Monsanto

COMPANY CONFIDENTIAL

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

DATE: December 28, 1971

cc: Messrs. A. E. Leisy, R. M. McCutchan, G. A. Hippe

SUBJECT: PCB SOURCE

REFERENCE:

TO: Mr. W. C. Engman

In our efforts to better define the magnitude and the source of PCB losses to the sewer, we are presently investigating three distinct areas where clues may be present. The three areas are:

I. The presence of Aroclor 1221 in sewer streams since 11/1/71.

II. Diversion of the sewer streams from the Aroclor Department at 4-Z. All department flow is directed to the north and not permitted to flow into the internal plant sewer system which exits at the 24" and 30" sewers.

III. Slow versus fast sewer samplers.

Information to date in the three areas can be summarized as follows:

I. THE PRESENCE OF AROCLOR 1221

Prior to 11/3/71 the presence of Aroclor had not been reported by the laboratory to be in any of the sewer streams that were analyzed. Since 11/1/71, Aroclor 1221 has been present in the composite samples as listed below.

Date		(4-Z) Dept. 246	(2-A) 24" Sewer	(1-B) 30" Sewer	Inf.	Eff.
11/3	*	618 ppb	0	395 ppb	419 ppb	322 ppb
11/7		134	0	376	186	90
11/10	*	-	0	225	0	64
11/14	*	372	20	611	254	237
11/17		-	27	60	600	218
11/21		67	0	53	228	230
11/25		76	29	30	46	59
11/28	*	150	0	166	28	59
12/5	*	70	14	252	40	15
12/8	*	1533	16	0	0	60
12/12	*	43	12	0	0	0
12/15		-	47	0	0	0
12/19		0	0	0	20	16
12/22		0	31	0	0	31

* Denotes when Aroclor 1105 was being produced during the sampling period.

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I. THE PRESENCE OF AROCLOR 1221 (continued)

100 ppb in the Influent stream of the Waste Treatment Plant represents about 11# PCB/day to sewer.

Harry Campbell has examined past chromatographs in July, August, September, and October and reports "no definite observation of 1221 was noticed. This appears to have occurred on or about 11/3/71." Harry reports, however, periods when there existed a fair to good possibility of the presence of Aroclor 1221 in past samples. He also stated there was a good possibility of 1105 being present on 9/1 and 9/12. This coincides with short production runs of 1105.

The data would indicate:

A. PCB's called 1221 that are present are coming from the production department via 4-Z.

B. The Department 246 sewer at 4-Z could be flowing from the plant via 1-B and not 2-A as we currently believe.

C. During the period when the department was producing 1105, about 20#/day of 1221 (?) were getting into the sewer. If we continue to produce 1105 it will not be possible to reach our goal of 1#/day loss with the existing facilities. Additional scrubbing equipment will be required to reach goal.

D. Further discrepancies in our present sampling techniques are evident because the streams do not balance with regard to the 1221 analyses.

II. DIVERSION OF SEWER FLOW AT DEPT. 246 (4-Z) FROM MAIN PLANT SYSTEM

The west exit from 4-Z was boarded closed on 12/16 and most of the water flow has been directed to the north and then to the Treatment Plant via Monsanto Avenue.

II. DIVERSION OF SEWER FLOW AT DEPT. 246 (4-Z) FROM MAIN PLANT SYSTEM (continued)

Date	(2-A) 24" Sewer		(1-B) 30" Sewer	
12/5	38 ppb		291	
12/8	48		122	
12/12	50		-	
12/13	79		28	
12/14	124		10	
12/15	157		9	
12/16	42		4	
Avg. to Date	77 ppb		66 ppb	
12/19	38 ppb	15	9 ppb	4
12/22	97	1	19	3
12/23	132	32	3	11
Avg.	89 ppb	53 ppb	10 ppb	8

(43)

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To date the 24" sewer is running about the same but the 30" sewer indicates a reduction. Additional samples are being obtained before conclusions are made.

Plans are to reroute the sewer back to its normal direction on 12/30/71. A more complete analysis will then be made.

III. SLOW VERSUS FAST SAMPLING PUMPS

Fast sampling pumps were installed at the 24" and 30" sewers at 2-A and 1-B. Data from the slow and fast pumps are being compared at these locations since 12/12.

Date	(2-A) 24" Sewer Slow	Fast	(1-B) 30" Sewer Slow	Fast
12/10,11,12	50 ppb	169 *	-	168
12/13	79	431	28	2217 *
12/14	124	231	10	4136 *

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III. SLOW VERSUS FAST SAMPLING PUMPS

Date	(2-A) 24 " Sewer Slow	Fast	(1-B) 30" Sewer Slow	Fast
12/15	157	252	9	1132 *
12/16	42	366	4	330
12/17,18,19	38	126 *	9	1592 *
12/20,21,22	97	-	19	1226
12/23	132	251	3	15

* Denotes sample collector overflowed; thus, abnormal amount of solids present.

On sample 2-A there is a ratio of slightly less than 3:1 when comparing fast with slow results. The data from 1-B is too erratic for analyses.

Plans are to install an isokinetic sampler at the Plant Treatment influent stream. After verification of the results by getting a traverse within the accuracy of the method, we will use the influent analyses as the criteria for judging how well in-plant controls are serving to attain our goal of 1 #/day. Expect the sampler to be installed by 12/31/71. To get isokinetic traverse week of 1/3/72.

Edward E. Stewart

/emz