

Rick Thomas  
ENGR 115  
Th 8-11

10/21/2016

Measured Parameters:

Measured Outdoor	800
Assumed Outdoor	400
Corrected Factor	400
Room Volume [ft3]	1287
Room Capacity	2

Calculations:

Air Exchange Rate [1/hr]	0.2591
Time to Remove non-reactive Chemical [hr]	3.8595
Ventilation Rate [ft3/min/person]	2.7788

Measurment	Date Time, GMT-07:00	Measured CO2, ppm
0	10/21/2016 9:20	1625.8
1	10/21/2016 9:21	1616.6
2	10/21/2016 9:22	1606.8
3	10/21/2016 9:23	1595.2
4	10/21/2016 9:24	1589.1
5	10/21/2016 9:25	1592.2
6	10/21/2016 9:26	1594.6
7	10/21/2016 9:27	1591
8	10/21/2016 9:28	1582.4
9	10/21/2016 9:29	1584.2
10	10/21/2016 9:30	1582.4
11	10/21/2016 9:31	1584.9
12	10/21/2016 9:32	1588.5
13	10/21/2016 9:33	1586.7
14	10/21/2016 9:34	1573.3
15	10/21/2016 9:35	1567.8
16	10/21/2016 9:36	1563.5
17	10/21/2016 9:37	1563.5
18	10/21/2016 9:38	1564.1
19	10/21/2016 9:39	1560.4
20	10/21/2016 9:40	1553.7
21	10/21/2016 9:41	1536
22	10/21/2016 9:42	1534.2
23	10/21/2016 9:43	1531.1
24	10/21/2016 9:44	1531.7
25	10/21/2016 9:45	1531.1
26	10/21/2016 9:46	1529.3
27	10/21/2016 9:47	1528.7

28	10/21/2016 9:48	1523.8
29	10/21/2016 9:49	1520.8
30	10/21/2016 9:50	1522.6
31	10/21/2016 9:51	1522
32	10/21/2016 9:52	1520.8
33	10/21/2016 9:53	1520.8
34	10/21/2016 9:54	1520.8
35	10/21/2016 9:55	1521.4
36	10/21/2016 9:56	1522
37	10/21/2016 9:57	1514.7
38	10/21/2016 9:58	1511.6
39	10/21/2016 9:59	1506.1
40	10/21/2016 10:00	1504.3
41	10/21/2016 10:01	1504.3

Actual CO2 ppm	Experiment time [hr]	$-\ln((C_{room}(t) - C_{outdoor}) / (C_o - C_{outdoor}))$
1225.8	0.0000	0.00000
1216.6	0.0167	0.01120
1206.8	0.0333	0.02328
1195.2	0.0500	0.03776
1189.1	0.0667	0.04546
1192.2	0.0833	0.04154
1194.6	0.1000	0.03851
1191	0.1167	0.04305
1182.4	0.1333	0.05399
1184.2	0.1500	0.05169
1182.4	0.1667	0.05399
1184.9	0.1833	0.05080
1188.5	0.2000	0.04622
1186.7	0.2167	0.04851
1173.3	0.2333	0.06569
1167.8	0.2500	0.07282
1163.5	0.2667	0.07844
1163.5	0.2833	0.07844
1164.1	0.3000	0.07765
1160.4	0.3167	0.08251
1153.7	0.3333	0.09136
1136	0.3500	0.11512
1134.2	0.3667	0.11757
1131.1	0.3833	0.12180
1131.7	0.4000	0.12098
1131.1	0.4167	0.12180
1129.3	0.4333	0.12427
1128.7	0.4500	0.12509

1123.8	0.4667	0.13184
1120.8	0.4833	0.13599
1122.6	0.5000	0.13350
1122	0.5167	0.13433
1120.8	0.5333	0.13599
1120.8	0.5500	0.13599
1120.8	0.5667	0.13599
1121.4	0.5833	0.13516
1122	0.6000	0.13433
1114.7	0.6167	0.14449
1111.6	0.6333	0.14884
1106.1	0.6500	0.15660
1104.3	0.6667	0.15915
1104.3	0.6833	0.15915

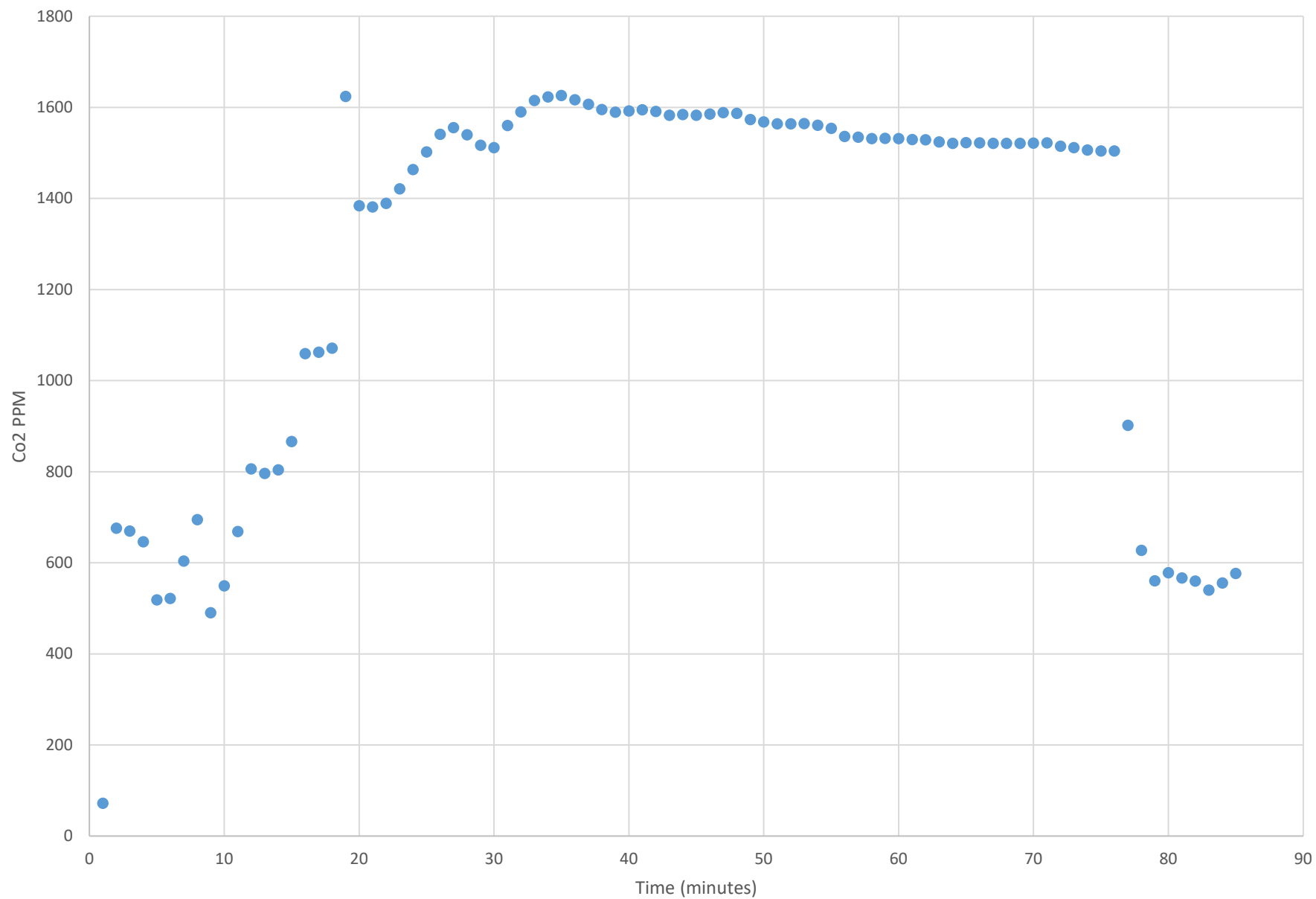
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10/21/2016

Measured Parameters:	
Measured Outdoor	800
Assumed Outdoor	400
Corrected Factor	400

	Date Time, GMT-07:00	Measured CO2, ppm	Actual CO2 ppm
1	10/21/2016 9:11	1540.9	1140.9
2	10/21/2016 9:12	1555.6	1155.6
3	10/21/2016 9:13	1539.7	1139.7
4	10/21/2016 9:14	1516.5	1116.5
5	10/21/2016 9:15	1511.6	1111.6
6	10/21/2016 9:16	1559.8	1159.8
7	10/21/2016 9:17	1589.7	1189.7
8	10/21/2016 9:18	1614.8	1214.8
9	10/21/2016 9:19	1622.7	1222.7
10	10/21/2016 9:20	1625.8	1225.8
11	10/21/2016 9:21	1616.6	1216.6
12	10/21/2016 9:22	1606.8	1206.8
13	10/21/2016 9:23	1595.2	1195.2
14	10/21/2016 9:24	1589.1	1189.1
15	10/21/2016 9:25	1592.2	1192.2
16	10/21/2016 9:26	1594.6	1194.6
17	10/21/2016 9:27	1591	1191
18	10/21/2016 9:28	1582.4	1182.4
19	10/21/2016 9:29	1584.2	1184.2
20	10/21/2016 9:30	1582.4	1182.4
21	10/21/2016 9:31	1584.9	1184.9
22	10/21/2016 9:32	1588.5	1188.5
23	10/21/2016 9:33	1586.7	1186.7
24	10/21/2016 9:34	1573.3	1173.3
25	10/21/2016 9:35	1567.8	1167.8
26	10/21/2016 9:36	1563.5	1163.5
27	10/21/2016 9:37	1563.5	1163.5
28	10/21/2016 9:38	1564.1	1164.1
29	10/21/2016 9:39	1560.4	1160.4
30	10/21/2016 9:40	1553.7	1153.7
31	10/21/2016 9:41	1536	1136
32	10/21/2016 9:42	1534.2	1134.2
33	10/21/2016 9:43	1531.1	1131.1
34	10/21/2016 9:44	1531.7	1131.7
35	10/21/2016 9:45	1531.1	1131.1
36	10/21/2016 9:46	1529.3	1129.3

37	10/21/2016 9:47	1528.7	1128.7
38	10/21/2016 9:48	1523.8	1123.8
39	10/21/2016 9:49	1520.8	1120.8
40	10/21/2016 9:50	1522.6	1122.6
41	10/21/2016 9:51	1522	1122
42	10/21/2016 9:52	1520.8	1120.8
43	10/21/2016 9:53	1520.8	1120.8
44	10/21/2016 9:54	1520.8	1120.8
45	10/21/2016 9:55	1521.4	1121.4
46	10/21/2016 9:56	1522	1122
47	10/21/2016 9:57	1514.7	1114.7
48	10/21/2016 9:58	1511.6	1111.6
49	10/21/2016 9:59	1506.1	1106.1
50	10/21/2016 10:00	1504.3	1104.3
51	10/21/2016 10:01	1504.3	1104.3

Raw Concentration Plot



Air Exchange Plot

