

File: LCCP
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Technical Memorandum

Research Project No. 609-81-804-8

Conoco Inc.
Research and Development Department
Research Services Division
Ponca City, Oklahoma

CONFIDENTIAL

To Mike Hayes, LCCP

From E. L. Sones, RSD

Date May 15, 1981

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Subject ANALYSES OF WASTEWATERS FROM THE LCCP 001 OUTFALL

Summary

No organic priority pollutants were found in the samples in concentrations greater than 10 ppb. Other priority pollutants indicated to be present in lower concentrations are given in the attached reports^{1,2,3}. These data represent a decrease in pollutants from the second sampling⁴ and are more in line with the first screening samples⁵.

The data for metals and chemical analyses are given in Tables I and II.

Discussion

The samples were delivered to Ponca City on 27 January 1981 by a chartered airplane. Those waters were sampled by LCCP personnel and shipped in containers provided by the EPA and the LCCP. No sample was submitted for total phenols and no blanks accompanied the samples.

The samples were received still adequately packed in ice and below 4°C. On receipt, the samples were stored in a cold room at 4°C until analyzed. Extraction of the composited sample for concentration of the nonvolatile organic components was performed within five days, and those extracts were preserved under refrigeration until the analyses were performed. Analyses of the extract for organics by GC-MS per Method 625 are reported in these data. Analyses for pesticides per Method 608 are in progress and will be reported separately when available. Analyses of the VOA sample by purge-and-trap GC-MS were accomplished the same week as received.

Subsequent samples from Outfall 001 were received 24 April for determination of radioactivity and for volatiles by Method 603. The radioactivity data will be reported as soon as available.

Determination of sulfite was requested and is included in Table II; however, the poor stability of that ion would preclude its presence in the samples when analyzed. Future determinations should be done on site.

References

1. TSR No. 260-81-840-8 by R. O. Gardner
2. TSR No. 409-81-804-8 by C. B. Herrin
3. TSR No. 438-81-839-9 by C. B. Herrin
4. TM No. 603-80-804-0 by R. E. Laramy
5. TM No. 602-79-801-0 by R. E. Laramy.

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Attachments

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TABLE 1

DISSOLVED METALS IN LCCP 001 OUTFALL

	Concentration in Mg/Liter	
	by ICP	by AA
Antimony	<0.25	
Arsenic		<0.002
Beryllium	<0.005	
Cadmium	<0.015	
Chromium	<0.03	
Copper	0.066	
Lead	<0.25	
Mercury		<0.013
Nickel	0.087	
Selenium		<0.002
Silver	<0.03	
Thallium	<0.50	
Zinc	0.16	
Aluminum	<0.15	
Barium	0.20	
Boron	<0.05	
Cobalt		<1.0
Iron	0.29	
Magnesium	27	
Molybdenum	<0.05	
Manganese	0.30	
Tin	<0.10	
Titanium	<0.025	
Calcium	400	
Strontium	0.92	
Vanadium	<0.025	
Sodium	910	

TABLE II

DETERMINATIONS BY CHEMICAL ANALYSES ON
LCCP 001 OUTFALL

<u>Parameter</u>	<u>Value</u>
Chemical Oxygen Demand	316 ppm
pH	6.9
Total Dissolved Solids	2900 ppm
Total Suspended Solids	108 ppm
Total Organic Carbon	59 ppm
Total Cyanides	0.4 ppb
Chloride	1435 ppm
Fluoride	0.4 ppm
Bromide	<1 ppm
Sulfate	200 ppm
Nitrate	<1 ppm
Surfactants by MBAS	0.37 ppm
Sulfide	<1 ppm
Sulfite	<1 ppm
Total Nitrogen	<1 ppm

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