

CORPORATE TECHNICAL SUPPORT
First Quarter Summary 1976

25-1649

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Environmental Lab - P. M. Zakriski, J. W. Born, O. S. Kurtz, C. E. Titus

Special testing of the water and air discharges from the Helicure process was carried out in February and March. These tests indicated the need for additional engineering to reduce polluting discharges before permit applications are filed. The improvements are expected to be completed soon and retesting will be carried out to collect the necessary permit data.

A preliminary study of the ozonation and chlorination of the QBTS waste water at the Henry plant was carried out. A report of the results is being prepared.

The Avon Lake Hydrin process was examined during its operation in February and March. Stack velocities, temperature and humidities were measured for engineering purposes. Personnel monitorings for epichlorohydrin, 1,3-dichloro-2-propanol, heptane and toluene exposure were analyzed. The ventilation systems from many pieces of process equipment were examined for pollutant character.

Much time was spent this quarter in consultation with the environmental engineers at Avon Lake, Louisville and Akron. All consultation was to aid in negotiations and planning for up-coming power house emission testing.

Late this quarter we began the adaptation of a Bendix total hydrocarbon analyzer to source testing for hydrocarbon emissions. We plan to be able to use this analyzer for performance testing at the Martha Mills tire cord treating oven which is being equipped with a catalytic incinerator to reduce hydrocarbon emissions.

This quarter we issued a report on the effect of water in adsorbing and retaining benzene vapors with MSA carbon tubes for personnel monitoring. Our work shows large reductions in efficiency, but nevertheless, under the proper conditions MSA carbon tubes can be successfully used to detect and measure benzene vapors in the work room. The benzene study has been followed up with a study of the effectiveness of the Bendix carbon tube to collect and retain vinyl chloride from 1 ppm atmospheres with high humidities. This work is nearing completion and will be reported on early in the second quarter.

Special samplings and analyses have been undertaken to identify irritating odors at the Marion plant, the Henry plant and the Calvert City plant. All these studies are being carried out with the services of the mass spectrometry laboratory. We expect to complete this work in the second quarter. At that time a report will be issued.

Experiments have been underway this quarter to screen a plastic pipe composite for FDA clearance. This work has been completed and our findings will be forwarded to the toxicologist in the medical department.

Testing

Type	Number
Blood	93
Urines	209
Personnel Exposure Measurements	1,055
Water tests	36
Special metals	178
	1,571

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CORPORATE TECHNICAL SUPPORT
Second Quarter Summary 1976

Environmental Lab - P. M. Zakriski, J. W. Born, O. S. Kurtz, C. E. Titus

Two boiler house stack emission studies were completed. The studies made at the Akron General Chemical plant indicated its boiler is out of compliance and work at the Louisville plant indicated its boiler is in compliance.

A trip was made to the Marietta plant to assist in the set up and operation of water testing needed for permit reporting.

Special laboratory work was devoted to the test procedure to be used to monitor for benzene, butadiene, and styrene at the Orange and Port Neches plants. The development of a satisfactory procedure was followed by the installation of a gas chromatograph and automatic sampler system at the Orange plant. Following the supervision of the installation, Environmental Lab personnel participated in a training program and in putting this critical sampling and analysis program into operation.

A visit was made to Louisiana State University to discuss the pumpless vinyl chloride personnel monitor badge. The inventors, Dr. Reiser and Dr. West, loaned us two for evaluation. Evaluation is under way and will be completed in the third quarter.

Preparations are under way for the third quarter testing of the Martha Mills catalytic incinerator. The test preparation involves the modification of a Bendix total hydrocarbon analyzer for special high temperature analyses to be conducted at Martha Mills.

A method was developed and tested for the analysis of worker exposure samples that were and will be collected in the vicinity of the Louisville polyacrylate Hycar process.

The lab tested a Dow procedure for the measurement of urine phenol which has been correlated to benzene exposure.

X We have completed laboratory testing of the Bendix flasher tube, used to collect vinyl chloride in the workers' breathing zone. We find that relative humidity does not affect the performance of the Bendix flasher tube under the conditions being followed. A report on this work will be issued in the third quarter.

Our clinical lab license has been reissued for the normal one year period. We have applied, also, for lab accreditation by the American Industrial Hygiene Association.

An AR has been written for the expansion of the Environmental lab and the purchase of an additional gas chromatograph-auto sampler system and for a graphite furnace for the atomic absorption spectrometer.

We have transferred one additional technician into the Environmental Lab. He will begin work at the beginning of the third quarter.

Laboratory Operations

<u>Test</u>	<u>Number Completed</u>
Blood	163
Urine	266
Personnel Monitor Measurements	565
Special VCI Tests	300
BOD's	32
Water Tests	20

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CORPORATE TECHNICAL SUPPORT
Third Quarter Summary 1976

Environmental Lab - P. M. Zakriski, J. W. Born, R. E. Harris, O. S. Kurtz,
C. E. Titus

Considerable time has been spent in converting a conventional Bendix Hydrocarbon analyzer to a high temperature unit for emission testing at Martha Mills. The analyzer and sampling system are nearly completed and we hope to be using them at Martha Mills in the 4th quarter.

Preliminary work was carried out to measure the biodegradability of Carbopol resin. This preliminary work did not determine biodegradability. Further work has been deferred, pending a clarification of the needs of the marketing department.

Continued testing of the Helicure process waste water total logging was carried out this quarter.

X A program is under way to determine how to use EPA method 106 for source emissions of vinyl chloride. The procedure as originally published by the EPA is bulky and awkward. Some modifications seem necessary.

Y Our report on vinyl chloride personnel monitor tubes was completed early in August. We have completed preliminary testing of the LSU pumpless badge. It performs well in the lab and now we intend to take it into the field. A status report will be issued in the 4th quarter.

J We attempted two vinyl chloride personnel monitor cross-check studies. Only one was successful and it shows that we still have some labs that are off by 50%. The report is being prepared now.

A careful examination of the Hydrin process was continued beginning on August 1, with the plant start-up. Our work shows that the NIOSH carbon tube procedure performs satisfactorily for the sampling of the major chlorinated materials reported by O'Mara, Nikora, Koebel and Dorsch. Samplings are continuing for the length of the production run to determine worker exposure.

Continued evaluation of the Dow urinary phenol procedure has been carried out. We have improved the gas chromatographic resolution and are ready to begin urine testing.

We intend to conduct source emission tests at Marion very late this quarter. The purpose is to measure emissions of lead.

Meetings and Seminars: C. E. Titus attended the meeting of the Ohio chapter of the Air Pollution Control Association early in September. P. M. Zakriski attended a meeting at the National Bureau of Standards dealing with "Methods and Standards for Environmental Measurement".

The gas chromatograph, GC-auto sampler, AA-graphite furnace and digital pH meter arrived this quarter.

We have expanded our service capability with the addition of a technician, Mike Paschal and a chemist, Ed Harris.

Work on expansion of the laboratory will begin soon.

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