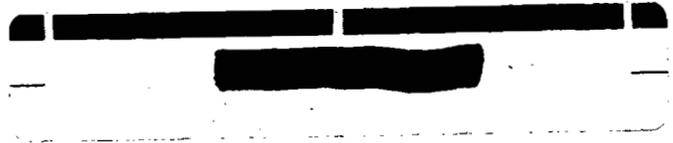


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**REMOVAL SITE EVALUATION  
DECONTAMINATION AND DECOMMISSIONING  
FACILITY ENVIRONMENTAL, HEALTH &  
SAFETY IMPROVEMENTS PROJECT OCTOBER  
1990**

**10-01-1990**

**WMCO/DOE  
WBS 1.1.3.1.03  
10  
RSE**



REMOVAL SITE EVALUATION

DECONTAMINATION AND DECOMMISSIONING FACILITY

ENVIRONMENTAL, HEALTH & SAFETY IMPROVEMENTS PROJECT

WBS 1.1.3.1.03

Feed Materials Production Center  
U.S. Department of Energy

October 1990

**Introduction:** The Decontamination and Decommissioning Facility (D&D) subproject is part of the Environmental, Health and Safety Improvements (EHSI) Line Item project. The site of this subproject is located in the north-eastern corner of the FMPC process area. (See Attachment No. 1)

Excavation will be performed on this subproject in order to construct building footings, roadways, walkways and various building mechanical appurtenances. Soil from the various project excavations will be used as backfill and general fill on the project.

This Removal Site Evaluation (RSE) has been completed by the DOE under authorities delegated by Executive Order 12580 under Section 104 of CERCLA and is consistent with Section 300.410 of the National Oil and Hazardous Substance Pollution Contingency Plan (NCP). This RSE addresses the excavation for construction of the new D&D Facility and has been completed to support the decision as to whether the subproject conditions warrant a removal action.

**Source Term:**

Various field investigations have revealed the presence of uranium contamination in the soils above background levels at the new D&D site. ("Determination of Concentration of Selected Radionuclides in Surface Soils in the U.S." Myrick, T.E. et al, Health Physics, Vol. 45(3):631-642, 1983.) The attachments referenced in the next section provide data as to soil sample locations, soil sample depths and soil sample analytical results. This data includes the results of analyses for uranium by FIDLER probe, laboratory analyses for uranium, laboratory analyses for EP Toxic metals and Hnu analyses for hazardous organic vapors. The aforementioned analyses did not reveal uranium concentrations above FMPC Category 1 limits, the presence of hazardous organic vapors, nor the presence of EP Toxic metals above detectable limits.

**Evaluation of the Magnitude of the Potential Threat:**

As part of the Decontamination and Decommissioning Facility subproject and other site investigative activities, multiple characterizations of the subproject site have been performed.

Surface characterization by FIDLER probe of the entire site and two bulldozer swaths cut across the site were made. Three isolated areas of elevated surface uranium contamination were found at approximately 53+58 E, 12+63 S FMPC coordinates. These three areas of surface contamination were removed from the subproject site between May 1988 and January 1989.

Evaluation of the Magnitude of the Potential Threat: (continued)

As part of the RI/FS investigations, a 50 ft. x 50 ft. grid with 28 grid locations was established across the new D&D site. This grid was based upon State of Ohio coordinates 481,200 N through 481,500 N and 1,381,850 E through 1,382,000 E. These State of Ohio coordinates correspond approximately to FMPC coordinates 53+12.82 E and 14+39.85 S in the south-west corner of the sampling grid and 54+54.55 E and 11+35.88 S in the north-east corner of the sampling grid. Three additional sample locations were established approximately on State of Ohio line 1,381,920 E at lines 481,200 N, 481,250 N and 481,300 N. Soil samples were secured at depths of 12", 24" and 36" at each sample or grid point. All soil samples were analyzed for uranium content and hazardous organic vapors. Forty-six (46) out of the 105 soil samples were analyzed for EP toxic metals. All analyses for uranium revealed no contamination of site soils above the FMPC 720, Category I limit of 30 pCi/g. Uranium contamination concentrations utilized in this document have been provided in parts per million (ppm). In order to determine the radiological activity levels for the various uranium concentrations, it was assumed the uranium contaminant contained 0.5% U-235. This assumption is supported by an FMPC study of contaminated trash and soil. The maximum uranium contamination level detected at the D&D site is 43 ppm or 29 pCi/g with an average of 14 ppm or 10 pCi/g. The aforementioned data represents samples taken at an average 12 inch depth at the indicated sample locations. Uranium contamination decreases to a maximum concentration of 9.6 ppm or 6 pCi/g at 24 inches of depth and to a maximum concentration 6.8 ppm or 5 pCi/g at 36 inches. (See Attachment No. 2)

Analysis for EP toxic metals did not reveal the presence of any of the eight primary metals above detectable limits in any sample. No hazardous organic vapors were detected at any sample location or depth.

Historical records and aerial photographs indicate no prior use of the project site. Based upon the above analytical data, only uranium contamination possibly carried to the project site by the wind is indicated. No other type of contamination is indicated or anticipated.

In consideration of the aforementioned data, the threat of a release of hazardous materials to the environment is low. Two routes of possible contamination exist; 1) distribution of contaminated soil by the wind, and 2) transportation of contaminated soils by run-off water. In order to prevent these possible avenues of contamination, normal construction dust control and run-off control procedures will be utilized during construction. Dust will be controlled during dry weather by wetting the surface of the soil in the work area and the project site shall be graded during construction to prevent run-off from exiting the project site in patterns different than currently existing.

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).

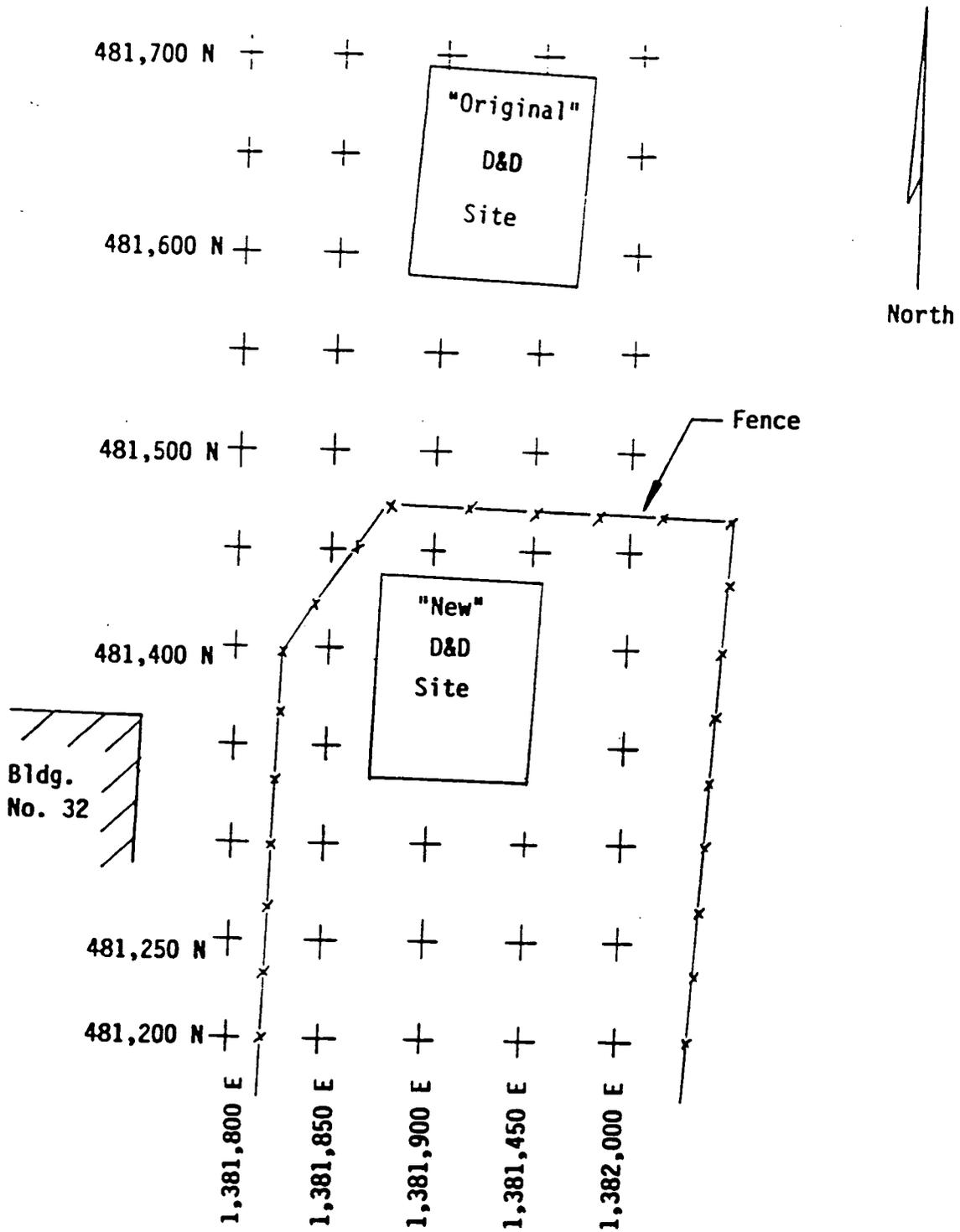
Based on the sampling data presented herein and the controls proposed, none of the eight factors listed in the NCP are applicable to the Decontamination and Decommissioning Facility subproject.

Appropriateness of a Response:

If a planning period of less than six months exists prior to initiation of a response action, DOE will issue an Action Memorandum. The Action Memorandum will describe the selected response and provide supporting documentation for the decision.

If it is determined that there is a planning period greater than six months before a response is initiated, DOE will issue an Engineering Evaluation/Cost Analysis (EE/CA) Approval Memorandum. This memorandum is to be used to document the threat to public health and the environment and to evaluate viable alternative response actions. It will also serve as a decision document to be included in the Administrative Record.

Significant site characterization activities completed to support the Decontamination and Decommissioning Facility subproject indicate only a minor potential for release of hazardous materials to the environment. This potential for release can be mitigated by general dust control and run-off control procedures during construction. Therefore, any potential threat of release of hazardous materials to the environment will be controlled and a removal action is not required.



DECONTAMINATION AND DECOMMISSIONING FACILITY

Location Map

DECONTAMINATION AND DECOMMISSIONING FACILITY  
REMOVAL SITE EVALUATION  
URANIUM CONTAMINATION DATA

SEPTEMBER 28, 1990

* SAMPLE LOCATION	12" DEPTH (ppm)	12" DEPTH (pCi/g)	24" DEPTH (ppm)	24" DEPTH (pCi/g)	36" DEPTH (ppm)	36" DEPTH (pCi/g)
1	22	15	**	**	**	**
2	26	18	**	**	**	**
3	10	7	**	**	**	**
4	38	26	**	**	**	**
5	21	14	**	**	**	**
6	<5	3	2.1	1	5.2	4
7	17	11	1.6	1	1.7	1
8	7.4	5	**	**	**	**
9	**	**	**	**	**	**
10	12	8	3.8	3	2.1	1
11	16	11	2.3	2	2.5	2
12	<5	3	**	**	**	**
13	43	29	**	**	**	**
14	14	9	2.3	2	2.8	2
15	12	8	<5	3	<5	3
16	<5	3	**	**	**	**
17	9.9	7	**	**	**	**
18	15	10	4.7	3	6.8	5
19	9	6	5.1	3	**	**
20	19	13	<5	3	<5	3
21	9.6	6	**	**	**	**
22	6.2	4	**	**	**	**
23	15	10	**	**	**	**
24	5.2	4	<5	3	**	**
25	<5	3	**	**	**	**
26	20	14	**	**	**	**
27	21	14	9.6	6	**	**
28	<5	3	<5	3	**	**
29	13	9	<5	3	**	**
30	<5	0	<5	3	**	**
31	20	14	<5	3	**	**
AVERAGE	14.4	9.7	4.4	2.8	3.9	2.6

NOTE: THE FMPC SITE PROCEDURE-720, CATEGORY 1 LIMIT FOR URANIUM CONTAMINATION IS 30 pCi/g. THIS LIMIT IS CONSISTANT WITH THE NUCLEAR REGULATORY COMMISSION BRANCH TECHNICAL POSITION ON URANIUM CONTAMINATION.

- PLEASE FIND ATTACHED SAMPLE LOCATION KEY.
- \*\* DENOTES THAT NO SAMPLE WAS TAKEN.

SOURCE: FEED MATERIALS PRODUCTION CENTER REMEDIAL INVESTIGATION AND FEASIBILITY STUDY-TASK 3.8

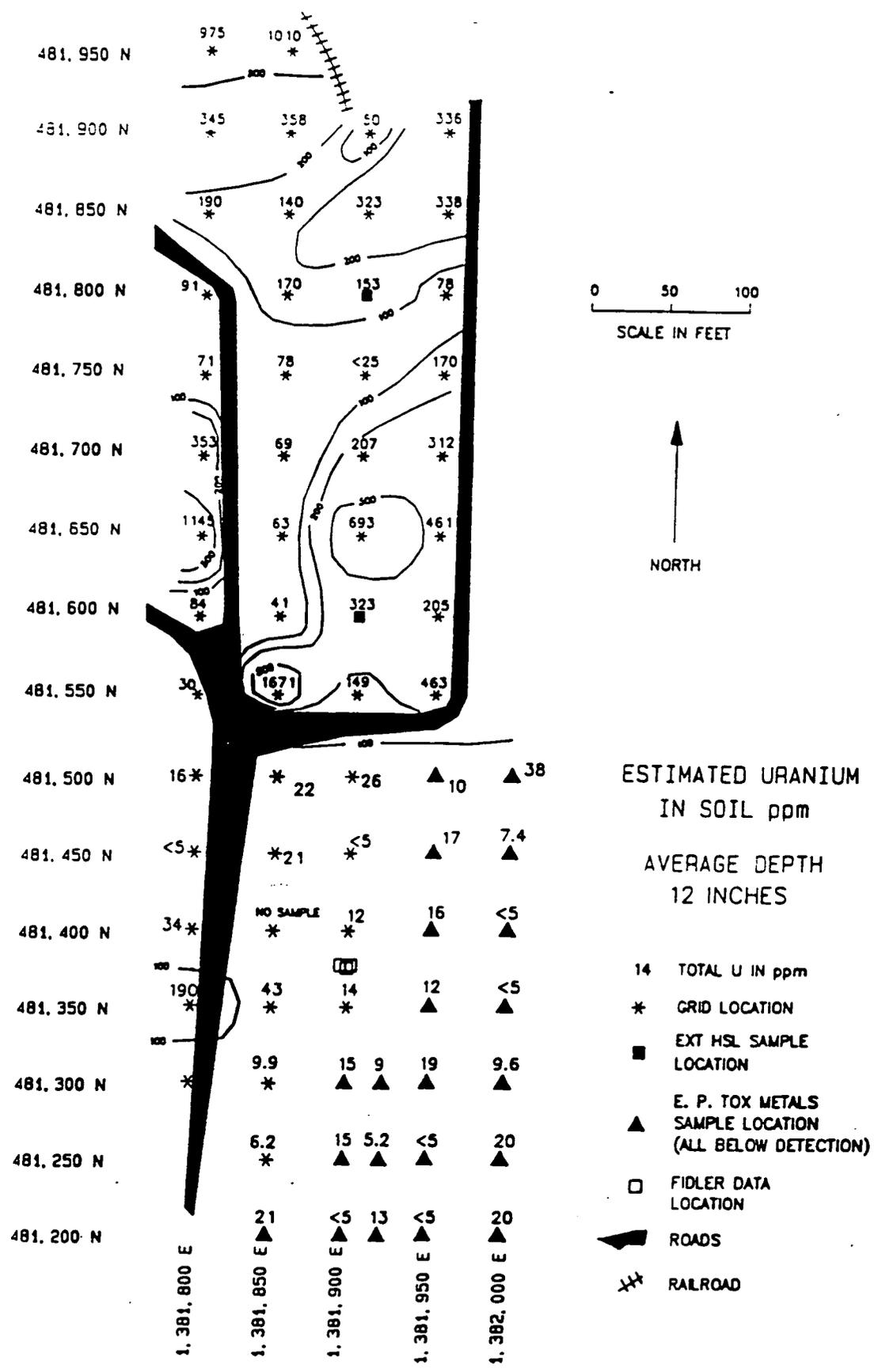
DECONTAMINATION AND DECOMMISSIONING FACILITY  
REMOVAL SITE EVALUATION  
SAMPLE LOCATION KEY

SEPTEMBER 28, 1990

	1,381,850 E	1,381,900 E	1,381,925 E	1,381,950 E	1,382,000 E
481,500 N	1	2		3	4
481,450 N	5	6		7	8
481,400 N	9	10		11	12
481,350 N	13	14		15	16
481,300 N	17	18	19	20	21
481,250 N	22	23	24	25	26
481,200 N	27	28	29	30	31

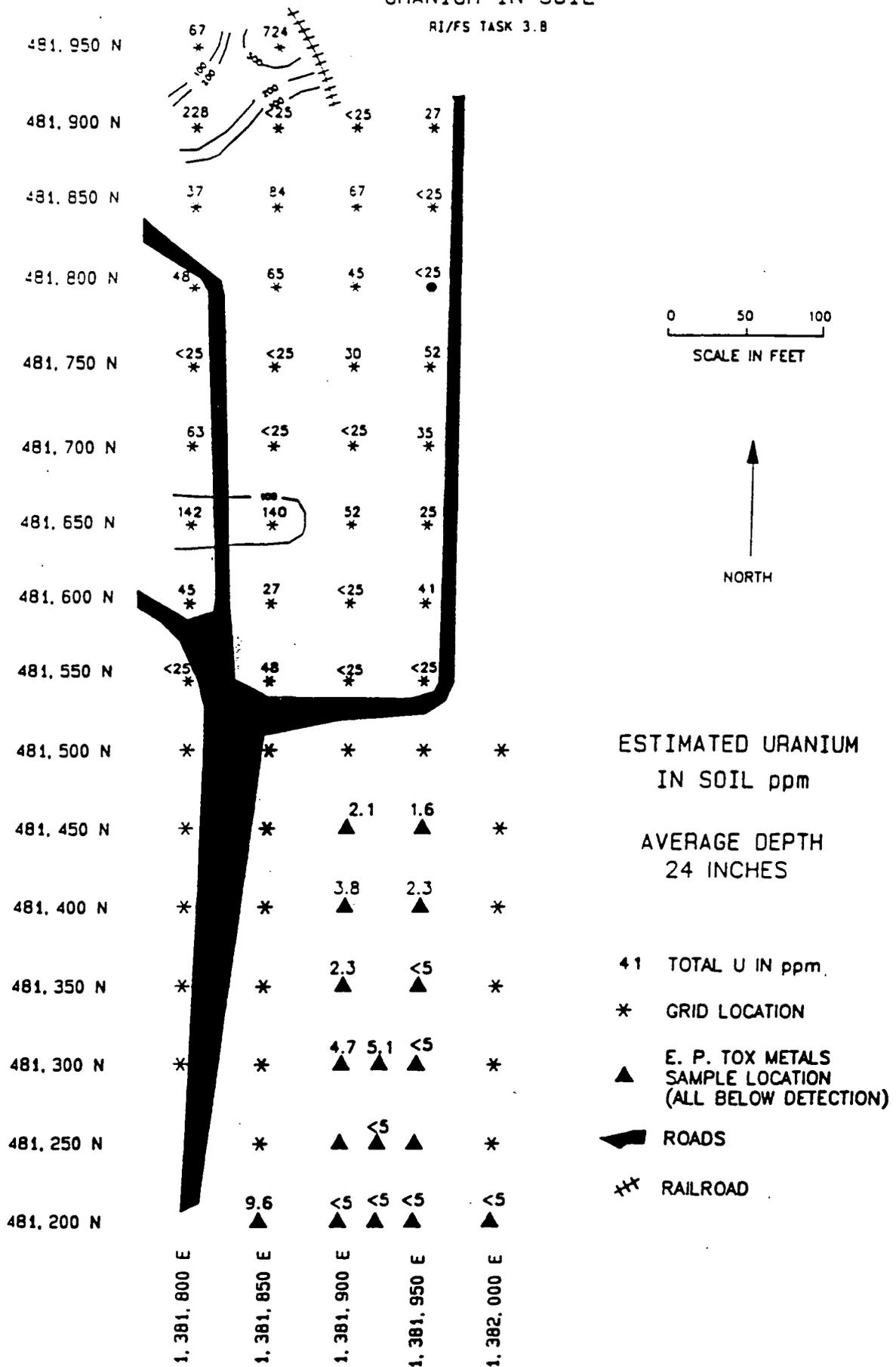
NOTE: ALL LOCATIONS ARE DENOTED IN STATE OF OHIO COORDINATES.

FORMER DRUM-BALING AREA  
 URANIUM IN SOIL  
 RI/FS TASK 3.8



FORMER DRUM BALING AREA  
URANIUM IN SOIL

RI/FS TASK 3.8



ESTIMATED URANIUM  
IN SOIL ppm

AVERAGE DEPTH  
24 INCHES

41 TOTAL U IN ppm.

\* GRID LOCATION

▲ E. P. TOX METALS  
SAMPLE LOCATION  
(ALL BELOW DETECTION)

▬ ROADS

✂ RAILROAD

FORMER DRUM BALING AREA  
URANIUM IN SOIL

RI/FS TASK 3.8

