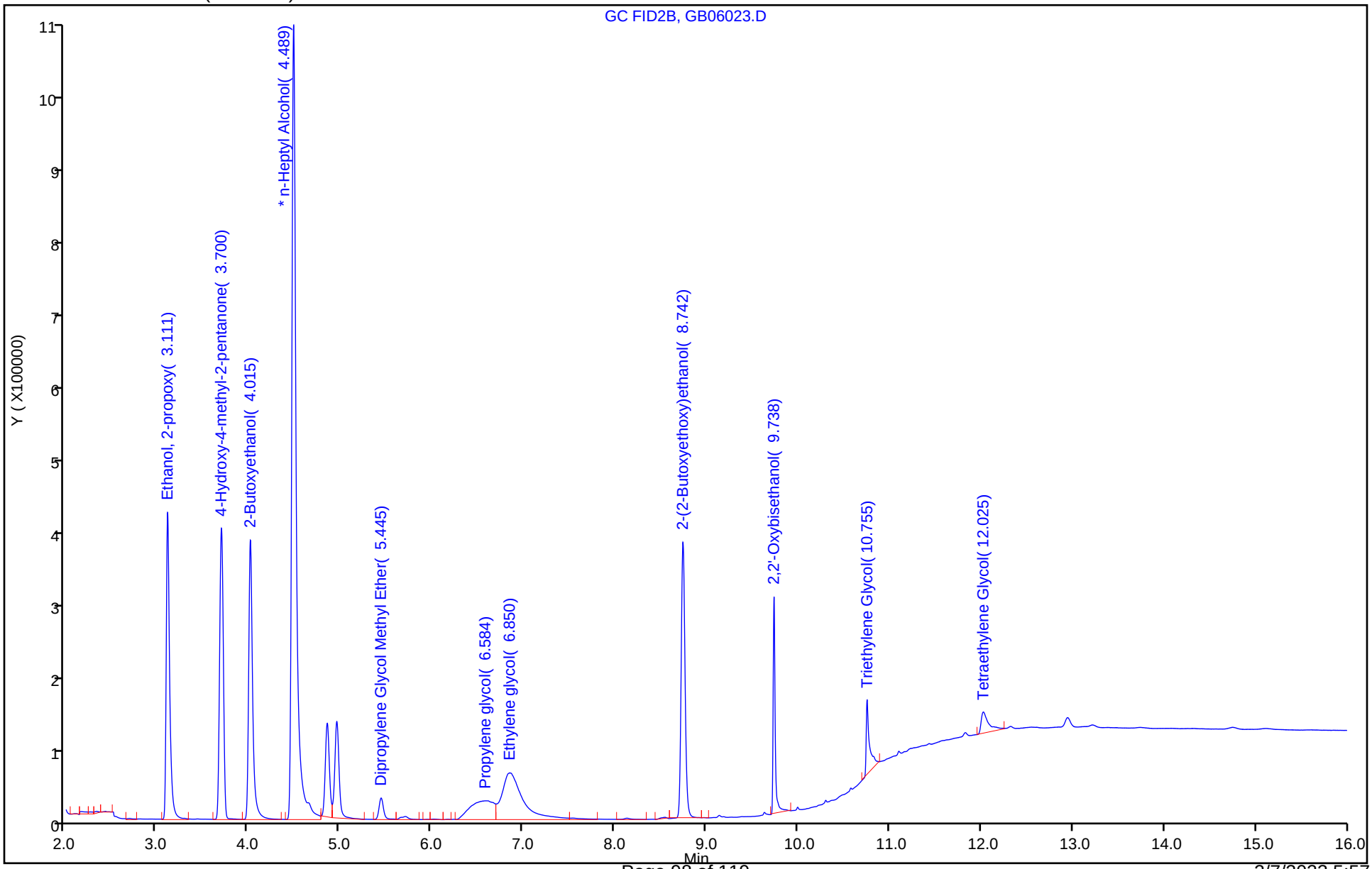
Lims ID: ccv g4 Worklist Smp#: 23

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

Manual Integration/User Assign Peak Report

Eurofins Savannah

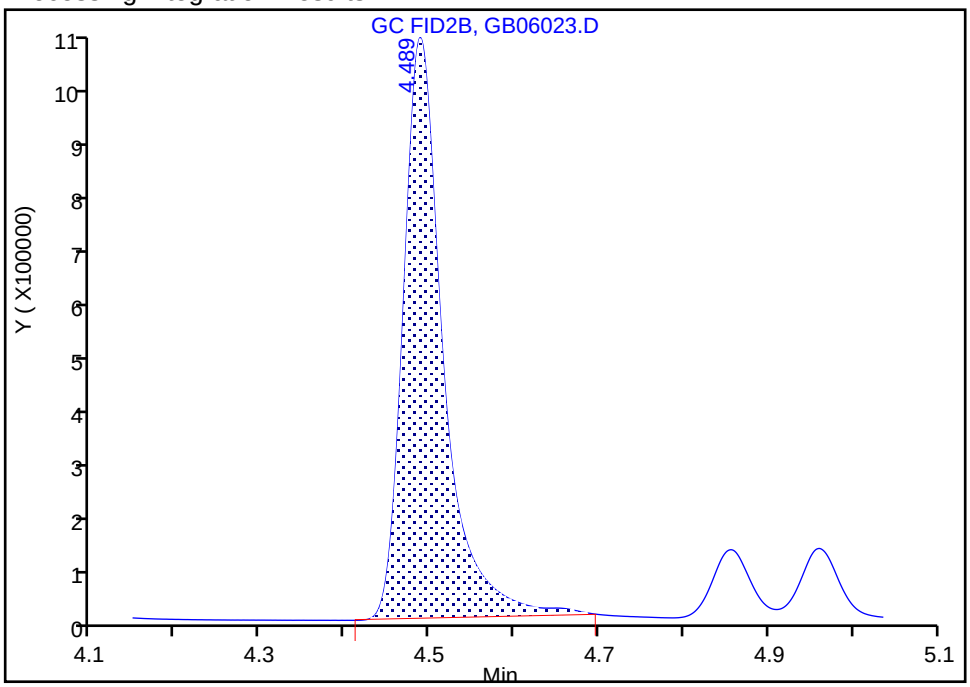
Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06023.D				
Injection Date:	06-Feb-2023 21:58:41	Instrument ID:	CVGG2		
Lims ID:	ccv g4				
Client ID:					
Operator ID:		ALS Bottle#:	0	Worklist Smp#:	23
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		
Column:	J&W DB WAX (0.45 mm)	Detector	GC FID2B		

* 4 n-Heptyl Alcohol, CAS: 111-70-6

Signal: 1

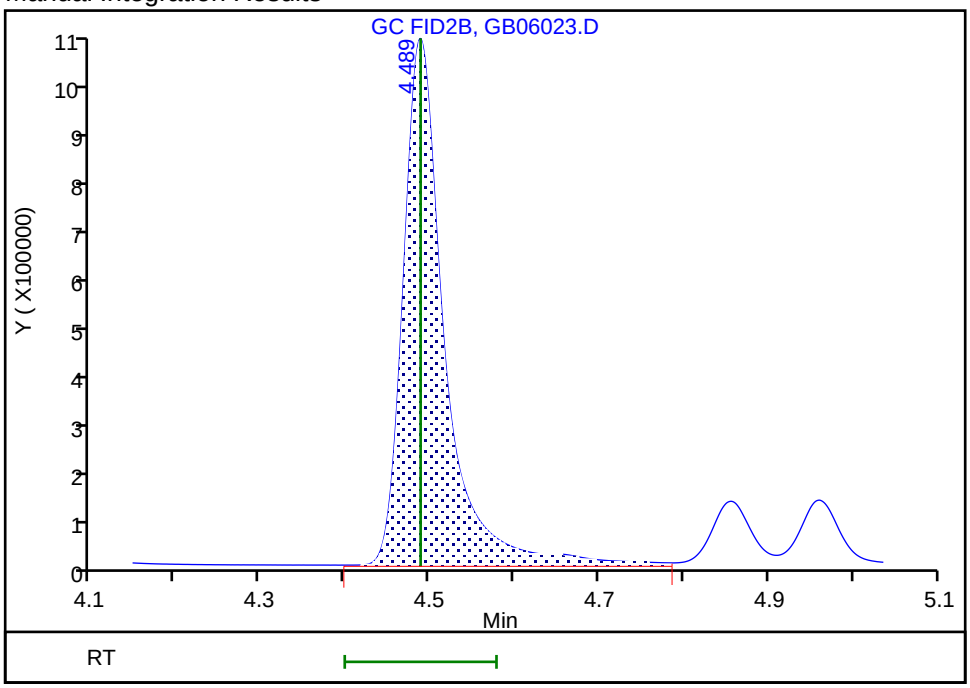
Processing Integration Results

RT: 4.49
Area: 3453274
Amount: 50.000000
Amount Units: ug/ml



Manual Integration Results

RT: 4.49
Area: 3589610
Amount: 50.000000
Amount Units: ug/ml



Reviewer: SWK1, 07-Feb-2023 11:24:51

Audit Action: Manually Integrated Audit Reason: Baseline Smoothing

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Savannah
Job No.: 580-122948-1
SDG No.:
Client Sample ID:
Lab Sample ID: MB 680-762138/10
Matrix: Water
Lab File ID: GB06010.D
Analysis Method: 8015C GLY
Date Collected:
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 02/06/2023 16:57
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: J&W DB WAX ID: 0.45(mm)
% Moisture: % Solids:
GPC Cleanup:(Y/N) N
Cleanup Factor:
Analysis Batch No.: 762138
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
112-34-5	2-(2-Butoxyethoxy)ethanol	3.0	U M	5.0	3.0	1.1

Eurofins Savannah
Target Compound Quantitation Report

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06010.D				
Lims ID:	mb				
Client ID:					
Sample Type:	MB				
Inject. Date:	06-Feb-2023 16:57:21	ALS Bottle#:	0	Worklist Smp#:	10
Injection Vol:	1.0 ul	Dil. Factor:	1.0000		
Sample Info:	680-0083679-010				
Operator ID:		Instrument ID:	CVGG2		

Method:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m		
Limit Group:	8015C_DAI		
Last Update:	07-Feb-2023 11:25:42	Calib Date:	31-Jan-2023 18:30:20
Integrator:	Falcon		
Quant Method:	Internal Standard	Quant By:	Initial Calibration
Last ICal File:	\\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D		

Column 1 :	J&W DB WAX (0.45 mm)	Det: GC FID2B
Process Host:	CTX1635	

First Level Reviewer: SWK1 Date: 07-Feb-2023 11:23:00

RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
* 4 n-Heptyl Alcohol						
4.482	4.489	-0.007	6075285	50.0	50.0	

QC Flag Legend

Processing Flags

Reagents:

SG_GLY_ISTD_00105 Amount Added: 10.00 Units: uL Run Reagent

Report Date: 07-Feb-2023 11:26:03 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06010.D

Injection Date: 06-Feb-2023 16:57:21 Instrument ID: CVGG2 Operator ID:

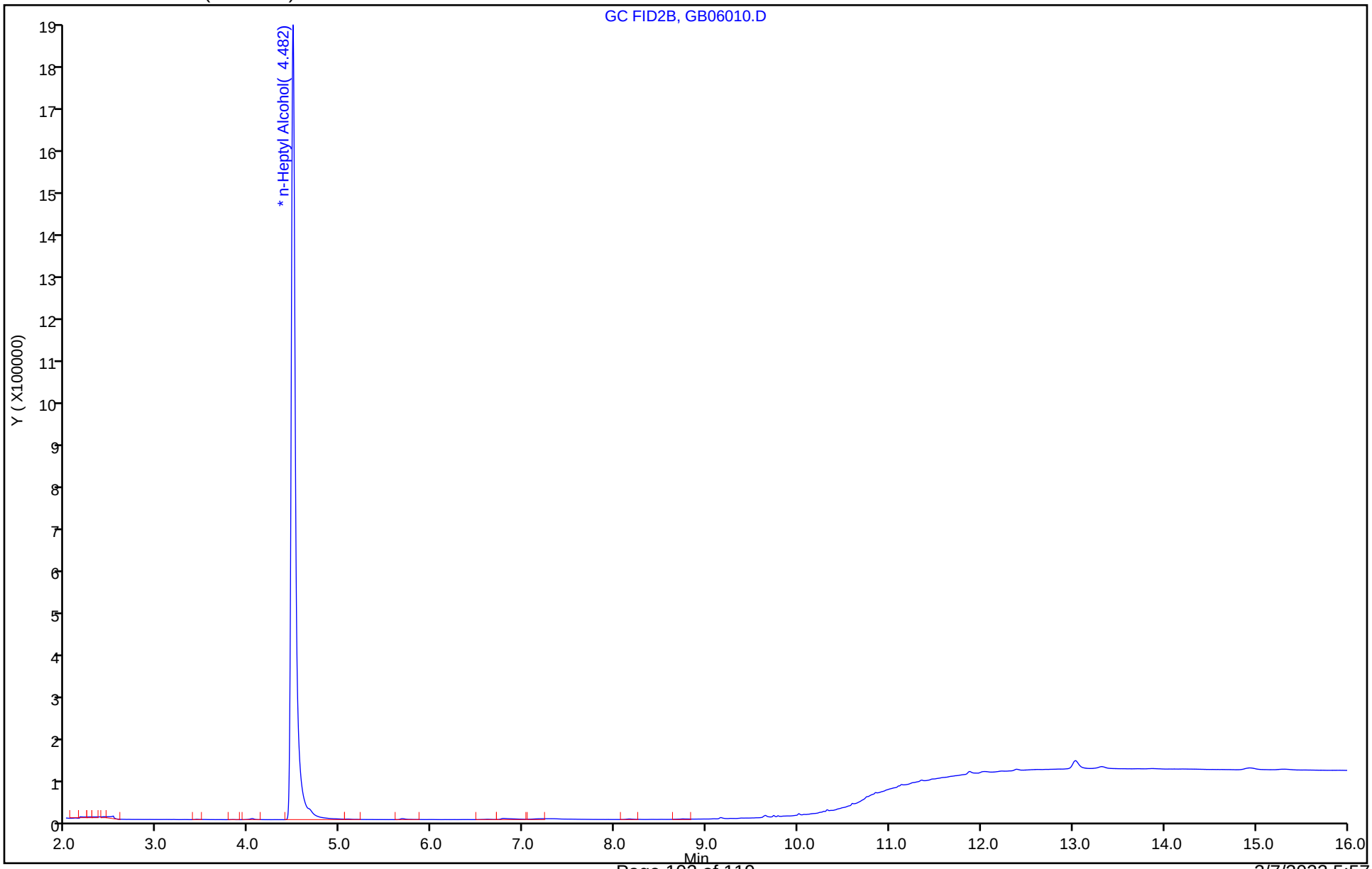
Lims ID: mb Worklist Smp#: 10

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Savannah
Job No.: 580-122948-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCS 680-762138/1006
Matrix: Water
Lab File ID: -GB06006-LCS.d
Analysis Method: 8015C GLY
Date Collected:
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 02/06/2023 15:24
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: J&W DB WAX ID: 0.45(mm)
% Moisture: % Solids:
GPC Cleanup:(Y/N) N
Cleanup Factor:
Analysis Batch No.: 762138
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
112-34-5	2-(2-Butoxyethoxy)ethanol	18.5		5.0	3.0	1.1

Eurofins Environment Testing America
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\-GB06006-LCS.d
Lims ID: LCS
Client ID:
Sample Type: LCS
Inject. Date: 06-Feb-2023 15:24:02 ALS Bottle#: 0 Worklist Smp#: 1006
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083679-006
Operator ID: Instrument ID: CVGG2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 07-Feb-2023 11:26:08 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1635

First Level Reviewer: SK9U Date: 06-Feb-2023 19:02:11

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.106	3.106	0.000	1222943	20.0	17.1	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.696	3.696	0.000	1178181	20.0	17.6	
3 2-Butoxyethanol							
	4.012	4.012	0.000	1352065	20.0	16.9	
* 4 n-Heptyl Alcohol							
	4.489	4.489	0.000	4725730	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.440	5.440	0.000	88681	20.0	18.1	
6 Propylene glycol							M
	6.596	6.596	0.000	354882	20.0	20.4	M
7 Ethylene glycol							
	6.842	6.842	0.000	715558	20.0	16.5	
8 2-(2-Butoxyethoxy)ethanol							
	8.742	8.742	0.000	1006894	20.0	18.5	
9 2,2'-Oxybisethanol							
	9.734	9.734	0.000	496530	20.0	19.9	
10 Triethylene Glycol							
	10.750	10.750	0.000	486134	20.0	20.0	
11 Tetraethylene Glycol							
	12.005	12.005	0.000	1015155	40.0	40.0	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

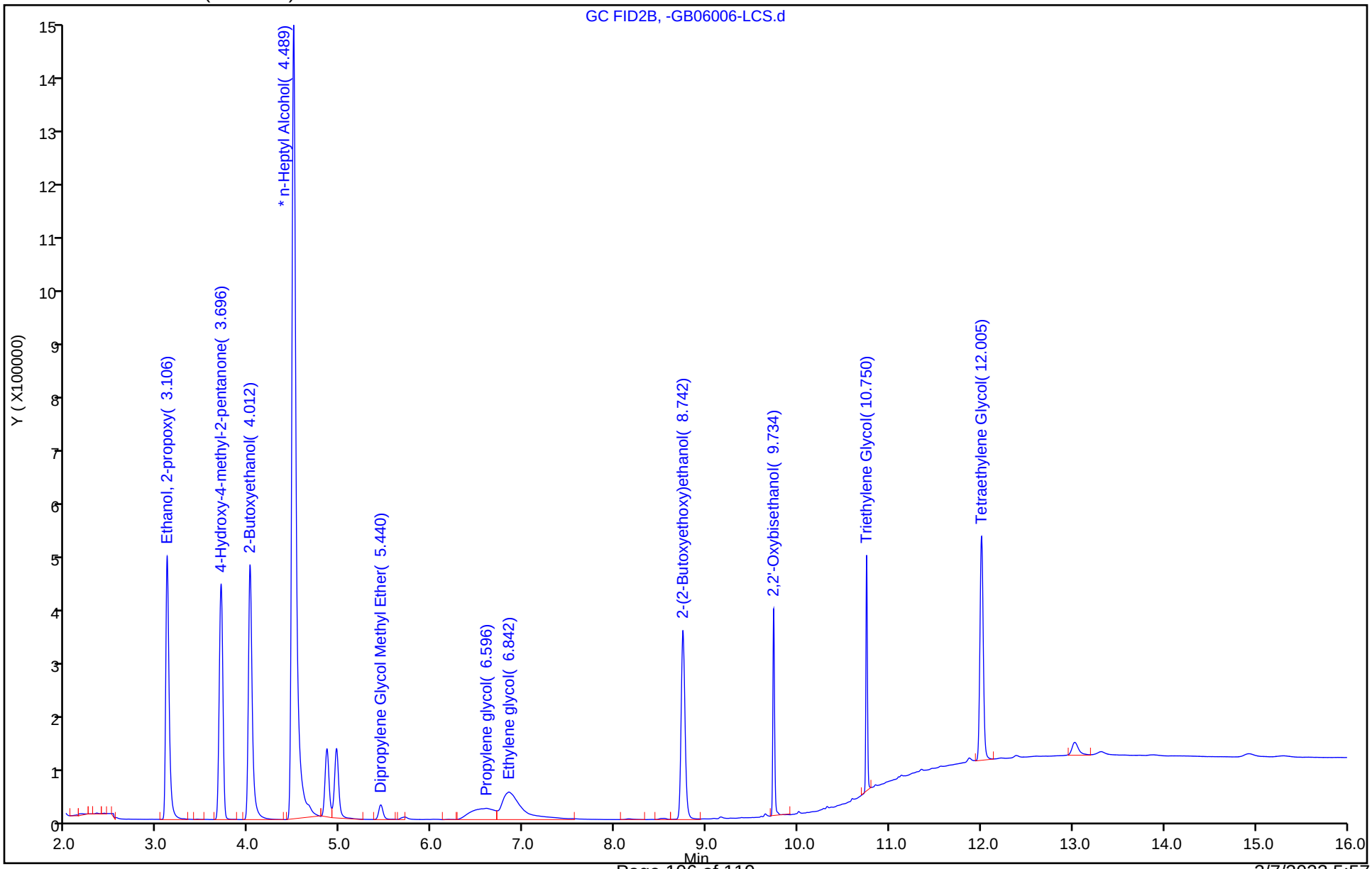
SG_Gly_CAL_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 07-Feb-2023 11:26:09 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Environment Testing America

Data File:	\\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\-GB06006-LCS.d				
Injection Date:	06-Feb-2023 15:24:02	Instrument ID:	CVGG2	Operator ID:	
Lims ID:	LCS			Worklist Smp#:	1006
Client ID:					
Injection Vol:	1.0 ul	Dil. Factor:	1.0000	ALS Bottle#:	0
Method:	8015_GLY_VGG	Limit Group:	8015C_DAI		

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

FORM I
GC SEMI VOA ORGANICS ANALYSIS DATA SHEET

Lab Name: Eurofins Savannah
Job No.: 580-122948-1
SDG No.:
Client Sample ID:
Lab Sample ID: LCSD 680-762138/7
Matrix: Water
Lab File ID: GB06007.D
Analysis Method: 8015C GLY
Date Collected:
Extraction Method:
Date Extracted:
Sample wt/vol: 1(mL)
Date Analyzed: 02/06/2023 15:47
Con. Extract Vol.: 1(mL)
Dilution Factor: 1
Injection Volume: 1(uL)
GC Column: J&W DB WAX ID: 0.45(mm)
% Moisture: % Solids:
GPC Cleanup:(Y/N) N
Cleanup Factor:
Analysis Batch No.: 762138
Units: mg/L

CAS NO.	COMPOUND NAME	RESULT	Q	LOQ	LOD	DL
112-34-5	2-(2-Butoxyethoxy)ethanol	22.2		5.0	3.0	1.1

Eurofins Savannah
Target Compound Quantitation Report

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06007.D
Lims ID: lcsd
Client ID:
Sample Type: LCSD
Inject. Date: 06-Feb-2023 15:47:25 ALS Bottle#: 0 Worklist Smp#: 7
Injection Vol: 1.0 ul Dil. Factor: 1.0000
Sample Info: 680-0083679-007
Operator ID: Instrument ID: CVGG2

Method: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\8015_GLY_VGG.m
Limit Group: 8015C_DAI
Last Update: 07-Feb-2023 11:26:08 Calib Date: 31-Jan-2023 18:30:20
Integrator: Falcon
Quant Method: Internal Standard Quant By: Initial Calibration
Last ICal File: \\chromfs\Savannah\ChromData\CVGG2\20230131-83575.b\GA31015.D

Column 1 : J&W DB WAX (0.45 mm) Det: GC FID2B
Process Host: CTX1635

First Level Reviewer: SK9U Date: 06-Feb-2023 19:01:51

	RT (min.)	Exp RT (min.)	Dlt RT (min.)	Response	Cal Amt ug/ml	OnCol Amt ug/ml	Flags
1 Ethanol, 2-propoxy							
	3.102	3.106	-0.004	847298	20.0	17.0	
2 4-Hydroxy-4-methyl-2-pentanone							
	3.687	3.696	-0.009	873258	20.0	19.0	
3 2-Butoxyethanol							
	4.011	4.012	-0.001	908749	20.0	16.3	
* 4 n-Heptyl Alcohol							
	4.491	4.489	0.002	3276281	50.0	50.0	
5 Dipropylene Glycol Methyl Ether							
	5.438	5.440	-0.002	72179	20.0	21.8	
6 Propylene glycol							M
	6.555	6.596	-0.041	346362	20.0	29.8	M
7 Ethylene glycol							
	6.837	6.842	-0.005	680191	20.0	24.3	
8 2-(2-Butoxyethoxy)ethanol							
	8.742	8.742	0.000	817207	20.0	22.2	
9 2,2'-Oxybisethanol							
	9.732	9.734	-0.002	434912	20.0	25.7	
10 Triethylene Glycol							
	10.749	10.750	-0.001	415913	20.0	25.1	
11 Tetraethylene Glycol							
	12.006	12.005	0.001	851523	40.0	49.2	

QC Flag Legend

Processing Flags

Review Flags

M - Manually Integrated

Reagents:

SG_Gly_CAL_00052	Amount Added:	10.00	Units: uL	
SG_GLY_ISTD_00105	Amount Added:	10.00	Units: uL	Run Reagent

Report Date: 07-Feb-2023 11:26:10 Chrom Revision: 2.3 01-Feb-2023 13:23:06

Eurofins Savannah

Data File: \\chromfs\Savannah\ChromData\CVGG2\20230206-83679.b\GB06007.D

Injection Date: 06-Feb-2023 15:47:25 Instrument ID: CVGG2 Operator ID:

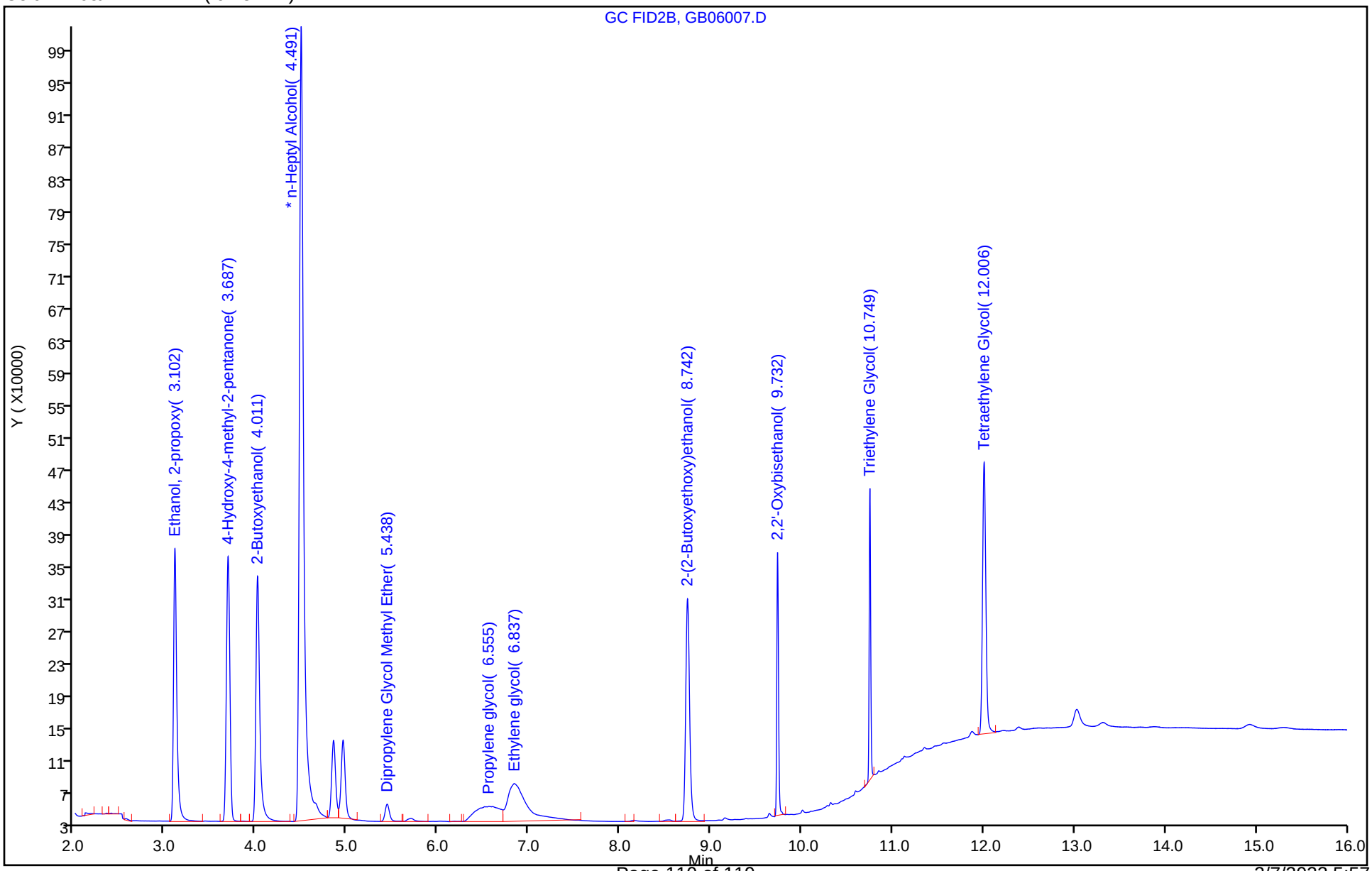
Lims ID: lcsd Worklist Smp#: 7

Client ID:

Injection Vol: 1.0 ul Dil. Factor: 1.0000 ALS Bottle#: 0

Method: 8015_GLY_VGG Limit Group: 8015C_DAI

Column: J&W DB WAX (0.45 mm)



2/7/2023 5:57 PM

GC SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Instrument ID: CVGG2 Start Date: 01/31/2023 16:10

Analysis Batch Number: 761417 End Date: 02/01/2023 08:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
IC 680-761417/2		01/31/2023 16:10	1	GA31009.D	J&W DB WAX 0.45(mm)
IC 680-761417/3		01/31/2023 16:33	1	GA31010.D	J&W DB WAX 0.45(mm)
IC 680-761417/4		01/31/2023 16:57	1	GA31011.D	J&W DB WAX 0.45(mm)
ICIS 680-761417/5		01/31/2023 17:20	1	GA31012.D	J&W DB WAX 0.45(mm)
IC 680-761417/6		01/31/2023 17:43	1	GA31013.D	J&W DB WAX 0.45(mm)
IC 680-761417/7		01/31/2023 18:07	1	GA31014.D	J&W DB WAX 0.45(mm)
IC 680-761417/8		01/31/2023 18:30	1	GA31015.D	J&W DB WAX 0.45(mm)
ICV 680-761417/9 CCV		01/31/2023 18:53	1	GA31016.D	J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 19:17	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 19:40	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 20:03	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 20:27	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 21:36	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 22:00	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 22:23	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 22:46	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 23:33	1		J&W DB WAX 0.45(mm)
ZZZZZ		01/31/2023 23:56	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 00:19	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 00:43	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 01:29	5		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 01:52	25		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 02:15	100		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 02:38	50		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 03:01	50		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 03:25	50		J&W DB WAX 0.45(mm)
CCV 680-761417/33		02/01/2023 04:11	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 05:21	500		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 05:44	500		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 06:07	100		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 06:31	50		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 06:54	100		J&W DB WAX 0.45(mm)
ZZZZZ		02/01/2023 07:17	10000		J&W DB WAX 0.45(mm)
CCV 680-761417/43		02/01/2023 08:04	1		J&W DB WAX 0.45(mm)

GC SEMI VOA ANALYSIS RUN LOG

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Instrument ID: CVGG2 Start Date: 02/06/2023 15:24

Analysis Batch Number: 762138 End Date: 02/07/2023 01:04

LAB SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	DILUTION FACTOR	LAB FILE ID	COLUMN ID
CCVIS 680-762138/6		02/06/2023 15:24	1	GB06006.D	J&W DB WAX 0.45(mm)
LCS 680-762138/1006		02/06/2023 15:24	1	-GB06006-LCS.d	J&W DB WAX 0.45(mm)
LCSD 680-762138/7		02/06/2023 15:47	1	GB06007.D	J&W DB WAX 0.45(mm)
MB 680-762138/10		02/06/2023 16:57	1	GB06010.D	J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 17:20	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 17:43	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 18:07	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 18:30	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 18:53	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 19:16	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 19:39	1		J&W DB WAX 0.45(mm)
580-122948-1	AF-RHMW04-WGN01LF-230 1W4	02/06/2023 20:02	1	GB06018.D	J&W DB WAX 0.45(mm)
580-122948-2	AF-RHMW06-WGN01LF-230 1W4	02/06/2023 20:25	1	GB06019.D	J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 20:49	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 21:12	1		J&W DB WAX 0.45(mm)
CCV 680-762138/23		02/06/2023 21:58	1	GB06023.D	J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 23:08	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 23:31	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/06/2023 23:54	1		J&W DB WAX 0.45(mm)
ZZZZZ		02/07/2023 00:17	1		J&W DB WAX 0.45(mm)
CCV 680-762138/31		02/07/2023 01:04	1		J&W DB WAX 0.45(mm)

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Batch Number: 761417 Batch Start Date: 01/31/23 16:10 Batch Analyst: Kellar, Joshua C

Batch Method: 8015C GLY Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SG_Gly_CAL 00052	SG_GLY_ISTD 00105	SG_GlyICV 00052		
IC 680-761417/2		8015C GLY		1 mL	50 uL	10 uL			
IC 680-761417/3		8015C GLY		1 mL	40 uL	10 uL			
IC 680-761417/4		8015C GLY		1 mL	25 uL	10 uL			
ICIS 680-761417/5		8015C GLY		1 mL	10 uL	10 uL			
IC 680-761417/6		8015C GLY		1 mL	5 uL	10 uL			
IC 680-761417/7		8015C GLY		1 mL	2.5 uL	10 uL			
IC 680-761417/8		8015C GLY		1 mL	1 uL	10 uL			
ICV 680-761417/9 CCV		8015C GLY		1 mL		10 uL	10 uL		

Batch Notes	

Basis	Basis Description

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

GC SEMI VOA BATCH WORKSHEET

Lab Name: Eurofins Savannah Job No.: 580-122948-1

SDG No.:

Batch Number: 762138 Batch Start Date: 02/06/23 15:24 Batch Analyst: Kellar, Joshua C

Batch Method: 8015C GLY Batch End Date:

Lab Sample ID	Client Sample ID	Method Chain	Basis	FinalAmount	SG_Gly_CAL 00052	SG_GLY_ISTD 00105			
CCVIS 680-762138/6		8015C GLY		1 mL	10 uL	10 uL			
LCSD 680-762138/7		8015C GLY		1 mL	10 uL	10 uL			
MB 680-762138/10		8015C GLY		1 mL		10 uL			
580-122948-A-1	AF-RHMW04-WGN01L F-2301W4	8015C GLY	T	1 mL		10 uL			
580-122948-A-2	AF-RHMW06-WGN01L F-2301W4	8015C GLY	T	1 mL		10 uL			
CCV 680-762138/23		8015C GLY		1 mL	10 uL	10 uL			
LCS 680-762138/1006		8015C GLY		1 mL	10 uL	10 uL			

Batch Notes	

Basis	Basis Description
T	Total/NA

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.

Subcontract Data

Shipping and Receiving Documents

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins Environment Testing America

Client Information	Sampler: Andy Young	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 2301W4AFEA08
Client Contact:	Phone: 402-871-5712	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:
Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract			
City: Honolulu	TAT Requested (days): Rush - ASAP			
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No			
Phone: 808-954-4512 / 770-331-0794	PO #:			
Email: Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	WO #:			
Project Name: CTO N6274223F0104	Project #: 60697810			
Site: RHSF	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAI_GL_D5/ 2-(2-butoxyethoxy)-ethanol	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
AF-RHMW04-WGN01LF-2301W4	1/26/23	1000	G	W	N	N	X	3	

1/26/23

1/26/23

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD

Special Instructions/QC Requirements: DOD QSM project.

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time		Company		Date/Time		Company
Relinquished by: Andy Young	1/26/23	1320	AECOM	Received by: James Mason	1/26/23	1320	AECOM
Relinquished by: James Mason	1/26/23	1350	AECOM	Received by:	01/02/23	12:05	
Relinquished by:				Received by:			

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.:
Cooler Temperature(s) °C and Other Remarks: 6.0
6.0

Ver: 01/16/2019

Eurofins FGS, Seattle
5755 8th Street East
Tacoma, WA 98424

Chain of Custody Record

eurofins | Environment Testing America

Client Information	Sampler: NOAH TURNER	Lab PM: Elaine Walker	Carrier Tracking No(s): FedEx	COC No: 2301W4AFEA09
Client Contact:	Phone: (781) 366-4777	E-Mail: M.Elaine.Walker@EurofinsET.com	State of Origin: Hawaii	Page: Page 1 of 1
Company: AECOM	PWSID:			Job #:
Address: 1001 Bishop St. Suite 1600	Due Date Requested: see subcontract			
City: Honolulu	TAT Requested (days): Rush - ASAP			
State, Zip: Hawaii 96813	Compliance Project: Δ Yes Δ No			
Phone: 808-954-4512 / 770-331-0794	PO #:			
Email: Watson Tanji (watson.tanji@aecom.com)/ Mark Kromis (mark.kromis@aecom.com)	WO #:			
Project Name: CTO N6274223F0104	Project #: 60697810			
Site: RHSF	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8015C_DAI_GL_D5/ 2-(2-butoxyethoxy)-ethanol	Total Number of containers	Special Instructions/Note:
			Preservation Code:				A		
AF-RHMW06-WGN01LF-2301W4	1/26/23	1220	G	W	N	N	X	3	

NT 1/26/23

NT 1/26/23

Possible Hazard Identification
☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Deliverable Requested: I, II, III, IV, Other (specify)

Prelim data (Level 1or2)=see TAT above. DoD Stage 4 report standard TAT. AECOM EQuIS EDD.

Special Instructions/QC Requirements: DOD QSM project.

Empty Kit Relinquished by: | Date: | Time: | Method of Shipment:

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
NOAH TURNER	1/26/23 1320	AECOM	James Mason	1/26/23 1320	AECOM
James Mason	1/26/23 1350	AECOM		02/02/23 12:05	

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks: 6.0 6.0

Ver: 01/16/2019

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-122948-1

Login Number: 122948
List Number: 2
Creator: Sims, Robert D

List Source: Eurofins Savannah
List Creation: 02/02/23 03:04 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	