



DOW CHEMICAL U.S.A.

*Tammy W*  
*Ham*

LOUISIANA DIVISION  
P. O. BOX 150  
PLAQUEMINE, LOUISIANA 70764  
504 389-8000

June 29, 1981

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"ENVIRONMENTAL CONTROL"  
JUN 30 1981

DUST SAMPLING PROJECT FOR THE PLASTICS DEPARTMENT

JUNE 16, 1981 THROUGH JUNE 23, 1981

The odd numbered quadrants were sampled during this period of time. Two samplers exceeded the recommended limit on dust emissions- - - Collector Number 3 located along the Poly B fenceline near its flare and Collector Number 7 located north of CPE at the intersection of Caustic and Mayflower Roads.

Quadrant 3 showed a slightly excessive amount of dustfall. There was not enough sample however to run a DSC (Differential Scanning Calorimeter) analysis. Microscopic investigation showed the sample to be mostly Polyethylene with some rust-like particles, the source of which has not been identified at this time.

The amount of dust collected in Quadrant 7 was the most collected so far, almost 63 Tons/mo/mi<sup>2</sup>. Figure 1 is a copy of the DSC analysis run on the dust collected in Quadrant 7. Figure 2 is a copy of a DSC analysis of some standard CPE resin with no additives. These two figures show marked similarities which lead one to conclude that Sample 7 was mostly CPE. The flattening of the sample peak was probably due to the impurity of the sample. A microscopic analysis of the same sample confirmed its being CPE intermixed with some rust-like particles.

The Spill Log for this same sampling period shows that CPE reported two spills leaving the Block on June 20, one at 8:15 AM and the second at 2:41 PM. The wind direction at the time of each of the spills was in the north to northeasterly direction. These spills explain the excessive amount of dustfall collected in Quadrant 7.

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DUST DAMPLING PROJECT  
JUNE 29, 1981  
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The Spill Log shows a citizen's complaint logged in on June 20 also. A sample of dust collected from a car was brought into Gate 1 along with the complaint. In order to determine if any PVC were present, the sample was allowed to sit in water for several minutes. The density of PVC causes it to sink in water while Polyethylene will float. The entire sample floated. Figure 3 is a copy of the DSC analysis run on this sample. Figure 4 is an analysis of a standard HDPE resin. The peak on the sample analysis is at a higher temperature than that of the standard HDPE resin. This sometimes indicates the presence of CPE in Polyethylene. The delay of the peak can also be caused by other impurities in the sample. A microscopic inspection of the sample showed no CPE present but there was much dirt present.

The preceding data leads one to conclude that the sample brought in was Polyethylene dust. There were no Polyethylene spills during this same period of time that would explain any excessive amounts of Polyethylene being found outside the Division.

Attached is the data for the week June 16 through June 23.

*Pam L. Usie*

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Attachments

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Figure 1

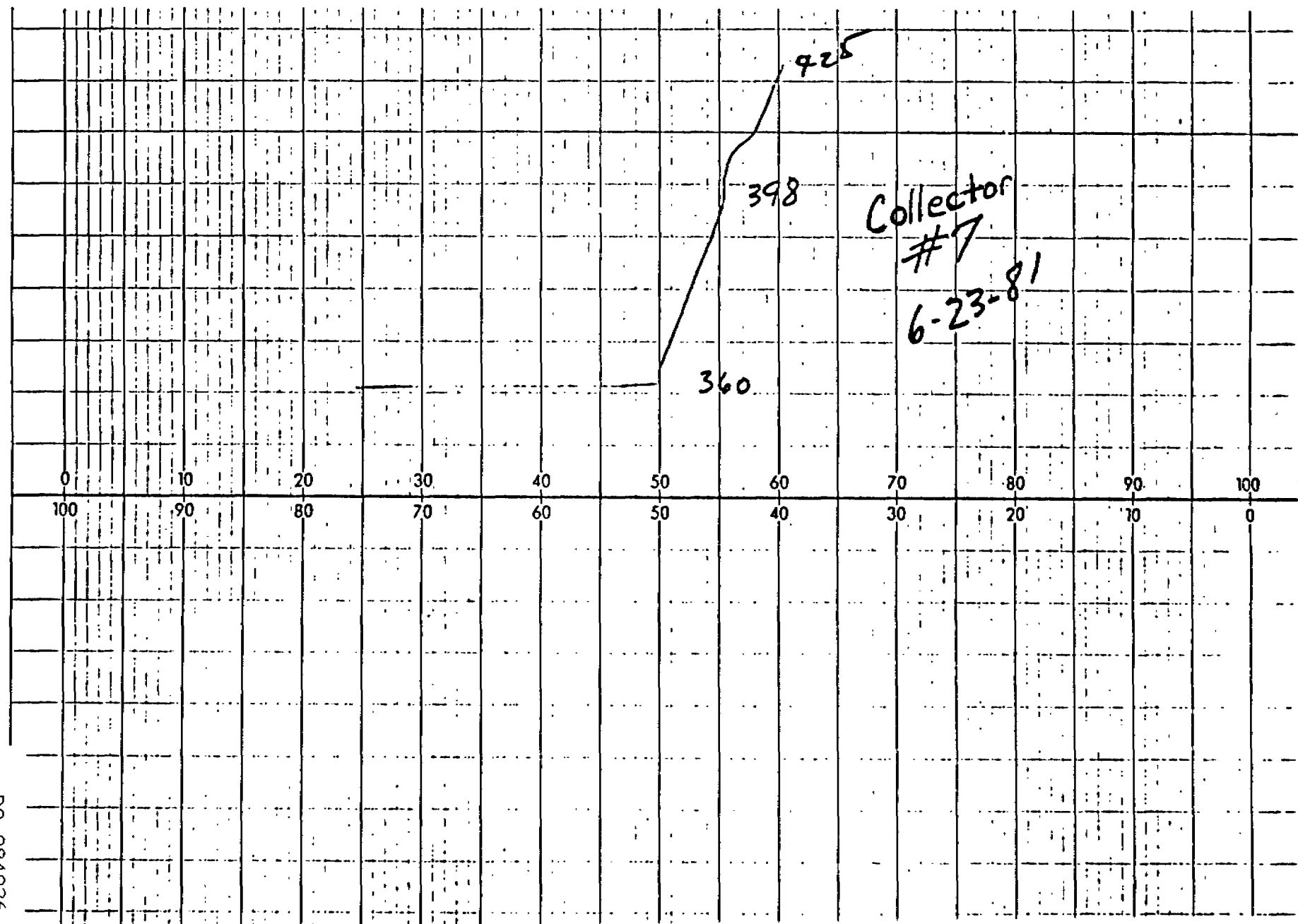
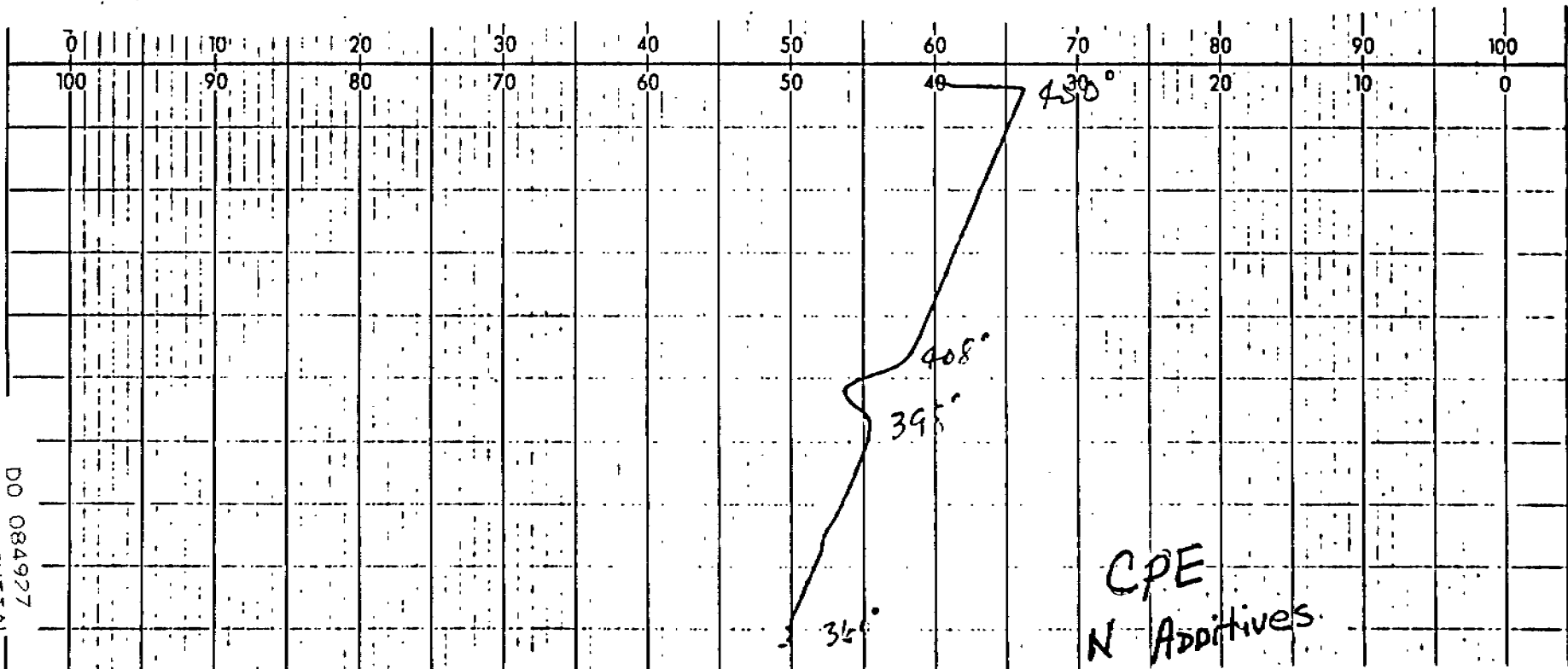


Figure 2  
Continued from Figure 1



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Figure 3

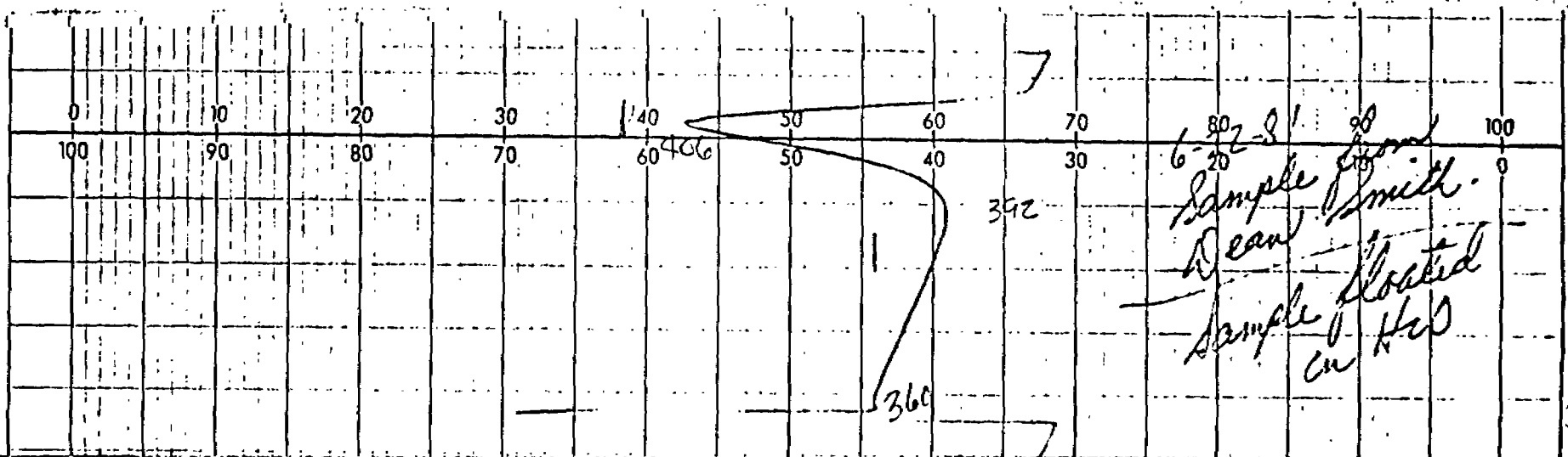
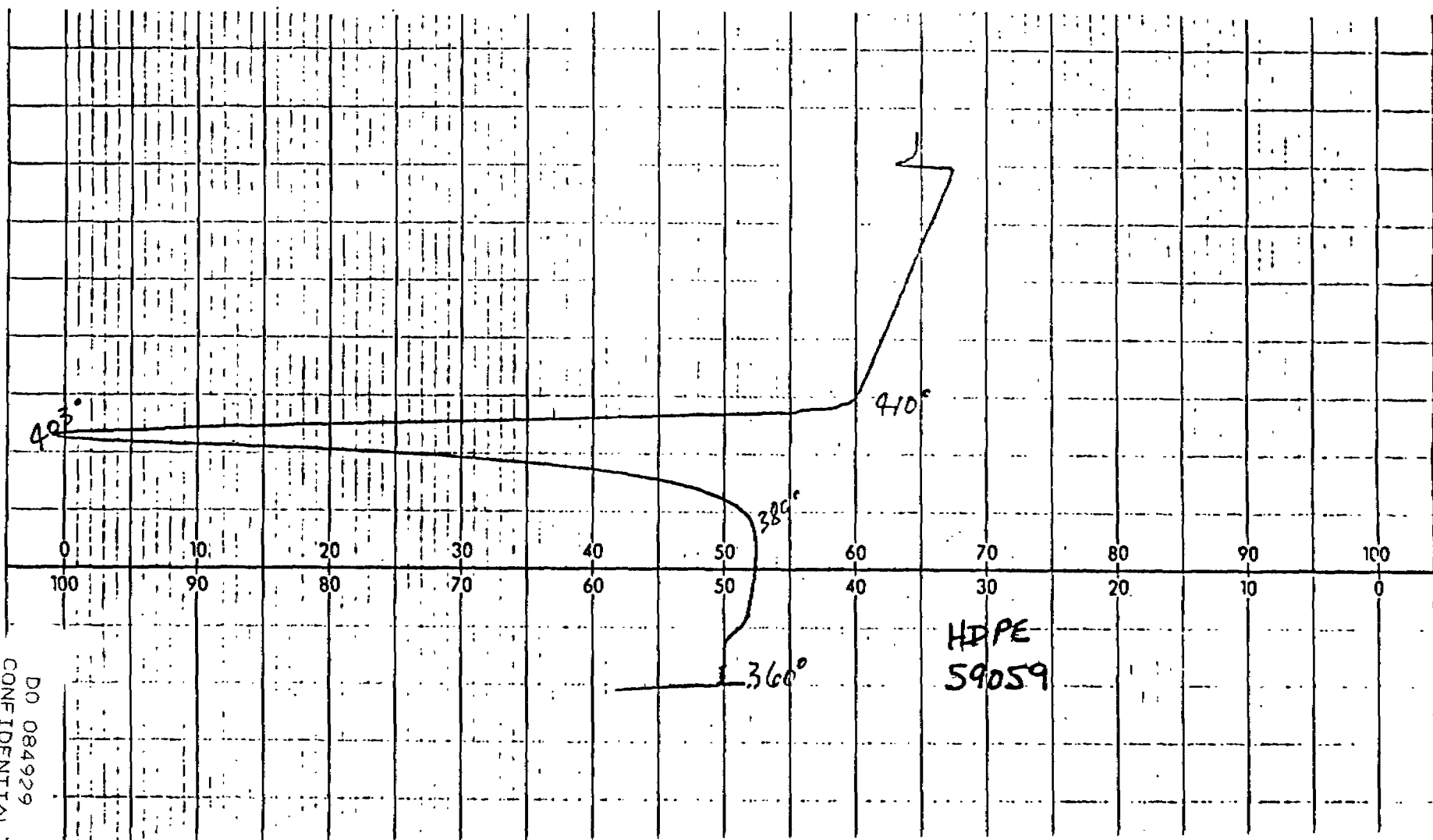


Figure 4

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Customer Use Only & Companion

DUPLICATE 10/10/2004



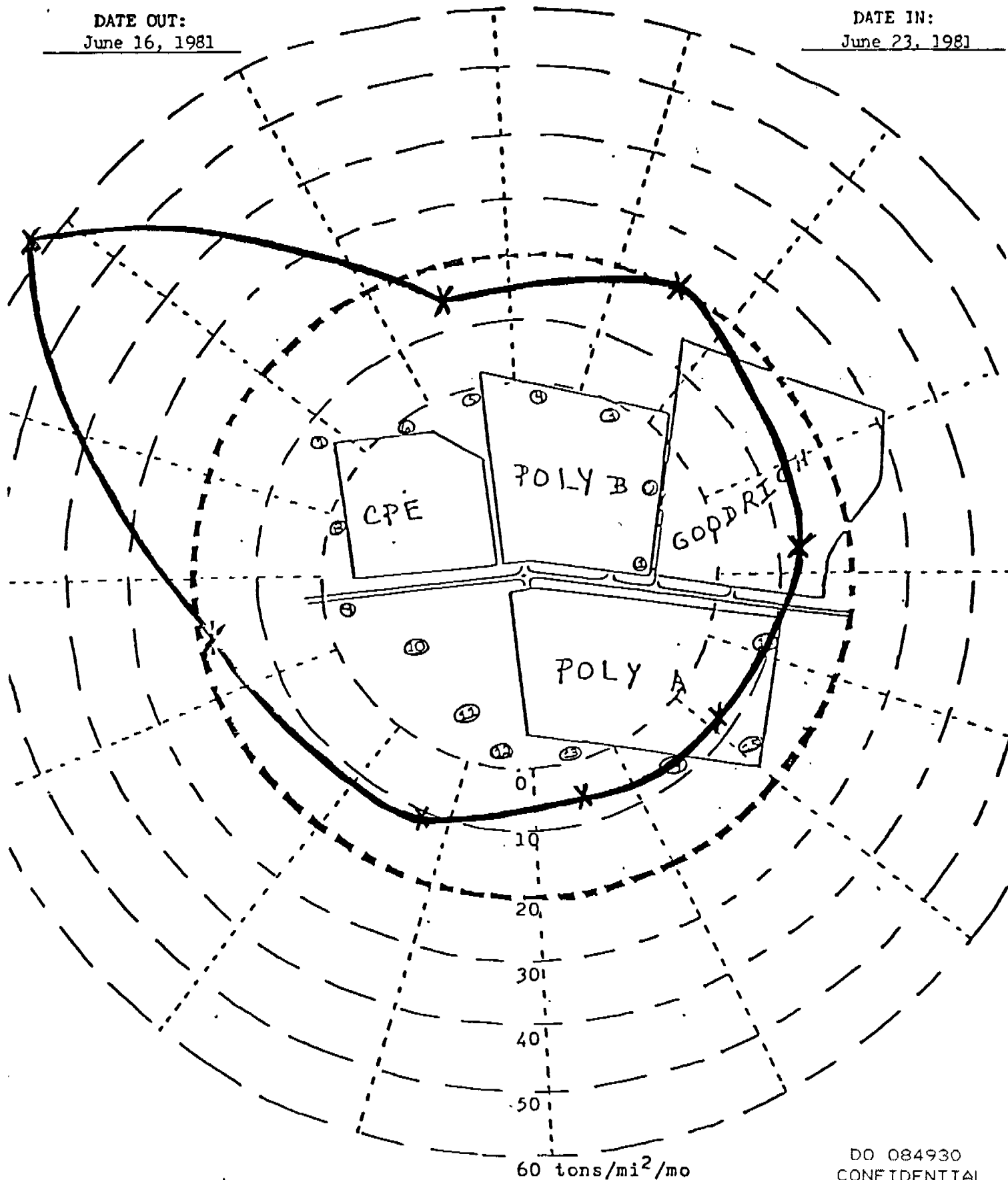
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DUSTFALL COLLECTION

Circle Numbers Indicate Collector Loc<sup>ns</sup>  
X's Indicate Amount Collected in That Quadrant

DATE OUT:  
June 16, 1981

DATE IN:  
June 23, 1981



EPA limit: 20 tons/mi<sup>2</sup>/mo

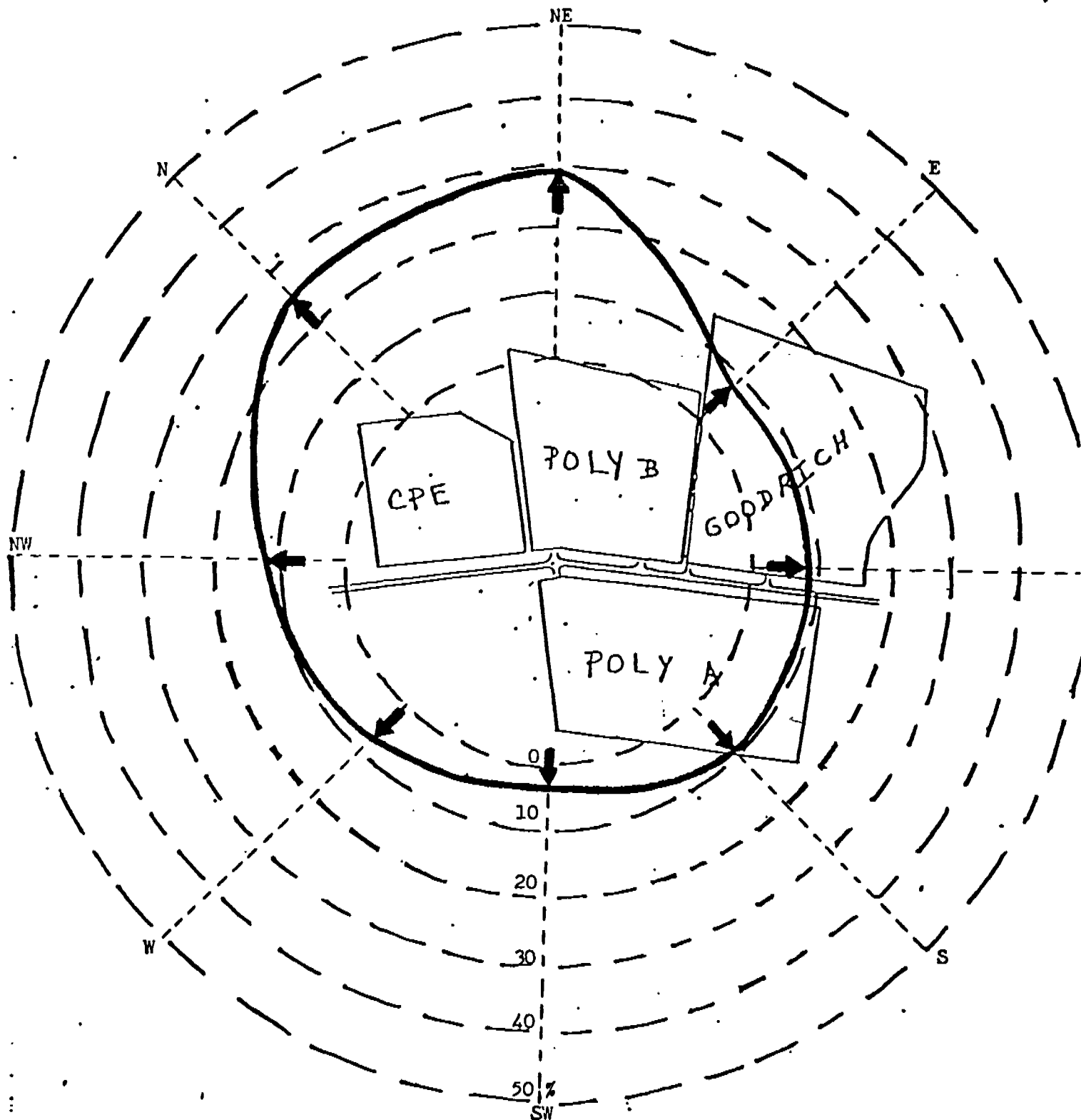
Quadrants Sampled: ODD

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WIND DIRECTION  
(Average In Given Direction Over The Week)

DATE OUT: June 16, 1981

DATE IN: June 23, 1981



QUADRANTS SAMPLED: ODD

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DUSTFALL ANALYSIS

DATE OUT: 6-16-81

DATE IN: 6-23-81

| QUADRANT<br>NUMBER | DUSTFALL<br>(g) | $\frac{D_T}{(TONS)} \frac{1}{(NoM1^2)}$ | COMMENTS                                 |
|--------------------|-----------------|-----------------------------------------|------------------------------------------|
| 1                  | .0191           | 12.79                                   | CPE, PVC, PE mix                         |
| 3                  | .0306           | 20.49                                   | Mostly PE, rusty<br>could be oxidized(?) |
| 5                  | .0232           | 15.54                                   | Rusty PE, much<br>insect remains         |
| 7                  | .0938           | 62.82                                   | 90% CPE, some<br>rusty PE                |
| 9                  | .0273           | 18.28                                   | PE & CPE Mix<br>brown, dirty             |
| 11                 | .0162           | 10.87                                   | CPE & PE                                 |
| 13                 | .0079           | 5.30                                    | PE                                       |
| 15                 | .0112           | 7.51                                    | Some Smooth Round<br>Particles           |

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SPILL LOG

| DATE    | PLANT<br>INVOLVED                   | TIME OF<br>REPORT | WIND DIRECTION AT<br>TIME OF REPORT                       |
|---------|-------------------------------------|-------------------|-----------------------------------------------------------|
| June 20 | CPE                                 | 8:15 a.m.         | 16.74% in N<br>74.48% in NE<br>8.78% in E                 |
| June 20 | Unknown<br>(citizen's<br>complaint) | 10:29 a.m.        |                                                           |
| June 20 | CPE                                 | 2:41 p.m.         | 12.97% in N<br>69.04% in NE<br>16.74% in E<br>1.25% in NW |

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