

To: T. H. Huffman

From: D. C. Skokna
Date: December 18, 1989

Interoffice
Communication

Subject: ABERDEEN MONTHLY PROGRESS REPORT
NOVEMBER, 1989

VISTA

Safety

There were two first aid and one recordable (RWC) cases reported during November. The recordable case involved a compound unit operator who severed the top of his right index finger when it was caught in the hinge side of a closing door. At month's end, the plant's employees had worked 3,801 days (5,037,551 manhours) since the last lost time injury.

On November 6, the plant's employees reached 5,000,000 manhours without a lost time injury - a Vista record.

<u>Key Statistical Information</u>	<u>November</u>	<u>Y.T.D.</u>
PVC Production, MM Lbs.	37.9	70.8
Reactor Stream Factor, %	90.1	82.6
Resin Quality, % Prime	95.9	96.7
VCM Efficiency, Lbs./Lb.	0.99838	0.9978
Flexible Compound Production, MM Lbs.	6.5	13.0
Flexible Compound Quality, % Prime	98.0	97.9
Rigid Compound Production, MM Lbs.	4.6	8.1
Rigid Compound Quality, % Prime	98.6	99.1
Plasticizer Production, MM Lbs.	1.5	3.0
Plasticizer Quality, % Prime	89.7	90.1
Energy Use, (EUI, %)	< 9.5>	< 6.9>
Fixed Cost Variance, \$M	<107.1>	<46.6>
Variable Cost Efficiency Variance, \$M	61.9	136.7

<u>Capacity Utilization Factors</u>		
Resin	103.6	95.2
Flexible Compound	83.3	83.7
Rigid Compound	75.0	65.6
Plasticizer	80.6	84.9

<u>Waste Reduction Indices (%)</u>		
Offsite, Hazardous Wastes	157.7 ⁽¹⁾	194.1
Recycled, Hazardous Wastes	101.9 ⁽¹⁾	117.6
Offsite, Non-Hazardous Wastes	79.2 ⁽¹⁾	91.1
Vulnerable By-Products	93.5 ⁽¹⁾	106.4
Total Waste Water	105.6 ⁽¹⁾	118.0
Air and Water	78.6 ⁽¹⁾	85.9

(1) Three-month rolling average.

T. H. Huffman

12/18/89

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Operations

Drying of 5415 resin was switched from rotary dryers to the fluid bed dryer to better match drying capacity to product mix. Results were good-acceptable rates were achieved and 5415 quality (contamination levels) has improved.

A two-day test run of three reduced flame and smoke compounds was performed on Line I. Results were encouraging.

Costs

Variable costs were favorable due to good raw material efficiencies in the resin unit, a favorable product mix variance in the flexible compound unit, partially offset by high raw material use in the rigid compound and plasticizer units.

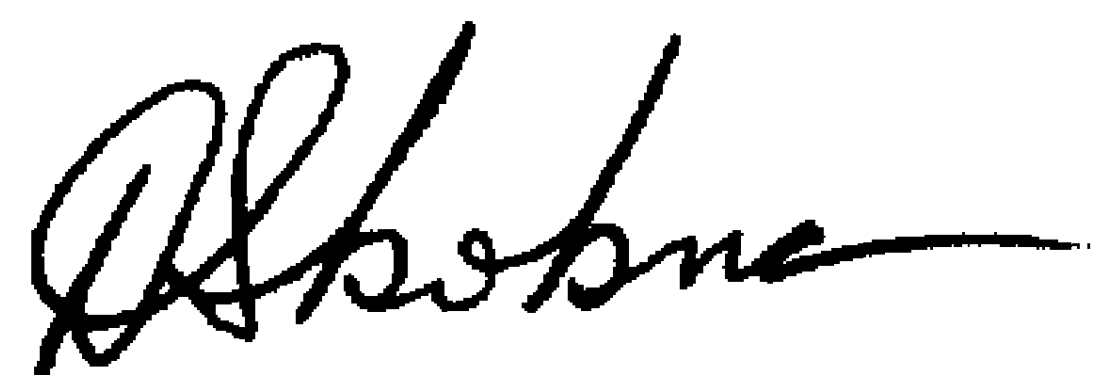
Fixed costs were unfavorable due to above budget payroll costs, maintenance material costs, and "Miscellaneous" costs.

OMP

1. Sixty-three percent of the plant's natural teams met during November (the highest level for the plant).
2. Twenty-eight "SPC Expert" students were recognized for completing their training in this voluntary course.
3. Plant personnel participated in a meeting at Klockner to review work to date on the 5305 graininess problem. The 10 micron filtration trial did not eliminate graininess; a deionized water test run will be done in early 1990.

Environmental

1. Presentation of 1988 SARA emissions were given to employees.
2. The NESHAPS 200 Valve Survey was completed - no leaks were found.


Doug Skokna
Plant Superintendent

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SAFETY - B. L. Trego, J. V. Uptain

	<u>November</u>	<u>Fiscal</u> <u>Y.T.D. 1990</u>	<u>Fiscal</u> <u>Y.T.D. 1989</u>
First Aid	2	4	3
OSHA Recordable	<u>1</u>	<u>2</u>	<u>0</u>
Total Injuries	3	6	3
Number of Restricted Workday Cases	1	1	0
Number of Lost Workday Cases	0	0	0

Injuries by Department

Vinyl Operations	0	0	0
Compound Operations	1	1	0
Maintenance	2	4	3
Laboratory	0	0	0
Receiving/Warehouse	0	0	0
Office	<u>0</u>	<u>1</u>	<u>0</u>
Totals	3	6	3

Injuries by Type

Cuts and Abrasions	0	0	1
Eye Injuries	1	1	0
Burns	0	1	0
Bruises	0	1	2
Strains/Sprains	0	0	0
Stings	0	1	0
Other	<u>2</u>	<u>2</u>	<u>0</u>
Totals	3	6	3

Non-Occupational Injuries

Lost Workday Cases	0	0	1
Days Lost	32	59	14

Safety Record

Last lost time injury - 7/5/79
 Days since - 3801
 Employee hours since - 5,037,551

On November 30, 1989, the employees of the Aberdeen plant completed 3801 days with no lost time injury.

Topics for plant safety meetings during the month included Reviews of 1989 (Fiscal) Injury Statistics and Weekly Maintenance Safety Feedback Meetings.

The Aberdeen Plant reached 5,000,000 manhours without a lost time accident on November 6, 1989. This is a Vista record that will set the standard for other locations. Our new goal? Continued improvement!

SAFETY - Continued

Routine dosimetry results for the month were:

<u>Chemical</u>	<u>< PEL</u>		<u>> PEL</u>	
	<u>Number</u>	<u>Percent</u>	<u>Number</u>	<u>Percent</u>
VCM	75	98.68	1	1.3
Lead	19	100.00	0	0.0
Total Particulates	7	100.00	0	0.0

Monthly Injury Summary

<u>Injury Class</u>	<u>Department</u>	<u>Description</u>
FA	Maintenance	Foreign object in left eye.
FA	Maintenance	Wood splinter in right palm.
RWC	Compound	Amputation of distal half joint of right index finger. A compound worker allowed a door to close on his finger. This caused a break in the finger tip bone and the loss of flesh and skin from his finger tip when he pulled his hand out of the way through his reflex reaction.

QUALITY DEVELOPMENT - M. R. Kane

Twenty-eight SPC Expert students were recognized for completion of the course. This was the second full round of training that was given. In total, there are now forty employees who have been trained in basic and practical SPC techniques through the course. The next course will begin in January and will be revised based on student feedback.

Progress was made in identifying measurement and calibration standards which need to be traceable to the National Bureau of Standards. Weights used on the large product and raw material scales have been certified as NBS traceable as well as some of the primary standards in the lab (temperature and weight).

The Plant Manager's Natural Team decided to emphasize and reinforce the team effort by developing some measures related to team progress. The two key measures are the number of teams meeting and the number of team meetings per month. Since effective facilitation is critical to success of inexperienced teams, it will be measured by having the facilitators report their progress to their department head each month. In addition, team leaders will report the progress of their team to their department head. Facilitators will be assigned to each natural team. The teams which have not been trained in team management will be trained as a team using a problem they pick as a case study.

COST VARIANCES - D. C. SkoknaVariable Costs

<u>Product</u>	<u>November, 1989 Variance, \$M</u>		
	<u>Efficiency</u>	<u>Price</u>	<u>Total</u>
PVC	\$ 46.7	\$ 700.0	\$ 746.7
Flexible Compound	73.0	161.6	234.6
Rigid Compound	< 43.2>	233.9	190.7
Plasticizer	< 14.6>	<15.3>	<29.9>
	\$ 61.9	\$1080.2	\$1142.1

PVC - Favorable raw material use (primarily VCM and initiators), partially offset by above budget utility use, resulted in the overall favorable variance.

Flexible Compound - The favorable variance was a result of product mix.

Rigid Compound - The unfavorable variance was a result of above budget raw material use and product mix.

Plasticizer - Raw material use was above budget.

Price Variances

	<u>\$M</u>
- VCM	\$662.4
- Resin to Rigid Compound	218.8
- Resin to Flexible Compound	184.5
- Electricity	27.0
- Water	15.3
- Natural Gas	14.8
- 610P to Flexible Compound	< 18.1>
- Alfol Alcohols	< 18.2>
- Other	< 6.3>
Total	\$1080.2

Fixed Cost Variances

	<u>\$M</u>
- Payroll and Benefits	\$< 18.3>
- MM&C	< 50.4>
- Miscellaneous	< 31.3>
- TI&D	< 3.5>
- Clearances	< 3.6>
Total	\$<107.1>

Payroll and Benefits - Salaried and hourly payroll costs were above budget, partially offset by a favorable benefits change, resulting in an overall unfavorable variance.

M. M. & C. - Parts for incinerator repair caused an unfavorable variance.

COST VARIANCES - Continued

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Miscellaneous:

Travel & Entertainment - Travel expenses for VCSM project related training and expenses related to the continuous stripping technology assessment caused this item to be \$15.2M over budget.

Moving/Home Assistance - This is part of R. Mackey's relocation costs.

Outside Professional Services - was \$10.2M favorable.

Unclassified - was \$16.6M unfavorable due to VCSM related training costs and physical exams.

Operating Supplies - was \$17.4M unfavorable, primarily due to performing a test using 10 micron raw material filters in the resin unit to evaluate the impact on 5305 resin quality.

VINYL - P. J. Kober, K. W. Birck

Safety

The Vinyl Department did not have any first aid or OSHA recordable injuries during the month of November.

The topics of the monthly safety meeting were SARA, New Unit Turnaround, and Winter Safety Awareness.

General

1. Production of 5415 resin was switched from the rotary dryers to the fluid bed dryer during the month. This switch lessens rotary dryer bottleneck created by increased 5415 (and decreased 5385) production. Results have been favorable: fluid bed rates have averaged between 19,350 to 23,650 pounds per hour and regular analysis for contamination has been below five average total contaminants.
2. Dryer #4 baghouse replacement was completed during the month. This was the last dryer to have its baghouse worked on as part of the Rotary Dryer Baghouse Replacement Project.
3. Production was reduced during the last part of the month to control VCM inventories. Minimum sphere levels were maintained to ensure an adequate VCM level to keep the plant operating during winter alert, had one occurred.
4. The resin raw materials in the 744 account were valued at \$411.2M.

	<u>November</u>	<u>YTD</u>
- Production, MM Lbs.	37.9	70.8
- Daily Rate, M Lbs./C.D.	1263.8	1060.8
- Capacity Utilization Factor, %	103.6	95.2
- Total Reactor Charges	886.0	1666.0
- Charges/C.D.	29.5	27.3
- Reactor Stream Factor, %	90.1	82.6
- Rotary Dryer Stream Factor (#4-#8), %	83.5	79.7
- Fluid Bed Dryer Stream Factor, %	93.0	84.4
- Resin Quality, % Prime	95.9	96.7

Reactor Downtime

	<u>Hours</u>
- Operational downtime (recovery scheduling conflicts, rinsing chem wash tanks, New Module rinse/charge water conflicts, no place to dump, O-ring leaks, waiting on Q.C. data before charging, and inclement weather).	280.8

VINYL - ContinuedReactor Downtime - continued

	<u>Hours</u>
- Maintenance downtime (hydroblast/drill reactors D700 and D745, drill condensers D741, D500 and D600, condenser lid torque/gasket replacement on D744, changed safety discs on D743, and miscellaneous instruments and valve repairs).	362.5
- Other (inventory control due to VCM shortage).	68.9

<u>Dryer Downtime</u>	<u>% of Total Downtime</u>
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- Reactor limited production.	53.9
- Operational downtime (centrifuge plugs, clean dryers, activator transfer problems, power outages (3), product change to 5415 in fluid bed dryer, leak checks and flame-outs).	31.7
- Maintenance downtime (centrifuge repairs, shear pins, exhauster repairs, sparge pipes, screener repairs, and various other activator and centrifuge repairs).	14.4

Key Maintenance Work - J. B. Autrey, J. B. Hegwood

- Reactors 500, 600, and 741 were shut down during the month for condenser drilling due to cooling water control problems. Reactors 700 and 745 were also shut down for condenser drilling as part of the contamination control program.
- The seal on reactor 745 was changed out because of a plugged lip seal flush line. This seal had been in service for four months.
- The condenser lid gasket on reactor 744 was replaced due to a leakage problem.
- Numbers 1 and 8 Birds were removed and rebuilt during the month.
- The rupture disc on reactor 743 was changed out as part of the annual rupture disc program.
- The "A" vacuum pump was changed out during the month because of two seal failures.

VINYL - ContinuedKey Maintenance Work - continued

- The motors on #4 exhauster and on the north chem wash pump were replaced during the month. The #4 exhauster motor had a bearing failure and the north chem wash pump motor broke off of the foundation.
- There were ten major valves changed out in the reactor area during the month.

COMPOUND - J. E. Nickerson, K. G. AkinsSafety

There was one restricted workday case in the Compound Department during November. A Compound Operator severed the tip of his right index finger when it was caught in the hinge side of a closing door. The accident team's investigation report is due December 22.

The SARA Title 313 emissions from the Aberdeen Plant were reviewed during the November safety meetings.

General

We continued to build critical inventories during November. Flexible compound inventories rose from 4489M pounds to 5664M pounds in November.

A two-day test run of reduced smoke and flame compounds, using licensed technology, was conducted on Line I at the end of the month. One insulation and two jacket formulations were produced.

Problems continued with production of 80273G rigid compound. Based on some preliminary testing, segregation of the master batch may be occurring. Work continues to isolate the problem. We do not believe this is a new phenomena, but the new, more sensitive torque rheometry tests are able to detect it. We are viewing this as an opportunity to improve the quality of our dry blends. No customer problems have been reported.

<u>Compound Production</u>	<u>Operating Days</u>	<u>Production (M Lbs.)</u>		
		<u>Month</u>	<u>Avg./Day</u>	<u>Fiscal Y.T.D.</u>
Line I	28.5	2085	73	4178
Line III	28.0	3415	122	7064
Line V	20.5	<u>960</u>	47	<u>1791</u>
Total		6460		13033
% Prime		98.0		97.9
Capacity Utilization Factor		.833		.837

DowntimeHoursLine I

- Product Changes	80
- Quality Problems & Control	11
- Miscellaneous Maintenance	39
- Dicer Problems & Maintenance	4

Line III

- Product Changes	67
- Quality Problems & Control	13
- Miscellaneous Maintenance	6

COMPOUND - ContinuedLine V

- Product Changes	40
- W-P Maintenance	20
- Miscellaneous Maintenance	9

	<u>Operating Days</u>	<u>Production (M Lbs.)</u>		
		<u>Month</u>	<u>Avg./Day</u>	<u>Fiscal Y.T.D.</u>
Rigid Compound	28	4600	164	8072
% Prime		98.6		99.1
Capacity Utilization Factor		.75		.656

DowntimeHours

- Quality Problems & Control	96
- Product Changes	44
- Miscellaneous Maintenance	36

	<u>Operating Days</u>	<u>Production (M Lbs.)</u>		
		<u>Month</u>	<u>Avg./Day</u>	<u>Fiscal Y.T.D.</u>
Plasticizer	29	1693	58	3374
% Prime		89.7		90.1
Capacity Utilization Factor		.806		.849

Key Maintenance Work - J. B. Autrey, J. B. Hegwood

- Line I Banbury was shut down for seal replacements during the month. A temporary fill chute was also made for the Banbury to assist with the experimental low smoke, low flame compound run.
- The 107 and 185 plasticizer pumps were shut down for the seal replacements and the motors were replaced on each. The motors on each were replaced due to bad bearings and windings.
- The Schenk filters were removed for cleaning during the month.
- Number two Welex was shut down during the month so that several badly worn seals could be replaced.
- The Line III condensate pump was rebuilt and the motor replaced. The motor was replaced because of bad bearings and windings.

UTILITIES - J. B. Autrey, J. B. Hegwood

Number one boiler was shut down for repairs because of a hot spot that developed on the outer skin. The inner skin had busted causing the hot spot. The boiler was repaired and put back in service.

Number two boiler was shut down for a second inspection during the month because of deposits that were found on #3 boiler during its inspection. The same type of deposits that were found in #3 boiler were found in #2 boiler. Because of this finding, the tubes and firebox were hydroblasted. A two-inch feed water line and the continuous blowdown line were replaced in the steam drum, also.

ENGINEERING - R. E. Polk, S. C. Hillman, C. J. McDonald

PROJECTS IN DEVELOPMENT - GENERAL

5305 Graininess Work

A meeting was held at Klockner to discuss work to-date on the graininess problem. Testing at BASF and Klockner showed that the ten micron filtration trial did not eliminate graininess. A D.I. water test run is being planned after the first of the year.

TC Wastewater Compliance

Several alternatives to reduce the total project cost are still being evaluated with results expected by late January. These are:

- The initial trial of EVC clean wall technology.
- A plant-wide test of stripping rinse water in small blend tanks.
- An economic comparison of stripping columns versus UV oxidation.

5415 in the Fluid Bed Dryer

The fluid bed dryer has been converted from 5385 to 5415 service for a trial run. Alternatives to increase fluid bed rates with 5415 are being evaluated.

2nd Fiscal Quarter 1990 Capital Budget

The 2nd Fiscal Quarter 1990 Capital Budget was completed and sent to Houston on 12/8/89.

Railcar Hazardous Materials Spill Response Training

Jim Edwards attended an American Association of Railroads seminar on management of hazardous materials spills from railcar accidents. He is one of four people at the plant trained to respond to such a spill.

**ABERDEEN CHEMICAL PLANT
APPROVED CAPITAL PROJECTS**

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APP NUMBER	PROJECT DESCRIPTION	STATUS
.58	ALTERNATE NATURAL GAS PIPELINE	INSTALLATION IS IN PROGRESS WITH COMPLETION IN DECEMBER.
C738	PLASTICIZER REACTOR CONDENSER	CLOSED TO FIELD CHARGES.
D018	VINYL VALVE UPGRADE	INSTALLATION IS IN PROGRESS AND PLANNED FOR COMPLETION IN FEBRUARY.
G688	PLASTICIZER REACTOR COOLING WATER RECYCLE	CLOSED TO FIELD CHARGES.
G768	WATER TREATMENT ACID DIKE REPLACEMENT	CLOSED TO FIELD CHARGES.
G848	IMPROVED POND AERATION	CLOSED TO FIELD CHARGES.
A519	PLANT ELECTRICAL UPGRADE	CONSTRUCTION IS 80% COMPLETE AND IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR JANUARY.
A648	VINYL CONTROL SYSTEM MODERNIZATION	ENGINEERING IS IN PROGRESS. ENGINEERING WORK STATIONS ARE TO BE SHIPPED IN DECEMBER.
A908	INERTS REMOVAL MODIFICATIONS	DESIGN IS IN PROGRESS WITH COMPLETION SCHEDULED FOR FEBRUARY.
C919	NEW WATER WELL	CONSTRUCTION IS IN PROGRESS WITH COMPLETION PLANNED FOR JANUARY.
D558	ALCOHOL TANK MODIFICATION	CLOSED TO FIELD CHARGES.
D618	PROPANE STORAGE AREA DELOGE SYSTEM	CONSTRUCTION IS SCHEDULED TO BEGIN IN LATE NOVEMBER WITH COMPLETION IN JANUARY.
D629	COMPOUND REELAND TRANSFER SYSTEM	INSTALLATION IS SCHEDULED TO BE COMPLETED IN JANUARY.
D638	BOILER SAFETY REVISIONS	THE PROJECT IS COMPLETE AND WILL BE CLOSED TO FIELD CHARGES IN DECEMBER.
D749	LEAD HANDLING AND EXPOSURE REDUCTION	INSTALLATION IS SCHEDULED TO BEGIN IN DECEMBER WITH COMPLETION IN MAY.
D789	INERT GAS PURGING OF PA TANKS	INSTALLATION IS IN PROGRESS WITH COMPLETION PLANNED FOR DECEMBER.
D849	COMPOUND LINE 3 SEMI-BULK LEAD HANDLING	ENGINEERING IS SCHEDULED TO BEGIN IN NOVEMBER WITH COMPLETION IN JANUARY.
D858	COMPOUND SILO BRIDGE BREAKING	ENGINEERING IS IN PROGRESS WITH COMPLETION PLANNED FOR JANUARY.
F579	COMPOUND BOXING HOPPER MAGNETS	CONSTRUCTION IS SCHEDULED TO BEGIN IN DECEMBER WITH COMPLETION IN JANUARY.
F609	PLASTICIZER FILTERS FOR LINES 1,3, AND 5	CONSTRUCTION IS IN PROGRESS WITH COMPLETION IN DECEMBER.
F689	COMPOUND LINE 5 HEATED PLASTICIZER	ENGINEERING IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR MARCH.
F699	LOW MOLECULAR WEIGHT RESIN EXPANSION	INSTALLATION IS IN PROGRESS WITH COMPLETION PLANNED FOR FEBRUARY.
F739	DRYER NO.8 CONTAMINATION REDUCTION	INSTALLATION IS COMPLETE EXCEPT FOR PUNCHLIST ITEMS. PROJECT COMPLETION IS PLANNED FOR FEBRUARY.
F779	DRYER NO.4 CONTAMINATION REDUCTION	INSTALLATION IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR JANUARY.
G569	DRYERLAND DIV. VALVE AND CHUTE REPLACEMENT	DESIGN IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR JANUARY.
G659	NEW DRYER BAGOUSES	INSTALLATION IS COMPLETE EXCEPT FOR PUNCHLIST ITEMS. PROJECT COMPLETION IS PLANNED FOR JANUARY.
G719	COMPOUND SEWER REVISIONS	INSTALLATION IS SCHEDULED TO BEGIN IN JANUARY WITH COMPLETION IN FEBRUARY.
G759	WASTE OIL REDUCTION	INSTALLATION IS IN PROGRESS WITH COMPLETION PLANNED FOR JANUARY.
G819	VCM SIGHT GLASS REPLACEMENT	DESIGN IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR FEBRUARY.
G839	PLANT WATER RECYCLE	DESIGN IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR JUNE.
H509	MISCELLANEOUS CAPITAL PROJECTS < \$15M	ALL PROJECT WORK IS SCHEDULED FOR COMPLETION IN DECEMBER.
.49	PVC REACTOR GEARBOX REPLACEMENT	CLOSED TO FIELD CHARGES.
.89	PLANT AIR SYSTEM OPTIMIZATION	INSTALLATION IS COMPLETE EXCEPT FOR PUNCHLIST ITEMS.
H679	PLASTICIZER REACTOR AGITATORS	THE AGITATORS HAVE BEEN RECEIVED. INSTALLATION IS PLANNED FOR COMPLETION IN FEBRUARY.
H729	TONGUE BROOMETER REPLACEMENT	INSTALLATION IS COMPLETE EXCEPT FOR PUNCHLIST ITEMS. THE PROJECT WILL BE CLOSED TO FIELD CHARGES IN JANUARY.
H769	PLANT DIVERTER VALVE REPLACEMENT	INSTALLATION IS PLANNED TO BEGIN IN JANUARY WITH COMPLETION IN FEBRUARY.
H809	DRYER CENTRIFUGE REPLACEMENT	CLOSED TO FIELD CHARGES.
H829	RECOVERY SYSTEM COMPRESSOR - SPARE	THE COMPRESSOR IS SCHEDULED FOR DELIVERY IN FEBRUARY 1990.
H869	COMPOUND LINE 1 FLOOR REPAIR	CLOSED TO FIELD CHARGES.
H879	ROOF UPGRADE	INSTALLATION IS 80% COMPLETE AND IN PROGRESS. COMPLETION IS PLANNED FOR DECEMBER.
L529	FURNITURE AND OFFICE EQUIPMENT	CLOSED TO FIELD CHARGES.
H500	PLANT WATER SYSTEM	ENGINEERING IS IN PROGRESS. PROJECT COMPLETION IS PLANNED FOR MID-1991.
H510	WEST INCINERATOR REPLACEMENT	ENGINEERING IS IN PROGRESS.
H520	MISCELLANEOUS CAPITAL PROJECTS < \$15M	ENGINEERING IS IN PROGRESS ON 7 PROJECTS.
L530	FURNITURE AND OFFICE EQUIPMENT	EQUIPMENT IS BEING QUOTED.

ENVIRONMENTAL - F. G. JeansonWater

All wastewater discharge parameters were met for the month of November. However, we did have a wastewater bypass. The bypass occurred on Sunday, November 19, when an estimated 500 gallons of untreated wastewater went to the storm water system. The bypass was caused by a plugged process sewer. The State was contacted about the incident.

SARA

Presentations on the 1988 SARA emissions were given to all employees at the plant by their respective department head.

Waste

Waste shipments for the month of November included:

- Ten drums of stabilizer spill were sent to Technical Environmental Systems in LaPorte, Texas. From this storage facility, the waste will be shipped to Chemical Waste Management's (CWM) Lake Charles facility.
- Two bulk loads of API sludge were sent to CWM's Emelle, Alabama facility.
- Two bulk loads of separator oil were sent to Systech in Demopolis, Alabama.

Air

The NESHAP 200 Valve Survey was completed during the month. No leaks were found. Results from this survey will be reported to EPA in the next NESHAP quarterly report.

Fiscal year residual VCM numbers were tabulated for 1988 and 1989. The total pounds emitted from slurry and the average ppm/batch are listed below:

	<u>Total Pounds Emitted</u>	<u>Avg. PPM/Batch</u>	<u>Total Pounds Production</u>
FY88	73,317	164	446.6MM
FY89	65,841	145	454.2MM

This represents a 12% decrease in VCM emissions, even though more PVC was produced in FY1989.

The rotary dryer baghouse project was completed this month. Emissions testing was completed on the baghouse stacks and submitted to the State. The emissions tests were completed on two of the five baghouses. Both baghouses were operating below the manufacturer's emission guarantee.

An application for a new air permit was completed this month. This new permit, if approved by the State, would allow us to become a minor source. This permit was reviewed with plant management and will be submitted to the State next month.

ENVIRONMENTAL - ContinuedToxicity

I discussed with the State the effect this regulation would have on our plant and inquired about an extension for wastewater. The State said they did not have the authority to grant an extension beyond what was called out in the regulation.

Miscellaneous

I attended the Mississippi Manufacturers Association Environmental Committee meeting this month. The Aberdeen Plant contributed \$1500 toward their hazardous waste public education campaign.

A guide for training requirements for environmental coordinators was completed.

I surveyed other manufacturer's methods of storage for EPA required documents (disc or hardcopy) for VCSM team.

Surveys and Reports Completed

- CMA survey of wastes shipped to Alabama
- Monthly NPDES report

Waste Minimization

I attended a waste minimization conference held by MISSTAP (Mississippi Technical Assistance Program).

The waste minimization three-year plan was completed.

Particulate emissions (non-SARA-air) decreased due to the completion of the baghouse project (63.37% WRI for last three months, 52.85% WRI for FY90).

A waste paper baler was included in the third quarter capital budget. Approximately 10-15% of our solid non-hazardous waste, in the form of waste paper and cardboard, will be recycled when this baler is installed.

A project to reduce slurry residual VCM by 50% was also included in the fourth quarter capital budget.

Nov-89

WASTE REDUCTION INDEX SHEET

	3 MONTH -----	%WRI 90 YTD -----	1989FY -----
OVERALL EXCLUDING "TOTAL WASTE WATER"	90.96%	103.54%	103.51%
NON-RECYCLED WASTE	85.41%	96.94%	94.96%
RECYCLED/SOLD WASTE	94.85%	108.17%	109.51%
I. Offsite, Hazardous Wastes	157.71%	194.12%	100.68%
a. Land Ban Wastes	0.00%	0.00%	244.74%
b. Hazardous Solids	125.84%	40.66%	111.19%
c. Non-Hazardous Treated as Hazardous	169.80%	246.65%	95.77%
II. Recycled Hazardous Wastes	101.86%	117.64%	103.51%
III. Offsite, Non-Hazardous Waste	79.18%	91.15%	95.37%
a. Recycled	95.95%	109.35%	98.39%
b. Non-Recycled	77.28%	89.09%	95.03%
IV. Vulnerable By-Products	93.50%	106.36%	111.36%
V. Total Waste Water	105.55%	118.00%	95.01%
VI. Air & Water	76.92%	75.10%	91.90%
a. SARA - Air	87.13%	87.41%	88.05%
b. SARA - Water	1139.94%	1274.36%	592.12%
c. Non-SARA - Air	67.37%	52.85%	98.30%
d. Non-SARA - Water	82.46%	90.99%	87.24%

Nov-89

WASTE RECTION INDEX SHEET

		POUNDS			
		1988FY	1989FY	90 YTD	3 Month
I.	Offsite, Hazardous Wastes	321409	329304	98907	124902
a.	Land Ban Wastes	2412	6006	0	0
	1. Phthalic Anhydride	2412	6006	0	0
b.	Hazardous Solids	79068	89465	5097	24517
	1. Stabilizer Spill	16989	22425	5097	5097
	2. Floor Sweep	62079	67040	0	19420
c.	Non-Hazardous Treated as Hazardous	239930	233833	93810	100385
	1. Plast. Filter Cake	61670	56573	0	0
	2. Lead Bags	68640	67880	13900	13900
	3. API Sludge	29620	29380	66540	66540
	4. Pit #1 Solids	80000	80000	13370	19945
II.	Recycled Hazardous Wastes	653226	688080	121815	163946
a.	Recycled	653226	688080	121815	163946
	1. Separator Oil	651700	686210	121340	163340
	2. Safety Kleen Solvent	1526	1870	475	606
III.	Offsite, Non-Hazardous Waste	2429430	2357718	351053	473996
a.	Recycled	247201	247500	42853	58446
	1. Drums	49600	49600	10950	10950
	2. Pallets	145600	145600	22812	34032
	3. Aluminum Cans	0	300	400	500
	4. Scrap Metal	52000	52000	8690	12964
b.	Non-Recycled	2182229	2110218	308200	415550
	1. Landfill	2182229	2110218	308200	415550
IV.	Vulnerable By-Products	3597456	4076656	606575	828835
a.	PVC	3597456	4076656	606575	828835
	1. Culls	471409	330521	26520	57180
	2. Vacuum Vent Dust	329480	541016	84297	124847
	3. Sifter Overflow	801007	504106	24836	39561
	4. Pond Resin	1915560	2621013	457552	587302
	5. Pit #2 Resin	80000	80000	13370	19945
V.	Total Waste Water	4424987560	4278245861	827694426	1150836733
a.	Effluent	4424987560	4278245861	827694426	1150836733
	1. Pond 6	4424987560	4278245861	827694426	1150836733
VI.	Air & Water	646617	604682	76981	122547
a.	SARA - Air	73316	65694	10159	15740
	1. VCM	73316	65694	10159	15740

Nov-89

WASTE RECTION INDEX SHEET

		POUNDS			
	1988FY	1989FY	90 YTD	3 Month	
	-----	-----	-----	-----	
b. SARA - Water	55	333	112	155	
1. VCM	22	21	4	6	
2. Di-n-octyl Phthalate	33	312	108	150	
c. Non-SARA - Air	264206	264290	22136	43858	
1. Particulates	263300	263300	21965	43606	
2. Sulfur Dioxide	906	990	171	252	
d. Non-SARA - Water	309040	274364	44574	62794	
1. BOD	43689	46750	11659	15346	
2. TSS	68392	53140	8530	11527	
3. COD	195581	173276	24304	35779	
4. NH3	1378	1199	81	142	

ENERGY CONSERVATION - D. A. Moore

November, 1989

Fiscal Y.T.D.

I. Energy Conservation Data⁽¹⁾

A. Unadjusted EUI	-9.1%	-6.1%
B. Adjusted EUI	-9.5%	-6.9%
C. BTU/Lb. Product	2689.0	2615.0
D. Total Energy Consumption MMM BTU	135.8	248.8

(1) Plant electrical usage is an estimate because an additional meter was added during the Electrical Upgrade Project and was not read. This will be reconciled in the December energy numbers.

II. Plant Energy Conservation Program

A. Maintenance

There were sixteen energy related items completed in October, 1989. Ten of these items were steam leak repairs. The remaining six were steam trap repairs.

III. Boiler Operation

<u>Boiler</u>	<u>Combustion Efficiency %</u>	
	<u>Nov.. 89</u>	<u>Fiscal Y.T.D.</u>
No. 1	83.3%	83.5%
No. 2	83.3%	83.4%
No. 3	83.1%	83.1%

HUMAN RESOURCE REPORT**NOVEMBER, 1989****Personnel** - J. E. Beall**Employment**

None

Promotions/Transfers

None

RETIREMENTS

None

TERMINATIONS/RESIGNATIONS

None

TO/FROM LEAVE OF ABSENCE

None

A B E R D E E N C H E M I C A L P L A N T
 DEPARTMENTAL HOURS ANALYSIS REPORT
 DISTRIBUTION LIST RMS, JAN, JUV, DEPARTMENT HEADS, FILE
 10/30/89 THRU 12/ 3/89

DEPT	STR TIME HRS WRKD	OVERTIME NONCONTROL	HOURS CONTROL	OVERTIME AS A % OF STR TIME	ABSENCE HRS LOST	SICKNESS	OTHER PAID	IRONPAID	TOTAL	YEAR-TO- DATE	VACATION HOURS
YARD	1519.75	84.00	194.75	18.34	64.25	0.00	2.37	1.86	4.23	2.17	108.00
UTILITY	816.00	48.00	40.25	10.81	0.00	0.00	0.00	0.00	0.00	0.00	36.00
MAINTENANCE	5800.00	32.00	792.50	14.22	472.00	6.90	0.14	1.10	8.14	7.56	632.00
QC LAB	3228.00	144.00	200.75	10.68	84.75	2.60	0.00	0.02	2.63	4.13	232.00
JANITORS	487.50	0.00	34.50	7.08	0.50	0.00	0.00	0.10	0.10	0.19	64.00
WAREHOUSE	1088.75	0.00	41.50	3.81	11.25	0.00	0.00	1.03	1.03	0.81	224.00
STORES	336.00	0.00	3.75	1.12	8.00	0.00	0.00	2.38	2.38	1.26	40.00
DEVELOPMENT LAB	1030.50	32.00	101.00	12.91	1.50	0.00	0.00	0.15	0.15	1.22	136.00
DRY BLEND	1200.00	36.00	73.25	9.10	0.00	0.00	0.00	0.00	0.00	0.38	44.00
COMPOUND	7414.25	228.00	652.25	11.87	317.75	3.40	0.00	0.89	4.29	3.14	248.00
VINYL	7413.50	412.00	799.75	16.35	24.50	0.00	0.00	0.33	0.33	0.43	396.00
PLASTICIZER	935.00	24.00	12.00	3.85	1.00	0.00	0.00	0.11	0.11	3.01	64.00
GENERAL HELPERS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
TOTAL PLANT	31269.25	1040.00	2946.25	12.75	985.50	2.35	0.14	0.66	3.15	3.04	2224.00

TOTAL PLANT HOURS FOR JURY DUTY..... 20.00
 TOTAL PLANT HOURS FOR NATIONAL GUARD/RESERVE DUTY..... 0.00
 TOTAL PLANT HOURS FOR DEATH IN FAMILY..... 24.00

ABERDEEN, MISSISSIPPI

NOVEMBER, 1989
MONTHLY PERSONNEL REPORT

Salaried Employees	<u>79*</u>	Minority Employees #, %		
Hourly Employees	<u>172</u>	Salaried	<u>6</u>	<u>8%</u>
Total Employees	<u>251</u>	Hourly	<u>66</u>	<u>38%</u>
		Total	<u>72</u>	<u>29%</u>

Employees (Hourly)

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>16</u>	<u>15</u>	<u>8</u>	<u>53</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Gen. Plant	<u>13</u>	<u>16</u>	<u>5</u>	<u>31</u>	<u>7</u>	<u>7</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Maintenance	<u>41</u>	<u>41</u>	<u>10</u>	<u>24</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Laboratory	<u>24</u>	<u>23</u>	<u>5</u>	<u>22</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Compound	<u>40</u>	<u>39</u>	<u>26</u>	<u>67</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Vinyl	<u>33</u>	<u>33</u>	<u>10</u>	<u>30</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Plasticizer	<u>5</u>	<u>5</u>	<u>2</u>	<u>40</u>	<u>0</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 21

APPLICANT BREAKDOWN:

Minority 0 % Minority 0
Female 0 % Female 0

Hires (Hourly):

Month 0 Year To Date 7

Terminations (Hourly):

Month 0 Year To Date 2

Overall Turnover 0

Projected Annual Turnover 1.2%

ADMINISTRATIVE SERVICES - J. E. LittleSafety

There were no safety instances this month.

Cost Savings

Savings due to competitive bidding were \$44,179 for November, and \$44,482 for FY1990.

Savings due to prompt payment discounts were \$1831 for November, and \$4215 for FY1990.

Warehouse - Finished Goods Inventory

Offgrade inventories remain a serious problem; will discuss with Fred Williams.

	<u>FY1988</u>	<u>FY1989</u>	<u>November</u>
Flexible Compound	142.7	477.0	566.3
Rigid Compound	49.7	64.4	120.7
Resin	28.6	83.7	52.0

Meetings

11/02/89 - Judy Frossard attended the Payroll Team
11/03/89 Meeting in Houston. Discussion included MMS
conversion to VMS, PMS conversion to PC
software, direct deposits, etc.

11/28/89 Mike Swierc attended a CQIP meeting in
Houston. Focus was primarily cast
stainless steel gate, globe, and check
valve testing.

ABERDEEN CHEMICAL PLANT
SHIPPING ANALYSIS
NOVEMBER 1989

A

-SHIPMENTS BY PRODUCTS-	MONTH			YTD		
	PUBLIC	IPT/ITC	EXCHANGE	PUBLIC	IPT/ITC	EXCHANGE
RESIN-BULK	19,422,860	7,857,230	0	35,806,470	18,004,840	0
RESIN-PACKAGED	372,253	315,900	0	745,074	512,500	0
FLEXIBLE COMPOUND-BULK	1,374,550	925,450	0	2,648,860	2,399,650	0
FLEXIBLE COMPOUND-PACKAGED	2,902,267	125,251	0	6,114,300	239,123	0
RIGID COMPOUND-BULK	2,667,430	520,000	0	7,010,240	695,100	0
RIGID COMPOUND-PACKAGED	94,181	12,800	0	406,516	12,800	0
PLASTICIZER	176,820	184,800	0	307,000	693,400	0
TOTAL	27,010,361	9,941,431	0	53,036,620	22,557,413	0

-SHIPMENTS BY MODE-

BULK:	RAILCAR	CUSTOMER PICKUP	COMMON CARRIER	TOTAL
NOVEMBER				
RESIN	122	22	76	220
FLEXIBLE COMPOUND	12	3	0	15
RIGID COMPOUND	16	2	10	28
PLASTICIZER	1	0	4	5
TOTAL NOVEMBER	151	27	90	268
YTD				
RESIN	258	52	145	455
FLEXIBLE COMPOUND	26	3	5	34
RIGID COMPOUND	39	7	20	66
PLASTICIZER	4	0	7	11
TOTAL YTD	327	62	177	566

PACKAGED:	CUSTOMER PICKUP	COMMON CARRIER	TOFC	CONTAINER	AIR/UPS	TOTAL
NOVEMBER						
RESIN	9	14	0	0	5	28
FLEXIBLE COMPOUND	23	65	1	0	3	92
RIGID COMPOUND	0	4	0	1	0	5
PLASTICIZER	0	0	0	0	0	0
TOTAL NOVEMBER	32	83	1	1	8	125
YTD						
RESIN	13	28	0	0	12	53
FLEXIBLE COMPOUND	40	143	1	0	4	188
RIGID COMPOUND	0	16	0	1	1	18
PLASTICIZER	0	0	0	0	1	1
TOTAL YTD	53	187	1	1	18	260

LABORATORY - H. G. Coleman

A. Safety - The Laboratory operated injury-free in November. Harold Coleman led the monthly safety meeting which included a review of FY89 safety statistics, the Vista/Aberdeen film, and a SARA presentation.

B. Customer Contacts - None.

C. Customer Q.C. Problems Reports

11/8 - Chicago Magnet Wire Corporation reported failure of their strip force adhesion test with 35851, lot 39N02. The problem was traced to something which affected melt flow; 42,000 pounds of material were returned - another 51,000 pounds in inventory were downgraded.

11/14 - Intex Plastics reported a bridging problem trying to unload a 5305 railcar. No moisture or resin flow discrepancies were found.

11/29 - Blane Polymers rejected a 5395 railcar for metal contamination. This car was produced during a previously identified problem. We have begun testing railcars for metal prior to shipment.

D. Requests for Corrective Action - None.

E. Product Waivers

<u>Customer</u>	<u>Product</u>	<u>Reason</u>	<u>No.</u>
H&W - Export	5385-3	Contamination	1 R/C
Rustique	435-30 WHT 111	40 Mesh	1 H/T

F. RVCM Summary

RVCM of In-Process Samples

The following is a summary of residual VCM results on in-process samples. None of the reactor daily averages exceeded 400 ppm RVCM during the month of November, 1989.

	<u>Reactor</u>	<u>Drier</u>	
	<u>Slurries</u>	<u>5265</u>	<u>5305</u>
Number of Samples	888	29	70
Average RVCM, ppm	138	0.527	0.595

LABORATORY - Continued

RVCM of Shipment Samples

The following is a summary of the residual VCM analysis of shipment samples for the month of November, 1989.

<u>Product</u>	<u>Number of Samples</u>	<u>Average RVCM, ppm</u>
5265	33	0.150
5305	98	0.247
5385	41	0.324
5395	0	
5415	62	0.153
5465	0	0
Dry Blend	61	0.084
Debox	13	0.350
Pond	8	5.114

G. Resin Process Capabilities (based on dryer "regulars")

	<u>5265</u>	<u>5305</u>	<u>5385</u>	<u>5415</u>
Bulk Density	1.52	1.33	2.67	1.37
Inherent Viscosity	0.78	0.90	0.93	0.55
(vs. 0.715 - 0.744)	----	0.43	----	----
L Color	5.75	3.08	4.11	4.33
A Color	6.00	3.50	----	----
B Color	2.67	2.50	2.50	6.33
% on Pan	1.93	1.72	2.67	4.00
(vs. 2%, max.)	----	----	----	0.67
% thru 140 Mesh	0.74	0.79	1.70	3.69
Drytime	----	----	1.67	2.00
Mets I.R.	----	----	----	1.93
(vs. 95% of control)	----	----	----	1.10
Hard Particles, (% > 10)	----	----	21.8	2.6
Average particle size, microns	134	136	157	174

H. Flexible Compound Quality Summary

	<u>Adjustments</u>		<u>Rejections</u>	
	<u>M Lbs.</u>	<u>(%)</u>	<u>M Lbs.</u>	<u>(%)</u>
Hardness	7.0	(0.11)	4.5	(0.07)
Color/Clarity	----	----	24.1	(0.37)
Hard Particles	----	----	46.4	(0.72)
Contamination	----	----	4.5	(0.07)
Dicing	----	----	25.5	(0.39)
Totals	7.0	(0.11)	105.0	(1.63)

LABORATORY - ContinuedI. Rigid Compound Quality Summary

		<u>Rejections</u>	
		<u>M Lbs.</u>	<u>(%)</u>
Torque Rheometry		<u>26.0</u>	<u>(0.57)</u>
Total		<u>26.0</u>	<u>(0.57)</u>

J. Miscellaneous

1. Our new Brabender PL2000 torque rheometer was commissioned for service this month. All rigid compound Q.C. technicians were trained.
2. H. G. Coleman participated in an Open House for the Aberdeen High School teachers. This was a kick-off for the Aberdeen/Vista Partners in Education Program.
3. Effective 12/1/89, Harold Coleman is being transferred to R&D in Austin as Senior Group Leader for PVC resins. Richard Williams will handle the duties of Chief Chemist until a replacement is named.

SAMPLE SHIPMENTS

NOVEMBER 1989

RESIN

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
11/02/89	5415	100 lbs.	ELECTRO CONDUCTORES C.A.
11/03/89	5415	100 lbs.	ELECTRO CONDUCTORES C.A.
11/07/89	5305	5 lbs.	General Cable Co.
11/19/89	5385	10 lbs.	Carter Footwear Co.
11/14/89	5415	100 lbs.	Twitchell
11/14/89	Pond Resin	5 lbs.	Sun Polymers
11/16/89	5305	50 lbs.	GLASSIDUR, S. A.
11/22/89	Pond Resin	5 lbs.	Sun Polymers
11/28/89	5415	50 lbs.	INYECCIONES INDUSTRIALES
11/28/89	Pond Resin	2 X 5 lbs.	Wexford International
11/30/89	Pond Resin	50 lbs.	JOSE M. TELLES

COMPOUND

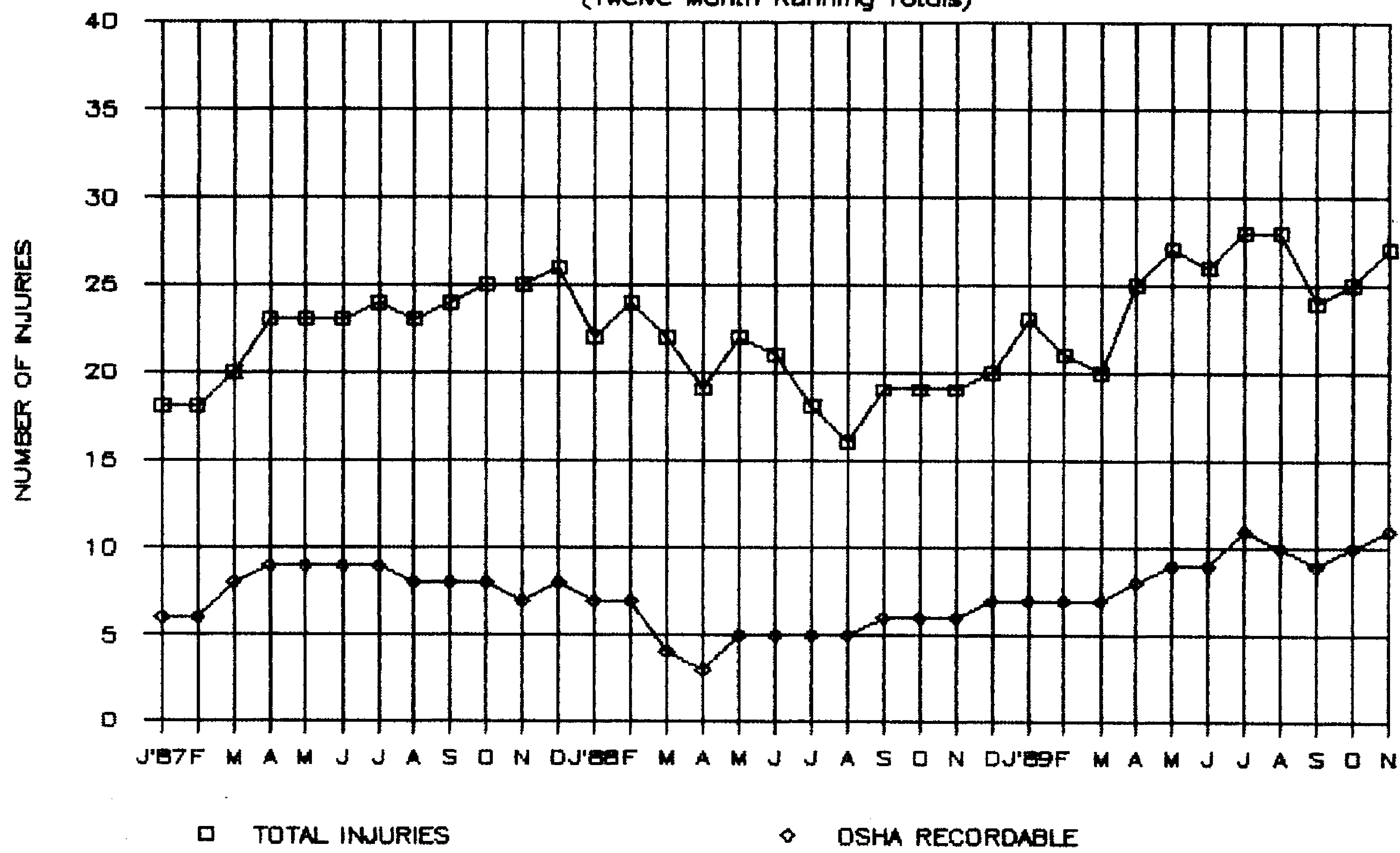
<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
11/02/89	35451 NAT	100 lbs.	ELECTRO CONDUCTORES C.A.
11/03/89	35451 NAT	300 lbs.	ELECTRO CONDUCTORES C.A.
11/09/89	416-74-1 NAT	50 lbs.	Vista - Austin
11/10/89	38525 NAT	250 lbs.	Times Fiber Comm'ns Inc.
11/16/89	38525 blk	300 lbs.	Communication Cable Inc.
11/16/89	240-183C NAT	150 lbs.	Prestolite Wire Corp.
	240-184 NAT	150 lbs.	
11/28/89	38201 GRY 573	200 lbs.	Carlon Company
	38901 GRY 573	200 lbs.	

DRYBLEND

<u>Ship Date</u>	<u>Product</u>	<u>Amount</u>	<u>Customer</u>
11/28/89	RP-200 WHT 111	50 lbs.	OMNI PRODUCTS

ABERDEEN CHEMICAL PLANT INJURIES

(Twelve Month Running Totals)



ABERDEEN ENERGY CONSUMPTION

