



UNION CARBIDE CORPORATION
CHEMICALS AND PLASTICS

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

SOUTH CHARLESTON PLANT

April 26, 1976

Mr. Carl G. Beard, II, Director
West Virginia Air Pollution Control Commission
1558 Washington Street, East
Charleston, West Virginia 25311

Ref: Letter, Carl G. Beard, II
to Arthur R. Ryrholm,
April 12, 1976

Dear Mr. Beard:

Subject: Vinyl Chloride Emissions From The
South Charleston Plant

The information which you requested is attached.

Very truly yours,

A handwritten signature in cursive script, appearing to read "A R Ryrholm".

A. R. Ryrholm
Plant Manager

ARR/pl

Attachment

UCC 098623

"(a) Vinyl Chloride emissions for the years 1967 through 1975
(these are to be the hourly values for a relatively
trouble free operation);"

See the attached table. Please note that the information is
given in the form of annualized average emission rates. This
is not precisely in the form requested, but we believe it to
be suitable for the purposes of the Center of Disease Control
study.

UCC 098624

ATMOSPHERIC VCM EMISSIONS

ANNUAL AVERAGE

UNION CARBIDE CORPORATION - SOUTH CHARLESTON PLANT

<u>YEAR</u>	<u>EMISSIONS, LBS./HOUR</u>
1967	240
1968	260
1969	250
1970	260
1971	270
1972	235
1973	265
1974	180
1975	76
1976	65*

*Emissions by the end of 1976 will have been reduced to approximately 3 pounds per hour.

UCC 098625

"(b) The dates, times and quantities of unusual emissions of vinyl chloride within the 1967 - 1975 time period;"

This information follows.

UCC 098626

ABNORMAL EMISSIONS
(Estimates)

	<u>Number of Abnormal Emissions</u>
1970	28
1971	18
1972	12
1973	5
1974	2
1975	0

These emissions ranged from 1000 to 8000 pounds. The average has been estimated as 2000 pounds; the larger releases have been very infrequent.

No estimates are available for the years 1967 - 1968 - 1969.

UCC 098627

An emission of 7000 + lbs. of vinyl chloride occurred on October 1, 1974, at about 2:15 a.m. This is the largest emission of which we have knowledge of during the 1967 - 1975 period.

Ten samples were taken to determine the effect and persistency of vinyl chloride in the community as a result of this release.

<u>Time</u>	<u>Sample Station</u>	<u>Type Sample</u>	<u>VCM Conc.</u> <u>ppmv</u>
7:36 a.m.	No. Chas. Fire Station	Grab	<0.05
7:36 a.m. - 11:55 a.m.	No. Chas. Fire Station	Carbon tube	<0.05
7:50 a.m.	No. 8*	Grab	0.2
7:50 a.m. - 11:55 a.m.	No. 8*	Carbon Tube	<0.05
8:11 a.m.	No. 9*	Grab	0.1
8:11 a.m. - 12 Noon	No. 9*	Carbon Tube	<0.05
8:25 a.m.	No. 10*	Grab	<0.05
8:25 a.m. - 12:15 p.m.	No. 10*	Carbon Tube	NA
8:45 a.m.	No. 3*	Grab	<0.05
8:45 a.m. 12:15 p.m.	No. 3*	Carbon Tube	<0.05

Weather conditions at the time of the incident:

Temperature	40 F°
Humidity	85%
Wind - Calm	Out of the SW
Other	Fog Condition

The emission occurred at a facility on Blaine Island, where all vinyl chloride consuming units are located. Virtually all abnormal vinyl chloride emissions have occurred at facilities located on Blaine Island.

*Consult the attached map.

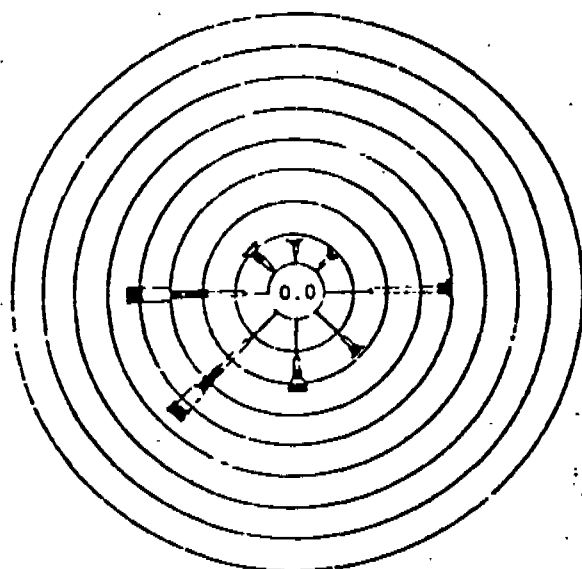
UCC 098628

13 10
"(c) Any meteorological data that your plant has that was taken by your personnel during the same time at your facility in South Charleston. It would be particularly helpful if this particular information had already been reduced to wind roses."

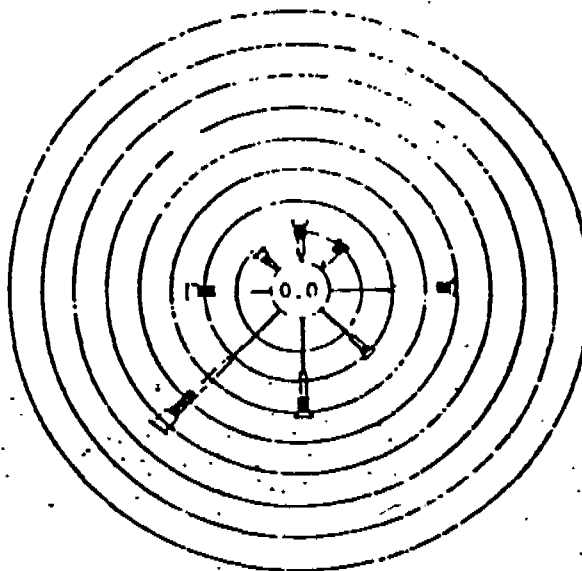
The following section is a summary of the requested data.

UCC 098629

Data Base: April 21, 1965 through
March 31, 1966

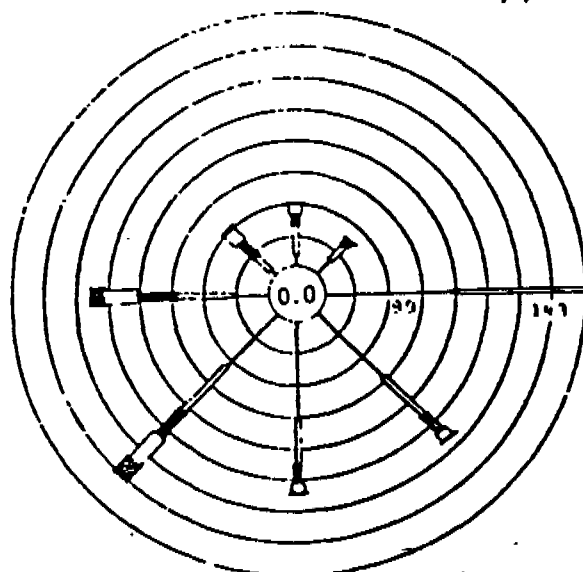
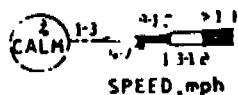


SPRING 844 OBSERVATIONS

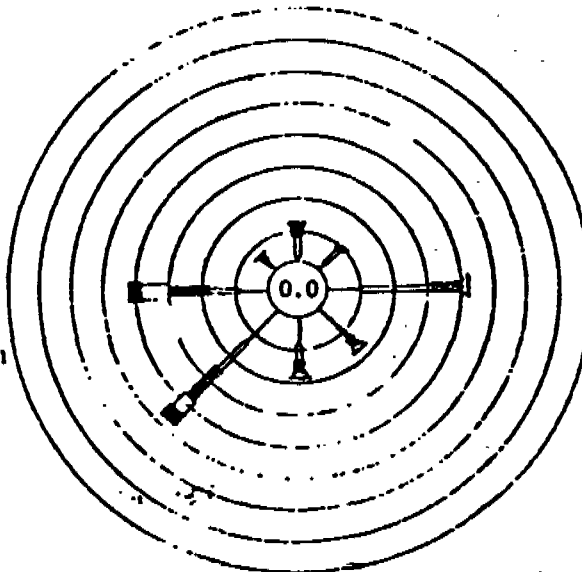


SUMMER 1080 OBSERVATIONS

DOWN VALLEY 260°



FALL 1520 OBSERVATIONS



WINTER 1059 OBSERVATIONS

UNION CARBIDE CORPORATION, SOUTH CHARLESTON PLANT

Data from an aerovane located on our office building in South Charleston (inoperable since 1973) are used in the Figure B-12 wind roses. Calm winds have been distributed among the 1 - 3 mile per hour groups of the 8 point wind record.

The following section is a summary of community monitoring data collected by UCC. This is an on-going program.

Please note that the OSHA TLV for an eight hour working day is 1 ppmv. The OSHA "action level" is 0.5 ppmv. If areas are less than 0.5 ppm, OSHA deems it unnecessary to continue additional monitoring, unless there is reason to believe that concentrations have increased.

Sample locations have been chosen in a manner which takes into account the frequency distribution of wind velocity.

UCC 098631

AMBIENT AIR VCM MONITORING
GRAB SAMPLES - CHARCOAL TUBE SAMPLES

1974

	<u>Fence Line</u>	-	<u>Community</u>	<u>Fence Line</u>	-	<u>Community</u>
Total No. Samples	65		128	2		11
ND (None Detected)	57		119	None		10
> ND, < 0.5 ppmv	8		9	2		1
≥ 0.5 ppmv, < 1.0 ppmv	None		None	None		None
≥ 1.0 ppmv	None		None	None		None

1975

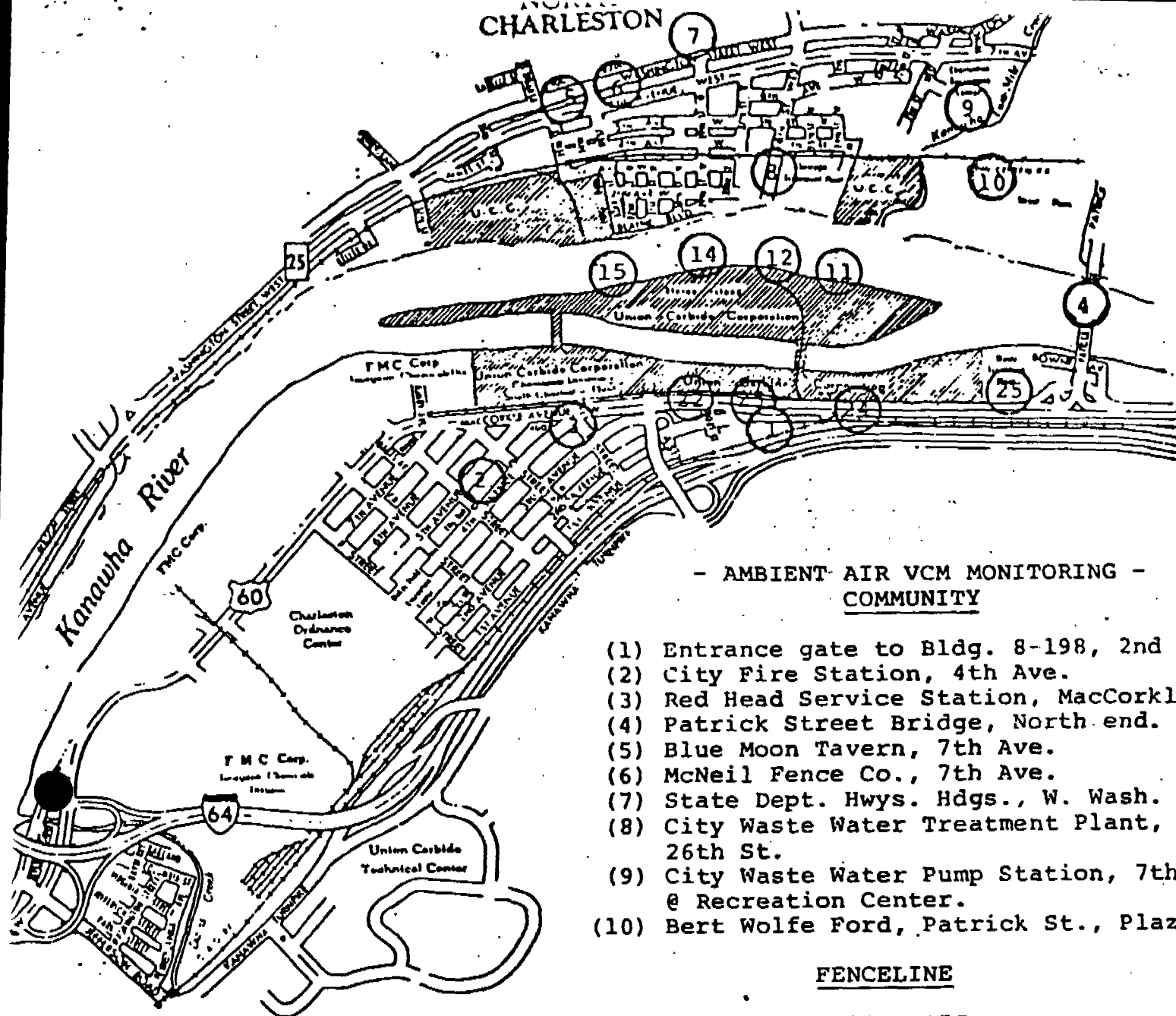
Total No. Samples	47	178	29	37
ND (None Detected)	46	173	25	30
> ND, < 0.5 ppmv	1	5	4	17
≥ 0.5 ppmv, < 1.0 ppmv	None	None	None	None
≥ 1.0 ppmv	None	None	None	None

1976 (Charcoal Tube Samples Only,
4 Hrs. Duration)

Total No. Samples	24	30
ND (None Detected)	20	29
> ND, < 0.5 ppmv	4	1
≥ 0.5 ppmv, < 1.0 ppmv	None	Non
≥ 1.0 ppmv	None	None

1. Grab samples collected in 50 ml syringes and analyzed by directed injection in GC (FID)
2. Charcoal Tube samples collected by battery powered pumps, desorbed by solvent extraction then analyzed by GC (FID).
3. Sensitivity of methods (1) and (2) is approximately 0.05 ppmv. Hence, ND (Non Detected) is less than 0.05 ppmv.

CHARLESTON



- AMBIENT AIR VCM MONITORING - COMMUNITY

- (1) Entrance gate to Bldg. 8-198, 2nd Ave
- (2) City Fire Station, 4th Ave.
- (3) Red Head Service Station, MacCorkle A
- (4) Patrick Street Bridge, North end.
- (5) Blue Moon Tavern, 7th Ave.
- (6) McNeil Fence Co., 7th Ave.
- (7) State Dept. Hwys. Hdgs., W. Wash. St.
- (8) City Waste Water Treatment Plant, 26th St.
- (9) City Waste Water Pump Station, 7th Ave @ Recreation Center.
- (10) Bert Wolfe Ford, Patrick St., Plaza

FENCELINE

- (11) Fenceline, Bldg. 175.
- (12) Fenceline, Bldg. 222 NE.
- (14) Fenceline, Bldg. 156 N.
- (15) Fenceline, Bldg. 200 NE.
- (22) Fenceline, Bldg. 308 N.
- (23) Fenceline, Bldg. 307 NE.
- (24) Fenceline, Gate 14.
- (25) Fenceline, Waste Treatment Plant.

Historical wind direction frequency included in another section of this report is the basis of sampling site selection.

Blind Copies: Mr. J. L. Carvajal
 Mr. C. E. Fry
 Mr. R. E. Jarrett
 Mr. R. T. Kramer
 Mr. B. L. Murray
 Mr. G. W. Stocking
 Mr. R. N. Wheeler
 Mr. H. L. Wise
 Mr. J. L. Worstell
 Mr. W. C. Young

Note to recipients of "bc" copies:

The letter to Carl Beard included a large amount of computer printout information concerning wind velocity data from the Building 82 weather station. This package of computer output is one-half inch thick, so we have not attached it to your individual copies of this letter.

J.L.Worstell
4/27/76

UCC 098634