



Interoffice Communication

To R. D. Gamblin
From J. H. Brunson
Date December 10, 1979
Subject Explanation of Variances - August, 1979

During the month of August the plant produced 58,453,572 pounds of VCM and 93,575,506 pounds of EDC. The variances from standard costs were as follows:

	August			Year-to-Date		
	Efficiency	Price	Total	Efficiency	Price	Total
EDC	\$(203,245)	\$(993,866)	\$(1,197,111)	\$ 163,742	\$(2,159,423)	\$(1,995,681)
VCM	(28,771)	(47,452)	(76,223)	(255,741)	(223,121)	(478,862)
Incinerator	(15,603)	(901)	16,504)	(223,899)	7,595)	231,494
Subtotal	\$(247,619)	\$(1,042,219)	\$(1,289,838)	\$(315,898)	\$(2,390,139)	\$(2,706,037)
Fixed Costs			(88,737)			74,590
Total			\$1,378,575)			\$(2,631,447)

FIXED COSTS VARIANCE

The unfavorable variance of \$88,737 was due primarily to Moving, Home Assistance - \$11.2M, Maintenance Materials - \$40.3M, and Maintenance Contract Costs - \$106.9M. The above variances were partially offset by favorable variances for Ad Valorem Taxes - \$13.4M, and Depreciation - \$55.4M. Smaller variances account for the remaining differences between budget and actual costs. The major variances are explained in detail below.

Moving, Home Assistance - \$11,153 Unfavorable

The unfavorable variance was due to the cost of transferring the Process Superintendent from Oklahoma City to Lake Charles clearing in August and the budget amount being spread throughout the year.

- Maintenance Materials - \$40,347 Unfavorable

The unfavorable variance was due to incinerator costs greater than the budget - \$13.6M; and to the following ordinary items greater than budget - Warehouse - \$7.7M, Agitators - \$4.5M, Pipe \$3.8M, Instruments - \$3.2M, Compressor - \$2.4M, Reactors - \$2.2M, Safety - \$1.5M, Fired Heaters - \$1.4M, Hose - \$1.4M, and Electrical - \$1.2M. This was partially offset by no expenditures in the extraordinary budget - 2.2M.

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Maintenance Contract Costs - \$106,929 Unfavorable

The unfavorable variance was due to incinerator costs greater than budget - \$32.4M, extraordinary costs greater than budget - \$42.1M, and to the following ordinary items greater than budget - Air Conditioning - \$1.2M, Agitators - \$1.4M,

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Miscellaneous Structures - \$2.3M, Piping and Valves - \$16.7M, Safety - \$5.9M, Towers - \$3.3M, and Railroads - \$1.8M.

Ad Valorem Taxes - \$13,417 Favorable

The favorable variance was due to the revised estimated taxes for 1979 being less than the estimate at time of budget.

Depreciation - \$55,414 Favorable

The favorable variance was due to the incinerator projects not being completed as soon as anticipated - \$12.1M, the 1979 depreciation rate being 1% less than the rate used for budget purposes - \$33.1M, and to plant capital investments being approximately \$1,800M less than anticipated due to projects not completed as soon as expected - \$10.3M. Major projects not completed as soon as expected were VCM Exposure Reduction - \$248.2M, EDC Exposure Reduction - \$421.0M, and Stand-by Waste Water Steam Stripper - \$392.0M.

VARIABLE COST VARIANCE

The total variable cost variance for August (including incinerator IPA variances) was \$1,289,838 unfavorable. This unfavorable variance consisted of:

	August, 1979	
	<u>EDC/VCM</u>	<u>Incinerator</u>
Raw Materials & By-Products -	\$(1,119,242)	\$ 6,557
Processing Supplies	(10,670)	(467)
Utilities	(159,131)	(22,594)
By-Products Handling	15,709	-
	<u>\$(1,273,334)</u>	<u>\$(16,504)</u>

In the explanations which follow, the incinerator variances are discussed as a separate topic.

EDC/VCM

Raw Materials and By-Products - \$1,119,242 Unfavorable

The chlorine price variance for August was \$62.3M unfavorable and the ethylene price variance for the month was \$920.5M unfavorable. The chlorine plus HCl efficiency variance for August was \$101.7M unfavorable. The ethylene efficiency variance is \$34.7M unfavorable. This leads to a total raw material efficiency variance of \$136,376 unfavorable. The cause of this unfavorable variance is direct EDC and HCl losses as follows:

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- 1) Direct EDC losses due to heavy ends column overhead condensing problems resulting in high vent rates of EDC to the incinerator.
- 2) Direct EDC losses from T-101 due to the malfunction and repair of BL-502 refrigeration system.
- 3) Direct HCl losses due to poor conversion in oxy leading to high acid strength in the primary separator.

Estimates of these losses indicate that a vast majority (approximately 70%) are due to EDC losses. Five oxy shutdowns occurred in August. HCl and ethylene venting during oxy shutdown and start-up also contributed to the above raw material variances.

Processing Supplies - \$10,670 Unfavorable

The net price variance for processing supplies in August was \$41.8 favorable. Significant price variances occurred with respect to caustic (\$15.6M favorable), nitrogen (\$7.0M unfavorable) and limestone (\$27.0M favorable). The net efficiency variance for processing supplies was \$53.1M unfavorable. Significant efficiency variances occurred with respect to oxychlorination catalyst, caustic solution, and limestone. Oxychlorination reactor R-304 was not re-charged in February, 1979, and led to a favorable catalyst efficiency. HCl conversion in oxy continues to deteriorate as the November turnaround approaches, leading to increased demand for caustic and limestone (\$9.1M unfavorable and \$5.2M unfavorable, respectively) for effluent neutralization.

Utilities - \$159,131 Unfavorable

Price variances for electricity and steam were unfavorable in August at \$14.8M and \$42.0M, respectively. Waste heat steam generation in oxy was below budget in August, leading to an unfavorable efficiency variance in this area of \$20.0M. Natural gas usage led to an unfavorable efficiency variance of \$4.2M due to the above-budget injection of methane into the R-101 vent for flammability control.

By-Product Handling - \$15,709 Favorable

The price variance for tars disposal was \$7.2M favorable in August. Light ends to sales (\$2.0M favorable) increased in lieu of light ends transfer to the incinerator (\$8.7M favorable) since light ends burning on a routine basis has not been instituted.

Incinerator - \$16,504 Unfavorable

Routine light ends burning has not been instituted at the incinerator and caused a \$3.9M unfavorable efficiency variance in the consumption of light ends. This

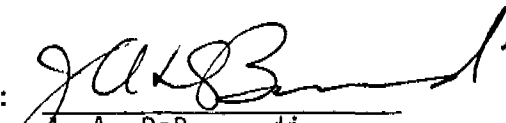
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lack of light ends burning has required an above-budget consumption of natural gas, leading to an unfavorable efficiency variance of \$17.1M. The concentration unit was budgeted to be on stream in August and since this unit is still under construction, no anhydrous HCl for dilute acid concentration was utilized. This resulted in a \$10.3M favorable efficiency variance in anhydrous HCl consumption. An unfavorable efficiency variance with respect to limestone occurred (\$5.4M) due to the fact that all HCl production continued to be neutralized. Increased caustic usage has been required at the incinerator for flue gas scrubbing (\$5.1M unfavorable efficiency variance) due to increased vent rates and experimental light ends burning in August.



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