Monsanto

CONFIDENTIAL

FROM (NAME & LOCATION): E. E. Stewart, Krummrich

DATE : November 16, 1971

SUBJECT : PCB - SEWER LOSSES

REFERENCE :

TO : Mr. A. E. Leisy

cc: Messrs.
C. F. Buckley
B. L. Caraway
W. C. Engman
P. E. Heisler
G. A. Hippe
R. M. McCutchan
J. A. Munoz

The average daily losses in September and October as measured by current methods are as follows. Compares with plant goal of 1 #/day.

	Dept.	24" & 30" WGK Sewers	Treatment Influent	Treatment Effluent
Sept.	0.2 #/day	6 #/day	22 #/day	11 #/day
Oct.	0.2	7	17	11

Losses measured at the treatment plant are in excess (3 times) of those leaving the main plant sewers.

Our recent objective has been to better define the magnitude of the losses. We must resolve the discrepancy between treatment plant and WGK plant loss figures so that we can better implement a program to get the real losses down to our goal of 1 #/day.

To date we have evaluated sampling techniques at the Treatment Plant (Effluent), Department 246 (4-Z) and the 24" WGK Sewer (2-A). Data attached.

The data would indicate the following:

1. Actual losses from the WGK plant are between those reported at the 24" - 30" plant sewers and those reported at the Treatment Plant Influent.

2. The standard Monsanto slow sampler will give low results because the velocity is too low in the suction tubing to move solids containing Aroclors.

DSW 247452

3. Grab samples contain more PCB's than slow or isokinetic samplers. Do not know which is more representative of the real numbers. The PCB content is related to the solids content in the sample and the method of sampling that contains the most solids will contain the highest amount of PCB.

4. In most cases about 90% of the PCB's can be removed by filtration.

We discontinued sampling from the Department 246 Area (4-Z) because of the major sewer work in progress and because 1105 was being produced. Flows were erratic because of the sewer work, and lower chlorinated biphenyls were showing up in the analysis of the sewer streams. Plans are to return to 4-Z for additional sampling after the sewers are repaired and when we are producing 1142.

It is necessary that CED complete the design for equipment installation to remove the chlorinated biphenyls from the off-gas when producing 1105.

Future:

1. Isokinetic samplers will be installed at the 24" and 30" exit plant sewers. Week of 11/15/71.

2. Parts will be ordered for building three additional isokinetic samplers. One will be installed at treatment plant influent, one will be installed at Department 246 (4-Z) and one will serve as spare or be available for checking at additional spots throughout the plant. This special isokinetic sampler was designed by Julio Munoz. A unique feature is that solids are not permitted to build up in the system that would give erroneous results - the additional samplers will not be available till December.

3. During this study it became evident that the 24" and 30" sewers are cross connected at some point(s) in the plant. Dye tests in Southwest corner of plant verifies. This may explain why we continue to get PCB in 30" sewer. Additional checking in progress.

Edward E. Stewart
Technical Services Department

DSW 247453

/tm

	10/27/71 TREATMENT EFFLUENT			11/3/71 DEPT. 246 (4-Z)			11/12/71 24" PLANT SEWER (2-A)		
	Unfiltered	Filtered	%	Unfiltered	Filtered	%	Unfiltered	Filtered	%
Standard WGK Sampler (slow)	38 ppb	3 ppb	92	725 ppb	147 ppb	80	13 ppb	8 ppb	38
Intermittent fast drum sampler	82	3	96						
Continuous Iso-kinetic sampler	57	9	84	883	146	83	86	18	79
Grab Sampler (Average of 5)	65	5	92	1856	143	92			
Grab Sampler (Average of 4)							343	8	98

Analyses in ppb are Aroclors 1242, 1254 and 1260. Does not include 1221.

% represents the reduction that can be made by filtering.

DSW 247454

EES

STLCOPCB4054024