COMPANY CONFIDENTIAL

Monsanto

Anniston Plant

TECHNICAL SERVICES DEPARTMENT

MONTHLY REPORT

Anniston

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General Offices

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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

AUGUST 1970

COST IMPROVEMENT RESULTS

	Est. Act.	Target	% of Target
Month	$40,355	$53,015	76%
YTD	$558,347	$497,605	112%

Organic Division

The Aroclor Process Sump was put into service on 8/12/70 bettering the revised startup date of 9/1/70 by almost three weeks and the original date (10/15/70) by two months.

The initial phase of the Aroclor waste effluent carbon treatment studies is complete. In the 13 day pilot run, initial concentrations of 1000 - 8000 ppb Aroclor in waste water were reduced to a range of 0-15 ppb upon passing through the series of 1" diameter packed carbon beds at an average flow rate of 25 cc/min. Over 99% of Aroclor removal occurred in the 6" deep carbon prefilter. This unusual reduction is believed to be due to the filtration of solids on which Aroclor was adsorbed. The study is presently being divided into two phases: (1) feasibility studies for continuous solids (with Aroclor) removal from limestone pit effluent, and (2) carbon adsorption from the clear stream at the Aroclor sump.

Redesigning of Aroclor chlorinator spargers will give better chlorine distribution, resulting in reduction of free chlorine in the off gas. This is a potential cost improvement of $31,000 in chlorine usage and is an integral part of Aroclor-HCl pollution abatement.

DSW 551459

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STLCOPCB4089876

The joint Research-PR&D study on Montar 9 is progressing on schedule. Twelve gallons of M-9, distilled by Organic Research, were used to prepare samples of high quaterphenyl (up to 50%) material hydrogenated 30%, to 100%. These samples will be used for market evaluation. EDC is 9-25-70.

The low color 5460 plant test is scheduled for the week of 9/7/70. This test is aimed at reducing the color to 1.25 NPA.

The delayed-promoter injection phase of the Polyphenyl Pilot Studies has been delayed by a burned-out reactor heater and then a coked reactor. The new reactor has now been installed and was started up on 8/31.

Construction for the expansion of HB-40 (CEA 1482) is approximately two weeks ahead of schedule with startup tentatively scheduled the week of November 16.

Revised design and estimate for Bulk Plasticizer Terminal was reviewed with J. E. Smith.

The following HCl recovery improvement work has been completed or is in progress.
1. Pressure by-pass loop installed by CED on CEA 2080 was relocated, calibrated and is presently working well, eliminating sewering of acid through this line.
2. Drain taps were installed on carbon towers to allow batch pretreating of fresh charges to eliminate iron. Previously total production was sewered during pre-treatment.

An HCl fume collection/scrubbing system for docks and storage tanks has been proposed. The project will significantly reduce water load to sewer and subsequent treatment for PCB removal.

PNP had a very good production month (1,862,860#) with excellent on-stream time (93.7%).

Agricultural Division

Tests of Process Amendments "Chlorination in the Presence of Acetone" and "Hydrocarbon Dilution of Still Residue" was restarted on 8/10/70. The residue hold tank temperature was maintained at 60-70°C., compared to 50-60°C. normally. Revised operating conditions were not successful in preventing residue from precipitating from the diesel fuel. Higher temperatures apparently caused the formation of some very large balls in the hold tank and the test was stopped.

The "Hydrocarbon Dilution" amendment was then tested independently. Results to date indicate increased yields and that the diesel fuel is a good residue pump-out aid. No problems have been experienced in the hold tank or in burning the residue as yet.

Experimental operation of #1 Parathion intermediate still verified predictions from process analysis of higher yields from controlling the profile of steam input with time. An average improvement of 200# per batch was achieved, worth $35,000 on methyl parathion at 1971 rates.

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Quality Control

The Plant Quality Score was 87.9, up 1.9 from July, with a YTD score of 86.0 against a target of 95.0. Improved Aroclor 1242 uniformity and PNP quality were proved.

Pollution Control

Monsanto has been dropped as a defendant in the class action suit by Bass Anglers Sportsman Society against over 200 industries in the State of Alabama.

Aroclor in plant effluent showed a sharp increase in August, concurrent with high solids out of the limestone pit. Work has begun on an interim HCl neutralization facility so that the existing pit can be decontaminated and improved without interruption in waste water treatment.

J. C. Landwehr

:kd

PLANT LABORATORIES

ANALYTICAL AND QUALITY CONTROL - S. O. Kemp

Complaint Report

Quality

Number	Material	Customer	Reason
ATL-18-P	Muriatic Acid	F. H. Ross	Assay
NY-51-P	Santowax R	Raybestos-Manhattan	Lumps

YTD Quality Complaints/100 Shipments 0.32

Target 0.20

COMMUNITY RELATIONS, PERSONNEL, RECRUITING AND DEVELOPMENT

Community Relations

1. J. C. Landwehr attended the Air & Water Resources Sub Committee meeting in Birmingham, Alabama on August 14.

2. Dr. Lowell Taylor and Group from Auburn University visited to discuss recruiting and Co-Op program with Auburn University on August 19.

Personnel Development

1. S. O. Kemp spent August 27 and 28 in St. Louis on special training for PCB analysis on Aroclor 5460 with E. M. Emery at Organic Research.

2. J. T. Bell and J. L. Brown attended Coaching and Appraisal course at Holiday Inn - Oxford on August 13 and 14.

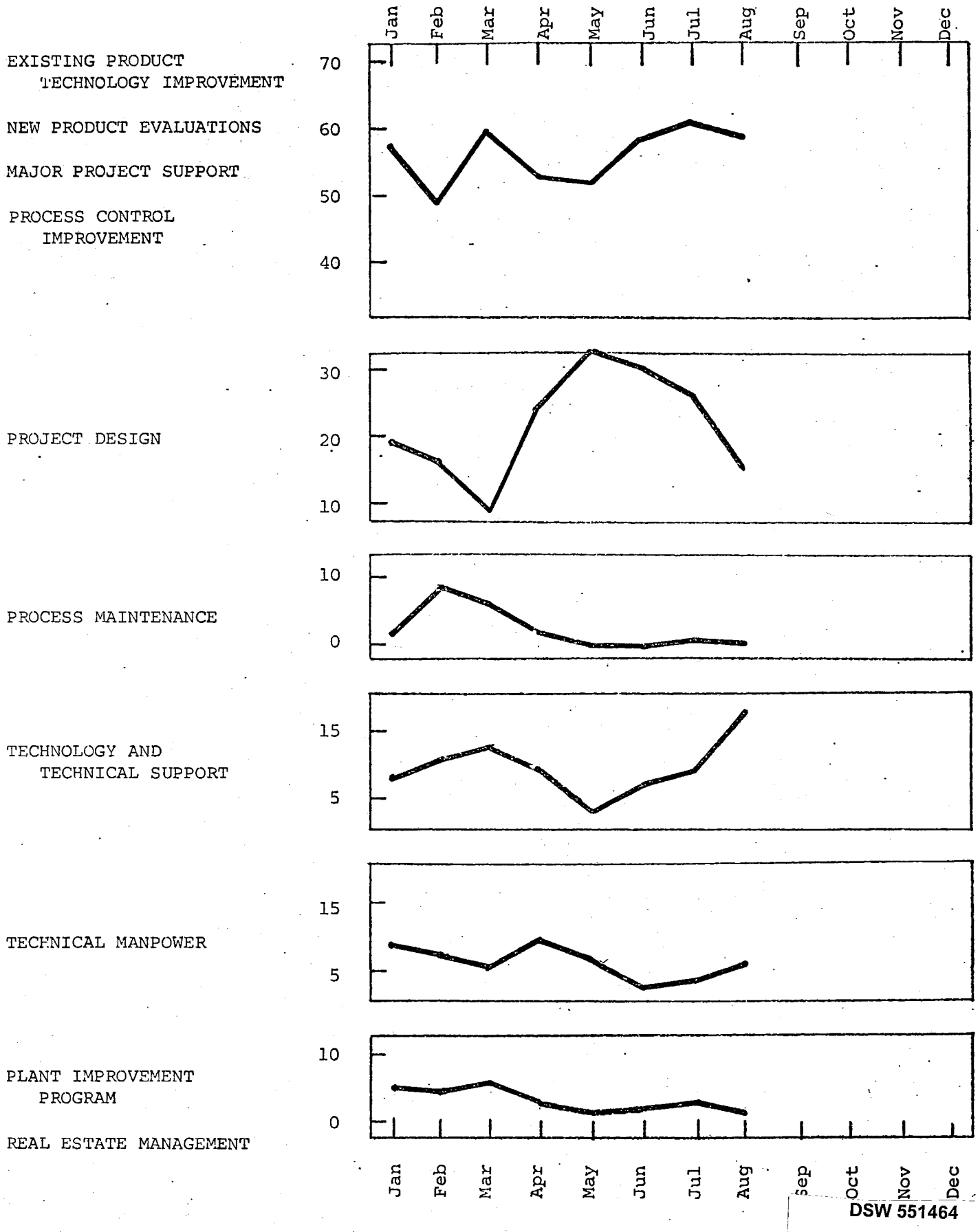
3. T. W. Lawrence transferred from Technical Services to position of Plant Safety Engineer on August 31, 1970.

Visitors

1. J. E. Smith, St. Louis, visited concerning Bulk Plasticizers Terminal - August 4 and 5.

2. J. R. Savage, St. Louis, visited to review Cost Standards - August 17.

1970 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



DSW 551464

STLCOPCB4089881

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				
	ACT			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				
	ACT			0	100	1000	1520	2565					
	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				
	ACT					0	0	0					
Sandvik Belt	TAR							2250	2250	2250	2250	2250	2250
	EST							0	0				
	ACT							0					
Add Tray Stripping Sections to Santowax	TAR				4580	4580	4580	4580	4580	4580	4580	4580	4580
	EST				0	0	0	0	0				
	ACT				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				
	ACT		51900	55900	10500	38500	23500	24700					
Chlorinator Back Pressure	TAR									360	360	360	360
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 551465

STLCOPCB4089882

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				
	ACT			4450	2800	5800	4000	970					
HB-40 Reduce Nickel Catalyst Usage	TAR			700	700	700	700	700	700	700			
	EST			1330	525	1230	425	0	0				
	ACT		1160	1335	525	2080	565	0					
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				
	ACT				625	625	625	625					
Install Entrainment Separator - Production	TAR							5500	5500	5500	5500	5500	5500
	EST							0	0				
	ACT							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				
	ACT	520	3016	2164	127	1605	0	1525					
Re-use Well Water	TAR										500	500	500
	EST												
	ACT												
Untargeted PNCB Heel Credits	TAR												
	EST		2275	563	3078	1650	920	410	550				
	ACT		2275	563	3078	1650	920	410					
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				
	ACT			4000	12300	3440	6500	3940					
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 551466

STLCOPCB4089883

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	TAR	950	950	950	950	950	950						
Power Factor	EST	900	900	916	790	800	845						
	ACT	940	914	840	790	810	845						
Central Air	TAR										1000	1000	1000
Compressor	EST												
	ACT												
	TAR	19900	19900	19900	19900	9950							
Chlorine Plant	EST	19900	19900	19900	19900	9950							
Shutdown	ACT	19900	19900	19900	19900	9950							
RTN Cooling	TAR							25	25	25	25	25	25
Water to Tower Cooling Conveyor - P_2S_5	EST							0					
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
Total Organic	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
Month - M $	EST	36.29	94.54	103.6	70.39	74.61	43.58	30.33	37.65				
	ACT	36.33	99.86	109.1	70.89	77.98	42.22	35.03					
Total Organic	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
YTD - M $	EST	36.29	130.9	239.8	315.7	390.8	437.7	467.7	510.0				
	ACT	36.33	136.2	245.3	316.2	394.1	437.3	472.4					

DSW 551467

STLCOPCB4089884

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				
	ACT					0	0	0					
Increase Chlor-inator Coolings	TAR								8500	8500	8500		
	EST								0				
	ACT												
Acetone Recovery	TAR	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	
	EST	1957	1069	1225	1935	130	715	0	0				
	ACT	1957	1069	1225	1935	130	715	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					
Optimize Methyl	TAR					3000	3000	3000	1500				
PNP/PCT	EST					0	0	0	0				
Ratio	ACT					0	0	0					
Optimize Ethyl	TAR	500	750	750								500	50
PNP/PCT	EST	0	2641	0									
Ratio	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	.5
	EST	5.90	8.17	4.85	10.63	11.2	3.15	1.75	2.71				
	ACT	5.90	8.17	4.85	10.63	11.2	3.15	1.75					
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	125.2
	EST	5.90	14.08	18.92	29.55	40.73	43.87	45.62	48.33				
	ACT	5.90	14.08	18.92	29.55	40.73	43.87	45.62					
	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	52.18
	EST	42.19	102.8	108.5	81.02	85.79	46.72	32.08	40.36				
	ACT	42.23	108.0	113.9	81.52	89.15	45.36	36.78					
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	728.9
	EST	42.19	145.0	258.8	345.3	431.5	481.6	513.3	558.3				
	ACT	42.23	150.3	264.2	345.8	434.9	481.2	518.0					

DSW 551468

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