COMPANY CONFIDENTIAL

Monsanto

Anniston Plant

TECHNICAL SERVICES DEPARTMENT

MONTHLY REPORT

Anniston

A. G. Hill
G. L. Jessee
L. C. Lahman
J. C. Landwehr
G. W. Miller
H. E. Schulte
W. F. Taffee
H. L. Williams

General Offices

H. S. Bergen
H. C. Carder
D. Danna (5)
F. B. Elliott
P. B. Hodges
F. J. Holzapfel
D. B. Hosmer (2)
W. A. Kuhn
C. F. Luecke
J. A. Morgan
J. E. Smith
J. A. Stephens

OTHER LOCATIONS

A. H. Forsten - Alvin, Texas

D. W. Jackson - WGK

T. M. Patrick - So. 2nd St.

Summary

February 1970

Cost Improvement Results

	Est. Act.	Target	% of Target
Month	$102,719	$78,100	131.5%
YTD	$144,950	$124,450	116.5%

Organic Division

Jim Mattern and Charlie McIlwain will return to TSD March 9, after serving as shift supervisors on the Solid Aroclor expansion startup.

Study of the excessive free chlorine in Aroclor off-gas has indicated nine changes contributing to the problem, many relating to chlorine plant shutdown. Five of these have been corrected with two others being worked on. Free chlorine in Muriatic acid from the absorber is currently at a more reasonable 0-50 ppm level, reduced from January values of 3000 ppm; principle remedies have been correction of chlorine pressure and density controller errors, modifications of the tank car unloading instruments, and production on chlorinators 2, 4, & 9 being scheduled back on liquid Aroclor. Further improvement in control instrumentation is scheduled for week of March 23, to continue the action sequence planned to regain 5 ppm level.

Chlorine unloading dock problems have been greatly reduced with installation of smaller ball floats in empty car detectors. TSD helped to demonstrate successful operation in unloading 42 cars with no unknown piece cars. Need for $10,000 expenditure to modify piping now appears unnecessary. Excessive operating costs of $14,000 over the last nine months due to chlorine unloading problems will be saved with solution of this problem.

Two contributors to free chlorine in off-gas may not be readily corrected, requiring addition of off-gas scrubbing. The scrubber will react free chlorine with low chlorinated biphenyl in a packed tower; current estimated cost is $100 M. Such a scrubber is also being evaluated for its reduction of Aroclor waste to acid plant.

DSW 014978

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Uniformity of Liquid Aroclor: A reduction in the range of chlorinated biphenyl homologs has followed renovation of chlorinator instrumentation demanded by the Muriatic acid high free chlorine problem. Gravity-distillation range relationships have now shifted back to historical levels.

PR&D is developing information for the preparation of HB-40 from Santowax C. Savings in the range of $280,000/year are possible if this project can be applied in the plant. A Project Work Plan will be issued by 3/9/70 with initial effort directed toward determination of catalyst requirements to duplicate current plant cycle times.

Agricultural Division

The PR&D project to reduce isomeric by-products in production of ethyl PCT is scheduled for completion by 3/11/70. The study will continue on methyl PCT. The use of a minor quantity of acetone will reduce isomer formation in the preparation of ethyl PCT by 3-4% with anticipated savings of approximately $70,000 for each per cent reduction.

Process testing of Eimco filter for removal of solids from Parathion waste treatment began in February with turnover to Production scheduled for March.

A potential recovery of 13 $\overline{M}$ lbs./year of Muriatic acid from Parathion is possible. Contact has been made with absorber vendors to estimate NFC required. Some tax benefits may be available on pollution abatement.

To eliminate Parathion process downtime for tie-ins, projects for Alcohol Feed Control, Agitator Interlock Modifications, Condensation Reactor Steam Sparge Prevention, and Emergency Generator are being carried as far as possible now with final tie-ins scheduled for Spring turnaround.

Quality Control

The Plant Quality Score was 79.1, down 1.6 from January; with a YTD score of 79.8 against a target of 95.0. An improved uniformity of Liquid Aroclors has resulted from initial efforts in renovation of chlorinator control instrumentation.

Pollution Control

A Work Plan was issued to start routine sampling to trace PCB losses to point sources. Sampling will start during mid-March.

Equipment has been purchased to give the plant capability to start mobile air sampling in anticipation of increased state activity in this area.

Guidelines for more efficient operation of the HCl neutralization pit have been prepared in support of production.

J. C. Landwehr

:kd

DSW 014979

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BIPHENYL	TAR												
	EST												
	ACT												
Improved Santowax C Yield	TAR			4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	EST												
	ACT												
Biphenyl Cooling Water Treatment	TAR	600	600	600	600	600	600	600					
	EST	670	680										
	ACT	670											
	TAR												
	EST												
	ACT												
HB-40	TAR												
	EST												
	ACT												
Reduce Nickel Catalyst Usage	TAR			700	700	700	700	700	700	700			
	EST												
	ACT												
Substitution of Santowax C for Santowax R	TAR											20000	20000
	EST												
	ACT												
	TAR												
	EST												
	ACT												
PNP	TAR												
	EST												
	ACT												
Modify Acidifier Dump Valve System	TAR							625	625	625	625	625	625
	EST												
	ACT												
Install Entrainment Separator - Productivity	TAR							5500	5500	5500	5500	5500	5500
	EST												
	ACT												
Optimize Reactor Variables - PNP	TAR	3150	3150	3150	4630	4630	4630	4630	4630	4630	4630	4630	4630
	EST	520	1277										
	ACT	520											
Re-use Well Water	TAR										500	500	500
	EST												
	ACT												
Untargeted PNCB Heel Credits	TAR												
	EST		2275										
	ACT												
HCl	TAR												
	EST												
	ACT												
150 M Gal. Storage Tank	TAR	4300	4300	4300	4300	4300	4300						
	EST	4300	4300										
	ACT	4300											
HCl Catch Tank and Coalescer	TAR	5700	5700	5700	5700	5700							
	EST	2500	7560										
	ACT	2500											
HCl Instrumentation	TAR				1875	1875	1875	1875	1875	1875	1875	1875	1875
	EST												
	ACT												

DSW 014980

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ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LIQUID AROCLORS	TAR												
	EST												
	ACT												
Disposal of Liquid Montar	TAR			1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
	EST												
	ACT												
#3 Aroclor Still New Burners	TAR		1500		1500								
	EST		600										
	ACT												
#2 Still Entrainment Separator	TAR							3000			3000		
	EST												
	ACT												
1242 Distillation - Productivity	TAR			1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	EST												
	ACT												
Flaking & Drumming Facility-Headcount	TAR	3000	3000	2000	1000	1000							
	EST	3000	3000										
	ACT	3000											
Aroclor Warehouse -Reduced Headcount	TAR	1000	1000	1000									
	EST	1000	1000										
	ACT	1000											
	TAR												
	EST												
	ACT												
SOLID AROCLORS	TAR												
	EST												
	ACT												
Solid Aroclor Instrumentation	TAR				3750	3750	3750	3750	3750	3750	3750	3750	3750
	EST												
	ACT												
Sandvik Belt	TAR							2250	2250	2250	2250	2250	2250
	EST												
	ACT												
Add Tray Stripping Sections to Santowax	TAR				4580	4580	4580	4580	4580	4580	4580	4580	4580
	EST												
	ACT												
Cl_2 Bulk Handling Facilities	TAR	2000	2000	2000	2000								
	EST	3500	3550										
	ACT	3500											
Solid Aroclor Expansion	TAR		30000	50000							30000		
	EST		49500										
	ACT												
Chlorinator Back Pressure	TAR									360	360	360	360
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 014981

STLCOPCB4003357

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	TAR												
	EST												
	ACT												
	TAR												
MISCELLANEOUS	EST												
	ACT												
Improve Plant	TAR	950	950	950	950	950	950						
Power Factor	EST	900	900										
	ACT	940											
Central Air	TAR										1000	1000	1000
Compressor	EST												
	ACT												
	TAR	19900	19900	19900	19900	9950							
Chlorine Plant	EST	19900	19900										
Shutdown	ACT	19900											
RTN Cooling	TAR							25	25	25	25	25	25
Water to Tower Cooling Conveyor - P_2S_5	EST												
	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										
	ACT	36.33											
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										
	ACT	36.33											

DSW 014982

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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												
	ACT												
Improve Cl_2- Still Yields	TAR					3000	3000	3000	3000	3000	3000		
	EST												
	ACT												
Increase Chlor- inator Coolings	TAR								8500	8500	8500		
	EST												
	ACT												
Acetone Recovery	TAR	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	2800	
	EST	1957	1069										
	ACT	1957											
Chlorine Unloading	TAR	2250	2250	2250	3200	3200	3200	3200	3200				
	EST	3634	4237										
	ACT	3634											
Optimize Methyl PNP/PCT Ratio	TAR					3000	3000	3000	1500				
	EST												
	ACT												
Optimize Ethyl PNP/PCT Ratio	TAR	500	750	750								500	50
	EST	0	2641										
	ACT	0											
Change Cooling H_2O - Item 737	TAR	200	200	200									
	EST	310	230										
	ACT	310											
	TAR												
	EST												
	ACT												
	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	.9
	EST	5.90	8.17										
	ACT	5.90											
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	125.6
	EST	5.90	14.08										
	ACT	5.90											
	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	52.1
	EST	42.19	102.8										
	ACT	42.23											
Total Plant YTD M $	TAR	46.34	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										
	ACT	42.23											

DSW 014983

PLANT LABORATORIES

ANALYTICAL AND QUALITY CONTROL - S. O. Kemp

Complaint Report

Quality

Number	Material	Customer	Reason
2-A-70	Aroclor 1254	Radiation Machine Corp.	Poor flame retardance
3-A-70	Aroclor 1254	American Mineral Spirits Company	Contamination
4-A-70	Aroclor 5460	Yates Manufacturing Co.	Black specks

YTD Quality Complaints/100 Shipments 0.40 Target 0.20

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COMMUNITY RELATIONS, PERSONNEL, RECRUITING, AND DEVELOPMENT

Community Relations

1. J. C. Landwehr, G. W. Miller and E. G. Wright attended AIChE meeting in Auburn, February 24.

2. G. W. Richey acted as judge at Wellborn High School Science Fair, February 17.

Personnel

1. T. W. Ward left for armed services reporting to Aberdeen, Maryland.

2. J. F. Benson returned after a tour of duty in armed services, February 16, as Process Engineer in Technical Services.

3. C. W. Humphrey, Design and Drafting Co-Op from Alabama A&M, resigned to return to school.

Development

1. G. W. Miller went to the annual Associated Industries of Alabama meeting with the Alabama Congressional Delegation, February 1-2.

2. M. D. Turner spent week of March 15 in St. Louis with E. S. Tucker at Organic Research training for special Aroclor analysis.

3. J. F. Benson, K. G. Hale, W. H. Howard and I. Ransaw attended AIChE meeting in Atlanta on "Carbon Absorption", February 18.

4. J. T. Bell, K. G. Hale and T. W. Lawrence attended short course February 14 & 15 on "Reaction Engineering." E. E. Bowles attended "Surface Chemistry" short course on the same dates.

5. R. V. Carlisle and J. A. Veazey attended a presentation on Fisher Instruments on February 10, in Birmingham.

Visitors

1. W. A. Kuhn visited to discuss various technical programs on February 27.

2. G. O. Hunt, Electrical Section S&PP, visited the plant on February 26 concerning plant safety audit.

DSW 014985

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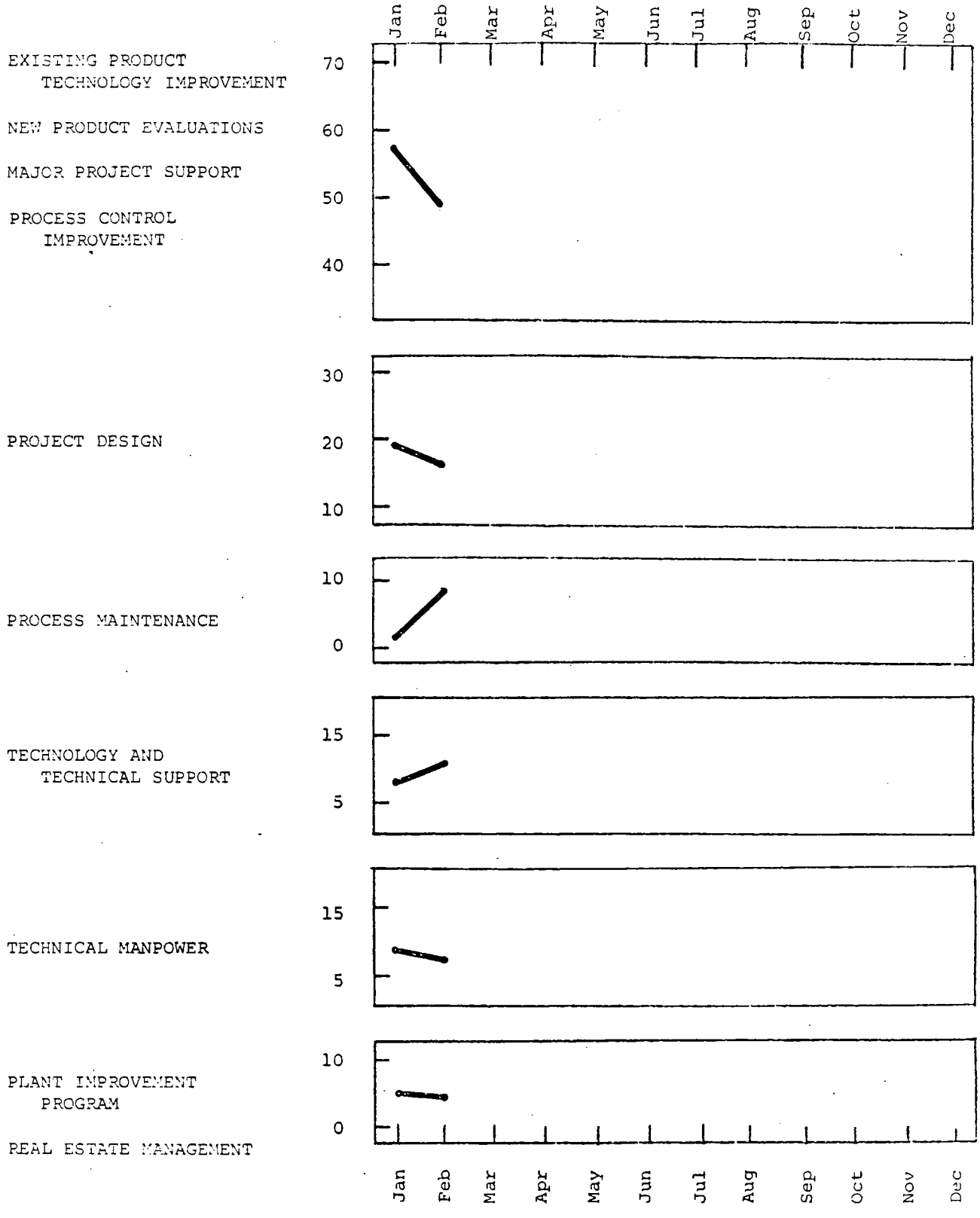
1970 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



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D

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

DO not include these sheets in Elliott, Luecke & Stephens Copy.

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
LIQUID AROCLORS	TAR												
	EST												
	ACT												
Disposal of Liquid Montar	TAR			1080	1080	1080	1080	1080	1080	1080	1080	1080	1080
	EST												
	ACT												
#3 Aroclor Still New Burners	TAR		1500		1500								
	EST												
	ACT												
#2 Still Entrainment Separator	TAR							3000			3000		
	EST												
	ACT												
1242 Distillation - Productivity	TAR			1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
	EST												
	ACT												
Flaking & Drumming Facility-Headcount	TAR	3000	3000	2000	1000	1000							
	EST	3000											
	ACT												
Aroclor Warehouse -Reduced Headcount	TAR	1000	1000	1000									
	EST	1000											
	ACT												
	TAR												
	EST												
	ACT												
SOLID AROCLORS	TAR												
	EST												
	ACT												
Solid Aroclor Instrumentation	TAR				3750	3750	3750	3750	3750	3750	3750	3750	3750
	EST												
	ACT												
Sandvik Belt	TAR							2250	2250	2250	2250	2250	2250
	EST												
	ACT												
Add Tray Stripping Sections to Santowax	TAR				4580	4580	4580	4580	4580	4580	4580	4580	4580
	EST												
	ACT												
Cl_2 Bulk Handling Facilities	TAR	2000	2000	2000	2000								
	EST	3500											
	ACT												
Solid Aroclor Expansion	TAR		30000	50000							30000		
	EST												
	ACT												
Chlorinator Back Pressure	TAR									360	360	360	360
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												
	TAR												
	EST												
	ACT												

DSW 014987

STLCOPCB4003363

D

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
BIPHENYL	TAR												
	EST												
	ACT												
Improved Santowax C Yield	TAR			4000	4000	4000	4000	4000	4000	4000	4000	4000	4000
	EST												
	ACT												
Biphenyl Cooling Water Treatment	TAR	600	600	600	600	600	600	600					
	EST	670											
	ACT												
	TAR												
	EST												
	ACT												
HB-40	TAR												
	EST												
	ACT												
Reduce Nickel Catalyst Usage	TAR			700	700	700	700	700	700	700			
	EST												
	ACT												
Substitution of Santowax C for Santowax R	TAR											20000	20000
	EST												
	ACT												
	TAR												
	EST												
	ACT												
PNP	TAR												
	EST												
	ACT												
Modify Acidifier Dump Valve System	TAR							625	625	625	625	625	625
	EST												
	ACT												
Install Entrainment Separator - Productivity	TAR							5500	5500	5500	5500	5500	5500
	EST												
	ACT												
Optimize Reactor Variables - PNP	TAR	3150	3150	3150	4630	4630	4630	4630	4630	4630	4630	4630	4630
	EST	520											
	ACT												
Re-use Well Water	TAR										500	500	500
	EST												
	ACT												
	TAR												
	EST												
	ACT												
HCl	TAR												
	EST												
	ACT												
150 M Gal. Storage Tank	TAR	4300	4300	4300	4300	4300	4300						
	EST	4300											
	ACT												
HCl Catch Tank and Coalescer	TAR	5700	5700	5700	5700	5700							
	EST	2500											
	ACT												
HCl Instrumentation	TAR				1875	1875	1875	1875	1875	1875	1875	1875	1875
	EST												
	ACT												

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D

ORGANIC DIVISION
1970 TSD COST IMPROVEMENT

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	TAR												
	EST												
	ACT												
	TAR												
MISCELLANEOUS	EST												
	ACT												
Improve Plant	TAR	950	950	950	950	950	950						
Power Factor	EST	900											
	ACT												
Central Air	TAR										1000	1000	1000
Compressor	EST												
	ACT												
	TAR	19900	19900	19900	19900	9950							
Chlorine Plant	EST	19900											
Shutdown	ACT												
RTN Cooling	TAR							25	25	25	25	25	25
Water to Tower Cooling Conveyor - P_2S_5	EST												
	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												
	ACT												
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											
	ACT												

DSW 014989

COMMUNITY RELATIONS, PERSONNEL, RECRUITING, AND DEVELOPMENT

Personnel

1. C. W. Humphrey, Design and Drafting Co-Op from Alabama A&M, started work on January 27 reporting to R. L. Brewer.

2. Effective February 2, W. G. Niemeyer transferred to CED's Process Design - Project Management group responsible for Organic Division plants.

Recruiting

1. Thomas J. Ward, Process Engineer - Mississippi State, reported to work February 1, for one month prior to induction in Armed Forces.

Development

1. G. W. Miller visited St. Louis January 22 and 23 to finalize analytical methods transferred from Organic Research to Anniston plant.

Visitors

1. R. S. Yates visited for Solid Aroclor start-up.

2. Miss Judy Johnson, Anniston Star reporter, visited January 19 concerning feature article on industrial pollution in our area.

3. C. A. Buehler from W. G. Krummrich Plant visited on January 20-22 to obtain material necessary for inclusion in the Anniston "L" manual.

4. J. F. Gaskill and R. F. Bennett of J. F. Gaskill Company of Birmingham (Fisher Controls representative) presented a demonstration of the new Fisher ac^2 instruments on January 21.

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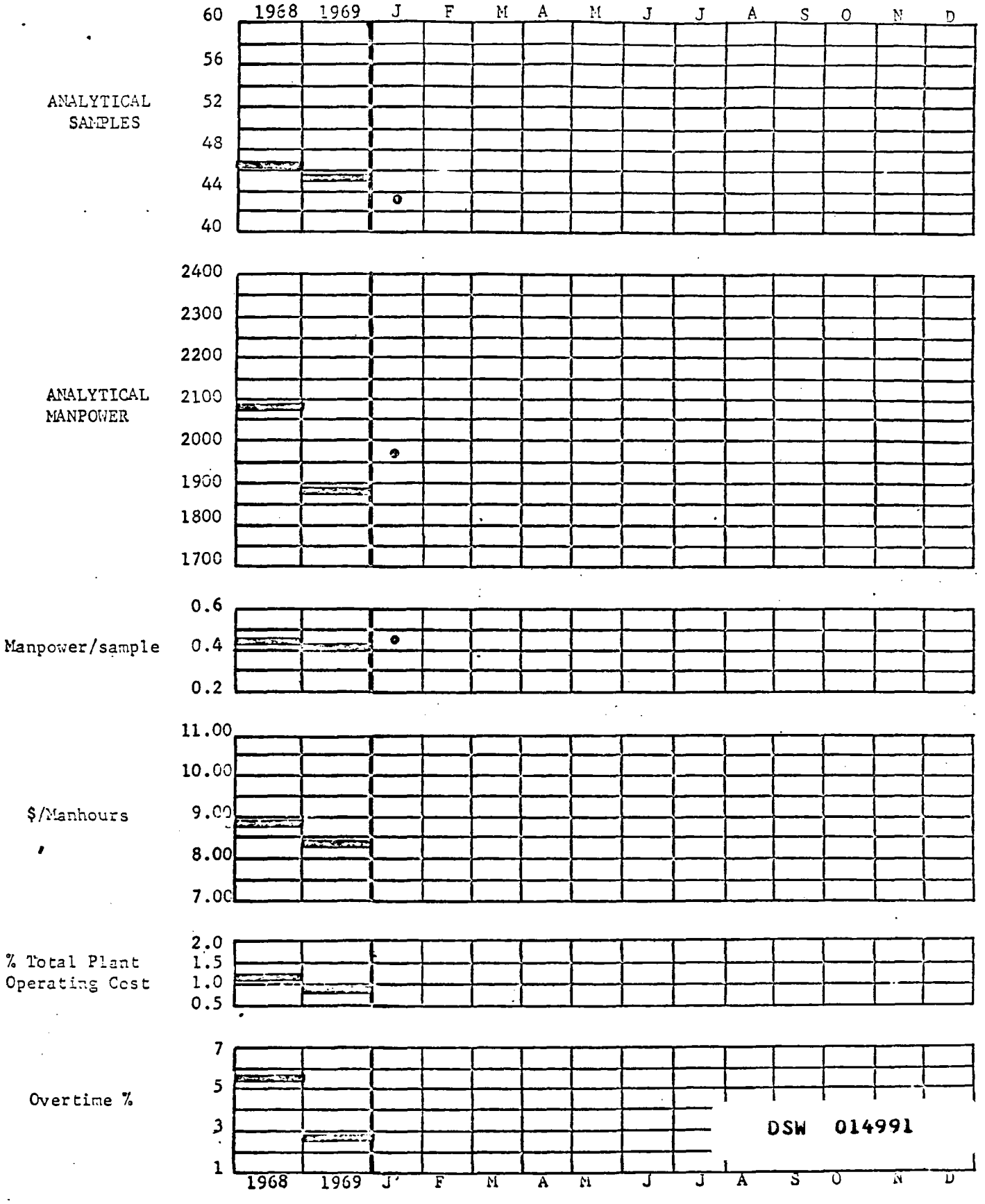
LABORATORY ADMINISTRATION



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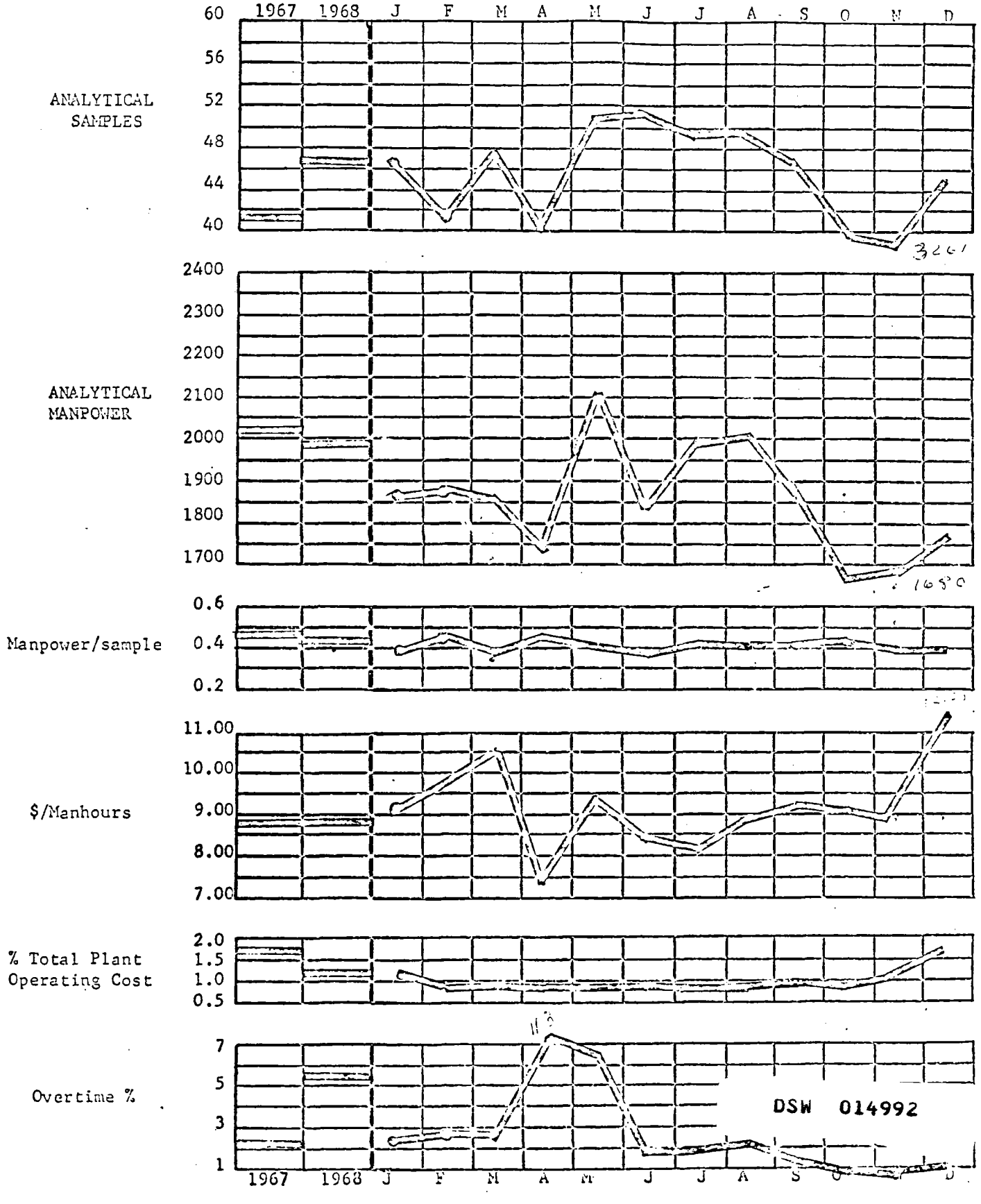
LABORATORY ADMINISTRATION



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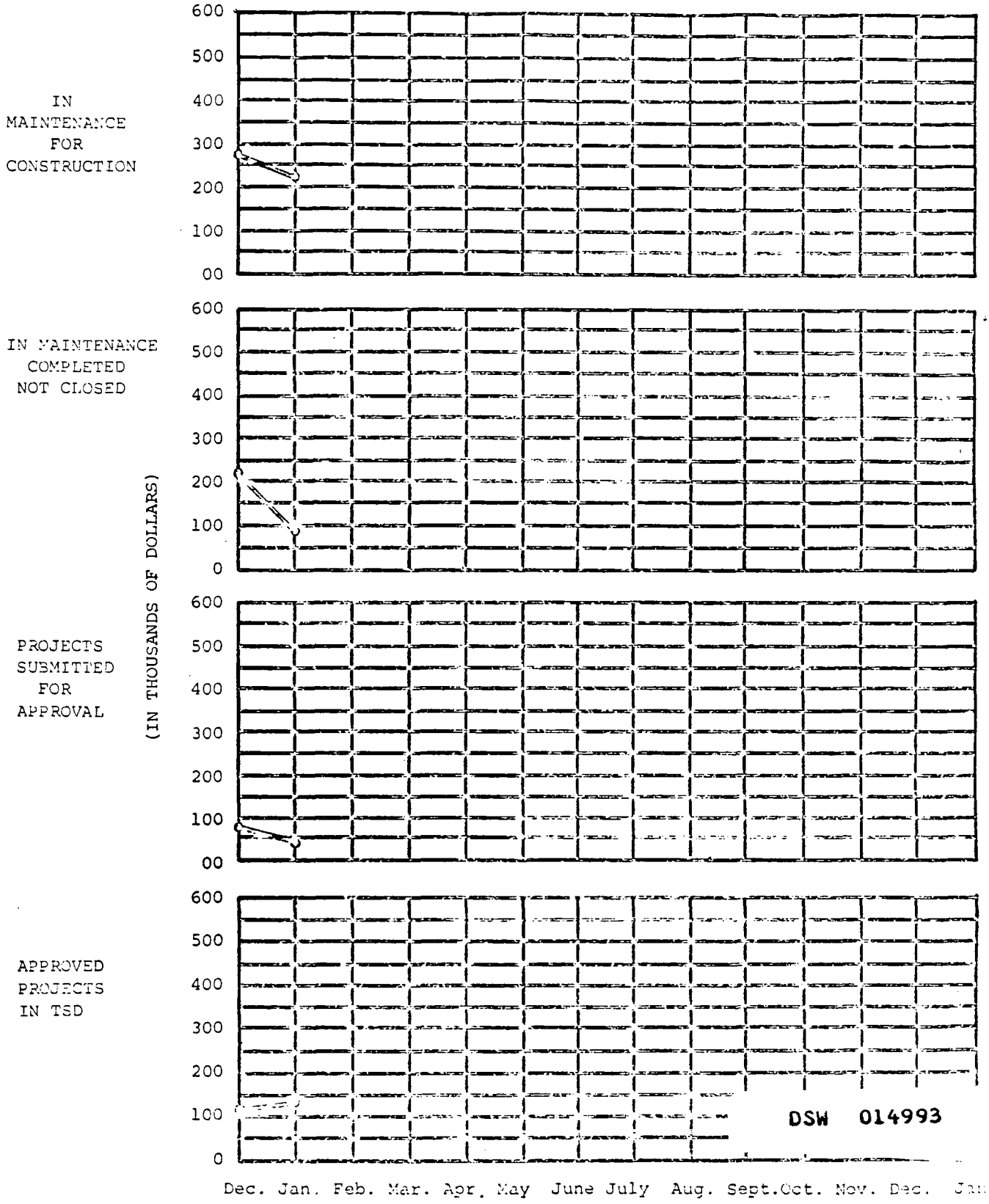
TSD PROJECT SUMMARY



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