

MONSANTO COMPANY

Location : Texas City, Texas

Date : December 29, 1964

**Subject : Monthly Production Summary
VCM Plant - December, 1964**

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SUMMARY

VCM production was 10.1 MM lbs (121.2 MM lbs/year) 87.8% of rated capacity. Reaction was down 549 hours for lack of acetylene. Cracking was limited for 133 hours: 87 hours by Department 26 downtime, 38 hours by Department 21 downtime (10 hours concurrent with Department 26 shutdowns), and 18 hours by the HCl stripper, 22D6, reboiler switch. Quality control was poor during the month with high HCl production occurring intermittently.

EDC production was 14.3 MM lbs (171.6 MM lbs/year) 114.2% of rated capacity.

Oxidative Chlorination production was 2.38 MM lbs (28.6 MM lbs/year) 82.4% of rated capacity. The unit was down 87 hours: 72 hours for cleaning fouled exchangers and repairs to the recycle compressor, 15 hours for instrument repairs. The unit ran the last half of the month with no feed gas analyzer, resulting in lower than standard conversions and higher caustic usage.

CBY 1107235

RSV0032250

Monthly Production Summary
VCM Plant - December, 1964

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OPERATING DETAILS

<u>A. Summary Table</u>	<u>Scheduled</u>	<u>This Month</u>	<u>Standard</u>	<u>Year to Date</u>
<u>Production</u>				
VCM, MM lbs	10.31	10.1	11.5	124.5
EDC, MM lbs - Dept. 23	13.12	14.3	12.5	158.0
- O.C.	2.78	2.38	2.89	18.4
Acid, gallons		755,000	0	
Acid dumped, gallons		0	0	
RFT, %		96.3		
<u>On-Stream Time</u>				
Cracking		100.0	91.3	
Reaction		26.3	91.3	
Dept. 23		96.5	91.3	
Acid, absorber, % time needed		99.8	91.3	
% available when needed		94.9	91.3	
Dept. 26		89.7	91.3	
21C2		99.9	91.3	
<u>Yields</u>				
C ₂ H ₄ to EDC - Dept. 23		95.0	95.0	
- O.C.		90.0	88.5	
Cl ₂ to EDC		95.0	95.0	
EDC to VCM		95.0	95.0	
C ₂ H ₂ to VCM		97.0	97.0	

B. Operations and Maintenance

The HCl stripper column, 22D6, reboiler was switched.

The VCM redistillation column, 22D14, reboiler was switched.

The No. 2 chlorine tank was entered and cleaned.

The VCM redistillation column operated for the fourth consecutive month without fouling.

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OPERATING DETAILS (continued)

The oxidative chlorination reactor catalyst tube supports appear to have worn in. Fluidizing gas was cut off three times without any reactor pressure drop increase.

The oxidative chlorination feed gas chromatograph failed at mid-month, efforts at repair were only of limited success, and a program to develop a parallel instrument was begun by the Analytical Instrument Group.

C. Personnel and Safety

All new men in the unit are now qualified on one job, thus eliminating overtime average of oxidative chlorination.

Safety meetings were held with all operators covering proper use of gas masks.

D. Costs

December Variances:	<u>VCM</u>	<u>EDC</u>	<u>O.C.</u>
Raw Materials			
Price	-11,000	0	0
Performance	0	0	0
Direct Conversion			
Labor	- 3,000	- 400	- 400
Repairs	-18,000	+ 2,000	0
Catalyst	0	0	0
Volume			
Off Scheduled Production	- 2,407	+ 3,152	- 3,143
Unscheduled Capacity	<u>-31,433</u>	<u>+ 1,636</u>	<u>- 942</u>
Total	-65,840	+ 6,388	- 4,485
Grand Total		-63,937	

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OPERATING DETAILS (continued)

Variance Explanation:

VCM:

Raw Materials

Performance

Direct Conversion

Labor

Labor force increased by 4 men since standard was developed.

Repairs

Late billing of the past 2 year's charges for acid proofing cement.

EDC:

Labor

As in VCM.

Repairs

Reduced corrosion.

O.C.:

Labor

As in VCM.

January Variances:

VCM

EDC

O.C.

Raw Materials

Price

0

0

0

Performance

Direct Conversion

Labor

0

0

0

Repairs

0

+ 2,000

0

Catalyst

0

0

0

Volume

-33,100

+ 1,340

+ 2,665

Total

-33,100

+ 3,340

+ 2,665

W. H. Slager
W. H. Slager

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RFK/qlh

VCM PLANT SUMMARY - 1964

VCM production was 124 MM lbs (90% of rated capacity and 86.5% of budget). Rates were limited through the year by the C_2H_2 shortages. To meet demand, 13.5 MM lbs was purchased from Ethyl and Carbide, and 13.45 MM lbs was obtained by swap and conversion arrangements with Dow and Carbide. C_2H_2 cleanup system was put back in operation in October when economics were again favorable. Muriatic acid production totalled 5.13 MM lgallons due to lack of C_2H_2 and low on-stream time of oxidative. VCM cost was 6.6¢ vs. budget of 6.1¢ due to out-of-balance operation and oxidative performance.

EDC production from C_2H_4 and Cl_2 was 158.5 MM lbs (105.5% of rated capacity).

Oxidative production was 18.5 MM lbs (53.4% of rated capacity). During much of the year, capacity was limited by plugged tubes and low conversion due to iron poisoning of the catalyst. Major revisions in October, including relining of the reactor and revision of the catalyst support system, corrected the source of catalyst poisoning and improved feed distribution so that capability was raised to 30 MM lbs/year.

1965 production is budgeted at 138 MM lbs. Plans for 1965 are as follows:

Capacity

VCM from C_2H_2	25 MM lbs
VCM from EDC	113 MM lbs
EDC from Cl_2	157 MM lbs
EDC from HCl (O.C.)	30 MM lbs

Cost

Improved yields Department 23 and 26 __+\$30,000 variance from std.

Reduce Maintenance cost 4% below std. in 1965 __+\$81,000.
Hold other fixed costs at standard.

Quality

Reduce quantity of rerun of off-spec VCM.

Safety

Reduce minor impurities by 10%.

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Personnel

Upgrade operator capability through increased training.

Community Relations

Reduce and reroute smog producing streams to eliminate our contribution.

JWK/qlh

CBY 1107240

RSV0032255