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REV. 1-1-53

INTEROFFICE COMMUNICATION

March , 1971
Westlake, Louisiana

TO: Mr. J.D. Burns - Saddle Brook

SUBJECT: Environmental Health Report
Continental VCM Plant - March 1971

A) Status of Active Budget Items

1) Plant Effluent System Revisions

The skimmer pipe for T-2 pit has been received and should be installed in March. 13,860 gallons of slop EDC were pulled from T-2 pit this month. The steam stripper (C-101) piping is being reassembled and the Kynar coated agitator base has been received. The stripper system could be operational by late March if maintenance priorities permit. New carbon heat exchangers have been ordered for replacing the overhead condenser for the steam stripper and a new unit for subcooling the stripper bottoms effluent. Installation of these exchangers will probably be in late October 1971.

2) Low Pressure Condensate System

Some electrical conduit has been reinstalled, but no other work has been done this month. Completion will probably be in April 1971.

3) Secondary Waste Treatment System

The Basis of Bids for concrete, dirt work and piping was reviewed and the revised Basis of Bids should be issued by March 8. The first electrical and instrument Basis of Bids are due at the same time. All major equipment except the two sludge pumps and some instrumentation has been ordered. Completion of this project is now estimated for early September 1971.

B) Current Developments

1) Analytical Work

Analysis for formates (either sodium formate or formic acid) has been started and average effluent levels of 600 to 700 ppm are being found. This agrees well with the calculated values in the January 1971 report. A reduction of over 97% will be required in our secondary system if State stream standards of 17 ppm are to be met. The laboratory is attempting to develop a method to determine formates at this low level, but no analytical method is available as yet. The required 97% reduction of formates will be difficult to attain since most activated sludge systems only attain around 95% removals of most organics. Since formates are small organic molecules, they may break down more easily and get over 97% removals, but this will have to be determined after an analysis method is found.

Analyses for CO has been started on the C-500 vent stack and is reported in this month's tabulation.

A water effluent sample taken during a light ends column wash period showed very high EDC levels (over 1%) plus high colors and solids. The plant is already investigating a system which may eliminate this problem (1971 Capital Budget Item V-4).

2) Air Pollution Criteria

A copy of the proposed Louisiana Ambient Air Criteria was received in late February. These criteria specify the maximum average ambient air levels of various pollutants within the New Orleans to Beaumont Air Quality Region, but have no specific stack emission rate. Stack emission standards are expected to be published by the State in January 1972. The regulations which will affect the VCM Plant are:

a) CO - maximum level of 9 ppm - 8 hour average.
b) Hydrocarbons - maximum level of 125 micrograms per cubic meter which is equivalent to 0.10 ppm ethylene.

Other regulations on open burning, smoke density, dustfall, sulfur compounds, haze and oxidents are not expected to affect the plant. If the above regulations are actually approved, we will have to reduce our ethylene emissions by about 99% (from 1.0% to 0.01%) if a strict interpretation of the regulations is enforced. However, the methods of calculating pollution effects are quite vague, so the problem may not be quite as bad as it appears. CO will also be a problem, but we are presently almost in compliance. These ambient air criteria are expected to be approved by the Federal Government in July 1971 and full compliance by industry will be expected no later than the summer of 1975.

3) Chromate Removal System

Investigation of several chromate removal systems for the plant cooling tower blowdown is continuing. It appears that an inexpensive system of chromate destruction can be installed using available equipment plus the already approved secondary treatment system clarifier. The preferred system is chromate reduction, utilizing SO_2 gas or Fe SO_4 x H_2O crystals as the reducing agent in the existing T-1 acid pit. The secondary system caustic neutralizing system and clarifier would precipitate chromium hydroxide and remove it with the clarifier sludge. The only equipment not available would be the SO_2 or Fe SO_4 addition system. Plant tests will be required to prove reaction rates, mixing requirements and actual chemical feed rates.

John D. Minott

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Gary Johnson

C-500 Stack Gas Analysis - February 1971

Date	ppm EDC	ppm VCM	ppm ETCl	ppm Cl_2	ppm HCl	Mole % Ethylene	Mole % CO_2	Mole % O_2	Mole % CO	Mole % Methane	ppm Misc. Organics	Remarks
											Acetylene	
2/3	263	1358	-	-	3958	2.97	1.29	3.23	-	Tr	387	H_2 was less than 0.01%.
2/10	1539	615	4910	-	222	2.14	1.37	1.92	-	Tr	50	
2/17	1673	347	2863	-	1964	0.70	1.30	2.02	0.53	0.31	26	
2/14	1509	388	3120	13	7286	1.60	1.60	1.70	0.63	0.66	750	Cl_2 analyzer repaired.

Plant Water Effluents - February 1971
24-Hour Composites

Date	pH	ppm EDC	ppm VCM	ppm ETCl	ppm Total Solids	ppm Susp. Solids	ppm CRO_4	ppm PO_4	ppm Cl	ppm Fe	ppm Cu	ppm BOD	ppm COD	Color Apha	Turbity J.T.U	Temp °F	gpm Flow Rate	ppm Formates	ppm other organics	Remark
2/5	3.0	3665	4	50	8424	160	3.0	Nil	4250	6.4	1.0	-	1520	> 30	50	91.7	450	657	231	
2/8	3.0	412	6	26	8244	84	3.0	18.0	4200	5.8	1.9	>600	1600	> 30	30	91.7	610	653	96	
2/15	5.5	13300	16	199	15924	237	16.0	1.0	7600	2.4	2.9	-	2400	> 50	450	85.0	400	703	528	(Lt. en col. i middle of was & dump
2/23	2.75	1170	16.5	4.6	11048	736	2.3	1.0	6200	9.2	4.4	1040	1120	> 30	50	87.0	340	653	126	

ENVIRONMENTAL HEAL[illegible] PROJECTS - VCM PLANT

January to December 1971