VP0973
3/7/12

Project VP0973
Hydrogen Sulfide Testing
Name:_John Reschl
Date:2/10/2012

Sample 30178 original redo
200g - 200g

Syringe #	Empty weight g	Total weight g	Trap Sol weight g	time sec	extract ug/mL	ug	umole	air umole/L	air Temp (°C)	air Temp (°K)	RT L-atm/mole	RT L/mole	1/RT mole/L	H_2S ppmV
1	7.77	12.7600	4.99	7	0.001662	0.008293	0.000259	0.051727	65.44038	338.59038	27.78371	33.89345	0.029504	1.753204
2	7.75	13.87	6.12	17	0.056042	0.342977	0.010696	2.139194	96.64627	369.79627	30.34437	37.01721	0.027014	79.18701
3	7.73	14.03	6.3	24	0.066788	0.420764	0.013122	2.624365	96.63885	369.78885	30.34376	37.01647	0.027015	97.14472
4	7.78	13.87	6.09	33	0.054799	0.333726	0.010407	2.081494	96.81574	369.96574	30.35828	37.03418	0.027002	77.08641
5	7.73	13.7	5.97	42	0.051595	0.308022	0.009606	1.921176	96.98179	370.13179	30.3719	37.0508	0.02699	71.1811
6	7.75	13.51	5.76	50	0.056621	0.326137	0.010171	2.034161	97.16412	370.31412	30.38687	37.06905	0.026977	75.4044
7	7.79	13.22	5.43	60	0.064679	0.351207	0.010953	2.190526	97.34565	370.49565	30.40176	37.08722	0.026963	81.24051
8	7.79	13.28	5.49	69	0.07091	0.389296	0.01214	2.428091	96.98679	370.13679	30.37231	37.0513	0.02699	89.96394
9	7.72	12.81	5.09	77	0.053301	0.271302	0.008461	1.692148	95.57731	368.72731	30.25666	36.91021	0.027093	62.45753
10	7.76	12.77	5.01	85	0.047867	0.239814	0.007479	1.49575	95.47777	368.62777	30.24849	36.90024	0.0271	55.19356
11	7.8	12.85	5.05	94	0.051635	0.260757	0.008132	1.626375	94.64311	367.79311	30.18	36.81669	0.027162	59.87776
12	7.81	13.03	5.22	104	0.031421	0.164018	0.005115	1.023	93.51962	366.66962	30.08781	36.70423	0.027245	37.54843
13	7.8	12.76	4.96	114	0.02675	0.13268	0.004138	0.827543	92.39762	365.54762	29.99574	36.59192	0.027328	30.28139
14	7.72	12.78	5.06	123	0.024043	0.121658	0.003794	0.758795	91.61279	364.76279	29.93134	36.51335	0.027387	27.70614
15	7.77	12.62	4.85	150	0.016868	0.08181	0.002551	0.510259	88.84402	361.99402	29.70414	36.23619	0.027597	18.48984
16	7.75	12.68	4.93	180	0.011508	0.056734	0.001769	0.35386	86.26578	359.41578	29.49258	35.97811	0.027795	12.73123
18	7.76	12.87	5.11	300	0.007044	0.035995	0.001123	0.224505	78.79242	351.94242	28.87934	35.23001	0.028385	7.909304
19	7.76	13.04	5.28	360	0.006304	0.033285	0.001038	0.207604	76.74978	349.89978	28.71173	35.02554	0.028551	7.271436
20	7.74	13	5.26	420	0.006039	0.031765	0.000991	0.198123	75.36617	348.51617	28.59819	34.88704	0.028664	6.911942
21	7.69	12.95	5.26	480	0.004956	0.026069	0.000813	0.162593	73.92019	347.07019	28.47954	34.74229	0.028783	5.648859
22	7.78	13.04	5.26	540	0.004326	0.022755	0.00071	0.141925	72.25433	345.40433	28.34284	34.57554	0.028922	4.907117
23	7.74	13.07	5.33	600	0.003477	0.018532	0.000578	0.115589	70.52272	343.67272	28.20075	34.4022	0.029068	3.976522
24	7.8	13.08	5.28	900	0.003527	0.018623	0.000581	0.116151	63.4177	336.56770	27.61774	33.69098	0.029682	3.913255
25	7.75	12.84	5.09	1200	0.002571	0.013086	0.000408	0.081622	58.6328	331.78280	27.2251	33.212	0.03011	2.710816
26	7.8	13.17	5.37	1500	0.002571	0.013806	0.000431	0.086112	54.89979	328.04979	26.91878	32.83832	0.030452	2.82776
27	7.8	13.14	5.34	1800	0.001409	0.007524	0.000235	0.046929	50.84257	323.99257	26.58586	32.43219	0.030834	1.521997
28	7.71	12.79	5.08	blank	0.002154	0.010942	0.000341	0.068249						
29	8.84	14.3	5.46	blank	0.003547	0.019367	0.000604	0.120792						
30	8.96	13.82	4.86	blank	0.004123	0.020038	0.000625	0.124978						

Syringe 11 (94 sec) is the average result of triplicate measurements.

623	mm Hg				
760	mm Hg				
0.819737	atm		RT	RT	1/RT
		T °K	L-atm/mole	L/mole	mole/L
21.6	T °C	294.75	24.1863	29.50496	0.033893
98.3	T °C	371.45	30.48007	37.18275	0.026894

VP0973
2/10/12

Project VP0973
Hydrogen Sulfide Testing
Name: original
Date: 2/10/12 Redo
Sample: 30178

Pressure: 623.0
Initial Temperature:

H2S Syringe #	Empty weight g	Total weight g	Trap Sol weight g	H2S Time	H2 Time	H2 Syringe #
1	7.77	12.76		7		
2	7.75	13.87		17		
3	7.73	14.03		24		
4	7.78	13.87		33		
5	7.73	13.70		42		
6	7.75	13.51		50		
7	7.79	13.22		60		
8	7.79	13.28		1:09		
9	7.72	12.81		1:17		
10	7.76	12.77		1:25		
11	7.80	12.85		1:34		
12	7.81	13.03		1:44		
13	7.80	12.76		1:54		
14	7.72	12.78		2:03		
15	7.77	12.62		2:30		
16	7.75	12.68		3:00		
~~17~~	7.80			4 →	Lost air sample in syringe	
18	7.76	12.87		5		
19	7.76	13.04		6		
20	7.74	13.00		7		
21	7.69	12.95		8		
22	7.78	13.04		9		
23	7.74	13.07		10		
24	7.80	13.08		15		
25	7.75	12.84		20		
26	7.80	13.17		25		
27	7.80	13.14		30		
28	7.71	~~13.14~~ 12.79		Blank 1		
29	8.84	14.30		Blank 2		
30	8.96	13.82		Blank 3		

JHJ
12.79
2/10/12

Run Results Report
Results: C:\FLOW_4\VP0973Q.RST
Results completed: 13:56 February 10, 2012.
Operator: J Reschl

VP0973
2/10/12

Time	Cup	Name	Height	Sulfide Calc.	Flags
---------- User request: Start Data Collect ----------					
12:28	0	Carryover	13944	0.005926	
12:29	0	Carryover	2199	0.002192	
		Mean & RSD:	8071	0.004059	NoRSD
12:30	1	Baseline	0	0.001493	BL
12:31	1	0ppm S	-686	0.001275	
12:32	2	0.0100ppm S	26338	0.009867	
12:33	3	0.0200ppm S	51289	0.017800	
12:35	4	0.0250ppm S	71240	0.024144	
12:36	5	0.0401ppm S	116618	0.038572	
12:37	6	0.0501ppm S	153500	0.050298	
12:38	7	0.0752ppm S	238275	0.077253	
12:39	8	0.1002ppm S	310396	0.100184	
12:40	9	0.1503ppm S	467250	0.150056	
12:42	90	1N HCl	424	0.001627	
12:43	0	Rinse	1548	0.001985	
12:44	1	Read Baselin	0	0.001493	BL
12:45	6	0.0501ppm S	144878	0.047557	
12:46	10	BaS 10000X	294887	0.095253	TV = 0.09228 3.2% Diff
12:47	0	Rinse	119	0.001531	
12:49	11	Blank 1	2079	0.002154	
12:50	12	Blank 2	6461	0.003547	
12:51	13	Blank 3	8271	0.004123	
12:52	14	7 sec	10831	0.004937	
12:53	15	17 sec	181865	0.059317	
12:54	0	Rinse	473	0.001643	
12:56	1	Read Baselin	0	0.001493	BL
12:57	6	0.0501ppm S	140124	0.046045	
12:58	16	24 sec	215664	0.070063	
12:59	17	33 sec	177956	0.058074	
13:00	18	42 sec	167880	0.054870	
13:01	19	50 sec	183685	0.059896	
13:03	0	Rinse	157	0.001543	
13:04	1	Read Baselin	0	0.001493	BL
13:05	6	0.0501ppm S	139135	0.045731	
13:06	20	1:00 min	209028	0.067954	
13:07	21	1:09 min	228627	0.074185	
13:08	22	1:17 min	173243	0.056576	
13:10	23	1:25 min	156153	0.051142	
13:11	0	Rinse	529	0.001661	
13:12	1	Read Baselin	0	0.001493	BL
13:13	6	0.0501ppm S	137206	0.045118	
13:14	24	1:34 min	150338	0.049293	
13:15	25	1:44 min	104428	0.034696	

Run Results Report
Results: C:\FLOW_4\VP0973Q.RST
Results completed: 13:56 February 10, 2012.
Operator: J Reschl

VP0973
2/10/12

Sulfide

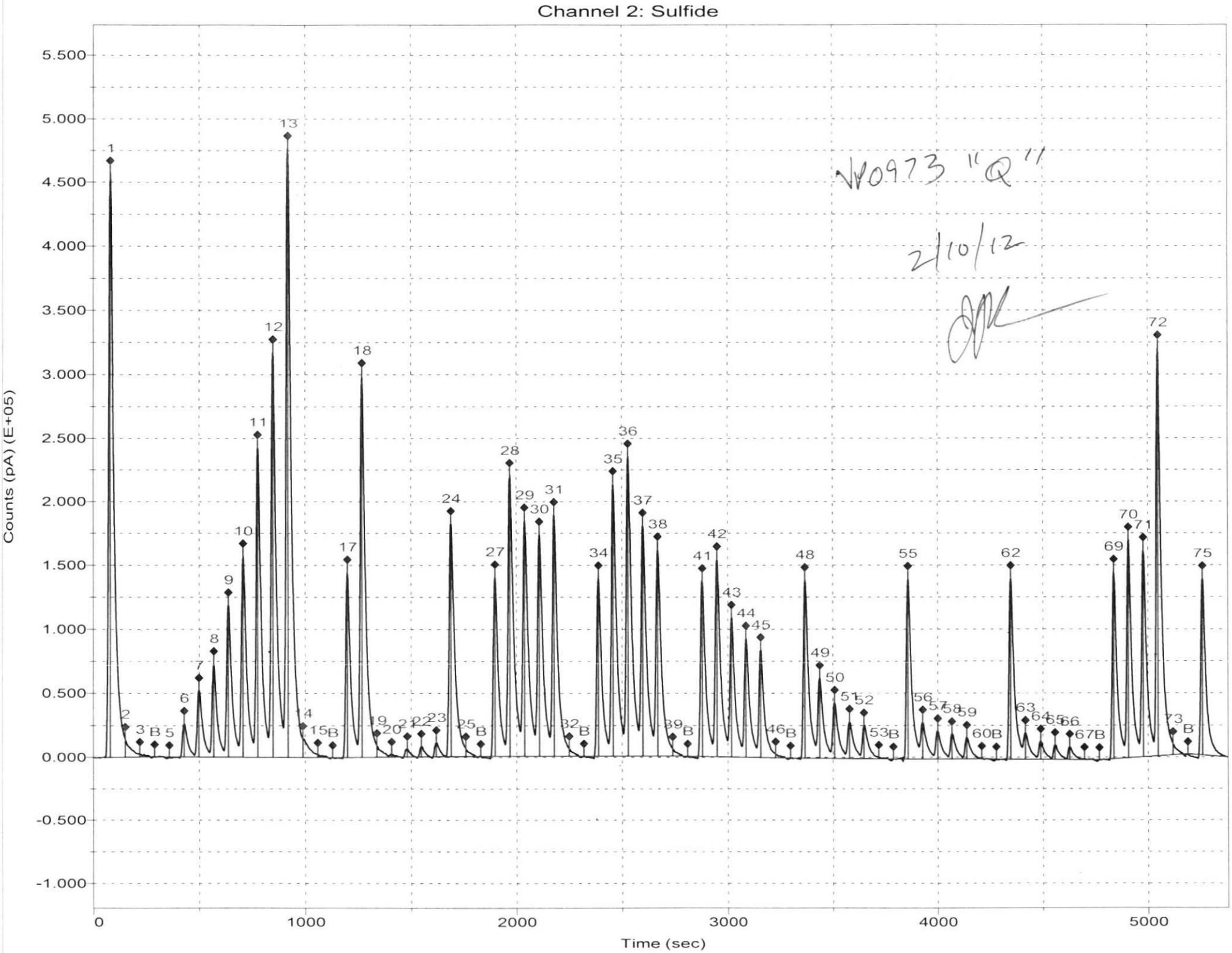
Time	Cup	Name	Height	Calc.	Flags
13:17	26	1:54 min	89737	0.030025	
13:18	27	2:03 min	81224	0.027318	
13:19	0	Rinse	399	0.001620	
13:20	1	Read Baselin	0	0.001493	BL
13:21	6	0.0501ppm S	139378	0.045808	
13:22	28	2:30 min	58659	0.020143	
13:24	29	3 min	41800	0.014783	
13:25	30	5 min	27759	0.010319	
13:26	31	6 min	25433	0.009579	
13:27	0	Rinse	423	0.001627	
13:28	1	Read Baselin	0	0.001493	BL
13:29	6	0.0501ppm S	140904	0.046294	
13:31	32	7 min	24599	0.009314	
13:32	33	8 min	21194	0.008231	
13:33	34	9 min	19212	0.007601	
13:34	35	10 min	16541	0.006752	
13:35	0	Rinse	34	0.001504	
13:36	1	Read Baselin	0	0.001493	BL
13:38	6	0.0501ppm S	141732	0.046557	
13:39	36	15 min	16698	0.006802	
13:40	37	20 min	13690	0.005846	
13:41	38	25 min	11149	0.005038	
13:42	39	30 min	10036	0.004684	
13:43	0	Rinse	-130	0.001451	
13:45	1	Read Baselin	0	0.001493	BL
13:46	6	0.0501ppm S	146251	0.047993	
13:47	40	dup 1:34 min	166224	0.054344	
13:48	40	trip 1:34 mi	156547	0.051267	
13:49	41	spk 1:34 min	314939	0.101628	10µL of 100X Aqua Solutions + 2.00mL Sample
13:50	0	Rinse	-1092	0.001146	
13:52	1	Read Baselin	0	0.001493	BL
13:53	6	0.0501ppm S	138104	0.045403	

1:34 min 0.049293
0.054344
0.051267
$\bar{x} = 0.051635$

Spike Recovery =

$$\frac{0.101628 - 0.051635}{0.0501} \times 100$$

= 99.8 %


Channel 2: Sulfide
Counts (pA) (E+05)
Time (sec)
VP0973 "Q"
2/10/12

Sulfide: Calibration, Peak 5-75

File name: C:\FLOW_4\VP0973Q.RST
Date: February 10, 2012
Operator: J Reschl

VP0973
2/10/12

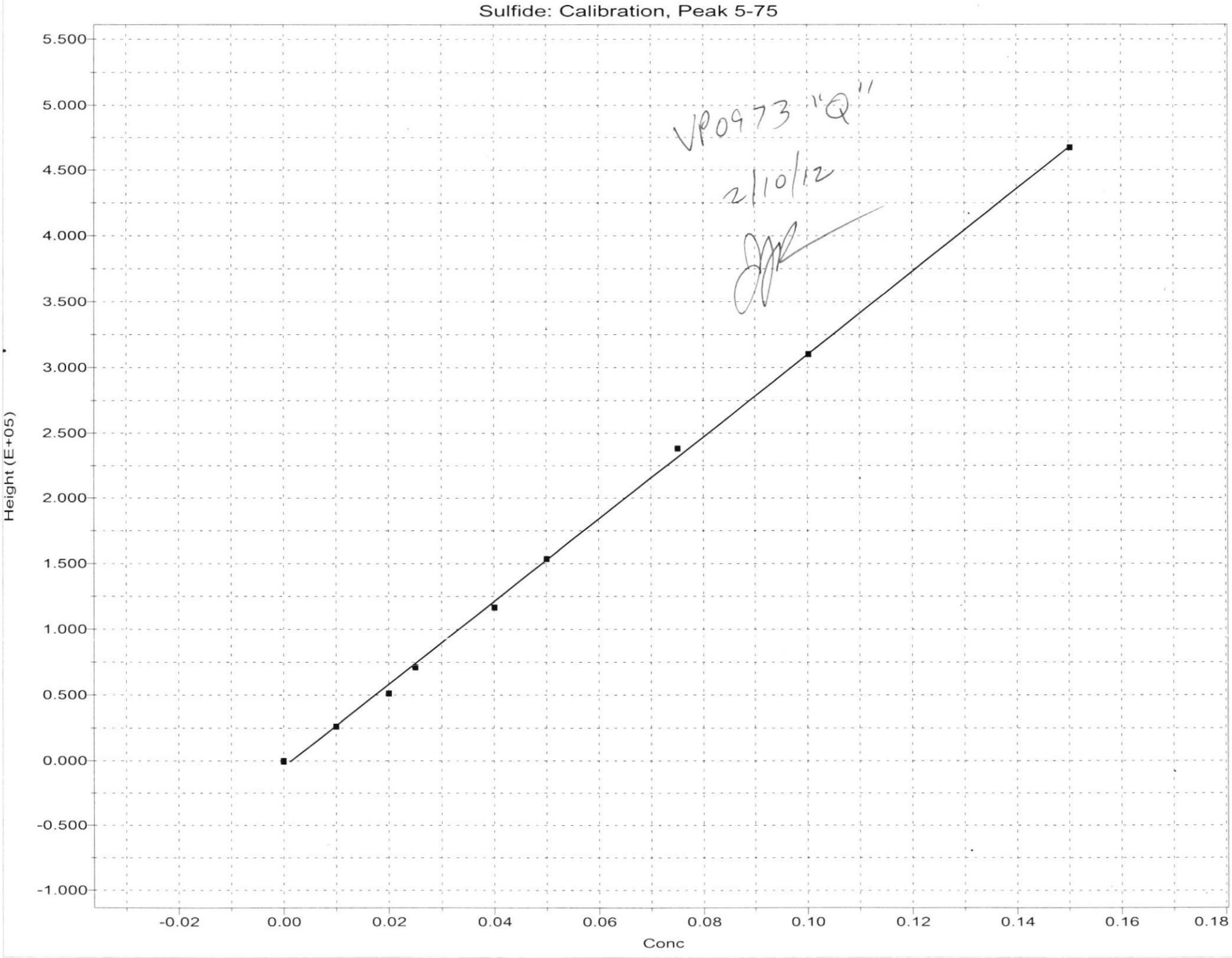
*	Name	Conc	Height
*	0ppm S	0.000000	-686.238098
*	0.0100ppm S	0.010020	26337.791016
*	0.0200ppm S	0.020040	51288.949219
*	0.0250ppm S	0.025050	71239.656250
*	0.0401ppm S	0.040080	116618.093750
*	0.0501ppm S	0.050100	153499.656250
*	0.0752ppm S	0.075150	238275.453125
*	0.1002ppm S	0.100200	310396.187500
*	0.1503ppm S	0.150300	467249.875000

Calib Coef:
y=bx+a
a: (intercept) -4.6950e+03
b: 3.1451e+06

Corr Coef: 0.999613

Carryover: 3.05%

No Drift Peaks


Sulfide: Calibration, Peak 5-75
Height (E+05)
5.500
5.000
4.500
4.000
3.500
3.000
2.500
2.000
1.500
1.000
0.500
0.000
-0.500
-1.000
-0.02
0.00
0.02
0.04
0.06
0.08
0.10
0.12
0.14
0.16
0.18
Conc
VP0973 "Q"
2/10/12