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KERR-McGEE NUCLEAR CORPORATION

KERR-McGEE CENTER • OKLAHOMA CITY, OKLAHOMA 73125

June 17, 1980

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Mr. William A. Nixon
Uranium Process Licensing Section
Uranium Fuel Cycle Branch
Division of Fuel Cycle & Material Safety
U. S. Nuclear Regulatory Commission
Washington, D. C. 20555

RE: SUB-1010, Condition No. 15

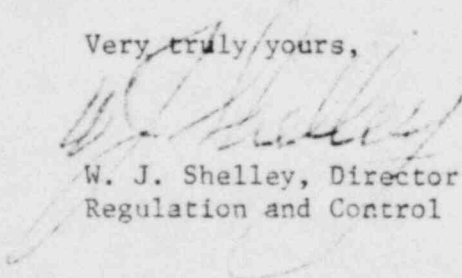
Dear Mr. Nixon:

Please refer to my letter of June 6, 1980 transmitting the report on Benthic Macroinvertebrate Fauna of the Illinois River Adjacent to the Effluent Outfall of the Sequoyah Facility.

In accordance with SUB-1010, Condition 15, a proposal for continued monitoring in the vicinity of the Sequoyah Facility effluent outfall is attached for your review.

If you have any questions or require additional information, please contact me.

Very truly yours,


W. J. Shelley, Director
Regulation and Control

WJS/hmw

Enclosures

16663

8007250634

Proposal for Continued Monitoring of Benthic Macroinvertebrate
Fauna in Vicinity of the Kerr-McGee Nuclear Sequoyah Facility

INTRODUCTION

The Kerr-McGee Nuclear Sequoyah Facility License SUB-1010 (Condition 15) issued by the U. S. Nuclear Regulatory Commission requires semi-annual sampling of bottom sediments and aquatic organism populations at upstream and downstream locations from the plant outfall into the Robert S. Kerr Reservoir.

To fulfill this license condition, Kerr-McGee Nuclear undertook an extensive, initial monitoring program in October 1978. Seasonal monitoring of benthic populations in the effluent stream and several locations upstream and downstream from the effluent outfall in the Illinois River was conducted from October 1978 to December 1979. Results of this program were provided in the report entitled: "Benthic Macroinvertebrate Fauna of the Illinois River Below Tenkiller Reservoir Adjacent to the Effluent Outfall of the Sequoyah Facility, Kerr-McGee Nuclear Corporation, October 1978 - December 1979."

The continuous monitoring program proposed has been developed from analyses of data generated in the initial report, which represented over one year of seasonal monitoring of liquid plant effluent effects on aquatic biota.

Methods

Benthic Sampling

Use of Hester-Dendy artificial substrates will be continued, and samplers will be suspended about two feet from the bottom at each sampling station. Each sampling station will be equipped with two float assemblies (8 Hester-Dendy samplers) to provide duplicate sampling and guard against sampler loss. Each Hester-Dendy sampler is made of 3" x 6" plates of 1/8" Masonite Hardboard strung on a 6" eye bolt. Plates are separated by 1/8" spacers to provide varying widths of separation. Total surface area of the sampler is approximately 252 square inches (See Figure 1 and 2).

Three sampling stations were selected for continuous monitoring. These locations are indicated in Figure 3 and include:

- 1) Upstream Illinois River: Approximately 1400 feet upstream from the Sequoyah plant effluent outfall, this station will correspond to location of transect #6 which was previously evaluated. This station is located in the Illinois River above the influence of the Arkansas River.

- 2) Effluent Ditch Mouth: During the initial monitoring program, this station exhibited community parameters which reflected the influence of both the effluent stream and the Illinois River. As such, it provides continuous monitoring of interaction of the effluent stream and Illinois River benthic communities.

- 3) Downstream Illinois River: This station will be located approximately 1400 feet downstream from the effluent outfall in the Illinois River and will be well within the influence of the Arkansas River. During the initial monitoring program, station #1 was the sampling location farthest downstream (approximately 625 feet) from the effluent outfall.

These three sample stations provide a comprehensive, continued, monitoring system for aquatic biota. Hester-Dendy samplers will be placed and allowed to remain at the three sample stations for approximately six weeks. Two sampling periods will be observed and include: Sample 1 (July - August); Sample 2 (November - December).

Following recovery of samplers, species will be segregated and numbers of each species will be counted. Mean diversity will be determined by pooling numbers of species and individuals collected from four Hester-Dendy Samplers (one-float assembly) at each location. This allows direct comparison with previous monitoring results.

Sediment Sampling

Based upon analyses of bottom sediment samples collected during 1978 and 1979 and reported in Appendix VIII, sediment samples collected from the effluent stream mouth provided a continuous monitor of bottom sediment condition as influenced by the plant effluent. Because "background" bottom sediment conditions have already been established at several

locations upstream and downstream in the Illinois River, sediment sampling will be conducted only at the mouth of the effluent ditch. This single location will provide indication of changes which may be occurring in bottom substrate conditions as influenced by plant effluent. Bottom sediment sampling will be conducted annually at this location.

It is believed that the continuous monitoring program proposed, and in conjunction with previous results, will provide a thorough evaluation of possible Sequoyah Facility effluent stream effects on aquatic biota. During the course of the continuous monitoring program, additional modifications may be made, as necessary, to insure the accuracy of this program.

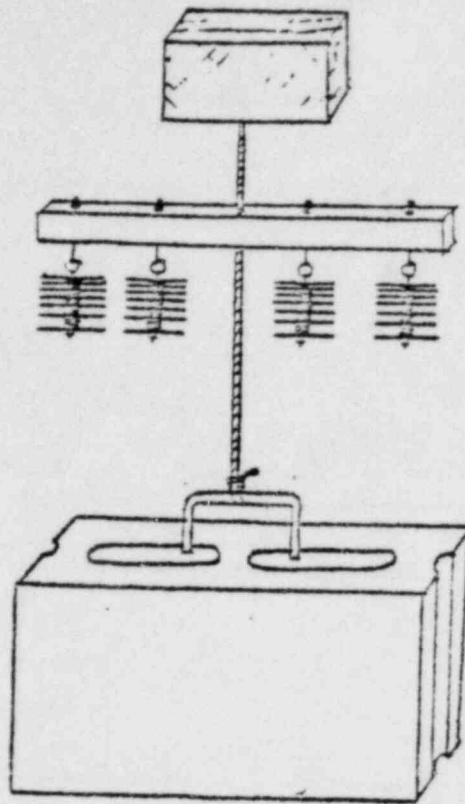


Fig. 1. Sampler float assembly.

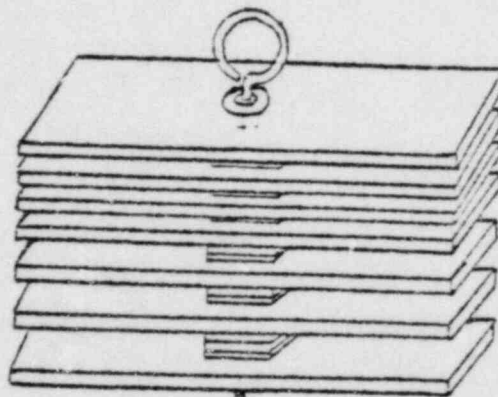


Fig. 2. Modified Hester-Dendy sampler, details of construction.

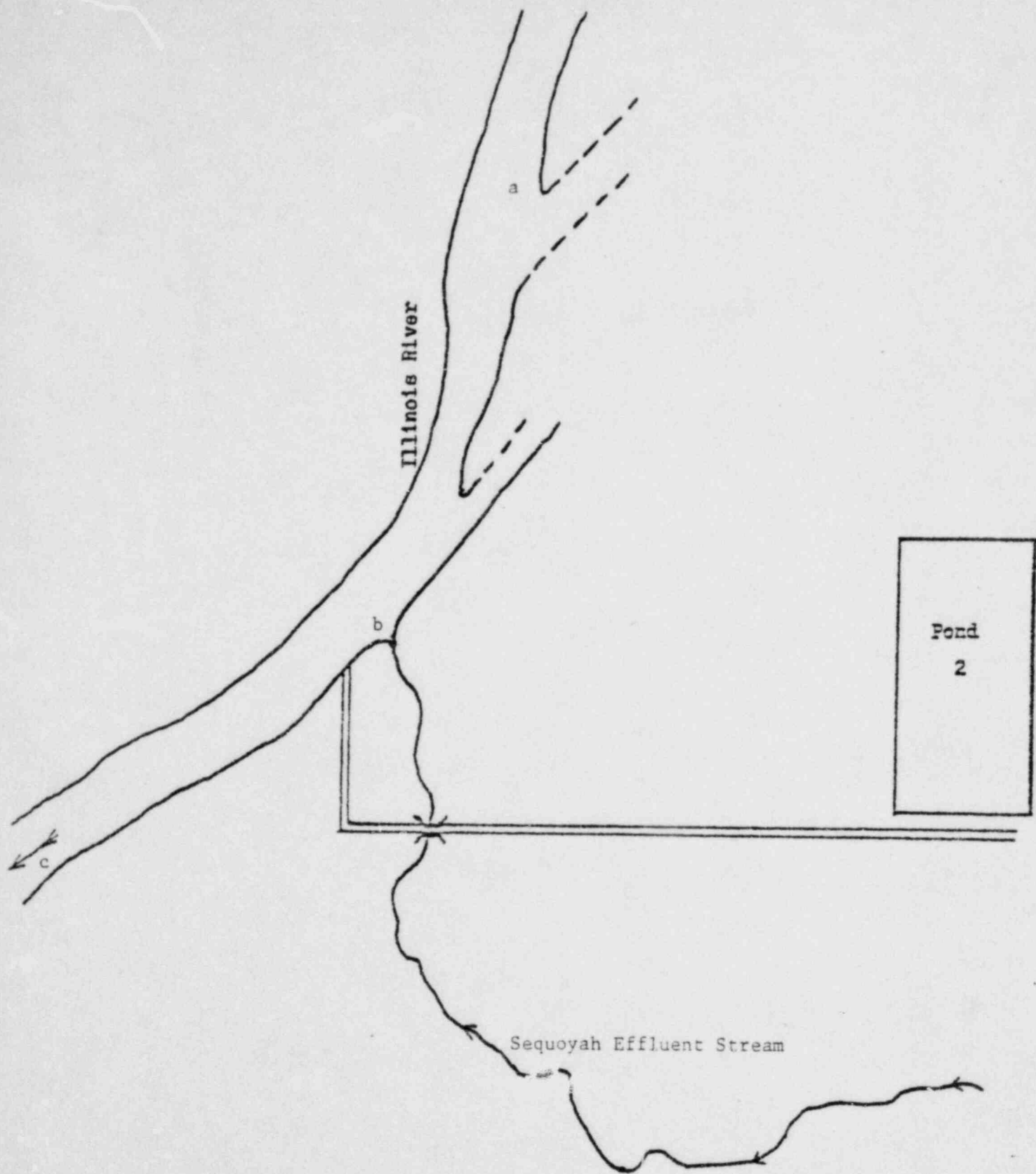


Fig. 3. Location of sample sites
a - Illinois River, upstream
b - mouth of effluent ditch
c - Illinois River, downstream

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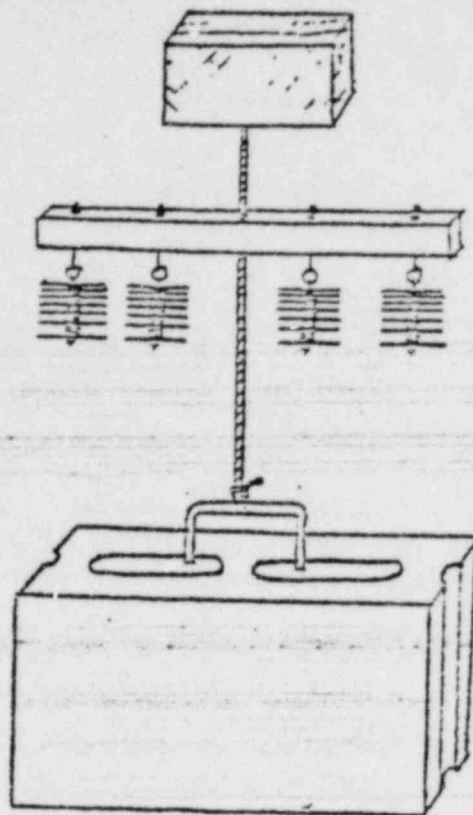


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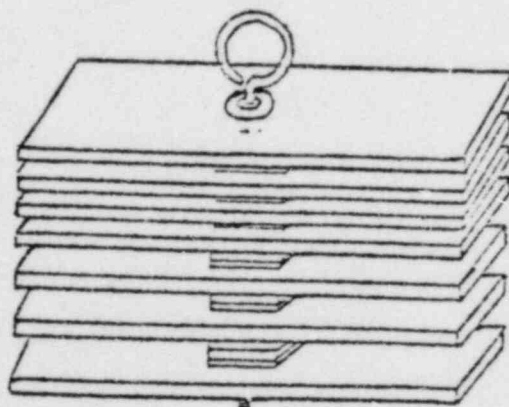


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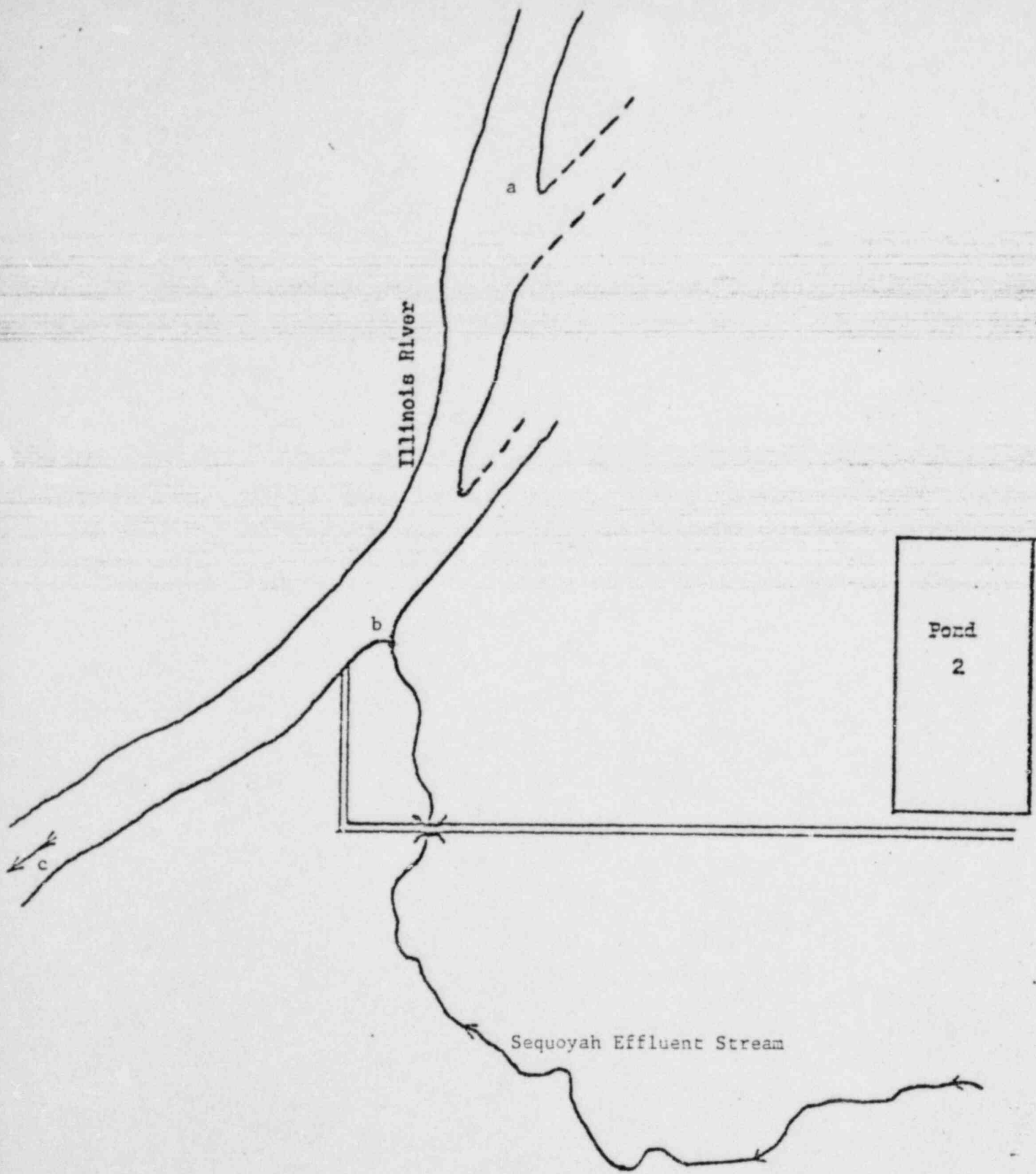


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