

SITE DESCRIPTION AND MAP

Lock and Dam No. 5

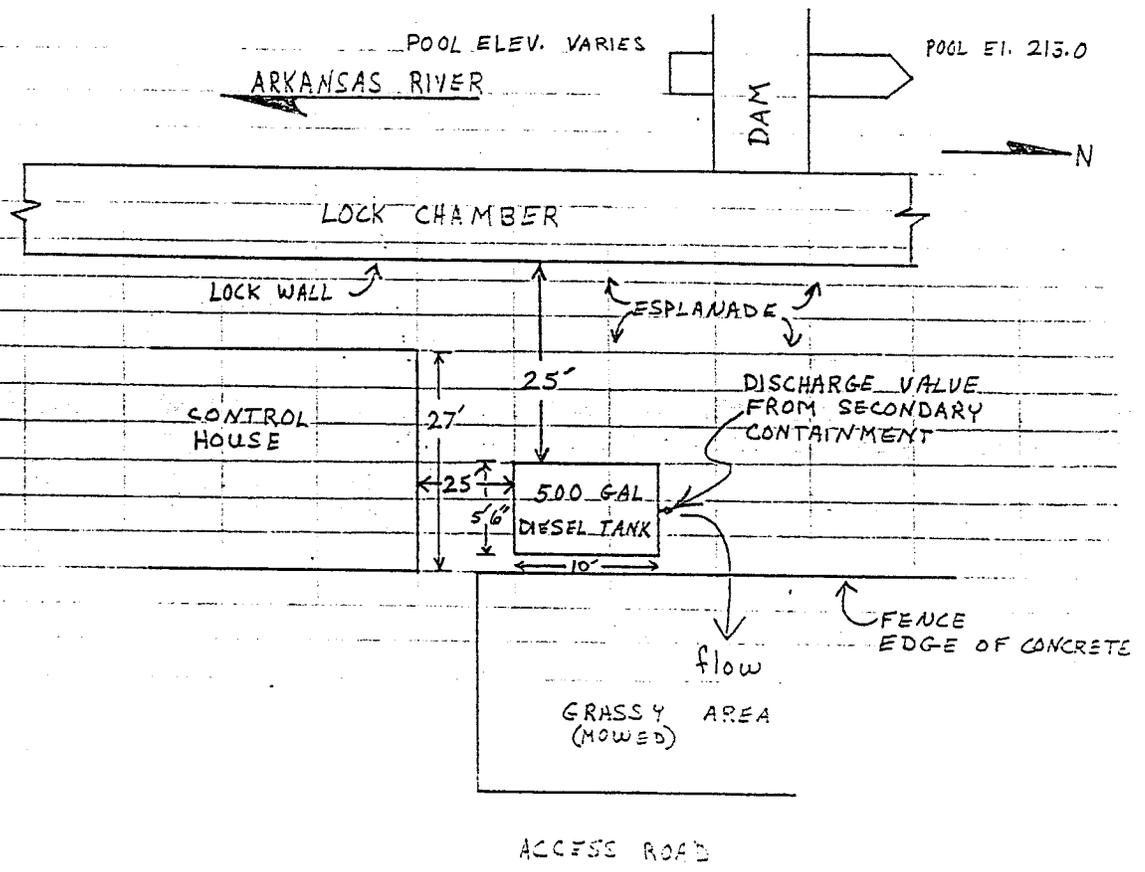
- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map. The Control House is brick veneer with concrete floors.
- c. Portable pallets and overpak drums will be placed under drums and other containers to provide impervious secondary containment to prevent uncontained spills in the event of a leak.
- d. Barrel top absorbent mats and drip pans are used to trap drips from dispensers. Spillblocker mats are used to close floor drains.
- e. Emergency spill absorbent materials are located on site.
- f. Flow direction - see site map.
- g. Rate of flow - too many variables to determine.
- h. Distance to nearby watercourses - see site map.
- i. Groundwater depth - approximately 10 feet.

SWLR 200-1-1
25 Sep 97

M-K Arkansas River Navigation System

COMPUTATION SHEET

Subject Spill Prevention and Response Plan File _____
Project Pine Bluff Pool, AR. Computed by _____ Date _____ Checked By _____ Date _____ Book No. _____



NO SCALE

LOCK NO. 5

11/9/97
JG

PROJECT INFORMATION, CLIMATE AND SOIL DATA
LOCK AND DAM NO. 5

Project Information: Lock and Dam No. 5 is located at navigation mile 86.3 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means of navigation for commercial and recreational vessels.

Climate: Lock and Dam No. 5 is located in Jefferson County, Arkansas. Jefferson County has long, hot summers. Winters are cool and fairly short, with only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year. Prolonged droughts are rare. The average winter temperature is 46 degrees F, and the average daily minimum temperature is 36 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 3.23 inches | Jul - 3.34 inches |
| Feb - 3.04 inches | Aug - 3.11 inches |
| Mar - 5.02 inches | Sep - 3.68 inches |
| Apr - 4.66 inches | Oct - 2.92 inches |
| May - 5.24 inches | Nov - 4.00 inches |
| Jun - 3.80 inches | Dec - 3.78 inches |

The total annual precipitation is approximately 50 inches. Of the total annual precipitation, 25 inches, or 50 percent, usually falls during the period April through September. The average seasonal snowfall is 4 inches.

Soils: Soil in the area of Lock and Dam No. 5 is Oklared fine sandy loam, occasionally flooded. This gently undulating, well drained soil is on low parallel ridges and swales between the Arkansas River and its levees. Slope is less than 1 percent. Typically, the surface layer is dark brown fine sandy loam about 12 inches thick. The underlying material extends to a depth of 70 inches or more. It is stratified strong brown and pink fine sandy loam and loamy fine sand. Reaction is mildly alkaline or moderately alkaline. Permeability is moderately rapid.

Groundwater: Depth to groundwater is approximately 10 feet.

Source: Soil Survey of Jefferson and Lincoln Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1980.

25 Sep 97

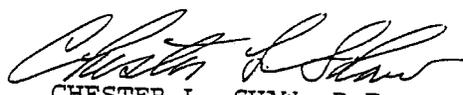
SPILL HISTORY - LOCK AND DAM NO. 5

CESWL-CO-PB (CESWL-CO-E 16 Oct 95) 1st End LEE/fj/534-0451
SUBJECT: Spill History

Pine Bluff Project Office, P.O. Box 7835, Pine Bluff, AR 71611
22 November 1995

FOR Chief, Construction-Operations Division
ATTN: Jane Smith, CESWL-CO-E

1. All supervisors and employees at the Pine Bluff Project Office have been asked to search their memories as well as their files for any information concerning spills of hazardous substances that have occurred during our history as an operating office. Spill history information is provided as requested.
2. There is only one spill to report.
 - a. Site/Building: Lock No. 2, McClellan-Kerr Arkansas River Navigation System, above-ground diesel storage tank.
 - b. Date: discovered on 30 November 1994.
 - c. Substance: virgin diesel fuel.
 - d. Quantity Released: approximately 200 gallons.
 - e. Cause: failure of an underground fuel line leading from an above-ground tank.
 - f. Corrective Action Taken: Approximately 45 cu. yds. of contaminated soil was excavated from the site and stored on visqueen in another location. Soil samples were taken at the spill site and of the excavated material. Once the sample tests results showed the leak site soil was within permissible limits, the excavation site was backfilled with clean soil. The stockpiled soil has been turned over to Emergency Management Branch and Logistics Management Office for proper disposal.
 - g. Method of Disposal: The stockpiled contaminated soil will be disposed of in an approved sanitary landfill.
3. There are no other known hazardous substance spills within the Pine Bluff Project Office area.


CHESTER L. SHAW, P.E.
Acting Resident Engineer

RECEIVED
NOV 24 1995
CON-OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
PINE BLUFF**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|-------------------------|--------------|-----------------------------------|
| Norrell Lock (Lock No.1) (Located near Tichnor, AR) | Diesel Aboveground Storage Tank | 250 Gal | Control House | On | Sorbents * |
| | Oil | 70 Gal | Equipment Compound Shed | On | Sorbents |
| | Used Oil | 25 Gal | Lock Yard | On | Sorbents |
| | EP1 Grease | 40 Gal | Paint Building | On | Sorbents |
| | Paint | 30 Gal | Paint Building | On | Sorbents |
| | Solvent (Safety Kleen) | 20 Gal | Under Breezeway | On | Sorbents |
| | Hydraulic Fluid | 3,600 Gal | Lock System | Off | Sorbents & System Inspected Daily |
| | Mineral Spirits | 55 Gal | Equipment Compound Shed | On | Sorbents |
| | Solvent | 55 Gal | Equipment Compound Shed | On | Sorbents |
| | | | | | |

* **Note:** AST will be moved outdoors and will have enclosed secondary containment. Design Request is in per Hal Lee 19 Dec 95.

****Note:** Lock 1, Lock 2 and Arkansas Post use the Equipment Compound to store supplies. Lock 1 and 2 often utilize from the same containers; however, a breakdown of quantities by facility is reflected in this Appendix.

H-33

SWLR 200-1-1
25 Sep 97

25 Sep 97

SITE DESCRIPTION AND MAP

Norrell Lock and Dam

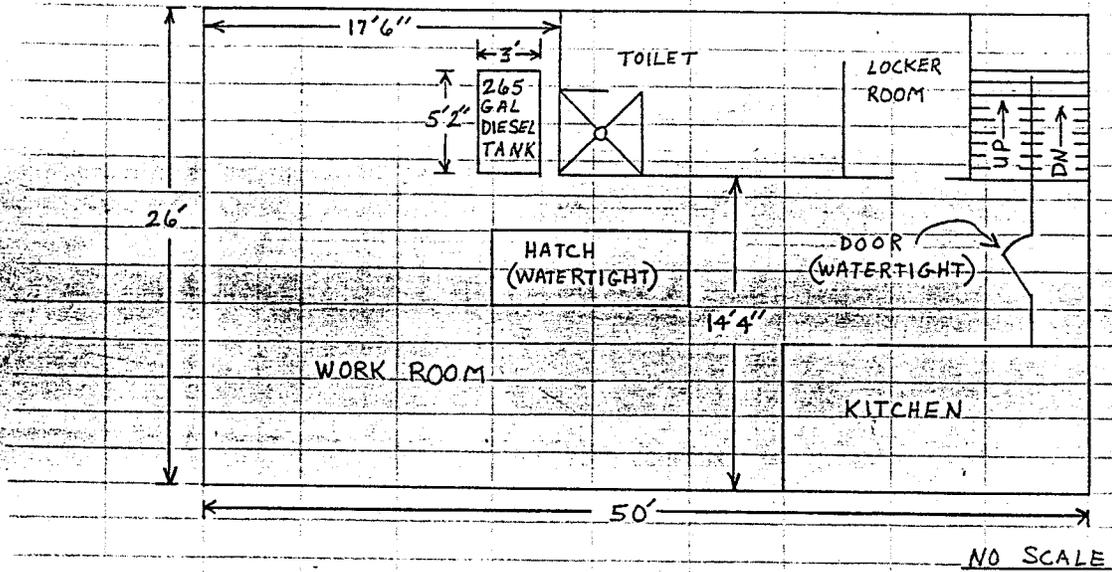
- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map. Brick veneer with concrete floor.
- c. Floor drain is found only in the shower located in the toilet area.
- d. Outdoors, portable pallets providing impervious secondary containment and weather shielding will be placed under drums and other containers as necessary to prevent uncontained spills in the event of a leak.
- e. Barrel top absorbent mats and drip pans are used to trap drips from dispensers. Spillblocker mats are used to close floor drains.
- f. Emergency spill absorbent materials are located on site.
- g. Flow direction - building is completely contained. See site map. Immediately adjacent to lock chamber and the Arkansas Post Canal.
- h. Rate of flow - too many variables to determine.
- i. Distance to nearby watercourse - immediately adjacent to lock chamber and the Arkansas Post Canal.
- j. Groundwater depth - approximately 10 feet.

M-K Arkansas River Navigation System

COMPUTATION SHEET

Subject Spill Prevention and Response Plan File _____

Project Pine Bluff Proj. Ofc. Computed by _____ Date _____ Checked By _____ Date _____ Book No. _____



NORRELL LOCK
2nd FLOOR

11/96
H

PROJECT INFORMATION, CLIMATE AND SOIL DATA
NORRELL LOCK & DAM (Lock & Dam #1)

Project Information: Norrell Lock and Dam is located at navigational mile 10.3 of the McClellan-Kerr Arkansas River Navigational System. Its primary purpose is to provide a means for commercial and recreational river navigation.

Climate: Norrell Lock and Dam is located in Arkansas County, Arkansas. Arkansas County is characterized by long hot, humid summers, short mild winters, and abundant rainfall. It is believed the climate has varied little since the formation of the soils in the county. The climate is relatively uniform throughout the county and, consequently, does not account for significant differences among the soils.

The warm, moist climate promotes rapid chemical reaction and rapid soil formation. The large amount of available water favors the rapid leaching of soluble and colloidal materials. Plant remains decompose rapidly, and the organic acids thus produced hasten the development of clay minerals and the removal of carbonates. Because the soil freezes for only short periods, soil formation continues almost the year round.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 5.86 inches | Jul - 4.16 inches |
| Feb - 4.93 inches | Aug - 3.05 inches |
| Mar - 5.56 inches | Sep - 3.23 inches |
| Apr - 5.02 inches | Oct - 2.99 inches |
| May - 4.84 inches | Nov - 4.43 inches |
| Jun - 3.91 inches | Dec - 4.73 inches |

Precipitation averages 53 inches per year. Roughly 60 percent of the annual precipitation falls in winter and in spring; heavy rain is most likely in spring.

Soils: Soils in this area, along the White River, consists of Sharkey Clay. It consists of level, poorly drained, very slowly permeable soils on the flood plain of the White River, and is subject to frequent flooding. The surface layer is very dark grayish-brown, very dark gray, or dark-gray clay about 9 inches thick. It is mottled in the lower part. The subsoil is gray or dark-gray, mottled clay. Below this is gray mottled clay. Clay depth from surface ranges from 0-72 inches.

Groundwater: Depth to seasonal higher water table is at 10 feet.

**Source: Soil Survey of Arkansas County, Arkansas, U.S.
Department of Agriculture Soil Conservation Service, Issued 1972.**

25 Sep 97

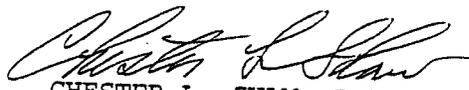
SPILL HISTORY - NORRELL LOCK AND DAM

CESWL-CO-PB (CESWL-CO-E 16 Oct 95) 1st End LEE/fj/534-0451
SUBJECT: Spill History

Pine Bluff Project Office, P.O. Box 7835, Pine Bluff, AR 71611
22 November 1995

FOR Chief, Construction-Operations Division
ATTN: Jane Smith, CESWL-CO-E

1. All supervisors and employees at the Pine Bluff Project Office have been asked to search their memories as well as their files for any information concerning spills of hazardous substances that have occurred during our history as an operating office. Spill history information is provided as requested.
2. There is only one spill to report.
 - a. Site/Building: Lock No. 2, McClellan-Kerr Arkansas River Navigation System, above-ground diesel storage tank.
 - b. Date: discovered on 30 November 1994.
 - c. Substance: virgin diesel fuel.
 - d. Quantity Released: approximately 200 gallons.
 - e. Cause: failure of an underground fuel line leading from an above-ground tank.
 - f. Corrective Action Taken: Approximately 45 cu. yds. of contaminated soil was excavated from the site and stored on visqueen in another location. Soil samples were taken at the spill site and of the excavated material. Once the sample tests results showed the leak site soil was within permissible limits, the excavation site was backfilled with clean soil. The stockpiled soil has been turned over to Emergency Management Branch and Logistics Management Office for proper disposal.
 - g. Method of Disposal: The stockpiled contaminated soil will be disposed of in an approved sanitary landfill.
3. There are no other known hazardous substance spills within the Pine Bluff Project Office area.


CHESTER L. SHAW, P.E.
Acting Resident Engineer

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NOV 23 1995
CON-OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
PINE BLUFF**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|--|--------------|---------------------------|
| Pine Bluff Marine Terminal Pine Bluff, AR | Diesel Aboveground Storage Tank | 8,000 Gal | Compound | On | Secondary Containment |
| | Gasoline Aboveground Storage Tank | 8,000 Gal | Compound | On | Secondary Containment |
| | Used Oil Aboveground Storage Tank | 1,000 Gal | Compound | On | Secondary Containment |
| | Oil | 7,000 Gal | Under Barge Cover | On | Sorbents |
| | Paint | 50 Gal | Paint Building | On | Sorbents |
| | Solvent | 20 Gal | Shop | On | Sorbents |
| | Antifreeze | 300 Gal | 66% - Under Barge Cover 34% - Warehouse | On On | Sorbents Sorbents |
| | EP1 Grease | 1,000 Gal | Back of Paint Building | On | Sorbents |

H-39

SITE DESCRIPTION AND MAP

Pine Bluff Marine Terminal

- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map.
- c. Portable pallets will be placed under drums and other containers to provide impervious secondary containment to prevent uncontained spills in the event of a leak.
- d. Barrel top absorbent mats and drip pans are used to trap drips from dispensers.
- e. Emergency spill kit is located in the shop/storage area, and prefabricated storage building.
- f. Flow direction - see site map.
- g. Rate of flow - too many variables to determine.
- h. Distance to nearby watercourse - fuel tanks and fuel pumps are immediately adjacent to the Arkansas River (Pine Bluff Harbor). The used oil tank and oil drum storage is approximately 400-feet from the Arkansas River (Pine Bluff Harbor). See site map.
- i. Groundwater depth - approximately 15 feet.

PROJECT INFORMATION, CLIMATE AND SOIL DATA
PINE BLUFF MARINE TERMINAL

Project Information: Pine Bluff Marine Terminal is located off State Highway 81, at navigation mile 2.6 of the Pine Bluff Harbor on Lake Langhofer. Its primary purpose is to maintain the navigation channel of the McClellan-Kerr Arkansas River Navigation System from Little Rock, Arkansas to the Mississippi River.

Climate: Pine Bluff Marine Terminal is located in Jefferson County, Arkansas. Jefferson County has long, hot summers. Winters are cool and fairly short, with only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year. Prolonged droughts are rare. The average winter temperature is 46 degrees F, and the average daily minimum temperature is 36 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 3.23 inches | Jul - 3.34 inches |
| Feb - 3.04 inches | Aug - 3.11 inches |
| Mar - 5.02 inches | Sep - 3.68 inches |
| Apr - 4.66 inches | Oct - 2.92 inches |
| May - 5.24 inches | Nov - 4.00 inches |
| Jun - 3.80 inches | Dec - 3.78 inches |

The total annual precipitation is approximately 50 inches. Of the total annual precipitation, 25 inches, or 50 percent, usually falls during the period April through September. The average seasonal snowfall is 4 inches.

Soils: Soils in the area of the Pine Bluff Marine Terminal are a combination of Coughatta soils, occasionally flooded, and Oklared fine sandy loam, occasionally flooded. Descriptions of each are as follows:

Coughatta soils, occasionally flooded. This undifferentiated group consists of well drained, level and gently undulating soils on natural levees along the Arkansas River. It consists of Coughatta silt loam intermingled in an irregular pattern with Coughatta soils. Typically, the surface layer is dark brown silt loam about 8 inches thick. The upper part of the subsoil is reddish brown silt loam that extends to a depth of about 15 inches, and the lower part is reddish brown silty clay loam that extends to a depth of about 30 inches. The underlying material is dark reddish brown very fine sandy loam over dark reddish brown silty clay loam that extends to a depth of 60 inches or

more.

Oklared fine sandy loam, occasionally flooded. This gently undulating, well drained soil is on low parallel ridges and swales between the Arkansas River and its levees. Slope is less than 1 percent. Typically, the surface layer is dark brown fine sandy loam about 12 inches thick. The underlying material extends to a depth of 70 inches or more. It is stratified strong brown and pink fine sandy loam and loamy fine sand. Permeability is moderately rapid.

Groundwater: Depth to groundwater is approximately 15 feet.

Source: Soil Survey of Jefferson and Lincoln Counties, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1980.

25 Sep 97

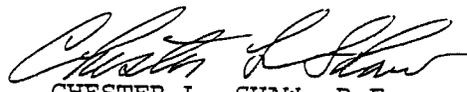
SPILL HISTORY - PINE BLUFF MARINE TERMINAL

CESWL-CO-PB (CESWL-CO-E 16 Oct 95) 1st End LEE/fj/534-0451
SUBJECT: Spill History

Pine Bluff Project Office, P.O. Box 7835, Pine Bluff, AR 71611
22 November 1995

FOR Chief, Construction-Operations Division
ATTN: Jane Smith, CESWL-CO-E

1. All supervisors and employees at the Pine Bluff Project Office have been asked to search their memories as well as their files for any information concerning spills of hazardous substances that have occurred during our history as an operating office. Spill history information is provided as requested.
2. There is only one spill to report.
 - a. Site/Building: Lock No. 2, McClellan-Kerr Arkansas River Navigation System, above-ground diesel storage tank.
 - b. Date: discovered on 30 November 1994.
 - c. Substance: virgin diesel fuel.
 - d. Quantity Released: approximately 200 gallons.
 - e. Cause: failure of an underground fuel line leading from an above-ground tank.
 - f. Corrective Action Taken: Approximately 45 cu. yds. of contaminated soil was excavated from the site and stored on visqueen in another location. Soil samples were taken at the spill site and of the excavated material. Once the sample tests results showed the leak site soil was within permissible limits, the excavation site was backfilled with clean soil. The stockpiled soil has been turned over to Emergency Management Branch and Logistics Management Office for proper disposal.
 - g. Method of Disposal: The stockpiled contaminated soil will be disposed of in an approved sanitary landfill.
3. There are no other known hazardous substance spills within the Pine Bluff Project Office area.


CHESTER L. SHAW, P.E.
Acting Resident Engineer

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NOV 24 1995

CON-OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
PINE BLUFF**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|----------------|--------------|---------------------------|
| Pine Bluff Project Office Pine Bluff, AR | Gasoline Aboveground Storage Tank | 8,000 Gal | Compound | On | Secondary Containment |
| | Oil | 55 Gal | Shop Area | On | Sorbents |
| | Paint | 25 Gal | Paint Building | On | Sorbents |
| | Solvent | 20 Gal | Shop Area | On | Sorbents |
| | Hydraulic Fluid | 55 Gal | Shop Area | On | Sorbents |
| | | | | | |

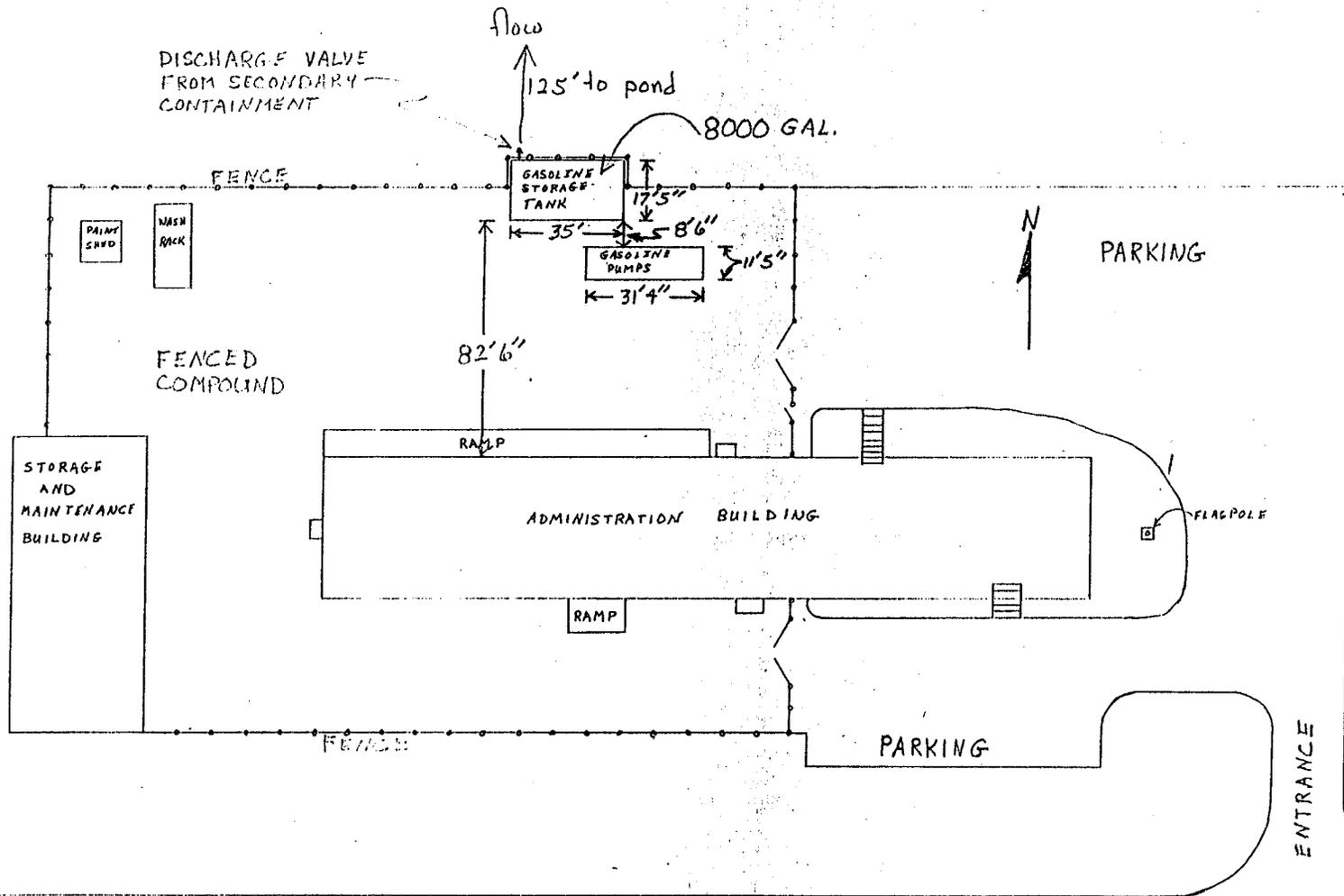
H-45

SITE DESCRIPTION AND MAP

Pine Bluff Project Office

- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map. The Administration Building, as well as the other buildings, is brick veneer with concrete floors.
- c. Floor drains in the vehicle maintenance area will be sealed using drainblocker spill mats.
- d. Floor drains in the gasoline dispensing area will be sealed using plumber's plugs or drainblocker spill mats.
- e. Portable pallets are placed under drums and other containers to provide impervious secondary containment to prevent uncontained spills in the event of a leak.
- f. Barrel top absorbent mats and drip pans are used to trap drips from dispensers.
- g. Emergency spill kits are located in the automotive shop area and in the equipment compound area. There are no longer any quantities of oil and/or hazardous substances stored in the equipment compound area toward the Arkansas River from the Administration Building.
- h. Flow direction - see site map.
- i. Rate of flow - too many variables to determine.
- j. Distance to nearby watercourse - see site map.
- k. Groundwater depth - approximately 20-feet.

H-47



PINE BLUFF PROJECT OFFICE
M-K ARKANSAS RIVER NAVIGATION SYSTEM

NO SCALE

11/96
 JCS

PROJECT INFORMATION, CLIMATE AND SOIL DATA
PINE BLUFF PROJECT OFFICE

Project Information: Pine Bluff Project Office is located off State Highway 81 near navigation mile 66.0 of the McClellan-Kerr Arkansas River Navigation System and Emmett Sanders Lock and Dam. Its primary purpose is to provide administrative and operational/maintenance support of locks, dams, navigation and recreational areas.

Climate: Pine Bluff Project Office is located in Jefferson County, Arkansas. Jefferson County has long, hot summers. Winters are cool and fairly short, with only a rare cold wave that moderates in 1 or 2 days. Precipitation is fairly heavy throughout the year. Prolonged droughts are rare. The average winter temperature is 46 degrees F, and the average daily minimum temperature is 36 degrees. In summer the average temperature is 81 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 3.23 inches | Jul - 3.34 inches |
| Feb - 3.04 inches | Aug - 3.11 inches |
| Mar - 5.02 inches | Sep - 3.68 inches |
| Apr - 4.66 inches | Oct - 2.92 inches |
| May - 5.24 inches | Nov - 4.00 inches |
| Jun - 3.80 inches | Dec - 3.78 inches |

The total annual precipitation is approximately 50 inches. Of the total annual precipitation, 25 inches, or 50 percent, usually falls during the period April through September. The average seasonal snowfall is 4 inches.

Soils: Soil in the area of the Pine Bluff Project Office is Portland clay. This level somewhat poorly drained soil is in low, slack water areas along the Arkansas River and its former channels. Slopes are less than 1 percent. Typically, the surface layer is dark brown clay about 6 inches thick. The upper part of the subsoil is brown, mottled clay. Reaction is strongly acid or very strongly acid in the upper 16 to 26 inches except in mined areas. The lower part of the subsoil ranges from slightly acid to moderately alkaline. Permeability is very slow.

Groundwater: Depth to groundwater is approximately 20 feet.

Source: Soil Survey of Jefferson and Lincoln Counties, Arkansas,
U.S. Department of Agriculture Soil Conservation Service, Issued
1980.

SWLR 200-1-1
25 Sep 97

SPILL HISTORY - PINE BLUFF PROJECT OFFICE

CESWL-CO-PB (CESWL-CO-E 16 Oct 95) 1st End LEE/fj/534-0451
SUBJECT: Spill History

Pine Bluff Project Office, P.O. Box 7835, Pine Bluff, AR 71611
22 November 1995

FOR Chief, Construction-Operations Division
ATTN: Jane Smith, CESWL-CO-E

1. All supervisors and employees at the Pine Bluff Project Office have been asked to search their memories as well as their files for any information concerning spills of hazardous substances that have occurred during our history as an operating office. Spill history information is provided as requested.

2. There is only one spill to report.

a. Site/Building: Lock No. 2, McClellan-Kerr Arkansas River Navigation System, above-ground diesel storage tank.

b. Date: discovered on 30 November 1994.

c. Substance: virgin diesel fuel.

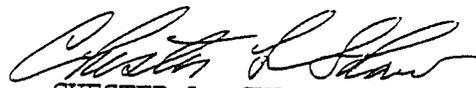
d. Quantity Released: approximately 200 gallons.

e. Cause: failure of an underground fuel line leading from an above-ground tank.

f. Corrective Action Taken: Approximately 45 cu. yds. of contaminated soil was excavated from the site and stored on visqueen in another location. Soil samples were taken at the spill site and of the excavated material. Once the sample tests results showed the leak site soil was within permissible limits, the excavation site was backfilled with clean soil. The stockpiled soil has been turned over to Emergency Management Branch and Logistics Management Office for proper disposal.

g. Method of Disposal: The stockpiled contaminated soil will be disposed of in an approved sanitary landfill.

3. There are no other known hazardous substance spills within the Pine Bluff Project Office area.


CHESTER L. SHAW, P.E.
Acting Resident Engineer

RECEIVED

NOV 24 1995

CON-OPS DIVISION

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
PINE BLUFF**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|---|--------------|---------------------------------------|
| Wilbur D. Mills Dam and Lock No. 2 (Both located near Tichnor, AR) | Diesel Aboveground Storage Tank | 5,000 Gal | Near Lock No. 2 on AR River, Outside Equip Yard | On | Sorbents (No secondary containment) * |
| | Diesel Aboveground Storage Tank | 500 Gal | Lock No. 2 | On | Secondary Containment |
| | Diesel Aboveground Storage Tank | 500 Gal | Dam No. 2 | Off | Secondary Containment |
| | Oil | 70 Gal | Equipment Compound Shed | On | Sorbents |
| | Paint | 30 Gal | Lock No. 2 in Paint Building | On | Sorbents |
| | Solvent | 20 Gal | Shop Area Lock No. 2 | On | Sorbents |
| | Hydraulic Fluid | 3,600 Gal | Lock System | Off | Sorbents & System Inspected Daily |
| | Hydraulic Fluid | 55 Gal | Equipment Compound Shed | On | Sorbents |
| | EP1 Grease | 80 Gal | 50% - Paint Bldg 50% - on Dam No. 2 | On Off | Sorbents Sorbents |

* Note: Design Request has been submitted for secondary containment per Hal Lee 19 Dec 95.

H-51

SWLR 200-1-1
25 Sep 97

SITE DESCRIPTION AND MAP

Wilbur D. Mills Dam

- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map. Structure is concrete with some brick veneer.
- c. Emergency spill absorbent materials are located on site.
- d. Flow direction - see site map.
- e. Rate of flow - too many variables to determine.
- f. Distance to nearby watercourse - see site map.
- g. Groundwater depth - approximately 22-feet.

Lock No. 2

- a. Site map of facilities enclosed.
- b. Description of each building, etc. - see site map. The Control House is brick veneer with concrete slab.
- c. Floor drains in equipment areas will be sealed using drainblocker spill mats.
- d. Portable pallets providing impervious secondary containment will be placed under drums and other containers as necessary to prevent uncontained spills in the event of a leak.
- e. Barrel top absorbent mats and drip pans are used to trap drips from dispensers.
- f. Emergency spill absorbent materials are located on site.
- g. Flow direction - see site map.

M-K Arkansas River Navigation System

COMPUTATION SHEET

Subject Spill Prevention and Response Plan

File _____

Project Pine Bluff Proj. Dfc.

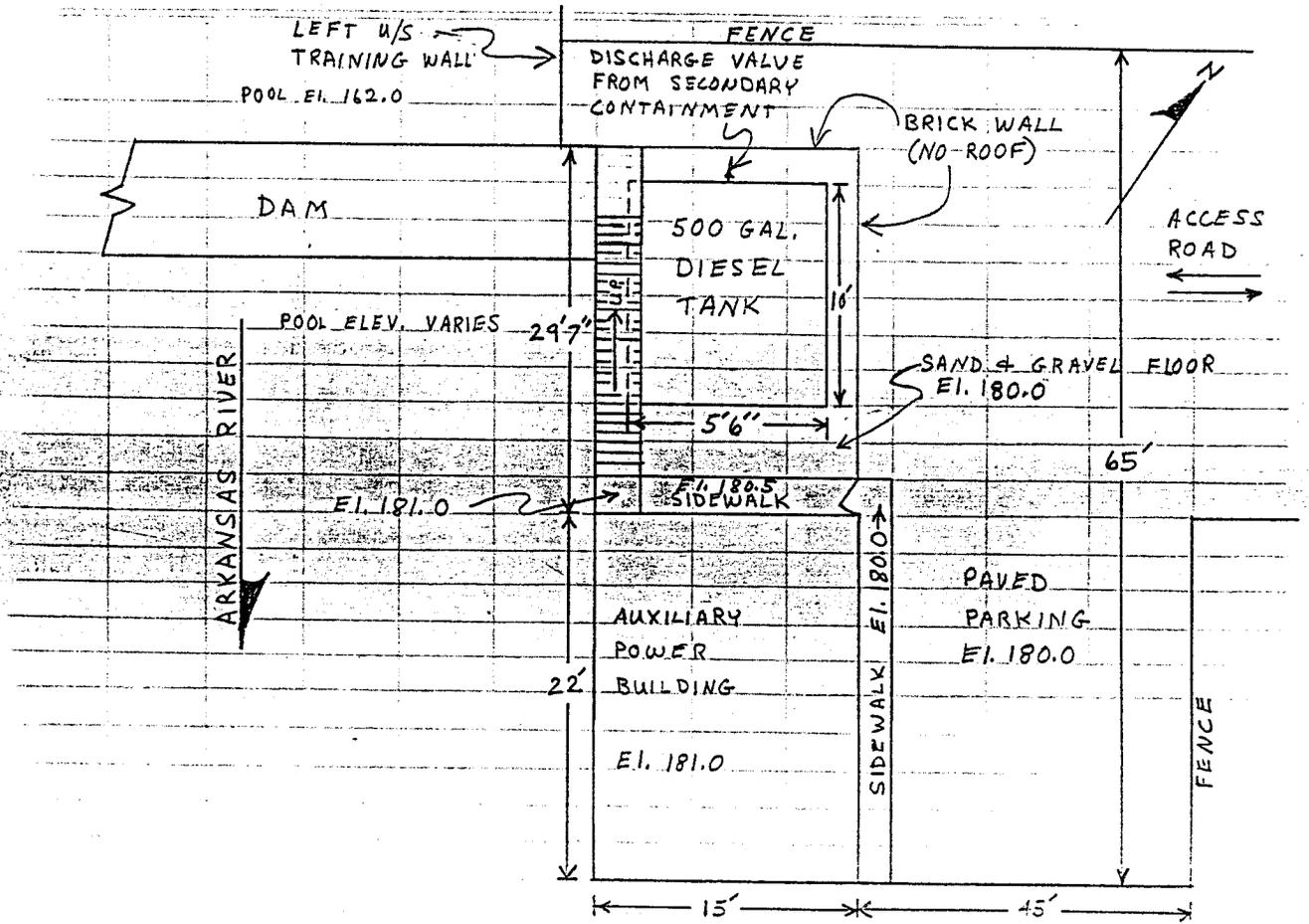
Computed by _____

Date _____

Checked By _____

Date _____

Book No. _____



NO SCALE

11/96
JG

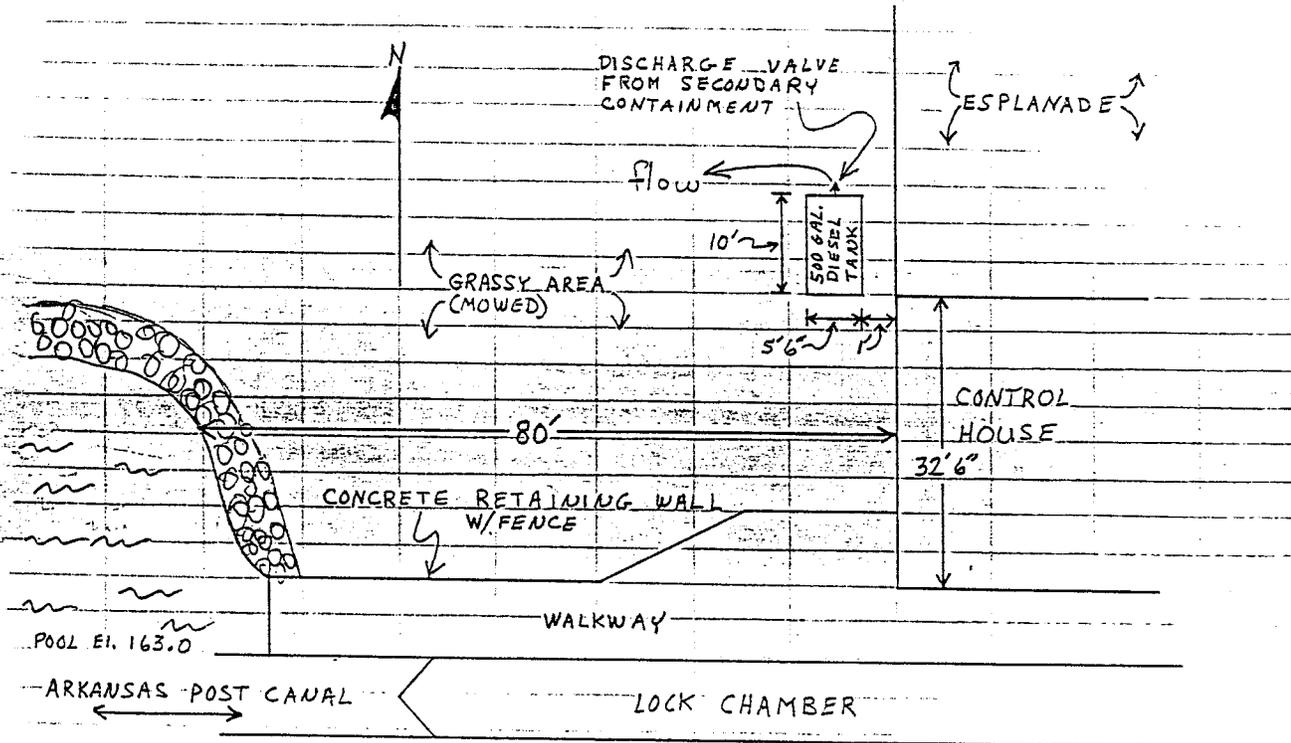
WILBUR D. MILLS DAM
Left Descending Bank

M-K Arkansas River Navigation System

COMPUTATION SHEET

Subject Spill Prevention and Response Plan File _____

Project Pine Bluff Proj. O & M Computed by _____ Date _____ Checked By _____ Date _____ Book No. _____



NO SCALE

LOCK NO. 2

11/96
2/01

PROJECT INFORMATION, CLIMATE AND SOIL DATA
WILBUR D. MILLS DAM (DAM NO. 2)

Project Information: Wilbur D. Mills Dam is located at Arkansas River mile 40.5, approximately 4 miles southwest of Lock No. 2. The dam's primary purpose is navigation by maintaining navigation pool.

Climate: Wilbur D. Mills Dam is located in Arkansas County, Arkansas. Arkansas County is characterized by long hot, humid summers, short mild winters, and abundant rainfall. It is believed the climate has varied little since the formation of the soils in the county. The climate is relatively uniform throughout the county and, consequently, does not account for significant differences among the soils.

The warm, moist climate promotes rapid chemical reaction and rapid soil formation. The large amount of available water favors the rapid leaching of soluble and colloidal materials. Plant remains decompose rapidly, and the organic acids thus produced hasten the development of clay minerals and the removal of carbonates. Because the soil freezes for only short periods, soil formation continues almost the year round.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 5.86 inches | Jul - 4.16 inches |
| Feb - 4.93 inches | Aug - 3.05 inches |
| Mar - 5.56 inches | Sep - 3.23 inches |
| Apr - 5.02 inches | Oct - 2.99 inches |
| May - 4.84 inches | Nov - 4.43 inches |
| Jun - 3.91 inches | Dec - 4.73 inches |

Precipitation averages 53 inches per year. Roughly 60 percent of the annual precipitation falls in winter and in spring; heavy rain is most likely in spring.

Soils: Soils in this area are Norwood silt loam and consists of level to gently undulating, well-drained, moderately permeable soils. These soils developed in stratified, young alluvium deposited by the Arkansas River. Surface layer is reddish-brown or dark reddish-brown silt loam about 8 inches thick. Below this, from 8 to 72 inches, is dark reddish-brown and reddish-brown, thinly stratified silt loam, silty clay loam, or very fine sandy loam.

SWLR 200-1-1

25 Sep 97

Groundwater: Depth to seasonal higher water table is approximately 22 feet.

Source: Soil Survey of Arkansas County, Arkansas, U.S.
Department of Agriculture Soil Conservation Service, Issued 1972.

PROJECT INFORMATION, CLIMATE AND SOIL DATA
LOCK NO. 2

Project Information: Lock No. 2 is located at navigational mile 13.3 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means for commercial and recreational river navigation.

Climate: Lock No. 2 is located in Arkansas County, Arkansas. Arkansas County is characterized by long hot, humid summers, short mild winters, and abundant rainfall. It is believed the climate has varied little since the formation of the soils in the county. The climate is relatively uniform throughout the county and, consequently, does not account for significant differences among the soils.

The warm, moist climate promotes rapid chemical reaction and rapid soil formation. The large amount of available water favors the rapid leaching of soluble and colloidal materials. Plant remains decompose rapidly, and the organic acids thus produced hasten the development of clay minerals and the removal of carbonates. Because the soil freezes for only short periods, soil formation continues almost the year round.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 5.86 inches | Jul - 4.16 inches |
| Feb - 4.93 inches | Aug - 3.05 inches |
| Mar - 5.56 inches | Sep - 3.23 inches |
| Apr - 5.02 inches | Oct - 2.99 inches |
| May - 4.84 inches | Nov - 4.43 inches |
| Jun - 3.91 inches | Dec - 4.73 inches |

Precipitation averages 53 inches per year. Roughly 60 percent of the annual precipitation falls in winter and in spring; heavy rain is most likely in spring.

Soils: Soils in this area are Grenada silt loam, 1 to 3 percent slopes, and are moderately well drained, slowly permeable soils on uplands. These soils developed in a thick mantle of loess. The surface layer is very dark grayish-brown to brown silt loam about 5 inches thick. The uppermost 12 to 20 inches of the subsoil is dark-brown to yellowish-brown silt loam or silty clay loam, the middle part is light brownish-gray to light-gray silt loam, and the lower part, beginning at a depth of about 24 inches to 72 inches, is a firm, brittle fragipan of light-gray to dark-brown, mottled silty clay loam.

SWLR 200-1-1
25 Sep 97

Groundwater: Depth to seasonal high water table is approximately
10 feet.

Source: Soil Survey of Arkansas County, Arkansas, U.S.
Department of Agriculture Soil Conservation Service, Issued 1972.

25 Sep 97

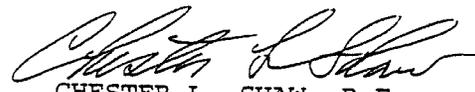
SPILL HISTORY - WILBUR D. MILLS DAM AND LOCK NO. 2

CESWL-CO-PB (CESWL-CO-E 16 Oct 95) 1st End LEE/fj/534-0451
SUBJECT: Spill History

Pine Bluff Project Office, P.O. Box 7835, Pine Bluff, AR 71611
22 November 1995

FOR Chief, Construction-Operations Division
ATTN: Jane Smith, CESWL-CO-E

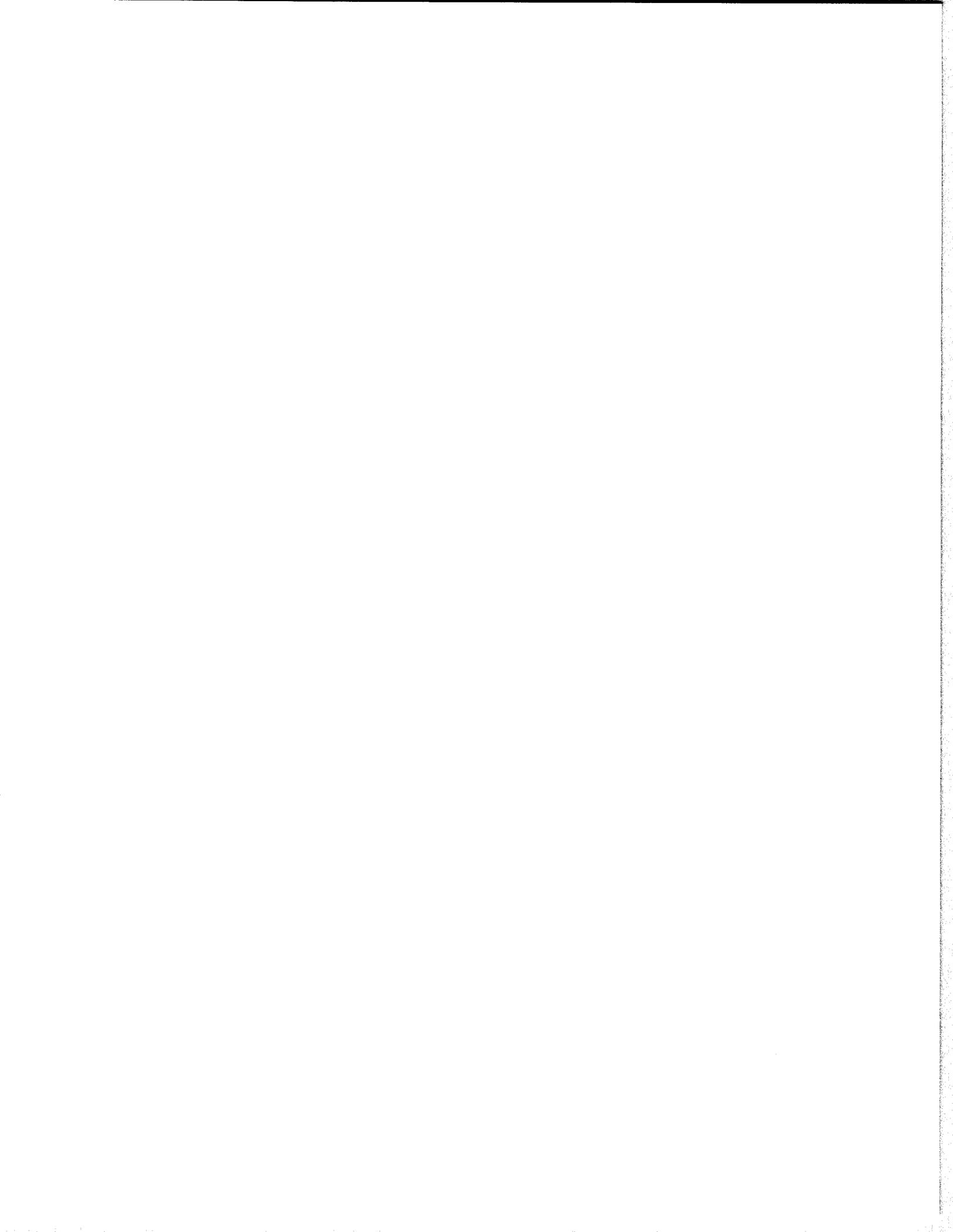
1. All supervisors and employees at the Pine Bluff Project Office have been asked to search their memories as well as their files for any information concerning spills of hazardous substances that have occurred during our history as an operating office. Spill history information is provided as requested.
2. There is only one spill to report.
 - a. Site/Building: Lock No. 2, McClellan-Kerr Arkansas River Navigation System, above-ground diesel storage tank.
 - b. Date: discovered on 30 November 1994.
 - c. Substance: virgin diesel fuel.
 - d. Quantity Released: approximately 200 gallons.
 - e. Cause: failure of an underground fuel line leading from an above-ground tank.
 - f. Corrective Action Taken: Approximately 45 cu. yds. of contaminated soil was excavated from the site and stored on visqueen in another location. Soil samples were taken at the spill site and of the excavated material. Once the sample tests results showed the leak site soil was within permissible limits, the excavation site was backfilled with clean soil. The stockpiled soil has been turned over to Emergency Management Branch and Logistics Management Office for proper disposal.
 - g. Method of Disposal: The stockpiled contaminated soil will be disposed of in an approved sanitary landfill.
3. There are no other known hazardous substance spills within the Pine Bluff Project Office area.


CHESTER L. SHAW, P.E.
Acting Resident Engineer

RECEIVED

NOV 24 1995

CON-OPS DIVISION



**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|--------------------------------------|------------------|---------------------------------|--------------|---------------------------|
| Dardanelle Field Office Russellville, AR | Concrete Water Seal | 5 Gal | Paint Room in Carpenter Shop | On | Sorbents |
| | Asphalt and Fiber Roof Coating | 10 Gal | Paint Room in Carpenter Shop | On | Sorbents |
| | Diesel | 2 Gal | Flammable Connex | On | Sorbents |
| | Gasoline | 8 Gal | Flammable Connex | On | Sorbents |
| | Hydraulic Fluid | 5 Gal | Flammable Connex | On | Sorbents |
| | Grease, Lubricating | 5 Gal | Flammable Connex | On | Sorbents |
| | Tar-Rid | 10 Gal | Flammable Connex | On | Sorbents |
| | | | | | |

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APPENDIX I

SWLR 200-1-1
25 Sep 97

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|------------------------------------|------------------------------------|------------------|-----------------------------------|--------------|---------------------------|
| Survey Section Russellville, AR | Antifreeze | 6 Gal | Land Maintenance Storage Building | On | Sorbents |
| | Hone Oil | 1 Gal | Land Maintenance Storage Building | On | Sorbents |
| | Denatured Alcohol | 3 Gal | Land Maintenance Storage Building | On | Sorbents |
| | Gas Treatment | 1 Gal | Land Maintenance Storage Building | On | Sorbents |
| | Gasoline | 3 Gal | Flammable Connex | On | Sorbents |
| | Oil | 1 Gal | Flammable Connex | On | Sorbents |
| | Generator Oil | 2 Gal | Flammable Connex | On | Sorbents |
| | | | | | |

I-2

SITE DESCRIPTION AND MAP

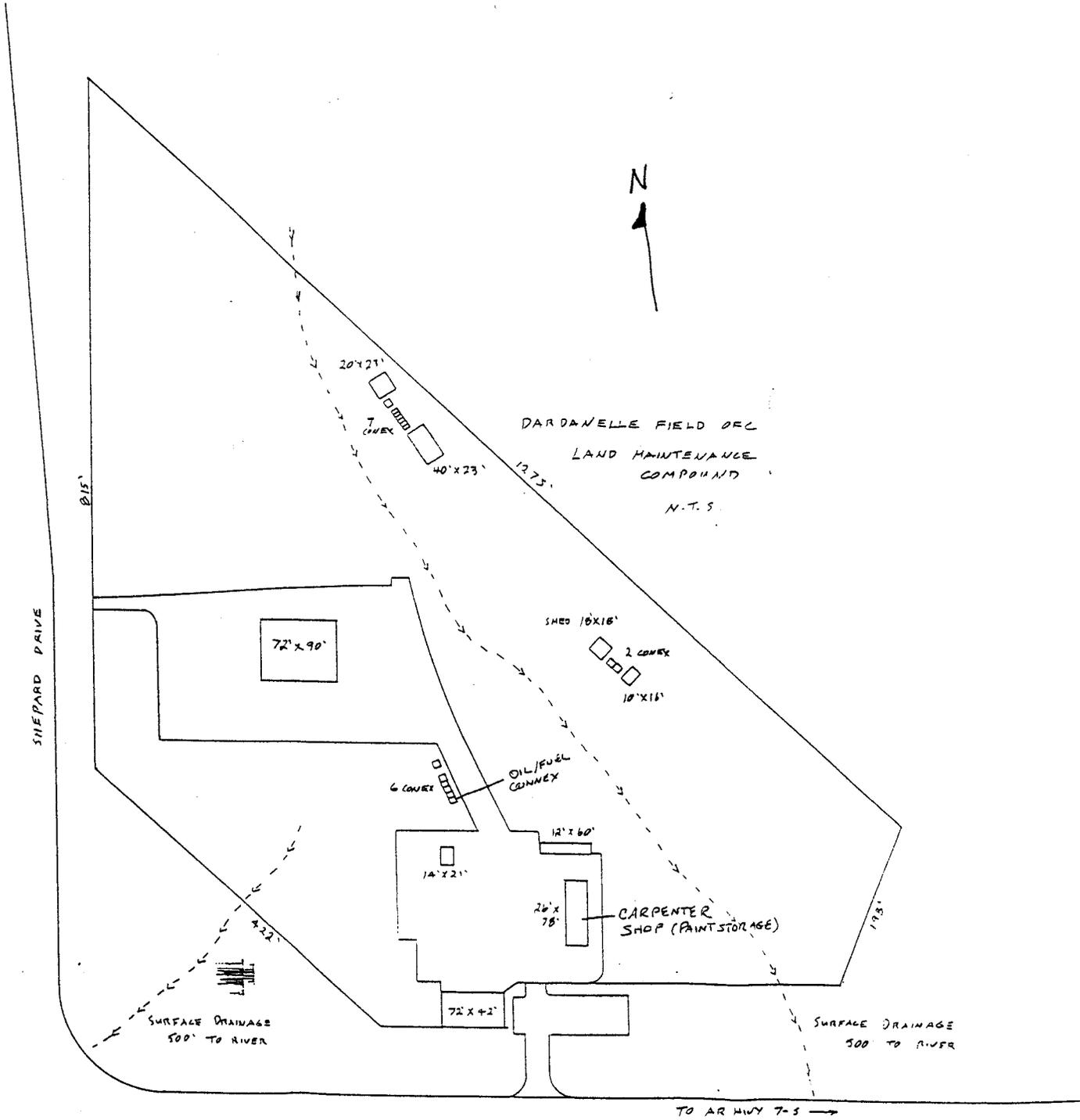
**DARDANELLE FIELD OFFICE
LAND MAINTENANCE COMPOUND**

A. Carpenter Shop

1. 26' X 78' wood frame building on concrete slab and no drain.
2. Building has a paint storage closet containing miscellaneous paints, thinners, water sealer, and asphalt roof repair.
3. No floor drains.
4. The largest container of paint is 5 gallon asphalt roof repair.
5. The spill would be contained inside the shop.
6. Rate of flow - estimated .5 ft/sec.
7. Distance to the Arkansas River is approximately 500'.
8. Absorbant materials near site.
9. Depth to groundwater - approximately 40'.

B. Oil and Fuel Connex

1. 5' X 8' metal connex container.
2. Connex has 1 - 5 gallon container fuel and mixed fuel, oils, lubricants.
3. No floor drains.
4. The largest container is 5 gallon fuel can.
5. Flow direction is to the south.
6. Rate of flow - estimated .10 ft/sec.
7. Distance to Arkansas River is approximately 500'.
8. Absorbant materials near site.
9. Depth to groundwater - approximately 40'.



PROJECT INFORMATION, CLIMATE AND SOIL DATA
DARDANELLE FIELD OFFICE
LAND MAINTENANCE COMPOUND

Project Information: Dardanelle Field Office, Land Maintenance Compound, is located at the intersection of Shepard Drive and Old Post Road in Russellville, Arkansas. Primary purposes are to: provide maintenance of operational facilities, parks and recreational areas; and serve as a storage area for operational supplies and equipment.

Climate: Dardanelle Field Office is located in Pope County, Arkansas. Pope County is hot in summer and moderately cool in winter. In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 30 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 2.98 inches | Jul - 3.53 inches |
| Feb - 3.43 inches | Aug - 3.55 inches |
| Mar - 4.97 inches | Sep - 4.06 inches |
| Apr - 4.82 inches | Oct - 3.47 inches |
| May - 5.12 inches | Nov - 4.26 inches |
| Jun - 4.42 inches | Dec - 3.64 inches |

Total annual rainfall is about 48 inches and is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. Of the total annual precipitation, 26 inches, or 54 percent, usually falls in April through September. Average seasonal snowfall is 3 inches. The greatest snow depth at any one time during the period of record was 8 inches. On the average, seldom is there a day with at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

Soils: Soil types consists of McKamie very fine sandy loam, 3 to 8 percent slopes, and Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes.

McKamie very fine sandy loam. This deep well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown very fine sandy loam about 2 inches thick. The next layer is brown very fine sandy loam to a depth of about 4 inches. The subsoil is red silty clay to 42 inches. Below this is mottled yellowish red and red clay loam to 56 inches and mottled strong brown and red silty clay loam to 72 inches. Permeability is very slow.

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25 Sep 97

Mountainburg gravelly fine sandy loam. This shallow, well drained, gently sloping soil is on hilltops, mountaintops, and ridges. Typically, the surface layer is very dark grayish brown gravelly fine sandy loam about 2 inches thick. The subsurface layer is brown gravelly fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Groundwater: Depth to seasonal high water table is greater than 6 feet.

Source: Soil Survey of Pope County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1981.

SPILL HISTORY - DARDANELLE FIELD OFFICE

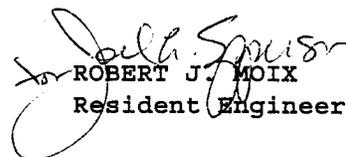
CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, Dardanelle Field Ofc

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. The following is a list of known, past spills at the Dardanelle Field Office:
 - A. Site/Building: Connex container
 - B. Date: Discovered in 1989 or 1990
 - C. Substance: Used oil
 - D. Quantity Released: Less than 5 gallons
 - E. Cause: Rusted-out container
 - F. Corrective Action Taken: Keep minimal amount of poisons on-hand and contract out as much as possible. Periodically check condition of containers stored on-site.
 - G. Method of Disposal: Advice from ADPC&E was to aerate building until no odor remained.
3. Please contact Mr. Joel Epperson at 968-5008 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Lake Dardanelle Field Ofc, Mr. Epperson

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AUG 27 1997

CON-OPS DIVISION

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|----------------|--------------|---------------------------|
| Dardanelle Lock and Dam Russellville, AR | Hydraulic Oil | 55 Gal | Paint Building | On | Secondary Containment |
| | Lubrication Engineer Grease | 30 Gal | Paint Building | On | Sorbents |
| | EP0 & EP1 Grease | 60 Gal | Paint Building | On | Sorbents |
| | Keystone Grease | 5 Gal | Paint Building | On | Sorbents |
| | Paint | 40 Gal | Paint Building | On | Sorbents |
| | Mineral Spirits | 55 Gal | Paint Building | On | Sorbents |
| | Solvent | 2 Gal | Shop | On | Sorbents |
| | Hydraulic Fluid | 3,600 Gal | Lock System | Off | System Inspected Daily |
| | | | | | |

SITE DESCRIPTION AND MAP

**Dardanelle Lock & Dam
Info for Spill Plan
Building Inventory and Description**

A. Lock Control House

1. Area Description: The Lock Control House is a 2-story brick veneer building located adjacent to the landside lock wall, with approximate size of 30' X 57'.
2. Substances Stored:
 - a. Solvent; 2 gal - in shop on lower level.
3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.
4. Largest Container: 1 gallon parts washer and 1 gallon can
5. Flow Direction in Event of Failure: SSE across parking lot and grassed area to the Arkansas River.
6. Estimate Flow Rate: Estimate 2 FPS for solvent.
7. Distance to Nearest Waterway: Approximately 400' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

B. Paint Building

1. Area Description: The Paint Building is a 1-story, brick veneer building located SE of the Lock Control House, with an approximate size of 12' X 18'.
2. Substances Stored:
 - a. Hydraulic Oil; 55 gal
 - b. Grease, Lubrication Engineers; 30 gal
 - c. Grease, EP0 and EP1; 60 gal
 - d. Grease, Keystone; 5 gal
 - e. Paint; 40 gal
3. Floor Drains: No floor drains in the building.
4. Largest Container: 55 gallon drum.
5. Flow Direction in Event of Failure: SSE across parking lot and grassed area to the Arkansas River.

~~Dardanelle Lock & Dam~~
~~Info for Spill Plan (Cont'd)~~

6. Estimate Flow Rate: Estimate 0.5 for paint, 1 FPS for oil and 2 FPS for solvent.
Grease will not flow.

7. Distance to Nearest Waterway: Approximately 350' to Arkansas River.
8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

C. Lock Hydraulic System

1. Area Description: The Lock Hydraulic system consists of piping and pumps in the Lock Control House and Lock Galleries.

2. Substances Stored: Hydraulic fluid; about 3600 gal total.

3. Floor Drains: Floor drains are located throughout the building and will either be plugged with a plumber's ball or encircled with absorbent "pigs" to prevent accidental discharge of hazardous substances.

4. Largest Container: Hydraulic pump reservoir in control house has a capacity of approximately 250 gallons.

5. Flow Direction in Event of Failure: Failure of pump or reservoir - SSE across parking lot and grassed area to the Arkansas River. Failure of piping in gallery - along gallery drain to sump pump pit which would be pumped into river.

6. Estimate Flow Rate: Estimate 1 FPS for Hydraulic fluid..

7. Distance to Nearest Waterway: Failure in the pump or reservoir - 400' to Arkansas River. Failure in gallery - 10' to 250'.

8. Containment Method: Absorbent materials located at the facility.

9. Depth to groundwater: Unknown. Estimate 10'.

D. Dam (Spillway Gate Control Gearboxes)

1. Area Description: The Dam is located West of the Lock. There are 20 tainter gates on the dam, and each gate has two gearboxes.

2. Substances Stored: Oil, Lubrication Engineers; 1000 gal (40 boxes @ 25 gal each)

3. Floor Drains: N/A

4. Largest Container: 25 gallons

5. Flow Direction in Event of Failure: Across the machinery deck; down to the pier; and down the pier face into the Arkansas River.

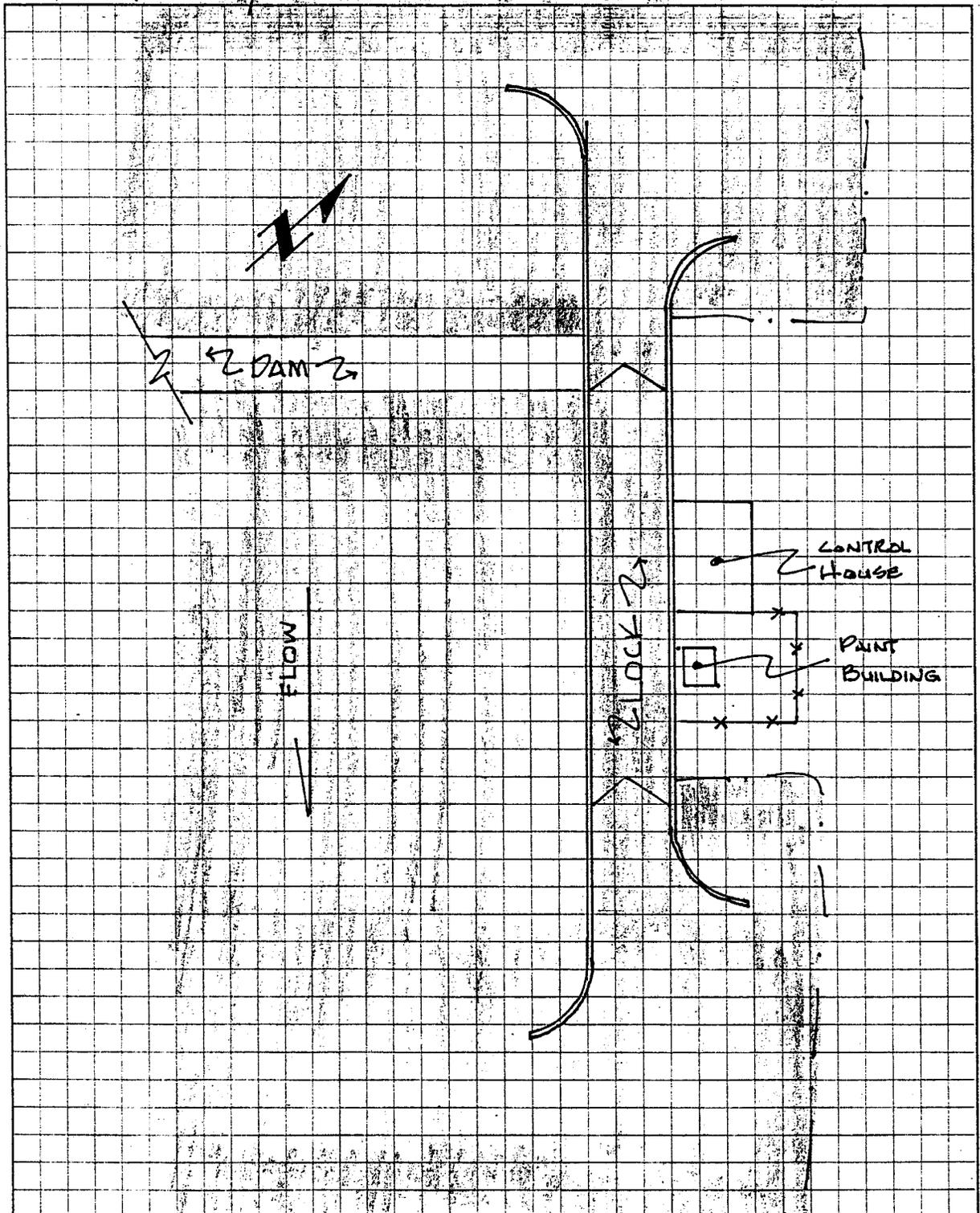
6. Estimate Flow Rate: Estimate 1 FPS for oil.

7. Distance to Nearest Waterway: Approximately 30' to Arkansas River.

8. Containment Method: Absorbent material located onsite.

9. Depth to groundwater: N/A

SUBJECT SPILL PLAN INFO FOR DARDANELLE LOCK - DAM
COMPUTATION SITE PLAN (N.T.S.) FILE NO. _____
COMPUTED BY BALGAVY DATE 9 DEC 96 CHECKED BY _____ DATE _____



PROJECT INFORMATION, CLIMATE AND SOIL DATA
DARDANELLE LOCK AND DAM (NO. 10)

Project Information: Dardanelle Lock and Dam is located at navigation mile 205.5 of the McClellan-Kerr Arkansas River Navigation System. Its primary purpose is to provide a means for navigation of commercial and recreational vessels.

Climate: Dardanelle Lock and Dam is located in Pope County, Arkansas. Pope County is hot in summer and moderately cool in winter. In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 30 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 2.98 inches | Jul - 3.53 inches |
| Feb - 3.43 inches | Aug - 3.55 inches |
| Mar - 4.97 inches | Sep - 4.06 inches |
| Apr - 4.82 inches | Oct - 3.47 inches |
| May - 5.12 inches | Nov - 4.26 inches |
| Jun - 4.42 inches | Dec - 3.64 inches |

Total annual rainfall is about 48 inches and is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. Of the total annual precipitation, 26 inches, or 54 percent, usually falls in April through September. Average seasonal snowfall is 3 inches. The greatest snow depth at any one time during the period of record was 8 inches. On the average, seldom is there a day with at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

Soils: Soil types consists of Mountainburg stony fine sandy loam, 1 to 40 percent slopes; Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes; Bruno loamy fine sand, 0 to 3 percent slopes; Dardanelle silt loam, gently undulating, 0 - 3 percent slopes; Muskogee silt loam, 3 to 8 percent slopes; Taft silt loam, 0 to 2 percent slopes; and McKamie very fine sandy loam, 3 to 8 percent slopes.

Mountainburg stony fine sandy loam. This shallow, well drained, nearly level to moderately steep soil is on side slopes and tops of hills, mountains, and ridges. Typically the surface layer is very dark grayish brown stony fine sandy loam about 2 inches thick. The subsurface layer is brown stony fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Mountainburg gravelly fine sandy loam. This shallow, well drained, gently sloping soil is on hilltops, mountaintops, and ridges. Typically, the surface layer is very dark grayish brown gravelly fine sandy loam about 2 inches thick. The subsurface layer is brown gravelly fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Bruno loamy fine sand. This deep, excessively drained, level to nearly level soil is on natural levees on the protected areas of the flood plain of the Arkansas River. Typically, the surface layer is brown loamy fine sand about 6 inches thick. The underlying layers are stratified brown and pale brown loamy fine sand and very fine sandy loam extending to a depth of 72 inches or more. Permeability is rapid.

Dardanelle silt loam, gently undulating. This deep, well drained soil is on natural levees along the Arkansas River. Typically, the surface layer is very dark grayish brown silt loam about 7 inches thick. The next layer is very dark brown silt loam to a depth of about 23 inches. The subsoil is dark reddish brown silt loam to 28 inches and reddish brown silty clay loam to 51 inches. The underlying material is brown very sandy loam and silt loam to a depth of 91 inches or more. Permeability is moderate.

Muskogee silt loam. This deep, moderately well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown silt loam about 4 inches thick. The subsurface layer is yellowish brown silt loam about 6 inches thick. The subsoil is yellowish brown silty clay loam to a depth of about 15 inches; yellowish brown, mottled silty clay loam to 25 inches; yellowish red, mottled silty clay to 45 inches; and yellowish red clay to 72 inches or more. Permeability is slow.

Taft silt loam. This deep, somewhat poorly drained, level to nearly level soil is on oil stream terraces in broad valleys. Typically, the surface layer is dark grayish brown silt loam about 6 inches thick. The subsurface layer is brown silt loam to a depth of about 11 inches. The subsoil is yellowish brown mottled, friable silt loam to about 19 inches; light brownish gray, mottled, friable silt loam to 25 inches; a fragipan from 25 to 56 inches that is mottled gray and yellowish brown silt loam to 35 inches and mottled gray and yellowish brown silty clay loam to 56 inches; yellowish brown, mottled, firm silty clay loam to 66 inches; and mottled gray and yellowish brown firm silty clay loam to 74 inches or more. Permeability is slow.

McKamie very fine sandy loam. This deep well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown very fine sandy loam about 2 inches thick. The next layer is brown very fine sandy

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loam to a depth of about 4 inches. The subsoil is red silty clay to 42 inches. Below this is mottled yellowish red and red clay loam to 56 inches and mottled strong brown and red silty clay loam to 72 inches. Permeability is very slow.

Groundwater: Depth to seasonal high water table is greater than 6 feet, except for the following soil types: Bruno loamy fine sand, 4 - 6 feet; Muskogee silt loam, 1 - 2 feet; and Taft silt loam, 1 - 2 feet.

Source: Soil Survey of Pope County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1981.

SPILL HISTORY - DARDANELLE LOCK AND DAM

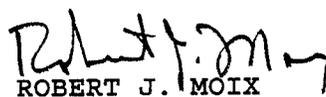
CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, Dardanelle Lock & Dam

1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.
2. No significant spills have been reported at the Dardanelle Lock and Dam. Please contact Mr. Larry Johnson at 667-2127 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:
Toad Suck Ferry Field Ofc, Mr. James
Dardanelle Lock & Dam, Mr. Johnson

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|--------------------------------------|--------------|---------------------------|
| Dardanelle Marine Terminal Russellville, AR | Latex Paint | 132 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | "Caterpillar" Paint | 28 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | "Caterpillar" Primer | 5 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Rust Inhibitive Primer & Paint | 8 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Contact Cement | 4 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Defthane Enamel Paint | 1 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Zinc Chromate Paint | 6 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Vinyl Paint | 33 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Oxide Vinyl Paint | 10 Gal | Paint Building (Building No. S-7) | On | Sorbents |

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SWLR 200-1-1
25 Sep 97

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|---|-------------------------|--|---------------------|----------------------------------|
| Dardanelle Marine Terminal Russellville, AR (Continued) | Lead-Base Paint | 31 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Fish Oil Paint | 25 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Galvanized Primer | 10 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Enamel 83 Paint | 1 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Heat Resistant Aluminum Paint | 10 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Exterior Oil Base Paint | 4 Gal | Paint Building (Building No. S-7) | On | Sorbents |
| | Vinyl Paint | 925 Gal | Storage Building (Building No. S-3) | On | Sorbents |
| | Vinyl Zinc Paint | 25 Gal | Storage Building (Building No. S-3) | On | Sorbents |

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PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|--|--------------|---------------------------|
| Dardanelle Marine Terminal Russellville, AR (Continued) | Polyamide Component A | 55 Gal | Storage Building (Building No. S-3) | On | Sorbents |
| | Epoxy Component B | 55 Gal | Storage Building (Building No. S-3) | On | Sorbents |
| | Fish Oil Paint | 25 Gal | Storage Building (Building No. S-3) | On | Sorbents |
| | Synthetic Primer Coating | 25 Gal | Storage Building (Building No. S-3) | On | Sorbents |
| | Vinyl Paint | 30 Gal | Connex Box (Box No. C-29) | On | Sorbents |
| | Solvent | 10 Gal | Storage Shed (Building No. OS-5) | On | Sorbents |
| | MIAK Thinner for Vinyl Paint | 110 Gal | Storage Shed (Building No. OS-5) | On | Sorbents |
| | Paint Thinner | 55 Gal | Storage Shed (Building No. OS-5) | On | Sorbents |

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SWLR 200-1-1
25 Sep 97

**PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE**

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|------------------------------------|------------------|-------------------------------------|--------------|---------------------------|
| Dardanelle Marine Terminal Russellville, AR (Continued) | Thinner (T-10) | 110 Gal | Storage Shed (Building No. OS-5) | On | Sorbents |
| | Gasoline Aboveground Storage Tank | 8,000 Gal | Compound - Fueling Station | On | Secondary Containment |
| | Diesel Aboveground Storage Tank | 8,000 Gal | Compound - Fueling Station | On | Secondary Containment |
| | Used Oil Aboveground Storage Tank | 5,000 Gal | Compound | On | Secondary Containment |
| | Engine Oil (OE-HDO-30) | 605 Gal | Oil Storage Building | On | Secondary Containment |
| | Grease (OGG-H) | 165 Gal | Oil Storage Building | On | Secondary Containment |
| | Oil (Phillips 66, SHD II 30) | 55 Gal | Oil Storage Building | On | Secondary Containment |
| | DTE Lube | 110 Gal | Oil Storage Building | On | Secondary Containment |

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PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|--|------------------|----------------------|--------------|---------------------------|
| Dardanelle Marine Terminal Russellville, AR (Continued) | Gear Lube (SAE 90) | 550 Gal | Oil Storage Building | On | Secondary Containment |
| | Concrete Curbing Compound | 55 Gal | Oil Storage Building | On | Secondary Containment |
| | Oil Gear Lube (95W/140) | 275 Gal | Oil Storage Building | On | Secondary Containment |
| | Grease (Novatex, EP0) | 360 Gal | Oil Storage Building | On | Secondary Containment |
| | Alamagard Vari-Purpose Lube (No. 3751) | 350 Gal | Oil Storage Building | On | Secondary Containment |
| | Hydraulic Oil (2075H) | 55 Gal | Oil Storage Building | On | Secondary Containment |
| | Metal Working Oil (Chevron) | 55 Gal | Oil Storage Building | On | Secondary Containment |
| | Transmission Fluid (Dexron II) | 55 Gal | Oil Storage Building | On | Secondary Containment |
| | Kerosene | 55 Gal | Oil Storage Building | On | Secondary Containment |

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SITE DESCRIPTION AND MAP

Dardanelle Marine Terminal
Info for Spill Plan
Building Inventory and Description

A. Paint Building (Building No. S-7)

1. Area Description: The Paint Building is a 1-story brick veneer building located on the SE side of the DMT area near the Fuel Tanks with an approximate size of 12' x 12'.

2. Substances Stored:

- a. Paint, Latex, 7-1 gal cans and 25-5 gal cans
- b. Paint, "Caterpillar"; 28-1 gal cans
- c. Paint, "Caterpillar" primer; 12-1 gal cans
- d. Contact Cement; 2-1 gal cans
- e. Paint, Vinyl; 16-1 gal cans
- f. Paint, Oxide Vinyl; 15-5 gal cans
- g. Paint, Fish Oil; 8-5 gal cans
- h. Paint, Exterior Oil base; 4-1 gal cans
- i. Paint, Rustoleum; 2-5 gal cans
- j. Paint, High Pent. Epoxy; 1-1 gal can
- k. Paint, Industrial Enamel # 7409; 7-1 gal cans
- l. Paint, Black Enamel; 10-1 gal cans
- m. Paint, Gray Enamel; 6-1 gal cans
- n. Paint, Gray Primer; 2-1 gal cans
- o. Paint, Red Enamel; 3-1 gal cans
- p. Paint, White Enamel; 1-1 gal can
- q. Paint, Yellow Enamel; 12-1 gal cans
- r. Roof Coating, Aluminum (Mobile Home); 2-5 gal cans
- s. Trichlorethane, Technical; 2-5 gal cans
- t. Paint, Coal Tar Epoxy; 2-5 gal cans and 1-1 gal can
- u. Paint, Red Quick Touch Enamel; 2-5 gal cans
- v. Waterproof/Sealer; 1-5 gal can
- w. Fuel Preservative; 3-5 gal cans

3. Floor Drains: No floor drains.

4. Largest Container: 5 gallon bucket

5. Flow Direction in Event of Failure: SW along dock to the Arkansas River.

6. Estimate Flow Rate: Estimate 2 FPS for solvent, waterproof/sealer, and fuel preservative, and estimate 0.5 FPS for paints.

7. Distance to Nearest Waterway: Approximately 150' to Arkansas River.

8. Containment Method: Absorbent materials located at the facility.

9. Depth to groundwater: Unknown. Estimate 10'.

6. Estimate Flow Rate: Estimate 0.5 for paint, 1 FPS for oil and 2 FPS for solvent.

Grease will not flow.

7. Distance to Nearest Waterway: Approximately 350' to Arkansas River.

Dardanelle Marine Terminal
Info for Spill Plan (Cont'd)

8. Containment Method: Absorbent materials located at the facility.
9. Depth to groundwater: Unknown. Estimate 10'.

B. Fuel Tanks (Above-ground Storage Tanks)

1. Area Description: The Fuel Tanks are located on the SE side of the DMT area.
2. Substances Stored: Diesel Fuel (8000 gal max) and Unleaded Gasoline (8000 gal max).
3. Floor Drains: N/A.
4. Largest Container: 8000 gal tank.
5. Flow Direction in Event of Failure: SW along the dock to the Arkansas River
6. Estimate Flow Rate: Estimate 2 FPS for Diesel Fuel and Unleaded Gasoline.
7. Distance to Nearest Waterway: Estimate 100'
8. Containment Method: Secondary containment.
9. Depth to groundwater: Unknown. Estimate 10'.

C. Storage Building (Building No. S-3)

1. Area Description: The building is metal framed with corrugated metal siding with approximate size of 10' x 10' and is located adjacent to the Steam Building.
2. Substances stored:
 - a. Paint, Vinyl; 185-5 gal cans
 - b. Paint, Vinyl Zinc; 4-5 gal cans
 - c. Paint, Polyamide Component A; 11-5 gal cans
 - d. Paint, Epoxy Component B; 11-5 gal cans
 - e. Paint, Synthetic Primer Coating; 5-5 gal cans
3. Floor Drains: N/A
4. Largest Container: 5 gal bucket
5. Flow Direction in Event of Failure: Across dirt/ gravel work area into the Arkansas River.
6. Estimate Flow Rate: Estimate 0.5 FPS for oil.
7. Distance to Nearest Waterway: Approximately 150' to Arkansas River.
8. Containment Method: Absorbent material located onsite.
9. Depth to groundwater: Unknown. Estimate 10'

D. Storage Shed (Solvents and Thinners, Building No. OS-5)

1. Area Description: The building is metal framed with corrugated metal siding on 3-sides. The building has a concrete floor, is open on the front, and has an approximate size of 10' x 20'.
2. Substances stored:
 - a. Solvent, Clean; less than 10 gal
 - b. Thinner, MIAK; 2-55 gal drums - for thinning vinyl paint
 - c. Thinner, paint; less than 10 gal

Dardanelle Marine Terminal
Info for Spill Plan (Cont'd)

- d. Thinner, T-10; 2-55 gal drums
- 3. Floor Drains: None.
- 4. Largest Container: 55 gal drum
- 5. Flow Direction in Event of Failure: Across dirt/ gravel work area into the Arkansas River.
- 6. Estimate Flow Rate: Estimate 2 FPS for solvent and thinner..
- 7. Distance to Nearest Waterway: Approximately 100' to Arkansas River.
- 8. Containment Method: Absorbent material located onsite.
- 9. Depth to groundwater: Unknown. Estimate 10'

E. Oil Storage Building (Drum Storage Building)

1. Area Description: The building is metal framed with corrugated metal siding on one side (back side) with an approximate size of 20' x 30'. The building has a concrete slab with a containment curb around its perimeter.

2. Substances stored:

- a. Oil, OE-HDO-30; 7-55 gal drums
- b. Grease (OGG-H); 11-15 gal drums
- c. Oil, Phillips 66 SHDII 30; 1-55 gal drum
- d. Oil, DTE Lube; 2-55 gal drums
- e. Oil, SAE 90 gear lube; 2-55 gal drums
- f. Grease, Novatex EP0 and EP1; 7-30 gal drums
- g. Oil, LE Almagard Vari-purpose lube # 3751; 5-10 gal drums
- h. Hydraulic Oil 2075SH; 6-55 gal drums
- i. Oil, Chevron Metal Working; 1-55 gal drum
- j. Transmission fluid, Dexron II; 1-55 gal drum
- k. Kerosene; 1-55 gal drum
- l. Grease, Moly 29; 4-10 gal cans

- 3. Floor Drains: None.
- 4. Largest Container: 55 gal drum
- 5. Flow Direction in Event of Failure: Across dirt/ gravel work area into the Arkansas River.
- 6. Estimate Flow Rate: Estimate 0.5 FPS for oil and 1 FPS for transmission fluid and kerosene.
- 7. Distance to Nearest Waterway: Approximately 100' to Arkansas River.
- 8. Containment Method: Secondary containment.
- 9. Depth to groundwater: Unknown. Estimate 10'

F. Used Oil Tank

- 1. Area Description: The tank is located near the river's edge and West of the Quonset Hut.
- 2. Substances stored: Used Oil; 5000 gal (max). The tank is usually emptied by a local

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Dardanelle Marine Terminal

~~Info for Spill Plan (Cont'd)~~

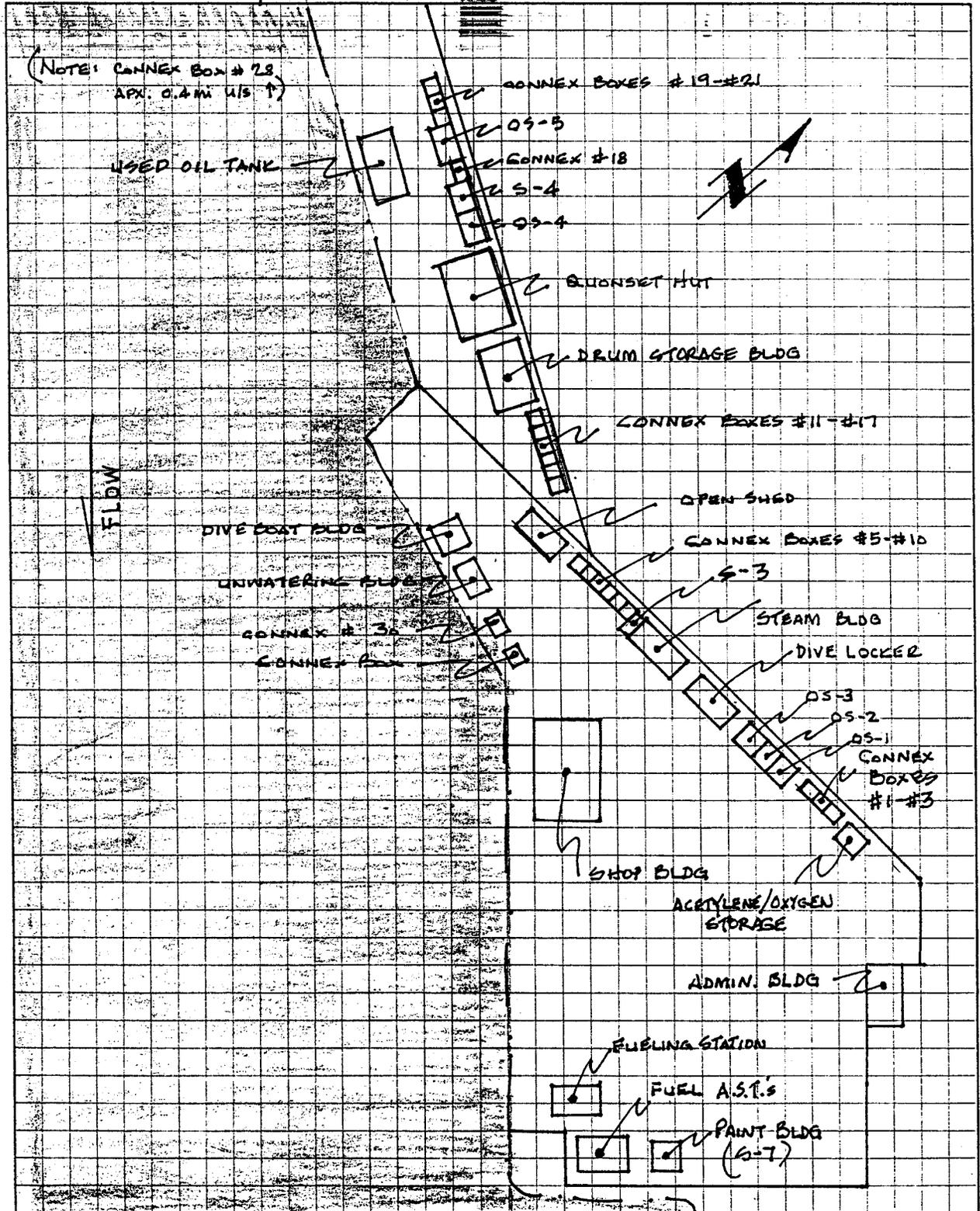
contractor when it contains about 2500 gallons.

3. Floor Drains: N/A
4. Largest Container: 5000 gal tank
5. Flow Direction in Event of Failure: SSW Across dirt/ gravel and riprap into the Arkansas River.
6. Estimate Flow Rate: Estimate 1 FPS for oil.
7. Distance to Nearest Waterway: Approximately 20' to Arkansas River.
8. Containment Method: Secondary containment.
9. Depth to groundwater: Unknown. Estimate 10'

SUBJECT SPILL PLAN INFO FOR DARDANELLE MARINE TERMINAL

COMPUTATION SITE PLAN (N.T.S.) FILE NO. _____

COMPUTED BY BALGANY DATE 9 DEC 96 CHECKED BY _____ DATE _____



25 Sep 97

**PROJECT INFORMATION, CLIMATE AND SOIL DATA
DARDANELLE MARINE TERMINAL**

Project Information: Dardanelle Marine Terminal is located immediately upstream of Dardanelle Lock and Dam, at navigation mile 205.5 of the McClellan-Kerr Arkansas River Navigation System. Its primary purposes are to survey and otherwise support the maintenance of the navigational channel and provide operational/maintenance support to the locks and dams along the McClellan-Kerr Arkansas River Navigation System.

Climate: Dardanelle Marine Terminal is located in Pope County, Arkansas. Pope County is hot in summer and moderately cool in winter. In winter the average temperature is 42 degrees F, and the average daily minimum temperature is 30 degrees. In summer the average temperature is 80 degrees, and the average daily maximum temperature is 92 degrees.

Rainfall: Rainfall averages for the general area are as follows:

| | |
|-------------------|-------------------|
| Jan - 2.98 inches | Jul - 3.53 inches |
| Feb - 3.43 inches | Aug - 3.55 inches |
| Mar - 4.97 inches | Sep - 4.06 inches |
| Apr - 4.82 inches | Oct - 3.47 inches |
| May - 5.12 inches | Nov - 4.26 inches |
| Jun - 4.42 inches | Dec - 3.64 inches |

Total annual rainfall is about 48 inches and is fairly heavy and well distributed throughout the year. Snow falls nearly every winter, but snow cover lasts but a few days. Of the total annual precipitation, 26 inches, or 54 percent, usually falls in April through September. Average seasonal snowfall is 3 inches. The greatest snow depth at any one time during the period of record was 8 inches. On the average, seldom is there a day with at least 1 inch of snow on the ground, but the number of such days varies greatly from year to year.

Soils: Soil types consists of Mountainburg stony fine sandy loam, 1 to 40 percent slopes; Mountainburg gravelly fine sandy loam, 3 to 8 percent slopes; Bruno loamy fine sand, 0 to 3 percent slopes; Dardanelle silt loam, gently undulating, 0 - 3 percent slopes; Muskogee silt loam, 3 to 8 percent slopes; Taft silt loam, 0 to 2 percent slopes; and McKamie very fine sandy loam, 3 to 8 percent slopes.

Mountainburg stony fine sandy loam. This shallow, well drained, nearly level to moderately steep soil is on side slopes and tops of hills, mountains, and ridges. Typically the surface layer is very dark grayish brown stony fine sandy loam about 2 inches thick. The subsurface layer is brown stony fine sandy

loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Mountainburg gravelly fine sandy loam. This shallow, well drained, gently sloping soil is on hilltops, mountaintops, and ridges. Typically, the surface layer is very dark grayish brown gravelly fine sandy loam about 2 inches thick. The subsurface layer is brown gravelly fine sandy loam to a depth of about 6 inches. The subsoil is strong brown very gravelly loam to about 15 inches. Below this is level-bedded acid sandstone bedrock. Permeability is moderately rapid.

Bruno loamy fine sand. This deep, excessively drained, level to nearly level soil is on natural levees on the protected areas of the flood plain of the Arkansas River. Typically, the surface layer is brown loamy fine sand about 6 inches thick. The underlying layers are stratified brown and pale brown loamy fine sand and very fine sandy loam extending to a depth of 72 inches or more. Permeability is rapid.

Dardanelle silt loam, gently undulating. This deep, well drained soil is on natural levees along the Arkansas River. Typically, the surface layer is very dark grayish brown silt loam about 7 inches thick. The next layer is very dark brown silt loam to a depth of about 23 inches. The subsoil is dark reddish brown silt loam to 28 inches and reddish brown silty clay loam to 51 inches. The underlying material is brown very sandy loam and silt loam to a depth of 91 inches or more. Permeability is moderate.

Muskogee silt loam. This deep, moderately well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown silt loam about 4 inches thick. The subsurface layer is yellowish brown silt loam about 6 inches thick. The subsoil is yellowish brown silty clay loam to a depth of about 15 inches; yellowish brown, mottled silty clay loam to 25 inches; yellowish red, mottled silty clay to 45 inches; and yellowish red clay to 72 inches or more. Permeability is slow.

Taft silt loam. This deep, somewhat poorly drained, level to nearly level soil is on oil stream terraces in broad valleys. Typically, the surface layer is dark grayish brown silt loam about 6 inches thick. The subsurface layer is brown silt loam to a depth of about 11 inches. The subsoil is yellowish brown mottled, friable silt loam to about 19 inches; light brownish gray, mottled, friable silt loam to 25 inches; a fragipan from 25 to 56 inches that is mottled gray and yellowish brown silt loam to 35 inches and mottled gray and yellowish brown silty clay loam to 56 inches; yellowish brown, mottled, firm silty clay loam to 66 inches; and mottled gray and yellowish brown firm silty clay loam to 74 inches or more. Permeability is slow.

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McKamie very fine sandy loam. This deep well drained, gently sloping soil is on high terraces along the Arkansas River. Typically, the surface layer is dark brown very fine sandy loam about 2 inches thick. The next layer is brown very fine sandy loam to a depth of about 4 inches. The subsoil is red silty clay to 42 inches. Below this is mottled yellowish red and red clay loam to 56 inches and mottled strong brown and red silty clay loam to 72 inches. Permeability is very slow.

Groundwater: Depth to seasonal high water table is greater than 6 feet, except for the following soil types: Bruno loamy fine sand, 4 - 6 feet; Muskogee silt loam, 1 - 2 feet; and Taft silt loam, 1 - 2 feet.

Source: Soil Survey of Pope County, Arkansas, U.S. Department of Agriculture Soil Conservation Service, Issued 1981.

SPILL HISTORY - DARDANELLE MARINE TERMINAL

CESWL-CO-RV

21 August 1997
Mr. James/jjs/329-2986

MEMORANDUM FOR Ch, Con-Ops Division

SUBJECT: Spill History, River Maintenance Section

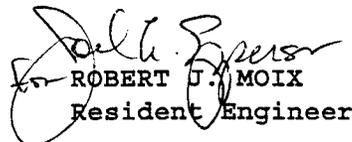
1. Reference Memorandum CESWL-CO-E dated 16 October 1995, Subject: Spill History.

2. The following is a list of known, past spills at the River Maintenance Section:

- A.
 - 1) Site/Building: Drum storage building
 - 2) Date: Accumulation since about 1993
 - 3) Substance: Hydraulic oil, motor oil, and solvent
 - 4) Quantity Released: Unknown
 - 5) Cause: Insufficient, overflowing drip pans and excessive spillage during filling.
 - 6) Corrective Action Taken: Periodic check of drip pans and cautioned employees of the importance of not having spills during filling operations.
 - 7) Method of Disposal: Contractor removal in August, 1995

- B.
 - 1) Site/Building: Used oil tank
 - 2) Date: Accumulation since about 1991
 - 3) Substance: Used oil
 - 4) Quantity Released: Unknown
 - 5) Cause: Excessive spillage during filling
 - 6) Corrective Action Taken: Cautioned employees of the importance of not having spills during filling operations.
 - 7) Method of Disposal: Contractor removal in August, 1995

3. Please contact Mr. Philip Callahan at 968-5008 if you have questions or need additional information.


ROBERT J. MOIX
Resident Engineer

Copy furnished:

Toad Suck Ferry Field Ofc, Mr. James
River Maintenance Section, Mr. Callahan

AUG 27 1997

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

SWIR 200-1-1
25 Sep 97

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|---|--|---|---|--------------|---|
| Dardanelle Powerhouse Russellville, AR | Turbine Oil (Four systems each at 8,039 Gal) | 32,152 Gal | Generator and Turbine System | Off | Areas drain to sump system where oil can be recovered. |
| | Transformer Oil - 2 Elec Transformers at 8,500 Gal | 17,000 Gal | Switchyard | On | Sorbents. * |
| | Insulating Oil - 6 Oil Cir- cuit Breakers at 3,225 Gal and 1 at 3,135 Gal | 22,485 Gal | Switchyard | On | Sorbent. * |
| | Turbine Oil - 2 Aboveground Storage Tanks Each at 6,000 Gal | 12,000 Gal (** Total Normal Capacity 2,400 Gal) | Oil Storage Room, Level 290 of Powerhouse | Off | All drains flow to sump system where oil can be recovered. |
| | Transformer Oil - 4 Above- ground Storage Tanks Each at 6,000 Gal | 24,000 Gal (** Total Normal Capacity 6,800 Gal) | Oil Storage Room, Level 290 of Powerhouse | Off | All drains flow to sump system where oil can be recovered. |
| | Insulating Oil - 2 Above- ground Storage Tanks Each at 6,000 Gal | 12,000 Gal (** Total Normal quantity 1,700 Gal) | Oil Storage Room, Level 290 of Powerhouse | Off | All drains flow to sump system where oil can be recovered. |

PETROLEUM AND HAZARDOUS SUBSTANCES SOURCE MATRIX
RUSSELLVILLE

| Facility | Petroleum and Hazardous Substances | Approx. Quantity | Location | On/Off Shore | Spill Prevention Measures |
|--|------------------------------------|------------------|--|--------------|---------------------------|
| Dardanelle Powerhouse Russellville, AR (Continued) | Used Oil | 55 Gal | Oil Storage Room, Level 312 of Powerhouse | Off | Sorbents |
| | Kerosene | 55 Gal | Oil Storage Room, Level 312 of Powerhouse | Off | Sorbents |
| | Solvent | 55 Gal | Oil Storage Room, Level 312 of Powerhouse | Off | Sorbents |
| | Diesel Aboveground Storage Tank | 500 Gal | Emergency Diesel Generator Room, Level 312 of Powerhouse | Off | Sorbents |
| | Paint | 20 Gal | Paint Room, Level 312 of Powerhouse | Off | Sorbents |
| | EP1 Grease | 165 Gal | Paint Room, Level 312 of Powerhouse | Off | Sorbents |
| | | | | | |

* Note: Efforts are being made to receive funding for secondary containment - five year budget plan.

** Note: Systems allow for: equal storage of clean and dirty oil (i.e., when two tanks are listed one tank is for clean oil and the second is for dirty oil); cleaning of dirty oil; and reuse. Dirty oil is continuously cleaned and placed back in clean storage tanks; therefore, total oil capacity is much less than the tank's total capacity.

SITE DESCRIPTION AND MAPS

**POTENTIAL SPILL SITES FOR DARDANELLE POWER PLANT
(As of December 1996)**

- A. Diesel Room and Storage Facility, Elevation 338 (Ref. Drg "A")
1. 275 gallon diesel fuel tank in a 11'X42' concrete walled room.
 2. Floor drain: Yes, but plugged.
 3. Threshold at door raised 8" to contain any spills.
 4. Inspected daily.
- B. Battery Room, Elevation 330 (Ref. Drg "A")
1. 63 cells @ 3 gallons each, sulfuric acid.
28 cells @ 1 gallon each, sulfuric acid.
All contents inside a 16'X26' concrete walled room.
 2. Floor drain: Yes, 3" to station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Drain can be plugged; portable door boom can be installed to contain spills.
- C. Generator Bay, Elevation 330 (Ref. Drg "A")
1. 8 governor pressure tanks (2 per unit)
 2. Plumbed to governor sump tanks (see Item D, below)
- D. Turbine Room, Elevation 312 (Ref. Drg "B")
1. 4 governor oil sump tanks (1 per unit, designed to hold all lube oil in governor system: 2520 gallons total.
 2. Various floor drains located throughout turbine room, although most of the flow would be into the unit turbine pit where it could be contained if detected early enough.
 3. Flow ultimately would end up in the station drainage sump.
 4. Rate of flow: Approx. 10 gpm.
 5. Containment: Oil-in-sump detectors in order that sump pumps could be turned off.
- E. Oil and Grease Storage Room, Elevation 312 (Ref. Drg "B")
1. Contents: 1- 55 gallon drum, kerosene
1- 55 gallon drum, solvent
3- 55 gallon drums, 30 wt. lube oil
10- 5 gallon cans, gear grease
All contents held within a 10'X21' concrete walled room.
 2. Floor drain: No
 3. Containment: Door is equipped with a portable boom.
- F. Paint Storage Room, Elevation 312 (Ref. Drg "B")
1. Contents: 50-1 gallon cans paint and thinner
All contents held within a 10'X21' concrete walled room.
 2. Floor drain: No
 3. Containment: Since no more than 1 gallon would likely ever be spilled, none needed; although, a portable door boom could be easily installed.

- G. Sewage Treatment Room, Elevation 290 (Ref. Drg "C")
1. Contents: 1-180 cu. ft. concrete sewage treatment tank inside a 21'X21' concrete walled room.
 2. Floor drain: Yes, 1-4" drain to station drainage sump.
 3. Rate of flow: Approx. 5 gpm.
 4. Containment: Drain could be plugged; portable door boom could be installed.
- H. Transformer Oil Storage Room, Elevation 290 (Ref. Drg "C")
1. Contents: 4-4800 gallon tanks of insulating oil inside a 18'X44' concrete walled room.
 2. Floor drains: Yes, 2-4" drains to station drainage sump.
 3. Rate of flow: Approx. 10 gpm.
 4. Containment: Storage room floor is recessed 6" below normal elevation to contain spills. Drains could be plugged, or rely on oil in sump alarms to turn off drainage pumps and contain spillage in sump.
- I. Turbine Lube Oil Storage Room, Elevation 290 (Ref. Drg "C")
1. Contents: 2-4000 gallon tanks of lubricating oil
2-5600 gallon tanks of lubricating oil
All contents are inside a 23'X26' concrete walled room.
 2. Floor drains: Yes, 2-4" drains to station drainage sump.
 3. Rate of flow: Approx. 10 gpm.
 4. Containment: Storage room floor is recessed 6" below normal elevation to contain spills. Drains could be plugged, or rely on oil in sump alarms to turn off drainage pumps and contain spillage in sump.
- J. Oil Transfer (Purification) Room, Elevation 290 (Ref. Drg "C")
1. Transfer facilities only, no storage. Room is 20'X26' and concrete walled.
 2. Floor drains: Yes, 1-4" drain to drainage sump.
 3. Rate of flow: Approx. 5 gpm, although highly unlikely a spill would occur here.
 4. Containment: Floor recessed 6" below normal elevation; drain could be plugged.
- K. Switchyard (Outside), Elevation 330 (Ref. Site Map)
1. Contents: 7 Oil Circuit Breakers, with 3 insulating oil tanks each, for a total of 21 tanks.
 2. Each tank has a capacity of 1075 gallons and is self-contained.
 3. Any spillage would be slight. It would be absorbed into the sand base where it could be recovered.
- L. Switchyard (Outside), Elevation 330 (Ref. Site Map)
1. Contents: 2- 13.8/161 kv, 3 phase power transformers.
 2. Each transformer has a capacity of 8500 gallons of insulating oil and it self-contained.
 3. Any spillage would be slight. It would be absorbed into the sand base where it could be recovered.
 4. Any concerns about a massive spill could be addressed by the pouring of a 6" concrete footing around the perimeter of the switchyard.

M. Special notes on the Station Drainage Sump and the connecting Unwatering Sump.

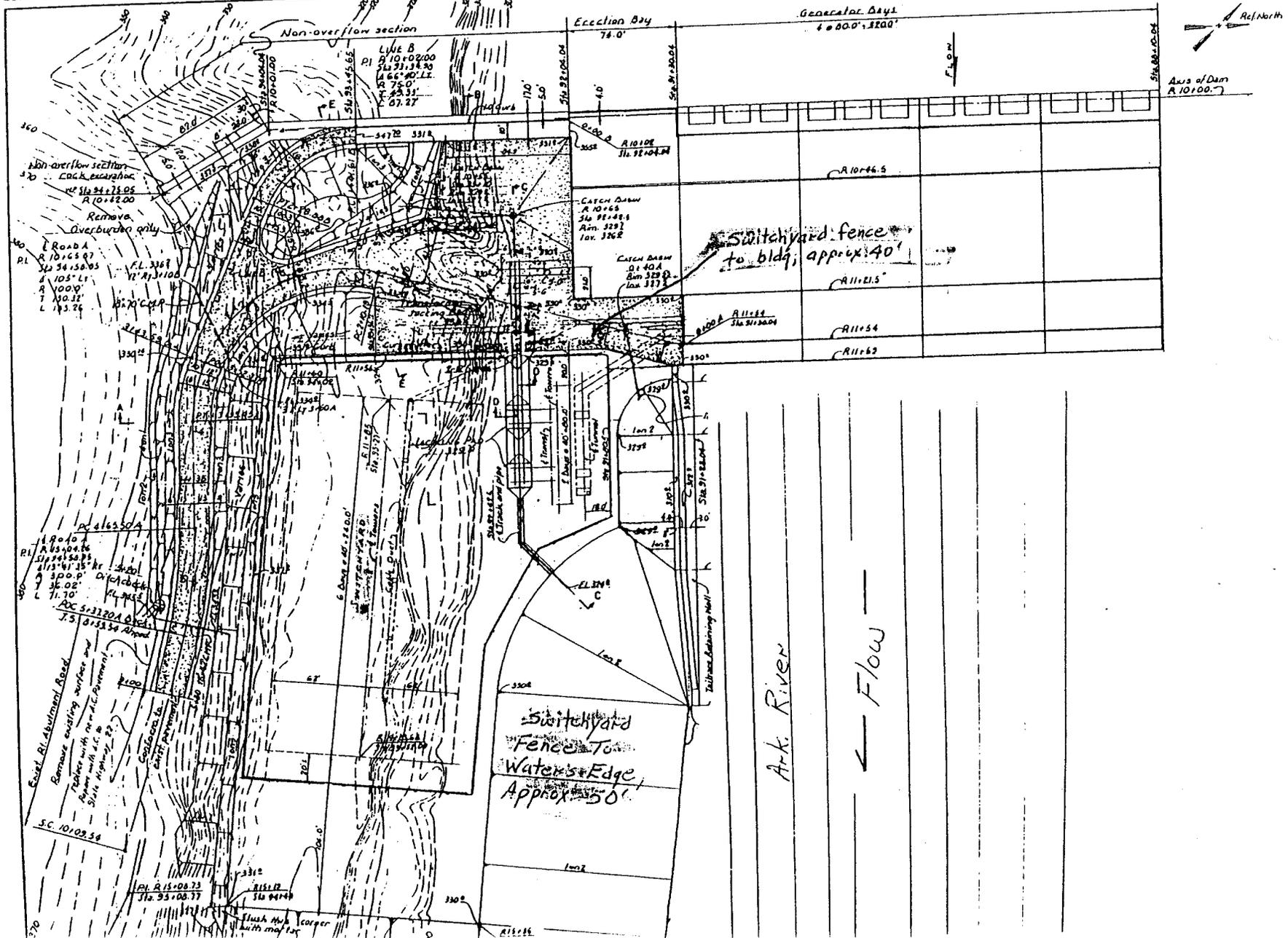
1. The station drainage sump has a capacity of 3456 cu. ft.
2. The unwatering sump has a capacity of 16,800 cu. ft.
3. Total capacity for the two is 20,256 cu. ft., or 151,515 gallons, more than enough to contain any inside spills provided the drainage pumps are off.

N. Notes on all potential spill sites.

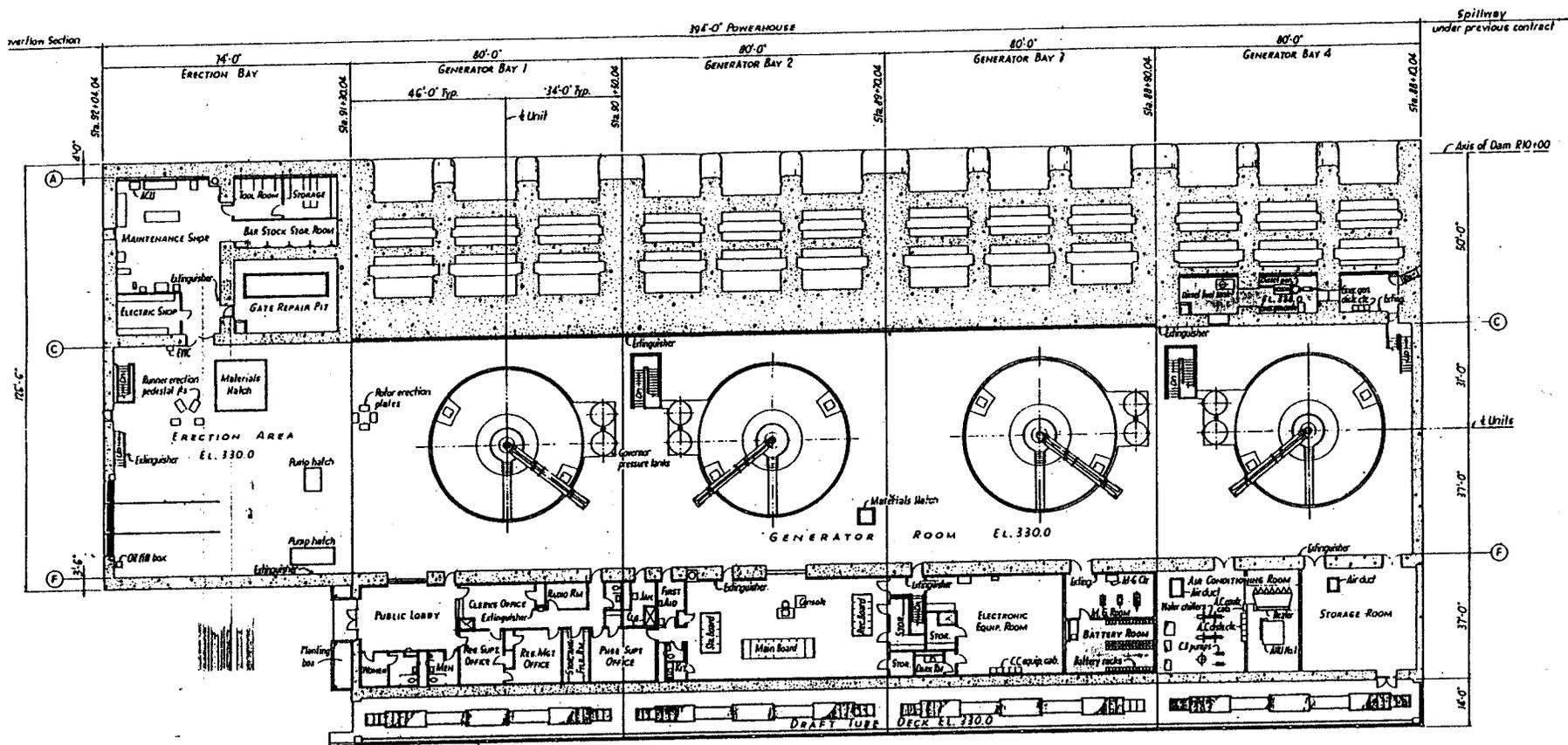
1. All areas are inspected at least once daily.
2. All tanks are constructed of heavy gauge steel.

Dardanelle Power Plant (Site Map)

CORPS OF ENGINEERS

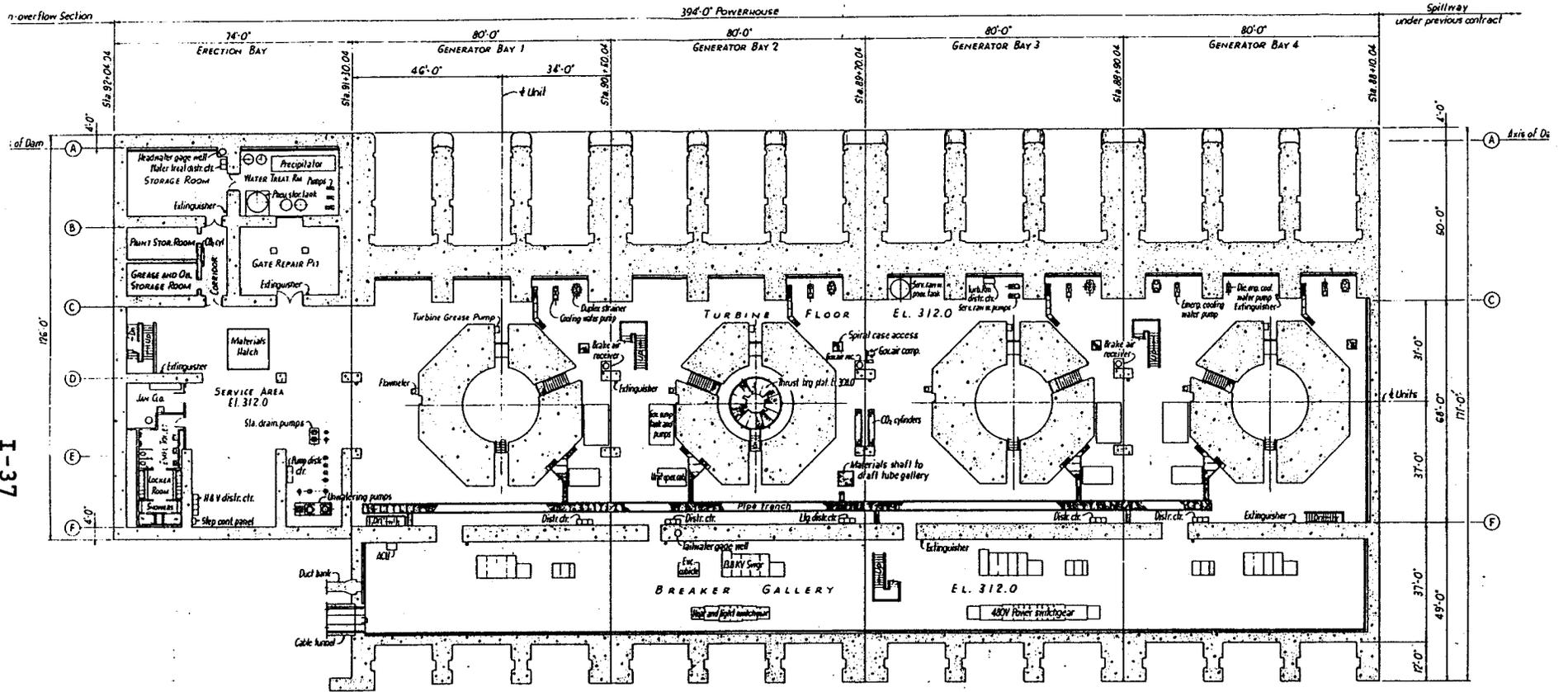


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Dardanelle Power Plant
DRG "A"

I-36



Dardanelle Power Plant
DRG "B"

