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February 22, 2002

ACCULABS, INC.

Kristi Pawski
TechLaw, Inc.
105 West Madison
Suite 900
Chicago, IL 60602

TEL: (312) 345-8963
FAX

RE:

Order No.: G02020055

Dear Kristi Pawski:

Acculabs, Inc. received 7 samples on 2/5/02 11:15:00 AM for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Deborah O Updyke
Project Manager

4130

4663 TABLE MOUNTAIN DRIVE, GOLDEN, COLORADO 80403-1650
TELEPHONE (303)277-9514 FAX (303)277-9512 WWW.ACCULABS.COM

DFR Study / Dure Lupulp

TechLaw, Inc.

Acculabs Job Number: G02020055

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Interlab Chain of Custody

Date: 01/28/2002 Page: 1 of 1

ANALYSIS REQUEST

Authorized by/ Attn: John Young

Bill to: HWB

AccuLab, Inc.
4663 Table Moutain Dr.
Golden, CO 80403-1650

CLIENT: Hazardous Waste Bureau
ADDRESS: 2905 Rodeo Park Drive East, Buildin
CITY, STATE, Z: Santa Fe, NM 87505-6303
(505)428-2500 Fax (505)428-2567

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Perchlorate EPA 8321 modified (LC-MS-MS)	Cost Estimate	Bottles
Spring 4	01/28/2002	10:34	water		x		1
Spring 4C	01/28/2002	10:45	water		x		1
Spring 4E	01/28/2002	11:15	water		x		1
Spring 4B	01/28/2002	10:45	water		x		1
Spring 4A	01/28/2002	13:30	water		x		1
Spring 4AA	01/28/2002	13:50	water		x		1
American Spring	01/29/2002	10:25	water		x		1

Total containers sent

PROJECT INFORMATION	SAMPLE RECEIPT
PROJECT #:	Total Number of Containers
PROJ. NAME:	Chain of Custody Seals
QC LEVEL: STD.	Received Intact?
QC REQUIRED:	Received Good Cond./Cold
	LAB NUMBER:

RELINQUISED BY: 1	RELINQUISED BY: 3
Signature: [signature] Time: 12:30	Signature: Fed-Ex Time:
Printed Name: Michael Dale Date: 2-4-02	Printed Name: Pinnacle Laboratories, Inc. Date:

RECEIVED BY: 2	RECEIVED BY: 4
Signature: [signature] Time: 11:15	Signature: Time:
Company: Printed Name: Brian P. Miller Date: 2-5-02	Company: Printed Name: Date:

DUE DATE:
RUSH SURCHARGE:
CLIENT DISCOUNT:
SPECIAL CERTIFICATION
REQUIRED: YES NO

Bill to Techlaw

Project # 01.28.02 - TECHLAW
There are two C-o-Cs for this project: see Pinnacle

000003

Acculabs, Inc. **Date:** *22-Feb-02*

CLIENT: TechLaw, Inc.
Project:
Lab Order: G02020055

CASE NARRATIVE

Samples were received on 2/5/02 and temperature upon receipt at the laboratory was 2.6 degrees C.

Analytical Comments for LC/MS/MS:

The matrix spike on sample G02020055-01A had a percent recovery of 69% which is outside the control limits of 70-130%. The LCS had a percent recovery of 77% which is within control limits.

Note in the form ones, sample G02020055-05A's result was 0.45 ug/L which rounds to 0.5 ug/L, therefore it does have a J flag.

All other quality control parameters required by the Acculabs Quality Assurance Plan were in control for this project. No anomalies were observed that would affect interpretation of the data.

RESULTS & QC FORMS

Acculabs Inc.

Perchlorate Analysis Data Sheet Flags

Q Flag	Description
U	Undetected
J	Value Between MDL and RL
B	Compound Detected in Method Blank
E	Estimated. Exceeds Calibration Range
I	Reporting Limit Increased Due to Matrix Effects
D	Analyte Diluted Out of Range

Form 1

Perchlorate Analysis Data Sheet

Client Sample No.

Spring 4

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-01A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.3	J	1	02/13/02	per021316

Comments

400000

Form 1

Perchlorate Analysis Data Sheet

Client Sample No.

Spring 4

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-01ADUP

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	U	1	02/13/02	per021317

Comments

000008

Perchlorate Analysis Data Sheet

Client Sample No.: Spring 4C

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-02A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.4	J	1	02/13/02	per021318

Comments

Perchlorate Analysis Data Sheet

Client Sample No.: Spring 4E

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-03A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.3	J	1	02/13/02	per021319

Comments

000010

Perchlorate Analysis Data Sheet

Client Sample No.: Spring 4B

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-04A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	U	1	02/13/02	per021320

Comments

000011

Perchlorate Analysis Data Sheet

Client Sample No.

Spring 4A

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-05A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	J	1	02/13/02	per021321

Comments

Perchlorate Analysis Data Sheet

Client Sample No.: Spring 4AA

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-06A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.4	J	1	02/13/02	per021322

Comments

Form 1

Perchlorate Analysis Data Sheet

Client Sample No.

American Spring

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-07A

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.3	J	1	02/13/02	per021323

Comments

000014

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: Method Blank

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	U	1	02/13/02	per021311A

Comments

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: LCS

Extract Batch Code: 2808

Date Filtered: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	7.7		1	02/13/02	per021312A

Comments

Form 1

Client Sample No.

Spring 4

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 02/05/02

Acculabs Job No: G02020055

Acculabs Sample ID: G02020055-01AMS

Extract Batch Code: 2808

Date Extracted: 02/12/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	7.1		1	02/13/02	per021313A

Comments

000017

Form 2

Perchlorate Initial Calibration

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL Acculabs Job No: G02020055

Instrument ID: F122 Date(s) Analyzed: 02/13/02

HPLC Column: Hamilton PRP-X300 anion exclusion

Calibration Level:	1	2	3	4	5	6
Cal Concentration (ug/L):	0.25	2	5	10	15	20

Coefficient of Determination: 0.994211

Calibration Curve: 49.3821X - 0.276522

Response Type: Internal Standard

Curve Type: Linear, Weighting 1/X^2

Perchlorate Initial Calibration Verification

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Analyzed: 02/13/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	10	11	110	02/13/02	per021307

Comments

Perchlorate Continuing Calibration Verification

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Analyzed: 02/13/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	10	10	100	02/13/02	per021309A
Perchlorate	10	11	110	02/13/02	per021314A
Perchlorate	10	9	90	02/13/02	per021324

Comments

Perchlorate Initial Calibration Blank

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Analyzed: 02/13/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	0.5	U	NA	02/13/02	per021308

Comments

Perchlorate Continuing Calibration Blank

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Analyzed: 02/13/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	0.5	U	NA	02/13/02	per021310A
Perchlorate	0.5	U	NA	02/13/02	per021315A
Perchlorate	0.5	U	NA	02/13/02	per021325

Comments

Perchlorate Laboratory Control Sample

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Filtered: 02/12/02

Matrix: Aqueous

Reporting Units: ug/L

Concentration Units: ug/L

Analyte	TRUE	Found	%Rec
Perchlorate	10	7.7	77

Comments

Perchlorate Spike Sample Recovery

Client Sample ID
Spring 4

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Filtered: 02/12/02

Matrix: Aqueous

Acculabs Sample ID: G02020055-01A

Reporting Units: ug/L

Type: MS

Concentration Units: ug/L

Analyte	Spike Result	Sample Result	Spike Added	%Rec	Q	Control Limit % Rec
Perchlorate	7.1	0.3	10	69	*	70 - 130

Comments

Perchlorate Duplicates

Client Sample ID
Spring 4

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02020055

Extract Batch Code: 2808

Date Filtered: 02/13/02

Matrix: Aqueous

Acculabs Sample ID: G02020055-01A

Reporting Units: ug/L

Concentration Units: ug/L

Analyte	Sample	Duplicate	%RPD	Q	Control Limit %
Perchlorate	0.3	U	NA		20

Comments

Perchlorate IS Area and Report Summary

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Instrument ID: F122

Acculabs Job No: G02020055

Date(s) Analyzed:

HPLC Column: Hamilton PRP-X300

	IS Citric Acid (Area)	RT (min)	
10 ppb Standard	155743.9	5.41	
Upper Limit	311487.8	5.91	
Lower Limit	77872.0	4.91	
Sample No.	IS #1	RT (min)	
MB-2808	123533.6	5.41	
LCS-2808	176872.1	5.40	
Spring 4 (MS)	173888.8	5.40	
Spring 4	149952.7	5.40	
Spring 4 (DUP)	222482.0	5.40	
Spring 4C	211512.4	5.39	
Spring 4E	165841.1	5.40	
Spring 4B	260570.2	5.40	
Spring 4A	154098.3	5.40	
Sring 4AA	163166.1	5.40	
American Spring	175915.0	5.39	

Column used to flag values outside QC limits with an asterick.

* Values outside QC limits.

PREPARATION RAW DATA

Acculabs, Inc.

PREP BATCH REPORT

Prep Start Date: **2/12/02 1:16:59 PM**
Prep End Date: **2/12/02 2:00:00 PM**

Prep Batch **2808** Prep Code: **P_MSMSCO4_** Technician: **Chris D Borton**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	Sol Added	Sol Recov	Fin Vol	factor	PrepStart	PrepEnd
MB-2808			10	0	0	10	1.000	2/12/02	2/12/02
LCS-2808			10	0	0	10	1.000	2/12/02	2/12/02
G02020055-01A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-02A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-03A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-04A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-05A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-06A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-07A	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-01AMS	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02
G02020055-01ADUP	Aqueous		10	0	0	10	1.000	2/12/02	2/12/02

2/12/02

sample ID		volume
007.97.1	- Method Blank	10 ml
.2	- LCS	
.3	- G02020055-01A	
.4	- -01A MS	
.5	- -01A DUP	
.6	- -02A	
.7	- -03A	
.8	- -04A	
.9	- -05A	
.10	- -06A	
.11	- -07A	

DCS: ClO_4^- in H_2O
5ppm 052940-1 exp 5/2/02 20µL

Filters:
Ag Lot # 228-111-16 exp 11/2002
Hg Lot # 101-112-58 exp 12/2002
Ba Lot # 206-112-69 exp 12/2002

Procedure:
Followed procedure on page 90 of this book.

CMB
2/12/02

Continued on Page

Read and Understood By

Christopher Butler 2/12/02
Signed Date Signed Date

2/2/02

sample ID		volume
007.90.1	Method Blk	10 ml
.2	LCS	
.3	G0201041 0-01A	
.4	-01A MS	
.5	-01A DUP	
.6	-02A	
.7	-03A	
.8	-04A	
.9	-05A	
.10	-06A	
.11	-07A	
.12	-08A	

DCS: ClO_4^- in H_2O (D) (20µL)
5ppm OS2940-1 exp 5/2/02

Filters
OnGuard Ag Lot 217-111-16 exp 11/2002
Ba Lot 107-108-69 exp 8/2002
H Lot 116-111-48 exp 11/2002

Procedure Final volume of each sample = 10.0 ml
Spiked QC sample w/ 20µL DCS.
Added sample to syringe equipped w/ a Ag-Ba-H cartridge in this order. Filtered sample at a rate of 2 drop/sec or less. Discarded the first 3 mL then collected the remaining. Stored extracts in poly vials at 4°C.

CBB
2/2/02

Continued on Page

Read and Understood By

Christopher Butler 2/2/02
Signed Date Signed Date

Sample List: C:\Masslynx\Perchlorate.PRO\SampleDB\021302per.SPL
Printed: Tue Feb 19 09:48:03 2002

	File Name	File Text	Sample ID	Sample Type	Inject Volume	Vial	Conc A
1	per021301	0.25 ppb Standard	OS3075-1	Standard	50.000	1:1,A	0.25
2	per021302	2.0 ppb Standard	OS3075-2	Standard	50.000	1:1,B	2.0
3	per021303	5.0 ppb Standard	OS3075-3	Standard	50.000	1:1,C	5.0
4	per021304	10.0 ppb Standard	OS3075-4	Standard	50.000	1:1,D	10.0
5	per021305	15.0 ppb Standard	OS3075-5	Standard	50.000	1:1,E	15.0
6	per021306	20.0 ppb Standard	OS3075-6	Standard	50.000	1:1,F	20.0
7	per021307	10 ppb ICV	OS3030-2	QC	50.000	1:2,A	10.0
8	per021308	CCB	---	Blank	50.000	1:2,B	---
9	per021309A	10 ppb CCV	OS3030-2	QC	50.000	1:8,E	10.0
10	per021310A	CCB	---	Blank	50.000	1:8,F	---
11	per021311A	MB-2808	007.97.1	Blank	50.000	1:2,C	---
12	per021312A	LCS-2808	007.97.2	QC	50.000	1:2,D	10
13	per021313A	G02020055-01AMS	007.97.4	QC	50.000	1:2,E	10
14	per021314A	10 ppb CCV	OS3030-2	QC	50.000	1:8,A	10.0
15	per021315A	CCB	---	Blank	50.000	1:8,B	---
16	per021316	G02020055-01A	007.97.3	Analyte	50.000	1:2,F	---
17	per021317	G02020055-01ADUP	007.97.5	Analyte	50.000	1:3,A	---
18	per021318	G02020055-02A	007.97.6	Analyte	50.000	1:3,B	---
19	per021319	G02020055-03A	007.97.7	Analyte	50.000	1:3,C	---
20	per021320	G02020055-04A	007.97.8	Analyte	50.000	1:3,D	---
21	per021321	G02020055-05A	007.97.9	Analyte	50.000	1:3,E	---
22	per021322	G02020055-06A	007.97.10	Analyte	50.000	1:3,F	---
23	per021323	G02020055-07A	007.97.11	Analyte	50.000	1:4,A	---
24	per021324	10 ppb CCV	OS3030-2	QC	50.000	1:8,C	10
25	per021325	CCB	---	Blank	50.000	1:8,D	---
26	per021326	Method Blank	007.98.1	---	50.000	1:4,D	---
27	per021327	LCS	007.98.2	---	50.000	1:4,E	10
28	per021328	AW578	007.98.3	---	50.000	1:4,F	---
29	per021329	AW578MS	007.98.4	---	50.000	1:5,A	10
30	per021330	AW578DUP	007.98.5	---	50.000	1:5,B	---
31	per021331	AW579	007.98.6	---	50.000	1:5,C	---
32	per021332	AW580	007.98.7	---	50.000	1:5,D	---
33	per021333	AW581	007.98.8	---	50.000	1:5,E	---
34	per021334	10 ppb CCV	OS3030-2	QC	50.000	1:5,F	10
35	per021335	CCB	---	Blank	50.000	1:6,A	---
36	per021336	---	---	---	50.000	1:6,D	---
37	per021337	CCB	---	Blank	50.000	1:4,C	---
38	per021338	---	---	---	50.000	1:6,F	---

Sample List: C:\Masslynx\Perchlorate.PRO\SampleDB\021302per.SPL
Printed: Tue Feb 19 09:48:03 2002

Page Position: (2, 1)

	LIMS ID	LIMS TYPE	LIMS DIL	Header	Inlet File	MS File
1	STD1	ICAL	1	Header	perchlorate	perchlorate MSMS
2	STD2	ICAL	1	Header	perchlorate	perchlorate MSMS
3	STD3	ICAL	1	Header	perchlorate	perchlorate MSMS
4	STD4	ICAL	1	Header	perchlorate	perchlorate MSMS
5	STD5	ICAL	1	Header	perchlorate	perchlorate MSMS
6	STD6	ICAL	1	Header	perchlorate	perchlorate MSMS
7	ICV	ICV	1	Header	perchlorate	perchlorate MSMS
8	ICB	ICB	1	Header	perchlorate	perchlorate MSMS
9	CCV1	CCV	1	Header	perchlorate	perchlorate MSMS
10	CCB1	CCB	1	Header	perchlorate	perchlorate MSMS
11	MB-2808	MBLK	1	Header	perchlorate	perchlorate MSMS
12	LCS-2808	LCS	1	Header	perchlorate	perchlorate MSMS
13	G02020055-01AMS	MS	1	Header	perchlorate	perchlorate MSMS
14	CCV1	CCV	1	Header	perchlorate	perchlorate MSMS
15	CCB1	CCB	1	Header	perchlorate	perchlorate MSMS
16	G02020055-01A	SAMP	1	Header	perchlorate	perchlorate MSMS
17	G02020055-01ADUP	DUP	1	Header	perchlorate	perchlorate MSMS
18	G02020055-02A	SAMP	1	Header	perchlorate	perchlorate MSMS
19	G02020055-03A	SAMP	1	Header	perchlorate	perchlorate MSMS
20	G02020055-04A	SAMP	1	Header	perchlorate	perchlorate MSMS
21	G02020055-05A	SAMP	1	Header	perchlorate	perchlorate MSMS
22	G02020055-06A	SAMP	1	Header	perchlorate	perchlorate MSMS
23	G02020055-07A	SAMP	1	Header	perchlorate	perchlorate MSMS
24	CCV2	CCV	1	Header	perchlorate	perchlorate MSMS
25	CCB2	CCB	1	Header	perchlorate	perchlorate MSMS
26	---	---	---	Header	perchlorate	perchlorate MSMS
27	---	---	---	Header	perchlorate	perchlorate MSMS
28	---	---	---	Header	perchlorate	perchlorate MSMS
29	---	---	---	Header	perchlorate	perchlorate MSMS
30	---	---	---	Header	perchlorate	perchlorate MSMS
31	---	---	---	Header	perchlorate	perchlorate MSMS
32	---	---	---	Header	perchlorate	perchlorate MSMS
33	---	---	---	Header	perchlorate	perchlorate MSMS
34	CCV2	CCV	1	Header	perchlorate	perchlorate MSMS
35	CCB2	CCB	1	Header	perchlorate	perchlorate MSMS
36	---	---	---	Header	perchlorate	perchlorate MSMS
37	CCB2	CCB	1	Header	perchlorate	perchlorate MSMS
38	---	---	---	Header	perchlorate	perchlorate MSMS

	MS Tune File
1	perchlorate MSMS
2	perchlorate MSMS
3	perchlorate MSMS
4	perchlorate MSMS
5	perchlorate MSMS
6	perchlorate MSMS
7	perchlorate MSMS
8	perchlorate MSMS
9	perchlorate MSMS
10	perchlorate MSMS
11	perchlorate MSMS
12	perchlorate MSMS
13	perchlorate MSMS
14	perchlorate MSMS
15	perchlorate MSMS
16	perchlorate MSMS
17	perchlorate MSMS
18	perchlorate MSMS
19	perchlorate MSMS
20	perchlorate MSMS
21	perchlorate MSMS
22	perchlorate MSMS
23	perchlorate MSMS
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25	perchlorate MSMS
26	perchlorate MSMS
27	perchlorate MSMS
28	perchlorate MSMS
29	perchlorate MSMS
30	perchlorate MSMS
31	perchlorate MSMS
32	perchlorate MSMS
33	perchlorate MSMS
34	perchlorate MSMS
35	perchlorate MSMS
36	perchlorate MSMS
37	perchlorate MSMS
38	perchlorate MSMS

Acculabs Research Inc.
Specialty Analytical Services Group

2/19/02

Analyte Summary

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(021202).mdb, Time: Wed Feb 13 16:30:31 2002
Calibration: Untitled, Time: Tue Feb 19 09:35:47 2002

Compound name: Perchlorate
Coefficient of Determination: 0.994211
Calibration curve: 49.3821 * x + -0.276522
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x^2, Axis trans: None

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq Time	Acq Date	RRF
1	per021301	0.25 ppb Standard	OS3075-1	Standard	0.250	5.94	19532.895	159316...	12.260	MM	0.2539	1.6	101.6	09:42:18	13-Feb-02	49.042
2	per021302	2.0 ppb Standard	OS3075-2	Standard	2.000	5.96	156601....	189646...	82.575	bb	1.6778	-16.1	83.9	10:01:21	13-Feb-02	41.288
3	per021303	5.0 ppb Standard	OS3075-3	Standard	5.000	5.97	448905....	176051...	254.986	bb	5.1691	3.4	103.4	10:18:53	13-Feb-02	50.997
4	per021304	10.0 ppb Standard	OS3075-4	Standard	10.000	5.97	861096....	155743...	552.892	MM	11.2018	12.0	112.0	10:36:25	13-Feb-02	55.289
5	per021305	15.0 ppb Standard	OS3075-5	Standard	15.000	5.99	1202585...	160771...	748.008	bb	15.1530	1.0	101.0	10:53:58	13-Feb-02	49.867
6	per021306	20.0 ppb Standard	OS3075-6	Standard	20.000	6.00	1448170...	149450...	968.996	bb	19.6280	-1.9	98.1	11:11:30	13-Feb-02	48.450
7	per021307	10 ppb ICV	OS3030-2	QC	10.000	6.01	745162....	143326...	519.905	bb	10.5338	5.3	105.3	11:29:03	13-Feb-02	51.991
8	per021308	CCB		Blank		8.07	90.960	12617.35	0.721	bb	0.0202			11:46:36	13-Feb-02	0.000
9	per021309A	10 ppb CCV	OS3030-2	QC	10.000	6.05	726252....	142817...	508.519	bb	10.3032	3.0	103.0	14:07:06	13-Feb-02	50.852
10	per021310A	CCB		Blank		8.92	3.657	149033...	0.002	bb	0.0056			14:31:35	13-Feb-02	0.000
11	per021311A	MB-2808	007.97.1	Blank				123533...						14:50:42	13-Feb-02	
12	per021312A	LCS-2808	007.97.2	QC	10.000	6.01	668784....	176872...	378.118	bb	7.6626	-23.4	76.6	15:08:18	13-Feb-02	37.812
13	per021313A	G02020055-01A...	007.97.4	QC	10.000	5.56	613216....	173888...	352.649	MM	7.1468	-28.5	71.5	15:25:50	13-Feb-02	35.265
14	per021314A	10 ppb CCV	OS3030-2	QC	10.000	6.05	722715....	135131...	534.825	bb	10.8360	8.4	108.4	15:43:28	13-Feb-02	53.483
15	per021315A	CCB		Blank				137053...						16:01:03	13-Feb-02	
16	per021316	G02020055-01A	007.97.3	Analyte		5.57	20820.668	149952...	13.885	MM	0.2868			16:18:37	13-Feb-02	0.000
17	per021317	G02020055-01A...	007.97.5	Analyte		5.56	26046.881	222482...	11.707	MM	0.2427			16:36:09	13-Feb-02	0.000
18	per021318	G02020055-02A	007.97.6	Analyte		5.55	44606.605	211512...	21.089	MM	0.4327			16:53:43	13-Feb-02	0.000
19	per021319	G02020055-03A	007.97.7	Analyte		5.53	21600.641	165841...	13.025	MM	0.2694			17:11:15	13-Feb-02	0.000
20	per021320	G02020055-04A	007.97.8	Analyte		6.00	30387.164	260570...	11.662	MM	0.2418			17:32:28	13-Feb-02	0.000
21	per021321	G02020055-05A	007.97.9	Analyte		5.85	33835.414	154098...	21.957	MM	0.4502			17:56:15	13-Feb-02	0.000
22	per021322	G02020055-06A	007.97.10	Analyte		5.82	30881.607	163166...	18.926	MM	0.3889			18:13:47	13-Feb-02	0.000
23	per021323	G02020055-07A	007.97.11	Analyte		5.96	27000.285	175914...	15.348	MM	0.3164			18:31:20	13-Feb-02	0.000
24	per021324	10 ppb CCV	OS3030-2	QC	10.000	6.08	813267....	183033...	444.327	MM	9.0033	-10.0	90.0	18:48:53	13-Feb-02	44.433
25	per021325	CCB		Blank		8.85	129.573	152656...	0.085	bb	0.0073			19:06:28	13-Feb-02	0.000
26	per021326	Method Blank	007.98.1			9.24	433.482	121787...	0.356	bb	0.0128			19:24:03	13-Feb-02	0.000
27	per021327	LCS	007.98.2			6.08	678597....	144558...	469.427	bb	9.5116	-4.9	95.1	19:41:36	13-Feb-02	46.943
28	per021328	AW578	007.98.3			6.01	178862....	369460...	48.412	MM	0.9860			19:59:09	13-Feb-02	0.000
29	per021329	AW578MS	007.98.4			5.84	663337....	237840...	278.900	MM	5.6534	-43.5	56.5	20:16:42	13-Feb-02	27.890
30	per021330	AW578DUP	007.98.5			5.75	283445....	291555...	97.218	bb	1.9743			20:34:17	13-Feb-02	0.000
31	per021331	AW579	007.98.6			5.80	215680....	318246...	67.772	bb	1.3780			20:51:50	13-Feb-02	0.000

Chemist: Christopher Borton

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Compound name: Perchlorate

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Time	Acq.Date	RRF
32	per021332	AW580	007.98.7			5.69	48529.469	360527...	13.461	MM	0.2782			21:09:23	13-Feb-02	0.000
33	per021333	AW581	007.98.8			5.78	94379.203	375351...	25.144	MM	0.5148			21:26:56	13-Feb-02	0.000
34	per021334	10 ppb CCV	OS3030-2	QC	10.000	5.84	815040....	146337...	556.959	bb	11.2842	12.8	112.8	21:44:30	13-Feb-02	55.696
35	per021335	CCB		Blank		7.87	108.355	125127...	0.087	bb	0.0074			22:02:04	13-Feb-02	0.000

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Chemist: Christopher Borton

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Compound name: Citric Acid-d4
Response Factor: 1651.63
RRF SD: 148.798, Relative SD: 9.00915
Response type: External Std, Area
Curve type: RF

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Time	Acq.Date	RRF
1	per021301	0.25 ppb Standard	OS3075-1	Standard	100.000	5.41	159316....		159316.656	bb	96.4600	-3.5	96.5	09:42:18	13-Feb-02	1593.167
2	per021302	2.0 ppb Standard	OS3075-2	Standard	100.000	5.41	189646....		189646.344	bb	114.8235	14.8	114.8	10:01:21	13-Feb-02	1896.463
3	per021303	5.0 ppb Standard	OS3075-3	Standard	100.000	5.41	176051....		176051.031	bb	106.5921	6.6	106.6	10:18:53	13-Feb-02	1760.510
4	per021304	10.0 ppb Standard	OS3075-4	Standard	100.000	5.41	155743....		155743.906	bb	94.2969	-5.7	94.3	10:36:25	13-Feb-02	1557.439
5	per021305	15.0 ppb Standard	OS3075-5	Standard	100.000	5.41	160771....		160771.719	bb	97.3410	-2.7	97.3	10:53:58	13-Feb-02	1607.717
6	per021306	20.0 ppb Standard	OS3075-6	Standard	100.000	5.41	149450....		149450.609	bb	90.4865	-9.5	90.5	11:11:30	13-Feb-02	1494.506
7	per021307	10 ppb ICV	OS3030-2	QC	100.000	5.40	143326....		143326.656	bb	86.7787	-13.2	86.8	11:29:03	13-Feb-02	1433.267
8	per021308	CCB		Blank	100.000	5.40	12617.354		12617.354	MM	7.6393	-92.4	7.6	11:46:36	13-Feb-02	126.174
9	per021309A	10 ppb CCV	OS3030-2	QC	100.000	5.40	142817....		142817.297	bb	86.4703	-13.5	86.5	14:07:06	13-Feb-02	1428.173
10	per021310A	CCB		Blank	100.000	5.41	149033....		149033.828	bb	90.2342	-9.8	90.2	14:31:35	13-Feb-02	1490.338
11	per021311A	MB-2808	007.97.1	Blank	100.000	5.41	123533....		123533.641	bb	74.7948	-25.2	74.8	14:50:42	13-Feb-02	1235.336
12	per021312A	LCS-2808	007.97.2	QC	100.000	5.40	176872....		176872.109	bb	107.0892	7.1	107.1	15:08:18	13-Feb-02	1768.721
13	per021313A	G02020055-01A...	007.97.4	QC	100.000	5.40	173888....		173888.828	MM	105.2829	5.3	105.3	15:25:50	13-Feb-02	1738.888
14	per021314A	10 ppb CCV	OS3030-2	QC	100.000	5.40	135131....		135131.031	bb	81.8166	-18.2	81.8	15:43:28	13-Feb-02	1351.310
15	per021315A	CCB		Blank	100.000	5.40	137053....		137053.031	bb	82.9803	-17.0	83.0	16:01:03	13-Feb-02	1370.530
16	per021316	G02020055-01A	007.97.3	Analyte	100.000	5.40	149952....		149952.734	bb	90.7905	-9.2	90.8	16:18:37	13-Feb-02	1499.527
17	per021317	G02020055-01A...	007.97.5	Analyte	100.000	5.40	222482....		222482.031	bb	134.7042	34.7	134.7	16:36:09	13-Feb-02	2224.820
18	per021318	G02020055-02A	007.97.6	Analyte	100.000	5.39	211512....		211512.438	bb	128.0626	28.1	128.1	16:53:43	13-Feb-02	2115.124
19	per021319	G02020055-03A	007.97.7	Analyte	100.000	5.40	165841....		165841.141	bb	100.4104	0.4	100.4	17:11:15	13-Feb-02	1658.411
20	per021320	G02020055-04A	007.97.8	Analyte	100.000	5.40	260570....		260570.172	MM	157.7651	57.8	157.8	17:32:28	13-Feb-02	2605.702
21	per021321	G02020055-05A	007.97.9	Analyte	100.000	5.40	154098....		154098.250	bb	93.3005	-6.7	93.3	17:56:15	13-Feb-02	1540.983
22	per021322	G02020055-06A	007.97.10	Analyte	100.000	5.40	163166....		163166.141	bb	98.7908	-1.2	98.8	18:13:47	13-Feb-02	1631.661
23	per021323	G02020055-07A	007.97.11	Analyte	100.000	5.39	175914....		175914.953	bb	106.5097	6.5	106.5	18:31:20	13-Feb-02	1759.150
24	per021324	10 ppb CCV	OS3030-2	QC	100.000	5.41	183033....		183033.563	MM	110.8197	10.8	110.8	18:48:53	13-Feb-02	1830.336
25	per021325	CCB		Blank	100.000	5.40	152656....		152656.406	bb	92.4275	-7.6	92.4	19:06:28	13-Feb-02	1526.564
26	per021326	Method Blank	007.98.1		100.000	5.41	121787....		121787.617	bb	73.7377	-26.3	73.7	19:24:03	13-Feb-02	1217.876
27	per021327	LCS	007.98.2		100.000	5.40	144558....		144558.813	bb	87.5247	-12.5	87.5	19:41:36	13-Feb-02	1445.588
28	per021328	AW578	007.98.3		100.000	5.38	369460....		369460.781	bb	223.6941	123.7	223.7	19:59:09	13-Feb-02	3694.608
29	per021329	AW578MS	007.98.4		100.000	5.38	237840....		237840.766	MM	144.0033	44.0	144.0	20:16:42	13-Feb-02	2378.408
30	per021330	AW578DUP	007.98.5		100.000	5.38	291555....		291555.906	bb	176.5258	76.5	176.5	20:34:17	13-Feb-02	2915.559
31	per021331	AW579	007.98.6		100.000	5.38	318246....		318246.875	bb	192.6861	92.7	192.7	20:51:50	13-Feb-02	3182.469
32	per021332	AW580	007.98.7		100.000	5.37	360527....		360527.938	MM	218.2856	118.3	218.3	21:09:23	13-Feb-02	3605.279
33	per021333	AW581	007.98.8		100.000	5.38	375351....		375351.844	MM	227.2609	127.3	227.3	21:26:56	13-Feb-02	3753.518
34	per021334	10 ppb CCV	OS3030-2	QC	100.000	5.40	146337....		146337.516	MM	88.6017	-11.4	88.6	21:44:30	13-Feb-02	1463.375

Chemist: Christopher Borton

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Compound name: Citric Acid-d4

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Time	Acq.Date	RRF
35	per021335	CCB		Blank	100.000	5.39	125127....		125127.164	bb	75.7596	-24.2	75.8	22:02:04	13-Feb-02	1251.272

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Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/19/02

Sample Data

Analyst: Christopher Borton

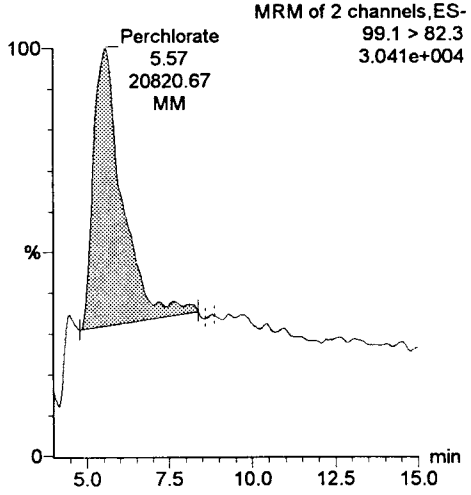
Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

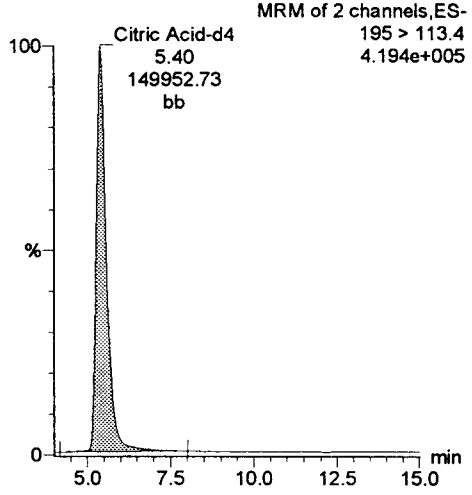
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021316
Date: 13-Feb-2002
Time: 16:18:37
ID: 007.97.3
Description: G02020055-01A
Vial: 1:2,F
Vial: 1:2,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.57	20820.67	149952.73	13.885	MM	0.287			13-Feb-02	16:18:37	19-Feb-02	09:40:19		0.0
2	Citric Acid-d4	195 > 113.4	5.40	149952.73		149952.734	bb	90.791	-9.2	90.8	13-Feb-02	16:18:37				1499.5

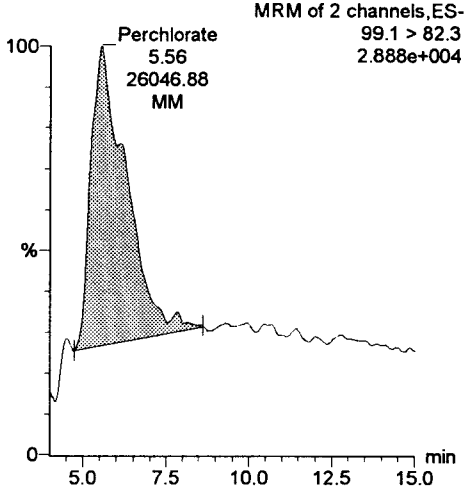
000040

Chemist: Christopher Borton

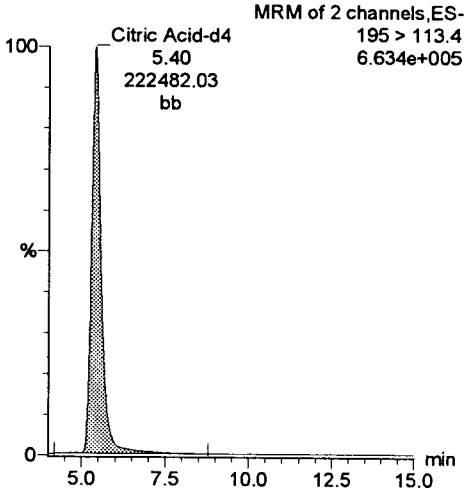
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021317
Date: 13-Feb-2002
Time: 16:36:09
ID: 007.97.5
Description: G02020055-01ADUP
Vial: 1:3,A
Vial: 1:3,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.56	26046.88	222482.03	11.707	MM	0.243			13-Feb-02	16:36:09	19-Feb-02	09:39:44		0.0
2	Citric Acid-d4	195 > 113.4	5.40	222482.03		222482.031	bb	134.704	34.7	134.7	13-Feb-02	16:36:09				2224.8

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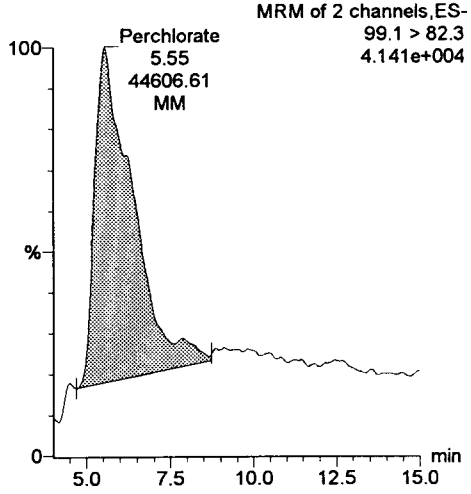
Chemist: Christopher Borton

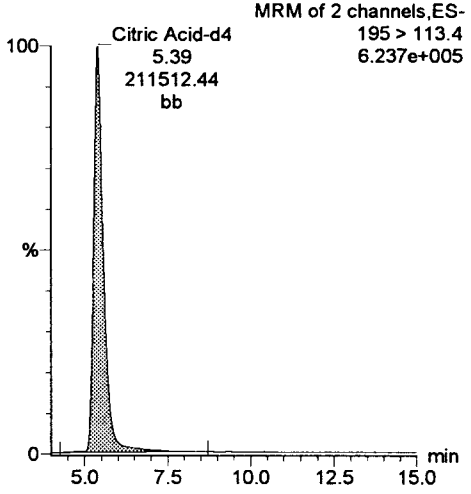
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021318
Date: 13-Feb-2002
Time: 16:53:43
ID: 007.97.6
Description: G02020055-02A
Vial: 1:3,B
Vial: 1:3,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.55	44606.61	211512.44	21.089	MM	0.433			13-Feb-02	16:53:43	19-Feb-02	09:39:37		0.0
2	Citric Acid-d4	195 > 113.4	5.39	211512.44		211512.438	bb	128.063	28.1	128.1	13-Feb-02	16:53:43				2115.1

000042

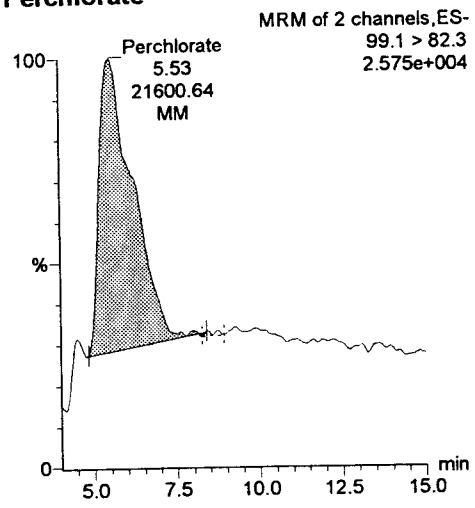
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

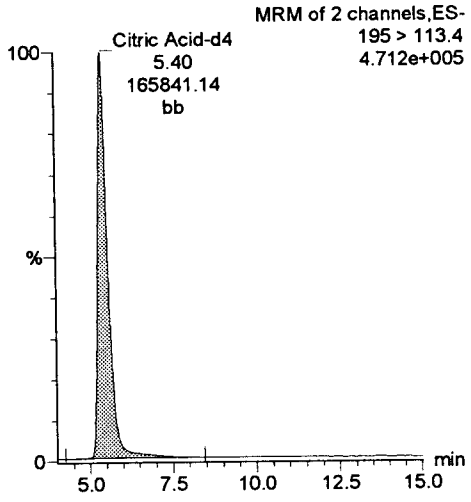
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021319
Date: 13-Feb-2002
Time: 17:11:15
ID: 007.97.7
Description: G02020055-03A
Vial: 1:3,C
Vial: 1:3,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.53	21600.64	165841.14	13.025	MM	0.269			13-Feb-02	17:11:15	19-Feb-02	09:39:30		0.0
2	Citric Acid-d4	195 > 113.4	5.40	165841.14		165841.141	bb	100.410	0.4	100.4	13-Feb-02	17:11:15				1658.4

000043

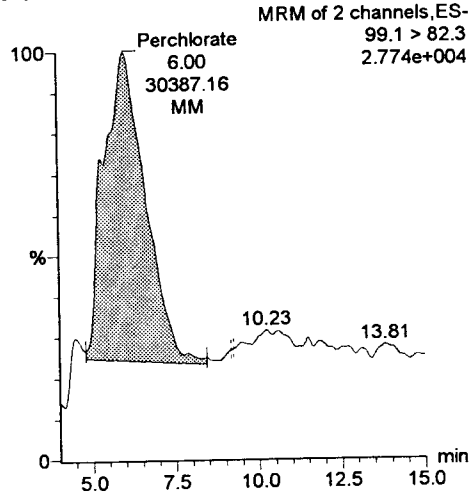
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

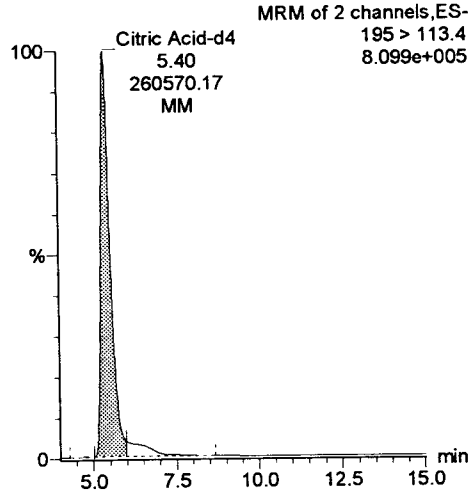
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021320
Date: 13-Feb-2002
Time: 17:32:28
ID: 007.97.8
Description: G02020055-04A
Vial: 1:3,D
Vial: 1:3,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.00	30387.16	260570.17	11.662	MM	0.242			13-Feb-02	17:32:28	19-Feb-02	09:39:19		0.0
2	Citric Acid-d4	195 > 113.4	5.40	260570.17		260570.172	MM	157.765	57.8	157.8	13-Feb-02	17:32:28	19-Feb-02	09:36:58		2605.7

000044

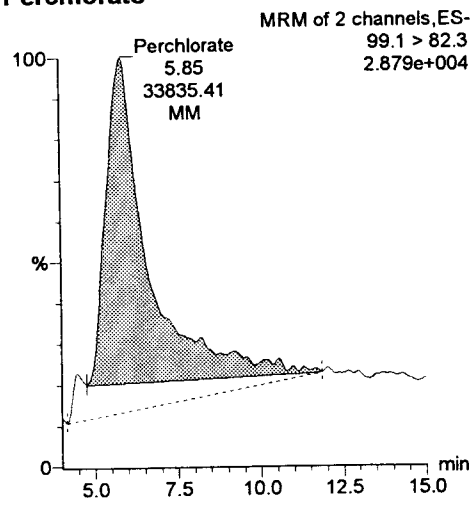
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

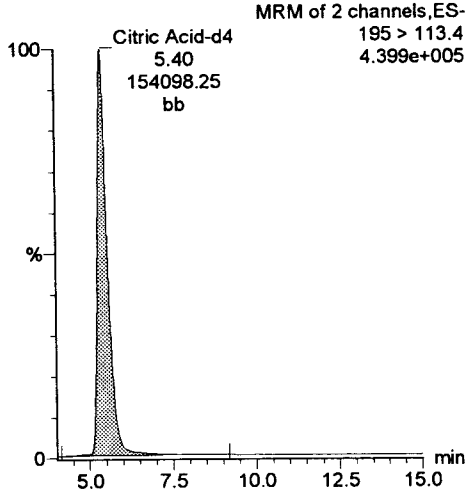
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021321
Date: 13-Feb-2002
Time: 17:56:15
ID: 007.97.9
Description: G02020055-05A
Vial: 1:3,E
Vial: 1:3,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.85	33835.41	154098.25	21.957	MM	0.450			13-Feb-02	17:56:15	19-Feb-02	09:39:08		0.0
2	Citric Acid-d4	195 > 113.4	5.40	154098.25		154098.250	bb	93.300	-6.7	93.3	13-Feb-02	17:56:15				1540.9

000045

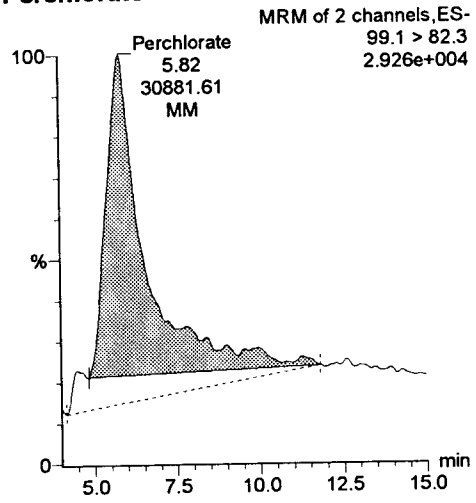
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

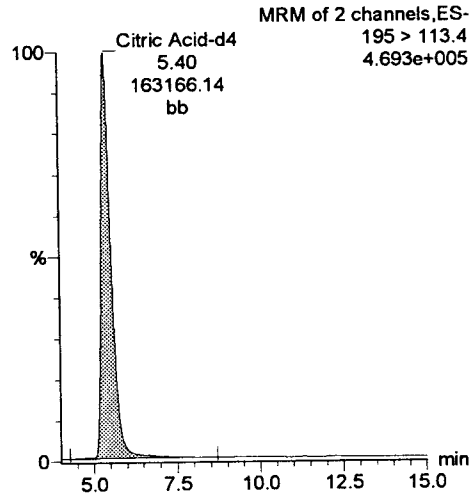
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021322
Date: 13-Feb-2002
Time: 18:13:47
ID: 007.97.10
Description: G02020055-06A
Vial: 1:3,F
Vial: 1:3,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.82	30881.61	163166.14	18.926	MM	0.389			13-Feb-02	18:13:47	19-Feb-02	09:39:02		0.0
2	Citric Acid-d4	195 > 113.4	5.40	163166.14		163166.141	bb	98.791	-1.2	98.8	13-Feb-02	18:13:47				1631.6

000046

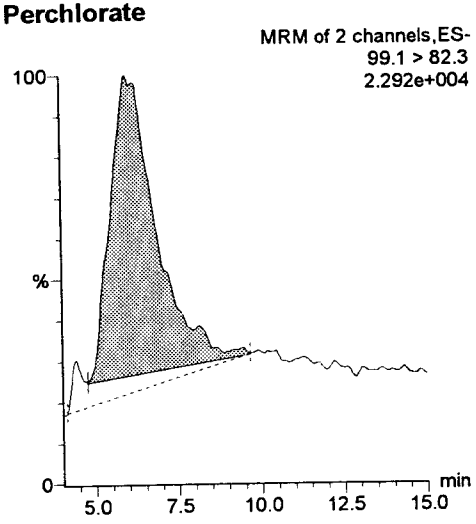
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

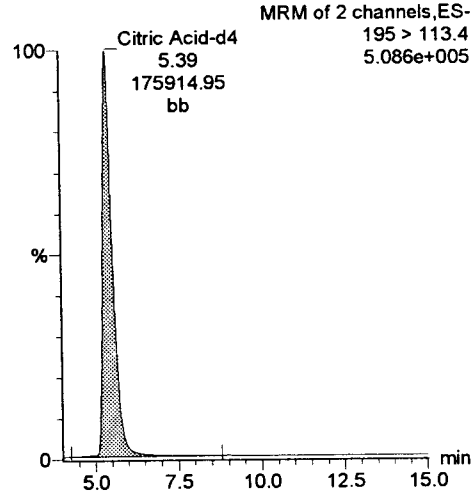
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021323
Date: 13-Feb-2002
Time: 18:31:20
ID: 007.97.11
Description: G02020055-07A
Vial: 1:4,A
Vial: 1:4,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.96	27000.29	175914.95	15.348	MM	0.316			13-Feb-02	18:31:20	19-Feb-02	09:38:54		0.0
2	Citric Acid-d4	195 > 113.4	5.39	175914.95		175914.953	bb	106.510	6.5	106.5	13-Feb-02	18:31:20				1759.1

000047

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/19/02

QC Data

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

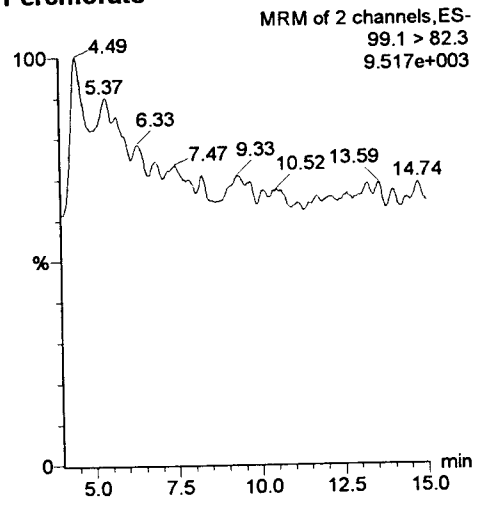
Application: Perchlorate by ESI/LC/MS/MS

Quantify Sample Report
Acculabs Research Inc.

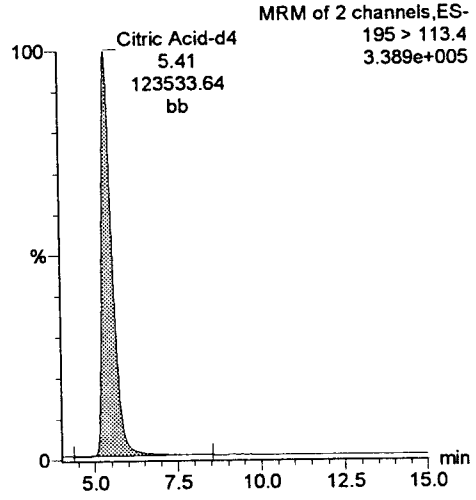
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021311A
Date: 13-Feb-2002
Time: 14:50:42
ID: 007.97.1
Description: MB-2808
Vial: 1:2,C
Vial: 1:2,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3			123533.64						13-Feb-02	14:50:42				
2	Citric Acid-d4	195 > 113.4	5.41	123533.64		123533.641	bb	74.795	-25.2	74.8	13-Feb-02	14:50:42				1235.3

000049

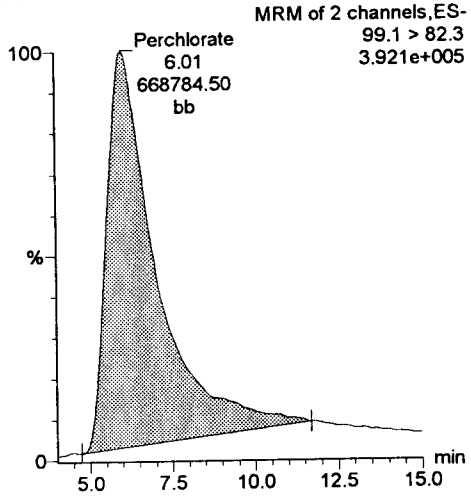
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

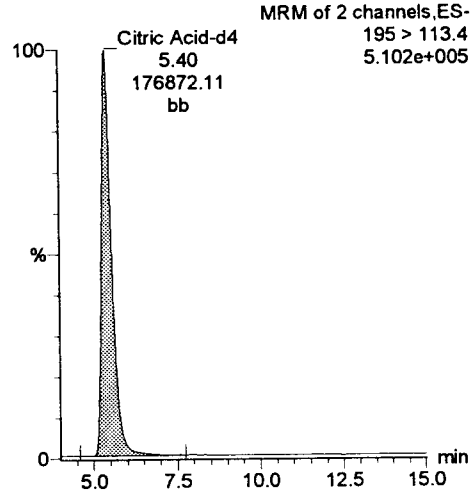
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021312A
Date: 13-Feb-2002
Time: 15:08:18
ID: 007.97.2
Description: LCS-2808
Vial: 1:2,D
Vial: 1:2,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.01	668784.50	176872.11	378.118	bb	7.663	-23.4	76.6	13-Feb-02	15:08:18				37.8
2	Citric Acid-d4	195 > 113.4	5.40	176872.11		176872.109	bb	107.089	7.1	107.1	13-Feb-02	15:08:18				1768.7

000050

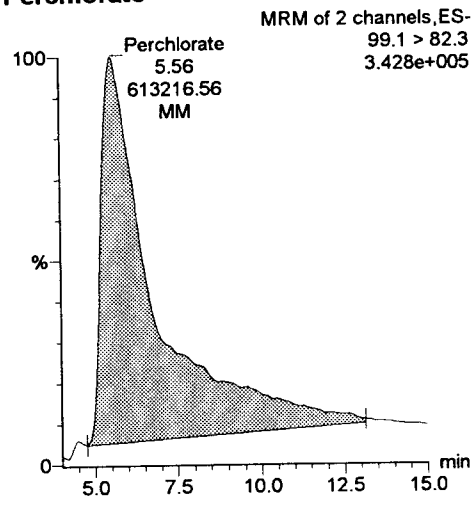
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

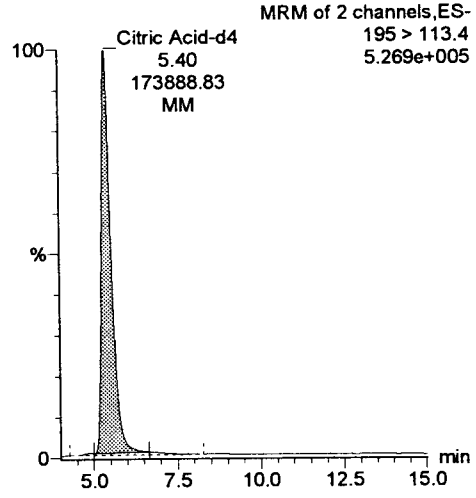
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021313A
Date: 13-Feb-2002
Time: 15:25:50
ID: 007.97.4
Description: G02020055-01AMS
Vial: 1:2,E
Vial: 1:2,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.56	613216.56	173888.83	352.649	MM	7.147	-28.5	71.5	13-Feb-02	15:25:50	19-Feb-02	09:40:44		35.2
2	Citric Acid-d4	195 > 113.4	5.40	173888.83		173888.828	MM	105.283	5.3	105.3	13-Feb-02	15:25:50	19-Feb-02	09:41:31		1738.8

000051

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/19/02

CCV Data

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

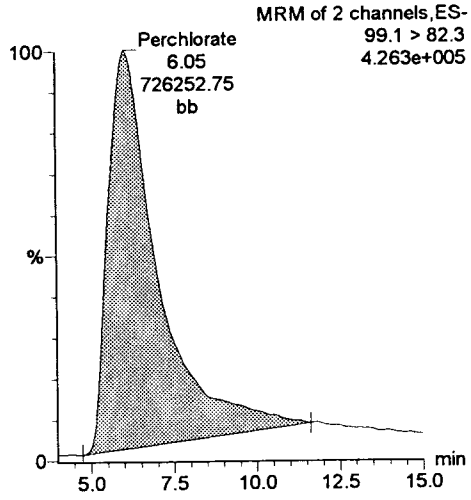
Application: Perchlorate by ESI/LC/MS/MS

Quantify Sample Report
Acculabs Research Inc.

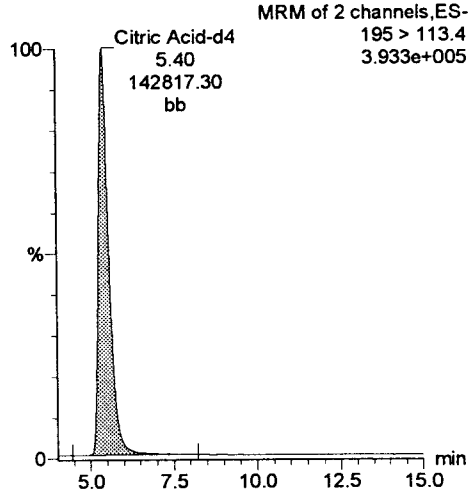
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021309A
Date: 13-Feb-2002
Time: 14:07:06
ID: OS3030-2
Description: 10 ppb CCV
Vial: 1:8,E
Vial: 1:8,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.05	726252.75	142817.30	508.519	bb	10.303	3.0	103.0	13-Feb-02	14:07:06				50.8
2	Citric Acid-d4	195 > 113.4	5.40	142817.30		142817.297	bb	86.470	-13.5	86.5	13-Feb-02	14:07:06				1428.1

000053

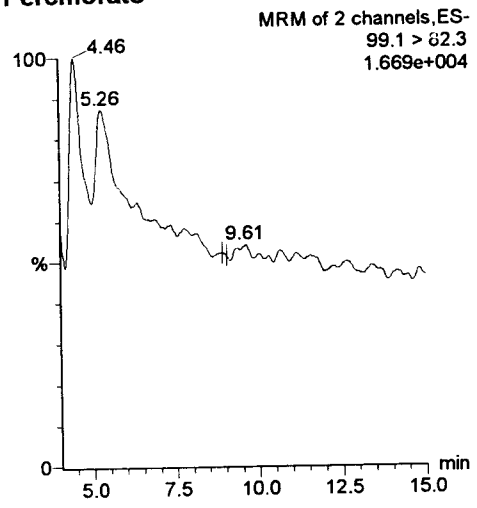
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

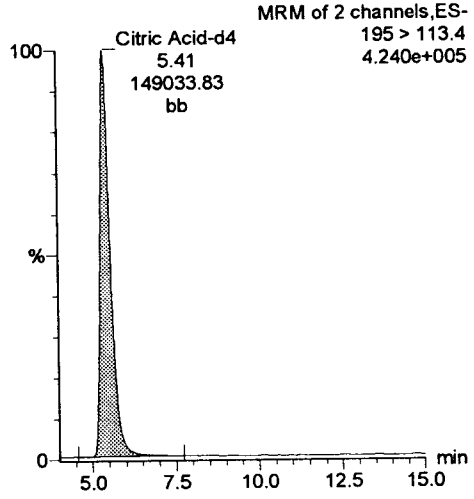
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021310A
Date: 13-Feb-2002
Time: 14:31:35
ID:
Description: CCB
Vial: 1:8,F
Vial: 1:8,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	8.92	3.66	149033.83	0.002	bb	0.006			13-Feb-02	14:31:35				0.0
2	Citric Acid-d4	195 > 113.4	5.41	149033.83		149033.828	bb	90.234	-9.8	90.2	13-Feb-02	14:31:35				1490.3

000054

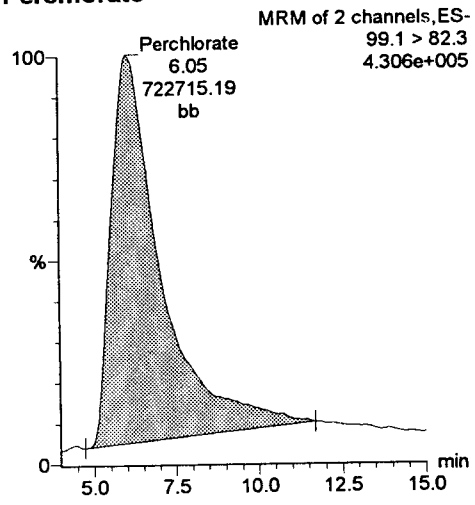
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

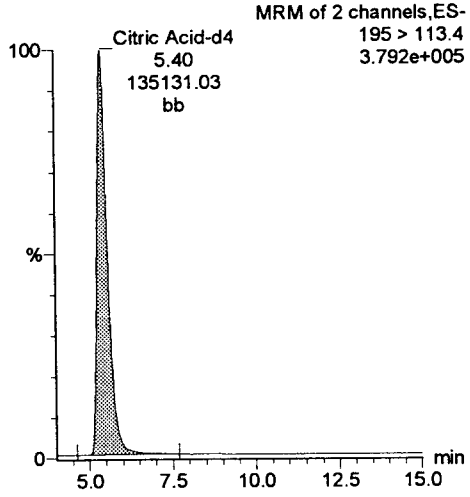
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021314A
Date: 13-Feb-2002
Time: 15:43:28
ID: OS3030-2
Description: 10 ppb CCV
Vial: 1:8,A
Vial: 1:8,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.05	722715.19	135131.03	534.825	bb	10.836	8.4	108.4	13-Feb-02	15:43:28				53.4
2	Citric Acid-d4	195 > 113.4	5.40	135131.03		135131.031	bb	81.817	-18.2	81.8	13-Feb-02	15:43:28				1351.3

000055

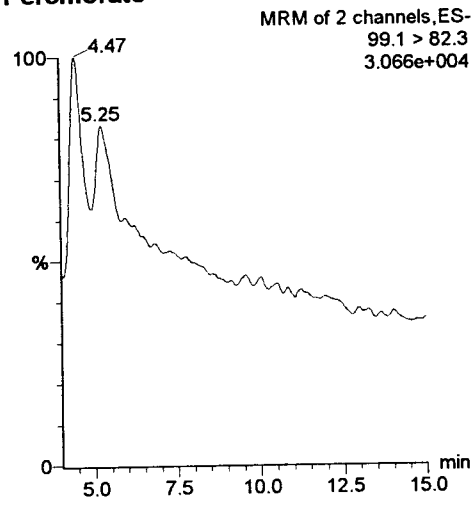
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

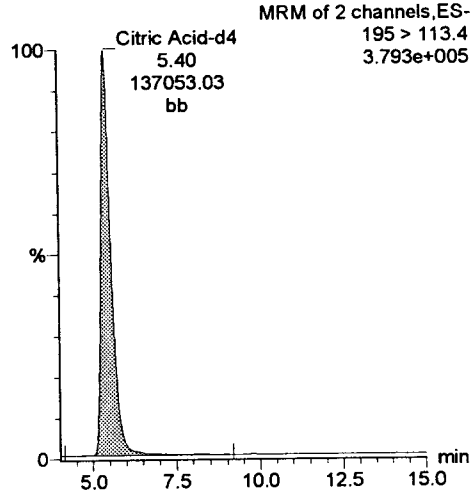
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021315A
Date: 13-Feb-2002
Time: 16:01:03
ID:
Description: CCB
Vial: 1:8,B
Vial: 1:8,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3			137053.03						13-Feb-02	16:01:03				
2	Citric Acid-d4	195 > 113.4	5.40	137053.03		137053.031	bb	82.980	-17.0	83.0	13-Feb-02	16:01:03				1370.5

000056

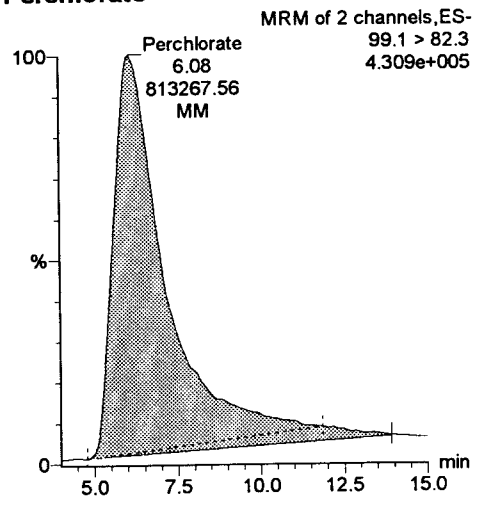
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

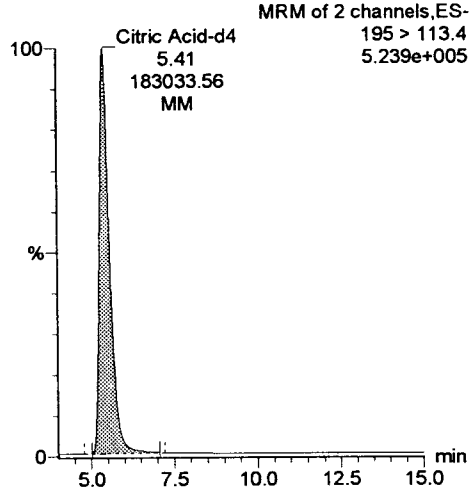
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021324
Date: 13-Feb-2002
Time: 18:48:53
ID: OS3030-2
Description: 10 ppb CCV
Vial: 1:8,C
Vial: 1:8,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.08	813267.56	183033.56	444.327	MM	9.003	-10.0	90.0	13-Feb-02	18:48:53	19-Feb-02	09:34:56		44.4
2	Citric Acid-d4	195 > 113.4	5.41	183033.56		183033.563	MM	110.820	10.8	110.8	13-Feb-02	18:48:53	19-Feb-02	09:33:33		1830.3

000057

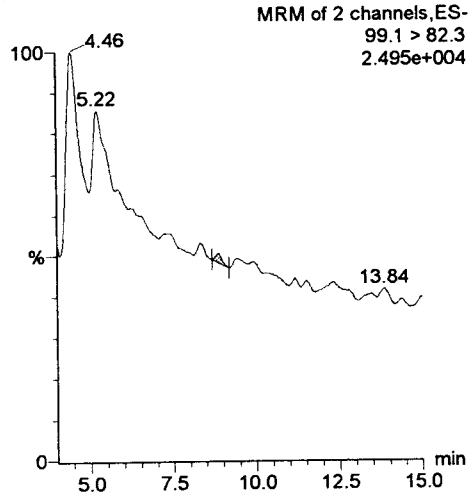
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

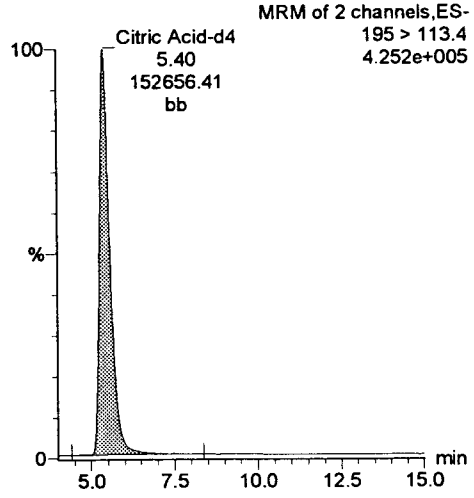
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021325
Date: 13-Feb-2002
Time: 19:06:28
ID:
Description: CCB
Vial: 1:8,D
Vial: 1:8,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	8.85	129.57	152656.41	0.085	bb	0.007			13-Feb-02	19:06:28				0.0
2	Citric Acid-d4	195 > 113.4	5.40	152656.41		152656.406	bb	92.428	-7.6	92.4	13-Feb-02	19:06:28				1526.5

000058

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/19/02

Calibration Data

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

Micromass LCMS INITIAL CALIBRATION REVIEW CHECKLIST

Method: ClO_4^- Date Analyzed: 2/13/02

Procedure:_____ Samples:_____

First Reviewer/Date: C. Boston 2/19/02 Second Reviewer/Date: TJS 2-20-02

Criteria	1st Review Y	1st Review N	1st Review NA	2nd Review Y	2nd Review N	2nd Review NA	Comments
Initial Calibration							
Minimum of five points used for all analytes in calibration curve?	✓			✓			
Were any points removed from the calibration curve?		✓			✓		
If points were removed, was it only a high point or a low point and was it properly documented?			✓			✓	
If points were removed, was the RL or upper range adjusted for reporting puposes?			✓			✓	
Does avg. RF meet criteria (RSD ≤ ____%) for all compounds?			✓			✓	$1/x^2$ weighting
Was minimum criteria met for linear regression (r ≥ 0.990)?	✓			✓			
Was quadratic regression used for any compounds (requires 6 points)? List cpds in comment section.		✓			✓		
If quadratic regression was used, were minimum coefficient of determination criteria met (COD ≥ 0.990)?			✓			✓	
Isomeric pairs checked for correct peak assignment?	✓			✓			
Manual integrations documented?	✓			✓			
Initial Calibration Verification							
ICV sample data meets criteria?	✓			✓			
Is the ICV std form a 2nd source?	✓			✓			
%D +/- 15 % for all analytes?	✓			✓			
Manual integrations documented?	✓			✓			
All manual calculations verified?			✓			✓	
Standards prep data included?	✓			✓			
Run Log included?	✓			✓			

Initial and date all mark overs

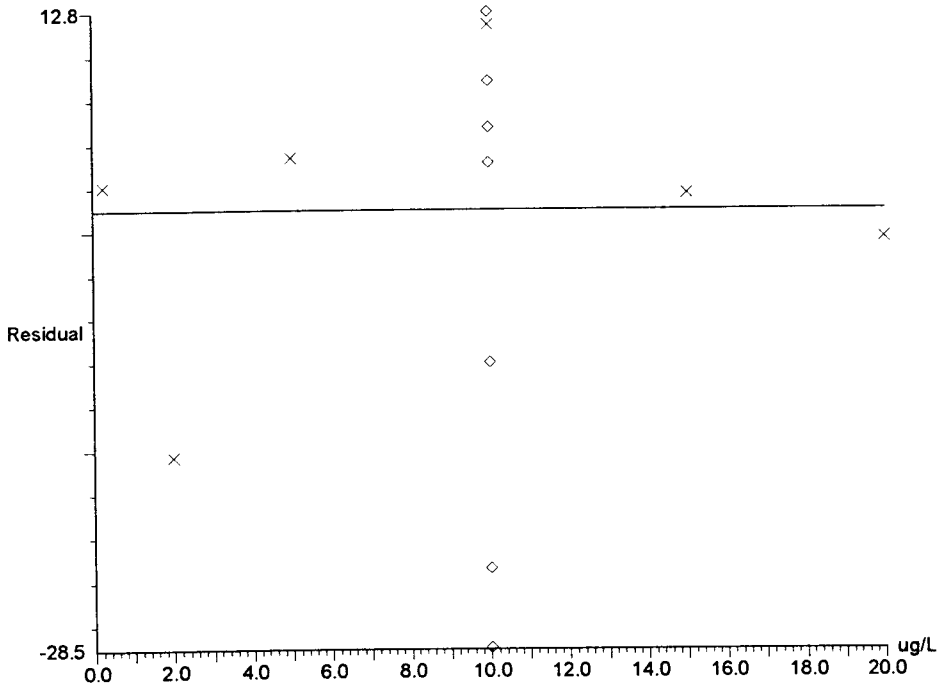
Comments:

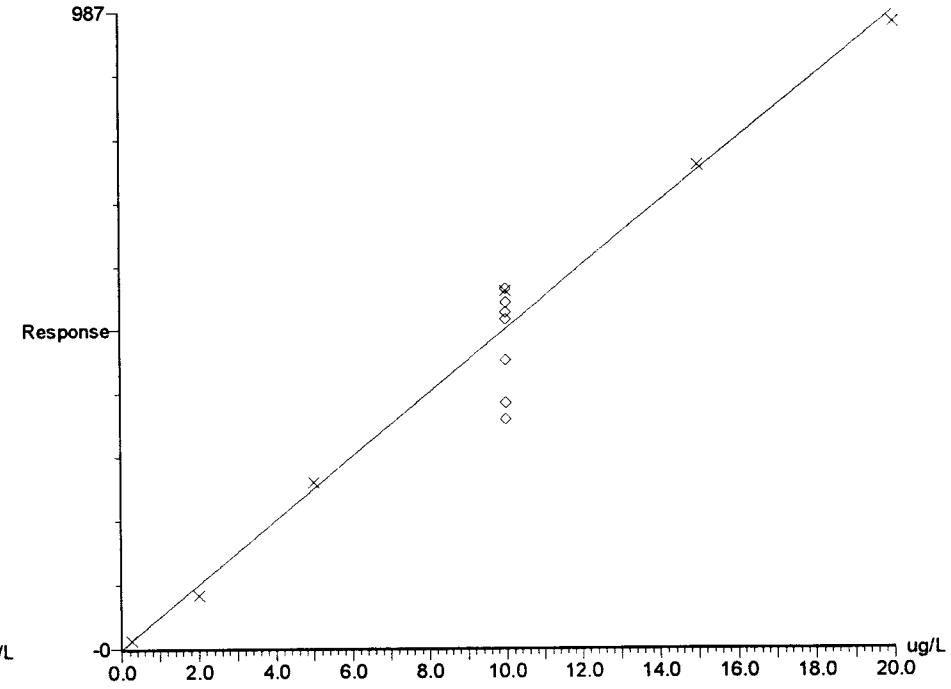
Quantify Calibration Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(021202).mdb, Time: Wed Feb 13 16:30:31 2002
Calibration: Untitled, Time: Tue Feb 19 09:35:47 2002

Compound name: Perchlorate
Coefficient of Determination: 0.994211
Calibration curve: 49.3821 * x + -0.276522
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: Linear, Origin: Exclude, Weighting: 1/x^2, Axis trans: None





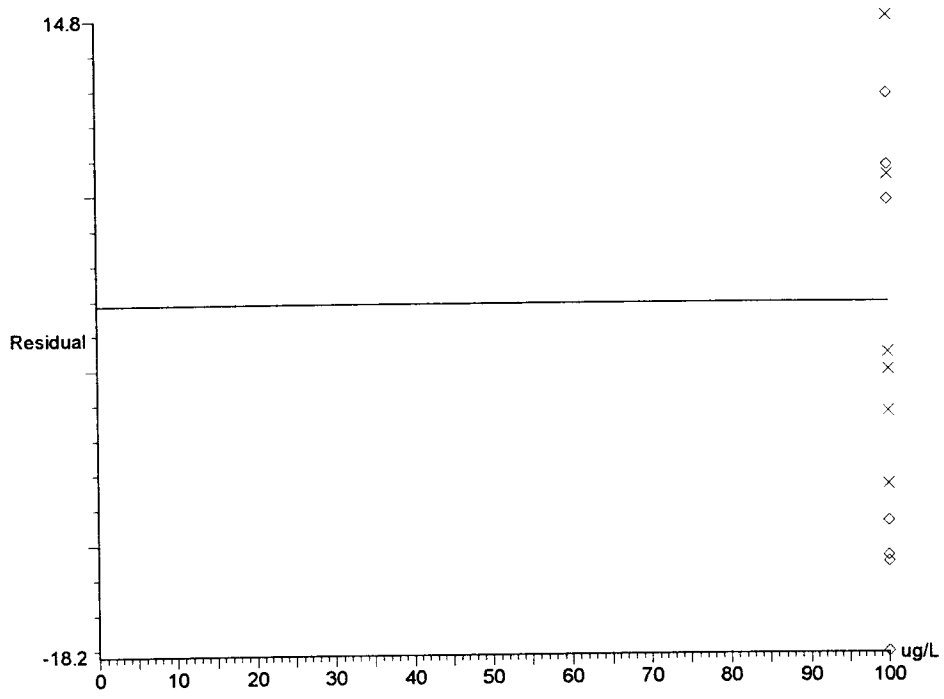
000061

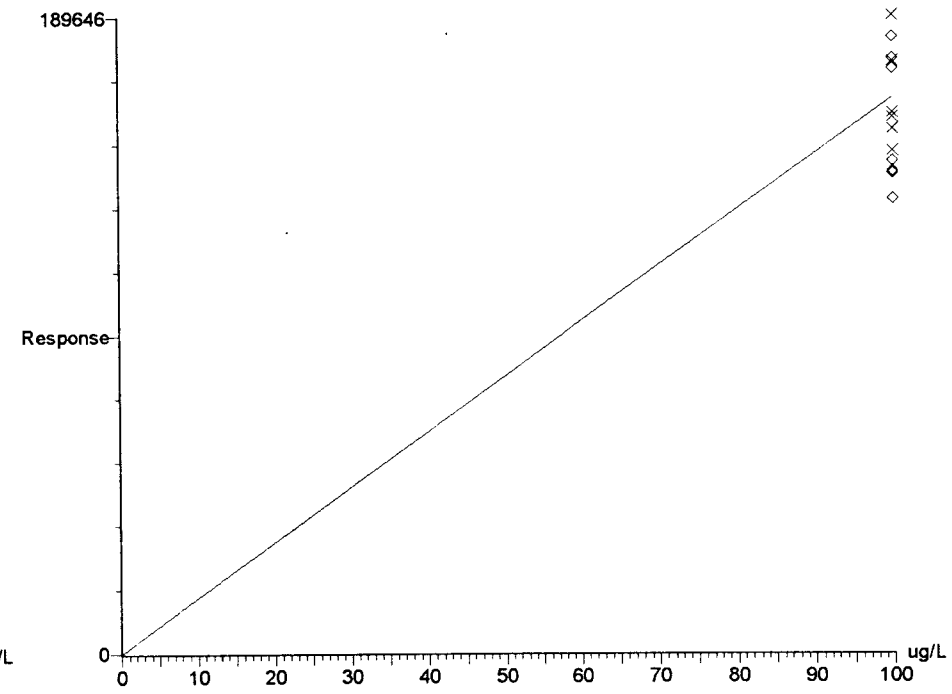
Chemist: Christopher Borton

Quantify Calibration Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Compound name: Citric Acid-d4
Response Factor: 1651.63
RRF SD: 148.798, % Relative SD: 9.00915
Response type: External Std, Area
Curve type: RF





000062

Chemist: Christopher Borton

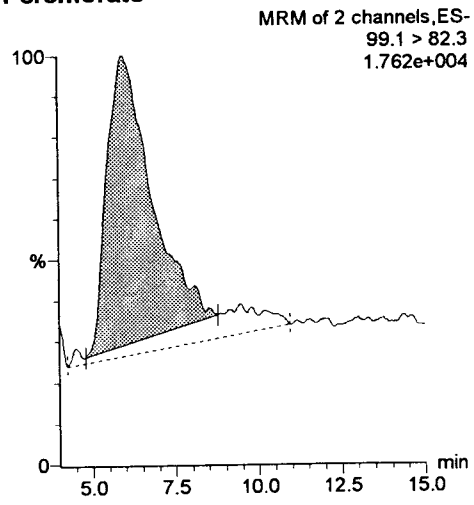
Quantify Sample Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

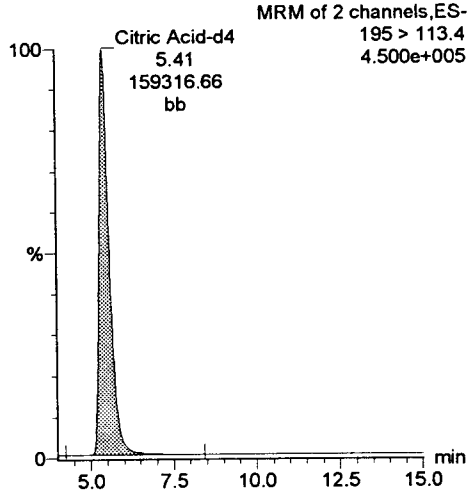
Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(021202).mdb, Time: Wed Feb 13 16:30:31 2002
Calibration: Untitled, Time: Tue Feb 19 09:35:47 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021301
Date: 13-Feb-2002
Time: 09:42:18
ID: OS3075-1
Description: 0.25 ppb Standard
Vial: 1:1,A
Vial: 1:1,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.94	19532.90	159316.66	12.260	MM	0.254	1.6	101.6	13-Feb-02	09:42:18	19-Feb-02	09:34:06		49.0
2	Citric Acid-d4	195 > 113.4	5.41	159316.66		159316.656	bb	96.460	-3.5	96.5	13-Feb-02	09:42:18				1593.1

000063

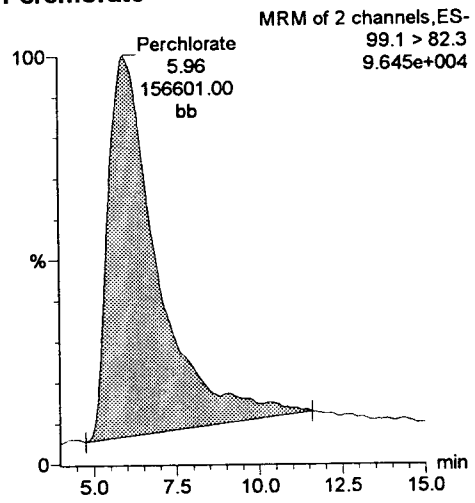
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

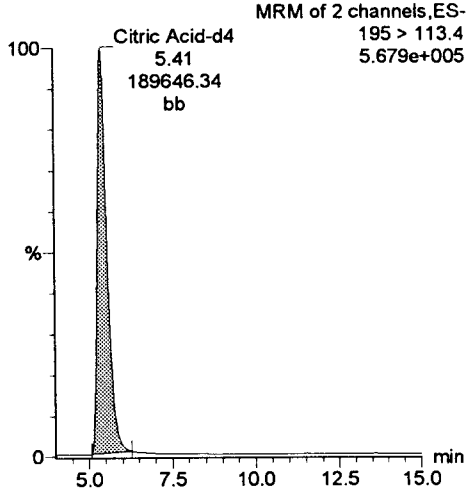
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021302
Date: 13-Feb-2002
Time: 10:01:21
ID: OS3075-2
Description: 2.0 ppb Standard
Vial: 1:1,B
Vial: 1:1,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.96	156601.00	189646.34	82.575	bb	1.678	-16.1	83.9	13-Feb-02	10:01:21				41.2
2	Citric Acid-d4	195 > 113.4	5.41	189646.34		189646.344	bb	114.823	14.8	114.8	13-Feb-02	10:01:21				1896.4

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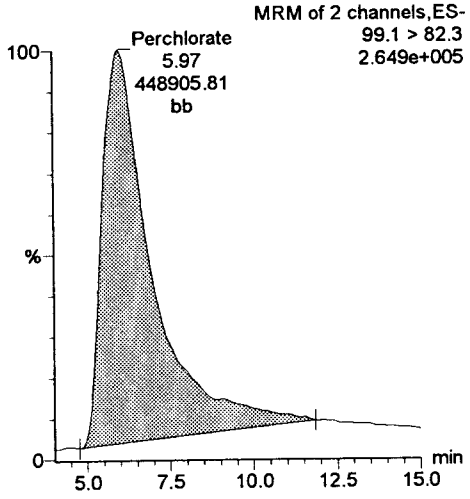
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

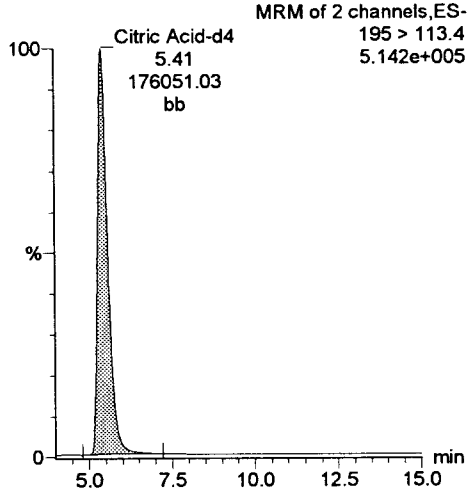
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021303
Date: 13-Feb-2002
Time: 10:18:53
ID: OS3075-3
Description: 5.0 ppb Standard
Vial: 1:1,C
Vial: 1:1,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.97	448905.81	176051.03	254.986	bb	5.169	3.4	103.4	13-Feb-02	10:18:53				50.9
2	Citric Acid-d4	195 > 113.4	5.41	176051.03		176051.031	bb	106.592	6.6	106.6	13-Feb-02	10:18:53				1760.5

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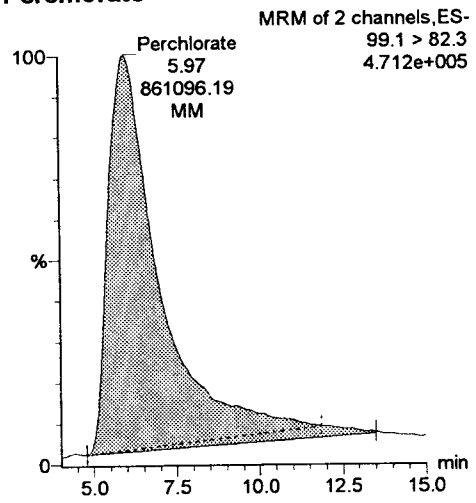
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

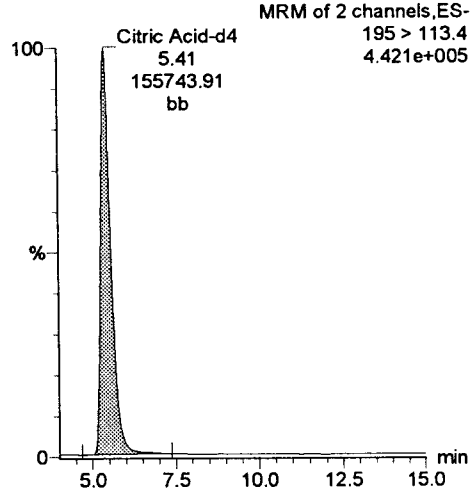
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021304
Date: 13-Feb-2002
Time: 10:36:25
ID: OS3075-4
Description: 10.0 ppb Standard
Vial: 1:1,D
Vial: 1:1,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.97	861096.19	155743.91	552.892	MM	11.202	12.0	112.0	13-Feb-02	10:36:25	19-Feb-02	09:35:10		55.2
2	Citric Acid-d4	195 > 113.4	5.41	155743.91		155743.906	bb	94.297	-5.7	94.3	13-Feb-02	10:36:25				1557.4

000066

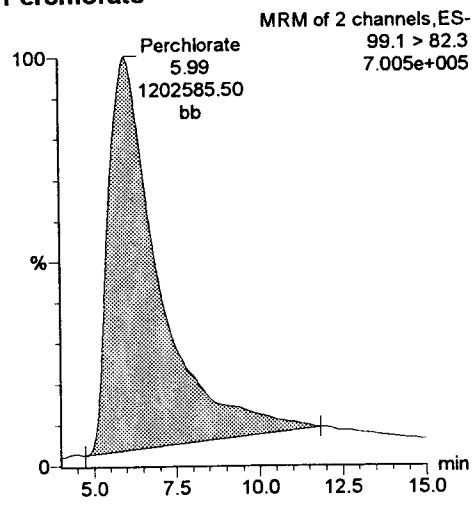
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

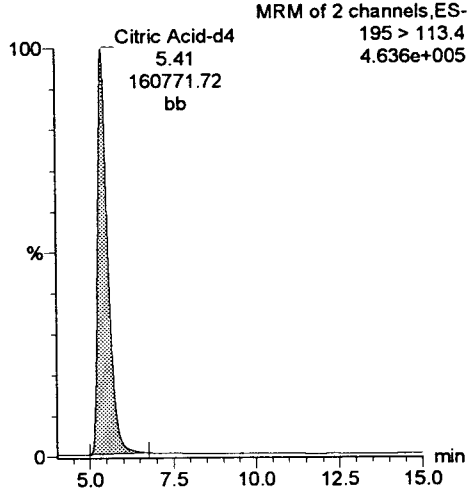
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021305
Date: 13-Feb-2002
Time: 10:53:58
ID: OS3075-5
Description: 15.0 ppb Standard
Vial: 1:1,E
Vial: 1:1,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	5.99	1202585....	160771.72	748.008	bb	15.153	1.0	101.0	13-Feb-02	10:53:58				49.8
2	Citric Acid-d4	195 > 113.4	5.41	160771.72		160771.719	bb	97.341	-2.7	97.3	13-Feb-02	10:53:58				1607.7

000067

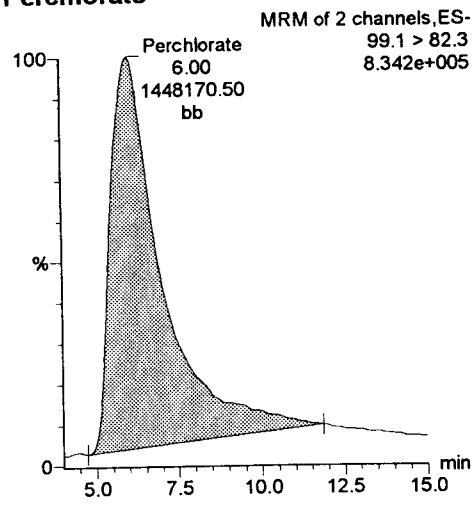
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

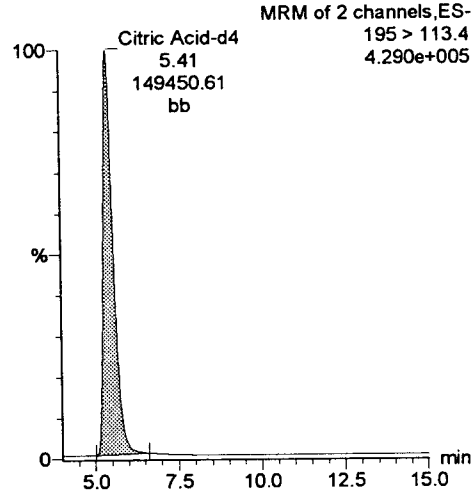
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021306
Date: 13-Feb-2002
Time: 11:11:30
ID: OS3075-6
Description: 20.0 ppb Standard
Vial: 1:1,F
Vial: 1:1,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.00	1448170....	149450.61	968.996	bb	19.628	-1.9	98.1	13-Feb-02	11:11:30				48.4
2	Citric Acid-d4	195 > 113.4	5.41	149450.61		149450.609	bb	90.487	-9.5	90.5	13-Feb-02	11:11:30				1494.5

000068

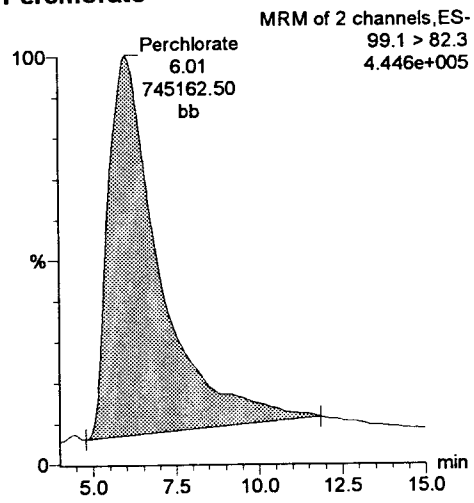
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

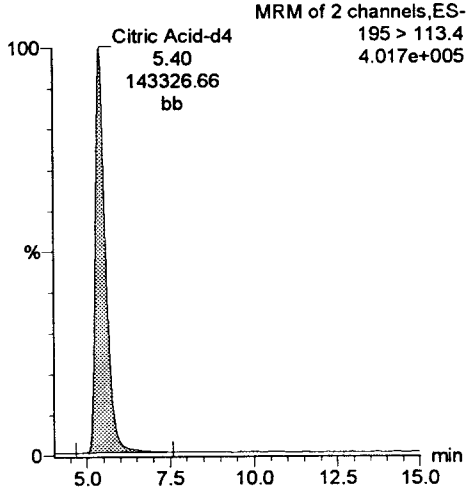
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021307
Date: 13-Feb-2002
Time: 11:29:03
ID: OS3030-2
Description: 10 ppb ICV
Vial: 1:2,A
Vial: 1:2,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	6.01	745162.50	143326.66	519.905	bb	10.534	5.3	105.3	13-Feb-02	11:29:03				51.9
2	Citric Acid-d4	195 > 113.4	5.40	143326.66		143326.656	bb	86.779	-13.2	86.8	13-Feb-02	11:29:03				1433.2

690000

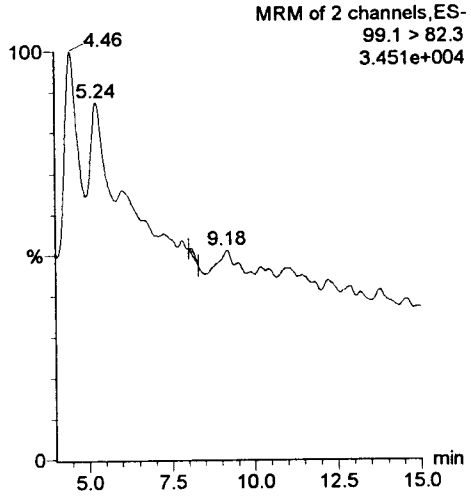
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

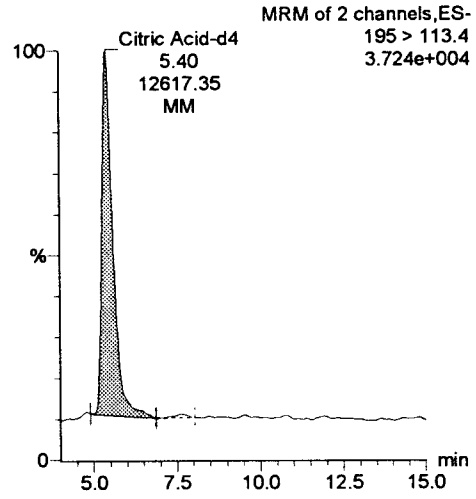
Dataset: C:\Masslynx\Perchlorate.PRO\021302Perchlorate.qld, Time: Tue Feb 19 09:41:31 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per021308
Date: 13-Feb-2002
Time: 11:46:36
ID:
Description: CCB
Vial: 1:2,B
Vial: 1:2,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment	RR
1	Perchlorate	99.1 > 82.3	8.07	90.96	12617.35	0.721	bb	0.020			13-Feb-02	11:46:36				0.0
2	Citric Acid-d4	195 > 113.4	5.40	12617.35		12617.354	MM	7.639	-92.4	7.6	13-Feb-02	11:46:36	19-Feb-02	09:36:17		126.1

000070

Chemist: Christopher Borton

TechLaw, Inc.

Acculabs Job Number: G02010410

Document Type	Page #
Document Inventory	1
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Chain of Custody	3
Case Narrative	5
Results and QC Forms	6
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Preparation Raw Data	29
Analyte Summary	35
Sample Data	38
QC Data	48
Continuing Calibration	52
Calibration Data	58

February 22, 2002

ACCULABS, INC.

Kristi Pawski
TechLaw, Inc.
105 West Madison
Suite 900
Chicago, IL 60602

TEL: (312) 345-8963
FAX

RE:

Order No.: G02010410

Dear Kristi Pawski:

Acculabs, Inc. received 8 samples on 1/31/02 9:50:00 AM for the analyses presented in the following report.

There were no problems with the analyses and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,

Deborah O Updyke
Project Manager

000002

4663 Table Mountain Drive, Golden, Colorado 80403-1650
Telephone (303)277-9514 Fax (303)277-9512 www.acculabs.com

60.30.D

Pinnacle Laboratories, Inc. **Interlab Chain of Custody** Date: 1/30 Page: 1 of 1

Network Project Manager: Jacinta A. Tenorio

Pinnacle Laboratories, Inc.
2709-D Pan American Freeway, NE
Albuquerque, New Mexico 87107
(505) 344-3777 Fax (505) 344-4413

Send report & invoice to Techlaw.
Send copy of report to Pinnacle Labs attention Mitch Rubenstein.

ANALYSIS REQUEST

SAMPLE ID	DATE	TIME	MATRIX	LAB ID	Metals (8) RCRA	RCRA TCLP METALS	Metals-13 PP List	Metals-TAL (23 METALS)		TOX	TOC	Gen Chemistry:	Perchlorate	Oil and Grease	Volatile Organics GC/MS (8260)	BOD	COD	PESTICIDES/PCB (608/8082)	Herbicides (615/8151)	PNA (8310)/8270 SIMS	8240 (TCLP 1311) ZHE		Base/Neutral Acid Compounds GC/MS (625/8270)	URANIUM (ICP-MS)	RADIUM 226+228	Gross Alpha/Beta	TO-14	NUMBER OF CONTAINERS
E1-HWB/201121-01	1/25	1030	AQ										X															
E5-HWB/201121-02	1/25	1000											X															
E1-AS/201121-03	1/29	1120											X															
E5-AS/201121-04	1/29	1059											X															
P1/201121-05	1/30	1400											X															
P2/201121-06		1410											X															
P3/201121-07		1415											X															
P4/201121-08		1420											X															

PROJECT INFORMATION	SAMPLE RECEIPT	SAMPLES SENT TO:	RELINQUISED BY: 1.	RELINQUISED BY: 2.
PROJECT #: 201121	Total Number of Containers	PENSACOLA - STL-FL	Signature: Francine Turino Time: 1700	Signature: UPS Time:
PROJ. NAME: NMHWB	Chain of Custody Seals	ESL - OR	Printed Name: Francine Turino Date: 1/30/02	Printed Name: Date:
QC LEVEL: STD IV	Received Intact?	STL - CT	Pinnacle Laboratories, Inc.	Company
QC REQUIRED: MS MSD BLANK	Received Good Cond./Cold	ATEL - AZ	RECEIVED BY: 1.	RECEIVED BY: 2
TAT: STANDARD RUSH!!	LAB NUMBER:	ATEL - MARION	Signature: Brian P. Miller Time: 9:50	Signature: Time:
DUE DATE: 2/20	COMMENTS:	ATEL - MELMORE	Printed Name: Brian P Miller Date: 1-31-02	Printed Name: Date:
RUSH SURCHARGE: —		BARRINGER	Company Accu labs Inc.	Company
CLIENT DISCOUNT: —		ENVIRO TEST LABS		
SPECIAL CERTIFICATION REQUIRED: YES NO		WCAS		
		WOHL		
		AccuLabs X		

INTERLAB WORK ORDER

DATE: 1/30/02

RUSH _____

RESPOND BY: _____

FROM: PLI-NM PM: Jacinta Tenorio

TO: AccuLabs PM: Lab Manager

Arriving to primary lab: 1/29

Arriving to secondary lab: 1/31

OK'D By: _____

UPDATES

Update Comment, Time, Date, Initials:

_____ Reconfirmed/Date: _____

_____ Reconfirmed/Date: _____

_____ Reconfirmed/Date: _____

Projects delayed for more than one day need to be reconfirmed.

Client Code: NMHWB

Client's Project: Spike CLO-4

Primary Lab Accession No.: 201121
(if samples are in-house)

FAX DUE DATE/TIME: 2/20

HARDCOPY DUE DATE: 2/22

Cause of Rush: _____ Client Request: _____ Holding Time: _____ Instrument Problems/Overdue: _____

DELIVERABLES: Standard ✓ Other (see Special Comments) _____

NUMBER OF SAMPLES	MATRIX	ANALYSIS	DATE SAMPLED	PRICE	% SUR-CHARGE
8	AQ	Perchlorate	1/25 & 1/29	Bill to Techlaw	
		Digestions? Y / N			
		% Moisture Y / N Report dry weight? Y / N		$5.00 / $10.00	

Special Comments: Send original results & invoice to Techlaw.
Send copy of report to Pinnacle Labs attention Mitch Rubenstein

RECHECKED BY: _____

Acculabs, Inc. **Date:** *22-Feb-02*

CLIENT: TechLaw, Inc.
Project:
Lab Order: G02010410

CASE NARRATIVE

Samples were received on 1/31/02 and temperature upon receipt at the laboratory was 3.4 degrees C.

Analytical Comments for LC/MS/MS:

All of the quality control parameters required by the Acculabs Quality Assurance Plan were in control for this project. No anomalies were observed that would affect interpretation of the data.

000005

RESULTS & QC FORMS

Acculabs Inc.

Perchlorate Analysis Data Sheet Flags

Q Flag	Description
U	Undetected
J	Value Between MDL and RL
B	Compound Detected in Method Blank
E	Estimated. Exceeds Calibration Range
I	Reporting Limit Increased Due to Matrix Effects
D	Analyte Diluted Out of Range

Client Sample No.

E1-HWB/201121-01

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-01A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	1.3		1	02/04/02	per020414

Comments

000008

Perchlorate Analysis Data Sheet

Client Sample No.

E1-HWB/201121-01

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-01ADUP

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	1.2		1	02/04/02	per020415

Comments

600000

Perchlorate Analysis Data Sheet

Client Sample No.
E5-HWB/201121-02

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-02A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.61		1	02/04/02	per020416

Comments

000010

Perchlorate Analysis Data Sheet

Client Sample No.

E1-AS/201121-03

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-03A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	1.3		1	02/04/02	per020417

Comments

Client Sample No.

E5-AS/201121-04

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-04A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.91		1	02/04/02	per020418

Comments

Client Sample No.

P1/201121-05

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-05A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	U	1	02/04/02	per020419

Comments

000012

Perchlorate Analysis Data Sheet

Client Sample No.: P2/201121-06

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-06A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.58		1	02/04/02	per020420

Comments

000014

Client Sample No.

P3/201121-07

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-07A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.98		1	02/04/02	per020421

Comments

Perchlorate Analysis Data Sheet

Client Sample No.: P4/201121-08

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-08A

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentraion Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	13		1	02/04/02	per020422

Comments

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: Method Blank

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	0.5	U	1	02/04/02	per020409

Comments

000017

Perchlorate Analysis Data Sheet

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: LCS

Extract Batch Code: 2695

Date Filtered: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	9.6		1	02/04/02	per020410

Comments

Perchlorate Analysis Data Sheet

Client Sample No.

E1-HWB/201121-01

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Matrix: Aqueous

Extraction Type: Filter/DAI

Date Received: 01/31/02

Acculabs Job No: G02010410

Acculabs Sample ID: G02010410-01AMS

Extract Batch Code: 2695

Date Extracted: 02/02/02

Injection Volume (uL): 50

CAS No.	Analyte	MDL ug/L	RL ug/L	Concentration Units: ug/L	Q	Dilution Faction	Date Analyzed	Acculabs File ID
14797-73-0	Perchlorate	0.25	0.5	8.9		1	02/04/02	per020411

Comments

000019

Form 2

Perchlorate Initial Calibration

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL Acculabs Job No: G02010410

Instrument ID: F122 Date(s) Analyzed: 02/04/02

HPLC Column: Hamilton PRP-X300 anion exclusion

Calibration Level:	1	2	3	4	5	6
Cal Concentration (ug/L):	0.25	2	5	10	15	20

Coefficient of Determination: 0.996733

Calibration Curve: -2.5062X^2 + 617.537X - 31.4495

Response Type: Internal Standard

Curve Type: 2nd Order, Origin: Exclude, Weighting: 1/X^2

Perchlorate Initial Calibration Verification

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Analyzed: 02/04/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	10	11	110	02/04/02	per020407

Comments

Perchlorate Continuing Calibration Verification

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Analyzed: 02/04/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	10	10	100	02/04/02	per020412
Perchlorate	10	10	100	02/04/02	per020423

Comments

Perchlorate Initial Calibration Blank

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Analyzed: 02/04/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	0.5	U	NA	02/04/02	per020408

Comments:

Perchlorate Continuing Calibration Blank

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Analyzed: 02/04/02

Reporting Units: ug/L

Analyte	TRUE	Found	%Rec	Date Analyzed	Acculabs File ID
Perchlorate	0.5	U	NA	02/04/02	per020413
Perchlorate	0.5	U	NA	02/04/02	per020424

Comments

Perchlorate Laboratory Control Sample

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Filtered: 02/02/02

Matrix: Aqueous

Reporting Units: ug/L

Concentration Units: ug/L

Analyte	TRUE	Found	%Rec
Perchlorate	10	9.6	96

Comments

Perchlorate Spike Sample Recovery

Client Sample ID
E1-HWB/201121-01

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Filtered: 02/02/02

Matrix: Aqueous

Acculabs Sample ID: G02010410-01A

Reporting Units: ug/L

Type: MS

Concentration Units: ug/L

Analyte	Spike Result	Sample Result	Spike Added	%Rec	Q	Control Limit % Rec
Perchlorate	8.9	1.3	10	76		70 - 130

Comments

Perchlorate Duplicates

Client Sample ID
E1-HWB/201121-01

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Acculabs Job No: G02010410

Extract Batch Code: 2695

Date Filtered: 02/02/02

Matrix: Aqueous

Acculabs Sample ID: G02010410-01A

Reporting Units: ug/L

Concentration Units: ug/L

Analyte	Sample	Duplicate	%RPD	Q	Control Limit %
Perchlorate	1.3	1.2	9		20

Comments

Perchlorate IS Area and Report Summary

Lab Name: Acculabs Inc.

Lab Code: TECHLAWIL

Instrument ID: F122

Acculabs Job No: G02010410

Date(s) Analyzed: 02/04/02

HPLC Column: Hamilton PRP-X300

	IS Citric Acid (Area)	RT (min)	
10 ppb Standard	136327.1	5.46	
Upper Limit	272654.2	6.16	
Lower Limit	68163.6	5.16	
Sample No.	IS #1	RT (min)	
MB-2695	140623.5	5.45	
LCS-2695	134053.8	5.45	
E1-HWB/201121-01	131382.0	5.46	
E1-HWB/201121-01 (MS)	136728.3	5.45	
E1-HWB/201121-01 (DUP)	133477.7	5.45	
E5-HWB/201121-02	152618.2	5.46	
E1-AS/201121-03	151573.9	5.45	
E5-AS/201121-04	136125.5	5.45	
P1/201121-05	124645.6	5.45	
P2/201121-06	120615.3	5.45	
P3/201121-07	132643.5	5.45	
P4/201121-08	162614.2	5.46	

Column used to flag values outside QC limits with an asterick.

* Values outside QC limits.

PREPARATION RAW DATA

Acculabs, Inc.

PREP BATCH REPORT

Prep Start Date: **2/2/02 2:38:26 PM**
Prep End Date: **2/2/02 3:00:00 PM**

Prep Batch **2695** Prep Code: **P_MSMSCO4_** Technician: **Chris D Borton**

Prep Factor Units: **mL / mL**

Sample ID	Matrix	pH	SampAmt	Sol Added	Sol Recov	Fin Vol	factor	PrepStart	PrepEnd
G02010410-08A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-01AMS	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-01ADUP	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
MB-2695			10	0	0	10	1.000	2/2/02	2/2/02
LCS-2695			10	0	0	10	1.000	2/2/02	2/2/02
G02010410-01A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-02A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-03A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-04A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-05A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-06A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02
G02010410-07A	Aqueous		10	0	0	10	1.000	2/2/02	2/2/02

2/2/02

sample ID		volume
207.90.1	Method Blk	10ml
.2	LCS	
.3	G0201041 0-01A	
.4	-01A MS	
.5	-01A DUP	
.6	-02A	
.7	-03A	
.8	-04A	
.9	-05A	
.10	-06A	
.11	-07A	
.12	-08A	

DCS: ClO_4^- in H_2O (D) (20µL)
5ppm OS2940-1 exp 5/2/02

Filters
OnGuard Ag Lot 217-111-16 exp 11/2002
Ba Lot 107-108-69 exp 8/2002
H Lot 116-111-48 exp 11/2002

Procedure Final volume of each sample = 10.0 ml
Spiked QC sample w/ 20µL DCS.
Added sample to syringe equipped w/ a Ag-Ba-H cartridge in the order. Filtered sample at a rate of 2 drop/sec or less. Discarded the first 3 mL then collected the remaining. Stored extracts in poly vials at 4°C.

CDB
2/2/02

Continued on Page

Read and Understood By

Christopher Butler 2/2/02
Signed Date Signed Date

Sample List: C:\Masslynx\Perchlorate.PRO\SampleDB\020402per.SPL
Printed: Tue Feb 05 09:35:50 2002

Page Position: (1, 1)

	File Name	File Text	Sample ID	Sample Type	Inject Volume	Vial
1	per020401	0.25 ppb Standard	OS3066-1	Standard	50.000	1:1,A
2	per020402	2.0 ppb Standard	OS3066-2	Standard	50.000	1:1,B
3	per020403	5.0 ppb Standard	OS3066-3	Standard	50.000	1:1,C
4	per020404	10.0 ppb Standard	OS3066-4	Standard	50.000	1:1,D
5	per020405	15.0 ppb Standard	OS3066-5	Standard	50.000	1:1,E
6	per020406	20.0 ppb Standard	OS3066-6	Standard	50.000	1:1,F
7	per020407	10 ppb CCV	OS3030-4	QC	50.000	1:2,A
8	per020408	ICB	---	Blank	50.000	1:2,B
9	per020409	MB-2695	007.90.1	Blank	50.000	1:2,C
10	per020410	LCS-2695	007.90.2	QC	50.000	1:2,D
11	per020411	G02010410-01AMS	007.90.4	QC	50.000	1:2,E
12	per020412	10 ppb CCV	OS3050-4	QC	50.000	1:4,C
13	per020413	CCB	---	Blank	50.000	1:2,B
14	per020414	G02010410-01A	007.90.3	Analyte	50.000	1:2,F
15	per020415	G02010410-01ADUP	007.90.5	Analyte	50.000	1:3,A
16	per020416	G02010410-02A	007.90.6	Analyte	50.000	1:3,B
17	per020417	G02010410-03A	007.90.7	Analyte	50.000	1:3,C
18	per020418	G02010410-04A	007.90.8	Analyte	50.000	1:3,D
19	per020419	G02010410-05A	007.90.9	Analyte	50.000	1:3,E
20	per020420	G02010410-06A	007.90.10	Analyte	50.000	1:3,F
21	per020421	G02010410-07A	007.90.11	Analyte	50.000	1:4,A
22	per020422	G02010410-08A	007.90.12	Analyte	50.000	1:4,B
23	per020423	10 ppb CCV	OS3050-4	QC	50.000	1:4,C
24	per020424	CCB	---	Blank	50.000	1:2,B
25	per020425	Method Blank	007.88.1	Blank	50.000	1:4,D
26	per020426	LCS	007.88.2	QC	50.000	1:4,E
27	per020427	0.25 ppb spike w/ 500 ppm Cl-	007.88.3	QC	50.000	1:4,F
28	per020428	0.25 ppb spike w/ 500 ppm SO4-	007.88.4	QC	50.000	1:5,A
29	per020429	0.25 ppb spike w/ 500 ppm Br-	007.88.5	QC	50.000	1:5,B
30	per020430	10 ppb spike w/ 500 ppm Cl-	007.88.6	QC	50.000	1:5,C
31	per020431	10 ppb spike w/ 500 ppm SO4-	007.88.7	QC	50.000	1:5,D
32	per020432	10 ppb spike w/ 500 ppm Br-	007.88.8	QC	50.000	1:5,E
33	per020433	10 ppb CCV	OS3050-4	QC	50.000	1:5,F
34	per020434	CCB	---	Blank	50.000	1:6,A
35	per020435	MDL Blank	007.92.1	Blank	0.000	1:6,B
36	per020436	MDL 1	007.92.2	QC	0.000	1:6,C
37	per020437	MDL 2	007.92.3	QC	0.000	1:6,D
38	per020438	MDL 3	007.92.4	QC	0.000	1:6,E
39	per020439	MDL 4	007.92.5	QC	50.000	1:6,F
40	per020440	MDL 5	007.92.6	QC	50.000	1:7,A
41	per020441	MDL 6	007.92.7	QC	50.000	1:7,B
42	per020442	MDL 7	007.92.8	QC	50.000	1:7,C
43	per020443	10 ppb CCV	OS3050-4	QC	50.000	1:7,D
44	per020444	CCB	---	Blank	50.000	1:7,E
45	per020445	Method Blank	007.88.1	Blank	50.000	1:4,D
46	per020446	LCS	007.88.2	QC	50.000	1:4,E
47	per020447	0.25 ppb spike w/ 500 ppm Cl-	007.88.3	QC	50.000	1:4,F
48	per020448	0.25 ppb spike w/ 500 ppm SO4-	007.88.4	QC	50.000	1:5,A
49	per020449	0.25 ppb spike w/ 500 ppm Br-	007.88.5	QC	50.000	1:5,B
50	per020450	10 ppb spike w/ 500 ppm Cl-	007.88.6	QC	50.000	1:5,C
51	per020451	10 ppb spike w/ 500 ppm SO4-	007.88.7	QC	50.000	1:5,D
52	per020452	10 ppb spike w/ 500 ppm Br-	007.88.8	QC	50.000	1:5,E
53	per020453	10 ppb CCV	OS3050-4	QC	50.000	1:7,D
54	per020454	CCB	---	Blank	50.000	1:7,E
55	per020455	---	---	---	0.000	---
56	per020456	---	---	---	50.000	2:2,B
57	per020457	---	---	---	50.000	2:2,C
58	per020458	---	---	---	50.000	2:2,D

Masslynx - Sample List

Sample List: C:\Masslynx\Perchlorate.PRO\SampleDB\020402per.SPL
Printed: Tue Feb 05 09:35:50 2002

Page Position: (2, 1)

	Conc A	LIMS ID	LIMS TYPE	LIMS DIL	Header	Inlet File	MS File
1	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
2	2.0	---	---	---	Header	perchlorate	perchlorate MSMS
3	5.0	---	---	---	Header	perchlorate	perchlorate MSMS
4	10.0	---	---	---	Header	perchlorate	perchlorate MSMS
5	15.0	---	---	---	Header	perchlorate	perchlorate MSMS
6	20.0	---	---	---	Header	perchlorate	perchlorate MSMS
7	10.0	---	---	---	Header	perchlorate	perchlorate MSMS
8	---	---	---	---	Header	perchlorate	perchlorate MSMS
9	---	---	---	---	Header	perchlorate	perchlorate MSMS
10	10	---	---	---	Header	perchlorate	perchlorate MSMS
11	10	---	---	---	Header	perchlorate	perchlorate MSMS
12	10	---	---	---	Header	perchlorate	perchlorate MSMS
13	---	---	---	---	Header	perchlorate	perchlorate MSMS
14	---	---	---	---	Header	perchlorate	perchlorate MSMS
15	---	---	---	---	Header	perchlorate	perchlorate MSMS
16	---	---	---	---	Header	perchlorate	perchlorate MSMS
17	---	---	---	---	Header	perchlorate	perchlorate MSMS
18	---	---	---	---	Header	perchlorate	perchlorate MSMS
19	---	---	---	---	Header	perchlorate	perchlorate MSMS
20	---	---	---	---	Header	perchlorate	perchlorate MSMS
21	---	---	---	---	Header	perchlorate	perchlorate MSMS
22	---	---	---	---	Header	perchlorate	perchlorate MSMS
23	10	---	---	---	Header	perchlorate	perchlorate MSMS
24	---	---	---	---	Header	perchlorate	perchlorate MSMS
25	---	---	---	---	Header	perchlorate	perchlorate MSMS
26	10	---	---	---	Header	perchlorate	perchlorate MSMS
27	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
28	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
29	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
30	10	---	---	---	Header	perchlorate	perchlorate MSMS
31	10	---	---	---	Header	perchlorate	perchlorate MSMS
32	10	---	---	---	Header	perchlorate	perchlorate MSMS
33	10	---	---	---	Header	perchlorate	perchlorate MSMS
34	---	---	---	---	Header	perchlorate	perchlorate MSMS
35	---	---	---	---	Header	perchlorate	perchlorate MSMS
36	1	---	---	---	Header	perchlorate	perchlorate MSMS
37	1	---	---	---	Header	perchlorate	perchlorate MSMS
38	1	---	---	---	Header	perchlorate	perchlorate MSMS
39	1	---	---	---	Header	perchlorate	perchlorate MSMS
40	1	---	---	---	Header	perchlorate	perchlorate MSMS
41	1	---	---	---	Header	perchlorate	perchlorate MSMS
42	1	---	---	---	Header	perchlorate	perchlorate MSMS
43	10	---	---	---	Header	perchlorate	perchlorate MSMS
44	---	---	---	---	Header	perchlorate	perchlorate MSMS
45	---	---	---	---	Header	perchlorate	perchlorate MSMS
46	10	---	---	---	Header	perchlorate	perchlorate MSMS
47	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
48	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
49	0.25	---	---	---	Header	perchlorate	perchlorate MSMS
50	10	---	---	---	Header	perchlorate	perchlorate MSMS
51	10	---	---	---	Header	perchlorate	perchlorate MSMS
52	10	---	---	---	Header	perchlorate	perchlorate MSMS
53	10	---	---	---	Header	perchlorate	perchlorate MSMS
54	---	---	---	---	Header	perchlorate	perchlorate MSMS
55	---	---	---	---	Header	perchlorate	perchlorate MSMS
56	---	---	---	---	Header	perchlorate	perchlorate MSMS
57	---	---	---	---	Header	perchlorate	perchlorate MSMS
58	---	---	---	---	Header	perchlorate	perchlorate MSMS

	MS Tune File
1	perchlorate MSMS
2	perchlorate MSMS
3	perchlorate MSMS
4	perchlorate MSMS
5	perchlorate MSMS
6	perchlorate MSMS
7	perchlorate MSMS
8	perchlorate MSMS
9	perchlorate MSMS
10	perchlorate MSMS
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12	perchlorate MSMS
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49	perchlorate MSMS
50	perchlorate MSMS
51	perchlorate MSMS
52	perchlorate MSMS
53	perchlorate MSMS
54	perchlorate MSMS
55	perchlorate MSMS
56	perchlorate MSMS
57	perchlorate MSMS
58	perchlorate MSMS

Acculabs Research Inc.
Specialty Analytical Services Group

2/5/02

Analyte Summary

000035

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(012402).mdb, Time: Thu Jan 24 17:01:11 2002
Calibration: C:\Masslynx\Perchlorate.PRO\CurveDB\020402Perchlorate Curve.cdb, Time: Mon Feb 04 14:49:22 2002

Compound name: Perchlorate
Coefficient of Determination: 0.996733
Calibration curve: -2.5062 * x^2 + 617.537 * x + -31.4495
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x^2, Axis trans: None

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Divisor1	Factor1	Acq.Time	Acq.Date
1	per020409	MB-2695	007.90.1	Blank		9.62	595.393	140623...	4.234	bb	0.0578			0.000	0.000	17:22:20	04-Feb-02
2	per020410	LCS-2695	007.90.2	QC	10.000	6.41	763311....	134053...	5694.073	bb	9.6494	-3.5	96.5	0.000	0.000	17:39:52	04-Feb-02
3	per020411	G02010410-01A...	007.90.4	QC	10.000	6.01	719023....	136728...	5258.777	MM	8.8872	-11.1	88.9	0.000	0.000	17:57:25	04-Feb-02
4	per020412	10 ppb CCV	OS3050-4	QC	10.000	6.37	805301....	134640...	5981.140	bb	10.1549	1.5	101.5	0.000	0.000	18:14:57	04-Feb-02
5	per020413	CCB		Blank		9.16	1553.028	137252...	11.315	bb	0.0693			0.000	0.000	18:32:30	04-Feb-02
6	per020414	G02010410-01A	007.90.3	Analyte		6.02	98686.141	131381...	751.139	MM	1.2739			0.000	0.000	18:50:03	04-Feb-02
7	per020415	G02010410-01A...	007.90.5	Analyte		6.02	91412.969	133477...	684.856	MM	1.1655			0.000	0.000	19:07:35	04-Feb-02
8	per020416	G02010410-02A	007.90.6	Analyte		5.87	52817.117	152618...	346.074	MM	0.6129			0.000	0.000	19:25:09	04-Feb-02
9	per020417	G02010410-03A	007.90.7	Analyte		6.23	119671....	151573...	789.528	MM	1.3367			0.000	0.000	19:42:42	04-Feb-02
10	per020418	G02010410-04A	007.90.8	Analyte		6.31	71905.539	136125...	528.230	MM	0.9097			0.000	0.000	20:00:14	04-Feb-02
11	per020419	G02010410-05A	007.90.9	Analyte		6.24	4628.313	124645...	37.132	bb	0.1111			0.000	0.000	20:17:46	04-Feb-02
12	per020420	G02010410-06A	007.90.10	Analyte		6.36	39252.801	120615...	325.438	bb	0.5793			0.000	0.000	20:35:19	04-Feb-02
13	per020421	G02010410-07A	007.90.11	Analyte		6.58	75868.906	132643...	571.976	bb	0.9811			0.000	0.000	20:52:52	04-Feb-02
14	per020422	G02010410-08A	007.90.12	Analyte		6.42	1251685...	162614...	7697.272	bb	13.2252			0.000	0.000	21:10:25	04-Feb-02
15	per020423	10 ppb CCV	OS3050-4	QC	10.000	6.38	873484....	150413...	5807.237	bb	9.8484	-1.5	98.5	0.000	0.000	21:27:58	04-Feb-02
16	per020424	CCB		Blank		9.47	1809.817	131535...	13.759	bb	0.0732			0.000	0.000	21:45:32	04-Feb-02

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Chemist: Christopher Borton

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Compound name: Citric Acid-d4
Response Factor: 133.079
RRF SD: 4.9978, Relative SD: 3.75551
Response type: External Std, Area
Curve type: RF

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Divisor1	Factor1	Acq.Time	Acq.Date
1	per020409	MB-2695	007.90.1	Blank	1000.000	5.45	140623....		140623.531	bb	1056.6911	5.7	105.7	1.000	1.000	17:22:20	04-Feb-02
2	per020410	LCS-2695	007.90.2	QC	1000.000	5.45	134053....		134053.750	bb	1007.3237	0.7	100.7	1.000	1.000	17:39:52	04-Feb-02
3	per020411	G02010410-01A...	007.90.4	QC	1000.000	5.45	136728....		136728.297	bb	1027.4211	2.7	102.7	1.000	1.000	17:57:25	04-Feb-02
4	per020412	10 ppb CCV	OS3050-4	QC	1000.000	5.45	134640....		134640.172	bb	1011.7302	1.2	101.2	1.000	1.000	18:14:57	04-Feb-02
5	per020413	CCB		Blank	1000.000	5.45	137252....		137252.453	bb	1031.3597	3.1	103.1	1.000	1.000	18:32:30	04-Feb-02
6	per020414	G02010410-01A	007.90.3	Analyte	1000.000	5.46	131381....		131381.969	bb	987.2470	-1.3	98.7	1.000	1.000	18:50:03	04-Feb-02
7	per020415	G02010410-01A...	007.90.5	Analyte	1000.000	5.45	133477....		133477.703	bb	1002.9950	0.3	100.3	1.000	1.000	19:07:35	04-Feb-02
8	per020416	G02010410-02A	007.90.6	Analyte	1000.000	5.46	152618....		152618.188	bb	1146.8229	14.7	114.7	1.000	1.000	19:25:09	04-Feb-02
9	per020417	G02010410-03A	007.90.7	Analyte	1000.000	5.45	151573....		151573.875	bb	1138.9756	13.9	113.9	1.000	1.000	19:42:42	04-Feb-02
10	per020418	G02010410-04A	007.90.8	Analyte	1000.000	5.45	136125....		136125.516	bb	1022.8916	2.3	102.3	1.000	1.000	20:00:14	04-Feb-02
11	per020419	G02010410-05A	007.90.9	Analyte	1000.000	5.45	124645....		124645.648	bb	936.6281	-6.3	93.7	1.000	1.000	20:17:46	04-Feb-02
12	per020420	G02010410-06A	007.90.10	Analyte	1000.000	5.45	120615....		120615.313	bb	906.3428	-9.4	90.6	1.000	1.000	20:35:19	04-Feb-02
13	per020421	G02010410-07A	007.90.11	Analyte	1000.000	5.45	132643....		132643.453	bb	996.7262	-0.3	99.7	1.000	1.000	20:52:52	04-Feb-02
14	per020422	G02010410-08A	007.90.12	Analyte	1000.000	5.46	162614....		162614.156	bb	1221.9359	22.2	122.2	1.000	1.000	21:10:25	04-Feb-02
15	per020423	10 ppb CCV	OS3050-4	QC	1000.000	5.46	150413....		150413.031	bb	1130.2526	13.0	113.0	1.000	1.000	21:27:58	04-Feb-02
16	per020424	CCB		Blank	1000.000	5.45	131535....		131535.031	bb	988.3972	-1.2	98.8	1.000	1.000	21:45:32	04-Feb-02

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Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/5/02

Sample Data

Analyst: Christopher Borton

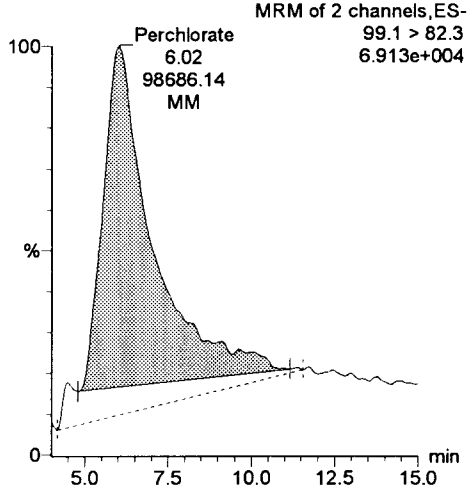
Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

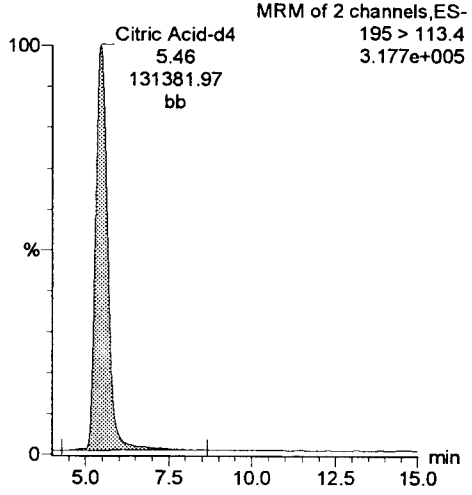
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020414
Date: 04-Feb-2002
Time: 18:50:03
ID: 007.90.3
Description: G02010410-01A
Vial: 1:2,F
Vial: 1:2,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.02	98686.14	131381.97	751.139	MM	1.274			04-Feb-02	18:50:03	05-Feb-02	09:26:43	
2	Citric Acid-d4	195 > 113.4	5.46	131381.97		131381.969	bb	987.247	-1.3	98.7	04-Feb-02	18:50:03			

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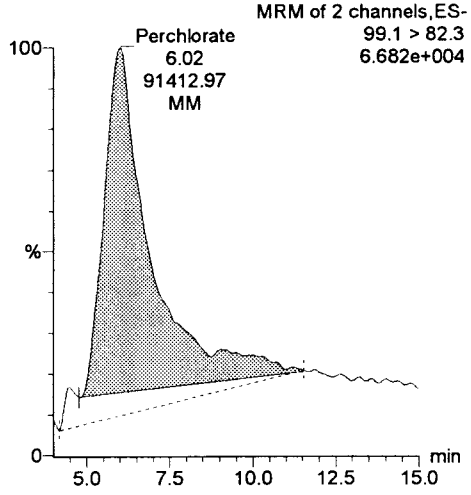
Chemist: Christopher Borton

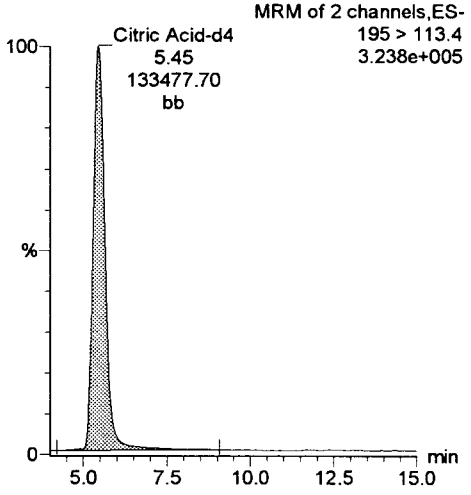
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020415
Date: 04-Feb-2002
Time: 19:07:35
ID: 007.90.5
Description: G02010410-01ADUP
Vial: 1:3,A
Vial: 1:3,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.02	91412.97	133477.70	684.856	MM	1.165			04-Feb-02	19:07:35	05-Feb-02	09:26:50	
2	Citric Acid-d4	195 > 113.4	5.45	133477.70		133477.703	bb	1002.995	0.3	100.3	04-Feb-02	19:07:35			

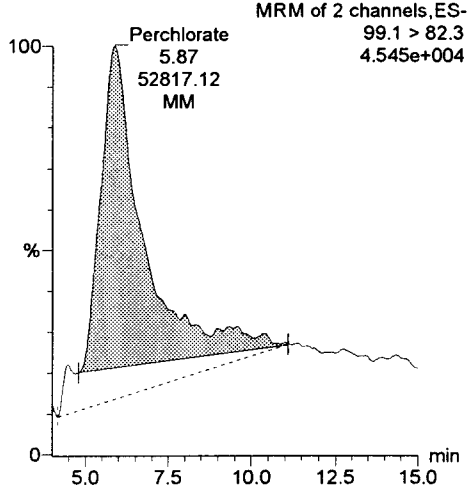
000040

Chemist: Christopher Borton

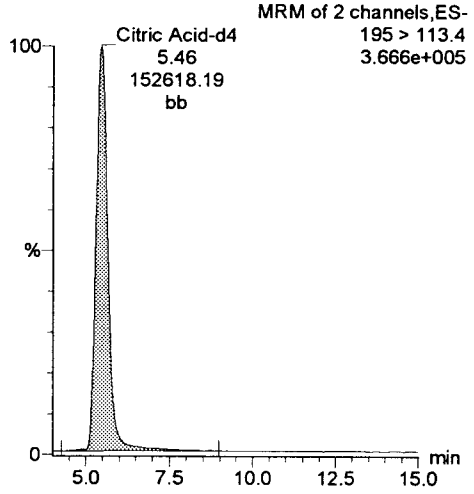
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020416
Date: 04-Feb-2002
Time: 19:25:09
ID: 007.90.6
Description: G02010410-02A
Vial: 1:3,B
Vial: 1:3,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	5.87	52817.12	152618.19	346.074	MM	0.613			04-Feb-02	19:25:09	05-Feb-02	09:27:03	
2	Citric Acid-d4	195 > 113.4	5.46	152618.19		152618.188	bb	1146.823	14.7	114.7	04-Feb-02	19:25:09			

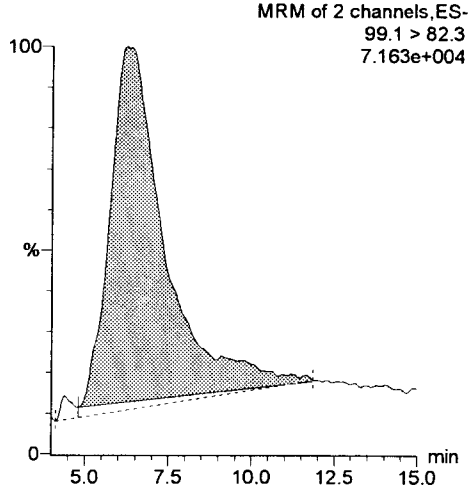
000041

Chemist: Christopher Borton

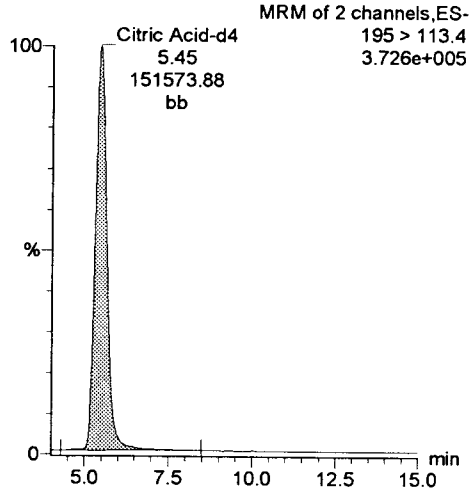
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020417
Date: 04-Feb-2002
Time: 19:42:42
ID: 007.90.7
Description: G02010410-03A
Vial: 1:3,C
Vial: 1:3,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.23	119671.87	151573.88	789.528	MM	1.337			04-Feb-02	19:42:42	05-Feb-02	09:27:10	
2	Citric Acid-d4	195 > 113.4	5.45	151573.88		151573.875	bb	1138.976	13.9	113.9	04-Feb-02	19:42:42			

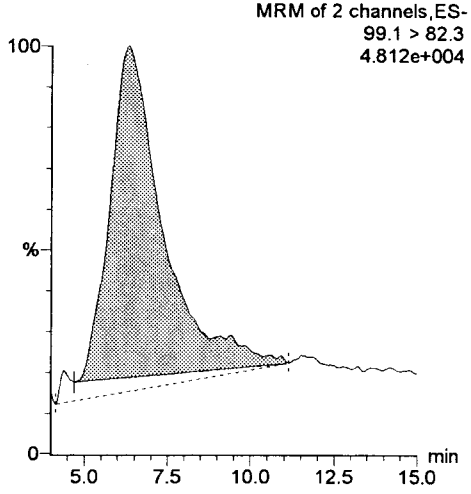
000042

Chemist: Christopher Borton

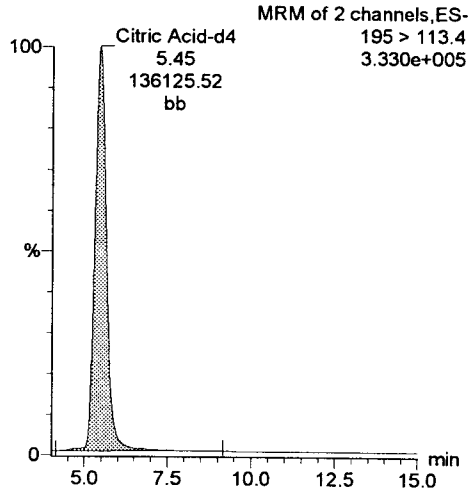
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020418
Date: 04-Feb-2002
Time: 20:00:14
ID: 007.90.8
Description: G02010410-04A
Vial: 1:3,D
Vial: 1:3,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.31	71905.54	136125.52	528.230	MM	0.910			04-Feb-02	20:00:14	05-Feb-02	09:27:18	
2	Citric Acid-d4	195 > 113.4	5.45	136125.52		136125.516	bb	1022.892	2.3	102.3	04-Feb-02	20:00:14			

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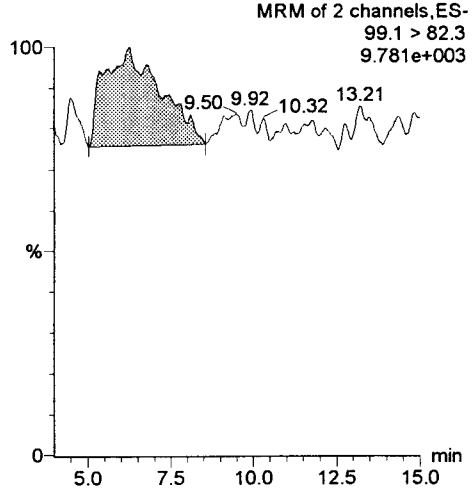
Chemist: Christopher Borton

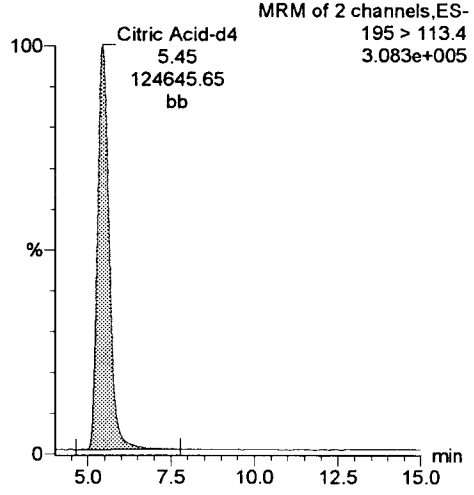
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020419
Date: 04-Feb-2002
Time: 20:17:46
ID: 007.90.9
Description: G02010410-05A
Vial: 1:3,E
Vial: 1:3,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.24	4628.31	124645.65	37.132	bb	0.111			04-Feb-02	20:17:46			
2	Citric Acid-d4	195 > 113.4	5.45	124645.65		124645.648	bb	936.628	-6.3	93.7	04-Feb-02	20:17:46			

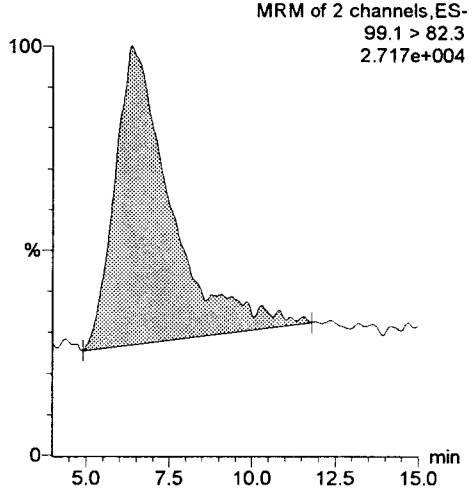
000044

Chemist: Christopher Borton

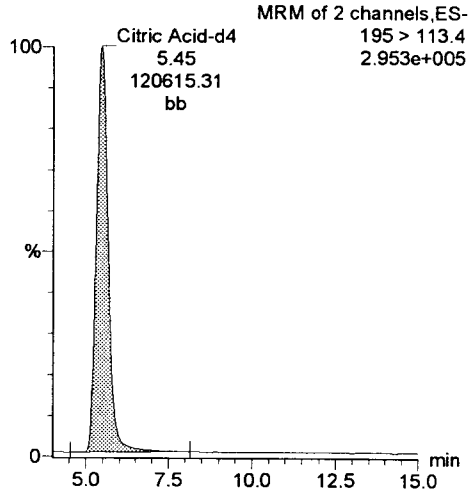
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020420
Date: 04-Feb-2002
Time: 20:35:19
ID: 007.90.10
Description: G02010410-06A
Vial: 1:3,F
Vial: 1:3,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.36	39252.80	120615.31	325.438	bb	0.579			04-Feb-02	20:35:19			
2	Citric Acid-d4	195 > 113.4	5.45	120615.31		120615.313	bb	906.343	-9.4	90.6	04-Feb-02	20:35:19			

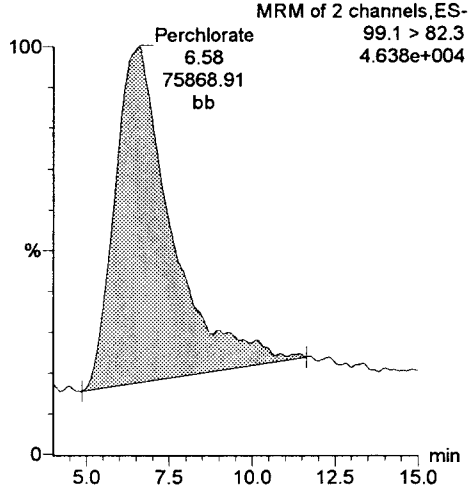
000045

Chemist: Christopher Borton

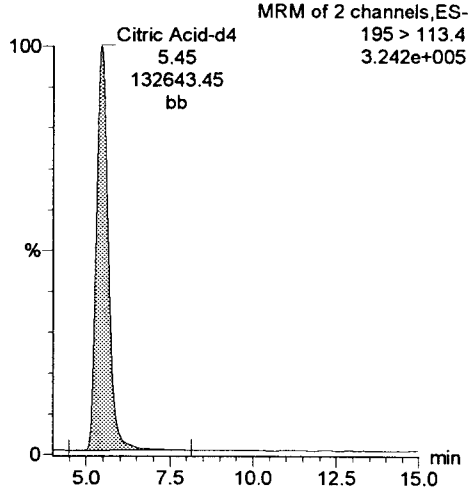
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020421
Date: 04-Feb-2002
Time: 20:52:52
ID: 007.90.11
Description: G02010410-07A
Vial: 1:4,A
Vial: 1:4,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.58	75868.91	132643.45	571.976	bb	0.981			04-Feb-02	20:52:52			
2	Citric Acid-d4	195 > 113.4	5.45	132643.45		132643.453	bb	996.726	-0.3	99.7	04-Feb-02	20:52:52			

000046

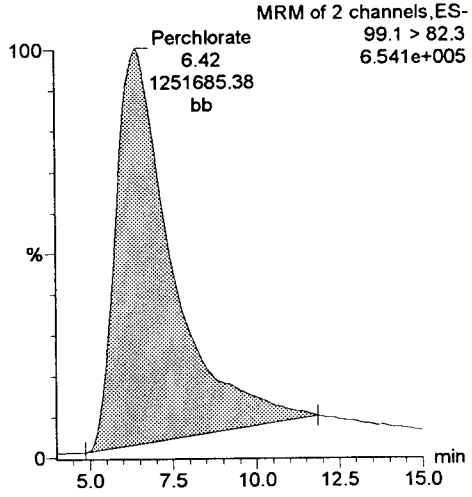
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

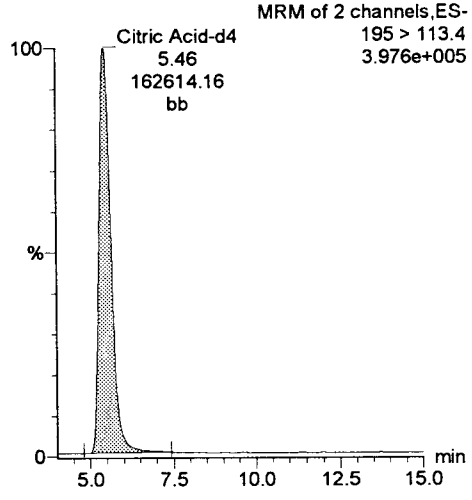
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020422
Date: 04-Feb-2002
Time: 21:10:25
ID: 007.90.12
Description: G02010410-08A
Vial: 1:4,B
Vial: 1:4,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.42	1251685....	162614.16	7697.272	bb	13.225			04-Feb-02	21:10:25			
2	Citric Acid-d4	195 > 113.4	5.46	162614.16		162614.156	bb	1221.936	22.2	122.2	04-Feb-02	21:10:25			

000047

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/5/02

QC Data

000048

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

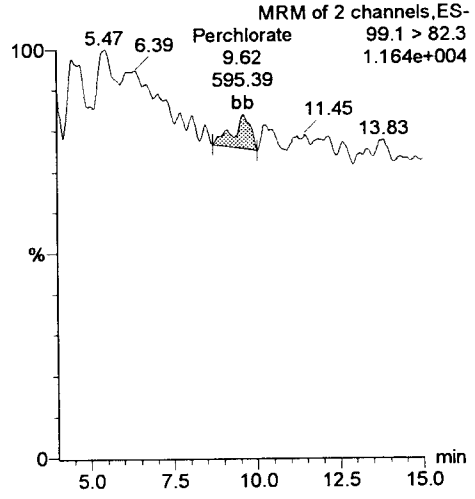
Quantify Sample Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

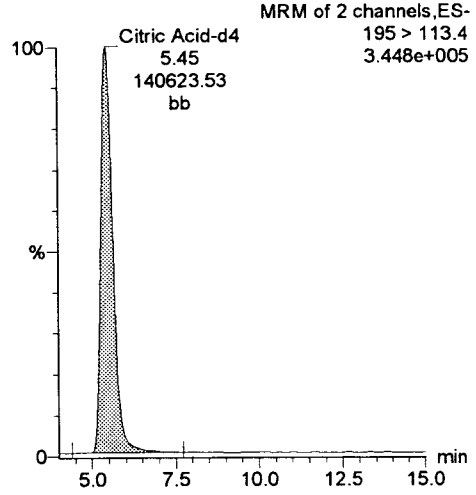
Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(012402).mdb, Time: Thu Jan 24 17:01:11 2002
Calibration: C:\Masslynx\Perchlorate.PRO\CurveDB\020402Perchlorate Curve.cdb, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020409
Date: 04-Feb-2002
Time: 17:22:20
ID: 007.90.1
Description: MB-2695
Vial: 1:2,C
Vial: 1:2,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	9.62	595.39	140623.53	4.234	bb	0.058			04-Feb-02	17:22:20			
2	Citric Acid-d4	195 > 113.4	5.45	140623.53		140623.531	bb	1056.691	5.7	105.7	04-Feb-02	17:22:20			

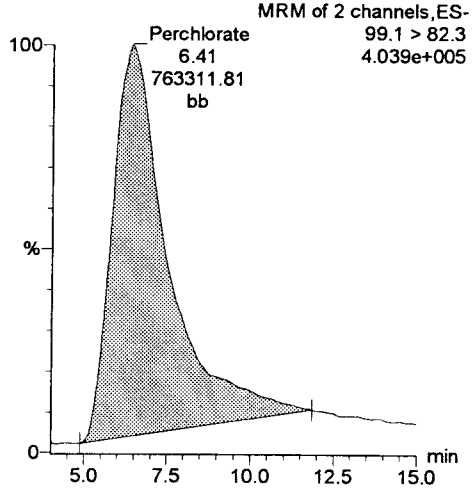
000049

Chemist: Christopher Borton

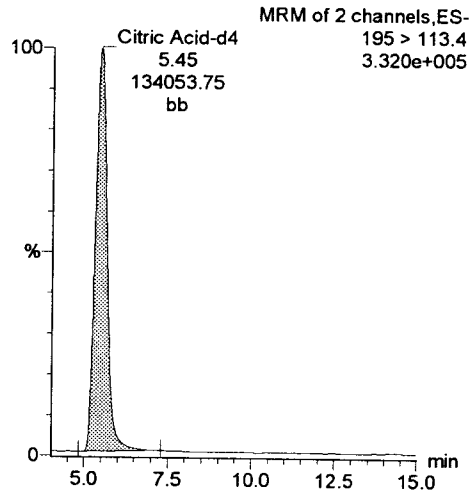
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020410
Date: 04-Feb-2002
Time: 17:39:52
ID: 007.90.2
Description: LCS-2695
Vial: 1:2,D
Vial: 1:2,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.41	763311.81	134053.75	5694.073	bb	9.649	-3.5	96.5	04-Feb-02	17:39:52			
2	Citric Acid-d4	195 > 113.4	5.45	134053.75		134053.750	bb	1007.324	0.7	100.7	04-Feb-02	17:39:52			

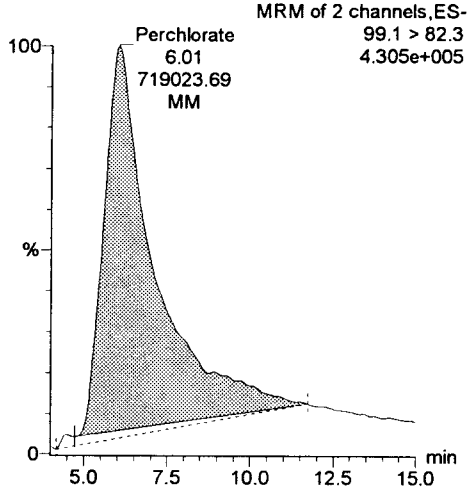
000050

Chemist: Christopher Borton

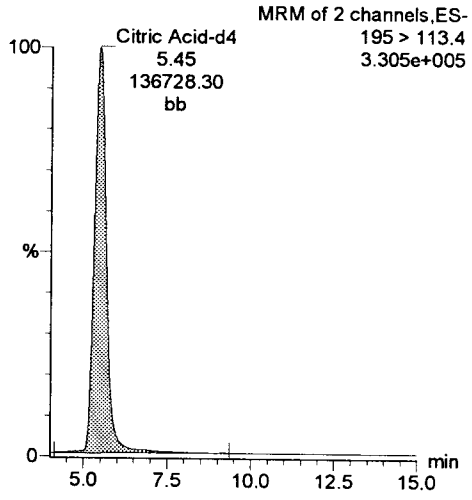
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020411
Date: 04-Feb-2002
Time: 17:57:25
ID: 007.90.4
Description: G02010410-01AMS
Vial: 1:2,E
Vial: 1:2,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.01	719023.69	136728.30	5258.777	MM	8.887	-11.1	88.9	04-Feb-02	17:57:25	05-Feb-02	09:26:25	
2	Citric Acid-d4	195 > 113.4	5.45	136728.30		136728.297	bb	1027.421	2.7	102.7	04-Feb-02	17:57:25			

000051

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/5/02

CCV Data

000052

Analyst: Christopher Borton

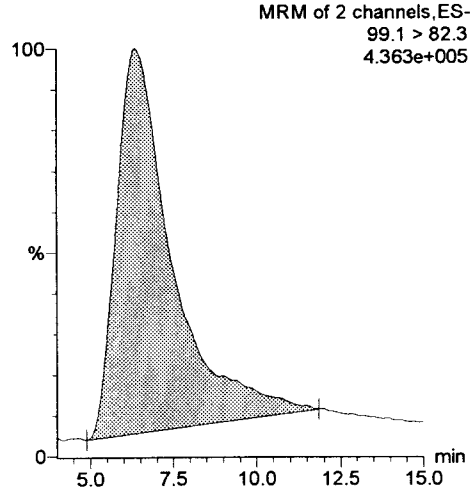
Instrument: Micromass Quattro Ultima
LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

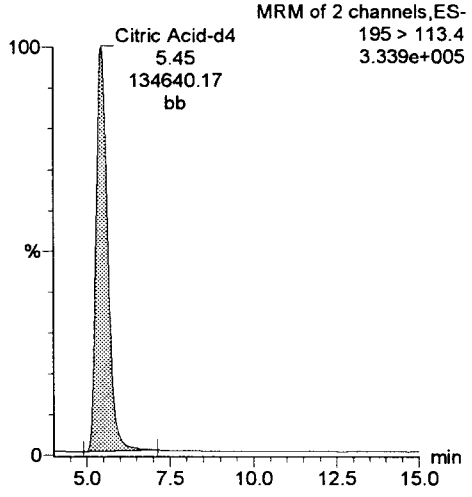
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020412
Date: 04-Feb-2002
Time: 18:14:57
ID: OS3050-4
Description: 10 ppb CCV
Vial: 1:4,C
Vial: 1:4,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.37	805301.69	134640.17	5981.140	bb	10.155	1.5	101.5	04-Feb-02	18:14:57			
2	Citric Acid-d4	195 > 113.4	5.45	134640.17		134640.172	bb	1011.730	1.2	101.2	04-Feb-02	18:14:57			

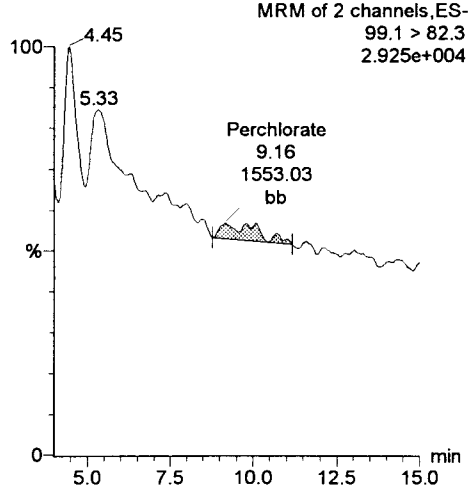
000053

Chemist: Christopher Borton

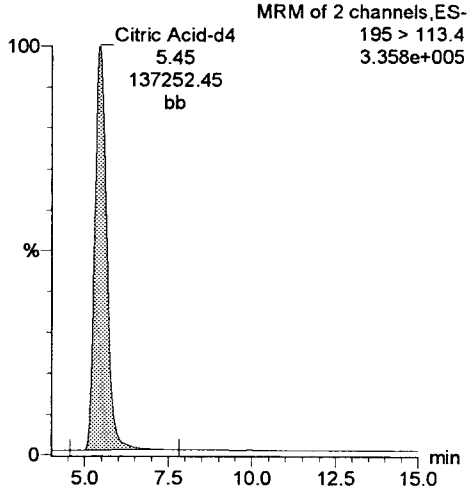
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020413
Date: 04-Feb-2002
Time: 18:32:30
ID:
Description: CCB
Vial: 1:2,B
Vial: 1:2,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	9.16	1553.03	137252.45	11.315	bb	0.069			04-Feb-02	18:32:30			
2	Citric Acid-d4	195 > 113.4	5.45	137252.45		137252.453	bb	1031.360	3.1	103.1	04-Feb-02	18:32:30			

000054

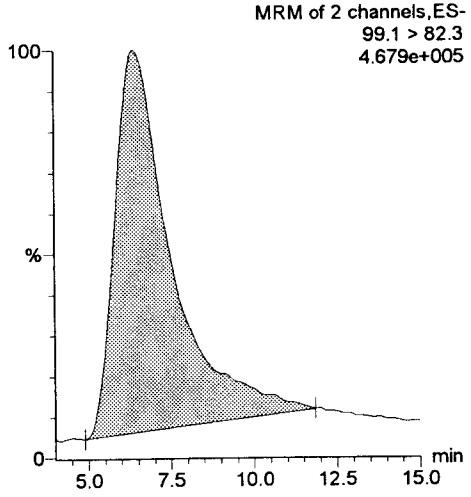
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

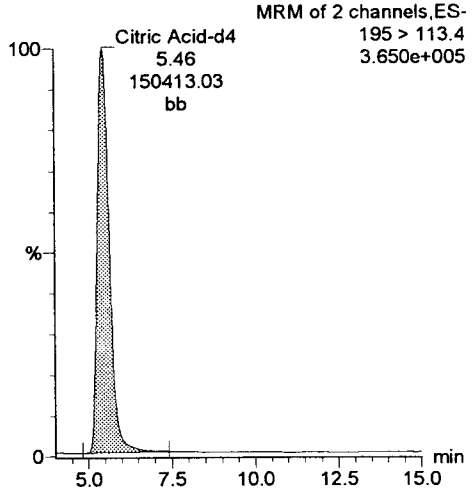
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020423
Date: 04-Feb-2002
Time: 21:27:58
ID: OS3050-4
Description: 10 ppb CCV
Vial: 1:4,C
Vial: 1:4,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.38	873484.13	150413.03	5807.237	bb	9.848	-1.5	98.5	04-Feb-02	21:27:58			
2	Citric Acid-d4	195 > 113.4	5.46	150413.03		150413.031	bb	1130.253	13.0	113.0	04-Feb-02	21:27:58			

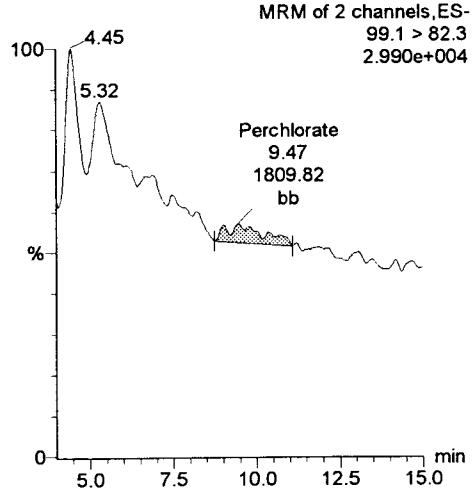
000055

Chemist: Christopher Borton

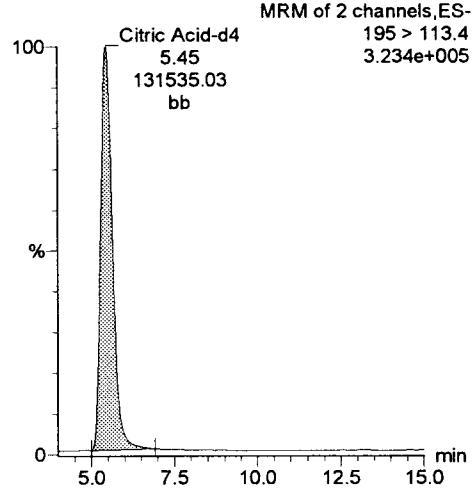
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020424
Date: 04-Feb-2002
Time: 21:45:32
ID:
Description: CCB
Vial: 1:2,B
Vial: 1:2,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	9.47	1809.82	131535.03	13.759	bb	0.073			04-Feb-02	21:45:32			
2	Citric Acid-d4	195 > 113.4	5.45	131535.03		131535.031	bb	988.397	-1.2	98.8	04-Feb-02	21:45:32			

000056

Chemist: Christopher Borton

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate.qld, Time: Tue Feb 05 09:27:18 2002

000057

Chemist: Christopher Borton

Acculabs Research Inc.
Specialty Analytical Services Group

2/5/02

Calibration Data

000058

Analyst: Christopher Borton

Instrument: Micromass Quattro Ultima
LC/MS/MS

Application: Perchlorate by ESI/LC/MS/MS

Micromass LCMS INITIAL CALIBRATION REVIEW CHECKLIST

Method: ClO_4^- Date Analyzed: 2/4/02

Procedure: _____ Samples: _____

First Reviewer/Date: C. Boston 2/5/02 Second Reviewer/Date: PCW 2/7/02

Criteria	1st Review Y	1st Review N	1st Review NA	2nd Review Y	2nd Review N	2nd Review NA	Comments
Initial Calibration							
Minimum of five points used for all analytes in calibration curve?	✓			✓		—	
Were any points removed from the calibration curve?		✓			✓		
If points were removed, was it only a high point or a low point and was it properly documented?			✓			✓	
If points were removed, was the RL or upper range adjusted for reporting puposes?			✓			✓	
Does avg. RF meet criteria (RSD ≤ ____%) for all compounds?			✓			✓	
Was minimum criteria met for linear regression (r ≥ 0.990)?			✓	✓			
Was quadratic regression used for any compounds (requires 6 points)? List cpds in comment section.	✓				✓		
If quadratic regression was used, were minimum coefficient of determination criteria met (COD ≥ 0.990)?	✓					✓	
Isomeric pairs checked for correct peak assignment?	✓					✓	
Manual integrations documented?	✓			✓			
Initial Calibration Verification							
ICV sample data meets criteria?	✓			✓			
Is the ICV std form a 2nd source?	✓			✓			
%D +/- 15 % for all analytes?	✓			✓			
Manual integrations documented?	✓			✓			
All manual calculations verified?			✓			✓	
Standards prep data included?	✓			✓		✓	
Run Log included?	✓			✓			

Initial and date all mark overs

Comments:

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(012402).mdb, Time: Thu Jan 24 17:01:11 2002
Calibration: Untitled, Time: Mon Feb 04 14:49:22 2002

Compound name: Perchlorate
Coefficient of Determination: 0.996733
Calibration curve: -2.5062 * x^2 + 617.537 * x + -31.4495
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x^2, Axis trans: None

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Divisor1	Factor1	Acq.Time	Acq.Date
1	per020401	0.25 ppb Standard	OS3066-1	Standard	0.250	6.37	16922.584	136327...	124.132	MM	0.2522	0.9	100.9	1.000	1.000	12:06:10	04-Feb-02
2	per020402	2.0 ppb Standard	OS3066-2	Standard	2.000	6.42	147199....	140318...	1049.040	bb	1.7623	-11.9	88.1	1.000	1.000	12:23:46	04-Feb-02
3	per020403	5.0 ppb Standard	OS3066-3	Standard	5.000	6.39	426357....	127724...	3338.097	bb	5.5829	11.7	111.7	1.000	1.000	12:41:19	04-Feb-02
4	per020404	10.0 ppb Standard	OS3066-4	Standard	10.000	6.39	795932....	131564...	6049.737	bb	10.2760	2.8	102.8	1.000	1.000	12:58:54	04-Feb-02
5	per020405	15.0 ppb Standard	OS3066-5	Standard	15.000	6.38	1109083...	127775...	8679.941	bb	15.0226	0.2	100.2	1.000	1.000	13:16:26	04-Feb-02
6	per020406	20.0 ppb Standard	OS3066-6	Standard	20.000	6.34	1475245...	134764...	10946.832	bb	19.2872	-3.6	96.4	1.000	1.000	13:33:58	04-Feb-02
7	per020407	10 ppb CCV	OS3030-4	QC	10.000	6.39	778796....	126684...	6147.531	bb	10.4489	4.5	104.5	0.000	0.000	13:51:31	04-Feb-02
8	per020408	ICB		Blank				134495...		MM-				0.000	0.000	14:09:04	04-Feb-02

000060

Chemist: Christopher Borton

Quantify Compound Summary Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Compound name: Citric Acid-d4
Response Factor: 133.079
RRF SD: 4.9978, Relative SD: 3.75551
Response type: External Std, Area
Curve type: RF

#	Name	Sample Text	ID	Type	Std. Conc	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Divisor1	Factor1	Acq.Time	Acq.Date
1	per020401	0.25 ppb Standard	OS3066-1	Standard	1000.000	5.46	136327....		136327.109	bb	1024.4064	2.4	102.4	1.000	1.000	12:06:10	04-Feb-02
2	per020402	2.0 ppb Standard	OS3066-2	Standard	1000.000	5.46	140318....		140318.344	bb	1054.3979	5.4	105.4	1.000	1.000	12:23:46	04-Feb-02
3	per020403	5.0 ppb Standard	OS3066-3	Standard	1000.000	5.46	127724....		127724.594	bb	959.7643	-4.0	96.0	1.000	1.000	12:41:19	04-Feb-02
4	per020404	10.0 ppb Standard	OS3066-4	Standard	1000.000	5.46	131564....		131564.734	bb	988.6204	-1.1	98.9	1.000	1.000	12:58:54	04-Feb-02
5	per020405	15.0 ppb Standard	OS3066-5	Standard	1000.000	5.46	127775....		127775.406	bb	960.1461	-4.0	96.0	1.000	1.000	13:16:26	04-Feb-02
6	per020406	20.0 ppb Standard	OS3066-6	Standard	1000.000	5.46	134764....		134764.563	bb	1012.6649	1.3	101.3	1.000	1.000	13:33:58	04-Feb-02
7	per020407	10 ppb CCV	OS3030-4	QC	1000.000	5.46	126684....		126684.422	bb	951.9481	-4.8	95.2	1.000	1.000	13:51:31	04-Feb-02
8	per020408	ICB		Blank	1000.000	5.46	134495....		134495.391	MM	1010.6423	1.1	101.1	1.000	1.000	14:09:04	04-Feb-02

000061

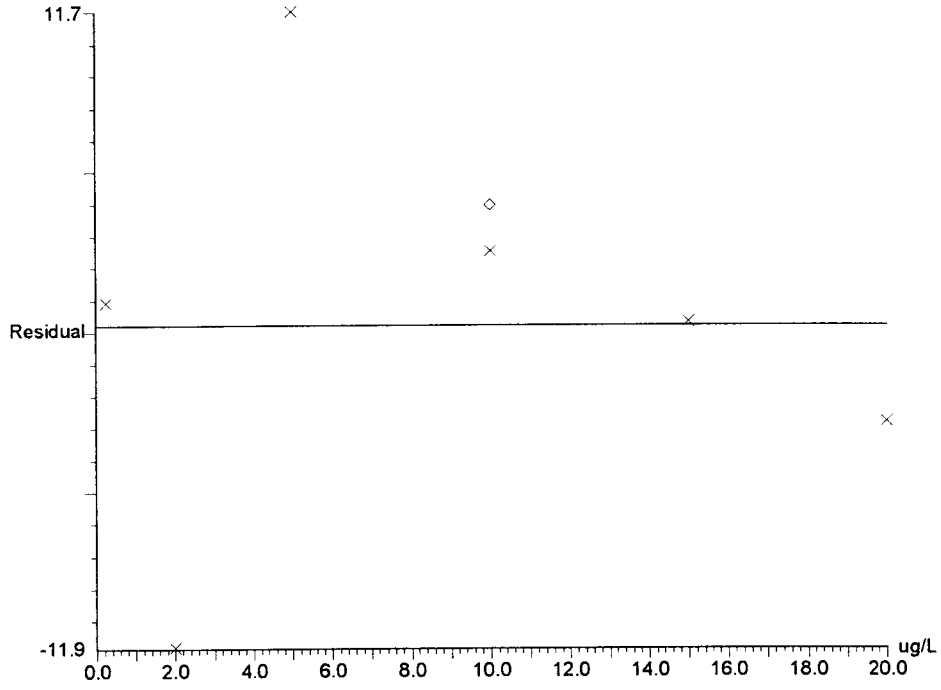
Chemist: Christopher Borton

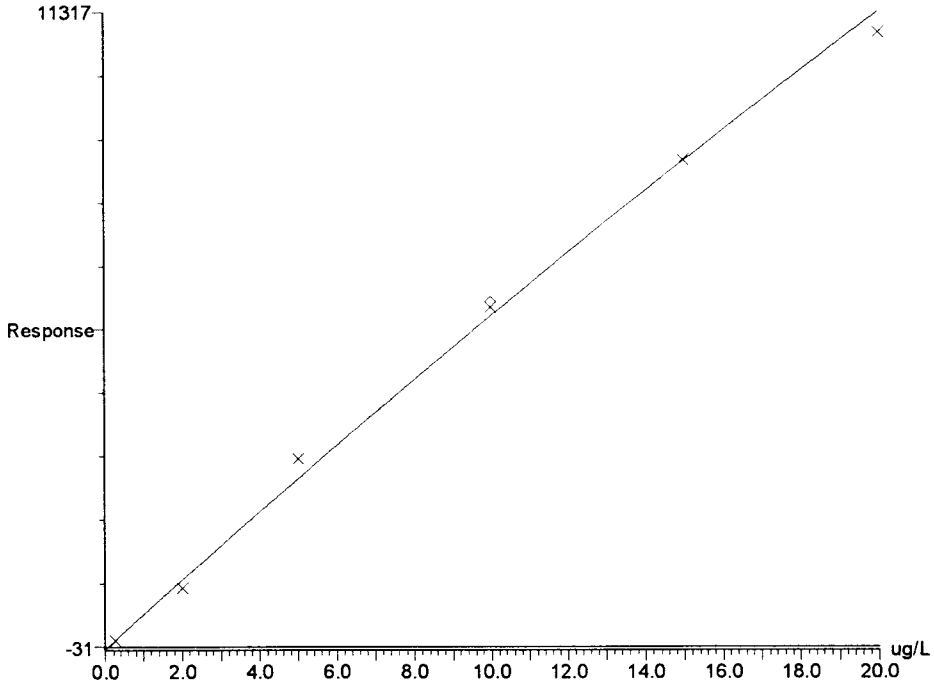
Quantify Calibration Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(012402).mdb, Time: Thu Jan 24 17:01:11 2002
Calibration: Untitled, Time: Mon Feb 04 14:49:22 2002

Compound name: Perchlorate
Coefficient of Determination: 0.996733
Calibration curve: -2.5062 * x^2 + 617.537 * x + -31.4495
Response type: Internal Std (Ref 2), Area * (IS Conc. / IS Area)
Curve type: 2nd Order, Origin: Exclude, Weighting: 1/x^2, Axis trans: None





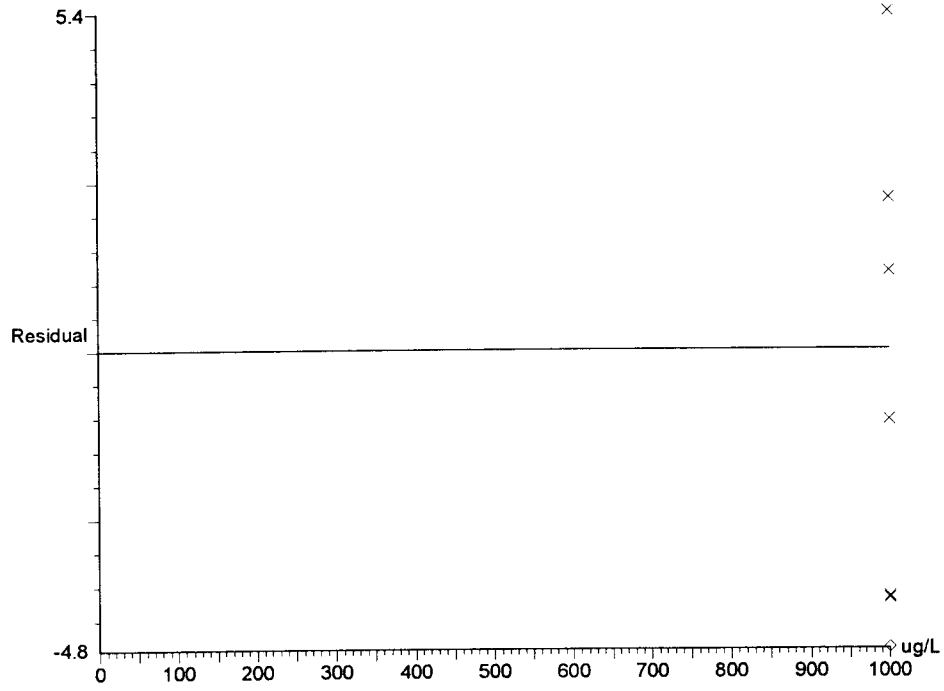
000062

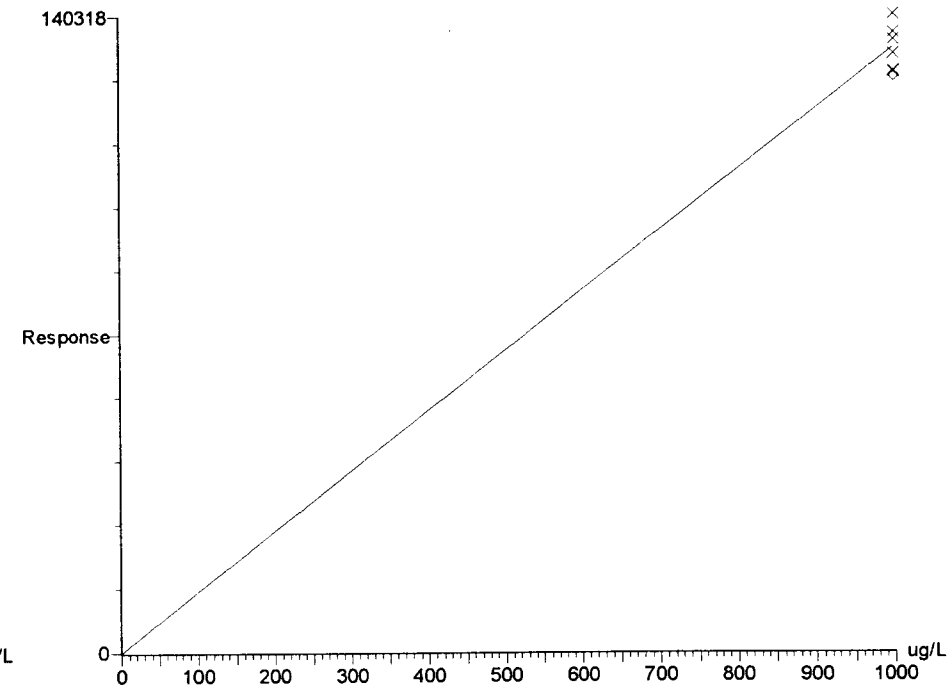
Chemist: Christopher Borton

Quantify Calibration Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Compound name: Citric Acid-d4
Response Factor: 133.079
RRF SD: 4.9978, % Relative SD: 3.75551
Response type: External Std, Area
Curve type: RF





000063

Chemist: Christopher Borton

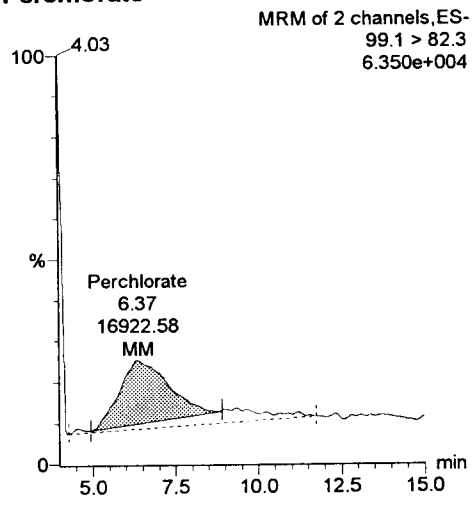
Quantify Sample Report
Acculabs Research Inc.

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

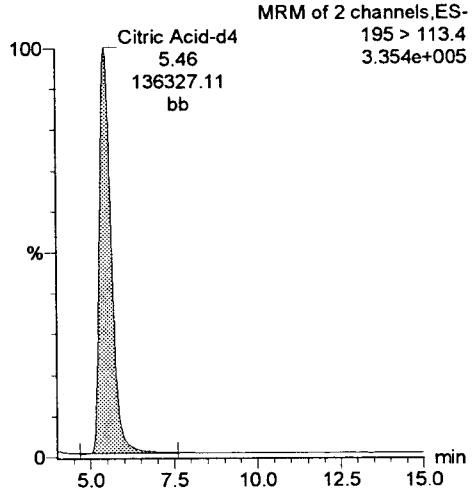
Method: C:\Masslynx\Perchlorate.PRO\MethDB\Perchlorate(012402).mdb, Time: Thu Jan 24 17:01:11 2002
Calibration: Untitled, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020401
Date: 04-Feb-2002
Time: 12:06:10
ID: OS3066-1
Description: 0.25 ppb Standard
Vial: 1:1,A
Vial: 1:1,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.37	16922.58	136327.11	124.132	MM	0.252	0.9	100.9	04-Feb-02	12:06:10	04-Feb-02	14:47:38	
2	Citric Acid-d4	195 > 113.4	5.46	136327.11		136327.109	bb	1024.406	2.4	102.4	04-Feb-02	12:06:10			

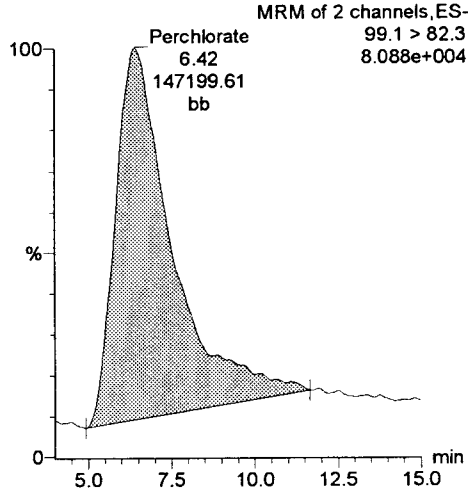
000064

Chemist: Christopher Borton

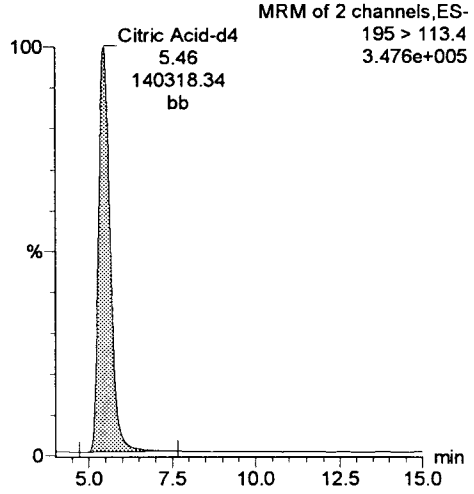
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020402
Date: 04-Feb-2002
Time: 12:23:46
ID: OS3066-2
Description: 2.0 ppb Standard
Vial: 1:1,B
Vial: 1:1,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.42	147199.61	140318.34	1049.040	bb	1.762	-11.9	88.1	04-Feb-02	12:23:46			
2	Citric Acid-d4	195 > 113.4	5.46	140318.34		140318.344	bb	1054.398	5.4	105.4	04-Feb-02	12:23:46			

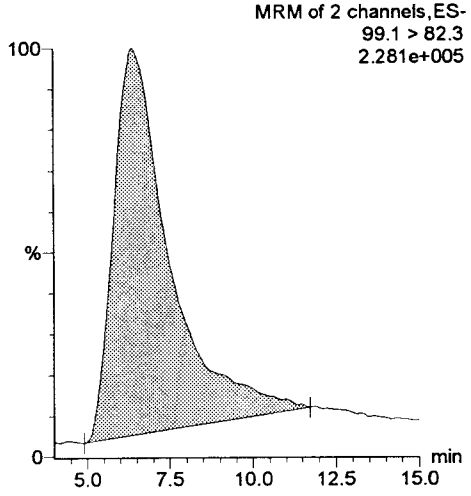
000065

Chemist: Christopher Borton

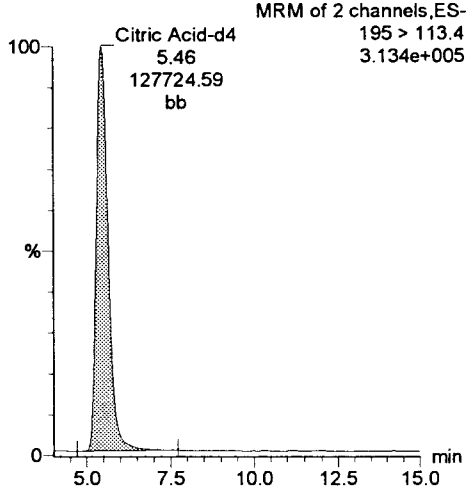
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020403
Date: 04-Feb-2002
Time: 12:41:19
ID: OS3066-3
Description: 5.0 ppb Standard
Vial: 1:1,C
Vial: 1:1,C

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.39	426357.03	127724.59	3338.097	bb	5.583	11.7	111.7	04-Feb-02	12:41:19			
2	Citric Acid-d4	195 > 113.4	5.46	127724.59		127724.594	bb	959.764	-4.0	96.0	04-Feb-02	12:41:19			

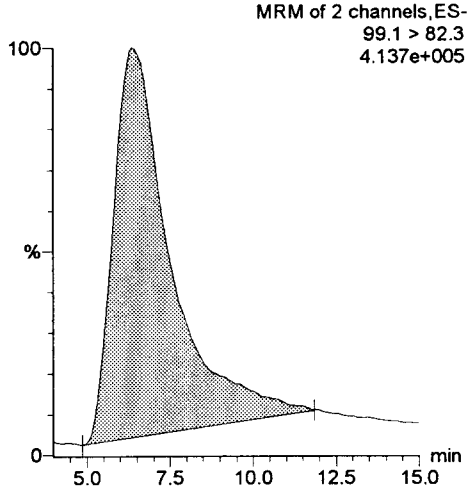
000066

Chemist: Christopher Borton

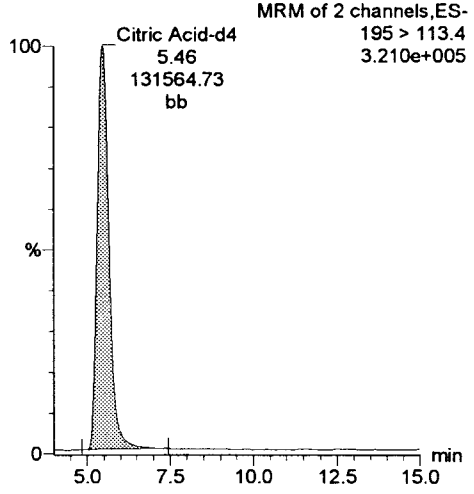
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020404
Date: 04-Feb-2002
Time: 12:58:54
ID: OS3066-4
Description: 10.0 ppb Standard
Vial: 1:1,D
Vial: 1:1,D

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.39	795932.06	131564.73	6049.737	bb	10.276	2.8	102.8	04-Feb-02	12:58:54			
2	Citric Acid-d4	195 > 113.4	5.46	131564.73		131564.734	bb	988.620	-1.1	98.9	04-Feb-02	12:58:54			

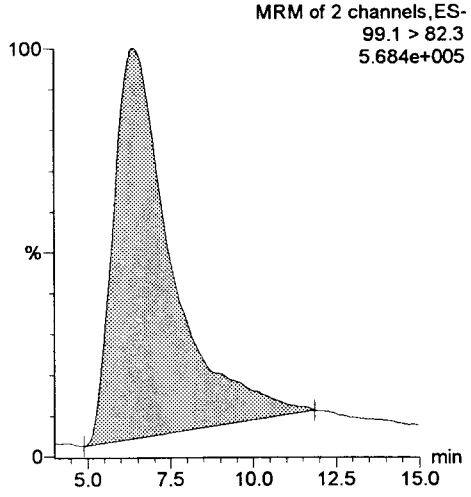
000067

Chemist: Christopher Borton

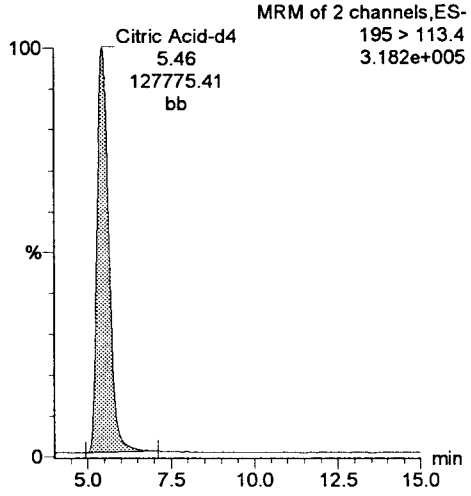
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020405
Date: 04-Feb-2002
Time: 13:16:26
ID: OS3066-5
Description: 15.0 ppb Standard
Vial: 1:1,E
Vial: 1:1,E

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.38	1109083....	127775.41	8679.941	bb	15.023	0.2	100.2	04-Feb-02	13:16:26			
2	Citric Acid-d4	195 > 113.4	5.46	127775.41		127775.406	bb	960.146	-4.0	96.0	04-Feb-02	13:16:26			

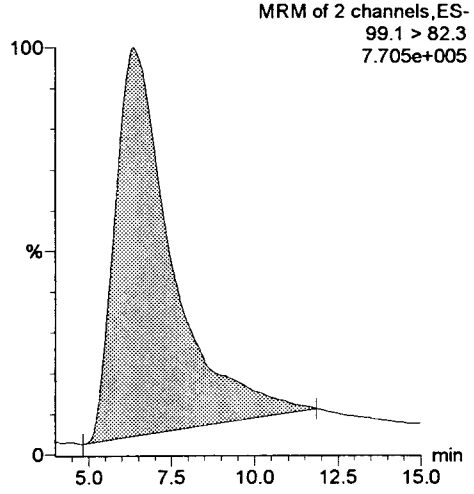
000068

Chemist: Christopher Borton

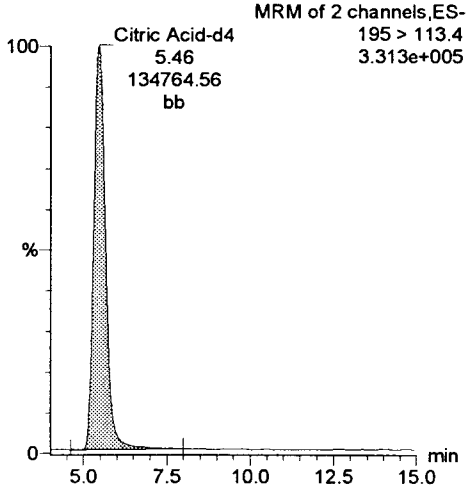
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020406
Date: 04-Feb-2002
Time: 13:33:58
ID: OS3066-6
Description: 20.0 ppb Standard
Vial: 1:1,F
Vial: 1:1,F

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.34	1475245....	134764.56	10946.832	bb	19.287	-3.6	96.4	04-Feb-02	13:33:58			
2	Citric Acid-d4	195 > 113.4	5.46	134764.56		134764.563	bb	1012.665	1.3	101.3	04-Feb-02	13:33:58			

000069

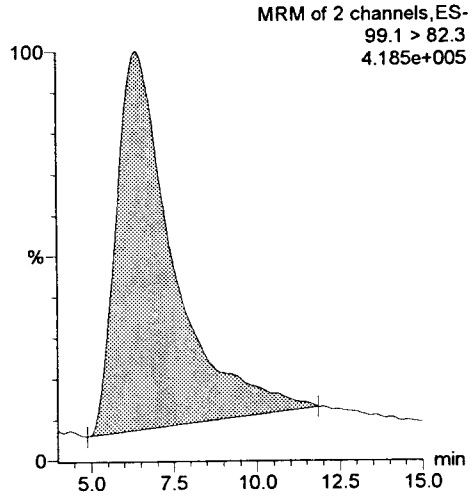
Chemist: Christopher Borton

Quantify Sample Report
Acculabs Research Inc.

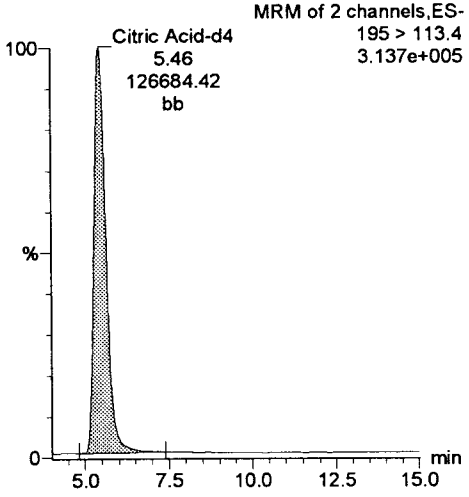
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020407
Date: 04-Feb-2002
Time: 13:51:31
ID: OS3030-4
Description: 10 ppb CCV
Vial: 1:2,A
Vial: 1:2,A

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3	6.39	778796.38	126684.42	6147.531	bb	10.449	4.5	104.5	04-Feb-02	13:51:31			
2	Citric Acid-d4	195 > 113.4	5.46	126684.42		126684.422	bb	951.948	-4.8	95.2	04-Feb-02	13:51:31			

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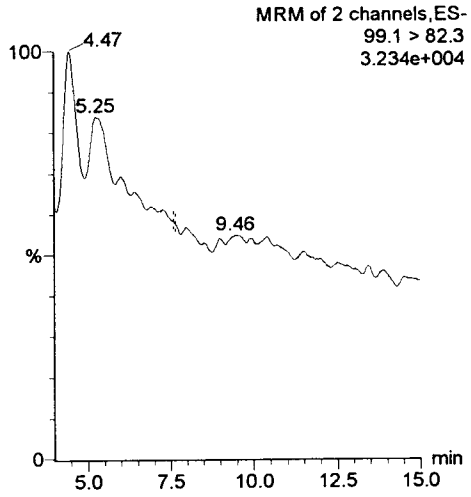
Chemist: Christopher Borton

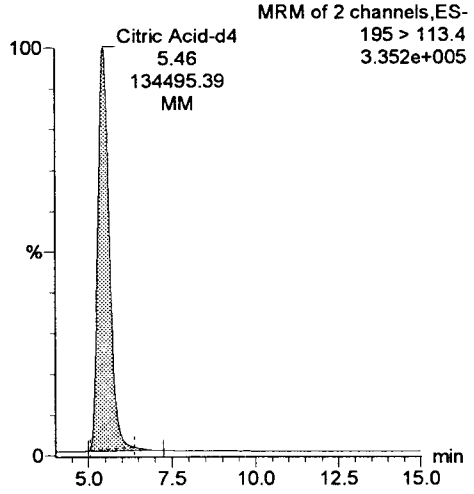
Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

Name: C:\Masslynx\PERCHLORATE.PRO\Data\per020408
Date: 04-Feb-2002
Time: 14:09:04
ID:
Description: ICB
Vial: 1:2,B
Vial: 1:2,B

Perchlorate



Citric Acid-d4



#	Name	Trace	RT	Area	IS Area	Response	Flags	ug/L	%Dev	%Rec	Acq.Date	Acq.Time	Mod.Date	Mod.Time	Mod.Comment
1	Perchlorate	99.1 > 82.3			134495.39		MM-				04-Feb-02	14:09:04	04-Feb-02	14:48:07	
2	Citric Acid-d4	195 > 113.4	5.46	134495.39		134495.391	MM	1010.642	1.1	101.1	04-Feb-02	14:09:04	04-Feb-02	14:48:39	

000071

Chemist: Christopher Borton

Dataset: C:\Masslynx\Perchlorate.PRO\020402Perchlorate Curve.qld, Time: Mon Feb 04 14:49:22 2002

000072

Chemist: Christopher Borton

Acculabs, Inc.

REMIT TO: **Acculabs, Inc.**
Accounts Receivable
4663 Table Mountain Drive
Golden, Colorado 804031650
TEL: (303) 277-9514

INVOICE

INV DATE: *February 22, 2002*
Print DATE: *February 22, 2002*

Invoice No: 53105

Invoice TO: TechLaw, Inc.
105 West Madison, Suite 900
Chicago, IL 60602

Attn: Kristi Pawski
Phone: (312) 345-8963

Work Order: G02020055
PO Number:

Order Name
Date Received 2/5/02

Item	Remarks	Matrix	Qty	Unit Price	Mult	Quoted	Test Total
Perchlorate by LCMSMS			7	$200.00	1	$200.00	$1,400.00
Perchlorate Prep			7	$0.00	1	$0.00	$0.00

Miscellaneous Charge Summary

Item	*Unit*	*Qty*	*Total*
copy for Pinnacle	$20.00	1	$20.00

Subtotal:	**$1,400.00**
Discount:	0.00%
Surcharge:	0.00%
Misc Charges:	$20.00
Payment Received:	$0.00
INVOICE Total:	**$1,420.00**

All invoices are due and payable net 30 days from receipt.

Acculabs, Inc.

REMIT TO: **Acculabs, Inc.**
Accounts Receivable
4663 Table Mountain Drive
Golden, Colorado 804031650
TEL: (303) 277-9514

INVOICE

INV DATE: *February 22, 2002*
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Invoice TO: TechLaw, Inc.
105 West Madison, Suite 900
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Attn: Kristi Pawski
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