CONOCO

Interoffice Communication

To L. N. Vernon

From J. C. Lunn, Jr.

Date August 15, 1975

Subject VCM Plant Environmental Health Report - July 1975

1. STATE AND FEDERAL AGENCY ACTION

A. Environmental Protection Agency

1) VCM Emission Control

Plant personnel visited Ponca City on July 31 to attend an R & D and PED review of control technology and the status of R & D research on carbon adsorption and catalytic oxidation. A Capital Budget item was prepared for control of VCM containing vent streams. This included incineration of all vents except the oxychlorination vent and carbon adsorption of the oxy vent.

B. Louisiana Air Control Commission

1) Hydrocarbon Compliance Plan Status

Mr. Gus VonBodungen of the LACC technical staff visited the VCM Plant during July to determine if a "good faith" effort was being made by Conoco to complete it's compliance plan projects. He concluded the VCM Plant was making such an effort and would convey his findings to the EPA.

The oxychlorination cleanup reactor, R-305, was completed by July 15 and an attempt was made to startup the reactor. As oxy started up the catalyst bed temperatures began to rise before the addition of chlorine. Oxychlorination was then shutdown as the R-305 outlet temperature approached the teflon piping temperature limit of 205°C and R-305 was bypassed. The Louisiana Air Control Commission was notified in July of the completion of R-305 and the unsuccessful initial startup attempt. On August 6, the reactor was successfully started up. The LACC will be notified of the successful R-305 startup.

The vent return pipeline is expected to be complete and ready for plant tie-in by the end of August. Delivery of the vent refrigeration system is still scheduled for the end of August.

2. SECONDARY TREATING SYSTEM

A. NPDES Permit Compliance - July Results

As indicated below, all effluent parameters remained within permit limitations.

Effluent Characteristic	Average lbs/day	Maximum lbs/day	Permit to 7-1-77 Average lbs/day	Permit to 7-1-77 Maximum lbs/day	After 7-1-77 Average lbs/day	After 7-1-77 Maximum lbs/day
COD	614.7	1469	8000	27000	4177	9398
BOD	211.1	538	4000	9000	600	1350
TSS	350	666	2000	4700	558	1256
Ammonia-N	59.3	142	110	330	30	68
Chromium	6.73	17.08	20	60	0.5 mg/l*	1.0 mg/l*
Chlorinated Hydrocarbons	Not analyzed					
pH	Remained in the required 6-9 range					

* In the cooling Tower Blowdown

Effluent water averaged 400 gpm during the July sampling periods.

The secondary system operated well during July, with only the ammonia limitation exceeding the after 7-1-77 conditions. The high ammonia discharges could have been caused by an overfeed of urea or by displacement of septic water from the sludge wasting basin.

B. Optimization Program

1) Operator training seminars were held during July to stress the importance of effective secondary system operation. The seminar covered all major operating points including safety, sampling requirements, EPA requirements and emergency repairs. Revised laboratory and operator log sheets were issued to improve communication on the systems operation.

2) Dilution water is being added to the feed to the secondary system to determine the effect of lower chloride concentration and lower COD feed concentration on system operation and clarifier solids carryover. If dilution proves effective in improving system operation, a design will be prepared to use LCCP treated effluent water as the dilution stream.

3) Non-chromate Cooling Water Test

The plant began using the United Chemical non-chromate treatment during July. This treatment replaced the Betz Chemical treatment which proved unsatisfactory due to corrosion (pitting) and heavy scale formation. High suspended solids were initially experienced indicating an effective cleanup program. The first set of United Chemical test exchanger tubes will be examined during August.

J. G. Lunn, Jr.

bw
CC:
REL-JAD-JEC-JHM-GGD-PLF-DAK-RLH-RDG-CLM-RFT
JBM-BDR

VCM EFFLUENT WATER ANALYSIS

PARAMETER						REGULATIONS	
1. Date	7-5-75	7-14-75	7-19-75	7-27-75			1
2. Average Flow-GPM	370	411	555	516			2
3. Temperature-°F	80	77	81	83		95° Max	3
4. pH	7.8	7.2	6.8	7.2		6.0 - 9.0	4
5. Dissolved Oxygen-PPM	6.4	6.6	5.4	7.9		4.0 Min	5
NPDES Requirements						Daily Avg.	Daily Max.
6. COD-lb/day	840	266	799	500		8000	27000	6
7. BOD$_5$-lb/day	228	75	538	87.3		4000	9000	7
8. Chromium-lb/day	1.37	2.5	6.0	17.1		20	60	8
9. Total Suspended Solids-lb/day	346.7	611	666	576		2000	4700	9
10. Chlorinated Hydrocarbons-lb/day	-	-	-	-				10
11. Ammonia (N) - lb/day	115	142	538	19.5		110	330	11

C-500 Vent Stack Analyses

IN PPM BY VOLUME								IN VOLUME PERCENT					
Date	EDC	VCM	EtCl	Other Organics	Cl_2	Total Acid As HCl	Total Chlorides	CO_2	CO	O_2	CH_4	C_2H_6	C_2H_4
7-3-75	340	300	1810	60	42	205	329	1.08	1.01	3.23	0.7	TR	0.52
7-17-75	980	700	3250	390	740	-	659	1.13	1.04	2.56	0.29	TR	0.35
7-24-75	1310	1120	9150	1290	1234	889	163	0.66	0.36	12.8	0.18	-	0.27
7-31-75	2320	1830	9170	1010	617	716	1037	1.2	0.79	1.9	0.35	TR	0.50

• HYDROCARBON COMPLIANCE PLAN STATUS

I. R-305

Progress Increment	Date As LACC Approved	Projected Completion	Actual Completion
1. System Design	11/30/73	--	11/30/73
2. Eval. and Cost Est.	01/13/74	--	02/07/74
3. AFE	02/01/74	--	03/05/74
4. Equipment and Mat'l. Purchase	05/15/74		
a. Reactor			03/20/74
b. Preheater			04/17/74
5. Delivery	03/15/75		
a. Reactor			06/21/74
b. Preheater			05/24/74
c. Structure			04/04/75
d. Teflon Pipe		03/27/75	
e. Catalyst		03/75	
6. Installation	05/01/75		
Modify plant piping			05/06/74
Foundations			12/02/74
Modify R-305			
Install. R-305			07/15/75
7. Startup and Operation	07/15/75*		07/15/75
II. VINYL VENT RECOVERY SYSTEM			
1. System Design	03/01/74		03/19/74
2. Eval. and Cost Est.	05/01/74		05/07/74
3. AFE	05/15/74		06/17/74
4. Equipment and Mat'l. Purchase	08/01/74		
a. Refrig. Unit			06/17/74
5. Delivery	03/01/75		
a. Refrig. Unit		08/25/75	
6. Installation	11/15/75*		
Stack Const.			02/26/75
Refrig. Unit		12/01/75	
7. Startup and Operation	12/01/75*	12/01/75	

III. VENT RETURN PIPELINE

Progress Increment	Date As LACC Approved	Projected Completion	Actual Completion
1. System Design	06/07/74	--	06/07/74
2. Eval. and Cost Est.	08/02/74	--	08/02/74
3. AFE	10/01/74	--	10/01/74
4. Equipment and Mat'l. Purchase	10/21/74		
a. Pipe			05/30/74
b. Stanchions & fittings			01/10/75
5. Delivery	01/31/75		
a. Pipe			05/30/74
b. Stanchions & fittings			01/10/75
6. Installation (Started 3-17-75)	12/01/75*	08/75	
7. Startup and Operation	12/01/75**	08/75	

* Revised LACC 5/20/75

** This date was revised by the LACC on 5/20/75 to correspond with startup of the vent refrigeration system's startup.

Figure I
VCM Plant
Effluent Water Analysis
From Secondary System Outlet

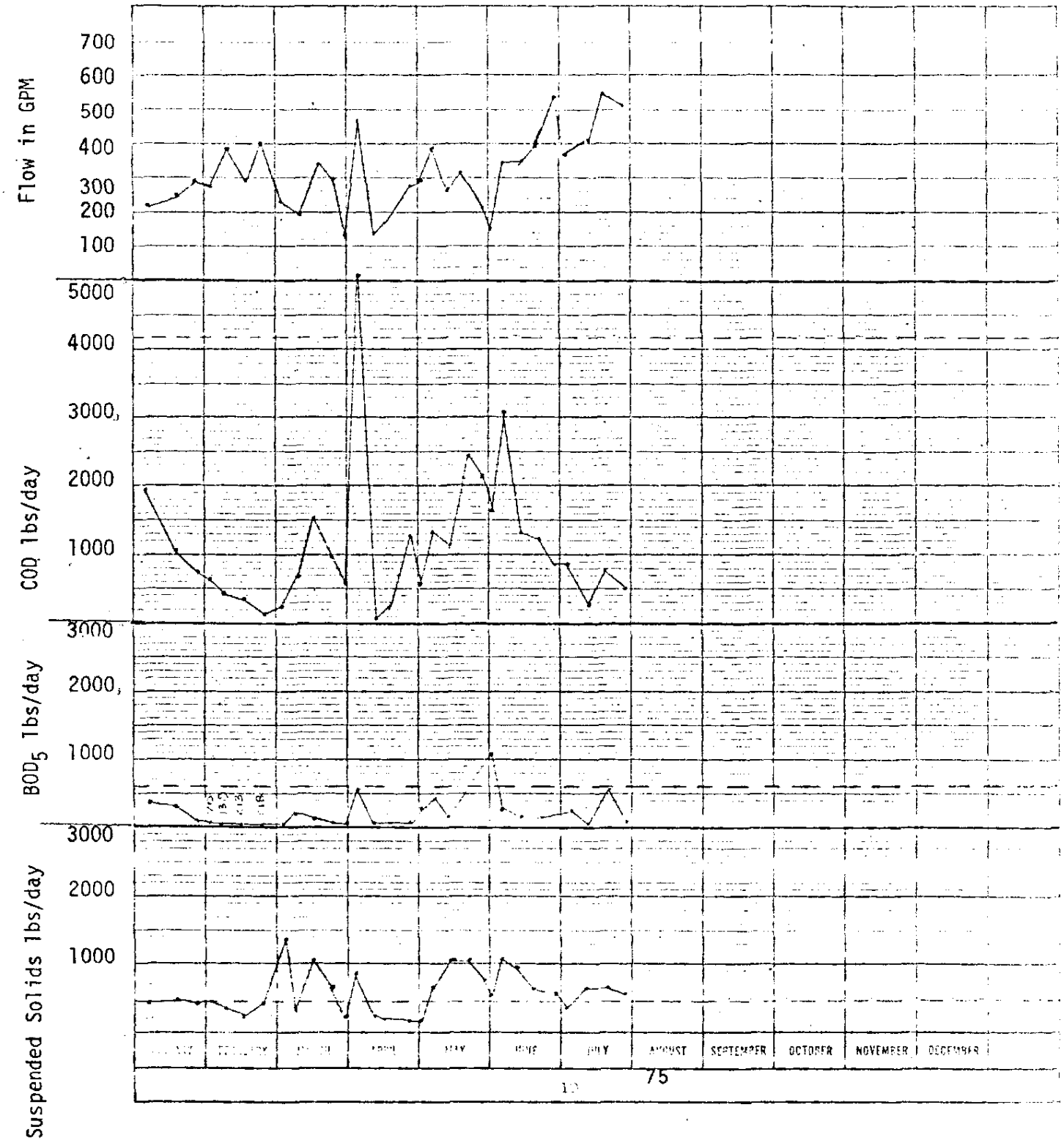

Figure II
VCM Plant
Effluent Water Analysis
From Secondary System Outlet

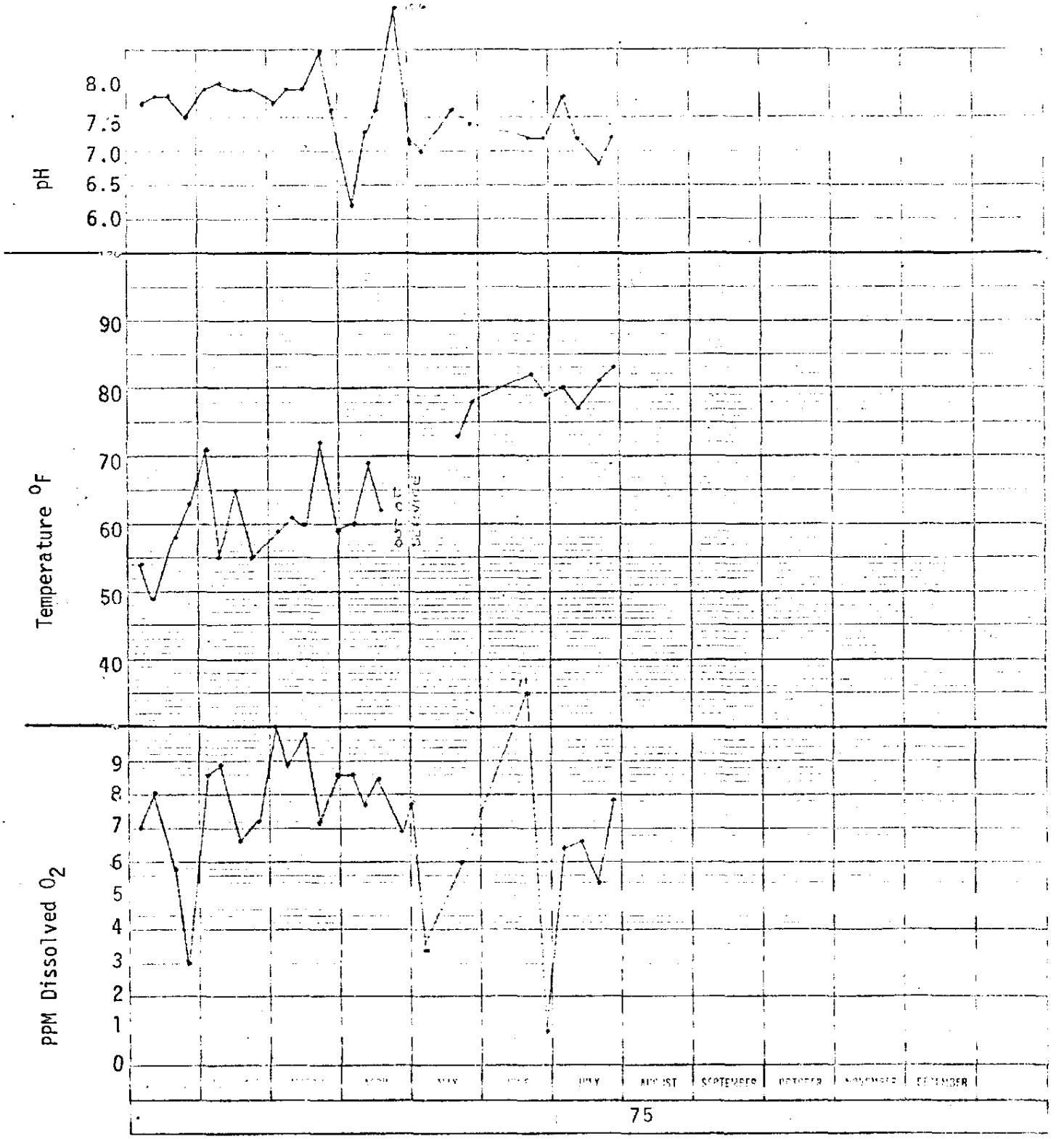

Figure III
VCM Plant
Effluent Air Analysis
From C-500 Vent

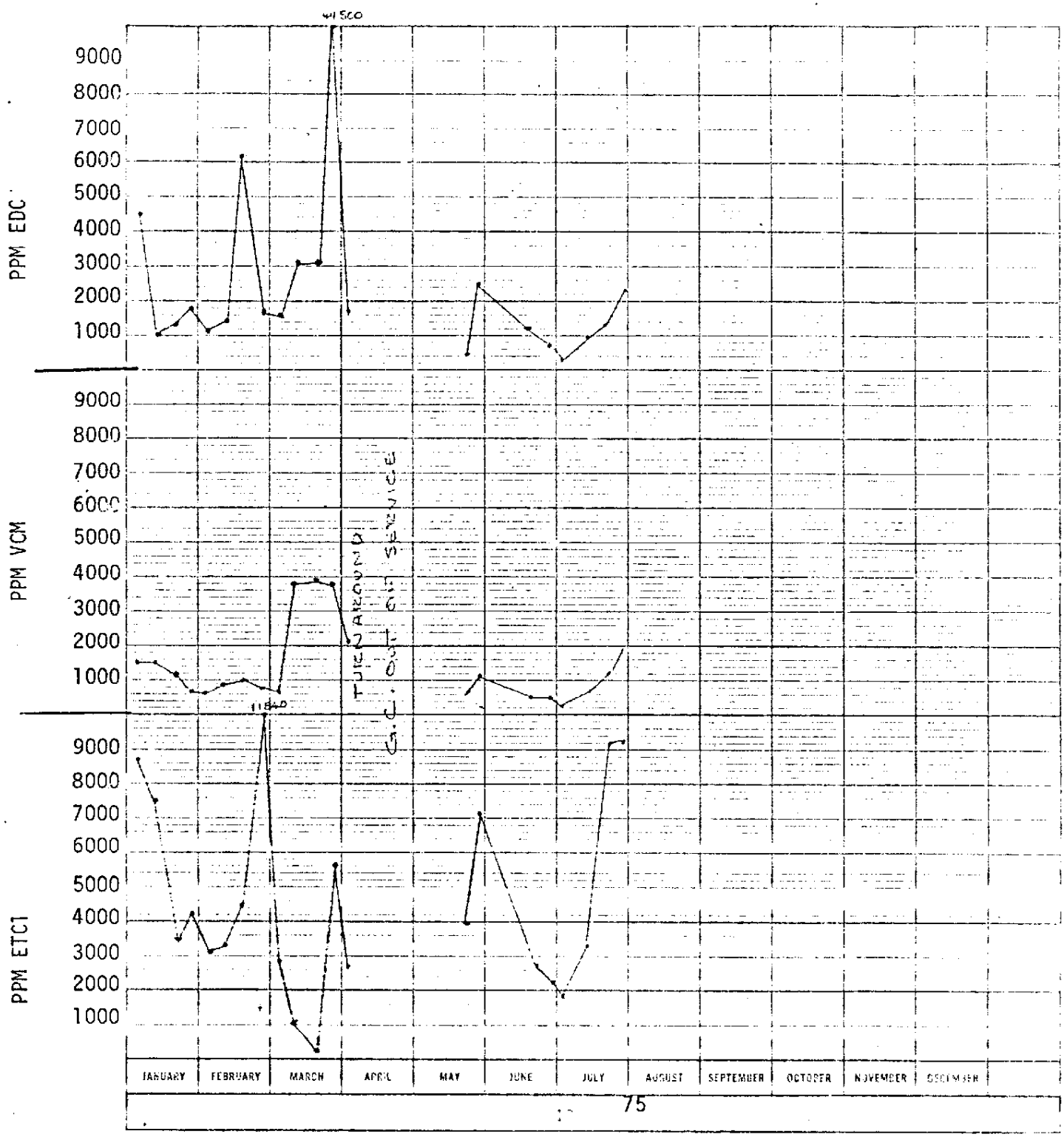

Figure IV
VCM Plant
Effluent Air Analysis
From C-500