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Level IV Data Package

MWH Group 209942

Method: EPA 314

2707110558
2707110559

Perchlorate QC Checklist

rev: 27 Mar 03

Analysis Date: 07-12-07 **Analyst:** Reyes QC'd by MVE Date 07/15/07

Instrument: IC 11 **Calculated MCT Level:** 3155 umhos/cm

Original IPC conductance: 3141 umhos/cm **Daily IPC conductance:** 3141 umhos/cm

Calibration including QCS

✓ QCS (20ppb) recovery is within 90% - 110% (18-22ppb) to verify that the calibration curve (minimum 5 points) still holds.

✓ Calibration curve is reanalyzed if QCS fails. Correlation Coefficient is 0.995 or better.

Initial QC Check Samples (MBLANK, MRL, ICCSCV, IPC) to be analyzed with every batch (up to 20 samples) or part thereof

✓ MLBANK is analyzed before samples. Perchlorate, if present, is < or = half of the MRL.

N/A *L-ClO4 only*: ICCSCV at 2ppb is within 50%-150% (1-3ppb)

✓ *ClO4 only*: MRL at 4ppb is within 75%-125% (3-5ppb)

PDA/H = 0.81%

✓ IPC (25ppb) recovery is between 80%-120% (20-30ppb)

✓ IPC retention time is within 5% of the retention time of the standards

✓ IPC Conductance level is within 10% of the original

LCS/LCSD (25ppb)

✓ Recoveries are between 90%-110% (22.5 – 27.5ppb)

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

MS/MSD (25ppb) NOTE: For UCMR, MS/MSD concentrations alternate between 4ppb and 25ppb

✓ Recoveries are within 80%-120% (20-30ppb) for 25ppb spike N/A (3.2-4.8ppb) for 4ppb spike

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

✓ RPD between MS and MSD is within 15%.

Continuing Calibration Verification (MCV, HCV) NOTE: For UCMR ECV and MCV are required

✓ Verification Checks alternate between mid- and high-level during the analysis (low- and mid-level for UCMR)

✓ MCV (25ppb) recovery is between 85%-115% (21.25 – 28.75ppb)

✓ HCV (100ppb) recovery is between 85%-115% (85-115ppb) N/A ECV (4ppb) recovery is between 75%-125% (3.0-5.0)

Pretreat and include the following QC parameters for any batch or part thereof containing samples requiring pretreatment

N/A One Laboratory Reagent Blank (LRB). Perchlorate is < or = half of MRL.

N/A One pair of Laboratory Control Samples (LCS/LCSD). Recovery of perchlorate is between 85%-115%.

N/A One Pair of Laboratory Fortified Matrices (MS/MSD). Recoveries are between 80%-120%

Samples

✓ All samples are analyzed within 28 days of collection.

✓ All samples are analyzed within MCT Conductance limit.

QIR

N/A QIR needed for failed QC

N/A QIR needed for samples analyzed outside of hold time

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

CONDUCTIVITY MW SOP REVISION 5
SM2510B

Analysis Date: 07-11-07
Analyst: Rajen
Reviewed By:
LIMS Check By:

Was QC Criteria Met: Y N
Was QIR Needed: Y N

Time of Analysis Start: End:
MRL 2umhos/cm: Rx# exp of solution:
KCl Std 1412 Rx# 201556 exp of solution 07/08
TV = 1412 µmho/cm @ 25°C for 0.0100M
Reading: 1410
Instrument: YSI Model 3200 SN:01A0504, Year Aquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale (µmho/mmho)	Result: Instrument	Result: Reported (µmho/cm)	Comments
Blk	Blank						µs	0.8571		
STD	MRL 2umhos/cm							N/A		1-3—±50% of TV
STD	KCl - 1000 mhos/cm							982		950-1050—±5% of TV
1	2707050182	200012	WRD	07-05-07				999		
2	377	200011						974		
3	2707060253	GW-11	Kennegee				ms	3369		
4	255	GW-11 SW						43.59		
5	260	Discharge						19.43		
6	261	West well					µs	8733		
7	262	East well					ms	11.92		
8	2707100282	Effluent Comp		07-07-07			µs	8722		
9	285	Inf-Comp						8883		
10	610	Stabilized		07-09-07				999		
DUP								999		RPD < 5%
11	070	30SA5E-5K2	Kernwater					321		
12	079	-18C01						562		
13	266	07G15-021	Calwater					518		
14	2707110183	MWD A	Foothill	07-11-07				604		
15	558	Effluent	Kennegee	07-10-07				8709		
16	559	Influent						8309		
17	645	005	Valencia	07-11-07				818		
18	648	668						726		
19	653	069						769		
20										
DUP	2707110183	MWD A	Foothill	07-11-07			µs	615		RPD < 5%
STD	KCl - 10 mhos/cm							N/A		8-12—RPD < 20% of TV

% RPD = |S1-S2| * 100
(S1+S2)/2

S1 = reading of 1st sample
S2 = reading of 2nd sample

(RL) 11 Jun 07

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

CONDUCTIVITY MW SOP REVISION 5
SM2510B

Analysis Date: 07-12-07
Analyst: Raja
Reviewed By: ______
LIMS Check By: ______

Was QC Criteria Met: Y N
Was QIR Needed: Y N

Time of Analysis Start: ______ End: ______
MRL 2umhos/cm: R# ______ exp of solution: ______
KCl Std 1412 R# 291562 exp of solution 08/07
TV = 1412 µmho/cm @ 25°C for 0.0100M
Reading: 1409
Instrument: YSI Model 3200 SN:01A0504, Year Aquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale (µmho/mmho)	Result Instrument	Result Reported (µmho/cm)	Comments
Blk	Blank						µs	0.608		
STD	MRL 2umhos/cm							NA		1-3—±50% of TV
STD	KCl - 1000 mhos/cm							975		950-1050—±5% of TV
1	2707110110	Art-1	Kermcgee	07-10-07			↓	9999		
2	112	-2					ms	14.09		
3	113	-3					↓	11.67		
4	114	-4					µs	8076		
5	115	-6					↓	9536		
6	116	-7					ms	13.18		
7	117	-8					↓	13.48		
8	118	PC-99R2/K3					µs	5997		
9	119	-115R						6160		
10	120	-116R						6295		
DUP	↓	↓						6308		RPD < 5%
11	121	SP'1						7928		
12	122	PC-117						4853		
13	123	-118						6422		
14	124	-119						6025		
15	125	-120						4306		
16	126	-121						3974		
17	127	-133						4954		
18	128	Art-9	↓	↓			↓	9507		
19										
20										
DUP	2707110128	Art-9	Kermcgee	07-10-07			µs	9525		RPD < 5%
STD	KCl - 10 mhos/cm						N/	N/A		8-12—RPD < 20% of TV

$$\% RPD = \frac{|S1-S2|}{(S1+S2)/2} * 100$$

S1 = reading of 1st sample
S2 = reading of 2nd sample

(initials) 12 Jul 07

Sample No.	Sample Name	Dil.Fac.	Comment	Time	Amount CLO4 CD_1	
1	autocal1	1.0		07.12.07 07:38	n.a.	
2	autocal2	1.0	RAJA060913-2	07.12.07 08:00	1.8772	
3	autocal3	1.0	RAJA060913-3	07.12.07 08:23	4.2299	
4	autocal4	1.0	RAJA060913-4	07.12.07 08:45	9.0724	
5	autocal5	1.0	RAJA060913-5	07.12.07 09:08	26.5365	
6	autocal6	1.0	RAJA060913-6	07.12.07 09:30	49.1862	
7	autocal7	1.0	RAJA060913-7	07.12.07 09:52	100.1092	
8	QCS	1.0		07.12.07 10:15	20.5002	103%
9	IPC	1.0		07.12.07 10:37	29.0792	116%
10	MBLK	1.0		07.12.07 11:00	n.a.	
11	MRL-2	1.0		07.12.07 11:22	1.7746	88.7%
12	MRL-4	1.0		07.12.07 11:44	✓ 4.7355	94.7%
13	LCS1	1.0		07.12.07 12:07	✓26.6030	106%
14	LCS2	1.0		07.12.07 12:29	✓25.5778	102%
15	2707050182	1.0		07.12.07 12:51	✓ n.a.	
16	2707050182MS	1.0		07.12.07 13:14	✓24.1432	24.1-96.4%
17	2707050182MSD	1.0		07.12.07 13:36	✓24.2878	24.3-97.2%
18	2707050377	1.0		07.12.07 13:59	✓ n.a.	
19	2707060253_1/50000	50000.0		07.12.07 14:21	✓3085650.2789	
20	2707060255_1/50000	50000.0		07.12.07 14:43	✓4249288.5618	
21	2707050260_1/50000	50000.0		07.12.07 15:06	✓1912543.5885	
22	2707050261_1/50000	50000.0		07.12.07 15:28	✓557024.7056	
23	2707050262_1/50000	50000.0		07.12.07 15:51	✓1117360.8013	
24	2707100070	1.0		07.12.07 16:13	✓ n.a.	
25	2707100079	1.0		07.12.07 16:35	✓ n.a.	
26	2707100266	1.0		07.12.07 16:58	✓ n.a.	
27	CCV	1.0		07.12.07 17:20	27.5433	110%
28	2707100282_1/5	5.0		07.12.07 17:43	✓43.7760	
29	2707100285_1/5000	5000.0		07.12.07 18:05	✓230135.2716	
30	2707100610	1.0		07.12.07 18:27	✓ 6.4171	
31	2707110183	1.0		07.12.07 18:50	✓ n.a.	
32	2707110558_1/5	5.0		07.12.07 19:12	✓29.3377	
33	2707110559_1/5000	5000.0		07.12.07 19:35	✓239081.9355	
34	2707110645	1.0		07.12.07 19:57	✓ n.a.	
35	2707110648	1.0		07.12.07 20:19	✓ n.a.	
36	2707110653	1.0		07.12.07 20:42	✓ n.a.	
37	2707110110_1/5	5.0		07.12.07 21:04	✓101.0326	
38	HCV	1.0		07.12.07 21:27	110.6154	111%
39	QCS	1.0	NO DATA WAS	07.12.07 21:49	22.9927	
40	IPC	1.0	REPORTED	07.12.07 22:11	31.7764	
41	MBLK	1.0	BEYOND THIS	07.12.07 22:34	n.a.	
42	MRL-2	1.0	POINT	07.12.07 22:56	1.6312	
43	MRL-4	1.0		07.12.07 23:19	5.4788	
44	LCS1	1.0		07.12.07 23:41	32.8112	

45	LCS2	1.0	07.13.07 00:03	29.7439
46	2707110112_1/5000	5000.0	07.13.07 00:26	99592.2630
47	2707110113_1/10000	10000.0	07.13.07 00:48	370229.1413
48	2707110114_1/10000	10000.0	07.13.07 01:11	360378.6530
49	2707110115_1/5000	5000.0	07.13.07 01:33	95267.8977
50	2707110116_1/5000	5000.0	07.13.07 01:55	157104.9173
51	2707110117_1/10000	10000.0	07.13.07 02:18	307473.6280
52	2707110118_1/500	500.0	07.13.07 02:40	13808.1211
53	2707110119_1/500	500.0	07.13.07 03:03	14330.8780
54	2707110120_1/500	500.0	07.13.07 03:25	11086.2467
55	2707110120MS	1.0	07.13.07 03:47	50.0221
56	2707110120MSD	1.0	07.13.07 04:10	48.9550
57	2707110121_1/5	5.0	07.13.07 04:32	23.5460
58	CCV	1.0	07.13.07 04:55	29.2663
59	2707110122_1/100	100.0	07.13.07 05:17	3648.4940
60	2707110123_1/200	200.0	07.13.07 05:39	11999.7685
61	2707110124_1/100	100.0	07.13.07 06:02	8988.0829
62	2707110125_1/100	100.0	07.13.07 06:24	2321.6706
63	2707110126_1/100	100.0	07.13.07 06:47	1358.9189
64	2707110127_1/100	100.0	07.13.07 07:09	5486.6862
65	2707110128_1/5000	5000.0	07.13.07 07:31	371549.6056
66	HCV	1.0	07.13.07 07:54	114.4298
67	STOP	1.0	07.13.07 08:16	n.a.

Sequence: 071207-CLO4-IC11
Operator: raja
Printed: 7/13/2007 3:46:48 PM

Title:
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC11_CLO4\2007\JULY
Timebase: IC11
#Samples: 67
Created: 7/12/2007 6:56:25 AM by raja
Last Update: 7/13/2007 3:16:15 PM by raja

No.	Name	Dil. Factor	Type	Comment	Status	Program
1	autocal1	1.0000	Standard		Finished	Perchlorate-IC11
2	autocal2	1.0000	Standard	RAJA060913-2	Finished	Perchlorate-IC11
3	autocal3	1.0000	Standard	RAJA060913-3	Finished	Perchlorate-IC11
4	autocal4	1.0000	Standard	RAJA060913-4	Finished	Perchlorate-IC11
5	autocal5	1.0000	Standard	RAJA060913-5	Finished	Perchlorate-IC11
6	autocal6	1.0000	Standard	RAJA060913-6	Finished	Perchlorate-IC11
7	autocal7	1.0000	Standard	RAJA060913-7	Finished	Perchlorate-IC11
8	QCS	1.0000	Unknown		Finished	Perchlorate-IC11
9	IPC	1.0000	Unknown		Finished	Perchlorate-IC11
10	MBLK	1.0000	Unknown		Finished	Perchlorate-IC11
11	MRL-2	1.0000	Unknown		Finished	Perchlorate-IC11
12	MRL-4	1.0000	Unknown		Finished	Perchlorate-IC11
13	LCS1	1.0000	Unknown		Finished	Perchlorate-IC11
14	LCS2	1.0000	Unknown		Finished	Perchlorate-IC11
15	2707050182	1.0000	Unknown		Finished	Perchlorate-IC11
16	2707050182MS	1.0000	Unknown		Finished	Perchlorate-IC11
17	2707050182MSD	1.0000	Unknown		Finished	Perchlorate-IC11
18	2707050377	1.0000	Unknown		Finished	Perchlorate-IC11
19	2707060253_1/50000	50000.0000	Unknown		Finished	Perchlorate-IC11
20	2707060255_1/50000	50000.0000	Unknown		Finished	Perchlorate-IC11
21	2707050260_1/50000	50000.0000	Unknown		Finished	Perchlorate-IC11
22	2707050261_1/50000	50000.0000	Unknown		Finished	Perchlorate-IC11
23	2707050262_1/50000	50000.0000	Unknown		Finished	Perchlorate-IC11
24	2707100070	1.0000	Unknown		Finished	Perchlorate-IC11
25	2707100079	1.0000	Unknown		Finished	Perchlorate-IC11
26	2707100266	1.0000	Unknown		Finished	Perchlorate-IC11
27	CCV	1.0000	Unknown		Finished	Perchlorate-IC11
28	2707100282_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
29	2707100285_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
30	2707100610	1.0000	Unknown		Finished	Perchlorate-IC11
31	2707110183	1.0000	Unknown		Finished	Perchlorate-IC11
32	2707110558_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
33	2707110559_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
34	2707110645	1.0000	Unknown		Finished	Perchlorate-IC11
35	2707110648	1.0000	Unknown		Finished	Perchlorate-IC11
36	2707110653	1.0000	Unknown		Finished	Perchlorate-IC11
37	2707110110_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
38	HCV	1.0000	Unknown		Finished	Perchlorate-IC11
39	QCS	1.0000	Unknown	NO DATA WAS	Finished	Perchlorate-IC11
40	IPC	1.0000	Unknown	REPORTED	Finished	Perchlorate-IC11
41	MBLK	1.0000	Unknown	BEYOND THIS	Finished	Perchlorate-IC11
42	MRL-2	1.0000	Unknown	POINT	Finished	Perchlorate-IC11
43	MRL-4	1.0000	Unknown		Finished	Perchlorate-IC11
44	LCS1	1.0000	Unknown		Finished	Perchlorate-IC11
45	LCS2	1.0000	Unknown		Finished	Perchlorate-IC11

Title:
Datasource: Dionex_USPAS2SD\O2
Location: IC\IC11_CLO4\2007\JULY
Timebase: IC11
#Samples: 67
Created: 7/12/2007 6:56:25 AM by raja
Last Update: 7/13/2007 3:16:15 PM by raja

No.	Name	Method	Inj. Date/Time	*Analyst	*Spike
1	autocal1	IC#4-CLO4-LOW	7/12/2007 7:38:26 AM	Raja	
2	autocal2	IC#4-CLO4-LOW	7/12/2007 8:00:50 AM	Raja	
3	autocal3	IC#4-CLO4-LOW	7/12/2007 8:23:13 AM	Raja	
4	autocal4	IC#4-CLO4-LOW	7/12/2007 8:45:37 AM	Raja	
5	autocal5	IC#4-CLO4-LOW	7/12/2007 9:08:00 AM	Raja	
6	autocal6	IC#4-CLO4-LOW	7/12/2007 9:30:23 AM	Raja	
7	autocal7	IC#4-CLO4-LOW	7/12/2007 9:52:47 AM	Raja	
8	QCS	IC#4-CLO4-LOW	7/12/2007 10:15:10 AM	Raja	
9	IPC	IC#4-CLO4-LOW	7/12/2007 10:37:36 AM	Raja	
10	MBLK	IC#4-CLO4-LOW	7/12/2007 11:00:00 AM	Raja	
11	MRL-2	IC#4-CLO4-LOW	7/12/2007 11:22:24 AM	Raja	
12	MRL-4	IC#4-CLO4-LOW	7/12/2007 11:44:48 AM	Raja	
13	LCS1	IC#4-CLO4-LOW	7/12/2007 12:07:11 PM	Raja	
14	LCS2	IC#4-CLO4-LOW	7/12/2007 12:29:35 PM	Raja	
15	2707050182	IC#4-CLO4-LOW	7/12/2007 12:51:59 PM	Raja	
16	2707050182MS	IC#4-CLO4-LOW	7/12/2007 1:14:23 PM	Raja	
17	2707050182MSD	IC#4-CLO4-LOW	7/12/2007 1:36:47 PM	Raja	
18	2707050377	IC#4-CLO4-LOW	7/12/2007 1:59:10 PM	Raja	
19	2707060253_1/50000	IC#4-CLO4-LOW	7/12/2007 2:21:34 PM	Raja	
20	2707060255_1/50000	IC#4-CLO4-LOW	7/12/2007 2:43:58 PM	Raja	
21	2707050260_1/50000	IC#4-CLO4-LOW	7/12/2007 3:06:22 PM	Raja	
22	2707050261_1/50000	IC#4-CLO4-LOW	7/12/2007 3:28:46 PM	Raja	
23	2707050262_1/50000	IC#4-CLO4-LOW	7/12/2007 3:51:10 PM	Raja	
24	2707100070	IC#4-CLO4-LOW	7/12/2007 4:13:33 PM	Raja	
25	2707100079	IC#4-CLO4-LOW	7/12/2007 4:35:58 PM	Raja	
26	2707100266	IC#4-CLO4-LOW	7/12/2007 4:58:22 PM	Raja	
27	CCV	IC#4-CLO4-LOW	7/12/2007 5:20:46 PM	Raja	
28	2707100282_1/5	IC#4-CLO4-LOW	7/12/2007 5:43:09 PM	Raja	
29	2707100285_1/5000	IC#4-CLO4-LOW	7/12/2007 6:05:33 PM	Raja	
30	2707100610	IC#4-CLO4-LOW	7/12/2007 6:27:57 PM	Raja	
31	2707110183	IC#4-CLO4-LOW	7/12/2007 6:50:20 PM	Raja	
32	2707110558_1/5	IC#4-CLO4-LOW	7/12/2007 7:12:44 PM	Raja	
33	2707110559_1/5000	IC#4-CLO4-LOW	7/12/2007 7:35:08 PM	Raja	
34	2707110645	IC#4-CLO4-LOW	7/12/2007 7:57:32 PM	Raja	
35	2707110648	IC#4-CLO4-LOW	7/12/2007 8:19:55 PM	Raja	
36	2707110653	IC#4-CLO4-LOW	7/12/2007 8:42:19 PM	Raja	
37	2707110110_1/5	IC#4-CLO4-LOW	7/12/2007 9:04:43 PM	Raja	
38	HCV	IC#4-CLO4-LOW	7/12/2007 9:27:07 PM	Raja	
39	QCS	IC#4-CLO4-LOW	7/12/2007 9:49:30 PM	Raja	
40	IPC	IC#4-CLO4-LOW	7/12/2007 10:11:54 PM	Raja	
41	MBLK	IC#4-CLO4-LOW	7/12/2007 10:34:18 PM	Raja	
42	MRL-2	IC#4-CLO4-LOW	7/12/2007 10:56:42 PM	Raja	
43	MRL-4	IC#4-CLO4-LOW	7/12/2007 11:19:06 PM	Raja	
44	LCS1	IC#4-CLO4-LOW	7/12/2007 11:41:29 PM	Raja	
45	LCS2	IC#4-CLO4-LOW	7/13/2007 12:03:53 AM	Raja	

Sequence: 071207-CLO4-IC11
Operator: raja
Printed: 7/13/2007 3:46:48 PM

Title:
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC11_CLO4\2007\JULY
Timebase: IC11
#Samples: 67

Created: 7/12/2007 6:56:25 AM by raja
Last Update: 7/13/2007 3:16:15 PM by raja

No.	Name	Dil. Factor	Type	Comment	Status	Program
46	2707110112_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
47	2707110113_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
48	2707110114_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
49	2707110115_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
50	2707110116_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
51	2707110117_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
52	2707110118_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
53	2707110119_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
54	2707110120_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
55	2707110120MS	1.0000	Unknown		Finished	Perchlorate-IC11
56	2707110120MSD	1.0000	Unknown		Finished	Perchlorate-IC11
57	2707110121_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
58	CCV	1.0000	Unknown		Finished	Perchlorate-IC11
59	2707110122_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
60	2707110123_1/200	200.0000	Unknown		Finished	Perchlorate-IC11
61	2707110124_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
62	2707110125_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
63	2707110126_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
64	2707110127_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
65	2707110128_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
66	HCV	1.0000	Unknown		Finished	Perchlorate-IC11
67	STOP	1.0000	Unknown		Interrupted	IC11 Stop

Sequence: 071207-CLO4-IC11
Operator: raja
Printed: 7/13/2007 3:46:48 PM

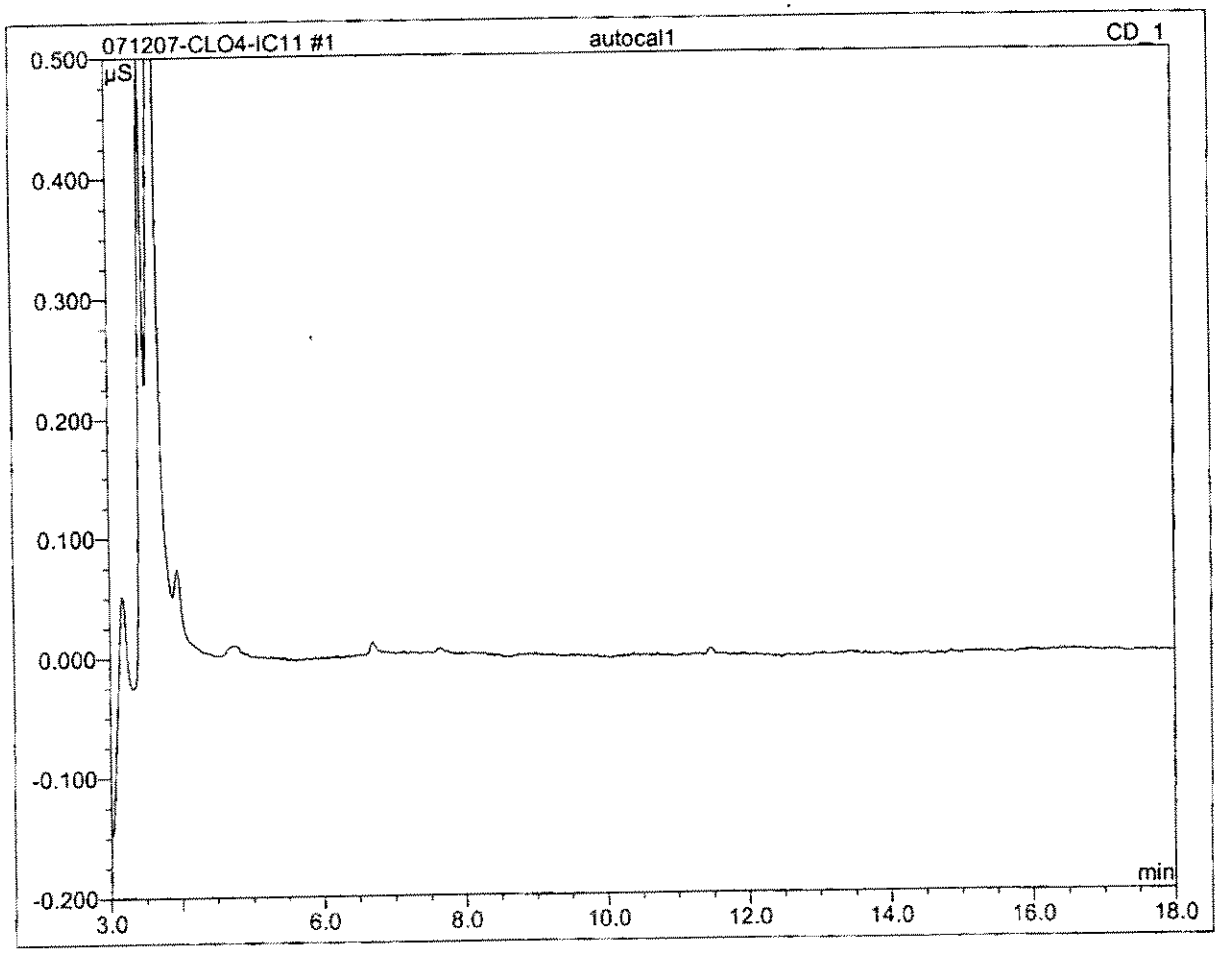
Title:
Datasource: Dionex_USPAS2SDIO2
Location: IC\IC11_CLO4\2007\JULY
Timebase: IC11
#Samples: 67

Created: 7/12/2007 6:56:25 AM by raja
Last Update: 7/13/2007 3:16:15 PM by raja

No.	Name	Method	Inj. Date/Time	*Analyst	*Spike
46	2707110112_1/5000	IC#4-CLO4-LOW	7/13/2007 12:26:17 AM	Raja	
47	2707110113_1/10000	IC#4-CLO4-LOW	7/13/2007 12:48:41 AM	Raja	
48	2707110114_1/10000	IC#4-CLO4-LOW	7/13/2007 1:11:04 AM	Raja	
49	2707110115_1/5000	IC#4-CLO4-LOW	7/13/2007 1:33:28 AM	Raja	
50	2707110116_1/5000	IC#4-CLO4-LOW	7/13/2007 1:55:52 AM	Raja	
51	2707110117_1/10000	IC#4-CLO4-LOW	7/13/2007 2:18:16 AM	Raja	
52	2707110118_1/500	IC#4-CLO4-LOW	7/13/2007 2:40:40 AM	Raja	
53	2707110119_1/500	IC#4-CLO4-LOW	7/13/2007 3:03:03 AM	Raja	
54	2707110120_1/500	IC#4-CLO4-LOW	7/13/2007 3:25:27 AM	Raja	
55	2707110120MS	IC#4-CLO4-LOW	7/13/2007 3:47:51 AM	Raja	
56	2707110120MSD	IC#4-CLO4-LOW	7/13/2007 4:10:15 AM	Raja	
57	2707110121_1/5	IC#4-CLO4-LOW	7/13/2007 4:32:38 AM	Raja	
58	CCV	IC#4-CLO4-LOW	7/13/2007 4:55:05 AM	Raja	
59	2707110122_1/100	IC#4-CLO4-LOW	7/13/2007 5:17:29 AM	Raja	
60	2707110123_1/200	IC#4-CLO4-LOW	7/13/2007 5:39:53 AM	Raja	
61	2707110124_1/100	IC#4-CLO4-LOW	7/13/2007 6:02:16 AM	Raja	
62	2707110125_1/100	IC#4-CLO4-LOW	7/13/2007 6:24:40 AM	Raja	
63	2707110126_1/100	IC#4-CLO4-LOW	7/13/2007 6:47:04 AM	Raja	
64	2707110127_1/100	IC#4-CLO4-LOW	7/13/2007 7:09:28 AM	Raja	
65	2707110128_1/5000	IC#4-CLO4-LOW	7/13/2007 7:31:51 AM	Raja	
66	HCV	IC#4-CLO4-LOW	7/13/2007 7:54:15 AM	Raja	
67	STOP	IC#4-CLO4-LOW	7/13/2007 8:16:39 AM	Raja	

1 autocal1

Sample Name:	**autocal1**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 07:38**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

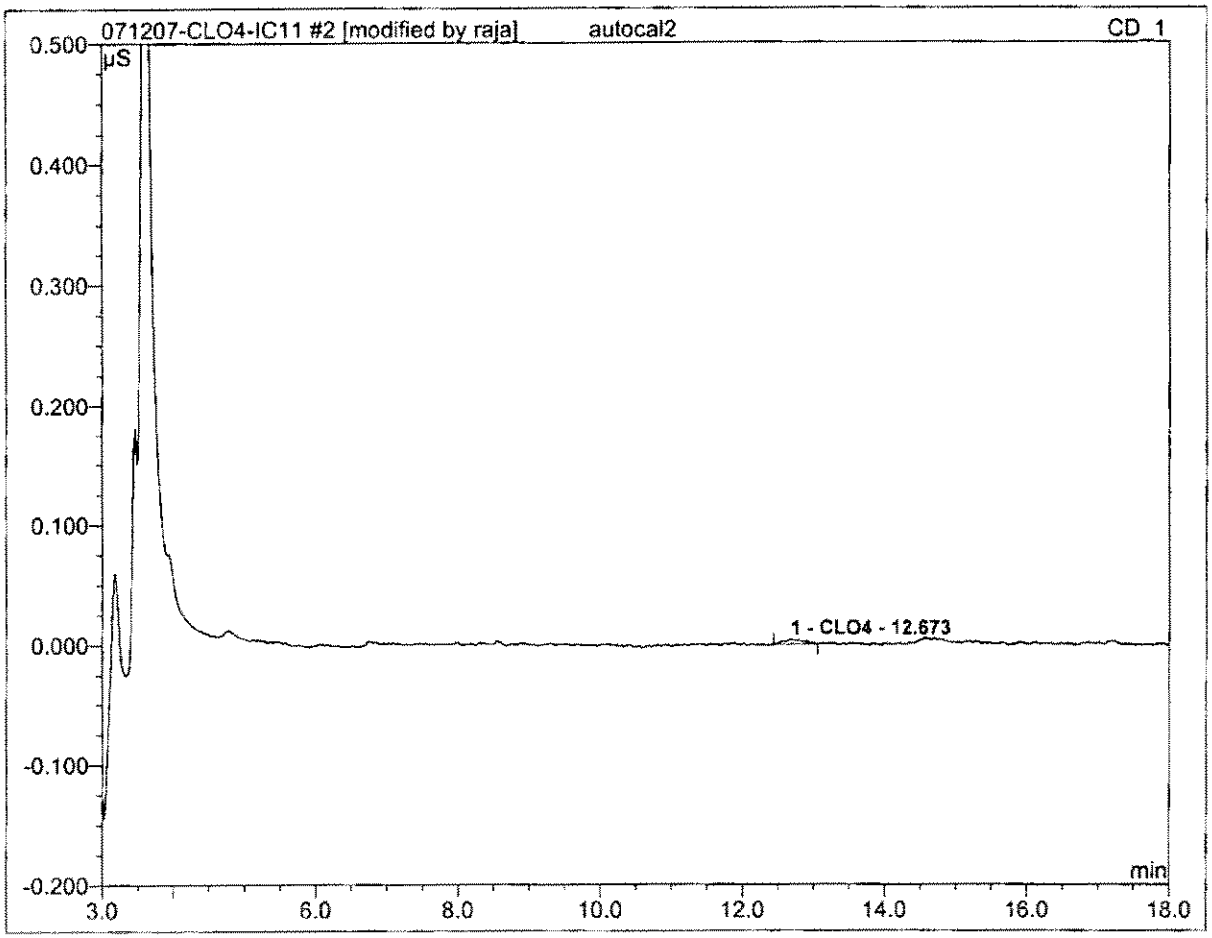


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

2 autocal2

RAJA060913-2

Sample Name:	**autocal2**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 08:00**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

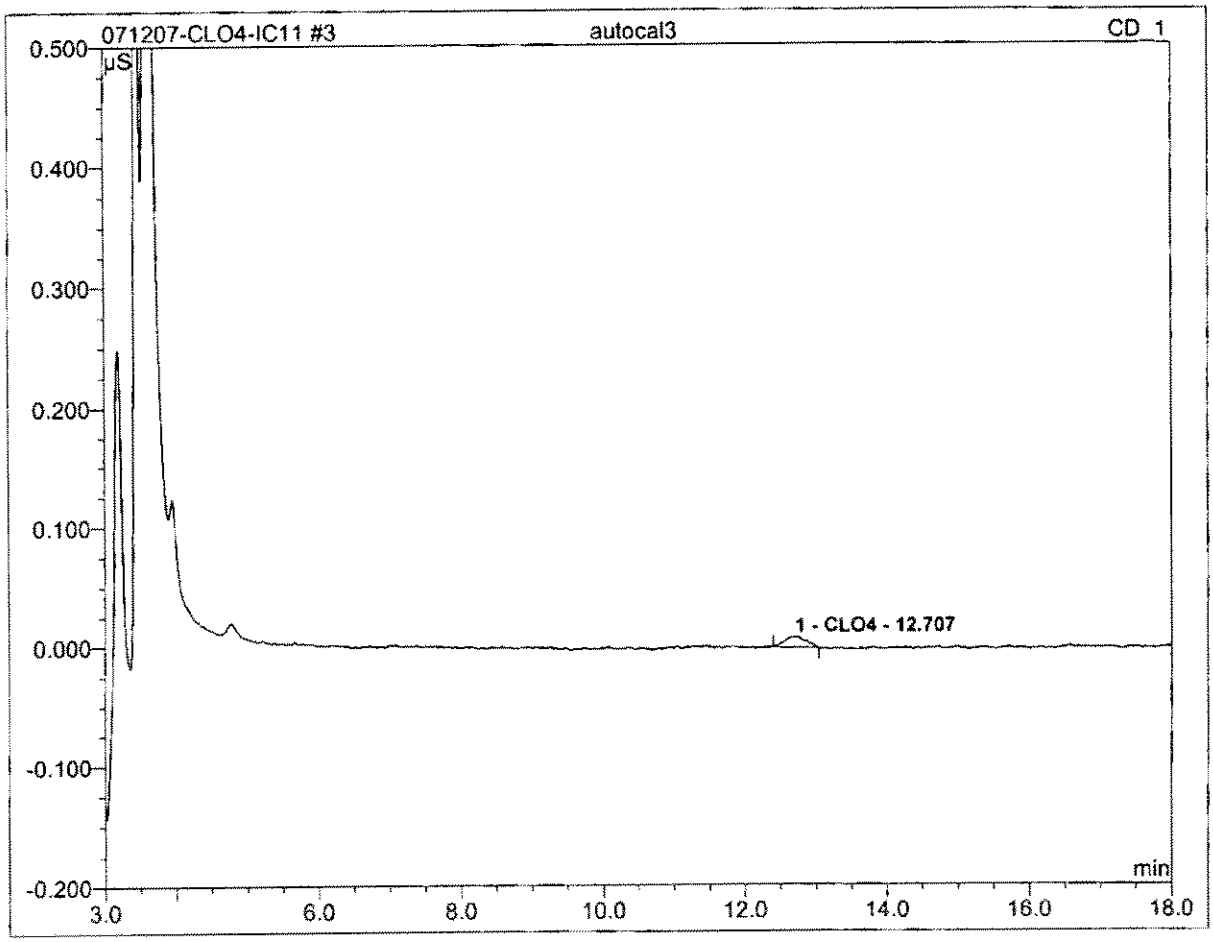


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.67	CLO4	0.004	0.001	100.00	1.877	BMB*
Total:			0.004	0.001	100.00	1.877	

3 autocal3

RAJA060913-3

Sample Name:	**autocal3**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 08:23**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

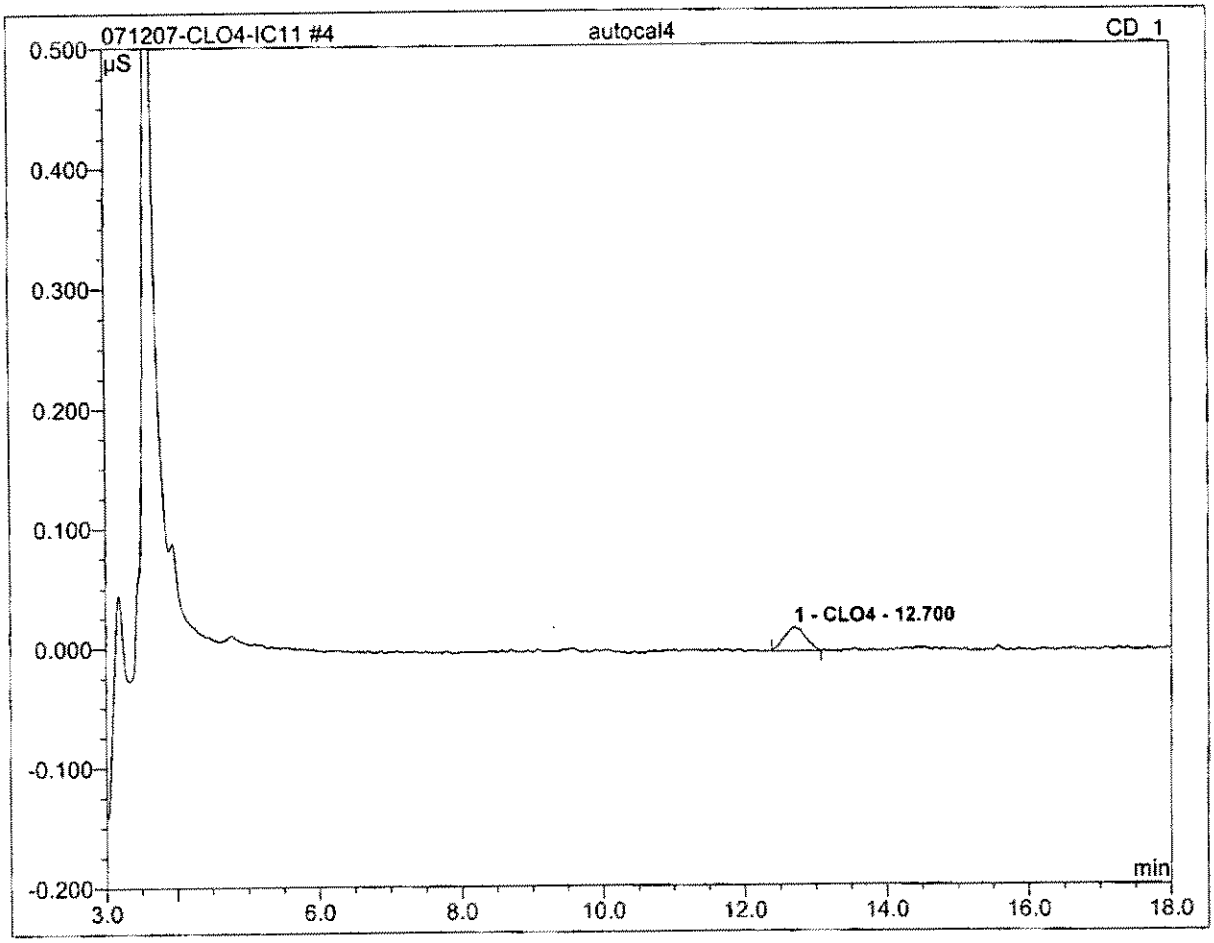


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.71	CLO4	0.008	0.003	100.00	4.230	BMB
Total:			0.008	0.003	100.00	4.230	

4 autocal4

RAJA060913-4

Sample Name:	**autocal4**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 08:45**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

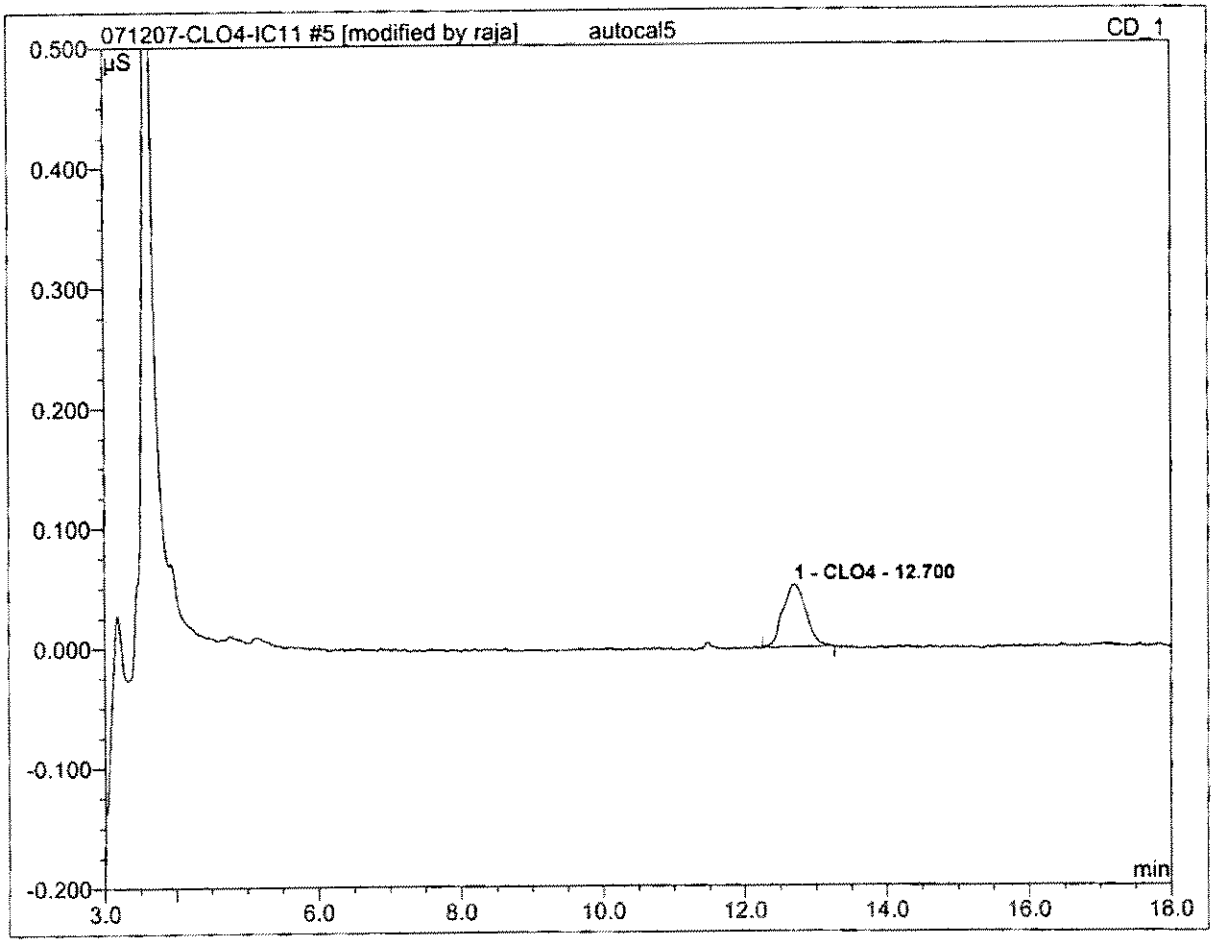


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.70	CLO4	0.020	0.007	100.00	9.072	BMB
Total:			0.020	0.007	100.00	9.072	

5 autocal5

RAJA060913-5

Sample Name:	**autocal5**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 09:08**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

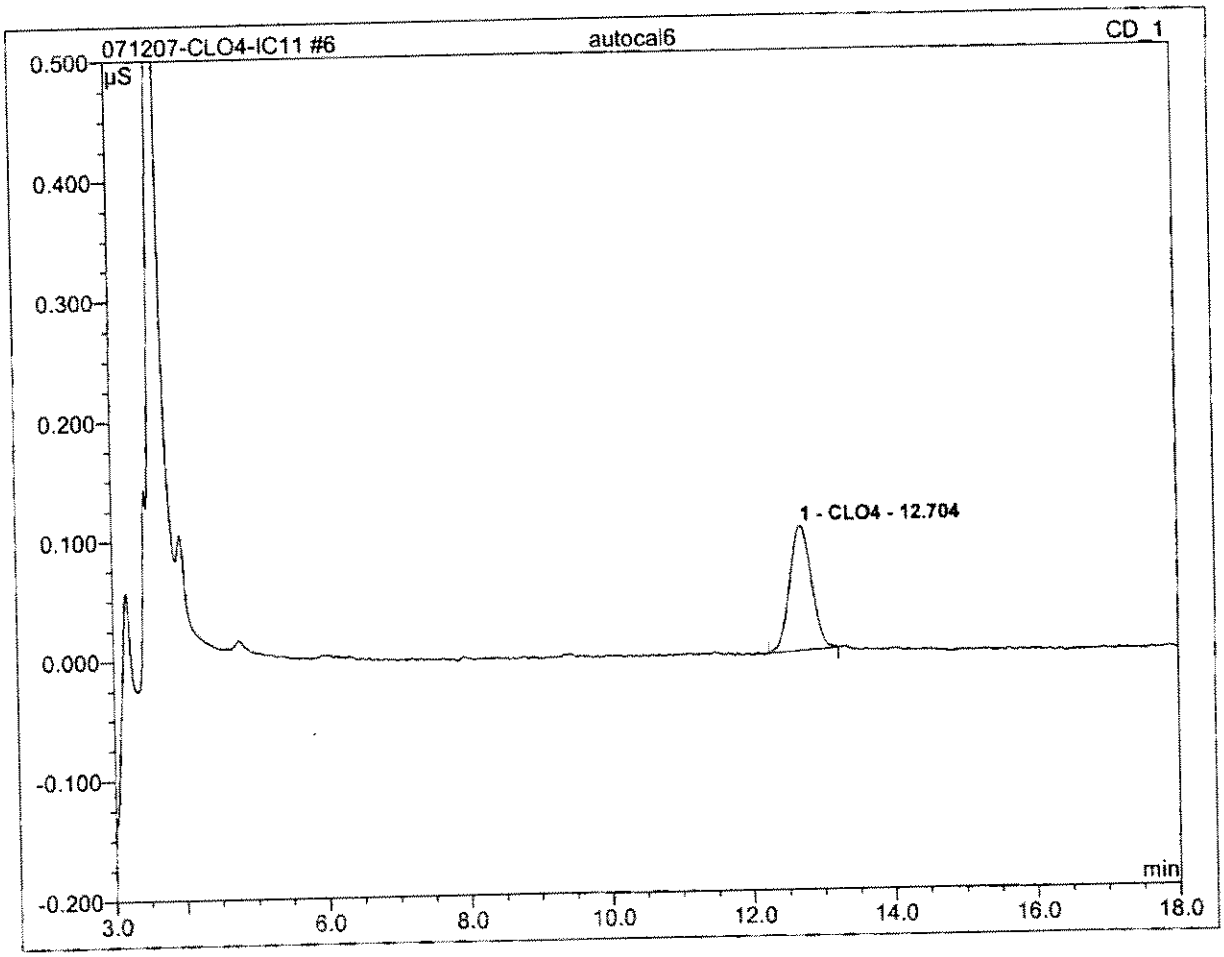


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.70	CLO4	0.052	0.020	100.00	26.536	BMB*
Total:			0.052	0.020	100.00	26.536	

6 autocal6

RAJA060913-6

Sample Name:	**autocal6**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 09:30**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

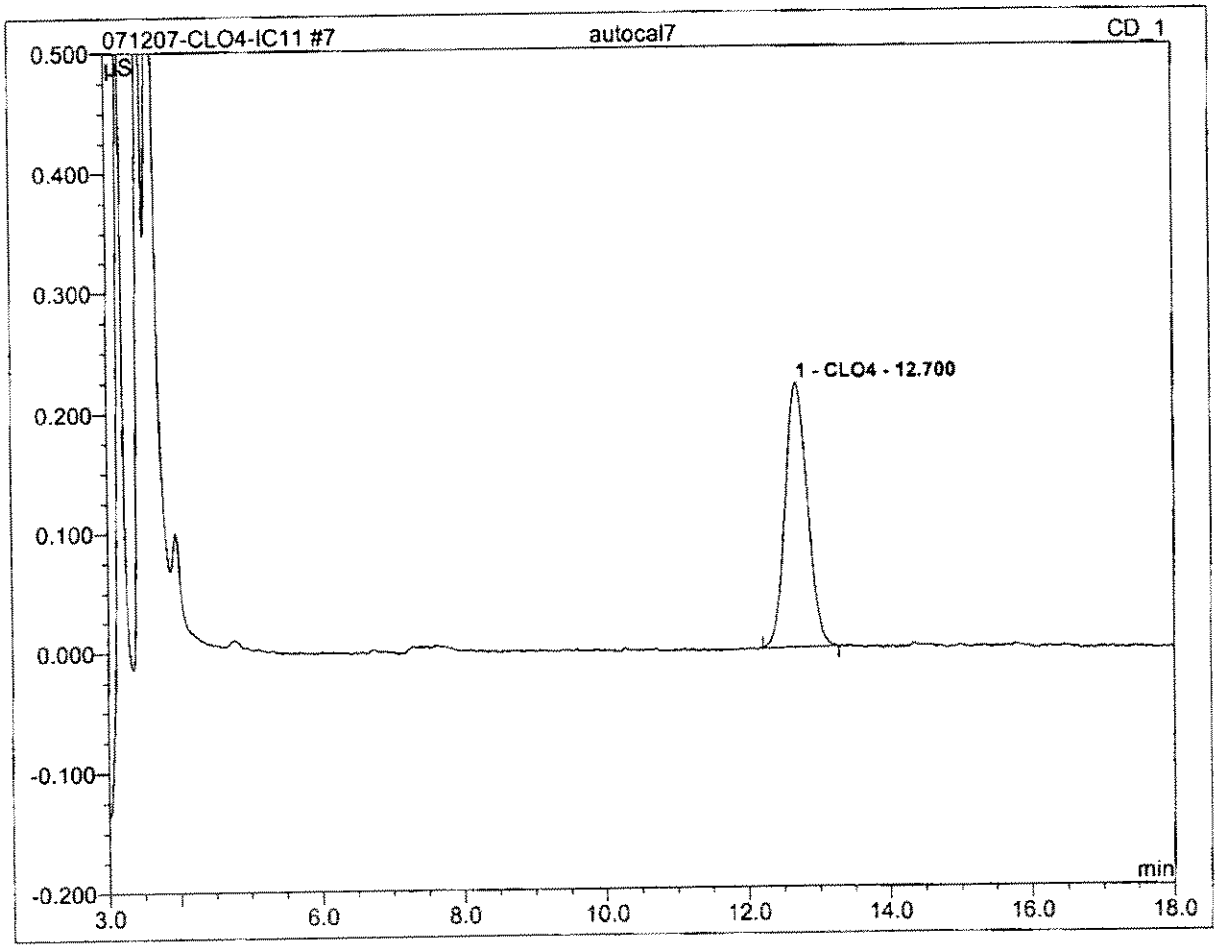


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.70	CLO4	0.105	0.037	100.00	49.186	BMB
Total:			0.105	0.037	100.00	49.186	

7 autocal7

RAJA060913-7

Sample Name:	**autocal7**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 09:52**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

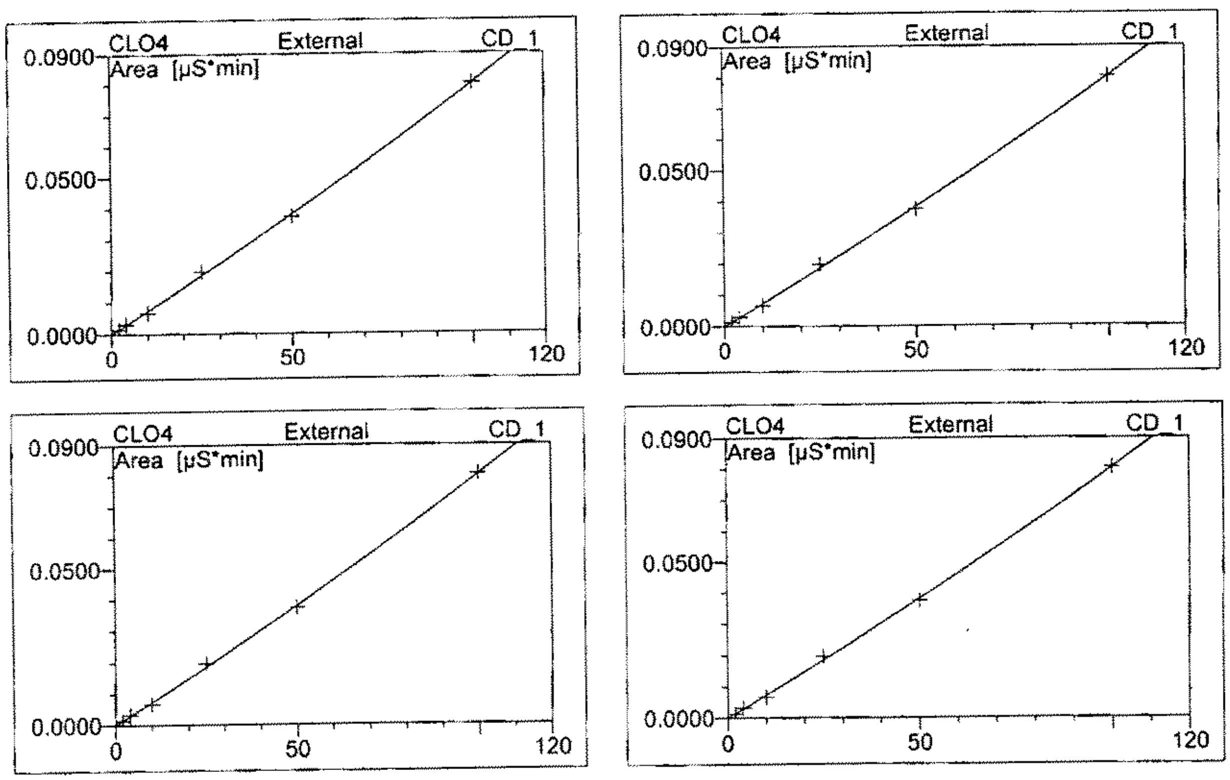


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.70	CLO4	0.221	0.080	100.00	100.109	BMB
Total:			0.221	0.080	100.00	100.109	

7 autocal7

RAJA060913-7

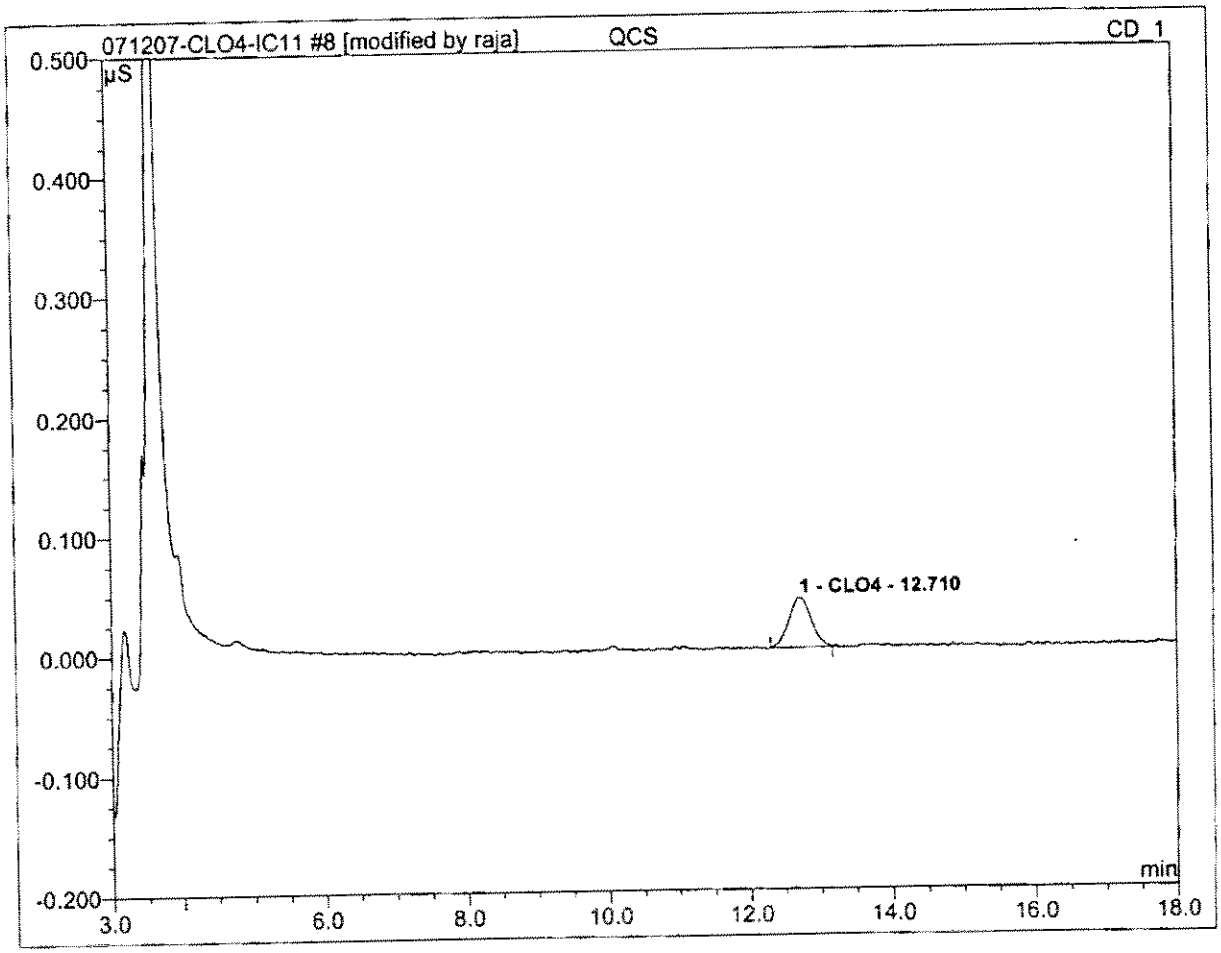
Sample Name:	**autocal7**	*Injection Volume:*	**20.0**
Vial Number:	**109**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Perchlorate-IC11**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC#4-CLO4-LOW**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/12/2007 9:52**	*Sample Weight:*	**1.0000**
Run Time (min):	**20.00**	*Sample Amount:*	**1.0000**



No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	12.70	CLO4	0QOff	6	99.9400	0.0000	0.0007	0.0000
Average:					99.9400	0.0000	0.0007	0.0000

8 QCS

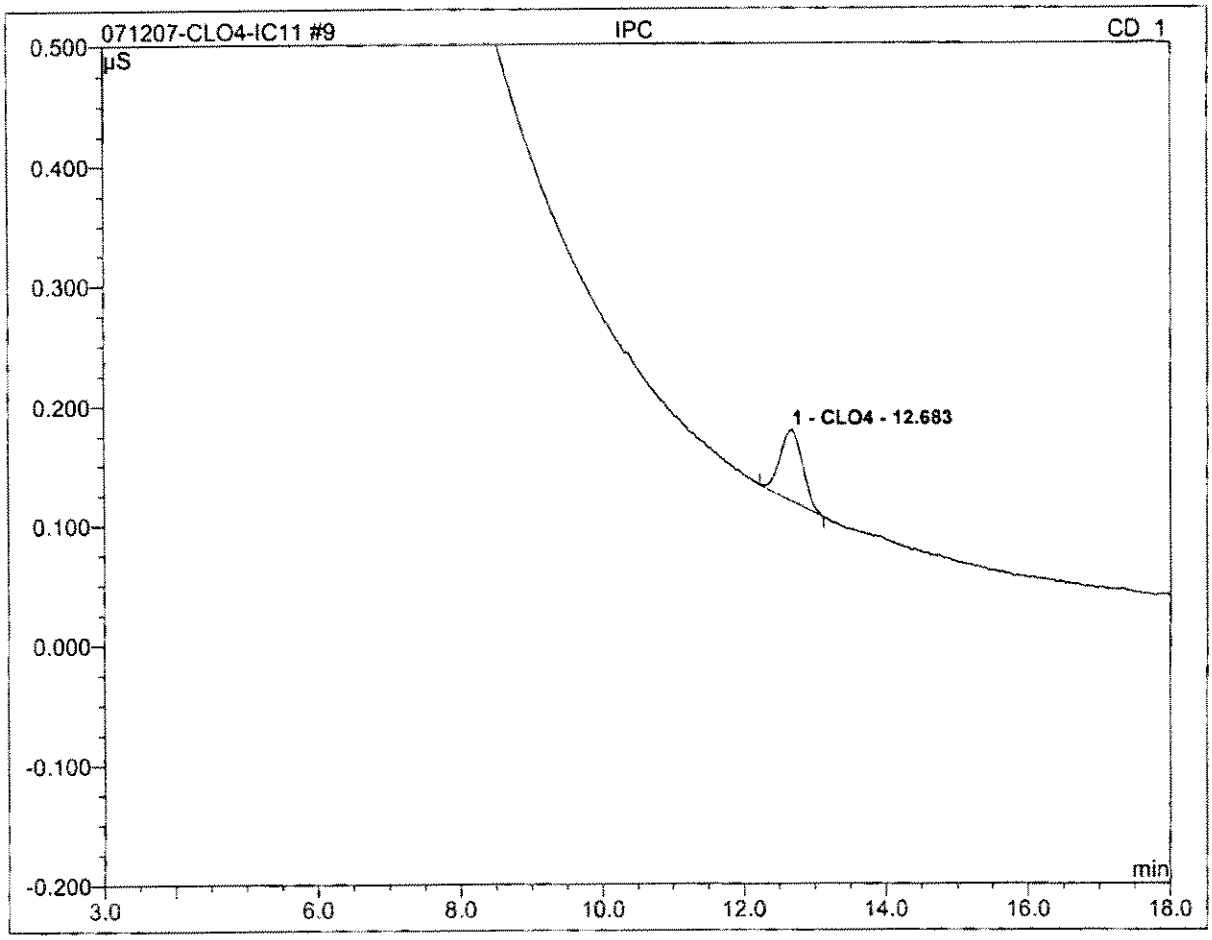
Sample Name:	**QCS**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 10:15**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.71	CLO4	0.041	0.015	100.00	20.500	BMB*
Total:			0.041	0.015	100.00	20.500	

9 IPC

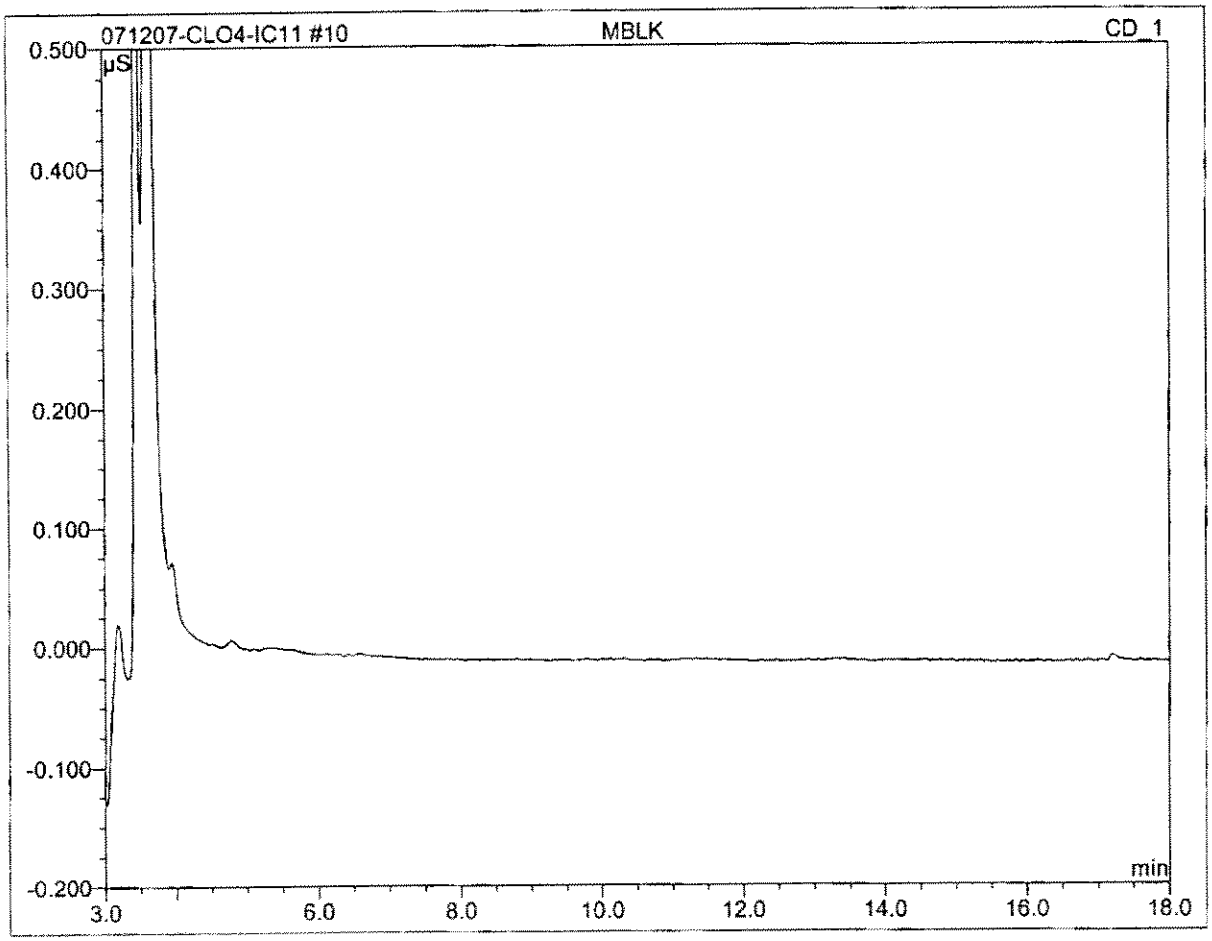
Sample Name:	**IPC**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 10:37**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.68	CLO4	0.060	0.022	100.00	29.079	BMB
Total:			0.060	0.022	100.00	29.079	

10 MBLK

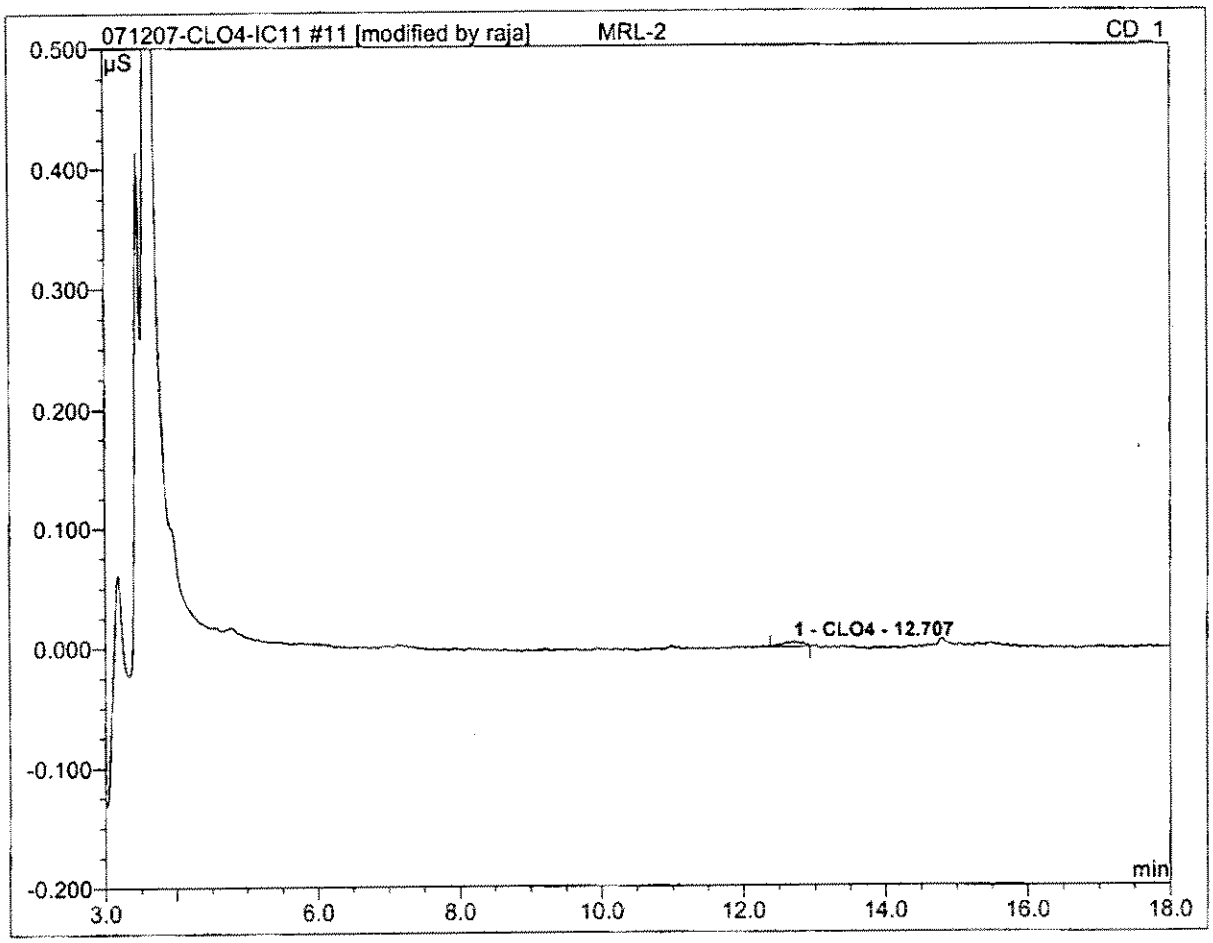
Sample Name:	**MBLK**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 11:00**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

11 MRL-2

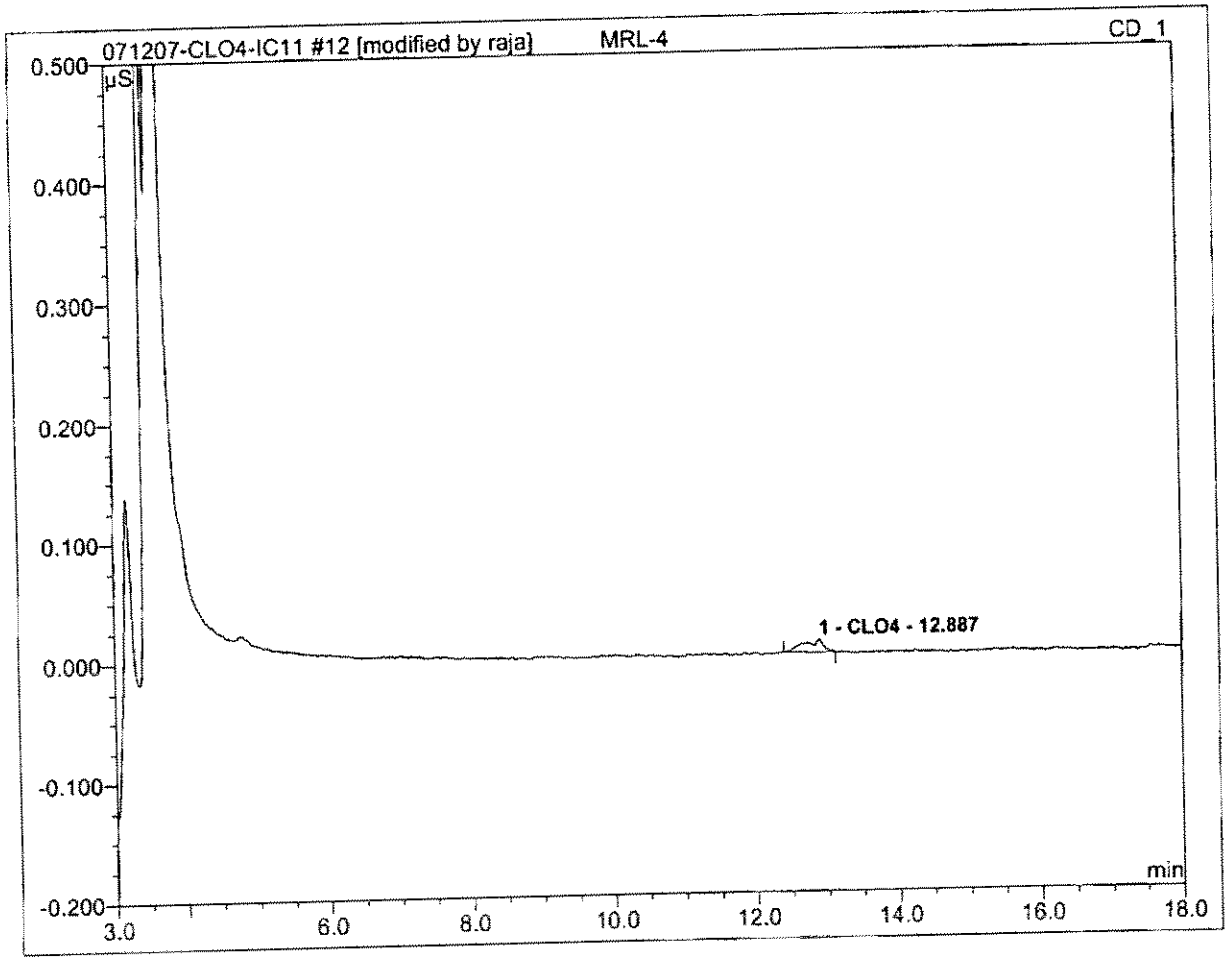
Sample Name:	**MRL-2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 11:22**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.71	CLO4	0.004	0.001	100.00	1.775	BMB*
Total:			0.004	0.001	100.00	1.775	

12 MRL-4

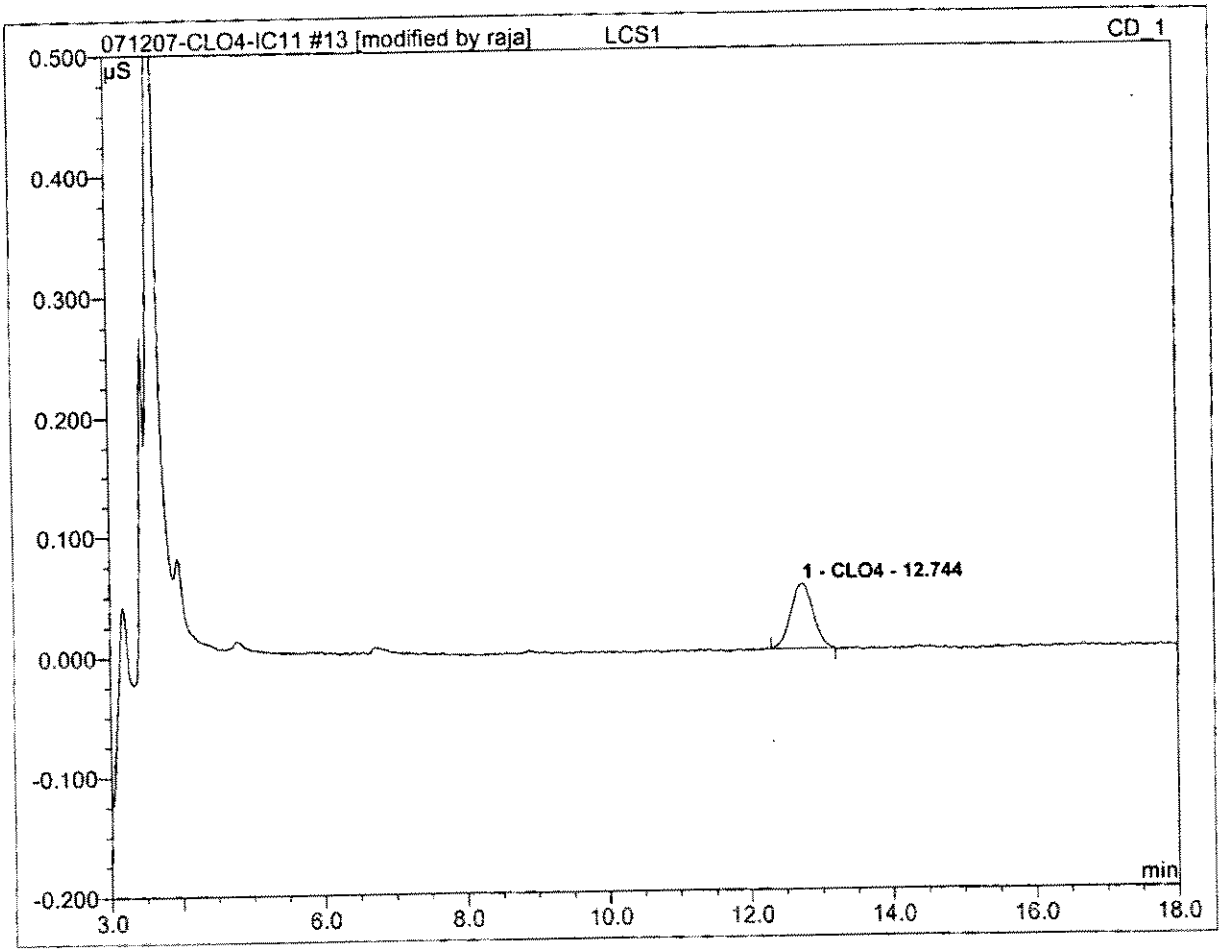
Sample Name:	**MRL-4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 11:44**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.89	CLO4	0.010	0.003	100.00	4.735	BMB*
Total:			0.010	0.003	100.00	4.735	

13 LCS1

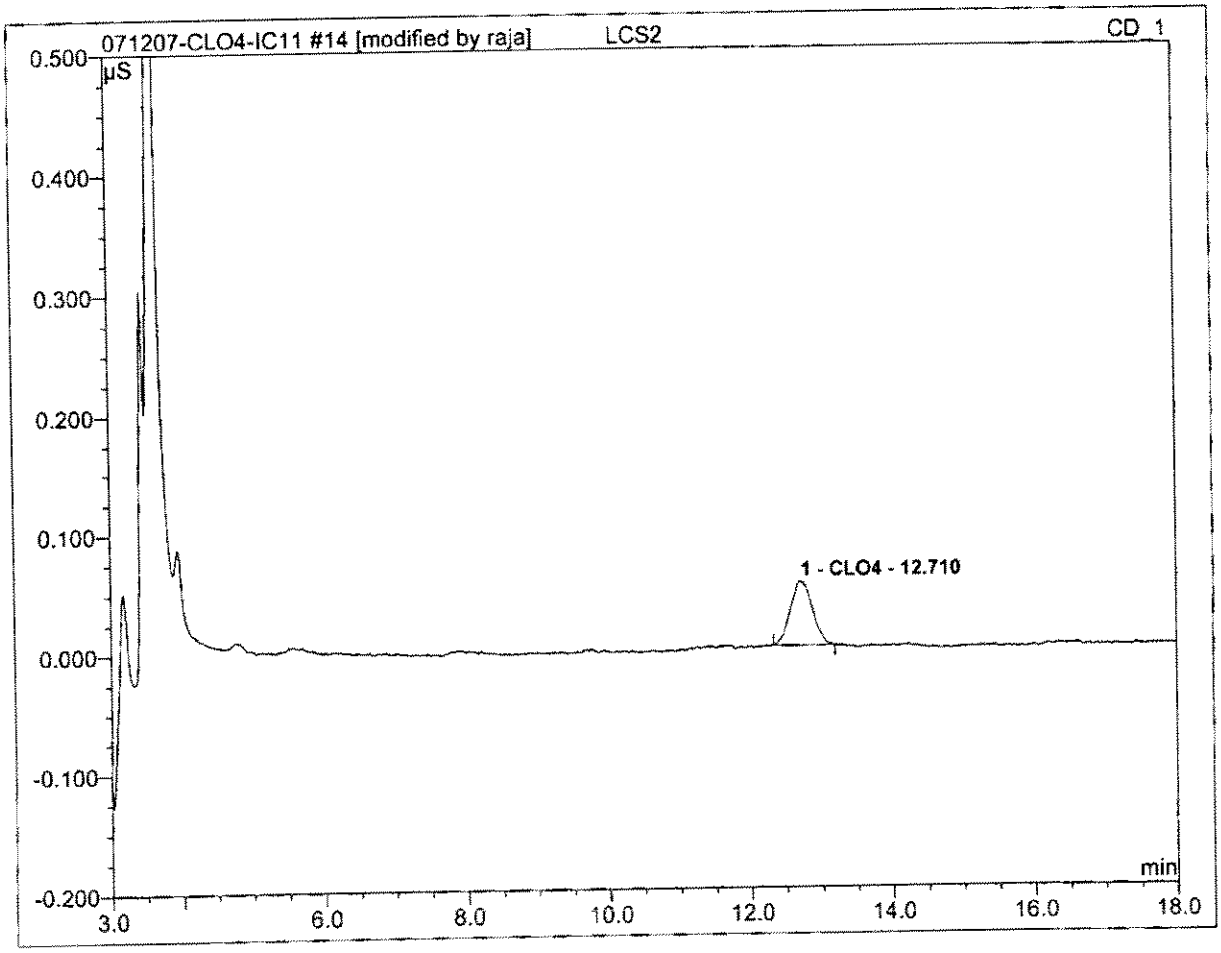
Sample Name:	**LCS1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 12:07**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.74	CLO4	0.054	0.020	100.00	26.603	BMB*
Total:			0.054	0.020	100.00	26.603	

14 LCS2

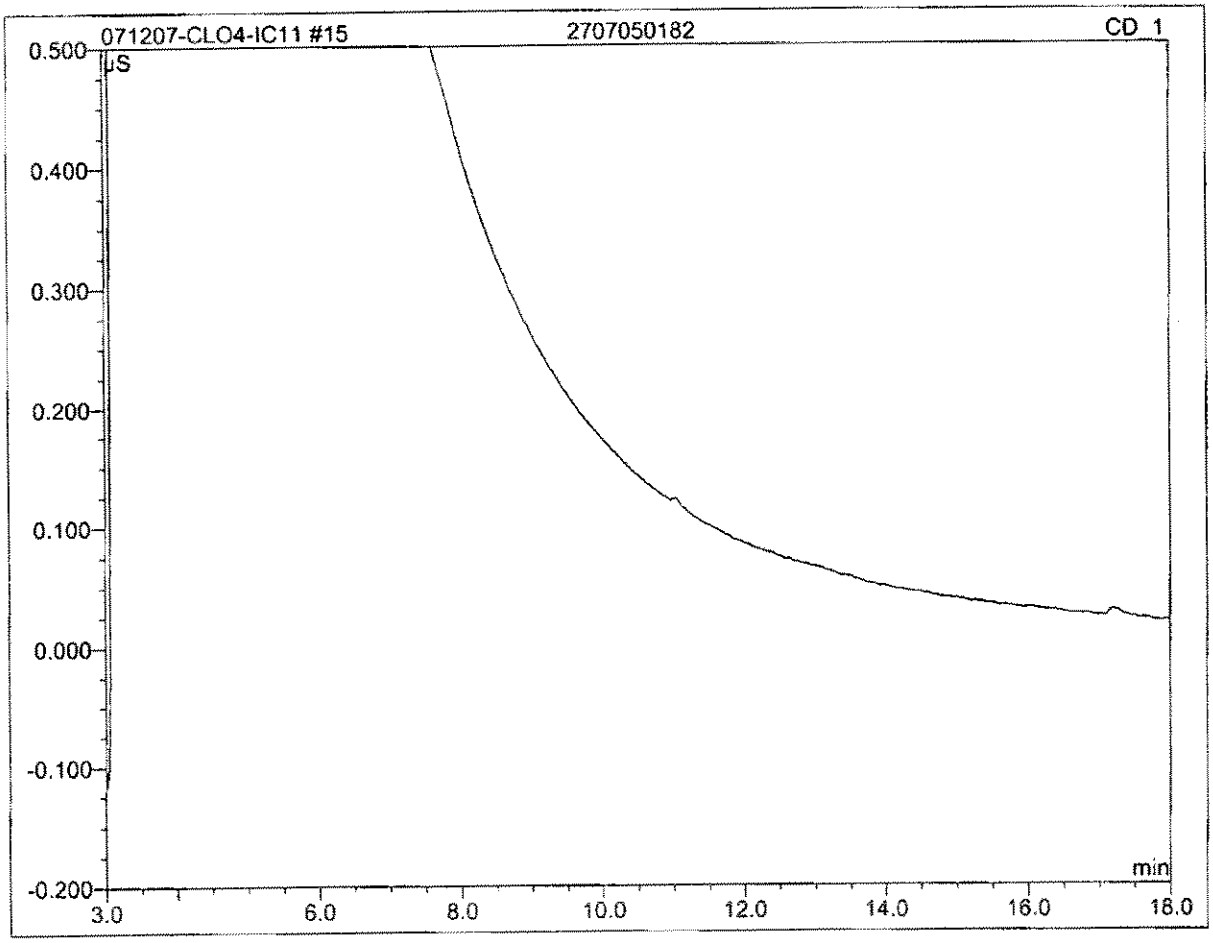
Sample Name:	**LCS2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 12:29**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.71	CLO4	0.053	0.019	100.00	25.578	BMB*
Total:			0.053	0.019	100.00	25.578	

15 2707050182

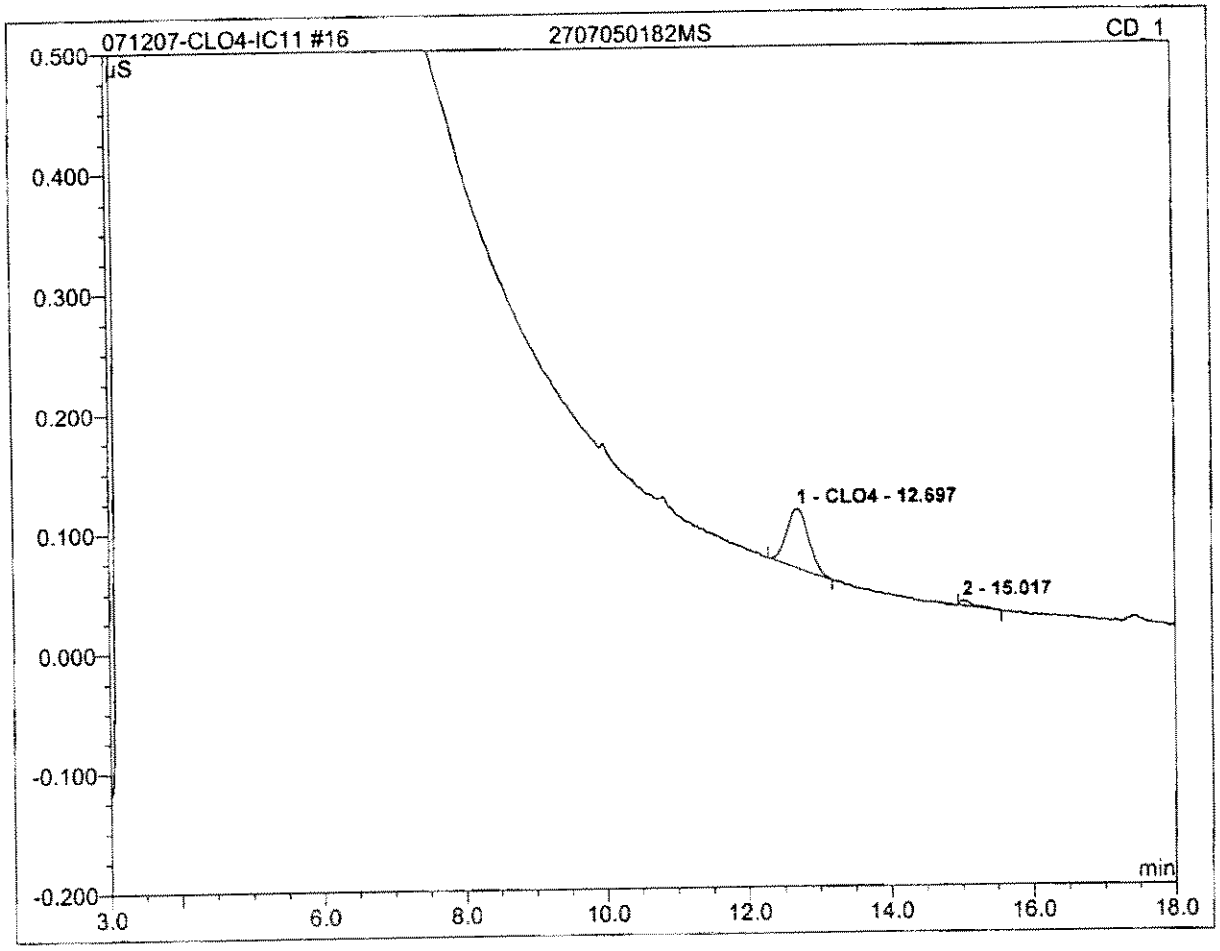
Sample Name:	**2707050182**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 12:51**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

16 2707050182MS

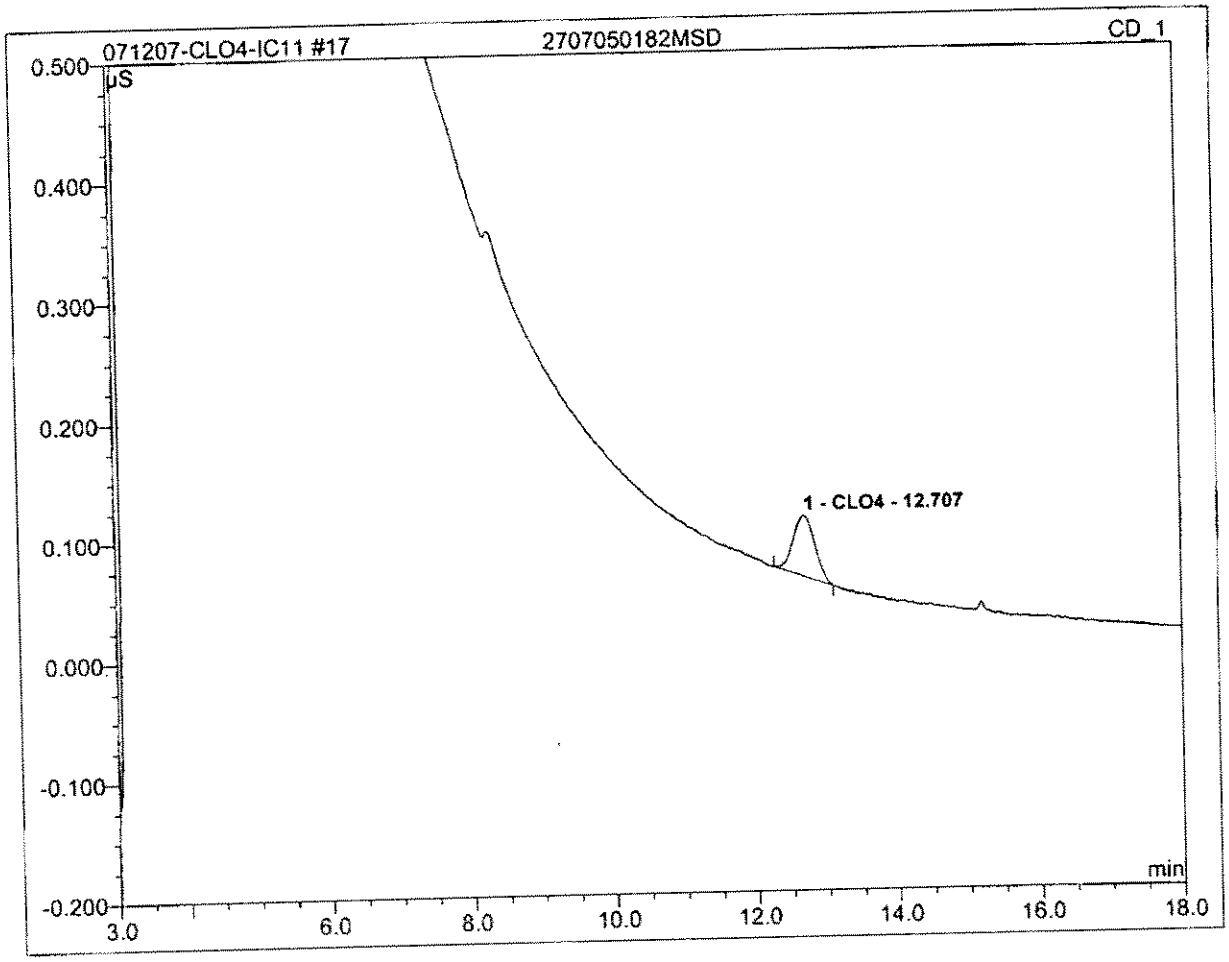
Sample Name:	**2707050182MS**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 13:14**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.70	CLO4	0.049	0.018	94.18	24.143	BMB
Total:			0.049	0.018	94.18	24.143	

17 2707050182MSD

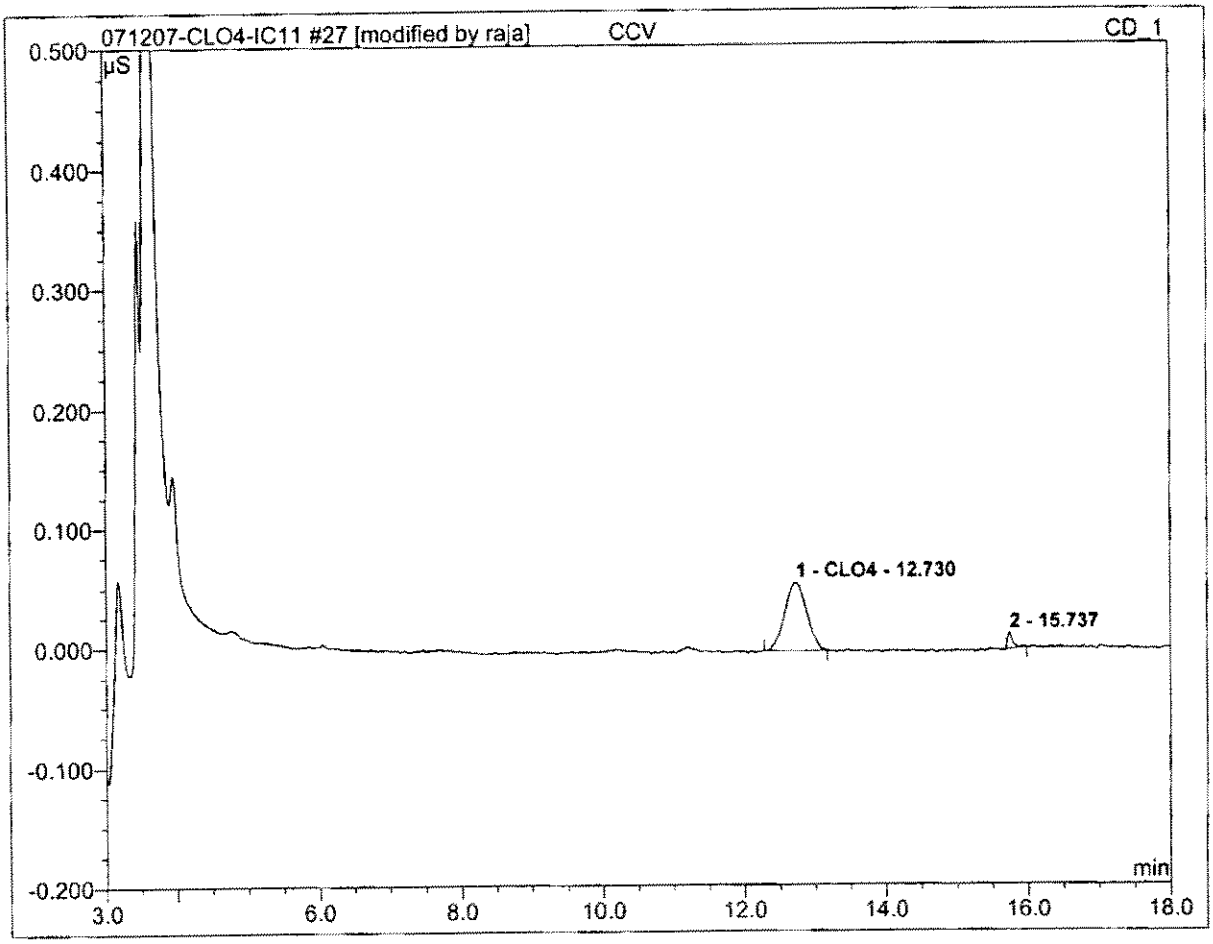
Sample Name:	**2707050182MSD**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 13:36**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.71	CLO4	0.051	0.018	100.00	24.288	BMB
Total:			0.051	0.018	100.00	24.288	

27 CCV

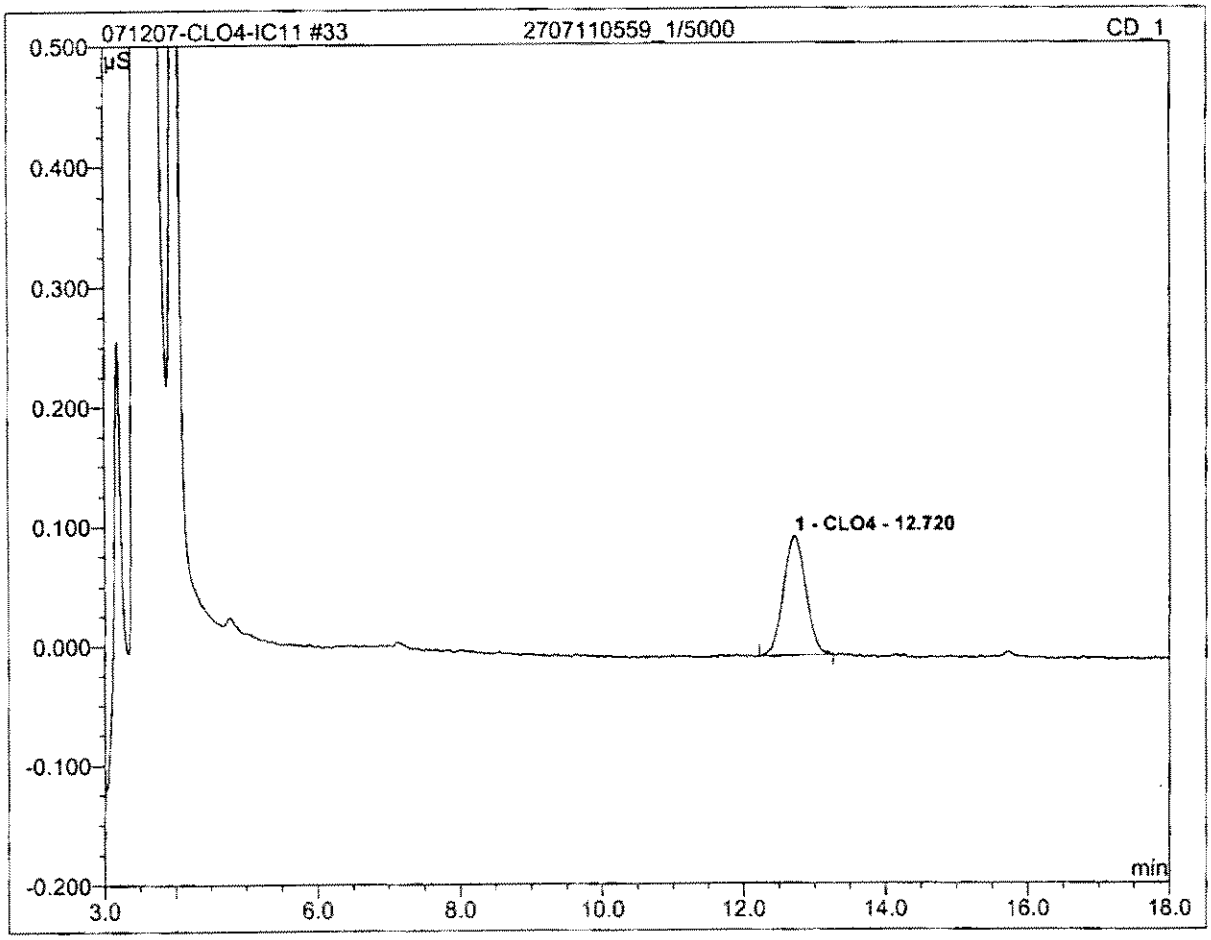
Sample Name:	**CCV**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 17:20**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.73	CLO4	0.057	0.021	94.87	27.543	BMB*
Total:			0.057	0.021	94.87	27.543	

33 2707110559_1/5000

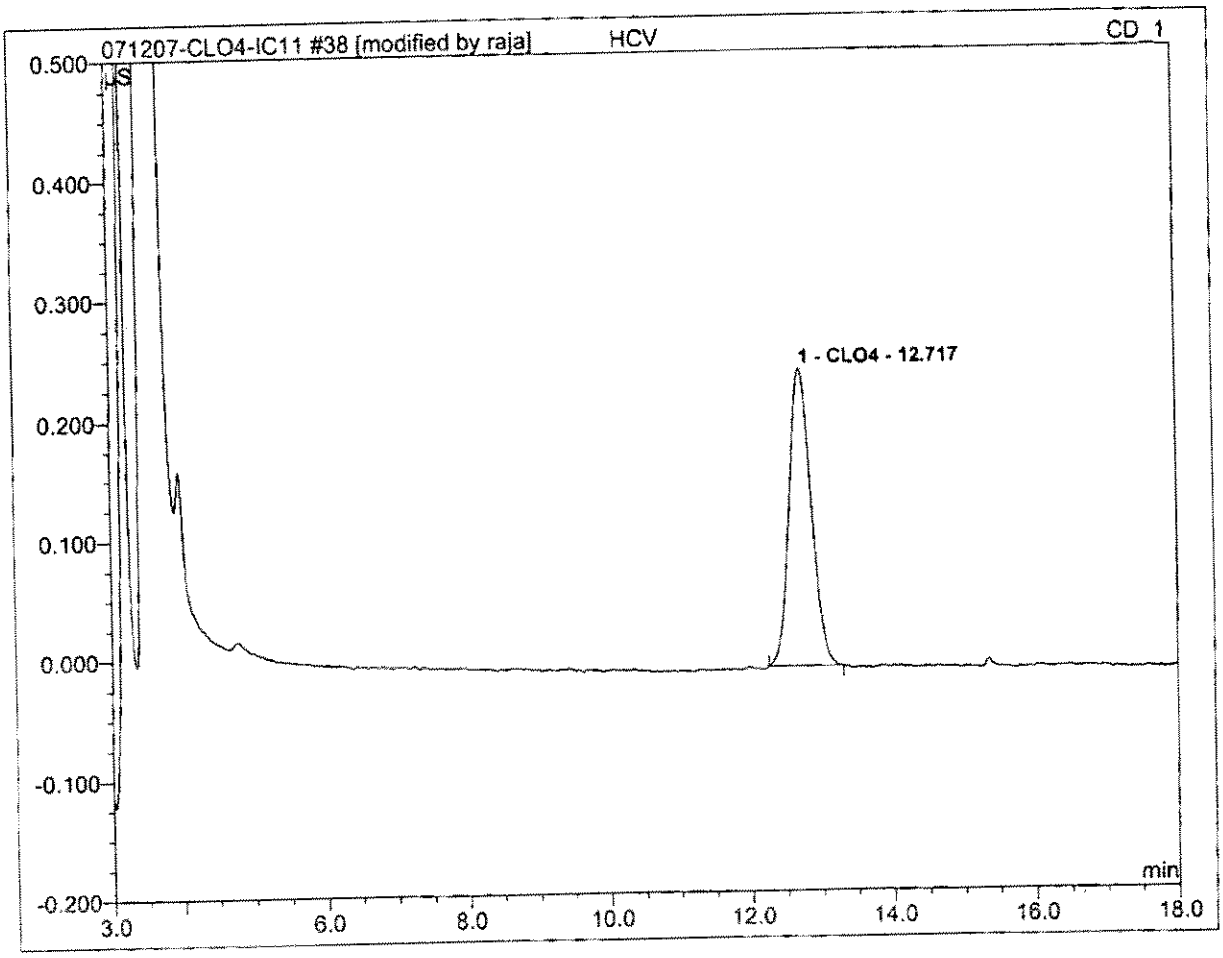
Sample Name:	**2707110559_1/5000**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 19:35**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**5000.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.72	CLO4	0.100	0.036	100.00	239081.935	BMB
Total:			0.100	0.036	100.00	239081.935	

38 HCV

Sample Name:	**HCV**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/12/2007 21:27**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	12.72	CLO4	0.248	0.090	100.00	110.615	BMB*
Total:			0.248	0.090	100.00	110.615	

Perchlorate QC Checklist

rev: 27 Mar 03

Analysis Date 7-16-07 **Analyst:** Raja **QC'd by** _____ **Date** _____

Instrument: IC 11 **Calculated MCT Level:** 3155 umhos/cm Batch #1

Original IPC conductance: 3153 umhos/cm **Daily IPC conductance:** 3151 umhos/cm

Calibration including QCS

✓ QCS (20ppb) recovery is within 90% - 110% (18-22ppb) to verify that the calibration curve (minimum 5 points) still holds.

✓ Calibration curve is reanalyzed if QCS fails. Correlation Coefficient is 0.995 or better.

Initial QC Check Samples (MBLANK, MRL, ICCSCV, IPC) to be analyzed with every batch (up to 20 samples) or part thereof

✓ MLBANK is analyzed before samples. Perchlorate, if present, is < or = half of the MRL.

N/A *L-ClO4 only*: ICCSCV at 2ppb is within 50%-150% (1-3ppb)

PDA/H = 1.1 ✓

✓ *ClO4 only*: MRL at 4ppb is within 75%-125% (3-5ppb)

✓ IPC (25ppb) recovery is between 80%-120% (20-30ppb)

✓ IPC retention time is within 5% of the retention time of the standards

✓ IPC Conductance level is within 10% of the original

LCS/LCSD (25ppb)

✓ Recoveries are between 90%-110% (22.5 – 27.5ppb)

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

MS/MSD (25ppb) NOTE: For UCMR, MS/MSD concentrations alternate between 4ppb and 25ppb

✓ Recoveries are within 80%-120% (20-30ppb) for 25ppb spike N/A (3.2-4.8ppb) for 4ppb spike

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

✓ RPD between MS and MSD is within 15%.

Continuing Calibration Verification (MCV, HCV) NOTE: For UCMR ECV and MCV are required

✓ Verification Checks alternate between mid- and high-level during the analysis (low- and mid-level for UCMR)

✓ MCV (25ppb) recovery is between 85%-115% (21.25 – 28.75ppb)

✓ HCV (100ppb) recovery is between 85%-115% (85-115ppb) N/A ECV (4ppb) recovery is between 75%-125% (3.0-5.0)

Pretreat and include the following QC parameters for any batch or part thereof containing samples requiring pretreatment

N/A One Laboratory Reagent Blank (LRB). Perchlorate is < or = half of MRL.

N/A One pair of Laboratory Control Samples (LCS/LCSD). Recovery of perchlorate is between 85%-115%.

N/A One Pair of Laboratory Fortified Matrices (MS/MSD). Recoveries are between 80%-120%

Samples

✓ All samples are analyzed within 28 days of collection.

✓ All samples are analyzed within MCT Conductance limit.

QIR

N/A QIR needed for failed QC

N/A QIR needed for samples analyzed outside of hold time

Perchlorate QC Checklist

rev: 27 Mar 03

Analysis Date: 07/07 **Analyst:** Raja **QC'd by** [illegible] **Date** 18Jul07

Instrument: IC11 **Calculated MCT Level:** 3165 umhos/cm

Batch #2

Original IPC conductance: 3153 umhos/cm **Daily IPC conductance:** 3151 umhos/cm

Calibration including QCS

✓ QCS (20ppb) recovery is within 90% - 110% (18-22ppb) to verify that the calibration curve (minimum 5 points) still holds.

✓ Calibration curve is reanalyzed if QCS fails. Correlation Coefficient is 0.995 or better.

Initial QC Check Samples (MBLANK, MRL, ICCSCV, IPC) to be analyzed with every batch (up to 20 samples) or part thereof

✓ MLBANK is analyzed before samples. Perchlorate, if present, is < or = half of the MRL.

N/A *L-ClO4 only*: ICCSCV at 2ppb is within 50%-150% (1-3ppb)

PDA/H = 4.1% 3.9

✓ *ClO4 only*: MRL at 4ppb is within 75%-125% (3-5ppb)

✓ IPC (25ppb) recovery is between 80%-120% (20-30ppb)

✓ IPC retention time is within 5% of the retention time of the standards

✓ IPC Conductance level is within 10% of the original

LCS/LCSD (25ppb)

✓ Recoveries are between 90%-110% (22.5 – 27.5ppb)

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

MS/MSD (25ppb) NOTE: For UCMR, MS/MSD concentrations alternate between 4ppb and 25ppb

✓ Recoveries are within 80%-120% (20-30ppb) for 25ppb spike N/A (3.2-4.8ppb) for 4ppb spike

✓ One pair is analyzed per batch (up to 20 samples) or part thereof

✓ RPD between MS and MSD is within 15%.

Continuing Calibration Verification (MCV, HCV) NOTE: For UCMR ECV and MCV are required

✓ Verification Checks alternate between mid- and high-level during the analysis (low- and mid-level for UCMR)

✓ MCV (25ppb) recovery is between 85%-115% (21.25 – 28.75ppb)

✓ HCV (100ppb) recovery is between 85%-115% (85-115ppb) N/A ECV (4ppb) recovery is between 75%-125% (3.0-5.0)

Pretreat and include the following QC parameters for any batch or part thereof containing samples requiring pretreatment

N/A One Laboratory Reagent Blank (LRB). Perchlorate is < or = half of MRL.

N/A One pair of Laboratory Control Samples (LCS/LCSD). Recovery of perchlorate is between 85%-115%.

N/A One Pair of Laboratory Fortified Matrices (MS/MSD). Recoveries are between 80%-120%

Samples

✓ All samples are analyzed within 28 days of collection.

✓ All samples are analyzed within MCT Conductance limit.

QIR

N/A QIR needed for failed QC

N/A QIR needed for samples analyzed outside of hold time

Sample No.	Sample Name	Dil.Fac.	Comment	Time	Amount CLO4 CD_1	
1	autocal1	1.0		07.16.07 08:19	n.a.	
2	autocal2	1.0	RAJA060913-2	07.16.07 08:41	2.1387	
3	autocal3	1.0	RAJA060913-3	07.16.07 09:03	3.8772	
4	autocal4	1.0	RAJA060913-4	07.16.07 09:26	9.0368	
5	autocal5	1.0	RAJA060913-5	07.16.07 09:48	25.2461	
6	autocal6	1.0	RAJA060913-6	07.16.07 10:11	49.9504	
7	autocal7	1.0	RAJA060913-7	07.16.07 10:33	100.0004	
8	autocal4	1.0	RAJA060913-4	07.16.07 11:25	9.6500	
9	WASH	1.0		07.16.07 11:47	n.a.	
10	QCS	1.0		07.16.07 12:09	18.9324	94.7%
11	IPC	1.0		07.16.07 12:32	22.0067	88.0%
12	MBLK	1.0		07.16.07 12:54	n.a.	
13	MRL-2	1.0		07.16.07 13:17	2.3548	118%
14	MRL-4	1.0		07.16.07 13:39	4.7052	118%
15	LCS1	1.0		07.16.07 14:01	24.2063	96.8%
16	LCS2	1.0		07.16.07 14:24	24.8420	99.4%
17	2707100282_1/5	5.0		07.16.07 14:46	24.3565	
18	2707110558_1/5	5.0		07.16.07 15:08	9.4364	
19	2707110112_1/5000	5000.0		07.16.07 15:31	83887.2651	
20	2707110113_1/10000	10000.0		07.16.07 15:53	307147.5172	
21	2707110114_1/10000	10000.0		07.16.07 16:15	317201.4023	
22	2707110115_1/5000	5000.0		07.16.07 16:38	85553.7937	
23	2707110116_1/5000	5000.0		07.16.07 17:00	135026.2117	
24	2707110117_1/10000	10000.0		07.16.07 17:23	249970.7709	
25	2707110118_1/500	500.0		07.16.07 17:45	11750.0534	
26	2707110118MS	1.0		07.16.07 18:08	46.2803	22.8-91.1%
27	2707110118MSD	1.0		07.16.07 18:30	47.9806	24.5-97.9%
28	2707110119_1/500	500.0		07.16.07 18:52	10892.2555	
29	CCV	1.0		07.16.07 19:15	23.1665	92.7%
30	2707110120_1/500	500.0		07.16.07 19:37	9281.9581	
31	2707110121_1/5	5.0		07.16.07 20:00	n.a.	
32	2707110122_1/100	100.0		07.16.07 20:22	3073.5838	
33	2707110123_1/200	200.0		07.16.07 20:44	10279.6989	
34	2707110124_1/100	100.0		07.16.07 21:07	7691.9282	
35	2707110125_1/100	100.0		07.16.07 21:29	2000.0346	
36	2707110126_1/100	100.0		07.16.07 21:52	1022.4757	
37	2707110127_1/100	100.0		07.16.07 22:14	4444.4513	
38	2707110128_1/5000	5000.0		07.16.07 22:36	330191.2530	
39	2707100282_1/5-DNR	5.0		07.16.07 22:59	26.5011	
40	HCV	1.0		07.16.07 23:21	104.6675	105%
41	wash	1.0		07.16.07 23:44	n.a.	
42	QCS	1.0		07.17.07 00:06	19.0623	95.3%
43	IPC	1.0		07.17.07 00:28	22.7230	90.9%
44	MBLK	1.0		07.17.07 00:51	n.a.	

45	MRL-2	1.0	07.17.07 01:13	2.4837	124%	
46	MRL-4	1.0	07.17.07 01:36	√3.5862	89.7%	
47	LCS1	1.0	07.17.07 01:58	√24.9775	99.9%	
48	LCS2	1.0	07.17.07 02:20	√23.1821	92.7%	
49	2707120562	1.0	07.17.07 02:43	√ n.a.		
50	2707120563	1.0	07.17.07 03:05	√1.3324		
51	2707120688	1.0	07.17.07 03:28	√7.8469		
52	2707120689	1.0	07.17.07 03:50	√6.0616		
53	2707120690	1.0	07.17.07 04:12	√5.1793		
54	2707120691	1.0	07.17.07 04:35	√ n.a.		
55	2707120691MS	1.0	07.17.07 04:57	√23.4392	23.4 - 93.6%	
56	2707120691MSD	1.0	07.17.07 05:20	√22.8270	22.8 - 91.2%	
57	2707120725	1.0	07.17.07 05:42	√ n.a.		
58	2707120727	1.0	07.17.07 06:04	√n.a.		
59	2707120728	1.0	07.17.07 06:27	√n.a.		
60	2707120729	1.0	07.17.07 06:49	√n.a.		
61	CCV	1.0	07.17.07 07:11	25.3849	102%	
62	2707120730_1/2	2.0	07.17.07 07:34	√8.1761		
63	2707120740_1/2	2.0	07.17.07 07:56	√4.8483		
64	2707120744	1.0	07.17.07 08:19	√ n.a.		
65	2707120745	1.0	07.17.07 08:41	√4.5080		
66	2707120746_1/2DNR	2.0	07.17.07 09:03	21.6103		
67	2707120747	1.0	07.17.07 09:26	√1.7981		
68	2707120748	1.0	07.17.07 09:48	√ n.a.		
69	2707120749	1.0	07.17.07 10:11	√n.a.		
70	2707120763	1.0	07.17.07 10:33	√n.a.		
71	2707120764	1.0	07.17.07 10:55	√n.a.		
72	HCV	1.0	07.17.07 11:18	103.2652	103%	

VB: NM 7/19/07

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

CONDUCTIVITY MW SOP REVISION 5
SM2510B

Analysis Date: 07-12-07
Analyst: Raja
Reviewed By:
LIMS Check By:

Was QC Criteria Met: Y N
Was QIR Needed: Y N

Time of Analysis Start: End:
MRL 2umhos/cm: Rx 201552 exp of solution:
KCl Std 1412 Rx 2005288 exp of solution 0810
TV = 1412 µmho/cm @ 25°C for 0.0100M
Reading: 1409
Instrument: YSI Model 3200 SN:01A0504, Year Aquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale (µmho/mmho)	Result: Instrument	Result: Reported (µmho/cm)	Comments
Blk	Blank						µs	0.608		
STD	MRL 2umhos/cm							NA		1-3—±50% of TV
STD	KCl - 1000 mhos/cm							975		950-1050—±5% of TV
1	2707110110	Art-1	Kennedy	07-10-07				9999		
2	112	-2					ms	14.09		
3	113	-3						11.67		
4	114	-4					µs	8076		
5	115	-6						9536		
6	116	-7					ms	13.18		
7	117	-8						13.48		
8	118	PC-99R2/13					µs	5997		
9	119	-115R						6160		
10	120	-116R						6295		
DUP	↓	↓ ↓						6308		RPD < 5%
11	121	98-1						7928		
12	122	Pc-117						4853		
13	123	-118						6422		
14	124	-119						6025		
15	125	-120						4306		
16	126	-121						3974		
17	127	↓ -133						4954		
18	128	Art-9						9507		
19										
20										
DUP	2707110128	Art-9	Kennedy	07-10-07			µs	9525		RPD < 5%
STD	KCl - 10 mhos/cm						N	N/A		8-12—RPD < 20% of TV

% RPD = |S1-S2| * 100 / (S1+S2)/2

S1 = reading of 1st sample
S2 = reading of 2nd sample

12 Jul 07

conductivity.xls

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

CONDUCTIVITY MW SOP REVISION 5
SM2510B

Analysis Date: 07-14-07
Analyst: Raja
Reviewed By:
LIMS Check By:

Was QC Criteria Met: Y N
Was QIR Needed: Y N

Time of Analysis Start: End:
MRL 2umhos/cm: Rx# exp of solution:
KCl Std 1412 Rx# 3C1656 exp of solution 08/07
TV = 1412 µmho/cm @ 25°C for 0.0100M
Reading: 1392
Instrument: YSI Model 3200 SN:01A0504, Year Aquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale (µmho/mmho)	Result: Instrument	Result: Reported (µmho/cm)	Comments
Blk	Blank						µS	0.860		
STD	MRL 2umhos/cm							N/A		1-3—±50% of TV
STD	KCl - 1000 mhos/cm							982		950-1050—±5% of TV
1	2707120562	POE 001	[redacted]	07-11-07				0216		
2	563	002	↓	↓				194		
3	688	1127	[redacted]	07-12-07				792		
4	689	1128						812		
5	690	1129						710		
6	691	1130						818		
7	725	1207121	[redacted]	07-11-07				890		
8	727	1207120						934		
9	728	1207119						999		
10	729	1207118						971		
DUP	↓	↓						974		RPD < 5%
11	730	1207117						1673		
12	740	1207123		07-10-07				1379		
13	744	1207122						999		
14	745	1207098						999		
15	746	1207124						771		
16	747	1207116						700		
17	748	1207115						341		
18	749	1207114						882		
19	763	1208306		07-12-07				656		
20	764	1208388						779		
DUP	↓	↓	↓	↓			↓	795		RPD < 5%
STD	KCl - 10 mhos/cm							N/A		8-12—RPD < 20% of TV

% RPD = |S1-S2| * 100 / (S1+S2)/2

S1 = reading of 1st sample
S2 = reading of 2nd sample

(R) 14 Jul 07

conductivity.xls

MWH Laboratories
750 Royal Oaks Drive, Suite 100
Monrovia, CA 91016-3629

CONDUCTIVITY MW SOP REVISION 5
SM2510B

Analysis Date: 07-11-07
Analyst: Raja
Reviewed By:
LIMS Check By:

Was QC Criteria Met: Y N
Was CIR Needed: Y N

Time of Analysis Start: End:
MRL 2umhos/cm: Rx# exp of solution:
KCl Std 1412 Rx# 201556 exp of solution 07/08
TV = 1412 µmho/cm @ 25°C for 0.0100M
Reading: 1410
Instrument: YSI Model 3200 SN:01A0504, Year Aquired 2001 New

Run #	Sample Number	Sample ID	Client	Date Collected	Temp °C	pH	Scale (µmho/mmho)	Result: Instrument	Result: Reported (µmho/cm)	Comments
Blk	Blank						µs	0.8571		
STD	MRL 2umhos/cm							N/A		1-3—±50% of TV
STD	KCl - 1000 mhos/cm							982		950-1050—±5% of TV
1	2707050182	200012	[redacted]	07-05-07				999		
2	377	200011						974		
3	2707060253	GW-11	Kennedy				ms	33.69		
4	255	GW-11 SW						43.59		
5	260	Discharge						19.43		
6	261	West well					µs	8733		
7	262	East well					ms	11.92		
8	2707100282	Effluent comp		07-07-07			µs	8722		
9	285	Inf-comp						8883		
10	610	Stabilized		07-09-07				999		
DUP								999		RPD < 5%
11	070	30SMSE-5K01	[redacted]					321		
12	079	-18(01						562		
13	266	07(15-02)	[redacted]					518		
14	2707110183	MWD A	[redacted]	07-11-07				604		
15	558	Effluent	[redacted]	07-10-07				8709		
16	559	Influent						8369		
17	645	005	[redacted]	07-11-07				818		
18	648	668						726		
19	653	069						769		
20										
DUP	2707110183	MWD A	[redacted]	07-11-07			µs	615		RPD < 5%
STD	KCl - 10 mhos/cm							N/A		8-12—RPD < 20% of TV

% RPD = |S1-S2| * 100 / (S1+S2)/2

S1 = reading of 1st sample
S2 = reading of 2nd sample

11 Jun 07

conductivity.xls

Sequence: 071607-CLO4-IC11
Operator: raja
Printed: 7/17/2007 3:21:57 PM

Title:
Datasource: IC-SERVER_local
Location: IC11\2007\JULY
Timebase: IC11
#Samples: 72

Created: 7/16/2007 8:11:50 AM by raja
Last Update: 7/17/2007 3:21:48 PM by raja

No.	Name	Dil. Factor	Type	Comment	Status	Program
1	autocal1	1.0000	Standard		Finished	Perchlorate-IC11
2	autocal2	1.0000	Standard	RAJA060913-2	Finished	Perchlorate-IC11
3	autocal3	1.0000	Standard	RAJA060913-3	Finished	Perchlorate-IC11
4	autocal4	1.0000	Unknown	RAJA060913-4	Finished	Perchlorate-IC11
5	autocal5	1.0000	Standard	RAJA060913-5	Finished	Perchlorate-IC11
6	autocal6	1.0000	Standard	RAJA060913-6	Finished	Perchlorate-IC11
7	autocal7	1.0000	Standard	RAJA060913-7	Finished	Perchlorate-IC11
8	autocal4	1.0000	Standard	RAJA060913-4	Finished	Perchlorate-IC11
9	WASH	1.0000	Unknown		Finished	Perchlorate-IC11
10	QCS	1.0000	Unknown		Finished	Perchlorate-IC11
11	IPC	1.0000	Unknown		Finished	Perchlorate-IC11
12	MBLK	1.0000	Unknown		Finished	Perchlorate-IC11
13	MRL-2	1.0000	Unknown		Finished	Perchlorate-IC11
14	MRL-4	1.0000	Unknown		Finished	Perchlorate-IC11
15	LCS1	1.0000	Unknown		Finished	Perchlorate-IC11
16	LCS2	1.0000	Unknown		Finished	Perchlorate-IC11
17	2707100282_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
18	2707110558_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
19	2707110112_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
20	2707110113_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
21	2707110114_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
22	2707110115_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
23	2707110116_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
24	2707110117_1/10000	10000.0000	Unknown		Finished	Perchlorate-IC11
25	2707110118_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
26	2707110118MS	1.0000	Unknown		Finished	Perchlorate-IC11
27	2707110118MSD	1.0000	Unknown		Finished	Perchlorate-IC11
28	2707110119_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
29	CCV	1.0000	Unknown		Finished	Perchlorate-IC11
30	2707110120_1/500	500.0000	Unknown		Finished	Perchlorate-IC11
31	2707110121_1/5	5.0000	Unknown		Finished	Perchlorate-IC11
32	2707110122_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
33	2707110123_1/200	200.0000	Unknown		Finished	Perchlorate-IC11
34	2707110124_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
35	2707110125_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
36	2707110126_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
37	2707110127_1/100	100.0000	Unknown		Finished	Perchlorate-IC11
38	2707110128_1/5000	5000.0000	Unknown		Finished	Perchlorate-IC11
39	2707100282_1/5-DNR	5.0000	Unknown		Finished	Perchlorate-IC11
40	HCV	1.0000	Unknown		Finished	Perchlorate-IC11
41	wash	1.0000	Unknown		Finished	Perchlorate-IC11
42	QCS	1.0000	Unknown		Finished	Perchlorate-IC11

Sequence: 071607-CLO4-IC11
Operator: raja
Printed: 7/17/2007 3:21:57 PM

Title:
Datasource: IC-SERVER_local
Location: IC11\2007\JULY
Timebase: IC11
#Samples: 72

Created: 7/16/2007 8:11:50 AM by raja
Last Update: 7/17/2007 3:21:48 PM by raja

No.	Name	Method	Inj. Date/Time	*Analyst
1	autocal1	IC#4-CLO4-LOW	7/16/2007 8:19:01 AM	Raja
2	autocal2	IC#4-CLO4-LOW	7/16/2007 8:41:25 AM	Raja
3	autocal3	IC#4-CLO4-LOW	7/16/2007 9:03:49 AM	Raja
4	autocal4	IC#4-CLO4-LOW	7/16/2007 9:26:13 AM	Raja
5	autocal5	IC#4-CLO4-LOW	7/16/2007 9:48:36 AM	Raja
6	autocal6	IC#4-CLO4-LOW	7/16/2007 10:11:00 AM	Raja
7	autocal7	IC#4-CLO4-LOW	7/16/2007 10:33:24 AM	Raja
8	autocal4	IC#4-CLO4-LOW	7/16/2007 11:25:04 AM	Raja
9	WASH	IC#4-CLO4-LOW	7/16/2007 11:47:27 AM	Raja
10	QCS	IC#4-CLO4-LOW	7/16/2007 12:09:50 PM	Raja
11	IPC	IC#4-CLO4-LOW	7/16/2007 12:32:13 PM	Raja
12	MBLK	IC#4-CLO4-LOW	7/16/2007 12:54:37 PM	Raja
13	MRL-2	IC#4-CLO4-LOW	7/16/2007 1:17:03 PM	Raja
14	MRL-4	IC#4-CLO4-LOW	7/16/2007 1:39:27 PM	Raja
15	LCS1	IC#4-CLO4-LOW	7/16/2007 2:01:51 PM	Raja
16	LCS2	IC#4-CLO4-LOW	7/16/2007 2:24:10 PM	Raja
17	2707100282_1/5	IC#4-CLO4-LOW	7/16/2007 2:46:31 PM	Raja
18	2707110558_1/5	IC#4-CLO4-LOW	7/16/2007 3:08:52 PM	Raja
19	2707110112_1/5000	IC#4-CLO4-LOW	7/16/2007 3:31:13 PM	Raja
20	2707110113_1/10000	IC#4-CLO4-LOW	7/16/2007 3:53:34 PM	Raja
21	2707110114_1/10000	IC#4-CLO4-LOW	7/16/2007 4:15:55 PM	Raja
22	2707110115_1/5000	IC#4-CLO4-LOW	7/16/2007 4:38:33 PM	Raja
23	2707110116_1/5000	IC#4-CLO4-LOW	7/16/2007 5:00:59 PM	Raja
24	2707110117_1/10000	IC#4-CLO4-LOW	7/16/2007 5:23:24 PM	Raja
25	2707110118_1/500	IC#4-CLO4-LOW	7/16/2007 5:45:48 PM	Raja
26	2707110118MS	IC#4-CLO4-LOW	7/16/2007 6:08:12 PM	Raja
27	2707110118MSD	IC#4-CLO4-LOW	7/16/2007 6:30:37 PM	Raja
28	2707110119_1/500	IC#4-CLO4-LOW	7/16/2007 6:52:57 PM	Raja
29	CCV	IC#4-CLO4-LOW	7/16/2007 7:15:20 PM	Raja
30	2707110120_1/500	IC#4-CLO4-LOW	7/16/2007 7:37:44 PM	Raja
31	2707110121_1/5	IC#4-CLO4-LOW	7/16/2007 8:00:08 PM	Raja
32	2707110122_1/100	IC#4-CLO4-LOW	7/16/2007 8:22:31 PM	Raja
33	2707110123_1/200	IC#4-CLO4-LOW	7/16/2007 8:44:55 PM	Raja
34	2707110124_1/100	IC#4-CLO4-LOW	7/16/2007 9:07:19 PM	Raja
35	2707110125_1/100	IC#4-CLO4-LOW	7/16/2007 9:29:42 PM	Raja
36	2707110126_1/100	IC#4-CLO4-LOW	7/16/2007 9:52:06 PM	Raja
37	2707110127_1/100	IC#4-CLO4-LOW	7/16/2007 10:14:29 PM	Raja
38	2707110128_1/5000	IC#4-CLO4-LOW	7/16/2007 10:36:53 PM	Raja
39	2707100282_1/5-DNR	IC#4-CLO4-LOW	7/16/2007 10:59:17 PM	Raja
40	HCV	IC#4-CLO4-LOW	7/16/2007 11:21:41 PM	Raja
41	wash	IC#4-CLO4-LOW	7/16/2007 11:44:05 PM	Raja
42	QCS	IC#4-CLO4-LOW	7/17/2007 12:06:28 AM	Raja

Sequence: 071607-CLO4-IC11
Operator: raja
Printed: 7/17/2007 3:21:57 PM

Title:
Datasource: IC-SERVER_local
Location: IC11\2007\JULY
Timebase: IC11
#Samples: 72

Created: 7/16/2007 8:11:50 AM by raja
Last Update: 7/17/2007 3:21:48 PM by raja

No.	Name	Dil. Factor	Type	Comment	Status	Program
43	IPC	1.0000	Unknown		Finished	Perchlorate-IC11
44	MBLK	1.0000	Unknown		Finished	Perchlorate-IC11
45	MRL-2	1.0000	Unknown		Finished	Perchlorate-IC11
46	MRL-4	1.0000	Unknown		Finished	Perchlorate-IC11
47	LCS1	1.0000	Unknown		Finished	Perchlorate-IC11
48	LCS2	1.0000	Unknown		Finished	Perchlorate-IC11
49	2707120562	1.0000	Unknown		Finished	Perchlorate-IC11
50	2707120563	1.0000	Unknown		Finished	Perchlorate-IC11
51	2707120688	1.0000	Unknown		Finished	Perchlorate-IC11
52	2707120689	1.0000	Unknown		Finished	Perchlorate-IC11
53	2707120690	1.0000	Unknown		Finished	Perchlorate-IC11
54	2707120691	1.0000	Unknown		Finished	Perchlorate-IC11
55	2707120691MS	1.0000	Unknown		Finished	Perchlorate-IC11
56	2707120691MSD	1.0000	Unknown		Finished	Perchlorate-IC11
57	2707120725	1.0000	Unknown		Finished	Perchlorate-IC11
58	2707120727	1.0000	Unknown		Finished	Perchlorate-IC11
59	2707120728	1.0000	Unknown		Finished	Perchlorate-IC11
60	2707120729	1.0000	Unknown		Finished	Perchlorate-IC11
61	CCV	1.0000	Unknown		Finished	Perchlorate-IC11
62	2707120730_1/2	2.0000	Unknown		Finished	Perchlorate-IC11
63	2707120740_1/2	2.0000	Unknown		Finished	Perchlorate-IC11
64	2707120744	1.0000	Unknown		Finished	Perchlorate-IC11
65	2707120745	1.0000	Unknown		Finished	Perchlorate-IC11
66	2707120746_1/2-DNR	2.0000	Unknown		Finished	Perchlorate-IC11
67	2707120747	1.0000	Unknown		Finished	Perchlorate-IC11
68	2707120748	1.0000	Unknown		Finished	Perchlorate-IC11
69	2707120749	1.0000	Unknown		Finished	Perchlorate-IC11
70	2707120763	1.0000	Unknown		Finished	Perchlorate-IC11
71	2707120764	1.0000	Unknown		Finished	Perchlorate-IC11
72	HCV	1.0000	Unknown		Finished	Perchlorate-IC11

Sequence: 071607-CLO4-IC11
Operator: raja
Printed: 7/17/2007 3:21:57 PM

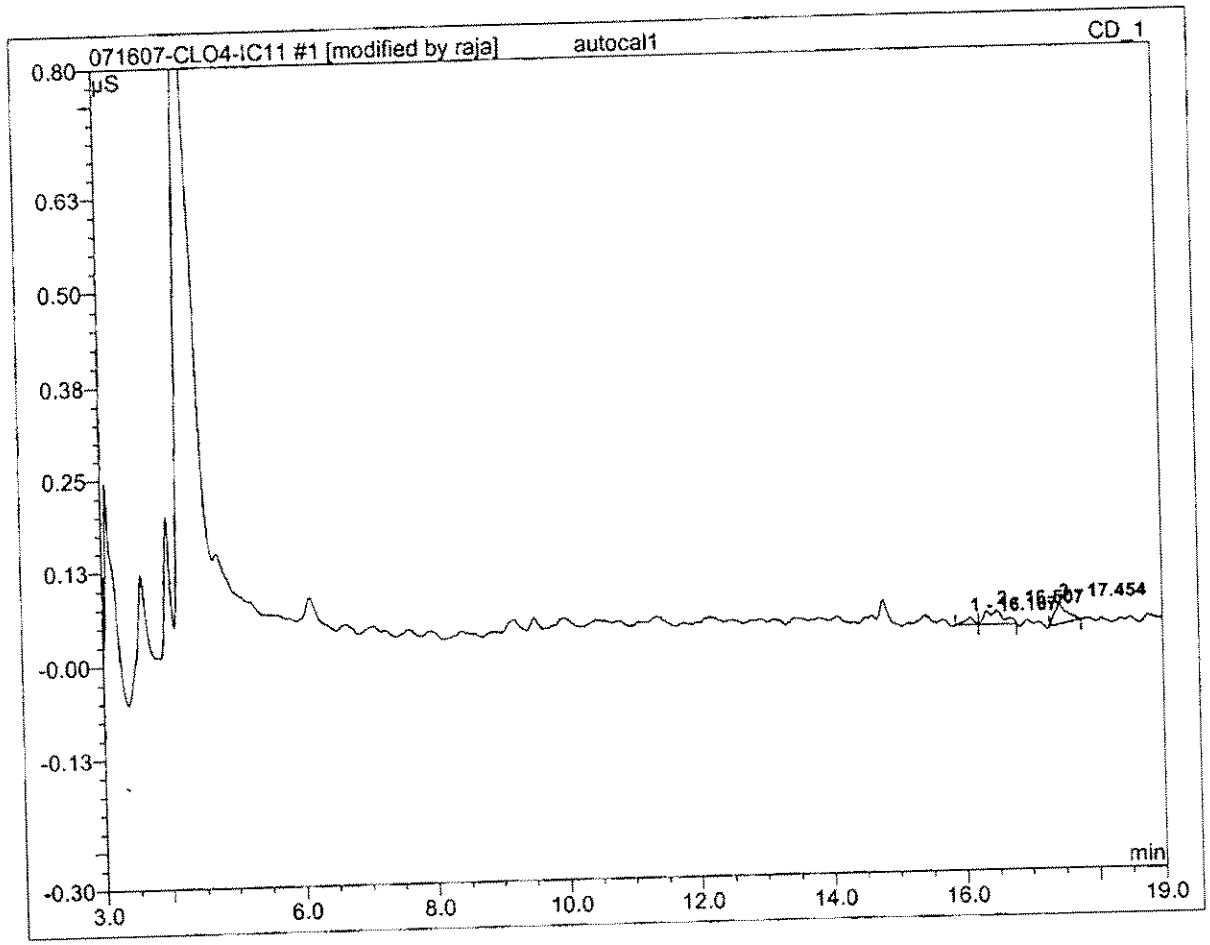
Title:
Datasource: IC-SERVER_local
Location: IC11\2007\JULY
Timebase: IC11
#Samples: 72

Created: 7/16/2007 8:11:50 AM by raja
Last Update: 7/17/2007 3:21:48 PM by raja

No.	Name	Method	Inj. Date/Time	*Analyst
43	IPC	IC#4-CLO4-LOW	7/17/2007 12:28:52 AM	Raja
44	MBLK	IC#4-CLO4-LOW	7/17/2007 12:51:16 AM	Raja
45	MRL-2	IC#4-CLO4-LOW	7/17/2007 1:13:40 AM	Raja
46	MRL-4	IC#4-CLO4-LOW	7/17/2007 1:36:03 AM	Raja
47	LCS1	IC#4-CLO4-LOW	7/17/2007 1:58:27 AM	Raja
48	LCS2	IC#4-CLO4-LOW	7/17/2007 2:20:51 AM	Raja
49	2707120562	IC#4-CLO4-LOW	7/17/2007 2:43:15 AM	Raja
50	2707120563	IC#4-CLO4-LOW	7/17/2007 3:05:39 AM	Raja
51	2707120688	IC#4-CLO4-LOW	7/17/2007 3:28:02 AM	Raja
52	2707120689	IC#4-CLO4-LOW	7/17/2007 3:50:26 AM	Raja
53	2707120690	IC#4-CLO4-LOW	7/17/2007 4:12:49 AM	Raja
54	2707120691	IC#4-CLO4-LOW	7/17/2007 4:35:13 AM	Raja
55	2707120691MS	IC#4-CLO4-LOW	7/17/2007 4:57:36 AM	Raja
56	2707120691MSD	IC#4-CLO4-LOW	7/17/2007 5:20:00 AM	Raja
57	2707120725	IC#4-CLO4-LOW	7/17/2007 5:42:24 AM	Raja
58	2707120727	IC#4-CLO4-LOW	7/17/2007 6:04:47 AM	Raja
59	2707120728	IC#4-CLO4-LOW	7/17/2007 6:27:11 AM	Raja
60	2707120729	IC#4-CLO4-LOW	7/17/2007 6:49:34 AM	Raja
61	CCV	IC#4-CLO4-LOW	7/17/2007 7:11:58 AM	Raja
62	2707120730_1/2	IC#4-CLO4-LOW	7/17/2007 7:34:21 AM	Raja
63	2707120740_1/2	IC#4-CLO4-LOW	7/17/2007 7:56:45 AM	Raja
64	2707120744	IC#4-CLO4-LOW	7/17/2007 8:19:08 AM	Raja
65	2707120745	IC#4-CLO4-LOW	7/17/2007 8:41:33 AM	Raja
66	2707120746_1/2-DNR	IC#4-CLO4-LOW	7/17/2007 9:03:57 AM	Raja
67	2707120747	IC#4-CLO4-LOW	7/17/2007 9:26:21 AM	Raja
68	2707120748	IC#4-CLO4-LOW	7/17/2007 9:48:45 AM	Raja
69	2707120749	IC#4-CLO4-LOW	7/17/2007 10:11:09 AM	Raja
70	2707120763	IC#4-CLO4-LOW	7/17/2007 10:33:33 AM	Raja
71	2707120764	IC#4-CLO4-LOW	7/17/2007 10:55:57 AM	Raja
72	HCV	IC#4-CLO4-LOW	7/17/2007 11:18:21 AM	Raja

1 autocal1

Sample Name:	**autocal1**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 08:19**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

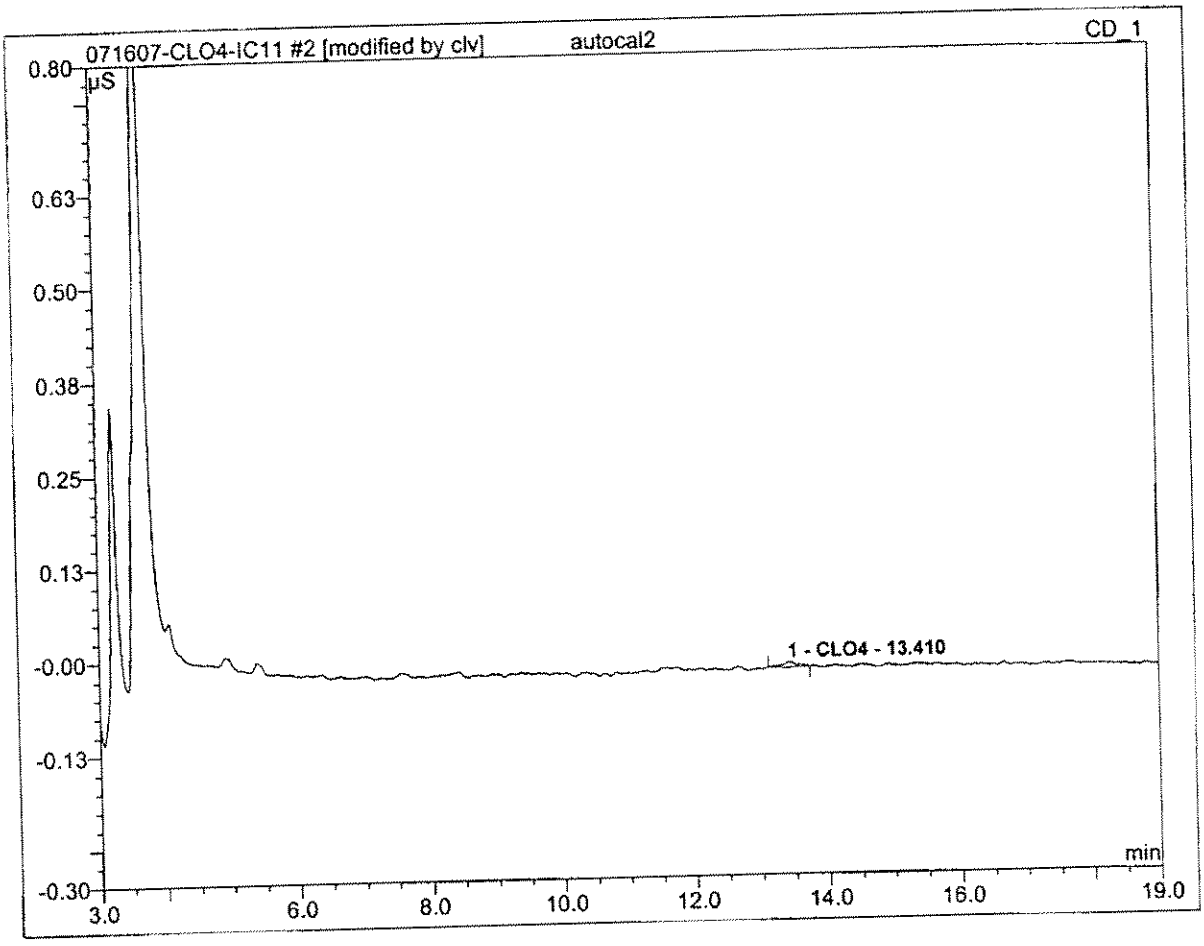


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

2 autocal2

RAJA060913-2

Sample Name:	**autocal2**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 08:41**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

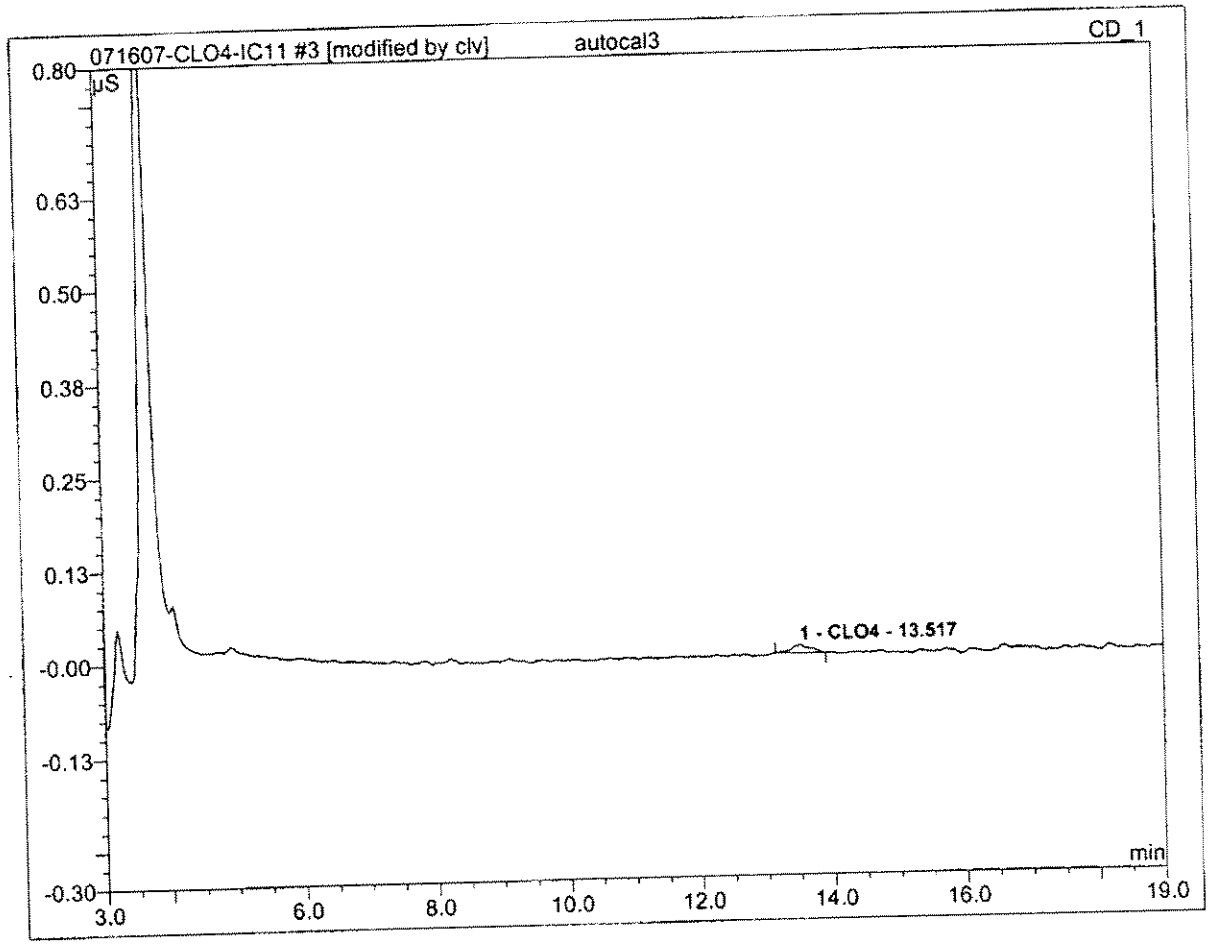


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.41	CLO4	0.007	0.002	100.00	2.139	BMB*
Total:			0.007	0.002	100.00	2.139	

3 autocal3

RAJA060913-3

Sample Name:	**autocal3**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 09:03**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

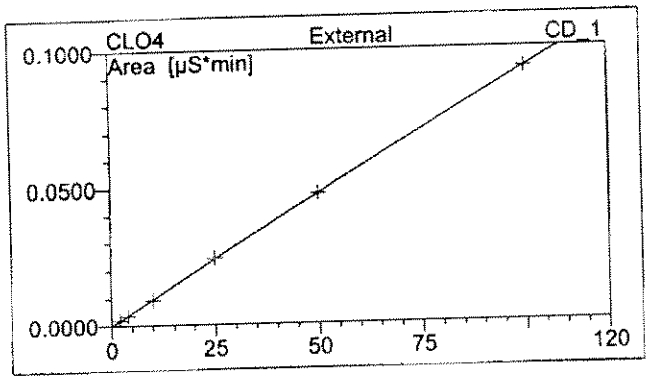


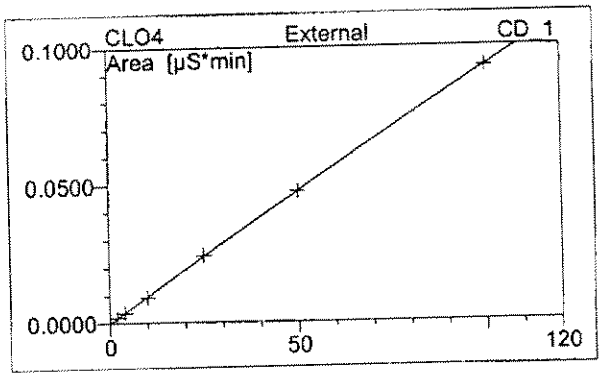
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.52	CLO4	0.011	0.004	100.00	3.877	BMB*
Total:			0.011	0.004	100.00	3.877	

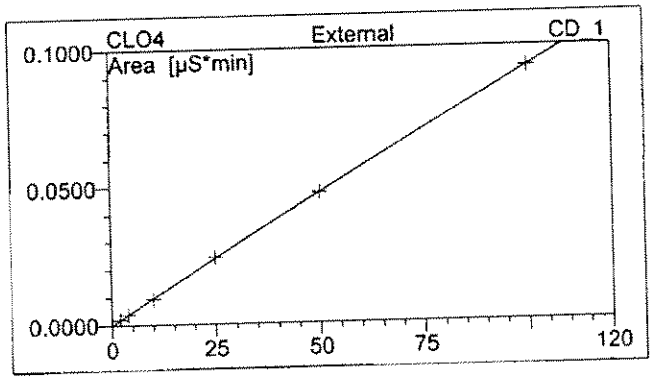
3 autocal3

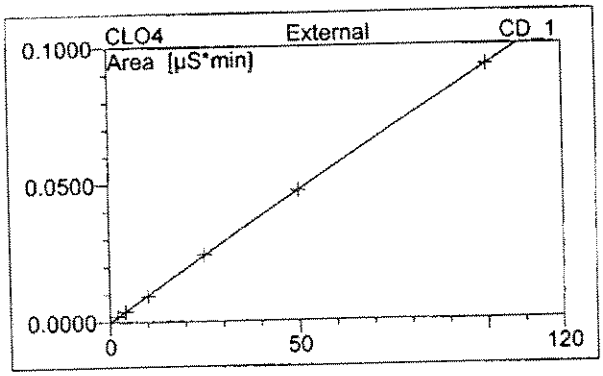
RAJA060913-3

Sample Name:	**autocal3**	*Injection Volume:*	**20.0**
Vial Number:	**105**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Perchlorate-IC11**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC#4-CLO4-LOW**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/16/2007 9:03**	*Sample Weight:*	**1.0000**
Run Time (min):	**20.00**	*Sample Amount:*	**1.0000**







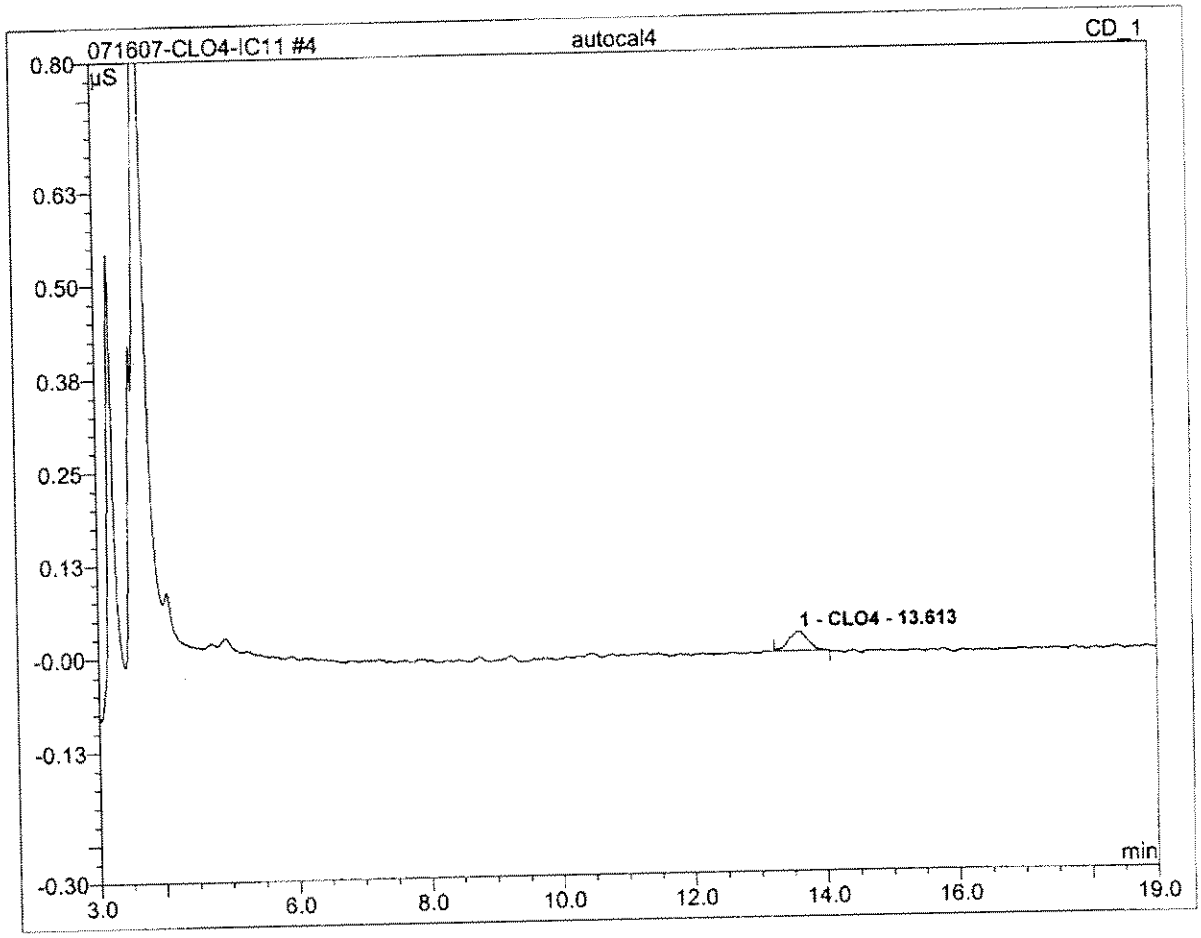


No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	13.52	CLO4	0QOff	6	99.9869	-0.0001	0.0010	0.0000
Average:					99.9869	-0.0001	0.0010	0.0000

4 autocal4

RAJA060913-4

Sample Name:	**autocal4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 09:26**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

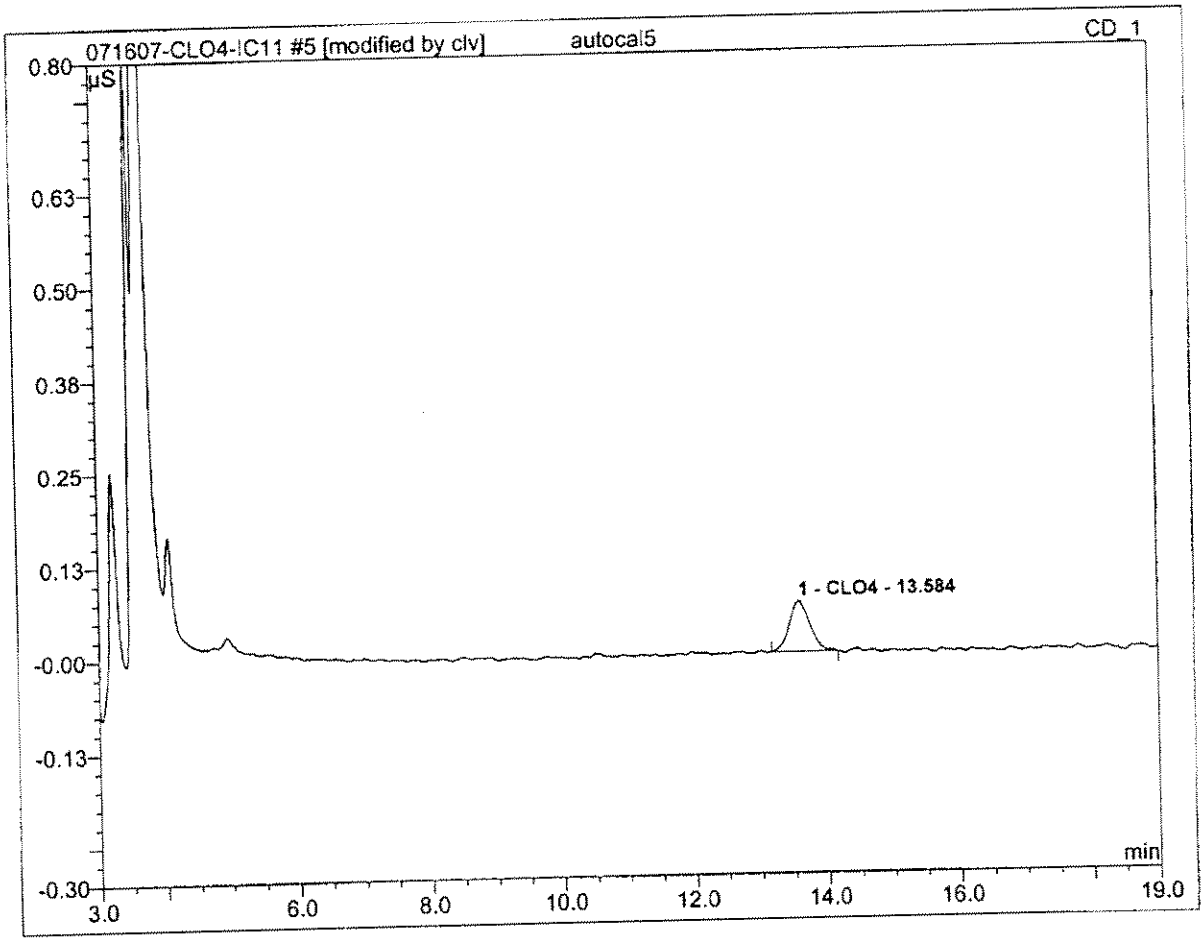


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.61	CLO4	0.026	0.009	100.00	9.037	BMB
Total:			0.026	0.009	100.00	9.037	

5 autocal5

RAJA060913-5

Sample Name:	**autocal5**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 09:48**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

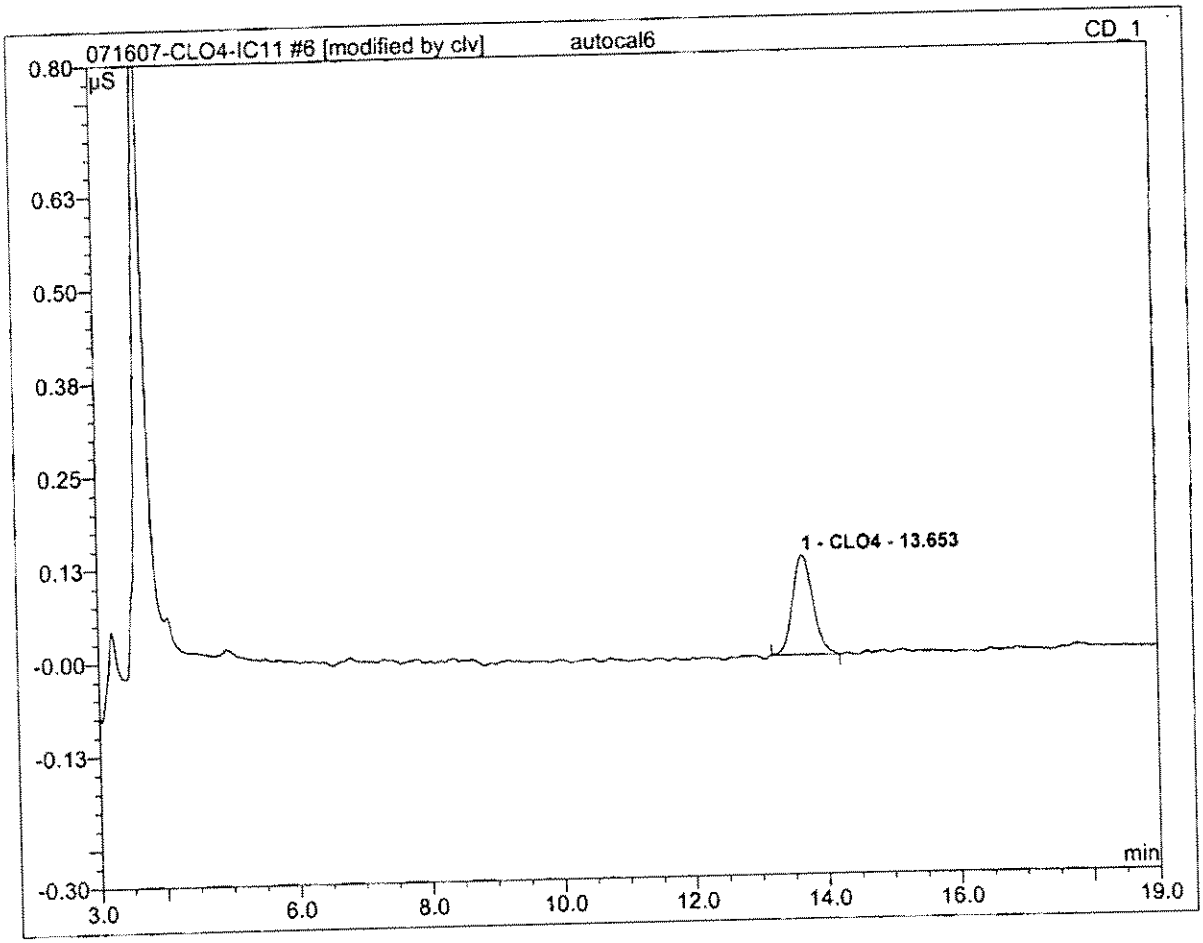


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.58	CLO4	0.067	0.024	100.00	25.246	BMB*
Total:			0.067	0.024	100.00	25.246	

6 autocal6

RAJA060913-6

Sample Name:	**autocal6**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 10:11**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

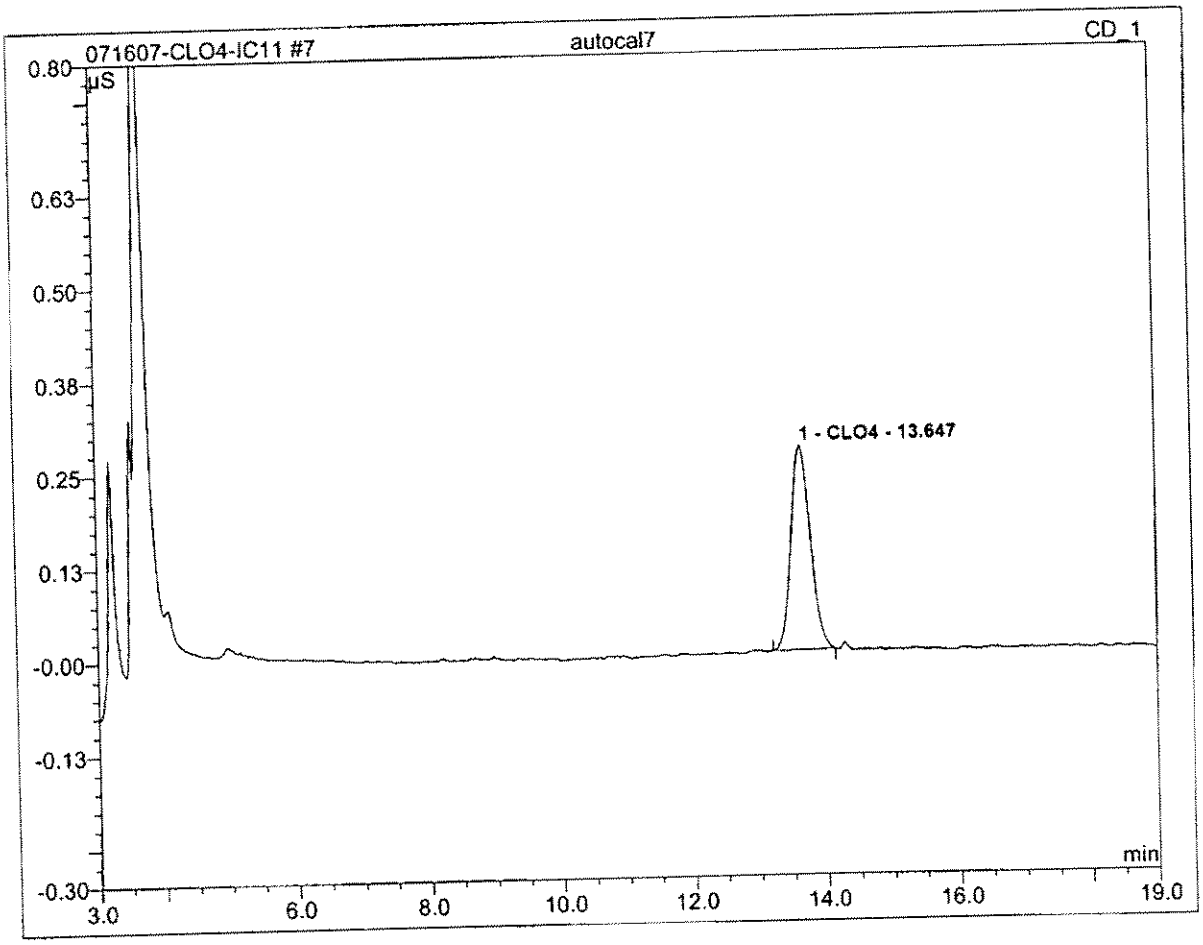


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.65	CLO4	0.134	0.047	100.00	49.950	BMB*
Total:			0.134	0.047	100.00	49.950	

7 autocal7

RAJA060913-7

Sample Name:	**autocal7**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 10:33**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

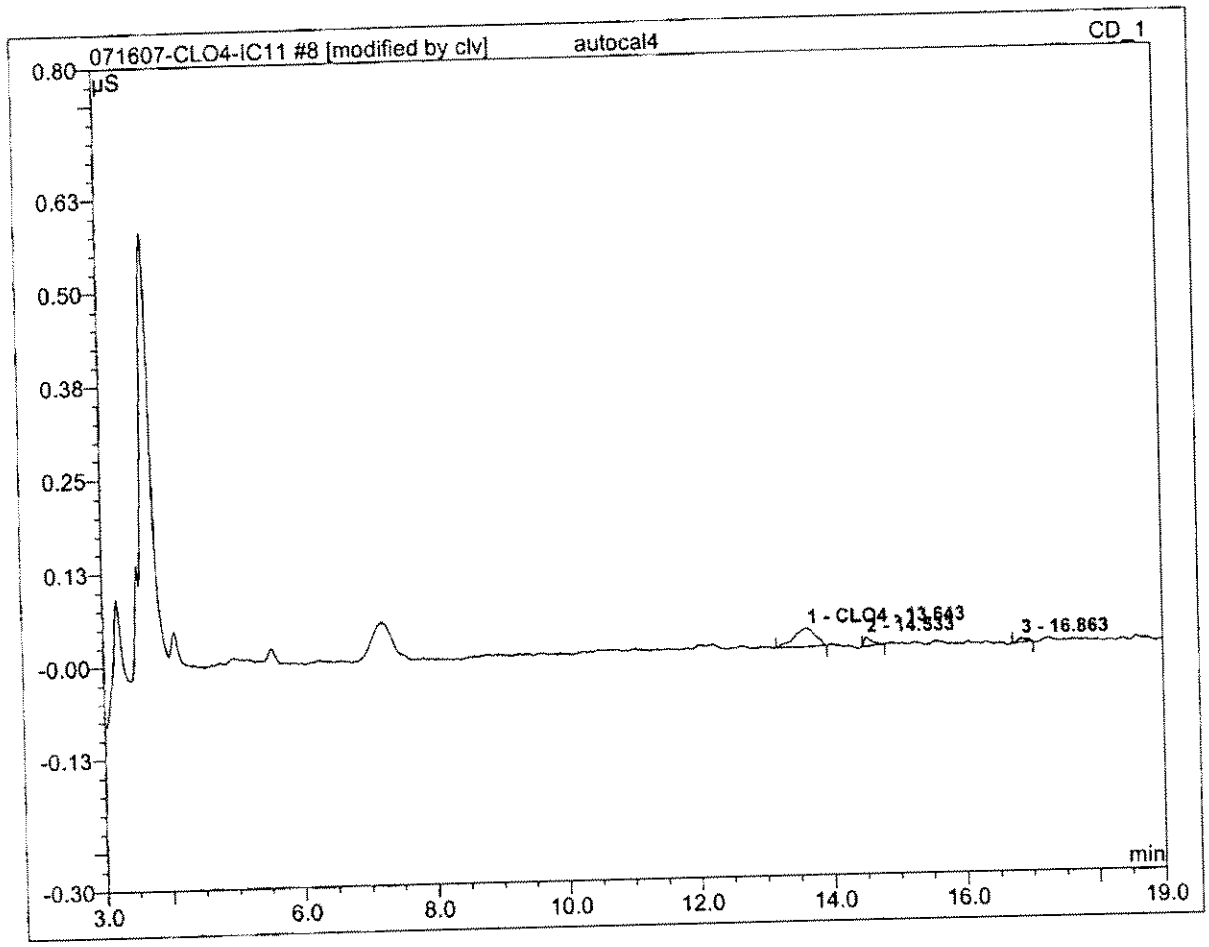


No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.65	CLO4	0.273	0.092	100.00	100.000	BMB
Total:			0.273	0.092	100.00	100.000	

8 autocal4

RAJA060913-4

Sample Name:	**autocal4**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 11:25**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**

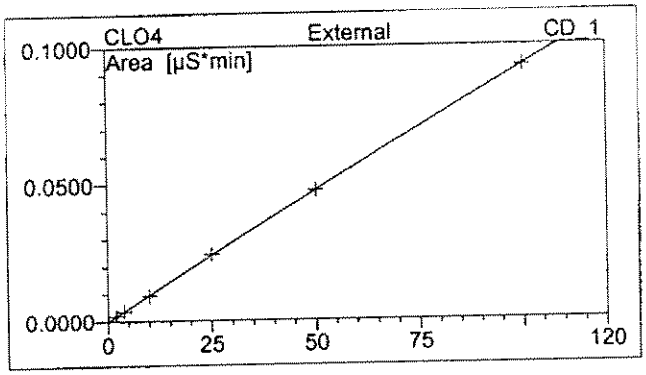


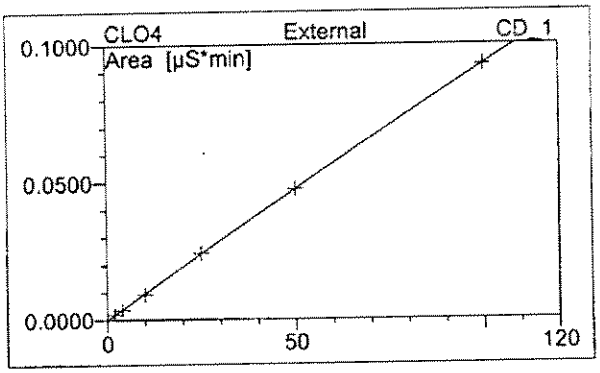
No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.64	CLO4	0.025	0.009	77.76	9.650	BMB*
Total:			0.025	0.009	77.76	9.650	

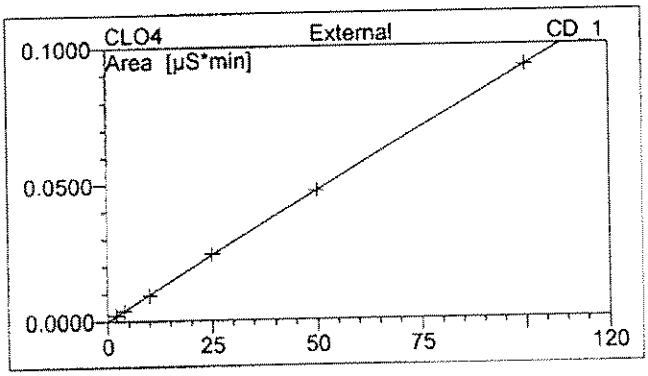
8 autocal4

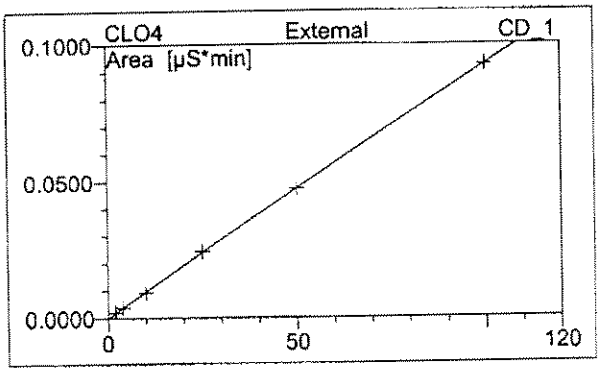
RAJA060913-4

Sample Name:	**autocal4**	*Injection Volume:*	**20.0**
Vial Number:	**106**	*Channel:*	**CD_1**
Sample Type:	**standard**	*Wavelength:*	**n.a.**
Control Program:	**Perchlorate-IC11**	*Bandwidth:*	**n.a.**
Quantif. Method:	**IC#4-CLO4-LOW**	*Dilution Factor:*	**1.0000**
Recording Time:	**7/16/2007 11:25**	*Sample Weight:*	**1.0000**
Run Time (min):	**20.00**	*Sample Amount:*	**1.0000**





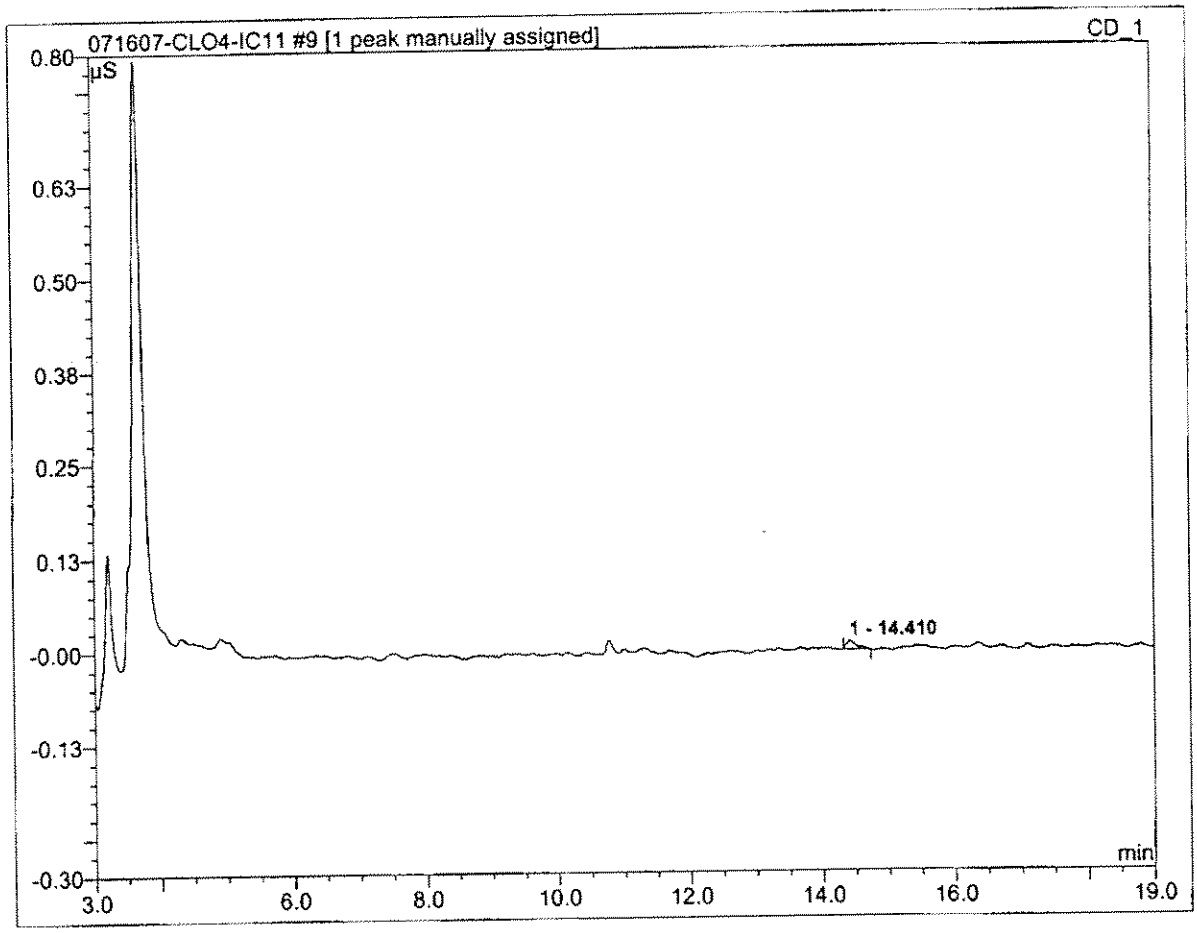




No.	Ret.Time min	Peak Name	Cal.Type	Points	Corr.Coeff. %	Offset	Slope	Curve
1	13.64	CLO4	0QOff	6	99.9869	-0.0001	0.0010	0.0000
2	14.53	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
3	16.86	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Average:					99.9869	-0.0001	0.0010	0.0000

9 WASH

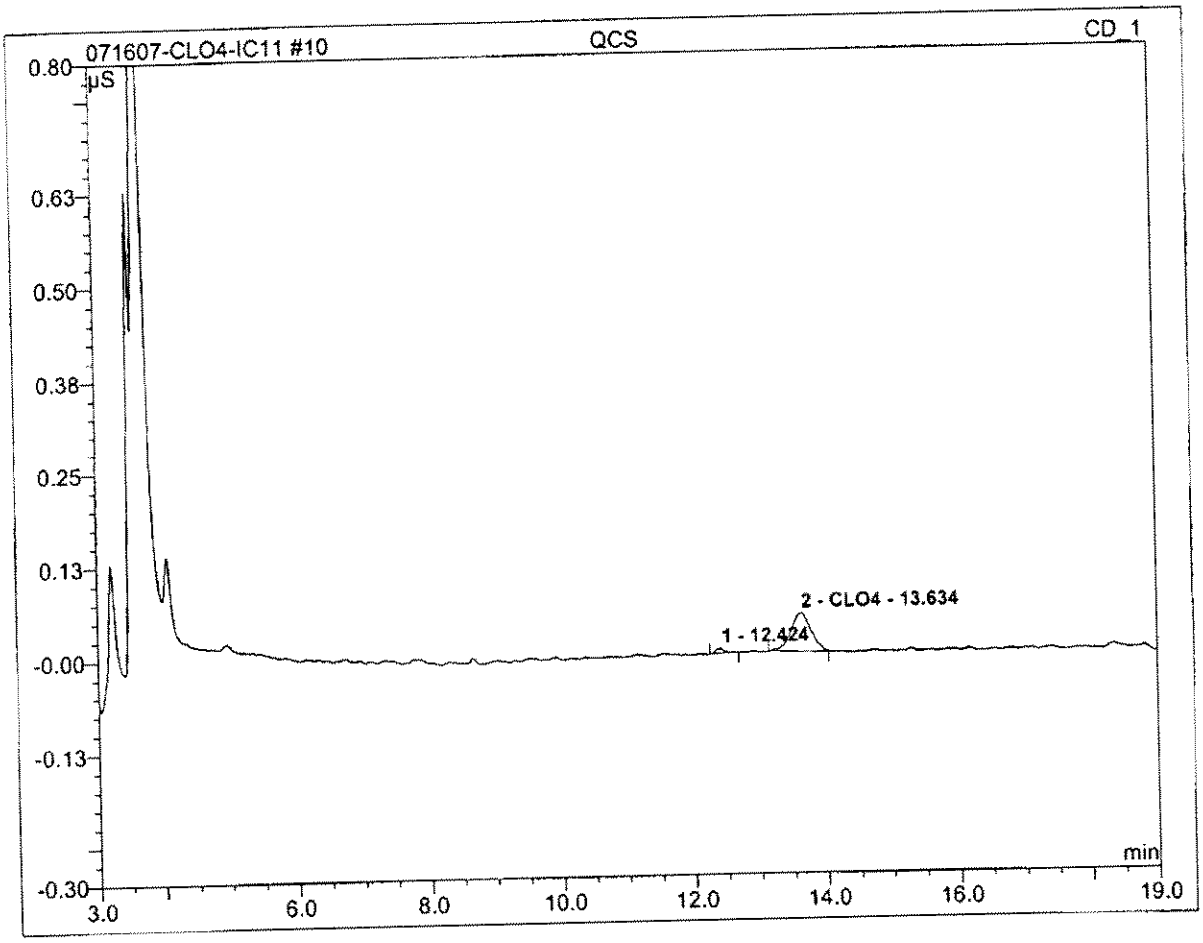
Sample Name:	**WASH**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 11:47**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

10 QCS

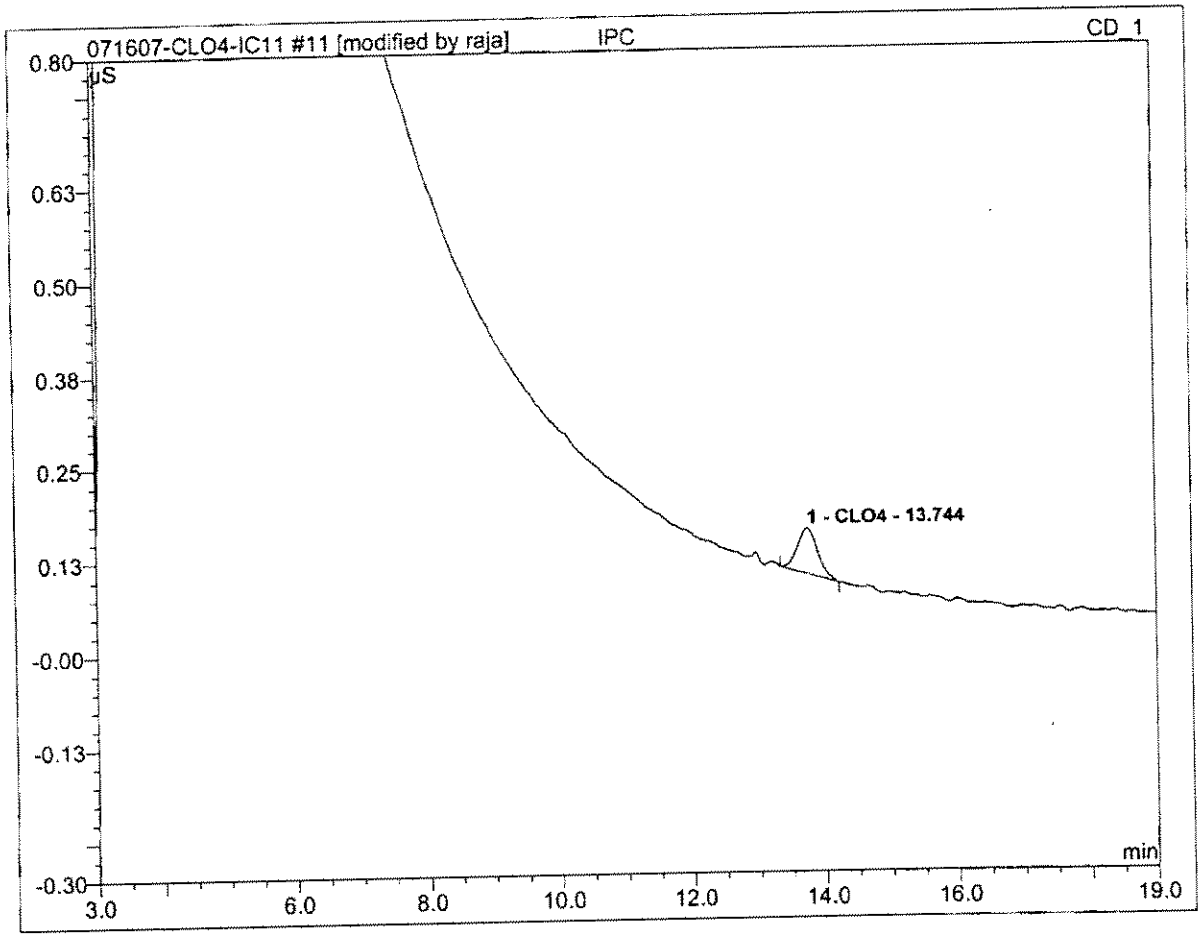
Sample Name:	**QCS**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 12:09**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
2	13.63	CLO4	0.051	0.018	94.53	18.932	BMB
Total:			0.051	0.018	94.53	18.932	

11 IPC

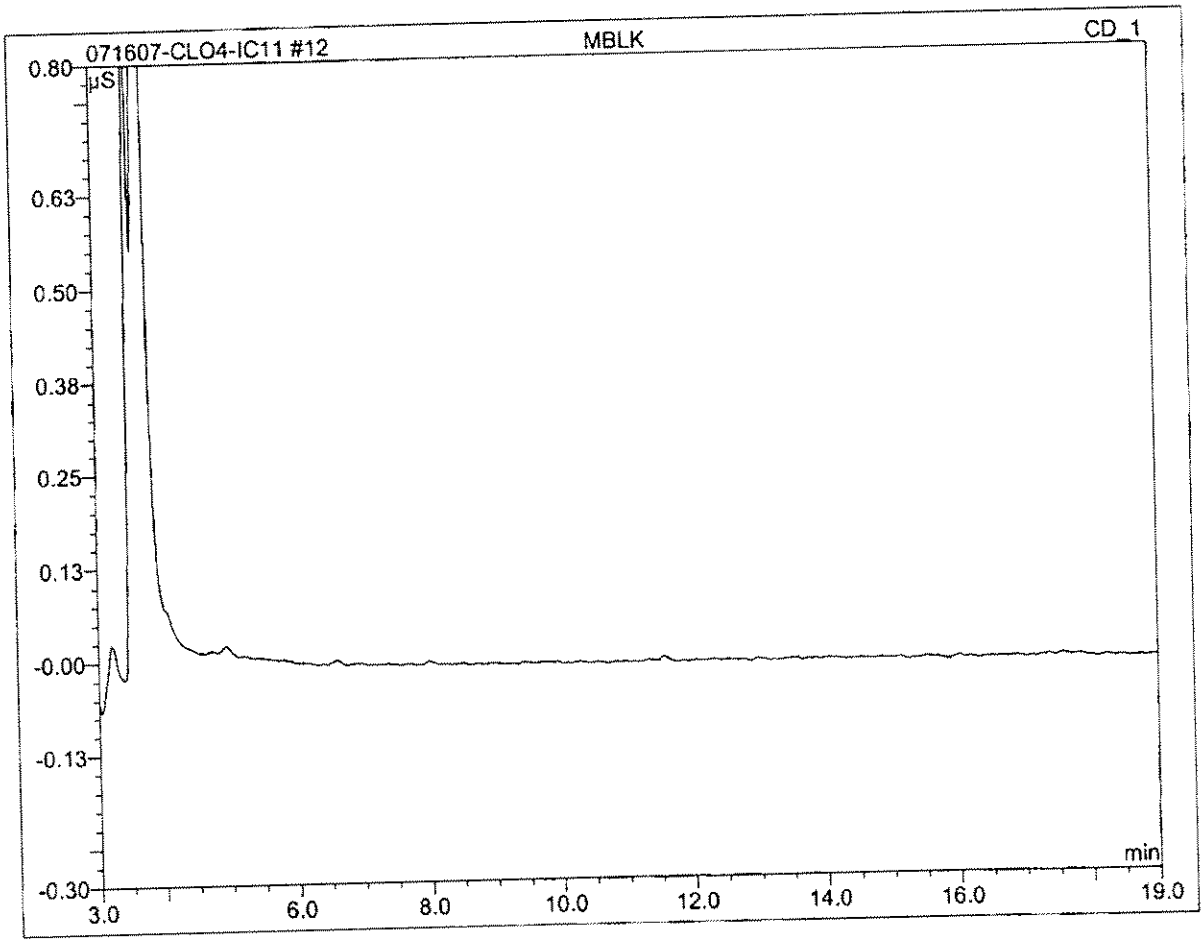
Sample Name:	**IPC**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 12:32**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.74	CLO4	0.060	0.021	100.00	22.007	BMB*
Total:			0.060	0.021	100.00	22.007	

12 MBLK

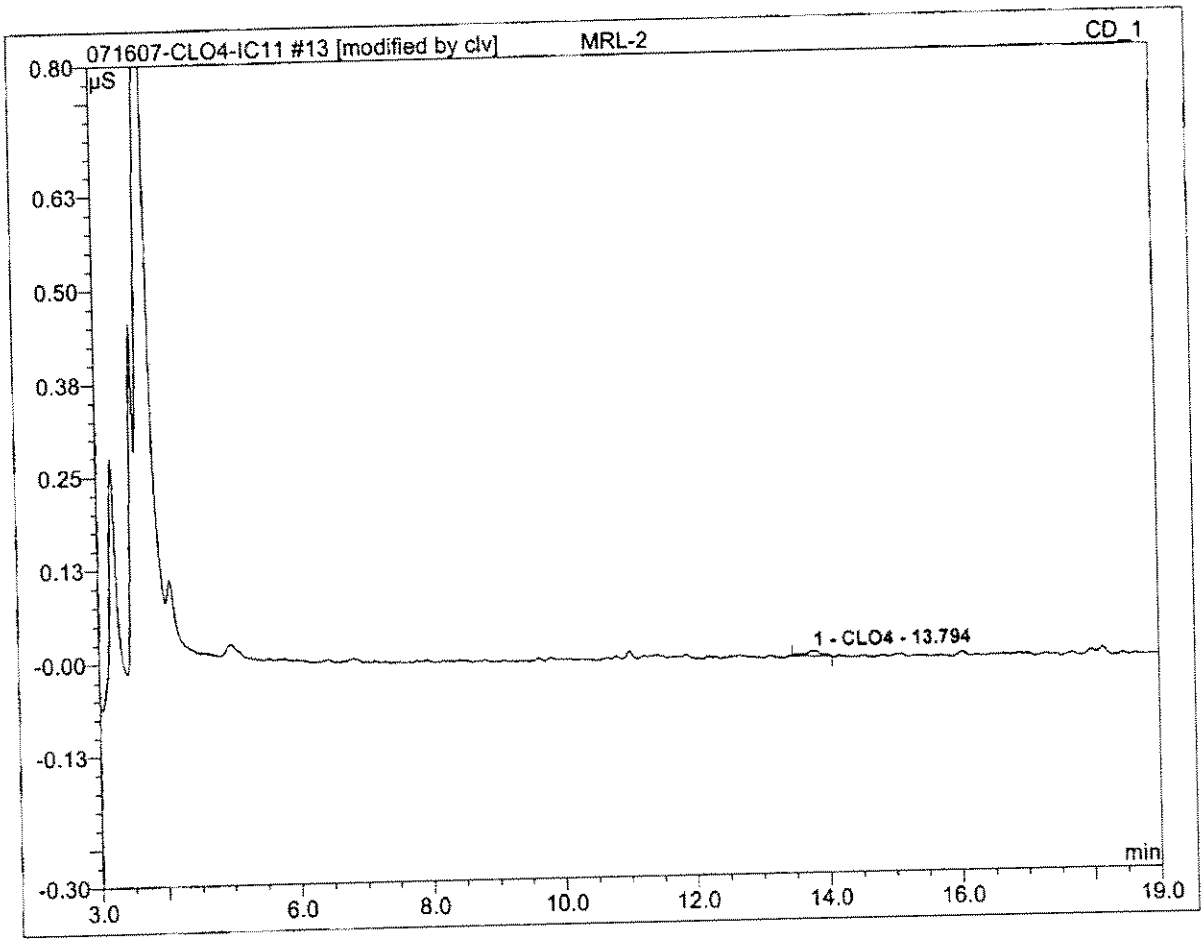
Sample Name:	**MBLK**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 12:54**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
Total:			0.000	0.000	0.00	0.000	

13 MRL-2

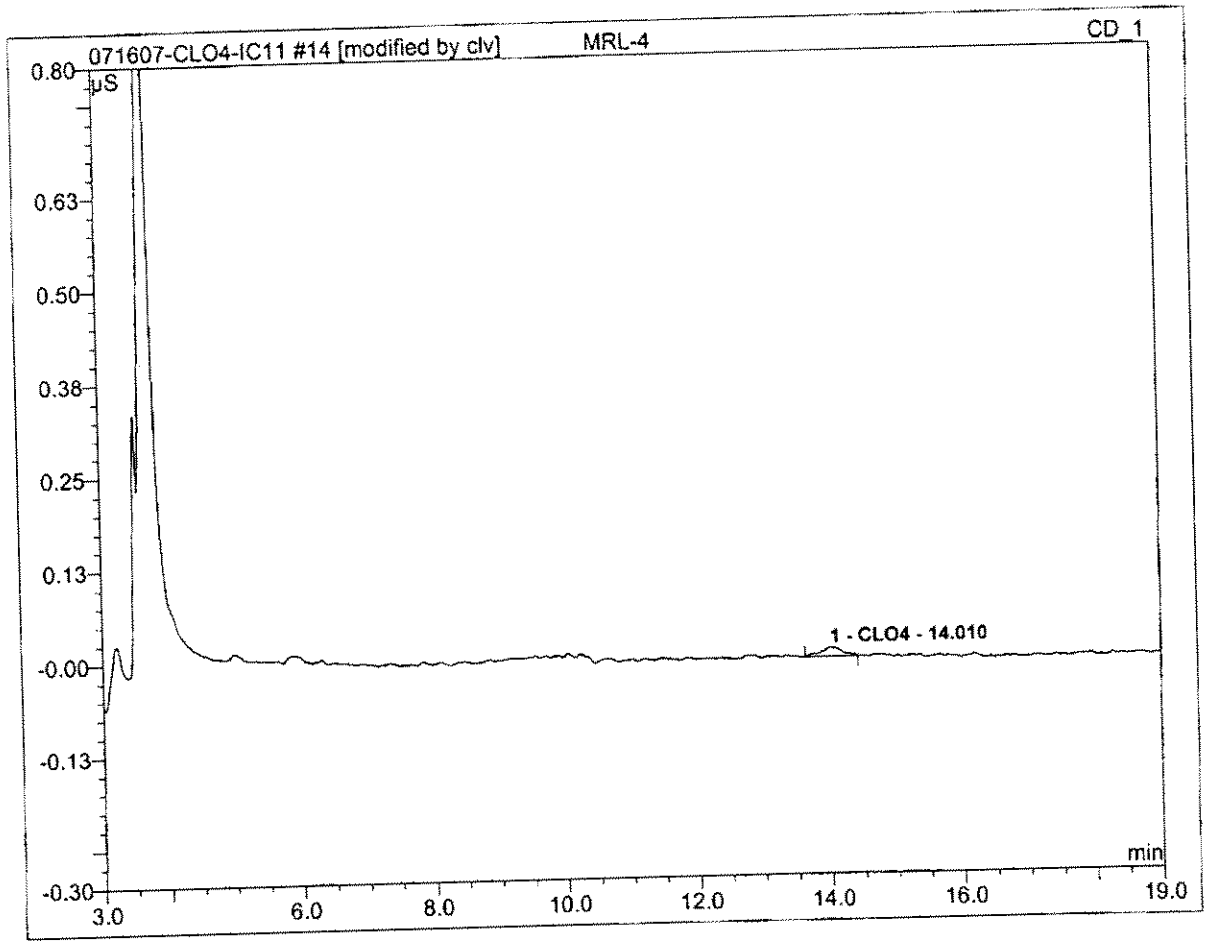
Sample Name:	**MRL-2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 13:17**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.79	CLO4	0.007	0.002	100.00	2.355	BMB*
Total:			0.007	0.002	100.00	2.355	

14 MRL-4

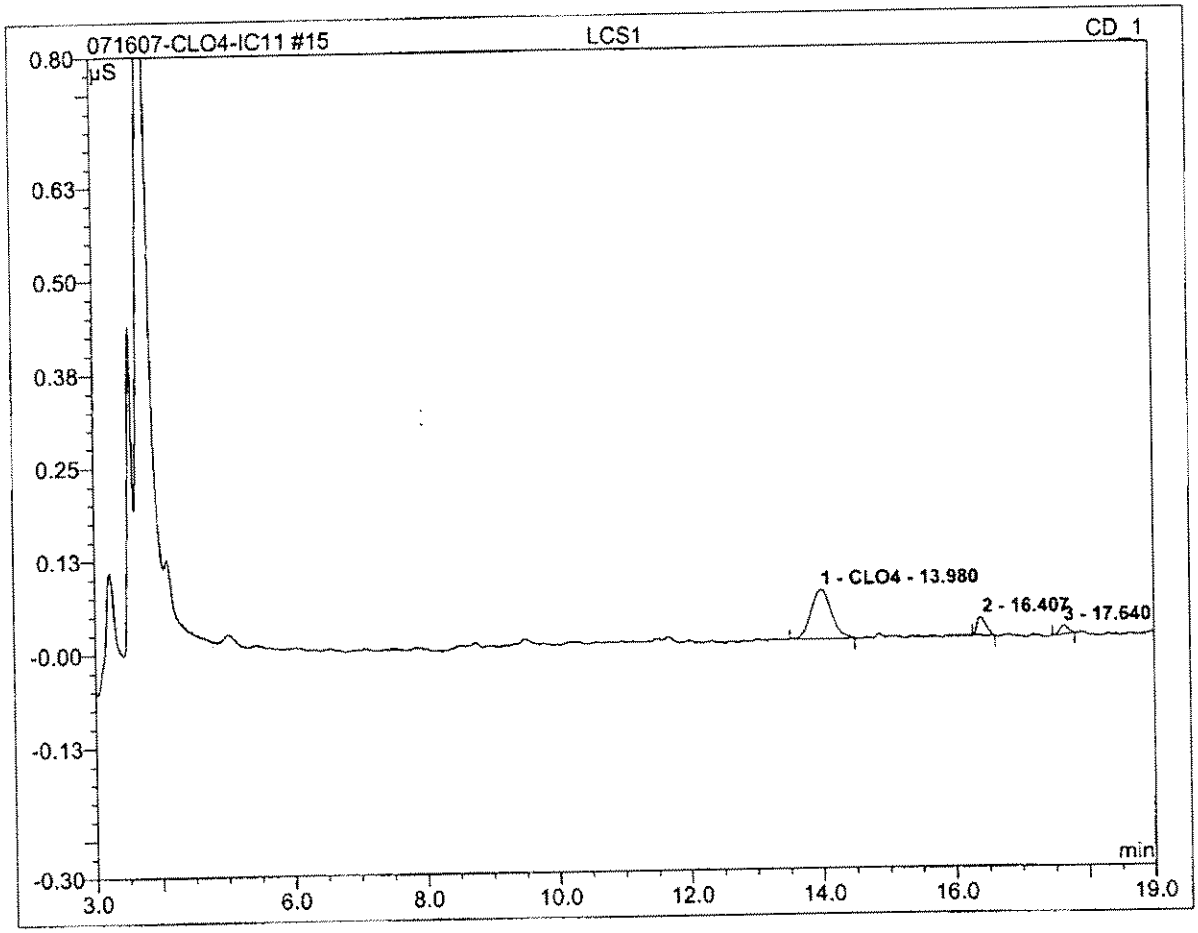
Sample Name:	**MRL-4**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 13:39**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.01	CLO4	0.011	0.004	100.00	4.705	BMB*
Total:			0.011	0.004	100.00	4.705	

15 LCS1

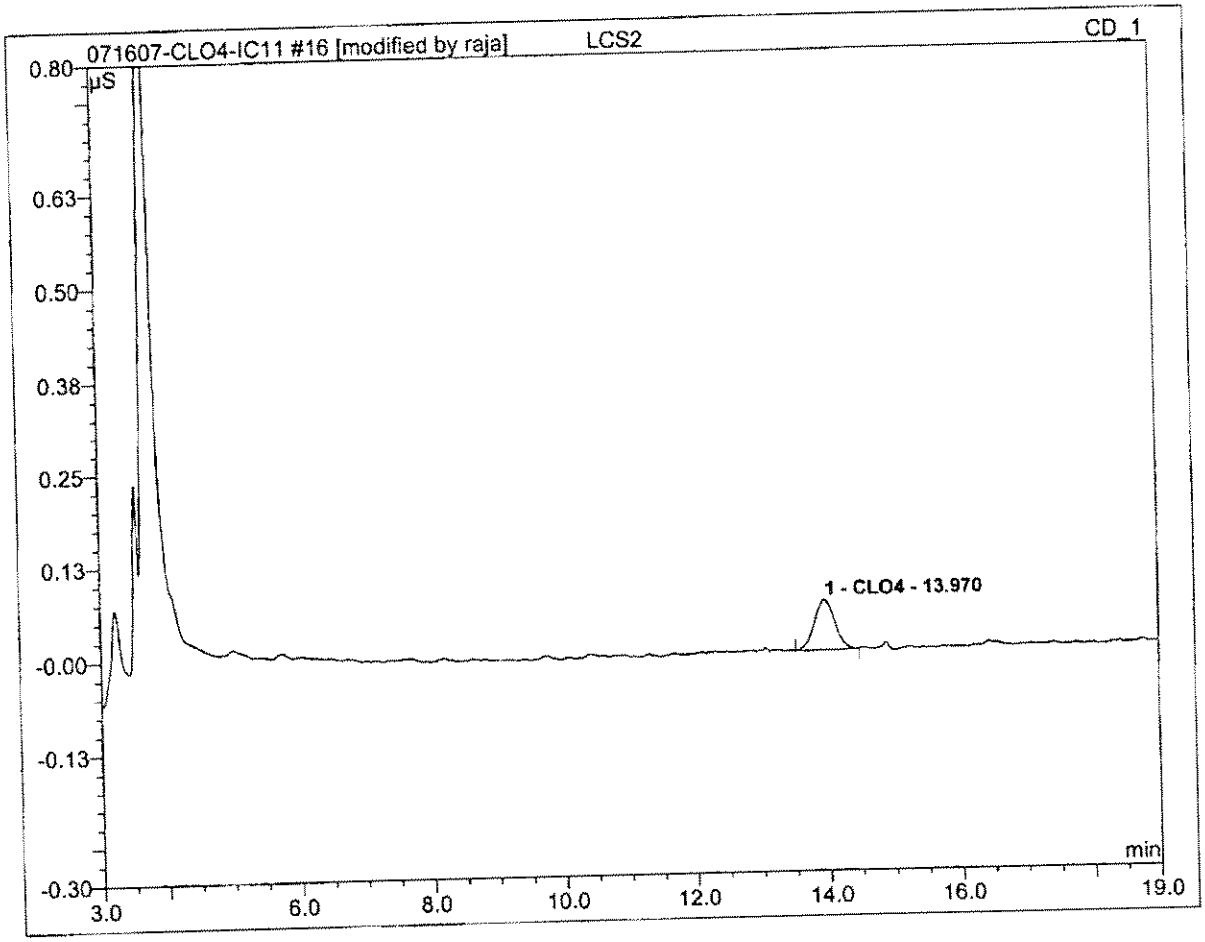
Sample Name:	**LCS1**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 14:01**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.98	CLO4	0.065	0.023	80.94	24.206	BMB
Total:			0.065	0.023	80.94	24.206	

16 LCS2

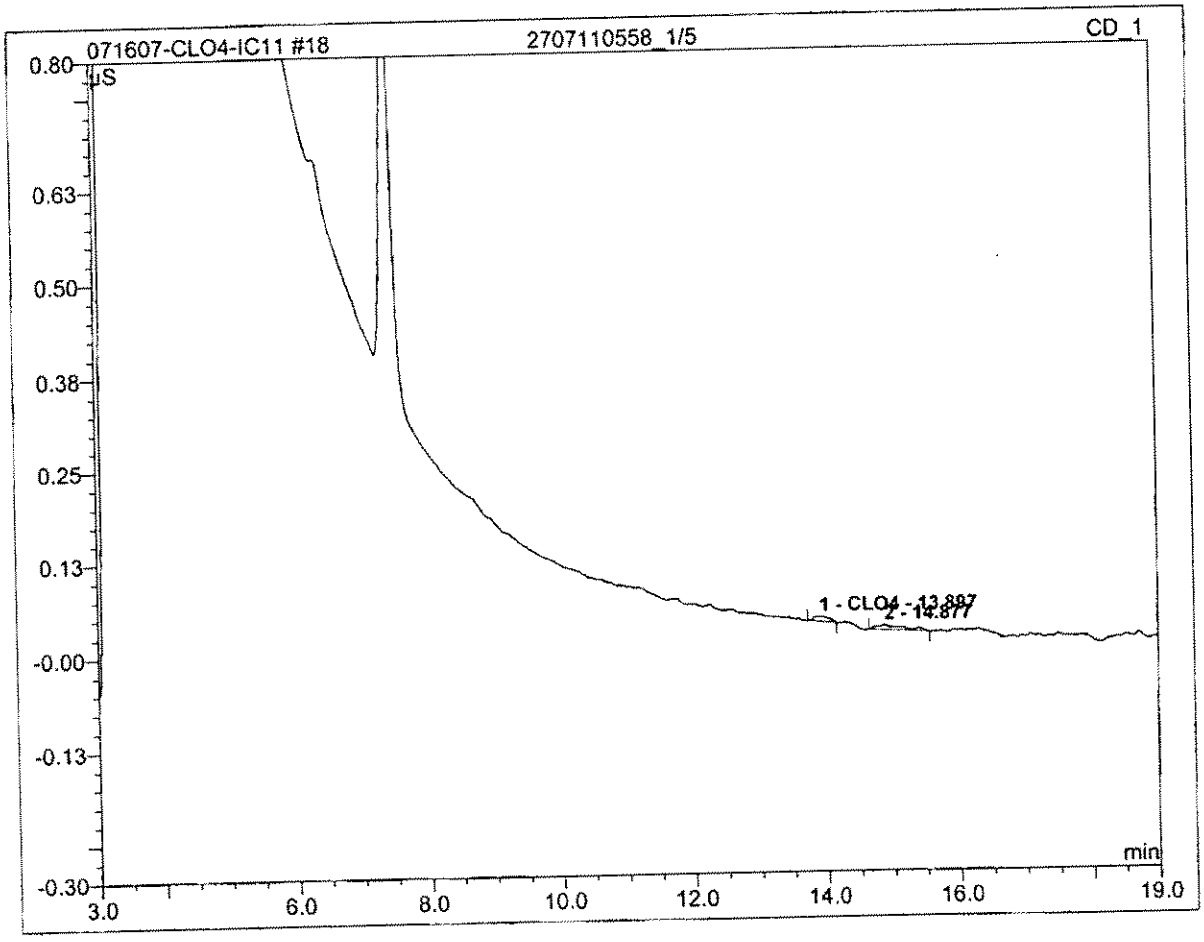
Sample Name:	**LCS2**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 14:24**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.97	CLO4	0.066	0.024	100.00	24.842	BMB*
Total:			0.066	0.024	100.00	24.842	

18 2707110558_1/5

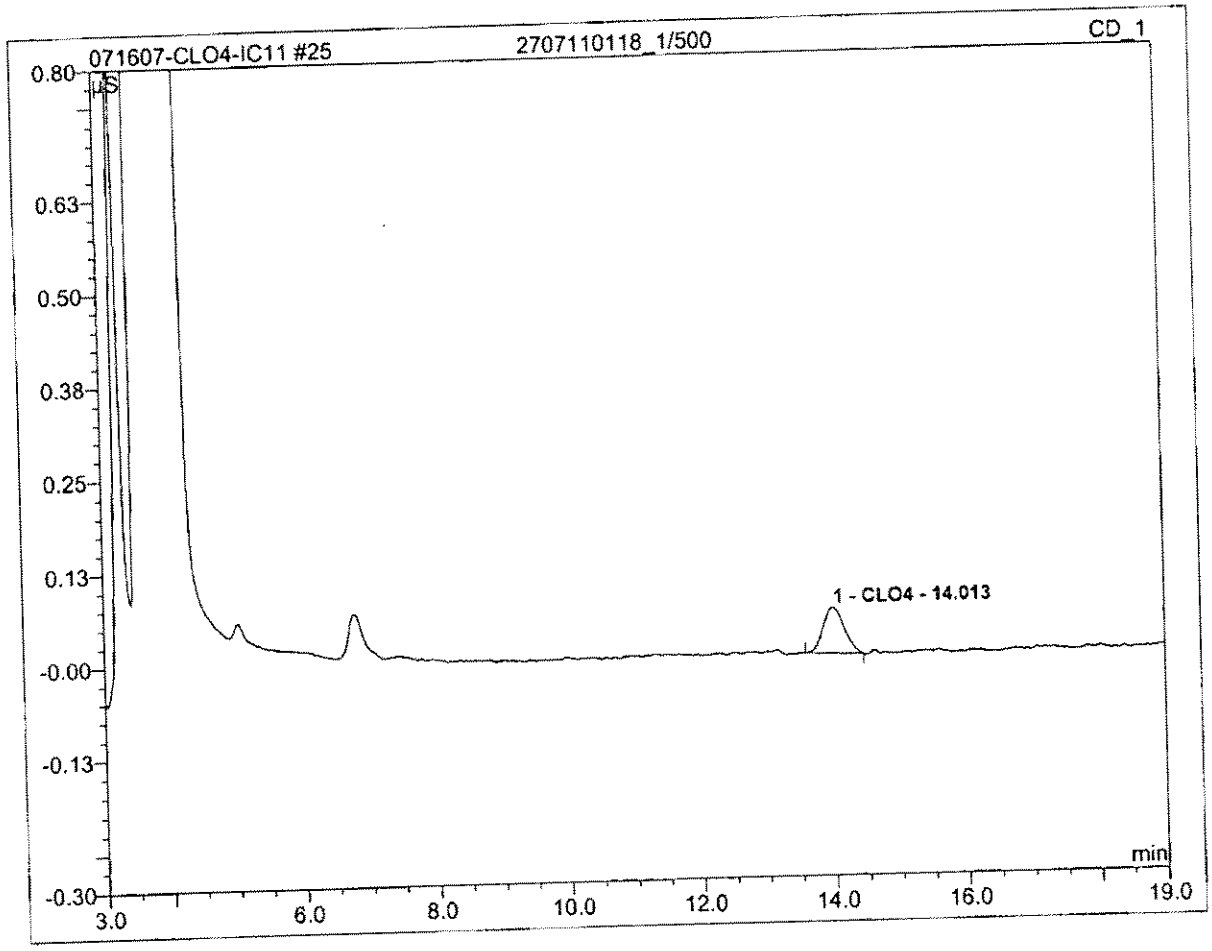
Sample Name:	**2707110558_1/5**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 15:08**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**5.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.90	CLO4	0.006	0.002	34.42	9.436	BMB
Total:			0.006	0.002	34.42	9.436	

25 2707110118_1/500

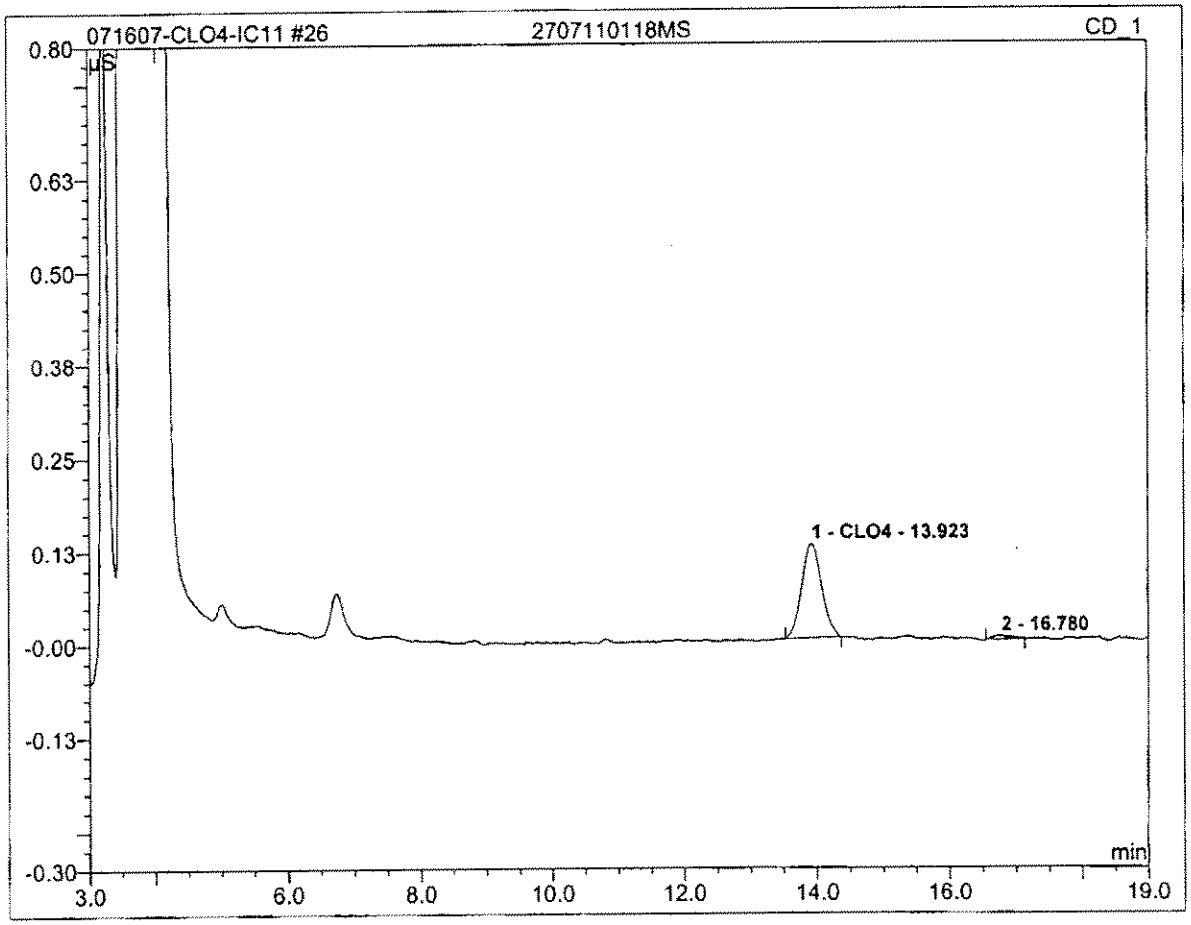
Sample Name:	**2707110118_1/500**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 17:45**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**500.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.01	CLO4	0.061	0.023	100.00	11750.053	BMB
Total:			0.061	0.023	100.00	11750.053	

26 2707110118MS

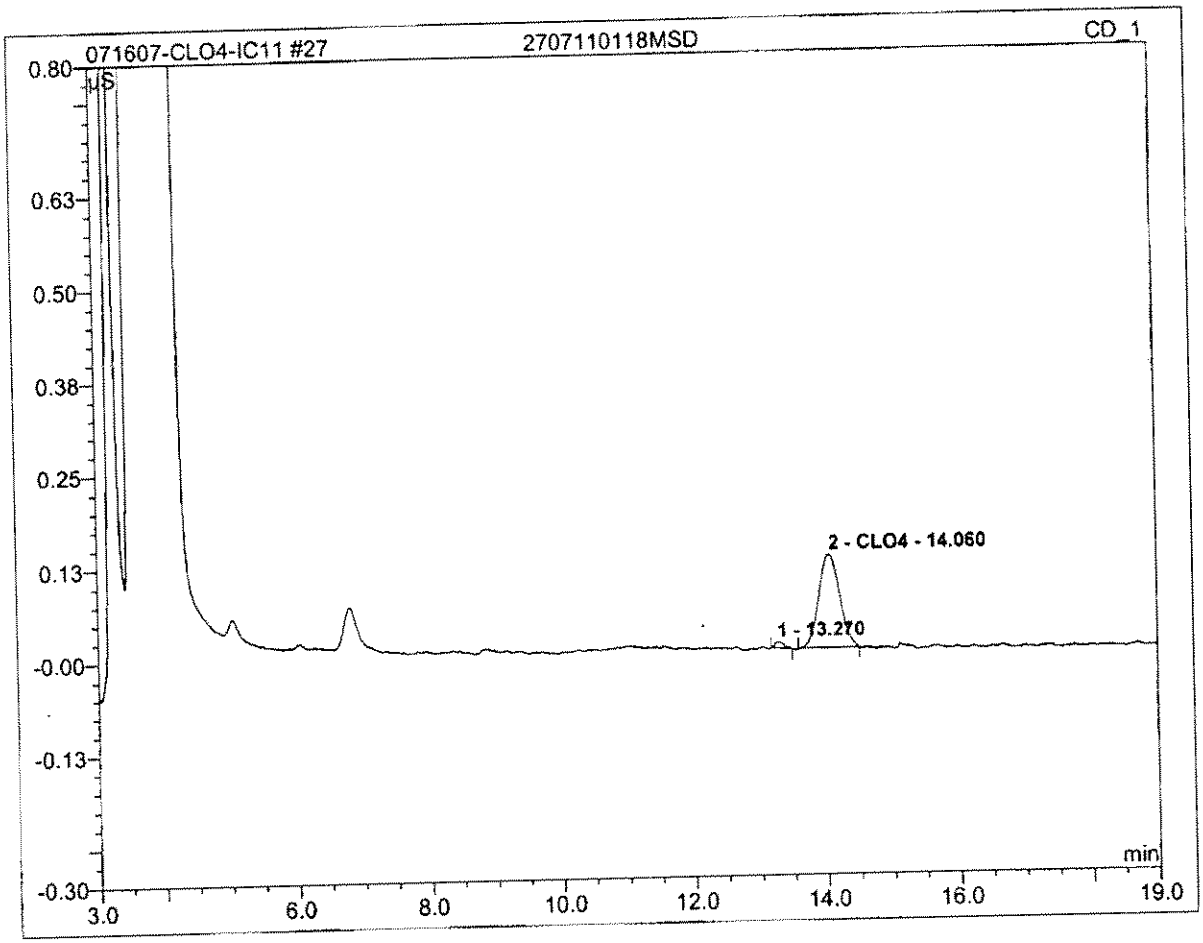
Sample Name:	**2707110118MS**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 18:08**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.92	CLO4	0.126	0.044	96.27	46.280	BMB
Total:			0.126	0.044	96.27	46.280	

27 2707110118MSD

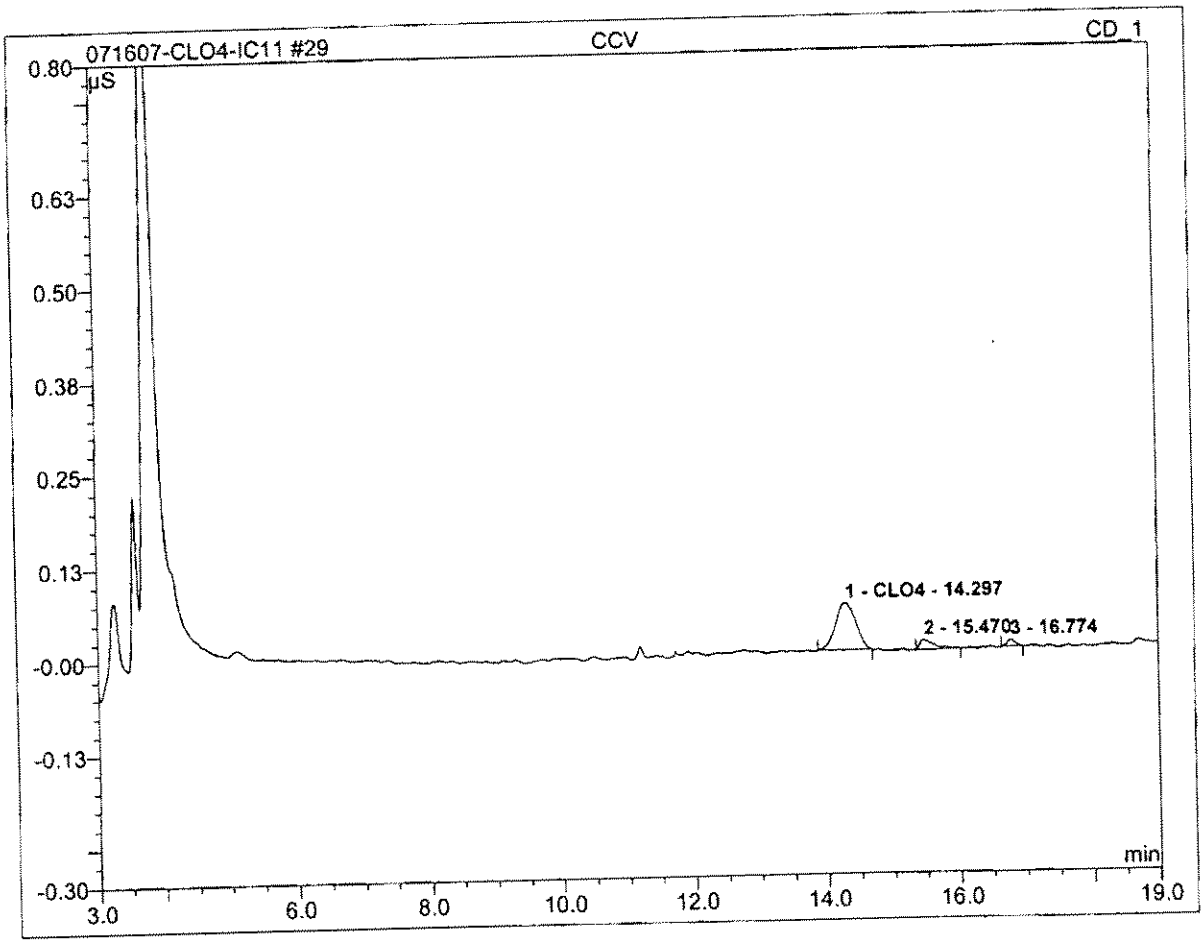
Sample Name:	**2707110118MSD**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 18:30**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
2	14.06	CLO4	0.125	0.046	97.25	47.981	BMB
Total:			0.125	0.046	97.25	47.981	

29 CCV

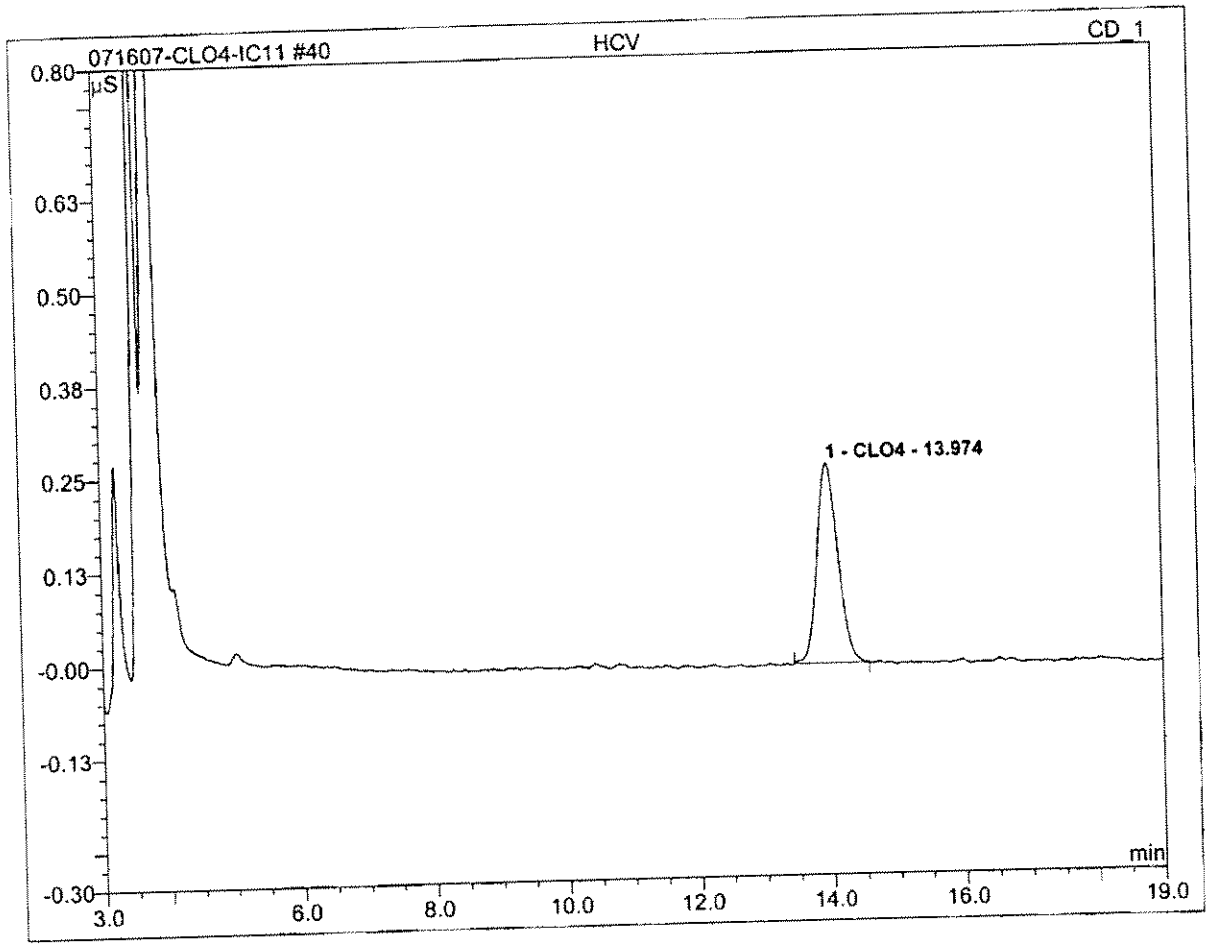
Sample Name:	**CCV**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 19:15**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	14.30	CLO4	0.063	0.022	82.60	23.166	BMB
Total:			0.063	0.022	82.60	23.166	

40 HCV

Sample Name:	**HCV**	*Channel:*	**CD_1**
Sample Type:	**unknown**	*Control Program:*	**Perchlorate-IC11**
Recording Time:	**07/16/2007 23:21**	*Quantif. Method:*	**IC#4-CLO4-LOW**
Analyst:	**Raja**	*Dilution Factor:*	**1.0000**



No.	Ret.Time min	Peak Name	Height µS	Area µS*min	Rel.Area %	Amount	Type
1	13.97	CLO4	0.265	0.097	100.00	104.667	BMB
Total:			0.265	0.097	100.00	104.667	

Standard Preparation Worksheet & Certificate of Analysis

Reagent Preparation Documentation

Reagent: DBP LCS Stock Solution
Date Received/Prepped: 082706/100106/110106/111606/122006/010807/020607
Date Expired: 092706/110106/120106/121606/012007/020807/030607
Manufacturer:
Storage Condition:

MW #: Raja060827-1
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
Chlorite 1000ppm exp:-03-24-07	1000 µL → Add 50 µL of EDA (LMR060129-12) the	R201401	10ppm
Chlorate 1000ppm exp:-05-31-09	1000 µL → dilute to 100 ml ~~with~~ Raja with D.I. water	R201400	10ppm
Bromide exp:- 10-27-07	500 µL →	R201369	5ppm

Comment:

Reagent: DBP LCS Solution
Date Received/Prepped: 082706/100106/110106/111606/122006/010807/020607
Date Expired: 092706/~~110106~~ Raja/120106/121606/012007/020807/030607
Manufacturer:
Storage Condition:

MW #: Raja060827-2
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
DBP LCS stock soln	2ml → Dilute with D.I. water to 100ml	Raja060827-1	ClO_2:-200ppb
			ClO_3:-200ppb
EDA Solution	50 µL →	LMR060129-12	Br^-:-100ppb

Comment: Prepp:-
Expired:-

Reagent: Perchlorate Calibration Stock Solution
Date Received/Prepped: 091306/101106/113006/012107/022607 RS/022807
Date Expired: 121306/011107/023007/042107/030607 RS/052807
Manufacturer:
Storage Condition:

MW #: Raja060913-1
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
Perchlorate 1000ppm exp:-072809	100 µL → Dilute with D.I water to 100ml	R201449	1000ppb
	MS/MSD		

Comment: 030407/042707/051607/061207/
060407/072707/081607/091207/

Reagent Preparation Documentation

Reagent: ClO_4 Calibration Standard #1
Date Received/Prepped: 091306/101106/113006/012107/022807
Date Expired: 121306/011107/023007/042107/052807
Manufacturer:
Storage Condition:

MW #: Raja060913-2
By: Raja
Matrix: aq
Amount: 100 ml
Lot #:

Component	Comment	Standard	Concentration
ClO_4 Cal. Stock Soln	200 µL → Dilute to 100 ml with D.I. water	Raja060913-1	2.0 ppb

Comment: 030407/042707/051607/061207/
060407/072707/081607/091207/

Reagent: ClO_4 Calibration Standard #2
Date Received/Prepped: 091306/101106/113006/012107/022807
Date Expired: 121306/011107/023007/042107/052807
Manufacturer:
Storage Condition:

MW #: Raja060913-3
By: Raja
Matrix: aq
Amount: 100 ml
Lot #:

Component	Comment	Standard	Concentration
ClO_4 Cal. Stock Soln	400 µL → raise to 100 ml with D.I water	Raja060913-1	4.0 ppb

Comment: 030407/042707/051607/061207/
060407/072707/081607/091207/

Reagent: ClO_4 Calibration Standard #3
Date Received/Prepped: 091306/101106/113006/012107/022807
Date Expired: 121306/011107/023007/042107/052807
Manufacturer:
Storage Condition:

MW #: Raja060913-4
By: Raja
Matrix: aq
Amount: 100 ml
Lot #:

Component	Comment	Standard	Concentration
ClO_4 Cal. Stock Soln	1 ml → Dilute to 100 ml with D.I. water	Raja060913-1	10.0 ppb

Comment: 030407/042707/051607/061207/
060407/072707/081607/091207/

Reagent Preparation Documentation

Reagent: ClO4 Calibration Standard #4
Date Received/Prepped: 091306/101106/113006/012107/022807/030407 ee
Date Expired: 121306/011107/023007 Raja/042107/052807/060407
Manufacturer:
Storage Condition:
MW #: Raja060913-5
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
ClO4 Cal. Stock Sol'n	2.5 ml → Dilute to 100 ml with D.I. water	Raja060913-1	25.0 ppb

Comment: 042707/051607/061207/072707/081607/091207/

Reagent: ClO4 Calibration Standard #5
Date Received/Prepped: 091306/101106/113006/012107/022807/030407
Date Expired: 121306/011107/023007/042107/052807/060407
Manufacturer:
Storage Condition:
MW #: Raja060913-6
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
ClO4 Cal. Stock Sol'n	5.0 ml → Dilute to 100 ml with D.I. water	Raja060913-1	50.0 ppb

Comment: 042707/051607/072707/081607/

Reagent: ClO4 Calibration Standard #6
Date Received/Prepped: 091306/101106/113006/012107/022807/030407
Date Expired: 121306/011107/023007/042107/052807/060407
Manufacturer:
Storage Condition:
MW #: Raja060913-7
By: Raja
Matrix: aq
Amount: 100ml
Lot #:

Component	Comment	Standard	Concentration
ClO4 Cal. Stock Sol'n	10.0 ml → Dilute to 100 ml with D.I. water	Raja060913-1	100 ppb

Comment: 042707/051607/061207/072707/081607/091207/

Reagent Documentation

Reagent: Fluoride Std-1000ppm
Date Received: 7 Sep 06
Date Expired: 1 Oct 07
Manufacturer: Inorganic Ventures
Storage Condition: refrigerate 4±2°C

Reagent #: 201447
By: LMR
Matrix: aq
Amount: 125 ml
Lot #: Y-F01047

Component	Comment	Standard	Concentration
	IV# ICFI-1		

Comment:

Reagent: Phosphate as P 1000ppm std
Date Received: 11 Sep 06
Date Expired: 31 Aug 09
Manufacturer: Absolute Stds
Storage Condition: refrigerate 4±2°C

Reagent #: 201448
By: LMR
Matrix: aq
Amount: 500 ml
Lot #: 083106

Component	Comment	Standard	Concentration
	Abs Std #54505		

Comment:

Reagent: Perchlorate 1000 ppm std
Date Received: 11 Sept 06
Date Expired: 28 Jul 09
Manufacturer: Absolute Stds
Storage Condition: refrigerate 4±2°C

Reagent #: 201449
By: LMR
Matrix: aq
Amount: 100 ml
Lot #: 072806

Component	Comment	Standard	Concentration
	Abs std # 57001		

Comment:

ABSOLUTE STANDARDS, INC • 44 ROSSOTTO DRIVE • HAMDEN, CT 06514 • (800)-368-1131

ISO 9001:2000 Quality System Registered
ISO/IEC Guide 17025 ANSI Z540 Compliant
DLS ANSI/RAB Accredited

CERTIFIED WEIGHT REPORT:

Part Number: 57001
Lot Number: 072806
Description: Perchlorate

R201449

Expiration Date: 072809

Nominal Concentration (µg/mL): 1000

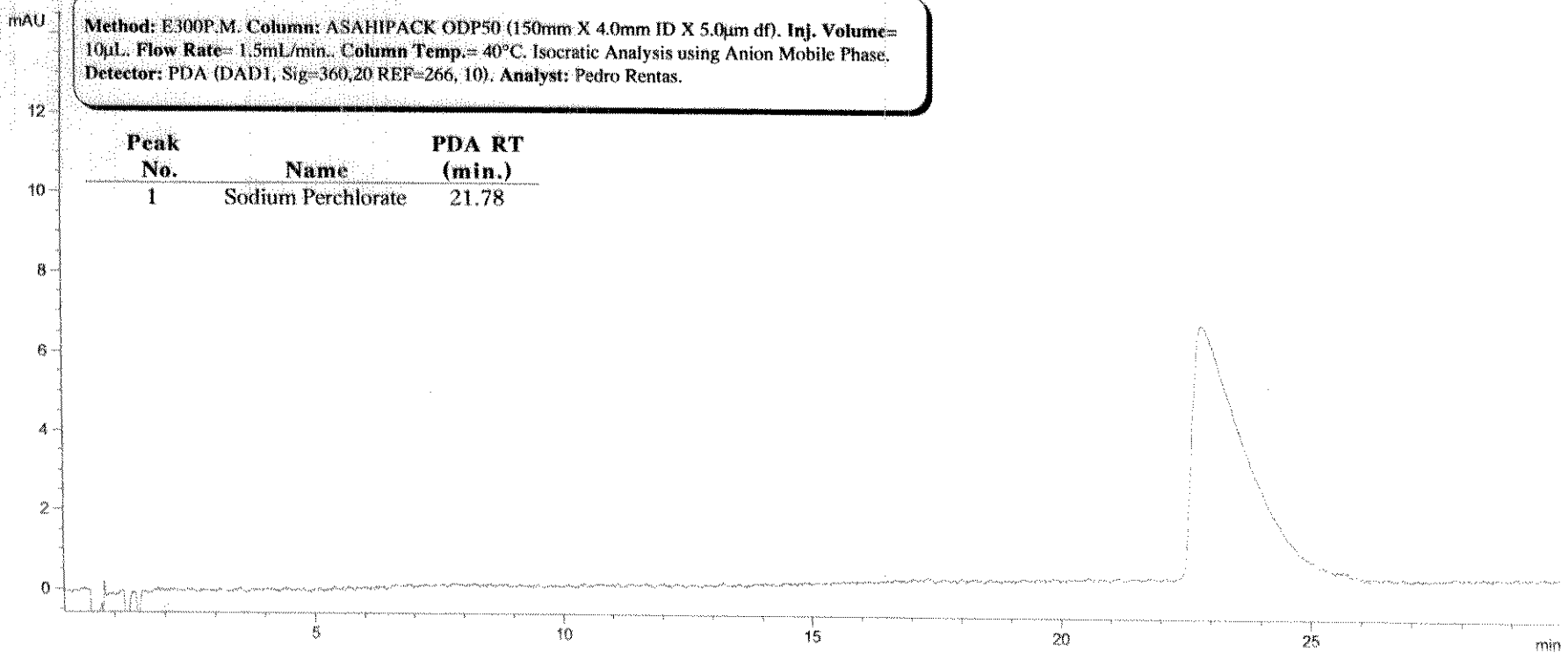
	Lot #		
Solvent(s):	072806	ASTM Type 1 Water	

5E-05 Balance Uncertainty

Weight(s) shown below were combined and diluted to (mL): 1000.55 0.084 Flask Uncertainty

Formulated By:	Lawrence Barry	072806
Reviewed By:	Pedro L. Rentas	072806

Compound	RM#	Lot Number	Nominal Conc (µg/mL)	Purity	Uncertainty Purity	Assay (%)	Target Weight(g)	Actual Weight(g)	*Actual Conc (µg/mL)	Expanded Uncertainty (+/-)	MSDS Information (Solvent Safety Info. On Attached pg.) CAS#	OSHA PEL (TWA)	LD50	NIST SRM
1. Sodium Perchlorate (ClO4)	IN119	AR06730TQ	1000.0	99.0	0.10	81.2	1.2319	1.23216	1000.2	0.00203	07601-89-0	N/A	N/A	3152a



Method: E300P.M. **Column:** ASAHIPACK ODP50 (150mm X 4.0mm ID X 5.0µm df). **Inj. Volume=** 10µL. **Flow Rate=** 1.5mL/min.. **Column Temp.=** 40°C. Isocratic Analysis using Anion Mobile Phase. **Detector:** PDA (DAD1, Sig=360,20 REF=266, 10). **Analyst:** Pedro Rentas.

Peak No.	Name	PDA RT (min.)
1	Sodium Perchlorate	21.78

72