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WALKOVER SCAN
OF
SEAWAY, ASHLAND 1, ASHLAND 2
TOMAHAWKA, NY

July 28 - August 12, 1986

WORK PERFORMED BY:

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UNDER SUBCONTRACT 14501-SC-1
FOR BECHTEL NATIONAL, INC.
OAK RIDGE, TENNESSEE

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SEAWAYGRID SYSTEM

A baseline was established along the eastern property line of SEAWAY and numbered starting at 0+00 to 45+00. A station was measured on the ground every 100' and marked with surveyors orange ribbon, red paint or pin flag for reference during the scan. One property corner was located at the intersection with River Road right-of-way. The baseline was established east of this point until its intersection with turning point at 11+48. This turning point was found as a hub and iron pipe on the ground. Measurement error at this point was less than 5 feet. The baseline continues at this point (11+48) to the end of the property (45+00±) as baseline and property line being the same line. The property line is also the center of a wood pole power line with telephone underbuild. Conversation with surveyors on site confirmed this to be the property line.

A small amount of additional grid was established due to the time allotted for scanning and the difficulty in establishing a grid in the high grass.

For the purpose of establishing a control for areas "A" and "B", a line was extended 400' to the right from 17+00 to 20+00. For establishing control for area "C", a line was extended 800' to the right from 17+00 to 21+00. Accuracy in these extensions is believed to be ±30 feet.

SCAN METHOD

Areas were scanned using Eberline ratemeter/scaler models PRS-1 and NAI scintillation probe model SPA-3. Paths of scan were 10'-15' apart with the probe being passed about 2-6" above ground level.

RESULTS OF SURFACE SCAN WALKOVER

The 1976 ORNL Survey indicated three areas of contamination designated areas "A", "B", and "C" as presented in Figure 1. Figure 1 also presents the area of Seaway, Ashland 1, and Ashland 2 that were included in the scan survey. Areas of external gamma radiation levels based on the survey conducted by Oak Ridge National Lab in 1978 are presented in Figure 2. Radiation levels based on the 1986 survey are presented in Figure 3.

The walkover results indicated:

Area "A" in the SE and SW area appears to have been disturbed by the placement of overburden and/or grading and shaping. In the NE section sloping towards Niagara-Mohawk property, migration of material down the bank appears to have occurred. This migration was present in 1978 as evidenced by the small area of elevated external gamma radiation levels northeast of area A (see Figure 2). Dozer tracks were noted at various places in this area and appear to be created in the past year.

Area "B" could not be found by surface scanning. Comparison of the 1976 with the 1986 topo map indicated that this area is now under the fill material to an undetermined depth. The presence or absence of the original contaminated material could not be verified.

Area "C" could not be found by surface scanning. Comparison of the 1976 with the 1986 topo map indicates that this area is now under the fill material, possibly up to 40' in some areas. The presence or absence of the original contaminated material could not be verified.

Area of Drainage onto Niagara-Mohawk property as indicated on ORNL survey still exists on the NE side in the drainage ditch. Evidence of road work and bank shaping appears to have disturbed some of this area. Possible migration of this area may have extended farther onto the Niagara-Mohawk property.

Area Adjacent to Ashland #1 property in the SW corner has been disturbed due to installation of a 4' bentonite wall around the SEARAY property and by shaping of a drainage ditch in this area. Much of this area could not be located. Some contamination was observed in the bottom of the ditch. Most of this area is now clay covered.

TOPO MAPS AVAILABLE

Two copies each of three topo maps showing contour intervals for SEARAY were obtained from Dave Hansen of BFI. These maps are:

- 1) EXTENT OF RADIOACTIVE RESIDUE DEPOSITION, September 7, 1976 by Mehran Engineering.

- 2) OPERATIONAL SEQUENCE PLAN, Sheet 14 of 22 August 17, 1982 by Mehran Engineering.
- 3) Untitled Map dated 4/18/86 by Dewberry and Davis One.

INTERFACE WITH OWNER/OPERATORS

A meeting was held between Reg Smith (TMA/Eberline), [REDACTED] (property owner) and [REDACTED] (Assistant Manager, BFI) at the SEAWAY Site on August 8, 1986. It was indicated to [REDACTED] the following:

- 1) We performed a walk over scan only and not a characterization.
- 2) We were able to determine contamination levels at or near the surface only and could not determine if contaminated materials existed beneath the surface.
- 3) We were unable to locate areas "B" and "C" and our interpretation of topo maps provided by Dave Hansen (BFI) indicated that those areas were possibly under the landfill.
- 4) We noted some additional migration of materials into the stream across Niagara-Mohawk.
- 5) We could not make decisions or recommendations concerning the site but could present data from the scan only.

OTHER COMMENTS

The landfill has had a 4' bentonite wall placed around the perimeter and connects the base clay with the clay cap that has been installed. This cap is said to be 1' to 2' thick maximum per Sean Irwin. This clay contains much gravel and may not pass permeability standards for radioactive materials. The clay cap placed over area "B" was installed in 1985 per BFI site supervisor [REDACTED]

ASHLAND #1GRID SYSTEM

The ORNL grid used in 1976 was used as a base for the 1986 walkover scan. The grid was not completely re-established but was referenced to existing landmarks on the site. This grid is designated N & S as 1-13 and E & W as A-E grid points.

SCAN METHOD

Areas were scanned using Eberline ratemeter/scaler models PRS-1 and MAI scintillation probe model SPA-3. Paths of scan were 10'-15' apart with the probe being about 2-6" above ground level.

RESULTS OF SURFACE SCAN WALKOVER

The ORNL survey divided the area into three sections: Section NW, Section N, and Section SE as presented in Figure 4. External gamma radiation profiles based on the 1976 ORNL survey are presented in Figure 5. Profiles based on the 1986 scan survey are presented in Figure 6.

Section SE appears to have had 2"-4" gravel placed over some of the area. Some areas were not found as indicated on the original, while several new areas were located.

Section N has a large area in the "tank dike bottom" that was not located. Operators at the site say no gravel or work has been done since 1976. A new area in the bank of the south dike was located. This appears to be a layer 1'-2' thick.

Section NW has had some concrete and gravel dumped from the asphalt road along the western edge of the survey, and gravel has been placed in the northern end of this section for the purpose of storing scrap materials.

Area NN of Section NW along the east property line shows some indication of road work and has disturbed some contaminated area. The water flow from the NW Section flows in a ditch adjacent to the east property line and turns east to a concrete pipeline and then flows under SEARAY to the Niagara-Mohawk property. A contaminated area was noted at the turning point and along the ditch prior to the turning point.

ASHLAND #2GRID SYSTEM

A baseline was established along the western property line border with Niagara-Mohawk. This line was actually measured down the gravel road from River Road and projected to the baseline. A grid line was also established across 19+00 to the left to 700' left of the baseline.

SCAN METHOD

Areas were scanned using Eberline ratemeter/scaler models PRS-1 and NAI scintillation probe model SPA-3. Paths of scan were 10'-15' apart with the probe being passed about 2-6" above the ground level. Some areas of high, thick brush were scanned as was accessible.

RESULTS OF SURFACE SCAN WALKOVER

The original area designated Ashland #2 is outlined on a copy of an aerial photograph (scale 1"=600'), and measures 1600' by 800'. The entire area was not accessible to scanning due to heavy brush, and swamp. One portion is designated by Ashland Oil as "Fill Area" on their property maps. Although other areas have obviously had some dumping, only the designated "Fill Area" showed evidence of contamination.

Fill Area is noted as 600' x 500' on the Ashland Oil maps. A clay cap has been placed on the Western portion of the Fill. The Eastern portion has not been capped and exhibits gamma reading up to 140 μ R/hr. This contaminated area extends down the slopes of the "Fill Area" running into water/swamp at two locations:

- 1) to the Northwest with readings to 90+ μ R/hr.
- 2) to the East of unknown extent into swamp with readings to 55 μ R/hr.

Estimated area of known contamination is at least 2 acres as presented in Figure 1. Two soil samples were taken by ORNL in January of 1980. These indicated Radium concentrations of 30 and 70 pCi/gm and uranium concentrations of 160 and 1100 pCi/gm.

This area of contamination appears to extend onto an adjacent property owned by Benson Development Co. (owner [REDACTED]).

INTERFACE WITH ASHLAND OIL REPRESENTATIVES

On August 12, 1986 a meeting was held between [REDACTED] [REDACTED] (TMA/Eberline), [REDACTED] [REDACTED] e and [REDACTED] (Ashland Oil on-site personnel). It was indicated to [REDACTED] [REDACTED] the following:

- 1) We performed a walk over scan only and not a characterization.
- 2) We were able to determine contamination levels at or near the surface only and could not determine if contaminated materials existed beneath the surface.
- 3) We found some differences in the Ashland #1 property from the 1976 ORNL characterization.
- 4) We noted a large contaminated area to the east of their clay cap on the Ashland #2 "Fill Area".
- 5) We believe it is possible that the contaminated area may extend onto property owned by [REDACTED].

[REDACTED] [REDACTED] indicated to [REDACTED] [REDACTED] the following:

- 1) The clay cap was installed in two sections - the SE area in 1980, the NW area in 1984,
- 2) the clay is 2' thick,
- 3) all fill material was taken by the gravel haul road out the rear gate on the former Haist property.

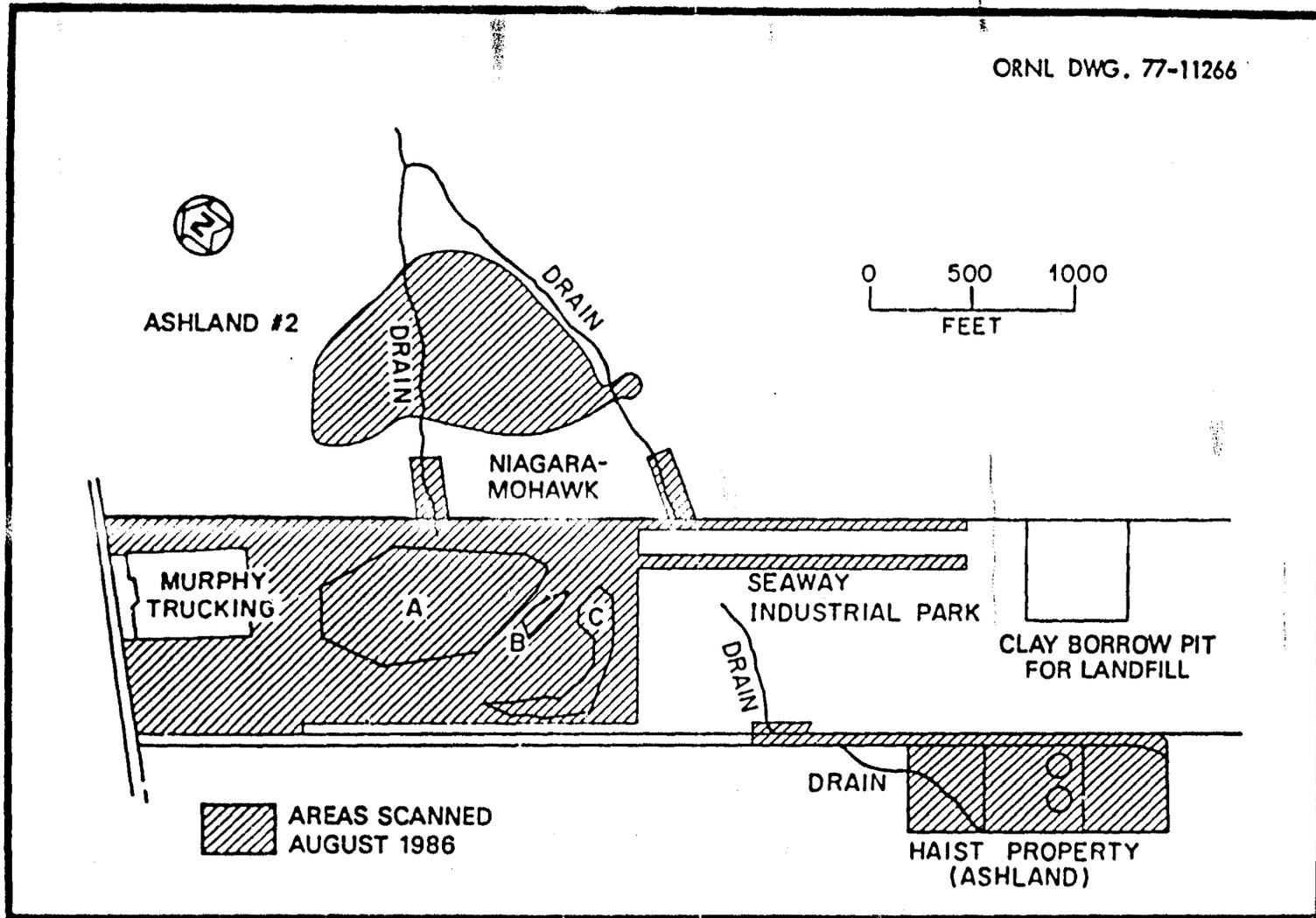


FIGURE 1 SURFACE AREAS OF SEAWAY, ASHLAND 1 AND 2, AND NIAGARA-MOHAWK PROPERTIES SURVEYED IN 1986

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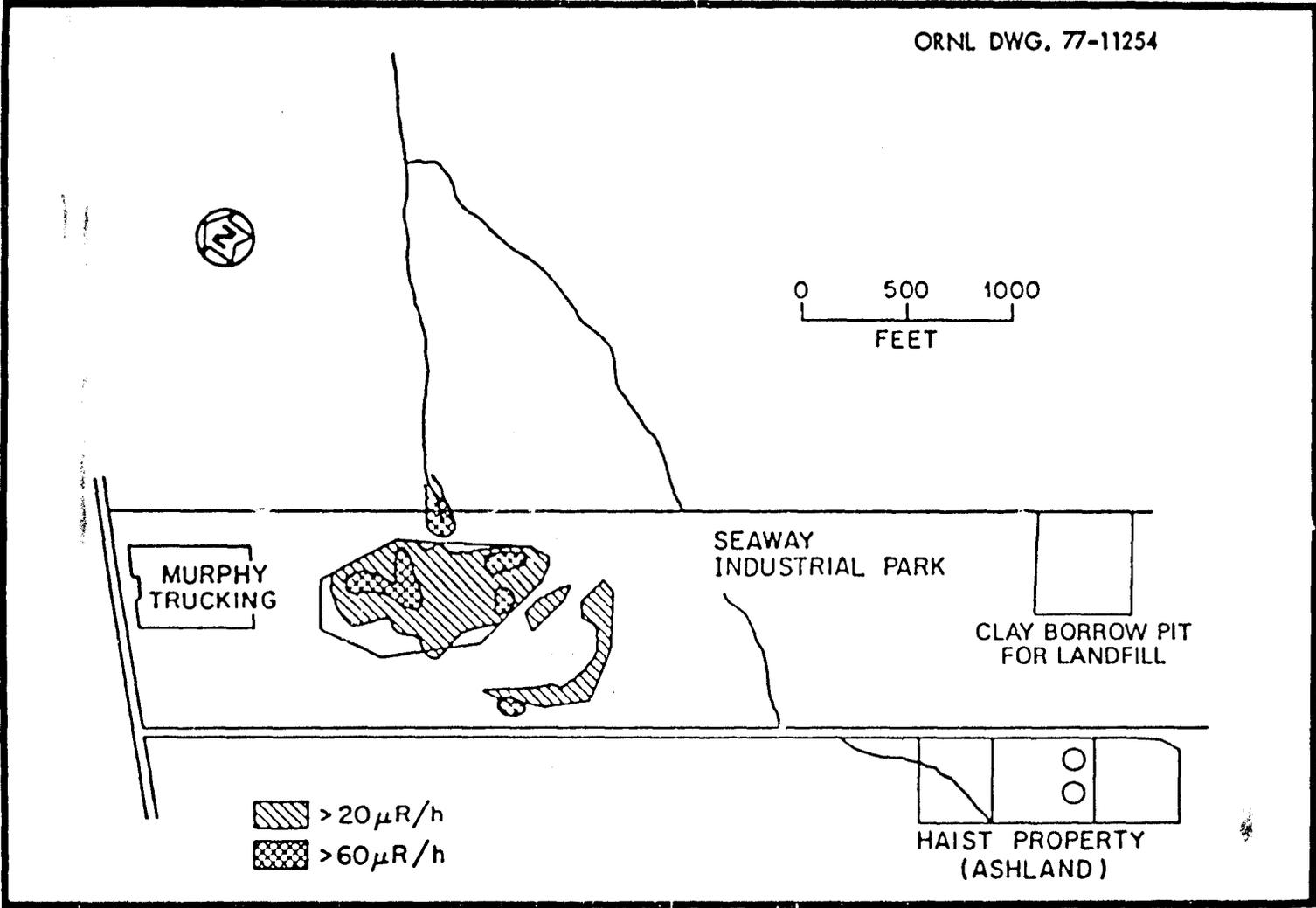


FIGURE 2 AREAS OF ELEVATED EXTERNAL RADIATION ON SEAWAY BASED ON 1976 ORNL SURVEY

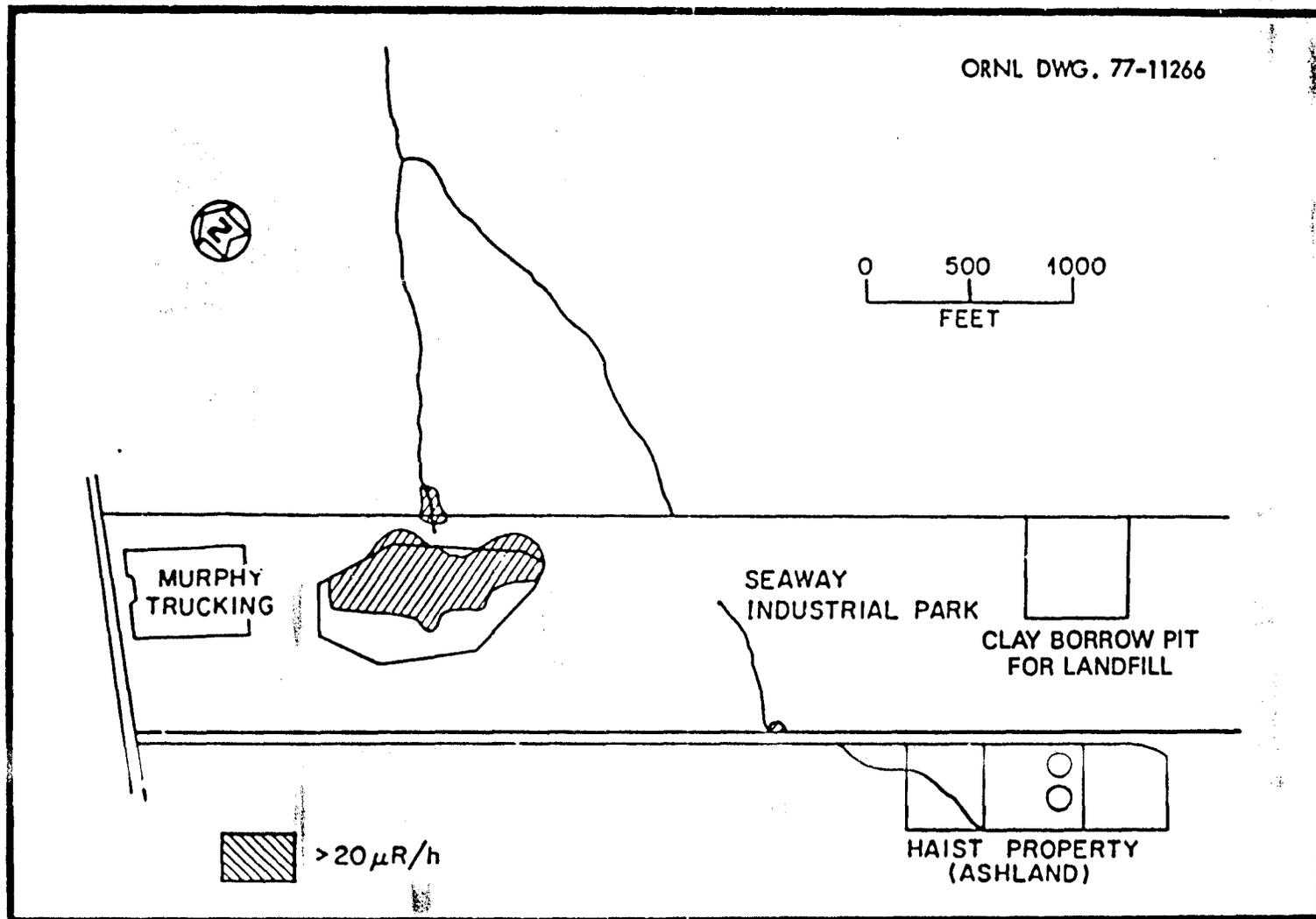


FIGURE 3 AREAS OF ELEVATED EXTERNAL RADIATION ON SEAWAY BASED ON 1986 SURVEY

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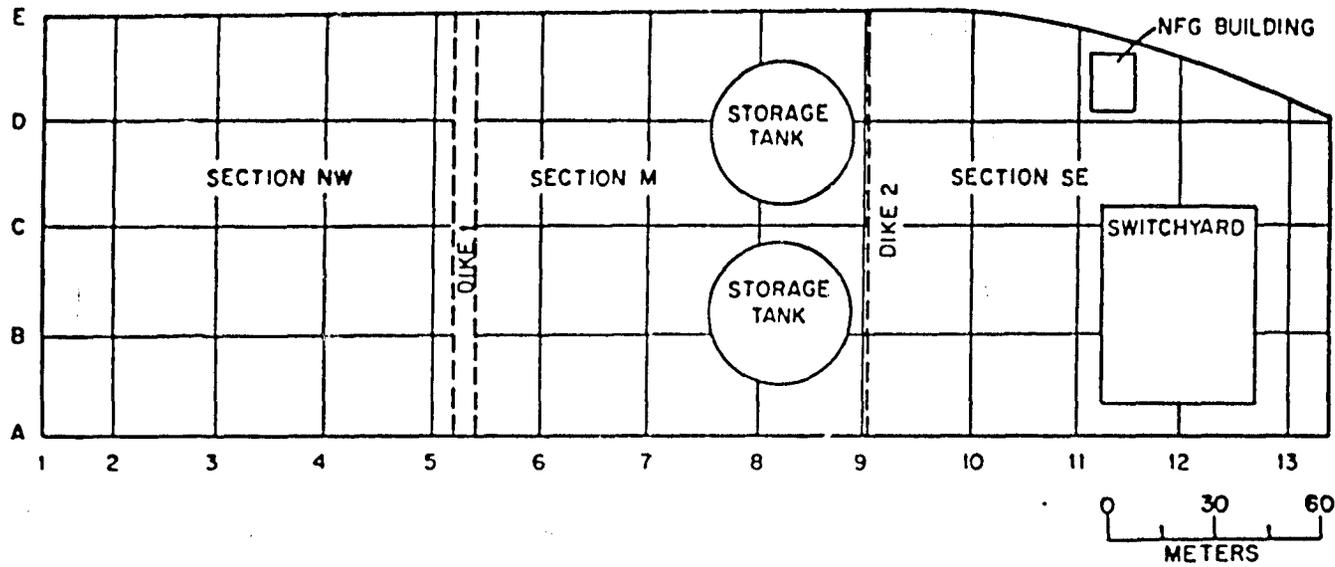


FIGURE 4 PLOT PLAN OF ASHLAND 1

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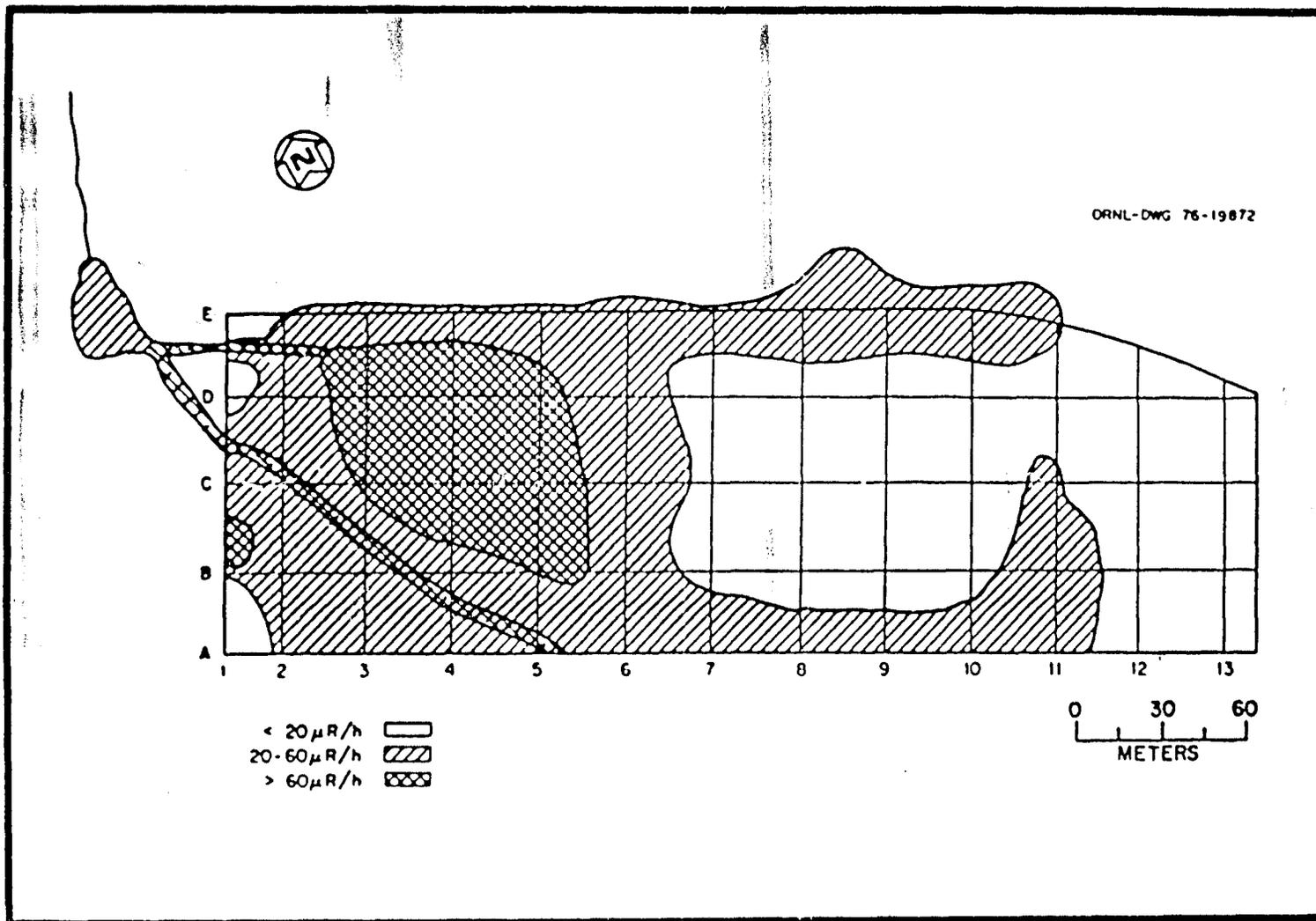


FIGURE 5 EXTERNAL RADIATION PROFILE OF ASHLAND 1 BASED ON 1976 ORNL SURVEY

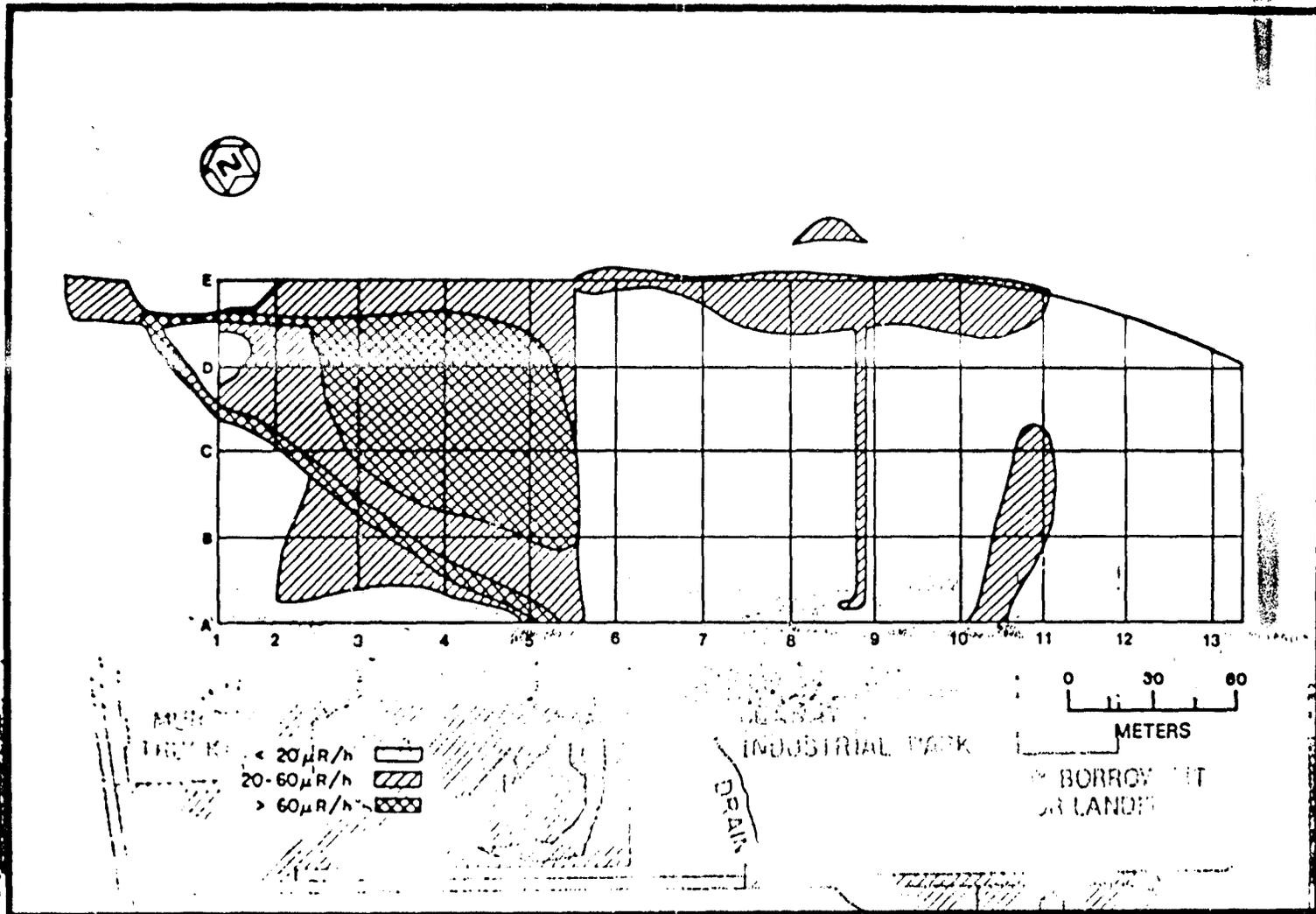


FIGURE 6 EXTERNAL RADIATION PROFILE OF ASHLAND 1 BASED ON 1986 SURVEY

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