COMPANY CONFIDENTIAL

Monsanto

Anniston Plant

TECHNICAL SERVICES DEPARTMENT

MONTHLY REPORT

Anniston

J. T. Bell
J. L. Corder
A. G. Hill
G. L. Jessee
L. C. Lahman
J. C. Landwehr
H. E. Schulte
W. F. Taffee

General Offices

H. C. Carder
D. Danna (5)
M. W. Farrar
P. B. Hodges
F. J. Holzapfel
D. B. Hosmer
R. E. Howard
W. K. Johnson
C. F. Luecke
W. R. Richard
W. R. Robirds
C. W. Roos
J. R. Savage
J. E. Smith
J. A. Stephens

South Second St.

P. O. DeGarmo

Other Locations

A. H. Forsten - Alvin, Texas

D. W. Jackson - W.G.K.

Summary

OCTOBER 1970

COST IMPROVEMENT RESULTS

	Est. Act.	Target	% of Target
Month	$74,570	$78,975	94.5%
YTD	$709,703	$621,755	114%

Organic Division

Initial results of the Polyphenyl Tubular Unit test indicates capacity of 92 mm lbs./year of polyphenyls at 50/50 - biphenyl/Santowax C split. Testing is continuing in order to verify/increase capacity of unit.

Redesigned chlorine spargers installed in one Solid Aroclor chlorinator has decreased free chlorine in HCl off-gas. Tentative Amendment "D" to use aluminum and/or $AlCl_3$ catalyst in Aroclor 5460 process was verbally approved and use of aluminum has further decreased the free chlorine. Test continues.

Progress report on the production of low color Aroclor 5460 in Sep 70 was issued.

Evolutionary Operation was begun in Aroclor 5460 to optimize chlorinator-still bottoms. Early results indicate a 30% reduction in still bottoms, with a potential yield savings of $70,000.

HCl - Project 3512 (HCl Catch Tank) was transmitted to Maintenance 10/15/70, catch tank arrived 10/21/70. Shop fabrication of pipe and supports started week of 10/26.

DSW 014920

AN - 306

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STLCOPCB4003296

Project 3690 (HCl Fume Collection and Scrubbing Systems) - AFE issued 10/26/70 for $35M NFC, $7M expense and $3M dismantling. Project forwarded for approval. Detail design now in progress. The project includes two separate systems for collecting and scrubbing fumes. One system will handle the loading operations and the other will handle storage tank vents, process tank vents and tails tower vent.

Carbon adsorption studies of the Aroclor sump effluent are continuing. After over 4 weeks of continuous operation, the effluent PCB level is still low (10 ppb).

The promoter scanning study and mid-point injection phase of the Polyphenyl Pilot Studies is approximately 95% complete. The target date for issuing the report covering work to date is 11-16-70.

PR&D studies directed toward solving handling problems of methyl and ethyl intermediate residue were initiated 10-15-70.

A progress report was issued on the plant demonstrations of Tentative Process Amendments: 1) Chlorination in the Presence of Acetone, and 2) Diesel Fuel as a Diluent for Still Residue. As a result of failure of these amendments because of sulfur and residue handling problems, a program was begun in PR&D to determine alternate means, other than a straight take-over distillation, for separating the intermediate product in chlorinated thio acid from sulfur and residue.

A work plan was prepared for returning parathion condensation yields to the standard once operations resume in early 1971.

Drafting was begun on an experimental project to increase the efficiency of the cone tank for removing Parathion from waste water.

Quality Control

The Plant Quality Score was 73.8, down 3.1 from September, with a YTD score of 84.4 against a target of 95.0. Pollution components were placed under the routine surveillance program.

Pollution Control

J. T. Bell, J. C. Landwehr and E. G. Wright met with Mr. J. L. Crockett (Technical Staff Director, A.W.I.C.) to discuss Anniston plant progress and plans on the PCB problem. Aroclor losses during October averaged 3.1 #/day. Planning is active and a project is being prepared for renovation of the old limestone pit. The entire Anniston plant program was reviewed with Messrs. Mason and Papageorge on October 16.

J. C. Landwehr

:kd

DSW 014921

PLANT LABORATORIES

ANALYTICAL AND QUALITY CONTROL - S. O. Kemp

Complaint Report

Quality

Number	Material	Customer	Reason
ATL-30-P	Muriatic Acid	Olin Corporation	High Iron

YTD Quality Complaints/100 Shipments 0.29

Target 0.20

DSW 014922

COMMUNITY RELATIONS, PERSONNEL, RECRUITING AND DEVELOPMENT

Community Relations

1. J. L. Brown, Ish Ransaw, W. F. Taffee, and J. L. Etheredge visited Reichold Chemical, October 6, to view the Biodize pilot waste treatment equipment.

2. Ish Ransaw attended "Industrial Waste Treatment & Water Pollution Seminar" at Bessemer branch University of Alabama, October 13-16.

3. J. T. Bell attended organizational meeting of Central Alabama AIChE Air & Water Pollution Committee in Birmingham, October 15.

4. J. T. Bell, E. G. Wright, and J. C. Landwehr met with Alabama Water Improvement Commission Technical Staff Director in Montgomery, October 23.

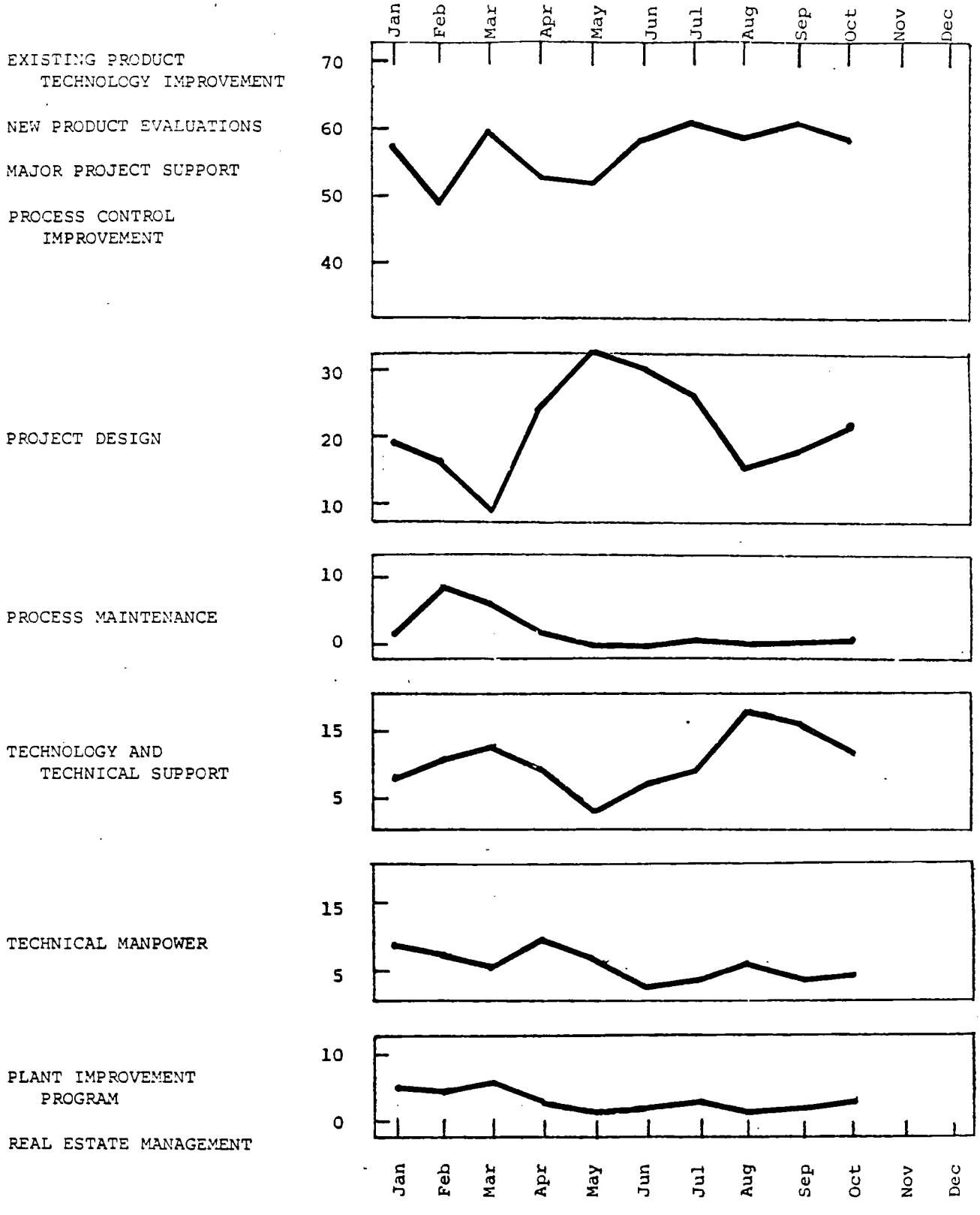
Visitors

1. J. C. Mahaney and J. V. Castelli, Pfaudler Corporation, presented technical seminar on "Wiped Film Distillation," October 1. The seminar was attended by TSD Engineers and PR&D Chemists.

2. W. B. Papageorge and John Mason visited the Anniston Plant for a review of PCB pollution abatement program, October 16.

3. Dr. Gerald Gunning (Tulane University) presented an analysis and proposal for study of Choccolocco Creek aquatic environment and its relationship to PCB.

1970 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



DSW 014924

STLCOPCB4003300

ORGANIC DIVISION

1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FUNCTIONAL FLUIDS	TAR												
	EST												
	ACT												
Disposal of Liquid Montar	TAR			1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
	EST			0	0	0	0	0	0	0	-		
	ACT			0	0	0	0	0	0	0			
#3 Aroclor Still New Burners	TAR		1500		1500								
	EST		600		500								
	ACT		600		500								
#2 Still Entrainment Separator	TAR							3000			3000		
	EST							0			-		
	ACT							0					
1242 Distillation Productivity	TAR			1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	EST			0	100	1000	1520	2565	2000	1210	660		
	ACT			0	100	1000	1520	2565	2000	1210			
	TAR												
	EST												
	ACT												
PLASTICIZERS	TAR												
	EST												
	ACT												
Flaking & Drumming Facilities Headcount	TAR	3000	3000	2000	1000	1000							
	EST	3000	3000	2000	1000	1000							
	ACT	3000	3000	2000	1000	1000							
Solid Aroclor Instrumentation	TAR				3750	3750	3750	3750	3750	3750	3750	3750	3750
	EST				0	0	0	0	0	0	-		
	ACT					0	0	0	0	0			
Sandvik Belt	TAR							2250	2250	2250	2250	2250	2250
	EST							0	0	0	-		
	ACT							0	0	0			
Add Tray Stripping Sections to Santowax	TAR				4580	4580	4580	4580	4580	4580	4580	4580	4580
	EST				0	0	0	0	0	0	-		
	ACT				0	0	0	0	0	0			
Cl_2 Bulk Handling Facilities	TAR	2000	2000	2000	2000								
	EST	3500	3550	1950	3440								
	ACT	3500	3550	3050	3440								
Solid Aroclor Expansion	TAR		30000	50000							30000		
	EST		49500	50000	10000	36000	24000	20000	17900	43000	72000		
	ACT		51900	55900	10500	38500	23500	24700	27600	45000			
Chlorinator Back Pressure	TAR									360	360	360	360
	EST									0	-		
	ACT									0			
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 014925

STLCOPCB4003301

ORGANIC DIVISION

1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
FUNCTIONAL FLUIDS & PLASTICIZERS	TAR												
	EST												
	ACT		(AFFECTING BOTH BUSINESS GROUPS)										
Aroclor Warehouse Reduced Headcount	TAR	1000	1000	1000									
	EST	1000	1000	1000									
	ACT	1000	1000	1000									
Improved Santowax Yield	TAR			4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	EST			5900	2800	5800	4000	970	6630	6280	1910		
	ACT			4450	2800	5800	4000	970	6630	6280			
HB-40 Reduce Nickel Catalyst Usage	TAR			700	700	700	700	700	700	700			
	EST			1330	525	1230	425	0	0	540			
	ACT		1160	1335	525	2080	565	0	0	450			
Substitution of Santowax C for Santowax R	TAR											20000	20000
	EST												
	ACT												
	TAR												
	EST												
	ACT												
GENERAL CHEMICALS	TAR												
	EST												
	ACT		(BIPHENYL, PNP, HCl)										
Biphenyl Cooling Water Treatment	TAR	600	600	600	600	600	600	600					
	EST	670	680	580	600	670	440	290					
	ACT	670	680	580	600	675	440	290					
PNP Modify Acidifier Dump Valve System	TAR							625	625	625	625	625	625
	EST				625	625	625	625	625	625	-		
	ACT				625	625	625	625	625	625			
Install Entrainment Separator - Production	TAR							5500	5500	5500	5500	5500	5500
	EST							0	0	0	-		
	ACT							0	0	0			
Optimize Reactor Variables-PNP	TAR	3150	3150	3150	4630	4630	4630	4630	4630	4630	4630	4630	4630
	EST	520	1277	2164	127	1604	0	1525	1780	2368	-		
	ACT	520	3016	2164	127	1605	0	1525	1780	2368			
Re-use Well Water	TAR										500	500	500
	EST										-		
	ACT												
Untargeted PNCB Heel Credits	TAR												
	EST		2275	563	3078	1650	920	410	550	753			
	ACT		2275	563	3078	1650	920	410	550	753			
HCl HCl Catch Tank & Coalescer	TAR	5700	5700	5700	5700	5700							
	EST	2500	7560	9000	10300	6545							
	ACT	2500	7560	9000	10300	6545							
150 M Gallon Storage Tank	TAR	4300	4300	4300	4300	4300	4300						
	EST	4300	4300	4300	4300	4300	4300						
	ACT	4300	4300	4300	4300	4300	4300						
HCl Instrumentation	TAR				1875	1875	1875	1875	1875	1875	1875	1875	1875
	EST			4000	12300	3440	6500	3940	8160	12900	0		
	ACT			4000	12300	3440	6500	3940	8160	10400			
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 014926

STLCOPCB4003302

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	TAR												
	EST												
	ACT												
	TAR												
PLANT WIDE	EST												
	ACT												
Improve Plant Power Factor	TAR	950	950	950	950	950	950						
	EST	900	900	916	790	800	845						
	ACT	940	914	840	790	810	845						
Central Air Compressor	TAR										1000	1000	1000
	EST										-		
	ACT												
	TAR	19900	19900	19900	19900	9950							
Chlorine Plant Shutdown	EST	19900	19900	19900	19900	9950							
	ACT	19900	19900	19900	19900	9950							
RTN Cooling Water to Tower Cooling Conveyor - P_2S_5	TAR							25	25	25	25	25	25
	EST							0	0	0	-		
	ACT							-	-	-			
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
Total Organic Month - M $	TAR	40.6	72.1	96.88	58.07	44.62	27.97	34.12	30.52	30.88	64.68	51.68	51.68
	EST	36.29	94.54	103.6	70.39	74.61	43.58	30.33	37.65	67.68	74.57		
	ACT	36.33	99.86	109.1	70.89	77.98	42.22	35.03	47.35	67.09			
Total Organic YTD - M $	TAR	40.6	112.7	209.6	267.6	312.3	340.2	374.3	404.9	435.7	500.4	552.1	603.8
	EST	36.29	130.9	239.8	315.7	390.8	437.7	467.7	510.0	587.6	661.4		
	ACT	36.33	136.2	245.3	316.2	394.1	437.3	472.4	519.7	586.8			

DSW 014927

AG DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
PARATHIONS	TAR												
	EST												
	ACT												
Replace #3 Chlorinator	TAR					3500	3500	3500	3500				
	EST				4860	2340	0	0	0				
	ACT				4860	2340	0	0					
Improve Cl_2- Still Yields	TAR					3000	3000	3000	3000	3000	3000		
	EST					0	0	0	0	0			
	ACT					0	0	0	0	0	-		
Increase Chlor- inator Coolings	TAR								8500	8500	8500		
	EST								0	0	-		
	ACT								0	0			
Acetone Recovery	TAR	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	
	EST	1957	1069	1225	1935	130	715	0	0	0	-		
	ACT	1957	1069	1225	1935	130	715	0	0	0			
Chlorine Unloading	TAR	2250	2250	2250	3200	3200	3200	3200	3200				
	EST	3634	4237	3350	1406	3431	2430	1750	2710				
	ACT	3634	4237	3350	1406	3431	2430	1750	2710				
Optimize Methyl PNP/PCT Ratio	TAR					3000	3000	3000	1500				
	EST					0	0	0	0				
	ACT					0	0	0	0				
Optimize Ethyl PNP/PCT Ratio	TAR	500	750	750								500	5
	EST	0	2641	0									
	ACT	0	2641	0									
Change Cooling H_2O - Item 737	TAR	200	200	200									
	EST	310	230	270									
	ACT	310	230	270									
Untargeted: Plant Test - ~~Freon-21~~	TAR												
	EST				2430	5270							
	ACT				2430	5270							
	TAR												
	EST												
	ACT												
Total AG - Month M $	TAR	5.75	6.0	6.0	6.0	15.5	15.5	15.5	22.5	14.3	14.3	3.3	
	EST	5.90	8.17	4.85	10.63	11.2	3.15	1.75	2.71	0	-		
	ACT	5.90	8.17	4.85	10.63	11.2	3.15	1.75	2.71	0			
Total AG YTD M $	TAR	5.75	11.75	17.75	23.75	39.25	54.75	70.25	92.75	107.1	121.4	124.7	125.
	EST	5.90	14.08	18.92	29.55	40.73	43.87	45.62	48.33	48.33	48.33		
	ACT	5.90	14.08	18.92	29.55	40.73	43.87	45.62	48.33	48.33			
	TAR												
	EST												
	ACT												
Total Plant Month M $	TAR	46.35	78.1	102.9	64.07	60.12	43.47	49.62	53.02	45.18	78.98	54.98	52.
	EST	42.19	102.8	108.5	81.02	85.79	46.72	32.08	40.36	67.68	74.57		
	ACT	42.23	108.0	113.9	81.52	89.15	45.36	36.78	50.06	67.09			
Total Plant YTD M $	TAR	46.35	124.5	227.3	291.4	351.5	395.0	444.6	497.6	542.8	621.8	676.7	728.
	EST	42.19	145.0	258.8	345.3	431.5	481.6	513.3	558.3	635.7	709.7		
	ACT	42.23	150.3	264.2	345.8	434.9	481.2	518.0	568.0	635.1			

DSW 014928