DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FORT TOTTEN, QUEENS, NEW YORK
PROJECT NO. C02NY005700

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DEFENSE ENVIRONMENTAL RESTORATION PROGRAM
FINDINGS OF FACT AND DETERMINATION OF
DEPARTMENT OF DEFENSE RESPONSIBILITY
FORT TOTTEN, WILLETS POINT, NEW YORK
PROJECT NO. C02NY005700

## Findings of Fact

1. This project involves the demolition and removal of unwanted improvements located on land formerly used by the Department of Defense (DOD) for a military reservation. The project will encompass the following:

A. BUILDING DEMOLITION - Completely demolish and remove three buildings (#623, #624 and #625) and foundations (3,490 square feet total). Also, remove one boiler and asbestos insulation located in Building #625. Include capping of utilities, backfill and compaction. Prior to demolition and selection of disposal method, sampling of insulation used in Building #625 is necessary to determine the presence of asbestos.

B. MARINE BUILDING DEMOLITION - Completely demolish and remove Marine Buildings #606 and #607 (3,610 square feet total). Also remove pile foundation, independent of pier, under Building #606.

C. BUNKER DEMOLITION - Completely demolish and remove one Bunker, #619 (2,100 square feet total). Back and side walls will remain intact in order that they can continue to function as retaining walls. The foundation will also remain intact. Prior to demolition and selection of disposal method, sampling of leakage remaining from previously stored insecticides is necessary to determine the presence of DDT.

D. FUEL STORAGE TANK REMOVAL - Remove one 350 gallon fuel tank (volume estimated) located above grade behind Building #625. Include removal of concrete tank support on which the tank is located. Backfill and compact. Prior to removal and selection of disposal method, sampling of vicinity and remaining fuel in storage tanks will be necessary.

E. SITE GRADING AND SEEDING - Site grade and seed 650 square yards of area disturbed by demolition.

The structures proposed for demolition are considered to be unsightly and a hazard to the safety of the general public within the context of the property's designated use. The U.S. Coast Guard has plans to remove the dilapidated buildings and construct a housing development for Coast Guard personnel and their families.

2. Fort Totten which contains approximately 147 acres is situated on the south bank of the East River in the Borough of Queens, New York City. Audited records of the New York District indicate that the site for the military reservation now known as Fort Totten was purchased in three parts. The first purchase was a tract of 110 acres from George Irving by a deed dated 16 May 1857. The second tract of 26.35 acres was obtained from Henry Day by a deed dated 14 April 1863 and the final tract of 10.40 acres was purchased from Charles Meyer by a deed dated 29 March 1943.

3. Fort Totten was not used for military purposes until 1862, when the Engineer Agent Officer in New York City commenced the work of building the fortifications as approved by the Chief of Engineers. During the Civil War, a portion of the reservation was used as a recruit depot and temporary encampment for troops enroute to the front. In 1864, a general hospital was established, consisting of 37 wards and accommodating about 1500 patients. After the close of the Civil War, Fort Totten was made a Depot for Engineer stores and supplies. In 1873, the post at Willets Point was placed under the direct orders of the Chief of Engineers and was used as a Torpedo Training and Instruction Post for West Point Graduates. In 1885, the Engineer School of Application was established and continued until 1901, when the School was transferred to the Washington Barracks, District of Columbia. During World War I, Fort Totten was used, as in the Civil War, as a training camp for troops enroute to the front. During World War II, the Anti-Aircraft Command of the Eastern Defense Command was established here. Since 1 July 1967, Fort Totten has been a sub-installation of Fort Hamilton, Brooklyn, New York.

4. On 29 October 1968, 9.6 acres in fee were transferred to the Department of Transportation for use by the U.S. Coast Guard. On 24 November 1970, 45 acres in fee were transferred to the U.S. Department of Labor. On 23 March 1978, the Fort Totten Battery was determined eligible for the National Register as an example of military architecture used in the United States seacoast fortifications. The 45 acres transferred to the Department of Labor and used as a Job Corps facility were reported excess to the General Services Administration (GSA) in 1979. Disposal efforts by GSA of these 45 acres have been hampered as a result of (local) objections from the community as to how this property should be disposed of. As a result, GSA still remains as the disposal agency for the property. In the meantime, approximately 32 acres of the 45 acres are under permit to the Department of the Army for reserve training and recreational use. A portion of the said 32 acres is also occupied by the Eastern Paralyzed Veterans Association under a license from the Army, the current permittee, whose license was originated by GSA.

5. The majority of the site (92.4 acres) is still owned and used by the Department of the Army. GSA is currently handling 45 acres, however, they do not want any work done on their portion of the site. The balance of the site (9.6 acres) is owned by the U.S. Coast Guard. The majority of the U.S. Coast Guard's buildings are grouped along an axis bordering the waterfront located at the western boundary of the site. Buildings that are being utilized are #609 (Electrical Sub-station), #610 (Station Building), #611 (Galley, Mess and Engineering Shop), #612 (Boatswain Shop and Storage), #614 (Warehouse, currently empty), #615 (Coast Guard Reserve Unit and Warehouse), #620 (Four Family Housing), #621 (Garage), and #622 (subleased to ambulance corporation). The U.S. Coast Guard requested that the following buildings be demolished, #606 (Storage Building), #607 (Storage Building), #619 (Bunker), #623 (Storage Building), #624 (Storage Building) and #625 (Storage Building). There have been no intervening beneficial uses of the structures proposed for demolition. Possible DDT contamination exists in Building #619 due to leakage of DOD stored drums containing pesticides. When the drums began leaking they were removed, however, the leakage remained in the building. This building also contains a room in the eastern part of the building with no entrance or windows. The U.S. Coast Guard is very concerned that this room contains more hazardous waste. Buildings #623, #624 and #625

are almost 100 years old, yet they are in such poor condition that they are evaluated as being structures without historical significance. All of these buildings have been severely vandalized. One of the buildings, which is easily accessible, contains a boiler insulated with possible asbestos. The asbestos insulation is exposed to the atmosphere and is easily pryable. Buildings #606 and #607 are marine structures. Building #606 was formerly used as the Quartermasters Wharf Building and Building #607 was used as the Quartermaster Storage Shed. Building #606 was constructed on a pile foundation adjacent to the existing pier but independent of it. Building #607 was constructed on the existing pier. The pier is currently utilized by the Coast Guard. Live ordnance (three 16 inch shells and several live grenades) has been found on the site, however the property that the ordnance was discovered on is still DOD owned and is adjacent to U.S. Coast Guard property. Therefore, there is a possibility that ordnance could be buried on U.S. Coast Guard land.

No significant environmental impact is anticipated by project implementation. This will be determined through the preparation of an Environmental Assessment prior to commencement of work. An ongoing cultural resources evaluation is being prepared by the National Park Service. This report is addressing the potential for eligibility of the post to the National Register of Historic Places and the existence of any prehistoric sites. All six buildings being considered for demolition were evaluated for historical significance as part of normal Coast Guard facility review under the guidance of TM 5-801-1, Historic Preservation Administrative Procedures. While all of the buildings were constructed around the turn of the century, none were found to contribute to the historic value of this former military post. All are abandoned and severely deteriorated with many being vandalized.

The portion of Fort Totten used by the Coast Guard has had substantial ground disturbance as a result of facility construction. This has reduced archaeological potential by damaging or destroying any underground sites which may have been located there. Cultural Resource efforts are necessary in order to prepare a determination of no adverse effect in compliance with Section 106 of the National Historic Preservation Act.

6. The potential exists for a two-phased project at this site. A resolution of that question will depend upon subsequent investigation to determine if ordnance, mercury deposits and toxic and hazardous waste conditions exist.

## DETERMINATION

Based on the foregoing findings of fact, the present condition of the site as described above has been determined to be the result of a prior DOD ownership, utilization, or activity in connection therewith. Moreover, it is determined that an environmental restoration project, to the extent proposed or set out herein is an appropriate undertaking within the purview of the Defense Environmental Restoration Account for the reasons stated above.

_____
Date

_____
LLOYD A. DUSCHA, P.E.
Deputy Director
Directorate of Engineering
and Construction

# APPENDIX B

## SITE REPORT

SITE SURVEY SUMMARY SHEET
FOR
FORT TOTTEN, WILLETS POINT, NEW YORK
PROJECT NO. C02NY005700

SITE NAME: Fort Totten, Project No. C02NY005700

LOCATION: Willets Point, Queens County, New York

SITE HISTORY: Fort Totten contains approximately 147 acres of land. During colonial times, the area belonged to the Thorne family and was farmland for over two hundred years. In 1823 the land was purchased by Charles Willet and the land became known as "Willet Point." The site for the military reservation now known as Fort Totten was purchased in three parts. The first purchase was a tract of 100 acres from George Irving by a deed dated 16 May 1857. The second tract of 26.35 acres was obtained from Henry Day by a deed dated 14 April 1863 and the final tract of 10.40 acres was purchased from Charles Meyer by a deed dated 29 March 1943. Fort Totten was not used for military purposes until 1862, when the Engineer Agent Officer in New York City commenced the work of building the fortifications as approved by the Chief of Engineers. The plans for the fortifications were designed by Robert E. Lee. During the Civil War, a portion of the reservation was used as a recruit depot and temporary encampment for troops enroute to the front. In 1864, a general hospital was established, consisting of 37 wards and accommodating about 1500 patients. After the close of the Civil War, Fort Totten was made a Depot for Engineer stores and supplies. In 1873, the post at Willets Point was placed under the direct orders of the Chief of Engineers and was used as a Torpedo Training and Instruction Post for West Point Graduates. In 1885, the Engineer School of Application was established and continued until 1901, when the School was transferred to the Washington Barracks, District of Columbia. In 1898, a second set of fortifications was constructed during the Spanish-American War, and the fort was officially designated Fort Totten, in honor of Brigadier General Totten who supervised numerous engineering and defense projects. During World War I, Fort Totten was used, as in the Civil War, as a training camp for troops enroute to the front. During World War II, the Anti-Aircraft Command of the Eastern Defense Command was established here. Between 1945 and 1967 the fort was used as a hospital, army command base, air defense, garrison and missile defense installation. Since 1 July 1967, Fort Totten has been a sub-installation of Fort Hamilton, Brooklyn, New York. On 29 October 1968, 9.6 acres in fee were transferred to the Department of Transportation for use by the U.S. Coast Guard. On 24 November 1970, 45 acres in fee were transferred to the U.S. Department of Labor. On 23 March 1978, the Fort Totten Battery was determined eligible for the National Register as an example of military architecture used in the United States seacoast fortifications. The 45 acres transferred to the Department of Labor and used as a Job Corps facility was reported excess to the General Services Administration (GSA) in 1979. Disposal efforts by GSA of these 45 acres have been hampered as a result of (local) objections from the community as to how this property should be disposed of. As a result, GSA still remains as the disposal agency for the property. In the meantime, approximately 32 acres of the 45 acres are under permit to the Department of the Army for reserve training and recreational use. A portion of the said 32 acres is also occupied by the Eastern Paralyzed Veterans Association under a license from the Army, the current permittee, whose license was originated by GSA.

DESCRIPTION OF THE PROBLEM: As a result of prior DOD activity, the condition of Fort Totten exists such that it creates a hazard. Former DOD structures exist on the site and due to their accessibility and dilapidated condition, a hazardous condition exists. One building (#619) proposed for demolition, which is inaccessible, is chemically contaminated from pesticides, including DDT, which were at one time stored in the building. Also, it is possible that asbestos is present in another building proposed for demolition. Portions of the site are easily accessible. Live ordnance has been found on the site, however the property that the ordnance was discovered on is still DOD owned and is adjacent to U.S. Coast Guard property. Therefore, there is a possibility that ordnance could be buried on Coast Guard land.

BASIS FOR DETERMINATION OF DOD RESPONSIBILITY: The facilities were constructed by the United States Army and vacated thereafter. Currently, the DOD owns 92.4 acres of land in fee of this site. Items recommended for removal were used by the Department of Defense and have not been of beneficial use to subsequent owners.

POC/DISTRICT: John E. Tunnell, PE, NAPEN-P, FTS 597-5953/Philadelphia

STATUS: On 23 April 1985, the following Philadelphia District personnel performed an on-site investigation of the subject property: Paula Nohrstedt NAPEN-P and Jane Jablonski NAPEN-P.

The majority of Fort Totten (92.4 acres) is still owned by the Department of the Army, therefore this portion of the site is not eligible for any work under this program. GSA owns 45 acres and desires that no demolition or debris work be considered for their property. The U.S. Coast Guard owns the balance of the site consisting of 9.6 acres. The Coast Guard Station is situated within the 77th Army Reserve Training Center Complex at Willets Point. It is bounded by Army property on the north, east and south and faces Little Bay to the west. The station occupies the north-west portion of the Willets Point peninsula. The U.S. Coast Guard requested that six buildings be removed from their property.

The majority of the U.S. Coast Guard's buildings, formerly owned by the DOD, are grouped along an axis bordering the waterfront located at the western boundary of the site. Buildings being utilized are #609 (Electrical Sub-Station), #610 (Station Building), #611 (Galley, Mess and Engineering Shop), #612 (Boatswain Shop and Storage), #614 (Warehouse, currently empty), #615 (Coast Guard Reserve Unit and Warehouse), #620 (Four Family Housing), #621 (Garage), and #622 (subleased to ambulance corporation). The U.S. Coast Guard requested that the following buildings be demolished, #606 (Storage Building), #607 (Storage Building), #619 (Bunker), #623 (Storage Building), #624 (Storage Building) and #625 (Storage Building). To the east and southeast of the U.S. Coast Guard's property are scattered military residential buildings, owned by the Army, which are set on landscaped grounds. The land to the north of the site is an abandoned and overgrown area which contains historical fortifications, monumental in scale, still owned by the Department of the Army. Live ordnance (three 16 inch shells and several live grenades) has been found on this portion of DOD property which is adjacent to Coast Guard land. Therefore, there is a possibility that ordnance could be buried on Coast Guard property. To the southwest of the site are two military administration

buildings and a traffic intersection.

Building #610 is the Coast Guard's main station building. The building is currently used for administrative purposes as well as a barracks. The building was constructed in the late 19th century and was formerly used by the DOD as an officers laboratory. The storehouse (#611), which was also constructed in the late 19th century, presently serves the Coast Guard as a galley, mess hall, and engineering shop. Two temporary barracks structures to the west of these structures were recently demolished. Buildings #612 and #614 were constructed in the early 1900's. Building #612 was formerly used as a stable and is currently being used as a storage building for paint. Building #614 was formerly used as a wharf shed and is currently vacant. In the late 1800's, Building #615 was constructed and was used by the DOD as a torpedo store house. Currently, the first floor is used for storage and the second floor as a reserve operations center. Buildings #620 and #621 were also constructed in the late 1800's. They were formerly used respectively as a torpedo laboratory and shop building. Currently, Building #620 is being used as a residence and Building #621 as a garage. Building #622 was constructed in the early 1900's and was formerly used as barracks. The building is currently sublet to a local ambulance corporation. Buildings #612, #614, #620, #621, and #622 bear no historical significance at the present time. In addition, Buildings #610 and #611 are classified as being of historical significance.

Buildings #606, #607, #619, #623, #624 and #625 have not been utilized beneficially by subsequent owners since DOD ownership. Building #619 was formerly used by the DOD as a storage bunker and was constructed in the late 19th century as part of the second set of fortifications constructed at Fort Totten. The bunker is a one-story rectangular plan, recessed below grade and set into a granite block retaining wall. The bunker has a flat roof with projected concrete cornice. The exterior is made of concrete with original four pane double-hung windows. There is a manhole and vent on the roof. The west elevation door is made of steel. The bunker contains a room in the eastern part of the building, with no entrance and no windows. The U.S. Coast Guard is very concerned that this room contains hazardous wastes. The bunker has been unused since the Coast Guard took it over in 1968. There are no mechanical systems in operational condition and the structure is deteriorating with much evidence of the concrete reinforcing rods (in walls) rusting and cracking the exterior wall structure. The building was evaluated as bearing no historical significance. In addition, the interior of the building is inaccessible due to contamination of the interior rooms by stored pesticides, including DDT, which were stored in the building by DOD. The building is extremely hazardous to the site. The Coast Guard plans to remove the bunker and use the space for automobile parking. Therefore, they did request that this building be demolished. The foundation should remain as a foundation for parking and the back and side walls should remain to continue their function as retaining walls.

Buildings #623, #624 and #625 were also erected in the late 19th century and served as workshops for the fortifications located 200 feet to the north. Building #623 is a one-story square plan. It has a flat corrugated metal roof, brick exterior with granite lintels and sills, and a concrete foundation. Building #624 is L-shaped with only one story. It contains an asphalt gable roof, brick exterior with granite lintels and sills, six over six windows, concrete foundation and brick walks. Building #625 is a

rectangular one-story building, concrete base. It has a slate gambrel roof over a gable roof, granite sills, brick arch lintels, six over six windows, a one-story flat roof extension on the south, granite foundation and brick walks. This building also contains a boiler that is partially covered with insulation that could contain asbestos. All of these buildings have been vandalized and are easily accessible. The U.S. Coast Guard ball field is located adjacent to the buildings, thus making the buildings a more severe hazard. None of these buildings possess any historical significance and were therefore requested for demolition by the U.S. Coast Guard.

Buildings #606 and #607 are marine structures that were also requested to be demolished. Building #606 was formerly used as the Quartermasters Wharf Building. Under DOD ownership, the City of New York was allowed to utilize this building for use by fire boats until 1972. The building was used to store fire boat supplies, a water pump used for pumping water onto the boats, and for berthing. The U.S. Coast Guard has never utilized this building. This building is a 1-1/2 story rectangular plan with a shingle gable roof. It has corrugated sheet metal siding, two garage doors on the south elevation and a pile foundation independent of the adjacent pier. This building is deteriorated and windows are missing. Building #607 was formerly used as the Quartermaster Storage Shed. This building is a one story rectangular structure with three bays north and south, and two bays east and west. Unlike Building #606, it is built on top of the existing pier. This building is also deteriorated and the Coast Guard has never utilized the building and has no plans for its use. The pier, on which Building #607 is built and Building #606 is located adjacent to, is currently utilized by the Coast Guard.

The Coast Guard has established a 4.4 acres site as a location for a future development of housing for Coast Guard personnel and their families. It is desirable that the houses be compatible with other existing housing near the site owned by the U.S. Army. This 4.4 acres is land on which the existing Buildings #623, #624 and #625 and the ball field are located.

RIGHT-OF-ENTRY: For the purpose of this site survey, approval to enter the site was arranged by Mr. Lou Wunderlich of the United States Coast Guard. Formal right-of-entry agreements will be prepared for this project and will be executed prior to initiating any further field investigation.

AVAILABLE STUDIES AND REPORTS: As-built site plans, a Shore Facility Study and a Historic Survey and Inventory of Selected Real Property Facilities for the U.S. Coast Guard property are on file at the Philadelphia District.

CATEGORY OF HAZARDS: A safety hazard exists at the site due to the accessibility and dilapidated condition of several of the structures. One of the Buildings (#619), which is inaccessible, is suspected to be chemically contaminated with pesticides, including DDT, which were formerly stored in the building. Another Building #625 which is easily accessible, contains a boiler insulated with material that might consist of asbestos. Mercury contamination was recently (May 1985) found in clogged bathroom drains located in Building #615. There is no evidence as to the source from which this contamination originates. The Coast Guard indicated that they were checking into the problem and had plans to call a plumber to possibly remove some of the pipes. Therefore, there is a possibility of the vicinity being contaminated with mercury. However, the presence of such contaminants cannot be confirmed without appropriate testing measures. Contaminated materials, depending upon

the nature and magnitude of the problem, will require consideration of appropriate procedures for handling and disposal. In addition, live ordnance has been found on the site, however the property that the ordnance was discovered on is still DOD owned and is adjacent to U.S. Coast Guard property. Therefore, there is a possibility that ordnance could be buried on Coast Guard land.

DESCRIPTION OF REMEDIAL ACTION: The remedial actions to be taken, based on available information, are described in the paragraphs below.

A. BUILDING DEMOLITION - Completely demolish and remove three buildings (#623, #624, and #625) and foundations (3,490 square feet total). Also, remove one boiler and asbestos insulation located in Building #625. Include capping of utilities, backfill and compaction. Prior to demolition and selection of disposal method, sampling of insulation used in Building #625 is necessary to determine the presence of asbestos.

B. MARINE BUILDING DEMOLITION - Completely demolish and remove Marine Buildings #606 and #607 (3,610 square feet total). Also remove pile foundation, independent of pier, under Building #606.

C. BUNKER DEMOLITION - Completely demolish and remove one Bunker, #619 (2,100 square feet total). Back and side walls will remain intact in order that they can continue to function as retaining walls. The foundation will also remain intact. Prior to demolition and selection of disposal method, sampling of leakage remaining from previously stored insecticides is necessary to determine the presence of DDT.

D. FUEL STORAGE TANK REMOVAL - Remove one 350 gallon fuel tank (volume estimated) located above grade behind Building #625. Include removal of concrete tank support on which the tank is located. Backfill and compact. Prior to removal and selection of disposal method, sampling of vicinity and remaining fuel in storage tanks will be necessary.

E. SITE GRADING AND SEEDING - Site grade and seed 650 square yards of area disturbed by demolition.

ESTIMATED COST: Total estimated cost of the proposed remedial action, Fort Totten = $ 99,000

# REASONABLE CONTRACT ESTIMATE

SHEET 1 OF 1

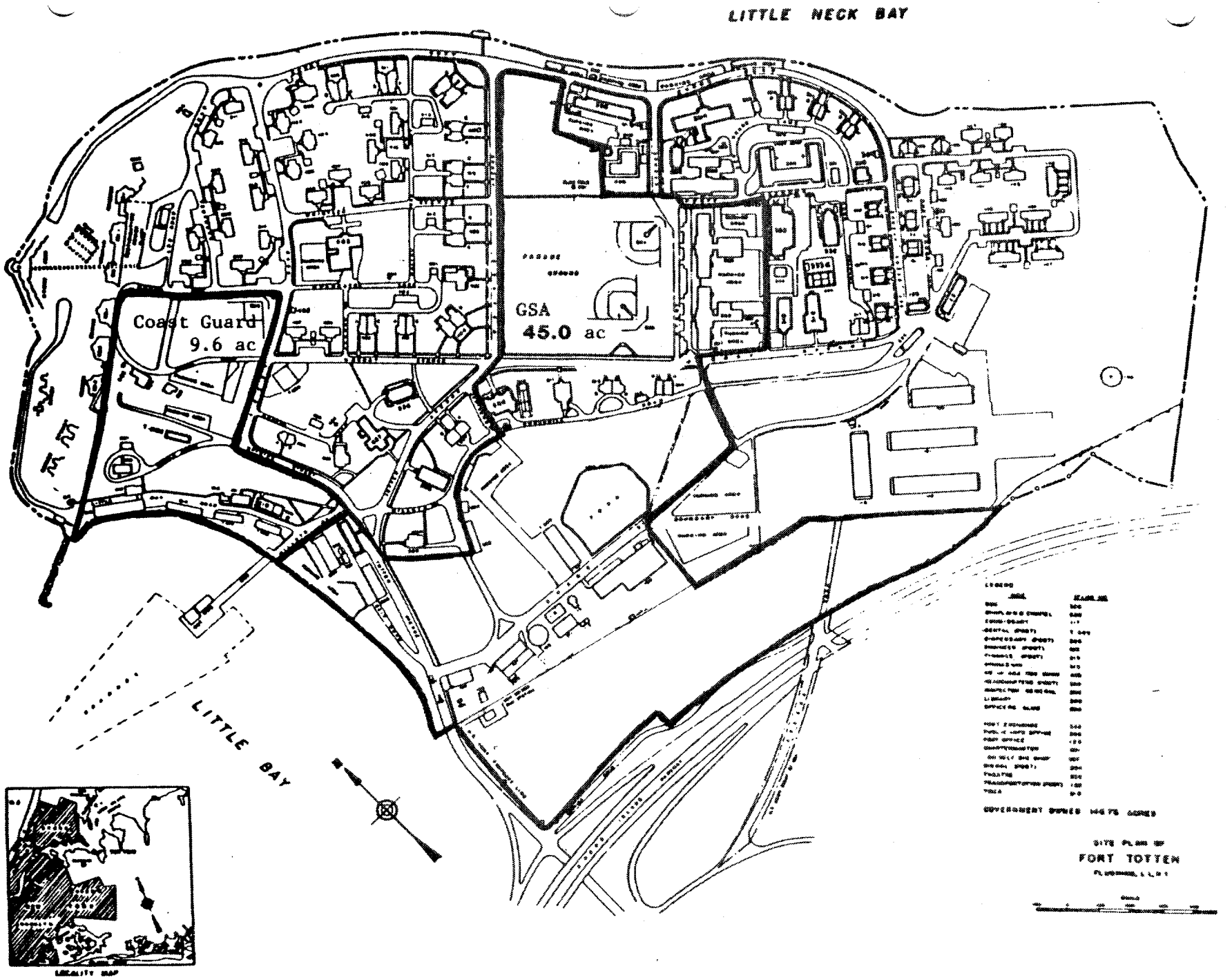
PROJECT: FORT TOTTEN, QUEENS, NEW YORK

INVITATION NO.

| ITEM NO. | DESCRIPTION | ESTIMATED QUANTITY | UNIT | UNIT PRICE | ESTIMATED AMOUNT |
|---|---|---|---|---|---|
| 1. | DEMOLITION | | | | |
| | | | | | |
| | Asbestos Removal | 1 | bldg. | $ 4,300 | $ 4,300 |
| | Bldg 606 (1810 SF) | | LS | | 11,700 |
| | Bldg 607 (1800 SF) | | LS | | 1,800 |
| | Bldg 619 (contaminated bunker-2100 SF) | | LS | | 11,000 |
| | Bldg 623 (150 SF) | | LS | | 900 |
| | Bldg 624 (2200 SF) | | LS | | 13,200 |
| | Bldg 625 w/Boiler (1140 SF) | | LS | | 6,840 |
| | Fuel Storage Tank (350 gals) | 1 | EA | 3,900 | 3,900 |
| | (Assume contents contaminated) | | | | |
| | Liquid Material Disposal PCB | 350 | GAL | 10.00 | 3,500 |
| | contamination (between 50 and 500 ppm PCB) | | | | |
| 2. | NEW WORK | | | | |
| | Site Grading and Seeding | 650 | SY | 1.75 | 1,140 |
| | | | | SUBTOTAL | 58,280 |
| | SUMMARY | | | | |
| | Construction Cost (R) | | | | 58,000 |
| | Contingencies (10%) (R) | | | | 6,000 |
| | S&A (5.5%) (R) | | | | 4,000 |
| | TOTAL CONSTRUCTION CWE | | | | 68,000 |
| | DESIGN (6%) | | | | 4,000 |
| | FEASIBILITY STUDY COST (R) | | | | 27,000 |
| | Site Investigation/Data Gathering | | | $ 7,000 | |
| | Support Activities | | | | |
| | Real Estate | | | 2,000 | |
| | Public Participation/Local Cooperation | | | 1,000 | |
| | Laboratory Support | | | | |
| | Asbestos Tests (Bldgs) | | | 300 | |
| | PCB Tests (Tanks) | | | 200 | |
| | DDT Tests (Bunker) Priority Pollutant List | | | 5,000 | |
| | Cultural Resources Investigations | | | 2,000 | |
| | Chemical Testing for Fuel Tank | | | 160 | |
| | Labor & Report for Chemical Testing | | | 2,000 | |
| | Environmental/Regulatory Compliance | | | 3,500 | |
| | Health, Safety & QA/QC Plan | | | 1,000 | |
| | Project Management | | | 2,500 | |
| | TOTAL FEASIBILITY COST (R) | | | $ 27,000 | |
| | TOTAL IMPLEMENTATION COST | | | | $ 99,000 |

ENG FORM APR 67 1738 SUPERSEDES ENG FORM 1738, 1 APR 54, WHICH IS OBSOLETE.

GPO : 1967 OP—262-653



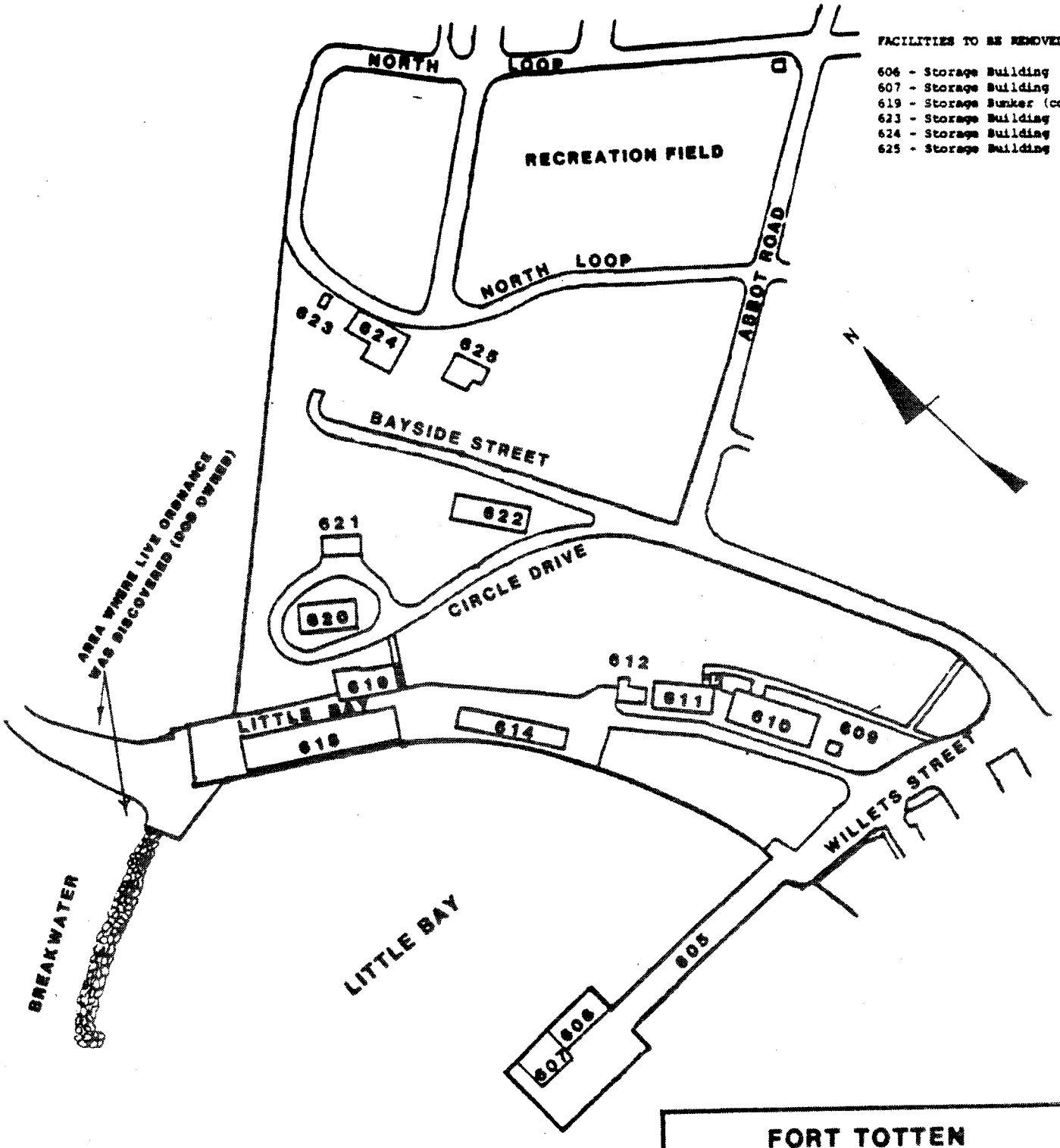

# GENERAL SITE MAP OF FORT TOTTEN

**FACILITIES UTILIZED**

605 - Pier
609 - Electrical Substation
610 - Station Building
611 - Galley, Mess and Engineering Shop
612 - Boatswain Shop
614 - Warehouse
615 - Coast Guard Reserve Unit and Warehous
620 - Four Family Housing
621 - Garage
622 - Subleased to ambulance corporation

FACILITIES TO BE REMOVED

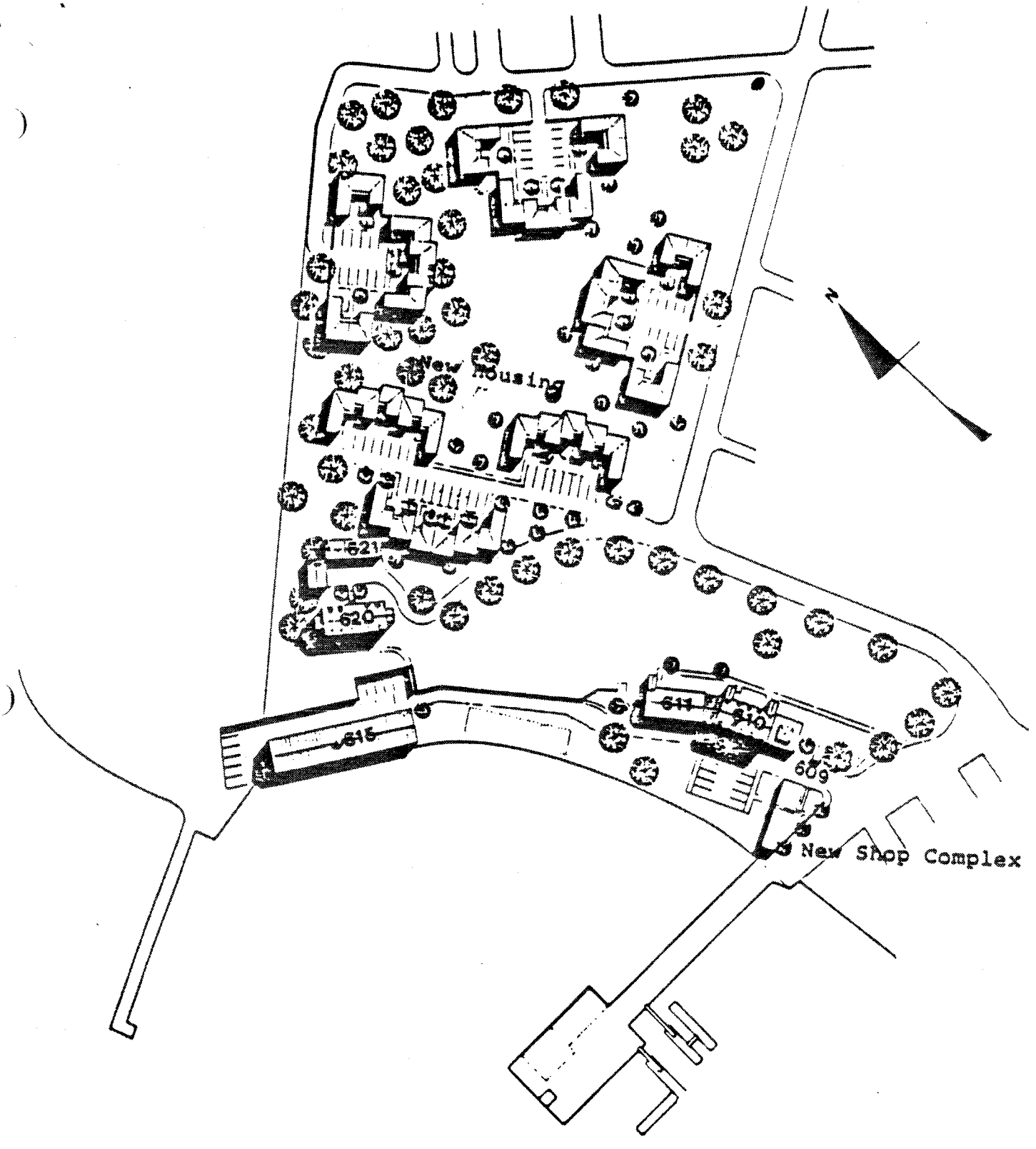
606 - Storage Building
607 - Storage Building
619 - Storage Bunker (contaminated
623 - Storage Building
624 - Storage Building
625 - Storage Building




# FORT TOTTEN
# U.S. COAST GUARD SITE

## EXISTING SITE PLAN

SCALE 1" = 150'




# FORT TOTTEN
# U.S. COAST GUARD SITE

## FUTURE SITE PLAN FOR HOUSING UNITS

SCALE 1" = 100'

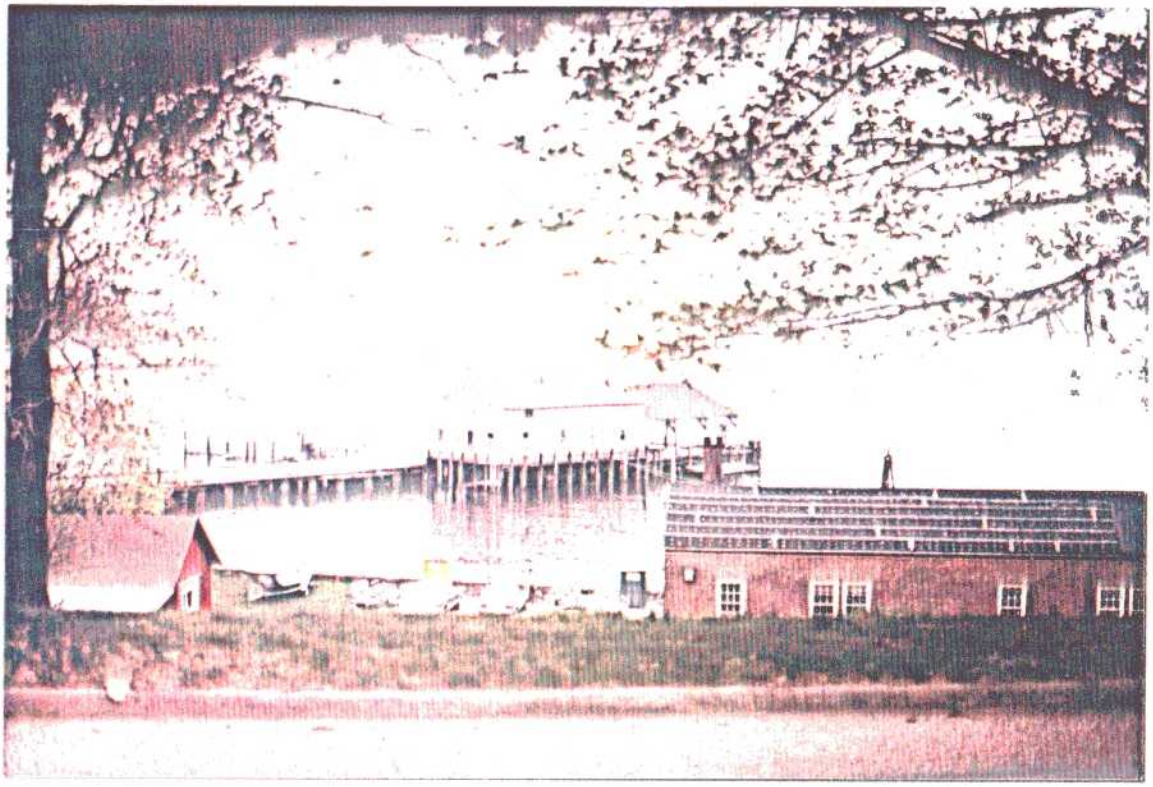
# APPENDIX C

## PHOTOGRAPHS

Fort Totten

Queens, New York

Left to right: Building #612 (Boatswain shop and storage), Building #611 (Galley, mess and engineering shop), Building #610 (Station building) and Building #609 (Electrical sub-station); all buildings are utilized.



Left to right: Building #612 (Boatswain shop and storage), Buildings #606 and #607 on pier, and Building #614 (Warehouse). All buildings utilized except #606 and #607.

Fort Totten

Queens, New York

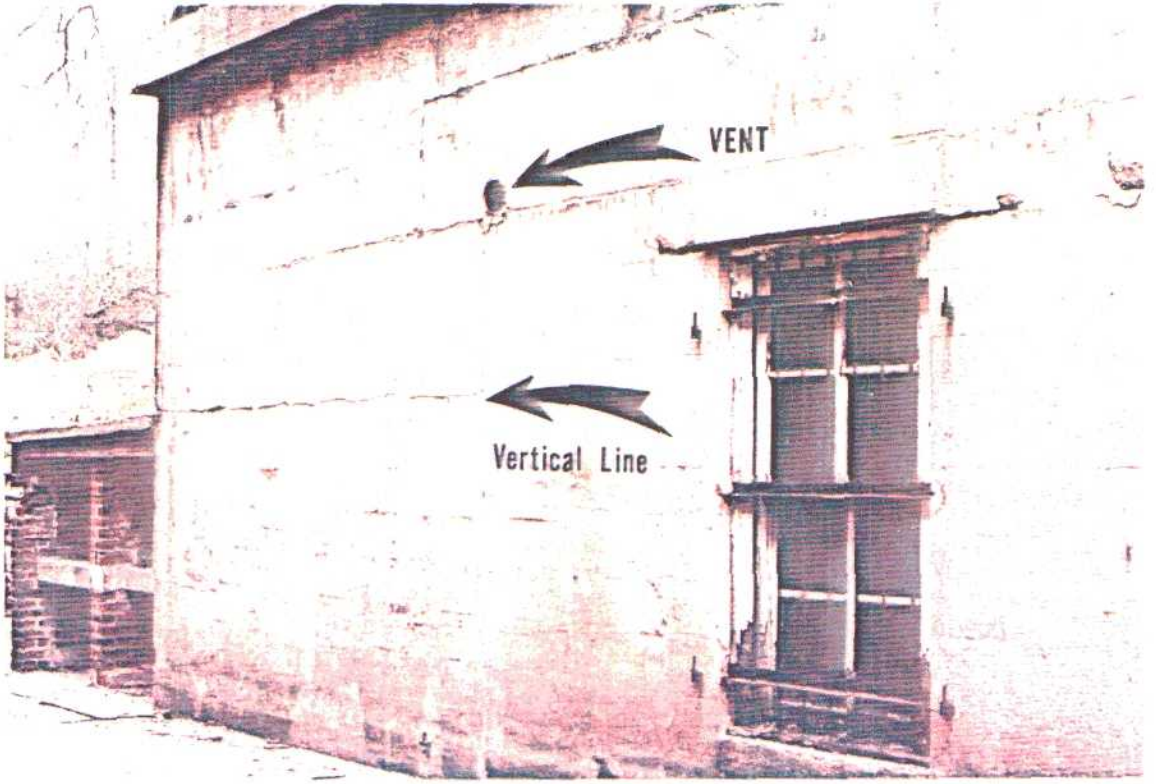
Left to right: Building #619 (Storage Bunker-not utilized) and Building #615 (Coast Guard Reserve unit and warehouse -utilized); fence marks boundary of U.S. Coast Guard property and U.S. Army property.

Building #619-inaccessible storage bunker contaminated with DDT; not utilized.

Fort Totten

Queens, New York

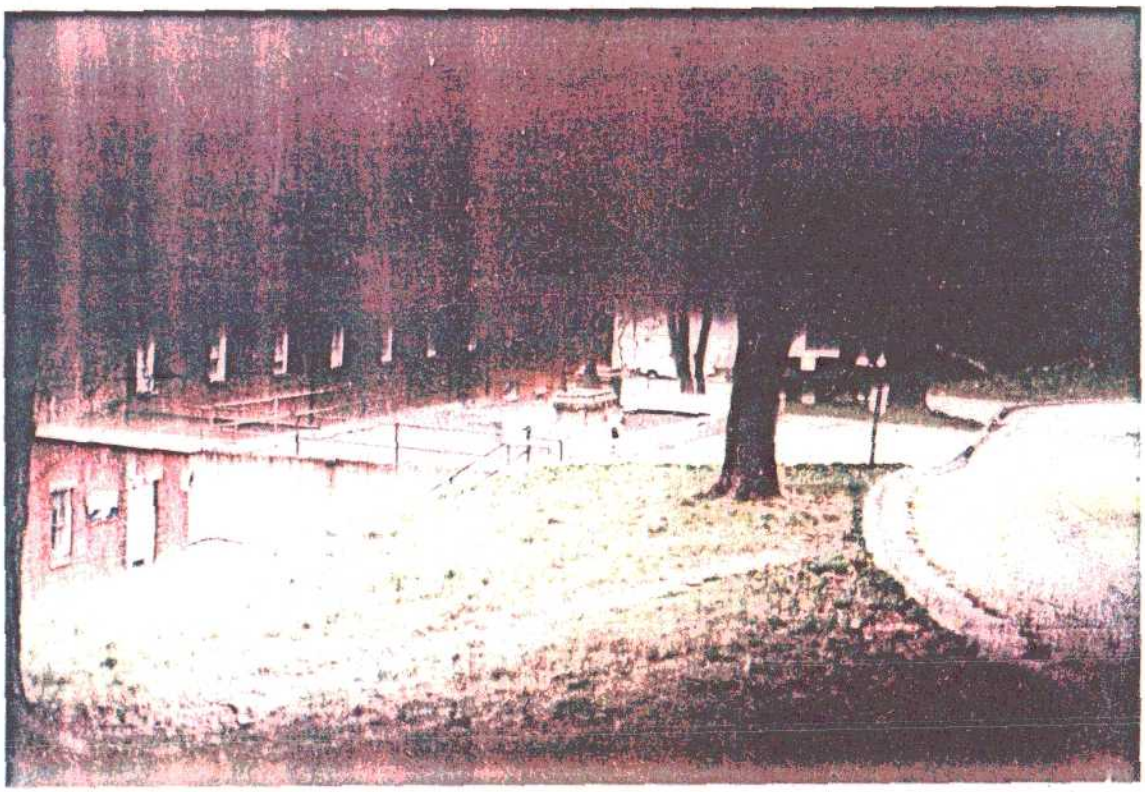
Interior view of Building #619-contaminated storage bunker.




Building #619-Vertical line under vent shows the point at which a room with no entrance exists. It is possible that under DOD ownership more hazardous waste was stored in this room.

Fort Totten

Queens, New York

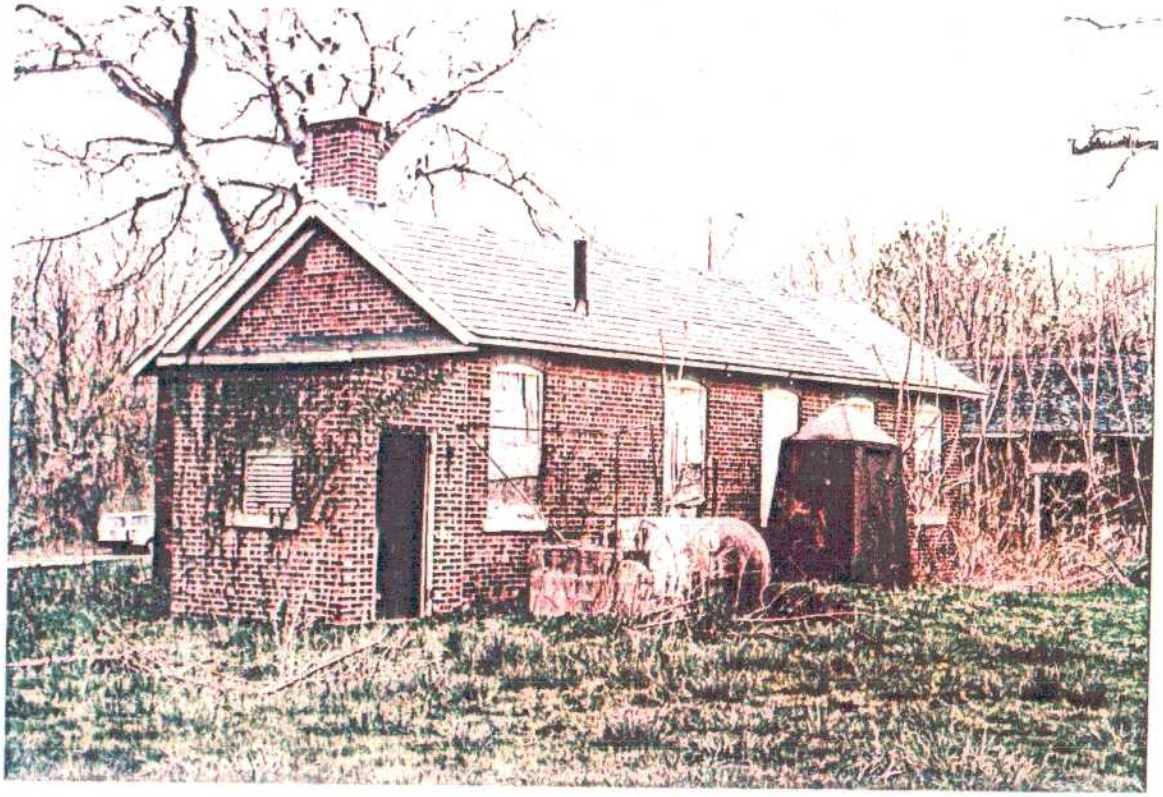


View of Roof on Building #619 (Storage Bunker). Back and side walls will remain after building demolition to act as retaining walls.

Building #606 in foreground (to be demolished including pile foundation) and portion of Building #607 in background (to be demolished); small white structure is an oily Water Separator Building.

Fort Totten

Queens, New York

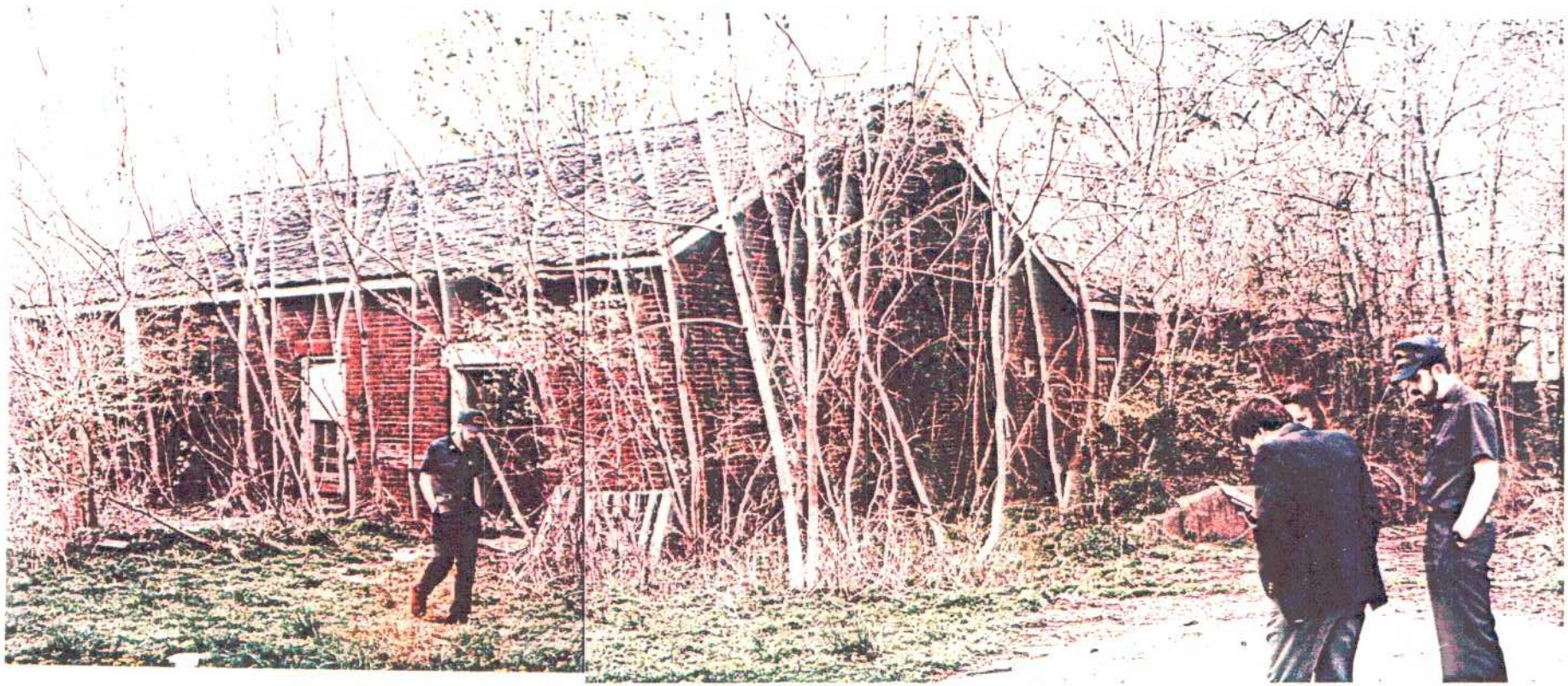


Side and back view of Building #625; Boiler is located in back room with open entrance, fuel storage tank located above ground and small brown shed is used by local baseball team to store equipment.

Side view of Building #624

Fort Totten

Queens, New York

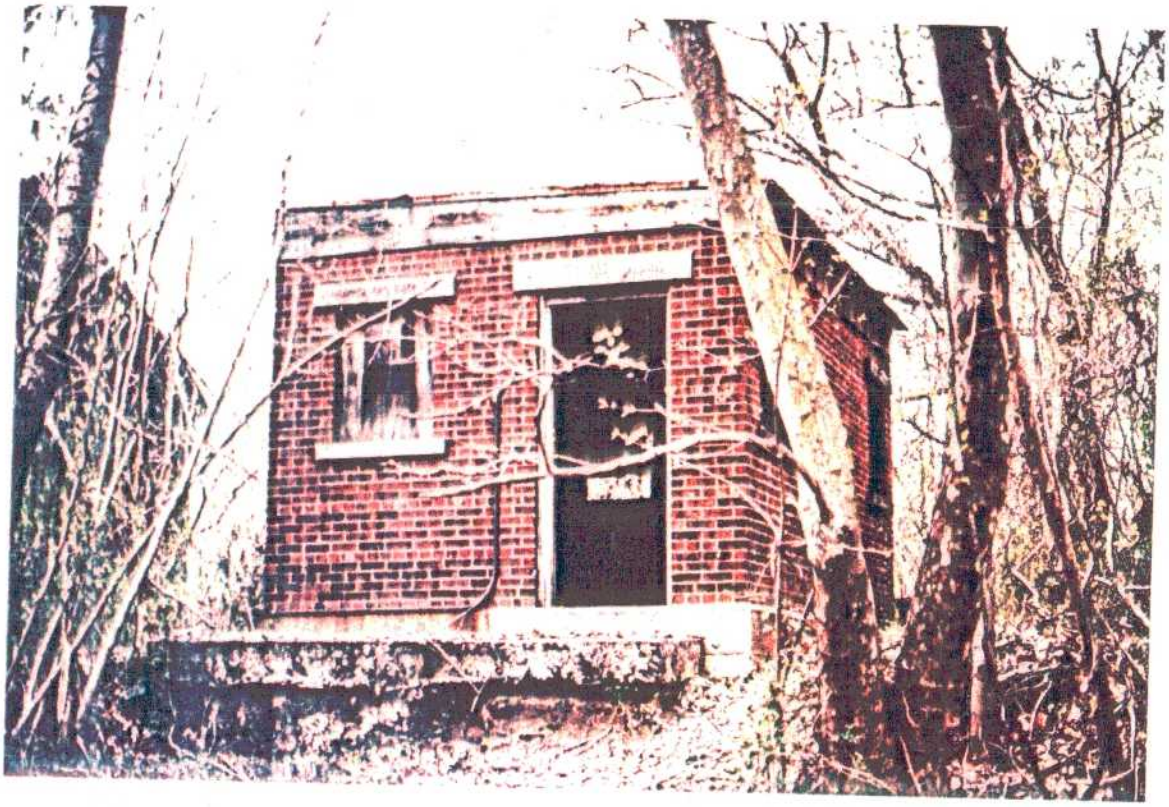


Front and side view of Building #624 formerly used as an ordnance repair shop; not utilized.

Fort Totten

Queens, New York

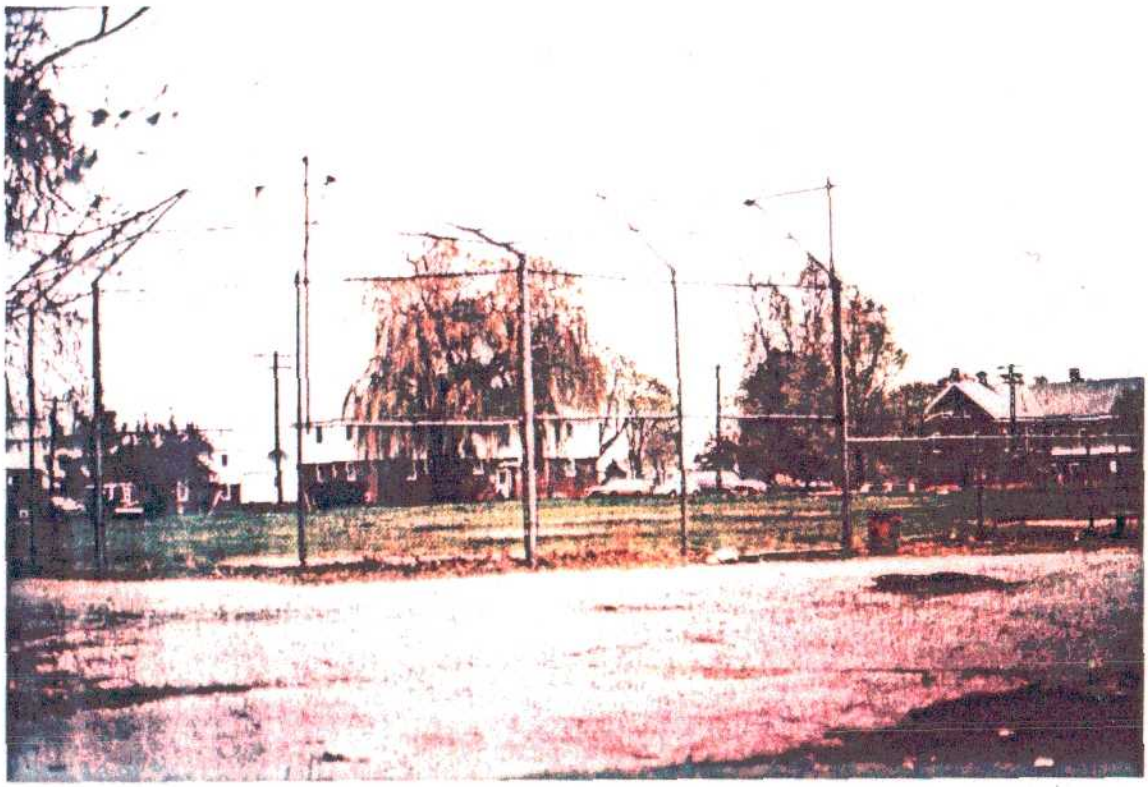
Interior of Building #624.



Front view of Building #623.

Fort Totten

Queens, New York



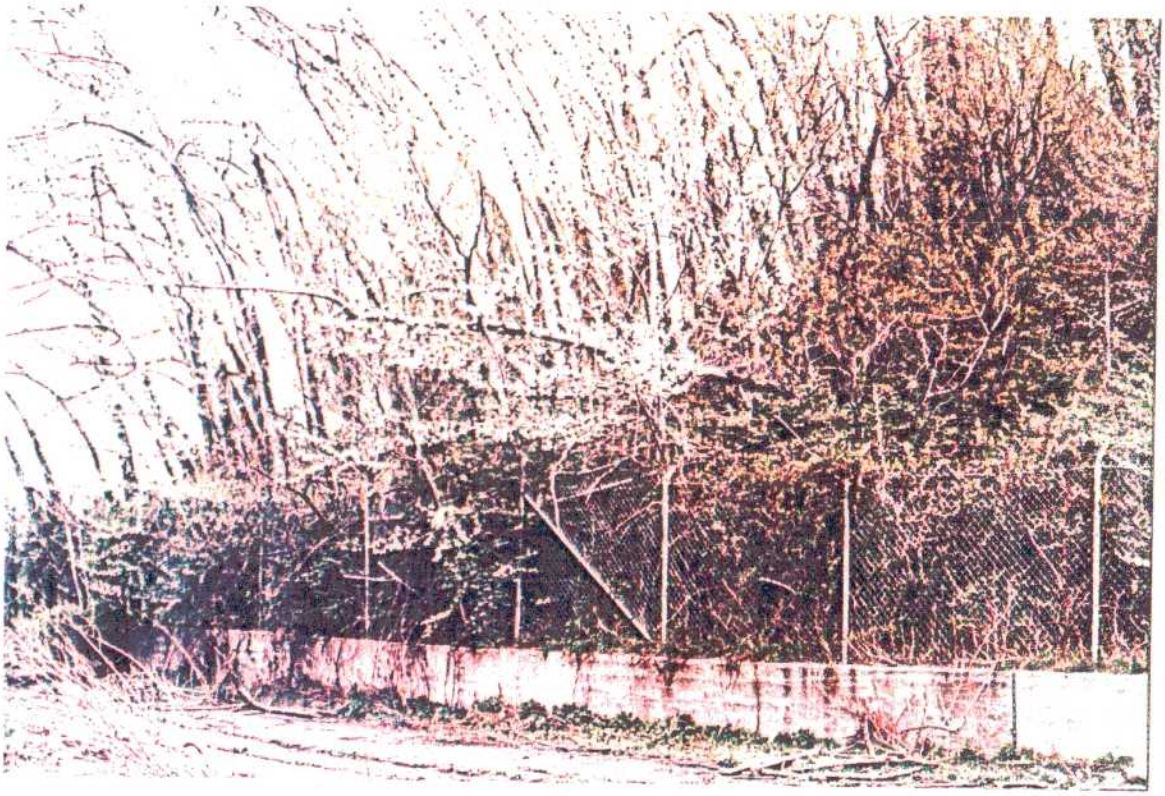
U.S. Coast Guard baseball field across from Buildings #624 and #625.

Army residences across from Coast Guard property.

Fort Totten

Queens, New York

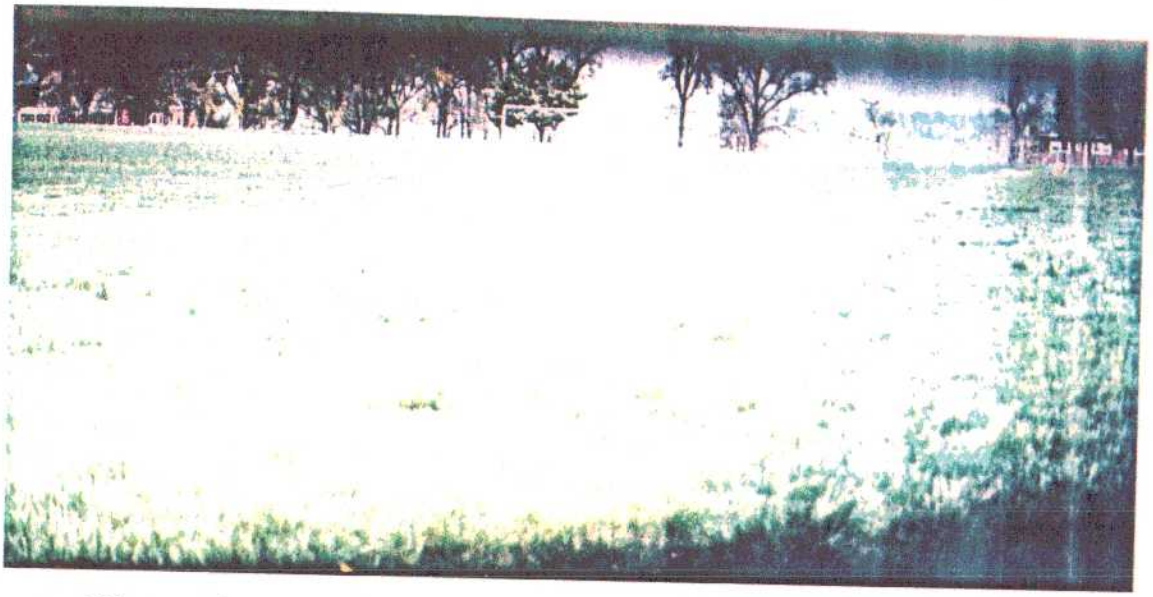

Army property adjacent to Coast Guard property.



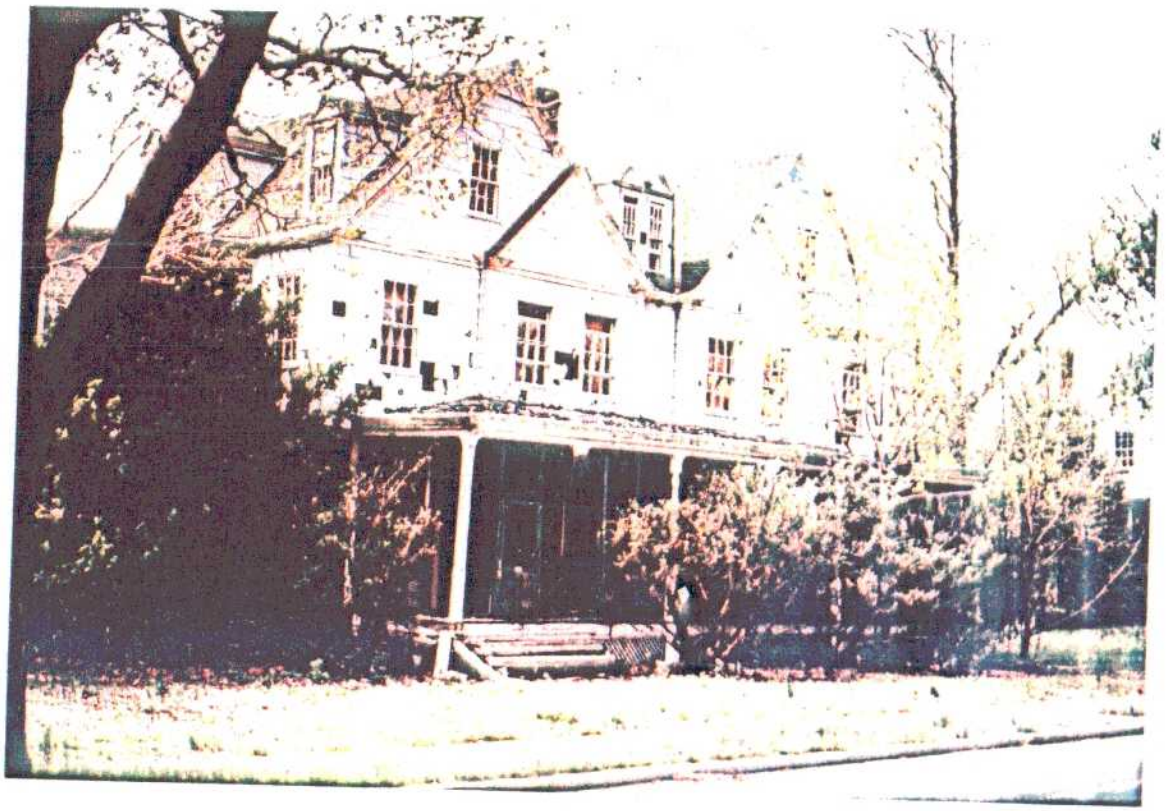
Army property on which live ordnance was found, adjacent to Coast Guard property.

Fort Totten

Queens, New York



GSA owned recreation field located adjacent to Army property.



GSA owned building adjacent to Army property.

# APPENDIX D

## INVENTORY REPORT AND HAZARDOUS RANKING SYSTEM EVALUATION

DERP

INVENTORY REPORT AND HAZARDOUS RANKING SYSTEM EVALUATION

Preliminary General Information

1. DERP Code Number. (11) C.02.NY.00.5.7.00.

2. Site Name (current). (35) FORT TOTTEN

3. Site Name when used by DOD. (35) FORT TOTTEN (ENGINEER SCHOOL)

4. Street/Route Number. (25) CROSS ISLAND PARKWAY

5. City. (16) WILLETS POINT

6. County. (15) QUEENS

7. State. (2) N.Y.

8. Zip Code. (9) 11359

9. Congressional District Code Number. (2) 8

10. Latitude: degrees, minutes, seconds. (6) 40°47'30"N

11. Longitude: degrees, minutes, seconds. (7) 73°46'30"W

12. Is a large scale, greater than 1 inch equals 200 feet, topograhic map of the site area available to attach to this inventory report? (1) N
Y = YES N = NO

13. Are site maps or sketches on file with the inventory? (1) Y.
Y = YES N = NO

14. Are there photographs on file with the inventory? (1) Y.
Y = YES N = NO

15. Current Owners Name(s). (45) U.S. COAST GUARD. U.S. ARMY. GSA

16. Owner's Street Address. (25) 3RD COAST GUARD DIST. TRICT BLDG 108 RM 100B

17. Owner's City. (16) GOVERNORS ISLAND
NEW YORK CITY

18. Owner's State. (2) N.Y.

19. Owner's Zip Code. (9) 10004

20. Number of Years Owned. (2) 16

21. What is the current owner's use of the site? (50) COAST GUARD STATION

REAL ESTATE SEARCH INFORMATION

22. Give chronological list of owners or lessees since termination of DOD ownership or lease; include dates of ownership and brief description of use. (240)

DEPT OF TRANSPORTATION US COAST GUARD 1966 TO DATE COAST GUARD STATION US DEPT LABOR (GSA) 1970-1979 JOB CORPS FACILITY GSA 1979-PRES GSA LEASES TO ARMY FOR ARMY RESERVE TRAINING AND ARMY LEASES TO EASTERN PARALYZED VET ASSOC

23. Was property leased out to others by DOD? (Y or N), describe and match owner/lessee with use(s). (51)

Y ARMY/EASTERN PARALYZED VET ASSOC

24. Was property leased-out to others by subsequent owners? (Y or N) Describe. (51)

Y GSA/ARMY ARMY/EASTERN PARALYZED VET ASSOC

25. Type of problem(s) listed in claim documents, check as many as applicable: (3) H O D

Hazardous and Toxic = H (if listed complete questions 100 to 399).

Ordnance and Explosive = O (if listed complete questions 400-499).

Debris/Structures = D (if listed complete questions 500 to 599).

26. Has Right of Entry Permit been obtained? (Y or N). (1) N

27. Are copies of lease agreements or deeds or other instruments conveying title on file? (Y or N). (1) .Y.

28. Does deed(s) or lease agreement(s) contain any disclaimers or restoration requirements? (Y or N). If yes, decribe. (161)

.N. . . . . .

29. Date field inspection completed. (6) .042385.

30. Agency performing inspection. (25)

.U.S.A.E.D.P. .P.H.I.L.A.D.E.L.P.H.I.A. .P.A. . . .

31. Inspection team leader's name. (20) .P.A.U.L.A. .N.O.H.R.S.T.E.D.T. . . . .

32. Title. (25) .C.I.V.I.L. .E.N.G.I.N.E.E.R. . . . . .

33. Organization (office symbol). (10) .N.A.P.E.N.-.P. . . .

34. Telephone number(s): Commercial. (10) .2.1.5.5.9.7.5.9.5.3.

35. Telephone number(s): FTS. (7) .5.9.7.5.9.5.3

36. Telephone number(s): AUTOVON. (7) . . . . . .

37. Site Status: A = Active I = Inactive (1) .A.

38. Years of operation in current status. (2) .16

39. Type(s) of problems found by inspection team. (3) .HOD

USE:
H = H&T
O = OEW
D = Debris

40. Enter the number of buildings on the site. (3) .168

41. Describe. (80)

.15. .A.L.D.G.S. .O.N. .C.O.A.S.T. .G.U.A.R.D. .P.R.O.P., .21. .B.L.D.G.S. .O.N. .G.S.A. .P.R.O.P., .132. .O.N. .D.O.D. .P.R.O.P.E.R.T.Y. . . . . .

42. What is the major land use for a one mile radius around the site? (20) (e.g., agriculture, industry, residential).

RESIDENTIAL

43. What is the estimated population within a one mile radius around the site? (use 3.8 persons/house). (6)

1580

44. Describe the security of the site. (120)

INACCESSIBLE TO PUBLIC - SURROUNDED BY NATURAL BARRIERS AND FENCE WITH GUARD AT MAIN GATE

45. Describe the best access to the site from the nearest public road. (120)

ENTER SITE THRU TOTTEN AVE ABOUT ONE-QUARTER MILE FROM EXIT 4B ON CROSS ISLAND PARKWAY

LIST CURRENT AND/OR PAST POLLUTION ABATEMENT PERMITS

| PERMIT INFORMATION | NONE AVAILABLE | | | |
|---|---|---|---|---|
| TYPE OF PERMIT ISSUED PAST AND/OR PRESENT | PRESENT NO. | DATE ISSUED | EXPIRATION DATE | COMMENTS |

46. NPDES. (72) (PERMIT #, DATE ISSUED, EXPIRATION DATE, COMMENTS)

47. UIC. (72) (SAME AS 46)

48. AIR. (72) (SAME AS 46)

49. **RCRA.** (72) (SAME AS 46)

---

50. Describe any pertinent environmental protection response actions previously taken at the site. (240)

NONE KNOWN

51. Describe any environmental protection remediation actions previously taken at the site. (240)

NONE KNOWN

52. List any court orders, lawsuits, fines or other legal actions that have been taken against any owners/operators of the site since DOD ownership/ lease. (160)

NONE KNOWN

53. **Determination** of Responsible Party for restoration: (1) D

**DOD** Other Not yet determined

54. Contract 1. (13)

55. Contract 2. (13)

56. Contract 3. (13)

57. Contract 4. (13) . . . . . .

58. Contract 5. (13) . . . . . .

59-98. (Reserved)

99. Preliminary Information remarks. (80)

LIVE ORDNANCE FOUND ON ARMY PROP IMMEDIATELY ADJACENT TO COAST GUARD PROPERTY. . . .

## DESCRIPTION OF WASTE AREAS WITH HRS OF WASTE STORAGE AT THE SITE

CONTAINMENT

100. Types of containment found in the individual waste areas: (4) . . . C.

| | | | | | |
|---|---|---|---|---|---|
| Surface impoundment | / / | (I) | Waste piles, including contaminated surface soils | / / | (P) |
| Containers | X | (C) | Landfill, including contaminated subsoils | / / | (L) |

101. Present integrity of containment: (25) (Use TABLES 1, 2 or 3 phrases)

CONTAINERS . . . . . .

102. Evaluation of the integrity of containment versus potential groundwater release, before any remedial actions (see TABLE 1 for evaluation considerations). HRS Value - (Groundwater Containment). (1) .0.

103. Evaluation of the integrity of containment versus potential surface water release, before any remedial actions (see TABLE 2 for evaluation considerations). HRS Value - (Surface Water Containment). (1) .0.

QUANTITY

104. Total quantity of hazardous waste, as deposited and capable of migrating. (Having a non-zero containment value (TABLE 3). The air pathway quantity is to include only those quantities that can be transported by the air: (10) . . . . . .

105. Total quantity of waste now present: CY, drums and gallons (use only one common unit). (10) .2 .D.R.U.M.S. .+ .CONTENTS OF ROOM W/ NO ENTRANCE

106. Quantity with the potential to migrate by groundwater. (10) . . . . . .

107. HRS Value (groundwater quantity). (1) (TABLE 3) . .

108. Quantity with the potential to migrate by surface water. (10) . . . . . .

109. HRS Value (Surface Water Quantity). (1) (TABLE 3) . .

110. Quantity with the potential to migrate by air. (10) .....

111. HRS Value (Air Quantity). (1) (TABLE 3) ..

HAZARDOUS SUBSTANCES

112. Hazardous substances in this area. (360)

| Name(s) | Chemical Abstract System (CAS) Number |
|---|---|
| BLDG #619 FLOOR SURFACE IS CONTAMINATED WITH LEAKAGE FROM PREVIOUSLY STORED PESTICIDES INCLUDING DDT ..... | |
| MERCURY WAS RECENTLY FOUND IN THE CLOGGED BATHROOM DRAIN OF BLDG 615. COAST GUARD CONCERNED W/ POSSIBLE MERCURY CONTAMINATION OF SURROUNDING WATERS-SOURCE OF MERCURY IS UNKNOWN ..... | |

113. Highest scoring substance for Groundwater Migration Route. (25) .....

114.* Toxicity ranking number. (1) ..

115.* Persistence ranking number. (1) ..

116.** HRS Matrix Value. (2) ...

117. Highest scoring substance for Surface Water Migration Route. (25) .....

118.* Toxicity (ranking number). (1) ..

119.* Persistence (ranking number). (1) ..

120.** HRS Matrix Value. (2) ...

* Use TABLES 4, 5, or 6
**Use TABLE 7

121. **Highest** scoring substance for Air Migration Route. (25)

. . . . . .

122.* Toxicity (ranking number). (1) . .

123.** HRS Value. (2) . . .

PHYSICAL STATE

124. Physical state of waste as deposited: (1)

| | HRS Value | | HRS Value |
|---|---|---|---|
| Solid consoidated or stabilized: | 0 | Powder or fine material: | 2 |
| Solid, unconsolidated or unstabilized: | 1 | Liquid, sludge or gas: | 3 |

HRS value from item 124. 3.

125. Description of current physical state of waste. (15)

PESTICIDES-LIQUID
MERCURY — SOLID

GROUNDWATER MIGRATION ROUTE

HYDROGEOLOGY TO BE DETERMINED BY CONFIRMATORY STUDY

126. Description of strata from surface to the deepest aquifer or condern (names, thickness, type of material). (Refer to TABLE 8) (200)

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

127. Direction of regional groundwater flow. (3) . . . .

128. Are there barriers to horizontal migration of groundwater within 3 miles downgradient of the site (e.g., rivers). These barriers should be identified on a map of the site. (1) Y/N . .

* Use TABLES 4, 5, or 6
**Use TABLE 7

129. Are there discharge and/or recharge areas within 3 miles of the site? (These areas should be identified on a map of the site). (1) Y/N . .

COMPARATIVE DOCUMENTATION OF AQUIFERS TO BE DETERMINED BY CONTAMINATION STUDY

(All questions on this page refer to surficial aquifer).

130. Name of aquifer. (25)

. . . . . .

131. Designation of aquifer use. (10) . . . . . .

132. Depth to highest seasonal level. (3) . . . .

Circle the HRS value corresponding to the use of groundwater drawn from within 3 miles from the source of contamination:

| | VALUE |
|---|---|
| Unusable | 0 |
| Commmercial, irrigation, or not used but usable | 1 |
| Drinking water with alternate source available | 2 |
| Sole source, drinking water supply | 3 |

133. The HRS Value circled. (1) . .

134. Location of nearest drinking or irrigation well within 3 miles downgradient of the source of contamination, give direction. (20)

. . . . . .

135. Depth of the nearest well (ft). (3) . . . .

136. Distance to the well from nearest point of contamination (critical distances that require careful measurement for HRS purposes of 2000', 1 mile, 2 miles and 3 miles). (5) . . . . . .

137. Population served by groundwater drawn from aquifer within 3 miles of contamination. (6) . . . . . .

138. **Basis** of population figure (e.g., census, house count). (10)

. . . . . .

139. HRS value from Distance/Population Matrix (TABLE 9). (2) . . . .

140. Acres of cropland/pastureland irrigated by water drawn from the aquifer within 3 miles of contamination. (4) . . . . .

COMPARATIVE DOCUMENTATION OF AQUIFERS TBD

(All questions on this page refer to Deeper Aquifer)

141. Name of aquifer. (25)

. . . . . .

142. Designation of aquifer use. (10) . . . . . .

143. Distance from ground surface (elevation) to highest seasonal water level. (3) . . . .

Circle the HRS value corresponding to the use of groundwater drawn from within 3 miles from the source of contamination:

| | VALUE |
|---|---|
| Unusable | 0 |
| Commercial, irrigation, or not used but usable | 1 |
| Drinking water with alternate source available | 2 |
| Sole source, drinking water supply | 3 |

144. HRS value circled. (1) . .

145. **Location** of nearest drinking or irrigation well within 3 miles downgradient of the source of contamination, give direction. (20)

. . . . . .

146. Depth of the nearest well (ft). (3) . . . .

147. Distance to the well from nearest point of contamination (critical distance that require careful measurement for HRS purposes are 2000', 1 mile, 2 miles and 3 miles). (5) . . . . . .

148. Population served by groundwater drawn from aquifer within 3 miles of contamination. (6) . . . . . .

149. Basis of population figure (e.g., census, house count). (10)

. . . . . .

150. HRS value from Distance/Population Matrix (TABLE 9). (2) . . .

151. Acres of cropland/pastureland irrigated by water drawn from the aquifer within 3 miles of contamination. (4) . . . . .

RELEASE TO AQUIFER OF CONCERN TED

Select from the comparative documentation of aquifers, the aquifer that yields the highest HRS groundwater score. Document and evaluate this aquifer.

152. Name of aquifer. (25)

. . . . . .

153. Is it the surficial (S) or deeper (D) of the aquifers? (1) . .

154. Is there an observed release of contaminants to this aquifer: (1) . .

Y (YES), Value = 45
N (NO), Value = 0

155. HRS Value. (2) . . .

156. Are there any analytical findings that document observed release to groundwater above background? (1) Y = YES N = NO . .

157. Date of Analysis. (6) . . . . . .

158. Reference. (60)

. . . . . .
. . . . . .

159. Identification of background well(s). (25)

. . . . . .

160. Identification of contaminated well(s). (25)

. . . . . .

161. **Contaminants** detected. (150)

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

162. Depth of contamination. (3) . . . .

163. Distance from ground surface to highest seasonal water level in this aquifer. (3) . . . .

164. Depth below ground surface of deepest documented waste or of intake of of a contaminated well. (3) . . . .

165. Depth from deepest point of documented contamination to the aquifer of concern. (3) (Question 164 minus 165) . . . .

166. HRS Value. (1)

| DEPTH | VALUE |
|---|---|
| 0 - 20 | 3 |
| 21 - 75 | 2 |
| 76 -150 | 1 |
| 150 | 0 |

. .

167. Inches of normal annual total precipitation (Figure 1). (2) + . . .

168. Inches of mean annual lake evaporation (Figure 2). (2) - . . .

169. Net precipitation, in inches (if seasonal data is used, show month(s) represented). (2) . . .

-10 inches = 0 15 inches = 3
-10 to + 5 = 1
+ 5 to +15 = 2

170. HRS Value (Precipitation). (1) . .

171. **Permeability** of the least permeable layer between documented contamination and the highest seasonal water level of this aquifer of concern (**TABLE** 10). (6) . . . . . .

172. HRS Value (Permeability) (1) . .

GROUNDWATER USE TBD

173. Write the number for the highest-valued actual use of this aquifer within a 3-mile radius as shown on the comparative evaluation. (1) . .

| USE | VALUE | USE | VALUE |
|---|---|---|---|
| Unusable | 0 | Drinking water with with alternate source | 2 |
| Commercial or irrigation | 1 | Without alternate source | 3 |

DISTANCE TO NEAREST WELL TBD

174. Distance to the nearest drinking water or irrigation well in this aquifer (comparative evaluation between surficial and deeper). (3) . . . .

POPULATION SERVED TBD

175. Total population served by groundwater drawn from the aquifer within 3 miles of contamination (comparative evaluation between surficial and deeper).

Population (3.8 persons/house) (5) + . . . . . .

176. Acres irrigated times 1.5 (4) persons/acre + . . . . .

177. Total Population (5) . . . . . .

178. Determine the worst case from distance/population Matrix (TABLE 9) and enter HRS value. (2) . . .

## SURFACE WATER MIGRATION

A topographical map is to be attached showing the migration path that run-off would follow from the areas of waste storage to surface waters and thence to targets within 5 miles downstream. All distances are to be measured along the migration path rather than by a straight line.

Indicate sampling points, the most downstream point (or point along migration path) of documented contamination, all water intakes by use, and sensitive environments and critical habitats that lie contiguous to the migration path. Show names of water bodies.

---

OBSERVED RELEASE

179. Is there analytical evidence of contamination of surface waters above background? (1) N, Go to Item 185 Y, Go to Item 180 — N

180. Date of Evidence: (6) .....

181. Reference: (60)

.....

182. Background sampling points (list well identification): (80)

.....

183. Downstream sampling points (list well identification): (80)

.....

184. Contaminants detected (5 maximum): (100)

.....

185. HRS Value. Direct evidence of release of surface water (evidence must be quantitative) - HRS value = 45; no evidence - HRS value = 0 (2) 0

186. Check if drinking water intakes have been contaminated. (1) 0 = NO 1 = YES, Public 2 = YES, Private 3 = BOTH . . .

---

Questions 187 to 193 MUST BE COMPLETED ONLY IF EVIDENCE OF AN OBSERVED RELEASE TO SURFACE WATER IS LACKING:

ROUTE CHARACTERISTICS

187. Does this facility lie in a topographical depression with no surface water migration route? If YES, assign a surface water migration score of zero. If NO, continue with Item 188. (1) . .

SLOPE

188. Slope of the facility. (2) . . .

189. Slope of intervening terrain from nearest point of documented contamination to surface water (Use TABLE 11): (2) . . .

190. HRS Value (Slope Matrix). (1) . .

191. 1 year 24 hour rainfall as indicated for the site on Figure 3 (inches). (2) . . .

192. HRS Value (Rainfall). (1) . .

193. Distance along migration path from most downstream point of documented contamination to surface waters. (7) . . . . . Distances of 2 miles and less are classifiable.

*DISTANCE - Assign a value as follows:

| Distance | Assigned Value |
|---|---|
| 2 miles | 0 |
| 1 to 2 miles | 1 |
| 1000 feet to 1 mile | 2 |
| 1000 feet | 3 |

194. HRS Value (Distance of Surface Water). (1) . .

---

SURFACE WATER USE

195. Surface water use within 3 miles (1 mile maximum in static waters) along the migration path from the most downstream point of documented contamination: (1)

| | HRS Value | | |
|---|---|---|---|
| Not currently used for reasons unrelated to contamination from site: | 0 | Irrigation recreation, etc: | 2 |
| Commercial or industrial use: | 1 | Drinking water: | 3 |

HRS Value (Surface Water Use) (Values may be added if water has more than one use). . .

DISTANCE TO A SENSITIVE ENVIRONMENT

196. Name of nearest sensitive environment that is within 2 miles. (20)

. . . . . .

197. Type of Sensitive Environment. (3) 1 = Coastal Wetland . . . .
2 = Freshwater Wetland
3 = Critical Habitat (S - State or F - Federal)

198. Distance to a wetland (5 acre minimum) or a critical habitat of a Federal list endangered species that lies contiguous to the migration path. Measure distance from the nearest point of documented surface contamination along the migration path. (6) . . . . . .

199. HRS Value (Distance to Sensitive Environment). (1) Use TABLE 12 . .

DISTANCE TO WATER INTAKE

200. Distance to drinking water or irrigation intake, measured from probable point of entry of migration path to surface water. (6) . . . . . .

POPULATION SERVED

Total Population served by water drawn from surface water within the 3 mile limit:

201. Population (assume 3.8 persons/house). (5) . . . . . .

202. Acres irrigated times 1.5 persons/acre. (4) . . . . . .

203. Total HRS population: (5) . . . . . .

204. HRS, Value (Dist/Pop Matrix). (2) . . .
(The distance (question 200) and population (question 203) are used in TABLE 9 to determine HRS value.

AIR MIGRATION ROUTE

OBSERVED RELEASE - AIR

205. Is there any reason to suggest that air sampling should be done? (80)

NO _____ YES ____

Narrative Summary:

. . . . . .
. . . . . .
. . . . . .

206. Is there analytical evidence confirming an observed released air above background? (1) . .

NO ____ Go to Item 212 YES ____ Continue with Item 207

207. Date: (6) . . . . . .

208. Reference: (60)

. . . . . .
. . . . . .

209. Location of upwind and downwind sampling points: (80)

. . . . . .
. . . . . .
. . . . . .

210. **Method and equipment:** (80)

. . . . . .
. . . . . .
. . . . . .

211. Contaminants detected above background: (150)

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

212. Analytical evidence of contaminants. (2) . . .

HRS value - 45 if yes NO evidence - HRS value = 0

REACTIVITY & INCOMPATABILITY

See TABLE 13 and TABLE 14

Most reactive materials onsite are: (List)

213. (25) . . . . . .

214. (25) . . . . . .

215. (25) . . . . . .

216. (25) . . . . . .

217. (25) . . . . . .

218. (25) . . . . . .

Most incompatible pairs of material onsite are: (List)

219. (25) . . . . . .

220. (25) . . . . . .

221. (25) . . . . . .

222. (25) . . . . . .

223. (25) . . . . . .

224. (25) . . . . . .

| INCOMPATIBILITY | VALUE and TABLE 13 |
|---|---|
| No incompatible materials are present | 0 |
| Present but do not pose a hazard | 1 |
| Present & may pose a future hazard | 2 |
| Present & posing an immediate hazard | 3 |

225. HRS Value (R/I). (1) . .

POPULATION EXPOSED

Population exposed to risk of air release, (fill in population information for all distances from the volatilizing source):

Indicate in each box (a, b, c and d) the total population for the given radius.

Total Population

226. 0 - 1/4 mile (7) . . . . . .

227. 0 - 1/2 mile (7) . . . . . .

228. 0 - 1 mile (7) . . . . . .

229. 0 - 4 miles (8) . . . . . .

230. Use insert *** to determine HRS value. (2) . . .

***Select the highest valuefor this rating factor as follows: Distance to Population from Hazardous Substance

| Population | 0-4 Mile | 0-1 Mile | 0-1/2 Mile | 0-1/4 Mile |
|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 |
| 1-100 | 9 | 12 | 15 | 18 |
| 101-1000 | 12 | 15 | 18 | 21 |
| 1001-3000 | 15 | 18 | 21 | 24 |

DISTANCE TO A SENSITIVE ENVIRONMENT

Coastal wetland Freshwater wetland Critical habitat

231. Location and description of wetlands (5 acre minimum): (200)

. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .
. . . . . .

Location of critical habitat of endangered species, including notation of whether the species is on the Federal list.

232. Distance from volatile substance to the sensitive environment. (6) . . . . . .

233. HRS Value - See TABLE 12. (1) . .

LAND USE within 2 miles - See TABLE 14

DISTANCE/VALUE

234. Commercial/industrial area. (5) . . . . / .

235. Residential area. (5) . . . . / .

236. National/State park, forest, wildlife reserves. (5) . . . . / .

237. Prime agricultural land. (5) . . . . / .

238. Agricultural land in production within the past 5 years. (5) . . . . / .

239. Is a historic landmark site within view of the facility or like to be subject to significant impacts from air release? YES/NO (80)
If so, identify, locate and describe expected impacts:

. . . . . .
. . . . . .
. . . . . .

240. HRS Value (use TABLE 14, Land Use). (1) . .

## FIRE AND EXPLOSION FROM HAZARDOUS OR TOXIC MATERIALS

FIRE AND EXPLOSION POTENTIAL:

241. Based on field observation and measurement, is there a demonstrated fire and explosion threat at this site? (41) NO/YES Describe:

Narrative summary:

. . . . . .

242. Has state or local fire marshal certified that site presents a significant hazard of fire or explosion: (41)

Narrative summary:

. . . . . .

---

IF ANY QUESTIONS IN ITEMS 241 and 242 HAVE BEEN CHECKED "YES" FOR FIRE AND EXPLOSION POTENTIAL, COMPLETE ITEMS (243 TO 284)

CONTAINMENT

Substances found onsite that are individually ignitable.

243. (25) . . . . . .

244. (25) . . . . . .

245. (25) . . . . . .

246. (25) . . . . . .

247. (25) . . . . . .

Substances found onsite that are incompatible.

248. (25) . . . . . .

249. (25) . . . . . .

250. (25) . . . . . .

251. (25) . . . . . .

252. (25) . . . . . .

253. Are any of the substances that are onsite hazardous in combination and are not segregated or isolated so as to prevent the formation of incompatible mixtures: Y OR N (1) . .

| ISOLATED/SEGREGATED | VALUE |
|---|---|
| YES | 1 |
| NO | 3 |

254. HRS Value (Containment). (1) . .

WASTE CHARACTERISTICS:

255. Direct evidence of ignitability or explosion potential, as measured: Y = YES N = NO (1) . .

256. HRS Value (Direct Evidence). VALUE: YES 3 NO 0 (1) . .

257. Ignitability: List the most ignitable substance onsite and indicate the National Fire Protection Agency (NFPA) level assigned this substance (TABLE 15): (25)

. . . . . .

258. HRS Value (Ignitable). (1) . .

259. Most reactive materials onsite are: See TABLE 16 (25)

. . . . . .

260. HRS Value (Reactive): (1) . .

261. Most incompatible pairs of material onsite are: See TABLE 13 (40)

. . . . . .

262. HRS Value (Incompatible). (1) . .

263. Quantity of materials onsite that are flammable or explosive, including hazardous materials that are flammable or explosive alone or in combination: (9) . . . . . .

264. HRS (Quantity) - See TABLE 3. (1) . .

DISTANCE TO TARGETS:

265. Distance to nearest persons like to be at risk to fire or explosion (critical distances that require careful measurement for HRS purposes are 0 feet, 200 feet, 1/2 mile, 1 mile and 2 miles): (6) . . . . . .

266. HRS Value (Population) - See TABLE 15A. (1) . .

267. Distance to the nearest building from the hazardous substance (critical distances that require careful measurement for HRS purposes are 50 feet, 200 feet and 1/2 mile): (6) . . . . . .

| DISTANCE | VALUE |
|---|---|
| 1/2 mile | 0 |
| 201'-1/2 mile | 1 |
| 51'-200' | 2 |
| 0-50' | 3 |

268. HRS Value (Buildings). (1) . .

269. Distance to nearest wetland from the hazardous substance? (6) . . . . . .

| DISTANCE | VALUE |
|---|---|
| 100' | 0 |
| 100' | 3 |

270. HRS Value (Wetlands). (1) . .

271. Distance to a critical habitat from the hazardous substance (critical distances that require careful management of HRS purposes are 100 feet, 1000 feet and 1/2 mile): (6) . . . . . .

| DISTANCE | VALUE |
|---|---|
| 1/2 mile | 0 |
| 1001 -1/2 mile | 1 |
| 101-1000' | 2 |
| 0-100' | 3 |

272. HRS Value (Habitat). (1) . .

273. Is a fire like to spread to this critical habitat, regardless of distance? YES or NO (1) . .

TARGETS FOR FIRE AND EXPLOSION:

Land use within 2 miles (note that this item is identical to the air migration pathway, providing the location of the volatilizing substances and the flammable or explosive substance is the same):

(Critical distances requiring measurement for HRS purposes are 1/4 mile, 1/2 mile, 1 mile and 2 miles): See TABLE 14

| | | DISTANCE/VALUE |
|---|---|---|
| 274. | Commercial/industrial area. (5) | . . . . / . |
| 275. | Residential area. (5) | . . . . / . |
| 276. | National/State park, forest, wildlife reserves. (5) | . . . . / . |
| 277. | Prime agricultural land. (5) | . . . . / . |
| 278. | Agricultural land in production within the past 5 years. (5) | . . . . / . |

279. Is a historic landmark site within view of the facility or like to be subject to significant impacts from fire or explosion? YES OR NO. Describe (81)

. . . . . .
. . . . . .
. . . . . .

TABLE 14 is used to determine the HRS value. The highest value is to be chosen.

280. HRS Value (Land Use). (1) . .

281. Population with 2 mile radius. (If areial photography is used in making the count, assume 3.8 individuals per dwelling). (6) . . . . . .

| POPULATION | VALUE |
|---|---|
| 0 | 0 |
| 1-100 | 1 |
| 101-1000 | 2 |
| 1001-3000 | 3 |
| 3001-10,000 | 4 |
| 10,000 | 5 |

282. HRS Value (Population). (1) . .

283. Buildings within a 2-mile radius (measures from the hazardous substance). (4) . . . . .

| NO OF BUILDINGS | VALUE |
|---|---|
| 0 | 0 |
| 1-26 | 1 |
| 27-60 | 2 |
| 261-790 | 3 |
| 791-2600 | 4 |
| 2600 | 5 |

284. HRS Value (Buildings). (1) . .

DIRECT CONTACT

285. Is there a confirmed instance in which contact caused injury, illness or death to humans or to domestic or wild animals? (100)

Narrative summary:

. . . . . .
. . . . . .
. . . . . .

286. HRS Values: YES - 45, NO - 0 (2) . . .

---

IF ITEM 285 FOR DIRECT CONTACT IS CHECKED "YES" SKIP TO LINE 292 - IF NO, COMPLETE ITEMS 287 TO 291

Accessibility to where the hazardous material is deposited - evaluate the following aspects: (1)

287. Surveillance system:

| | VALUE |
|---|---|
| YES | 0 |
| NO | 1 |

. .

288. Artificial or natural barriers to entry: (1)

| | VALUE |
|---|---|
| YES | 0 |
| NO | 1 |

. .

289. Control of entry points: (1)

| | VALUE |
|---|---|
| YES | 0 |
| NO | 1 |

. .

Add values from lines 287, 288 and 289 to mark in 291.

290. Have any changes in accessibility been made since the confirmed instance of direct contact? (1) Y/N . .

291. HRS Value (Access). (1) . .

292. Indicate if there is Containment of the hazardous materials against direct contact: (6)

| CONTAINMENT | VALUE | Y OR N |
|---|---|---|
| Surface impound. | 15 | . . |
| Sealed or unsealed containers | 15 | . . |
| Tanks | 15 | . . |
| Landfill with less than 2' cover | 15 | . . |
| Spills | 15 | . . |
| Otherwise | 0 | . . |

293. HRS Value (Containment) from item 292. (2) . . .

294. Toxicity of the most hazardous materials that are not adequately contained against direct contact: Refer to TABLES 4 & 5 (60)

Storage Area #

. . . . . (20)

Material

. . . . . (20)

Toxicity

. . . . . (20)

295. HRS Value (Toxicity). (1) . .

296. Population within one mile of hazardous materials: (7) . . . . . .

| POPULATION WITHIN 1 MILE | VALUE |
|---|---|
| 0 | 0 |
| 1-100 | 1 |
| 101-1000 | 2 |
| 1001-3000 | 3 |
| 3001-10,000 | 4 |
| >10,000 | 5 |

Basis for this estimate:

297. HRS Value (Population): (1) . .

Location of critical habitat of endangered species, including notation of whether species is on the federal list:

298. Circle the appropriate Distance to the critical habitat (critical distance that require measurement for HRS purposes are 1/4 mile, 1/2 mile and 1 mile): (6)

. . . . . .

| DISTANCE | VALUE |
|---|---|
| 1 mile | 0 |
| 1/2 mile - 1 mile | 1 |
| 1/4 mile - 1/2 mile | 2 |
| <1/4 mile | 3 |

299. Indicate if the critical habitat is on the State S, Federal F, or both B list(s). (1) . .

300. HRS Value (Distance to critical habitat) from Item 298. (1) . .

301-398. Reserved

399. Remarks. (80)

BLDG 619 (INACCESSIBLE) FLOOR CONTAMINATED W LEAKAGE FROM PREVIOUSLY STORED PESTICIDES, INCLUDING DDT, BLDG 615 BATHROOM DRAIN WAS CLOGGED AND MERCURY CONTAMINATION WAS RECENTLY DISCOVERED. THE SOURCE OF THE MERCURY CONTAMINATION IS UNKNOWN; FUEL STORAGE TANK COULD BE CONTAMINATED WITH DDT; BOILER INSULATION COULD CONTAIN ASBESTOS

## ORDNANCE AND EXPLOSIVE WASTE (OEW)

OEW RISK ASSESSMENT:

The OEW risk assessment is based on records searches, reports of Explosive Ordnance Detachment actions, and field observations and measurements. These data are used to assess the risk involved based upon the hazards identified at the site. The risk assessment is composed of two factors, hazard severity and hazard probability.

Hazard Severity. Hazard severity categories are defined to provide a qualitative measure of the worst credible mishap resulting from personnel error, environmental conditions, or other pertinent factors.

| Description | Category | Mishap Definition |
|---|---|---|
| CATASTROPHIC | 1 | Explosion, Death, Life-threatening or other injury causing total permanent disability, or Property damage in excess of $500,000. |
| CRITICAL | 2 | Major fire, Severe injury which requires doctor or hospital care for 1 or more persons, or Property damage between $100K and $500K. |
| MARGINAL | 3 | Minor fire, Minor injury which would require any medical or Property damage between $700 and $100,000. |
| NEGLIGIBLE | 4 | No injuries or Property damage less than $700. |

400. The Hazard Category assigned for this site is. (1) 1

401. This is based primarily upon the following: (160)

DISCOVERY OF UNEXPLODED ORDNANCE LOCATED ON ARMY PROPERTY IMMEDIATELY ADJACENT TO COAST GUARD PROPERTY . . . .

Hazard probability. The probability that a hazard has been or will be created due to the presence of unexploded ordnance or explosive materials on a formerly used DOD site.

| Description | Level | Probability Definition |
|---|---|---|
| FREQUENT | A | Has already occurred more than once or has the potential to occur at least every 1 or 2 years. |
| PROBABLE | B | Has already occurred once or has the potential to occur more than once in the next 10 to 20 years. |
| OCCASIONAL | C | Is likely to occur sometime in the next 10 to 20 years. |
| REMOTE | D | Unlikely but possible due to the nature of past DOD use of the site. |
| IMPROBABLE | E | So unlikely that it can be assumed that it will not occur. |

402. The hazard probability level assigned for this site is. (1) A.

403. This is based upon the following: (160)

THREE UNEXPLODED 16 INCH SHELLS FOUND ON ARMY PROP ADJACENT TO COAST GUARD PROP 3 YRS AGO, LIVE GRENADES FOUND NEXT TO COAST GUARD PROP BEFORE 1980 . . . . . .

Risk Assessment. The risk assessment value for this site is to be found by using the following table. Enter with the results of items 400 & 402.

| Probability Level | A | B | C | D | E |
|---|---|---|---|---|---|
| Severity Category: | | | | | |
| I | 20 | 20 | 18 | 14 | 10 |
| II | 20 | 18 | 14 | 10 | 6 |
| III | 18 | 14 | 10 | 6 | 2 |
| IV | 14 | 10 | 6 | 2 | 0 |

404. The risk assessment value for this site is. (3) .20

405. Ordnance and Explosive Waste Characteristics. Is there any direct or other evidence that OEW is present or could be present based upon former DOD uses of the site? This evidence can be based upon direct observation of the site survey team, reports received from individuals, government agencies, or news media, review of drawings or archive documents relating to DOD operations at the site, or any other pertinent source.

YES (Complete the rest of this question).

NO (Enter 0 in Question 2 on the OEW Work Sheet and continue starting with Question 422).

If the answer to this question is YES describe briefly the type of evidence and where that evidence is available for detailed review. (161)

CONVERSATION WITH CHIEF MILLIS AT FT TOTTEN

(For Questions 406 through 442 underline, check, circle or otherwise indicate each appropriate answer.)

406. High Explosives. (4)

| | YES VALUE | NO VALUE | Y OR N |
|---|---|---|---|
| Primary or Initiating Explosives (Lead Styphnate, Lead Azide, Nitroglycerin, Mercury Azide, Mercury Fulminate, etc.) | 10 | 0 | N |
| Booster or Bursting Explosives (PETN, Compositions A, B, C, Tetryl, TNT, RDX, HMX, HBX, Black Powder, etc.) | 5 | 0 | N |
| Military Dynamite | 5 | 0 | N |
| Less Sensitive Explosives (Ammonium Nitrate, Favier Explosives, etc.) | 3 | 0 | N |

407. High Explosives Ordnance Ranking System (ORS) Value (Maximum value of 10). (2) 0

408. Propellants. (5)

| | YES VALUE | NO VALUE | Y OR N |
|---|---|---|---|
| Single Base Propellant (M10, M12, etc.) | 3 | 0 | N |
| Double Base Propellant (M2, M5, M9, M13, etc.) | 4 | 0 | N |
| Triple Base Propellant (M15, M17, etc.) | 4 | 0 | N |
| Liquid Propellant | 4 | 0 | N |
| Large Rocket Motors | 5 | 0 | N |

409. Other (describe). (15) .....

410. Propellants HRS Value from item 408. (1) 0

411. **Conventional** Ordnance and Ammunition. (11)

| | YES VALUE | Y OR N |
|---|---|---|
| Small Arms (.22 cal - 20mm) | 1 | N |
| Medium/Large Caliber (over 20mm) | 5 | N |
| Ammunition, Inert | 0 | Y |
| Ammunition, Blank or Practice | 2 | N |
| Bombs, Explosive | 5 | N |
| Bombs, Practice, Fuzed | 2 | N |
| Grenades, Mines | 5 | Y |
| Grenades, Mines, Practice, Fuzed | 2 | N |
| Detonators, Blasing Caps | 5 | N |
| Rockets, Missiles | 5 | N |
| Demolition Charges | 4 | N |

412. Other. (15) 16 LIVE SHELLS

413. Conventional Ordnance and Ammunition ORS Value from item 411 (Maximum of 5). (1) 5

414. Pyrotechnics. (4)

| | YES VALUE | Y OR N |
|---|---|---|
| White Phosphorus | 5 | N |
| **Pyrolusite** | 4 | N |
| **Flares** | 3 | N |
| Smoke Rounds and Bombs | 3 | N |

415. Other Pyrotechnic Devices. (15) . . . . . .

416. Pyrotechnics ORS Value (Maximum of 5). (1) 0

417. Chemical Weapons/Agents. (3)

| | YES VALUE | Y OR N |
|---|---|---|
| Toxic Chemical Warfare Agents (GB, VX, H, HD, BZ, __, etc.) | 40 | N |
| Vomiting Agents (DA, DM, DC, etc.) | 20 | N |
| Tear Agents (CNS, CNB, BBC, CS, etc.) | 10 | N |

418. Other Chemical Warfare Agents. (15) .....

419. Chemical Weapons ORS Value. (2) 0

420. Total Ordnance and Explosive Waste Characteristics ORS Value (Total = 407 + 410 + 413 + 416 + 419 with a Maximum value of 55). (2) 5

421. Provide a detailed description on any and all chemical weapons or chemical agents present at the site. (400)

NONE COAST GUARD PORTION OF SITE. ORDNANCE WAS FOUND ON ARMY PROPERTY ADJACENT TO COAST GUARD LAND

422. Locations of Contamination. (6)

| | VALUE | Y OR N |
|---|---|---|
| Within Tanks, Pipes, Vessels or Other confined locations. | 5 | N |
| On the surface or within 3 feet. | 5 | Y |
| Inside walls, ceilings, or other parts of Buildings or Structures. | 4 | N |

423. **Other (describe).** (22) . . . . . .

424. **Locations of Contamination ORS Value (Maximum of 5).** (1) 5.

425. **Area Contaminated.** (6) . . . . . .

| | VALUE |
|---|---|
| None | 0 |
| Less than 1 acre | 1 |
| 1 to 5 acres | 2 |
| 5 to 50 acres | 3 |
| 50 to 250 acres | 4 |
| Over 250 acres | 5 |

426. **Area Contaminated ORS Value (Maximum of 5).** (1) . .

427. **Extent of Contamination ORS Value Sum of items (424 + 426) - (Maximum of 10).** (2) . . .

428. **Weight of OEW materials on site.** (7) . . . . . .

429. **Number of rounds (from 428).** (7) . . . . . .

| Weight of Bulk Explosives in Rounds | No. of Rounds, Containers, etc. | Value |
|---|---|---|
| 0 | 0 | 0 |
| Less than 10 | 1 to 9 | 2 |
| 10 to 100 | 10 to 100 | 4 |
| 101 to 500 | 101 to 500 | 6 |
| 501 to 1000 | 501 to 1000 | 8 |
| Over 1000 | Over 1000 | 10 |

430. **Quantity of OEW ORS Value (Maximum of 10).** (2) . . . rounds
Two valves may be figured (e.g., 8 lbs TNT gives value of 2 & 200 rounds a value of 6. Then the ORS value would be 8).

431. **Provide a detailed description and the types and amounts of ordnance and explosive materials previously removed from the site by EOD forces, currently at the site, or suspected to be at the site.** (800)

THE COAST GUARD FOUND AND REMOVED THREE UNEXPLODED 16 INCH SHELLS AND LIVE GRENADES ON ARMY PROPERTY LOCATED ADJACENT TO COAST GUARD LAND

432. Distance to nearest persons or normally inhabited structures likely to be at risk from OEW site. (6)

| Distance to Nearest Target | VALUE |
|---|---|
| Less than 1250 feet | 5 |
| 1250 feet to 0.5 miles | 4 |
| 0.6 miles to 1.0 mile | 3 |
| 1.1 mile to 2.0 miles | 2 |
| 2.1 miles to 5.0 miles | 1 |
| Over 5.0 miles | 0 |

433. Distance to Persons ORS Value (Maximum of 5). (1) 5

434. Distance to nearest utility system (power, water, or gas) or public highway likely to be at risk from OEW site. (6) 1 MILE

| Distance to Nearest Target | VALUE |
|---|---|
| Less than 1250 feet | 5 |
| 1251 feet to 1 mile | 3 |
| 1 mile to 2 miles | 1 |
| Over 2 miles | 0 |

435. Distances to Public Utilities/Highways ORS Value (Maximum of 5). (1) 3

436. Distances ORS Value (433 + 435) - (Maximum of 10). (2) .8

437. Numbers and types of Buildings within a 2 mile radius measured from the hazardous area, not the installation boundary. (6) .....

| Numbers of Buildings | VALUE |
|---|---|
| 0 | 0 |
| 1 to 10 | 1 |
| 11 to 50 | 2 |
| 51 to 100 | 3 |
| 101 to 250 | 4 |
| 251 or Over | 5 |

438. Numbers of Buildings ORS Value (Maximum of 5). (1) 5.

439. Types of Buildings. (30)

RESIDENTIAL AND OFFICE TYPE....

| | VALUE |
|---|---|
| Educational, Child Care, etc. | 5 |
| Residential, Hospitals, Hotels, etc. | 5 |
| Commercial, Shopping Centers, etc. | 5 |

| | |
|---|---|
| Industrial, Warehouse, etc. | 4 |
| Agricultural, Forestry, etc. | 3 |
| Detention, Correctional | 2 |
| Military | 1 |
| No Buildings | 0 |

440. Types of Buildings ORS Value (Maximum of 5). (1) 5

441. Numbers and Types of Buildings ORS Value (438 + 440) - Maximum of 10). (2) 10

442. Accessibility to site refers to the measures taken to limit access by humans or animals to ordnance and explosive wastes. Assign a value using the following guidance: Describe. (40)

FENCE W/ LOCKED GATE + NATURAL BARRIER.....

| Barrier | Assigned Value |
|---|---|
| A 24-hour surveillance system (e.g., television monitoring or surveillance by guards or facility personnel) which continuously monitors and controls entry onto the facility; | 0 |
| or | |
| An artificial or natural barrier (e.g., a fence combined with a cliff), which completely surrounds the facility; and a means to control entry, at all times, through the gates or other entrances to the facility (e.g., an attendant, television monitors, locked entrances, or controlled roadway access to the facility). | 0 |
| Security guard, but no barrier | 1 |
| A barrier, but no separate means to control entry | 2 |
| Barriers do not completely surround the facility | 3 |
| No barrier or security system | 5 |

443. ORS Value (Maximum of 5). (1) .Q

444-498. Reserved

499. Remarks. (80)

UNEXPLODED ORDNANCE FOUND ON ARMY PROPERTY IMMEDIATELY ADJACENT TO COA ST GUARDS

## DEBRIS

Debris description:

500. Type of Debris. (150)

2 TIMBER BLDGS, 2 MASONRY-TIMBER BLDGS, 1 MASONRY BLDG, 1 CONCRETE BLDG

501. Type of construction for structures. (100)

SEE ABOVE

502. Quantity. (80)

SEE ABOVE

503. Condition, etc. (15)

HAZARDOUS

504. List underground structures or items. (80)

NONE

505. DOD use of debris items. (80)

STORAGE AND WORKSHOPS

506. List buildings or other items that owner(s), after DOD disposal, have used for their benefit. Give use. (150)

BLDGS 605, 609, 610, 611, 612, 614, 615, 620, 621, 622. PIER, POWER PLANT ADM/BARRACKS, MESS HALL & GALLEY, STORAGE, VACANT, RESERVE OPER BARRACK, GARAGE, AMMUNITION, RESPECTIVELY

DEBRIS (CONTINUED)

507. List items onsite that were not constructed or used by DOD or DOD contractor. (80)

NONE

508. List items owner wants to retain. (80)

BLDGS 605, 609, 610, 611, 612, 614, 615, 620, 621, 622, HYDRANT, LIGHT POST

509. List items that may have salvage value. (100)

NONE

510. Give location of nearest or most economical disposal location. (80)

DEBRIS MATERIALS SHOULD BE COMPACTED AND BURIED ONSITE OR IN COUNTY LANDFILL

511. Give special labor, equipment or methods that will be required for project. (100)

BLDG 619 FLOOR SURFACE CONTAMINATED WITH LEAKAGE FROM PREVIOUSLY STORED PESTICIDES, INCLUDING DDT

512. List any restrictions on methods of demolition or disposal. (80)

FOUNDATION, BACK AND SIDE WALLS OF BLDG 619 WILL REMAIN INTACT

513. Describe site grading that will be required for restoration: (include any special requirements or adverse foundation conditions). (40)

MATCH SURROUNDING GRADE

514. Give location for borrow material if required. (40)

## DEBRIS (CONTINUED)

515. List and give location of underground items that need to be preserved. (60)

NONE

516. Give requirements for seeding and mulching or other erosion measures. (80)

SITE GRADE AND SEED ALL AREAS DISTURBED BY DEMOLITION

517. Describe unsightly debris (UD). If no unsightly debris exists, enter NONE for this item and 0 for item 538, and do not complete items 518 thru 529. (160)

2 TIMBER BLDGS, 2 MASONRY & TIMBER BLDGS, 1 MASONRY BLDG, 1 CONCRETE BLDG

518. Size of Debris Area (UD): (2) — Value: 2

| | Value |
|---|---|
| Debris covers area 5 acres or less in size. | 2 |
| Debris covers area 6-25 acres in size. | 5 |
| Debris covers area over 25 acres in size. | 10 |

519. Debris Above Ground Level (UD): (2) — 4

(Include structures, miscellaneous debris items or piles 3' or more in height. Structures larger than 12,000 SF in area or more than two-story height to count as two structures. Groups of individual items wioll be considered one structure).

| Number of Structures or Piles: | Value |
|---|---|
| 0 | 0 |
| 1-2 | 2 |
| 3-6 | 4 |
| 7-15 | 6 |
| 16-30 | 8 |
| 31 or more | 10 |

## DEBRIS (CONTINUED)

520. Describe unusual items that require transformation to structure comparison in Item 519. (100)

NONE

521. Ground level debris (less than 3' high) (UD). Foundations, slabs, small piles, etc: (1)

| Area Covered by Debris Items | Value |
|---|---|
| No Ground Level Debris | 0 |
| 0-20,000 SF | 1 |
| 20,000 - 100,000 SF | 3 |
| Over 100,000 SF | 5 |

0

522. Briefly describe Item 521 (concrete foundation, rubble etc). (80)

523. Condition of Debris (UD): (2)

| | Value |
|---|---|
| Building or structures very unsightly, such as partially demolished or collapsed or deteriorated beyond any reasonable renovation. | 10 |
| Structures that are in need of considerable maintenance, very large foundations, piles of building rubble, etc. | 5 |
| Small foundations, small debris piles or buildings in good condition that are not compatible with surrounding area. | 2 |

10

524. Give basis for value selected in Item 523. (100)

BUILDINGS ARE SEVERELY VANDALIZED AND DILAPIDATED

DEBRIS (CONTINUED)

525. Location (UD): (2) — Value: 10

| | Value |
|---|---|
| Rural | 2 |
| Small Town or Community | 5 |
| Urban or densely populated residential area | 10 |

526. Effect on Surrounding Area (UD): (1) — Value: 2

| | Value |
|---|---|
| Contributes highly to general area being slum or very desirable for use. | 5 |
| Serves as a deterent to development of general area or has slight bearing on above choice. | 2 |
| No effect. | 0 |

527. Briefly describe effect in Item 526. (80)

AREA LIMITS THE EXPANSION OF COAST GUARD PERSONNEL HOUSING

528. Public Use or Exposure (UD): (2) — Value: 0

| | Value |
|---|---|
| Isolated from public exposure. | 0 |
| Located in area with little public exposure. | 1 |
| Located in area that receives heavy public use or exposure of seasonal or other varying nature. | 6 |
| Located in area that receives heavy year round use. | 10 |

529. Give basis for value seleced in Item 528. (80)

AREA IS NOT OPEN TO GENERAL PUBLIC

DEBRIS (CONTINUED)

530. Describe Hazardous Debris (HD): (160)

If there is no debris that represents a potential physical or health hazard to persons or is a potential source of damage to surrounding property, enter NONE for this item and 0 for item 539 and do not complete items 531 thru 537.

3 DILAPIDATED VANDALIZED BLDGS. 2 DILAPIDATED BLDS, 1 DETERIORATING BLDG CONTAMINATED WITH PREVIOUSLY STORED PESTICIDES INCLUDING DDT

531. Probability of Injury or Health Hazard (HD): (2) — Value .6

| | Value |
|---|---|
| Has occurred frequently or has potential to occur at least annually. | 10 |
| Has occurred once and has potential to occur at least once every two years. | 8 |
| Has potential to occur every 2-10 years. | 6 |
| Has potential to occur every 10-25 years. | 4 |
| Unlikely to occur once every 25 years. | 2 |

532. List past occurrences or give basis for value selected in Item 531. (100)

CONTINUED DECAY & VANDALIZATION OF THE SE BLDGS INCREASES POTENTIAL HAZARD PROBABILITY

533. Severity of Potential Hazard (HD): (2) (Most probable results from incident involving debris) — Value .6

| | Value |
|---|---|
| Totally disabling or death. | 10 |
| Loss of limb, partial sight, hearing, etc. | 8 |
| Would require hospitalization or repeated medical treatment. | (6) |
| Would require minor medical care. | 3 |
| Minor cuts and bruises. | 1 |
| No injury. | 0 |

DEBRIS (CONTINUED)

534. Give information on past incidents or describe conditions that would contribute to value selected in Item 533. (100)

SEVERELY VANDALIZED BLDS ARE EASILY ACCESSIBLE TO CHILDREN RESIDING IN ARMY RESIDENCES ACROSS THE WAY.

535. Hazard to Property Other Than Owner (HD): (2) (Damage resulting from fire, collapse, etc.) Value .0

| | |
|---|---|
| Potential for damage in excess of $250,000. | 10 |
| Potential for damage of $75,000 to $250,000. | 5 |
| Potential for damage of less than $75,000. | 1 |
| No damage potential. | 0 |

536. List hazard and property that would be exposed to hazard in Item 535. (80)

. . . . . .

537. Probability of Damage Occurring (HD): (1) Value .1.

| | |
|---|---|
| In next two years. | 5 |
| In 2-10 years. | 4 |
| In 10-25 years. | 2 |
| Beyond 25 years. | 1 |

538. Has site been coordinated for demolition and/or removal under Section 106 of the National Preservation Act? ✓ Yes ___ No (1) .Y.

542-598. Reserved.

599. Remarks (80)

FLOOR SURFACE OF BLDG 619 CONTAMINATED W/ LEAKAGE FROM PREVIOUSLY STORED PESTICIDES INCLUDING DDT.

## DEBRIS WORKSHEET

539. Unsightly Debris Score:

| A. Item No. | Value |
|---|---|
| 518 | 2 |
| 519 | 4 |
| 521 | 0 |
| 523 | 10 |
| 525 | 10 |
| 526 | 2 |

TOTAL

B. If value for item 528 is 0, multiply total in A. by 0.5 14.

If value for items 528 is 1, multiply totasl in A. by 0.9 _____.

If value for item 528 is 6 to 10, add value selected to Total in A. _____.

C. Divide B. by 2.10 for Unsightly Debris Score 7 (Round to nearest whole number).

540. Hazard Debris Score:

| Item No. | Value |
|---|---|
| 531 | 6 |
| 533 | 6 |
| 535 | 0 |
| 537 | 1 |

A. Multiply Item 531 value by Item 533 = 36

B. Multiply Item 535 value by Item 537 = 0

TOTAL A + B = 36

Hazardous Debris Score = Total A+B = 36
(Round to nearest whoe number)

## DEBRIS WORKSHEET (CONTINUED)

541. Total Score for Ranking.

Total Score = Unsightly Debris Score (Item 538) + Hazardous Debris Score (Item 539) = 43.

TABLE 1

CONTAINMENT VALUE FOR GROUNDWATER ROUTE

(Use technical judgement of best fit)

---

Assign containment a value of 0 if: (1) all the hazardous substances at the facility are underlain by an essentially nonpermeable surface (natural or artificial) and adequate leachate collection systems and diversion systems are present; or (2) there is no groundwater in the vicinity. The value "0" does not indicate no risk. Rather, it indicates a significantly lower relative risk when compared with more serious sites on a national level. Otherwise, evaluate the containment for each of the different means of storage or disposal at the facility using the following guidance.

A. Surface Impoundment

| | Assigned Value |
|---|---|
| Sound run-on diversion structure, essentially nonpermeable liner (natural or artificial) compatible with the waste, and adequate leachate collection system. | 0 |
| Essentially nonpermeable compatible liner with no leachate collection system; or inadequate freeboard. | 1 |
| Potentially unsound run-on diversion structure; or moderately permeable compatible liner. | 2 |
| Unsound run-on diversion structure; no liner; or incompatible liner. | 3 |

B. Piles

| | Assigned Value |
|---|---|
| Piles uncovered and waste stabilized; or piles covered, waste unstabilized, and essentially nonpermeable liner. | 0 |
| Piles uncovered, waste unstabilized, moderately permeable liner, and leachate collection system. | 1 |
| Piles uncovered, waste unstabilized, moderately permeable liner, and no leachate collection system. | 2 |
| Piles uncovered, waste unstabilized, and no liner. | 3 |

TABLE 1 (CONTINUED)

CONTAINMENT VALUE FOR GROUNDWATER ROUTE

(Use technical judgement of best fit)

C. Containers

| | Assigned Value |
|---|---|
| Containers sealed and in sound condition, adequate liner, and adequate leachate collection system. | 0 |
| Containers sealed and in sound condition, no liner or moderately permeable liner. | 1 |
| Containers leaking, moderately permeable liner. | 2 |
| Containers leaking and no liner or incompatible liner. | 3 |

D. Landfill

| | Assigned Value |
|---|---|
| Essentially nonpermeable liner, compatible with waste, and adequate leachate collection system. | 0 |
| Essentially nonpermeable compatible liner, no leachate collection system, and landfill surface precludes ponding. | 1 |
| Moderately permeable, compatible liner, and landfill surface precludes ponding. | 2 |
| No liner or incompatible liner; moderately permeable compatible liner; landfill surface encourages ponding; no run-on control. | 3 |

TABLE 2

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

Assign containment a value of 0 if: (1) all the waste at the site is surrounded by diversion structures that are in sound condition and adequate to contain all runoff, spills, or leaks from the waste; or (2) intervening terrain precludes runoff from entering surface water. Otherwise, evaluate the containment for each of the different means of storage or disposal at the site and assign a value as follows:

A. Surface Impoundment

| | Assigned Value |
|---|---|
| Sound diking or diversion structure, adequate freeboard, and no erosion evident. | 0 |
| Sound diking or diversion structure, but inadequate freeboard. | 1 |
| Diking not leaking, out potentially unsound. | 2 |
| Diking unsound, leaking, or in danger of collapse. | 3 |

B. Waste Piles

| | Assigned Value |
|---|---|
| Piles are covered and surrounded by sound diversion or containment system. | 0 |
| Piles covered, wastes unconsolidated, diversion or containment system not adequate. | 1 |
| Piles not covered, waste unconsolidated, and diversion or containment system potentially unsound. | 2 |
| Piles not covered, wastes unconsolidated, and no diversion or containment or diversion system leaking or in danger or collapse. | 3 |

TABLE 2 (CONTINUED)

CONTAINMENT VALUES FOR SURFACE WATER ROUTE

C. Containers

| | Assigned Value |
|---|---|
| Containers sealed, in sound condition, and surrounded by sound diversion or containment system. | 0 |
| Containers sealed and in sound condition, but not surrounded by sound diversion or containment system. | 1 |
| Containers leaking and diversion or containment structures potentially unsound. | 2 |
| Containers leaking, and no diversion or containment structures or diversion structures leaking or in danger of collapse. | 3 |

D. Landfill

| | Assigned Value |
|---|---|
| Landfill slope precludes runoff, landfill surrounded by sound diversion system, or landfill has adequate cover material. | 0 |
| Landfill not adequately covered and diversion system sound. | 1 |
| Landfill not covered and diversion system potentially unsound. | 2 |
| Landfill not covered and no diversion system present, or diversion system unsound. | 3 |

TABLE 3

QUANTITY RANKING VALUES

Hazardous waste quantity includes all hazardous substances at a facility (as deposited) except that with a containment value of 0 (See items 102 or 103). Do not include amounts of contaminated soil or water; in such cases, the amount of contaminating hazardous substance may be estimated.

On occasion, it may be necessary to convert data to a common unit to combine them. In such cases, 1 ton = 1 cubic yard = 4 drums and for the purposes of converting bulk storage, 1 drum = 50 gallons. Assign a value as follows:

| Gallons | Tons/Cubic Yards | No. of Drums | Assigned Value |
|---|---|---|---|
| 0 | 0 | 0 | 0 |
| 1-2000 | 1-10 | 1-40 | 1 |
| 2,050-12,500 | 11-62 | 41-250 | 2 |
| 12,550-25,000 | 63-126 | 251-500 | 3 |
| 25,050-50,000 | 126-250 | 501-1000 | 4 |
| 50,050-125,000 | 251-625 | 1001-2500 | 5 |
| 125,050-250,000 | 626-1250 | 2501-5000 | 6 |
| 250,050-500,000 | 1251-2500 | 5001-10,000 | 7 |
| 500,000 | 2500 | 10,000 | 8 |

TABLE 4
WASTE CHARACTERISTICS VALUES
FOR SOME COMMON CHEMICALS

| CHEMICAL/COMPOUND | | | | |
|---|---|---|---|---|
| Acetaldehyde | 3 | 0 | 3 | 2 |
| Acetic Acid | 3 | 0 | 2 | 1 |
| Acetone | 2 | 0 | 3 | 0 |
| Aldrin | 3 | 3 | 1 | 0 |
| Ammonia, Anhydrous | 3 | 0 | 1 | 0 |
| Aniline | 3 | 1 | 2 | 0 |
| Benzene | 3 | 1 | 3 | 0 |
| Carbon Tetrachloride | 3 | 3 | 0 | 0 |
| Chlordane | 3 | 3 | 0* | 0* |
| Chlorobenzene | 2 | 2 | 3 | 0 |
| Chloroform | 3 | 3 | 0 | 0 |
| Cresol-O | 3 | 1 | 2 | 0 |
| Cresol-M&P | 3 | 1 | 1 | 0 |
| Cyclohexane | 2 | 2 | 3 | 0 |
| Endrin | 3 | 3 | 1 | 0 |
| Ethyl Benzene | 2 | 1 | 3 | 0 |
| Formaldehyde | 3 | 0 | 2 | 0 |
| Formic Acid | 3 | 0 | 2 | 0 |
| Hydrochloric Acid | 3 | 0 | 0 | 0 |
| Isopropyl Ether | 3 | 1 | 3 | 1 |
| Lindane | 3 | 3 | 1 | 0 |
| Methane | 1 | 1 | 3 | 0 |
| Methyl Ethyl Ketone | 2 | 0 | 3 | 0 |
| Methy Parathion in xylene Solution | 3 | 0** | 3 | 2 |
| Naphthalene | 2 | 1 | 2 | 0 |
| Nitric Acid | 3 | 0 | 0 | 0 |
| Parthion | 3 | 0** | 1 | 2 |
| PCB | 3 | 3 | 0** | 0** |
| Petroleum, Kerosene (Fuel Oil No. 1) | 3 | 1 | 2 | 0 |
| Phenol | 3 | 1 | 2 | 0 |
| Sulfuric Acid | 3 | 0 | 0 | 2 |
| Toluene | 2 | 1 | 3 | 0 |
| Trichlorobenzone | 2 | 3 | 1 | 0 |
| - Trichloroethane | 2 | 2 | 1 | 0 |
| xylene | 2 | 1 | 3 | 0 |

[1]Sax, N. I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Co., New York, 4th ed, 1975. The highest rating listed under each chemical is used.

[2]JRB Associates, Inc., Methodology for Rating the Hazard Potential of Waste Disposal Sites, May 5, 1980.

[3]National Fire Protection Association, National Fire Codes, Vol 13, No. 49, 1977.

*Professional judgment based on information contained in the U.S. Coast Guard CHRIS Hazardous Chemical Data, 1978.

**Professional judgment based on existing literature.

TABLE 5

SAX TOXICITY RATINGS

0 - No Toxicity* (None)**

This designation is given to materials which fall into one of the following categories:

(a) Materials which cause no harm under any conditions of normal use.

(b) Materials which produce toxic effects on humans only under the most unusual conditions or by overwhelming dosage.

1 - Slight Toxicity*(Low)**

(a) Acute Local. Materials which on single exposure lasting seconds, minutes, or hours cause only slight effects on the skin or mucuous membranes regardless of the extent of the exposure.

(b) Acute Systemic. Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slight effects following a single exposure lasting seconds, minutes, or hours, or following ingestion of a single dose, regardless of the quantity absorbed or the extent of exposure.

(c) Chronic Local. Materials which on continuous or repeated exposure extending over periods of days, months, or years cause only slight and usually reversible harm to the skin or mucuous membranes. The extent of exposure may be great or small.

(d) Chronic Systemic. Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce only slight and usually reversible effects extending over days, months, or years. The extent of the exposure may be great or small.

In general, those classified as having "slight toxicity" produce changes in the human body which are readily reversible and which will disappear following termination of exposure, either with or without medical treatment.

TABLE 5 (CONTINUED)

SAX TOXICITY RATINGS

| 2 - Moderate Toxicity*(Mod)** | 3 - Severe Toxicity((High)** |
|---|---|
| (a) Acute Local. Materials which on single exposure lasting seconds, minutes, or hours cause moderate effects on the skin or mucous membrane. These effects may be the result of intense exposure for a matter of hours. | (a) Acute Local. Materials which on single exposure lasting seconds or minutes cause injury to skin or mucous membranes of sufficient severity to threaten life or to cause permanent physical impairment or disfigurement. |
| (b) Acute Systemic. Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and produce moderate effects following single exposure lasting seconds, minutes, or hours, or following ingestion of a single dose. | (b) Acute Systemic. Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which can cause injury of sufficient severity to threaten life following a single exposure lasting seconds, minutes, or hours, or following ingestion of a single dose. |
| (c) Chronic Local. Materials which on continuous or repeated exposure extending over periods of days, months, or years cause moderate harm to the skin or mucous membrane. | (c) Chronic Local. Materials which on continuous or repeated exposure extending over periods of days, months, or years can cause injury to skin or mucous membrane of sufficient severity to threaten life or cause permanent impairment, disfigurement, or irreversible change. |
| (d) Chronic Systemic. Materials which can be absorbed into the body by inhalation, ingestion, or through the skin and which produce moderate effects following continuous or repeated exposure extending over periods of days, months, or years. | (d) Chronic Systemic. Materials which can be absorbed into the body by inhalation, ingestion or through the skin and which can cause death or serious physical impairment following continuous or repeated exposures to small amounts extending over periods of days, months, or years. |
| Those substances classified as having "moderate toxicity" may produce irreversible so well as reversible changes in the human body. These changes are not of such severity as to threaten life or to produce serious physical impairment. | |

*Sax, N.I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Company, New York, 4th Edition, 1975.

**Sax, N.I., Dangerous Properties of Industrial Materials, Van Nostrand Rheinhold Company, New York, 5th Edition, 1979.

TABLE 6

PERSISTENCE (BIODEGRADABILITY) OF
SOME ORGANIC COMPOUNDS*

| VALUE = 3 HIGHLY PERSISTENT COMPOUNDS | | VALUE = 1 SOMEWHAT PERSISTENT COMPOUNDS | |
|---|---|---|---|
| ALDRIN | HEPTACHLOR | ACETYLENE DICHLORIDE | LIMONENE |
| BENZOPYRENE | HEPTACHLOR EPOXIDE | BEHENIC ACID, METHYL ESTER | METHYL ESTER OF LIGNOCERIC ACID |
| BENZOTHIAZOLE | 1,2,3,4,5,7,7-HEPTACHLORONORBORNENE | BENZENE | METHANE |
| BENZOTHIOPHENE | HEXACHLOROBENZENE | BENSENE SULFONIC ACID | 2-METHYL-5-ETHYL-PYRIDINE |
| BENZYL BUTYL PHTHALATE | HEXACHLORO-1,3-BUTADIENE | BUTYL BENZENE | METHYL NAPHTHALENE |
| BROMOCHLOROBENZENE | HEXACHLOROCYCLOHEXANE | BUTYL BROMIDE | METHYL PALMITATE |
| BROMOFORM BUTANOL | HEXACHLOROETHANE | E-CAPROLACTAM | METHYL PHENYL CARBINOL |
| BROMOPHENYL PHYNTL ETHER | METHYL BENZOTHIAZOLE | CARBON-DISULFIDE | METHYL STEARATE |
| CHLORDANE | PENTACHLOROBIPHENYL | O-CRESOL | NAPHTHALENE |
| CHLOROHYDROXY BENZOPHENONE | PENTACHLOROPHENOL | DECANE | NONANE |
| BIS-CHLOROISOPROPHYL ETHER | 1,1,3,3-TETRACHLOROACETONE | 1,2-DICHLOROETHANE | OCTANE |
| M-CHLORONITROBENZENE | TETRACHLOROPHENYL | 1,2-DIMETHOXY BENZENE | OCTYL CHLORIDE |
| DDE | THIOMETHYLBENZOTHIAZOLE | 1,3-DIMETHYL NAPHTHALENE | PENTANE |
| DDT | TRICHLOROBENZENE | 1,4-DIMETHYL PHENOL | PHENYL BENSOATE |
| DIBROMOBENZENE | TRICHLOROBIPHENYL | DIOCTYL ADIPATE | PHTHALIC ANHYDRIDE |
| DIBUTYL PHTHALATE | TRICHLOROFLUOROMETHANE | N-DODECANE | PROPYLBENZENE |
| 1,4-DICHLOROBENZENE | 2,4,6-TRICHLOROPHENOL | ETHYL BENZENE | 1-TERPINEOL |
| DIELDRIN | BROMODICHLOROMETHANE | 2-ETHYL-N-HEXANE | TOLUENE |
| DIETHYL PHTHALATE | BROMOFORM | O-ETHYLTOLUENE | VINYL BENZENE |
| DI(2-ETHYLHEXYL) PHTHALATE | CARBON TETRACHLORIDE | ISODECANE | XYLENE |
| DIMETHYL PHTHALATE | DIBROMODICHLOROETHANE | ISOPROPHYL BENZENE | |
| 4,6-DINITRO-2 AMINOPHENOL | TETRACHLOROETHANE | | |
| DIPROPYL PHTHALATE | 1,1,2-TRICHLOROETHANE | | |
| ENDRIN | | | |

TABLE 6 (CONTINUED)

PERSISTENCE (BIODEGRADABILITY) OF
SOME ORGANIC COMPOUNDS*

| VALUE = 2 PERSISTENT COMPOUNDS | | VALUE = 0 NONPERSISTENT COMPOUNDS | |
|---|---|---|---|
| ACENAPHTHYLENE | CIS-2-ETHYL-4-METHYL-1, 3-DIOXOLANE | ACETALDEHYDE | METHYL BENZOATE |
| ATRAZINE | TRANS-2-ETHYL-4-METHYL-1, 3-DIOXOLANE | ACETIC ACID | 3-ETHYL BUTANOL |
| (DIETHYL) ATRASINE | GUAIACOL | ACETONE | METHYL ETHYL KETONE |
| BARBITAL | 2-HYDROXYADIPONITRILE | ACETOPHENONE | 2-METHYLPROPANOL |
| BORNEOL | ISOPHORONE | BENZOIC ACID | OCTADECANE |
| BROMOBENZENE | INDENE | DI-ISOBUTYL CARBINOL | PENTADECANE |
| CAMPHOR | ISOBORMEOL | DOCOSANE | PENTANOL |
| CHLOROBENZENE | ISOPROPHENYL-R-ISOPROPYL BENZENE | EICOSANE | PROPANOL |
| 1,2-BIS-CHLOROETHOXY ETHANE | 2-METHOXY BIPHENYL | ETHANOL | PROPYLAMINE |
| B-CHLOROETHYL METHYL ETHER | METHYL BIPHENYL | ETHYLAMINE | TETRADECANE |
| CHLOROMETHYL ETHER | METHYL CHLORIDE | HEXADECANE | n-TRIDECANE |
| CHLOROMETHYL ETHYL ETHER | METHYLINDENE | METHANOL | N-UNDECANE |
| 3-CHLOROPYRIDINE | METHYLENE CHLORIDE | | |
| DI-T-BUTYL-P-BENZOQUINONE | NITROANISOLE | | |
| DICHLOROETHYL ETHER | NITROBENZENE | | |
| DIHYROCARVONE | 1,1,2-TRICHLOROETHYLENE | | |
| DIMETHYL SULFOXIDE | TRIMETHYL-TRIOXO-HEXAHYDRO-TRIAZINE IOSMER | | |
| 2,6-DINITROTOLUENE | | | |

TABLE 7

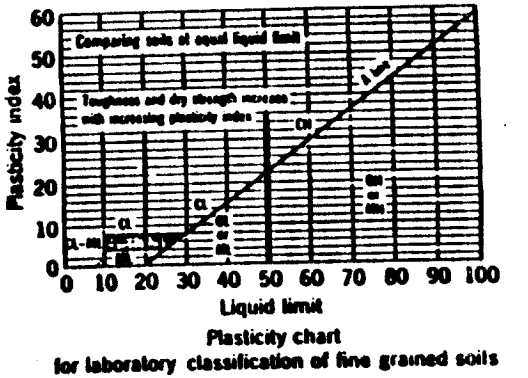
Toxicity and Persistence have been combined in the matrix below because of their important relationship. To determine the overall value for this combined factor, evaluate each factor individually as discussed below. Match the individual values assigned with the values in the matrix for the combined rating factor. Evaluate several of the most hazardous substances at the facility independently and enter only the highest score in the matrix on the work sheet.

MATRIX

| | VALUE FOR PERSISTENCE | | | |
|---|---|---|---|---|
| VALUE FOR TOXICITY | 0 | 1 | 2 | 3 |
| 0 | 0 | 0 | 0 | 0 |
| 1 | 3 | 6 | 9 | 12 |
| 2 | 6 | 9 | 12 | 15 |
| 3 | 9 | 12 | 15 | 18 |

# Table 8 Unified Soil Classification

| Field Identification Procedures (Excluding particles larger than 3 in. and basing fractions on estimated weights) | | | | Group Symbols[a] | Typical Names | Information Required for Describing Soils | Laboratory Classification Criteria |
|---|---|---|---|---|---|---|---|
| **Coarse-grained soils** More than half of material is larger than No. 200 sieve size[b] (The No. 200 sieve size is about the smallest particle visible to the naked eye) | Gravels More than half of coarse fraction is larger than No. 4 sieve size (For visual classification, the ¼ in. size may be used as equivalent to the No. 4 sieve size) | Clean gravels (little or no fines) | Wide range in grain size and substantial amounts of all intermediate particle sizes | *GW* | Well graded gravels, gravel-sand mixtures, little or no fines | Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses<br><br>For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics<br><br>Example:<br>*Silty sand*, gravelly; about 20% hard, angular gravel particles ½-in. maximum size; rounded and subangular sand grains coarse to fine, about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*) | Determine percentages of gravel and sand from grain size curve<br>Depending on percentage of fines (fraction smaller than No. 200 sieve size) coarse grained soils are classified as follows:<br>Less than 5%: *GW, GP, SW, SP*<br>More than 12%: *GM, GC, SM, SC*<br>*Borderline* cases requiring use of dual symbols | $C_u = \frac{D_{60}}{D_{10}}$ Greater than 4<br>$C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3<br>Not meeting all gradation requirements for *GW* |
| | | | Predominantly one size or a range of sizes with some intermediate sizes missing | *GP* | Poorly graded gravels, gravel-sand mixtures, little or no fines | | |
| | | Gravels with fines (appreciable amount of fines) | Nonplastic fines (for identification procedures see *ML* below) | *GM* | Silty gravels, poorly graded gravel-sand-silt mixtures | | Atterberg limits below "A" line, or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols |
| | | | Plastic fines (for identification procedures, see *CL* below) | *GC* | Clayey gravels, poorly graded gravel-sand-clay mixtures | | Atterberg limits above "A" line, with *PI* greater than 7 |
| | Sands More than half of coarse fraction is smaller than No. 4 sieve size | Clean sands (little or no fines) | Wide range in grain sizes and substantial amounts of all intermediate particle sizes | *SW* | Well graded sands, gravelly sands, little or no fines | | $C_u = \frac{D_{60}}{D_{10}}$ Greater than 6<br>$C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3<br>Not meeting all gradation requirements for *SW* |
| | | | Predominantly one size or a range of sizes with some intermediate sizes missing | *SP* | Poorly graded sands, gravelly sands, little or no fines | | |
| | | Sands with fines (appreciable amount of fines) | Nonplastic fines (for identification procedures, see *ML* below) | *SM* | Silty sands, poorly graded sand-silt mixtures | | Atterberg limits below "A" line or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols |
| | | | Plastic fines (for identification procedures, see *CL* below) | *SC* | Clayey sands, poorly graded sand-clay mixtures | | Atterberg limits below "A" line with *PI* greater than 7 |
| **Fine-grained soils** More than half of material is smaller than No. 200 sieve size (The No. 200 sieve size is about the smallest particle visible to the naked eye) | Identification Procedures on Fraction Smaller than No. 40 Sieve Size | | | | | | Use grain size curve in identifying the fractions as given under field identification |
| | | Dry Strength (crushing characteristics) | Dilatancy (reaction to shaking) | Toughness (consistency near plastic limit) | | | |
| | Silts and clays Liquid limit less than 50 | None to slight | Quick to slow | None | *ML* | Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses<br><br>For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions<br><br>Example:<br>*Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*) | |
| | | Medium to high | None to very slow | Medium | *CL* | | |
| | | Slight to medium | Slow | Slight | *OL* | | |
| | Silts and clays Liquid limit greater than 50 | Slight to medium | Slow to none | Slight to medium | *MH* | | |
| | | High to very high | None | High | *CH* | | |
| | | Medium to high | None to very slow | Slight to medium | *OH* | | |
| **Highly Organic Soils** | | Readily identified by colour, odour, spongy feel and frequently by fibrous texture | | | *Pt* | Peat and other highly organic soils | |



Plasticity chart for laboratory classification of fine grained soils

From Wagner, 1957.

[a] *Boundary classifications*. Soils possessing characteristics of two groups are designated by combinations of group symbols. For example *GW–GC*, well graded gravel-sand mixture with clay binder.

[b] All sieve sizes on this chart are U.S. standard.

*Field Identification Procedure for Fine Grained Soils or Fractions*

These procedures are to be performed on the minus No. 40 sieve size particles, approximately ¼64 in. For field classification purposes, screening is not intended, simply remove by hand the coarse particles that interfere with the tests.

*Dilatancy* (Reaction to shaking):
After removing particles larger than No. 40 sieve size, prepare a pat of moist soil with a volume of about one-half cubic inch. Add enough water if necessary to make the soil soft but not sticky.
Place the pat in the open palm of one hand and shake horizontally, striking vigorously against the other hand several times. A positive reaction consists of the appearance of water on the surface of the pat which changes to a livery consistency and becomes glossy. When the sample is squeezed between the fingers, the water and gloss disappear from the surface, the pat stiffens and finally it cracks or crumbles. The rapidity of appearance of water during shaking and of its disappearance during squeezing assist in identifying the character of the fines in a soil.
Very fine clean sands give the quickest and most distinct reaction whereas a plastic clay has no reaction. Inorganic silts, such as a typical rock flour, show a moderately quick reaction.

*Dry Strength* (Crushing characteristics):
After removing particles larger than No. 40 sieve size, mould a pat of soil to the consistency of putty, adding water if necessary. Allow the pat to dry completely by oven, sun or air drying, and then test its strength by breaking and crumbling between the fingers. This strength is a measure of the character and quantity of the colloidal fraction contained in the soil. The dry strength increases with increasing plasticity.
High dry strength is characteristic for clays of the CH group. A typical inorganic silt possesses only very slight dry strength. Silty fine sands and silts have about the same slight dry strength, but can be distinguished by the feel when powdering the dried specimen. Fine sand feels gritty whereas a typical silt has the smooth feel of flour.

*Toughness* (Consistency near plastic limit):
After removing particles larger than the No. 40 sieve size, a specimen of soil about one-half inch cube in size, is moulded to the consistency of putty. If too dry, water must be added and if sticky, the specimen should be spread out in a thin layer and allowed to lose some moisture by evaporation. Then the specimen is rolled out by hand on a smooth surface or between the palms into a thread about one-eighth inch in diameter. The thread is then folded and re-rolled repeatedly. During this manipulation the moisture content is gradually reduced and the specimen stiffens, finally loses its plasticity, and crumbles when the plastic limit is reached.
After the thread crumbles, the pieces should be lumped together and a slight kneading action continued until the lump crumbles.
The tougher the thread near the plastic limit and the stiffer the lump of it finally crumbles, the more potent is the colloidal clay fraction in the soil. Weakness of the thread at the plastic limit and quick loss of coherence of the lump below the plastic limit indicate either inorganic clay of low plasticity, or materials such as kaolin-type clays and organic clays which occur below the A-line.

TABLE 9

DISTANCE TO DRINKING WATER OR IRRIGATION INTAKE

| Population* | >3 Miles | 2-3 Miles | 1-2 Miles | 2001 FEET to 1 Mile | 0-2000 Feet |
|---|---|---|---|---|---|
| 0 | 0 | 0 | 0 | 0 | 0 |
| 1-100 | 0 | 4 | 6 | 8 | 10 |
| 101-1000 | 0 | 8 | 12 | 16 | 20 |
| 1001-3000 | 0 | 12 | 18 | 24 | 30 |
| 3001-10,000 | 0 | 16 | 24 | 32 | 35 |
| > 10,000 | 0 | 20 | 30 | 35 | 40 |

Determine population by:

*3.8 persons/house and

*1-1/2 persons/acre of irrigated land or by

*census

TABLE 10

PERMEABILITY OF GEOLOGIC MATERIALS*

| TYPE OF MATERIAL | APPROXIMATE RANGE OF HYDRAULIC CONDUCTIVITY | ASSIGNED VALUE |
|---|---|---|
| Clay, compact till, shale; unfractured metamorphic and igneous rock | $<10^{-7}$ cm/sec | 0 |
| Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till | $<10^{-5} - 10^{-7}$ cm/sec | 1 |
| Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till | $<10^{-3} - 10^{-5}$ cm/sec | 2 |
| Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite | $10^{-3}$ cm/sec | 3 |

*Derived from:

Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969.

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979.

TABLE 11

VALUES FOR FACILITY SLOPE AND INTERVENING TERRAIN

| DEPOSITION SITE Facility Slope | | Intervening Terrain: Terrain Average Slope 3%; or Site Separated from Water Body by Areas of Higher Elevation | Terrain Average Slope 3-5% | Terrain Average Slope 5-8% | Terrain Average Slope 8% | Site in Surface Water |
|---|---|---|---|---|---|---|
| Facility is closed basin | | 0 | 0 | 0 | 0 | 3 |
| Facility has average slope | 3% | 0 | 1 | 1 | 2 | 3 |
| Average slope | 3-5% | 0 | 1 | 1 | 2 | 3 |
| Average slope | 5-8% | 0 | 2 | 2 | 3 | 3 |
| Average slope | 8% | 0 | 2 | 3 | 3 | 3 |

TABLE 12

VALUES FOR SENSITIVE ENVIRONMENT (SURFACE W/.TER)

| ASSIGNED VALUE = | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| DISTANCE TO WETLANDS* (5 acre minimum) | | | | |
| Coastal | 2 miles | 1 - 2 miles | 1/2 - 1 mile | 1/2 mile |
| Fresh Water | 1 mile | 1/4 - 1 mile | 100 feet - 1/4 mile | 100 feet |
| DISTANCE TO CRITICAL HABITAT (of endangered species)** | 1 mile | 1/2 - 1 mile | 1/4 - 1/2 mile | 1/4 mile |

*Wetland is defined by EPA in the Code of Federal Regulations 40 CFR Part 230, Appendix A, 1980

**Endangered species are designated by the U. S. Fish and Wildlife Service.

TABLE 13

INCOMPATIBLE MATERIALS

In the lists below, the mixing of Group A material with a Group B material may have the potential consequence as noted.

| Group 1-A | Group 1-B |
|---|---|
| Acetylene sludge | Acid slude |
| Akaline caustic liquids | Acid and water |
| Alkaline cleaner | Battery acid |
| Alkaline corrosive liquids | Chemical cleaners |
| Alkaline corrosive batter fluid | Electrolyte acid |
| Caustic wastewater | Etching acid liquid or solvent |
| Lime sludge and other corrosive alkalies | Pickling liquor and other corrosive acids |
| Lime wastewater | Spent acid |
| Lime and water | Spent mixed acid |
| Spent caustic | Spent sulfuric acid |

Potential consequences: Heat generation; violent reaction.

| Group 2-A | Group 2-B |
|---|---|
| Aluminum | Any waste in Group 1-A or 1-B |
| Berylium | |
| Calcium | |
| Lithium | |
| Potassium | |
| Sodium | |
| Zinc powder | |
| Other reactive metals and metal hydrides | |

Potential consequences: Fire or explosion; generation of flammable hydrogen gas.

| Group 4-A | Group 4-B |
|---|---|
| Alcohols | Concentrated Group 1-A or 1-B wastes |
| Aldehydes | Group 2-A wastes |
| Halogenated hydrocarbons | |
| Nitrated hydrocarbons | |
| Unsaturated hydrocarbons | |
| Other reactive organic compounds and solvents | |

Potential consequences: Fire, explosion, or violent reaction.

| Group 5-A | Group 5-B |
|---|---|
| Spent cyanide and sulfide solutions | Group 1-B wastes |

Potential consequences: Generation of toxic hydrogen cyanide or hydrogen sulfide.

| Group 6-A | Group 6-B |
|---|---|
| Chlorates | Acetic acid and other organic acids |
| Chlorine | Concentrated mineral acids |
| Chlorites | Group 2-A wastes |
| Chromic acid | Group 4-A wastes |
| Hyphochlorites | Other flammable and combustible wastes |
| Nitrates | |
| Nitric acid, fuming | |
| Perchlorates | |
| Permanganates | |
| Paroxides | |
| Other strong oxidizers | |

Potential consequences: Fire, explosion or violent reaction.

TABLE 13

INCOMPATIBLE MATERIALS (CONTINUED)

| Group 3-A | Group 3-B |
|---|---|
| Alcohols | Any concentrated waste in Groups 1-A or 1-B |
| Water | Calcium |
| | Lithium |
| | Metal hydrides |
| | Potassium |
| | Thionylchloride |
| | Sulfonylchloride, Phosphorus dichloride |
| | Methane, Silicon Trichloride |
| | Other water-reactive waste |

Potential consequences: Fire, explosion, or heat generation; generation of flammable or toxic gases.

SOURCE: Hazardous Waste Management Law, Regulation, and Guidlines for the Handling of Hazardous Waste. California Department of Health, Sacramento, California, February 1975.

TABLE 14

VALUES FOR LAND USE (AIR ROUTE)

| ASSIGNED VALUE = | 0 | 1 | 2 | 3 |
|---|---|---|---|---|
| Distance to Commercial-Industrial | 1 mile | 1/2 - 1 mile | 1/4 - 1/2 mile | 1/4 mile |
| Distance to National/State Parks, Forests, Wildlife Reserves, and Residential Areas | 2 miles | 1 - 2 miles | 1/4 - 1 mile | 1/4 mile |
| Distance to Agricultural Lands (in Production within 5 years) | | | | |
| Ag land | 1 mile | 1/2 - 1 mile | 1/4 - 1/2 mile | 1/4 mile |
| Prime Ag land* | 2 miles | 1 - 2 miles | 1/2 - 1 mile | 1/2 mile |
| Distance to Historic/Landmark Sites (National Register of Historic Register and National Natural Landmarks) | | | within view of site or if site is subject to significant impacts | |

*Defined in the Code of Federal Regulations, 7 CFR 657.5, 1981.

TABLE 15

NFPA IGNITABILITY LEVELS AND ASSIGNED VALUES

| | NFPA LEVEL | ASSIGNED VALUE |
|---|---|---|
| 4 | Very flammable gases, very volatile flammable liquids, and materials that in the form of dusts or mists readily form explosive mixtures when dispersed in air. Flashpoint less than 80 F. | 3 |
| 3 | Liquids which can be ignited under all normal temperature conditions. Any material that ignites spontaneously at normal temperature in air. Flashpoint less than 80 F. | |
| 2 | Liquids which must be moderately heated before ignition will occur and solids that readily give off flammable vapors. Flashpoint 80 to 140 F. | 2 |
| 1 | Materials that must be preheated before ignition can occur. Most combustible solids have a flammability rating of 1. Flashpoint 141 to 200 F. | 1 |
| 0 | Materials that will not burn. Flashpoint greater than 201 F. | 0 |

TABLE 15A

| DISTANCE TO POPULATION | VALUE |
|---|---|
| >2 mi. | 0 |
| >1 to 2 mi. | 1 |
| >1/2 to 1 mi. | 2 |
| 201' to 1/2 mi. | 3 |
| 51' to 200' | 4 |
| 0' to 50' | 5 |

TABLE 16

NFPA REACTIVITY RATINGS

| | NFPA LEVEL | ASSIGNED VALUE |
|---|---|---|
| 0 | Materials which are normally stable even under fire exposure conditions and which are not reactive with water. | 0 |
| 1 | Materials which in themselves are normally stable but which may become unstable at elevated temperatures and pressures or which may react with water with some release of energy but not violently. | 1 |
| 2 | Materials which in themselves are normally unstable and readily undergo violent chemical change but do not detonate. Includes materials which can undergo chemical change with rapid release of energy at normal temperatures and pressures or which can undergo violent chemical change at elevated temperatures and pressures. Also includes those materials which may react violently with water or which may form potentially explosive mixtures with water. | 2 |
| 3 | Materials which in themselves are capable of detonation or of explosive decomposition or of explosive reaction but which require a strong initiating source or which must be heated under confinement before initiation. Includes materials which are sensitive to thermal or mechanical shock at elevated temperatures and pressures or which react explosively with water without requiring heat or confinement. | 3 |
| 4 | Materials which in themselves are readily capable of detonation or of explosive decomposition or explosive reaction at normal temperature and pressures. Includes materials which are sensitive to mechanical or localized thermal shock. | 3 |

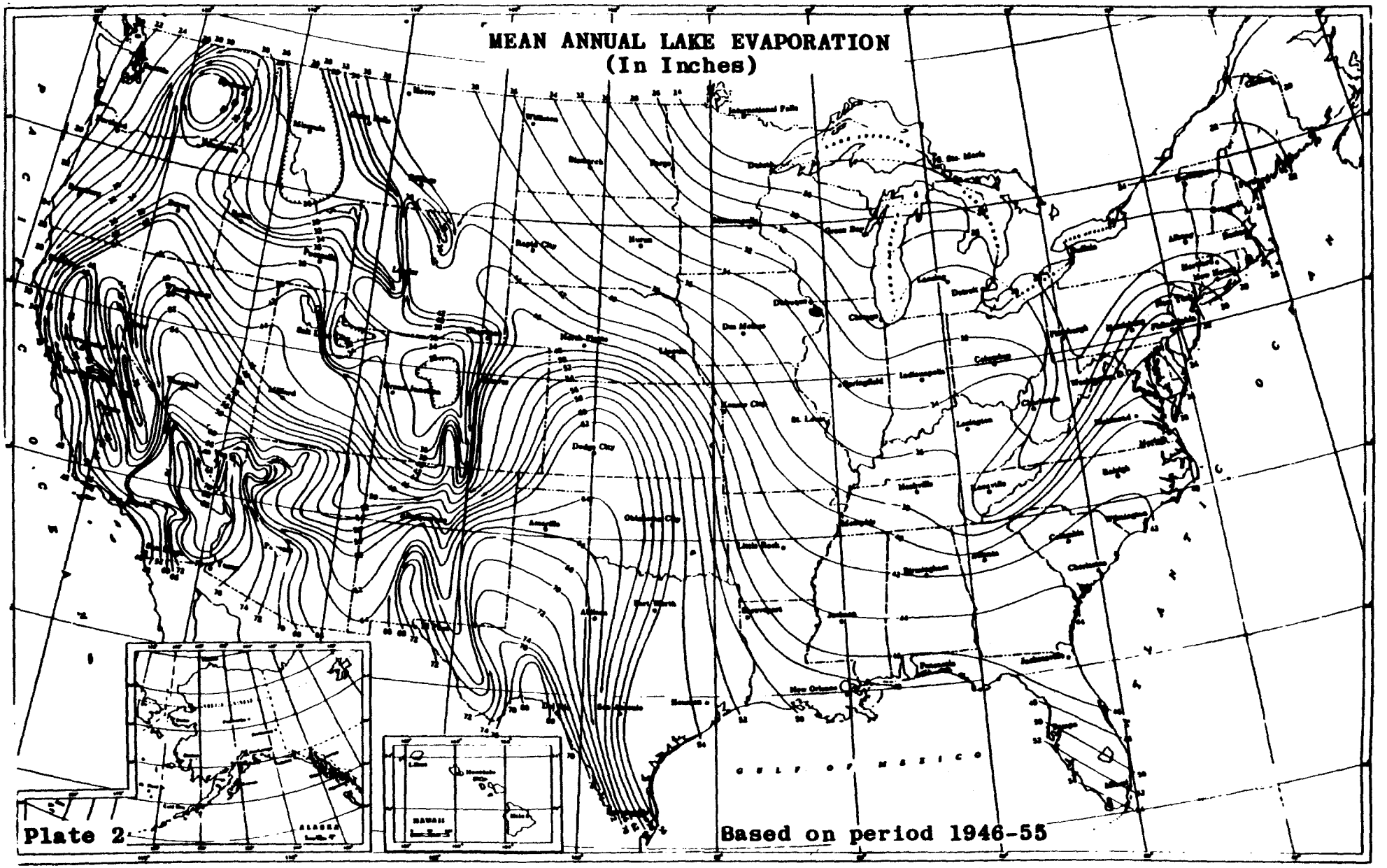

MEAN ANNUAL LAKE EVAPORATION
(In Inches)
GULF OF MEXICO
Plate 2
Based on period 1946-55

FIGURE 1

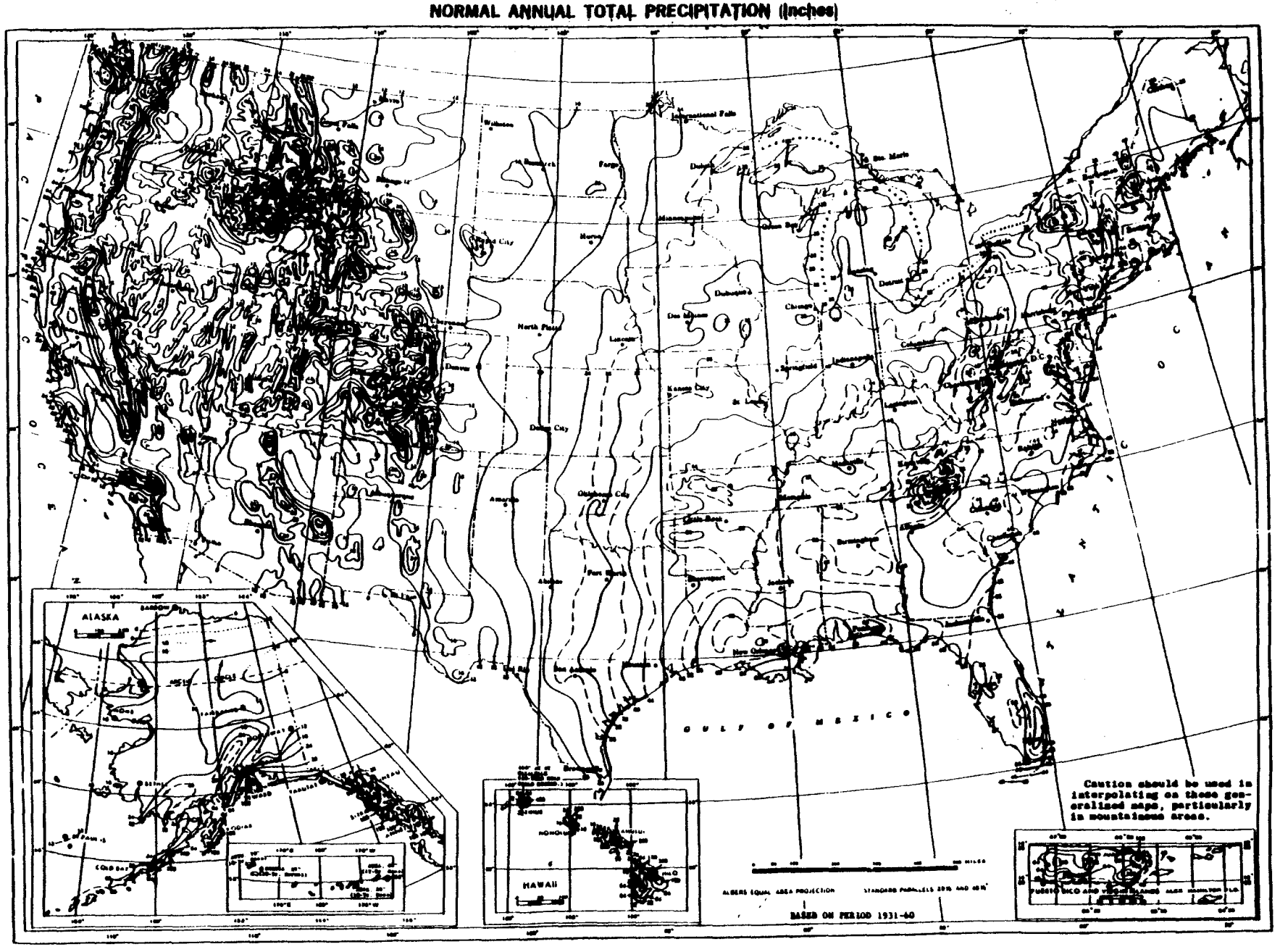
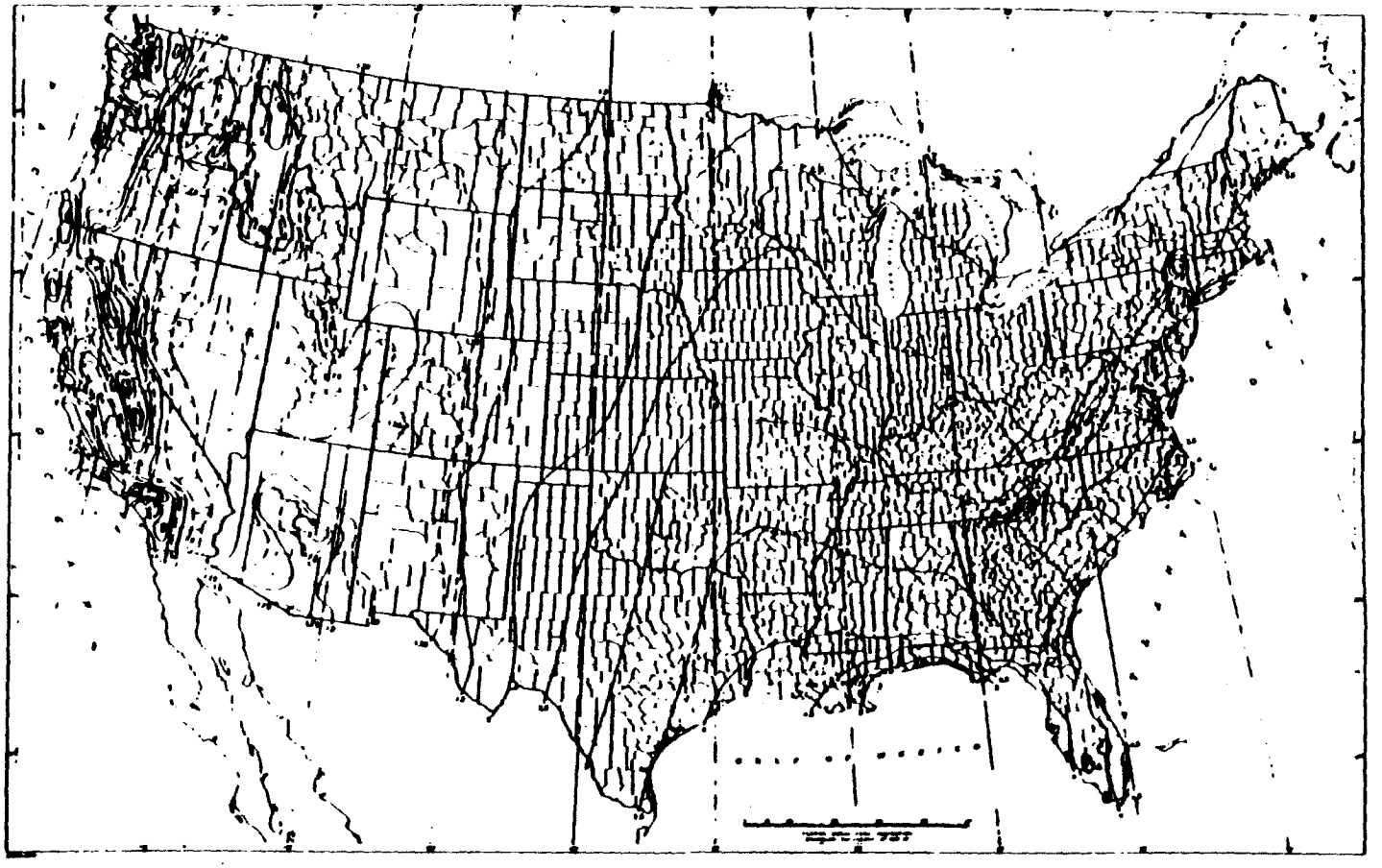

NORMAL ANNUAL TOTAL PRECIPITATION (Inches)
ALASKA
HAWAII
GULF OF MEXICO
Caution should be used in interpolating on these generalized maps, particularly in mountainous areas.
BASED ON PERIOD 1931-60

FIGURE 2



Source: Rainfall Frequency Atlas of the United States, Technical Paper No. 40, U.S. Department of Commerce, U.S. Government Printing Office, Washington, D.C., 1961.

**FIGURE 3**
**1-YEAR 24-HOUR RAINFALL**
**(INCHES)**

| Figure 3 inches | Value |
|---|---|
| less than 1.0 | 0 |
| 1.0 - 2.0 | 1 |
| 2.1-3.0 | 2 |
| greater than 3 | 3 |