Report of Trace Metals Analyses Biotas

Project: Makau Military Reservation
Samples Collected: September 9 –27, 2013
Report Date: December 13, 2013

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Case Narrative

Shipping and Receiving

On October 23, 2013, Brooks Rand Labs (BRL) received twenty-five (25) octopus samples and twenty-five (25) sea cucumber samples at 11:17 A.M. in two coolers with dry ice and at temperatures of -3.2 °C and -2.6 °C. The chain-of-custody (COC) forms requested analysis for silver (Ag), aluminum (Al), arsenic (As), barium (Ba), beryllium (Be), cadmium (Cd), cobalt (Co), chromium (Cr), copper (Cu), iron (Fe), manganese (Mn), lead (Pb), antimony (Sb), selenium (Se), thallium (Tl), vanadium (V), zinc (Zn), mercury (Hg), methylmercury (MeHg), percent total solids (%TS) and arsenic speciation analysis of the samples, contractually defined as trivalent arsenic [As(III)], inorganic arsenic [As(In)], monomethyl arsenic (MMAs), dimethyl arsenic (DMAs), and pentavalent arsenic [As(V)] determined by difference. The samples were received and stored securely according to BRL standard operating procedures (SOP) and EPA methodology.

This report only contains the arsenic speciation analysis of sample *MAK014O* (1343025-24). The preparation vial leaked and could not reported in the initial report. Only the arsenic speciation of sample *MAK014O* (1343025-24) has been reported here.

Preservation and Holding Time

All method and SOP requirements for preservation and holding time were satisfied.

Inorganic Arsenic in Biota by EPA Method 1632, Mod. (SOP BR-0021)

Prior to analysis, samples are digested with 2 M hydrochloric acid (HCl) and heated for 16 hours. Then, an aliquot of biota digestate is placed in a specially-designed reaction vessel and 6 M HCl is added. To this, a 4% (m/v) sodium borohydride ($NaBH_4$) solution is added to convert the inorganic arsenic to volatile arsines. Arsines are purged from the sample onto a cooled glass trap. The trapped arsines are thermally desorbed, in order of increasing boiling points, into an inert gas stream that carries them into the quartz furnace of an atomic absorption spectrophotometer for detection. The first arsine (AsH_3) to be desorbed is represents total inorganic As in the sample.

The results were method blank corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Sequence 1300845

The high calibration standard CAL5 recovered outside of criteria and was removed from the calibration.

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

Several peaks were manually integrated by the analyst and approved by BRL's QA department.

Batch B132010

All matrix spikes were spiked less than the native sample concentration and only MS1 was analyzed. Post-preparation spikes (PS) were analyzed instead.

Aside from concentration qualifiers, all data was reported without qualification and all associated quality control sample results met the acceptance criteria.

Trivalent Arsenic in Biota by EPA Method 1632, Mod. (SOP BR-0021)

Prior to analysis, the samples are extracted with 0.5 M phosphoric acid (H_3PO_4) and 0.1 M hydroxylamine hydrochloride ($NH_2OH{\cdot}HCl$), tumbled for one hour, and then centrifuged for 20 - 30 minutes. An aliquot of tissue digestate is diluted to final volume with a 0.5% (v/v) HCl solution, the pH is adjusted with a 2% (m/v) potassium hydroxide (KOH) solution, and 2.5 M trishydrochloride buffer is added. To this, a 4% (m/v) $NaBH_4$ solution is added to convert the inorganic arsenic to volatile arsines. Arsines are purged from the sample onto a cooled glass trap. The trapped arsines are thermally desorbed, in order of increasing boiling points, into an inert gas stream that carries them into the quartz furnace of an atomic absorption spectrophotometer for detection. The first arsine to be desorbed is AsH_3, which represents As(III) in the sample.

The results were method blank corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Sequence 1300856

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

The calibration standard CAL5 recovered low and was removed from the calibration.

Several peaks were manually integrated by the analyst and approved by BRL's QA department.

Batch B132011

All matrix spikes were spiked less than the native sample concentration were not analyzed. Post-preparation spikes (PS) were analyzed instead.

Aside from concentration qualifiers, all data was reported without qualification and all associated quality control sample results met the acceptance criteria.

Pentavalent Arsenic in Biota by Calculation

The concentration of As(V) found in a sample is determined by subtracting the result of the analysis of As(III) from the result of the analysis of As(Inorg). The MDL and MRL for As(V) are equal to the MDL and MRL for As(III) or As(Inorg), whichever is greater.

DMAs & MMAs in Biota by EPA Method 1632, Mod. (SOP BR-0021)

Prior to analysis, samples are digested with 2 M sodium hydroxide (NaOH) and heated at 80 °C for 16 hours. Then, an aliquot of biota digestate is placed in a specially-designed reaction vessel and 6 M HCl is added. To this, a 4% (m/v) $NaBH_4$ solution is added to convert the inorganic arsenic to volatile arsines. Arsines are purged from the sample onto a cooled glass trap. The trapped arsines are thermally desorbed, in order of increasing boiling points, into an inert gas

stream that carries them into the quartz furnace of an atomic absorption spectrophotometer for detection.

The results were method blank corrected as described in the calculations section of the relevant BRL SOP(s) and may have been evaluated using reporting limits that have been adjusted to account for sample aliquot size. Please refer to the *Sample Results* page for sample-specific MDLs, MRLs, and other details.

Sequence 1300862 - DMAs

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

Several peaks were manually integrated by the analyst and approved by BRL's QA department.

Batch B132012 - DMAs

All matrix spikes were spiked less than the native sample concentration. No qualifications were made based on the recoveries.

Aside from concentration qualifiers, all data was reported without qualification and all associated quality control sample results met the acceptance criteria.

Sequence 1300863 - MMAs

Instrument calibration, meeting all quality control criteria, was successfully achieved on the day of sample analysis.

Several peaks were manually integrated by the analyst and approved by BRL's QA department.

Batch B132013 - MMAs

Aside from concentration qualifiers, all data was reported without qualification and all associated quality control sample results met the acceptance criteria.

We certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. BRL, an accredited laboratory, certifies that the reported results of all analyses for which BRL is NELAP accredited meet all NELAP requirements. For more details, please see the *Report Information* page in your report. Please feel free to contact us if you have any questions regarding this report.

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Report Information

Laboratory Accreditation

BRL is accredited by the *National Environmental Laboratory Accreditation Program* (NELAP) through the State of Florida Department of Health, Bureau of Laboratories (E87982) and is certified to perform many environmental analyses. BRL is also certified by many other states to perform environmental analyses. For a current list of our accreditations/certifications, please visit our website at <http://www.brooksrand.com/default.asp?contentID=586>. Results reported relate only to the samples listed in the report.

Field Quality Control Samples

Please be notified that certain EPA methods require the collection of field quality control samples of an appropriate type and frequency; failure to do so is considered a deviation from some methods and for compliance purposes should only be done with the approval of regulatory authorities. Please see the specific EPA methods for details regarding required field quality control samples.

Common Abbreviations

BLK	method blank	**MS**	matrix spike
BRL	Brooks Rand Labs	**MSD**	matrix spike duplicate
BS	laboratory fortified blank	**ND**	non-detect
CAL	calibration standard	**NR**	non-reportable
CCV	continuing calibration verification	**PS**	post preparation spike
COC	chain of custody record	**REC**	percent recovery
CRM	certified reference material	**RPD**	relative percent difference
D	dissolved fraction	**RSD**	relative standard deviation
DUP	duplicate	**SCV**	secondary calibration verification
ICV	initial calibration verification	**SOP**	standard operating procedure
MDL	method detection limit	**SRM**	standard reference material
MRL	method reporting limit	**T**	total recoverable fraction
IBL	instrument blank		

Definition of Data Qualifiers

(Effective 9/23/09)

B	Detected by the instrument, the result is > the MDL but ≤ the MRL. Result is reported and considered an estimate.
E	An estimated value due to the presence of interferences. A full explanation is presented in the narrative.
H	Holding time and/or preservation requirements not met. Result is estimated.
J	Estimated value. A full explanation is presented in the narrative.
J-M	Duplicate precision (RPD) for associated QC sample was not within acceptance criteria. Result is estimated.
J-N	Spike recovery for associated QC sample was not within acceptance criteria. Result is estimated.
M	Duplicate precision (RPD) was not within acceptance criteria. Result is estimated.
N	Spike recovery was not within acceptance criteria. Result is estimated.
R	Rejected, unusable value. A full explanation is presented in the narrative.
U	Result is ≤ the MDL or client requested reporting limit (CRRL). Result reported as the MDL or CRRL.
X	Result is not BLK-corrected and is within 10x the absolute value of the highest detectable BLK in the batch. Result is estimated.

These qualifiers are based on those previously utilized by Brooks Rand Labs, those found in the EPA SOW ILM03.0, Exhibit B, Section III, pg. B-18, and the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review; USEPA; January 2010. These supersede all previous qualifiers ever employed by BRL.

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Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MAK003C - test	1343025-01	Sea Cucumber	QC Sample	09/09/2013	10/23/2013
MB-SO-HEE000- Test	1343025-02	Octopus	QC Sample	08/29/2013	10/23/2013
MAK010C	1343025-03	Sea Cucumber	Sample	09/13/2013	10/23/2013
MAK014C	1343025-04	Sea Cucumber	Sample	09/13/2013	10/23/2013
MAK015C	1343025-05	Sea Cucumber	Sample	09/13/2013	10/23/2013
MAK018C	1343025-06	Sea Cucumber	Sample	09/16/2013	10/23/2013
MAK019C	1343025-07	Sea Cucumber	Sample	09/16/2013	10/23/2013
MAK020C	1343025-08	Sea Cucumber	Sample	09/16/2013	10/23/2013
MAK022C	1343025-09	Sea Cucumber	Sample	09/16/2013	10/23/2013
MAK024C	1343025-10	Sea Cucumber	Sample	09/22/2013	10/23/2013
MAK025C	1343025-11	Sea Cucumber	Sample	09/22/2013	10/23/2013
MAK026C	1343025-12	Sea Cucumber	Sample	09/22/2013	10/23/2013
MAK027C	1343025-13	Sea Cucumber	Sample	09/22/2013	10/23/2013
MAK028C	1343025-14	Sea Cucumber	Sample	09/22/2013	10/23/2013
MAK029C	1343025-15	Sea Cucumber	Sample	09/23/2013	10/23/2013
MAK030C	1343025-16	Sea Cucumber	QC Sample	09/23/2013	10/23/2013
MAK031C	1343025-17	Sea Cucumber	Sample	09/23/2013	10/23/2013
MAK032C	1343025-18	Sea Cucumber	QC Sample	09/23/2013	10/23/2013
MAK009O	1343025-19	Octopus	Sample	09/13/2013	10/23/2013
MAK010O	1343025-20	Octopus	Sample	09/16/2013	10/23/2013
MAK011O	1343025-21	Octopus	Sample	09/16/2013	10/23/2013
MAK012O	1343025-22	Octopus	Sample	09/22/2013	10/23/2013
MAK013O	1343025-23	Octopus	Sample	09/22/2013	10/23/2013
MAK014O	1343025-24	Octopus	Sample	09/23/2013	10/23/2013
MAK015O	1343025-25	Octopus	Sample	09/22/2013	10/23/2013
MAK016O	1343025-26	Octopus	Sample	09/22/2013	10/23/2013
MAK017O	1343025-27	Octopus	Sample	09/22/2013	10/23/2013
MAK018O	1343025-28	Octopus	Sample	09/22/2013	10/23/2013
MAK019O	1343025-29	Octopus	Sample	09/23/2013	10/23/2013
MAK020O	1343025-30	Octopus	Sample	09/23/2013	10/23/2013
MAK020O - Duplicate Login	1343025-31	Biota	Sample	09/23/2013	10/23/2013
MAK021O	1343025-32	Octopus	Sample	09/23/2013	10/23/2013
MAK022O	1343025-33	Octopus	Sample	09/23/2013	10/23/2013
MAK023O	1343025-34	Octopus	Sample	09/23/2013	10/23/2013
MAK024O	1343025-35	Octopus	Sample	09/27/2013	10/23/2013
MAK001C	1343025-36	Sea Cucumber	Sample	09/09/2013	10/23/2013
MAK002C	1343025-37	Sea Cucumber	Sample	09/09/2013	10/23/2013
MAK004C	1343025-38	Sea Cucumber	Sample	09/09/2013	10/23/2013
MAK005C	1343025-39	Sea Cucumber	Sample	09/09/2013	10/23/2013
MAK006C	1343025-40	Sea Cucumber	Sample	09/11/2013	10/23/2013
MAK007C	1343025-41	Sea Cucumber	Sample	09/11/2013	10/23/2013

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Sample Information

Sample	Lab ID	Report Matrix	Type	Sampled	Received
MAK008C	1343025-42	Sea Cucumber	Sample	09/11/2013	10/23/2013
MAK009C	1343025-43	Sea Cucumber	Sample	09/11/2013	10/23/2013
MAK002O	1343025-44	Octopus	Sample	09/09/2013	10/23/2013
MAK003O	1343025-45	Octopus	Sample	09/09/2013	10/23/2013
MAK004O	1343025-46	Octopus	Sample	09/11/2013	10/23/2013
MAK005O	1343025-47	Octopus	Sample	09/11/2013	10/23/2013
MAK006O	1343025-48	Octopus	QC Sample	09/11/2013	10/23/2013
MAK007O	1343025-49	Octopus	QC Sample	09/11/2013	10/23/2013
MAK008O	1343025-50	Octopus	QC Sample	09/11/2013	10/23/2013
MAK001O	1343025-51	Octopus	Sample	09/09/2013	10/23/2013

Batch Summary

Analyte	Lab Matrix	Method	Prepared	Analyzed	Batch	Sequence
As(III)	Biota	EPA 1632	12/07/2013	12/10/2013	B132011	1300856
As(Inorg)	Biota	EPA 1632	12/07/2013	12/08/2013	B132010	1300845
DMAs	Biota	EPA 1632	12/07/2013	12/11/2013	B132012	1300862
MMAs	Biota	EPA 1632	12/07/2013	12/11/2013	B132013	1300863

Sample Results

Sample	Analyte	Report Matrix	Basis	Result	Qualifier	MDL	MRL	Unit	Batch	Sequence
MAK014O										
1343025-24	As(III)	Octopus	wet	0.004	U	0.004	0.010	mg/kg	B132011	1300856
1343025-24	As(Inorg)	Octopus	wet	0.004	U	0.004	0.010	mg/kg	B132010	1300845
1343025-24	As(V)	Octopus	wet	0.004	U	0.004	0.010	mg/kg	[CALC]	N/A
1343025-24	DMAs	Octopus	wet	0.018		0.004	0.012	mg/kg	B132012	1300862
1343025-24	MMAs	Octopus	wet	0.004	U	0.004	0.012	mg/kg	B132013	1300863

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Accuracy & Precision Summary

Batch: B132010
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B132010-BS1	**Laboratory Fortified Blank (1348017)**						
	As(Inorg)		0.1000	0.097	mg/kg	97% 65-135	
B132010-SRM1	**Certified Reference Material (1337024, NIST 1568b)**						
	As(Inorg)		0.09200	0.102	mg/kg	111% 75-125	
B132010-SRM2	**Certified Reference Material (1337024, NIST 1568b)**						
	As(Inorg)		0.09200	0.100	mg/kg	108% 75-125	
B132010-DUP1	**Duplicate (1345019-01)**						
	As(Inorg)	0.198		0.228	mg/kg		14% 35
B132010-MS1	**Matrix Spike (1345019-01)**						
	As(Inorg)	0.198	0.04995	0.269	mg/kg	*142%* 65-135	
B132010-PS1	**Post Spike (1345019-01)**						
	As(Inorg)	0.198	0.3936	0.570	mg/kg	94% 65-135	
B132010-DUP2	**Duplicate (1345019-11)**						
	As(Inorg)	0.177		0.182	mg/kg		3% 35
B132010-PS2	**Post Spike (1345019-11)**						
	As(Inorg)	0.177	0.3956	0.548	mg/kg	94% 65-135	
B132010-DUP3	**Duplicate (1345019-21)**						
	As(Inorg)	0.727		0.743	mg/kg		2% 35
B132010-PS3	**Post Spike (1345019-21)**						
	As(Inorg)	0.727	1.953	2.501	mg/kg	91% 65-135	

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Accuracy & Precision Summary

Batch: B132011
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B132011-BS2	**Laboratory Fortified Blank (1348004)**						
	As(III)		0.1003	0.096	mg/kg	96% 50-150	
B132011-DUP1	**Duplicate (1345019-01)**						
	As(III)	0.152		0.206	mg/kg		31% 35
B132011-PS1	**Post Spike (1345019-01)**						
	As(III)	0.152	0.1968	0.284	mg/kg	67% 65-135	
B132011-DUP2	**Duplicate (1345019-11)**						
	As(III)	0.142		0.150	mg/kg		5% 35
B132011-PS2	**Post Spike (1345019-11)**						
	As(III)	0.142	0.1978	0.323	mg/kg	92% 65-135	
B132011-DUP3	**Duplicate (1345019-21)**						
	As(III)	0.666		0.742	mg/kg		11% 35
B132011-PS3	**Post Spike (1345019-21)**						
	As(III)	0.666	0.9764	1.622	mg/kg	98% 65-135	

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Accuracy & Precision Summary

Batch: B132012
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B132012-BS1	**Laboratory Fortified Blank (1346012)**								
	DMAs		0.1000	0.099	mg/kg	99%	60-140		
B132012-SRM1	**Certified Reference Material (1337024, NIST 1568b)**								
	DMAs		0.1800	0.169	mg/kg	94%	75-125		
B132012-SRM2	**Certified Reference Material (1337024, NIST 1568b)**								
	DMAs		0.1800	0.155	mg/kg	86%	75-125		
B132012-DUP1	**Duplicate (1345019-01)**								
	DMAs	0.352		0.358	mg/kg			2%	35
B132012-MS1	**Matrix Spike (1345019-01)**								
	DMAs	0.352	0.09889	0.373	mg/kg	*21%*	60-140		
B132012-MSD1	**Matrix Spike Duplicate (1345019-01)**								
	DMAs	0.352	0.09730	0.376	mg/kg	*24%*	60-140	0.7%	35
B132012-DUP2	**Duplicate (1345019-11)**								
	DMAs	0.288		0.327	mg/kg			13%	35
B132012-MS2	**Matrix Spike (1345019-11)**								
	DMAs	0.288	0.09812	0.303	mg/kg	*15%*	60-140		
B132012-MSD2	**Matrix Spike Duplicate (1345019-11)**								
	DMAs	0.288	0.09992	0.326	mg/kg	*38%*	60-140	7%	35
B132012-DUP3	**Duplicate (1345019-21)**								
	DMAs	0.287		0.300	mg/kg			5%	35
B132012-MS3	**Matrix Spike (1345019-21)**								
	DMAs	0.287	0.09843	0.328	mg/kg	*41%*	60-140		

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Accuracy & Precision Summary

Batch: B132012
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B132012-MSD3	**Matrix Spike Duplicate (1345019-21)**								
	DMAs	0.287	0.09917	0.315	mg/kg	*28%*	60-140	4%	35

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Accuracy & Precision Summary

Batch: B132013
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits	RPD & Limits
B132013-BS1	**Laboratory Fortified Blank (1346011)**						
	MMAs		0.1000	0.085	mg/kg	85% 60-140	
B132013-SRM1	**Certified Reference Material (1337024, NIST 1568b)**						
	MMAs		0.01160	0.011	mg/kg	98% 75-125	
B132013-SRM2	**Certified Reference Material (1337024, NIST 1568b)**						
	MMAs		0.01160	0.011	mg/kg	91% 75-125	
B132013-DUP1	**Duplicate (1345019-01)**						
	MMAs	ND		ND	mg/kg		N/C 25
B132013-MS1	**Matrix Spike (1345019-01)**						
	MMAs	ND	0.09889	0.076	mg/kg	77% 60-140	
B132013-MSD1	**Matrix Spike Duplicate (1345019-01)**						
	MMAs	ND	0.09730	0.066	mg/kg	68% 60-140	13% 25
B132013-DUP2	**Duplicate (1345019-11)**						
	MMAs	ND		ND	mg/kg		N/C 25
B132013-MS2	**Matrix Spike (1345019-11)**						
	MMAs	ND	0.09812	0.071	mg/kg	72% 60-140	
B132013-MSD2	**Matrix Spike Duplicate (1345019-11)**						
	MMAs	ND	0.09992	0.076	mg/kg	76% 60-140	7% 25
B132013-DUP3	**Duplicate (1345019-21)**						
	MMAs	ND		ND	mg/kg		N/C 25
B132013-MS3	**Matrix Spike (1345019-21)**						
	MMAs	ND	0.09843	0.079	mg/kg	80% 60-140	

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Accuracy & Precision Summary

Batch: B132013
Lab Matrix: Biota
Method: EPA 1632

Sample	Analyte	Native	Spike	Result	Units	REC & Limits		RPD & Limits	
B132013-MSD3	**Matrix Spike Duplicate (1345019-21)**								
	MMAs	ND	0.09917	0.081	mg/kg	82%	60-140	3%	25

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Method Blanks & Reporting Limits

Batch: B132010
Matrix: Biota
Method: EPA 1632
Analyte: As(Inorg)

Sample	Result	Units
B132010-BLK1	-0.0005	mg/kg
B132010-BLK2	-0.0005	mg/kg
B132010-BLK3	-0.0003	mg/kg
B132010-BLK4	-0.0006	mg/kg

Average: 0.000 **Standard Deviation:** 0.000 **MDL:** 0.004
Limit: 0.008 **Limit:** 0.003 **MRL:** 0.010

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Method Blanks & Reporting Limits

Batch: B132011
Matrix: Biota
Method: EPA 1632
Analyte: As(III)

Sample	Result	Units
B132011-BLK1	0.0005	mg/kg
B132011-BLK2	0.0004	mg/kg
B132011-BLK3	0.0006	mg/kg
B132011-BLK4	0.0007	mg/kg

Average: 0.001 **Standard Deviation:** 0.000 **MDL:** 0.004
Limit: 0.008 **Limit:** 0.003 **MRL:** 0.010

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Method Blanks & Reporting Limits

Batch: B132012
Matrix: Biota
Method: EPA 1632
Analyte: DMAs

Sample	Result	Units
B132012-BLK1	0.00	mg/kg
B132012-BLK2	0.00	mg/kg
B132012-BLK3	0.00	mg/kg
B132012-BLK4	0.0002	mg/kg

Average: 0.000 **Standard Deviation:** 0.000 **MDL:** 0.004
Limit: 0.008 **Limit:** 0.003 **MRL:** 0.012

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Method Blanks & Reporting Limits

Batch: B132013
Matrix: Biota
Method: EPA 1632
Analyte: MMAs

Sample	Result	Units
B132013-BLK1	0.00	mg/kg
B132013-BLK2	0.0004	mg/kg
B132013-BLK3	0.00	mg/kg
B132013-BLK4	0.00	mg/kg

Average: 0.000 **Standard Deviation:** 0.000 **MDL:** 0.004
Limit: 0.008 **Limit:** 0.003 **MRL:** 0.012

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Instrument Calibration

Sequence: 1300845
Instrument: HGAAS-2
Date: 12/08/2013
Analyte: As(Inorg)

Total Arsenic and Arsenic Speciation by HG-CT-AAS
Method: EPA 1632

Lab ID	True Value	Result	Units	REC & Limits	
1300845-IBL1		0.179	ng As		
1300845-IBL2		0.155	ng As		
1300845-IBL3		0.145	ng As		
1300845-CAL1	0.5000	0.518	ng As	104%	
1300845-CAL2	2.000	2.187	ng As	109%	
1300845-CAL3	10.00	10.08	ng As	101%	
1300845-CAL4	20.00	17.73	ng As	89%	
1300845-ICV1	5.015	5.450	ng As	109%	80-120
1300845-CCV1	5.000	5.459	ng As	109%	80-120
1300845-CCB1		0.136	ng As		
1300845-CCV2	5.000	5.442	ng As	109%	80-120
1300845-CCB2		0.147	ng As		
1300845-CCV3	5.000	5.473	ng As	109%	80-120
1300845-CCB3		0.091	ng As		
1300845-CCV4	5.000	5.287	ng As	106%	80-120
1300845-CCB4		0.117	ng As		

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Instrument Calibration

Sequence: 1300856
Instrument: HGAAS-2
Date: 12/10/2013
Analyte: As(III)

Total Arsenic and Arsenic Speciation by HG-CT-AAS
Method: EPA 1632

Lab ID	True Value	Result	Units	REC & Limits	
1300856-IBL1		0.000	µg/L		
1300856-IBL2		0.000	µg/L		
1300856-IBL3		0.000	µg/L		
1300856-CAL1	0.5000	0.569	µg/L	114%	
1300856-CAL2	2.000	2.072	µg/L	104%	
1300856-CAL3	10.00	10.11	µg/L	101%	
1300856-CAL4	20.00	18.85	µg/L	94%	
1300856-CAL5	30.00	27.14	µg/L	90%	
1300856-ICV1	5.015	5.333	µg/L	106%	80-120
1300856-CCV1	5.000	5.274	µg/L	105%	80-120
1300856-CCB1		0.00	µg/L		
1300856-CCV2	5.000	5.394	µg/L	108%	80-120
1300856-CCB2		0.00	µg/L		
1300856-CCV3	5.000	5.261	µg/L	105%	80-120
1300856-CCB3		0.00	µg/L		
1300856-CCV4	5.000	5.305	µg/L	106%	80-120
1300856-CCB4		0.00	µg/L		

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Instrument Calibration

Sequence: 1300862
Instrument: HGAAS-2
Date: 12/11/2013
Analyte: DMAs

Total Arsenic and Arsenic Speciation by HG-CT-AAS
Method: EPA 1632

Lab ID	True Value	Result	Units	REC & Limits	
1300862-IBL1		0.000	ng As		
1300862-IBL2		0.000	ng As		
1300862-IBL3		0.000	ng As		
1300862-CAL1	0.5000	0.406	ng As	81%	
1300862-CAL2	1.000	0.929	ng As	93%	
1300862-CAL3	2.000	2.046	ng As	102%	
1300862-CAL4	10.00	11.13	ng As	111%	
1300862-CAL5	20.00	21.65	ng As	108%	
1300862-CAL6	30.00	33.56	ng As	112%	
1300862-ICV2	5.000	4.683	ng As	94%	70-130
1300862-CCV1	5.000	5.119	ng As	102%	70-130
1300862-CCB1		0.00	ng As		
1300862-CCV2	5.000	5.214	ng As	104%	70-130
1300862-CCB2		0.00	ng As		
1300862-CCV3	5.000	5.380	ng As	108%	70-130
1300862-CCB3		0.00	ng As		
1300862-CCV4	5.000	4.916	ng As	98%	70-130
1300862-CCB4		0.00	ng As		

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Instrument Calibration

Sequence: 1300863
Instrument: HGAAS-2
Date: 12/11/2013
Analyte: MMAs

Total Arsenic and Arsenic Speciation by HG-CT-AAS
Method: EPA 1632

Lab ID	True Value	Result	Units	REC & Limits	
1300863-IBL1		0.000	ng As		
1300863-IBL2		0.000	ng As		
1300863-IBL3		0.000	ng As		
1300863-CAL1	0.5000	0.513	ng As	103%	
1300863-CAL2	1.000	1.087	ng As	109%	
1300863-CAL3	2.000	2.011	ng As	101%	
1300863-CAL4	10.00	9.410	ng As	94%	
1300863-CAL5	20.00	19.97	ng As	100%	
1300863-CAL6	30.00	28.65	ng As	95%	
1300863-ICV1	5.000	4.428	ng As	89%	80-120
1300863-CCV1	5.000	5.266	ng As	105%	80-120
1300863-CCB1		0.00	ng As		
1300863-CCV2	5.000	4.841	ng As	97%	80-120
1300863-CCB2		0.00	ng As		
1300863-CCV3	5.000	5.018	ng As	100%	80-120
1300863-CCB3		0.057	ng As		
1300863-CCV4	5.000	5.303	ng As	106%	80-120
1300863-CCB4		0.149	ng As		

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-01 **Report Matrix:** Sea Cucumber **Collected:** 09/09/2013
Sample: MAK003C - test **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: This is an unknown CRM provided by client. Do not rerun wo talking to Tiff

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-02 **Report Matrix:** Octopus **Collected:** 08/29/2013
Sample: MB-SO-HEE000- Test **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: This is an unknown CRM provided by client. Do not rerun wo talking to Tiff

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-03 **Report Matrix:** Sea Cucumber **Collected:** 09/13/2013
Sample: MAK010C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-04 **Report Matrix:** Sea Cucumber **Collected:** 09/13/2013
Sample: MAK014C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-05 **Report Matrix:** Sea Cucumber **Collected:** 09/13/2013
Sample: MAK015C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-06 **Report Matrix:** Sea Cucumber **Collected:** 09/16/2013
Sample: MAK018C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-07 **Report Matrix:** Sea Cucumber **Collected:** 09/16/2013
Sample: MAK019C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-08 **Report Matrix:** Sea Cucumber **Collected:** 09/16/2013
Sample: MAK020C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-09 **Report Matrix:** Sea Cucumber **Collected:** 09/16/2013
Sample: MAK022C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-10 **Report Matrix:** Sea Cucumber **Collected:** 09/22/2013
Sample: MAK024C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-11 **Report Matrix:** Sea Cucumber **Collected:** 09/22/2013
Sample: MAK025C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-12 **Report Matrix:** Sea Cucumber **Collected:** 09/22/2013
Sample: MAK026C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-13 **Report Matrix:** Sea Cucumber **Collected:** 09/22/2013
Sample: MAK027C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-14 **Report Matrix:** Sea Cucumber **Collected:** 09/22/2013
Sample: MAK028C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-15 **Report Matrix:** Sea Cucumber **Collected:** 09/23/2013
Sample: MAK029C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-16 **Report Matrix:** Sea Cucumber **Collected:** 09/23/2013
Sample: MAK030C **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: perform MD/MS/MSD

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-17 **Report Matrix:** Sea Cucumber **Collected:** 09/23/2013
Sample: MAK031C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-18 **Report Matrix:** Sea Cucumber **Collected:** 09/23/2013
Sample: MAK032C **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: perform MD/MS/MSD

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-19 **Report Matrix:** Octopus **Collected:** 09/13/2013
Sample: MAK009O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-20 **Report Matrix:** Octopus **Collected:** 09/16/2013
Sample: MAK010O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-21 **Report Matrix:** Octopus **Collected:** 09/16/2013
Sample: MAK011O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-22 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK012O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-23 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK013O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-24 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK014O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-25 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK015O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-26 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK016O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-27 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK017O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-28 **Report Matrix:** Octopus **Collected:** 09/22/2013
Sample: MAK018O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-29 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK019O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-30 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK020O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-31 **Report Matrix:** Biota **Collected:** 09/23/2013
Sample: MAK020O - Duplicate Login **Sample Type:** Sample **Received:** 10/23/2013
Comments: logged in twice

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-32 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK021O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-33 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK022O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-34 **Report Matrix:** Octopus **Collected:** 09/23/2013
Sample: MAK023O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

Lab ID: 1343025-35 **Report Matrix:** Octopus **Collected:** 09/27/2013
Sample: MAK024O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler 2

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-36 **Report Matrix:** Sea Cucumber **Collected:** 09/09/2013
Sample: MAK001C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-37 **Report Matrix:** Sea Cucumber **Collected:** 09/09/2013
Sample: MAK002C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-38 **Report Matrix:** Sea Cucumber **Collected:** 09/09/2013
Sample: MAK004C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-39 **Report Matrix:** Sea Cucumber **Collected:** 09/09/2013
Sample: MAK005C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-40 **Report Matrix:** Sea Cucumber **Collected:** 09/11/2013
Sample: MAK006C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-41 **Report Matrix:** Sea Cucumber **Collected:** 09/11/2013
Sample: MAK007C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-42 **Report Matrix:** Sea Cucumber **Collected:** 09/11/2013
Sample: MAK008C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-43 **Report Matrix:** Sea Cucumber **Collected:** 09/11/2013
Sample: MAK009C **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-44 **Report Matrix:** Octopus **Collected:** 09/09/2013
Sample: MAK002O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-45 **Report Matrix:** Octopus **Collected:** 09/09/2013
Sample: MAK003O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-46 **Report Matrix:** Octopus **Collected:** 09/11/2013
Sample: MAK004O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-47 **Report Matrix:** Octopus **Collected:** 09/11/2013
Sample: MAK005O **Sample Type:** Sample **Received:** 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-48 **Report Matrix:** Octopus **Collected:** 09/11/2013
Sample: MAK006O **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: perform MD/MS/MSD

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-49 **Report Matrix:** Octopus **Collected:** 09/11/2013
Sample: MAK007O **Sample Type:** QC Sample **Received:** 10/23/2013
Comments: perform MD/MS/MSD

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

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Project ID: ARD-MV1302
PM: Lydia Greaves

Client PM: Dean Dickerson
Client PO: 22678 BSD

Sample Containers

Lab ID: 1343025-50
Sample: MAK008O
Comments: perform MD/MS/MSD

Report Matrix: Octopus
Sample Type: QC Sample

Collected: 09/11/2013
Received: 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Lab ID: 1343025-51
Sample: MAK001O

Report Matrix: Octopus
Sample Type: Sample

Collected: 09/09/2013
Received: 10/23/2013

Des	Container	Size	Lot	Preservation	P-Lot	pH	Ship. Cont.
A	Jar HDPE	4 oz	13-0198	none	n/a		Cooler

Shipping Containers

Cooler

Received: October 23, 2013 11:17
Tracking No: 932518877899 via FedEx
Coolant Type: Dry Ice
Temperature: -3.2 °C

Description: Cooler
Damaged in transit? No
Returned to client? No

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes

Cooler 2

Received: October 23, 2013 11:17
Tracking No: 932518877903 via FedEx
Coolant Type: Dry Ice
Temperature: -2.6 °C

Description: Cooler 2
Damaged in transit? No
Returned to client? No

Custody seals present? Yes
Custody seals intact? Yes
COC present? Yes

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CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

Brooks Rand Lab

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	ICP metals via 200.8	Total Hg 1631E	Methyl Mercury 1630 modified	As (III), As (V), AsB, MMA, DMA	Containers Sent	Remarks or Sample Location	PRESERVATION: ICED	PRESERVATION: Specify Chemicals added and final pH if known
MAK003C - test	9/9/2013	1005		x	1	x	x	x	x	1	Sea Cucumber	x	
MB-SO-HEE000 - Test	8/29/2013	1049		x	1	x	x	x	x	1	Octopus	x	
~~MB-SO-LIMU000-test~~	~~8/29/2013~~	~~1100~~		~~x~~	~~1~~	~~x~~	~~x~~	~~x~~	~~x~~	1	~~Limu~~	~~x~~	~~ASF 10·18~~

	Date	Time		
Relinquished by: (Signature)	10/22/13	1600	Relinquished by: (Signature)	REMARKS / SPECIAL INSTRUCTIONS:
Relinquished by: (Signature)	Date	Time ~~0935~~	Relinquished by: (Signature)	Test samples - please process this group before or with the accompanying project samples.
Received for Laboratory by: (Signature)	10/23/13	Time 0935	Shipping Ticket No.	Please send level 4 hardcopy report and excel edd to: Dean Dickerson, c/o ARDL, Inc. 400 Aviation Drive, Mount Vernon, IL 62864. Email questons to ddickerson@ardlinc.com.

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CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

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Brooks Rand Lab

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	ICP metals via 200.8	Total Hg 1631E	Methyl Mercury 1630 modified	As (III), As (V), AsB, MMA, DMA	Containers Sent								Remarks or Sample Location	PRESERVATION: ICED	PRESERVATION: Specify Chemicals added and final pH if known
MAK010C	9/13/2013	1128		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK014C	9/13/2013	1355		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK015C	9/13/2013	958		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK018C	9/16/2013	905		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK019C	9/16/2013	915		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK020C	9/16/2013	1018		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK022C	9/16/2013	1150		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK024C	9/22/2013	830		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK025C	9/22/2013	906		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK026C	9/22/2013	1018		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK027C	9/22/2013	1140		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK028C	9/22/2013	1300		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK029C	9/23/2013	820		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK030C	9/23/2013	833		x	1	x	x	x	x	1	Extra Volume							Sea Cucumber	x	
MAK031C	9/23/2013	1050		x	1	x	x	x	x	1								Sea Cucumber	x	
MAK032C	9/23/2013	1210		x	1	x	x	x	x	1	Extra Volume							Sea Cucumber	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	10/22/13	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	10/23/13	0935	

REMARKS / SPECIAL INSTRUCTIONS:

Project Samples. Please treat each matrix separately.

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CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

Brooks Rand Lab

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	ICP metals via 200.8	Total Hg 1631E	Methyl Mercury 1630 modified	As (III), As (V), AsB, MMA, DMA	Cartridges Sent								Remarks or Sample Location	PRESERVATION: ICED	PRESERVATION: Specify Chemicals added and final pH if known
MAK009O	9/13/2013	1248		x	1	x	x	x	x	\								Octopus	x	
MAK010O	9/16/2013	1025		x	1	x	x	x	x	\								Octopus	x	
MAK011O	9/16/2013	1110		x	1	x	x	x	x	\								Octopus	x	
MAK012O	9/22/2013	1315		x	1	x	x	x	x	\								Octopus	x	
MAK013O	9/22/2013	1400		x	1	x	x	x	x	\								Octopus	x	
MAK014O	9/23/2013	820		x	1	x	x	x	x	\								Octopus	x	
MAK015O	9/22/2013	830		x	1	x	x	x	x	\								Octopus	x	
MAK016O	9/22/2013	1115		x	1	x	x	x	x	\								Octopus	x	
MAK017O	9/22/2013	1140		x	1	x	x	x	x	\								Octopus	x	
MAK018O	9/22/2013	1206		x	1	x	x	x	x	\								Octopus	x	
MAK019O	9/23/2013	833		x	1	x	x	x	x	\								Octopus	x	
MAK020O	9/23/2013	855		x	1	x	x	x	x	\								Octopus	x	
MAK021O	9/23/2013	927		x	1	x	x	x	x	\								Octopus	x	
MAK022O	9/23/2013	1020		x	1	x	x	x	x	\								Octopus	x	
MAK023O	9/23/2013	1136		x	1	x	x	x	x	\								Octopus	x	
MAK024O	9/27/2013	828		x	1	x	x	x	x	\								Octopus	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	REMARKS / SPECIAL INSTRUCTIONS:
	10/22/13	1600		
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)	Test samples - please process this group before or with the accompanying project samples.
Received for Laboratory by: (Signature)	Date 10/23/13	Time 0935	Shipping Ticket No.	Please send level 4 hardcopy report and excel edd to: Dean Dickerson, c/o ARDL, Inc. 400 Aviation Drive, Mount Vernon, IL 62864. Email questons to ddickerson@ardlinc.com.

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CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

Brooks Rand Lab

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	ICP metals via 200.8	Total Hg 1631E	Methyl Mercury 1630 modified	As (III), As (V), AsB, MMA, DMA	Containers 5 Fert								Remarks or Sample Location	PRESERVATION: ICED	PRESERVATION: Specify Chemicals added and final pH if known
MAK001C	9/9/2013	1403		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK002C	9/9/2013	1227		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK004C	9/9/2013	1420		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK005C	9/9/2013	1514		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK006C	9/11/2013	1005		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK007C	9/11/2013	1020		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK008C	9/11/2013	1115		x	1	x	x	x	x	\								Sea Cucumber	x	
MAK009C	9/11/2013	1126		x	1	x	x	x	x	\								Sea Cucumber	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	10/22/13	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	10/23/13	0935	

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CHAIN OF CUSTODY RECORD

Project
ARDL / Makau Military Reservation Oahu, Hawaii Project

SAMPLERS (Signature)

Brooks Rand Lab

SAMPLE NUMBER	DATE	TIME	Comp	Grab	# of Containers	ICP metals via 200.8	Total Hg 1631E	Methyl Mercury 1630 modified	As (III), As (V), AsB, MMA, DMA	Containers Sent								Remarks or Sample Location	PRESERVATION: ICED	PRESERVATION: Specify Chemicals added and final pH if known
MAK001O	9/9/2013	1104		x	1	x	x	x	x	1								Octopus	x	
MAK002O	9/9/2013	1215		x	1	x	x	x	x	1								Octopus	x	
MAK003O	9/9/2013	1505		x	1	x	x	x	x	1								Octopus	x	
MAK004O	9/11/2013	1011		x	1	x	x	x	x	1								Octopus	x	
MAK005O	9/11/2013	1035		x	1	x	x	x	x	1								Octopus	x	
MAK006O	9/11/2013	1055		x	1	x	x	x	x	2	Extra Volume							Octopus	x	
MAK007O	9/11/2013	1125		x	1	x	x	x	x	2	↓							Octopus	x	
MAK008O	9/11/2013	1210		x	1	x	x	x	x	1	↓							Octopus	x	

Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
	10/22/13	1600	
Relinquished by: (Signature)	Date	Time	Relinquished by: (Signature)
Received for Laboratory by: (Signature)	Date	Time	Shipping Ticket No.
	10/23/13	0935	

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ORIGIN ID:GRBA (920) 469-2436
SHIPPING
PACE ANALYTICAL
1241 BELLEVUE

GREEN BAY, WI 54302
UNITED STATES US

ACTWGT:
CAD: 255289/

DRY ICE: 4.5 KGS
BILL THIRD PARTY

TIFFANY STILLWATER
BROOKS RAND LLC
3958 6TH AVE NW

SEATTLE WA 98107
(206) 632-6206
INV:
PO:
REF:
DEPT:

INSPECTION BY ORIGIN
DG SPECIALIST
EMP. # 232101
11#003 M-1558 1/08 RRD

FedEx Express

J131113062230126

2 of 2
MPS# 0263 9325 1887 7903
Mstr# 9325 1887 7899
0201

WED – 23 OCT AA
STANDARD OVERNIGHT
ICE
98107
SEA
WA-US

NC BFIA

-26°C

Part # 1561148-434 RIT2 03/12

ORIGIN ID:GRBA (920) 469-2436
SHIPPING
PACE ANALYTICAL
1241 BELLEVUE

GREEN BAY, WI 54302
UNITED STATES US

SHIP DATE: 22OCT13
ACTWGT: 18.0 LB MAN
CAD: 255289/CAFE2704

DRY ICE: 4.5 KGS
BILL THIRD PARTY

TO TIFFANY STILLWATER
BROOKS RAND LLC
3958 6TH AVE NW

SEATTLE WA 98107
(206) 632-6206
REF:
DEPT:

-32°C

FedEx Express

J131113062230126

1 of 2
TRK# 0201 9325 1887 7899
MASTER

WED – 23 OCT AA
STANDARD OVERNIGHT
ICE
98107
SEA
WA-US

NC BFIA

Part # 1561148-434 RIT2 03/12

...ation not required

...ve t

...p

...airbills must have the following:
1. Dry Ice; 9; UN1845

...ice amount must be in

Sample Calculations

CVAFS

EPA 1631, Biota*

$$\frac{\frac{CFD}{A} - \frac{BF_d}{A_d}}{I * 1000}$$

C – result produced at the instrument, pg
F – final volume of the sample preparation, mL
D – dilution factor of any dilution of the preparation made at the instrument
A – analyzed volume of the prep or dilution of the prep, mL
B- the mean of the method blank instrument result, pg
F_d – default final prep volume for the method used for the method blanks, 40 mL
A_d – default analyzed volume for the method used for the method blanks, 1 mL
I – aliquot of sample prepared, g.
* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

EPA 1630, Biota*

$$\frac{\frac{CFD}{A} - \frac{BF_d}{A_d}}{I * 1000}$$

C – result produced at the instrument, pg
F – final volume of the sample preparation, mL
D – dilution factor of any dilution of the preparation made at the instrument
A – analyzed volume of the prep or dilution of the prep, mL
B – the mean of the method blank instrument result, pg
F_d – default final prep volume for the method used for the method blanks, 2.5 mL
A_d – default analyzed volume for the method used for the method blanks, 0.03 mL
I – aliquot of sample prepared, g.
* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

Sample Calculations

ICP-MS Metals

EPA 1638, Biota*

$$\left(C - \frac{D_s B}{D_b}\right)\frac{F}{I * 1000}$$

C – concentration of the sample preparation, corrected for the dilution at the instrument, µg/L
D_s – dilution factor of the sample
D_b – default dilution factor for the method, used for the method blanks, 10x for biota
B – the mean of the method blank instrument result, µg/L
F – final volume of the prep, mL (40 mL)
I – aliquot of sample prepared in grams (typically ~0.5 g)
* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

Arsenic Speciation (HGAAS)

EPA 1632, Biota* [includes As(In), As(III), MMA, & DMA]

$$\frac{\frac{CFD}{A} - \frac{BF_d}{A_d}}{I * 1000}$$

C – result produced at the instrument, ng
F – final volume of the sample preparation, mL
D – dilution factor of any dilution of the preparation made at the instrument
A – analyzed volume of the prep or dilution of the prep, mL
B – the mean of the method blank instrument result, ng
F_d – default final prep volume for the method used for the method blanks, 10 mL
A_d – default analyzed volume for the method used for the method blanks, 2 mL
I – aliquot of sample prepared, g.
* If requested, the final result is dry weight corrected by dividing it by the percent total solids result

EPA 1632, [As(V)] by Difference for All Matrices*

$R_{As(In)} - R_{As(III)}$

$R_{As(In)}$ – final result for inorganic arsenic
$R_{As(III)}$ – final result for trivalent arsenic
* If requested, the final result for solids is dry weight corrected by dividing it by the percent total solids result

ANALYSIS SEQUENCE

1300845

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1300845-IBL1	1300845	QC	1		-			
1300845-IBL2	1300845	QC	2		-			
1300845-IBL3	1300845	QC	3		-			
1300845-CAL1	1300845	QC	4	1348011	-			
1300845-CAL2	1300845	QC	5	1348012	-			
1300845-CAL3	1300845	QC	6	1348013	-			
1300845-CAL4	1300845	QC	7	1348014	-			
1300845-CAL5	1300845	QC	8	1348015	-			
1300845-ICV1	1300845	QC	9	1348009	-			
1300845-CCV1	1300845	QC	10	1348008	-			
1300845-CCB1	1300845	QC	11		-			
B132010-BLK1	B132010	QC	12		-			
B132010-BLK2	B132010	QC	13		-			
B132010-BLK3	B132010	QC	14		-			
B132010-BLK4	B132010	QC	15		-			
B132010-BS1	B132010	QC	16		-			
B132010-SRM1	B132010	QC	17		-			
B132010-SRM2	B132010	QC	18		-			
1345019-01	B132010	As(Inorg)-B-HClExt-HGAAS	19			ARD-MV1302	12/2/2013	
1345019-01RE1	B132010	As(Inorg)-B-HClExt-HGAAS	20			ARD-MV1302	12/2/2013	Added 12/9/2013 by BJT
B132010-DUP1	B132010	QC	21		1345019-01RE1			
B132010-MS1	B132010	QC	22		1345019-01RE1			
B132010-PS1	B132010	QC	23		1345019-01RE1			
1345019-02	B132010	As(Inorg)-B-HClExt-HGAAS	24			ARD-MV1302	12/2/2013	
1345019-02RE1	B132010	As(Inorg)-B-HClExt-HGAAS	25			ARD-MV1302	12/2/2013	Added 12/9/2013 by BJT
1345019-03	B132010	As(Inorg)-B-HClExt-HGAAS	26			ARD-MV1302	12/2/2013	

ANALYSIS SEQUENCE

1300845

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-04	B132010	As(Inorg)-B-HClExt-HGAAS	27			ARD-MV1302	12/2/2013	
1345019-05	B132010	As(Inorg)-B-HClExt-HGAAS	28			ARD-MV1302	12/2/2013	
1345019-06	B132010	As(Inorg)-B-HClExt-HGAAS	29			ARD-MV1302	12/2/2013	
1345019-07	B132010	As(Inorg)-B-HClExt-HGAAS	30			ARD-MV1302	12/2/2013	
1345019-08	B132010	As(Inorg)-B-HClExt-HGAAS	31			ARD-MV1302	12/2/2013	
1345019-09	B132010	As(Inorg)-B-HClExt-HGAAS	32			ARD-MV1302	12/2/2013	
1345019-10	B132010	As(Inorg)-B-HClExt-HGAAS	33			ARD-MV1302	12/2/2013	
1300845-CCV2	1300845	QC	34	1348008	-			
1300845-CCB2	1300845	QC	35		-			
1345019-11	B132010	As(Inorg)-B-HClExt-HGAAS	36			ARD-MV1302	12/2/2013	
1345019-11RE1	B132010	As(Inorg)-B-HClExt-HGAAS	37			ARD-MV1302	12/2/2013	Added 12/9/2013 by BJT
B132010-DUP2	B132010	QC	38		1345019-11RE1			
B132010-PS2	B132010	QC	39		1345019-11RE1			
1345019-12	B132010	As(Inorg)-B-HClExt-HGAAS	40			ARD-MV1302	12/2/2013	
1345019-13	B132010	As(Inorg)-B-HClExt-HGAAS	41			ARD-MV1302	12/2/2013	
1345019-14	B132010	As(Inorg)-B-HClExt-HGAAS	42			ARD-MV1302	12/2/2013	
1345019-15	B132010	As(Inorg)-B-HClExt-HGAAS	43			ARD-MV1302	12/2/2013	
1345019-16	B132010	As(Inorg)-B-HClExt-HGAAS	44			ARD-MV1302	12/2/2013	
1345019-17	B132010	As(Inorg)-B-HClExt-HGAAS	45			ARD-MV1302	12/2/2013	
1345019-18	B132010	As(Inorg)-B-HClExt-HGAAS	46			ARD-MV1302	12/2/2013	
1345019-19	B132010	As(Inorg)-B-HClExt-HGAAS	47			ARD-MV1302	12/2/2013	
1345019-20	B132010	As(Inorg)-B-HClExt-HGAAS	48			ARD-MV1302	12/2/2013	
1300845-CCV3	1300845	QC	49	1348008	-			
1300845-CCB3	1300845	QC	50		-			
1345019-21	B132010	As(Inorg)-B-HClExt-HGAAS	51			ARD-MV1302	12/2/2013	
B132010-DUP3	B132010	QC	52		1345019-21			

ANALYSIS SEQUENCE

1300845

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
B132010-PS3	B132010	QC	53		1345019-21			
1345019-22	B132010	As(Inorg)-B-HClExt-HGAAS	54			ARD-MV1302	12/2/2013	
1345019-23	B132010	As(Inorg)-B-HClExt-HGAAS	55			ARD-MV1302	12/2/2013	
1345019-24	B132010	As(Inorg)-B-HClExt-HGAAS	56			ARD-MV1302	12/2/2013	
1343025-24	B132010	As(Inorg)-B-HClExt-HGAAS	57			ARD-MV1302	12/2/2013	
1300845-CCV4	1300845	QC	58	1348008	-			
1300845-CCB4	1300845	QC	59		-			

Manual Integration Abbreviation Sheet

m. Modified peak shape due to split peak in Guru software

u. Unidentified peak. No peak called out in the appropriate retention time window

m1. Modified peak due to dip in hydride baseline. Peak integrated from the new baseline

m2. Modified peak due to dip in hydride baseline. Peak integrated from old baseline

dp. Double peak called out by software.

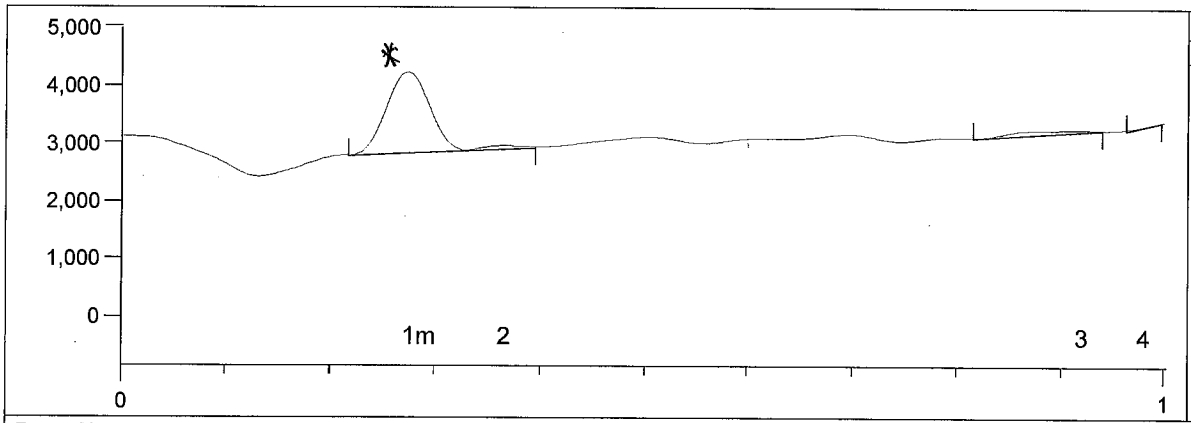
g. Analysis volume value is a mass, assumed to be equal to a volume based on an assumed density of 1.00 +/- 0.03g/mL.

Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

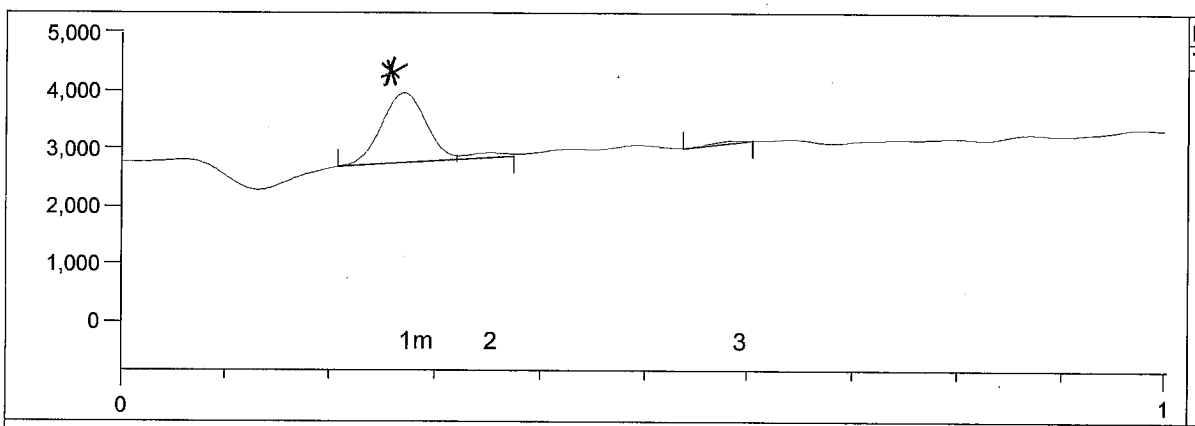


Date: 12/8/13
Time: 7:43 AM

Peak	rt	Area
1m	0.27	39,078
2	0.36	1,208
3	0.91	3,088
4	0.97	17

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL1		1m	39,078	0.179		0.179	< 0.4	accept
Notes											

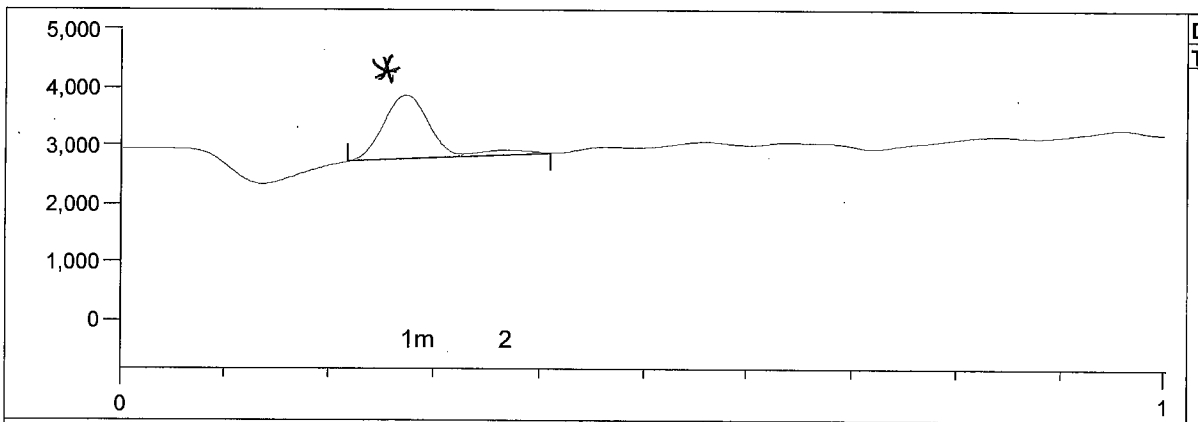


Date: 12/8/13
Time: 7:47 AM

Peak	rt	Area
1m	0.27	33,971
2	0.35	1,261
3	0.59	1,014

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
3		CB	SEQ-IBL2		1m	33,971	0.155		0.155	< 0.4	accept
Notes											



Date: 12/8/13
Time: 7:52 AM

Peak	rt	Area
1m	0.27	31,716
2	0.36	2,522

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		CB	SEQ-IBL3		1m	31,716	0.145		0.145	< 0.4	accept
Notes											

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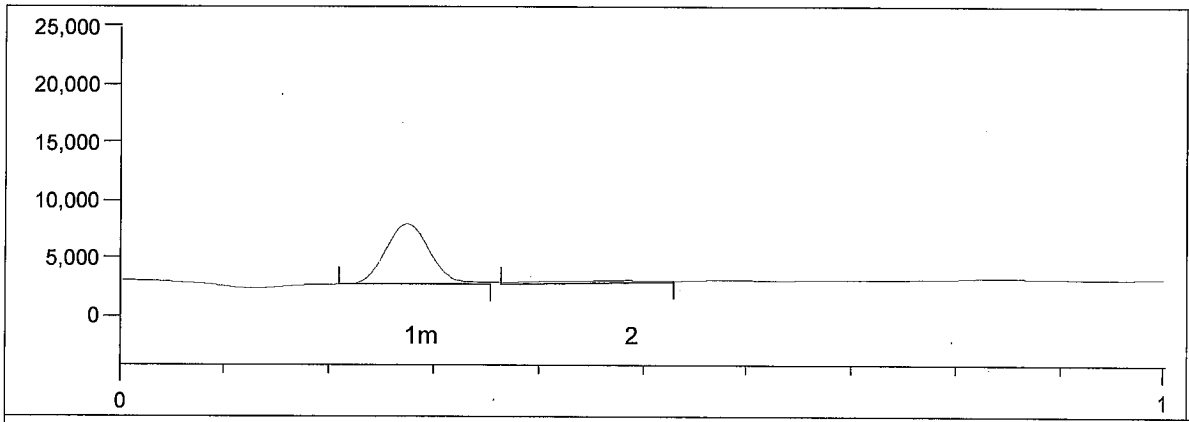
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

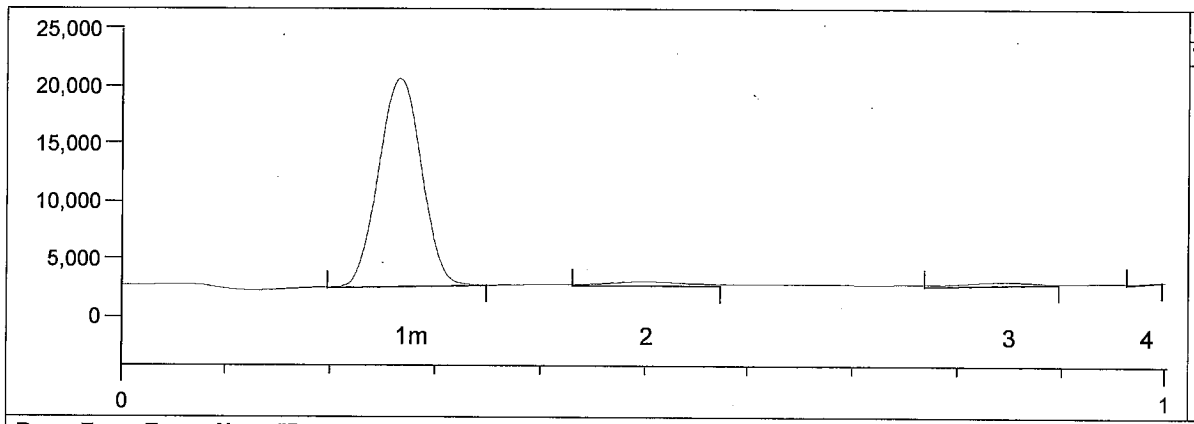


Date: 12/8/13
Time: 7:56 AM

Peak	rt	Area
1m	0.27	148,124
2	0.48	6,038

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
5		STD	SEQ-CAL1		1m	148,124	0.518		104	80-120	accept
Notes											

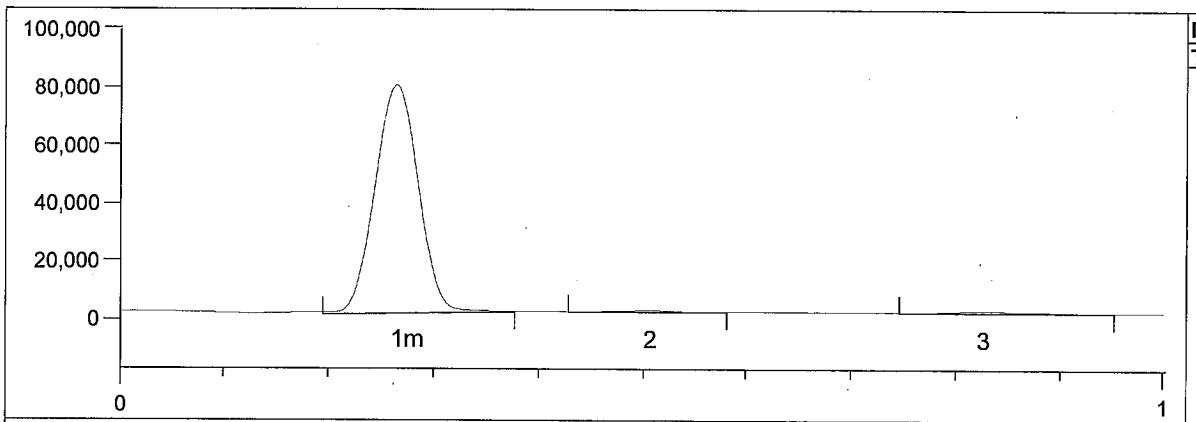


Date: 12/8/13
Time: 8:00 AM

Peak	rt	Area
1m	0.26	512,901
2	0.50	10,135
3	0.84	9,294
4	0.98	52

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL2		1m	512,901	2.19		109	80-120	accept
Notes											



Date: 12/8/13
Time: 8:05 AM

Peak	rt	Area
1m	0.26	2,239,045
2	0.50	16,942
3	0.82	23,995

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
7		STD	SEQ-CAL3		1m	2,239,045	10.1		101	80-120	accept
Notes											

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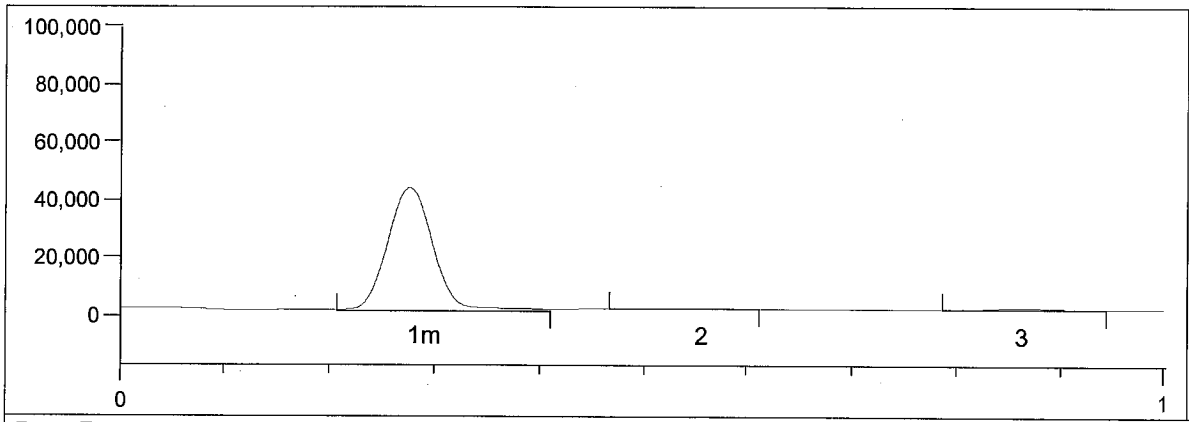
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

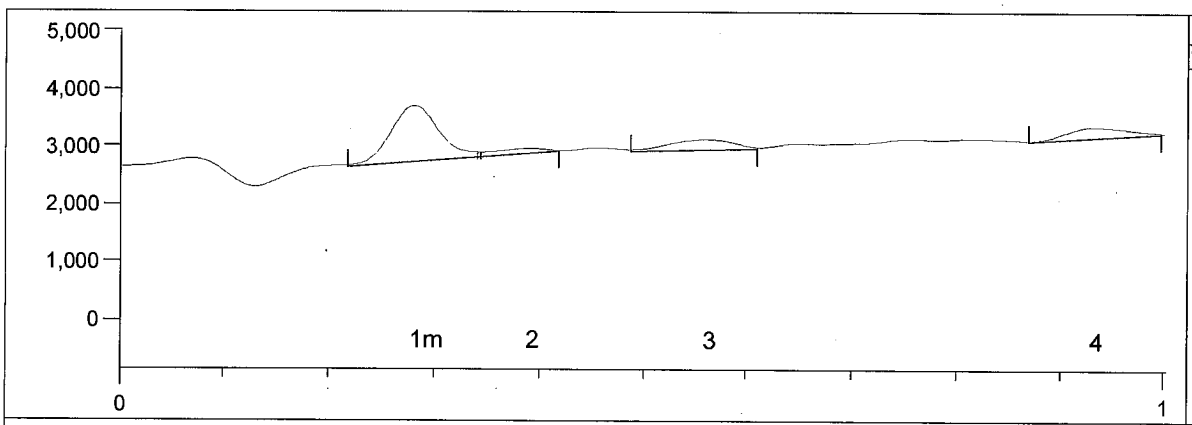


Date: 12/8/13
Time: 8:23 AM

Peak	rt	Area
1m	0.27	1,228,146
2	0.55	13,424
3	0.86	24,113

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
11		OPR	SEQ-CCV		1m	1,228,146	5.46		109	80-120	accept
Notes											

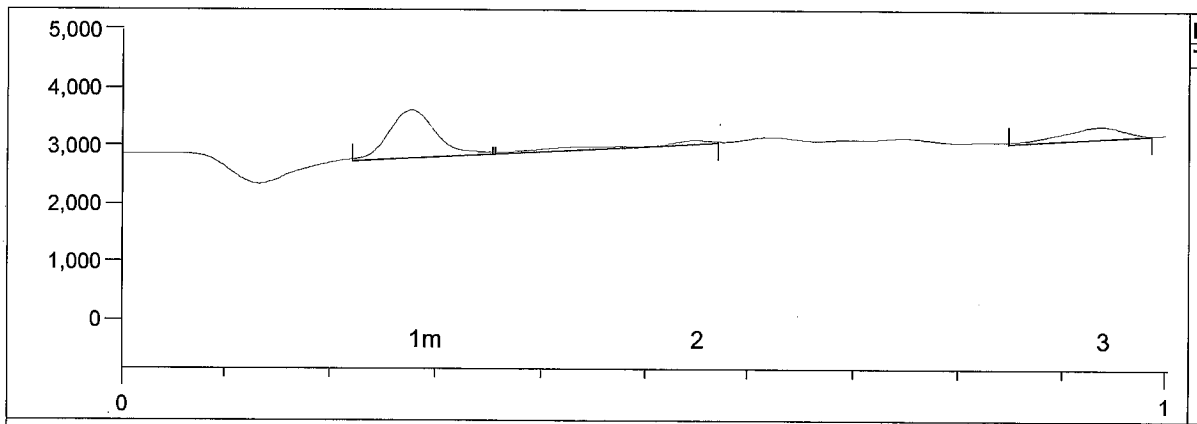


Date: 12/8/13
Time: 8:28 AM

Peak	rt	Area
1m	0.28	29,675
2	0.39	2,517
3	0.56	6,218
4	0.93	6,992

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
12		CCB	SEQ-CCB		1m	29,675	0.136		0.136	< 0.4	accept
Notes											



Date: 12/8/13
Time: 8:33 AM

Peak	rt	Area
1m	0.27	23,364
2	0.54	2,244
3	0.93	7,646

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
13		S	B132010-BLK1		1m	23,364	-0.0529	0.00		< HS	accept
Notes											

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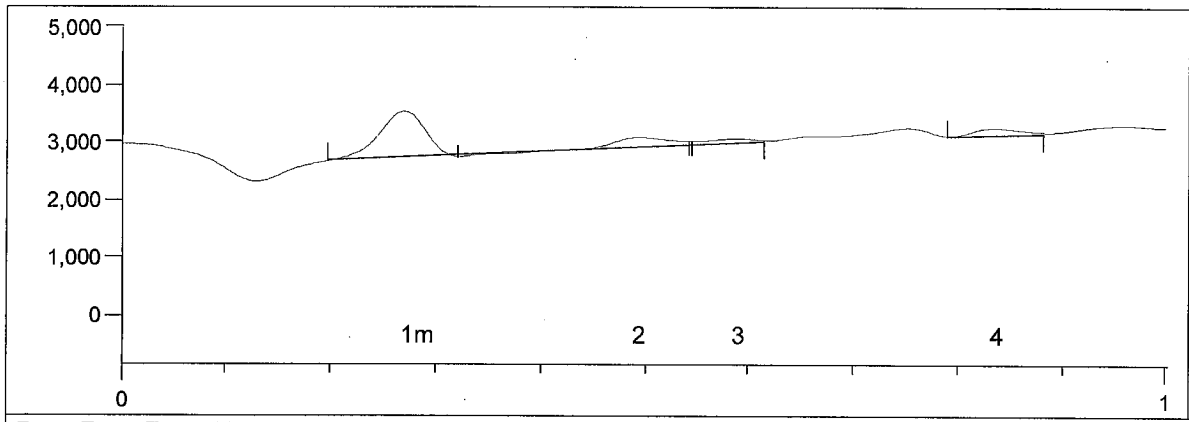
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

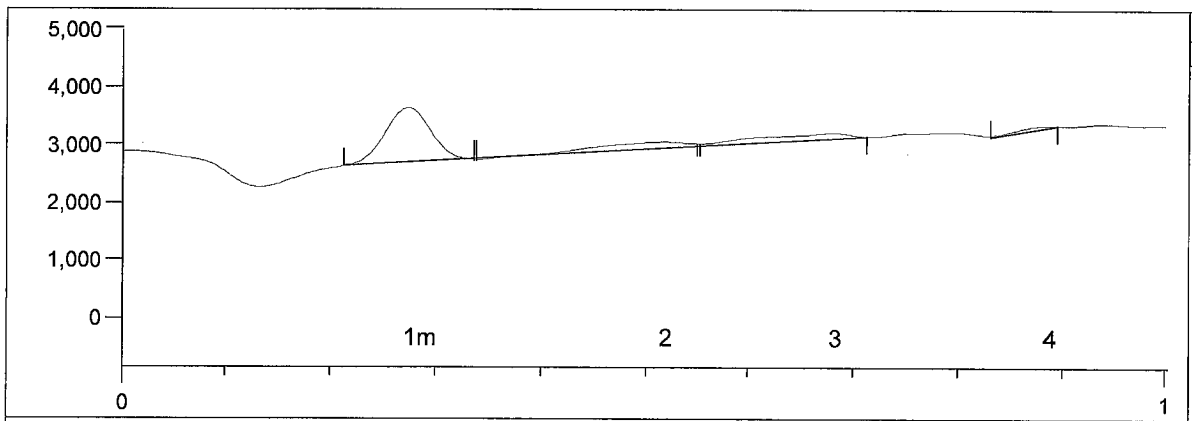


Date: 12/8/13
Time: 8:37 AM

Peak	rt	Area
1m	0.27	23,093
2	0.49	4,160
3	0.58	1,743
4	0.83	3,307

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		S	B132010-BLK2		1m	23,093	-0.0541	0.00		< HS	accept
Notes											

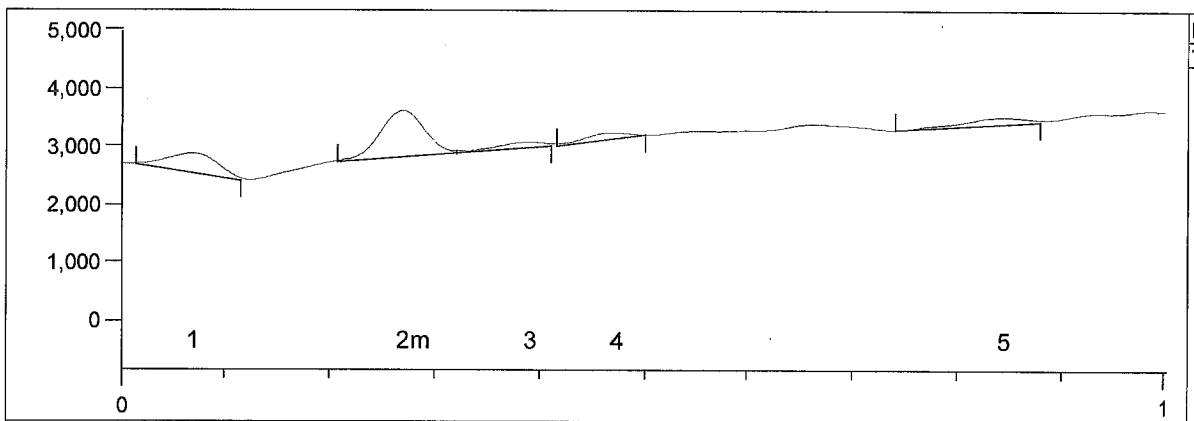


Date: 12/8/13
Time: 8:42 AM

Peak	rt	Area
1m	0.27	27,817
2	0.51	7,538
3	0.68	7,709
4	0.88	1,255

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132010-BLK3		1m	27,817	-0.0325	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 8:46 AM

Peak	rt	Area
1	0.06	9,525
2m	0.26	21,509
3	0.38	1,483
4	0.47	2,783
5	0.84	3,910

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132010-BLK4		2m	21,509	-0.0614	0.00		< HS	accept
Notes											

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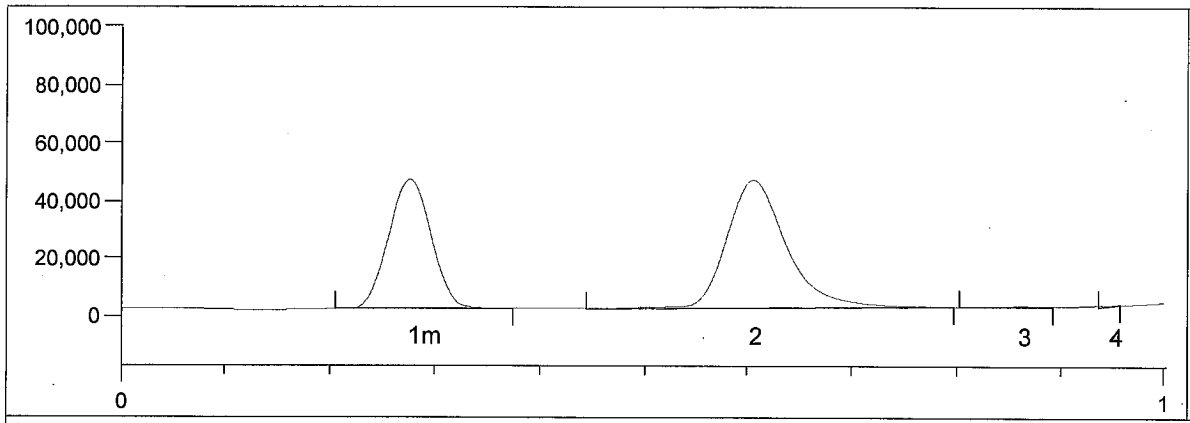
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

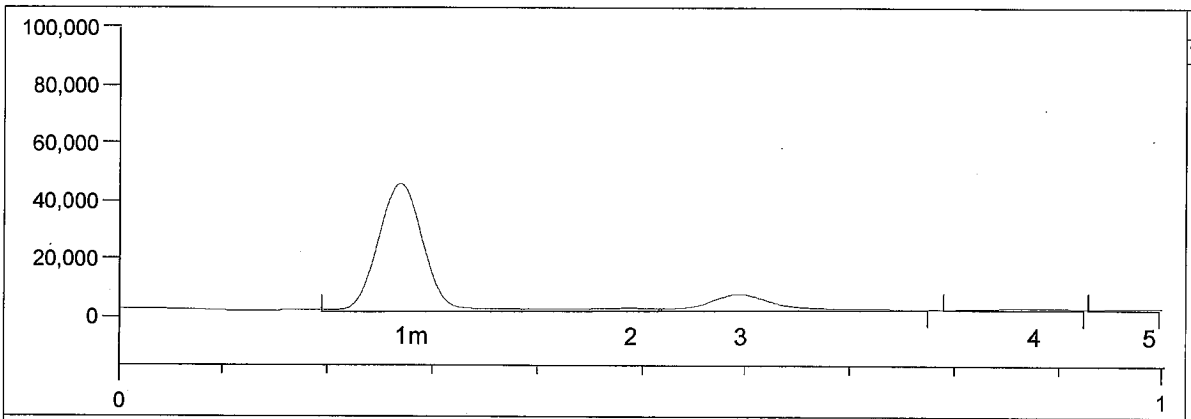


Date: 12/8/13
Time: 9:16 AM

Peak	rt	Area
1m	0.27	1,276,413
2	0.60	1,778,064
3	0.86	5,878
4	0.95	-5

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
22		S	B132010-DUP1		1m	1,276,413	5.68	0.00		< HS	accept
Notes											

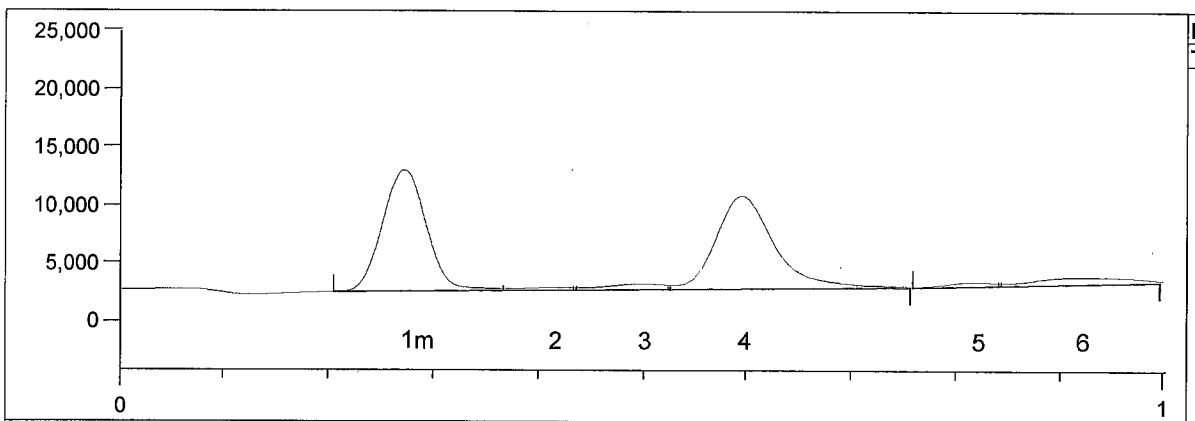


Date: 12/8/13
Time: 10:01 AM

Peak	rt	Area
1m	0.26	1,266,929
2	0.48	26,751
3	0.59	218,461
4	0.87	12,134
5	0.98	1,967

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
27		S	1345019-03		1m	1,266,929	5.64	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:15 AM

Peak	rt	Area
1m	0.27	303,097
2	0.41	6,069
3	0.50	17,496
4	0.59	308,374
5	0.82	8,170
6	0.92	31,837

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-06		1m	303,097	1.23	0.00		< HS	accept
Notes											

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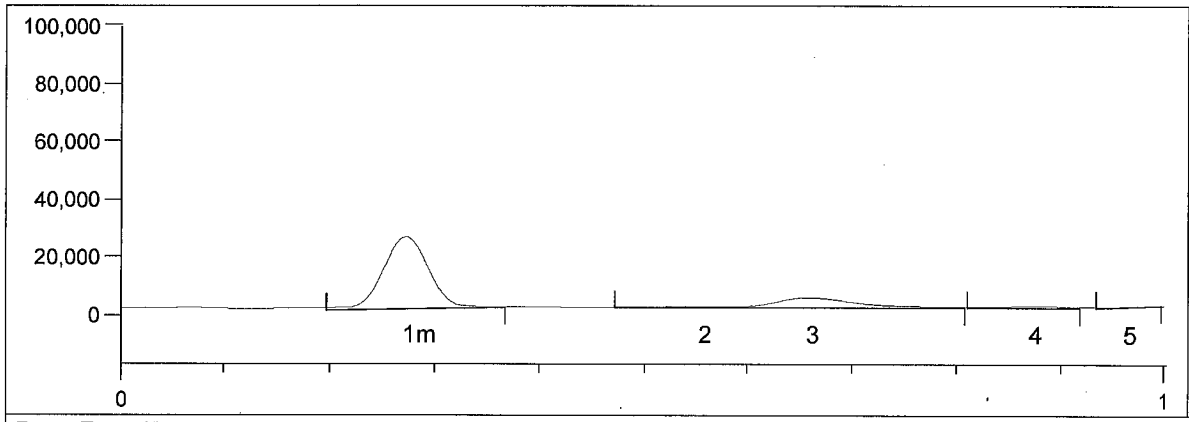
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

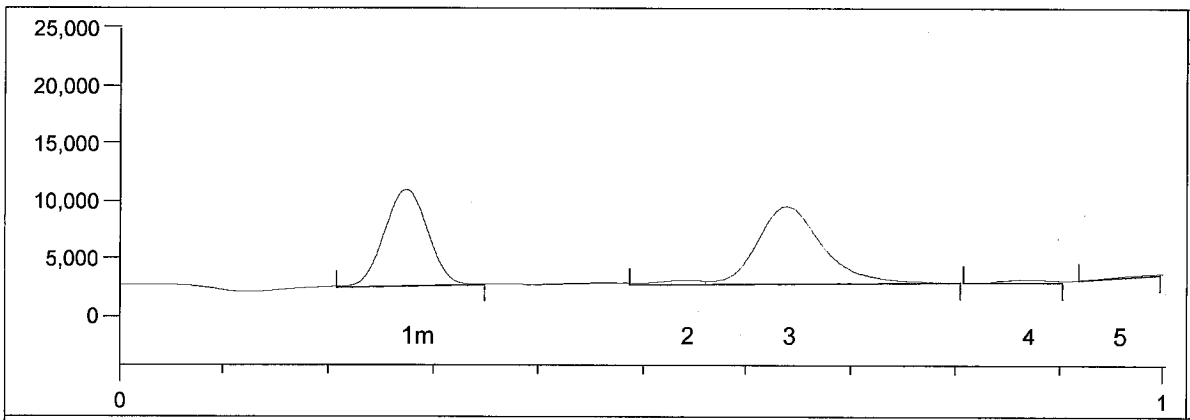


Date: 12/8/13
Time: 10:20 AM

Peak	rt	Area
1m	0.27	707,045
2	0.55	15,309
3	0.66	170,875
4	0.87	8,966
5	0.96	338

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-07		1m	707,045	3.07	0.00		< HS	accept
Notes											

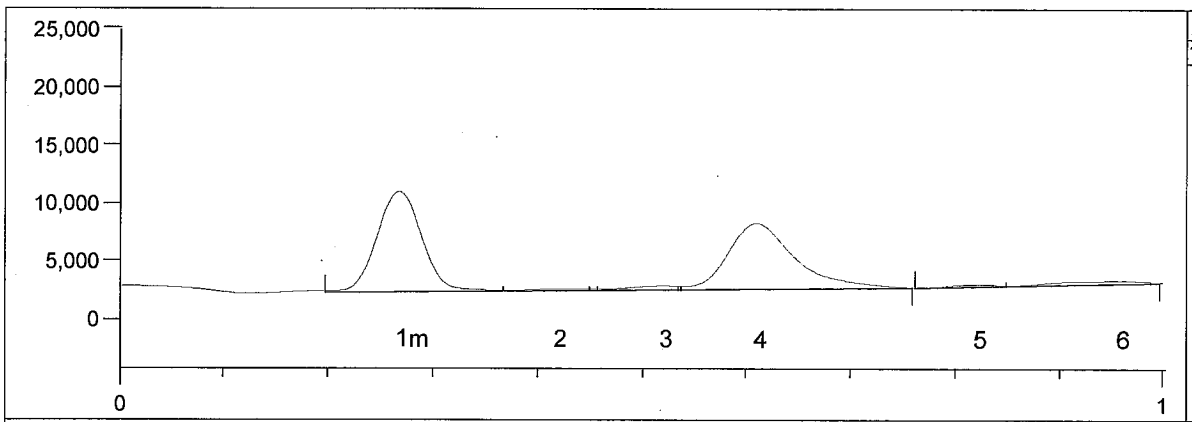


Date: 12/8/13
Time: 10:29 AM

Peak	rt	Area
1m	0.27	236,667
2	0.54	7,069
3	0.64	287,790
4	0.86	6,026
5	0.95	1,887

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-09		1m	236,667	0.923	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:34 AM

Peak	rt	Area
1m	0.26	243,819
2	0.42	598
3	0.52	7,508
4	0.61	248,750
5	0.82	4,905
6	0.96	15,525

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
34		S	1345019-10		1m	243,819	0.956	0.00		< HS	accept
Notes											

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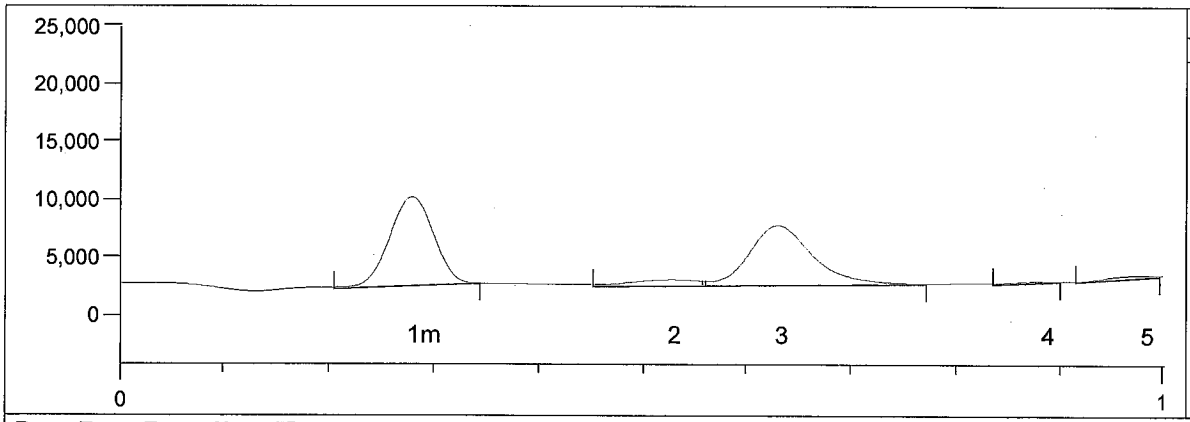
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

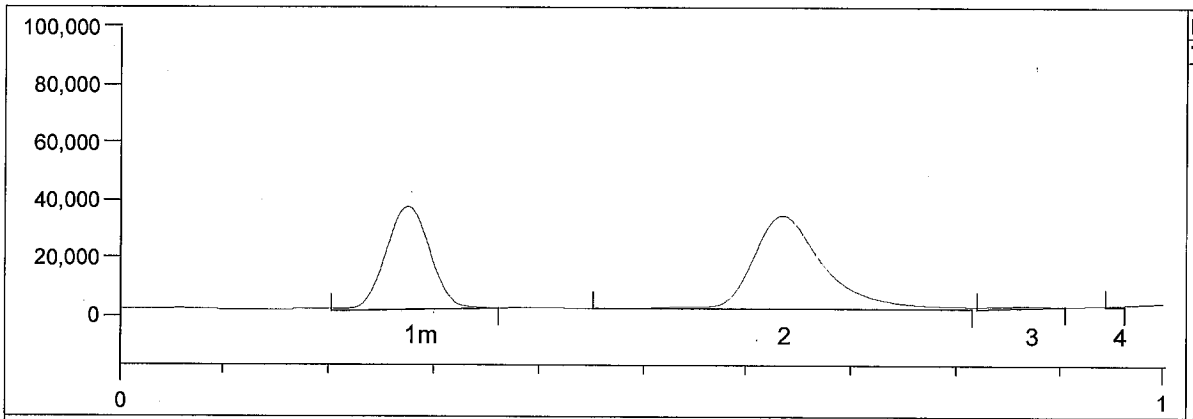


Date: 12/8/13
Time: 10:48 AM

Peak	rt	Area
1m	0.28	219,812
2	0.52	16,594
3	0.63	210,302
4	0.88	1,463
5	0.98	5,488

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
37		S	1345019-11		1m	219,812	0.846	0.00		< HS	accept
Notes											

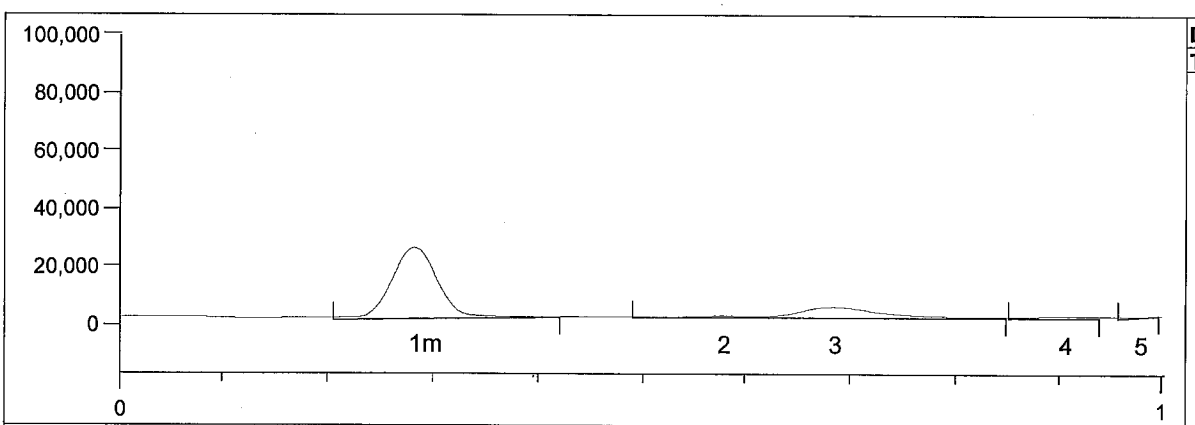


Date: 12/8/13
Time: 10:55 AM

Peak	rt	Area
1m	0.27	1,012,738
2	0.63	1,447,626
3	0.87	5,653
4	0.95	-46

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
38		S	1345019-11RE1		1m	1,012,738	4.47	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:12 AM

Peak	rt	Area
1m	0.28	698,023
2	0.57	14,954
3	0.68	177,300
4	0.90	3,710
5	0.97	262

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
41		S	1345019-12		1m	698,023	3.03	0.00		< HS	accept
Notes											

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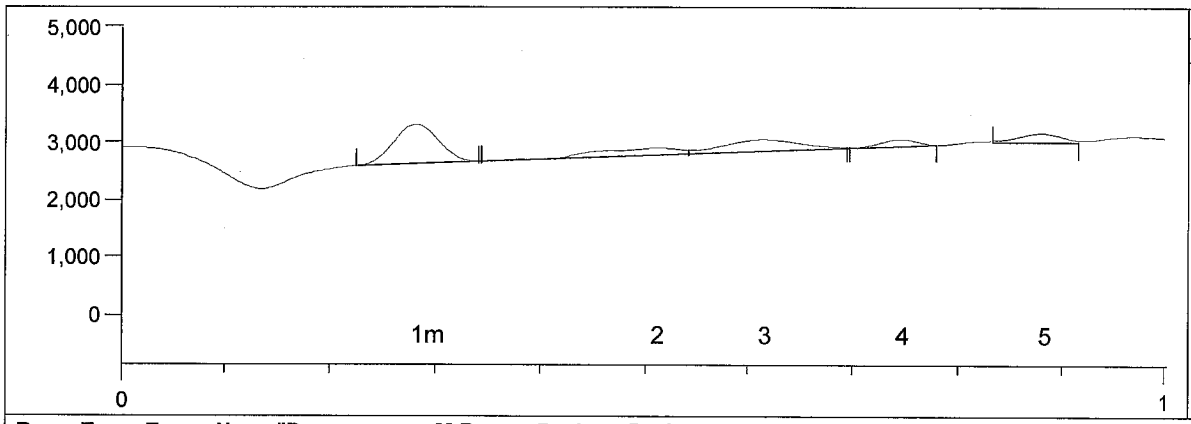
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

Date Analyzed: 12/8/13
Analyst Name: BJT

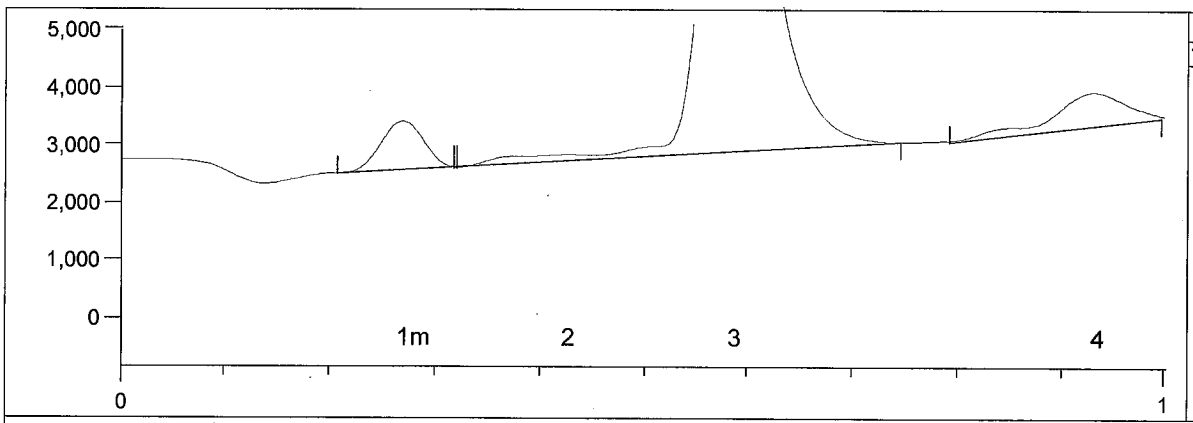


Date: 12/8/13
Time: 12:03 PM

Peak	rt	Area
1m	0.28	19,802
2	0.51	6,979
3	0.61	10,488
4	0.74	3,074
5	0.88	3,190

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
51		CCB	SEQ-CCB		1m	19,802	0.0906		0.0906	< 0.4	accept
Notes											

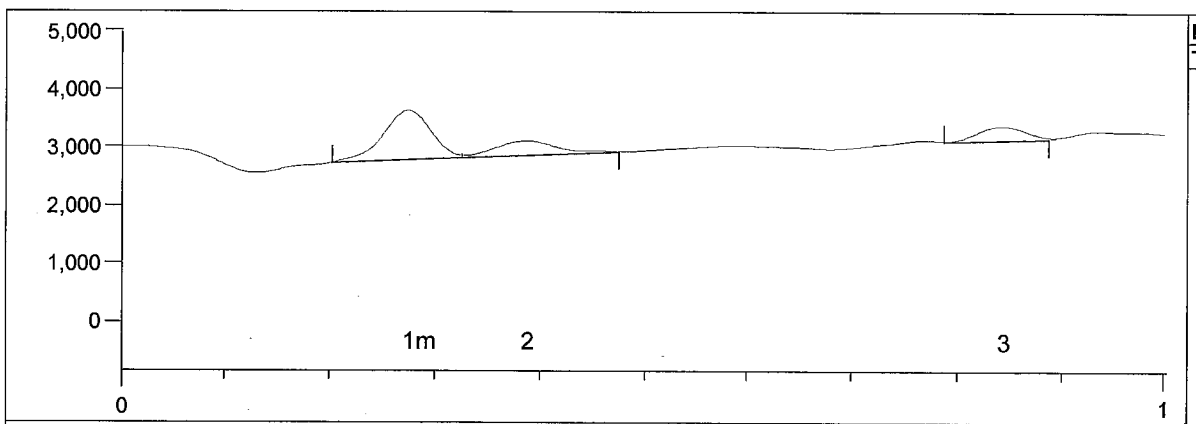


Date: 12/8/13
Time: 12:40 PM

Peak	rt	Area
1m	0.26	23,334
2	0.42	6,888
3	0.58	422,577
4	0.93	28,037

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1343025-24		1m	23,334	-0.0530	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:50 PM

Peak	rt	Area
1m	0.27	25,481
2	0.38	9,424
3	0.84	6,946

MSU 12/11/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		CCB	SEQ-CCB		1m	25,481	0.117		0.117	< 0.4	accept
Notes											

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SOP(s) / Rev#(s): 0021 Rev 46

As(In) ☒ As(III) ☐ MMA ☐ DMA ☐ Analysis Sheet

Sequence: 1300845	Batch(es): B132010	Matrix: Biota
Analyst: BJT	Date: 12/8/13	Pump purge time: 2:30
Cal. blank (average): 0.1160	Cal. coefficient: 0.00457	RSD: 9.12
Method blank (average): -0.0005	Noise: 1181	Trap(s) #: 41
Cal. Std. 10ng/mL: 1348003	ICV Std. 100ng/mL: 1348004	4% NaBH4: 1344014
6M HCl: 1349002	2.5M Tris-HCl: —	

Run #	Sample ID	Analyzed volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
1	Test	0.500		1348003
2	1BL	—		m2
3	1BL	—		m2
4	1BL	—		m2
5	CAL1	0.050		1348003 m2
6	CAL2	0.200		m2
7	CAL3	1.00		m2
8	CAL4	2.00		~~AA2~~ 12/8/13 BJT
9	CAL5	3.00		m2 reject suppression
10	ICV	0.050		1348004
11	CCV	0.500		1348003 m2
12	CCB	—		m2
13	B132010 BLK1	2.00		m2
14	BLK2			m2
15	3			
16	4			
17	BS1	2.00		
18	SRM1	2.00		
19	SRM2	2.00		
20	1345019-01	2.00		< 2x over cal.
21	-01REI	0.500		
22	B132010 DUP1	0.500		m2
23	MS1	0.500		under spiked.
24	~~MSD1~~ RS1	0.500		19-01REI (1mL of 1348003)

Comments:

As(In) ☒ As(III) ☐ MMA ☐ DMA ☐ Analysis Sheet

Sequence: 1300845 Batch: 132010 Analyst: BJT Date: 12/8/13

Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
25	1345019-02	0.500		<2x over cal
26	↓ -02RE1	0.100		
27	↓ -03	0.100		2m
28	↓ -04	0.100		
29	↓ 05	0.100		
30	↓ 06	0.100		2m
31	↓ 07	0.100		↓
32	↓ 08	0.100		
33	↓ 09	0.100		2m
34	↓ 10	0.100		↓
35	CCV	0.500		1348004
36	CCB	—		
37	1345019-11	0.100		2m
38	↓ -11RE1	0.500		2M 12/11/13 BJT
40	B132010 PS2	0.500		19-11RE1 (1mL of 1348004) 3
39	↓ DUP2	↓		
41	1345019-12	0.100		2m
42	↓ -13	0.100		
43	↓ -14	0.100		
44	↓ -15	0.100		
45	↓ -16	0.100		
46	↓ -17	0.100		
47	↓ -18	0.100		
48	↓ -19	0.100		
49	↓ -20	0.100		12/11/13 BJT
50	CCV	0.500		1348004 3
51	CCB	—		2m
52	1345019-21	0.100		

Comments: _____

As(In) ☒ As(III) ☐ MMA ☐ DMA ☐ Analysis Sheet

Sequence: 1300845 Batch: 132010 Analyst: BJT Date: 12/8/13

Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
53	B132010 DUP3	0.100		12/11/13 BJT
54	↓ PS3	0.100		19-21 (1mL of 1348004)3
55	1345019-22	0.100		
56	↓ -23	0.100		
57	↓ -24	0.100		
58	1343025-24	2.00		2m 12/4/13 BJT
59	CCV	0.500		1348004/3
60	CCB	—		2m

12/9/13 BJT

Comments: _____

Total As / Total Se / As Species (Long, III, MMA/DMA) **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 0.4b **Mod. of EPA 1632 (HGAAS) (circle)** 43025, Addendum

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 1 of 2

* Time is when the first reagents are added.

COPY

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
BLK-1	0.5	
BLK-2		
BLK-3		
BLK-4		
B132010/11 -BS1		
B132011 - BS2		
B132012/13 ~~BS3~~ BS1		
~~SRM1~~		IRJ
~~SRM2~~	see pg 2	12-07-13
1345019-01	0.5081	
1345019-02	0.5112	
1345019-03	0.5059	
1345019-04	0.5064	
1345019-05	0.5079	
1345019-06	0.5036	
1345019-07	0.5083	
1345019-08	0.5023	
1345019-09	0.5049	
1345019-10	0.5041	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
1345019-11	0.5056	
1345019-12	0.5040	
1345019-13	0.5134	
1345019-14	0.5021	
1345019-15	0.5128	
1345019-16	0.5066	
1345019-17	0.5023	
1345019-18	0.5027	
1345019-19	0.5004	
1345019-20	~~0.5121~~ MR 11/26/13	0.5058
1345019-21	0.5121	
1345019-22	0.5131	
1345019-23	0.5069	
1345019-24	0.5124	
~~1345019-25~~	~~0.5068~~	MGW 12/11/13
DUP1	0.5003	
DUP2	0.5102	
DUP3	0.5036	
B132010/2011-MS1	0.5020	

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
DUP-1	1345019 - 01		IRJ 12-07-13		
DUP-2	- 11				①
DUP-3	- 21				
B132010/2011-MS/MSD1	1345019 - 01	0.250	0.10	2348004	

Reagents Added (ID/Amount Added)
2 M HCl (1349001/10mL)

Target Digestion Temperature = 75-85 °C

Measured Temperature*, Time On / Time Off, Date
70 (69) °C, 1508, 12-07-13
—16 hour timer—

Thermometer ID: BR-02

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: 10mL
Volume of Prep Subsampled: _____
Dilution Media: IRJ 12-07-13
Final Dilution Volume: _____

CRM, Matrix, Certified Values
CRM # 1337024

Comments: Samples were weighed out by MR on 11/26/13 and stored in the walk-in freezer (shelf #1)

① No spike witness available - IRJ 12-07-13

Total As / Total Se / As Species hmt/IIII/mmt/DMA **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 004b **Mod. of EPA 1632 (HGAAS) circle**

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 2 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
B132010/2011-MS2	0.5013	
B132010/2011-MS3	0.5075	
B132010/2011-MSD1	0.5113	
B132010/2011-MSD2	0.5018	
B132010/2011-MSD3	0.5051	
B132012/2013-MS1	0.5056	
B132012/2013-MS2	0.5096	
B132012/2013-MS3	0.5080	
B132012/2013-MSD1	0.5139	
B132012/2013-MSD2	0.5004	
B132012/2013-MSD3	0.5042	
SRM 1	0.2055	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
SRM 2	0.2062	
1343025-24	0.5059	
IRJ 12-07-13		

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
B132010/2011-MS/MSD2	1345019 - 11	0.250	0.10	1348004	
B132010/2011-MS/MSD3	- 21	↓	↓	↓	①
B132012/2013-MS/MSD1	- 01	0.500/0.500	0.10/0.10	1346011/1346012	
B132012/2013-MS/MSD2	- 11	↓	↓	↓	
B132012/2013-MS/MSD3	- 21	↓	↓	↓	
B132010/11-BS1	-	0.500	0.10	1348017	
B132011-BS2	-	↓	↓	1348004	
B132012/13-BS1	-	0.500/0.500	0.10/0.10	1346011/1346012	
		IRJ 12-07-13			

Reagents Added (ID/Amount Added)

See pg. 1

Target Digestion Temperature = _____

Measured Temperature*, Time On / Time Off, Date

See pg. 1

Thermometer ID: _____

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: _____

Volume of Prep Subsampled: _____

Dilution Media: _____

Final Dilution Volume: _____

CRM, Matrix, Certified Values

IRJ 12-07-13

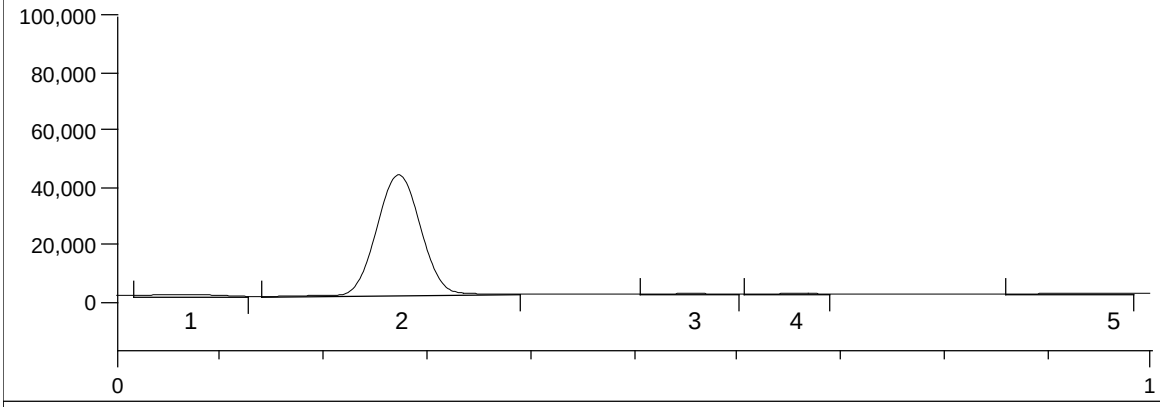
Comments:

Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

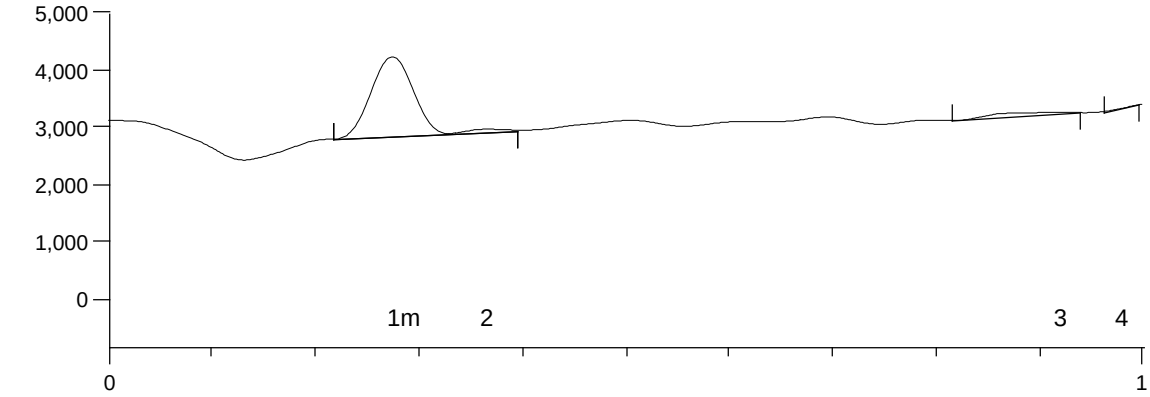
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 7:38 AM

Peak	rt	Area
1	0.07	14,187
2	0.27	1,249,459
3	0.55	4,323
4	0.65	1,941
5	0.96	4,274

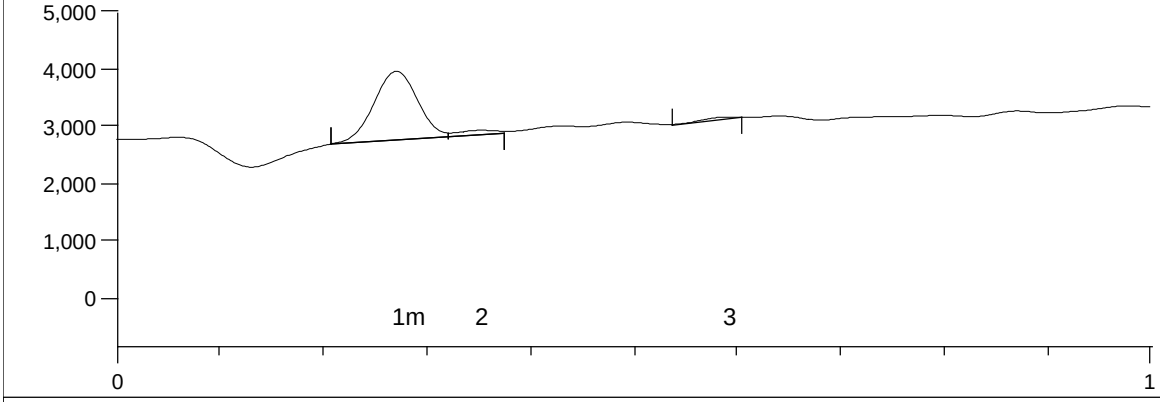
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
1		S	TEST		2	1,249,459	5.56	0.00		< HS	reject
Notes											



Date: 12/8/13
Time: 7:43 AM

Peak	rt	Area
1m	0.27	39,078
2	0.36	1,208
3	0.91	3,088
4	0.97	17

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL1		1m	39,078	0.179		0.179	< 0.4	accept
Notes											



Date: 12/8/13
Time: 7:47 AM

Peak	rt	Area
1m	0.27	33,971
2	0.35	1,261
3	0.59	1,014

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
3		CB	SEQ-IBL2		1m	33,971	0.155		0.155	< 0.4	accept
Notes											

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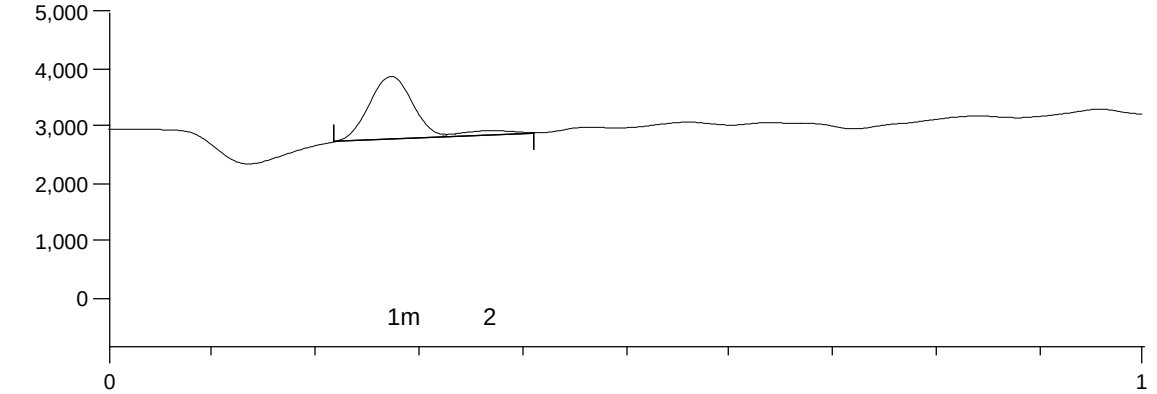
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

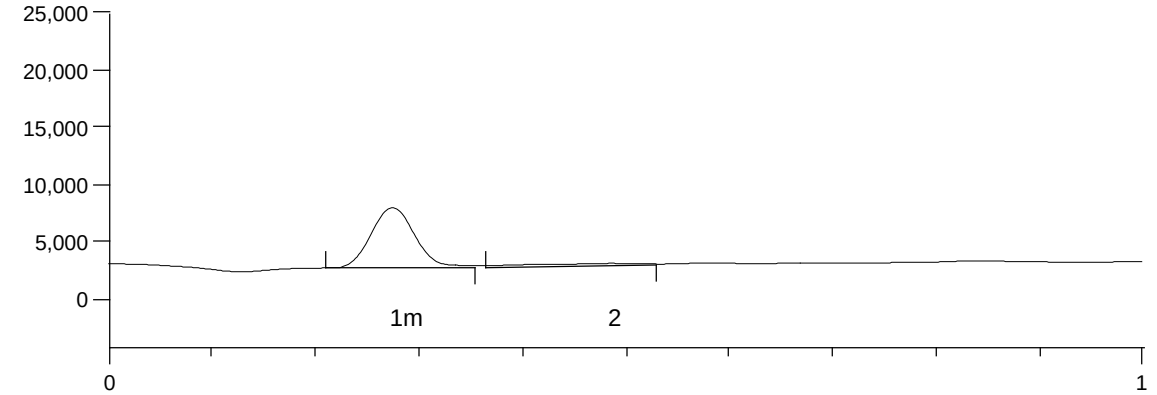
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 7:52 AM

Peak	rt	Area
1m	0.27	31,716
2	0.36	2,522

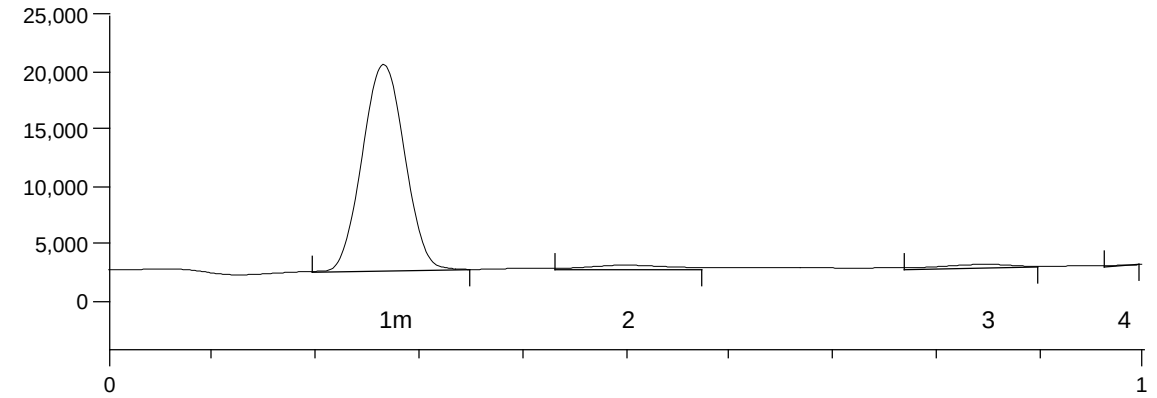
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		CB	SEQ-IBL3		1m	31,716	0.145		0.145	< 0.4	accept
Notes											



Date: 12/8/13
Time: 7:56 AM

Peak	rt	Area
1m	0.27	148,124
2	0.48	6,038

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
5		STD	SEQ-CAL1		1m	148,124	0.518		104	80-120	accept
Notes											



Date: 12/8/13
Time: 8:00 AM

Peak	rt	Area
1m	0.26	512,901
2	0.50	10,135
3	0.84	9,294
4	0.98	52

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL2		1m	512,901	2.19		109	80-120	accept
Notes											

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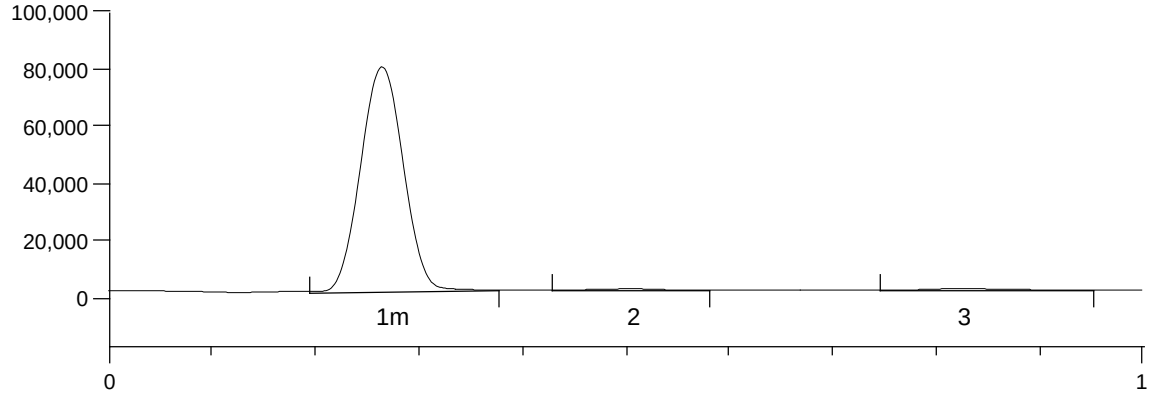
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

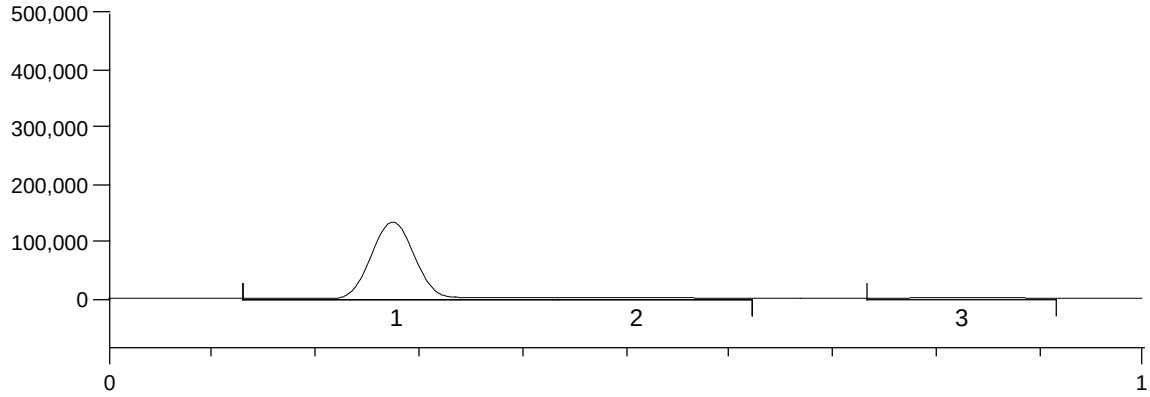
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 8:05 AM

Peak	rt	Area
1m	0.26	2,239,045
2	0.50	16,942
3	0.82	23,995

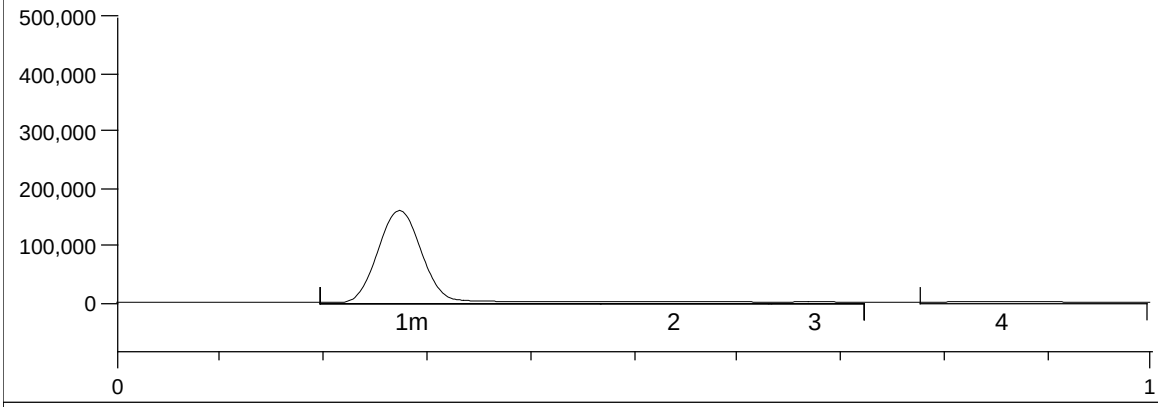
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
7		STD	SEQ-CAL3		1m	2,239,045	10.1		101	80-120	accept
Notes											



Date: 12/8/13
Time: 8:09 AM

Peak	rt	Area
1	0.27	3,910,578
2	0.50	59,980
3	0.82	40,729

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
8		STD	SEQ-CAL4		1	3,910,578	17.7		88.6	80-120	accept
Notes											



Date: 12/8/13
Time: 8:14 AM

Peak	rt	Area
1m	0.27	4,778,249
2	0.53	79,702
3	0.67	7,545
4	0.85	51,216

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
9		STD	SEQ-CAL5		1m	4,778,249	21.7		72.3	80-120	reject
Notes											

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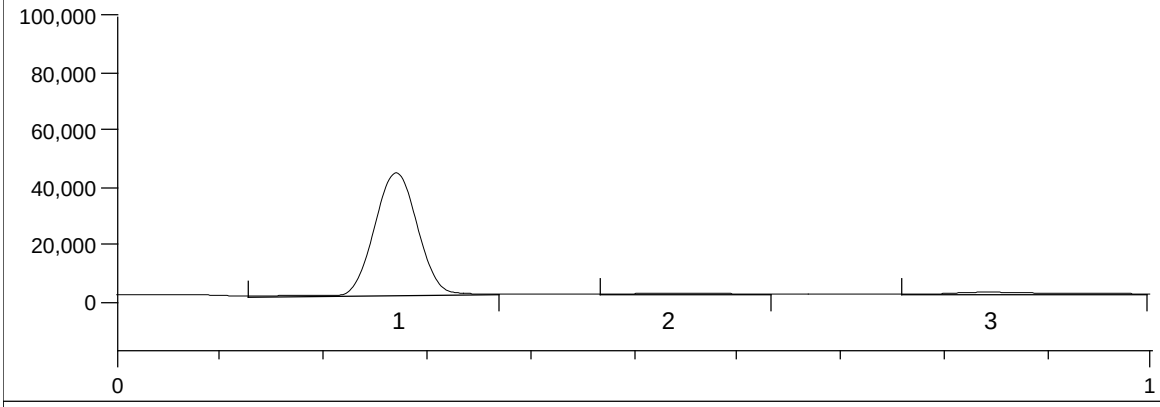
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

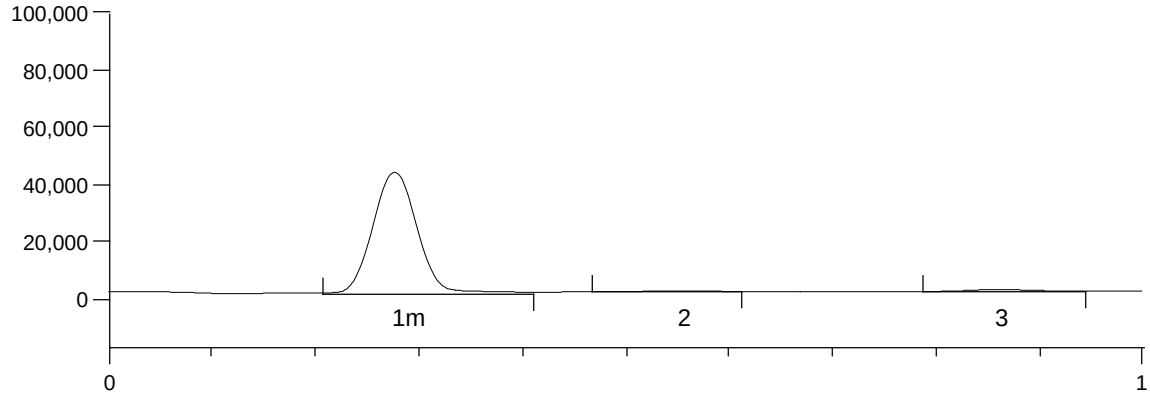
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 8:19 AM

Peak	rt	Area
1	0.27	1,226,250
2	0.53	14,462
3	0.84	36,501

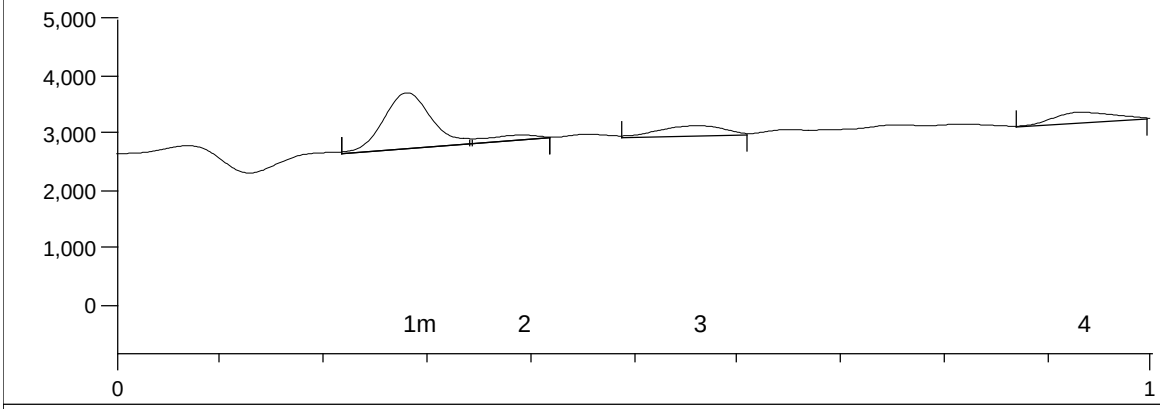
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
10		OPR	SEQ-ICV		1	1,226,250	5.45		109	80-120	accept
Notes											



Date: 12/8/13
Time: 8:23 AM

Peak	rt	Area
1m	0.27	1,228,146
2	0.55	13,424
3	0.86	24,113

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
11		OPR	SEQ-CCV		1m	1,228,146	5.46		109	80-120	accept
Notes											



Date: 12/8/13
Time: 8:28 AM

Peak	rt	Area
1m	0.28	29,675
2	0.39	2,517
3	0.56	6,218
4	0.93	6,992

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
12		CCB	SEQ-CCB		1m	29,675	0.136		0.136	< 0.4	accept
Notes											

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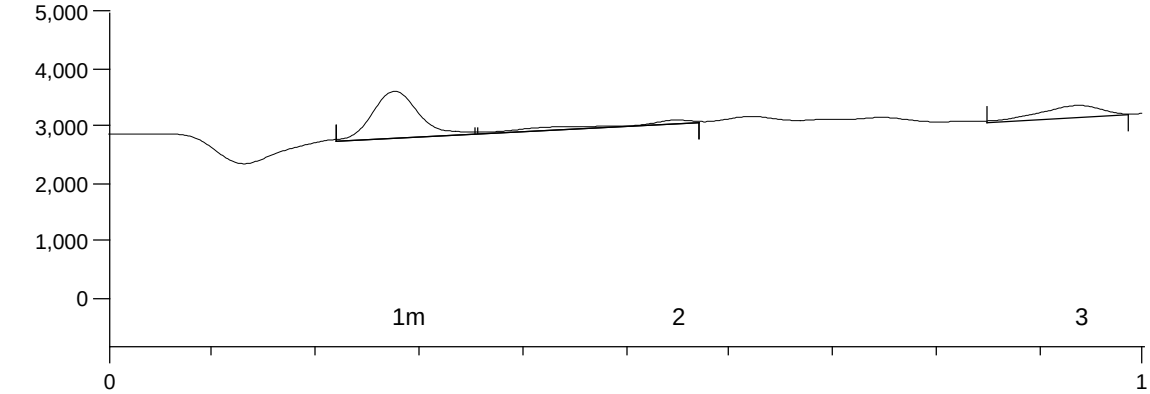
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

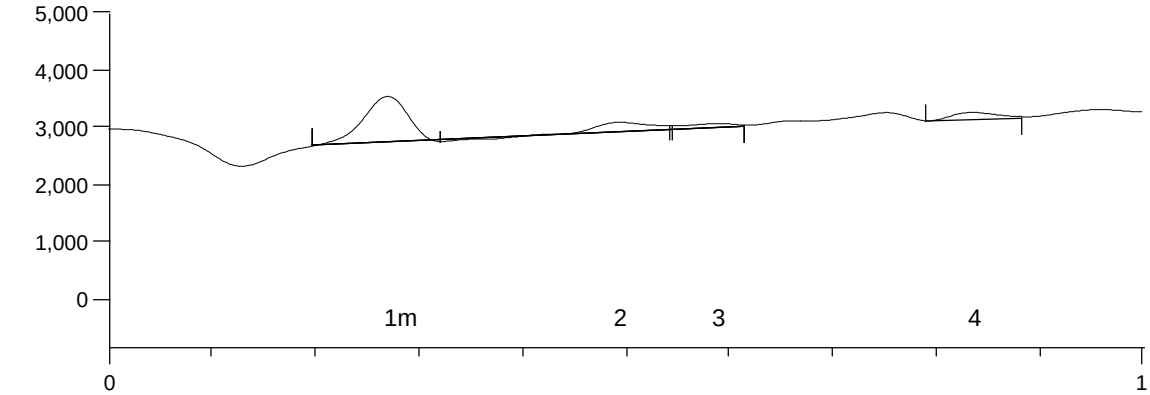
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 8:33 AM

Peak	rt	Area
1m	0.27	23,364
2	0.54	2,244
3	0.93	7,646

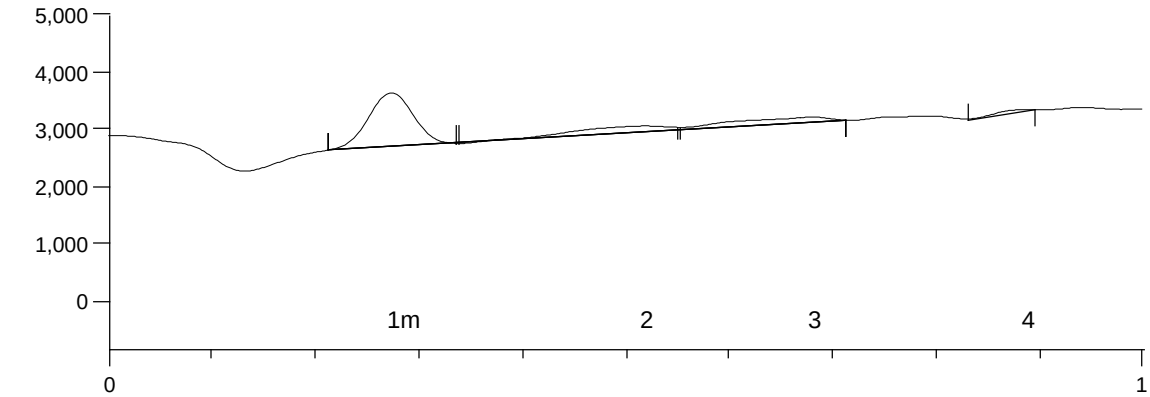
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
13		S	B132010-BLK1		1m	23,364	-0.0529	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 8:37 AM

Peak	rt	Area
1m	0.27	23,093
2	0.49	4,160
3	0.58	1,743
4	0.83	3,307

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		S	B132010-BLK2		1m	23,093	-0.0541	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 8:42 AM

Peak	rt	Area
1m	0.27	27,817
2	0.51	7,538
3	0.68	7,709
4	0.88	1,255

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132010-BLK3		1m	27,817	-0.0325	0.00		< HS	accept
Notes											

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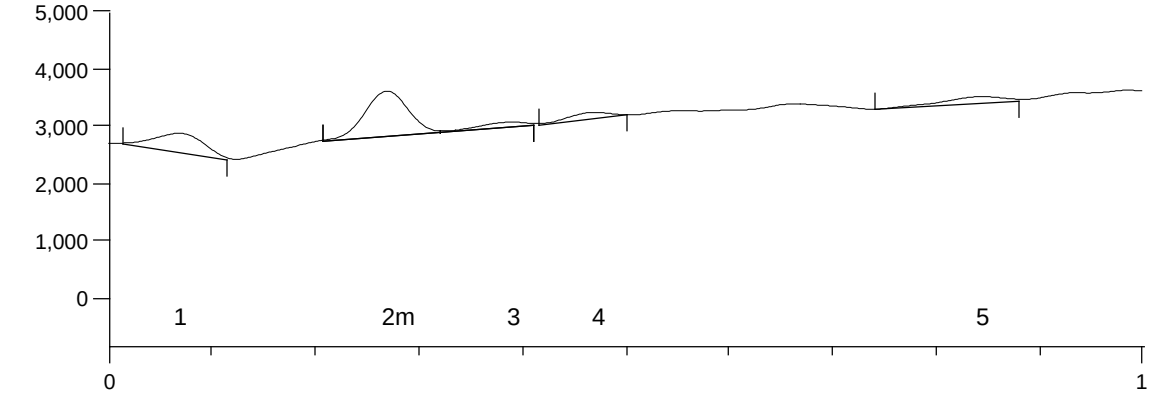
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

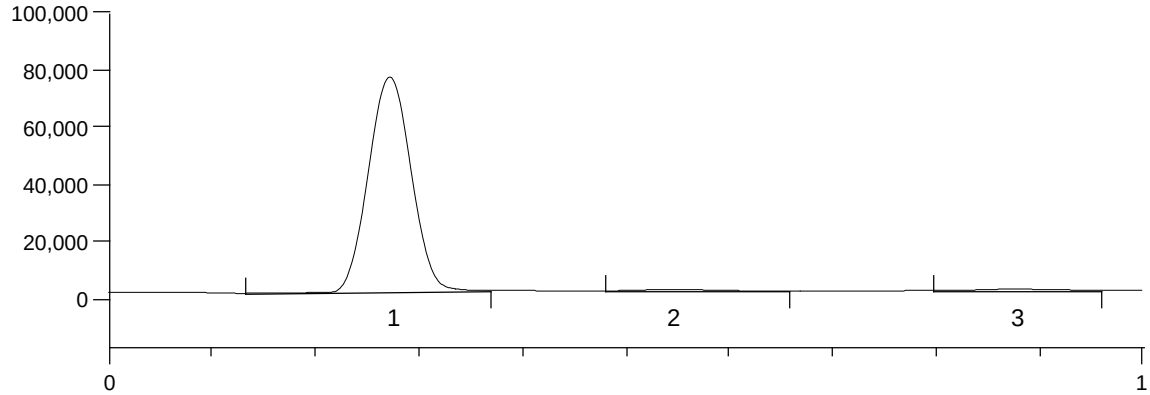
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 8:46 AM

Peak	rt	Area
1	0.06	9,525
2m	0.26	21,509
3	0.38	1,483
4	0.47	2,783
5	0.84	3,910

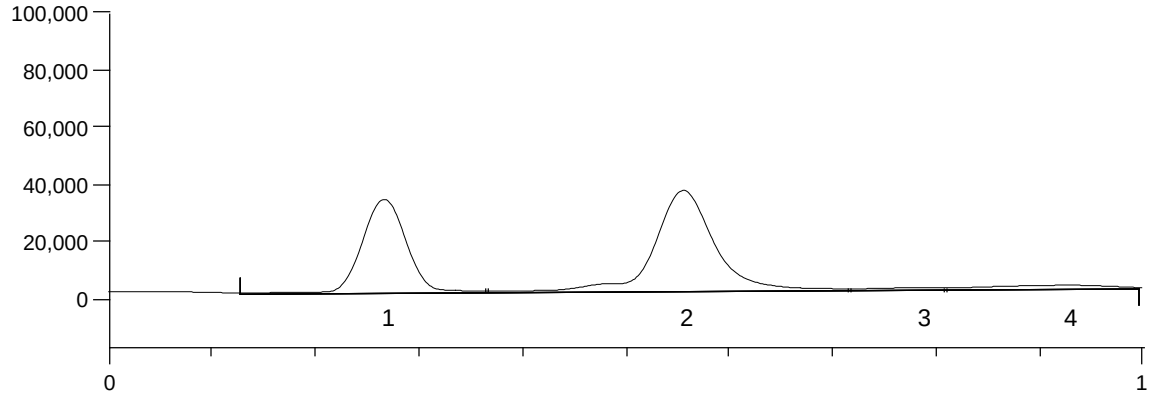
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132010-BLK4		2m	21,509	-0.0614	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 8:51 AM

Peak	rt	Area
1	0.27	2,154,751
2	0.54	20,571
3	0.87	21,383

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
17		S	B132010-BS1		1	2,154,751	9.70	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 8:55 AM

Peak	rt	Area
1	0.26	938,518
2	0.55	1,378,258
3	0.78	20,528
4	0.92	75,593

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
18		S	B132010-SRM1		1	938,518	4.13	0.00		< HS	accept
Notes											

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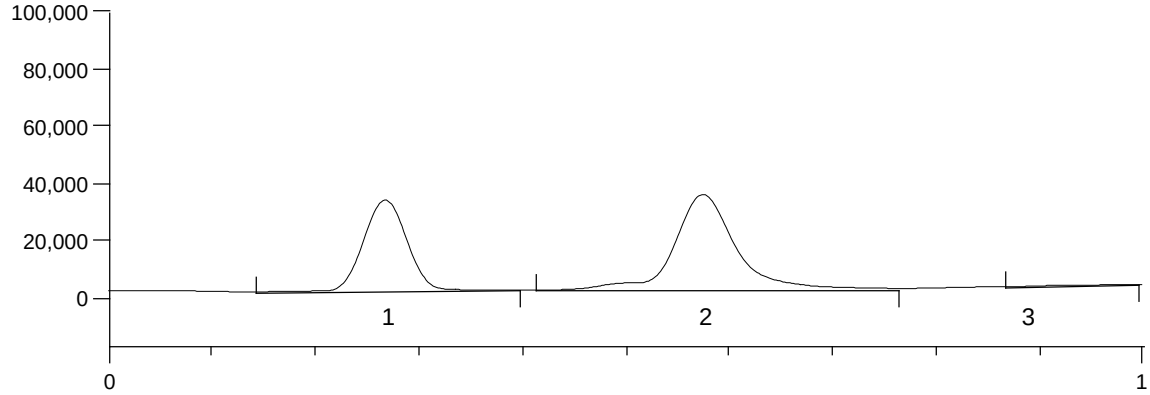
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

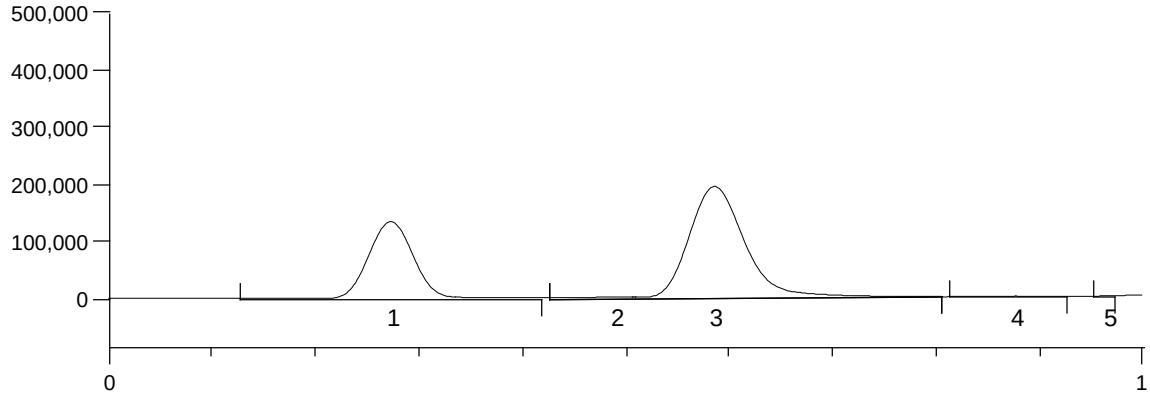
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 9:00 AM

Peak	rt	Area
1	0.26	922,720
2	0.57	1,337,490
3	0.88	6,248

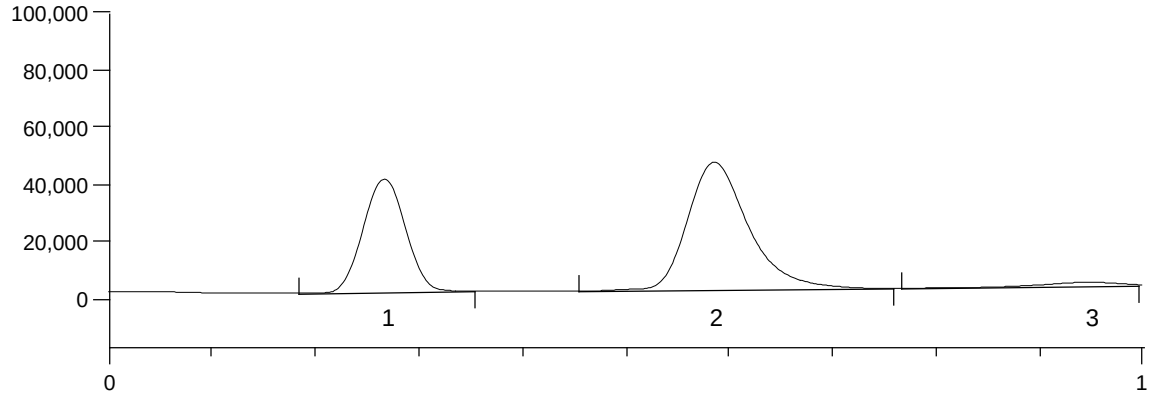
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
19		S	B132010-SRM2		1	922,720	4.06	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 9:05 AM

Peak	rt	Area
1	0.27	3,986,253
2	0.49	31,466
3	0.58	7,199,119
4	0.87	24,495
5	0.96	-707

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
20		S	1345019-01		1	3,986,253	18.1	0.00		< HS	reject
Notes											



Date: 12/8/13
Time: 9:12 AM

Peak	rt	Area
1	0.26	1,129,376
2	0.58	1,845,120
3	0.94	63,271

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
21		S	1345019-01RE1		1	1,129,376	5.01	0.00		< HS	accept
Notes											

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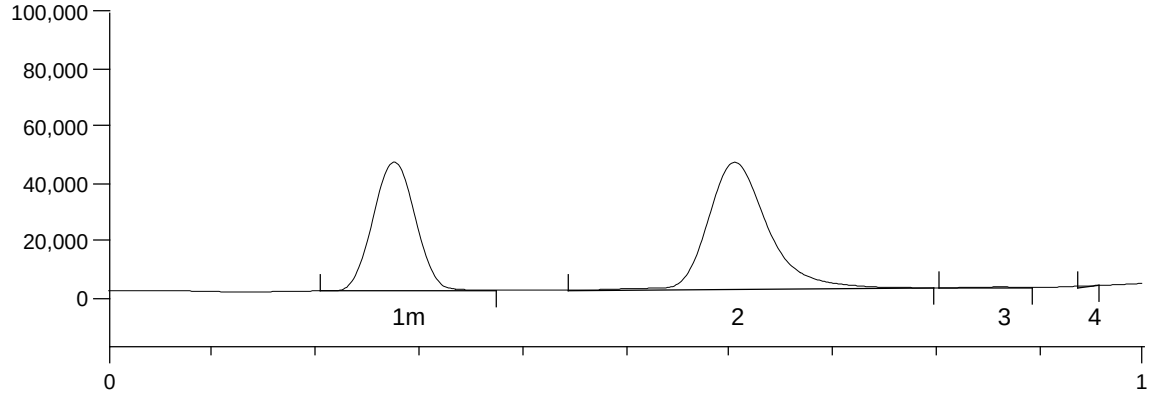
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

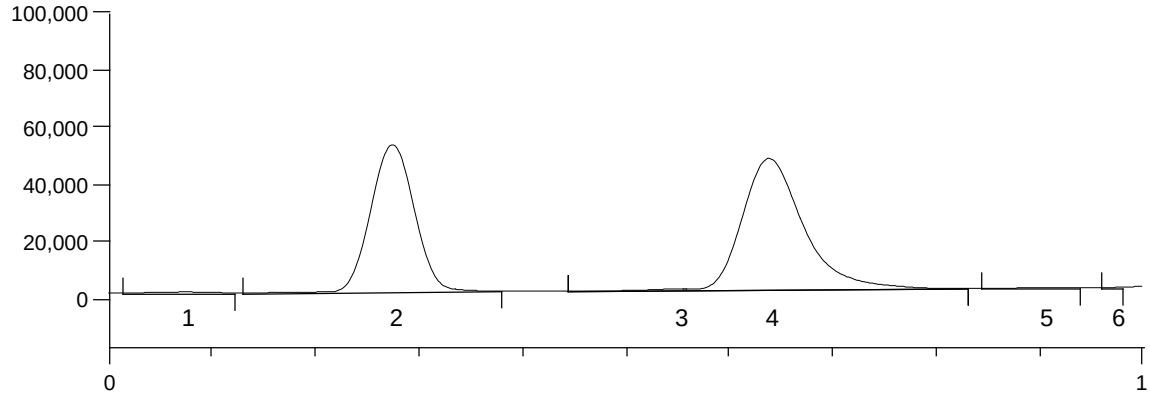
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 9:16 AM

Peak	rt	Area
1m	0.27	1,276,413
2	0.60	1,778,064
3	0.86	5,878
4	0.95	-5

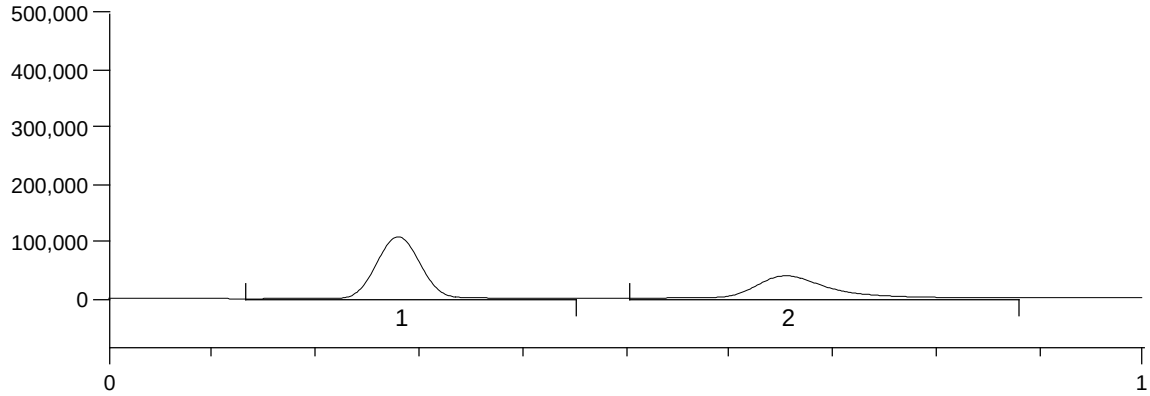
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
22		S	B132010-DUP1		1m	1,276,413	5.68	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 9:21 AM

Peak	rt	Area
1	0.07	9,342
2	0.27	1,505,837
3	0.55	13,836
4	0.64	1,890,697
5	0.90	6,723
6	0.97	-58

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
23		S	B132010-MS1		2	1,505,837	6.73	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 9:47 AM

Peak	rt	Area
1	0.28	3,195,102
2	0.65	1,916,840

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
24		S	B132010-PS1		1	3,195,102	14.5	0.00		< HS	accept
Notes											

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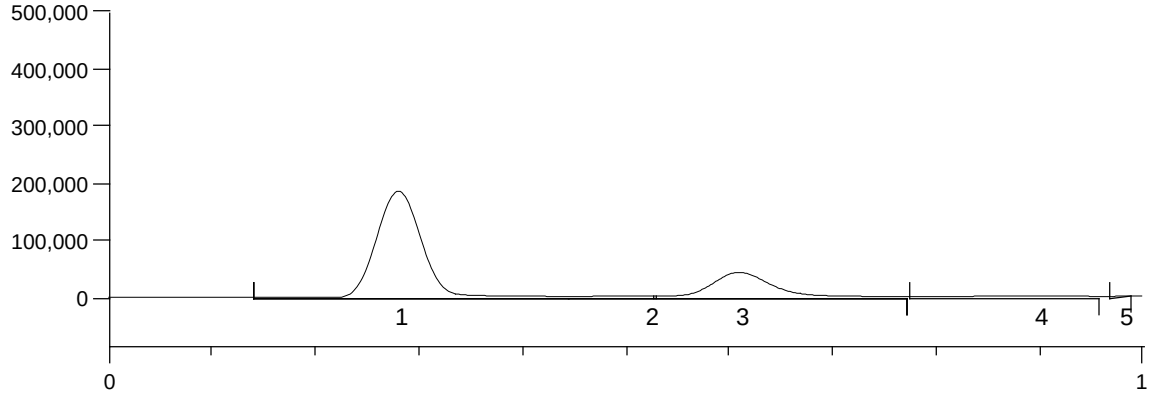
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

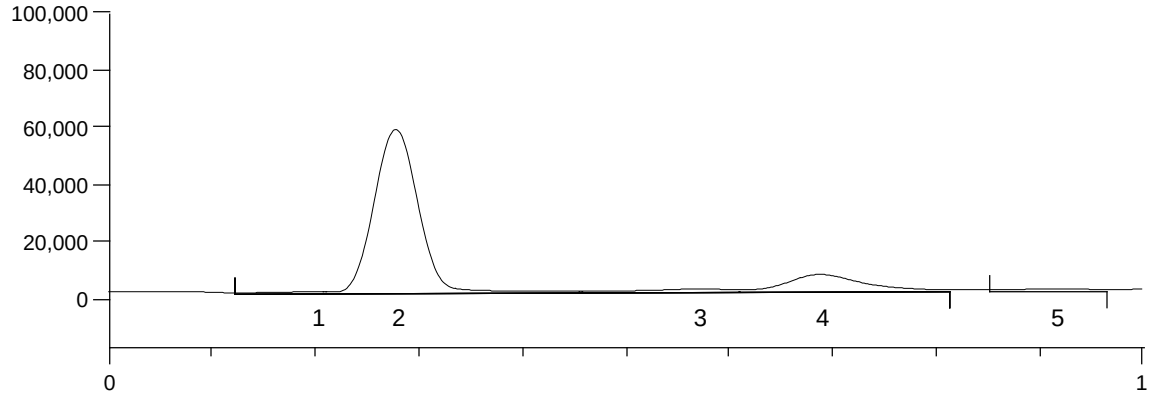
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 9:51 AM

Peak	rt	Area
1	0.28	5,619,006
2	0.52	88,229
3	0.61	1,690,632
4	0.90	45,204
5	0.98	-413

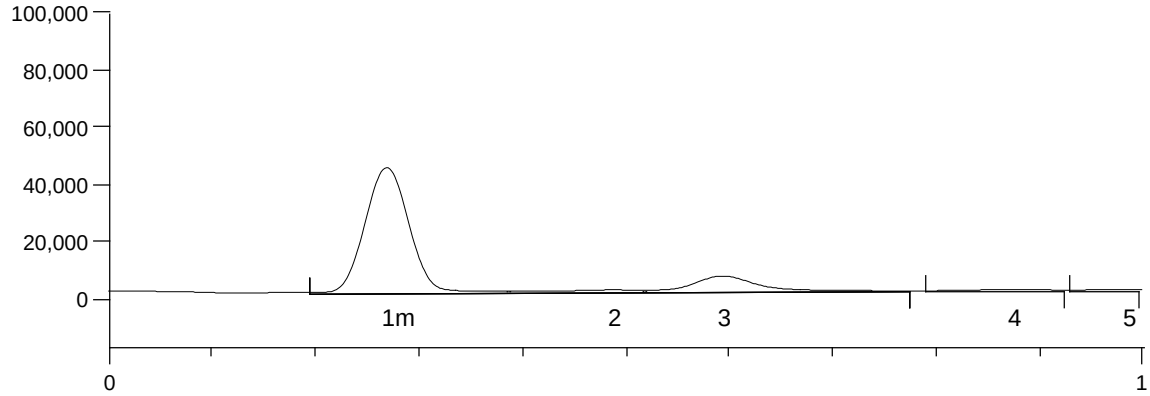
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
25		S	1345019-02		1	5,619,006	25.5	0.00		< HS	reject
Notes											



Date: 12/8/13
Time: 9:57 AM

Peak	rt	Area
1	0.20	9,277
2	0.27	1,670,704
3	0.57	33,699
4	0.68	265,677
5	0.91	8,966

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
26		S	1345019-02RE1		2	1,670,704	7.48	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:01 AM

Peak	rt	Area
1m	0.26	1,266,929
2	0.48	26,751
3	0.59	218,461
4	0.87	12,134
5	0.98	1,967

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
27		S	1345019-03		1m	1,266,929	5.64	0.00		< HS	accept
Notes											

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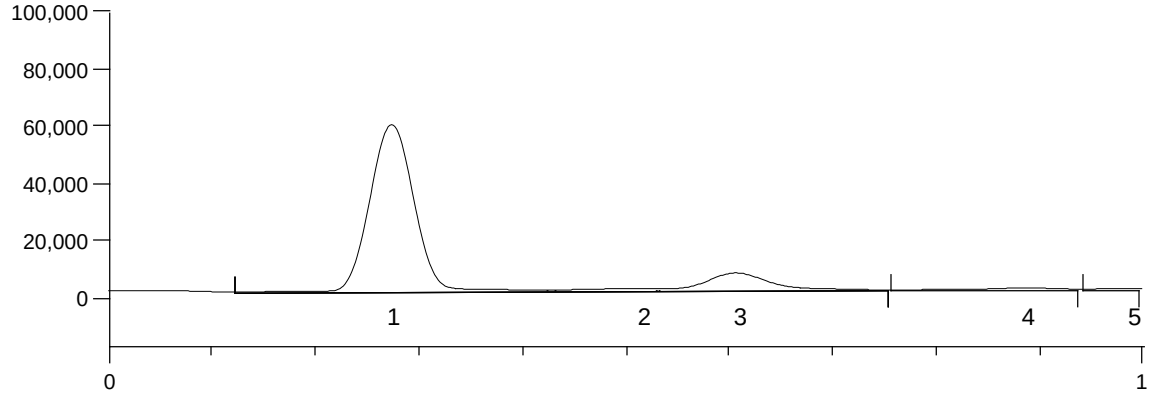
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

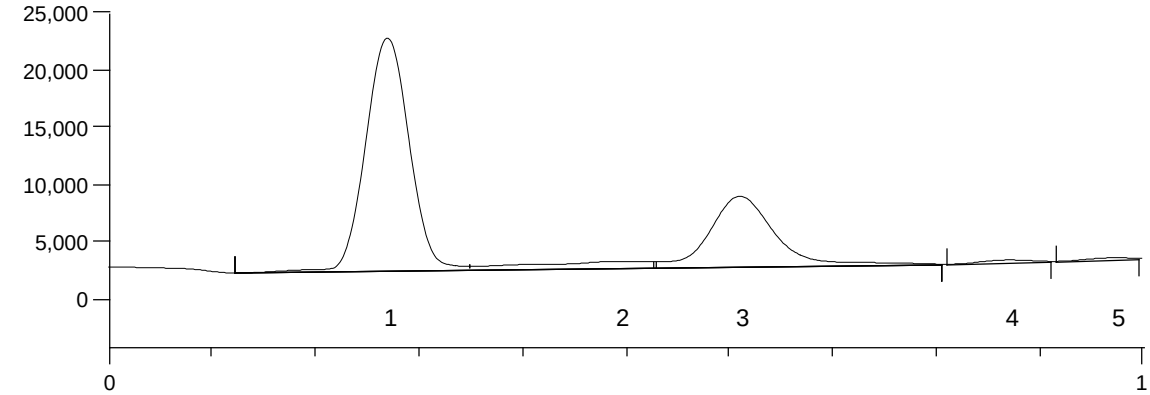
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 10:06 AM

Peak	rt	Area
1	0.27	1,741,255
2	0.51	36,753
3	0.60	260,322
4	0.88	19,247
5	0.98	1,319

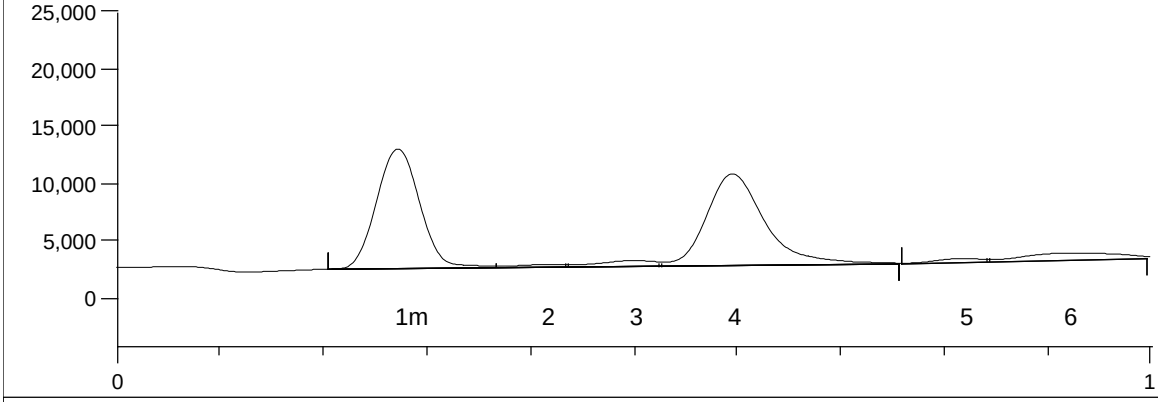
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-04		1	1,741,255	7.81	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:10 AM

Peak	rt	Area
1	0.27	602,744
2	0.49	51,107
3	0.61	267,541
4	0.87	7,151
5	0.97	4,084

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-05		1	602,744	2.60	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:15 AM

Peak	rt	Area
1m	0.27	303,097
2	0.41	6,069
3	0.50	17,496
4	0.59	308,374
5	0.82	8,170
6	0.92	31,837

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-06		1m	303,097	1.23	0.00		< HS	accept
Notes											

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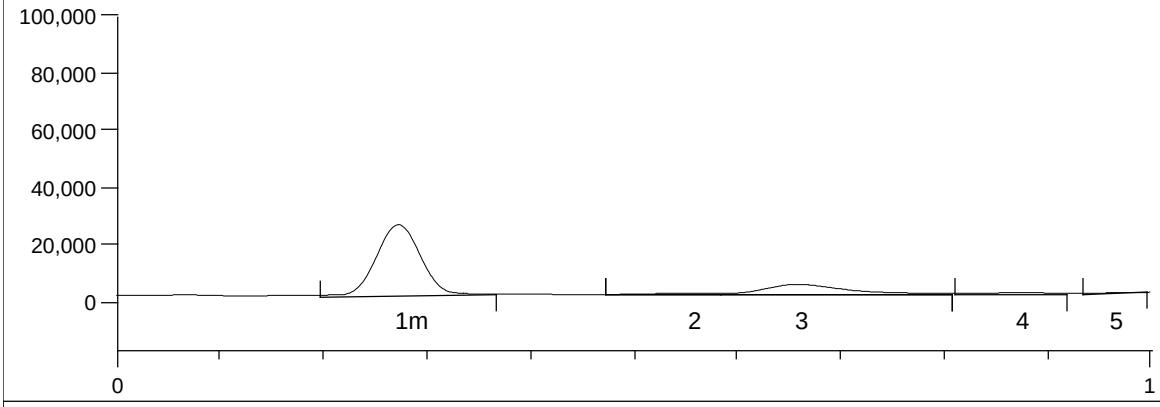
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

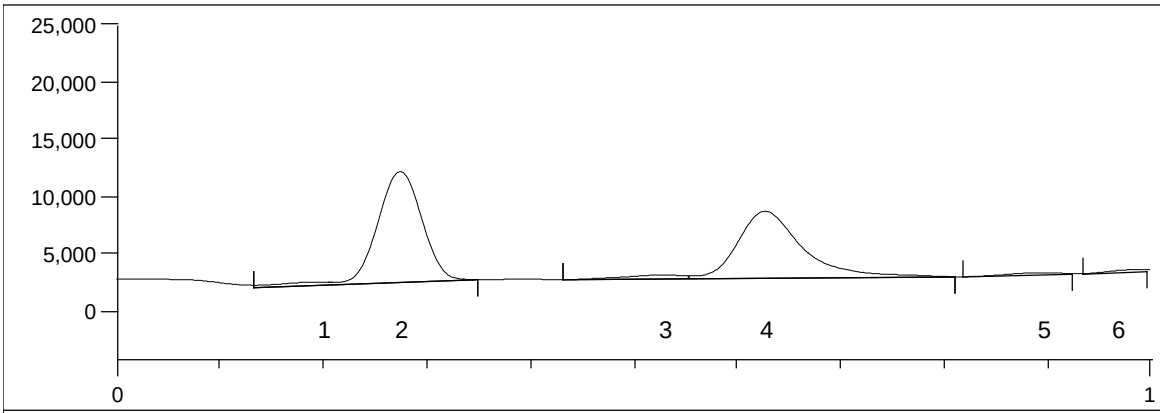
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 10:20 AM

Peak	rt	Area
1m	0.27	707,045
2	0.55	15,309
3	0.66	170,875
4	0.87	8,966
5	0.96	338

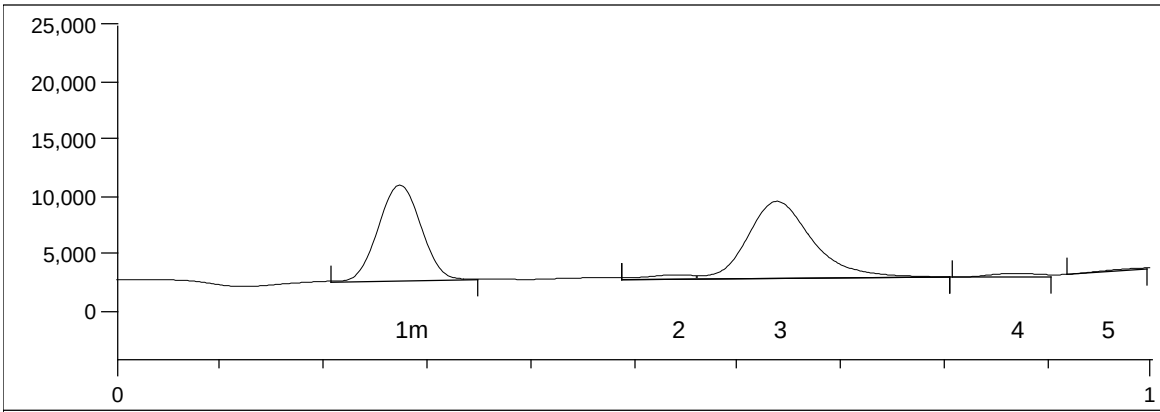
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-07		1m	707,045	3.07	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:24 AM

Peak	rt	Area
1	0.19	4,213
2	0.27	280,287
3	0.52	14,052
4	0.62	254,175
5	0.89	6,082
6	0.96	2,265

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
32		S	1345019-08		2	280,287	1.12	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:29 AM

Peak	rt	Area
1m	0.27	236,667
2	0.54	7,069
3	0.64	287,790
4	0.86	6,026
5	0.95	1,887

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-09		1m	236,667	0.923	0.00		< HS	accept
Notes											

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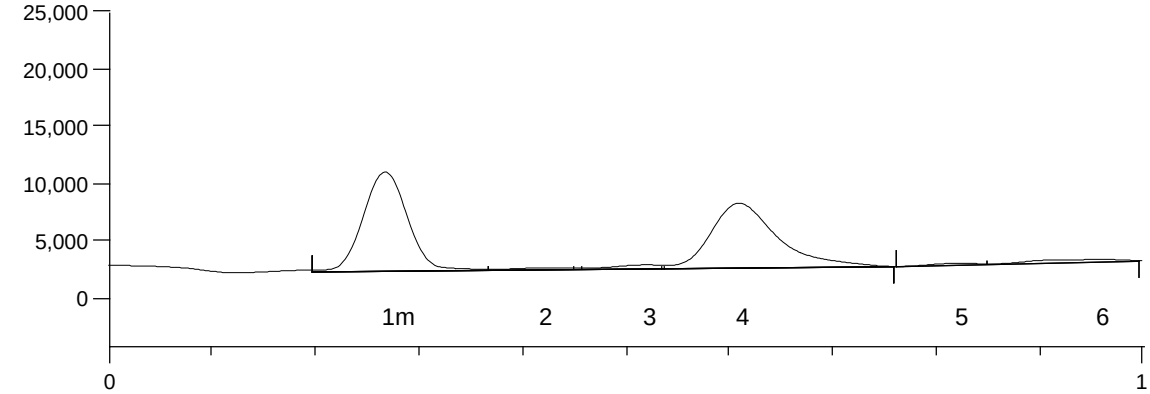
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

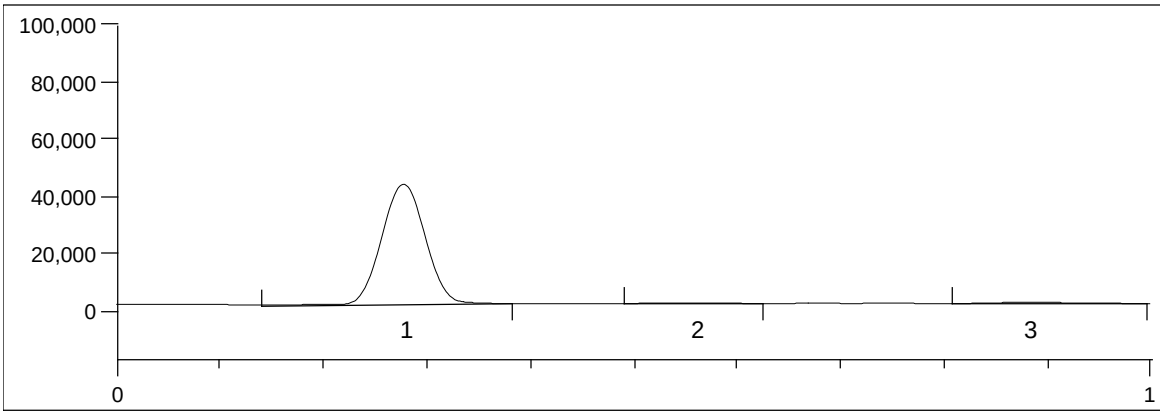
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 10:34 AM

Peak	rt	Area
1m	0.26	243,819
2	0.42	598
3	0.52	7,508
4	0.61	248,750
5	0.82	4,905
6	0.96	15,525

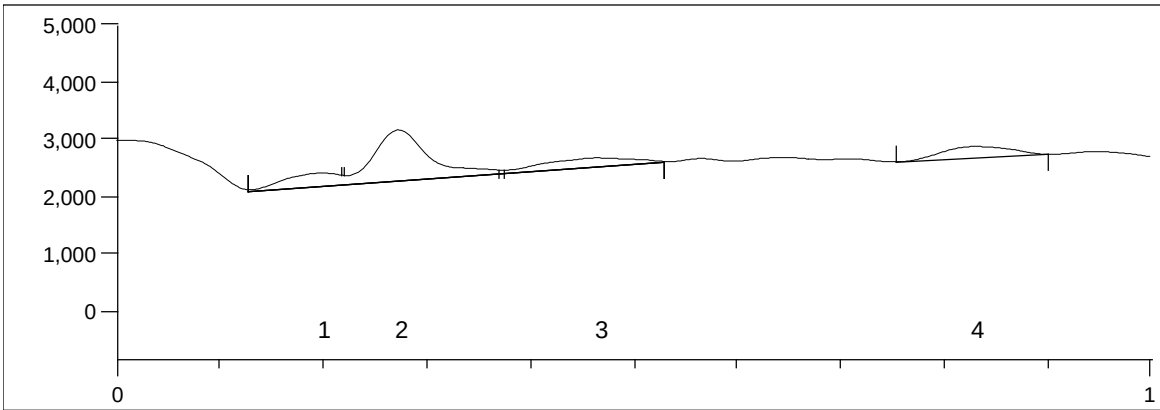
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
34		S	1345019-10		1m	243,819	0.956	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:39 AM

Peak	rt	Area
1	0.27	1,224,449
2	0.56	7,771
3	0.88	18,772

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
35		OPR	SEQ-CCV		1	1,224,449	5.44		109	80-120	accept
Notes											



Date: 12/8/13
Time: 10:43 AM

Peak	rt	Area
1	0.20	7,895
2	0.27	32,056
3	0.46	9,130
4	0.83	9,631

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
36		CCB	SEQ-CCB		2	32,056	0.147		0.147	< 0.4	accept
Notes											

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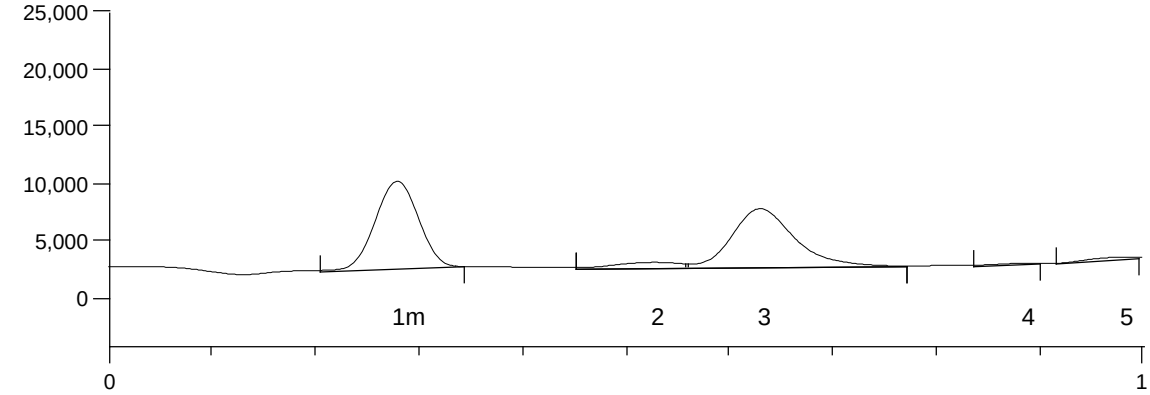
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

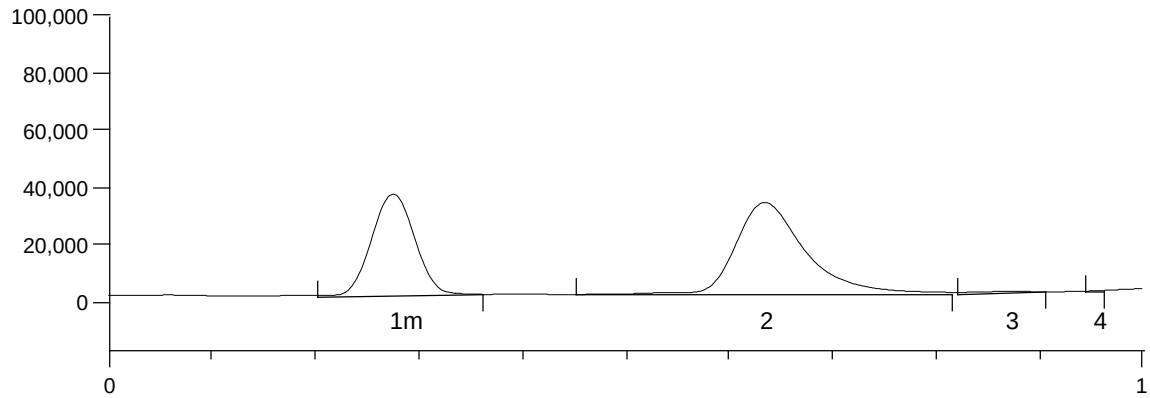
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 10:48 AM

Peak	rt	Area
1m	0.28	219,812
2	0.52	16,594
3	0.63	210,302
4	0.88	1,463
5	0.98	5,488

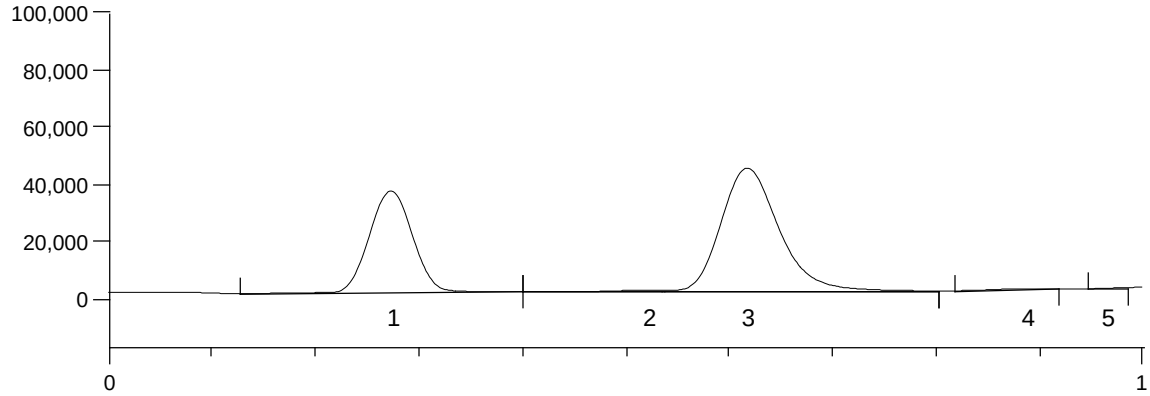
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
37		S	1345019-11		1m	219,812	0.846	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:55 AM

Peak	rt	Area
1m	0.27	1,012,738
2	0.63	1,447,626
3	0.87	5,653
4	0.95	-46

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
38		S	1345019-11RE1		1m	1,012,738	4.47	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 10:59 AM

Peak	rt	Area
1	0.27	1,047,070
2	0.52	17,293
3	0.61	1,677,937
4	0.88	10,502
5	0.96	162

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
39		S	B132010-DUP2		1	1,047,070	4.63	0.00		< HS	accept
Notes											

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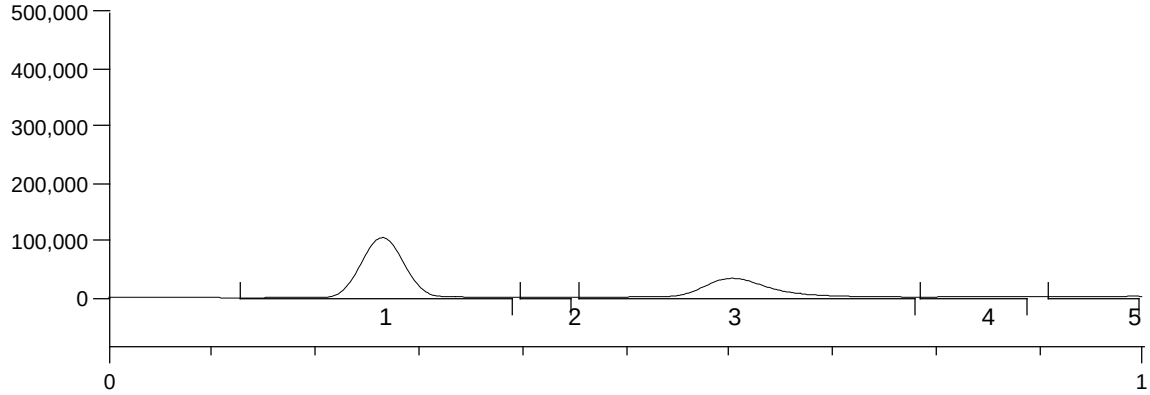
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

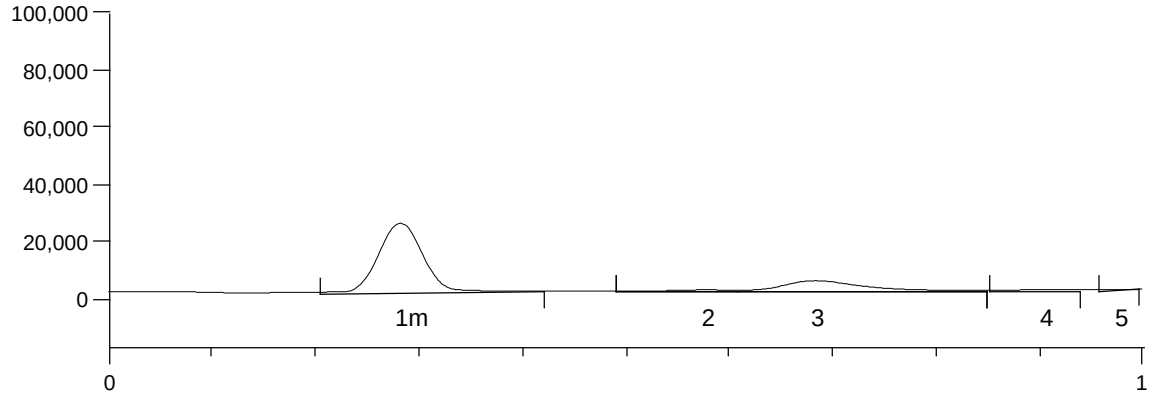
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 11:05 AM

Peak	rt	Area
1	0.26	3,059,624
2	0.44	630
3	0.60	1,494,072
4	0.84	13,144
5	0.99	4,481

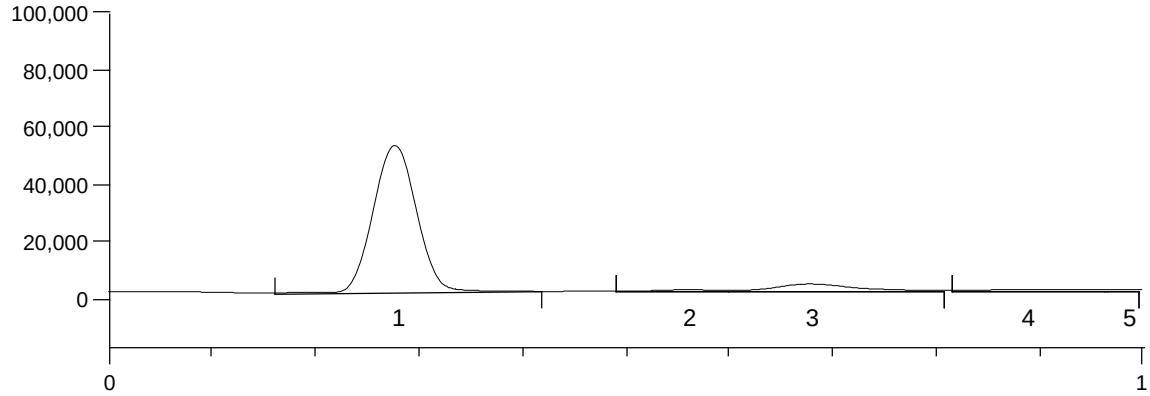
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
40		S	B132010-PS2		1	3,059,624	13.8	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:12 AM

Peak	rt	Area
1m	0.28	698,023
2	0.57	14,954
3	0.68	177,300
4	0.90	3,710
5	0.97	262

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
41		S	1345019-12		1m	698,023	3.03	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:18 AM

Peak	rt	Area
1	0.27	1,491,301
2	0.56	15,233
3	0.68	116,372
4	0.88	9,065
5	0.98	-117

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
42		S	1345019-13		1	1,491,301	6.66	0.00		< HS	accept
Notes											

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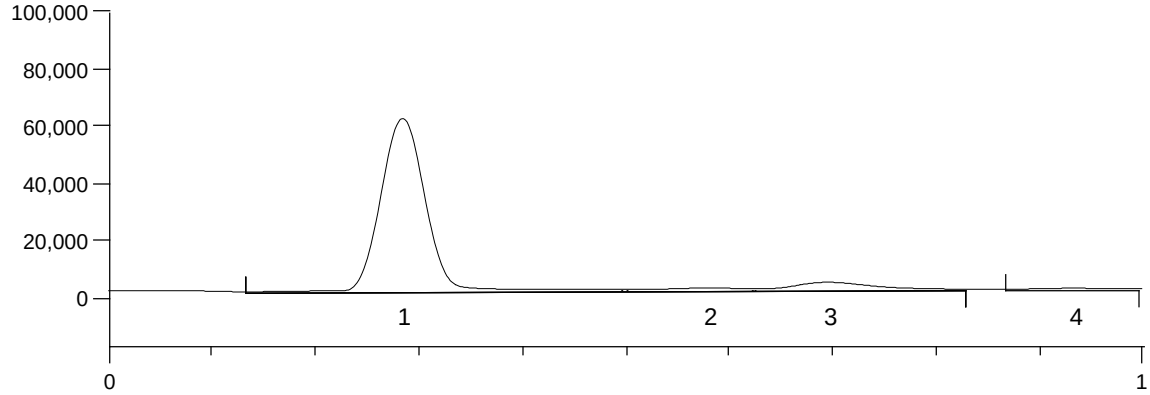
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

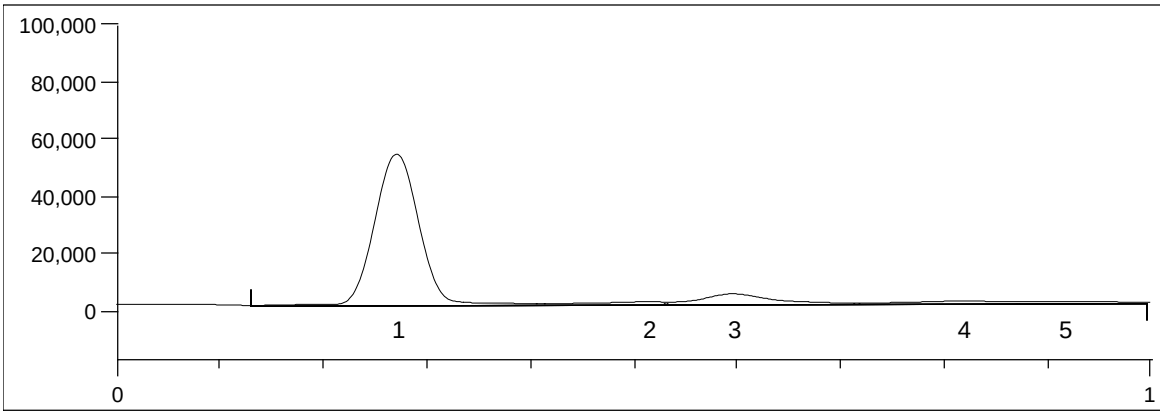
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 11:23 AM

Peak	rt	Area
1	0.28	1,803,232
2	0.58	37,360
3	0.69	131,446
4	0.93	11,739

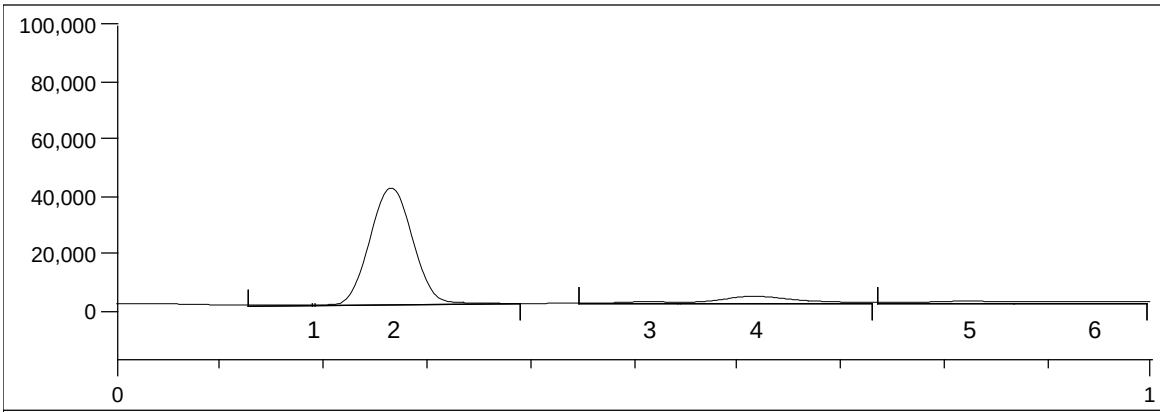
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-14		1	1,803,232	8.09	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:28 AM

Peak	rt	Area
1	0.27	1,563,386
2	0.51	38,350
3	0.59	155,971
4	0.81	39,774
5	0.91	21,492

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-15		1	1,563,386	6.99	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:33 AM

Peak	rt	Area
1	0.18	2,562
2	0.26	1,172,328
3	0.51	15,311
4	0.61	108,975
5	0.82	17,160
6	0.94	11,495

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-16		2	1,172,328	5.20	0.00		< HS	accept
Notes											

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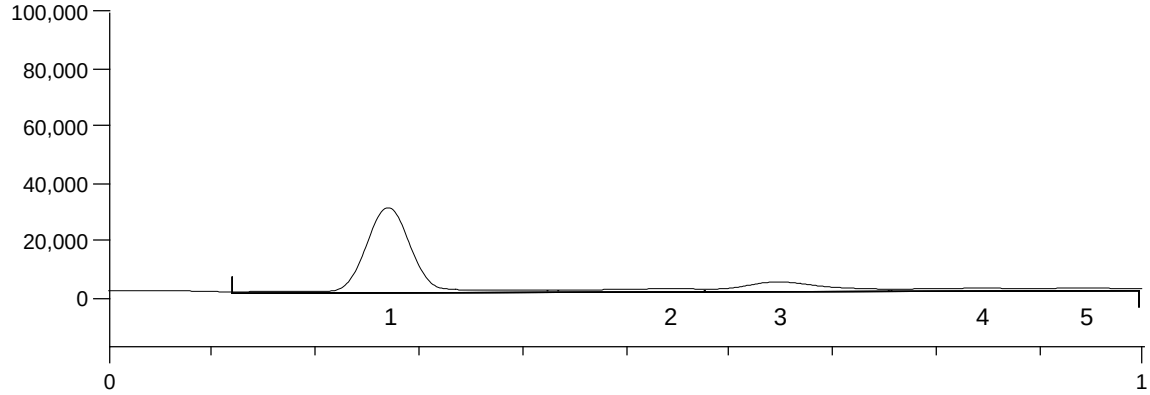
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

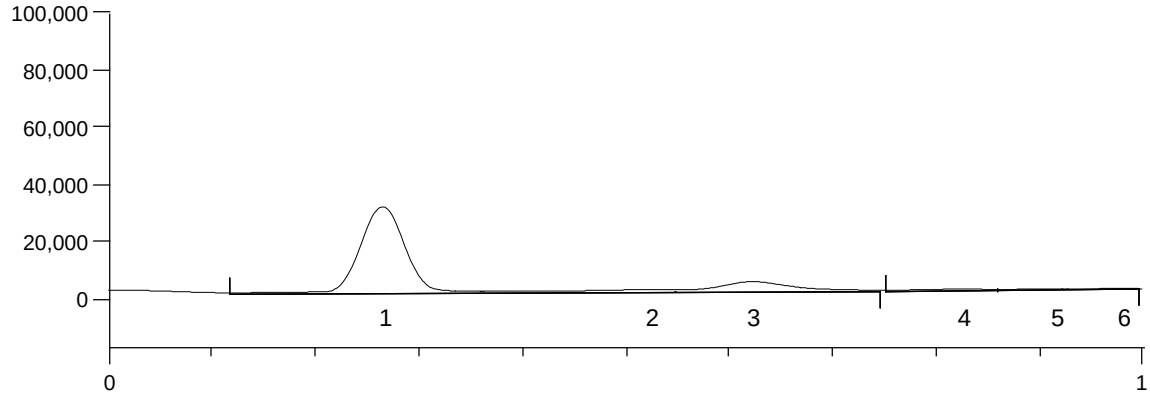
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 11:38 AM

Peak	rt	Area
1	0.27	866,094
2	0.54	32,631
3	0.64	134,720
4	0.84	19,883
5	0.94	11,468

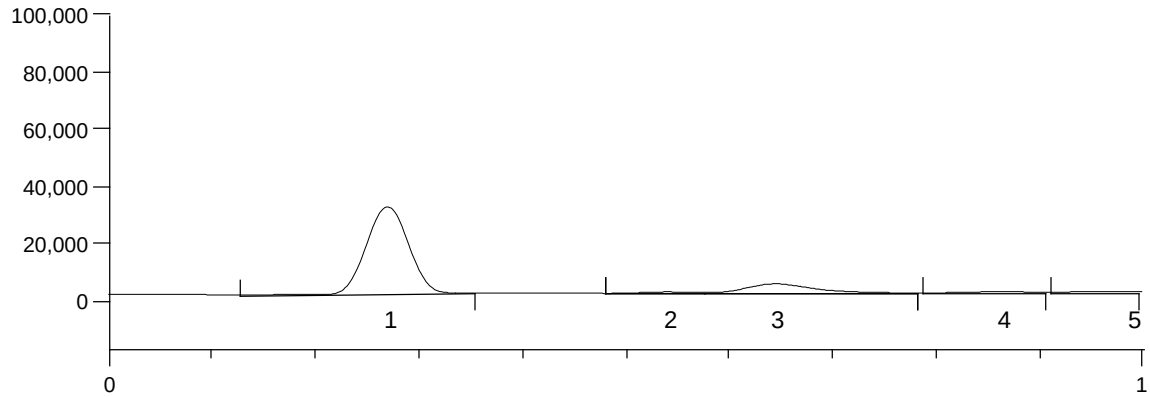
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-17		1	866,094	3.80	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:43 AM

Peak	rt	Area
1	0.26	875,503
2	0.52	36,844
3	0.62	143,679
4	0.82	7,081
5	0.91	2,944
6	0.98	4,254

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-18		1	875,503	3.85	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:47 AM

Peak	rt	Area
1	0.27	871,936
2	0.54	15,334
3	0.64	144,069
4	0.86	8,083
5	0.98	3,092

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-19		1	871,936	3.83	0.00		< HS	accept
Notes											

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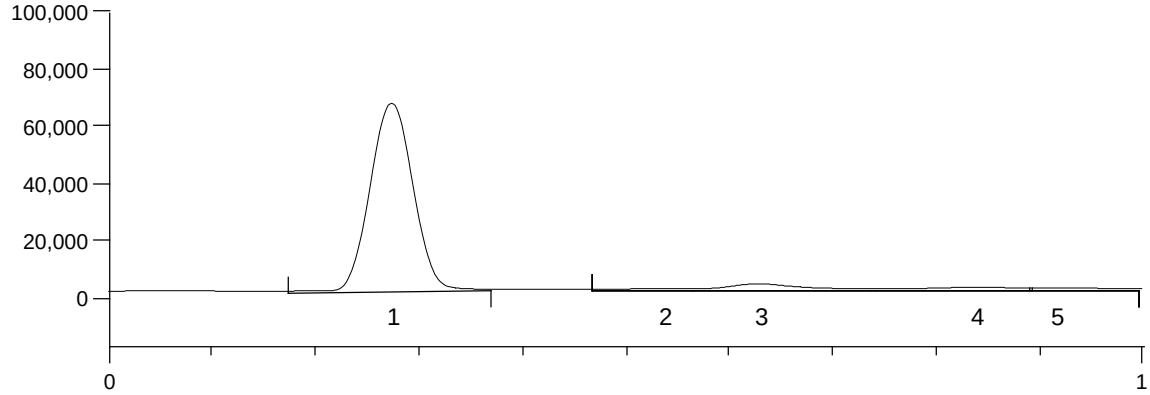
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

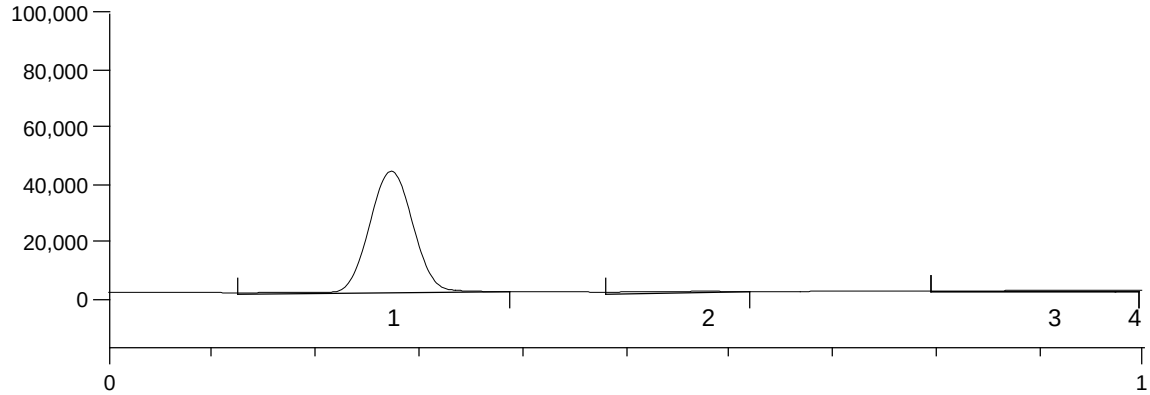
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 11:52 AM

Peak	rt	Area
1	0.27	1,866,056
2	0.53	14,293
3	0.62	84,680
4	0.84	34,343
5	0.91	11,343

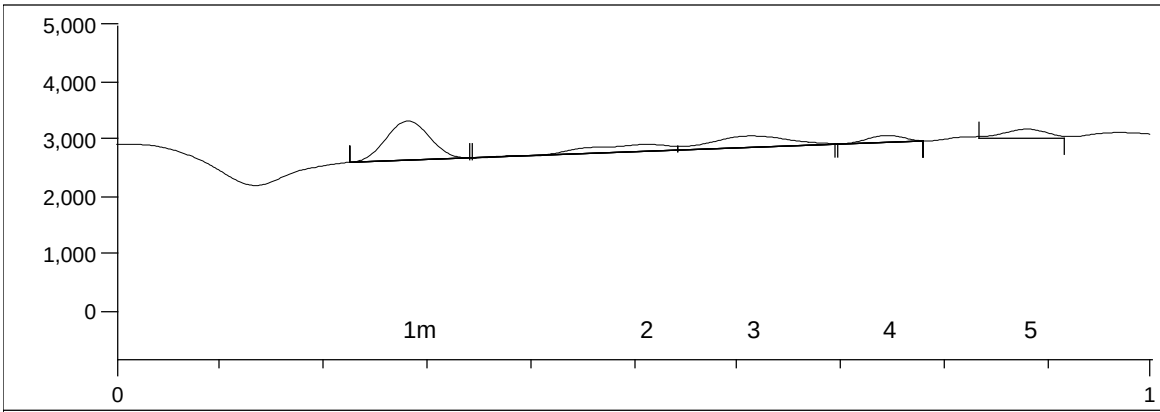
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-20		1	1,866,056	8.38	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 11:57 AM

Peak	rt	Area
1	0.27	1,231,311
2	0.57	6,477
3	0.91	9,659
4	0.99	125

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		OPR	SEQ-CCV		1	1,231,311	5.47		109	80-120	accept
Notes											



Date: 12/8/13
Time: 12:03 PM

Peak	rt	Area
1m	0.28	19,802
2	0.51	6,979
3	0.61	10,488
4	0.74	3,074
5	0.88	3,190

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
51		CCB	SEQ-CCB		1m	19,802	0.0906		0.0906	< 0.4	accept
Notes											

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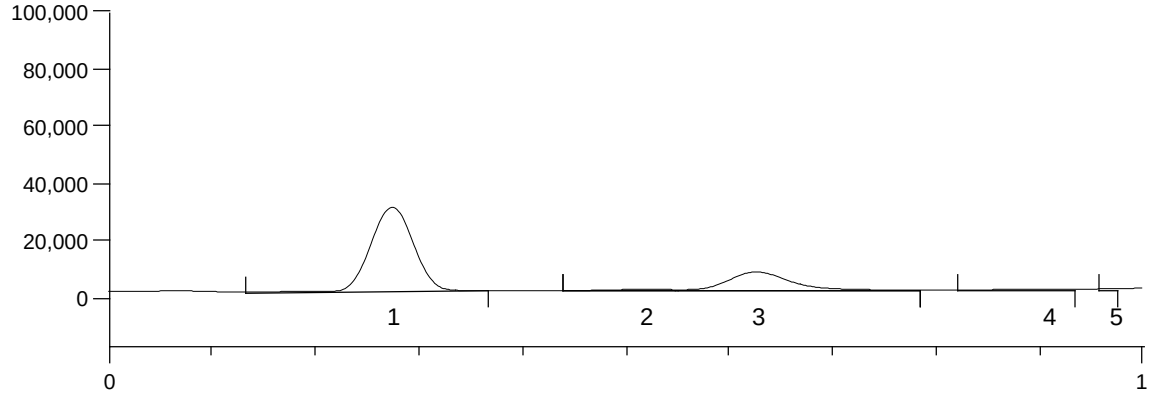
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

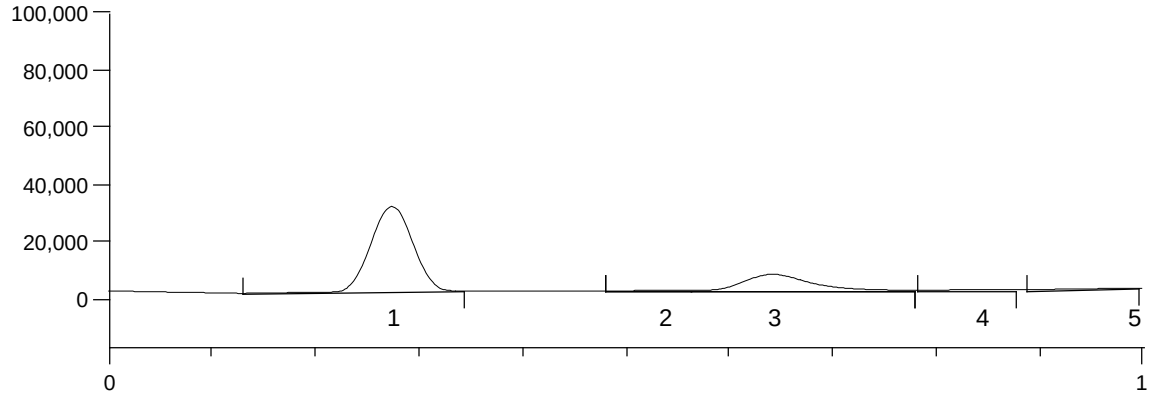
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 12:08 PM

Peak	rt	Area
1	0.27	847,837
2	0.51	14,859
3	0.62	267,495
4	0.90	4,081
5	0.97	-54

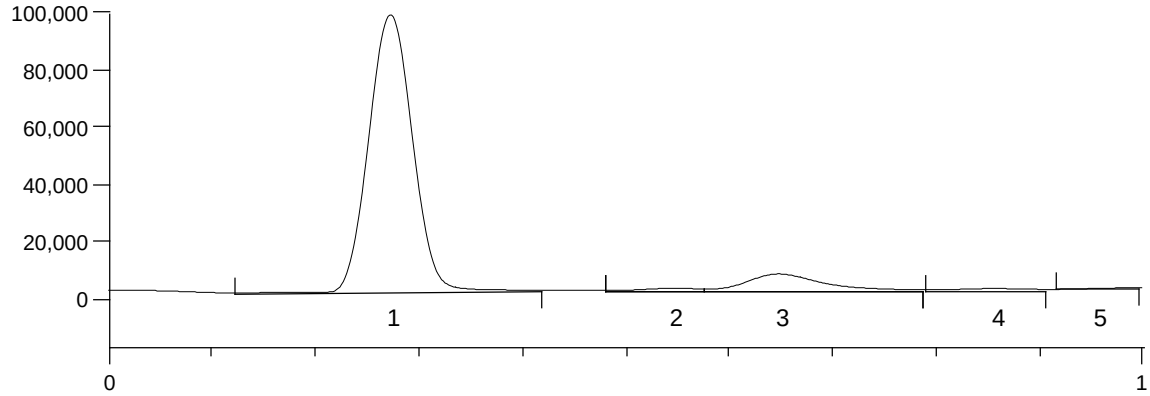
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
52		S	1345019-21		1	847,837	3.72	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:13 PM

Peak	rt	Area
1	0.27	852,168
2	0.53	7,366
3	0.64	248,047
4	0.84	4,196
5	0.99	4,788

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
53		S	B132010-DUP3		1	852,168	3.74	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:20 PM

Peak	rt	Area
1	0.27	2,834,186
2	0.54	24,123
3	0.64	269,305
4	0.85	12,490
5	0.95	3,360

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
54		S	B132010-PS3		1	2,834,186	12.8	0.00		< HS	accept
Notes											

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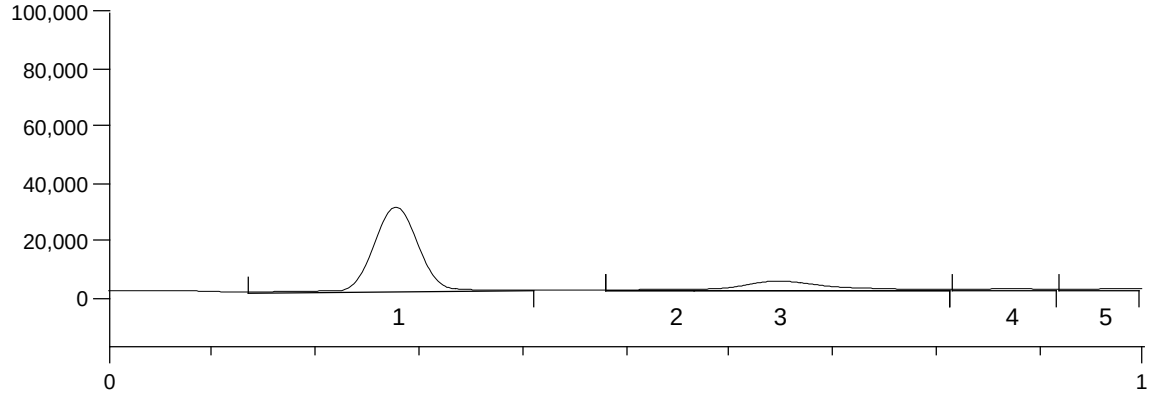
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

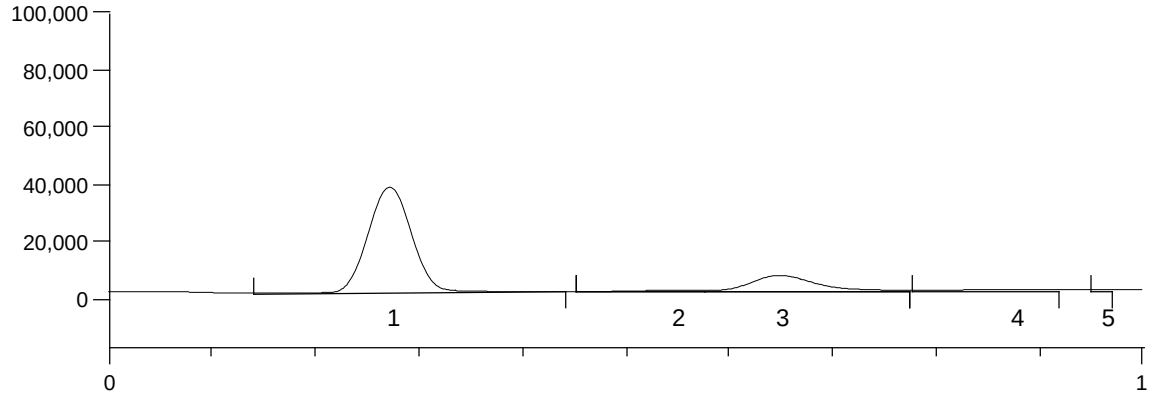
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 12:25 PM

Peak	rt	Area
1	0.28	868,937
2	0.54	12,300
3	0.64	163,550
4	0.87	6,741
5	0.96	1,040

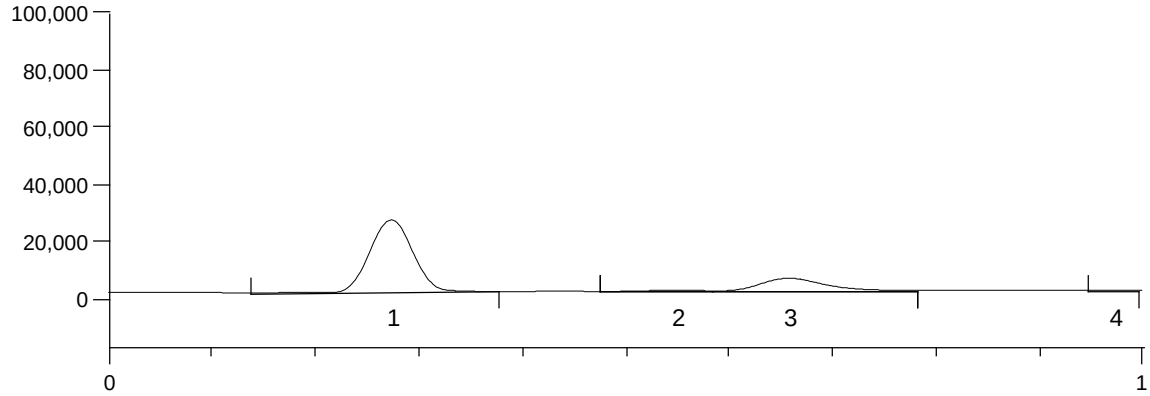
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	1345019-22		1	868,937	3.82	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:30 PM

Peak	rt	Area
1	0.27	1,081,020
2	0.54	14,372
3	0.64	229,358
4	0.87	10,254
5	0.96	-51

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	1345019-23		1	1,081,020	4.79	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:35 PM

Peak	rt	Area
1	0.27	728,100
2	0.54	12,274
3	0.65	186,802
4	0.97	205

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	1345019-24		1	728,100	3.17	0.00		< HS	accept
Notes											

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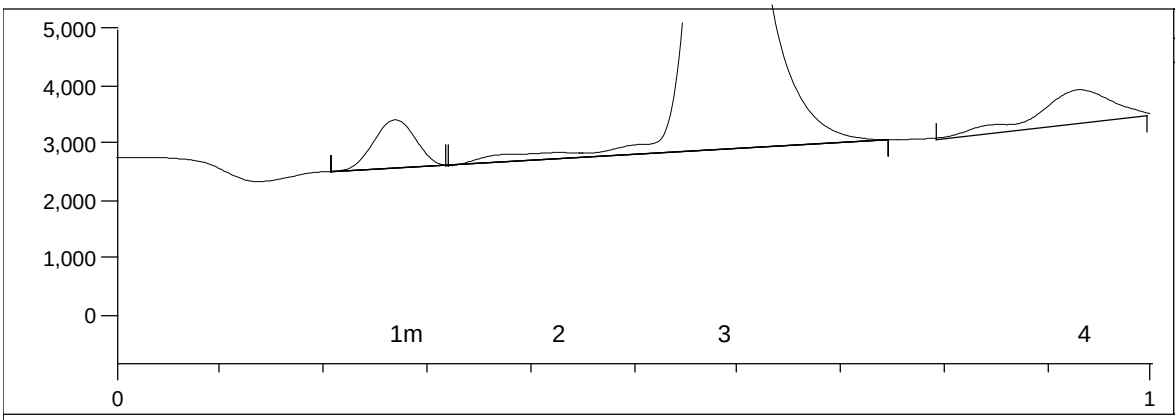
Peak Report

Batch Number: B132010
Method Number: BR-0021

Project Number(s): 1300845
Instrument ID: HGAA2

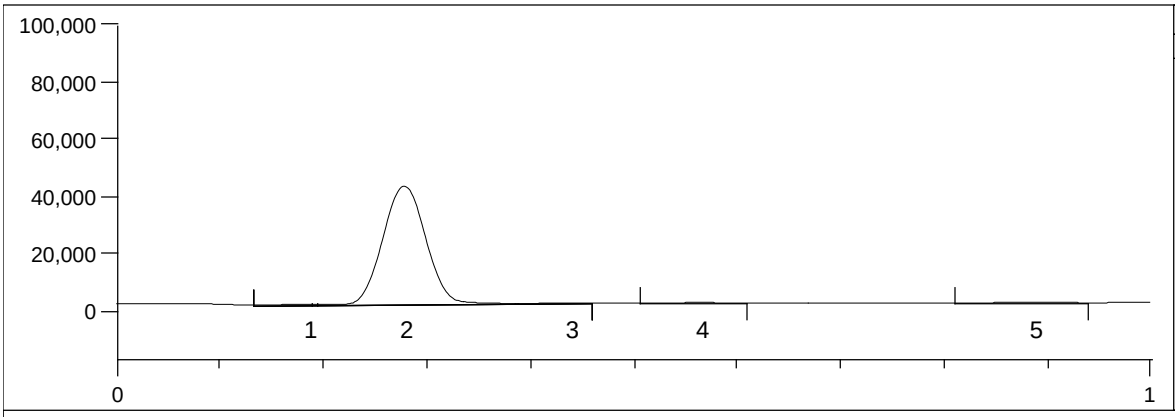
Date Analyzed: 12/8/13
Analyst Name: BJT



Date: 12/8/13
Time: 12:40 PM

Peak	rt	Area
1m	0.26	23,334
2	0.42	6,888
3	0.58	422,577
4	0.93	28,037

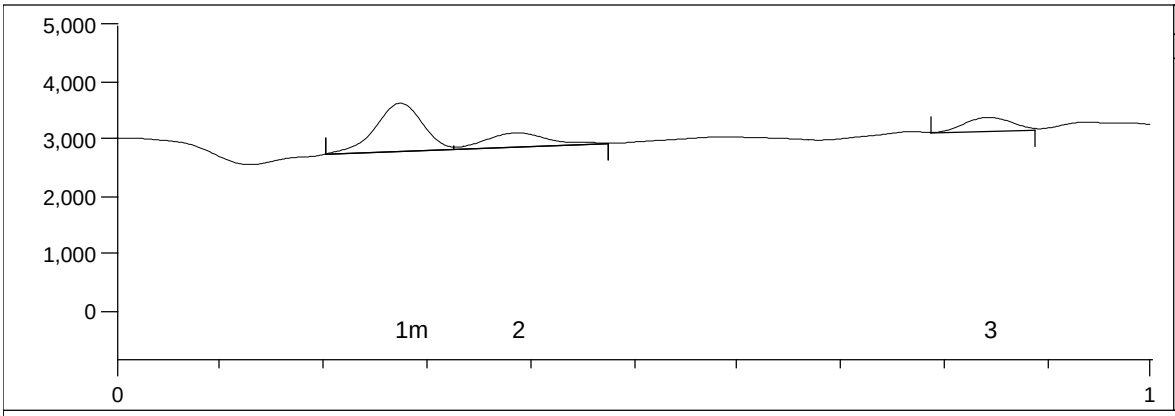
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1343025-24		1m	23,334	-0.0530	0.00		< HS	accept
Notes											



Date: 12/8/13
Time: 12:46 PM

Peak	rt	Area
1	0.18	2,365
2	0.28	1,190,744
3	0.44	2,189
4	0.56	5,400
5	0.88	10,261

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		OPR	SEQ-CCV		2	1,190,744	5.29		106	80-120	accept
Notes											



Date: 12/8/13
Time: 12:50 PM

Peak	rt	Area
1m	0.27	25,481
2	0.38	9,424
3	0.84	6,946

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		CCB	SEQ-CCB		1m	25,481	0.117		0.117	< 0.4	accept
Notes											

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ANALYSIS SEQUENCE

1300856

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1300856-IBL1	1300856	QC	1		-			
1300856-IBL2	1300856	QC	2		-			
1300856-IBL3	1300856	QC	3		-			
1300856-CAL1	1300856	QC	4	1348011	-			
1300856-CAL2	1300856	QC	5	1348012	-			
1300856-CAL3	1300856	QC	6	1348013	-			
1300856-CAL4	1300856	QC	7	1348014	-			
1300856-CAL5	1300856	QC	8	1348015	-			
1300856-ICV1	1300856	QC	9	1348009	-			
1300856-CCV1	1300856	QC	10	1348008	-			
1300856-CCB1	1300856	QC	11		-			
B132011-BLK1	B132011	QC	12		-			
B132011-BLK2	B132011	QC	13		-			
B132011-BLK3	B132011	QC	14		-			
B132011-BLK4	B132011	QC	15		-			
B132011-BS1	B132011	QC	16		-			
B132011-BS2	B132011	QC	17		-			
1343025-24	B132011	As(III)-B-HClExt-HGAAS	18			ARD-MV1302	12/2/2013	
1345019-01	B132011	As(III)-B-HClExt-HGAAS	19			ARD-MV1302	12/2/2013	
B132011-DUP1	B132011	QC	20		1345019-01			
B132011-PS1	B132011	QC	21		1345019-01			
1345019-02	B132011	As(III)-B-HClExt-HGAAS	22			ARD-MV1302	12/2/2013	
1345019-03	B132011	As(III)-B-HClExt-HGAAS	23			ARD-MV1302	12/2/2013	
1345019-04	B132011	As(III)-B-HClExt-HGAAS	24			ARD-MV1302	12/2/2013	
1345019-05	B132011	As(III)-B-HClExt-HGAAS	25			ARD-MV1302	12/2/2013	
1345019-06	B132011	As(III)-B-HClExt-HGAAS	26			ARD-MV1302	12/2/2013	

ANALYSIS SEQUENCE

1300856

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-07	B132011	As(III)-B-HClExt-HGAAS	27			ARD-MV1302	12/2/2013	
1300856-CCV2	1300856	QC	28	1348008	-			
1300856-CCB2	1300856	QC	29		-			
1345019-08	B132011	As(III)-B-HClExt-HGAAS	30			ARD-MV1302	12/2/2013	
1345019-09	B132011	As(III)-B-HClExt-HGAAS	31			ARD-MV1302	12/2/2013	
1345019-10	B132011	As(III)-B-HClExt-HGAAS	32			ARD-MV1302	12/2/2013	
1345019-11	B132011	As(III)-B-HClExt-HGAAS	33			ARD-MV1302	12/2/2013	
B132011-DUP2	B132011	QC	34		1345019-11			
B132011-PS2	B132011	QC	35		1345019-11			
1345019-12	B132011	As(III)-B-HClExt-HGAAS	36			ARD-MV1302	12/2/2013	
1345019-13	B132011	As(III)-B-HClExt-HGAAS	37			ARD-MV1302	12/2/2013	
1345019-14	B132011	As(III)-B-HClExt-HGAAS	38			ARD-MV1302	12/2/2013	
1345019-15	B132011	As(III)-B-HClExt-HGAAS	39			ARD-MV1302	12/2/2013	
1345019-16	B132011	As(III)-B-HClExt-HGAAS	40			ARD-MV1302	12/2/2013	
1345019-17	B132011	As(III)-B-HClExt-HGAAS	41			ARD-MV1302	12/2/2013	
1300856-CCV3	1300856	QC	42	1348008	-			
1300856-CCB3	1300856	QC	43		-			
1345019-18	B132011	As(III)-B-HClExt-HGAAS	44			ARD-MV1302	12/2/2013	
1345019-19	B132011	As(III)-B-HClExt-HGAAS	45			ARD-MV1302	12/2/2013	
1345019-20	B132011	As(III)-B-HClExt-HGAAS	46			ARD-MV1302	12/2/2013	
1345019-21	B132011	As(III)-B-HClExt-HGAAS	47			ARD-MV1302	12/2/2013	
B132011-DUP3	B132011	QC	48		1345019-21			
B132011-PS3	B132011	QC	49		1345019-21			
1345019-22	B132011	As(III)-B-HClExt-HGAAS	50			ARD-MV1302	12/2/2013	
1345019-23	B132011	As(III)-B-HClExt-HGAAS	51			ARD-MV1302	12/2/2013	
1345019-24	B132011	As(III)-B-HClExt-HGAAS	52			ARD-MV1302	12/2/2013	

ANALYSIS SEQUENCE

1300856

Brooks Rand Labs

Instrument: HGAAS-2

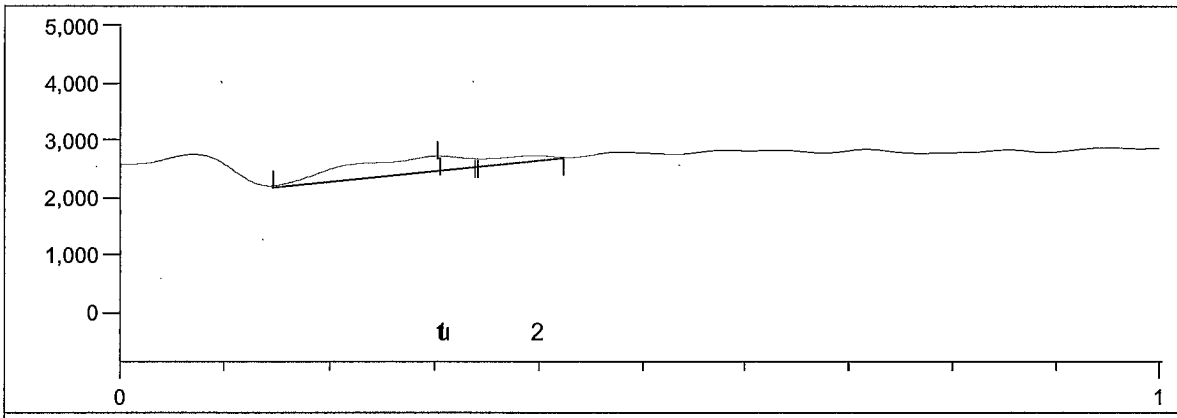
Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1300856-CCV4	1300856	QC	53	1348008	-			
1300856-CCB4	1300856	QC	54		-			

Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

Date Analyzed: 12/10/13
Analyst Name: IRJ

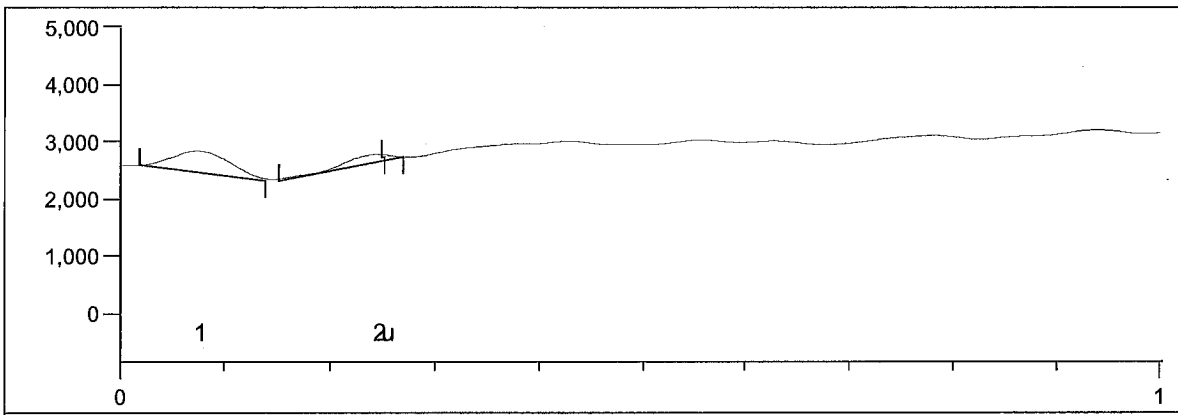


Date: 12/10/13
Time: 9:31 AM

Peak	rt	Area
1	0.30	21,479
2	0.39	4,208
u	0.30	0

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
1		CB	SEQ-IBL1		u	0	0.00		0.00	< 0.40	accept
Notes											

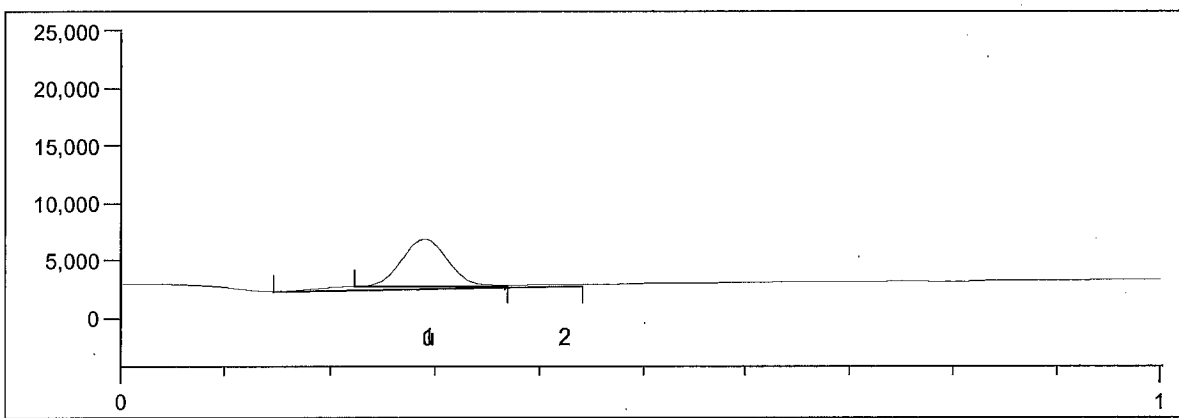


Date: 12/10/13
Time: 9:36 AM

Peak	rt	Area
1	0.07	12,745
2	0.24	4,293
u	0.25	0

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL2		u	0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 9:46 AM

Peak	rt	Area
1	0.29	147,359
2	0.42	2,601
u	0.29	123,249

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		STD	SEQ-CAL1		u	123,249	0.569		114	80-120	accept
Notes											

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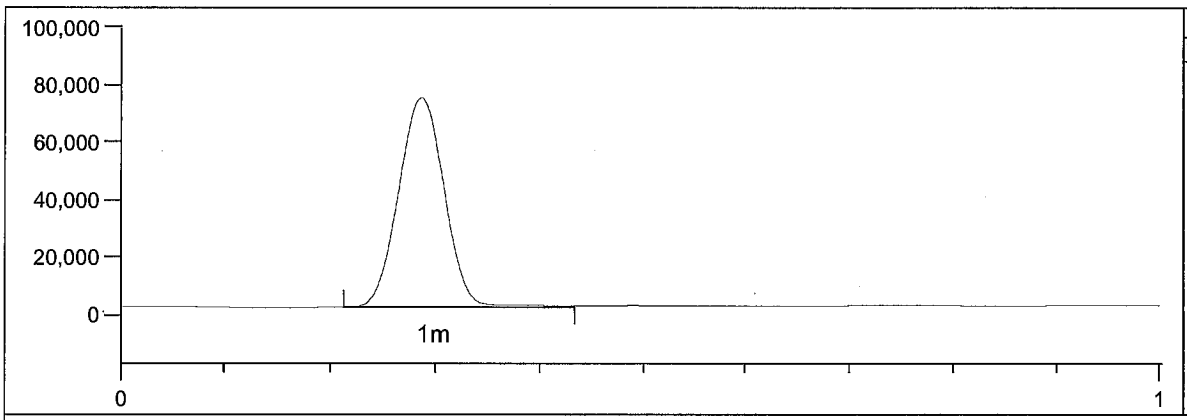
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

Date Analyzed: 12/10/13
Analyst Name: IRJ



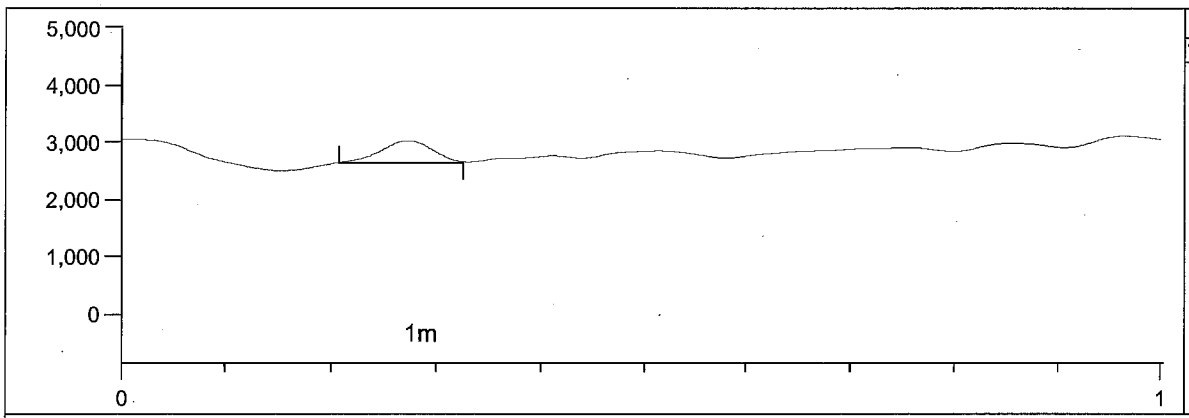
Date: 12/10/13
Time: 9:55 AM

Peak	rt	Area
1m	0.28	2,192,003

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL3		1m	2,192,003	10.1		101	80-120	accept

Notes



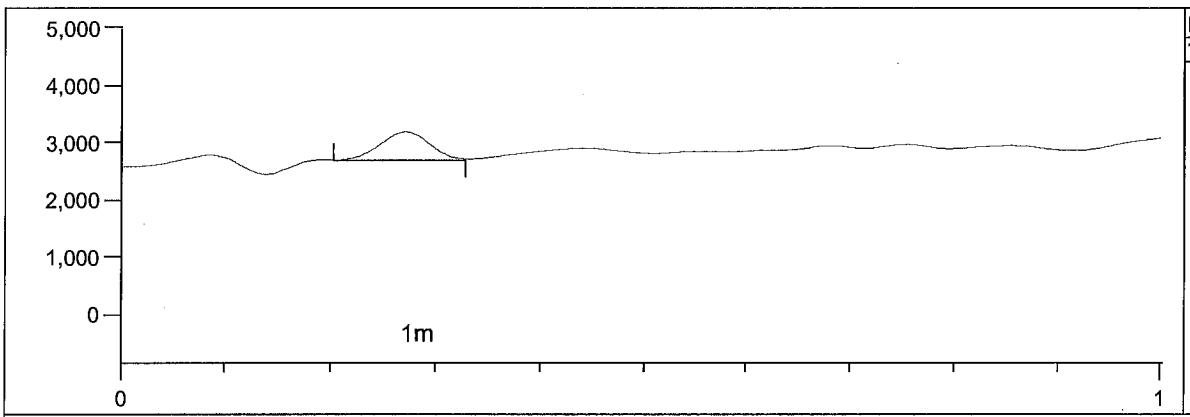
Date: 12/10/13
Time: 11:00 AM

Peak	rt	Area
1m	0.27	12,180

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		S	B132011-BLK3		1m	12,180	0.0562	0.00		< HS	accept

Notes



Date: 12/10/13
Time: 11:07 AM

Peak	rt	Area
1m	0.27	15,271

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132011-BLK4		1m	15,271	0.0704	0.00		< HS	accept

Notes

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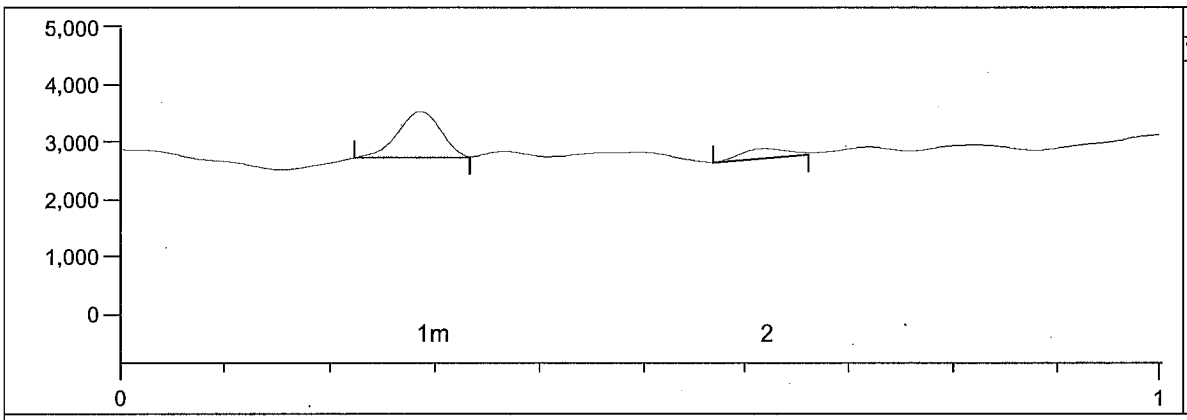
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

Date Analyzed: 12/10/13
Analyst Name: IRJ

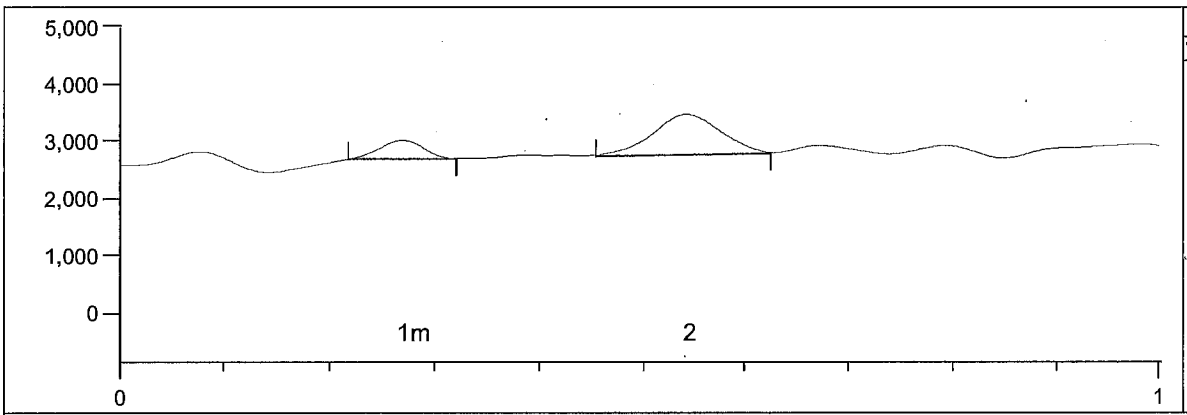


Date: 12/10/13
Time: 11:14 AM

Peak	rt	Area
1m	0.28	22,225
2	0.62	4,410

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132011-BS1		1m	22,225	0.103	0.00		< HS	accept
Notes											

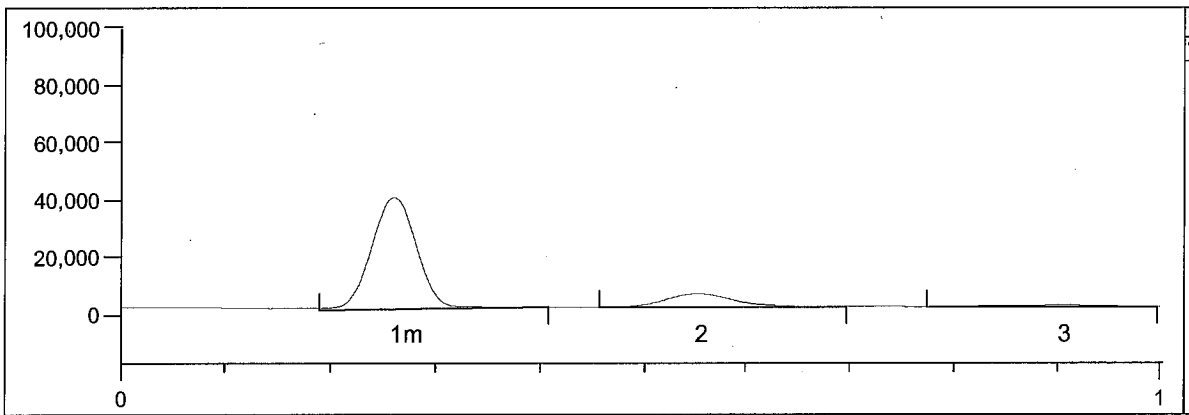


Date: 12/10/13
Time: 11:26 AM

Peak	rt	Area
1m	0.26	9,078
2	0.54	30,774

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
18		S	1343025-24		1m	9,078	0.0419	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:41 AM

Peak	rt	Area
1m	0.26	1,121,130
2	0.55	207,937
3	0.90	41,706

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
20		S	B132011-DUP1		1m	1,121,130	5.17	0.00		< HS	accept
Notes											

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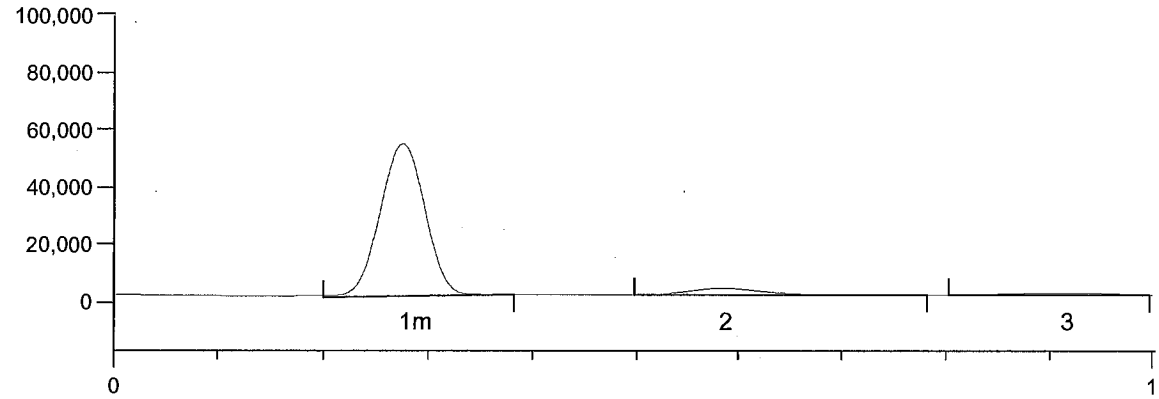
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

Date Analyzed: 12/10/13
Analyst Name: IRJ

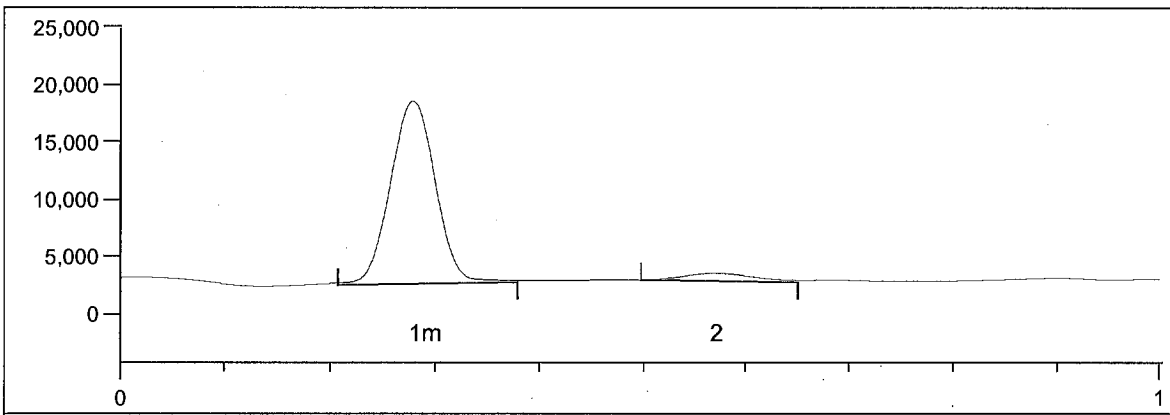


Date: 12/10/13
Time: 11:50 AM

Peak	rt	Area
1m	0.27	1,564,668
2	0.58	119,592
3	0.91	47,318

CenC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
21		S	B132011-PS1		1m	1,564,668	7.22	0.00		< HS	accept
Notes											

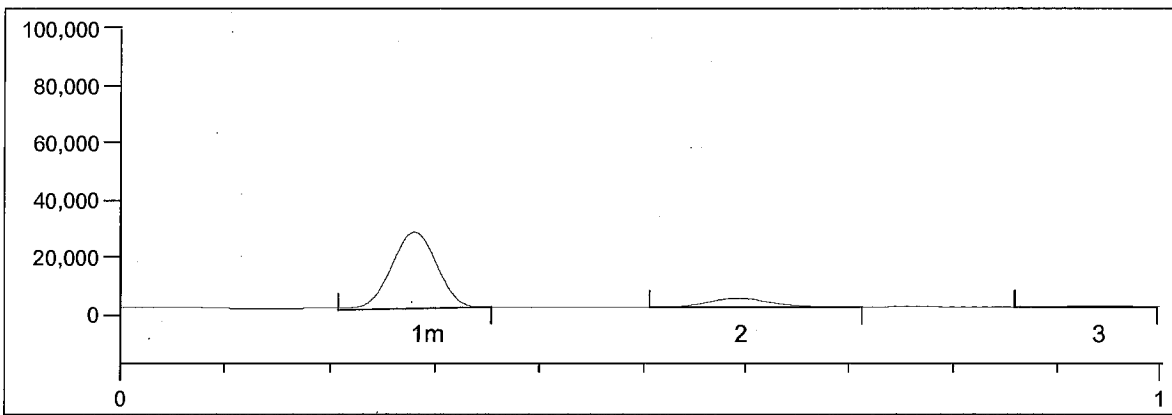


Date: 12/10/13
Time: 1:24 PM

Peak	rt	Area
1m	0.28	463,370
2	0.57	24,556

CenC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
25		S	1345019-05		1m	463,370	2.14	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:11 PM

Peak	rt	Area
1m	0.28	781,202
2	0.59	135,490
3	0.93	17,933

CenC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-11		1m	781,202	3.60	0.00		< HS	accept
Notes											

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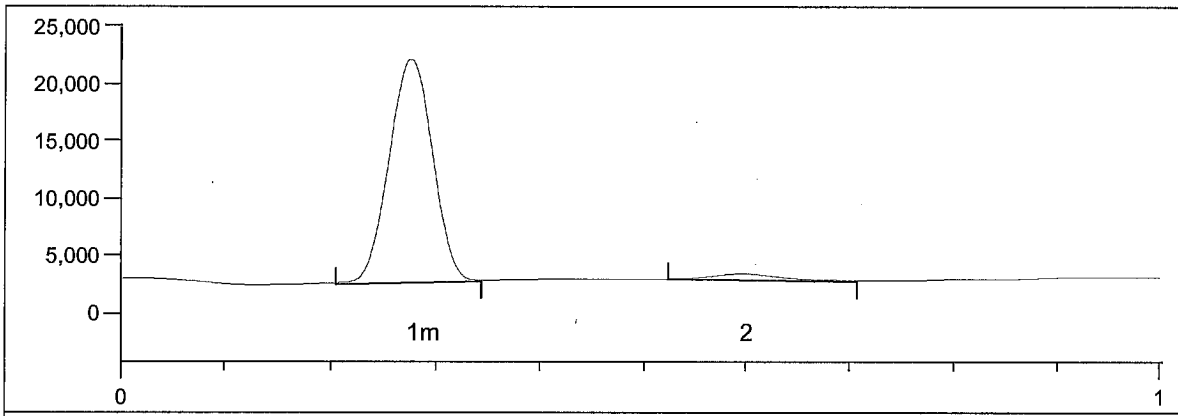
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

Date Analyzed: 12/10/13
Analyst Name: IRJ

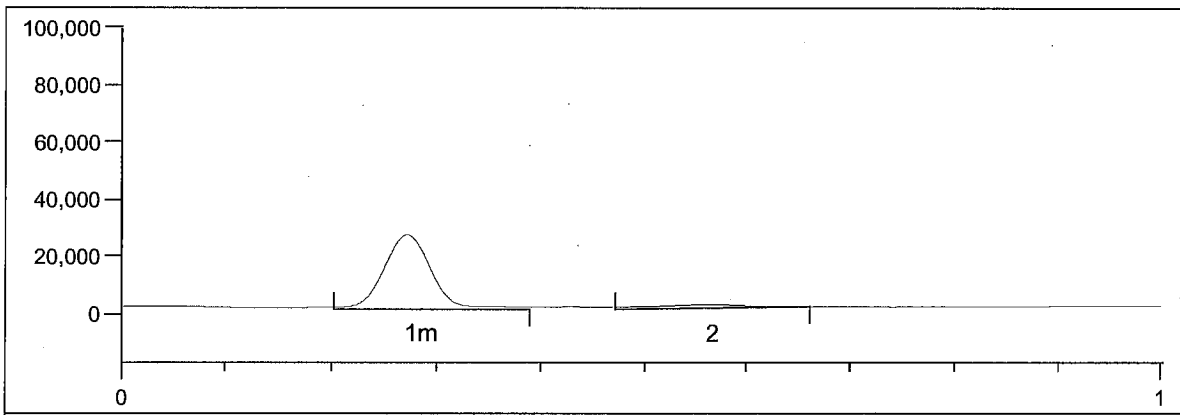


Date: 12/10/13
Time: 2:27 PM

Peak	rt	Area
1m	0.27	558,677
2	0.59	22,438

CuC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
36		S	1345019-12		1m	558,677	2.58	0.00		< HS	accept
Notes											

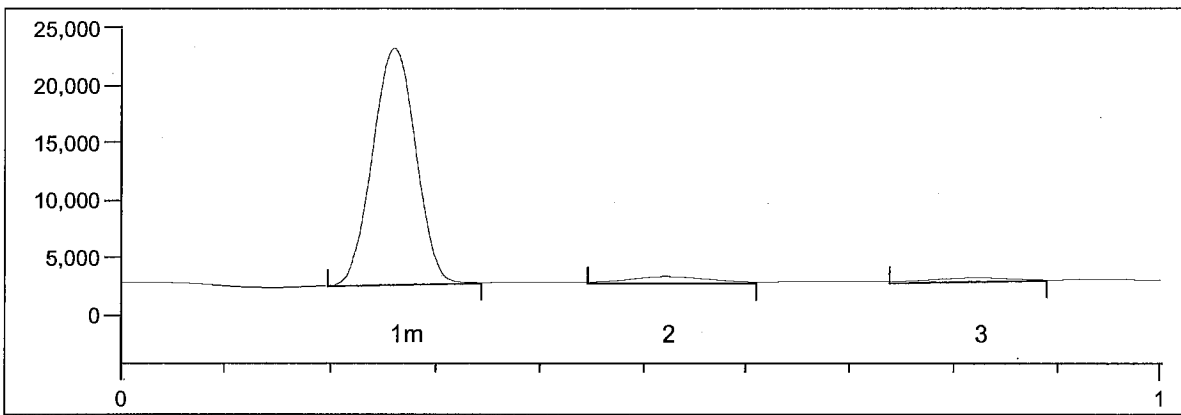


Date: 12/10/13
Time: 3:22 PM

Peak	rt	Area
1m	0.27	739,925
2	0.56	38,637

CuC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-21		1m	739,925	3.41	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:59 PM

Peak	rt	Area
1m	0.26	589,281
2	0.52	23,098
3	0.82	13,311

CuC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
52		S	1345019-24		1m	589,281	2.72	0.00		< HS	accept
Notes											

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Manual Integration Abbreviation Sheet

m. Modified peak shape due to split peak in Guru software

u. Unidentified peak. No peak called out in the appropriate retention time window

m1. Modified peak due to dip in hydride baseline. Peak integrated from the new baseline

m2. Modified peak due to dip in hydride baseline. Peak integrated from old baseline

dp. Double peak called out by software.

g. Analysis volume value is a mass, assumed to be equal to a volume based on an assumed density of 1.00 +/- 0.03g/mL.

SOP(s) / Rev#(s): 0021 - Rev 0046

As(In) ☐ As(III) ☑ MMA ☐ DMA ☐ Analysis Sheet

Sequence: 1300856	Batch(es): B132011	Matrix: Biota
Analyst: IRJ	Date: 12-10-13	Pump purge time: 2:30
Cal. blank (average): 0.00 µg/L	Cal. coefficient: 0.00461	RSD: 8.8
Method blank (average): 0.0005 µg/g	Noise: 2399	Trap(s) #: 51
Cal. Std. 10ng/mL: 1348003	ICV Std. 100ng/mL: 1348004	4% NaBH4: 1344014
6M HCl: —	2.5M Tris-HCl: 1348018	

	Run #	Sample ID	Analyzed volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
m1	1	SEQ - IBL1	-		
	2	- IBL2	-		
	3	- IBL3	-		
m1	4	- CAL1	0.050		10ng/mL Cal.
	5	- CAL2	0.200		
m2	6	- CAL3	1.00		
	7	- CAL4	2.00		
	8	- CAL5	3.00		
	9	- ICV	0.050		100ng/mL ICV
	10	- CCV	0.500		10ng/mL Cal.
	11	- CCB	-		
	12	B132011-BLK1	2.00		
	13	- BLK2			
m2	14	- BLK3			
	15	- BLK4			
	16	- BS1			
	17	- BS2			
m2	18	1343025-24			
	19	1345019-01	0.500		
m2	20	B132011-DUP1			~~native~~ native: 1345019-01
	21	- PS1			@ 5ng - 0.50 mL Cal.
	22	1345019-02	0.100		
	23	-03			
	24	-04			

Comments: _____

As(In) ☐ As(III) ☑ MMA ☐ DMA ☐ Analysis Sheet

Page 2 of 2

Sequence: 1300856 Batch: B132011 Analyst: IRJ Date: 12-10-13

	Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
m1	25	1345019-05	0.100		
	26	-06	IRJ 12-10-13 ~~0.50~~		
	27	-07			
	28	SEQ-CCV	0.500		10ng/mL Cal.
	29	-CCB	–		
	30	1345019-08	0.500		
	31	-09			
	32	-10			
m2	33	-11			
	34	B132011-DUP2			native: 1345019-11
	35	-PS2			@ 5ng - 0.50mL Cal.
m2	36	1345019-12	0.100		
	37	-13			
	38	-14			
	39	-15			
	40	-16			
	41	-17			
	42	SEQ-CCV	0.500		10ng/mL Cal.
	43	-CCB	–		
	44	1345019-18	0.100		
	45	-19			
	46	-20			
m2	47	-21			
	48	B132011-DUP3			native: 1345019-21
	49	-PS3			@ 5ng - 0.50mL Cal.
	50	1345019-22			
	51	-23			
m2	52	-24			

~~Comments:~~ IRJ 12-10-13

53	SEQ-CCV	0.500		10ng/mL Cal.
54	-CCB	–		

Total As / Total Se / As Species I, II, III, MMA/DMA **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 004B **Mod. of EPA 1632 (HGAAS) - circle**

Matrix: Water / Sediment / Biota / Other _____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 1 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
BLK-1	0.5	
BLK-2		
BLK-3		
BLK-4		
B132010/11-BS1		
B132011 - BS2		
B132012/13 ~~BS5~~ BS1		
~~SRM1~~		IRJ
~~SRM2~~	see pg. 2	12-07-13
1345019-01	0.5081	
1345019-02	0.5112	
1345019-03	0.5059	
1345019-04	0.5064	
1345019-05	0.5079	
1345019-06	0.5036	
1345019-07	0.5083	
1345019-08	0.5023	
1345019-09	0.5049	
1345019-10	0.5041	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
1345019-11	0.5056	
1345019-12	0.5040	
1345019-13	0.5134	
1345019-14	0.5021	
1345019-15	0.5128	
1345019-16	0.5066	
1345019-17	0.5023	
1345019-18	0.5027	
1345019-19	0.5004	
1345019-20	~~0.5121~~ MR 11/26/13	0.5058
1345019-21	0.5121	
1345019-22	0.5131	
1345019-23	0.5069	
1345019-24	0.5124	
1345019-25	0.5068	
DUP1	0.5003	
DUP2	0.5102	
DUP3	0.5036	
B132010/2011-MS1	0.5020	

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
DUP-1	1345019 - 01		IRJ 12-07-13		
DUP-2	- 11				①
DUP-3	- 21				
B132010/2011-MS/MSD1	1345019 - 01	0.250	0.10	2348004	

Reagents Added (ID/Amount Added)
2 M HCl (1349001/10mL)

Target Digestion Temperature = 75-85 °C

Measured Temperature*, Time On / Time Off, Date
70 (69) °C, 1508, 12-07-13
—16 hour timer—

Thermometer ID: BR-02

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: 10mL
Volume of Prep Subsampled: _____
Dilution Media: IRJ 12-07-13
Final Dilution Volume: _____

CRM, Matrix, Certified Values
CRM # 1337024

Comments: Samples were weighed out by MR on 11/26/13 and stored in the walk-in freezer (shelf #1)

① No spike witness available - IRJ 12-07-13

☆ - from B132005 by IRJ -CWB 12/11/13

Total As / Total Se / As Species mono./III/mmt/dmt **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 004b **Mod. of EPA 1632 (HGAAS) - circle**

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 2 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
B132010/2011-MS2	0.5013	
B132010/2011-MS3	0.5075	
B132010/2011-MSD1	0.5113	
B132010/2011-MSD2	0.5018	
B132010/2011-MSD3	0.5051	
B132012/2013-MS1	0.5056	
B132012/2013-MS2	0.5096	
B132012/2013-MS3	0.5080	
B132012/2013-MSD1	0.5139	
B132012/2013-MSD2	0.5004	
B132012/2013-MSD3	0.5042	
SRM 1	0.2055	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
SRM 2	0.2062	
* 1343025-24	0.5059	
IRJ 12-07-13		

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
B132010/2011-MS/MSD2	1345019 - 11	0.250	0.10	1348004	
B132010/2011-MS/MSD3	- 21	↓	↓	↓	①
B132012/2013-MS/MSD1	- 01	0.500/0.500	0.10/0.10	1346011/1346012	
B132012/2013-MS/MSD2	- 11	↓	↓	↓	
B132012/2013-MS/MSD3	- 21	↓	↓	↓	
B132010/11-BS1	-	0.500	0.10	1348017	
B132011-BS2	-	↓	↓	1348004	
B132012/13-BS1	-	0.500/0.500	0.10/0.10	1346011/1346012	
		IRJ 12-07-13			

Reagents Added (ID/Amount Added)

See pg. 1

Target Digestion Temperature = _____

Measured Temperature*, Time On / Time Off, Date

See pg. 1

Thermometer ID: _____

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: _____

Volume of Prep Subsampled: _____

Dilution Media: _____

Final Dilution Volume: _____

CRM, Matrix, Certified Values

IRJ 12-07-13

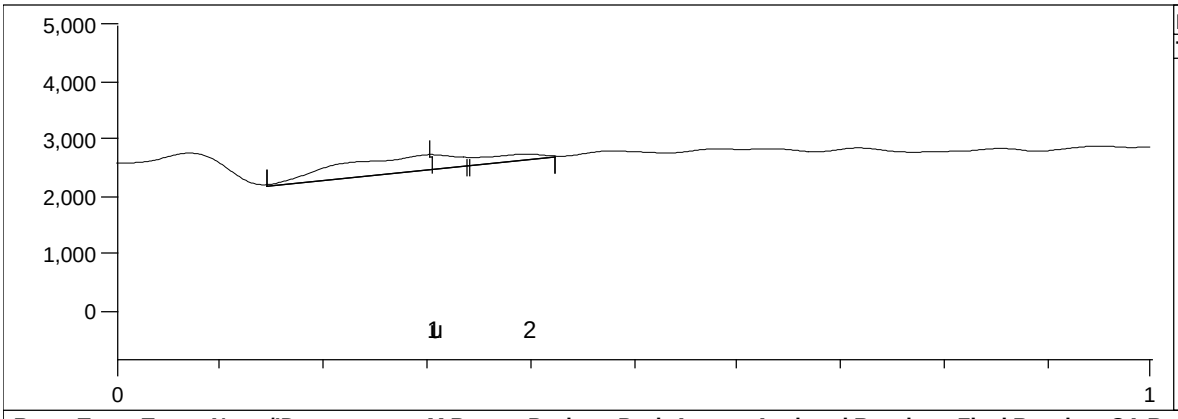
Comments:

Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

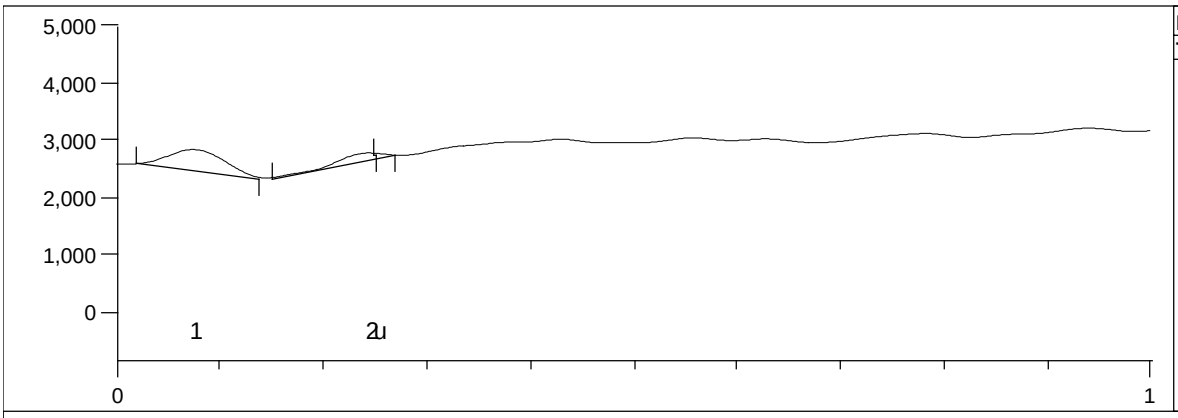
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 9:31 AM

Peak	rt	Area
1	0.30	21,479
2	0.39	4,208
u	0.30	0

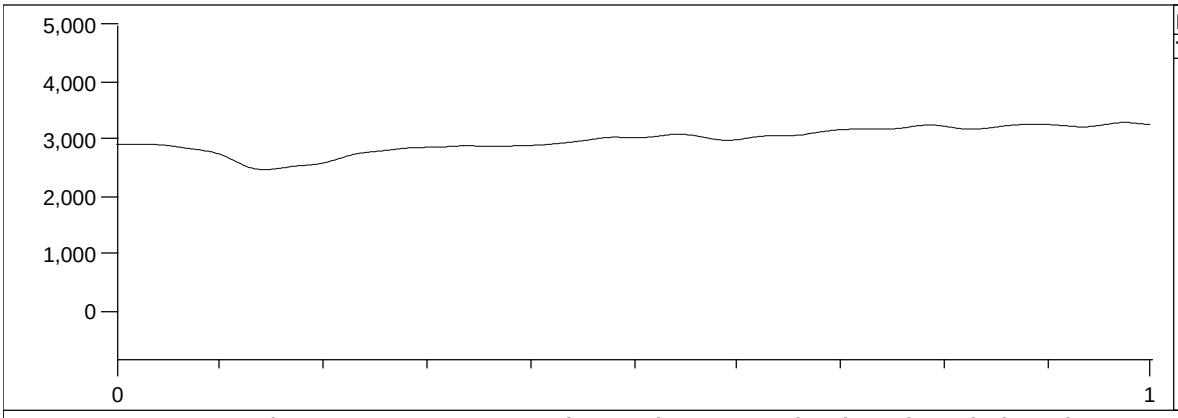
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
1		CB	SEQ-IBL1		u	0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 9:36 AM

Peak	rt	Area
1	0.07	12,745
2	0.24	4,293
u	0.25	0

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL2		u	0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 9:39 AM

Peak	rt	Area

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
3		CB	SEQ-IBL3			0	0.00		0.00	< 0.40	accept
Notes											

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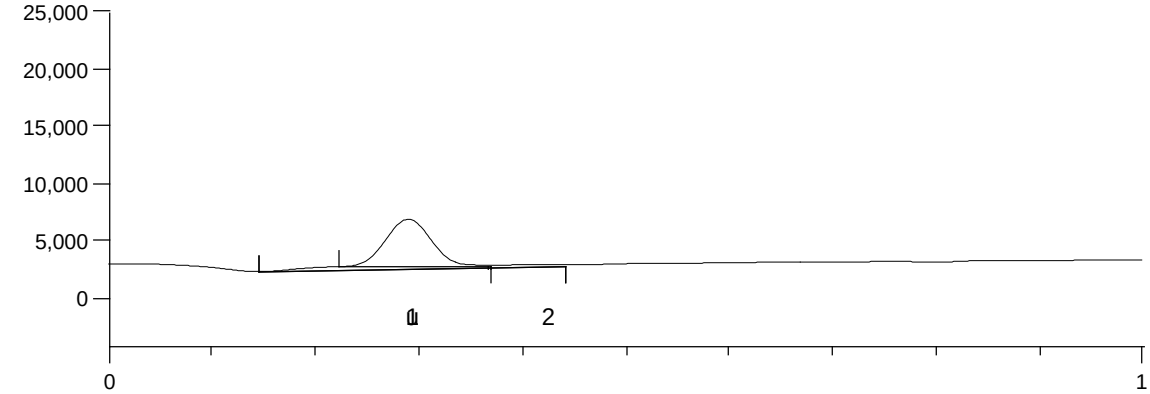
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

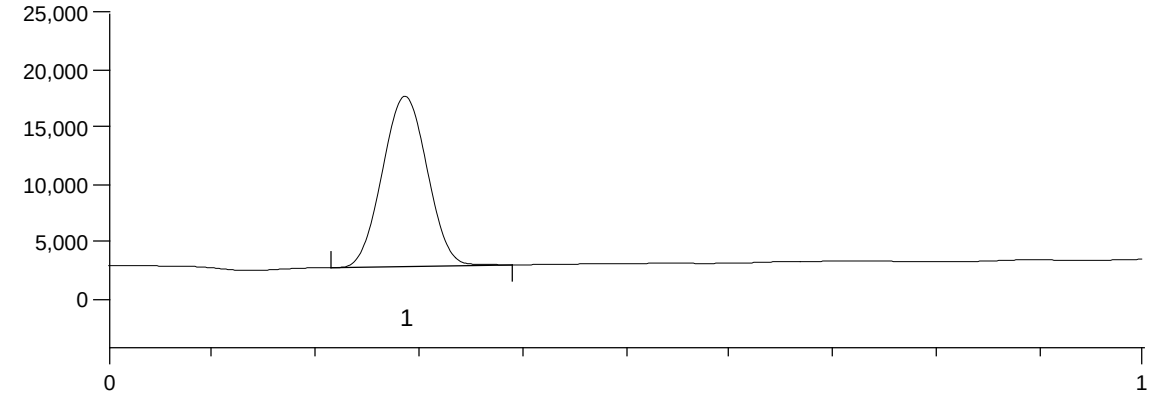
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 9:46 AM

Peak	rt	Area
1	0.29	147,359
2	0.42	2,601
u	0.29	123,249

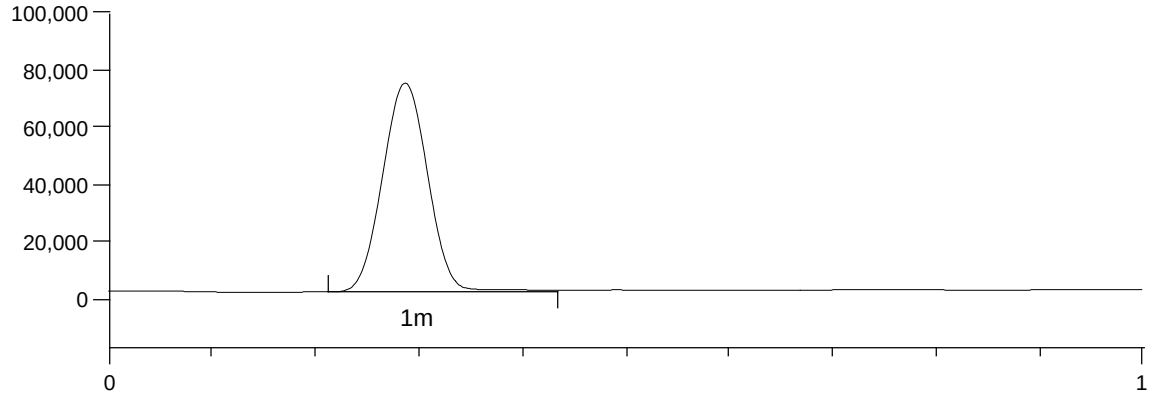
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		STD	SEQ-CAL1		u	123,249	0.569		114	80-120	accept
Notes											



Date: 12/10/13
Time: 9:51 AM

Peak	rt	Area
1	0.28	449,255

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
5		STD	SEQ-CAL2		1	449,255	2.07		104	80-120	accept
Notes											



Date: 12/10/13
Time: 9:55 AM

Peak	rt	Area
1m	0.28	2,192,003

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL3		1m	2,192,003	10.1		101	80-120	accept
Notes											

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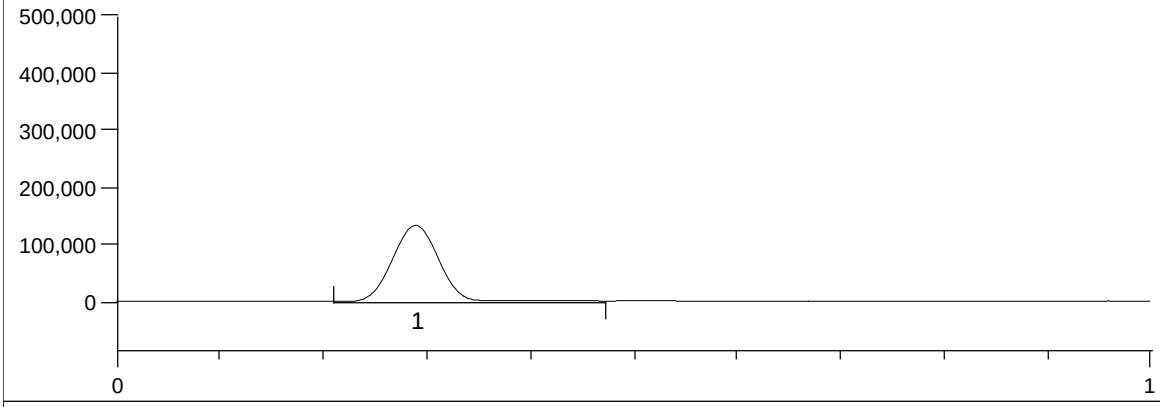
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

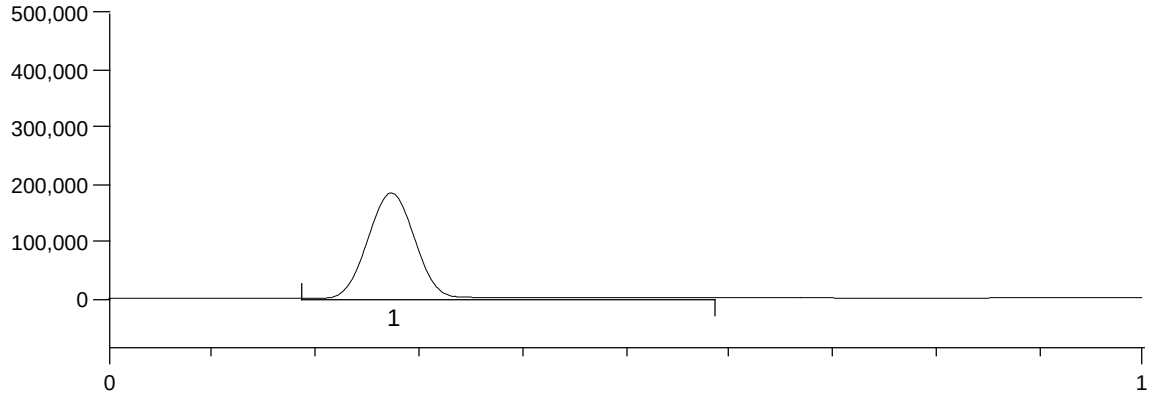
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 10:00 AM

Peak	rt	Area
1	0.28	4,085,618

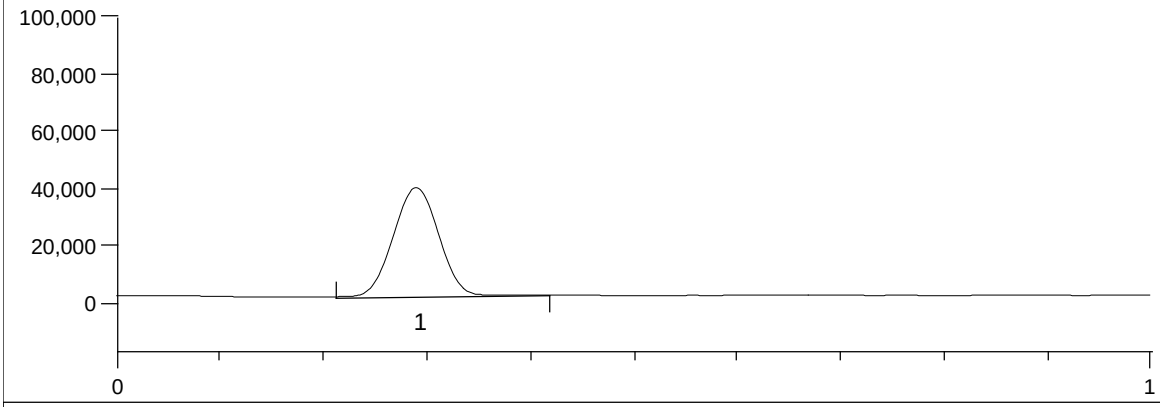
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
7		STD	SEQ-CAL4		1	4,085,618	18.8		94.2	80-120	accept
Notes											



Date: 12/10/13
Time: 10:14 AM

Peak	rt	Area
1	0.27	5,882,458

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
8		STD	SEQ-CAL5		1	5,882,458	27.1		90.5	80-120	accept
Notes											



Date: 12/10/13
Time: 10:18 AM

Peak	rt	Area
1	0.29	1,155,939

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
9		OPR	SEQ-ICV		1	1,155,939	5.33		107	80-120	accept
Notes											

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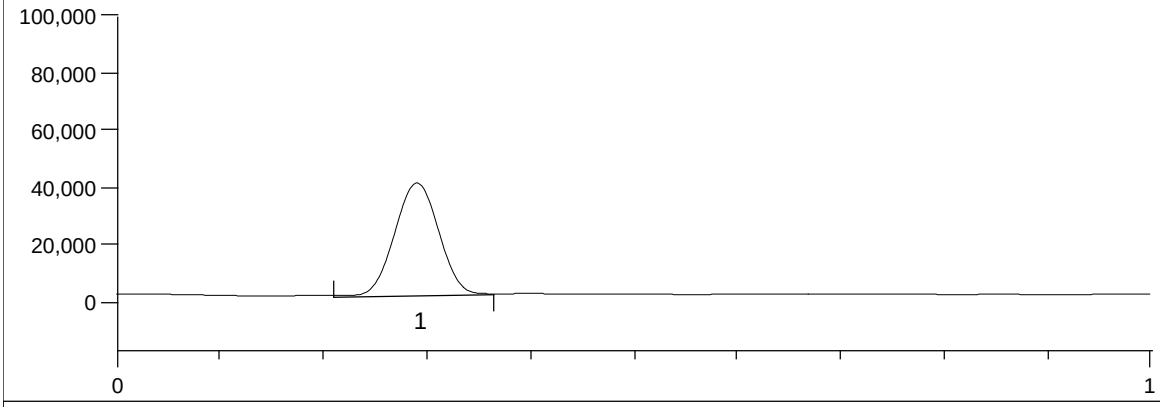
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

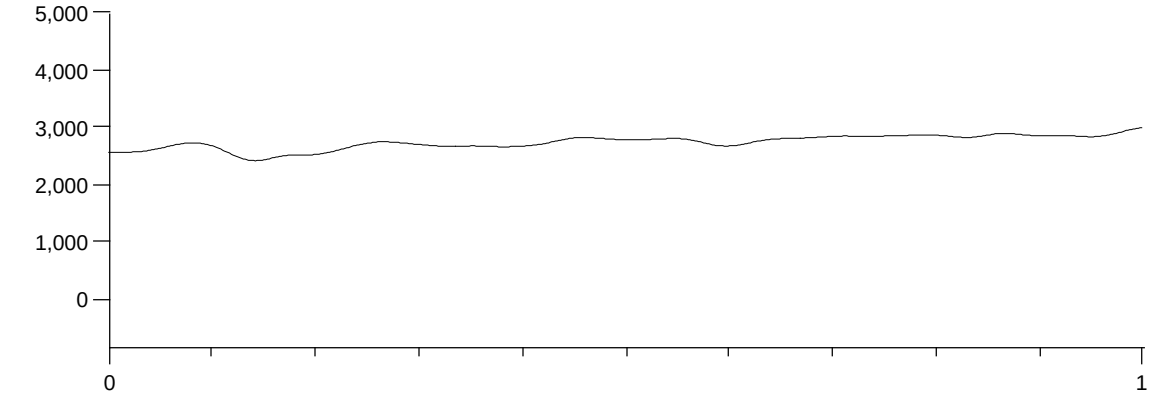
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 10:23 AM

Peak	rt	Area
1	0.29	1,143,344

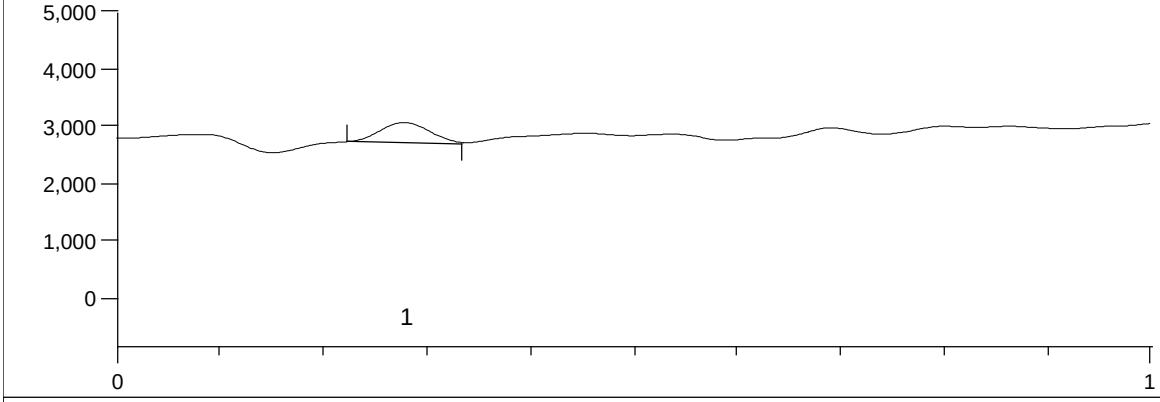
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
10		OPR	SEQ-CCV		1	1,143,344	5.27		105	80-120	accept
Notes											



Date: 12/10/13
Time: 10:27 AM

Peak	rt	Area

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
11		CCB	SEQ-CCB			0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 10:44 AM

Peak	rt	Area
1	0.27	10,949

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
12		S	B132011-BLK1		1	10,949	0.0505	0.00		< HS	accept
Notes											

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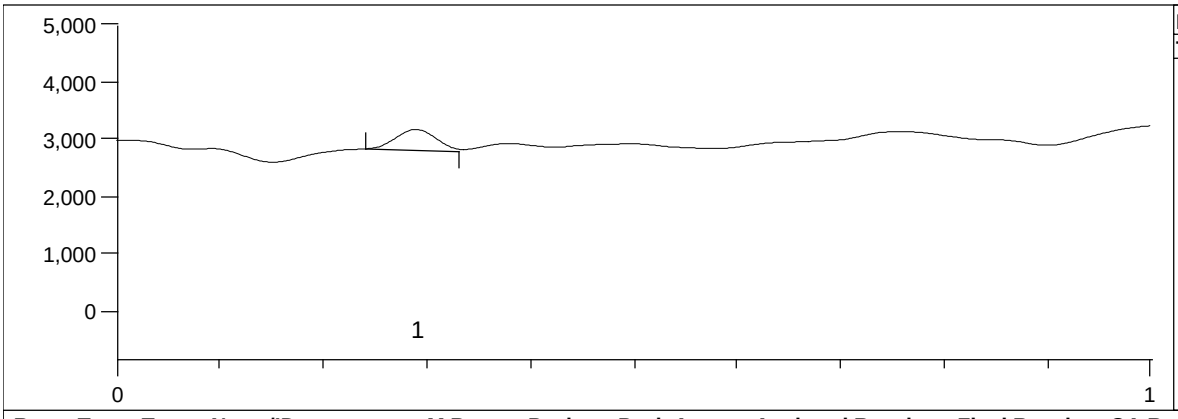
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

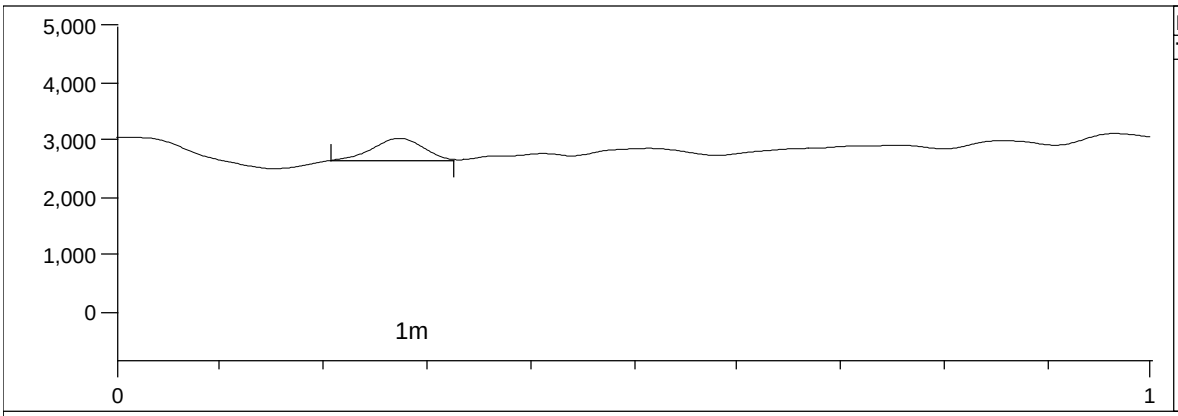
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 10:53 AM

Peak	rt	Area
1	0.28	8,818

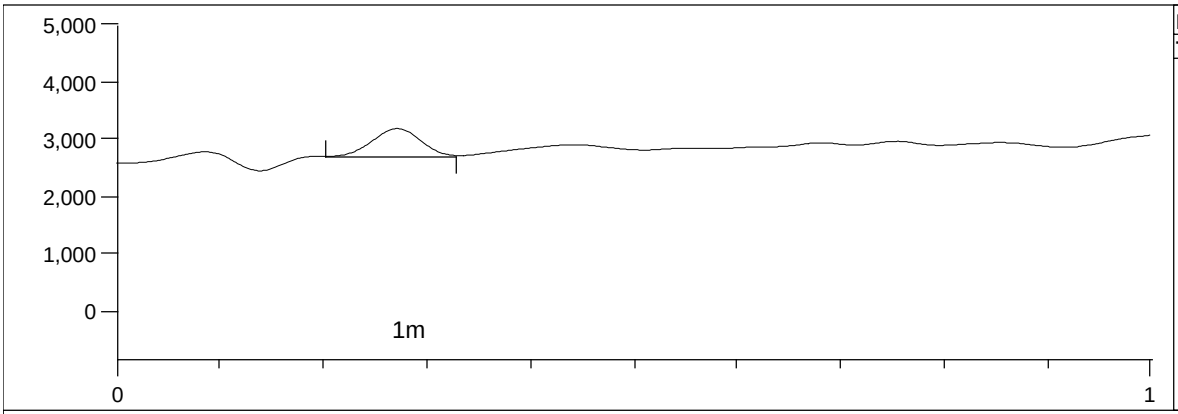
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
13		S	B132011-BLK2		1	8,818	0.0407	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:00 AM

Peak	rt	Area
1m	0.27	12,180

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		S	B132011-BLK3		1m	12,180	0.0562	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:07 AM

Peak	rt	Area
1m	0.27	15,271

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132011-BLK4		1m	15,271	0.0704	0.00		< HS	accept
Notes											

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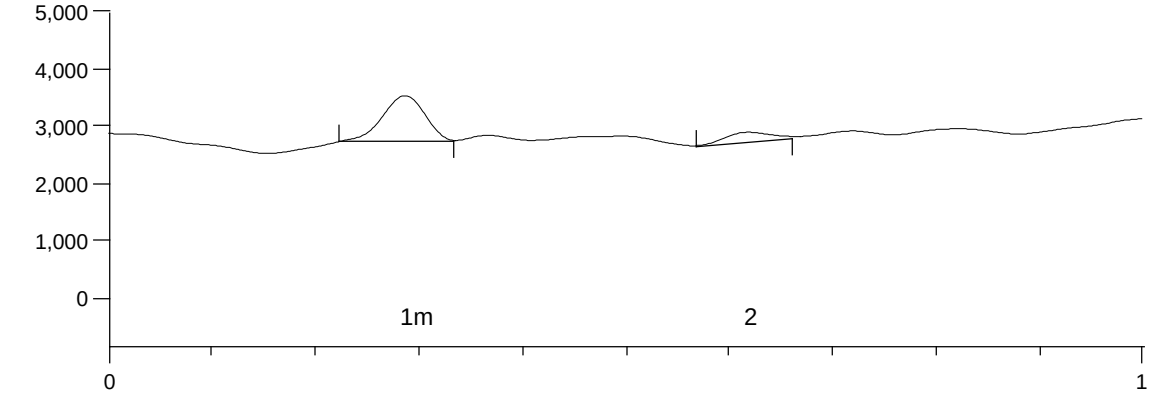
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

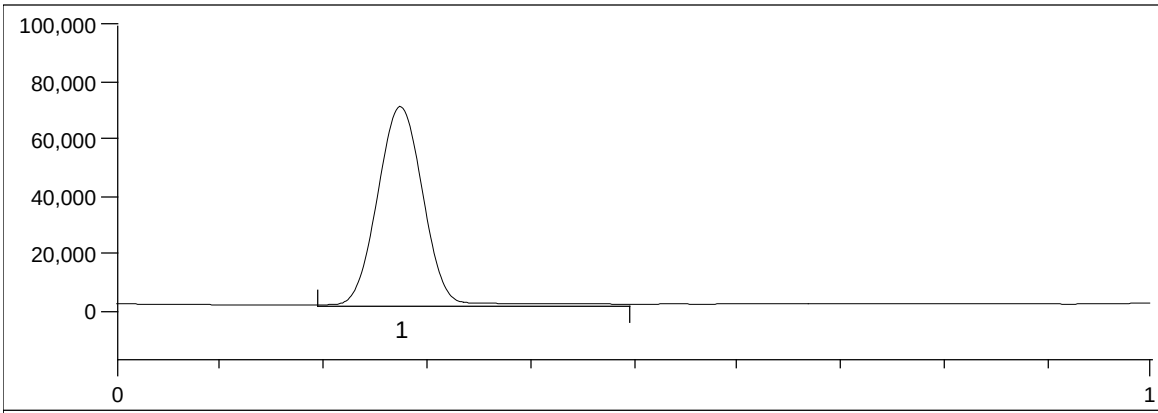
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 11:14 AM

Peak	rt	Area
1m	0.28	22,225
2	0.62	4,410

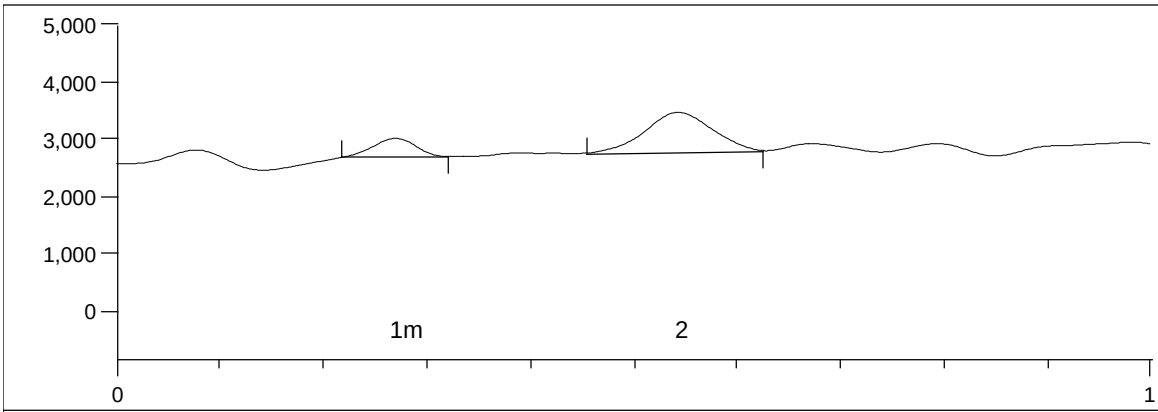
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132011-BS1		1m	22,225	0.103	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:20 AM

Peak	rt	Area
1	0.27	2,098,106

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
17		S	B132011-BS2		1	2,098,106	9.68	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:26 AM

Peak	rt	Area
1m	0.26	9,078
2	0.54	30,774

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
18		S	1343025-24		1m	9,078	0.0419	0.00		< HS	accept
Notes											

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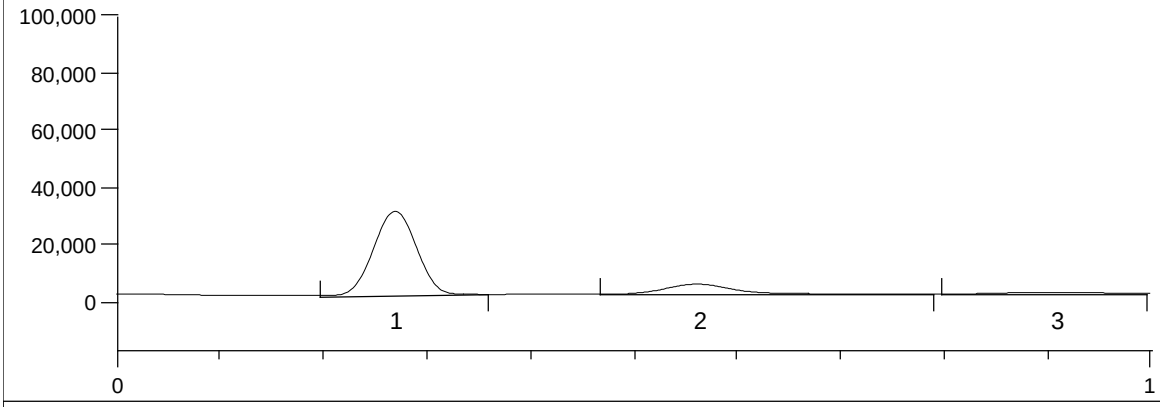
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

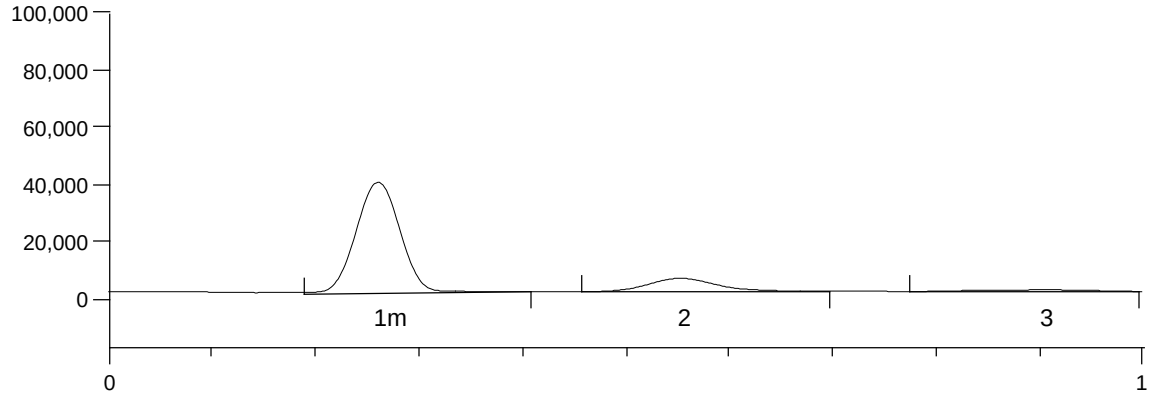
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 11:35 AM

Peak	rt	Area
1	0.26	837,877
2	0.56	163,021
3	0.90	26,950

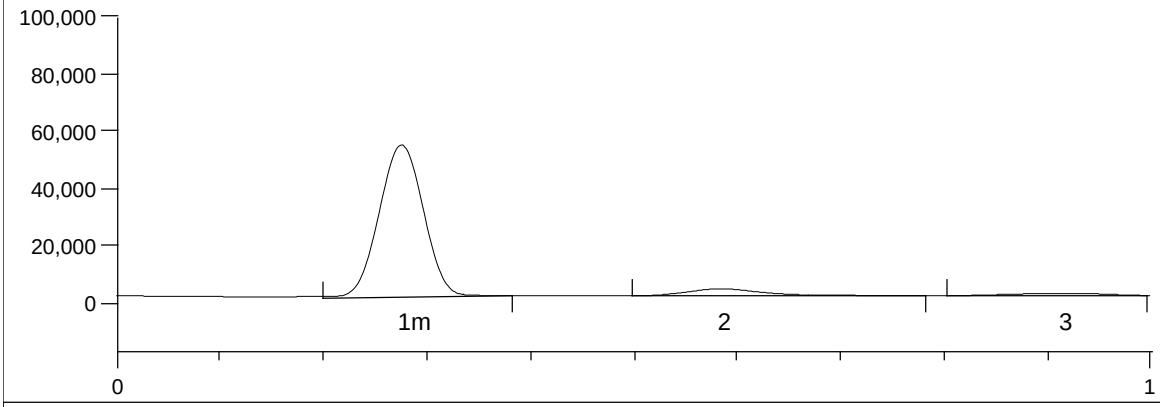
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
19		S	1345019-01		1	837,877	3.87	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:41 AM

Peak	rt	Area
1m	0.26	1,121,130
2	0.55	207,937
3	0.90	41,706

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
20		S	B132011-DUP1		1m	1,121,130	5.17	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 11:50 AM

Peak	rt	Area
1m	0.27	1,564,668
2	0.58	119,592
3	0.91	47,318

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
21		S	B132011-PS1		1m	1,564,668	7.22	0.00		< HS	accept
Notes											

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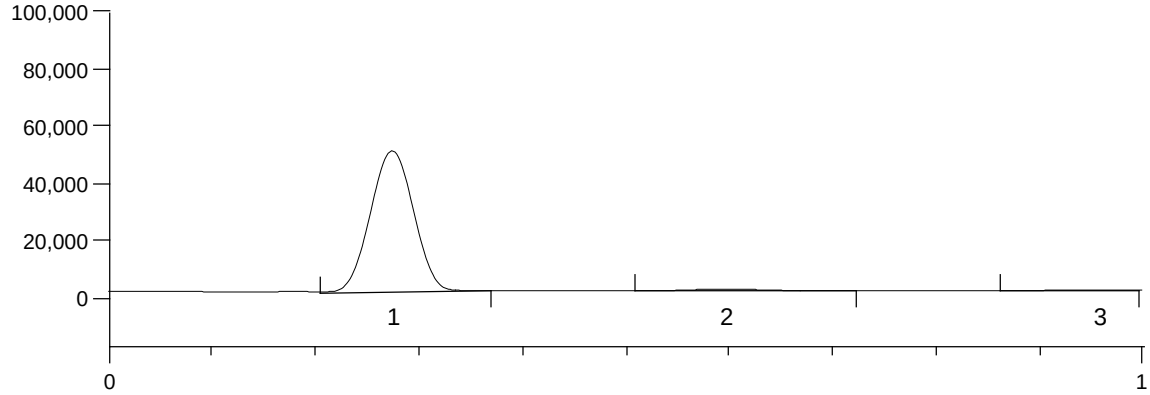
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

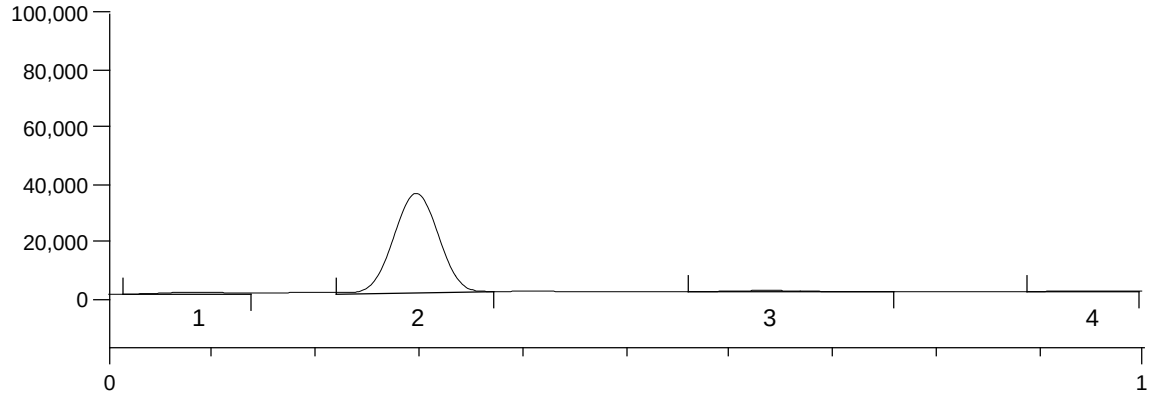
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 11:55 AM

Peak	rt	Area
1	0.27	1,421,381
2	0.59	31,072
3	0.95	10,565

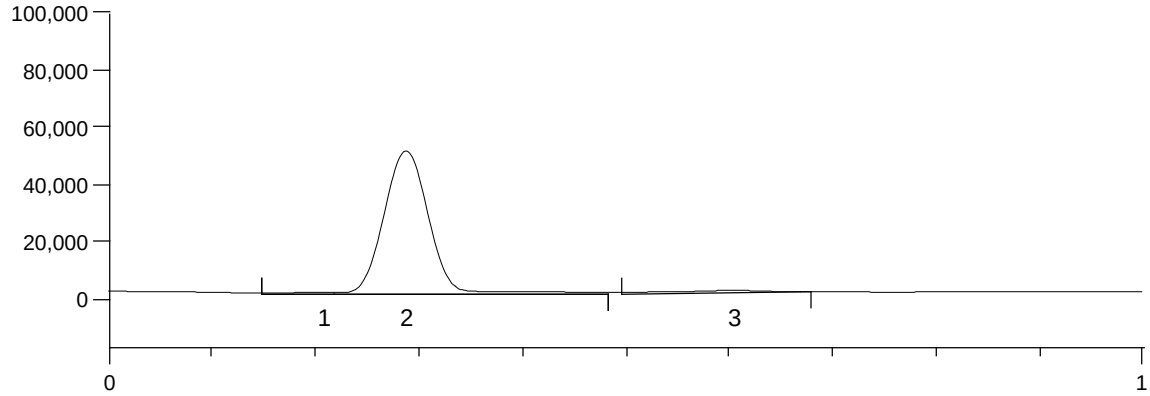
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
22		S	1345019-02		1	1,421,381	6.56	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 1:14 PM

Peak	rt	Area
1	0.08	18,724
2	0.29	1,032,157
3	0.63	19,469
4	0.94	6,052

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
23		S	1345019-03		2	1,032,157	4.76	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 1:19 PM

Peak	rt	Area
1	0.20	5,402
2	0.28	1,454,589
3	0.60	26,091

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
24		S	1345019-04		2	1,454,589	6.71	0.00		< HS	accept
Notes											

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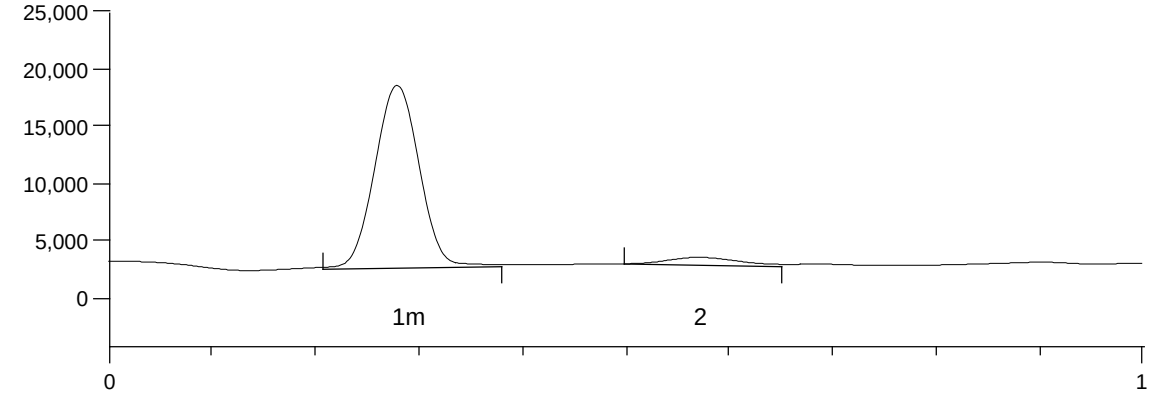
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

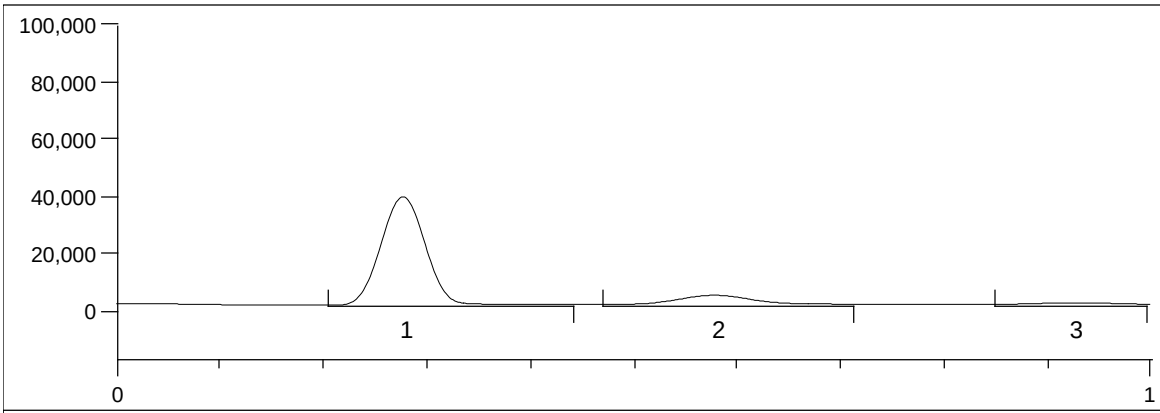
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 1:24 PM

Peak	rt	Area
1m	0.28	463,370
2	0.57	24,556

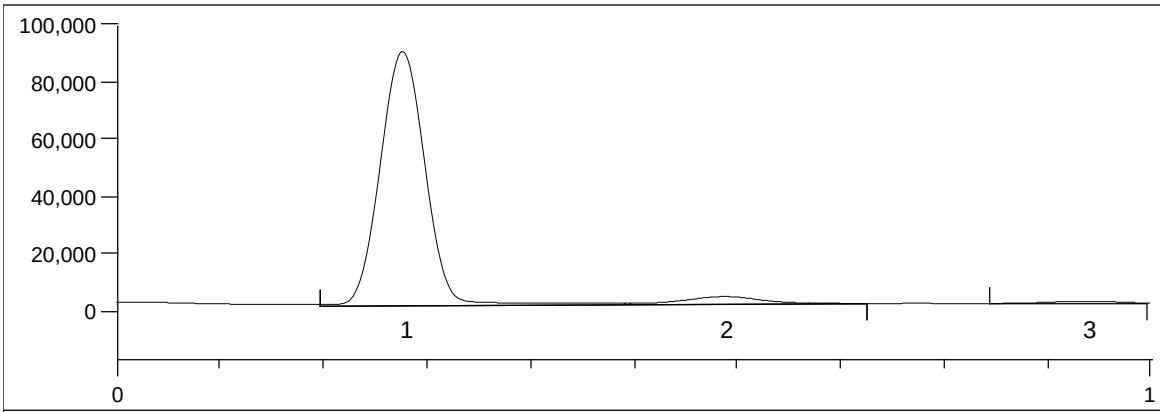
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
25		S	1345019-05		1m	463,370	2.14	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 1:30 PM

Peak	rt	Area
1	0.27	1,122,870
2	0.58	152,309
3	0.92	24,127

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
26		S	1345019-06		1	1,122,870	5.18	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 1:36 PM

Peak	rt	Area
1	0.27	2,642,602
2	0.58	131,388
3	0.93	29,226

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
27		S	1345019-07		1	2,642,602	12.2	0.00		< HS	accept
Notes											

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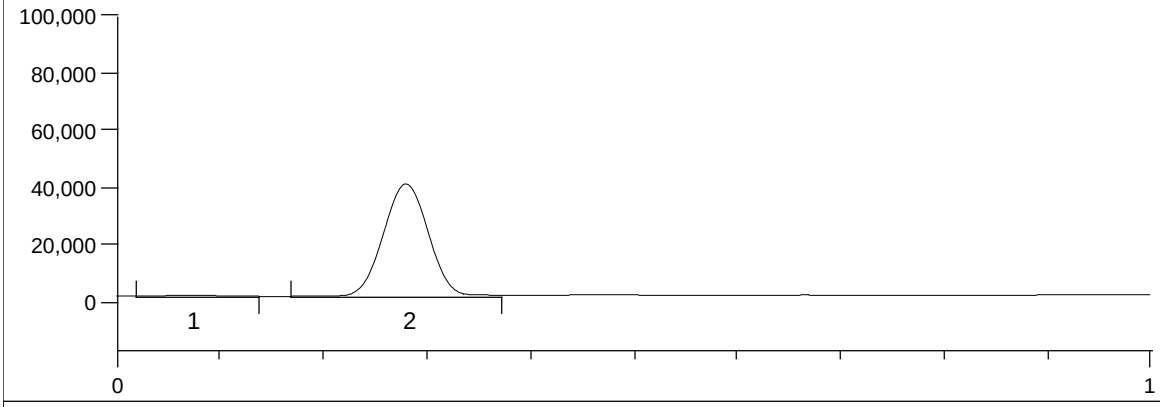
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

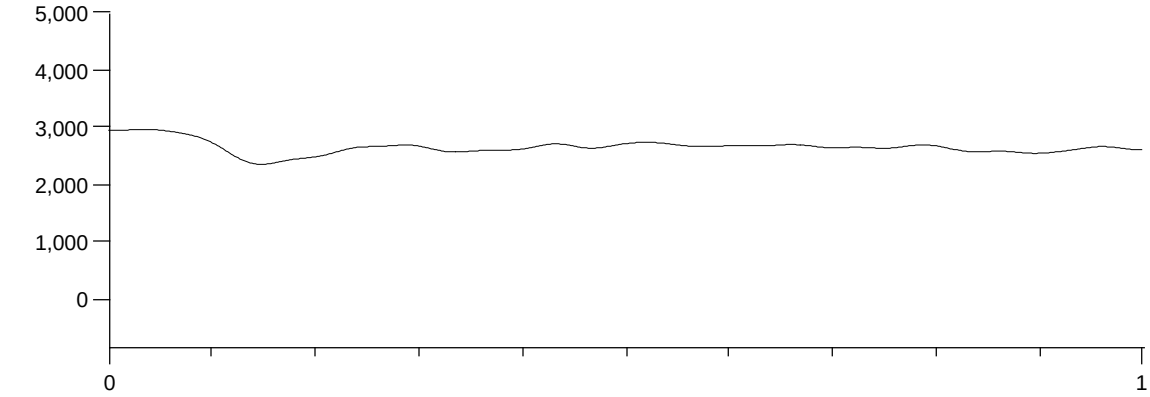
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 1:41 PM

Peak	rt	Area
1	0.07	10,120
2	0.28	1,169,366

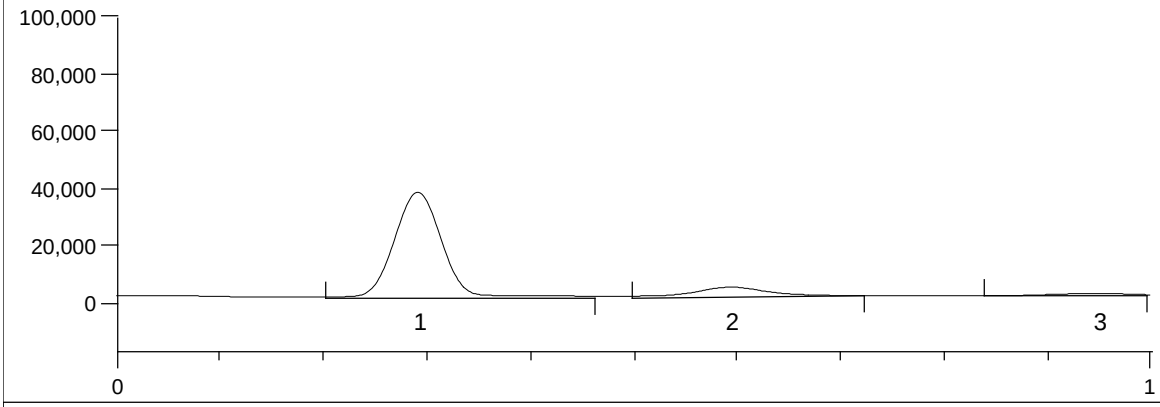
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		OPR	SEQ-CCV		2	1,169,366	5.39		108	80-120	accept
Notes											



Date: 12/10/13
Time: 1:45 PM

Peak	rt	Area

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		CCB	SEQ-CCB			0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 1:52 PM

Peak	rt	Area
1	0.29	1,129,523
2	0.59	138,018
3	0.94	27,530

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-08		1	1,129,523	5.21	0.00		< HS	accept
Notes											

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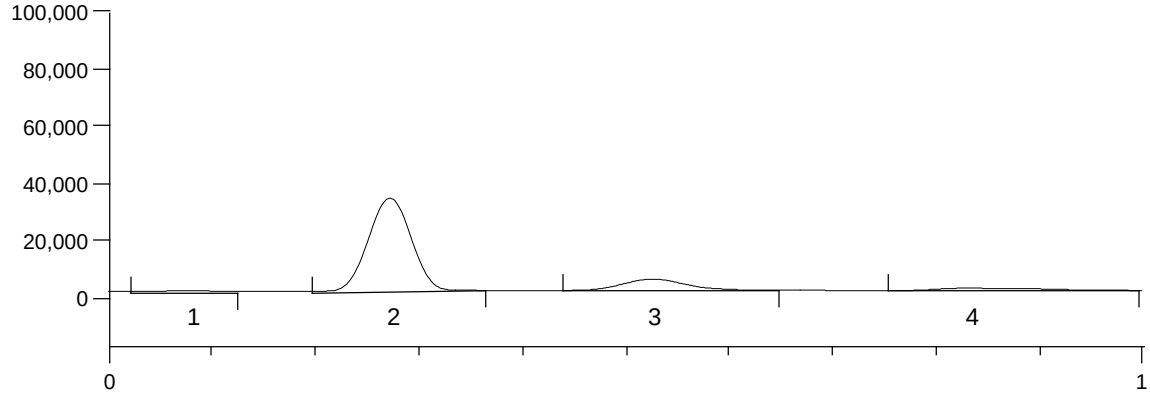
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

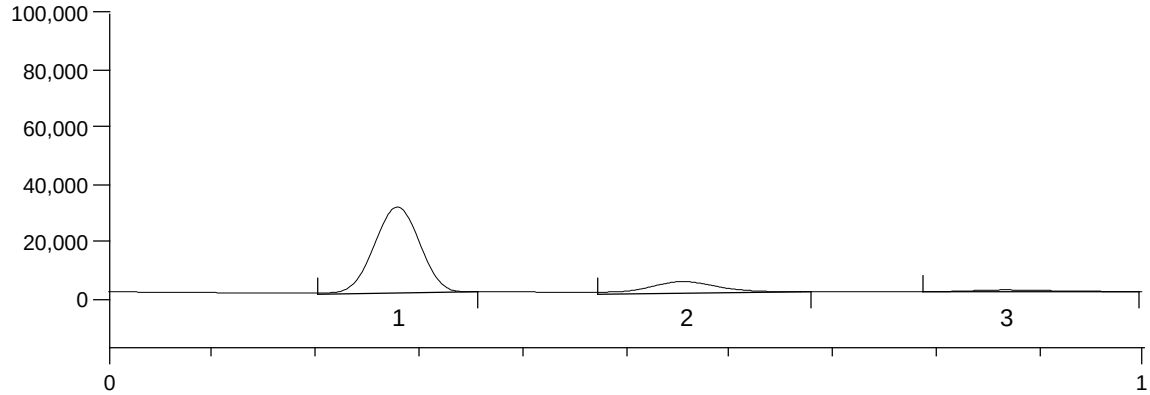
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 1:59 PM

Peak	rt	Area
1	0.08	8,580
2	0.27	926,977
3	0.52	167,707
4	0.83	59,037

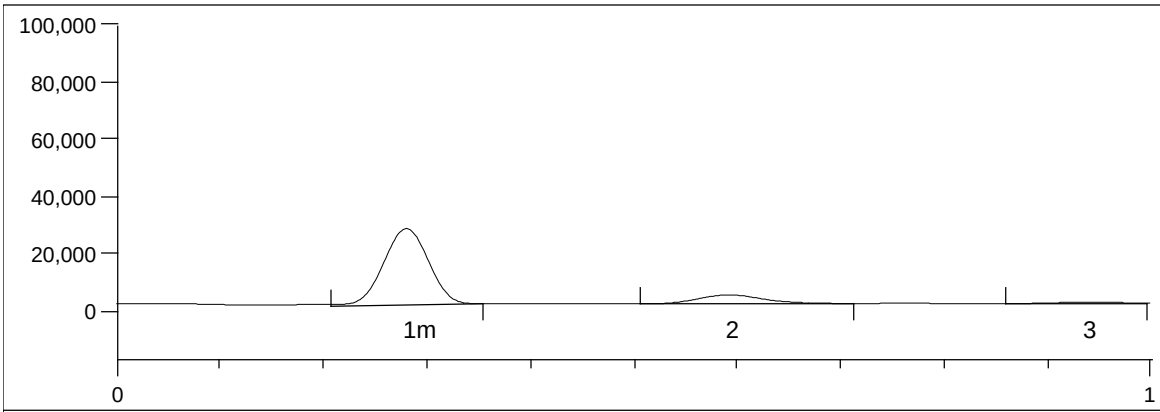
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-09		2	926,977	4.28	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:05 PM

Peak	rt	Area
1	0.28	907,696
2	0.55	154,141
3	0.86	36,174

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
32		S	1345019-10		1	907,696	4.19	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:11 PM

Peak	rt	Area
1m	0.28	781,202
2	0.59	135,490
3	0.93	17,933

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-11		1m	781,202	3.60	0.00		< HS	accept
Notes											

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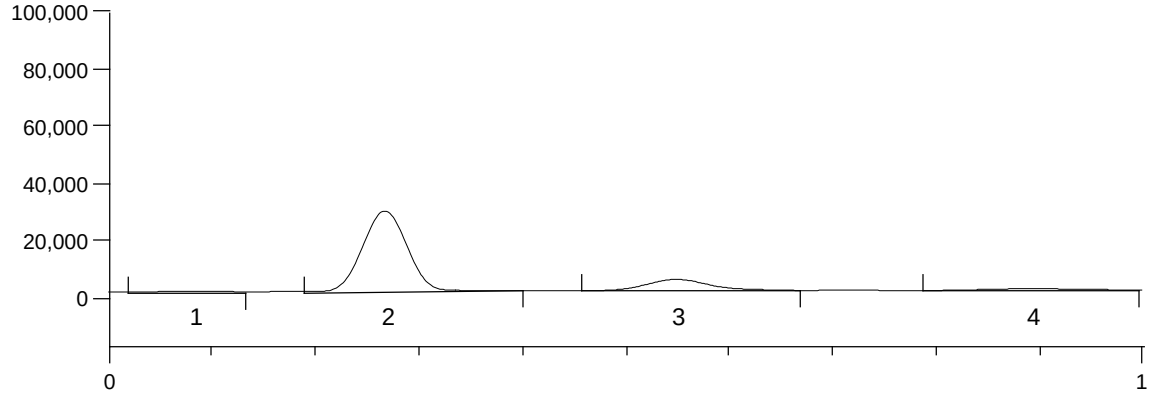
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

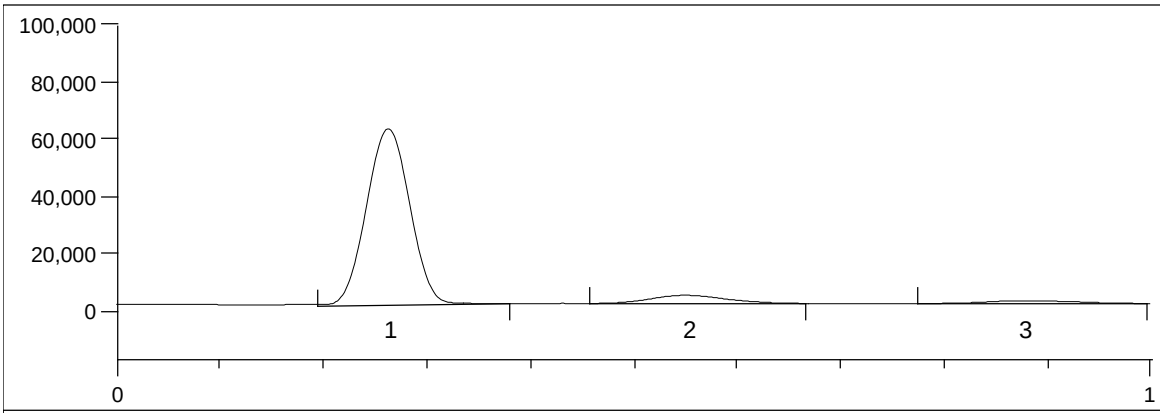
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 2:16 PM

Peak	rt	Area
1	0.08	11,686
2	0.26	832,475
3	0.54	164,652
4	0.89	35,971

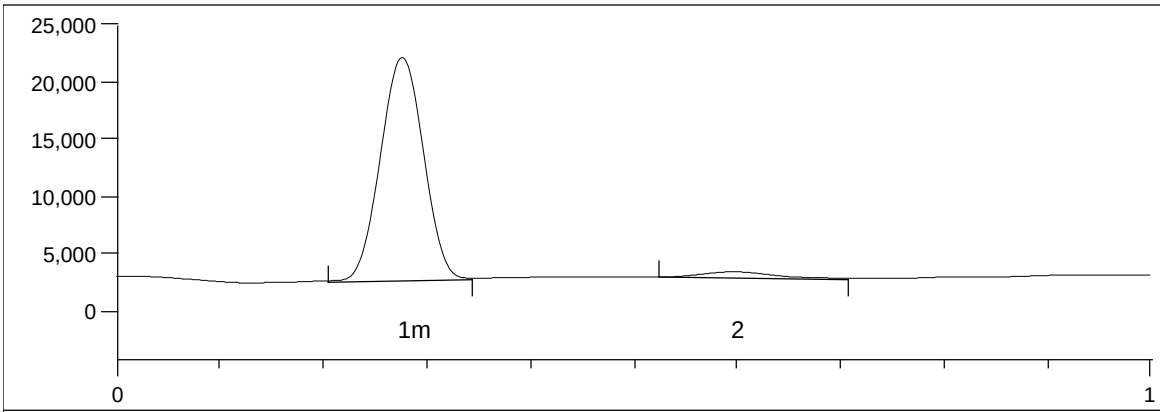
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
34		S	B132011-DUP2		2	832,475	3.84	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:21 PM

Peak	rt	Area
1	0.26	1,774,396
2	0.55	142,616
3	0.87	56,354

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
35		S	B132011-PS2		1	1,774,396	8.19	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:27 PM

Peak	rt	Area
1m	0.27	558,677
2	0.59	22,438

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
36		S	1345019-12		1m	558,677	2.58	0.00		< HS	accept
Notes											

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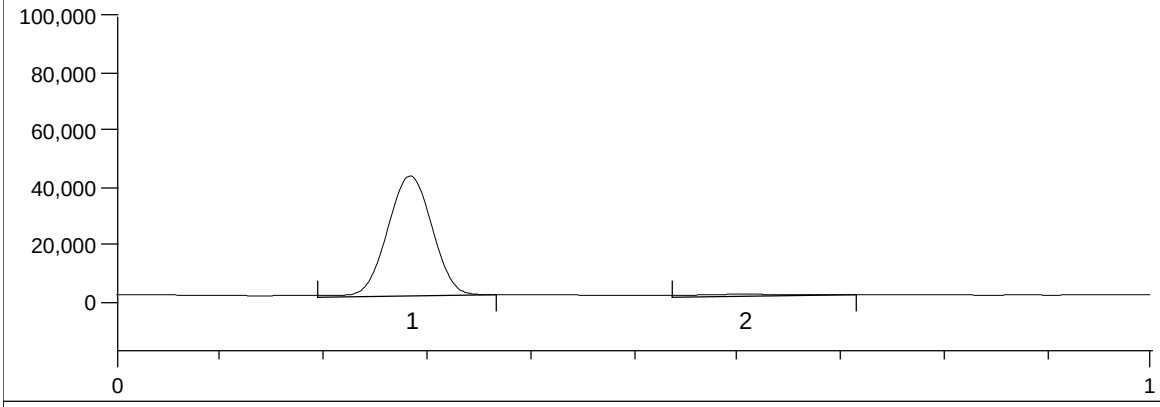
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

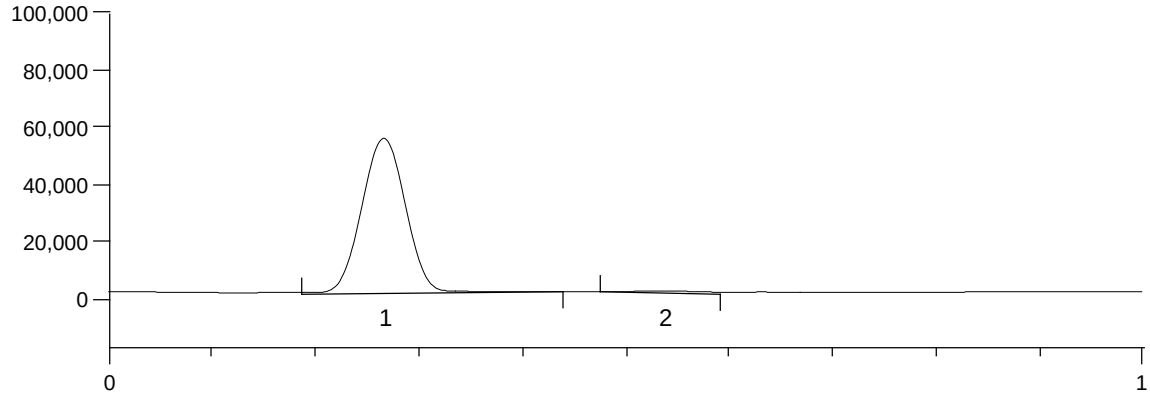
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 2:33 PM

Peak	rt	Area
1	0.28	1,235,064
2	0.60	18,671

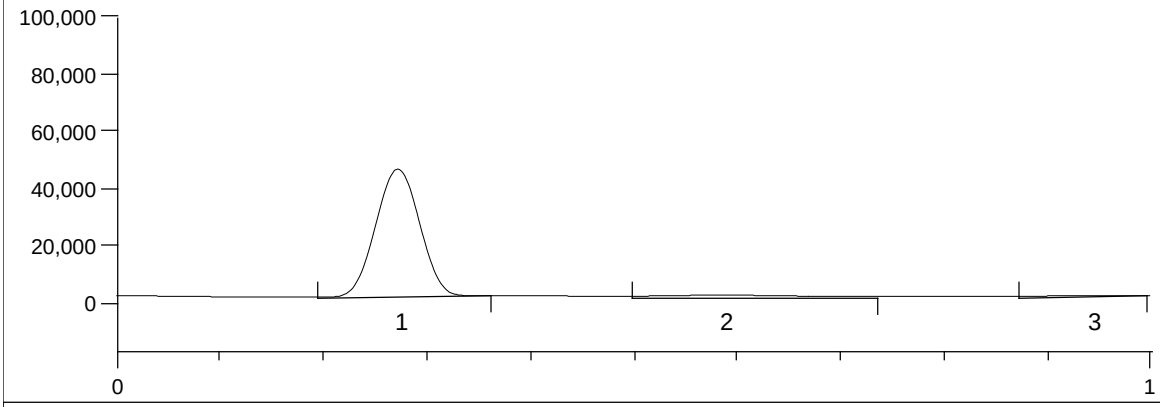
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
37		S	1345019-13		1	1,235,064	5.70	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:38 PM

Peak	rt	Area
1	0.26	1,575,617
2	0.53	13,516

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
38		S	1345019-14		1	1,575,617	7.27	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:43 PM

Peak	rt	Area
1	0.27	1,319,721
2	0.58	22,907
3	0.94	10,631

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
39		S	1345019-15		1	1,319,721	6.09	0.00		< HS	accept
Notes											

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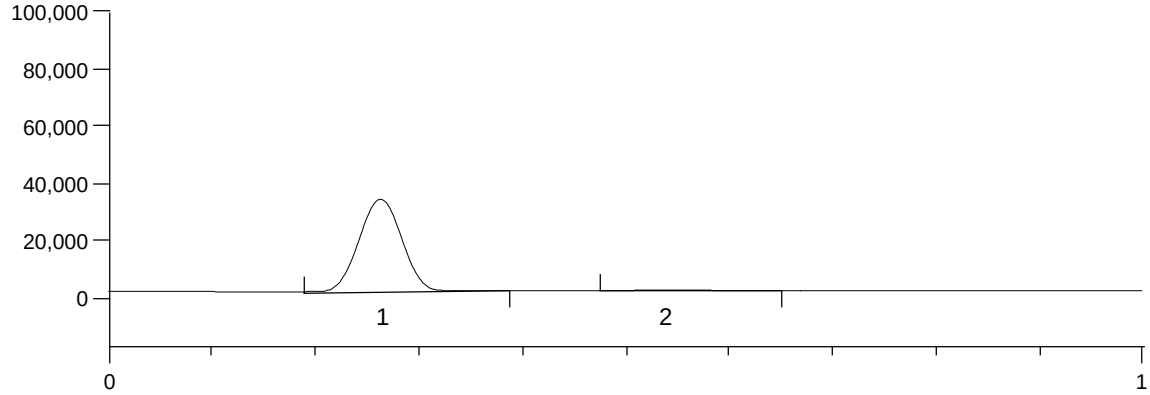
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

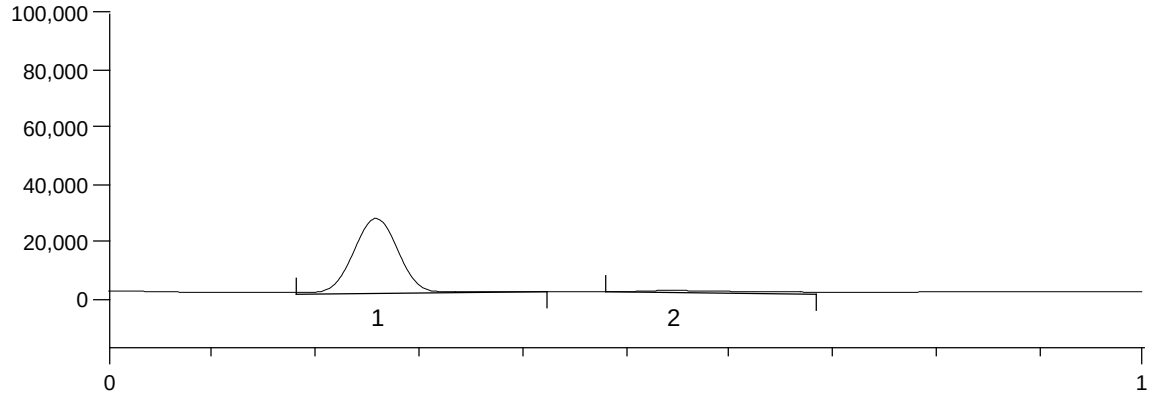
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 2:48 PM

Peak	rt	Area
1	0.26	927,802
2	0.53	19,124

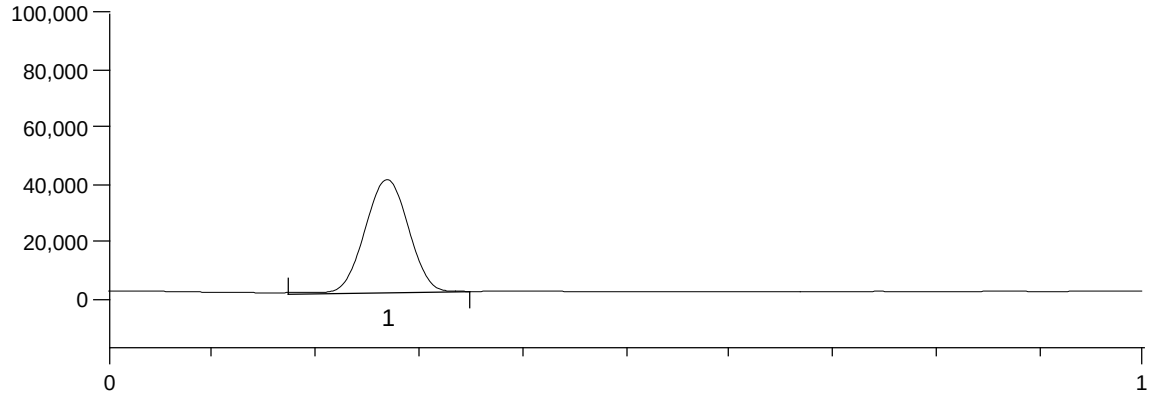
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
40		S	1345019-16		1	927,802	4.28	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:54 PM

Peak	rt	Area
1	0.26	765,970
2	0.54	26,106

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
41		S	1345019-17		1	765,970	3.53	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 2:58 PM

Peak	rt	Area
1	0.26	1,140,388

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
42		OPR	SEQ-CCV		1	1,140,388	5.26		105	80-120	accept
Notes											

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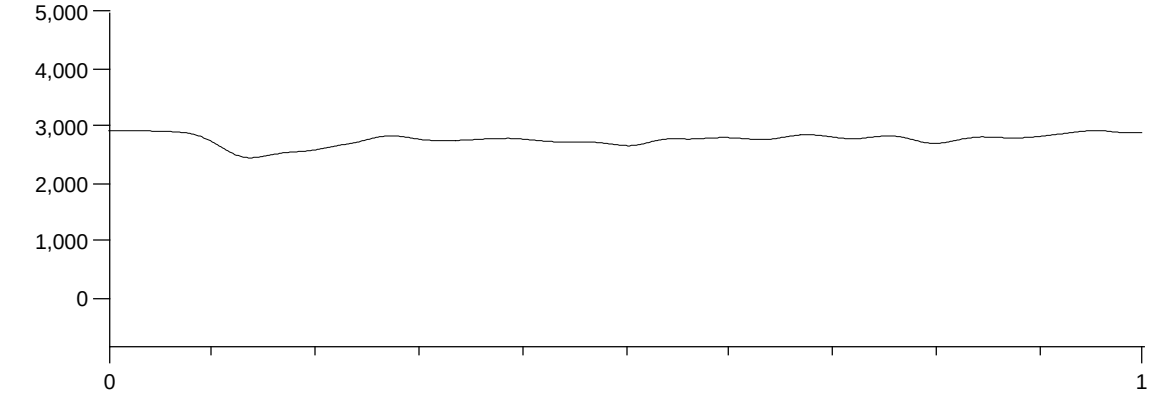
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

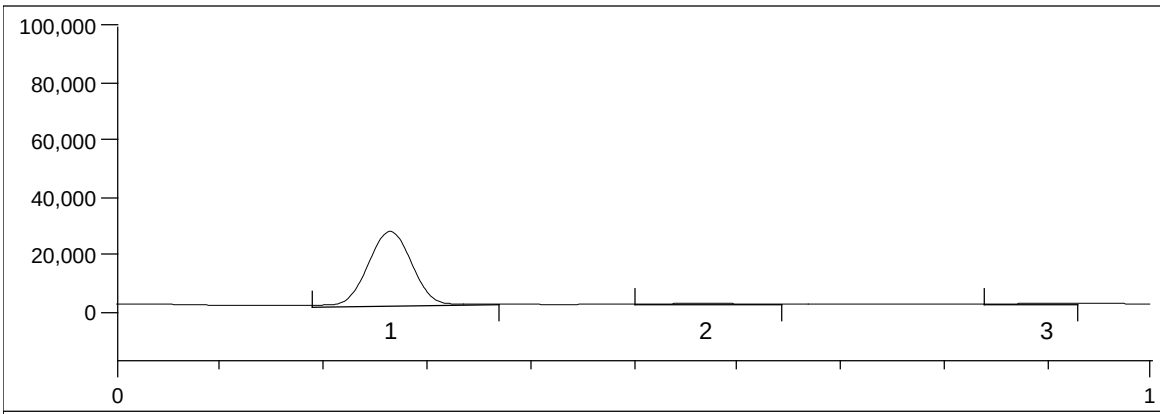
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 3:03 PM

Peak	rt	Area

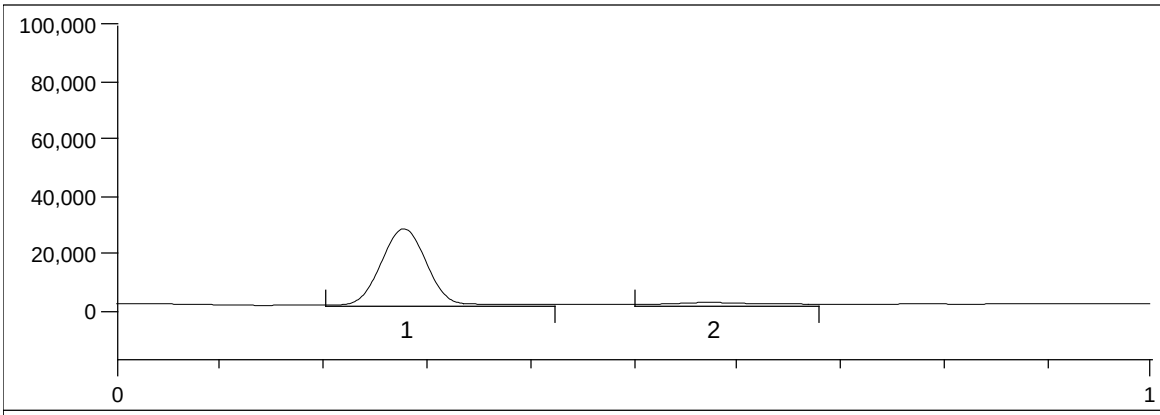
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		CCB	SEQ-CCB			0	0.00		0.00	< 0.40	accept
Notes											



Date: 12/10/13
Time: 3:08 PM

Peak	rt	Area
1	0.26	739,846
2	0.56	15,096
3	0.89	4,935

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-18		1	739,846	3.41	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:12 PM

Peak	rt	Area
1	0.27	795,386
2	0.57	25,567

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-19		1	795,386	3.67	0.00		< HS	accept
Notes											

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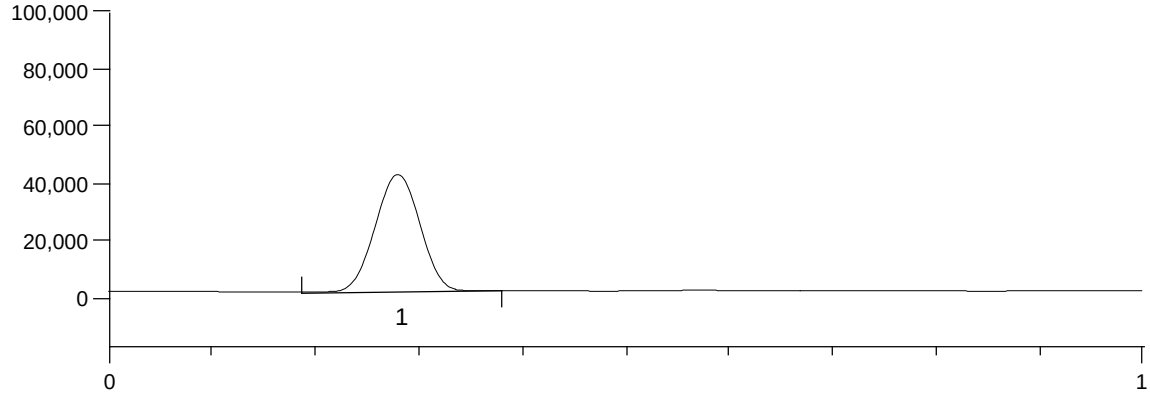
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

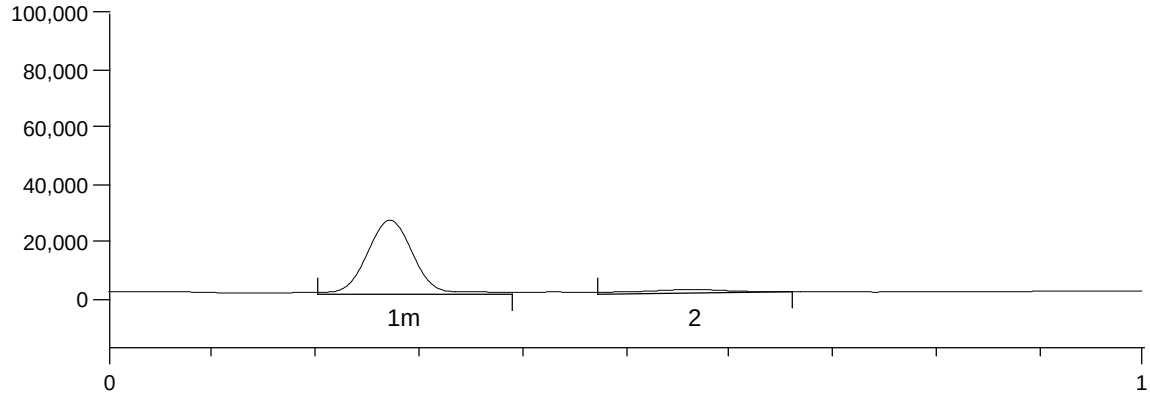
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 3:17 PM

Peak	rt	Area
1	0.28	1,230,927

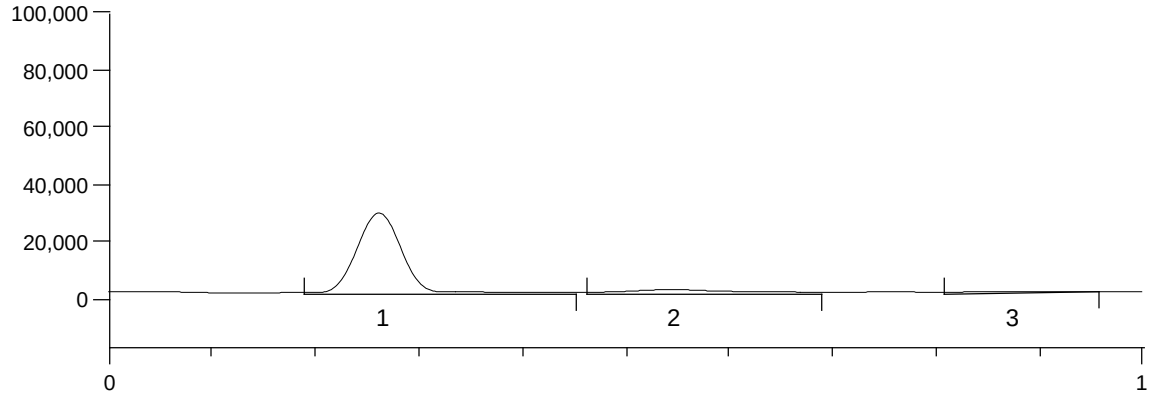
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-20		1	1,230,927	5.68	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:22 PM

Peak	rt	Area
1m	0.27	739,925
2	0.56	38,637

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-21		1m	739,925	3.41	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:27 PM

Peak	rt	Area
1	0.26	810,171
2	0.54	51,684
3	0.87	11,298

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	B132011-DUP3		1	810,171	3.74	0.00		< HS	accept
Notes											

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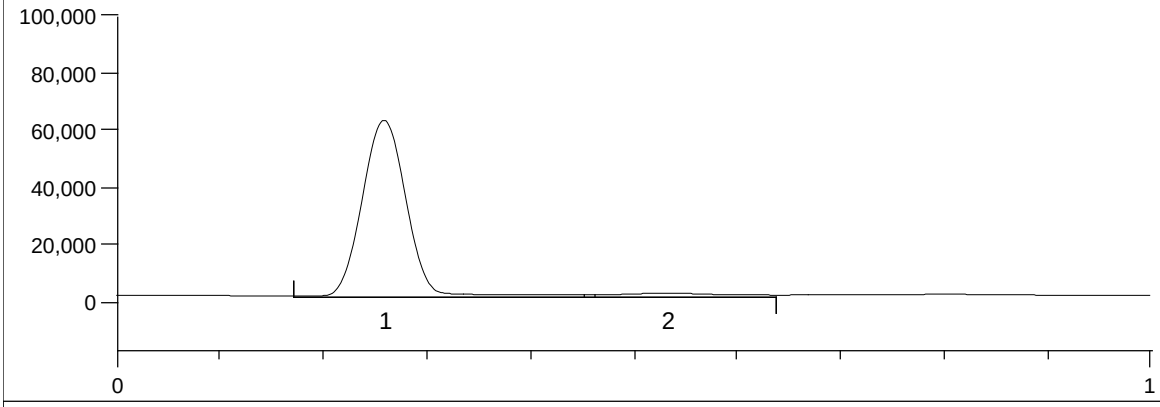
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

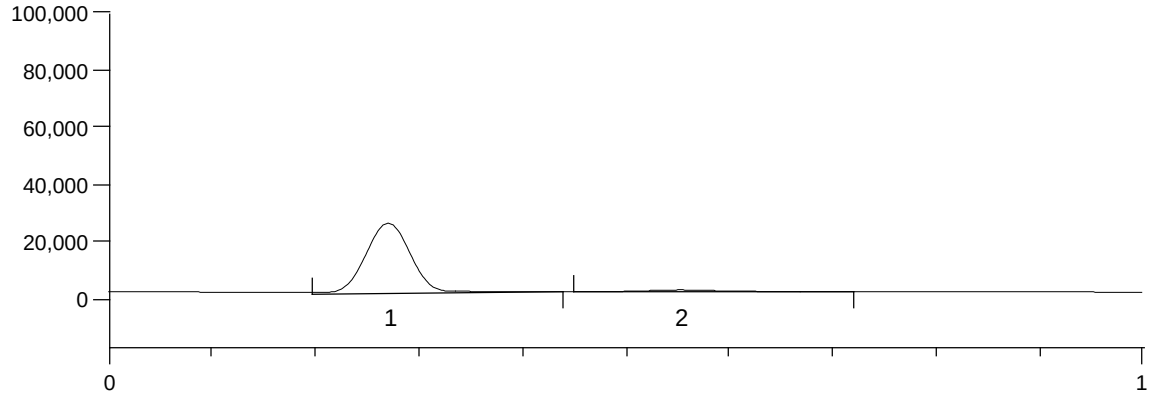
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 3:32 PM

Peak	rt	Area
1	0.26	1,801,621
2	0.53	38,110

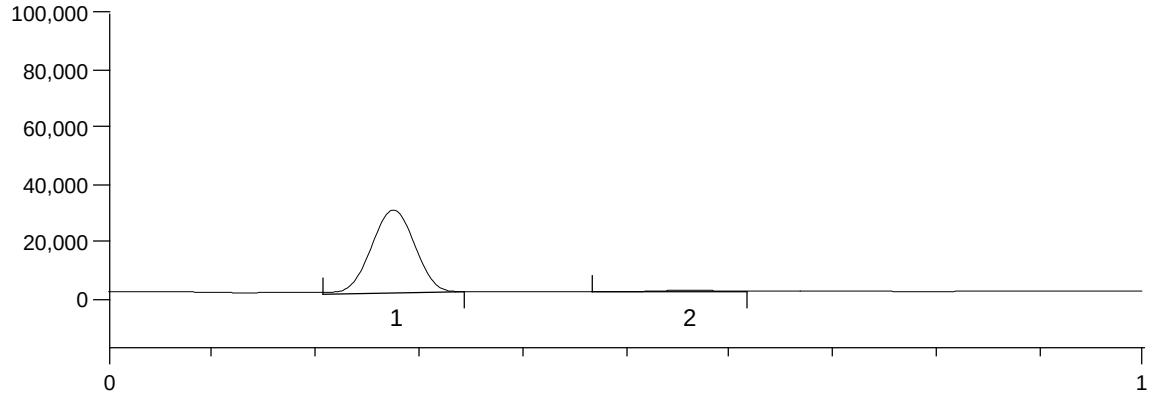
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	B132011-PS3		1	1,801,621	8.31	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:36 PM

Peak	rt	Area
1	0.27	717,041
2	0.55	38,262

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-22		1	717,041	3.31	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 3:54 PM

Peak	rt	Area
1	0.27	822,775
2	0.56	17,182

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
51		S	1345019-23		1	822,775	3.80	0.00		< HS	accept
Notes											

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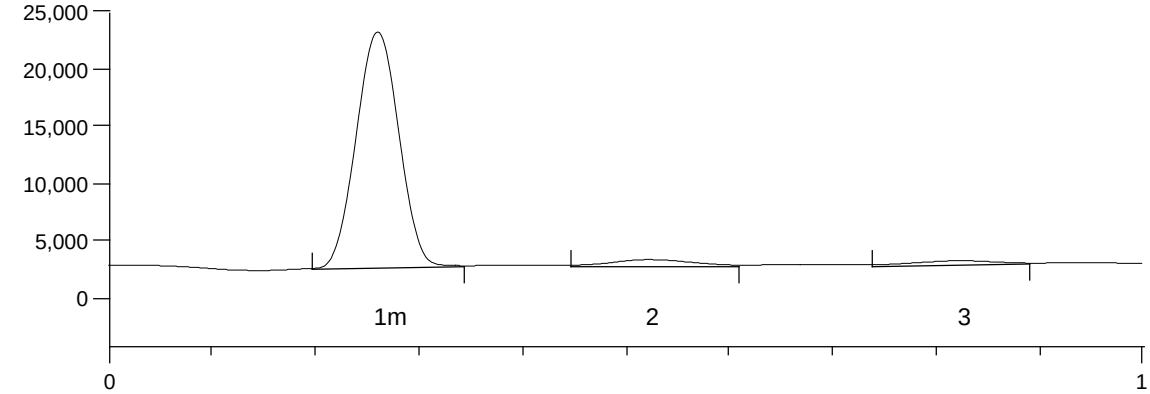
Peak Report

Batch Number: B132011
Method Number: BR-0021

Project Number(s): 1300856
Instrument ID: HGAA2

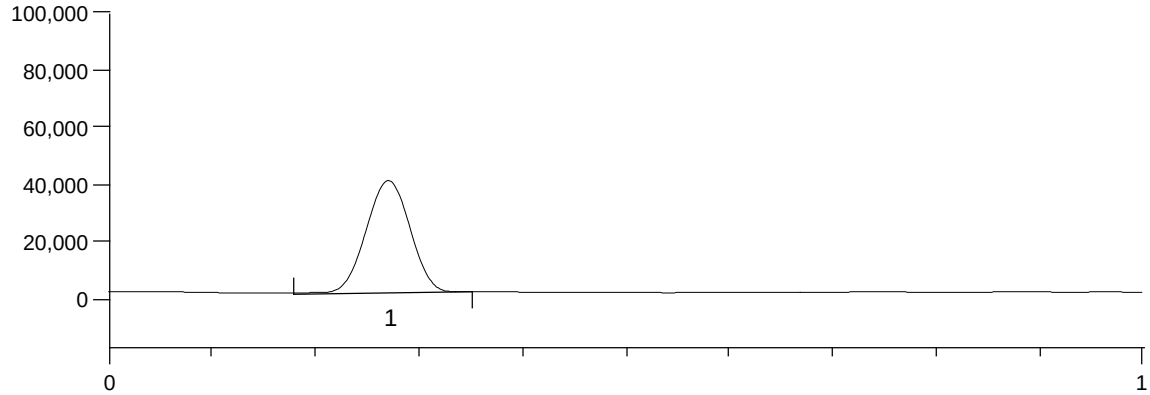
Date Analyzed: 12/10/13
Analyst Name: IRJ



Date: 12/10/13
Time: 3:59 PM

Peak	rt	Area
1m	0.26	589,281
2	0.52	23,098
3	0.82	13,311

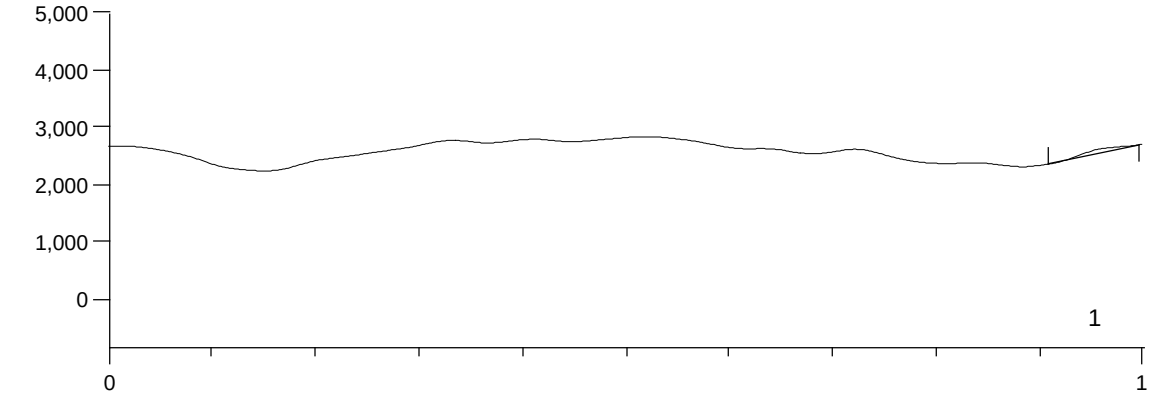
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
52		S	1345019-24		1m	589,281	2.72	0.00		< HS	accept
Notes											



Date: 12/10/13
Time: 4:02 PM

Peak	rt	Area
1	0.27	1,149,958

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
53		OPR	SEQ-CCV		1	1,149,958	5.30		106	80-120	accept
Notes											



Date: 12/10/13
Time: 4:06 PM

Peak	rt	Area
1	0.95	1,925

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
54		CCB	SEQ-CCB			0	0.00		0.00	< 0.40	accept
Notes											

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ANALYSIS SEQUENCE

1300862

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1300862-IBL1	1300862	QC	1		-			
1300862-IBL2	1300862	QC	2		-			
1300862-IBL3	1300862	QC	3		-			
1300862-CAL1	1300862	QC	4	1346015	-			
1300862-CAL2	1300862	QC	5	1346016	-			
1300862-CAL3	1300862	QC	6	1346017	-			
1300862-CAL4	1300862	QC	7	1346018	-			
1300862-CAL5	1300862	QC	8	1346019	-			
1300862-CAL6	1300862	QC	9	1346020	-			
1300862-ICV1	1300862	QC	10	1346049	-			
1300862-ICV2	1300862	QC	11	1346050	-			
1300862-CCV1	1300862	QC	12	1346014	-			
1300862-CCB1	1300862	QC	13		-			
B132012-BLK1	B132012	QC	14		-			
B132012-BLK2	B132012	QC	15		-			
B132012-BLK3	B132012	QC	16		-			
B132012-BLK4	B132012	QC	17		-			
B132012-BS1	B132012	QC	18		-			
B132012-SRM1	B132012	QC	19		-			
B132012-SRM2	B132012	QC	20		-			
1343025-24	B132012	DMAs-B-HClExt-HGAAS	21			ARD-MV1302	11/20/2013	
1345019-01	B132012	DMAs-B-HClExt-HGAAS	22			ARD-MV1302	12/2/2013	
1345019-01RE1	B132012	DMAs-B-HClExt-HGAAS	23			ARD-MV1302	12/2/2013	Added 12/11/2013 by IRJ
B132012-DUP1	B132012	QC	24		1345019-01RE1			
B132012-MS1	B132012	QC	25		1345019-01RE1			
B132012-MSD1	B132012	QC	26		1345019-01RE1			

ANALYSIS SEQUENCE

1300862

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-02	B132012	DMAs-B-HClExt-HGAAS	27			ARD-MV1302	12/2/2013	
1345019-03	B132012	DMAs-B-HClExt-HGAAS	28			ARD-MV1302	12/2/2013	
1345019-04	B132012	DMAs-B-HClExt-HGAAS	29			ARD-MV1302	12/2/2013	
1345019-05	B132012	DMAs-B-HClExt-HGAAS	30			ARD-MV1302	12/2/2013	
1345019-06	B132012	DMAs-B-HClExt-HGAAS	31			ARD-MV1302	12/2/2013	
1345019-07	B132012	DMAs-B-HClExt-HGAAS	32			ARD-MV1302	12/2/2013	
1345019-08	B132012	DMAs-B-HClExt-HGAAS	33			ARD-MV1302	12/2/2013	
1345019-09	B132012	DMAs-B-HClExt-HGAAS	34			ARD-MV1302	12/2/2013	
1300862-CCV2	1300862	QC	35	1346014	-			
1300862-CCB2	1300862	QC	36		-			
1345019-10	B132012	DMAs-B-HClExt-HGAAS	37			ARD-MV1302	12/2/2013	
1345019-11	B132012	DMAs-B-HClExt-HGAAS	38			ARD-MV1302	12/2/2013	
B132012-DUP2	B132012	QC	39		1345019-11			
B132012-MS2	B132012	QC	40		1345019-11			
B132012-MSD2	B132012	QC	41		1345019-11			
1345019-12	B132012	DMAs-B-HClExt-HGAAS	42			ARD-MV1302	12/2/2013	
1345019-13	B132012	DMAs-B-HClExt-HGAAS	43			ARD-MV1302	12/2/2013	
1345019-14	B132012	DMAs-B-HClExt-HGAAS	44			ARD-MV1302	12/2/2013	
1345019-15	B132012	DMAs-B-HClExt-HGAAS	45			ARD-MV1302	12/2/2013	
1345019-16	B132012	DMAs-B-HClExt-HGAAS	46			ARD-MV1302	12/2/2013	
1345019-17	B132012	DMAs-B-HClExt-HGAAS	47			ARD-MV1302	12/2/2013	
1345019-18	B132012	DMAs-B-HClExt-HGAAS	48			ARD-MV1302	12/2/2013	
1345019-19	B132012	DMAs-B-HClExt-HGAAS	49			ARD-MV1302	12/2/2013	
1300862-CCV3	1300862	QC	50	1346014	-			
1300862-CCB3	1300862	QC	51		-			
1345019-20	B132012	DMAs-B-HClExt-HGAAS	52			ARD-MV1302	12/2/2013	

ANALYSIS SEQUENCE

1300862

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-21	B132012	DMAs-B-HClExt-HGAAS	53			ARD-MV1302	12/2/2013	
B132012-DUP3	B132012	QC	54		1345019-21			
B132012-MS3	B132012	QC	55		1345019-21			
B132012-MSD3	B132012	QC	56		1345019-21			
1345019-22	B132012	DMAs-B-HClExt-HGAAS	57			ARD-MV1302	12/2/2013	
1345019-23	B132012	DMAs-B-HClExt-HGAAS	58			ARD-MV1302	12/2/2013	
1345019-24	B132012	DMAs-B-HClExt-HGAAS	59			ARD-MV1302	12/2/2013	
1300862-CCV4	1300862	QC	60	1346014	-			
1300862-CCB4	1300862	QC	61		-			

Manual Integration Abbreviation Sheet

m. Modified peak shape due to split peak in Guru software

u. Unidentified peak. No peak called out in the appropriate retention time window

m1. Modified peak due to dip in hydride baseline. Peak integrated from the new baseline

m2. Modified peak due to dip in hydride baseline. Peak integrated from old baseline

dp. Double peak called out by software.

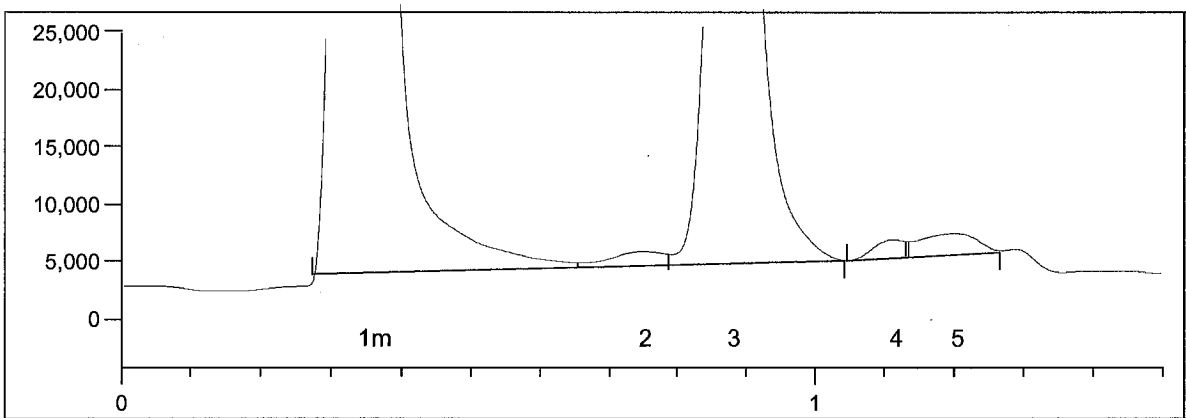
g. Analysis volume value is a mass, assumed to be equal to a volume based on an assumed density of 1.00 +/- 0.03g/mL.

Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

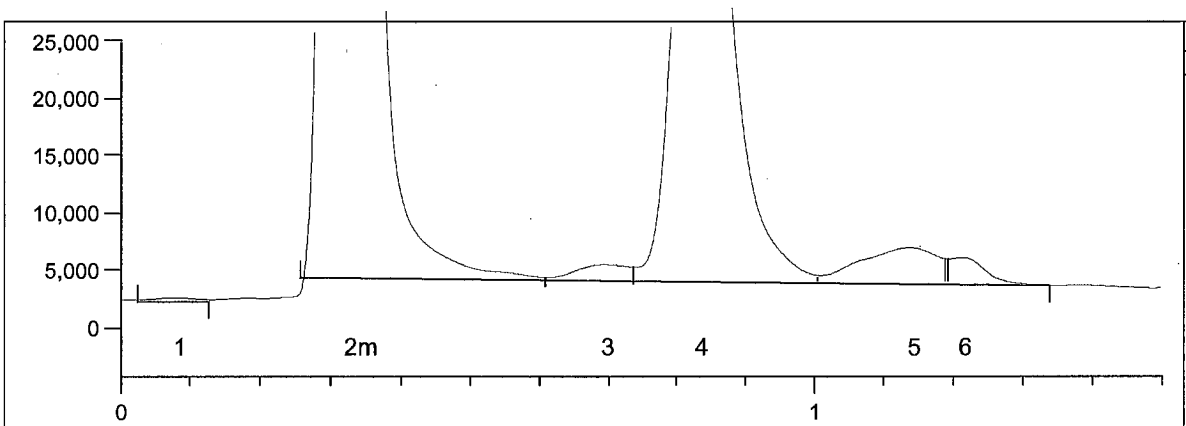


Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		2	64,169	0.269	0.00		< HS	accept
Notes											

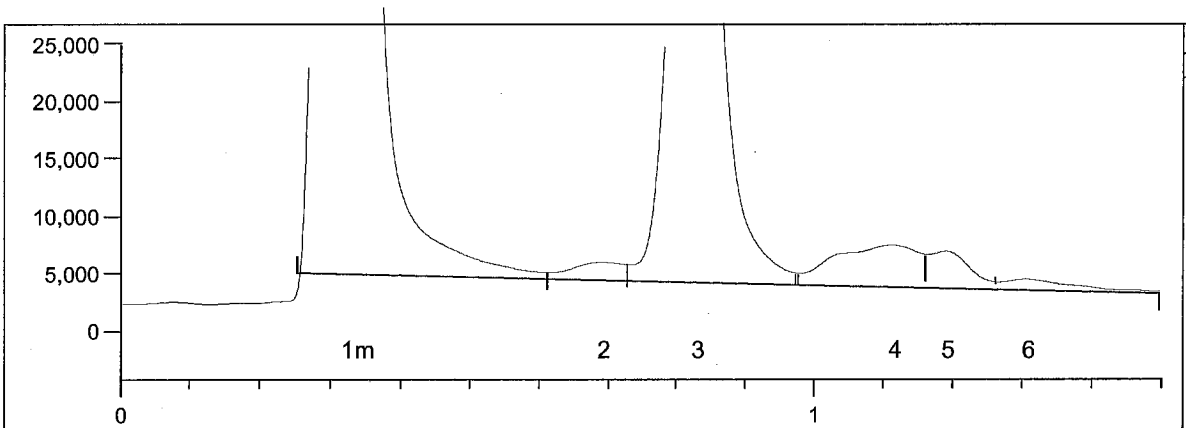


Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		3	76,093	0.319	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		2	75,312	0.316	0.00		< HS	accept
Notes											

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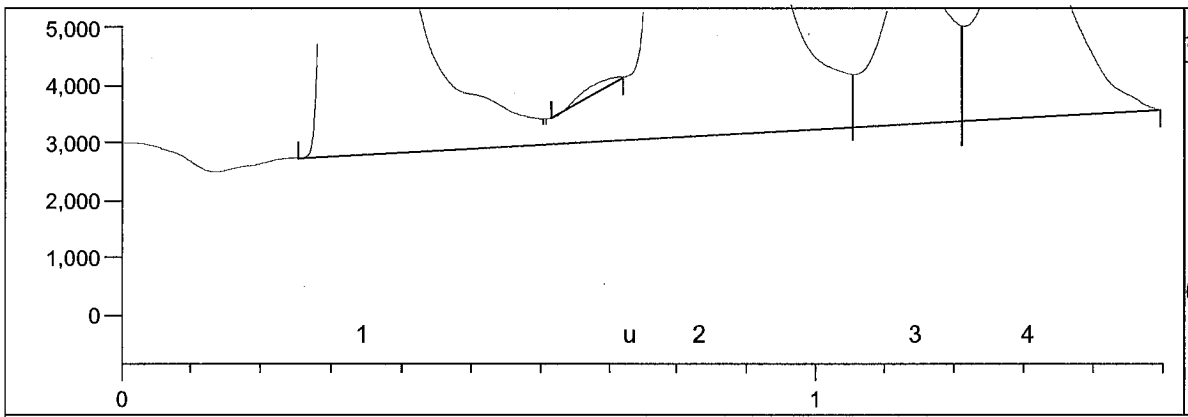
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

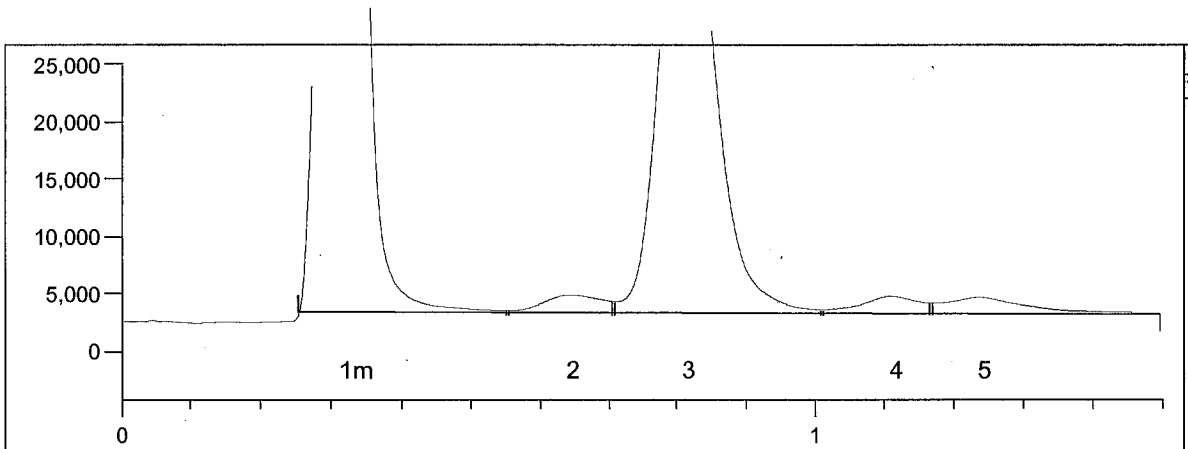


Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.72	6,222

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	6,222	0.0261	0.00		< HS	accept
Notes											

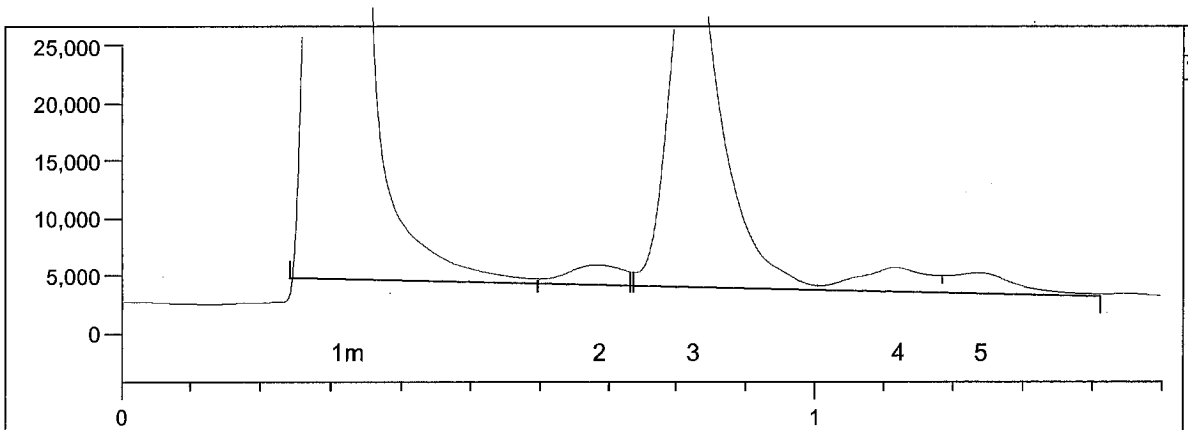


Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		2	84,948	0.357	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		2	94,185	0.395	0.00		< HS	accept
Notes											

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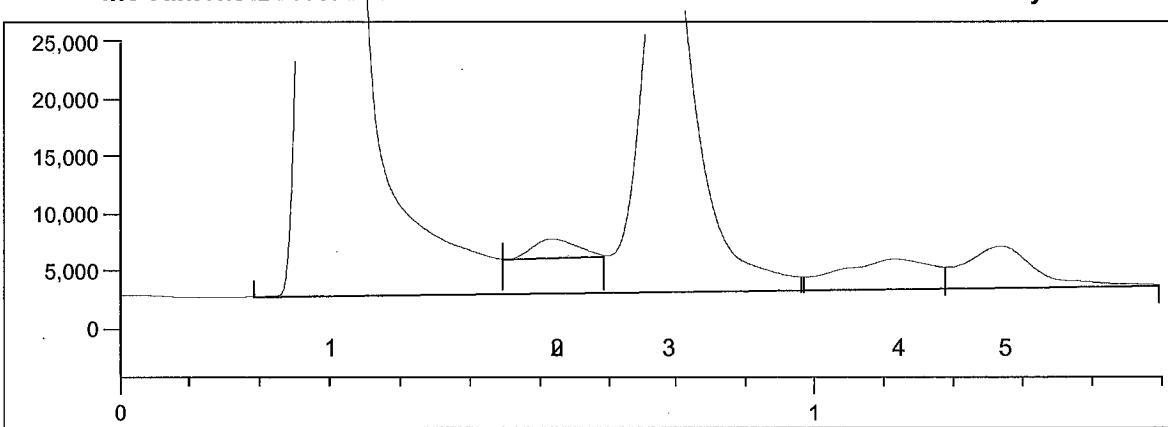
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

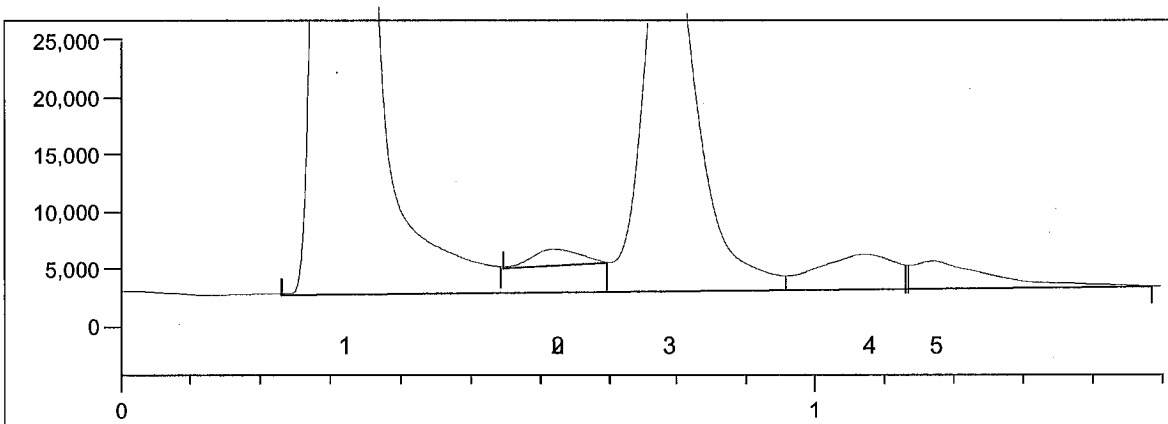


Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.62	72,446

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	72,446	0.304	0.00		< HS	accept
Notes											

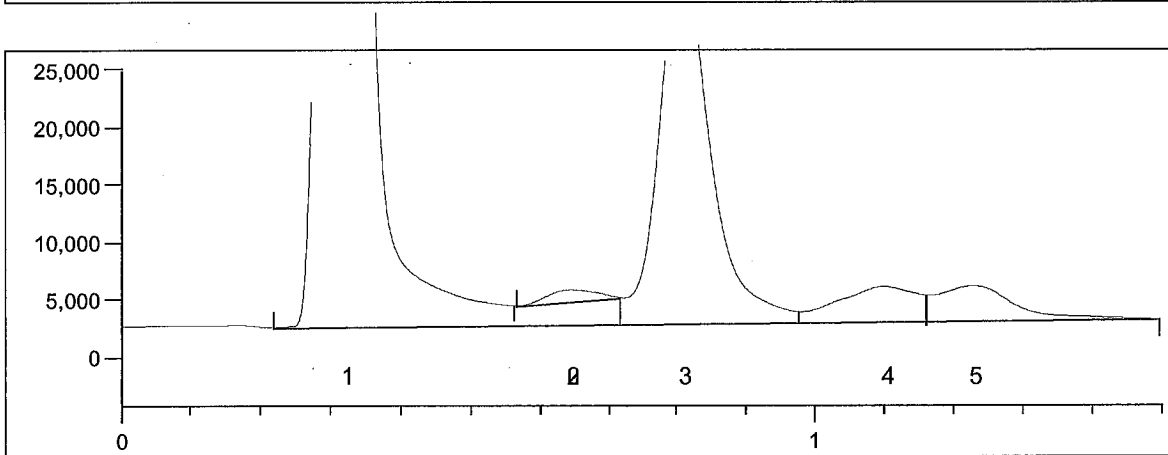


Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.62	63,917

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	63,917	0.268	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.64	51,652

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	51,652	0.217	0.00		< HS	accept
Notes											

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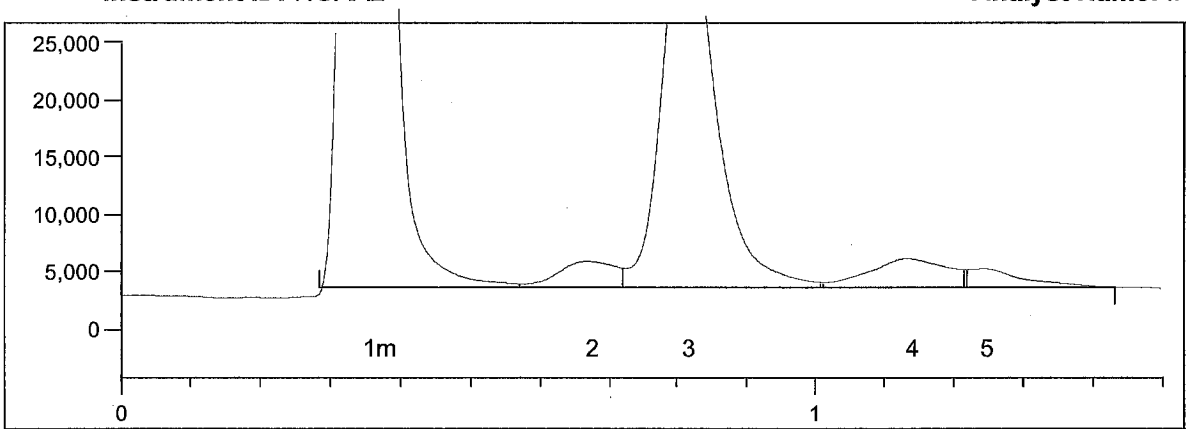
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

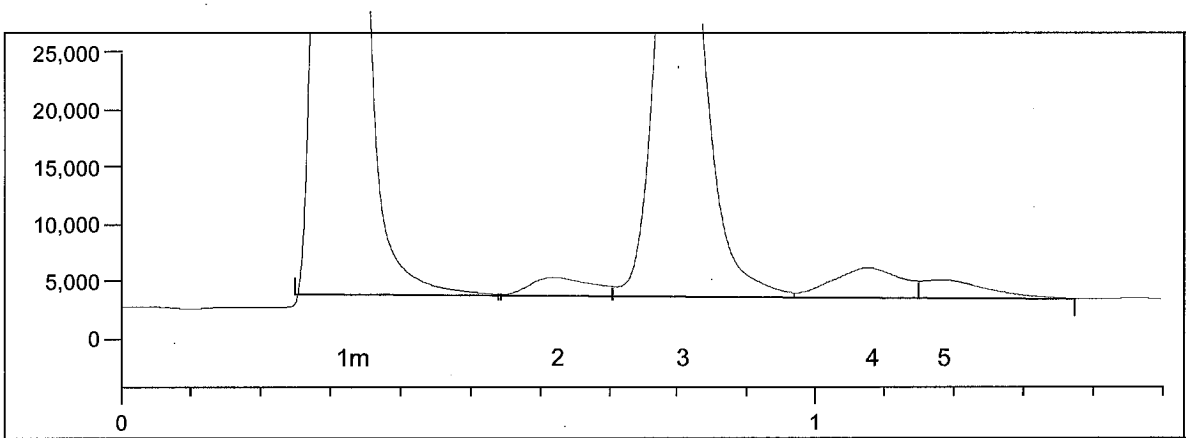


Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		2	130,912	0.550	0.00		< HS	accept
Notes											

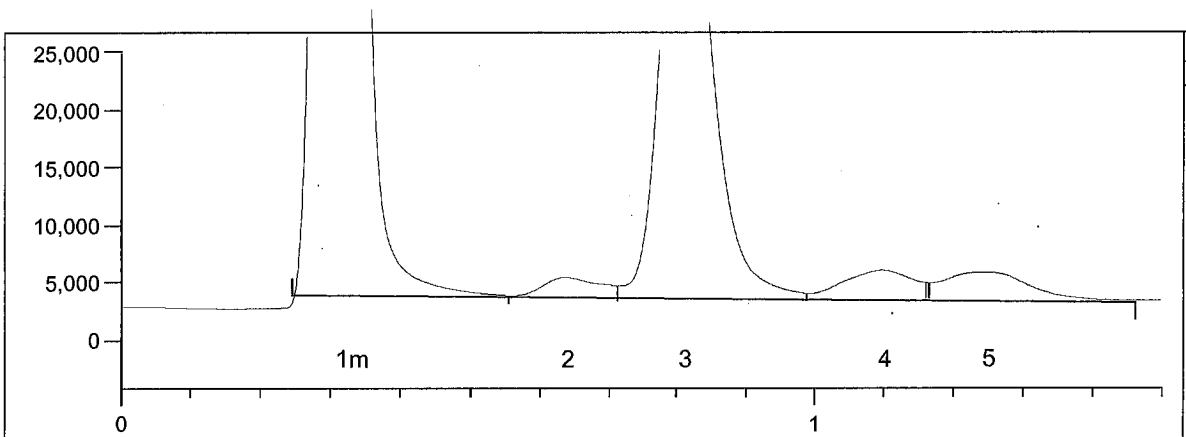


Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		2	98,353	0.413	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		2	99,646	0.418	0.00		< HS	accept
Notes											

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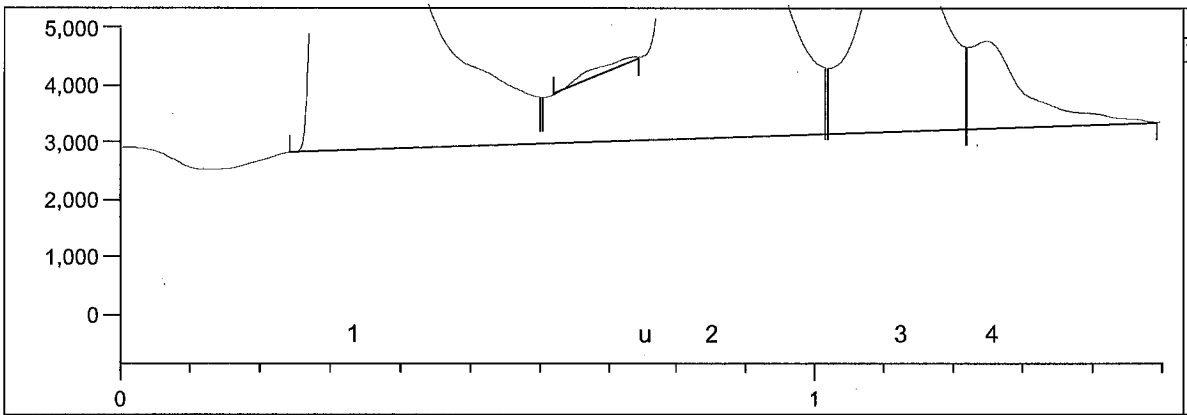
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

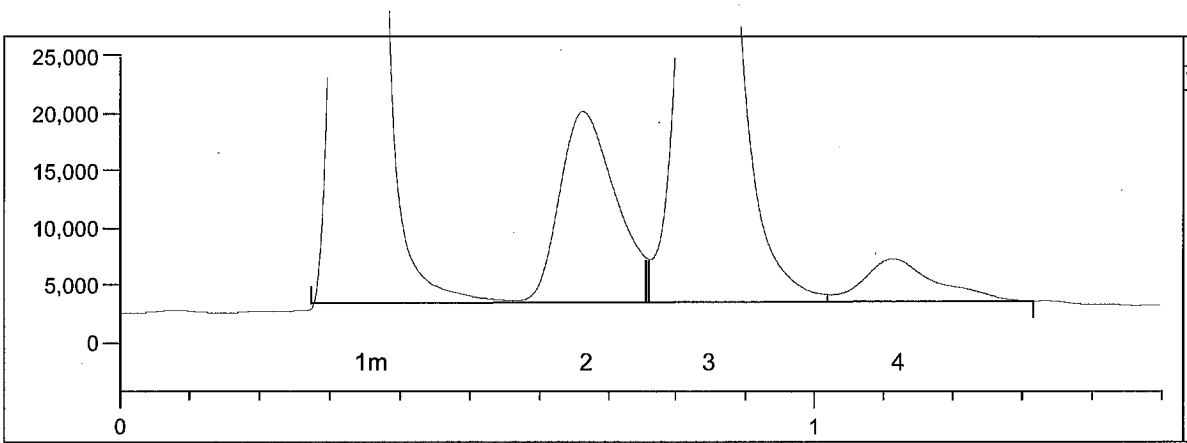


Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.74	6,539

Cm C 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132013-DUP3		u	6,539	0.0275	0.00		< HS	accept
Notes											

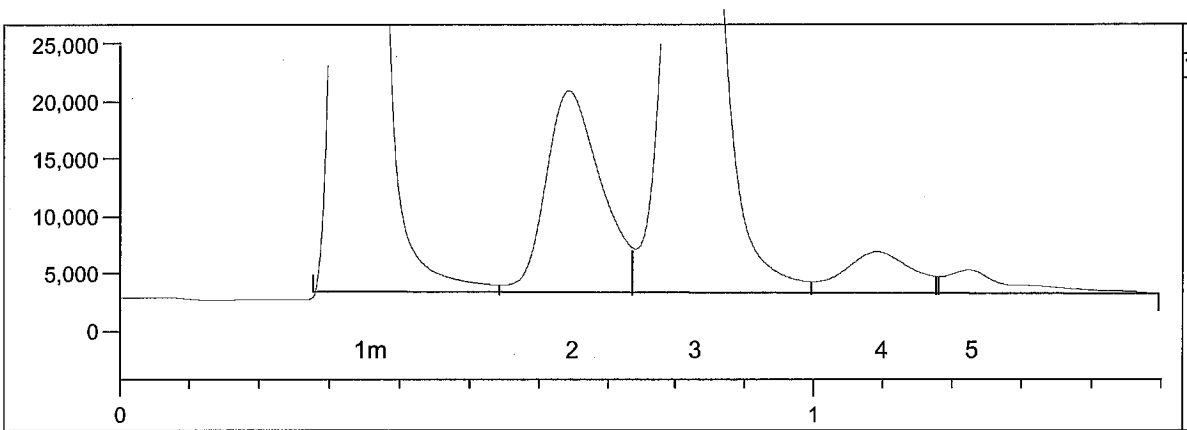


Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132013-MS3		2	952,977	4.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,558,097
2	0.64	972,178
3	0.82	3,575,265
4	1.09	240,995
5	1.22	125,414

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132013-MSD3		2	972,178	4.08	0.00		< HS	accept
Notes											

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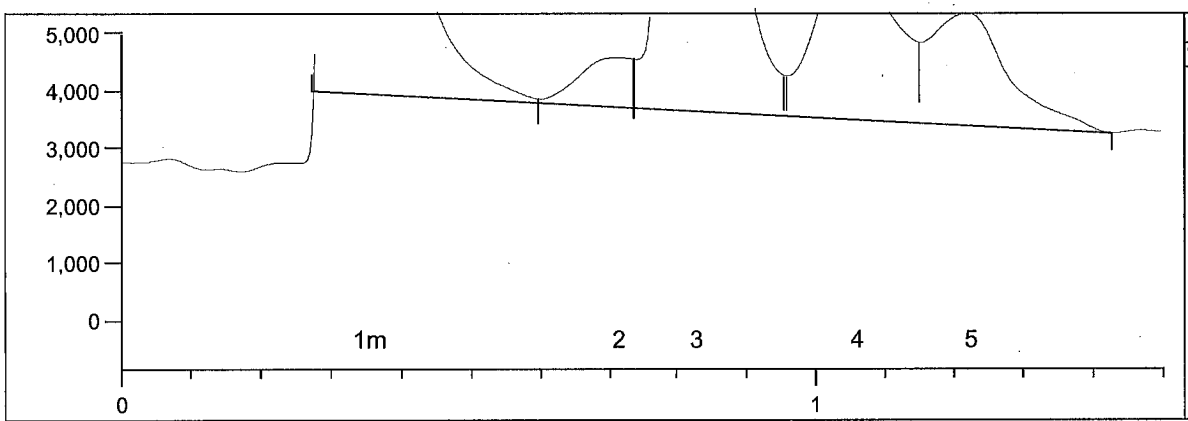
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

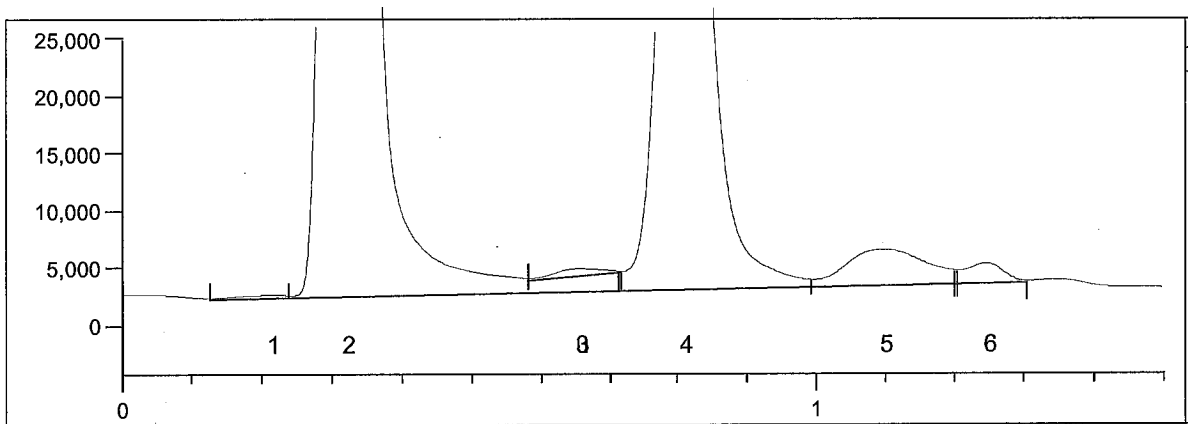


Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		2	46,880	0.197	0.00		< HS	accept
Notes											

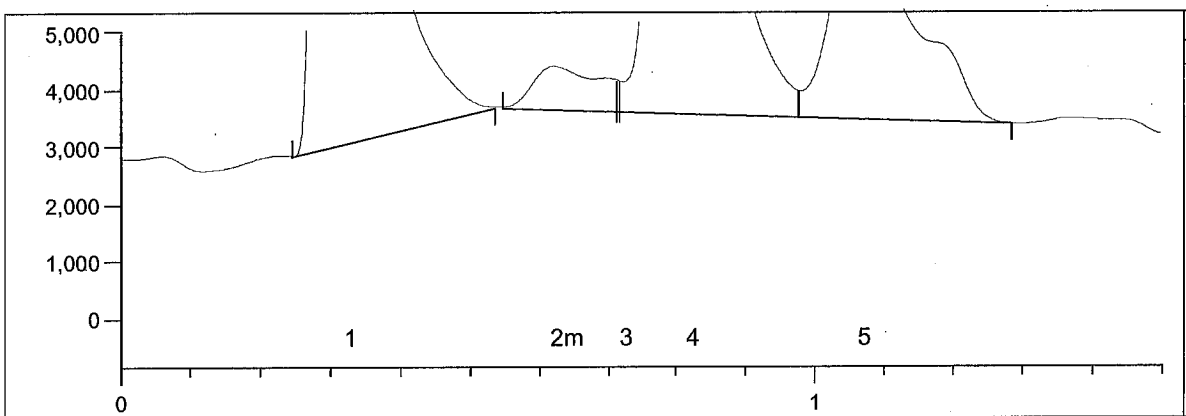


Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.65	22,611

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	22,611	0.0949	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:35 PM

Peak	rt	Area
1	0.32	6,253,389
2m	0.62	50,079
3	0.72	510
4	0.81	2,490,274
5	1.06	296,782

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		S	1345019-24		2m	50,079	0.210	0.00		< HS	accept
Notes											

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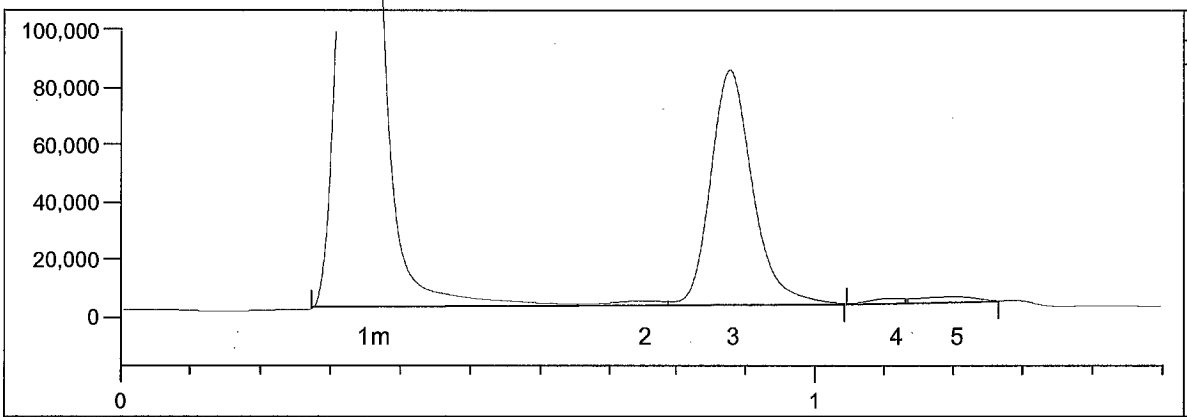
①②③ [illegible] 12/13/13

Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

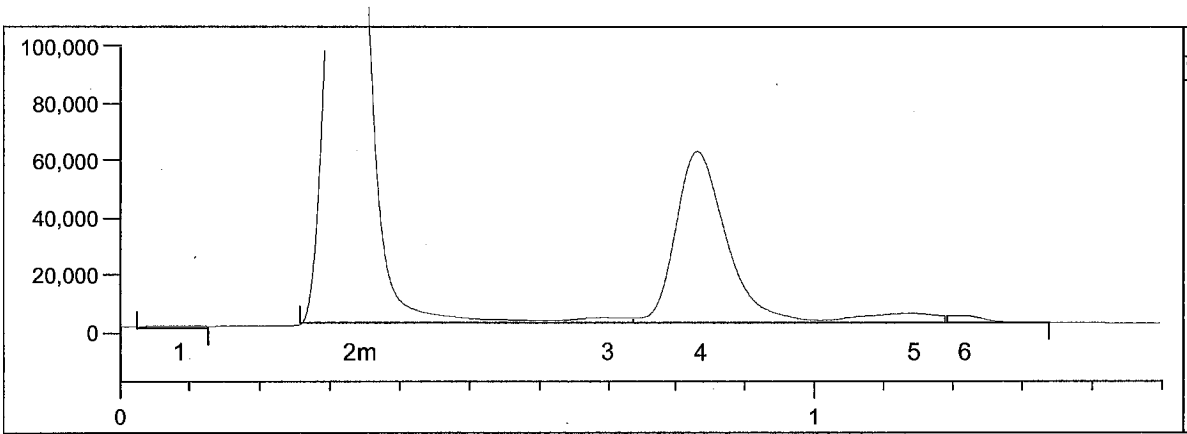


Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		3	3,413,404	15.3	0.00		< HS	accept
Notes											

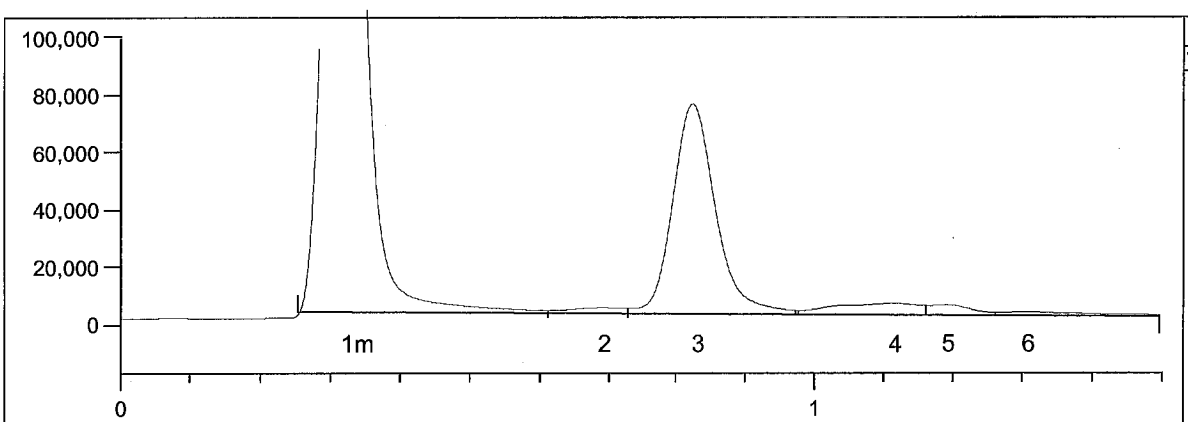


Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		4	3,009,095	13.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		3	3,112,927	14.0	0.00		< HS	accept
Notes											

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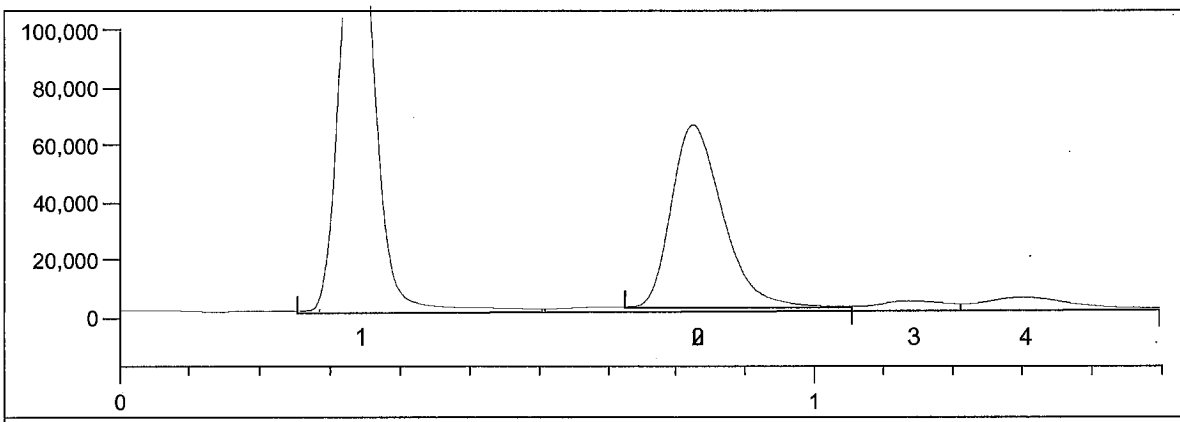
Peak Report

1 2 3 [illegible] 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

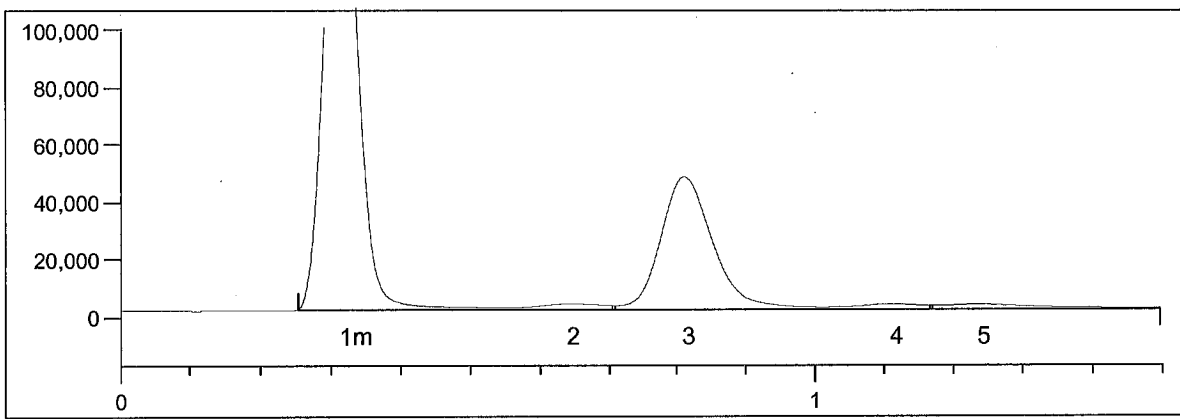


Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.82	3,244,532

1

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	3,244,532	14.6	0.00		< HS	accept
Notes											

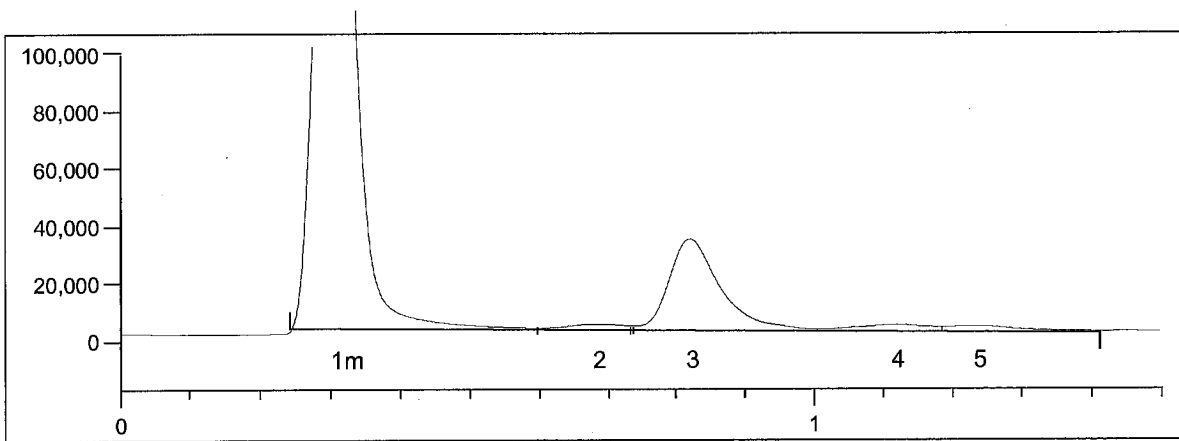


Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

2

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		3	2,350,881	10.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

3

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		3	1,610,606	7.23	0.00		< HS	accept
Notes											

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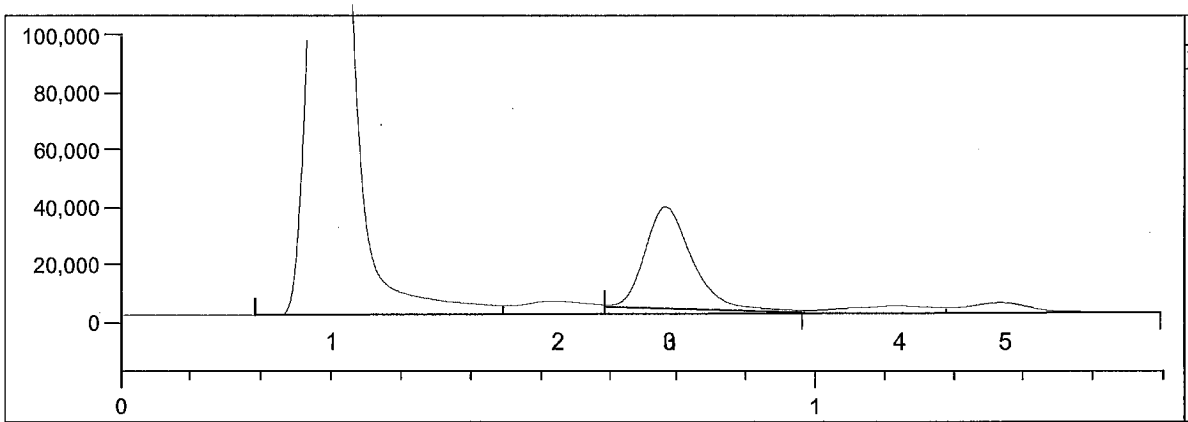
Peak Report

①②③ CMC 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

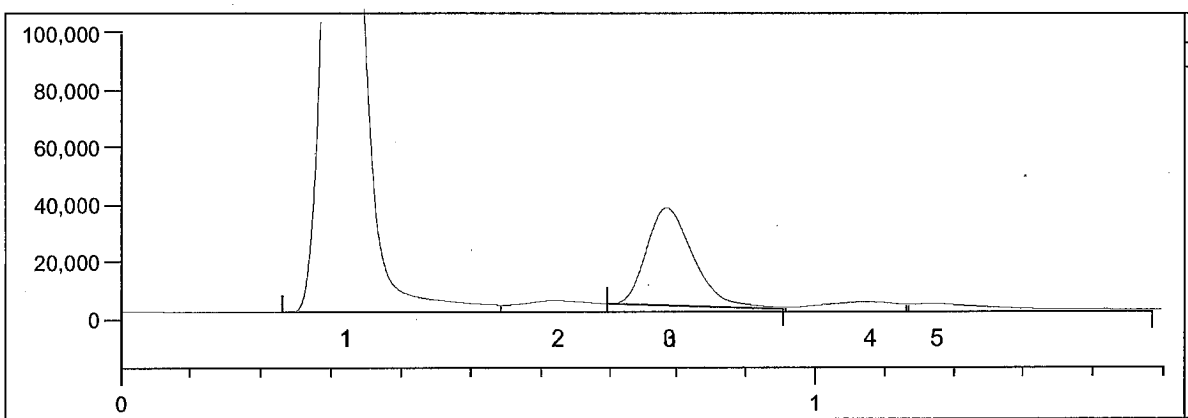


Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.78	1,588,716

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	1,588,716	7.13	0.00		< HS	accept
Notes											

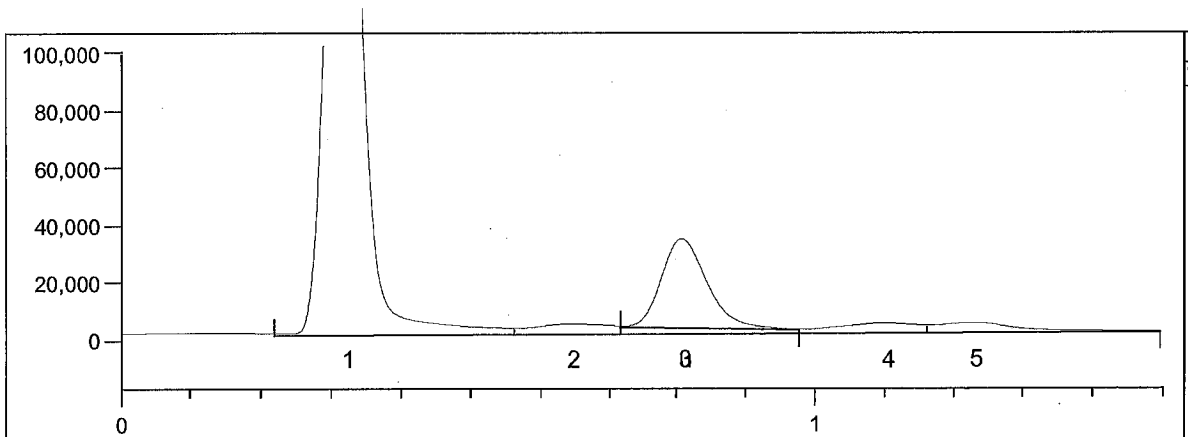


Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.78	1,577,514

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	1,577,514	7.08	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.80	1,400,878

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	1,400,878	6.29	0.00		< HS	accept
Notes											

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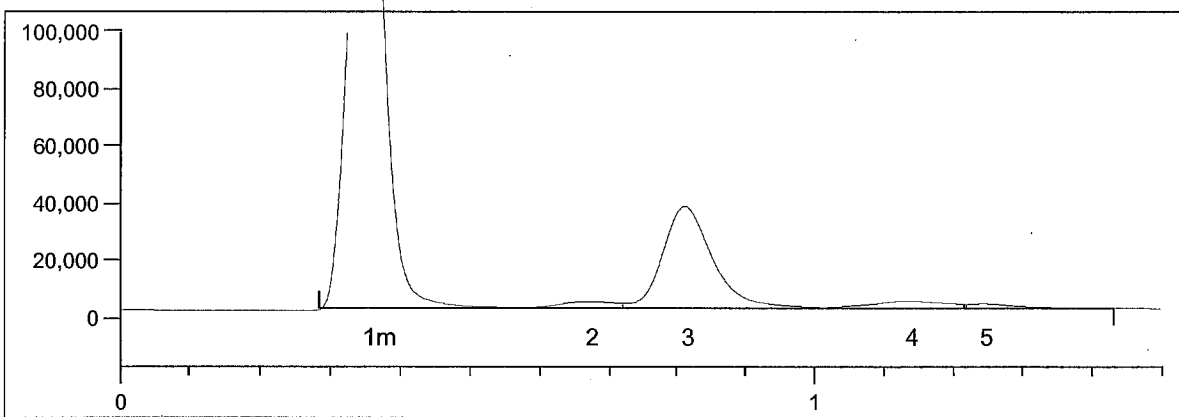
Peak Report

(1)(2)(3) CMC 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

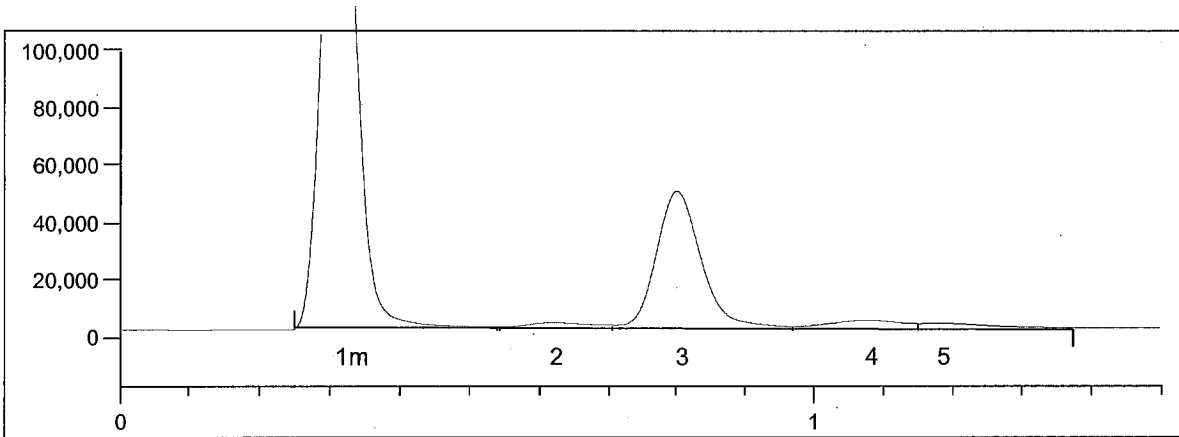


Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

(1)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		3	1,804,317	8.10	0.00		< HS	accept
Notes											

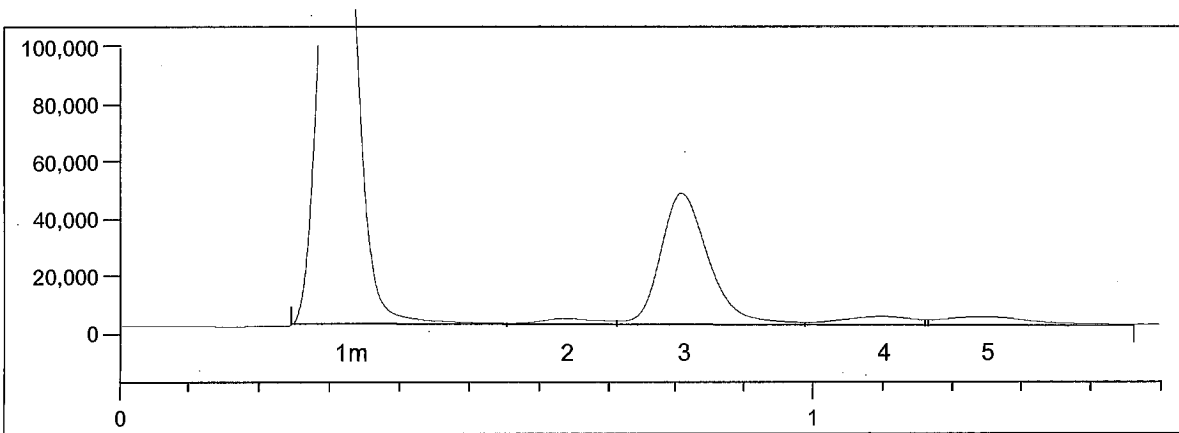


Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

(2)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		3	2,133,903	9.58	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

(3)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		3	2,196,562	9.86	0.00		< HS	accept
Notes											

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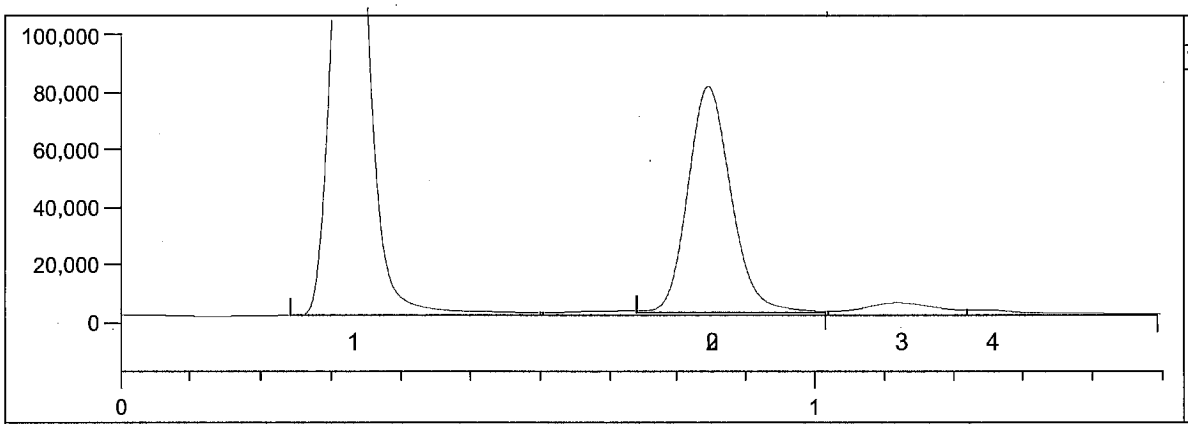
Peak Report

Batch Number: B132012
Method Number: BR-0021

①②③ CMC 12/13/13

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

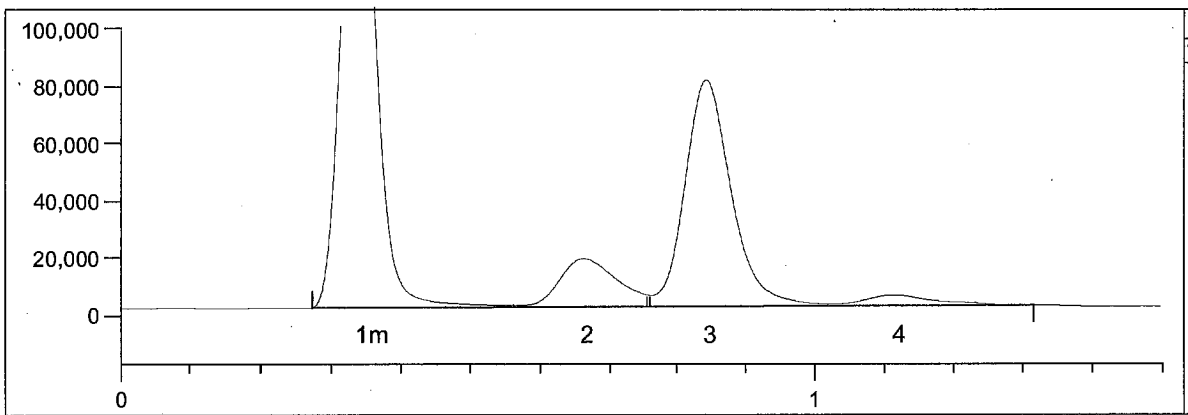


Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.84	3,371,816

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132012-DUP3		u	3,371,816	15.1	0.00		< HS	accept
Notes											

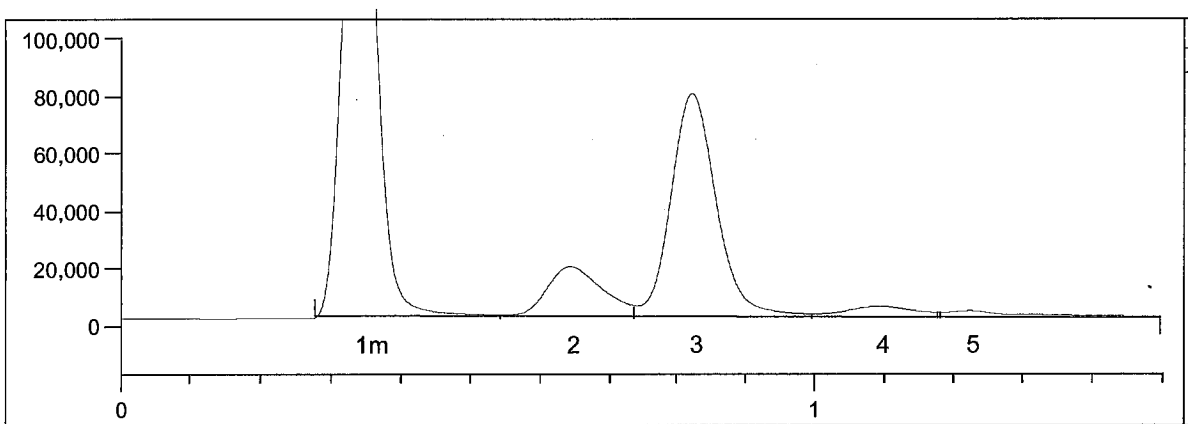


Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132012-MS3		3	3,712,347	16.7	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,485,838
2	0.64	930,260
3	0.82	3,534,426
4	1.09	221,962
5	1.22	112,768

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132012-MSD3		3	3,534,426	15.9	0.00		< HS	accept
Notes											

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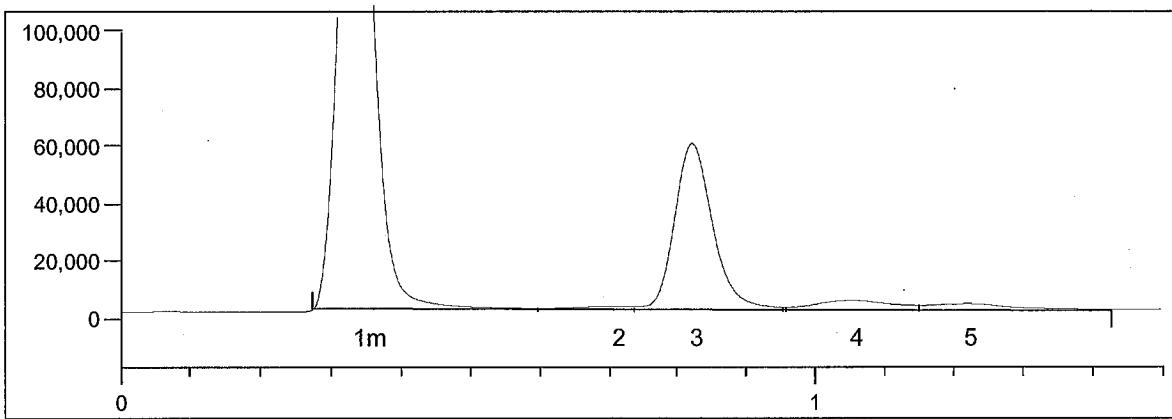
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

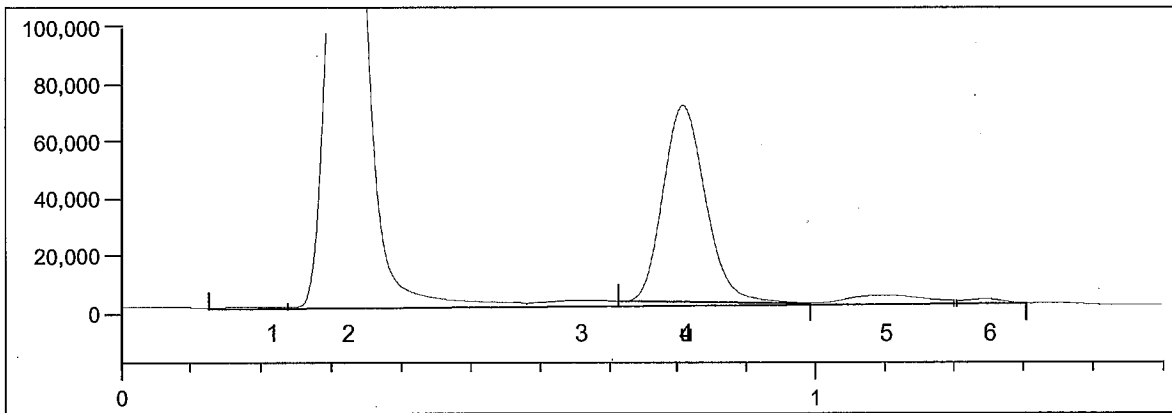
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		3	2,208,888	9.91	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.80	2,919,248

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	2,919,248	13.1	0.00		< HS	accept
Notes											

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As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

DMA / MMA

Sequence: 1300862, 863	Batch(es): B132012, 2013	Matrix: Biota
Analyst: IRJ	Date: 12-11-13	Pump purge time: 2:30
Cal. blank (average): 0.00 µg/L	Cal. coefficient: 0.00412/0.00449	RSD: 4.85/13.17
Method blank (average): 0.00 µg/L	Noise: 1868	Trap(s) #: 41
Cal. Std. 10ng/mL: 1346013	ICV Std. 100ng/mL: 1346011/6012	4% NaBH4: 1344014
6M HCl: 1349002	2.5M Tris-HCl: —	

Run #	Sample ID	Analyzed volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
1	TEST	0.500		10ng/mL Cal.
2	SEQ-IBL1	—		
3	-IBL2	—		
4	-IBL3	—		
5	-CAL1	0.050		10ng/mL Cal.
6	-CAL2	0.100		
7	-CAL3	0.200		
8	-CAL4	1.00		
9	-CAL5	2.00		
10	-CAL6	3.00		
11	-ICV1	0.050		100ng/mL ICV MMA
12	-ICV2			DMA
13	-CCV	0.500		10ng/mL Cal.
14	-CCB	-		
15	B132012/2013-BLK1	2.00		
16	-BLK2			
17	-BLK3			
18	-BLK4			
19	-BS1			
20	-SRM1			
21	-SRM2			
22	1343025-24			
23	1345019-01			>CAL DMA
24	-01RE1	1.00		

Comments: _____

As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

Page 2 of 3

Sequence: 1300862, 863 Batch: B132012, 2013 Analyst: IRJ Date: 12-11-13

	Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
	25	B132012/2013-DUP1	1.00		native: 1345019-01 RE1
	26	-MS1			
	27	-MSD1			
m2	28	1345019-02			
m2	29	-03			
m2	30	-04			
m1	31	-05			
	32	-06			
	33	-07			
	34	-08			
	35	-09			
	36	SEQ-CCV	0.500		10ng/mL Cal.
	37	-CCB	-		
	38	1345019-10	1.00		
	39	-11			
	40	B132012/2013-DUP2			native: 1345019-11
	41	-MS2			
	42	-MSD2			
m2	43	1345019-12			
	44	-13			
m1	45	-14			
	46	-15			
	47	-16			
m2	48	-17			
	49	-18			
	50	-19			
	51	SEQ-CCV	0.500		10ng/mL Cal.
	52	-CCB	-		

Comments:

As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

Page 3 of 3

Sequence: 1300862, 863 Batch: B132012/2013 Analyst: IRJ Date: 12-11-13

	Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
	53	1345019-20	1.00		
	54	↓ -21	↓		
m1	55	B132012/2013-DUP3			native: 1345019-21
m2	56	↓ -MS3			↓
	57	↓ -MSD3			
	58	1345019-22			
m1	59	↓ -23			
m2	60	↓ -24	↓		
	61	SEQ-CCV	0.500		1.0mg/mL Cal.
	62	↓ -CCB	–		

IRJ 12-11-13

Comments: _____

COPY

Total As / Total Se / As Species I, III, MMA/DMA (circle)

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 004 Mod. of EPA 1632 (HGAAS) - circle

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 1 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
BLK-1	0.5	
BLK-2		
BLK-3		
BLK-4		
B132010/11-BS1		
B132011 - BS2		
B132012/13 ~~BS3~~ BS1		
~~SRM1~~		IRJ
~~SRM2~~	see pg 2	12-07-13
1345019-01	0.5081	
1345019-02	0.5112	
1345019-03	0.5059	
1345019-04	0.5064	
1345019-05	0.5079	
1345019-06	0.5036	
1345019-07	0.5083	
1345019-08	0.5023	
1345019-09	0.5049	
1345019-10	0.5041	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
1345019-11	0.5056	
1345019-12	0.5040	
1345019-13	0.5134	
1345019-14	0.5021	
1345019-15	0.5128	
1345019-16	0.5066	
1345019-17	0.5023	
1345019-18	0.5027	
1345019-19	0.5004	
1345019-20	~~0.5121~~ MR 11/26/13	0.5058
1345019-21	0.5121	
1345019-22	0.5131	
1345019-23	0.5069	
1345019-24	0.5124	
1345019-25	0.5068	
DUP1	0.5003	
DUP2	0.5102	
DUP3	0.5036	
B132010/2011-MS1	0.5020	

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
DUP-1	1345019 - 01		IRJ 12-07-13		
DUP-2	- 11				1
DUP-3	- 21				
B132010/2011-MS/MSD1	1345019 - 01	0.250	0.10	1348004	

Reagents Added (ID/Amount Added)
2 M HCl (1349001/10mL)

Target Digestion Temperature = 75-85 °C

Measured Temperature*, Time On / Time Off, Date
70 (69) °C, 1508, 12-07-13
—16 hour timer—

Thermometer ID: BR-02

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: 10mL
Volume of Prep Subsampled: _____
Dilution Media: IRJ 12-07-13
Final Dilution Volume: _____

CRM, Matrix, Certified Values
CRM # 1337024

Comments: Samples were weighed out by MR on 11/26/13 and stored in the walk-in freezer (shelf #1)

1 No spike witness available - IRJ 12-07-13

Total As / Total Se / As Species hmt/mmt/dmt **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 004b **Mod. of EPA 1632 (HGAAS) (circle)**

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 2 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
B132010/2011-MS2	0.5013	
B132010/2011-MS3	0.5075	
B132010/2011-MSD1	0.5113	
B132010/2011-MSD2	0.5018	
B132010/2011-MSD3	0.5051	
B132012/2013-MS1	0.5056	
B132012/2013-MS2	0.5096	
B132012/2013-MS3	0.5080	
B132012/2013-MSD1	0.5139	
B132012/2013-MSD2	0.5004	
B132012/2013-MSD3	0.5042	
SRM 1	0.2055	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
SRM 2	0.2062	
1343025-24	0.5059	
IRJ 12-07-13		

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
B132010/2011-MS/MSD2	1345019 - 11	0.250	0.10	1348004	
B132010/2011-MS/MSD3	- 21	↓	↓	↓	①
B132012/2013-MS/MSD1	- 01	0.500/0.500	0.10/0.10	1346011/1346012	
B132012/2013-MS/MSD2	- 11	↓	↓	↓	
B132012/2013-MS/MSD3	- 21	↓	↓	↓	
B132010/11-BS1	-	0.500	0.10	1348017	
B132011-BS2	-	↓	↓	1348004	
B132012/13-BS1	-	0.500/0.500	0.10/0.10	1346011/1346012	
		IRJ 12-07-13			

Reagents Added (ID/Amount Added)

See pg. 1

Target Digestion Temperature = _____

Measured Temperature*, Time On / Time Off, Date

See pg. 1

Thermometer ID: _____

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: _____

Volume of Prep Subsampled: _____

Dilution Media: _____

Final Dilution Volume: _____

CRM, Matrix, Certified Values

IRJ 12-07-13

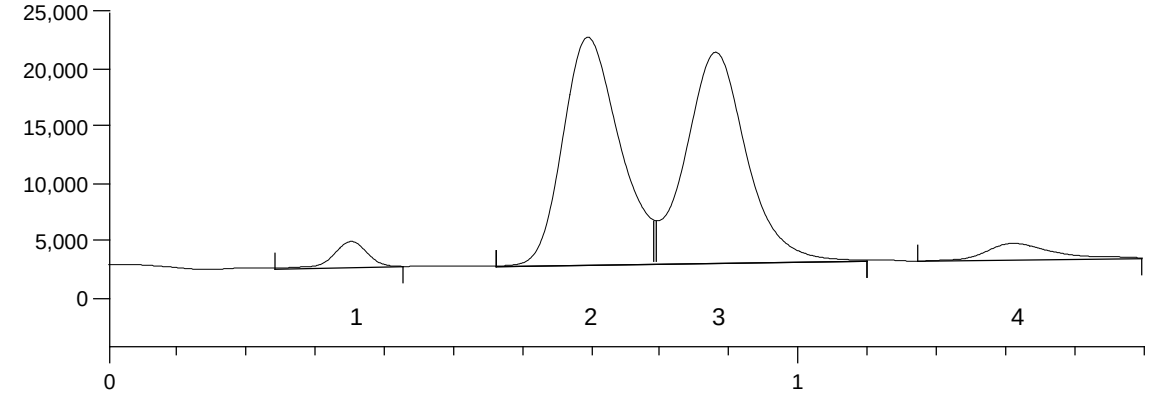
Comments:

Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

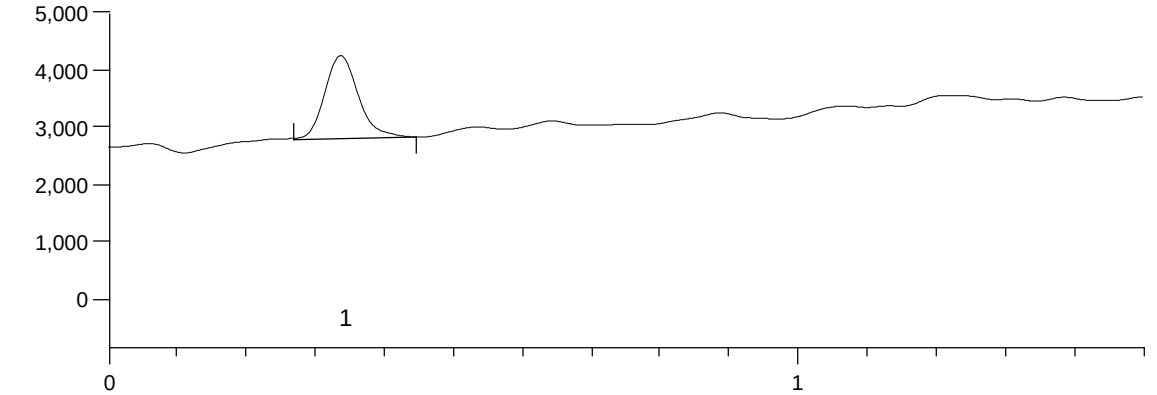
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 10:34 AM

Peak	rt	Area
1	0.35	74,216
2	0.69	1,142,796
3	0.88	1,115,735
4	1.31	95,710

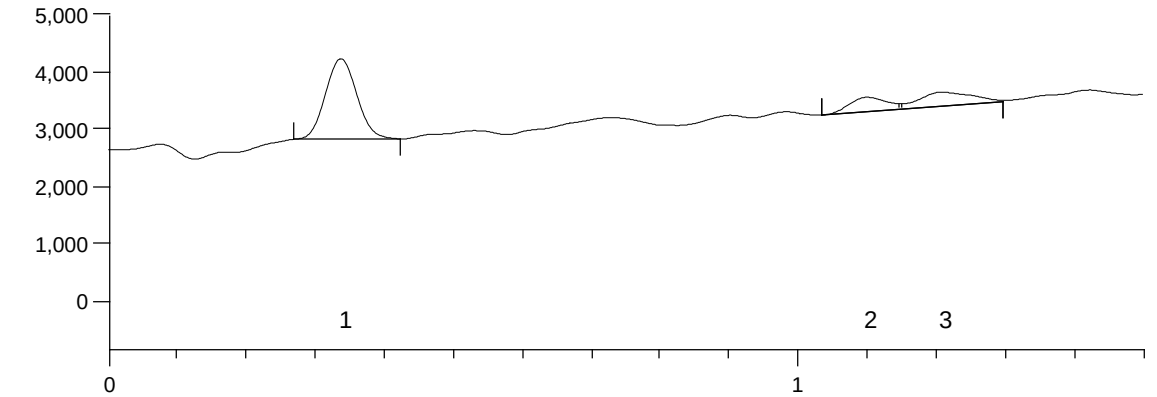
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
1		S	TEST		3	1,115,735	5.01	0.00		< HS	reject
Notes											



Date: 12/11/13
Time: 10:43 AM

Peak	rt	Area
1	0.33	48,317

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL1			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 10:48 AM

Peak	rt	Area
1	0.33	44,477
2	1.10	9,458
3	1.20	11,790

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
3		CB	SEQ-IBL2			0	0.00		0.00	< 0.4	accept
Notes											

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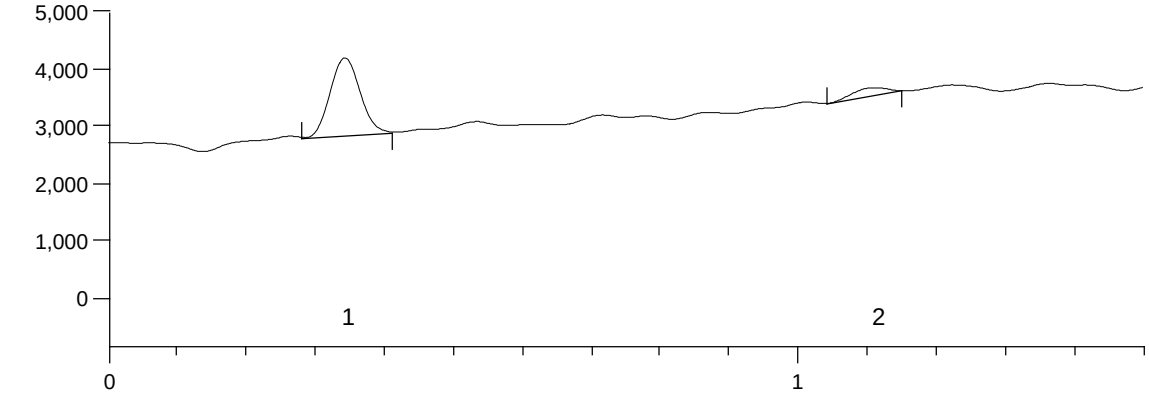
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

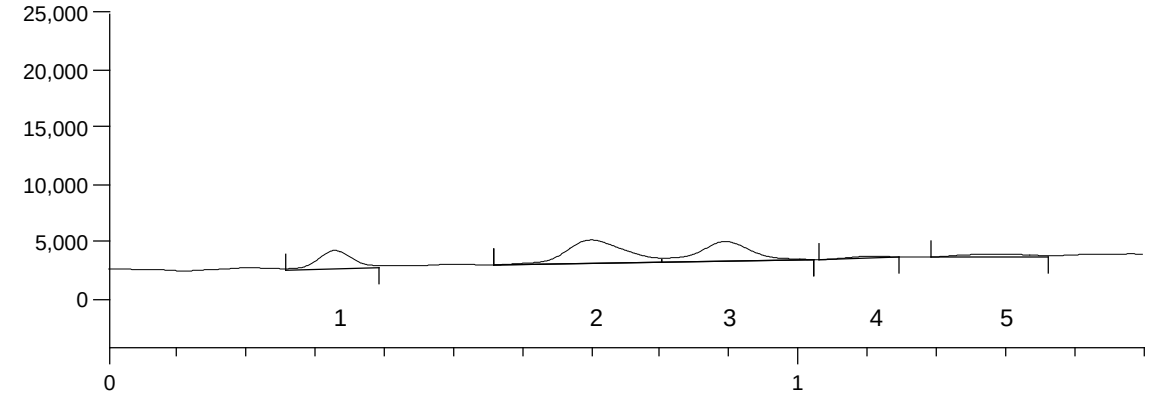
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 10:53 AM

Peak	rt	Area
1	0.34	40,719
2	1.11	5,372

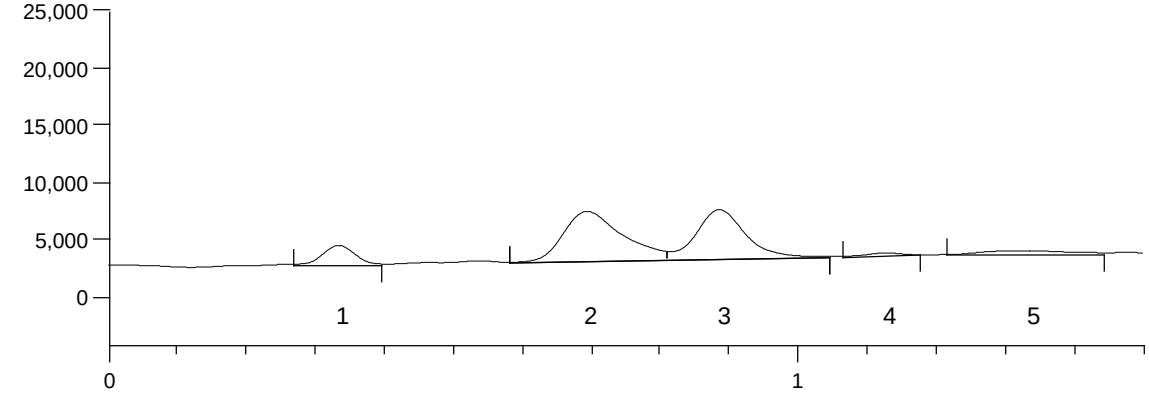
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		CB	SEQ-IBL3			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 10:58 AM

Peak	rt	Area
1	0.32	45,871
2	0.70	122,227
3	0.89	90,565
4	1.10	5,539
5	1.29	11,386

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
5		STD	SEQ-CAL1		3	90,565	0.406		81.3	80-120	accept
Notes											



Date: 12/11/13
Time: 11:03 AM

Peak	rt	Area
1	0.33	49,941
2	0.69	258,984
3	0.88	207,092
4	1.12	7,161
5	1.33	19,498

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL2		3	207,092	0.929		92.9	80-120	accept
Notes											

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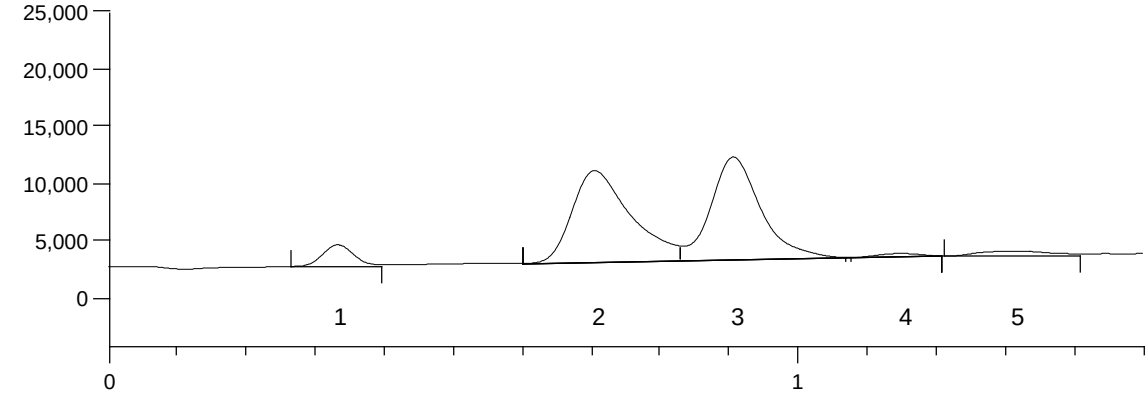
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

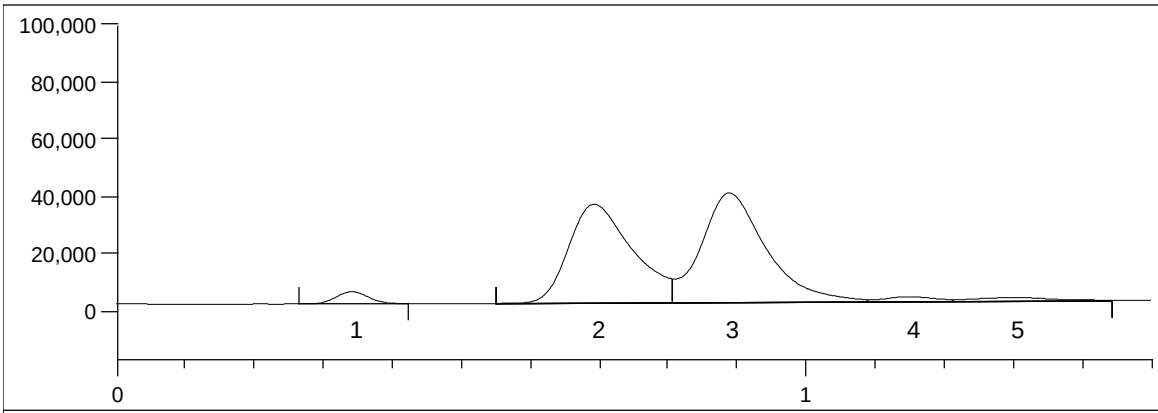
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:07 AM

Peak	rt	Area
1	0.33	54,028
2	0.70	479,029
3	0.90	455,890
4	1.14	14,121
5	1.31	23,362

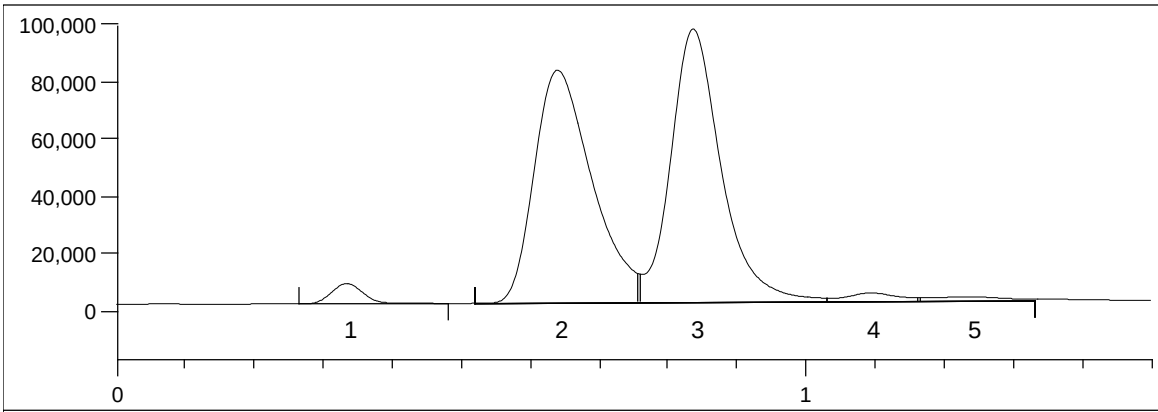
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
7		STD	SEQ-CAL3		3	455,890	2.05		102	80-120	accept
Notes											



Date: 12/11/13
Time: 11:12 AM

Peak	rt	Area
1	0.34	137,088
2	0.69	2,241,388
3	0.88	2,481,482
4	1.14	78,351
5	1.30	80,958

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
8		STD	SEQ-CAL4		3	2,481,482	11.1		111	80-120	accept
Notes											



Date: 12/11/13
Time: 11:17 AM

Peak	rt	Area
1	0.33	224,360
2	0.64	4,756,609
3	0.83	4,825,030
4	1.09	125,456
5	1.23	61,265

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
9		STD	SEQ-CAL5		3	4,825,030	21.7		108	80-120	accept
Notes											

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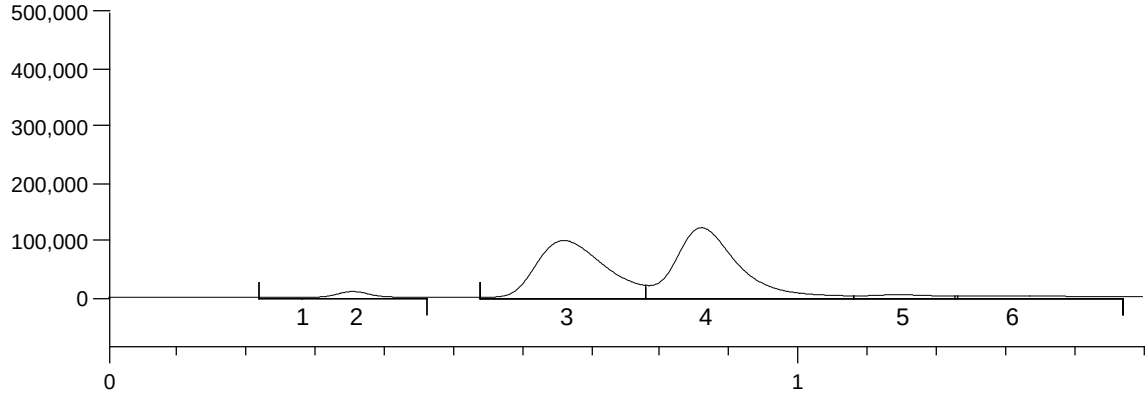
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

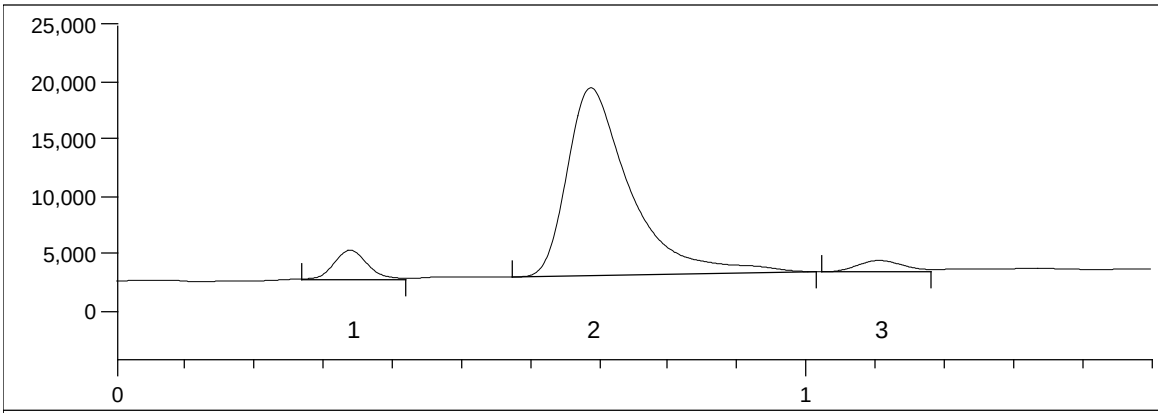
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:22 AM

Peak	rt	Area
1	0.27	3,807
2	0.35	331,958
3	0.66	6,824,240
4	0.86	7,477,963
5	1.14	211,754
6	1.30	113,632

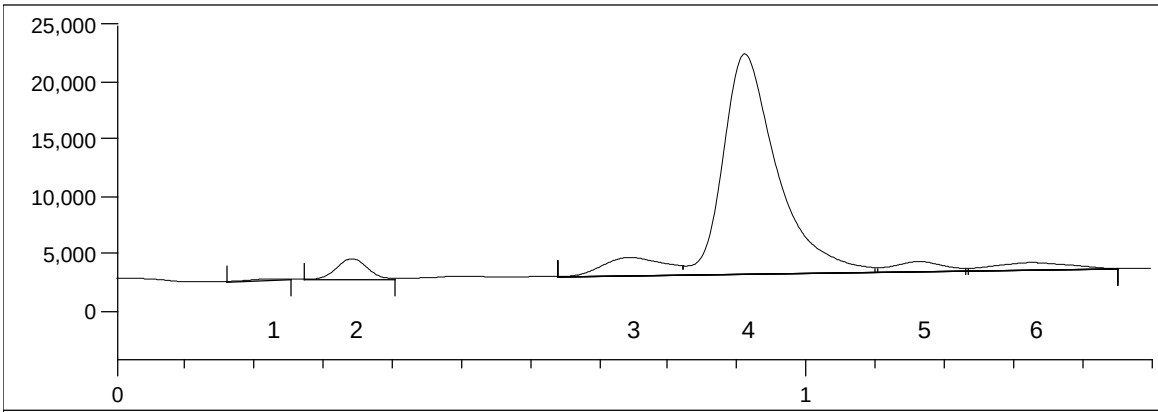
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
10		STD	SEQ-CAL6		4	7,477,963	33.6		112	80-120	accept
Notes											



Date: 12/11/13
Time: 11:27 AM

Peak	rt	Area
1	0.34	80,376
2	0.68	1,054,823
3	1.10	38,045

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
11		OPR	SEQ-ICV			0	0.00		0.00	70-130	reject
Notes											



Date: 12/11/13
Time: 11:32 AM

Peak	rt	Area
1	0.22	2,730
2	0.34	51,987
3	0.74	100,170
4	0.91	1,043,728
5	1.16	43,235
6	1.32	48,856

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
12		OPR	SEQ-ICV		4	1,043,728	4.68		93.7	70-130	accept
Notes											

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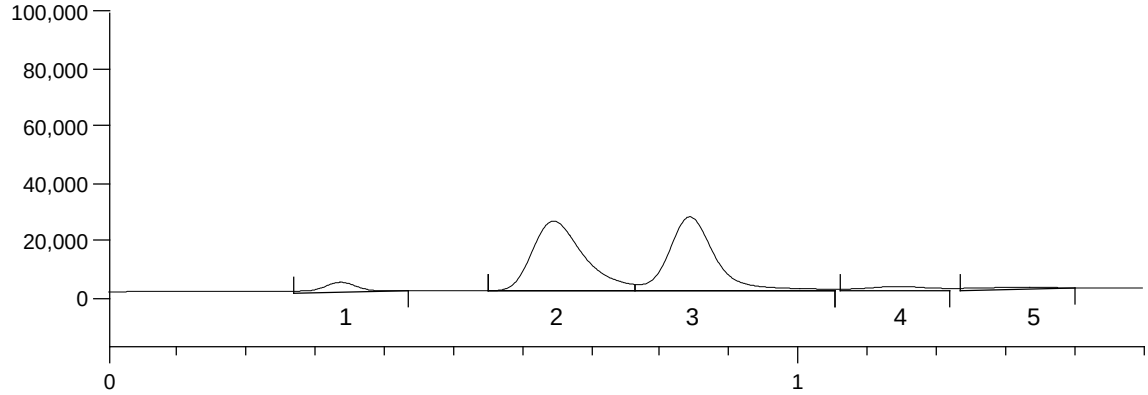
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

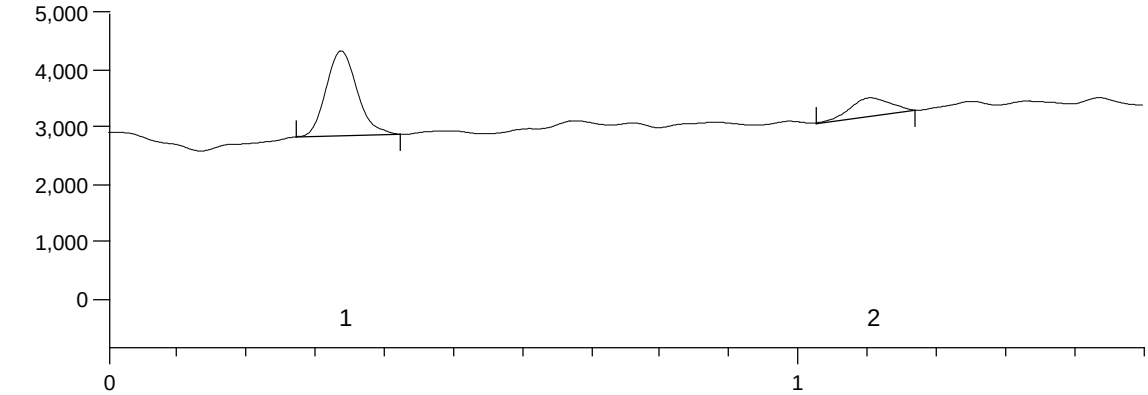
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:37 AM

Peak	rt	Area
1	0.33	92,683
2	0.64	1,254,416
3	0.84	1,140,842
4	1.14	35,957
5	1.33	19,630

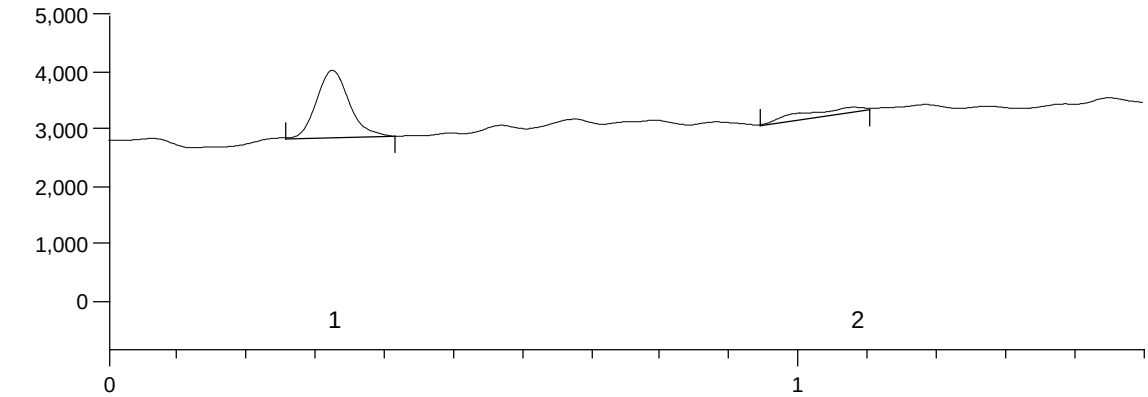
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
13		OPR	SEQ-CCV		3	1,140,842	5.12		102	70-130	accept
Notes											



Date: 12/11/13
Time: 11:47 AM

Peak	rt	Area
1	0.33	46,559
2	1.10	13,052

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 11:53 AM

Peak	rt	Area
1	0.32	38,308
2	1.08	6,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132012-BLK1			0	0.00	0.00		< HS	accept
Notes											

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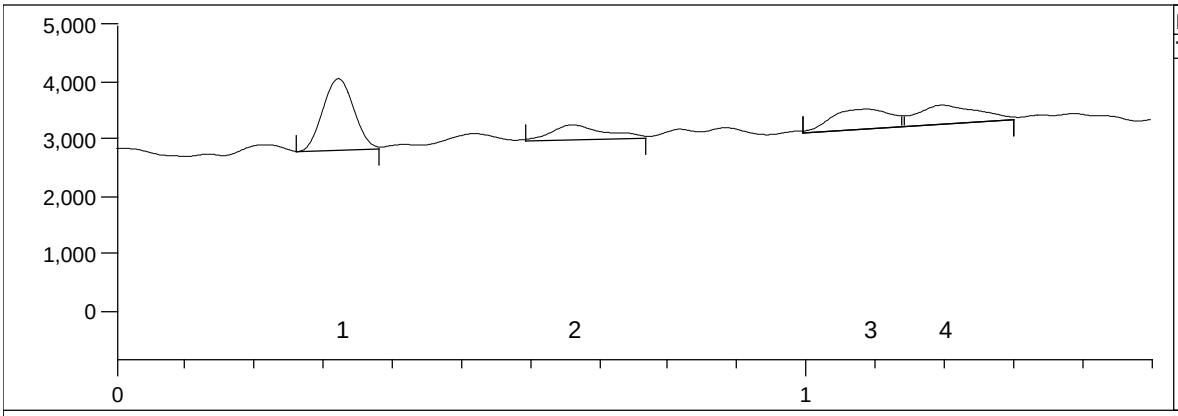
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

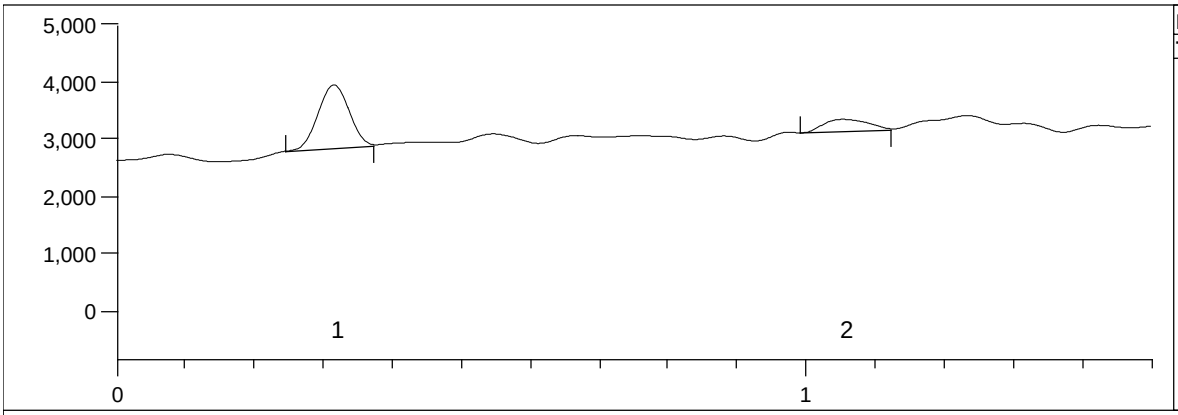
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:58 AM

Peak	rt	Area
1	0.32	38,003
2	0.66	10,678
3	1.08	18,101
4	1.19	16,548

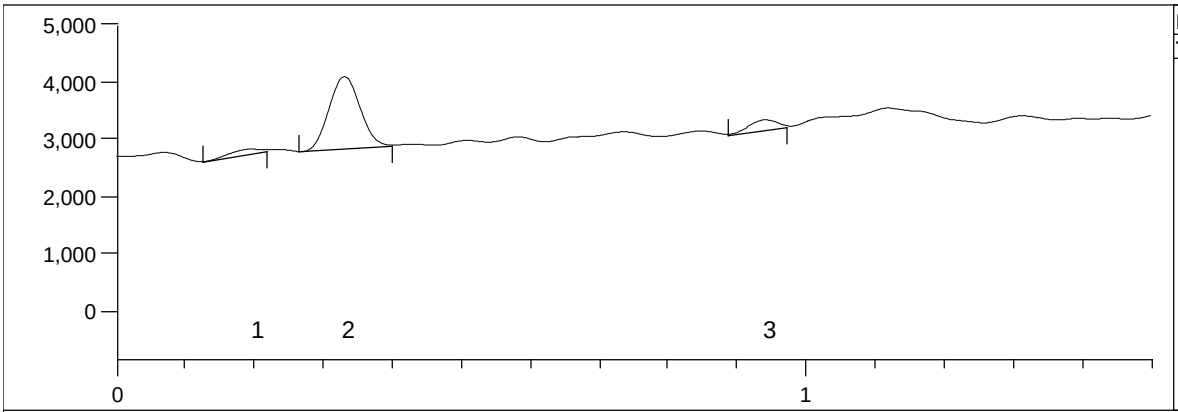
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132012-BLK2			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:03 PM

Peak	rt	Area
1	0.31	34,014
2	1.05	8,918

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
17		S	B132012-BLK3			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:08 PM

Peak	rt	Area
1	0.19	2,402
2	0.33	39,227
3	0.94	4,602

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
18		S	B132012-BLK4		3	4,602	0.0207	0.00		< HS	accept
Notes											

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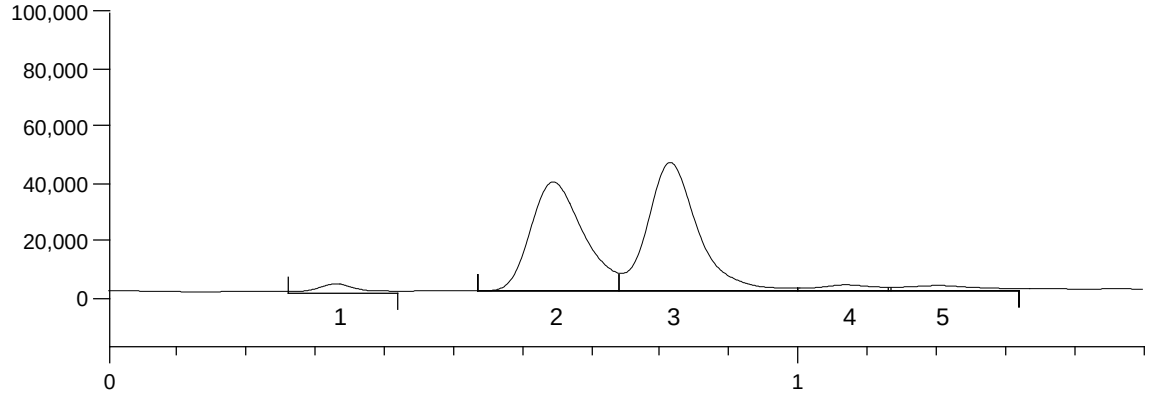
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

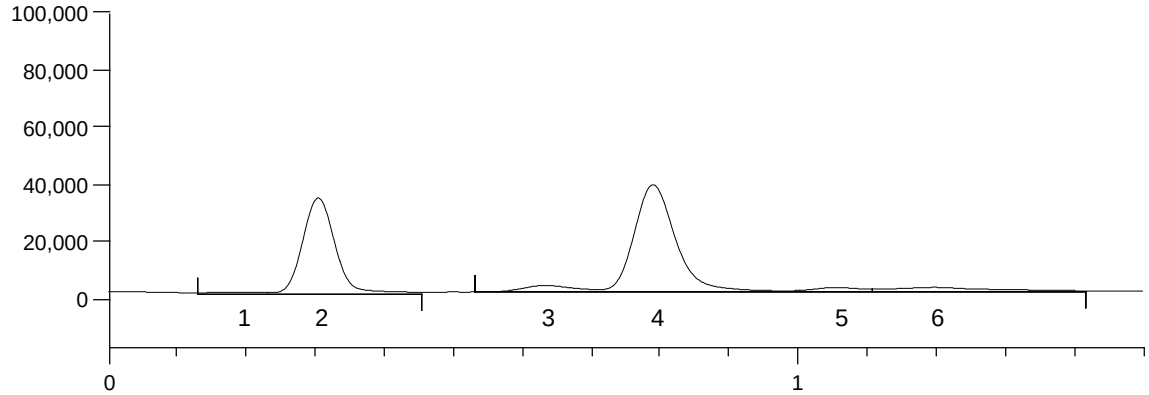
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:12 PM

Peak	rt	Area
1	0.33	81,212
2	0.64	2,021,422
3	0.81	2,212,817
4	1.06	82,578
5	1.20	77,896

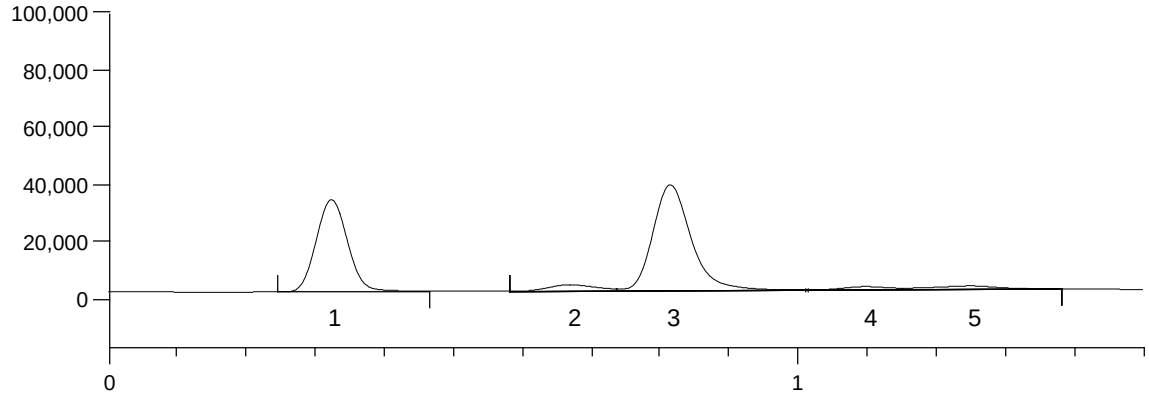
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
19		S	B132012-BS1		3	2,212,817	9.93	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:17 PM

Peak	rt	Area
1	0.19	6,166
2	0.30	1,041,959
3	0.63	113,984
4	0.78	1,551,278
5	1.05	63,253
6	1.19	115,493

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
20		S	B132012-SRM1		4	1,551,278	6.96	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:22 PM

Peak	rt	Area
1	0.32	1,011,847
2	0.66	106,879
3	0.81	1,430,126
4	1.10	55,339
5	1.24	88,473

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
21		S	B132012-SRM2		3	1,430,126	6.42	0.00		< HS	accept
Notes											

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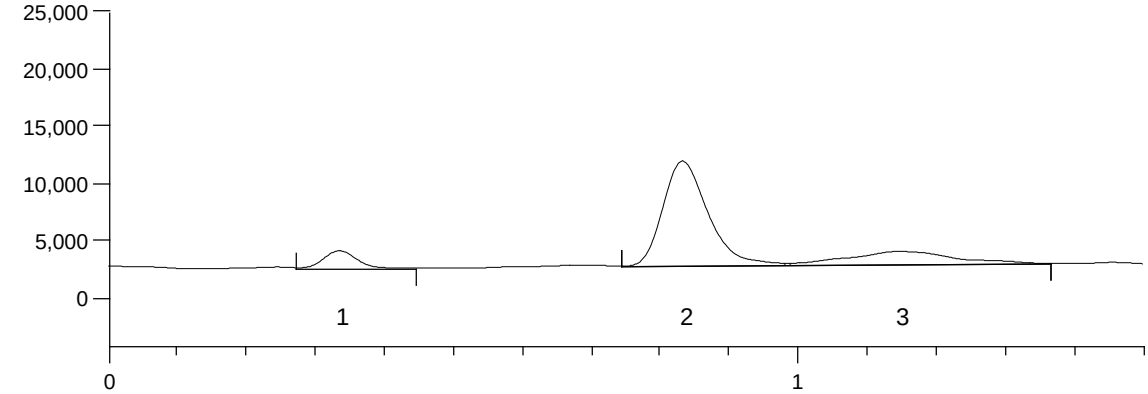
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

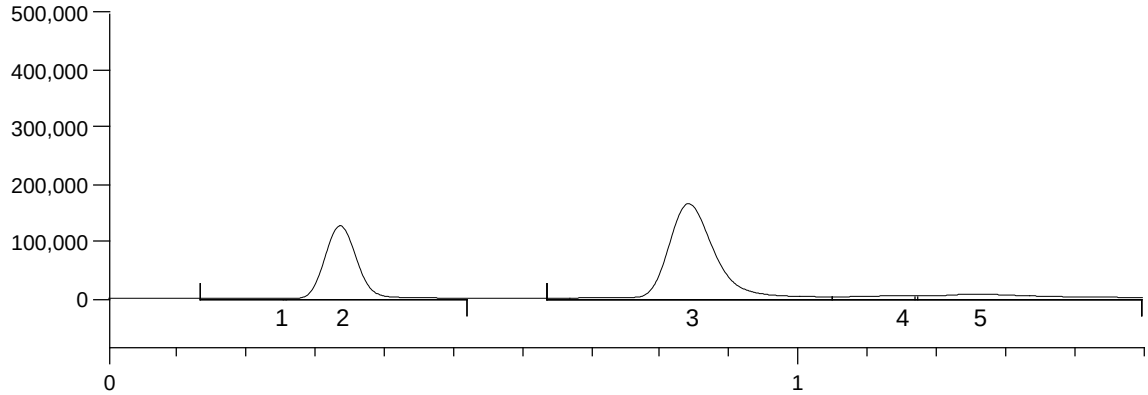
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:27 PM

Peak	rt	Area
1	0.33	47,924
2	0.83	416,435
3	1.14	118,946

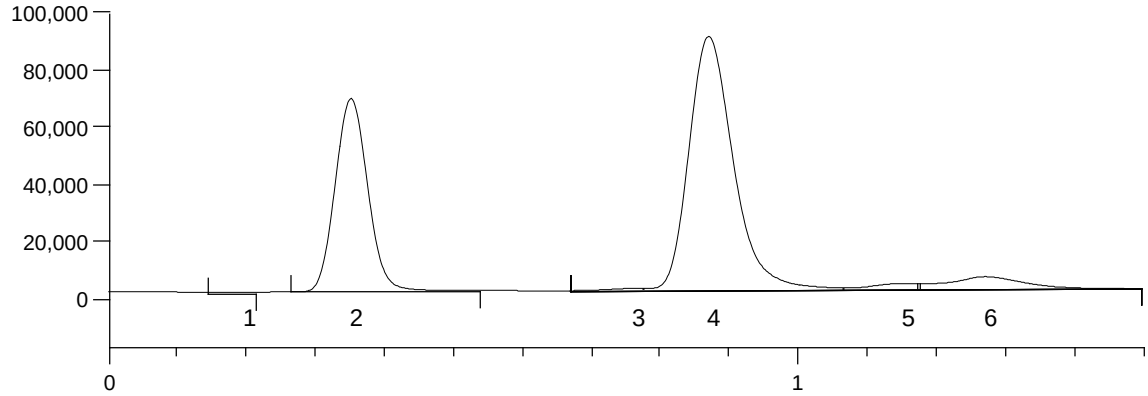
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
22		S	1343025-24		2	416,435	1.87	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:33 PM

Peak	rt	Area
1	0.24	5,314
2	0.33	4,077,962
3	0.84	7,553,176
4	1.14	198,619
5	1.25	550,242

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
23		S	1345019-01		3	7,553,176	33.9	0.00		< HS	reject
Notes											



Date: 12/11/13
Time: 12:40 PM

Peak	rt	Area
1	0.20	1,771
2	0.35	2,212,136
3	0.76	24,158
4	0.87	3,991,769
5	1.15	106,096
6	1.27	352,957

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
24		S	1345019-01RE1		4	3,991,769	17.9	0.00		< HS	accept
Notes											

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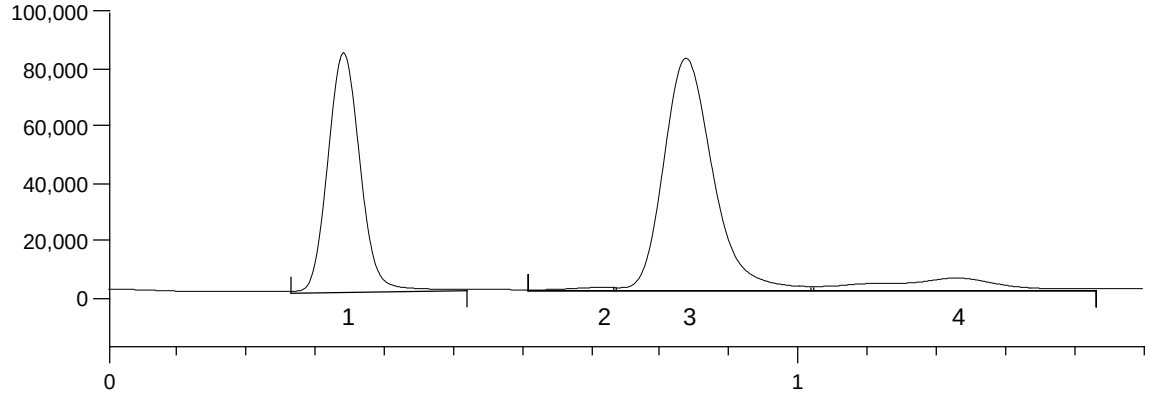
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

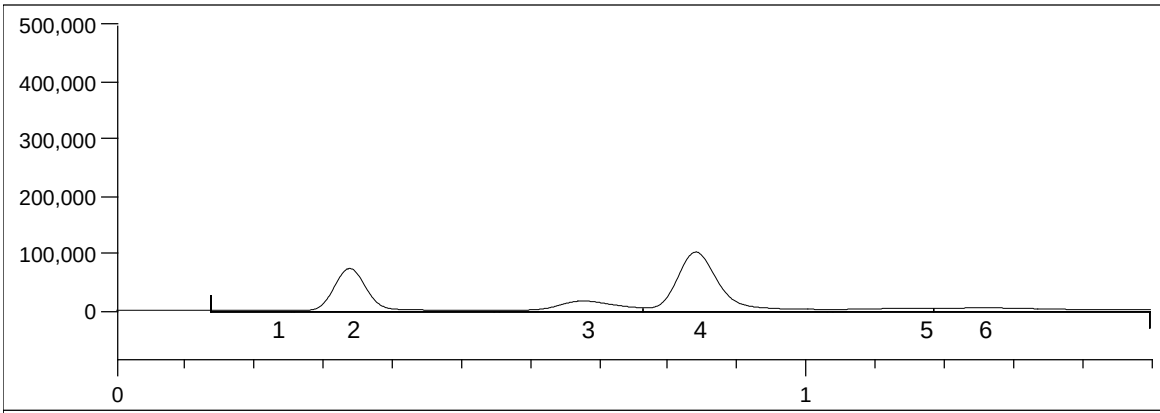
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:45 PM

Peak	rt	Area
1	0.34	2,673,221
2	0.71	32,014
3	0.83	3,990,005
4	1.22	413,889

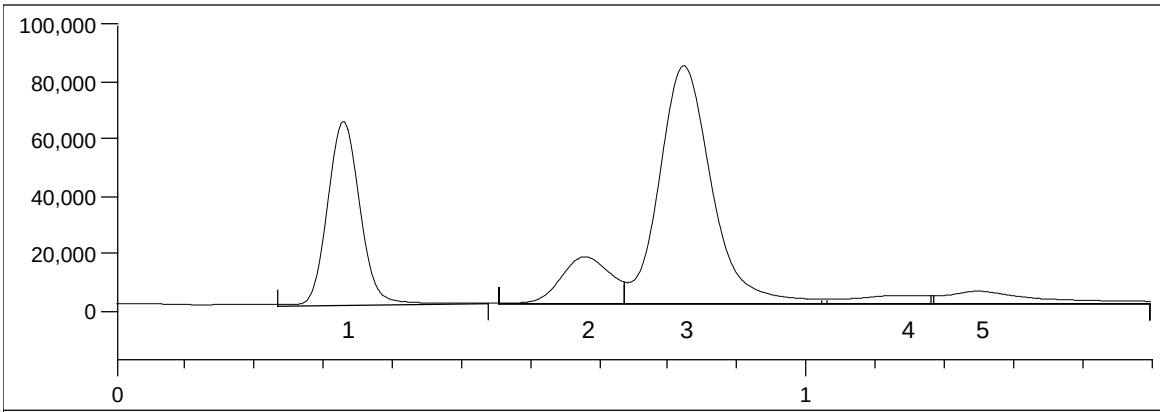
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
25		S	B132012-DUP1		3	3,990,005	17.9	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:50 PM

Peak	rt	Area
1	0.23	10,645
2	0.34	2,380,360
3	0.67	913,102
4	0.84	4,207,362
5	1.16	187,835
6	1.25	336,776

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
26		S	B132012-MS1		4	4,207,362	18.9	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:55 PM

Peak	rt	Area
1	0.32	2,056,351
2	0.68	813,796
3	0.82	4,305,736
4	1.14	171,317
5	1.24	283,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
27		S	B132012-MSD1		3	4,305,736	19.3	0.00		< HS	accept
Notes											

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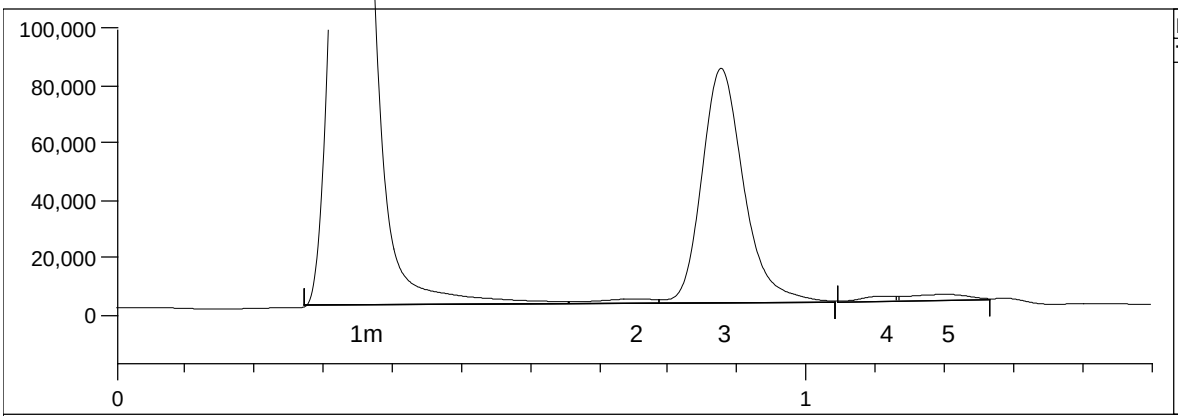
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

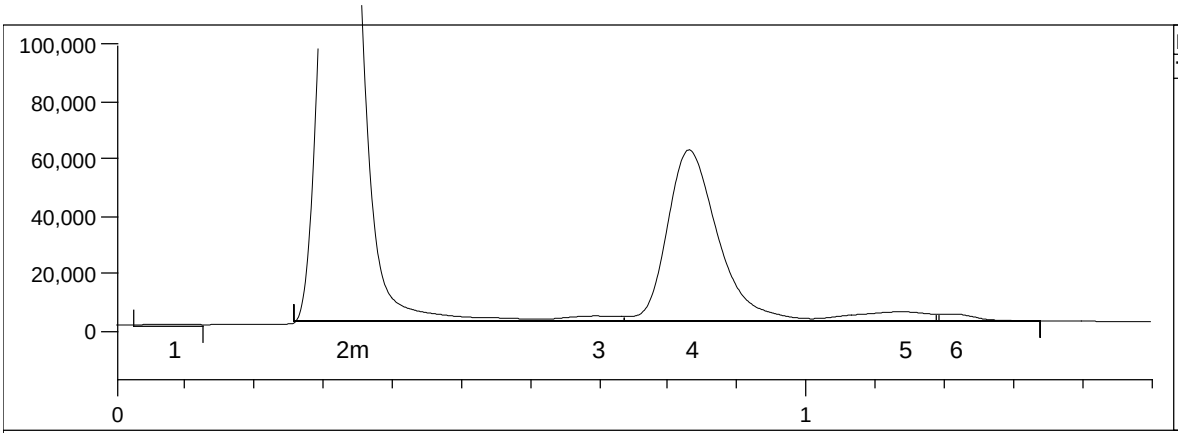
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

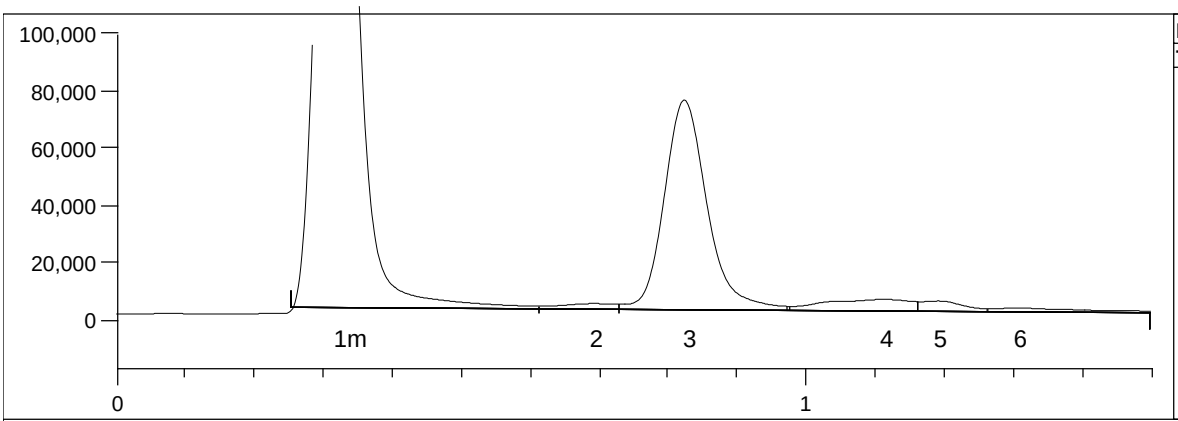
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		3	3,413,404	15.3	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		4	3,009,095	13.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		3	3,112,927	14.0	0.00		< HS	accept
Notes											

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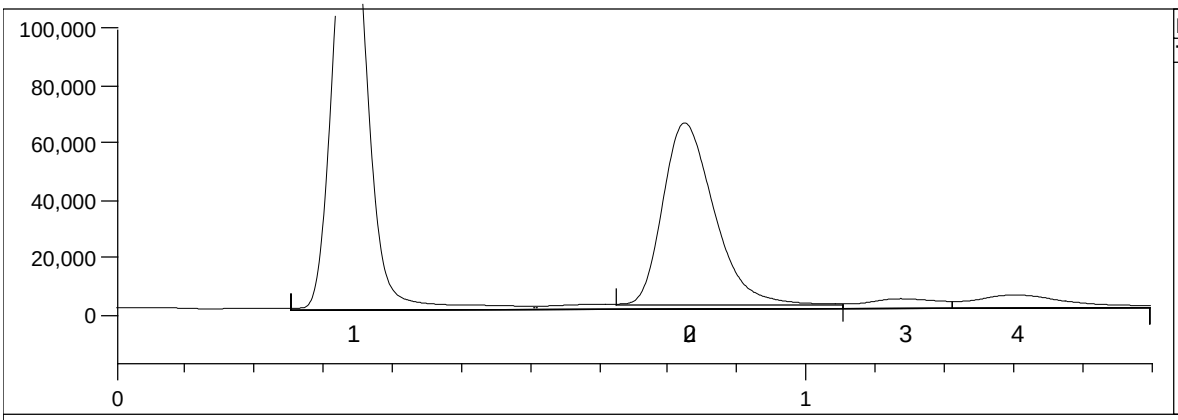
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

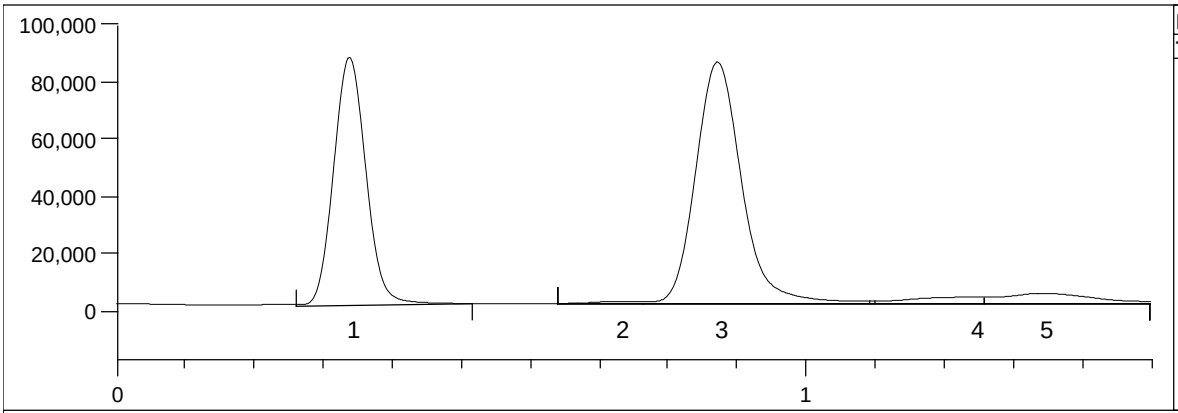
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.82	3,244,532

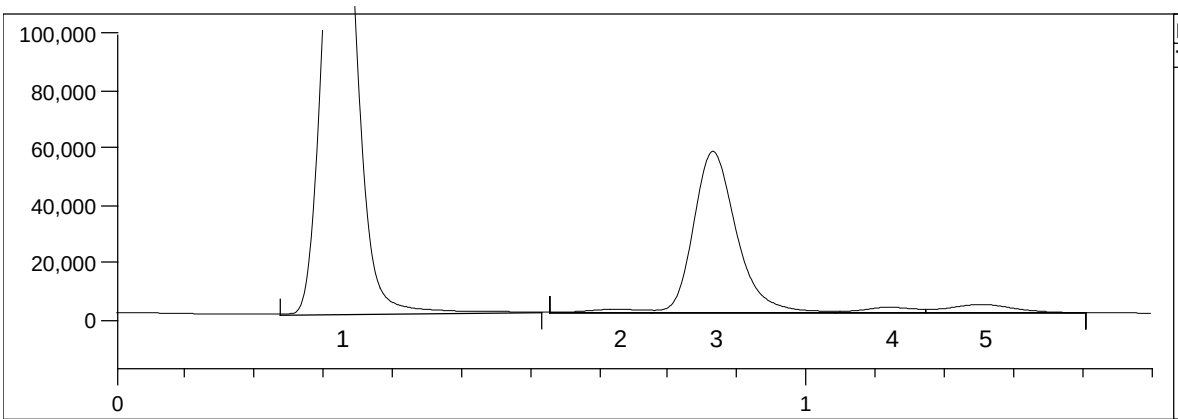
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	3,244,532	14.6	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:12 PM

Peak	rt	Area
1	0.33	2,796,039
2	0.72	27,709
3	0.87	3,881,709
4	1.24	127,495
5	1.34	240,671

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
32		S	1345019-06		3	3,881,709	17.4	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:17 PM

Peak	rt	Area
1	0.32	6,153,482
2	0.72	53,372
3	0.86	2,418,786
4	1.12	98,480
5	1.25	192,093

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-07		3	2,418,786	10.9	0.00		< HS	accept
Notes											

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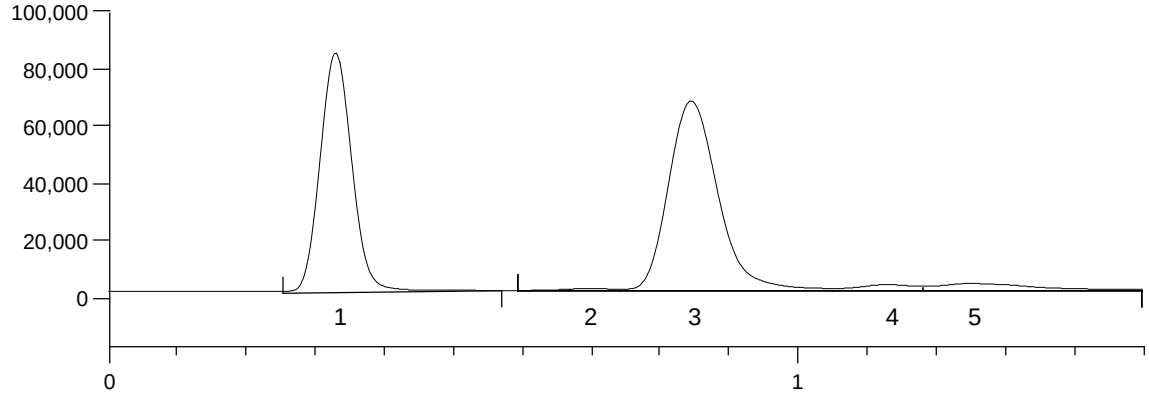
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

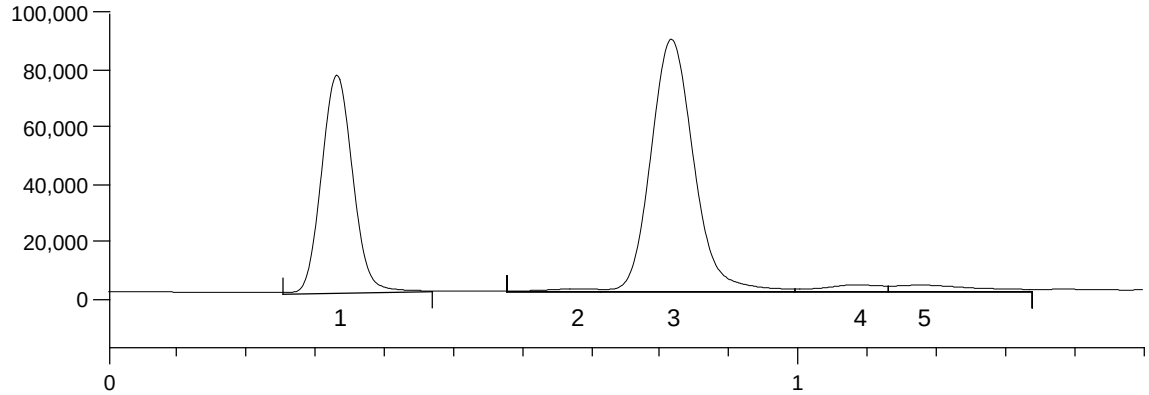
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:22 PM

Peak	rt	Area
1	0.32	2,655,541
2	0.69	29,146
3	0.84	3,293,491
4	1.12	102,652
5	1.25	193,500

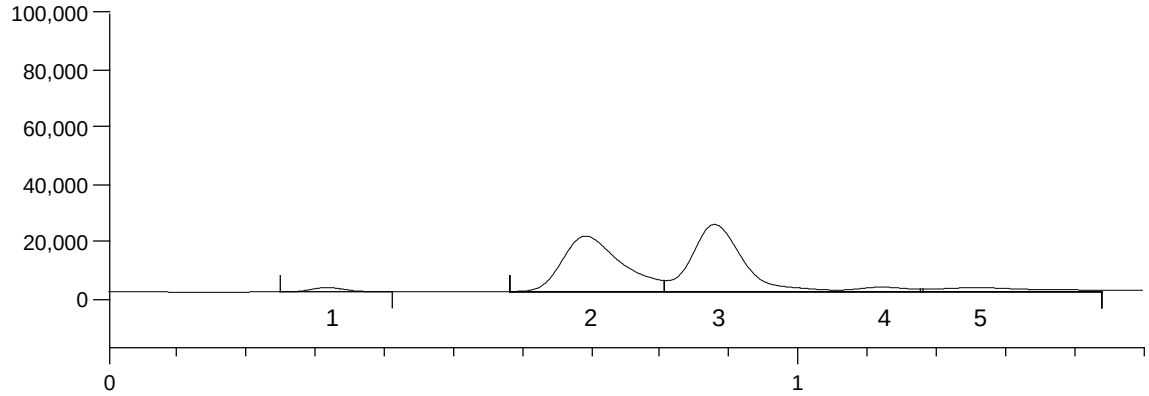
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
34		S	1345019-08		3	3,293,491	14.8	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:27 PM

Peak	rt	Area
1	0.33	2,356,320
2	0.67	30,903
3	0.81	3,758,318
4	1.08	98,071
5	1.17	106,106

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
35		S	1345019-09		3	3,758,318	16.9	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:31 PM

Peak	rt	Area
1	0.31	49,339
2	0.69	1,153,132
3	0.88	1,161,924
4	1.12	58,003
5	1.26	76,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
36		OPR	SEQ-CCV		3	1,161,924	5.21		104	70-130	accept
Notes											

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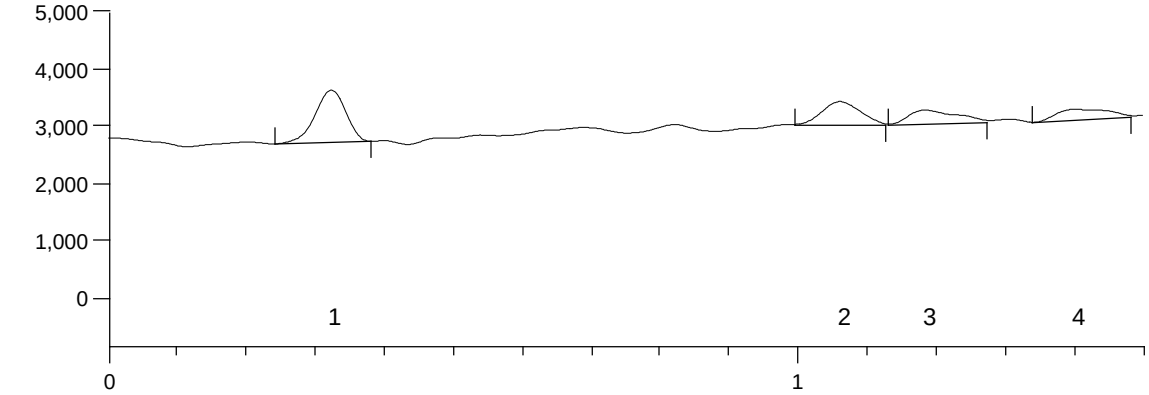
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

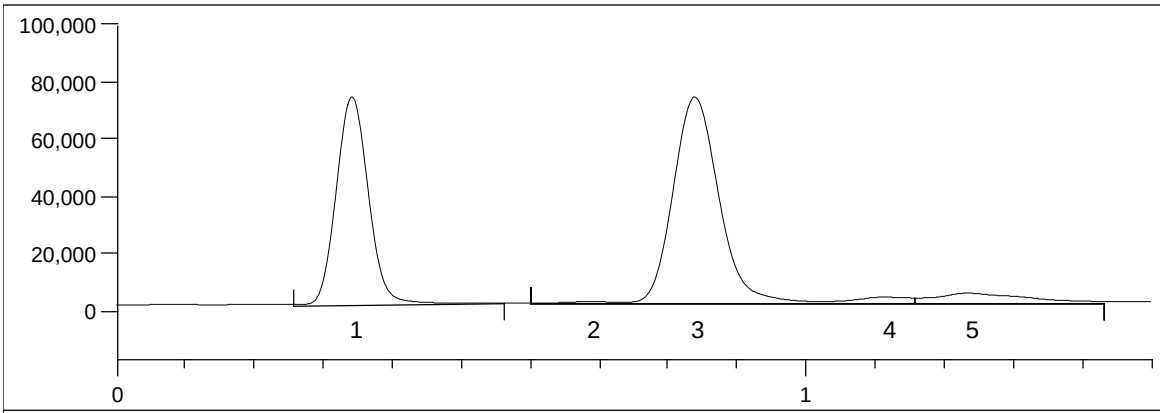
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:36 PM

Peak	rt	Area
1	0.32	28,492
2	1.06	14,925
3	1.18	10,185
4	1.40	9,181

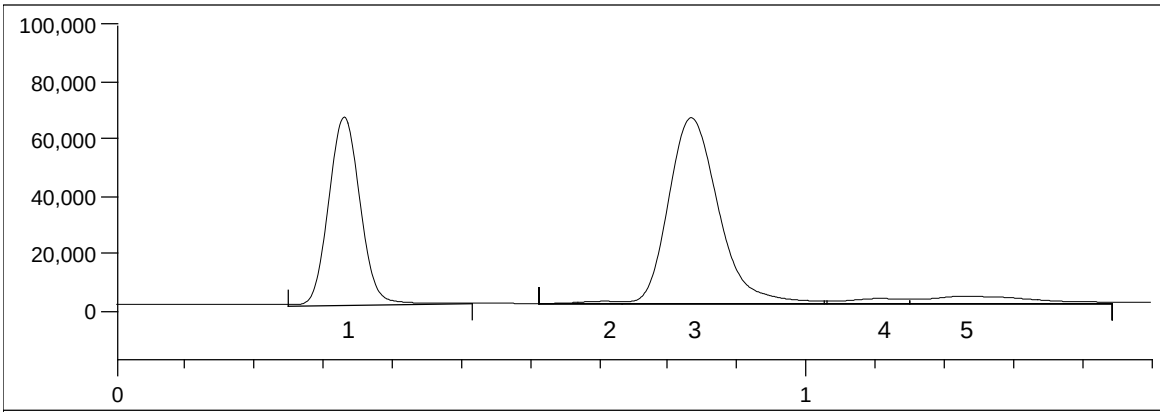
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
37		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 2:41 PM

Peak	rt	Area
1	0.34	2,334,450
2	0.68	21,244
3	0.84	3,286,032
4	1.11	94,601
5	1.23	245,930

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
38		S	1345019-10		3	3,286,032	14.7	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:46 PM

Peak	rt	Area
1	0.33	2,056,254
2	0.70	29,027
3	0.83	3,245,843
4	1.10	81,188
5	1.22	206,434

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
39		S	1345019-11		3	3,245,843	14.6	0.00		< HS	accept
Notes											

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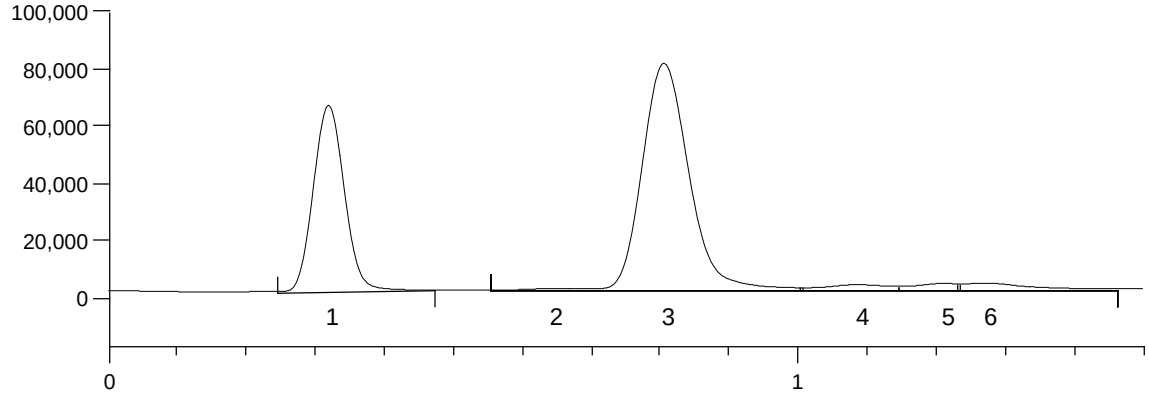
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

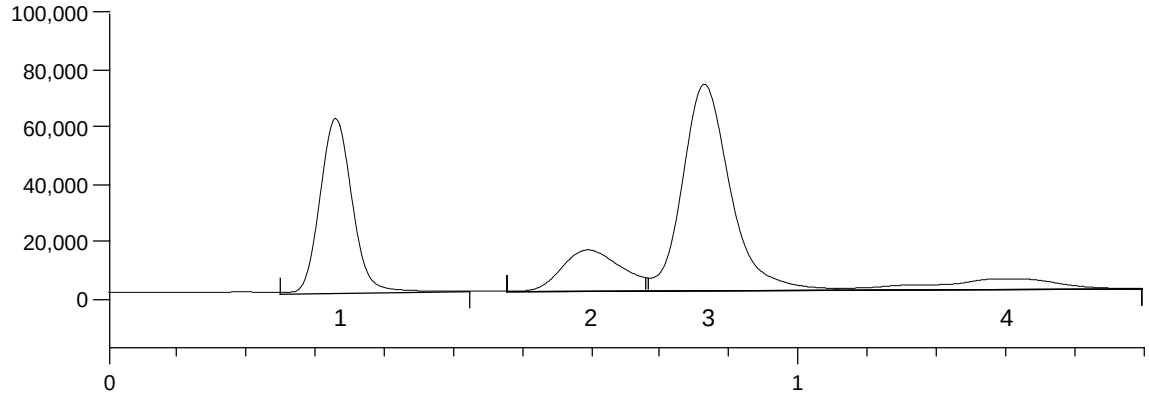
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:51 PM

Peak	rt	Area
1	0.32	2,020,247
2	0.64	26,648
3	0.80	3,720,872
4	1.08	103,651
5	1.21	87,823
6	1.27	126,973

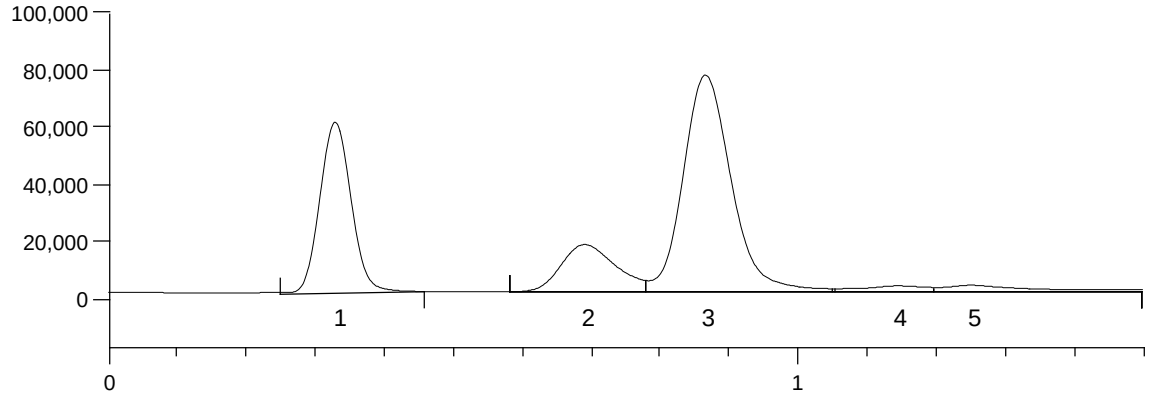
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
40		S	B132012-DUP2		3	3,720,872	16.7	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:03 PM

Peak	rt	Area
1	0.32	1,938,689
2	0.69	860,229
3	0.86	3,443,966
4	1.29	436,606

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
41		S	B132012-MS2		3	3,443,966	15.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:08 PM

Peak	rt	Area
1	0.32	1,860,825
2	0.69	908,837
3	0.86	3,640,637
4	1.14	102,187
5	1.25	113,131

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
42		S	B132012-MSD2		3	3,640,637	16.3	0.00		< HS	accept
Notes											

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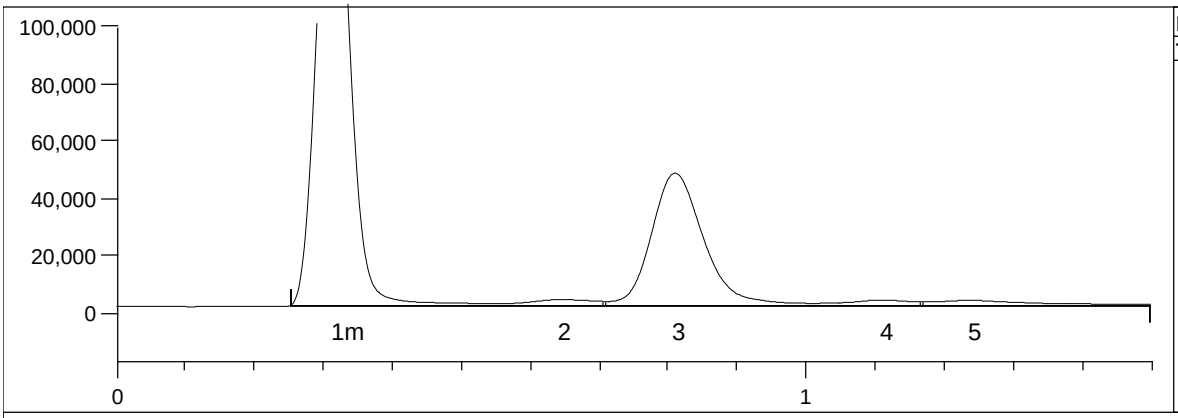
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

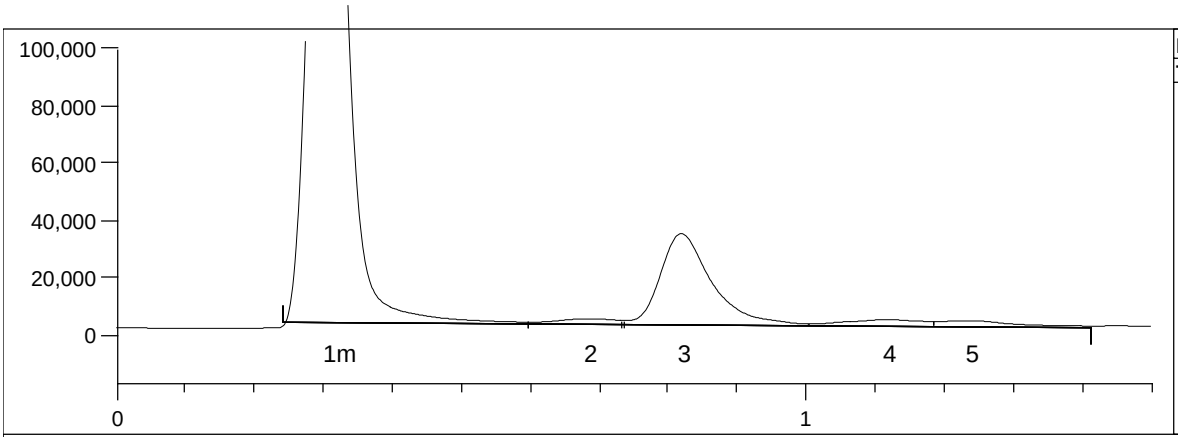
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

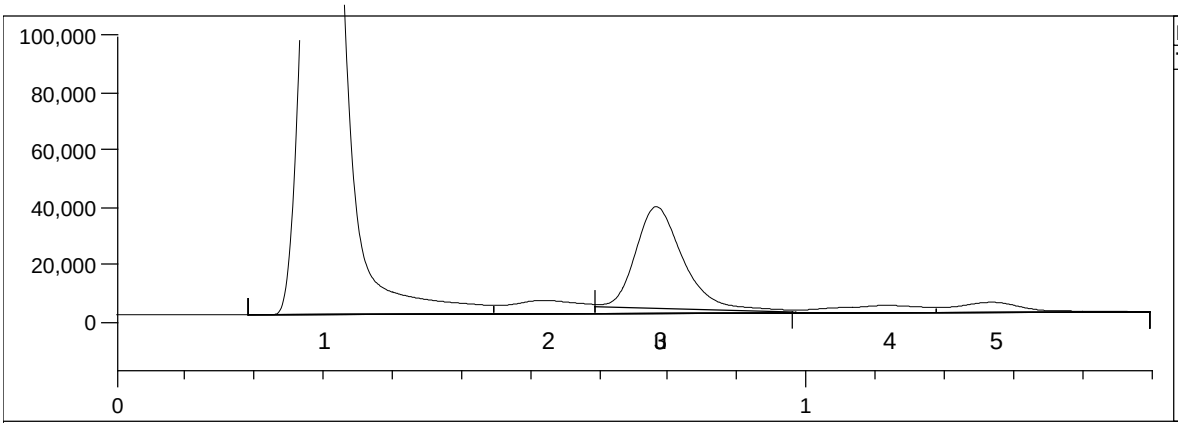
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		3	2,350,881	10.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		3	1,610,606	7.23	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.78	1,588,716

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	1,588,716	7.13	0.00		< HS	accept
Notes											

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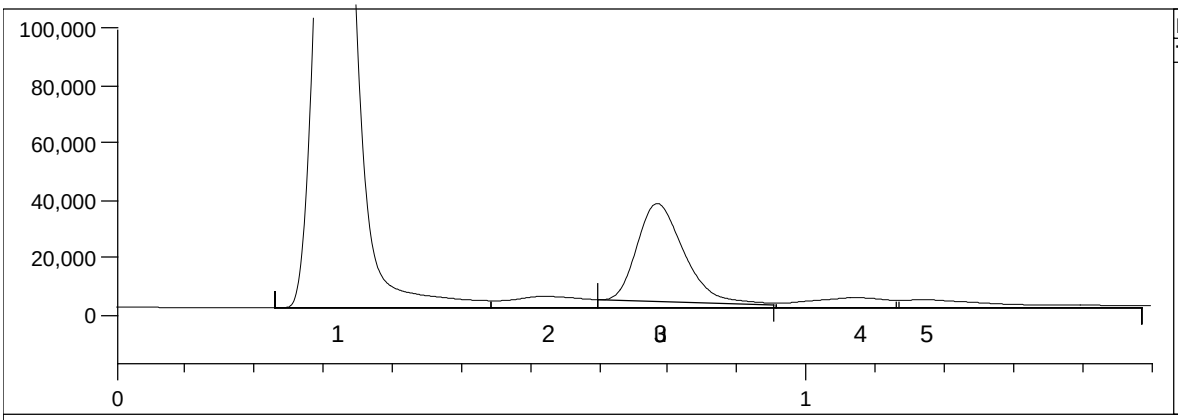
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

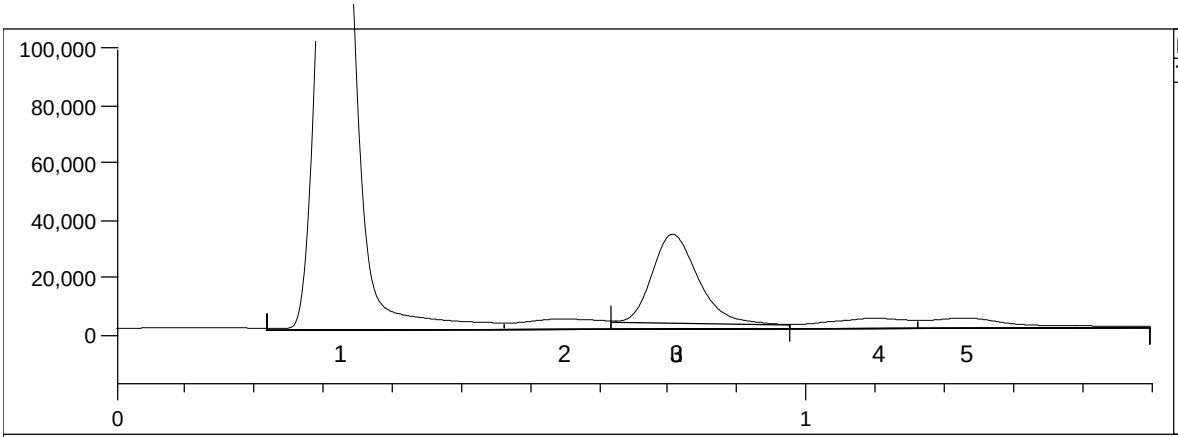
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.78	1,577,514

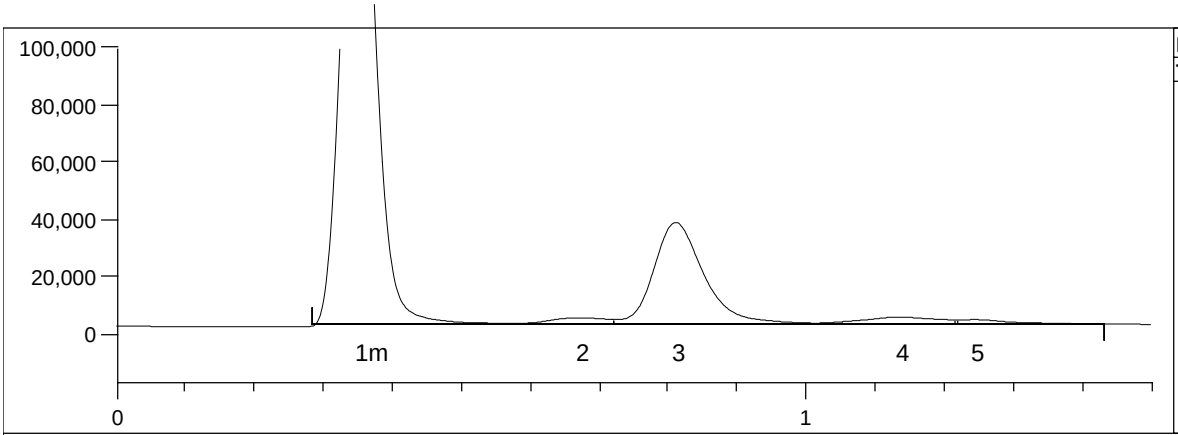
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	1,577,514	7.08	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.80	1,400,878

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	1,400,878	6.29	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		3	1,804,317	8.10	0.00		< HS	accept
Notes											

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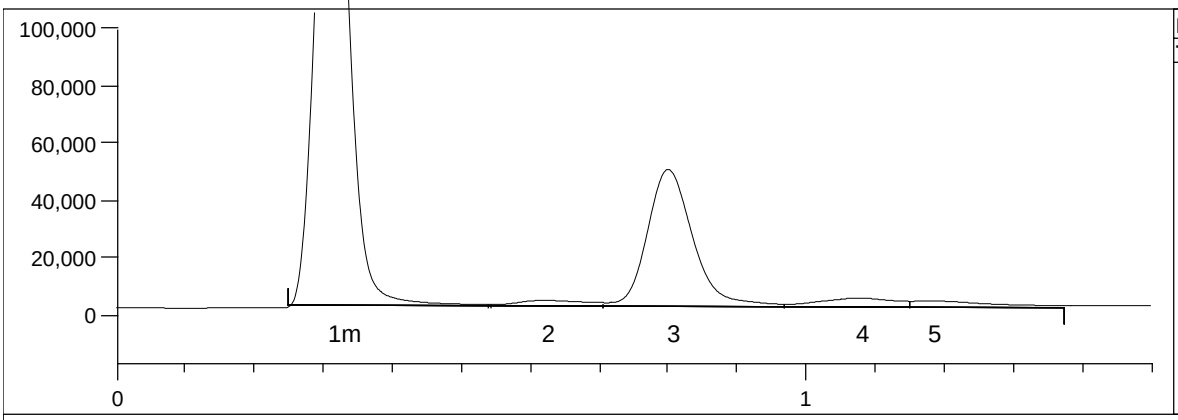
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

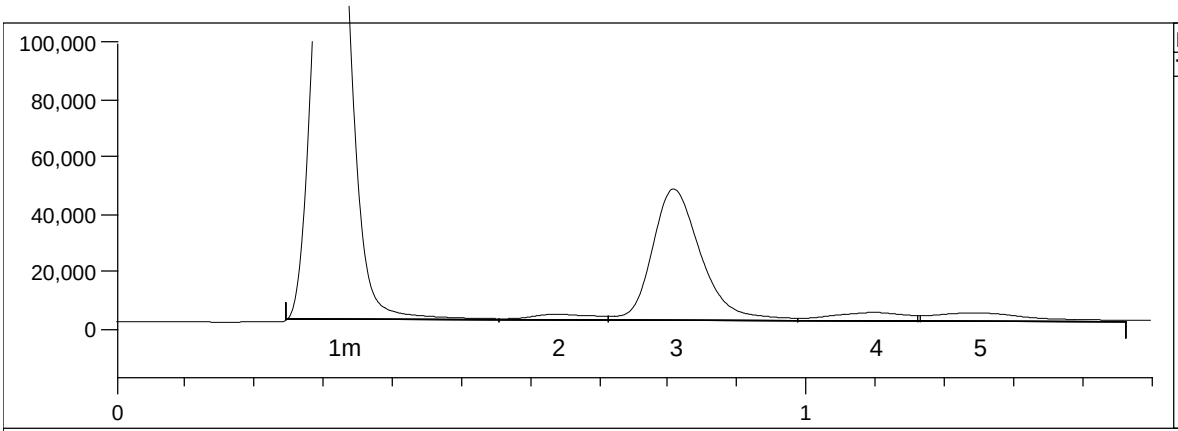
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

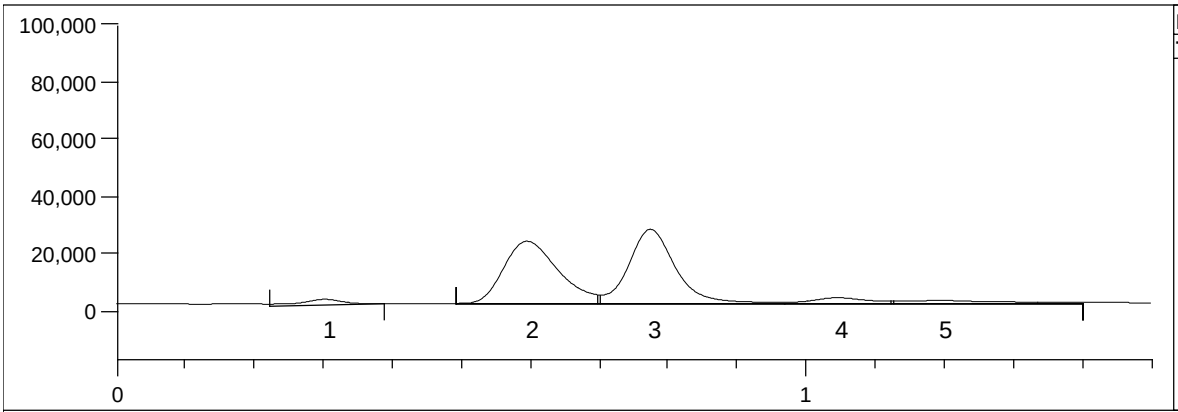
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		3	2,133,903	9.58	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		3	2,196,562	9.86	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:52 PM

Peak	rt	Area
1	0.30	54,398
2	0.59	1,195,178
3	0.77	1,198,907
4	1.04	94,479
5	1.19	65,750

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
51		OPR	SEQ-CCV		3	1,198,907	5.38		108	70-130	accept
Notes											

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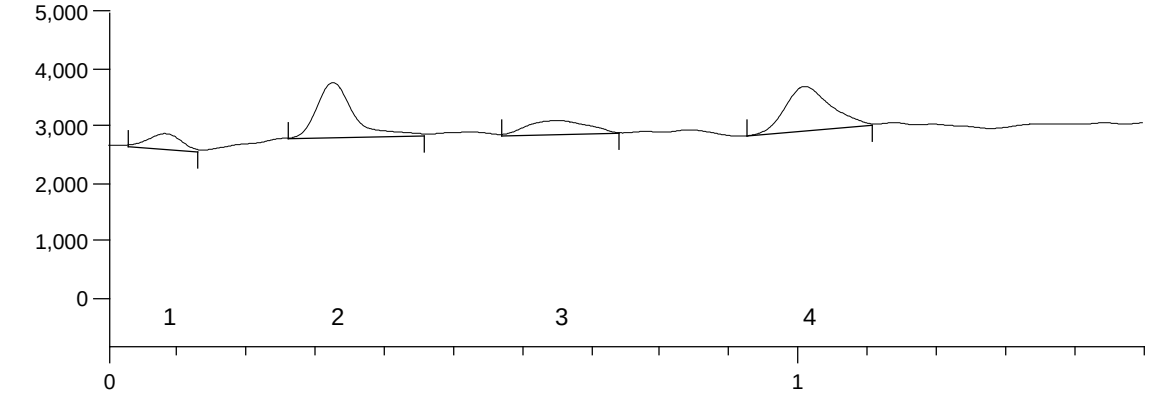
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

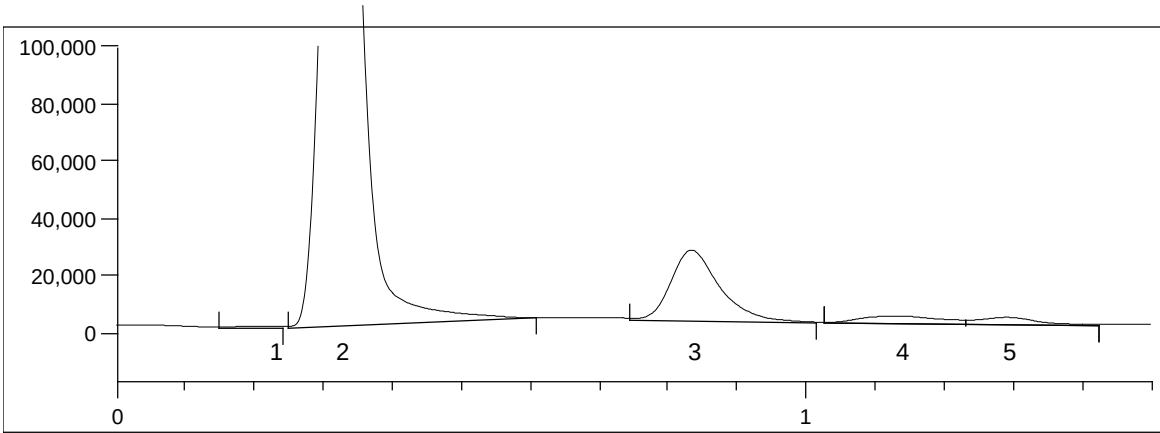
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:57 PM

Peak	rt	Area
1	0.08	7,204
2	0.32	33,458
3	0.65	13,603
4	1.01	35,167

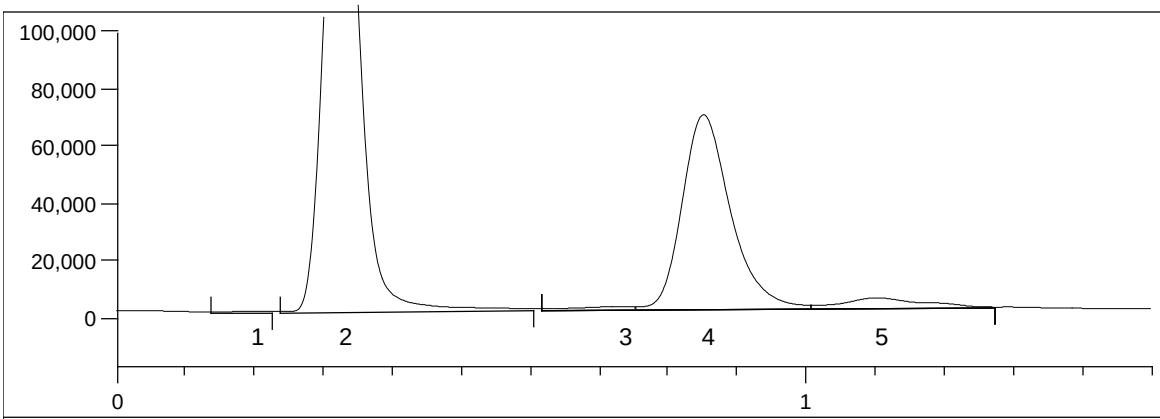
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
52		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 4:02 PM

Peak	rt	Area
1	0.22	2,634
2	0.32	10,649,591
3	0.83	1,161,124
4	1.13	183,727
5	1.29	110,350

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
53		S	1345019-20		3	1,161,124	5.21	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:07 PM

Peak	rt	Area
1	0.19	3,758
2	0.32	6,847,787
3	0.73	28,464
4	0.85	3,276,858
5	1.10	253,715

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
54		S	1345019-21		4	3,276,858	14.7	0.00		< HS	accept
Notes											

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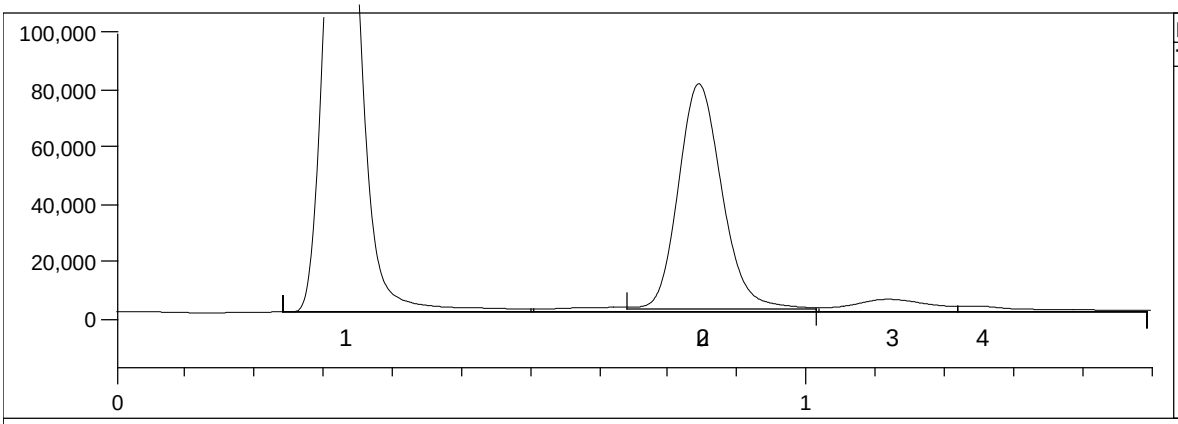
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

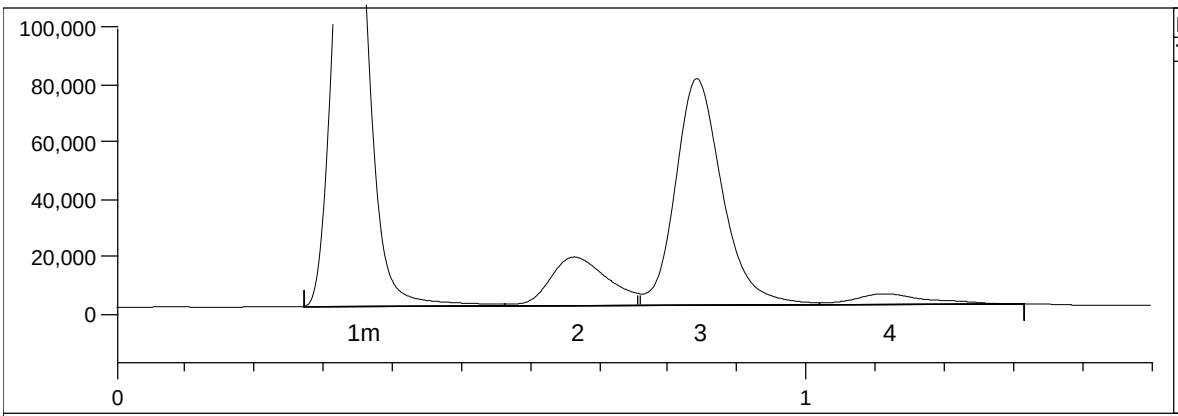
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.84	3,371,816

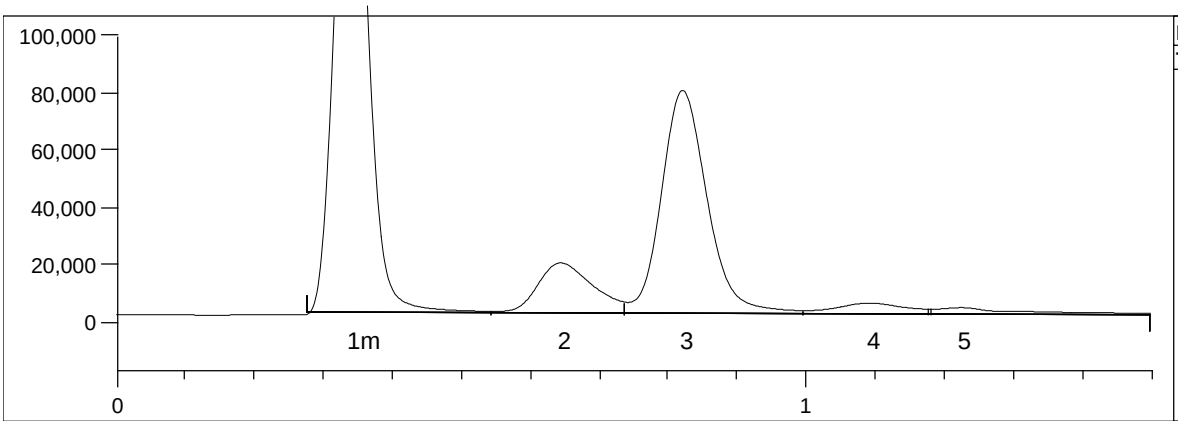
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132012-DUP3		u	3,371,816	15.1	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132012-MS3		3	3,712,347	16.7	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,485,838
2	0.64	930,260
3	0.82	3,534,426
4	1.09	221,962
5	1.22	112,768

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132012-MSD3		3	3,534,426	15.9	0.00		< HS	accept
Notes											

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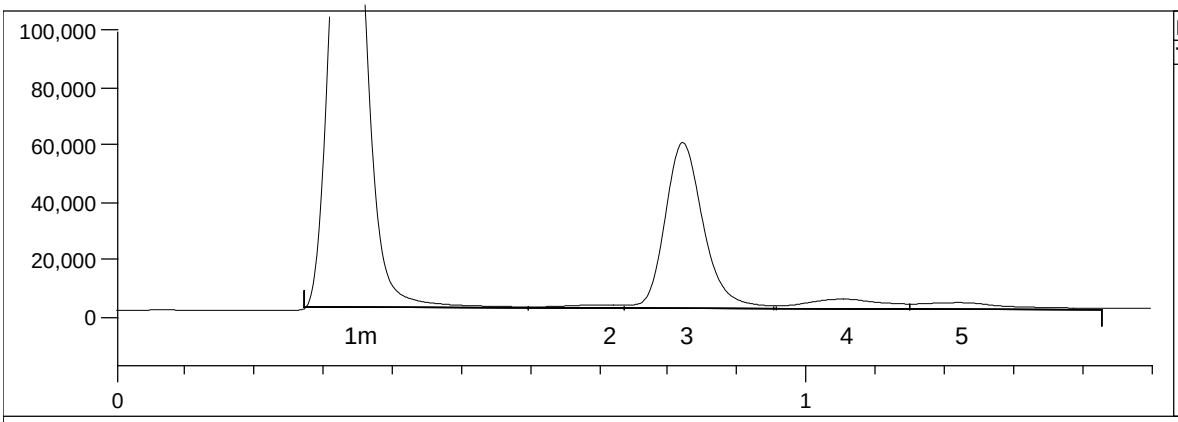
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

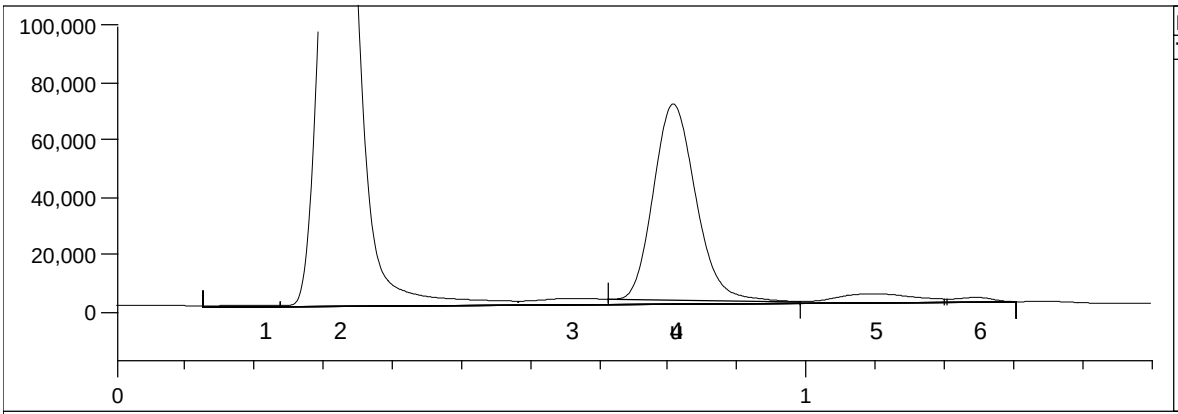
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

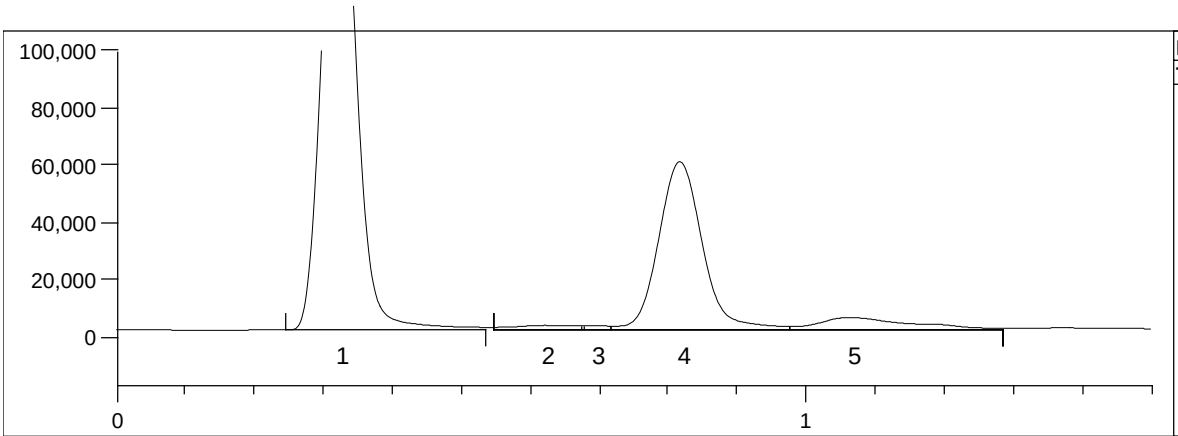
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		3	2,208,888	9.91	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.80	2,919,248

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	2,919,248	13.1	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:35 PM

Peak	rt	Area
1	0.32	6,253,389
2	0.62	37,034
3	0.69	13,555
4	0.81	2,490,274
5	1.06	296,782

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		S	1345019-24		4	2,490,274	11.2	0.00		< HS	accept
Notes											

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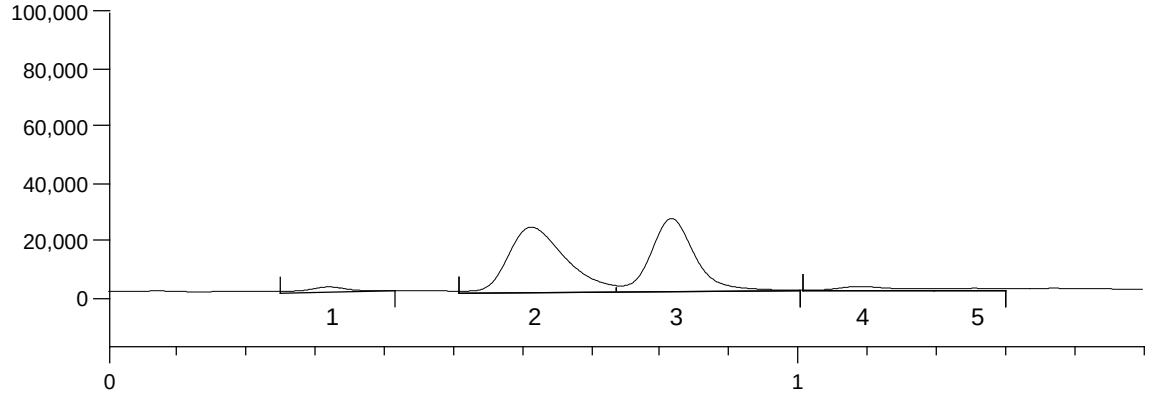
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

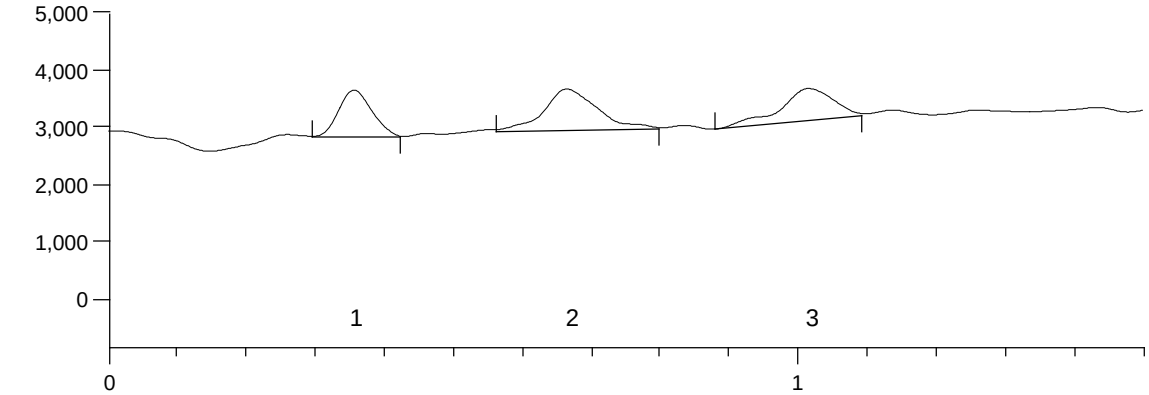
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:40 PM

Peak	rt	Area
1	0.32	46,795
2	0.61	1,263,249
3	0.81	1,095,512
4	1.08	57,495
5	1.25	9,543

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
61		OPR	SEQ-CCV		3	1,095,512	4.92		98.3	70-130	accept
Notes											



Date: 12/11/13
Time: 4:44 PM

Peak	rt	Area
1	0.35	26,826
2	0.66	35,468
3	1.01	28,785

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
62		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											

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ANALYSIS SEQUENCE

1300863

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1300863-IBL1	1300863	QC	1		-			
1300863-IBL2	1300863	QC	2		-			
1300863-IBL3	1300863	QC	3		-			
1300863-CAL1	1300863	QC	4	1346015	-			
1300863-CAL2	1300863	QC	5	1346016	-			
1300863-CAL3	1300863	QC	6	1346017	-			
1300863-CAL4	1300863	QC	7	1346018	-			
1300863-CAL5	1300863	QC	8	1346019	-			
1300863-CAL6	1300863	QC	9	1346020	-			
1300863-ICV1	1300863	QC	10	1346049	-			
1300863-ICV2	1300863	QC	11	1346050	-			
1300863-CCV1	1300863	QC	12	1346014	-			
1300863-CCB1	1300863	QC	13		-			
B132013-BLK1	B132013	QC	14		-			
B132013-BLK2	B132013	QC	15		-			
B132013-BLK3	B132013	QC	16		-			
B132013-BLK4	B132013	QC	17		-			
B132013-BS1	B132013	QC	18		-			
B132013-SRM1	B132013	QC	19		-			
B132013-SRM2	B132013	QC	20		-			
1343025-24	B132013	MMAs-B-HClExt-HGAAS	21			ARD-MV1302	11/20/2013	
1345019-01	B132013	MMAs-B-HClExt-HGAAS	22			ARD-MV1302	12/2/2013	
1345019-01RE1	B132013	MMAs-B-HClExt-HGAAS	23			ARD-MV1302	12/2/2013	Added 12/11/2013 by IRJ
B132013-DUP1	B132013	QC	24		1345019-01RE1			
B132013-MS1	B132013	QC	25		1345019-01RE1			
B132013-MSD1	B132013	QC	26		1345019-01RE1			

ANALYSIS SEQUENCE

1300863

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-02	B132013	MMAs-B-HClExt-HGAAS	27			ARD-MV1302	12/2/2013	
1345019-03	B132013	MMAs-B-HClExt-HGAAS	28			ARD-MV1302	12/2/2013	
1345019-04	B132013	MMAs-B-HClExt-HGAAS	29			ARD-MV1302	12/2/2013	
1345019-05	B132013	MMAs-B-HClExt-HGAAS	30			ARD-MV1302	12/2/2013	
1345019-06	B132013	MMAs-B-HClExt-HGAAS	31			ARD-MV1302	12/2/2013	
1345019-07	B132013	MMAs-B-HClExt-HGAAS	32			ARD-MV1302	12/2/2013	
1345019-08	B132013	MMAs-B-HClExt-HGAAS	33			ARD-MV1302	12/2/2013	
1345019-09	B132013	MMAs-B-HClExt-HGAAS	34			ARD-MV1302	12/2/2013	
1300863-CCV2	1300863	QC	35	1346014	-			
1300863-CCB2	1300863	QC	36		-			
1345019-10	B132013	MMAs-B-HClExt-HGAAS	37			ARD-MV1302	12/2/2013	
1345019-11	B132013	MMAs-B-HClExt-HGAAS	38			ARD-MV1302	12/2/2013	
B132013-DUP2	B132013	QC	39		1345019-11			
B132013-MS2	B132013	QC	40		1345019-11			
B132013-MSD2	B132013	QC	41		1345019-11			
1345019-12	B132013	MMAs-B-HClExt-HGAAS	42			ARD-MV1302	12/2/2013	
1345019-13	B132013	MMAs-B-HClExt-HGAAS	43			ARD-MV1302	12/2/2013	
1345019-14	B132013	MMAs-B-HClExt-HGAAS	44			ARD-MV1302	12/2/2013	
1345019-15	B132013	MMAs-B-HClExt-HGAAS	45			ARD-MV1302	12/2/2013	
1345019-16	B132013	MMAs-B-HClExt-HGAAS	46			ARD-MV1302	12/2/2013	
1345019-17	B132013	MMAs-B-HClExt-HGAAS	47			ARD-MV1302	12/2/2013	
1345019-18	B132013	MMAs-B-HClExt-HGAAS	48			ARD-MV1302	12/2/2013	
1345019-19	B132013	MMAs-B-HClExt-HGAAS	49			ARD-MV1302	12/2/2013	
1300863-CCV3	1300863	QC	50	1346014	-			
1300863-CCB3	1300863	QC	51		-			
1345019-20	B132013	MMAs-B-HClExt-HGAAS	52			ARD-MV1302	12/2/2013	

ANALYSIS SEQUENCE

1300863

Brooks Rand Labs

Instrument: HGAAS-2

Lab Number	Batch #	Analysis	Order	STD ID	Source ID	BRL Project #	Due	Comments
1345019-21	B132013	MMAs-B-HClExt-HGAAS	53			ARD-MV1302	12/2/2013	
B132013-DUP3	B132013	QC	54		1345019-21			
B132013-MS3	B132013	QC	55		1345019-21			
B132013-MSD3	B132013	QC	56		1345019-21			
1345019-22	B132013	MMAs-B-HClExt-HGAAS	57			ARD-MV1302	12/2/2013	
1345019-23	B132013	MMAs-B-HClExt-HGAAS	58			ARD-MV1302	12/2/2013	
1345019-24	B132013	MMAs-B-HClExt-HGAAS	59			ARD-MV1302	12/2/2013	
1300863-CCV4	1300863	QC	60	1346014	-			
1300863-CCB4	1300863	QC	61		-			

Manual Integration Abbreviation Sheet

m. Modified peak shape due to split peak in Guru software

u. Unidentified peak. No peak called out in the appropriate retention time window

m1. Modified peak due to dip in hydride baseline. Peak integrated from the new baseline

m2. Modified peak due to dip in hydride baseline. Peak integrated from old baseline

dp. Double peak called out by software.

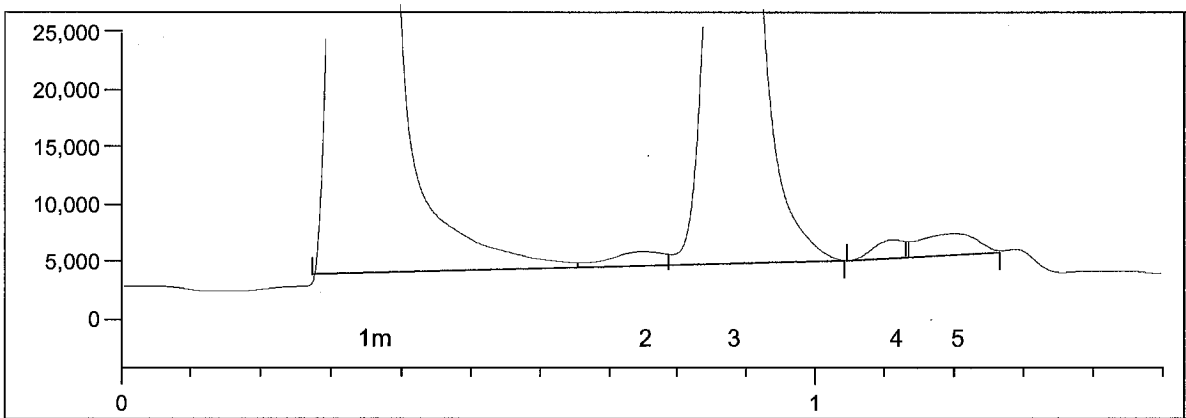
g. Analysis volume value is a mass, assumed to be equal to a volume based on an assumed density of 1.00 +/- 0.03g/mL.

Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

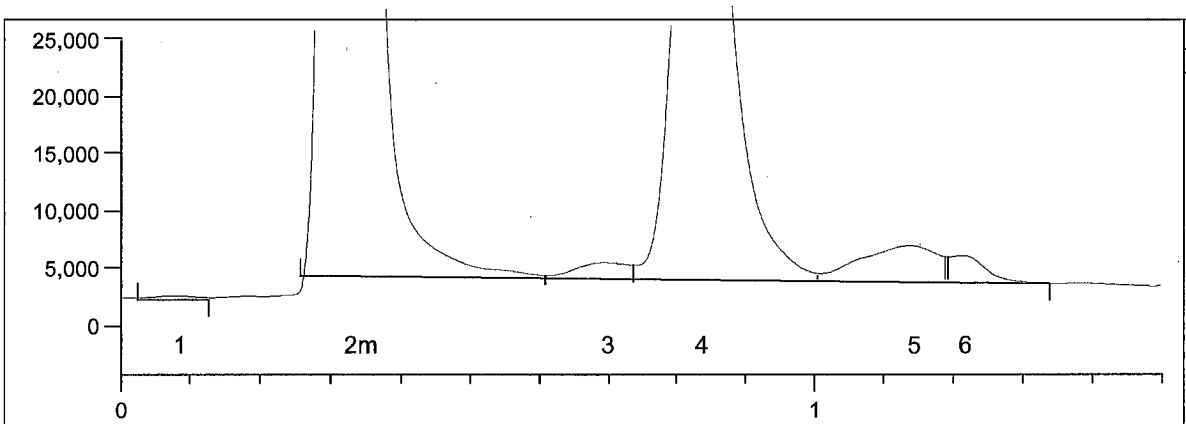


Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		2	64,169	0.269	0.00		< HS	accept
Notes											

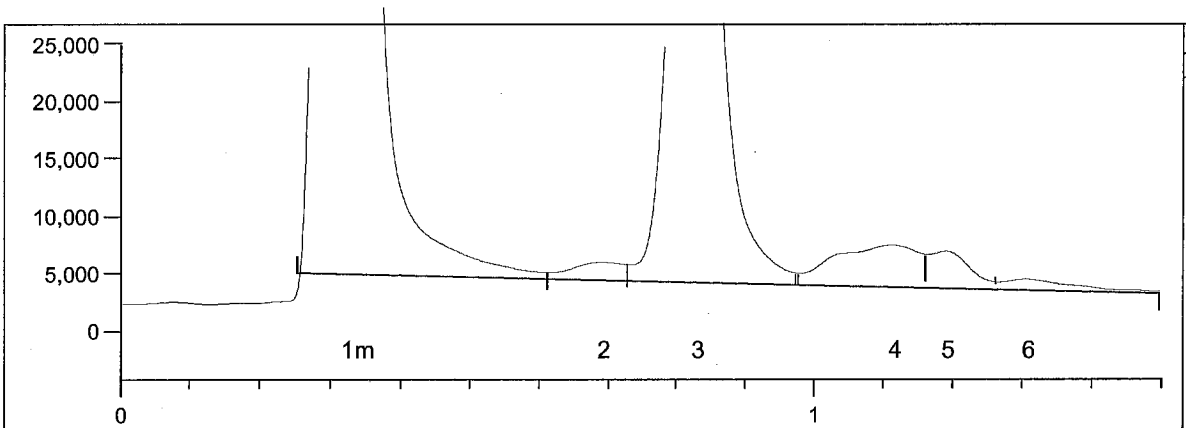


Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		3	76,093	0.319	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		2	75,312	0.316	0.00		< HS	accept
Notes											

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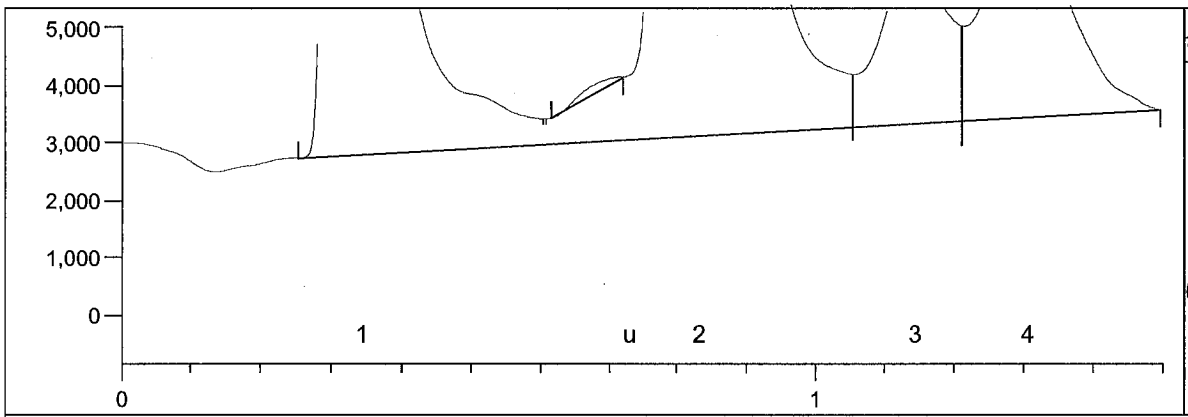
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

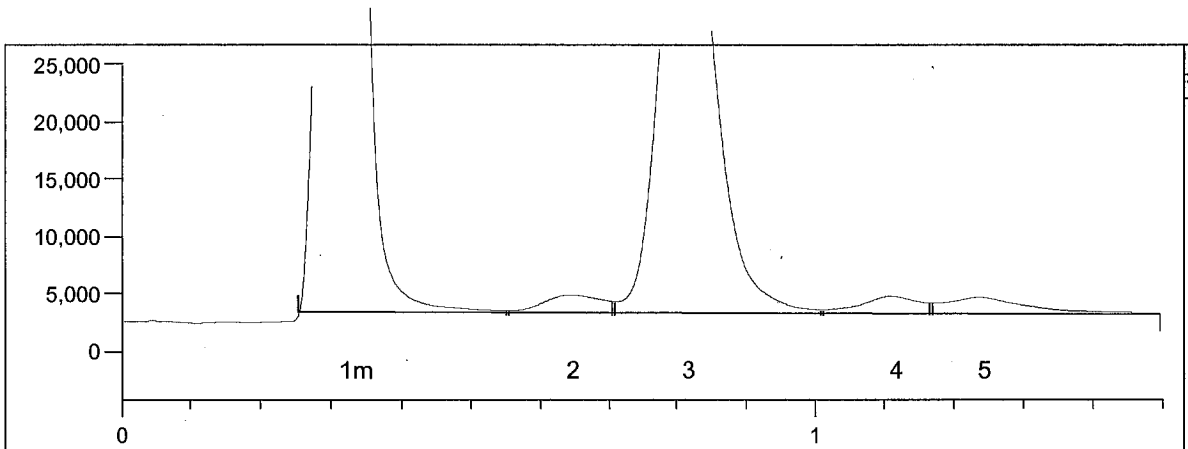


Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.72	6,222

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	6,222	0.0261	0.00		< HS	accept
Notes											

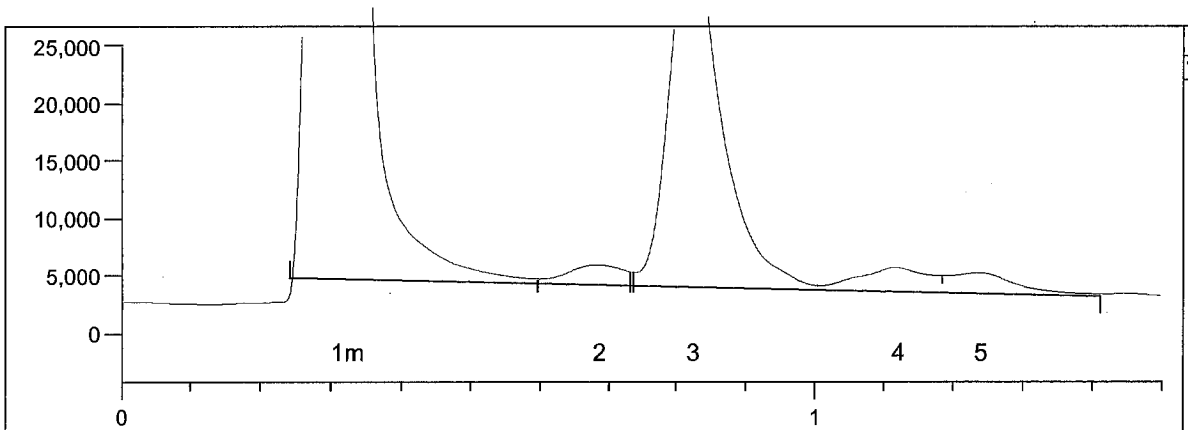


Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		2	84,948	0.357	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		2	94,185	0.395	0.00		< HS	accept
Notes											

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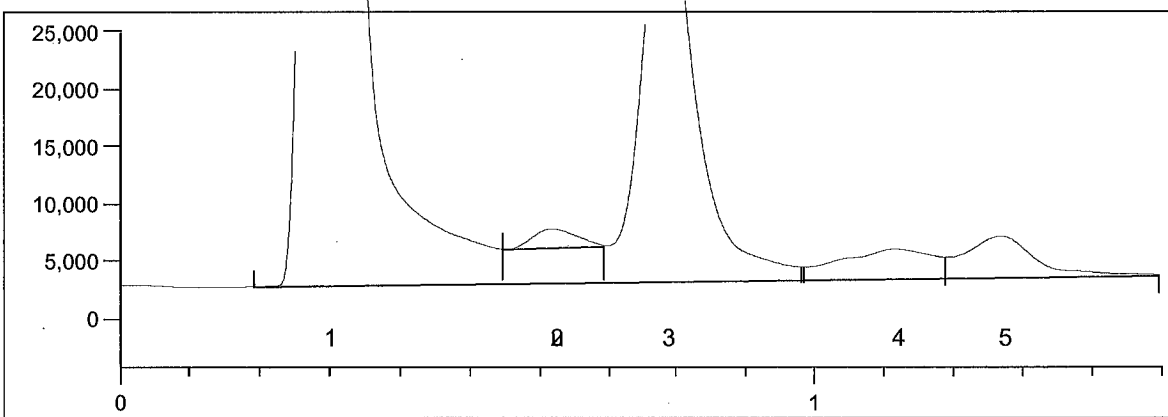
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

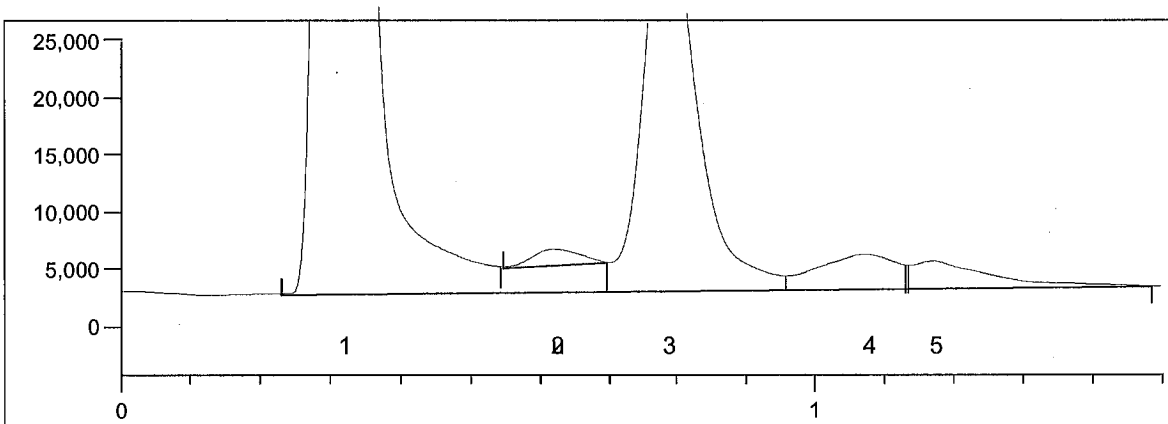


Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.62	72,446

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	72,446	0.304	0.00		< HS	accept
Notes											

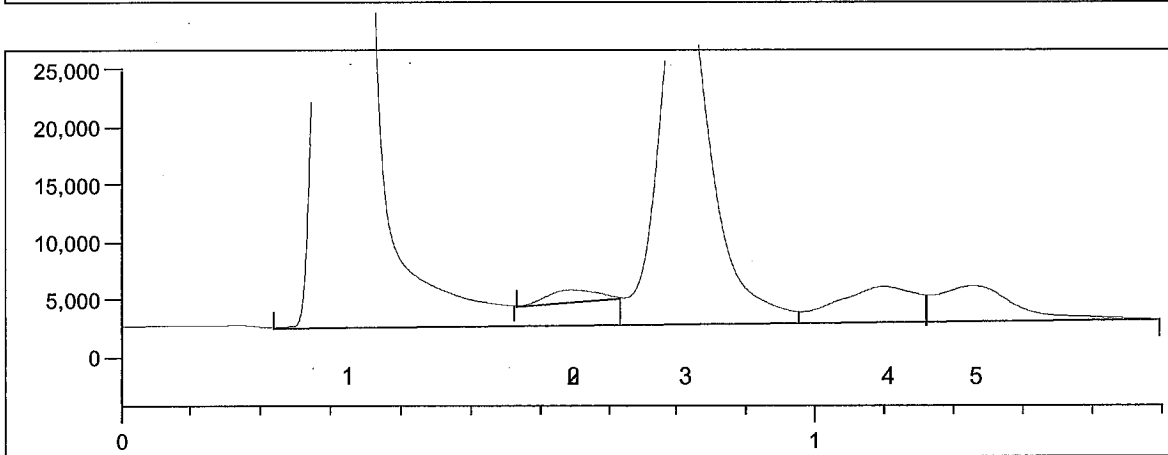


Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.62	63,917

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	63,917	0.268	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.64	51,652

CMC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	51,652	0.217	0.00		< HS	accept
Notes											

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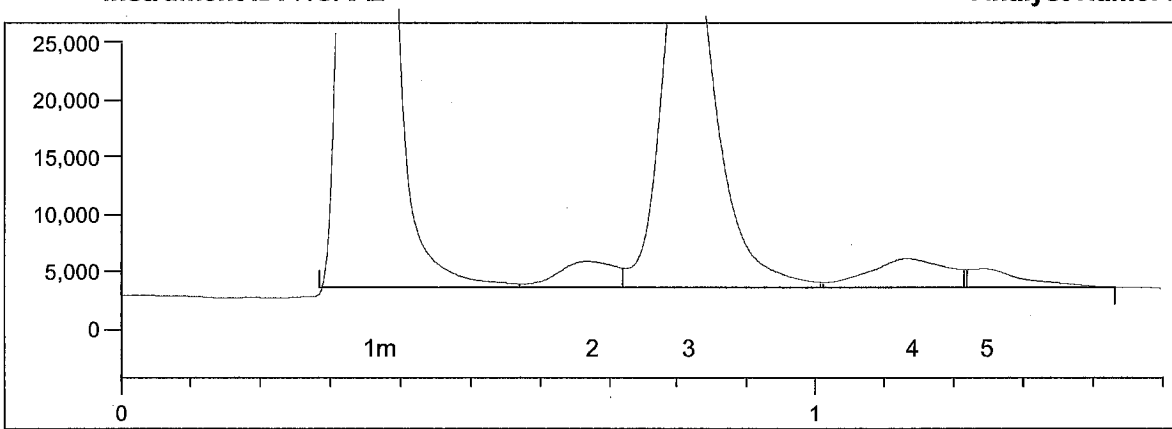
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

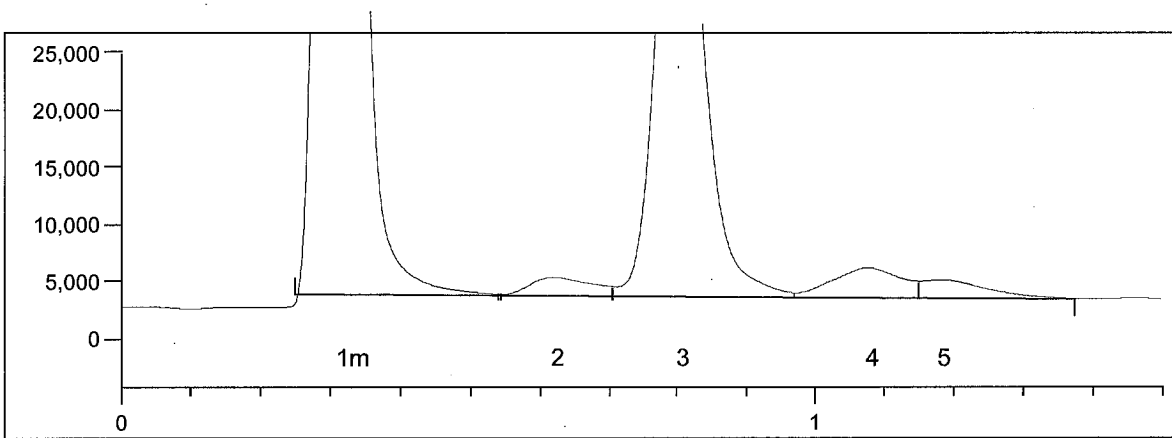


Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		2	130,912	0.550	0.00		< HS	accept
Notes											

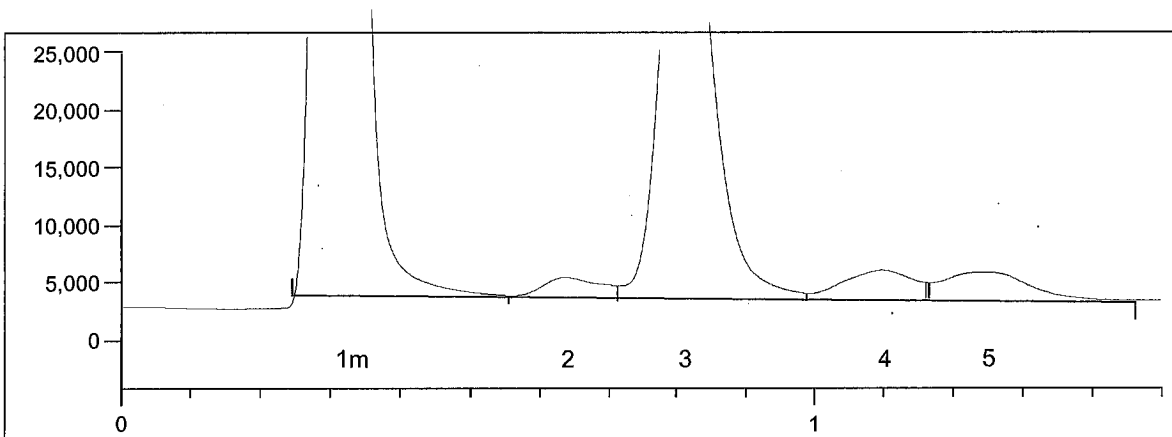


Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		2	98,353	0.413	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		2	99,646	0.418	0.00		< HS	accept
Notes											

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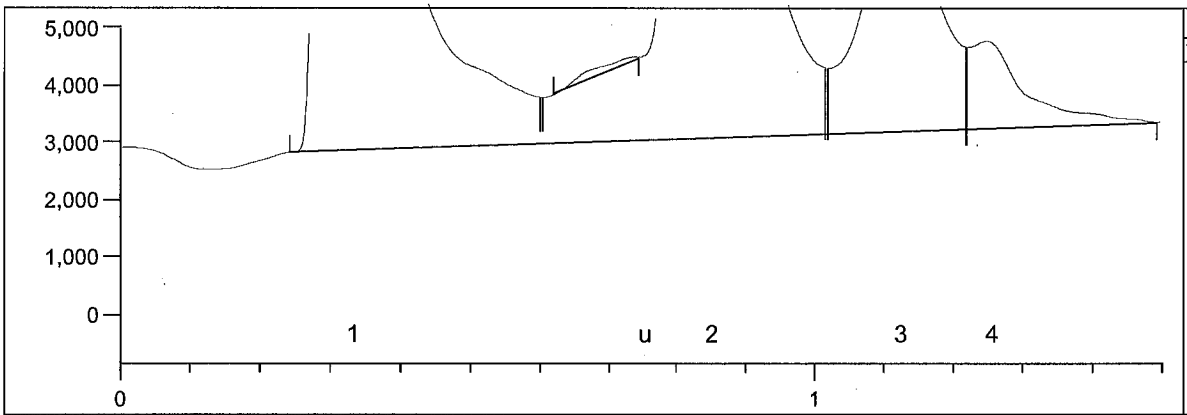
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

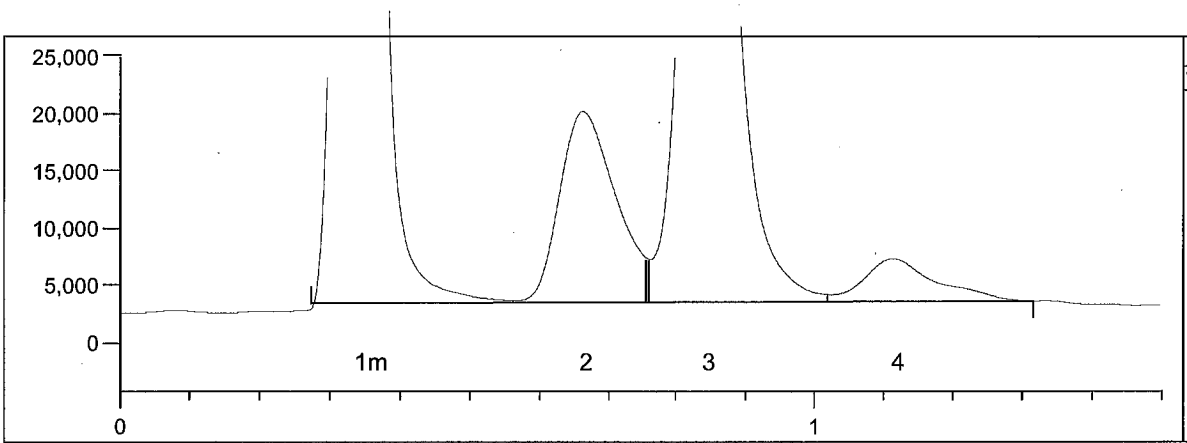


Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.74	6,539

Cm C 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132013-DUP3		u	6,539	0.0275	0.00		< HS	accept
Notes											

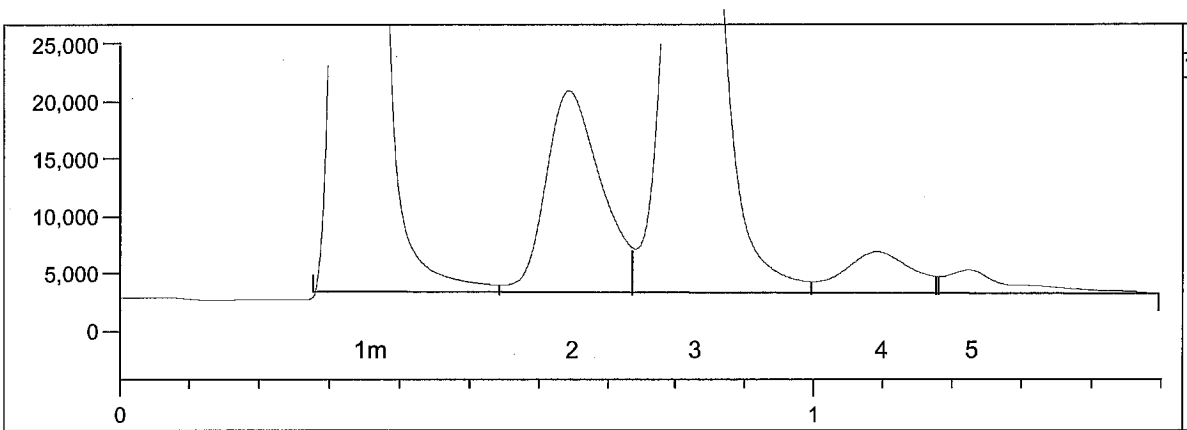


Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132013-MS3		2	952,977	4.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,558,097
2	0.64	972,178
3	0.82	3,575,265
4	1.09	240,995
5	1.22	125,414

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132013-MSD3		2	972,178	4.08	0.00		< HS	accept
Notes											

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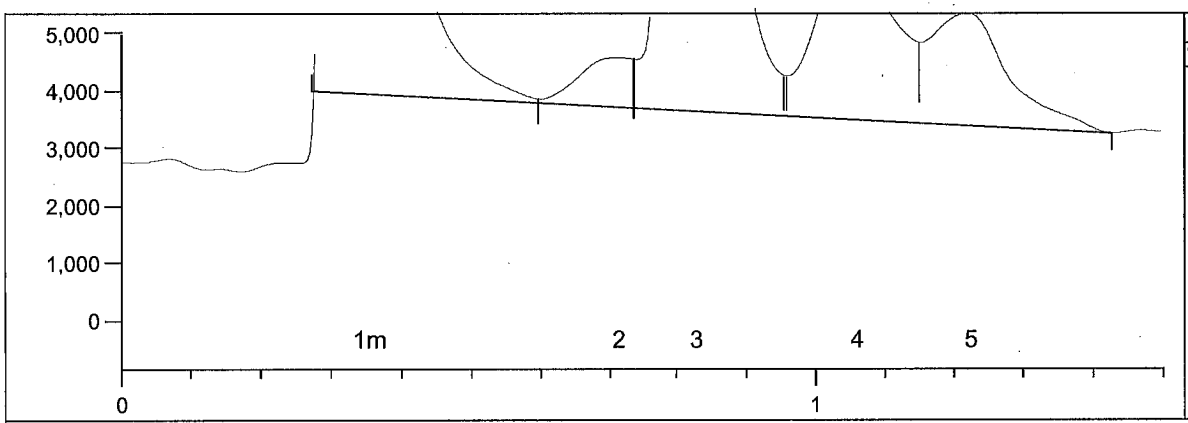
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

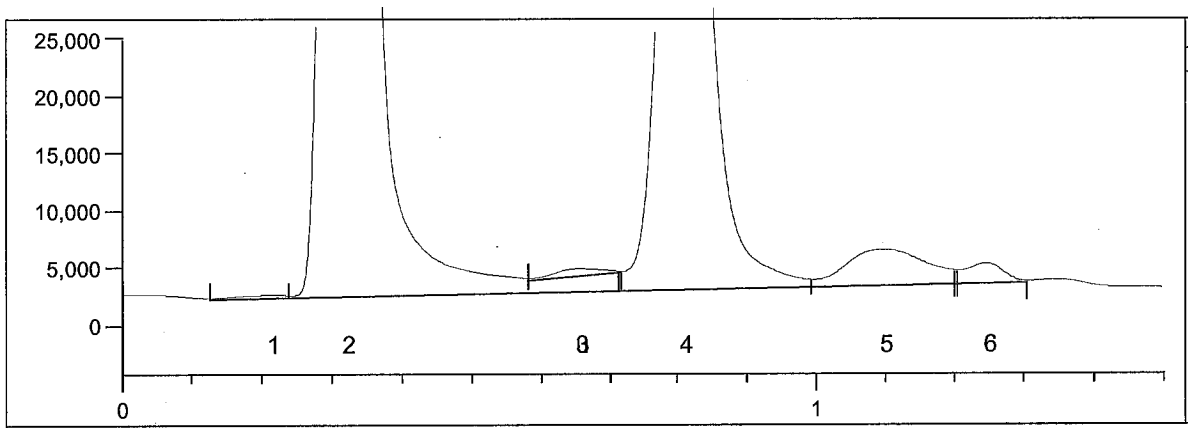


Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		2	46,880	0.197	0.00		< HS	accept
Notes											

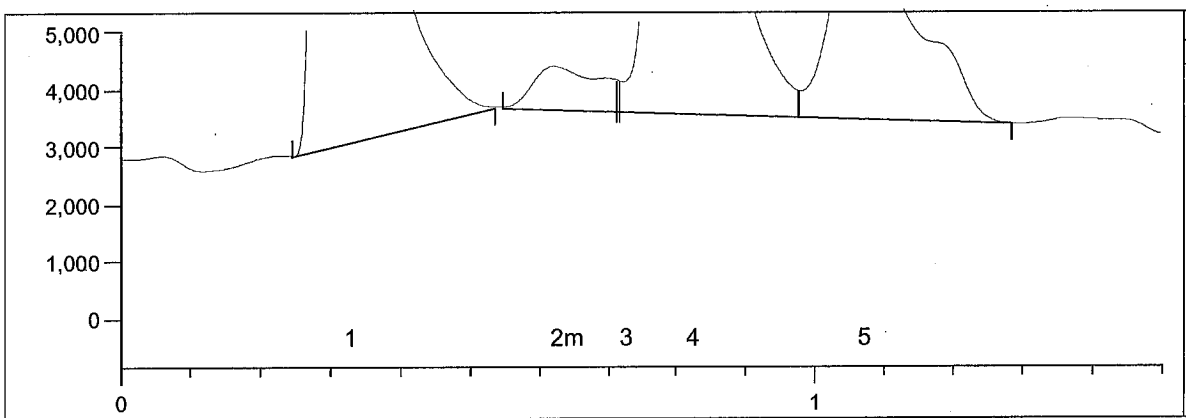


Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.65	22,611

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	22,611	0.0949	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:35 PM

Peak	rt	Area
1	0.32	6,253,389
2m	0.62	50,079
3	0.72	510
4	0.81	2,490,274
5	1.06	296,782

CmC 12/13/13

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		S	1345019-24		2m	50,079	0.210	0.00		< HS	accept
Notes											

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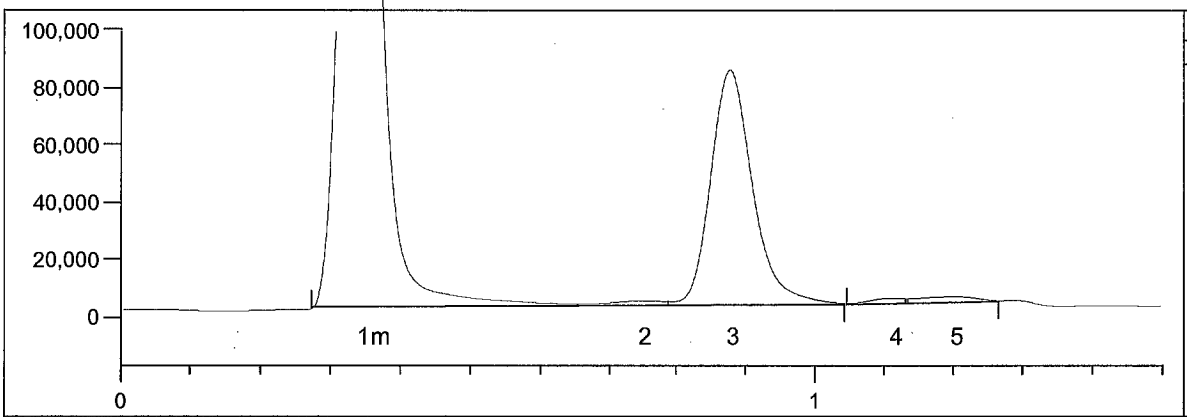
Peak Report

①②③ [illegible] 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

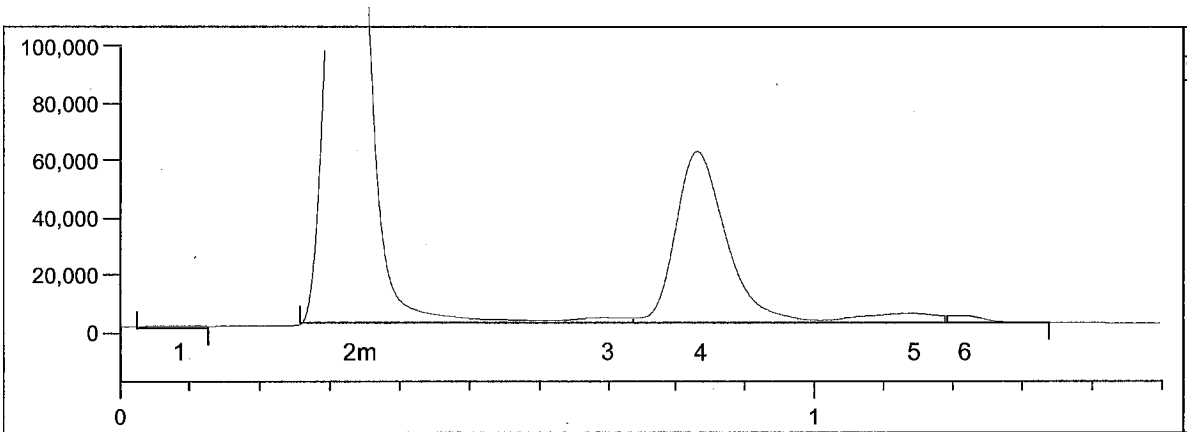


Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		3	3,413,404	15.3	0.00		< HS	accept
Notes											

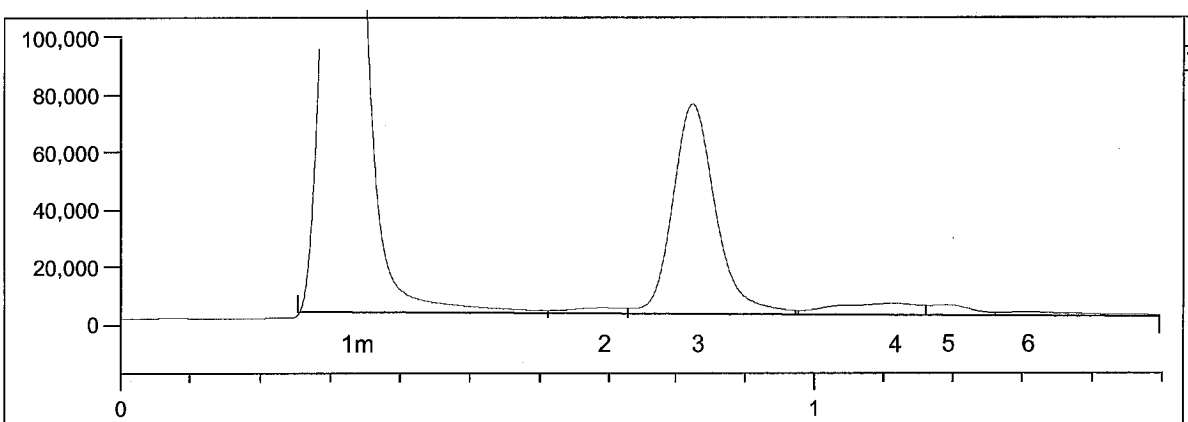


Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		4	3,009,095	13.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		3	3,112,927	14.0	0.00		< HS	accept
Notes											

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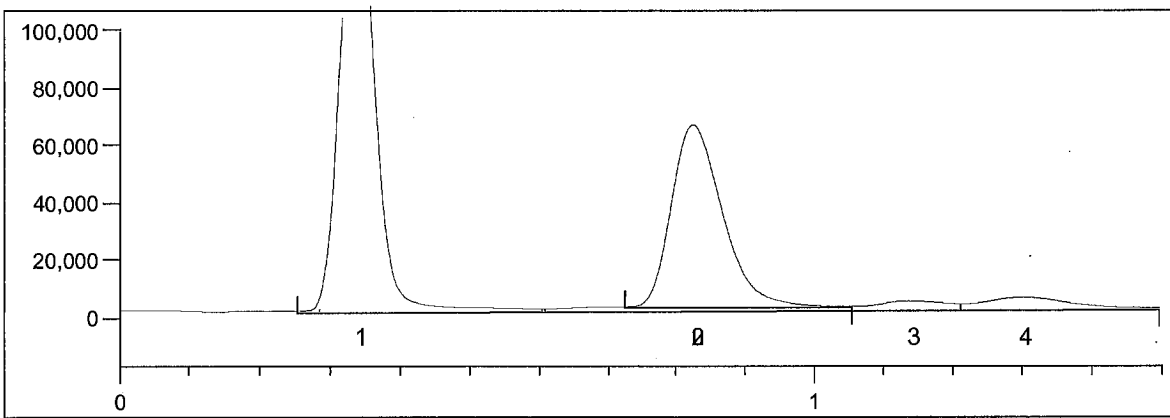
Peak Report

1 2 3 [illegible] 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

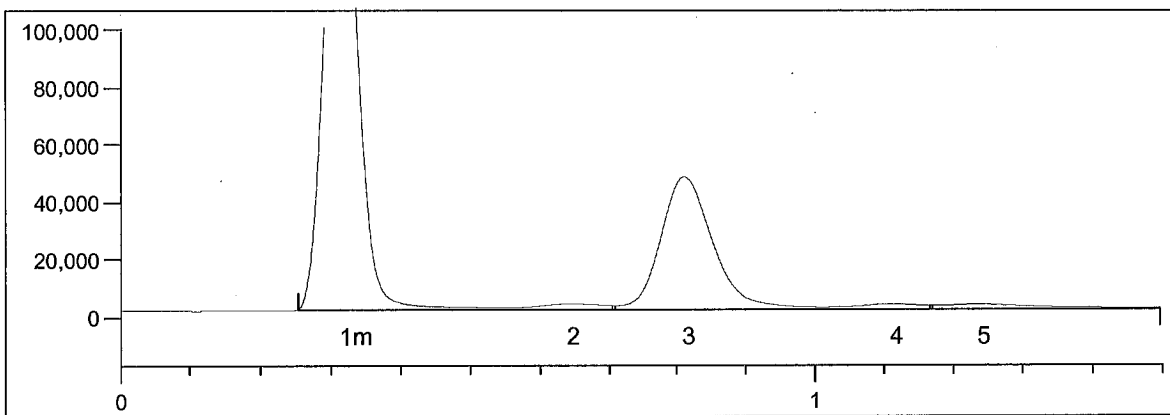


Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.82	3,244,532

1

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	3,244,532	14.6	0.00		< HS	accept
Notes											

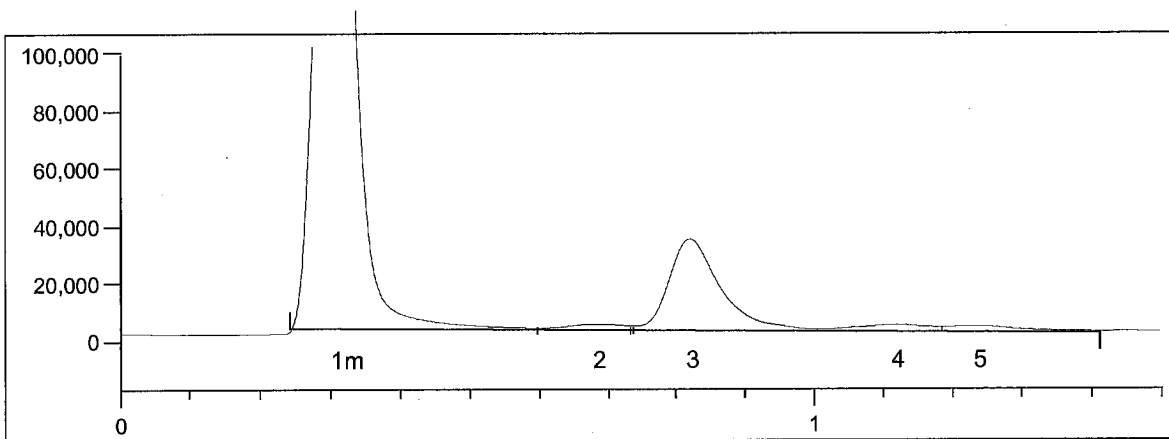


Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

2

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		3	2,350,881	10.5	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

3

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		3	1,610,606	7.23	0.00		< HS	accept
Notes											

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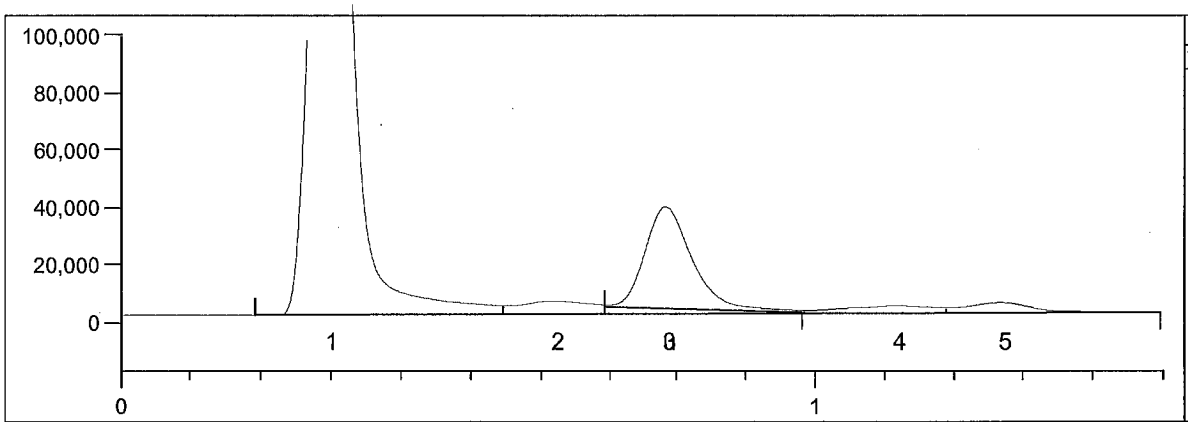
Peak Report

①②③ CMC 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

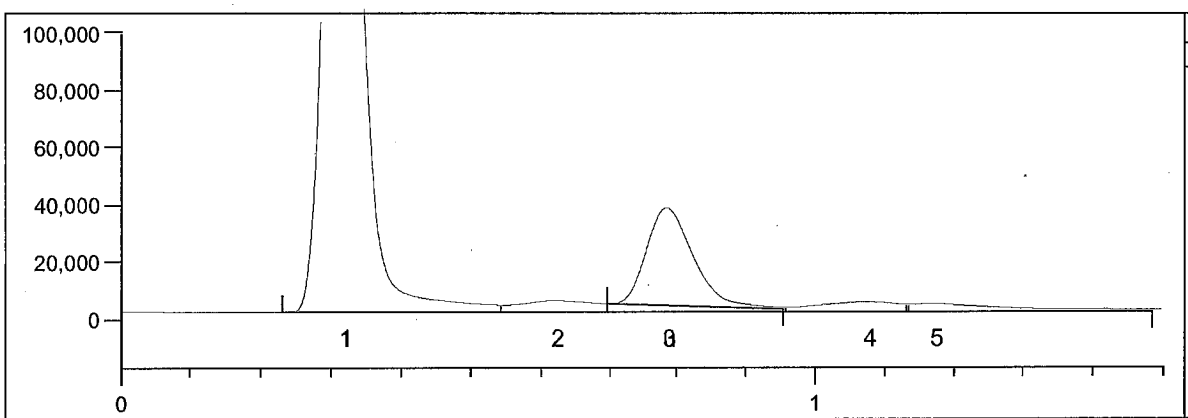


Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.78	1,588,716

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	1,588,716	7.13	0.00		< HS	accept
Notes											

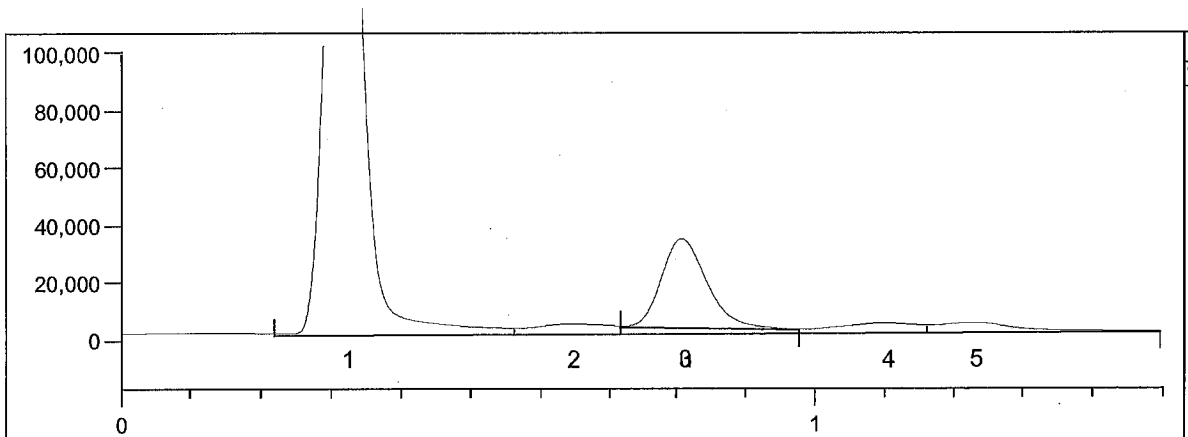


Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.78	1,577,514

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	1,577,514	7.08	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.80	1,400,878

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	1,400,878	6.29	0.00		< HS	accept
Notes											

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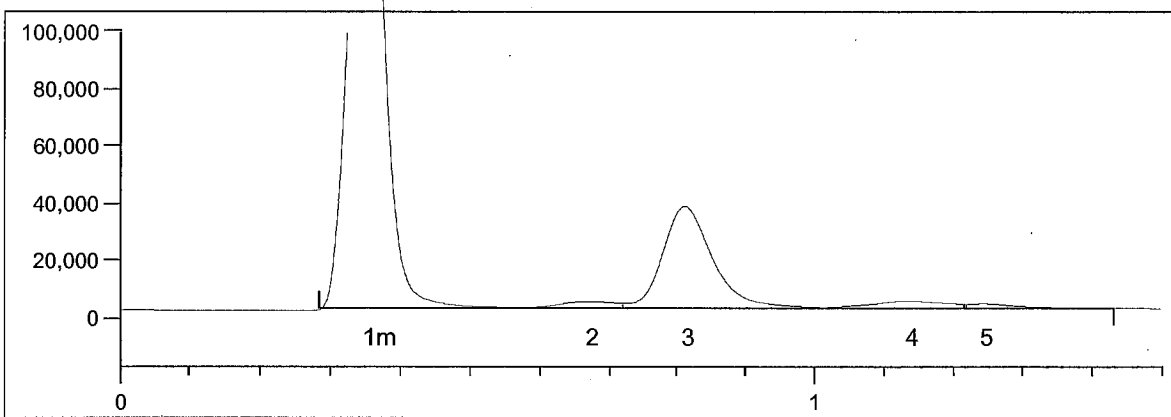
Peak Report

(1)(2)(3) CMC 12/13/13

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

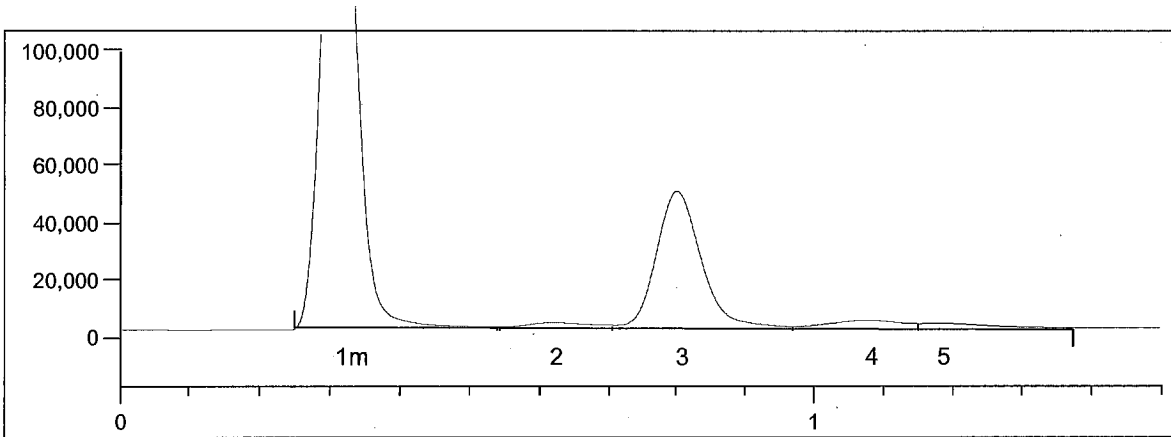


Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

(1)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		3	1,804,317	8.10	0.00		< HS	accept
Notes											

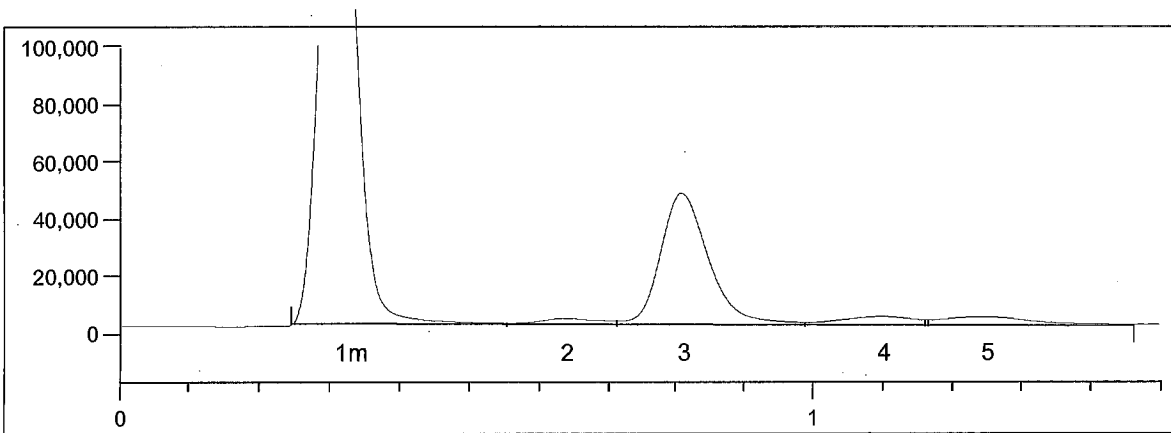


Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

(2)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		3	2,133,903	9.58	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

(3)

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		3	2,196,562	9.86	0.00		< HS	accept
Notes											

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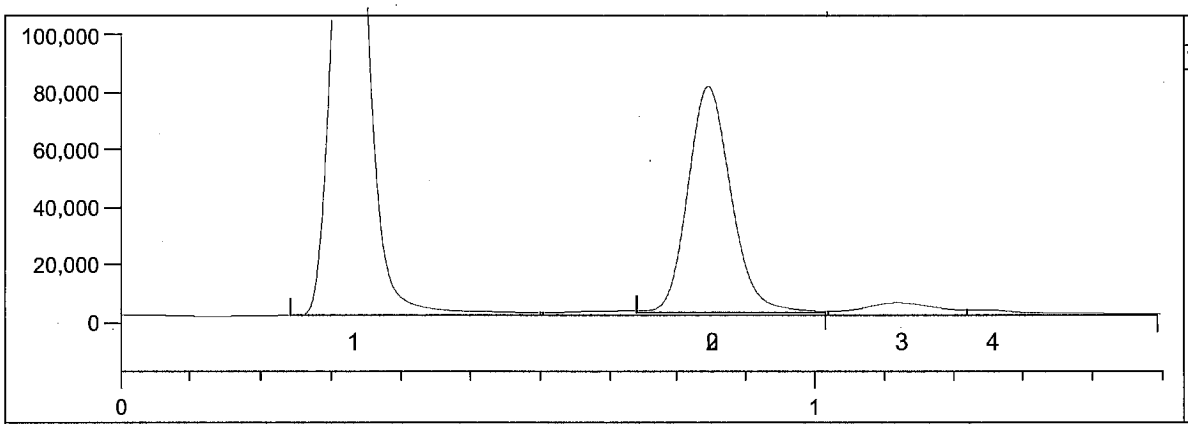
Peak Report

Batch Number: B132012
Method Number: BR-0021

①②③ CMC 12/13/13

Project Number(s): 1300862
Instrument ID: HGAA2

Date Analyzed: 12/11/13
Analyst Name: IRJ

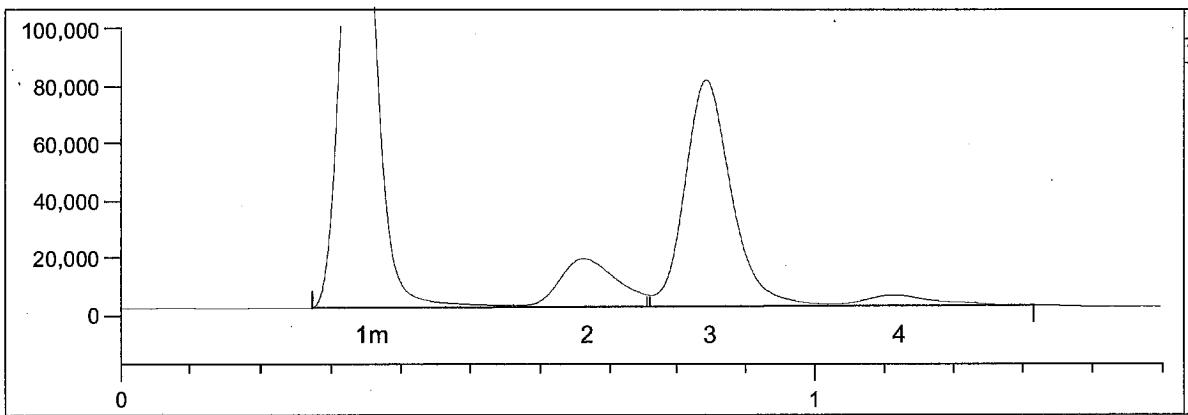


Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.84	3,371,816

①

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132012-DUP3		u	3,371,816	15.1	0.00		< HS	accept
Notes											

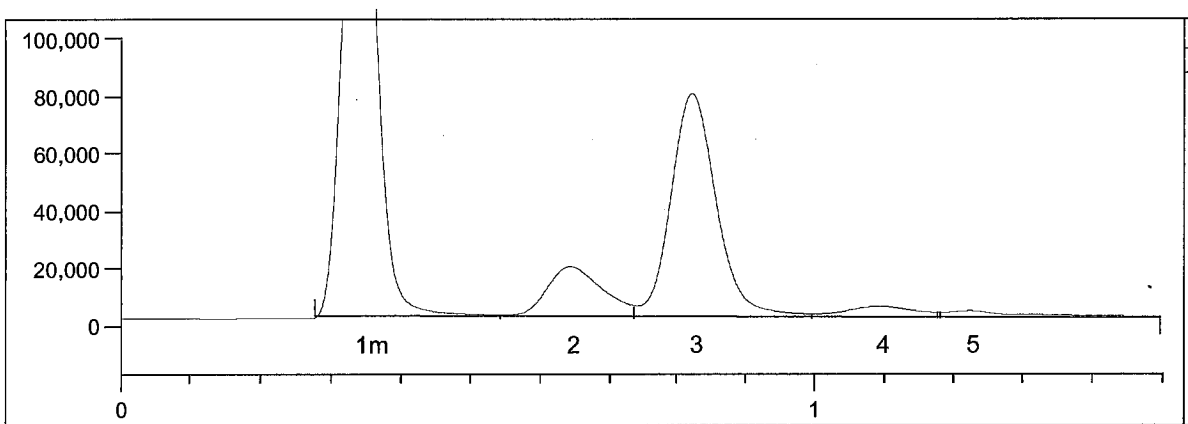


Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

②

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132012-MS3		3	3,712,347	16.7	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,485,838
2	0.64	930,260
3	0.82	3,534,426
4	1.09	221,962
5	1.22	112,768

③

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132012-MSD3		3	3,534,426	15.9	0.00		< HS	accept
Notes											

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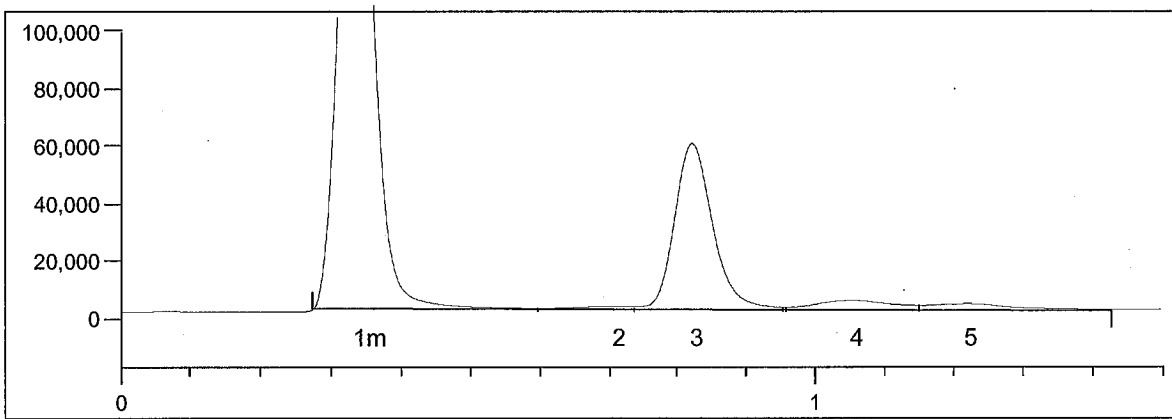
Peak Report

Batch Number: B132012
Method Number: BR-0021

Project Number(s): 1300862
Instrument ID: HGAA2

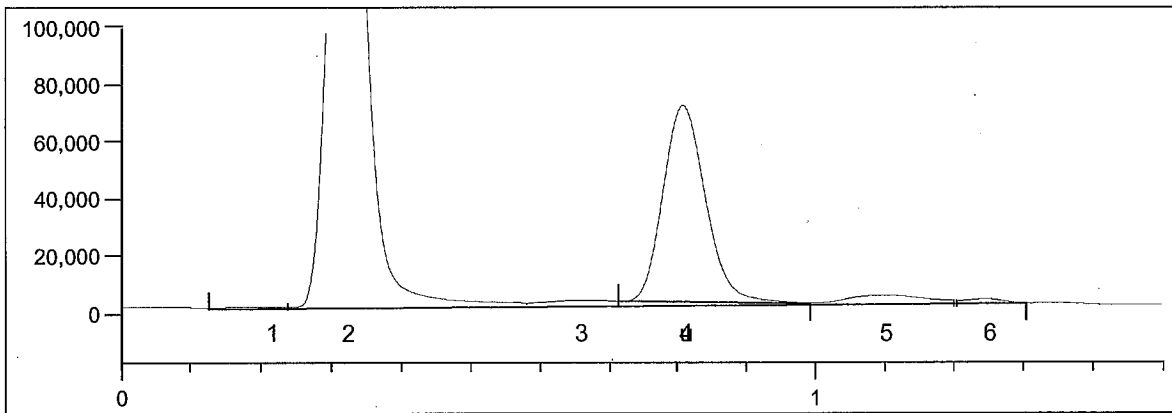
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		3	2,208,888	9.91	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.80	2,919,248

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	2,919,248	13.1	0.00		< HS	accept
Notes											

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As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

DMA / MMA

Sequence: 1300862, 863	Batch(es): B132012, 2013	Matrix: Bath
Analyst: IRJ	Date: 12-11-13	Pump purge time: 2:30
Cal. blank (average): 0.00 µg/L	Cal. coefficient: 0.00412/0.00449	RSD: 4.85/13.17
Method blank (average): 0.00 µg/L	Noise: 1868	Trap(s) #: 41
Cal. Std. 10ng/mL: 1346013	ICV Std. 100ng/mL: 1346011/6012	4% NaBH4: 1344014
6M HCl: 1349002	2.5M Tris-HCl: —	

Run #	Sample ID	Analyzed volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
1	TEST	0.500		10ng/mL Cal.
2	SEQ-IBL1	—		
3	-IBL2	—		
4	-IBL3	—		
5	-CAL1	0.050		10ng/mL Cal.
6	-CAL2	0.100		
7	-CAL3	0.200		
8	-CAL4	1.00		
9	-CAL5	2.00		
10	-CAL6	3.00		
11	-ICV1	0.050		100ng/mL ICV MMA
12	-ICV2			DMA
13	-CCV	0.500		10ng/mL Cal.
14	-CCB	-		
15	B132012/2013-BLK1	2.00		
16	-BLK2			
17	-BLK3			
18	-BLK4			
19	-BS1			
20	-SRM1			
21	-SRM2			
22	1343025-24			
23	1345019-01			>CAL DMA
24	-01RE1	1.00		

Comments: _____

As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

Page 2 of 3

Sequence: 1300862, 863 Batch: B132012, 2013 Analyst: IRJ Date: 12-11-13

	Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
	25	B132012/2013-DUP1	1.00		native: 1345019-01RE1
	26	-MS1			
	27	-MSD1			
m2	28	1345019-02			
m2	29	-03			
m2	30	-04			
m1	31	-05			
	32	-06			
	33	-07			
	34	-08			
	35	-09			
	36	SEQ-CCV	0.500		10ng/mL Cal.
	37	-CCB	-		
	38	1345019-10	1.00		
	39	-11			
	40	B132012/2013-DUP2			native: 1345019-11
	41	-MS2			
	42	-MSD2			
m2	43	1345019-12			
	44	-13			
m1	45	-14			
	46	-15			
	47	-16			
m2	48	-17			
	49	-18			
	50	-19			
	51	SEQ-CCV	0.500		10ng/mL Cal.
	52	-CCB	-		

Comments: _____

As(In) ☐ As(III) ☐ MMA ☑ DMA ☑ Analysis Sheet

Page 3 of 3

Sequence: 1300862, 863 Batch: B132012/2013 Analyst: IRJ Date: 12-11-13

	Run #	Sample ID	Analyzed Volume (mL)	Dilution Factor	Analysis comments / For QC: Source sample, standard ID, and spiked amount
	53	1345019-20	1.00		
	54	↓ -21	↓		
m1	55	B132012/2013-DUP3			native: 1345019-21
m2	56	↓ -MS3			↓
	57	↓ -MSD3			
	58	1345019-22			
m1	59	↓ -23			
m2	60	↓ -24	↓		
	61	SEQ-CCV	0.500		1.0mg/mL Cal.
	62	↓ -CCB	–		

IRJ 12-11-13

Comments: _____

COPY

Total As / Total Se / As Species (circle)

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev _____ Mod. of EPA 1632 (HGAAS) - circle

Matrix: Water / Sediment / Biota / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 1 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
BLK-1	0.5	
BLK-2		
BLK-3		
BLK-4		
B132010/11-BS1		
B132011 - BS2		
B132012/13 ~~BS3~~ BS1		
~~SRM1~~		IRJ
~~SRM2~~	see pg 2	12-07-13
1345019-01	0.5081	
1345019-02	0.5112	
1345019-03	0.5059	
1345019-04	0.5064	
1345019-05	0.5079	
1345019-06	0.5036	
1345019-07	0.5083	
1345019-08	0.5023	
1345019-09	0.5049	
1345019-10	0.5041	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
1345019-11	0.5056	
1345019-12	0.5040	
1345019-13	0.5134	
1345019-14	0.5021	
1345019-15	0.5128	
1345019-16	0.5066	
1345019-17	0.5023	
1345019-18	0.5027	
1345019-19	0.5004	
1345019-20	~~0.5121~~ MR 11/26/13 → 0.5058	
1345019-21	0.5121	
1345019-22	0.5131	
1345019-23	0.5069	
1345019-24	0.5124	
1345019-25	0.5068	
DUP1	0.5003	
DUP2	0.5102	
DUP3	0.5036	
B132010/2011-MS1	0.5020	

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
DUP-1	1345019 - 01		IRJ 12-07-13		
DUP-2	- 11				①
DUP-3	- 21				
B132010/2011-MS/MSD1	1345019 - 01	0.250	0.10	8348004	

Reagents Added (ID/Amount Added)
2 M HCl (1349001/10mL)

Target Digestion Temperature = 75-85 °C

Measured Temperature*, Time On / Time Off, Date
70 (69) °C, 1508, 12-07-13
—16 hour timer—

Thermometer ID: BR-02

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: 10mL
Volume of Prep Subsampled: _____
Dilution Media: IRJ 12-07-13
Final Dilution Volume: _____

CRM, Matrix, Certified Values
CRM # 1337024

Comments: Samples were weighed out by MR on 11/26/13 and stored in the walk-in freezer (shelf #1)

① No spike witness available - IRJ 12-07-13

Total As / Total Se / As Species hmt/////hmt/dmt **(circle)**

Methods BR-0020 Rev _____ (HGAAS) & BR-0021 Rev 0046 **Mod. of EPA 1632 (HGAAS) (circle)**

Matrix: Water / Sediment / (Biota) / Other_____ (circle one)

Batch #(s): B132010, 2011, 2012, 2013 Preparation Start Date/Time*: 12-07-13/1440 Page 2 of 2

* Time is when the first reagents are added.

Prepared By: IRJ

Balance ID: BL-08

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
B132010/2011-MS2	0.5013	
B132010/2011-MS3	0.5075	
B132010/2011-MSD1	0.5113	
B132010/2011-MSD2	0.5018	
B132010/2011-MSD3	0.5051	
B132012/2013-MS1	0.5056	
B132012/2013-MS2	0.5096	
B132012/2013-MS3	0.5080	
B132012/2013-MSD1	0.5139	
B132012/2013-MSD2	0.5004	
B132012/2013-MSD3	0.5042	
SRM 1	0.2055	

Sample ID	Sample Mass / Volume (g) / (mL)	Notes
SRM 2	0.2062	
1343025-24	0.5059	
IRJ 12-07-13		

Batch QC ID	Sample Source	Spike Added (mL)	Spike Concentration (ug/mL)	Spike ID	Spike Witness Initials/Date
B132010/2011-MS/MSD2	1345019 - 11	0.250	0.10	1348004	
B132010/2011-MS/MSD3	- 21	↓	↓	↓	①
B132012/2013-MS/MSD1	- 01	0.500/0.500	0.10/0.10	1346011/1346012	
B132012/2013-MS/MSD2	- 11	↓	↓	↓	
B132012/2013-MS/MSD3	- 21	↓	↓	↓	
B132010/11-BS1	-	0.500	0.10	1348017	
B132011-BS2	-	↓	↓	1348004	
B132012/13-BS1	-	0.500/0.500	0.10/0.10	1346011/1346012	
		IRJ 12-07-13			

Reagents Added (ID/Amount Added)

See pg. 1

Target Digestion Temperature = _____

Measured Temperature*, Time On / Time Off, Date

See pg. 1

Thermometer ID: _____

* Both measured and corrected temperatures must be recorded

Final Volume of Preparation: _____

Volume of Prep Subsampled: _____

Dilution Media: _____

Final Dilution Volume: _____

CRM, Matrix, Certified Values

IRJ 12-07-13

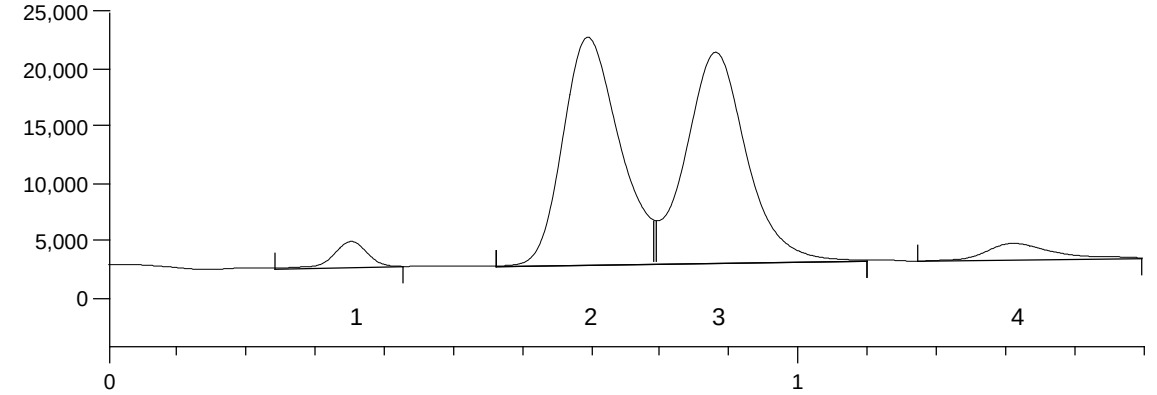
Comments:

Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

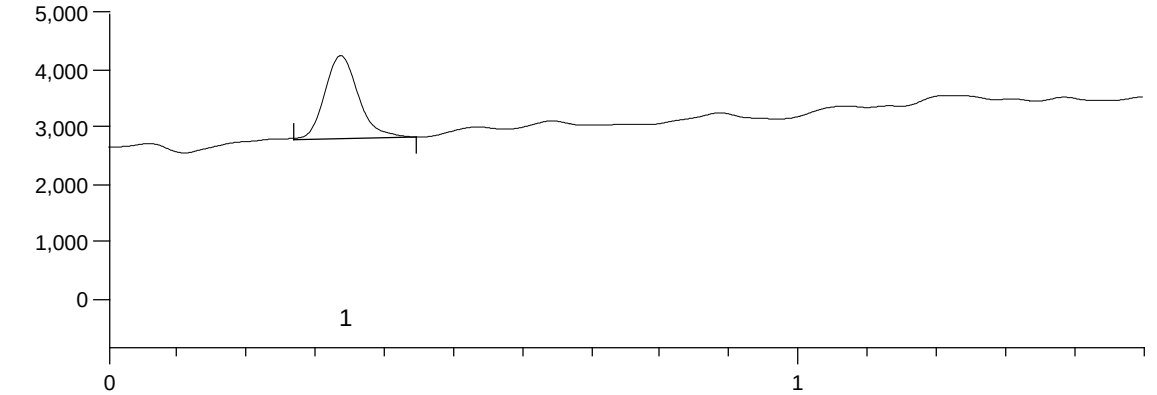
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 10:34 AM

Peak	rt	Area
1	0.35	74,216
2	0.69	1,142,796
3	0.88	1,115,735
4	1.31	95,710

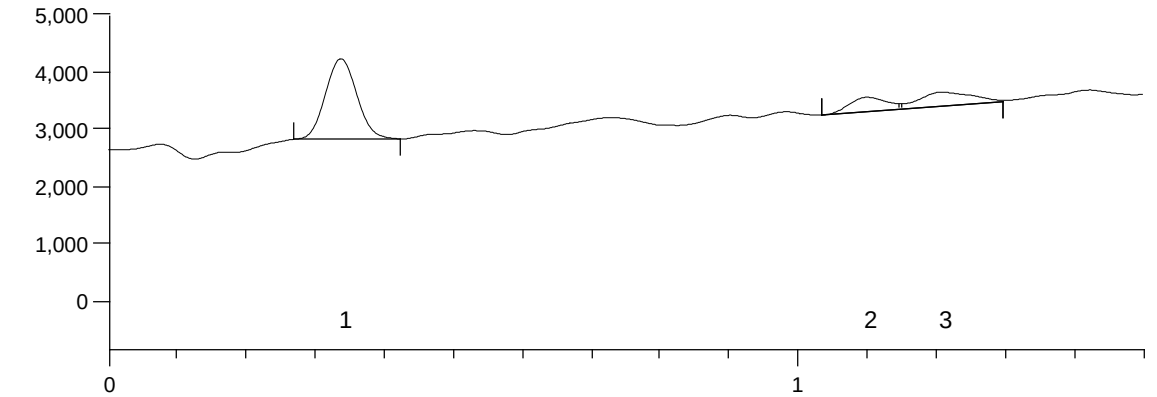
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
1		S	TEST		2	1,142,796	4.80	0.00		< HS	reject
Notes											



Date: 12/11/13
Time: 10:43 AM

Peak	rt	Area
1	0.33	48,317

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
2		CB	SEQ-IBL1			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 10:48 AM

Peak	rt	Area
1	0.33	44,477
2	1.10	9,458
3	1.20	11,790

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
3		CB	SEQ-IBL2			0	0.00		0.00	< 0.4	accept
Notes											

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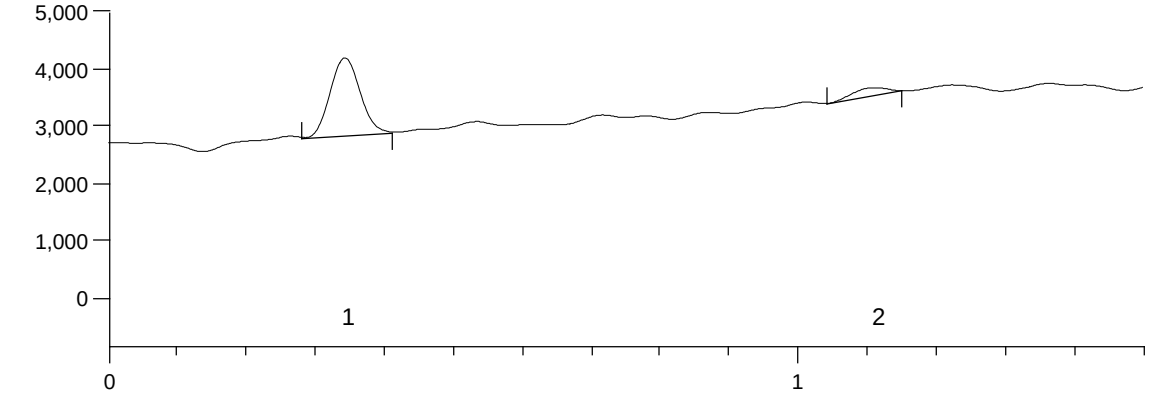
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

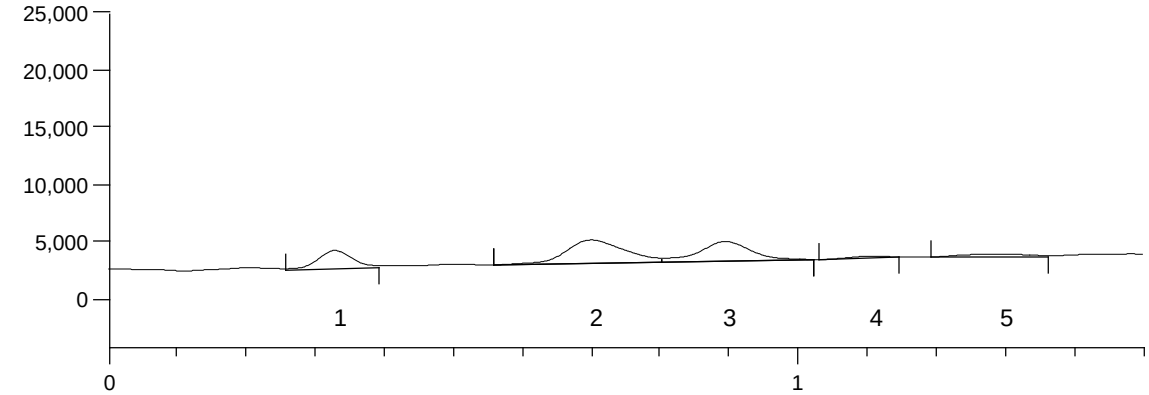
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 10:53 AM

Peak	rt	Area
1	0.34	40,719
2	1.11	5,372

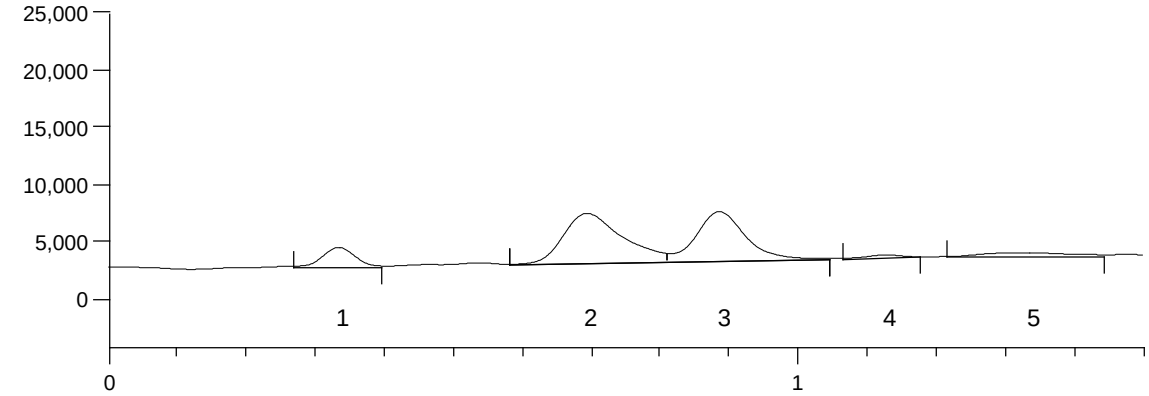
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
4		CB	SEQ-IBL3			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 10:58 AM

Peak	rt	Area
1	0.32	45,871
2	0.70	122,227
3	0.89	90,565
4	1.10	5,539
5	1.29	11,386

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
5		STD	SEQ-CAL1		2	122,227	0.513		103	80-120	accept
Notes											



Date: 12/11/13
Time: 11:03 AM

Peak	rt	Area
1	0.33	49,941
2	0.69	258,984
3	0.88	207,092
4	1.12	7,161
5	1.33	19,498

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
6		STD	SEQ-CAL2		2	258,984	1.09		109	80-120	accept
Notes											

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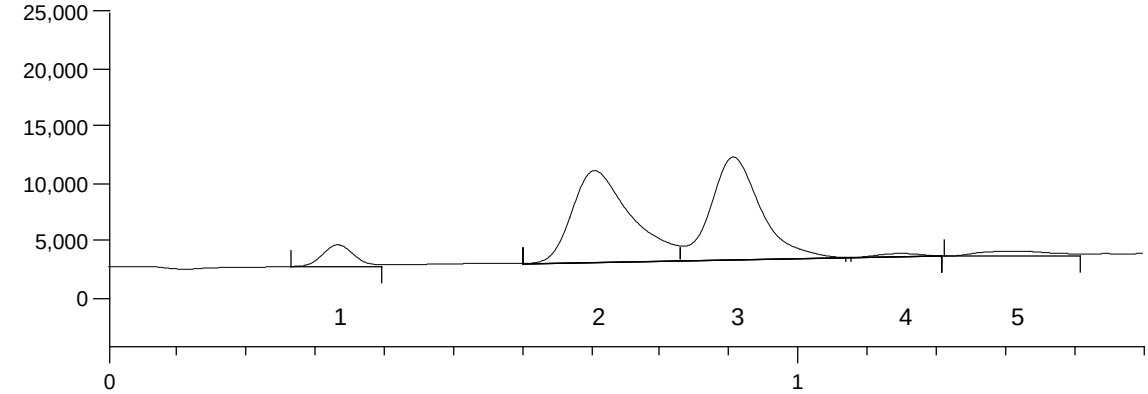
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

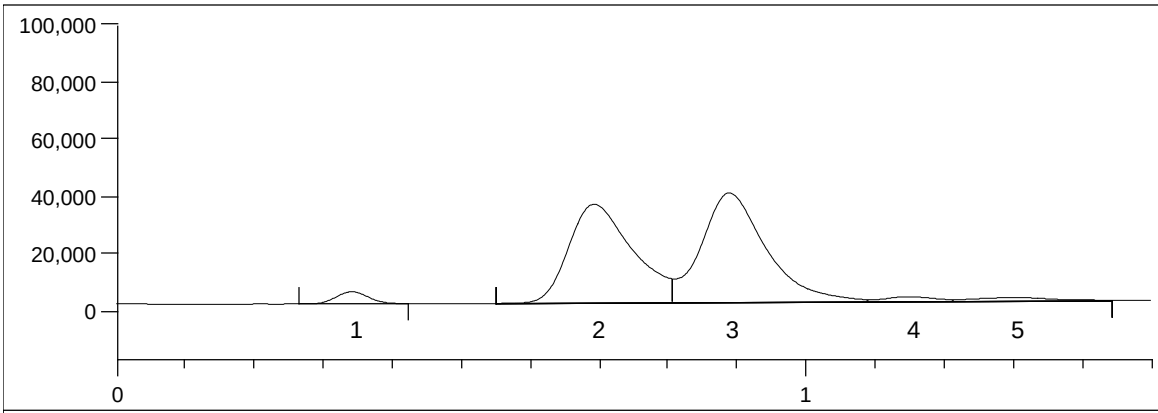
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:07 AM

Peak	rt	Area
1	0.33	54,028
2	0.70	479,029
3	0.90	455,890
4	1.14	14,121
5	1.31	23,362

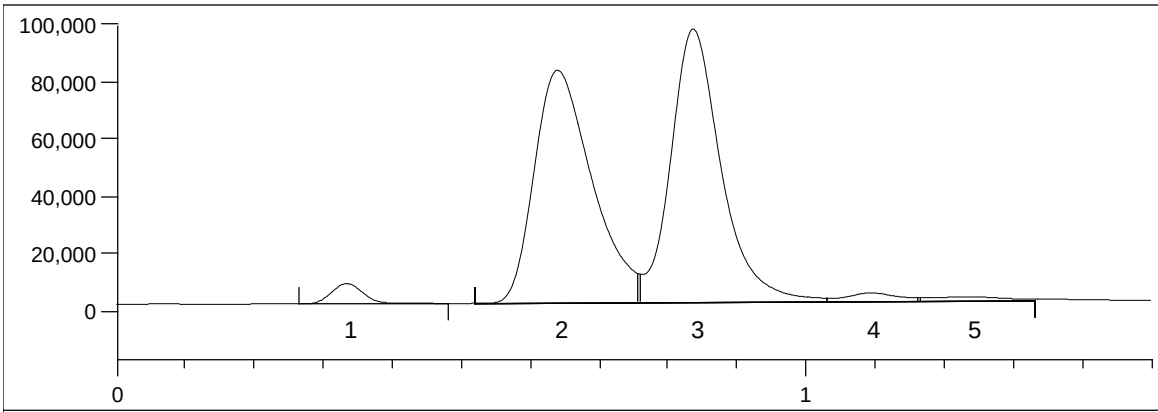
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
7		STD	SEQ-CAL3		2	479,029	2.01		101	80-120	accept
Notes											



Date: 12/11/13
Time: 11:12 AM

Peak	rt	Area
1	0.34	137,088
2	0.69	2,241,388
3	0.88	2,481,482
4	1.14	78,351
5	1.30	80,958

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
8		STD	SEQ-CAL4		2	2,241,388	9.41		94.1	80-120	accept
Notes											



Date: 12/11/13
Time: 11:17 AM

Peak	rt	Area
1	0.33	224,360
2	0.64	4,756,609
3	0.83	4,825,030
4	1.09	125,456
5	1.23	61,265

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
9		STD	SEQ-CAL5		2	4,756,609	20.0		99.8	80-120	accept
Notes											

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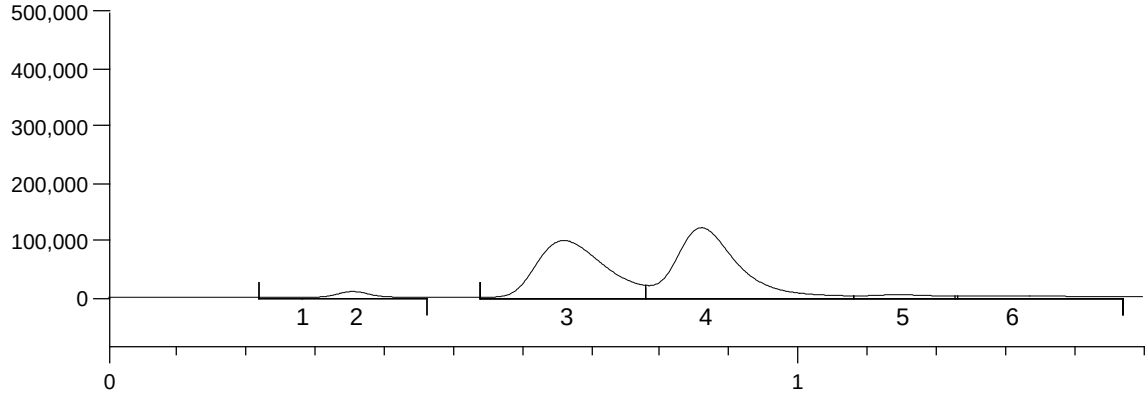
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

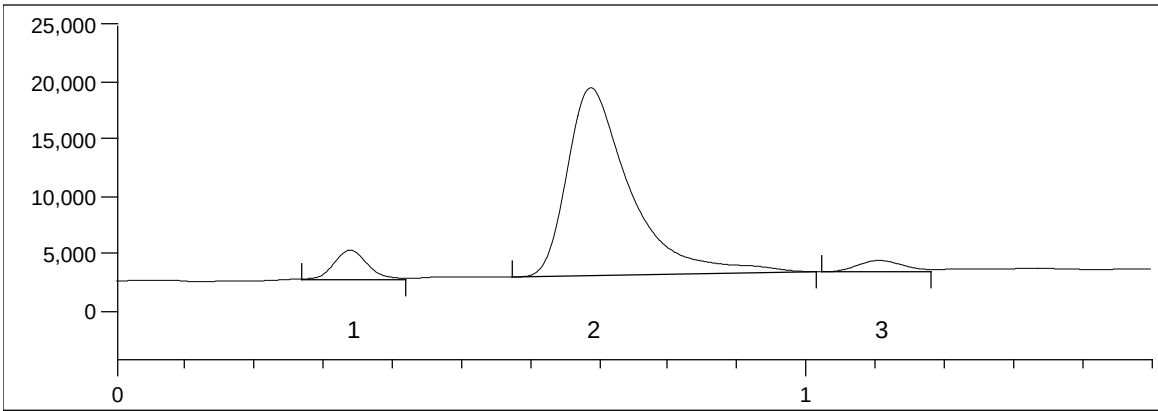
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:22 AM

Peak	rt	Area
1	0.27	3,807
2	0.35	331,958
3	0.66	6,824,240
4	0.86	7,477,963
5	1.14	211,754
6	1.30	113,632

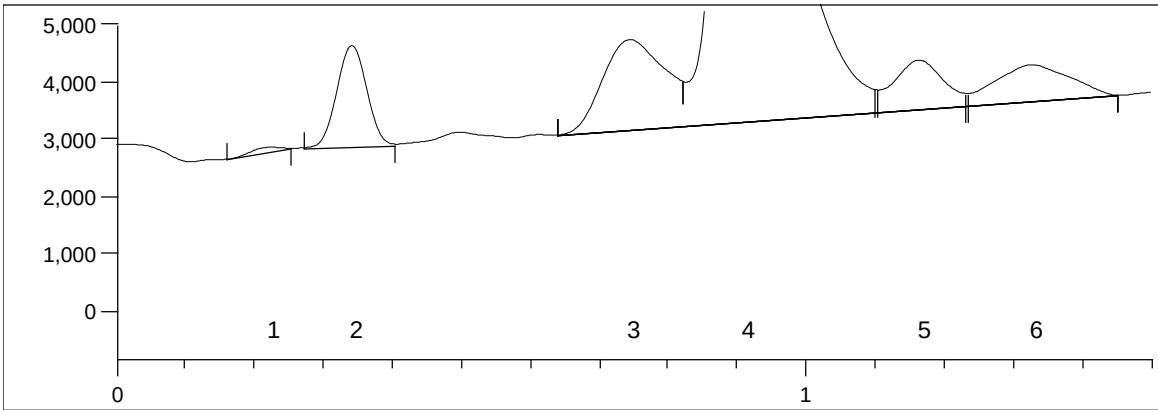
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
10		STD	SEQ-CAL6		3	6,824,240	28.6		95.5	80-120	accept
Notes											



Date: 12/11/13
Time: 11:27 AM

Peak	rt	Area
1	0.34	80,376
2	0.68	1,054,823
3	1.10	38,045

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
11		OPR	SEQ-ICV		2	1,054,823	4.43		88.6	80-120	accept
Notes											



Date: 12/11/13
Time: 11:32 AM

Peak	rt	Area
1	0.22	2,730
2	0.34	51,987
3	0.74	100,170
4	0.91	1,043,728
5	1.16	43,235
6	1.32	48,856

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
12		OPR	SEQ-ICV		3	100,170	0.421		8.41	80-120	reject
Notes											

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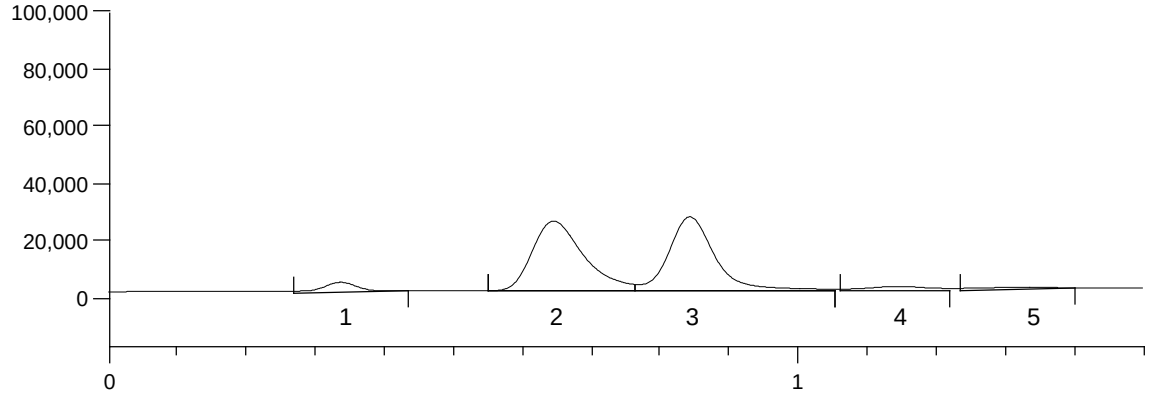
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

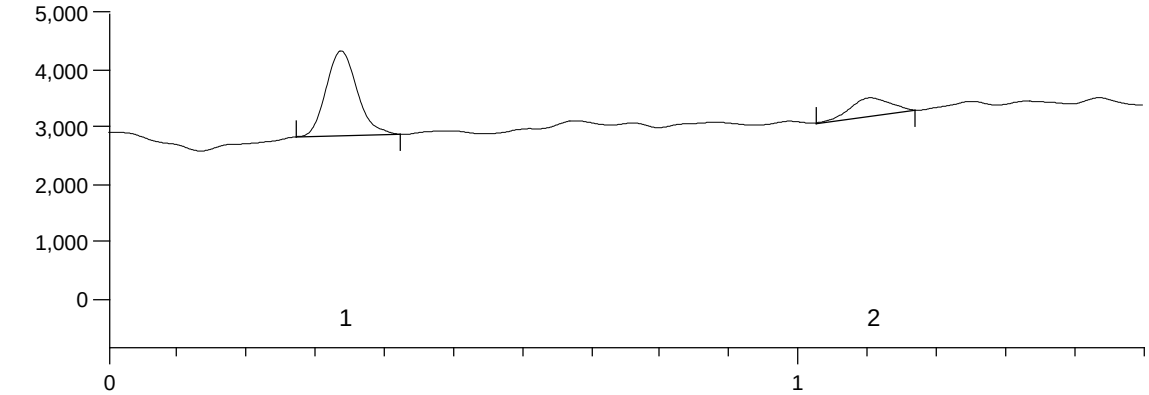
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:37 AM

Peak	rt	Area
1	0.33	92,683
2	0.64	1,254,416
3	0.84	1,140,842
4	1.14	35,957
5	1.33	19,630

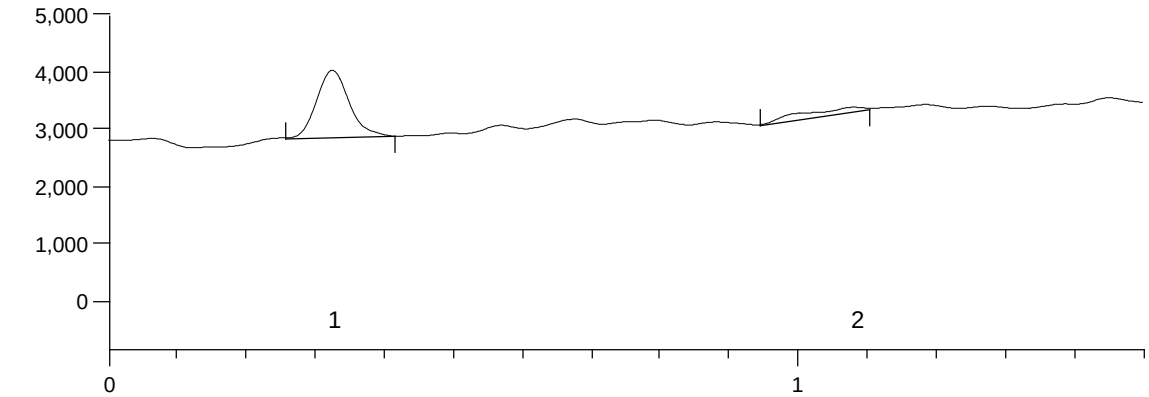
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
13		OPR	SEQ-CCV		2	1,254,416	5.27		105	80-120	accept
Notes											



Date: 12/11/13
Time: 11:47 AM

Peak	rt	Area
1	0.33	46,559
2	1.10	13,052

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
14		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 11:53 AM

Peak	rt	Area
1	0.32	38,308
2	1.08	6,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
15		S	B132013-BLK1			0	0.00	0.00		< HS	accept
Notes											

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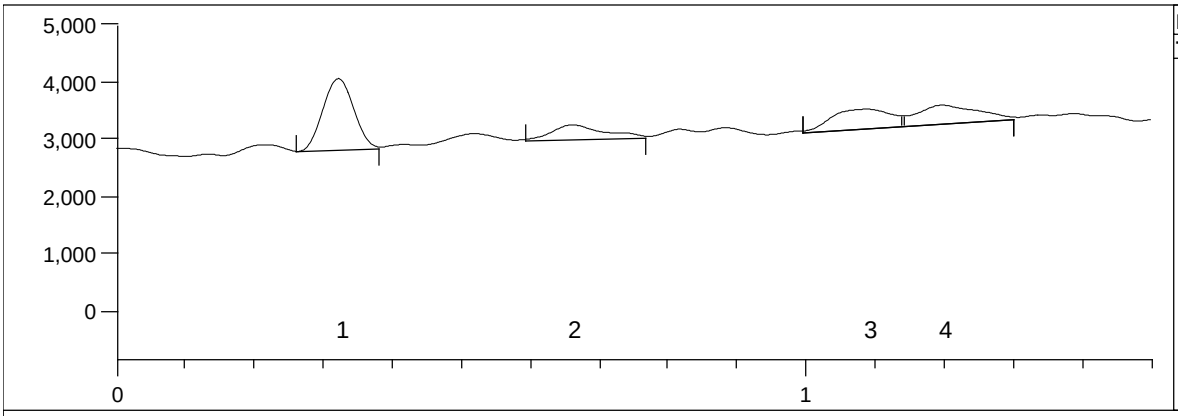
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

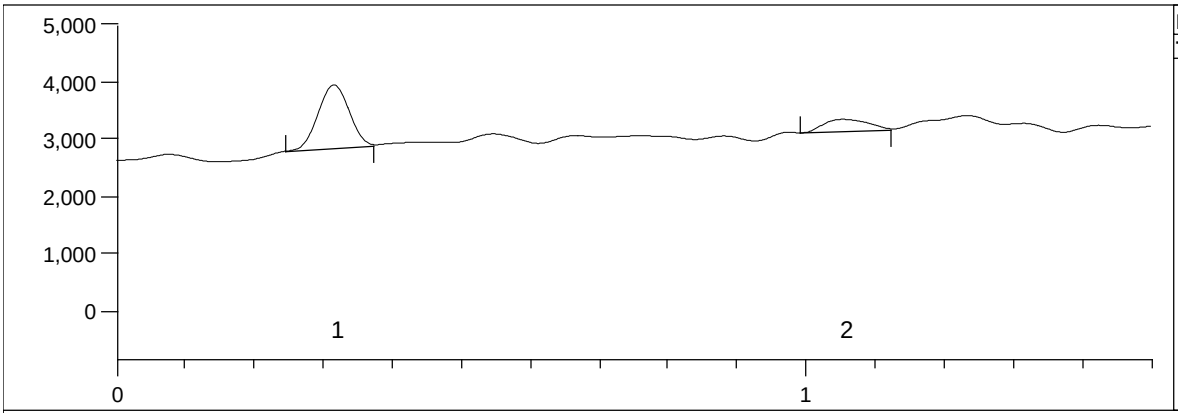
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 11:58 AM

Peak	rt	Area
1	0.32	38,003
2	0.66	10,678
3	1.08	18,101
4	1.19	16,548

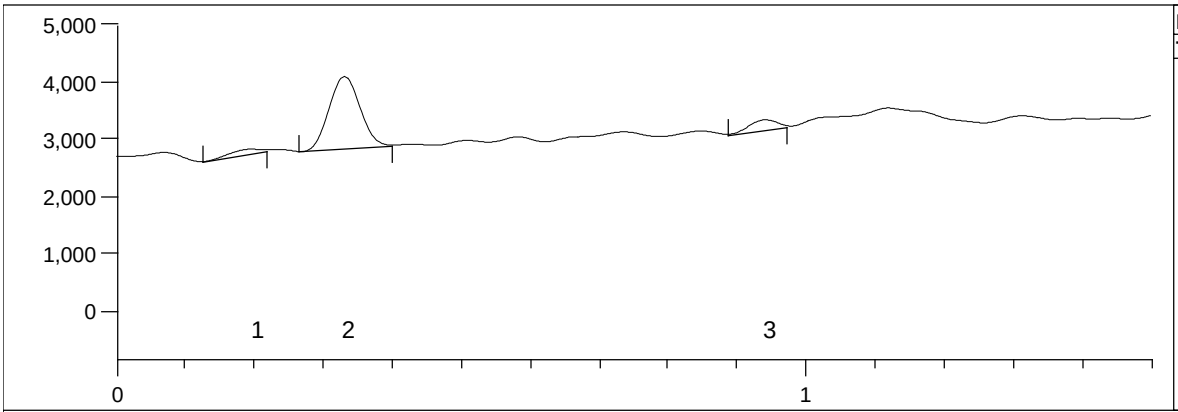
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
16		S	B132013-BLK2		2	10,678	0.0448	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:03 PM

Peak	rt	Area
1	0.31	34,014
2	1.05	8,918

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
17		S	B132013-BLK3			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:08 PM

Peak	rt	Area
1	0.19	2,402
2	0.33	39,227
3	0.94	4,602

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
18		S	B132013-BLK4			0	0.00	0.00		< HS	accept
Notes											

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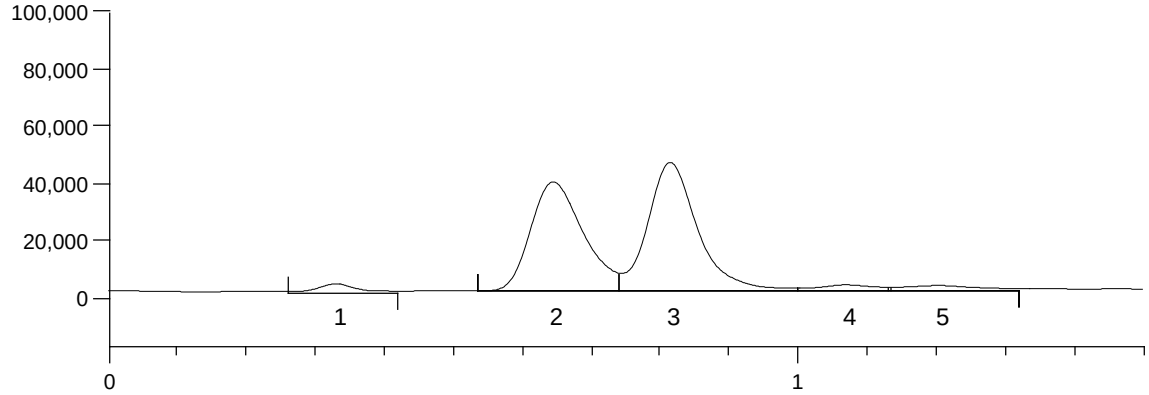
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

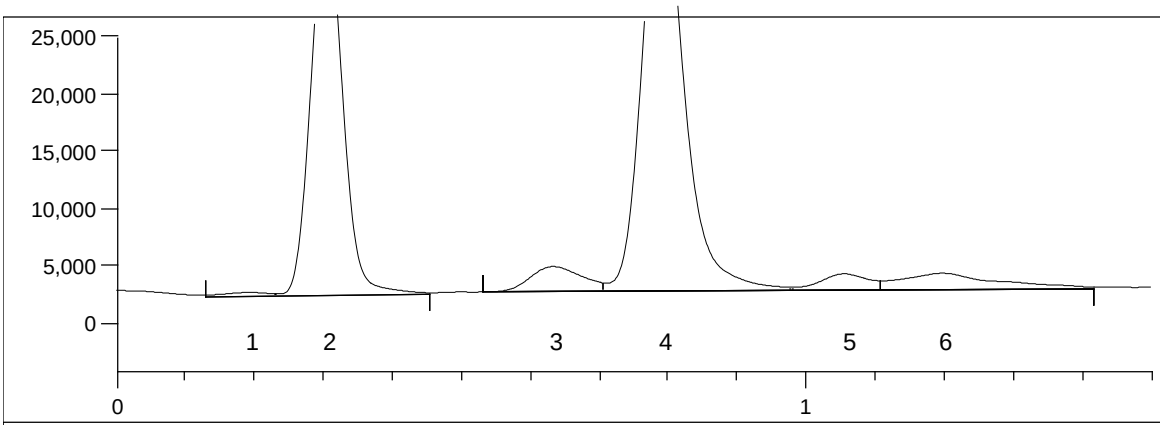
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:12 PM

Peak	rt	Area
1	0.33	81,212
2	0.64	2,021,422
3	0.81	2,212,817
4	1.06	82,578
5	1.20	77,896

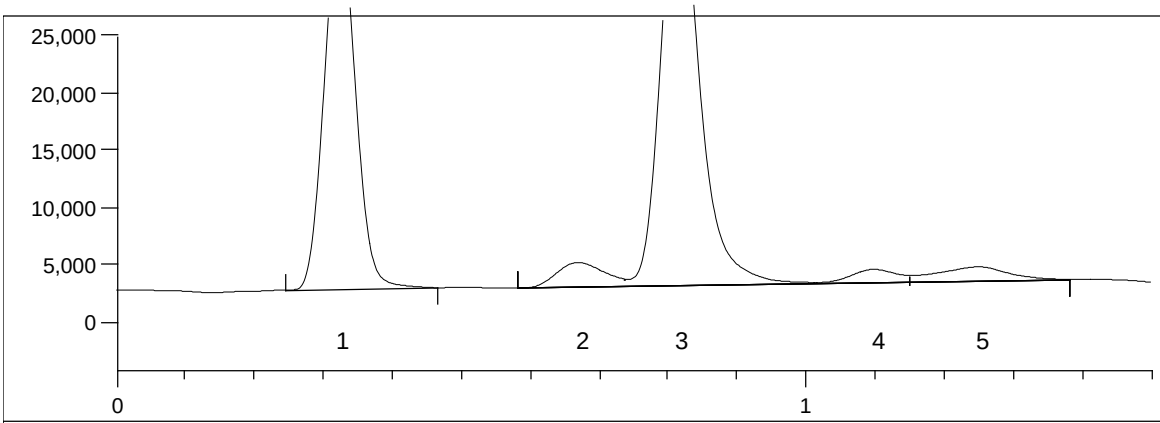
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
19		S	B132013-BS1		2	2,021,422	8.49	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:17 PM

Peak	rt	Area
1	0.19	6,166
2	0.30	1,041,959
3	0.63	113,984
4	0.78	1,551,278
5	1.05	63,253
6	1.19	115,493

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
20		S	B132013-SRM1		3	113,984	0.479	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:22 PM

Peak	rt	Area
1	0.32	1,011,847
2	0.66	106,879
3	0.81	1,430,126
4	1.10	55,339
5	1.24	88,473

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
21		S	B132013-SRM2		2	106,879	0.449	0.00		< HS	accept
Notes											

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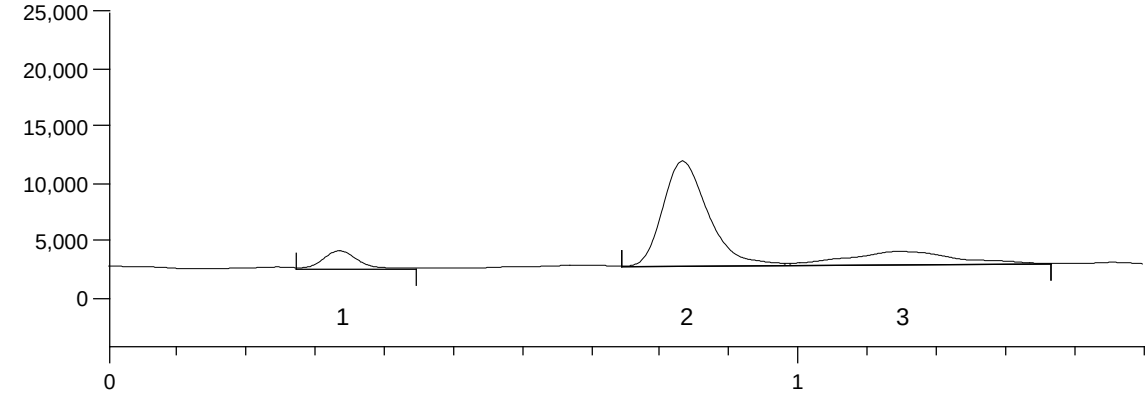
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

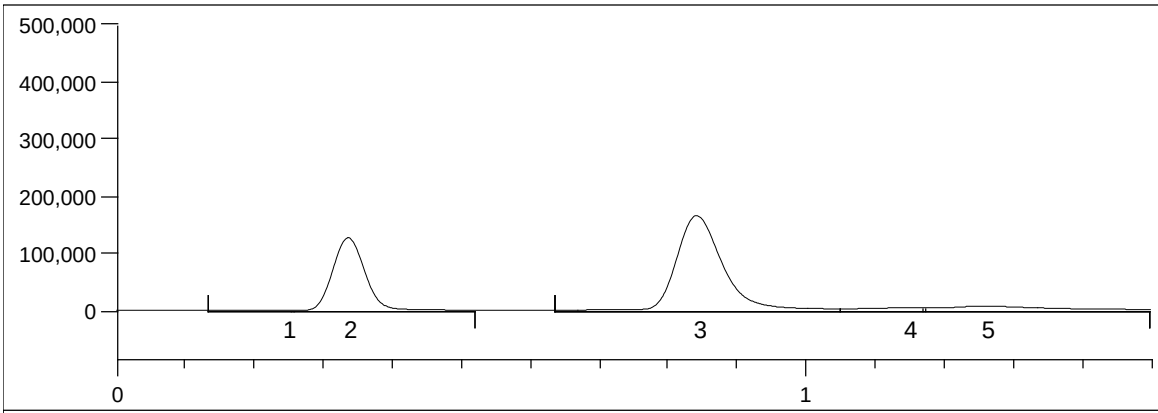
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:27 PM

Peak	rt	Area
1	0.33	47,924
2	0.83	416,435
3	1.14	118,946

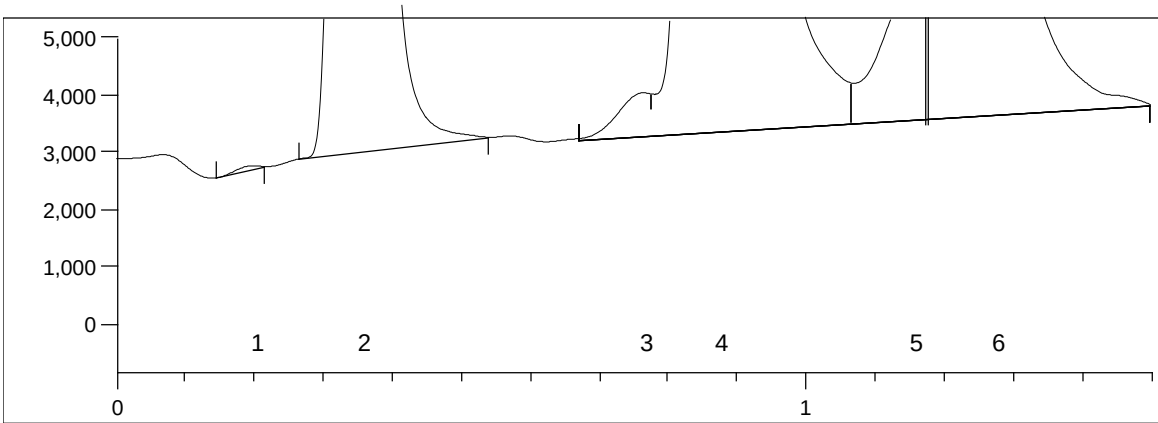
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
22		S	1343025-24			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:33 PM

Peak	rt	Area
1	0.24	5,314
2	0.33	4,077,962
3	0.84	7,553,176
4	1.14	198,619
5	1.25	550,242

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
23		S	1345019-01			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:40 PM

Peak	rt	Area
1	0.20	1,771
2	0.35	2,212,136
3	0.76	24,158
4	0.87	3,991,769
5	1.15	106,096
6	1.27	352,957

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
24		S	1345019-01RE1		3	24,158	0.101	0.00		< HS	accept
Notes											

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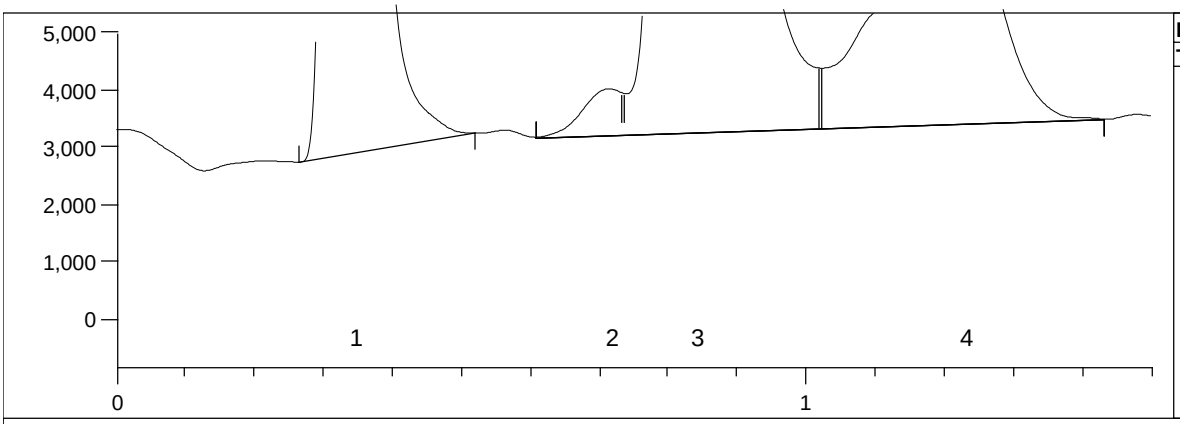
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

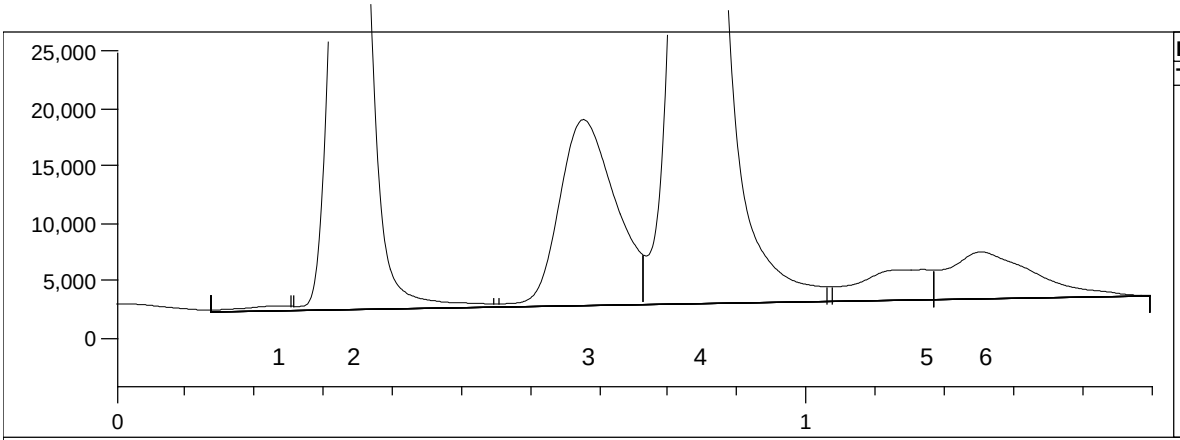
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 12:45 PM

Peak	rt	Area
1	0.34	2,673,221
2	0.71	32,014
3	0.83	3,990,005
4	1.22	413,889

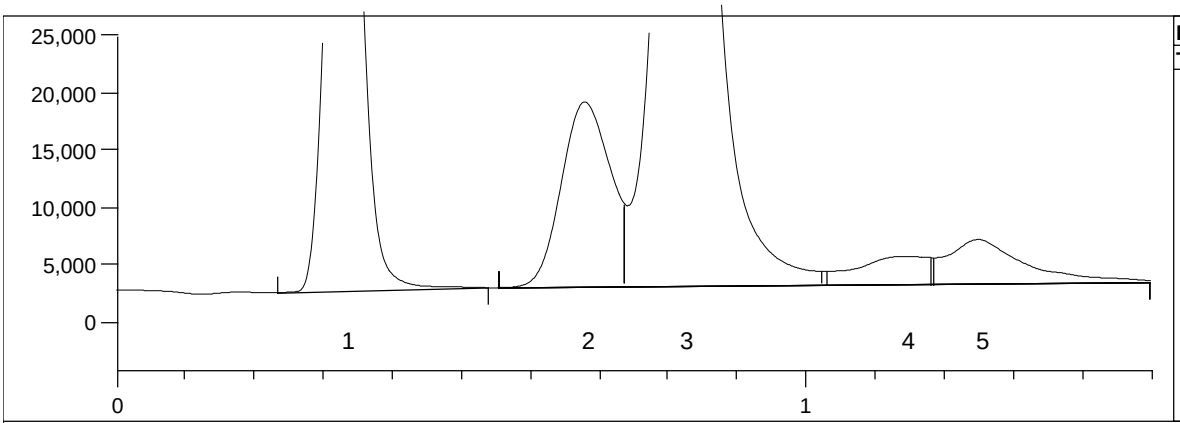
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
25		S	B132013-DUP1		2	32,014	0.134	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:50 PM

Peak	rt	Area
1	0.23	10,645
2	0.34	2,380,360
3	0.67	913,102
4	0.84	4,207,362
5	1.16	187,835
6	1.25	336,776

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
26		S	B132013-MS1		3	913,102	3.83	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 12:55 PM

Peak	rt	Area
1	0.32	2,056,351
2	0.68	813,796
3	0.82	4,305,736
4	1.14	171,317
5	1.24	283,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
27		S	B132013-MSD1		2	813,796	3.42	0.00		< HS	accept
Notes											

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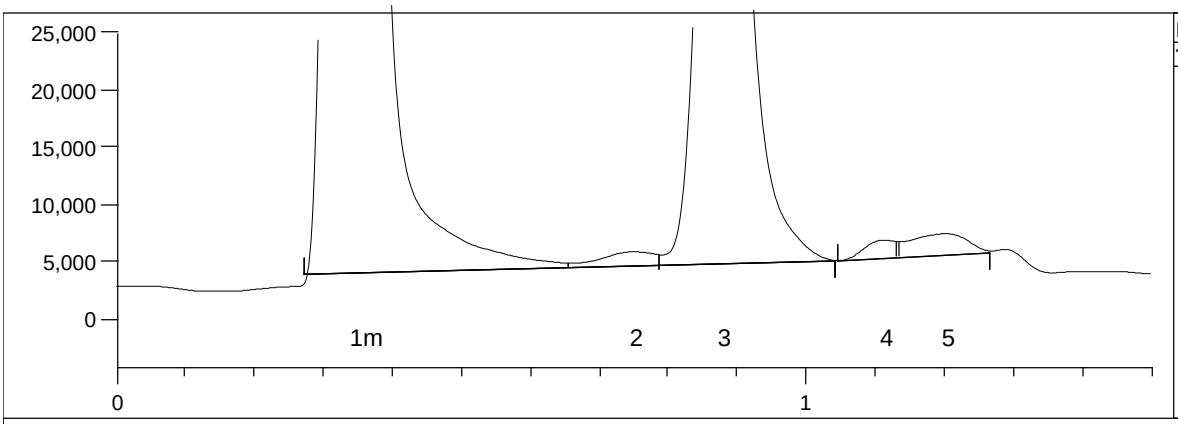
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

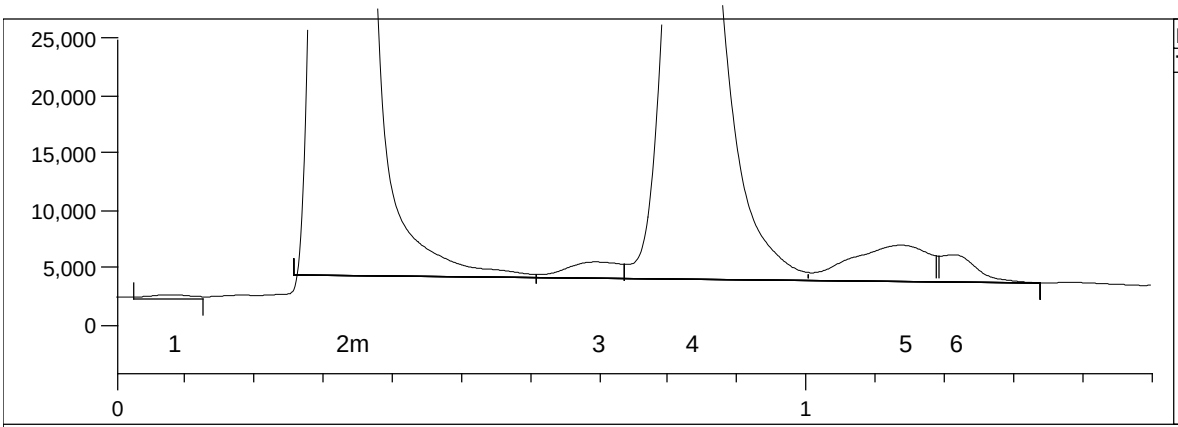
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 1:00 PM

Peak	rt	Area
1m	0.34	10,842,947
2	0.74	64,169
3	0.87	3,413,404
4	1.11	50,529
5	1.20	99,221

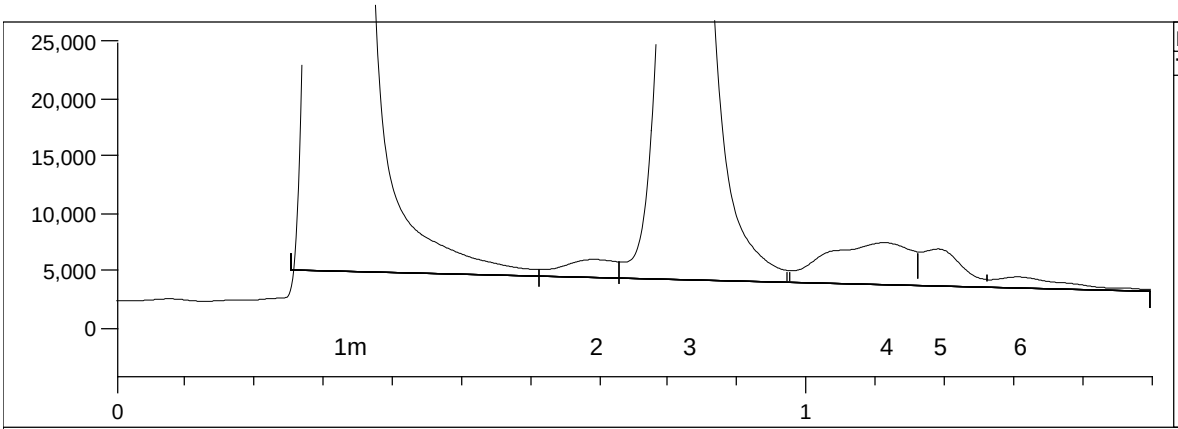
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
28		S	1345019-02		2	64,169	0.269	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:05 PM

Peak	rt	Area
1	0.08	5,378
2m	0.32	9,556,573
3	0.69	76,093
4	0.83	3,009,095
5	1.13	250,863
6	1.21	82,831

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
29		S	1345019-03		3	76,093	0.319	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 1:10 PM

Peak	rt	Area
1m	0.31	10,749,548
2	0.69	75,312
3	0.82	3,112,927
4	1.11	301,327
5	1.19	118,712
6	1.30	50,623

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
30		S	1345019-04		2	75,312	0.316	0.00		< HS	accept
Notes											

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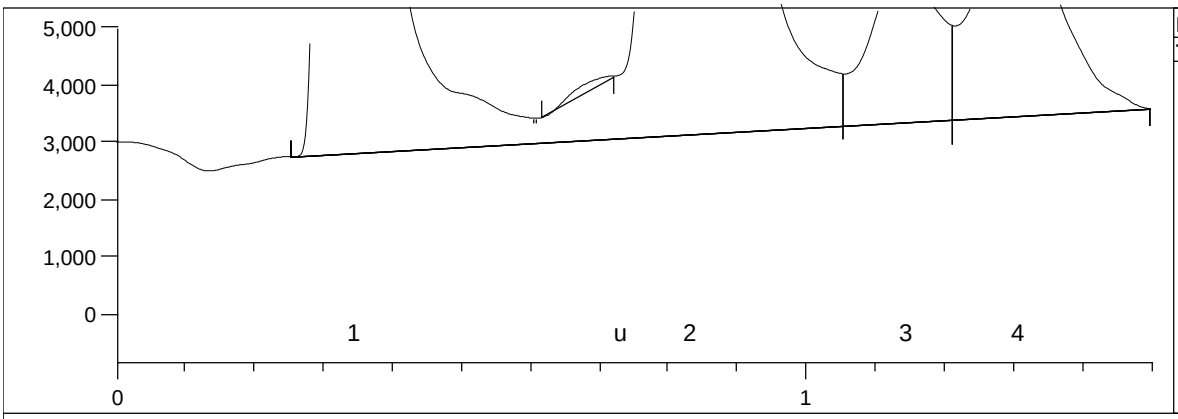
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

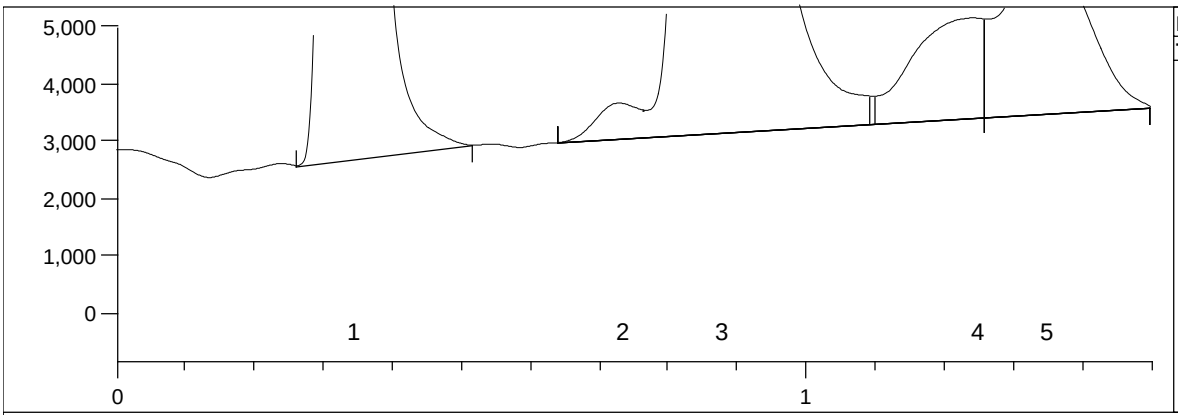
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 1:15 PM

Peak	rt	Area
1	0.33	5,342,856
2	0.82	3,501,838
3	1.13	187,503
4	1.30	316,267
u	0.72	6,222

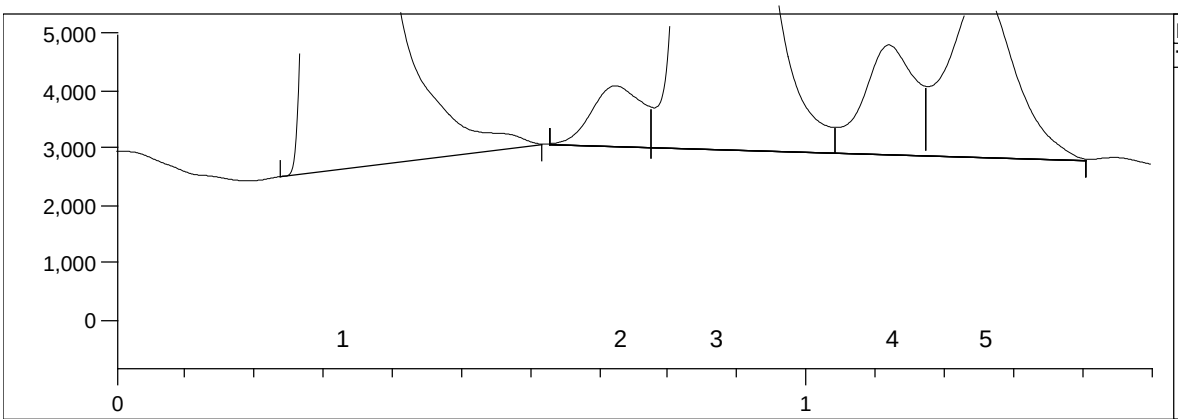
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
31		S	1345019-05		u	6,222	0.0261	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:12 PM

Peak	rt	Area
1	0.33	2,796,039
2	0.72	27,709
3	0.87	3,881,709
4	1.24	127,495
5	1.34	240,671

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
32		S	1345019-06		2	27,709	0.116	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:17 PM

Peak	rt	Area
1	0.32	6,153,482
2	0.72	53,372
3	0.86	2,418,786
4	1.12	98,480
5	1.25	192,093

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
33		S	1345019-07		2	53,372	0.224	0.00		< HS	accept
Notes											

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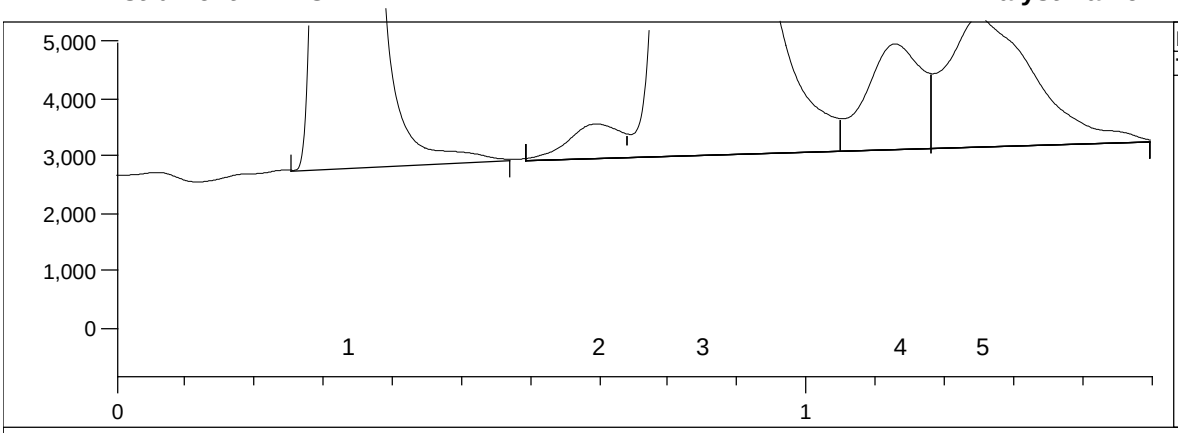
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

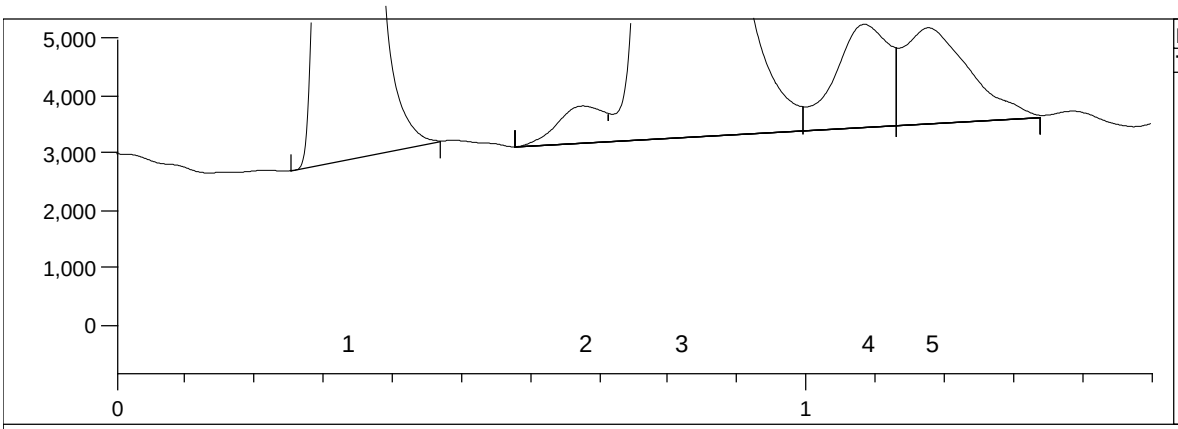
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:22 PM

Peak	rt	Area
1	0.32	2,655,541
2	0.69	29,146
3	0.84	3,293,491
4	1.12	102,652
5	1.25	193,500

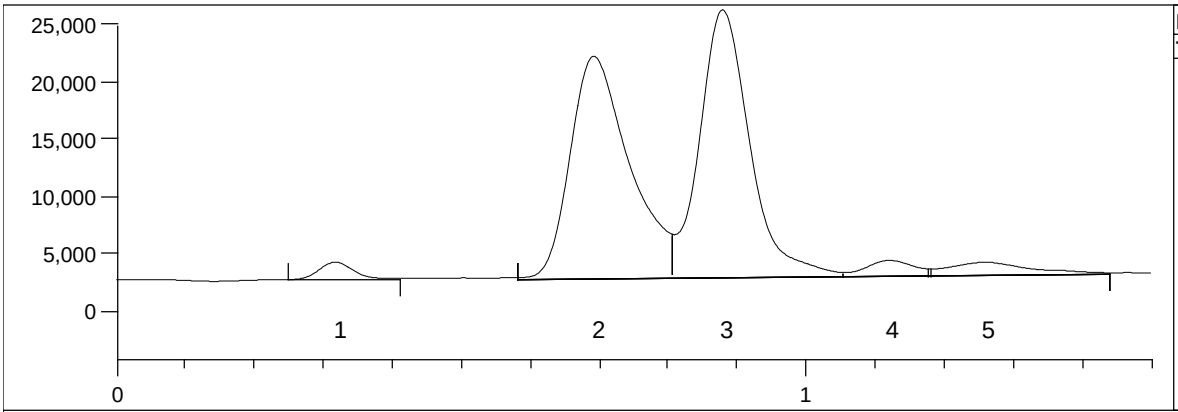
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
34		S	1345019-08		2	29,146	0.122	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:27 PM

Peak	rt	Area
1	0.33	2,356,320
2	0.67	30,903
3	0.81	3,758,318
4	1.08	98,071
5	1.17	106,106

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
35		S	1345019-09		2	30,903	0.130	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:31 PM

Peak	rt	Area
1	0.31	49,339
2	0.69	1,153,132
3	0.88	1,161,924
4	1.12	58,003
5	1.26	76,133

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
36		OPR	SEQ-CCV		2	1,153,132	4.84		96.8	80-120	accept
Notes											

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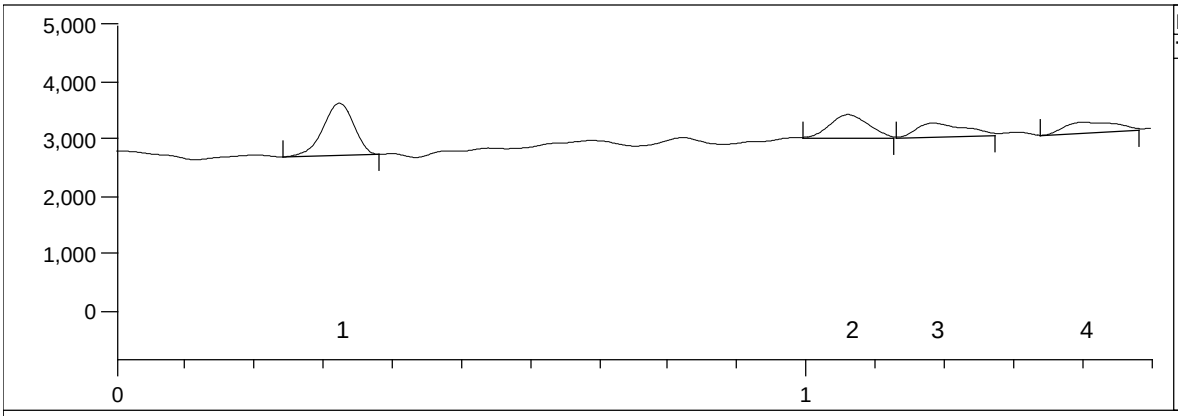
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

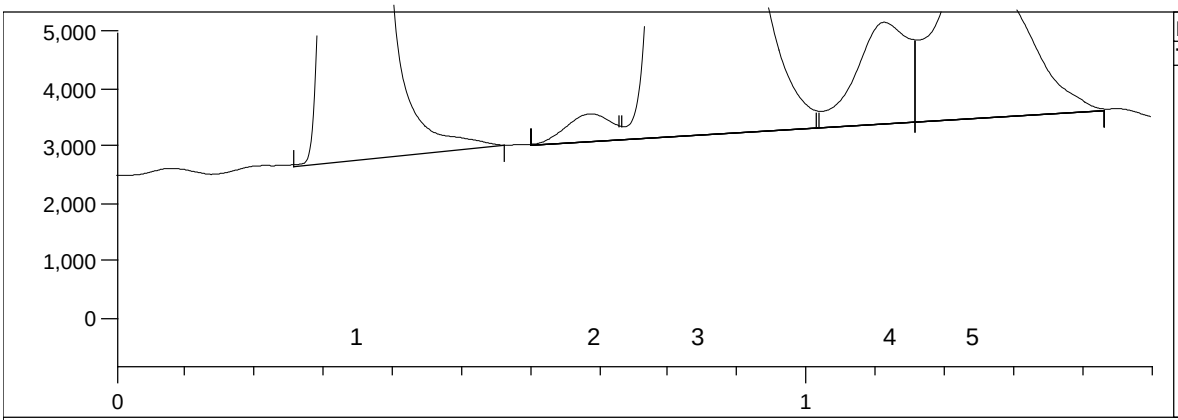
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:36 PM

Peak	rt	Area
1	0.32	28,492
2	1.06	14,925
3	1.18	10,185
4	1.40	9,181

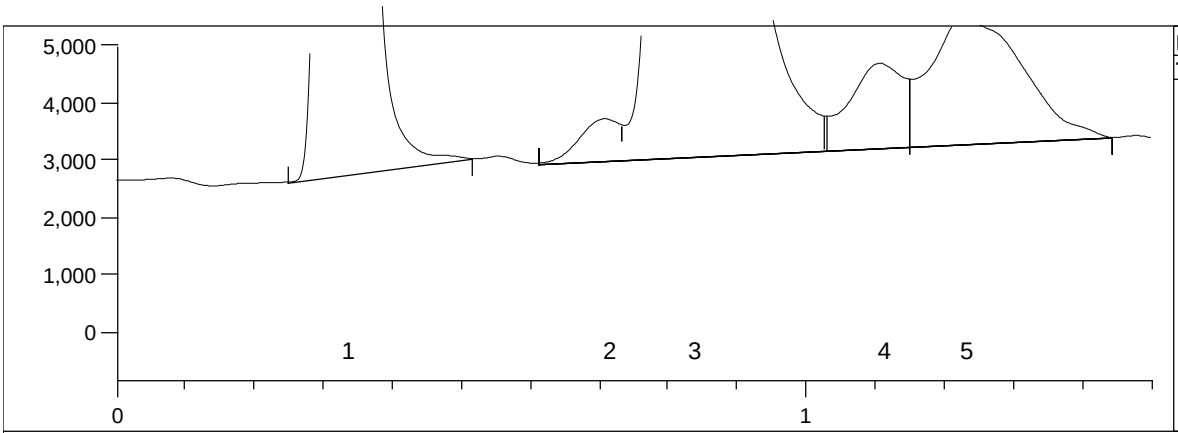
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
37		CCB	SEQ-CCB			0	0.00		0.00	< 0.4	accept
Notes											



Date: 12/11/13
Time: 2:41 PM

Peak	rt	Area
1	0.34	2,334,450
2	0.68	21,244
3	0.84	3,286,032
4	1.11	94,601
5	1.23	245,930

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
38		S	1345019-10		2	21,244	0.0892	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 2:46 PM

Peak	rt	Area
1	0.33	2,056,254
2	0.70	29,027
3	0.83	3,245,843
4	1.10	81,188
5	1.22	206,434

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
39		S	1345019-11		2	29,027	0.122	0.00		< HS	accept
Notes											

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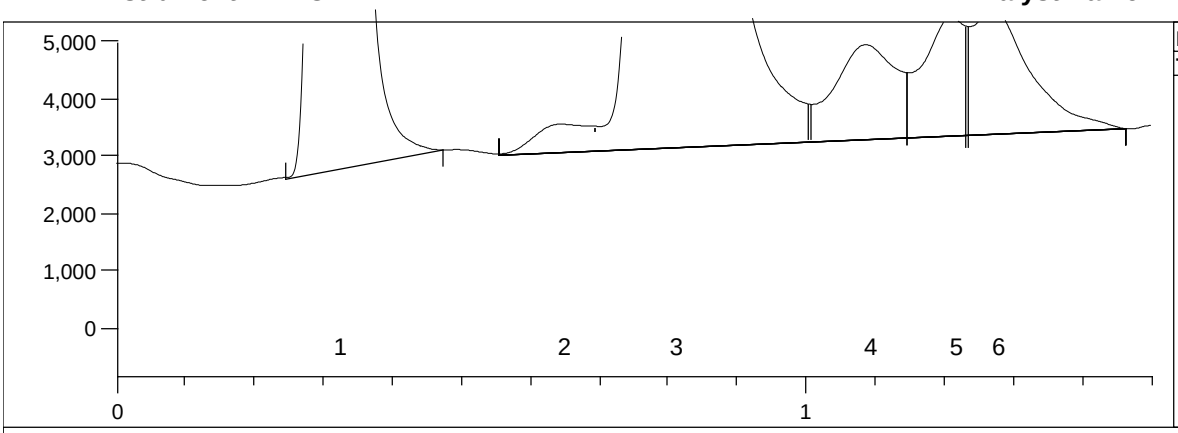
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

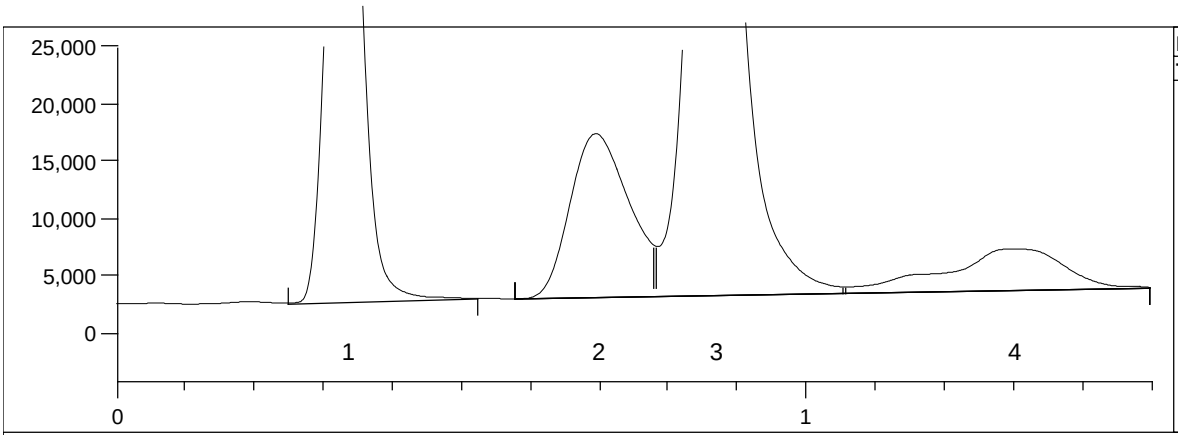
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 2:51 PM

Peak	rt	Area
1	0.32	2,020,247
2	0.64	26,648
3	0.80	3,720,872
4	1.08	103,651
5	1.21	87,823
6	1.27	126,973

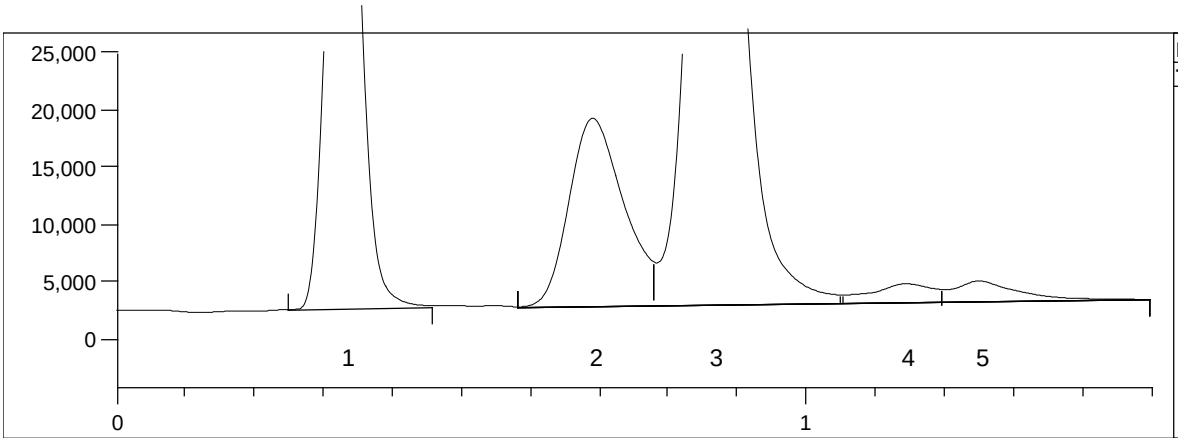
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
40		S	B132013-DUP2		2	26,648	0.112	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:03 PM

Peak	rt	Area
1	0.32	1,938,689
2	0.69	860,229
3	0.86	3,443,966
4	1.29	436,606

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
41		S	B132013-MS2		2	860,229	3.61	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:08 PM

Peak	rt	Area
1	0.32	1,860,825
2	0.69	908,837
3	0.86	3,640,637
4	1.14	102,187
5	1.25	113,131

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
42		S	B132013-MSD2		2	908,837	3.82	0.00		< HS	accept
Notes											

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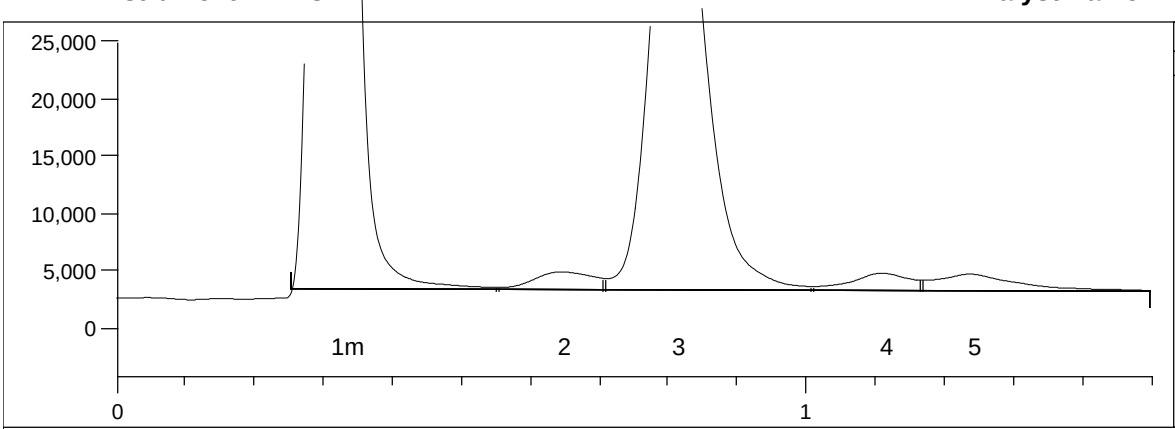
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

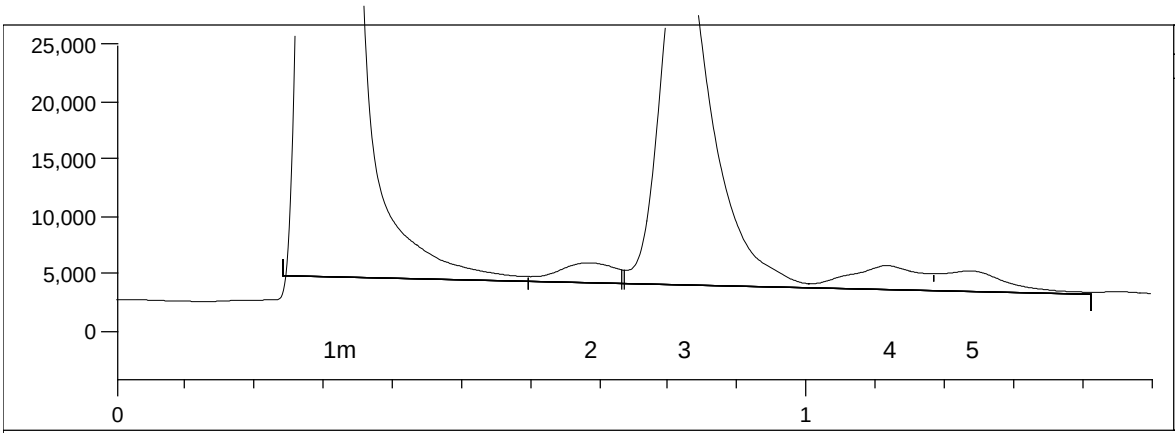
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:13 PM

Peak	rt	Area
1m	0.31	5,728,647
2	0.64	84,948
3	0.81	2,350,881
4	1.11	83,141
5	1.23	107,041

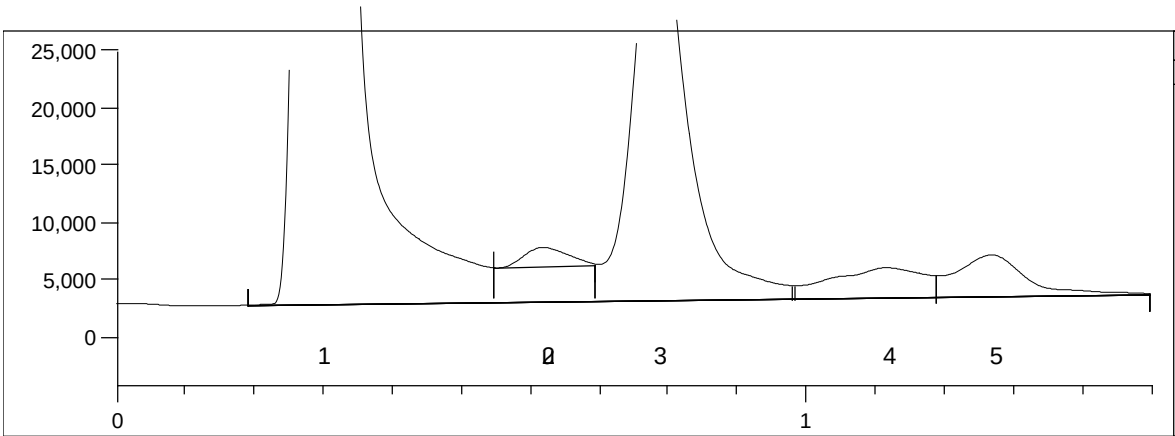
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
43		S	1345019-12		2	84,948	0.357	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:18 PM

Peak	rt	Area
1m	0.30	9,591,844
2	0.68	94,185
3	0.82	1,610,606
4	1.11	136,781
5	1.23	98,132

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
44		S	1345019-13		2	94,185	0.395	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:23 PM

Peak	rt	Area
1	0.29	10,638,062
2	0.62	349,153
3	0.78	1,960,553
4	1.11	242,620
5	1.26	245,019
u	0.62	72,446

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
45		S	1345019-14		u	72,446	0.304	0.00		< HS	accept
Notes											

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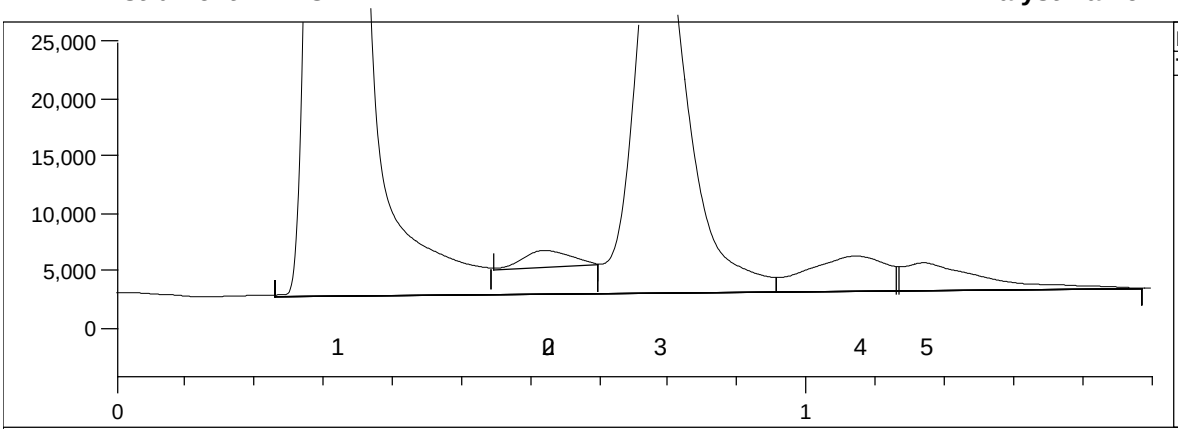
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

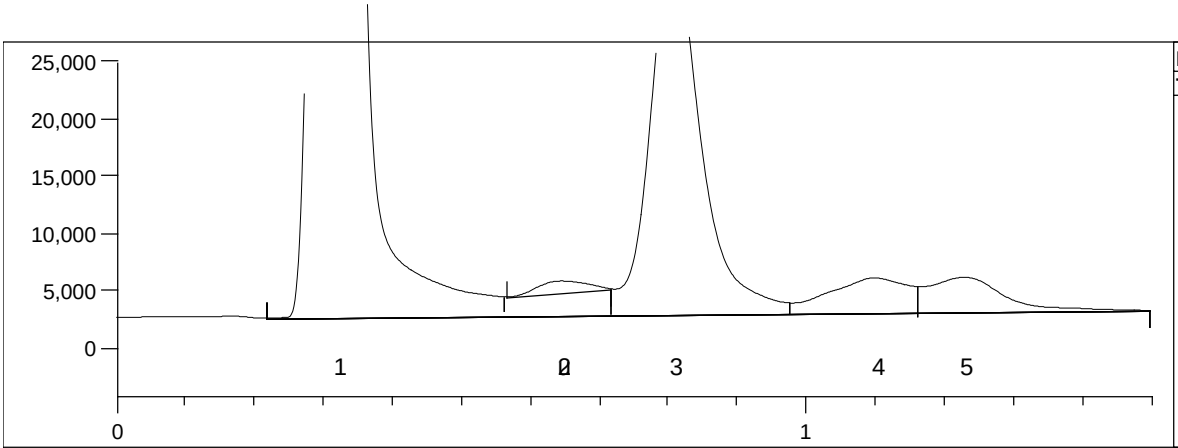
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:28 PM

Peak	rt	Area
1	0.31	9,577,192
2	0.62	278,570
3	0.78	1,859,196
4	1.07	241,278
5	1.17	184,317
u	0.62	63,917

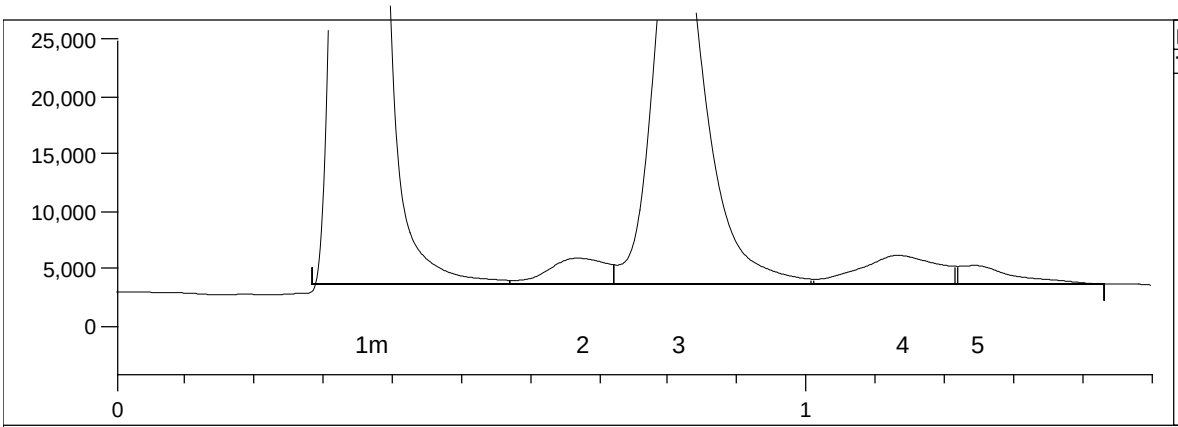
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
46		S	1345019-15		u	63,917	0.268	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:33 PM

Peak	rt	Area
1	0.31	8,291,662
2	0.64	237,567
3	0.80	1,649,832
4	1.10	246,669
5	1.22	225,455
u	0.64	51,652

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
47		S	1345019-16		u	51,652	0.217	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:38 PM

Peak	rt	Area
1m	0.34	6,732,358
2	0.66	130,912
3	0.81	1,804,317
4	1.13	202,229
5	1.24	88,404

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
48		S	1345019-17		2	130,912	0.550	0.00		< HS	accept
Notes											

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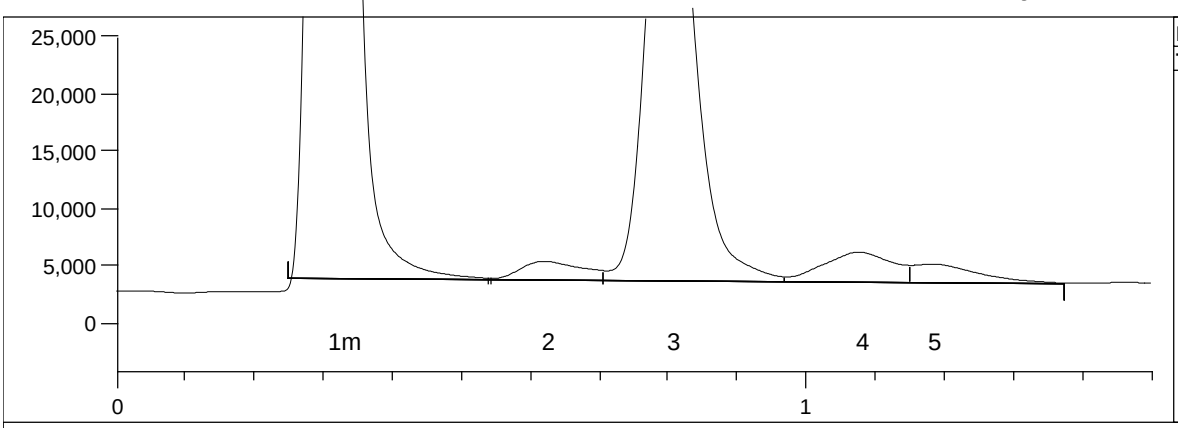
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

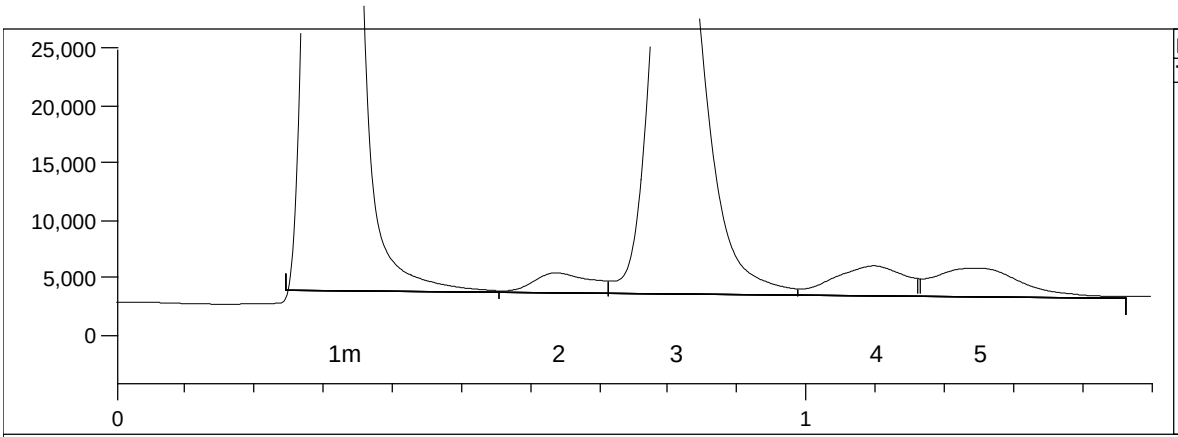
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:43 PM

Peak	rt	Area
1m	0.31	6,647,756
2	0.62	98,353
3	0.80	2,133,903
4	1.07	179,940
5	1.18	96,353

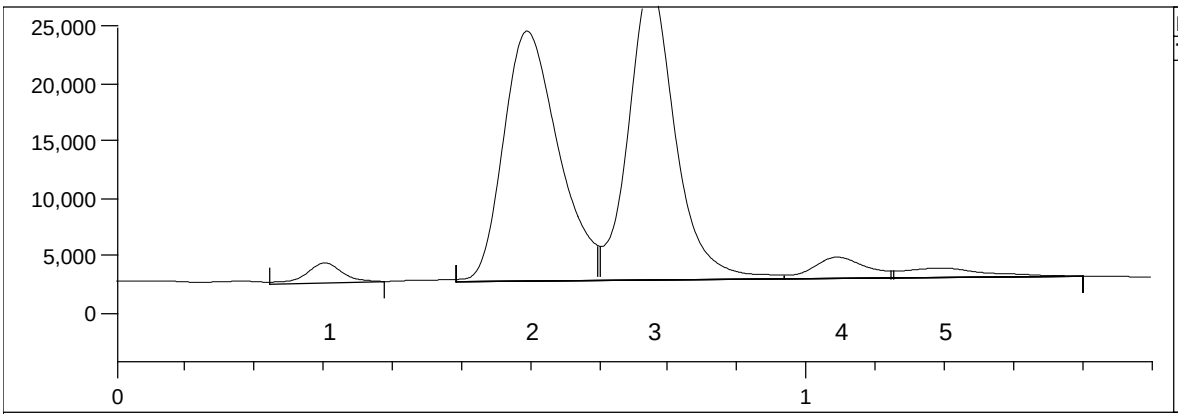
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
49		S	1345019-18		2	98,353	0.413	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:48 PM

Peak	rt	Area
1m	0.31	7,213,509
2	0.63	99,646
3	0.80	2,196,562
4	1.09	177,122
5	1.24	195,733

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
50		S	1345019-19		2	99,646	0.418	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 3:52 PM

Peak	rt	Area
1	0.30	54,398
2	0.59	1,195,178
3	0.77	1,198,907
4	1.04	94,479
5	1.19	65,750

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
51		OPR	SEQ-CCV		2	1,195,178	5.02		100.	80-120	accept
Notes											

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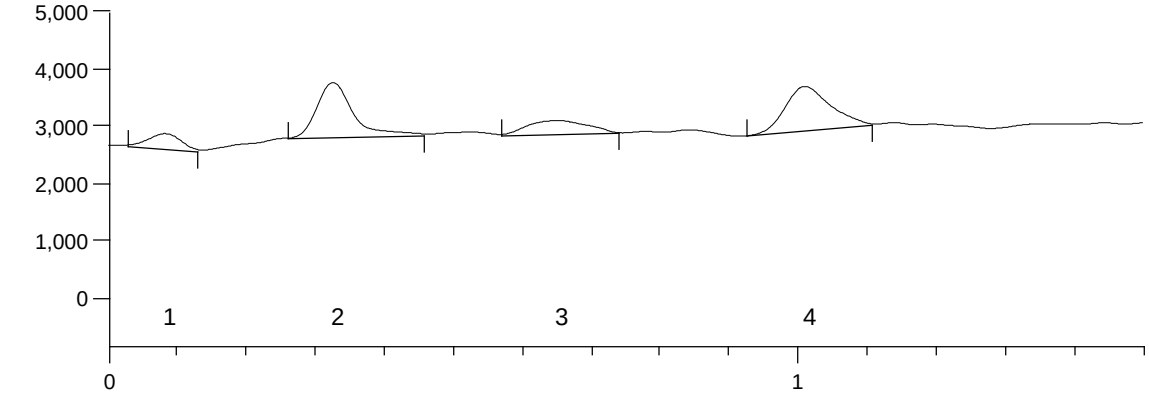
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

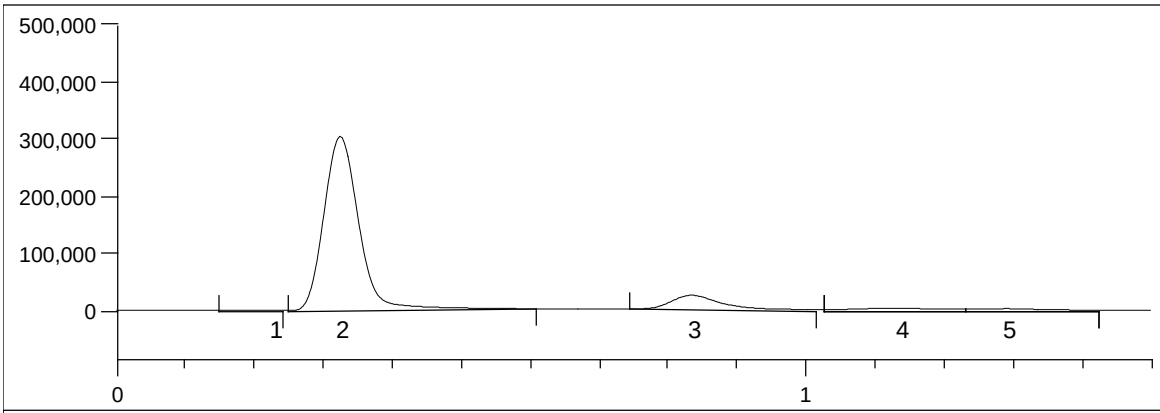
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 3:57 PM

Peak	rt	Area
1	0.08	7,204
2	0.32	33,458
3	0.65	13,603
4	1.01	35,167

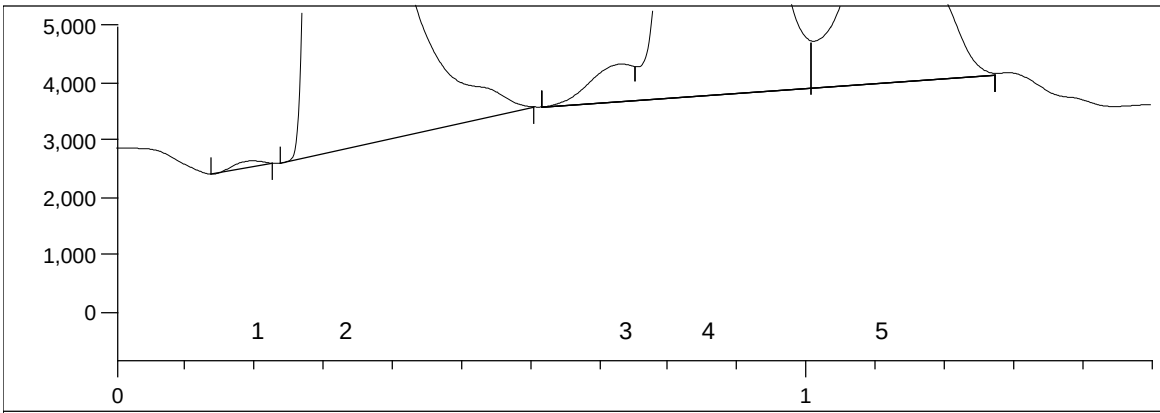
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
52		CCB	SEQ-CCB		3	13,603	0.0571		0.0571	< 0.4	accept
Notes											



Date: 12/11/13
Time: 4:02 PM

Peak	rt	Area
1	0.22	2,634
2	0.32	10,649,591
3	0.83	1,161,124
4	1.13	183,727
5	1.29	110,350

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
53		S	1345019-20			0	0.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:07 PM

Peak	rt	Area
1	0.19	3,758
2	0.32	6,847,787
3	0.73	28,464
4	0.85	3,276,858
5	1.10	253,715

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
54		S	1345019-21		3	28,464	0.119	0.00		< HS	accept
Notes											

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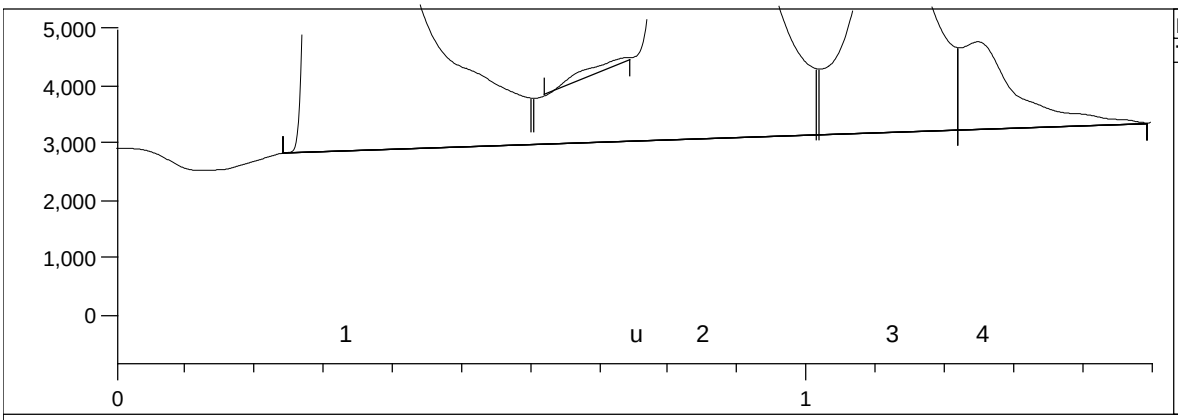
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

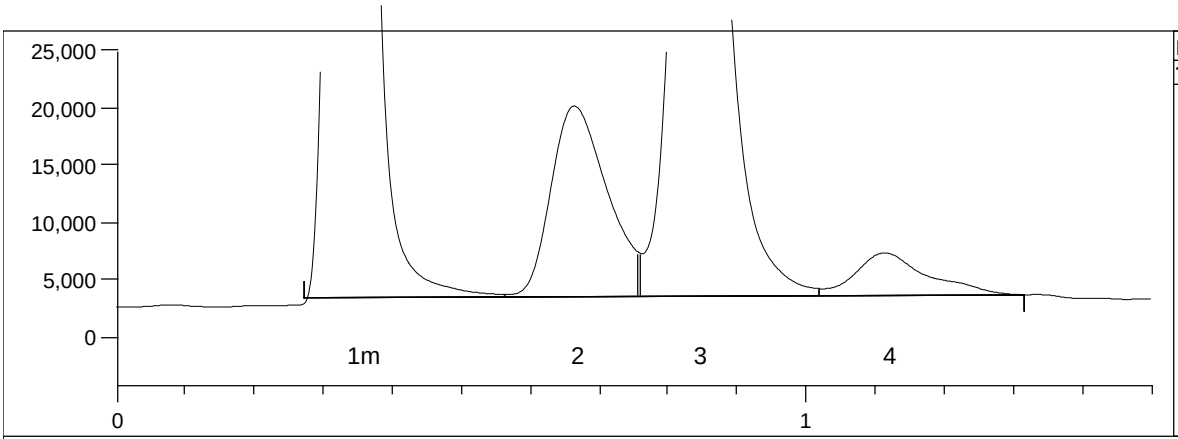
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:11 PM

Peak	rt	Area
1	0.32	7,257,508
2	0.84	3,685,949
3	1.12	307,693
4	1.24	83,236
u	0.74	6,539

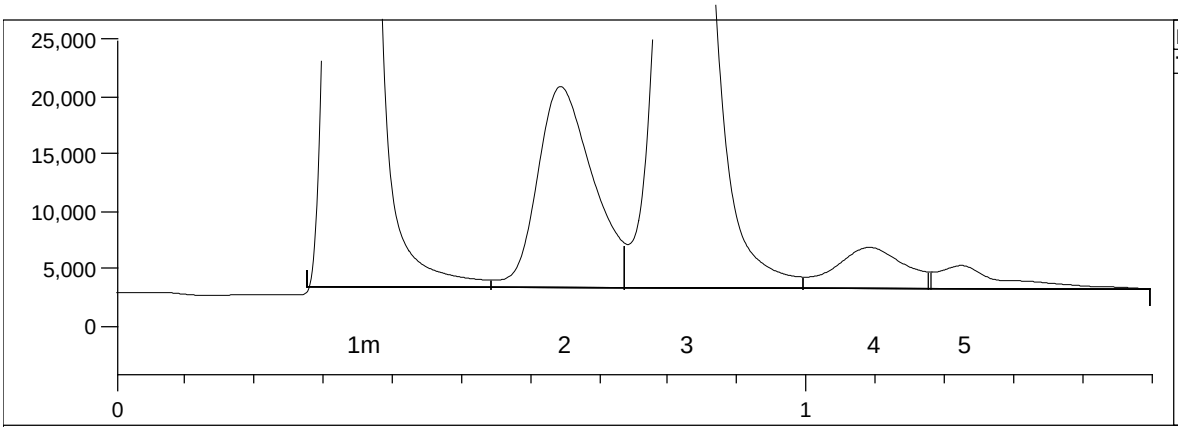
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
55		S	B132013-DUP3		u	6,539	0.0275	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:16 PM

Peak	rt	Area
1m	0.34	6,292,986
2	0.66	952,977
3	0.84	3,712,347
4	1.11	269,061

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
56		S	B132013-MS3		2	952,977	4.00	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:21 PM

Peak	rt	Area
1m	0.34	6,558,097
2	0.64	972,178
3	0.82	3,575,265
4	1.09	240,995
5	1.22	125,414

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
57		S	B132013-MSD3		2	972,178	4.08	0.00		< HS	accept
Notes											

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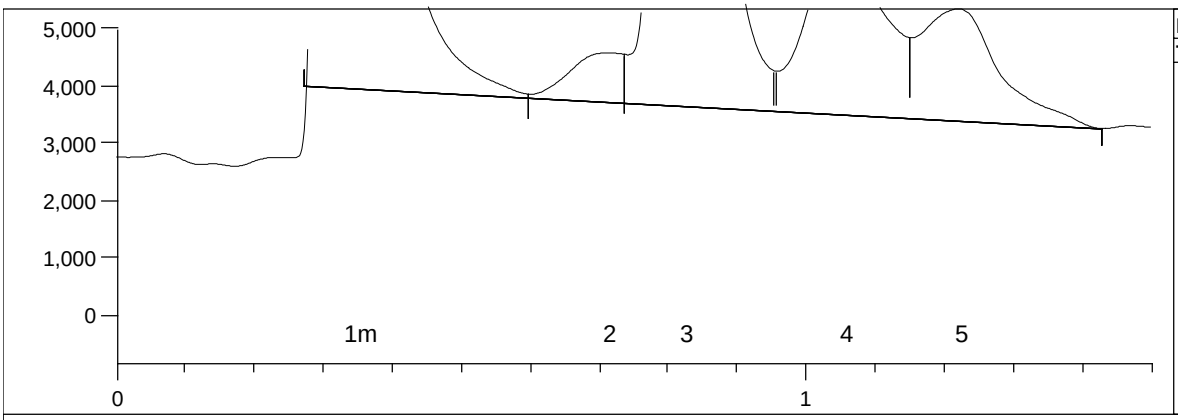
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

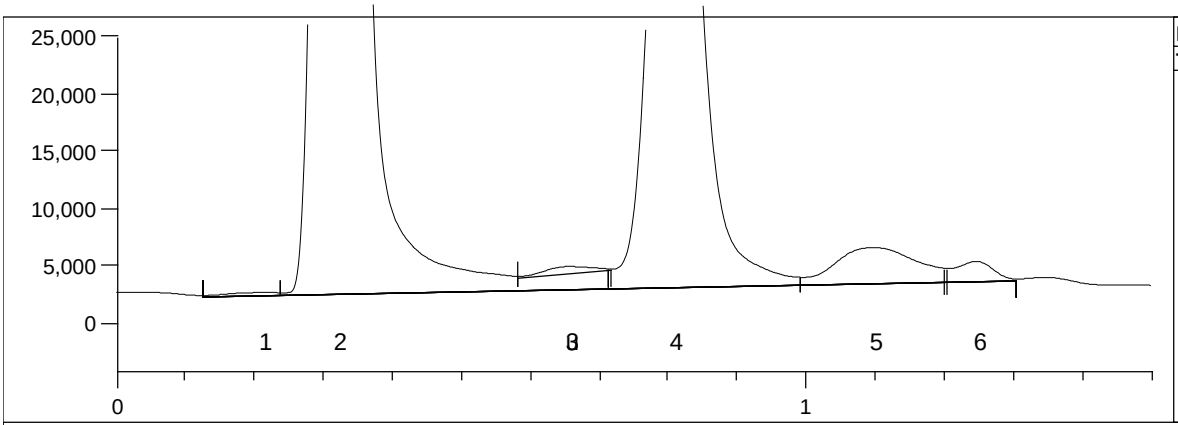
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:26 PM

Peak	rt	Area
1m	0.33	7,032,421
2	0.70	46,880
3	0.82	2,208,888
4	1.05	235,976
5	1.22	152,965

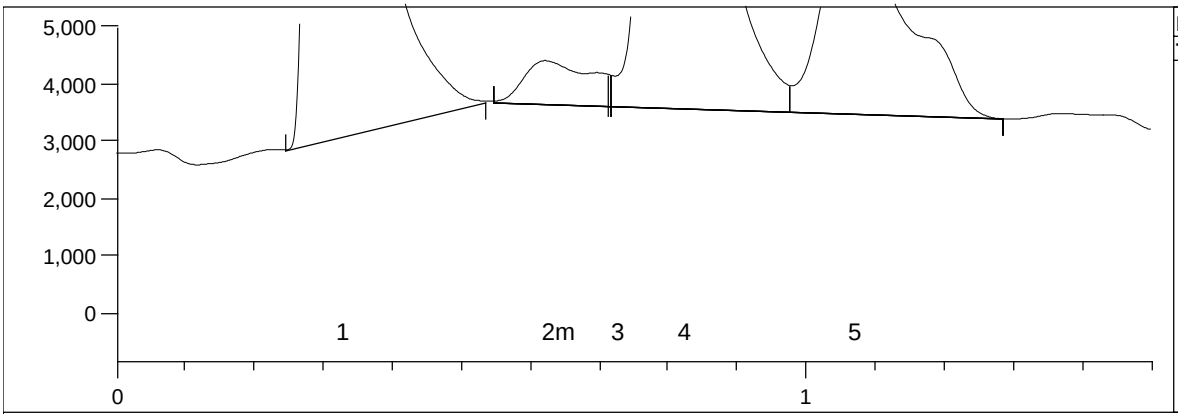
Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
58		S	1345019-22		2	46,880	0.197	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:31 PM

Peak	rt	Area
1	0.20	7,063
2	0.32	8,419,514
3	0.65	131,406
4	0.80	3,094,927
5	1.09	243,744
6	1.24	57,610
u	0.65	22,611

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
59		S	1345019-23		u	22,611	0.0949	0.00		< HS	accept
Notes											



Date: 12/11/13
Time: 4:35 PM

Peak	rt	Area
1	0.32	6,253,389
2m	0.62	50,079
3	0.72	510
4	0.81	2,490,274
5	1.06	296,782

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
60		S	1345019-24		2m	50,079	0.210	0.00		< HS	accept
Notes											

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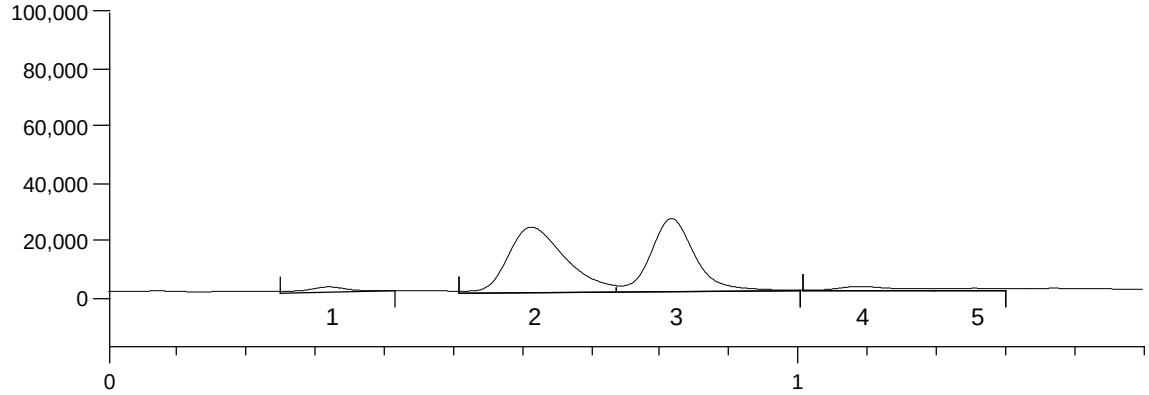
Peak Report

Batch Number: B132013
Method Number: BR-0021

Project Number(s): 1300863
Instrument ID: HGAA2

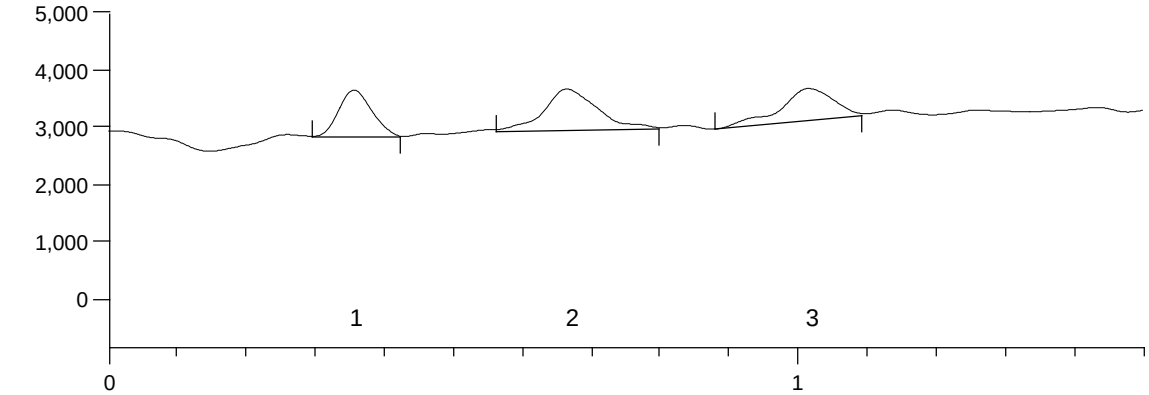
Date Analyzed: 12/11/13
Analyst Name: IRJ



Date: 12/11/13
Time: 4:40 PM

Peak	rt	Area
1	0.32	46,795
2	0.61	1,263,249
3	0.81	1,095,512
4	1.08	57,495
5	1.25	9,543

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
61		OPR	SEQ-CCV		2	1,263,249	5.30		106	80-120	accept
Notes											



Date: 12/11/13
Time: 4:44 PM

Peak	rt	Area
1	0.35	26,826
2	0.66	35,468
3	1.01	28,785

Run	Trap	Type	Name/ID	M B	Peak	Peak Area	Analyzed Result	Final Result	QA Results	Criteria	Notes
62		CCB	SEQ-CCB		2	35,468	0.149		0.149	< 0.4	accept
Notes											

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