GROUP	3
EXHIBIT	
BQ	

Agency / Organization

Paulsboro Refining Company

Title

Paulsboro Refining Company
Mutual Aid Summary

Paulsboro Refinery Hazardous Materials Response Team Mutual Aid

11/30/12 Personnel Involvement & Timestamp of Air Monitoring Data

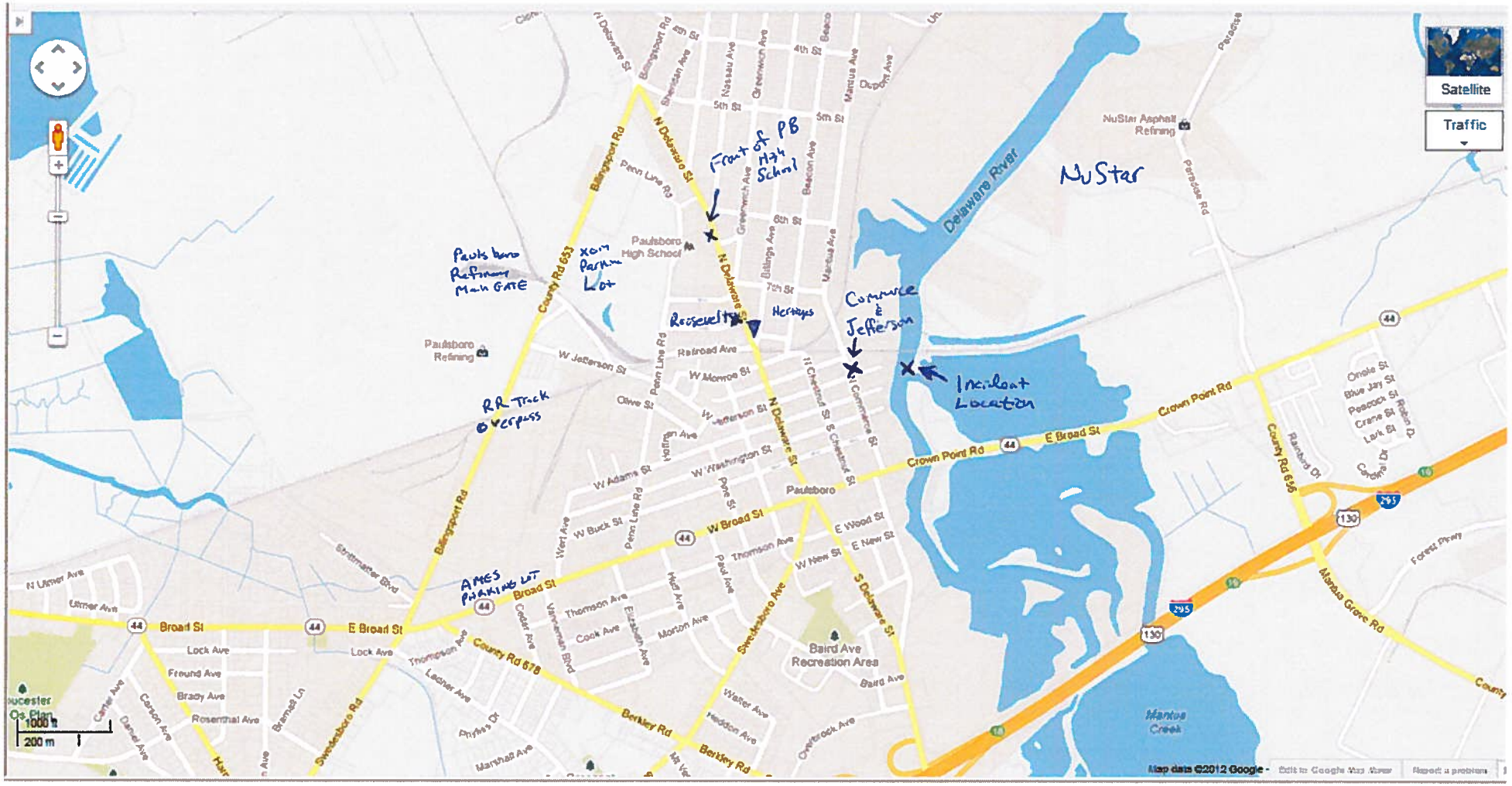
Paulsboro Refinery Personnel & Involvment: **1) Incident Comment Post** - Patrick Robinson, ** P I I ** **2) Incident Monitoring Team** - ** P I I ** u **3) Paulsboro Refinery (PBR) Monitoring Team** - ** P I I ** **4) Southwest Monitoring Team** - ** P I I ** ** P I I **

The Paulsboro Refinery Hazardous Materials Response Team researched Vinyl Chloride and determined that the Vapor Density is 2.21* (heavier than air) and has an Ionization Potential of 9.99eV*, which could be detected using Photoionization Detectors (PIDs) with a 10.6eV lamp. The Paulsboro Refinery air monitoring instrumentation used during this incident was Industrial Scientific MX6 with 10.6eV PID. The instruments are calibrated monthly and bump tested daily automatically via iNet docking stations. The PIDs are calibrated to 100 ppm Isobutylene; therefore, the Vinyl Chloride PID Response Factor is 1.9 per the attached PID Response Factors table. For example, 100 ppm on a Paulsboro Refinery PID would be 190 ppm of Vinyl Chloride (assuming this is the only material present). The Response Factors were researched after the incident monitoring data was obtained. All results reported below is raw data, the Response Factor is NOT applied.

* *NIOSH Pocket Guide to Chemical Hazards Online Web Version*

Time	Readings (ppm)	Notes	Location
8:33	631	HazMat Team arrive on location, cannot zero equip., obtain high level alarms, informs IC of high levels.	Corner of Commerce & Jefferson
8:34	694		Corner of Commerce & Jefferson
8:37	760		Corner of Commerce & Jefferson
8:40	0	HazMat Teams leaves incident and goes West to zero instruments.	Delaware & Billings
8:44	193	Shortly after zeroing equipment, obtain readings >100 near Heritages	Delaware & Billings
8:48	111		Delaware & Billings
8:55	35	HazMat (Incident Monitoring) Team moves Northwest out of high readings zone	Delaware & Roosevelt
8:55	35		Delaware in front of Paulsboro HS
9:00	4		Delaware & Roosevelt
9:05	0-5		Delaware in front of Paulsboro HS
9:30	11	PBR Monitoring Team	Billingsport Road - ExxonMobil Parking Lot
9:30	0		Billingsport Road - Paulsboro Refinery Main Gate
9:40	0	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
9:55	10	HazMat Team return to Incident Location	Conrail Shack North Side of RR Tracks, West side of Mantua Creek
10:00	1.2	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
10:05	7		Billingsport Road & Broad Street - Ames Parking Lot
10:10	9	PBR Monitoring Team	Billingsport Road RR Tracks Overpass
10:15	7	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
10:21	16		Billingsport Road & Broad Street - Ames Parking Lot
10:30	12		Billingsport Road & Broad Street - Ames Parking Lot
10:43	0	NuStar Monitoring Team**	NuStar Main Gate
10:43	1		NuStar Refinery Peak Reading
10:55	2	Incident Monitoring Team	Broad Street (Rt. 44) Bridge
11:00	0	Southwest Monitoring Team	Broad Street - Gibbstown Fire Dept, Old Wawa, Broad St. School
11:06	0-1	NuStar Monitoring Team**	NuStar Refinery Peak Reading
11:30	0	Incident Monitoring Team	Along Mantua Creek North & South of Incident location
11:35	0	Southwest Monitoring Team	Billingsport Road & Broad Street - Ames Parking Lot
12-14:00	0-50	Incident Monitoring Team	Along Mantua Creek South of Incident location
14:00	Paulsboro Incident Monitoring Team was informed by members of the Gloucester Country CBRN Team to clear the area and discontinued monitoring at incident.		

** *NuStar Monitoring Team data called into Paulsboro Refinery Personnel. Nu Star data not included with data downloads, monitoring instrumentation, method, and exact locations are unknown to Paulsboro Refinery Team personnel.*


Front of PB High School
Paulsboro Refining Main GATE
Xcom Parking Lot
Roosevelt
Commerce & Jefferson
Incident Location
RR Track Overpass
AMES PARKING LOT
NuStar
Delaware River
Paulsboro High School
Paulsboro Refining
NuStar Asphalt Refining
Baird Ave Recreation Area
Manita Creek
Satellite
Traffic
Broad St
E Broad St
W Broad St
Crown Point Rd
Berkley Rd
Billingsport Rd
N Delaware St
S Delaware St
Swedesboro Rd
Mantua Grove Rd
County Rd 653
County Rd 656
County Rd 678
Map data ©2012 Google

Paulsboro Refinery Hazardous Materials Response Team Mutual Aid
11/30/12 Personnel Involvement & Timestamp of Air Monitoring Data

Attachments

1. Area Map with Monitoring Locations Marked

2. Industrial Scientific PID Response Factors

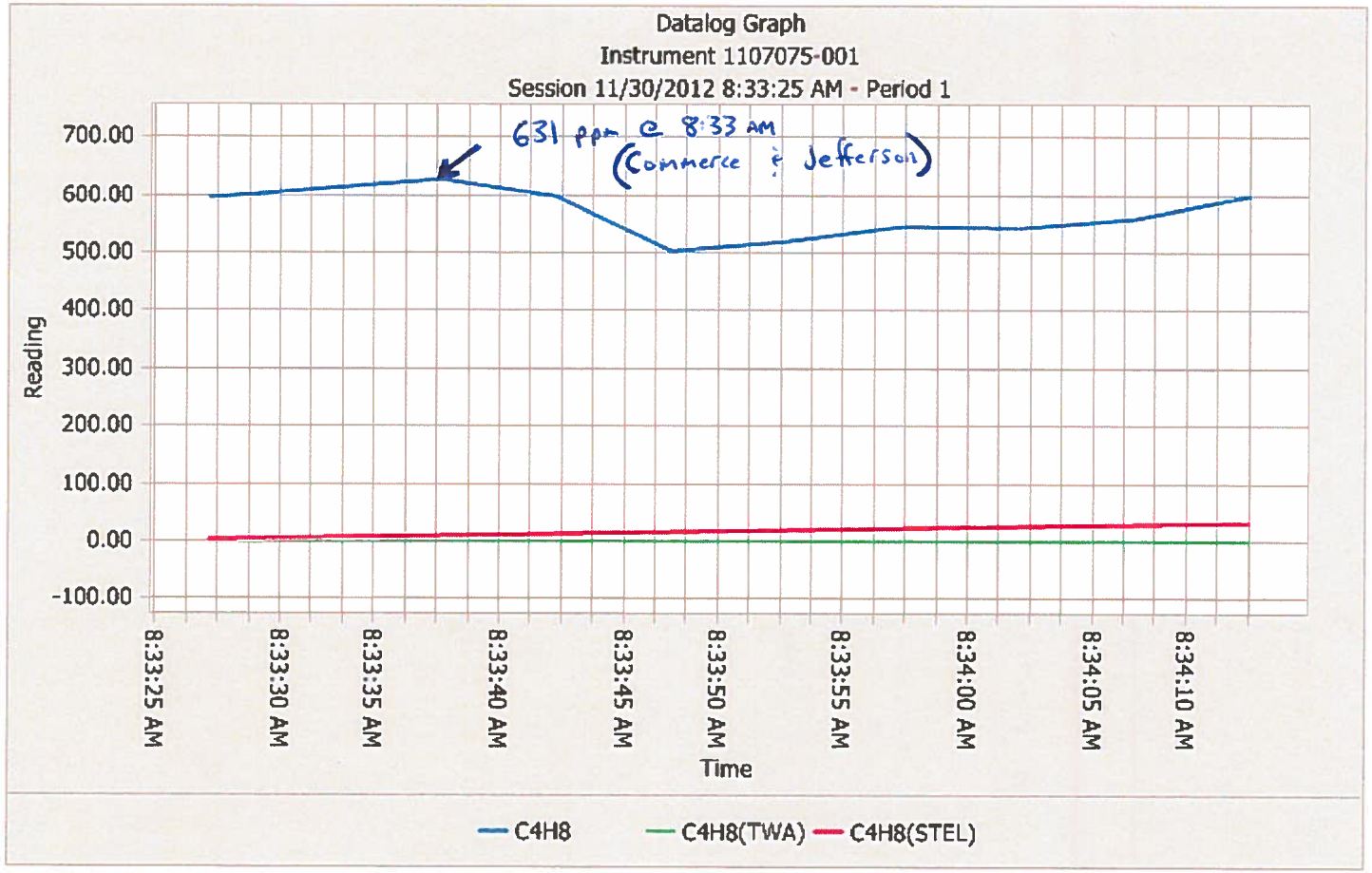
3. Paulsboro Refinery Haz Mat Team Monitoring Data Downloads - 11/30/12

4. Incident Picture Emailed to Refinery Leadership Team at Paulsboro Refinery

5. Incident Picture - West of Mantua Creek along railroad tracks toward Refinery Belco Scrubber to get an idea of atmospheric conditions & wind direction

Paulsboro Refinery Haz Mat Team Monitoring Data 11/30/12

- Included with this data are all of the instrument PID data downloads believed to be used during 11/30/12 Railcar derailment VOC monitoring.
- Readings by the Air Monitoring Teams were called into a central person for recordkeeping during this time.
- Print outs and corresponding readings & times noted on data downloads – as were obvious and matched up to reporting times. Not all downloads have notes.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(Commerce & Jefferson)
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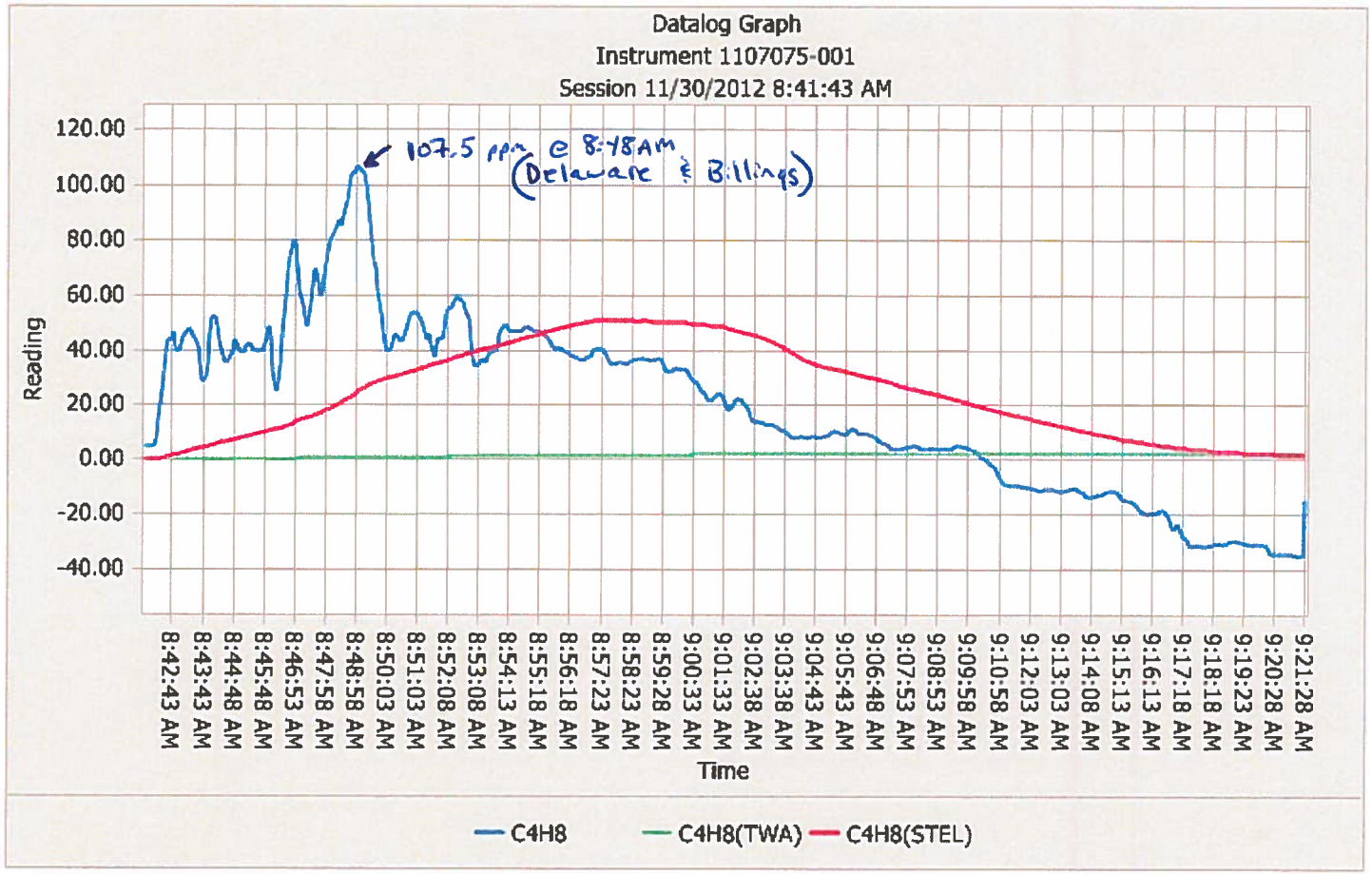
600.00
500.00
400.00
300.00
200.00
100.00
0.00
-100.00
Reading
8:33:25 AM
8:33:30 AM
8:33:35 AM
8:33:40 AM
8:33:45 AM
8:33:50 AM
8:33:55 AM
8:34:00 AM
8:34:05 AM
8:34:10 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)


Datalog Graph
Instrument 1107075-001
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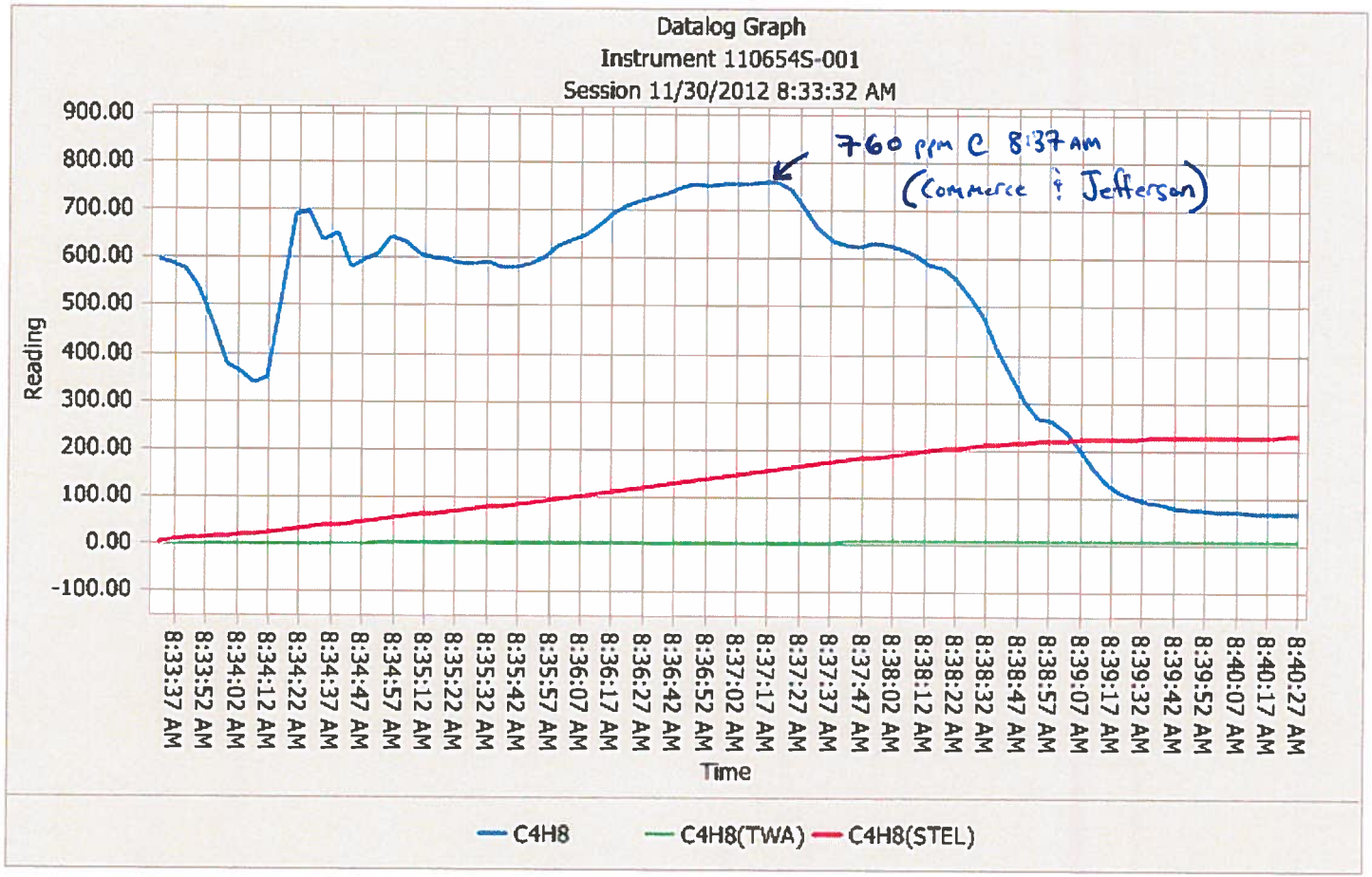
107.5 ppm @ 8:48AM
(Delaware & Billings)
120.00
100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
Reading
8:42:43 AM
8:43:43 AM
8:44:48 AM
8:45:48 AM
8:46:53 AM
8:47:58 AM
8:48:58 AM
8:50:03 AM
8:51:03 AM
8:52:08 AM
8:53:08 AM
8:54:13 AM
8:55:18 AM
8:56:18 AM
8:57:23 AM
8:58:23 AM
8:59:28 AM
9:00:33 AM
9:01:33 AM
9:02:38 AM
9:03:38 AM
9:04:43 AM
9:05:43 AM
9:06:48 AM
9:07:53 AM
9:08:53 AM
9:09:58 AM
9:10:58 AM
9:12:03 AM
9:13:03 AM
9:14:08 AM
9:15:13 AM
9:16:13 AM
9:17:18 AM
9:18:18 AM
9:19:23 AM
9:20:28 AM
9:21:28 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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Instrument 110654S-001
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760 ppm C 8:37 AM
(Commerce & Jefferson)
900.00
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
-100.00
Reading
8:33:37 AM
8:33:52 AM
8:34:02 AM
8:34:12 AM
8:34:22 AM
8:34:37 AM
8:34:47 AM
8:34:57 AM
8:35:12 AM
8:35:22 AM
8:35:32 AM
8:35:42 AM
8:35:57 AM
8:36:07 AM
8:36:17 AM
8:36:27 AM
8:36:42 AM
8:36:52 AM
8:37:02 AM
8:37:17 AM
8:37:27 AM
8:37:37 AM
8:37:47 AM
8:38:02 AM
8:38:12 AM
8:38:22 AM
8:38:32 AM
8:38:47 AM
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8:39:32 AM
8:39:42 AM
8:39:52 AM
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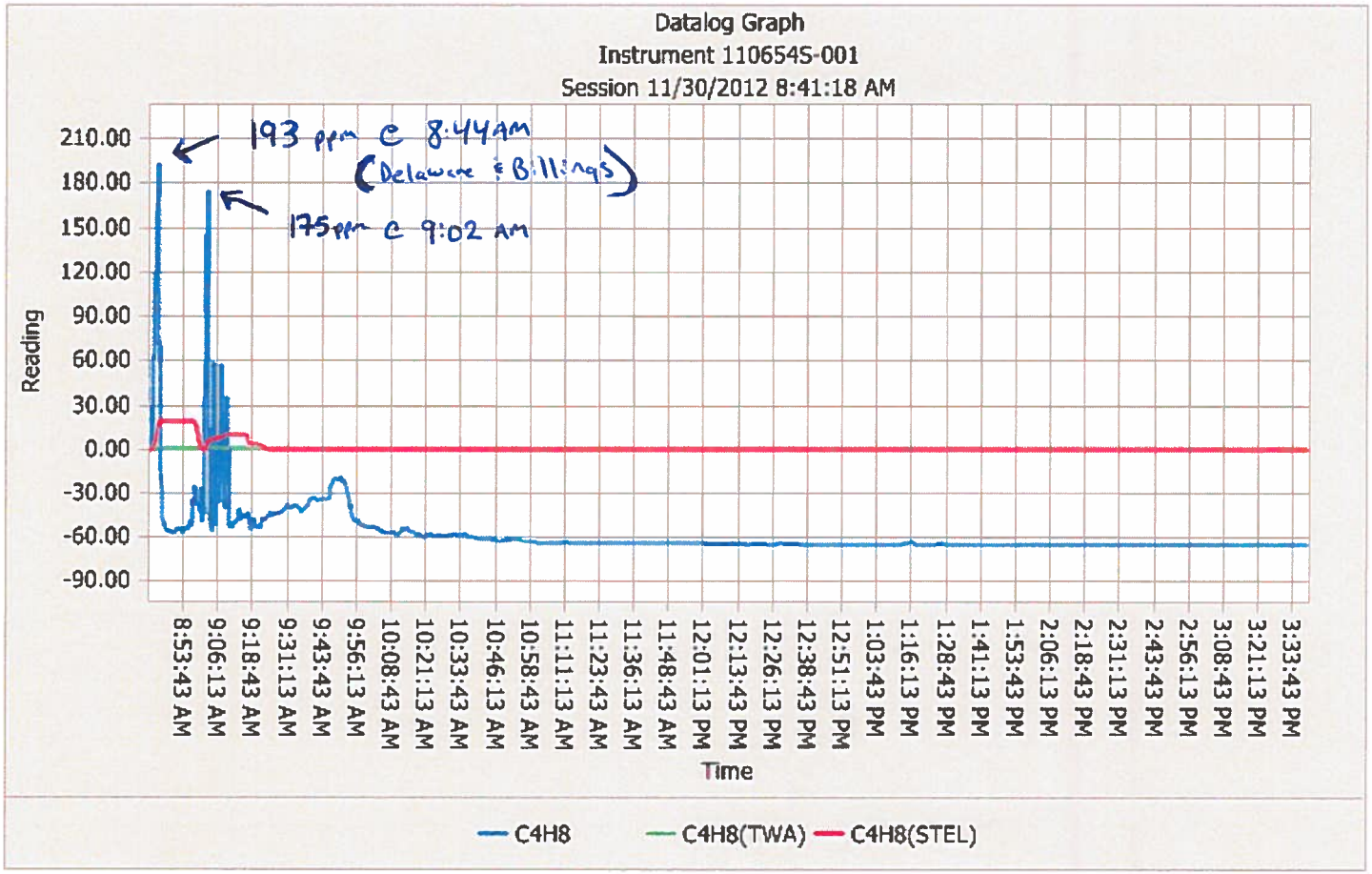
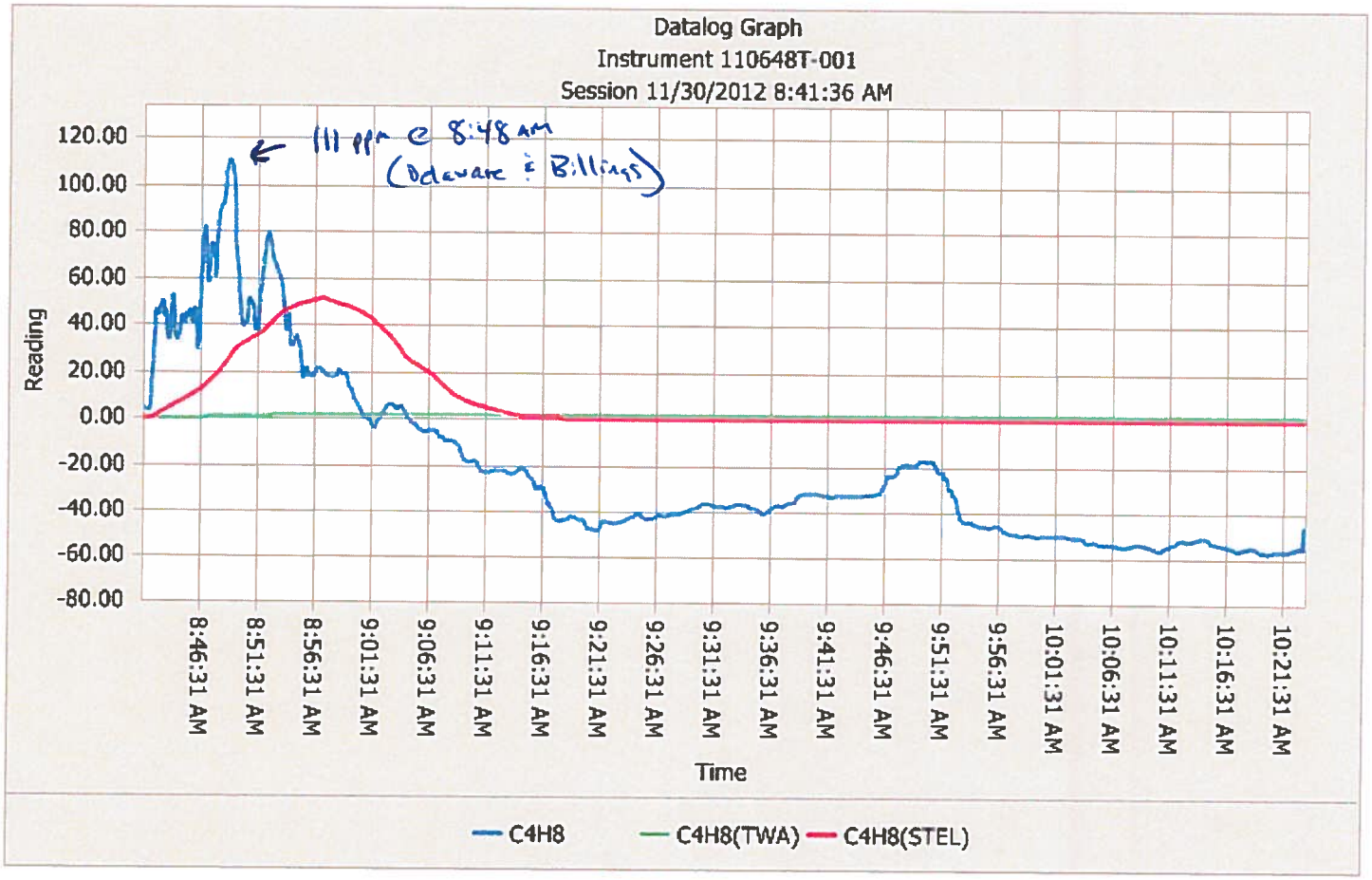
8:40:17 AM
8:40:27 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)


Datalog Graph
Instrument 110654S-001
Session 11/30/2012 8:41:18 AM
193 ppm @ 8:44AM
(Delaware & Billings)
175ppm @ 9:02 AM
Reading
210.00
180.00
150.00
120.00
90.00
60.00
30.00
0.00
-30.00
-60.00
-90.00
8:53:43 AM
9:06:13 AM
9:18:43 AM
9:31:13 AM
9:43:43 AM
9:56:13 AM
10:08:43 AM
10:21:13 AM
10:33:43 AM
10:46:13 AM
10:58:43 AM
11:11:13 AM
11:23:43 AM
11:36:13 AM
11:48:43 AM
12:01:13 PM
12:13:43 PM
12:26:13 PM
12:38:43 PM
12:51:13 PM
1:03:43 PM
1:16:13 PM
1:28:43 PM
1:41:13 PM
1:53:43 PM
2:06:13 PM
2:18:43 PM
2:31:13 PM
2:43:43 PM
2:56:13 PM
3:08:43 PM
3:21:13 PM
3:33:43 PM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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(Delaware & Billings)
120.00
100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
Reading
8:46:31 AM
8:51:31 AM
8:56:31 AM
9:01:31 AM
9:06:31 AM
9:11:31 AM
9:16:31 AM
9:21:31 AM
9:26:31 AM
9:31:31 AM
9:36:31 AM
9:41:31 AM
9:46:31 AM
9:51:31 AM
9:56:31 AM
10:01:31 AM
10:06:31 AM
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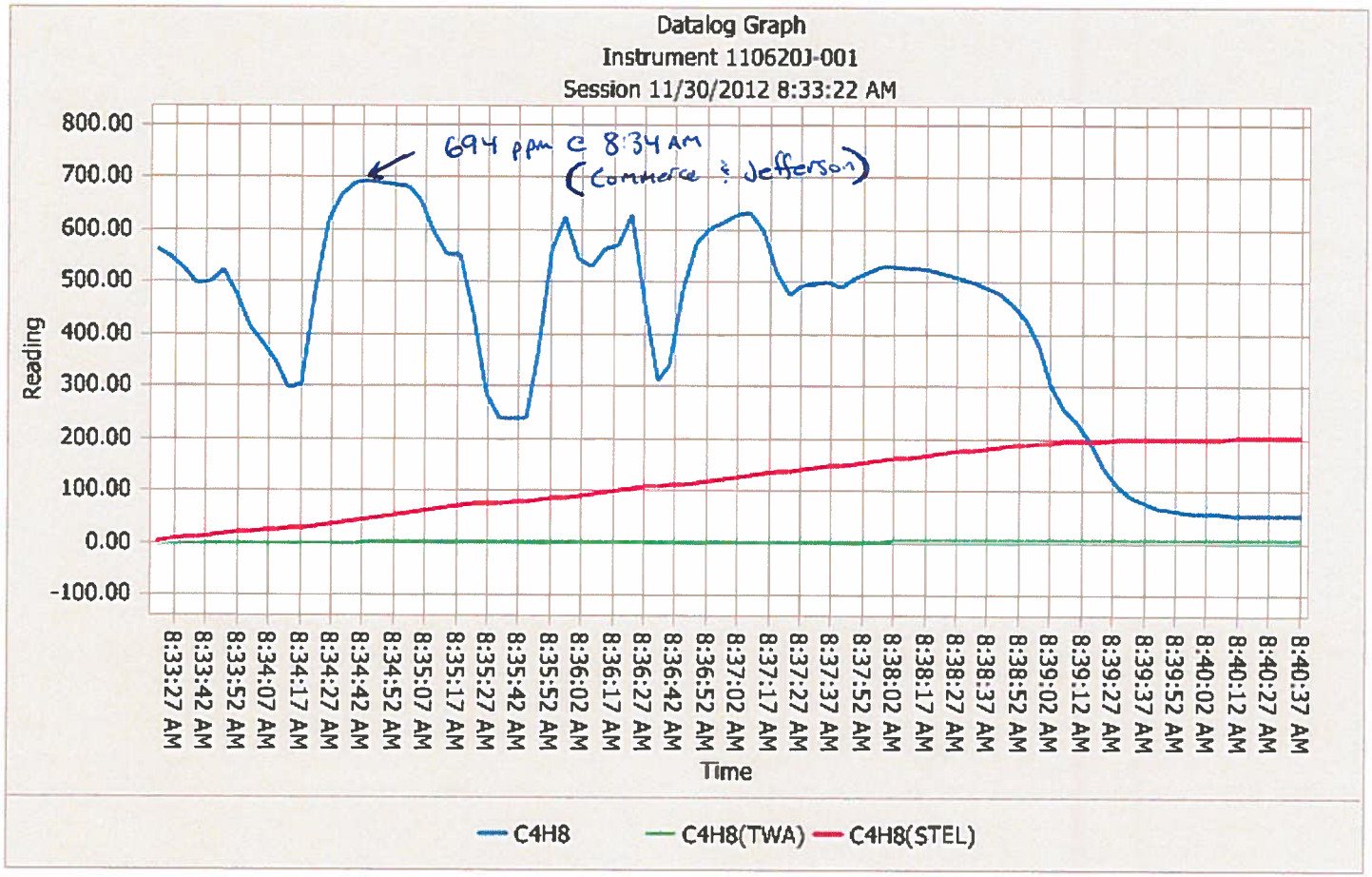
10:21:31 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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Session 11/30/2012 8:33:22 AM
694 ppm @ 8:34 AM
(Commerce & Jefferson)
800.00
700.00
600.00
500.00
400.00
300.00
200.00
100.00
0.00
-100.00
Reading
8:33:27 AM
8:33:42 AM
8:33:52 AM
8:34:07 AM
8:34:17 AM
8:34:27 AM
8:34:42 AM
8:34:52 AM
8:35:07 AM
8:35:17 AM
8:35:27 AM
8:35:42 AM
8:35:52 AM
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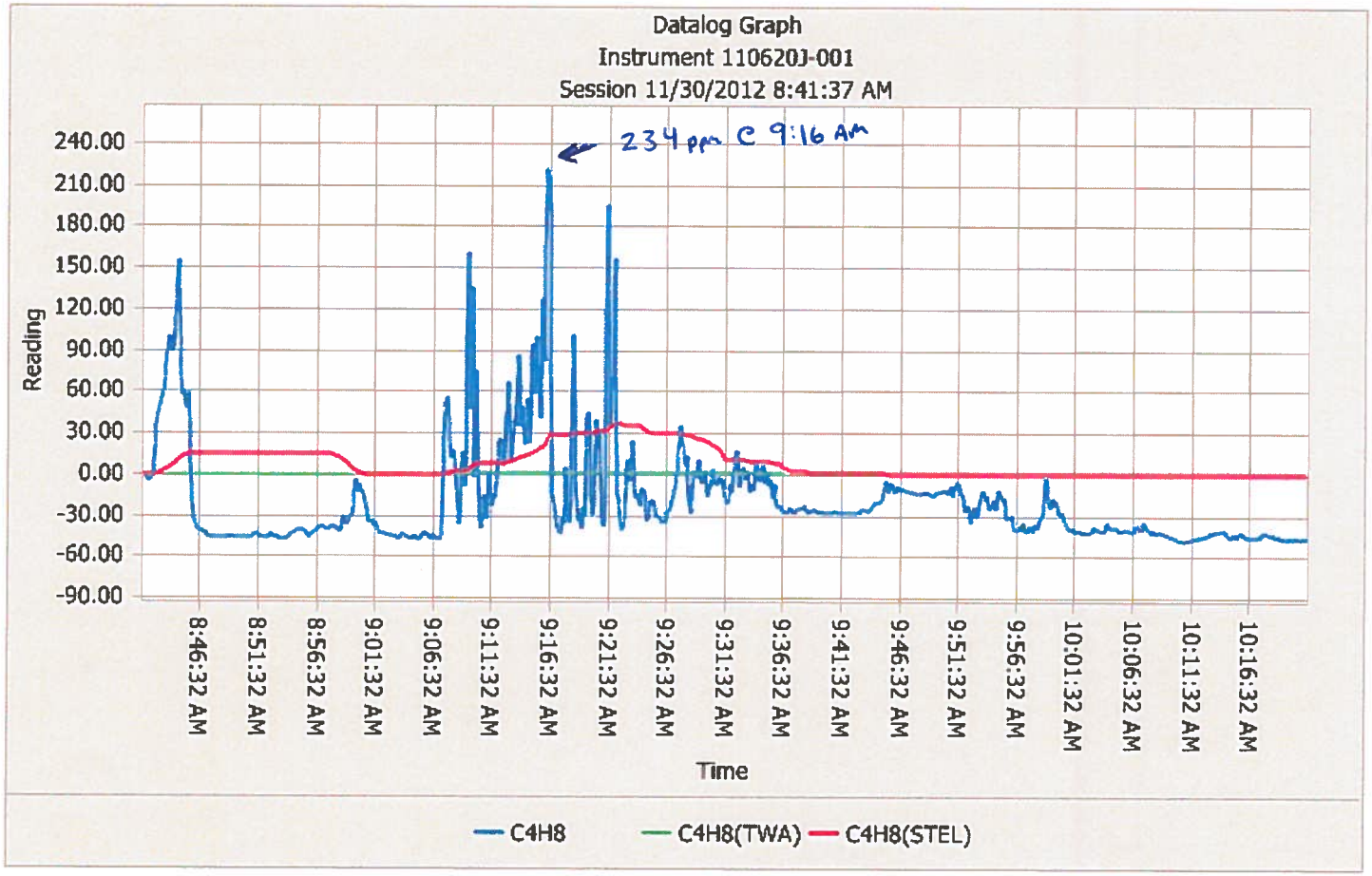
8:39:52 AM
8:40:02 AM
8:40:12 AM
8:40:27 AM
8:40:37 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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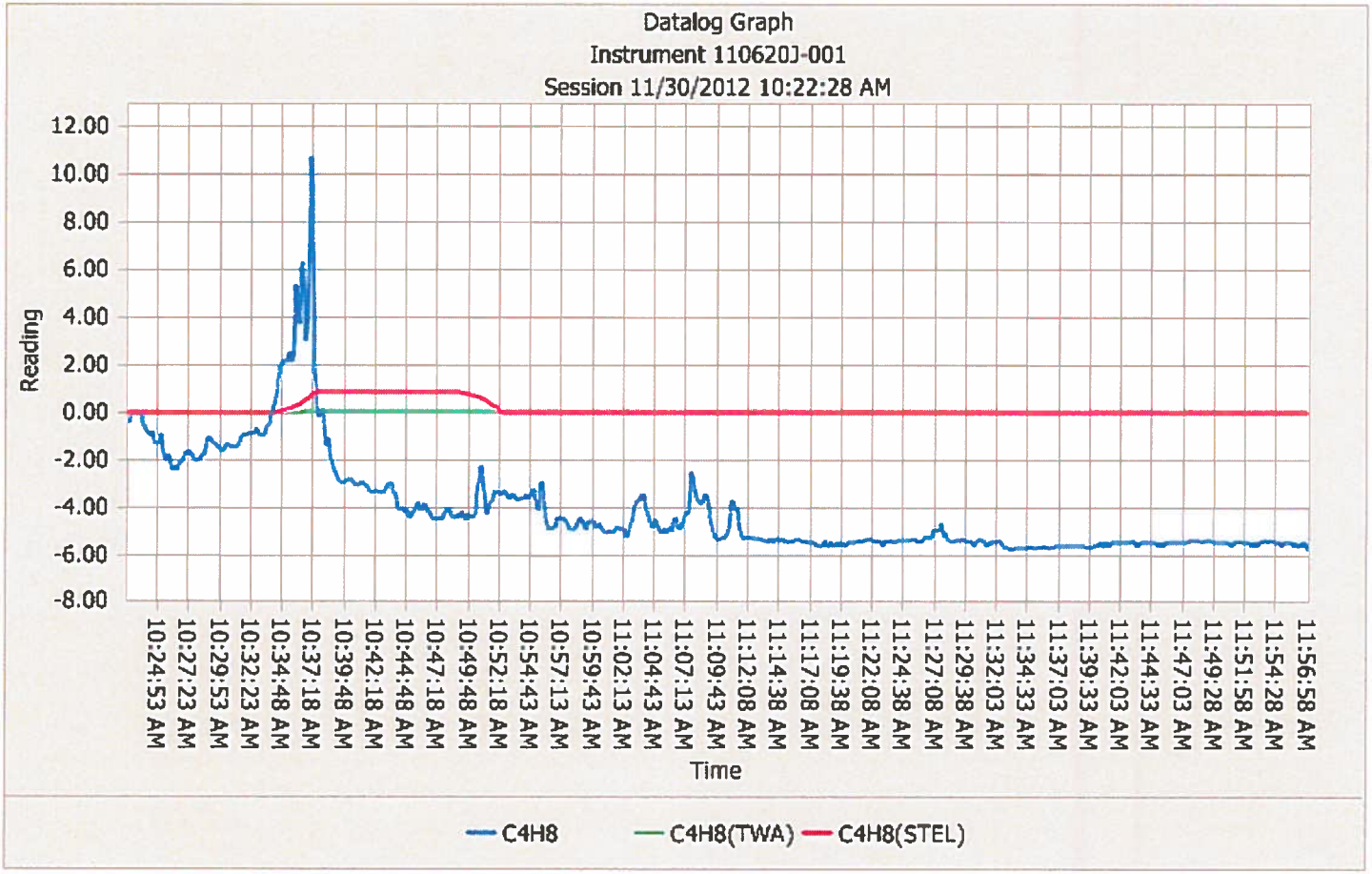
234 ppm @ 9:16 AM
240.00
210.00
180.00
150.00
120.00
90.00
60.00
30.00
0.00
-30.00
-60.00
-90.00
Reading
8:46:32 AM
8:51:32 AM
8:56:32 AM
9:01:32 AM
9:06:32 AM
9:11:32 AM
9:16:32 AM
9:21:32 AM
9:26:32 AM
9:31:32 AM
9:36:32 AM
9:41:32 AM
9:46:32 AM
9:51:32 AM
9:56:32 AM
10:01:32 AM
10:06:32 AM
10:11:32 AM
10:16:32 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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Reading
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10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
10:24:53 AM
10:27:23 AM
10:29:53 AM
10:32:23 AM
10:34:48 AM
10:37:18 AM
10:39:48 AM
10:42:18 AM
10:44:48 AM
10:47:18 AM
10:49:48 AM
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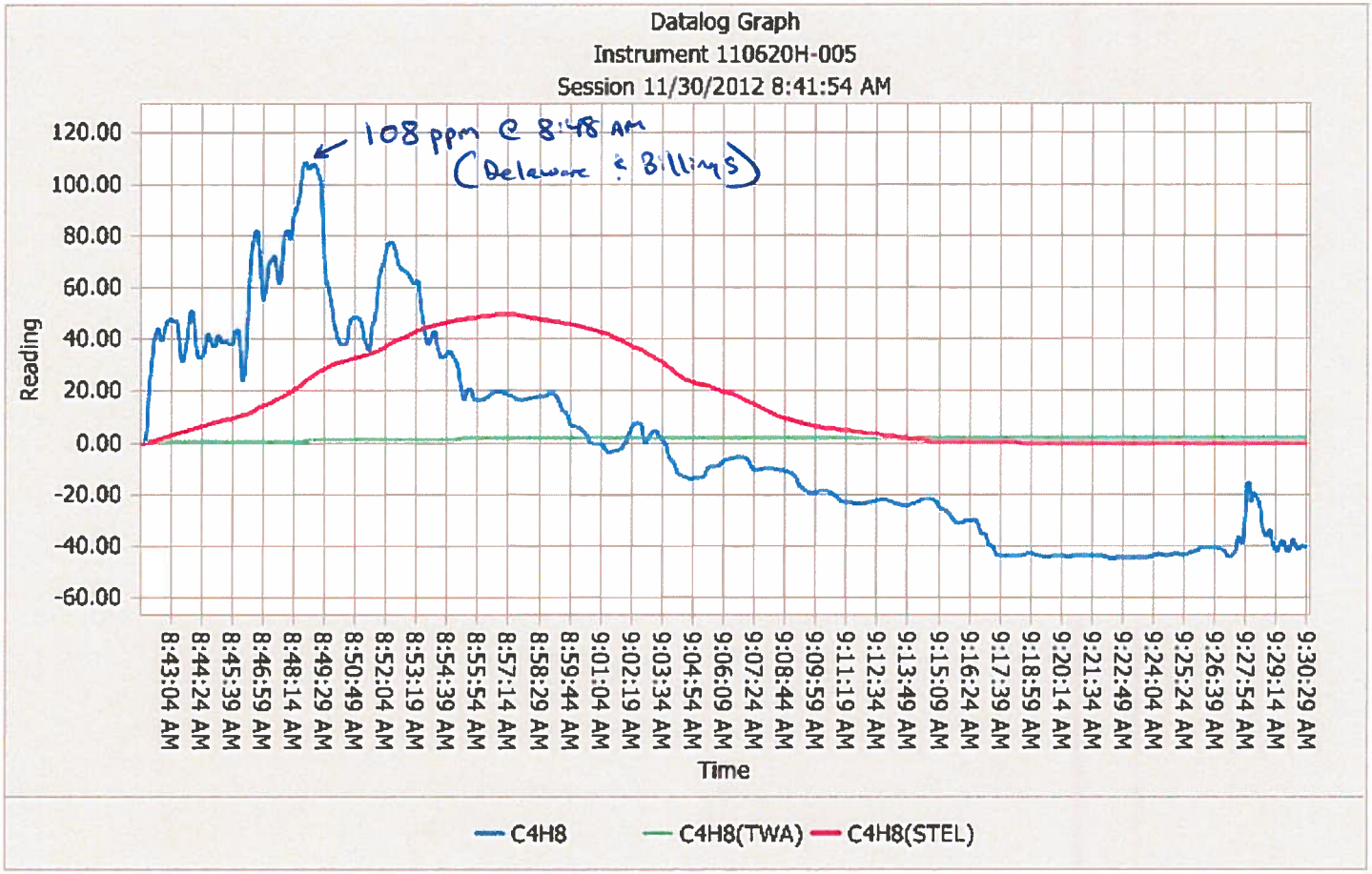
11:42:03 AM
11:44:33 AM
11:47:03 AM
11:49:28 AM
11:51:58 AM
11:54:28 AM
11:56:58 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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(Delaware & Billings)
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60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
8:43:04 AM
8:44:24 AM
8:45:39 AM
8:46:59 AM
8:48:14 AM
8:49:29 AM
8:50:49 AM
8:52:04 AM
8:53:19 AM
8:54:39 AM
8:55:54 AM
8:57:14 AM
8:58:29 AM
8:59:44 AM
9:01:04 AM
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9:03:34 AM
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9:06:09 AM
9:07:24 AM
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9:13:49 AM
9:15:09 AM
9:16:24 AM
9:17:39 AM
9:18:59 AM
9:20:14 AM
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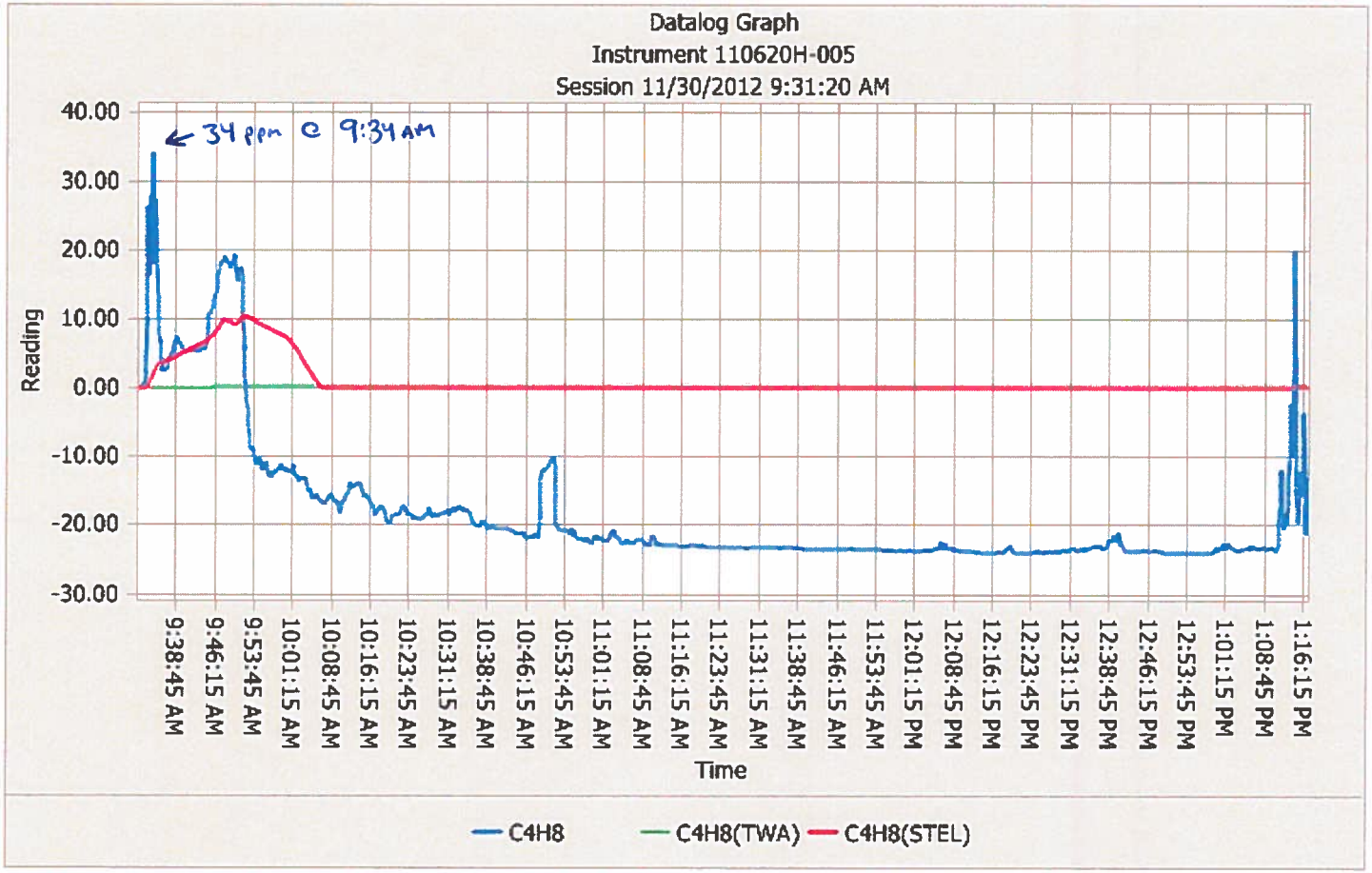
9:22:49 AM
9:24:04 AM
9:25:24 AM
9:26:39 AM
9:27:54 AM
9:29:14 AM
9:30:29 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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Session 11/30/2012 9:31:20 AM
34 ppm @ 9:34 AM
40.00
30.00
20.00
10.00
0.00
-10.00
-20.00
-30.00
Reading
9:38:45 AM
9:46:15 AM
9:53:45 AM
10:01:15 AM
10:08:45 AM
10:16:15 AM
10:23:45 AM
10:31:15 AM
10:38:45 AM
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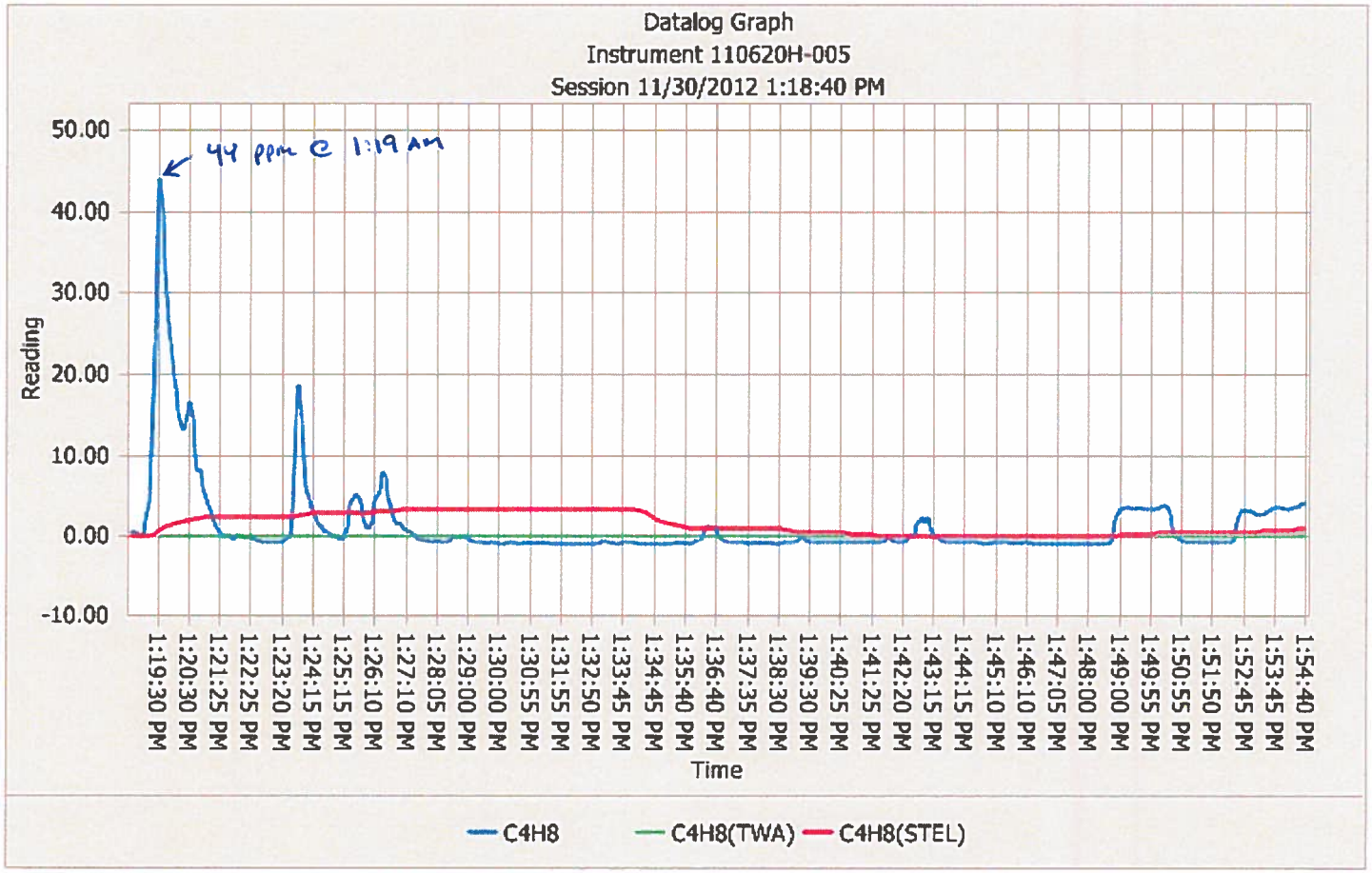
Time
C4H8
C4H8(TWA)
C4H8(STEL)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44 ppm @ 1:19 AM
50.00
40.00
30.00
20.00
10.00
0.00
-10.00
Reading
1:19:30 PM
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1:50:55 PM
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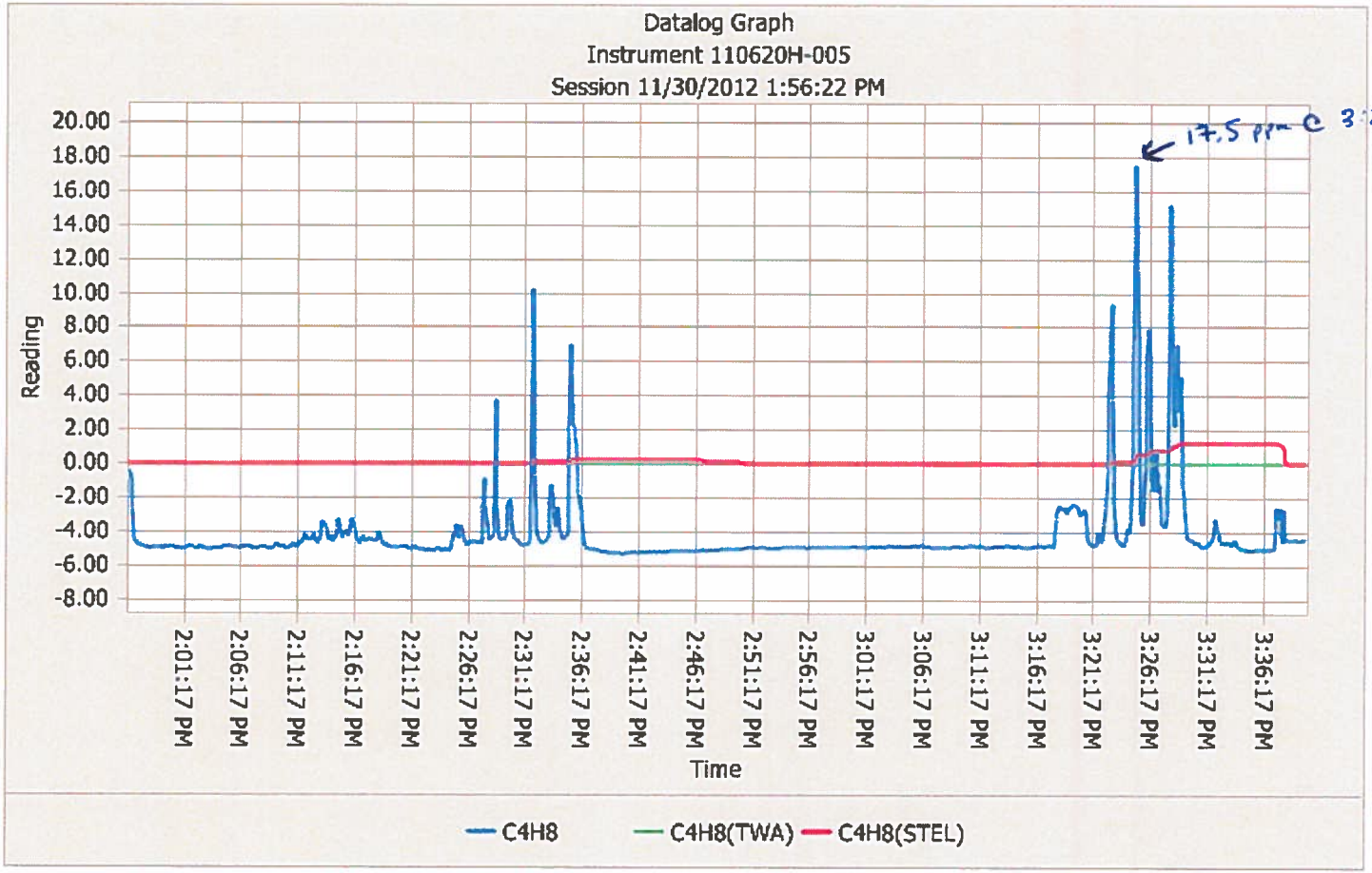
1:53:45 PM
1:54:40 PM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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17.5 ppm @ 3:24 pm
Reading
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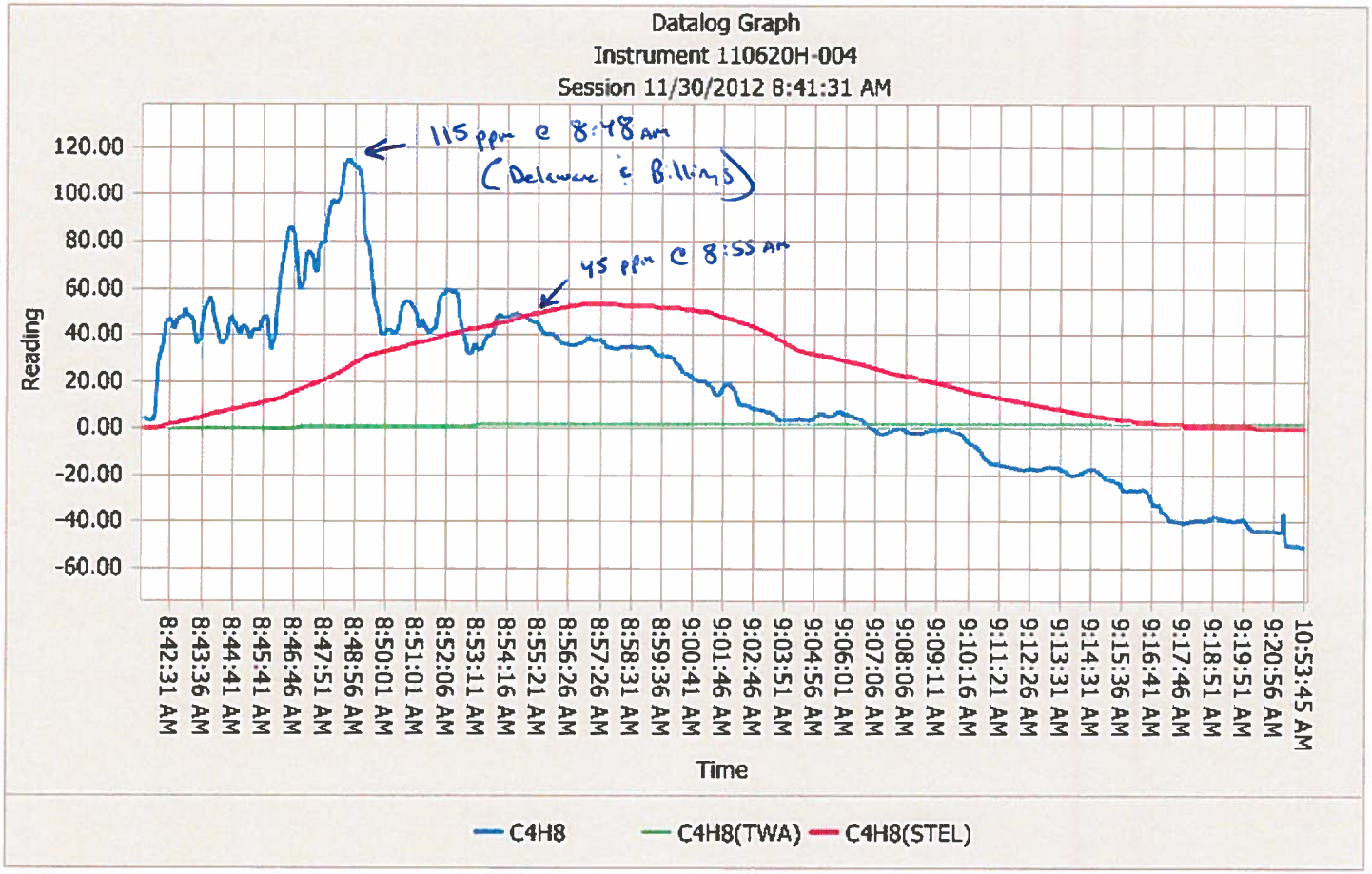
18.00
16.00
14.00
12.00
10.00
8.00
6.00
4.00
2.00
0.00
-2.00
-4.00
-6.00
-8.00
2:01:17 PM
2:06:17 PM
2:11:17 PM
2:16:17 PM
2:21:17 PM
2:26:17 PM
2:31:17 PM
2:36:17 PM
2:41:17 PM
2:46:17 PM
2:51:17 PM
2:56:17 PM
3:01:17 PM
3:06:17 PM
3:11:17 PM
3:16:17 PM
3:21:17 PM
3:26:17 PM
3:31:17 PM
3:36:17 PM
Time
C4H8
C4H8(TWA)
C4H8(STEL)


Datalog Graph
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Session 11/30/2012 8:41:31 AM
115 ppm @ 8:48 AM
(Delaware & Billings)
45 ppm @ 8:55 AM
Reading
120.00
100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
8:42:31 AM
8:43:36 AM
8:44:41 AM
8:45:41 AM
8:46:46 AM
8:47:51 AM
8:48:56 AM
8:50:01 AM
8:51:01 AM
8:52:06 AM
8:53:11 AM
8:54:16 AM
8:55:21 AM
8:56:26 AM
8:57:26 AM
8:58:31 AM
8:59:36 AM
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9:02:46 AM
9:03:51 AM
9:04:56 AM
9:06:01 AM
9:07:06 AM
9:08:06 AM
9:09:11 AM
9:10:16 AM
9:11:21 AM
9:12:26 AM
9:13:31 AM
9:14:31 AM
9:15:36 AM
9:16:41 AM
9:17:46 AM
9:18:51 AM
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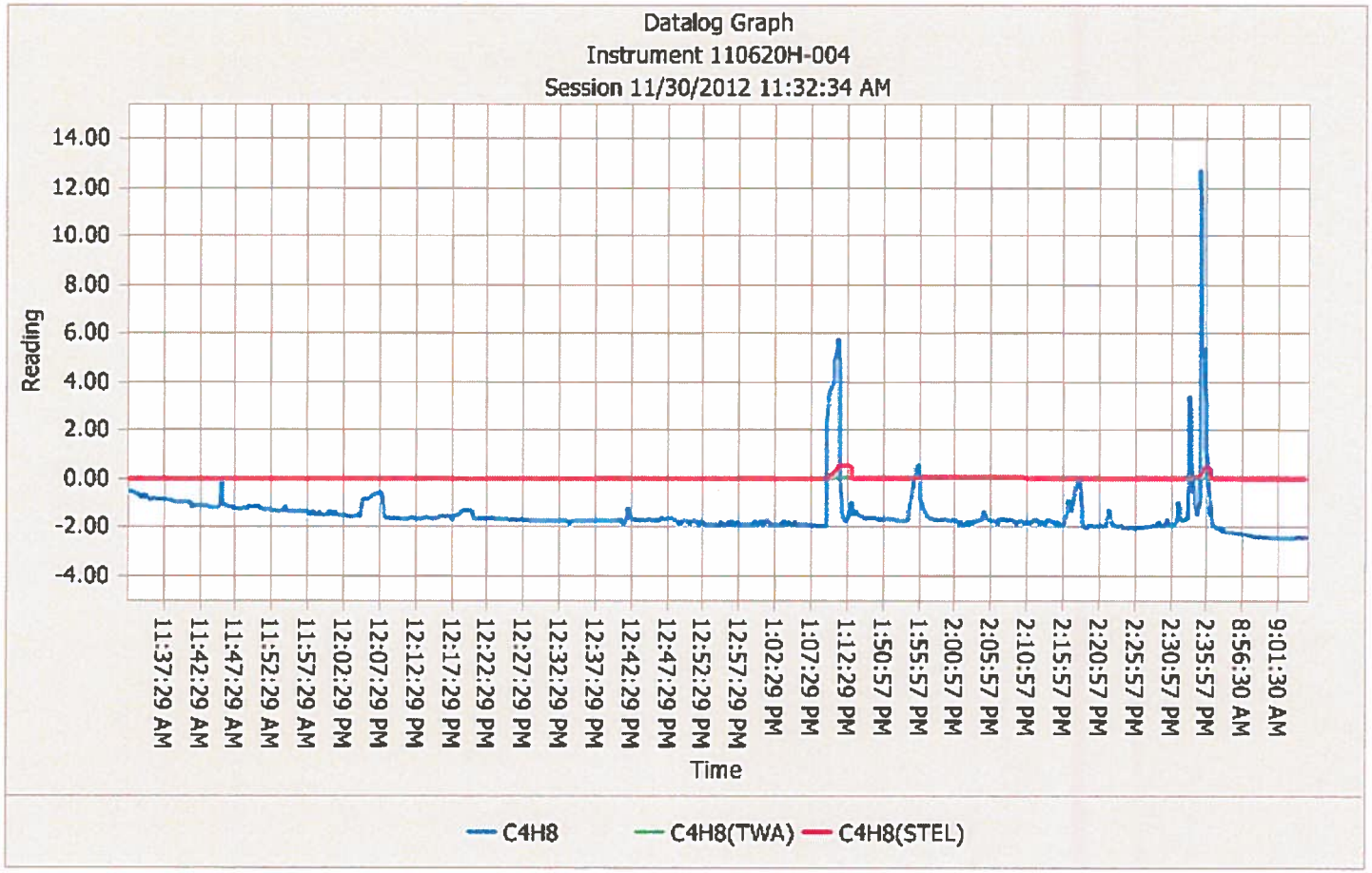
9:20:56 AM
10:53:45 AM
Time
C4H8
C4H8(TWA)
C4H8(STEL)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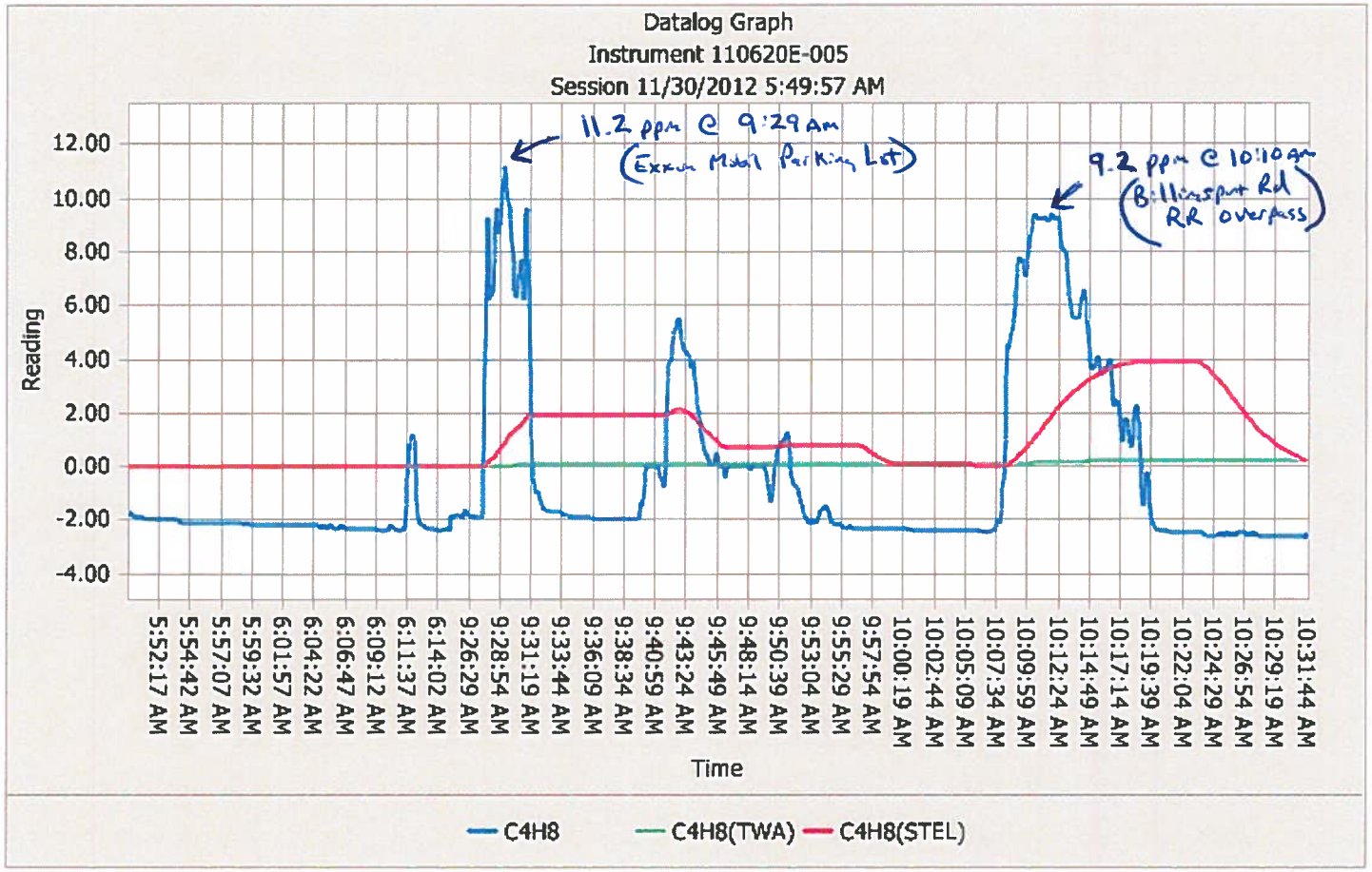
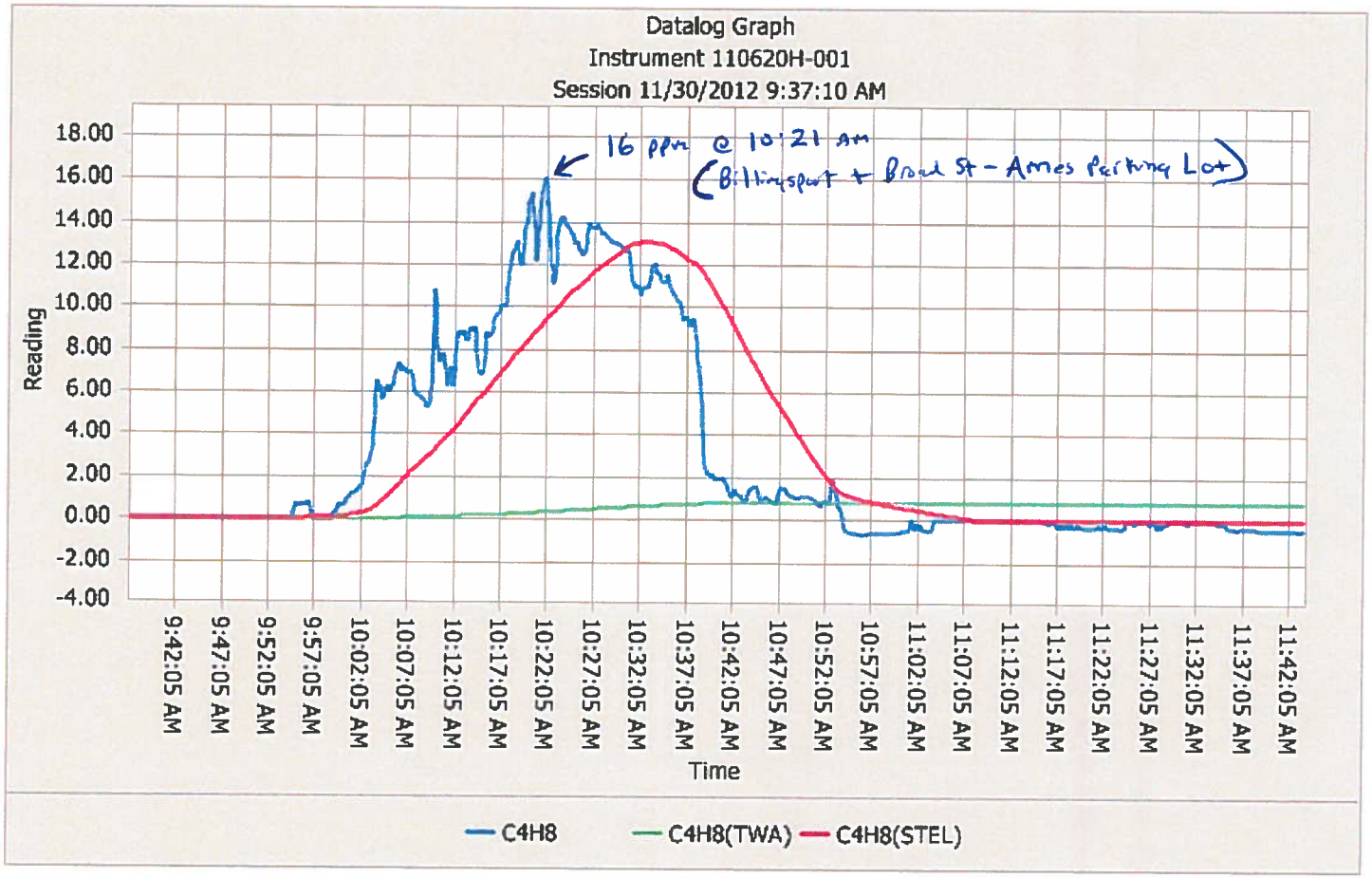
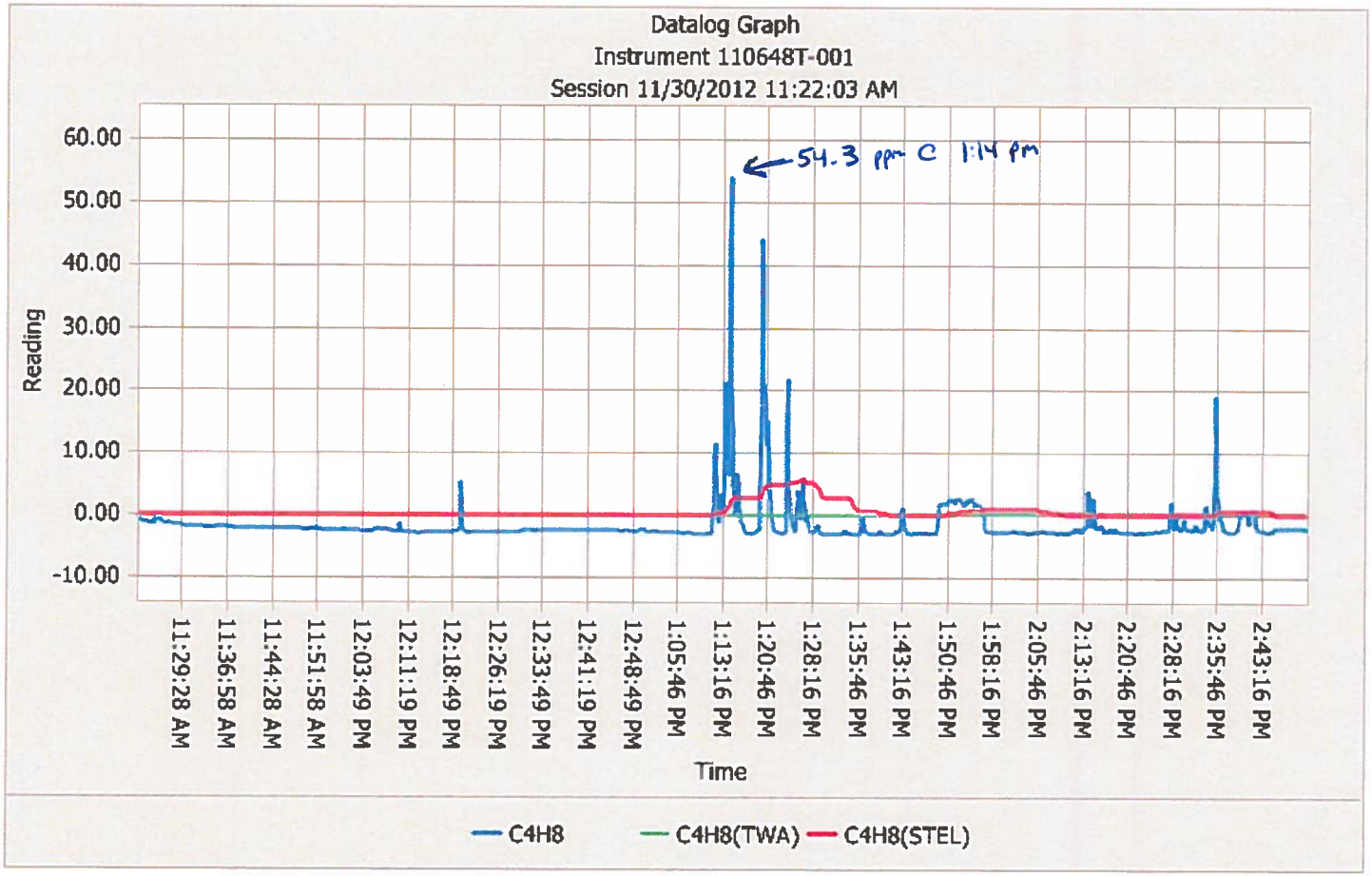
Time
C4H8
C4H8(TWA)
C4H8(STEL)



PBR MONITORING TEAM



Southwest Monitoring Team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20.00
10.00
0.00
-10.00
Reading
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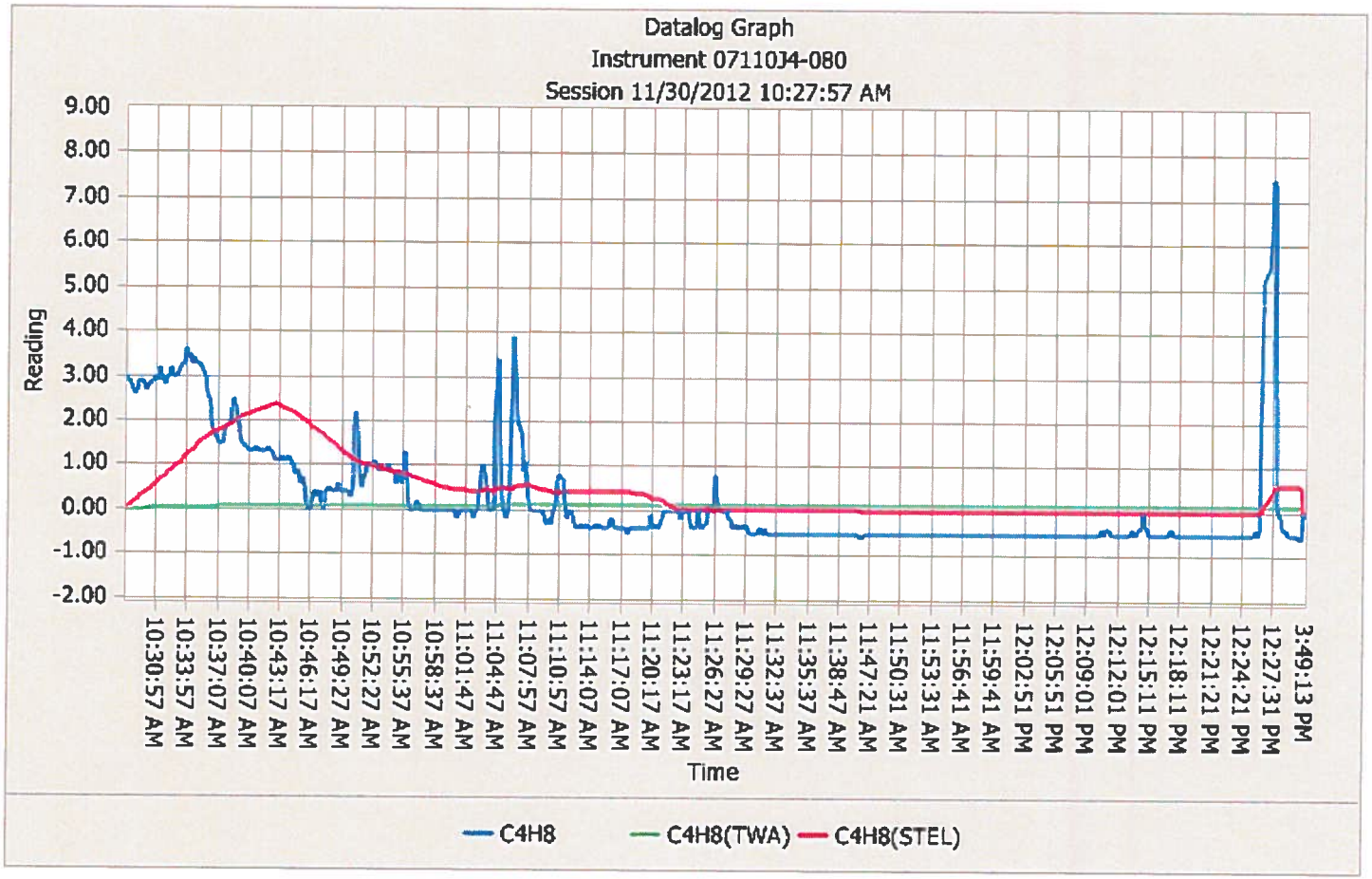
Time
C4H8
C4H8(TWA)
C4H8(STEL)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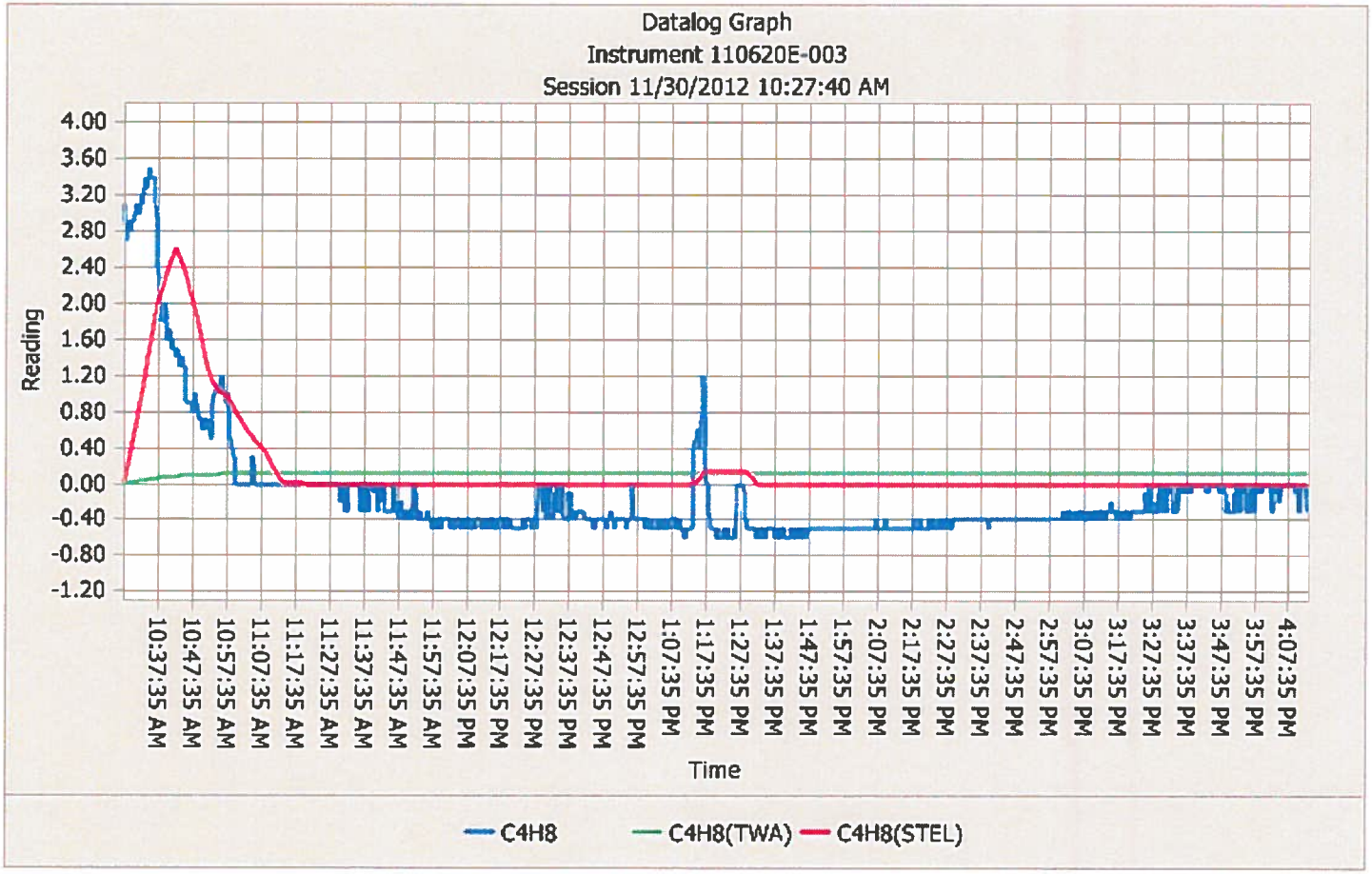
Time
C4H8
C4H8(TWA)
C4H8(STEL)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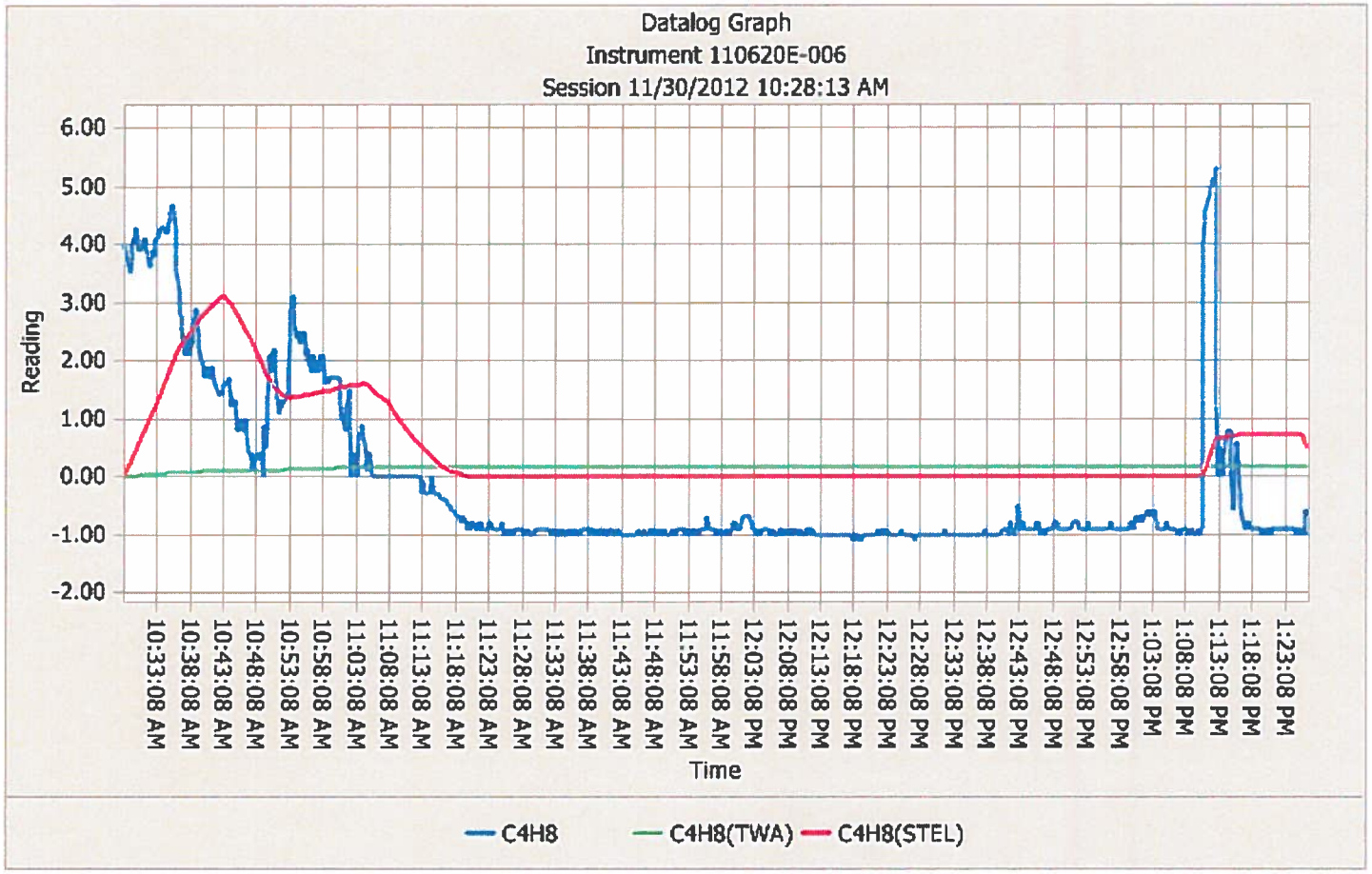
Time
C4H8
C4H8(TWA)
C4H8(STEL)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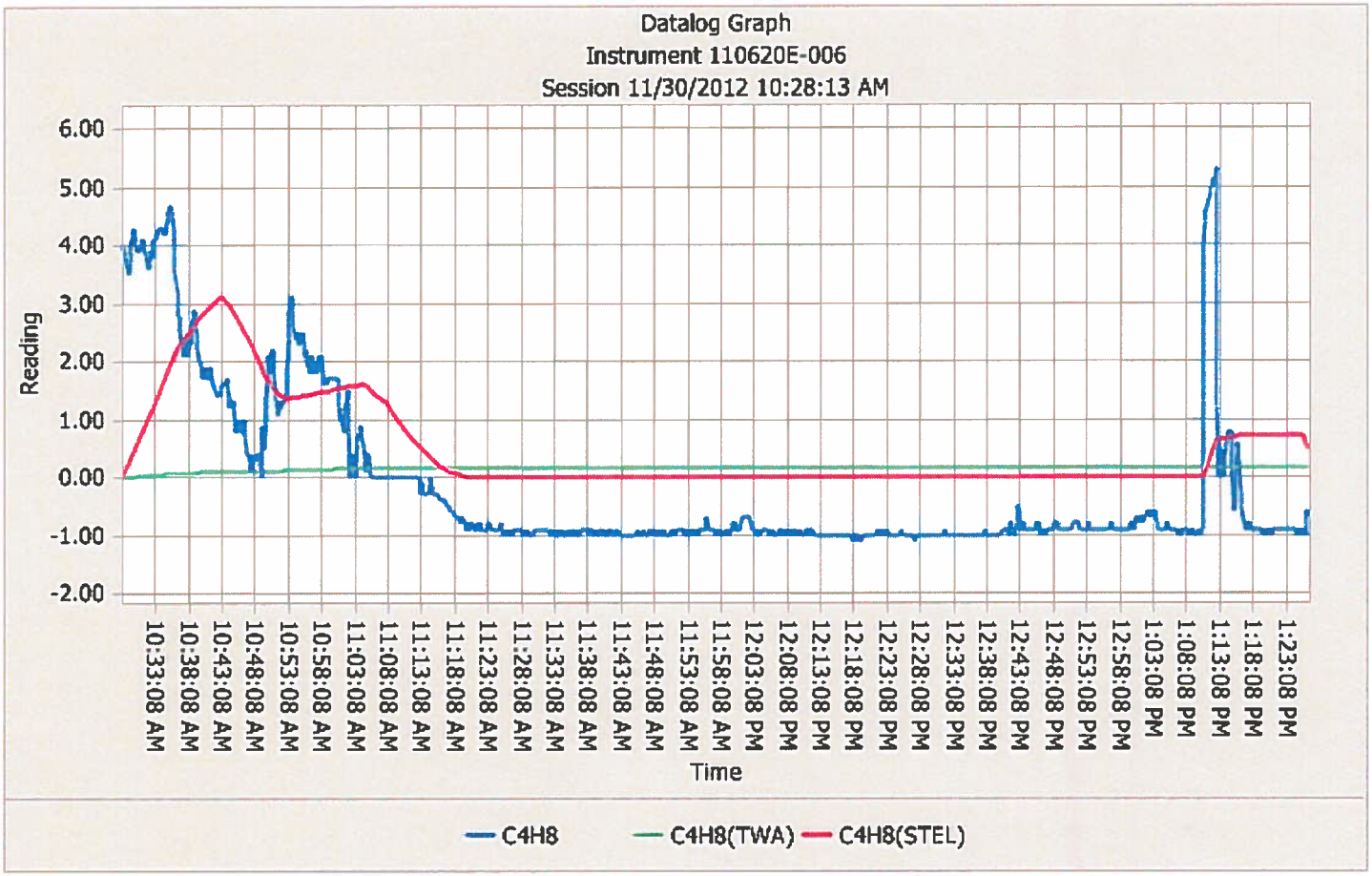
Time
C4H8
C4H8(TWA)
C4H8(STEL)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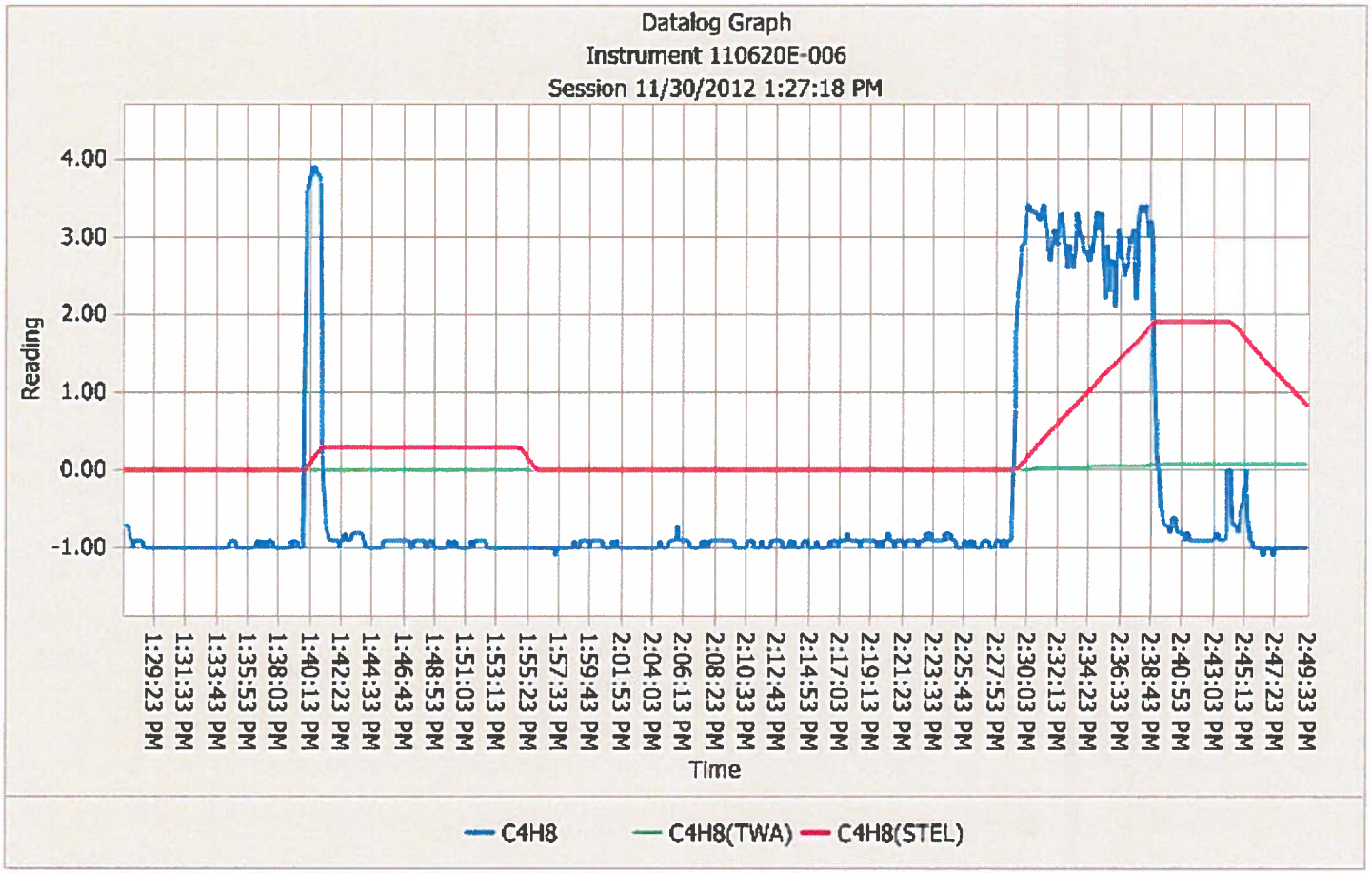
Time
C4H8
C4H8(TWA)
C4H8(STEL)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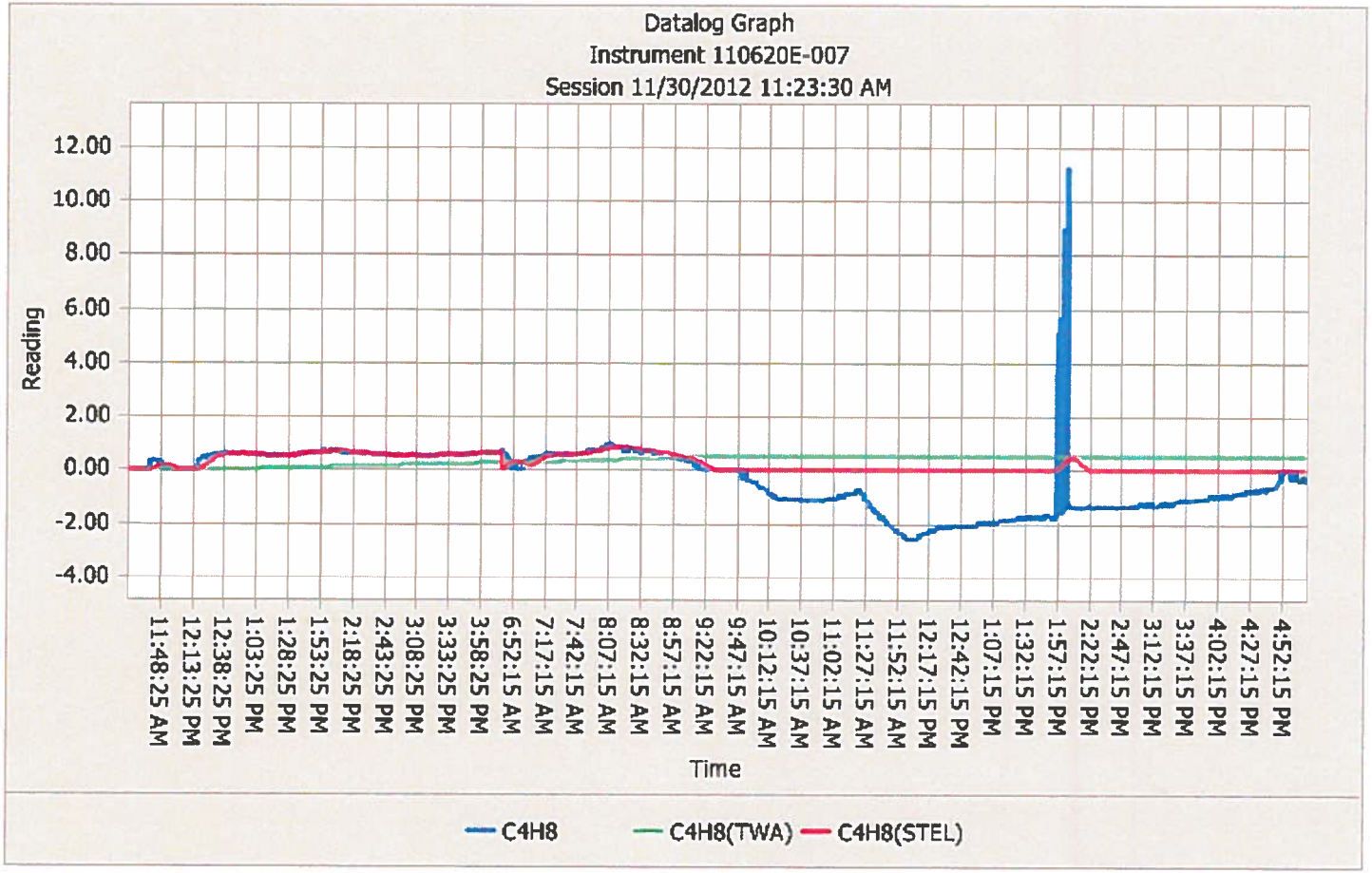
Time
C4H8
C4H8(TWA)
C4H8(STEL)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3:12:15 PM
3:37:15 PM
4:02:15 PM
4:27:15 PM
4:52:15 PM
Time
C4H8
C4H8(TWA)
C4H8(STEL)

PID Response Factors

The table below lists response factors for various gases detected by the MX6 PID when calibrated to isobutylene.

	Chemical name	Synonym	CAS #	Formula	IP, ev	TWA	RF
1	Acetaldehyde		75-07-0	C2H4O	10.23	C25	5.14
2	Acetic acid	Ethanoic acid	64-19-7	C2H4O2	10.66	10	23.05
3	Acetic Anhydride	Ethanoic acid Anhydride	108-24-7	C2H4O	10.14	5	6.10
4	Acetone	2 - Propanone	67-64-1	C3H6O	9.71	500	1.24
5	Acetophenone						0.59
6	Allyl Alcohol		107-18-6	C3H6O	9.67	2	2.92
7	Ammonia		7664-41-7	NH3	10.16	25	12.80
8	Amyl Acetate	mix of n-Pentyl acetate & 2-Methylbutyl acetate	628-63-7	C7H14O2	<9.9	100	1.92
9	Arsine	Arsenic trihydride	7784-42-1	AsH3	9.89	0.05	2.38
10	Benzene		71-43-2	C6H6	9.25	0.5	0.55
11	Bromine		7726-95-6	Br2	10.51	0.1	1.30
12	Bromomethane						2.72
13	1,4-butanediol						37.20
14	Butadiene	1,3-Butadiene, Vinyl ethylene	106-99-0	C4H6		2	0.73
16	Butanol, 1-	Butyl alcohol, n-Butanol	71-36-3	C4H10O	9.99	C50	4.09
17	Butanol, t-	tert-Butanol, t-Buty alcohol	75-65-0	C4H10O	9.9	100	3.24
18	2-Butanone						0.90
19	Butoxyethanol, 2-	Butyl Cellosolve, Ethylene glycol monobutyl ether	111-76-2	C6H14O2	<10	25	1.44
20	Butyl acetate, n-		123-86-4	C6H12O2	10	150	2.38
21	Butylamine, t-	tert-butylamine					1.01
22	Butyl mercaptan	1-Butanethiol	109-79-5	C4H10S	9.14	0.5	0.61
23	Butyrolactone	gama-butyrolctone					3.01
24	Carbon disulfide		75-15-0	CS2	10.07	10	1.25
25	Chlorobenzene	Monochlorobenzene	108-90-7	C6H5Cl	9.06	10	0.49
26	Cumene	Isopropylbenzene	98-82-8	C9H12	8.73	ne	0.54
27	Cyclohexane		110-82-7	C6H12	9.86	50	1.44
28	Cyclohexanone		108-94-1	C6H10O	9.14	300	0.82
29	Cyclohexene		110-83-8	C6H10	8.95	10	0.80
30	Decane		124-18-5	C10H22	9.65	50	1.24
31	Diacetone alcohol	4-Methyl-4-hydroxy-2-pentanone	123-42-2	C6H12O2	9.65		0.73
32	Dibromoethane, 1,2-	EDB, Ethylene dibromide, Ethylene bromide	106-93-4	C2H4Br2	10.37	ne	2.03

MX6 iBrid PID RESPONSE FACTORS (continued)

	Chemical name	Synonym	CAS #	Formula	IP, ev	TWA	RF
33	Dichlorobenzene, o-	1,2-Dichlorobenzene	95-50-1	C6H4Cl2	9.08	25	0.50
34	Dichloroethene, t-1,2-	t-1,2-DCE, tris-Dichloroethylene	156-60-5	C2H2Cl2	9.65	200	0.45
35	Diesel Fuel		68334-30-5	m.w. 226		11	0.80
36	Diethylamine		109-89-7	C4H11N	8.01	5	0.89
37	Dimethoxymethane						1.51
38	Dimethylacetamide, N,N-	DMA	127-19-5	C4H9NO	8.81	10	0.66
39	Dimethylformamide, N,N-	DMF	68-12-2	C3H7NO	9.13	10	0.81
40	Dimethyl sulfoxide	DMSO, Methyl sulfoxide	67-68-5	C2H6OS	9.1	ne	1.40
41	Dioxane, 1,4-		123-91-1	C4H8O2	9.19	25	1.48
42	Epichlorohydrin	ECH Chloromethyloxirane, 1-chloro2,3-epoxypropane	106-89-8	C2H5ClO	10.2	0.5	7.70
43	Ethanol	Ethyl alcohol	64-17-5	C2H6O	10.47	1000	10.70
44	Ethene	Ethylene	74-85-1	C2H4	10.51	ne	10.20
45	Ethyl acetate		141-78-6	C4H8O2	10.01	400	4.10
46	Ethylacetoacetate			C6H10O3			1.14
47	Ethylbenzene		100-41-4	C8H10	8.77	100	0.53
48	Ethylene glycol	1,2-Ethanediol	107-21-1	C2H6O2	10.16	100	15.30
49	Ethylene oxide	Oxirane, Epocyethane	75-21-8	C2H4O	10.57	1	12.20
50	Ethyl ether	Deithyl ether	60-29-7	C4H10O	9.51	400	1.15
51	Heptane, n-		142-82-5	C7H16	9.92	400	2.35
52	Hexane, n-		110-54-3	C6H14	10.13	50	4.06
53	Hydrazine		302-01-2	H4N2	8.1	0.01	2.60
54	Hydrogen sulfide		6/4/7783	H2S	10.45	10	3.30
55	Iodine		7553-56-2	I2	9.4	C0.1	0.14
56	Isoamyl acetate	Isopentyl acetate	123-92-2	C7H14O2	<10	100	1.79
57	Isobutanol	2-Methyl-1propanol	78-83-1	C4H10O	10.02	50	4.99
58	Isobutene	Isobutylene, Methyl butene	115-11-7	C4H8	9.24	ne	1.00
59	Isooctane	2,2,4-Trimethylpentane	540-84-1	C8H18	9.86	ne	1.21
60	Isophorone		78-59-1	C9H14O	9.07	C5	0.74
61	Isopropanol	Isopropyl alcohol, 2-propanol	67-63-0	C3H8O	10.12	400	5.93
62	Isopropylamine						1.28
63	Isopropyl ether	Diisopropyl ether	108-20-3	C6H14O	9.2	250	0.84
64	Jet fuel JP-5 &JP-8	Jet 5, Kerosene type aviation fuel	8008-20-6	m.w. 167		15	1.06
65	Jet A	Jet A-1, Kerosene type	8008-20-6	m.w. 165		15	1.06
66	Jet A1 fuel						1.06
67	Mesityloxide						0.54
68	Methoxyethanol, 2-	Methyl cellosolve, Ethylene glycol monomethyl ether	109-86-4	C3H8O2	10.1	5	2.22

MX6 iBrid PID RESPONSE FACTORS (continued)

	Chemical name	Synonym	CAS #	Formula	IP, ev	TWA	RF
69	MethoxyethoXyethanol, 2-	2-(2-methoxyethoxy) ethanol Diethylene glycol monomethyl ether	111-77-3	C7H16O	<10	ne	2.42
70	1- Methoxy-2-propanol						1.85
71	Methyl acetate		79-20-9	C3H6O2	10.27	200	6.44
72	Methylacetoacetate						1.30
73	Methyl acrylate	Methyl 2-propenoate, acrylic acid methyl ester	96-33-3	C4H6O2	9.9	2	3.40
74	Methylamine	Aminomethane	74-89-5	CH5N	8.97	5	1.64
75	Methylbenzoate						0.93
76	Methyl benzyl alcohol						7.12
77	Methyl bromide	Bromomethane	74-83-9	CH3Br	10.54	1	1.98
78	Methyl t-butyl ether	MTBE, tert-Butyl methyl ether	1634-04-4	C5H12O	9.24	40	0.89
79	Methyl ethyl ketone	MEK, 2-Butanone	78-93-3	C4H8O	9.51	200	0.97
80	Methyl isobutyl ketone	MIBK, 4-Methyl-2-pentanone	108-10-1	C6H12O	9.3	50	1.14
81	Methyl mercaptan	Methanethiol	74-93-1	CH4S	9.44	9.44	0.58
82	Methyl methacrylate		80-62-6	C5H8O2	9.7	9.7	1.57
83	Methyl propyl ketone	MPK, 2-Pentanone	107-87-9	C5H12O	9.38	9.38	0.87
84	Meth-2-pyrrolidone, N-	NMP, N-Methylpyrrolidone, 1-Methyl-2-pyrrolidinone, 1-Methyl 2-pyrrolidone	872-50-4	C5H9NO	9.17	ne	1.02
85	Naphthalene	Mothballs	91-20-3	C10H8	8.13	10	0.40
86	Nitrobenzene		98-95-3	C6H5NO2	9.81	1	1.90
87	Octane, n-		111-65-9	C8H18	9.82	300	2.10
88	Pentane		109-66-0	C5H12	10.35	600	8.40
89	2-Pentanone						0.87
90	Phenol	Hydroxybenzene	108-95-2	C6H6O	8.51	5	1.10
91	phenylethylalcohol	Phenol Ethyl alcohol					9.04
92	Phosphine		7803-51-2	PH3	9.87	0.3	3.02
93	Picoline, 2-	2-Methylpyridine					0.72
94	Picoline, 3-	3-Methylpyridine	108-99-6	C6H7N	9.04	ne	0.92
95	Propanol, n-	Propyl alcohol	71-23-8	C3H8O	10.22	200	4.91
96	Propanol, 2-	Propyl alcohol		C3H8O			5.53
97	Propene	Propylene	115-07-1	C3H6	9.73	ne	1.41
98	Propylene oxide	Methyloxirane	75-56-9	C3H6O	10.22	20	6.30
99	Pyridine		110-86-1	C5H5N	9.25	5	0.78
100	Quinoline						0.97
101	Styrene		100-42-5	C8H8	8.43	20	0.47
102	Tetracholoethylene			C2Cl4			0.60
103	Tetrahydrofuran	THF	109-99-9	C4H8O	9.41	200	1.53
104	Thiophene						0.41
105	Toluene	Methylbenzene	108-88-3	C7H8	8.82	50	0.53

MX6 iBrid PID RESPONSE FACTORS (continued)

	Chemical name	Synonym	CAS #	Formula	IP, ev	TWA	RF
106	Trichloroethylene	TCE, Trichoroethylene	79-01-6	C2HCl3	9.47	50	0.51
107	Trimethylbenzene, 1,2,3						0.49
108	Trimethylbenzene, 1,2,4		108-67-8			25	0.43
109	Trimethylbenzene, 1,3,5	1,3,5-(CH3)3C5H6					0.34
110	Turpentine	Pinenes (85%) + other diisoprenes	8006-64-2	C10H16	8	100	0.50
111	Vinyl actetate		108-05-4	C4H6O2	9.19	10	1.17
112	Vinyl chloride	Chloroethylene, VCM	75-01-4	C2H3Cl	9.99	5	1.90
113	Vinyl cyclohexone	VCH					1.40
114	Xylene, m-	1,3- Dimethylbenzene	108-38-3	C8H10	8.56	100	0.45
115	Xylene, o-	1,2- Dimethylbenzene	95-47-6	C8H10	8.56	100	0.54
116	Xylene, p-	1,4- Dimethylbenzene	106-42-3	C8H10	8.44	100	0.47

NOTE: PID sensor response factor accuracy is+/-30%

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