

## Monsanto

## Anniston Plant

TECHNICAL SERVICES DEPARTMENT  
MONTHLY REPORTAnniston

J. T. Bell  
A. G. Hill  
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Summary

JUNE 1970

## COST IMPROVEMENT RESULTS

|       | Est.      | Act. | Target    | % of Target |
|-------|-----------|------|-----------|-------------|
| Month | \$46,720  |      | \$43,465  | 107%        |
| YTD   | \$481,577 |      | \$394,975 | 122%        |

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

Agricultural Division

The Parathion plant test of Process Amendments "Chlorination in the Presence of Acetone" and "Hydrocarbon Dilution of Residue" started 6/22/70. Distilled intermediate assays have risen from 93% to 98%. The diesel fuel addition to the still started on 6/29/70 and first indications were that increased yields and good residue handling would be realized. On the 4th distillation batch with hydrocarbon dilution, an operating problem resulted in formation of plastic sulfur in the still and residue hold tank preventing normal handling.

It was necessary to suspend the test on 7/2/70 in order to clean out equipment. Laboratory work has tentatively confirmed the suspected cause for plastic sulfur precipitation. Field testing is expected to resume the week of 7/6/70, incorporating the necessary countermeasures and controls to overcome the problem with plastic sulfur.

Organic Division

HB-40 design proceeding essentially on schedule. Therminol heater manufacturers' data needed to complete AC&M drawings. Instrumentation drawings out for review, electrical drawings on the board. 881 manhours were devoted to this project in June.

The waste Aroclor Sump Project AFE 3427 (\$22,500 NFC) has been approved. Construction has started and is expected to be completed by early September.

OTHER LOCATIONS

A. H. Forsten -  
Alvin, Texas  
  
P. O. DeGarmo -  
South Second  
  
D. W. Jackson -  
W.G.K.

DSW 014948

Organic Division - continued

A Tentative Process Amendment, to make low color Solid Aroclor 5460 by distilling in the presence of caustic soda, has been written and submitted for approval. The field test is anticipated for August 1970.

Operation of the Polyphenyl Pilot Unit continues to be smooth. The promoter scanning study outlined in Work Plan IV issued on 5/20/70 is proceeding on schedule and is still targeted for completion on 7/13/70.

Laboratory studies on treatment of high color HB-40 made from Santowax C have shown that Attapulugus Clay will remove color bodies. However, initial studies show that clay usage is very high. Further work is currently being directed toward defining the usage rates.

Pollution Control

A project premise is in review to provide a drying bed for the sludge which is collected in the HCl neutralization pit mixing basin.

Analyses are 90% complete on second Aroclor department Waste Audit.

Equipment is on order and the Pollution Control Engineer, assisted by a CO-OP, will conduct a pilot plant study of the parathion waste treatment aeration basins to retard the production of solids in this process. Solids to the City of Anniston Waste Treatment Plant are being controlled at close to the ordinance limit of 700 ppm by sewerage excess to the waste lagoon. The Eimco filter is also operating to remove solids from clarifier bottoms.

Quality Control

The Plant Quality Score was 86.9, down 1.4 from May, with a YTD score of 85.6 against a target of 95.0. The semi-annual review of process quality capability showed a relaxation of control on 45 standards versus an improvement on 31 standards, a substantial decline from the historical 3:1 improvement to relaxation ratio.

  
J. C. Landwehr

:kd

DSW 014949

STLCOPCB4003325

PLANT LABORATORIESANALYTICAL AND QUALITY CONTROL - S. O. Kemp

## Complaint Report

Quality

| <u>Number</u> | <u>Material</u> | <u>Customer</u>     | <u>Reason</u> |
|---------------|-----------------|---------------------|---------------|
| NY 28 P       | Aroclor 5460    | Manhattan Adhesives | Specks        |

YTD Quality Complaints/100 Shipments 0.35Target 0.20

DSW 014950

Community Relations

1. S. O. Kemp, Laboratory Supervisor, attended the Annual Industrial Management Club Midsouth Round Table held at Pine Mountain, Georgia, May 2930.

Development

1. Safety Committee presented departmental safety program June 30 entitled "Automobile Safety."

Personnel

1. Michael L. Marcum (University of Tennessee) and Danny J. Johnson (University of Alabama), Chemical Engineering students, reported for work in TSD as summer employes June 8. Mickey will report to W. B. Dunlap and Danny will work in ED&S.
2. Coby Riggins, BSChE University of South Florida, reported to work July 1. His initial assignment is as a Manufacturing Cost Accountant in Accounting. After 4 months he will report to TSD as a Process Engineer.
3. Frederick D. Ramsey, Jr., BSChE Auburn University, reported to work June 29 as Chemical Engineer I, Process Group B. Ricky will report to V. R. Haupt.
4. Danny F. Pittman, BSChE University of South Alabama, reported to work June 15 in Process Research and Development reporting to J. L. Brown.
5. Lee O. Chambers (Auburn University) and John M. Jones (Georgia Tech), two TSD CO-OPs, have completed their last working quarter and resumed their studies.
6. R. V. Carlisle, Electrical/Instrument Technician in TSD, will assume duties in Maintenance Engineering effective July 1 reporting to J. W. Kennedy.
7. Transfer-promotions in TSD and Lab effective June 15 were:
  - G. W. Miller to Production Department as Production supervisor for Aroclor, Muriatic Acid and Packaging.
  - J. T. Bell promoted to Chief Chemist.
  - J. L. Brown promoted to PR&D Group Leader reporting to J. T. Bell.
  - J. F. Benson to Maintenance department as Corrective Maintenance Engineer reporting to J. W. Kennedy.
  - E. E. Bowles to Maintenance department as Corrective Maintenance Engineer reporting to J. W. Kennedy.

DSW 014951

COMMUNITY RELATIONS, PERSONNEL, RECRUITING AND DEVELOPMENT - continued

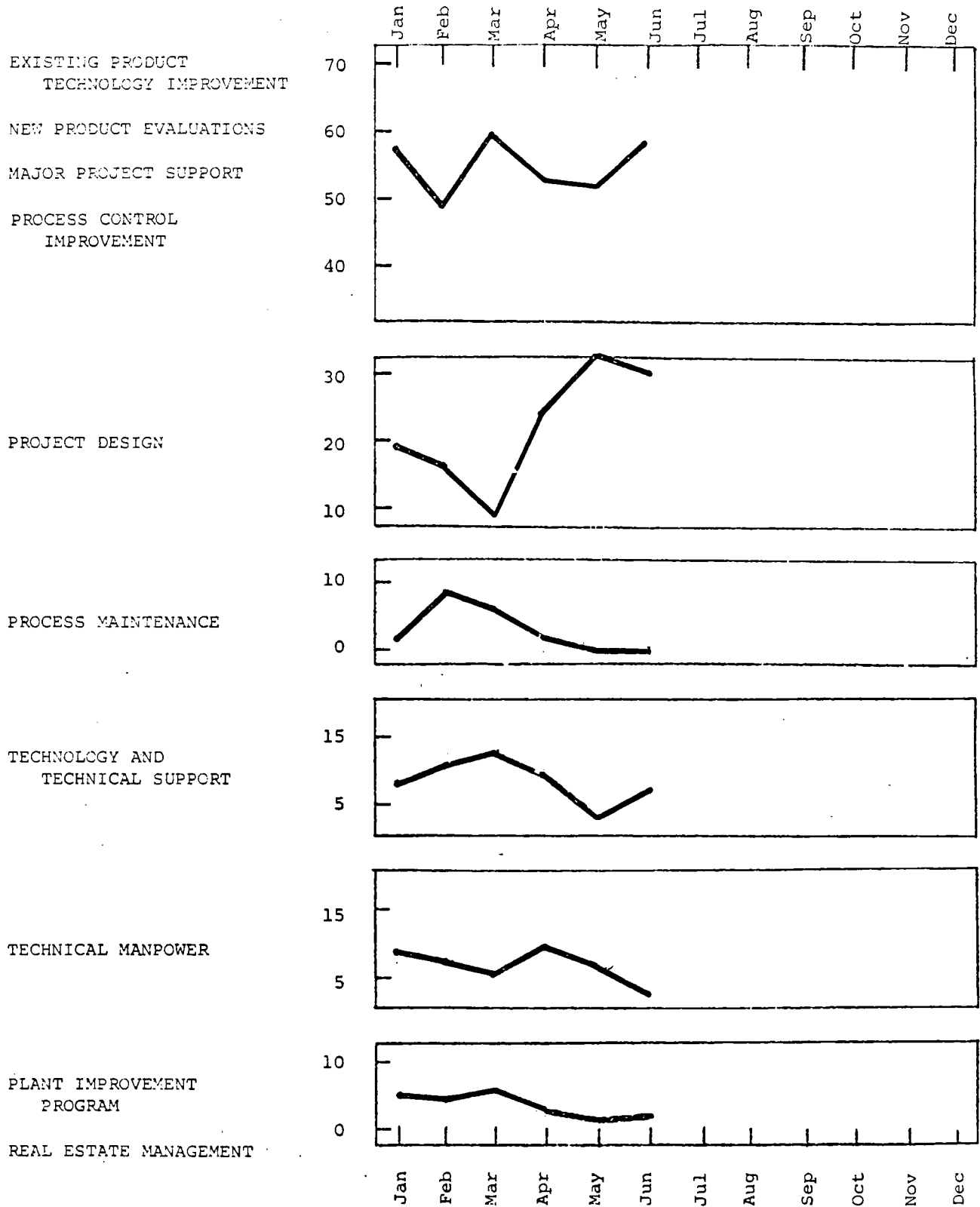
8. J. T. Bell attended a Parathion Research meeting in St. Louis on June 4.
9. David Dixon, CO-OP, returned to work June 29 and will be conducting a waste treatment study this summer.

Visitors

1. Messrs. Earl Billen and John Thompson, Inorganic Division - St. Louis, visited Ag and TSD to discuss  $P_2S_5$ .

DSW 014952

1970 DISTRIBUTION OF TIME BY TECHNICAL SERVICE



DSW 014953

ORGANIC DIVISION  
1970 TSD COST IMPROVEMENT

|                                                 |     | JAN  | FEB   | MAR   | APR   | MAY   | JUN   | JUL  | AUG  | SEP  | OCT   | NOV  | DEC  |
|-------------------------------------------------|-----|------|-------|-------|-------|-------|-------|------|------|------|-------|------|------|
| FUNCTIONAL<br>FLUIDS                            | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
| Disposal of<br>Liquid Montar                    | TAR |      |       | 1080  | 1080  | 1080  | 1080  | 1080 | 1080 | 1080 | 1080  | 1080 | 1080 |
|                                                 | EST |      |       | 0     | 0     | 0     | 0     |      |      |      |       |      |      |
|                                                 | ACT |      |       | 0     | 0     | 0     |       |      |      |      |       |      |      |
| #3 Aroclor Still<br>New Burners                 | TAR |      | 1500  |       | 1500  |       |       |      |      |      |       |      |      |
|                                                 | EST |      | 600   |       | 500   |       |       |      |      |      |       |      |      |
|                                                 | ACT |      | 600   |       | 500   |       |       |      |      |      |       |      |      |
| #2 Still<br>Entrainment<br>Separator            | TAR |      |       |       |       |       |       | 3000 |      |      | 3000  |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
| 1242 Distillation<br>Productivity               | TAR |      |       | 1500  | 1500  | 1500  | 1500  | 1500 | 1500 | 1500 | 1500  | 1500 | 1500 |
|                                                 | EST |      |       | 0     | 100   | 1000  | 1520  |      |      |      |       |      |      |
|                                                 | ACT |      |       | 0     | 100   | 1000  |       |      |      |      |       |      |      |
|                                                 | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
| PLASTICIZERS                                    | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
| Flaking & Drum-<br>ming Facilities<br>Headcount | TAR | 3000 | 3000  | 2000  | 1000  | 1000  |       |      |      |      |       |      |      |
|                                                 | EST | 3000 | 3000  | 2000  | 1000  | 1000  |       |      |      |      |       |      |      |
|                                                 | ACT | 3000 | 3000  | 2000  | 1000  | 1000  |       |      |      |      |       |      |      |
| Solid Aroclor<br>Instrumentation                | TAR |      |       |       | 3750  | 3750  | 3750  | 3750 | 3750 | 3750 | 3750  | 3750 | 3750 |
|                                                 | EST |      |       |       | 0     | 0     | 0     |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       | 0     |       |      |      |      |       |      |      |
| Sandvik Belt                                    | TAR |      |       |       |       |       |       | 2250 | 2250 | 2250 | 2250  | 2250 | 2250 |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
| Add Tray Strip-<br>ping Sections to<br>Santowax | TAR |      |       |       | 4580  | 4580  | 4580  | 4580 | 4580 | 4580 | 4580  | 4580 | 4580 |
|                                                 | EST |      |       |       | 0     | 0     | 0     |      |      |      |       |      |      |
|                                                 | ACT |      |       |       | 0     | 0     |       |      |      |      |       |      |      |
| Cl <sub>2</sub> Bulk<br>Handling Facilities     | TAR | 2000 | 2000  | 2000  | 2000  |       |       |      |      |      |       |      |      |
|                                                 | EST | 3500 | 3550  | 1950  | 3440  |       |       |      |      |      |       |      |      |
|                                                 | ACT | 3500 | 3550  | 3050  | 3440  |       |       |      |      |      |       |      |      |
| Solid Aroclor<br>Expansion                      | TAR |      | 30000 | 50000 |       |       |       |      |      |      | 30000 |      |      |
|                                                 | EST |      | 49500 | 50000 | 10000 | 36000 | 24000 |      |      |      |       |      |      |
|                                                 | ACT |      | 51900 | 55900 | 10500 | 38500 |       |      |      |      |       |      |      |
| Chlorinator<br>Back Pressure                    | TAR |      |       |       |       |       |       |      |      | 360  | 360   | 360  | 360  |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | TAR |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | EST |      |       |       |       |       |       |      |      |      |       |      |      |
|                                                 | ACT |      |       |       |       |       |       |      |      |      |       |      |      |

DSW 014954

ORGANIC DIVISION  
1970 TSD COST IMPROVEMENT

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

DSW 014955

ORGANIC DIVISION  
1970 TSD COST IMPROVEMENT

|                                                                             |     | JAN   | FEB   | MAR   | APR   | MAY   | JUN   | JUL   | AUG   | SEP   | OCT   | NOV   | DEC   |
|-----------------------------------------------------------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                                                                             | TAR |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | EST |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | ACT |       |       |       |       |       |       |       |       |       |       |       |       |
| PLANT WIDE                                                                  | TAR |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | EST |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | ACT |       |       |       |       |       |       |       |       |       |       |       |       |
| Improve Plant Power Factor                                                  | TAR | 950   | 950   | 950   | 950   | 950   | 950   |       |       |       |       |       |       |
|                                                                             | EST | 900   | 900   | 916   | 790   | 800   |       |       |       |       |       |       |       |
|                                                                             | ACT | 940   | 914   | 840   | 790   | 810   | 845   |       |       |       |       |       |       |
| Central Air Compressor                                                      | TAR |       |       |       |       |       |       |       |       |       | 1000  | 1000  | 1000  |
|                                                                             | EST |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | ACT |       |       |       |       |       |       |       |       |       |       |       |       |
| Chlorine Plant Shutdown                                                     | TAR | 19900 | 19900 | 19900 | 19900 | 9950  |       |       |       |       |       |       |       |
|                                                                             | EST | 19900 | 19900 | 19900 | 19900 | 9950  |       |       |       |       |       |       |       |
|                                                                             | ACT | 19900 | 19900 | 19900 | 19900 | 9950  |       |       |       |       |       |       |       |
| RTN Cooling Water to Tower Cooling Conveyor - P <sub>2</sub> S <sub>5</sub> | TAR |       |       |       |       |       |       | 25    | 25    | 25    | 25    | 25    | 25    |
|                                                                             | EST |       |       |       |       |       |       |       |       |       |       |       |       |
|                                                                             | 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 |       |       |       |       |       |       |
|                                                                             | ACT | 36.33 | 99.86 | 109.1 | 70.89 | 77.98 |       |       |       |       |       |       |       |
| 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 |       |       |       |       |       |       |
|                                                                             | ACT | 36.33 | 136.2 | 245.3 | 316.2 | 394.1 |       |       |       |       |       |       |       |

DSW 014956

STLCOPCB4003332

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     |       |       |       |       |       |      |
|                                            | ACT |       |       |       | 4860  | 2340  |       |       |       |       |       |       |      |
| Improve Cl <sub>2</sub> -Still Yields      | TAR |       |       |       |       | 3000  | 3000  | 3000  | 3000  | 3000  | 3000  |       |      |
|                                            | EST |       |       |       |       | 0     | 0     |       |       |       |       |       |      |
|                                            | ACT |       |       |       |       | 0     |       |       |       |       |       |       |      |
| Increase Chlorinator Coolings              | TAR |       |       |       |       |       |       |       | 8500  | 3500  | 8500  |       |      |
|                                            | EST |       |       |       |       |       |       |       |       |       |       |       |      |
|                                            | ACT |       |       |       |       |       |       |       |       |       |       |       |      |
| Acetone Recovery                           | TAR | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  | 2800  |      |
|                                            | EST | 1957  | 1069  | 1225  | 1935  | 130   | 715   |       |       |       |       |       |      |
|                                            | ACT | 1957  | 1069  | 1225  | 1935  | 130   |       |       |       |       |       |       |      |
| Chlorine Unloading                         | TAR | 2250  | 2250  | 2250  | 3200  | 3200  | 3200  | 3200  | 3200  |       |       |       |      |
|                                            | EST | 3634  | 4237  | 3350  | 1406  | 3431  | 2430  |       |       |       |       |       |      |
|                                            | ACT | 3634  | 4237  | 3350  | 1406  | 3431  |       |       |       |       |       |       |      |
| Optimize Methyl PNP/PCT Ratio              | TAR |       |       |       |       | 3000  | 3000  | 3000  | 1500  |       |       |       |      |
|                                            | EST |       |       |       |       | 0     | 0     |       |       |       |       |       |      |
|                                            | ACT |       |       |       |       | 0     |       |       |       |       |       |       |      |
| Optimize Ethyl PNP/PCT Ratio               | TAR | 500   | 750   | 750   |       |       |       |       |       |       |       | 500   | 500  |
|                                            | EST | 0     | 2641  | 0     |       |       |       |       |       |       |       |       |      |
|                                            | ACT | 0     | 2641  | 0     |       |       |       |       |       |       |       |       |      |
| Change Cooling H <sub>2</sub> O - 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  |       |       |       |       |       |      |
|                                            | ACT | 5.90  | 8.17  | 4.85  | 10.63 | 11.2  |       |       |       |       |       |       |      |
| 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 |       |       |       |       |       |      |
|                                            | ACT | 5.90  | 14.08 | 18.92 | 29.55 | 40.73 |       |       |       |       |       |       |      |
|                                            | 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 | 54.93 | 52.1 |
|                                            | EST | 42.19 | 102.8 | 108.5 | 81.02 | 85.79 | 46.72 |       |       |       |       |       |      |
|                                            | ACT | 42.23 | 108.0 | 113.9 | 81.52 | 89.15 |       |       |       |       |       |       |      |
| 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 | 723. |
|                                            | EST | 42.19 | 145.0 | 258.8 | 345.3 | 431.5 | 481.6 |       |       |       |       |       |      |
|                                            | ACT | 42.23 | 150.3 | 264.2 | 345.8 | 434.9 |       |       |       |       |       |       |      |

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