

**REMOVAL SITE EVALUATION
SURGE LAGOON PIPING MODIFICATION
PROJECT**

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~~CONFIDENTIAL~~

MAY 10

Department of Energy

FMPC Site Office
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May 14, 1990
DOE-1050-90

Mr. M. B. Boswell, President
Westinghouse Materials Company
of Ohio
P. O. Box 398704
Cincinnati, Ohio 45239-8704

Dear Mr. Boswell:

REMOVAL SITE EVALUATION - SURGE LAGOON PIPING MODIFICATION PROJECT

Reference: Letter, DOE-930-90, Raymond J. Hansen to M. B. Boswell, "CERCLA Removal Actions," dated April 23, 1990

The enclosed Removal Site Evaluation for the Surge Lagoon Piping Modification Project has been reviewed by my office. Based on this review DOE has determined that this project does not constitute a removal action as defined in the referenced letter. Therefore, the Surge Lagoon Piping Modification Project can proceed following the guidelines of FMPC Procedure 720.

If your staff has any questions, please ask them to contact Carlos Fermaintt, of my staff, at extension 6157.

Sincerely,

Gerald W. Westerbeck
FMPC Site Manager

DP-84:Craig

Enclosure: As stated

cc w/encl.:

P. C. Weddle, WMCO
A. C. Snider, WMCO

REMOVAL SITE EVALUATION
SURGE LAGOON PIPING MODIFICATION PROJECT

Feed Materials Production Center
U.S. Department of Energy

Introduction

The Surge Lagoon Piping Modification Project involves the modification to the piping associated with the existing Biondenitrification Surge Lagoon. To accomplish these piping modifications, limited excavation operations will be performed in a localized area adjacent to the existing surge lagoon. Soils from the project excavation will be used as backfill and general fill for the project. Additional fill materials will be obtained from the soil stockpile located adjacent to the Stormwater Retention Basin.

Source Term

In accordance with FMPC Site Procedure 720, site characterization and history records reviews were performed relative to the project work area and the soil stockpile.

As part of the site characterization activities, surface and subsurface soil sampling was performed along the proposed excavation. The location and analytical results from these samples are provided as Attachment 1. As indicated by these analytical results, no significant activity concentrations of uranium or thorium were identified in any of the more than 200 analyses performed. No individual sample indicated concentrations of uranium or thorium above Category 1 requirements as defined in FMPC Site Procedure 720 (sample #15 is completely outside of the construction area). Additionally, EP Toxicity analysis completed on representative samples indicated no concentrations of the eight primary metals in excess of the established criteria in 40 CRF 261 for characteristics of hazardous waste.

Historical records and aerial photograph reviews of the project work area did not reveal any known prior use for the project area. There is no reason to believe any production related operations, including storage, treatment or disposal activities were performed which may have contributed to a release of hazardous substances to the environment at this location. The site characterization data discussed above directly supports this position.

Additionally, characterization was completed on the stockpile of soil adjacent to the Stormwater Retention Basin. The location of the samples and the analytical results are presented in Attachment 2. As indicated by the data, no significant activity concentrations of uranium are present in this stockpiled fill material. EP Toxicity analysis on representative samples from the pile indicated no concentrations of the eight primary metals in excess of the established criteria in 40 CFR 261 for characteristics of hazardous waste. Again, there is no production, operation or release incidents which would require additional characterization activities. The results of all soil sampling and analyses performed for this project support the uncontrolled use of this soil.

Evaluation of the Magnitude of the Potential Threat

On the basis of the above referenced data, the Surge Lagoon Piping Modification Project does not involve evacuation of elevated concentrations of hazardous substances and that the action will not result in a release or a substantial threat of release of hazardous substances into the environment.

Assessment of the Need For Removal Action

Consistent with the National Contingency Plan (NCP), 40 CFR 300.415, the lead agency (DOE) shall determine the appropriateness of a removal action. The factors to be considered in this determination are listed in the NCP, 40 CFR 300.415 (b) (2).

Based on the sampling data obtained and historical records, none of the eight factor listed in the NCP are applicable to this project.

Appropriateness of a Response

Significant site characterization activities completed to support the Surge Lagoon Piping Modification Project indicate that no significant concentrations of hazardous substances are present in the environment at the proposed project are or the borrow stockpile. Therefore, there is no threat of environmental release associated with this project and a Removal Action is not required.

**ANALYTICAL RESULTS
FROM SOILS SAMPLED AT THE PROJECT SITE
(ATTACHMENT 1)**

CONTENT:

- TABLE 1A..RADIUM, URANIUM AND THORIUM ANALYSIS (SURFACE SAMPLES 0"-4")
- TABLE 1B..RADIUM, URANIUM AND THORIUM ANALYSIS (CORE SAMPLES)
- TABLE 1C..RADIUM, URANIUM AND THORIUM ANALYSIS (COMPOSITE OF CORE SAMPLES 0-6')
- TABLE 2...EP TOXICITY ANALYSIS
- FIGURE 1..SAMPLING PLAN (12-07-89)

TABLE 1A
 SURGE LAGOON PIPING MODIFICATIONS
 RADIUM, URANIUM AND THORIUM ANALYTICAL ANALYSIS
 SURFACE SAMPLES (0"-4")

SAMPLE	TOTAL U (pCi/g)	TOTAL Th (pCi/g)	U (Wt %)	Th228 (d/m/g)	Th232 (d/m/g)	Ra226 (pCi/g)
1	<7.4	<5				
2	8.8	<5				
3	7.4	<5				
4	8.8	<5				
5	8.8	<5				
6	8.1	<5				
7	<7.4	<5				
8	<7.4	<5				
9	<7.4	<5				
10	8.1	<5				
11	<7.4	<5				
12	<7.4	<5				
13	15.6	<5				
14	9.5	<5				
15	37.2	<5				
16	12.2	<5				
17	7.6	NR				
18	9.5	<5				
19	8.9	NR				
20	14.0	NR				
H1	9.5	<5				

NOTES:

1. Designation NR indicates that analyses were cancelled because of project budget limitations.
2. Total U and Th calculated assuming all daughters in equilibrium and a conversion of 0.677
 pCi/g: 1 ppm for uranium
 and 4.6 ppm: 1 pCi/g for thorium.

TABLE 1B
 SURGE LAGOON PIPING MODIFICATIONS
 RADIUM, URANIUM AND THORIUM ANALYTICAL ANALYSIS
 CORE SAMPLES

SAMPLE	TOTAL U* (pCi/g)	TOTAL Th* (pCi/g)	U (Wt %)	Th228 (d/m/g)	Th232 (d/m/g)	Ra226 (pCi/g)
LOC-A						
0'-1'	7.4	<5				
1'-2'	<7.4	<5				
2'-3'	<7.4	<5				
3'-4'	<7.4	<5				
4'-5.5'	<7.4	<5				
LOC-B						
0'-1'	12.9	<5				
1'-2'	<7.4	<5				
2'-3'	<7.4	<5				
3'-4'	<7.4	<5				
4'-5.5'	7.4	<5				
LOC-C						
0'-1.5'	<7.4	<5				
1.5'-3'	<7.4	<5				
LOC-D						
0'-1'	<7.4	<5				
1'-2'	<7.4	<5				
2'-3'	<7.4	<5				
3'-4'	<7.4	<5				
LOC-E						
0'-1'	<7.4	<5				
1'-2'	<7.4	<5				
2'-3'	<7.4	<5				
3'-4'	9.5	<5				
4'-5'	8.8	<5				
5'-6'	<7.4	<5				
LOC-F						
0'-1'	10.8	<5				
1'-2'	7.4	<5				
2'-3'	<7.4	<5				
3'-4'	<7.4	<5				
4'-5'	<7.4	<5				
5'-6'	<7.4	<5				

Note: Results of individual segments of soil profile:
 *Calculated, assuming all daughters in equilibrium and a conversion of 0.677 pCi/g: 1 ppm for uranium and 4.6 ppm: 1 pCi/g for thorium.

TABLE 1C
 SURGE LAGOON PIPING MODIFICATIONS
 RADIUM, URANIUM AND THORIUM ANALYTICAL ANALYSIS
 COMPOSITE OF CORE SAMPLES (0-6')

SAMPLE	TOTAL U* (pCi/g)	TOTAL Th* (pCi/g)	U (Wt %)	Th228 (d/m/g)	Th232 (d/m/g)	Ra226* (pCi/g)
LOC-A	<7.4	<5	U234 0.003 U235 0.46 U236 0.004 U238 99.53	35	23	3.5
LOC-B	<7.4	<5	U234 0.004 U235 0.59 U236 0.010 U238 99.39	13	22	3.7
LOC-C	8.8	<5	U234 0.003 U235 0.62 U236 0.001 U238 99.37	23	23	2.1
LOC-D	<7.4	<5	U234 0.004 U235 0.64 U236 0.006 U238 99.35	28	26	9.6
LOC-E	<7.4	<5	U234 0.004 U235 0.61 U236 0.003 U238 99.38	19	17	9.6
LOC-F	<7.4	<5	U234 0.003 U235 0.45 U236 0.004 U238 99.55	36	19	3.3

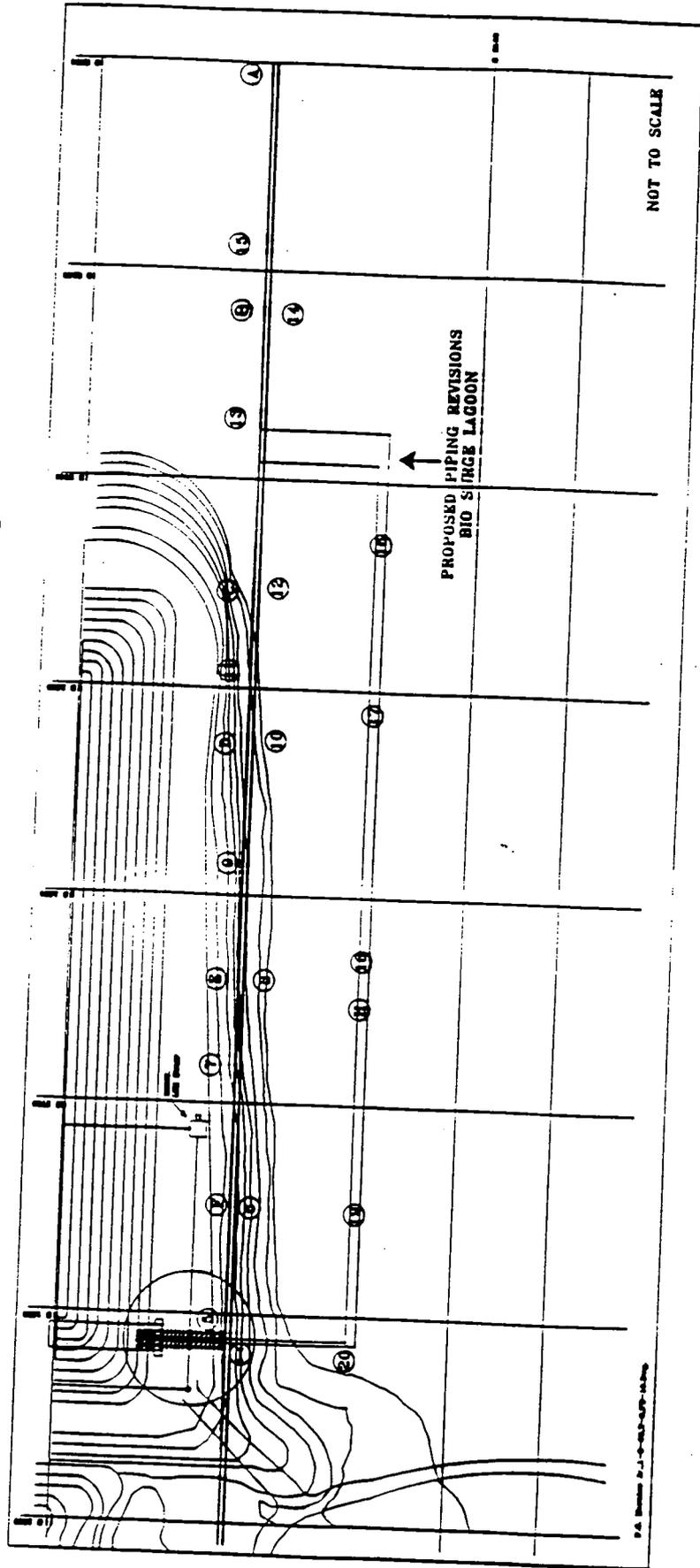
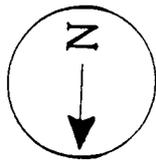
*Calculated, assuming equilibrium and conversion of 0.677 pCi/g: 1 ppm for uranium, 1 pCi/g: 4.6 ppm for thorium and 1 pCi/g: 2.2 d/m/g for Radium 226.

TABLE 2
 SURGE LAGOON PIPING MODIFICATIONS
 EP TOXICITY ANALYSIS

SAMPLE	As (mg/1)	Ba (mg/1)	Cd (mg/1)	Cr (mg/1)	Pb (mg/1)	Hg (mg/1)	Se (mg/1)	As (
2	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
3	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
16	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
18	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
20	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC A	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC B	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC C	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC D	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC E	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
LOC F	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<
H-1	<1.0	<25	<0.2	<1.0	<1.0	<0.1	<0.1	<

NOTE: SAMPLES LOC A THRU LOC F ARE COMPOSITES OF THE TOTAL BORING SAMPLES MADE AT EACH POINT

FIGURE 1
BIO SURGE LAGOON
SAMPLING PLAN
12-07-89
REFERENCE DWG.
18-89101-C002



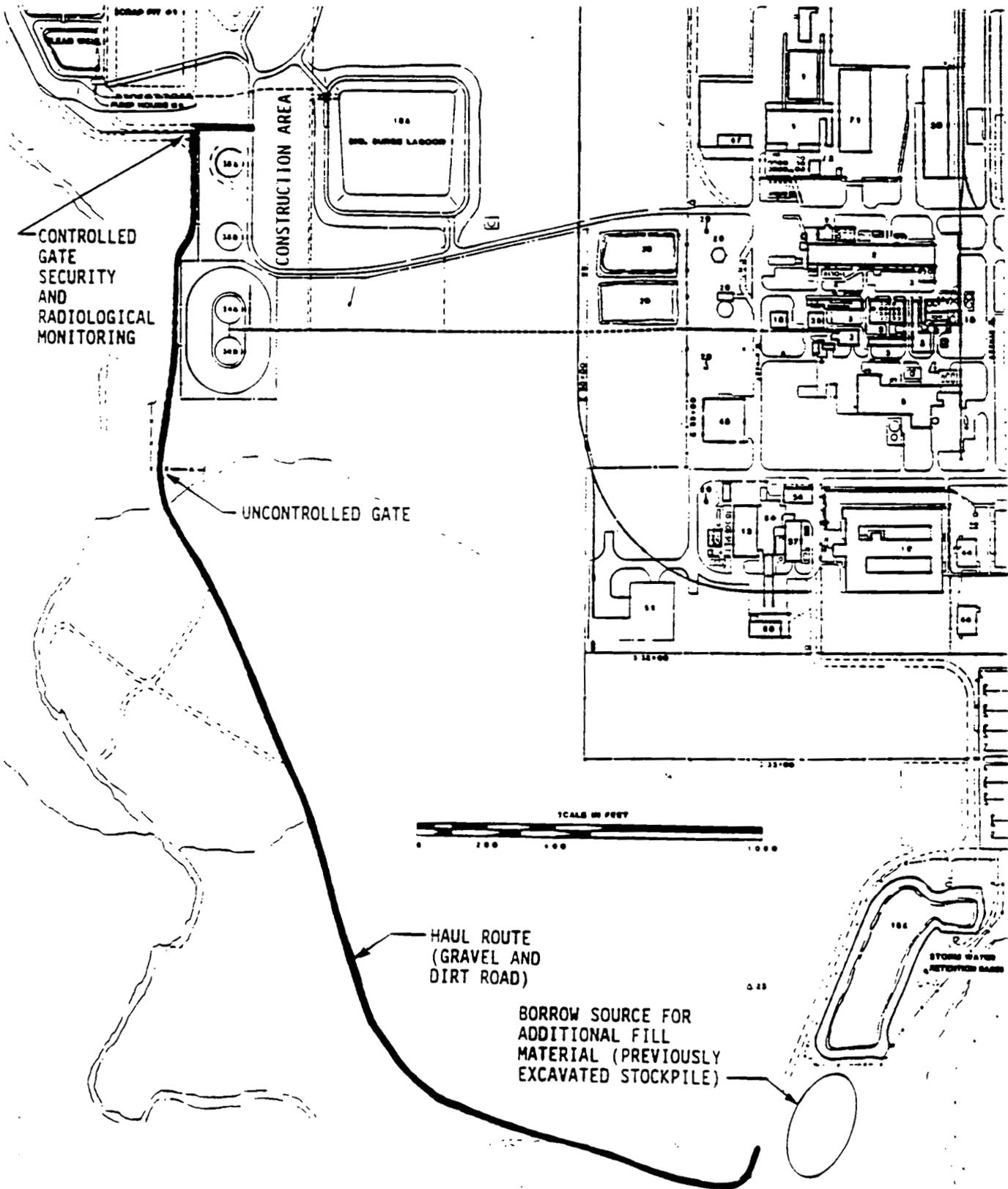
**ANALYTICAL RESULTS
FROM SOILS SAMPLED AT THE BORROW SITE
(ATTACHMENT 2)**

CONTENT:

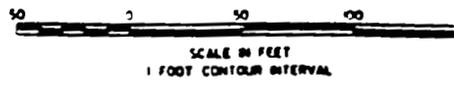
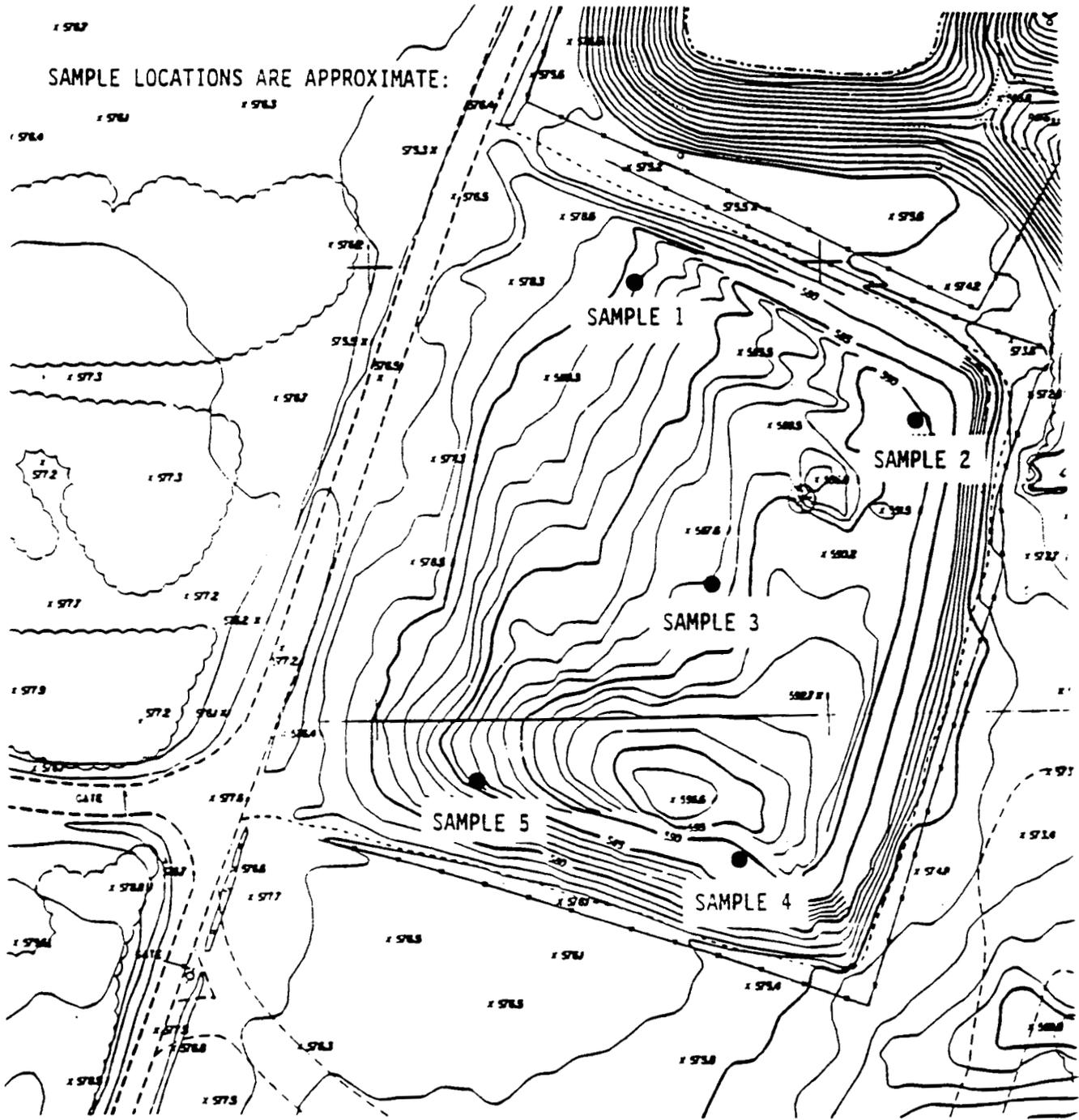
FIGURE 1..HAUL ROUTE FOR SURGE LAGOON PIPING MODIFICATION PROJECT

FIGURE 2..STORMWATER RETENTION BASIN STOCKPILE SAMPLE LOCATIONS

TABLE 1...SOIL SAMPLING RESULTS FOR THE STORMWATER RETENTION BASIN STOCKPILE



HAUL ROUTE FOR
SURGE LAGOON PIPING MODIFICATION PROJECT
(FIGURE 1)



STORMWATER RETENTION
BASIN STOCKPILE SAMPLE LOCATIONS
(FIGURE 2)

SOIL SAMPLING RESULTS FOR THE
STORMWATER RETENTION BASIN STOCKPILE
(TOTAL-U AND EP-TOX)*

TABLE 1

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>	<u>Sample 5</u>
Uranium (pCi/g)	0.7	3.4	4.0	3.3	3.8



TABLE 2

	<u>Sample 1</u>	<u>Sample 2</u>	<u>Sample 3</u>	<u>Sample 4</u>	<u>Sample 5</u>
Arsenic (ug/L)	5.4	5.3	5.3	5.8	6.2
Barium (ug/L)	82.2	84.7	65.5	63.5	27.3
Cadmium (ug/L)	1.0	1.9	1.5	1.4	1.6
Chromium (ug/L)	18.5	18.7	14.7	13.9	9.1
Lead (ug/L)	12.7	13.3	14.3	8.7	4.9
Mercury (ug/L)	0.038	0.041	0.040	0.030	0.023
Selenium (ug/L)	0.54	0.55	0.51	0.52	0.52
Silver (ug/L)	0.54	0.55	0.51	0.53	0.52

• Analysis performed in July and August 1988.