



INTERNAL
CORRESPONDENCE

UNION CARBIDE CORPORATION P. O. BOX 8004, SOUTH CHARLESTON, WV 25303

ICONES AND URETHANE INTERMEDIATES

SOUTH CHARLESTON PLANT

(Name) J. L. Worstell

Date June 2, 1981

vision

cation

ea

Originating Dept.

Environmental Protection

Area

by to

J. E. Barron
R. N. Bates
R. E. Jarrett
R. T. Kramer
R. G. Link
S. F. Stowers
H. L. Wise
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Subject Ethyl Acrylate
Community Monitoring Program

This is the second report on the continuing Community Monitoring Program for measuring ambient levels of ethyl acrylate in areas surrounding the South Charleston Plant.¹ Data collected on fifteen days from February 22, 1981, through May 11, 1981, are shown in Table I.² The samples were taken at thirteen locations in the community (see attached map and list). During this sampling period a new sampling point (#13) was added. This sampling point is located on 30th Street in North Charleston, approximately one block northeast of the Navy residence.

Of the ninety-seven samples collected during the period covered by this report, eighty-nine contained ethyl acrylate below the level of detection. The analytical procedure used has a lower detection limit of 1.5 micrograms or 5 parts per billion (ppb) for a seventy liter sample. The lower limit of detection, in parts per billion, will vary depending on the quantity of air drawn through the charcoal tube by the sampling pump. This limit of detection is an order of magnitude above the threshold odor for detection which is listed in various references as 0.3 to 0.5 ppb.

The eight samples which contained ethyl acrylate above the limit of detection ranged from 8 ppb to 400 ppb. The latter result is suspect because no ethyl acrylate odor was reported at the sampling location (#13).

Table II shows the wind direction and temperature variation on the days samples were taken. This data comes from the meteorological station at Building 406.

UCC 098665

Attached to this report as appendices are computer-generated descriptive statistics covering the data contained in this report and all data collected in the monitoring program. Appendix A covers the ninety-seven data samples from this report. Appendices B and C cover all data in the monitoring program. In Appendices A and B, data values for those samples which were below the limit of detection were entered as the absolute numerical value (i.e., <5 was entered as 5). In Appendix C, data values for those samples which were below the limit of detection were entered as 0.1 ppb (or 100 parts per trillion). This value was selected as one just below the threshold odor.

A summary of the geometric means of the data in the appendices is listed below. In general, a geometric mean is more descriptive of environmental data than is the arithmetic mean. The selection of the geometric mean is further borne out by its relationship to the median. In all cases, the geometric mean is much closer to the median than the arithmetic mean.

Data from Appendix

	<u>A</u>	<u>B</u>	<u>C</u>
Number of Samples	97	134	134
Geometric Mean	9	9	0.2
Median	7	7	0.1
Arithmetic Mean	15	14	6

The community monitoring program will continue on a monthly basis.

Very truly yours,



J. R. Soice

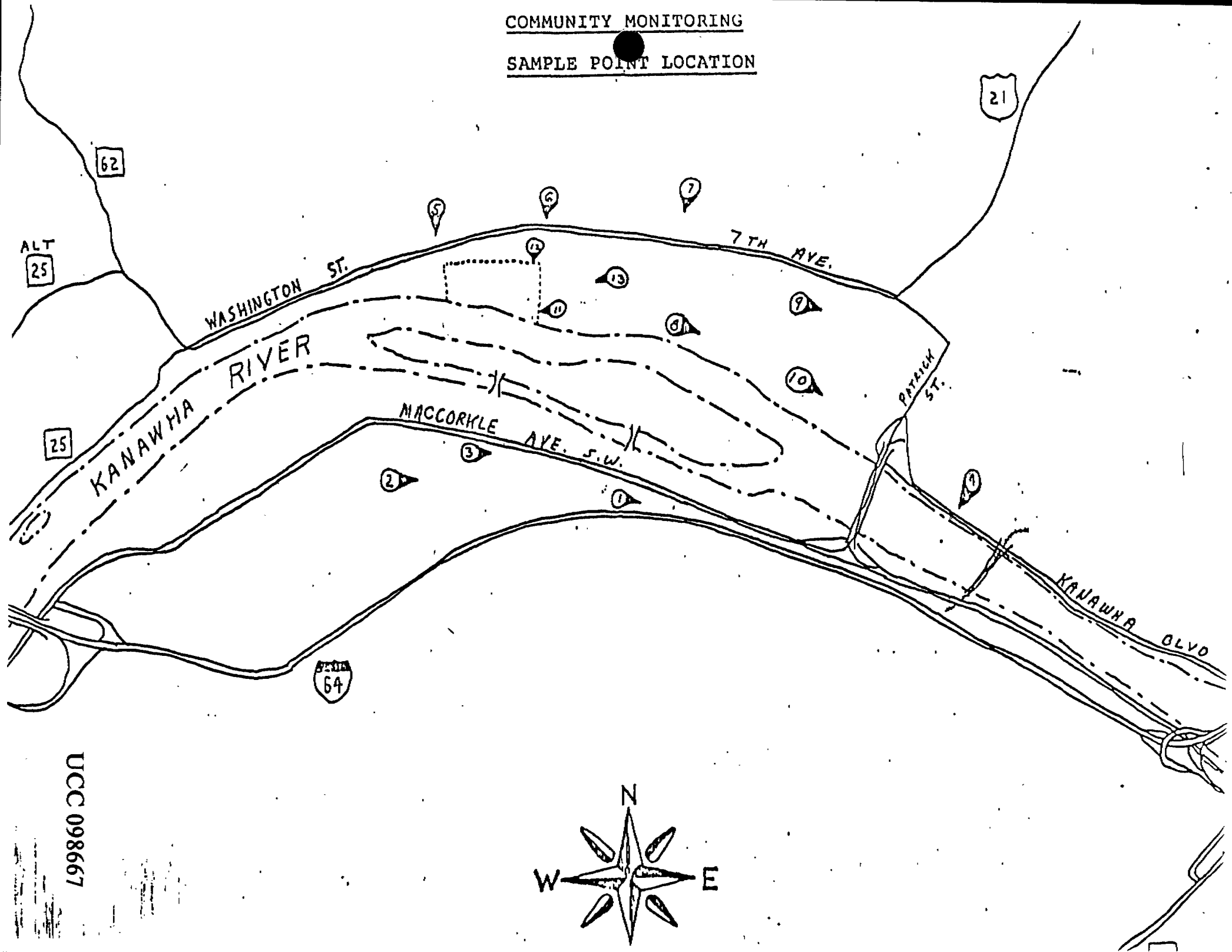
JRS:co

Attachments

-
- 1 Soice, J. R., "Ethyl Acrylate Community Monitoring Program," February 23, 1981.
 - 2 The sampling is being performed by the Plant Industrial Hygiene Group.

UCC 098666

COMMUNITY MONITORING
SAMPLE POINT LOCATION



UCC 098667

TABLE I
COMMUNITY MONITORING
PPB ETHYL ACRYLATE

<u>DATE</u>	<u>#1</u>	<u>#2</u>	<u>#3</u>	<u>#4</u>	<u>#5</u>	<u>#6</u>	<u>#7</u>	<u>#8</u>	<u>#9</u>	<u>#10</u>	<u>#11</u>	<u>#12</u>	<u>#13</u>	<u>COMMENTS</u>
2/22/81													<10	
2/23/81	<17	<10	<7	<8	<7	<7	<13*	<7	<7	<6	<7	<43*	<6	Tank car unloaded starting 2:30 p.m.
2/24/81													<7	
2/25/81													16	Tank car unloaded.
2/26/81	<12*	<51*	<11	<7	<7	<7	<7	<9	<8	<7	<8	<6	<5	
2/27/81													<6	
2/28/81													<7	
3/1/81													<7	
3/2/81	<8	<17*	<43*	<5	<8	<8	<10*	<9	<7	-	<9	<7	<5	
3/3/81													<6	
3/4/81													<6	
3/5/81	<9	<5	<10	<8	<8	<9	<10	<7	<11	<8	<6	9	<6	Tank car unloaded.
3/6/81													<6	
3/19/81											<15	<9	<6	Changing gasket on emergency vent.
3/20/81													<6	
3/26/81													<6	Tank truck loaded.
3/29/81													<7	
4/5/81													<6	
4/6/81													403	Two tank trucks loaded.
4/9/81											<6	74	<7	Tank truck loaded. Replacing line at tank car rack.
4/13/81	<6	<8	<6	<7	<6	<5	64	15	<36*	<5	<6	<9	<5	
4/21/81													<6	
4/30/81													<5	
5/11/81	<5	<7	<8	<6	<7	<5	<6	<16*	78	15	<5	<5	-	

* NOTE: Sample pump problem--low sample volume.

Arithmetic mean = 15 ppb
Geometric mean = 9 ppb
Median = 7 ppb

TABLE II-A
COMMUNITY MONITORING
METEOROLOGICAL DATA

WIND (FROM) DIRECTION BUILDING 406

<u>DATE</u>	<u>7A</u>	<u>8A</u>	<u>9A</u>	<u>10A</u>	<u>11A</u>	<u>12N</u>	<u>1P</u>	<u>2P</u>	<u>3P</u>	<u>4P</u>
2/22/81	NE	W	ESE	ESE	ESE	ESE	ESE	ESE	SE	SE
2/23/81	W	WSW	NE	ESE	ESE	SE	SW	SW	W	W
2/24/81	W	W	W	W	WNW	WNW	W	W	W	W
2/25/81	NE	ENE	W	W	W	W	WNW	NW	NW	NW
2/26/81	NE	ENE	NE	NE	NE	NE	N	N	NW	NW
2/27/81	NE	N	ESE	SE	SE	NE	SE	N	E	ESE
2/28/81	*	*	*	*	*	*	*	*	*	*
3/1/81	*	*	*	*	*	*	*	*	*	*
3/2/81	*	W	W	NW	W	WNW	NW	WSW	W	W
3/3/81	WNW	WNW	NW	NW	WNW	WNW	WNW	W	NW	W
3/4/81	ESE	ESE	ESE	ENE	NE	SE	E	E	ESE	ESE
3/5/81	NE	NE	WSW	WNW	WNW	WNW	WNW	NW	NW	WNW
3/6/81	W	W	WNW	W	WNW	W	NW	W	W	WSW
3/19/81	WNW	WNW	NW	WNW	NW	WNW	NW	WNW	WNW	WNW
3/20/81	WSW	WSW	W	W	W	W	W	W	W	W
3/26/81	ENE	E	E	ENE	N	WSW	WSW	W	W	SW
3/29/81	ENE	NE	ENE	WSW	S	WSW	SW	WSW	SSE	SSW
4/5/81	ENE	SW	W	NW	WNW	WNW	WNW	W	W	WNW
4/6/81	W	WNW	WNW	WNW	WNW	WNW	NW	NW	NW	NW
4/9/81	W	WSW	WSW	W	WSW	WSW	WSW	W	W	W
4/13/81	E	E	ENE	NE	NE	NNW	NW	N	NW	NNW
4/21/81	NE	SE	E	SE	E	E	ESE	ESE	N	N
4/30/81	SE	S	W	WNW	NW	NE	NW	NW	NW	N
5/11/81	S	E	S	WSW	WSW	SW	SW	WSW	WSW	W

UCC 098669

* NOTE: Data Not Available--Instrument Malfunction

TABLE II-B

COMMUNITY MONITORING

METEOROLOGICAL DATA

TEMPERATURE (°F) BUILDING 406

<u>DATE</u>	<u>7A</u>	<u>8A</u>	<u>9A</u>	<u>10A</u>	<u>11A</u>	<u>12N</u>	<u>1P</u>	<u>2P</u>	<u>3P</u>	<u>4P</u>
2/22/81	36	38	38	44	52	60	62	64	65	64
2/23/81	42	41	41	42	45	51	51	52	47	52
2/24/81	38	38	39	39	39	40	41	41	41	40
2/25/81	35	38	43	45	47	49	52	53	54	55
2/26/81	28	31	35	37	40	42	44	47	50	50
2/27/81	26	28	30	35	40	46	48	54	58	57
2/28/81	*	*	*	*	*	*	*	*	*	*
3/1/81	*	*	*	*	*	*	*	*	*	*
3/2/81	*	39	39	36	35	36	36	39	41	42
3/3/81	28	28	28	30	32	33	36	38	41	42
3/4/81	39	41	43	45	48	50	52	52	51	52
3/5/81	42	42	42	42	42	41	41	40	38	38
3/6/81	32	32	34	35	36	37	38	38	41	39
3/19/81	27	26	26	27	29	30	30	31	31	32
3/20/81	25	26	27	28	30	31	32	34	34	32
3/26/81	32	35	40	48	57	62	62	64	63	64
3/29/81	47	51	58	70	72	74	75	77	78	78
4/5/81	57	58	59	58	58	57	55	57	60	61
4/6/81	41	42	44	45	47	49	50	51	54	53
4/9/81	65	63	62	62	64	64	66	68	69	71
4/13/81	61	64	67	74	78	81	82	84	86	86
4/21/81	37	40	44	46	52	55	58	63	64	68
4/30/81	54	55	56	58	62	64	68	67	69	62
5/11/81	59	60	62	63	62	62	61	61	61	57

UCC 098670

*NOTE: Data Not Available--Instrument Malfunction

APPENDIX A

ETHYL ACRYLATE

COMMUNITY MONITORING PROGRAM

DESCRIPTIVE STATISTICS

Period Covered: 2/22/81 - 5/11/81

"Less than" (<) values entered as absolute values.

UCC 098671

NUMBER OF VARIATES = 97
ARITHMETIC MEAN = 15.4020619
STANDARD DEVIATION = 41.7305199
VARIANCE = 1741.43629
COEFF OF VAR (PCT) = 270.941
STANDARD SKEWNESS = 8.347
STANDARD EXCESS = 73.848

GEOMETRIC MEAN = 8.98424078
GEOMETRIC STD DEV = 2.03269044

ORDER STATISTICS

SMALLEST VARIATE = 5
LOWER DECILE = 5
FIRST QUARTILE = 6
MEDIAN = 7
THIRD QUARTILE = 9.5
UPPER DECILE = 17
LARGEST VARIATE = 403

TOTAL RANGE = 398
DECILE RANGE = 12
SEMI-QUARTILE RANGE = 1.75
BOWLEY'S SKEWNESS = .429
PEARSON SKEWNESS = .604

UCC 098672

ROM	UP TO BUT NOT INCLUDING	FREQUENCY	PERCENT FREQUENCY
9	1	0	0.00
1	11	78	80.41
11	21	11	11.34
2	31	0	0.00
31	41	1	1.03
41	51	2	2.06
51	61	1	1.03
61	71	1	1.03
71	81	2	2.06
81	91	0	0.00
91	101	0	0.00
101	111	0	0.00
111	121	0	0.00
121	131	0	0.00
131	141	0	0.00
141	151	0	0.00
151	161	0	0.00
161	171	0	0.00
171	181	0	0.00
181	191	0	0.00
191	201	0	0.00
201	211	0	0.00
211	221	0	0.00
221	231	0	0.00
231	241	0	0.00
241	251	0	0.00
251	261	0	0.00
261	271	0	0.00
271	281	0	0.00
281	291	0	0.00
291	301	0	0.00
301	311	0	0.00
311	321	0	0.00
321	331	0	0.00
331	341	0	0.00
341	351	0	0.00
351	361	0	0.00
361	371	0	0.00
371	381	0	0.00
381	391	0	0.00
391	401	0	0.00
401	411	1	1.03
411	421	0	0.00

UCC 098673

CUMULATIVE DISTRIBUTION

VALUE	NUMBER LESS THAN VALUE	% LESS THAN VALUE	VARIATE SUM % LESS THAN VALUE
1	0	0.00	0.00
1	78	80.41	36.41
21	89	91.75	46.98
31	89	91.75	46.98
41	90	92.78	49.39
51	92	94.84	55.15
61	93	95.87	58.56
71	94	96.90	62.85
81	96	98.96	73.02
91	96	98.96	73.02
101	96	98.96	73.02
111	96	98.96	73.02
121	96	98.96	73.02
131	96	98.96	73.02
141	96	98.96	73.02
151	96	98.96	73.02
161	96	98.96	73.02
171	96	98.96	73.02
181	96	98.96	73.02
191	96	98.96	73.02
201	96	98.96	73.02
211	96	98.96	73.02
221	96	98.96	73.02
231	96	98.96	73.02
241	96	98.96	73.02
251	96	98.96	73.02
261	96	98.96	73.02
271	96	98.96	73.02
281	96	98.96	73.02
291	96	98.96	73.02
301	96	98.96	73.02
311	96	98.96	73.02
321	96	98.96	73.02
331	96	98.96	73.02
341	96	98.96	73.02
351	96	98.96	73.02
361	96	98.96	73.02
371	96	98.96	73.02
381	96	98.96	73.02
391	96	98.96	73.02
401	96	98.96	73.02
411	97	100.00	100.00

UCC 098674

ORDERED ARRAY

<6	<7	<10
<6	<7	<10
<6	<7	<10
<6	<7	<10
<6	<7	<10
<6	<8	<11
<6	<8	<11
<7	<8	<12
<7	<8	<13
<7	<8	<15
<7	<8	15
<7	<8	15
<7	<8	<16
<7	<8	16
<7	<8	<17
<7	<8	<17
<7	<9	<36
<7	<9	<43
<7	<9	<43
<7	<9	<51
<7	<9	64
<7	<9	74
<7	<9	78
<7	9	403

NOTE: "<" ADDED AFTER REPORT GENERATION

APPENDIX B

ETHYL ACRYLATE

COMMUNITY MONITORING PROGRAM

DESCRIPTIVE STATISTICS

Period Covered: 2/10/81 - 5/11/81

"Less than" (<) values entered as absolute values.

UCC 098676

NUMBER OF VARIATES = 134
ARITHMETIC MEAN = 14.0970149
STANDARD DEVIATION = 35.7198614
VARIANCE = 1275.9085
COEFF OF VAR (PCT) = 253.386
STANDARD SKEWNESS = 9.743
STANDARD EXCESS = 102.045

GEOMETRIC MEAN = 9.13832698
GEOMETRIC STD DEV = 1.90472681

ORDER STATISTICS

SMALLEST VARIATE = 5
LOWER DECILE = 6
FIRST QUARTILE = 6
MEDIAN = 7
THIRD QUARTILE = 10
UPPER DECILE = 17
LARGEST VARIATE = 403

TOTAL RANGE = 398
DECILE RANGE = 11
SEMI-QUARTILE RANGE = 2
BOWLEY'S SKEWNESS = .5
PEARSON SKEWNESS = .596

UCC 098677

FROM	UP TO BUT NOT INCLUDING	FREQUENCY	PERCENT FREQUENCY
9	1	0	0.00
1	11	105	78.35
1	21	17	12.68
1	31	3	2.23
31	41	2	1.49
41	51	2	1.49
51	61	1	.74
61	71	1	.74
71	81	2	1.49
81	91	0	0.00
91	101	0	0.00
101	111	0	0.00
111	121	0	0.00
121	131	0	0.00
131	141	0	0.00
141	151	0	0.00
151	161	0	0.00
161	171	0	0.00
171	181	0	0.00
181	191	0	0.00
191	201	0	0.00
201	211	0	0.00
211	221	0	0.00
221	231	0	0.00
231	241	0	0.00
241	251	0	0.00
251	261	0	0.00
261	271	0	0.00
271	281	0	0.00
281	291	0	0.00
291	301	0	0.00
301	311	0	0.00
311	321	0	0.00
321	331	0	0.00
331	341	0	0.00
341	351	0	0.00
351	361	0	0.00
361	371	0	0.00
371	381	0	0.00
381	391	0	0.00
391	401	0	0.00
401	411	1	.74
411	421	0	0.00

UCC 098678

CUMULATIVE DISTRIBUTION

VALUE	NUMBER LESS THAN VALUE	% LESS THAN VALUE	VARIATE SUM % LESS THAN VALUE
1	0	0.00	0.00
11	105	78.35	40.12
21	122	91.04	52.30
31	125	93.28	56.27
41	127	94.77	59.97
51	129	96.26	64.53
61	130	97.01	67.23
71	131	97.76	70.61
81	133	99.25	78.66
91	133	99.25	78.66
101	133	99.25	78.66
111	133	99.25	78.66
121	133	99.25	78.66
131	133	99.25	78.66
141	133	99.25	78.66
151	133	99.25	78.66
161	133	99.25	78.66
171	133	99.25	78.66
181	133	99.25	78.66
191	133	99.25	78.66
201	133	99.25	78.66
211	133	99.25	78.66
221	133	99.25	78.66
231	133	99.25	78.66
241	133	99.25	78.66
251	133	99.25	78.66
261	133	99.25	78.66
271	133	99.25	78.66
281	133	99.25	78.66
291	133	99.25	78.66
301	133	99.25	78.66
311	133	99.25	78.66
321	133	99.25	78.66
331	133	99.25	78.66
341	133	99.25	78.66
351	133	99.25	78.66
361	133	99.25	78.66
371	133	99.25	78.66
381	133	99.25	78.66
391	133	99.25	78.66
401	133	99.25	78.66
411	134	100.00	100.00

UCC 098679

ORDERED ARRAY

5	<6	<7	<10
5	<6	<8	<10
5	<7	<8	<10
5	<7	<8	10
5	<7	<8	<11
5	<7	<8	<11
5	<7	<8	<11
5	<7	<8	11
5	<7	<8	<12
5	<7	<8	<12
5	<7	<8	<12
5	<7	<8	12
6	<7	8	<13
6	<7	<9	14
6	<7	<9	<15
6	<7	<9	15
6	<7	<9	15
6	<7	<9	<16
6	<7	<9	16
6	<7	<9	<17
6	<7	<9	<17
6	<7	<9	22
6	<7	<9	25
6	<7	<9	28
6	<7	<9	34
6	<7	9	<36
6	<7	<10	<43
6	<7	<10	<43
6	<7	<10	<51
6	<7	<10	64
6	<7	<10	74
6	<7	<10	78
6	<7	<10	403
6	<7		

NOTE: "<" ADDED AFTER REPORT GENERATION

UCC 098680

APPENDIX C

ETHYL ACRYLATE
COMMUNITY MONITORING PROGRAM
DESCRIPTIVE STATISTICS

Period Covered: 2/10/81 - 5/11/81

"Less than" (<) value entered as 0.1

UCC 098681

SUMMARY STATISTICS

NUMBER OF VARIATES = 134
ARITHMETIC MEAN = 6.34104478
STANDARD DEVIATION = 36.3584133
VARIANCE = 1321.93421
COEFF OF VAR (PCT) = 573.382
STANDARD SKEWNESS = 9.828
STANDARD EXCESS = 102.971

GEOMETRIC MEAN = .200806249
GEOMETRIC STD DEV = 6.44064429

ORDER STATISTICS

SMALLEST VARIATE = .1
LOWER DECILE = .1
FIRST QUARTILE = .1
MEDIAN = .1
THIRD QUARTILE = .1
UPPER DECILE = 11.5
LARGEST VARIATE = 403

TOTAL RANGE = 402.9
DECILE RANGE = 11.4
SEMI-QUARTILE RANGE = 0
BOWLEY'S SKEWNESS = 0
PEARSON SKEWNESS = .515

UCC 098682

CUMULATIVE DISTRIBUTION

VALUE	NUMBER LESS THAN VALUE	% LESS THAN VALUE	VARIATE SUM % LESS THAN VALUE
	0	0.00	0.00
	117	87.31	1.37
11	120	89.55	4.55
21	126	94.03	14.32
31	129	96.26	23.14
41	130	97.01	27.15
51	130	97.01	27.15
61	130	97.01	27.15
71	131	97.76	34.68
81	133	99.25	52.57
91	133	99.25	52.57
101	133	99.25	52.57
111	133	99.25	52.57
121	133	99.25	52.57
131	133	99.25	52.57
141	133	99.25	52.57
151	133	99.25	52.57
161	133	99.25	52.57
171	133	99.25	52.57
181	133	99.25	52.57
191	133	99.25	52.57
201	133	99.25	52.57
211	133	99.25	52.57
221	133	99.25	52.57
231	133	99.25	52.57
	133	99.25	52.57
251	133	99.25	52.57
261	133	99.25	52.57
271	133	99.25	52.57
281	133	99.25	52.57
291	133	99.25	52.57
301	133	99.25	52.57
311	133	99.25	52.57
321	133	99.25	52.57
331	133	99.25	52.57
341	133	99.25	52.57
351	133	99.25	52.57
361	133	99.25	52.57
371	133	99.25	52.57
381	133	99.25	52.57
391	133	99.25	52.57
401	133	99.25	52.57
411	134	100.00	100.00

UCC 098683

CUMULATIVE DISTRIBUTION

VALUE	NUMBER LESS THAN VALUE	Z LESS THAN VALUE	VARIATE SUM Z LESS THAN VALUE
0	0	0.00	0.00
11	117	87.31	1.37
21	120	89.55	4.55
31	126	94.03	14.32
41	129	96.26	23.14
51	130	97.01	27.15
61	130	97.01	27.15
71	130	97.01	27.15
81	131	97.76	34.68
91	133	99.25	52.57
101	133	99.25	52.57
111	133	99.25	52.57
121	133	99.25	52.57
131	133	99.25	52.57
141	133	99.25	52.57
151	133	99.25	52.57
161	133	99.25	52.57
171	133	99.25	52.57
181	133	99.25	52.57
191	133	99.25	52.57
201	133	99.25	52.57
211	133	99.25	52.57
221	133	99.25	52.57
231	133	99.25	52.57
1	133	99.25	52.57
1	133	99.25	52.57
261	133	99.25	52.57
271	133	99.25	52.57
281	133	99.25	52.57
291	133	99.25	52.57
301	133	99.25	52.57
311	133	99.25	52.57
321	133	99.25	52.57
331	133	99.25	52.57
341	133	99.25	52.57
351	133	99.25	52.57
361	133	99.25	52.57
371	133	99.25	52.57
381	133	99.25	52.57
391	133	99.25	52.57
401	133	99.25	52.57
411	134	100.00	100.00

UCC 098684

bcc:

J. E. Barron*

R. N. Bates

R. E. Jarrett

R. T. Kramer

R. G. Link*

S. F. Stowers*

H. L. Wise

EPD Staff*

UCC 098686

UNION CARBIDE CORPORATION

P. O. BOX 8004, SOUTH CHARLESTON, W. VA. 25303

Silicones and Urethane Intermediates

South Charleston Plant

July 30, 1981

Ms. Ellen Shapiro
West Virginia Air Pollution Control Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Dear Ms. Shapiro:

Subject: Ethyl Acrylate
Community Monitoring Program

Reference: Letter, J. L. Worstell to
Ellen Shapiro, June 4, 1981

In my letter to you of June 4, 1981, I mentioned that we planned to develop a fourth statistical treatment of the monitoring data. If you will recall, most of the monitoring data collected was "less than" type information. This precluded a single statistical treatment and made it necessary to develop several treatments to illustrate the full range of possibilities.

Case D has been prepared and is attached. Table I summarizes the assumptions incorporated in Case D. Table II summarizes and compares all four statistical treatments. Appendix D gives the details of statistical treatment Case D; analogous detail for Cases A, B, and C were included in the June 4 memo.

Please note that all monitoring data collected through May 11 of this year were included in the June 4 memo.

If you have any questions about this, please contact me on 747-3169 or John Soice on 747-3022.

Very truly yours,

J L Worstell

J. L. Worstell
Environmental Protection
Coordinator

JLW:co
Attachment
cc: J. R. Soice, Union Carbide

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TABLE I

STATISTICAL TREATMENT CASE D

- A. Four data values were deleted:
1. 34 ppb from sample point 2 on 2/16/81
 2. 403 ppb from sample point 13 on 4/9/81
 3. 78 ppb from sample point 9 on 5/11/81
 4. 15 ppb from sample point 10 on 5/11/81
- B. All data values which were below the limit of detection were entered as 0.001.

Refer to June 4 letter, J. L. Worstell to Ellen Shapiro, for detailed monitoring data information.

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TABLE II

SUMMARY OF STATISTICAL TREATMENTSA, B, C, AND D

	<u>A</u>	<u>B</u>	<u>C</u>	<u>D</u>
Number of Samples	97	134	134	130
Geometric Mean, ppb	9	9	0.2	0.003
Median, ppb	7	7	0.1	0.001
Arithmetic Mean, ppb	15	14	6	2
Percentage of "less than" Values, ppb	Absolute Value	Absolute Value	0.1	0.001

Also refer to June 4 letter, J. L. Worstell to Ellen Shapiro.

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APPENDIX D

ETHYL ACRYLATE

COMMUNITY MONITORING PROGRAM

DESCRIPTIVE STATISTICS

Period Covered: 2/10/81 - 5/11/81

"less than" (<) values entered as 0.001

UCC 098690

NUMBER OF VARIATES = 130
ARITHMETIC MEAN = 2.37013077
STANDARD DEVIATION = 9.57630189
VARIANCE = 91.7055578
COEFF OF VAR (PCT) = 404.041
STANDARD SKEWNESS = 5.646
STANDARD EXCESS = 35.139

GEOMETRIC MEAN = 2.66625308E-03
GEOMETRIC STD DEV = 19.1019766

ORDER STATISTICS

SMALLEST VARIATE = 1E-03
LOWER DECILE = 1E-03
FIRST QUARTILE = 1E-03
MEDIAN = 1E-03
THIRD QUARTILE = 1E-03
UPPER DECILE = 7.20010005
LARGEST VARIATE = 74

TOTAL RANGE = 73.999
DECILE RANGE = 7.19910005
SEMI-QUARTILE RANGE = 0
BOWLEY'S SKEWNESS = 0
PEARSON SKEWNESS = .742

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FROM	DI TO DO NOT	FREQUENCY	PERCENT
	NOT INCLUDING		FREQUENCY
9	-9	0	0.00
1	1	117	90.00
11	11	3	2.30
21	21	5	3.84
31	31	3	2.30
41	41	0	0.00
51	51	0	0.00
61	61	0	0.00
71	71	1	.76
81	81	1	.76
91	91	0	0.00

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CUMULATIVE DISTRIBUTION

VALUE	NUMBER LESS THAN VALUE	% LESS THAN VALUE	VARIATE SUM Z LESS THAN VALUE
9	0	0.00	0.00
1	117	90.00	.03
11	120	92.30	8.80
21	125	96.15	30.87
31	128	98.46	55.21
41	128	98.46	55.21
51	128	98.46	55.21
61	128	98.46	55.21
71	129	99.23	75.98
81	130	100.00	100.00

UCC 098693

—

E-03

D I S T R I B U T I O N

R. N. Bates

M. E. Griffith*

R. W. Holland, Jr.*

R. T. Kramer

S. F. Stowers*

B. D. Tissue*

H. L. Wise

EPD Staff

Shift Superintendents

* Circulated

UCC 098695