

SAFETY - A. H. Sather

OCCUPATIONAL INJURIES

<u>Injuries Treated</u>	<u>1979 May</u>	<u>1979 Year-to-Date</u>	<u>1978 Year-to-Date</u>
First Aid	4	12	24
Medical Cases	0	1	3
Restricted Workday Cases	0	2	1
Restricted Workdays	0	29	10
Lost Time	0	0	0
<u>Injuries by Department</u>			
Vinyl Operations	2	7	10
Compound Operations	1	1	9
Maintenance	1	5	6
Laboratory	0	0	2
Receiving and Warehouse	0	0	0
Office	0	2	0
<u>Injuries by Types</u>			
Cuts and Abrasions	1	3	12
Eye Injuries	0	3	3
Burns	3	5	5
Bruises	0	4	4
Sprains and Strains	0	3	4
Other	0	0	0

As of May 31, 1979, the plant operated 298 days or 393,167 man-hours without a disabling injury.

TRAINING

The plantwide lifting training program initiated in April was completed during the reporting period.

Five (5) casual employees and three (3) engineers received new employee safety orientation.

A. H. Sather attended the Managerial Grid Seminar May 6-11, 1979.

PLASTIC VESSEL/SPLASH INVESTIGATION

Two (2) in-plant teams conducted investigations regarding the use of plastic vessels and process hazards which could expose personnel to splash or spill hazards. Team members for each investigation are as follows:

PLASTIC VESSEL/SPLASH INVESTIGATION (Cont.)

Plastic Vessels - J. V. Uptain - Safety, F. W. Frantz - Maintenance, and
V. L. Thornhill - Process Engineering.

Splash/Spill Hazards - E. L. Kieschnick - Vinyl Operations, C. R. Miller -
Compound Operations, J. R. McCrimon - Process Engineering,
and A. H. Sather - Safety.

The reports were compiled and issued to C. L. Miller who assigned priorities for corrective action and distributed the final document to responsible personnel.

OSHA INSPECTION

On May 15, 1979, inspectors from the Occupational Safety and Health Administration initiated an industrial hygiene inspection which was initially directed toward the handling of VCM. After the plant walk-around, some interest was shown with regards to lead handling in the compound area. The inspection lasted essentially seven (7) full days (May 16, 17, 22, 23, 24, 31 with half days on May 18 and 25, 1979).

The initial activity involved a detailed review of personnel monitoring records to define sampling requirements for their inspection, and a brief review of overall plant safety procedures. Samples were taken on operators from two (2) separate shifts in each of the two (2) reactor modules, one dryer operator and a maintenance mechanic. The sampling for lead was limited to an 8-hour sample on a line III compounder during a Western Electric run. In all cases, the plant parallel-sampled the OSHA samples.

Currently, the inspectors are awaiting the results of their sampling to determine if further sampling is required. The closing conference will be scheduled following that determination.

FACTORY MUTUAL INSPECTION

Factory Mutual Engineering conducted their semi-annual inspection on May 15, 16, 1979. The fire pumps were also tested and rated satisfactory.

OSHA COMPLIANCE

Lead - Activity in this area was limited to revising the process design for the building ventilation system baghouse air supply. The new design reflects air supply pressure requirements keyed to particulate loadings which normally would be found in that stream. Also, the forms for the finalized lead sampling plan have been received and the sampling procedures have been finalized.

OSHA COMPLIANCE (Cont.)

VCM - Seventy-four (74) samples were taken with six (6) indicating over-exposure. The distribution of results and a brief explanation of over-exposures are shown below:

<u>Range (ppm)</u>	<u>Number</u>	<u>Percent</u>
0.0 - 0.5	61	82.43
0.5 - 1.0	7	9.46
1.0 - 5.0	5	6.76
5.0+	1	1.35
	<u>74</u>	<u>100.00</u>

Six (6) personnel received exposures to VCM of 1.0 ppm or greater. Job classifications, jobs, and respirator usage were as follows: a Mechanic working in the reactor area was overexposed from an unknown source; a Mechanic changed a reactor VCM charge valve and was wearing a respirator; a Yard Operator was unloading VCM cars and wearing a respirator ; a Reactor Operator was overexposed to an unknown source; a Mechanic was unplugging a 3/4 inch VCM line which contained liquid and was wearing a respirator; and a reactor operator was involved in clearing a plugged VCM charge line and wore a respirator.

VINYL - E. L. Kieschnick

May had 31 accounting days (Y.T.D. is 151 accounting days).

<u>Production</u>	<u>Month</u>	<u>Y.T.D.</u>	<u>Standard</u>
1. Total Production, MM #'s	28.7	123.6	
2. Production Rate, M #'s/C.D.	926	819	904
3. Charging, Rx B.A.'s/C.D.	22.7	20.7	
4. Total Charges	703	3124	
5. Reactor Stream Factor, %	91.6	87.5	
6. Drying Rates, Average #'s/Hr.	5860	5519	
7. Dryers, Stream Factor, %	94.0	88.2	

The vinyl department production for the month was 28.7 MM pounds which represents a new monthly production record (old record 26.8 MM pounds in November, 1978). The 703 charges also represents a new record for 8 reactor operation. Items which contributed to the record production for the month were:

1. Utilization of dual initiators in 5425 production beginning May 4, 1979 which significantly reduced the 5425 polymerization times.
2. Continued success of the reduction in chem wash and swirl frequency in 5425 production and in elimination of swirl in 5385 production.
3. Improved reactor stream factor which was a result of:
 - a. Maintenance of an optimum batch size to control foaming/condenser fouling. D-400 and 742 were the only reactors which required condenser cleaning for the month.
 - b. Utilization of a new antifoam agent in all products beginning May 22.

Approximately 1.7 MM pounds of resin were bagged during the month, primarily to meet export orders.

Resin Quality

<u>Resin Type</u>	<u>Prime Pounds</u>	<u>"BC" Grade</u>	<u>"H" Grade</u>	<u>% of Total Production</u>
5305	2,226,413	0	(3,000)	(0.01)
5385	21,959,448	45,000	(11,050)	0.12
5425	4,052,375	0	(2,250)	(0.01)
5465	272,505	0	(1,500)	(0.01)
Sifter Overflow			169,090	0.59
TOTAL	28,510,741	45,000	151,290	0.68

Quality performance for the month of May was 99.32% customer grade with 0.16% "BC" and 0.52% "H" grade. This represents the highest percent customer grade resin production since November, 1977.

The variable cost variance for the vinyl department was (\$340.4 M) with (\$299 M) due to price and (\$41.5 M) due to efficiency. The only major price variance was (\$288.9 M) on VCM. The only major efficiency variance was (\$59.0 M) on VCM.

The raw material requirement for the month was 1.0339 pounds VCM per pound PVC versus a 1.01960 standard.

General

1. A reactor opening loss test run was completed during the month.
2. A test batch of 5385 using PC-555, a liquid antioxidant replacement for BHT, was produced with samples being forwarded to PAL for evaluation. The material will provide for easier handling and a reduction in cost.

COMPOUND - C. R. Miller

May had 31 accounting days (Y.T.D. is 151 accounting days)

<u>Compound Production</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Line I, M Pounds	1,870	60	7,686
Line III, M Pounds	3,092	100	14,533
Total, M Pounds	4,962	160	22,219

Line I operated thirty-one days during the month at an average rate of 60 M pounds per day. Major items affecting productivity were the number of product changes (18 changes - 51 hours total) and maintenance on the blender scale system (24.3 hours).

Line III averaged 100 M pounds per day. Production included several compounds for Tenex and Western Electric including a test run on Western Electric compound 34861 gray 536. Items affecting productivity during the month were number of product changes (17 changes - 44.6 hours total) and downtime due to contaminated resin (12.9 hours). The only major mechanical downtime resulted from a motor and bracket failure on the pellet classifier (Sweco).

Quality performance on flexible compound was 2.8% of which 58% was due to mill scrap. The remaining off-grade was due to resin contamination (52 M #'s) and seal contamination (2.5 M #'s). "BC" production was 0.4% due to mis-charge. Reblending of "BC" grade compound totaled 330 M pounds.

The raw material requirement for flexible compound was 1.01789 pounds raw materials/pound of compound versus a 1.01298 standard. (Y.T.D. is 1.01082)

The variable cost variance for compound was \$7.4 M with (\$23.3 M) due to price and \$30.7 M due to efficiency. Variance due to product mix was \$15.0 M. The only major efficiency variance for the month was \$16.8 M for combined colors. The efficiency variance for the month was a result of (\$20.4 M) variances due to off-grade production.

<u>Dry Blend</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Total Production, M Pounds	4,153	181	19,943

Dry Blend operated twenty-three days during the month at an average rate of 181 M pounds per day. Production included 80172-B, 80273-G and 80274 dry blends. Major items affecting productivity included mechanical downtime on the Orbitran unit (22.3 hours), product changes (13.2 hours) and quality testing (19.0 hours).

Quality performance for the month was 100% customer grade. Off-grade dry blend reworked totaled 111 M pounds for May.

The raw material requirement for dry blend was 0.98924 pound raw materials/pound of dry blend versus a 1.00321 standard. (Y.T.D. is 0.99989)

The variable cost variance for dry blend was \$12.0 M with (\$2.4 M) due to price and \$14.4 M due to efficiency. The efficiency variance reflects a favorable product mix of \$16.7 M. The only other major efficiency variance was (\$10.6 M) for combined stabilizers. There were no major price variances for the month.

<u>Plasticizer</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Total Production, M Pounds	1,398	74	5,497

Plasticizer operated nineteen days during the month at an average rate of 74 M pounds per day. The total monthly production of 1.49 MM pounds including VRP is a new record for the plasticizer unit on a five day operation. Production of plasticizers included DOP, 610-P and DIDP. VRP production for the month was 99 M pounds (7.1%).

The raw material requirement for plasticizer was 1.13704 pounds raw materials per pound of plasticizer versus a 1.10744 standard. (Y.T.D. is 1.12913)

The variable cost for plasticizer was (\$29.6 M) with (\$25.7 M) due to price and \$3.9 M due to efficiency. The major price variances for the month were \$22.1 M due to 2-ethyl hexanol and (\$36.6 M) due to phthalic anhydride. There were no major efficiency variances for the month.

General

Total customer grade compound inventory increased from 6.5 MM pounds to 8.1 MM pounds during May.

MECHANICAL - S. J. Vincent

Vinyl - Area I

Two reactor condensers were cleaned during this month on D-400 and 742 reactors. Other work completed on D-400 included installation of equipment for reactor opening loss testing by PED and R&D. Several valves were repaired on 742 reactor including the vent valve, catalyst injection valve, and the recovery valve.

A major failure of the gasket under D-300 condenser required the condenser to be lifted for replacement of the gasket. A metal filled gasket was installed since this type of gasket has had promising results on some of the other reactor condensers. The agitator drive motor also had to be replaced when it failed during the changeout of the condenser gasket. Three condenser head gaskets had to be tightened because of leakage. The failure of a fuseable plug in one of the new unit fluid couplings is being investigated. Polymer restrictions in the old module VCM charge line required several cleanings and replacement of some sections of piping. On D-600 the VCM charge valve and operator were repaired while on 743 reactor the main dump valve had to be replaced.

A new cooling water isolation valve was installed during the cleaning of the VCM charge line. A new rubber connector was installed on the new unit dump Sweco. Two new relief valves were installed on D-300 reactor condenser and on the vessel. The spare reactor gearbox was sent out to a machine shop to obtain an estimate of repair costs.

The dampers were removed from number seven dryer exhauster. The gearbox was replaced on number two Bird centrifuge. A complete PM inspection of number four dryer was completed. Some other work completed on number four included the installation of a new fuel gas regulator and the installation of a new trial level probe in the activator. A fresh air supply line was routed to the top of the two large blend tanks. The rotex sifter bottom was replaced on number six dryer. A small slurry tank transfer pump motor was repaired. Electronic DP cells were installed on several of the small blend tanks.

There were nine mechanical seals repaired on various pumps and compressors. Most of the seal failures were in the old module. Seven pumps and two compressors were overhauled and cleaned. A motor on the vacuum pump in the emission recovery system was repaired.

One of the new unit knockout drums was opened for cleaning. The relief valve was checked on one of the old unit receivers and reset. A monorail for the removal of the Corken compressors was installed at the tank farm. Some minor repairs were completed on the incinerator. Most of the equipment for the TV cameras was installed and is presently being checked.

Compound, Dry Blend, Storage Silos - Area II

A nitrogen supply header was connected to one of the compound silo vibrators for testing. The Banbury and FCM seals were replaced. An overhaul of one of the Line I dicers was completed. One of the Line III dicers was also overhauled. A new transfer line was installed to number two bagger. The storage area exhaust fans were repaired. Motors were replaced on the Line I jump conveyor and the Line III Sweco. A new scale was installed on the palletizer.

The number two Welex motor was removed and repaired. One Kason screen was replaced. Several sections of transfer line were repaired and some flexible hoses made for use. The blender relief valve discharges were routed to the sewer drains.

The bearings were replaced in the north nitrogen blower. Two plasticizer reactor safety discs were replaced. The spare inert gas compressor was rebuilt.

Several safety showers were relocated. The product transfer unit was given a major overhaul. The plant crane was sent out for boom repairs and has been returned to the plant. The boom on the plant truck was also repaired.

Utilities and Services

Five air compressor valve repairs were completed during this period. The desiccant was replaced in one of the V-10 air dryers. Number one boiler had a new front installed during the month. Improved performance has been realized with the percent excess air operating at about 3 to 4 percent. A PM and insurance inspection was also completed on this boiler. Number two boiler is presently shutdown for the same modifications.

The refrigeration PM program is progressing. Several tubes in the Line III chiller had to be plugged because of internal leaks.

Planning

The planners work involved processing 26 invoices for payment and estimating 25 work orders. Material was purchased for 22 projects. There were 21 register tickets issued during the month. The plant shutdown list was updated several times.

Miscellaneous

The initial reports from MMS are being reviewed and checked.

PERSONNEL - J. L. Carter

EMPLOYMENT

During the month of May, there were two permanent new hires, Thomas Docherty, Chemical Engineer and John Windham, Mechanical Engineer. Plus two temporaries, Gregory Ashby, Summer Engineer and Elbert Solomon, Co-op Student.

Eight casual labor employees were placed on payroll during the month. Total hours worked were 341. The bulk of these employees were utilized on the bagging and debuggng operation.

TO/FROM LEAVE OF ABSENCE

None.

TRANSFER/PROMOTION

None.

RETIREMENT

None.

TERMINATION

None.

DEATH/DISABILITY

None.

CONOCO CHEMICALS
Aberdeen, Mississippi

May 1979
MONTHLY PERSONNEL REPORT

Salaried Employees	<u>77*</u>	Minority Employees #		%
Hourly Employees	<u>161</u>	Salaried	<u>5**</u>	<u>6.5%**</u>
Total Employees	<u>238*</u>	Hourly	<u>63</u>	<u>39%</u>
Employees (Hourly)		Total	<u>68**</u>	<u>28.6%**</u>
New Employees	<u>0</u>	Hourly Min. Hired	<u>0</u>	
Terminations	<u>0</u>	% Min. Hired	<u>0</u>	
		Hourly Min. Term.	<u>0</u>	
		% Min. Term.	<u>0</u>	

DEPARTMENTS	PAR	# EMPLOYEES	MIN. EMP.	% MIN.	NEW HIRES	YTD	TERM.	YTD	TURNOVER	YTD
Warehouse	<u>9</u>	<u>9</u>	<u>2</u>	<u>22%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Gen. Plant	<u>10</u>	<u>11</u>	<u>5</u>	<u>45%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>3</u>	<u>0</u>	<u>27%</u>
Maintenance	<u>46</u>	<u>45</u>	<u>7</u>	<u>15%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>0</u>	<u>2%</u>
Laboratory	<u>22</u>	<u>22</u>	<u>3</u>	<u>14%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Compound	<u>38</u>	<u>38</u>	<u>30</u>	<u>79%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Vinyl	<u>32</u>	<u>32</u>	<u>13</u>	<u>41%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Plasticizer	<u>4</u>	<u>4</u>	<u>3</u>	<u>75%</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>

Number of Applicants:

Month 22 Year to Date 27

APPLICANT BREAKDOWN:

Minority 10 % Minority 45%

Female 1 % Female 4.5%

*Include 3 temporaries, 1 summer employee
and two co-op students.

**Include 2 temporaries, 1 summer employee
and one co-op student.

Hires (Hourly) :

Month 0 Year to Date 0

Terminations (Hourly) :

Month 0 Year to Date 4

Overall Turnover 0

Projected Annual Turnover 2.5%

DTH 000019309

OVERTIME AND ABSENTEEISM

May 1979

Department	Straight Time Hours Worked	Overtime Hours Worked		Overtime as % of Straight Time	Absence Hours Lost	Absence as a % of Straight Time			
		Controllable(1)	Non-Controllable(2)			Sickness	Other	Total	Year to Date
Warehouse	1569.00	131.50	40.00	10.9%	-0-	-0-	-0-	-0-	.2%
Maintenance	6983.25	533.75	16.00	7.9%	128	100%	-0-	1.8%	1.2%
Laboratory	3873.75	327.75	115.75	11%	80	100%	-0-	2%	4.1%
Compound	6809.25	490.25	442.00	13.7%	368	93.5%	6.5%	5.4%	3.2%
Vinyl	6467.75	629.00	216.00	13.1%	88	100%	-0-	1.4%	1.7%
Plasticizer	765.25	23.50	8.00	4%	-0-	-0-	-0-	-0-	.2%
Utility Boiler House	663.00	123.25	56.00	27%	-0-	-0-	-0-	-0-	-0-
General Plant	1063.00	84.75	-0-	7.9%	8	100%	-0-	.7%	.5%
Total	28194.25	2343.75	893.75	11.5%	672	96.4%	3.6%	2.4%	2%

Note:

(1) Controllable Overtime - all overtime excluding overtime due to working regular hours on a holiday and working the sixth day in operations.

(2) Non-Controllable Overtime - that overtime due to working regular hours on a holiday and working regular hours on the sixth day in operations.

PROCESS ENGINEERING - R. A. Frohreich

A. Specialty Compound Line

Crawford and Russel has completed the mechanical design for the project. Their only remaining work is to complete the mechanical catalogs. The contract for piping/structural has been awarded. The Contractor is to be on site June 19. Offsite piping will be complete the week of June 6. Electrical offsite work is presently awaiting shutdown for completion. The electrical and instrument bid package is out for bidding. Project mechanical completion is now projected for mid October.

B. Fire Water Revisions - Phase I and Phase II

Mechanical Engineering for the project is continuing. The underground piping basis of bids is expected to be received in the plant in June.

A class "A" process design for phase II will be issued in June.

C. Propane Vaporizer Replacement

The electrical contractor has begun work. Completion is scheduled for late June. Startup will commence as soon as possible after completion.

D. Plasticizer Exposure Abatement

Mechanical Engineering is complete on the project and the contract has been awarded. The filter delivery is scheduled for mid July.

E. Charge Water Heating Improvements

System installation is complete and an operating procedure has been issued. Problems with the temperature controller have delayed using the new system. The controller is being repaired.

F. Silo High Level Alarms

The prototype sensing element is in operation and is being tested. Problems with panel alarm units are being investigated.

G. Plant Dryer Debottlenecking

1. Remote Dryer Lighting

Plant mechanical engineering is proceeding on the project. All major equipment has been received. A prototype instrument system has been tested. Project completion is expected by the end of July.

2. V-10 Transfer System

Plant mechanical engineering is proceeding on the project. All major pieces of equipment have been ordered. Mechanical installation has begun. Project completion will be delayed due to a strike at the equipment manufacturer supplying the rotary air locks.

H. Silo Isolation Valves

The silo isolation valves have been received and will be installed.

J. Automatic Plasticizer Weighup System

The revised process design was issued. The panel drawings were approved for construction. Panel delivery is scheduled for the end of July.

K. Emission Recovery System

A definitive cost estimate was prepared for the modifications to the emissions recovery system to improve level control and to install an additional vacuum pump. An AFE request was submitted for the project.

L. Plant Air System

A study of the plant air system has been completed and reviewed. Process designs for three parts of the study have been issued and estimated. These designs include a new reactor area instrument air dryer, a new centrifugal air compressor for plant air and a new air header to the building ventilation baghouse. An AFE request for the instrument air dryer has been submitted. The AFE requests for the compressor and air header will be submitted in June.

M. VCM Receiver High Level Alarms

Two test sensors, a capacitance type and a sonic type, have been ordered. The capacitance probe has been received and will be installed during the first shutdown of the new unit.

N. Reactor Inert Vent Design

An AFE request for this project has been submitted.

O. OMS Addition System

A revised process design has been issued for this project. A cost estimate is being prepared.

P. New Slurry Blend Tank

A process design was issued for a new 150,000 gallon slurry blend tank for use in multigrade resin production. The CED cost estimate has been completed. Work is underway to submit an AFE request.

Q. New PVC Railcar Silo

A process design was issued for a new 200,000 lb. capacity railcar silo for use in multigrade resin production. The design has been sent to CED for cost estimation.

R. Water Treatment Revisions

A process design for part one of this project has been issued and is being estimated. Part one includes installation of stormwater settling pits.

S. Capital Budget

Work is proceeding on preparing the 1980 Capital Budget.

ENVIRONMENTAL HEALTH - J. R. McCrimon

I. Particulates

The exhaust from one of the resin dryers was sampled for particulates.

A meeting with the Mississippi Air and Water Pollution Commission was held to discuss the expansion permits.

II. Water

BOD and COD levels were within NPDES permit limitations in May.

III. Vinyl Chloride

In-plant emission testing and leak checking are continuing as specified in the Compliance Manual.

Plant, R&D, and PED personnel conducted an extensive reactor opening loss test run on D-400 reactor. Results will be published in June.

OSHA inspectors visited the plant and conducted a survey pertaining to the VCM and lead standards.

TABLE I
WATER COMPLIANCE WITH
NPDES PERMIT PARAMETERS

		Flow	BOD		COD		Sus. Solids		Diss.	ph
		GPM	PPM	LB./DY.	PPM	LB./DY.	PPM	LB./DY.	O ²	
Jan. -	Ave.	788	26	246	63	589	19	170	6.9-7.3	7.5-8.2
	Max.	948	37	307	94	781	31	279		
Feb. -	Ave.	756	30	272	73	656	27	241	6.9-7.9	7.7-8.0
	Max.	773	43	380	95	840	34	315		
Mar. -	Ave.	669	17	134	61	490	26	214	6.9-7.6	7.3-7.9
	Max.	760	24	184	81	621	45	367		
Apr. -	Ave.	743	6	55	33	295	10	85	6.9-7.3	7.3
	Max.	930	9	73	42	446	16	130		
May -	Ave.	730	12	101	44	374	11	95	6.6-7.4	7.3-7.9
	Max.	881	18	149	61	504	14	129		
June -		Ave.								
		Max.								
July -		Ave.								
		Max.								
Aug. -		Ave.								
		Max.								
Sept. -		Ave.								
		Max.								
Oct. -		Ave.								
		Max.								
Nov. -		Ave.								
		Max.								
Dec. -		Ave.								
		Max.								
NPDES -	Ave.	-	32	387	-	1390	-	605	6.0	6.0-8.5
	Max.	-	43	520	-	1940	-	909		

ENERGY CONSERVATION - V. L. Thornhill

I. Plant Operations

Total energy consumption for May was 115.2 MMM BTUs. The energy consumption per pound of product decreased from 3272 BTU/Lb. in April to 2908 BTU/Lb. in May.

II. Plant Energy Conservation Program

A. Steam Leaks

10 of 10 reported steam leaks were repaired during May.

B. Charge Water Heating Improvements

Installation of hot water preheater was completed in May. Use of the system has been delayed due to problems with the temperature controller. The controller is being repaired.

C. Boiler Burner Replacement

Installation of new front on one of the 40,000 lb./hr. boilers has been completed and the unit has been started up. Initial operation of the burner shows favorable results with the boiler operating at an average of 20% excess air.

ENERGY CONSERVATION DATA

<u>ITEM</u>	<u>1978</u>	<u>1979</u>
	<u>MAY</u>	<u>MAY</u>
<u>Production, MM Lbs.</u>		
Resin	25.1	28.7
Dry Blend	4.1	4.3
Compound	4.1	5.1
Plasticizer	1.0	1.5
TOTAL	34.3	39.6
<u>Natural Gas</u>		
Consumption, MSCF	51401	61055
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	52.429	62.276
<u>Electricity</u>		
Consumption, MM KWH	4.675	5.2896
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	46.750	52.896
<u>Propane</u>		
Consumption, M Gal.		
Conversion, BTU/Gal.		
Energy Consumption, MMM BTU		
<u>Total</u>		
Energy Consumption, MMM BTU	99.179	115.172
Energy Consumption, BTU/Lb.	2892	2908

Boiler Operating Data

	<u>Avg. Stack Temp.</u>		<u>Avg. % Excess Air</u>	
	<u>1978</u>	<u>1979</u>	<u>1978</u>	<u>1979</u>
No. 1	388	409	70	54
No. 2	371	421	74	100
No. 3	429	464	82	120

MECHANICAL ENGINEERING - J. A. Dixon

AFE's Submitted, Approved, and Closed

The following AFE's were submitted and approved during May:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9569	Misc. Projects Under \$10,000	\$125,000
9579	Additional Office Space	12,500
9589	Instrument Air Dryer	110,000
9599	Reactor Jacket Modifications	21,000

One additional project was submitted for AFE approval during May:

<u>Title</u>	<u>Authorized</u>
Reactor Inert Vent System	\$ 90,000

The following AFE's were closed to field charges during May:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9048	Resin Moisture Analyzers	\$ 17,000
9198	Debottlenecking - Centrifuge Anti-Chatter Devices	70,000

A completion report was issued for the following AFE during May:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9058	Laboratory Equipment	\$ 50,000

Design

Bids were requested for the following projects: Reactor Jacket Modifications, Piping - Equipment Installation Plasticizer Chemical Exposure Abatement, Piping - Equipment Installation Dryer Operation Improvements, Electrical - Silo High Level Alarms, Installation of Dust Collectors - Resin Debottlenecking, the Mechanical Installation for the New Compound Line, and Electrical - Propane Vaporizer Replacement.

The contract was let for the New Compound Line Mechanical installation.

Definitive estimates were completed for the following: Waste Water Revisions Part I, Reactor Inert Vent System, Plant Air System Addition, Building Ventilation Air Compressor, and the Vinyl Area Air Dryer.

Design work is in progress on the following projects: Dryer Operation Improvements, Monorails for Blenders and Welex Equipment, Silo High Level Alarm, Resin Transfer Debottlenecking, Dryer Noise Abatement and Vinyl Area Air Dryer.

Construction

1. Insulation work on the propane vaporizer project is complete.
2. The piping and electrical work for the Hot Water Charge Improvement Project is complete.
3. The installation of the silo rescue davits is complete.
4. Installation of the number 1 and 2 Boiler Burner Replacement is complete.
5. The fabrication of the offsites piping for the new compound line is complete.
6. A new cyclone was installed on the bagging hopper.
7. Air conditioning and electrical for the Additional Office Space is complete.

(1) Thru April, 1979 Actual Accounting
(2) Thru May, 1979

ABERDEEN AUTHORIZATIONS REPORT

AUTH. NO.	CAPITAL DESCRIPTION	DATE APPROVED	AUTH. AFE AMT.	(1) EXPENDED TO DATE	(2) COMMITTED TO DATE	FINAL TOTAL EST. COST COMP.	UNDER (OVER) AUTH. AMT.	EST. COMP. DATE	EST. CLOS. DATE	REMARKS
9126	PVC Reactor Capacity Replacement	7/8/76	8,577,000	8,147,787	8,194,505	8,194,505	382,495	12/78	6/79	Closed to field charges.
9276	Relief Valve Vent Containment	12/10/76	39,000	34,499	34,499	34,499	4,501	12/78	6/79	Closed to field charges.
9286	Additional Slurry Blend Tank	12/7/76	290,000	283,537	285,823	285,823	4,177	12/78	6/79	Closed to field charges.
9057	Vent Gas Incineration	4/1/77	275,000	275,876	275,876	275,876	(876)	12/78	5/79	Closed to field charges.
9087	Resin Silo Aeration	5/16/77	280,000	242,054	242,336	242,336	37,664	12/78	6/79	Closed to field charges.
9147	Phthalic Anhydride Exposure Reduction	6/30/77	45,000	40,290	44,039	44,039	961	11/78	6/79	Closed to field charges.
9187	Emergency Reactor Vent Control	9/29/77	33,000	32,547	33,720	33,720	(720)	5/79	7/79	Closed to field charges.
9197	Dryer Area Noise Abatement	9/29/77	45,000	30,916	32,671	45,000	0	9/79	12/79	Installation proceeding.
9227	Plant Emergency Lighting System	10/10/77	65,000	50,441	63,475	65,000	0	6/79	9/79	To be closed.
9237	Heated Plasticizer Addition System	10/11/77	37,000	7,628	8,057	37,000	0	9/79	12/79	Installation proceeding.
9247	Farrell Mixer Feeders	11/21/77	47,000	20,934	21,143	47,000	0	6/79	9/79	Mill take-off conveyors purchased.
9257	Resin Transfer Debottlenecking	11/16/77	56,000	31,879	54,111	56,000	0	9/79	12/79	Collectors to be installed.
9267	Dry Blend Production Expansion	11/23/77	200,000	202,942	202,815	202,815	(2,815)	5/79	8/79	Closed to field charges.
9277	Truck Loading Safety Revisions	11/28/77	16,000	6,306	6,306	16,000	0	6/79	9/79	Installation proceeding.
9287	Plasticizer Yield Improvement Test	12/5/77	6,000	3,544	3,544	6,000	2,456	5/79	6/79	Closed to field charges.
9297	Automatic Plasticizer-Stabilizer Weighup System	12/14/77	60,000	873	43,718	60,000	0	9/79	12/79	Design in progress.
9307	Compound Project Conveying Lines	12/14/77	50,000	24,274	26,271	50,000	0	6/79	9/79	Installation proceeding.
9018	Critical Spare Equipment	1/31/78	63,000	60,855	63,502	63,502	(502)	12/78	6/79	Closed to field charges.
9028	Miscellaneous Items Under \$10,000	1/31/78	50,000	42,002	49,083	49,083	917	12/78	7/79	Closed to field charges.
9038	Maintenance Equipment	2/3/78	18,000	18,213	18,213	18,213	(213)	12/78	7/79	Closed to field charges.
9048	Resin Moisture Analyzers	2/24/78	17,000	13,729	13,729	13,729	3,271	5/79	7/79	Closed to field charges.
9058	Laboratory Equipment	2/24/78	50,000	48,617	48,659	48,659	1,341	10/78	6/79	Closed to field charges.
9078	Mis. Projects Under \$10,000	2/24/78	166,000	156,349	160,131	160,131	5,869	12/78	7/79	Closed to field charges.
9088	Replacement Inert Gas Generator	3/28/78	44,000	31,920	40,647	44,000	0	6/79	9/79	Installation proceeding.
9098	New Compound Line	4/17/78	2,050,000	957,520	1,496,233	2,083,934	(33,934)	12/79	3/80	Concrete work complete. Most tie-ins complete. Engineering 98% complete.
9108	Boiler Burner Replacement	5/12/78	170,000	1,469	166,968	170,000	0	7/79	10/79	Installation proceeding.
9138	Plant Guardhouse Improvement	8/14/78	19,000	18,540	18,540	18,540	460	11/78	6/79	Closed to field charges.
9148	Plasticizer Chemical Exposure Abatement	8/21/78	152,000	7,399	111,874	152,000	0	7/79	10/79	Piping contract let.
9158	Fire Protection Improvements-Phase I	9/19/78	176,000	2,494	24,097	176,000	0	9/79	12/79	Engineering in progress by CED.
9168	Misc. Projects Under \$10,000	9/21/78	59,000	43,772	52,117	52,117	6,883	12/78	7/79	Closed to field charges.
9178	Propane Vaporizer Replacement	9/21/78	175,000	99,020	128,787	175,000	0	9/79	12/79	Installation proceeding.
9188	Railcar Resin Heel Cleanup System	10/12/78	55,000	3,643	41,523	55,000	0	7/79	9/79	Fabrication of Satellite hopper in progress.
9198	Debottlenecking - Centrifuge Anti-Chatter Devices	11/7/78	70,000	65,085	65,085	65,085	4,915	5/79	6/79	Closed to field charges.
9208	Spare Recovery Vacuum Pump	12/5/78	14,000	0	14,633	14,633	(633)	8/79	11/79	Vacuum pump on order.
9218	Charge Water Heating Improvement	12/8/78	32,000	17,740	34,976	34,976	(2,976)	9/79	12/79	Installation proceeding.
9228	Dry Blend Silo Alarms	12/13/78	25,000	3,991	4,287	25,000	0	8/79	12/79	Prototype installed.
9248	Silo Isolation Valves	12/14/78	25,000	0	15,589	25,000	0	7/79	10/79	Installation scheduled.
9258	Dryer Operation Improvements	12/14/78	315,000	4,037	138,795	315,000	0	10/79	1/80	Piping and equipment contract let.

DTH 000019320

(1) Thru April, 1979 Actual Accounting
(2) Thru May, 1979

ABERDEEN AUTHORIZATIONS REPORT

<u>AUTH.</u> <u>NO.</u>	<u>CAPITAL</u> <u>DESCRIPTION</u>	<u>DATE</u> <u>APPROVED</u>	<u>AUTH.</u> <u>AFE AMT.</u>	(1) <u>EXPENDED</u> <u>TO DATE</u>	(2) <u>COMMITTED</u> <u>TO DATE</u>	<u>FINAL</u> <u>TOTAL EST.</u> <u>COST COMP.</u>	<u>UNDER</u> <u>(OVER)</u> <u>AUTH. AMT.</u>	<u>EST.</u> <u>COMP.</u> <u>DATE</u>	<u>EST.</u> <u>CLOS.</u> <u>DATE</u>	<u>REMARKS</u>
9519	Critical Spare Equipment	2/6/79	175,000	0	115,165	175,000	0	11/79	2/80	Purchases proceeding.
9529	Misc. Projects Under \$10,000	2/15/79	125,000	32,415	82,571	125,000	0	12/79	3/80	Forty projects approved.
9539	Laboratory Equipment	3/27/79	31,000	0	9,648	31,000	0	10/79	1/80	Purchases proceeding.
9549	Safety Equipment	3/26/79	15,000	0	3,429	15,000	0	10/79	1/80	Purchases proceeding.
9559	Color Weigh Room Modifications	4/19/79	25,000	0	0	25,000	0	10/79	1/80	Engineering in progress.
9569	Misc. Projects Under \$10,000	5/8/79	125,000	0	25,665	125,000	0	12/79	3/80	Twelve projects approved.
9579	Additional Office Space	5/11/79	12,500	0	0	12,500	0	8/79	11/79	Installation in progress.
9589	Instrument Air Dryer	5/30/79	110,000	0	0	110,000	0	12/79	3/80	Quotes being obtained.
9599	Reactor Jacket Modification	6/4/79	21,000	0	0	21,000	0	8/79	11/79	Modifications scheduled.
<u>EXPENSE</u>										
9238	Compound Line I Roof Collapse	12/13/78	44,000	0	0	44,000	0	6/79	7/79	Insurance claim filed.

DTH 000019321

LABORATORY - R. B. Martin

CUSTOMER COMPLAINTS

<u>CUSTOMER</u>	<u>PRODUCT</u>	<u>COMPLAINT TYPE</u>	<u>NO.</u>	<u>STATUS</u>
<u>Resin</u>				
Uniroyal	5425	Streamers	ARP-051679	Under Study
<u>Compound</u>				
NECO	38963	Off-Color Pellets	ACP-050479	Report by CRM
Anchor	15041	Metal Contamination	ACP-051479	Under Study

WAIVERS RECEIVED

<u>Date</u>	<u>Identification</u>	<u>Product</u>	<u>Customer</u>	<u>Reason</u>	<u>Waived by</u>
5/3	PTLX 41829	5385-3	Simpson - OR	Particle Size	GGD
5/8	PLCX 43193	5385-3	Simpson - WA	Particle Size	RDJ
5/8	PLCX 43191	5385-3	World of Plastics	Particle Size	RDJ
5/10	PTLX 41660	5385-3	LCP	Color	GGD
5/11	PLCX 43233	5385-3	LCP	Contamination	GGD
5/15	PTLX 41645	5425	Southwire	Dry Time	GGD
5/21	PTLX 41821	5425	C & E Terminal	Dry Time	RBM
5/21	T-2811	5425	Athol	Dry Time	GGD
5/25	00641	5385	Eximplas	Particle Size	GGD
5/29	00654	5385	Eximplas	Dry Time	GGD
5/29	00656	5385	Eximplas	Dry Time	GGD
5/29	00657	5385	Eximplas	Dry Time	GGD
5/30	00662	5385	Eximplas	Particle Size	JRW
5/30	00662	5385	Eximplas	Contamination	GGD
5/30	00666	5385	Eximplas	Particle Size	RBM

QUALITY CONTROL TESTING

Resin

Regular Samples = 686 Other In-Process Samples = 3311
Bulk Shipments = 190 (Railcars = 123; Trucks = 67)

Dry Blend

Blenders Produced = 418 Blenders Tested = 274
Blenders Adjusted = 6.2% Other In-Process Samples = 296
Bulk Shipments = 42 (Railcars = 20; Trucks = 22)

Compound

Blenders Produced = 900 Other In-Process Samples = 196
Blenders Adjusted = 1.0%
Bulk Shipments = 18 (Railcars = 11; Trucks = 7)

QUALITY CONTROL TESTING (Cont.)

Resin Heat Stability

Fifty-four (54) blends of resin were tested for oven heat stability. This included some experimental blends. All of the samples showed good heat stability.

5385 - 20 Blends
5425 - 22 Blends
5305 - 10 Blends
5465 - 2 Blends

Residual VCM - Shipments

A total of 142 samples were analyzed for RVCM which related to bulk resin shipments. The summary by product is listed below:

Product	<u>5305</u>	<u>5385</u>	<u>5425</u>	<u>5465</u>	<u>Dry Blend</u>
Average ppm	2	0.7	0.2	0.2	0.2
Number of Samples	30	82	13	2	15

Raw Material Testing

Cyastab 523, tribasic lead sulfate stabilizer, was evaluated and approved for use in the Western Electric 34861 compound.

Ninety (90) lots of various plant raw materials were tested. There were no rejections during the month. Dow Chemical Co. has agreed that the lots of Methocel F-50 rejected in April give low values for solution viscosity and has agreed to accept return of these lots. On the other hand, Ponca City pilot plant tests have indicated that the low viscosity lots are more efficient than lots of Methocel with viscosities near the top of the specification range. Variations are the concern in operations.

PRODUCT DEVELOPMENT & SERVICE

<u>Date Shipped</u>	<u>Quantity</u>	<u>Product</u>	<u>Customer</u>	<u>Requested by</u>	<u>Shipped by</u>
5/8	50#	5385-I	Hartz Mountain Corp.	RNG	JRW
	50#	5425-I			
5/8	50#	27121 Wht.	Perez & Jacard	CLS	JRW
	50#	28831 Blk.			
	50#	26831 Blk.	Perez & Jacard	CLS	JRW
5/15	100#	15041	Commercial Plastics Co.	MAS	HAP
		Cl. Bl. 50			
5/16	2#	5385-I	Kohkoku	RTM	HAP
	2#	5305-I			
5/21	50#	5425-I	Geauga Plastics	JTW	JRW
5/23	50#	26421 Nat.	Tiga	AMP	JRW
5/29	100#	5385-I	Sherwin-Williams Co.	MAS	HAP
5/29	50#	14331	Vinyl Plastics, Inc.	MAS	HAP
		Cl. Bl. 50			

COMPOUND DEVELOPMENT AND SERVICE

Special Compound Testing

Western Electric specification tests were run on 4 lots of 34861 Gray 546 and on 3 lots of 36861 Natural.

Compound Verification Tests

Non-routine properties are being measured on seven (7) compounds in order to verify that they agree with published specification and typical values. All active compounds will be tested during the year as time permits.

SPECIAL PROJECTS

Waste Treatment Test Run

A total of 55 samples of waste water were tested for COD, % solids, and Ph. This project is in support of work done by L. Evans of Ponca City on our waste water system and is a follow-up to the April test run.

Reactor Opening Test Run

During the month, a test run was held to measure reactor vapor space concentration prior to dump and to evaluate vapor space steam purging. A total of 52 bomb samples, 29 bag samples, 47 syringe samples, and 65 slurry samples were tested for VCM concentration during the run. Analytical Research supported the effort with people and equipment.

Yield Study

A total of 11 samples of #1 pond inlet water were tested for % solids in May as part of the continuing yield loss program. A new composite sampler was also checked out and is now in routine usage on our yield sampling program.

RVCM - Slurry Samples

Of the 703 batches produced in May, 691 were tested for residual vinyl chloride monomer. The average RVCM for all batches tested was 182 ppm. The highest daily average was 262 ppm RVCM and the low daily average was 126 ppm.

RVCM - Dryer Samples - 5305

A total of 75 samples of 5305 from the dryers were checked. These averaged 3.7 ppm RVCM with a maximum of 28 ppm. During most of the month, 5305 truck shipments were released prior to analysis for residual VCM due to low VCM concentrations in dryer samples.

ORDER ENTRY AND TRANSPORTATION WAREHOUSE - J. C. Coffman & J. E. Mays

<u>Shipment by Product - M Lbs.</u>	<u>May</u>	<u>Year-to-Date</u>
Resin	24,344	90,034
Plasticizer	41	460
Dry Blend	4,602	20,793
Compound	3,989	20,981
TOTAL	32,976	136,268

Number of Shipments by Mode

	<u>R/C</u>	<u>O.T.</u>	<u>C.C.</u>	<u>C.O.T.</u>	<u>TOFC</u>	<u>CPU</u>	<u>TOTAL</u>
Resin - Bulk	117	50	9				176
- Package		5			8	4	17
- Export - Aberdeen	1	53					54
Plasticizer - Bulk						1	1
Dry Blend - Bulk	21	10				11	42
- Package		2					2
Compound - Bulk	9	5					14
- Package		26	5	1	2	24	58
- Export Package		2					2
	148	153	14	1	10	40	366

Number of Shipments by Month - Y.T.D.

	<u>R/C</u>	<u>O.T.</u>	<u>C.C.</u>	<u>C.O.T.</u>	<u>TOFC</u>	<u>CPU</u>	<u>TOTAL</u>
January	100	166	12	7	7	56	351
February	101	119	10	0	3	36	269
March	110	145	21	2	8	49	335
April	117	191	11	1	4	42	366
May	148	153	14	1	10	40	366

Material Handling Report

	<u>M/Lbs.</u>	<u>T/L</u>
Packaged Resin From Production	1,836	46
Packaged Compound, Dry Blend From Production	2,876	71
Transferred From Main to Prairie	1,093	27
Transferred From Prairie to Prairie	1,134	28
Reverse Transfer Resin to Plant	364	9
Reverse Transfer Compound to Plant	446	11
Shipment From Warehouses	5,103	126
Special Packaging	2,228	55
Transferred From Prairie to Main	1,174	29
	16,281	402

ABERDEEN WAREHOUSE

<u>LOCATION</u>	<u>TOTAL M SQ. FT.</u>	<u>CONTENTS</u>	<u>ESTIMATED MM POUNDS</u>		
			<u>ON FLOOR</u>	<u>OPEN</u>	<u>TOTAL</u>
MAIN-East	48	Compounds	<u>4.6</u>		
		Dry Blend	<u>.5</u>		
		Export Resin	<u>.2</u>		
		Conoco Resin	<u>.4</u>	<u>5.7</u>	<u>3.8</u> <u>9.5</u>
Prairie 12-1	12	Conoco	<u>.1</u>	<u>1.0</u>	<u>1.0</u>
12-2	22	Compound resin	<u>.1</u>		
		Dry Blend	<u>.1</u>	<u>.3</u>	<u>3.2</u> <u>3.5</u>
12-3	21	Comp O.G.	<u>.1</u>		
		Raw Materials	<u>.2</u>		
		Conoco Resin	<u>.1</u>	<u>.2</u>	<u>3.2</u> <u>3.5</u>
12-4	22	Conoco Resin	<u>.3</u>		
		Resin O.G.	<u>1.7</u>	<u>2.0</u>	<u>1.5</u> <u>3.5</u>
12-5	21	Mill Scraps	<u>.1</u>		
		Cmpd O. G.	<u>.5</u>		
		Dry Blend O. G.	<u>.3</u>		
		Sifter Overflow	<u>.1</u>		
		Resin O. G.	<u>.1</u>	<u>.9</u>	<u>1.6</u> <u>2.5</u>
12-6	21	Compound Raw Material	<u>1.2</u>	<u>1.3</u>	<u>2.2</u> <u>3.5</u>
			<u>.1</u>		
12-7	21	Conoco	<u>.1</u>	<u>3.5</u>	<u>3.5</u>
12-8	21	Conoco	<u>.1</u>	<u>3.5</u>	<u>3.5</u>
Total on Hand			<u>10.4</u>	<u>23.6</u>	<u>34.0</u>

Chrysler Resin (-1.6)

<u>Total</u>	<u>20.9</u>	<u>Total Conoco</u>	<u>8.8</u>
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DTH 000019326

Off-Grade In Storage

<u>Material</u>	<u>M/Lbs.</u>	<u>T/L</u>
Sifter Overflow	36	1
Resin "BC"	635	16
Resin "H"	1,169	29
Mill Scraps	30	1
Compound "B"	506	12
Compound "H"	-	-
Dry Blend "O.G."	328	8
	<u>2,740</u>	<u>67</u>

Chrysler Storage

Balance, May	1,954	48
Transferred during month	336	8
	<u>1,618</u>	<u>40</u>

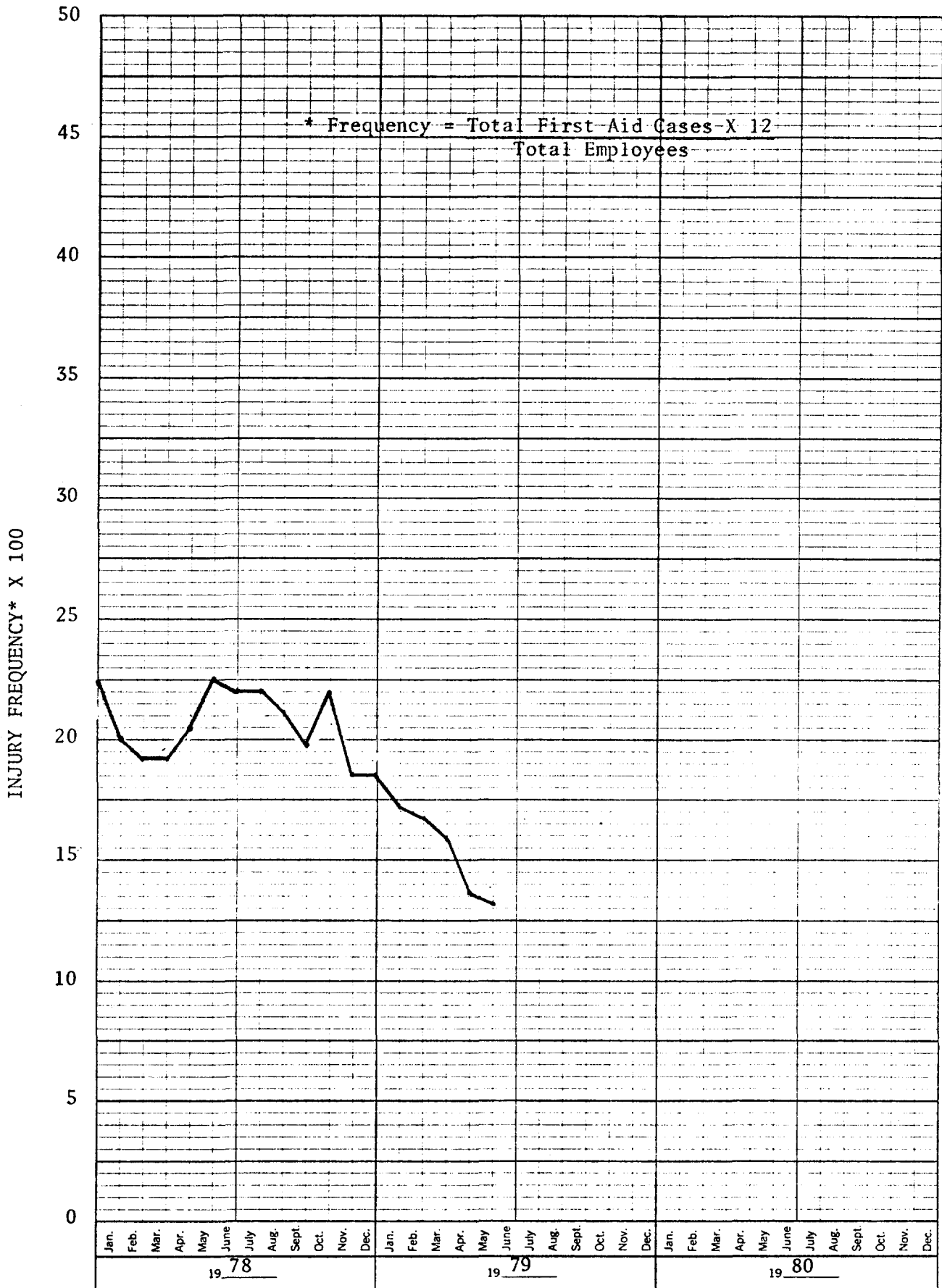
D. F. Operations

We met the May 9, deadline on the 2.2 MM lbs. Eximplast order. They also entered a new order for the same amount at the end of May for June 6, deadline. This order will only give us seven working days to complete and deliver to the wharf. This material will have to come out of current production which has to be made.

Our total packaged inventory still remains about the same as previous month.

ABERDEEN FIRST-AID CASES

12 MONTHS MOVING AVERAGE



ABERDEEN OSHA RECORDABLE INJURIES

12 MONTH MOVING AVERAGE

INJURY FREQUENCY* X 100

20

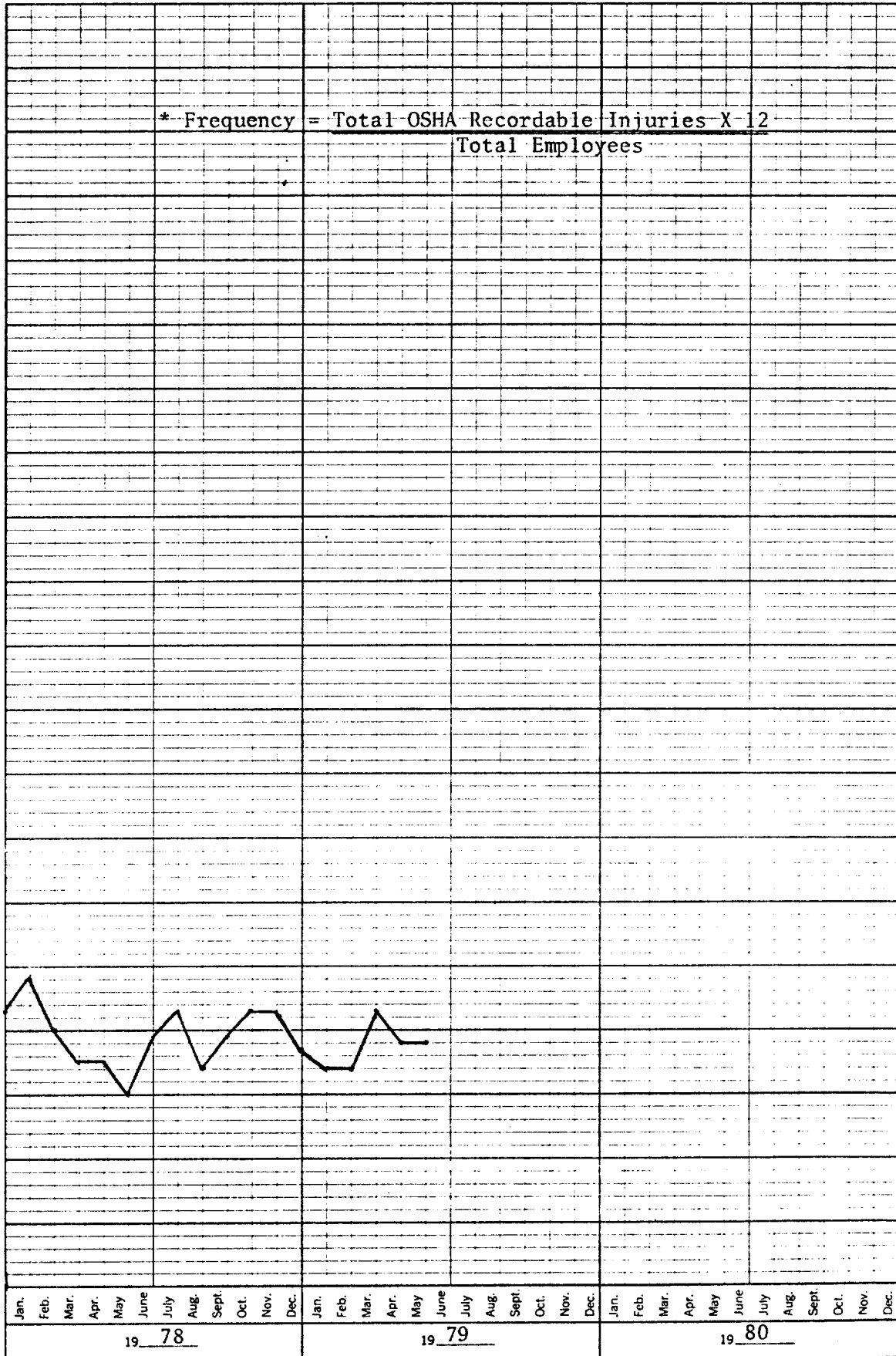
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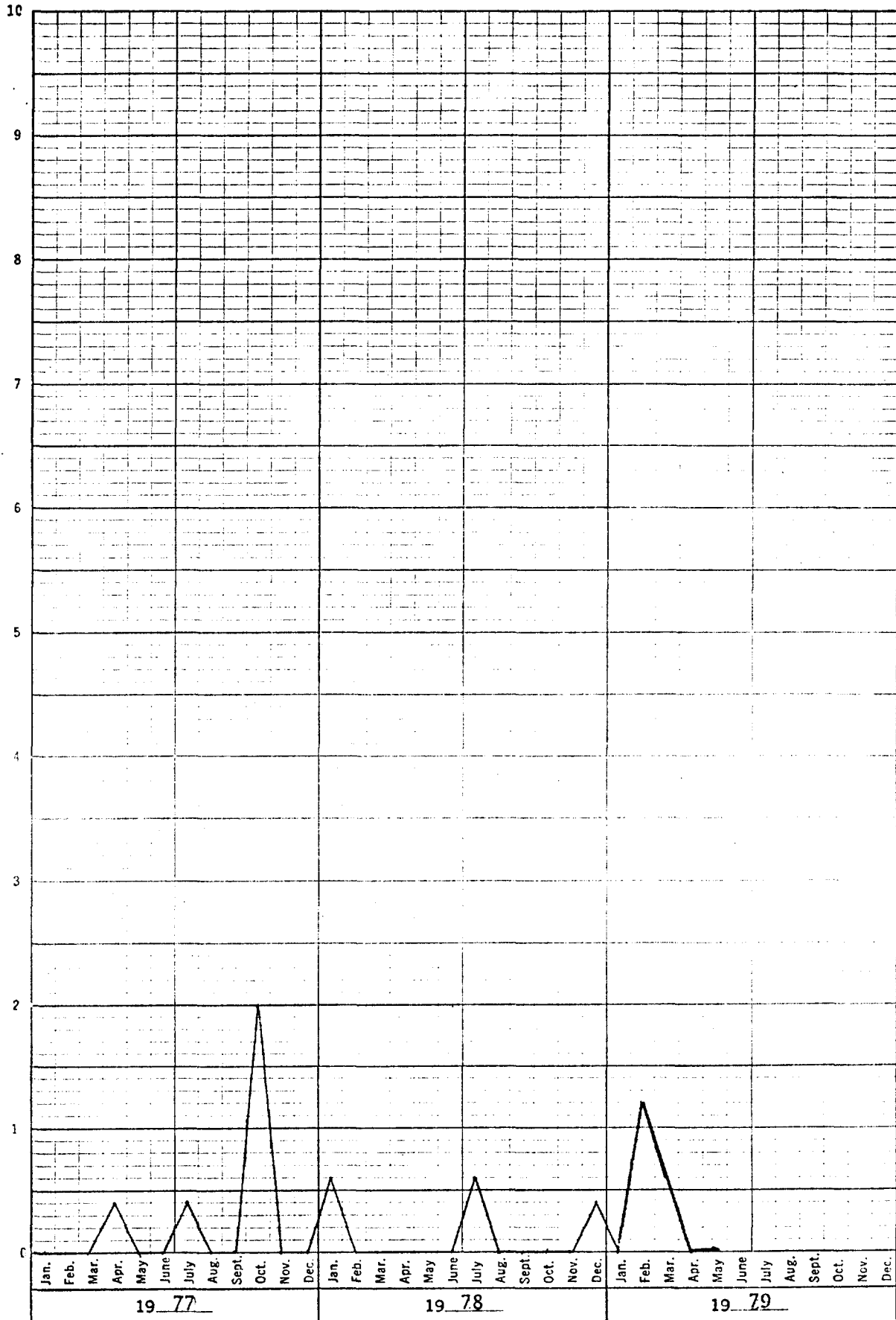
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$$* \text{ Frequency} = \frac{\text{Total OSHA Recordable Injuries} \times 12}{\text{Total Employees}}$$



MONTHLY HOURLY TURNOVER



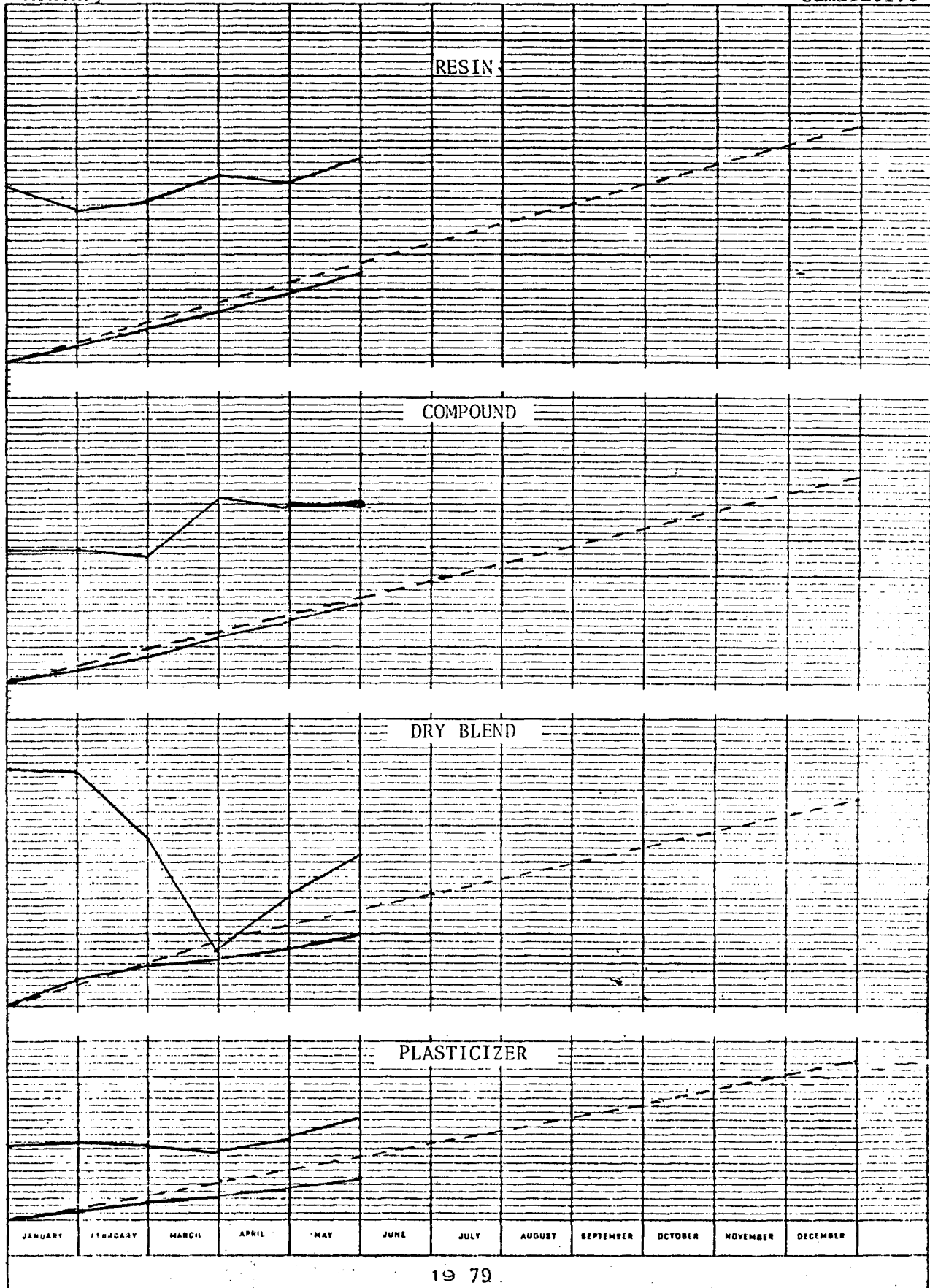
KE 3 YEARS BY MONTHS 45 3290
X 100 DIVISIONS
KEUFFEL & ESSER CO.

ABERDEEN PLANT PRODUCTION

MM Pounds
Monthly

1979

MM Pounds
Cumulative



19 79

BUDGET -----

ACTUAL _____ DTH 000019331

EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340 1/2" DIAMETER, 1/4" WALL THICKNESS
ONE YEAR BY MONTHS

1979

MM Pounds

Resin Customer Grade

Total Bag

40.0

30.0

20.0

10.0

0

Resin Off Grade

III

BC

3.0

2.0

1.0

0

Compound Customer Grade

8.0

6.0

4.0

2.0

1.0

0

Compound Off Grade

II

BC

JANUARY

FEBRUARY

MARCH

APRIL

MAY

JUNE

JULY

AUGUST

SEPTEMBER

OCTOBER

NOVEMBER

DECEMBER

19 79

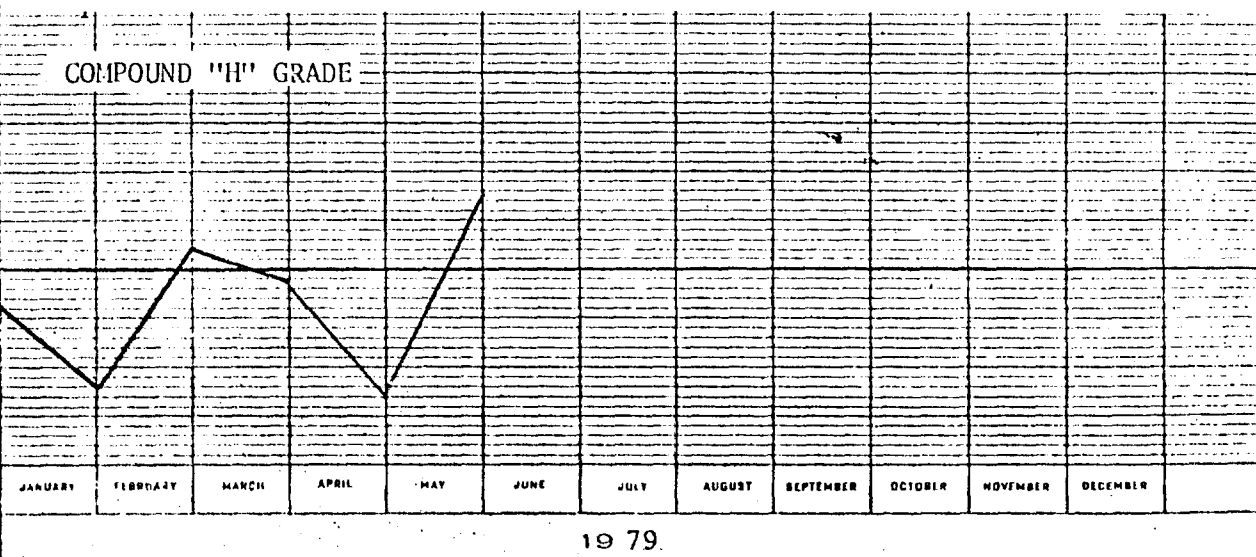
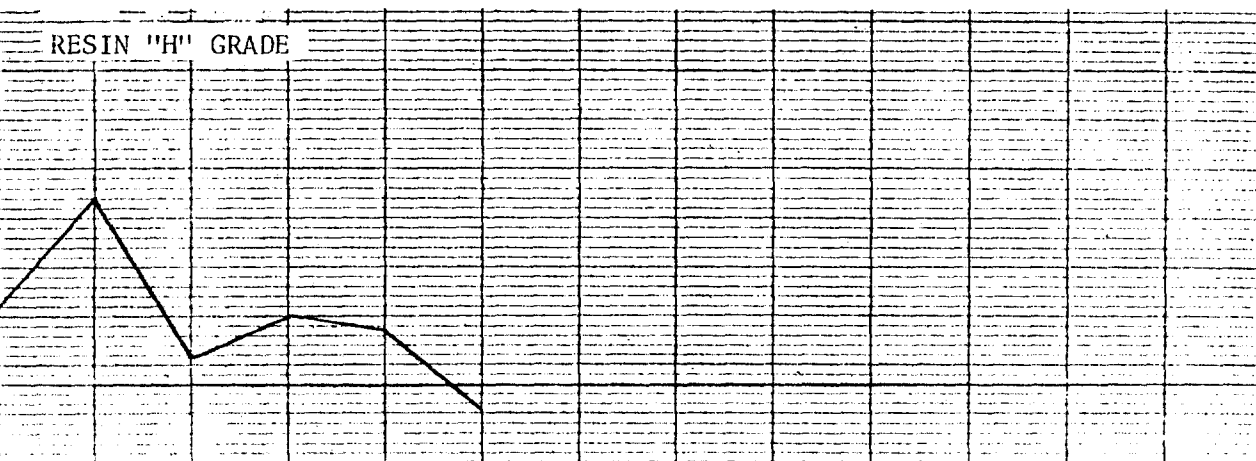
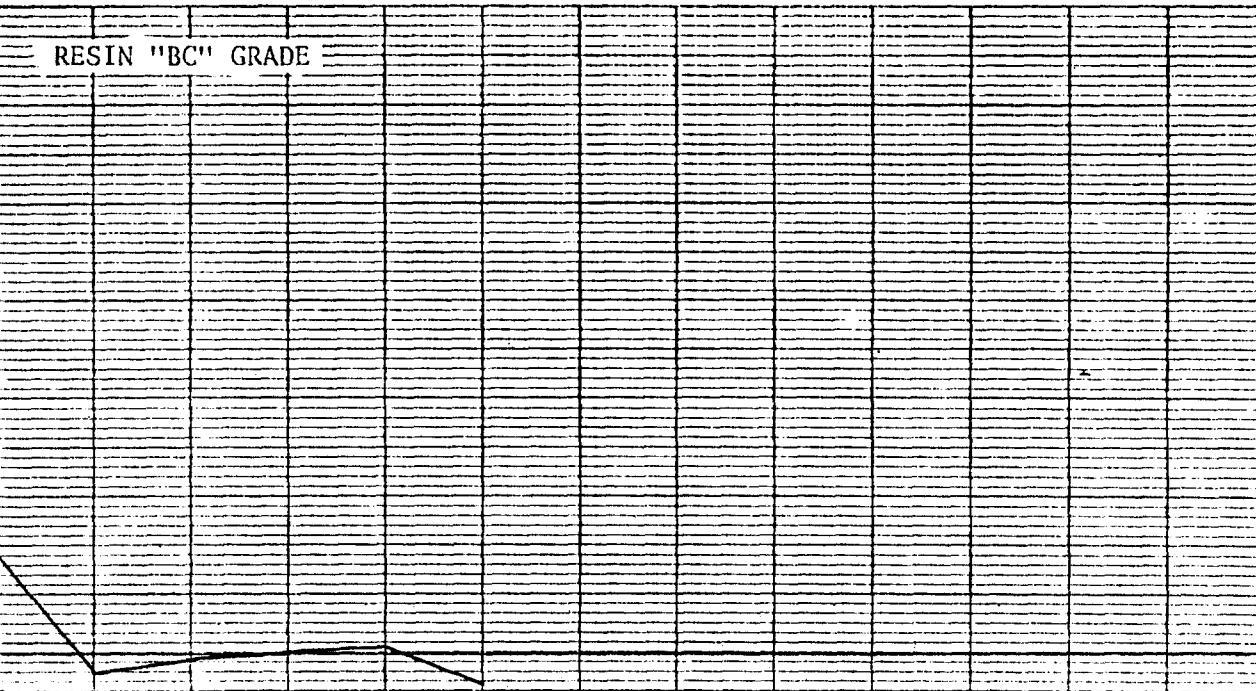
GENCO DETZGEN CO.
MADE IN U.S.A.

357-124 GLENN DETZGEN CO.
ONE YEAR WARRANTY

DTH 000019332

1979

% Off Grade



19 79

CLUBSHE DIETZGEN CO.
MADE IN U. S. A.

CLUBSHE DIETZGEN CO.
ONE YEAR WARRANTY

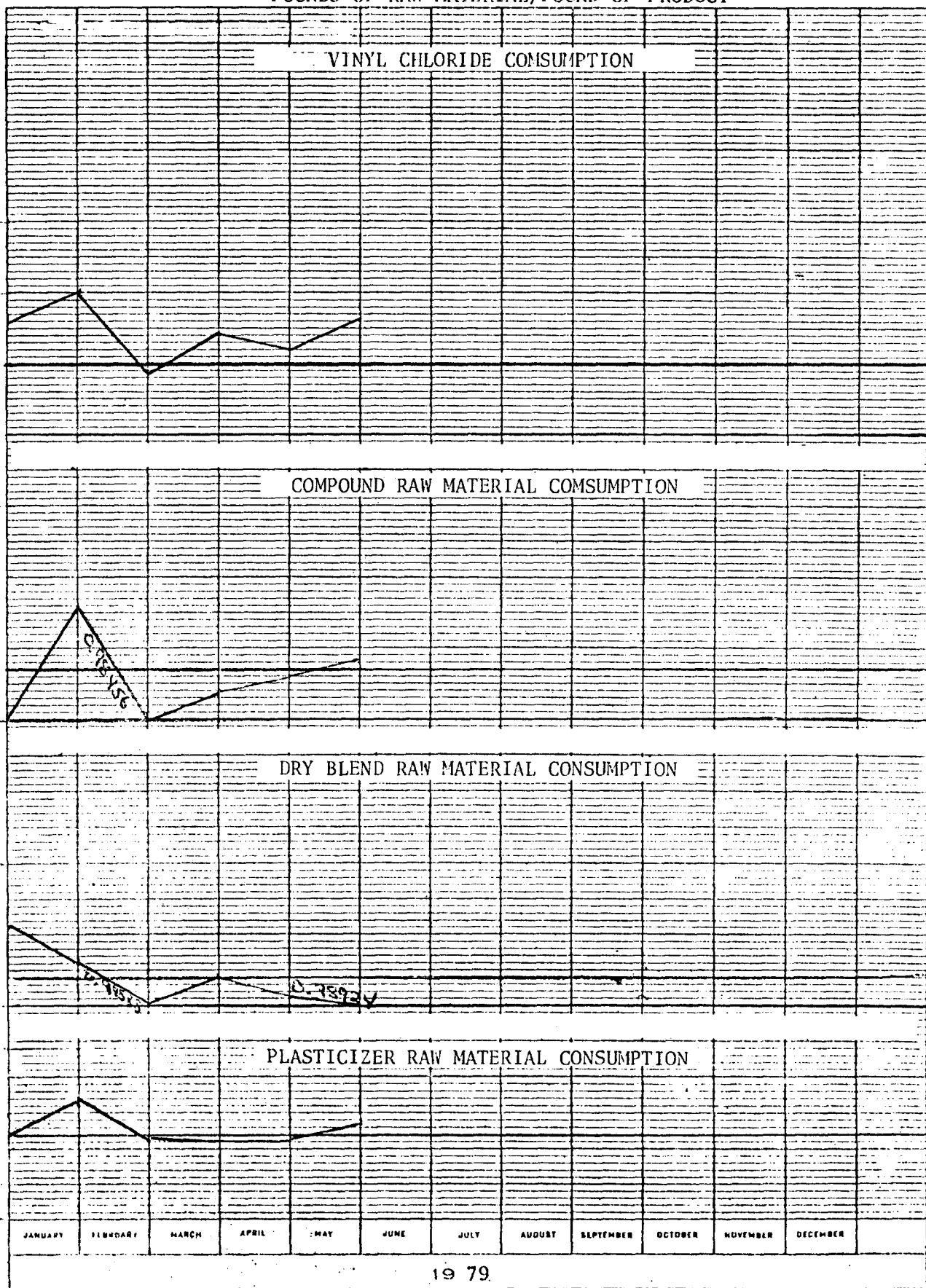
ABERDEEN PLANT EFFICIENCY

1979

POUNDS OF RAW MATERIAL/POUND OF PRODUCT

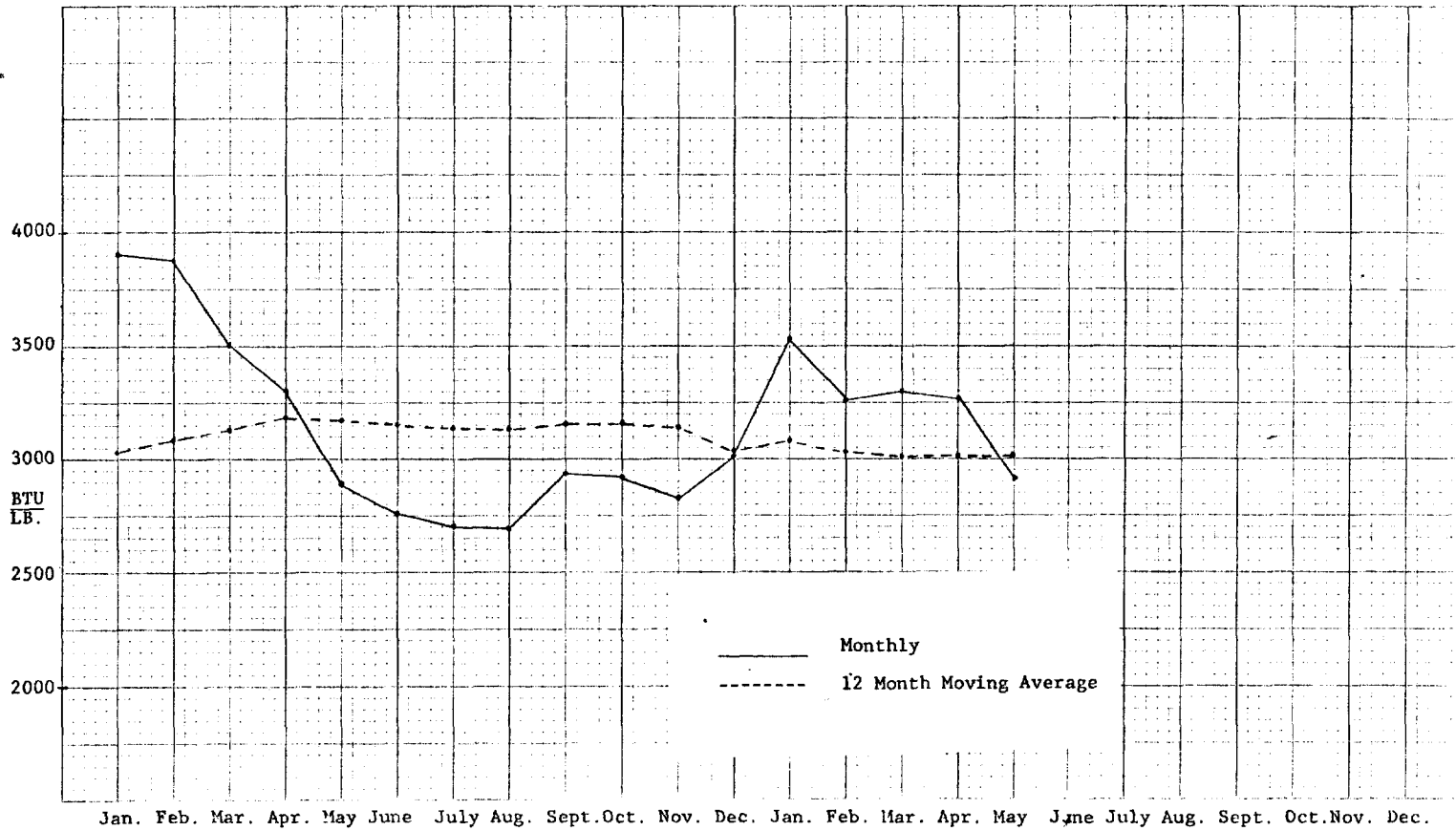
EUGENE DIETZEN CO.
MADE IN U. S. A.

NO. 340-124 DIETZEN CO. PAPER
ONE YEAR BY MONTHS



DTH 000019334

ENERGY USAGE



1978
46 0780

RE-10 X 10 TO THE INCHES
46 0780

1979

46 0780

DTH 000019335