

CONOCO CHEMICALS
Aberdeen, Mississippi

February 1978
MONTHLY PERSONNEL REPORT

Salaried Employees	<u>71*</u>
Hourly Employees	<u>155</u>
Total Employees	<u>226*</u>
Employees (Hourly)	<u> </u>
New Employees	<u>-0-</u>
Terminations	<u>-0-</u>

Minority Employees	#	%
Salaried	<u>4*</u>	<u>5%</u>
Hourly	<u>56</u>	<u>36%</u>
Total	<u>60*</u>	<u>26%</u>

Hourly Min. Hired	<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>11</u>	<u>11</u>	<u>4</u>	<u>36</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>7</u>	<u>15</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Laboratory	<u>21</u>	<u>21</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>32</u>	<u>24</u>	<u>75</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Vinyl Dryers	<u>20</u>	<u>20</u>	<u>11</u>	<u>55</u>						
Vinyl Large Reactors	<u>12</u>	<u>12</u>	<u>2</u>	<u>18</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>1</u>	<u>9%</u>	<u>9%</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 -0- Year to Date 27

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 -1-

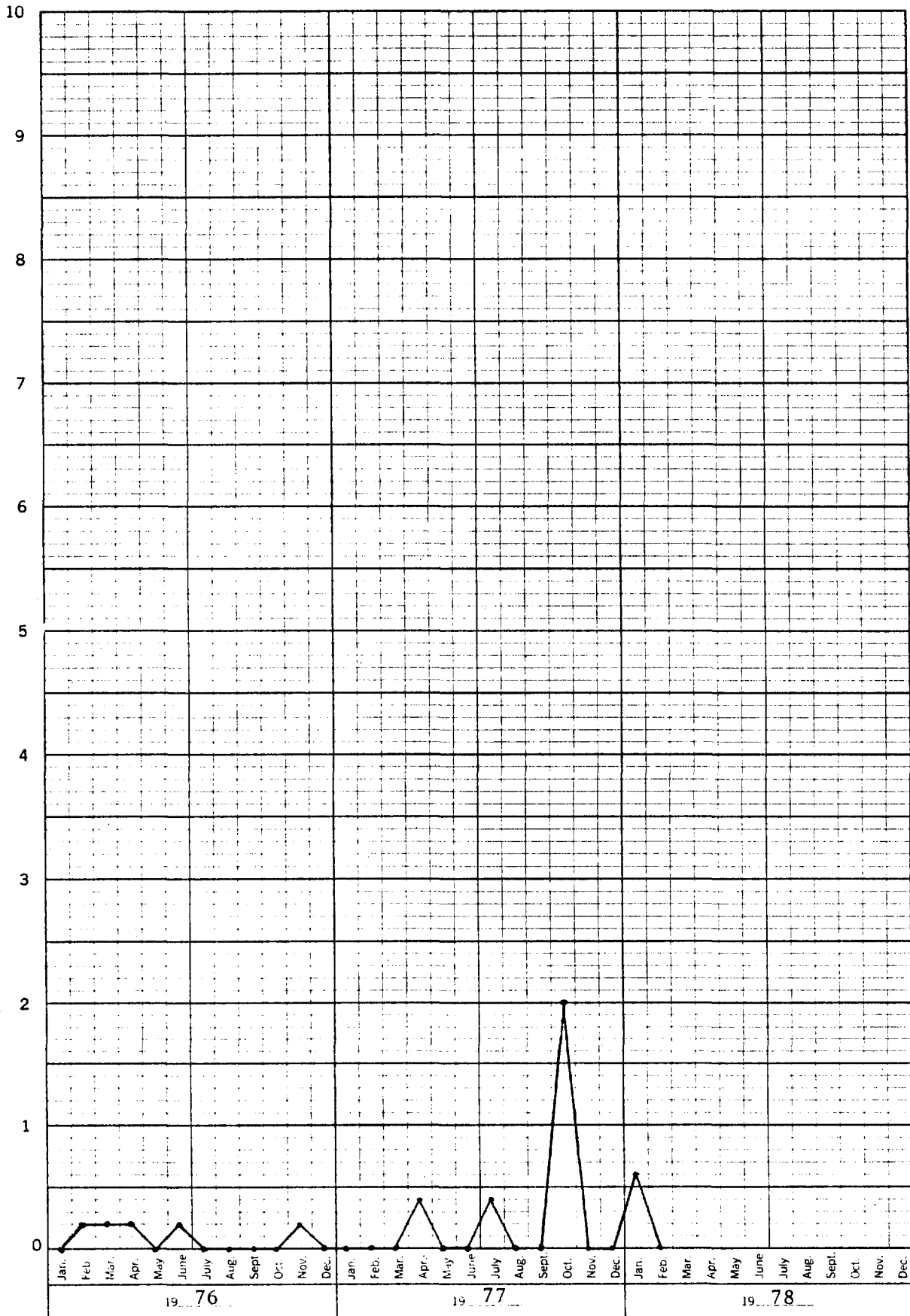
Overall Turnover -0-

Projected Annual Turnover .6%

*Include One (1) Co-op Student.

MONTHLY HOURLY TURNOVER

Percent



46 3290

3 YEARS BY MONTHS X 100 DIVISIONS
NEUFFEL & FISHER CO. MADE IN U.S.A.

OVERTIME AND ABSENTEEISM

February 1978

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	1384.00	217.50	24.00	17%	-0-	-0-	-0-	-0-
Maintenance	6447.00	645.50	-0-	10%	80	100%	-0-	1%
Laboratory	3266.25	97.50	136.00	7%	80	100%	-0-	2%
Compound	5261.75	187.00	225.75	8%	112	100%	-0-	2%
Vinyl Dryer	3370.50	378.00	160.00	16%	112	100%	-0-	3%
Vinyl Large Reactor	1826.25	170.00	88.00	14%	-0-	-0-	-0-	.4%
Plasticizer	637.75	11.00	-0-	2%	-0-	-0-	-0-	-0-
Utility Boiler House	639.50	18.25	32.00	8%	-0-	-0-	-0-	-0-
General Plant	901.50	73.50	-0-	8%	-0-	-0-	-0-	-0-
Total	23734.50	1798.25	665.75	10%	384	100%	-0-	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.

DTH 000051492

VINYL - E. L. Kieschnick

February had 28 accounting days (Y.T.D. is 59 accounting days).

<u>Production</u>	<u>Month</u>	<u>Y.T.D.</u>	<u>Standard</u>
1. Total Production, MM #'s	12.4	25.2	
2. Production Rate, M #'s/C.D.	444	427	836
3. Charging, Rx B.A.'s/C.D.	11.3	10.9	
4. Total Charges	317	646	
5. Reactor Stream Factor, %	89.8	88.6	
6. Drying Rates, Average #'s/Hr.	511	416	
7. Dryers, Stream Factor, %	51.8	61.1	

Items which limited production for the month included:

1. A one day shutdown to make tie-ins for the Capacity Replacement Project and EPA related projects.
2. Time lost on D-600 to replace the agitator motor bearing, change the seal, and clean the reactor.
3. Time lost to replace the internal parts of the evacuation jets which had caused extended evacuation times.
4. Operation of two reactors on 5425, one on 5385, and one on 5305 for a two week period. Estimated production penalty versus normal 70-75% 5385 production is 6%.
5. Time lost to replace a leaking VCM charge valve on D-500 reactor.

Resin Quality Summary

<u>Resin Type</u>	<u>Prime Pounds</u>	<u>"BC" Grade</u>	<u>"H" Grade</u>	<u>% Off Grade</u>	<u>% of Total Production</u>
5305	1,620,088	400		.02	
5350			(1,700)		(0.01)
5385	6,097,384	(26,650)	(150)	(.44)	(0.22)
5425	4,281,313	(84,125)	(12,700)	(2.26)	(0.78)
5446/5465	315,350	47,250		15.00	0.38
Sifter Overflow			191,130	100.00	1.54
TOTAL	12,314,135	(63,125)	176,580		0.91

Quality performance for the month of February was 99.01% customer grade with (.51)% "BC" and 1.42% "H" grade.

The 1.54% sifter overflow reflects recovery of 30,000 pounds (0.32%) in resin spills due to a resin transfer line failure and to failure of a valve on a bulk loading silo. In addition, a coarse blend of 5305, due to an extended heat-up time, was also put in sifter overflow.

The variable cost variance for the vinyl department was \$274.4 M with \$336.0 M due to price and (\$61.6 M) due to efficiency. The major efficiency variances for the month were (\$61.6 M) on VCM and \$27.0 M on Lupersol 223 M. The \$27.0 M on Lupersol 223 M is due to comparison with the standard unit per pound usage which is in error.

The only major price variance is \$332.7 M on VCM.

The raw material requirement for the month was 1.04561 #'s VCM/# PVC versus a standard of 1.0147. The major losses in the department for the month were:

1. 0.0030 lb./lb. due to removal of resin heels from returning railcars and trucks.
2. 0.0014 lb./lb. (estimated) due to reactor foaming losses.
3. 0.0050 lb./lb. due to a coarse batch/reactor vent

General

1. Total customer grade inventory decreased from 28.8 MM pounds to 24.2 MM pounds.
2. 5.3 MM pounds of 5385 resin were debagged during the month.

COMPOUND - C. R. Miller

February had 28 accounting days (Y.T.D. is 59 accounting days).

<u>Compound Production</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
1) Line I, M pounds	104	52	420
2) Line III, M pounds	2859	114	5211
3) Total, M pounds	2963	106	5631

Line I operated three days during the month at an average rate of 52M pounds per day. Production included sample heating pad compounds 3711-27C and 3711-27E and a sample plug stock compound 3565-49. All samples produced were for Neco.

Line III operated twenty-five days averaging 114 M pounds per day. Production rates were affected by long blender dry times during the production of profile compound 18161 and specialty compound 44842. Production for the month also included 20 M pounds of 34533 Natural for Packard Electric.

Quality performance for flexible compound was 1.76% "H" grade of which 92.3% was due to mill scrap. The remaining "H" grade resulted from black spec contamination in 15041 C1 Blue 50. "BC" production for the month was 3.4% of which all has been reblended. The "BC" production was largely due to white specs in 32 M pounds of 35441 Black.

The raw material requirement for flexible compound was 0.99804#'s raw material/ # flexible compound versus a 1.01501 standard. (Y.T.D. is 1.00888). The low raw material requirement reflects the error made in resin inventory for January.

The variable cost variance for flexible compound was \$27.2 M with \$2.0 M due to price and \$25.2 M due to efficiency. Variance due to product mix was (\$8.0 M). There were no major price or efficiency variances for the month.

<u>Dry Blend</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Total Production	2766	99	5277

The dry blend unit operated twenty-eight days during the month at an average rate of 99 M pounds per day. Production included 80172-B, 80273-G and 90281 dry blends. Major factors affecting rate were the packaging of 780 M pounds of dry blend, operation of only one Welex for several days due to mechanical difficulties and by unit downtime required to solve problem areas related to the new scale system.

Quality performance for the month was 97.8% customer grade. Off-grade material continues to be reworked at a 3% rate.

The raw material requirement for dry blend was 0.96788 #'s raw materials/ # dry blend versus a 1.00321 standard. (Y.T.D. is 0.97589) The low raw material requirement reflects a \$17.3M variance for resin usage.

The variable cost variance for dry blend was \$68.9M with \$5.8M due to price and \$63.1M due to efficiency. The variance due to product mix was \$47.9M. The only major efficiency variance was \$17.3M for resin usage. There were no major price variances during the month.

<u>Plasticizer</u>	<u>Month</u>	<u>#'s/Day</u>	<u>Y.T.D.</u>
Total Production, M Pounds	903	65	1478

The plasticizer unit operated fourteen days during the month averaging 65M pounds per day. Production included DOP, DIDP, 610-P and TOTM plasticizer. VRP production for the month was 44M pounds.

The raw material requirement for the month was 1.21598 #'s raw materials/ # plasticizer versus a 1.10745 standard (Y.T.D. is 1.18799). The high raw material requirement reflects an error made in REP on the February month ending inventory. A correction will be made in March.

The variable cost variance for plasticizer was \$7.4M with \$2.5M due to price and \$4.9M due to efficiency. Variance due to product mix was \$8.6M. There were no major price or efficiency variances for the month.

MAINTENANCE - K. W. Couch

Vinyl

1. D-300 agitator seal failed early in the month after it had been changed in late January. Upon investigation, we found that the seal cavity had burs which nicked the seal O-ring when it was installed. The spacer between the gearbox and reactor bottom was removed and the seal cavity was machined to remove all burs.
2. Due to a buildup on D-600 agitator blades, the bottom bearing in the motor failed and the seal started to leak. The motor was sent out for repairs and our spare motor was installed. We also changed the mechanical seal.
3. Installed new nozzles in the evacuation eductors.
4. Replaced the mechanical seal in the east V.C.M. transfer pump.
5. Changed or rebuilt the following valves:
 - A. D-500 VCM charge
 - B. D-500 chem wash
 - C. D-600 chem wash
 - D. VCM pure receiver inlet
6. During a one day shutdown of the reactor area, 11 maintenance work orders were completed.

Safety

1. Installed an escape ladder from the V-10 dryer sifter deck to the floor.
2. Completed the installation of safety latches on the new reactor Lenape manways.

Projects

1. Aligned the equipment for the new slurry blend tank and the vent recovery project.
2. Installed and revised the debuggging systems for dryer lines 1, 6, & 8.
3. Installed larger motors, 15 HP, on the two small Corken compressors and removed unnecessary piping in the transfer system from the bullets at the VCM storage area.

Compound, Dry Blend, Plasticizer & Silos

1. Installed a new ram on Line I Banbury. Also installed hopper door seals.
2. Changed the motor and motor base for #6 air compressor.
3. Installed and removed the portable screeners under silos 412 and 413 due to problems with Kason screener.

4. Replaced the drive bearings and coupling for #1 Welex unit in Dry Blend.
5. Rebuilt the 687 and 688 silo valves.
6. Completed overhaul of "A" feeder for Line III.

Safety

1. Completed the installation of new steps and handrail on the platform on the south end of the plasticizer tank farm.
2. Rebuilt chain guards for the palletizer and #5 and 6 star valves for Line III.
3. Repainted the safety lanes in the hall by the Lab.
4. Installed quick connect fittings for the resin transfer system at the 600 series silos. (ESAR)

Projects

1. Built a motor repair table in the I & E Shop.
2. Removed the unused equipment for the atomite system in Dry Blend.
3. Installed a 3" transfer line from V-11 dryer building to the resin hook-up station.

Utilities

1. Completed a major overhaul of #7 air compressor.
2. Repaired valves in #2, 3, 4, 5 and 8 air compressors.
3. Repaired the damaged parts for #9 air compressor and placed it on line.
4. Removed the suction strainer from the new Joy centrifugal compressor and repaired minor oil leaks.

Safety

1. Insulated a section of #6 air compressor discharge line for personnel protection.
2. Repaired the safety shower at the lagoon area.

Projects

1. Set up cooling tower pretreatment for the Capacity Replacement cooling tower.

Instrument and Electrical

1. Completed the installation of the new Dry Blend control system and removed all unused panels and conduit. Completed the design for the silo control panel.
2. Rewired the constant temperature room in the lab after the G.C. units were moved.

3. Installed new switch gear and wire for the 15 HP motors on the two small Corken compressors at the VCM unloading rack.
4. Installed the pressure controller for the Joy centrifugal air system.
5. A great deal of the Instrument Technicians' time was spent on check out of the Capacity Replacement Project.

Planner

1. Processed 21 Invoice Registers for contract repairs.
2. Supervising the update of the plant fixed assets inventory.
3. Worked with MED planning group to set up computer run for the relocation of the existing reactor control room and work to be accomplished in the existing reactor area.

Micellaneous

1. The plant was on propane 17 hours during the month.
2. There were 596 maintenance, 11 revision, 10 safety and 17 service to operations work orders received during the month. The following is a breakdown on the maintenance work orders by priority.

E	275	46%
A	94	16%
B	24	4%
C	62	10%
Shift Mechanic	141	24%
Total	596	100%

3. During the month, 615 maintenance, 24 revision, 23 safety and 19 service to operations work orders were completed.
4. The percentage of maintenance time spent on non-scheduled work was 29.3% for the month.
5. During the month, 10 safety work orders were received, 23 completed and we have a backlog of 2 work orders.
6. All maintenance employees completed the fork truck driver training.

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PROCESS ENGINEERING - Douglas Michels

A. Capacity Replacement Project

Final operator training sessions were completed. Initial commissioning work was begun on February 20, 1978 with the cooling tower, process water system and duraseal systems being put into operation. The construction contractor completed essential work on February 24, 1978. Full startup coverage was initiated. The period of February 24th to March 1st was used to flush all lines and equipment, leak test all systems and initially operate mechanical equipment. Preparations for initial charging were completed on March 1, 1978 with initial batch being produced on March 2, 1978.

Plant process engineering coverage is continuing. Remaining problems are associated with automatic charge sequencing and recovery operation. Ponca City Process Engineers, Al Peck, David Hester, and Pat Fetizanan, assisted as coordinators and trainers during startup. Their work was completed on March 6, 1978. Wally Sirmons of Oklahoma City provided overall startup coordination which also was completed on March 6, 1978.

B. Dry Blend Weigh System

The Orbitran sequencing, weighup and control system was put into operation. Initial debugging was completed and the system was turned over to operations.

Final programming changes are now being defined. A meeting will be held with Orbitran in March to incorporate remaining changes into the system.

C. Resin Silo Aeration

The system was completed and put into operation. Air compressor operating instructions were written. Dryer operator training was conducted on the system.

D. VCM Railcar Unloading

The system was completed and put into operation. Process Engineering provided startup assistance.

E. V-10 Dryer Startup

Vernon Thornhill assisted operations in the initial startup on the V-10 dryers.

F. P.A. Unloading

The Engineering staff observed the unloading of several P.A. railcars. Railcar unloading procedures have been written. Minor mechanical revisions are still needed before the system is fully operational.

G. OMS Addition System

The process design for the OMS Addition System was completed and issued. The design is being reviewed by CED and PED. The plant is now developing a definitive estimate.

H. Inert Gas Generator

The process design for this project was completed and issued. The Plant is developing a definitive estimate for this project.

I. Boiler Burner Replacement

The process design for this project was issued by PED. The Plant is developing the definitive estimate. Plant process design review is complete.

J. Specialty Compound Line

A meeting was held with Buss-Condux and Houston Management on this project. Buss-Condux was asked to supply updated cost information relative to the new line. Costs will sharply escalate due to dollar devaluation relative to the Swiss Franc.

K. Plant Yield Improvement

A report was written defining the magnitude and sources of VCM yield losses. A program was identified to further control and measure losses.

Mr. Royce Robertson of PED was in the Plant. He reviewed the Plant's program and setup some of the sampling and calculation procedures.

Measured losses during February were:

1. Dryer Dusting Losses	1,200 lb./day	33,600 lb./month
2. Centrifuge Centrate Losses	679 lb./day	19,020 lb./month
3. Rinse Losses to Sewer	1,196 lb./day	33,482 lb./month
4. Reactor Foaming Losses	640 lb./day	17,924 lb./month
5. Coarse Batch and Reactor Vent		63,000 lb./month

Accounted for Losses 167,026 lb./month

This is equivalent to .0135 lb./lb. PVC product.

ENVIRONMENTAL HEALTH - Douglas Michels

I. Compliance Plan Status

A. Particulates

No action steps were required during February.

B. Water

No action steps were required during February.

The Plant was visited by the Mississippi Air and Water Pollution Control Commission during February. They inspected the Plant for compliance and conducted concurrent effluent sampling. Due to a secondary treatment system biological upset we expect the concurrent sampling to indicate a non-compliance condition.

C. Vinyl Chloride

We had no communications to or from the EPA during February. The recordkeeping program has been set up.

II. Project Status

A. Particulates

We are awaiting construction bids on the resin bagging revisions project.

B. Water

We have received information that Exxon is using a process to remove irritating odors from plasticizer effluent. We are pursuing Exxon to get more detailed information.

C. Vinyl Chloride

Tabulated on Table I is the identification and status of projects related to vinyl chloride emissions which will be required by the EPA.

III. Operating Status

A. Particulates

The recalibrated sampling probe on the RAC stacksampler was returned. Dryer particulate emission testing will resume when priorities permit.

III. Project Status (Cont.d)

B. Water

During mid December the operation of Plasticizer Unit was curtailed because of market limiting conditions. Waste water flow from this unit to the secondary treatment system did not occur between December 20, 1977 and January 29, 1978. During this period our biological digestion lagoons apparently lost acclimatization. This was assisted by the cold weather conditions and a nutrient deficiency during the period. The subsequent result of this upset condition was a drastic increase in effluent BOD and a non-compliance condition.

The State offices were notified. We will remain out of compliance until reacclimatization occurs. Nutrient additives are being used to expedite reacclimatization.

During February there was also a major spill of alcohol apparently emanating from the railcar unloading area. Some of this material bypassed our treatment system and had to be collected by a pump truck and recycled. Revisions are planned to prevent bypassing a spill from the alcohol unloading area.

Table II shows recent quality data on the Plant's effluent.

C. Vinyl Chloride

Inspection programs are in place for leak detection, double mechanical seals, and vessel rupture disks.

Reactor slurry samples are being obtained each batch for VCM residuals. The February average for all samples was 417 ppm. Work continues on emphasizing procedures and repairing mechanical problems.

TABLE IEPA COMPLIANCE ON VCM EMISSIONSABERDEEN PVC PLANT

<u>PROJECT</u>	<u>COMPLIANCE PLAN</u>	<u>ACTUAL</u>
<u>A. Vent Gas Emission Recovery System</u>	AFE No. 9226	
Purchase Order Issued	8/1/77	1/77
Construction Started	10/1/77	9/1/77
Installation Completed	1/1/78	-
Compliance Achieved	2/1/78	-
<u>B. Vent Gas Incineration</u>	AFE No. 9057	
Purchase Order Issued	9/1/77	7/1/77
Construction Started	4/1/78	-
Installation Completed	5/15/78	-
Compliance Achieved	8/1/78	-
<u>C. Process Water Stripping</u>	AFE No. 9565	
Purchase Order Issued	2/76	2/76
Construction Started	2/76	2/76
Installation Completed	5/76	5/76
Compliance Achieved	5/1/77	5/77
<u>D. Reactor Exhaust Gases</u>	AFE No. 9275	
Purchase Order Issued	10/75	10/75
Construction Started	1/76	1/76
Installation Completed	7/76	7/76
Compliance Achieved	8/76	8/76
<u>E. Reactor Opening Loss</u>	AFE No. 9055	
Purchase Order Issued	3/31/77	3/75
Construction Started	4/30/77	4/75
Installation Completed	7/31/77	9/75
Compliance Achieved	8/31/77	
<u>F. Exhaust Gas Discharge</u>	AFE No. 9256	
Purchase Order Issued	6/1/77	5/1/77
Construction Started	10/1/77	9/1/77
Installation Completed	12/1/77	12/1/77
Compliance Achieved	2/1/78	-
<u>G. Sources Following Stripper</u>	AFE No. 9055	
Purchase Order Issued	3/75	3/75
Construction Started	4/75	4/75
Installation Completed	9/75	9/75
Compliance Achieved	6/30/77	6/30/77

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TABLE I (cont.)

<u>PROJECT</u>	<u>COMPLIANCE PLAN</u>	<u>ACTUAL</u>
<u>H. Unloading Lines</u>	AFE No. 9256	
Purchase Order Issued	6/1/77	5/1/77
Construction Started	11/1/77	10/1/77
Installation Completed	2/28/78	2/15/78
Compliance Achieved	4/1/78	-
<u>I. Pump Seals</u>	AFE No. 9525, 9495	
Purchase Order Issued	9/30/76	9/76
Construction Started	11/30/76	11/76
Installation Completed	8/31/77	8/31/77
Compliance Achieved	10/31/77	10/31/77
<u>J. Compressor Seals</u>	AFE No. 9525, 9495	
Purchase Order Issued	9/30/76	9/76
Construction Started	11/30/76	11/76
Installation Completed	8/31/77	8/1/77
Compliance Achieved	10/31/77	8/1/77
<u>K. Reciprocating Compressors</u>	AFE No. 9505	
Purchase Order Issued	9/1/77	5/15/77
Construction Started	11/1/77	10/1/77
Installation Completed	3/1/78	2/15/78
Compliance Achieved	5/1/78	-
<u>L. Relief Valve Leakage</u>	AFE No. 9276	
Purchase Order Issued	6/30/77	2/77
Construction Started	8/31/77	8/31/77
Installation Completed	10/31/77	10/31/77
Compliance Achieved	11/30/77	11/30/77
<u>M. Equipment Opening</u>	AFE No. 9266	
Purchase Order Issued	5/31/77	2/77
Construction Started	8/31/77	6/1/77
Installation Completed	11/30/77	11/30/77
Compliance Achieved	2/1/78	2/1/78
<u>N. Samples</u>	AFE No. 9485, 9535	
Purchase Order Issued	12/76	12/76
Construction Started	1/77	1/77
Installation Completed	4/30/77	5/15/77
Compliance Achieved	5/31/77	5/31/77

NOTE: Dates shown are as agreed to by the Plant and the EPA

DTH 000051505

TABLE II
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.	627	26	205	54	434	14	117	7.2-7.6	7.6-7.7
Max.	798	34	240	72	508	17	163		
Feb. - Ave.	606	69	515	123	906	11	79	7.9-9.6	7.6-8.1
- Max.	745	100	894	154	1377	12	107		
NPDES-Ave.	-	32	386	-	1390	-	605	>6.0	6.0-8.5
Max.	-	43	520	-	1940	-	909		

ENERGY CONSERVATION - Douglas Michels

I. Plant Operations

Total energy consumption for February was 45.24 MM BTU's. The energy consumption per pound of product decreased from 2797 BTU/Lb. in January to 2377 BTU/Lb. during February.

II. Plant Energy Conservation Program

A. Energy Audit Booklet

The energy audit booklet was completed and issued.

B. Boiler Burner Replacement

The Class "A" design for conversion of the boiler burners to allow fuel oil firing was issued for plant review.

C. Steam Leaks

19 of 19 reported steam leaks were repaired during February.

ENERGY CONSERVATION DATA

FEBRUARY, 1978

<u>ITEM</u>	<u>1977</u>	<u>1978</u>
<u>Production, MM Lbs.</u>		
Control Period	Accounting Month	Accounting Month
Resin	15.23	12.40
Plasticizer	0.27	0.90
Compound	1.62	2.96
Dry Blend	2.87	2.77
TOTAL	19.99	19.03
<u>Natural Gas</u>		
Consumption, MSCF	5021	11000
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	5.121	11.220
<u>Propane</u>		
Consumption, M Gal.	360.829	294.533
Conversion, BTU/Gal.	92000	92000
Energy Consumption, MMM BTU	33.196	27.097
<u>Electricity</u>		
Consumption, MM KWH	2.698	2.029
Conversion, BTU/KW	3413	3413
Energy Consumption, MMM BTU	9.208	6.926
<u>Total</u>		
Energy Consumption, MMM BTU	47.525	45.243
BTU/Lb.	2377	2377

Boiler Operating Data

	<u>Ave. Stack Temp.</u>		<u>Ave. % Excess Air</u>	
	<u>1977</u>	<u>1978</u>	<u>1977</u>	<u>1978</u>
No. 1	394	395	96	70
No. 2	419	420	114	95
No. 3	410	410	120	95

MECHANICAL ENGINEERING - S. J. Vincent

AFE's Submitted, Approved, and Closed

The following AFE's were submitted for approval during the month of February:

Resin Moisture Analyzers	\$ 17,000
Laboratory Equipment	\$ 50,000
Safety Equipment	\$ 14,000
Miscellaneous Projects Under \$10,000	\$225,000

AFE approvals for the month of February were as follows:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9038	Maintenance Equipment	\$ 18,000
9048	Resin Moisture Analyzers	\$ 17,000
9058	Laboratory Equipment	\$ 50,000
9068	Safety Equipment	\$ 14,000
9078	Miscellaneous Projects Under \$10,000	\$166,000

There was one AFE closed to field charges in February:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9246	Dry Blend Control Revisions	\$ 75,000

Design

The electrical design for the Emergency Lighting System has been completed. A basis of bids was compiled and issued for quotes. Installation is scheduled to begin in March.

The design and material procurement for the Dry Blend Production Expansion is being handled by CED. The goal date for start-up of this project still remains at June 1, 1978. CED anticipates completion of their design in April. The only significant change made to date has been the relocation of the Dry Blend Screener. No apparent design problems or delays have resulted.

Basis of bids were issued for the Inert Vent Incinerator involving the concrete, underground piping, structural, and piping and equipment installation. Most of the materials have been purchased by the Plant. Partial receipt of the incinerator from Trane Thermal occurred at the end of the month. The remainder of the incinerator should be shipped during March.

Construction

The following major construction activity occurred during February:

- A. The mechanical installation of the Additional Slurry Blend Tank was completed. Insulation and painting remain to be completed. The system is now ready to be placed in operation.

Construction (Cont.d)

- B. The construction work for the Vapor Emission Recovery project is complete for startup checkout. Some mechanical changes and insulation work remain to be completed.
- C. The VCM Unloading Area Revisions project was installed during a shutdown. Some minor items remain to be adjusted, but VCM is being transferred through the system.
- D. The Dry Blend In-Line Screener was relocated to eliminate vibration problems for the new Dry Blend Weigh System.
- E. Preliminary work for site clearing and various tie-ins for the Inert Vent Incinerator were done.

LABORATORY - R. B. Martin

CUSTOMER COMPLAINTS

<u>Type Complaint</u>	<u>Customer</u>	<u>Product</u>	<u>Date Received</u>	<u>Status End of Month</u>
Marketing	Industrial Plastics	Compound	2/2/78	Marketing Complaint
Quality	Variform	90281 Dry Blend	2/6/78	Report by CRM
Quality	Ross & Roberts	5385-Resin	2/13/78	Report by RBM
Quality	Reynolds Metal	38631-Compound	2/27/78	Under Investigation
Service	LCP Plastics	5385-Resin	2/27/78	Under Investigation
Quality/ Service	Lone Star	80273-G Dry Blend	2/27/78	Under Investigation
Quality	Grinnel	5305-Resin	2/27/78	Under Investigation

WAIVERS REQUESTED

<u>Date</u>	<u>Shipment Type</u>	<u>Product</u>	<u>Customer</u>	<u>Reason</u>	<u>Waived By</u>
2/13	Miller Transportation	5425	General Cable	Particle Size	TGS
2/24	PTLX 41828	5425/5385	Western Textile	Off Grade	TGS
2/28	T 2321	5305	Hatco	Particle Size	TGS

QUALITY CONTROL TESTING

In-Process Testing - Routine

Resin - 323 regular samples with 2135 in-process testing. Bulk shipments were 166 (42 railcars and 124 trucks).

Compound - 411 blenders tested with 2.9% requiring adjustment. Bulk shipments were 16 (4 railcars and 12 trucks).

Dry Blend - 565 blenders tested with 14.2% requiring adjustment. Bulk shipments were 25 (10 railcars and 15 trucks).

Plasticizer - 48 batches were tested. 2 alcohol tank samples tested. 4 incoming alcohol shipments and 1 incoming plasticizer shipment were tested. 1 outgoing plasticizer shipment was also tested.

The month of February set a record for bulk shipments tested in the resin area. This record has not been exceeded since December, 1976. The total bulk shipments tested were 208 which included 166 resin bulk shipments.

Resin Oven Heat Stability

Sixty-seven (67) blends of resin were tested for heat stability.

5385	34 Blends
5425	22 Blends
5305	10 Blends
5446	1 Blend

Resin Oven Heat Stability (Cont.)

One blend of 5385 was 15 minutes poorer than the control. All the other blends met the heat stability specification. An increase to 7 gallons of catalyst in 5385 resin did not lower heat stability for that product.

RVCM Testing of Shipments

The RVCM content of 58 railcars was measured during February. The averages by product are as follows:

Product	<u>5385</u>	<u>5425</u>	<u>5446</u>	<u>5305</u>	<u>Dry Blend</u>
Average	2.0	0.4	0.3	15.8	0.5
# Samples	29	15	1	6	7

Raw Material Testing

Seventeen (17) lots of plant raw materials were tested and approved for use.

A sample of Glowmax LL clay from the Georgia Kaolin Company was tested as a possible substitute for SP-33 clay. The color of the Glowmax LL was excellent, but it did not give an acceptable high value for volume resistivity.

COMPOUND DEVELOPMENT AND SERVICE

Compound Property Verification

The program to evaluate non-routine properties of compounds was continued by testing four (4) additional electrical compounds as well as new compound (16542X). The program was expanded to include oven aging tests on all electrical compounds used for primary insulation.

Quality Control Standards

New color and heat stability standards were prepared for six (6) compounds. Color plaques and heat stability buttons were submitted to the Quality Control Laboratory.

New Compound Formulas

Plant formulas, specifications and quality control standards were prepared for four (4) new experimental compounds - 3711-27C, 3711-27E, 16542X, and 3565-41 (using reworked 90826).

Customer Complaints

Reynolds Metal - In order to investigate a complaint from Reynolds, tensile properties were measured on four (4) samples of 35441 and two (2) samples of 38631. These properties were normal as tested in our plant laboratory.

Customer Complaints (Cont.)

Sometco - Melt flow tests were run on three (3) lots of 18161 and portions of the samples were sent to Ponca City for evaluation. This work was prompted by a report that Sometco was experiencing low extrusion rates on these materials. There were some variations in the flow rate as measured by this test but coorelation to the processability of the compounds is questionable.

PRODUCT DEVELOPMENT AND SERVICE

<u>Product</u>	<u>Type</u>	<u>Pounds</u>	<u>Customer</u>
37121 Wht. Std.	Compound	50	Bata Shoe Company Salem, IN 47167
18961 Wht. 366	Compound	50	Pan-Am Plastics Corp. Chicago, IL 60616
5385-I	Resin	10	Continental Plastics Inc. Avenel, NJ 07001
5385-I	Resin	50	U.S. Gypsum Research Des Plaines, IL 60016
80172B	Dry Blend	200	Extrudyne Omityville, NY 11701
27121 Blk.	Compound	100	Brierwood Molding
28131 Blk.	Compound	100	Littletown, PA 17340
14331 Clear	Compound	50	Armorlite, Inc.
28831 Nat.	Compound	50	Sam Marcos, CA 90269
18161 Nat.	Compound	50	Vinyl Plastics, Inc.
14331 Cl. Bl. 50	Compound	50	Sheboygan, WI 53081
15041 Cl. Bl. 50	Compound	50	
5385-I	Resin	50	Sherwin Williams Co. Chicago, IL 60628
5385-I	Resin	5	Cerro Wire & Cable Co. Maspeth, L.I., N.Y. 11378
5465-I	Resin	5	Thiskol Corp.
5305-I	Resin	5	Brigham City, Utah 84302
90171	Dry Blend		Multi-Fittings
5385-I	Resin	2,250	Wolverine Aluminum Jackson, MI 49203

SPECIAL PROJECTS

High VR 5425 Resin

Volume resistivity (VR) tests were run on four (4) experimental blends of 5425 resin produced in cooperation with a Ponca City VR improvement program. The VR results were in good agreement with values measured in Ponca City. This data has been reported to PAL.

RVCM of Slurries

A total of 300 slurry samples were tested for RVCM in February. The overall average was 414 ppm. It should be noted that 58.1% of the samples were below 400 ppm.

Personnel VC Measurements

Work was done on a new VCM monitoring device. The "REAL" minimonitor, a device that uses activated carbon, was tested for possible use as a replacement for the air bag monitoring we now do. A method for using the F-42 head space analyzer to measure the VCM absorbed on the carbon was developed. Effective March 1st, all monitoring work will be evaluated using the new system.

RVCM Testing on Bagged Resin

As part of the current program to remove the cancer label from bagged resin, work was done to check the VCM exposure of workers while debagging. A report is to be issued on these results by March 17. The first portion of this project involved the testing of air trailer space for VCM while unloading bagged resin.

ORDER ENTRY & TRANSPORTATION WAREHOUSE - J. E. Stark, J. C. Coffman

<u>Shipment by Product M/Lbs.</u>	<u>February, 1978</u>	<u>Year-To-Date</u>
Resin	14,888	28,701
Plasticizer	44	131
Dry Blend	3,363	6,824
Compound	3,066	5,879
TOTAL	21,361	41,535

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	35	89	36			2	162
-Package		4				4	8
-Export Aberdeen		32	17	29			78
-Export Hattisburg			13				13
Plasticizer -Bulk						1	1
Dry Blend -Bulk	14	14					28
-Package		10	1			2	13
Compound -Bulk	6	10	4				20
-Package		24	12			18	54
Export -Package			1				1
	55	183	84	29	—	27	378

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	72	140	36	1	0	35	284
February	55	183	84	29	0	27	378

Material Handling Report

	<u>M/Lbs.</u>	<u>T/L</u>
Packaged Resin from Production	891	22
Packaged Compound, Dry Blend From Prod.	2106	52
Transferred From Main to Prairie	567	14
Transferred to Hamilton from Main	0	0
Transferred From Prairie to Main	5670	140
Transferred From Prairie to Prairie	0	0
Reverse Transfer Resin to Plant	5467	135
Reverse Transfer Cmpd. to Plant	202	5
Shipment From Warehouses	6075	150
Special Packaging	3726	92
Shipment From Hattiesburg	526	13
	25,232	623

CONOCO TRANSPORTATION

ABERDEEN WAREHOUSE

LOCATION	TOTAL M SQ. FT.	CONTENTS	ESTIMATED MM POUNDS			
			ON FLOOR	OPEN	TOTAL	
MAIN-East	48	Compound	2.9			
		Dry Blend	.6			
		Export Resin	.2			
		Conoco Resin	1.0	4.7	4.8	9.5
HAMILTON	11	III Resin	1.2			
		Raw Material	.2	1.4	.6	2.0
PRAIRIE 12-1	12	Compound		1.4	.1	1.5
		Compound	2.7			
12-2	22	Dry Blend	.1	2.8	.7	3.5
		Chrysler Resin	2.6			
12-3	22	Raw Materials	.3			
		Conoco Resin	.5	3.4	.1	3.5
12-4	22	Conoco Resin	2.9			
		Resin O.G.	.	2.9	.6	3.5
12-5	21	Mill Scraps	.			
		Cmpd O.G.	.1			
		Dry Blend O.G.	.4			
		Sifter Overflow	.4			
		Resin O.G.	1.0	1.9	.6	2.5
12-6	21	Conoco Resin	*	4.5	.	3.5
12-7	21	Conoco Resin	.1			
		Export Resin	.	.1	3.4	3.5
12-8	21	Chrysler Resin	*	4.5	.	3.5
12-9	21	Exp Resin		3.2	.3	3.5
12-11	21	Cmpd. O.G.	.2			
		Conoco Resin	.6			
		.	.	.8	2.7	3.5
12-12	22	Conoco Resin		3.2	.3	3.5
HATTIESBURG	18	Exp Resin		1.8	1.2	3.0
		Sub-Total				50.0
		(Plug Aisles)	*			2.0
			DTH 000051518			
TOTAL	303		36.6	15.4	52.0	

DTH 000051516

Off-Grade In Storage

<u>Material</u>	<u>M/Lbs.</u>	<u>T/L</u>
Sifter Overflow	348	9
Resin "BC"	1183	29
Resin "H"	51	1
Mill Scraps	40	1
Compound "B"	219	5
Compound "H"	49	1
Dry Blend "O.G."	<u>382</u>	<u>9</u>
TOTAL	2232	54

Chrysler Storage

Balance, February 1	7224	178
Transferred during month	<u>347</u>	<u>8</u>
TOTAL	6877	170

Export Shipments

Special Packaging	3726	92
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Other

During the month of February we had a drop in our packaged inventory. This drop was due to debuggging resin for shipments and several large export orders. We have released two of our outside rental buildings as of the first of April.

DTH 000051517

(1) Thru January, 1978 Actual Accounting
(2) Thru February, 1978

ABERDEEN AUTHORIZATIONS REPORT

<u>AUTH. NO.</u>	<u>CAPITAL DESCRIPTION</u>	<u>DATE APPROVED</u>	<u>AUTH. AFE AMT.</u>	<u>(1) EXPENDED TO DATE</u>	<u>(2) COMMITTED TO DATE</u>	<u>FINAL TOTAL EST. COST COMP.</u>	<u>UNDER (OVER) AUTH. AMT.</u>	<u>EST. COMP. DATE</u>	<u>EST. CLOS. DATE</u>	<u>REMARKS</u>
9164	Blender Vent System	8/26/74	30,000	28,782	28,782	28,782	1,218	9/77	3/78	Closed. Credit due.
9525	Replacement of VCM Equip Seals	12/19/75	36,000	12,418	13,818	13,818	22,182	12/77	4/78	Closed to field charges.
9623	Building Ventilation System	12/31/75	344,000	311,347	322,316	344,000	0	4/78	7/78	Painting in progress.
9106	Dry Blend In-Line Screener	6/29/76	20,000	16,547	16,384	16,384	3,616	5/77	4/78	Closed. Credit due.
9123	PVC Reactor Capacity Replacement	7/8/76	8,577,000	6,958,222	7,808,273	7,950,208	626,792	3/78	6/78	Unit being started.
9153	Revisions to the Manual Baggers	9/7/76	62,000	9,599	9,999	62,000	0	6/78	9/78	Bids requested.
9175	Area Vacuum Cleanup System	10/11/76	25,000	34,324	33,951	33,951	(8,951)	9/77	4/78	Closed. Credit due.
9183	Plant Communication System	10/21/76	38,000	36,662	36,662	36,662	1,338	7/77	3/78	Closed to field charges.
9206	Maintenance Equipment	11/2/76	33,000	33,296	33,366	33,366	(366)	12/77	4/78	Closed to field charges.
9221	Vapor Emission Recovery System	11/4/76	260,000	153,776	204,460	260,000	0	3/78	6/78	Construction in progress.
9243	Dry Blend Control System	11/4/76	75,000	72,902	81,353	81,353	(6,353)	3/78	5/78	Closed to field charges.
9253	Railcar Unloading Area Compliance	12/2/76	220,000	119,247	193,869	220,000	0	3/78	6/78	Painting scheduled.
9263	Vessel Purging System	12/10/76	43,000	33,352	37,138	38,000	5,000	3/78	6/78	Changes to be made.
9273	Relief Valve Vent Containment	12/10/76	39,000	26,073	27,500	39,000	0	3/78	6/78	Installation in progress.
9283	Additional Slurry Blend Tank	12/7/76	290,000	189,236	236,556	290,000	0	3/78	6/78	Construction proceeding.
9017	Misc. Capital Items Less Than \$2500	1/12/77	25,000	25,758	25,758	25,758	(758)	7/77	3/78	Closed to field charges.
9047	Cooling Water Circulation Revision	3/2/77	105,000	56,786	64,094	105,000	0	4/78	7/78	Waiting for shutdown to complete.
9057	Vent Gas Incineration	4/1/77	275,000	8,508	138,192	275,000	0	7/78	10/78	Bids requested.
9127	Resin Silo Aeration	5/16/77	280,000	196,764	207,998	207,998	72,002	4/78	7/78	Construction in progress.
9127	Compound Plasticizer Tank Farm	6/6/77	45,000	14,900	23,840	45,000	0	4/78	7/78	Insulation to complete.
9117	Misc. Capital Items Less Than \$2500	6/30/77	10,000	9,090	9,141	10,000	0	1/78	4/78	Closed to field charges.
9147	Phthalic Anhydride Exposure Reduction	6/30/77	45,000	8,937	15,887	45,000	0	3/78	6/78	Work in progress.
9157	Boiler Feedwater Treating System	6/30/77	49,000	0	34,476	49,000	0	4/78	7/78	Waiting on equipment.
9167	Farrel Mixer Rotors	6/30/77	38,000	0	35,735	38,000	0	3/78	6/78	Ordered.
9177	Laboratory Equipment	7/19/77	21,000	1,429	20,295	21,000	0	3/78	6/78	Some equipment received.
9187	Emergency Reactor Vent Control	9/29/77	33,000	100	100	33,000	0	6/78	9/78	Design proceeding.
9197	Dryer Area Noise Abatement	9/29/77	45,000	0	0	45,000	0	10/78	12/78	Design proceeding.
9207	Safety Equipment	9/29/77	7,000	1,361	5,488	5,488	1,512	1/78	4/78	Closed to field charges.
9227	Plant Emergency Lighting System	10/10/77	65,000	3,221	16,805	65,000	0	4/78	7/78	Bids requested.
9237	Heated Plasticizer Addition System	10/11/77	37,000	1,863	4,183	37,000	0	4/78	7/78	Installation proceeding.
9247	Farrel Mixer Feeders	11/21/77	47,000	0	12,476	47,000	0	5/78	8/78	Feeders purchased.
9257	Resin Transfer Debottlenecking	11/16/77	56,000	0	2,163	56,000	0	5/78	8/78	CED handling project.
9267	Dry Blend Production Expansion	11/23/77	200,000	29,871	47,539	200,000	0	7/78	10/78	Design in progress.
9277	Truck Loading Safety Revisions	11/28/77	16,000	0	0	16,000	0	4/78	7/78	Scheduled.
9287	Plasticizer Yield Improvement Test	12/5/77	6,000	0	0	6,000	0	6/78	9/78	Design in progress.
9297	Automatic Plasticizer-Stabilizer Weighup System	12/14/77	60,000	0	0	60,000	0	12/78	3/79	Waiting on design.
9307	Compound Project Conveying Lines	12/14/77	50,000	0	0	50,000	0	11/78	2/79	Scheduled.
9018	Critical Spare Equipment	1/31/78	63,000	0	52,764	63,000	0	12/78	3/79	Equipment Ordered.
9018	Misc. Items Under \$10,000	1/31/78	50,000	0	1,919	50,000	0	12/78	3/79	Purchases proceeding.
9018	Maintenance Equipment	2/3/78	18,000	0	3,870	18,000	0	9/78	12/78	Equipment Ordered.

DTH 000051518

(1) Thru January, 1978 Actual Accounting
 (2) Thru February, 1978

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>AFR. 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>
916	Blender Vent System	8/26/74	30,000	28,782	28,782	28,782	1,218	9/77	3/78	Closed. Credit due.
952	Replacement of VCM Equip Seals	12/19/75	36,000	12,418	13,818	13,818	22,182	12/77	4/78	Closed to field charges.
962	Building Ventilation System	12/31/75	344,000	311,347	322,316	344,000	0	4/78	7/78	Painting in progress.
910	Dry Blend In-Line Screener	6/29/76	20,000	16,547	16,384	16,384	3,616	5/77	4/78	Closed. Credit due.
912	PVC Reactor Capacity Replacement	7/8/76	8,577,000	6,958,222	7,808,273	7,950,208	626,792	3/78	6/78	Unit being started.
915	Revisions to the Manual Baggers	9/7/76	62,000	9,599	9,999	62,000	0	6/78	9/78	Bids requested.
917	Area Vacuum Cleanup System	10/11/76	25,000	34,324	33,951	33,951	(8,951)	9/77	4/78	Closed. Credit due.

(1) Thru January, 1978 Actual Accounting
 (2) Thru February, 1978

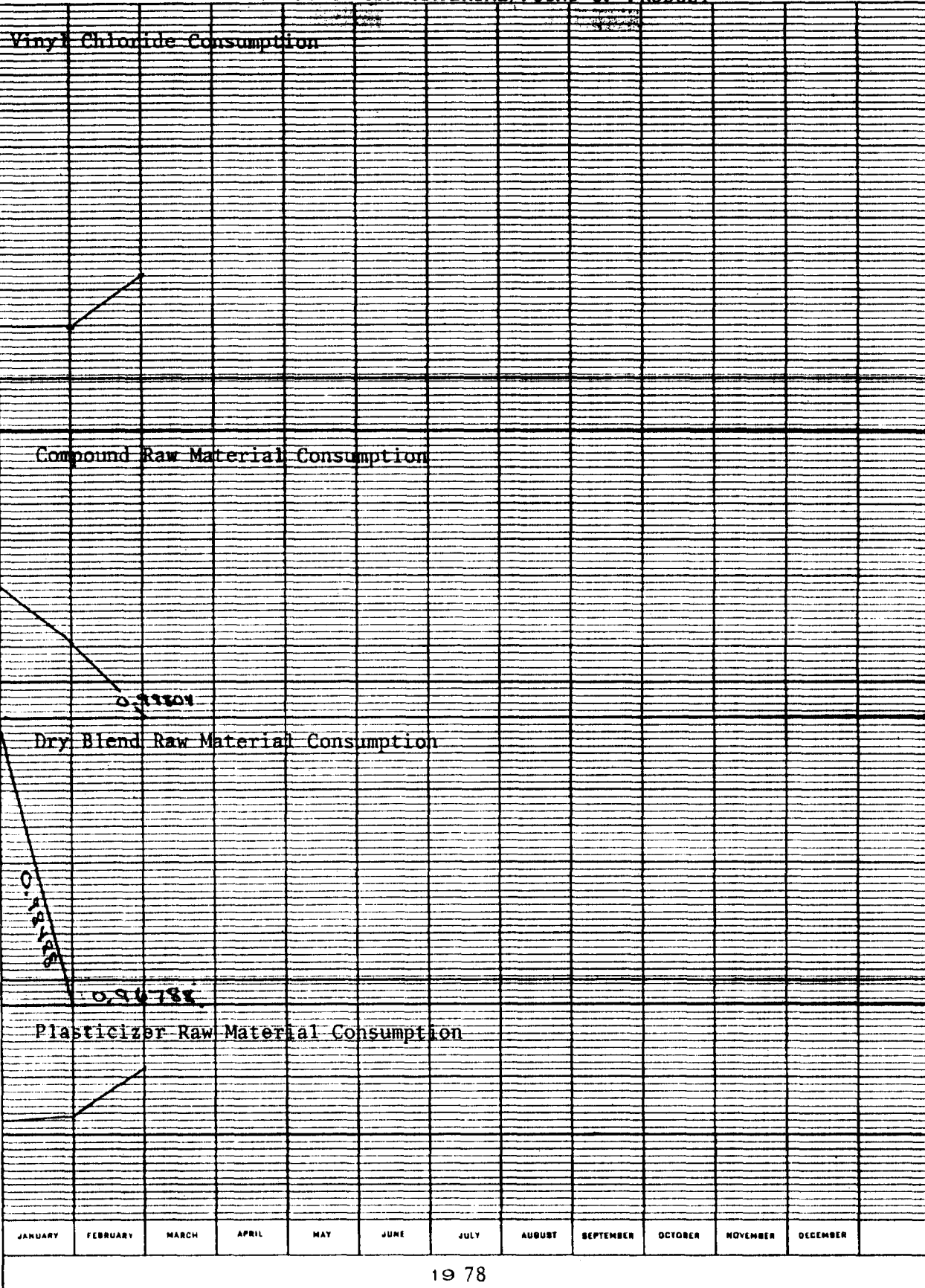
ABERDEEN AUTHORIZATIONS REPORT

AUTH. NO.	EXPENSE 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
95-5	Revisions to Corken Compressors	12/22/75	22,000	7,354	6,874	6,874	15,126	5/77	4/78	Closed. Credit due.
91-6	PVC Reactor Capacity Replacement (ONS)	17/8/76	175,000	53,916	65,025	175,000	0	3/78	6/78	Unit being started.
90-7	Repairs to V-11 Dryer Roof	5/17/77	18,000	12,928	21,428	21,428	(3,428)	4/78	7/78	Construction proceeding.
91-7	Laboratory Modifications (ONS)	5/31/77	40,000	33,082	35,449	35,449	4,551	1/78	4/78	Closed to field charges.
92-7	Maintenance Painting Projects	9/29/77	85,000	72,214	81,595	85,000	0	3/78	6/78	In progress.

ABERDEEN PLANT EFFICIENCY

1978

POUNDS OF RAW MATERIAL/POUND OF PRODUCT



19 78

Monthly
Cumulative

DTH 000051520

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

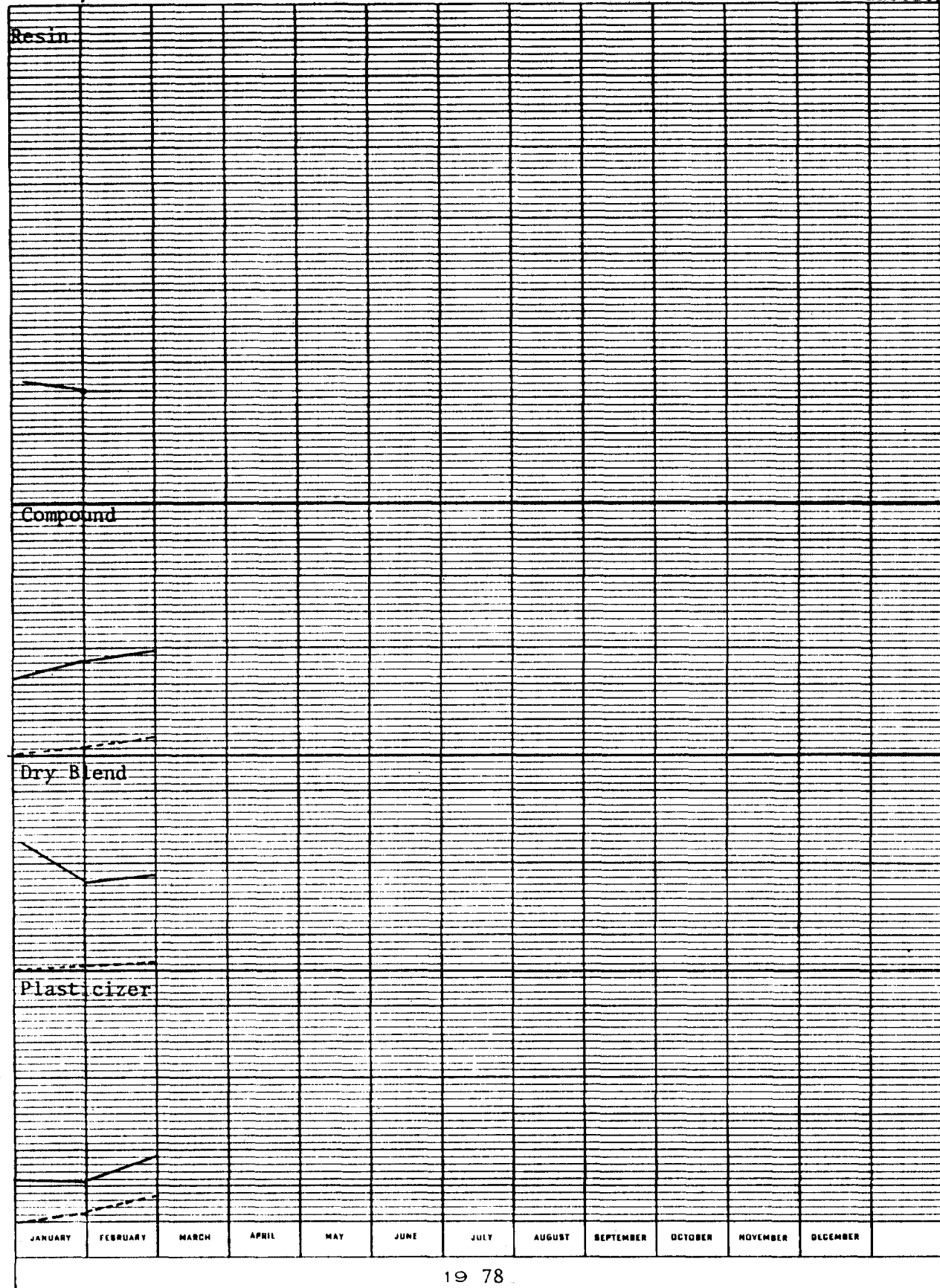
NO. 340-T24 DIETZGEN GRAPH PAPER
ONE YEAR BY MONTHS

ABERDEEN PLANT PRODUCTION

MM Pounds
Monthly Production

1978

MM Pound
Cumulative Production



19 78

Monthly
 Cumulative

DTH 000051521

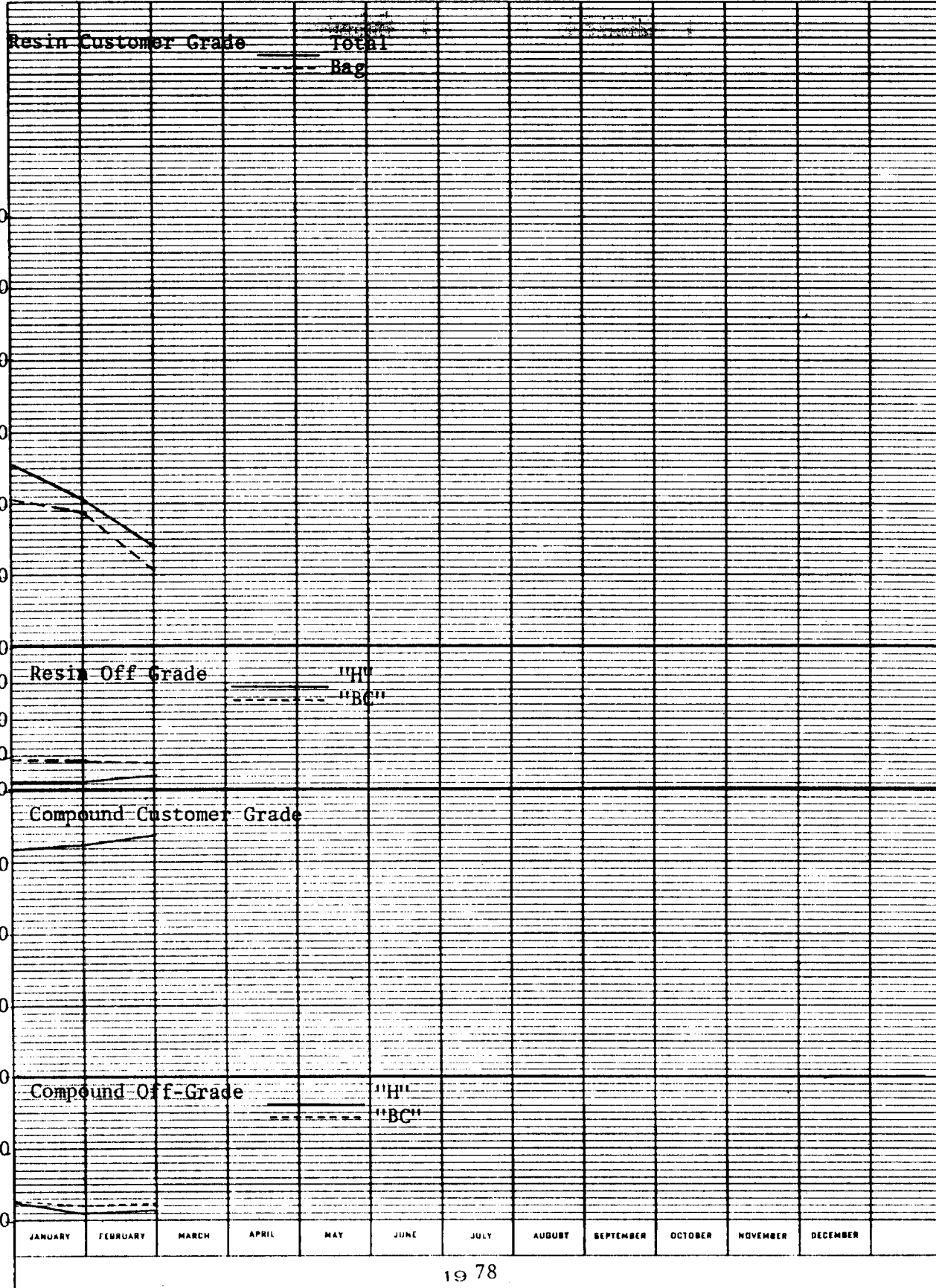
EUGENE DIETZGEN CO.
MADE IN U. S. A.

NO. 340-T24 DIETZGEN GRAPH PAPER
ONE YEAR BY MONTHS

ABERDEEN PLANT INVENTORIES

1978

MM Pounds



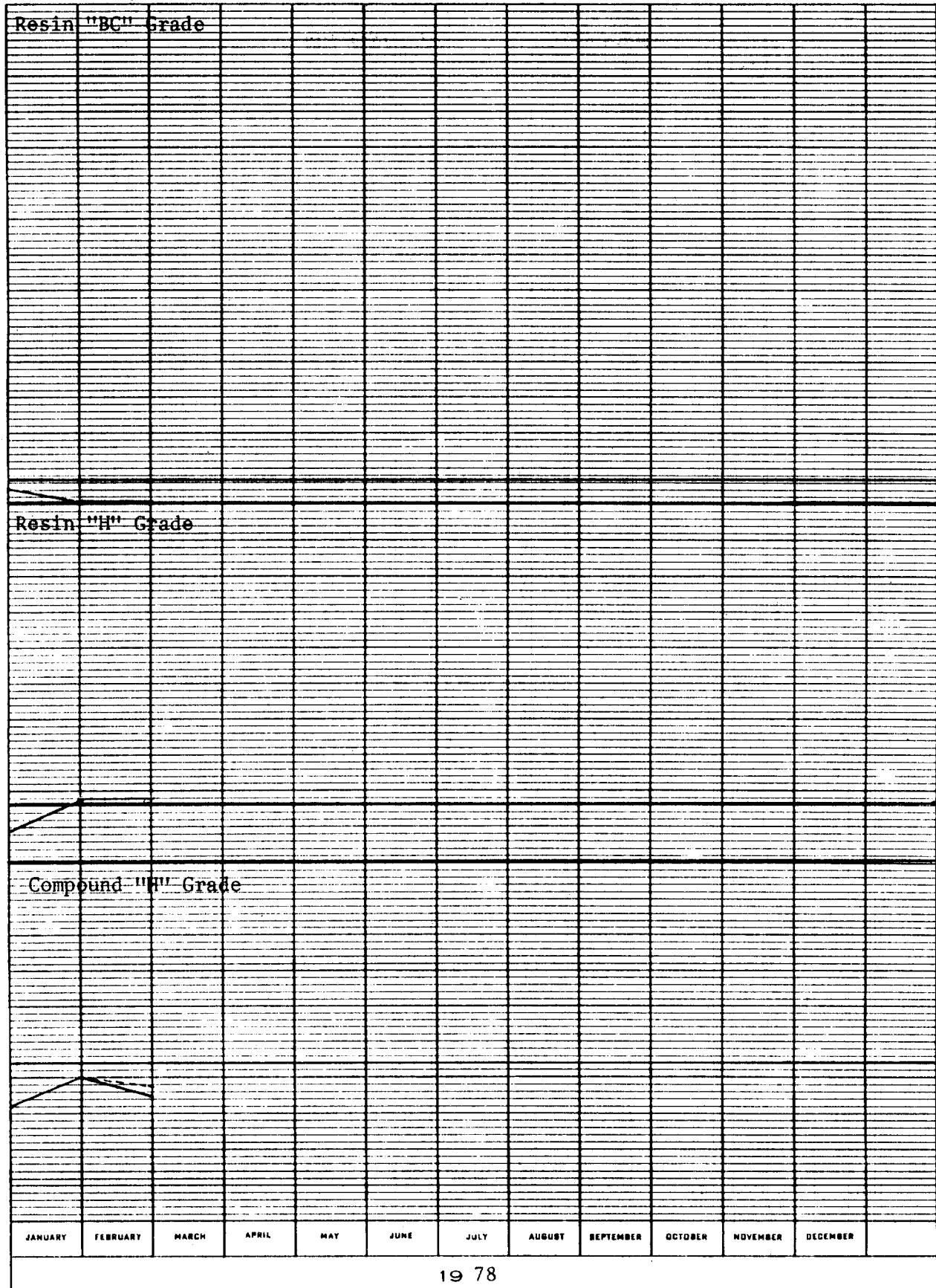
19 78

DTH 000051522

ABERDEEN PLANT QUALITY PERFORMANCE

1978

% Off Grade



Monthly
Cumulative

DTH 000051523