

SAFETY - A. H. Sather

OCCUPATIONAL INJURIES

<u>Injuries Treated</u>	<u>1979 January</u>	<u>1979 Year-To-Date</u>	<u>1978 Year-To-Date</u>
First Aid	2	2	5
Medical Cases	0	0	1
Lost Time	0	0	0
<u>Injuries By Department</u>			
Vinyl Operations	2	2	3
Compound Operations	0	0	0
Maintenance	0	0	3
Laboratory	0	0	0
Receiving & Warehouse	0	0	0
Office	0	0	0

As of January 31, 1978, the plant operated 178 days or 236,249 manhours without a lost time injury.

The plant record for total injury free operating time was increased to 69 days. Also, as of January 31, 1979, the longest period without a medical case injury had been increased to 115 days from the previous record of 99 days.

INDUSTRIAL HYGIENE SEMINAR

J. V. Uptain and A. H. Sather attended the Conoco Chemicals Industrial Hygiene Seminar held in Houston, Texas January 23 - 25, 1979. Also, the problems of lead handling and the Lead Industry approach to the new OSHA Lead Standard were discussed with National Lead representatives on the evening of January 22, 1979.

LEAD STANDARD

The Lead Standard Compliance Plan was completed and issued to G. G. Draper on January 31, 1979. Initial sampling as required by the Initial Determination of Exposure paragraph was initiated with preliminary results being returned in early February. This data indicates that we do have exposures in excess of the 50 Ug lead/ m³ Permissible Exposure Limit (PEL). Initial work to reduce this exposure will be done in early February with a rental air compressor which will be placed in captive service to the Building Ventilation System dust collector. This work should improve dust collector efficiency and therefore increase airflow rates through the system. Personnel sampling will be done concurrently with this change.

The Department of Labor has issued several changes in the standard. They include a delay in the effective date of the standard to February 24, 1979 and a notice of reconsideration of the 3M disposable dust, mist, and fume respirator but have not deleted any of the requirements for quantitative face fit testing for concentrations of lead up to 500 Ug lead/ m³.

VCM COMPLIANCE

Activity in this area for the reporting period was as follows:

1. Ninty-seven (97) percent of plant received VCM Compliance Training
2. The annual medical screening was initiated
3. Routine personnel monitoring (results are shown below)

VCM Dosimetry

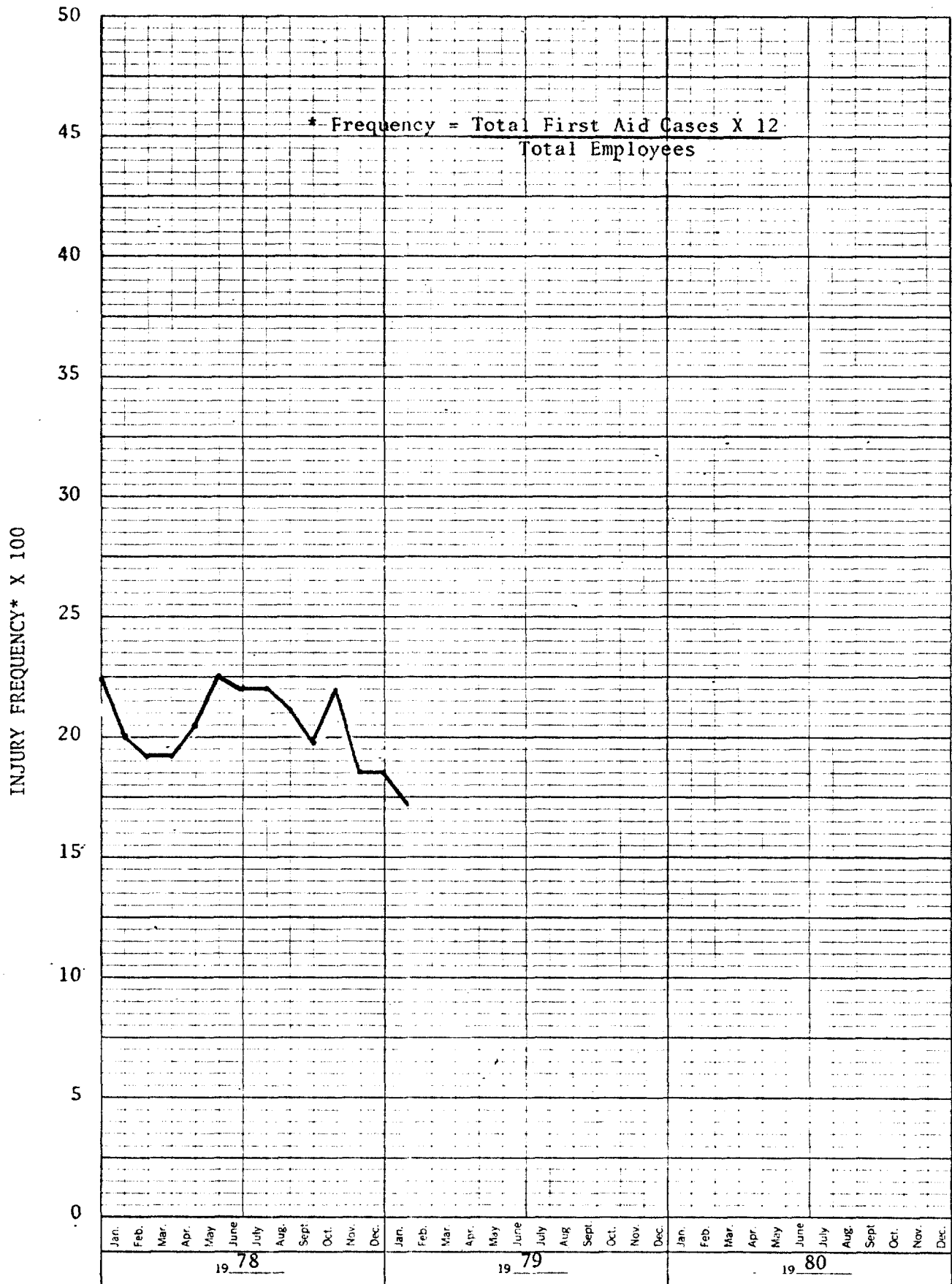
Seventy-four (74) samples were taken during the reporting period. Twelve (12) of which indicated overexposures. The distribution of sample results are shown in the table below. Explanations for overexposures are also shown below.

<u>Range</u>	<u>Number</u>	<u>Percent</u>
0.0 - 0.5	60	81.08%
0.5 - 1.0	2	2.70
1.0 - 5.0	7	9.46
5.0 ⁺	5	6.76
	<u>74</u>	<u>100.00</u>

Of the twelve (12) overexposures; one (1) occurred to an Operations Superintendent who was wearing a respirator during the change-out of seals on a pump, three (3) occurred to personnel hanging tarps around the V-11 Building and incinerator during normal operations, three (3) indicate no known reason, and the remaining five (5) are currently under investigation.

ABERDEEN FIRST-AID CASES

12 MONTHS MOVING AVERAGE



ABERDEEN OSHA RECORDABLE INJURIES

12 MONTH MOVING AVERAGE

INJURY FREQUENCY* X 100

20

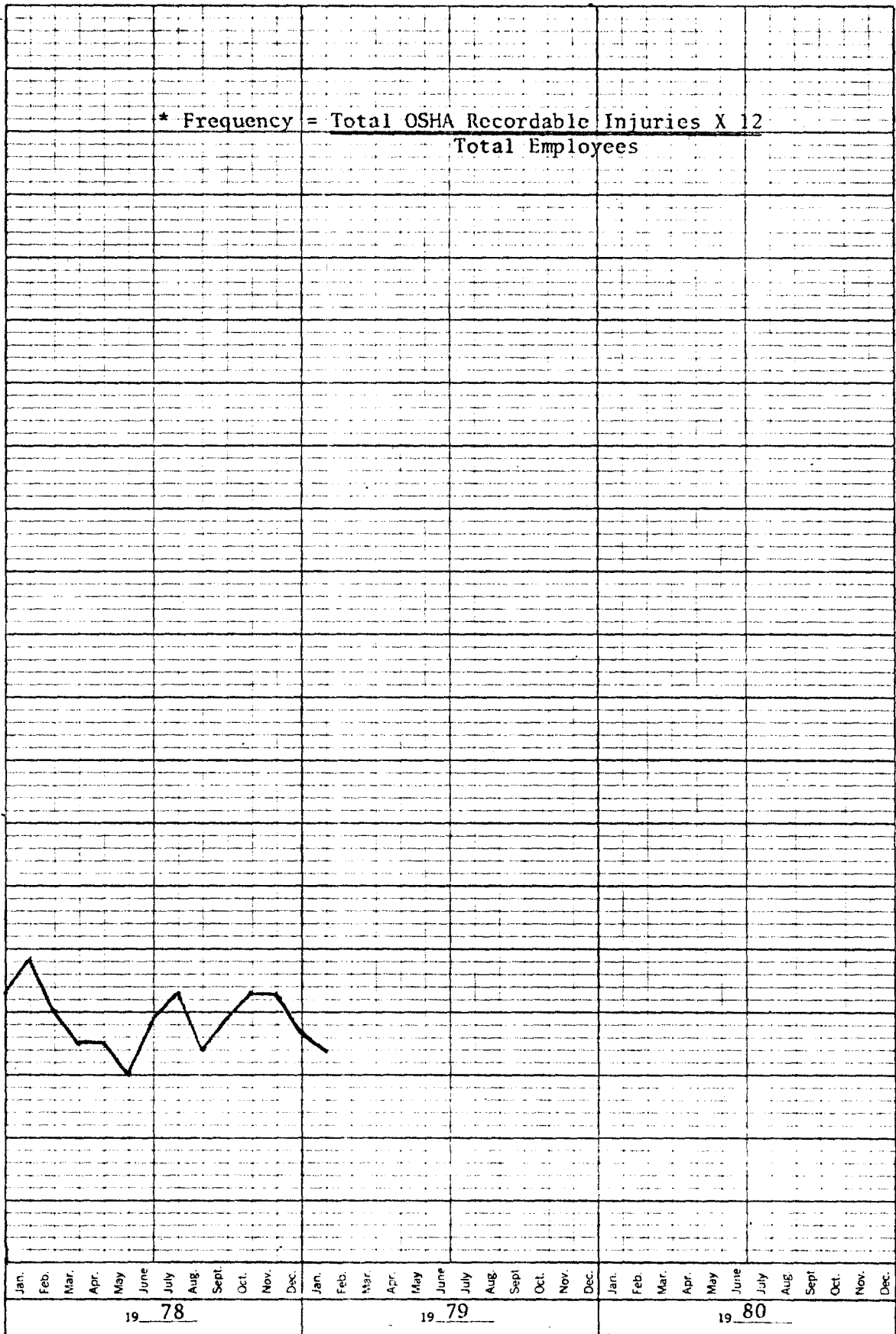
15

10

5

0

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



PERSONNEL _ J. L. Carter

EMPLOYMENT

During the month of January Aberdeen had one new hire - Mechanical Engineer.

There was a total of three (3) casual labor employees on payroll during this month. Total hours worked were 268.25. The bulk of these employees were utilized for holiday coverage.

TO/FROM LEAVE OF ABSENCE

None.

TRANSFER/PROMOTIONS

Gary G. Draper, Plant Manager of the Aberdeen Plant, was transferred and promoted to Resin Product Manager in Houston, Texas.

Curry L. Miller, Plant Manager of the Newark Plant, was transferred and promoted to Plant Manager of the Aberdeen Plant.

RETIREMENTS

None.

TERMINATIONS

None.

DEATH/DISABILITY

None.

CONOCO CHEMICALS
Aberdeen, Mississippi

January 1979
MONTHLY PERSONNEL REPORT

Salaried Employees	<u>70*</u>	Minority Employees #		%
Hourly Employees	<u>165</u>	Salaried	<u>3</u>	<u>4%</u>
Total Employees	<u>235*</u>	Hourly	<u>66</u>	<u>40%</u>
Employees (Hourly)		Total	<u>69</u>	<u>29%</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>
Chem. Plant	<u>10</u>	<u>19</u>	<u>12</u>	<u>63</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Maintenance	<u>46</u>	<u>46</u>	<u>8</u>	<u>17</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</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>33</u>	<u>33</u>	<u>25</u>	<u>76</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Acryl	<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>
Elasticizer	<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 -0- Year to Date -0-

APPLICANT BREAKDOWN:

Minority -0- % Minority -0-

Female -0- % Female -0-

Hires (Hourly) :

Month -0- Year to Date -0-

Terminations (Hourly) :

Month -0- Year to Date -0-

Overall Turnover -0-

Projected Annual Turnover 0

*Includes one (1) Co-op Student.

OVERTIME AND ABSENTEEISM

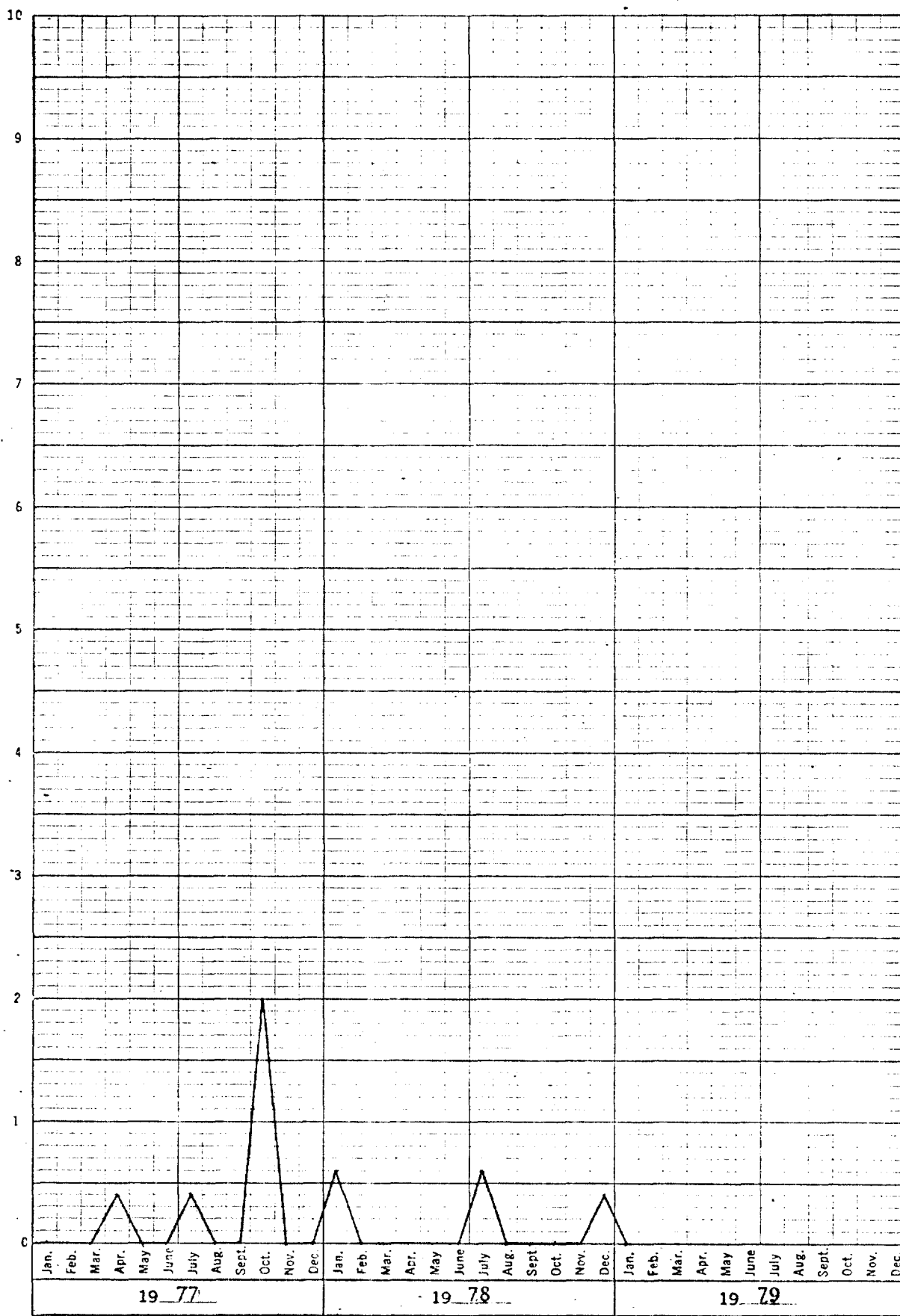
January 1979

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
Warehouse	1293.25	102.75	64.00	13%	-0-	-0-	-0-	-0-
Maintenance	5758.25	1158.00	24.00	20%	64	87%	13%	1%
Laboratory	3304.25	143.75	227.50	11%	24	100%	-0-	.7%
Compound	4808.75	76.00	283.50	7%	200	100%	-0-	4%
Vinyl	6690.00	626.50	208.00	12%	120	100%	-0-	2%
Plasticizer	598.75	7.75	11.00	3%	8	100%	-0-	1%
Utility Boiler House	607.75	80.00	56.00	22%	-0-	-0-	-0-	-0-
General Plant	847.50	61.50	-0-	7%	-0-	-0-	-0-	-0-
Total	23908.50	2256.25	874.00	13%	416	98%	2%	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.

MONTHLY HOURLY TURNOVER



VINYL - E. L. Kieschnick

January had 31 accounting days (Y.T.D is 31 accounting days).

<u>Production</u>	<u>Month</u>	<u>Y.T.D.</u>	<u>Standard</u>
1. Total Production, MM #'s	21.1	21.1	
2. Production Rate, M #'s/C. D.	681	681	904
3. Charging, Rx B. A.'s/C.D.	17.3	17.3	
4. Total Charges	537	537	
5. Reactor Stream Factor, %	81.4	81.4	
6. Drying Rates, Average #'s/Hr.	5042	5042	
7. Dryers, Stream Factor, %	80.4	80.4	

Items which limited productivity during the month included:

1. A severe freeze up problem in both reactor modules beginning 1/1/79. The old and new reactor modules were brought back on stream 1/3/79 and 1/5/79, respectively.
2. Extended downtime on D-400 reactor gearbox (119.5 hours) due to equipment delivery delays resulting from inclement weather.
3. Propane vaporizer capacity on 1/7/79 and 1/9/79.
4. Time lost in the old reactor module to repair and troubleshoot the cause for repeated failures of the water charge turbine meter in the old module (118 hours). The cause was traced to steam leakage into a water supply header which in turn resulted in sporadic, destructive flow of vapor across the meter.
5. Replacement of the agitator blades in D-300 reactor (22 hours).
6. A high level of inerts in the recovered VCM from 1/19 to 1/22 which required a reduction in catalyst loading.

Steps taken during the month to improve productivity were:

1. Installation of two centrifuge anti-chatter devices on 1/23 and 1/24. The current estimate for completion of the anti-chatter device installations is mid-February.
2. Implementation of a freeze protection program which resulted in normal operation during three additional days of temperatures below those which caused the shutdown.
3. Installation of an improved trial dust collector sock pulsing device on No. 6 dryer. The device is designed to keep the socks clean there by minimizing rate reductions to control maximum drying temperatures.

Production - (cont.d)

4. Rental of an additional electric propane vaporizer until the new steam propane vaporizers can be installed in February.
5. Rental of an additional air compressor to increase the air pressure at the dryer activators which will reduce the frequency of activator induced rate reductions. This air compressor was received and piped up in February.

Resin Quality Summary

<u>Resin Type</u>	<u>Prime Pounds</u>	<u>"BC" Grade</u>	<u>"H" Grade</u>	<u>% of Total Production</u>
5305	1,582,032			0
5385	16,054,935			0
5425	2,869,007	42,000	276,450	1.51
5465	(11,450)			
Sifter Overflow			288,985	1.37
TOTAL	20,494,524	42,000	565,435	2.88

Quality performance for the month of January was 97.12% customer grade with 0.20% "BC" and 2.68% "H" grade.

The major item affecting quality for the month was the production of contaminated 5425 which is reflected in the bag and bulk values listed above. The dryer cleaning frequency was increased and contamination guidelines prior to dryer shutdown and cleaning were tightened.

The variable cost variance for the vinyl department was (\$17.6 M) with \$29.1 M due to price and (\$46.7 M) due to efficiency. The major price variance was \$51.8 M on VCM. The major efficiency variances were (\$65.7 M) on VCM and \$11.3 M on combined initiators.

The raw material requirement for the month was 1.04053 pounds/pound PVC versus a 1.01960 standard. Two coarse batches contributed to the efficiency problem.

COMPOUND - C. R. Miller

January had 31 accounting days.

<u>Compound Production</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
1. Line I, M Pounds	1,427	62	1,427
2. Line III, M Pounds	2,252	98	2,252
3. Total, M Pounds	3,679	160	3,679

Line I operated twenty-three days during the month at an average rate of 62 M pounds per day. Production rates during the month were affected by mechanical downtime on the mill skip hoist.

Line III operated twenty-three days averaging 98 M pounds per day. Production included several compounds including a new color formulation for 34431 grey 547 for Kaiser Electric. Major items affecting rates were the number of product changes and the blending cycle times required for the 34861 and 18031 compounds.

Quality performance for flexible compound was 0.8% off-grade of which 96% was due to mill scrap. The remaining off-grade consisted of 2 M pounds due to burned seal material. The "BC" production for the month was 0.8%.

The raw material requirement for flexible compound was 1.03083 pounds raw materials/pound of compound versus a 1.01298 standard.

The variable cost variance for compound was \$17.1 M with \$17.4 M due to price and (\$0.3 M) due to efficiency. The major efficiency variances were (\$10.9 M) due to resin and \$20.0 M due to combined colors. There were no major price variances.

<u>Dry Blend</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Total Production, M Pounds	6,550	211	6,550

Dry Blend operated thirty-one days during the month at an average rate of 211 M pounds per day. Production rates were limited by a 400 M pound production run of 90171 fittings dry blend to boxes. Rates were also affected by longer heat up times due to colder weather conditions.

Quality performance for the month was 99.8% customer grade.

The raw material requirement for dry blend was 1.00570 pounds raw materials/pound of dry blend versus a 1.00322 standard. The high raw material consumption reported reflects an overcharge of omyalite 90-T to dry blend. A correction will be made in February.

The variable cost analysis for dry blend was (\$37.3 M) with \$7.7 M due to price and (\$45.0 M) due to efficiency. The variances due to efficiency reflects the use of T-101 stabilizer for 90181 fittings dry blends. This usage is a

Dry Blend - (Cont.d)

result of a revision to the formulation after preparation of the budget. 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	1,009	63	1,009

The Plasticizer unit operated sixteen days during the month averaging 63 M pounds per day. Plasticizer production consisted of DOP, 610-P, DIDP, and TOTM plasticizers. VRP production for the month was 63 M pounds.

The raw material requirement for plasticizer was 1.16981 pounds raw materials/ pound of plasticizer versus a 1.11641 standard. The high raw material requirement reflects the usage of budgeted formulations which included efficiency savings from two capital projects which were not completed in January.

The variable cost for plasticizer was (\$3.7 M) with \$14.3 M due to price and (\$18.0 M) due to efficiency. There were no major price or efficiency variances for the month.

MECHANICAL - S. J. Vincent

Vinyl - Area I

The condensers that were cleaned were D-300, D-400, D-500 twice, and D-600. Some of the other work completed on D-300 involved changing the safety discs and cleaning the spray head on the chem wash system. The agitator blades on D-300 also had to be replaced when some PVC residue damaged them. The gearbox on D-400 was rebuilt along with the slurry dump valve and the spray head for the chem wash system. Oil failure switches were also installed on D-300 and D-400 gearboxes. The agitator drive motor on D-500 was replaced because of bearing failures, the spray head for the chem wash system was pulled and cleaned twice, and the vent valve was rebuilt. The D-600 reactor seal was replaced and the spray head for the chem wash system was pulled and cleaned twice also. Several flow meters and back pressure controllers were repaired because of freeze damage. The VCM turbine meter was rebuilt several times.

The condensers in the new module were not cleaned during this period. However, leaks on the water jacket for 741 and 742 reactors were repaired. Weld failures on these two jackets are now beginning to reappear in some of the spot weld repairs previously performed. Complete weld repairs to the jackets will probably require major downtime for each reactor. The spray head for the chem wash system was also cleaned for 742 reactor and twice for 744 reactor. The safety discs were replaced on 743 reactor. The reactor seal on 744 reactor was replaced with the spare. Extensive damage to this seal required machine shop repairs and the purchase of a new bearing housing.

The recovery condensers in the old module were cleaned, each two times. A low fire switch was installed for the incinerator. The new unit cooling tower pump motor was returned to the manufacturer due to problems with the oil system. One of the area cooling towers was serviced.

Some major work was performed on the dryer system. The exhaustor motor on number one dryer was replaced along with the drive belts. The gearbox was changed on number two dryer centrifuge, the drive belts were replaced, and a PM inspection completed. An anti-chatter device was installed on two dryer centrifuges. Dryers number four and six were given a PM inspection. A revision to the pulsation system on number six dryer day collector was installed and appears to be functioning well. A burner control box was also installed on this dryer system. The blowback motor on number eight dryer pulsing system was repaired.

The seal was replaced in the west VCM charge pump in the old module. Several other seal repairs were made to some of the equipment in the new unit that included the recovery compressor, vacuum pump, water charge pump, and the VCM charge pump. Most of the seal failures experienced were a result of freeze problems. The emission recovery compressor and the hot water charge pump had to be rebuilt. An inspection of all pumps in the new unit was completed. The two large Corken compressors were refurbished. Several hoses were also changed on the unloading stations.

Compound, Dry Blend, Plasticizer, and Storage Silos - Area II

In the compound area several steam tracing leaks were repaired on the lines to both compound systems. The rotors for the FCM unit were returned to Farrel for an estimate to refurbish them. A new pump was installed on the compound feed tanks. The compound cooling tower return pump and motor were repaired and re-installed. A drainage trench was installed under the line one scale system.

Both Welex gate operators were repaired in the dry blend unit. The drive end bearings on number one welex were replaced and temporary repairs were made to the shaft and coupling. One screen change was made on the Kason system and a dump valve was repaired. Motor repairs were necessary for one of the Kason units. A cylinder operated valve was installed on the boxing hopper.

The bearings and seals in one of the nitrogen blowers were replaced. The old bypass lines were removed from the reactors. Repairs were made to the Phthalic Anhydride unloading piping after being damaged by a railcar. The caustic tank was repainted.

The resin silo sampler being evaluated by the plant was removed and returned to the vendor for further design changes. Several silo chutes and valves were repaired.

The turbo blowers on the four diesel fire pumps were repaired. Electric alarms are being tested on the compound area forklifts. The V-10 plastic strip door was replaced. Some of the abandoned conduit was removed from the Chiller area.

The laboratory compound mill was rebuilt. The power supply was revised to the lab brabenders. A new brabender was installed in the lab.

Utilities

A rental LPG vaporizer was installed at the propane system to help supplement plant needs while operating on propane. A new refrigeration compressor was installed on one of the catalyst freezers and the old unit was sent out for repairs. A complete cylinder overhaul of number one air compressor was made and the motor repaired. Six compressors had valve repairs during this period.

Chain hoist inspections were completed throughout the plant. The refrigeration and lubrication programs are continuing. The installation of an emergency shutdown for the propane vaporizers was completed. Control valve repairs were also completed on one of the boilers.

General

As a result of freeze problems, mechanical coverage was provided continuously for three days in the vinyl unit. A local explosion and fire at the Aberdeen telephone office required continuous mechanical coverage for eight days.

Planning

The planners work involved processing twenty-six invoice registers for contract work, forty-one bills were processed for payment, and twenty-seven registers were closed. Material was ordered for twenty-three projects and estimates completed for twenty-one work orders. The year end closings were completed and the work backlog was updated. Arrow diagramming was also completed for the installation of the day collector pulser revisions.

Miscellaneous

There were 622 maintenance, 41 revision, 3 safety, and 97 service to operations work orders received during the month. The following is a breakdown of the maintenance work orders by priority:

	<u>Number</u>	<u>Percent</u>
E	393	63
A	128	21
B	7	1
C	69	11
Shift Mechanic	<u>25</u>	<u>4</u>
TOTAL	622	100

During this reporting period 583 maintenance, 35 revision, 4 safety, and 100 service to operations work orders were completed. 50.3% of the time was spent on non-scheduled work. There is a backlog of 7 safety work orders with 3 safety work orders being received and 4 being completed.

PROCESS ENGINEERING - R. A. Frohreich

A. Specialty Compound Line

The plant is continuing to work with Crawford and Russell and CED on the mechanical design of the project. Engineering is 75% complete. Crawford and Russell and CED personnel were in the plant to discuss construction of the control panel and other engineering questions in early January. Project completion is now scheduled for September 15, 1979.

B. Fire Water System Revisions - Phase I

CED was in the plant January 11th to discuss the process design for the project with the plant Safety and Engineering Departments

C. Propane Vaporizer Replacement

The vaporizers and mixers will be delivered to the plant in mid February. Foundation and piping work is in progress. Project completion is scheduled for April 1.

D. Plasticizer Exposure Abatement

CED is preparing the bid package for the installation of the filter. The bid package is expected in the plant in late February.

E. Railcar Resin Cleanup

The rental unit has been evaluated. The unit works well and a purchase order has been issued for the machine.

F. Charge Water Heating Improvement

Mechanical Engineering for the project is continuing.

G. Silo High Level Alarms

One of the radiating frequency alarm probes has been purchased and will be evaluated prior to ordering the remaining alarms.

H. Plant Dryer Debottlenecking

1. Anti-Chatter Device

Two of the anti-chatter devices were received and installed. Centrifuge performance has improved with the addition of the devices. The remaining five units are expected in the plant in mid February and will be installed when received.

H. Plant Dryer Debottlenecking - (Cont.d)

2. Dryer Feed Control

The new one inch slurry feed valves are being installed as opportunities arise to make the change without taking downtime for this purpose.

3. Remote Dryer Lighting

Mechanical design for the project is in progress. Estimated completion date for the project is June 1.

4. Dryer Slurry Feed Strainers

Plans are to purchase and install one system for evaluation purposes.

I. Silo Isolation Valves

Mechanical design of this project is in progress.

J. Plant Yield Study

A continuous sampler is being used to determine the amount of resin in the effluent to the plant waste treatment system.

K. Blend Tank Aeration

The spargers for blend tanks 648, 649, 650 and 651 have been fabricated and will be installed.

L. Automatic Plasticizer Weighup System

Plant Process Engineering is working with the Orbitran Co. on the construction of the panel and the sequence of operation. A trip was made to Orbitran in January to discuss final details on the sequencing operation.

M. OMS Addition Systems

A process design for an automatic OMS addition system for the new module is being prepared.

N. Emission Recovery System

A process design to provide an additional vacuum pump and to improve tank level control in the emission recovery system is being prepared.

O. Plant Air System

A rental air compressor will be used to supplement the present plant air system. A study to define the amount of additional air required is in progress. A process design for an additional compressor will be prepared after the requirement is defined.

ENVIRONMENTAL HEALTH - R. A. Frohreich

I. Particulates

The exhausts from two of the resin dryers were sampled for particulates.

The rental vacuum cleanup system was evaluated and found to work well.
A purchase order was issued for the unit.

The application for a permit to construct the specialty compound line is being prepared for submission to the Mississippi Air and Water Pollution Control Commission.

II. Water

BOD and COD levels were within the permit limitations in December.

Methods of eliminating the Pond Irritant are being investigated.

III. Vinyl Chloride

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

TABLE I
WATER COMPLIANCE WITH
NPDES PERMIT PARAMETERS

	Flow GPM	BOD		COD		Sus. Solids		Diss. O ₂	ph
		PPM	LB./DY.	PPM	LB./DY.	PPM	LB./DY.		
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.									
Max.									
Mar. - Ave.									
Max.									
Apr. - Ave.									
Max.									
May - Ave.									
Max.									
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 January was 114.4 MMM BTU's. The energy consumption per pound of product increased from 3013 BTU/lb. in December to 3535 BTU/lb. in January.

II. Plant Energy Conservation Program

A. Energy Reporting

An energy consumption analysis for January was completed (See following sheet). A change has been made in the calculation of electrical usage. The conversion factor for electrical energy has been changed from 3413 BTU/KWH to 10000 BTU/KWH which is used in the plant's MCA reporting procedure.

B. Steam Leaks

18 of 18 reported steam leaks were repaired in January.

C. Boilers

Equipment for the Boiler Burner Replacement Project is scheduled to arrive in late February.

ENERGY CONSERVATION DATA

<u>ITEM</u>	<u>January 1978</u>	<u>January 1979</u>
<u>Production, MM Lbs.</u>		
Resin	12.9	21.1
Dry Blend	2.5	6.6
Compound	2.7	3.6
Plasticizer	0.6	1.1
TOTAL	18.7	32.4
<u>Natural Gas</u>		
Consumption, MSCF	29906	56200
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	30.504	57.324
<u>Electricity</u>		
Consumption, MM KWH	3.139	4.867
Conversion, BTU/KWH	10000	10000
Energy Consumption, MMM BTU	31.390	48.670
<u>Propane</u>		
Consumption, M Gal.	118.749	91.700
Conversion, BTU/Gal.	92000	92000
Energy Consumption, MMM BTU	10.925	8.436
<u>Total</u>		
Energy Consumption, MMM BTU	72.819	114.430
Energy Consumption, BTU/Lb.	3894	3532

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	422	423	70	98
No. 2	422	410	90	105
No. 3	433	463	90	121

MECHANICAL ENGINEERING - J. A. Dixon

AFE's Submitted, Approved and Closed

There were no AFE's submitted, approved, or closed to field charges during the month of January.

Completion Reports were issued for one AFE in January:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9226	Vapor Emission Recovery System	\$ 260,000

Design

Bid packages were prepared for the following: Steel Structure and Foundations for the Propane Vaporizer project, the Fork Lift Ramp and Canopy for the Dry Blend Production Expansion project.

Design work is in progress for the Propane Vaporizer, Slurry Blend Tank Sparger System, Hot Water Charge System, Resin Samplers, Electrical for Acrison Feeders, and Vent Line from Incinerator to VCM Bullets.

Design work by CED is in progress on Plasticizer Chemical Exposure Abatement, and Fire Protection Improvement - Phase I.

Basis of Bids were issued for concrete work for the new compound line. All major electrical, instrumentation, and mechanical equipment is on order for this project.

Construction

1. The live bottom on the 410 silo was removed and a new cone section with air pads was installed.
2. The emergency items were completed on the winter insulation schedule.
3. The leaks were repaired on the Phthalic Anhydride Unloading System.
4. The centrifuge chute modification on number 1 and 6 noise abatement project was completed.
5. The insulation of the soya epoxy line was completed.
6. New spargers were fabricated for the old and new blowdown tanks.
7. The electrical remote controls for Silo-Aeration is complete.
8. The piping on the Compound Conveying Lines project is complete.
9. Construction to divert all process flow from number 2 to number 1 lagoon is complete.

Construction - (Continued)

10. Electrical work for the new inert gas generator was completed during the period.
11. A new duct with an electric vibrator was installed for the dry blend B scale.
12. Work is in progress on Dryer Noise Abatement, Maintenance Insulation, Inert Gas Generator, Compound Conveying Lines, Farrel Mixer Feeders, Truck Unloading Safety Revisions, Railcar Resin Heel Cleanup System, New Contractor Shed, Offsites Electrical-Specialty Compound Line, Plant Emergency Siren, and Plant Emergency Lighting System.

LABORATORY - R. B. Martin

CUSTOMER COMPLAINTS

<u>Customer</u>	<u>Product</u>	<u>Type Complaint</u>	<u>No.</u>	<u>Status</u>
<u>Resin</u>				
Ross & Roberts	5305	Contamination	ARP-122078	Report by RBM
Tridyn	5385	Moisture	ARP-011079	Under Investigation
Mastic	5385	Contamination	ARP-122178	Under Investigation
Elm Coated	5385	Contamination	ARP-011279	Report by RBM
Elm Coated	5385	Gels & Contamination	ARP-011079	Report by RBM
Tridyn	5385	Moisture	ARP-011779	Under Investigation
World of Plastics	5385	Moisture	ARP-011079	Under Investigation
<u>Compound</u>				
Central Plastics	18961	Cross Contamination	ACP-121578	Report by CRM
Central Plastics	18161	Rough Profile	ACP-121578	Report by CRM
Central Plastics	17461	Cross Contamination	ACP-011179	Report by CRM
Superior	15041	Sticky Product	ACP-011279	Under Investigation
American Electrical	34641	Contamination	ACS-011179	Under Investigation
American Electrical	34641	Scheduling	ACS-011079	Under Investigation
<u>Dry Blend</u>				
Permafit Corp.	90171	Agglomerates	ACP-011279	Under Investigation

WAIVERS RECEIVED

<u>Date</u>	<u>Car</u>	<u>Material</u>	<u>Customer</u>	<u>Reason</u>	<u>Waived By</u>
1-4	PTLX-41597	5425	Hatco	Volatiles	CLS
1-5	PLCX-42680	5465	Industrial Plastics	Volatiles	CLS
1-5	T-2320	5425	Hatco	Volatiles	RDJ
1-8	00292 Bags	5425	Whittaker	Dry Time	CLS
1-10	T-2319	5425	Athol	Static	RBM
1-11	T-2419	5425	Athol	Static	CLS
1-15	T-2809	5425	Uniroyal	Gels	CLS
1-16	T-2351	5385	Robin Tech	Static	RBM
1-17	PLCX-43227	5385	Carlton	Residual VCM	GGD
1-17	PTLX-41622	5305	Carlton	Residual VCM	GGD
1-17	T-2320	5385	Robin Tech	Particle Size	RDJ
1-18	PTLX-42040	5385	World of Plastics	Particle Size	RBM
1-25	Miller Transport	VRP	Triple R	Acid Value	RBM
1-25	PTLX-41860	5305	Flexi-Flo	Residual VCM, Particle Size	NJF
1-25	PTLX-41640	5305	Flexi-Flo	Residual VCM	NJF
1-26	Bagged	5385	Export	Dry Time	CLS
1-24	PLCX-43235	5385	Tridyn Industries	Particle Size	RBM
1-31	PLCX-43199	5305	Carlton	Residual VCM, Contamination	HRF
1-31	PTLX-41826	5385	Simpson- Ore	Particle Size	GGD
1-31	PTLX-41565	5385	Tridyn Industries	Moisture	GGD

20 Waivers Total

DTH 000043847

QUALITY CONTROL TESTING

Resin - 521 regular samples, 2860 other in-process resin samples. Bulk resin shipments total 132 (62 railcars, 70 trucks).

Dry Blend - 614 blenders plus 346 boxes produced in January. 353 blenders checked plus 77 boxes tested. Adjustment rate for Dry Blend blenders was 1.8%, (boxes 0.3%). There were 339 other Dry Blend in-process samples during January. Bulk shipments total 54 (29 railcars, 25 trucks).

Compound - 598 blenders produced and tested. 429 other in-process samples. Adjustment rate was 2.2% of total blenders produced. Bulk shipments total 18 (11 railcars, 7 trucks).

RVCM in Shipments

A total of 127 shipment samples were tested for RVCM in January. A summary of these results are listed below.

<u>Product</u>	<u>5385</u>	<u>5305</u>	<u>5425</u>	<u>Dry Blend (including 90171)</u>
Average RVCM	2.5	14.0	0.4	2.9
# Samples	35	14	11	36

Resin Heat Stability

Oven heat stability tests were run on forty-two (42) blends of resins.

5385	16 Blends
5425	16 Blends
5305	8 Blends
5465	2 Blends

Two blends of 5425 were rated 15 minutes poorer than the control and one blend was more than 15 minutes poorer.

Raw Material Testing

Sixty-two (62) lots of plant raw materials were tested. One railcar of 2-Ethyl hexanol was rejected for high acid heat and phthalate ester color. The phthalate ester color was run for the first time in January and will be used when acid heat colors indicate poor quality alcohol.

Color Concentrates

Custom Chemicals Co. green color concentrate CVG-258M was tested as a replacement for Americhem 11866-R3 and was found unacceptable.

QUALITY CONTROL TESTING (CONT.D)

Lead Stabilizers

A sample of special non-dusting Tribase XL was tested. It dispersed well and was equivalent to the regular Tribase XL as a stabilizer.

Titanium Dioxide

A plant sample of New Jersey Zinc RF-1 titanium dioxide was tested. This coarse particle size and less expensive grade did not adversely affect the Brabender properties of dry blend.

PRODUCT DEVELOPMENT AND SERVICE

<u>Date Shipped</u>	<u>Quantity</u>	<u>Product</u>	<u>Customer</u>	<u>Requested By</u>
1-10	100 lbs.	18031 CL BL 50	Unique Plastic Graphics	EAS
1-11	50 lbs.	5385 III	M & T Chemicals Inc.	RNG
1-24	50 lbs.	5385 III	GAF Inc.	RNG
1-25	50 lbs.	27121	ACME Boot Co.	JFN

COMPOUND DEVELOPMENT AND SERVICE

Special Compound Testing

The specification physical tests and extrusion quality were measured on 5 railcar shipments of 34861 Gray 546 and 1 truck shipment of 36861 Natural for Western Electric. The materials all met Western Electric's specifications and were released.

Color Formulas

Gray 547

Color formulas and quality control standards were prepared for 34431 Gray 547 to enable the plant to make this compound color.

Gray 544

17461 Gray 544 was matched using a solid block color concentrate in place of a paste color concentrate.

Extension Quality Tests

During the month 20 compound samples were extruded to evaluate quality. They included Western Electric shipment samples, customer complaint samples, and plant quality evaluations.

SPECIAL PROJECTS

Resin Volume Resistivity

Volume resistivity measurements were made on 4 blends of 5425 resin produced during the month. These values were all normal for 5425 resin.

RVCM in Slurry

A total of 458 slurry samples were tested for RVCM out of a total of 498. The daily average exceeded the 400 ppm limit on 7 days (23% of the days were over 400 ppm RVCM). The overall average of all samples for the month of January was 324 ppm.

RVCM of 5305 Drier Samples

The Laboratory continues to monitor 5305 RVCM on samples from the drier. A total of 31 samples were tested with an average RVCM of 25 ppm.

RVCM of Waste Water

The GC lab continues to monitor blowdown drain water taken by production for RVCM. Problems with the emission recovery system continued to cause high VCM levels in the blowdown effluent.

A summary of January's results is as follows:

	<u>Old Blowdown Tank</u>	<u>New Blowdown Tank</u>
Average ppm RVCM	190	131
No. of Samples	21	28

Special Samples for Aberdeen Engineering

Sampling continued from the blowdown tanks for % solids. This month 22 samples were tested for the yield project. The other continuing project for Aberdeen Engineering is the special sampling of slurries and waste water for VCM content. There were 48 of these samples in January.

Dry Blend Rheometer

A new torque rheometer was put into service and sensitivity curves plotted. Due to field problems with 80273 H work was concentrated on this dry blend. It was found that stabilizer errors as analyzed on the torque rheometer would not respond to major changes in concentration. The new instrument operates quite well and work will be done to determine if the torque totalizer (integrator) is capable of routine plant usage.

SPECIAL PROJECTS (CONT.D)

Anacon Moisture Monitor

Work continued on verification and calibration of the Anacon Moisture Monitors. Anacon results were compared to the standard percent moisture by oven. Problems of mechanical reliability have developed as two of the three units are now out of service. A data letter will be issued concerning the precision and accuracy of the units in early February.

PRC Color Test

The phthalate reflux color method was set up using the run lab equipment and three alcohol samples were checked. One sample of 2-ethyl hexanol had very poor color. The other incoming shipment was marginal. This test will be used to monitor incoming alcohol shipments which fail the routine acid heat color specification.

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

<u>Shipment by Product- M/Lbs.</u>	<u>January, 1979</u>	<u>Year-to-Date</u>
Resin	17,291	17,291
Plasticizer	82	82
Dry Blend	5,471	5,471
Compound	3,997	3,997
TOTAL	26,841	26,841

Number of Shipment 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	68	65	5				138
Package		6	2		7	7	22
Export Aberdeen	3	45		6			54
Plasticizer - Bulk						2	2
Dry Blend - Bulk	24	11	2			12	49
Package		3	1			3	7
Compound - Bulk	8	7					15
Package		27	2	1		32	62
Export - Package		2					2
	103	166	12	7	7	56	351
Back Hauls for January		11		1			12

Number of Shipment 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	103	166	12	7	7	56	351

Material Handling Report

	<u>M/Lbs.</u>	<u>T/L</u>
Packaged Resin From Production	486	12
Packaged Compound, Dry Blend From Production	2,066	51
Transferred From Main to Prairie	648	16
Transferred From Prairie to Prairie	0	0
Reverse Transfer Resin to Plant	486	12
Reverse Transfer Compound to Plant	0	0
Shipment From Warehouses	5,467	135
Special Packaging	2,066	51
Transferred From Prairie to Main	1,782	44
	13,001	321

CONOCO TRANSPORTATION

/ /

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	2.8		
		Dry Blend	.6		
		Export Resin	.2		
		Conoco Resin	.3	3.9	5.6 9.5
Prairie 12-1	12	Compound		.3	1.2 1.5
12-2	22	Compound	1.2		
		Dry Blend	.1	1.3	2.2 3.5
12-3	21	Comp O.G.	.5		
		Raw Materials	.2		
		Conoco Resin	.	.7	2.8 3.5
12-4	22	Conoco Resin	1.1		
		Resin O.G.	.9	2.0	1.5 3.5
12-5	21	Mill Scraps	.		
		Cmpd O. G.	.7		
		Dry Blend O. G.	.4		
		Sifter Overflow	.1		
		Resin O. G.	1.0	2.2	.3 2.5
12-6	21	Conoco Resin			3.5 3.5
12-7	21	Conoco Resin			
		Chrysler Resin	1.4	1.4	2.1 3.5
12-8	21	Chrysler Resin	1.2	1.3	2.2 3.5
		Conoco Resin	.1		
Sub-Total					34.5
(Plug Aisles)					
Total	20.9		13.1	21.4	34.5

Off-Grade In Storage

<u>Material</u>	<u>M/Lbs.</u>	<u>T/L</u>
Sifter Overflow	160	4
Resin "BC"	1,025	25
Resin "H"	675	17
Mill Scraps	72	2
Compound "B"	1,040	26
Compound "H"	185	5
Dry Blend "O.B."	448	11
TOTAL	3,605	90

Chrysler Storage

Balance, January, 1979	2,974	73
Transferred during month	334	8
TOTAL	2,640	65

D. F. Operation

During the month of January we experienced another drop in our resin inventory. We had an export order for Eximplast that amounted to 2 MM lbs. Our total inventory is the lowest since 1974 with only 13 MM lbs. We now have 3 empty warehouse buildings at Prairie ready for future use.

(1) Thru December, 1978 Actual Accounting
(2) Thru January, 1979

ABERDEEN AUTHORIZATIONS REPORT

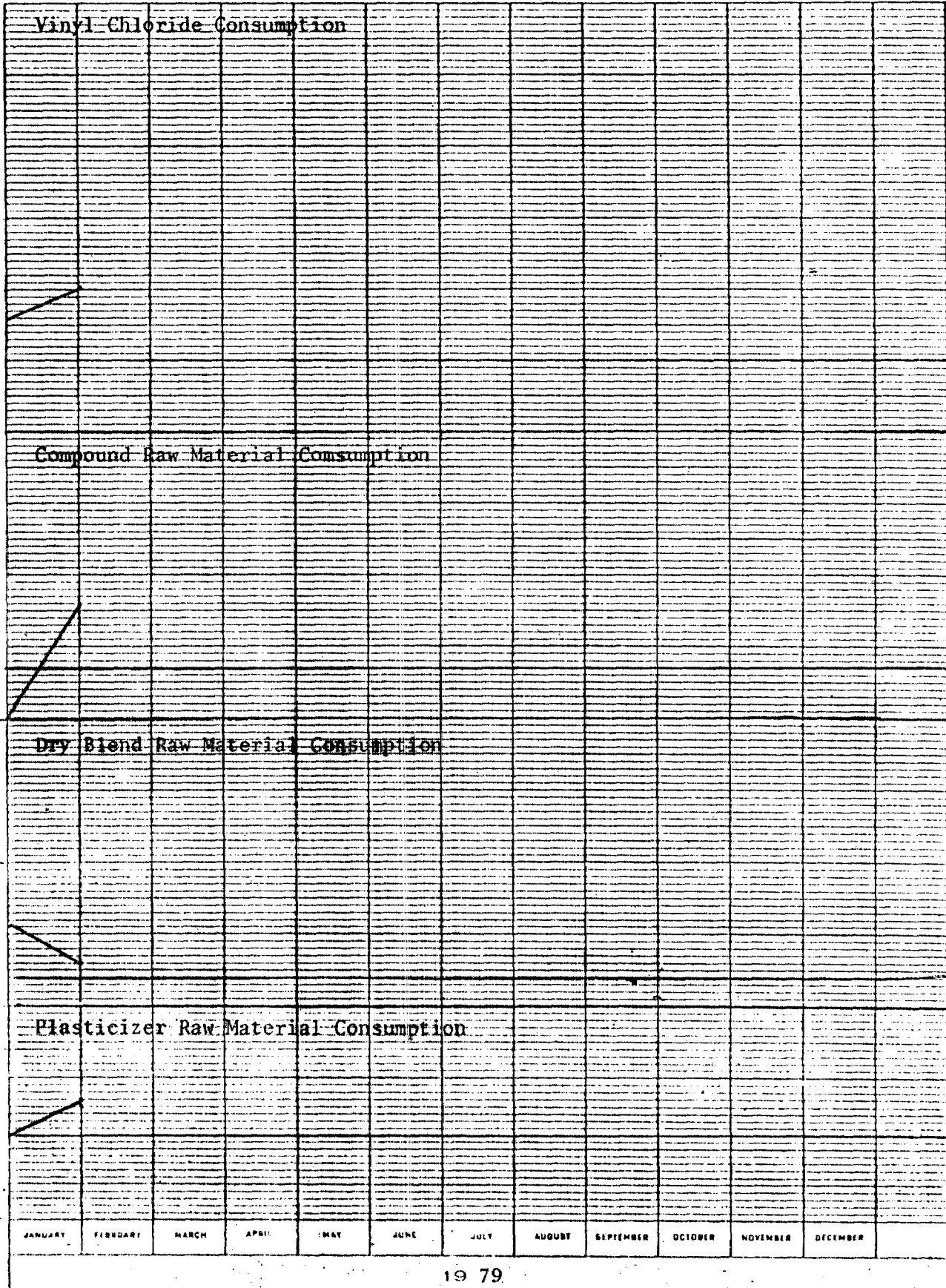
AUTH. NO.	CAPITAL DESCRIPTION	DATE APPROVED	AUTH. AFE AMT.	(1) EXPENDED TO DATE	(2) COMMITTED TO DATE	FINAL TOTAL EST. COST COMP.	UNDER (OVER) AUTH. AMT.	EST. COMP. DATE	EST. CLOS. DATE	REMARKS
9126	PVC Reactor Capacity Replacement	7/8/76	8,577,000	8,102,089	8,180,029	8,190,029	386,971	12/78	3/79	Closed to field charges.
9276	Relief Valve Vent Containment	12/10/76	39,000	33,203	34,499	34,499	4,501	12/78	3/79	Closed to field charges.
9286	Additional Slurry Blend Tank	12/7/76	290,000	281,706	285,922	285,922	4,078	12/78	4/79	Closed to field charges.
9057	Vent Gas Incineration	4/1/77	275,000	273,794	274,284	274,284	716	12/78	4/79	Closed to field charges.
9087	Resin Silo Aeration	5/16/77	280,000	229,525	241,989	241,989	38,011	12/78	3/79	Closed to field charges.
9147	Phthalic Anhydride Exposure Reduction	6/30/77	45,000	40,290	44,039	44,039	961	11/78	3/79	Closed to field charges.
9187	Emergency Reactor Vent Control	9/29/77	33,000	24,640	31,118	33,000	0	3/79	6/79	Testing.
9197	Dryer Area Noise Abatement	9/29/77	45,000	12,763	25,245	45,000	0	6/79	9/79	Installation proceeding.
9227	Plant Emergency Lighting System	10/10/77	65,000	42,052	45,648	65,000	0	4/79	7/79	Installation proceeding.
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	14,321	17,321	47,000	0	3/79	6/79	Feeders to be installed.
9257	Resin Transfer Debottlenecking	11/16/77	56,000	28,142	31,444	56,000	0	5/79	8/79	Dust collector purchased.
9267	Dry Blend Production Expansion	11/23/77	200,000	165,313	179,374	200,000	0	4/79	7/79	Some items to complete.
9277	Truck Loading Safety Revisions	11/28/77	16,000	1,147	3,095	16,000	0	3/79	6/79	Installation proceeding.
9287	Plasticizer Yield Improvement Test	12/5/77	6,000	3,041	3,544	6,000	0	3/79	6/79	One test complete.
9297	Automatic Plasticizer-Stabilizer Weighup System	12/14/77	60,000	873	41,778	60,000	0	9/79	12/79	Design being done.
9307	Compound Project Conveying Lines	12/14/77	50,000	11,131	20,563	50,000	0	4/79	7/79	Installation proceeding.
9018	Critical Spare Equipment	1/31/78	63,000	56,665	63,502	63,502	(502)	12/78	3/79	Closed to field charges.
9028	Misc. Items Under \$10,000	1/31/78	50,000	24,138	47,273	47,273	2,727	12/78	3/79	Closed to field charges.
9038	Maintenance Equipment	2/3/78	18,000	7,737	17,899	17,899	101	12/78	3/79	Closed to field charges.
9048	Resin Moisture Analyzers	2/24/78	17,000	13,148	13,148	17,000	0	3/79	6/79	Analyzers in service.
9058	Laboratory Equipment	2/24/78	50,000	48,617	48,659	48,659	1,341	10/78	2/79	Closed to field charges.
9078	Misc. Projects Under \$10,000	2/24/78	166,000	132,512	158,374	166,000	7,626	12/78	3/79	Closed to field charges.
9088	Replacement Inert Gas Generator	3/28/78	44,000	25,490	28,703	44,000	0	4/79	7/79	Equipment to be installed.
9098	New Compound Line	4/17/78	2,050,000	340,980	1,037,230	2,050,000	0	12/79	3/80	Offsites electrical being installed.
9108	Boiler Burner Replacement	5/12/78	170,000	1,183	166,525	170,000	0	6/79	9/79	Burners on order.
9138	Plant Guardhouse Improvement	8/14/78	19,000	18,496	18,540	18,540	460	11/78	3/79	Closed to field charges.
9148	Plasticizer Chemical Exposure Abatement	8/21/78	152,000	2,038	73,122	152,000	0	7/79	10/79	Purchases proceeding.
9158	Fire Protection Improvements-Phase I	9/19/78	176,000	0	0	176,000	0	9/79	12/79	Engineering in progress by CEF
9168	Misc. Projects Under \$10,000	9/21/78	59,000	10,540	50,511	59,000	0	12/78	3/79	Closed to field charges.
9178	Propane Vaporizer Replacement	9/21/78	175,000	0	88,941	175,000	0	9/79	12/79	Engineering in progress.
9188	Railcar Resin Heel Cleanup System	10/12/78	55,000	0	3,613	55,000	0	5/79	8/79	Trial unit being tested.
9198	Debottlenecking-Centrifuge Anti- Chatter Devices	11/7/78	70,000	0	60,876	70,000	0	2/79	5/79	Equipment being installed.
9208	Spare Recovery Vacuum Pump	12/5/78	14,000	0	0	14,000	0	8/79	11/79	To be purchased.
9218	Charge Water Heating Improvement	12/8/79	32,000	0	11,198	32,000	0	5/79	8/79	Purchases proceeding.
9228	Dry Blend Silo Alarms	12/13/78	25,000	0	0	25,000	0	5/79	8/79	Engineering in progress.
9248	Silo Isolation Valves	12/14/78	25,000	0	0	25,000	0	7/79	10/79	Engineering in progress.
9258	Dryer Operation Improvements	12/14/78	315,000	0	0	315,000	0	10/79	1/80	Engineering in progress.
<u>EXPENSE</u>										
9238	Compound Line I Roof Collapse	12/13/78	44,000	0	0	44,000	0	2/79	5/79	Insurance claim being filed.

DTH 000043855

ABERDEEN PLANT EFFICIENCY

1979

POUNDS OF RAW MATERIAL/POUND OF PRODUCT



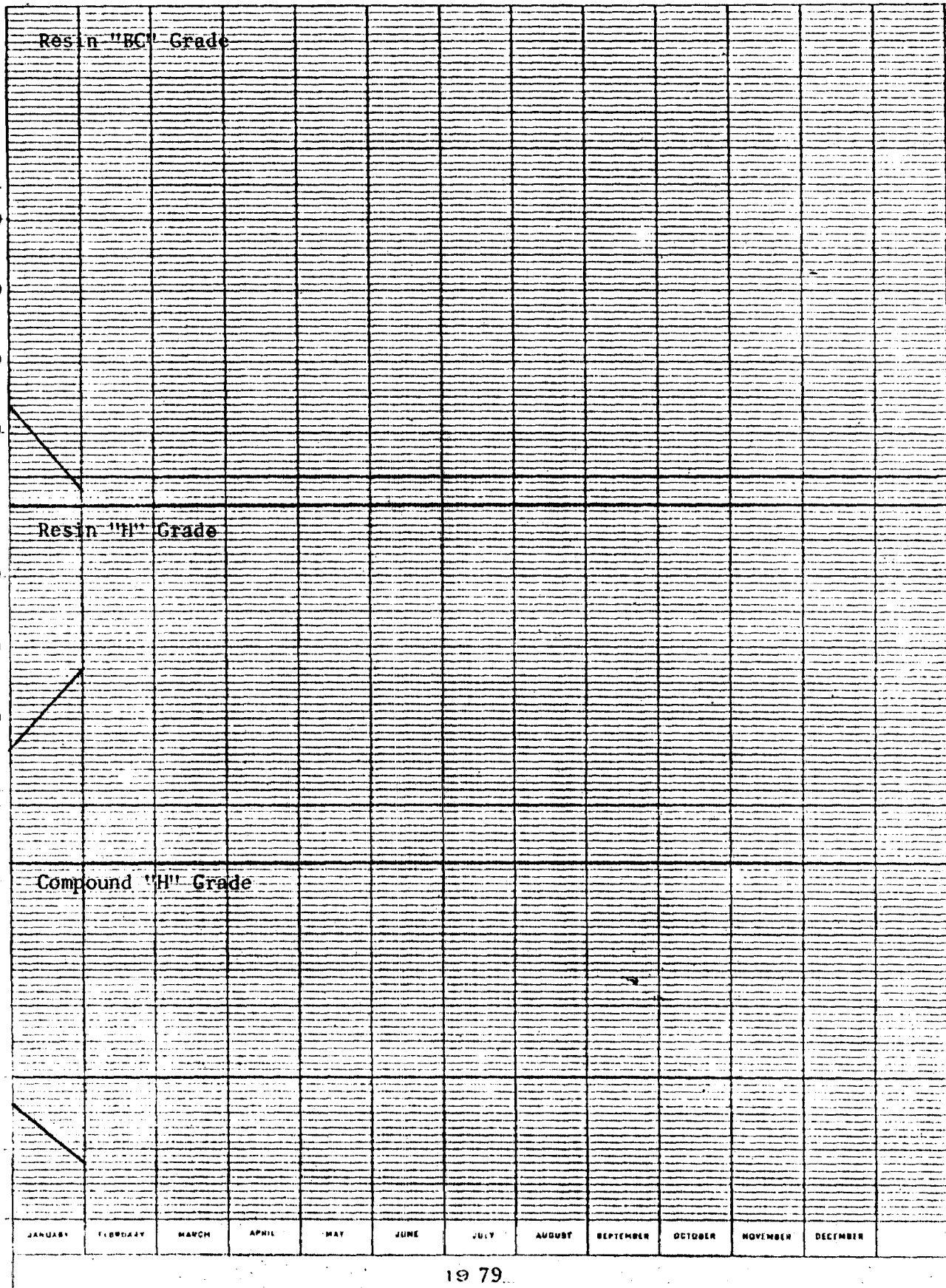
19 79

DTH 000043856

ABERDEEN PLANT QUALITY PERFORMANCE

1979

% Off Grade



1979

DTH 000043857

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

FOR USE IN ABERDEEN PLANT
ONE YEAR BY MONTHS

ABERDEEN PLANT PRODUCTION

1979

MM Pounds
Monthly Production

MM Pounds
Cumulative Production

Resin

Compound

Dry Blend

Plasticizer

40
35
30
25
20
15
10
5
0

350
300
250
200
150
100
50
0

8
7
6
5
4
3

50
40
30
20
10
0

- 5
- 4
- 3
- 2
- 1
- 0

30
60
40
20
0

2
1
0

12
9
6
3
0

[illegible]

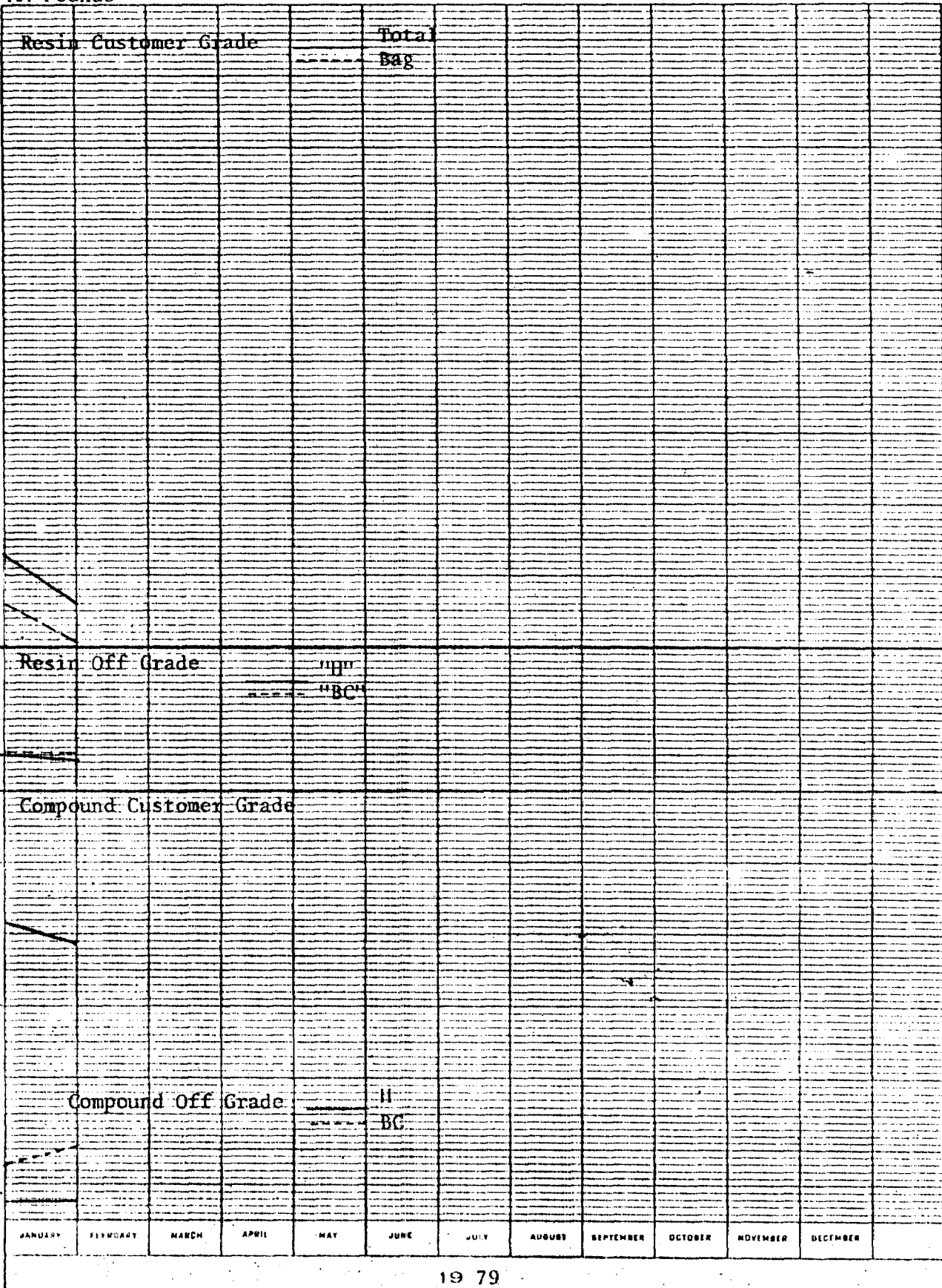
19 79

DTH 000043858

ABERDEEN PLANT INVENTORIES

1979

MM Pounds



19 79

DTH 000043859