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200-UP-2 Operable Unit Technical Baseline Report

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



Westinghouse
Hanford Company Richland, Washington

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

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200-UP-2 OPERABLE UNIT TECHNICAL BASELINE REPORT

INTRODUCTION

This report is prepared in support of the development of a Remedial Investigation/Feasibility Study (RI/FS) Work Plan for the 200-UP-2 Operable Unit by EBASCO Environmental, Incorporated. It provides a technical baseline of the 200-UP-2 Operable Unit and results from an environmental investigation undertaken by the Technical Baseline Section of the Environmental Engineering Group, Westinghouse Hanford Company (Westinghouse Hanford). The 200-UP-2 Operable Unit Technical Baseline Report is based on review and evaluation of numerous Hanford Site current and historical reports, Hanford Site drawings and photographs and is supplemented with Hanford Site inspections and employee interviews. No field investigations or sampling were conducted.

Each waste site in the 200-UP-2 Operable Unit is described separately. Close relationships between waste units, such as overflow from one to another, are also discussed.

The 200-UP-2 Operable Unit consists of liquid-waste disposal sites in the vicinity of, and related to, U Plant operations in the 200 West Area of the Hanford Site.

The 'U Plant' refers to the 221-U Process Canyon Building, a chemical separations facility constructed during World War II. It also includes the Uranium Oxide (UO₃) Plant, which was constructed at the same time and, like the 221-U Process Canyon Building, was later converted for other missions. Waste sites in the 200-UP-2 Operable Unit are associated with the U Plant Uranium Metal Recovery Program mission that occurred between 1952 and 1958 and the UO₃ Plant's ongoing uranium oxide mission and include one or more cribs, reverse wells, french drains, septic tanks and drain fields, trenches, catch tanks, settling tanks, diversion boxes, waste vaults, and the lines and encasements that connect them. There are 25 such facilities plus 17 unplanned releases in the 200-UP-2 Operable Unit. Two additional waste sites are reported that are not included in the list of 200-UP-2 Operable Unit waste sites provided by the *Preliminary Operable Units Designation Project Report*, (WHC 1989).

Unplanned releases are described in Appendix B, Waste Information Data System (WIDS) (WHC 1990). Impacts of unplanned releases upon 200-UP-2 Operable Unit waste sites are noted in the waste site descriptions that follow. Note that unplanned release UPR-200-W-138 appears to duplicate UN-200-W-22.

An environmental summary for the 200-UP-2 Operable Unit is not provided in this report. A summary may be found in *Inactive Waste Sites at Hanford* (Stenner et al. 1988), which describes geology and soils, meteorology, hydrology, land use, population, and air quality.

Most of the historical documents from which data was extracted for this report provide dimensions in non-metric units of measure. In the interest of accuracy, data is reported as it was provided in referenced documents, and conversions to or from metric units are not provided.

221-U PROCESS CANYON BUILDING

The 221-U Process Canyon Building, or U Plant, is a central feature and key operational facility of the 200-UP-2 Operable Unit and is, therefore, described here even though it will not be remediated as part of this operable unit.

The U Plant was one of three identical Hanford Site chemical separation plants constructed in 1944-1945 by the du Pont Company for the U.S. Army Corps of Engineers in support of World War II plutonium production. The 221-U Process Canyon Building is called canyon building because of its monolithic size and the canyon-like appearance of its upper galleries. The B, T, and U plants were built to extract plutonium from fuel rods irradiated in the Hanford Site production reactors. Each plant was equipped to use a bismuth phosphate separation process. Early operational experience, however, indicated that B and T plants were sufficient to meet production goals and U Plant was held in reserve.

The U Plant was used to train B and T plant operators until 1952 when it was converted to a tributyl phosphate (TBP) process for uranium recovery from bismuth phosphate process wastes.

The U Plant TBP process recovered residual uranium from B and T plant waste, which had been stored in the 200 East and 200 West Area tank farms. The waste tanks were sluiced with their own supernatant to produce a slurry that was pumped to U Plant via underground stainless-steel transfer lines. A counter-current extraction column used organic solutions of TBP in kerosene to preferentially attract uranium, separating it from other fission products and small amounts of plutonium. Uranium was stripped back into the aqueous phase in a second column. The resulting uranyl nitrate was converted to UO_3 by calcination at high temperatures in the UO_3 Plant (Bramson 1989, Ballinger and Hall 1989, and WHC 1990).

The same underground transfer lines were used to pump U Plant TBP waste to cribs and trenches located near B Plant in the 200 East Area, some 3 mi distant. The U Plant non-TBP waste was disposed of in nearby cribs, trenches, dry wells, reverse wells, and the U-Pond. See Table 1-0 for a description of U Plant liquid-waste transfer history (Bramson 1989).

The U Plant was placed in standby in 1958. It was used for an unspecified time for decontamination and reclamation activity and was subsequently retired. All TBP process hardware remains in place.

The 221-U Process Canyon Building is currently used to store spare equipment that has been reconditioned in the T Plant equipment decontamination facility. The overhead crane is operable. Electrical power, sanitary and raw water, and steam are available. The deck level of the canyon has been decontaminated to a level that allows reasonable access with a low level of radiation exposure. The electrical gallery is contaminated in spots. One building air supply fan and one exhaust fan continue to operate. The exhaust fan exhausts through the 291-U sand filter (Baker et al. 1988).

Numerous Hanford Site drawings are available that describe U Plant and its environs. Appendix A provides photographs of U Plant.

Table 1-0. U Plant Waste History.

Date	Source of waste	Waste site
11/52 to 12/57	Evaporator Process Condensate from 221-U Process Canyon Building and 224-U Building	216 B-12 Crib
11/54 to 11/54	TBP Waste from 221-U	216 B-43 Crib
11/54 to 03/55	TBP Waste from 221-U	216 B-44 Crib
01/55 to 02/55	TBP Waste from 221-U	216 E-42 Crib
04/55 to 06/55	TBP Waste from 221-U	216 B-45 Crib
09/55 to 12/55	TBP Waste from 221-U	216 B-46 Crib
09/55 to 09/55	TBP Waste from 221-U	216 B-47 Crib
11/55 to 07/57	TBP Waste from 221-U	216 B-48 Crib
11/55 to 12/55	TBP Waste from 221-U	216 B-49 Crib
01/56 to 01/56	TBP Waste from 221-U	216 B-17 Crib
01/56 to 02/56	TBP Waste from 221-U	216 B-14 Crib
03/56 to 04/56	TBP Waste from 221-U	216 B-18 Crib
04/56 to 12/57	TBP Waste from 221-U	216 B-15 Crib
04/56 to 08/56	TBP Waste from 221-U	216 B-16 Crib
08/56 to 09/56	TBP Waste from 221-U	216 B-20 Crib
09/56 to 10/56	TBP Waste from 221-U	216 B-21 Crib
10/56 to 10/56	TBP Waste from 221-U	216 B-22 Crib
10/56 to 10/56	TBP Waste from 221-U	216 B-23 Crib
10/56 to 11/56	TBP Waste from 221-U	216 B-24 Crib
11/56 to 12/56	TBP Waste from 221-U	216 B-25 Crib
12/56 to 02/57	TBP Waste from 221-U	216 B-26 Crib
02/57 to 10/57	TBP Waste from 221-U	216 B-19 Crib
02/57 to 04/57	TBP Waste from 221-U	216 B-27 Crib
04/57 to 06/57	TBP Waste from 221-U	216 B-28 Crib
06/57 to 07/57	TBP Waste from 221-U	216 B-29 Crib
07/57 to 07/57	TBP Waste from 221-U	216 B-30 Crib
07/57 to 08/57	TBP Waste from 221-U	216 B-31 Crib
08/57 to 09/57	TBP Waste from 221-U	216 B-32 Crib
09/57 to 10/57	TBP Waste from 221-U	216 B-33 Crib
10/57 to 10/57	TBP Waste from 221-U	216 B-34 Crib
12/57 to 01/58	TBP Waste from 221-U	216 B-52 Crib
11/51 to 06/67	Liquid Waste from 221-U/224-U/276-U	216 U-1 Crib
03/52 to 05/67	Liquid Waste from 221-U/224-U/276-U	216 U-2 Crib
05/54 to 08/55	241-U Condensate	216 U-3 Crib
03/47 to 08/55	222-U Lab Waste	216 U-4 Reverse Well
07/55 to 07/70	222-U Lab Waste	216 U-4A Dry Well
01/60 to 09/68	222-U Lab Waste	216 U-4B Dry Well
03-52 to 03-52	221-U Uranium Waste	216 U-5 Trench
03-52 to 03-52	221-U Uranium Waste	216 U-6 Trench
03-52 to 06-57	221-U Counting Box Floor Drainage	216 U-7 French Drain
06/52 to 03/60	221-U and 224-U Process Condensate	216 U-8 Crib
04/60 to 01/88	291-U and 224-U Waste	216 U-12 Crib
07/44 to Present	Waste from 284-W, 2723-W, 221-U Chem Sewer, 224-U and 241-U	216 U-14 Ditch
05/57 to 05/57	276-U Waste from 288-U Tank	216 U-15 Trench
01/84 to 1987	224-U Cooling Water and Condensate	216 U-16 Crib

UN-200-W-46, -48, -86, -101, -117, -118, and -138 describe unplanned releases of radioactive contaminants at or near the 221-U Process Canyon Building. See Appendix B, WIDS Data.

URANIUM OXIDE (UO₃) PLANT

Like the 221-U Process Canyon Building, the UO₃ Plant will not be remediated as part of the 200-UP-2 Operable Unit but is briefly described here as a source of wastes flowing to multiple 200-UP-2 Operable Unit waste sites.

The UO₃ Plant is an active production facility that is currently in standby mode awaiting its next production campaign scheduled for June 1991. Constructed in 1944, the UO₃ Plant was used for fuel processing as part of the original U Plant complex but was never used for its original purpose. The UO₃ Plant was operated as a training facility from 1944 to 1950 and converted in 1952 to a uranium reduction facility. It was converted again in 1955 to its current UO₃ configuration in support of its Plutonium-Uranium Extraction (PUREX) uranium oxide mission. This mission involves conversion of PUREX-generated liquid uranium nitrate (UNH) to powdered UO₃. The UNH is transferred to the UO₃ Plant by tanker truck.

Located immediately south of the 221-U Process Canyon Building, the UO₃ Plant is a complex of several buildings, a tank farm, storage areas, and load/unload facilities. The UO₃ Plant's primary building is 224-U, a three-story structure measuring 200 x 66 ft, providing over 32,300 ft² of total area. Hanford Site drawings show the UO₃ Plant's relationship to other nearby structures and its waste lines flowing to 200-UP-2 Operable Unit waste units.

The UO₃ Plant has provided liquid waste to 200-UP-2 Operable Unit underground waste units since its beginning as an operational production facility. The UO₃ Plant contributed to the 216-U-1, 2, 8, 12, 16, and 17 crib waste inventories. Currently, noncorrosive steam condensate goes through the 207-U Retention Basins to the 216-U-14 Ditch and other condensate and cooling water to the 216-U-17 Crib (Bramson 1989).

The UN-200-W-55 describes a major contamination event that occurred in April 1960, when 1.5 tons of uranium powder was spilled onto the 224-U Building loading ramp. Additional contaminations of the UO₃ Plant are described in UN-200-W-33, -39, and -78. See Appendix B, WIDS Data.

241-WR VAULT

Constructed in 1952 as part of the U Plant uranium recovery program modification, the 241-WR Vault is a 128 x 66 x 45 ft deep underground concrete structure that contains nine 50,000-gal storage tanks and associated pumps, valves, and agitators. These storage tanks were used during U Plant operation (1952-1958) to store uranyl nitrate hexahydrate (UNH) for feed to the 221-U Process Canyon Building, temporary storage of recovered nitric acid (HNO₃), and to hold TBP waste before routing to B Plant cribs and trenches. Following termination of U Plant operations in 1958, the 241-WR Vault was used to store nitric acid and thorium from reduction oxidation (REDOX) and PUREX.

Nitric acid was transferred by railroad tank car and thorium was transferred by truck. The UNH, HNO₃, and TBP waste were transferred to the 241-WR Vault through underground transfer lines.

A significant but unidentified contamination is reported to have occurred in the early 1960's when a tank overflowed and filled its cell. The tank may have held thorium. When the tank was subsequently pumped out, it became buoyant in the spilled liquid and floated loose from its base, rupturing its lines, jumpers, and mechanical connections. A significant cleanup effort was required to return the facility to service. The 241-WR Vault is reported to contain radioactively contaminated equipment and structure with an estimated contamination burden of 60 Ci beta.

The 241-WR Vault is now completely sealed. Aboveground structures, the entry port, and vents have been dismantled, and the vault has been sealed with a plasticized foam. All tanks and related equipment remain in place within the 241-WR Vault (WHC 1990).

Aliases for the waste unit include 241-WR Diversion Station Vault and Thorium Vault. Located at Hanford Site coordinates N38800 W72900, the 241-WR Vault is 700 ft above mean sea level (msl) and 236 ft above the water table.

PROCESS LINES AND ENCASEMENTS

Process lines are not included in the 200-UP-2 Operable Unit but are described here because they pass through the unit and have been essential to the operation of 221-U Process Canyon Building, 224-U Building, 241-WR Vault, and related tank farms.

Process lines, sometimes referred to on drawings as transfer lines or process sewer lines, connect the major process facilities with each other and with their high-level waste handling facilities. Most are 3-in-diameter stainless-steel pipes with welded joints. Major process line groupings are enclosed in reinforced concrete encasements. Nearly all are below grade, some as deep as 15 ft. A few, which pass between adjacent facilities, are elevated above ground on wooden poles.

Encasements are concrete fixtures designed to protect from one to seven buried process lines. The encasements vary in width, depending on the number of process lines contained. The base portion is made of reinforced concrete that was formed and poured in place. Separate channels are sometimes provided for each process line and the lines are raised from the encasement bottom by steel spacers. Steel plate of various design was sealed in place over the process line channels to form a water-tight seal. A reinforced concrete upper portion, or encasement lid, was then sealed in place to form a second water-tight seal to further protect the process lines. Riser pipes were provided to allow interior sampling of the encasement for contamination that might result from process line leakage.

Encasements protect process lines running between S, T, and U plants and the 241-S, T and U tank farms. Diversion stations at the three tank farms and at U Plant permit routing of process fluids to the different lines.

CONSTRUCTION SURFACE LAYDOWN AREA

The Construction Surface Laydown Area was a shallow pit used for disposal of unusable construction materials such as valves, piping, and plumbing materials. There is no evidence that any of the materials disposed of were radioactively or chemically contaminated.

The Construction Surface Laydown Area is located southeast of the intersection of 16th Street and Beloit Avenue, Hanford Site coordinates N37625 W72450 (center of pit). The pit was a 400 x 175 x 15 ft deep excavation into which trucks were driven to dump materials. Although drawings are referenced in Stenner 1988, none have been located that show the pit. Aerial photographs of the area show its approximate location and size. See Appendix A for photo (WHC 1990, Stenner et al. 1988, and Hanford photo's).

The area of the pit was cleaned and grubbed in 1987 before construction of the 216-U-17 Crib, the dimensions of which partially encompass those of the pit.

No radionuclide or hazardous chemical inventories are available for this site.

207-U RETENTION BASINS

The 207-U Retention Basins are located at Hanford Site coordinates N38000 W75200. They consist of two concrete basins, each about 6.5 ft deep and holding about .5 million gallons. The bottom dimensions of each basin are 106 x 106 ft. Total dimensions of the 207-U Retention Basins are 246 x 123 ft.

Associated structures include inlet and outlet structures on the east and west sides, located outside of the 207-U Retention Basins. Also included are two sections of 16-in. concrete pipe, about 13 ft long, running to two 3 x 3 ft sumps, one for each basin (WHC 1990).

Until 1972, the 207-U Retention Basins received steam condensate and cooling water from the 224-U Building and chemical sewer waste from 221-U Process Canyon Building. Since that year, the 207-U Retention Basins have received only cooling water from the 224-U Building. The 207-U Retention Basins were temporarily replaced by the 216-U-16 Crib but were reactivated when the 216-U-16 Crib shut down. Effluent is routed from the 207-U Retention Basins to the 216-U-14 Ditch (Maxfield 1979).

In the 1960's, sludge was scraped from the north basin and buried in a 40 x 10 x 8 ft deep trench on the north side of the north basin (216-W-22). A similar action was taken to clean out the south basin and a similar burial trench is located immediately south of the south basin (216-W-21) (Maxfield 1979). These waste units are also described as unplanned releases. See unplanned releases UPR-200-W-111 and 112.

On August 6, 1986, about 800 gal of 50% reprocessed nitric acid was released to the 207-U Retention Basins and subsequently to the 216-U-14 Ditch. The total release to the environment consisted of about 225,000 lbs of corrosive solution (pH less than 2.0) and 100 lbs of uranium (Stenner et al. 1988).

The north basin is overgrown with aquatic plant life. Surface contamination is measured at 200 to greater than 100,000 counts per minute (cpm). No aliases are known for this waste unit. See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

216-U-1 AND -2 CRIBS

The 216-U-1 and -2 Cribs will be treated together in this report because of their similarities and colocation. They are similarly treated in most reference materials.

Located at Hanford Site coordinates N37860 W74242, the 216-U-1 and -2 Cribs are 200 ft north of 16th Street and 1,000 ft east of the 207-U Retention Basins in the 200 West Area (WHC 1990 and Maxfield 1979).

These cribs sit side by side in an east-west orientation with overflow from the 216-U-1 crib flowing to the -2 Crib. Each is a 12 x 12 x 4 ft wooden structure constructed of 6 x 6 in. timbers. The cribs rest on undisturbed soil at the bottom of a 20-ft-deep backfilled excavation. Gravel fill was not used. The 216-U-1 and -2 Cribs are about 60 ft apart and are connected by a 3.5-in. stainless-steel pipe.

The 2-in. stainless-steel vent pipes were installed but blanked off and replaced at a later date with .25-in. stainless-steel lines that extend downward from the surface to within 1 ft of the bottom of each crib. The 8-in. black iron test well casings also extend from the surface, through the center of each crib structure, downward to a depth of 70 ft. All wastes flowed to these cribs from the 241-U-361 Settling Tank, located about 80 ft east of the 216-U-1 Crib.

Constructed in 1951, these cribs operated from 1951 through 1967, receiving liquid waste from the 221-U Process Canyon Building and 224-U Buildings. Waste history is described in WIDS as follows.

"From 3/52 (Crib 2) to 6/57, the site received cell drainage from Tank 5-6 in the 221-U Process Canyon Building and waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank. From 6/57 to 7/57, the site received waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank and contaminated solvent from the 276-U Settling Tank Storage Area. The discharge of 221-U Process Canyon Building waste was discontinued during shutdown of production operations. From 7/57 to 5/67, the site received waste from the 224-U Building and equipment decontamination and reclamation wastes from Chemical Processing Division (CPD) Services Operations in the 221-U Process Canyon Building. Crib 2 was deactivated in 5/67. The waste was low salt and neutral/basic (WHC 1990 and Maxfield 1979)."

Records indicate that 4,040 kg of uranium were discharged to the 216-U-1 and -2 Cribs between 1957 and 1967, which became insoluble as it reached the sediments by reacting with carbonate to form a carbonate-phosphate compound. Acid wastes discharged to the 216-U-1 and -2 Cribs between 1957 and 1967 reacted with the uranium complexes to form compounds that are both soluble and nonsorbing in the sediments. While the acid had mobilized the uranium, the volume of fluid discharged to the 216-U-1 and -2 Cribs was inadequate to transport the uranium in significant quantities to the water table.

A new crib, 216-U-16, was installed a few hundred feet south of the 216-U-1 and -2 Cribs. Liquid discharges to the 216-U-16 Crib were sufficient by early 1985 to form a pond above a caliche layer (about 165 ft below the surface), move laterally below the 216-U-1 and -2 Cribs, and transport the solute uranium through holes in the caliche layer to the water table. In February 1985, it was discovered that uranium concentrations in the groundwater below the 216-U-1 and -2 Cribs had abruptly increased from a background of about 166 pCi/L to about 72,000 pCi/L.

Three actions were taken to remedy the discharges of uranium to the groundwater. Groundwater was pumped through an ion-exchange column to remove uranium. Portions of existing wells were grouted to prevent vertical groundwater communication. New monitoring wells were installed to aid in characterization and cleanup of the uranium plume. Eight million gal of groundwater were pumped and treated removing 687 kg of uranium. Uranium contamination, as measured at nearby wells, was reduced from 72,000 pCi/L to about 17,000 pCi/L (Baker et al. 1988).

A spill occurred in the vicinity of 216-U-1 and -2 Cribs. K. F. Baldrige reports as follows.

"Organic wastes and cell drainage from the TBP and UO₃ plants overflowed to the ground by way of the tank and crib vents in the spring of 1953. Ground contamination up to 11.5 rads/h at 3 in. was found over an area of approximately 50 ft². Decontamination was attempted and the area was then backfilled, delimited with a wooden fence, and posted with radiation zone signs (Baldrige 1959)."

See also unplanned release UN-200-W-19.

Aliases for the 216-U-1 and -2 Cribs include 361-WR, 216-U-3 French Drain, and 216-UR-1 and -2 cribs.

See Appendix A for photo's and Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

216-U-3 FRENCH DRAIN

Although currently listed as a french drain, the 216-U-3 French Drain is described on drawings as a crib. The 216-U-3 French Drain is located just south of the 241-U Tank Farm at Hanford Site coordinates N37620 W75630. The 216-U-3 French Drain is a 12-ft-deep rock filled excavation with a 6-ft-diameter bottom and side slopes of 3:1. The 216-U-3 French Drain has no fabricated sides as the Hanford Site french drains typically have.

A 2-in. steel line enters the drain from the northeast at a depth of 7 ft and a 4-in. black steel riser pipe extends upwards to a cap 12 in. above the surface. The 216-U-3 French Drain is a registered underground injection well.

The 216-U-3 French Drain received condensate from the 241-U steam condenser on the 241-U-104 and 241-U-110 waste tanks at the 241-U Waste Tank Farm from 1954 to 1955. It is estimated that 7.91×10^5 L of low-salt, neutral/basic condensate have been pumped into the 216-U-3 French Drain.

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories (WHC 1990, WHC 1988, Maxfield 1979, and Stenner et al. 1988).

Photos are included in Appendix A. The alias for this site is 216-U-11.

216-U-4 REVERSE WELL

The 216-U-4 Reverse Well is located 17 ft west and 2 ft north of the west corner of the 222-U Laboratory Building, at Hanford Site coordinates N38209 W73218. The 216-U-4 Reverse Well is immediately inside the UO_2 exclusion area fence and may be seen but not approached from the direction of the 222-U Building. An "Underground Radioactive Material" marker is attached to the portion of pipe that extends aboveground and a concrete post with an identification plate reading "216-U-4 Crib" is installed between the well and the drain.

The 216-U-4 Reverse Well is a 3-in-diameter steel pipe that extends 75 ft beneath the surface. The bottom 25 ft are perforated and the bottom end is nearly closed by flattening.

The 216-U-4 Reverse Well received 300,000 L of decontamination waste from the 222-U Laboratory hood sinks from 1947 to 1955. This waste is described as acidic plutonium and fission product waste. The 216-U-4 Reverse Well was reportedly deactivated in 1955 when it began to plug, and an overflow line to the newly constructed 216-U-4A French Drain was installed. Baldrige, 1959, reports that the pipe has been sealed off above ground level but is not posted as a radiation zone. A site inspection found that two warning markers have been installed. The 216-U-4 Reverse Well is a registered injection well.

Aliases for this site include 222-U Dry Well, 222-U-110 Dry Well, 216-U-2 and 216-U-4 dry wells. Clukey (1956) refers to the combination of well and drain as the "222-U-110 Reverse Well and French Drain."

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories. Photos are included in Appendix A (WHC 1990, Stenner et al. 1988, Baldrige 1959, Clukey 1956, and Maxfield 1979).

No evidence that any overt steps were taken to deactivate the 216-U-4 Reverse Well. When it began to plug (i.e., failed to percolate liquids) in 1955 the 216-U-4A French Drain was constructed adjacent to the 216-U-4 Reverse Well and an overflow line was installed between the well and the drain. No evidence exists that any steps were taken to seal off the

216-U-4 Reverse Well. If the 216-U-4 Reverse Well were fully plugged, all waste liquids entering the top of the well would flow through the overflow line into the 216-U-4A French Drain. If, however, the well were only partially plugged, or if it became unplugged over time, some quantity of wastes would continue to pass to the soil column through the well, the balance passing to soil through the 216-U-4A French Drain but at a much shallower depth.

216-U-4A FRENCH DRAIN

The 216-U-4A French Drain was installed in mid-1955 to receive 222-U Laboratory hood sink decontamination wastes when the 216-U-4 Reverse Well began to plug. The drain was installed 8 ft north of the well and the two were connected by an overflow line.

Located about 15 ft west of the west corner of the 222-U Laboratory Building, the 216-U-4A French Drain is a 51-in-diameter concrete pipe that extends downward 4 ft (minimum), the upper surface of which is 5 ft below grade. The 216-U-4A French Drain top is covered with a 5-in-thick wooden lid. The drain rests on undisturbed soil and is not gravel filled.

A 3-in. stainless-steel line runs from the 216-U-4 Reverse Well to the 216-U-4A French Drain, entering the drain a few inches below its lid.

The 216-U-4A French Drain is located immediately outside the UO₃ exclusion area security fence. It is unmarked, but the adjacent 216-U-4 Reverse Well is marked with an "Underground Radioactive Material" marker attached to the portion of pipe that extends aboveground and a concrete post with identification plate reading "216-U-4 Crib" is installed between the well and the drain.

From 1955 until 1970, the drain received 545,000 L of acidic plutonium and fission product decontamination waste. See Appendix B, WIDS Data, for radionuclide inventory and hazardous chemical inventory. Photos are included in Appendix A.

Aliases for this site include 222-U Dry Well, 222-U-110 Dry Well, and 216-U-2 (WHC 1990, Clukey 1956, and Maxfield 1979).

216-U-4B FRENCH DRAIN

The 216-U-4B French Drain was installed in January 1960 to receive liquid wastes from the 222-U Laboratory. A registered underground injection well, the drain is a 36-in-diameter concrete pipe that extends 10 ft beneath the surface. The 216-U-4B French Drain operated until 1970 and received 33,000 L of low-salt, neutral/basic 222-U Laboratory hot cell and hood wastes.

The 216-U-4B French Drain is located 30 ft south of the 222-U Laboratory rear wall at Hanford Site coordinates N38248 W73100. It was vented with a 1-in. steel riser pipe, which is now capped. The site is currently marked with four concrete posts and a steel chain with "Underground Radioactive Contamination" warning signs attached (WHC 1990, Stenner et al. 1988, Clukey 1956, and Maxfield 1979).

The alias for this site is the 216-U-4B Dry Well. See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories. Photos are included in Appendix A.

216-U-5 AND 216-U-6 TRENCHES

The 216 U-5 and 216-U-6 trenches will be treated together in this document because of their colocation and similarity of function. No structures exist in either waste unit. Both are simple excavations that have been backfilled and have had all piping removed.

The 216-U-5 and 216-U-6 trenches are located immediately northwest of the 241-WR Vault and north of the east end of the 221-U Process Canyon Building.

Both waste units were excavated in March 1952 to receive unirradiated uranium waste from the cold startup run at U Plant (221-U Process Canyon Building). The liquid waste was transferred to the trenches by way of aboveground pipes, which were removed at the conclusion of the waste transfer. Both trenches were then backfilled in March 1952, and the sites were posted with barriers and signs.

When opened, the 216-U-5 Trench was 40 x 40 x 10 ft deep. The 216-U-6 Trench was 10 x 75 x 10 ft deep.

The 2,250,000 L of waste containing 360 kg of unirradiated uranium were pumped into each trench (Stenner et al. 1988). Another reference cites the amount of uranium as 16,000 lbs, presumably 8,000 lbs into each trench (Baldrige 1959).

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories. Additional descriptive documents include RHO-CD-673 (Maxfield 1979), HW-43121 (Clukey 1956), and Hanford Site drawings. Photographs are included in Appendix A.

Aliases for this waste site include 216-U-4 and 216-U-5, 221-U Cold Uranium Trench, and 221-U Cold Uranium Grave 1 and 2.

216-U-7 FRENCH DRAIN

The 216-U-7 French Drain is located 8 ft south of the 221-U Counting Box to which it is connected. The 216-U-7 French Drain is a gravel-filled 30-in-diameter concrete pipe extending 17 ft downward in 3-ft sections. The 216-U-7 French Drain received liquid wastes from the 221-U Counting Box floor drain from 1952 through 1957 during the metal recovery program at 221-U Process Canyon Building. The 216-U-7 French Drain top extends a few inches above grade and is capped with a wooden cover.

The 216-U-7 French Drain is connected to the 221-U Counting Box by a 3-in. schedule 40 steel drain pipe that intersects the 216-U-7 French Drain 13 ft below grade and extends 6 in. into the drain.

One Hanford Site drawing incorrectly identifies the 221-U Counting Box as the 291-U Blower Pit, thereby suggesting that the 216-U-7 French Drain supports the wrong facility. Detailed drawings clearly indicate, however, that the 216-U-7 French Drain is connected to the 221-U Counting Box and the blower pit floor drain is connected to the 241-WR Vault.

Perhaps because of the mislabeled drawing, confusion exists concerning the relationship between 216-U-7 French Drain and unplanned release UPR-200-W-138. The UPR-200-W-138 describes a spill of about 300 lbs of uranium, in UNH form, into the "vessel vent blower pit and through its floor drain into the 216-U-7 French Drain." As mentioned, detailed drawings show that the 216-U-7 French Drain is connected to the 221-U Counting Box, not to the blower pit, and the blower pit drains to the 241-WR Vault. It is, therefore, unclear at which point the UNH reached soil at the 221-U Counting Box drain or at the blower pit (WHC 1990, Baldrige 1959, Stenner et al. 1988).

The RHO-CD-673 (Maxfield 1979) and HW-43121 (Clukey 1956) were reviewed and sufficient detail was not found to resolve this question. It might be best resolved through interviews with knowledgeable personnel. Until the issue is resolved, it should be assumed that 300 lbs of uranium were introduced to the soil through the 216-U-7 French Drain.

Aliases for this site include UN-216-W-11 and 221-U Vessel Vent Blower Pit French Drain. See Appendix A for photos and Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

216-U-8 CRIB

The 216-U-8 Crib consists of three timber crib structures within a north-south gravel-filled 160 x 50 ft trench. The center point of the 216-U-8 Crib is located at Hanford Site coordinates N36860 W763100, about 450 ft west of Beloit Avenue and 750 ft south of 16th Street.

Each crib structure measures 16 x 16 x 10 ft high, is constructed of 6 x 8 in. Douglas fir timbers resting on a 3-ft-thick gravel bed about 31 ft below grade. The cribs are 60 ft apart, connected in series by a 6-in. schedule 40 steel pipe. Each pipe is supported at two points by a wooden pipe support. Each crib structure was vented by two 4-in. schedule 40 steel pipes that have since been capped below grade.

A test well constructed of 8-in. schedule 40 pipe extends through the center of each crib from 2 ft above grade to a depth of 50 ft.

The waste transfer line to the 216-U-8 Crib is a 6-in. vitrified clay pipe protected by a 12-in. concrete encasement. A total of approximately 378,000 L of acidic process condensate from 221-U Process Canyon Building, the 224-U Building, and the 291-U Stack drainage system were discharged to the 216-U-8 Crib.

In 1960, the 216-U-8 Crib was deactivated when surface subsidence was observed around the vent risers. The incoming waste transfer line was blanked off at a point about 60 ft north of the 216-U-8 Crib. Liquid wastes were thereafter diverted to the 216-U-12 Crib (WHC 1990 and Maxfield 1979).

Aliases for this site include the 216-U-9 and 216-WR-1, -2, -3 cribs. See Appendix A for photos and Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

This waste site reportedly holds the largest inventory of waste uranium of any 200 West Area crib (Baker et al. 1988).

216-U-12 CRIB

The 216-U-12 Crib is located southwest of the intersection of Beloit Avenue and 16th Street, at Hanford Site coordinates N36350 W73100. The 216-U-12 Crib is about 250 ft south of the 216-U-8 Crib and nearly in line with it.

The 216-U-12 Crib consists of a 150-ft-long gravel-filled drain field, which replaced the 216-U-8 Crib when it began to show signs of structural failure.

The 216-U-12 Crib is about 13 ft deep and contains no structure. Its bottom dimensions are about 100 x 10 ft and has natural earthen sides with a 2:1 slope. The bottom 7 ft are filled with graduated layers of sand and gravels that are covered with a polyethylene barrier. A perforated 12-in. vitrified clay pipe (VCP) runs the length of the 216-U-12 Crib 10 ft beneath the surface and 3 ft above the 216-U-12 Crib bottom. A 13-ft, 12-in-long VCP pipe serves as a vent riser at the south end, extending from 10 ft beneath the surface to 3-ft above grade. Two 17-ft-long VCP liquid-level gage wells also extend 3 ft above the surface. A 6-in. VCP waste line delivered waste to the 216-U-12 Crib from the point where the 216-U-8 Crib feed line was blanked off and diverted to the 216-U-12 Crib (WHC 1990).

Constructed in 1960, the 216-U-12 Crib received 1.5 million L of liquid waste during its 28-yr use. Drainage was received from the 291-U Stack drainage system, 224-U Building process condensate system, wastes from the C-5 and C-7 tanks, and miscellaneous storm drain wastes from 224-U Building.

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

The 216-U-12 Crib is a RCRA Site with a 1994 Tri-Party Agreement milestone for completion of a closure/post closure plan.

216-U-14 DITCH

The 216-U-14 Ditch is an open ditch running from northeast to southwest across about 1 mi of the 200 West Area. The 216-U-14 Ditch has provided waste disposal for a number of 200 West Area facilities since 1944. Historically referred to as the "Laundry Ditch," the 216-U-14 Ditch received liquid wastes from the 2724-W Laundry Building but received a greater waste burden from other waste sources.

The 216-U-14 Ditch has a minimum bottom width of 8 ft, sides that slope at 2.5:1, and was 5,680 ft long before being partially backfilled. The 216-U-14 Ditch originated 1,600 ft north of the 221-U Process Canyon Building, about midway between 19th Street and 22nd Street, and 700 ft west of Bridgeport Avenue, and terminated at the 216-U-10 Pond.

Approximately 75% of the unit has been backfilled. It now originates about 300 ft north of 16th Avenue and terminates about 300 ft west of Cooper Avenue. The 216-U-14 Ditch no longer flows into the 216-U-10 Pond, which has also been backfilled. A 48-in. x 150-ft-long culvert allows the 216-U-14 Ditch to pass beneath 16th Street and a 24-in. culvert passes beneath 19th Street (WHC 1990 and Maxfield 1979).

Waste types and amounts have varied over time. The WIDS reports the following:

"From 7/44 to 9/44, the site received wastewater from the 284-W Powerhouse. From 9/44 to 1/50, the same plus waste from 2723-W. From 1/50 to 3/52, received wastewater from 284-W and 2724-W Laundry Building. From 3/52 to 5/54, the same plus chemical sewer waste from 221-U Process Canyon Building and cooling water from 224-U Building. From 5/54 to 8/55, the same plus cooling water from 241-U-110 condenser tank. From 8/55 to 11/73, the same plus 271-U cooling water. From 11/73 to 4/80, the same plus 242-S Evaporator condensate and cooling water. From 4/80 to 9/81, the same minus 242-S condensate, 2723-W and 2724-W waste. From 9/81 to 7/84, the same minus 221-U Process Canyon Building, 224-U Building, and 271-U waste. Since 7/84, the site has been receiving only 242-S Evaporator cooling water" (WHC 1990).

K. F. Baldrige reports that 150,000 gal/day of laundry water has run into the 216-U-14 Ditch since 1955 (Baldrige 1959).

About 796 gal of 50% reprocessed nitric acid were released to the unit on August 6, 1986. The total release to the environment consisted of about 225,000 lbs of corrosive solution (pH less than 2.0) and 100 lbs of uranium.

The 216-U-14 Ditch is partially overgrown with grasses and various aquatic plants. Fresh water continues to be provided to the trench from a fire hydrant near the 242-S Evaporator through a 3-in. underground line.

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

216-U-15 TRENCH

The 216-U-15 Trench was a 20 x 20 x 15 ft deep excavation that was opened in May 1957 and backfilled immediately after receiving wastes.

Located approximately at Hanford Site coordinates N38270 W73900, the 216-U-15 Trench is 550 ft north of 16th Street and 500 ft west of the 271-U Building (WHC 1990).

The 216-U-15 Trench was opened to receive approximately 7,000 gal of interface crud, activated charcoal, and diatomaceous earth containing about 1 Ci of fission products from the 388-U Tank in the 276-U Solvent Storage Area. Wastes were pumped to the 216-U-15 Trench through aboveground lines, which were removed after the waste transfer.

The exact nature of organic wastes received in this waste unit is unclear. One researcher reports 40,000 kg of Hexone and 13,000 kg of TBP while another reports 40,000 kg of paraffin hydrocarbon and 13,000 kg of TBP (Stenner et al. 1988).

H. L. Maxfield provides radionuclide inventory data at time of discharge as follows (Maxfield 1979).

<u>Radionuclide</u>	<u>At time of discharge</u>
Plutonium, g	0.1
Beta, Ci	7.0
Strontium-90, Ci	0.1
Ruthenium-106, Ci	1.0
Cesium-137, Ci	0.1
Cobalt-60, Ci	0.1
Uranium, kg	2.3

No surface markers exist to identify the exact location of this waste unit.

See Appendix A for photos and Appendix B, WIDS Data, for radioisotope and hazardous chemical inventories.

Data sources include WHC 1990, Stenner et al. 1988, Maxfield 1979, Baldrige 1959, and a site inspection.

Aliases for this site include 388-U Tank Dump and U-152 Interface Crud Burial Site.

216-U-16 CRIB

Located south of 16th Street and midway between Beloit Avenue and Cooper Avenue, the 216-U-16 Crib is a large, gravel-filled drain field with no major structure other than a distribution box.

Located at Hanford Site coordinates N37209 W74376, the 216-U-16 Crib is 262 x 191 x 15 to 17 ft deep. Liquid wastes enter a 6 x 6 ft distribution box and flow into a pair of 8-in. PVC header pipes that form the east and west borders of the drain field. Connecting the header pipes are twenty-two, equally spaced, 4-in-diameter perforated drain pipes that run the width of the drain field 3 ft above the 216-U-16 Crib bottom. Each drain pipe has a 4-in. vent pipe that extends to the surface. Three 6-in. gage wells also extend to the surface.

The 216-U-16 Crib is filled with gravel to a depth of 5 ft. Covering the gravel is a 36-mil reinforced polyethylene liner. A 6-in. subdrainage pipe runs the width of the unit at the west side (WHC 1990).

The 216-U-16 Crib received 224-U Building steam and process condensate and chemical sewer waste, 271-U compressor cooling water, and 221-U Process Canyon Building chemical sewer waste.

Liquid discharges to 216-U-16 Crib were sufficient by early 1985 to form a pool above a caliche layer (about 165 ft below the surface), move laterally northward below the 216-U-1 and -2 Cribs, and transport uranium from those cribs through holes in the caliche layer to groundwater. See 216-U-1 and -2 Cribs.

The alias for the 216-U-16 Crib is the UO_3 Crib (WHC 1990).

See Appendix B, WIDS Data, for radionuclide and hazardous chemical inventories.

216-U-17 CRIB

The 216-U-17 Crib is an active, underground, gravel-filled drain field located southeast of the intersection of Beloit Avenue and 16th Street, at Hanford Site coordinates N37575 W72480. The 216-U-17 Crib is oriented east to west and lies across the site of the Construction Surface Laydown Area, which was cleaned and grubbed prior to crib construction.

Constructed in 1986, the 216-U-17 Crib was designed to replace the 216-U-12 Crib, which had received its maximum allowed inventory of radioactive waste. The only discharge stream to the 216-U-17 Crib consists of the UO_3 process condensate stream. This waste stream is monitored at the UO_3 facility and transported underground to the 216-U-17 Crib through a 6-in. polyethylene drain pipe. A neutralization system operates to maintain waste pH within a range of 2.0 to 12.5.

The 216-U-17 Crib is an 18-ft-deep drain field that is covered with a 10-mil PVC membrane vapor barrier and backfilled. The drain field piping is designed to allow even flow over the entire 216-U-17 Crib from a distribution line within a 10 x 150 x 6 ft aggregate field. Three liquid-level wells are provided for monitoring the 216-U-17 Crib levels. Two vent risers are placed in the pipe header and contain deentrainers below ground level for protection against freezing, and for collection of any potential condensate (WHC 1990).

See Appendix B, WIDS Data, for an inventory of radionuclides that have been deposited in the 216-U-17 Crib.

The 216-U-17 Crib is protected by a chain barrier supported by steel posts. It is surveyed quarterly and no surface contamination has been discovered.

The site has no known aliases.

241-U-151 DIVERSION BOX

The 241-U-151 Diversion Box is an active waste unit located about 100 ft northeast of the intersection of Camden Avenue and 16th Street at Hanford Site coordinates N37845 W75390. High-level wastes passing to and from the 241-U Tank Farm pass through the 241-U-151 Diversion Box. The 241-U-151 Diversion Box has operated since 1946.

The 241-U-151 Diversion Box is a 20 x 9 x 17 ft high concrete box with a floor drain connected to the 241-U-301 Catch Tank. The 241-U-151 Diversion Box is buried to a depth that places the upper surface of its 3-ft-thick lid at ground level. Multiple encased liquid-waste transfer lines enter the 241-U-151 Diversion Box through its north wall. Liquid-waste routing is accomplished through the use of changeable jumper assemblies that connect pairs of waste transfer lines. Any leaks that occur are drained through the floor drain and, by gravity, through the drain line to the catch tank located about 450 ft to the west (WHC 1990).

Fourteen 3-in. stainless-steel transfer lines enter the 241-U-151 Diversion Box. Two transfer lines are connected directly to the 241-101 Tank in the 241-U Tank Farm. Others run to the 241-U-153 Diversion Box, to other tank farm facilities, and to various 200 West Area operations facilities. An additional 3-in. drain line runs from the floor drain to the catch tank.

K. F. Baldrige reports surface contamination around this waste unit. He states, "The ground around these boxes was contaminated in the spring of 1950 to a maximum observed dose rate of 20 mRads/h at surface. The contamination was covered with 1 ft of clean soil and the area aboveground delimited by a rope barricade posted with radiation zone signs" (Baldrige 1959).

See also unplanned release UN-200-W-6.

241-U-152 DIVERSION BOX

The 241-U-152 Diversion Box is an active waste unit located about 50 ft northeast of the intersection of Camden Avenue and 16th Street at Hanford Site coordinates N37800 W75400. High-level processing and decontamination wastes passing to and from the 241-U Tank Farm pass through this waste unit. It has operated since 1946.

The 241-U-152 Diversion Box is a 28 x 9 x 17 ft high concrete box with a floor drain connected to the 241-U-301 Catch Tank. The 241-U-152 Diversion Box is buried to a depth that places the upper surface of its 3-ft-thick lid at ground level. Multiple encased liquid-waste transfer lines enter the 241-U-152 Diversion Box through its north wall. Liquid-waste routing is accomplished through the use of changeable jumper assemblies which connect pairs of waste transfer lines. Any leaks that occur are drained by gravity through the floor drain and a drain line to the 241-U-301 Catch Tank that is located about 425 ft to the west (WHC 1990).

Twenty-one 3-in. stainless-steel transfer lines connect the 241-U-152 Diversion Box to the 241-U-133 Diversion Box, to 214-U Tank Farm facilities, and to various 200 West Area operations facilities. An additional 3-in. line runs from the floor drain to the 241-U-301 Catch Tank.

K. F. Baldrige reports surface contamination around this waste unit. He states, "The ground around these boxes was contaminated in the spring of 1950 to a maximum observed dose rate of 20 mRads/h at surface. The contamination was covered with 1 ft of clean soil and the area aboveground delimited by a rope barricade posted with radiation zone signs" (Baldrige 1959).

See also unplanned release UN-200-W-6.

241-UX-154 DIVERSION BOX

The 241-UX-154 Diversion Box is an active waste unit located about 50 ft southeast of the 221-U Process Canyon Building near its R-7 exit at Hanford Site coordinates N38460 W73115.

Associated with 221-U Process Canyon Building, the 241-UX-154 Diversion Box provides liquid-waste routing to the 241-WR Vault and various tank farms, including waste units in the 200 East Area via the inter-area transfer line.

The 241-UX-154 Diversion Box is a 52 x 6 x 11 ft high concrete box with a floor drain connected to the 241-UX-302 Catch Tank. The 241-UX-154 Diversion Box is buried to a depth of 11 ft and the upper surface of its 5-ft-thick lid is at ground level. Multiple encased liquid-waste transfer lines enter the 241-UX-154 Diversion Box through its southeast wall. Liquid-waste routing is accomplished through the use of changeable jumper assemblies that connect pairs of waste transfer lines. Any leaks that occur are drained through the floor drain and, by gravity, through a drain line to a catch tank that is located 25 ft to the southwest. The 241-UX-154 Diversion Box and 241-UX-302 Catch Tank are aligned in a southwest to northeast orientation (WHC 1990).

High-level process and decontamination wastes passing between the 221-U Process Canyon Building and waste units and between other process facilities and waste units pass through the 241-UX-154 Diversion Box. Operating since 1946, the 241-UX-154 Diversion Box serves as a waste transfer hub for not only 200 West Area, but also for cross-site waste transfers through the cross-site transfer line.

Twenty-seven 3-in. stainless-steel waste transfer lines connect the 241-UX-154 Diversion Box to the 221-U Process Canyon Building, 241-UX-302 Catch Tank, 241-U Tank Farm, 241-WR Vault, cross-site transfer lines, and 241-TX-155 Diversion Box. All lines, except the floor drain line to the 241-UX-302 Catch Tank, are encased in concrete (WHC 1990).

Steel-chain barricades and surface contamination warning signs are in place around this waste unit.

241-U-302 CATCH TANK

The 241-U-302 Catch Tank appears to be synonymous with the 241-UX-302 Catch Tank, which is in approximately the same location as that listed in WIDS for 241-U-302 Catch Tank. No evidence can be found of a second catch tank in this vicinity nor is a waste unit with the 241-U-302 Catch Tank designator mentioned on drawings or reference documents.

See 241-UX-302 Catch Tank.

241-UX-302 CATCH TANK

The 241-UX-302 Catch Tank appears to be synonymous with the 241-U-302 Catch Tank. The 241-UX-302 Catch Tank is an active waste unit located 25 ft southwest of the 241-UX-154 Diversion Box from which it accepts liquid wastes that may spill and drain through its floor drain.

The 241-UX-302 Catch Tank is a 36-ft-long by approximately 9-ft-diameter steel tank buried at a depth of about 4 ft.

Service dates are not available for this unit but may be assumed to approximate those of the 241-UX-154 Diversion Box which it supports (i.e., 1946 to present); nor are radionuclide or hazardous chemical inventories available for this unit. The 241-UX-302 Catch Tank would have received wastes that may have leaked into the 241-UX-154 Diversion Box, potentially including high-level process waste and various decontamination and other wastes. No waste volume data has been identified.

Steel-chain barricades and surface contamination warning signs are in place around this waste unit.

Please note that the WIDS database incorrectly places this waste unit within the 241-U Tank Farm.

241-U-361 SETTLING TANK

The 241-U-361 Settling Tank is located southwest of U Plant and 100 ft east of the 216-U-1 Crib at Hanford Site coordinates N37830 W74160. The 241-U-361 Settling Tank served as a settling tank for fluid wastes enroute to the 216-U-1 and -2 Crib from 1951 through 1967, receiving waste as follows.

"From 3/52 to 6/57, the site received cell drainage from Tank 5-6 in the 221-U Process Canyon Building and waste from the 224-U Building... From 6/57 to 7/57, the site received waste from the 224-U Building... and contaminated solvent from the 276-U Settling Tank Storage Area. The discharge of 221-U Process Canyon Building waste was discontinued during shutdown of production operations. From 7/57 to 5/67, the site received waste from the 224-U Building and equipment decontamination and reclamation wastes from CPD Services Operations in the 221-U Process Canyon Building. The waste was low salt and neutral/basic" (WHC 1990 and Maxfield 1979).

Records indicate that 4,040 kg of uranium were discharged to this waste unit between 1957 and 1967, the bulk of which necessarily overflowed into the 216-U-1 and -2 Cribs. The 241-U-361 Settling Tank is currently estimated to contain 27,500 gal of sludge of unknown plutonium content estimated at 2,125 Ci beta/gamma (WHC 1990).

The 241-U-361 Settling Tank is a circular 20-ft-diameter by 19-ft-deep structure made of 6-in-thick, reinforced, prestressed concrete. The 241-U-361 Settling Tank top is 6 ft below grade. Several vent and liquid level measurement risers penetrate the surface (WHC 1990 and Site Inspection).

A spill occurred in the vicinity of the 241-U-361 Tank. K. F. Baldrige reports as follows.

"Organic wastes and cell drainage from the TBP and UO_3 plants overflowed to the ground by way of the tank and crib vents in the spring of 1953. Ground contamination up to 11.5 rads/h at 3 in. was found over an area of approximately 50 ft². Decontamination was attempted and the area was then backfilled, delimited with a wooden fence, and posted with radiation zone signs" (Baldrige 1959).

See also unplanned release UN-200-W-19.

2607-W-5 SEPTIC TANK AND DRAIN FIELD

The 2607-W-5 Septic Tank and Drain Field are located 400 ft west of the southwest corner of the 221-U Process Canyon Building. It includes an underground septic tank, two distribution boxes, and two drain fields, referred to as tile fields on some drawings. It received sanitary wastewater and sewage from 221-U Process Canyon Building, 222-U Laboratory, UO_3 Plant, and the 271-U Pu Storage and Services Building (WHC 1990).

Operating from 1944 to the present, this active waste unit is located at Hanford Site coordinates N37825 W74050 (WHC 1990).

The 2607-W-5 Septic Tank is a 30 x 13 x 11 ft deep concrete box buried to a depth that places its upper surface at ground level. Three 3-ft-diameter entry openings exist on the top, each protected by a wooden cover. The 2607-W-5 Septic Tank is fed by an 8-in. vitrified tile pipe. A similar pipe connects the 2607-W-5 Septic Tank with an 5 x 4 x 9 ft deep concrete diversion box, and then to a second 7 x 5 x 9 ft deep concrete diversion box before entering the drain field. Each diversion box is buried to a depth that places its upper surface at ground level and is provided with a manhole for personnel entry.

The drain field consists of five 135-ft runs of perforated 8-in-diameter HEL-COR* pipes laid 20 ft apart. It lies in a gravel bed which extends 2 ft below the drain pipe. The excavation is backfilled to a depth of 2.5 ft above the drain pipe, forming a surface that is 3 ft below original grade. The drain field is, therefore, identifiable as a large rectangular recess in the

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otherwise flat field west of U Plant. The drain field is protected by a wooden barricade and warning signs. An earlier, now abandoned, drain field exists immediately west of the existing field. The drain field was somewhat larger but otherwise similar to the existing drain field (Site Inspection and WHC 1990).

No radionuclides or hazardous chemicals have been associated with this waste unit. Rate of sanitary waste and sewage generation is reported as 12.2 m³ per day (WHC 1990).

2607-W-7 SEPTIC TANK AND DRAIN FIELD

The 2607-W5 Septic Tank and Drain Field are located about 250 ft north of the northeast corner of the 221-U Process Canyon Building at Hanford Site coordinates N37825 W74050. Operating since 1954, this active waste site has received sanitary wastewater and sewage from the 221-U Process Canyon Building.

Little else is known about this waste unit. It may be located on Hanford Site drawings, but no further detail or history has been identified. Drawings show the location of the 2607-W-7 Septic Tank but not that of the drain field. One drawing refers to a drain field, or irrigation field, with the following citation, "Note: Irrigation field to be laid out by field in accordance with specification number 1909."

No radionuclides or hazardous chemicals have been associated with this waste unit. Rate of sanitary waste and sewage generation is reported as 1.02 m³ per day (WHC 1990).

276-U SOLVENT FACILITY

The 276-U Solvent Facility was omitted from the 200-UP-2 Operable Unit list of waste units but is described here in anticipation of its eventual inclusion.

The 276-U Solvent Facility is described as follows.

"The 276-U solvent handling facility is an aboveground concrete basin, 66 x 54 x 8 ft with 5-ft below grade. It is physically attached to the south end wall of 221-U Process Canyon Building.

The basin contains three tanks and three vacant concrete tank pads. Tank-380 is 17-ft in diameter and 17.5 ft high made of carbon steel with a 29,000 gal capacity. Tank-381 is 8-ft in diameter and 17.5 ft high made of black iron with a 6,000 gal capacity. Tank-388 is 6-ft in diameter and 14.5 ft high made of black iron with a 2,500 gal capacity.

There are stairs, platforms, catwalks, piping and utilities for service at the tank tops."

"Tank-388" is the tank which was cleaned in 1957 and its waste placed in the 216-U-15 Trench. See 216-U-15 Trench.

The history for this waste site is described as follows.

"The 276-U Solvent Facility was built for TBP and diluent storage, and for makeup and treatment of the organic solution used in 221-U Process Canyon Building. Three of six tanks have been removed and only tank pads remain. Piping above the vacant tank pads is cut and covered with tape and plastic. The remaining tanks are unused and this facility is considered retired."

The 276-U Solvent Facility is located at Hanford Site coordinates N38500 W73400 (WHC 1990).

No radionuclide or hazardous chemical inventories are available, but the 276-U Solvent Facility is known to be contaminated. Hanford Site documents report that it contains

"... surface contamination on tanks and concrete; amounts have not been determined. There is 20,000 cpm smearable beta/gamma fixed by paint, less than 500 cpm direct and smearable alpha, and 300 mRem/h penetrating."

BURIAL GROUND AND BURNING GROUND

Underground radioactive contamination is reported to exist at a burial ground and burning ground near U Plant, neither of which is included in the 200-UP-2 Operable Unit list of waste sites.

A burial ground is located immediately northeast of the intersection of 16th Street and Beloit Avenue at approximate Hanford Site coordinates N72500 W38000. The burial ground and burning ground are barricaded with metal posts and chain and are marked with "Underground Radioactive Material" signs. Its contents are unknown.

A burning ground is located immediately east of Beloit Avenue and immediately south of the ash disposal pit at approximate Hanford Site coordinates N39500 W72500.

K. F. Baldrige reports contamination at a site that could be either of the above waste sites. He reports the following.

"Contamination was discovered in the spring of 1950 in the old burning ground, which is located approximately 1,500 ft east of the "U" facility. An area of 150 ft² of ground was observed to be contaminated to a maximum dose rate of 45 rads/h at 2 in. The area was subsequently covered with about 10 ft of clean earth and is posted with "Underground Contamination" signs" (Baldrige 1959).

A recent site visit revealed that a barricade and warning signs exist at the burial ground, but none at the burning ground site. An interview was conducted with 200 West Area personnel who remember that a contamination area was located at the "old burning grounds" and was cleaned up around 1970 and the area released as a radiation zone. They recall that contaminated special

work permit clothing was found to have been disposed of at the site. This and an unspecified amount of soil and debris were removed and transported to another burial ground for disposal.

No other data have been located that reference these waste sites.

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- Maxfield, H. L., 1979, *Handbook - 200 Area Waste Sites*, RHO-CD-673, Rockwell Hanford Operations, Richland, Washington.
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APPENDIX A
U PLANT PHOTOGRAPHS

APPENDIX A

U PLANT PHOTOGRAPHS

A-1.	U Plant	APP A-1
A-2.	216-U-1 and -2 Cribs	APP A-2
A-3.	216-U-15 Trench (approximate)	APP A-3
A-4.	Construction Surface Laydown Area	APP A-4
A-5.	216-U-8 Crib	APP A-5
A-6.	216-U-4 Reverse Well and 216-U-4A French Drain	APP A-6
A-7.	216-U-3 French Drain	APP A-7
A-8.	216-U-4B French Drain	APP A-8
A-9.	216-U-7 French Drain	APP A-9
A-10.	216-U-5 and 216-U-6 Trenches	APP A-10

Figure A-1. U Plant.



Figure A-2. 216-U-1 and -2 Cribs.

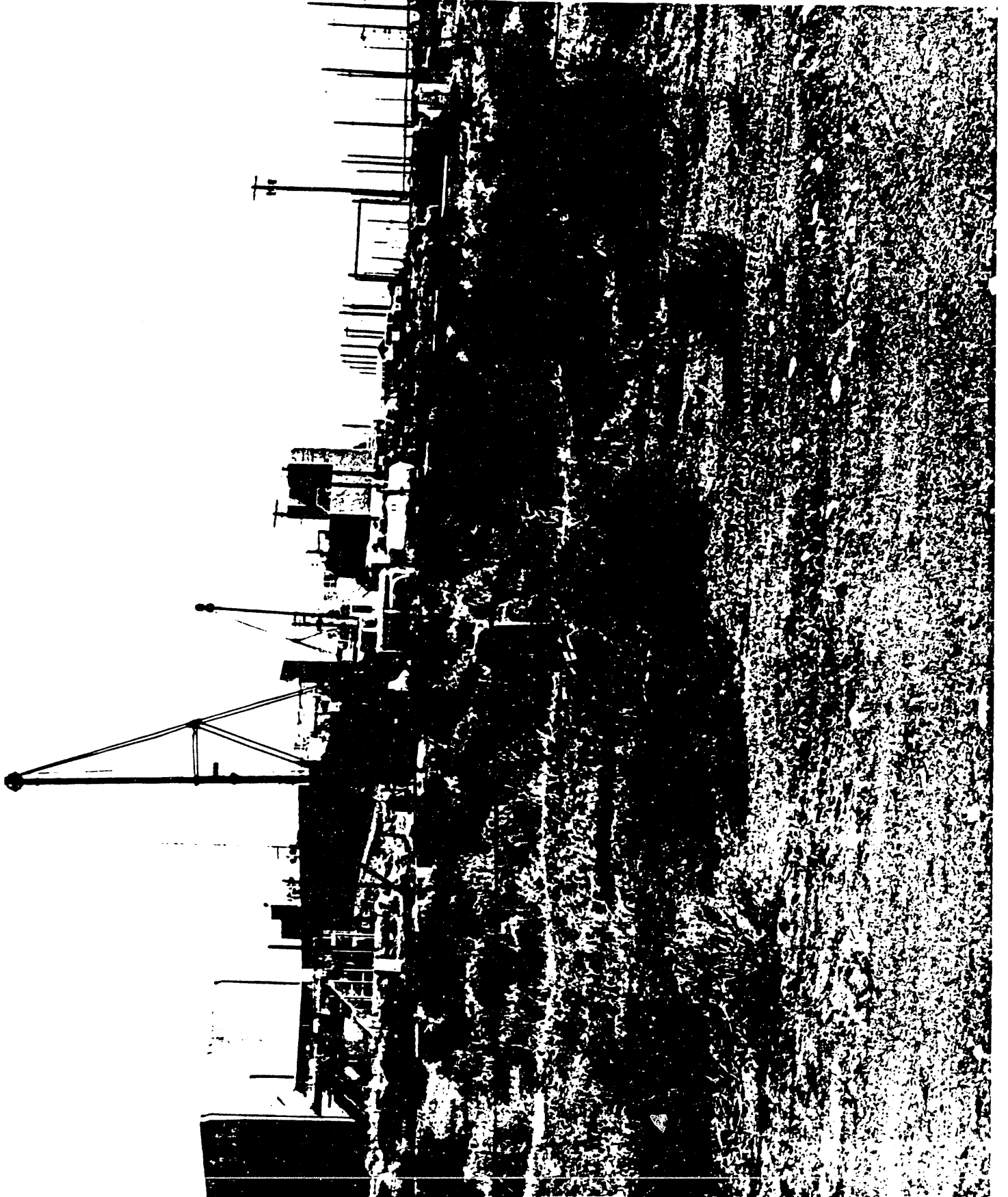


Figure A-3. 216-U-15 Trench (approximate).



Figure A-4. Construction Surface Laydown Area.

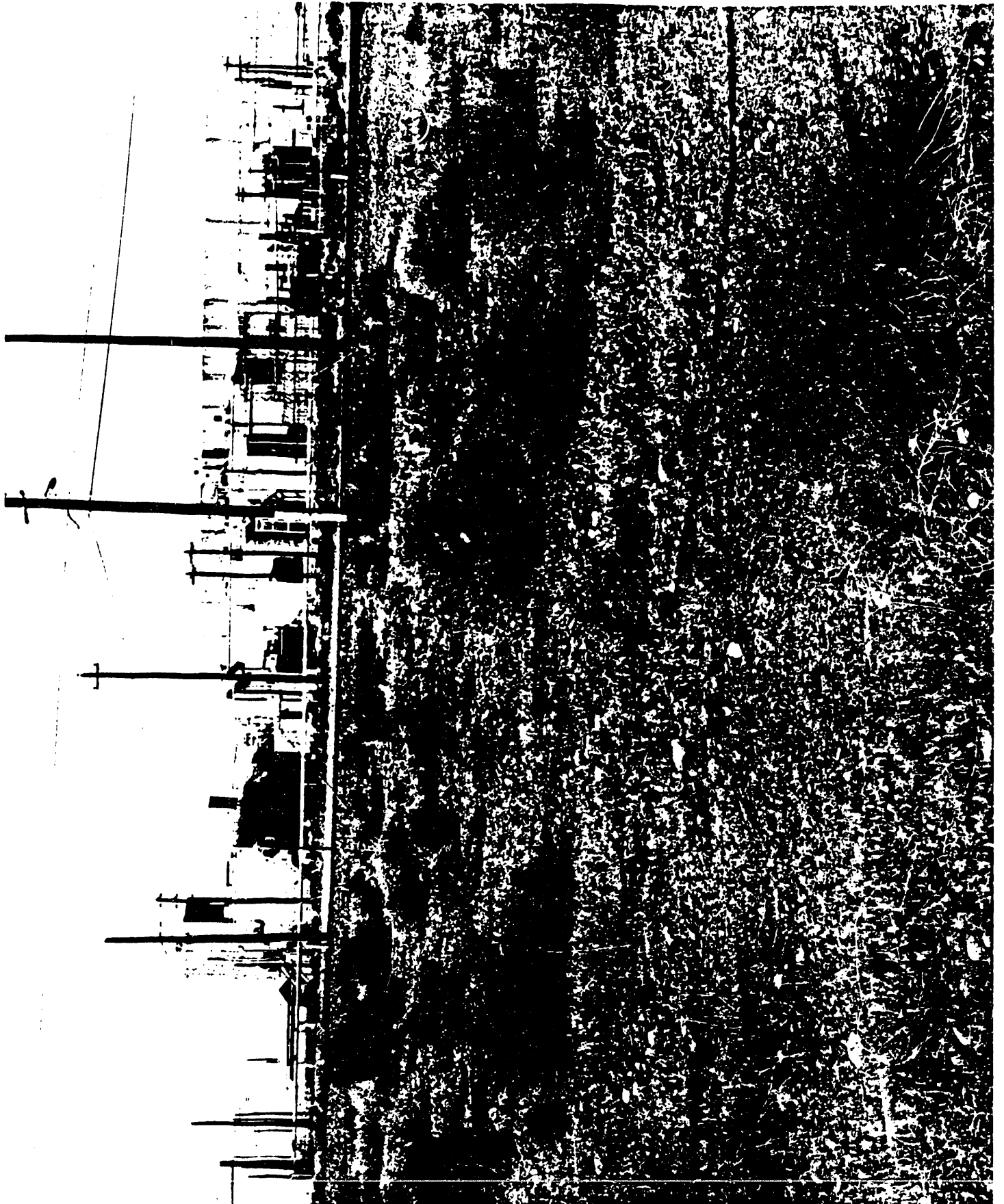


Figure A-5. 216-U-8 Crib.

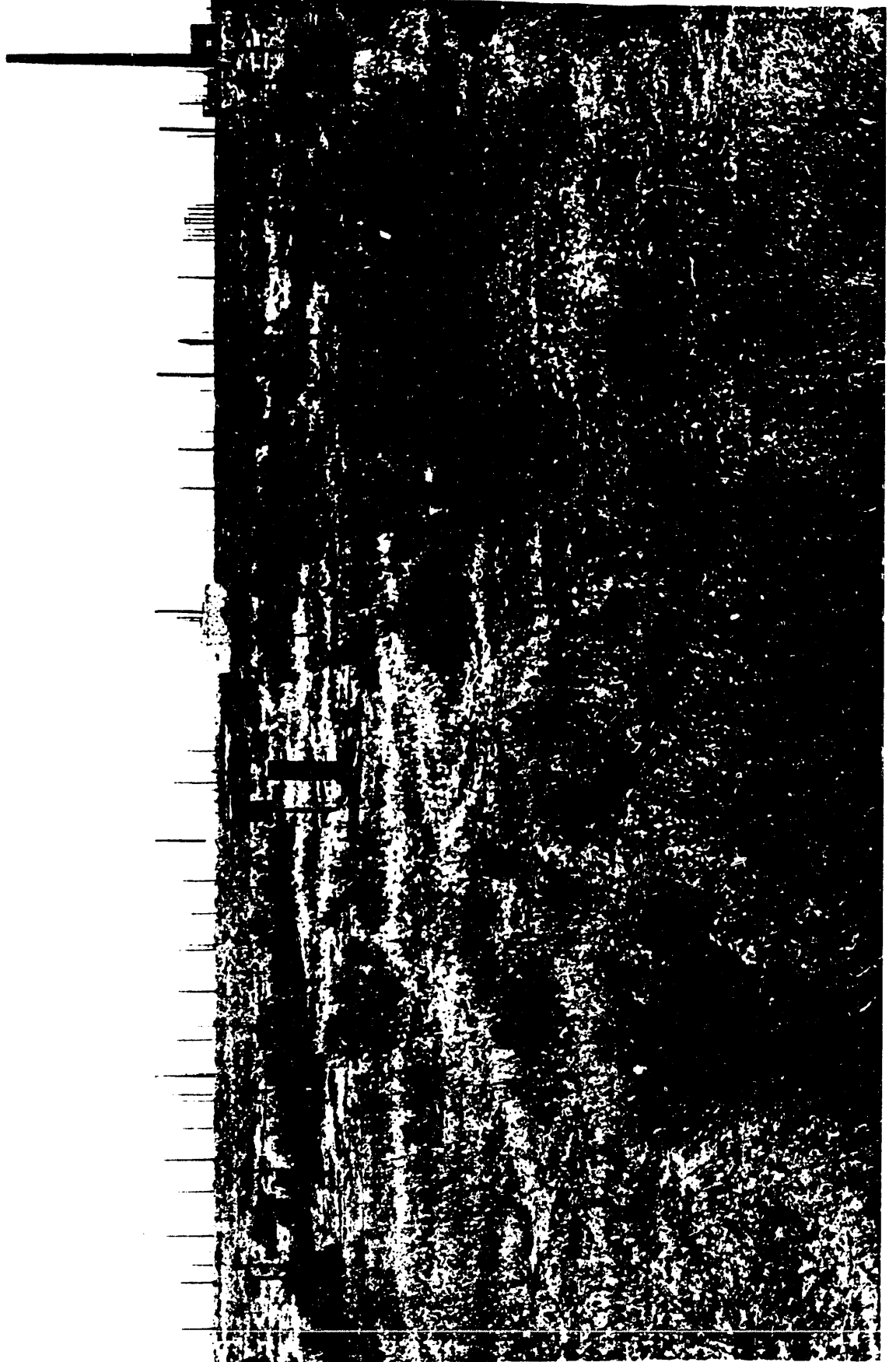


Figure A-6. 216-U-4 Reverse Well and 216-U-4A French Drain.

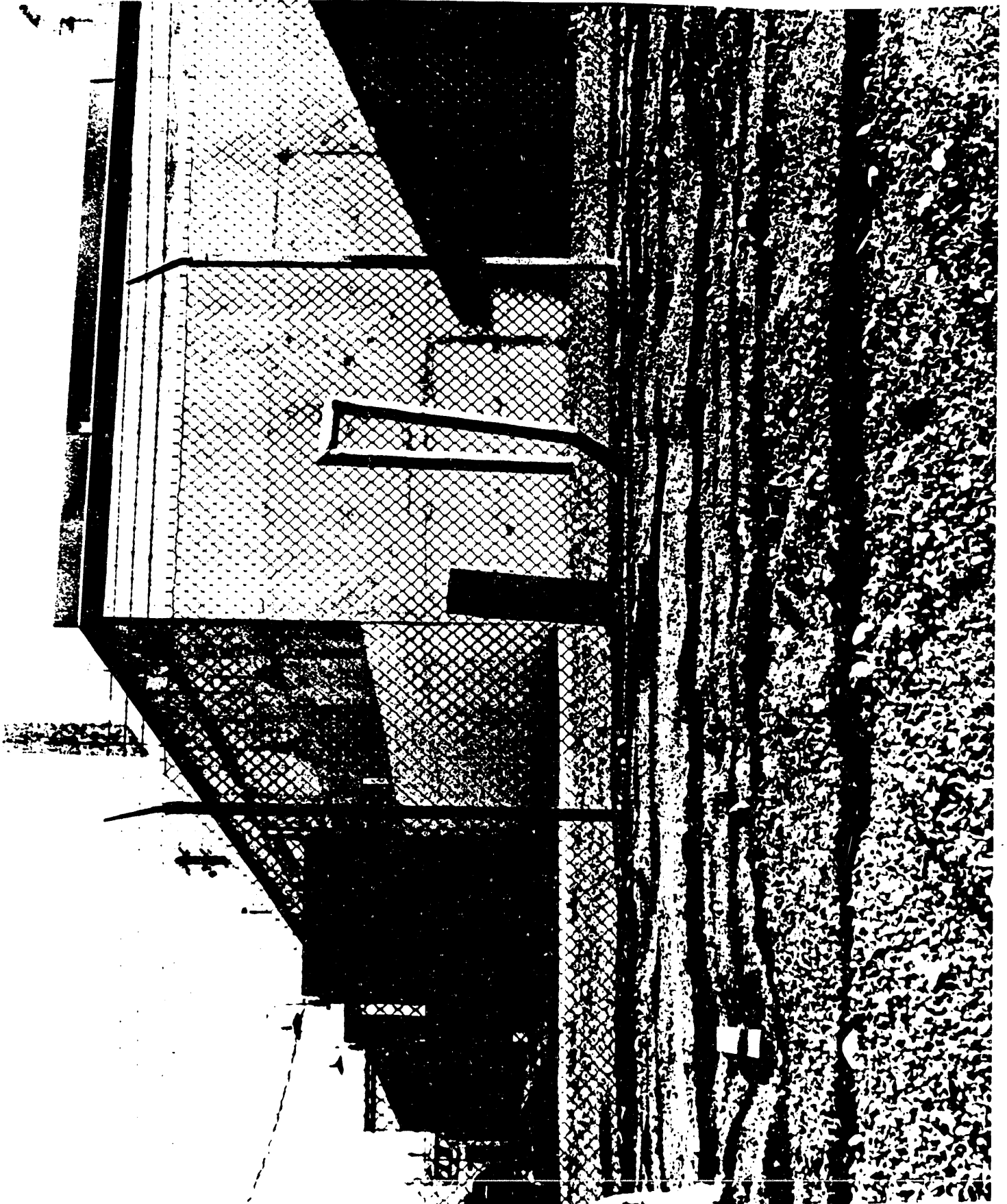


Figure A-7. 216-U-3 French Drain.

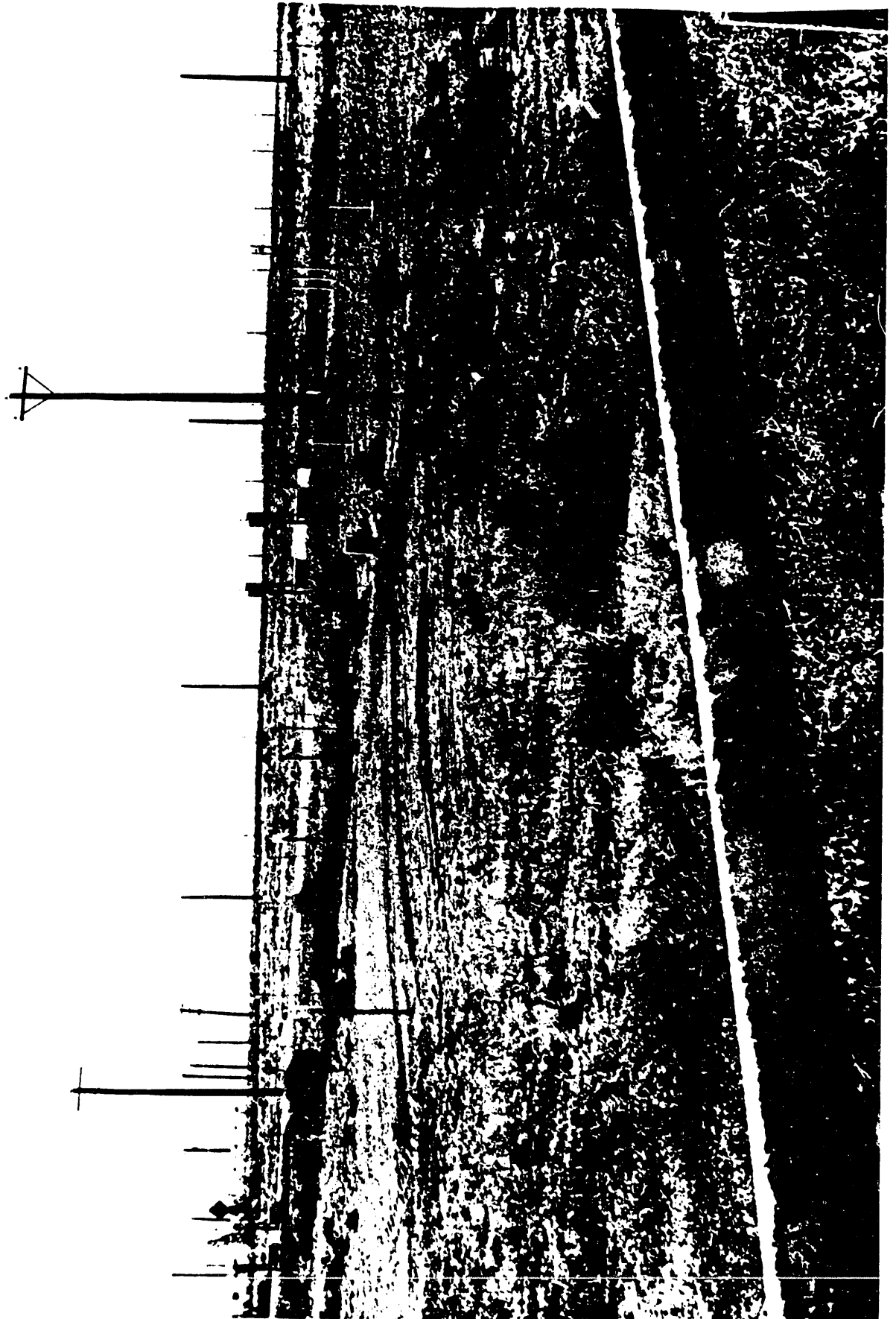


Figure A-8. 216-U-4B French Drain.

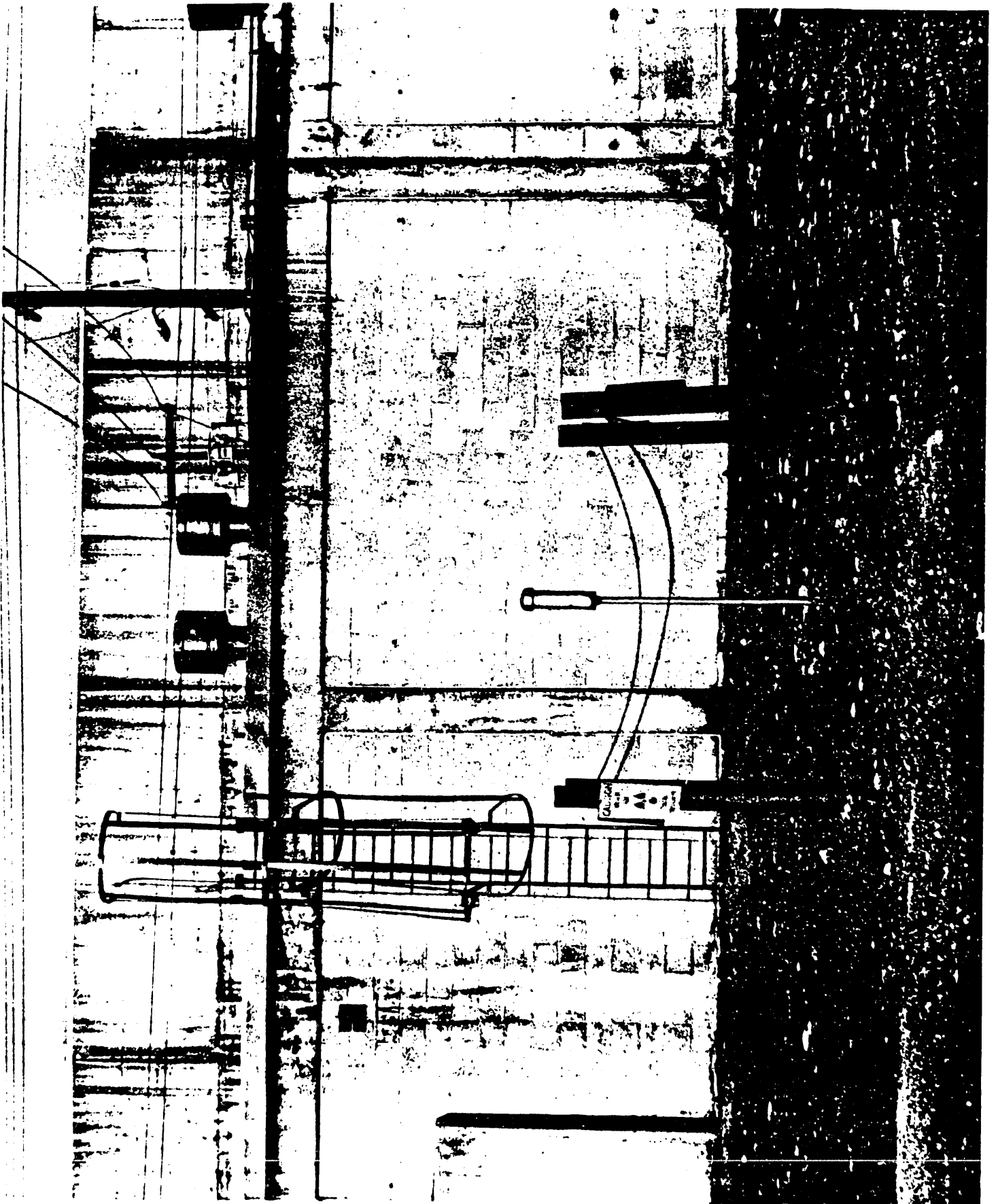


Figure A-9. 216-U-7 French Drain.

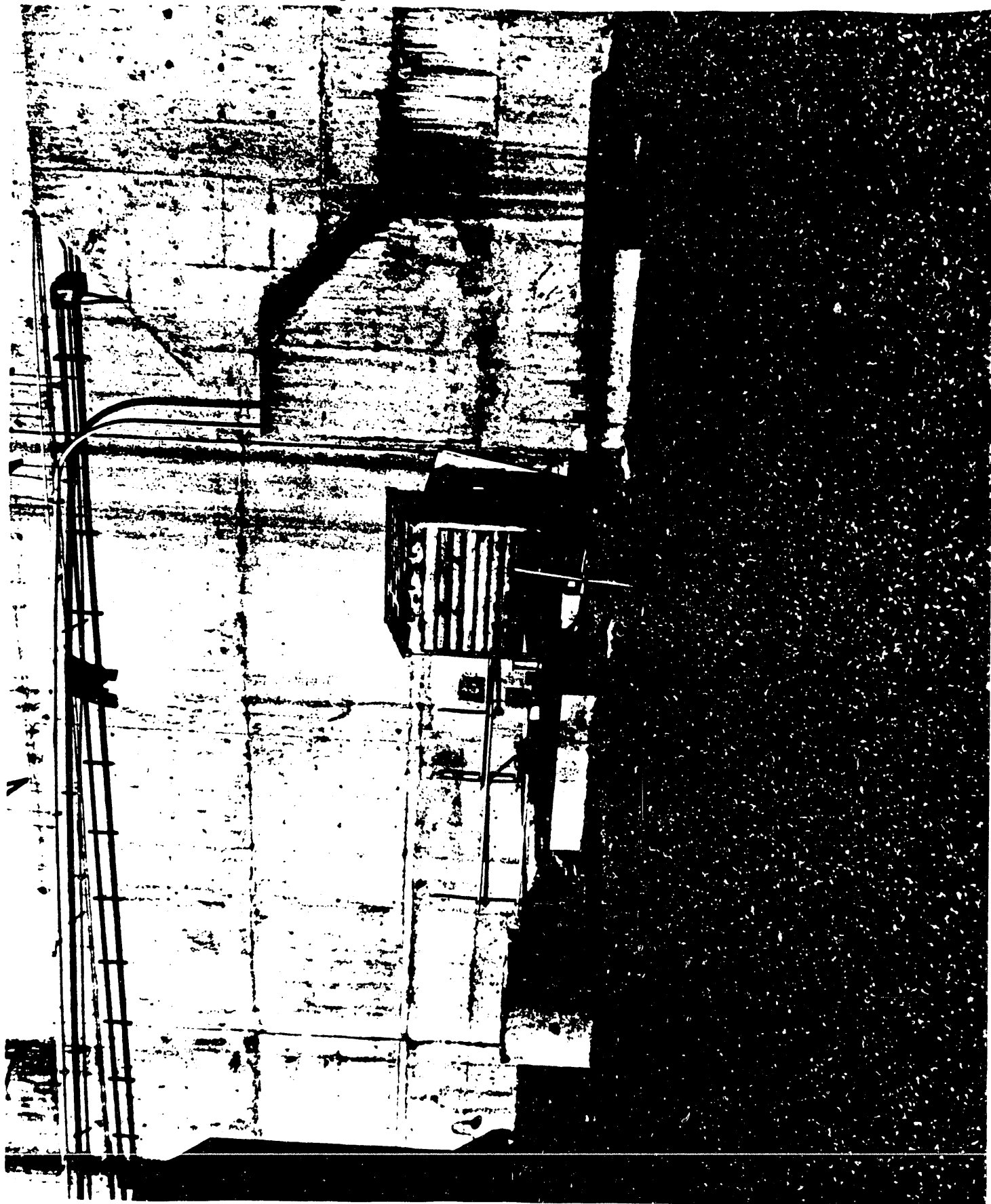
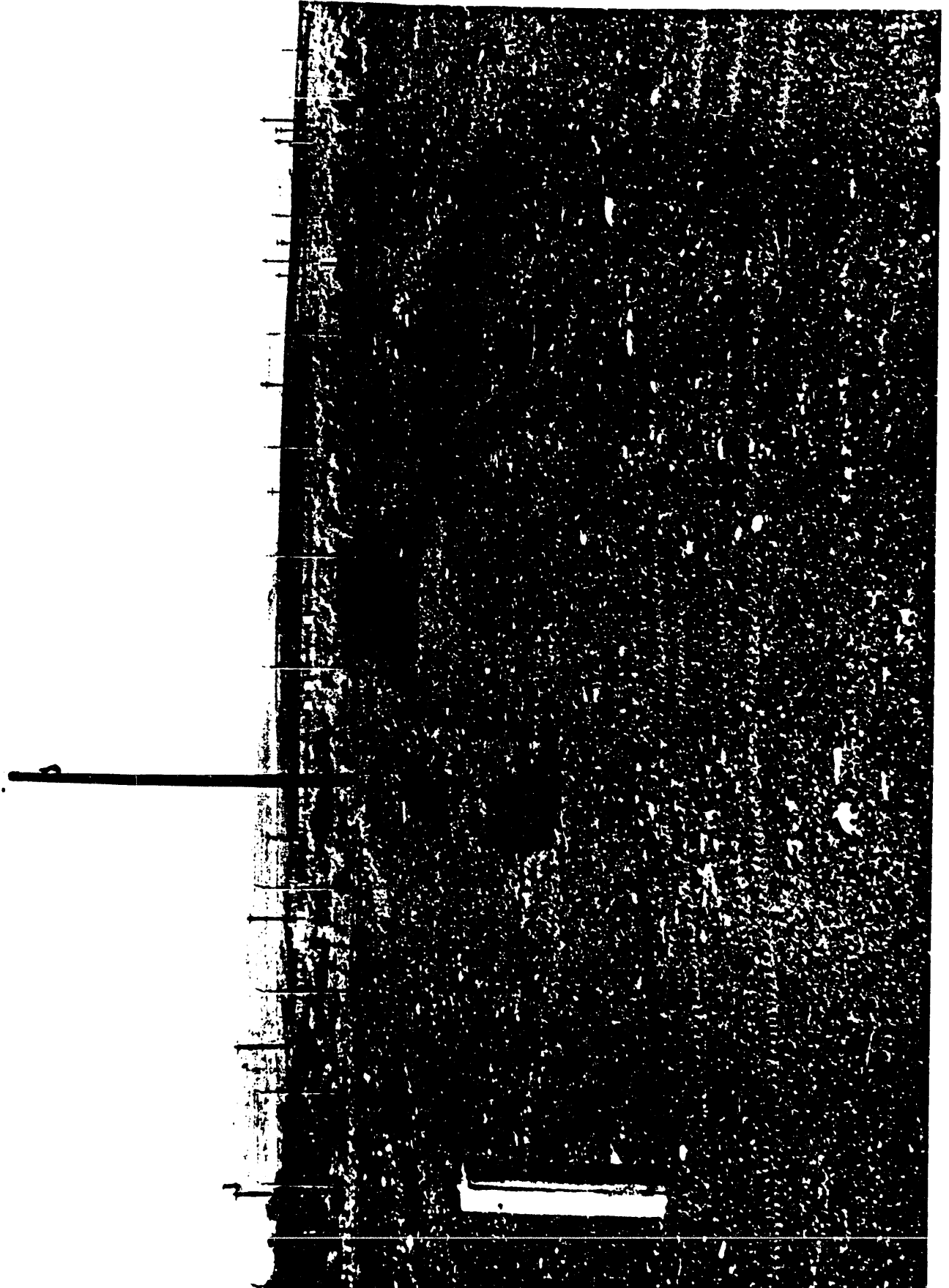


Figure A-10. 216-U-5 and 216-U-6 Trenches.



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APPENDIX B

**200-UP-2 RADIOLOGICAL/CHEMICAL DATA
(Excerpts from WIDS)**

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 200-W Construction Surface Laydown Area [359]

ALIASES:

Non-Rad Burial Ground, Construction Surface Laydown Area [309]

SITE TYPE: Burial Ground [309]

WASTE CATEGORY: Hazardous Waste [NR]

WASTE TYPE: Solid [309]

STATUS: Inactive [309] Pre-1980 [309]

START DATE: 1945 [309]

END DATE: 1950 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Environmental Restoration/Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 0.00 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N37500 W72550 [370]

LOCATION:

West of 216-U-17 [329] at the corner of 16th and Beloit Avenue [309]

GROUND ELEVATION: 715.00 feet above MSL [309]

WATER TABLE DEPTH: 250.00 feet below grade [309]

SITE DIMENSIONS: Length: 400.00 feet [309]

Width: 175.00 feet [309]

Depth: 15.00 feet [309]

SITE DESCRIPTION:

The site consists of a shallow trench [309].

WASTE TYPES AND AMOUNTS:

This site was used to dispose of unuseable valves, piping, and other plumbing materials [309].

CLEANUP ACTIONS:

The area was cleaned and grubbed in 1987 prior to the construction of the 216-U-17 Crib [309].

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 207-U Retention Basin [315]

SITE TYPE: Retention Basin [315]
WASTE CATEGORY: Mixed Waste [315]
WASTE TYPE: Liquid [315]
STATUS: Active [315]
START DATE: 1952 [315]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Surveillance and Maintenance [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [329]

COORDINATES: N38000 W75200 [370]

LOCATION:

~1,700 ft west of 221-U Buidling [315] and ~200 ft north of 16th Street [349], east of the 241-U Tank Farm [58]

GROUND ELEVATION: 674.00 feet above MSL [17]

WATER TABLE DEPTH: 200.00 feet below grade [NR]

SITE DESCRIPTION:

The unit is concrete and divided, with ~1M gal capacity, 6.5 ft deep. The bottom dimensions for each basin are 106 by 106 ft. The total overall dimensions including bottom, sloped side section and top ledge are 246 by 123 ft [315].

ASSOCIATED STRUCTURES:

Inlet and outlet structures on the east and west sides, respectively, on the outside of the basins;
Two sections of 16-in. C.I. pipe, ~13 ft long, running to two 3-ft by 3-ft sumps, one set for each basin [383].

WASTE TYPES AND AMOUNTS:

Until 1972, the unit received steam condensate and cooling water from 224-U Building [315] and chemical sewer waste from 221-U Building [58]. Since 1972, the unit has received only cooling water from 224-U Building. It was temporarily replaced by 216-U-16 Crib but was reactivated when U-16 shut down. Effluent is routed to the 216-U-14 ditch [315].

SITE NAME: 207-U Retention Basin

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KNOWN RELEASES:

On August 6, 1986, ~796 gal of 50% reprocessed nitric acid was released to the basin and subsequently to 216-U-14 Ditch. The total release to the environment consisted of ~225,000 lb of corrosive solution (pH less than 2.0) and 100 lb of uranium [315]. UPR-200-W-111, UPR-200-W-112 [309].

COMMENTS:

The north basin is badly overgrown with aquatic type plant life [58].

ENVIRONMENTAL MONITORING:

Weekly sampling and analysis of liquid effluents is performed. These results are composited monthly [315]. Radiological surveys of the surface are performed annually [356].

CLEANUP ACTIONS:

In the 1960's, sludge was scraped from the north basin and buried in a 40- by 10- by 8-ft-deep trench on the north side of the north basin, within 10 ft of the basin (see 216-W-22). A similar action was taken to clean out the south basin. The burial trench is on the south side of the south basin (see 216-W-21) [58].

SURVEILLANCE INFORMATION [494]

SURVEILLANCE DATE: 7/88
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination
CAVE-IN POTENTIAL: None

RESULTS/STATUS: 200 to > 100,000 ct/min on surface. No change in activity since the last survey, 7/87.

ACTION REQUIRED: Area is being decontaminated.

These results show the unit to be in compliance with the Environmental Compliance Manual.

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 216-U-1 & 2 [309]
ALIASES:
361-WR (Crib 2), 216-U-3, 216-UR #1&2 Cribs [58]

SITE TYPE: Crib [309]
WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
START DATE: 11/51 (Crib 1) [58]
END DATE: 6/67 (Crib 1) [58]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 69.92 [309]

DESIGNATED AREA: 200 West, U Plant [329]
COORDINATES: N37860 W74247 (center) [58]
LOCATION:
200 ft north of 16th Street and 1,000 ft east of the 207-U Retention Basin [58]

WASTE VOLUME RECEIVED: 46,200,000.00 liters [612]
CONTAMINATED SOIL VOLUME: 220.00 cubic meters [253]
OVERBURDEN SOIL VOLUME: 2,100.00 cubic meters [253]

GROUND ELEVATION: 691.00 feet above MSL [309]
WATER TABLE DEPTH: 209.00 feet below grade [309]

SITE DIMENSIONS: Length: 78.00 feet [309]
Width: 28.00 feet [309]
Depth: 24.00 feet [309]

SITE DESCRIPTION:
Two wooden structures that operate in series, with bottom dimensions of 12 ft by 12 ft each. The side slope for each is 1:1 [309].

ASSOCIATED STRUCTURES:

An 8-in. BL iron test well extending vertically to the center, rising to a flange 2 ft above grade;

A 1/4-in. IPS stainless steel pipe extending vertically, 1 ft from the bottom and valved above grade, one per structure;

3 1/2-in. O.D. effluent piping leading to the unit from the 361-U Settling Tank;

Timber for each structure: Top frame is made of 26 boards, 6 in. by 6 in. by 12 ft long. There are 7 frames placed underneath [39].

WASTE TYPES AND AMOUNTS:

From 3/52 (Crib 2) to 6/57, the site received cell drainage from Tank 5-6 in the 221-U Building and waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank. From 6/57 to 7/57, the site received waste from the 224-U Building via the overflow from the 241-U-361 Settling Tank and contaminated solvent from the 276-U Settling Tank Solvent Storage area. The discharge of 221-U waste was discontinued during shutdown of production operations. From 7/57 to 5/67, the site received waste from the 224-U Building and equipment decontamination and reclamation wastes from CPD Services Operations in the 221-U Building canyon. Crib 2 was deactivated in 5/67 [309]. The waste is low salt and neutral/basic [58].

COMMENTS:

Liquid waste from the 216-U-16 Crib migrated to the north and flushed through the soil column beneath this unit. This action carried uranium contamination into the groundwater at this site. Remedial action consisted of pumping out 8M gal of groundwater, which was processed to recover the uranium [309].

RELEASE POTENTIAL:

The wooden structure may collapse. Prompt remedial action would be required to prevent the spread of contamination [58].

SURVEILLANCE INFORMATION [477]

SURVEILLANCE DATE: 8/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination
CAVE-IN POTENTIAL: high potential

RESULTS/STATUS: Contamination up to 6,500 dis/min reported along the north and east sides of unit outside its boundaries. Zone has been extended to include this contamination migration. Similar contamination reported on 8/88.

ACTION REQUIRED: Site clean-up requested.

These results show the unit to be out of compliance with the Environmental Compliance Manual.

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Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-1 & 2
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:	I-125:	Ra-226:	
Am-241:	I-129:	Ra-228:	
Am-243:	I-131:	Ru-106:	.00000
C-14:	K-40:	S-35:	
Cd-109:	Kr-85:	Sb-125:	
Ce-141:	Li:	Sb-126:	
Ce-144:	Mn-54:	Se-75:	
Cf-252:	Mo-93:	Se-79:	
Cm-243:	Na-22:	Sm-151:	
Cm-244:	Nb-95:	Sn-113:	
Cm-245:	Ni-59:	Sr-85:	
Co-58:	Ni-63:	Sr-90:	2.11000
Co-60:	Np-237:	Ta-182:	
Cr-51:	Other-G:	Tc-99:	
Cs-134:	P-32:	Te-125M:	
Cs-137:	Pb-212:	Th-232:	4.36000
Eu-152:	Pm-147:	Tl-204:	
Eu-154:	Po-210:	U-233:	
Eu-155:	Pu-238:	U-234:	
Fe-55:	Pu-239:	U-235:	
Fe-59:	Pu-240:	U-238:	
H-2:	Pu-241:	Zn-65:	
H-3:	Pu-242:	Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	42.60000	grams*	[260]
Uranium:		grams*	
Alpha:	2.62000		
Beta:	12.60000		
Gamma:			
U-gross:	.70200		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

1/28/91

Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-1 & 2
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:	
Aluminum Fluoronitrate:		Nitric Acid:	
Ammonium Carbonate:		Oxalate:	
Ammonium Nitrate:		Phosphate:	70000.00000
Beryllium:		Potassium:	
Calcium Nitrate:		Potassium Borate:	
Cadmium (II):		Silver (I):	
Chromium (VI):		Sodium:	500000.00000
Copper (II):		Sodium Aluminate:	
Copper Sulfate:		Sodium Dichromate:	
Ferric Nitrate:		Sodium Hydroxide:	
Ferrocyanide:		Sodium Oxalate:	
Flouride:		Sodium Silicate:	
Lead (II):		Sodium Sulfamate:	
Magnesium Nitrate:		Sulfamic Acid:	
Mercury:		Sulfate:	100000.00000
Nickel (II):		Sulfuric Acid:	
Nitrate:	1200000.00000	Uranium	
		Zinc (II):	

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-12 [58]
 ALIASES:
 216-U-12 Crib [315]

SITE TYPE: Crib [315]
 WASTE CATEGORY: Mixed Waste [315]
 WASTE TYPE: Liquid [315]
 STATUS: Inactive [349] Post-1980 [306]
 START DATE: April 1960 [58]
 END DATE: January 1, 1988 [306]

OPERABLE UNIT: 200-UP-2 [329]
 TSD NUMBER: D-2-8 [323]
 REG. AUTHORITY: TSD [323]
 DOE/RL PROGRAM: Surveillance and Maintenance [358]

This site is included in the Tri-Party Agreement Action Plan [329]

The following have been submitted for this site: Part A Permit [308]

DESIGNATED AREA: 200 West, U Plant [315]
 COORDINATES: N36350 W73100 [58]
 LOCATION:

2,130 ft south of the 221-U Building and 460 ft north of Beloit Avenue [58]

WASTE VOLUME RECEIVED: 150,000,000.00 liters [612]
 CONTAMINATED SOIL VOLUME: 2,200.00 cubic meters [253]
 OVERBURDEN SOIL VOLUME: 2,700.00 cubic meters [253]

GROUND ELEVATION: 688.00 feet above MSL [58]
 WATER TABLE DEPTH: 223.00 feet below grade [NR]

SITE DIMENSIONS (Bottom) [58]:
 Length: 100.00 feet [58]
 Width: 10.00 feet [58]
 Depth: 13.00 feet [39]

SITE DESCRIPTION:

The bottom is filled with gravel (~9,320 cu ft). A perforated 12-in. V.C.P. pipe is placed horizontally the length of the unit, 10 ft below grade [39].

SITE NAME: 216-U-12

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ASSOCIATED STRUCTURES:

A 6-in.-diameter V.C.P. waste line to the unit;
 A 12-in.-diameter V.C.P. riser at the south end, rising from 10 ft below grade to 3 ft above, 13 ft long;
 An 8-in.-diameter liquid level gage well, 17 ft long;
 An 18-in.-diameter liquid level gage well, 17 ft long [39].

WASTE TYPES AND AMOUNTS:

From 4/60 to 5/67, the site received waste from the 291-U-1 Stack drainage [4], 244-WR Vault waste [134], and 224-U process condensate via C-5 Tank [4]. Disposal of contaminated water from 244-WR Vault was accomplished in October 1965 and included 3.14 kg thorium [134]. From 5/67 to 9/72, the site received the above wastes excluding the 244-WR Vault waste and occasional waste via the C-7 Tank in the 244-U Building [4]. From 9/72 to 11/81, the site was taken out of service [386]. Since 11/81, the site has been receiving process condensate (corrosive: typical pH less than 1) from the 224-U Building [254]. In the past, this facility also received miscellaneous storm drain wastes from 224-U Building [386].

COMMENTS:

This unit replaced the 216-U-8 disposal site because the 216-U-8 site showed signs of potential cave-in [105]. This unit was replaced by 216-U-17. It was isolated and will not be used again [306]. The Part A Permit Application will be withdrawn [308].

ENVIRONMENTAL MONITORING:

Radiological surveys of the surface are performed quarterly [349].

SURVEILLANCE INFORMATION [473]

SURVEILLANCE DATE: 12/89
SURVEY SCHEDULE: Quarterly
SITE POSTING: Surface Contamination
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination detected and no change in activity since the last survey, 9/89.

ACTION REQUIRED: Requested special survey for posting status change.

 These results show the unit to be in compliance with the Environmental Compliance Manual.

1/28/91

WHC-EP-0400
Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-12
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:	
Am-241:	.00645	I-129:		Ra-228:	
Am-243:		I-131:		Ru-106:	.00000
C-14:		K-40:		S-35:	
Cd-109:		Kr-85:		Sb-125:	
Ce-141:		Li:		Sb-126:	
Ce-144:		Mn-54:		Se-75:	
Cf-252:		Mo-93:		Se-79:	
Cm-243:		Na-22:		Sm-151:	
Cm-244:		Nb-95:		Sn-113:	
Cm-245:		Ni-59:		Sr-85:	
Co-58:		Ni-63:		Sr-90:	55.90000
Co-60:		Np-237:		Ta-182:	
Cr-51:		Other-G:		Tc-99:	
Cs-134:		P-32:		Te-125M:	
Cs-137:	.05660	Pb-212:		Th-232:	
Eu-152:		Pm-147:		Tl-204:	
Eu-154:		Po-210:		U-233:	
Eu-155:		Pu-238:		U-234:	
Fe-55:		Pu-239:	.01230	U-235:	
Fe-59:		Pu-240:		U-238:	
H-2:		Pu-241:		Zn-65:	
H-3:	.00188	Pu-242:		Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	1.00000	grams*	[260]
Uranium:		grams*	
Alpha:	.10500		
Beta:	112.00000		
Gamma:			
U-gross:	.67700		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

**Waste Information Data System
General Summary Report
January 28, 1991**

SITE NAME: 216-U-14 [17]

ALIASES:

Laundry Ditch [17]; 216-U-14 Ditch [315]

SITE TYPE: Ditch [315]
WASTE CATEGORY: Mixed Waste [315]
WASTE TYPE: Liquid [315]

STATUS: Active [315]
START DATE: July 1944 [58]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Surveillance and Maintenance [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [329]
COORDINATES: N41270 W74710 (head), N36845 W76910 (end) [4]
LOCATION:

Originates 1,600 ft north of the 221-U Building and 700 ft west of Bridgeport Avenue and terminates at 216-U-10 [349]. Now starts 100 yd north of 16th Street and ends about 100 yd west of Cooper Avenue [NR]

CONTAMINATED SOIL VOLUME: 4,900.00 cubic meters [253]
OVERBURDEN SOIL VOLUME: 0.00 cubic meters [253]

GROUND ELEVATION: 674.00 feet above MSL [58]
WATER TABLE DEPTH: 200.00 feet below grade [NR]

SITE DIMENSIONS (Bottom) [58]: Length: 5,680.00 feet [58]
Width: 8.00 feet [58]

SITE DESCRIPTION:

The side slope is 2.5:1. The unit contains one 48-in.-diameter, 150-ft-long culvert for continuing the flow under 16th Street and three 24-in. R.C.P.s laid end to end to continue the flow under 19th Street [39].

WASTE TYPES AND AMOUNTS:

From 7/44 to 9/44, the site received wastewater from the 284-W Powerhouse. From 9/44 to 1/50, the same plus waste from 2723-W. From 1/50 to 3/52, received wastewater from 284-W and 2724-W Laundry Building. From 3/52 to 5/54, the same plus chemical sewer waste from 221-U and cooling water from 224-U. From 5/54 to 8/55, the same plus cooling water from 241-U-110 condenser tank [4]. From 8/55 to 11/73, the same plus 271-U cooling water. From 11/73 to 4/80, the same plus 242-S Evaporator condensate and cooling water. From 4/80 to 9/81, the same minus 242-S condensate, 2723-W and 2724-W waste. From 9/81 to 7/84, the same minus 221-U, 224-U, and 271-U waste [NR]. Since 7/84, the site has been receiving only 242-S Evaporator cooling water [293].

KNOWN RELEASES:

On August 6, 1986, ~796 gal of 50% reprocessed nitric acid was released to the unit. The total release to the environment consisted of ~225,000 lb of corrosive solution (pH less than 2.0) and 100 lb of uranium [315].

COMMENTS:

The radionuclide inventory is included in the 216-U-10 Pond inventory [306].

CLEANUP ACTIONS:

Approximately 3/4 of the unit has been backfilled and surface stabilized [349].

SURVEILLANCE INFORMATION [484]

SURVEILLANCE DATE: 6/89

SURVEY SCHEDULE: Semiannual

SITE POSTING: Underground Radioactive Material

RESULTS/STATUS: No contamination detected. No change in survey of 9/88.

ACTION REQUIRED: No action required.

These results show the unit to be in compliance with the Environmental Compliance Manual.

**Waste Information Data System
General Summary Report
January 28, 1991**

SITE NAME: 216-U-15 [58]

ALIASES:

UN-216-W-10 [17]; 388-U Tank Dumping [58]; UPR-200-W-125 [309];
UN-200-W-158 [361]; U-152 Interface Crud Burial [97]

SITE TYPE: Trench [58]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [58]

STATUS: Inactive [58] Pre-1980 [58]

START DATE: May 1957 [58]

END DATE: May 1957 [58]

OPERABLE UNIT: 200-UP-2 [309]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.09 [309]

DESIGNATED AREA: 200 West, U Plant [58]

COORDINATES: N38270 W73900 (center) [58]

LOCATION: 500 ft west of 271-U and 550 ft north of 16th Street [58]

WASTE VOLUME RECEIVED: 68,100.00 liters [309]

CONTAMINATED SOIL VOLUME: 54.00 cubic meters [253]

OVERBURDEN SOIL VOLUME: 970.00 cubic meters [253]

GROUND ELEVATION: 695.00 feet above MSL [309]

WATER TABLE DEPTH: 221.00 feet below grade [309]

SITE DIMENSIONS (Top) [309]: **Length:** 20.00 feet [309]

Width: 20.00 feet [309]

Depth: 15.00 feet [309]

SITE DESCRIPTION:

An excavated hole that was immediately backfilled after completing the discharge of waste to the hole [58].

WASTE TYPES AND AMOUNTS:

Approximately 7,000 gal of interface crud, activated charcoal, and diatomaceous earth, containing ~1 Ci. The waste was transferred from the 388-U Tank in the 276-U Solvent Storage Area to a hole at the above coordinates [58].

SITE NAME: 216-U-15

Page 2

COMMENTS:

The site was deactivated by removing the above-ground piping and backfilling the hole [58].

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Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-15
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:	
Am-241:		I-129:		Ra-228:	
Am-243:		I-131:		Ru-106:	.00000
C-14:		K-40:		S-35:	
Cd-109:		Kr-85:		Sb-125:	
Ce-141:		Li:		Sb-126:	
Ce-144:		Mn-54:		Se-75:	
Cf-252:		Mo-93:		Se-79:	
Cm-243:		Na-22:		Sm-151:	
Cm-244:		Nb-95:		Sn-113:	
Cm-245:		Ni-59:		Sr-85:	
Co-58:		Ni-63:		Sr-90:	.04420
Co-60:		Np-237:		Ta-182:	
Cr-51:		Other-G:		Tc-99:	
Cs-134:		P-32:		Te-125M:	
Cs-137:	.04650	Pb-212:		Th-232:	
Eu-152:		Pm-147:		Tl-204:	
Eu-154:		Po-210:		U-233:	
Eu-155:		Pu-238:		U-234:	
Fe-55:		Pu-239:		U-235:	
Fe-59:		Pu-240:		U-238:	
H-2:		Pu-241:		Zn-65:	
H-3:		Pu-242:		Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	.10000	grams*	[260]
Uranium:		grams*	
Alpha:	.00614		
Beta:	.18000		
Gamma:			
U-gross:	.00076		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

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Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-15
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:	Nitrite:
Aluminum Fluoronitrate:	Nitric Acid:
Ammonium Carbonate:	Oxalate:
Ammonium Nitrate:	Phosphate:
Beryllium:	Potassium:
Calcium Nitrate:	Potassium Borate:
Cadmium (II):	Silver (I):
Chromium (VI):	Sodium:
Copper (II):	Sodium Aluminate:
Copper Sulfate:	Sodium Dichromate:
Ferric Nitrate:	Sodium Hydroxide:
Ferrocyanide:	Sodium Oxalate:
Flouride:	Sodium Silicate:
Lead (II):	Sodium Sulfamate:
Magnesium Nitrate:	Sulfamic Acid:
Mercury:	Sulfate:
Nickel (II):	Sulfuric Acid:
Nitrate:	Uranium
	Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:	
DBP:	TBP:	13000.00000
Hexone:	Trichloroethylene:	
		40000.00000

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 216-U-16 [349]
ALIASES:
U03 Crib [NR]

SITE TYPE: Crib [315]
WASTE CATEGORY: Low-Level Waste [315]
WASTE TYPE: Liquid [315]
STATUS: Inactive [315] Post-1980 [315]
START DATE: July 20, 1984 [390]
END DATE: 1987 [315]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Surveillance and Maintenance [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [329]

COORDINATES:

N37421 W74158, N37209 W74376, N37375 W74538, N37588 W74320 [370]

LOCATION:

South of 16th Street, midway between Beloit and Cooper Avenues,
southwest of the 224-U Building [315]

WASTE VOLUME RECEIVED: 409,000,000.00 liters [612]

SITE DIMENSIONS: **Length:** 262.00 feet [392]
 Width: 191.00 feet [392]

SITE DESCRIPTION:

The unit is 15 to 17 ft deep. Two header pipes, 8 in. reducing to 6 in., are located 3 ft above the bottom, running the length of the unit, one on each side. At each end of the pipe is a 6-in. vent pipe.

Connecting the two header pipes are twenty-two 4-in. perforated pipes running the width of the unit, equally spaced, 3 ft above the bottom.

Each pipe has a 4-in. vent unit at the center. There are three 6-in. gage wells, one near the north and south ends and one near the center.

The bottom is filled with gravel to 5 ft above bottom. Covering the gravel is a 36-mil, reinforced polyethylene liner extending 8 ft up the sides of the excavation, backfilled over to grade. A 6-in. subdrainage pipe runs the width of the unit at the west side [392].

SITE NAME: 216-U-16

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ASSOCIATED STRUCTURES:

Four 6-in. vent structures, capped, 20 ft long, placed on a 1-ft by 1-ft by 6-in. concrete base;
 Twenty-two 4-in. vent structures, capped, 20 ft long, placed on a 1-ft by 1-ft by 6-in. concrete base, with a perforated bottom section;
 Three 6-in. gage wells, 20 ft long, bottom 5 ft perforated, placed on a concrete base;
 Distribution box, acid resistant, 6 ft 8 in. by 6 ft 8 in. by 7.5 in. tall [392].

WASTE TYPES AND AMOUNTS:

The site received 224-U steam condensate, 224-U chemical sewer waste, 271-U compressor cooling water [315], 221-U chemical sewer waste [259], and 224-U process condensate [261].

ENVIRONMENTAL MONITORING:

Radiological surveys of the surface are performed quarterly [349]. Well #299-W19-13: Contaminants Alpha and total U have exceeded the U-238 concentration limit since July 1984. The activity is due to a nearby inactive waste site, 216-U-1&2 cribs. Contaminant NO3 has remained below the drinking water standard since November 1985 and is decreasing. Well #299-W19-14: Contaminant Alpha has fluctuated around the U-238 concentration limit since October 1984. Activity is due to a nearby inactive waste site, 216-U-1&2 cribs [NR] [Groundwater Monitoring Compliance Report for August 1986 (9/19/86)].

RELEASE POTENTIAL:

A concrete block has been installed to prevent discharge to the unit [315].

SURVEILLANCE INFORMATION [473]

SURVEILLANCE DATE: 12/89
SURVEY SCHEDULE: Quarterly
SITE POSTING: Underground Radioactive Material
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination detected and no change in activity since the last survey, 9/89.

ACTION REQUIRED: No action required.

These results show the unit to be in compliance with the Environmental Compliance Manual.

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-16
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:	
Am-241:	.23300	I-129:		Ra-228:	
Am-243:		I-131:		Ru-106:	
C-14:		K-40:		S-35:	
Cd-109:		Kr-85:		Sb-125:	
Ce-141:		Li:		Sb-126:	
Ce-144:		Mn-54:		Se-75:	
Cf-252:		Mo-93:		Se-79:	
Cm-243:		Na-22:		Sm-151:	
Cm-244:		Nb-95:		Sn-113:	
Cm-245:		Ni-59:		Sr-85:	
Co-58:		Ni-63:		Sr-90:	.00921
Co-60:		Np-237:		Ta-182:	
Cr-51:		Other-G:		Tc-99:	
Cs-134:		P-32:		Te-125M:	
Cs-137:	.01650	Pb-212:		Th-232:	
Eu-152:		Pm-147:		Tl-204:	
Eu-154:		Po-210:		U-233:	
Eu-155:		Pu-238:		U-234:	
Fe-55:		Pu-239:	.09020	U-235:	
Fe-59:		Pu-240:		U-238:	
H-2:		Pu-241:		Zn-65:	
H-3:		Pu-242:		Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:		grams* []
Uranium:		grams*
Alpha:	.00739	
Beta:	.05150	
Gamma:		
U-gross:	.00592	

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-17 [306]

SITE TYPE: Crib [306]
WASTE CATEGORY: Low-Level Waste [306]
WASTE TYPE: Liquid [306]

STATUS: Active [306]
START DATE: January 31, 1988 [306]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [306]
COORDINATES: N37575,W72480 to N37575,W72250 [329]

LOCATION:
 ~940 ft south-east-east of U03 Plant and 1,000 ft northeast of the
 216-U-12 Crib [306]

WASTE VOLUME RECEIVED: 2,110,000.00 liters [612]

SITE DESCRIPTION:
 The unit is 18 ft below the surface, covered with a 10-mil PVC membrane vapor barrier and backfill. Flow is even over the entire unit from a distribution line within a 6- by 10- by 150-ft aggregate field [391].

ASSOCIATED STRUCTURES:
 Three liquid-level wells;
 Two vent risers [391].

WASTE TYPES AND AMOUNTS:
 The unit receives U03 plant process condensate. A neutralization system was placed into operation before startup of this unit to preclude the discharge of process condensate outside the range of 2.0 to 12.5 pH [306].

COMMENTS:
 This unit is a replacement for the 216-U-12 Crib [306].

SITE NAME: 216-U-17

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SURVEILLANCE INFORMATION [473]

SURVEILLANCE DATE: 12/89
SURVEY SCHEDULE: Quarterly
SITE POSTING: Underground/Surface
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination detected and no change in activity since the last survey, 9/89.

ACTION REQUIRED: No action required.

These results show the unit to be in compliance with the Environmental Compliance Manual.

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-17
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:
Am-241:	.00005	I-129:		Ra-228:
Am-243:		I-131:		Ru-106:
C-14:		K-40:		S-35:
Cd-109:		Kr-85:		Sb-125:
Ce-141:		Li:		Sb-126:
Ce-144:		Mn-54:		Se-75:
Cf-252:		Mo-93:		Se-79:
Cm-243:		Na-22:		Sm-151:
Cm-244:		Nb-95:		Sn-113:
Cm-245:		Ni-59:		Sr-85:
Co-58:		Ni-63:		Sr-90:
Co-60:		Np-237:		Ta-182:
Cr-51:		Other-G:		Tc-99:
Cs-134:		P-32:		Te-125M:
Cs-137:		Pb-212:		Th-232:
Eu-152:		Pm-147:		Tl-204:
Eu-154:		Po-210:		U-233:
Eu-155:		Pu-238:		U-234:
Fe-55:		Pu-239:	.00003	U-235:
Fe-59:		Pu-240:		U-238:
H-2:		Pu-241:		Zn-65:
H-3:	69.70000	Pu-242:		Zr-95:

The following are not summations of the individual isotopes listed above.

Plutonium:		grams* []
Uranium:		grams*
Alpha:	.00020	
Beta:		
Gamma:		
U-gross:	.00048	

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 216-U-3 [309]
ALIASES:
216-U-11, 216-U-3 French Drain [309]

SITE TYPE: French Drain [309]
This unit is a registered underground injection well [324]

WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]
START DATE: May 1954 [309]
END DATE: August 1955 [309]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 47.28 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N37620 W75630 (center) [309]

LOCATION:
1,000 ft west of the railroad tracks and 50 ft south of 16th Street near
Camden Avenue [58]

WASTE VOLUME RECEIVED: 791,000.00 liters [309]
CONTAMINATED SOIL VOLUME: 10.00 cubic meters [253]
OVERBURDEN SOIL VOLUME: 160.00 cubic meters [253]

GROUND ELEVATION: 668.00 feet above MSL [309]
WATER TABLE DEPTH: 190.00 feet below grade [309]

SITE DIMENSIONS: Depth: 12.00 feet [309]
Diameter: 6.00 feet [309]

SITE DESCRIPTION:
The unit has a rock-filled bottom and a side slope of 3:1 [309].

ASSOCIATED STRUCTURES:
A 4-in. SCH 40 black steel vertical pipe, 7 ft deep, with a heavy screen
for the bottom end;
A 2-in. drain pipe welded to a 4-in. riser at 8 in. from the bottom of
the riser, placed horizontally 6 ft 4 in. below grade [NR].

SITE NAME: 216-U-3

Page 2

WASTE TYPES AND AMOUNTS:

The site received condensed vapors from the condenser on the 110-U Tank in the 241-U Tank Farm. The waste is low salt and neutral/basic [309].

COMMENTS:

The site was deactivated by valving out the condenser piping [309].

SURVEILLANCE INFORMATION [477]

SURVEILLANCE DATE: 8/89
SURVEY SCHEDULE: Annual
SITE POSTING: Underground Radioactive Material
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination was detected. No change since survey of 8/88.

ACTION REQUIRED: No action required.

These results show the unit to be in compliance with the Environmental Compliance Manual.

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-3
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:	I-125:	Ra-226:	
Am-241:	I-129:	Ra-228:	
Am-243:	I-131:	Ru-106:	.00000
C-14:	K-40:	S-35:	
Cd-109:	Kr-85:	Sb-125:	
Ce-141:	Li:	Sb-126:	
Ce-144:	Mn-54:	Se-75:	
Cf-252:	Mo-93:	Se-79:	
Cm-243:	Na-22:	Sm-151:	
Cm-244:	Nb-95:	Sn-113:	
Cm-245:	Ni-59:	Sr-85:	
Co-58:	Ni-63:	Sr-90:	.04100
Co-60:	Np-237:	Ta-182:	
Cr-51:	Other-G:	Tc-99:	
Cs-134:	P-32:	Te-125M:	
Cs-137:	Pb-212:	Th-232:	
Eu-152:	Pm-147:	Tl-204:	
Eu-154:	Po-210:	U-233:	
Eu-155:	Pu-238:	U-234:	
Fe-55:	Pu-239:	U-235:	
Fe-59:	Pu-240:	U-238:	
H-2:	Pu-241:	Zn-65:	
H-3:	Pu-242:	Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	.10000	grams*	[260]
Uranium:		grams*	
Alpha:	.00614		
Beta:	.91700		
Gamma:			
U-gross:	.00605		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

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Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-3
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:
Aluminum Fluoronitrate:		Nitric Acid:
Ammonium Carbonate:		Oxalate:
Ammonium Nitrate:		Phosphate:
Beryllium:		Potassium:
Calcium Nitrate:		Potassium Borate:
Cadmium (II):		Silver (I):
Chromium (VI):		Sodium:
Copper (II):		Sodium Aluminate:
Copper Sulfate:		Sodium Dichromate:
Ferric Nitrate:		Sodium Hydroxide:
Ferrocyanide:		Sodium Oxalate:
Flouride:		Sodium Silicate:
Lead (II):		Sodium Sulfamate:
Magnesium Nitrate:		Sulfamic Acid:
Mercury:		Sulfate:
Nickel (II):		Sulfuric Acid:
Nitrate:	9.00000	Uranium
		Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-4 [309]

ALIASES:

222-U Dry Well, 222-U-110 Dry Well, 216-U-2 [309];
 216-U-4 Dry Well [4]

SITE TYPE: Reverse Well [309]
 This unit is a registered underground injection well [324]

WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]
START DATE: March 1947 [309]
END DATE: August 1955 [309]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 32.72 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N38209 W73218 (center) [309]

LOCATION:
 170 ft southeast of 221-U, 450 ft north of 16th Street, ~12 ft south and
 3 ft west of the southwest corner of 222-U [58]

WASTE VOLUME RECEIVED: 300,000.00 liters [309]

GROUND ELEVATION: 704.00 feet above MSL [309]
WATER TABLE DEPTH: 227.00 feet below grade [309]

SITE DIMENSIONS: Depth: 75.00 feet [309]
 Diameter: .50 feet [309]

SITE DESCRIPTION:
 The unit is made of a 3-in.-diameter pipe. The bottom 25 ft of pipe are perforated with twelve 0.5-in. holes per foot. The end of the pipe is nearly closed by flattening [309].

ASSOCIATED STRUCTURES:
 The 216-U-4A French Drain waste line taps into this unit below grade;
 A 6-in.-diameter riser pipe, 6 ft high [39].

SITE NAME: 216-U-4

Page 2

WASTE TYPES AND AMOUNTS:

The site received decontamination waste from 222-U Laboratory hood sinks. The waste is acidic (Pu and fission products). The waste contains less than 1 Ci beta activity [309].

COMMENTS:

The site was retired when the unit plugged [309]. The site was deactivated by installing an overflow line to the new 216-U-4A French Drain [4].

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 216-U-4A [309]
ALIASES:
216-U-4 Dry Well [309]

SITE TYPE: French Drain [309]
This unit is a registered underground injection well [324]

WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]
START DATE: July 1955 [309]
END DATE: July 1970 [309]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 47.82 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N38215 W73215 (center) [309]
LOCATION:
500 ft north of 16th Street and 500 ft west of Beloit Avenue [58]

WASTE VOLUME RECEIVED: 545,000.00 liters [309]
CONTAMINATED SOIL VOLUME: 4.40 cubic meters [253]
OVERBURDEN SOIL VOLUME: 74.00 cubic meters [253]

GROUND ELEVATION: 705.00 feet above MSL [309]
WATER TABLE DEPTH: 227.00 feet below grade [309]

SITE DIMENSIONS: Depth: 10.00 feet [309]
Diameter: 4.30 feet [309]

SITE DESCRIPTION:
The unit is made of 51.5-in. I.D. concrete pipe with a 5-in.-thick removable lid. The minimum length of the pipe is 4 ft. The top of the unit is buried ~5 ft below grade [309].

ASSOCIATED STRUCTURES:
A feeder line cuts into the existing pipe of the 216-U-4 Reverse Well 6 ft below grade [393].

SITE NAME: 216-U-4A

Page 2

WASTE TYPES AND AMOUNTS:

Until 1/65, the site received decontamination waste from hood sinks in the 222-U Building via the overflow line from the 216-U-4 Reverse Well. After 1/65, the site received PNL Operations decontamination waste from a hood sink in the 222-U Building via the overflow line from the 216-U-4 Reverse Well. The waste is acidic [309]

COMMENTS:

The site has been inactive since PNL Operations in the 222-U Building were shut down [309].

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-4A
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:	
Am-241:		I-129:		Ra-228:	
Am-243:		I-131:		Ru-106:	.00000
C-14:		K-40:		S-35:	
Cd-109:		Kr-85:		Sb-125:	
Ce-141:		Li:		Sb-126:	
Ce-144:		Mn-54:		Se-75:	
Cf-252:		Mo-93:		Se-79:	
Cm-243:		Na-22:		Sm-151:	
Cm-244:		Nb-95:		Sn-113:	
Cm-245:		Ni-59:		Sr-85:	
Co-58:		Ni-63:		Sr-90:	.01590
Co-60:		Np-237:		Ta-182:	
Cr-51:		Other-G:		Tc-99:	
Cs-134:		P-32:		Te-125M:	
Cs-137:	.18500	Pb-212:		Th-232:	
Eu-152:		Pm-147:		Tl-204:	
Eu-154:		Po-210:		U-233:	
Eu-155:		Pu-238:		U-234:	
Fe-55:		Pu-239:		U-235:	
Fe-59:		Pu-240:		U-238:	
H-2:		Pu-241:		Zn-65:	
H-3:		Pu-242:		Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	.00900	grams*	[260]
Uranium:		grams*	
Alpha:	.00055		
Beta:	.38700		
Gamma:			
U-gross:	.00295		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

1/28/91

Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-4A
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:	
Aluminum Fluoronitrate:		Nitric Acid:	
Ammonium Carbonate:		Oxalate:	
Ammonium Nitrate:		Phosphate:	30.00000
Beryllium:		Potassium:	
Calcium Nitrate:		Potassium Borate:	
Cadmium (II):		Silver (I):	
Chromium (VI):		Sodium:	400.00000
Copper (II):		Sodium Aluminate:	
Copper Sulfate:		Sodium Dichromate:	
Ferric Nitrate:		Sodium Hydroxide:	
Ferrocyanide:		Sodium Oxalate:	
Flouride:		Sodium Silicate:	
Lead (II):		Sodium Sulfamate:	
Magnesium Nitrate:		Sulfamic Acid:	
Mercury:		Sulfate:	
Nickel (II):		Sulfuric Acid:	
Nitrate:	900.00000	Uranium	
		Zinc (II):	

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-4B [309]

ALIASES:

216-U-4B Dry Well [309]; 216-U-4B French Drain [4]

SITE TYPE: French Drain [309]
 This unit is a registered underground injection well [324]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

START DATE: January 1960 [58]

END DATE: September 1968 [58]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 45.30 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N38248 W73100 (center) [309]

LOCATION:

500 ft north of Sixteenth Street, 500 ft west of Beloit Avenue [NR] and
 30 ft from the back side of the 222-U Building [58]

WASTE VOLUME RECEIVED: 33,000.00 liters [309]

CONTAMINATED SOIL VOLUME: .68 cubic meters [253]

OVERBURDEN SOIL VOLUME: 170.00 cubic meters [253]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 230.00 feet below grade [309]

SITE DIMENSIONS: Depth: 10.00 feet [309]

Diameter: 3.00 feet [309]

ASSOCIATED STRUCTURES:

A 1-in.-diameter stainless steel riser vent with a small hood [58].

WASTE TYPES AND AMOUNTS:

Until 1/65, the site received waste from a hot cell and hood in the 222-U Building. After 1/65, the site received PNL Operations waste from a hot cell and hood in the 222-U Building. The waste is low salt and neutral/basic [309].

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Waste Information Data System
 Radionuclide Inventory
 (In Curies)

Site Name: 216-U-4B
 Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:	I-125:	Ra-226:	
Am-241:	I-129:	Ra-228:	
Am-243:	I-131:	Ru-106:	
C-14:	K-40:	S-35:	
Cd-109:	Kr-85:	Sb-125:	
Ce-141:	Li:	Sb-126:	
Ce-144:	Mn-54:	Se-75:	
Cf-252:	Mo-93:	Se-79:	
Cm-243:	Na-22:	Sm-151:	
Cm-244:	Nb-95:	Sn-113:	
Cm-245:	Ni-59:	Sr-85:	
Co-58:	Ni-63:	Sr-90:	.00165
Co-60:	Np-237:	Ta-182:	
Cr-51:	Other-G:	Tc-99:	
Cs-134:	P-32:	Te-125M:	
Cs-137:	Pb-212:	Th-232:	
Eu-152:	Pm-147:	Tl-204:	
Eu-154:	Po-210:	U-233:	
Eu-155:	Pu-238:	U-234:	
Fe-55:	Pu-239:	U-235:	
Fe-59:	Pu-240:	U-238:	
H-2:	Pu-241:	Zn-65:	
H-3:	Pu-242:	Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium: .05400 grams* [260]
 Uranium: grams*
 Alpha: .00332
 Beta: .38100
 Gamma:
 U-gross:

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

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Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-4B
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:
Aluminum Fluoronitrate:		Nitric Acid:
Ammonium Carbonate:		Oxalate:
Ammonium Nitrate:		Phosphate:
Beryllium:		Potassium:
Calcium Nitrate:		Potassium Borate:
Cadmium (II):		Silver (I):
Chromium (VI):		Sodium:
Copper (II):		Sodium Aluminate:
Copper Sulfate:		Sodium Dichromate:
Ferric Nitrate:		Sodium Hydroxide:
Ferrocyanide:		Sodium Oxalate:
Flouride:		Sodium Silicate:
Lead (II):		Sodium Sulfamate:
Magnesium Nitrate:		Sulfamic Acid:
Mercury:		Sulfate:
Nickel (II):		Sulfuric Acid:
Nitrate:	10.00000	Uranium
		Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 216-U-5 [309]

ALIASES:

216-U-4, 221-U Cold U Trench #2 [309]

SITE TYPE: Trench [309]
WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]
START DATE: March 1952 [309]
END DATE: March 1952 [309]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N38975 W72880, N39025 W72925 (center line) [309]
LOCATION:

250 ft west of Beloit Avenue at the northwest corner the 241-WR Vault
[58]

WASTE VOLUME RECEIVED: 2,250,000.00 liters [309]
CONTAMINATED SOIL VOLUME: 27.00 cubic meters [253]
OVERBURDEN SOIL VOLUME: 480.00 cubic meters [253]

GROUND ELEVATION: 705.00 feet above MSL [309]
WATER TABLE DEPTH: 235.00 feet below grade [309]

SITE DIMENSIONS (Bottom) [309]: Length: 40.00 feet [309]
Width: 35.00 feet [309]
Depth: 10.00 feet [309]

WASTE TYPES AND AMOUNTS:

The site received the unirradiated uranium waste from the cold start-up run at U-Plant [309].

COMMENTS:

The site was deactivated when discharge to the unit was completed [309] by removing the above-ground piping and backfilling the unit [58].

SITE NAME: 216-U-5

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SURVEILLANCE INFORMATION [477]

SURVEILLANCE DATE: 8/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination was detected. No change since 8/88.

ACTION REQUIRED: Posting status change to concur with clean-up of UN-216-W-9 and WR Vault.

These results show the unit to be out of compliance with the Environmental Compliance Manual.

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-5
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:	I-125:	Ra-226:	
Am-241:	I-129:	Ra-228:	
Am-243:	I-131:	Ru-106:	.00000
C-14:	K-40:	S-35:	
Cd-109:	Kr-85:	Sb-125:	
Ce-141:	Li:	Sb-126:	
Ce-144:	Mn-54:	Se-75:	
Cf-252:	Mo-93:	Se-79:	
Cm-243:	Na-22:	Sm-151:	
Cm-244:	Nb-95:	Sn-113:	
Cm-245:	Ni-59:	Sr-85:	
Co-58:	Ni-63:	Sr-90:	.01950
Co-60:	Np-237:	Ta-182:	
Cr-51:	Other-G:	Tc-99:	
Cs-134:	P-32:	Te-125M:	
Cs-137:	Pb-212:	Th-232:	.02070
Eu-152:	Pm-147:	Tl-204:	
Eu-154:	Po-210:	U-233:	
Eu-155:	Pu-238:	U-234:	
Fe-55:	Pu-239:	U-235:	
Fe-59:	Pu-240:	U-238:	
H-2:	Pu-241:	Zn-65:	
H-3:	Pu-242:	Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	.05000	grams*	[260]
Uranium:		grams*	
Alpha:	.00307		
Beta:	.07920		
Gamma:			
U-gross:	.12100		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

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Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-5
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:
Aluminum Fluoronitrate:		Nitric Acid:
Ammonium Carbonate:		Oxalate:
Ammonium Nitrate:		Phosphate:
Beryllium:		Potassium:
Calcium Nitrate:		Potassium Borate:
Cadmium (II):		Silver (I):
Chromium (VI):		Sodium:
Copper (II):		Sodium Aluminate:
Copper Sulfate:		Sodium Dichromate:
Ferric Nitrate:		Sodium Hydroxide:
Ferrocyanide:		Sodium Oxalate:
Flouride:		Sodium Silicate:
Lead (II):		Sodium Sulfamate:
Magnesium Nitrate:		Sulfamic Acid:
Mercury:		Sulfate:
Nickel (II):		Sulfuric Acid:
Nitrate:	200.00000	Uranium
		Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

**Waste Information Data System
General Summary Report
January 28, 1991**

SITE NAME: 216-U-6 [309]

ALIASES:

U Facility Unirradiated Uranium Waste Trench, 221-U Cold U Trench [58];
216-U Cold U Trench #1, 216-U-5 [309]; 221-U Cold U Grave #1 [NR]

SITE TYPE: Trench [309]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

START DATE: March 1952 [309]

END DATE: March 1952 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N39030 W73020, N39085 W73095 (center line) [309]

LOCATION:

500 ft west of Beloit Avenue and 300 ft north of the 221-U Building,
west of the 216-U-5 Trench [58]

WASTE VOLUME RECEIVED: 2,250,000.00 liters [309]

CONTAMINATED SOIL VOLUME: 42.00 cubic meters [253]

OVERBURDEN SOIL VOLUME: 760.00 cubic meters [253]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 232.00 feet below grade [309]

SITE DIMENSIONS (Bottom) [309]: Length: 75.00 feet [309]

Width: 10.00 feet [309]

Depth: 10.00 feet [309]

WASTE TYPES AND AMOUNTS:

In 3/52, the site received the unirradiated uranium waste from the cold
start-up run at U-Plant [309].

COMMENTS:

The site was deactivated when discharge to the trench was completed
[309] by removing the above-ground piping and backfilling the trench
[58].

SITE NAME: 216-U-6

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SURVEILLANCE INFORMATION [477]

SURVEILLANCE DATE: 8/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination
CAVE-IN POTENTIAL: None

RESULTS/STATUS: No contamination was detected. No change since survey of 8/88.

ACTION REQUIRED: Posting status change to concur with clean-up of UN-216-W-9 and WR Vault.

These results show the unit to be in compliance with the Environmental Compliance Manual.

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-6
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:		I-125:		Ra-226:	
Am-241:		I-129:		Ra-228:	
Am-243:		I-131:		Ru-106:	.00000
C-14:		K-40:		S-35:	
Cd-109:		Kr-85:		Sb-125:	
Ce-141:		Li:		Sb-126:	
Ce-144:		Mn-54:		Se-75:	
Cf-252:		Mo-93:		Se-79:	
Cm-243:		Na-22:		Sm-151:	
Cm-244:		Nb-95:		Sn-113:	
Cm-245:		Ni-59:		Sr-85:	
Co-58:		Ni-63:		Sr-90:	.01950
Co-60:		Np-237:		Ta-182:	
Cr-51:		Other-G:		Tc-99:	
Cs-134:		P-32:		Te-125M:	
Cs-137:	.02070	Pb-212:		Th-232:	
Eu-152:		Pm-147:		Tl-204:	
Eu-154:		Po-210:		U-233:	
Eu-155:		Pu-238:		U-234:	
Fe-55:		Pu-239:		U-235:	
Fe-59:		Pu-240:		U-238:	
H-2:		Pu-241:		Zn-65:	
H-3:		Pu-242:		Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	.05000	grams*	[260]
Uranium:		grams*	
Alpha:	.00307		
Beta:	.07920		
Gamma:			
U-gross:	.12100		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

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Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-6
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:
Aluminum Fluoronitrate:		Nitric Acid:
Ammonium Carbonate:		Oxalate:
Ammonium Nitrate:		Phosphate:
Beryllium:		Potassium:
Calcium Nitrate:		Potassium Borate:
Cadmium (II):		Silver (I):
Chromium (VI):		Sodium:
Copper (II):		Sodium Aluminate:
Copper Sulfate:		Sodium Dichromate:
Ferric Nitrate:		Sodium Hydroxide:
Ferrocyanide:		Sodium Oxalate:
Flouride:		Sodium Silicate:
Lead (II):		Sodium Sulfamate:
Magnesium Nitrate:		Sulfamic Acid:
Mercury:		Sulfate:
Nickel (II):		Sulfuric Acid:
Nitrate:	200.00000	Uranium
		Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-7 [309]

ALIASES:

221-U Vessel Vent Blower Pit French Drain, UN-216-W-11 [309]

SITE TYPE: French Drain [309]
 This unit is a registered underground injection well [324]

WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]
START DATE: March 1952 [309]
END DATE: June 1957 [309]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N38519 W73112 (center) [309]

LOCATION:
 20 ft southeast of the 221-U Building and 460 ft west of Beloit Avenue.
 Back side of 221-U Building at R-3 [58]

WASTE VOLUME RECEIVED: 7,000.00 liters [309]

GROUND ELEVATION: 713.00 feet above MSL [309]
WATER TABLE DEPTH: 230.00 feet below grade [309]

SITE DIMENSIONS: Depth: 17.00 feet [309]
 Diameter: 2.50 feet [309]

SITE DESCRIPTION:
 The unit is composed of concrete pipe in 3-ft sections. A 3.5-ft layer of gravel fill is in the pipe [309].

ASSOCIATED STRUCTURES:
 A 3-in. SCH 40 drain pipe from counting box to 216-U-7, 13 ft below grade, extending 6 in. into pipe [394].

WASTE TYPES AND AMOUNTS:
 The site received waste from counting box floor drainage [309].

SITE NAME: 216-U-7

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KNOWN RELEASES:

UPR-200-W-138 [309]: In June 1953, an unplanned release of an estimated 300 lb of uranium (UNH) overflowed into the 221-U Building vessel vent blower pit and then to the ground through this unit. An estimated 13.6 kg of uranium was discharged to the site [98].

COMMENTS:

The site was retired when production operations in the 221-U Building were shut down [309]. The site was deactivated by removing the cell jumpers in 221-U [58]. Past designation as a "French Drain" is a misnomer. "French Drain" is for the counting box [4].

1/28/91

Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-7
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:		Nitrite:
Aluminum Fluoronitrate:		Nitric Acid:
Ammonium Carbonate:		Oxalate:
Ammonium Nitrate:		Phosphate:
Beryllium:		Potassium:
Calcium Nitrate:		Potassium Borate:
Cadmium (II):		Silver (I):
Chromium (VI):		Sodium:
Copper (II):		Sodium Aluminate:
Copper Sulfate:		Sodium Dichromate:
Ferric Nitrate:		Sodium Hydroxide:
Ferrocyanide:		Sodium Oxalate:
Flouride:		Sodium Silicate:
Lead (II):		Sodium Sulfamate:
Magnesium Nitrate:		Sulfamic Acid:
Mercury:		Sulfate:
Nickel (II):		Sulfuric Acid:
Nitrate:	70.00000	Uranium
		Zinc (II):

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: 216-U-8 [309]
ALIASES:
 216-WR-1,2,3 Cribs, 216-U-9 [309]

SITE TYPE: Crib [309]
WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
START DATE: June 1952 [309]
END DATE: March 1960 [309]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.20 [309]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N36860 W73100 (center of #2) [309]
LOCATION:
 450 ft west of Beloit Avenue and 750 ft south of 16th Street [58]

WASTE VOLUME RECEIVED: 379,000.00 liters [612]
CONTAMINATED SOIL VOLUME: 3,900.00 cubic meters [253]
OVERBURDEN SOIL VOLUME: 10,000.00 cubic meters [253]

GROUND ELEVATION: 692.00 feet above MSL [309]
WATER TABLE DEPTH: 227.00 feet below grade [309]

SITE DIMENSIONS (Bottom) [309]:
Length: 160.00 feet [309]
Width: 50.00 feet [309]
Depth: 31.00 feet [309]

SITE DESCRIPTION:

The unit consists of wooden structures, three in series, each structure 16 by 16 by 10 ft. The site is backfilled with 1/2-in. crushed stone to the tops of the wooden structures. There is ~73,000 cu ft of gravel fill [309].

SITE NAME: 216-U-8

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ASSOCIATED STRUCTURES:

Six 4-in. risers, 2 per structure, capped below grade, ~18 ft long;
Three 8-in. SCH 40 steel test wells, 50 ft deep, one per structure,
capped, 2 ft above grade;
A 6-in. V.C.P. waste line with acid-proof joints at 12 ft below grade,
140 ft long [395].

WASTE TYPES AND AMOUNTS:

The site received process condensate from 221-U [309] and 224-U [58]
buildings and the 291-U Stack drainage. The waste is acidic [309].

COMMENTS:

When ground settling occurred around the vent risers, the site was
deactivated by blanking the pipeline north of the unit. ~75 cu yd of
fill dirt were used to fill sink holes at this site. The effluents
were rerouted to the 216-U-12 Crib [4]. The ground surface has been
stable since August 1975 [58].

SURVEILLANCE INFORMATION [477]

SURVEILLANCE DATE: 8/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination

RESULTS/STATUS: No contamination detected. No change since survey of 8/88.

ACTION REQUIRED: Posting status change to concur with clean-up of UN-216-W-33.

These results show the unit to be in compliance with
the Environmental Compliance Manual.

1/28/91

Waste Information Data System
 Hazardous Chemical Inventory
 (In Kilograms)

Site Name: 216-U-8
 Operable Unit: 200-UP-2
 Bibliography: [315]

----- INORGANICS -----

Aluminum Nitrate:	Nitrite:	
Aluminum Fluoronitrate:	Nitric Acid:	200000.00000
Ammonium Carbonate:	Oxalate:	
Ammonium Nitrate:	Phosphate:	
Beryllium:	Potassium:	
Calcium Nitrate:	Potassium Borate:	
Cadmium (II):	Silver (I):	
Chromium (VI):	Sodium:	
Copper (II):	Sodium Aluminate:	
Copper Sulfate:	Sodium Dichromate:	
Ferric Nitrate:	Sodium Hydroxide:	
Ferrocyanide:	Sodium Oxalate:	
Flouride:	Sodium Silicate:	
Lead (II):	Sodium Sulfamate:	
Magnesium Nitrate:	Sulfamic Acid:	
Mercury:	Sulfate:	
Nickel (II):	Sulfuric Acid:	
Nitrate:	Uranium	
	Zinc (II):	

----- ORGANICS -----

CCL4:	MIBK:
DBP:	TBP:
Hexone:	Trichloroethylene:

WHC-EP-0400

1/28/91

Waste Information Data System
Radionuclide Inventory
(In Curies)

Site Name: 216-U-8
Operable Unit: 200-UP-2

Bibliography for the following isotopes: [612]

Ag-110M:	I-125:	Ra-226:	
Am-241:	I-129:	Ra-228:	
Am-243:	I-131:	Ru-106:	.00000
C-14:	K-40:	S-35:	
Cd-109:	Kr-85:	Sb-125:	
Ce-141:	Li:	Sb-126:	
Ce-144:	Mn-54:	Se-75:	
Cf-252:	Mo-93:	Se-79:	
Cm-243:	Na-22:	Sm-151:	
Cm-244:	Nb-95:	Sn-113:	
Cm-245:	Ni-59:	Sr-85:	
Co-58:	Ni-63:	Sr-90:	.04310
Co-60:	Np-237:	Ta-182:	
Cr-51:	Other-G:	Tc-99:	
Cs-134:	P-32:	Te-125M:	
Cs-137:	Pb-212:	Th-232:	
Eu-152:	Pm-147:	Tl-204:	
Eu-154:	Po-210:	U-233:	
Eu-155:	Pu-238:	U-234:	
Fe-55:	Pu-239:	U-235:	
Fe-59:	Pu-240:	U-238:	
H-2:	Pu-241:	Zn-65:	
H-3:	Pu-242:	Zr-95:	

The following are not summations of the individual isotopes listed above.

Plutonium:	370.00000	grams*	[260]
Uranium:		grams*	
Alpha:	22.70000		
Beta:	.65000		
Gamma:			
U-gross:	8.01000		

Values are decayed through: December 31, 1989

* Plutonium and Uranium values are not decayed.

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: 221-U Building [366]
ALIASES:
221-U Canyon Building [315]

SITE TYPE: Building [315]
WASTE CATEGORY: Mixed Waste [360]
WASTE TYPE: Solid [315]

STATUS: Inactive [315] Pre-1980 [315]
START DATE: 1952 [17]
END DATE: 1958 [226]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N38450 W73250 [17]

GROUND ELEVATION: 693.00 feet above MSL [17]
WATER TABLE DEPTH: 221.00 feet below grade [NR]

SITE DIMENSIONS: Length: 810.00 feet [315]
Width: 66.00 feet [315]

SITE DESCRIPTION:

Massive concrete structure [315] 102 ft tall [17]. There are twenty 40-ft-long reinforced concrete sections. A wall ranging in thickness from 5 to 9 ft divides the unit along its length. All major items of equipment last used in the uranium recovery process are still in position in the cells [315].

WASTE TYPES AND AMOUNTS:

This unit contains radioactively contaminated equipment and structure (estimated at 10,000 Ci beta) [315].

SITE NAME: 221-U Building

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COMMENTS:

The unit was used to recover uranium from the high-level liquid wastes from the B&T fuel separation plants. Since shutdown, the unit has been used to store deactivated equipment. Support facilities (change rooms, showers, lavatories) are not used except the change room by RM when taking samples of canyon air [226]. The site is used for storage of spare equipment that has been reconditioned in the equipment decontamination facility. The deck level of the canyon has been decontaminated to a level that allows reasonable access with a low level of radiation exposure. The crane is operable. Sanitary and raw water, as well as steam, are available. The electrical gallery is generally considered contaminated in spots. One building air supply fan and one exhaust fan (exhausting through the sand filter) are operating [17].

ENVIRONMENTAL MONITORING:

Routine radiation survey, airborne radionuclide monitoring, and visual inspections are performed [315].

RELEASE POTENTIAL:

Prioritization of this facility for decommissioning classifies the relative radiological hazard as medium in comparison with other 200 Area surplus facilities [315].

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SITE NAME: 224-U HWSA [359]
ALIASES:
 224-U Hazardous Waste Staging Area [315]

SITE TYPE: Staging Area [315]
WASTE CATEGORY: Hazardous Waste [315]
WASTE TYPE: Liquid [315]

STATUS: Active [315]
START DATE: July 1986 [315]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: U03 and PUREX [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N38070 W73380 [329]
LOCATION: West of the 224-U Building [315]

WASTE TYPES AND AMOUNTS:
 Typical wastes contained in staging in the past year: ~1,454 kg of paint and solvents [315].

ENVIRONMENTAL MONITORING:
 Weekly documented inspections are performed by plant personnel [315].

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SITE NAME: 224-U Condensate Neutralization Tank [359]
ALIASES:
224-U Process Condensate Neutralization Tank [315]

SITE TYPE: Neutralization Tank [315]
WASTE CATEGORY: Mixed Waste [315]
WASTE TYPE: Liquid [315]

STATUS: Active [315]
START DATE: August 1987 [315]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: UO3 and PUREX [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N38070 W73380 [329]
LOCATION: At the 224-U Building [315]

WASTE TYPES AND AMOUNTS:

Under normal conditions, this site receives process condensate that is neutralized from an initial pH of 0.5 to a final pH of ~7 at the rate of 11,500 to 14,400 gal/d. When the plant is in standby mode, the initial pH is greater than 1.9, and the condensate generation rate is 1,440 to 2,600 gal/d. Neutralization is done with sodium hydroxide [315].

COMMENTS:

Addition of sodium hydroxide is regulated by a pH feedback controller [315].

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SITE NAME: 241-U-151 [359]
ALIASES:
241-U-151 Diversion Box [315]

SITE TYPE: Diversion Box [315]
WASTE CATEGORY: Mixed Waste [315]
WASTE TYPE: Liquid [315]
STATUS: Active [315]
START DATE: 1946 [315]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Stabilization and Isolation [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N37845 W75390 [329]

ASSOCIATED STRUCTURES:

Associated with 241-U-301 Catch Tank and 241-U Tank Farm [315].

WASTE TYPES AND AMOUNTS:

The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation [315].

ENVIRONMENTAL MONITORING:

Leak detection and air monitoring are performed continuously within the tank farm in which this unit is located [315].

RELEASE POTENTIAL:

Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks from transfers and drainage from operations within the unit [315].

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SITE NAME: 241-U-152 [359]

ALIASES:

241-U-152 Diversion Box [315]

SITE TYPE: Diversion Box [315]

WASTE CATEGORY: Mixed Waste [315]

WASTE TYPE: Liquid [315]

STATUS: Active [315]

START DATE: 1946 [315]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [329]

DOE/RL PROGRAM: Stabilization and Isolation [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]

COORDINATES: N37800 W75400 [329]

ASSOCIATED STRUCTURES:

Associated with 241-U-301 Catch Tank and 241-U Tank Farm [315].

WASTE TYPES AND AMOUNTS:

The unit transports waste solutions from processing and decontamination operations. Quantities are variable according to specific plant operation [315].

ENVIRONMENTAL MONITORING:

Leak detection and air monitoring are performed continuously within the tank farm in which this unit is located [315].

RELEASE POTENTIAL:

Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks from transfers and drainage from operations within the unit [315].

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SITE NAME: 241-U-302 [NR]

SITE TYPE: Catch Tank [348]
WASTE CATEGORY: Mixed Waste [NR]
WASTE TYPE: Liquid [NR]

STATUS: Inactive [NR]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [NR]
COORDINATES: N38470 W73100 [370]

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SITE NAME: 241-U-361 [359]

ALIASES:

241-U-361 Settling Tank [315]; 361-U-TANK [627]

SITE TYPE: Settling Tank [315]

WASTE CATEGORY: Mixed Waste [WR]

WASTE TYPE: Liquid [315]

STATUS: Inactive [627] Pre-1980 [315]

START DATE: 1951 [226]

END DATE: 1957 [226]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]

COORDINATES: N37830 W74160 [329]

LOCATION: Southwest of U Plant [315]

SITE DIMENSIONS: Length: 19.00 feet [315]

Diameter: 20.00 feet [315]

SITE DESCRIPTION:

The unit is constructed of 6-in. reinforced, pre-stressed concrete. The top is 6 ft below grade [315]. There are several risers visible above grade, one equipped with manual tape and one with two dip tubes for liquid level measurement [226].

WASTE TYPES AND AMOUNTS:

The unit received radioactively contaminated liquid. It is presently estimated to contain 27,500 gal of sludge of unknown plutonium content (estimated at 2,125 Ci beta/gamma) [315]. This unit received drainage from U-Plant [627].

COMMENTS:

Overflow from this unit was routed to the 216-U-1 & 2 Cribs [226].

ENVIRONMENTAL MONITORING:

Routine radiation survey, airborne radionuclide monitoring, and visual inspections are performed [315]. The manual tape was removed in 1985 [627].

SITE NAME: 241-U-361

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RELEASE POTENTIAL:

Prioritization of this facility for decommissioning classifies the relative radiological hazard as high in comparison with other 200 Area surplus facilities [315].

CLEANUP ACTIONS:

This unit was interim stabilized in 1985 [627].

RELEASE POTENTIAL:

Diversion boxes and receiving vaults drain to catch tanks. They are designed to contain leaks from transfers and drainage from operations within the unit [315].

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SITE NAME: 241-UX-302A [627]

ALIASES:

241-UX-302 Catch Tank [NR]; 241-UX-302 [359]

SITE TYPE: Catch Tank [627]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [NR]

STATUS: Active [627]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Stabilization and Isolation [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [534]

COORDINATES: N38400 W73175 [370]

LOCATION:

Just southeast of the 221-U Building and just northwest of the 222-U Building [534]

ASSOCIATED STRUCTURES:

Associated with 241-UX-154 Diversion Box [627].

WASTE TYPES AND AMOUNTS:

This unit was used for transfer of waste solution from processing and decontamination operations. Volumes were variable according to specific plant operation [NR]. It contains 6,540 gal of waste [633].

ENVIRONMENTAL MONITORING:

This unit is monitored by MFIC and CASS [627].

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SITE NAME: 241-WR Vault [315]

ALIASES:

241-WR Diversion Station Vault [226]

SITE TYPE: Receiving Vault [315]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [315]

STATUS: Inactive [315] Pre-1980 [315]

END DATE: 1976 [315]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]

COORDINATES: N38800 W72900 [17]

LOCATION: Adjacent to northeast end of 221-U [17]

GROUND ELEVATION: 700.00 feet above MSL [17]

WATER TABLE DEPTI: 236.00 feet below grade [NR]

SITE DIMENSIONS: Length: 128.00 feet [17]

Width: 66.00 feet [17]

SITE DESCRIPTION:

The entire structure is below grade. The structure is reinforced concrete, 45 ft deep. There are 9 compartments arranged in 2 rows with a 50,000-gal tank in each compartment [315] in a 24 sq ft pit. A 3-ft concrete wall separates the two rows of tanks [17]. In addition to the tanks, the facility contains miscellaneous agitators, pumps, and valves [315].

WASTE TYPES AND AMOUNTS:

The unit contains radioactively contaminated equipment and structure. Preliminary estimate of the contamination level is 60 Ci beta [315].

COMMENTS:

The unit was built for storage of uranyl nitrate hexahydrate for feed to 221-U and temporary storage for recovered nitric acid and waste before routing to tank farms and cribs. It was also used for thorium storage [226].

SITE NAME: 241-WR Vault

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ENVIRONMENTAL MONITORING:

Routine radiation survey, airborne radionuclide monitoring, and visual inspections are performed [315].

RELEASE POTENTIAL:

Prioritization of this facility for decommissioning classifies the relative radiological hazard as medium in comparison with other 200 Area surplus facilities [315].

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SITE NAME: 2607-W5 [315]

SITE TYPE: Septic Tank [315]
 WASTE CATEGORY: Nonhazardous/Nonradioactive [315]
 WASTE TYPE: Liquid [315]

STATUS: Active [315]
 START DATE: 1944 [315]

OPERABLE UNIT: 200-UP-2 [329]
 REG. AUTHORITY: CERCLA Past Practice [323]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West Area [315]
 COORDINATES: N37825 W74050 [329]

SITE DESCRIPTION:
 The unit includes a drain field [315].

WASTE TYPES AND AMOUNTS:
 Sanitary wastewater and sewage. Rate of waste generation is 12.2
 cu m/d [315].

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SITE NAME: 2607-W7 [315]

SITE TYPE: Septic Tank [315]
WASTE CATEGORY: Nonhazardous/Nonradioactive [315]
WASTE TYPE: Liquid [315]

STATUS: Active [315]
START DATE: 1954 [315]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West Area [315]
COORDINATES: N38800 W73000 [329]

SITE DESCRIPTION:
The unit includes a drain field [315].

WASTE TYPES AND AMOUNTS:
Sanitary wastewater and sewage. Rate of waste generation is 1.02 cu m/d [315].

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SITE NAME: 271-U Building [17]
ALIASES:
271-U Office Building [226]

SITE TYPE: Building [NR]
WASTE CATEGORY: Mixed Waste [360]
WASTE TYPE: Solid [17]

STATUS: Inactive [NR]
START DATE: 1952 [17]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [17]
COORDINATES: N38450 W73250 [17]
LOCATION: Adjacent to 221-U on the northwest side [17]

GROUND ELEVATION: 695.00 feet above MSL [17]
WATER TABLE DEPTH: 221.00 feet below grade [NR]

SITE DIMENSIONS: Length: 160.00 feet [17]
Width: 48.00 feet [17]

SITE DESCRIPTION:

The basement and three-story structure consists of reinforced concrete foundation, floors and pillars, pumice block walls, and a built-up asphalt gravel roof [17]. The structure is 65 ft 10 in. high with 10 ft 6 in. below grade. It is physically attached to the gallery side of the 221-U Canyon Building [226].

COMMENTS:

The unit is a support services building for 221-U. Parts of the unit are in use for craft training programs, studies of contamination containment techniques, and for offices [17].

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SITE NAME: 2727-WA SRE Sodium Storage Building [308]

SITE TYPE: Storage Facility [308]
WASTE CATEGORY: Mixed Waste [308]
WASTE TYPE: Solid [308]

STATUS: Active [308]
START DATE: April 1977 [308]

OPERABLE UNIT: 200-UP-2 [329]
TSD NUMBER: S-2-6 [323]
REG. AUTHORITY: TSD [368]

This site is not included in the Tri-Party Agreement Action Plan [329]

The following have been submitted for this site: Part A Permit [308]

DESIGNATED AREA: 200 West Area [308]
COORDINATES: N38520 W74680 [329]

SITE DESCRIPTION:

Prefabricated (Butler-type) metal building. The design capacity is 35,000 gal. Approximately 1/4 of the concrete floor is occupied [308].

WASTE TYPES AND AMOUNTS:

158 fifty-five-gal steel drums of radioactive waste sodium in metallic form were shipped to Hanford for storage after use by Atomics International as a primary coolant in their Sodium Reactor Experiment reactor [308].

COMMENTS:

The Part A Permit Application will be withdrawn [308].

RELEASE POTENTIAL:

The drums were purged of air and internally blanked with nitrogen at Atomics International. The drums are stored on noncombustible pallets [308].

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SITE NAME: 276-U Solvent Facility [359]
ALIASES:
276-U Solvent Handling Facility [315]

SITE TYPE: Test Treatment or Support Facility [315]
WASTE CATEGORY: Mixed Waste [NR]
WASTE TYPE: Solid [315]
STATUS: Inactive [315] Pre-1980 [315]
START DATE: 1952 [17]
END DATE: 1976 [315]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N38050 W73600 [17]
LOCATION: Southwest end of U Plant [315]

GROUND ELEVATION: 695.00 feet above MSL [17]
WATER TABLE DEPTH: 221.00 feet below grade [NR]

SITE DIMENSIONS (Top) [17]:
Length: 66.00 feet [17]
Width: 54.50 feet [17]

SITE DESCRIPTION:

The facility is an uncovered, reinforced concrete basin containing three tanks [315] (#380,381,388) and three vacant concrete tank pads [226] and a large amount of pipe. Two tanks are carbon steel and one is stainless steel. The capacities of the tanks are 29,000 gal, 6,000 gal, and 2,500 gal respectively [315]. Three of the six original tanks have been removed [226].

WASTE TYPES AND AMOUNTS:

This unit contains radioactive surface contamination on tanks and concrete; amounts have not been determined. There is 20,000 ct/min smearable beta/gamma fixed by paint, less than 500 ct/min direct and smearable alpha, and 300 mrem/h penetrating [315].

COMMENTS:

The unit was built for TBP and diluent storage and for makeup and treatment of organic solutions used in 221-U [226].

SITE NAME: 276-U Solvent Facility

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ENVIRONMENTAL MONITORING:

Routine radiation survey, airborne radionuclide monitoring, and visual inspections are performed [315].

RELEASE POTENTIAL:

Prioritization of this facility for decommissioning classifies the relative radiological hazard as low in comparison with other 200 Area surplus facilities [315]. The concrete basin can hold the contents of all tanks in case of a rupture [17].

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SITE NAME: 291-U Fan and Filter Building [359]

ALIASES:

291-U Fan Control House and Filter [NR]

SITE TYPE: Equipment [NR]
WASTE CATEGORY: Low-Level Waste [17]
WASTE TYPE: Solid [17]

STATUS: Active [226]
START DATE: 1992 [17]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [226]
COORDINATES: N38500 W72900 [226]
LOCATION: Southeast of 221-U [17]

GROUND ELEVATION: 697.00 feet above MSL [17]
WATER TABLE DEPTH: 233.00 feet below grade [NR]

SITE DIMENSIONS: Site Area: 330.00 square feet [226]
Length: 19.00 feet [226]
Width: 18.00 feet [226]

SITE DESCRIPTION:

The unit consists of reinforced concrete foundation and floor, concrete and block walls, and a concrete slab roof covered with asphalt and gravel, trimmed in wood. It is a one-story (14 ft high), one-room building with wooden doors [226].

ASSOCIATED STRUCTURES:

Sand filter, partially below grade, reinforced concrete box structure, 96 by 96 by 22 ft deep with an asphalt covered concrete slab roof;
Vessel vent pit, below grade reinforced concrete pit, 19 by 15 by 10.5 ft deep with 2-ft-thick walls and floor, closed by 2-ft-thick ground-level blocks; contains two exhaust fans [226]

COMMENTS:

The unit provides exhaust ventilation for the 221-U Canyon Building. The 221-U Building is retired; however, the 291-U exhaust ventilation system is planned to remain in operation until the 221-U Building is decommissioned [226].

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SITE NAME: 291-U-1 [359]

ALIASES:

291-U-1 Stack [NR]

SITE TYPE: Stack [226]
WASTE CATEGORY: Low-Level Waste [17]
WASTE TYPE: Solid [226]

STATUS: Active [226]
START DATE: 1952 [17]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [226]
COORDINATES: N38500 W72900 [226]
LOCATION: Southeast of 221-U [17]

GROUND ELEVATION: 697.00 feet above MSL [17]
WATER TABLE DEPTH: 233.00 feet below grade [NR]

SITE DIMENSIONS: Length: 200.00 feet [226]

SITE DESCRIPTION:

The unit consists of reinforced concrete, lined with acid-resistant brick. It rests on an octagonal, two-tiered foundation of brick and concrete. The foundation is 23 ft across and 7 ft thick at its greatest points. The unit is 14 ft in diameter at the base [226].

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SITE NAME: 296-U-10 [359]

ALIASES:

296-U-10 Stack [315]

SITE TYPE: Stack [315]
WASTE CATEGORY: Low-Level Waste [315]
WASTE TYPE: Solid [315]

STATUS: Inactive [315] Pre-1980 [315]
END DATE: 1976 [315]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: Other [368]
DOE/RL PROGRAM: Surplus Facilities Management Program (GF dollars) [358]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [315]
COORDINATES: N38500 W73400 [226]
LOCATION: On the roof of the 271-U Building [315]

SITE DIMENSIONS: **Length:** 10.00 feet [226]
 Diameter: 24.00 feet [226]

SITE DESCRIPTION:

The unit rests on the rooftop of the 271-U Building and is supported by the 221-U Building wall [226].

ASSOCIATED STRUCTURES:

Electric motor and fan enclosure, also mounted on the rooftop, rests on a 9-ft-10-in by 8-ft-wide metal foundation [226].

WASTE TYPES AND AMOUNTS:

The unit consists of carbon steel with trace amounts of surface contamination [315].

COMMENTS:

Originally, the unit was built to ventilate the 271-U third floor plutonium storage area. Currently, it continues to ventilate this area; plutonium is no longer stored here. The area is now used for storage of contaminated sediment [226].

ENVIRONMENTAL MONITORING:

Routine radiation survey, airborne radionuclide monitoring, and visual inspections are performed [315].

SITE NAME: 296-U-10

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RELEASE POTENTIAL:

Prioritization of this facility for decommissioning classifies the relative radiological hazard as low in comparison with other 200 Area surplus facilities [315].

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SITE NAME: UN-200-W-101 [361]

ALIASES:

UN-216-W-9, 221-U Acid Spill R-1 through R-5 [58]; UPR-200-W-101 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: March 1957 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Environmental Restoration [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [58]

COORDINATES: N38730 W73050 to N38550 W73230 [309]

LOCATION:

Northeast end of the 221-U Building from section R-1 to R-9 [309].

GROUND ELEVATION: 695.00 feet above MSL [309]

WATER TABLE DEPTH: 225.00 feet below grade [309]

SITE DIMENSIONS (Top) [309]:

Length:	90.00 feet [309]
Width:	65.00 feet [309]
Depth:	3.00 feet [309]

WASTE TYPES AND AMOUNTS:

Reclaimed acid containing Sr-90 fission products to ~1 Ci [309]. A radiological survey on 9/76 revealed surface contamination up to 300 ct/min. This is a low activity waste site containing ~1 Ci fission products (at the time of discharge) [NR].

KNOWN RELEASES:

Reclaimed acid spilled onto the ground [309].

SITE NAME: UN-200-W-101

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COMMENTS:

REDOX Radiation Monitoring Management Report, November 13, 1967: Special Services Operation resealed ~20,000 sq ft of ground surface at the rear of the 221-U Building. The area extends from Section 1 through Section 9 and out to the road east of the building. The original tar seal over an old radioactive liquid spill area had decomposed and permitted weeds to grow, bringing beta contamination to the surface of the ground. Sr-90 was identified as the active isotope. In effecting the resealed, all weeds were removed, a soil sterilizing agent was sprayed over the ground, a hot tar base was applied; and this was capped with a fine mesh of chipped gravel. Total cost - \$975 [58].

CLEANUP ACTIONS:

The area was covered with 3 in. of sand and gravel [309].

SURVEILLANCE INFORMATION [514]

SURVEILLANCE DATE: 5/88
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination

RESULTS/STATUS: No contamination detected.

ACTION REQUIRED: No action required.

These results show the unit to be in compliance with the Environmental Compliance Manual.

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SITE NAME: UPR-200-W-111 [309]

ALIASES:

UN-216-W-21 [58]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: Unknown [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [368]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N37850 W75180 [309]

LOCATION:

South side of the 207-U Retention Basin, within 10 ft of the wall [309]

GROUND ELEVATION: 668.00 feet above MSL [309]

WATER TABLE DEPTH: 190.00 feet below grade [309]

SITE DIMENSIONS: Length: 40.00 feet [309]

Width: 15.00 feet [309]

Depth: 10.00 feet [309]

WASTE TYPES AND AMOUNTS:

Approximately 27 cu yd of sludge scraped from the bottom of the south retention basin of the 207-U site [309].

KNOWN RELEASES:

Sludge was scraped from the bottom of the south retention basin on the 207-U site and put into a trench on the south side of 207-U Retention Basin. The sludge was covered with 4 ft of clean fill dirt [309].

SITE NAME: UPR-200-W-111

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SURVEILLANCE INFORMATION [474]

SURVEILLANCE DATE: 9/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination

RESULTS/STATUS: Areas of contamination up to 2mr/hr noted on south and west sides of 207-U Retention Basin. Similar conditions reported on 9/88 survey.

ACTION REQUIRED: Issue new SCIR to reflect current conditions.

These results show the unit to be out of compliance with the Environmental Compliance Manual.

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General Summary Report
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SITE NAME: UPR-200-W-112 [309]

ALIASES:

UN-216-W-22 [58]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: Unknown [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [368]

This site is not included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N38150 W75180 [309]

LOCATION:

North side of the 207-U Retention Basin within 10 ft of the wall [309]

GROUND ELEVATION: 664.00 feet above MSL [309]

WATER TABLE DEPTH: 195.00 feet below grade [309]

SITE DIMENSIONS: Length: 40.00 feet [309]

Width: 15.00 feet [309]

Depth: 10.00 feet [309]

WASTE TYPES AND AMOUNTS:

Approximately 27 cu yd of sludge scraped from the bottom of the north retention basin of the 207-U site [309].

KNOWN RELEASES:

Sludge was scraped from the bottom of the north retention basin on the 207-U site and put into a trench on the north side of 207-U Retention Basin. The sludge was covered with 4 ft of clean fill dirt [309].

SITE NAME: UPR-200-W-112

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SURVEILLANCE INFORMATION [474]

SURVEILLANCE DATE: 9/89
SURVEY SCHEDULE: Annual
SITE POSTING: Surface Contamination

RESULTS/STATUS: No contamination detected. Same conditions reported on 9/88 survey.

ACTION REQUIRED: No action required. This area is the perimeter of the U Retention Basin and remains a Surface Contamination Zone as a traffic barrier to the basin.

These results show the unit to be in compliance with the Environmental Compliance Manual.

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General Summary Report
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SITE NAME: UN-200-W-117 [361]

ALIASES:

UN-216-W-27 [185]; UPR-200-W-118 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: Mid 1950's [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Site Management Division [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N39235 W73725 [309]

LOCATION:

The ground around the railroad cut directly northeast of the 221-U Building [309]

GROUND ELEVATION: 695.00 feet above MSL [309]

WATER TABLE DEPTH: 221.00 feet below grade [309]

KNOWN RELEASES:

This site is the result of contaminated liquid and particulate matter dropping from railroad cars servicing the 221-U facility during the Uranium Recovery Program, Equipment Decontamination Program, and the various storage and unloading activities. These activities started in 1952 with the Uranium Recovery Program (1952-1957) and have continued intermittently to the present [185].

COMMENTS:

The date of occurrence is unknown, but the date established as a site is September 1980 [185].

CLEANUP ACTIONS:

The site was designated as a radiation zone but has since been released as contamination has decayed to background levels [309].

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General Summary Report
January 28, 1991

SITE NAME: UN-200-W-118 [361]

ALIASES:

UN-216-W-28 [185]; UPR-200-W-118 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: 1960-1972 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N38575 W73490 [309]

LOCATION:

The railroad spur ~50 ft northwest of the 221-U Building [309]

GROUND ELEVATION: 695.00 feet above MSL [309]

WATER TABLE DEPTH: 221.00 feet below grade [309]

WASTE TYPES AND AMOUNTS:

Reclaimed nitric acid [309].

KNOWN RELEASES:

This site is the result of drippings and spills from the reclaimed nitric acid unloading stations in the 211-U Chemical Tank Farm. Wind-borne particulate matter spread to the ground surface outside the concrete unloading station [185].

CLEANUP ACTIONS:

This site was designated a radiation zone but has since been released as contamination has decayed to background levels [309].

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 General Summary Report
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SITE NAME: UN-200-W-125

SITE TYPE: Unplanned Release
WASTE CATEGORY: Mixed Waste
WASTE TYPE: Liquid

STATUS: Inactive
START DATE: 1956

OPERABLE UNIT: 200-UP-2
REG. AUTHORITY: CERCLA Past Practice
DOE/RL PROGRAM: UO3 and PUREX

This site is included in the Tri-Party Agreement Action Plan

DESIGNATED AREA: 200 West Area
COORDINATES: N38270 W73900
LOCATION: 200 West Area. A hole in the ground in U-Plant.

SITE DESCRIPTION:
 Fission products measuring ~1 Ci.

WASTE TYPES AND AMOUNTS:
 A leak in the transfer line from the 200-U Tank.

COMMENTS:
 This site is scheduled for deletion. It is a duplicate of
 216-U-15 [WID].

ENVIRONMENTAL MONITORING:
 Contamination was limited to a hole in the ground (which included
 interface crud, activated charcoal, and diatomaceous earth) in U Plant.

Waste Information Data System
 General Summary Report
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SITE NAME: UPR-200-W-138 [309]
ALIASES:
 UN-200-W-138 [361]; UN-216-W-11 [58]

SITE TYPE: Unplanned Release [309]
WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
OCCURRENCE DATE: June 1953 [309]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [NR]
DOE/RL PROGRAM: UO3 and PUREX [358]

This site is not included in the Tri-Party Agreement Action Plan [NR]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N38670 W73090 [309]
LOCATION:

Near the northwest corner of the 221-U Building near the R-3 entrance
 [309]

GROUND ELEVATION: 695.00 feet above MSL [309]
WATER TABLE DEPTH: 225.00 feet below grade [309]

WASTE TYPES AND AMOUNTS:

UNH solution from the 221-U Building containing an estimated 300 lb of uranium [309].

KNOWN RELEASES:

Solution overflowed to the 221-U Building vessel vent blower pit onto the ground through a French drain (216-U-7) [309].

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SITE NAME: UN-200-W-19 [361]

ALIASES:

UPR-200-W-19 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: Spring 1953 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Radiation Areas Reduction [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N37800 W74200 [329]

LOCATION: Near the 361-U Settling Tank and the 216-UR Crib [309]

SITE DIMENSIONS (Top) [309]: Site Area: 50.00 square feet [309]

WASTE TYPES AND AMOUNTS:

Organic waste and cell drainage with readings to 11.5 R/h at 3 in [309].

KNOWN RELEASES:

Drainage from the TBP and UO3 plants overflowed tank and crib vents [309].

CLEANUP ACTIONS:

Decontamination was attempted, and the area was then backfilled [309].

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SITE NAME: UN-200-W-22

SITE TYPE: Unplanned Release
WASTE CATEGORY: Mixed Waste
WASTE TYPE: Liquid

STATUS: Inactive Pre-1980
OCCURRENCE DATE: June 1953

OPERABLE UNIT: 200-UP-2
REG. AUTHORITY: CERCLA Past Practice
DOE/RL PROGRAM: U03 and PUREX

This site is included in the Tri-Party Agreement Action Plan

PNL Hazardous Ranking System Migration Score: 1.03

DESIGNATED AREA: 200 West Area
COORDINATES: N38250 W75055

LOCATION:
200 West Area: The 216-U-7 French Drain on the southeast side of the
211-U Building, near the R-3 entrance.

GROUND ELEVATION: 705.00 feet above MSL
WATER TABLE DEPTH: 227.00 feet below grade

SITE DESCRIPTION:
UNH solution, an estimated 300 lb of uranium.

WASTE TYPES AND AMOUNTS:
An overflow of UNH solution.

COMMENTS:
This site is scheduled for deletion. It is a duplicate of
UPR-200-W-138 [WID].

ENVIRONMENTAL MONITORING:
Contamination was limited to a vessel vent blower pit, a French drain,
and an area around the 221-U Building.

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: UN-200-W-33 [361]

ALIASES:

UPR-200-W-33 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: March 1955 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: .98 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N38050 W73200 [97]

LOCATION: 90 ft east of the 224-U Building [309]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 227.00 feet below grade [309]

SITE DIMENSIONS: Site Area: 3.00 square feet [309]

KNOWN RELEASES:

A flange leak in the C-5 condensate line caused the contamination [309].

CLEANUP ACTIONS:

The top 4 in. of contaminated dirt was removed and new dirt filled in.

The area was removed from radiation zone status in December 1970 [309].

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: UN-200-W-39 [361]

ALIASES:

UPR-200-W-39 [309]; 224-U Buried Contamination [97]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: March 1954 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.03 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N37925 W73270 [309]

LOCATION: Under the 224-UA addition [309]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 230.00 feet below grade [309]

SITE DIMENSIONS (Top) [309]:	Length:	50.00 feet [309]
	Width:	10.00 feet [309]
	Depth:	3.00 feet [309]

WASTE TYPES AND AMOUNTS:

Uranium, with less than 0.02 Ci/m³ [309].

KNOWN RELEASES:

A leak at the 224-U Building [309].

ENVIRONMENTAL MONITORING:

Contamination was limited to an area southeast of the 224-U Building [309].

CLEANUP ACTIONS:

The contamination was buried in a trench and covered with 3 ft of soil. The area was removed from radiation zone status in June 1972 and is now under the 224-UA addition [309].

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: UN-200-W-46 [361]
ALIASES:
UPR-200-W-46 [309]

SITE TYPE: Unplanned Release [309]
WASTE CATEGORY: Mixed Waste [NR]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
OCCURRENCE DATE: January 21, 1958 [1]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Environmental Restoration [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West Area [309]
COORDINATES: N38250 W73000 [309]
LOCATION: In the 234-5 and 224-U areas [309]

GROUND ELEVATION: 705.00 feet above MSL [309]
WATER TABLE DEPTH: 227.00 feet below grade [309]

KNOWN RELEASES:

Burial operation of an H-2 centrifuge from REDOX resulted in spotty contamination in the Z and U plant areas [309]. Fumes were observed coming from the centrifuge shortly after it was placed in the box. After four hours of this condition and unsuccessful attempts to control it, fumes escaped the tunnel and began circulating throughout the building via the vent system. Considerable contamination was deposited on all horizontal surfaces, including construction work areas outside the building [1].

ENVIRONMENTAL MONITORING:

Contamination was limited to within the 234-5 and 224-U areas [309].

Waste Information Data System
General Summary Report
January 28, 1991

SITE NAME: UN-200-W-48 [361]

ALIASES:

UPR-200-W-48 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [309]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: July 9, 1958 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: Site Management Division [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: .86 [309]

DESIGNATED AREA: 200 West Area [309]

COORDINATES: N39310 .173760 [309]

LOCATION: At the 221-U railroad crossing [309]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 232.00 feet below grade [309]

SITE DIMENSIONS: Site Area: 1,000.00 square feet [309]

WASTE TYPES AND AMOUNTS:

Unknown beta/gamma with readings to 9 R/h [309].

KNOWN RELEASES:

Leakage from a contaminated jumper in transit [309].

CLEANUP ACTIONS:

Recommendations were made to establish a temporary radiation zone boundary and of the necessary decontamination [309].

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General Summary Report
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SITE NAME: UN-200-W-55 [361]

ALIASES:

UPR-200-W-55 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: April 12, 1960 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: 1.09 [309]

DESIGNATED AREA: 200 West, U Plant [309]

COORDINATES: N38075 W73102 [309]

LOCATION: The 224-U asphalt loading ramp and a nearby roadway [309]

GROUND ELEVATION: 705.00 feet above MSL [309]

WATER TABLE DEPTH: 227.00 feet below grade [309]

WASTE TYPES AND AMOUNTS:

1.5 tons of uranium powder that had been separated from fission products [309].

KNOWN RELEASES:

A broken loading hose caused the contamination of the 224-U asphalt loading ramp and a nearby roadway [309].

CLEANUP ACTIONS:

Most of the powder was swept up and put into drums for recovery. The rest was washed off the asphalt and into the ground surface [309].

Waste Information Data System
 General Summary Report
 January 28, 1991

SITE NAME: UN-200-W-6 [361]
ALIASES:
 UPR-200-W-6 [309]

SITE TYPE: Unplanned Release [309]
WASTE CATEGORY: Mixed Waste [309]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
OCCURRENCE DATE: Spring 1950 [309]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Stabilization and Isolation [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West Area [309]
COORDINATES: N37900 W75470 [309]

LOCATION:
 The ground around the 241-U-151 and the 241-U-152 Diversion Boxes [309]

GROUND ELEVATION: 668.00 feet above MSL [309]
WATER TABLE DEPTH: 190.00 feet below grade [309]

WASTE TYPES AND AMOUNTS:
 Unknown beta/gamma with a maximum dose rate of 20 mR/h at the surface [309].

KNOWN RELEASES:
 Work done at the 241-U-151 and 152 diversion boxes provided some contamination in that area [309].

CLEANUP ACTIONS:
 The contamination was covered with a foot of clean soil. The area was delimited with rope and posted with radiation zone signs [309].

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 General Summary Report
 January 28, 1991

SITE NAME: UN-200-W-60 [361]
ALIASES:
 UPR-200-W-60 [309]

SITE TYPE: Unplanned Release [309]
WASTE CATEGORY: Mixed Waste [NR]
WASTE TYPE: Liquid [309]
STATUS: Inactive [309] Pre-1980 [309]
OCCURRENCE DATE: February 25, 1966 [309]
OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West, U Plant [309]
COORDINATES: N39310 W73760 [309]

LOCATION:
 An area extending 75 yd along the 221-U railroad cut from the tunnel door [309]

GROUND ELEVATION: 705.00 feet above MSL [309]
WATER TABLE DEPTH: 232.00 feet below grade [309]

WASTE TYPES AND AMOUNTS:
 Unknown beta/gamma with readings from a few thousand counts per minute to a maximum of 1 R/h [309].

KNOWN RELEASES:
 A defective transfer box containing PUREX equipment was contaminated [309].

CLEANUP ACTIONS:
 The contamination was isolated and cleaned [309].

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SITE NAME: UN-200--W-78 [361]

ALIASES:

UPR-200-W-78 [309]

SITE TYPE: Unplanned Release [309]

WASTE CATEGORY: Mixed Waste [NR]

WASTE TYPE: Liquid [309]

STATUS: Inactive [309] Pre-1980 [309]

OCCURRENCE DATE: August 21, 1970 [309]

OPERABLE UNIT: 200-UP-2 [329]

REG. AUTHORITY: CERCLA Past Practice [323]

DOE/RL PROGRAM: UO3 and PUREX [358]

This site is included in the Tri-Party Agreement Action Plan [329]

PNL Hazardous Ranking System Migration Score: .86 [309]

DESIGNATED AREA: 200 West Area [309]

COORDINATES: N37850 W73550 [329]

LOCATION: South of the UO3 storage area [309]

SITE DIMENSIONS: Site Area: 40.00 square feet [309]

WASTE TYPES AND AMOUNTS:

UO3 powder [309].

KNOWN RELEASES:

A spill from a loading pallet during movement contaminated an area up to 20,000 ct/min [309].

CLEANUP ACTIONS:

The contaminated dirt was removed [309].

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General Summary Report
January 28, 1991

SITE NAME: UN-200-W-86 [361]
ALIASES:
UPR-200-W-86, UN-216-W-86 [315]

SITE TYPE: Unplanned Release [315]
WASTE CATEGORY: Mixed Waste [NR]
WASTE TYPE: Solid [315]
STATUS: Inactive [315] Post-1980 [315]
OCCURRENCE DATE: October 27, 1981 [315]

OPERABLE UNIT: 200-UP-2 [329]
REG. AUTHORITY: CERCLA Past Practice [323]
DOE/RL PROGRAM: Environmental Restoration [358]

This site is included in the Tri-Party Agreement Action Plan [329]

DESIGNATED AREA: 200 West Area [315]
COORDINATES: N39600 W75550 [NR]

LOCATION:
200 West Area environment, specifically around 221-U Building and the
204-S Basin [315]

GROUND ELEVATION: 691.00 feet above MSL [NR]
WATER TABLE DEPTH: 209.00 feet below grade [NR]

WASTE TYPES AND AMOUNTS:

Contamination consisted of pigeon feces containing Cs-134, Cs-137, Sr-90, and Ru-106, with readings from 10,000 dis/min beta/gamma to 40 mR/h [315].

KNOWN RELEASES:

Contaminated pigeon feces [315].

RELEASE POTENTIAL:

No potential for release from this spill site exists; radioactive contamination has been removed to background levels [315].

CLEANUP ACTIONS:

The north 204-S Basin was decontaminated to background radiation levels, and the affected area around 221-U was chained off and posted as a radiation area [315].

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Project Title/Work Order:

200-U-2 Operable Unit Technical Baseline Report

EDT No.: WHC-EP-0400

ECN No.:

Name	MS IN	With Attachment	EDT/ECN & Comment	EDT/ECN Only
R. A. Carlson	H4-55			
D. H. DeFord	H4-55			
M. S. Gerber	H4-55			
G. E. Harris	H4-55			
R. P. Henckel	H4-55			
I. D. Jacques	H4-55			
S. K. Kent	H4-55			
C. D. Wittreich	H4-55			

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S. K. Kent	H4-55			
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