

# Quarterly Environmental Radiological Survey Summary

Fourth Quarter 1995 100, 200,  
300, and 600 Areas

S. M. McKinney

B. M. Markes

Date Published

January 1996

Prepared for the U.S. Department of Energy  
Office of Environmental Restoration and  
Waste Management



**Westinghouse  
Hanford Company**

P.O. Box 1970  
Richland, Washington

Management and Operations Contractor for the  
U.S. Department of Energy under Contract DE-AC06-87RL10930

Approved for Public Release

**MASTER**

DISTRIBUTION OF THIS DOCUMENT IS UNLIMITED

*td*

## **DISCLAIMER**

**This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.**

**DISCLAIMER**

**Portions of this document may be illegible in electronic image products. Images are produced from the best available original document.**

## RELEASE AUTHORIZATION

**Document Number:** WHC-SP-0665-19

**Document Title:** Quarterly Environmental Radiological Survey Summary  
Fourth Quarter 1995 100, 200, 300, and 600 Areas

**Release Date:** 1/30/96

**This document was reviewed following the  
procedures described in WHC-CM-3-4 and is:**

**APPROVED FOR PUBLIC RELEASE**

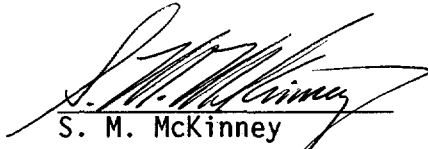
**WHC Information Release Administration Specialist:**

  
Kara M. Broz

January 30, 1996

APPROVAL PAGE

PREPARED BY

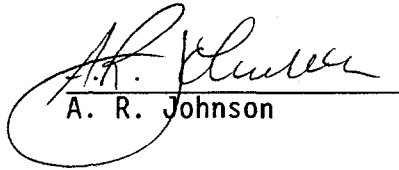
  
S. M. McKinney

1-29-96  
Date

  
B. M. Markes

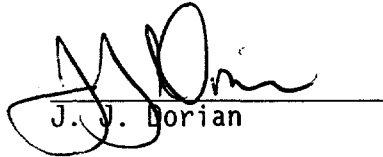
1/29/96  
Date

REVIEWED BY

  
A. R. Johnson

01.29.96  
Date

APPROVED BY:

  
J. J. Dorian

1/27/96  
Date

WHC-SP-0665-19

QUARTERLY  
ENVIRONMENTAL RADIOLOGICAL SURVEY SUMMARY  
100, 200, 300, 400, and 600 Areas

4th Quarter 1995

S. M. McKinney  
B. M. Markes

ENVIRONMENTAL MONITORING AND INVESTIGATIONS  
NEAR-FIELD MONITORING

EXECUTIVE SUMMARY

This report provides a summary of the radiological surveys performed in support of the operational environmental monitoring program at the Hanford Site. The Fourth Quarter 1995 survey results and the status of actions required from current and past reports are summarized below:

- All the routine environmental radiological surveys scheduled during October, November, and December 1995 were completed with the exception of one waste site in the 100-N area and ten waste sites in the 100-B/C areas which were undergoing either decommissioning or remediation.
- Four hundred fifty two environmental radiological surveys were performed during 1995, one hundred forty five at the active waste sites and three hundred seven at the inactive waste sites. Contamination above background levels was found at thirty three of the active waste sites and thirty five of the inactive waste sites. Contamination levels as high as >1,000,000 disintegrations per minute (dpm) were reported. Of these contaminated surveys eighteen were in a Surface Contamination (SC) area and fifty were in Underground Radioactive Material (URM) areas or radiologically controlled areas (RCA). The contamination found within thirty four of the URM areas was immediately cleaned up and no further action was required. In the remaining twenty sites the areas were posted and will require decontamination. Radiological Problem Reports (RPR's) were issued and the sites were turned over to the landlord for further action if required.
- During 1995, 53.3 hectares (131.7 acres) were stabilized and radiologically down posted from SC to URM or released from posting.
- No Compliance Assessment Reports (CARs) were issued for sites found out of compliance with standards identified in WHC-CM-7-5, Environmental Compliance.
- Six Surveillance Compliance/Inspection Reports (SCIR) were closed during 1995.
- Five open SCIRs had not been resolved.

Responsibilities for the unresolved SCIRs are as follows:

| <u>LANDLORD</u>            | <u>OPEN SCIR/CAR</u> |
|----------------------------|----------------------|
| PUREX                      | 1                    |
| Tank Farm Operations (TFO) | 4                    |

TOP TEN PRIORITY RANKING

Below is a listing of the top ten waste sites in order of highest priority ranking for contamination control. The waste site may have an open SCIR or CAR identifying the contamination. An explanation of the prioritization system is on page 12 of this report. Priority rankings of the open SCIRs and CARs are listed in Table 2.

|     | <u>SITE</u>                         | <u>CUSTODIAN</u> | <u>SCIR/CAR</u> |
|-----|-------------------------------------|------------------|-----------------|
| 1.  | 241-C Tank Farm Perimeters          | TFO              | 9008EP200-068   |
| 2.  | 241-B Tank Farm Perimeters          | TFO              | 8909EP200-036   |
| 3.  | 241-BX-BY Tank Farm Perimeters      | TFO              | 9007EP200-056   |
| 4.  | 241-S, SX, SY Tank Farm Perimeters  | TFO              | 9208ERI-006     |
| 5.  | UN-216-E-16 TC-4 R.R. Spur          | PUREX            | 8901EP200-001   |
| 6.  | UN-216-E-6 241-BX-155 Diversion Box | TFO              | NONE            |
| 7.  | UN-216-W-35 207-U Retention Basin   | ERC              | NONE            |
| 8.  | 207-T Retention Basin               | TFO              | NONE            |
| 9.  | 216-B-64 Basin                      | B-Plant          | NONE            |
| 10. | 207-A Retention Basin               | TFO              | NONE            |



TABLE OF CONTENTS

EXECUTIVE SUMMARY . . . . . i

TOP TEN PRIORITY RANKING . . . . . ii

1.0 INTRODUCTION . . . . . 1

    AREA RADIOLOGICAL CONTAMINATION ILLUSTRATIONS . . . . . 2-11

2.0 PROGRAM DESCRIPTION . . . . . 12

    2.1 ENVIRONMENTAL RADIOLOGICAL SURVEY PROGRAM OBJECTIVES . . . 12

    2.2 PRIORITY RANKING SYSTEM . . . . . 12

    2.3 ENVIRONMENTAL STANDARDS . . . . . 13

    2.4 COMPLIANCE ASSESSMENT REPORTS . . . . . 15

    2.5 SURVEY METHODS AND PROCEDURES . . . . . 15

        2.5.1 ROAD SURVEYS . . . . . 15

        2.5.2 WASTE SITES AND OTHER RADIOLOGICAL AREA SURVEYS . . 16

3.0 RADIOLOGICAL SURVEY RESULTS . . . . . 17

    3.1 ENVIRONMENTAL RADIOLOGICAL SURVEY SUMMARY . . . . . 17

    3.2 COMPLIANCE ASSESSMENT REPORTS ISSUED . . . . . 23

    3.3 COMPLIANCE/SURVEILLANCE REPORTS CLOSED . . . . . 23

    3.4 STATUS OF OPEN SURVEILLANCE AND COMPLIANCE REPORTS . . . . 23

4.0 SUMMARY . . . . . 25

## 1.0 INTRODUCTION

Routine radiological surveys are part of the near-facility environmental monitoring program which monitors and helps direct the reduction of the radiological areas at the Hanford Site. The routine radiological surveys are performed by the Southern Area Remediation Support Group and the Site Support Services Radiological Control Group as directed by Near-Field Monitoring. The surveys included in this program consist of inactive waste sites; outdoor radiological control areas; tank farm perimeters and associated diversion boxes, lift stations, and vent stations; perimeters of active or uncovered waste sites such as burial grounds, retention basins, ponds, process trenches, and ditches; and road and rail surfaces (Figures 1 through 10). This report provides a summary of the radiological surveys performed during the Third Quarter of 1995. The status of corrective actions required from current and past reports are also discussed.

A waste site survey schedule, WHC-SP-0098-6, is developed by Near-Field Monitoring and approved by the Southern Area Remediation Support Group and the Site Support Services Radiological Control Group. Near-Field Monitoring reviews the radiological survey reports and files a copy for historical purposes and reference. Radiological conditions are tracked and trends noted. All sites are surveyed at least once each year. The survey frequencies for particular sites are based on site history, radiological conditions, and general maintenance. Special surveys may be conducted at irregular frequencies if conditions warrant (e.g., growth of deep-rooted vegetation is noted at a waste site). Radiological surveys are conducted to detect surface contamination and document changes in vegetation growth, biological intrusion, erosion, and general site maintenance conditions. Survey data are compared with standards identified in WHC-CM-7-5, Environmental Compliance, as well as previous surveys to recognize possible trends, assess environmental impacts, and help determine where corrective actions are needed.

Landlords of the sites found out of compliance may be issued a Radiological Problem Report (RPR) from the appropriate radiological Control Groups. Should the landlord fail to respond to the identified problem in a timely manner, or if the corrective action will require a long-term commitment, Near-Field Monitoring will issue a Compliance Assessment Report (CAR). The Compliance Assessment Report, formerly called Surveillance Compliance Inspection Report (SCIR), is tracked to completion by Near-Field Monitoring. Open SCIRs and CARs are listed in Table 2 of this report.

The surveys scheduled for this program consist of inactive waste sites; outdoor radiological areas; tank farm perimeters and associated diversion boxes, lift stations, and vent stations; perimeters of active or uncovered waste sites such as burial grounds, retention basins, ponds, process trenches, and ditches; and road and rail surfaces. Surveillance of the active nuclear facilities and inside the tank farms is the responsibility of the facility. These radiological surveys are to determine surface radiological conditions and do not constitute a release survey. Therefore, surveys that detect no contamination in radiological areas do not release the site from control but may result in a posting status change.

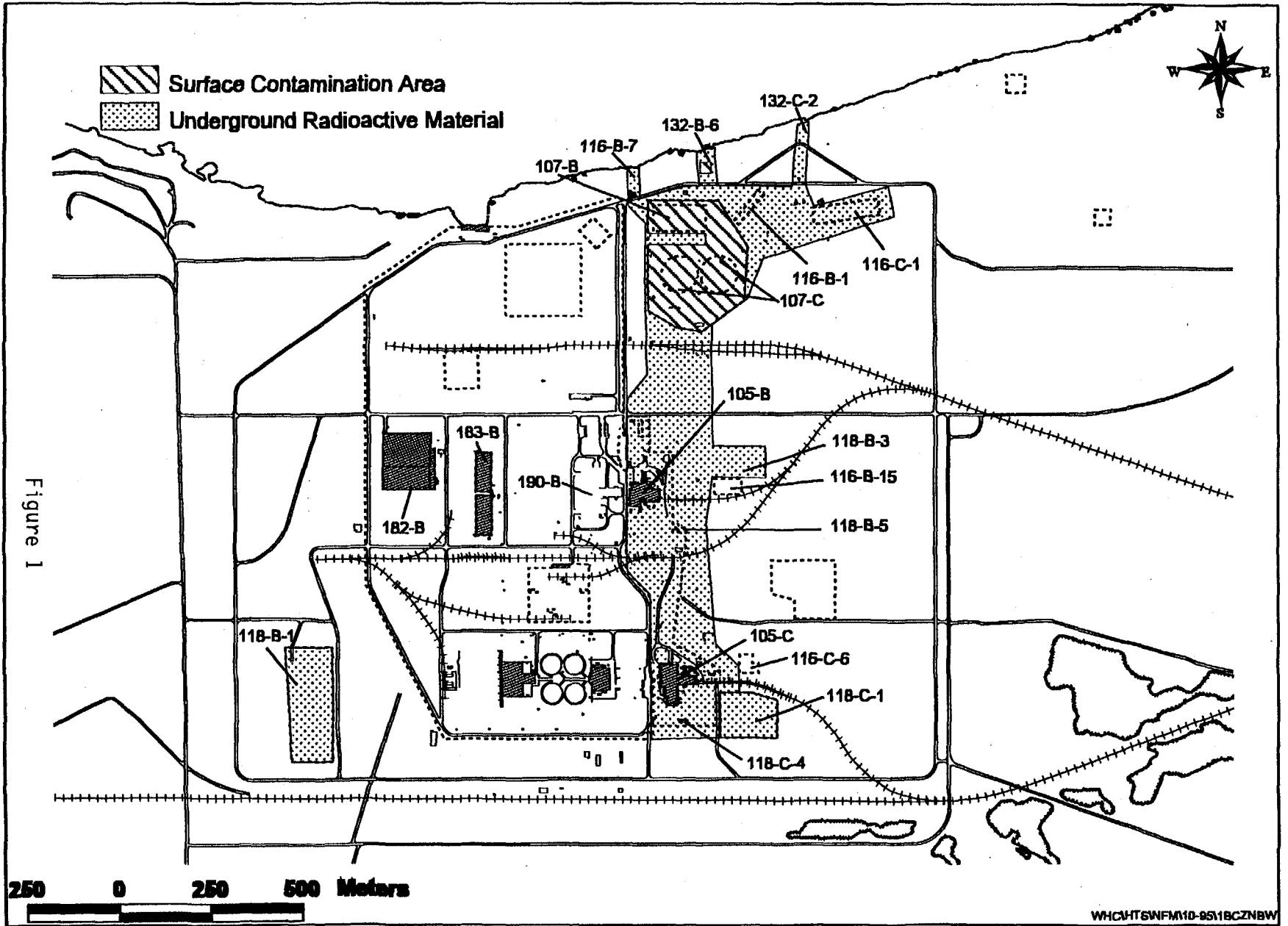


Figure 1

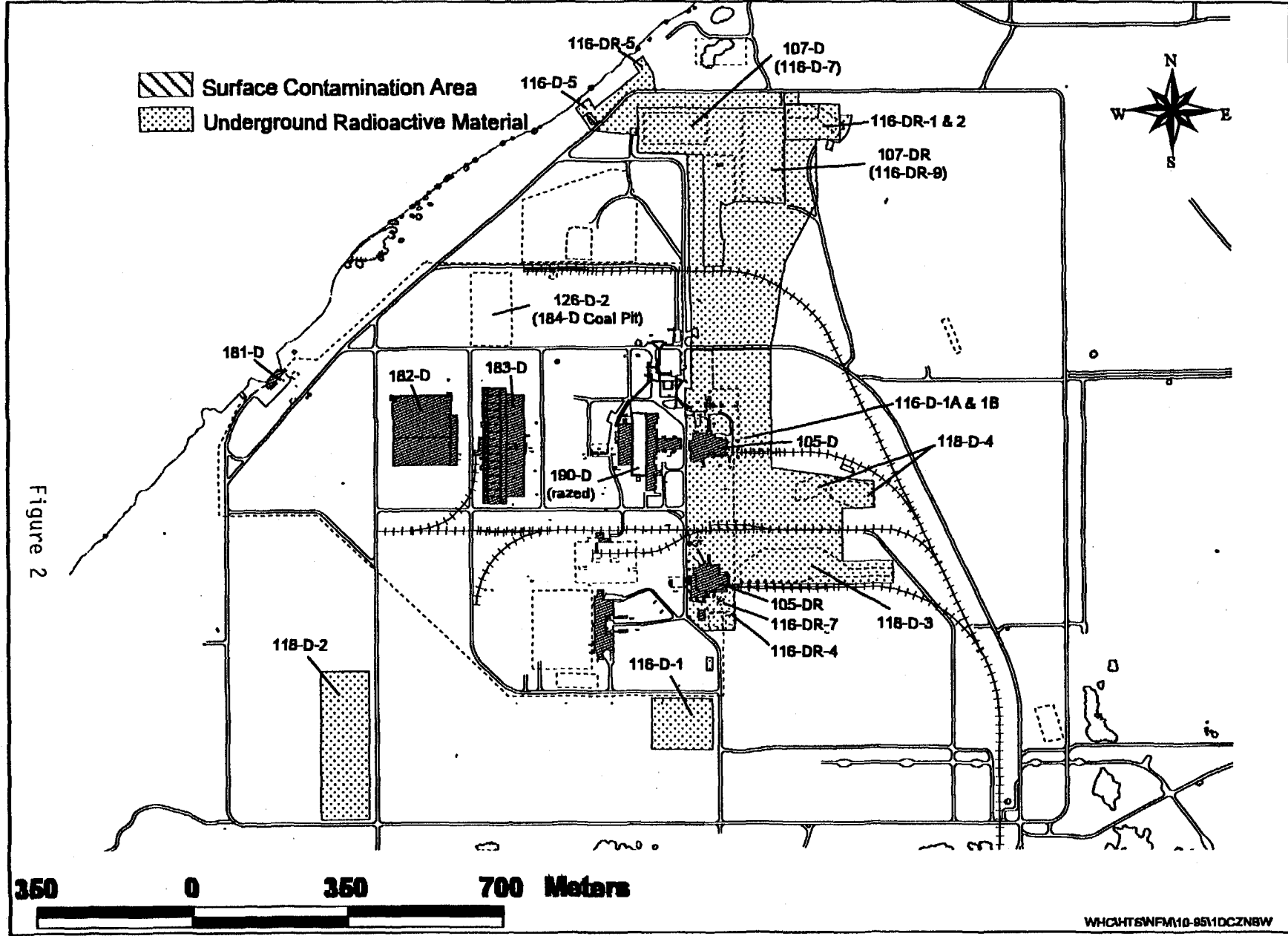


Figure 2

3

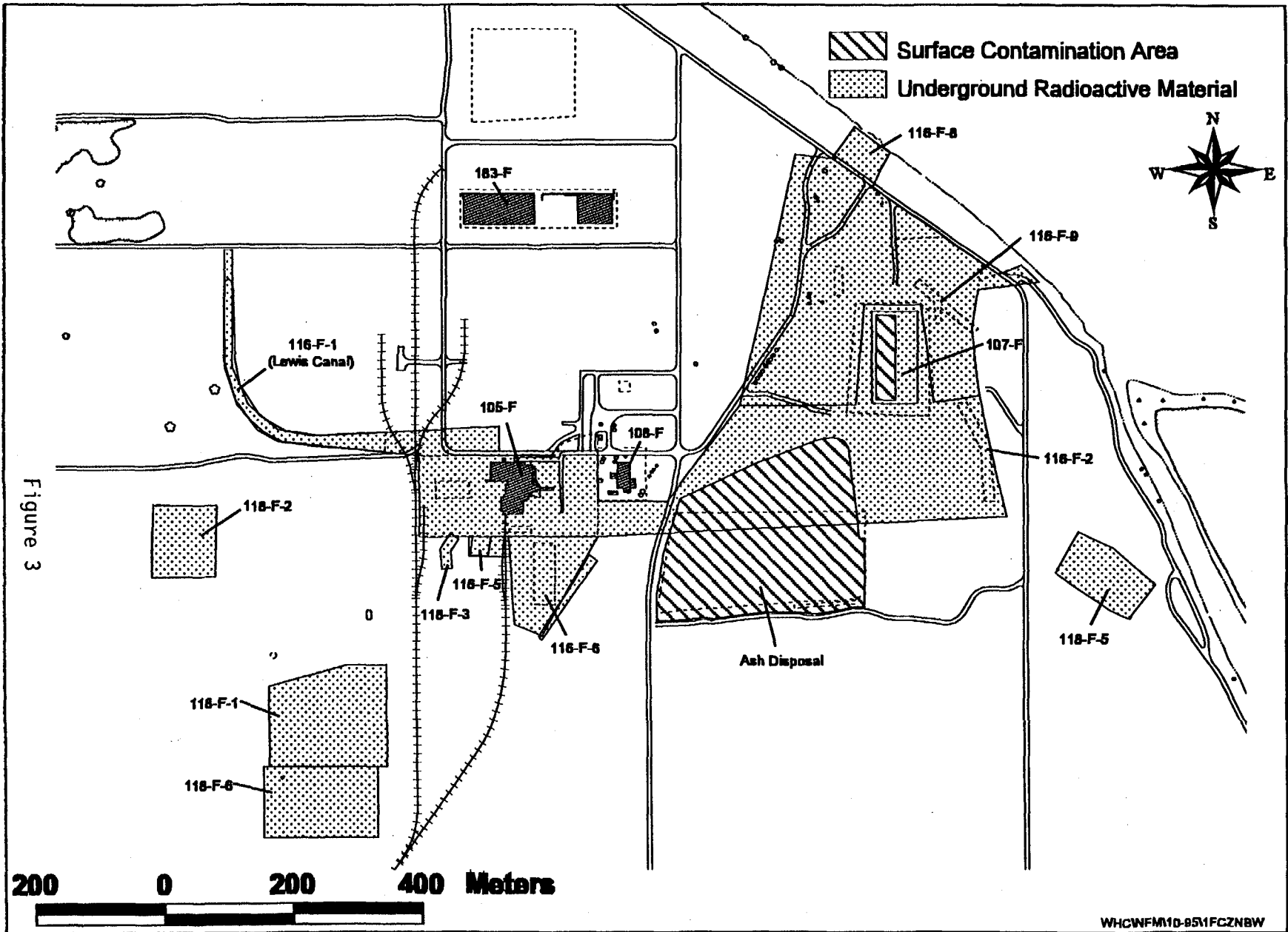


Figure 3

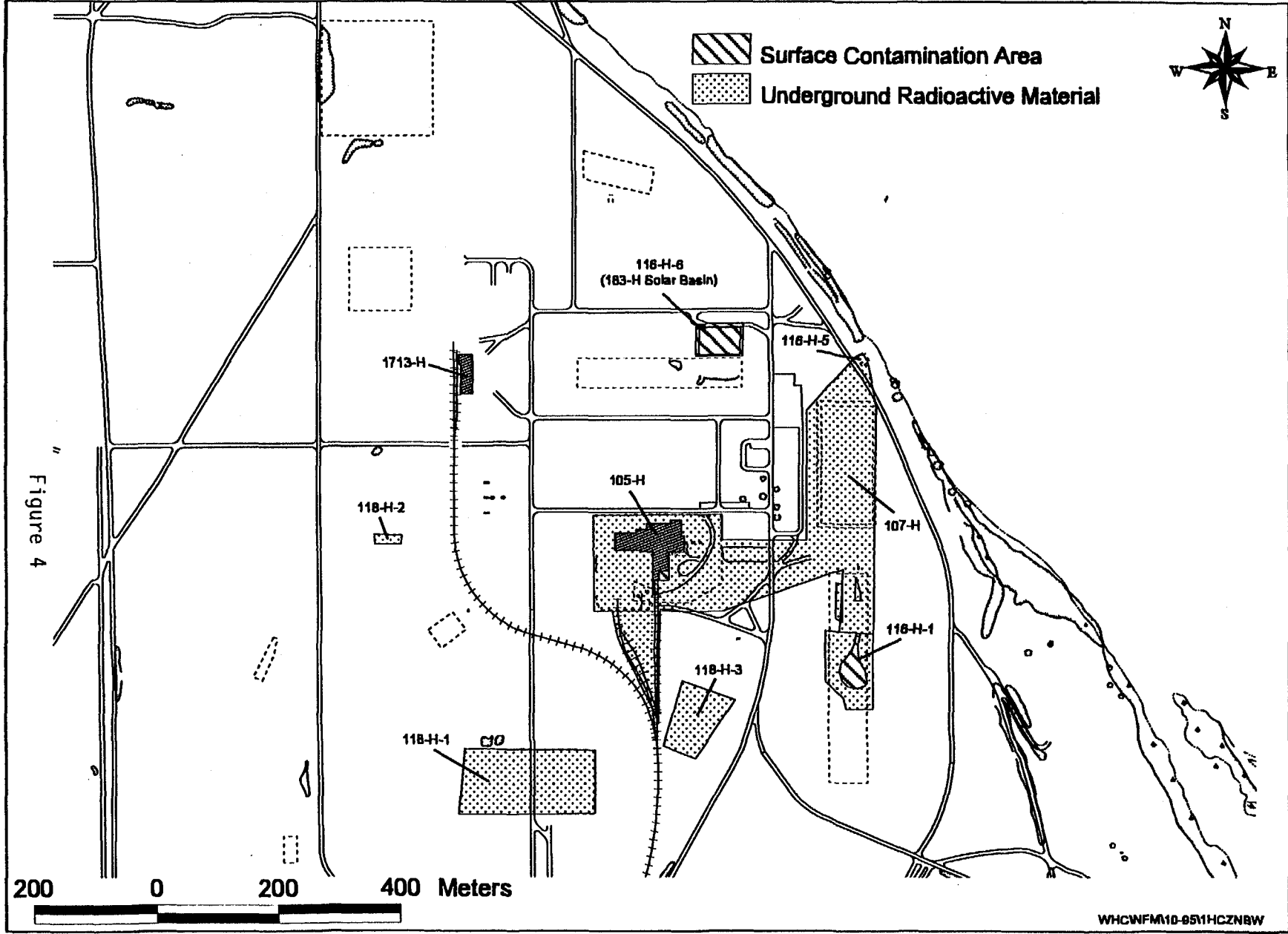
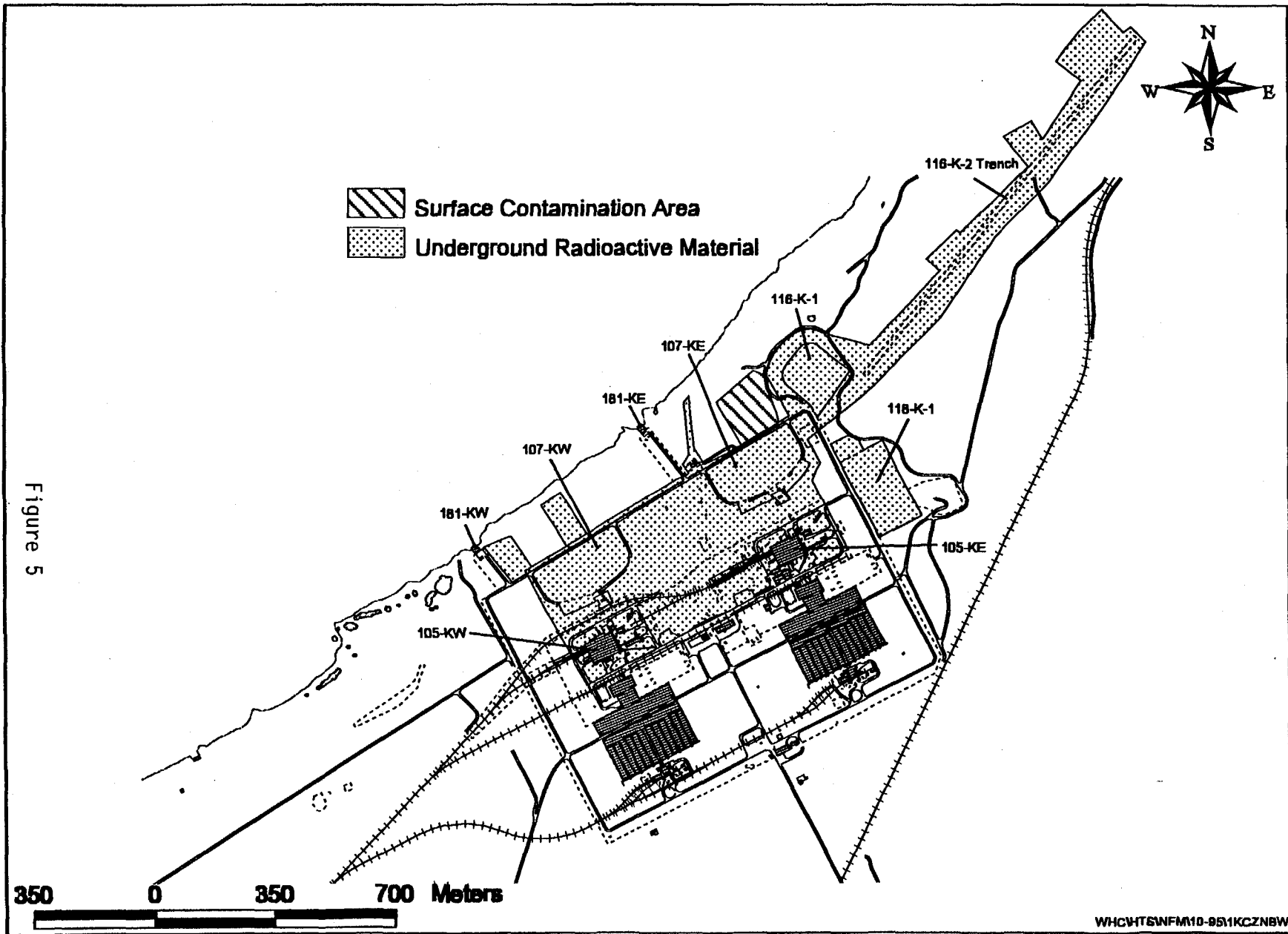
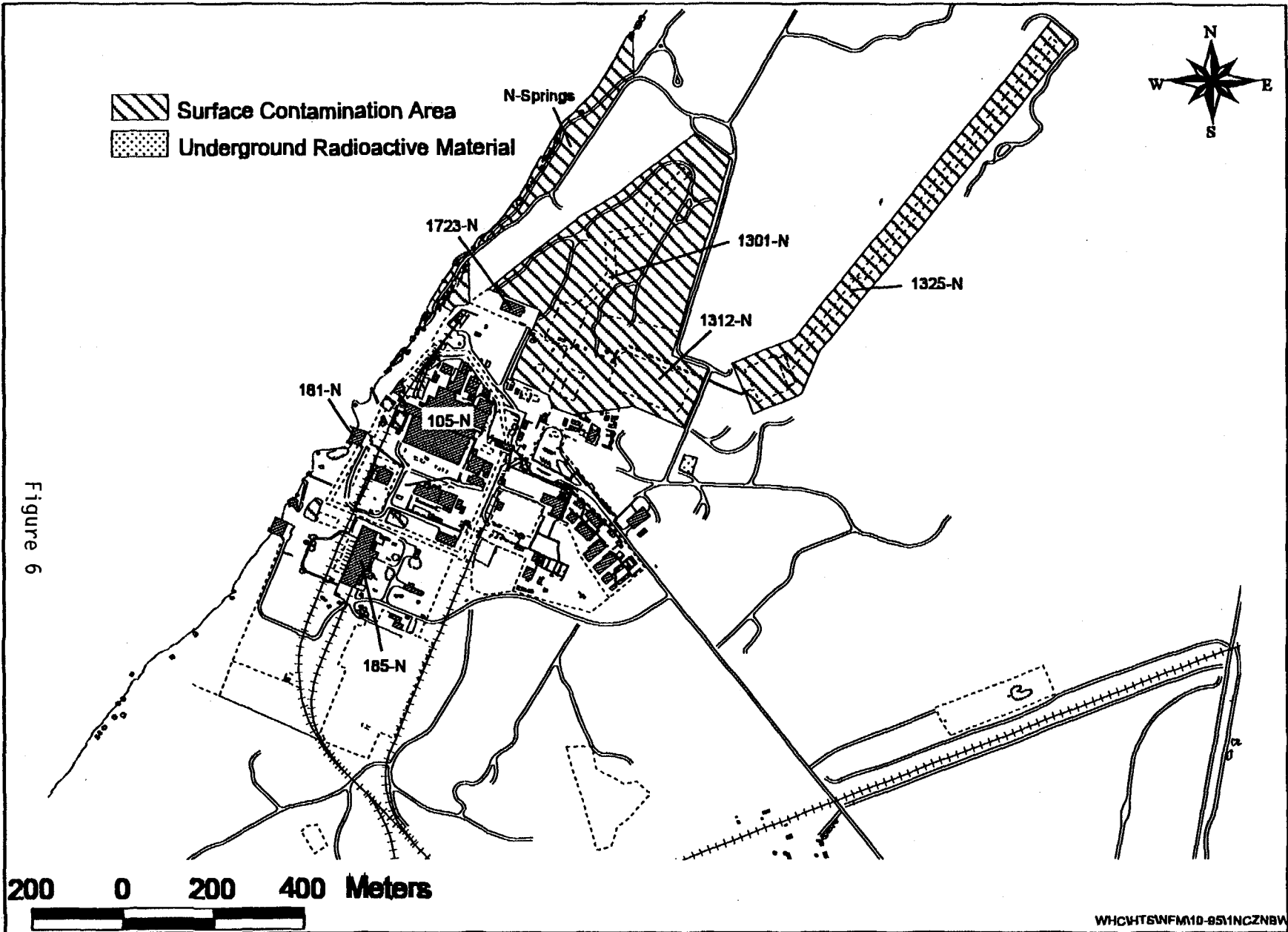


Figure 4

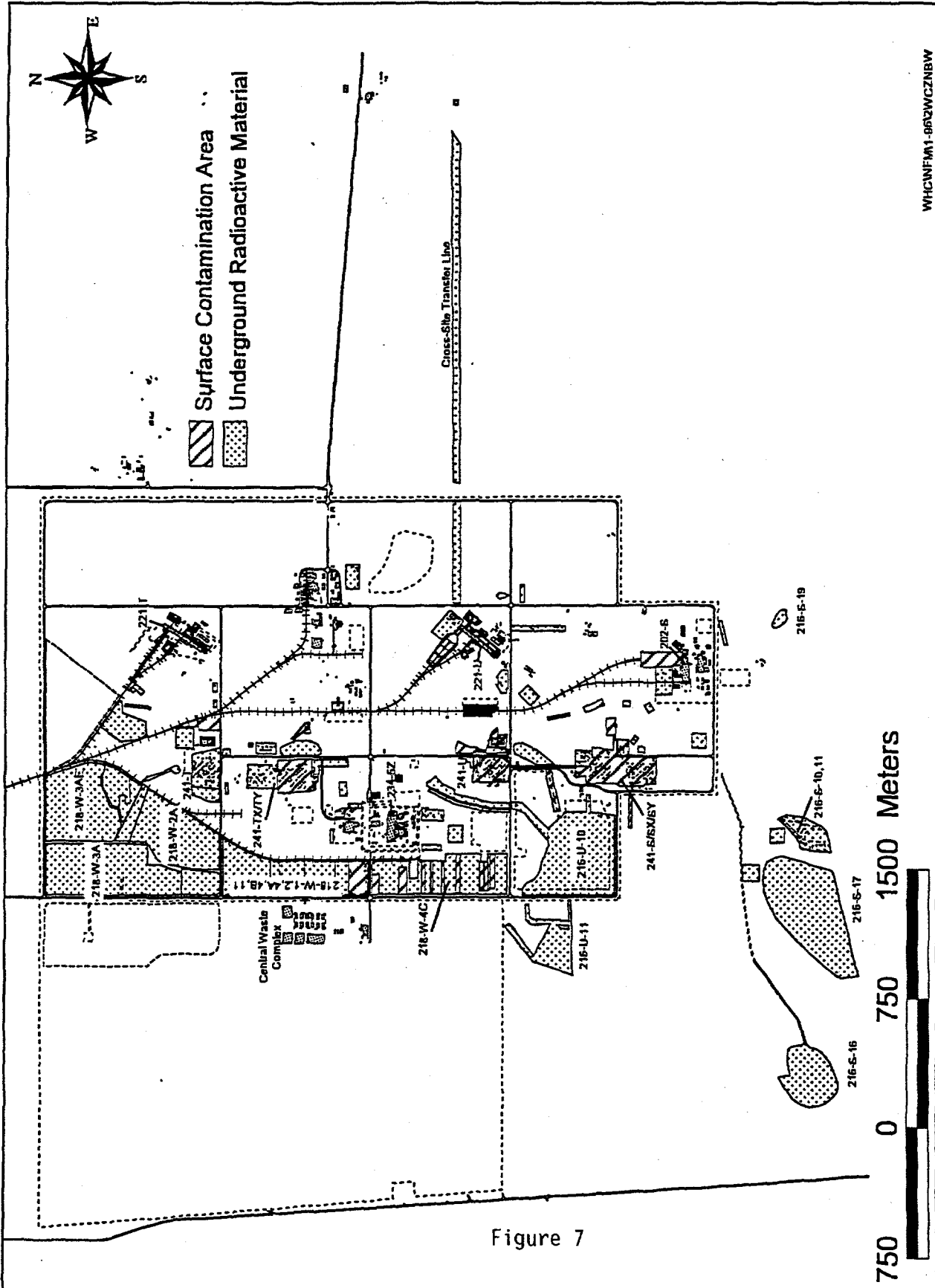
Figure 5



WHCWT6WFM10-951KCZNBW









WHCWFMA1-862WZCZNBW

Figure 7

 Surface Contamination Area  
 Underground Radioactive Material

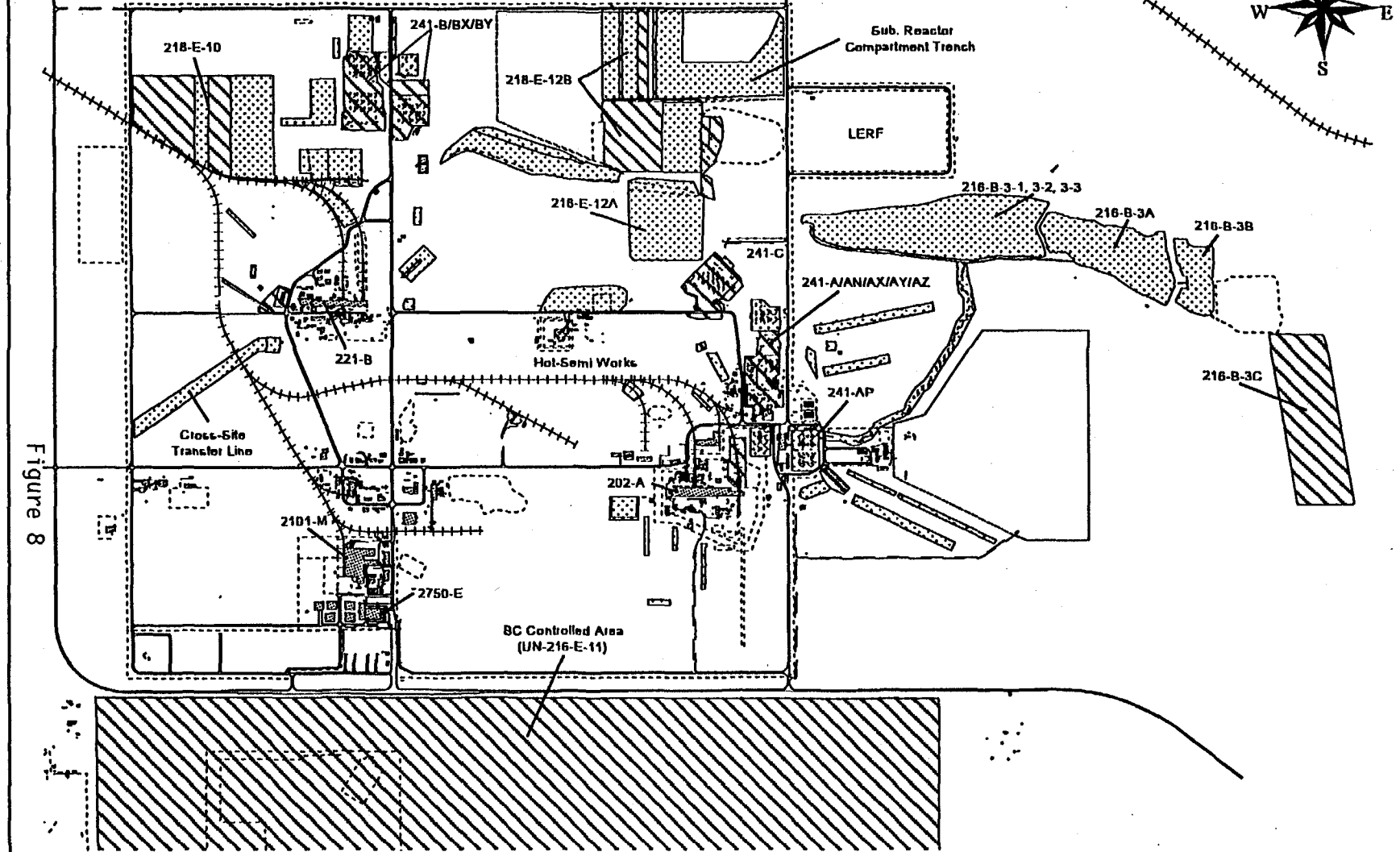
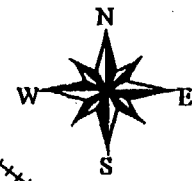


Figure 8

9

480 0 480 960 Meters



WHCWFMD1-86VZECZNBW

WHC-SP-0665-19

WHC/TSNF/M10-953CZ/NB/V

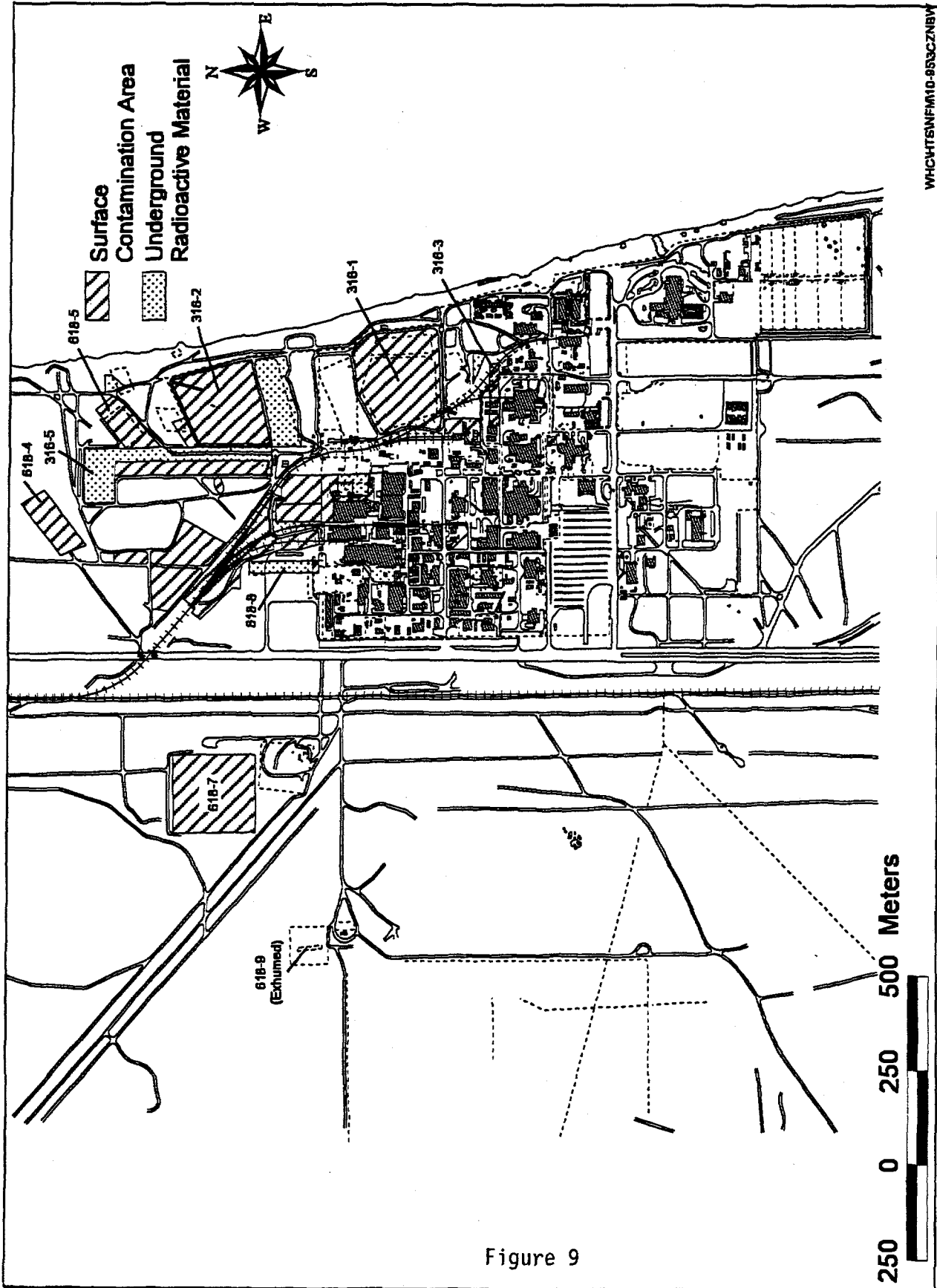


Figure 9

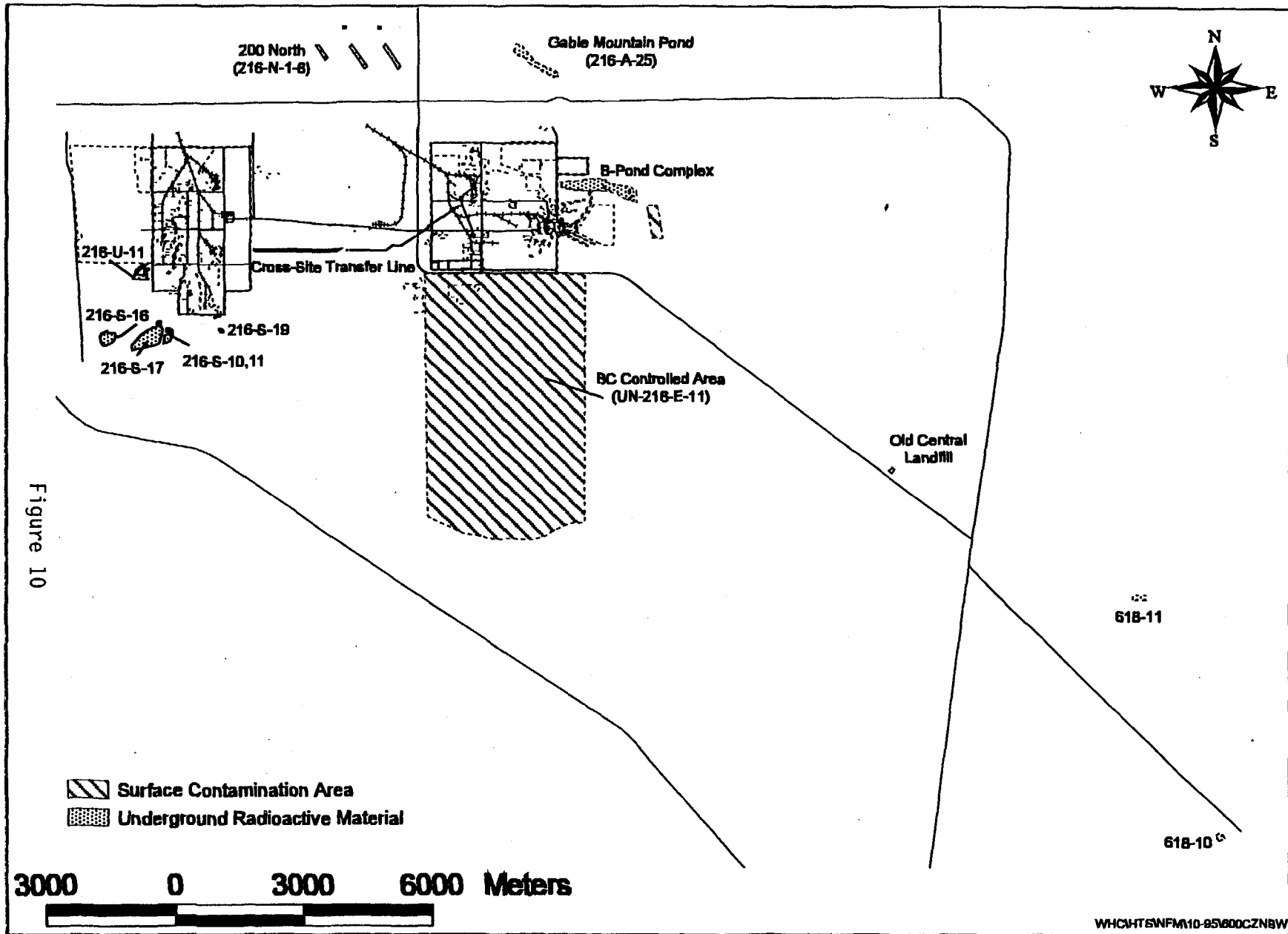


Figure 10

## 2.0 PROGRAM DESCRIPTION

### 2.1 ENVIRONMENTAL RADIOLOGICAL SURVEY PROGRAM OBJECTIVES

Environmental radiological surveys are performed to:

- Identify priorities for environmental cleanup or stabilization of surface contamination.
- Determine compliance with Department of Energy requirements and applicable policies and standards regarding operational control and environmental and radiological protection.
- Identify trends in radioactive contamination levels and contamination migration at waste sites and other radiological areas.
- Assess the surface integrity of solid and liquid waste disposal sites.
- Monitor for unplanned releases of radioactivity to the operations area environment.

### 2.2 PRIORITY RANKING SYSTEM

A numerical ranking system is used for sorting contaminated waste sites relative to environmental radiological concerns. This system provides a priority guideline to responsible landlords for clean-up or stabilization of surface-contaminated areas.

A numerical value is assigned based on the level of contamination, site accessibility, and contamination mobility. Site histories are examined by reviewing past and present radiological surveys. Contamination levels from 1,000 counts per minute (cpm) to greater than 10 mrad/hr (as measured on Radiological Control's field survey instruments) are considered and assigned a numerical value of 1 (lowest value) to 5 (greatest value). Any removable alpha contamination will be considered a high priority and will receive a contamination value of 5. Location is evaluated for accessibility. A restricted area would receive the lowest point value of 1 progressing up to a value of 5 where the public could have access. Mobility refers to contamination that can be or has a history of being transported from where it was originally identified to places outside of the posted radiological area. Fixed contamination would receive a value of 1 progressing to contamination that is blown by the wind or the result of biological uptake receiving a value of 5. The rankings (a maximum of 15 points is possible) are noted on Table 2.

It should be noted that this system is not intended to be a total risk assessment, but rather a way of communicating environmental significance to the landlords and their program offices. Other elements of the site clean-up process are considered such as costs, location, political emphasis and engineering strategies before a site is actually remediated.

## 2.3 ENVIRONMENTAL STANDARDS

Radiological survey data are used to determine compliance of Radioactive Waste Sites with WHC-CM-7-5, Environmental Compliance, Section 6.0 (Rev. 1) and BHI-EE-02, Environmental Requirements, Section 7.0 (Rev. 0), requirements.

Applicable requirements include the following:

1. Engineered barriers shall be provided, where applicable, over the disposal site to inhibit radionuclide transport to the surface.
2. Inactive waste site boundaries shall be accurately and permanently marked with Hanford plant standard (AC-5-40) approved concrete marker posts. Sites never used and those that are no longer contaminated do not require marker posts.
3. Facility effluent lines which are potential discharge points shall be isolated, capped, or sealed off to prevent accidental releases to inactive sites. This shall be verified and documented.
4. Active and inactive waste sites shall be inspected and surveyed at least annually.
5. One or more of the following actions shall be taken when contamination of any type is detected (either new or in excess of action limits) to prevent the migration or mobilization of the contamination:
  - \* Small-scale stabilization (<5 acres)
  - \* Vegetation removal
  - \* Radioactive hot-spot removal
  - \* Fencing
  - \* Posting
  - \* Herbicide spraying
  - \* Immediate spill response
  - \* Other corrective measures
6. Information regarding all suspect waste sites or newly identified waste sites shall be provided for documentation into the Environmental Sites Database (ESD) formerly called the Waste Identification Data System (WIDS) database.
7. Inactive waste sites shall be maintained to control deep-rooted vegetation that could provide transport of contamination to the surface through plant uptake. The application of herbicides or pesticides may be required.

Near-Field Monitoring is responsible for:

1. Establishing radiological survey schedules of active and inactive radiological waste sites.
2. Conducting compliance assessments of active and inactive waste sites to determine compliance with the physical and radiological requirements.
3. Compiling and maintaining copies of historical records, including radiological survey reports, compliance assessment reports (CARs), surveillance/compliance inspection reports (SCIRs), and other information for each active and inactive radioactive waste site.
4. Trending radiological data, and issuing reports on the status of radiological surveys and compliance assessments for active and inactive radioactive waste sites.
5. Reviewing any proposed activity, other than routine inspections, that may impact or may be impacted by any active and inactive waste site.
6. Issuing a compliance assessment report or notifying the facility manager or area landlord, as appropriate, when violations of the requirements occur.

The above mentioned requirements apply to all active and inactive radioactive waste sites which include cribs, trenches, ditches, ponds, French drains, burial grounds and other areas of concern such as tank farm perimeters and radioactive contamination due to spills or releases. Interiors of tank farms and radiological areas where operations are ongoing are not included, because monitoring and tracking is done by Tank Waste Remediation System and other requirements are applicable to these areas.

In order to compare standards [as established in WHC-CM-7-5, Section 6.0] and field instrument values, a conversion factor is necessary. This conversion factor has been established where 20,000 dpm (2,000 cpm) are approximately equivalent to one millirem per hour for beta-emitting radionuclides. It must be understood that converting field instrument values, which include both beta and gamma energies, is approximate and does not allow for absolute precision.

## 2.4 COMPLIANCE ASSESSMENT REPORTS

When it is determined that conditions at a site are not in compliance with the standards established in WHC-CM-7-5, the appropriate area landlord is notified. If the noncompliance is not corrected as a result of Radiological Control's RPR Near-Field Monitoring may issue a Compliance Assessment Report (CAR). Resolution of a CAR is considered initiated when a formal corrective action plan is provided to and accepted by Near-Field Monitoring. However, for tracking purposes it will remain on file and appear in subsequent Environmental Radiological Survey Reports until satisfactory completion of the plan is demonstrated. A visual inspection by Near-Field Monitoring and/or a post-corrective action radiological survey by Radiological Control is required before closing a CAR. If a compliance plan is not provided to Near-Field Monitoring within one month, a second notice is issued.

A CAR may be issued for conditions which pose a probable threat of radioactive contamination to uncontrolled areas. These conditions include the presence of deep-rooted vegetation, animal intrusion, or obvious migrating contamination. Once the contamination is contained on or removed from a site for which a CAR has been issued, the report will be closed after a follow-up radiological survey has indicated that no further adverse environmental impact is evident.

## 2.5 SURVEY METHODS AND PROCEDURES

Surveys documented by this report include road/railroad surfaces, cribs, stabilized burial grounds, covered ponds and ditches, tank farm perimeters, active burial ground perimeters, unplanned release sites and other radiological areas. Methods and procedures for these surveys can be found in WHC-CM-7-4, Operational Environmental Monitoring; HSRM-1, Hanford Site Radiological Control Manual; and WHC-IP-0718, Health Physics Procedures.

### 2.5.1 ROAD/RAILROAD SURVEYS

Road Surveys are performed with a Mobile Surface Contamination Monitor (MSCM) vehicle equipped with sodium iodide detectors or plastic scintillators. Railroad Surveys are conducted with a vehicle equipped with "high railers", which allows the vehicle to travel both on the roads or railroads, and sodium iodide detectors. The detector height is adjustable in all cases and the average survey height is six inches.

The vehicles are driven at less than five miles per hour. If activity above background is detected, the vehicle is stopped and a thorough survey is made with a portable count rate meter equipped with a pancake type probe to identify the extent of the contamination. Appropriate management is notified if road/railroad contamination is identified, and corrective actions are initiated.



### 2.5.2 WASTE SITES AND OTHER RADIOLOGICAL AREA SURVEYS

Surveys at waste sites and other radiological areas may be conducted with vehicles equipped with radiation detection instruments or with portable field instruments. Field instrument survey results are reported in disintegrations per minute (using a conversion factor of 10 dpm/cpm) as detected by using a Geiger-Mueller detector for beta/gamma radiation equipped with a pancake type probe. Alpha survey results are reported in disintegrations per minute as measured with a portable alpha meter (PAM) (using a correction factor of 7). Surveys include the perimeter and portions of the ground surface of radiological areas. Wherever possible, smear surveys are made on the surface of exposed equipment and other hard surfaces within a radiological area. Vegetation, animal burrows, and animal feces are also monitored to detect biological transport. Detailed survey practices and procedures are described in WHC-CM-7-4, Operational Environmental Monitoring; HSRM-1, Hanford Site Radiological Control Manual; and WHC-IP-0718, Health Physics Procedures.

### 3.0 RADIOLOGICAL SURVEY RESULTS

All the routine environmental radiological surveys scheduled during October, November, and December 1995 were completed with the exception of the following waste sites:

| <u>Waste Site</u> | <u>Reason for Deviation</u>                    |
|-------------------|--|
| 116-B-1           | Inaccessible due to remediation activities     |
| 116-B-2C          | Inaccessible due to decommissioning activities |
| 116-B-5           | Remediated (to be removed from 1996 Schedule)  |
| 116-B-11          | Inaccessible due to remediation activities     |
| 116-B-13          | Inaccessible due to remediation activities     |
| 116-B-14          | Inaccessible due to remediation activities     |
| 116-C-1           | Active remediation                             |
| 116-C-2B          | Inaccessible due to decommissioning activities |
| 116-C-5           | Active remediation                             |
| 118-C-2           | Inaccessible due to decommissioning activities |
| 118-N-1           | Active remediation                             |

Surveys of active and inactive waste disposal sites included cribs, trenches, burial grounds, covered ponds and covered ditches. The survey schedule for environmental sites is outlined in WHC-CM-7-4, Section 12, and in WHC-SP-0098-5, Rev. 0.

Ninety two environmental radiological surveys were performed during the fourth quarter of 1995. Contamination above background levels was found at nine of the surveyed active waste site areas and two of the inactive waste site areas. Contamination levels ranging from a low of 12,000 dpm to a high of >1,000,000 dpm were reported. Of the contamination found, two were located in SC areas and nine were in URM areas.

The contamination found in two of the URM areas was immediately cleaned up and no further action was required. The contamination found in the remaining URM areas was posted and will require decontamination. Radiological Problem Reports were issued and the remaining sites were turned over to the landlord for further action.

The radiologically contaminated areas have been reposted to meet the new requirements as outlined in the Hanford Site Radiological Control Manual, HSRCM-1. For continuity between quarterly reports issued in 1995, the use of Surface Contamination (SC) areas in this report includes Contamination Areas, High Contamination Areas (activity >500Kdpm), and soil Contamination areas.

### 3.1 RADIOLOGICAL SURVEY SUMMARY

This report provides a synopsis of the radiological survey results conducted calendar year 1995. The stabilization efforts for thirty eight waste sites resulted in the down posting from SC to URM of 53.3 hectares (131.7 acres).

During the first quarter, stabilization efforts for the 116-H-2 Crib, 216-S-9 Crib, 216-T-4 Pond, 216-T-4-1 Ditch, 216-U-14 Ditch between Cooper Ave

and 16th Street, the cross-site corridor and vent station 241-EW-151 (UN-216-E-41), and the UN-216-W-24 and 30 sites were completed. The recontaminated portions of the 216-U-1 and 216-U-2 Cribs and the 216-U-10 and 216-U-11 ponds were corrective action backfilled and down posted to URM.

The placement of sealant in the tank farms was on going.

The stabilization of the cross site corridor and the vent station, a major effort, was completed during the first quarter. It was one of the high priority contaminated sites since it was discovered in 1988. The large surface area and the amount of funding required for stabilization of the site had prevented earlier efforts. The cross site corridor was treated with a "tall oil emulsion" to prevent wind erosion and treated with herbicides to prevent weed growth.

During the second quarter, stabilization efforts for the 107-D/DR Basins, 216-T-1 Ditch, 216-T-4-2 Ditch, 216-U-14 Ditch, 241-AN Tank Farm, small areas of 241-B/BX/BY Tank Farms, the area west of 241-BX/BY and the 241-C Tank Farm Perimeter were completed. The caved in portion of 216-S-20 was backfilled and the crib brought up to grade. The crib had already been posted as URM.

During the third quarter, stabilization and clean-up efforts for the 107-KE/KW basins; 216-T-4-2 pond; 241-T Tank Farms; 241-TX-155 and 241-UX-151/241-UX-152 Diversion Boxes; 241-EW-151 Vent Station; 241-A and 241-U Tank Farm Perimeters; and portions of the TC-4 Railroad Spur, 241-A, 241-AY, 241-AZ, 241-C, 241-TY, and 241-U Tank Farms were completed.

Spotty contamination was found in areas to the south and to north of the 241-EW-151 Vent Station and posted SC. The cause of the contamination is suspected to be from biotic intrusion.

During the fourth quarter, stabilization and clean-up efforts for the 218-E-7 and 218-W-8 burial vaults; 241-B-154 and 241-ER-151 diversion box enclosures; the remaining SC portions of the 241-TY tank farm; a small area of the 241-BX West Perimeter and small areas of 216-A-24, 216-B-2-3, 216-S-1 & 2, 216-T-5, 216-U-1 & 2, 216-U-11, 218-E-2, 218-E-10, 218-E-12B, 218-W-2A, and 218-W-4A which had become recontaminated were completed.

During the radiological surveys, contaminated media was encountered and collected. The samples that are deemed appropriate are sent in for analysis (Table 1). In addition to the contaminated samples found during calendar year 1995, a special project was conducted which sampled coyote feces and cryptogams to determine the amount of contamination present. The results of these analysis can be found in the Westinghouse Hanford Company Operational Environmental Monitoring Annual Report which is published in August of each year.

TABLE 1  
1995 FIELD SAMPLES

| SAMPLE NO. | DATE    | DESCRIPTION               | LOCATION                            | ACTIVITY (dpm) |
|------------|---------|---------------------------|-------------------------------------|----------------|
| 5800       | 1/17/95 | Mouse                     | 241-C Laundry sack                  | 1,000          |
| 5801       | 1/31/95 | Mouse, Feces, Insulation  | 209-E                               | N/R            |
| 5802       | 2/24/95 | Wasp Nest and Soil        | 1301-N                              | 10,000         |
| 5803       | 3/02/95 | Soil                      | 2W portion of E-W Transfer Line     | 20,000         |
| 5804       | 3/03/95 | Mouse                     | 2713-WB                             | 8,000          |
| 5805       | 3/06/95 | Soil from Ant Mound       | 3/10 mi. E of E/W Vent Station      | N/R            |
| 5806       | 3/09/95 | Mouse                     | KEH trailer near 241-A Evaporator   | 6,000          |
| 5807       | 1/19/95 | Coyote Feces              | E of B-Plant and S of 207-B         | 5,000          |
| 5808       | 3/09/95 | Mouse                     | 202-A PUREX                         | N/R            |
| 5809       | 3/13/95 | Soil                      | UN-216-E-7 (207-B Basin)            | 60,000         |
| 5810       | 3/15/95 | Soil/Tumbleweed Fragments | 216-A-30                            | 20,000         |
| 5811       | 3/27/95 | Pigeons                   | 105-N                               | N/R            |
| 5812       | 3/26/95 | Pigeons                   | 221-U                               | N/R            |
| 5813       | 3/28/95 | Coyote Jaw                | 202-A PUREX                         | N/R            |
| 5814       | 4/10/95 | Tumbleweed                | 3/4 Mi. West of E/W Vent Station    | 15,000         |
| N/A        | 3/10/95 | Plant Fragments           | 216-B-55                            | 8,000          |
| N/A        | 3/21/95 | Tumbleweed Fragments      | UN-216-E-8 (R3 Section @ 221-B)     | 100,000        |
| N/A        | 3/22/95 | Speck                     | UN-216-E-26 (SE of 209-E, Hot Semi) | 30,000         |
| N/A        | 4/04/95 | Speck                     | 300 m East of E/W Vent Station      | 20,000         |
| 5983       | 4/11/95 | Soil/Mouse Urine          | 244-A Lift Station                  | 30,000         |

TABLE 1  
1995 FIELD SAMPLES

| SAMPLE NO. | DATE    | DESCRIPTION           | LOCATION                          | ACTIVITY (dpm) |
|------------|---------|-----------------------|-----------------------------------|----------------|
| N/A        | 5/09/95 | 2 Specks              | SW Corner of 241-TX/TY            | 250,000        |
| N/A        | 5/09/95 | Speck (0.4 mRad)      | SE side of 241-SX                 | 80,000         |
| N/A        | 5/10/95 | Speck (2.5 mRad)      | W side of 241-SX @ Decon Dome     | 400,000        |
| N/A        | 5/10/95 | 2 Specks              | N side 241-U                      | 60,000         |
| N/A        | 5/10/95 | Speck                 | N side 241-U                      | 150,000        |
| 5984       | 4/21/95 | Mouse                 |                                   | N/R            |
| 5985       | 4/14/95 | Pigeon                |                                   | N/R            |
| 5986       | 5/10/95 | Feces/Soil            |                                   | N/R            |
| 5987       | 5/12/95 | Gopher Snake          | 218-W-4 Burial Ground             | 500,000        |
| 5988       | 5/15/95 | Mouse                 |                                   | N/R            |
| 6104       | 5/22/95 | Rattle Snake          | 105-N                             | 2,000          |
| 6105       | 5/24/95 | mouse                 | 241-AY                            | 10,000         |
| N/A        | 6/12/95 | Starlings             |                                   | 2,000          |
| N/A        | 6/13/95 | Deer (bone, muscle)   | North of 300 Area                 | <D             |
| N/A        | 7/24/95 | soil (speck)          | West of 216-A-24 crib             | 20,000         |
| 6045       | 7/28/95 | mouse                 | 2247-B                            | 3,000          |
| 6046       | 8/9/95  | soil (speck)          | outside S-Farm                    | N/R            |
| 6047       | 8/10/95 | ants/soil (ant mound) | CR Tank Farm near Control Room    | 400,000/1mRad  |
| 6106       | 8/24/95 | Gopher Snake          | Camden & 19th @ KEH Complex       | 8,000          |
| 6107       | 9/13/95 | soil (2-specks)       | UN-216-E-6 Unplanned Release Site | 70,000         |

TABLE 1  
1995 FIELD SAMPLES

| SAMPLE NO. | DATE     | DESCRIPTION                 | LOCATION                              | ACTIVITY (dpm) |
|------------|----------|-----------------------------|---------------------------------------|----------------|
| 6108       | 9/18/95  | Gopher Snake                | 20 meters west of 241-AZ              | 4,000          |
| N/A        | 9/22/95  | Riser "T" Handle            | UN-216-E-44                           | 2-10,000       |
| 6237       | 9/22/95  | Tumble Weeds                | UN-216-E-44                           | 2-10,000       |
| N/A        | 9/22/95  | Soil                        | UN-216-E-44                           | 1-75,000       |
| N/A        | 9/22/95  | Concrete Chunks             | UN-216-E-44 10 mRad/hr                | 1,000,000      |
| N/A        | 9/22/95  | General Surface Area        | UN-216-E-44                           | 1-3,000        |
| N/A        | 10/03/95 | Mouse Feces and Soil        | X-Site Transfer Line in 200-West Area | 10 mRad/hr     |
| N/A        | 10/23/95 | Tumble Weeds                | 1.5 mi. S. of Gate 810 on 200-E Fence | 20,000         |
| N/A        | 10/26/95 | Vegetation Fragments        | 300 ft. E. of 241-SY Fence            | 250,000        |
| N/A        | 10/30/95 | Tumble Weed Seeds           | 50 ft. E. of 216-S-4 Crib             | 10-20,000      |
| N/A        | 10/30/95 | Vegetation                  | 218-W-3A Burial Ground                | 3,000          |
| N/A        | 10/31/95 | Tumble Weed                 | East side of 216-S-4 and 21 Cribs     | 5,000          |
| N/A        | 10/31/95 | Mouse Feces (1.0 mRad/hr)   | East side of 216-S-4 and 21 Cribs     | 300,000        |
| N/A        | 10/31/95 | Soil around Mouse Feces     | East side of 216-S-4 and 21 Cribs     | 1-5,000        |
| N/A        | 10/31/95 | Tumble Weed Seeds/Ant Mound | East side of 216-S-4 and 21 Cribs     | 20,000         |
| 6228       | 11/03/95 | Mouse                       | 2707-SX Lunch Room - 1.5 mRad/hr.     | 200,000        |
| N/A        | 11/13/95 | Soil contamination          | North Side of 241-B Tank Farm         | 300,000        |
| 6238       | 11/14/95 | "Green" Soil                | North Side of 241-B Tank Farm         | 20,000         |
| N/A        | 11/14/95 | 30 spots                    | N.E. Perimeter of 241-BY              | 200,000        |



**3.2 COMPLIANCE ASSESSMENT REPORTS ISSUED**

No unsatisfactory CARs were issued during calendar year 1995.

**3.3 SURVEILLANCE/COMPLIANCE REPORTS CLOSED**

SCIRs closed during 1995 are as follows:

| <u>SCIR</u>   | <u>CUSTODIAN</u> | <u>SITE</u>                          |
|---------------|------------------|--------------------------------------|
| ESC-85-019    | B-Plant          | B-Plant Rail Road Spur               |
| ECU-86-048    | ERC              | UN-216-W-30 Northeast of 241-S,SX,SY |
| 9012EP200-095 | TFO              | UN-216-E-41 Cross-Site Transfer Line |
| 8910EP200-043 | TFO              | UN-216-E-5, 241-B-154 Diversion Box  |
| 9110ERI-001   | B-Plant          | UN-216-E-36, 216-B-64 Basin          |
| 9203ERI-002   | TFO              | 241-U Tank Farm Perimeter            |

**3.4 STATUS OF OPEN SURVEILLANCE AND COMPLIANCE REPORTS**

Five SCIRs, from past activities, remained open at the end of the fourth quarter of 1995. These reports are summarized on Table 2 to include the referenced site number, priority ranking points (maximum of 15 points based on contamination levels, location and mobility), responsible custodian, SCIR report number, and estimated completion date.

Abbreviations used on Table 2 include:

- CAR - Compliance Assessment Report
- SCIR - Surveillance/Compliance Inspection Report
- ECD - Estimated Completion Date
- ERC - Environmental Restoration Contractor
- TFO - Tank Farm Operations
- PTS - Points
- TBD - To Be Determined



**TABLE 2**  
**OPEN SCIRs AND CARs**  
(maximum 15 points)

| SCIR/CAR      | SITE                               | DATE INITIATED | MONTHS OPEN | ECD      | SITE RANKING | CUSTODIAN |
|---------------|------------------------------------|----------------|-------------|----------|--------------|-----------|
| 8901EP200-001 | UN-216-E-16 TC-4 RR SPUR           | 01/01/89       | 74          | 11/31/95 | 8            | PUREX     |
| 8909EP200-036 | 241-B FARM PERIMETERS              | 09/01/89       | 66          | 09/30/95 | 13           | TFO       |
| 9007EP200-056 | BX-BY TANK FARM PERIMETERS         | 07/20/90       | 54          | 12/30/95 | 13           | TFO       |
| 9008EP200-068 | C-TANK FARM PERIMETERS             | 08/13/90       | 53          | 12/30/95 | 13           | TFO       |
| 9203ERI-002   | 241-U TANK FARM PERIMETERS         | 03/17/92       |             | CLOSED   |              | TFO       |
| 9208ERI-006   | 241-S, SX, SY TANK FARM PERIMETERS | 08/14/92       | 28          | 09/30/95 | 12           | TFO       |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |
|               |                                    |                |             |          |              |           |

#### 4.0 SUMMARY

All the routine outdoor radiological surveys were completed during the calendar year 1995 in the 100, 200-East/West, 300 and 600 areas with the exception of fourteen inactive waste sites.

No unsatisfactory CARs were issued (Section 3.2)

Six SCIRs were closed (Section 3.3)

Five SCIRs remained open (Table 2). Open reports have been addressed and clean-up plans with completion dates are being developed or are to be provided to Near-Field Monitoring.

#### RADIOLOGICAL POSTING CHANGES

During 1995, 25.6 hectares (63.3 acres) were radiologically down posted from SC to URM or released from posting during the first quarter, 7.7 hectares (19.0 acres) were radiologically down posted from SC to URM or released from posting during the second quarter, 14.1 hectares (34.9 acres) were radiologically down posted from SC to URM or released from posting and 5.9 hectares (14.7 acres) were found to be contaminated and reposted as a soil contamination area (SC) during the third quarter, and 1.6 hectares (4.0 acres) were radiologically down posted from SC to URM during the fourth quarter.

Radiological posting changes, by quarter and waste site, noted during the calendar year 1995 are as follows:

##### First Quarter:

The 116-H-2 Crib was stabilized and down posted from SC to URM, 0.04 hectares (0.1 acres).

The 216-S-9 Crib was stabilized and down posted from SC to URM, 0.28 hectares (0.7 acres).

The 216-T-4 Pond was stabilized and down posted from SC to URM, 6.5 hectares (16.0 acres).

The 216-T-4-1 Ditch was stabilized and down posted from SC to URM, 0.065 hectares (0.16 acres).

The recontaminated portions of the 216-U-1 and 2 Cribs, 216-U-10 and 11 ponds were corrective action backfilled and down posted from SC to URM.

The 216-U-14 Ditch between Cooper Ave and 16th Street was backfilled and stabilized and down posted from SC to URM, 1.13 hectares (2.8 acres).

The cross-site corridor and vent station 241-EW-151 (UN-216-E-41) were stabilized and down posted from SC to URM 11.83 hectares (29.24 acres).

The UN-216-W-24 and 30 sites were stabilized and down posted from SC to URM or released, 2.6 hectares (6.5 acres) and 4.1 hectares (7.75 acres) respectively.

The 107-D/DR Basins were stabilized and down posted from SC to URM, 2.7 hectares (6.7 acres).

Second Quarter:

The 216-T-1 Ditch was backfilled, stabilized and down posted from SC to URM, .22 hectares (.53 acres).

The 216-T-4-2 Ditch was stabilized and down posted from SC to URM, 0.12 hectares (0.32 acres).

The 216-U-14 Ditch north of 16th Street was stabilized and down posted from SC to URM, 1.6 hectares (3.9 acres).

The 241-AN Tank Farm was cleaned/stabilized and down posted from SC to URM, 1.26 hectares (3.1 acres).

Small areas outside the 241-B/BX/BY were stabilized and down posted from SC to URM, 0.075 hectares (0.19 acres).

Area west of the 241-BX/BY Tank Farm was stabilized and down posted from SC to URM, 1.7 hectares (4.3 acres).

The north side of the 241-C Tank Farm perimeter was cleaned up and down posted from SC to URM 0.003 hectares (.008 acres).

The caved in portion of the 216-S-20 Crib was backfilled and the crib brought up to grade, 0.03 hectares (0.07 acres). There was no change to the URM posting.

Third Quarter:

The 107-KE/KW Basins were stabilized and down posted from SC to URM, 8.1 hectares (20 acres).

The 216-T-4-2 Pond was backfilled, stabilized, and down posted from SC to URM, 0.93 hectares (2.29 acres).

The 241-T Tank Farm was surface stabilized and down posted from SC to URM, 2.56 hectares (6.3 acres).

The 241-TX-155 and 241-UX/151/241-UX-152 Diversion Boxes were surface stabilized and down posted from SC to URM, 50.5 square meters, (0.01 acres).

The 241-EW-151 Vent Station was surface stabilized and down posted from SC to URM, 37.2 square meters (400 Square feet).

The 241-A and 241-U Tank Farm Parameters were stabilized and down posted from SC to URM or released, 0.2 hectares (0.5 acres).

Portions of the 241-A, 241-AY, 241-AZ, 241-C, 241-TY, AND 241-U Tank Farm perimeters were surface stabilized and down posted from SC to URM, 1.96 hectares (4.83 acres).

A portion of the TC-4 Rail Spur was stabilized and down posted from SC to URM, 0.4 hectares (0.9 acres).

Spotty contamination was found in areas to the south and to north of the 241-EW-151 Vent Station and posted SC, 5.9 hectares (14.7 acres). The cause of the contamination is suspected to be from biotic intrusion.

Fourth Quarter:

The 218-E-7 burial vault was stabilized and down posted from SC to URM, 0.008 hectares (0.02 acres).

The 218-W-8 burial vault was stabilized and down posted from SC to URM, 0.028 hectares (0.07 acres).

The 241-B-154 diversion box was stabilized and down posted from SC to URM, 0.45 hectares (1.12 acres).

The 241-ER-151 diversion box enclosure was stabilized and down posted from SC to URM, 0.34 hectares (0.84 acres).

Portions of the 241-TY tank farm were stabilized and down posted from SC to URM, 0,83 hectares (2.04 acres).

Small areas at the following waste sites were also stabilized during the fourth quarter:

- 216-A-24
- 216-B-2-3
- 216-S-1 & 2
- 216-T-5
- 216-U-1 & 2
- 216-U-11
- 218-E-2
- 218-E-10
- 218-E-12B
- 218-W-2A
- 218-W-4A
- 241-BX West Perimeter

The total area stabilized at the listed waste sites was less than 0.4 hectares (1.0 acres).

DISTRIBUTION

Number of Copies

ONSITE

37

WESTINGHOUSE HANFORD COMPANY

|                    |       |
|--------------------|-------|
| I. J. Austin       | T4-01 |
| H. A. Besel        | T1-27 |
| D. M. Bogen        | T5-50 |
| S. L. Bump         | T4-08 |
| C. L. Caldwell     | S5-07 |
| D. L. Chase        | X3-85 |
| D. A. De Lucchi    | R1-51 |
| L. P. Diediker     | S3-95 |
| J. J. Dorian       | H6-06 |
| R. E. Elder        | T7-37 |
| D. P. Ellingson    | T1-27 |
| R. F. Giddings     | S3-24 |
| R. D. Gustavson    | R1-51 |
| A. R. Johnson      | H6-20 |
| M. Kaviani         | X3-60 |
| C. L. Looney       | H6-06 |
| B. M. Markes       | H6-20 |
| A. K. McDowell     | R1-51 |
| S. M. McKinney (6) | S3-95 |
| D. L. Mitchell     | H6-32 |
| D. J. Newland      | T7-37 |
| O. L. Rasmussen    | R1-51 |
| J. W. Schmidt      | H6-20 |
| R. A. Schieffer    | T1-27 |
| J. E. Thrasher     | S6-70 |
| R. J. Thomas       | S5-21 |
| R. R. Thompson     | H6-32 |
| D. J. Watson       | X3-79 |
| R. L. Watts        | T7-37 |
| O.S.T.I. (2)       | A3-36 |
| Central Files      | A3-88 |

## DISTRIBUTION (continued)

Number of Copies

|    |   |       |
|----|---|-------|
|    | <u>U.S. DEPARTMENT OF ENERGY - Richland</u> |       |
| 5  | G. M. Bell                                  | A5-52 |
|    | M. J. Furman                                | H4-83 |
|    | J. B. Hall                                  | A5-55 |
|    | P. M. Pak                                   | H4-83 |
|    | D. C. Ward                                  | A5-55 |
|    | <u>PACIFIC NORTHWEST LABORATORY</u>         |       |
| 2  | R. L. Dirkes (2)                            | K6-75 |
|    | <u>KAISER ENGINEERS</u>                     |       |
| 1  | P. I. Thakkar                               | G3-06 |
|    | <u>BECHTEL HANFORD, INC.</u>                |       |
| 20 | A. I. Davis                                 | X0-21 |
|    | L. A. Dietz                                 | H6-07 |
|    | R. G. Egge                                  | T7-05 |
|    | D. B. Erb                                   | H9-12 |
|    | J. R. Freeman-Pollard (2)                   | H9-12 |
|    | J. T. Hadley                                | H9-11 |
|    | W. M. Hayward                               | T7-05 |
|    | J. E. Hodgson                               | T7-12 |
|    | R. A. Hughes                                | H4-87 |
|    | W. L. Osborne                               | T7-05 |
|    | T. L. Lafreniere                            | X0-23 |
|    | R. A. Lewis                                 | H4-79 |
|    | L. A. Mihalik                               | H9-12 |
|    | J. E. Parsons                               | X0-23 |
|    | W. H. Price                                 | H6-04 |
|    | K. A. Smith                                 | X0-17 |
|    | C. D. Wade                                  | T7-05 |
|    | D. C. Weekes                                | X0-37 |
|    | J. P. Zoric                                 | X0-21 |