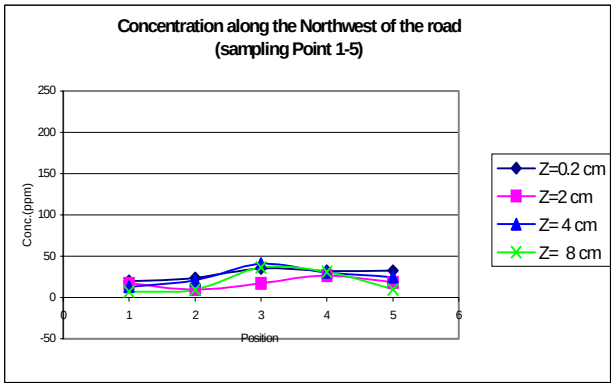
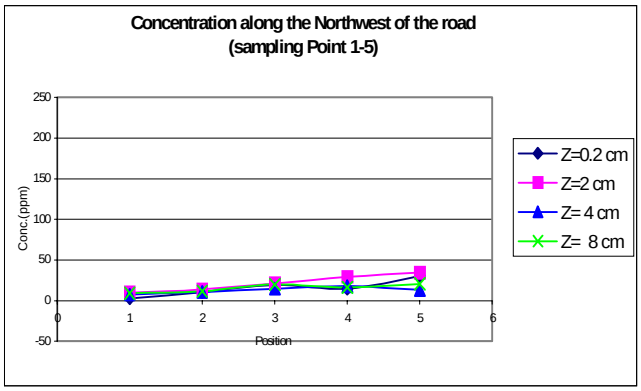
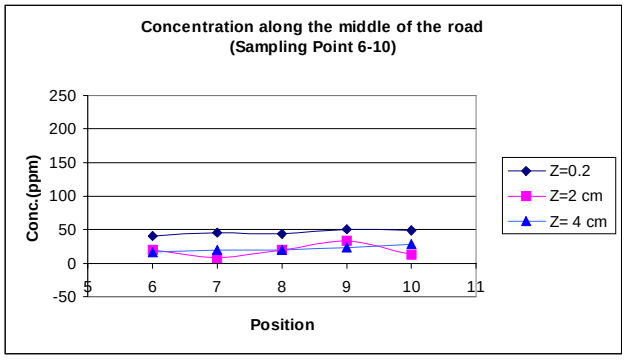
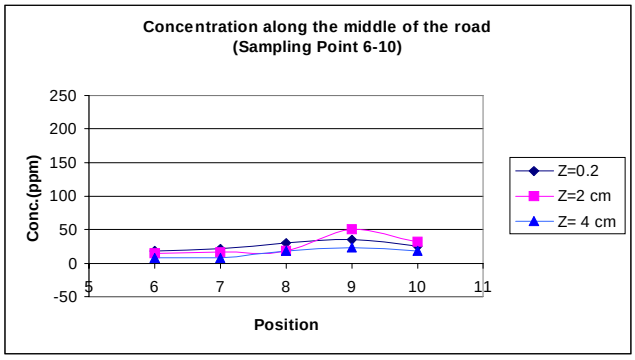
APPENDIX A: REPLICATION COMPARISON

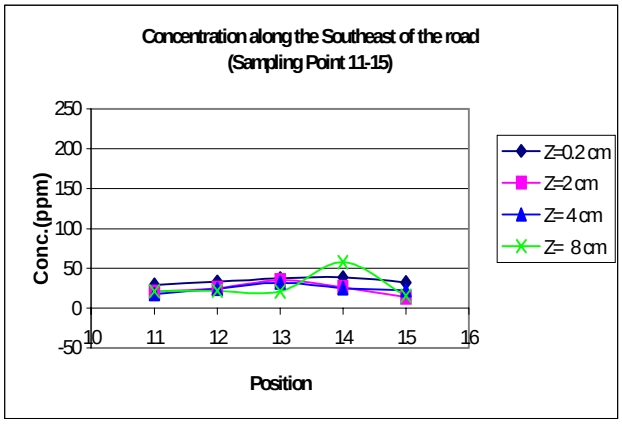
Replication 1 Replication 2











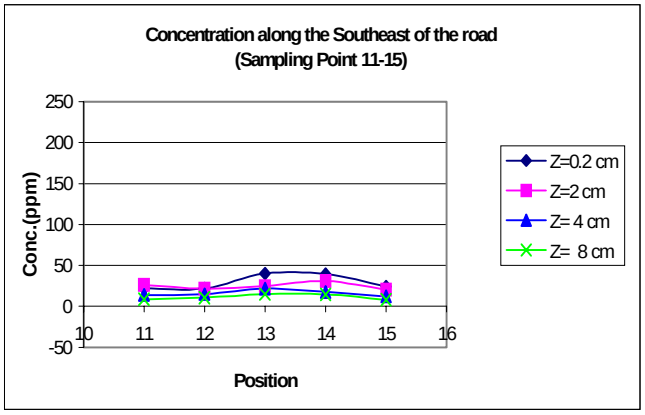


Figure A-1: Replication Comparison of Inlet Flow 1.293 mg/min, without Station

Replication 1 Replication 2

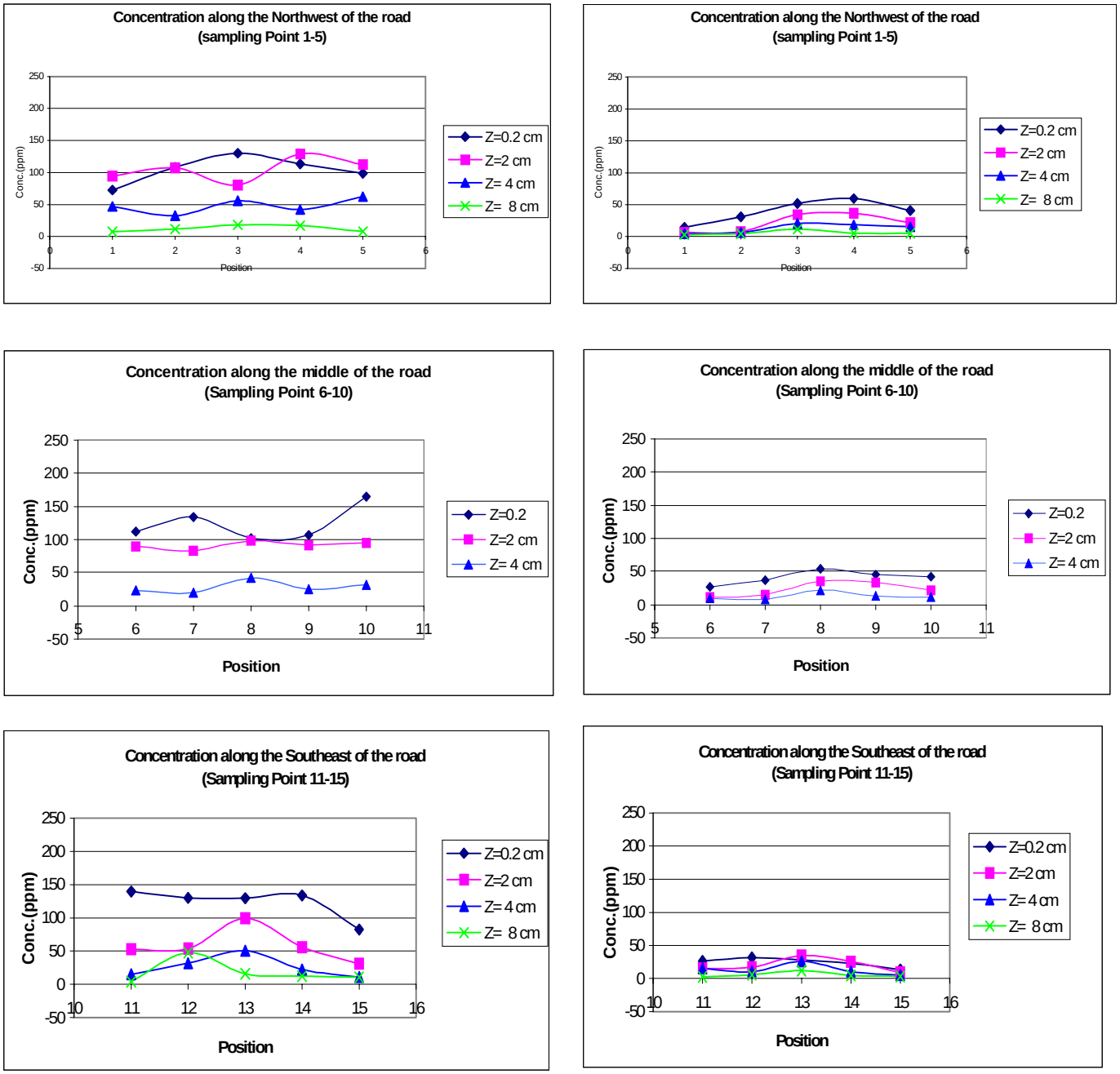
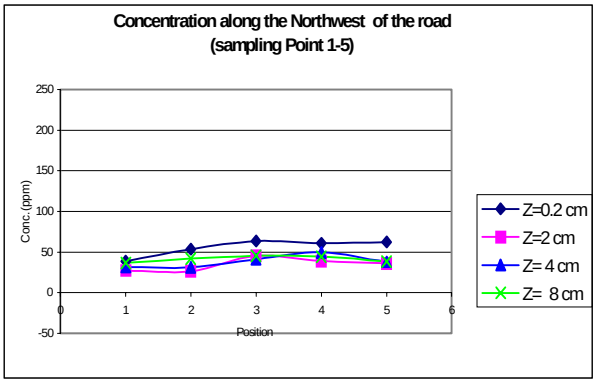
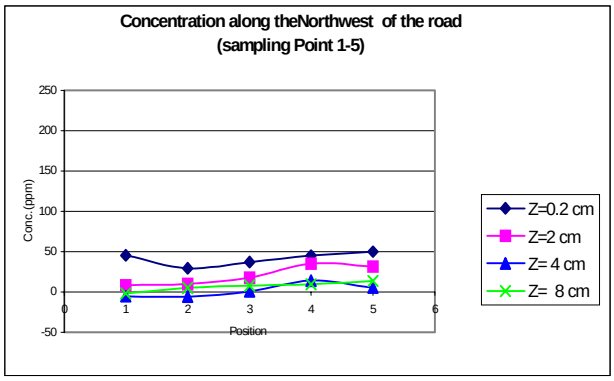
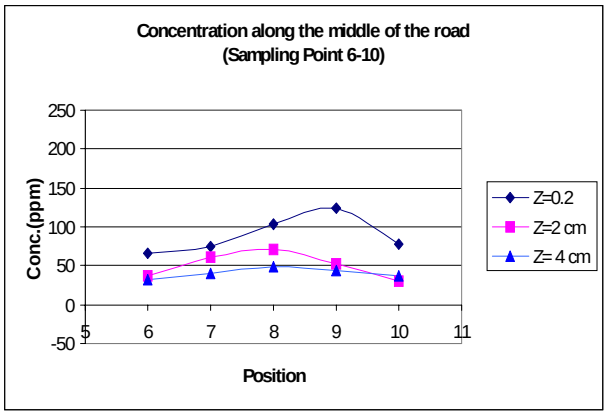


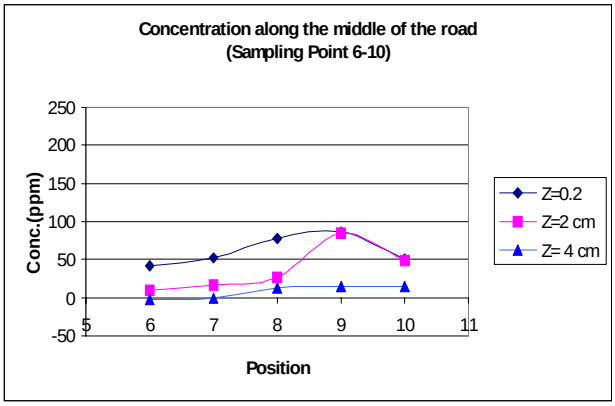
Figure A-2: Replication Comparison of Inlet Flow 1.293 mg/min, with station

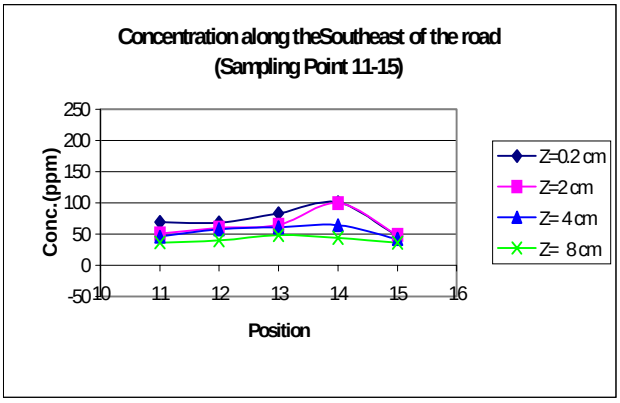
Replication 1 Replication 2











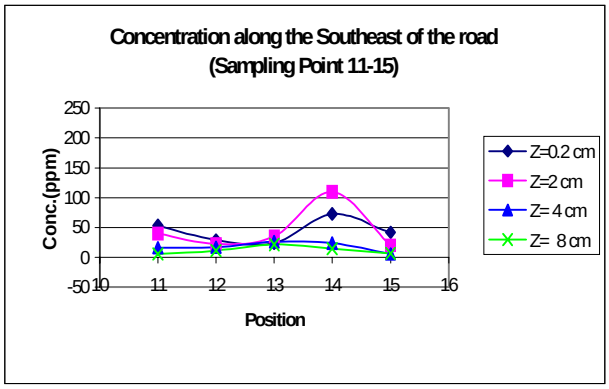


Figure A-3: Replication Comparison of Inlet Flow 2.586-mg/min, without station

Replication 1 Replication 2

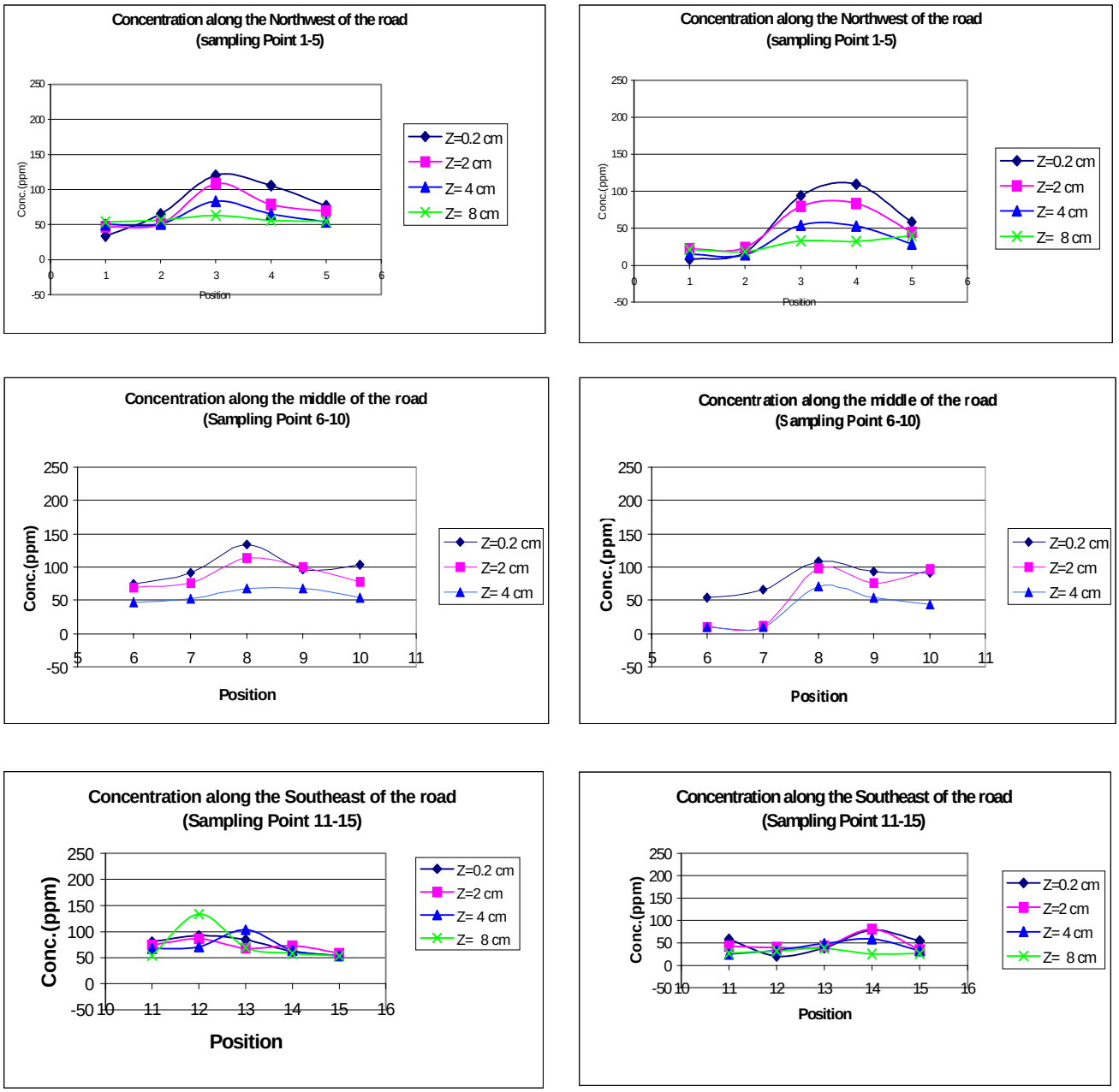


Figure A-4: Replication Comparison of Inlet Flow 2.586-mg/min, with station

Replication 1 Replication 2

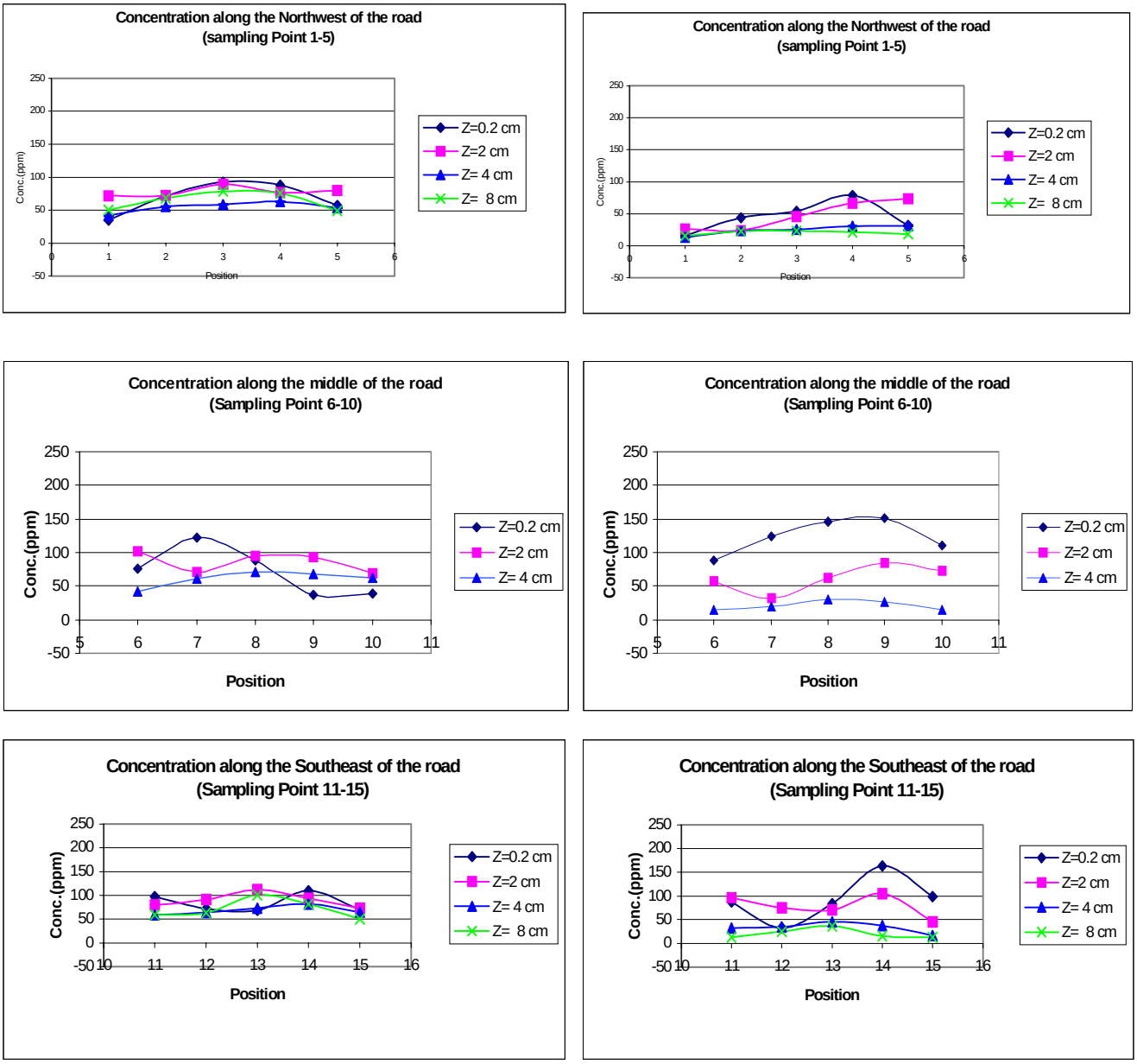


Figure A-5: Replication Comparison of Inlet Flow 5.177 mg/min, without station

Replication 1 Replication 2

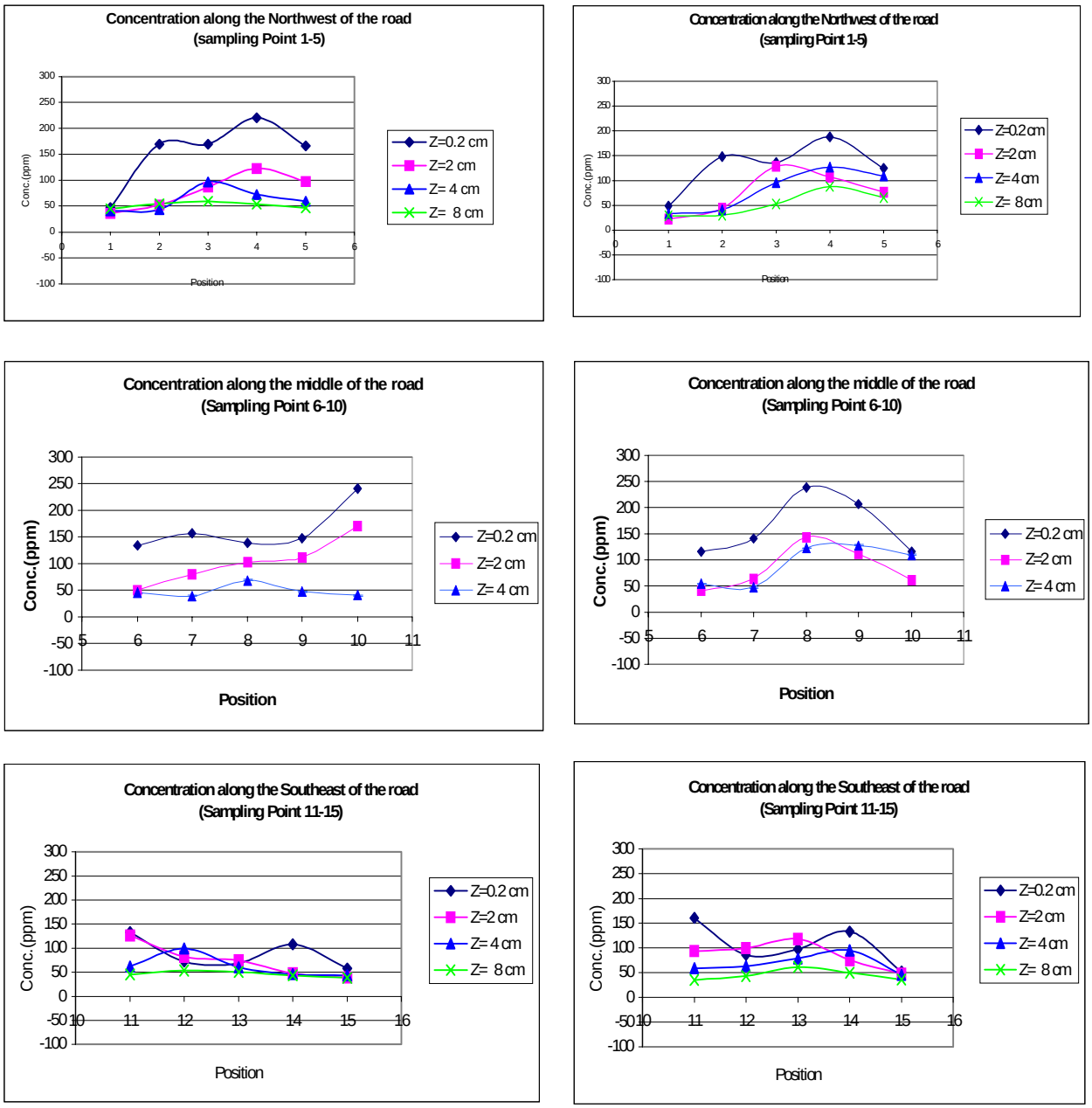
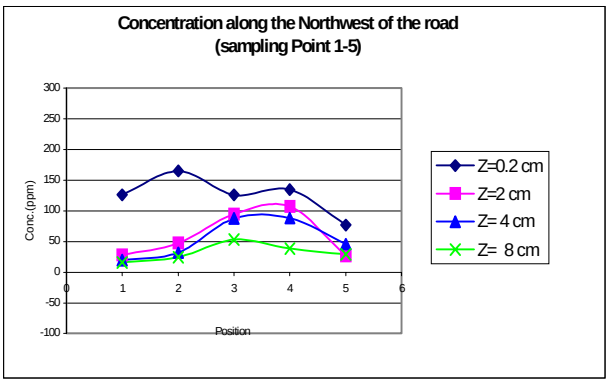
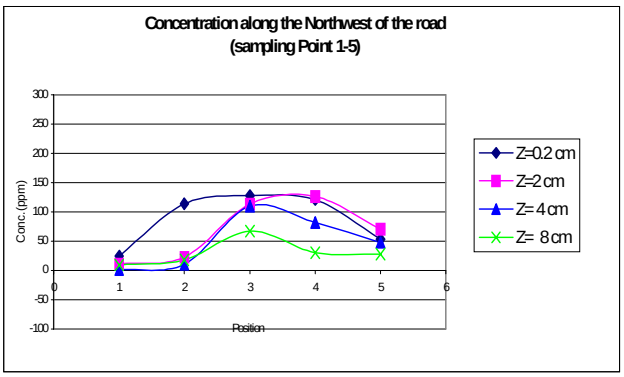
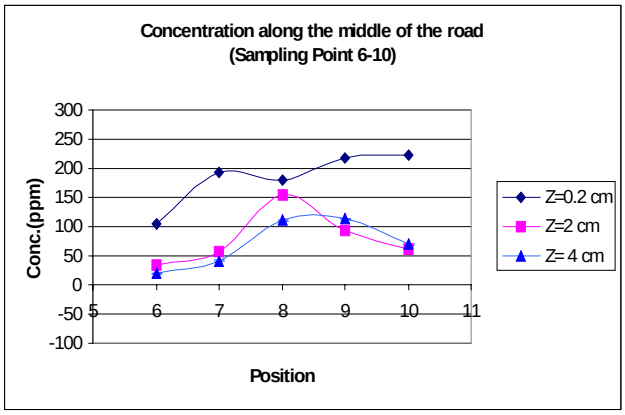


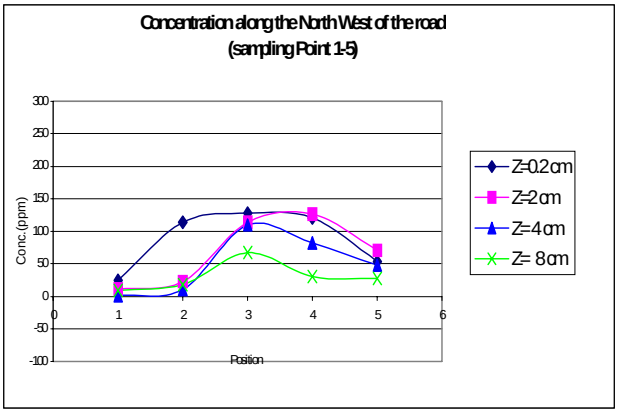
Figure A-6: Replication Comparison of Inlet Flow 5.177 mg/min, with station

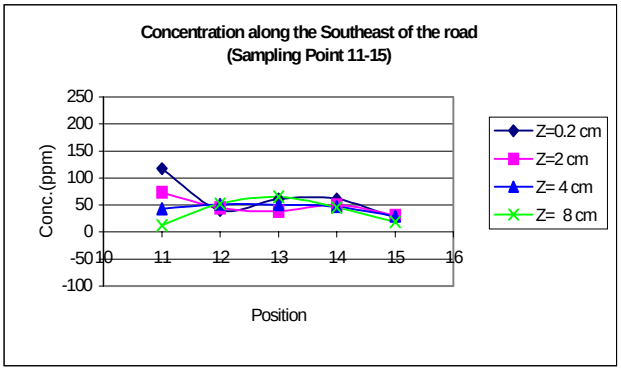
Replication 1 Replication 2











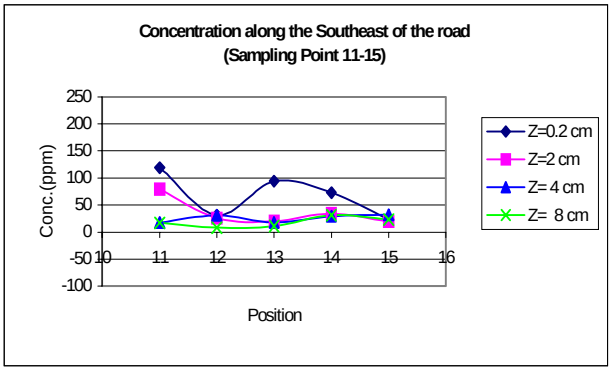


Figure A-7: Replication Comparison of Inlet Flow 5.177 mg/min, with Station with Ventilation System 12.5 cc/min

Replication 1 Replication 2

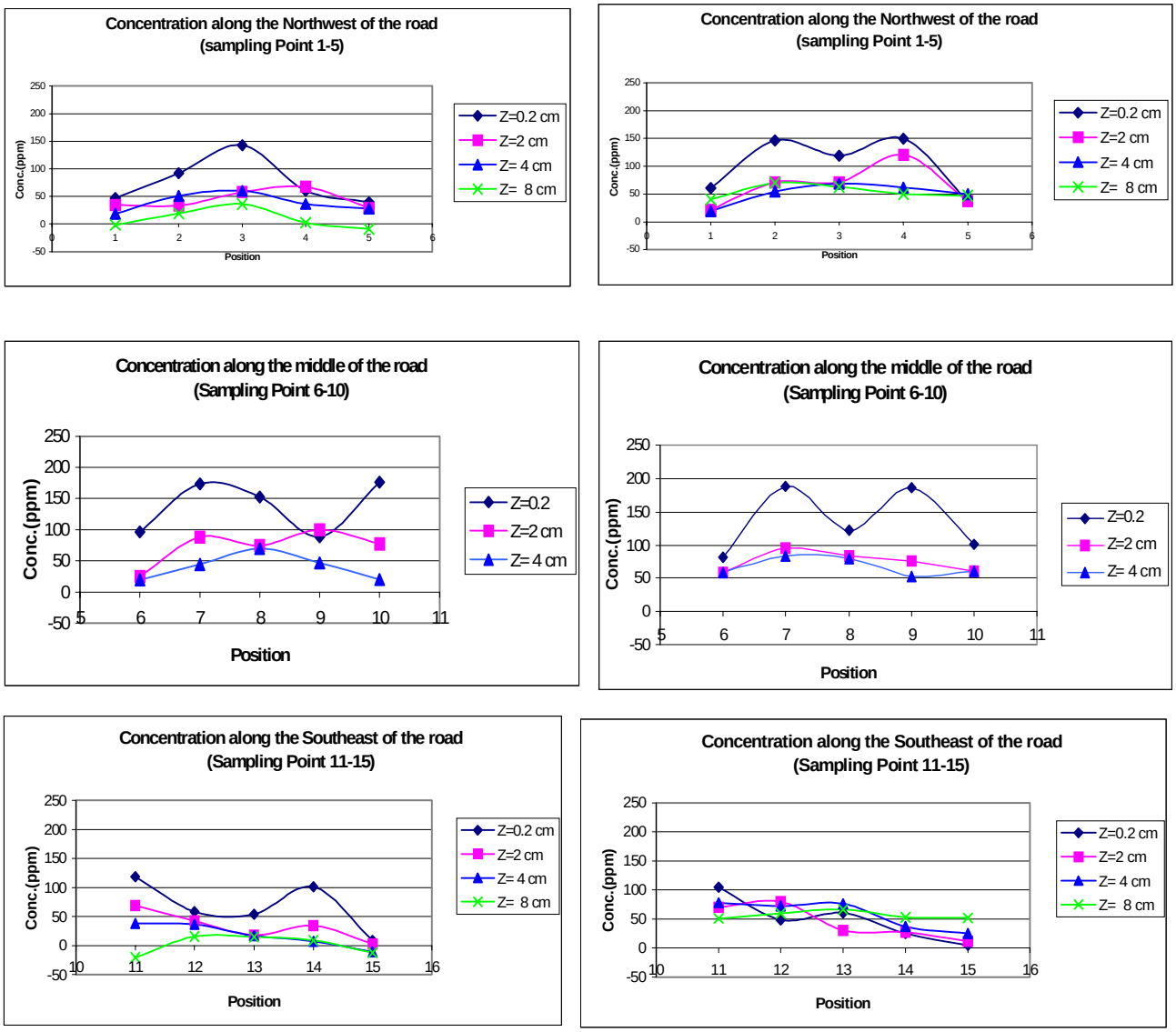
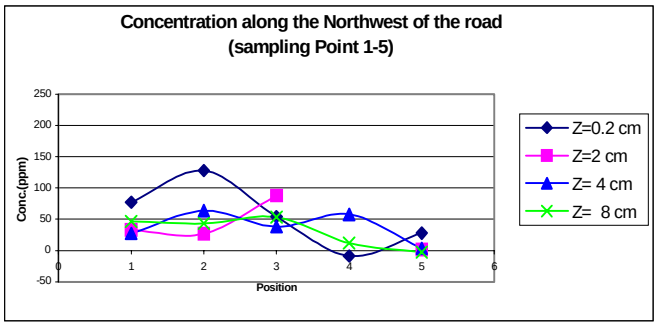
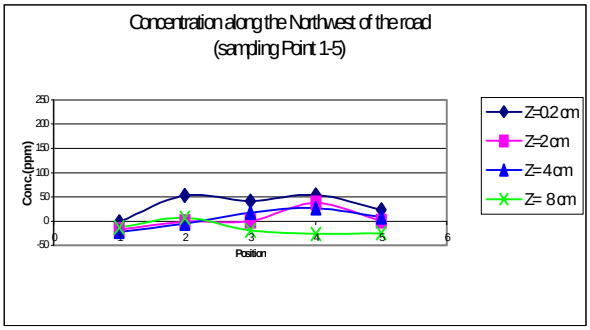
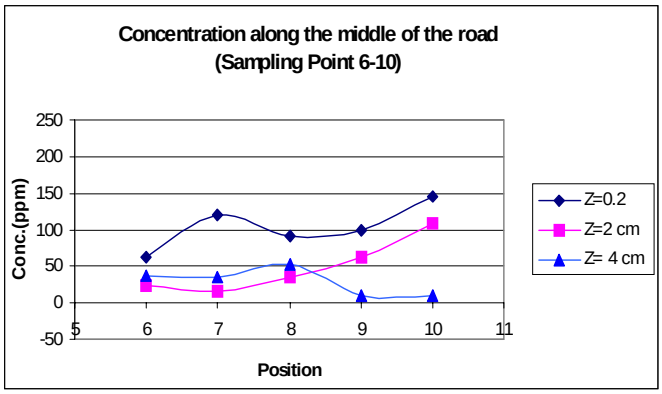


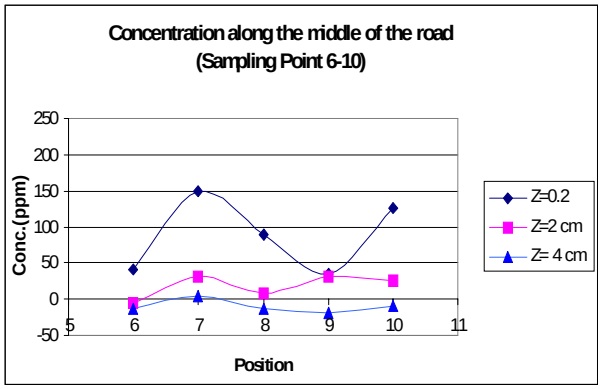
Figure A-8: Replication Comparison of Inlet Flow 5.177 mg/min, with Station with Ventilation System 25 cc/min

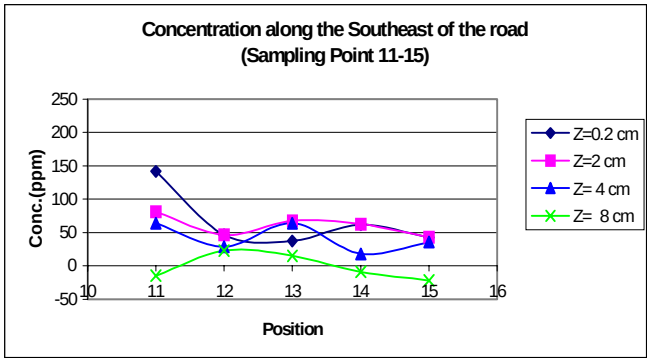
Replication 1 Replication 2











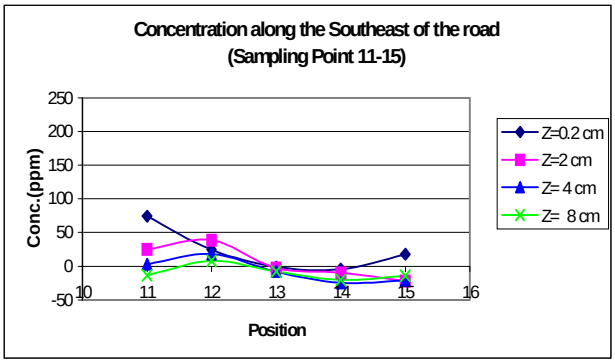


Figure A-9: Replication Comparison of Inlet Flow 5.177 mg/min, with Station, with Ventilation System 32.5 cc/min

APPENDIX B: VARIOGRAM FITTING MODEL

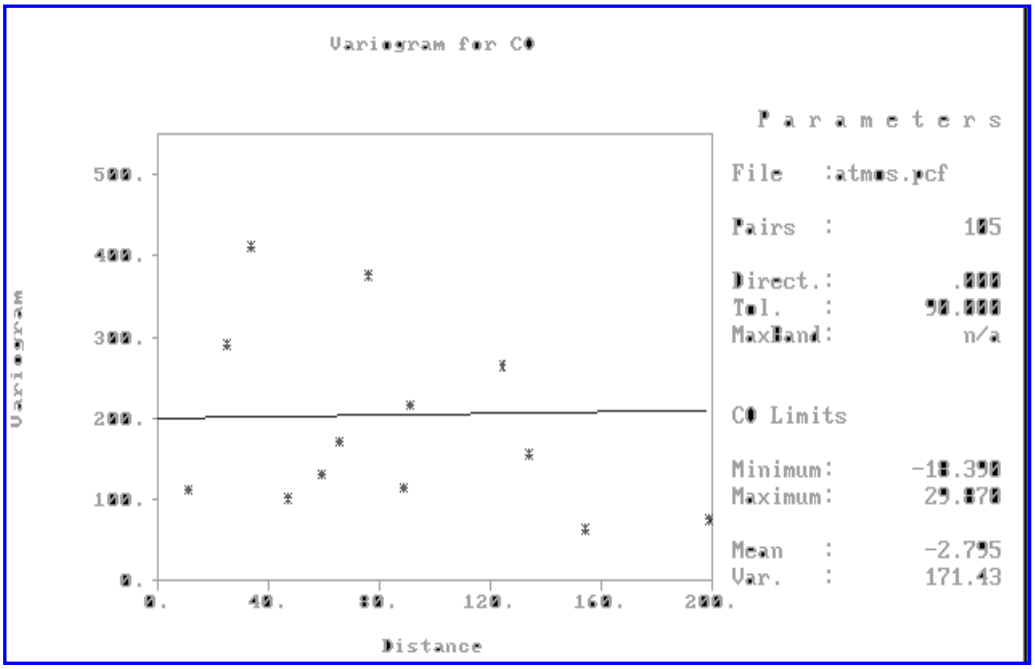


Figure B-1: **Variogram of Atmosphere CO_2 Concentration**

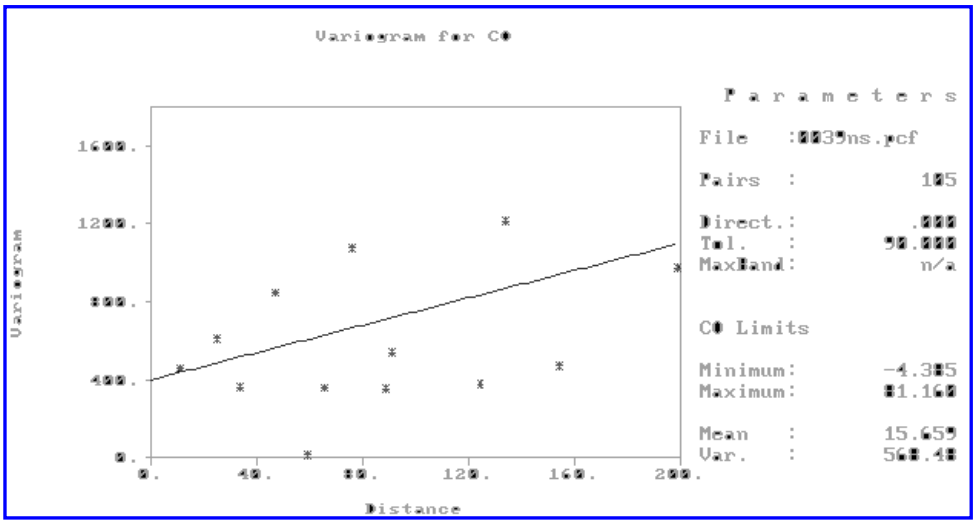


Figure B-2: Variogram of CO_2 Concentration, with Emission Rate 0.0039 mg/min, without Station

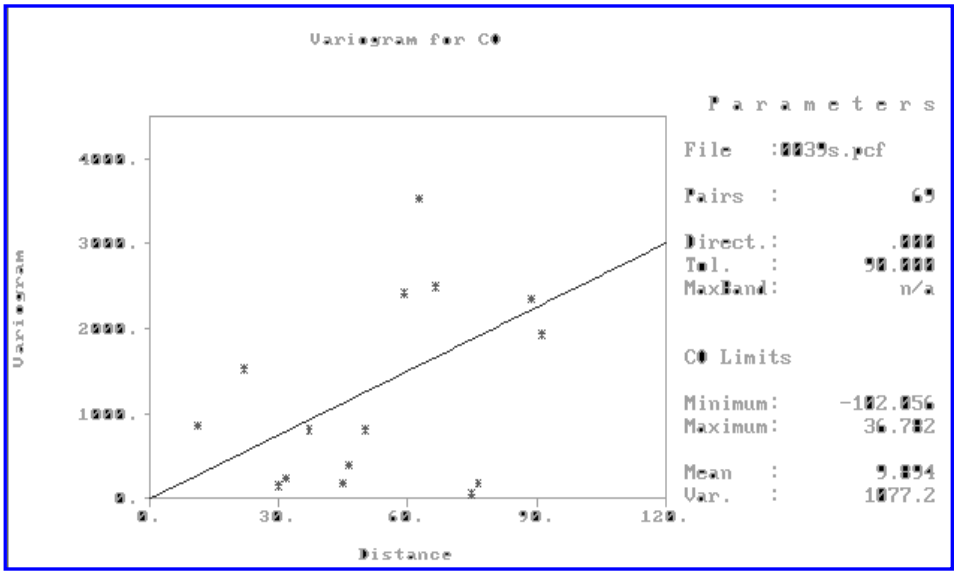


Figure B-3: Variogram of CO_2 Concentration, with Emission rate 0.0039 mg/min, with Station

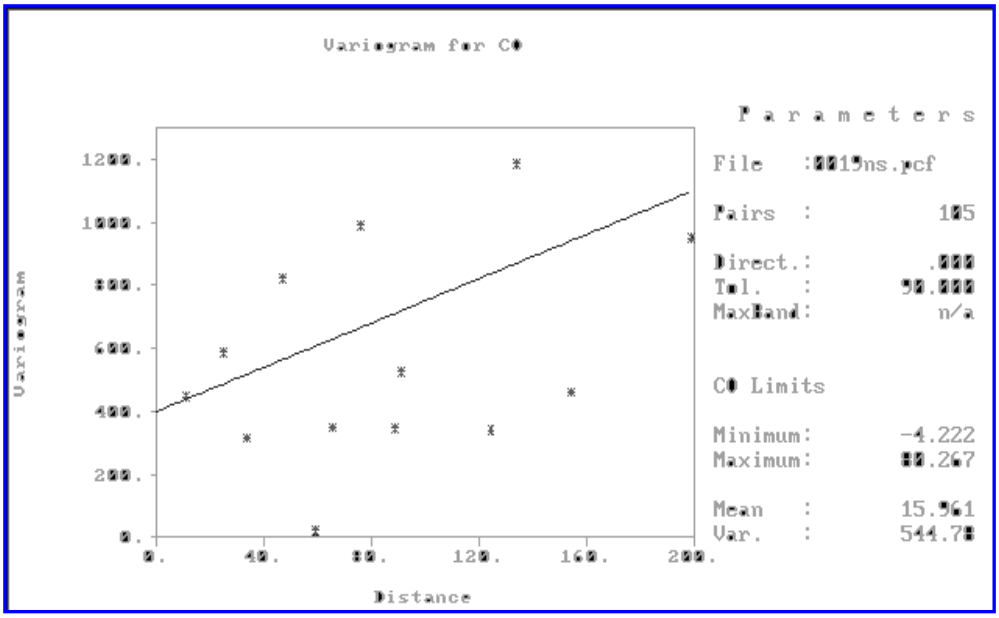


Figure B-4: Variogram of CO_2 Concentration, with Emission rate 0.0198 mg/min, without Station

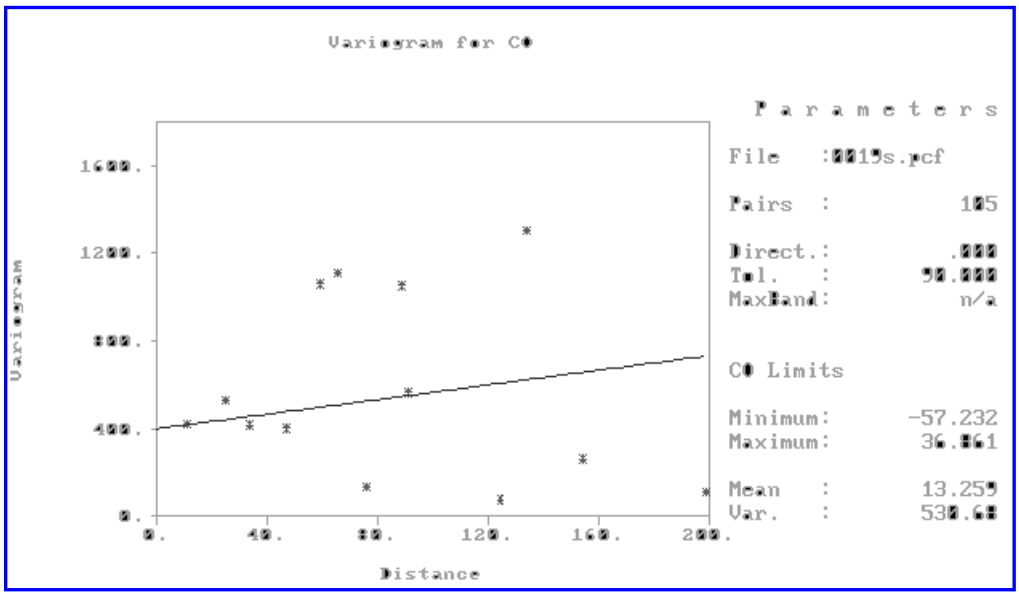


Figure B-5: Variogram of CO_2 Concentration, with Emission rate 0.0198 mg/min, with Station

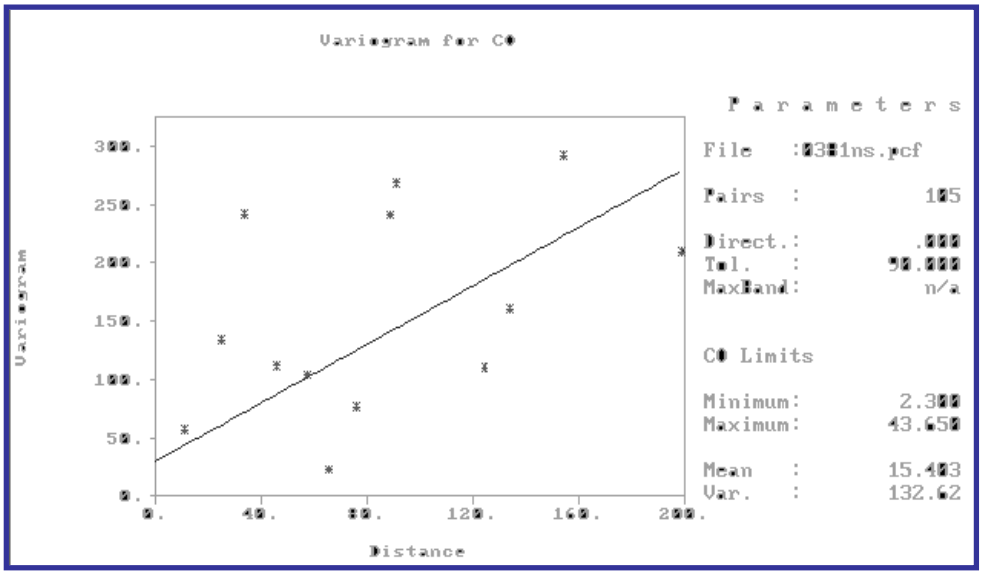


Figure B-6: Variogram of CO_2 Concentration, with Emission rate 0.038 mg/min, without Station

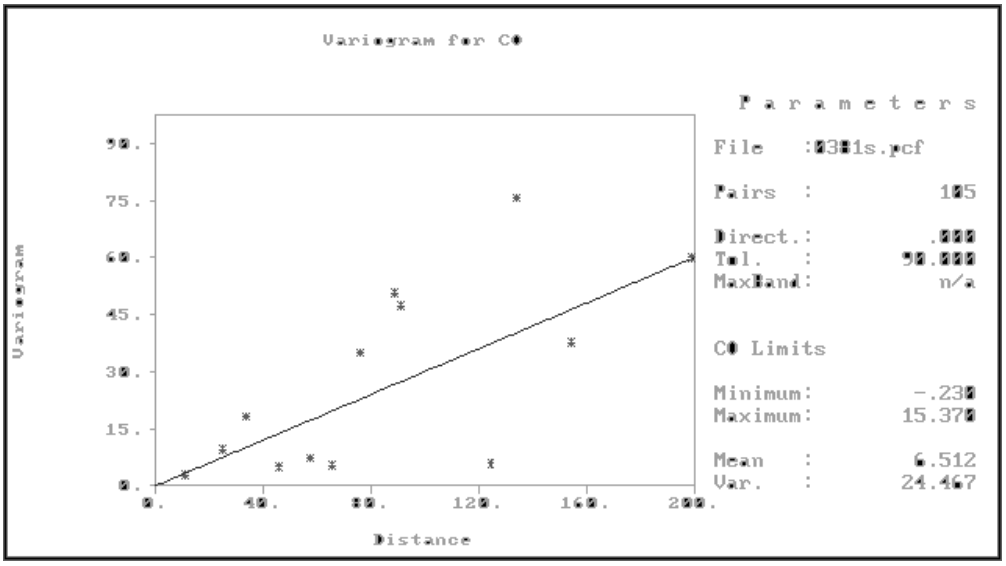


Figure B-7: Variogram of CO_2 Concentration, with Emission rate 0.038 mg/min, with Station

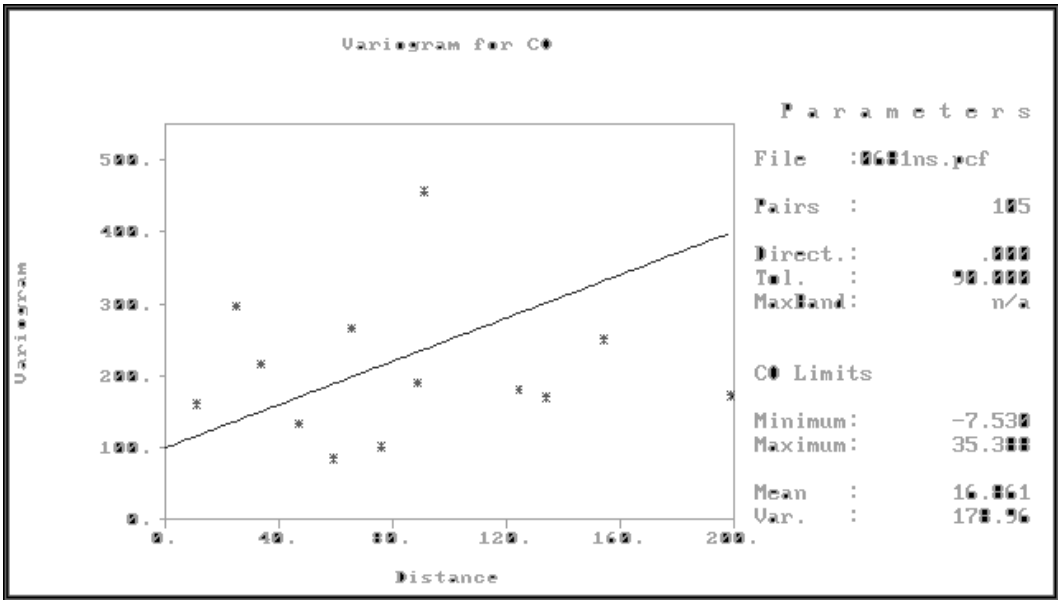


Figure B-8: Variogram of CO_2 Concentration, with Emission rate 0.681 mg/min, without Station

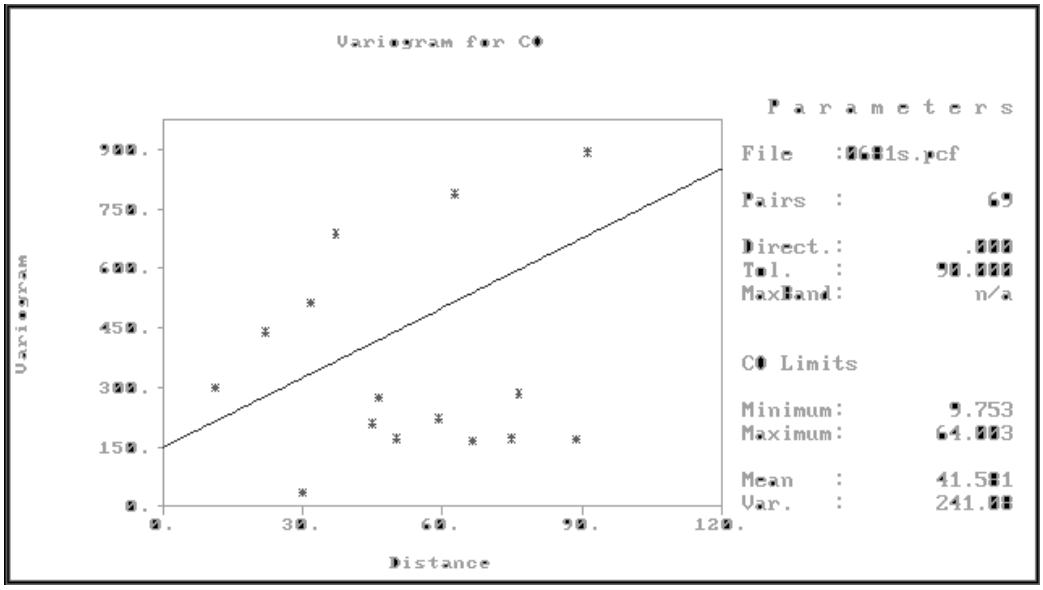


Figure B-9: Variogram of CO_2 Concentration, with Emission rate 0.681 mg/min, with Station

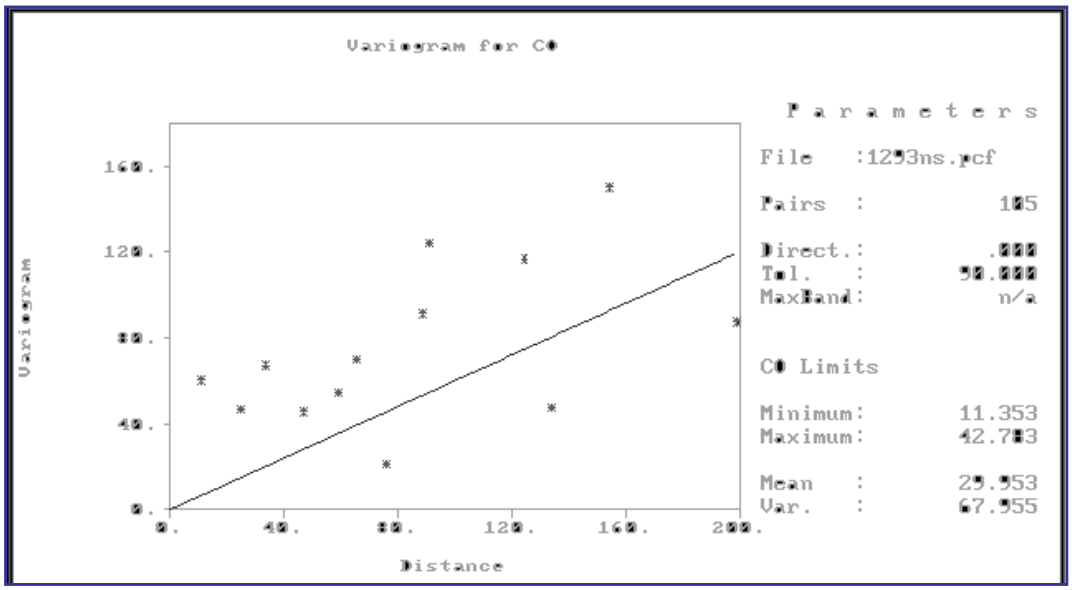


Figure B-10: Variogram of CO_2 Concentration, with Emission rate 1.293 mg/min, without Station

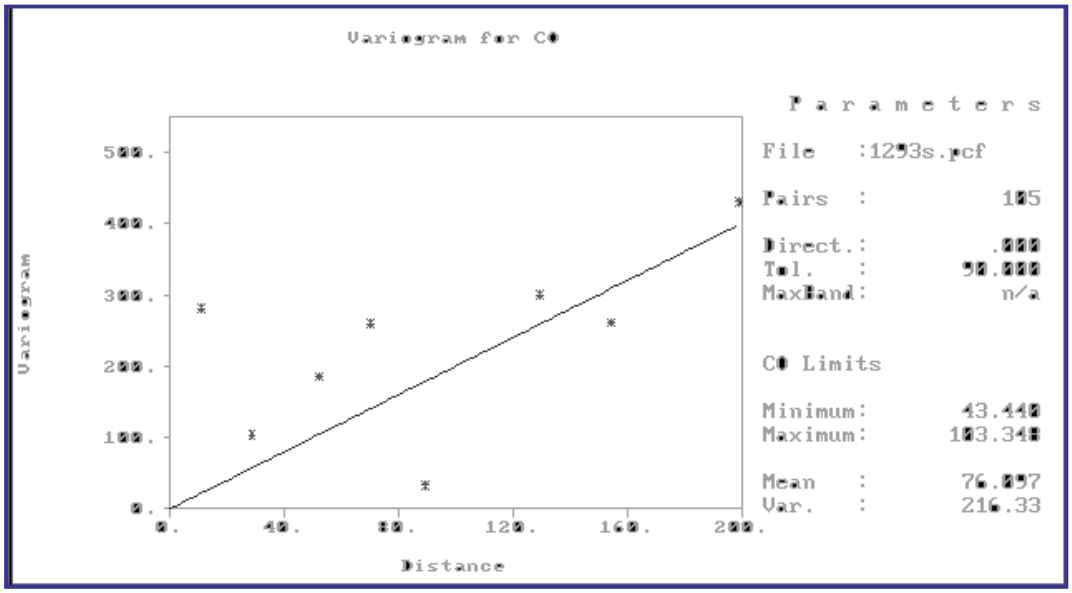


Figure B-11: Variogram of CO_2 Concentration, with Emission rate 1.293 mg/min, with Station

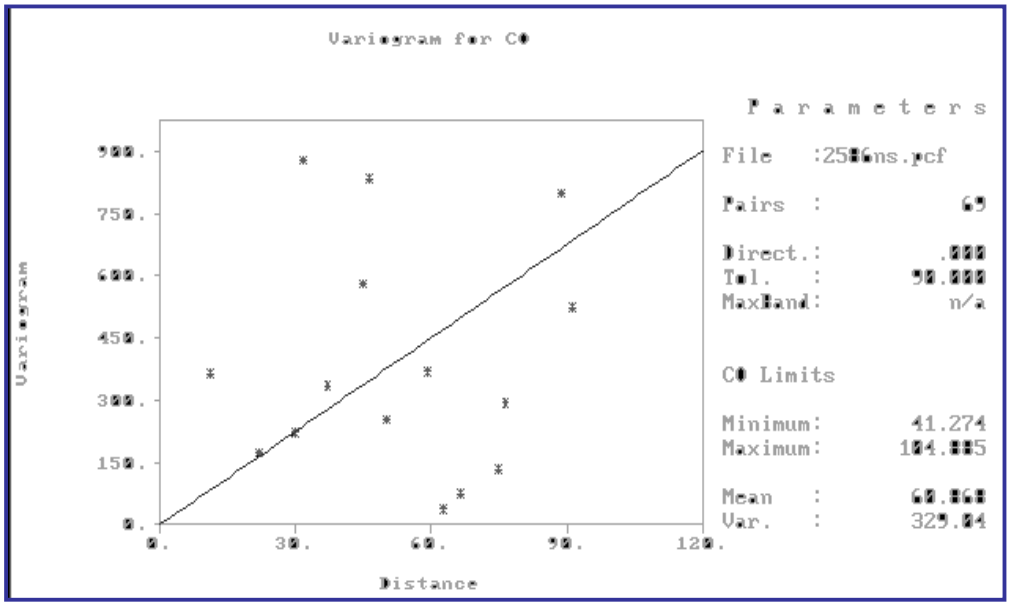


Figure B-12: Variogram of CO_2 Concentration, with Emission rate 2.586 mg/min, without Station

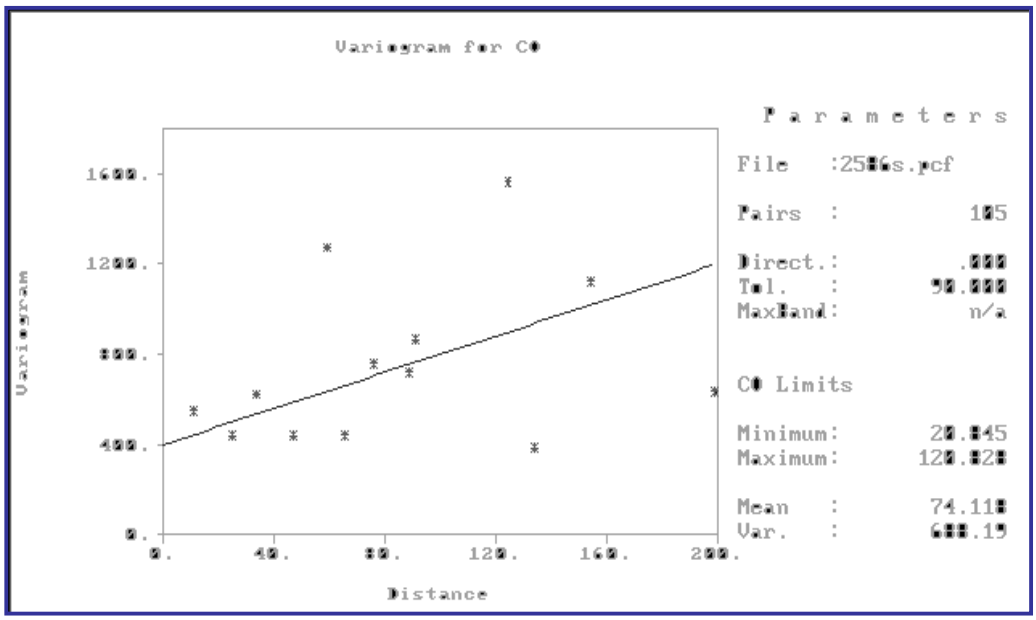


Figure B-13: Variogram of CO_2 Concentration, with Emission rate 2.586 mg/min, with Station

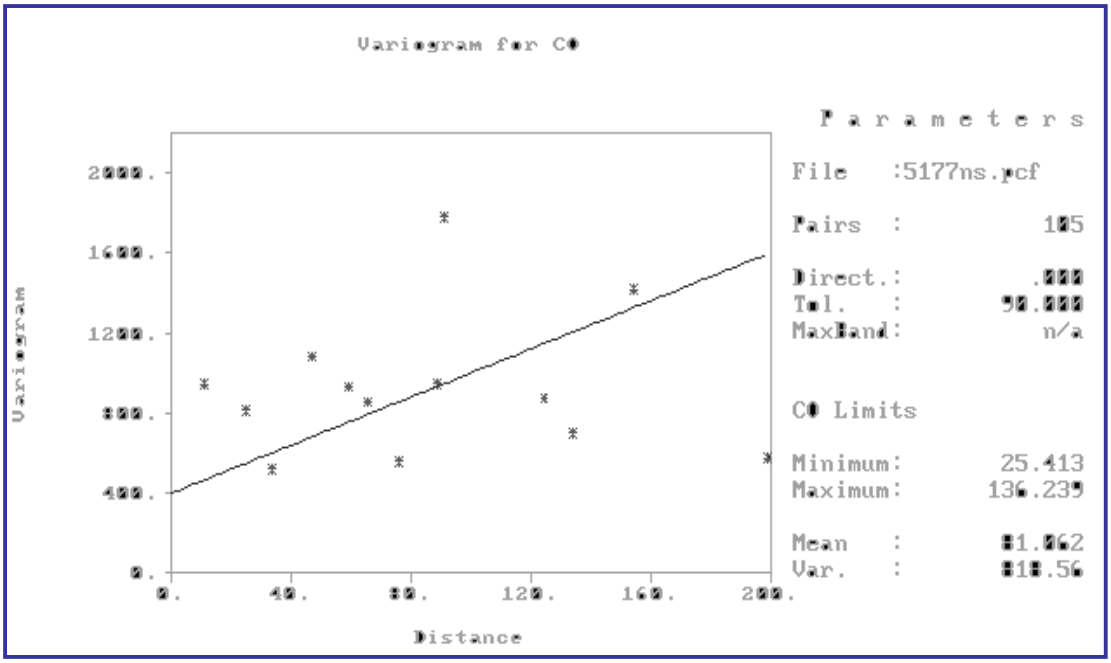


Figure B-14: Variogram of CO_2 Concentration, with Emission rate 5.177 mg/min, without Station

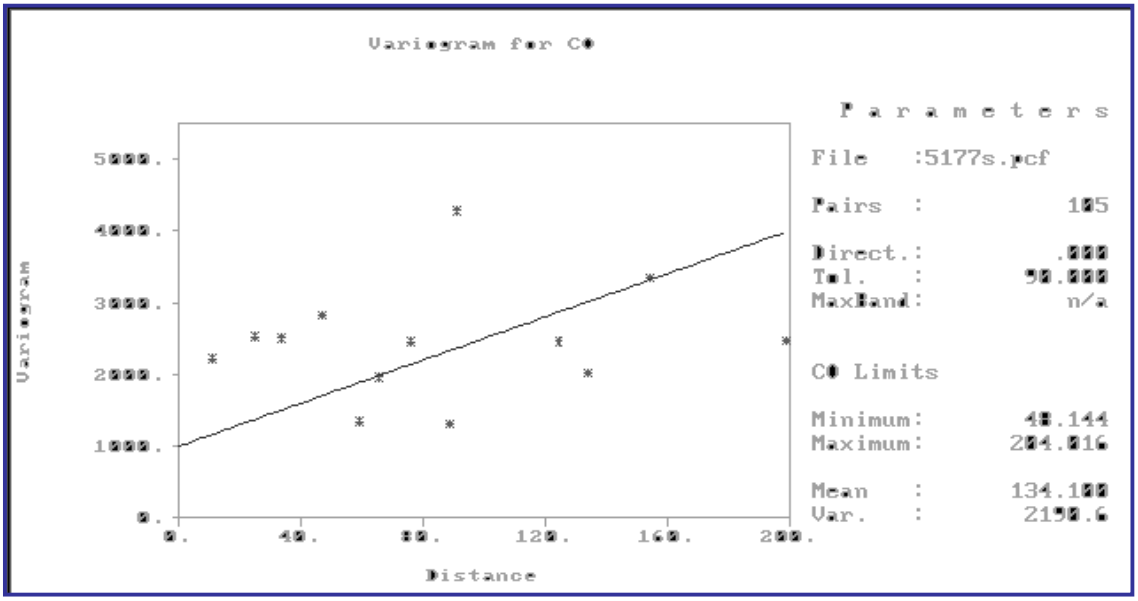


Figure B-15: Variogram of CO_2 Concentration, with Emission rate 5.177 mg/min, with Station

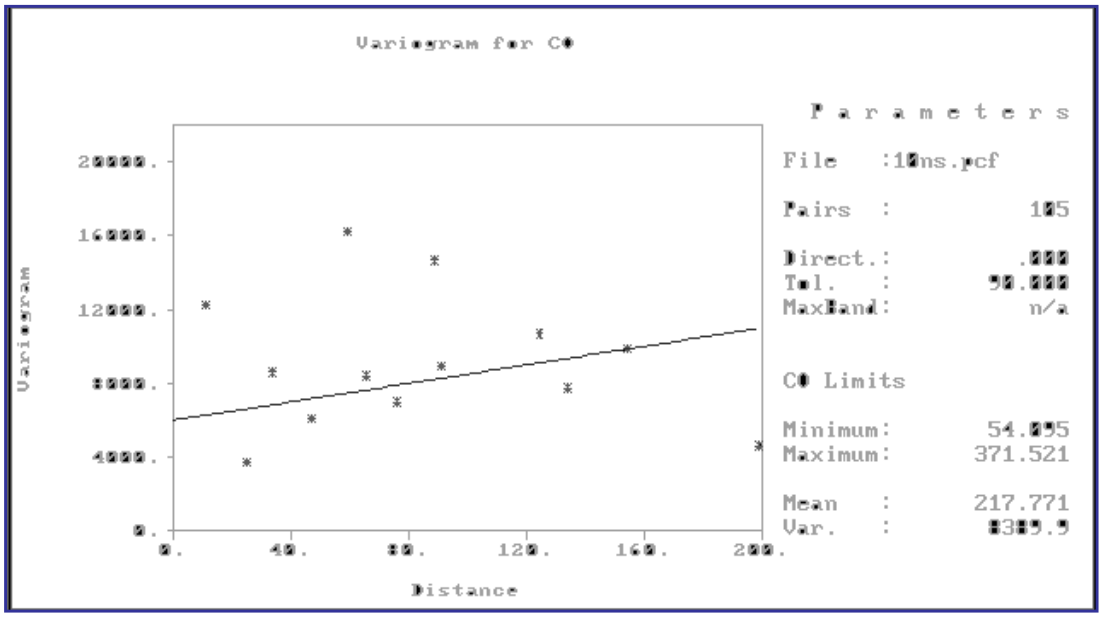


Figure B-16: Variogram of CO_2 Concentration, with Emission rate 10.77 mg/min, without Station

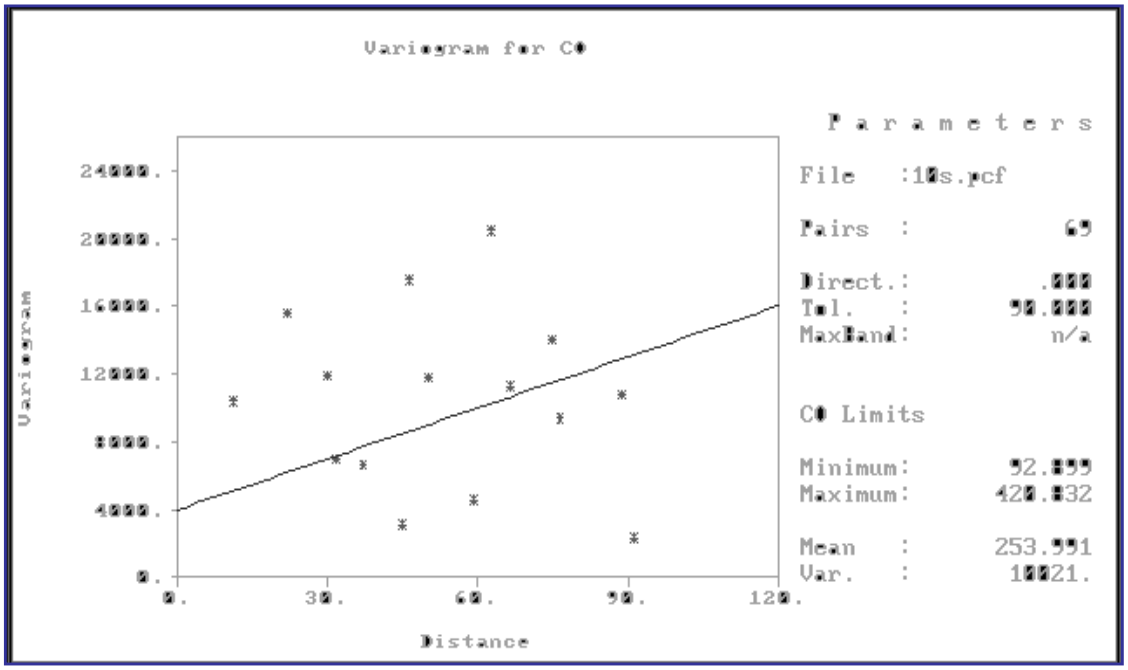


Figure B-17: Variogram of CO_2 Concentration, with Emission rate 10.77 mg/min, with Station

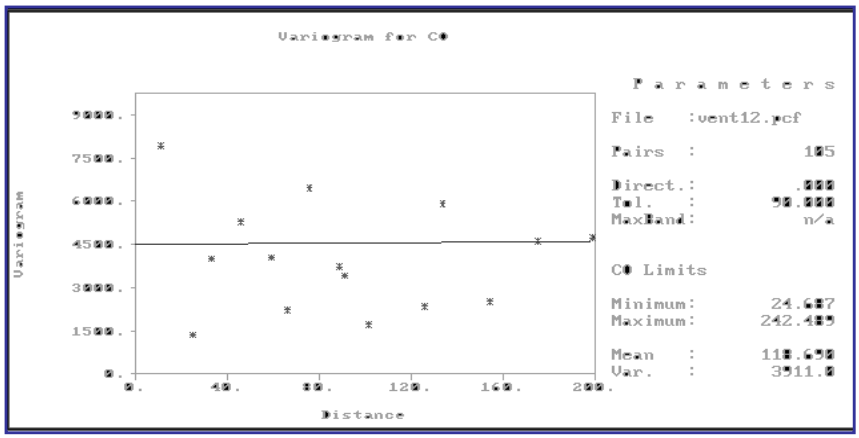


Figure B-18: Ventilation 12.5 cc/min with Inlet Flow 5.177 mg/min

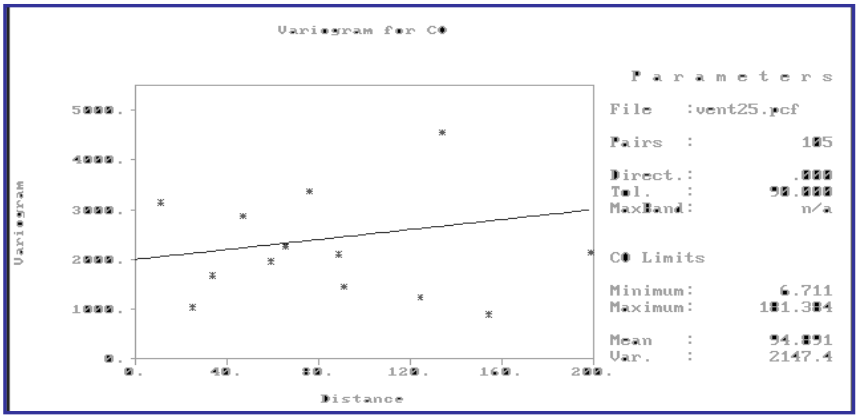


Figure B-19: **Ventilation 25 cc/min with Inlet Flow 5.177 mg/min**

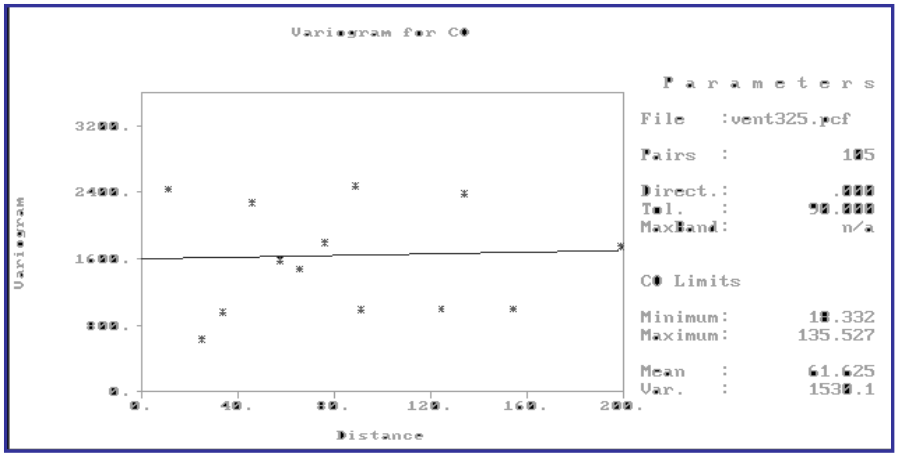


Figure B-20: Ventilation 32.5 cc/min with Inlet Flow 5.177 mg/min

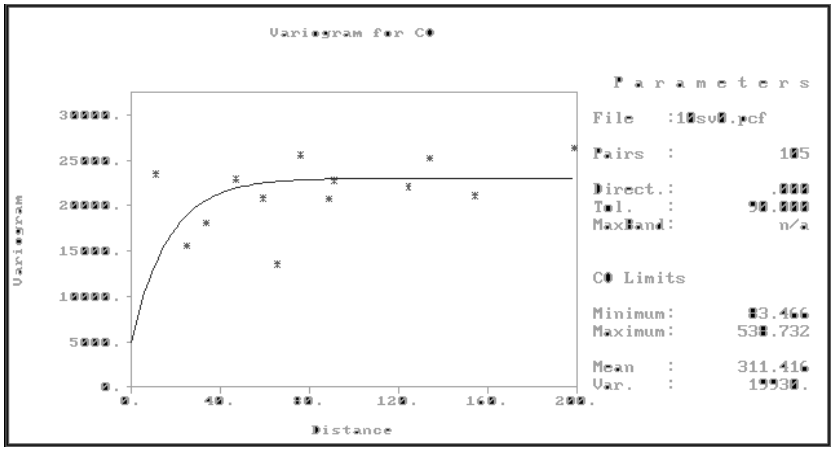


Figure B-21: Ventilation 0 cc/min with Inlet Flow 10.77 mg/min

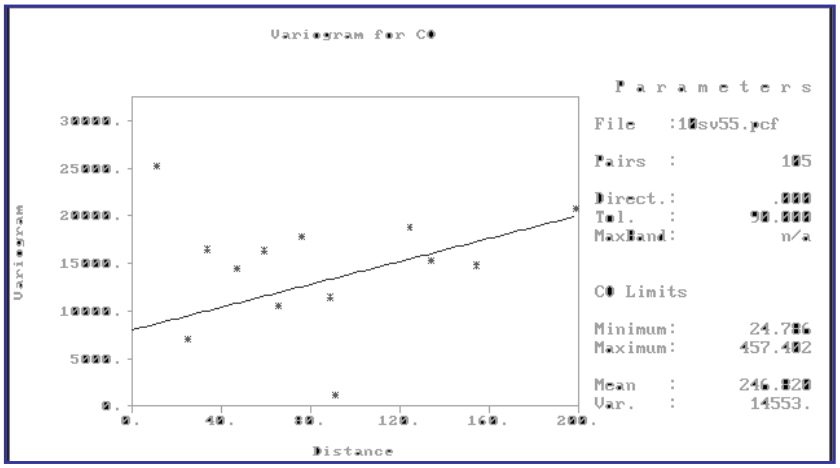


Figure B-22: Ventilation 55 cc/min with Inlet Flow 10.77 mg/min

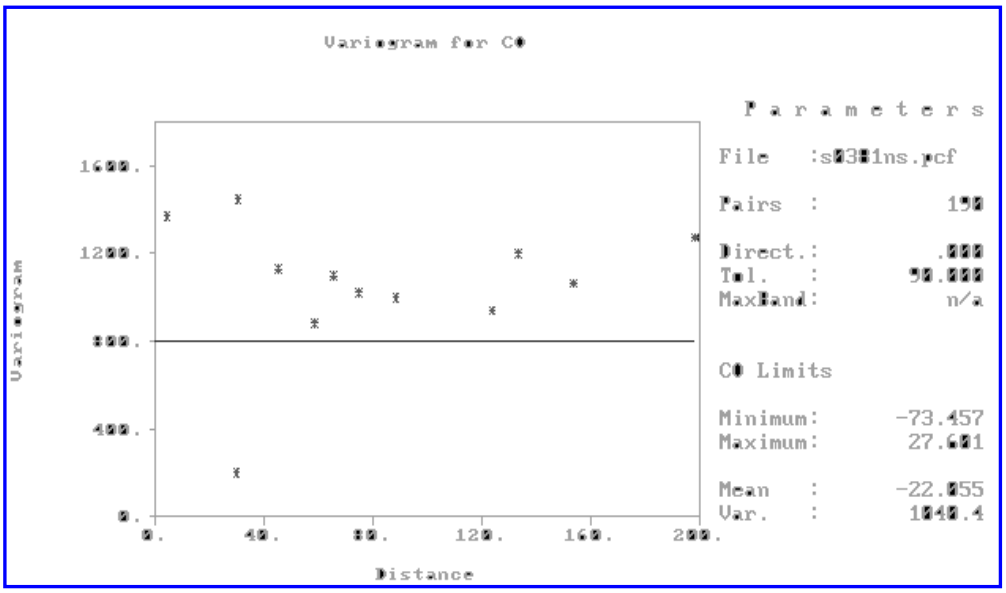


Figure B-23: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station along the Northwest Side of the Road

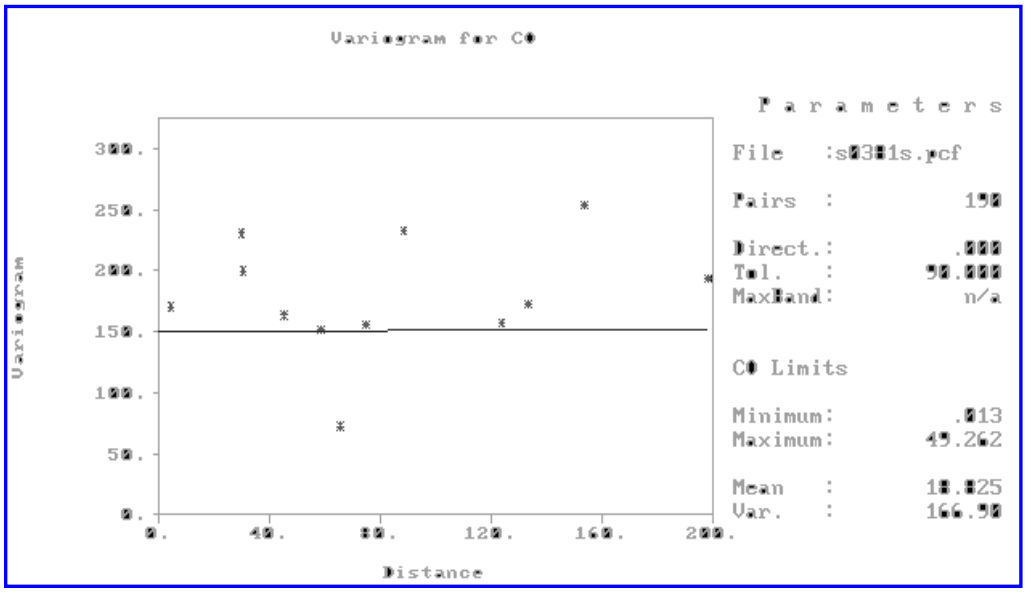


Figure B-24: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station along the Northwest Side of the Road

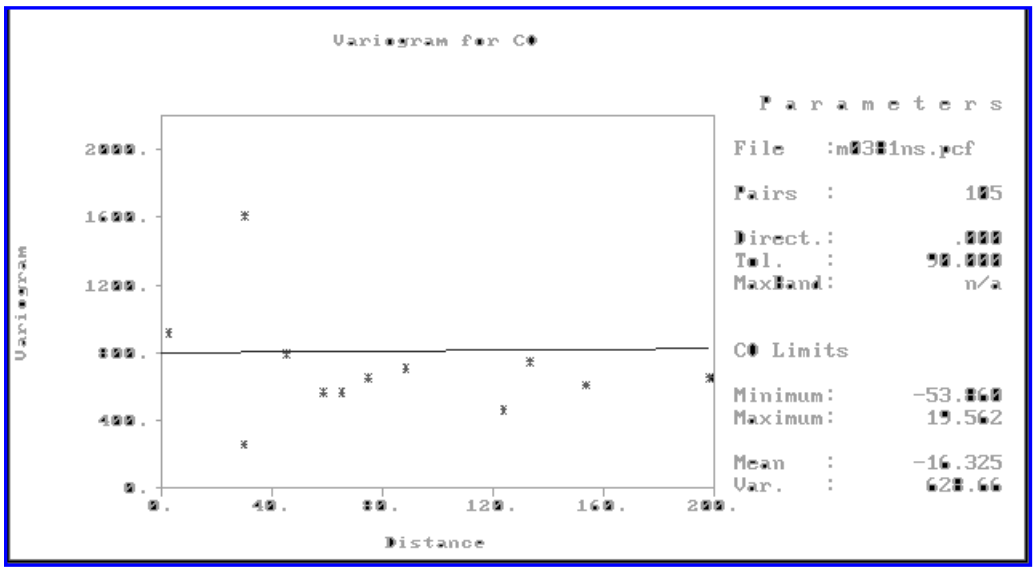


Figure B-25: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station along the Middle of the Road

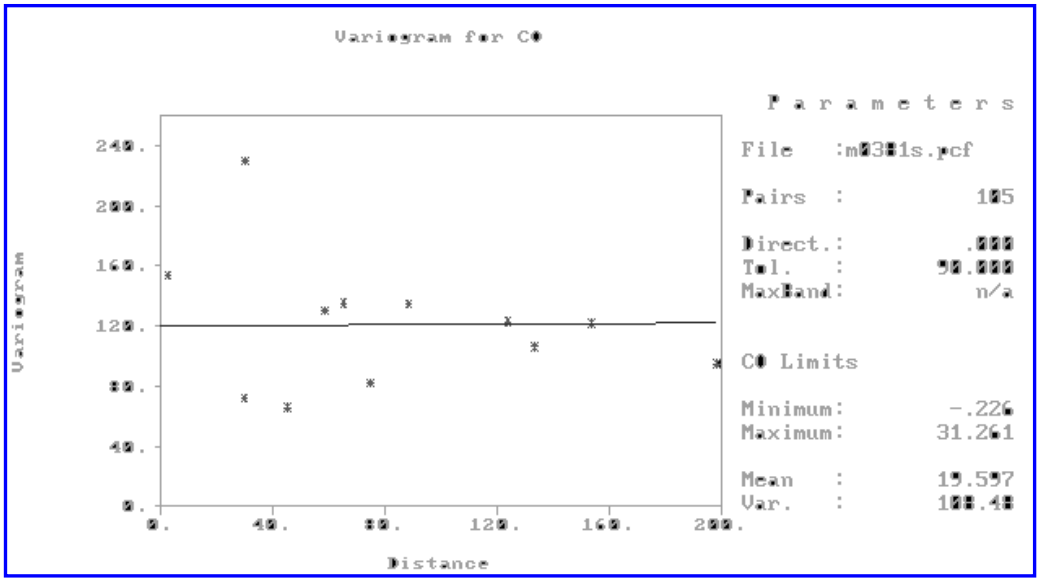


Figure B-26: Variogram of CO_2 Concentration, with Emission rate 0.038 mg/min, with Station along the Middle of the Road

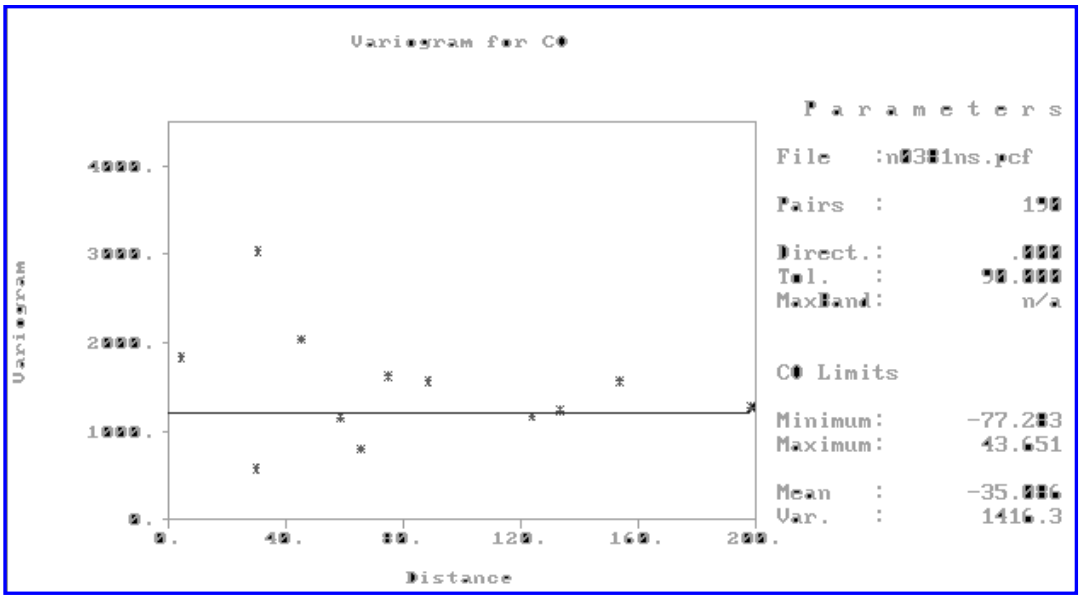


Figure B-27: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station along the Southeast of the Road

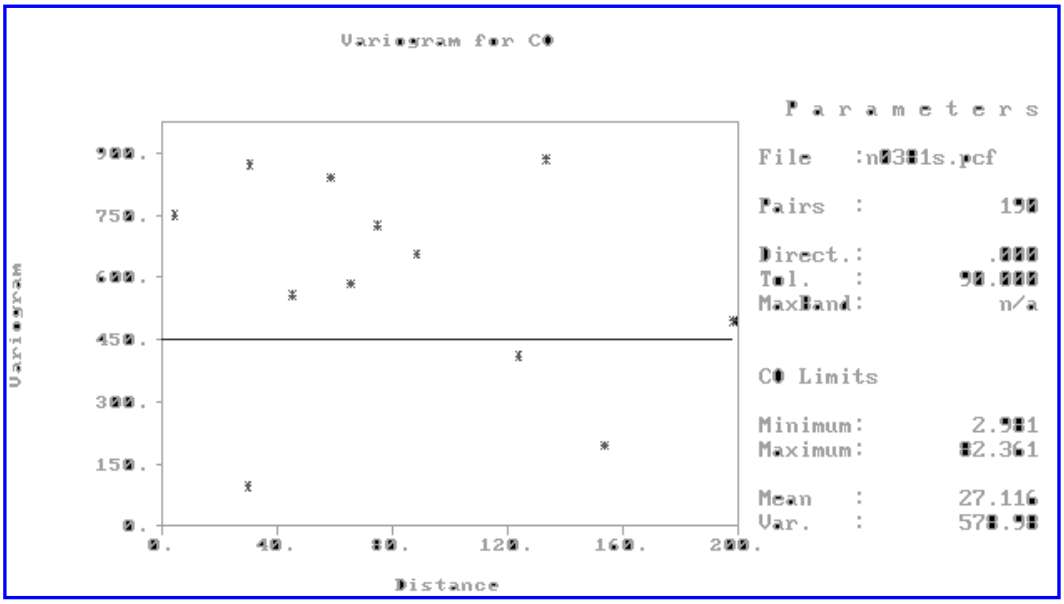


Figure B-28: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station along the Southeast of the Road

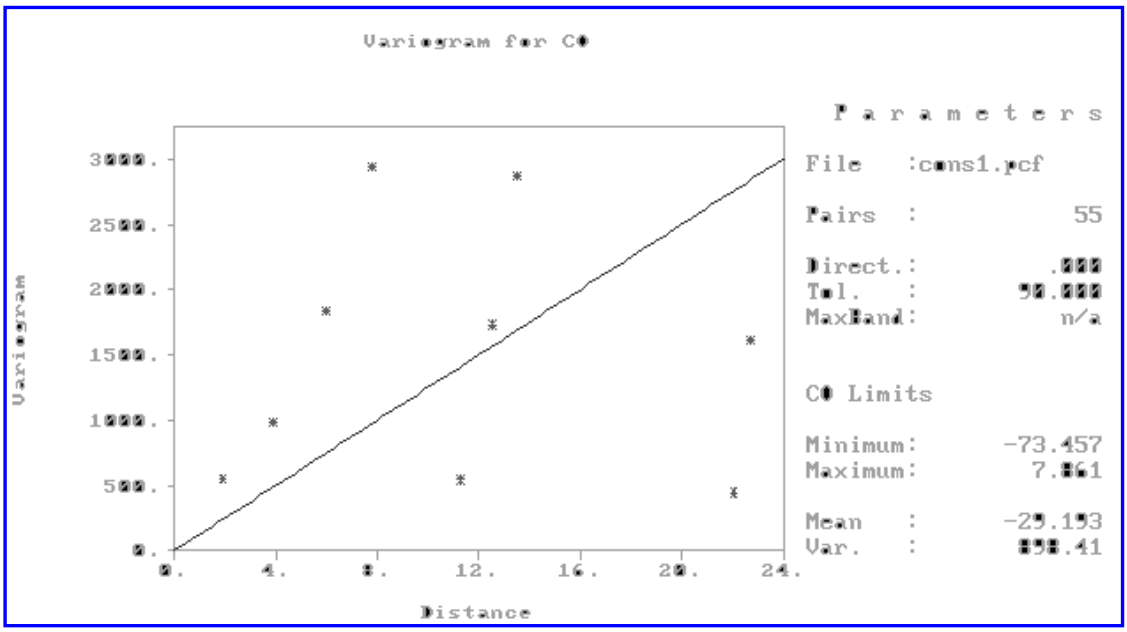


Figure B-29: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station across the Street at 50 m

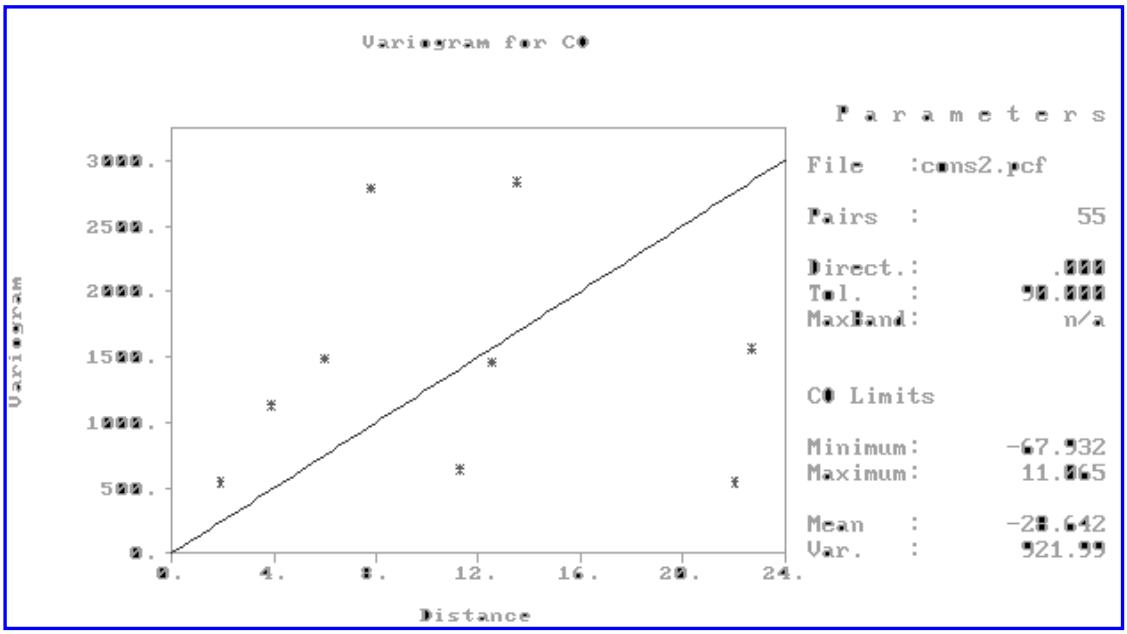


Figure B-30: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station across the Street at 100 m

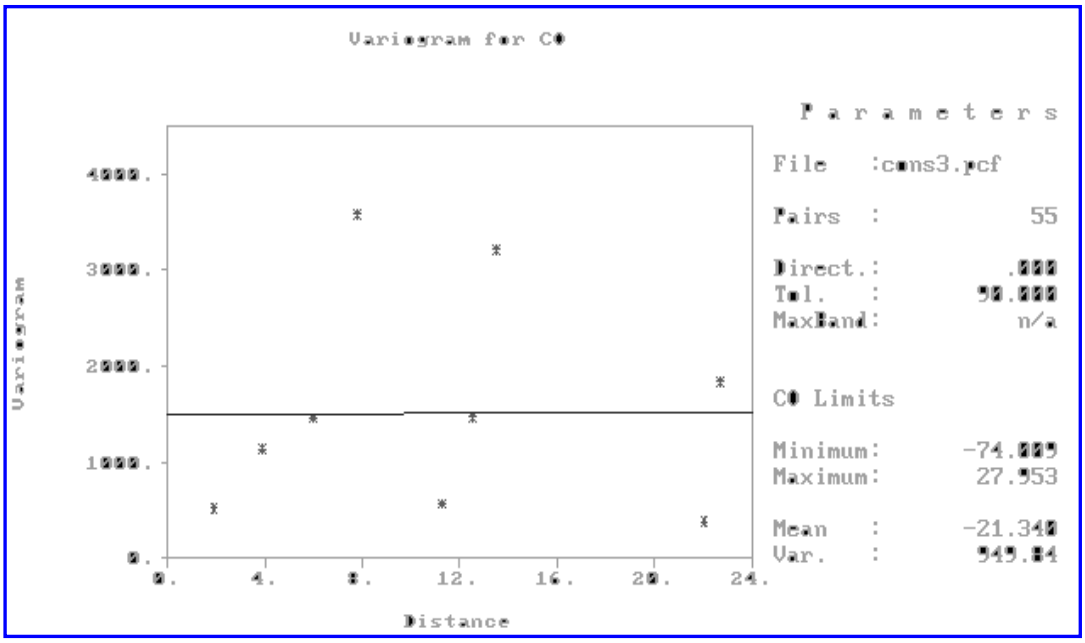


Figure B-31: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station across the Street at 200 m

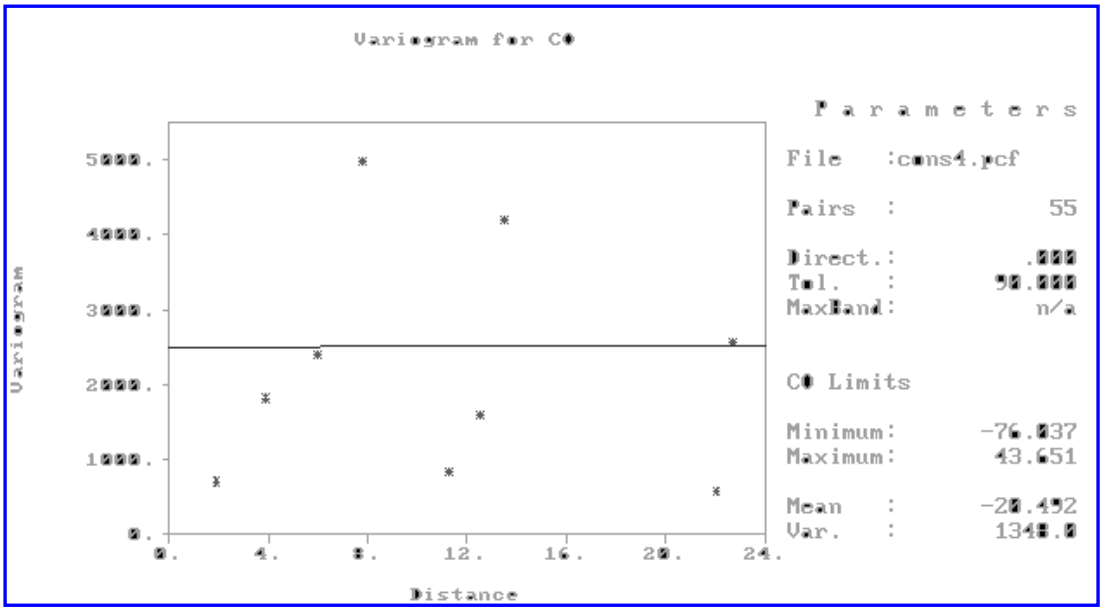


Figure B-32: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station across the Street at 225 m

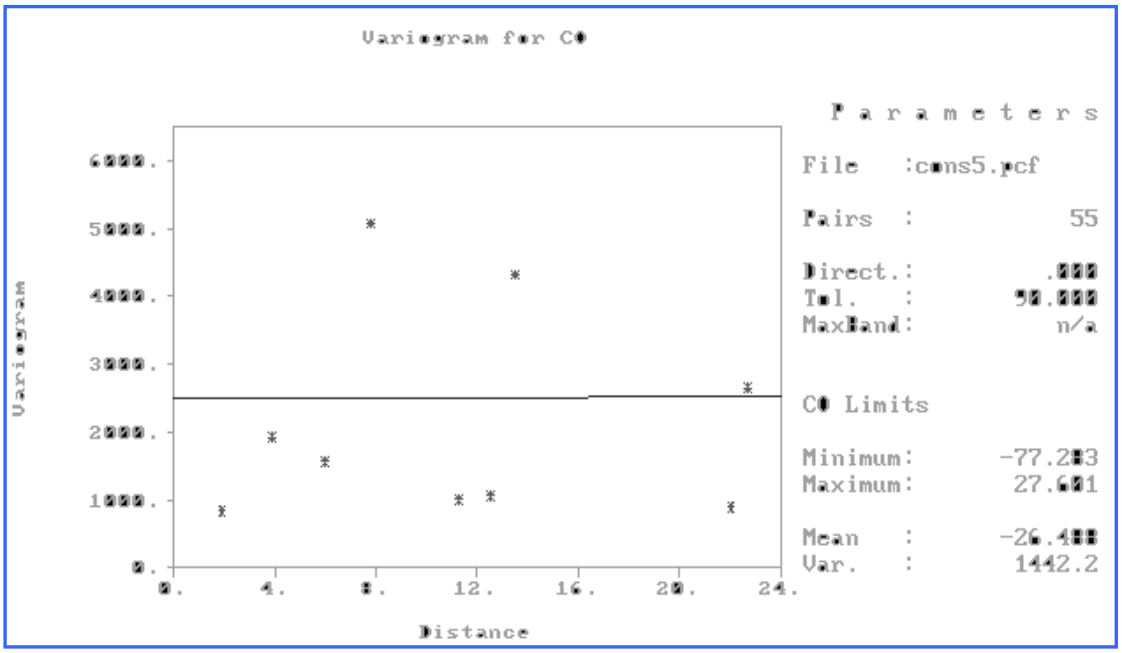


Figure B-33: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, without Station across the Street at 275 m

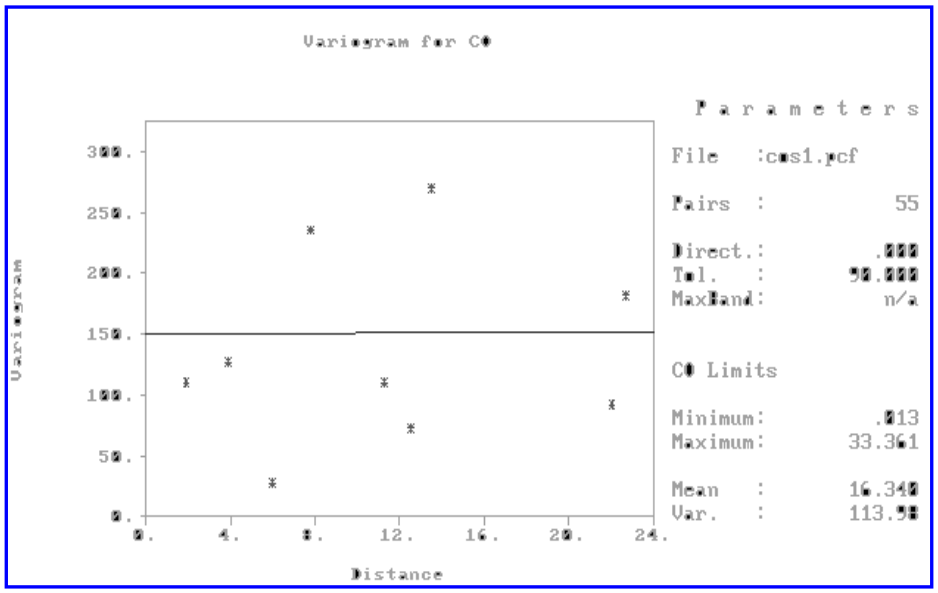


Figure B-34: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station across the Street at 50 m

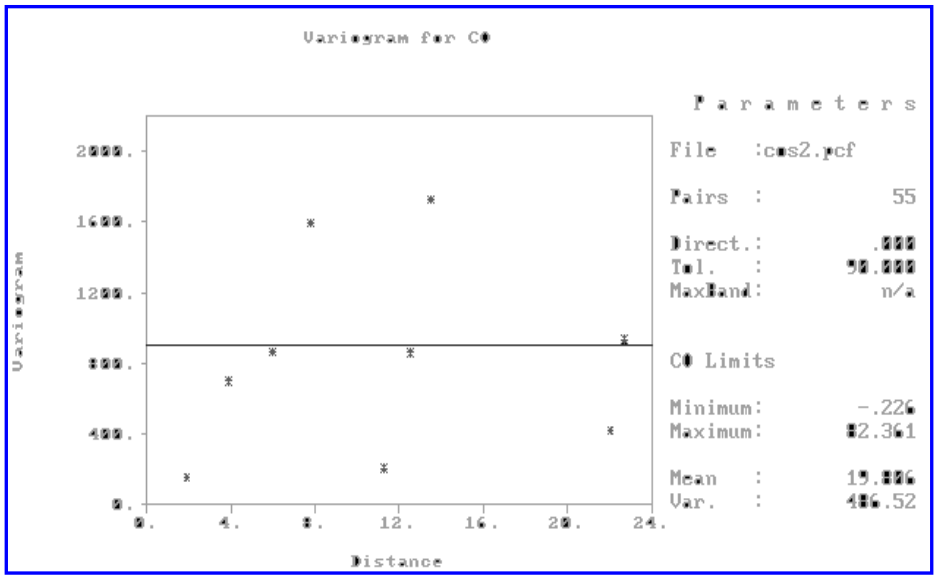


Figure B-35: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station across the Street at 100 m

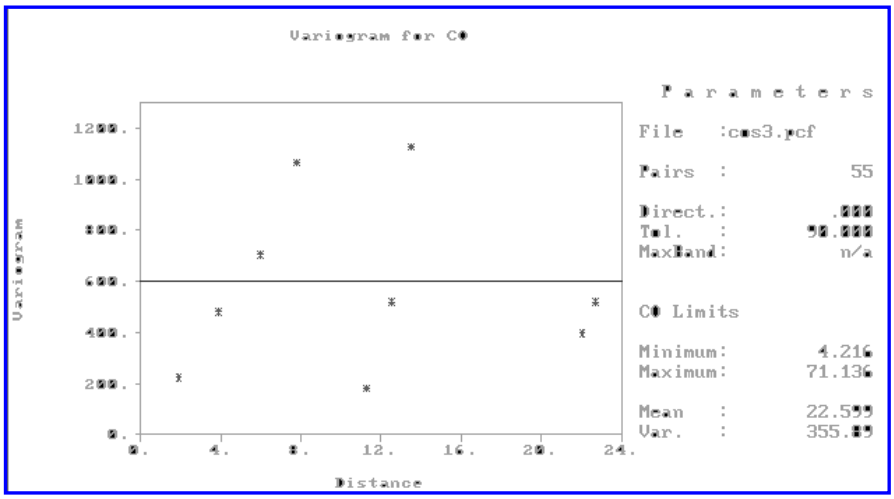


Figure B-36: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station across the Street at 200 m

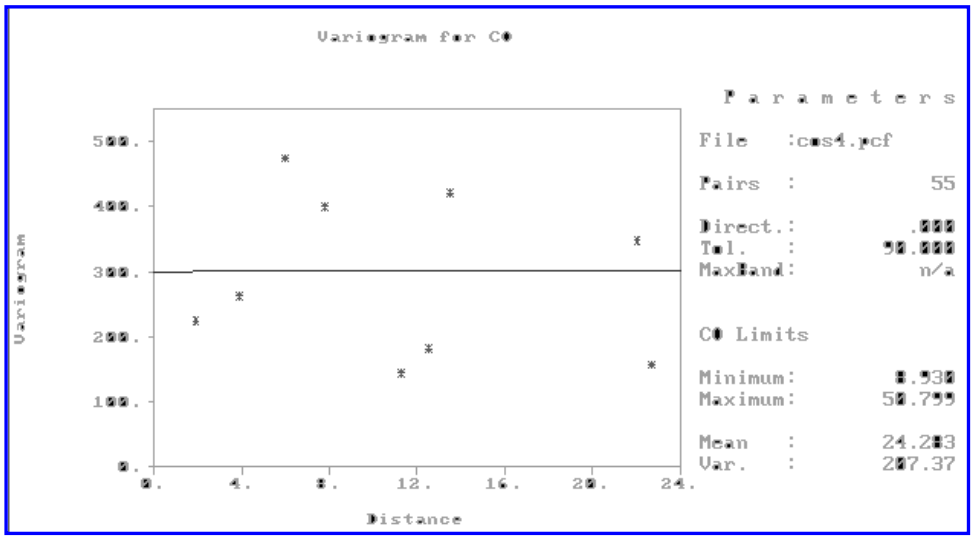


Figure B-37: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station across the street at 225 m

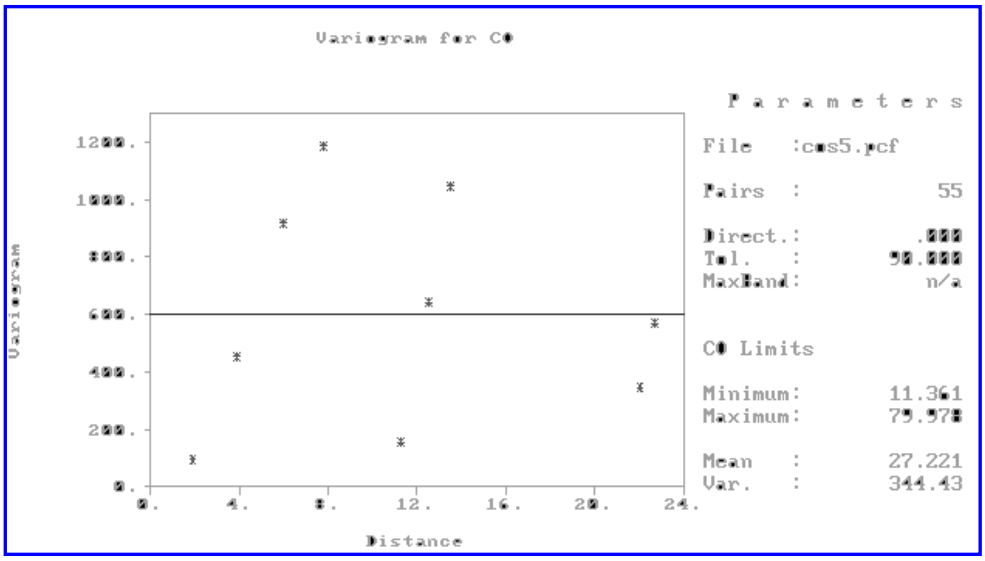


Figure B-38: Variogram of CO_2 Concentration, with Emission Rate 0.038 mg/min, with Station across the Street at 200 m

APPENDIX C: CONTOUR PLOT

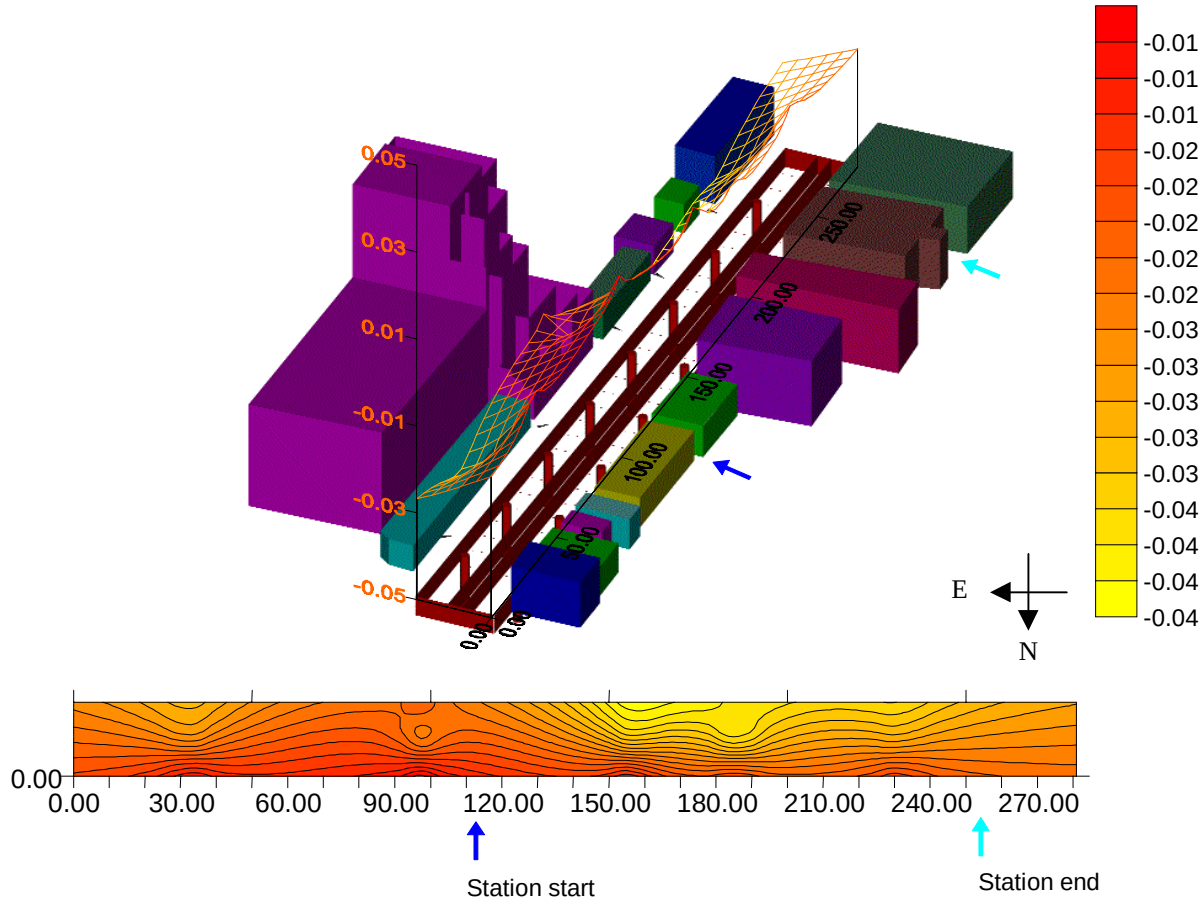


Figure C-1: Emission Rate 0.0039 mg/min, without Station

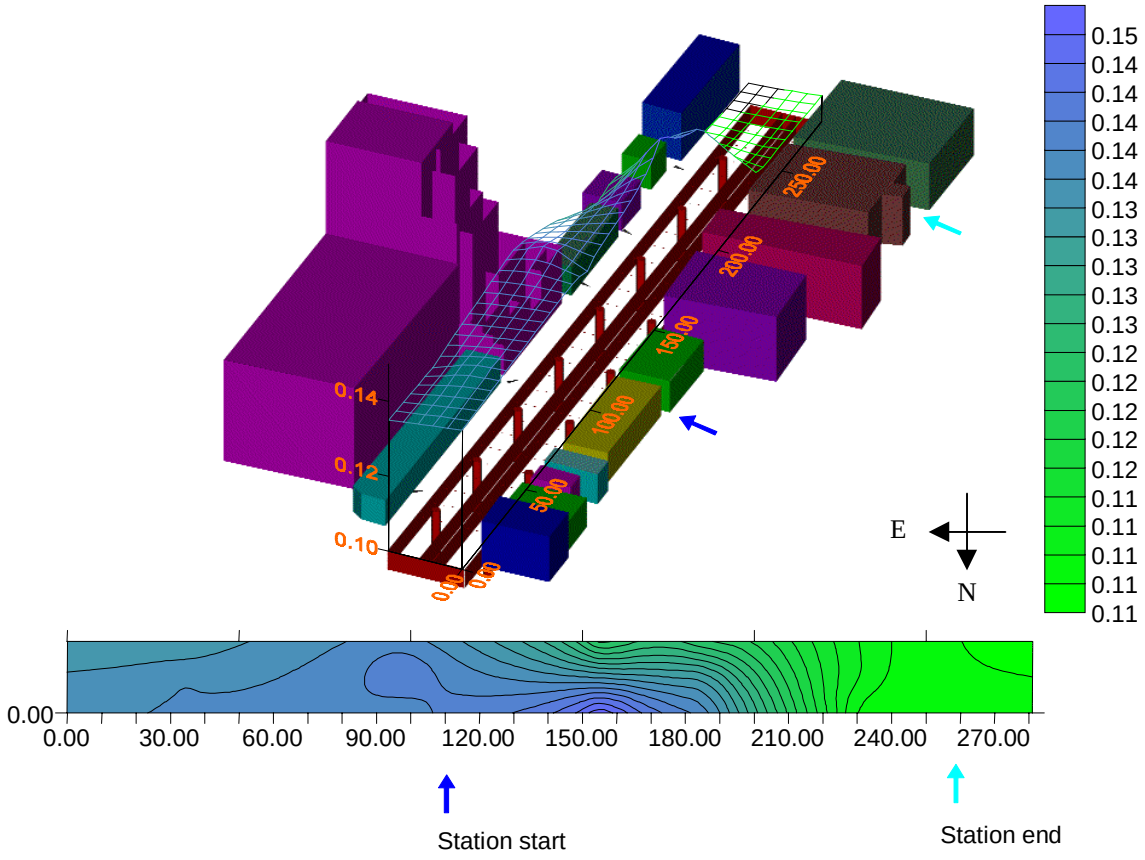


Figure C-2: Emission Rate 0.0039 mg/min, with Station

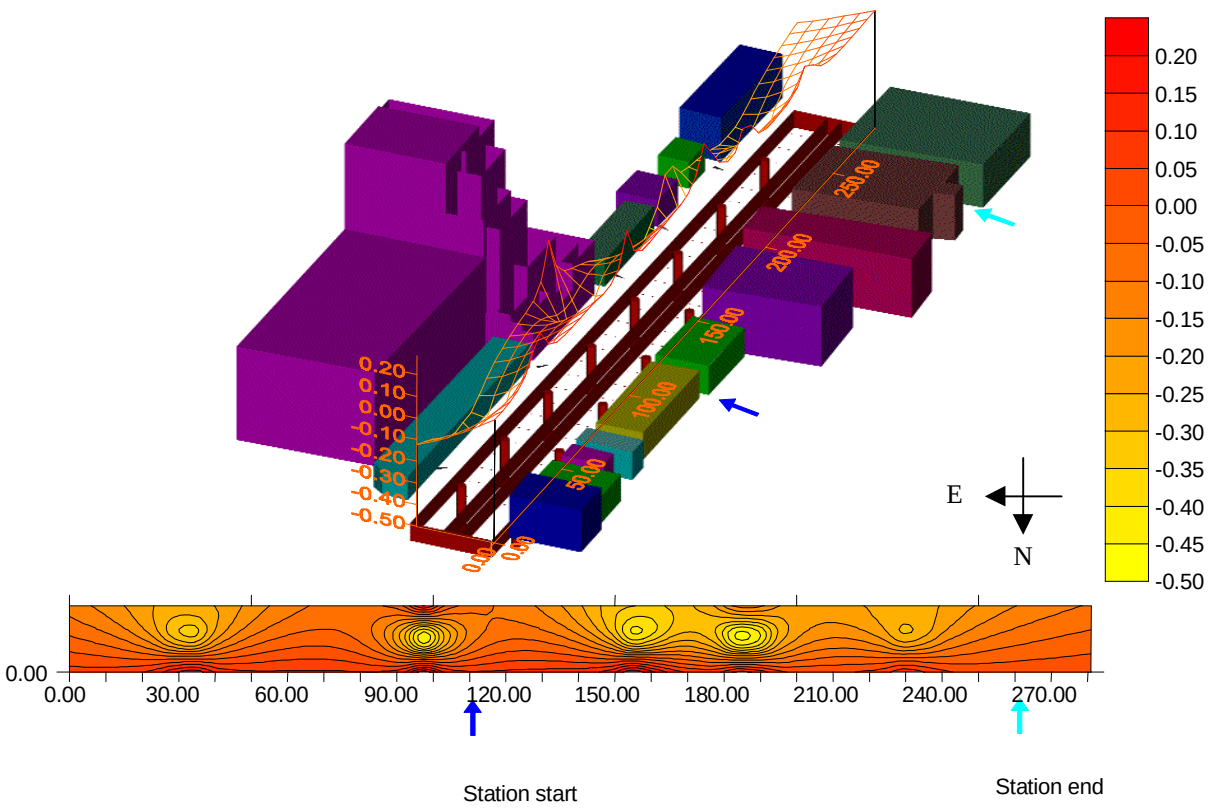


Figure C-3: Emission Rate 0.0198 mg/min, without Station

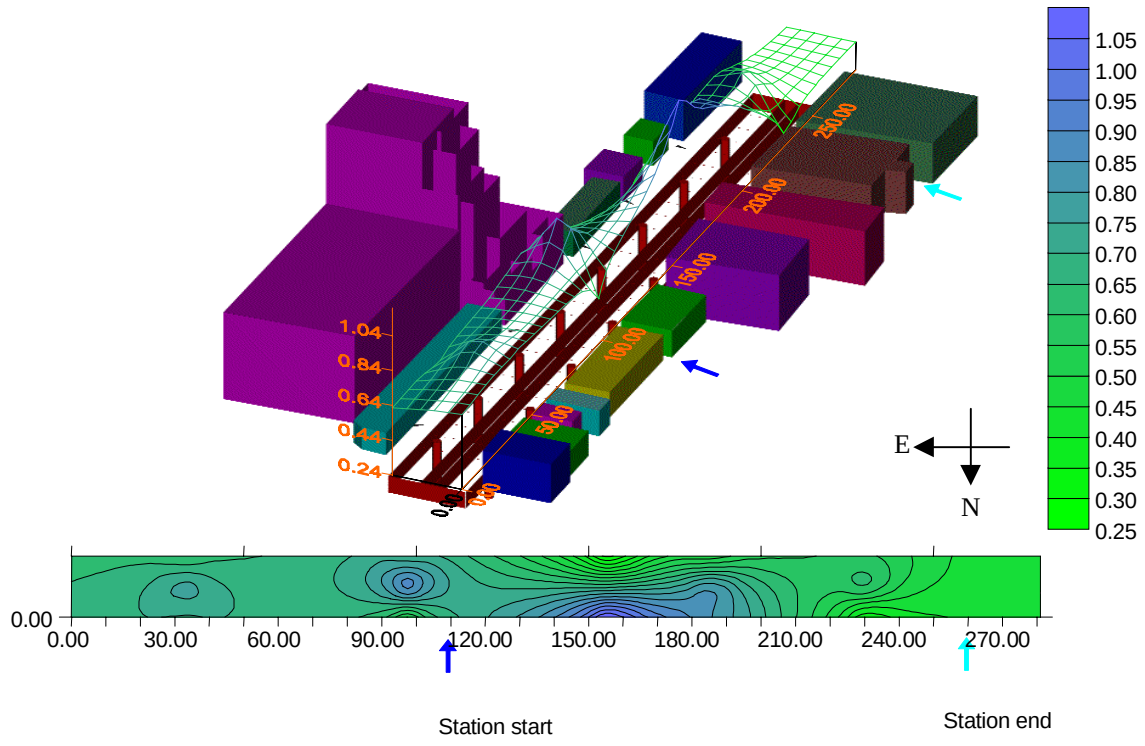


Figure C-4: Emission Rate 0.198 mg/min, with Station

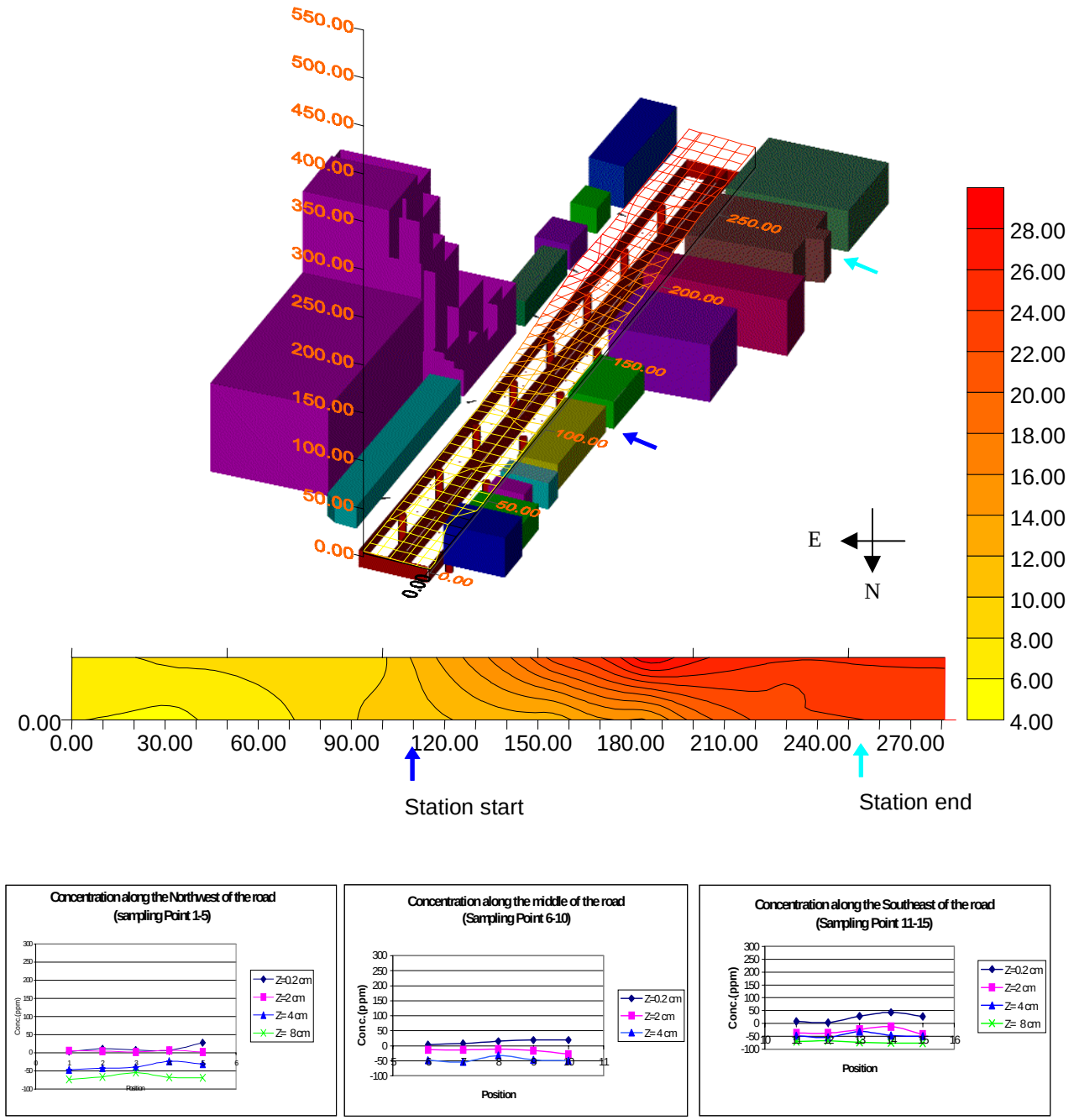


Figure C-5: Emission Rate 0.381 mg/min, without Station

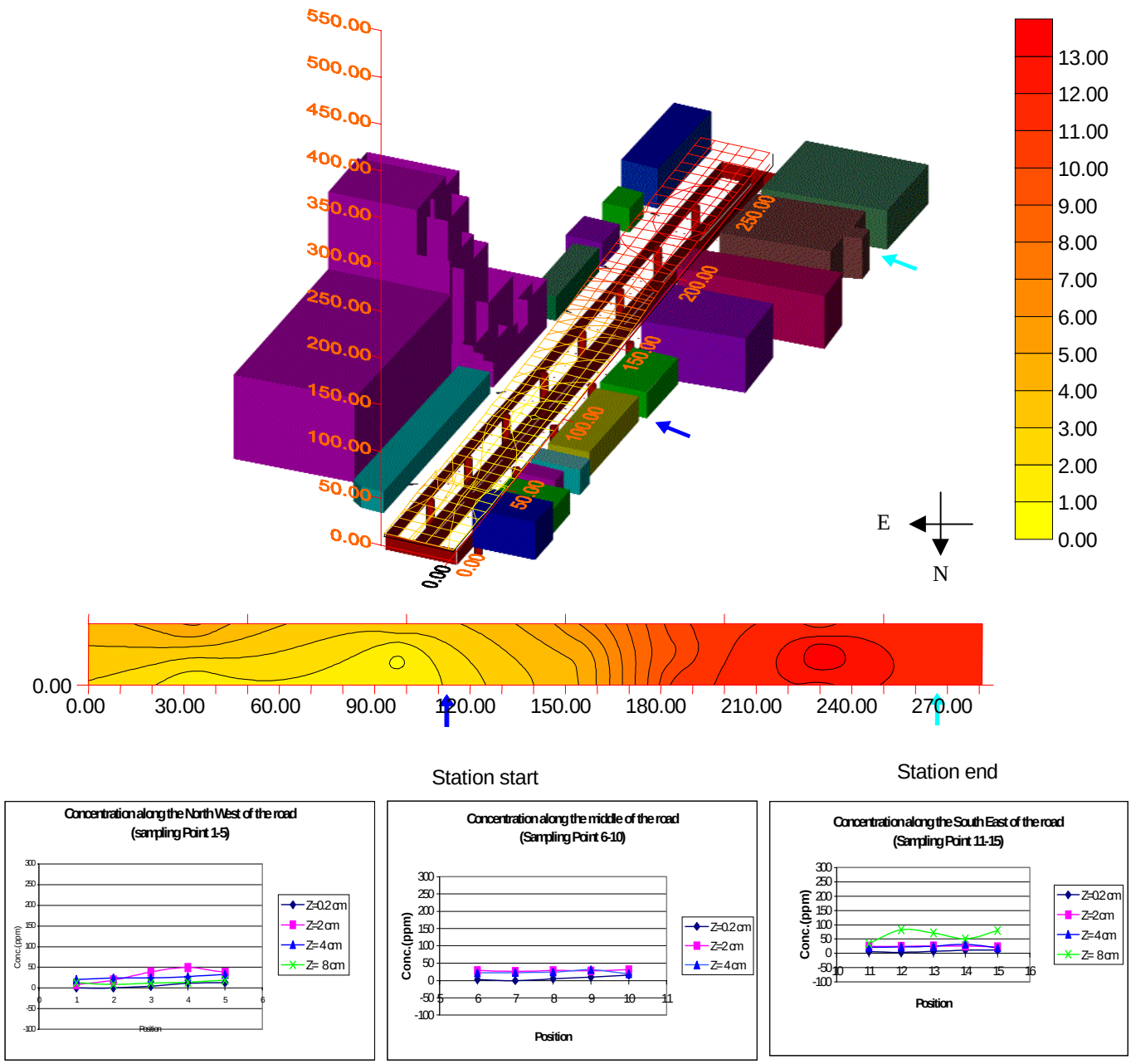


Figure C-6: Emission Rate 0.381 mg/min, with Station

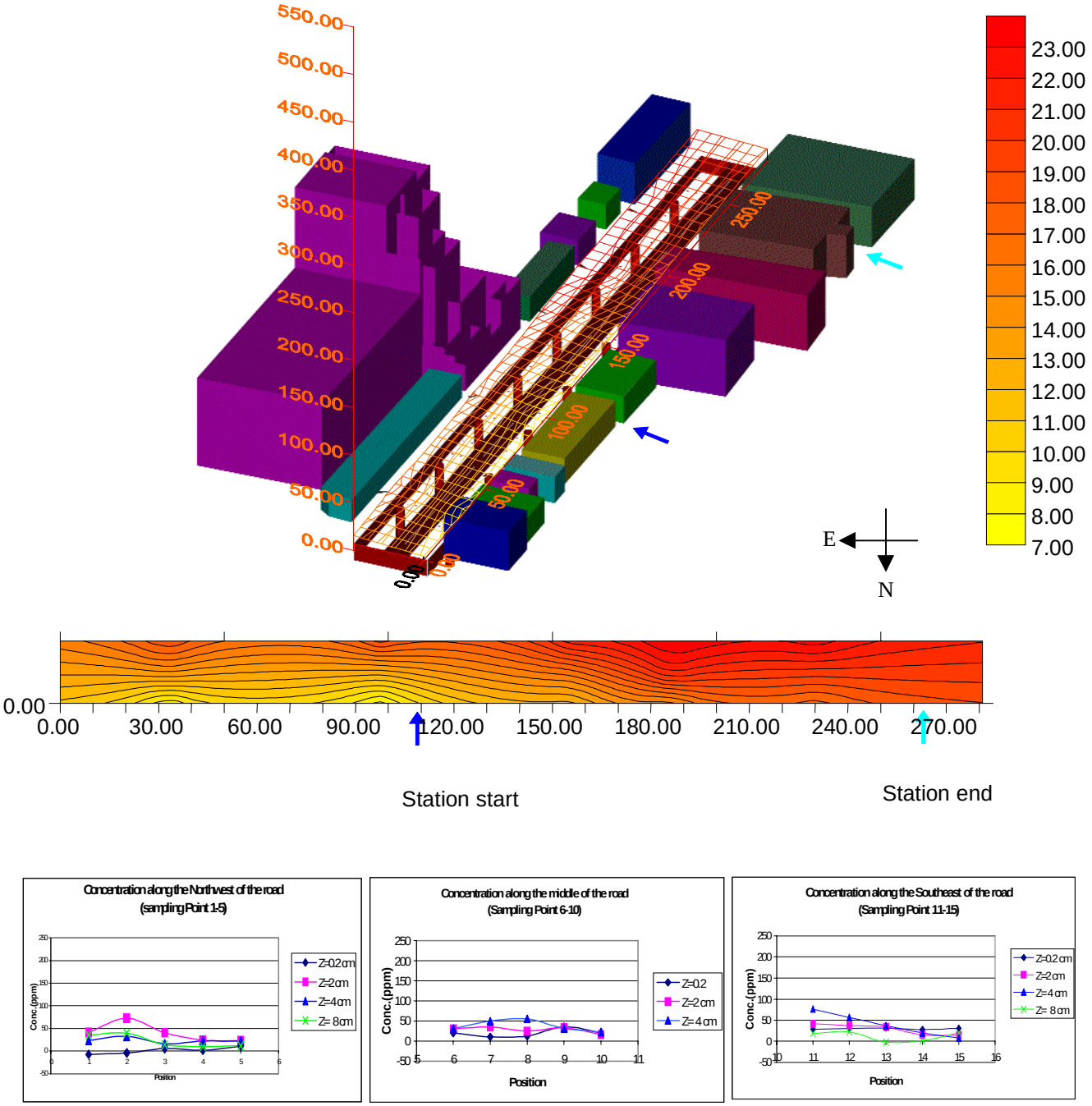


Figure C-7: Emission Rate 0.681 mg/min, without Station

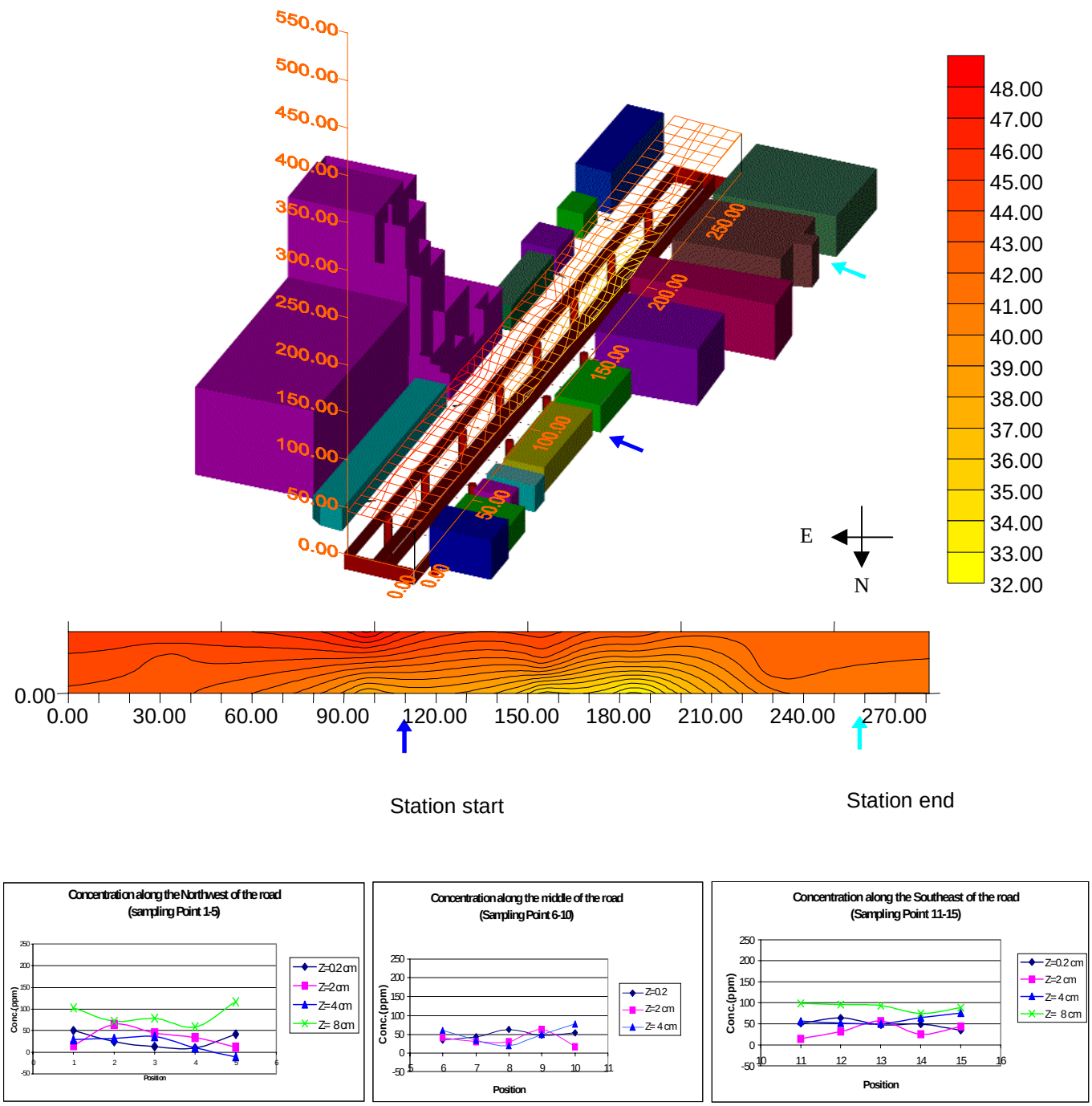


Figure C-8: Emission Rate 0.681 mg/min, with Station

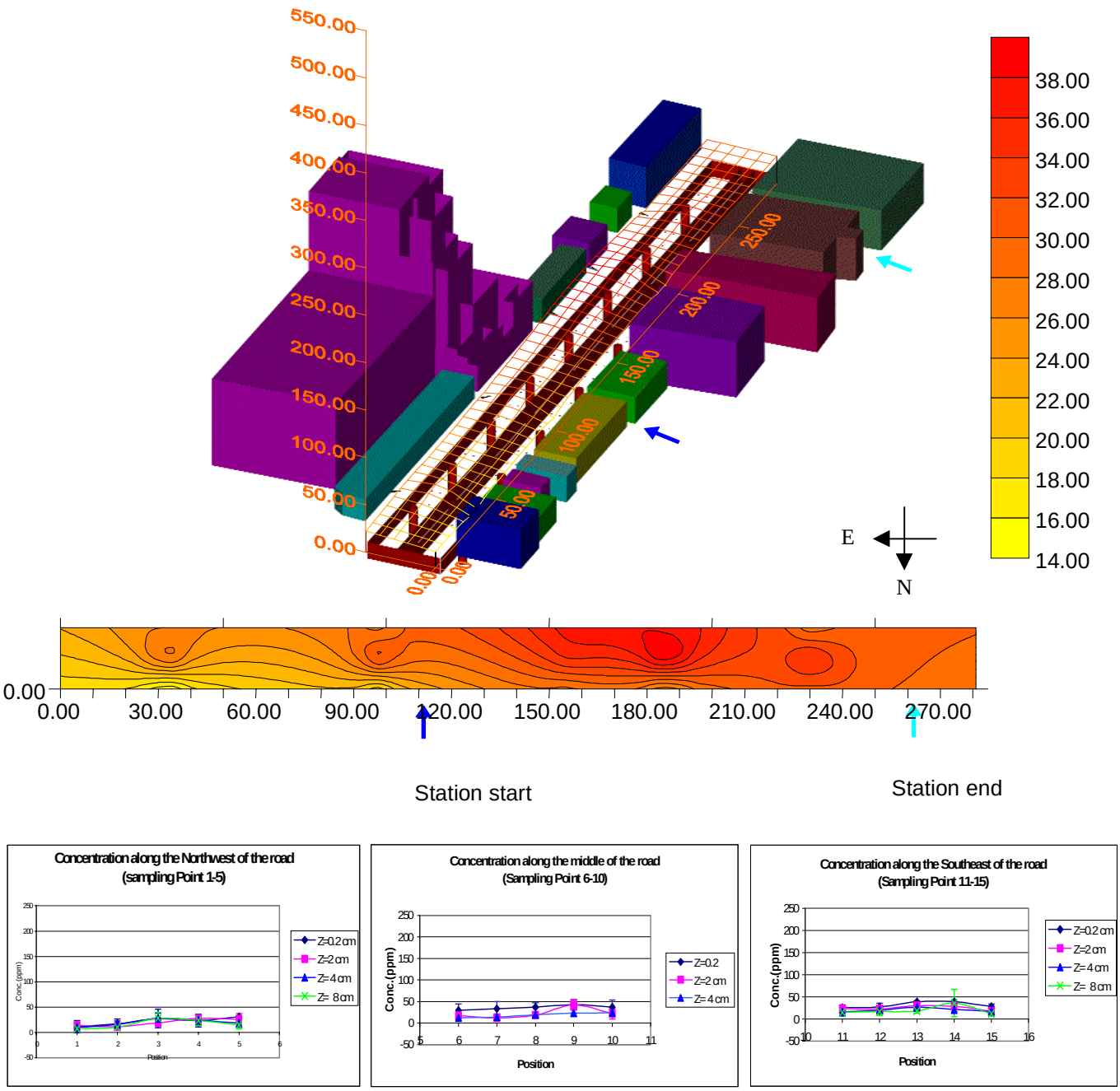
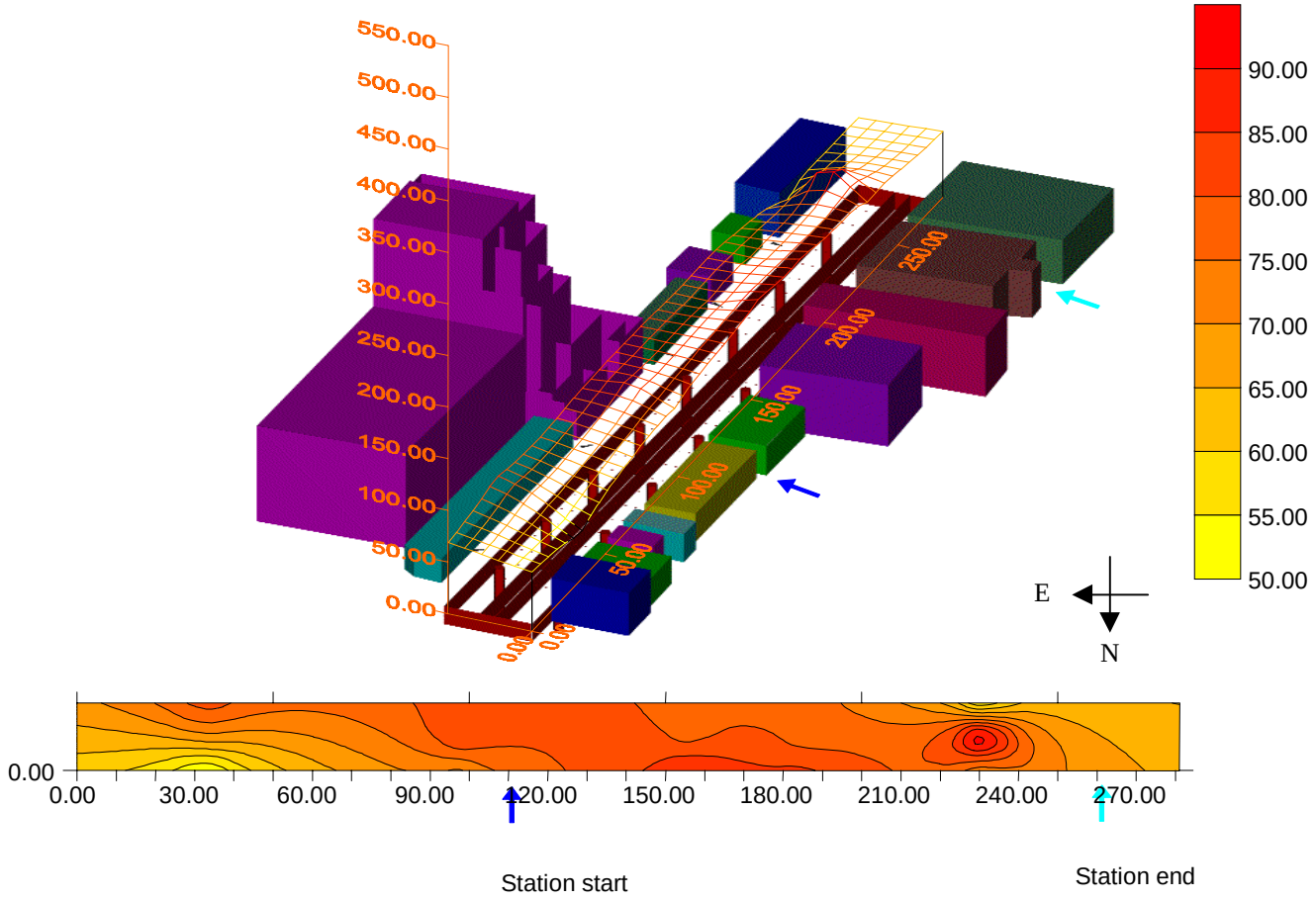
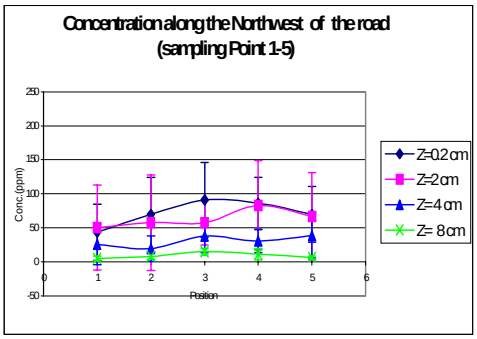
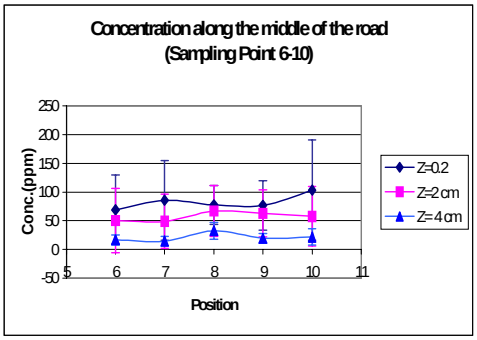


Figure C-9: Emission Rate 1.293 mg/min, without Station







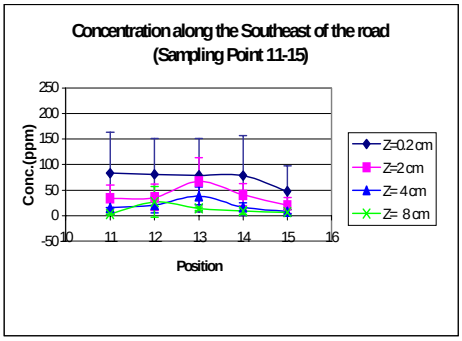


Figure C-10: Emission Rate 1.293 mg/min, with Station

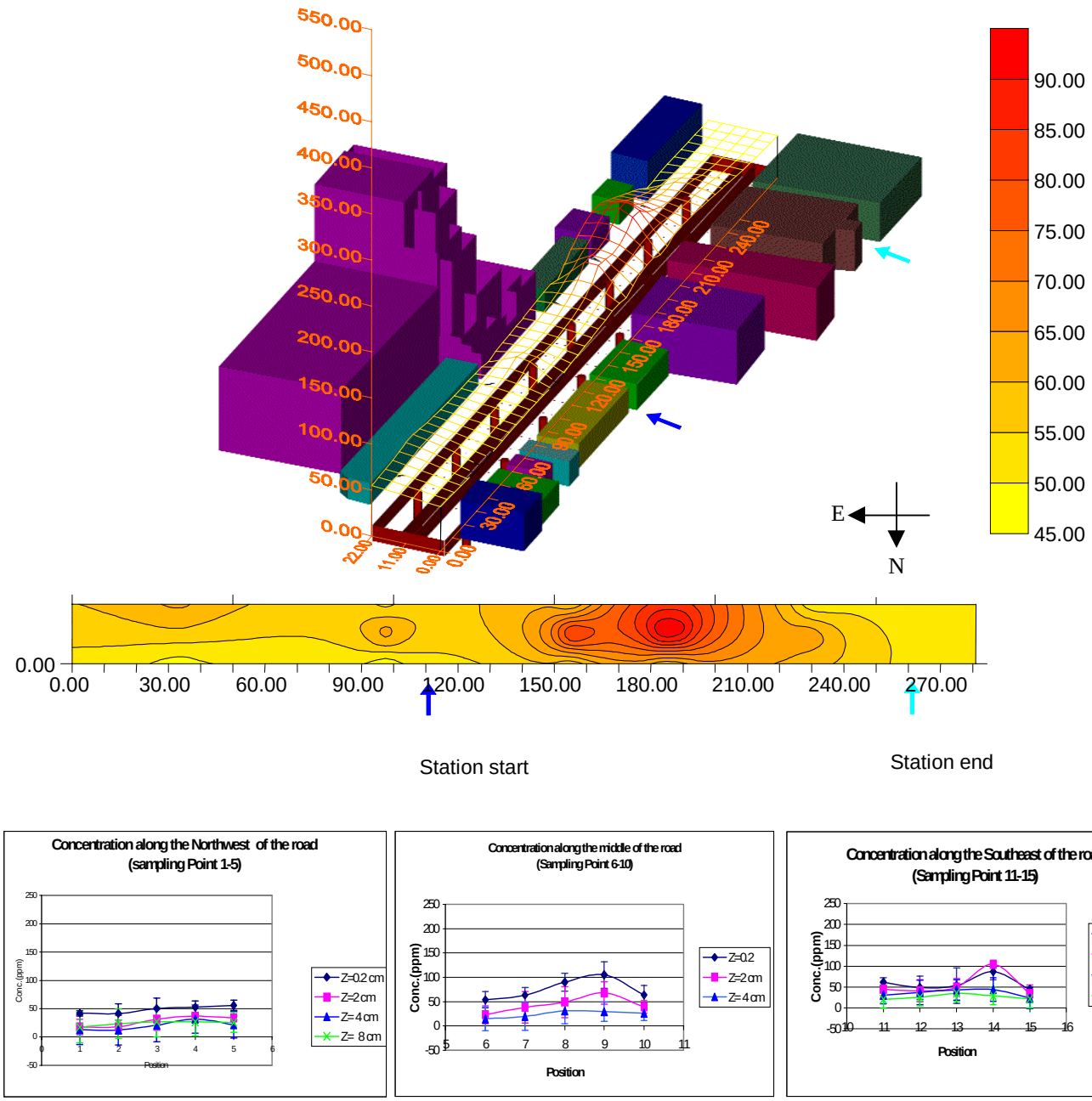


Figure C-11: Emission Rate 2.586 mg/min, without Station

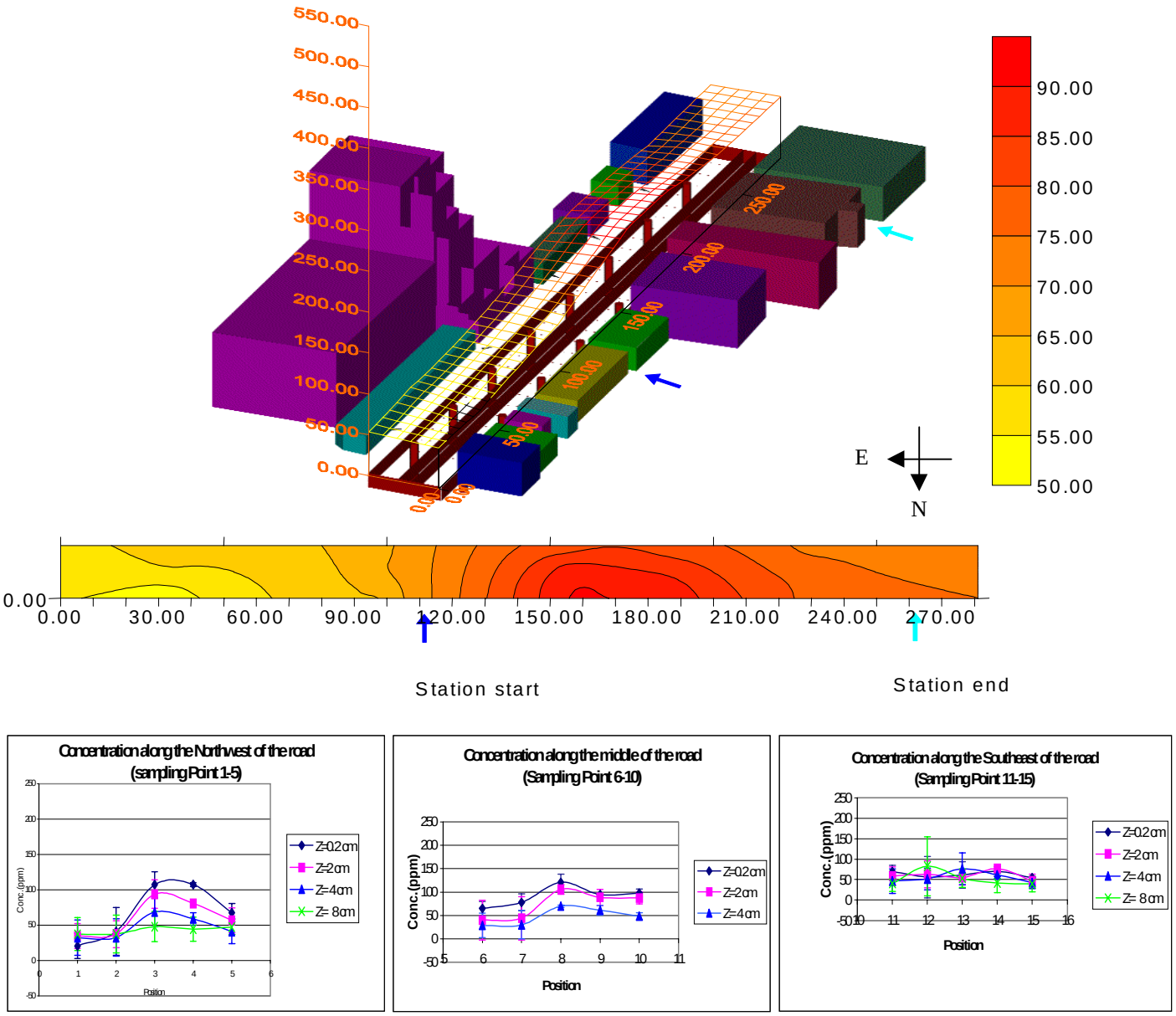


Figure C-12: Emission Rate 2.586 mg/min, with Station

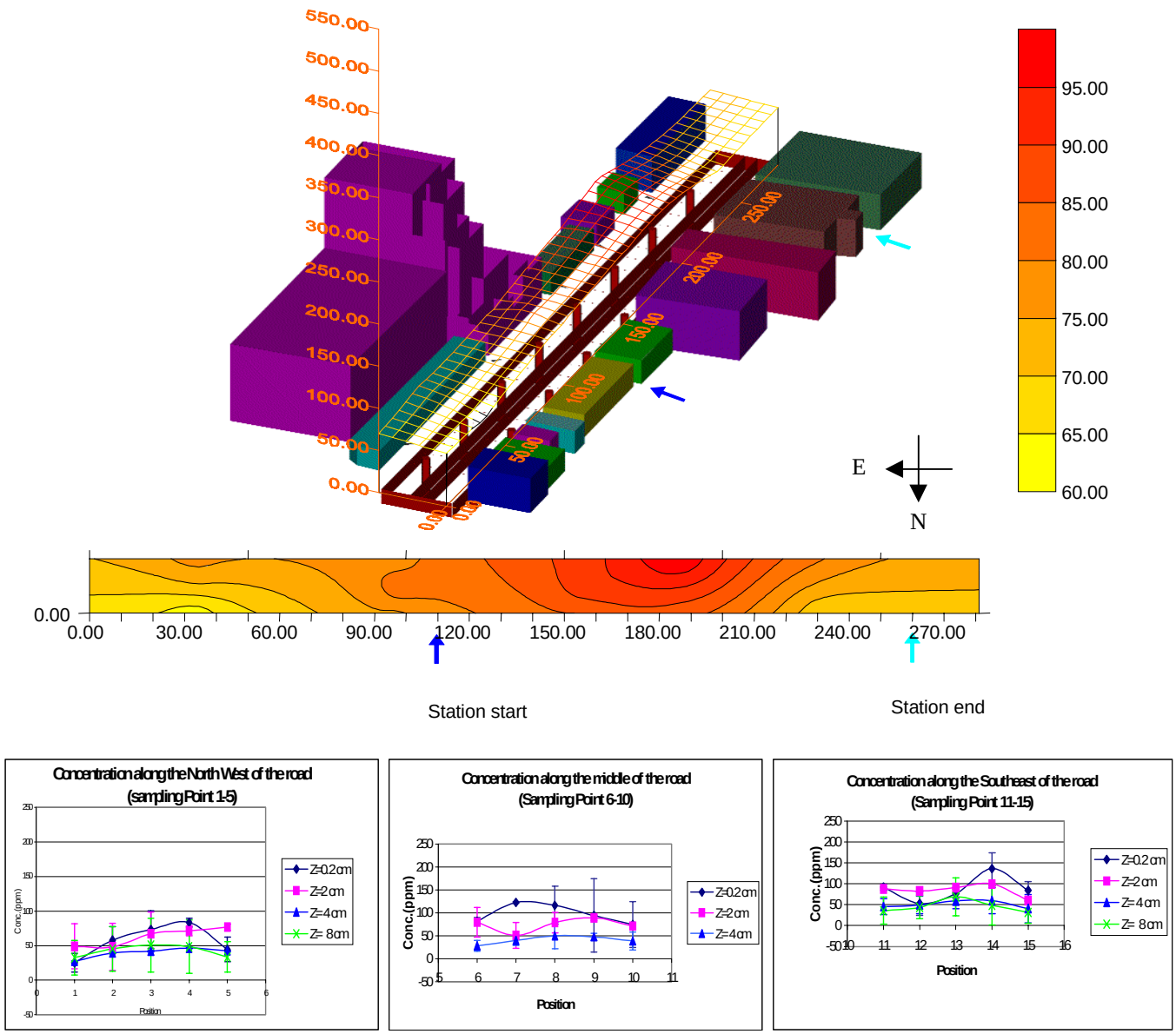


Figure C-13: Emission Rate 5.177 mg/min, without Station

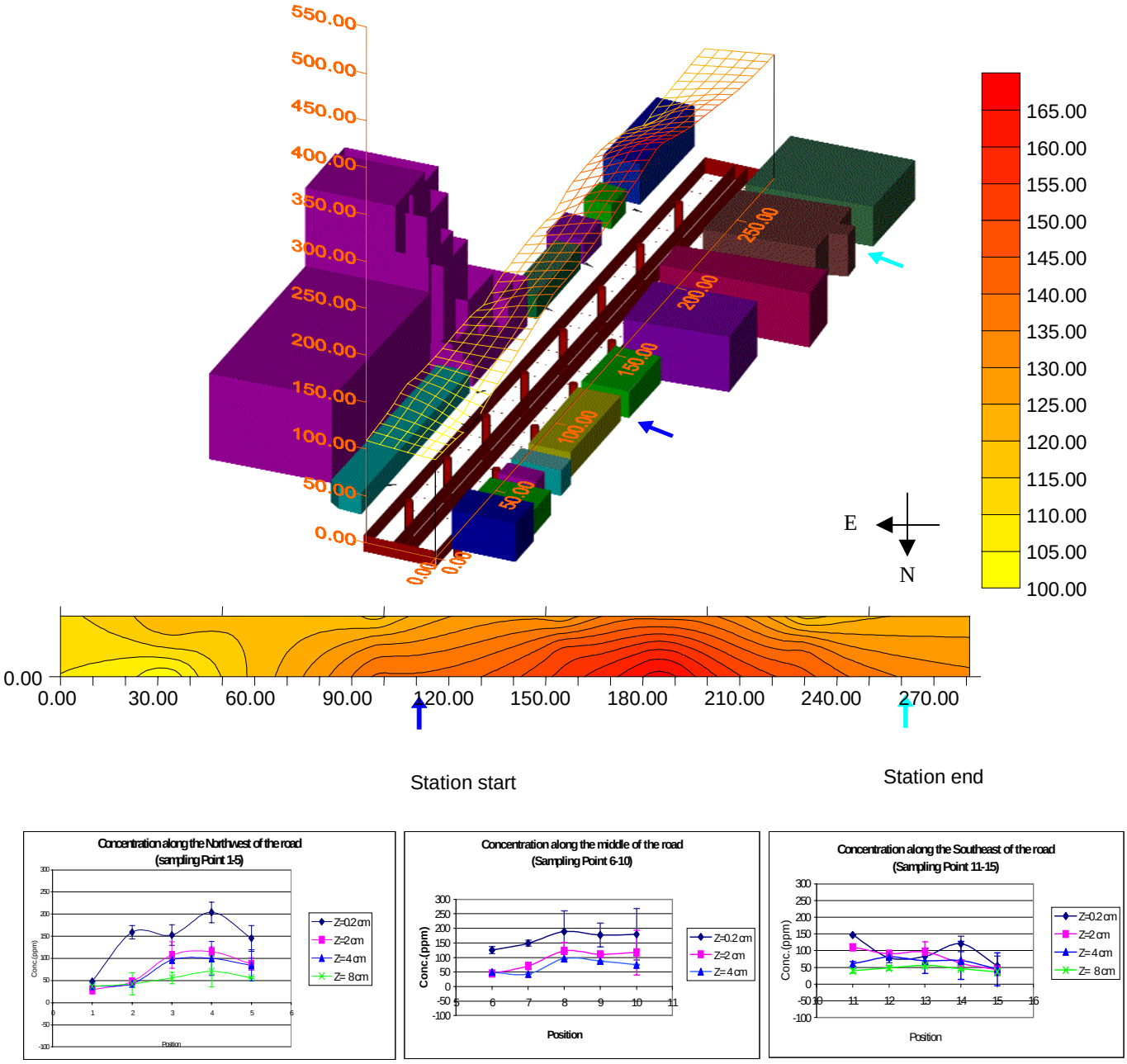


Figure C-14: Emission Rate 5.177 mg/min, with Station

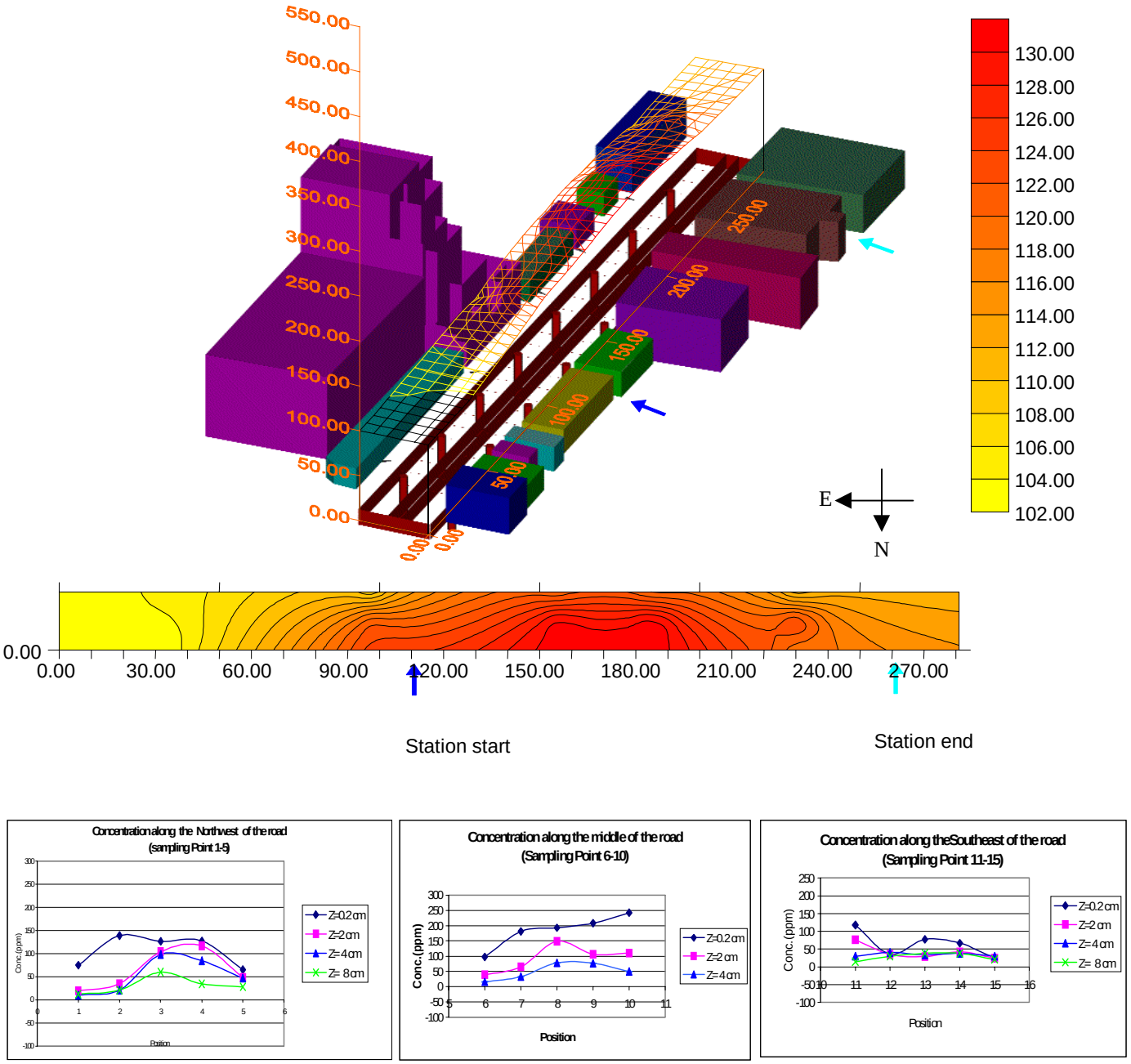


Figure C-15: Emission Rate 5.177 mg/min, with Station, with Ventilation System 12 cc/min

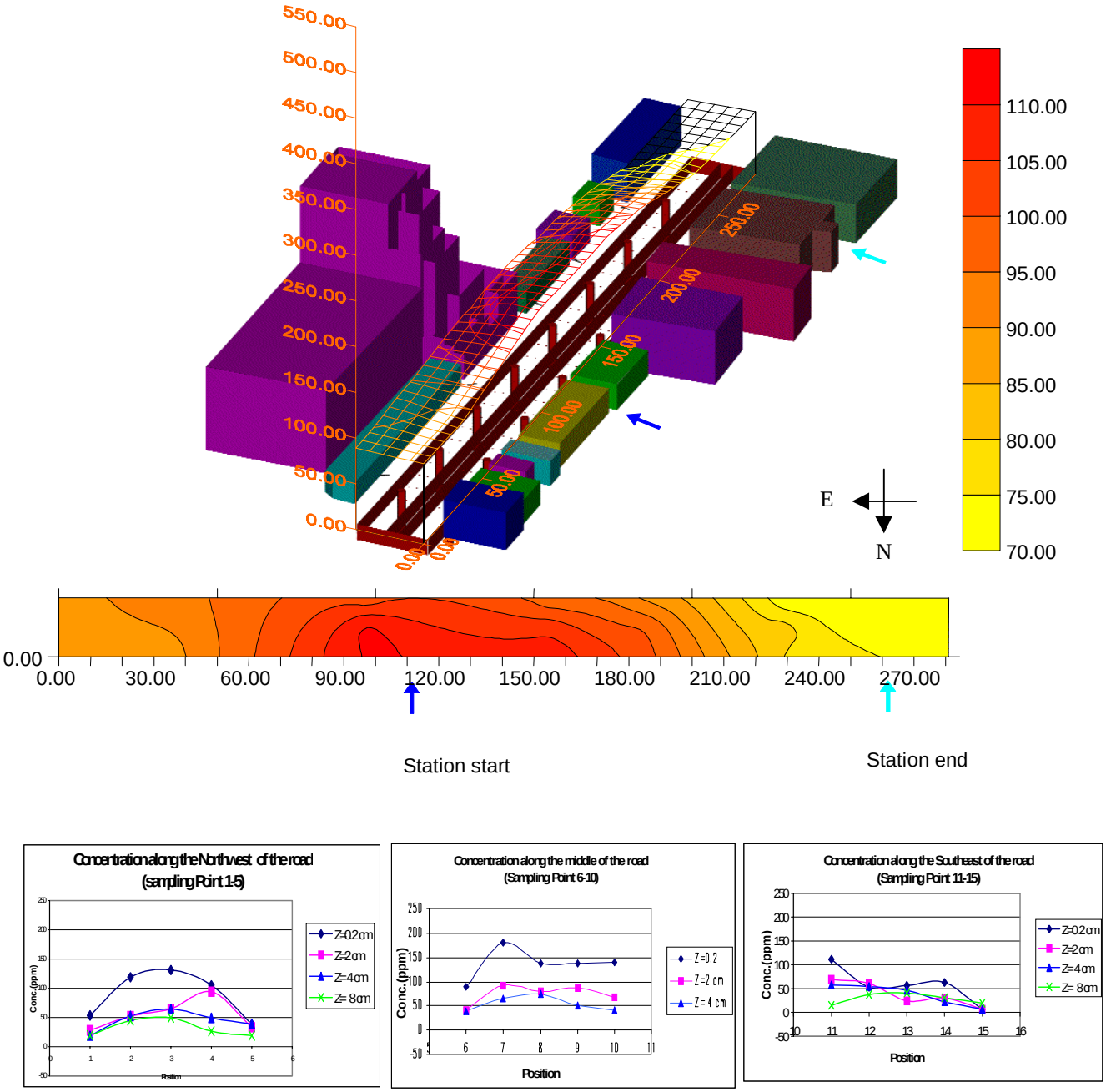


Figure C-16: Emission Rate 5.177 mg/min, with Station, with Ventilation System 25 cc/min

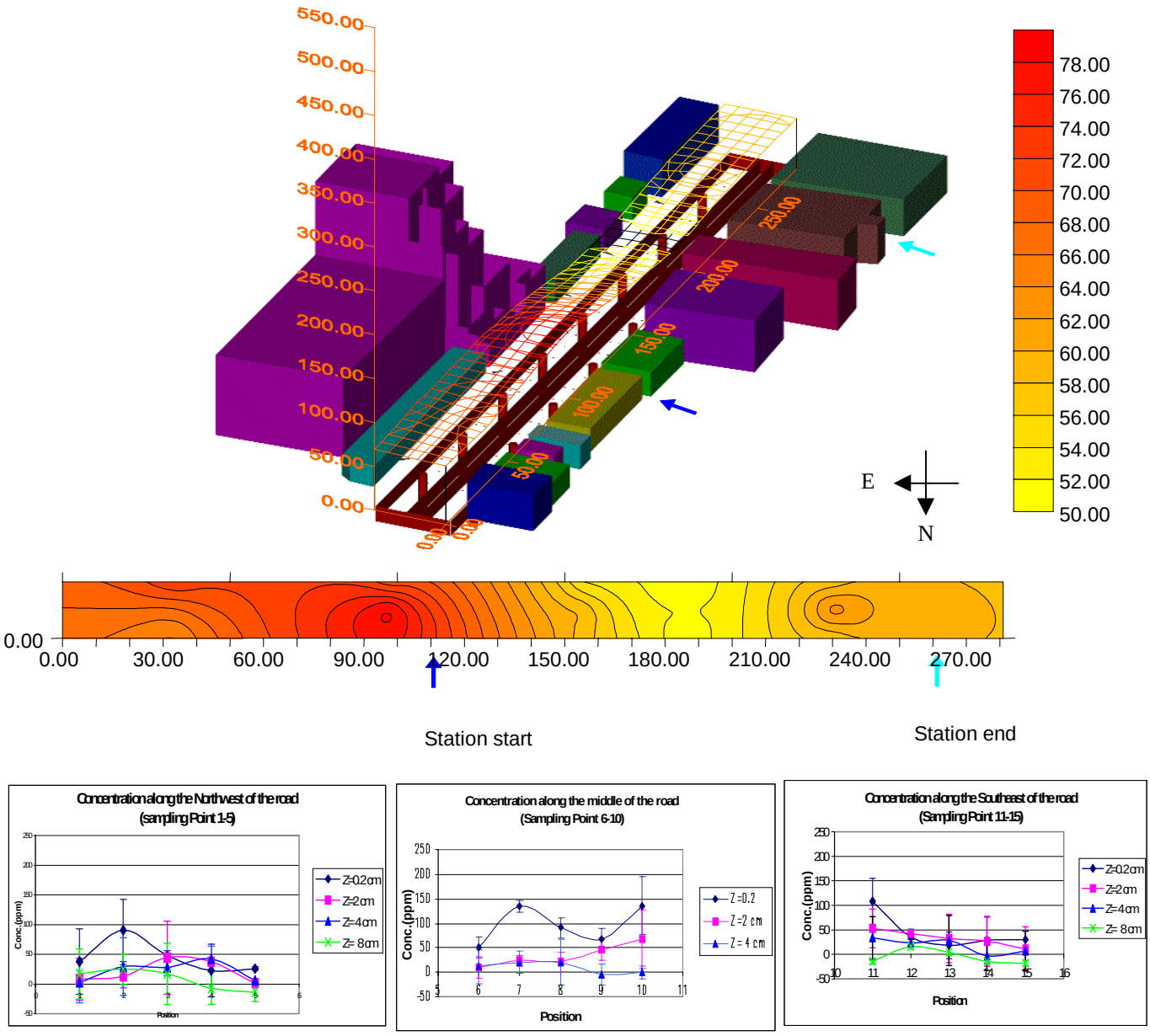
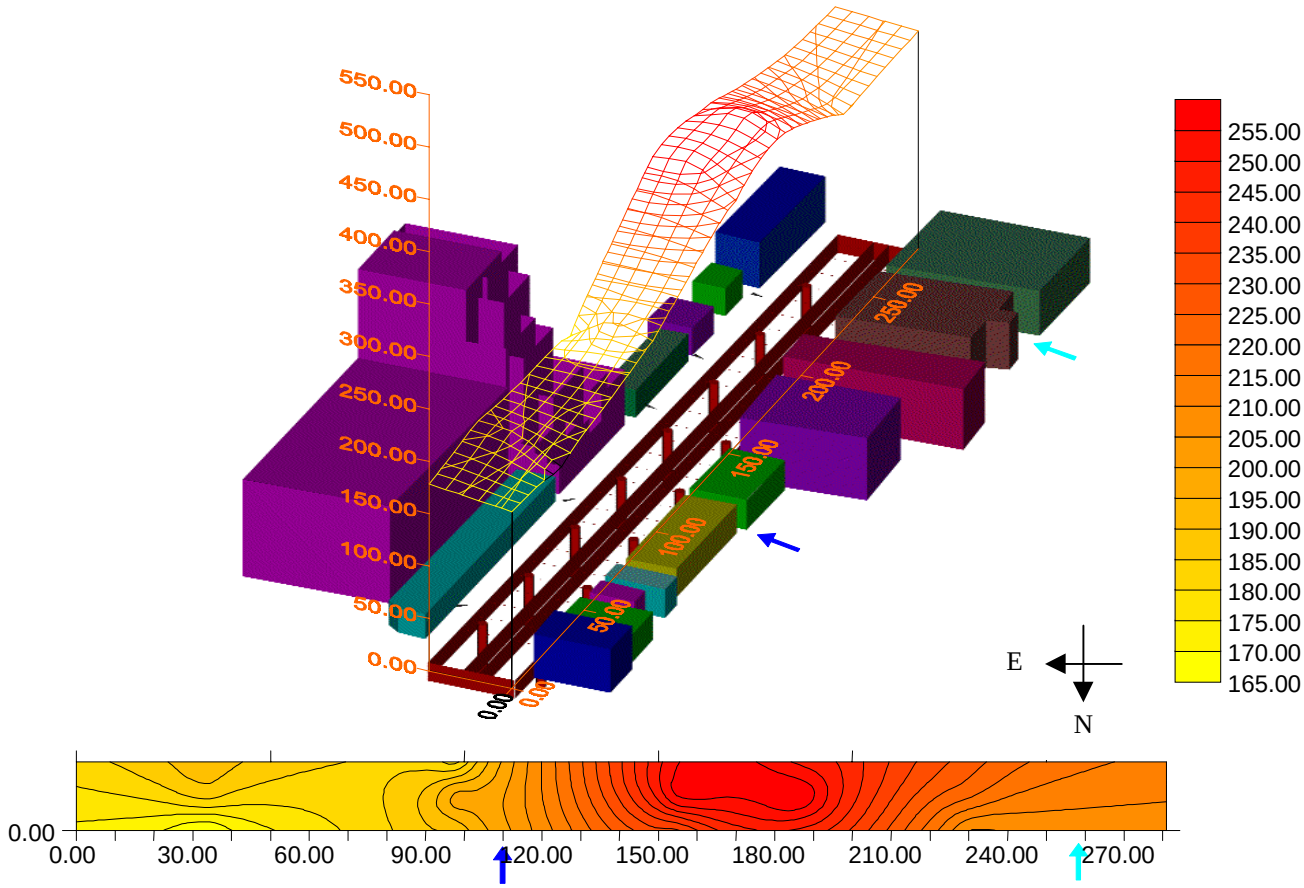
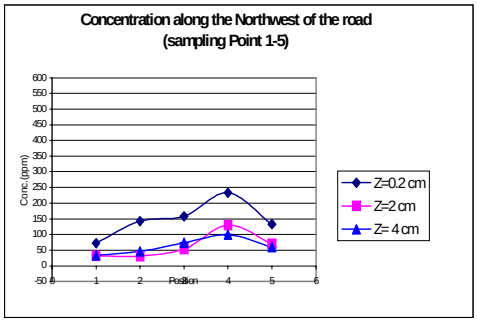
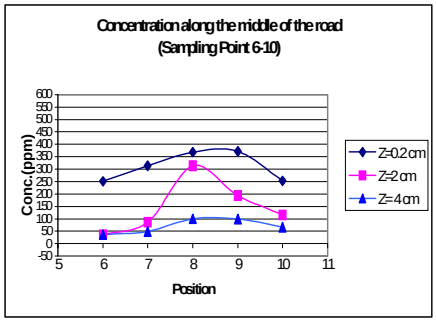


Figure C-17: Emission Rate 5.177 mg/min, with Station, with Ventilation System 32.5 cc/min







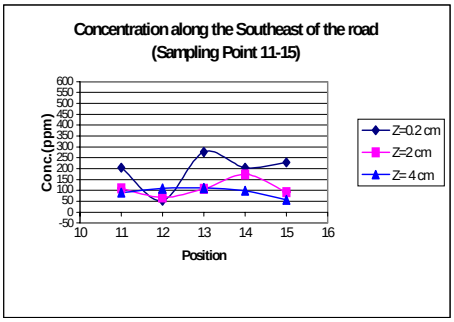


Figure C-18: Emission Rate 10.77 mg/min, without Station

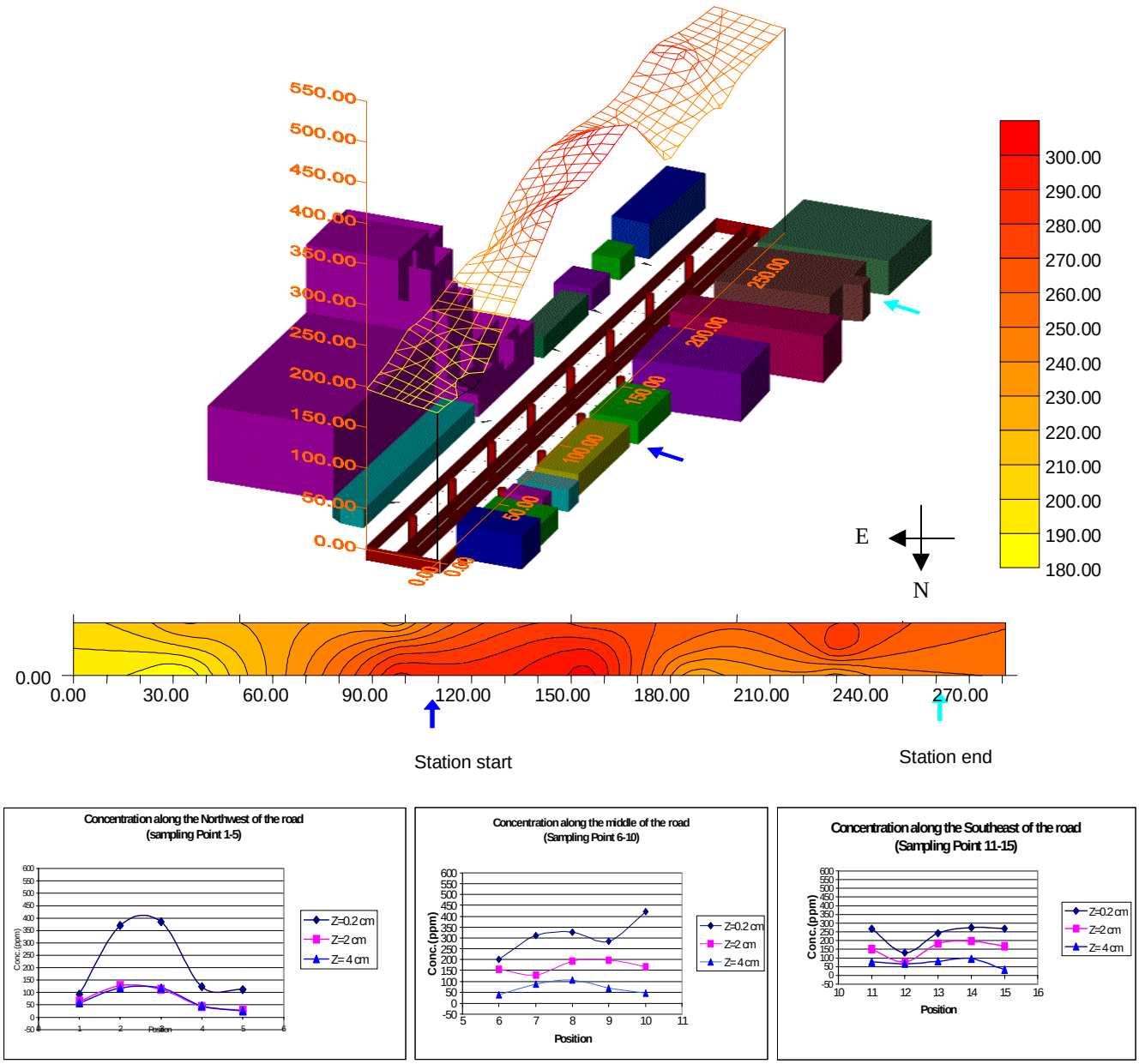


Figure C-19: Emission Rate 10.77 mg/min, with Station

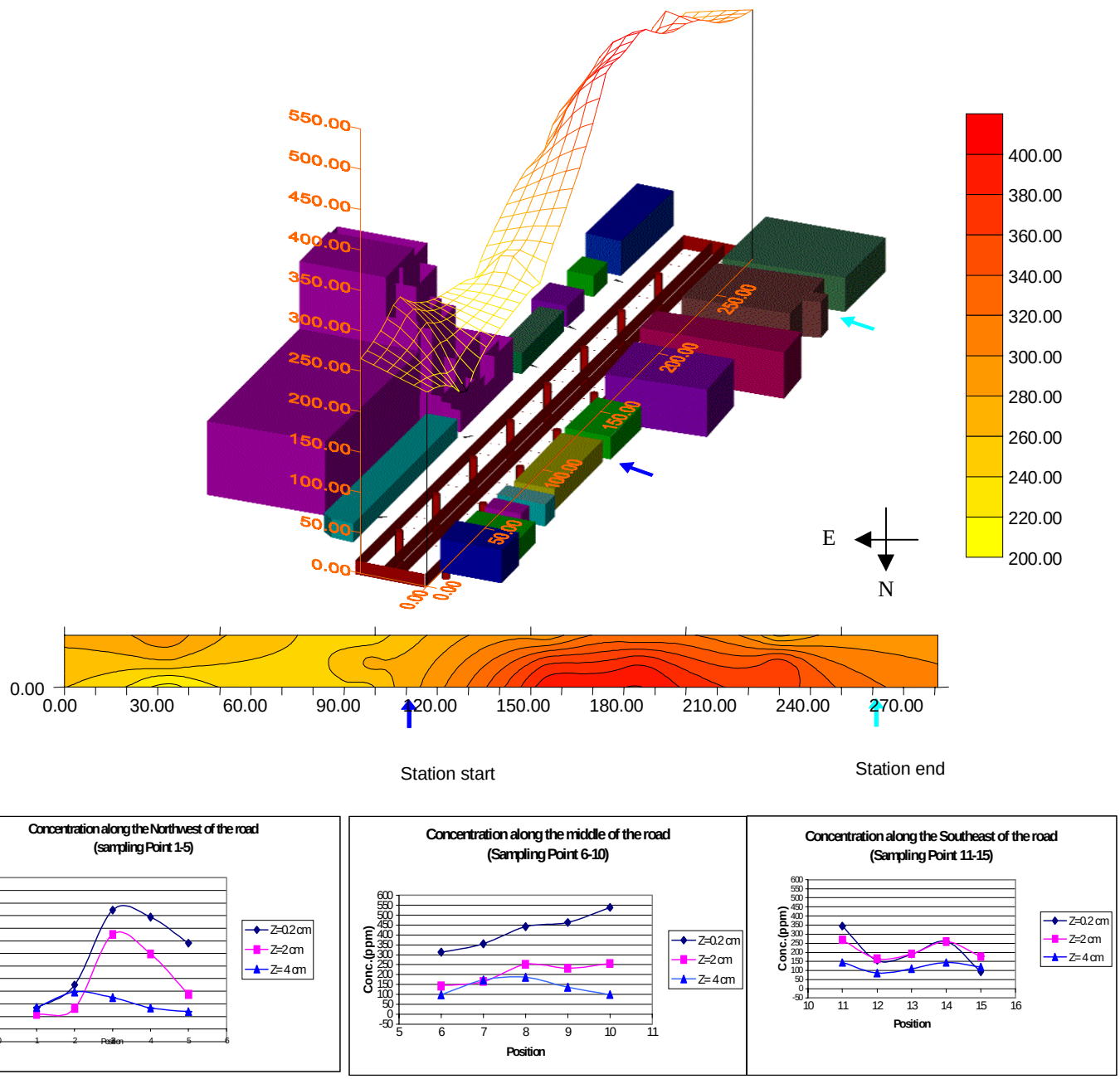


Figure C-20: Emission Rate 10.77 mg/min, with Station, with Natural Ventilation System 0 cc/min

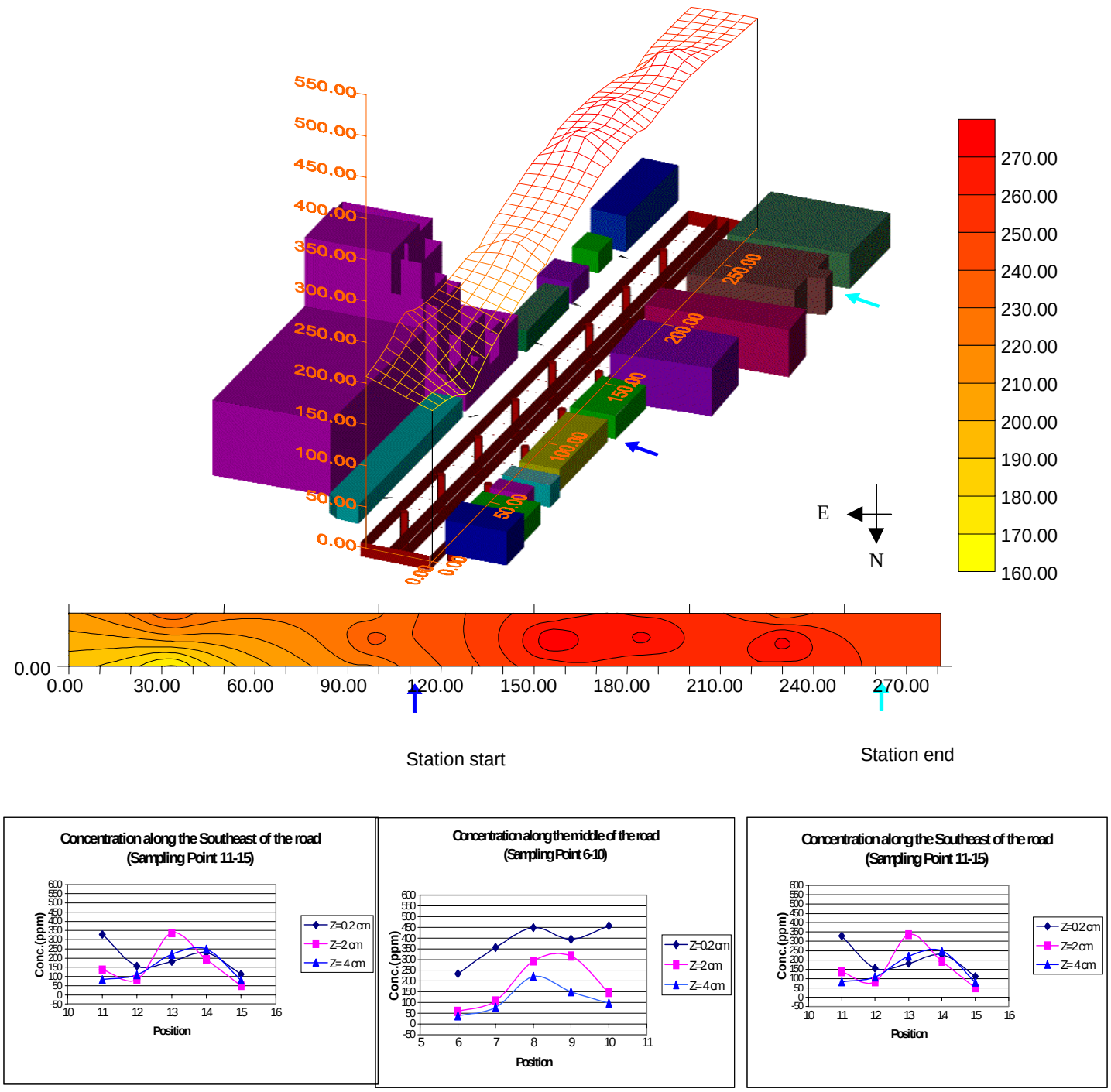


Figure C-21: Emission Rate 10.77 mg/min, with Station, with Ventilation System 55 cc/min

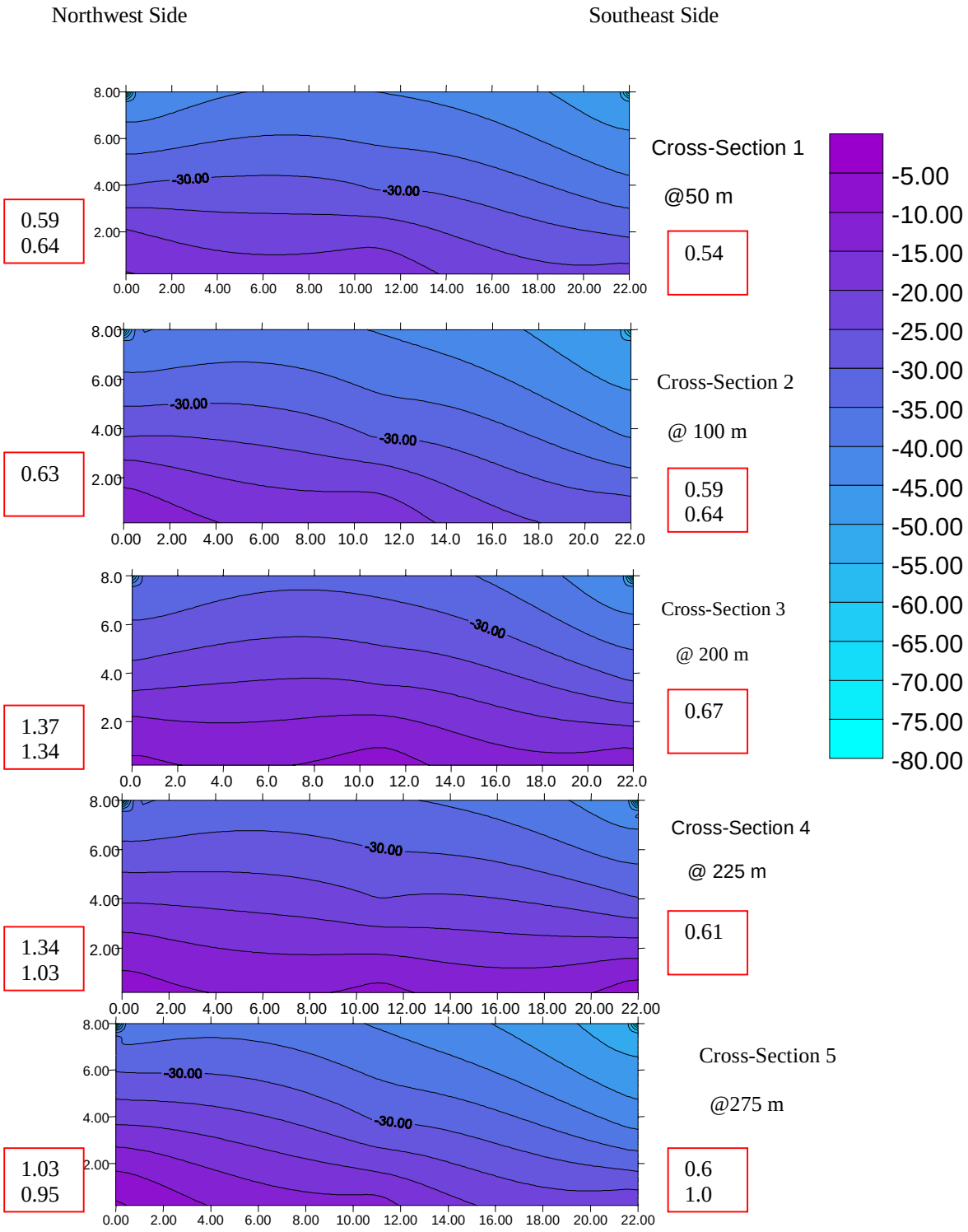


Figure C-22: CO Vertical Distribution without Station Case

contains B/H ratio on road side.

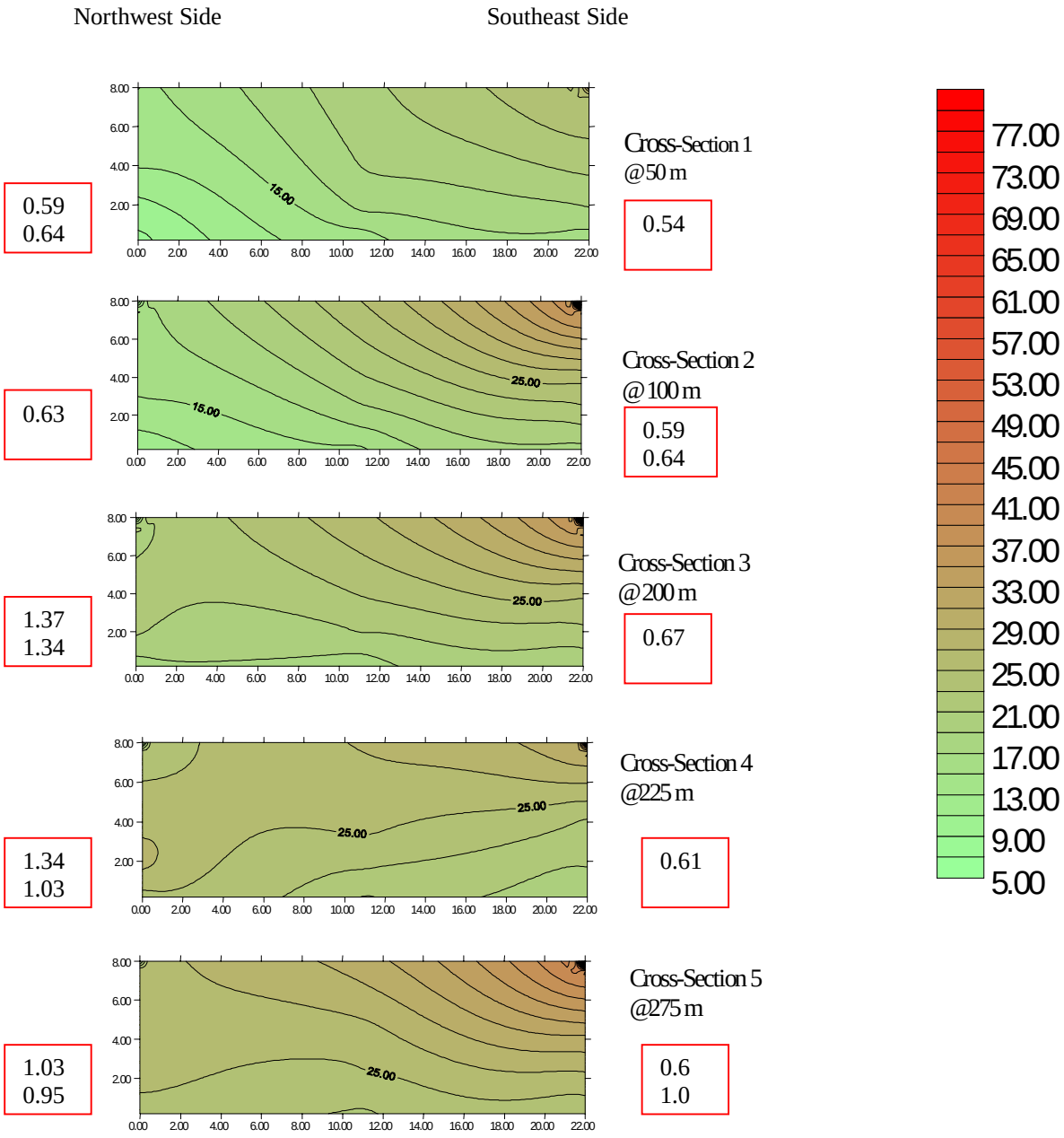


Figure C-23: CO Vertical Distribution with Station Case

contains B/H ratio on road side.

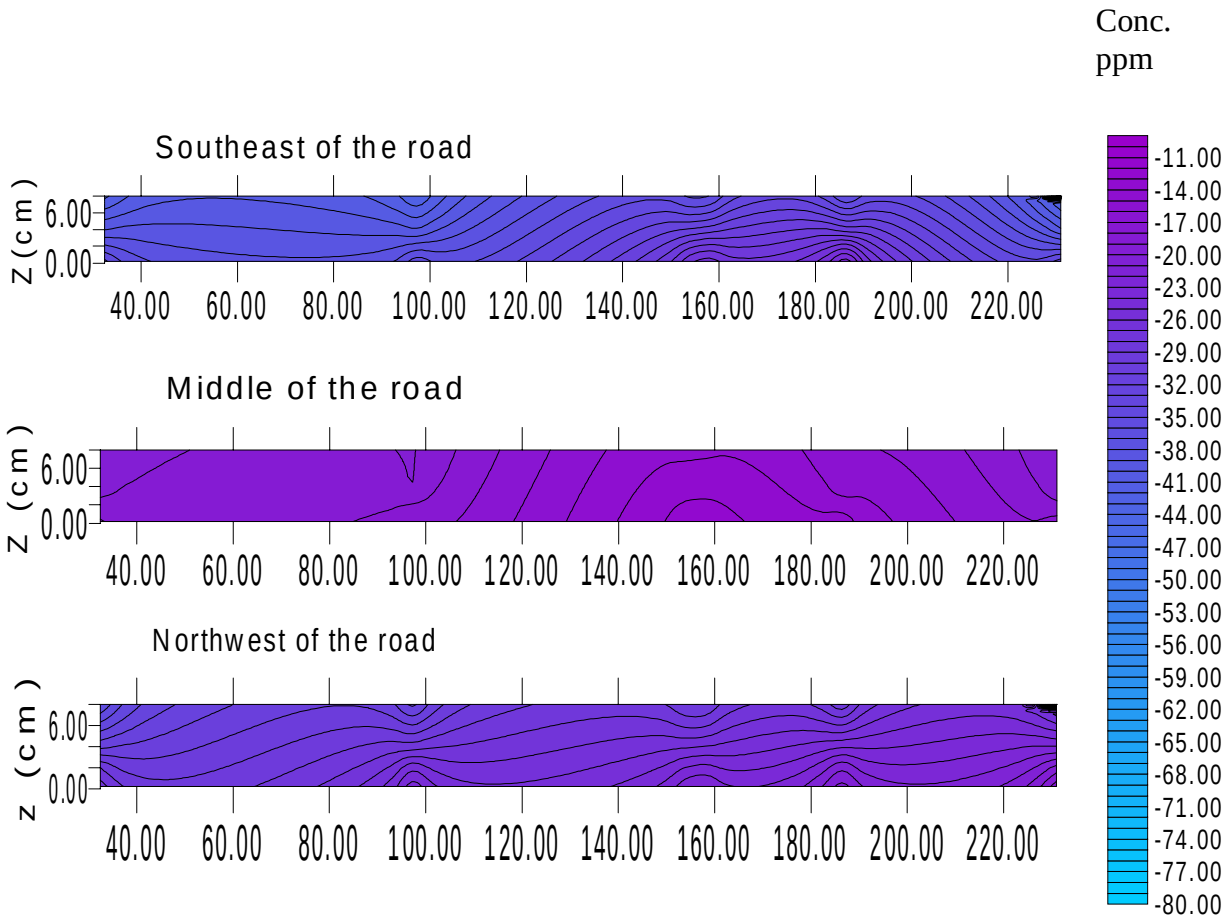


Figure C-24: CO Lateral Vertical Concentration without Station Case

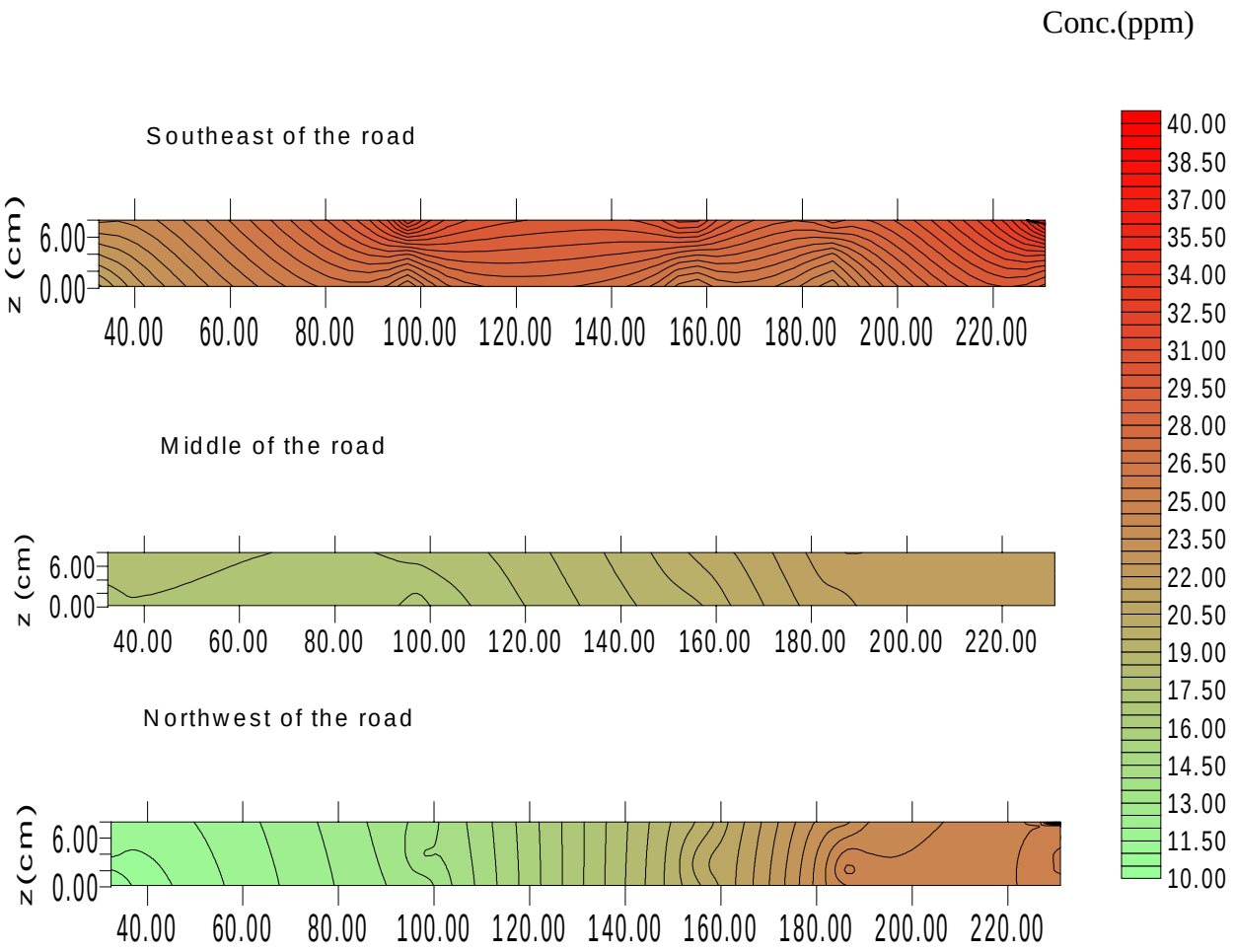


Figure C-25: CO Lateral Vertical Concentration without Station Case

APPENDIX D: REGRESSION ANALYSIS

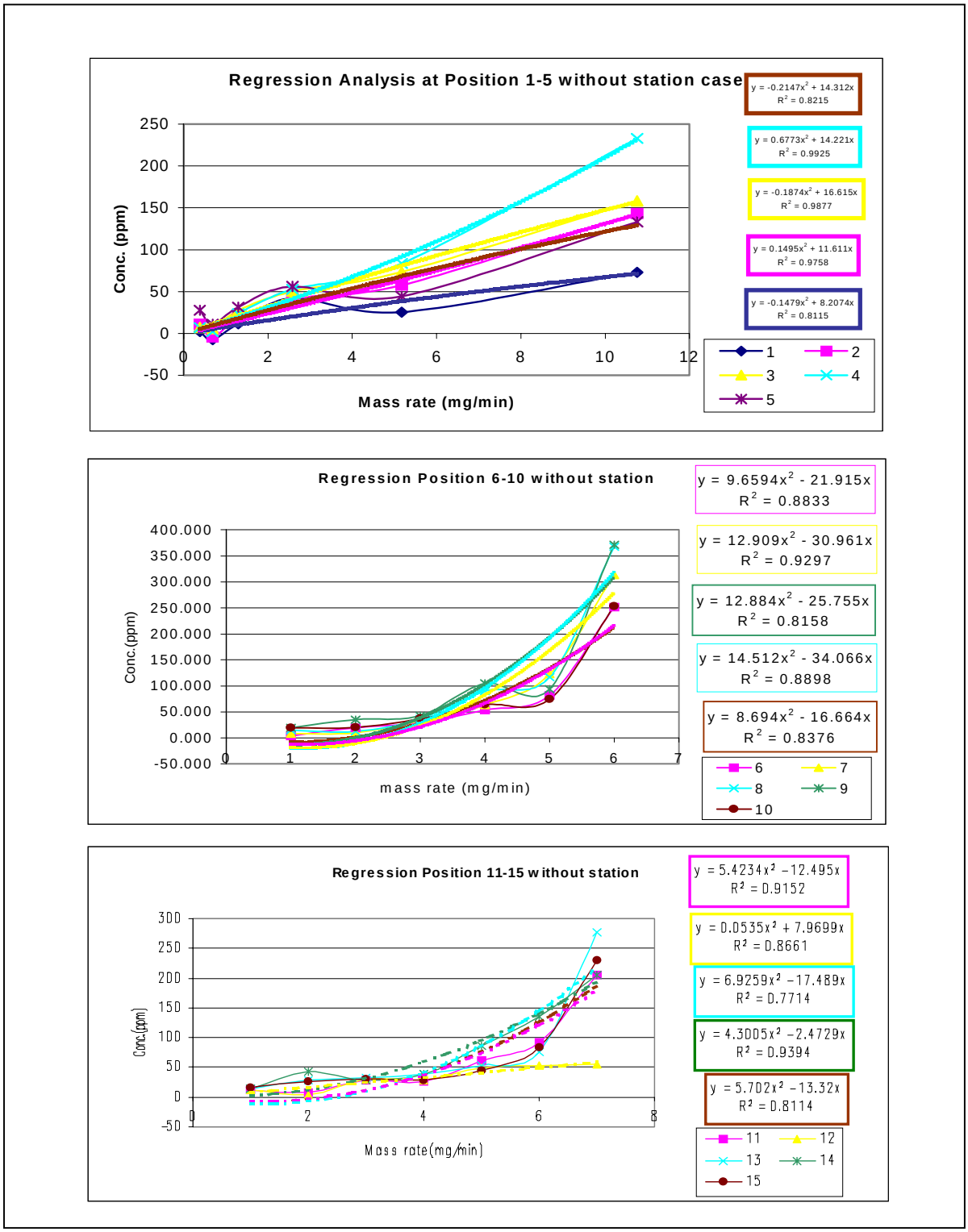


Figure D-1: Regression Analysis at Different Position without Station Case

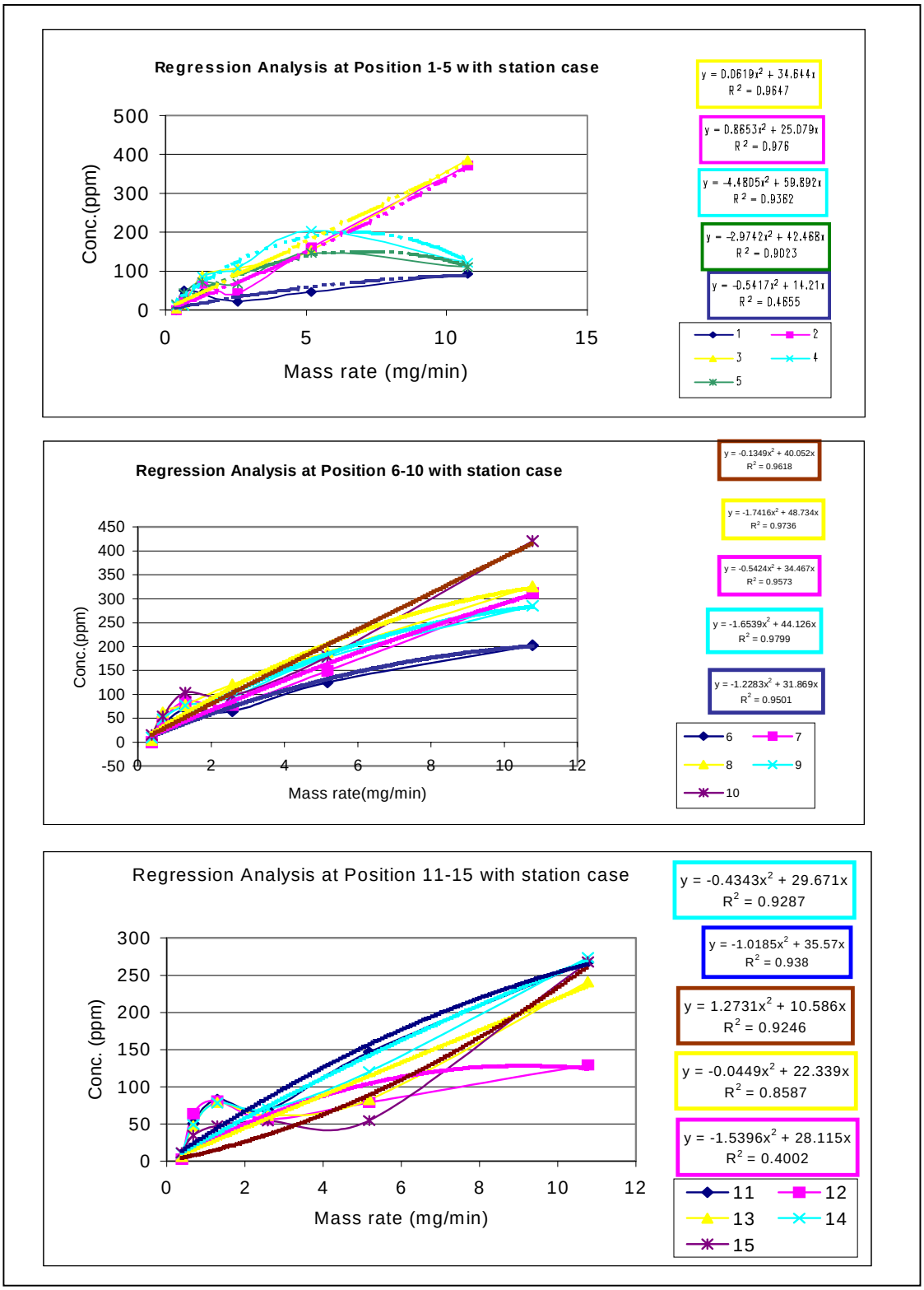


Figure D-2: Regression Analysis at Different Position with Station Case

APPENDIX E: TREND AND ANOVA OUTPUT

Carbondioxide Concentration 1
19:29 Monday, November 16, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
STATION	2	ns s
MASSRATE	6	0.381 0.681 1.293 10.76 2.586 5.177

Number of observations in data set = 640

Carbondioxide Concentration 2
19:29 Monday, November 16, 1998

General Linear Models Procedure

Dependent Variable: CO2

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	11	1304071.14413007	118551.92219364	60.81	0.0001
Error	628	1224296.57466107	1949.51683863		
Corrected Total	639	2528367.71879113			

R-Square	C.V.	Root MSE	CO2 Mean
0.515776	82.81707	44.15333327	53.31428813

Source	DF	Type III SS	Mean Square	F Value	Pr > F
STATION	1	106241.39292934	106241.39292934	54.50	0.0001
MASSRATE	5	1179934.68425131	235986.93685026	121.05	0.0001
STATION*MASSRATE	5	15538.00929890	3107.60185978	1.59	0.1596

Contrast	DF	Contrast SS	Mean Square	F Value	Pr > F

Linear trend of mass	1	439717.91998842	439717.91998842	225.55
0.0001				
Quadratic trend of m	1	228769.28810544	228769.28810544	117.35
0.0001				
Cubic trend of massr	1	13370.66840883	13370.66840883	6.86
0.0090				
Quad trend of massra	1	102949.32541415	102949.32541415	52.81
0.0001				

General Linear Models Procedure

Level of STATION	N	CO2 Mean	CO2 SD
ns	320	40.2879656	61.4250266
s	320	66.3406107	61.7450379

Level of MASSRATE	N	CO2 Mean	CO2 SD
0.381	110	-1.590429	35.9318261
0.681	110	36.973588	24.9816049
1.293	110	33.217780	23.2281094
10.76	90	142.974888	98.1898100
2.586	110	50.014015	24.3520107
5.177	110	74.597814	38.0919797

Level of STATION	Level of MASSRATE	N	CO2 Mean	CO2 SD
ns	0.381	55	-25.230945	33.856141
ns	0.681	55	25.614575	16.882510
ns	1.293	55	22.797383	8.758036
ns	10.76	45	133.447853	93.213153
ns	2.586	55	39.942414	21.316353
ns	5.177	55	62.094676	25.039123
s	0.381	55	22.050088	17.928081
s	0.681	55	48.332601	26.680816
s	1.293	55	43.638178	28.128055
s	10.76	45	152.501923	103.088555
s	2.586	55	60.085616	23.151773
s	5.177	55	87.100952	44.536093

Carbondioxide Concentration 1
17:45 Sunday, November 15, 1998

General Linear Models Procedure
Class Level Information

Class	Levels	Values
CASE	18	0.381ns 0.381s 0.681ns 0.681s 1.293ns 1.293s 10.76ns 10.76s 10vent0 10vent55 2.586ns 2.586s 5.177ns 5.177s atmos vent12.5 vent25 vent32.5

Number of observations in data set = 950

Carbondioxide Concentration 2
17:45 Sunday, November 15, 1998

General Linear Models Procedure

Dependent Variable: CONC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	3146106.33025963	185065.07825057	61.74	0.0001
Error	932	2793792.44444767	2997.63137816		
Corrected Total	949	5939898.77470730			

R-Square	C.V.	Root MSE	CONC Mean
0.529657	86.57380	54.75062902	63.24156880

Source	DF	Type III SS	Mean Square	F Value	Pr > F
CASE	17	3146106.33025963	185065.07825057	61.74	0.0001

Carbondioxide Concentration 3
17:45 Sunday, November 15, 1998

General Linear Models Procedure

T tests (LSD) for variable: CONC

NOTE: This test controls the type I comparisonwise error rate not the experimentwise error rate.

Alpha= 0.05 Confidence= 0.95 df= 932 MSE= 2997.631
Critical Value of T= 1.96251

Comparisons significant at the 0.05 level are indicated by '***'.

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
10vent0 - 10vent55	19.20	41.85	64.50	***
10vent0 - 10.76s	36.85	59.51	82.16	***
10vent0 - 10.76ns	55.91	78.56	101.21	***
10vent0 - 5.177s	103.31	124.91	146.51	***
10vent0 - vent12.5	121.92	143.52	165.12	***
10vent0 - 5.177ns	128.32	149.91	171.51	***
10vent0 - 2.586s	130.32	151.92	173.52	***
10vent0 - vent25	131.45	153.04	174.64	***
10vent0 - 0.681s	142.08	163.68	185.27	***
10vent0 - 1.293s	146.77	168.37	189.97	***
10vent0 - 2.586ns	150.47	172.07	193.66	***
10vent0 - vent32.5	161.07	182.67	204.27	***
10vent0 - 0.681ns	164.80	186.39	207.99	***
10vent0 - 1.293ns	167.61	189.21	210.81	***
10vent0 - 0.381s	168.36	189.96	211.56	***
10vent0 - atmos	187.91	209.51	231.11	***
10vent0 - 0.381ns	215.64	237.24	258.84	***
10vent55 - 10vent0	-64.50	-41.85	-19.20	***
10vent55 - 10.76s	-5.00	17.65	40.31	
10vent55 - 10.76ns	14.06	36.71	59.36	***
10vent55 - 5.177s	61.46	83.05	104.65	***
10vent55 - vent12.5	80.07	101.67	123.27	***
10vent55 - 5.177ns	86.46	108.06	129.66	***
10vent55 - 2.586s	88.47	110.07	131.67	***
10vent55 - vent25	89.59	111.19	132.79	***
10vent55 - 0.681s	100.23	121.82	143.42	***
10vent55 - 1.293s	104.92	126.52	148.12	***
10vent55 - 2.586ns	108.62	130.21	151.81	***
10vent55 - vent32.5	119.22	140.82	162.42	***
10vent55 - 0.681ns	122.94	144.54	166.14	***
10vent55 - 1.293ns	125.76	147.36	168.96	***

10vent55 - 0.381s	126.51	148.11	169.70	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
10vent55 - atmos	146.06	167.65	189.25	***
10vent55 - 0.381ns	173.79	195.39	216.98	***
10.76s - 10vent0	-82.16	-59.51	-36.85	***
10.76s - 10vent55	-40.31	-17.65	5.00	
10.76s - 10.76ns	-3.60	19.05	41.71	
10.76s - 5.177s	43.80	65.40	87.00	***
10.76s - vent12.5	62.42	84.01	105.61	***
10.76s - 5.177ns	68.81	90.41	112.01	***
10.76s - 2.586s	70.82	92.42	114.01	***
10.76s - vent25	71.94	93.54	115.14	***
10.76s - 0.681s	82.57	104.17	125.77	***
10.76s - 1.293s	87.27	108.86	130.46	***
10.76s - 2.586ns	90.96	112.56	134.16	***
10.76s - vent32.5	101.57	123.17	144.76	***
10.76s - 0.681ns	105.29	126.89	148.49	***
10.76s - 1.293ns	108.11	129.70	151.30	***
10.76s - 0.381s	108.85	130.45	152.05	***
10.76s - atmos	128.40	150.00	171.60	***
10.76s - 0.381ns	156.13	177.73	199.33	***
10.76ns - 10vent0	-101.21	-78.56	-55.91	***
10.76ns - 10vent55	-59.36	-36.71	-14.06	***
10.76ns - 10.76s	-41.71	-19.05	3.60	
10.76ns - 5.177s	24.75	46.35	67.94	***
10.76ns - vent12.5	43.36	64.96	86.56	***
10.76ns - 5.177ns	49.76	71.35	92.95	***
10.76ns - 2.586s	51.76	73.36	94.96	***
10.76ns - vent25	52.89	74.48	96.08	***
10.76ns - 0.681s	63.52	85.12	106.71	***
10.76ns - 1.293s	68.21	89.81	111.41	***
10.76ns - 2.586ns	71.91	93.51	115.10	***
10.76ns - vent32.5	82.51	104.11	125.71	***
10.76ns - 0.681ns	86.24	107.83	129.43	***
10.76ns - 1.293ns	89.05	110.65	132.25	***
10.76ns - 0.381s	89.80	111.40	133.00	***

10.76ns - atmos	109.35	130.95	152.55	***
10.76ns - 0.381ns	137.08	158.68	180.28	***
5.177s - 10vent0	-146.51	-124.91	-103.31	***
5.177s - 10vent55	-104.65	-83.05	-61.46	***
5.177s - 10.76s	-87.00	-65.40	-43.80	***
5.177s - 10.76ns	-67.94	-46.35	-24.75	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
5.177s - vent12.5	-1.88	18.61	39.10	
5.177s - 5.177ns	4.52	25.01	45.50	***
5.177s - 2.586s	6.53	27.02	47.51	***
5.177s - vent25	7.65	28.14	48.63	***
5.177s - 0.681s	18.28	38.77	59.26	***
5.177s - 1.293s	22.97	43.46	63.95	***
5.177s - 2.586ns	26.67	47.16	67.65	***
5.177s - vent32.5	37.27	57.76	78.25	***
5.177s - 0.681ns	41.00	61.49	81.98	***
5.177s - 1.293ns	43.81	64.30	84.79	***
5.177s - 0.381s	44.56	65.05	85.54	***
5.177s - atmos	64.11	84.60	105.09	***
5.177s - 0.381ns	91.84	112.33	132.82	***
vent12.5 - 10vent0	-165.12	-143.52	-121.92	***
vent12.5 - 10vent55	-123.27	-101.67	-80.07	***
vent12.5 - 10.76s	-105.61	-84.01	-62.42	***
vent12.5 - 10.76ns	-86.56	-64.96	-43.36	***
vent12.5 - 5.177s	-39.10	-18.61	1.88	
vent12.5 - 5.177ns	-14.10	6.39	26.88	
vent12.5 - 2.586s	-12.09	8.40	28.89	
vent12.5 - vent25	-10.97	9.52	30.01	
vent12.5 - 0.681s	-0.33	20.16	40.65	
vent12.5 - 1.293s	4.36	24.85	45.34	***
vent12.5 - 2.586ns	8.06	28.55	49.04	***
vent12.5 - vent32.5	18.66	39.15	59.64	***
vent12.5 - 0.681ns	22.38	42.87	63.36	***
vent12.5 - 1.293ns	25.20	45.69	66.18	***
vent12.5 - 0.381s	25.95	46.44	66.93	***
vent12.5 - atmos	45.50	65.99	86.48	***

vent12.5 - 0.381ns	73.23	93.72	114.21	***
5.177ns - 10vent0	-171.51	-149.91	-128.32	***
5.177ns - 10vent55	-129.66	-108.06	-86.46	***
5.177ns - 10.76s	-112.01	-90.41	-68.81	***
5.177ns - 10.76ns	-92.95	-71.35	-49.76	***
5.177ns - 5.177s	-45.50	-25.01	-4.52	***
5.177ns - vent12.5	-26.88	-6.39	14.10	
5.177ns - 2.586s	-18.48	2.01	22.50	
5.177ns - vent25	-17.36	3.13	23.62	
5.177ns - 0.681s	-6.73	13.76	34.25	
5.177ns - 1.293s	-2.03	18.46	38.95	
5.177ns - 2.586ns	1.66	22.15	42.64	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
5.177ns - vent32.5	12.27	32.76	53.25	***
5.177ns - 0.681ns	15.99	36.48	56.97	***
5.177ns - 1.293ns	18.81	39.30	59.79	***
5.177ns - 0.381s	19.55	40.04	60.53	***
5.177ns - atmos	39.10	59.59	80.08	***
5.177ns - 0.381ns	66.84	87.33	107.82	***
2.586s - 10vent0	-173.52	-151.92	-130.32	***
2.586s - 10vent55	-131.67	-110.07	-88.47	***
2.586s - 10.76s	-114.01	-92.42	-70.82	***
2.586s - 10.76ns	-94.96	-73.36	-51.76	***
2.586s - 5.177s	-47.51	-27.02	-6.53	***
2.586s - vent12.5	-28.89	-8.40	12.09	
2.586s - 5.177ns	-22.50	-2.01	18.48	
2.586s - vent25	-19.37	1.12	21.61	
2.586s - 0.681s	-8.74	11.75	32.24	
2.586s - 1.293s	-4.04	16.45	36.94	
2.586s - 2.586ns	-0.35	20.14	40.63	
2.586s - vent32.5	10.26	30.75	51.24	***
2.586s - 0.681ns	13.98	34.47	54.96	***
2.586s - 1.293ns	16.80	37.29	57.78	***
2.586s - 0.381s	17.55	38.04	58.53	***
2.586s - atmos	37.10	57.58	78.07	***
2.586s - 0.381ns	64.83	85.32	105.81	***

vent25	- 10vent0	-174.64	-153.04	-131.45	***
vent25	- 10vent55	-132.79	-111.19	-89.59	***
vent25	- 10.76s	-115.14	-93.54	-71.94	***
vent25	- 10.76ns	-96.08	-74.48	-52.89	***
vent25	- 5.177s	-48.63	-28.14	-7.65	***
vent25	- vent12.5	-30.01	-9.52	10.97	
vent25	- 5.177ns	-23.62	-3.13	17.36	
vent25	- 2.586s	-21.61	-1.12	19.37	
vent25	- 0.681s	-9.86	10.63	31.12	
vent25	- 1.293s	-5.16	15.33	35.82	
vent25	- 2.586ns	-1.47	19.02	39.51	
vent25	- vent32.5	9.14	29.63	50.12	***
vent25	- 0.681ns	12.86	33.35	53.84	***
vent25	- 1.293ns	15.68	36.17	56.66	***
vent25	- 0.381s	16.42	36.91	57.40	***
vent25	- atmos	35.97	56.46	76.95	***
vent25	- 0.381ns	63.71	84.19	104.68	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
0.681s	- 10vent0	-185.27	-163.68	-142.08	***
0.681s	- 10vent55	-143.42	-121.82	-100.23	***
0.681s	- 10.76s	-125.77	-104.17	-82.57	***
0.681s	- 10.76ns	-106.71	-85.12	-63.52	***
0.681s	- 5.177s	-59.26	-38.77	-18.28	***
0.681s	- vent12.5	-40.65	-20.16	0.33	
0.681s	- 5.177ns	-34.25	-13.76	6.73	
0.681s	- 2.586s	-32.24	-11.75	8.74	
0.681s	- vent25	-31.12	-10.63	9.86	
0.681s	- 1.293s	-15.80	4.69	25.18	
0.681s	- 2.586ns	-12.10	8.39	28.88	
0.681s	- vent32.5	-1.49	19.00	39.49	
0.681s	- 0.681ns	2.23	22.72	43.21	***
0.681s	- 1.293ns	5.05	25.54	46.02	***
0.681s	- 0.381s	5.79	26.28	46.77	***
0.681s	- atmos	25.34	45.83	66.32	***
0.681s	- 0.381ns	53.07	73.56	94.05	***

1.293s	- 10vent0	-189.97	-168.37	-146.77	***
1.293s	- 10vent55	-148.12	-126.52	-104.92	***
1.293s	- 10.76s	-130.46	-108.86	-87.27	***
1.293s	- 10.76ns	-111.41	-89.81	-68.21	***
1.293s	- 5.177s	-63.95	-43.46	-22.97	***
1.293s	- vent12.5	-45.34	-24.85	-4.36	***
1.293s	- 5.177ns	-38.95	-18.46	2.03	
1.293s	- 2.586s	-36.94	-16.45	4.04	
1.293s	- vent25	-35.82	-15.33	5.16	
1.293s	- 0.681s	-25.18	-4.69	15.80	
1.293s	- 2.586ns	-16.79	3.70	24.19	
1.293s	- vent32.5	-6.19	14.30	34.79	
1.293s	- 0.681ns	-2.47	18.02	38.51	
1.293s	- 1.293ns	0.35	20.84	41.33	***
1.293s	- 0.381s	1.10	21.59	42.08	***
1.293s	- atmos	20.65	41.14	61.63	***
1.293s	- 0.381ns	48.38	68.87	89.36	***
2.586ns	- 10vent0	-193.66	-172.07	-150.47	***
2.586ns	- 10vent55	-151.81	-130.21	-108.62	***
2.586ns	- 10.76s	-134.16	-112.56	-90.96	***
2.586ns	- 10.76ns	-115.10	-93.51	-71.91	***
2.586ns	- 5.177s	-67.65	-47.16	-26.67	***
2.586ns	- vent12.5	-49.04	-28.55	-8.06	***
2.586ns	- 5.177ns	-42.64	-22.15	-1.66	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
2.586ns	- 2.586s	-40.63	-20.14	0.35	
2.586ns	- vent25	-39.51	-19.02	1.47	
2.586ns	- 0.681s	-28.88	-8.39	12.10	
2.586ns	- 1.293s	-24.19	-3.70	16.79	
2.586ns	- vent32.5	-9.88	10.61	31.10	
2.586ns	- 0.681ns	-6.16	14.33	34.82	
2.586ns	- 1.293ns	-3.34	17.15	37.63	
2.586ns	- 0.381s	-2.60	17.89	38.38	
2.586ns	- atmos	16.95	37.44	57.93	***
2.586ns	- 0.381ns	44.68	65.17	85.66	***
vent32.5	- 10vent0	-204.27	-182.67	-161.07	***

vent32.5 - 10vent55	-162.42	-140.82	-119.22	***
vent32.5 - 10.76s	-144.76	-123.17	-101.57	***
vent32.5 - 10.76ns	-125.71	-104.11	-82.51	***
vent32.5 - 5.177s	-78.25	-57.76	-37.27	***
vent32.5 - vent12.5	-59.64	-39.15	-18.66	***
vent32.5 - 5.177ns	-53.25	-32.76	-12.27	***
vent32.5 - 2.586s	-51.24	-30.75	-10.26	***
vent32.5 - vent25	-50.12	-29.63	-9.14	***
vent32.5 - 0.681s	-39.49	-19.00	1.49	
vent32.5 - 1.293s	-34.79	-14.30	6.19	
vent32.5 - 2.586ns	-31.10	-10.61	9.88	
vent32.5 - 0.681ns	-16.77	3.72	24.21	
vent32.5 - 1.293ns	-13.95	6.54	27.03	
vent32.5 - 0.381s	-13.20	7.29	27.78	
vent32.5 - atmos	6.35	26.84	47.33	***
vent32.5 - 0.381ns	34.08	54.57	75.06	***
0.681ns - 10vent0	-207.99	-186.39	-164.80	***
0.681ns - 10vent55	-166.14	-144.54	-122.94	***
0.681ns - 10.76s	-148.49	-126.89	-105.29	***
0.681ns - 10.76ns	-129.43	-107.83	-86.24	***
0.681ns - 5.177s	-81.98	-61.49	-41.00	***
0.681ns - vent12.5	-63.36	-42.87	-22.38	***
0.681ns - 5.177ns	-56.97	-36.48	-15.99	***
0.681ns - 2.586s	-54.96	-34.47	-13.98	***
0.681ns - vent25	-53.84	-33.35	-12.86	***
0.681ns - 0.681s	-43.21	-22.72	-2.23	***
0.681ns - 1.293s	-38.51	-18.02	2.47	
0.681ns - 2.586ns	-34.82	-14.33	6.16	
0.681ns - vent32.5	-24.21	-3.72	16.77	
0.681ns - 1.293ns	-17.67	2.82	23.31	

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
0.681ns - 0.381s	-16.93	3.56	24.05	
0.681ns - atmos	2.62	23.11	43.60	***
0.681ns - 0.381ns	30.36	50.85	71.34	***
1.293ns - 10vent0	-210.81	-189.21	-167.61	***
1.293ns - 10vent55	-168.96	-147.36	-125.76	***

1.293ns	- 10.76s	-151.30	-129.70	-108.11	***
1.293ns	- 10.76ns	-132.25	-110.65	-89.05	***
1.293ns	- 5.177s	-84.79	-64.30	-43.81	***
1.293ns	- vent12.5	-66.18	-45.69	-25.20	***
1.293ns	- 5.177ns	-59.79	-39.30	-18.81	***
1.293ns	- 2.586s	-57.78	-37.29	-16.80	***
1.293ns	- vent25	-56.66	-36.17	-15.68	***
1.293ns	- 0.681s	-46.02	-25.54	-5.05	***
1.293ns	- 1.293s	-41.33	-20.84	-0.35	***
1.293ns	- 2.586ns	-37.63	-17.15	3.34	
1.293ns	- vent32.5	-27.03	-6.54	13.95	
1.293ns	- 0.681ns	-23.31	-2.82	17.67	
1.293ns	- 0.381s	-19.74	0.75	21.24	
1.293ns	- atmos	-0.19	20.30	40.79	
1.293ns	- 0.381ns	27.54	48.03	68.52	***
0.381s	- 10vent0	-211.56	-189.96	-168.36	***
0.381s	- 10vent55	-169.70	-148.11	-126.51	***
0.381s	- 10.76s	-152.05	-130.45	-108.85	***
0.381s	- 10.76ns	-133.00	-111.40	-89.80	***
0.381s	- 5.177s	-85.54	-65.05	-44.56	***
0.381s	- vent12.5	-66.93	-46.44	-25.95	***
0.381s	- 5.177ns	-60.53	-40.04	-19.55	***
0.381s	- 2.586s	-58.53	-38.04	-17.55	***
0.381s	- vent25	-57.40	-36.91	-16.42	***
0.381s	- 0.681s	-46.77	-26.28	-5.79	***
0.381s	- 1.293s	-42.08	-21.59	-1.10	***
0.381s	- 2.586ns	-38.38	-17.89	2.60	
0.381s	- vent32.5	-27.78	-7.29	13.20	
0.381s	- 0.681ns	-24.05	-3.56	16.93	
0.381s	- 1.293ns	-21.24	-0.75	19.74	
0.381s	- atmos	-0.94	19.55	40.04	
0.381s	- 0.381ns	26.79	47.28	67.77	***
atmos	- 10vent0	-231.11	-209.51	-187.91	***
atmos	- 10vent55	-189.25	-167.65	-146.06	***
atmos	- 10.76s	-171.60	-150.00	-128.40	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit

atmos	- 10.76ns	-152.55	-130.95	-109.35	***
atmos	- 5.177s	-105.09	-84.60	-64.11	***
atmos	- vent12.5	-86.48	-65.99	-45.50	***
atmos	- 5.177ns	-80.08	-59.59	-39.10	***
atmos	- 2.586s	-78.07	-57.58	-37.10	***
atmos	- vent25	-76.95	-56.46	-35.97	***
atmos	- 0.681s	-66.32	-45.83	-25.34	***
atmos	- 1.293s	-61.63	-41.14	-20.65	***
atmos	- 2.586ns	-57.93	-37.44	-16.95	***
atmos	- vent32.5	-47.33	-26.84	-6.35	***
atmos	- 0.681ns	-43.60	-23.11	-2.62	***
atmos	- 1.293ns	-40.79	-20.30	0.19	
atmos	- 0.381s	-40.04	-19.55	0.94	
atmos	- 0.381ns	7.24	27.73	48.22	***

0.381ns	- 10vent0	-258.84	-237.24	-215.64	***
0.381ns	- 10vent55	-216.98	-195.39	-173.79	***
0.381ns	- 10.76s	-199.33	-177.73	-156.13	***
0.381ns	- 10.76ns	-180.28	-158.68	-137.08	***
0.381ns	- 5.177s	-132.82	-112.33	-91.84	***
0.381ns	- vent12.5	-114.21	-93.72	-73.23	***
0.381ns	- 5.177ns	-107.82	-87.33	-66.84	***
0.381ns	- 2.586s	-105.81	-85.32	-64.83	***
0.381ns	- vent25	-104.68	-84.19	-63.71	***
0.381ns	- 0.681s	-94.05	-73.56	-53.07	***
0.381ns	- 1.293s	-89.36	-68.87	-48.38	***
0.381ns	- 2.586ns	-85.66	-65.17	-44.68	***
0.381ns	- vent32.5	-75.06	-54.57	-34.08	***
0.381ns	- 0.681ns	-71.34	-50.85	-30.36	***
0.381ns	- 1.293ns	-68.52	-48.03	-27.54	***
0.381ns	- 0.381s	-67.77	-47.28	-26.79	***
0.381ns	- atmos	-48.22	-27.73	-7.24	***

Carbondioxide Concentration 12:05 Monday, December 21, 1998 1

General Linear Models Procedure
Class Level Information

Class Levels Values

CASE 18 0.381ns 0.381s 0.681ns 0.681s 1.293ns 1.293s 10.76ns 10.76s 10vent0 10vent55 2.586ns 2.586s 5.177ns 5.177s
atmos vent12.5 vent25 vent32.5

Number of observations in data set = 950

Carbondioxide Concentration 12:05 Monday, December 21, 1998 2

General Linear Models Procedure

Dependent Variable: CONC

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	17	3146106.33025963	185065.07825057	61.74	0.0001
Error	932	2793792.44444767	2997.63137816		
Corrected Total	949	5939898.77470730			

R-Square	C.V.	Root MSE	CONC Mean
0.529657	86.57380	54.75062902	63.24156880

Source	DF	Type III SS	Mean Square	F Value	Pr > F
CASE	17	3146106.33025963	185065.07825057	61.74	0.0001

General Linear Models Procedure

T tests (LSD) for variable: CONC

NOTE: This test controls the type I comparisonwise error rate not the experimentwise error rate.

Alpha= 0.1 Confidence= 0.9 df= 932 MSE= 2997.631
Critical Value of T= 1.64649

Comparisons significant at the 0.1 level are indicated by '***'.

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
10vent0 - 10vent55	22.85	41.85	60.86	***
10vent0 - 10.76s	40.50	59.51	78.51	***
10vent0 - 10.76ns	59.56	78.56	97.56	***
10vent0 - 5.177s	106.79	124.91	143.03	***
10vent0 - vent12.5	125.40	143.52	161.64	***
10vent0 - 5.177ns	131.79	149.91	168.03	***
10vent0 - 2.586s	133.80	151.92	170.04	***
10vent0 - vent25	134.92	153.04	171.16	***
10vent0 - 0.681s	145.56	163.68	181.80	***
10vent0 - 1.293s	150.25	168.37	186.49	***
10vent0 - 2.586ns	153.95	172.07	190.19	***
10vent0 - vent32.5	164.55	182.67	200.79	***
10vent0 - 0.681ns	168.27	186.39	204.51	***
10vent0 - 1.293ns	171.09	189.21	207.33	***
10vent0 - 0.381s	171.84	189.96	208.08	***
10vent0 - atmos	191.39	209.51	227.63	***
10vent0 - 0.381ns	219.12	237.24	255.36	***
10vent55 - 10vent0	-60.86	-41.85	-22.85	***
10vent55 - 10.76s	-1.35	17.65	36.66	
10vent55 - 10.76ns	17.70	36.71	55.71	***
10vent55 - 5.177s	64.93	83.05	101.17	***
10vent55 - vent12.5	83.55	101.67	119.79	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
10vent55 - 5.177ns	89.94	108.06	126.18	***
10vent55 - 2.586s	91.95	110.07	128.19	***
10vent55 - vent25	93.07	111.19	129.31	***
10vent55 - 0.681s	103.70	121.82	139.94	***
10vent55 - 1.293s	108.40	126.52	144.64	***
10vent55 - 2.586ns	112.09	130.21	148.33	***
10vent55 - vent32.5	122.70	140.82	158.94	***
10vent55 - 0.681ns	126.42	144.54	162.66	***
10vent55 - 1.293ns	129.24	147.36	165.48	***
10vent55 - 0.381s	129.99	148.11	166.23	***
10vent55 - atmos	149.53	167.65	185.78	***
10vent55 - 0.381ns	177.27	195.39	213.51	***
10.76s - 10vent0	-78.51	-59.51	-40.50	***
10.76s - 10vent55	-36.66	-17.65	1.35	
10.76s - 10.76ns	0.05	19.05	38.06	***
10.76s - 5.177s	47.28	65.40	83.52	***
10.76s - vent12.5	65.89	84.01	102.13	***
10.76s - 5.177ns	72.29	90.41	108.53	***
10.76s - 2.586s	74.30	92.42	110.54	***
10.76s - vent25	75.42	93.54	111.66	***
10.76s - 0.681s	86.05	104.17	122.29	***
10.76s - 1.293s	90.74	108.86	126.98	***
10.76s - 2.586ns	94.44	112.56	130.68	***
10.76s - vent32.5	105.04	123.17	141.29	***
10.76s - 0.681ns	108.77	126.89	145.01	***
10.76s - 1.293ns	111.58	129.70	147.82	***
10.76s - 0.381s	112.33	130.45	148.57	***
10.76s - atmos	131.88	150.00	168.12	***
10.76s - 0.381ns	159.61	177.73	195.85	***
10.76ns - 10vent0	-97.56	-78.56	-59.56	***
10.76ns - 10vent55	-55.71	-36.71	-17.70	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
10.76ns - 10.76s	-38.06	-19.05	-0.05	***
10.76ns - 5.177s	28.23	46.35	64.47	***
10.76ns - vent12.5	46.84	64.96	83.08	***
10.76ns - 5.177ns	53.23	71.35	89.47	***
10.76ns - 2.586s	55.24	73.36	91.48	***
10.76ns - vent25	56.36	74.48	92.60	***
10.76ns - 0.681s	67.00	85.12	103.24	***
10.76ns - 1.293s	71.69	89.81	107.93	***
10.76ns - 2.586ns	75.39	93.51	111.63	***
10.76ns - vent32.5	85.99	104.11	122.23	***
10.76ns - 0.681ns	89.71	107.83	125.95	***
10.76ns - 1.293ns	92.53	110.65	128.77	***
10.76ns - 0.381s	93.28	111.40	129.52	***
10.76ns - atmos	112.83	130.95	149.07	***
10.76ns - 0.381ns	140.56	158.68	176.80	***
5.177s - 10vent0	-143.03	-124.91	-106.79	***
5.177s - 10vent55	-101.17	-83.05	-64.93	***
5.177s - 10.76s	-83.52	-65.40	-47.28	***
5.177s - 10.76ns	-64.47	-46.35	-28.23	***
5.177s - vent12.5	1.42	18.61	35.80	***
5.177s - 5.177ns	7.82	25.01	42.20	***
5.177s - 2.586s	9.83	27.02	44.21	***
5.177s - vent25	10.95	28.14	45.33	***
5.177s - 0.681s	21.58	38.77	55.96	***
5.177s - 1.293s	26.27	43.46	60.65	***
5.177s - 2.586ns	29.97	47.16	64.35	***
5.177s - vent32.5	40.57	57.76	74.95	***
5.177s - 0.681ns	44.30	61.49	78.68	***
5.177s - 1.293ns	47.11	64.30	81.49	***
5.177s - 0.381s	47.86	65.05	82.24	***
5.177s - atmos	67.41	84.60	101.79	***
5.177s - 0.381ns	95.14	112.33	129.52	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit

vent12.5 - 10vent0	-161.64	-143.52	-125.40	***
vent12.5 - 10vent55	-119.79	-101.67	-83.55	***
vent12.5 - 10.76s	-102.13	-84.01	-65.89	***
vent12.5 - 10.76ns	-83.08	-64.96	-46.84	***
vent12.5 - 5.177s	-35.80	-18.61	-1.42	***
vent12.5 - 5.177ns	-10.80	6.39	23.58	
vent12.5 - 2.586s	-8.79	8.40	25.59	
vent12.5 - vent25	-7.67	9.52	26.71	
vent12.5 - 0.681s	2.97	20.16	37.35	***
vent12.5 - 1.293s	7.66	24.85	42.04	***
vent12.5 - 2.586ns	11.36	28.55	45.74	***
vent12.5 - vent32.5	21.96	39.15	56.34	***
vent12.5 - 0.681ns	25.68	42.87	60.06	***
vent12.5 - 1.293ns	28.50	45.69	62.88	***
vent12.5 - 0.381s	29.25	46.44	63.63	***
vent12.5 - atmos	48.80	65.99	83.18	***
vent12.5 - 0.381ns	76.53	93.72	110.91	***
5.177ns - 10vent0	-168.03	-149.91	-131.79	***
5.177ns - 10vent55	-126.18	-108.06	-89.94	***
5.177ns - 10.76s	-108.53	-90.41	-72.29	***
5.177ns - 10.76ns	-89.47	-71.35	-53.23	***
5.177ns - 5.177s	-42.20	-25.01	-7.82	***
5.177ns - vent12.5	-23.58	-6.39	10.80	
5.177ns - 2.586s	-15.18	2.01	19.20	
5.177ns - vent25	-14.06	3.13	20.32	
5.177ns - 0.681s	-3.43	13.76	30.95	
5.177ns - 1.293s	1.27	18.46	35.65	***
5.177ns - 2.586ns	4.96	22.15	39.34	***
5.177ns - vent32.5	15.57	32.76	49.95	***
5.177ns - 0.681ns	19.29	36.48	53.67	***
5.177ns - 1.293ns	22.11	39.30	56.49	***
5.177ns - 0.381s	22.85	40.04	57.23	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
5.177ns - atmos	42.40	59.59	76.78	***
5.177ns - 0.381ns	70.14	87.33	104.52	***

2.586s	- 10vent0	-170.04	-151.92	-133.80	***
2.586s	- 10vent55	-128.19	-110.07	-91.95	***
2.586s	- 10.76s	-110.54	-92.42	-74.30	***
2.586s	- 10.76ns	-91.48	-73.36	-55.24	***
2.586s	- 5.177s	-44.21	-27.02	-9.83	***
2.586s	- vent12.5	-25.59	-8.40	8.79	
2.586s	- 5.177ns	-19.20	-2.01	15.18	
2.586s	- vent25	-16.07	1.12	18.31	
2.586s	- 0.681s	-5.44	11.75	28.94	
2.586s	- 1.293s	-0.74	16.45	33.64	
2.586s	- 2.586ns	2.95	20.14	37.33	***
2.586s	- vent32.5	13.56	30.75	47.94	***
2.586s	- 0.681ns	17.28	34.47	51.66	***
2.586s	- 1.293ns	20.10	37.29	54.48	***
2.586s	- 0.381s	20.85	38.04	55.23	***
2.586s	- atmos	40.39	57.58	74.78	***
2.586s	- 0.381ns	68.13	85.32	102.51	***
vent25	- 10vent0	-171.16	-153.04	-134.92	***
vent25	- 10vent55	-129.31	-111.19	-93.07	***
vent25	- 10.76s	-111.66	-93.54	-75.42	***
vent25	- 10.76ns	-92.60	-74.48	-56.36	***
vent25	- 5.177s	-45.33	-28.14	-10.95	***
vent25	- vent12.5	-26.71	-9.52	7.67	
vent25	- 5.177ns	-20.32	-3.13	14.06	
vent25	- 2.586s	-18.31	-1.12	16.07	
vent25	- 0.681s	-6.56	10.63	27.82	
vent25	- 1.293s	-1.86	15.33	32.52	
vent25	- 2.586ns	1.83	19.02	36.21	***
vent25	- vent32.5	12.44	29.63	46.82	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
vent25	- 0.681ns	16.16	33.35	50.54	***
vent25	- 1.293ns	18.98	36.17	53.36	***
vent25	- 0.381s	19.72	36.91	54.10	***
vent25	- atmos	39.27	56.46	73.65	***
vent25	- 0.381ns	67.00	84.19	101.39	***
0.681s	- 10vent0	-181.80	-163.68	-145.56	***

0.681s	- 10vent55	-139.94	-121.82	-103.70	***
0.681s	- 10.76s	-122.29	-104.17	-86.05	***
0.681s	- 10.76ns	-103.24	-85.12	-67.00	***
0.681s	- 5.177s	-55.96	-38.77	-21.58	***
0.681s	- vent12.5	-37.35	-20.16	-2.97	***
0.681s	- 5.177ns	-30.95	-13.76	3.43	
0.681s	- 2.586s	-28.94	-11.75	5.44	
0.681s	- vent25	-27.82	-10.63	6.56	
0.681s	- 1.293s	-12.50	4.69	21.88	
0.681s	- 2.586ns	-8.80	8.39	25.58	
0.681s	- vent32.5	1.81	19.00	36.19	***
0.681s	- 0.681ns	5.53	22.72	39.91	***
0.681s	- 1.293ns	8.34	25.54	42.73	***
0.681s	- 0.381s	9.09	26.28	43.47	***
0.681s	- atmos	28.64	45.83	63.02	***
0.681s	- 0.381ns	56.37	73.56	90.75	***
1.293s	- 10vent0	-186.49	-168.37	-150.25	***
1.293s	- 10vent55	-144.64	-126.52	-108.40	***
1.293s	- 10.76s	-126.98	-108.86	-90.74	***
1.293s	- 10.76ns	-107.93	-89.81	-71.69	***
1.293s	- 5.177s	-60.65	-43.46	-26.27	***
1.293s	- vent12.5	-42.04	-24.85	-7.66	***
1.293s	- 5.177ns	-35.65	-18.46	-1.27	***
1.293s	- 2.586s	-33.64	-16.45	0.74	
1.293s	- vent25	-32.52	-15.33	1.86	

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
1.293s	- 0.681s	-21.88	-4.69	12.50	
1.293s	- 2.586ns	-13.49	3.70	20.89	
1.293s	- vent32.5	-2.89	14.30	31.49	
1.293s	- 0.681ns	0.83	18.02	35.21	***
1.293s	- 1.293ns	3.65	20.84	38.03	***
1.293s	- 0.381s	4.40	21.59	38.78	***
1.293s	- atmos	23.95	41.14	58.33	***
1.293s	- 0.381ns	51.68	68.87	86.06	***
2.586ns	- 10vent0	-190.19	-172.07	-153.95	***
2.586ns	- 10vent55	-148.33	-130.21	-112.09	***

2.586ns - 10.76s	-130.68	-112.56	-94.44	***
2.586ns - 10.76ns	-111.63	-93.51	-75.39	***
2.586ns - 5.177s	-64.35	-47.16	-29.97	***
2.586ns - vent12.5	-45.74	-28.55	-11.36	***
2.586ns - 5.177ns	-39.34	-22.15	-4.96	***
2.586ns - 2.586s	-37.33	-20.14	-2.95	***
2.586ns - vent25	-36.21	-19.02	-1.83	***
2.586ns - 0.681s	-25.58	-8.39	8.80	
2.586ns - 1.293s	-20.89	-3.70	13.49	
2.586ns - vent32.5	-6.58	10.61	27.80	
2.586ns - 0.681ns	-2.86	14.33	31.52	
2.586ns - 1.293ns	-0.05	17.15	34.34	
2.586ns - 0.381s	0.70	17.89	35.08	***
2.586ns - atmos	20.25	37.44	54.63	***
2.586ns - 0.381ns	47.98	65.17	82.36	***
vent32.5 - 10vent0	-200.79	-182.67	-164.55	***
vent32.5 - 10vent55	-158.94	-140.82	-122.70	***
vent32.5 - 10.76s	-141.29	-123.17	-105.04	***
vent32.5 - 10.76ns	-122.23	-104.11	-85.99	***
vent32.5 - 5.177s	-74.95	-57.76	-40.57	***
vent32.5 - vent12.5	-56.34	-39.15	-21.96	***

General Linear Models Procedure

CASE Comparison	Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
vent32.5 - 5.177ns	-49.95	-32.76	-15.57	***
vent32.5 - 2.586s	-47.94	-30.75	-13.56	***
vent32.5 - vent25	-46.82	-29.63	-12.44	***
vent32.5 - 0.681s	-36.19	-19.00	-1.81	***
vent32.5 - 1.293s	-31.49	-14.30	2.89	
vent32.5 - 2.586ns	-27.80	-10.61	6.58	
vent32.5 - 0.681ns	-13.47	3.72	20.91	
vent32.5 - 1.293ns	-10.65	6.54	23.73	
vent32.5 - 0.381s	-9.90	7.29	24.48	
vent32.5 - atmos	9.65	26.84	44.03	***
vent32.5 - 0.381ns	37.38	54.57	71.76	***
0.681ns - 10vent0	-204.51	-186.39	-168.27	***
0.681ns - 10vent55	-162.66	-144.54	-126.42	***
0.681ns - 10.76s	-145.01	-126.89	-108.77	***

0.681ns	- 10.76ns	-125.95	-107.83	-89.71	***
0.681ns	- 5.177s	-78.68	-61.49	-44.30	***
0.681ns	- vent12.5	-60.06	-42.87	-25.68	***
0.681ns	- 5.177ns	-53.67	-36.48	-19.29	***
0.681ns	- 2.586s	-51.66	-34.47	-17.28	***
0.681ns	- vent25	-50.54	-33.35	-16.16	***
0.681ns	- 0.681s	-39.91	-22.72	-5.53	***
0.681ns	- 1.293s	-35.21	-18.02	-0.83	***
0.681ns	- 2.586ns	-31.52	-14.33	2.86	
0.681ns	- vent32.5	-20.91	-3.72	13.47	
0.681ns	- 1.293ns	-14.37	2.82	20.01	
0.681ns	- 0.381s	-13.63	3.56	20.75	
0.681ns	- atmos	5.92	23.11	40.30	***
0.681ns	- 0.381ns	33.66	50.85	68.04	***
1.293ns	- 10vent0	-207.33	-189.21	-171.09	***
1.293ns	- 10vent55	-165.48	-147.36	-129.24	***
1.293ns	- 10.76s	-147.82	-129.70	-111.58	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
1.293ns	- 10.76ns	-128.77	-110.65	-92.53	***
1.293ns	- 5.177s	-81.49	-64.30	-47.11	***
1.293ns	- vent12.5	-62.88	-45.69	-28.50	***
1.293ns	- 5.177ns	-56.49	-39.30	-22.11	***
1.293ns	- 2.586s	-54.48	-37.29	-20.10	***
1.293ns	- vent25	-53.36	-36.17	-18.98	***
1.293ns	- 0.681s	-42.73	-25.54	-8.34	***
1.293ns	- 1.293s	-38.03	-20.84	-3.65	***
1.293ns	- 2.586ns	-34.34	-17.15	0.05	
1.293ns	- vent32.5	-23.73	-6.54	10.65	
1.293ns	- 0.681ns	-20.01	-2.82	14.37	
1.293ns	- 0.381s	-16.44	0.75	17.94	
1.293ns	- atmos	3.11	20.30	37.49	***
1.293ns	- 0.381ns	30.84	48.03	65.22	***
0.381s	- 10vent0	-208.08	-189.96	-171.84	***
0.381s	- 10vent55	-166.23	-148.11	-129.99	***
0.381s	- 10.76s	-148.57	-130.45	-112.33	***
0.381s	- 10.76ns	-129.52	-111.40	-93.28	***

0.381s	- 5.177s	-82.24	-65.05	-47.86	***
0.381s	- vent12.5	-63.63	-46.44	-29.25	***
0.381s	- 5.177ns	-57.23	-40.04	-22.85	***
0.381s	- 2.586s	-55.23	-38.04	-20.85	***
0.381s	- vent25	-54.10	-36.91	-19.72	***
0.381s	- 0.681s	-43.47	-26.28	-9.09	***
0.381s	- 1.293s	-38.78	-21.59	-4.40	***
0.381s	- 2.586ns	-35.08	-17.89	-0.70	***
0.381s	- vent32.5	-24.48	-7.29	9.90	
0.381s	- 0.681ns	-20.75	-3.56	13.63	
0.381s	- 1.293ns	-17.94	-0.75	16.44	
0.381s	- atmos	2.36	19.55	36.74	***
0.381s	- 0.381ns	30.09	47.28	64.47	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
atmos	- 10vent0	-227.63	-209.51	-191.39	***
atmos	- 10vent55	-185.78	-167.65	-149.53	***
atmos	- 10.76s	-168.12	-150.00	-131.88	***
atmos	- 10.76ns	-149.07	-130.95	-112.83	***
atmos	- 5.177s	-101.79	-84.60	-67.41	***
atmos	- vent12.5	-83.18	-65.99	-48.80	***
atmos	- 5.177ns	-76.78	-59.59	-42.40	***
atmos	- 2.586s	-74.78	-57.58	-40.39	***
atmos	- vent25	-73.65	-56.46	-39.27	***
atmos	- 0.681s	-63.02	-45.83	-28.64	***
atmos	- 1.293s	-58.33	-41.14	-23.95	***
atmos	- 2.586ns	-54.63	-37.44	-20.25	***
atmos	- vent32.5	-44.03	-26.84	-9.65	***
atmos	- 0.681ns	-40.30	-23.11	-5.92	***
atmos	- 1.293ns	-37.49	-20.30	-3.11	***
atmos	- 0.381s	-36.74	-19.55	-2.36	***
atmos	- 0.381ns	10.54	27.73	44.92	***
0.381ns	- 10vent0	-255.36	-237.24	-219.12	***
0.381ns	- 10vent55	-213.51	-195.39	-177.27	***
0.381ns	- 10.76s	-195.85	-177.73	-159.61	***
0.381ns	- 10.76ns	-176.80	-158.68	-140.56	***
0.381ns	- 5.177s	-129.52	-112.33	-95.14	***

0.381ns	- vent12.5	-110.91	-93.72	-76.53	***
0.381ns	- 5.177ns	-104.52	-87.33	-70.14	***
0.381ns	- 2.586s	-102.51	-85.32	-68.13	***
0.381ns	- vent25	-101.39	-84.19	-67.00	***
0.381ns	- 0.681s	-90.75	-73.56	-56.37	***
0.381ns	- 1.293s	-86.06	-68.87	-51.68	***
0.381ns	- 2.586ns	-82.36	-65.17	-47.98	***
0.381ns	- vent32.5	-71.76	-54.57	-37.38	***
0.381ns	- 0.681ns	-68.04	-50.85	-33.66	***
0.381ns	- 1.293ns	-65.22	-48.03	-30.84	***

General Linear Models Procedure

CASE Comparison		Lower Confidence Limit	Difference Between Means	Upper Confidence Limit	
0.381ns	- 0.381s	-64.47	-47.28	-30.09	***
0.381ns	- atmos	-44.92	-27.73	-10.54	***

VITA

Umarporn Charusombat was born on April 11, 1974 in Bangkok of Thailand. She attended Thammasat University for her Bachelor degree in Environmental Sciences in 1991-1994.

In 1994, she was trained at Tesco Environmental Consultant Company for 3 months. In 1995, she was environmental officer temporary employee at Air Pollution and Noise Management Division of Pollution Control Department for 6 months. After that she worked as system analyst for Airport Authority of Thailand for 1 year.

In 1996, she received the scholarship from Thai Government to attend the Master degree of Environmental Engineering at Virginia Polytechnic Institute and State University under the direction of Dr. John Martin Hughes.