

SAFETY - A. H. SatherOccupational Injuries

<u>Injuries Treated</u>	<u>March</u>	<u>1981 Year to Date</u>	<u>1980 Year to Date</u>
First Aid	3	7	16
Medical Cases	1	1	8
Restricted Workday Cases	0	0	1
Restricted Workdays	0	0	3
Lost Time	0	0	0

Injuries by Department

Vinyl Operations	0	0	6
Compound Operations	0	2	7
Maintenance	2	4	10
Laboratory	1	1	2
Receiving and Warehouse	1	1	0
Office	0	0	0

Injuries by Type

Cuts and Abrasion	2	5	11
Eye Injuries	0	0	2
Burns	0	1	2
Brusies	0	1	5
Strains and Sprains	1	1	4
Other	1	1	3

As of March 31, 1981, the plant operated 635 days or 822,555 manhours without a disabling injury. The first medical case injury for the year occurred March 6, 1981. This established a new record of 197 days of operating time between medical case injuries versus 177 days for the previous record.

Safety Meetings

The topic for March safety meetings was the new "Fire Prevention and Emergency Plan" for the Aberdeen Chemical Plant.

One safety meeting was conducted for the plant expansion contractor. The topic of this meeting was "The Convincer" slide and tape show.

Chemicals Safety Meetings

A. H. Sather attended the Chemicals Safety and Industrial Hygiene Meetings held in the San Antonio, TX area, March 3-6, 1981

SAFETY - (continued)Insurance Inspection

John A. Krembs of Marsh and McLennan Protection Consultants (M & MPC) conducted an inspection of the Aberdeen Chemical Plant March 24, 25, and 26, 1981. Several minor items were noted for correction. He reviewed the plant fire water system and plans for the remaining portions of the fire water expansion. Also, he reviewed the plans for the emergency cooling water project and made recommendations.

OSHA Compliance

Activity for the reporting period included scheduling for hands-on physicals and routine dosimetry as noted below.

Sample Results

<u>Chemical</u>	<u>< PEL</u>		<u>≥ PEL</u> <u>Overexposures</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
VCM	83	95	4	5
Lead	22	100	0	0
Antimony	22	100	0	0
Total Particulates	7	100	0	0

Overexposures

Four (4) VCM overexposures occurred during the reporting period. One occurred to a Vinyl operator who was wearing a respirator during a VCM filter pack change. The remaining overexposures to personnel who were not wearing a respirator. One occurred to a Vinyl operator working in the old reactor module near a leaking vacuum pump seal flush line. The remaining overexposures occurred to a Vinyl Operator and an instrument technician. No sources of overexposure were isolated.

VINYL - P. E. Markey

<u>Production</u>	<u>Month</u>	<u>Year to Date</u>
1. Total Production, MM Lbs.	28.3	79.1
2. Production Rate, M Lbs./C.D.	913	879
3. Charges, Reactor Batches/C.D.	22.6	21.4
4. Total Charges	702	1928
5. Reactor Stream Factor, %	90.7	87.8
6. Dryer Rates, Average Lbs./Hr.	5961	5910
7. Dryer Stream Factor, %	91.2	88.5
8. Accounting Days	31	90

Vinyl Department production for March was 111.1% of budget and 99.5% of capacity at 28.3 MM pounds.

Reactor and dryer stream factors were 90.5% and 91.2% respectively. The major items affecting production were:

Reactors

1. Maintenance on D-300 reactor agitator gearbox and agitator motor failure resulted in a 1.0% reactor stream factor penalty.
2. Condenser cleanings were performed on D-300 and 743 reactors resulting in a 1.2% reactor stream factor penalty.
3. Tubeside pluggage in the new unit hot water preheater resulted in a 0.9% reactor stream factor penalty.
4. Maintenance on the old unit dump Sweco and dump line problems resulted in a 0.8% reactor stream factor penalty.
5. Recovery system and dryer imbalances resulted in a 5% reactor stream factor penalty.

Dryers

1. Maintenance on dryer centrifuges and centrifuge plugging resulted in a 3.6% dryer stream factor penalty.
2. Normal dryer cleaning and line changes resulted in a 1.2% dryer stream factor penalty.
3. Slurry and valve pluggage resulted in a 0.7% dryer stream factor penalty.
4. During the period of excess dryer capacity advantage was taken to perform needed dust collector sock changes, resulting in a 0.4% dryer stream factor penalty.

VINYL - (continued)Dryers - (continued)

5. Resin transfer system problems resulted in a 0.5% dryer stream factor penalty.
6. Reactor-dryer area imbalances resulted in a 0.8% stream factor penalty.

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	2,276,229	-	(26,750)	7.9
5385	18,239,771	(35,750)	(250,950)	63.4
5425	6,804,694	-	(124,900)	23.6
5465	1,124,570	-	-	4.0
Sifter Overflow	-	-	301,990	1.1
Total	28,445,264	(35,750)	(100,610)	100.0

Quality performance for March was 100.5% customer grade with (0.1%) "BC" grade and (0.4%) "H" grade.

Cost

The variable cost variance for March was favorable \$1,752 M with \$1,780 M due to price and (\$28 M) due to efficiency. The major price variance was \$1,757 M due to below budget monomer pricing. Unfavorable efficiency variances of (\$105 M) for VCM were partially offset by \$21 M in favorable efficiencies in the additives area. Product mix caused an unfavorable variance of (\$3 M) and the variance due to packaged off-grade was favorable \$59 M as a result of successful startup of a resifting system.

The monomer raw material requirement for March was 1.03515 pounds VCM per pound PVC versus of 1.01936 standard. The unfavorable VCM efficiency was found to be a result of erroneous rail and truck scales.

The plant rail and truck scales were found to read light 2% and 1% respectively. The truck scale was recalibrated and placed back in service. The rail scale remains out of service until scale system modifications can be completed and an ICG rail scale test car can be scheduled in for recalibration. All rail product movements are being weighed on out-of-plant scales.

General

1. Packaging for the month was 577 M pounds.
2. Installation of a resifting system was completed March, permitting debagging and deboxing without penalizing dryer stream factors. Debagging and deboxing activities for the month upgraded 813 M pounds of off-grade resin to customer grade for internal use at Aberdeen.

VINYL - (continued)

3. Additional testing of Lucidol L-46 high productivity initiator was conducted during the month. A total of 16 batches were produced using the initiator.
4. A fresh monomer test run was conducted in the old module. The objective of the test run was to determine the effect of RVCM on particle size variability.
5. The two expansion reactors arrived at the plant March 14, 1981.

COMPOUND - J. R. McCrimon

<u>Compound Production</u>	<u>Month</u>	<u>Per Day</u>	<u>Y.T.D.</u>
Line I, M Pounds	1,102	52.5	3,365
Line V, M Pounds	426	42.6	1,027
Line III, M Pounds	3,663	118.2	9,269
Total, M Pounds	5,191	167.5	13,661
Accounting Days	31		90

Line I operated 21 days during March at an average rate of 52.5 M pounds per day. Major items affecting production efficiency were: dicers (53.8 hours), product changes (35.9 hours), Banbury seal repair (15.0 hours), maintenance on skip hoist (11.5 hours), and maintenance on blender conveyor (10.3 hours).

Line V operated 10 days during March at an average rate of 42.6 M pounds per day. Major items affecting production efficiency were: product changes (18.7 hours) and screw changes (8.8 hours). Line V set a daily production record of 81,000 pounds on 3/21/81.

Line III operated 31 days during March at an average rate of 118.2 M pounds per day. Line III production was affected by: product changes (37.2 hours), maintenance on mill (20.0 hours), product star valve motor and gearbox replacement (10.5 hours), and quality control (9.6 hours).

Quality performance for flexible compounds was 4.9 % off-grade of which 54.3% was due to mill scrap. "BC" production was 1.7%. The off-grade was higher than normal due to packaging of bulk off-grade produced in 1980.

The raw material requirement for flexible compounds was 1.01113 pounds of raw material per pound of compound versus a 1.01295 standard. (Y.T.D. is 1.00388.)

The variable cost variance for compound was (\$16.9 M) with \$41.5 M due to price and (\$58.5 M) due to efficiency. The variance due to product mix was (\$1.25 M). There were no major efficiency variances. The unfavorable efficiency variance is due to higher than budgeted off-grade production.

Compound production for March was 110% of budget.

<u>Dry Blend</u>	<u>Month</u>	<u>Per Day</u>	<u>Y.T.D.</u>
Production, M Pounds	4,806	192.2	11,771
Accounting Days	31		90

Dry Blend operated 25 days during March at an average rate of 192.2 M pounds per day. Production included: RP-100, 80273G, 80174, 90171, 80274. Dry Blend production was affected by: quality control (23.9 hours), out of resin (13.2 hours), product changes (10.3 hours), and maintenance on Welex diverter valve (9.3 hours.)

COMPOUND - (continued)Dry Blend - (continued)

Quality performance for the month was 99.9% customer grade.

The raw material requirement for dry blend was 1.00157 pounds of raw material per pound of dry blend versus a standard of 1.00580. (Y.T.D. is 1.01280.)

The variable cost variance for dry blend was \$75.8 M with \$24.0 M due to price and \$51.8 M due to efficiency. The variance due to mix was \$54.6 M.

Dry Blend production for March was 266% of budget.

<u>Plasticizer</u>	<u>Month</u>	<u>Per Day</u>	<u>Y.T.D.</u>
Production, M Pounds	845	65	3,121
Accounting Days	31		90

Plasticizer operated 13 days during March at an average rate of 65 M pounds per day. Production included: DOP, DIDP, and 610P.

VRP production totaled 94.9 M pounds (10.0%). Production was affected by: R-2 coil repair, north catch tank, pump motor repairs and out of phthalic anhydride for a total of 9 days due to railcar deficiencies which would not allow safe unloading of phthalic anhydride.

The raw material requirement for plasticizer was 1.05864 pounds of raw materials per pound of plasticizer versus a 1.10499 standard. (Y.T.D. is 1.10795.)

The variable cost for plasticizer was \$32.9 M with \$24.6 M due to price and \$8.3 M due to efficiency. Major variances were: \$10.9 M for isodecanol and (\$13.7 M) for phthalic anhydride. The phthalic anhydride variance is due to the IPA not accounting for P. A. consumption in RAE (VRP) production. The variance due to product mix was (\$0.7 M).

General

Total customer grade compound inventory increased from 6.3 to 6.6 MM pounds during March.

MAINTENANCE - S. J. VincentVinyl

There were no large reactor seal failures in this period. At this time all reactor seals were running using water flushes. D-300 reactor motor failed and was rebuilt. Two reactor condensers were cleaned and one reactor gear box failed. The condensers cleaned were on D-300 reactor in the old module and on 743 condenser in the new module.

The gear box failure was on the D-300 reactor in the old module. The high speed and intermediate gears, bearings, and shafts were replaced. The condenser top gasket was replaced on the 744 condenser. Only one major valve was replaced in this period which was the 6" suction valve on the "A" vacuum pump.

Pumps and compressors repairs in this period were to replace seven seals and overhaul two compressors and one pump.

In the new module, seals were replaced in the west VCM charge pump, the outboard seal in the 904 compressor, the seal in the east chemical wash pump, and the seal in the east VCM charge pump. Seals replaced in the old module were in the west VCM return pump, the outboard seal in the 706 emission recovery compressors, and the seal in the east VCM charge pump.

In the old module the "A" and "B" recovery compressors were rebuilt to replace leaking compressor cases. In the old module the south K.O. drum circulating pump was overhauled and the pump case replaced. The north and south recovery condensers in the old module were cleaned. The charge water pre heater in the new module was hydroblasted and chemically cleaned.

Repairs to the vinyl dryer were to change out the #2 centrifuge and gear box twice. The belts were replaced on the #2 and #6 centrifuges. Minor repairs were made to the dryer door and exhaust stacks on the #4 and #5 dryers. The Honeywell gas bottle racks were relocated for the construction of the fluid bed dryer. The torque controls for #4, #5, and #8 dryers were calibrated.

Compound - Dry Blend - Plasticizer and Resin Storage

Operation in this period was to operate Line Three full time and run Line One or Line Five as required by product demand. With Line One down several steam leaks were repaired, along with, dicer repairs and changing banbury seals. Line Three was down twice for a product change. The F.C.M. seals and rotary joints were replaced and the coupling on the south mill roll motor was replaced. Two electric vibrators were installed on the Line V scales. The bulk of the repairs in the plasticizer unit involved steam leaks.

In the dry blend unit the belts were replaced twice on the intensive cooler. The Sprocket was repaired on "D" blender drive. The Welx Diverter Valve was repaired.

MAINTENANCE - (Continue)Utilities and Service

There were four repairs to the Plant Air system. Valves were repaired in #5 and #6 compressor. #1 compressor was overhauled after the piston failed. The major repair in this period was to remove the west Joy air compressor and return the unit for new gears to be installed and a general inspection at the Joy factory. A project to pipe treated water to the boiler feed pump packing was completed to help improve boiler water control.

Utilities were piped to the new safety valve test stand in the Maintenance shop. The main break area was repainted. The removal of unused switchgear from the refrigeration building to provide air compressor access was completed.

Planner

There were 115 work orders planned and estimated and material ordered for 30 projects.

Twenty invoice registers were closed, 25 new registers were issued.

The revised Safety Valve and Safety Disc Log Book was completed.

MECHANICAL ENGINEERING - J. A. DixonAFE's Submitted, Approved, and Closed

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

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9571	Centrifugal Air Compressor Repair	\$ 45,000
9581	Dryer Building Ventilation	23,000
9591	Sifter Overflow Reclaim System	200,000
9601	Compliance With EPA VCM Standard (Air)	72,000
9611	Recovery System Revisions	30,000
9621	Laboratory Equipment	42,000
9631	Ground Water Monitoring (Solid)	30,000

The Following AFE's were closed to field charges during March:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9589	Instrument Air Dryer	\$110,000
9610	API Clean Water Bypass	23,000

Completion reports were issued for the following AFE's:

<u>AFE No.</u>	<u>Title</u>	<u>Authorized</u>
9237	Heated Plasticizer Addition System	\$ 37,000
9519	Critical Spare Equipment	175,000
9669	New Air Header	25,000
9739	Methocel Charge Revision	66,000

Design

Design work is in progress on the following projects:

- Fixed Point Monitor Data Computer and Warning Lights
- Spare Inert Incinerator
- Resin Reclaim System
- Reactor Pressure Relief Modifications
- Emergency AMS Kill System
- Sifter Overflow Reclaim
- Contrate Heat Recovery
- Fire Protection Improvements - Phase III
- VCM Tank Farm Revisions
- Centrate Heat Recovery System
- Calcium Stearate Additon System

MECHANICAL ENGINEERING - (continued)AFE Activity

1. AFE 9709 - Facilities for Multigrade Resin Production - G. Kreutzer
Erection of structural steel and fabrication of slurry blend tanks is in progress.
2. AFE 9729 - Fire Protection Improvements - Phase II - M. Ingle
Excavation work is complete. Forming and pouring of concrete for the pump building is in progress.
3. AFE 9530 - Spare Incinerator - L. Roussel
Overall project design is approximately 92% complete. Foundation work is in progress. The structural steel fabrication work has been let. Bids were requested for piping, equipment installation and pneumatic instrumentation.
4. AFE 9600 - Calcium Stearate Addition System - M. Richards
Electrical design and equipment purchasing is in progress.
5. AFE 9630 - Water Stripping - M. Ingle
Nearly all the piping and valves have been received. Installation of instrumentation work in the control room is in progress. Bids have been requested for installation of the electrical and instrumentation work.
6. AFE 9680 - Fixed Point Monitor Data Computer and Warning Lights - R. B. Harned
The stand for the CRT and printers have been received. Installation drawings are in progress.
7. AFE 9730 - Compound Line III Debottlenecking - R. B. Harned
The class "A" design for this project is being revised. Some equipment specifications were firmed up and a suggested bidders list was compiled.
8. AFE 9760 - Emergency AMS Kill System - J. L. White
Plan drawings have been approved and drafting is in progress.
9. AFE 9770 - Reactor Pressure Relief Modifications - J. L. White
Plan drawings have been approved and installation drawings are in progress.
10. AFE 9780 - Resin Reclaim System - J. P. McKee
All major equipment except the tank is on order. Drafting is in progress.

MECHANICAL ENGINEERING - (cont.)AFE Activity - (cont.)11. AFE 9790 - Resin Reclaim System - P. Meiers

A kick-off meeting was held with the plant, CED and contract engineering personnel on 4-3-81. Some equipment bid tabulations have been reviewed and approved.

12. AFE 9800 - Plasticizer Irritant Control (AIC) - R. B. Harned

The aerators have been received. Certified drawings of the motor control center have been received and it is scheduled to ship in May.

13. AFE 9521 - New VCM Railspur - Herzog - Hart Corp.

The topography and soil boring work is complete. Progress prints and a draft of the specifications were received for review and approved.

14. AFE 9541 - VCM Tank Farm Modifications - R. B. Harned

Purchasing of equipment and instrumentation is in progress. Quotes for the knock-out pot have been received and are being evaluated. The structural and foundation drawings are complete and piping design is in progress.

15. AFE 9591 - Sifter Overflow Reclaim System - J. P. Windham

A temporary system was completed in March and is operational.

Construction - G. A. Morgan

The following projects were completed during March:

1. Relocation of Air Cannons on 410 Silo.
2. Installation of Lighting in the Drum Storage Shed.
3. Replacement of Ladder Rungs on 282 Silo.
4. Interplant Communication - Phase II.

The following contracts were issued during March:

1. Fireproofing of the New Reactor Structure.
2. Insulation of the Batch Water Stripping Project.
3. Installation of Structural Steel for Spare Incinerator.
4. Collection and Disposal of Scrap Metals.

Twenty register tickets were issued during March:

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
9559	Color Weigh Room Modifications	4/19/79	25,000	22,901	23,090	23,090	1,910	1/81	4/81	Closed to field charges.
9589	Instrument Air Dryer	5/30/79	110,000	96,423	100,259	100,259	9,741	3/81	6/81	Closed to field charges.
9609	Reactor Inert Vent System	6/28/79	90,000	14,541	14,541	90,000	0	12/81	3/82	Project on hold.
9629	Air Compressor	7/9/79	340,000	282,148	292,203	340,000	0	5/81	8/81	Revisions in progress.
9639	Revisions to Emission Recovery Sys.	7/12/79	100,000	77,645	81,604	100,000	0	5/81	8/81	Revisions in progress.
9689	Diking of Sphere & Curbing of Drum Storage Areas	9/15/79	170,000	132,398	134,500	170,000	0	6/81	9/81	Revisions in progress.
9699	Plant Dryer Debottlenecking	9/15/79	80,000	32,305	63,595	80,000	0	8/81	11/81	Construction in progress.
9709	Facilities for Multiple Grade Resin	9/20/79	870,000	179,365	589,595	870,000	0	8/81	11/81	Construction in progress.
9719	Aberdeen PVC Resin Expansion	9/10/79	850,000	11,421	860,000	860,000	(10,000)	8/81	11/81	Reactors received 3/14/81.
9729	Fire Protection Improvements - Phase II	10/1/79	490,000	175,972	376,494	490,000	0	6/81	9/81	Construction in progress.
9759	Aberdeen PVC Resin Expansion	12/10/79	11,150,000	4,430,680	9,071,800	11,150,000	0	9/81	12/81	Construction in progress.
9510	Miscellaneous Projects Under \$10,000	1/3/80	150,000	143,362	159,788	150,000	0	12/80	3/81	Closed to field charges.
9530	Spare Incinerator	1/23/80	650,000	99,907	368,503	650,000	0	6/81	9/81	Construction in progress.
9550	P. A. Handling Improvement	3/3/80	63,000	32,384	33,612	63,000	0	12/81	3/82	Project on hold.
9560	Safety Equipment	3/12/80	25,000	10,923	29,015	28,908	(3,908)	4/81	7/81	Construction in progress.
9570	Replace T-101 P.A. Tank	3/27/80	119,000	62,720	62,720	119,000	0	12/81	3/82	Project on hold.
9580	Boiler Economizers	3/26/80	140,000	144,894	145,389	145,389	(5,389)	12/80	3/81	Closed to field charges.
9590	Critical Spare Equipment	3/26/80	59,000	11,410	60,386	60,386	(1,386)	3/81	6/81	Condenser to ship 6/81.
9600	Calcium Stearate Addition System	4/2/80	84,000	429	12,048	84,000	0	5/81	8/81	Engineering in progress.
9610	API Clean Water Bypass	4/15/80	23,000	18,203	18,511	18,511	4,489	3/81	6/81	Closed to field charges.
9630	Water Stripping	4/30/80	810,000	215,911	341,167	810,000	0	6/81	9/81	Construction in progress.
9650	Miscellaneous Projects Under \$10,000	5/30/80	150,000	127,715	172,530	150,000	0	12/80	3/81	Closed to field charges.
9660	Hot Water Charge Tank Replacement	6/4/80	160,000	110,789	139,016	160,000	0	4/81	7/81	Project operational.
9670	Laboratory Equipment	7/9/80	32,000	31,587	32,447	32,447	(447)	12/80	3/81	Closed to field charges.
9680	Fixed Point Monitor Data Computer and Warning Lights	9/4/80	113,000	1,431	39,714	113,000	0	9/81	12/81	Engineering in progress.
9690	Breathing Air Modification	9/9/80	21,000	1,264	6,869	21,000	0	5/81	8/81	Engineering in progress.
9700	Compound Fines & Streamers Removal	10/1/80	95,000	0	0	95,000	0	10/81	1/82	Engineering scheduled.
9710	Fire Protection - Phase III	10/14/80	385,000	0	400	385,000	0	10/81	1/82	Engineering in progress.
9720	Reactor Agitator Replacement	10/14/80	420,000	0	191,268	420,000	0	10/81	1/82	Agitators to ship 5/81.
9730	Compound Line III Debottlenecking	10/16/80	1,350,000	0	69,500	1,350,000	0	10/81	1/82	FCM barrel to ship 10/81.
9740	Modifications to Make Profile Dry Blend	10/27/80	200,000	49	23,975	200,000	0	10/81	1/82	Engineering scheduled.
9750	Rotary Dryer Insulation (Energy)	11/10/80	22,000	0	27,391	27,391	(5,391)	4/81	7/81	75% complete.
9760	Emergency AMS Kill System	11/15/80	335,000	0	59,043	335,000	0	8/81	11/81	Engineering in progress.
9770	Reactor Pressure Relief Modifications	11/25/80	560,000	243	235,708	560,000	0	12/81	3/82	Engineering in progress.
9780	Centrate Heat Recovery	12/8/80	300,000	473	42,518	300,000	0	3/82	6/82	Engineering in progress.
9790	Resin Reclaim System	12/14/80	727,000	147	147	727,000	0	3/82	6/82	Engineering in progress. CED
9800	Plasticizer Irritant Control (Air)	12/15/80	80,000	0	28,305	80,000	0	9/81	12/81	Engineering in progress.
9810	Replacement Gearbox for Farrel Mixer	12/18/80	73,000	0	69,400	73,000	0	9/81	12/81	Gearbox to ship 9/81.
9511	Miscellaneous Projects Under \$10,000	1/9/81	170,000	9,760	53,963	170,000	0	12/81	3/82	Twenty projects approved.
9521	New VCM Railspur	1/30/81	11,000	0	15,800	11,000	0	5/81	8/81	Engineering in progress.
9531	Vinyl Initiator Charge Pots	1/21/81	165,000	0	0	165,000	0	11/81	2/82	Engineering scheduled.
9541	VCM Tank Farm Modifications	1/21/81	90,000	0	13,769	90,000	0	1/82	4/82	Engineering in progress.
80-395	Interplant Communication - Phase II	1/22/80	55,000	0	21,755	55,000	0	6/81	9/81	Project operational.
9551	V-10 Centrate Heat Recovery (Energy)	2/17/81	125,000	0	0	125,000	0	5/82	8/82	Engineering scheduled.
9561	Cooling Tower Fan Controls (Energy)	2/17/81	40,000	0	0	40,000	0	11/81	2/82	Engineering scheduled.
9571	Centrifugal Air Compressor Repair	3/11/81	45,000	0	42,975	45,000	0	4/81	7/81	Compressor operational.
9581	Dryer Building Ventilation	3/20/81	23,000	0	0	23,000	0	9/81	12/81	Engineering scheduled.
9591	Sifter Overflow Reclaim System	3/20/81	200,000	0	0	200,000	0	3/82	6/82	Engineering in progress.
9601	Compliance With EPA VCM Standard (Air)	3/25/81	72,000	0	0	72,000	0	12/81	3/82	Engineering scheduled.
9611	Recovery System Revisions	3/25/81	30,000	0	0	30,000	0	12/81	3/82	Engineering scheduled.
9621	Laboratory Equipment	3/25/81	42,000	0	0	42,000	0	8/81	11/81	Equipment quotes requested.
9631	Ground Water Monitoring (Solid)	3/24/81	30,000	0	0	30,000	0	10/81	1/82	Engineering in progress.

EXPENSE

9020	Repairs to Line I Compounder	11/24/80	33,000	0	0	33,000	0	11/81	2/82	Parts ordered in January.
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DTH 000019116

PERSONNEL - J. L. Carter

EMPLOYMENT

Ralph D. Flippo - General Helper
Dave Gathings - General Helper
Jeffery Shields - General Helper
John White - Casual Labor (Transportation)
Howard Sykes - Casual Labor (Transportation)
Hanna Word - Casual Labor (Transportation)

TO/FROM LEAVE OF ABSENCE

None.

TRANSFER/PROMOTION

Jeffery Shield, General Helper, transferred to Building Attendant.
Eddie M. Smith, Head Building Attendant, transferred to Lab Trainee.
Robert L. Williams, Building Attendant, promoted to Head Building Attendant.
Jerry R. Crosby, Lab Technician "A", transferred to Maintenance Helper.

RETIREMENT

Sara F. Jones, Payroll Clerk
Earnest R. Long, General Mechanic "A"

TERMINATION

Ulas Nabor - Casual Labor
Georgia Elliott - Casual Labor
David Elliott - Casual Labor
Jerry McCulloum - Casual Labor (Transportation)
David Thompson - Casual Labor (Transportation)

OTHER

During March there were 15 casual labor employees on payroll.
Total hours worked were 1429.

CONOCO CHEMICALS
Aberdeen, Mississippi

(15)

March 1981
MONTHLY PERSONNEL REPORT

Salaried Employees 79*
Hourly Employees 157
Total Employees 236*
Employees (Hourly)
New Employees 3
Terminations 1**

Minority Employees # %
Salaried 6 7.6%
Hourly 58 37%
Total 64 27%

Hourly Min. Hired 1
% Min. Hired 33.3%
Hourly Min. Term. 0
% Min. Term. 0

DEPARTMENTS	PAR	# EMPLOYEES	MIN. EMP.	% MIN.	NEW HIRES	YTD	TERM.	YTD	TURNOVER	YTD
Warehouse	9	8	1	12%	0	0	0	0	0	0
Gen. Plant	11	12	4	33%	3	5	0	0	0	0
Maintenance	46	45	7	15%	0	0	1**	1**	0	0
Laboratory	22	21	3	14%	0	0	0	0	0	0
Compound	37	35	27	77%	0	0	0	0	0	0
Vinyl	32	32	13	40%	0	0	0	0	0	0
Plasticizer	4	4	3	75%	0	0	0	0	0	0

Number of Applicants:

Month 11 Year to Date 74

APPLICANT BREAKDOWN:

Minority 5 % Minority 45%
Female 9 % Female 82%

Hires (Hourly) :

Month 3 Year to Date 5

Terminations (Hourly) :

Month 1** Year to Date 1**

Overall Turnover 0

Projected Annual Turnover 0

*Includes two (2) temporary employees.
**Includes one retirement. Retirements
are not included in turnover rates.

DTH 000019118

OVERTIME AND ABSENTEEISM

March 1981

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	1276.75	113.00	0	8.9%	8	100%	0	.6%
Maintenance	5737.00	316.00	0	5.5%	128	88%	12%	2%
Laboratory	3331.25	325.00	0	9.7%	0	0	0	0
Compound	5806.00	280.75	0	4.8	72	100%	0	1%
Vinyl	5441.75	588.25	0	11%	280	91%	9%	5%
Plasticizer	475.75	21.75	0	4.5%	128	100%	0	27%
Utility Boiler House	576.00	97.00	0	17%	0	0	0	0
General Plant	796.50	3.50	0	.4%	0	0	0	.3%
Total	23441.00	1745.25	0	7%	616	94%	6%	3%

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. FrohreichA. Expansion Project

All concrete work has been completed except for the Chem Wash area. Erection of the west cooling tower has begun with completion of both towers expected in May. Erection of the slurry blend tanks is proceeding. Dryer steel erection and equipment setting in this area has begun. Instrumentation bid packages have been received and selection will be made in April. All major equipment for the Chemical Wash system has been ordered.

B. Reactor Emergency Cooling System

A revised class "A" design is being prepared for this project.

C. Compound Line I Modernization

The class "A" design for this project is being prepared.

D. Plasticizer Spill Containment

The class "A" design for this project was issued. A design review was held and the comments were incorporated in the design.

E. Donnelly Mirror Compound Testing

The design is being revised to incorporate "Super Sac" containers with a longer service life.

F. Automatic Resin Bagging

The class "A" design to convert the compound automatic bagging system to resin service is underway.

G. Dryer Vacuum System

Work has begun on the class "A" design to install a vacuum clean up system for the dryer buildings.

H. Recovery System Revisions

During review of this design, it was decided that additional field data needs to be taken to verify the flow rates through recovery system that were used as a basis for equipment sizing.

I. Slurry Delumper

The class "A" design incorporating comments from the design review meeting was issued.

PROCESS ENGINEERING - (Continue)J. Caustic Addition System

The class "A" design to add caustic to the recovery systems to reduce corrosion is being prepared.

K. Line III Production Improvement

A report proposing a test run on line III to determine rate limitations for several compounds is being prepared.

L. Pressure Relief on Recovery Compressors

The class "A" design to install pressure relief on the recovery compressors was issued. The AFE request for this project was submitted and approved.

M. Pressure Relief on Pumps in VCM Service

A survey of the relief capacity on pumps in VCM service was conducted. A design to provide adequate relief for these pumps is being prepared.

N. Evaluation of Vinyl Emergency systems operability

The MSPW and new module seal oil emergency systems are being evaluated for operability and capacity to determine if these systems are adequate.

O. Plasticizer Caustic Charge Pump

A design to replace the plasticizer caustic charge eductor with a pump to reduce the amount of water that needs to be treated was issued.

P. Sifter Overflow Reclaim System

The AFE request for this project was submitted and approved.

ENVIRONMENTAL - V. E. Messick

Particulates

Two dryers were sampled in March for particulates and were within allowable limits.

Water

The ph for outfall 002 exceeded allowable limits with a value of 10.0. All other effluent parameters were within NPDES limitations.

A proposed compliance schedule to meet lower effluent limitations by the installation of biodisc was submitted to the State of Mississippi

A draft NPDES permit was received from the state in early April.

VCM

All leaks found during the comprehensive VCM survey have been repaired and verified.

Hazardous Waste Management

The Groundwater Monitoring AFE request was approved. A meeting was held with the contractor to plan work on the plant's closure and post-closure plan and the groundwater monitoring study.

All manifests on previous shipments of hazardous wastes have been received.

The RCRA Training Manual is being prepared.

TABLE I

(20)

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.	1069	39	504	69	888	7	93	8.5-10.4	7.4-7.8
Max.	1297	57	887	106	1650	9	114		
Feb. - Ave.	757	11	95	43	382	7	65	8.9-9.8	7.5-7.9
Max.	819	18	154	56	479	10	86		
Mar. - Ave.	753	10	90	36	330	11	93	8.3-8.9	7.6-7.7
Max.	790	11	103	51	466	17	139		
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 - J. F. Perez-VelascoI. Plant Operations

Total energy consumption for March was 112.653 MMM BTU's. The energy consumption per pound of product decreased to 2873 BTU/lb as compared with 3448 BTU/lb. for February.

II. Plant Energy Conservation ProgramA. Steam Leaks

Twenty-six (26) steam leaks were repaired in March, two of which were steam trap repairs. In addition, Leak Repair Inc. made twenty eight (28) on-line steam leak repairs.

B. Light Survey

Westinghouse conducted a plant-wide light survey and will send recommendations.

C. Energy Reporting

Calculation of weekly plant energy efficiencies was begun in March.

D. Continuous Oxygen Analyzers

Installation and calibration of the excess oxygen analyzers was completed in March and they are in full operation.

ENERGY CONSERVATION DATA

<u>ITEM</u>	<u>1981</u>	<u>1980</u>
<u>Control Period</u>	March	March
<u>Production, MM Lbs.</u>		
Resin	28.3	25.6
Dry Blend	4.8	2.2
Compound	5.2	4.0
Plasticizer	0.9	1.3
TOTAL	39.2	33.1
<u>Natural Gas</u>		
Consumption, MSCF	59178	57691
Conversion, BTU/SCF	1020	1020
Energy Consumption, MMM BTU	60.361	58.845
<u>Electricity</u>		
Consumption, MM KWH	5.2291	5.1456
Conversion, BTU/KWH	10,000	10,000
Energy Consumption, MMM BTU	52.291	51.456
<u>Propane</u>		
Consumption, M Gal.	0	0
Conversion, BTU/Gal.	92000	92000
Energy Consumption, MMM BTU	0	0
<u>Total</u>		
Energy Consumption, MMM BTU	112.653	110.301
Energy Consumption, BTU/Lb.	2873	3332

Boiler Operating Data

	<u>Avg. Stack Temp.</u>		<u>Avg. % Excess Air</u>	
	<u>1981</u>	<u>1980</u>	<u>1981</u>	<u>1980</u>
No. 1	260	384	37	19
No. 2	280	408	30	19
No. 3	270	414	18	21

LABORATORY - R. D. JacksonCUSTOMER COMPLAINTS

<u>Customer</u>	<u>Product</u>	<u>Complaint</u>	<u>Report By</u>
Charlotte Pipe	5358	Moisture	PEM
Packard Electric	34533 Natural	Processing, Lumps	CRM
Lubonyl	5385	Contamination	CRM

WAIVERS RECEIVED

<u>Date</u>	<u>Identification</u>	<u>Product</u>	<u>Customer</u>	<u>Reason</u>	<u>Waived By</u>
3/7	T-2479	5425	Southwire	Gels	RDJ
3/9	P-1261	80273G	Ari Products	Low Torque	RDJ
3/11	PTLX-41833	5385-3	World of Plastics	Viscosity	ELK
3/23	CONX-45770	5385-3	World of Plastics	Viscosity	ELK
3/23	CONX-45757	5385-3	World of Plastics	Viscosity	ELK
3/23	PTLX-41600	5385-3	World of Plastics	Viscosity	ELK
3/24	PLCX-43710	5425	Uniroyal	Viscosity	ELK
3/24	PTLX-41640	5305	Intex	Viscosity	ELK
3/24	PTLX-41651	5305	N. J. Terminal	Viscosity	ELK

PRODUCT SERVICE & DEVELOPMENTSample Shipments

<u>Ship Date</u>	<u>Product</u>	<u>Amount (lb.)</u>	<u>Customer</u>	<u>Requested By</u>
3/6	5385-3	8 x 2	Vydel Corp. of America	MFM
3/9	5385-1	200	Hamelin Industries	COEDS
3/9	18031 CLBL50	900	Tenex Corp.	COEDS
3/12	5305	250	Mitsui & Co. (USA) Inc.	COEDS
3/13	18831 CLBL50	200	Astro Plastics	COEDS
3/13	18961 Natural	50	Lavanture	COEDS
3/16	5305	1	Innovative Sensors, Inc.	RTM
3/16	38761 Black	5	Conoco, Ponca City	ERC
3/17	5385-1	50	Dart Industries	RNG
3/17	35851 Natural	50	Wrap-On Co. Inc.	MFM
	34431 Natural	50		
	38551 Natural			

LABORATORY - (continued)Sample Shipments - (continued)

<u>Ship Date</u>	<u>Product</u>	<u>Amount (lb.)</u>	<u>Customer</u>	<u>Requested By</u>
3/23	27121 Natural	200	Quimsanto Industrial C.A.	COEDS
	14331 Water Cl.	200		
	18961 Natural	200		
	28831 Natural	100		
3/25	18031 CLBL50	100	Ruvan Plastics	COEDS
3/25	5425-1	50	Royal Plastics LTD	COEDS
3/25	5305	100	Genova Inc.	COEDS
3/25	5385	5	Abboth Industries, Inc.	NTH
	5425	5		
3/25	5305	10	Fritz Airfreight	JPM
	5385-1	10		
	5425	10		
	5465	10		
3/26	26421 Natural	50	Fritz Airfreight	JPM
3/26	5385	2 x 500	Conoco, Inc.	COEDS
3/31	90171	100	LCP Plastics Inc.	COEDS
3/31	35851 Natural	150	Whitaker Cable Corp.	COEDS
3/31	5385-3	50	American Pipe & Plastics	NTH
3/31	5385-3	50	Pro Tochem Inc.	COEDS
3/31	5425	5	Fritz Airfreight	JPM

Special Compound Testing

Complete Western Electric specification tests were run on three production batches of 34861 Gray 546, on one batch of 36861 Natural, and on one batch of 38761 Black. In addition, plasticizer extraction and flammability tests were run on six rail-car samples. The 38761 Black exhibited poor extrusion flow characteristics and was rejected for shipment.

New Compounds

Quality control specifications and standards were prepared for 3711-65C White - a new Neco heating pad formula. The color was adjusted to match the Neco standard.

Dry Blend Development

Welex batches of four dry blend compounds were prepared for use as control standards.

LABORATORY - (continued)Customer Complaints

As the result of a complaint from Taylor Cable, melt flow tests were run on the complaint sample of 34431 Natural and on production retains. There was no significant difference in the melt flows of the two materials.

QUALITY CONTROL TESTINGResin

Regular Samples = 413
 Bag Samples = 18
 Other In-Process Samples = 3,257
 Bulk Shipments = 204 (Railcars = 123; Trucks = 81)

Dry Blend

Blenders Produced = 446
 Blenders Tested = 446
 Blenders Adjusted = 16.4%
 Other In-Process Samples = 555
 Bulk Shipments = 57 (Railcars = 11; Trucks = 46)

Compound

Blenders Produced = 762
 Blenders Adjusted = 2.1%
 Line V Production = 256 skids
 Other In-Process Samples = 940
 Bulk Shipments = 30 (Railcars = 14; Trucks = 16)

Resin Heat Stability

Resin heat stability was good during March, with only one sample approaching the unacceptable level. Forty-six (46) samples were tested, as follows:

5385	16 samples
5425	16 samples
5305	8 samples
5465	6 samples

Raw Material Testing

Eighty-three (83) lots of plant raw materials were tested and released. A report has been issued regarding variations in the volume resistivity of clays. Tests indicated that problems with dispersion of the clays has been responsible for very low VR readings, and the sample preparation technique has been revised. Preliminary test results have indicated that Compound Line III gives good clay dispersion and acceptable values for VR of electrical compounds.

LABORATORY - (continued)Raw Material Testing - (continued)

A sample of XM-3941V Gray color concentrate from Avecor Midwest was compared with Wilson 32-GY-16. The Avecor sample appeared to be an acceptable color match, however' the pigment dispersion was very poor.

RVCM of Shipments

A total of 166 shipment samples were tested for RVCM in March. The following is a summary of these results.

<u>Product</u>	<u>5305</u>	<u>5385</u>	<u>5425</u>	<u>5465</u>	<u>Dry Blend</u>
PPM RVCM	1.6	1.6	0.2	0.1	0.1
Number Samples	60	59	30	8	9

Viscosity

A total of 807 samples were tested for solution viscosity. This gives an average of 26 samples per day for 31 days.

MISCELLANEOUS PROJECTS5385 Resin Molecular Weight

This project was undertaken because of a proposal to reduce the molecular weight of 5385 from a minimum inherent viscosity of 0.90 to 0.88. Laboratory batches of two critical melt flow compounds (18031 and 34861) were prepared using the two resins and tested for melt flow. Compounds containing the 0.88 I.V. 5385 flowed much faster than the same compounds made with 0.93 I.V. resin. The low molecular weight resins would not appear suitable for 18031 or 34861 based on these laboratory comparisons.

Computer/L&N

In order to make reactor slurry particle size data from the Leeds and Northrup more meaningful to the Vinyl Department, a new program has been prepared for the lab computer. This program stores the last sixty data points and graphs the results to show trends in particle size performance. This information is transmitted to the Vinyl Control Room several times during a shift.

RVCM in Slurry

A total of 669 slurry samples were checked for RVCM. The overall average ppm RVCM for March was 212. The daily average exceeded 400 ppm on one day.

RVCM of 5305 Dryer Samples

The dried 5305 samples were tested for RVCM. A total of 57 samples were tested with a monthly average of 2.6 ppm RVCM.

LABORATORY - (continued)RVCM of Blowdown Tanks

A total of 165 blowdown tank water samples were tested for RVCM in March. The overall average was 7 ppm VCM.

Special

A total of 100 non-routine samples were analyzed for the Processing Engineering Department. Most of these were for COD testing.

Dosimetry

A total of 86 VCM dosimetry samples and 25 plasticizer in air samples were tested.

Technical Service

A visit was made by the Plant Chief Chemist to Phelps Dodge, Starkville, MS concerning particle size analysis differences. The problem at this customer's plant was found to be processing related and it was recommended that PAL be called in to monitor the situation.

TRANSPORTATION - J. E. StarkShipments By Product - M/Lbs.

	<u>March</u>	<u>Year-to-Date</u>
Resin	27,336	69,814
Plasticizer	164	409
Dry Blend	5,401	12,628
Compound	4,560	12,646
	<u>37,461</u>	<u>95,497</u>

Number of Shipments By Mode

	<u>R/C</u>	<u>O.T. Bulk</u>	<u>O.T. Van</u>	<u>C.O.T.</u>	<u>C.C.</u>	<u>TOFC</u>	<u>CPU</u>	<u>Total</u>
Resin - Bulk	104	48			27			179
- Package			3		1		4	8
- Export		3	167	4				174
Plasticizer							4	4
Dry Blend - Bulk	14	1			3		43	61
- Package			5	1	1		5	12
- Export			12					12
Compound - Bulk	14	13			3			30
- Package			12	1	19		18	50
- Export			9					9
	<u>132</u>	<u>65</u>	<u>208</u>	<u>6</u>	<u>54</u>	<u>0</u>	<u>74</u>	<u>539</u>
Back Hauls for March			27	1	4			32

Number of Shipments by Month

	<u>R/C</u>	<u>Bulk</u>	<u>Van</u>	<u>C.O.T.</u>	<u>C.C.</u>	<u>TOFC</u>	<u>CPU</u>	<u>Total</u>
January	91	48	200	2	91	0	55	487
February	91	55	172	0	40	0	58	416
March	132	65	208	6	54	0	74	539

Material Handling Report

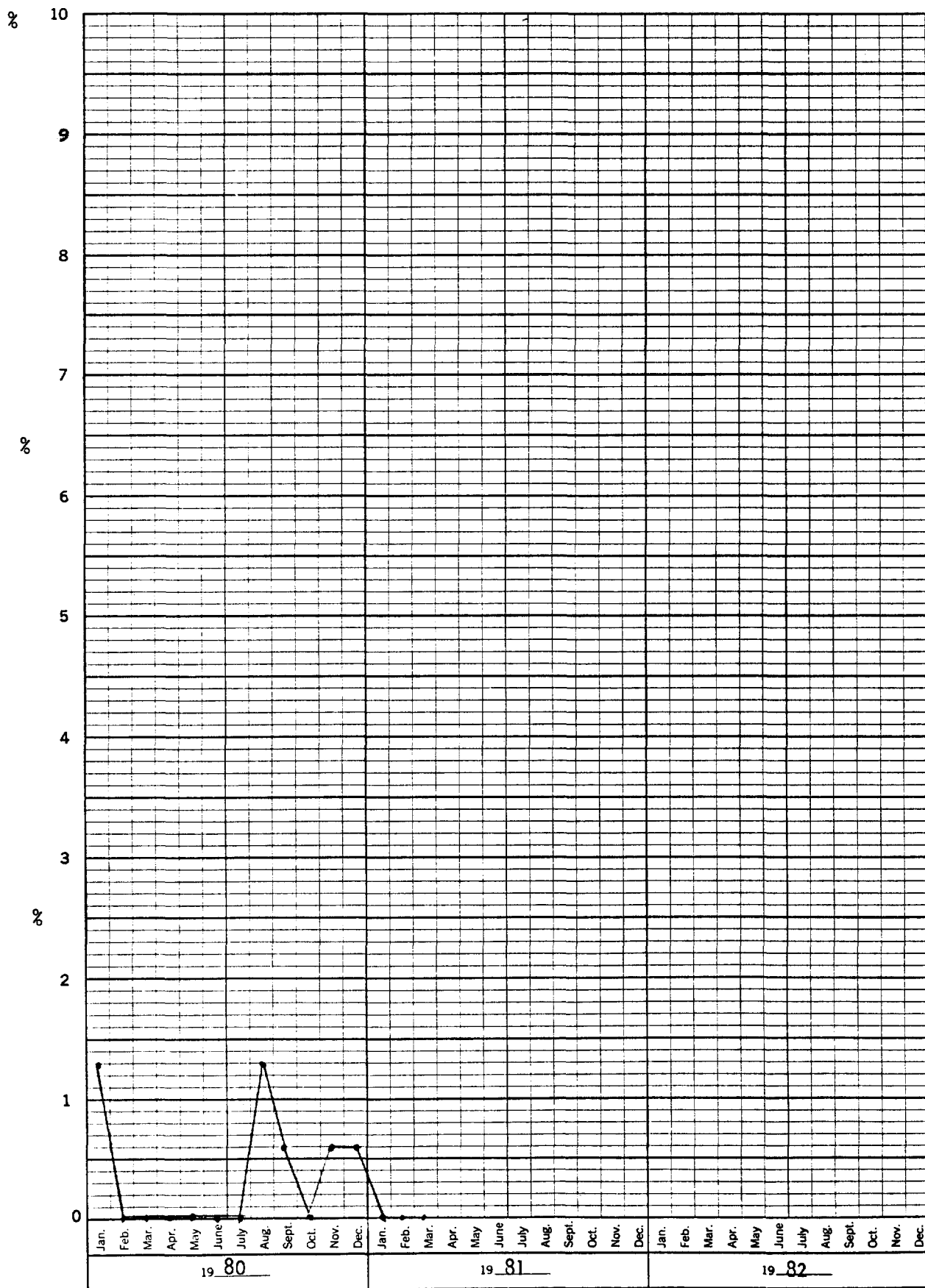
	<u>M/Lbs.</u>	<u>T/L</u>
Packaged Resin From Production	1,134	28
Packaged Compound, Dry Blend From Production	3,159	78
Transferred From Main to Prairie	1,903	47
Transferred From Prairie to Prairie	0	0
Reverse Transfer Resin to Plant	770	19
Reverse Transfer Compound to Plant	283	7
Shipment From Warehouses	10,246	253
Special Packaging	7,776	192
Transferred From Prairie to Main	6,359	157
	<u>31,630</u>	<u>781</u>

TRANSPORTATION - (continued)Off Grade In Storage

<u>Material</u>	<u>M/Lbs.</u>	<u>T/L</u>
Sifter Overflow	1,379	34
Resin "BC"	3,043	75
Resin "H"	750	18
Mill Scrap	133	3
Compound "B"	1,687	42
Compound "H"	70	2
Dry Blend "O.G."	366	9
	<u>7,428</u>	<u>183</u>

		<u>CONOCO TRANSPORTATION</u>				
		<u>ABERDEEN WAREHOUSE</u>				
<u>LOCATION</u>	<u>TOTAL M SQ. FT.</u>	<u>CONTENTS</u>	<u>ESTIMATED MM POUNDS ON FLOOR OPEN TO</u>			
MAIN-East	48	Compounds	4.4			
		Dry Blend	.2			
		Export Resin	.2			
		Conoco Resin	.2	5.0	5.0	10.0
Prairie 12-1	12	HDPE	.3			
		Dry Blend	.2	.5	1.0	1.5
12-2	22	Conoco Resin	1.4	1.4	2.1	3.5
12-3	21	Conoco	.3			
		Export Resin	.7	1.0	2.5	3.5
12-4	22	Conoco Resin	4.4			
		Resin O.G.	.	* 4.4	.	3.5
12-5	21	Mill Scraps	.1			
		Compd O.G.	1.0			
		Dry Blend O.G.	.2			
		Sifter Overflow	.7			
		Resin O.G.	.3	2.3	.2	2.5
12-6	21	Compound	.1			
		Resin	3.0			
		Raw Material	.3	3.4	.1	3.5
12-7	21	Resin O.G.	3.4	3.4	.1	3.5
12-8	21	Conoco Resin	4.5	* 4.5	.	3.5
12-9	21	Conoco Resin	2.3	2.3	1.2	3.5
12-12	21	Dry Blend O.G.	.			
		S.O.	.6			
		Comp. O.G.	.7			
		Mill Scarp	.	1.3	2.2	3.5
		Sub-Total				42.0
		(Plug-Aisles)				1.9
Total	251	Total Conoco		29.5	14.4	43.9

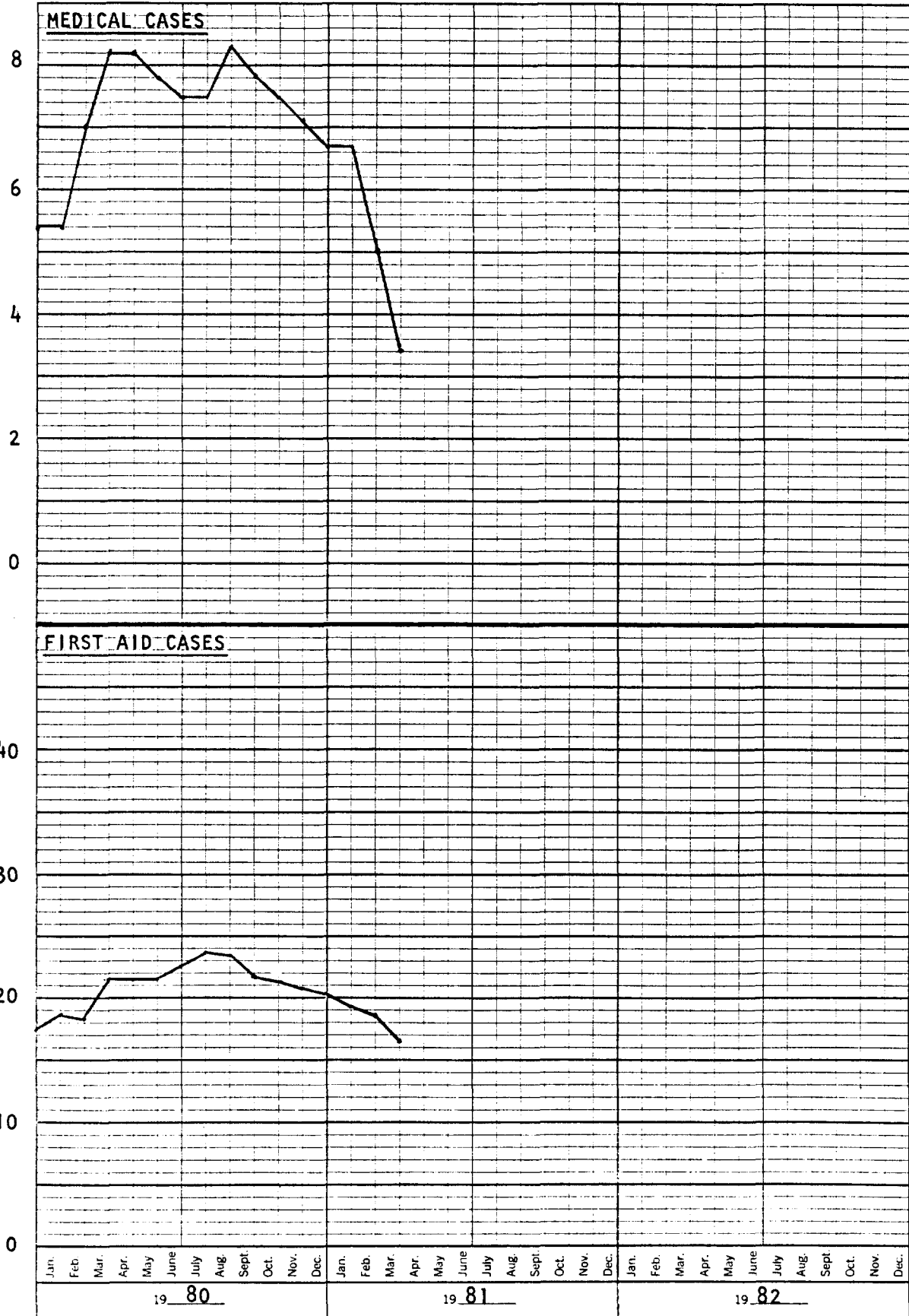
MONTHLY HOURLY TURNOVER



ABERDEEN CHEMICAL PLANT

INJURY PERFORMANCE

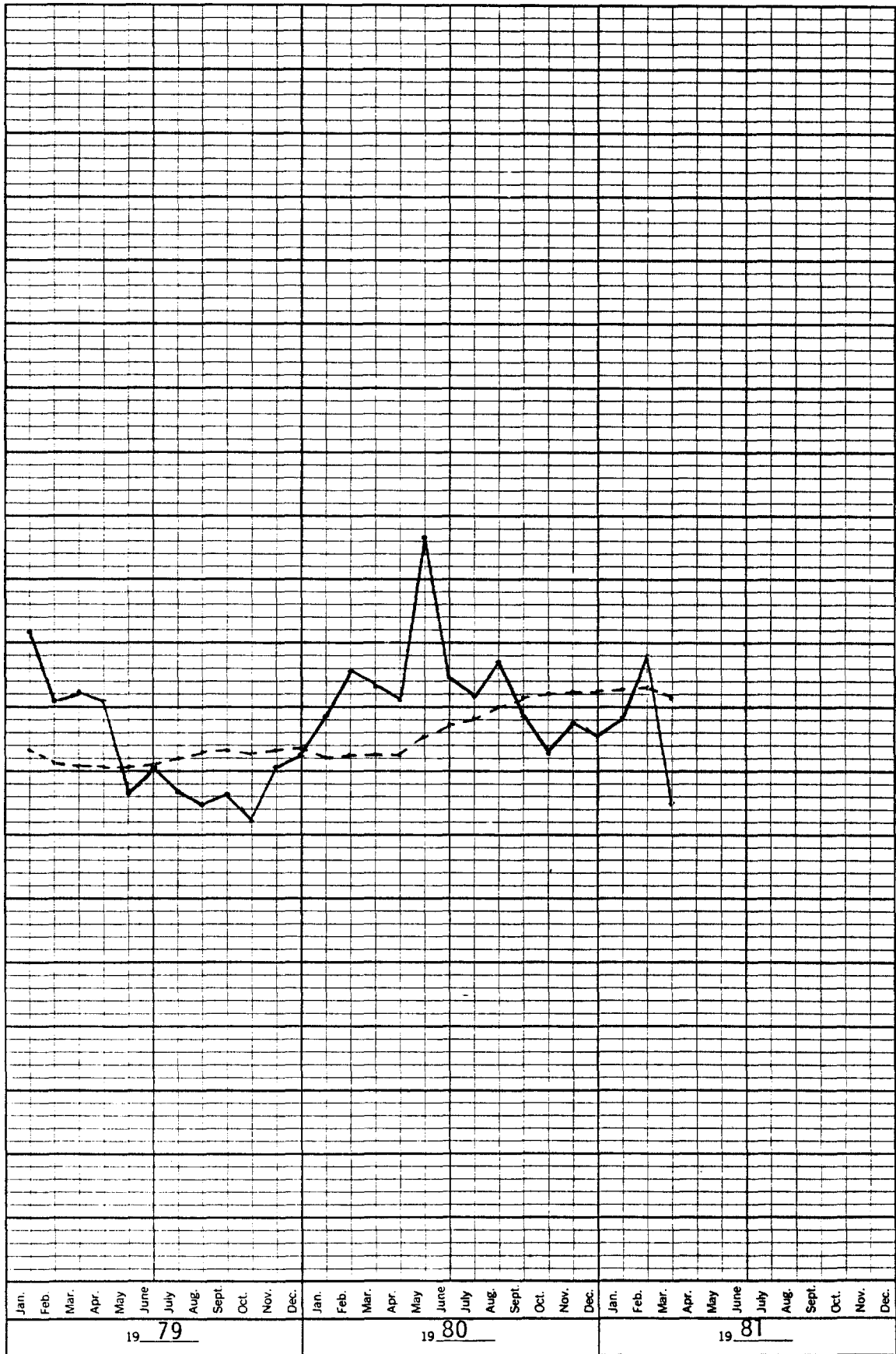
INJURY FREQUENCY X 100



$$\text{FREQUENCY} = \frac{\text{TOTAL INJURIES (FA OR MC)} \times 12}{\text{TOTAL EMPLOYEES}}$$

ENERGY USAGE

BTU/Lb.



_____ Monthly
 ----- 12 Month Moving Average

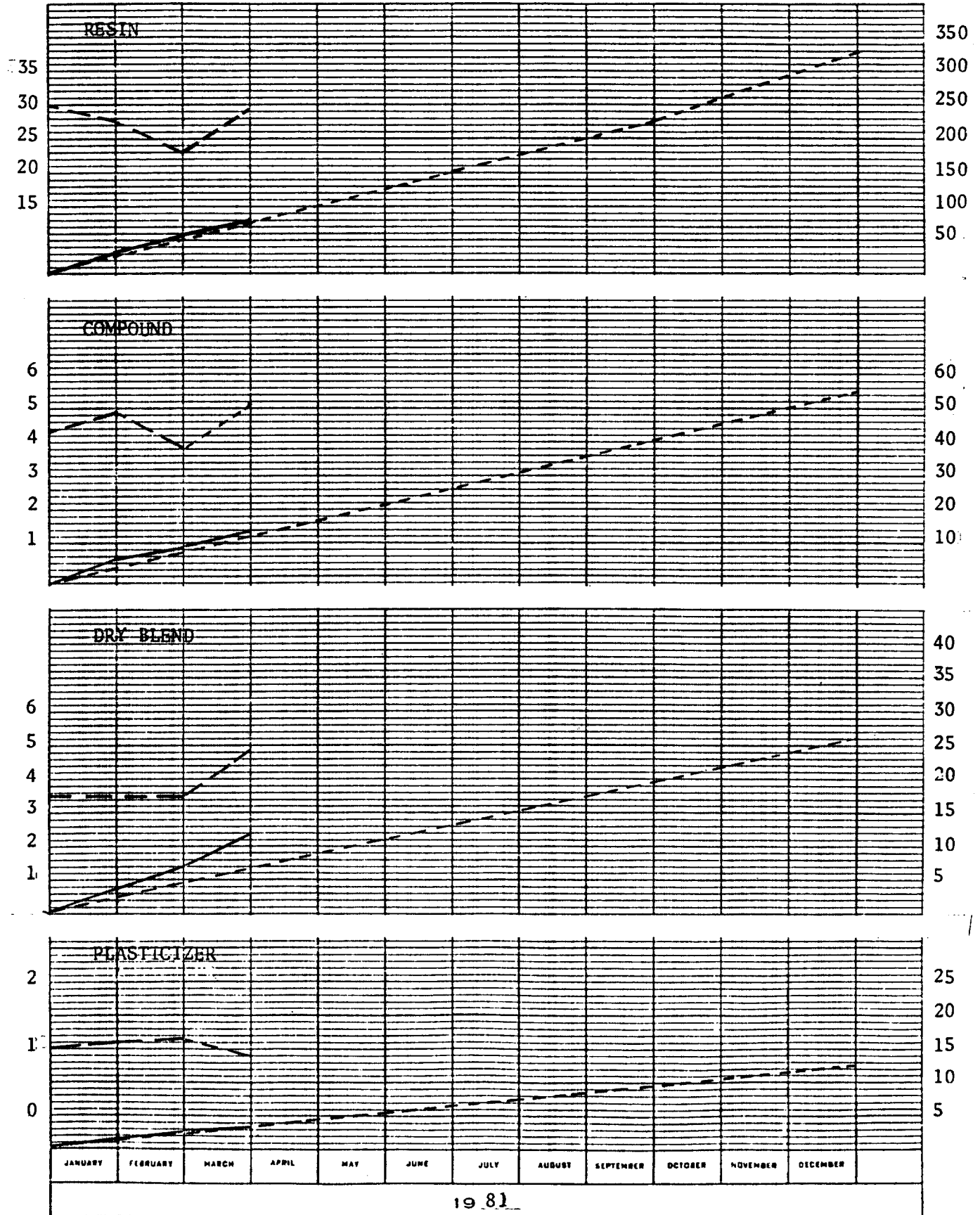
DTH 000019136

MM POUNDS
MONTHLY

ABERDEEN PLANT PRODUCTION

1981

MM POUNDS
CUMULATIVE

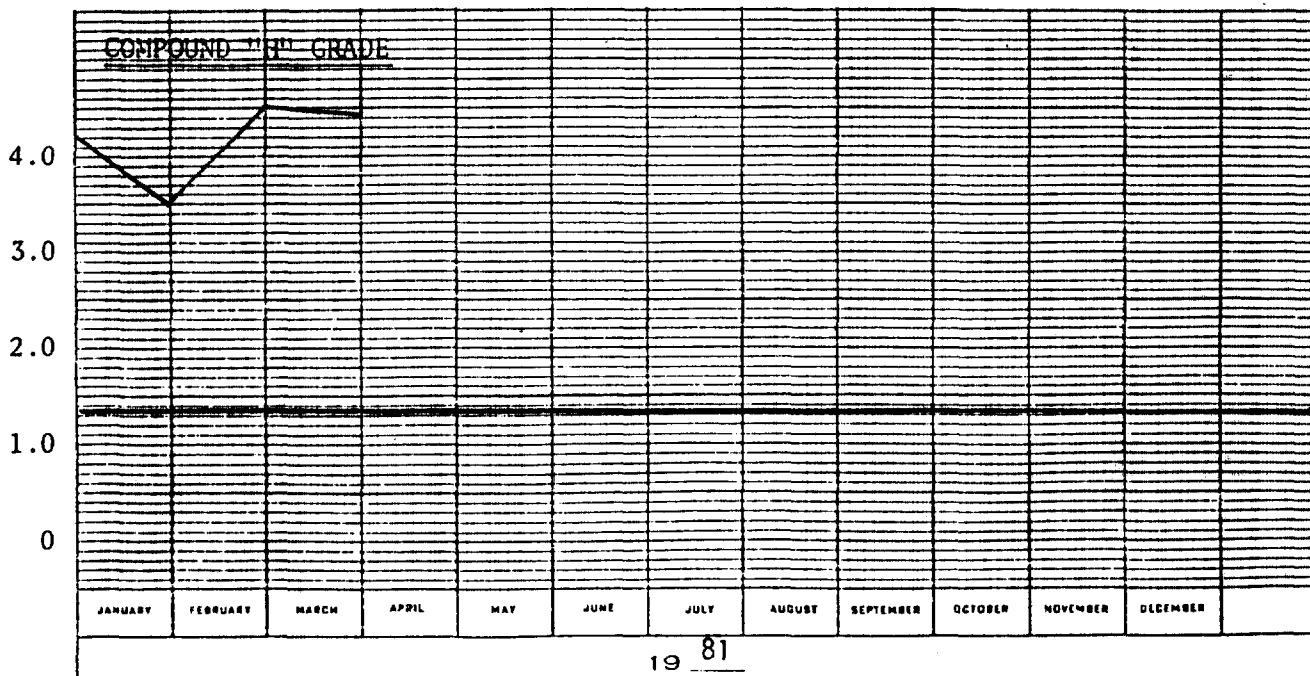
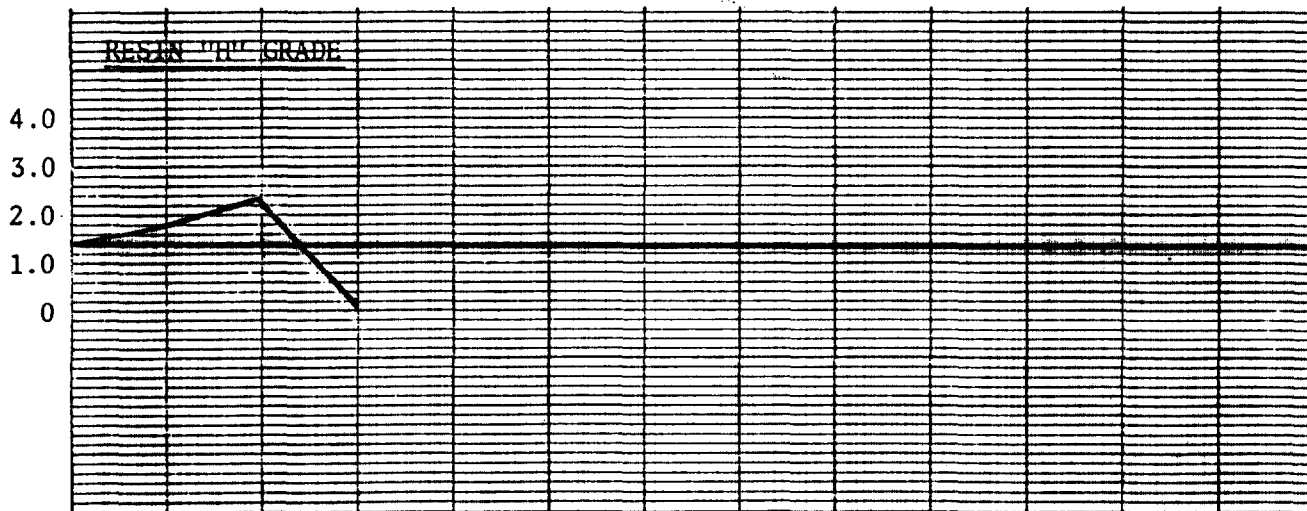
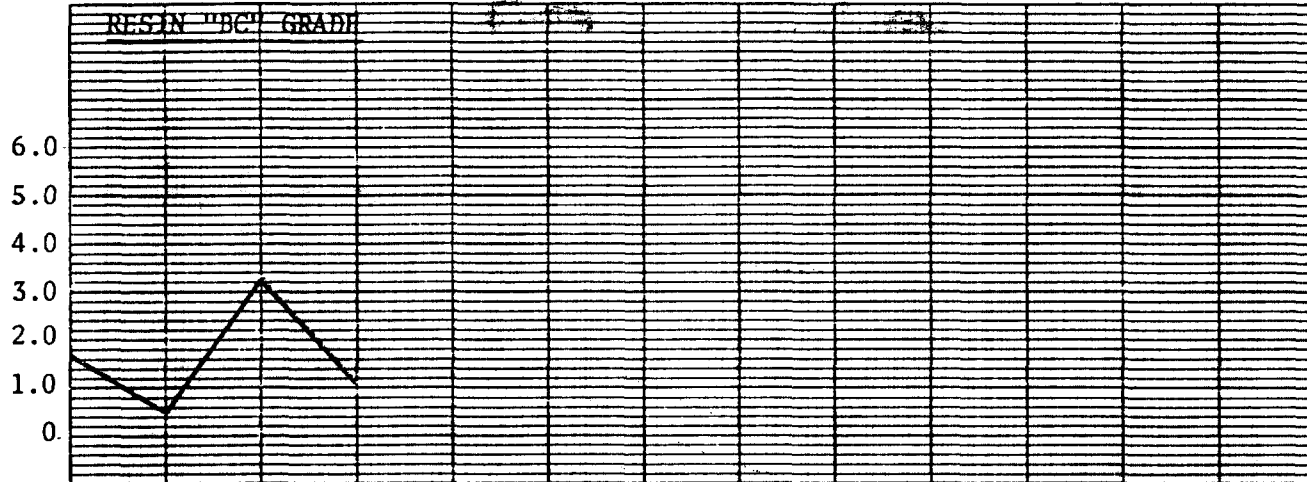


----- BUDGET
- . - . - ACTUAL
———— CUMULATIVE

ABERDEEN PLANT QUALITY PERFORMANCE

1981

%
OFF-GRADE

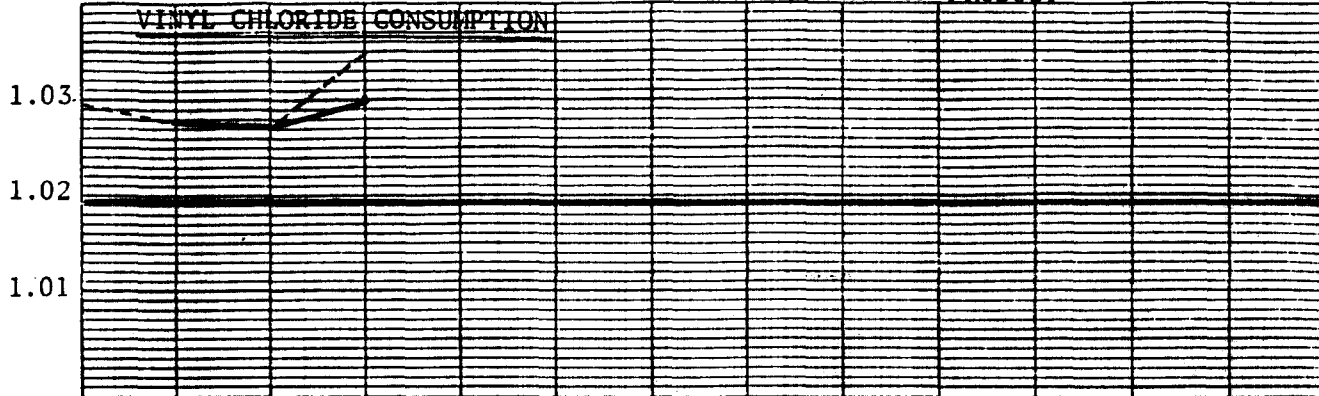


19 81

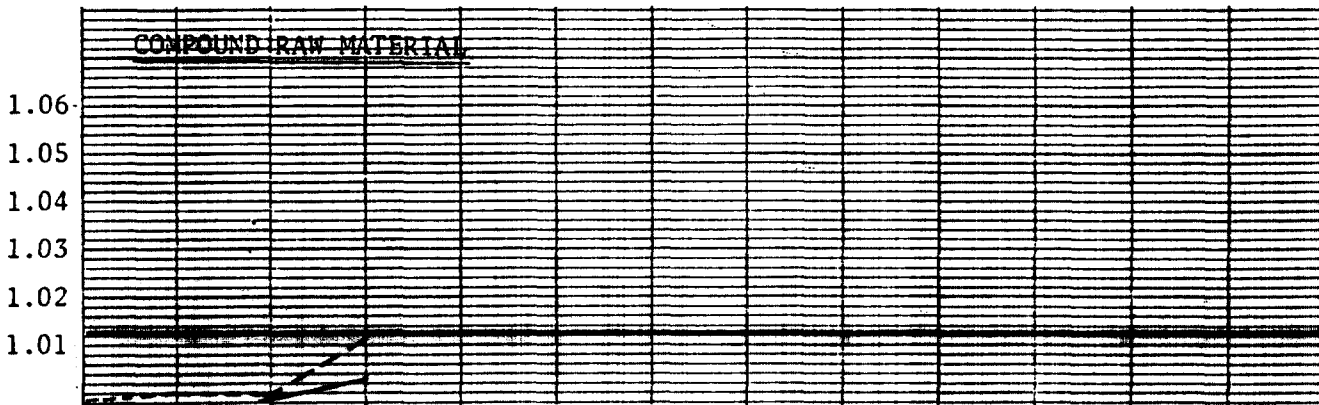
ABERDEEN PLANT EFFICIENCY

1981

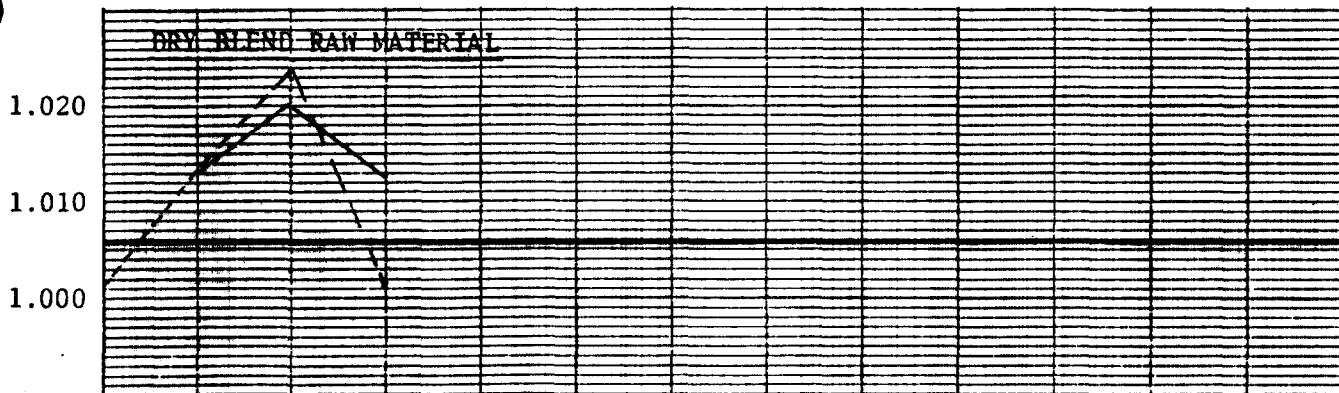
POUNDS OF RAW MATERIAL/POUND OF PRODUCT



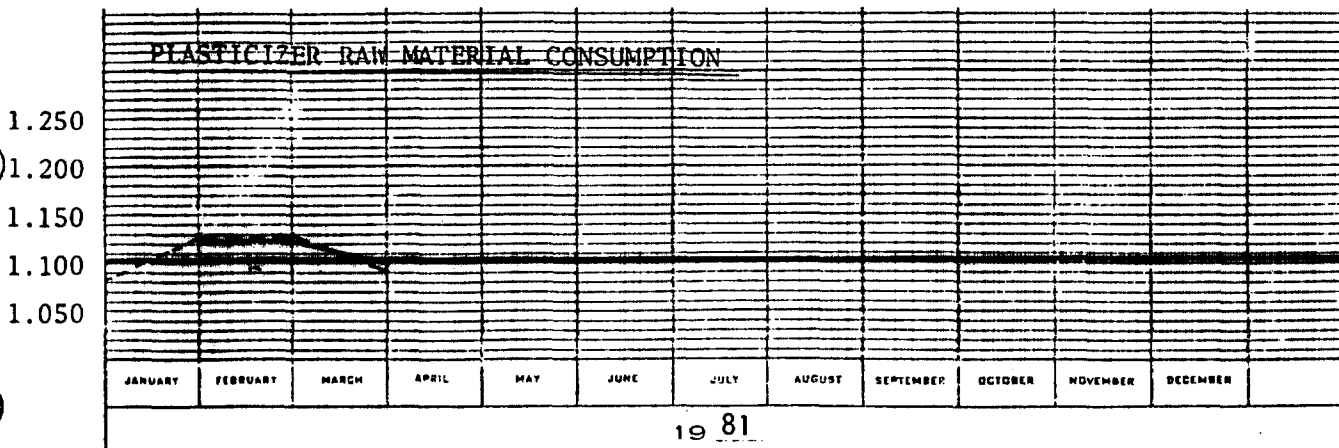
STANDARD
1.01936



STANDARD
1.01300



STANDARD
1.00580



STANDARD
1.10500

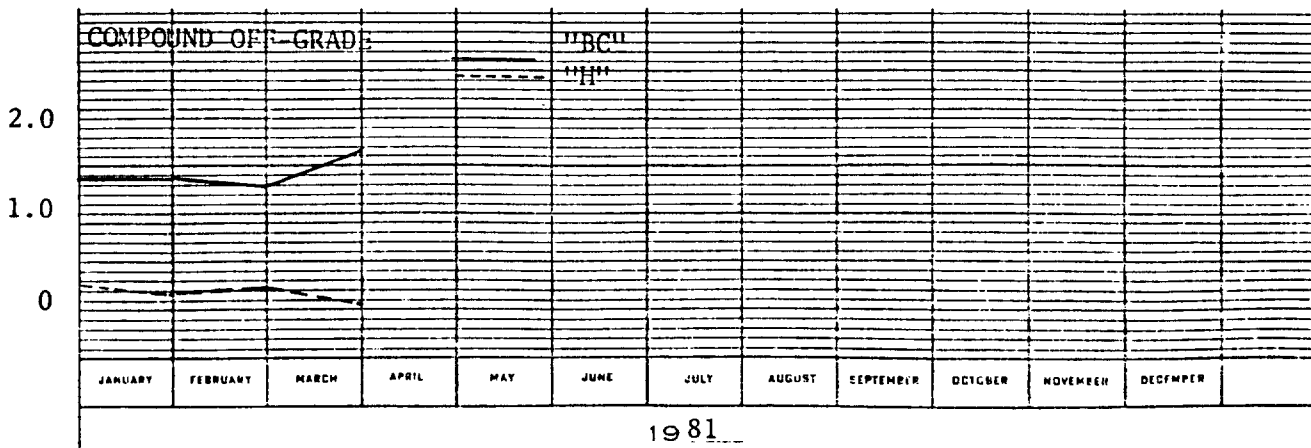
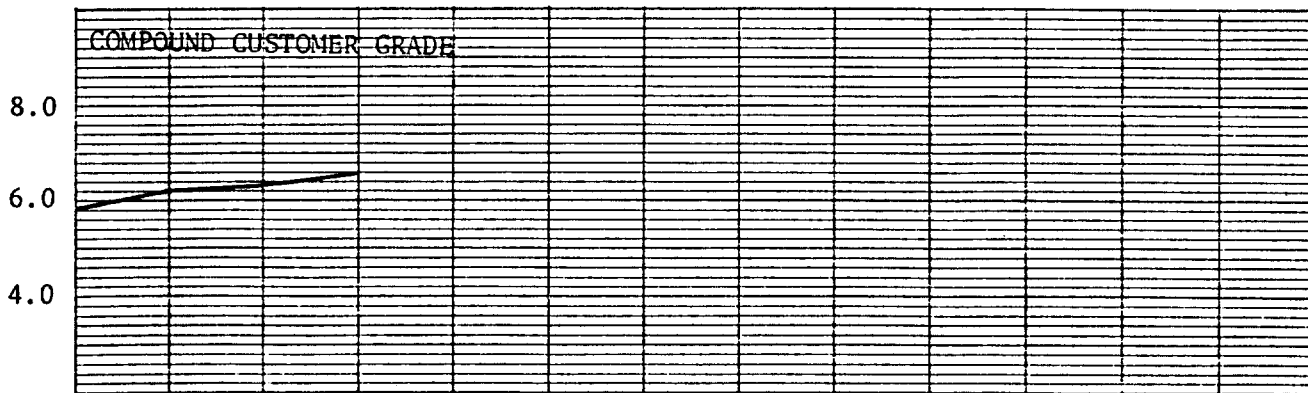
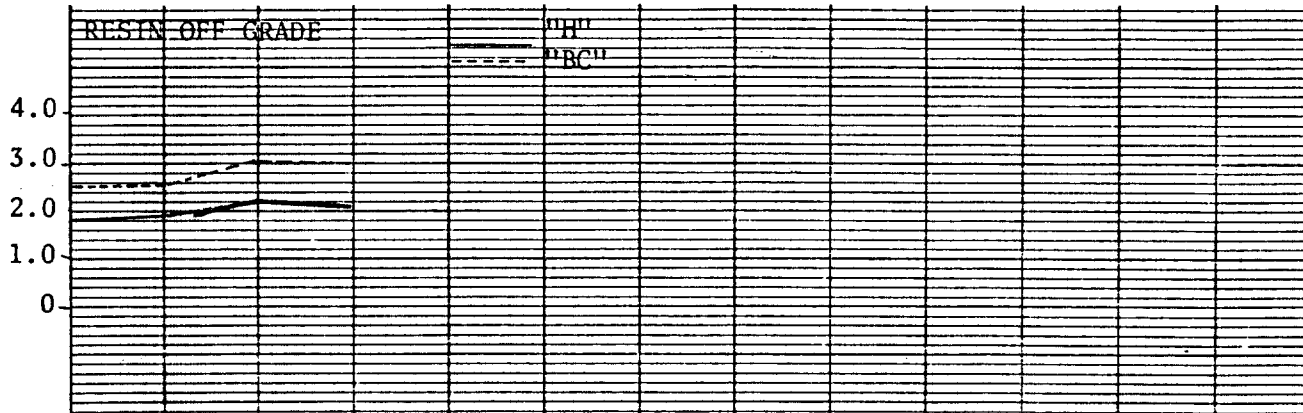
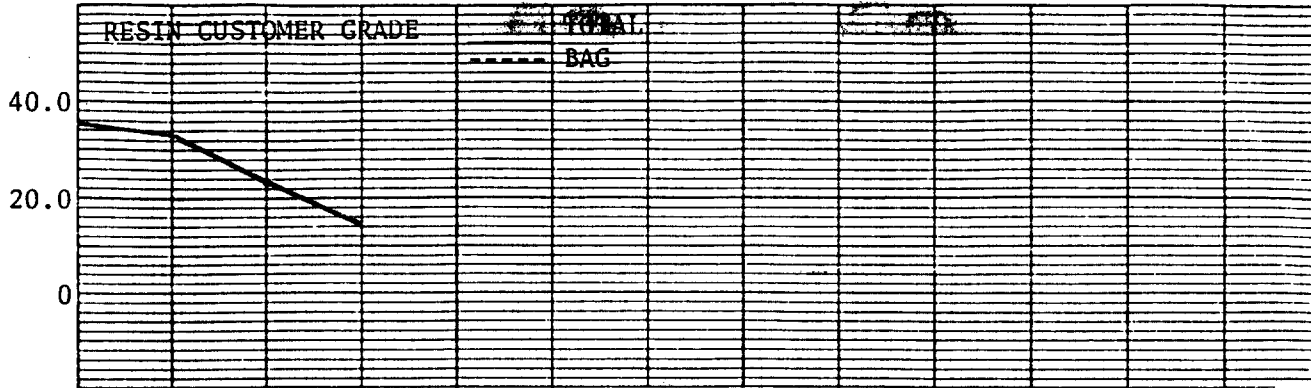
19 81

----- MONTHLY
_____ CUMULATIVE

ABERDEEN PLANT INVENTORIES

1981

MM
POUNDS



1981