

**NAVAL ENERGY AND ENVIRONMENTAL  
SUPPORT ACTIVITY**  
**Port Hueneme, California 93043-5014**

**ADDENDUM TO THE  
PRELIMINARY ASSESSMENT  
(INITIAL ASSESSMENT STUDY)  
OF  
NAVAL WEAPONS STATION EARLE  
COLTS NECK, NEW JERSEY**

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## EXECUTIVE SUMMARY

Naval Weapons Station (NWS) Earle is currently listed on the National Priority List and is being studied and cleaned up as part of the Navy Installation Restoration program. An Initial Assessment Study was performed at NWS Earle in 1983. Currently there are 29 sites in either the Site Inspection phase or the Remedial Investigation/Feasibility Study phase. In 1991 the Environmental Photographic Interpretation Center performed an aerial photographic interpretation analysis of NWS Earle for the Environmental Protection Agency. This analysis identified 17 additional sites that required investigation. In May 1992, Northern Division, Naval Facilities Engineering Command requested that NEESA perform a supplemental Preliminary Assessment on the 17 sites. One of the 17 sites, the Roundhouse Area is recommended for further work.

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## CHAPTER 1. INTRODUCTION

Northern Division, Naval Facilities Engineering Command requested that the Naval Energy and Environmental Support Activity (NEESA) perform a supplemental Preliminary Assessment (PA) at the Naval Weapons Station Earle, Colts Neck, New Jersey. This request was based on a 17 January 1992 letter from the Environmental Protection Agency (EPA) requesting a PA for 17 additional sites identified by an aerial photography site analysis. This analysis was performed for the EPA by the Environmental Photographic Interpretation Center (EPIC), at the Environmental Monitoring Systems Laboratory, Las Vegas, Nevada.

### 1.1 Authority and Scope.

Section 211 of the Superfund Amendments and Reauthorization Act of 1986 (SARA 211) provides continued authority for the Department of Defense Environmental Restoration Program (DERP) and the Defense Environmental Restoration Account (DERA). The Navy Installation Restoration (IR) program is authorized by Chief of Naval Operations Instruction (OPNAVINST) 5090.1A of Oct 1990. The Naval Facilities Engineering Command (NAVFACENGCOM) manages the Navy program. NAVFACENGCOM tasked the Naval Energy and Environmental Support Activity (NEESA) to conduct a Preliminary Assessment (PA) for each Navy and Marine Corps facility listed on the Federal Agency Hazardous Waste Compliance Docket (Docket) as required by SARA 120.

PAs are conducted in accordance with the Guidance for Performing Preliminary Assessments Under CERCLA, U.S. Environmental Protection Agency, September 1991; recommendations are consistent with the National Contingency Plan.

The PA begins with investigation and review of available records at NEESA and the cognizant NAVFACENGCOM Engineering Field Division. After the records search, the PA team visits the activity to complete documentation of past and present operations and disposal practices. With the assistance of the activity point of contact, the team tours the activity and interviews long term employees. If a potential threat to human health or the environment is suspected, further action is recommended.

### 1.2 Background.

Naval Weapons Station Earle (NWS Earle) is listed on the National Priority List (NPL) and is currently is being studied and cleaned up as part of the Navy IR program. An Initial Assessment Study (IAS) was performed for NWS Earle by NEESA in February 1983. The IAS identified 29 waste disposal sites; four sites were recommended for further investigation. Currently all 29 sites either in the Site Inspection (SI) phase or in the Remedial Investigation/Feasibility Study (RI/FS) phase.

#### 1.2.1 Initial Assessment Study.

Prior to the enactment of SARA, the first step in the investigating of potential sites was the Initial Assessment Study, which contained the elements of a Preliminary Assessment. An IAS for NWS Earle was completed under contract by Fred C. Hart Associates in February 1983 (NEESA 13-020).

### 1.2.2 Aerial Photographic Interpretation Survey.

EPIC performed an aerial photographic survey of NWS Earle for the EPA. The survey consisted of obtaining past aerial photographs and subjectively interpreting the photographs. The EPIC survey identified 17 sites for further investigation; three of the sites are already under investigation in the IR program. The sites are identified in Table 1.

Table 1 - EPIC Sites				
EPIC Site Name	Site Letter	Included in this report as		
		PA Name	Section Number	IAS Site Number
Railroad Classification Yard	A	Railroad Classification Yard	2.1	
Disposal Area	B	Colts Neck Garage Area	2.2	
Open Storage Area	C	Length of Duffy's Locker	2.3	Site 29
Fill Area, Disposal Area, and Open Storage	D	Parking/Grounds Maintenance Area	2.4	
Open Storage Area	E	C-15 Parking Area	2.5	
Railroad Classification Yard	F	Roundhouse Area	2.6	Site 16
Small Arms Range	G	Army Pistol Range/Wayside Area	2.7	
Possible Disposal Area	H	Trailer Parking Area (west of Route 34)	2.8	
Burn Area	I	Open Area NW Building S-35	2.9	
Open Storage Area	J	Ordnance Carpenter Shop, Building S-35	2.10	
Open Storage	K	Cleared Area South of Building S-35	2.11	
Open Storage Area	L	MSC Van Parking Lot	2.12	
Open Storage Area	M	Demil Furnace Area	2.13	Site 21
Fill Area and Probable Disposal Area	N	Storage Area	2.14	
Fill Area	O	Borrow Pit	2.15	
Demilitarization Area	P	Abandoned Bunkers	2.16	
Possible Training Area	Q	Military Sealift Command	2.17	

### 1.3 Supplemental Preliminary Assessment.

The objective of this report is to evaluate the EPIC aerial photographic interpretations by inspecting each identified site, interviewing long term facility personnel, and viewing other aerial photographs not used by EPIC. Once this information was gathered, that information was used to review and expand on the EPIC aerial photographic interpretations.

## CHAPTER 2. SIGNIFICANT FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

This chapter is based on information from the Initial Assessment Study of Naval Weapons Station Earle, Colts Neck, New Jersey (NEESA, 1983), the Site Analysis, Earle Ammunition Depot: Main Base Area, Colts Neck, New Jersey (EPA, 1992), and a NEESA visit of June 1992. Aerial photograph interpretation "in quotes" is from the aerial photographic site analysis (EPA, 1992), and the clarification of the interpretations in *italics* is provided by NEESA.

### 2.1 Site A - Railroad Storage Yard.

This area is approximately 12.2 acres and is located north of the roundhouse spur and IAS Site 1 (currently under investigation), on the east and west sides of Macassar Road as shown in Figure 1.

This former railroad storage yard was used to store railroad ties, rail cars, telephone poles, and ballast stone<sup>1</sup>. Because the area was saturated with water when the yard was first developed, the area was covered with cinders<sup>2</sup>, a dark colored material.

Aerial photograph analysis:

- ♦ 1953: "Railroad classification yard; open storage; dark-toned objects; medium-toned mounded material; ground scar." *No photograph available.*
- ♦ April 1961: "Railroad classification yard; open storage; dark-toned objects; impoundment; probable dark-toned stains." *The area contains four railroad spurs that dead end. Approximately 18 railroad cars and engines are parked along the spurs. The dark objects that appear on the ground between the middle two spurs are reported to be telephone poles and railroad ties. The dark objects on the ground between the southern two spurs are reported to be telephone poles and one building of unknown use. The ground surface between the northern two tracks appears dark in color probably because of the slag or cinders used as railroad track bedding. Surface water appears to the west of the yard; this area is low lying, and the ground is saturated with water, so the area would retain seasonal standing water.*
- ♦ March 1974: "Railroad classification yard; buildings; open storage; dark-toned objects; impoundment; light- and medium-toned mounded material." *The yard appears much the same as in the 1961 photograph, approximately 25 railroad cars and engines are parked along the spurs. A second building has been added adjacent to the building noted in the 1961 photograph. The dark objects on the ground between the middle two spurs are reported to be railroad ties. The ground between the southern two spurs appears to contain more than telephone poles, possibly scrap wood or piles of ballast stone. The ground surface between*

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<sup>1</sup> Ballast Stone. Used to provide a stable bed for railroad tracks. (Hawley, 1981)

Ballast. gravel, broken stone, slag, etc., placed between and under the ties of a railroad to give stability, provide drainage, and distribute loads. (Random House College Dictionary, 1975)

<sup>2</sup> Cinders. incombustible residue of something burnt. (Websters New International Dictionary, 1971)

Cinder. a burned-out or partially burned piece of coal, wood, etc. (Random House College Dictionary, 1975)

Cinder. (2) The residue or ash from coal gasification process, it may run as high as 40% depending on the rank of coal used. (Hawley, 1981)

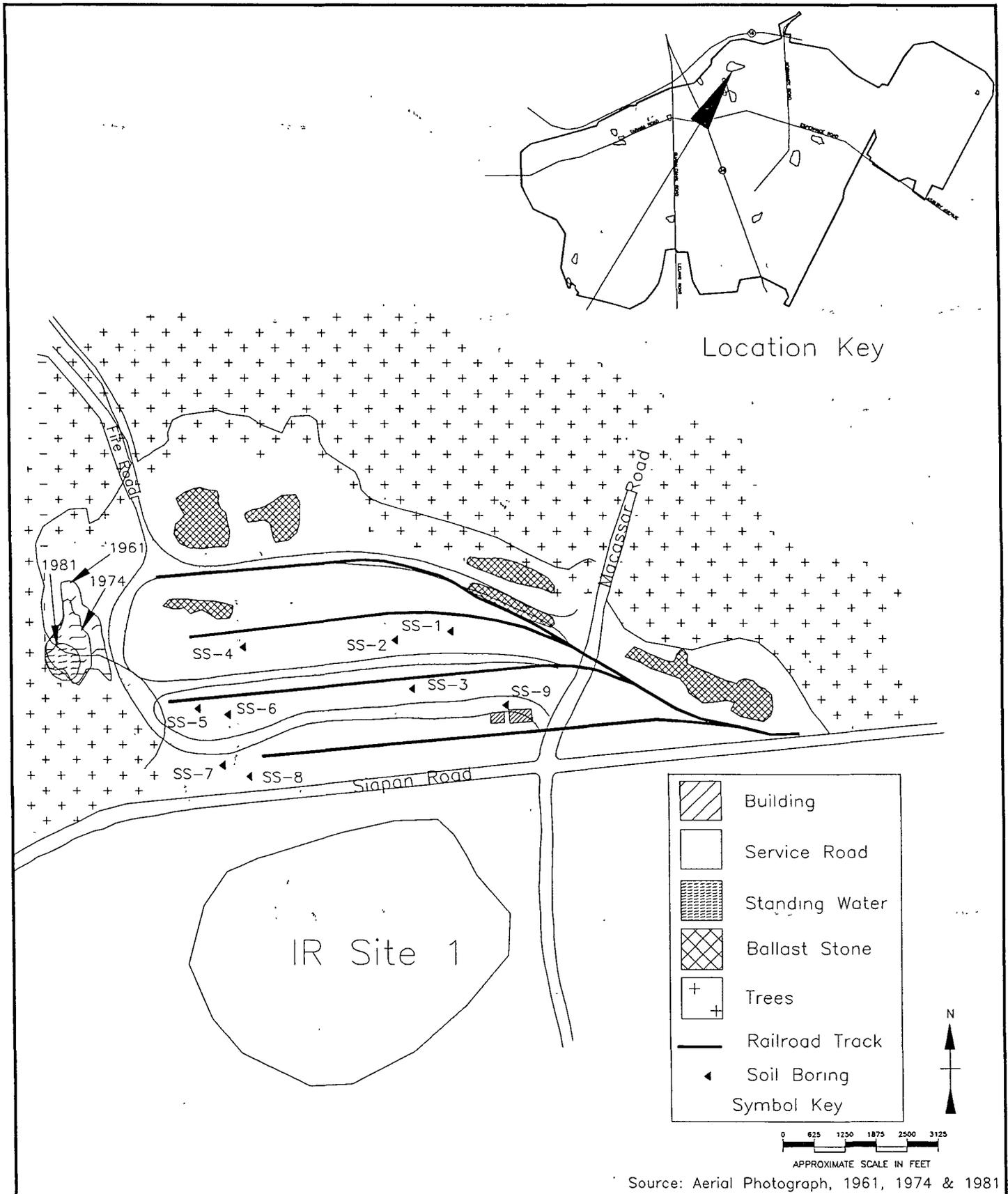


Figure 1 -  
Site A - Railroad Storage Yard



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*the northern two tracks appears dark in color probably because of the cinders used as railroad track bedding. The area of surface water to the west appears filled in on its eastern edge. The mounded material is reportedly ballast stone for railroad track maintenance.*

- ♦ January 1981: "Railroad classification yard; buildings; open storage; dark-toned objects; impoundment; medium-toned mounded material; probable dark-toned stain." *The yard appears much the same as in the 1961 and 1974 photographs. The two buildings of unknown use remain. Approximately 15 railroad cars and engines are parked on the spurs. The dark objects on the ground between the middle two spurs are reported to be railroad ties. The ground between the southern two tracks appears to contain more than telephone poles, possibly scrap wood or piles of ballast rock. The ground surface between the northern two tracks appears dark in color probably because of the slag or cinders used as railroad track bedding. The surface water to the west appears dry and a building or connex box is located in the area. Some of the mounds of ballast stone have been removed.*
- ♦ April 1981: *Aerial photograph clearly shows the surface water to the west. No building or connex box evident.*
- ♦ 1987: "Railroad classification yard; northern half of this area: open storage of construction materials; southern half: open storage, dark-toned objects, standing liquid, mounded material." *The Northern half was used for staging during construction of base housing. The Southern half remained a storage area for railroad ties, telephone poles, and ballast stone. The road between the southern two spurs appears to have standing water.*

The Navy initiated an Environmental Assessment (EA) of the Railroad Storage Yard in preparation for the construction of a Child Development Center and a Community Center. The EA involved the investigation of past operations and the collection of soil samples. A total of nine soil samples were collected from the railroad storage yard and analyzed for Volatile Organic Compounds (EPA 8240), Semi Volatile Organic Compounds (EPA 8270), Chlorinated Herbicides (EPA 8150), and Priority Pollutant Metals (EPA 7000 and/or 8000 Series). The analysis of the soil samples (Appendix A) revealed "very low concentrations" of contaminants. (BCM, 1991) "All of the constituents detected in the soil samples were below the concentrations limits of the New Jersey Environmental Cleanup Responsibility Act (ECRA) informal guidelines." (BCM, 1991) Construction of the Child Development Center was to begin in April 1992. On March 16, 1992 representatives from Halliburton NUS collected soil samples from nine locations. The soil sample analysis (Appendix B) was for Polychlorinated Biphenyls (PCBs); none were detected.

Conclusions: This area was used to store items related to the maintenance and operation of the base railroad. Items stored in this area included ballast stone, railroad ties, and telephone poles. The soil in the area is low lying and saturated with water. Material such as cinders was used as bedding for the railroad spurs and to stabilize soil in the area. The standing water to the west of the area, noted as an impoundment (EPIC, 1991), is a low-lying area where seasonal water collects. Soil sample analysis did not reveal contaminant levels of concern.

Recommendations: Because there are no reports of hazardous material storage or disposal and because soil samples did not reveal contaminant levels of concern, no further work is recommended under the Installation Restoration program.

## 2.2 Site B - Colts Neck Garage Area.

This area is approximately 4.8 acres, and is located in the northern area east of Route 34 and west of the NWS Earle sewage treatment plant. Reportedly, this area was originally cleared pre-1900 and

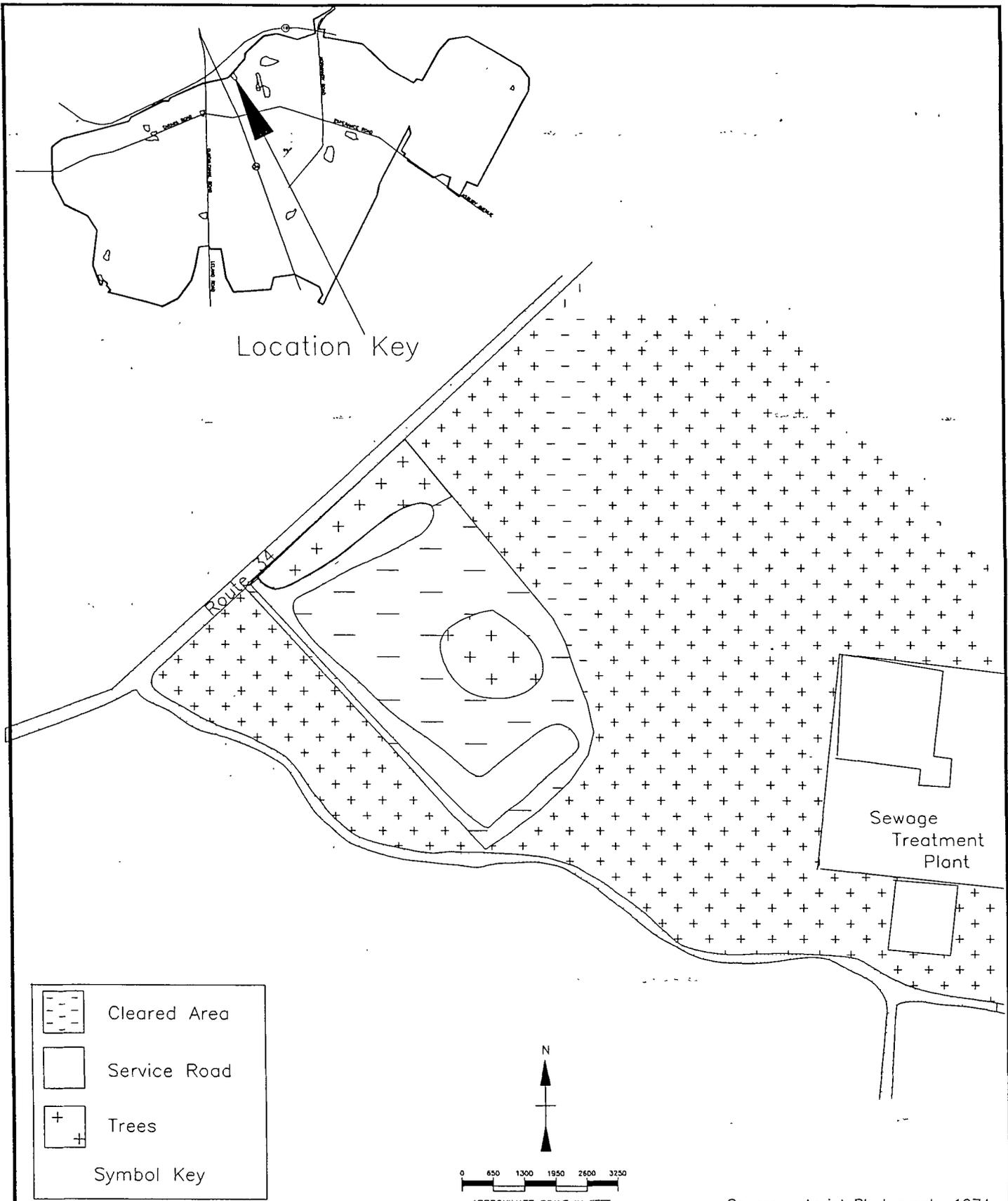


Figure 2 —  
 Site B — Colts Neck  
 Garage Area of 1974



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was used as a homestead. As shown in Figure 2, the area was cleared for the Township of Colts Neck Recreation Area in 1974. The southern portion of this area was never developed; and the northern portion of the area was developed as the Township of Colts Neck Municipal Garage.

Aerial photograph analysis:

- ♦ 1953/1961: Pre-site.
- ♦ March 1974: "Disposal area; mounded material; debris." *The area was in the process of being cleared. The mounded debris evident in the photograph was from clearing and burial of tree stumps. There were no reports of disposal of trash or other types of debris.*
- ♦ 1981: "Building; trailers; mounded materials." *The area appears as an unpaved storage yard, with some piles of dirt in the center of the area.*
- ♦ 1987: "Building; vehicle and equipment storage; dark-toned stain; light- and medium-toned mounded material." *The area is a paved storage yard for the Colts Neck Township vehicles.*

Conclusions. The area was first cleared for use as a recreation area for the local township. The southern half of the area was left to slowly revegetate, while the northern half was developed as a township garage.

Recommendations. Because there are no reports of hazardous material storage disposal on the southern half of this area, no further work is recommended under the Installation Restoration program. However, some effort should be made by NWS Earle to ensure that the local township is complying with standard hazardous materials handling techniques.

### 2.3 Site C - Length of Duffy's Locker.

This area is 4.3 acres and is located east of Saipan Road and west of the roundhouse spur; spanning an area from the north end of Building C-16 north to a wooded area. As shown in Figure 3 this area has been used as a Public Works storage area for station maintenance items. Items stored include piles of sand, power transmission cable, weapons containers, fire hydrant parts, scrap aluminum, and bridge decking.

This area also includes IAS Site 29, an area of PCB-contaminated soil that is currently in the Site Inspection phase.

Aerial photograph analysis:

- ♦ 1953: "Open storage; vehicle and equipment storage; objects; dark stains." *No photograph available.*
- ♦ April 1961: "Open storage; light- and dark-toned material, possible fill area; classification bins." *The toned material possibly includes metals parts. The northern portion of the area appears cleared of ground vegetation.*
- ♦ March 1974: "Open storage; variety of objects; light- and dark-toned mounded material; probable dark-toned stain." *The mounded materials are reportedly sand. The dark ground surface is probably cinders used as ground cover near railroad tracks.*
- ♦ January 1981: "Open storage; variety of objects; mounded materials; debris; probable dark-toned stain." *The objects appear to be telephone poles in the center of the turn-around, overseas or connex boxes, and various metal scrap. The mounded material is probably sand. The dark-toned ground surface is probably telephone poles or cinders.*

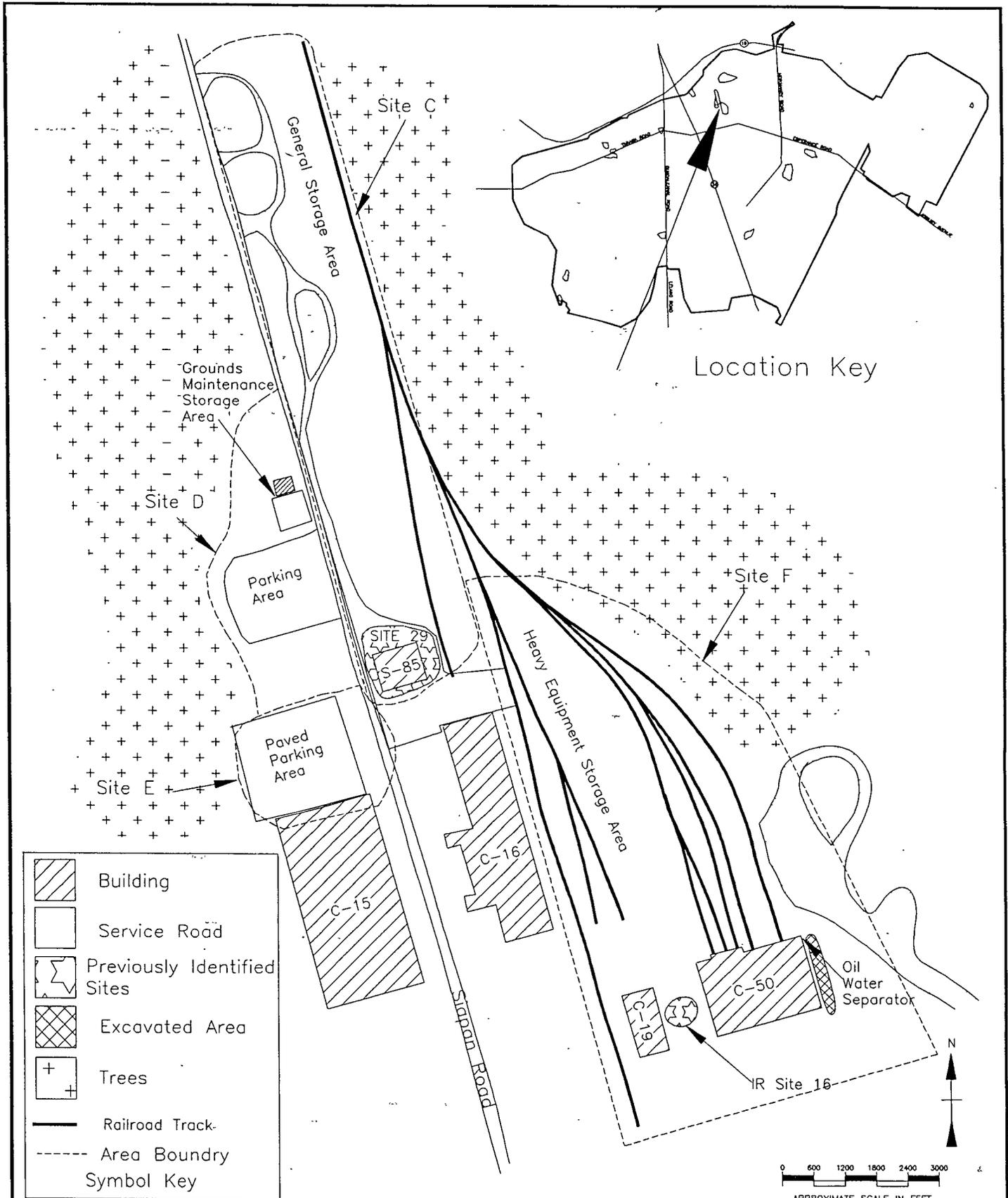


Figure 3 –  
Sites C, D, E, and F



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- ◆ 1987: "Open storage within the southern portion of the site; fill area in the northern portion." *The objects in the northern portion were removed, and the area was graded, exposing the light soil of this area.*
- ◆ 1987: *The color aerial photograph reveals that the northern portion of the area contains piles of sand, while the middle portion of the area has been cleared and graded.*

Plans currently call for the demolition of Building S-85 and the construction of a paved exterior storage area for the Public Works shops for FY 94. Further north (about midway), a Hazardous Waste Storage Facility is planned for FY 96. This facility is under Military Construction Project #P-982.

Conclusions. This area has been used for Public Works storage. IAS Site 29 has been identified and is currently being investigated. The scale and quality of the aerial photographs do not allow a conclusion regarding any disposal areas or the exact identity of the items stored. There were no reports of hazardous material storage or disposal.

Recommendation. Because there is no clear indication that hazardous materials were either stored or disposed of in this area, no further work under the Installation Restoration program is recommended.

#### 2.4 Site D - Parking/Grounds Maintenance Area.

This area is approximately 1.4 acres and is located on the west side of Saipan Road, adjacent to EPIC Site C as shown in Figure 3. This unpaved area was used as a parking area for grounds maintenance equipment, storage of wood chips, and vehicles from circa 1960 to 1991. In 1975 Building C-15 to the south was converted from a vehicle storage area to a maintenance facility, therefore more vehicle storage occurred in this area after 1975. There were no reports or evidence of maintenance operations in this area.

Aerial photograph analysis:

- ◆ 1947: *Area is undeveloped.*
- ◆ 1953: "Buildings; possible impoundments. *No photograph available.*
- ◆ April 1961: Fill area; probable disposal area; light- and dark-toned material." *Area appears as if it has been cleared and graded exposing light toned soil. Dark-toned objects appear to be bushes or piles of sand or slag.*
- ◆ 1974/1981/1987: "Parking area." *Photographs reveal vehicle parking in the southern portion of the area and a fenced grounds maintenance facility in the northern portion.*

In 1991 this area was regraded and paved. It is currently used to store containers relocated from EPIC Site C.

Conclusions: This area has been used as a storage area for grounds maintenance equipment and materials and as a parking area for vehicles. There was no evidence or reports of disposal operations. The area was recently regraded and paved.

Recommendations: Because there were no reports or evidence of hazardous materials operations in this area, no further work under the Installation Restoration program is recommended.

## 2.5 Site E - C-15 Parking Lot.

This area is approximately 0.9 of an acre and is located west of Saipan Road, bordered by Site D to the north and Building C-15 to the south as shown in Figure 3. This area has been used for the past 35 years for vehicle parking.

### Aerial photograph analysis:

- ◆ 1953: "Open storage." *No photograph available.*
- ◆ 1961: "Open storage; vehicle and equipment storage." *Photograph reveals vehicles parked along north and west perimeter of the area. Grassy area in median to the east.*
- ◆ 1974: "Parking area; minor open storage." *Photograph reveals vehicle parking along perimeter and in the center of the area. Appears that the grassy area in the median to the east has been graded.*
- ◆ 1981: "Open storage; variety of objects; dark-toned stain." *Photograph reveals that vehicles have been removed. The area is now used to store empty ordnance containers. The dark-toned area that appears in the median is apparently a truck that is parked; the truck casts a shadow which makes it appear as if the soil is dark in color.*
- ◆ 1987: "Parking area; minor open storage." *No photograph available.*
- ◆ 1987: *The color aerial photograph reveals some type of vehicle or small trailer in the median, no sign of stain. Area in the median is grass and parking area is paved.*

This area is currently paved and continues to be used for parking and as a staging area for empty weapon containers.

Conclusions: This area has been used for vehicle storage and weapon container storage. There are no reports of hazardous materials operations in this area.

Recommendations. Because there were no reports or evidence of hazardous materials operations in this area, no further work under the Installation Restoration program is recommended.

## 2.6 Site F - C-50 Roundhouse Area.

This area is approximately 7.8 acres and is located just east of Saipan Road as shown in Figure 3. This area encompasses Buildings C-50 and C-19, a heavy equipment storage yard, and two railroad car storage yards. The area was first developed in the late 1940's along with NWS Earle.

Building C-50 is known as the Roundhouse and is used for maintenance and repair of locomotives and rolling stock. According to the IAS and facility personnel, waste oils generated from locomotive maintenance were stored in a holding tank (now removed under the Underground Storage Tank program) until a contractor picked up the waste oils for off-base disposal. According to the IAS, rinse water from the steam cleaning of the locomotives was discharged to sewer drains. Facility personnel report that rinse water was discharged to an oil-water separator on the east side of the building and eventually to a drainage ditch that ran along the east side of the railroad tracks to an impoundment. In 1989 the oil-water separator failed, and the ditch on the east side of Building C-50 was excavated; the soil was disposed of as hazardous waste. Since 1989 the rinse water has been retained in a portable tank and sent out as bilge water. No building drawings could be found to confirm these reports, but drawings from the rail car maintenance facility in the northern pier annex of NWS Earle reveal that an oil-water separator which discharged to buried leach lines was used.

C-19 is the forklift maintenance and repair building. According to the IAS, waste oils from forklift maintenance were stored in the same tank as the oils from Building C-50. The IAS further states that batteries both leaking and non-leaking were stored behind Building C-19 awaiting disposal through DRMO; no exact location given. No leaks were observed during the IAS investigation.

High pressure parts washing is performed on the concrete mat north of Building C-19. No containment for the rinse water is currently provided.

The railroad storage yard to the west is used for rail car storage. The gravel area between the spurs is used for obsolete vehicles and heavy equipment including cranes, backhoes, and forklifts. Some of the area was filled with soil and concrete debris. The spur to the east was used to stage and store locomotives. The center of the tracks near Building C-50 is stained with thick oil. Reportedly the Alco engines were known to leak oil.

Aerial photograph analysis:

- ♦ 1953: "Railroad classification yard; maintenance building; track area is dark-toned." *No photograph available.*
- ♦ 1961: "Railroad classification yard; maintenance building; dark-toned stains; possible standing liquid; open storage." *The ground surface appears dark because of a combination of the cinders material used as ground cover, oil possibly leaked from locomotives, and vegetation that appears in the eastern spur. A circular dark shape which appears in the spur to the east may be standing liquid. Vehicles appear along eastern edge of middle storage yard.*
- ♦ 1974: "Railroad classification yard; maintenance building; open storage; variety of objects; dark-toned stains; open storage." *The circular dark shape no longer appears in the eastern spur. Vehicles appear along both edges of the middle storage yard.*
- ♦ 1981: "Railroad classification yard; maintenance building; vehicle and equipment storage; dark-toned stains; open storage." *Area appears much the same as in the 1974 photograph.*
- ♦ 1987: "Railroad classification yard; open storage; dark-toned stains." *No photograph available.*

Conclusion. This area has been used from the late 1940s for the maintenance and storage of locomotives, forklifts, excessed vehicles, and heavy equipment. Waste oil generated during maintenance of locomotives and forklifts was stored in a tank until removed by a contractor. Steam cleaning of locomotives in Building C-50 resulted in the discharge of rinse water to an oil-water separator on the east side of the building; the separator was known to occasionally fail. In 1989 the rinse water discharge area was excavated and removed, and use of the oil water separator was discontinued. Rinse water is currently collected awaiting proper disposal. The center of the tracks in the eastern spur received oil leaking from the parked locomotives.

Recommendation. Because oil is considered a hazardous waste in New Jersey, confirmation that the soil excavation removed all soil subjected to rinse-water discharge should be performed. The oil that leaked in the center of the track in the eastern spur appears not to be mobile, therefore no further work is recommended.

## 2.7 Site G - Army Pistol Range/Wayside Area.

This area is approximately 1.3 acres and is located in the former Army Wayside area in the eastern portion of NWS Earle as shown in Figure 4. The pistol range was first developed in 1961 and its use was suspended in the summer of 1991. The pistol range is typical in layout; a firing line and an earthen berm approximately 100 yards away. The area is characterized by spent cartridge and shotgun cases along the firing line and by lead and copper-jacketed lead bullets in the impact berm.

Aerial photograph analysis:

- ◆ 1953: "Excavation area." *No photograph available.*
- ◆ 1961: "Small arms range." *No photograph available.*
- ◆ 1974: "Small arms range; fill area north of the range." *Photograph reveals the small arms range; fill area to the north appears to be a parking area.*
- ◆ 1981/1987: "Small arms range." *No photographs available.*

The arms range was investigated under a Comprehensive Long-Term Environmental Action Navy (CLEAN) contract, CTO-010. The contractor did not find anything other than that this area was a former small arms range. The Marine Corps is currently planning on reactivating the arms range.

Conclusion. This area was used as a small arms firing range from circa 1961 until the summer of 1991. There are current plans to reactivate the area.

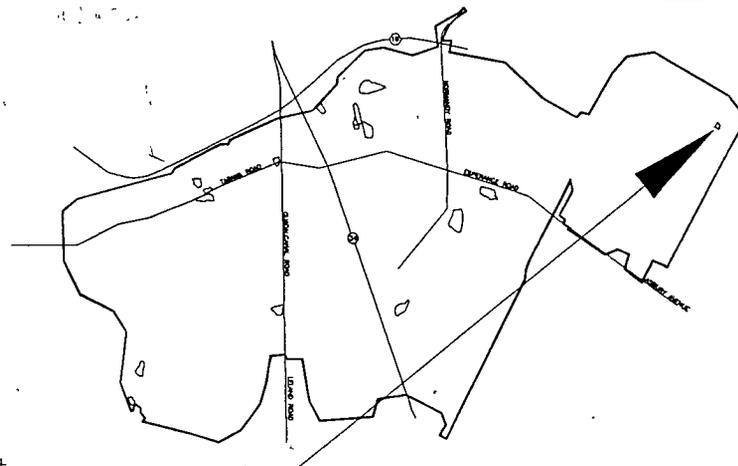
Recommendation. Recent studies performed by the Naval Civil Engineering Laboratory have identified a lead/sediment migration problem associated with arms ranges. If the range is to be abandoned, the potential for lead/sediment migration should be addressed under the Installation Restoration program. If the arms range is reactivated, containment of sediment runoff from the impact berm should be provided.

## 2.8 Site H - Trailer Parking Area (West of Route 34).

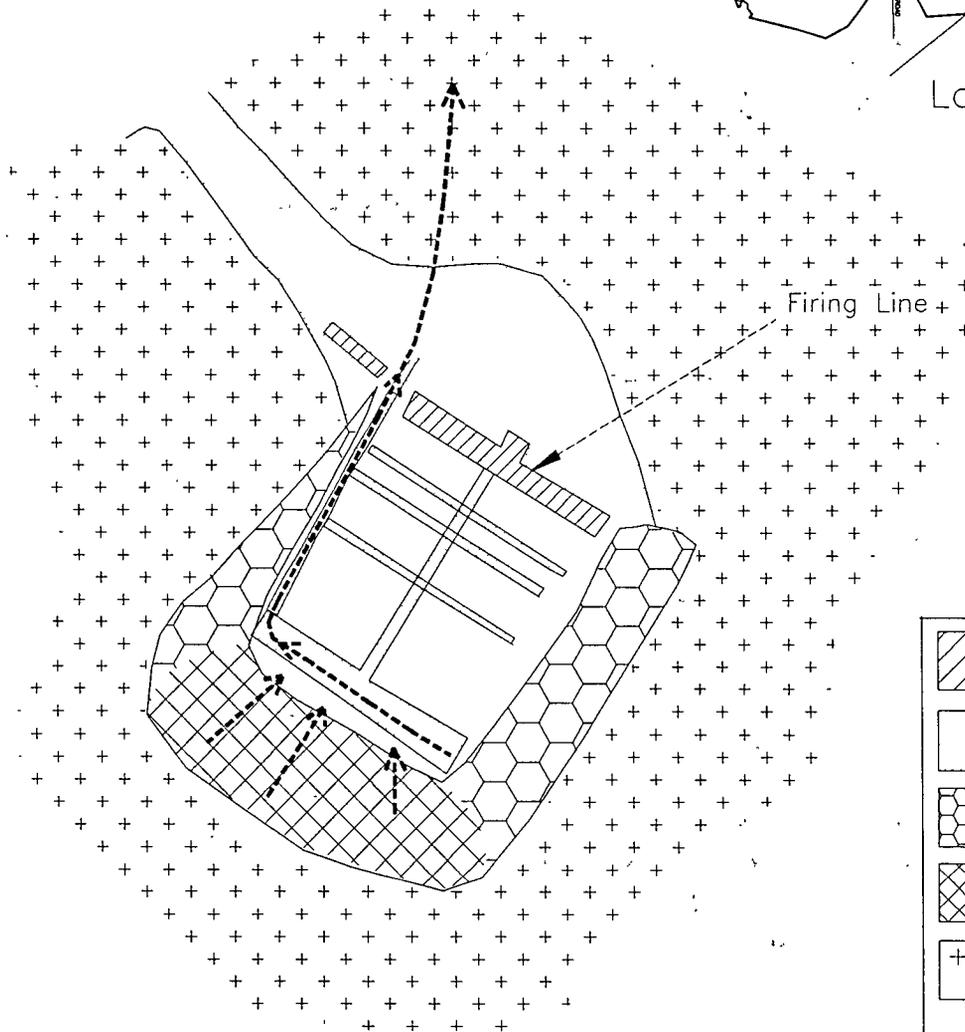
This area is approximately 1.9 acres and is located northwest of Guadalcanal Road and Tarawa Road as shown in Figure 5. A concrete pad in the southeastern corner of the area was used for temporary parking of trailers holding ordnance containers. In 1981, during construction of the nearby M-group ordnance bunkers, excavation materials were placed in the area west of the concrete pad. This area has also been used to store a seed roller and iron mats used to free stuck trucks. Infrequently, excess fill materials are stored on a temporary basis.

Aerial photograph analysis:

- ◆ 1953: "Graded area." *No photograph available.*
- ◆ 1961: "Parking area; probably trailers; ground scar." *No photograph available.*

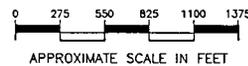


Location Key



	Building
	Service Road
	Retaining Wall
	Impact Berm
	Trees
	Apparent Path of Surface Water Migration

Symbol Key

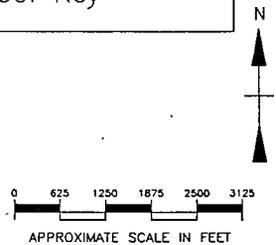
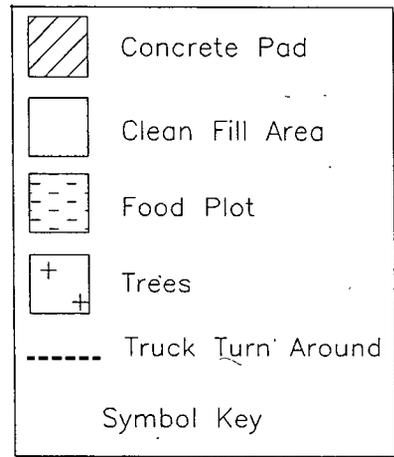
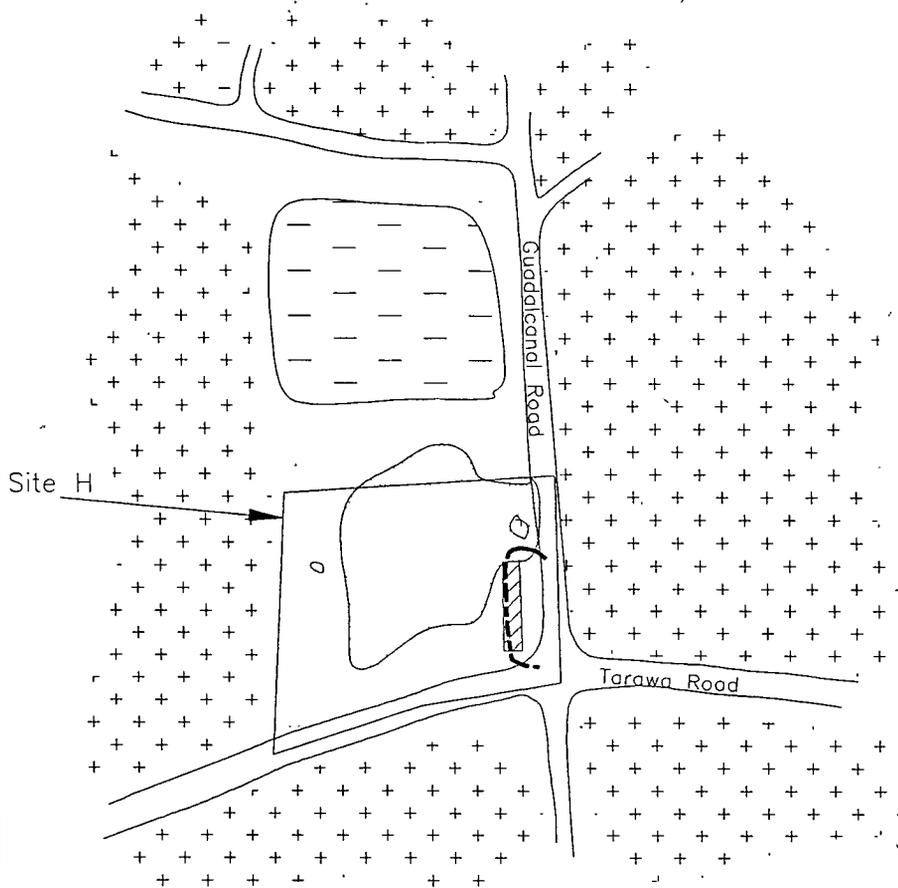
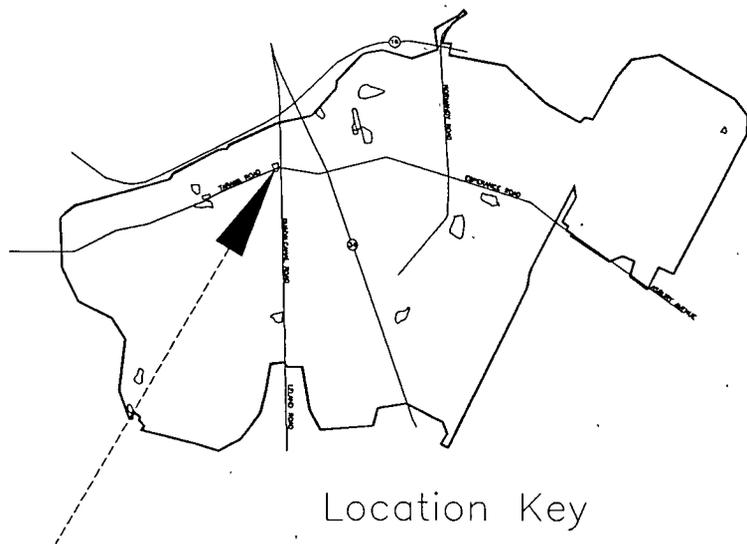


Source: Aerial Photograph, 1974

Figure 4 -  
Site G - Army Pistol Range



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey



Source: Aerial Photograph, 1974

Figure 5 -  
Site H - Trailer Parking Area



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

- ♦ 1974: "Ground scar; possible debris." *Concrete pad located in southeastern corner, area appears graded, no vans appear.*
- ♦ 1981: "Fill area; graded surface." *No photograph available.*
- ♦ 1987: "Light or bright material spread over the surface and adjacent area." *Fill from the M-group excavations.*

Conclusions. This area has been used for parking of ordnance trailers and the disposal and storage of excavated clean materials.

Recommendations. Because there no reports or evidence of hazardous material operations in this area, no further work under the Installation Restoration program is recommended.

## 2.9 Site I - Open Area Northwest of Building S-35.

This area is approximately 3.6 acres and is located northwest of Tarawa Road and Building S-35 as shown in Figure 6. The area was originally developed as a homestead circa 1850. Fence posts and pear, apple, and blackjack oak trees remain in the area. This area contains white sandy soil which has been planted with rye grass to support local wildlife. This area was reportedly burned to promote grass growth.

Aerial photograph analysis:

- ♦ 1953: "Disturbed ground." *No photograph available.*
- ♦ 1961: "Cleared area; center remains disturbed." *No photograph available.*
- ♦ 1963: *Stereo view reveals that the vegetation in this area is undergrown. A blackjack oak in the center of an area of white soil is evident.*
- ♦ 1974: "Burn area; disturbed ground surface; dark-toned feature near center of the site." *Area was burned for agricultural reasons. Area appears disturbed because of poor soil conditions. Dark toned feature is a blackjack oak which remains.*
- ♦ 1981: "Cleared area; disturbed ground." *No photograph available.*
- ♦ 1987: "Cleared area; disturbed ground surface; graded area; dark-toned stains." *Photograph reveals that the area has been plowed in preparation for planting.*

Conclusions. This area was first developed for a homestead has recently been planted with grasses to feed wildlife. This area was subjected to controlled burns to promote grass growth. There were no reports of disposal activity.

Recommendations. No further work under the Installation Restoration program is recommended.

## 2.10 Site J - Ordnance Carpenter Shop, Building S-35.

This area is 2.1 acres and is located northeast of the intersection of Tarawa Road and Fire Road as shown in Figure 6. There are several structures located in this area; the main building is the ordnance carpenter shop, Building S-35.

The ordnance carpenter shop has been a wood working facility providing pallets, boxes, etc. in support of ordnance transfer and storage operations from the early 1940's until the present. Aside from the generation of sawdust and trash waste, the shop produces empty cans which may contain hazardous waste, e.g. lacquer, polyurethane, varnish, wood stain, toluene, plastic resin glue, rubber

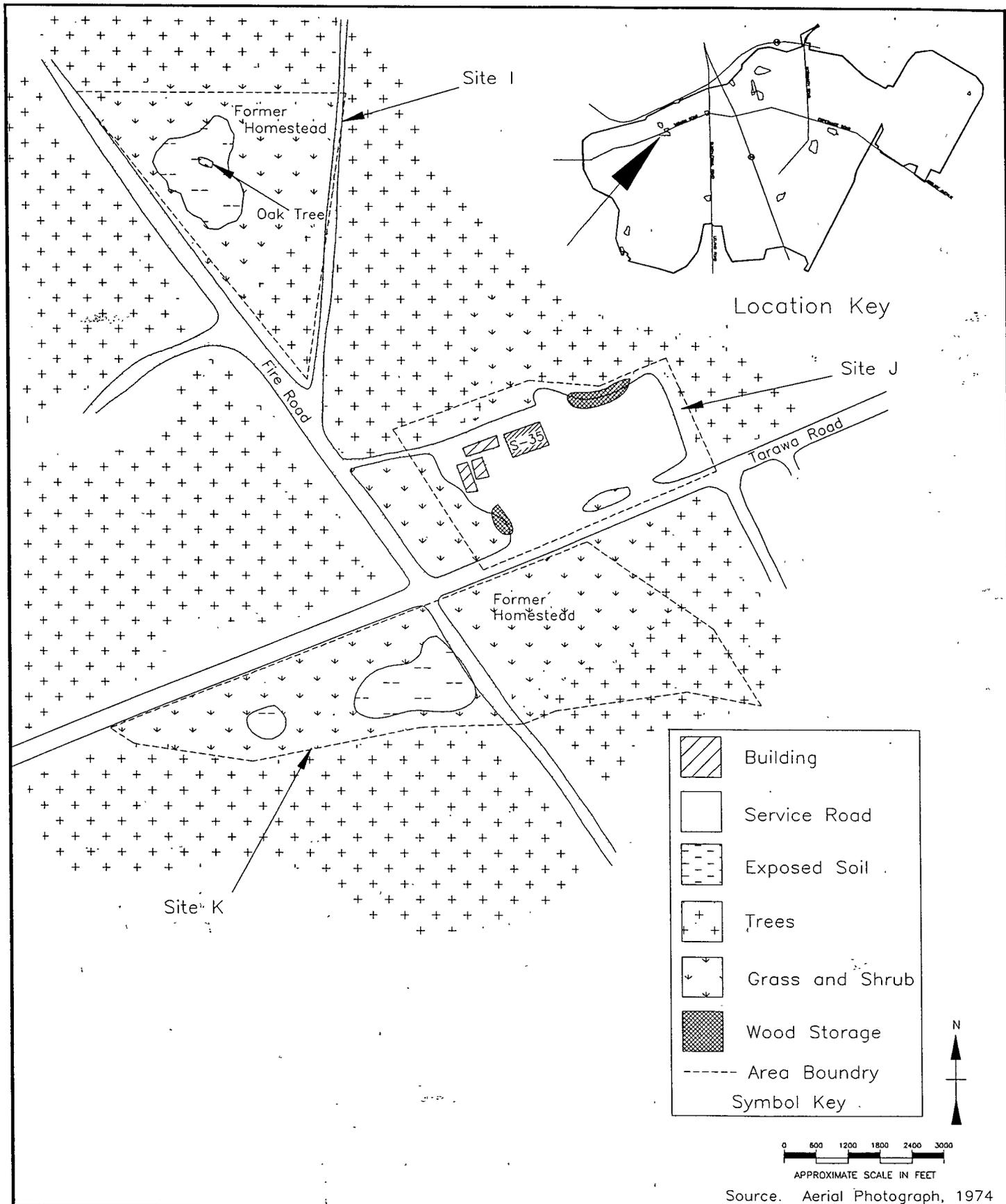


Figure 6 —  
Sites I, J, and K



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

cement, acetone, and synthetic thinner. However, the quantities used are small for all these items -- less than 1 gal/month. (NEESA, 1983)

Wood preservatives were previously used here for three or four years in the 1970s. At present, wood products are constructed from pretreated wood. Comments made during on-site interviews indicate that at one time, 500 gallons of pentachlorophenol (PCP) was used as a wood preservative. The preservative was applied by hand and consumed by the wood being treated. (NEESA, 1983)

Current facility personnel had no knowledge of the PCP treatment. Personnel report that treatment of wood is not necessary because the wood boxes they construct are for temporary storage of ordnance items in transit.

The wastes generated from this shop consisted of solvents, varnishes, and preservatives generated as residues in discarded cans. This waste would have been mixed with general shop trash in the shop dumpster. Prior to 1978, these wastes would have been disposed of in the base landfills. (NEESA, 1983)

One contradiction to the IAS report is that property records for Building S-35 indicate that it was originally built in 1944 as a lunchroom for ordnance workers, was converted to an ammunition rework and overhaul shop in 1957, and was then converted to the carpentry shop in 1962.

No further information about the ammunition rework operations could be found. Reportedly ammunition rework operations included painting of small caliber ordnance.

Two drinking water wells were located in this area. One developed in 1944 was abandoned for unknown reasons, and a second 80-foot deep well replaced the first. Currently the station uses local municipal water. The only report of drinking water problems from the wells is in the IAS: "Personnel in the building complained of a vinegar taste and foul smell from the water, which was also observed by the NEESA team. However, analyses of water by NWS Earle were reported to have shown rust contamination." (NEESA, 1983)

Aerial photograph analysis:

- ◆ 1953: "Buildings; graded area." *No photograph available.*
- ◆ 1961: "Buildings; graded area; open storage; dark-toned objects." *No photograph available.*
- ◆ 1963: *Stereo view reveals that a large amount of wood was stored in the southeast corner of the lot.*
- ◆ 1974: "Buildings; graded area; open storage; crates; stacked material." *The graded area is the parking and loading area for tractor trailer trucks. Open storage of wood for making crates, crates for shipping of ordnance, and stacked material is wood for crates was also apparent.*
- ◆ 1981: "Buildings; graded area; open storage; crates; stacked materials." *No photograph available.*
- ◆ 1987: "Buildings; open storage; crates; other objects." *No photograph available.*

Conclusions. From the property records, this area first had a building that was used as a lunchroom, then converted to rework small caliber ammunition, then converted to the carpenter shop. Facility personnel have no knowledge of any hazardous material operations occurring in this area. There

were two drinking water wells used in this area; the only reported problem was determined to be rust in the water.

Recommendations. Because there are no reports or evidence of hazardous material release or problems with the drinking water wells, no further work is recommended under the Installation Restoration program.

### 2.11 Site K - Cleared Area South of Building S-35.

This area is 4.4 acres and is located southwest of the intersection of Tarawa Road and Fire Road, and the Ordnance Carpenter Shop, Building S-35, as shown in Figure 6. The western portion of this area is mainly used to store materials for the maintenance of fire roads. The carpenter shop stores materials in this area. These materials include wood chips and soil. The easterly portion of the area was first developed as a homestead circa 1850. The vegetation has not fully recovered, reportedly because of the poor soil conditions in the area.

Aerial photograph analysis:

- ◆ 1953: "Cleared area; parking area." *No photograph available.*
- ◆ 1961: "Cleared area; open storage; dark-toned objects; dark-toned mounded material; crates." *No photograph available.*
- ◆ 1963: *Stereo view reveals that the area is covered with gravel.*
- ◆ 1974: "Cleared area; disturbed ground; dark-toned objects." *The eastern portion of this area was first developed as a homestead. This area appears undergrown which may be due to poor soil conditions. The western portion of this area was developed as a storage area for fire road repair material, including soil, wood chips, and ballast stone. The western area appears as if used by trucks to turn around; a tree appears in the center.*
- ◆ 1981: "Cleared area; disturbed ground; light-toned objects." *No photograph available.*
- ◆ 1987: "Cleared area; grey mounded material (probable gravel)." *No photograph available.*

Conclusions. The eastern portion of this area was developed as a homestead and has remained unused. The western portion of this area is used to store fire road materials.

Recommendations. Because there is no evidence or reports of hazardous material operations no further work under the Installation Restoration program is recommended.

### 2.12 Site L - MSC Van Parking Lot.

Site L is approximately 15.7 acres and is located south of Asbury Avenue and lies on both the west and east side of Pine Brook Road as shown in Figure 7. Approximately four acres of the northern portion has been used for the storage of telephone poles, railroad ballast stone, ordnance containers, and currently stores excessed electronic equipment. The remaining 11.7 acres encompasses a powerline easement. The area has been used for storage for 25-30 years.

Aerial photograph analysis:

- ◆ 1953: "Disturbed ground; dark-toned objects or mounds; pit; light-toned mounded material." *No photograph available.*

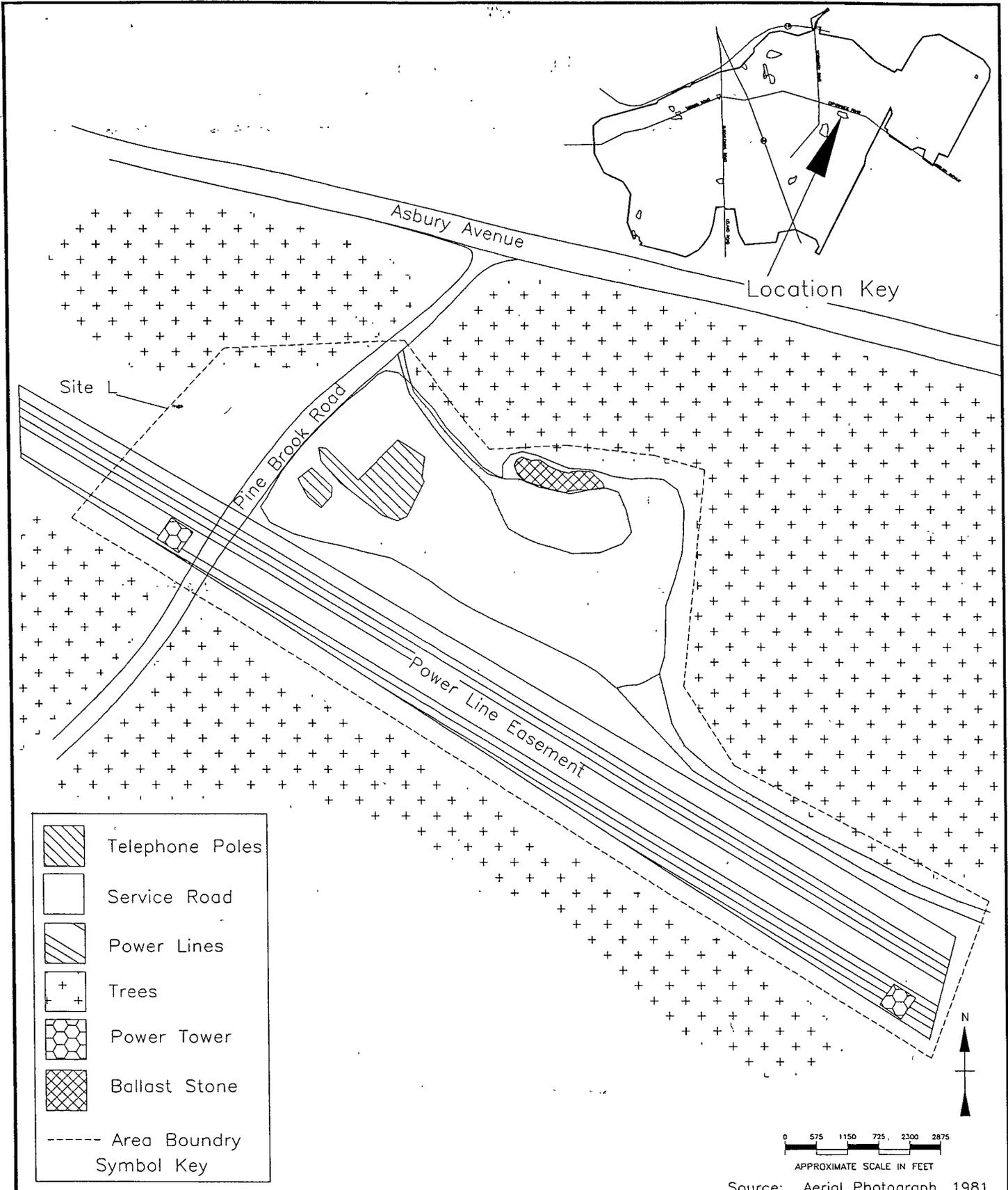


Figure 7 -  
Site L - MSC Van Parking Lot



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
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- ◆ 1961: "Disturbed ground; dark-toned linear objects; probable dark-toned stains; light-toned mounded material." *No photograph available.*
- ◆ 1963: *General storage, telephone poles are obvious.*
- ◆ 1974: "Light-through dark-toned material." *No photograph available.*
- ◆ 1981: "Open storage: linear objects; medium- and dark-toned mounded material; graded area; probable debris." *Linear objects are clearly telephone poles. Mounded materials are railroad ballast stone. The northeast section of the area appears cleared because it has been accessed by heavy equipment; no debris noted.*
- ◆ 1987: "Open storage with linear objects; ground scars; possible dark stains." *No photograph available.*

Conclusions. This area has been used as a general storage area since at least 1953. Items stored include telephone poles, railroad ballast stone, ordnance containers, and electronic equipment.

Recommendations. Because there are no reports or visual evidence of hazardous material operations, no further work under the Installation Restoration program is recommended.

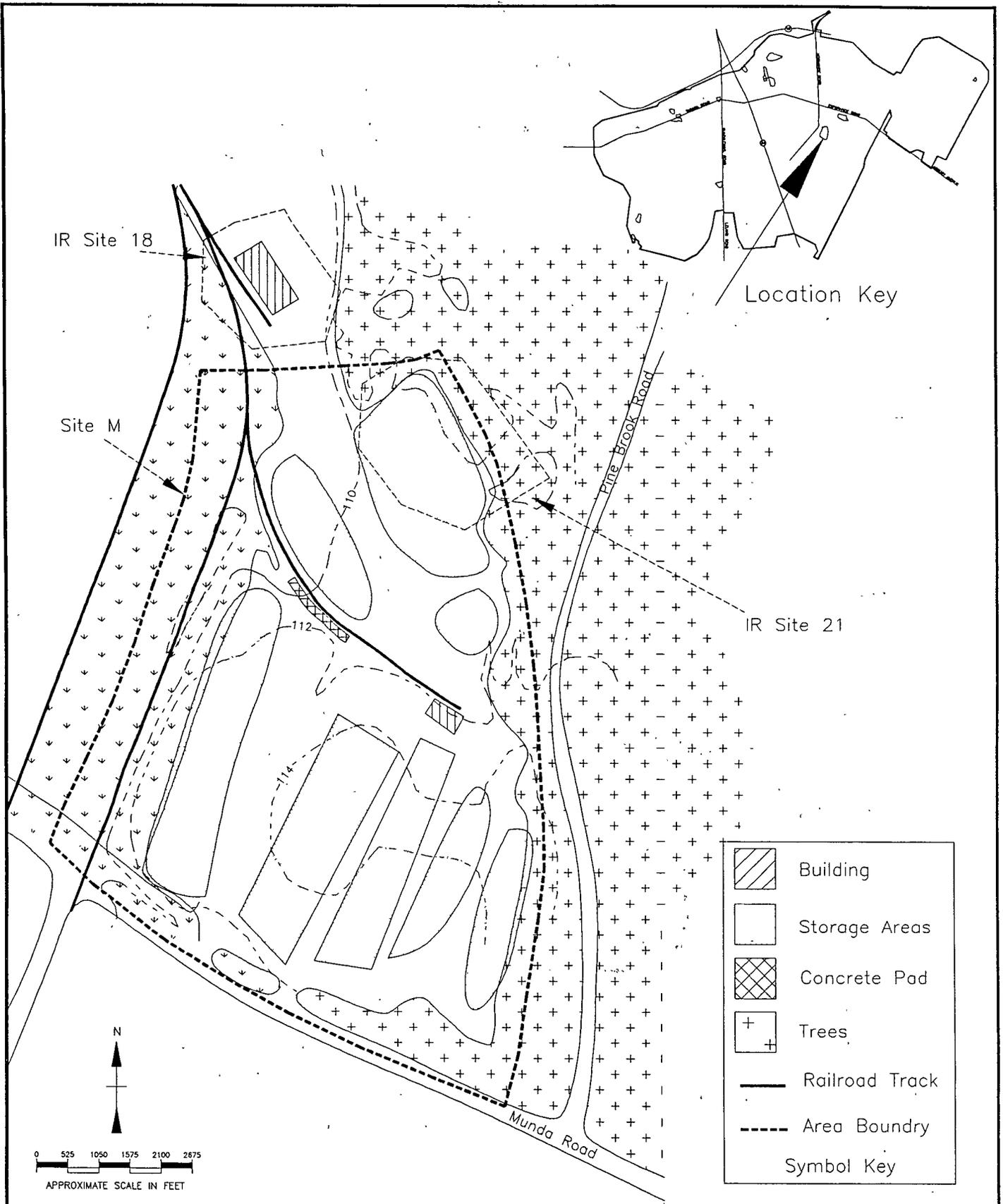
### 2.13 Site M - Demil Furnace Area.

This area is 11.6 acres and is located just north of Munda Road, just west of Pine Brook Road, and just south of IR Site 18 as shown in Figure 8. This area includes IR Site 21, the Baghouse and Cyclone Dust Storage Area. The remaining portion is primarily used for storage of trailer vans, weapon containers, metal ammunition cans, inert weapons, empty rocket containers, scrap metal, metal tank traps, vehicles, and miscellaneous equipment.

Aerial photograph analysis:

- ◆ 1953: "Open storage; stacked objects; dark-toned staining." *No photograph available.*
- ◆ 1961: "Open storage; stacked objects; classification bins; dark-toned stains." *The photograph reveals this area was used for extensive storage, though the photograph is not clear enough to distinguish stored items. Several areas in the photograph appear as dark-toned; reportedly these areas were covered with cinders to prevent trucks from getting stuck. Staged containers of baghouse and cyclone dust material appear stored in the northeast corner; this area is designated as IR Site 21. Dark-toned stains along railroad tracks are from cinders.*
- ◆ 1963: *Stereo view reveals an extensive amount of stored material.*
- ◆ 1974: "Buildings; open storage; variety of objects; stacked materials; crates; mounded debris." *No photograph available.*
- ◆ 1981: "Buildings; open storage; variety of objects; stacked material; crates; probable drums." *It appears that most of the stored items have been removed; a few containers remain along the east edge and in the center of the area. Vegetation replaces stored items along the west edge of the area. Drums used to store baghouse material appear in the upper northeast section of the area; this area is designated as IR Site 21.*
- ◆ 1987: "Building; graded area; dark stains; open storage; containers and objects." *No photograph available.*

Currently the area is used for extensive storage of ordnance-related storage containers. A permitted hazardous waste storage area is located within this area. The storage facility was permitted by the state of New Jersey September 6, 1990.



Source: Aerial Photograph, 1981

Figure 8 -  
Site M - Demil Furnace Area



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

Conclusions. This area has been used for extensive storage of ordnance-related storage containers. The northeast portion of this area is IR Site 21.

Recommendations. This area was reported to store empty ordnance related items, therefore no further work under the Installation Restoration program is recommended.

#### 2.14 Site N - Storage Area.

This area is approximately 4.7 acres and is located northwest of the intersection of Guadalcanal Road and Midway Road as shown in Figure 9. The eastern portion of this area contains two buildings, Building HA-3 used for ordnance storage and Building S-31 used for ordnance transfer. The western portion of this area has been used for trailer parking and in 1981 for the stockpiling of soil from the construction of the nearby M-group bunkers. The stockpiled soil has been removed.

Aerial photograph analysis:

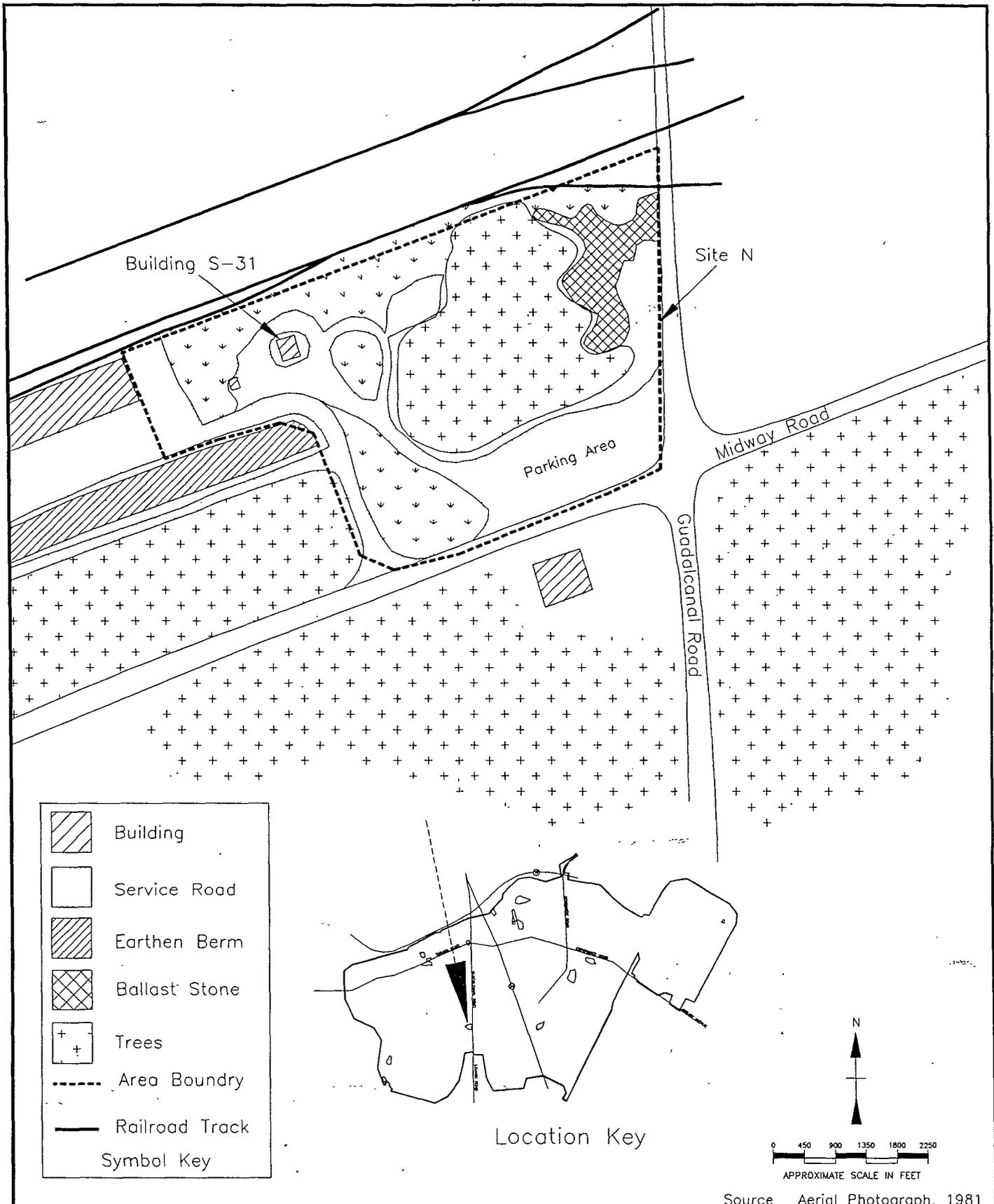
- ◆ 1953: "Buildings; possible dark-toned stain; drainage ditch; cleared area." *No photograph available.*
- ◆ 1961: "Buildings; fill area; dark-toned areas; standing liquid." *The foundation for Building HA-3 appears near the center of the area. Dark areas are probably from stone fill laid down to provide support for vehicles. The standing liquid appears to be vegetation.*
- ◆ 1974: "Buildings; ground scarring; open storage; medium- and dark-toned stacked objects; revegetation." *No photograph available.*
- ◆ 1981: "Buildings; probable disposal; light-toned mounded material; trailers; open storage; dark-toned objects." *Part of the area is cleared, probably by heavy vehicles that transport ordnance. The light-toned mounded material is soil from the construction of M-group bunkers to the east. Trailers are flatbeds used in the transportation of ordnance. No open storage is noted; the dark-toned objects appear to be trees.*
- ◆ 1987: "Graded surface; bermed areas have been removed." *No photograph available.*

Conclusions. This area contains two buildings used in the transportation and storage of ordnance. Trucks use the southeast portion of the area to turn around. Excavated soil from nearby construction was placed in the eastern portion of the area. There were no reports of disposal activities in this area.

Recommendations. Because there is no evidence or reports of hazardous material operations in this area, no further work under the Installation Restoration program is recommended.

#### 2.15 Site 0 - Borrow Pit.

This area is approximately 6.2 acres and is located just west of Oran Road opposite Building E-14 as shown in Figure 10. Reportedly this area was originally cleared in 1947. At that time material was excavated and used in the construction of roads and railroad track. Reportedly because of poor soil conditions, this area remained undervegetated until the late 1960s when varieties of grasses were planted to feed local wildlife. This area currently has a full stand of trees.



Source Aerial Photograph, 1981

Figure 9 -  
Site N - Storage Area



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

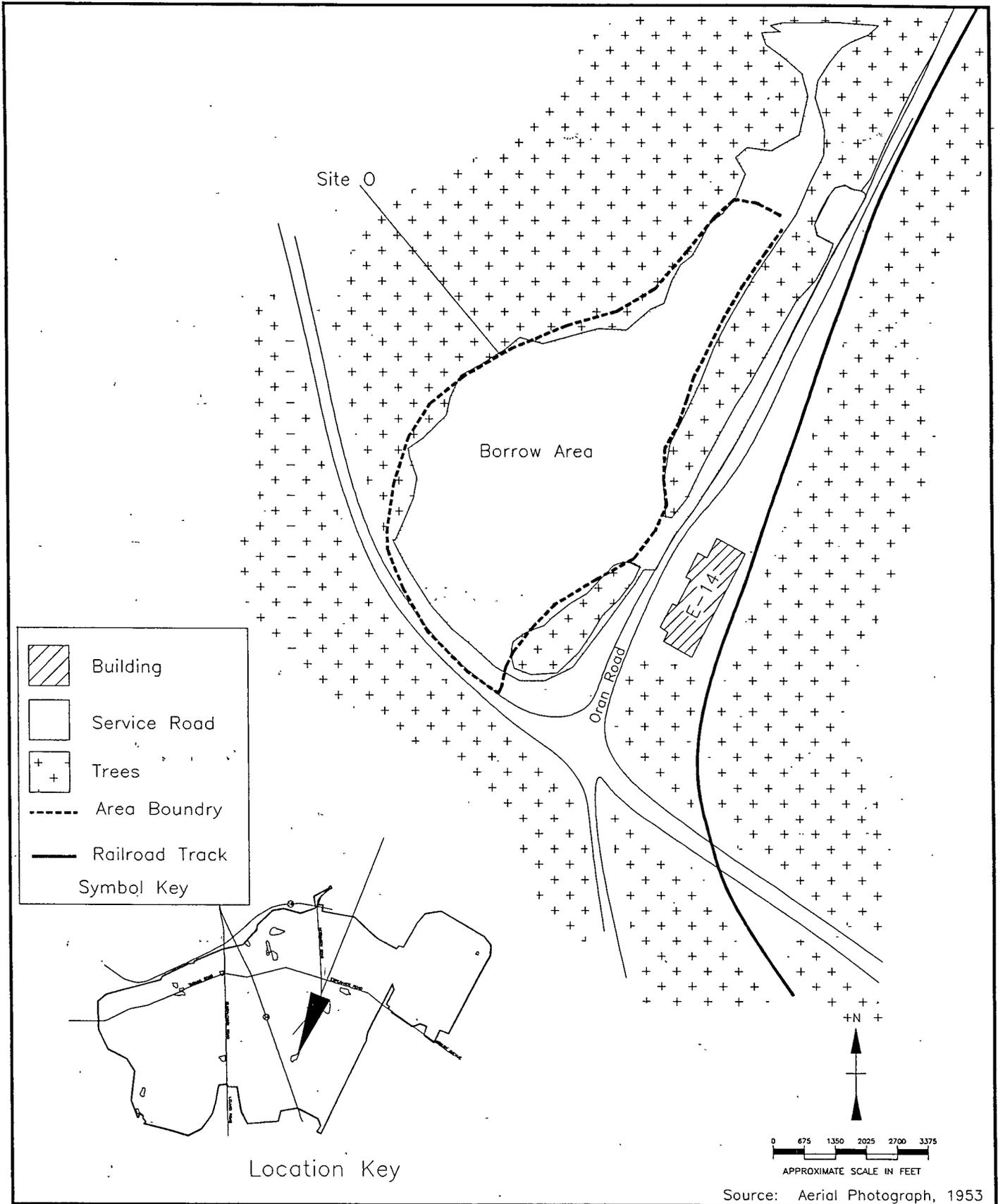


Figure 10 -  
Site 0 - Borrow Pit



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

## Aerial photograph analysis:

- ♦ 1947: *This area along with many other areas, appears cleared; material was probably borrowed to build adjacent structures or roadways.*
- ♦ 1953: *"Fill area; light- and medium-toned material." The area appears unchanged from the 1947 photograph except for the addition of vegetation in the center of the area.*
- ♦ 1963: *Stereo view reveals a stand of trees and grass; there are no signs activity in this area.*
- ♦ 1961/1974/1981/1987: *"Revegetated." No photograph available.*

Conclusions. This area was reportedly used for borrow material during construction of NWS Earle in 1947. It was planted in the late 1960s to provide food for local wildlife. There are no reports or evidence of hazardous material disposal.

Recommendations. No further work under the Installation Restoration program is recommended.

### 2.16 Site P - Abandoned Bunkers.

This area is 6.5 acres and is located adjacent to the perimeter road at the extreme southwestern part of the station as shown in Figure 11. This area was first developed as farmland prior to NWS Earle. No records were found regarding the construction or use of this area.

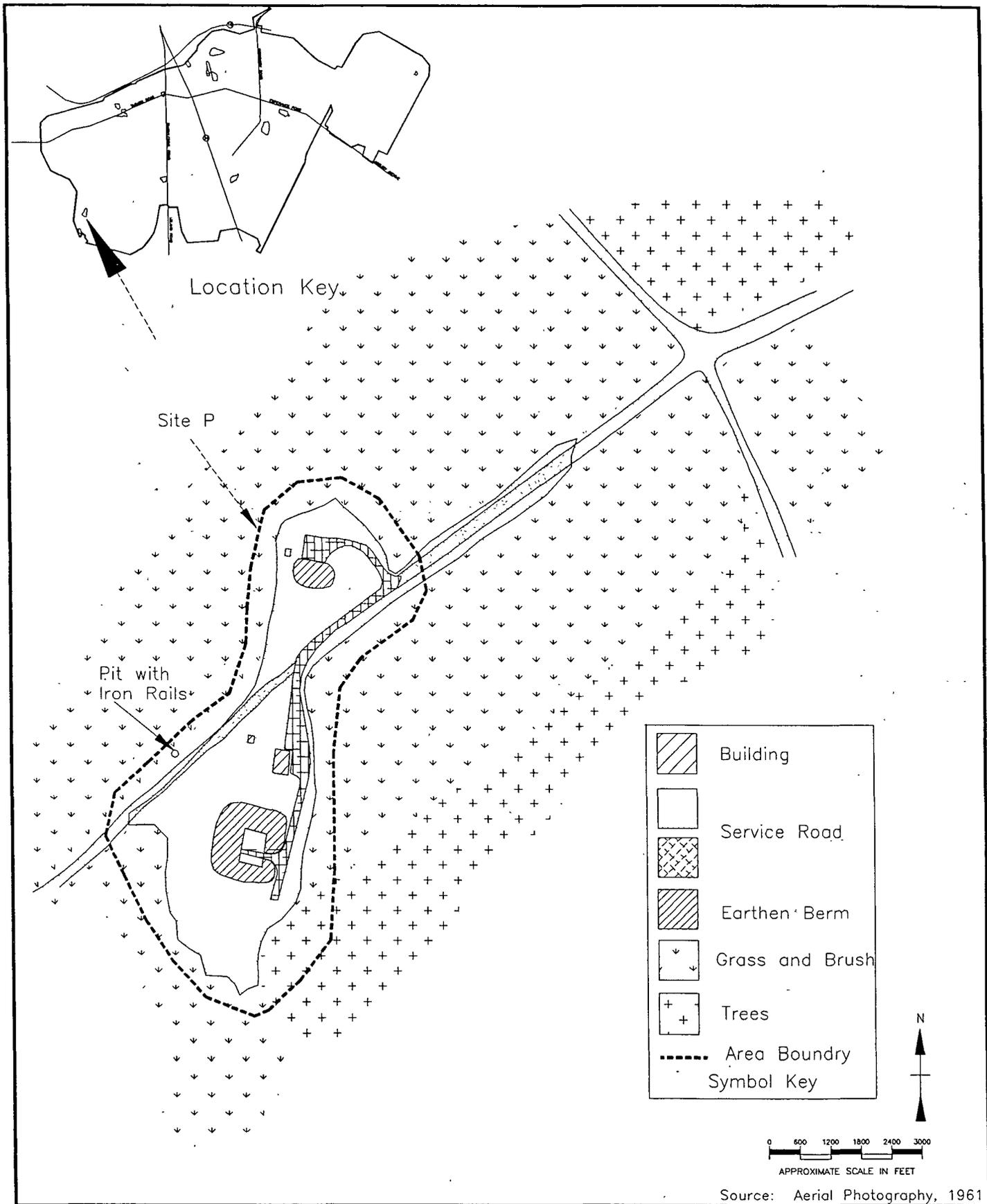
The layout of the structures in this area consists of two bunkers. One bunker consists of three walls of piled gravel; the other consists of one wall of piled gravel. There are three concrete pads; one large pad once supported some type of building and the other two smaller pads probably supported electrical distribution equipment. Directly west of the large pad is a pit approximately 10 feet square covered with small gauge railroad rails and a metal grate.

The area reportedly was used from 1961 until 1965 by the Explosive Ordnance Detachment (EOD) for the destruction of ordnance. The EOD discontinued use of this area because local residents complained of excessive noise. The Commander in charge of this EOD detachment in 1964 was contacted, but stated that this area was not used by the EOD.

There are several facts about this area:

- 1) These structures were reported built in 1961 and abandoned in 1965, but the trees growing through the southern bunker are approximately 25 to 30 years old according to the station forester. Which indicates that the structure may have been abandoned between 1962 and 1967.
- 2) The layout of the southern bunker is not typical for EOD purposes; the walls of the bunker are designed to focus a blast upward, not protect personnel from a blast outside of the bunker.
- 3) If the southern bunker was used for ordnance disposal, some type physical damage to the interior of the bunker should be evident; none was observed.

The pit with the railroad rails possibly appears in the 1947 aerial photograph as the center of a large circular cleared area. This pit was probably not associated with the bunkers because the White Pines planted in rows in 1961 appear all around the pit, suggesting that it was not used at the time the bunkers were constructed.



Source: Aerial Photography, 1961

Figure 11 —  
Site P — Abandoned Bunkers



PRELIMINARY ASSESSMENT  
Naval Weapons Station Earle  
Colts Neck, New Jersey

Aerial photograph analysis:

- ◆ 1947: *The area was cleared, an apparently perfect circular area was cleared which nearly encompasses the current structures. This circular area appears to be centered on the pit covered with railroad rails.*
- ◆ 1953: *"Cleared area; disturbed ground." No photograph available.*
- ◆ 1961: *"Demilitarization area; one area bermed on four sides; building; a second bermed on one side." The photograph reveals two bermed areas, one building between, and two smaller buildings.*
- ◆ 1963: *Stereo view reveals similar layout to the 1961 photograph and that gravel was laid down on the road leading to the berms and into the southern berm.*
- ◆ 1974/1981: *"Demilitarization area; one area bermed on four sides; building; a second area bermed on one side; revegetation." No photograph available.*
- ◆ 1987: *"Graded surface; berms have been removed." No photograph available.*

Currently the berms remain, but are overgrown with vegetation and not used.

Conclusions. The structures in this area were built to contain an ordnance blast, but it appears from inspection that no blast or demolition ever occurred. These structures were probably used for a short period of time for the disassembly of live ordnance. This would explain the lack of damage to the bunkers.

Recommendations. Because there was no evidence that ordnance demolition occurred in this area, no further work under the Installation Restoration program is recommended.

### 2.17 Site Q - Military Sealift Command - Maritime Administration Training Fire Fighting School.

This area is 5.5 acres and is located outside the station perimeter fence in the extreme southwestern area as shown in Figure 12. This area is a Fire Training School which was built in 1975 on NWS Earle property by the Military Sealift Command. The school is used by the Merchant Marines, U.S. Navy, Monmouth County, New Jersey State Police, and others. The facility is operated by the Military Sealift Command, which reports having all necessary operating permits and is inspected by the New Jersey Department of Environment. The operation is equipped with an oil-water separator and retention pond. The Military Sealift Command has obtained a NJNPDES permit for disposal of water from the oil-water separator to the pond. This permit requires regular monitoring of the pond and sets discharge limits.

Aerial photograph analysis:

- ◆ 1953/1961/1974: *"Pre-site; wooded area." No photographs available.*
- ◆ 1981: *"Horizontal tanks; open storage; dark stains; impoundment; structure centrally located on a concrete pad." The tanks were used in fire fighting training; the dark stains appear to be shadows cast by the training structure which is over 100 feet tall.*
- ◆ 1987: No coverage.

Conclusions. This area was developed in 1975 by the Military Sealift Command as a fire training facility.

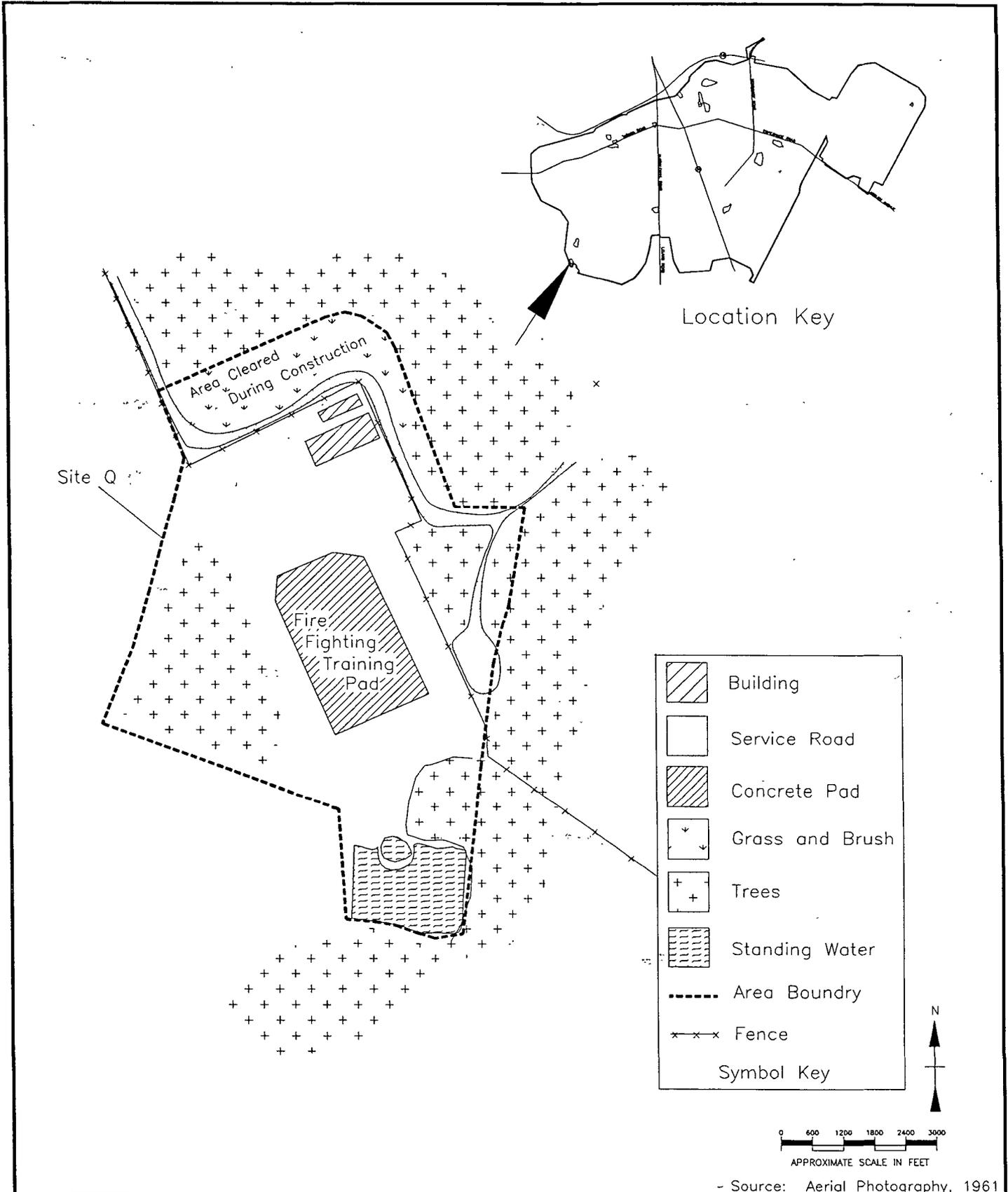


Figure 12 -  
Site Q - Fire Training

Recommendations. No further work under the Installation Restoration program is recommended. However, because the area is located on station property, NWS Earle personnel should ensure that the Military Sealift Command is complying with state and federal regulations.

#### REFERENCES

BCM Engineers. Environmental Assessment, BCM Project No. 00-4067-15. BCM Engineers, Burlington, NJ, 1991

Environmental Photographic Interpretation Center (EPIC). Site Analysis Earle Ammunition Depot: Main Base Area Colts Neck, New Jersey, U.S. Environmental Protection Agency, 1991.

Hawley, Gessner. The Condensed Chemical Dictionary. 10th ed./rev. by Gessner Hawley, 1981.

Naval Energy and Environmental Support Activity (NEESA). Initial Assessment Study of Naval Weapons Station Earle, Colts Neck, New Jersey. NEESA 13-020, 1983.

Appendix A



TABLE 5  
ANALYTICAL RESULTS FOR SOIL SAMPLES  
ENVIRONMENTAL ASSESSMENT OF 12 ACRE SITE  
MAYAL WEAPONS STATION - EARLE  
COLTS NECK, NEW JERSEY

SAMPLING LOCATION:		S-1	S-1D	S-2	S-3	S-4
SAMPLING DATE:		06/14/91	06/14/91	06/14/91	06/14/91	06/14/91
BCM SAMPLE NUMBER:		118698	118699	118700	118701	118702
<b>BASE/NEUTRAL ORGANICS:</b>						
Anthracene	ug/kg	NT	NT	--	89.0 J	--
*Benzo(a)anthracene	ug/kg	NT	NT	--	250.0 J	--
*Benzo(b)pyren	ug/kg	NT	NT	--	94.0 J	--
*Benzo(b)fluoranthene	ug/kg	NT	NT	--	300.0 J	--
*Benzo(k)fluoranthene	ug/kg	NT	NT	--	270.0 J	--
*Chrysene	ug/kg	NT	NT	--	510.0	--
Fluoranthene	ug/kg	NT	NT	--	880.0	--
Phenanthrene	ug/kg	NT	NT	--	250.0 J	--
Pyrene	ug/kg	NT	NT	--	650.0	--
Total Base/Neutral Organics	ug/kg	NT	NT	--	3293.0	--
<b>PHYSICAL PROPERTIES:</b>						
Total Solids	%	91.0	90.2	89.1	86.8	94.3
<b>HERBICIDES:</b>						
2,4,5-T	ug/kg	8.9	--	NT	NT	NT
2,4,5-TP	ug/kg	6.3	--	NT	NT	NT
2,4-D	ug/kg	18.9	--	NT	NT	NT
<b>VOLATILE ORGANICS:</b>						
Methylene Chloride	ug/kg	NT	NT	5.0 J	8.0	3.0 JB
Toluene	ug/kg	NT	NT	27.0	24.0	--
Total Volatile Organics	ug/kg	NT	NT	32.0	32.0	3.0

\* : POTENTIAL CARCINOGEN  
 -- : NONE DETECTED.  
 B : COMPOUND ALSO PRESENT IN METHOD BLANK.  
 J : ESTIMATED CONCENTRATION BE DETECTION LIMIT  
 NT : NOT TESTED AS PART OF THIS STUDY.

TABLE 5  
ANALYTICAL RESULTS FOR SOIL SAMPLES  
ENVIRONMENTAL ASSESSMENT OF 12 ACRE SITE  
NAVAL WEAPONS STATION--EARLE  
COLTS NECK, NEW JERSEY

SAMPLING LOCATION:	S-5	S-6	S-7	S-1	S-8
SAMPLING DATE:	06/14/91	06/14/91	06/14/91	06/14/91	06/14/91
BCM SAMPLE NUMBER:	118703	118704	118705	118706	118707
<b>BASE/NEUTRAL ORGANICS:</b>					
Benzo(a)anthracene	ug/kg	50.0 J	--	NT	--
Benzo(b)fluoranthene	ug/kg	95.0 J	--	NT	--
Benzo(k)fluoranthene	ug/kg	76.0 J	--	NT	--
Chrysene	ug/kg	210.0 J	--	NT	--
Fluoranthene	ug/kg	410.0	86.0 J	NT	--
Phenanthrene	ug/kg	160.0 J	--	NT	--
Pyrene	ug/kg	290.0 J	64.0 J	NT	--
Total Base/Neutral Organic	ug/kg	1291.0	150.0	NT	--
<b>PHYSICAL PROPERTIES:</b>					
Total Solids	%	89.6	86.2	88.5	89.6
<b>METALS:</b>					
Arsenic	ng/kg	NT	4.72	7.21	7.2
Beryllium	ng/kg	NT	--	0.420	0.11
Chromium	ng/kg	NT	8.24	48.4	44.1
Copper	ng/kg	NT	24.6	14.1	15.1
Lead	ng/kg	NT	13.1	14.1	13.1
Nickel	ng/kg	NT	10.4	3.92	3.2
Selenium	ng/kg	NT	1.01	1.08	0.89
Zinc	ng/kg	NT	15.8	19.1	19.1
<b>VOLATILE ORGANICS:</b>					
Ethylene Chloride	ug/kg	--	NT	NT	6.0 B
Total Volatile Organics	ug/kg	--	NT	NT	6.0

\* : POTENTIAL CARCINOGENE  
 -- : NONE DETECTED.  
 B : COMPOUND ALSO PRESENT IN METHANOL BLANK.  
 J : ESTIMATED CONCENTRATION BELOW DETECTION LIMIT  
 NT : NOT TESTED AS PART OF THIS STUDY

TABLE 5

ANALYTICAL RESULTS FOR SOIL SAMPLES  
 ENVIRONMENTAL ASSESSMENT OF 12 ACRE SITE  
 NAVAL WEAPONS STATION--EARLE  
 COLTS NECK, NEW JERSEY

PAGE 3 OF 3

SAMPLING LOCATION:	S-9	S-90
SAMPLING DATE:	06/14/91	06/14/91
BCM SAMPLE NUMBER:	118708	118709
<b>BASE/NEUTRAL ORGANICS:</b>		
Butylbenzylphthalate	ug/kg 260.0 J	170.0 J
Fluoranthene	ug/kg --	64.0 J
Pyrene	ug/kg --	230.0 J
bis(2 Ethylhexyl)phthalate	ug/kg 300.0 J	280.0 J
Total Base/Neutral Organics	ug/kg 560.0	744.0
<b>PHYSICAL PROPERTIES:</b>		
Total Solids	% 90.4	90.4
<b>VOLATILE ORGANICS:</b>		
Methylene Chloride	ug/kg 6.0 B	10.0 B
Toluene	ug/kg 3.0 J	3.0 J
Total Volatile Organics	ug/kg 9.0	13.0

-- : NONE DETECTED.

B : COMPOUND ALSO PRESENT IN METHOD BLANK.

J : ESTIMATED CONCENTRATION BELOW DETECTION LIMIT

Source: BCM Engineers, Inc. (BCM Project No. 00-4067-15)

TABLE 6

ANALYTICAL RESULTS FOR QUALITY CONTROL/QUALITY ASSURANCE SAMPLES

ENVIRONMENTAL ASSESSMENT OF 12 ACRE SITE  
NAVAL WEAPONS STATION--EARLE  
COLTS NECK, NEW JERSEY

SAMPLING LOCATION:		TRIP BLANK		FIELD BLANK
SAMPLING DATE:		06/13/91		06/14/91
BCM SAMPLE NUMBER:		118710		118711
<b>BASE/NEUTRAL ORGANICS:</b>				
bis(2-Chloroethyl)ether	ug/l	NT		1.0 J
Total Base/Neutral Organics	ug/l	NT		1.0
<b>METALS:</b>				
Zinc	ug/l	NT		0.200
<b>HERBICIDES:</b>				
2,4,5-T	ug/kg	NT		1.2
<b>VOLATILE ORGANICS:</b>				
Methylene Chloride	ug/l	2.0 JB		3.0 JB
Toluene	ug/l	--		1.0 J
Total Volatile Organics	ug/l	2.0		4.0
--	NONE DETECTED.			
B	COMPOUND ALSO PRESENT IN METHOD BLANK.			
J	ESTIMATED CONCENTRATION BELOW DETECTION LIMIT			
NT	NOT TESTED AS PART OF THIS STUDY.			

Source BCM Engineers, Inc. (BCM Project No. 00-4267-15)

Appendix B



999 WEST VALLEY ROAD • WAYNE, PENNSYLVANIA 19087 • (215) 971-0900

March 27, 1992

Project Number 4367

Naval Facilities Engineering Command  
Northern Division Code 0232  
Building 77-L, United States Navy Yard  
Philadelphia, PA 19112-5094

Attention: Gerald Hoover, Remedial Project Manager

Reference: CLEAN Contract No. N62472-90-1298  
Contract Task Order (CTO) 55

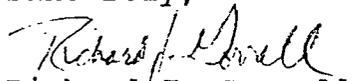
Subject: Transmittal of Sample Data Summary  
Soil Sampling and Analysis  
NWS Earle  
Colts Neck, New Jersey

Dear Mr. Hoover:

HALLIBURTON NUS Environmental Corporation is pleased to submit the enclosed Sample Data Summary Table for the soil sampling and analysis conducted at NWS Earle on March 10, 1992. Please keep in mind that the data presented in the table is preliminary in that the data validation described in our proposal has not been conducted.

Please contact me (215-971-0900) if you have questions regarding the table format and/or the data in general.

Sincerely,

  
Richard J. Gorrell  
Project Manager

cc: J. Trepanowski, P.E. (HALLIBURTON NUS)

OFF NAME: Naval Weapons Station-Earle  
 DD NUMBER: P3-  
 LAB NAMES: Ortel

SAMPLING DATE(s): 3/10/92  
 CASE NUMBER: CTOSS  
 STATE/COUNTY CODE:  
 EPA NUMBER:

PRELIMINARY DATA, NOT VALIDATED

SAMPLE NUMBER:	BB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
SAMPLE ID:	E-BB-0310	E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS1-0612	E-SS10-0612	E-SS11-0612	E-SS12-0612	E-SS12D-0612	E-SS13-0612	E-SS2-0612	E-SS3-0612
LOCATION:	rinsate blank	soil at 6in. child play area	soil at 12 inches, rail siding area	soil at 12 inches, child play area,	soil at 12 inches, child play area	soil at 12 inches, child play area	duplicate of SS-12	soil at 12 inches, child play area,	soil at 12 inches, rail siding area	soil at 12 inches, rail siding area			
PB:		full scan 8.3	full scan 5.3	full scan 8.1	full scan 8.4	PCBs only 4.7	full scan 6.2	full scan 7.5	full scan 7.1	full scan 7.3	full scan 6.9	PCBs only 4.7	PCBs only 4.6
FIELD MEASUREMENTS:													
PERCENT SOLIDS:		89.6%	93.0%	85.0%	87.0%	91.0%	91.5%	94.0%	89.7%	90.0%	87.1%	93.0%	89.0%
TYPE OF DATA: *****	VOLATILES	*****											
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ST. LIMIT	SAMPLE NUMBER:	BB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
RQL (≠IDL)	UNITS:	ug/l	ug/kg	ug/kg	ug/kg	ug/kg	n/a	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	n/a	n/a
5.00	methylene chloride	7.00 J	8.00 J	36.00	8.00 J	10.00 J		7.00 J	7.00 J	6.00 J	7.00 J			28.00
10.00	acetone	26.00												
5.00	carbon disulfide	17.00												
5.00	1,1,1-trichloroethane		6.00 J	28.00	6.00 J	4.00 J		3.00 J	2.00 J					36.00
5.00	benzene	5.00 J		21.00				3.00 J	5.00 J	3.00 J	4.00 J			
5.00	tetrachloroethene		2.00 J	16.00		3.00 J								13.00
5.00	toluene		13.00	29.00	10.00 J	15.00								53.00
5.00	ethylbenzene		1.00 J	4.00 J		2.00 J								5.00 J
5.00	total xylenes		7.00 J	22.00	6.00 J	11.00 J								28.00
TYPE OF DATA: *****	SEMIVOLATILES	*****												
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ST. LIMIT	SAMPLE NUMBER:	BB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
RQL (≠IDL)	UNITS:	ug/l	ug/kg	ug/kg	ug/kg	ug/kg	n/a	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	n/a	n/a
10.00	diethyl phthalate	2.00 J												
10.00	fluorene					48.00 J								
10.00	phenanthrene					580.00								
10.00	anthracene					83.00 J								
10.00	fluoranthene			49.00 J		1700.00						110.00 J		
10.00	pyrene				51.00 J	1800.00								
10.00	benzo(a)anthracene					130.00								
10.00	chrysene					600.00								
10.00	bis(2-ethylhexyl) phthalate				120.00 J	170.00 J			160.00 J		100.00 J		87.00 J	
10.00	benzo(b)fluoranthene					1000.00								
10.00	benzo(a)pyrene					450.00								
10.00	indeno(1,2,3-cd)pyrene					140.00 J								
10.00	benzo(g,h,i)perylene					71.00 J								
TYPE OF DATA: *****	PESTICIDES	*****												
DILUTION FACTOR:		1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ST. LIMIT	SAMPLE NUMBER:	BB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
RQL (≠IDL)	UNITS:	ug/l	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
0.05	delta-BHC										0.27 J		1.30 J	
0.05	heptachlor				1.40 J	1.40 J								
0.05	aldrin								0.85 J					
0.05	heptachlor epoxide				1.60 J									
0.05	endosulfan I					0.60 J								
0.10	1,1'-DDE		2.10 J		33.00	0.16 J							33.00	
0.10	endrin				13.00									
0.10	endosulfan II		0.42 J					2.20 J						

Comments: \*\*\*\*\*

ITE NAME: Naval Weapons Station-Ortek  
 DD NUMBER: P3-  
 AB NAMES: Ortek

SAMPLING DATE(s): 3/10/92  
 CASE NUMBER: C7055

STATE/COUNTY CODE:  
 EPA NUMBER:

PRELIMINARY DATA, NOT VALIDATED

SAMPLE NUMBER:	RB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
SAMPLE ID:	E-RB-0310	E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS1-0612	E-SS10-0612	E-SS11-0612	E-SS12-0612	E-SS12D-0612	E-SS13-0612	E-SS2-0612	E-SS3-0612
LOCATION:	rinstate blank	soil at 6in. child play area full scan	soil at 12 inches,rail siding area PCBs only	soil at 12 inches,child play area, full scan	soil at 12 inches,child play area full scan	soil at 12 inches,child play area full scan	duplicate of SS-12	soil at 12 inches,child play area, full scan	soil at 12 inches, rail siding area PCBs only	soil at 12 inches, rail siding area PCBs only			
PH:		8.3	5.3	8.1	8.4	4.7	6.2	7.5	7.1	7.3	6.9	4.7	4.6
FIELD MEASUREMENTS:													
PERCENT SOLIDS:		89.6%	93.0%	85.0%	87.0%	91.0%	91.5%	94.0%	89.7%	90.0%	87.1%	93.0%	89.0%
TYPE OF DATA: ***** PESTICIDES *****													
DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ST. LIMIT	SAMPLE NUMBER:	RB	S-10	S-11	S-12	S-13	SS-1	SS-10	SS-11	SS-12	SS-12D	SS-13	SS-2	SS-3
200 (±10%)	UNITS:	ug/l	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
0.10 4,4'-DDD			3.90		47.00	0.96 J						9.50		
0.10 endosulfan sulfate										0.30 J				
0.10 4,4'-DDT			1.40 J		12.00	0.32 J				0.38 J		12.00		
0.50 methoxychlor				0.22 J										
0.50 alpha chlordane			0.39 J		2.80	0.60 J						0.31 J		
0.50 gamma chlordane					3.10	0.91 J						0.58 J		

Comments: \*\*\*\*\*

WPC NAME: Naval Weapons Station-Ortel  
 DD NUMBER: P3-  
 LAB NAMES: Ortel

SAMPLING DATE(s): 3/10/92  
 CASE NUMBER: C7055

STATE/COUNTY CODE:  
 EPA NUMBER:

PRELIMINARY DATA, NOT VALIDATED

SAMPLE NUMBER:	RB	S-10	S-11	S-12	S-13	SS-10	SS-11	SS-12	SS-12D	SS-13
SAMPLE ID:	E-RB-0310	E-S10-0006	E-S11-0006	E-S12-0006	E-S13-0006	E-SS10-0612	E-SS11-0612	E-SS12-0612	E-SS12D-0612	E-SS13-0612
LOCATION:	rinsate blank	soil at 6in. child play area full scan	soil at 12 inches,child play area, full scan	soil at 12 inches,child play area full scan	soil at 12 inches,child play area full scan	duplicate of SS-12	soil at 12 inches,child play area, full scan			
PH:		8.3	5.3	8.1	8.4	6.2	7.5	7.1	7.3	6.9
FIELD MEASUREMENTS:										
PERCENT SOLIDS:		89.6%	93.0%	85.0%	87.0%	91.5%	94.0%	89.7%	90.0%	87.1%
TYPE OF DATA: *****	INORGANICS	*****								
DILUTION FACTOR:	: GFAA	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	: ICP	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	: Hg	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000
	: CR	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000

DET. LIMIT	SAMPLE NUMBER:	RB	S-10	S-11	S-12	S-13	SS-10	SS-11	SS-12	SS-12D	SS-13
REQ (#=IDL)	UNITS:	ug/l	ug/kg								
200.00	aluminum		3960.00	3330.00	11000.00	5050.00	3880.00	4140.00	3950.00	4220.00	3220.00
10.00	arsenic		9.10	11.20	15.20	13.60	12.20	12.60	9.00	8.90	10.50
200.00	barium		7.60	9.30	26.70	15.90	2.50	1.80	2.40	2.30	12.90
5.00	beryllium		0.46	0.43	0.55	0.46	0.42	0.49	0.35	0.40	0.54
5.00	cadmium					0.65					
5000.00	calcium	42.50	1340.00	202.00	8770.00	5820.00	422.00	25.20	799.00	765.00	985.00
10.00	chromium		50.40	49.40	64.90	46.40	61.20	58.30	50.00	53.20	35.00
50.00	cobalt			2.10	12.00	1.80		0.85		1.20	2.50
25.00	copper		3.20	13.80	61.20	4.60	1.10	1.90	2.30	2.60	22.10
100.00	iron	42.00	12600.00	13800.00	30600.00	14600.00	14100.00	15100.00	11300.00	11800.00	13700.00
5.00	lead (anal. by GFAA)		23.50	4.20	4.50	10.10	3.80	5.30	4.10	3.30	12.50
5000.00	magnesium		851.00	676.00	8050.00	1460.00	816.00	789.00	821.00	897.00	834.00
15.00	manganese		19.50	20.50	200.00	55.60	2.30	2.70	5.40	5.30	49.90
0.20	mercury		0.15		0.88						
40.00	nickel		2.00	4.50	25.90	4.40		2.40		1.90	5.90
5000.00	potassium		1910.00	1570.00	2400.00	1840.00	2390.00	2370.00	1850.00	2060.00	1370.00
5.00	selenium		0.35	0.58	0.63	0.35	0.30	0.40	0.29	0.24	1.90
5000.00	sodium	170.00	20.50	19.10	498.00	47.00	16.90	15.30	17.00	17.00	65.30
50.00	vanadium		35.80	40.00	63.40	33.60	44.90	50.00	31.30	31.60	28.80
20.00	zinc	6.00	16.00	20.10	57.70	32.50	10.90	11.10	9.30	9.80	13.10
10.00	cyanide				0.35						0.37

Comments: \*\*\*\*\*

ICC NAME: Naval Weapons Station Earle  
 DD NUMBER: P3-  
 AB NAMES: Ortek

SAMPLING DATE(S): 8/10/98  
 COUNTY CODE:  
 CASE NUMBER: C7055  
 EPA NUMBER:

SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
SAMPLE ID:	E-SS4-0612	E-SS5-0612	E-SS6-0612	E-SS7-0612	E-SS8-0612	E-SS9-0612	E-TB-0310
LOCATION:	soil-12 inch rail siding area, VOAs & PCBs only	soil at 12 inches, rail siding area, PCBs only	soil at 12 inches, rail siding area, PCBs only	soil at 12 inches, rail siding area, PCBs only	soil at 12 inches, rail siding area, PCBs only	soil at 12 inches, rail siding area, PCBs only	trip blank VOAs only
PH:	5.2	4.9	4.5	4.9	4.8	6.4	
FIELD MEASUREMENTS:							
PERCENT SOLIDS:	90.0%	87.0%	91.0%	92.0%	94.0%	89.0%	
TYPE OF DATA: ***** VOLATILES	*****						
DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ET. LIMIT	SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
RQL (#=IDL)	UNITS:	ug/kg	n/a	n/a	n/a	n/a	n/a	ug/l
5.00 methylene chloride		8.00 J						170.00
10.00 acetone		73.00						8.00 J
5.00 carbon disulfide		9.00 J						
5.00 1,1,1-trichloroethane		7.00 J						2.00 J
5.00 benzene		5.00 J						
5.00 tetrachloroethene								
5.00 toluene		11.00 J						
5.00 ethylbenzene		130.00						
5.00 total xylenes		250.00						
TYPE OF DATA: ***** SEMI-VOLATILES	*****							
DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ET. LIMIT	SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
RQL (#=IDL)	UNITS:	n/a	n/a	n/a	n/a	n/a	n/a	n/a
10.00 diethyl phthalate								
10.00 fluorene								
10.00 phenanthrene								
10.00 anthracene								
10.00 fluoranthene								
10.00 pyrene								
10.00 benzo(a)anthracene								
10.00 chrysene								
10.00 bis(2-ethylhexyl) phthalate								
10.00 benzo(b)fluoranthene								
10.00 benzo(a)pyrene								
10.00 indeno(1,2,3-cd)pyrene								
10.00 benzo(g,h,i)perylene								
TYPE OF DATA: ***** PESTICIDES	*****							
DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ET. LIMIT	SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
RQL (#=IDL)	UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	n/a
0.05 delta-BHC								
0.05 heptachlor								
0.05 aldrin								
0.05 heptachlor epoxide								
0.05 endosulfan I								
0.10 4,4'-DDE								
0.10 endrin								
0.10 endosulfan II								
Comments: *****	*****							

11E NAME: Naval Weapons Station-Darle  
 DD NUMBER: F3-  
 AB NAMES: Ortek

SAMPLING DATE(s): 3/10/92  
 CASE NUMBER: CTO55  
 STATE/COUNTY CODE:  
 EPA NUMBER:

PRELIMINARY DATA, NOT VALIDATED

	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
SAMPLE ID:	E-SS4-0612	E-SS5-0612	E-SS6-0612	E-SS7-0612	E-SS8-0612	E-SS9-0612	E-TB-0310
LOCATION:	-soil-12 inch rail siding area, VOAs & PCBs only	soil at 12 inches, rail siding area, PCBs only	trip blank VOAs only				
PH:	5.2	4.9	4.5	4.9	4.8	6.4	
FIELD MEASUREMENTS:							
PERCENT SOLIDS:	90.0%	87.0%	91.0%	92.0%	94.0%	89.0%	
TYPE OF DATA: ***** PESTICIDES	*****						
DILUTION FACTOR:	1.0	1.0	1.0	1.0	1.0	1.0	1.0

ET. LIMIT	SAMPLE NUMBER:	SS-4	SS-5	SS-6	SS-7	SS-8	SS-9	TB
20L (±10L)	UNITS:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	n/a
		0.10 1,1'-DDD						
		0.10 endosulfan sulfate						
		0.10 1,1'-DDT						
		0.50 methoxychlor						
		0.50 alpha chlordane						
		0.50 gamma chlordane						



PROJECT NO.:		SITE NAME:				NO. OF CONTAINERS	ANALYTES							REMARKS
SAMPLERS (SIGNATURE):							PCB	PCB/PST	VOA	TAL	BNA's	GLYCOLIC		
STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION									
SS-1	7/16/05	11:55		X	E-SS1-0612	1	1							
SS-2	7/16/05	12:00		X	E-SS2-0612	1	1							
SS-3				X	E-SS3-0612	1	1							
SS-4				X	E-SS4-0612	2	1	1						
SS-5		11:55		X	E-SS5-0612	1	1							
SS-6		11:55		X	E-SS6-0612	1	1							
SS-7		12:00		X	E-SS7-0612	1	1							
SS-8		11:45		X	E-SS8-0612	1	1							
SS-9		12:05		X	E-SS9-0612	1	1							
S10		12:00		X	E-S10-0006	5	1	1	1	1	1			
SS-10		1:30		X	E-SS10-0612	5	1	1	1	1	1			
S11		11:45		X	E-S11-0006	5	1	1	1	1	1			
SS11		11:55		X	E-SS11-0612	15	3	3	3	3	3	DO MS/MSD		
S12				X	E-S12-0006	5	1	1	1	1	1			

RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
<i>[Signature]</i>	7/16/05 11:55				
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE/TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE):	DATE/TIME:	REMARKS:	
				Shipped Fed Exp # 3891126223 MESA Level 12	