AGENDA
ANNISTON ARMY DEPOT
RESTORATION ADVISORY BOARD
January 24, 2000
Calhoun County Administrative Building

Introductions	Dr. Barry Cox
Roll Call and Approval of Minutes	Dr. Barry Cox
Well and Spring Inventory Update	Susan Abston
SWMU 12 Soil Remediation Alternative Technologies	Susan Abston
RAB Administrative Issues	All
Agenda for Next Meeting	All

ANNISTON ARMY DEPOT
RESTORATION ADVISORY BOARD
DECEMBER 6, 1999
COLDWATER ELEMENTARY SCHOOL
COLDWATER, ALABAMA

The special called meeting of the ANAD RAB began shortly after 6:00 PM with co-chairperson, Dr. Cox calling roll. RAB members reviewed and approved the minutes of the October 4, meeting as submitted.

Dr. Cox explained the procedures for the board meeting and public meeting to follow. He explained the purpose of the ANAD RAB and invited those interested in the environmental issues regarding the Depot to attend upcoming meetings and to sign up for notice of future meetings.

Ms. Abston noted that other monies have become available to continue the ecological risk assessment in the ammunition storage area and that the eighty thousand dollars previously designated for that assessment can now be put toward the well and spring inventory.

Following this, Ms. Abston discussed the Cooper well results as well as the prior history of the property. Prior to Mr. Cooper's ownership the water had been used only for filling the ponds. In 1995, a groundwater sample collected from the well showed 10 parts per billion (ppb) of trichlorethene (TCE). Five ppb is the drinking water level. This was acceptable at the time, as it was not water used for drinking. It was noted that on August 30, 1999 one of the Corps of Engineers' personnel performing work as part of the off-post investigation noticed someone drinking from the well. On September 3, 1999, Depot personnel from the office of Risk Management met with Mr. Cooper, sharing the 1995 results and requested permission to sample his well. On September 10, 1999 his well was sampled for volatile organics. On October 20, 1999 results of this sampling were received indicating a TCE level of 109 ppb. Cis-1,2-Dichloroethene (DCE) was detected as well at that time. DCE is a breakdown product of TCE. Its concentration was at 155 ppb.

On October 21, 1999, Mr. Cooper was given the results of the samplings and requested that he limit access to the water for drinking. He agreed to this request. On the October 29, 1999 the part of the well that was going to the spigot, that allowed access to the well was plugged. Water continues to go to the ponds via underground pipe. Mr. Cooper does have city water for drinking. He pumps water for 10-12 hours a day to the ponds, at a pump rate of about three hundred gallons a minute.

Confirmatory sampling was accomplished on October 22, 1999, to verify the prior results and to sample the ponds. The confirmatory sampling again showed elevated levels in the well. The ponds, which are a series of ten, one feeding into the other, showed TCE at 61.2 ppb in the first and DCE at 70.1 ppb. By the fourth pond, however, TCE levels had dropped below the drinking water standard. The separate pond was a non-detect for TCE.

The Agency for Toxic Substances and Disease Registry is currently performing a health consultation for the Catfish Ponds.

There have also been ecological risk and human health risk assessments looking at the effects of eating the fish from the ponds. TCE is not bio accumulating; the fish do not continue building up TCE as they are exposed to it. The water would have to be grossly contaminated with TCE in order for the fish to be effected. Any TCE in the fish would be volatilized in cooking.

EPA will resample the well and the ponds and will be performing a site-specific risk assessment on it.

Ms. Abston noted that Tim Garrett has made copies of the survey conducted by the University of Arizona, discussed at several prior meetings, available to any and all RAB members. The survey was conducted to examine the social, cultural, and economic factors that influence public involvement in the Army's Chemical Demilitarization Program. The study has been completed. The University of Arizona was distributing the survey in segments and we currently have everything here that the Army has received. As more information becomes available, it will be provided to the RAB.

Commissioner Eli Henderson, will host the next meeting at the Calhoun County Administration Building on 17th and Noble in Anniston on January 24, 2000 at 6:00 PM.

Dr. Cox again encouraged the public to attend the RAB meetings and suggested should anyone be interested in being on the Board, to contact Ms. Abston or him.

The ANAD RAB meeting was adjourned to be reconvened for a public meeting to discuss ANAD's off post well and spring survey that is being conducted as part of the off post remedial investigation.

RAB ATTENDEES—December 6, 1999

Members Present:
Dr. Thomas Baucom
Dwight Mitchell for Mr. Echols Bryant
Representative for Ms. Delois Champ
Dr. Barry Cox
COL Hayes
Commissioner Eli Henderson
Mr. Bruce Hutchinson
Ms. Dawn Landholm
Mr. Charles Lay Jr
Ms. Helen Leatherwood
Mr. Roosevelt Parker
Mr. Jerry Roberts
Mr. Garrett C. Smith Sr.

Members Absent:
Mr. Jack Boydston
Ms. Annette B. Daugherty
Mr. Walter Frazier
Mr. Tim Garrett, called with regrets
Ms. Mary L. Harrington, Ed.D
Mr. Julian Jenkins
Mr. Wayne Livingston
Dr. Christopher Randolph
Ms. Cassandra Roberts
Ms. Greta Naugher Senn, called with regrets
Mr. Roy C. Stephens
Honorable Willie Maude Snow
Mr. Shane Thomason, called with regrets

Non-Members Present:
Ms. Susan Abston, ANAD
Mr. Ron Grant, ANAD
Mr. Greg Jones, ANAD
Mr. Dusty McClure, ADEM
Ms. Patsy Goldberg, EPA
Lodrect McDonald
Mrs. L. T. Bright
Mr. & Mrs. Julian Holmes
Mr. Danny Cairo
Ms. Tina Dale
Mr. Gene Brenson
Mr. G. A. Howell
Mr. Luther Daniel
Mr. Linley Haynes
Mr. James E. Wallace
Mr. Morris Stokes
L. Burell
Mr. Lorey Buford
Mr. Joe E. Evans
Mr. Johnny Holder
Mr. Greg Street
Mr. Morris Stokes
Mr. & Mrs. Steve Howell
Ms. Mary Greenwood
Mr. Vince Gowan
Mr. Jim Miller
Mr. Troy Evans
Ms. Sherry Cable, Gallet & Associates

ANAD RAB
MEETING SCHEDULE
2000
(Tentative)

Monday, January 24, 2000

Monday, April 3, 2000

Monday, July 3, 2000

Monday, October 2, 2000

Additional meetings scheduled as necessary

Information to be displayed on ANAD web page:

- RAB Charter
- RAB Minutes
- RAB Roster
- Membership Application with instruction
- Frequently Ask Questions concerning the RAB
- Fact Sheet about the clean up activities at the Depot
- Scrolling Marquee with meeting notice
- Administrative Record Index

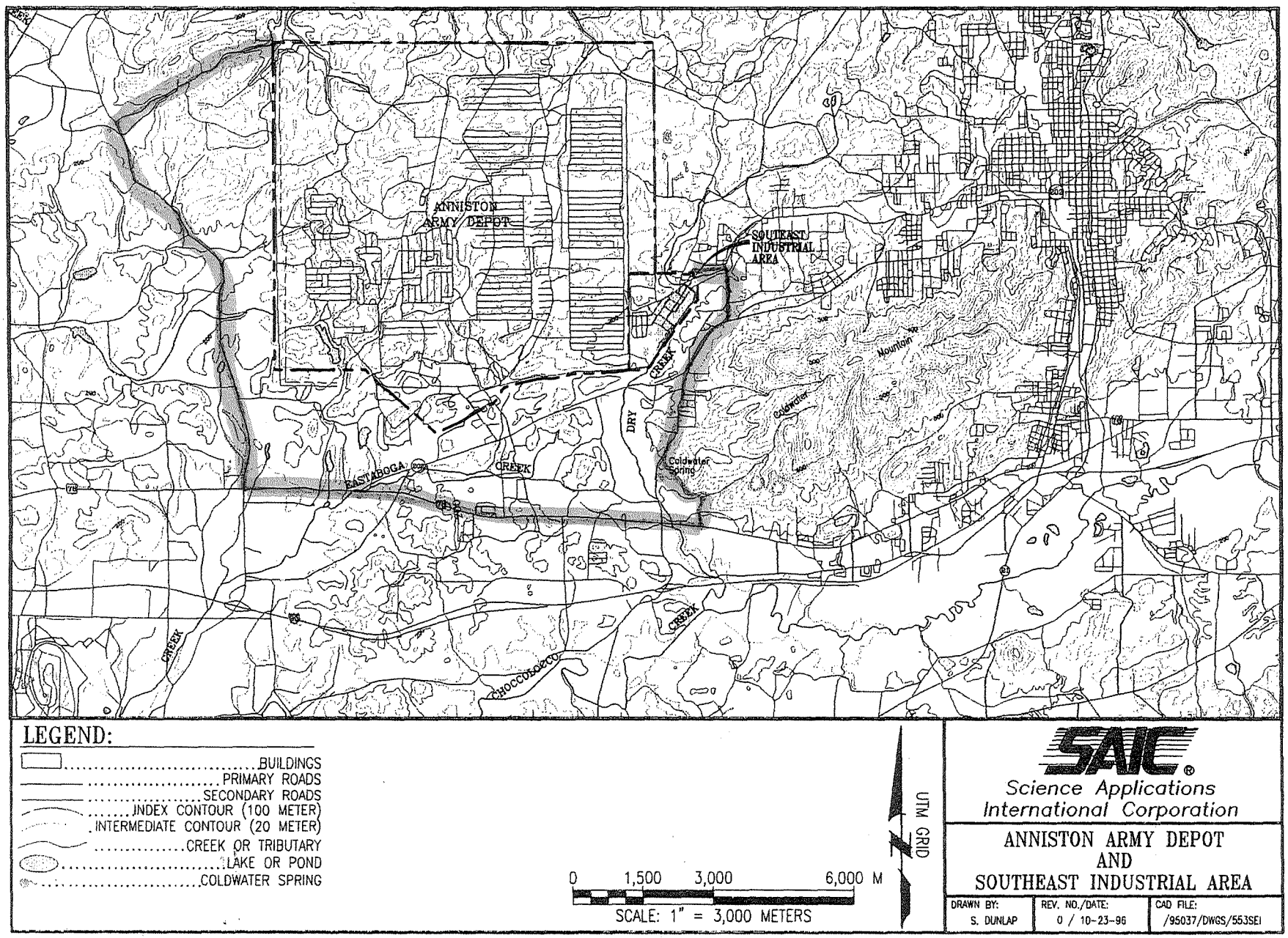
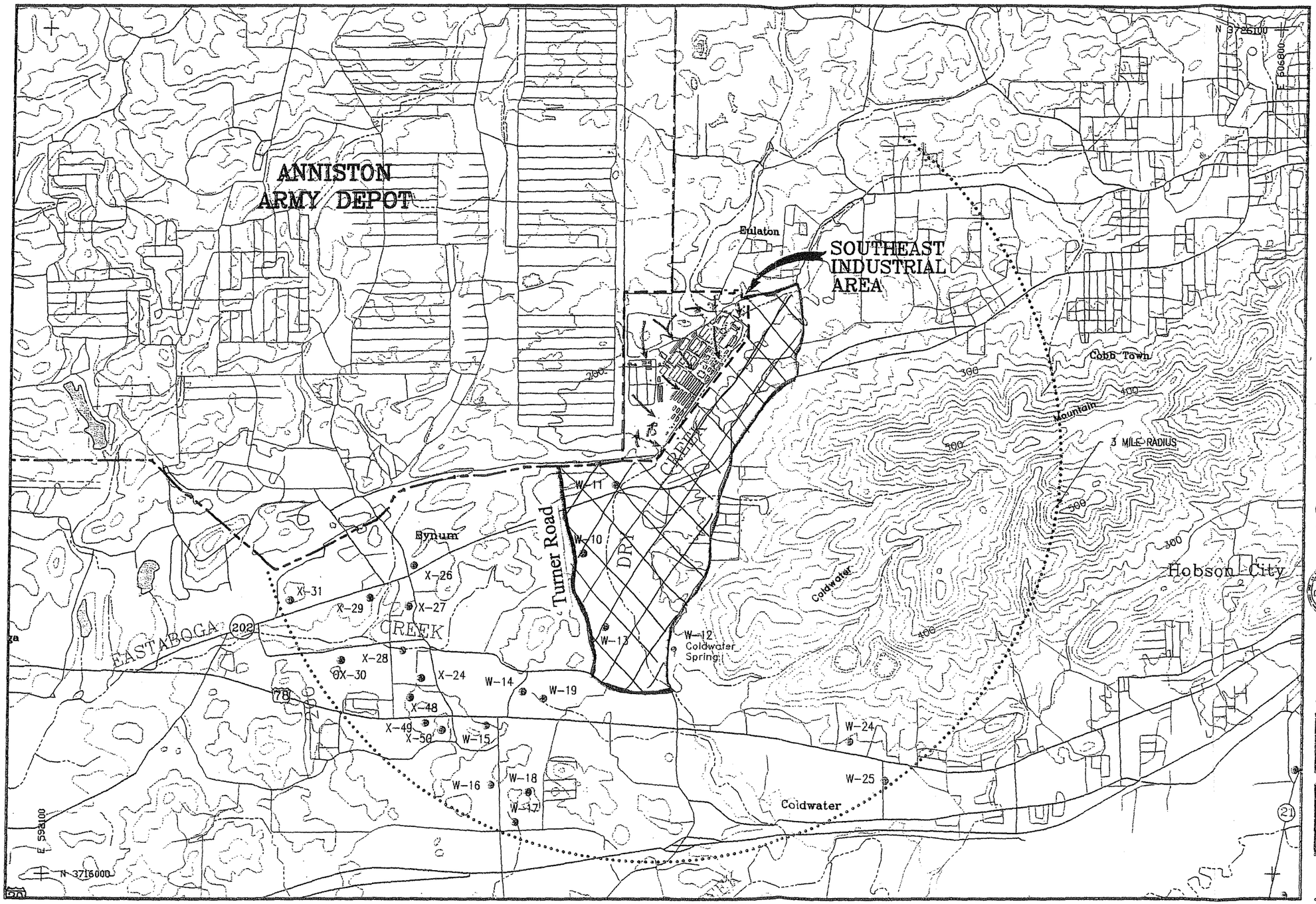


Figure 3 – Phase 2 Well and Spring Inventory Area (boundary designated in green)



LEGEND:

- PRIMARY ROADS, INTERSTATE
- SECONDARY ROADS
- CHANNEL, TRIBUTARIES, & CREEK
- 3 MILE RADIUS
- INDEX CONTOUR (100 METER INTERVAL)
- INTERMEDIATE CONTOUR (20 METER INTERVAL)
- GROUNDWATER FLOW DIRECTION
- BEDROCK WELLS
- WELLS IN UNCONSOLIDATED AQUIFER– QUATERNARY RESIDUUM

NOTE:

FOR SOURCES SEE THE ENVIRONMENTAL SETTINGS MAP – ANAD RI REPORT.

UTM GRID

0 609.6 1219.2 2438.4 M

SCALE: 1" = 1219.2 METERS

0 2000 4000 8000 FT.

SCALE: 1" = 4000 FT.

U.S. ARMY
ENVIRONMENTAL CENTER
ANNISTON ARMY DEPOT

WELLS WITHIN 3 MILES AND POTENTIALLY DOWN-GRADIENT OF THE S.I.A.

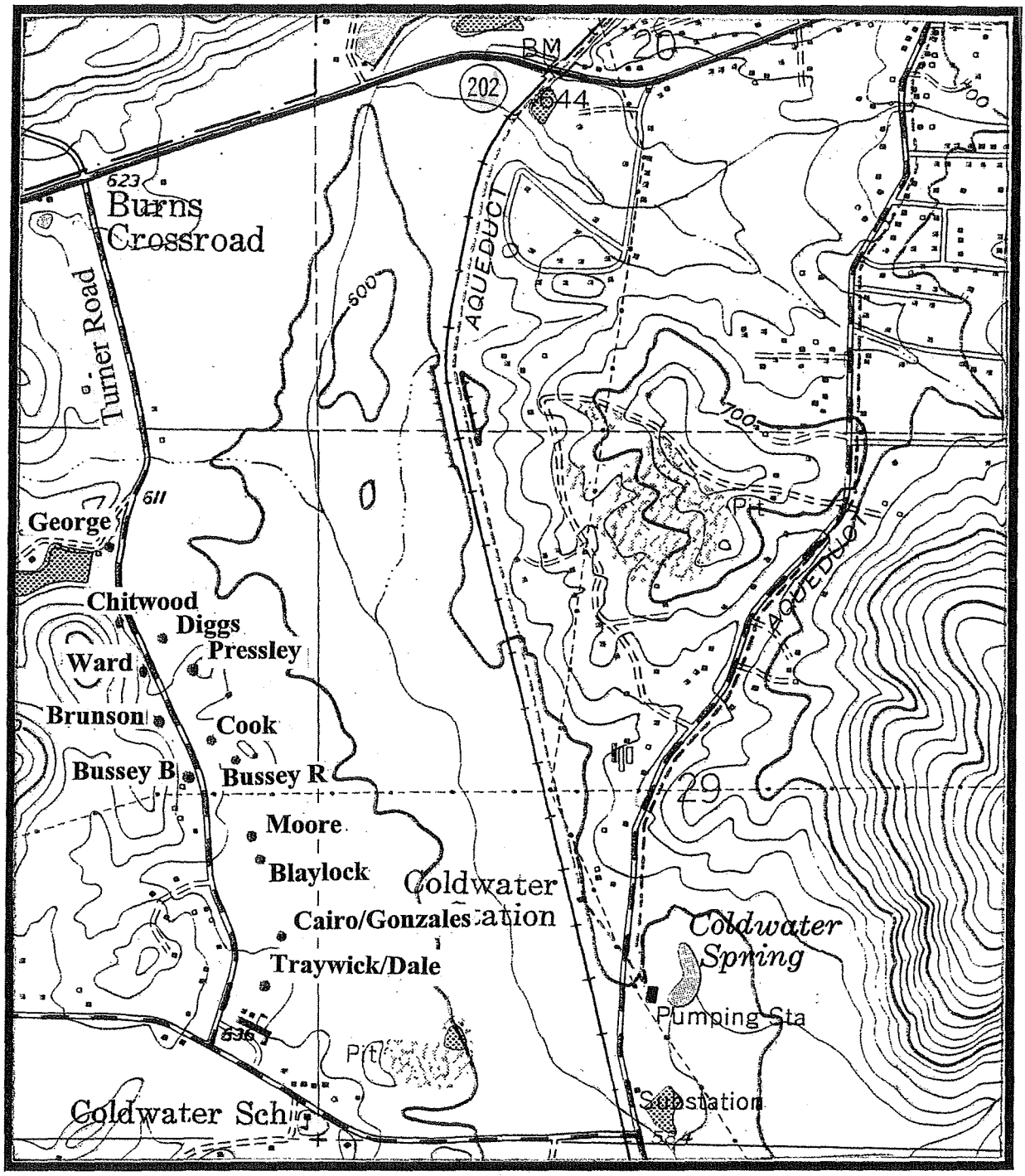
REVISION	DRAWN BY:	CHKD. BY:	DATE:
0	S. DUNLAP	C. BUONI	01-23-98

XREFERENCES	PLOT FILES
/95037/XREF/9-26TOPO /95037/XREF/9-26HYDR /95037/DATA/9-26ROS /95037/DATA/10-10WLS	/95037/PLOT/A09WE3M.PLT

SHT 1 OF 1 DRAWING #

/95037/DWGS/A09WE3M CAD FILE #

Figure 2 – Phase 1 Well and Spring Inventory Area (boundary designated in green)



ANAD PHASE 1 WELL AND SPRING INVENTORY
SOLE SOURCE WATER SUPPLY SAMPLING LOCATION

N

1 INCH = 0.2 MILES

SOURCE:
MUNFORD QUADRANGLE
ALABAMA
7.5 MINUTE SERIES
1972

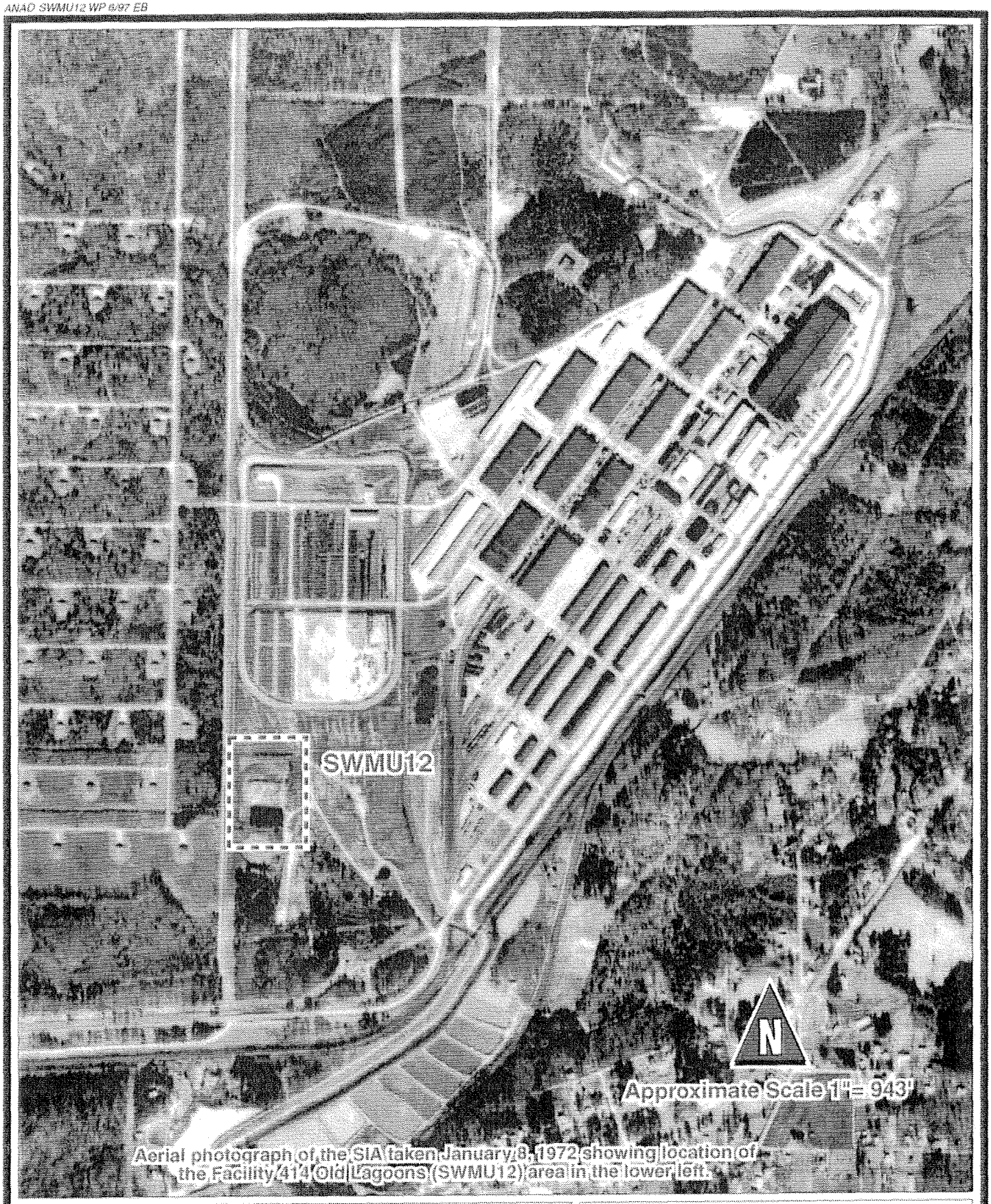


Figure 2-2
SWMU12 LOCATION IN THE SIA

SOURCE: USDA, GS-VCVD 2-12, 1972.

Emergency Removal of SWMU12
Anniston Army Depot

U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland

ANNISTON ARMY DEPOT SOLID WASTE MANAGEMENT UNIT (SWMU) 12 SOIL REMEDIATION ALTERNATIVES

ANNISTON ARMY DEPOT
WEAPONS • COMBAT VEHICLES • AMMUNITION

SWMU 12 Soils

- Injection of hydrogen peroxide into the soils has removed most of the chlorinated solvents from the soils above the water table
- Approximately 2,000 cubic yards are above the clean up level of 41 ppm (41,000 ppb)

Alternatives

- Dig and Dispose Off Site
- Dig and Treat Above Ground Then Replace
- Other in Place Treatments

Alternatives

Dig and Dispose Off Site
"Dig and Haul"

- **Cost - $1.5 Million**
- **Site must be restored for reuse**

Alternatives

Dig and Treat Above Ground Then Replace

"Ex-Situ"

- **Cost - $1 Million**
- **Requires excavation, treatment above ground using an oxidizer, back filling, and compaction before use**

Alternatives

Other in Place Treatments

"In-Situ"

- **Chemical Oxidation (current method)**
- **Thermal Treatment "6 phase heating"**

Chemical Oxidation

- Cost - $ 1 Million
- Has worked as designed for most of the site
- Effectiveness has been significantly reduced in the area of concern due to development of preferred pathways in the soils for the hydrogen peroxide.

Thermal Treatment

- Cost - $600,000
- Thermal treatment combines soil heating and soil vapor extraction technologies
- No damage for reuse

Schedule

- Partnering group (ANAD, EPA, ADEM) will discuss alternate methods of clean up at the January 26, 2000 meeting.
- Remediation will begin after completion of the hot spot groundwater treatment at SWMU 12 (approximately September 2000).

Block 4 Confirmatory Sampling

CONFSOILGPL.XLS

Sample	Depth	Sample Date	TCE (ppb)	DCE	Vinyl Chloride	Methylene Chloride	Carbon Tetrachloride
S32	12	04/14/1999	**1400000**	19000	<3000	4800	1100
S32	12	11/16/1999	3838	262	<59	103	<29
U20	8	04/14/1999	**590000**	18000	<3300	11000	4400
U20	12	04/14/1999	**630000**	2700	<3100	13000	1500
U20	8	11/17/1999	4200	<30	<60	450	<30
U20	12	11/17/1999	**52000**	3700	<60	1600	84
U24	8	04/14/1999	**630000**	<1500	<3000	6300	5800
U24	12	04/14/1999	**620000**	12000	<3000	11000	5000
U24	14	04/14/1999	**670000**	4200	<3100	32000	10000
U24	8	11/17/1999	36656	6294	<60	666	2261
U24	12	11/17/1999	2592	33	<54	67	66
U24	14	11/17/1999	29556	3155	<59	1945	1284
U28	10	04/14/1999	**510000**	1900	<3000	8300	1900
U28	14	04/14/1999	**780000**	5700	<3000	28000	1700
U28	10	11/16/1999	34087	4925	<65	6611	188
U28	**14**	11/16/1999	**187252**	34642	368	51142	2227
U32	8	04/14/1999	**930000**	2300	<3100	12000	5600
U32	10	04/14/1999	**230000**	<1500	<2900	9000	340
U32	12	04/14/1999	**810000**	1500	<3000	14000	3500
U32	8	11/16/1999	20376	544	<61	242	234
U32	**10**	11/16/1999	94714	6266	<62	1012	1143
U32	**12**	11/16/1999	**410534**	52851	<60	11272	2145
U48	10	04/13/1999	**1500000**	20000	<3000	8200	4200
U48	**10**	11/16/1999	**43167**	48911	857	9114	812
W20	8	04/14/1999	**3400000**	6900	<3000	9600	1400
W20	10	04/14/1999	**3500000**	970	<3000	8000	520
W20	8	11/17/1999	12000	400	<59	810	<29
W20	10	11/17/1999	**120000**	5500	<60	8200	210
W28	8	04/14/1999	**29000000**	19000	<3300	**7300000**	40000
W28	10	04/14/1999	**1500000**	<1500	<3000	8000	1300
W28	12	04/14/1999	**7300000**	1600	<3000	8000	2200
W28	**8**	11/16/1999	**1014012**	3566	<60	22317	4180
W28	**10**	11/16/1999	**489114**	16576	<60	27832	1925
W28	**12**	11/16/1999	**340170**	11778	<60	12912	1215
W32	8	04/14/1999	**220000**	1800	<3000	11000	1300
W32	12	04/14/1999	**450000**	3000	<2900	11000	7200

Sample	Depth	Sample Date	TCE (ppb)	DCE	Vinyl Chloride	Methylene Chloride	Carbon Tetrachloride
W32	8	11/16/1999	25980	2401	<59	567	163
W32	**12**	11/16/1999	**64843**	13553	95	6063	1137
W44	10	04/13/1999	**140000**	12000	<3000	5900	<1500
W44	12	04/13/1999	15000	6000	<2900	6100	<1500
W44	10	11/16/1999	2618	8798	472	131	<31
W44	12	11/16/1999	1455	4718	37	157	<30
Y24	6	04/14/1999	**1000000**	19000	<3000	9200	1000
Y24	6	11/17/1999	18567	20178	1015	1312	102
Y28	6	04/14/1999	**6300000**	41000	<3000	48000	730
Y28	**6**	11/16/1999	**340170**	11778	<60	12912	1215
TARGET CONC.			**41000**	**51000**	**23000**	**63000**	**5200**

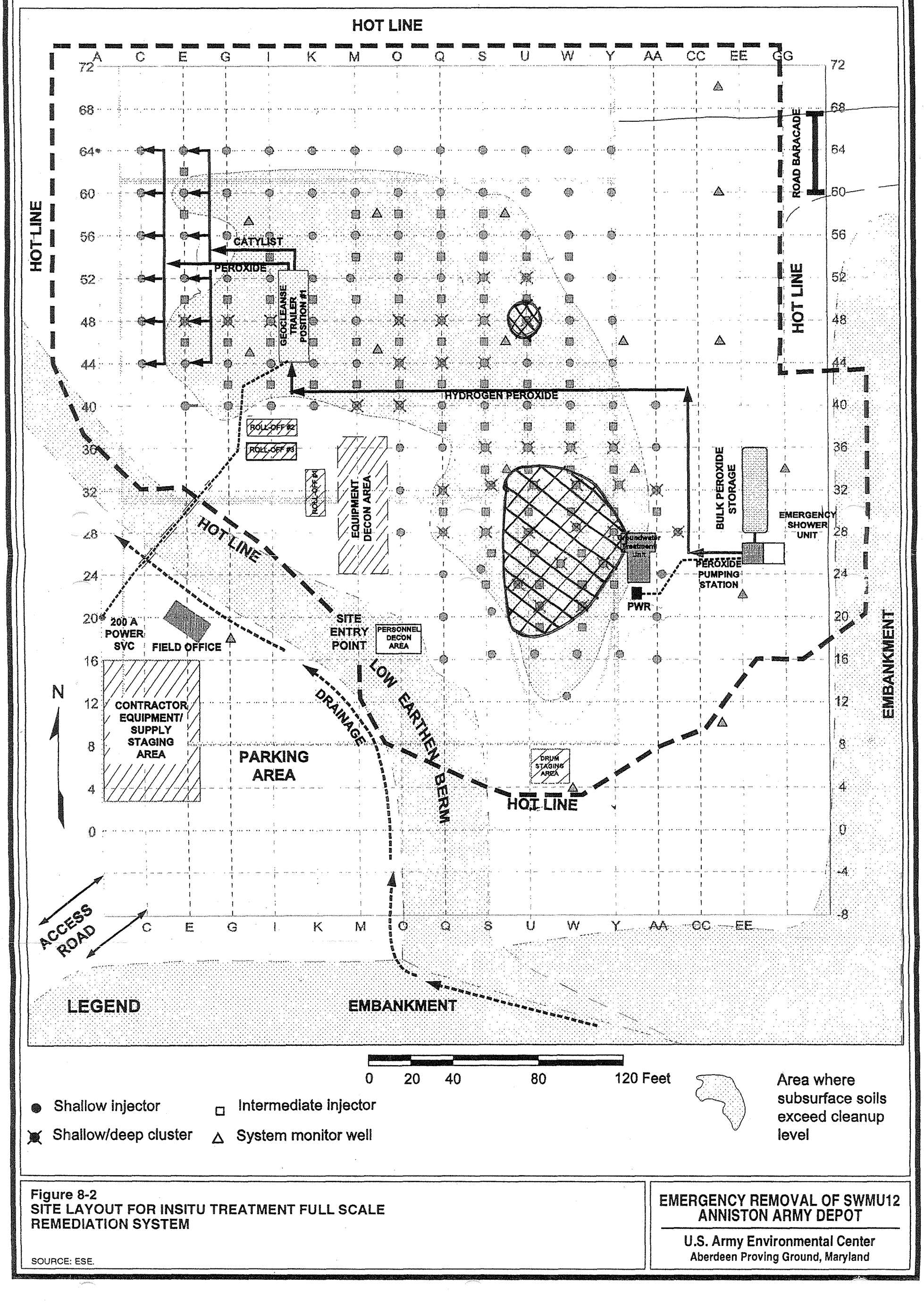


Figure 8-2
SITE LAYOUT FOR INSITU TREATMENT FULL SCALE REMEDIATION SYSTEM

SOURCE: ESE.

EMERGENCY REMOVAL OF SWMU12
ANNISTON ARMY DEPOT

U.S. Army Environmental Center
Aberdeen Proving Ground, Maryland