

THE SOURCES AND DEVIATION OF WATER

by

B ATTELLE  
Columbus Laboratories



1. [REDACTED] has been awarded by the Medical Department

## FOREWORD

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and Sludge Concentration . . . . . 29



The major cause of trade imbalances is the

a point of controversy. Environmental authorities have expressed concern



THE SOURCES AND BEHAVIOR OF HEAVY

by

Columbus Laboratories



P. 100









TABLE 3. SOURCES OF HEAVY METALS TO WASTEWATER IN

## LOS ANGELES

Cd	17	83
Zn	25	75
Cu	13	87
Cr	7	92
Ni	12	88
Pb	45	55

Unfortunately this data cannot be directly interpreted as involving corresponding

INDUSTRIAL CONTRIBUTIONS TO TRACEMETAL LOADS

plants were located near Toronto, Ontario, Canada. The Ashbridge Bay plant

TORONTO, CANADA(a)



Some portion of material is missing from the original.





# RATES AND PARTICLE SIZE DISTRIBUTION

B. % Distribution by

(lbs/curb mi/day)		(Each species = 100%)			
Numer- ical Mean (m)	Avg. Dev- iation ± m	104 to 246	246 to 495	495 to 746	Total

slide 15, the 104 to 206 planes were outside the resolution of solid -

(12)

Population: 100,000 people

Land-use distribution:

Residential 75%

Commercial 5%

Industrial 20%



TABLE 11. AVERAGE CONCENTRATION OF METALS IN SOILS FROM 65

	Depth	
	0-2.5 cm	10-15 cm
As	8.4	8.2
Cd	2.3	2.1
Cu	33.2	30.9
Ni	34.8	30.3

(17)



TABLE 14. AVERAGE. RANGE. AND STANDARD DEVIATION OF METAL

THIRD FORK CREEK DRAINAGE BASIN,  
DURHAM. NORTH CAROLINA

Mean      Standard Deviation      Range (mg/l)





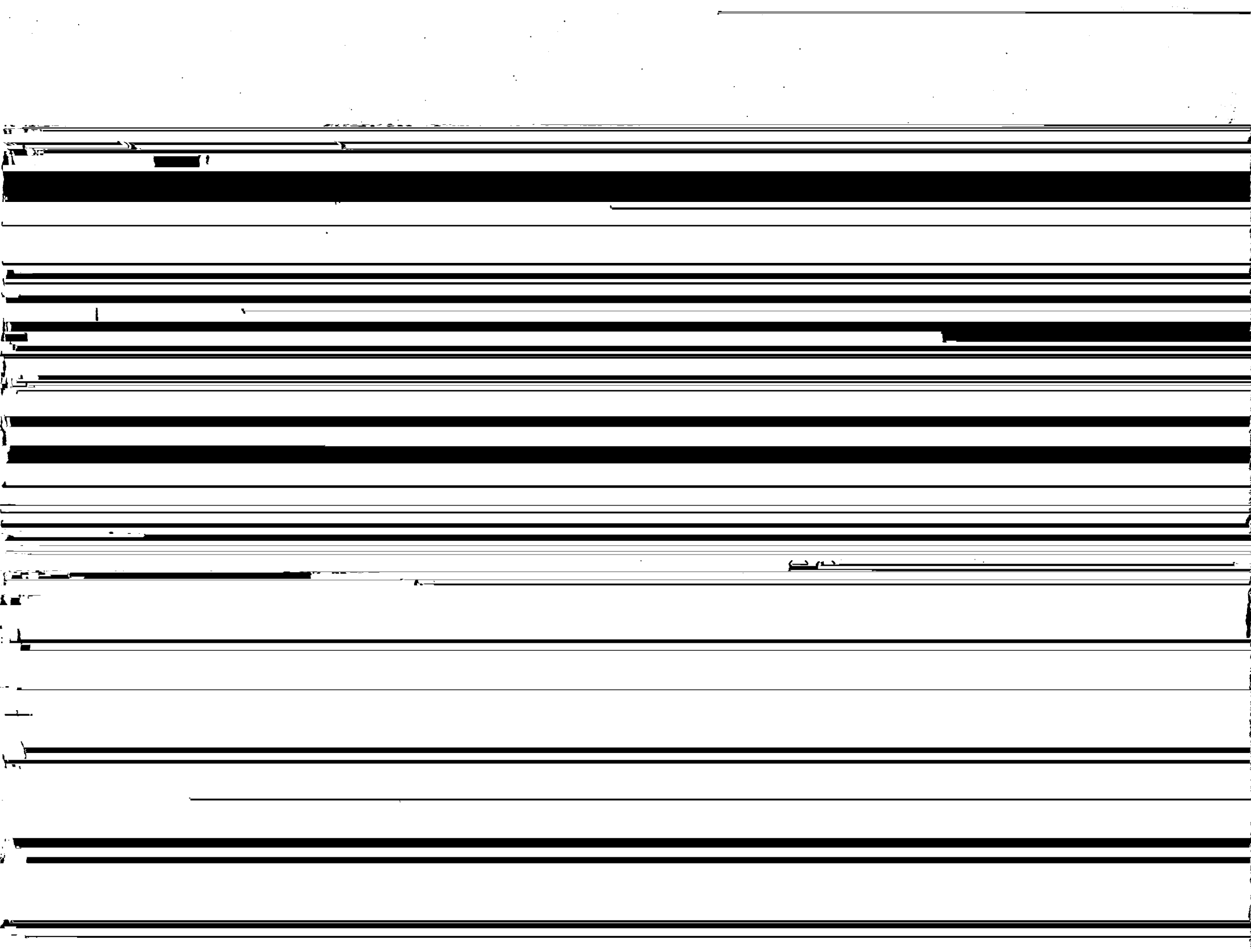
TABLE 14. COMPARISON OF AMPLIFIED AND UNAMPLIFIED SIGNALS

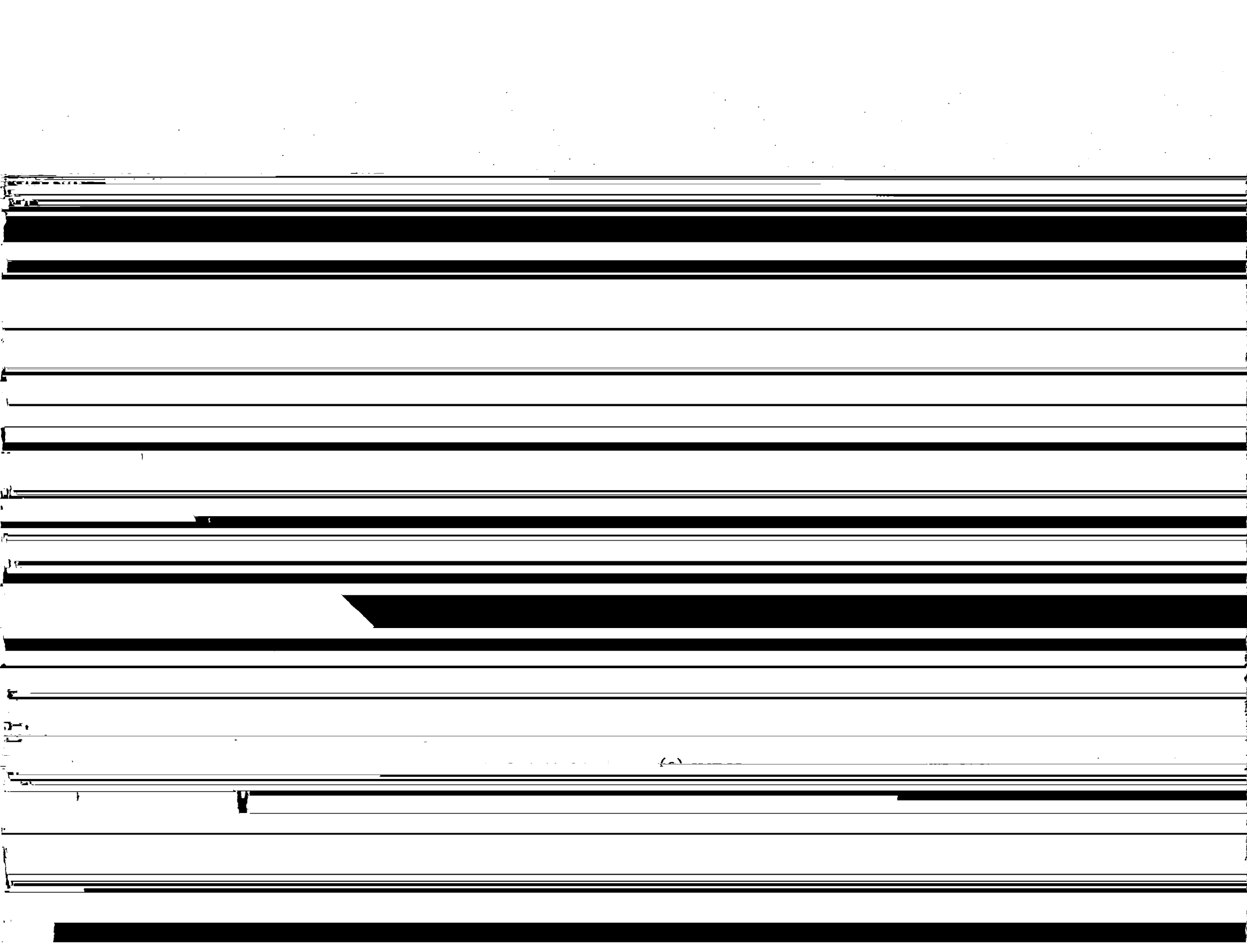
Signal	Amplified Signal		Unamplified Signal	
	Amplitude	Frequency	Amplitude	Frequency
1	100	100	100	100
2	100	100	100	100
3	100	100	100	100
4	100	100	100	100
5	100	100	100	100
6	100	100	100	100
7	100	100	100	100
8	100	100	100	100
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95	100	100	100	100
96	100	100	100	100
97	100	100	100	100
98	100	100	100	100
99	100	100	100	100
100	100	100	100	100



The treatment of municipal and/or industrial wastes involves a







(2) התקנתו של המכשיר תהיה כשורה

City

Cadmium

Nickel

**Zinc**

Copper





TABLE 21 COMPARISON OF PREDICTED AND MEASURED VALUES

OF METALS INFLUENT TO THE MILWAUKEE, WISCONSIN  
TREATMENT PLANTS

Measured Concentration mg/l



HEAVY METAL CONCENTRATIONS(a)

Plant	Metal	Sample Point	Exceeded Limits on Low or High Side of Distribution(b)
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REMOVAL EFFICIENCIES FOR TREATMENT PLANTS IN THE INTERSTATE

limit. In this case a concentration factor of only about 500 would cause



[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

used as a soil conditioner has two distinct parts. On the one hand, there

uncertainties in the actual absorption rates of ingested Cd and the normal





### Toxicity to the Plant

1. The concentration of the corn was higher

(36)

CONCLUSIONS





Revised: 10/1/11

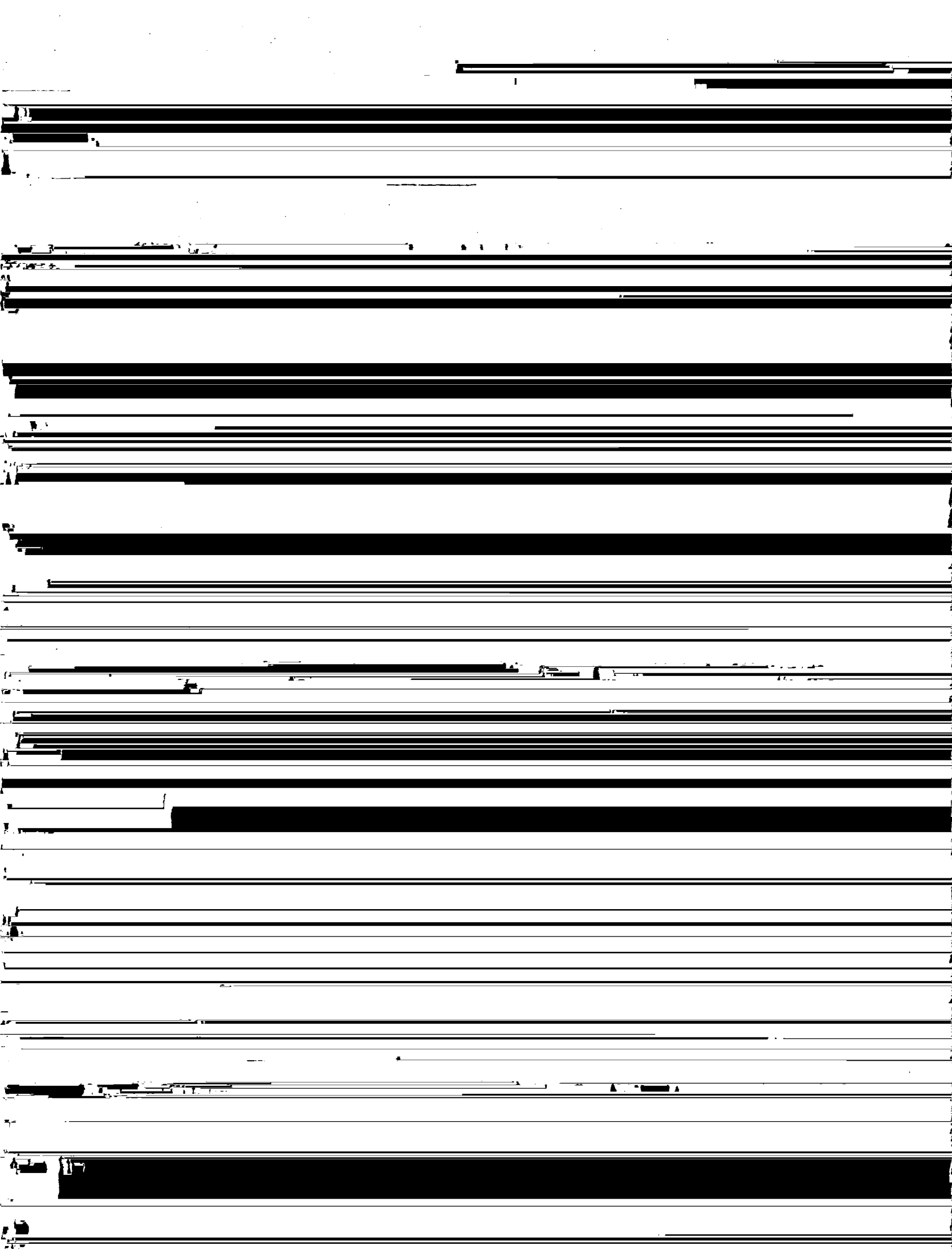




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receiving streams and there is apparently no way to correlate the weighted



Soil and Vegetation with Cadmium, Nickel, Lead, and Zinc". Environ-

mental Science and Technology 1 (7): 592-596

(16) Niekamp, Henry T. 1975. "Road, River, and Canyon in Saddle of Utah"

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**B**

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[illegible]

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1

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Figure 1. Schematic diagram of the experimental setup. The subject is seated in a chair, viewing a screen displaying a target (T) and a starting point (S). The distance between S and T is 10 cm. The subject's hand is positioned at S, and the target is at T. The subject is instructed to move the hand from S to T. The distance between S and T is 10 cm. The subject is instructed to move the hand from S to T. The distance between S and T is 10 cm.

1. **Introduction**

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CONFIDENTIAL

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