

JOB REPORT

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Project No. MP-2R-1 Date 9 September 1960
Project Name: Pollution Abatement in Region MP-2 (Areas M-4 through M-9).
Period Covered: September 1, 1959 to September 1, 1960. Job No. F-6

Bio-assay and Chemical Analysis of American Smelting and Refining Company Waste and its Effects on Aquatic Life in Corpus Christi Harbor.

Abstract: The American Smelting and Refining Company has an acid waste that escapes periodically from a bleed line. The flow is so small the acid waste dissipates before doing any physical harm to aquatic life.

Objectives: To determine the damage done to the Corpus Christi harbor by the industrial effluent.

Procedure: Three stations were set up to sample the effects of the waste in the harbor.
Station I - outfall prior to emptying into drainage ditch;
Station II - at outfall ditch emptying into harbor;
Station III - fifty (50) feet into harbor.

Information was obtained from the plant manager as to methods of production and operation.

Toxicity studies were conducted to determine the median tolerance limit in which the marine indices (pin perch) would withstand the waste for a 48-hour period.

Findings: The American Smelting and Refining Company is located on the south side of the harbor near the closed end. Its production consists of sulfuric acid and zinc sulfate. In the process of producing these inorganic chemicals zinc sulphite ($\text{ZnSO}_3 \cdot 2\frac{1}{2} \text{H}_2\text{O}$) is ground and roasted to get zinc oxide (ZnO). SO_2 escapes as a gas and is emitted into the cooling water and forms a sulfuric acid waste. This waste escapes via a bleed line from the acid plant and is usually less than 50 gallon/min. Occasionally the pH will be very acid (Table 1), but before entering the bay it flows through a drainage ditch 100 feet long, dissipates, and is neutral or slightly acid upon entering the harbor.

Toxicity studies were conducted to determine if any toxic pollutant extended into the harbor beyond 10 feet of the disposal point. No effects were noticed during the 48-hour test.

Comments: At no time during the investigation of American Smelting and Refining Company's waste was any toxic pollutant found. The company is supplied with city water and the only disposal line is a small stream of acid waste that is neutralized before entering the harbor.

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Accepted by: Howard T. Lee
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Table 1

Date	Station	pH	48 hour TLm.
9-3	I	6.5	100%
9-3	II	6.6	
9-3	III	6.9	
9-14	I	4.1	100%
9-14	II	6.5	
9-14	III	6.6	
10-7	I	2.0	100%
10-7	II	6.0	
10-7	III	6.6	
11-24	I	6.4	
11-24	II	6.6	
11-24	III	7.0	
12-7	I	6.1	100%
12-7	II	6.5	
12-7	III	6.9	
1-20	I	4.5	100%
1-20	II	6.1	
1-20	III	6.5	
2-15	I	5.2	100%
2-15	II	6.1	
2-15	III	6.7	