Publication No. 74-e59

June 6, 1974

Memo to: Jim Knudson

From: Pat Lee

Subject: Survey at St. Regis Paper in Tacoma.

A four hour effluent survey was conducted at the St. Regis Paper Company in Tacoma on March 12, 1974. The effluents from the wood room clarifier and the main clarifier were composited for the four hour period, split with St. Regis personnel and brought to Olympia and analyzed. These results are reported below:

Analysis	Wood Room Clarifier Effluent DOE Results	Wood Room Clarifier Effluent St. Regis Res.	Main Clarifier Effluent DOE Results	Main Clarifier Effluent St. Regis Res.
BOD ppm @ 20°	68	56	187	205
K @ 20°	.15		.14	
L @ 20°	89		303	
BOD ppm @ 30°	68		205	
K @ 30°	.15		.13	
L @ 30°	89		245	
T.S.S. ppm Whatman "40"	176	128	71	51
S.C.S. ppm Whatman "40"	99	63	60	38
T.S.S. ppm Gooch	201		49	
S.C.S. ppm Gooch	131		47	
Turbidity	65		55	
Color	650		1300	

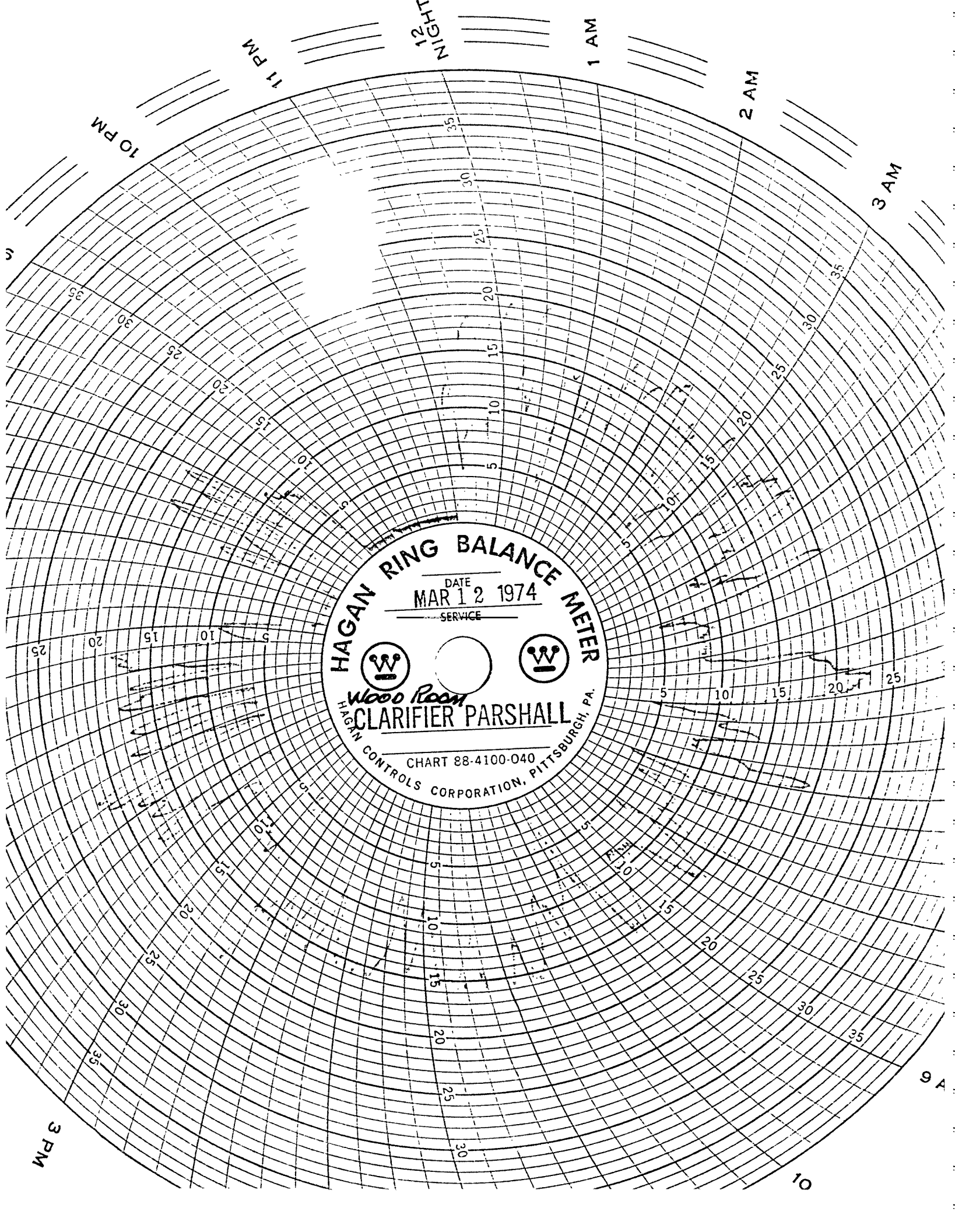
The agreement between the two different labs is pretty good with respect to BOD analysis. All these results are averaged from two or more separate BOD tests and the extreme values overlap thus showing good consistency. In the suspended solids portion of the results, some discrepancies show up. The data from the St. Regis lab is pretty consistently about 30% lower than the DOE results. Normally analysis by using the Gooch crucible gives higher suspended solids amounts than the Whatman "40" filter paper due to the differences in pore size. However, on the main clarifier effluent, our lab reported higher S.S. concentrations using Whatman "40" than with the fiberglass pads. That fact, combined with the changes in personnel that our lab was having then probably explain the differences.

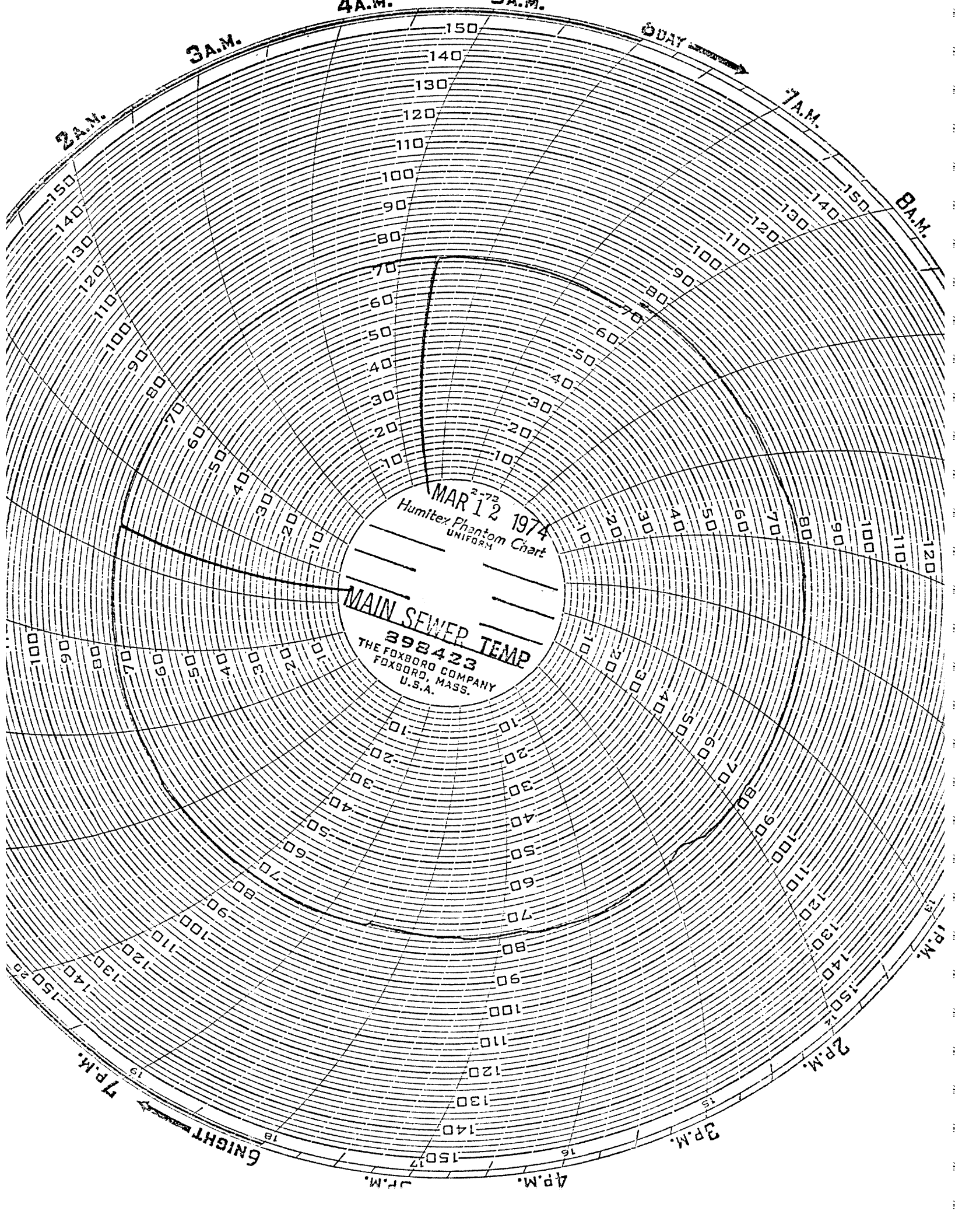
I also conducted a series of field analyses at four different locations throughout the plant. The data obtained is as follows:

Time	Wood Clarifier				Main Clarifier				Silo	Filter Backwash (002)				Line above 002
	S.S.	Cond	Temp	pH	S.S.	Cond	Temp	pH	pH	S.S.	Cond	Temp	pH	pH
1100	.10									Trace				
1200	.05	300	10.6	6.5	2.0	1650	28.0	8.1	6.9					
1230										Trace	350	6.8	9.2	
1300	.10	300	10.4	7.0	1.3	1600	27.8	8.8	8.6					
1330										Trace	800	6.9	10.4	
1400	.10	300	10.2	6.8	.75	2000	28.2	7.2	7.4					
1430										Trace	600	6.9	10.2	10.0
1500		300	10.4	6.9		1800	27.4	7.4	7.8					

The above data is pretty well self-explanatory but a few observations are in order. The difference in pH between the silo and the main clarifier effluent could be explained by either lack of mixing at the main clarifier effluent (which is where St. Regis installed their pH meter) or the pH is changing that fast. I tend to think that the first reason is more logical. As I made my last trip to 002, I noticed a line discharging to the ground right above the outfall. It was obvious that this discharge was going to the river because of erosion between it and the Puyallup. Field analysis showed a pH of 10.0 and a temperature of 6.7°C. I also sampled off the rock pier adjacent to St. Regis and off the dock near the main clarifier effluent. As would be expected, there was an increase in temperature and pH. I also enclose the copies of the flow temperature, and pH circular charts that Mr. McClain of St. Regis was kind enough to send me.

PL:jmh


HAGAN RING BALANCE METER
DATE
MAR 12 1974
SERVICE
WOOD ROOM
CLARIFIER PARSHALL
CHART 88-4100-040
HAGAN CONTROLS CORPORATION, PITTSBURGH, PA.
12 NIGHT
1 AM
2 AM
3 AM
10 PM
11 PM
3 PM


MAR 12 1974
Humitex Phantom Chart
UNIFORM
MAIN SEWER TEMP
398423
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.
DAY
NIGHT
2A.M.
3A.M.
4A.M.
5A.M.
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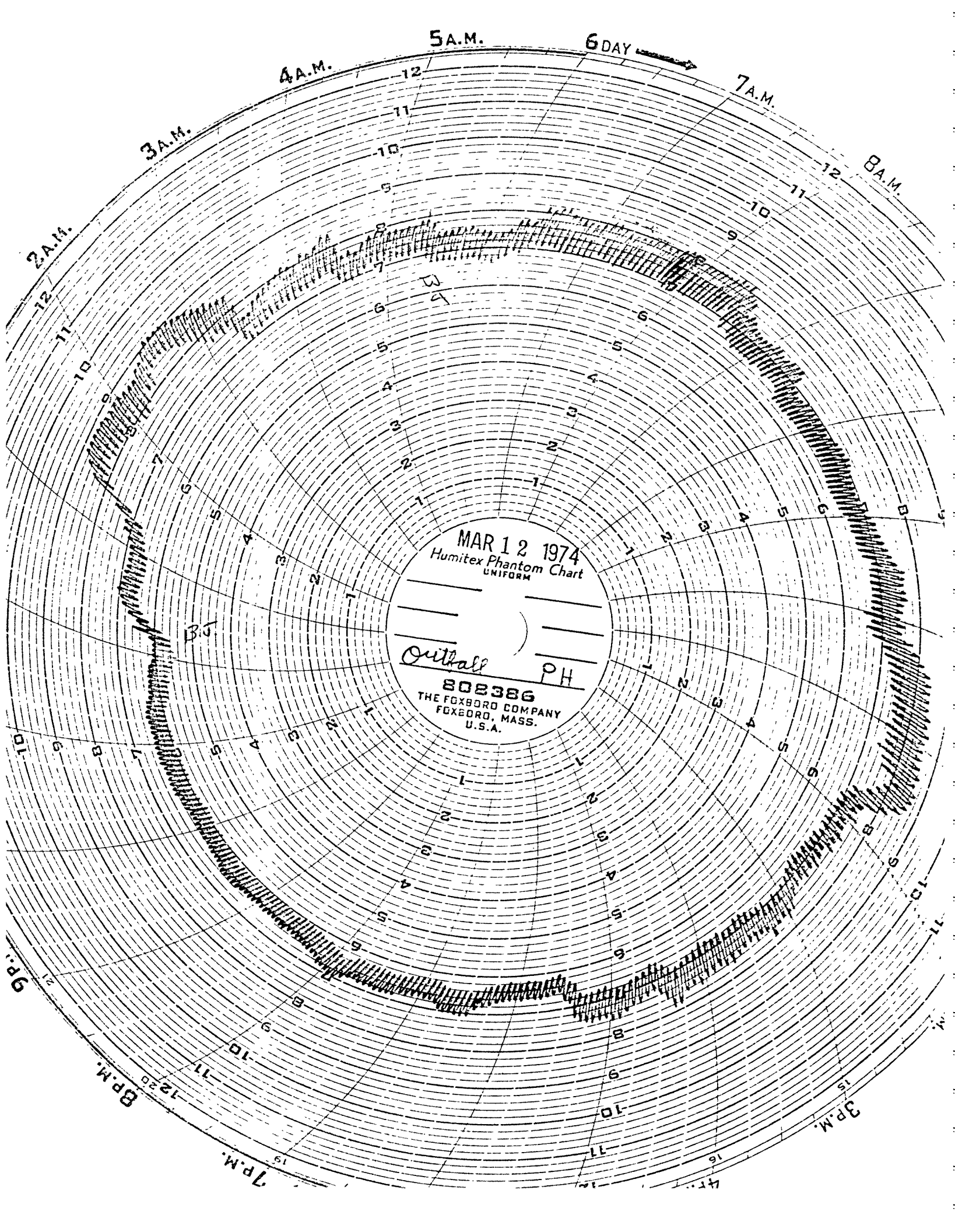
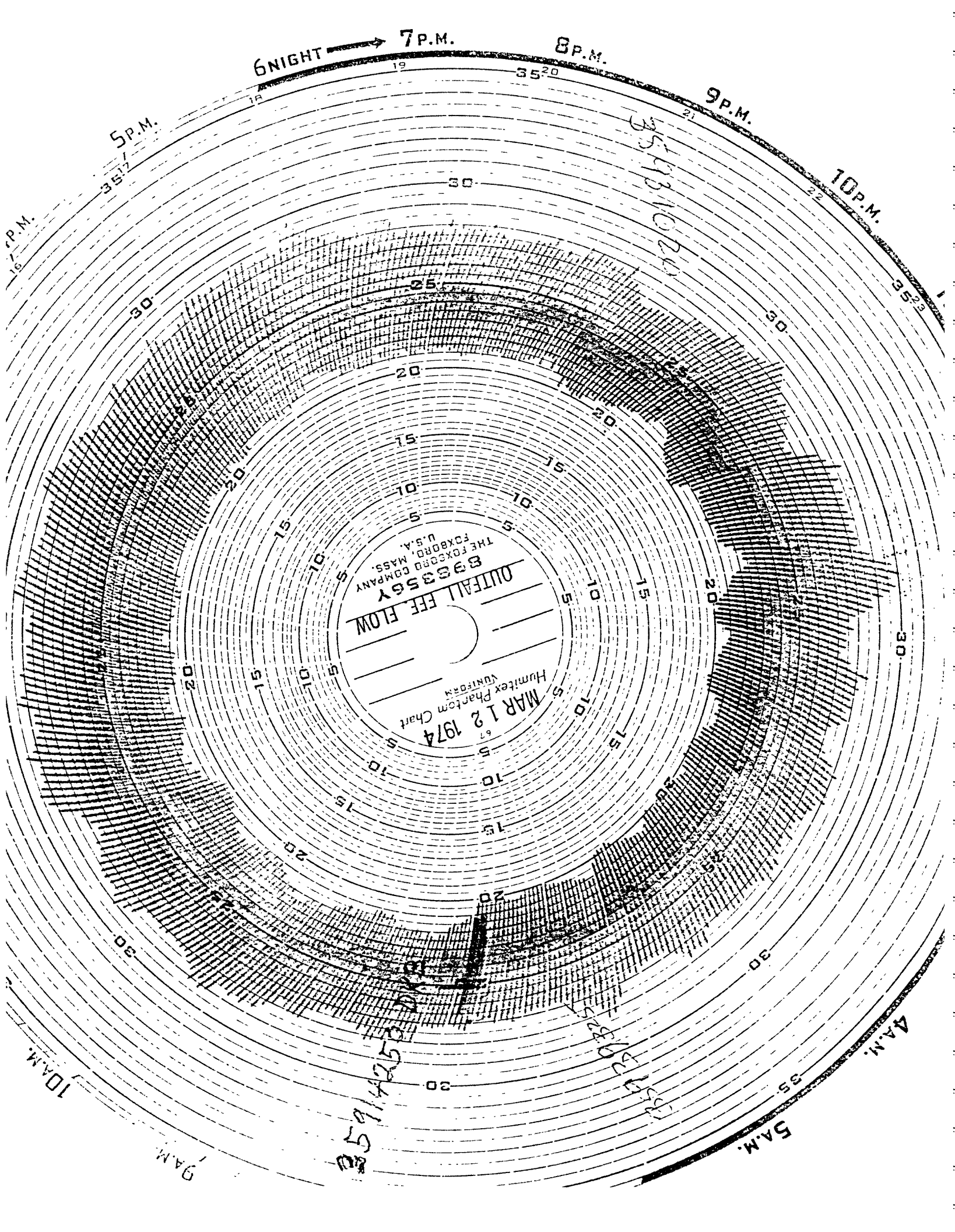

5A.M.
6 DAY
4A.M.
7A.M.
3A.M.
8A.M.
2A.M.
9P.M.
8P.M.
7P.M.
3P.M.
MAR 12 1974
Humitex Phantom Chart
UNIFORM
Outfall
PH
808386
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.


6 NIGHT
7 P.M.
8 P.M.
9 P.M.
10 P.M.
5 P.M.
4 A.M.
5 A.M.
9 A.M.
10 A.M.
MAR 12 1974
Humitex Phantom Chart
OUTFALL EFF FLOW
893356Y
THE FOXBORO COMPANY
FOXBORO, MASS.
U.S.A.