United States Environmental Protection Agency

Office of Emergency and Remedial Response

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September 1991

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Superfund Record of Decision:

USA Anniston Army Depot, AL

50272-101

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First Remedial Action

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16. Abstract (Limit: 200 words)

The 15,200-acre USA Anniston Army Depot site is an active equipment rework facility for the U.S. Army in Anniston, Calhoun County, Alabama. The site is divided into several areas including a southeast industrial area, which is the focus of this Record of Decision (ROD). Land use in the area is predominantly residential. An estimated 72,000 residents in Calhoun County use Coldwater Springs, located 1.5 miles south of the site, as their primary source of drinking water. The Army initially used the depot to store munitions, and subsequently, to overhaul and repair combat vehicles. Various types of liquid and solid hazardous wastes were generated, including electroplating wastes containing metals and organic solvents from cleaning operations. Wastes were disposed of in various landfills, trenches, disposal pits, and lagoons located in the southeast industrial area and throughout the site. A number of EPA and State site investigations have revealed contamination by VOCs, other organic compounds, inorganics, and metals in the onsite ground water. Between 1978 and 1983, several onsite actions were taken by the Army to remove contaminated sludge and soil. In 1990, the Army completed and began operating a ground water pumping and treatment system. This ROD addresses an interim remedy for ground water

(See Attached Page)

17. Document Analysis a. Descriptors
Record of Decision - USA Anniston Army Depot, AL
First Remedial Action
Contaminated Medium: gw
Key Contaminants: VOCs (PCE, TCE), other organics (phenols), metals (chromium)

b. Identifiers/Open-Ended Terms

c. COSATI Field/Group

18. Availability Statement	19. Security Class (This Report) None	21. No. of Pages 47
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Abstract (Continued)

contamination beneath the southeast industrial area as the first operable unit. Future RODs may address further contamination in the southeast industrial portion of the site. The primary contaminants of concern affecting the ground water are VOCs including PCE and TCE; other organics including phenols; and metals including chromium.

The selected remedial action for this site includes continued use of the existing ground water pumping and treatment system using air stripping to remove VOCs, followed by charcoal filtration to remove phenols; discharging the treated ground water onsite to surface water; and continued operation of the dewatering and treatment system. The estimated present worth cost for this remedial action is $945,000, which includes an annual O&M cost of $60,000. The capital cost is estimated at $895,000.

PERFORMANCE STANDARDS OR GOALS: Chemical-specific ground water goals will be addressed in the final remedial action for the site.

U. S. ARMY INSTALLATION RESTORATION PROGRAM

SUPERFUND RECORD OF DECISION

ANNISTON ARMY DEPOT, ALABAMA GROUNDWATER OPERABLE UNIT

SEP 2 6 1991

SEPTEMBER, 1991

DECLARATION FOR THE INTERIM ACTION RECORD OF DECISION

SEP 2 6 1991

DECLARATION FOR THE INTERIM ACTION RECORD OF DECISION

SITE NAME AND ADDRESS

Anniston Army Depot
Groundwater Operable Unit
SDSAN-DEL-EMD
Anniston, Calhoun County, Alabama 36201-5080

STATEMENT OF PURPOSE

This Decision Document presents the selected interim remedial action of the Groundwater Operable Unit of Anniston Army Depot, developed in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) as amended by the Superfund Amendments and Reauthorization Act (SARA), and to the extent practicable, the National Contingency Plan (NCP). This decision is based on the Administrative Record which is on file in the Anniston Public Library, the Jacksonville Public Library, the Talladega Public Library, the Oxford Public Library and the Public Affairs Office, Building 7, Anniston Army Depot, Alabama, 36201.

This interim remedial action is taken to protect human health and the environment from any threat, while final remedial solutions are being developed.

ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from the Groundwater Operable Unit, if not addressed by implementing the interim remedial action selected in this Record of Decision (ROD), may present a current or potential threat to public health, welfare, or the environment.

DESCRIPTION OF THE SELECTED REMEDY

The Groundwater Operable Unit addresses groundwater under the Southeast Industrial Area (SIA). The SIA includes the Landfill Area, the Trench Area and the Northeast Area. The scope of this ROD is limited to the Groundwater Operable Unit.

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The selected remedy for the Groundwater Operable Unit, source control, includes the following:

- Groundwater Withdrawal
- Treatment of the Groundwater for volatile organics and phenolics with discharge to the surface
- Continued Operation of the Building 114 Dewatering and Treatment System

STATUTORY DETERMINATIONS

The selected interim remedial actions are protective of human health and the environment, comply with Federal and State requirements that are legally applicable or relevant and appropriate to the remedial action, and are cost-effective. These interim remedial actions utilize permanent solutions and alternative treatment technologies to the maximum extent practicable for this site. The contaminated groundwater will be withdrawn and treated. Because this interim remedial action does not constitute the Final Remedy for the Site, the statutory preference for remedies as a principle element will be addressed by the Final response action.

JOEL C DENNEY
COLONEL, OD
COMMANDER

29 September 1991
Date

LEWIS D. WALKER
DEPUTY FOR THE ENVIRONMENT, SAFETY AND OCCUPATIONAL HEALTH
OFFICE OF THE ASSISTANT SECRETARY OF THE ARMY

9/26/91
Date

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DECISION SUMMARY

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1.0 SITE NAME, LOCATION AND DESCRIPTION

Anniston Army Depot (ANAD) is an active facility occupying approximately 15,200, acres 8 miles west of Anniston, Alabama (Figure 1-1). Several smaller towns, such as Bynum, Hobson City, and Coldwater surround the facility. ANAD is bordered on the north by the Fort McClellan Army Military Reservation.

The Groundwater Operable Unit, National Priority List (NPL) site is located in the Southeast Industrial Area of ANAD.

ANAD is currently a major heavy equipment rework facility for the U.S. Army.

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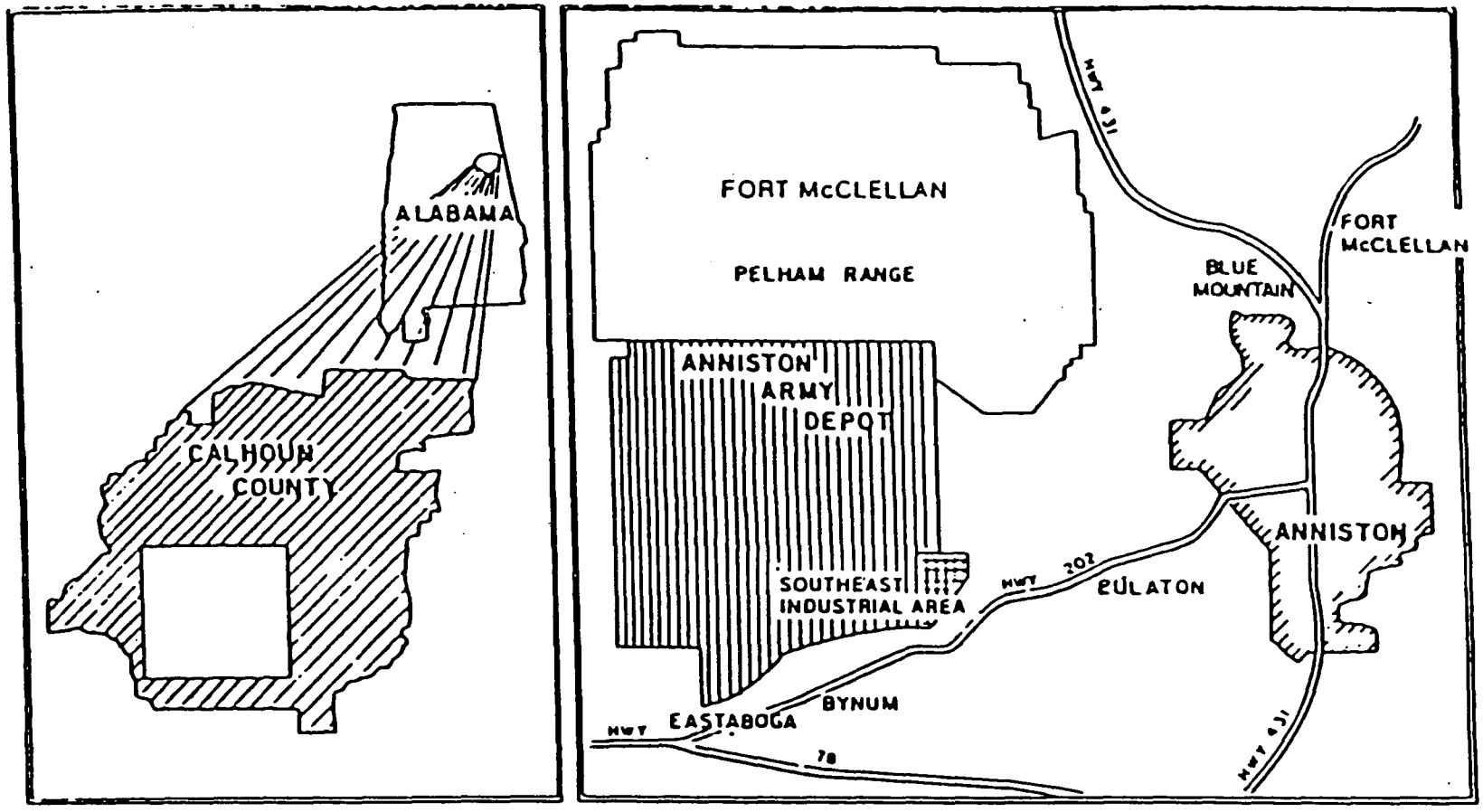

Figure 1-1
ANAD GENERAL LOCATION MAP

SOURCE USATHAMA, 1981

ANNISTON ARMY DEPOT
PROPOSED PLAN
Anniston, Alabama

2.0 SITE HISTORY AND ENFORCEMENT ACTIVITIES

ANAD is currently a major heavy equipment rework facility for the U.S. Army. ANAD's initial mission was munitions storage which was expanded to include combat equipment storage. It was further expanded to include the overhauling and repair of combat vehicles.

ANAD has generated various types of liquid and solid wastes over the years, including refuse and hazardous wastes. The hazardous wastes include electroplating wastes containing heavy metals, and organic solvents from cleaning operations.

Previous studies show that various areas in the Southeast Industrial Area at ANAD contained contaminants that had migrated to the groundwater. During a period of 1978 to 1983 action was taken at several areas to remove contaminated sludges and soils to reclaim the areas.

The Groundwater Operable Unit addresses the groundwater beneath certain contaminated areas. As a result of the contaminated groundwater, the Southeast Industrial Area was placed on the CERCLA (Superfund) National Priorities List (NPL) in 1989. ANAD entered into a Federal Facilities Agreement in June of 1990 with ADEM and EPA to establish a procedural framework and schedule for developing, implementing and monitoring appropriate response actions at the facility in accordance with CERCLA, the National Contingency Plan (NCP), Superfund guidance and policy, Alabama Environmental Management Act, and EPA and ADEM guidance and policies.

The following reports describe the results of investigations of the Groundwater Operable Unit to date:

GEOPHYSICAL AND GEOHYDROLOGIC INVESTIGATION OF ANNISTON ARMY DEPOT, September 1981.

CONTAMINANT MIGRATION SURVEY, ANNISTON ARMY DEPOT, letter, 4 March 1981.

GROUNDWATER QUALITY ASSESSMENT PLAN SOUTHEAST AREA, September, 1981.

STATUS REPORT, GROUNDWATER QUALITY ASSESSMENT OF THE SOUTHEAST AREA, ANNISTON, ARMY DEPOT, October 1982.

STATUS REPORT, GROUNDWATER QUALITY ASSESSMENT OF THE SOUTHEAST AREA, ANNISTON, ARMY DEPOT, APPENDIX A.5, WELL LOGS, October 1982.

STATUS REPORT, GROUNDWATER QUALITY ASSESSMENT OF THE SOUTHEAST AREA, ANNISTON, ARMY DEPOT, APPENDIX B.5, ANALYTICAL RESULTS, October 1982.

REMEDIAL ACTION OF HAZARDOUS WASTE SITES, ANNISTON ARMY DEPOT, January 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX A. DEVELOPMENT OF FLOW AND TRANSPORT MODELS, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX B. FEASIBILITY STUDY AND REMEDIAL ACTION ANALYSIS, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX C. HYDROGEOLOGIC FIELD INVESTIGATION, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX D. SAMPLING AND ANALYSIS, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX E. WASTE PROCESS AND SOURCE IDENTIFICATION STUDIES, June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX F. ENVIRONMENTAL CHEMISTRY AND FATE OF CONTAMINANT,June 1984.

SOURCE IDENTIFICATION, CONTAMINANT TRANSPORT SIMULATION, AND REMEDIAL ACTION ANALYSIS, ANNISTON ARMY DEPOT, APPENDIX G. HYDROGEOLOGIC AND CHEMICAL DATA, June 1984.

INVESTIGATION OF POSSIBLE PALEOCHANNELS AT THE ANNISTON ARMY DEPOT, December 1985.

CONCEPT DESIGN REPORT, GROUNDWATER WITHDRAWAL AND TREATMENT SYSTEMS AT THREE CONTAMINATION SITES, 14 November 1986.

OFF POST INVESTIGATION AT ANNISTON ARMY DEPOT, SUMMARY OF PRELIMINARY RESULTS, December 1986.

FEASIBILITY STUDY FOR ANNISTON ARMY DEPOT, DRAFT SAMPLING DESIGN PLAN A004, May 20, 1987.

PHOTOGEOLOGIC STUDY OF POTENTIAL GROUNDWATER POLLUTION PATHWAYS BETWEEN ANNISTON ARMY DEPOT AND COLDWATER SPRING, ALABAMA, June 1987.

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DRAFT ANNISTON ARMY DEPOT ENDANGERMENT ASSESSMENT, October 1987.

THREE SOURCES GROUNDWATER COLLECTION AND TREATMENT SYSTEM, ANNISTON ARMY DEPOT, DESIGN ANALYSIS, PRELIMINARY REVIEW (60%).

THREE SOURCES GROUNDWATER COLLECTION AND TREATMENT SYSTEM, ANNISTON ARMY DEPOT, DESIGN ANALYSIS, FINAL REVIEW (95%), 15 June, 1987.

THREE SOURCES GROUNDWATER COLLECTION AND TREATMENT SYSTEM, ANNISTON ARMY DEPOT, DESIGN ANALYSIS, SPECIFICATIONS, FINAL REVIEW (95%), 15 June, 1987.

THREE SOURCES GROUNDWATER COLLECTION AND TREATMENT SYSTEM, ANNISTON ARMY DEPOT, DESIGN ANALYSIS, FINAL (100%), 21 October 1987.

ANNISTON ARMY DEPOT GROUNDWATER, EXTRACTION OPTIMIZATION, TECHNICAL PLAN, DATA ITEM A005, July 1988.

ANNISTON ARMY DEPOT GROUNDWATER, EXTRACTION OPTIMIZATION, PHASE 1 INTERIM REPORT, July 8, 1988.

REMEDIAL INVESTIGATION, ANNISTON ARMY DEPOT, VOLUME 1, January 1989.

REMEDIAL INVESTIGATION, ANNISTON ARMY DEPOT, VOLUME 2, January 1989.

REMEDIAL INVESTIGATION, ANNISTON ARMY DEPOT, VOLUME 3, January 1989.

REMEDIAL INVESTIGATION, ANNISTON ARMY DEPOT, VOLUME 4, January 1989.

ASSESSMENT OF APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS ARARS) FOR ANNISTON ARMY DEPOT, ALABAMA, January 30, 1989.

GROUNDWATER EXTRACTION OPTIMIZATION, ANNISTON ARMY DEPOT, FINAL REPORT, DATA ITEM A011, April, 1989.

ANNISTON ARMY DEPOT, GROUNDWATER EXTRACTION OPTIMIZATION, MONITORING PLAN, October 1990.

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3.0 HIGHLIGHTS OF COMMUNITY PARTICIPATION

The Feasibility Study, Groundwater Operable Unit and the Proposed Plan, Groundwater Operable Unit were released to the public in August 1991. Public comment period for the Proposed Plan was August 23 - September 24, 1991. These documents were made available to the public in the Administrative Record located at the Anniston Public Library, the Jacksonville Public Library, the Talladega Public Library, the Oxford Public Library and the Public Affairs Office, Building 7, Anniston Army Depot, Alabama, 36201. The notice of availability of the Proposed Plan was published in the Talladega-Sylacauga-Pell City Daily Home on August 23, 1991, and in the Anniston Star, the Jacksonville News, and the Oxford Sun on August 21, 1991. A public meeting was held on September 10, 1991. At this meeting, representatives from ANAD, EPA, ADEM and USATHAMA answered questions about the site and the remedial alternatives under consideration. A response to the comments received during this period is included in the Responsiveness Summary, which is part of the Record of Decision.

The proposed plan identified the preferred remedy for the Groundwater Operable Unit as Alternative 1. Alternative 1 is described in the Feasibility Study (FS), Groundwater Operable Unit as follows: groundwater withdrawal, treatment with surface discharge, and continued operation of the Building 114 Dewatering and Treatment System. ANAD, U.S. EPA and ADEM reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that no significant changes to the Proposed Plan preferred remedy were necessary.

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4.0 SCOPE AND ROLE OF THE GROUNDWATER OPERABLE UNIT

The overall strategy for remediation of the Southeast Industrial Area NPL Site is currently divided into the Groundwater Operable Unit, for source control and the remainder of the Southeast Industrial Area, which may result in additional operable units. The interim remedial actions selected in this ROD are applicable to the Groundwater Operable Unit.

The Groundwater Operable Unit is a control action and is achieved by the reduction in contaminant concentration and reduction in contaminant mobility directly under the Trench Area, the Landfill Area and the Northeast Area, by groundwater extraction wells and treatment of the contaminated groundwater. The purpose of the ongoing Remedial Investigation/Feasibility Study (RI/FS) is to collect necessary environmental data and information that does not currently exist to reach a final remedial decision on the Southeast Industrial Area NPL Site.

The overall strategies of the Groundwater Operable Unit are:

- initiation of interim remedial action measures designed to prevent further migration of contaminants during the remedial investigation and until sufficient information about the aquifer systems' response has been obtained to allow final remedial decision.

The overall strategies of the ongoing RI/FS are:

- establish the extent of contamination associated with other units within the Southeast Industrial Area and

- collection of additional or supplemental information with which to better assess contaminant mobility and system effectiveness, such as data related to vertical changes in hydraulic conductivity, contaminant partitioning between soil and groundwater, and the presence of non-aqueous phase liquid.

This interim remedial action will be reevaluated at the conclusion of the current remedial investigation and feasibility study. The data concerning the aquifer's response to the extraction system will be evaluated at that time. Final groundwater remedial goals and timeframes may be established at that time.

This interim remedial action will be consistent with any planned future actions, to the extent possible.

5.0 SUMMARY OF SITE CHARACTERISTICS

5.1 GEOLOGY

The geologic characteristics of the ANAD area are extremely complex. The site lies predominantly in the Coosa Valley which is bounded on the southeast by the Weisner Ridges, a series of maturely dissected monoclinal mountains of strong relief developed upon the resistant Weisner Quartzite. Sharply folded consolidated strata from northeastward trending synclines and anticlines. Thrust faults, which generally strike northeastward and dip southeastward, are the predominating structural features of the area (Warman and Causey, 1962). Secondary stresses resulting from the primary folding and thrust faulting have caused numerous high-angle faults.

5.2 HYDROGEOLOGY

Due to the nature of the geology in the area, determining the offpost movement of groundwater contamination from ANAD is extremely difficult. There are a variety of different flow conditions which could control the movement of contaminants. The "normal" flow conditions in this area are severely affected and altered by localized preferential conditions. The "normal" flow condition generally consists of a gravity induced flow which is governed by the topographic surface.

Coldwater Springs is located approximately 1.5 miles south of the ANAD site boundary. The spring is the primary source of drinking water for approximately 72,000 people in Calhoun County. The average discharge is 31.2 million gallons per day which flows from a deep seated or distant source in the thrust fault zone (Warman and Causey, 1962). The recharge area for Coldwater Spring, determined from potentiometric data (Scott, 1987), is estimated to be approximately 23 square miles extending to the northeast of the spring. The groundwater flow in this area; however, is difficult to accurately predict and is severely impacted by the geologic discontinuities in the area; particularly the Jacksonville Fault. In addition, based on recharge requirements it appears that the area is a shallow flow system that supplies only part of the total spring flow and that the faulting in the area probably connects Coldwater Spring to a deeper flow system that cannot be defined by the available information.

5.3 GEOTECHNICAL CHARACTERISTICS

In the ANAD area the groundwater flow is also influenced by permeability variations caused by near surface sand and gravel stringers, fractures, and joints in the weathered bedrock, fault planes and associated brecciated materials, and sinkholes and other dissolution channels. These different conditions are not mutually exclusive and thus groundwater transport at ANAD is likely governed by more than one type of flow.

5.4 NATURE AND EXTENT OF CONTAMINANTS

A number of sites within ANAD have been used for disposal of various chemical wastes generated through ANAD's industrial operations.

5.4.1 CONTAMINANT SOURCES

The principle areas of contamination in the vicinity of the SIA include the following Solid Waste Management Units (SWMU):

a. Z-1 Disposal Area, SWMU #1,

b. Facility 414 Lagoons, SWMU #12,

c. A-Block Lagoon, SWMU #22,

d. Northeast Lagoon Area, SWMU #30,

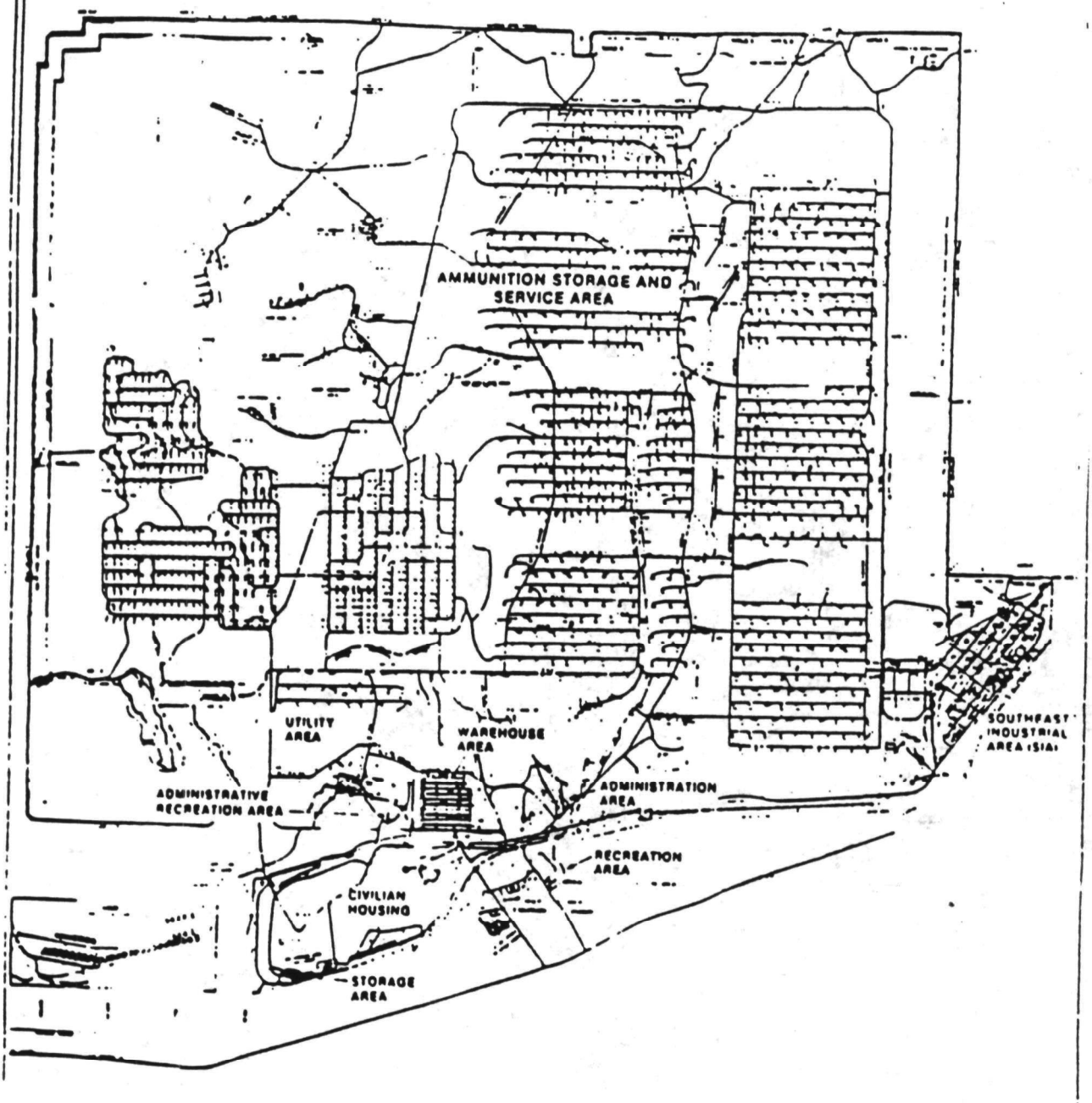
e. Chemical Disposal Pits, SWMU #7,

f. Building 130 Sump, SWMU #25, and

g. Building 114, SWMU #31.

These sites are located in and around the industrial area. The contamination sources have been removed in SWMU's #1, #12, #22, and #25. A map of the Depot and a map showing the locations of these sites, along with other SWMU's are presented in Figures 5-1 and 5-2.

This ROD will address source areas of defined groundwater contamination at ANAD. The Trench Area includes SWMU #1; the Northeast Area includes SWMU #7, 25, 30 and 31; and the landfill area includes SWMU # 12 and 22. These areas are shown in Figure 5-3.



FACILITY LAYOUT

FIGURE 5-1

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POOR QUALITY ORIGINAL

ANNISTON ARMY DEPOT

Anniston, Alabama

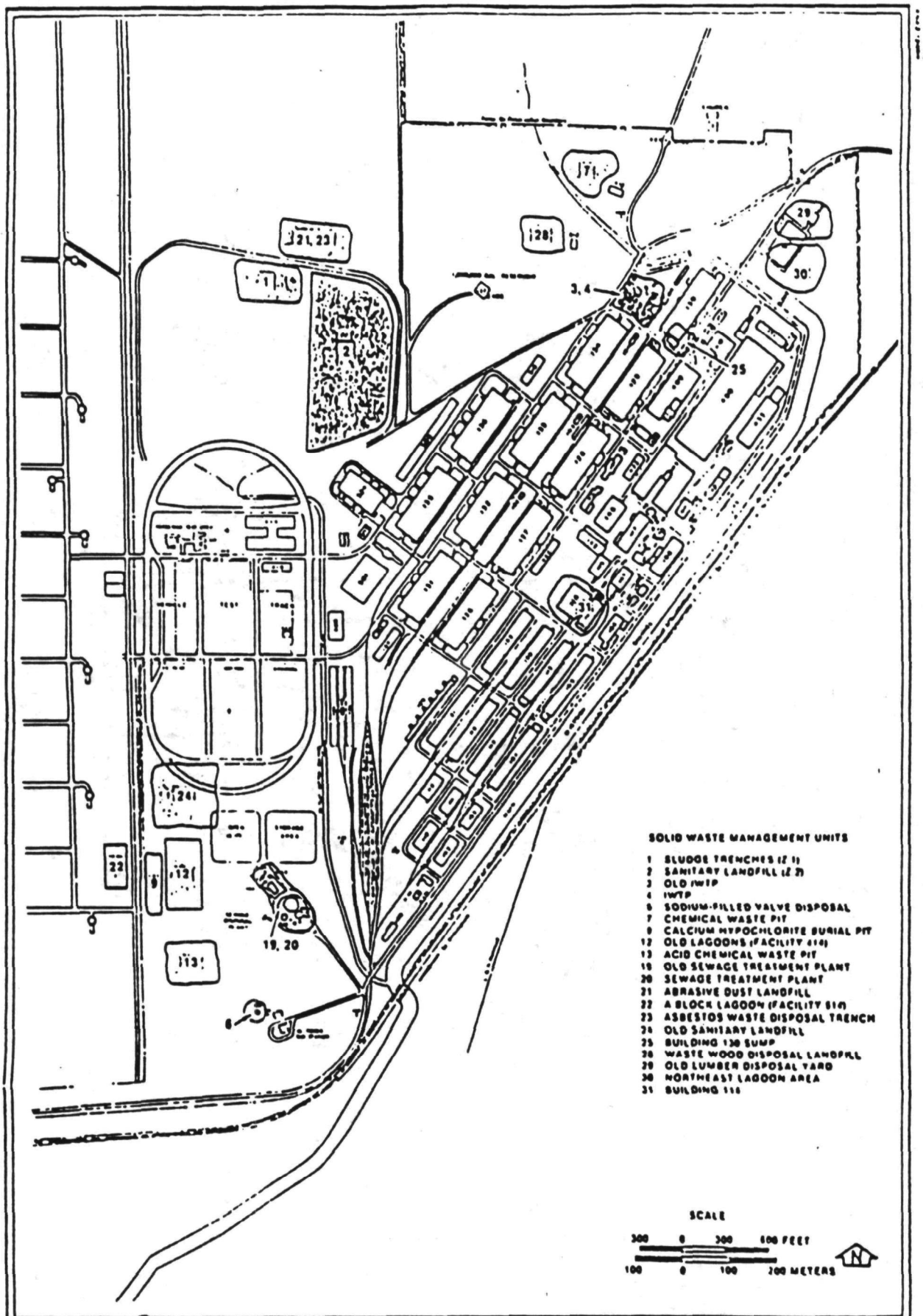

Figure5-2
LOCATIONS OF SOLID WASTE MANAGEMENT UNITS
WITHIN THE SIA, ANNISTON ARMY DEPOT

SOURCE: [illegible]

ANNISTON ARMY DEPOT

POOR QUALITY ORIGINAL

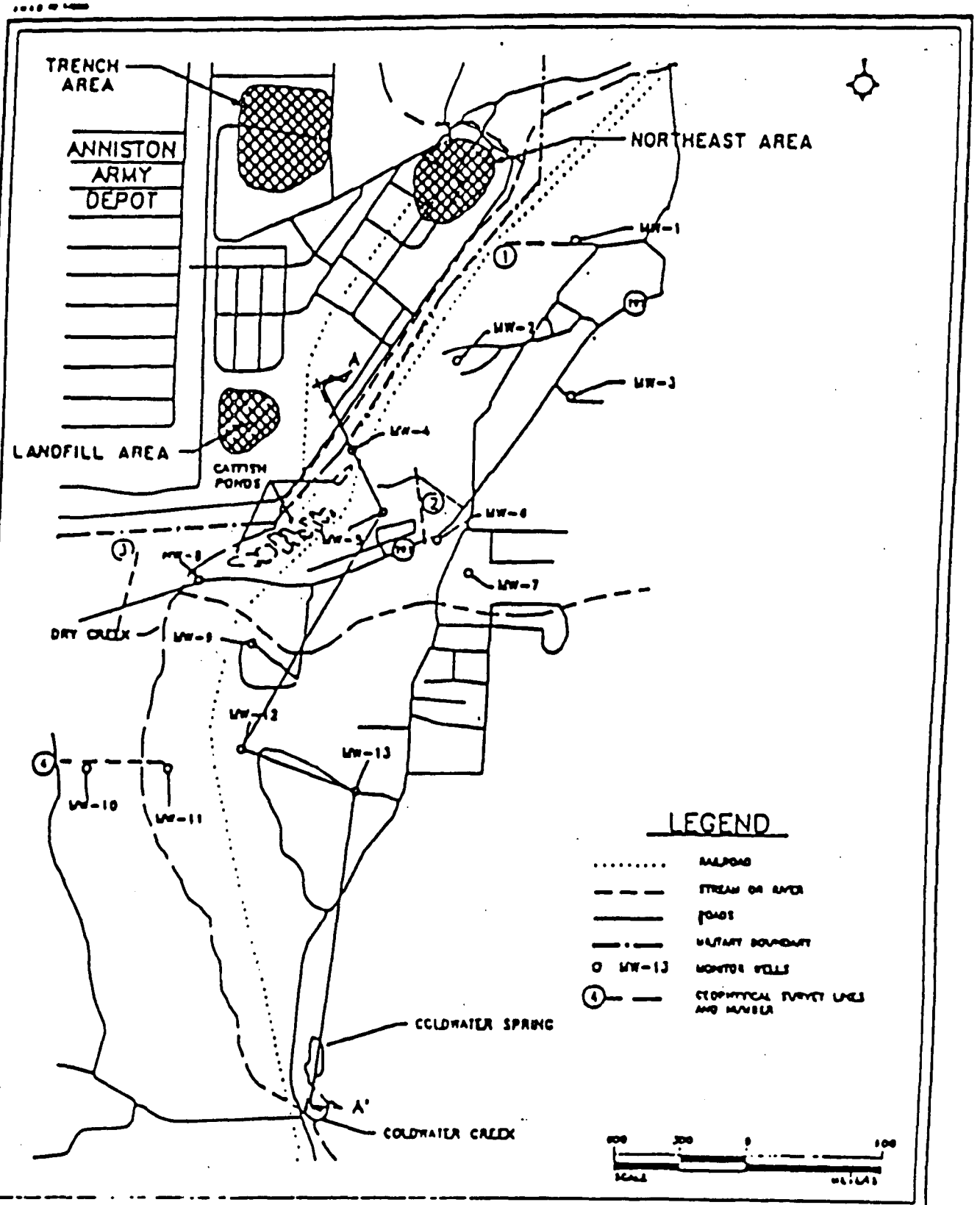

Figure 5-3
LOCATION OF GEOPHYSICAL SURVEY LINES AND OFFPOST MONITOR WELLS

SOURCE: ESE 1990 SEP 2 6 1991

ANNISTON ARMY DEPOT

Anniston, Alabama

POOR QUALITY ORIGINAL

SWMU #1

The Z-1 Disposal Area was one of the primary chemical disposal areas at ANAD and was heavily used from 1971 to 1981. The facility consisted of a series of seven trenches, covering approximately 2 acres, located immediately north of the tank test track. The trenches were used for the disposal of a variety of chemical wastes, including wastewater treatment sludges, plating and quenching bath sludges, spent cyanide solutions, paint residues, spent halogenated and nonhalogenated solvents, corrosive wastes, and reactive wastes. During 1982 and 1983 the area was reclaimed and contaminated materials were excavated and transported to an off-post site disposal facility.

SWMU #12

The lagoons associated with Facility 414 were located immediately northwest of the Sewage Treatment Plant (STP). The disposal area was used from 1960 to 1978 and consisted of a series of three lagoons, each approximately 140 ft. by 220 ft. Abrasive dust wastes containing cadmium and possibly lead, metal plating and cleaning solutions, fuels, oils, various solvents, and residues from the IWTP were disposed in the lagoons. The liquid from the lagoons was removed in 1978, and pumped to the A-block lagoon. The sludges from the liquid lagoons and contaminated soils were excavated and disposed of off-post in conjunction with the reclamation operations performed for the Z-1 Disposal Area.

SWMU #22

The A-Block Lagoon was a lined surface impoundment located to the west of the STP. The liner consisted of 20-mil polyolefin material. The lagoon was used for the temporary storage of liquid wastes removed from the Facility 414 Lagoons and various other liquid chemical wastes generated by metal cleaning, plating and painting operations. The facility was in use from 1978 until 1981, when the lagoon was emptied, the liner and the sludge removed, and the area backfilled, regraded and grassed.

SWMU #30

The Northeast Lagoon Area was located in the northeastern portion of the SIA adjacent to Building 513. It contained a series of lagoons which were operated during the 1950's to early 1960's. No visible evidence of the lagoons currently remains, and no listing of specific wastes disposed of within the facility is available.

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SWMU #7

A series of Chemical Disposal Pits have been used. One area is located in the north end of the SIA and was used during 1960 for the disposal of chemicals including paint stripper; alkaline corrosion removers; lead, zinc, and cadmium-containing compounds; phosphoric acid and a variety of chemically treated materials. The exact location of this unit is unknown, and no surficial evidence of the unit currently exists.

SWMU #25

An 8,000 gallon sump located outside the southwest corner of Building 130 was used in the past to drain vats of paint stripper containing methylene chloride and phenol. This sump and adjacent contaminated soil were excavated in conjunction with the work performed on the Z-1 landfill and the lagoons.

SWMU #31

Building 114, the metal plating and finishing shop, contains the principle metal treating operations in the shop area. A dewatering system was installed underneath the basement when this building was expanded in 1982. The groundwater is currently pumped to a treatment system and treated for volatiles organic compounds (volatiles). The volatiles in the groundwater are believed to originate from areas located hydraulically upgradient from Building 114 within the SIA.

5.4.2 CONTAMINANTS OF CONCERN

Hazardous substances detected in the groundwater samples for the site are listed in Table 5-1. Due to the number of contaminants detected at ANAD, it was necessary to select a limited number of chemicals that pose the greatest potential health and environmental risk at the site. To provide a focus for remedial action goals, contaminants of concern were identified in the Baseline Risk Assessment of the RI report. The following factors were considered in the selection of the contaminants of concern:

- Concentration, frequency of occurrence and persistence
- Distribution in the groundwater
- Regulatory criteria and toxicity

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Table 5-1

HAZARDOUS SUBSTANCES DETECTED IN
GROUNDWATER AT ANNISTON ARMY DEPOT

ARSENIC
CADMIUM
CHROMIUM, TOTAL
CHROMIUM, HEXAVALENT
MOLYBDENUM
NICKEL
ZINC
ANTIMONY
SELENIUM
THALLIUM

TRICHLOROFLUOROMETHANE
CARBON TETRACHLORIDE
CHLOROFORM
METHYLENE CHLORIDE
TETRACHLOROETHYLENE
TRICHLOROETHYLENE
C/T-1,2-DICHLOROETHYLENE
1,1-DICHLOROETHYLENE
1,1-DICHLORETHANE
1,1,1-TRICHLOROETHANE
1,1,2-TRICHLOROETHANE

BENZENE
ETHYLBENZENE
TOLUENE
PHENOL
PENTACHLOROPHENOL
2-METHYLPHENOL
3- AND 4-METHYLPHENOL

Using these factors, the contaminants of concern identified for the Groundwater Operable Unit are:

- CHROMIUM, TOTAL
- CHROMIUM, HEXAVALENT
- CARBON TETRACHLORIDE
- CHLOROFORM
- METHYLENE CHLORIDE
- TETRACHLOROETHYLENE
- TRICHLOROETHYLENE
- C/T-1,2-DICHLOROETHYLENE
- 1,1-DICHLOROETHYLENE
- 1,1,1-TRICHLOROETHANE
- PHENOL

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A summary of the number of samples with detections and the concentrations found for wells in the Trench, Landfill, and Northeast Areas, as well as offpost wells are presented in Tables 5-2, 5-3, 5-4 and 5-5. The compounds most widely distributed in the groundwater included VOC's, metals and phenols. Of the contaminants of concern identified in the RI, trichloroethylene (TCE), 1,2-dichloroethyene (T12DCE), hexavalent chrome and phenol were the most widely distributed and typically at higher concentrations than other constituents. They are considered to be representative of the distribution of constituents at the site.

Table 5-2
The CONTAMINANTS OF CONCERN

	Number of Samples	Number of Hits	Maximum Concen ug/l	Minimum Concen ug/l
Off Installation Contamination				
CHROMIUM, TOTAL	26	2	13	7
CHROMIUM, HEXAVALENT	24	4	9	3
CARBON TETRACHLORIDE	26	0		
CHLOROFORM	26	0		
METHYLENE CHLORIDE	26	0		
TETRACHLOROETHYLENE	26	0		
TRICHLOROETHYLENE	26	6	9	2
C/T-1,2-DICHLOROETHYLENE	0	0		
1,1-DICHLOROETHYLENE	26	0		
1,1,1-TRICHLOROETHANE	26	0		
PHENOL	6	2	151	76

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Table 5-3
The CONTAMINANTS OF CONCERN

	Number of Samples	Number of Hits	Maximum Concen ug/l	Minimum Concen ug/l
Trench Area				
CHROMIUM, TOTAL	37	15	36*	7
CHROMIUM, HEXAVALENT	4	1	8	
CARBON TETRACHLORIDE	39	2	4*	2
CHLOROFORM	39	2	23466*	235
METHYLENE CHLORIDE	42	17	6,631,300*	5
TETRACHLOROETHYLENE	39	9	342,847*	1
TRICHLOROETHYLENE	40	37	344,827*	5
C/T-1,2-DICHLOROETHYLENE	36	30	10,684*	2
1,1-DICHLOROETHYLENE	39	14	27,397*	2
1,1-DICHLOROETHANE	39	12	2141*	2
1,1,1-TRICHLOROETHANE	41	18	225,733*	3
PHENOL	39	14	786*	4

* Prior to source removal actions

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Table 5-4
CONTAMINANTS OF CONCERN

	Number of Samples	Number of Hits	Maximum Concen ug/l	Minimum Concen ug/l
Northeast Area - Building 130				
CHROMIUM, TOTAL	10	0		
CHROMIUM, HEXAVALENT	5	1	5	
CARBON TETRACHLORIDE	9	0		
CHLOROFORM	9	4	1882*	2
METHYLENE CHLORIDE	9	4	2400960*	27
TETRACHLOROETHYLENE	9	6	103*	1
TRICHLOROETHYLENE	9	9	32291*	15
C/C/T-1,2-DICHLOROETHYLENE	6	5	9966*	56
1,1-DICHLOROETHYLENE	9	3	7*	1
1,1-DICHLOROETHANE	9	3	2255*	1071
1,1,1-TRICHLOROETHANE	10	7	9051*	4
PHENOL	10	4	117878*	15123
Northeast Area - Building 114				
CHROMIUM, TOTAL	43	25	540	9
CHROMIUM, HEXAVALENT	12	10	583	104
CARBON TETRACHLORIDE	45	11	3	1
CHLOROFORM	45	22	7	1
METHYLENE CHLORIDE	45	24	48	4
TETRACHLOROETHYLENE	45	17	5	1
TRICHLOROETHYLENE	45	34	2422	2
C/T-1,2-DICHLOROETHYLENE	45	19	134	1
1,1-DICHLOROETHYLENE	45	1	8	
1,1-DICHLOROETHANE	43	2	5	5
1,1,1-TRICHLOROETHANE	45	5	199	2
PHENOL	33	10	98	4

* Prior to source removal actions

Table 5-5
CONTAMINANTS OF CONCERN

	Number of Samples	Number of Hits	Maximum Concen ug/l	Minimum Concen ug/l
Landfill Area				
CHROMIUM, TOTAL	20	7	80*	9
CHROMIUM, HEXAVALENT	5	2	151*	11
CARBON TETRACHLORIDE	16	2	7*	2
CHLOROFORM	16	5	6*	1
METHYLENE CHLORIDE	19	1	6*	
TETRACHLOROETHYLENE	13	2	1*	1
TRICHLOROETHYLENE	20	15	222*	2
C/T-1,2-DICHLOROETHYLENE	12	12	2137*	3
1,1-DICHLOROETHYLENE	16	1	1	
1,1-DICHLOROETHANE	16	9	78*	1
1,1,1-TRICHLOROETHANE	20	4	13*	4
PHENOL	17	1	14*	

* Prior to source removal actions

5.4.3 GROUNDWATER CONTAMINATION

Figure 5-3 shows the Landfill, Trench and Northeast Areas of the Southeast Industrial Area of ANAD. The distribution of the contaminants of concern showing the plume are shown in Figure 5-4, for Total Phenols, Figure 5-5 for the Hexavalent Chromium and Figure 5-6 for the TCE, and Figure 5-7 for T12DCE.

In 1985 a groundwater study was conducted. It was recommended from this study that a pump and treat system be installed in the Groundwater Operable Unit areas. This system was completed and began operation in September 1990. This system involves the withdrawal of groundwater from the Groundwater Operable Unit areas. Treatment is provided to the contaminated groundwater by the removal of the volatile organics through air strippers and the removal of phenolic compounds through charcoal filtration. The treated groundwater is then discharged to the surface, which flows to Dry Creek in compliance with ADEM NPDES Discharge Limits under Permit AL0002658.

In addition to this system, the Building 114 dewatering and treatment system has been in operation since 1985. A dewatering sump was originally installed underneath the basement of Building 114 to remove excess groundwater for structural reasons. The

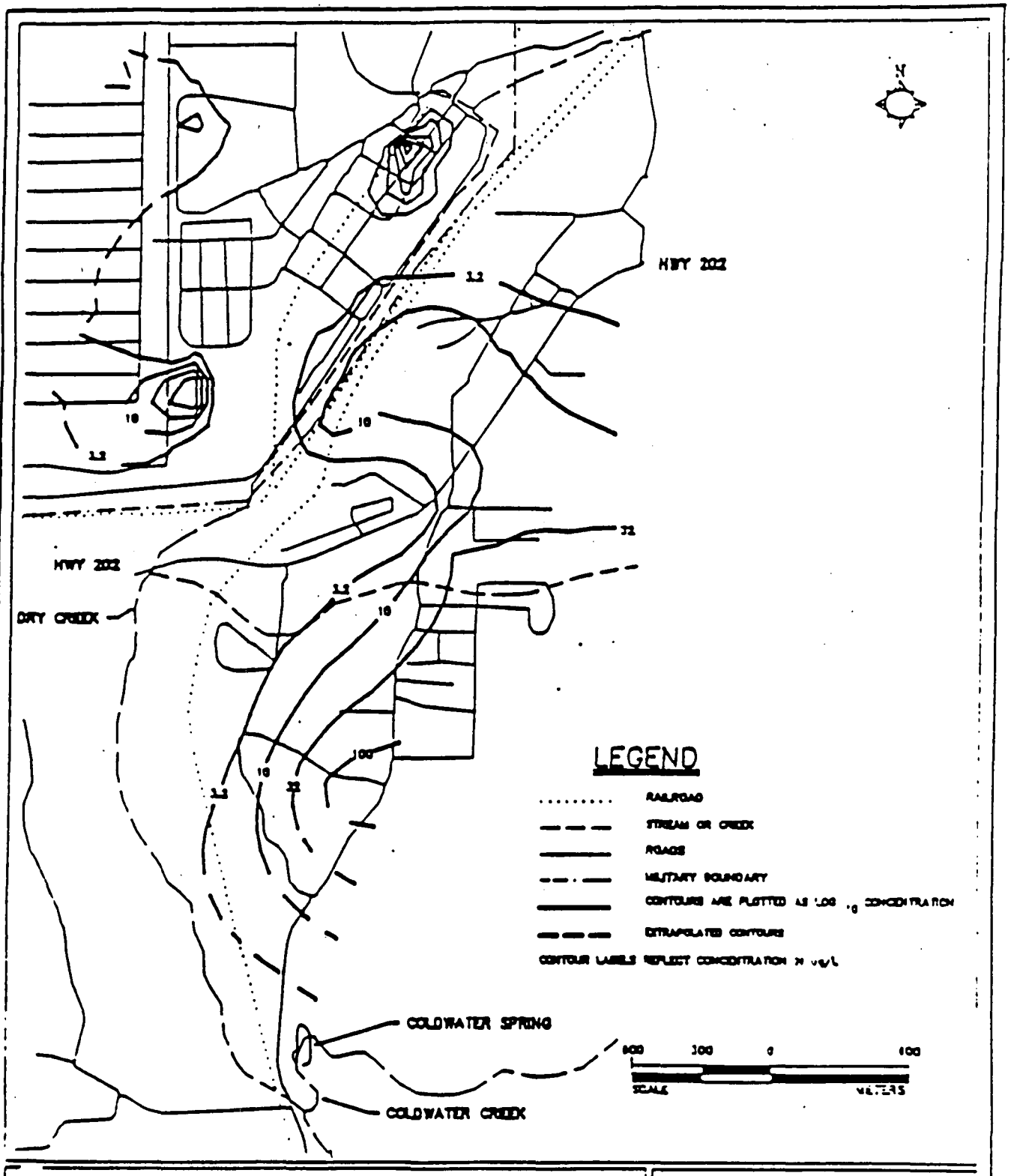

FIGURE 5-4
CONSTITUENT CONTOUR MAP - TOTAL PHENOLS - JUNE 1988

ANNISTON ARMY DEPOT

ANNISTON, ALABAMA

SEP 2 6 1991

POOR QUALITY
ORIGINAL

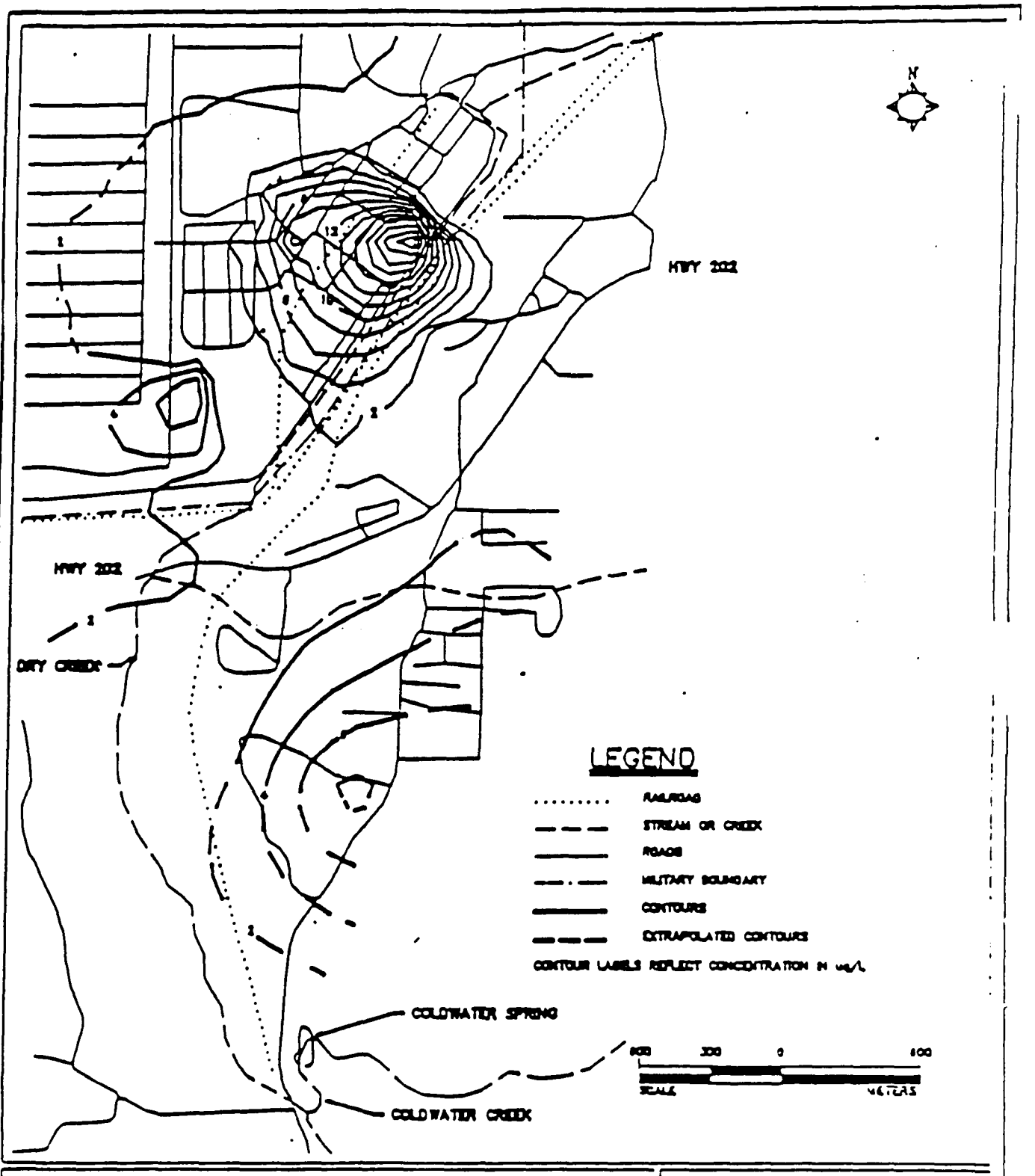

FIGURE 5-5
CONSTITUENT CONTOUR MAP
HEXAVALENT CHROMIUM - JUNE 1986

ANNISTON ARMY DEPOT

ANNISTON, ALABAMA

POOR QUALITY ORIG

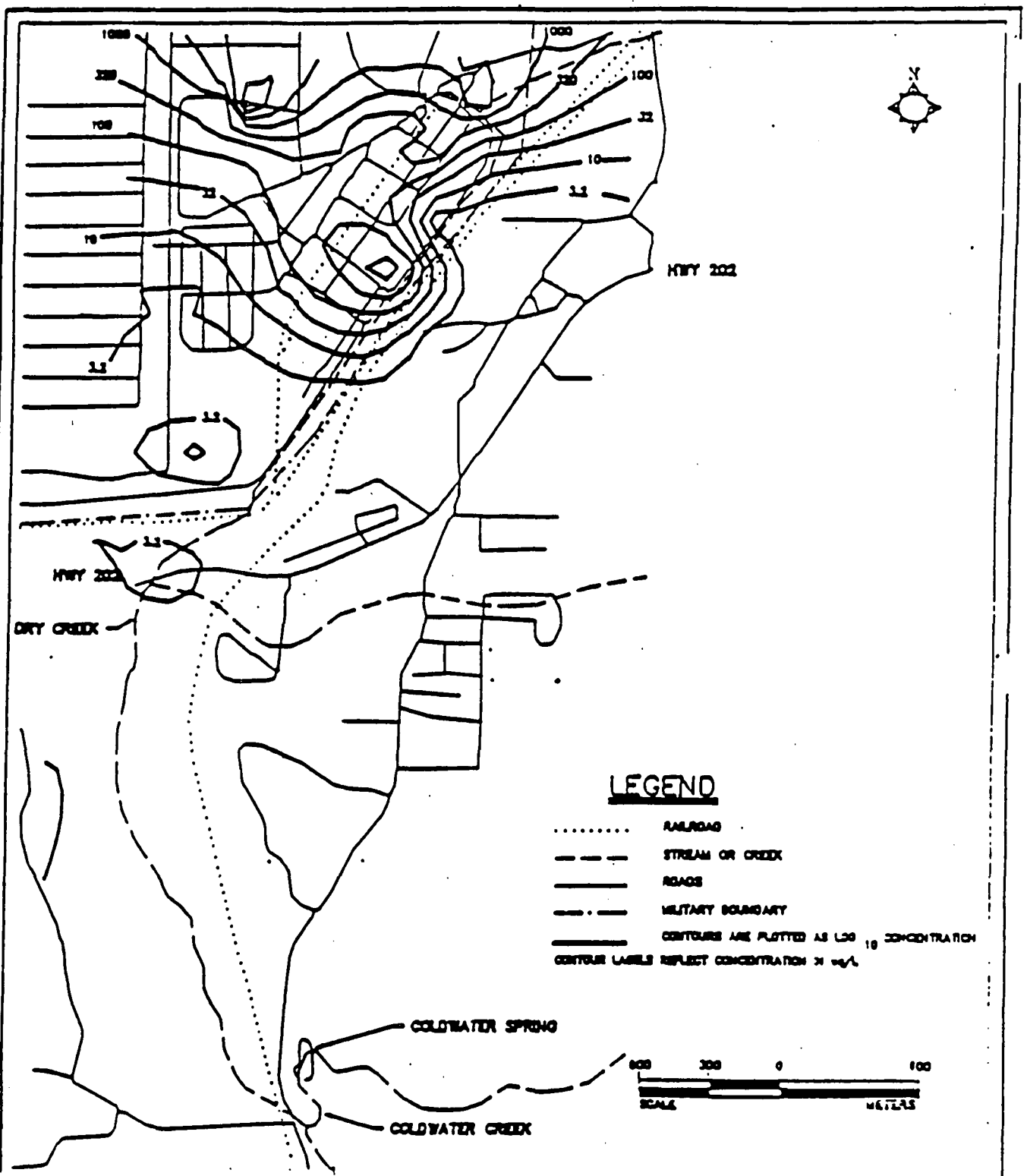

FIGURE 5-6
CONSTITUENT CONTOUR MAP - TCE - JUNE 1988

ANNISTON ARMY DEPOT

ANNISTON, ALABAMA

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POOR QUALITY ORIGINAL

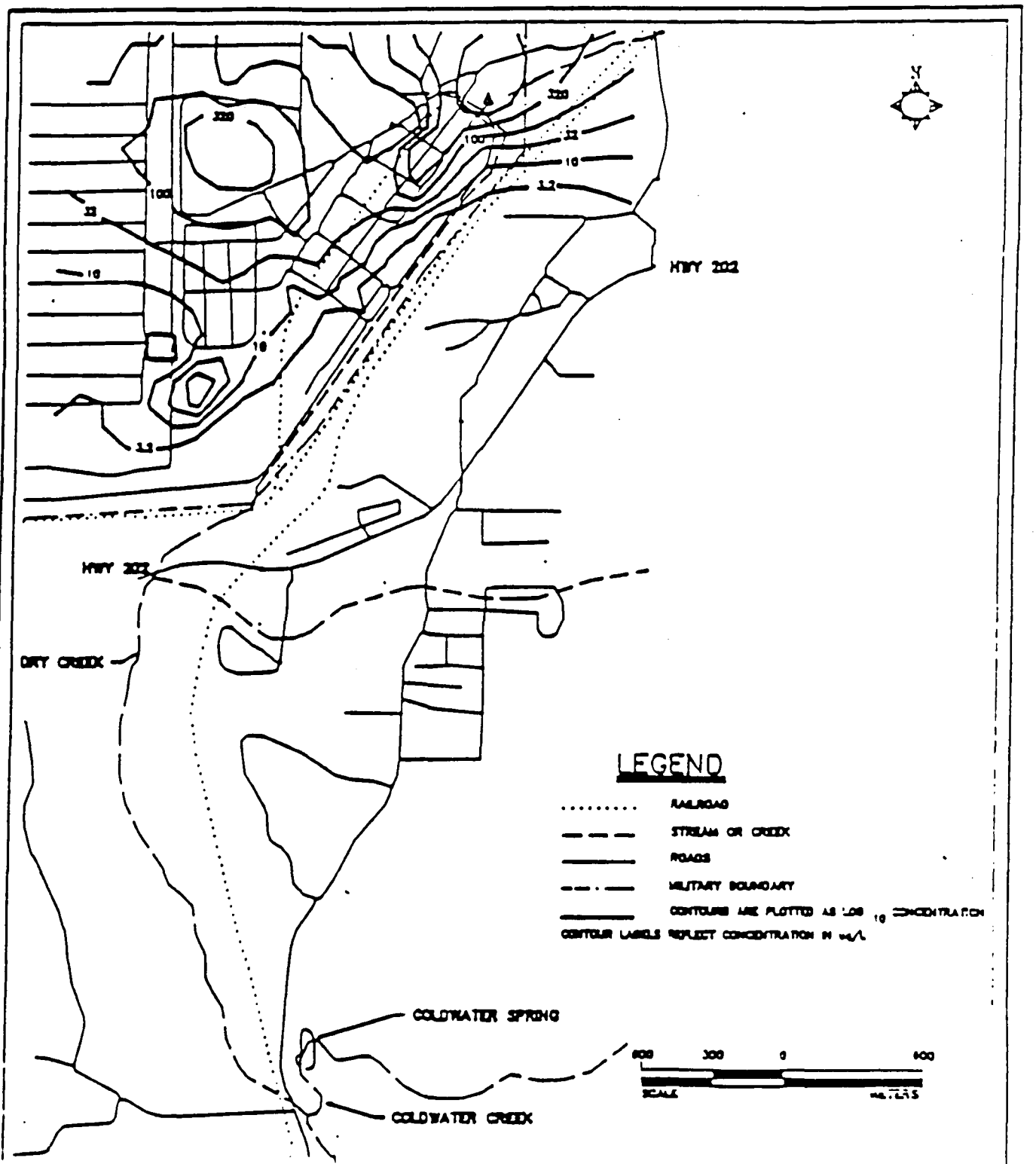

FIGURE 5-7
CONSTITUENT CONTOUR MAP - t-1,2 DCE - JUNE 1986

ANNISTON ARMY DEPOT

ANNISTON, ALABAMA

POOR QUALITY
ORIGINAL

groundwater is currently pumped to a treatment system where the volatile organics are removed by air strippers. The volatile organics in the groundwater are believed to originate from areas located hydraulically upgradient from Building 114. Additional treatment will be added for Chromium.

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6.0 SUMMARY OF SITE RISKS

The actual or threatened release of hazardous substances, if not addressed by implementing the action selected in this ROD, may present a current or potential threat to public health, welfare, or the environment.

6.1 EXPOSURE ASSESSMENT

The most significant risk of exposure to off-post populations is potential groundwater transport of contaminants to drinking water supplies. The use of contaminated groundwater for domestic and agricultural purposes in unknown. The possibility of contaminated ground water migrating off-post or of future development of contaminated groundwater supplies is unknown. The catfish farm ponds are a commercial (agricultural) operation and, therefore, are a high exposure pathway, although the exposure point concentrations are reasonably small. These compounds do discharge into Dry Creek, which is an important route of exposure for environmental populations. Other off-post potential exposure pathways such as dermal contact with contaminated surface water, ground water or soil; inhalation of volatiles and ingestion of contaminated crops or livestock are likely to be small.

A preliminary classification of the groundwater in the vicinity of Anniston Army Depot, utilizing Guidelines for Ground-Water Classification under the EPA Ground-Water Protection Strategy, December 1986, indicates that, at a minimum, the groundwater should be considered a Class IIB aquifer. There is also some indication that a more stringent classification of Class I may be warranted. Remediation goals for Class I and II groundwater should be set at maximum contaminant levels (MCLs), non-zero maximum contaminant level goals (MCLGs) or other health protective levels, as directed by the National Contingency Plan. A comparison of groundwater data at Anniston Army Depot with the health protective groundwater criteria indicates that the groundwater contamination levels exceed the criteria levels. The health protective groundwater criteria for hazardous substances detected at Anniston Army Depot are listed in Table 6-1.

Class I aquifers are defined as irreplaceable groundwater that is currently used by a substantial population or that supports an ecologically vital habitat.

Class IIB aquifers are defined as groundwater that is a potential source of drinking water which is capable of yielding a quantity at 150 gallons/day and a quality of water with a total-dissolved-solids (TDS) concentration of less than 10,000 mg/l, which can be used without treatment,

Table 6-1

HEALTH PROTECTIVE CRITERIA FOR
HAZARDOUS SUBSTANCES DETECTED IN THE GROUNDWATER

INORGANIC CONSTITUENTS

	(mg/l)	
ARSENIC	0.05	MCLp
ANTIMONY	0.01/0.005	MCLp
CADMIUM	0.005	MCL
CHROMIUM, TOTAL	0.1	MCL
MOLYBDENUM	0.003	RfD
NICKEL	0.1	MCLp
SELENIUM	0.05	MCL
THALLIUM	0.002/0.001	MCLp
ZINC	5	SMCL

VOLATILE ORGANIC COMPOUNDS

	(mg/L)	
BENZENE	0.005	MCL
CARBON TETRACHLORIDE	0.005	MCL
CHLOROFORM	6.0	CSF
1,1-DICHLOROETHANE	0.07	RfD
1,1-DICHLOROETHYLENE	0.007	MCL
Cis-1,2-DICHLOROETHYLENE	0.07	MCL
Trans-1,2-DICHLOROETHYLENE	0.1	MCL
ETHYLBENZENE	0.7	MCL
METHYLENE CHLORIDE	0.005	MCLp
TETRACHLOROETHYLENE	0.005	MCL
TOLUENE	1.0	MCL
TRICHLOROETHYLENE	0.005	MCL
1,1,1-TRICHLOROETHANE	0.2	MCL
1,1,2-TRICHLOROETHANE	0.005	MCLp
TRICHLOROFLUOROMETHANE	2.0	RfD

SEMIVOLATILES ORGANIC COMPOUNDS

	(mg/l)	
PHENOL	4.0	RfD
PENTACHLOROPHENOL	0.001	MCLp

Abreviations from Table 6-1

MCL Maximum Contaminant Level. Maximum permissible level of a contaminant in water which is delivered to any user of a public system.

MCLp Maximum Contaminant Level, proposed.

CSF Carcinogenic Slope Factor. The concentration represents a 10E-6 risk level and a 2 liter daily consumption rate by a 70 kg individual. The CSF for Chloroform is 6.1E-3 mg/kg-day.

RfD Reference Dose. The concentration represent a 2 liter daily consumption rate by a 70 kg individual. The concentration also reflects a 20% relative source contribution from exposure to site groundwater. An additional safety factor of 10 is incorporated into the concentration for 1,1-DICHLOROETHANE to reflect its classification as a Class C carcinogen. The following RfDs were used to determine the acceptable groundwater concentration: MOLYBDENUM = 4E-3 mg/kg-day
1,1-DICHLOROETHANE = 1E-1 mg/kg-day
TRICHLOROFLUOROMENTHANE = 3E-1 mg/kg-day
PHENOL = 6E-1 mg/kg-day

SMCL Secondary Maximum Contaminant Levels.

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or which can be treated using methods reasonably employed in a public water-supply system.

6.2 ECOLOGICAL EVALUATION

The number of livestock potentially endangered by drinking contaminated groundwater and surface water is unknown, but consists primarily of poultry, dairy cattle, beef cattle and hogs. Springs and shallow wells in the general area are used for domestic and small farm needs, but the extent and potential for groundwater contamination is not fully defined. Dry Creek has been classified as a Fish and Wildlife Stream by the State of Alabama, but the potentially endangered environmental population has not be identified.

Aquatic life observed in Coldwater Spring include the pygmy sculpin, water snake, crayfish and various aquatic insects. The pygmy sculpin is only found in the habitat of the Spring and is listed as a Threatened Species by the U.S. Fish and Wildlife Service.

It is beyond the scope of this interim action to establish final cleanup goals at this time.

This interim remedial action is taken to prevent further plume migration from identified source areas and initiate cleanup while the remedial investigation and feasibility study are being completed. Also, this interim remedial action is being taken to obtain information concerning the response of the aquifer to remediation measures to define the final cleanup goals that are practicable for Anniston Army Depot.

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7.0 DESCRIPTION OF ALTERNATIVES

The following is a description of the alternatives evaluated in the FS for Groundwater Operable Unit.

7.1 Alternative 1 - Groundwater Withdrawal, Treatment, with Surface Water Discharge, and Continued Operation of the Building 114 Dewatering and Treatment System.

This Alternative involves the withdrawal of groundwater from the Groundwater Operable Unit areas. Treatment is provided to the contaminated groundwater by the removal of the volatile organics through air strippers and the removal of phenolic compounds through charcoal filtration. The treated groundwater is then discharged to the surface, which flows to Dry Creek in compliance with ADEM NPDES Discharge Limits under Permit AL0002658.

In addition to the removal and treatment of groundwater this alternative also calls for the continued operations of the Building 114 dewatering and treatment system. A dewatering sump was originally installed underneath the basement of Building 114 to remove excess groundwater for structural reasons. The groundwater is currently pumped to a treatment system where the volatile organics are removed by air strippers. The volatile organics in the groundwater are believed to originate from areas located hydraulically upgradient from Building 114.

Estimated Capital Costs: $895,000
Estimated Annual Operation and Maintenance Costs: $60,000
Estimated Present Worth: $945,000
Estimated Months to Fully Implement: 0

7.2 Alternative 2 - Groundwater Withdrawal, Treatment, with Reinjection, and Continued Operation of the Building 114 Dewatering and Treatment System.

This alternative involves the groundwater removal by extraction wells and treatment of groundwater from the Groundwater Operable Unit areas. Treatment is provided to the contaminated groundwater by the removal of the volatile organics through air strippers and the removal of phenolic compounds through charcoal filtration. The treated groundwater is then reinjected in a combination of either or both upgradient and downgradient from the extraction wells back into the ground.

In addition to the removal and treatment of groundwater this alternative also calls for the continued operations of the Building 114 dewatering and treatment system. A dewatering

sump was installed underneath the basement of Building 114 to remove excess groundwater for structural reasons. The groundwater is currently pumped to a treatment system where the volatile organics are removed by air strippers. The volatile organics in the groundwater are believe to originate from areas located hydraulically upgradient from Building 114 in the northeast section of the SIA.

Estimated Capital Costs: $2,502,800
Estimated Annual Operation and Maintenance Costs: $172,000
Estimated Present Worth: $2,664,800
Estimated Months to Fully Implement: 30

7.3 Alternative 3 - Groundwater Withdrawal, Treatment and Strategically Placed Grout Curtains, and Continued Operation of the Building 114 Dewatering and Treatment System.

This alternative involves the removal of the groundwater by extraction wells. Treatment is provided to the contaminated groundwater by the removal of the volatile organics through air strippers and the removal of phenolic compounds through charcoal filtration. In addition, a grout curtain is placed to keep highly contaminated pockets of groundwater from migrating beyond the Groundwater Operable Unit areas and to reduce the amount of groundwater running into the Groundwater Operable Unit areas.

In addition to the removal and treatment of groundwater this alternative also calls for the continued operations of the Building 114 dewatering and treatment system. A dewatering sump was installed underneath the basement of Building 114 to remove excess groundwater for structural reasons. The groundwater is currently pumped to a treatment system where the volatile organics are removed by air strippers. The volatile organics in the groundwater are believe to originate from areas located hydraulically upgradient from Building 114 in the northeast section of the SIA.

Estimated Capital Costs: $29,628,200
Estimated Annual Operation and Maintenance Costs: $306,100
Estimated Present Worth: $29,924,300
Estimated Months to Fully Implement: 48

7.4 Alternative 4 - Limited Action Alternative, with Continued Operation of the Building 114 Dewatering and Treatment System.

This alternative calls for only the continued operations of the Building 114 dewatering and treatment system. A dewatering sump was installed underneath the basement of Building 114 to remove excess groundwater for structural

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reasons. The groundwater is currently pumped to a treatment system where the volatile organics are removed by air strippers. The volatile organics in the groundwater are believe to originate from areas located hydraulically upgradient from Building 114 in the northeast section of the SIA.

Estimated Capital Costs: $0
Estimated Annual Operation and Maintenance Costs: $10,000
Estimated Present Worth: $162,150
Estimated Months to Fully Implement: N/A

No other interim remedial action is taken under Alternative 4. All remedial action is deferred until the current RI/FS is completed.

7.5 Alternative 5 - No Action Alternative.

This alternative calls for no action at the Groundwater Operable Unit.

Estimated Capital Costs: $0
Estimated Annual Operation and Maintenance Costs: $0
Estimated Present Worth: $0
Estimated Months to Fully Implement: N/A

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8.0 SUMMARY OF COMPARATIVE ANALYSIS OF ALTERNATIVES

8.1 Overall Protection of Human Health and the Environment

Based on the Risk Assessment, it is known that the groundwater is contaminated in the Groundwater Operable Unit areas of concern in excess of the Maximum Concentration Limits (MCLs). Alternatives 4 and 5 offer no protection for human health or the environment. Long term protection is provided with Alternatives 1, 2, and 3. However, long term monitoring would be required to assure permanence of the remedial action.

8.2 Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)

Alternative 1 is an interim remedial action and may not fully comply with all ARARs applicable to Anniston Army Depot. However, Alternative 1 will comply with Action Specific and Location Specific ARARs. Chemical Specific ARARs will not be determined until completion of the RI/FS. MCLs/MCLGs or ADEM cleanup standards will not be ARARs for these actions because they are beyond the scope of the interim remedial action. Alternative 2 would require additional Action Specific ARARs because of the additional standards of treatment for reinjection into the ground. The Alternative 3 may require additional ARARs for the installation of the grout curtains. The Limited Action and the No Action Alternative, Alternatives 4 and 5, meet no ARARs. The final remedial action will comply with all ARARs.

8.3 Long-term Effectiveness and Permanence

Long-term Effectiveness of any of the presented alternatives is currently unknown. However, the prevention of further plume migration has been started. Alternatives 4 and 5 offer no effectiveness, while the placement of a grout curtain, as in Alternative 3 or reinjection may complicate the understanding of the groundwater. Alternatives 1, 2 and 3 will require long-term monitoring following construction. Alternative 1 offers the best option to start controlling the contaminated groundwater.

8.4 Reduction of Toxicity, Mobility or Volume Through Treatment

Alternatives 4 and 5 offer no reduction of toxicity, mobility or volume. Alternatives 1, 2 and 3 will provide an unknown reduction of contaminants. However, Alternatives 2 and 3 provide no addition reduction of toxicity, mobility or volume for their additional expense to implement. The interim remedial action chosen will be used to restrict the

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plume migration until a final action is determined under the RI/FS process.

8.5 Short Term Effectiveness

Alternatives 2 and 3 will create some additional risk to workers, associated with the additional construction of injections wells or grout curtains. Alternative 1 may not achieve final cleanup levels for the ground water, although it is effective in the short term in preventing further degradation and initiating reduction in toxicity, mobility or volume, consistent with the scope and purpose of the interim remedial action.

8.6 Implementability

Alternatives 4 and 5 are not administratively implementable, because Anniston is not currently seeking an ARAR waiver. Technically, Alternatives 1, 2 and 3 may be designed and implemented. However Alternatives 2 and 3 may require additional administrative steps due to the additional construction of injection well or grout curtains.

8.7 Cost

The cost to implement an interim remedial action is significantly less for Alternative 1 than the other alternatives in which action is required.

8.8 ADEM/EPA Acceptance

EPA and ADEM have concurred with the choice of Alternative 1.

8.9 Community Acceptance

Few comments on the selected remedy were received. It is believed that the community is supportive of the selected interim remedial action.

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9.0 SELECTED REMEDY

This alternative calls for implementation of an interim action to protect human health and the environment. The goals of this interim remedial action are to halt the spread of a contaminant plume, remove contaminant mass and to collect data on aquifer and contaminant response to remediation measures. The ultimate goal of remediation will be determined in the final remedial action for this site. This interim remedial action will be monitored carefully to determine the feasibility of achieving this goal with this method and to ensure that hydraulic control of the contaminated plume is maintained. At the conclusion if the current remedial investigation and feasibility study, ANAD in consultation with the U.S. EPA and ADEM, may arrive at a final decision for the site. A final ROD for ground water, which specifies the ultimate goal, remedy and anticipated remediation timeframe, will be prepared at that time. Upon completion of the RI/FS, this interim system may be incorporated into the design of the site remedy specified in the final action ROD.

Based upon considerations of the requirements of CERCLA, the detailed analysis of the alternatives, and public comments, ANAD in consultation with U.S. EPA and ADEM have determined that the most appropriate remedy for the Groundwater Operable Unit is Alternative 1.

The complete remedy for the Groundwater Operable Unit, for source control includes:

- Groundwater Withdrawal
- Treatment of the Groundwater for volatile organics and phenolics with discharge to the surface
- Continued Operation of the Building 114 Dewatering and improvements to the Treatment System

In 1985 a groundwater study was conducted that recommended a pump and treat system be installed in the Groundwater Operable Unit areas. This system was completed and began operation in September 1990. This system involves the withdrawal of groundwater from the Groundwater Operable Unit areas. Treatment is provided to the contaminated groundwater by the removal of the volatile organics through air strippers and the removal of phenolic compounds through charcoal filtration. The treated groundwater is then discharged to the surface, which flows to Dry Creek in compliance with ADEM NPDES Discharge Limits under Permit AL0002658.

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The estimated cost of the selected remedy is as follows:

Estimated Capital Costs: $895,000
Estimated Annual Operation and Maintenance Costs: $60,000
Estimated Present Worth: $945,000
Estimated Months to Fully Implement: 0

9.1 REMEDIATION GOALS

This selected interim action does not specify final cleanup levels because such goals are beyond the scope of the action. These remediation goals will be addressed in the final remedial action record of decision.

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10.0 STATUTORY DETERMINATIONS

Under its legal authorities, the EPA's primary responsibility at Superfund sites is to undertake remedial actions that achieve adequate protection of human health and the environment. In addition, Section 121 of CERCLA establishes several other statutory requirements and preferences. These specify that when complete, the selected remedial action for this site must comply with applicable or relevant and appropriate environmental standards established under Federal and State environmental laws unless a statutory waiver is justified. The selected remedy also must be cost-effective and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. Finally, the statute includes a preference for remedies that employ treatments that permanently and significantly reduce the volume, toxicity, or mobility of hazardous waste as their principal element. The following sections discuss how the selected remedy meets these statutory requirements.

10.1 PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

The selected remedy protects human health and the environment through collection and treatment of groundwater in the Groundwater Operable Unit Area.

10.2 COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS.

The chosen alternative is an interim remedial action and may not fully comply with all ARARs applicable to Anniston Army Depot. However, this alternative will comply with Action Specific and Location Specific ARARs. Chemical Specific ARARs will not be determined until completion of the RI/FS. The final remedial action will comply with all ARARs.

10.3 COST-EFFECTIVENESS

The selected remedy for the Groundwater Operable Unit has been determined to provide overall effectiveness proportional to its costs. The selected remedy is protective of public health and the environment and is substantially less expensive than the same action with reinjection, and substantially less expensive that the addition of strategically placed grout curtains.

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10.4 UTILIZATION OF PERMANENT SOLUTIONS AND ALTERNATIVE TREATMENT TECHNOLOGIES (OR RESOURCE RECOVERY TECHNOLOGIES) TO THE MAXIMUM EXTENT PRACTICABLE

The treatment applied to the extracted groundwater is permanent and meets the current requirements for the National Pollutant Discharge Elimination System Permit. Alternative treatment technologies were evaluated but were not found to be cost effective.

10.5 PREFERENCE FOR TREATMENT AS A PRINCIPAL ELEMENT

This interim remedial action does not address all potential threats posed by the site. One known threat is migration of the groundwater contamination plume. This interim remedial action will initiate control of the source of the groundwater contamination plume. While a final action level is not established for the groundwater during this interim remedial action, the extracted groundwater treatment meets the NPDES permit requirements.

10.6 DOCUMENTATION OF SIGNIFICANT CHANGES

No significant changes from the proposed plan were made.

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COMMUNITY RELATIONS
RESPONSIVENESS SUMMARY

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COMMUNITY RELATIONS RESPONSIVENESS SUMMARY

1.0 OVERVIEW

ANAD, along with U.S. EPA and ADEM held a public meeting on September 10, 1991, at the Headquarters Building Auditorium at Anniston Army Depot to discuss the results of the RI/FS, present the proposed plan and solicit comments and questions from the public. The majority of questions and comments received during the public comment period were received during the public meeting.

2.0 BACKGROUND ON COMMUNITY INVOLVEMENT

An active community relations program providing information and soliciting input has been conducted by ANAD for the Groundwater Operable Unit. The public has been informed since the early 1980's of the actions being taken at ANAD. Interviews of citizens in the Anniston Area were conducted in early 1991 to identify community concerns. No significant concerns that required focused response were identified. Most comments received were concerning the Chemical Demilitarization Program, which is an incinerator that will be built to destroy Chemical Munitions. The local media has been informed throughout the 1980's concerning remedial actions and our placement on the NPL. In addition all documents concerning the Groundwater Operable Unit can be found in the Anniston Public Library, the Jacksonville Public Library, the Talladega Public Library, the Oxford Public Library, and the Anniston Army Depot, Public Affairs Office.

3.0 SUMMARY OF PUBLIC COMMENT AND AGENCY RESPONSE

3.1 Public Meeting

Comments and questions raised during the Public Meeting held on September 10, 1991 are summarized below.

3.1.1 Technical Comments and Questions

1. Questions from a member of the press dealt mainly with the Remedial Investigation/Feasibility Study Workplans and the work that will lead to the Final ROD. There was one question concerning the proposed plan. It dealt with the contaminant levels presented in the slides during the public meeting. He questioned whether the average contaminant was an average from the whole spectrum of testing from the time the wells were installed until the present.

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ANAD Response: The average was from the whole spectrum of testing. There are some wells that are monitored quarterly and that some wells were just sampled in the 1982-1985 timeframes. A document has been compiled that lists all results from all testing done in the areas of concern.

3.1.2 Other Comments and Questions

Comments and questions raised during the public meeting that were not technical in nature are summarized below.

1. A county commissioner from Calhoun Calhoun asked EPA and ADEM if ANAD was on target with the cleanup efforts that were presented at the meeting.

ADEM's Response: Yes.

2. The county commissioner commented that he felt that the low turnout for the meeting was an indication that the residence of Calhoun county had confidence in ANAD.

He said that the pollution was the result of hazardous waste disposal methods that were acceptable for many years, and that ANAD made positive steps to cleanup the pollution before they were placed on the National Priorities List.

He commend ANAD for the cleanup efforts. He said that ANAD was a "good corporate neighbor" and that he supported our efforts. He stated that things should be done like they are supposed to be and that he had a lot of confidence that ANAD would do what is right.

ANAD's Response: No response was necessary.

3.2 Public Comment Period

Comments and questions received during the public comment period that ran from 23 August to 24 September are summarized below.

3.2.1 Technical Comments and Questions

No technical comments and questions were received during the public comment period.

3.2.2 Other Comments and Questions

No other comments and questions were received during the public comment period.

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