

SET 1913-01-0788

5.0 RISK ASSESSMENT

An evaluation of the health risk associated with the plant's vinyl chloride emissions was conducted by comparing the results of the modeling analysis to the the health effects data presented in "Toxicological Profile for Vinyl Chloride" which was prepared by the U.S. Public Health Service in collaboration with the U.S. Environmental Protection Agency. This report was published by the Oak Ridge National Laboratory.

It is important that the analysis presented in the above referenced report is based on animal studies and extrapolated to humans. As such, it is extremely conservative. It has been estimated that this report presents risk levels which are 3 to 4 orders of magnitude more conservative than other studies which are based on human health risks directly.

For long term exposure (24 hours per day, 365 days per year) the following concentrations and risk levels were derived:

<u>Vinyl Chloride Concentration (ppb)</u>	<u>Human Cancer Risk Level</u>
1.0	10⁻⁴ 10 ⁻⁴
0.1	10⁻⁵ 10 ⁻⁵
0.01	10⁻⁶ 10 ⁻⁶
0.001	10⁻⁷ 10 ⁻⁷

These data were compared to the annual average modeling results to generate the health effects plot presented on the following page.



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SET 1913-01-0788

1.0 INTRODUCTION

Scott Environmental Technology, Inc. was contracted by Vista Polymers Company in Aberdeen, Mississippi to conduct a comprehensive dispersion modeling study for vinyl chloride which is emitted from the Vista plant. Modeling was conducted to determine the predicted short term and long term ambient air quality impacts of these emissions in the area around the plant.

Presented in this report are the results of this modeling study. Presented also, is a discussion of the modeling procedures which were used.



30	9	18	0	0	0	0	0	0	0
.10000E+03	.15000E+03	.20000E+03	.30000E+03	.40000E+03	.50000E+03	.70000E+03	.10000E+04		

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.20000E+02
.10000E+02 .15400E+01 .30900E+01 .51400E+01 .82300E+01 .10800E+02
.10000E+07 .00000E+00 (GRAMS/SEC) (MICROGRAMS PER CUBIC METER) 9 3

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.00000E+00 (GRAMS/SEC) (MICROGRAMS PER CUBIC METER) 9 3

[illegible]

83721 76 93734 76

**** ISCLT ***** ANNUAL AVERAGE VINYL CHLORIDE CONCENTRATIONS

***** PAGE 5 ****

** ANNUAL GROUND LEVEL CONCENTRATION (MICROGRAMS PER CUBIC METER) FROM ALL SOURCES COMBINED **

		- GRID SYSTEM RECEPTORS -									
		- X AXIS (RANGE , METERS) -									
		100.000	200.000	300.000	400.000	500.000	700.000	1000.000	1200.000	1500.000	
AXIS (AZIMUTH BEARING, DEGREES)				- CONCENTRATION -							
360.000	24.348120	10.522710	6.128715	4.031760	2.859557	1.668172	.927626	.685757	.473935		
340.000	20.279270	8.442020	4.755054	3.065236	2.147582	1.235463	.679058	.499493	.343203		
320.000	16.384370	6.647962	3.694324	2.365560	1.650286	.941978	.513199	.375903	.257037		
300.000	13.144880	5.092993	2.760374	1.740945	1.200541	.674252	.363393	.264721	.179968		
280.000	12.878120	5.138128	2.828449	1.788377	1.235844	.698105	.377119	.275236	.187401		
260.000	14.263670	5.894222	3.252348	2.065649	1.431460	.810192	.438853	.320462	.218322		
240.000	14.739820	5.967187	3.248862	2.055844	1.421588	.802600	.433634	.316277	.215177		
220.000	13.378700	5.417063	2.951188	1.871557	1.300115	.738546	.401371	.293496	.200363		
200.000	11.652770	4.783687	2.673748	1.715704	1.197711	.686172	.376523	.276797	.190023		
180.000	15.011390	6.135675	3.391175	2.158251	1.498847	.851014	.462288	.338180	.230972		
160.000	20.427790	8.245599	4.549039	2.894622	2.009634	1.146759	.630440	.464849	.320220		
140.000	30.667560	12.905910	7.360291	4.796587	3.410005	1.995213	1.111854	.822396	.568492		
120.000	35.309120	15.267380	8.987267	5.988168	4.281711	2.517402	1.409056	1.044208	.723356		
100.000	32.469310	13.796300	8.318458	5.557428	3.990162	2.356446	1.323594	.982774	.682255		
80.000	28.577010	10.947240	6.497255	4.314162	3.085444	1.820375	1.020860	.758016	.526238		
60.000	26.329740	10.685130	5.982221	3.920068	2.777270	1.622470	.902536	.667655	.461746		
40.000	28.502610	12.292820	6.957807	4.536510	3.215785	1.876795	1.044444	.772087	.533676		
20.000	27.690690	12.005110	6.736555	4.346607	3.045395	1.752844	.967800	.714451	.492863		

- PROGRAM DETERMINED MAXIMUM 10 VALUES -

X COORDINATE RANGE (METERS)	Y COORDINATE AZIMUTH BEARING (DEGREES)	CONCENTRATION
100.00	120.00	35.309120
100.00	100.00	32.469310
100.00	140.00	30.667560
100.00	80.00	28.577010
100.00	40.00	28.502610
100.00	20.00	27.690690
100.00	60.00	26.329740
100.00	360.00	24.348120
100.00	160.00	20.427790
100.00	340.00	20.279270

**** ISCLT ***** ANNUAL AVERAGE VINYL CHLORIDE CONCENTRATIONS

***** PAGE 4 ****

- SOURCE INPUT DATA (CONT.) -

C T	SOURCE	SOURCE	X	Y	EMISSION	BASE /
A	NUMBER	TYPE	COORDINATE	COORDINATE	HEIGHT	ELEV- /
P			(M)	(M)	(M)	ATION /
E						(M) /

- SOURCE DETAILS DEPENDING ON TYPE -

X	25	STACK	.00	.00	13.72	.00	GAS EXIT TEMP (DEG K)= 349.82, GAS EXIT VEL. (M/SEC)= 17.07, STACK DIAMETER (M)= .838, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.15793E-03
	26	STACK	.00	.00	14.78	.00	GAS EXIT TEMP (DEG K)= 349.82, GAS EXIT VEL. (M/SEC)= 21.64, STACK DIAMETER (M)= .747, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.15793E-03
X	27	STACK	.00	.00	14.78	.00	GAS EXIT TEMP (DEG K)= 349.82, GAS EXIT VEL. (M/SEC)= 21.64, STACK DIAMETER (M)= .747, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.15793E-03
X	28	STACK	.00	.00	14.78	.00	GAS EXIT TEMP (DEG K)= 349.82, GAS EXIT VEL. (M/SEC)= 21.03, STACK DIAMETER (M)= .756, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.15793E-03
	29	STACK	.00	.00	22.86	.00	GAS EXIT TEMP (DEG K)= 323.15, GAS EXIT VEL. (M/SEC)= 15.24, STACK DIAMETER (M)= .658, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 1.38598E-02
X	30	STACK	.00	.00	24.99	.00	GAS EXIT TEMP (DEG K)= 310.93, GAS EXIT VEL. (M/SEC)= 1.52, STACK DIAMETER (M)= .506, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.14995E-03

[illegible]

[illegible]

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

* SOURCE-RECEPTOR COMBINATIONS LESS THAN 001 METERS OR THREE BUILDING HEIGHTS IN DISTANCE. NO AVERAGE CONCENTRATION IS CALCULATED *

[illegible]

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 MAX 50
 1-HR
 SGROUP# 1

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

* 50 MAXIMUM 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS PER CUBIC METER) *

* FROM ALL SOURCES *

RANK	CON.	HOUR	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)	RANK	CON.	HOUR	DAY	X OR RANGE (METERS)	Y(METERS) OR DIRECTION (DEGREES)
1	1458.71700	4	152	100.0	360.0	26	1040.64400	20	290	100.0	160.0
2	1377.66400	21	74	100.0	360.0	27	1038.16400	1	34	100.0	60.0
3	1193.90600	4	152	150.0	360.0	28	1038.05900	2	149	100.0	120.0
4	1098.62500	8	341	100.0	220.0	29	1037.91000	2	84	100.0	20.0
5	1094.61800	24	15	100.0	260.0	30	1037.84200	2	316	100.0	140.0
6	1088.78100	20	16	100.0	180.0	31	1037.81600	7	46	100.0	40.0
7	1088.78100	2	309	100.0	180.0	32	1037.81500	24	233	100.0	40.0
8	1085.86200	21	74	150.0	360.0	33	1037.27000	24	40	100.0	80.0
9	1072.13100	1	115	100.0	100.0	34	1037.27000	1	267	100.0	80.0
10	1058.07200	22	34	100.0	200.0	35	1036.99100	3	188	100.0	60.0
11	1058.07200	5	99	100.0	200.0	36	1035.52200	5	192	100.0	100.0
12	1053.39600	22	82	100.0	280.0	37	1035.52200	2	183	100.0	100.0
13	1046.70900	3	262	100.0	40.0	38	1032.98400	1	110	100.0	340.0
14	1046.70800	2	213	100.0	40.0	39	1032.87800	3	289	100.0	100.0
15	1046.70800	3	181	100.0	40.0	40	1032.87800	23	144	100.0	100.0
16	1046.40500	22	273	100.0	60.0	41	1032.87800	2	229	100.0	100.0
17	1046.40400	24	209	100.0	60.0	42	1031.80300	6	354	100.0	140.0
18	1046.40400	20	235	100.0	60.0	43	1031.80300	24	232	100.0	140.0
19	1045.61500	6	245	100.0	20.0	44	1031.61800	23	110	100.0	360.0
20	1045.61500	24	162	100.0	20.0	45	1031.56600	22	231	100.0	320.0
21	1042.74400	20	338	100.0	360.0	46	1031.56600	5	228	100.0	320.0
22	1042.74400	22	54	100.0	360.0	47	1027.74400	20	51	100.0	300.0
23	1042.74300	23	94	100.0	360.0	48	1027.36500	21	292	100.0	140.0
24	1042.74300	22	258	100.0	360.0	49	1023.49400	23	278	100.0	200.0
25	1042.74300	20	107	100.0	360.0	50	1023.49400	3	207	100.0	200.0

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2ND HIGH
1-HR
SGROUP# 1

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS PER CUBIC METER) *

* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1377.66400 AND OCCURRED AT (100.0, 360.0) *

DIRECTION /
(DEGREES) /RANGE (METERS)
1000.0

500.0

700.0

1500.0

360.0 /	354.62090 (107, 20)	291.40640 (258, 22)	234.08930 (258, 22)	171.28670 (258, 22)
340.0 /	332.90030 (110, 1)	271.26910 (110, 1)	214.55960 (110, 1)	154.00630 (110, 1)
320.0 /	326.93200 (231, 22)	268.57610 (231, 22)	213.87670 (231, 22)	154.15140 (231, 22)
300.0 /	272.80440 (27, 6)	189.17300 (27, 6)	120.22420 (210, 22)	79.55159 (210, 22)
280.0 /	299.15870 (82, 22)	226.37770 (82, 22)	165.07310 (82, 22)	109.45980 (82, 22)
260.0 /	325.32540 (151, 24)	222.97350 (151, 24)	153.75850 (45, 21)	110.55630 (45, 21)
240.0 /	282.82230 (32, 4)	210.51730 (2, 7)	162.74160 (2, 7)	114.98720 (2, 7)
220.0 /	232.54660 (333, 16)	172.35880 (98, 19)	132.74850 (45, 19)	93.77045 (45, 19)
200.0 /	282.46740 (8, 2)	200.83300 (99, 5)	146.34770 (99, 5)	98.77079 (99, 5)
180.0 /	344.49050 (16, 20)	279.24170 (16, 20)	223.02960 (16, 20)	163.99080 (16, 20)
160.0 /	280.11570 (147, 20)	209.83090 (304, 2)	170.34190 (304, 2)	125.89980 (304, 2)
140.0 /	325.68040 (316, 2)	266.50940 (232, 24)	211.88480 (232, 24)	152.83120 (232, 24)
120.0 /	295.18430 (258, 2)	228.38960 (258, 2)	174.83800 (217, 1)	129.07500 (217, 1)
100.0 /	339.70330 (192, 5)	275.05060 (192, 5)	216.26560 (192, 5)	154.54760 (192, 5)
80.0 /	349.30970 (40, 24)	275.35670 (40, 24)	212.05910 (40, 24)	150.27060 (40, 24)
60.0 /	377.31670 (209, 24)	307.88930 (209, 24)	243.31260 (209, 24)	175.26920 (209, 24)
40.0 /	379.11580 (213, 2)	308.83730 (213, 2)	243.55060 (213, 2)	175.13650 (213, 2)
20.0 /	368.59720 (245, 6)	298.03340 (245, 6)	235.43870 (245, 6)	170.62750 (245, 6)

2ND HIGH
1-HR
SGROUP# 1

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION ***

* SECOND HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS PER CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1377.66400 AND OCCURRED AT (100.0, 360.0) *

DIRECTION / (DEGREES) /	100.0	150.0	RANGE (METERS) 200.0	300.0	400.0
360.0 /	1377.66400 (74, 21)	1085.86200 (74, 21)	832.31610 (74, 21)	539.60890 (107, 20)	422.70770 (107, 20)
340.0 /	971.79740 (20, 5)	761.25170 (20, 5)	615.38410 (20, 5)	507.03740 (110, 1)	398.05120 (110, 1)
320.0 /	1031.56600 (231, 22)	825.27570 (231, 22)	680.41520 (231, 22)	496.05010 (231, 22)	389.63360 (231, 22)
300.0 /	904.74370 (35, 20)	651.77560 (35, 20)	480.10510 (35, 20)	391.93840 (27, 6)	329.88810 (27, 6)
280.0 /	1004.30800 (82, 20)	786.31260 (82, 20)	630.43300 (82, 20)	430.71600 (82, 20)	361.66980 (355, 9)
260.0 /	1006.95300 (269, 19)	762.97080 (269, 19)	589.18700 (237, 24)	484.99740 (151, 24)	397.56860 (151, 24)
240.0 /	967.14410 (330, 23)	720.36220 (330, 23)	555.31690 (254, 1)	417.44260 (32, 4)	345.56180 (32, 4)
220.0 /	1021.73000 (31, 24)	792.77080 (31, 24)	631.65480 (31, 24)	424.52340 (31, 24)	301.58530 (31, 24)
200.0 /	1058.07200 (99, 5)	842.16470 (99, 5)	683.17670 (34, 22)	470.81450 (34, 22)	346.33180 (99, 5)
180.0 /	1088.78100 (309, 2)	882.97120 (309, 2)	732.98140 (16, 20)	533.50400 (16, 20)	415.19340 (16, 20)
160.0 /	1001.53600 (266, 20)	781.64950 (266, 20)	625.18930 (266, 20)	426.21190 (266, 20)	339.58860 (147, 20)
140.0 /	1031.80300 (354, 6)	826.09390 (232, 24)	681.63090 (232, 24)	496.66340 (232, 24)	389.29170 (232, 24)
120.0 /	1009.30200 (258, 2)	796.68020 (258, 2)	652.79930 (258, 2)	469.25140 (258, 2)	360.95880 (258, 2)
100.0 /	1035.52200 (183, 2)	858.93290 (192, 5)	713.30720 (192, 5)	521.02670 (192, 5)	407.48590 (192, 5)
80.0 /	1037.27000 (267, 1)	887.23130 (267, 1)	738.36190 (40, 24)	542.79690 (40, 24)	423.41920 (40, 24)
60.0 /	1046.40400 (209, 24)	901.51450 (209, 24)	753.77420 (209, 24)	563.17030 (209, 24)	447.96220 (209, 24)
40.0 /	1046.70800 (181, 3)	902.46050 (213, 2)	754.24470 (213, 2)	563.97530 (213, 2)	449.72370 (213, 2)
20.0 /	1045.61500 (162, 24)	899.79850 (245, 6)	752.72150 (245, 6)	559.76550 (245, 6)	441.40940 (245, 6)

HIGH
1-HR
SGROUP# 1

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS PER CUBIC METER) *
* FROM ALL SOURCES *
* FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1458.71700 AND OCCURRED AT (100.0, 360.0) *

DIRECTION / (DEGREES) /	500.0	700.0	RANGE (METERS) 1000.0	1500.0
360.0 /	371.86470 (152, 4)	292.53410 (107, 20)	235.14170 (107, 20)	171.97400 (107, 20)
340.0 /	412.43100 (174, 5)	324.73660 (174, 5)	243.68140 (174, 5)	171.32880 (174, 5)
320.0 /	327.12380 (228, 5)	268.87810 (228, 5)	214.15940 (228, 5)	154.33590 (228, 5)
300.0 /	299.35550 (51, 20)	240.85700 (51, 20)	191.25760 (51, 20)	139.78940 (51, 20)
280.0 /	316.65220 (355, 9)	248.90010 (355, 9)	185.46990 (355, 9)	130.18320 (355, 9)
260.0 /	351.89440 (15, 24)	283.45660 (15, 24)	224.94990 (15, 24)	164.60950 (15, 24)
240.0 /	282.91160 (32, 7)	217.78370 (254, 1)	169.40160 (254, 1)	119.26730 (254, 1)
220.0 /	364.63570 (341, 8)	291.45270 (341, 8)	228.68810 (341, 8)	165.71350 (341, 8)
200.0 /	284.08830 (294, 10)	203.78150 (280, 1)	159.46470 (280, 1)	113.79240 (280, 1)
180.0 /	345.62870 (309, 2)	281.17630 (309, 2)	224.94960 (309, 2)	165.30880 (309, 2)
160.0 /	333.83180 (290, 20)	275.63820 (290, 20)	223.17330 (290, 20)	165.20640 (290, 20)
140.0 /	325.74870 (232, 24)	268.20700 (316, 2)	217.51750 (316, 2)	161.87290 (316, 2)
120.0 /	329.26210 (149, 2)	272.55230 (149, 2)	221.33020 (149, 2)	164.33330 (149, 2)
100.0 /	340.41690 (183, 2)	276.18560 (183, 2)	217.33560 (183, 2)	155.24960 (183, 2)
80.0 /	351.53480 (267, 1)	279.13510 (267, 1)	215.79660 (267, 1)	152.82090 (267, 1)
60.0 /	379.16670 (235, 20)	310.74050 (235, 20)	245.94760 (235, 20)	176.97690 (235, 20)
40.0 /	379.34580 (181, 3)	309.19910 (181, 3)	243.88970 (181, 3)	175.35880 (181, 3)
20.0 /	371.53340 (162, 24)	302.75120 (162, 24)	239.93190 (162, 24)	173.61050 (162, 24)

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*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

*** RANGES OF POLAR GRID SYSTEM ***
(METERS)

100.0, 150.0, 200.0, 300.0, 400.0, 500.0, 700.0, 1000.0, 1500.0,

*** RADIAL ANGLES OF POLAR GRID SYSTEM ***

(DEGREES)

20.0, 40.0, 60.0, 80.0, 100.0, 120.0, 140.0, 160.0, 180.0, 200.0,
220.0, 240.0, 260.0, 280.0, 300.0, 320.0, 340.0, 360.0,

SET 1913-01-0788

3.0 MODELING PROCEDURE

All modeling was conducted using the UNAMAP-6 versions of the Industrial Source Complex Short Term (ISCST) and Long Term (ISCLT) dispersion models. Five years of meteorological data from the Columbus Air Force Base were used as model input data.

Modeling was conducted using the ISCST model to determine the downwind 1-hour average concentrations of vinyl chloride. The ISCLT model was used to predict annual average concentrations.

All models were run in the regulatory default mode. Terrain heights were not evaluated because of the very flat nature of the area around the plant. A 162 polar receptor grid was established around the plant. Receptors were located at 20 degree intervals at downwind distances of 100, 150, 200, 300, 400, 500, 700, 1000, and 1500 meters.

Upon completion of each model, two and three dimensional plots of the predicted pollutant concentrations were prepared in a 2,000 meter x 2,000 meter grid using the EPA UNAMAP Graphics Package. The plant property is drawn in and blanked out on the two dimensional plots.



TABLE 2-1
VINYL CHLORIDE EMISSION SOURCES

POINT SOURCES	STACK HEIGHT (meters)	STACK DIAM. (meters)	EXHAUST VELOCITY (m/sec)	VINYL CHLORIDE EMISSIONS (g/sec)
=====	=====	=====	=====	=====
D300 DUMP SCREENER	9.14	0.4084	12.50	0.03276
D700 DUMP SCREENER	18.29	0.4572	11.58	0.00806
D741 DUMP SCREENER	19.05	0.5182	9.14	0.03490
D745 DUMP SCREENER	19.81	0.4572	11.58	0.00869
OLD STEAM JET	20.73	0.3566	24.08	0.04624
NEW STEAM JET	20.73	0.3566	24.08	0.05040
501 BLEND TANK	13.72	0.1280	12.19	0.35153
502 BLEND TANK	18.29	0.1859	15.55	0.04536
407 BLEND TANK	13.72	0.1280	12.19	0.05418
747 BLEND TANK	18.29	0.1859	15.55	0.45107
V-11 BLEND TANK	12.19	0.1524	24.08	0.12474
DRYER 4	13.72	0.8382	17.07	0.00416
ERYER 5	13.72	0.8382	17.07	0.00416
DRYER 6	14.78	0.7468	21.64	0.00416
DRYER 7	14.78	0.7468	21.64	0.00416
DRYER 8	14.78	0.7559	21.03	0.00416
FLUID BED DRYER	22.86	0.6584	15.24	0.01386
INCINERATOR	12.19	0.1524	7.33	0.00002
SILOS (10)	24.99	0.5060	1.52	0.00315

VOLUME SOURCES	BOTTOM ELEV. (meters)	TOP ELEV. (meters)	VINYL CHLORIDE EMISSIONS (g/sec)
=====	=====	=====	=====
OLD MODULE GRADE	0.00	3.05	0.0550
OLD MODULE SECOND	3.05	9.14	0.0660
OLD MODULE HIGH	9.14	12.19	0.0390
NEW MODULE GRADE	0.00	3.05	0.0380
NEW MODULE SECOND	3.05	9.14	0.0340
NEW MODULE HIGH	9.14	12.19	0.0270
TANK FARM GRADE	0.00	3.05	0.0830
TANK FARM SECOND	3.05	9.14	0.0360
TANK FARM HIGH	9.14	12.19	0.0400

AREA SOURCES	ELEV. (meters)	VINYL CHLORIDE EMISSIONS (g/sec)
=====	=====	=====
RAILCAR UNLOADING	3.00	0.0190
VCM BIODISCS	7.62	0.0480
WASTEWATER PONDS	1.00	0.0400

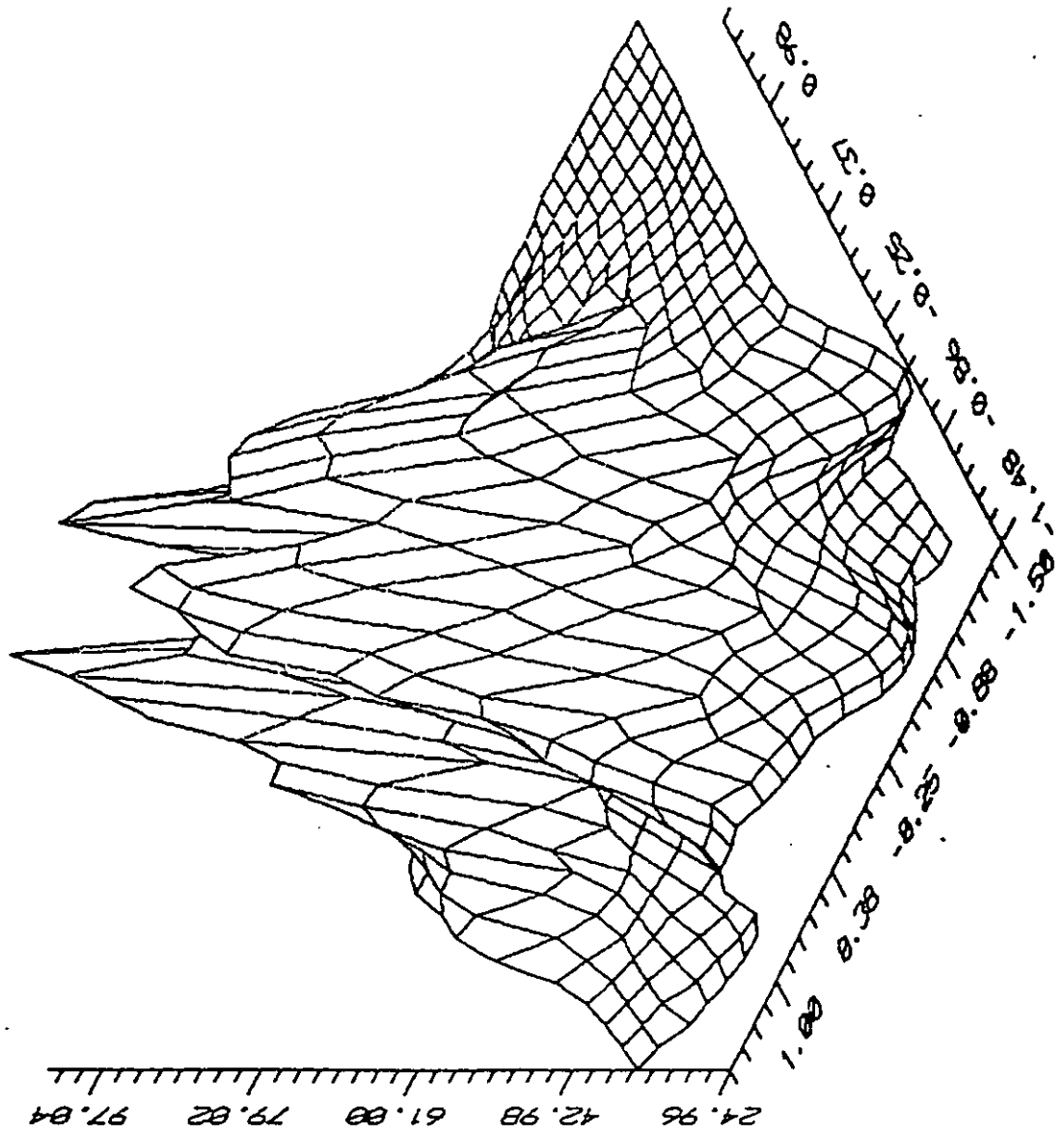
SET 1913-01-0788

2.0 PLANT DESCRIPTION

The Vista Polymers plant is located on Highway 25 in Aberdeen, Mississippi. The plant measures approximately 750 meters in length and 450 meters in width. It is bordered on the east and west sides by other industrial properties, on the north side by Highway 25 and on the south side by undeveloped areas. The plant is located in an area which is surrounded by level terrain.

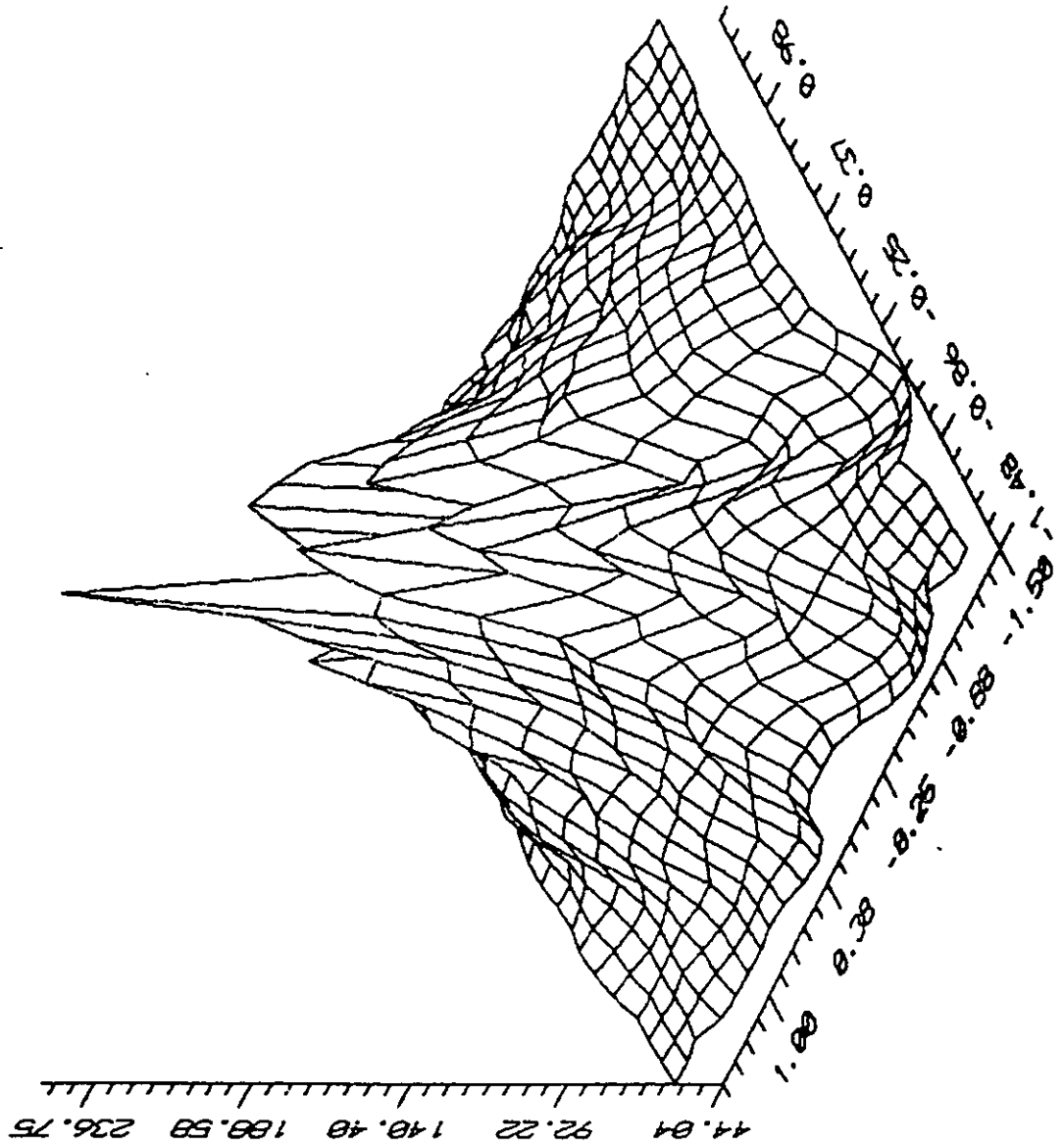
Various procedures at the Vista facility emit vinyl chloride to the atmosphere. Current (1988) point source, volume source, and area source emission rates were estimated by Vista personnel. Table 2-1 presents a listing of all emission sources along with their physical parameters which were used as data input for this modeling study.





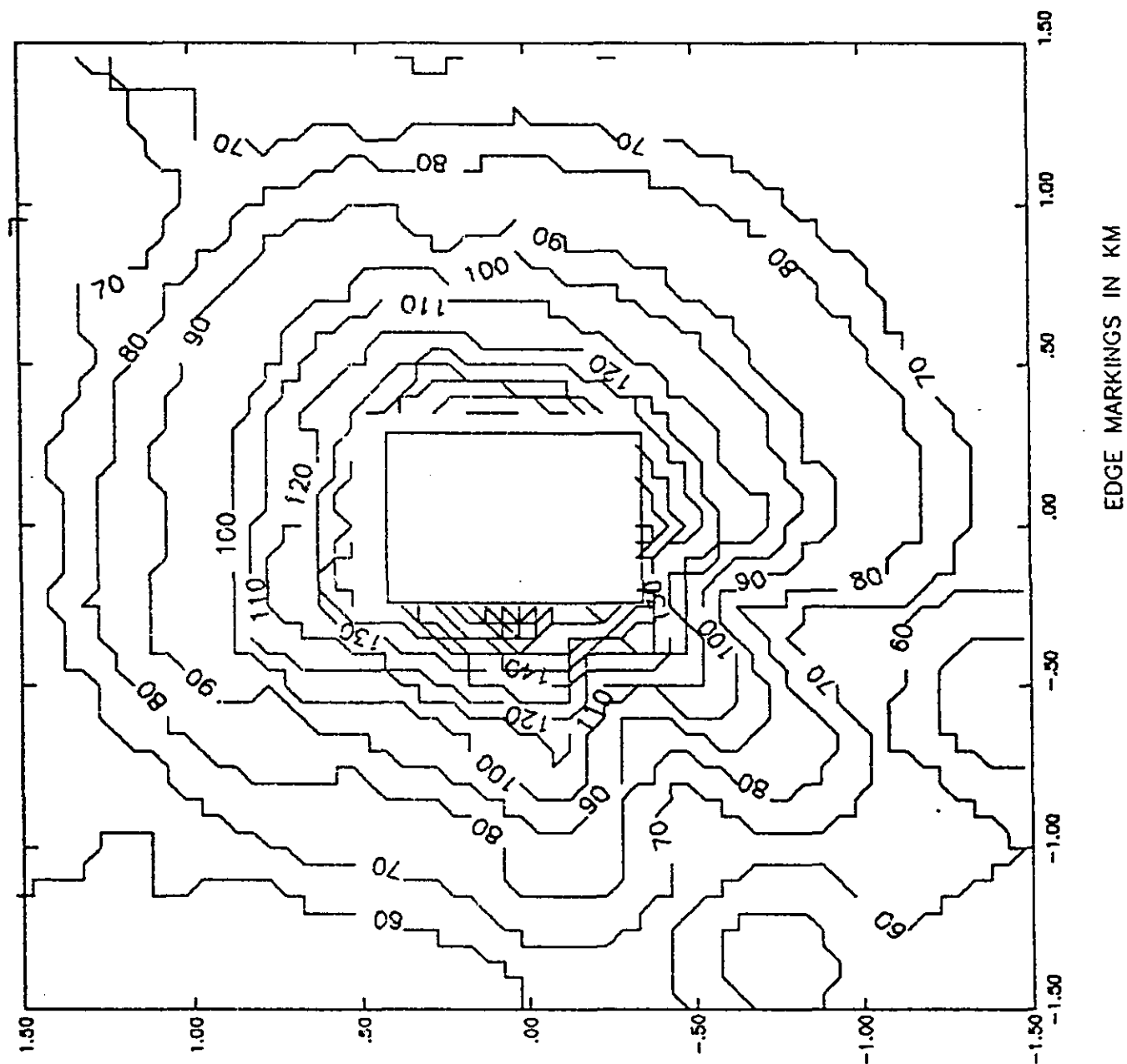
1-HOUR WITHOUT FUGITIVES

VINYL CHLORIDE 1-HOUR



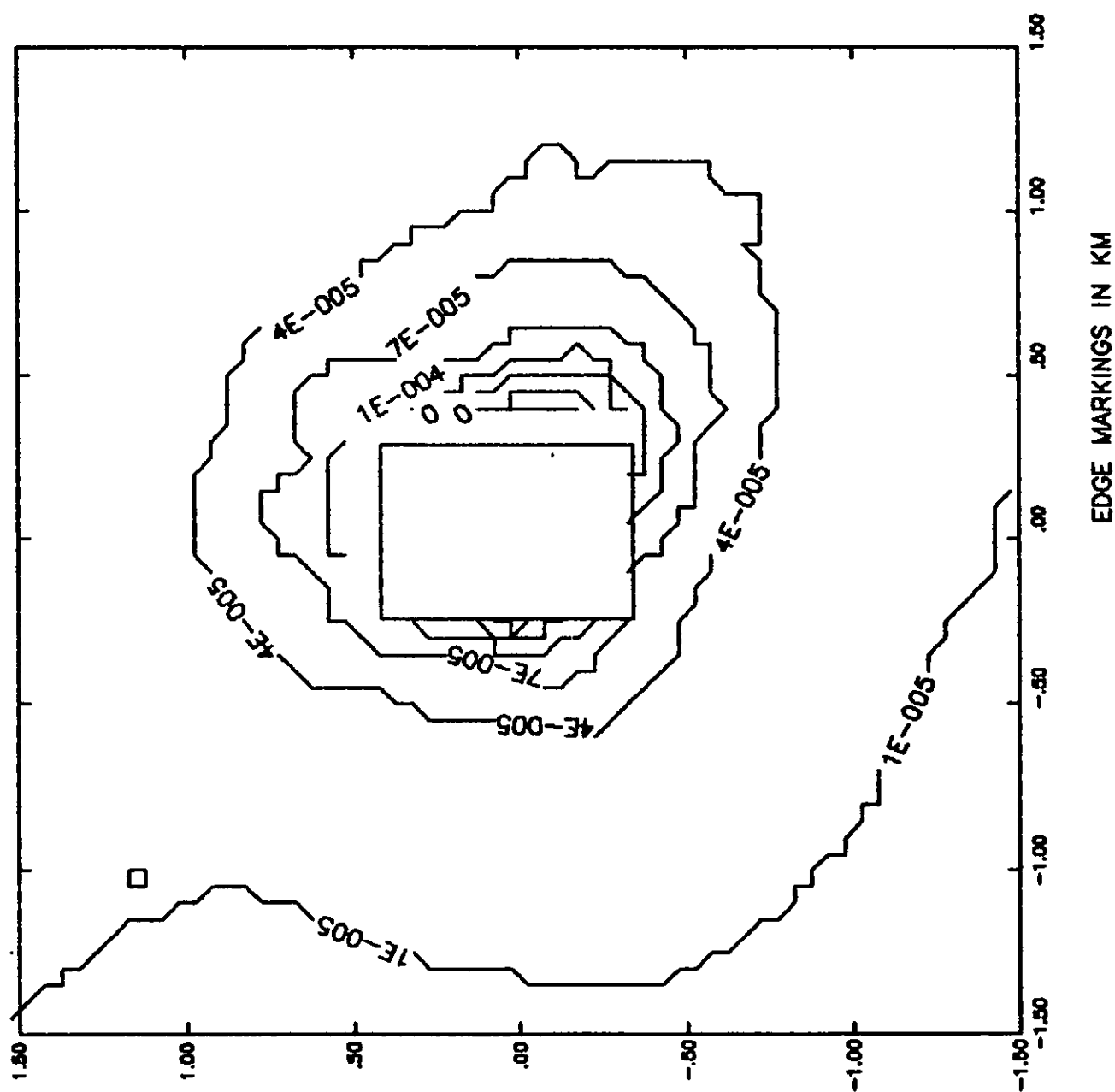
VINYL CHLORIDE

1-HOUR AVERAGE CONCENTRATIONS



VINYL CHLORIDE - CANCER RISK

INCIDENCE RATE



SET 1913-01-0788

5.0 RISK ASSESSMENT

An evaluation of the health risk associated with the plant's vinyl chloride emissions was conducted by comparing the results of the modeling analysis to the the health effects data presented in "Toxicological Profile for Vinyl Chloride" which was prepared by the U.S. Public Health Service in collaboration with the U.S. Environmental Protection Agency. This report was published by the Oak Ridge National Laboratory.

It is important that the analysis presented in the above referenced report is based on animal studies and extrapolated to humans. As such, it is extremely conservative. It has been estimated that this report presents risk levels which are 3 to 4 orders of magnitude more conservative than other studies which are based on human health risks directly.

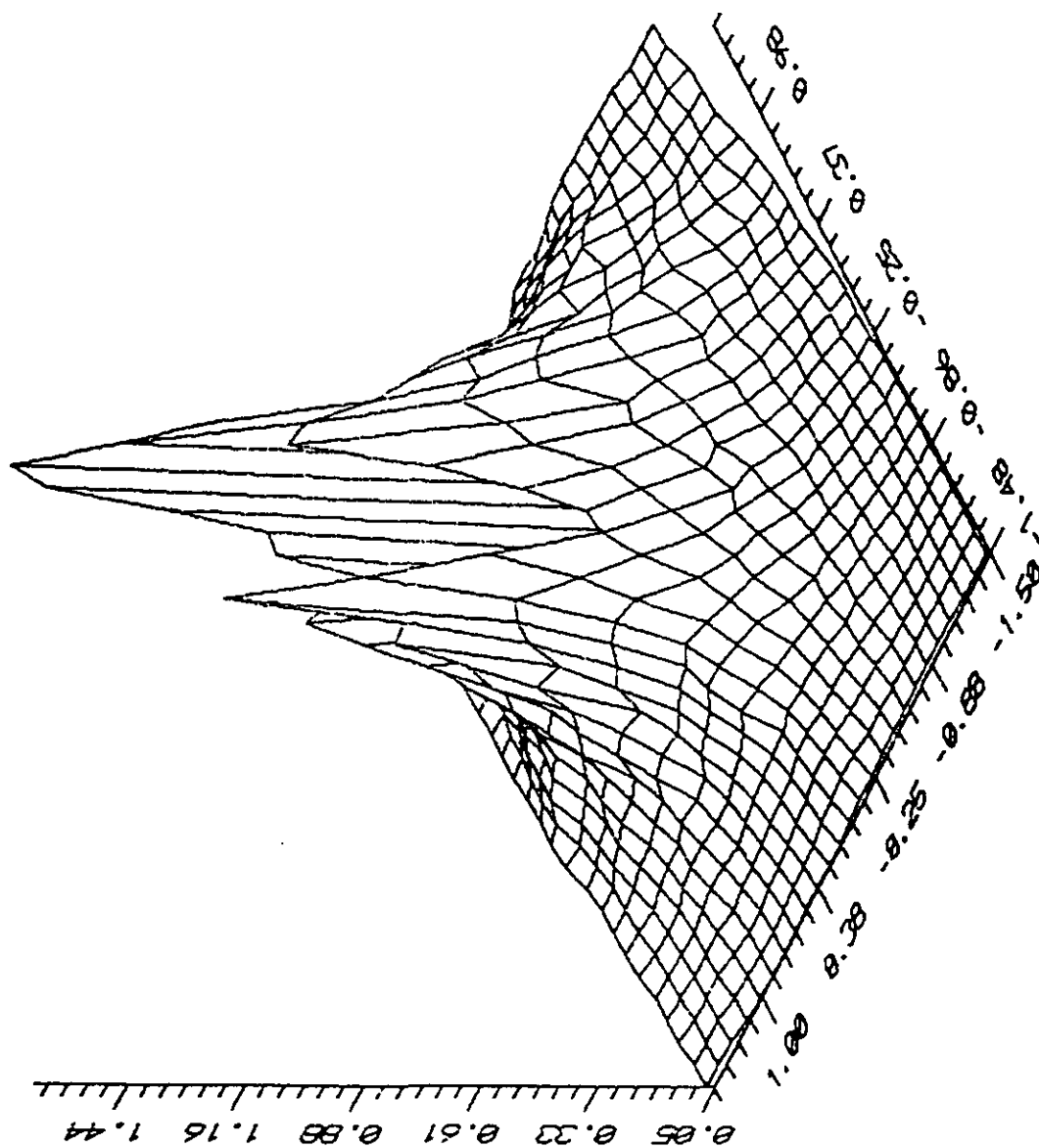
For long term exposure (24 hours per day, 365 days per year) the following concentrations and risk levels were derived:

<u>Vinyl Chloride Concentration (ppb)</u>	<u>Human Cancer Risk Level</u>
1.0	10⁻⁴ 10 ⁻⁴
0.1	10⁻⁵ 10 ⁻⁵
0.01	10⁻⁶ 10 ⁻⁶
0.001	10⁻⁷ 10 ⁻⁷

These data were compared to the annual average modeling results to generate the health effects plot presented on the following page.



ANNUAL WITHOUT FUGITIVES



**** ISCLT ***** ANNUAL AVERAGE VINYL CHLORIDE CONCENTRATIONS

***** PAGE 3 ****

- SOURCE INPUT DATA (CONT.) -

C T SOURCE SOURCE X Y EMISSION BASE /
 A NUMBER TYPE COORDINATE COORDINATE HEIGHT ELEV- /
 P (M) (M) (M) ATION /
 E (M) /

- SOURCE DETAILS DEPENDING ON TYPE -

C	T	SOURCE	SOURCE	X	Y	EMISSION	BASE	
A	NUMBER	TYPE	COORDINATE	COORDINATE	HEIGHT	ELEV-	ATION	
P			(M)	(M)	(M)		(M)	
E								
X	18	STACK	.00	.00	20.73	.00	GAS EXIT TEMP (DEG K)= 373.15, GAS EXIT VEL. (M/SEC)= 24.08, STACK DIAMETER (M)= .357, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 5.03992E-02	
	19	STACK	.00	.00	13.72	.00	GAS EXIT TEMP (DEG K)= 338.71, GAS EXIT VEL. (M/SEC)= 12.19, STACK DIAMETER (M)= .128, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.51534E-01	
	20	STACK	.00	.00	18.29	.00	GAS EXIT TEMP (DEG K)= 338.71, GAS EXIT VEL. (M/SEC)= 15.54, STACK DIAMETER (M)= .186, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.53593E-02	
X	21	STACK	.00	.00	13.72	.00	GAS EXIT TEMP (DEG K)= 338.71, GAS EXIT VEL. (M/SEC)= 12.19, STACK DIAMETER (M)= .128, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 5.41791E-02	
	22	STACK	.00	.00	18.29	.00	GAS EXIT TEMP (DEG K)= 338.71, GAS EXIT VEL. (M/SEC)= 15.54, STACK DIAMETER (M)= .186, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.51073E-01	
	23	STACK	.00	.00	12.19	.00	GAS EXIT TEMP (DEG K)= 338.71, GAS EXIT VEL. (M/SEC)= 24.08, STACK DIAMETER (M)= .152, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 1.24738E-01	
X	24	STACK	.00	.00	13.72	.00	GAS EXIT TEMP (DEG K)= 349.82, GAS EXIT VEL. (M/SEC)= 17.07, STACK DIAMETER (M)= .838, HEIGHT OF ASSO. BLDG. (M)= .00, WIDTH OF ASSO. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.15793E-03	

**** ISCLT ***** ANNUAL AVERAGE VINYL CHLORIDE CONCENTRATIONS

***** PAGE 2 ****

- SOURCE INPUT DATA (CONT.) -

C T	SOURCE	SOURCE	X	Y	EMISSION	BASE /
A	NUMBER	TYPE	COORDINATE	COORDINATE	HEIGHT	ELEV- /
P			(M)	(M)	(M)	ATION /
E						(M) /

- SOURCE DETAILS DEPENDING ON TYPE -

X	10	AREA	.00	.00	3.00	.00	WIDTH OF AREA (M)= 15.00 - SOURCE STRENGTHS (GRAMS PER SEC PER SQUARE METER) SEASON 1 SEASON 2 SEASON 3 SEASON 4 8.88900E-06	) -
X	11	AREA	.00	.00	1.00	.00	WIDTH OF AREA (M)= 100.00 - SOURCE STRENGTHS (GRAMS PER SEC PER SQUARE METER) SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.05000E-06	) -
WARNING - DISTANCE BETWEEN SOURCE 11 AND POINT X,Y= 100.00, 20.00 IS LESS THAN PERMITTED								
WARNING - DISTANCE BETWEEN SOURCE 11 AND POINT X,Y= 100.00, 40.00 IS LESS THAN PERMITTED								
WARNING - DISTANCE BETWEEN SOURCE 11 AND POINT X,Y= 100.00, 60.00 IS LESS THAN PERMITTED								
	12	AREA	.00	.00	7.62	.00	WIDTH OF AREA (M)= 50.00 - SOURCE STRENGTHS (GRAMS PER SEC PER SQUARE METER) SEASON 1 SEASON 2 SEASON 3 SEASON 4 2.60000E-05	) -
	13	STACK	.00	.00	9.14	.00	GAS EXIT TEMP (DEG K)= 322.04, GAS EXIT VEL. (M/SEC)= 12.50, STACK DIAMETER (M)= .408, HEIGHT OF ASSD. BLDG. (M)= .00, WIDTH OF ASSD. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.27595E-02	) -
X	14	STACK	.00	.00	18.29	.00	GAS EXIT TEMP (DEG K)= 322.04, GAS EXIT VEL. (M/SEC)= 11.58, STACK DIAMETER (M)= .457, HEIGHT OF ASSD. BLDG. (M)= .00, WIDTH OF ASSD. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) SEASON 1 SEASON 2 SEASON 3 SEASON 4 8.06387E-03	) -
X	15	STACK	.00	.00	19.05	.00	GAS EXIT TEMP (DEG K)= 322.04, GAS EXIT VEL. (M/SEC)= 9.14, STACK DIAMETER (M)= .518, HEIGHT OF ASSD. BLDG. (M)= .00, WIDTH OF ASSD. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.49015E-02	) -
	16	STACK	.00	.00	19.81	.00	GAS EXIT TEMP (DEG K)= 322.04, GAS EXIT VEL. (M/SEC)= 11.58, STACK DIAMETER (M)= .457, HEIGHT OF ASSD. BLDG. (M)= .00, WIDTH OF ASSD. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) SEASON 1 SEASON 2 SEASON 3 SEASON 4 8.69386E-03	) -
X	17	STACK	.00	.00	20.73	.00	GAS EXIT TEMP (DEG K)= 373.15, GAS EXIT VEL. (M/SEC)= 24.08, STACK DIAMETER (M)= .357, HEIGHT OF ASSD. BLDG. (M)= .00, WIDTH OF ASSD. BLDG. (M)= .00, WAKE EFFECTS FLAG = 0 - SOURCE STRENGTHS (GRAMS PER SEC) SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.62413E-02	) -

**** ISCLT ***** ANNUAL AVERAGE VINYL CHLORIDE CONCENTRATIONS

***** PAGE 1 ****

- SOURCE INPUT DATA -

C T A P E	SOURCE NUMBER	SOURCE TYPE	X COORDINATE (M)	Y COORDINATE (M)	EMISSION HEIGHT (M)	BASE / ELEV- / ATION / (M) /
--------------------	------------------	----------------	------------------------	------------------------	---------------------------	---------------------------------------

- SOURCE DETAILS DEPENDING ON TYPE -

X	1	VOLUME	.00	.00	1.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 5.50000E-02
Y	2	VOLUME	.00	.00	3.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 6.60000E-02
	3	VOLUME	.00	.00	6.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.90000E-02
	4	VOLUME	.00	.00	1.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.80000E-02
	5	VOLUME	.00	.00	3.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.40000E-02
	6	VOLUME	.00	.00	6.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 2.70000E-02
X	7	VOLUME	.00	.00	1.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 8.30000E-02
X	8	VOLUME	.00	.00	3.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 3.60000E-02
X	9	VOLUME	.00	.00	6.00	.00	STANDARD DEVIATION OF THE CROSSWIND SOURCE DISTRIBUTION (M)= 10.00 STANDARD DEVIATION OF THE VERTICAL SOURCE DISTRIBUTION (M)= 3.00 - SOURCE STRENGTHS (GRAMS PER SEC) - SEASON 1 SEASON 2 SEASON 3 SEASON 4 4.00000E-03

ISCLT (DATED 86210)
AN AIR QUALITY DISPERSION MODEL IN
SECTION 1. GUIDELINE MODELS
IN UNAMAP (VERSION 6) JULY 86.
SOURCE: FILE 7 ON UNAMAP MAGNETIC TAPE FROM NTIS.
IBM-PC VERSION 1.00 COPYRIGHT 1986 JIM CLARY & ASSOCIATES, INC
S/N 00-08-012 SOLD TO SCOTT ENVIRONMENTAL TEC
DATE & TIME OF THIS RUN 05-06-88 09:30:00

TABLE 4-1
DISPERSION MODELING RESULTS

AVERAGING PERIOD	MAXIMUM PREDICTED CONCENTRATION (ppb)	MAXIMUM OFF-PROPERTY CONCENTRATION (ppb)	LOCATION
1-HOUR WITH FUGITIVES	445.9	210.0	WEST PROPERTY BORDER
1-HOUR WITHOUT FUGITIVES	120.2	107.4	NORTH PROPERTY BORDER
ANNUAL WITH FUGITIVES	13.6	3.2	EAST PROPERTY BORDER
ANNUAL WITHOUT FUGITIVES	6.1	2.2	EAST PROPERTY BORDER

SET 1913-01-0788

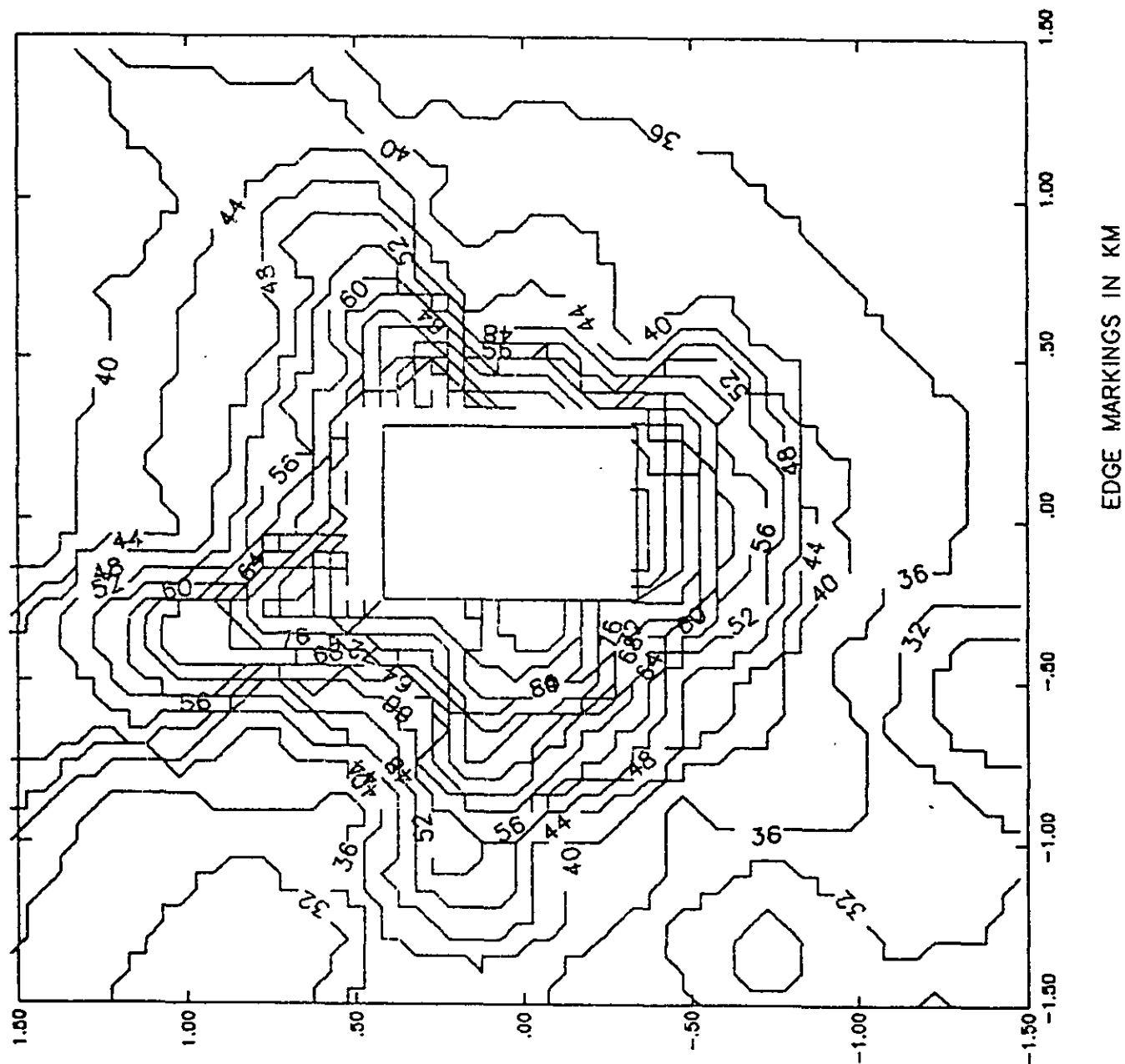
4.0 MODELING RESULTS

The maximum predicted downwind ambient pollutant concentrations and their locations are presented in Table 4-1 for the emission rates and time periods which were modeled. The modeling results are shown graphically on the plots which follow Table 4-1. The plots are presented in the same order as the information appears in Table 4-1. These plots show there is no one primary impact area of the plant's emissions. This is due to the generally light winds in the Aberdeen area.



VINYL CHLORIDE WITHOUT FUGITIVES

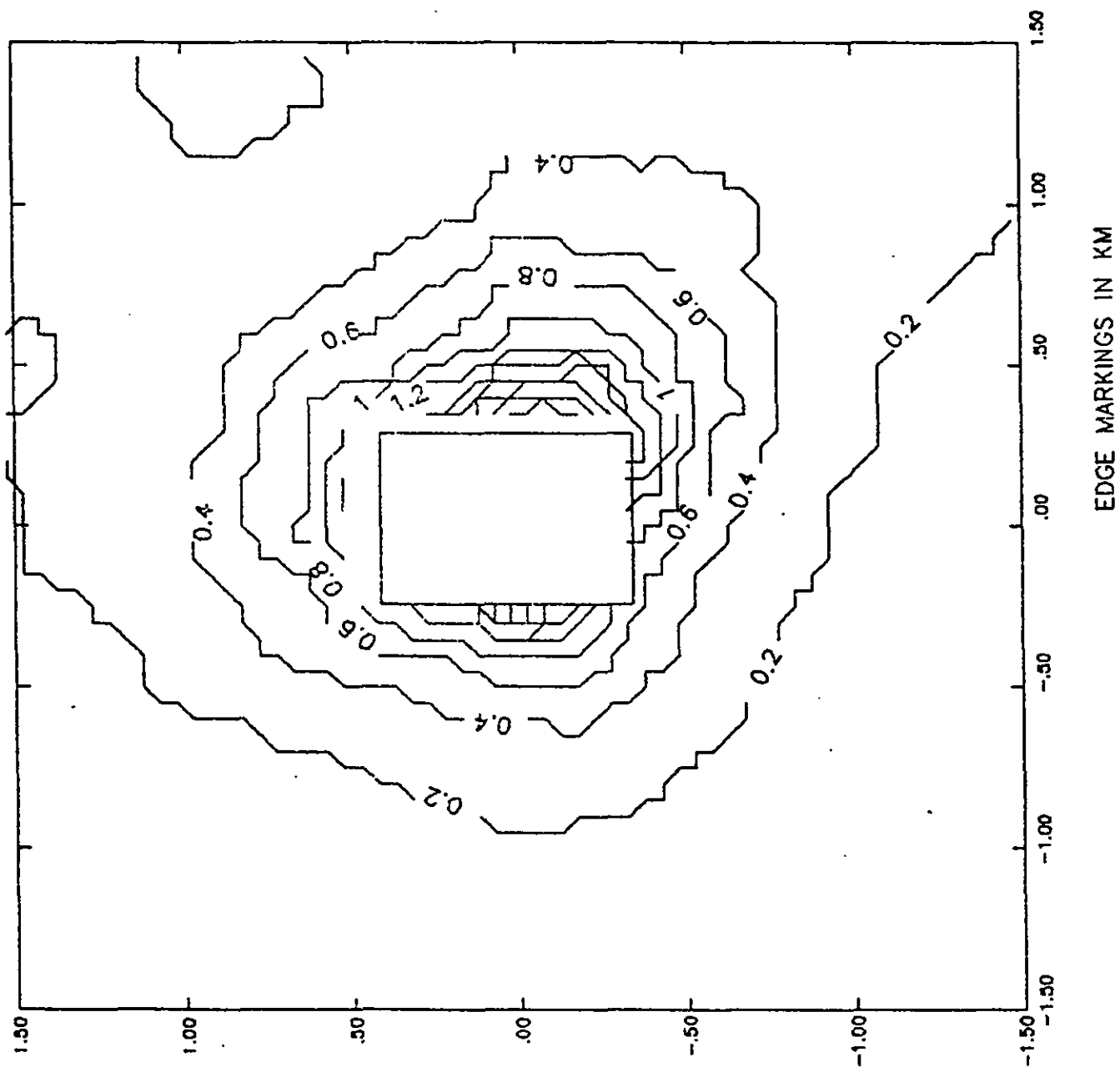
1-HOUR AVERAGE CONCENTRATIONS



-11-

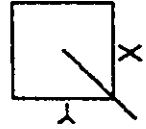
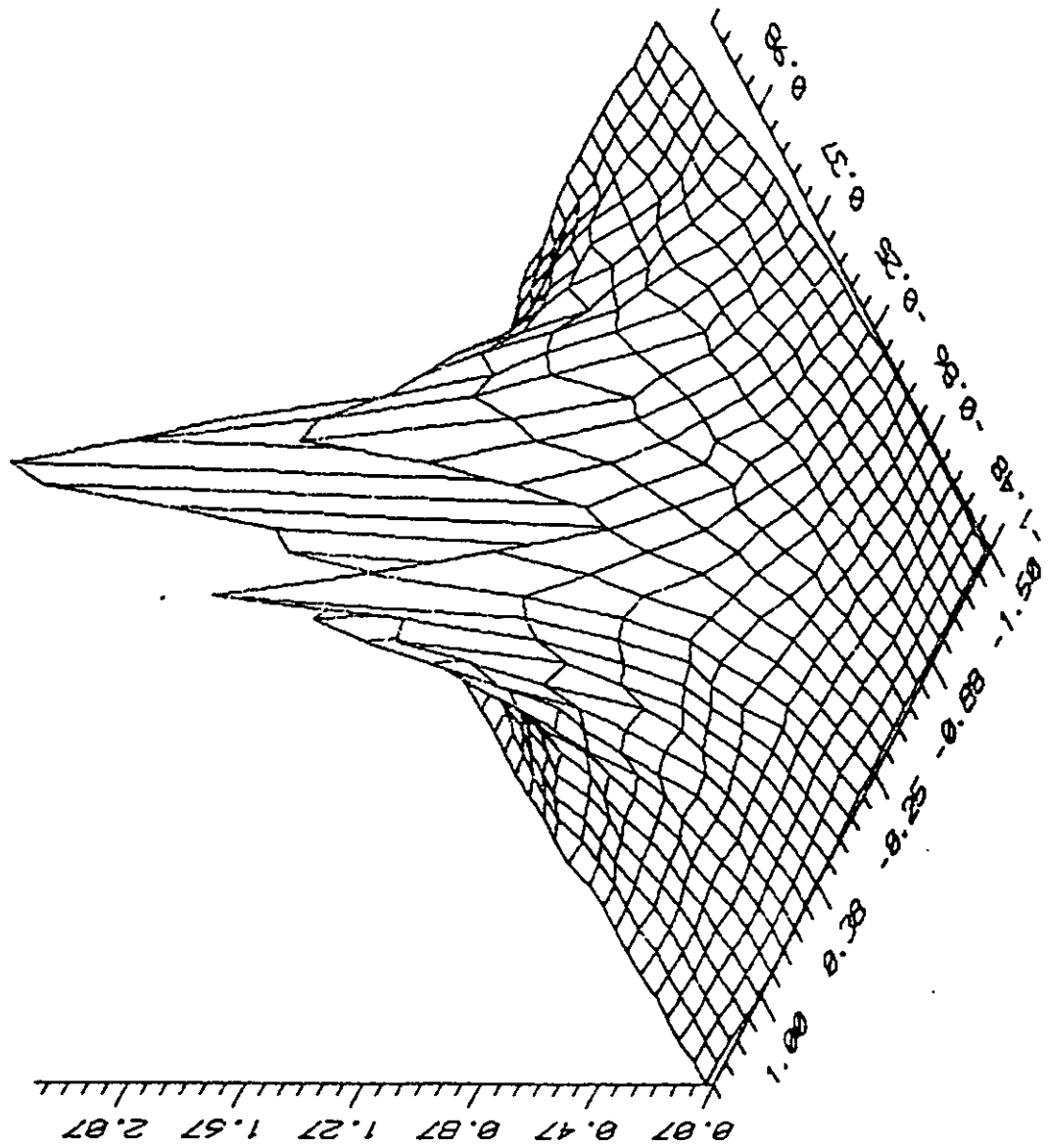
VINYL CHLORIDE

ANNUAL AVERAGE CONCENTRATIONS

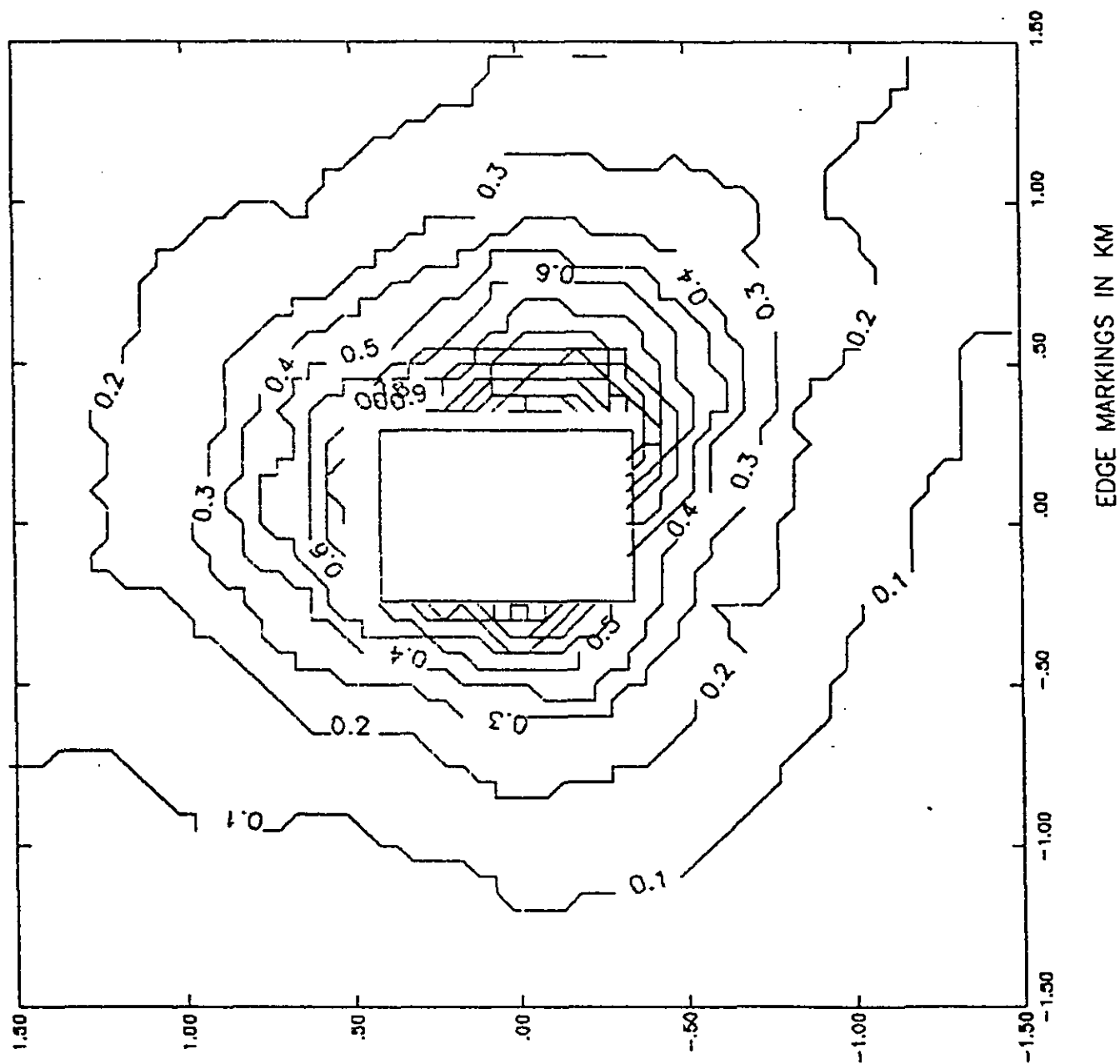


-12-

VINYL CHLORIDE - ANNUAL



VINYL CHLORIDE WITHOUT FUGITIVES
ANNUAL AVERAGE CONCENTRATIONS



APPENDIX A
SAMPLE MODEL PRINTOUT



*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

CALCULATE (CONCENTRATION=1, DEPOSITION=2)
 RECEPTOR GRID SYSTEM (RECTANGULAR=1 OR 3, POLAR=2 OR 4)
 DISCRETE RECEPTOR SYSTEM (RECTANGULAR=1, POLAR=2)
 TERRAIN ELEVATIONS ARE READ (YES=1, NO=0)
 CALCULATIONS ARE WRITTEN TO TAPE (YES=1, NO=0)
 LIST ALL INPUT DATA (NO=0, YES=1, MET DATA ALSO=2)

ISW(1) = 1
 ISW(2) = 4
 ISW(3) = 2
 ISW(4) = 0
 ISW(5) = 0
 ISW(6) = 1

COMPUTE AVERAGE CONCENTRATION (OR TOTAL DEPOSITION)
 WITH THE FOLLOWING TIME PERIODS:

HOURLY (YES=1, NO=0)
 2-HOUR (YES=1, NO=0)
 3-HOUR (YES=1, NO=0)
 4-HOUR (YES=1, NO=0)
 6-HOUR (YES=1, NO=0)
 8-HOUR (YES=1, NO=0)
 12-HOUR (YES=1, NO=0)
 24-HOUR (YES=1, NO=0)
 PRINT 'N'-DAY TABLE(S) (YES=1, NO=0)

ISW(7) = 1
 ISW(8) = 0
 ISW(9) = 0
 ISW(10) = 0
 ISW(11) = 0
 ISW(12) = 0
 ISW(13) = 0
 ISW(14) = 0
 ISW(15) = 0

PRINT THE FOLLOWING TYPES OF TABLES WHOSE TIME PERIODS ARE
 SPECIFIED BY ISW(7) THROUGH ISW(14):

DAILY TABLES (YES=1, NO=0)
 HIGHEST & SECOND HIGHEST TABLES (YES=1, NO=0)
 MAXIMUM 50 TABLES (YES=1, NO=0)
 METEOROLOGICAL DATA INPUT METHOD (PRE-PROCESSED=1, CARD=2)
 RURAL-URBAN OPTION (RU.=0, UR. MODE 1=1, UR. MODE 2=2, UR. MODE 3=3)
 WIND PROFILE EXPONENT VALUES (DEFAULTS=1, USER ENTERS=2, 3)
 VERTICAL POT. TEMP. GRADIENT VALUES (DEFAULTS=1, USER ENTERS=2, 3)
 SCALE EMISSION RATES FOR ALL SOURCES (NO=0, YES=0)
 PROGRAM CALCULATES FINAL PLUME RISE ONLY (YES=1, NO=2)
 PROGRAM ADJUSTS ALL STACK HEIGHTS FOR DOWNWASH (YES=2, NO=1)
 PROGRAM USES BUOYANCY INDUCED DISPERSION (YES=1, NO=2)
 CONCENTRATIONS DURING CALM PERIODS SET = 0 (YES=1, NO=2)
 REG. DEFAULT OPTION CHOSEN (YES=1, NO=2)
 TYPE OF POLLUTANT TO BE MODELLED (1=SO2, 2=OTHER)
 DEBUG OPTION CHOSEN (1=YES, 2=NO)
 USE RUNNING AVERAGES (0=NO, 1=YES)

ISW(16) = 0
 ISW(17) = 1
 ISW(18) = 1
 ISW(19) = 1
 ISW(20) = 0
 ISW(21) = 1
 ISW(22) = 1
 ISW(23) = 0
 ISW(24) = 1
 ISW(25) = 2
 ISW(26) = 1
 ISW(27) = 1
 ISW(28) = 1
 ISW(29) = 2
 ISW(30) = 1
 ISW(40) = 0

NUMBER OF INPUT SOURCES
 NUMBER OF SOURCE GROUPS (=0, ALL SOURCES)
 TIME PERIOD INTERVAL TO BE PRINTED (=0, ALL INTERVALS)
 NUMBER OF X (RANGE) GRID VALUES
 NUMBER OF Y (THETA) GRID VALUES
 NUMBER OF DISCRETE RECEPTORS
 SOURCE EMISSION RATE UNITS CONVERSION FACTOR
 HEIGHT ABOVE GROUND AT WHICH WIND SPEED WAS MEASURED
 LOGICAL UNIT NUMBER OF METEOROLOGICAL DATA
 DECAY COEFFICIENT FOR PHYSICAL OR CHEMICAL DEPLETION
 SURFACE STATION NO.
 YEAR OF SURFACE DATA
 UPPER AIR STATION NO.
 YEAR OF UPPER AIR DATA
 ALLOCATED DATA STORAGE
 REQUIRED DATA STORAGE FOR THIS PROBLEM RUN

NSOURC = 30
 NGROUP = 0
 IPERD = 0
 NXPNTS = 9
 NYPNTS = 18
 NXWYPT = 0
 TK = 10000E+07
 ZR = 10.00 METERS
 IMET = 9
 DECAY = .000000E+00
 ISS = 93721
 ISY = 76
 IUS = 93734
 IUY = 76
 LIMIT = 55500 WORDS
 MIMIT = 8136 WORDS

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION

*** SOURCE DATA ***

SOURCE NUMBER	T W Y A P K E E	PART. CATS.	EMISSION RATE	X (METERS)	Y (METERS)	BASE ELEV. (METERS)	HEIGHT (METERS)	TEMP.	EXIT VEL.	DIAMETER (METERS)	BLDG. HEIGHT (METERS)	BLDG. LENGTH (METERS)	BLDG. WIDTH (METERS)
			TYPE=0,1 (GRAMS/SEC) TYPE=2 (GRAMS/SEC) *PER METER**2					(DEG. K); VERT. DIM TYPE=1 (METERS)	(M/SEC); HORZ. DIM TYPE=1,2 (METERS)				
1	1 0	0	.55000E-01	.0	.0	.0	1.00	3.00	10.00	.00	.00	.00	.00
2	1 0	0	.66000E-01	.0	.0	.0	3.00	3.00	10.00	.00	.00	.00	.00
3	1 0	0	.39000E-01	.0	.0	.0	6.00	3.00	10.00	.00	.00	.00	.00
4	1 0	0	.38000E-01	.0	.0	.0	1.00	3.00	10.00	.00	.00	.00	.00
5	1 0	0	.34000E-01	.0	.0	.0	3.00	3.00	10.00	.00	.00	.00	.00
6	1 0	0	.27000E-01	.0	.0	.0	6.00	3.00	10.00	.00	.00	.00	.00
7	1 0	0	.83000E-01	.0	.0	.0	1.00	3.00	10.00	.00	.00	.00	.00
8	1 0	0	.36000E-01	.0	.0	.0	3.00	3.00	10.00	.00	.00	.00	.00
9	1 0	0	.40000E-02	.0	.0	.0	6.00	3.00	10.00	.00	.00	.00	.00
10	2 0	0	.89000E-05	.0	.0	.0	3.00	.00	15.00	.00	.00	.00	.00
11	2 0	0	.31000E-05	.0	.0	.0	1.00	.00	100.00	.00	.00	.00	.00
12	2 0	0	.26000E-04	.0	.0	.0	7.60	.00	50.00	.00	.00	.00	.00
13	0 0	0	.32759E-01	.0	.0	.0	9.10	322.00	12.50	.41	.00	.00	.00
14	0 0	0	.80639E-02	.0	.0	.0	18.30	322.00	11.58	.46	.00	.00	.00
15	0 0	0	.34901E-01	.0	.0	.0	19.00	322.00	9.14	.52	.00	.00	.00
16	0 0	0	.86939E-02	.0	.0	.0	19.80	322.00	11.58	.46	.00	.00	.00
17	0 0	0	.46241E-01	.0	.0	.0	20.70	373.10	24.08	.36	.00	.00	.00
18	0 0	0	.50399E-01	.0	.0	.0	20.70	373.10	24.08	.36	.00	.00	.00
19	0 0	0	.35153E+00	.0	.0	.0	13.70	338.70	12.19	.13	.00	.00	.00
20	0 0	0	.45359E-01	.0	.0	.0	18.30	338.70	15.55	.19	.00	.00	.00
21	0 0	0	.54179E-01	.0	.0	.0	13.70	338.70	12.19	.13	.00	.00	.00
22	0 0	0	.45107E+00	.0	.0	.0	18.30	338.70	15.55	.19	.00	.00	.00
23	0 0	0	.12474E+00	.0	.0	.0	12.20	338.70	24.08	.15	.00	.00	.00
24	0 0	0	.41579E-02	.0	.0	.0	13.70	349.80	17.07	.84	.00	.00	.00
25	0 0	0	.41579E-02	.0	.0	.0	13.70	349.80	17.07	.84	.00	.00	.00
26	0 0	0	.41579E-02	.0	.0	.0	14.80	349.80	21.64	.75	.00	.00	.00
27	0 0	0	.41579E-02	.0	.0	.0	14.80	349.80	21.64	.75	.00	.00	.00
28	0 0	0	.41579E-02	.0	.0	.0	14.80	349.80	21.03	.76	.00	.00	.00
29	0 0	0	.13860E-01	.0	.0	.0	22.90	323.10	15.24	.66	.00	.00	.00
30	0 0	0	.31499E-02	.0	.0	.0	25.00	310.90	1.52	.51	.00	.00	.00

HIGH
1-HR
SGROUP# 1

*** VINYL CHLORIDE ONE HOUR MAXIMUM CONCENTRATION ***

* HIGHEST 1-HOUR AVERAGE CONCENTRATION (MICROGRAMS PER CUBIC METER) *
 * FROM ALL SOURCES *
 * FOR THE RECEPTOR GRID *

* MAXIMUM VALUE EQUALS 1458.71700 AND OCCURRED AT (100.0, 360.0) *

DIRECTION / (DEGREES) /	100.0	150.0	RANGE (METERS) 200.0	300.0	400.0
360.0 /	1458.71700 (152, 4)	1193.90600 (152, 4)	950.89800 (152, 4)	649.83620 (152, 4)	478.33330 (152, 4)
340.0 /	1032.98400 (110, 1)	829.33450 (110, 1)	690.05120 (110, 1)	539.40890 (174, 5)	471.63610 (174, 5)
320.0 /	1031.56600 (228, 5)	825.27570 (228, 5)	680.41600 (228, 5)	496.07330 (228, 5)	389.73170 (228, 5)
300.0 /	1027.74400 (51, 20)	818.50810 (51, 20)	668.68180 (51, 20)	475.42220 (51, 20)	364.34640 (51, 20)
280.0 /	1053.39600 (82, 22)	839.95310 (82, 22)	686.80240 (82, 22)	487.09130 (82, 22)	370.29710 (82, 22)
260.0 /	1094.61800 (15, 24)	894.18500 (15, 24)	746.17060 (15, 24)	545.66820 (15, 24)	424.87110 (15, 24)
240.0 /	1017.28300 (238, 1)	787.54860 (238, 1)	621.76530 (238, 1)	417.55520 (32, 7)	345.66640 (32, 7)
220.0 /	1098.62500 (341, 8)	900.10770 (341, 8)	754.82230 (341, 8)	559.27360 (341, 8)	439.39480 (341, 8)
200.0 /	1058.07200 (34, 22)	842.16480 (34, 22)	683.18230 (99, 5)	470.99010 (99, 5)	346.65260 (294, 10)
180.0 /	1088.78100 (16, 20)	882.97120 (16, 20)	732.98500 (309, 2)	533.62320 (309, 2)	415.74190 (309, 2)
160.0 /	1040.64400 (290, 20)	840.56810 (290, 20)	697.42730 (290, 20)	509.07730 (290, 20)	398.69700 (290, 20)
140.0 /	1037.84200 (316, 2)	833.22480 (316, 2)	687.25330 (316, 2)	499.02620 (316, 2)	389.92640 (316, 2)
120.0 /	1038.05900 (149, 2)	833.42720 (149, 2)	687.83090 (149, 2)	500.84470 (149, 2)	392.70480 (149, 2)
100.0 /	1072.13100 (115, 1)	858.93300 (183, 2)	713.31020 (183, 2)	521.11130 (183, 2)	407.84800 (183, 2)
80.0 /	1037.27000 (40, 24)	887.23130 (40, 24)	738.36910 (267, 1)	543.02960 (267, 1)	424.49100 (267, 1)
60.0 /	1046.40500 (273, 22)	901.51480 (235, 20)	753.78310 (235, 20)	563.40570 (235, 20)	448.92650 (235, 20)
40.0 /	1046.70900 (262, 3)	902.46050 (181, 3)	754.24560 (181, 3)	564.00320 (181, 3)	449.84170 (181, 3)
20.0 /	1045.61500 (245, 6)	899.79880 (162, 24)	752.73340 (162, 24)	560.10840 (162, 24)	442.88890 (162, 24)