

Acc# 2097

Job Report

Project No. MP-1-R2 Date 9 January 1961.  
Project Name: Industrial Waste Control in Region MP-1.  
Period Covered: 30 June 1959 through 30 June 1960. Job No. F-3-13

Chemical Analysis of Sinclair Refinery's Waste Waters, Pasadena, Texas.

Objectives: Determine toxic chemical compounds present that would be detrimental to marine and aquatic life.

Procedure: Collect water samples from waste water outfall and run chemical analysis according to procedures in Standard Methods for the Examination of Sewage and Industrial Waste.

Findings: Sinclair Refinery is located on the Houston Ship Channel approximately  $2\frac{1}{2}$  miles above Washburn Tunnel in Pasadena, Texas. Sinclair employs 2,000 personnel and processes over 150,000 barrels of crude per day.

Five thousand gallons per minute of waste waters from the refinery enters the Houston Ship Channel after being run through old, outdated oil skimmers. However, since our visit on June 29, 1959, a large U-shaped concrete retention basin was completed and is now in operation. The retention basin has a retention time of approximately 20 hours. At each end of the U-shaped basin there are oil skimmers to remove any floating oils. In addition to the retention basin there is an adjacent acid holding pond with automatic pH control.

Due to work loads in other areas a comparison of before and after effects of the retention basin has not been completed. The following is the analysis on water samples collected June 29, 1959, before the new retention basin was completed:

Sulfides ----- 40 ppm  
Phenols (4 Aminoantipyrine Method) ----- 14 ppm  
Chlorides ----- 2,062 ppm  
Chemical Oxygen Demand (Dichromate Reflux Method) 1,067 ppm  
pH ----- 8.4  
Color ----- Black

It is believed that with the completion of the new retention basin and acid pond with pH control a substantial improvement in water quality should be achieved.

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Accepted by Howard T. Lee  
Howard T. Lee  
Date 10 January 1961

### References

American Public Health Association, American Water Works Association, Federation of Sewage and Industrial Wastes Associations, Standard Methods for the Examination of Sewage and Industrial Wastes. Tenth Ed., 1955.

American Petroleum Institute's Manual on Disposal of Refinery Wastes. Vol. IV. Sampling and Analysis of Waste Water. Second Ed. 1957.