2009 Method 9

Opacity

CATALYST AIR MANAGEMENT, INC.
SUMMARY OF METHOD 9 VISIBLE EMISSIONS DATA

Opacity Monitor

CLIENT: UGI
PLANT: Hunlock Station

DATE: 5/13/2009

Run 1	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	15	10	10	11.25	11.85	0.60
2	10	15	15	10	12.50	14.84	2.34
3	10	15	10	15	12.50	13.48	0.98
4	10	10	15	10	11.25	15.89	4.64
5	10	15	15	10	12.50	15.50	3.00
6	10	15	10	15	12.50	17.76	5.26
7	10	15	10	10	11.25	15.09	3.84
8	15	10	10	10	11.25	17.08	5.83
9	10	15	10	10	11.25	14.15	2.90
10	10	15	15	10	12.50	18.27	5.77
11	10	10	15	10	11.25	13.14	1.89
12	15	15	10	10	12.50	16.16	3.66
13	10	15	10	15	12.50	11.92	0.58
14	15	15	10	15	13.75	16.10	2.35
15	10	15	15	15	15.00	14.83	0.17
			AVG.		12.25	15.07	2.82

Run 2	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	15	15	15	10	13.75	14.48	0.73
2	10	10	15	10	11.25	12.46	1.21
3	10	10	10	15	11.25	13.00	1.75
4	10	15	15	15	13.75	14.21	0.46
5	10	15	10	10	11.25	15.46	4.21
6	10	15	10	15	12.50	13.65	1.15
7	10	15	15	10	12.50	13.50	1.00
8	10	15	10	10	11.25	13.00	1.75
9	15	15	10	15	13.75	12.38	1.37
10	10	10	10	15	11.25	13.17	1.92
11	10	10	15	15	12.50	14.40	1.90
12	15	10	10	15	12.50	14.74	2.24
13	15	10	15	10	12.50	12.51	0.01
14	15	15	15	15	15.00	12.95	2.05
15	15	10	15	15	13.75	13.16	0.59
			AVG.		12.58	13.54	0.95

Run 3	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	15	15	10	10	12.50	11.16	1.34
2	10	10	15	15	12.50	11.24	1.26
3	10	15	15	15	13.75	10.69	3.06
4	15	10	10	15	12.50	13.78	1.28
5	15	15	10	15	13.75	13.21	0.54
6	15	15	10	10	12.50	13.24	0.74
7	10	10	15	15	12.50	17.14	4.64
8	10	10	15	15	12.50	11.95	0.55
9	15	15	10	25	16.25	18.50	2.25
10	15	10	15	10	12.50	12.98	0.48
11	15	10	15	15	13.75	17.76	4.01
12	10	15	15	10	12.50	13.72	1.22
13	10	10	15	10	11.25	14.85	3.60
14	10	15	10	10	11.25	11.76	0.51
15	15	10	10	15	12.50	15.49	2.99
			AVG.		12.83	13.83	1.00

Run 4	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	15	10	15	12.50	12.54	0.04
2	15	15	10	10	12.50	12.34	0.16
3	10	15	15	10	12.50	13.37	0.87
4	10	10	15	10	11.25	11.47	0.22
5	20	20	15	15	17.50	20.14	2.64
6	15	10	15	10	12.50	11.75	0.75
7	10	10	15	10	11.25	13.43	2.18
8	10	15	10	10	11.25	10.75	0.50
9	15	15	10	10	12.50	17.50	5.00
10	15	10	15	10	12.50	11.63	0.87
11	10	15	15	10	12.50	17.27	4.77
12	20	15	10	10	13.75	15.75	2.00
13	15	15	15	10	13.75	15.98	2.23
14	10	10	15	15	12.50	11.90	0.60
15	10	15	10	10	11.25	14.35	3.10
			AVG.		12.67	14.01	1.34

Run 5	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	10	15	15	12.50	12.65	0.15
2	10	15	10	10	11.25	10.47	0.78
3	15	10	10	10	11.25	10.14	1.11
4	10	10	10	15	11.25	10.20	1.05
5	10	10	15	15	12.50	17.85	5.35
6	15	10	10	15	12.50	13.01	0.51
7	15	15	15	10	13.75	12.99	0.76
8	15	15	10	10	12.50	12.45	0.05
9	15	15	10	10	12.50	13.35	0.85
10	15	15	15	10	13.75	11.17	2.58
11	15	15	10	15	13.75	13.08	0.67
12	10	15	15	10	12.50	10.16	2.34
13	10	10	10	15	11.25	17.59	6.34
14	15	15	15	10	13.75	11.04	2.71
15	15	10	10	15	12.50	14.36	1.86
			AVG.		12.50	12.70	0.20

Run 6	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	15	10	15	15	13.75	12.37	1.38
2	10	10	10	15	11.25	10.29	0.96
3	10	15	10	15	12.50	10.86	1.64
4	20	15	10	15	15.00	13.13	1.87
5	15	15	10	15	13.75	16.66	2.91
6	10	15	10	25	15.00	13.69	1.31
7	15	10	15	15	13.75	14.57	0.82
8	15	10	10	15	12.50	10.60	1.90
9	15	15	10	10	12.50	17.14	4.64
10	10	10	15	15	12.50	13.00	0.50
11	10	10	10	15	11.25	14.43	3.18
12	15	15	10	15	13.75	12.31	1.44
13	15	10	15	10	12.50	14.22	1.72
14	15	10	15	10	12.50	11.91	0.59
15	15	15	10	10	12.50	14.18	1.68
			AVG.		13.00	13.29	0.29

Run 7	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	15	10	10	11.25	13.71	2.46
2	15	15	10	10	12.50	10.73	1.77
3	10	10	15	15	12.50	10.02	2.48
4	10	10	15	10	11.25	9.83	1.42
5	10	10	10	15	11.25	14.82	3.57
6	10	15	10	10	11.25	12.50	1.25
7	10	15	15	10	12.50	14.62	2.12
8	10	15	15	10	12.50	13.61	1.11
9	10	10	10	15	11.25	11.85	0.60
10	10	10	15	10	11.25	10.02	1.23
11	10	15	15	10	12.50	12.02	0.48
12	15	10	15	10	12.50	10.27	2.23
13	10	10	15	10	11.25	11.19	0.06
14	10	10	10	15	11.25	10.46	0.79
15	15	10	10	10	11.25	14.21	2.96
			AVG.		11.75	11.99	0.24

Run 8	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	10	15	10	11.25	12.51	1.26
2	10	10	10	15	11.25	10.87	0.38
3	10	15	15	10	12.50	10.25	2.25
4	10	15	10	15	12.50	10.04	2.46
5	10	15	15	15	13.75	12.38	1.37
6	15	15	10	15	13.75	12.93	0.82
7	10	15	15	10	12.50	14.53	2.03
8	15	10	15	10	12.50	14.80	2.30
9	10	15	15	15	13.75	15.12	1.37
10	15	10	10	10	11.25	12.87	1.62
11	15	15	10	15	13.75	14.02	0.27
12	15	10	10	15	12.50	15.70	3.20
13	10	15	15	10	12.50	11.84	0.66
14	15	10	10	15	12.50	13.41	0.91
15	15	15	15	10	13.75	11.19	2.56
			AVG.		12.67	12.83	0.16

Run 9	seconds				method 9		
min.	0	15	30	45	AVG.	CEMS	Diff.
1	10	15	10	10	11.25	17.72	6.47
2	15	10	10	15	12.50	10.11	2.39
3	10	15	10	15	12.50	10.11	2.39
4	15	15	10	10	12.50	10.31	2.19
5	15	15	10	10	12.50	14.65	2.15
6	10	15	15	20	15.00	17.93	2.93
7	10	20	25	20	18.75	15.88	2.87
8	15	15	15	10	13.75	13.69	0.06
9	15	10	15	10	12.50	15.90	3.40
10	15	10	15	10	12.50	15.77	3.27
11	15	10	10	15	12.50	13.52	1.02
12	10	10	15	15	12.50	12.77	0.27
13	15	10	15	15	13.75	13.63	0.12
14	15	10	15	10	12.50	13.98	1.48
15	10	15	15	10	12.50	15.38	2.88
			AVG.		13.17	14.09	0.92

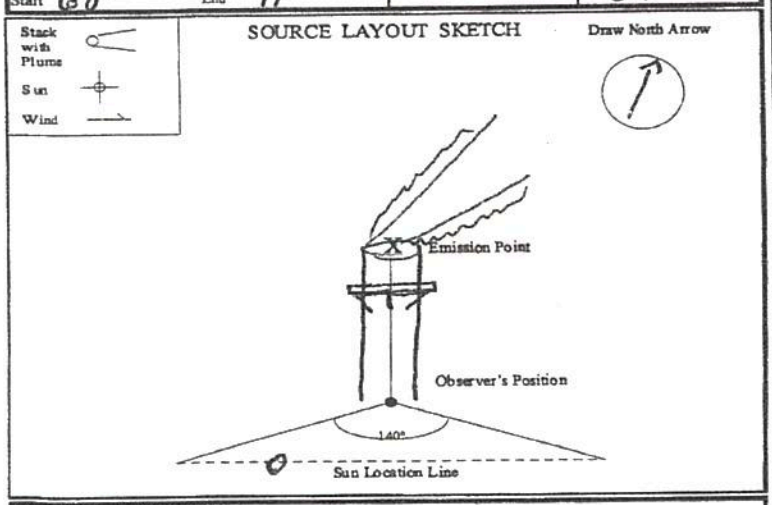
CATALYST AIR MANAGEMENT, INC. AIR QUALITY TESTING SERVICES

VISIBLE EMISSION OBSERVATION FORM

COMPANY NAME	UGI
STREET ADDRESS	US Route 11
CITY	Hunlock Creek
STATE	PA
ZIP	
PHONE (KEY CONTACT)	Jeff Steeber
SOURCE I.D. NUMBER	Unit 6
PROCESS EQUIPMENT	Stoker Boiler
OPERATING MODE	Normal
CONTROL EQUIPMENT	ESP
OPERATING MODE	Normal
DESCRIBE EMISSION POINT	Top of Stack
HEIGHT ABOVE GROUND LEVEL	150 ft
HEIGHT RELATIVE TO OBSERVER	Start 150 ft End Same
DISTANCE FROM OBSERVER	425 ft
DIRECTION FROM OBSERVER	Start NNE End Same
DESCRIBE EMISSIONS	Start Grey End Same
EMISSION COLOR	Start Grey End Grey
IF WATER DROPLET PLUME	Attached NA Detached
POINT IN THE PLUME AT WHICH OPACITY WAS DETERMINED	Start Top of Stack End Top of Stack
DESCRIBE PLUME BACKGROUND	Start Sky End
SKY COLOR	Start Blue End Same
SKY CONDITIONS	Start Part. Cloudy End Same
WIND SPEED	Start 10-15mph End Same
WIND DIRECTION	Start ENE End Same
AMBIENT TEMP.	Start 68° End 71°
WET BULB TEMP	
RH, percent	27

SOURCE LAYOUT SKETCH

Draw North Arrow



ADDITIONAL INFORMATION

OBSERVATION DATE	START TIME	END TIME
5/13/09	12:45	15:15

	0	15	30	45	COMMENTS
1	10	15	10	10	- 1245
2	10	15	15	10	
3	10	15	10	15	
4	10	10	15	10	
5	10	15	15	10	
6	10	15	10	15	
7	10	15	10	10	
8	15	10	10	10	- Rate R-1
9	10	15	10	10	
10	10	15	15	10	
11	10	10	15	10	
12	15	15	10	10	
13	10	15	10	15	
14	15	15	10	15	
15	10	15	15	15	- 1300
16	15	15	15	10	- 1301
17	10	10	15	10	
18	10	10	10	15	
19	10	15	15	15	
20	10	15	10	10	
21	10	15	10	15	
22	10	15	15	10	
23	10	15	10	10	- Rate R-2
24	15	15	10	15	
25	10	10	10	15	
26	10	10	15	15	
27	15	10	10	15	
28	15	10	15	10	
29	15	15	15	15	
30	15	10	15	15	- 1315

OBSERVER'S NAME	William Sapp	
OBSERVER'S SIGNATURE	W-Sp	DATE 5/13/09
ORGANIZATION	Catalyst Air Management, Inc.	
CERTIFIED BY	Whitlow Enterprises	DATE 1/12/09

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CATALYST AIR MANAGEMENT, INC. AIR QUALITY TESTING SERVICES

VISIBLE EMISSION OBSERVATION FORM

(CONTINUED)

COMPANY NAME: UGI	TYPE OF FACILITY: Electric Utility
CITY: Hunlock Creek	EMISSION POINT: Top of Stack
TEST NO.: Ruta R-3-6 PAGE 2 OF 3	OBSERVER: William Sapp
OBSERVATION DATE: 5/13/09 START TIME: END TIME:	START TIME: END TIME:

	0	15	30	45	COMMENTS
1	15	15	10	10	-1316
2	10	10	15	15	
3	10	15	15	15	
4	15	10	10	15	
5	15	15	10	15	
6	15	15	10	10	
7	10	10	15	15	-Ruta R3
8	10	10	15	15	
9	15	15	10	15	
10	15	10	15	10	
11	15	10	15	15	
12	10	15	15	10	
13	10	10	15	10	
14	10	15	10	10	
15	15	10	10	15	-1330
1	10	15	10	15	-1331
2	15	15	10	10	
3	10	15	15	10	
4	10	10	15	10	
5	20	20	15	15	
6	15	10	15	10	
7	10	10	15	10	-Ruta R-4
8	10	15	10	10	
9	15	15	10	10	
10	15	10	15	10	
11	10	15	15	10	
12	10	15	10	10	
13	15	15	15	10	
14	10	10	15	15	
15	10	15	10	10	-1345

	0	15	30	45	COMMENTS
1	10	10	15	15	-1346
2	10	15	10	10	
3	15	10	10	10	
4	10	10	10	15	
5	10	10	15	15	
6	15	10	10	15	
7	15	15	15	10	-Ruta R-5
8	15	15	10	10	
9	15	15	10	10	
10	15	15	15	10	
11	15	15	10	15	
12	10	15	15	10	
13	10	10	10	15	
14	15	15	15	10	
15	15	10	10	15	-1400
1	15	10	15	15	-1401
2	10	10	10	15	
3	10	15	10	15	
4	20	15	10	15	
5	15	15	10	15	
6	10	15	10	15	
7	15	10	15	15	-Ruta R-6
8	15	10	10	15	
9	15	15	10	10	
10	10	10	15	15	
11	10	10	10	15	
12	15	15	10	15	
13	15	10	15	10	
14	15	10	15	10	
15	15	15	10	10	-1415

CATALYST AIR MANAGEMENT, INC. AIR QUALITY TESTING SERVICES

VISIBLE EMISSION OBSERVATION FORM

(CONTINUED)

COMPANY NAME: UGI	TYPE OF FACILITY: Electric Facility
CITY: Hunlock Creek	EMISSION POINT: Top of Stack
TEST NO.: Rata R-7-10 PAGE 3 OF 3	OBSERVER: William Supp
OBSERVATION DATE: 5/13/09 START TIME: END TIME:	START TIME: END TIME:

	0	15	30	45	COMMENTS
1	10	15	10	10	-1416
2	15	15	10	10	
3	10	10	15	15	
4	10	10	15	10	
5	10	10	10	15	
6	10	15	10	10	
7	10	15	15	10	-Rata R-7
8	10	15	15	10	
9	10	10	10	15	
10	10	10	15	10	
11	10	15	15	10	
12	15	10	15	10	
13	10	10	15	10	
14	10	10	10	15	
15	15	10	10	10	-1430
1	10	10	15	10	-1431
2	10	10	10	15	
3	10	15	10	10	
4	10	15	10	15	
5	10	15	15	15	
6	15	15	10	15	
7	10	15	15	10	-Rata R-8
8	15	10	15	10	
9	10	15	15	15	
10	15	10	10	10	
11	15	15	10	15	
12	15	10	10	15	
13	10	15	15	10	
14	15	10	10	15	
15	15	15	15	10	-1445

	0	15	30	45	COMMENTS
1	10	15	10	10	-1446
2	15	10	10	15	
3	10	15	10	15	
4	15	15	10	10	
5	15	15	10	10	
6	10	15	15	20	
7	10	20	15	10	-Rata R9
8	15	15	15	10	
9	15	10	15	10	
10	15	10	15	10	
11	15	10	10	15	
12	10	10	15	15	
13	15	10	15	15	
14	15	10	15	10	
15	10	15	15	10	-1500
1	15	10	15	15	-1501
2	10	15	10	10	
3	10	15	15	10	
4	15	15	15	10	
5	10	10	15	10	
6	15	15	15	10	
7	10	15	15	10	-Rata R-10
8	15	15	10	15	
9	15	15	15	10	
10	10	10	15	10	
11	10	15	15	10	
12	15	15	10	20	
13	10	15	10	15	
14	15	10	15	10	
15	15	15	10	15	-1515