

Control #: D4-100N-0021

FACILITY STATUS CHANGE FORM

UPR-100-N-22, 184-ND Diesel Oil Supply Line Leak (Accepted Waste Site): The site was just outside of the 184-N Power House. In June 1986, corrosion caused the diesel oil supply line to leak. The line was excavated and rerouted. Oil contaminated soil was removed. D4 removal of the below grade tank rings associated with the 184-ND had the potential to impact this waste site. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-ix.

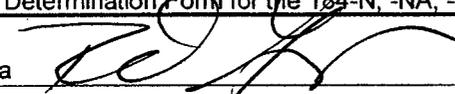
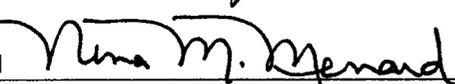
UPR-100-N-23, 184-ND Diesel Oil Supply Line Leak (Accepted Waste Site): The site was located near the Diesel Oil Day Tank for 184-N Power House. In January 1987, corrosion caused the diesel oil supply line to leak. The line was excavated and repaired. Oil-contaminated soil was removed. D4 removal of the below grade tank rings associated with the 184-ND had the potential to impact this waste site. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-ix.

UPR-100-N-36, 184-NA, Diesel Generator Area (Accepted Waste Site): The site is located between 153-N, 184-N, and 184-NC. In July 1999, this area was documented as having had numerous leaks over a thirteen-year period. The site was used as a diesel air compressor staging area. The most recent spills have been cleaned up. This waste site was not impacted by D4 activities. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-x.

UPR-100-N-42, 184-ND Day Tank Area Liquid Unplanned Release (Accepted Waste Site): The site is a concrete and metal tank structure located on the north side of the 184-N Building. In October 1987, there was a spill of diesel fuel. The amount was unknown. There is no information in WIDS as to the status of clean up. D4 removal of the below grade tank rings associated with the 184-ND had the potential to impact this waste site. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-x.

Section 3: List of Attachments

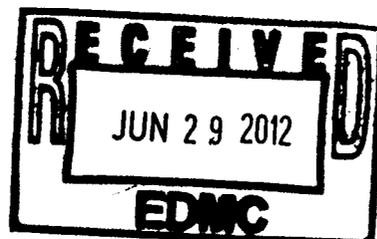
1. Facility Information - Building History and Characterization
2. Pre- and Post-Demolition Photographs
3. WIDS Sites General Location Map
4. Post-Demolition LARADS/GPERS Radiological Survey
5. Pre- and Post-Demolition GPS Surveys
6. Sampling Determination Form for the 184-N, -NA, -NB, -NC, -NE, -NF Facilities (SDF-100N-005).

Rudy Guercia 	6/19/12
DOE-RL	Date
Nina Menard 	6/20/12
Lead Regulator <input type="checkbox"/> EPA <input checked="" type="checkbox"/> Ecology	Date

DISTRIBUTION:

EPA: Dennis Faulk, B1-46
 Ecology: Wanda Elliott, H0-57
 DOE: Rudy Guercia, A3-04
 Document Control, H0-30
 Administrative Record, H6-08

SIS Coordinator: Benjamin Cowin, H4-22
 D4 EPL: Clay McCurley, X5-50
 Sample Design/Cleanup Verification: Megan Proctor, H4-22
 FR Engineering: Rich Carlson, N3-30
 FR EPL: Dan Saueressig, N3-30



FACILITY STATUS CHANGE FORM

Date Submitted: May 13, 2012 Originator: David Warren Phone: (509) 539-6040	Area: 100-N Facility ID: 184-N, -NA, -NB, -NC, -ND, -NE, & -NF Action Memorandum: 100-N Ancillary Facilities	Control #: D4-100N-0021
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This form documents agreement among the parties listed below on the status of the facility D&D operations and the disposition of underlying soil in accordance with the applicable regulatory decision documents.

Section 1: Facility Status

- All D4 operations required by action memo complete.
- D4 operations required by action memo partially complete, remaining operations deferred.

Description of Completed Activities and Current Conditions:

Deactivation: Utility isolation was performed on 184-N, -NA, -NB, -NC, -ND, -NE, & -NF (184-N complex) prior to beginning facility decontamination.

Decontamination and Decommissioning: The following hazardous materials were removed prior to facility demolition: batteries, light bulbs, oils, grease, asbestos-containing material (ACM), mercury, refrigerant and polychlorinated biphenyls. Hazardous material removal and waste disposition was performed in accordance with *Removal Action Work Plan for 100-N Ancillary Facilities*, DOE/RL-2002-70, Revision 2 (RAWP).

Demolition: Demolition of the above-grade structures began in the late 1990's when the 184-ND tanks were removed. The 184-NB and 184-NC structures were demolished in 2006. The 184-N, 184-NA, 184-ND below-grade, 184-NE, and 184-NF were demolished in 2008. The contaminants of concern during demolition were radionuclides and asbestos. Most ACM was abated in 184-N prior to demolition of the facility; however, due to accessibility some ACM remained during the demolition phase. To address the remaining ACM, the demolition of 184-N was performed in accordance with the 184-N Asbestos Work Plan which was an attachment within the 184-N demolition work package. There were no anomalies encountered during the demolition of the 184-N complex.

Description of Deferral (as applicable):

No deferral is necessary, all D4 actions are complete. However, the below-ground feed pipes associated with the 184-ND oil tanks still remain and will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD. Remedial activities for this site will be completed by Field Remediation.

Section 2: Underlying Soil Status

- No waste site(s) present. No additional actions anticipated.
- Documented waste site(s) present. Cleanup and closeout to be addressed under Record of Decision.
- Potential waste site discovered during D4 operations. Waste site identification number <to be> assigned.
 Cleanup and closeout to be addressed under Record of Decision.

Description of Current/As-Left Conditions:

All of the 184-N complex buildings and concrete pads were demolished. A minimal amount of soil was removed along with the concrete pads. The site has been backfilled and regraded with material from the 100-N borrow pit. Within the footprint of the 184-ND oil tanks excavation there was some soil staining, which was to be expected, noted as evidence of shallow zone oil contamination. WCH D4 personnel collected a sample of this material, HEIS number J17J67, and had it analyzed for: Total metals, VOAs, BNAs, Diesel Range Organics and Motor Oil Range Organics. Refer to Attachment 1 for details.

The Sampling Determination Form (Attachment 7) is part of a process implemented by the *Removal Action Work Plan*

FACILITY STATUS CHANGE FORM

for 100-N Area Ancillary Facilities, DOE/RL-2002-70, Revision 3. The Sampling Determination Form for the 184--N Facilities (SDF-100N-005) represents a regulatory agreement between DOE and the Lead Regulator (Ecology), and indicates that the requirements of the Action Memorandum have been met with respect to demonstrating that cleanup criteria, MTCA Method B for Chemical Constituents and 15 mRem above Hanford Site background for Radiological Constituents, have been achieved for soils and structures remaining after facility removal. Further action will not be required by the D4 organization to demonstrate that cleanup criteria have been met for the 184-N Facilities.

Identification of Documented Waste Site(s) or Nature of Potential Waste Site Discovery (as applicable):

Ten WIDS sites are in the general proximity of the 184-N complex. All of the accepted waste sites (except 100-N-55 which is a confirmatory site at this time) will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD.

100-N-12, 166-N/184-N Pipelines Liquid Unplanned Release (Not Accepted Waste Site): The site was an unplanned release. The site consisted of a leak of fuel oil found contained in a drain trench. The oil was cleaned up immediately. The oil leaked from a loose pipe fitting at the 184-NA annex and was contained inside of the building. Oil was being transferred from the day tank to the No. 2 Boiler. The oil was contained in the 184-NA drain trench and was cleaned up before it reached the trench drain. This waste site was rejected by the Tri-Parties.

100-N-24, Hydrogen Dry Well Liquid Waste Site (Accepted Waste Site): The site is a concrete and metal structure located on the south side of the 184-N Building and west of the 153-N Switch Gear Building. The drywell consists of a 2.75-foot diameter steel cover covering a 2.75-foot non-reinforced concrete pipe above a 8.3-foot diameter concrete subchamber. The subchamber is set in a gravel pocket 11-feet in diameter. A 2-inch chemical drain line that extends from 109-N Building fed the drywell. The drywell received 50 percent hydrogen peroxide and water from the hydrogen peroxide sump under the hydrogen peroxide tank located in the 109-N Decontamination Facility. The solution was used for washing down the storage tank area. This waste site was not impacted by D4 activities. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-iii.

100-N-28, Resin Disposal Pit Liquid Waste Site (Accepted Waste Site): The site is located south of 184-N and west of 153-N Building. The site is a slight depression around a 5-foot square concrete structure that has a 2.5-foot metal cover. Below the cover is a solid lead plug with four lifting lugs. The plug was provided as shielding for protection against radiation that may be contained in the disposed resin charge. Under the plug is a 3-inch diameter pipe leading 10-feet to the disposal pit. The pit is 17.5-feet by 12.5-feet by 13.5-feet high. The resin disposal pit could hold 110 cubic feet of resin. The pit was fed by a 3-inch line from the 109-N Decontamination Facility. The resin disposal pit was designed to receive the resin discharge from the 109-N Ion Exchanger. The construction of the pit is such that all liquids entrained in the resin are filtered to the soil below the resin disposal pit. This waste site was not impacted by D4 activities. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-iii.

100-N-55, 153-N Building Drywell, Miscellaneous Stream (Accepted Waste Site): The site is a French drain with a 4-foot steel cover. The site is located just off the northeast corner of the 153-N Building. The drywell received steam condensate from a condensate pump and drainage from a service sink in the 153-N Building. This waste site was not impacted by D4 activities. This waste site will be addressed as a confirmatory site under work instruction 0100N-WI-G0003.

UPR-100-N-19, 184-ND Day Tank Fuel Oil Spill (Accepted Waste Site): The site is a concrete and metal tank structure located on the north side of the 184-N Building. In April 1984, the No.6 Fuel Oil Day Tank was overfilled and fuel oil spilled to the ground inside the containment area. The oil was cleaned up from the surface of the ground and the tank impoundment area was cleaned up. D4 removal of the below grade tank rings associated with the 184-ND had the potential to impact this waste site. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-ix.

UPR-100-N-21, 184-ND Diesel Oil Day Tank Overflow (Accepted Waste Site): The site is a concrete and metal tank structure located on the north side of the 184-N Building. In April 1986, the Diesel Day Tank was overfilled and diesel fuel spilled to the ground inside the containment area. An estimated 650 gallons had spilled. The failure of the tank-level annunciator caused overfilling of the day tank during fuel transfer. The diesel fuel was cleaned up from the surface of the ground and the tank impoundment area was cleaned up. D4 removal of the below grade tank rings associated with the 184-ND had the potential to impact this waste site. This waste site will be addressed under the 100-NR-1/100-NR-2 OU Interim Action ROD, Appendix B - page B-ix.

100-N D4 Project Facility Completion Form

Attachment 1: Facility Information (6 pages)

Introduction

This document provides information regarding the 184-N, 184-NA, 184-NB, 184-NC, 184-ND, 184-NE, and 184-NF Power House (184-N complex) facilities history, characterization and final status at the completion of deactivation, decontamination, decommissioning, and demolition (D4) activities.

Site Information

The 184-N power plant consisted of seven buildings that provided process steam and electrical power for routine and emergency operations at the 100-N Area. The power plant buildings were constructed from 1962 through 1980 and consisted of the 184-N Plant Service Power House, 184-NA Auxiliary Power Annex Building, 184-NB Air Handler Main Building, 184-NC Air Handler Annex Building, 184-ND Fuel/Diesel Oil Day Tanks, 184-NE Compressed Gas Sheds, and 184-NF Chemical Injection Pump Shed.

The 184-N Plant Service Power House was a rectangular, four story building with channeled steel siding over a structural steel frame. The stairwells, offices, control room, and mezzanine walls were concrete masonry units. Floors were reinforced concrete and metal grating. The roof was pre-cast concrete planks supported by a structural steel beam-girder system, covered with 4-ply built-up roof with 2-inch insulation. The powerhouse dimensions were 96 ft by 112 ft (10,752 ft²) by 70 ft high. The main building equipment was a 575,000 Btu/hr Foster Wheeler boiler and a 15,000 kW turbine generator. Other process equipment included condensers, condensate de-aerator, fuel heating and pumping equipment, air compressors and dryers, boiler feed pumps, electrical switchgear, overhead crane, and chemical injection pumps.

The 184-NA Auxiliary Power Annex Building was a rectangular one-story metal-frame building with channeled steel siding and reinforced concrete floor. The roof was comprised of pre-cast concrete panels supported by a structural steel beams-girder system. The west wall was a common wall with 184-N. The annex building dimensions were 60 ft by 75 ft (4,500 ft²) by 40 ft high. The main building equipment was two Combustion Engineering package boilers, blowers for combustion air, and compressed air system.

The 184-NB Air Handler Main Building was a pre-engineered rectangular steel-sided building with a reinforced concrete floor that was located approximately 13 feet north of 184-N. Aerial photographs indicate the roof membrane is the same as 184-N and 184-NA. The north wall was composed of louver assemblies. The Air Handler Main Building dimensions were approximately 24 ft by 39 ft (936 ft²). Building equipment included an HVAC system for 184-N.

The 184-NC Air Handler Annex Building was a pre-engineered rectangular steel sided building with a reinforced concrete floor that was located south of 184-NA. Aerial photographs indicate the roof membrane is the same as 184-N and 184-NA. The east wall was composed of louver assemblies. The Air Handler Main Building dimensions were approximately 33 ft by 24 ft (784 ft²). Building equipment included an HVAC system for 184-NA.

100-N D4 Project Facility Completion Form

The 184-ND Fuel/Diesel Oil Day Tanks consisted of two 50,000-gallon oil storage and one 15,000-gallon catch tank. They were located inside a reinforced concrete containment basin. There was no roof to this facility. The day tank dimensions were approximately 81 ft by 41 ft (3400 ft²). These tanks were used for day uses of fuel/diesel for boilers in 184-N and 184-NA.

The 184-NE Compressed Gas Sheds were two corrugated metal gas bottle storage sheds attached to south wall of 184-N. Both of the sheds north walls were common with 184-N. The floors were reinforced concrete or steel plates. The roofs were corrugated steel panels. The 184-NE-1 West Shed was approximately 4 ft by 17 ft (62 ft²) and 184-NE-2 East Shed was approximately 4 ft by 11 ft (40 ft²). Gas cylinders were stored in the sheds and fed into 184-N.

The 184-NF Chemical Injection Pump Shed was a channeled metal light weight steel framed structure attached to the southwest corner of 184-N. The east wall was common to 184-N. The floor was reinforced concrete and the roof was a shallow metal gable roof. The building housed the chemical makeup system for 109-N.

Radiological Scoping and Industrial Hygiene Baseline Surveys

Radiological scoping and Industrial Hygiene baseline surveys were performed on the 184-N complex facilities prior to demolition. The radiological scoping surveys are documented in survey numbers RSR-IFSM-05-0371, RSR-IFSM-05-0372, RSR-IFSM-05-0373, and RSR-IFSM-05-0409. An Industrial Health Baseline survey was performed at 184-N and 184-NA and is documented in CCN 141871. See Table 1 for a summary of radiological and industrial hygiene scoping surveys.

Table 1. Summary of Scoping Surveys

Type	Quantity	Method Detection Limits	Results
Radiological Scoping Surveys (Each surveyed area included multiple sample locations and consisted of technical smears and direct readings)	Each surveyed area included multiple sample locations and consisted of technical smears and direct readings.	Alpha – 20 removable / 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 20 removable / 500 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²) Alpha – 100 fixed (dpm/100cm ²) Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm ²)	All results were below method detection limits.
Industrial Hygiene Scoping Surveys	2 Surveys	Measurements were taken from the interior of the facility with various direct reading instruments.	No evidence of spills or anomalies were noted. All readings were considered normal.

Facility & Waste Characterization Sampling

Sixty-one asbestos samples were collected from items inside or outside of 184-N and associated buildings. Several items were labeled as Presumed Asbestos Containing Material. These items included debris, gaskets, cork mastic, boiler interiors, boiler TSI, exterior wall TSI, wire insulation, and door interiors. Media sampled and positive for asbestos greater than 1% included TSI, white troweled on surfacing material, black cork mastic material from the steam condensers, anti-corrosion black tar fibrous coating on pipes, ammonium hydroxide tank coating, and electrical wiring with fibrous insulation.

Ten samples were collected for waste designation purposes. Material sampled included oily sand, concrete, cork mastic, sump water, soot and scale from the boilers, and soil from below 184-ND.

See Table 2 for a summary of asbestos samples collected.

Table 2. Summary of Asbestos Samples

Type	Quantity	Method Detection Limits	Results
Asbestos – Thermal System Insulation and Miscellaneous Material	61	<1% weight	14 samples were found to contain levels of Asbestos that required removal.

Demolition

The power plant structures were demolished at various times. The 184-ND tanks were demolished in the late 1990s. The concrete structure and piping associated with these tanks were removed during demolition activities in 2008. The 184-NB and 184-NC buildings were demolished in 2006. The 184-N, 184-NA, 184-NE, and 184-NF were demolished in 2008. The demolition material was loaded into roll-off containers and sent to the Environmental Restoration Disposal Facility.

Post Demolition Radiological Surveys

The final radiological down posting survey was performed in September 2008 and is documented in RSR-100N-08-1570. All areas were direct surveyed. All areas surveyed were at less than detectable levels and a summary of the results are included in Table 4.

During GPERS surveys of the 184-NC, the beta GPERS survey showed a single point between two and three times the background radiation level. The spot was immediately re-measured during the survey and could not be re-located, and was therefore determined to be a false reading. A final GPERS survey over most of the building footprints at the 184-N complex was

100-N D4 Project Facility Completion Form

conducted in September 2008. 8,594 data points were measured and no data point was greater than 2 times the average background of 1,304 counts per minute. A copy of the survey map is in Attachment 4.

Civil Survey Information

A pre-demolition Global Positioning System (GPS) survey of 184-N, 184-NB, 184-NC, 184-NE and 184-NF was performed in January 2007. A GPS survey of 184-ND was performed in December 2006. A post-demolition GPS survey was performed in September 2008. All surveys are included in Attachment 5.

Anomalies

There were no anomalies encountered during the above-grade demolition or pad removal of the 184-N complex. There was some expected soil staining noted within the footprint of the 184-ND oil tanks excavation due to known shallow zone oil contamination. WCH D4 personnel collected a sample of this material, HEIS number J17J67, sample delivery group K1345 and had it analyzed for: total metals, VOAs, BNAs, Diesel Range Organics and Motor Oil Range Organics (see results summary in Table 3; analytes that were not identified above detection limits are not included in the summary).

Table 3. Summary of Post-Demolition Samples 184-ND

HEIS Number	Date Sampled	Location	Analysis	Results
J17J67	22-Sep-2008	184-ND, south wall of 184-ND excavation	Metals (Total)	Antimony – 0.88 mg/Kg Arsenic – 2.6 mg/Kg Barium – 57.9 mg/Kg Boron – 1.1 mg/Kg Calcium – 6590 mg/Kg Chromium – 10.7 mg/Kg Copper – 16.5 mg/Kg Lead – 5.1 mg/Kg Lithium – 6.0 mg/Kg Manganese – 342 mg/Kg Nickel – 14.2 mg/Kg Sodium – 234 mg/Kg Vanadium – 57.5 mg/Kg
			VOAs (Total)	No volatile organic analytes were detected above detection limits.
			BNAs (Total)	No BNAs were detected above detection limits.
			Diesel Range Organics (Total)	1700000 µg/Kg

100-N D4 Project Facility Completion Form

HEIS Number	Date Sampled	Location	Analysis	Results
			Motor Oil Range Organics (Total)	2700000 µg/Kg

Final Building Status

The RCC contractor has demolished and removed all buildings associated with the 184-N complex and their concrete pads. A visual inspection of the area was made to identify any soil staining or anomalous debris. Contaminants of concern and determination of no impact to the soil are provided in Table 4. Backfill material from 100-N Borrow Pit was brought in to regrade the site.

Table 4. Contaminants of Concern for Facility Demolition

Contaminant of Concern	Determination of no impact to the soil
Radionuclides	<p>A radiological down-posting survey was conducted on the site – over 120 sample points that included 120 technical smears, and many direct readings and transferable smears. All sample results were below the following method detection limits: Alpha – 20 removable / 500 fixed (dpm/100cm²), Beta-gamma – 1,000 removable / 5,000 fixed (dpm/100cm²).</p> <p>Additionally, a Global Positioning Environmental Radiological Surveyor survey was conducted on the 184-N complex as a final survey of the site. During the survey, 8,594 data points were measured and no data point was greater than 2 times the average background of 1,304 counts per minute.</p> <p>Conclusion – no radiological impacts.</p>
Chemicals	<p>There was some expected soil staining noted within the footprint of the 184-ND oil tanks excavation due to known shallow zone oil contamination. WCH D4 personnel collected a sample of this material, HEIS number J17J67, sample delivery group K1345 and had it analyzed for: total metals, VOAs, BNAs, Diesel Range Organics and Motor Oil Range Organics (see results summary in Table 3; analytes that were not identified above detection limits are not included in the summary).</p> <p>Conclusion – The area of 184-ND contains several WIDS sites which will be remediated by the WCH Field Remediation Project. There were no soil impacts resulting from D4 actions.</p>

100-N D4 Project Facility Completion Form

Contaminant of Concern	Determination of no impact to the soil
Asbestos	<p>Most asbestos containing material (ACM) was abated prior to demolition. Demolition of the 184-N building was conducted in accordance with the 184-N Asbestos Abatement Plan to ensure that remaining ACM was properly managed during the demolition.</p> <p>Conclusion – no asbestos impacts.</p>

100-N D4 Project Facility Completion Form

Attachment 2. Project Photographs (3 Pages)

100-N D4 Project Facility Completion Form

Figure 1. Aerial Photograph of 184-N, 184-NA, 184-NC Buildings before Demolition

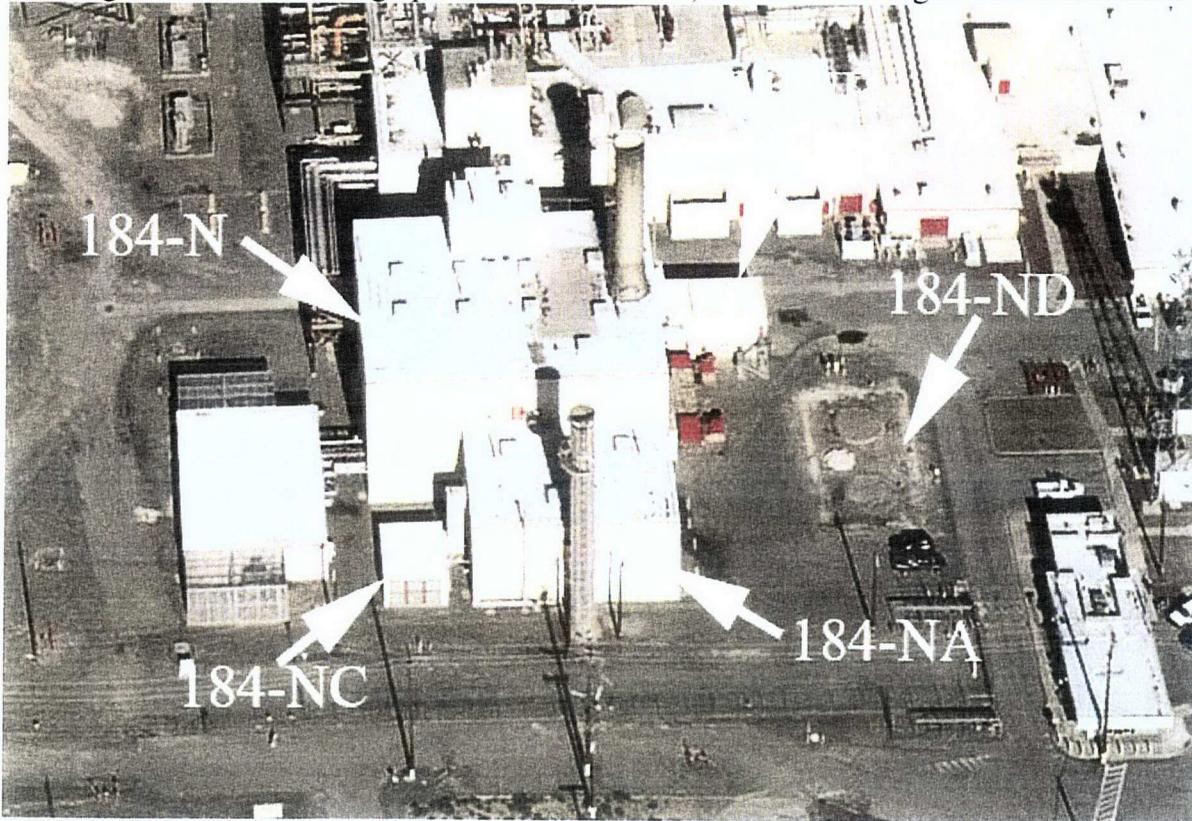


Figure 2. 184-N, 184-NB, and 184-ND before Demolition



184-N, 184 -NB, 184-NC, 184-ND, 184-NE, and 184-NF Facility Completion

100-N D4 Project Facility Completion Form

Figure 3. 184-N, 184-NB, 184-NE and 184-NF before Demolition

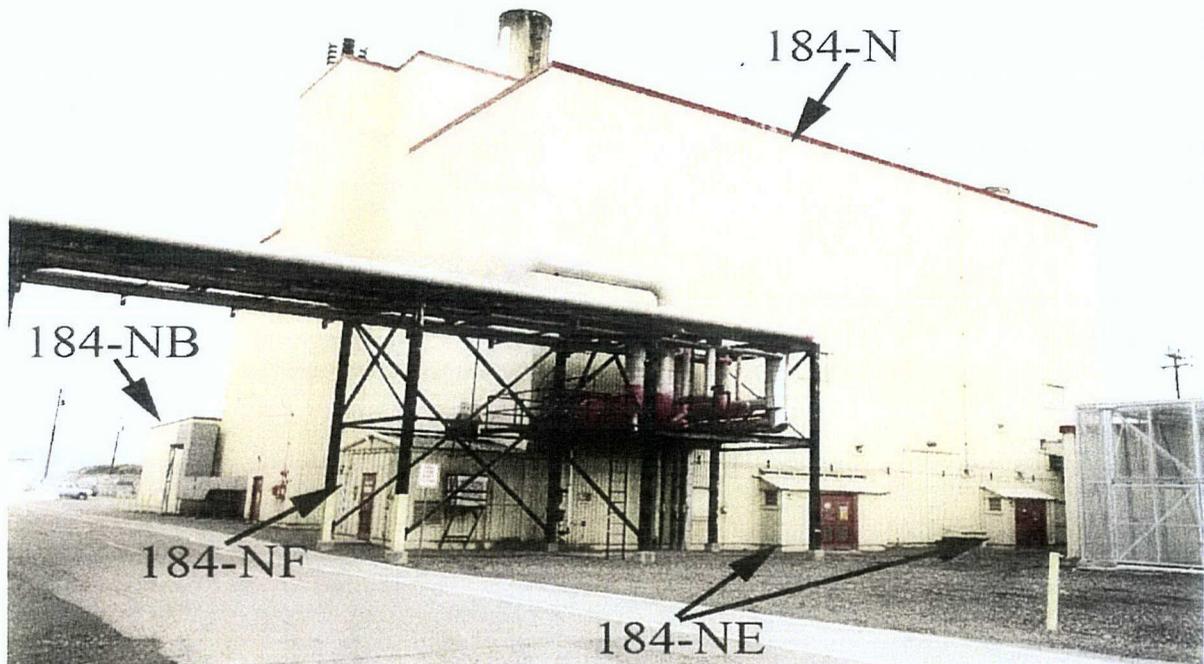


Figure 4. 184-NB, 184-NC, and 184-ND following demolition (184-N and 184-NA remain)

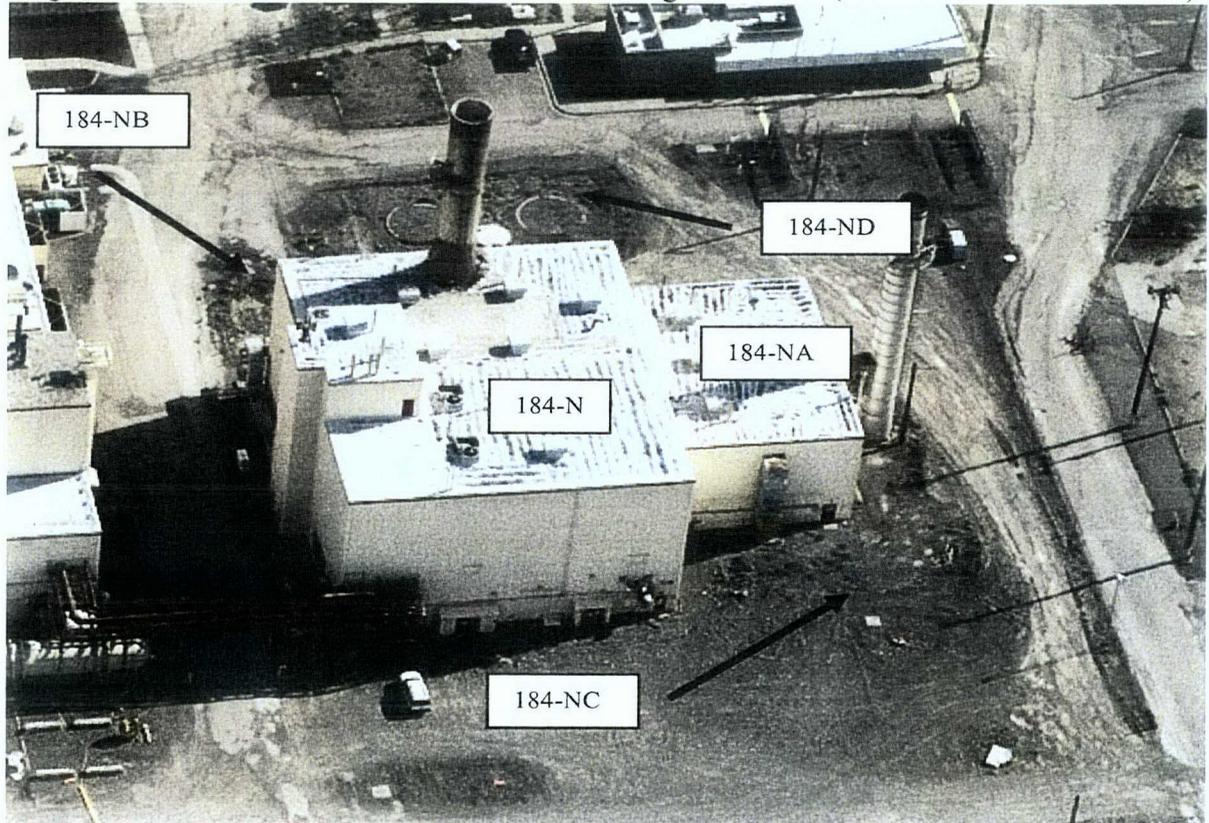


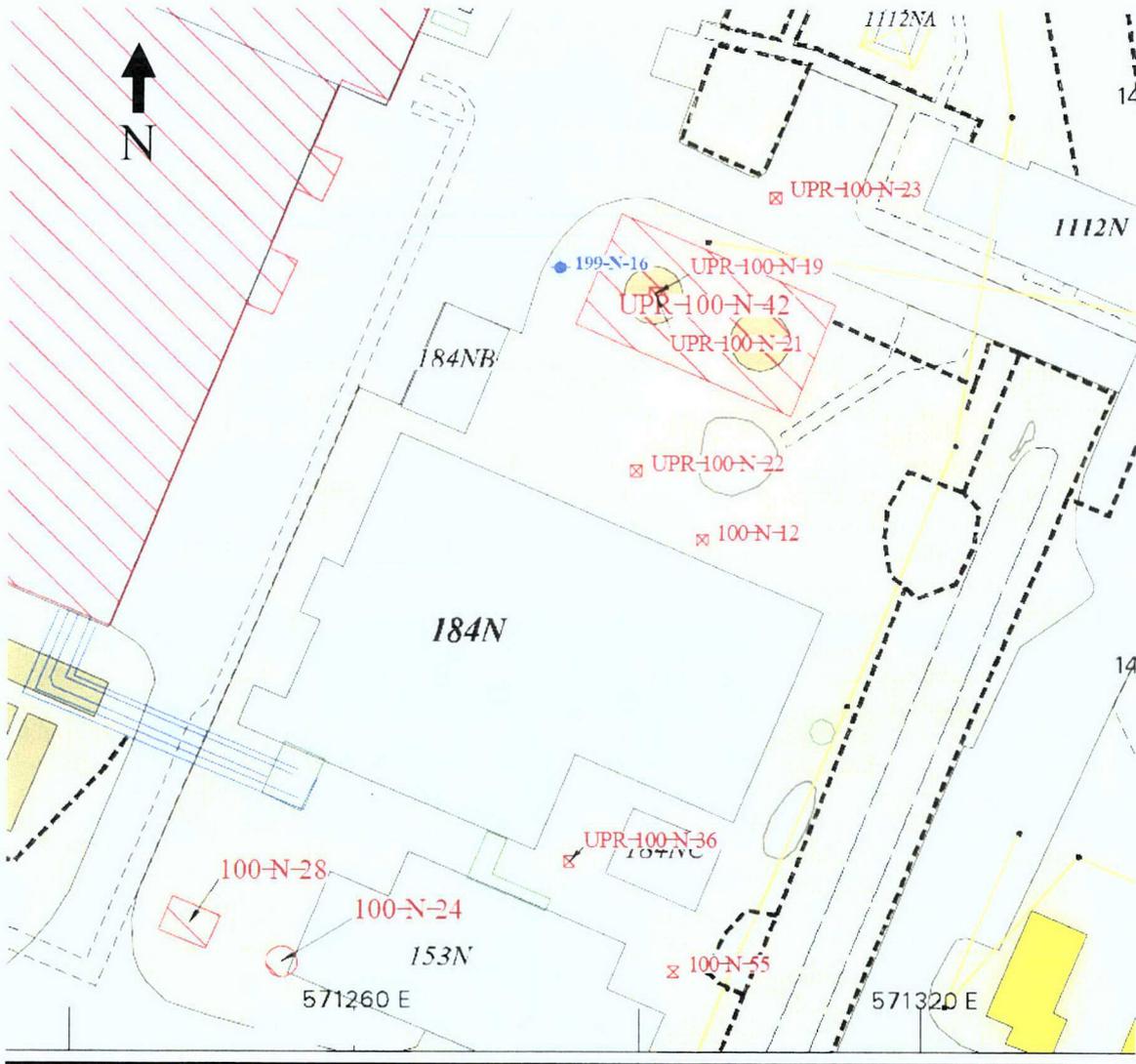
Figure 5. 184-N Powerhouse during demolition



Figure 5. 184-N Powerhouse following demolition



Attachment 3. WIDS sites general location map



Attachment 4. Post-Demolition LARADS/GPERS Radiological Surveys (5 Pages)



COPY

Legend

- X < 800
- 800 - 1k
- 1k - 1.5k
- 1.5k - 2k
- > 2k

Summary Statistics

CPM

Coverage File: N166
 Number of Data Pnts: 802
 Type of Survey: 'Beta'
 Max GCPM: 727
 Avg Bkg CPM: 441
 Survey Date: 06/15/2006
 Area Surveyed: 275 m²
 Project File: N166
 Pdf File: ESRFRM060146C

100N D4 Remedial Action

184-B

LARADS Radiological Survey

Beta Track Map



Survey Map Prepared by: Marc Wendling - ESI



Bkg. Location
441 c/m





COPY

Legend

- X < 2506
- 2506 - 5k
- 5k - 10k
- 10k - 25k
- > 25k

Summary Statistics

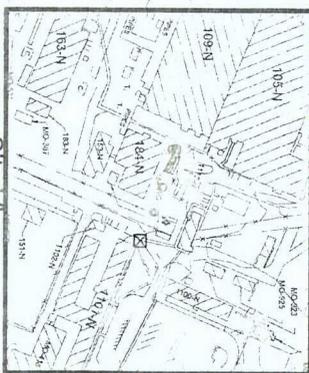
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 Max GCPM: 1760
 Avg Bkg CPM: 1253
 Survey Date: 06/15/2006
 Area Surveyed: 275 m²
 Project File: N186A
 Pdf File: ESRFRM060147C

100N D4 Remedial Action

184-B

LARADS Radiological Survey

Gamma Track Map

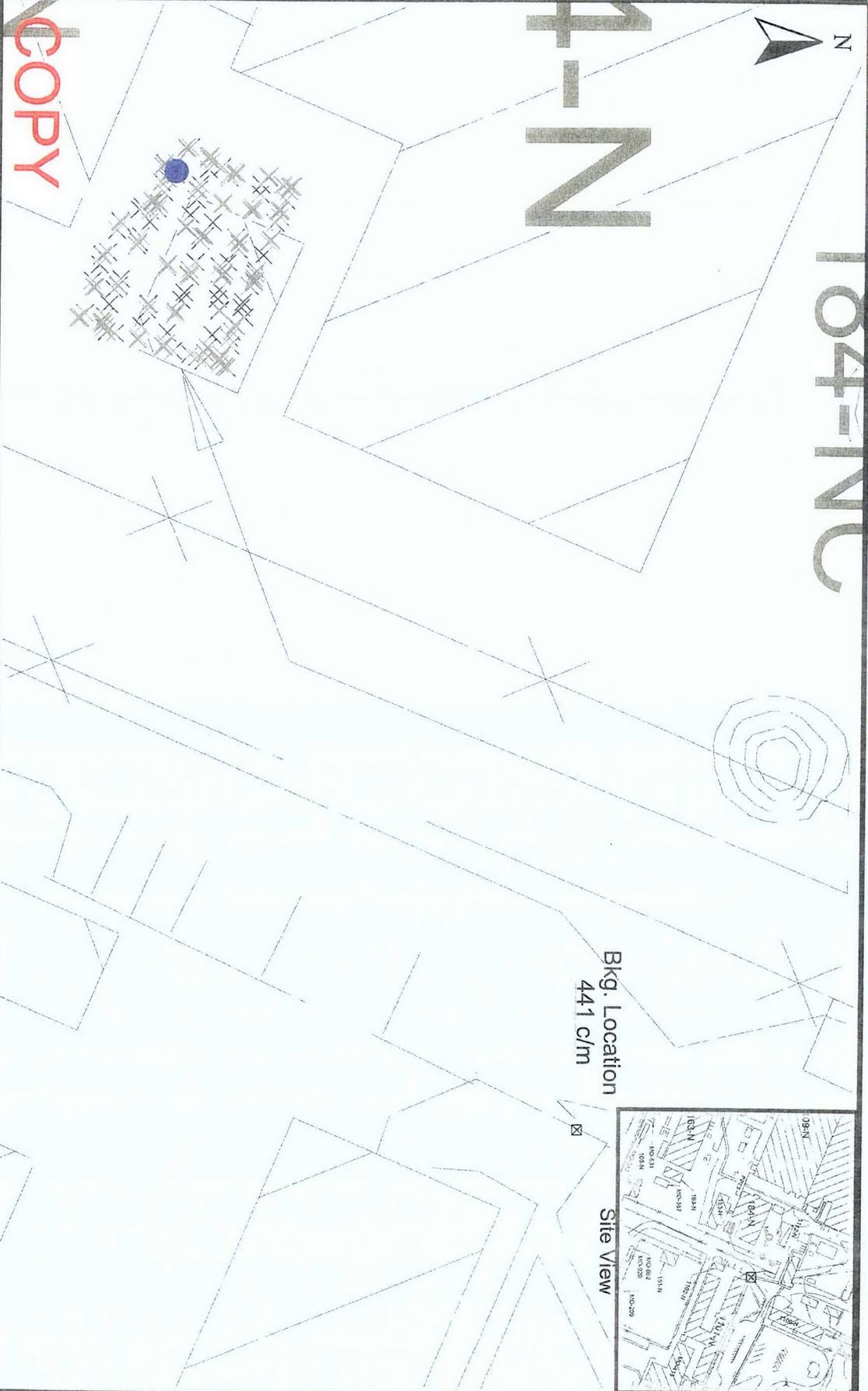


Survey Map Prepared By: Marc Werdling - ESI

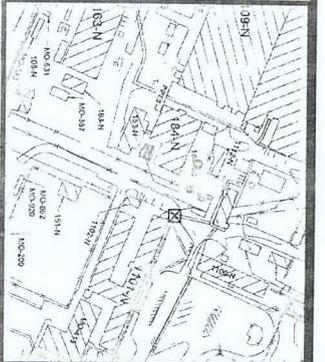
104-NC



4-N



Bkg. Location
441 c/m



COPY

Legend

- X < 800
- 800 - 1k
- 1k - 1.5k
- 1.5k - 2k
- > 2k

Summary Statistics

Coverage File: N166C
 Number of Data Pnts: 518
 Type of Survey: Beta'
 Max GCPM: 1020
 Avg Bkg CPM: 441
 Survey Date: 06/15/2006
 Area Surveyed: 160 m2
 Project File: N166C
 Pdf File: ESRFRM060148C

100N D4 Remedial Action
184-NC
LARADS Radiological Survey
Beta Track Map

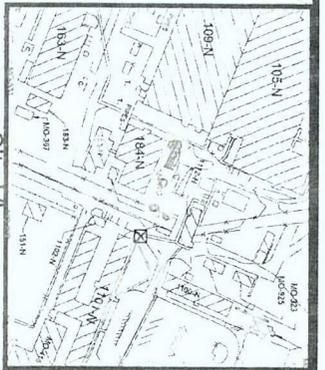
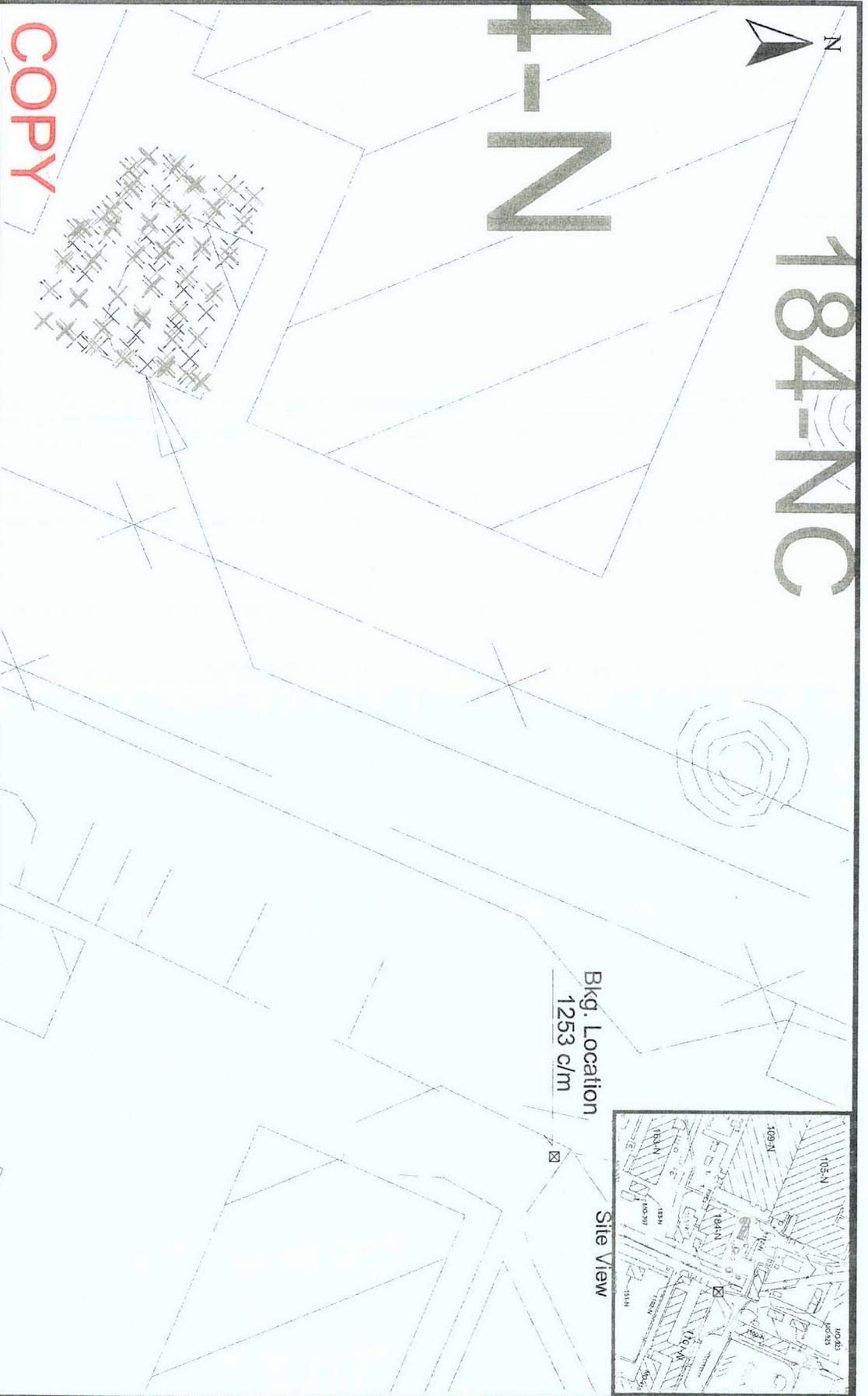


Survey Map Prepared By: Marc Wendling - ESI

184-NC



4-N



Bkg. Location
1253 c/m

Site View

COPY

Legend

- x < 2506
- 2506 - 5k
- 5k - 10k
- 10k - 25k
- > 25k

Summary Statistics

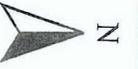
Coverage File: N166B
Number of Data Pnts: 459
Type of Survey: 'Gamma'
Max GCPM: 2408
Avg Bkg CPM: 1253
Survey Date: 06/15/2006
Area Surveyed: 160 m²
Project File: N166B
Pdf File: ESRFRM060149C

100N D4 Remedial Action 184-NC LARADS Radiological Survey Gamma Track Map

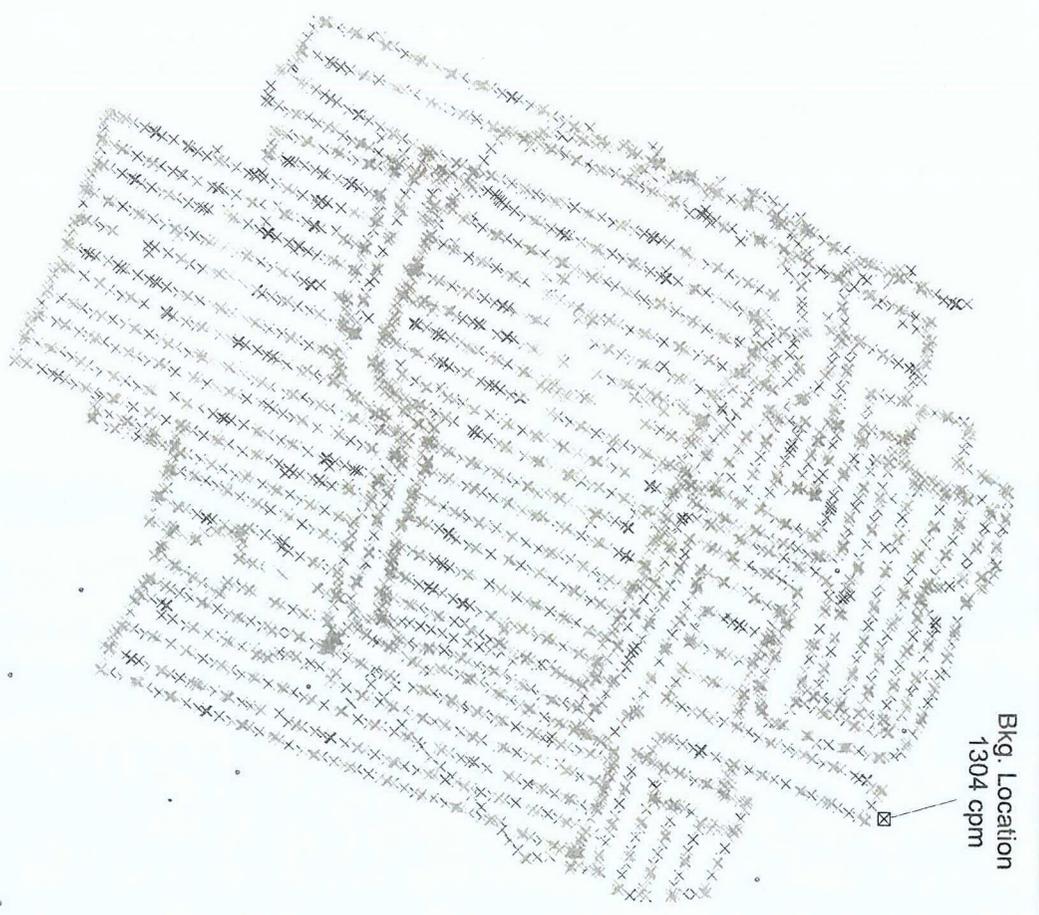


Survey Map Prepared By: Marc Wendling - ESI

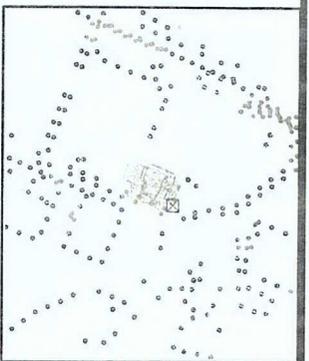




COPY



Bkg. Location
1304 cpm



Site View

Legend **Summary Statistics**

NETCPM

× < 2608
● 2608 - 5000
● 5000 - 10000
● 10000 - 25000
● > 25000

Coverage File: N269
Number of Data Pnts: 8594
Type of Survey: Gamma
Max GCPM: 2543
Avg Bkg CPM: 1304
Survey Date: 09/25/2008
Area Surveyed: 5848 m2
Project File: N269
Pdf File: ESRFRM080145C

100N D4 Project
184-N Area
GPERS Radiological Survey
Gamma Track Map



Survey Map Prepared By Mike Dillon, ESI



100-N D4 Project Facility Completion Form

Attachment 5. Pre- and Post-Demolition GPS Surveys (11 Pages)

0579147

GPS Survey Data Report for 184N Buildings, Pre Demolition

Project : Job 947

User name	maaye	Date & Time	12:17:30 PM 1/23/2007
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

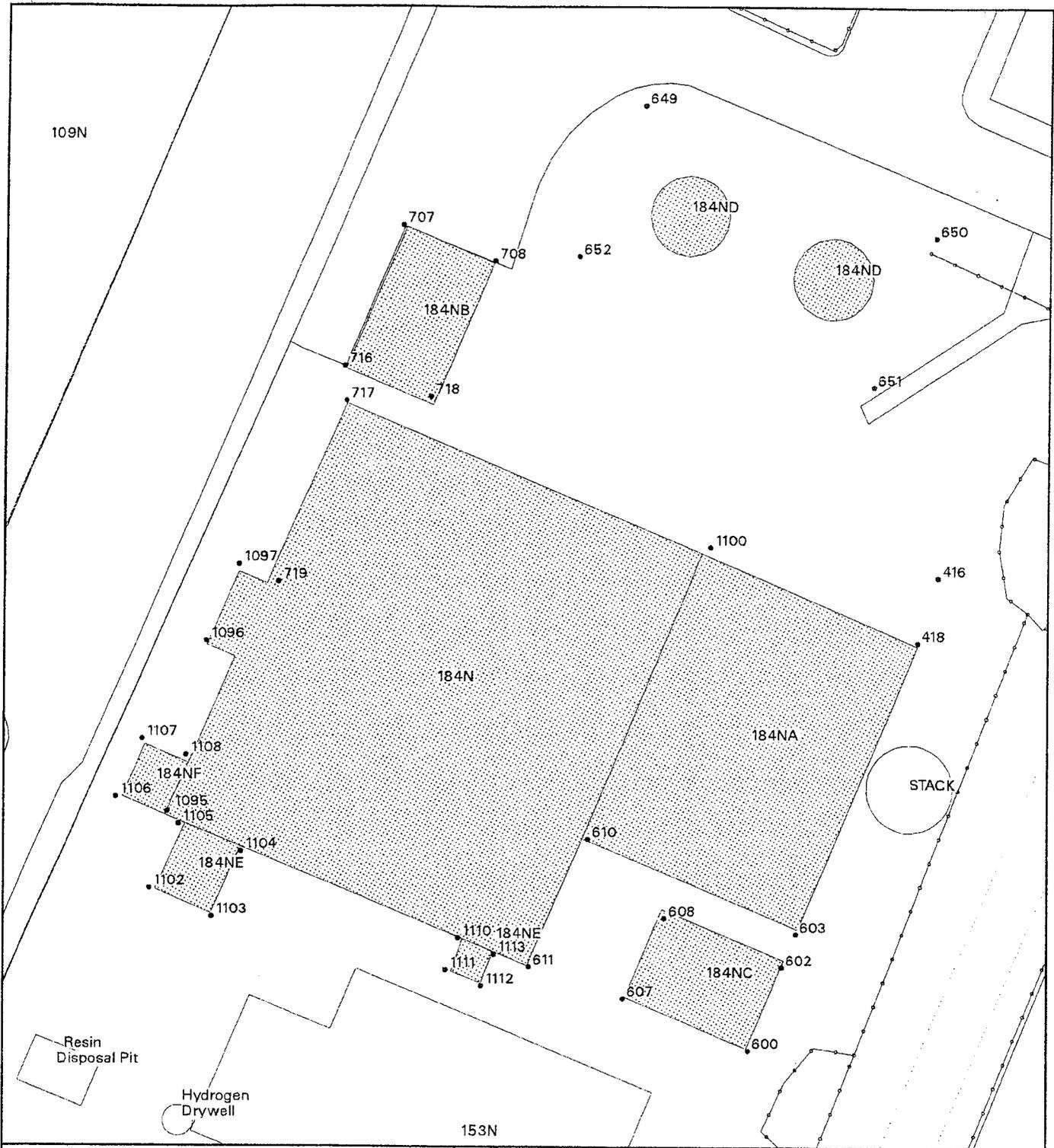
Survey Project Name/Title: Survey corners around the 184N building
- Pre demo
Survey Purpose: GPS the area corners and surrounding
features for the described building
Requested By: Amy Hood
General Site Location: 100-N
Charge Code:
Field Surveyor: Margo Aye
Computer Software Used: Trimble Survey Controller, and Geomatics
Office V.11
Survey Equipment Used: 5800
Control Monuments Used: 100N-4
Survey Method: RTK
Estimated Horizontal Precision: .02m
Estimated Vertical Precision: .05m
Fieldwork Start Date 3/22/06
Completion Date: 10/24/06

Notes: *Logbook # EL1571*

Name	Northing	Easting	Elevation	Feature Code	Description
418	149405.804m	571309.407m	139.681m	corn-bldg	
600	149373.733m	571296.128m	139.838m	corn-bldg	
602	149380.285m	571298.725m	139.831m	corn-bldg	
603	149382.894m	571299.880m	139.851m	corn-bldg	
607	149377.770m	571286.341m	139.826m	corn-bldg	
608	149384.103m	571289.553m	139.800m	corn-bldg	
610	149390.323m	571283.601m	139.924m	corn-bldg	
611	149380.248m	571279.087m	139.916m	corn-bldg	
649	149447.499m	571287.755m	139.487m	fence-corner	
650	149437.367m	571310.777m	139.645m	fence-corner	

651	149425.771m	571305.835m	139.750m	fence-corner
652	149435.855m	571282.681m	139.524m	fence-corner
707	149438.249m	571269.025m	139.539m	corn-bldg
708	149435.481m	571276.096m	139.519m	corn-bldg
716	149427.308m	571264.524m	139.775m	corn-bldg
717	149424.602m	571264.674m	139.793m	corn-bldg
718	149424.937m	571271.261m	139.702m	corn-bldg
719	149410.455m	571259.631m	139.841m	corn-bldg
1095	149392.421m	571251.101m	139.528m	corn-bldg
1096	149405.810m	571254.033m	139.524m	corn-bldg
1097	149411.802m	571256.583m	139.524m	corn-bldg
1100	149413.205m	571293.051m	139.759m	corn-bldg
1102	149386.413m	571249.767m	139.527m	bldg-corn
1103	149384.149m	571254.547m	139.527m	bldg-corn
1104	149389.306m	571256.810m	139.527m	bldg-corn
1105	149391.444m	571252.031m	139.527m	bldg-corn
1106	149393.583m	571247.126m	139.524m	bldg-corn
1107	149398.110m	571249.138m	139.524m	bldg-corn
1108	149396.853m	571252.534m	139.524m	bldg-corn
1110	149382.514m	571273.538m	139.916m	bldg-corn
1111	149379.999m	571272.532m	139.916m	bldg-corn
1112	149378.741m	571275.299m	139.916m	bldg-corn
1113	149381.257m	571276.305m	139.916m	bldg-corn

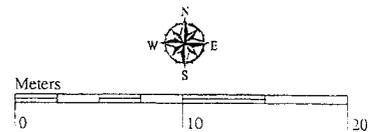
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-  Paved Roads and Sidewalks
-  Unpaved Roads and Trails
-  Railroad
-  Fences

-  Location of 184-N Buildings Prior to Demolition
-  GPS Locations for 184-N Buildings Prior to Demolition

Pre Demolition Survey of The 184-N Buildings



109N

153N

STACK

0579149

GPS Survey Data Report for 184ND Tank Pads, Pre Demolition

Project : Job 947

User name	maaye	Date & Time	3:33:37 PM 12/13/2006
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name/Title:	100-N Pre Demo Survey for 184ND Tank Pads		
Survey Purpose:	Map the 184ND tank pads and surrounding features		
Requested By:	Amy Hood		
General Site Location:	100-N		
Charge Code:			
Field Surveyor:	Margo Aye		
Computer Software Used:	Trimble Survey Controller, and Geomatics Office V.11		
Survey Equipment Used:	5800		
Control Monuments Used:			
Survey Method:	RTK		
Estimated Horizontal Precision:	.020m		
Estimated Vertical Precision:	.050m		
Fieldwork Start Date	12/12/06		
Completion Date:	12/12/06		

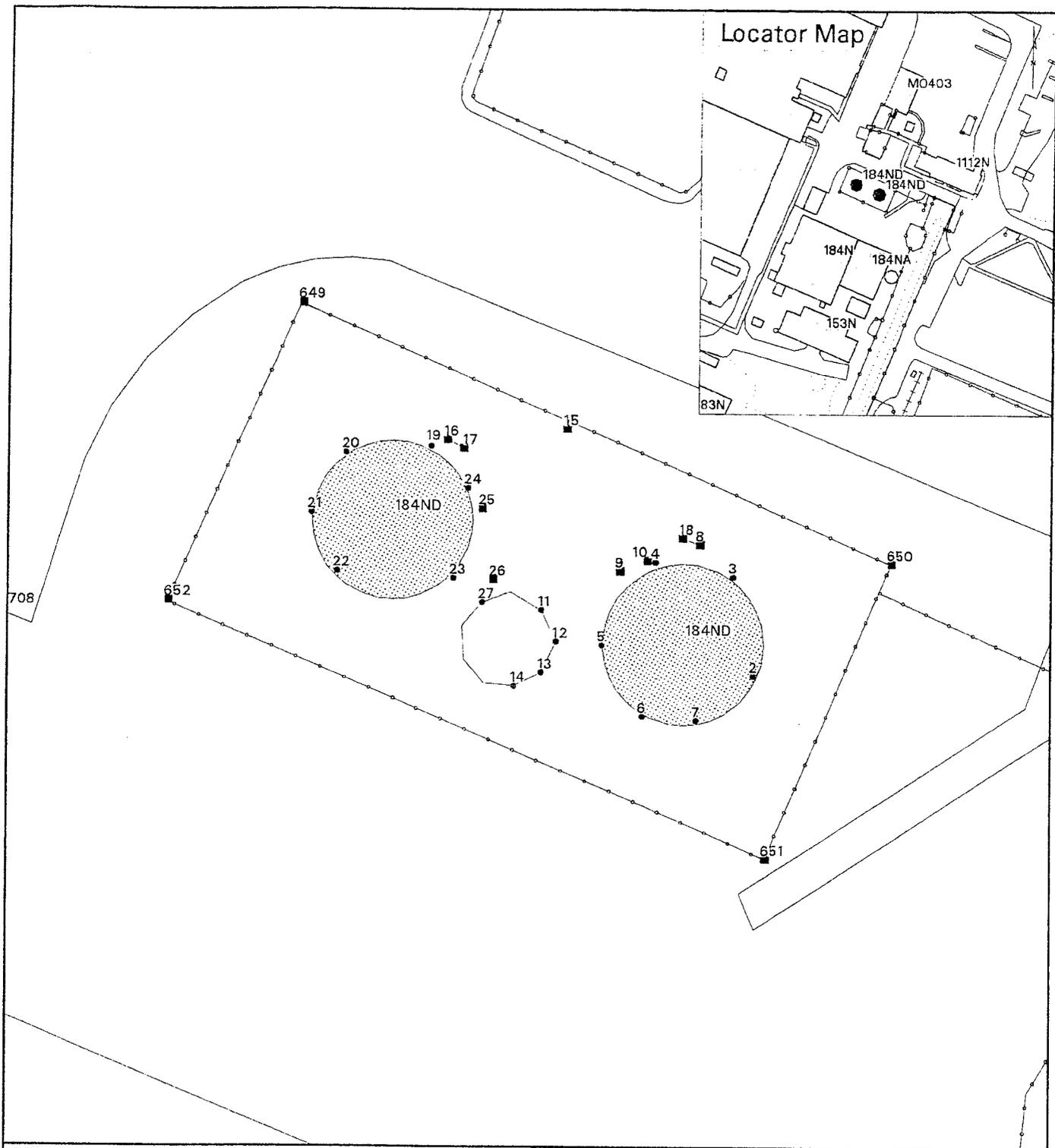
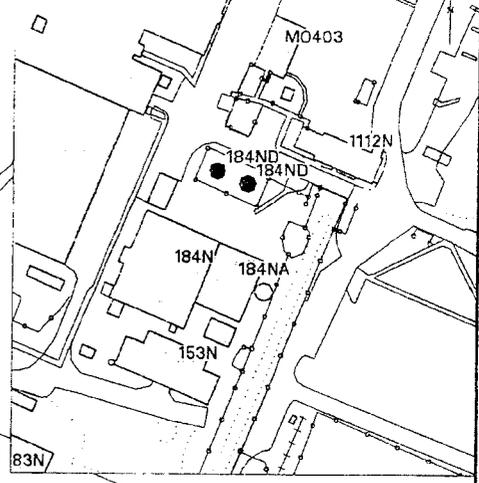
Notes: *Logbook # E21571*

Name	Northing	Easting	Elevation	Feature Code	Description
2	149432.952m	571305.312m	139.543m	tank-pad	
3	149436.827m	571304.493m	139.561m	tank-pad	
4	149437.383m	571301.456m	139.561m	tank-pad	
5	149434.146m	571299.348m	139.555m	tank-pad	
6	149431.348m	571300.965m	139.563m	tank-pad	
7	149431.183m	571303.049m	139.533m	tank-pad	
8	149438.086m	571303.189m	139.411m	pipe-end	
9	149437.035m	571300.055m	139.507m	pipe-end	
10	149437.468m	571301.100m	139.402m	conduit-cut	
11	149435.521m	571297.052m	139.768m	tank-pad	

12	149434.274m	571297.613m	139.768m	tank-pad
13	149433.065m	571297.072m	139.789m	tank-pad
14	149432.533m	571295.990m	139.765m	tank-pad
15	149442.616m	571298.029m	139.654m	mh
16	149442.165m	571293.360m	139.431m	pipe-end
17	149441.828m	571294.007m	139.351m	pipe-edge
18	149438.351m	571302.521m	139.348m	pipe-edge
19	149441.909m	571292.768m	139.525m	tank-pad
20	149441.652m	571289.452m	139.562m	tank-pad
21	149439.310m	571288.148m	139.569m	tank-pad
22	149437.022m	571289.095m	139.641m	tank-pad
23	149436.756m	571293.643m	139.083m	tank-pad
24	149440.258m	571294.214m	139.562m	tank-pad
25	149439.485m	571294.781m	139.610m	pipe-end
26	149436.701m	571295.170m	139.582m	mh
27	149435.800m	571294.722m	139.856m	tank-pad
649	149447.499m	571287.755m	139.488m	fence-corner
650	149437.367m	571310.777m	139.646m	fence-corner
651	149425.771m	571305.835m	139.751m	fence-corner
652	149435.855m	571282.681m	139.525m	fence-corner

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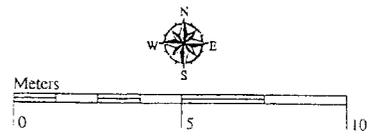
Locator Map



- Paved Roads and Sidewalks
- Unpaved Roads and Trails
- Railroad
- Fences

- Location of 184-ND Tank Pads Prior to Demolition
- GPS Locations for 184-ND Tank Pads Prior to Demolition
- GPS Locations for Surrounding Features See Survey Report for Point Details

Pre Demolition Survey of The 184-ND Tank Pads



GPS Post Demo Report for 184N, 184NA & 184ND

Project : 184NA

User name	maaye	Date & Time	10:39:11 AM 11/12/2008
Coordinate System	US State Plane 1983	Zone	Washington South 4602
Project Datum	NAD 1983 (Conus)		
Vertical Datum	NAD83	Geoid Model	GEOID99 (Conus)
Coordinate Units	Meters		
Distance Units	Meters		
Height Units	Meters		

Survey Project Name: Post Demo Survey Job for 184N, NA, ND
 Date: 9/29/2008
 Equipment: 5800
 Survey Purpose: Map the excavation site
 Requested By: Tom Edmondson
 Location: 100N
 Charge Code:
 Field Surveyor: Margo Aye
 Software Used: Trimble Survey Controller, and Geomatics Office V.11
 Survey Equipment Used: 5800
 Control Monuments Used: F-Line
 Survey Method: RTK
 Horizontal Precision: .020m
 Vertical Precision: .050m
 Fieldwork Start Date: 092408
 Fieldwork Completion Date: 092408
 Units are in meters
 Notes:

Name	Northing	Easting	Elevation	Feature Code
229	149436.621m	571320.253m	139.769m	
230	149442.828m	571306.575m	139.670m	
231	149446.349m	571300.068m	139.640m	
232	149453.333m	571291.766m	139.458m	
233	149454.223m	571284.095m	139.506m	
234	149443.627m	571266.096m	139.573m	
235	149421.697m	571254.781m	139.562m	
236	149385.996m	571240.840m	139.738m	
237	149368.211m	571234.353m	139.946m	
238	149356.757m	571236.633m	139.903m	
239	149349.718m	571259.400m	139.833m	top
240	149339.936m	571279.532m	139.879m	top
241	149336.237m	571296.060m	139.859m	top
242	149346.888m	571304.933m	139.948m	top
243	149373.155m	571315.279m	139.891m	top
244	149397.948m	571326.177m	139.779m	top

245	149413.123m	571332.576m	139.751m	top
246	149423.654m	571324.852m	139.775m	top
247	149422.515m	571323.780m	139.673m	cut-power-line
248	149431.280m	571321.185m	139.645m	top
249	149434.610m	571313.402m	139.653m	top-of-trench
250	149436.413m	571313.513m	139.667m	top-of-trench
251	149438.529m	571312.642m	139.630m	top-of-trench
252	149439.969m	571310.036m	139.699m	top-of-trench
253	149443.299m	571301.698m	139.678m	top-of-trench
254	149448.030m	571291.818m	139.449m	top-of-trench
255	149449.048m	571287.212m	139.457m	top-of-trench
256	149449.479m	571285.944m	139.501m	top-of-trench
257	149446.438m	571283.084m	139.470m	top-of-trench
258	149445.642m	571282.716m	139.519m	top-of-trench
259	149444.173m	571283.531m	139.501m	top-of-trench
260	149440.110m	571281.942m	139.539m	top-of-trench
261	149439.476m	571280.879m	139.461m	top-of-trench
262	149440.110m	571278.772m	139.489m	top-of-trench
263	149437.217m	571278.364m	139.546m	top-of-trench
264	149434.154m	571280.535m	139.606m	top-of-trench
265	149433.180m	571281.677m	139.641m	top-of-trench
266	149429.371m	571291.323m	139.498m	top-of-trench
267	149419.854m	571286.919m	139.750m	top-of-trench
268	149422.097m	571281.315m	139.745m	top-of-trench
269	149423.603m	571279.299m	139.637m	top-of-trench
270	149428.035m	571276.617m	139.620m	top-of-trench
271	149429.540m	571268.596m	139.328m	top-of-trench
272	149427.322m	571262.040m	139.385m	top-of-trench
273	149424.283m	571260.807m	139.553m	top-of-trench
274	149416.146m	571257.735m	139.632m	top-of-trench
275	149407.545m	571253.855m	139.690m	top-of-trench
276	149400.867m	571251.104m	139.489m	top-of-trench
277	149393.387m	571248.550m	139.444m	top-of-trench
278	149388.980m	571251.141m	139.277m	top-of-trench
279	149386.450m	571257.032m	139.508m	top-of-trench
280	149381.900m	571268.776m	139.232m	top-of-trench
281	149380.279m	571273.759m	139.218m	top-of-trench
282	149381.233m	571276.757m	139.220m	top-of-trench
283	149388.083m	571280.876m	139.263m	top-of-trench
284	149385.904m	571286.580m	139.234m	top-of-trench
285	149383.663m	571286.257m	139.231m	top-of-trench
286	149382.322m	571287.399m	139.207m	top-of-trench
287	149382.765m	571290.630m	139.322m	top-of-trench
288	149382.661m	571294.035m	139.403m	top-of-trench
289	149381.531m	571298.286m	139.544m	top-of-trench
290	149383.627m	571303.030m	139.622m	top-of-trench
291	149389.142m	571305.525m	139.657m	top-of-trench
292	149390.270m	571304.466m	139.648m	top-of-trench
293	149389.968m	571311.498m	139.777m	top-of-trench
294	149393.717m	571312.184m	139.756m	top-of-trench
295	149396.960m	571307.196m	139.724m	top-of-trench
296	149405.015m	571310.551m	139.699m	top-of-trench
297	149407.125m	571309.091m	139.575m	top-of-trench
298	149412.069m	571303.571m	139.677m	top-of-trench
299	149416.813m	571291.568m	139.803m	top-of-trench
300	149427.533m	571296.703m	139.661m	top-of-trench
301	149423.053m	571309.120m	139.829m	top-of-trench
302	149429.093m	571311.502m	139.722m	top-of-trench
303	149439.361m	571284.365m	138.192m	toe
304	149436.652m	571283.206m	138.254m	toe

305	149434.829m	571283.480m	138.328m	toe
306	149431.047m	571293.302m	138.310m	toe
307	149429.655m	571293.332m	138.379m	toe
308	149424.079m	571290.632m	138.469m	toe
309	149416.875m	571287.616m	138.462m	toe
310	149415.578m	571286.756m	138.762m	toe
311	149415.829m	571285.533m	138.766m	toe
312	149417.373m	571281.349m	138.658m	toe
313	149420.420m	571277.043m	138.536m	toe
314	149424.078m	571276.178m	138.577m	toe
315	149425.899m	571272.810m	138.579m	toe
316	149424.102m	571266.637m	138.494m	toe
317	149419.781m	571262.224m	138.615m	toe
318	149408.453m	571257.944m	138.793m	toe
319	149393.900m	571252.106m	138.646m	toe
320	149390.904m	571258.295m	138.738m	toe
321	149388.988m	571258.142m	138.688m	toe
322	149387.697m	571259.145m	138.672m	toe
323	149385.011m	571265.884m	138.566m	toe
324	149383.271m	571271.130m	138.367m	toe
325	149382.873m	571275.268m	138.292m	toe
326	149385.068m	571277.145m	138.433m	toe
327	149389.283m	571280.897m	138.495m	toe
328	149387.979m	571285.356m	138.448m	toe
329	149385.160m	571294.976m	138.589m	toe
330	149384.204m	571298.506m	138.694m	toe
331	149385.100m	571300.508m	138.717m	toe
332	149394.694m	571304.318m	138.858m	toe
333	149404.318m	571308.504m	138.744m	toe
334	149405.406m	571307.485m	138.697m	toe
335	149411.984m	571294.858m	138.845m	toe
336	149414.988m	571288.620m	138.757m	toe
337	149416.562m	571289.230m	138.462m	toe
338	149421.654m	571291.504m	138.328m	toe
339	149430.060m	571295.605m	138.306m	toe
340	149430.556m	571296.215m	138.237m	toe
341	149428.746m	571301.978m	138.395m	toe
342	149427.102m	571307.670m	138.500m	toe
343	149431.210m	571309.088m	138.413m	toe
344	149435.493m	571310.527m	138.421m	toe
345	149437.758m	571309.830m	138.374m	toe
346	149440.809m	571301.679m	138.470m	toe
347	149441.763m	571299.275m	138.498m	toe
348	149443.429m	571295.850m	138.479m	toe
349	149445.812m	571291.212m	138.358m	toe
350	149446.627m	571288.159m	138.308m	toe
351	149446.027m	571287.065m	138.269m	toe
352	149442.138m	571285.589m	138.202m	toe
353	149443.196m	571296.553m	138.995m	cut-pipe-8in
354	149443.375m	571296.908m	138.925m	cut-pipe-12in
355	149442.996m	571297.488m	138.860m	pipe-edge-3ft
356	149441.646m	571297.393m	138.538m	pipe-edge-3ft
357	149440.432m	571296.736m	138.773m	cut-pipe-6in
358	149440.190m	571298.789m	138.708m	cut-pipe-2in
359	149440.236m	571305.201m	138.920m	cut-pipe-2in
360	149440.334m	571305.118m	139.017m	cut-pipe-2in
361	149440.442m	571305.004m	138.991m	cut-pipe-2in
362	149438.909m	571310.450m	139.347m	cut-pipe-1in
363	149438.909m	571310.261m	139.366m	cut-pipe-1in
364	149426.792m	571306.998m	138.626m	cut-pipe-1in-covrd-rebar

365	149426.447m	571307.321m	138.678m	cut-pipe-1in-covrd-wire
366	149427.562m	571294.472m	138.626m	cut-pipe-1in-cable
367	149393.909m	571265.173m	138.933m	cut-pipe-db-1ft-2ft
368	149392.770m	571264.813m	138.790m	cut-pipe-1ft
369	149384.597m	571267.139m	139.024m	cut-pipe-2ft
370	149394.073m	571265.699m	138.560m	large-cut-rebar-area
371	149389.755m	571263.736m	138.594m	large-cut-rebar-area
372	149388.785m	571267.753m	138.367m	large-cut-rebar-area
374	149394.185m	571269.279m	138.469m	large-cut-rebar-area
375	149388.812m	571272.132m	138.464m	large-cut-rebar-area
376	149386.945m	571271.924m	138.344m	large-cut-rebar-area
377	149387.209m	571270.406m	138.379m	large-cut-rebar-area
378	149388.580m	571270.018m	138.447m	large-cut-rebar-area
379	149384.006m	571272.150m	138.361m	large-cut-rebar-clump
380	149386.525m	571265.264m	138.585m	large-cut-rebar-clump
381	149388.894m	571258.401m	138.645m	large-cut-rebar-clump
382	149386.628m	571275.309m	138.377m	large-cut-rebar-clump
383	149390.749m	571276.699m	138.409m	large-cut-rebar-clump
384	149391.006m	571282.875m	138.468m	large-cut-rebar-clump
385	149390.546m	571294.804m	138.759m	large-cut-rebar-clump
386	149394.651m	571291.013m	138.716m	large-cut-rebar-clump
387	149386.244m	571298.903m	138.755m	cut-pipe-2in
388	149384.636m	571299.385m	138.691m	cut-lin-conduit
389	149385.024m	571300.669m	138.689m	cut-conduit-clump
390	149397.914m	571305.366m	138.860m	cut-cable
391	149403.708m	571302.459m	138.778m	cut-rebar-area
392	149408.198m	571292.925m	138.723m	cut-rebar-area
393	149404.134m	571292.721m	138.659m	cut-rebar-area
394	149399.899m	571301.110m	138.799m	cut-rebar-area
395	149393.381m	571311.146m	139.896m	184-NA-stack
396	149392.609m	571311.420m	139.875m	184-NA-stack
397	149391.394m	571310.839m	139.887m	184-NA-stack
398	149390.694m	571309.921m	139.878m	184-NA-stack
399	149390.608m	571309.155m	139.923m	184-NA-stack
400	149391.202m	571307.676m	139.918m	184-NA-stack
401	149391.815m	571307.406m	139.905m	184-NA-stack
402	149392.358m	571306.340m	139.900m	184-NA-stack
403	149392.607m	571306.460m	139.913m	184-NA-stack
404	149392.662m	571306.973m	139.915m	184-NA-stack
405	149394.221m	571307.533m	139.909m	184-NA-stack
406	149394.662m	571307.267m	139.887m	184-NA-stack
407	149395.183m	571307.439m	139.917m	184-NA-stack
408	149394.749m	571308.779m	139.892m	184-NA-stack
409	149394.919m	571309.242m	139.923m	184-NA-stack
410	149394.415m	571310.406m	139.920m	184-NA-stack
411	149441.909m	571281.334m	140.701m	well-A4665-N16
412	149372.122m	571242.714m	139.998m	resin-disposal-pit-mh
413	149368.240m	571252.078m	140.025m	Hydrogen-peroxide-drywell
414	149395.557m	571245.022m	139.650m	mh-access
415	149445.192m	571275.205m	139.528m	elec-vault
416	149443.895m	571274.725m	139.539m	elec-vault
417	149444.277m	571273.931m	139.545m	elec-vault
418	149445.526m	571274.470m	139.566m	elec-vault

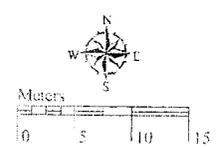
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Locator Map



Post Demolition Survey of 184N, 184NA & 184ND

- Paved Roads and Sidewalks
- - - Unpaved Roads and Trails
- + + + Railroad
- Minor Contour Lines, .10 Meters
- Major Contour Lines, .50 Meters
- Incline Contour Direction Lines
- 184N, 184NA & 184ND Locations Prior to Demolition
- Areas of Cut Rebar
- GPS Post Demolition Locations
- GPS Locations for Additional Features (See attached survey report for details)



100-N D4 Project Facility Completion Form

**Attachment 6. Sampling Determination Form for the 184-N, -NA, -NB, -NC, -NE, -NF
Facilities (SDF-100N-005) (6 Pages)**

100-N ANCILLARY FACILITIES REMOVAL ACTION SAMPLING DETERMINATION FORM

Determination Number
SDF-100N-005

A. INSTRUCTIONS

This form must be completed to: 1) document existing data in order to determine if current data is suitable to prove completion of 100-N Ancillary Facilities, or 2) document that site-specific sampling and analyses are needed to provide completion for 100-N Ancillary Facilities.

B. GENERAL INFORMATION

Building Name: Plant Service Power House / Auxiliary Power Annex Building / Air Handler Main Building / Air Handler Annex Building / Compressed Gas Sheds / Chemical Injection Pump Shed	Building Number: 184-N, 184-NA, 184-NB, 184-NC, 184-NE, and 184-NF
--	--

WIDS Sites Associated or Adjacent: 100-N-12 (Rejected), 100-N-24, 100-N-28, 100-N-55, UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, UPR-100-N-36, and UPR-100-N-42.

Other:
All of the 184-N facilities have been demolished. The 184-ND Diesel Day Tanks were removed by the Environmental Restoration Contractor in 1996. The footprint of the 184-ND is WIDS UPR-100-N-42 which will be closed out by FR.

C. INFORMATION SOURCES

Available information (list document number for each if applicable):

Historical Site Assessment: <u>Historical Site Assessment for the 184-N Powerhouse and Associated Structures CCN 125285</u>	Site Walkdown: <u>N/A</u>
IH Characterization Report: <u>N/A</u>	Radiological Survey: <u>Global Positioning Environmental Radiological Surveyor (GPERS) / Laser-Assisted Ranging and Data System (LARADS) surveys ESR-FRM-06-0146 / 0147 / 0148 / 0149 and ESR-FRM-08-0145</u>
IHC/FHC Document: <u>100-N Ancillary Facilities Preliminary Hazard Categorization CCN 095435</u>	WIDS/SIS: <u>SIS data sheets for 184-N, 184-NA, 184-NB, 184-NC, 184-ND, 184-NE1 and NE2, and 184-NF</u>
PDSR: <u>184-NA, 184-NB, 184-NC, 184-ND, 184-NE, and 184-NF Power House CCN 142336</u>	Facility Inspection: <u>Facility Inspection Summary for the 184-N Power House / 184-NA Power House Annex CCN 116924</u>
Waste Characterization Checklist: <u>N/A</u>	Summary Report: <u>N/A</u>

Other:
 Radiological Survey Record: RSR-100N-07-0194 (Downposting)
 Radiological Survey Records: RSR-100N-08-1106 / 1416 / 1570 (Downposting)
 Radiological Survey Records : RSR-IFSM2-07-0393 / 0485 (for Anomaly)
 Discussion of IHC for Building 184-N: CCN 141871
 Work Package 100-07-10-01-001: 184-N / 184-NA / 184-ND / 184-NE / 184-NF / Hazardous Material Removal
 Work Package 100-08-01-29-002: Above Grade Demolition 184-NA [review only-information contained within has no perceived relevant value]
 Work Package 100-08-04-15-001: 184-N Demolition and Removal
 Asbestos Summary Report for 184N and Associated Facilities: CCN 128253
 Pre-Existing Conditions Survey of Hanford Site Facilities to be Managed by BHI, Phase II: Doc Num BHI-00221
 100N Facility Endpoint Criteria and Turnover Documentation 184-N Power House: CCN 521128 (Relevant Portion Attached to this Form)
 100-N Area Technical Baseline Report: WHC-SD-EN-TI-251
 Hazardous Material Removal from 100N Buildings: CCN 137407
 GIS Field Remediation Excavation Boundary Overlay: Attached to this Form
 Photographs of 184-N Fuel Oil Leak and TSI Piping, Partial Time Stamp: CCN 116924 pgs. 6-7
 Photograph of 184-N, Time-Stamped 6/11/2002: SIS Data Sheet for 184-N pg. 7

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Photographs of 184-N, No Time Stamps: CCN 142336 Figures 1-6
 Photograph of 184-NA, Time-Stamped 11/2/2005: SIS Data Sheet for 184-NA pg. 5
 Photographs of 184-NB (Building and Post-Demolition), Time-Stamped 6/11/2002 and 6/12/2006: SIS Data Sheet for 184-NB pgs. 5-6
 Photographs of 184-NC (Building and Post-Demolition), Time-Stamped 11/2/2005 and 6/7/2006: SIS Data Sheet for 184-NC pgs. 4-5
 Photograph of 184-ND, Time-Stamped 3/25/2003: SIS Data Sheet for 184-ND pg. 5
 Photograph of 184-NE1, Time-Stamped 6/11/2002: SIS Data Sheet for 184-NE1 pg. 5
 Photograph of 184-NE2, Time-Stamped 6/11/2002: SIS Data Sheet for 184-NE2 pg. 5
 Photograph of 184-NF, Time-Stamped 11/2/2005: SIS Data Sheet for 184-NF pg. 4
 Additional Photographs Without Time Stamps Exist Within SIS Data Sheets for 184-N and its Associated Facilities

D. HAZARDOUS SUBSTANCES

Check all that apply:

- None
 Asbestos containing material
 Lead
 PCBs/PCB Articles
 Oils/Greases
 Chemicals
 List: Ammonium Hydroxide, Hydrazine, Morpholine, and Xylene (CCN 125285 pgs. 3 & 9, CCN 141871)
 Radiological Contamination
 Mercury/Mercury Devices
 Other: N/A

References/Comments:

Asbestos: CCN 128253, CCN 125285 pg. 7, CCN 142336 pg. 3, BHI-00221 pgs. 3-72 & 3-73, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5
 Lead: CCN 125285 pg. 8, BHI-00221 pg. 3-72, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5
 PCBs/PCB Articles: CCN 125285 pg. 9 and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5
 Oils/Greases: CCN 116924 pg. 4, CCN 125285 pg. 3, CCN 142336 pg. 2, BHI-00221 pgs. 3-73 & 3-76, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5
 Radiological Contamination: CCN 116924 pg. 3, CCN 125285 pg. 7, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5
 Mercury/Mercury Devices: CCN 125285 pg. 8, CCN 141871, BHI-00221 pg. 3-72, and Work Package 100 07 10 01 001 WCH Task Instruction pg. 5

Liquids: Yes No

If yes, describe source and nature of liquids:
 Two oil storage tanks were located in 184-ND (See CCN 142336 pg. 2) and were removed in the 1990s. These tanks likely contained diesel fuel and Number 6 fuel oil (CCN 125285 pg. 3). Ammonium hydroxide and hydrazine transfer pumps were located in 184-NF (CCN 125285 pg. 3, WHC-SD-EN-TI-251 Figure 2-12). Hydrazine mix tanks, a hydrazine transfer pump, and a morpholine transfer pump were located in 184-N (WHC-SD-EN-TI-251 Figure 2-12). Hydrazine and morpholine were also located within piping within 184-N and 184-NA (CCN 141871). Xylene was contained in heaters located in 184-N and 184-NA (CCN 141871).

Were the hazardous substances removed from the facility prior to demolition? Yes No

As verified by what documentation:
 Most of the asbestos insulation was abated prior to demolition (CCN 125285 pg. 7). The complete removal of many materials containing hazardous substances was documented in Work Package 100-07-10-01-001 (WCH Task Instruction pg. 29). See the list of hazardous materials left in the building for demolition, contained below, for items not ruled out by these citations.

Was there potential for hazardous substances to be introduced into the soils during facility operations or demolition? Yes No N/A

References/Comments:
 Some of the facilities associated with the 184-N facility were potentially contaminated, or the potential existed for releases to the environment during facility operations.

List any hazardous materials left in the building for demolition:
 Class II asbestos was not entirely removed from the building (Work Package 100-08-04-15-001 WCH Task Instruction pg. 1). Additional items left in the building for demolition were: 1,000 pounds of silica gel (product), four lead pipes, two

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capillary tubes, two light bulbs-one fluorescent and one mercury vapor (Work Package 100-07-10-01-001 Work Package Status Log pgs. 10-11). The capillary tubes contained xylene (Work Package 100-07-10-01-001 WCH Task Instruction pg. 20). It is unclear from the Hazardous Material Removal Completion log if oil-containing door actuators and non-ERDF compatible wastes were removed from the facilities, or just inspected and/or properly identified for segregation during demolition (Work Package 100-07-10-01-001 WCH Task Instruction pg. 29). Additionally, radiological contamination was not removed but was instead stabilized (Work Package 100-07-10-01-001 WCH Task Instruction pg. 29). Materials not removed prior to demolition containing hazardous substances were included in the waste profile and disposed of at the ERDF.

Does review of historical records and process knowledge indicate a potential for radiological or chemical contamination to be present in the facility?
While some hazardous materials were left in the facilities for demolition, there was potential that each posed only a minor threat of contaminating the underlying soil. The decision to leave some items was specifically approved prior to demolition by EPA and the Department of Ecology (CCN 137407). The only radiological contamination identified was fixed in steam lines and equipment, which would not have posed a contamination threat to the adjacent environment due to its contained nature (CCN 116924 pg. 3). The GPERS/LARADS surveys substantiate this claim as all but one data point indicate that radiological levels in the area did not exceed twice the background level (ESR-FRM-06-0146 / 0147 / 0148 / 0149 & ESR-FRM-08-0145). The exceptional data point indicated a localized elevated radiological level that exceeded twice the background beta level (ESR-FRM-06-0148). The point was not reproducible in subsequent surveys and ruled as instrument error. None of the other GPERS/LARADS data points taken and documented in this form indicate the presence of elevated radiological levels for these facilities.

There are multiple documents that indicate that releases of hazardous substances occurred during actions at the facilities. The sample summary indicates that stained concrete was found at 184-N and 184-NF, and that oiled sand was found at 184-ND (CCN 142336 Attachment 2), the location of WIDS sites UPR-100-N-19, 21, 22, 23, and 42. Additionally, oily residues were found in 184-NA and oil leaks were identified on the ground at 184-ND (BHI-00221 pgs. 3-73 & 3-76), also in the vicinity of those waste sites. The Facility Inspection Summary indicates that fuel oil stains were found in building 184-N (CCN 116924 pg. 4). The stained concrete was removed during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation.

Comments:
Because some hazardous substances were not removed from the facilities prior to demolition, there was a potential for the underlying soil to become contaminated during demolition. However, the act of leaving many of these hazardous substances in the building for demolition was approved by the regulatory agencies due to the low perceived risk of doing so. The presence of staining within the facilities is of more concern for sampling determination purposes. Some of these stains have been or will be addressed by the remediation of waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43. The remainder of the stains were removed with the concrete during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation. Additionally, a large portion of the footprint of the facilities is covered by planned field remediation boundaries, indicating that much of the soil underlying the facilities will be removed and the remaining soils sampled for verification purposes of the co-located and adjacent waste sites (GIS Field Remediation Excavation Boundary Overlay-attached to this form).

The stack foundation at 184-NA and the below ground pipes at 184-ND were not removed by D4 activities (CCN 142336 pgs. 2 & 7). Removal of the stack foundation was performed by D4 later in April of 2012. Remediation of any waste sites and removal of the remaining pipes at 184-ND will be performed by Field Remediation.

E. FIELD OBSERVATIONS

Visual Inspection

Were any stained soils/anomalies discovered during or after demolition of the facility? Yes No

References/Comments:
A radiologically contaminated swallows nest was discovered during demolition, the nest was removed. See part D "comments" of this form for a discussion of stained soils.

Were samples taken of the stained soils/anomalies? Yes No N/A

References/Comments:
CCN 142336 Attachment 2

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Do results of the samples indicate that chemical contamination exists? Yes No N/A

References/Comments:

Results of the samples indicate that petroleum contamination was present in the concrete at certain locations. The stained concrete was removed during demolition of the facilities and the underlying soils exhibited no signs of staining during visual inspection of the excavation. The oiled sands present at the 184-ND (diesel day tanks) will be removed during remediation of waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43.

Is the area potentially a discovery site? Yes No

References/Comments:

N/A

Radiological Surveys

Did radiological surveys (GPERS or equivalent) identify contamination? Yes No

References/Comments:

Multiple radiological surveys were conducted for these facilities (RSR-100N-07-0194, RSR-100N-08-1106 / 1416 / 1570, ESR-FRM-06-0146 / 0147 / 0148 / 0149 and ESR-FRM-08-0145). Only one data point from these surveys identified radiological contamination (ESR-FRM-06-0148). This data point indicated a beta reading of 1,020 counts per minute, as opposed to a background beta reading of 441 counts per minute (ESR-FRM-06-0148 & CCN 142336 pg. 3). The beta radiological survey consisted of 1,320 data points, of which only one identified the presence of radiological contamination (ESR-FRM-06-0148 & CCN 142336 pg. 3). It is also worth noting that, as part of the beta radiological survey, multiple data points were collected of the areas adjacent to the area of the elevated reading (ESR-FRM-06-0148). None of these data points indicated the presence of radiological contamination (ESR-FRM-06-0148). The point was not reproducible in subsequent surveys and ruled as instrument error.

Were samples taken of the radiologically contaminated soils? Yes No N/A

References/Comments:

N/A

Is the area potentially a discovery site? Yes No

References/Comments:

N/A

Were the contaminated materials removed? Yes No N/A

References/Comments:

Aside the first survey with the single point with the elevated reading, there was no indication that radiological contamination existed in the area. Several attempts were made at reproducing the reading. All were unsuccessful and the reading was ruled as instrument error.

F. WIDS SITES

Were there any WIDS sites affected by D4 activities? Yes No

If yes, list the WIDS sites:

N/A

Were the WIDS site(s) completely removed? Yes No

References/Comments:

This question is not applicable because no WIDS sites were affected by D4 activities.

Will the Ancillary Facility Footprint be deferred to FR to be closed out with a co-located Waste Site? Yes No

References/Comments:

This question is not applicable because no WIDS sites were affected by D4 activities.

G. COPCs FOR SOILS AND STRUCTURES REMAINING AFTER DEMOLITION

What are the potential contaminants of concern for the remaining below-grade soil?

None SVOC VOC Metals TPH Rad PCBs

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Other (Specify): _____

Comments:
N/A

Summary of in-process soil sampling requirements:

This question is not applicable, no in-process soil samples were taken by D4 for this facility.

Constituents detected / concentrations / rationale

See references listed below.

Sample Collection Summary

SEE PDSR (CCN 142336) ATTACHMENT 2 and ASBESTOS SUMMARY REPORT (CCN 128253) for sample collection summary for these facilities. Also consult sampling for waste sites UPR-100-N-19, UPR-100-N-21, UPR-100-N-22, UPR-100-N-23, and UPR-100-N-43 due to the overlap between the facilities and these waste sites.

H. NOTES / ADDITIONAL INFORMATION

Check here if additional information / data / maps / sketches are attached to this form.

If checked, list the attachment(s):

GIS Field Remediation Excavation Boundary Overlay

I. SAMPLING

Are soil samples required to demonstrate that remaining structure or below-grade soils meet cleanup standards?

Yes No

Based on the above information it was determined that sampling: will will not be required in order to demonstrate that cleanup criteria have been met.

The individual below acknowledges that the review of this facility has been completed. He or she also commits to provide to the Department of Energy (DOE) and the Washington State Department of Ecology (Ecology) any available information that could alter the sampling decision established in this form.

Information Reviewer Signature

David Warren

Printed Name

David Warren

Date

4/30/12

The regulatory representative below agrees with the decision outlined in section I of this form for the indicated facility and supports implementation of that decision based on the information currently available.

DOE Signature

[Signature]

Printed Name

Mr. Guzman

Date

4/30/2012

Ecology Signature

Nina M. Menard

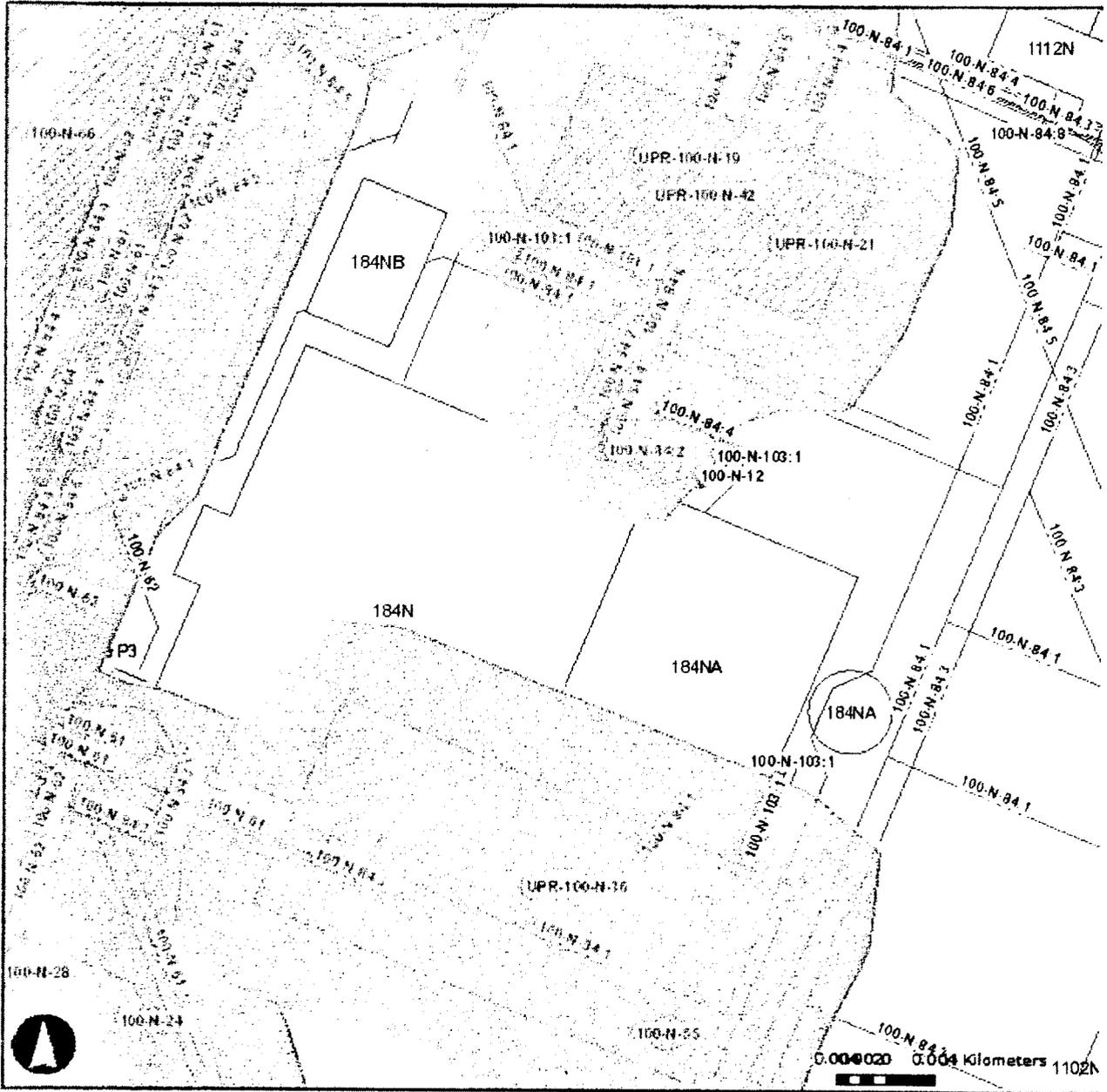
Printed Name

NINA M. Menard

Date

5/1/2012

Map



Hydrant Names

Fire Hydrants



WasteSitePoints

- Sitecode Missing in SIS
- Accepted,

WasteSitesLine (continued)

- Accepted, Interim Closed Out
- Accepted, No Action
- Accepted, Rejected
- Discovery,
- Not Accepted,

WasteSitePolys

Waste Polygon Labels

Waste Line Labels

Waste Point Labels

N_EXC_Toe

