EPA/ROD/R04-88/032
1988

EPA Superfund
Record of Decision:

CHEMTRONICS, INC.
EPA ID: NCD095459392
OU 01
SWANNANOA, NC
04/05/1988

Site: CHEMTRONICS, INC.
Break: 59
Other: V2

ENFORCEMENT
RECORD OF DECISION
REMEDIAL ALTERNATIVE SELECTION

CHEMTRONICS SITE
SWANNANOA, BUNCOMBE COUNTY
NORTH CAROLINA

PREPARED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
ATLANTA, GEORGIA

10451112

DECLARATION FOR THE RECORD OF DECISION

SITE NAME and LOCATION

Chemtronics
Swannanoa, Buncombe County, North Carolina

STATEMENT OF PURPOSE

This document represents the selected remedial action for this Site developed in accordance with CERCLA as amended by SARA, and to the extent practicable, the National Contingency Plan.

The State of North Carolina has concurred on the selected Remedy.

STATEMENT OF BASIS

The decision is based upon the administrative record for the Chemtronics Site. The attached index identifies the items which comprise the administrative record upon which the selection of a remedial action is based.

DESCRIPTION OF THE SELECTED REMEDY

MIGRATION CONTROL (Remediating Contaminated Groundwater)

Installation of a groundwater interception and extraction system downgradient of the disposal areas in both the Front Valley and Gregg Valley. The level and degree of treatment of the extracted groundwater will depend on 1) the ultimate discharge point of this water and 2) the level of contaminants in the extracted groundwater. The three water discharge alternatives for the treated water are 1) the local sewer system, 2) a surface stream and 3) on-site irrigation. The range of treatment for the extracted groundwater includes air stripping, filtration through activated carbon filter and metal removal. The point of discharge and the degree of treatment will be determined in the Remedial Design stage. The water discharged will meet all ARAR's.

A monitoring program, employing bioassays, will be established for surface water/sediment. Monitoring locations will be located on the Unnamed Stream, Gregg Branch and Bee Tree Creek. The purpose of this monitoring program is 1) to insure no adverse impact on these streams during implementation of the remedial action and 2) to establish a data base to use to measure the success of the remedial action implemented. The initiation of this monitoring program will be concurrent with the remedial design activities.

Review the existing groundwater monitoring system and install additional wells, if necessary, to insure proper monitoring of groundwater downgradient of each disposal area. This includes disposal areas #6, #7/8, #9, #10/11, #23, and the acid pit area.

In addition to the monitoring of the groundwater downgradient of each disposal area identified above, action levels for the contaminants present in the disposal areas will be set so that after remediation levels for groundwater have been obtained and verified through monitoring, if this level is reached in any subsequent sampling episode, a remedial action to permanently eliminate that source of contamination will be initiated.

SOURCE CONTROL (Remediating Contaminated Soils)

Cap Disposal Area #6, Disposal Area #7/8, Disposal Area #9, Disposal Area #10/11, and the Acid Pit Area with a Multi-Layer cap which includes a synthetic liner. Security fencing, vegetative covers and, where deemed necessary, a gas collection/ventilation system will be installed. The multi-layer cap will meet as a minimum, the standards specified under 40 CFR Subsection 264, Subparts K-N.

For the contaminants and contaminated soils associated with DA-23, determine the most appropriate soil fixation/stabilization/solidification process and the mixing ratios for the components involved. Following the soil fixation/stabilization/solidification for DA-23, the entire surface of the disposal area will be capped.

Sample On-Site Pond on Unnamed Stream

During the Remedial Design stage, sample the water and sediment in the pond. If the analysis indicates contaminants in either the water column or sediment, then the pond will be drained, with the water being treated through the treatment system developed for addressing the extracted groundwater and the sediments could be either commingled with the soils of Disposal Area #23 for fixation/stabilization/solidification or transported to another disposal area and capped along with that disposal area.

DECLARATION

The selected remedy is protective of human health and the environment, attains Federal and State requirements that are applicable or relevant and appropriate, and is cost-effective. This remedy satisfies the preference for treatment that reduces toxicity, mobility, or volume as a principal element. Finally, it is determined that this remedy utilizes permanent solution and alternative treatment technologies to the maximum extent practicable.

April 5, 1988
Date

Lee G. DeHihns III, for
Greer C. Tidwell
Regional Administrator

SUMMARY OF REMEDIAL ALTERNATIVE SELECTION

CHEMTRONICS SITE
SWANNANOA, BUNCOMBE COUNTY NORTH CAROLINA

PREPARED BY:

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IV
ATLANTA GEORGIA

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ENFORCEMENT RECORD OF DECISION
SUMMARY OF REMEDIAL ALTERNATIVE SELECTION
CHEMTRONICS SITE
SWANNANOA, BUNCOMBE COUNTY, NORTH CAROLINA

1.0 INTRODUCTION

The Chemtronics Site was included on the first official National Priorities List (NPL) published by EPA in December 1982. The Chemtronics Site has been the subject of a Remedial Investigation (RI) and a Feasibility Study (FS) performed by two of the potentially responsible parties (PRPs), Chemtronics, Inc., and Northrop Corporation, under an Administrative Order of Consent dated October 1985. The third viable PRP, Hoechst Celanese Corporation, declined to participate in the RI/FS. The RI report, which examined air, groundwater, soil, and surface water and sediment contamination at the Site and the routes of exposure of these contaminants to the public and environment was accepted by the Agency in May 1987. The FS, which develops, examines and evaluates alternatives for remediation of the contamination found on site, was issued in draft form to the public in February 1988.

This Record of Decision has been prepared to summarize the remedial alternative selection process and to present the selected remedial alternative.

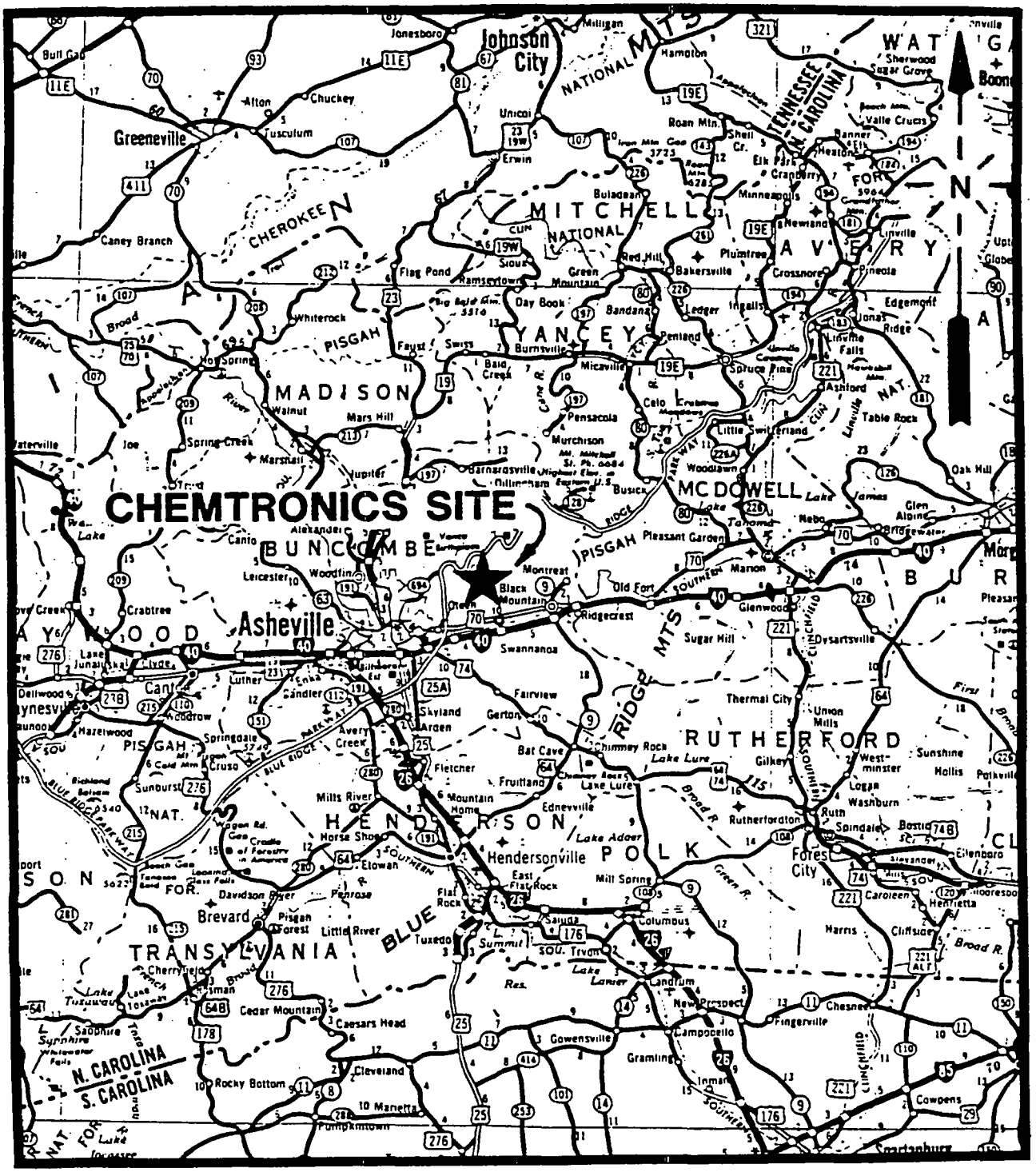
1.1 SITE LOCATION AND DESCRIPTION

The Chemtronics Site encompasses approximately 1,027 acres and is located at 180 Old Bee Tree Road in a rural area of Swannanoa, Buncombe County, approximately 8 miles east of Asheville, North Carolina. The approximate center of the site lies at latitude 35 degrees 38′ 18" north and longitude 82 degrees 26′ 8" west. The Site is bounded on the east by Bee Tree Road and Bee Tree Creek. The area to the north and west of the Site is comprised of sparsely inhabited woodlands. Immediately to the south of the Site, there are several industrial facilities which lie on land that was once part of the original (Oerlikon) property. The general location of the Site is shown in Figure 1. Figure 2 shows the approximate boundaries of the Site in relationship to its immediate surroundings.

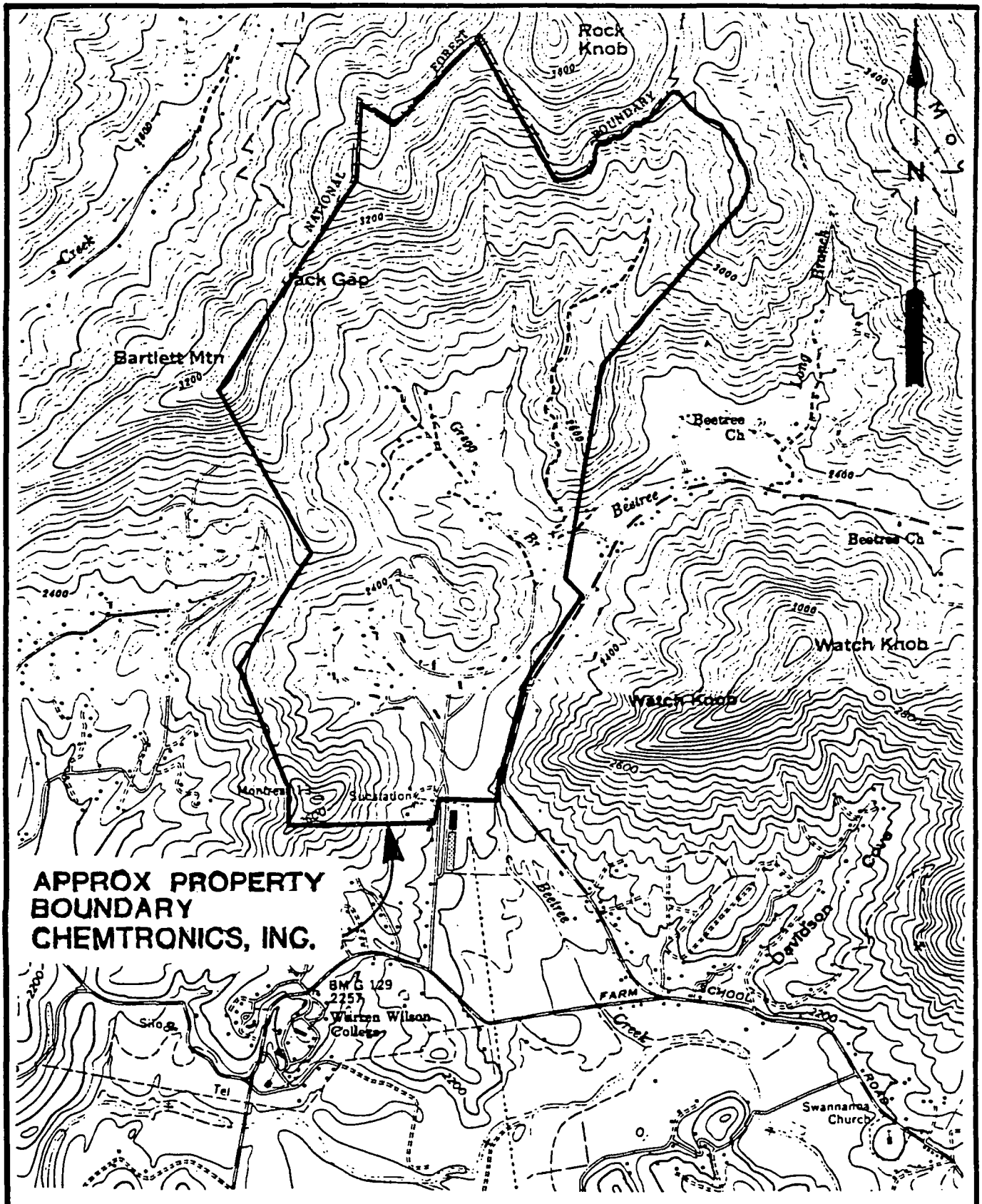
The topography of the Site is steep, ranging from 2,200 to 3,400 feet above mean sea level (amsl). The Site lies on the southeast side of Bartlett Mountain and is moderate to heavily vegetated. Surrounding mountains reach elevations of approximately 3,800 feet amsl. All surface water from the Site drains into small tributaries of Bee Tree Creek or directly into Bee Tree Creek. This creek flows into the Swannanoa River which ultimately, empties into the French Broad River.

1.2 SITE HISTORY

The property comprising the Chemtronics Site was first developed as an industrial facility in 1952. The Site has been owned/operated by Oerlikon Tool and Arms Corporation of America (1952-1959), Celanese Corporation of America (Hoechst Celanese Corporation) (1959-1965), Northrop Carolina, Inc. (Northrop Corporation) (1965-1971), Chemtronics, Inc., as apart of Airtronics, Inc.,



GENERAL LOCATION MAP CHEMTRONICS, INC. SWANNANOA, NORTH CAROLINA	FIGURE NO. 1



USGS CRAGGY PINNACLE, N.C. & OTEEN, N.C. QUADS

SCALE 1 : 24,000

SITE LOCATION MAP CHEMTRONICS, INC. SWANNANOA, NORTH CAROLINA	FIGURE NO. 2

(1971-1978), and Chemtronics, Inc. (1978 - present). The Site operated under the name of Amcel Propulsion, Inc. (1959-1965) under both Oerlikon and Celanese. The Site is currently occupied by an active facility owned and operated by Chemtronics Incorporated, a subsidiary of the Halliburton Company.

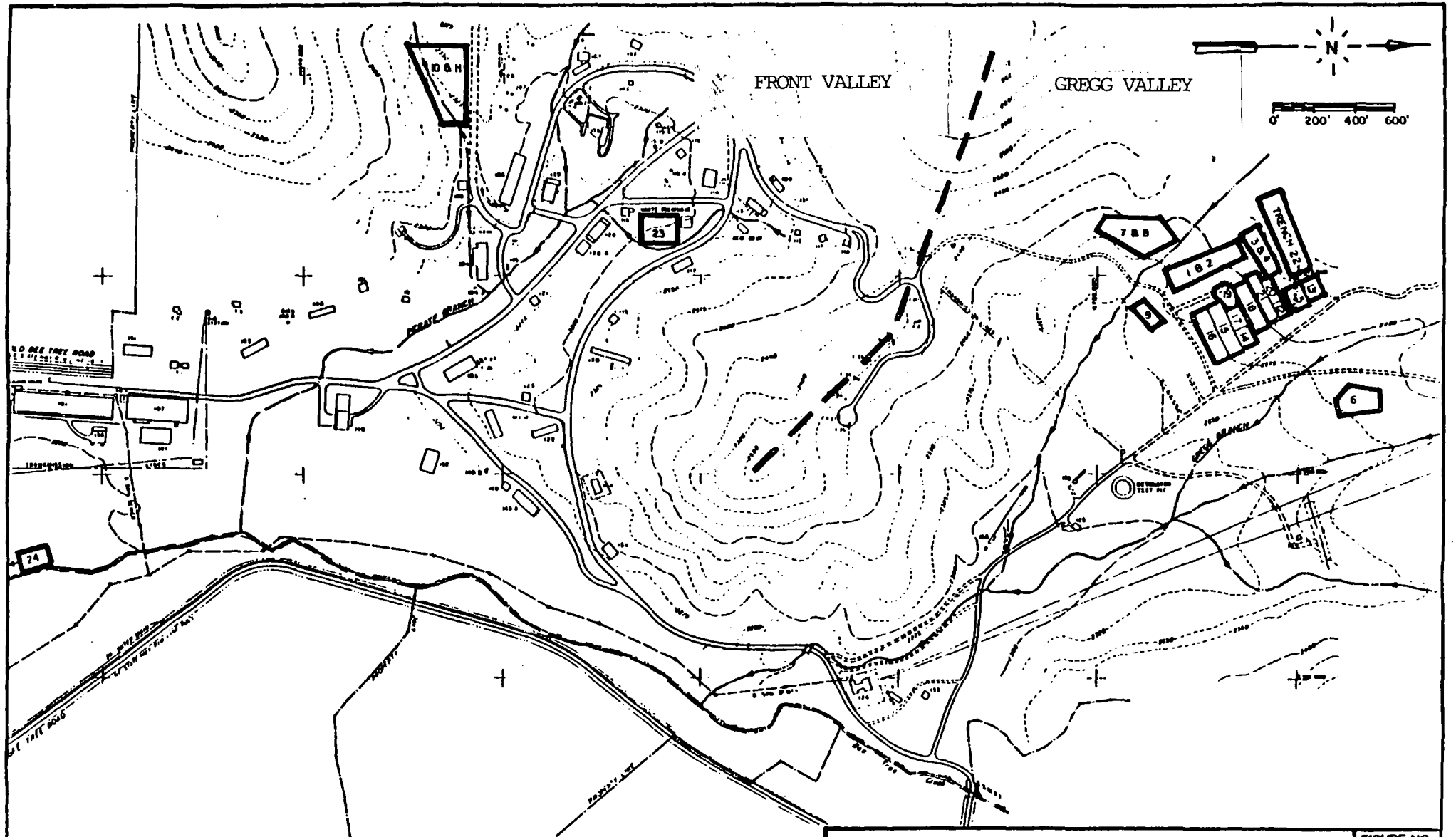
Waste disposal occurred over a small portion (approximately than ten acres) of the Site. Twenty-three individual on-site disposal areas were identified and described by reviewing existing records and through interviews with former and current Site employees. These 23 individual disposal areas (DAs) are grouped into 6 discrete disposal areas: DA-6, DA-7/8, DA-9, DA-10/11, DA-23, and the Acid Pit Area. The Site can also be divided into two geographical subsections; they will be referred to as the Front Valley and Gregg Valley. The locations of the 23 disposal areas and the two valleys are shown in Figure 3.

In the northwest corner of the Site, Figure 3, is a group of disposal areas that are collectively referred to as the Acid Pit Area. The acid pit area includes Disposal Areas 1, 2, 3, 4, 5, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, and Trench 22. The acid pit area along with DA-6, DA-7/8 and DA-9 are located in Gregg Valley. Disposal areas DA-10/11 and DA-23 are located in the Front Valley.

The acid pit area was first used as the burning grounds as described in the following pages. This area, as well as all of the other disposal areas, were used by more than one of the site owner/operators.

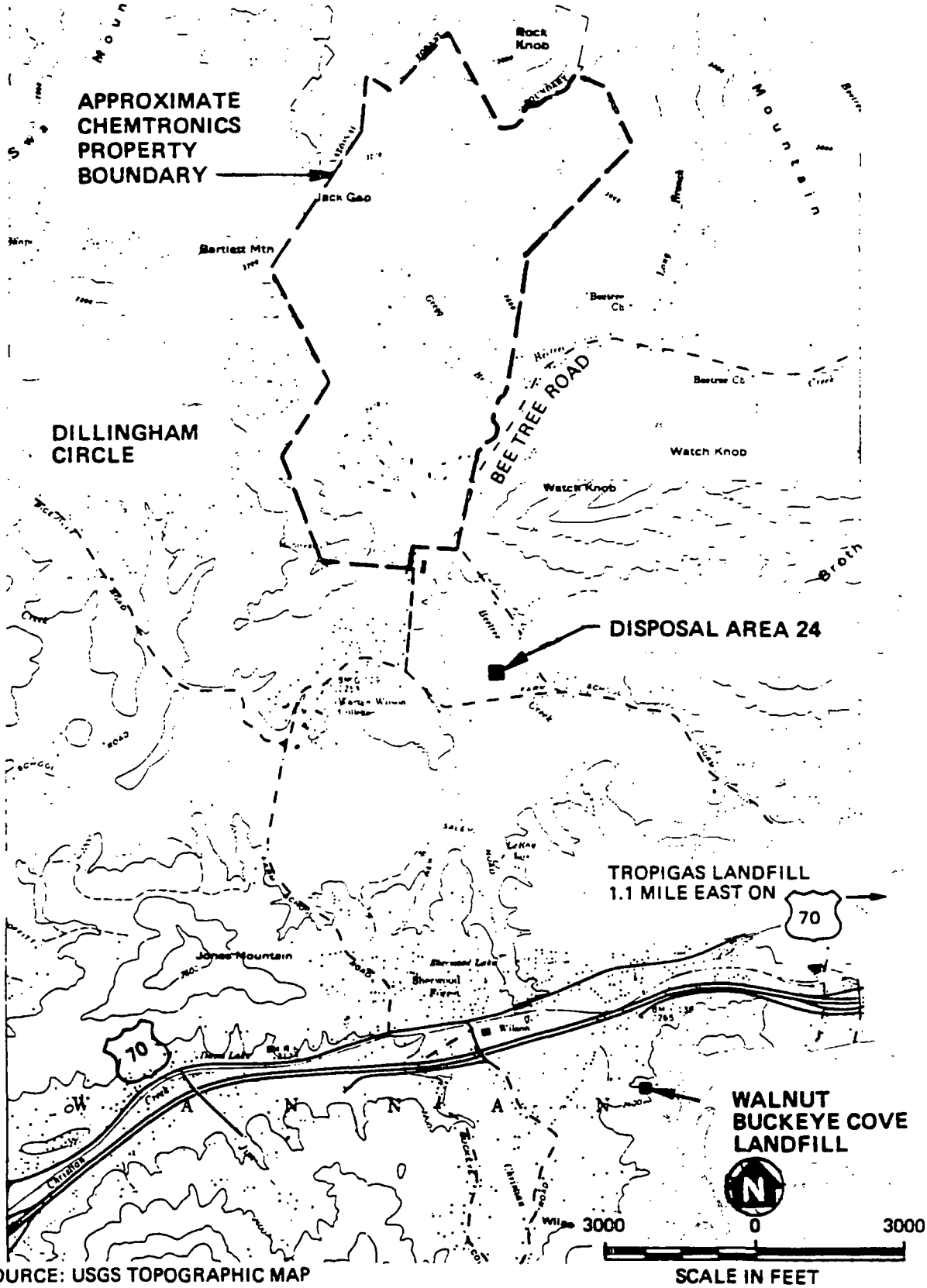
In addition to investigating the on-site disposal areas for contamination, three off-site areas were also investigated (Figure 4). One disposal area, designated DA-24, lies on a tract of land that was once a part of the original acreage. This tract of land was sold in the 1970's and is now owned by another industry. The other two off-site areas investigated as part of the RI were local municipal landfills that were operated by the Buncombe County back in the 1970's. These two landfills, referred to as the Buckeye/Walnut Cove (B/WC) Landfill and the Tropigas Landfill, reportedly received waste from the Site as well as from other industrial facilities in the vicinity. Eight additional areas on-site were sampled since sufficient information was collected to indicate these areas as possible areas of contamination.

Disposal practices prior to 1971 are not well defined. From 1952 to 1971, solid waste materials and possibly solvents were incinerated in pits dug in the burning ground. Chemical wastes were disposed of in trenches beside this burning ground. Waste materials generated in the production of the incapacitating, surety agent, 3-quinuclidinyl benzilate (BZ) and the tear gas agent, o-chlorobenzylidene malononitrile (CS), were placed in 55 gallon, rim-lid drums, reportedly covered with decontamination "kill" solution and then buried on-site in trench-type landfills. These kill solutions neutralized the BZ and CS compounds. These drums were disposed of in disposal areas DA-6, DA-7/8, DA-9, and DA-10/11.



LOCATIONS OF KNOWN/SUSPECTED DISPOSAL AREAS
CHEMTRONICS, INC.
SWANNANOA, NORTH CAROLINA

FIGURE NO.
3



SOURCE: USGS TOPOGRAPHIC MAP
GRAGY PINNACLE, N.C., 1978
OTEEN, N.C., 1962

FIGURE NO. 4 LOCATIONS OF OFF-SITE AREAS SAMPLED

From 1971-1975, most of the liquid wastes generated on-site went to the Buncombe County Sewer System following some form of neutralization and equalization. Small volumes were disposed of in on-site pits/trenches. Solid wastes, rocket motors, explosive wastes, etc., were all burned in the burning ground. From 1975-1979, Chemtronics, Inc. constructed pits/trenches, as needed, for the disposal of spent acid and various organic wastes. These pits/trenches were constructed in the area that was once the burning ground, now referred to as the Acid Pit Area.

In 1980, the State ordered Chemtronics to discontinue all discharges to these disposal pits/trenches. The pits have subsequently been back-filled. Consequently, in 1979, Chemtronics installed a 500,000 gallon lined lagoon for biotreatment of wastewaters on top of an abandoned leach field for the main production/processing building (Building 113). After the lagoon was filled, the lagoon lost its contents due to the incompatibility of the liner with the brominated waste initially introduced into the lagoon. Reconstruction of the biolagoon, with a different liner, was completed in August 1980 and was in use up to 1984 at which time the biolagoon was deactivated. This entire area, including the abandoned leach field and the biolagoon, has been designated as DA-23.

The Site has been the subject of two previous Region IV, USEPA planned investigations, an investigation by the U.S. Army and an emergency response action by Region IV, USEPA. In June 1980, groundwater, surface water, sediment, and waste samples were collected for analysis. In April 1984, private water supply wells in the vicinity of the Site were sampled. In September 1984, the U.S. Army Toxic and Hazardous Materials Agency (USATHAMA) collected samples from two drums exposed at the surface in DA-10/11. These two drums were suspected of containing wastes from the production of the chemical warfare agent BZ. Although no BZ was found, in January 1985, an immediate removal of the same two exposed drums was initiated by EPA due to heightened public awareness/involvement with the Site. The drums were sampled and then transported to GSX, Pinewood facility, South Carolina.

2.0 ENFORCEMENT ANALYSIS

The Chemtronics Site was included on the first NPL in December 1982, and EPA assumed lead responsibility for the Site at that time. The Site has been operated as an industrial facility since 1952. An EPA contractor completed a Potentially Responsible Party (PRP) search in November 1983. Notice Letters were sent to the six identified PRPs. Three of the PRPs were found to be viable and EPA initiated negotiations with these three PRPs. Negotiations began in June 1984 and were concluded in October 1985 with two of the PRPs, Chemtronics, Inc. and Northrop Corporation, signing an Administrative Order of Consent to perform an RI/FS. The third PRP, Hoechst Celanese Corporation declined to participate in the RI/FS process.

3.0 CURRENT SITE STATUS

The Site is an active facility with the majority of manufacturing activities occurring in the Front Valley.

3.1 HYDROGEOLOGIC SETTING

The Chemtronics Site lies within the Blue Ridge geologic province. The Blue Ridge province is predominantly composed of ancient igneous and metamorphic rocks. These rocks have been complexly folded and faulted in a northeasterly direction, parallel to the regional trend of the mountains. These structural and metamorphic imprints are reflected in the topographic and drainage patterns within the region.

There are no known geologic faults or shear zones within two miles of the Site, and the Brevard Fault Zone lies about seven miles south of the Site. The Site property is underlain almost entirely by biotite gneiss.

In the Front Valley, the bedrock topography is reflected in the surface topography and has a shape similar to an elongated bowl or trough. The center of the bedrock trough coincides roughly with the center of the topographic valley and this is where the overburden is thickest (65 to 90 feet). Bedrock elevations increase with the surface topography and the overburden decreases as slopes steepen. The thickening of the overburden in the valley is most likely due to natural weathering processes.

In Gregg Valley, the bedrock topography is more complex and is not always reflected by the surface topography. For example, a steep bedrock slope was identified in the northeastern corner of the acid pit area but is not reflected by the surface topography. There is also a bedrock trough near the middle of the acid pit area which has no surface expression. Reshaping of the topography by man in this area is most likely responsible for masking these bedrock features. Elsewhere in Gregg Valley, the bedrock topography is reflected by the surface topography. As in the Front Valley, overburden in Gregg Valley thickens in its central and lower portions.

Groundwater recharge in this area is derived primarily from local precipitation. Generally, the depth of the water table depends on the topography and rock weathering. The water table varies from the ground surface in the valleys (streams) to more than 40 feet below the ground surface in sharply rising slopes.

The aquifer underlying the Site can be subdivided into a surficial zone and a bedrock zone. The surficial zone refers to the overlying saprolite and the bedrock zone includes the weathered and fractured region of the bedrock. These two zones are considered one aquifer as it was demonstrated in the RI that these zones are interconnected.

The groundwater underlying the Site has been classified as Class IIB, using USEPA Groundwater Classifications Guidelines of December 1986, since there is potential future use for this aquifer as a source of drinking water. Therefore, the groundwater needs to be remediated to levels protective of public health and where appropriate, to levels protective of the environment.

3.2 SITE CONTAMINATION

The field work associated with the RI for the Chemtronics Site centered on numerous known disposal areas on-site, eight other possible areas of contamination on-site and three off-site areas that reportedly received waste material from the Site. Soil, groundwater, surface water and sediment samples were collected in and around these areas and initially analyzed for the compounds on the Hazardous Substance List (HSL) as well as other selected compounds. After reviewing the analytical data from the HSL scans, indicator parameters were then selected to be run on subsequent samples and sampling episodes.

The indicator compounds selected were:

* Volatile Organic Priority Pollutants
  - Benzene
  - 1,2-Dichloroethane
  - Methylene chloride
  - Tetrachloroethene
  - Toluene
  - Trichloroethene/Trichloroethylene
  - Trihalomethanes
    - Bromoform
    - Chloroform

* Explosives
  - Picric Acid
  - RDX
  - TNT

* Chemical Agents
  - BZ
  - CS
  - and their degradative compounds

* Metals
  - Chromium
  - Nickel

The Agency approved the RI report in May 1987 which documented the presence as well as the level and extent of contaminants on-site. Contamination was found in the following media: surface and subsurface soils, surface water and sediment, and groundwater. In October 1987, the PRPs resampled 12 monitor wells in an attempt to verify and confirm the levels and extent of

contamination in the groundwater. The analytical data indicates that, to date, no contamination has migrated pass the Site's boundaries although plumes of contamination in the groundwater have been found emanating from several of the disposal areas.

Samples collected from the three off-site areas indicated the absence of hazardous substances in these areas. The sampling included surface and subsurface soil samples. Surface water and sediment and groundwater samples were collected only at the Tropigas Landfill. These transport media were not sampled at the other two off-site areas because they were not encountered.

3.3 AIR CONTAMINATION

The most common source of air contamination at hazardous waste sites are the volatilization of toxic organic chemicals and the spread of airborne contaminated dust particles. During the recent RI, Site personnel used an HNu photoionization analyzer and cyanide sensitive colorimetric indicator tubes to monitor the air while performing the designated RI tasks. An action level of 5 ppm was established in the Chemtronics Project Operations Plan (POP) and Health & Safety Plan. This level was only attained during the excavation of the test pits in the disposal areas. The 5 ppm action level was surpassed on several occasions when the HNu was placed in the test pit or near exposed waste material unearthed during the excavation of the test pits. No cyanide was detected by the colorimetric tube.

3.4 SOIL CONTAMINATION

The study of the soil, surface and subsurface, occurred in two parts. The first task encompassed the excavation of test pits in the majority of the known disposal areas and the second task centered on the collection of surface and subsurface soil samples from borings drilled in and around the disposal areas. These activities not only allowed the determination of the depth of the disposed wastes but also provided data to determine the extent, vertically and horizontally, that the contaminants have migrated in the soil. The three disposal areas where test pits were not excavated were in DA-9, DA-23 and the Acid Pit Area.

3.4.1 SOIL CONTAMINATION IN THE FRONT VALLEY

The Front Valley contains two disposal areas, DA-10/11 and DA-23, where surface and subsurface soil samples were collected and analyzed. Below briefly describes the contaminants present in each disposal area.

DA 10/11

The analytes detected in and around DA-10/11 include volatile organic priority pollutants, extractable organic priority pollutants, the pesticide 4,4,4'-DDD, RDX, CS, total organic halide, and total cyanide. The sampling location and method of sampling (i.e., soil boring vs. test pit) are shown in Figure 5. The analytes found are listed in Table 1. Along with the maximum concentration found, Table 1 also identifies where the contaminants were found as well as the frequency of their occurrence among both on-site and off-site samples analyzed.

DA-23

The analytes detected in and around DA-23 included volatile organic priority pollutants, explosives, CS, BZ, and their degradative products, total organic halides, and total cyanide. The sampling locations are shown in Figure 6. The analytes found are listed in Table 2 along with the maximum concentrations. Table 2 also identifies where the contaminants were found as well as the frequency of their occurrence among both on-site and off-site samples.

3.4.2 SOIL CONTAMINATION IN GREGG VALLEY

Gregg Valley contains several disposal areas: DA-6, DA-7/8, DA-9, and the Acid Pit Area. Soil samples were collected from each of these areas for analysis. Below briefly describes the contaminants present in and around each disposal area.

DA-6

The analytes found associated with DA-6 are methylene chloride, lead, and the BZ degradation product benzylic acid/benzophenone. Figure 7 locates where the samples were collected and Table 3 provides the maximum detected concentrations, the locations where these concentrations were found and the frequency of occurrence among both on-site and off-site samples.

DA-7/8

Samples were collected from and around DA-7/8 were analyzed for volatile and extractable priority pollutants, explosives, metals, total organic halide, pH, total cyanide, and pesticides/PCBs. Selected samples were analyzed for CS, BZ and their degradative products. Figure 8 show the location of the soil samples collected in and around DA-7/8. The analytes detected are listed in Table 4. Boring locations at which maximum concentration were observed are also included in Table 4 along with the frequency of occurrence from both the on-site and off-site samples.

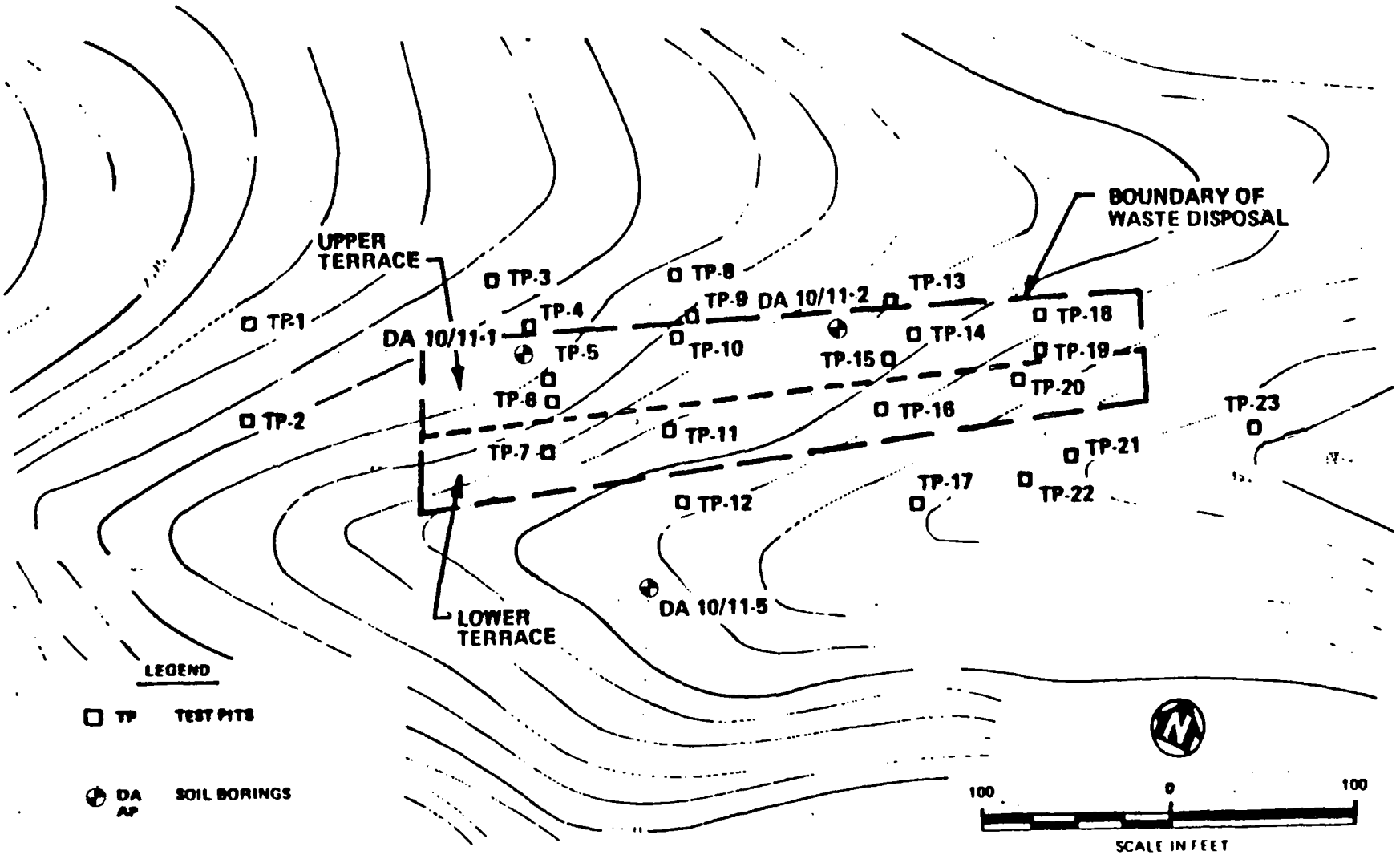


FIGURE NO. 5 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND DISPOSAL AREA 10/11

TABLE NO. 1 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 10/11

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed(1) in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants					
Toluene	21,000.0	DA 10/11 TP-11	CSS	17	N/A
Methylene chloride	0.110	DA 10/11	1 (5-9)	92	N/A
1,2-Dichloroethane	0.032	DA 10/11	4 (20-22)	25	N/A
Extractable Organic Priority Pollutants					
Dibutyl phthalate	58.0	DA 10/11 TP-11	CSS	8	N/A
Benzo(a)anthracene	<10.0	DA 10/11 TP-14	CSS	8	N/A
Pesticides/PCB's					
4,4,4-DDD	0.021	DA 10/11 TP-14	CSS	8	N/A
Explosives					
RDX	290.0	DA 10/11 TP-14	CSS	25	0
CS, BZ & Degradation Products					
CS	1.50	DA 10/11 TP-7	CSS	8	0
Total Organic Halides	1.0	DA 10/11 TP-7	CSS	8	0
Total Cyanide	3.98	DA 10/11 TP-14	CSS	92	22

DA = Disposal Area
TP = Test Pit
N/A = Not Analyzed
CSS = Composite Soil Sample

	On-site	Off-site
(1) Number of locations sampled	25	4
Number of samples collected	41	32
Number of samples analyzed	12	18

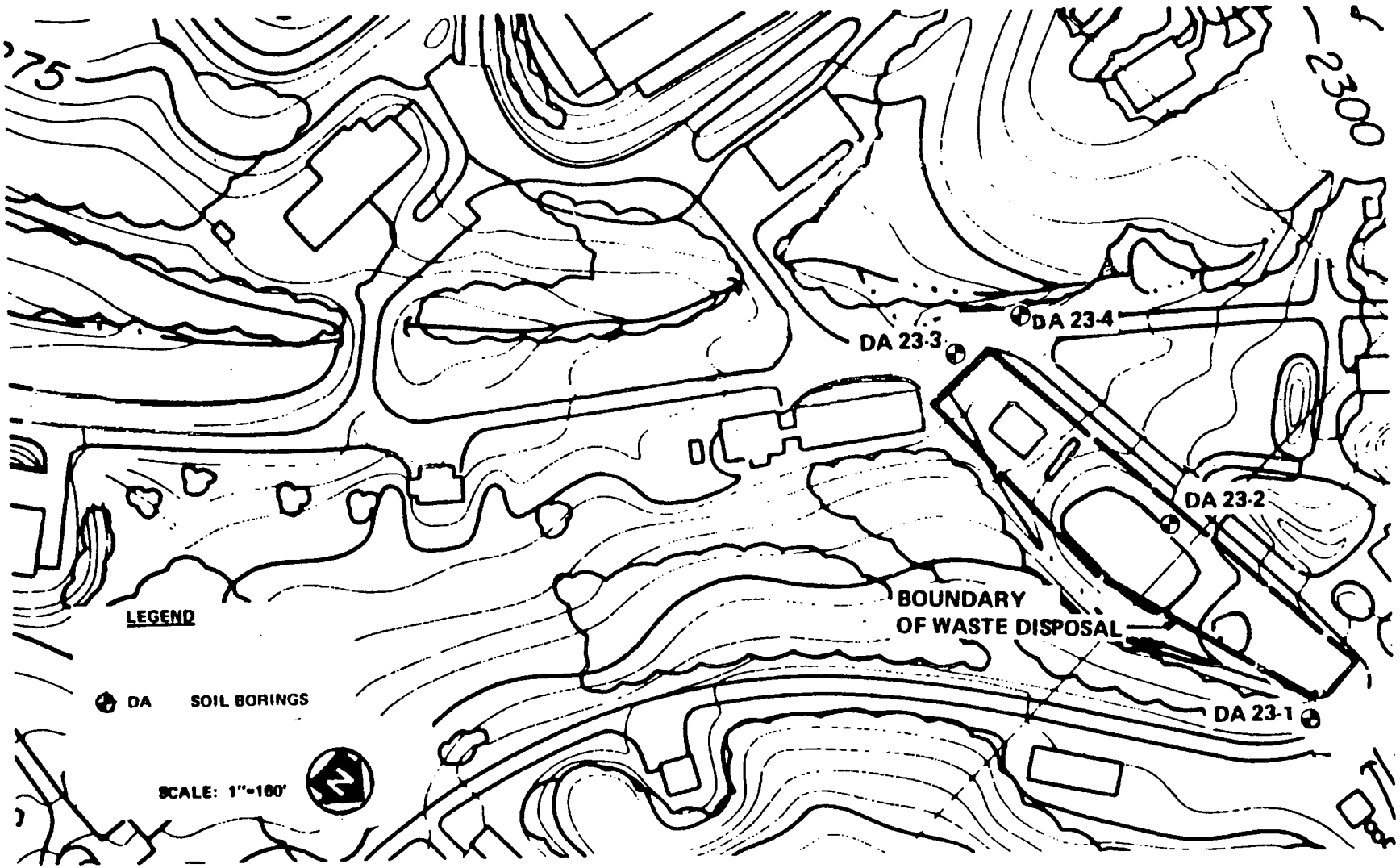


FIGURE NO. 6 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND DISPOSAL AREA 23

TABLE NO. 2 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 23

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants(1)					
Toluene	0.014	DA 23-2	#2 (10-12)	25	0
Methylene chloride	0.140	DA 23-4	#2 (45-85)	100	100
1,2-Dichloroethane	2.70	DA 23-2	#4 (25-27)	100	29
Chloroform	0.011	DA 23-2	#2 (10-12)	25	0
Ethyl Benzene, tetrachloroethene	<0.01	DA 23-2	#2 (10-12)	25	0
Explosives(2)					
TNT	0.6	DA 23-2	#1 (5-9)	50	N/A
	0.5	DA 23-2	#2 (10-12)		
CS, BZ & Degradation Products Total Organic Halides(2)					
Benzylic Acid/ Benzophenone	9.0	DA 23-2	#1 (5-9)		
	3.6	DA 23-2	#2 (10-12)	75	6
	1.9	DA 23-2	#2 (10-12)		
Total Organic Halides(2)	11.0	DA 23-2	#3 (15-19) (20-22)	25	N/A
Total Cyanide(2)	0.18	DA 23-4	#1 (0-2)	25	24
	0.58	DA 23-4	#2 (4.5-8.5)		

DA = Disposal Area
N/A = Not Analyzed

		On-site	Off-site
(1)	Number of locations sampled	4	3
	Number of samples collected	4	30
	Number of samples analyzed	4	17

		On-site	Off-site
(2)	Number of locations sampled	1	3
	Number of samples collected	4	30
	Number of samples analyzed	4	17

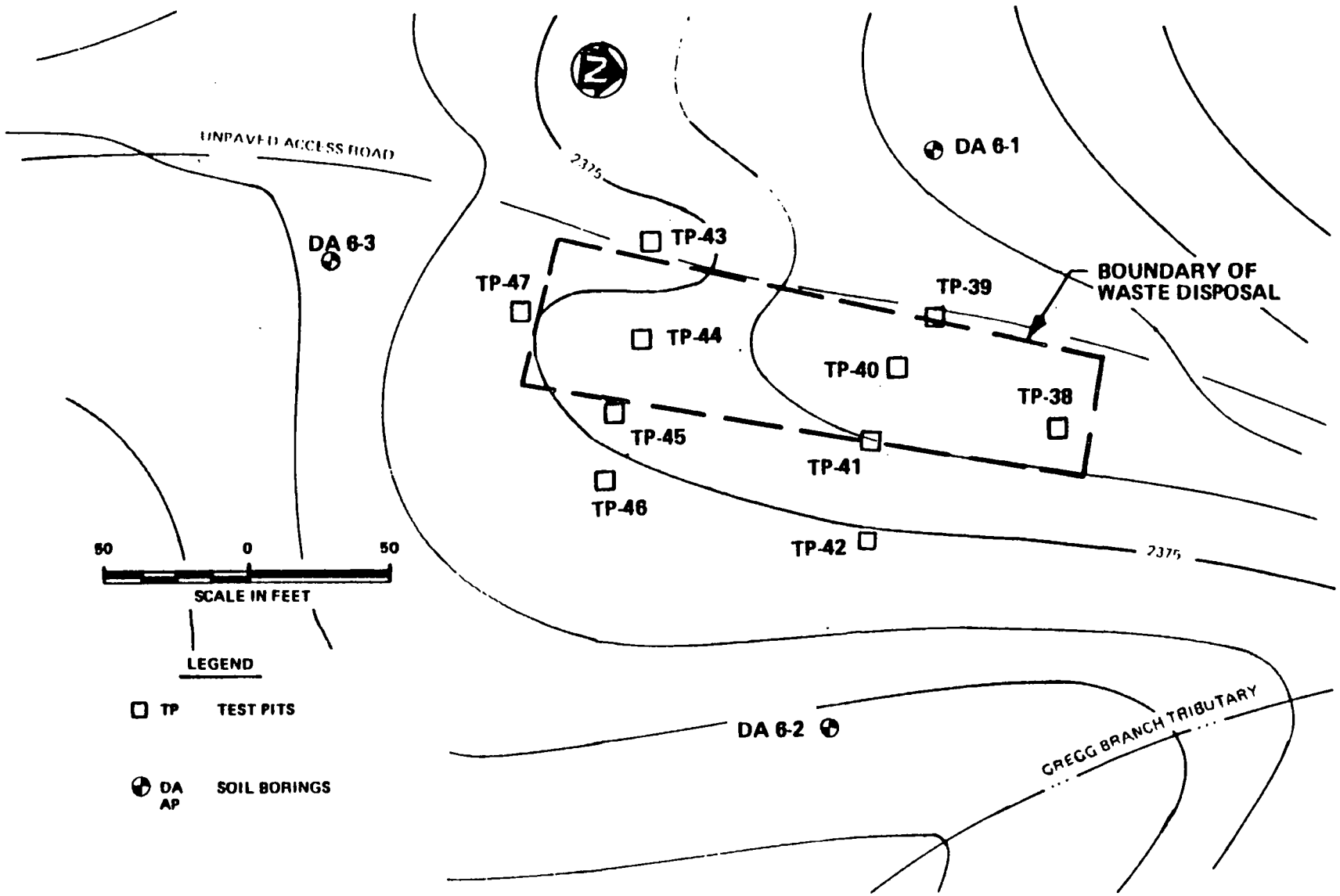


FIGURE NO. 7 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND DISPOSAL AREA 6

TABLE NO. 3 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 6

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed(1) in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants					
Methylene chloride	0.013	6 TP 38, 40 and 44	CSS	100	N/A
Metals*					
Lead+	35.0 (30)	6 TP 43 and 49	CSS	100	N/A
CS, BZ & Degradation Products					
Benzylic Acid	<0.39	6 TP 38, 40 and 44	CSS	50	0
Benzophenone	<0.39	6 TP 38, 40 and 44	CSS	50	0

TP = Test Pit
N/A = Not Analyzed
CSS = Composite Soil Sample
* Metals listed are those detected at levels which exceed background concentrations
+ Background Concentration in Parentheses

		On-site	Off-site
(1)	Number of locations sampled	10	3
	Number of samples collected	10	21
	Number of samples analyzed	2	9

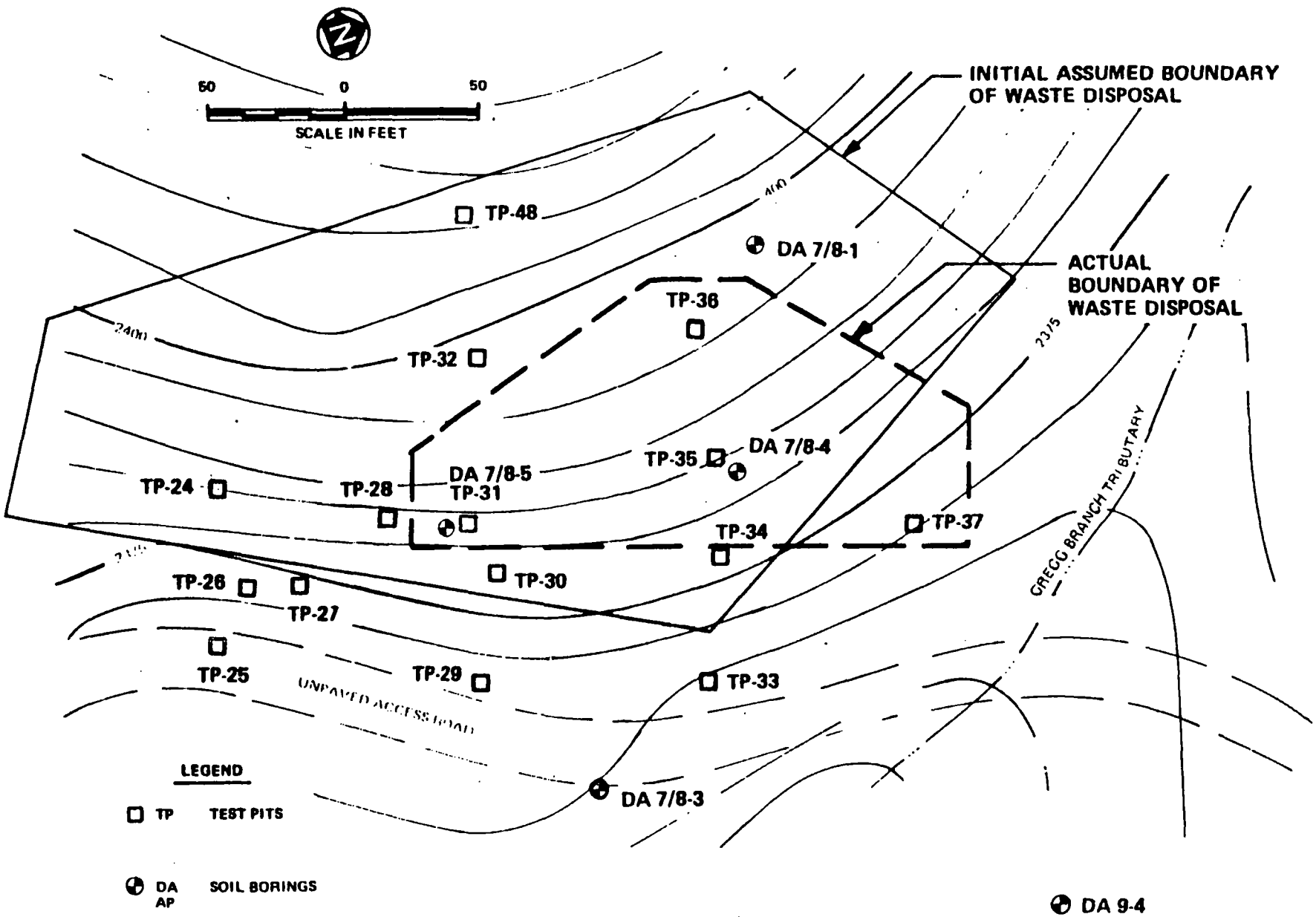


FIGURE NO. 8 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND DISPOSAL AREA 7/8

TABLE NO. 4 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 7/8

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants(1)					
Toluene	0.030	DA 7/8 TP 35 and 37	CSS	10	N/A
Methylene chloride	0.170	DA 7/8 4	#2 (25-27)	100	N/A
1,2-Dichloroethane	0.150	DA 7/8 TP 35 and 37	CSS	40	N/A
trans-1,2-dichloroethene	0.440	DA 7/8 TP 35 and 37	CSS	20	N/A
Ethyl benzene	0.045	DA 7/8 TP 35 and 37	CSS	10	N/A
Vinyl chloride	0.012	DA 7/8 TP 35 and 37	CSS	10	N/A
Extractable Organic Priority Pollutants(2)					
Bis(2-ethylhexyl) phthalate	1.0	DA 7/8 TP 35 and 37	CSS	10	N/A
Pesticides/PCB's(2)					
Aroclor 1242	0.1	DA 7/8 TP 31 and 36	CSS	10	N/A
Explosives(2)					
RDX	9.6	DA 7/8 TP 35 and 37	CSS	10	0
CS, BZ & Degradation Products(2)					
CS	3,100.0	DA 7/8 TP 35 and 37	CSS	10	0
Orthochloro benzaldehyde	7.6	DA 7/8 TP 35 and 37	CSS	10	0
Malononitile	<0.51	DA 7/8 TP 35 and 37	CSS	10	0

TABLE NO. 4 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 7/8
(continued)

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Total Organic Halides(2)	270.0	DA 7/8 TP 35 and 37	CSS	10	0
Total Cyanide(2)	0.8	DA 7/8 TP 35 and 37	CSS	10	0
Metals*(2)					
Copper+	160.0 (110)	DA 7/8 TP 31 and 36	CSS	10	22
Chromium+	97.0 (57)	DA 7/8 TP 31 and 36	CSS	10	78
Lead+	32.0 (24)	DA 7/8 TP 35 and 37	CSS	10	N/A

DA = Disposal Area
TP = Test Pit
N/A = Not Analyzed
CSS = Composite Soil Sample
* Metals listed are those detected at levels which exceed background concentrations
+ Background Concentration in Parentheses

		On-site	Off-site
(1)	Number of locations sampled	9	13
	Number of samples collected	74	160
	Number of samples analyzed	62	79

		On-site	Off-site
(2)	Number of locations sampled	17	3
	Number of samples collected	22	20
	Number of samples analyzed	10	9

DA-9

The analytes found associated with DA-9 are listed in Table 5 along with the boring location at which the maximum concentration was observed and the frequency of occurrence from both on-site and off-site samples. Figure 9 situates where the samples were located in and around the disposal area.

ACID PIT AREA

The analytes detected in and around the Acid Pit Area include volatile organic priority pollutants, pesticides/PCBs, explosives, total cyanide, total organic halide, and metals. The analytical results are presented in Table 6. The analytes are listed with the boring location at which the maximum concentration was observed and the frequency of occurrence both inside and outside the presumed boundaries of the disposal area. Figure 10 provides the location of the soil borings in and around the acid pit area.

3.5 GROUNDWATER CONTAMINATION

All monitor wells were sampled in June 1986 as part of the RI. Twelve (12) of these wells were resampled in October 1987 in an attempt to verify concentrations.

3.5.1 GROUNDWATER CONTAMINATION IN THE FRONT VALLEY

Groundwater contamination in the surficial zone of the Front Valley exists primarily in the area downgradient of DA-23, the old leach field for Building 113 and the biolagoon. Other portions of the aquifer in this valley also appear to have been adversely affected but the source of contamination in these areas cannot be clearly defined. In each of these locations, volatile organic priority pollutants are present.

The following discussion is based on the samples analyzed as part of the RI. Figures 11 and 12 locate the monitor wells associated with DA-10/11 and identifies the contaminants and their concentrations found during the RI. The results of the October 1987 sampling episode are also included on these figures, where appropriate. The analytical data is also tabulated; Table 7 is for DA-10/11 and Table 8 is for DA-23.

As can be seen from Figures 10 and 11, there is no groundwater contamination immediately downgradient of DA-10/11. The contaminants identified in surficial monitor well #5 (SW-5) and bedrock monitor well #5 (BW-5) are due to disposal area DA-23 as explained below.

The highest concentrations of volatile organics in the groundwater were detected in monitor wells downgradient of DA-23 as shown in Figure 13. Concentrations of 1,2-dichloroethane range from 0.15 to 7.4 mg/L. In this area, higher concentrations of volatiles were also detected in the deeper portion of the aquifer, indicating downward as well as lateral migration of the contaminants. 1,2-Dichloroethane was also detected in stream sample RW-7

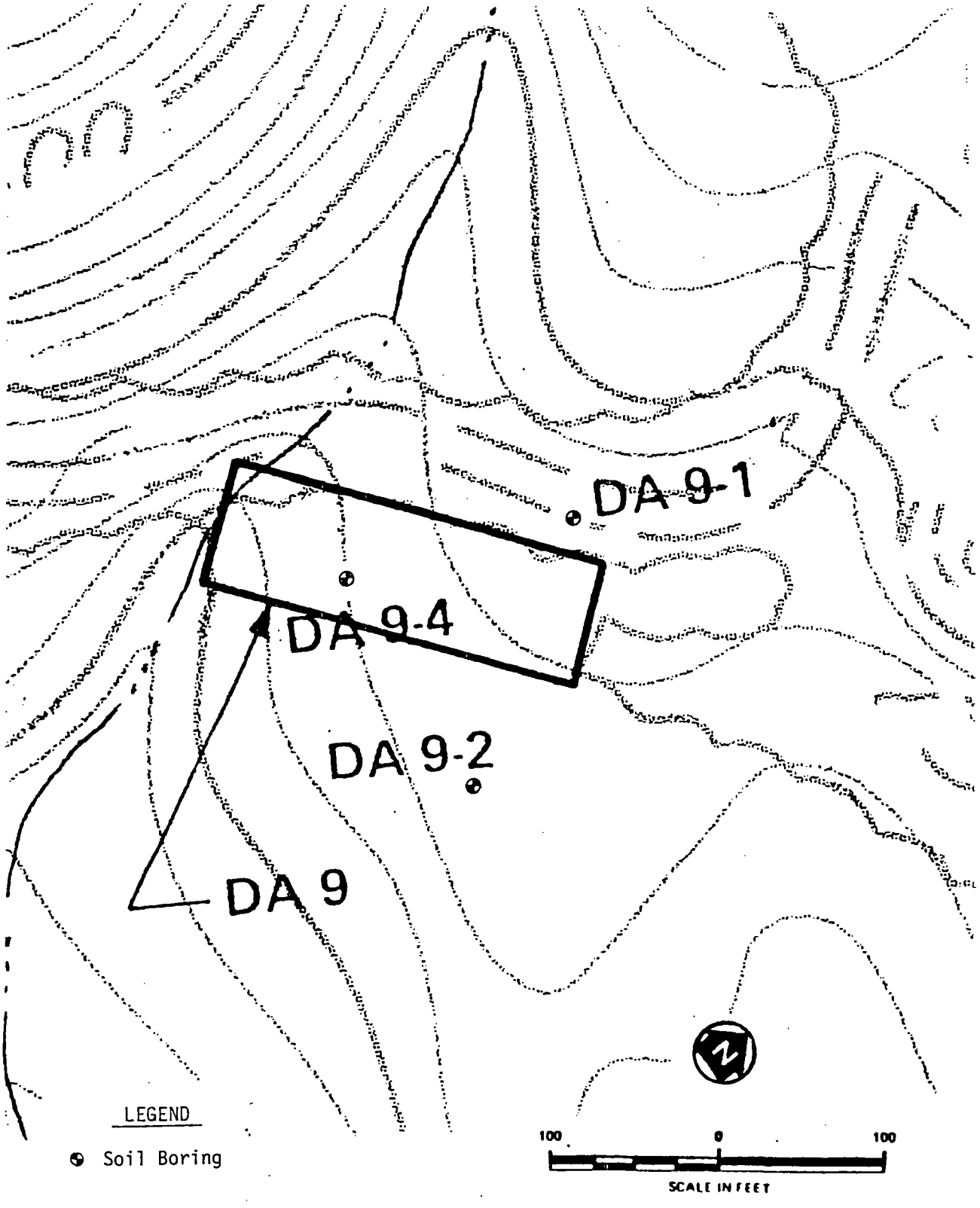


FIGURE NO. 9 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND DISPOSAL AREA 9

TABLE NO. 5 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH DISPOSAL AREA 9

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants					
Trichloroethylene	3.2	DA 9-4	#2 (4-10)	88	5
1,2-dichloroethane	1.8	DA 9-4	#3 (14-16)	63	25
Methylene Chloride	0.40	DA 9-2	#5 (24-36)	88	95
Tetrachloroethene	0.021	DA 9-6	SS	25	0
Extractable Organic Priority Pollutants					
Bis (2-ethylhexyl) phthalate	15.0	DA 9-4	#2 (4-10)	38	0
Pesticides/PCB's					
Aroclor	5.0	DA 9-4	#1 (0-4)	13	0
Explosives					
RDX	220	DA 9-6	SS	50	0
TNT	280	DA 9-6	SS	50	0
CS, BZ & Degradation Products					
CS	370	DA 9-6	SS	50	0
Orthochloro-benzaldehyde	22	DA 9-4	#2 (4-10)	63	0
Total Organic Halide	260	DA 9-4	#1 (0-4)	50	N/A
Total Cyanide	8.71	DA 9-6	SS	63	25

DA = Disposal Area
SS = Surface Soil Sample
N/A = Not Analyzed

	On-site	Off-site
(1) Number of locations sampled	3	3
Number of samples collected	10	35
Number of samples analyzed	8	20

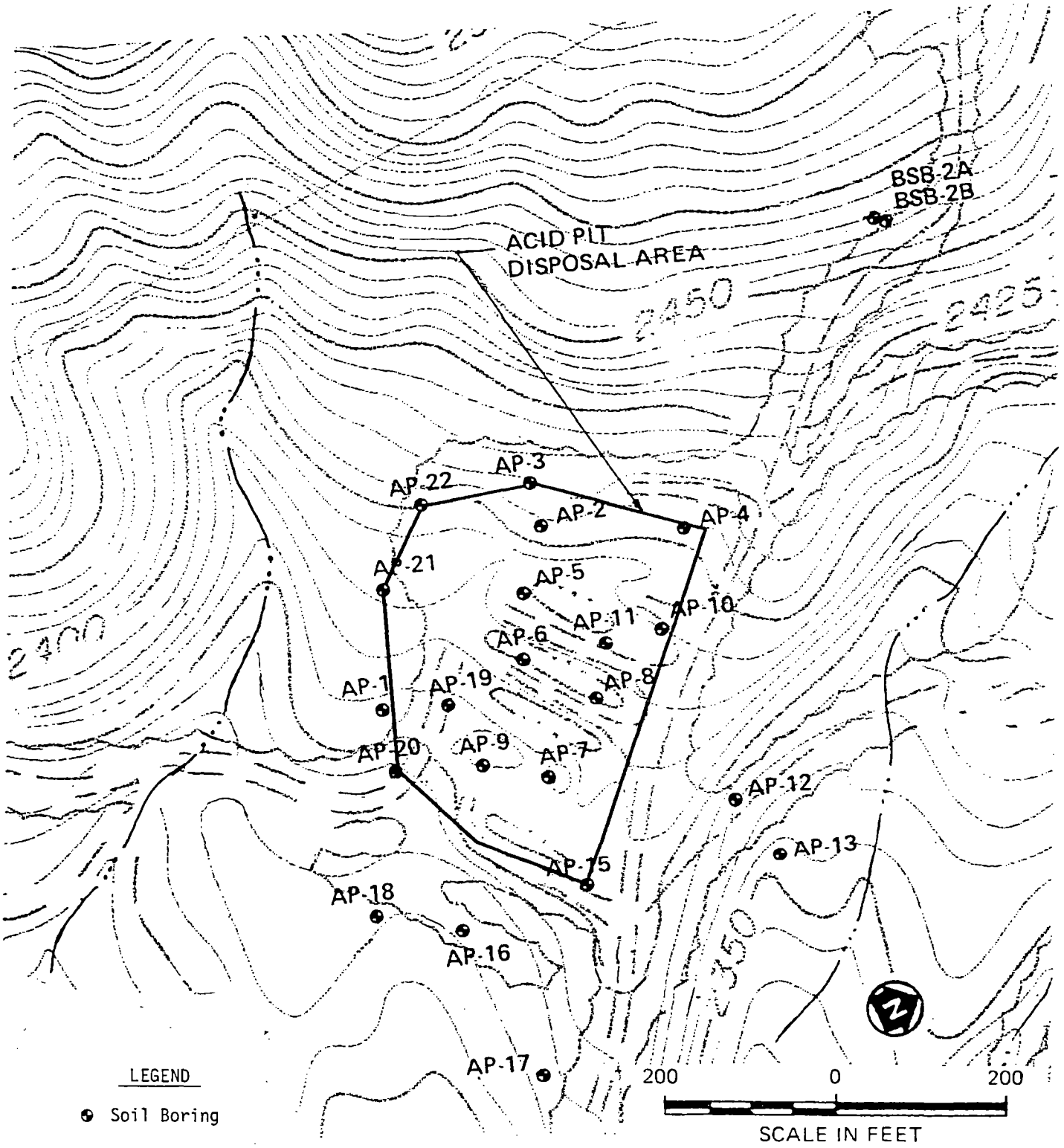


FIGURE NO. 10 LOCATIONS OF SURFACE/SUBSURFACE SOIL SAMPLES IN AND AROUND THE ACID PIT AREA

TABLE NO. 6 CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH THE ACID PIT DISPOSAL AREA

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Volatile Organic Priority Pollutants					
1,2 Dichloroethane	46.0	AP-7	#3 (9-13)	61	33
Toluene	15.0	AP-7	#6 (24-26)	10	1
Trichloroethene	9.80	AP-7	#7 (29-31)	19	4
Ethyl benzene	1.80	AP-7	#3 (9-13)	10	3
Chloroform	1.20	AP-8	#6 (25-27)	10	5
Bromoform	0.51	AP-8	#2 (5-9)	10	1
Tetrachloroethene	0.31	AP-7	#3 (9-13)	16	0
Methylene Chloride	0.18	AP-4	#6 (27-29)	6	90
1,1,2-trichloroethane	0.13	AP-7	#3 (9-13)	85	0
Benzene	0.05	AP-7	#3 (9-13)	3	1
1,1,1-trichloroethane	0.032	AP-18	#2 (4-16)	3	1
Trans-1,2-dichloroethene	0.028	AP-19	#8 (35-37)	0	0
Bromomethane	0.016	AP-7	#9 (39-41)	2	0
Chlorobenzene	0.010	AP-7	#4 (14-16)	2	0
Pesticides/PCB's					
- Endosulfan	160.0	AP-9	#2 (5-9)	2	N/A
Heptachlor	130.0	AP-9	#2 (5-9)	2	N/A
- BHC	57.0	AP-5	#3 (28-29)	6	N/A
- BHC	13.0	AP-9	#1 (0-2)	2	N/A
- BHC (Lindane)	7.9	AP-11	#4 (14-18)	2	N/A
4,4' - DDT	6.6	AP-4	#3 (10-14)	2	N/A
Dieldrin	0.13	AP-5	#1 (0-2)	2	N/A
- BHC	0.072	AP-3	#1 (0-2)	2	N/A

TABLE NO. 6 (continued) CONTAMINANTS FOUND IN SOIL SAMPLES ASSOCIATED WITH THE ACID PIT DISPOSAL AREA

Compound Detected	Maxium Detected Concentration (mg/Kg)	Location of Maxium Detected Concentration	Boring Interval Sample Depth (ft)	% of Samples Analyzed in Which Compound Was Detected	
				On-site	Off-site
Explosives					
Picric Acid	22.0	AP-8	#6 (25-27)	6	N/A
2,4,6 TNT	0.8	AP-3	#1 (0-2)	3	N/A
Total Organic Halides	8,300.0	AP-4	#2 (5-9)	32	N/A
Total Cyanide	2.20	AP-7	#6 (24-26)	79	5
Metals*					
Arsenic	100.0 (56)	AP-4	#4 (15-17)	8	0
Chromium	72.0 (57)	AP-3	#2 (5-9)	6	N/A
Lead	38.0 (30)	AP-3	#5 (20-21)	3	N/A
Zinc	120.0 (100)	AP-3	#5 (20-21)	3	N/A
Thallium	110.0 (†)	AP-7	#2 (4-8)	2	N/A

AP = Acid Pit Area
N/A = Not Analyzed
CSS = Composite Soil Sample
* Metals listed are those detected at levels which exceed background concentrations
+ Backgound Concentration in Parentheses
† Below detection limit

(Figure 13) indicating that this compound is discharging with groundwater in this vicinity into the northern tributary of the unnamed branch.

Lower concentrations of two other volatile organic compounds were also detected in this area, specifically, 0.11 mg/L of chloroform in monitor well (MW) SW-4 and 0.013 mg/L of trans-1,2-dichloroethene in MW M85L-4.

Benzylic acid, a degradative compound of BZ, was detected in MW SW-4 at 470 mg/L (Figure 14). This implies that BZ derivatives have migrated downgradient with the groundwater from the Building 113 leach field. RDX and picric acid were also detected in the groundwater downgradient of DA-23. A concentration of 0.046 mg/L of RDX in MW SW-6, which is located upgradient to DA-23, may indicate that this well is located near the abandoned tile drainage line leading from Building 113 to the leach field or within the upper boundary of the leach field itself. A low concentration of bis (2-ethylhexyl) phthalate was also detected in MW SW-6 (Figure 14).

Groundwater in the vicinity of MW SW-5, on the southwestern side of the unnamed branch, has also been adversely affected (Figures 13 and 14). Contaminants in this area include trichloroethene, RDX and trans 1,2-dichloroethane. According to groundwater flow patterns in the area, it is unlikely that these contaminants are coming from DA-23 or DA-10/11. It is feasible that these contaminants have migrated from the leach field of Building 107 (Figure 3) or are a result of other past activities or incidents within the upgradient area.

Lastly, 0.17 mg/L of trichloroethene was the only contaminant detected in the furthest downgradient MW M85L-11 (Figure 13). It is unlikely that this contaminant originated from DA-10/11 since this contaminant was not found in either monitor wells, SW-2 or SW-3 (Figure 11), both of which are immediately downgradient of DA-10/11. This is further supported by the fact that no trichloroethene contamination was detected in any of the soil borings samples (Table 1) collected from this area. The absence of trichloroethene in groundwater downgradient of DA-23 indicates that the source of trichloroethene in MW M85L-11 is not DA-23 (Figure 13) and is therefore, most likely due to some other past activity or incident.

In summary, the extent of the groundwater contamination in the surficial zone in the Front Valley is greatest downgradient of DA-23. The majority of contaminants from this area are migrating with the groundwater and discharging locally into a northern tributary of the unnamed branch. Groundwater contamination in other areas within the valley are most likely due to the presence of other old leach fields (such as that of Building 107) or other past activities. Finally, given that no contaminants were detected in groundwater samples collected from wells downgradient of DA-10/11 during the RI and only methylene chloride at 0.007 mg/L (Figure 11) in the October 1987 sampling episode, it appears that contaminants have not moved from this area.

The bedrock zone of the aquifer in the Front Valley contains three contaminants: 1,2-dichloroethane, bis (2-ethylhexyl) phthalate, and chloroform. The extent of this contamination is in the vicinity of two wells, BW-4 and BW-5 (Figure 13 and 14). The contaminant detected in MW BW-5 was 1,2 dichloroethane at a concentration of 0.15 mg/L. The source of this contaminant

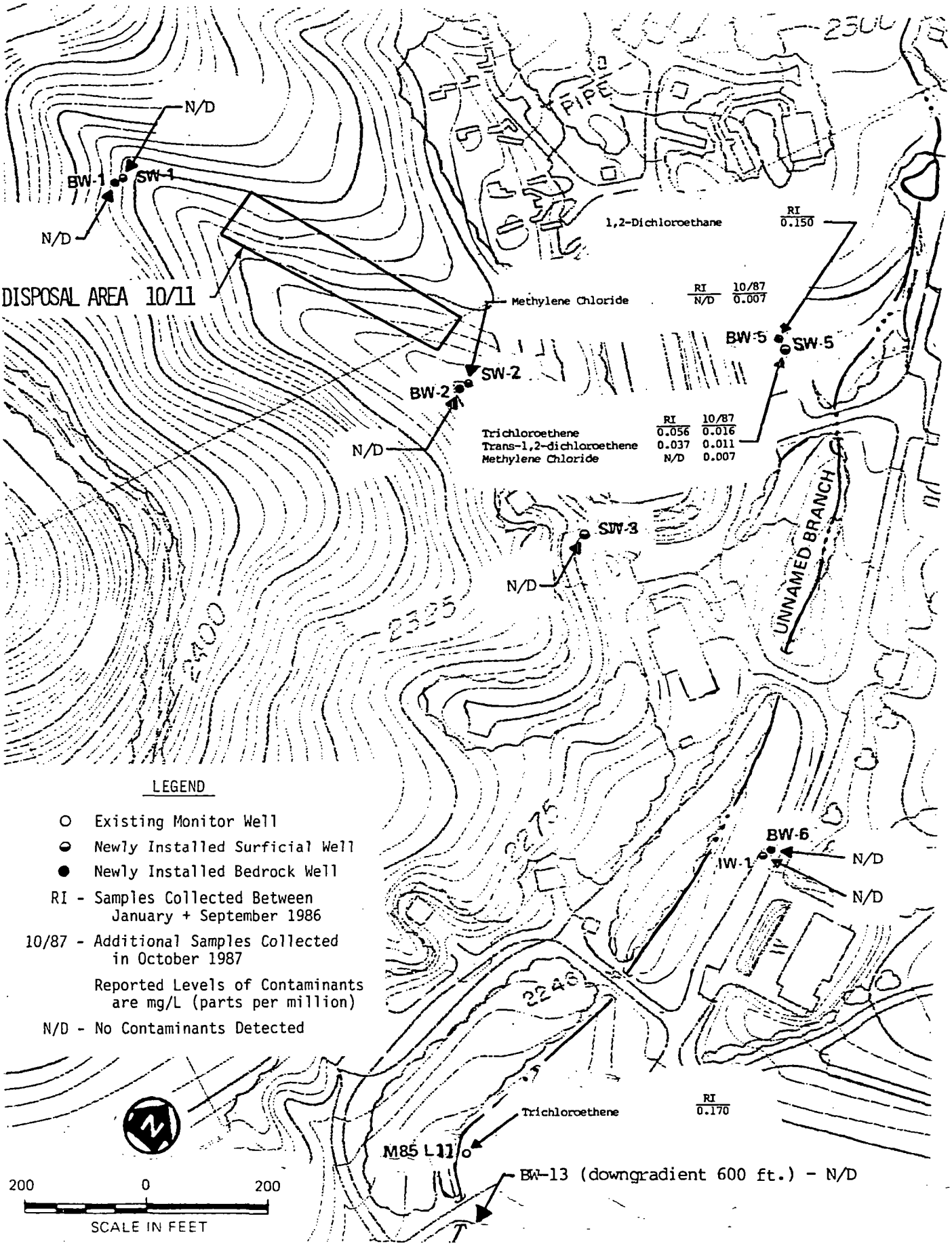


FIGURE NO. 11 LOCATIONS AND CONCENTRATIONS OF VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 10/11 FOUND IN THE GROUNDWATER IN THE FRONT VALLEY

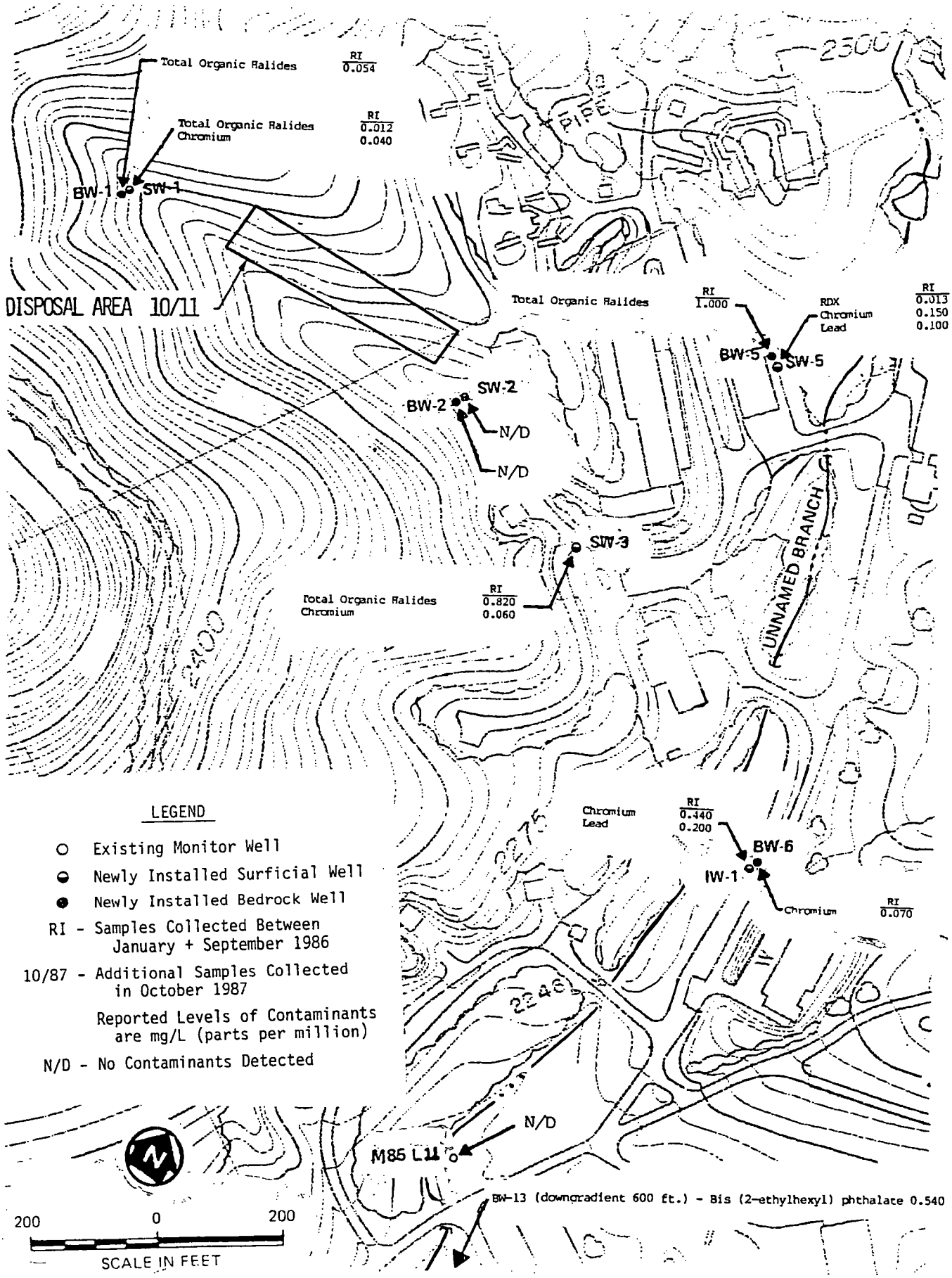


FIGURE NO. 12 LOCATIONS AND CONCENTRATIONS OF NON-VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 10/11 FOUND IN THE GROUNDWATER IN THE FRONT VALLEY

Well Location	Well Type	Volatiles: Chloroform	Volatiles: Trichloroethylene	Volatiles: Methylene chloride	Volatiles: 1,2-dichloroethane	Volatiles: Trans 1,2-dichloroethene	Extractables: Bis (2-ethylhexyl) phthalate (2)	Extractables: Di-n-octylphthalate (2)	Explosives: RDX	Metal: Chromium	Total organic halide	Total cyanide	Pesticides/PCBs	CS/Bz	pH
Upgradient															
SW 1	Shallow	<0.01	-	-	-	-	<0.01	-	-	0.04	0.012	-	-	NA	7.18
BW 1	Bedrock	<0.01	-	-	-	-	0.052	-	-	+	0.054	-	-	NA	9.68
Downgradient															
SW 2	Shallow	-	-	-	-	-	-	<0.01	-	+	-	-	-	NA	6.10
SW 3	Shallow	-	-	-	-	-	-	-	-	0.06	0.82	-	-	NA	6.00
SW 5	Shallow	-	0.056	-	-	0.037	-	-	0.013	0.5	-	-	-	NA	6.20
IW 1	Intermediate	-	-	-	-	-	-	-	-	0.54	<0.01	-	-	NA	6.01
BW 2	Bedrock	-	-	-	-	-	<0.01	-	-	-	-	-	-	-	5.48
BW 5	Bedrock	-	-	-	0.15	-	<0.01	-	-	+	1.0	-	-	NA	8.04
BW 6	Bedrock	<0.01	<0.01	0.130	<0.01	-	<0.01	-	-	0.07	-	-	-	NA	6.53
BW 13	Bedrock	<0.01	-	-	-	-	0.040	-	-	-	-	-	-	-	7.45
M85L11	Existing	-	0.170	-	-	-	-	-	-	-	8.9*	-	-	NA	6.41

* = qualified data - = not detected
NA = not analyzed + = detected but not at significant levels

(1) Number of wells in this area: 11
(2) Phthalate concentrations are assumed to be the result of contact between groundwater and phthalate-containing materials during well installation or handling and analysis in the laboratory.
(3) Contaminant Levels Measured in mg/L (parts per million)

TABLE NO. 7 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF DISPOSAL AREA 10/11

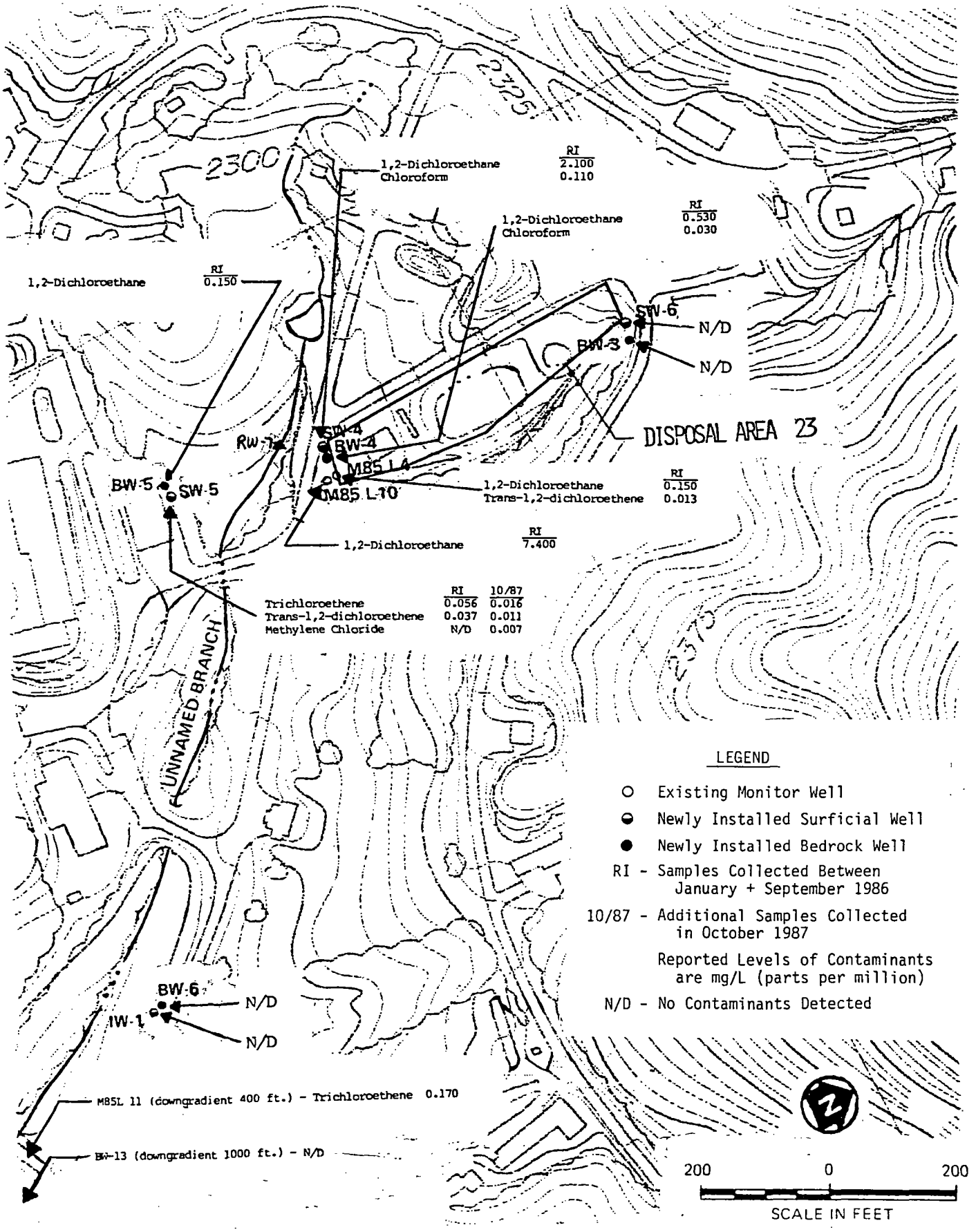


FIGURE NO. 13 LOCATIONS AND CONCENTRATIONS OF VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 23 FOUND IN THE GROUNDWATER IN THE FRONT VALLEY

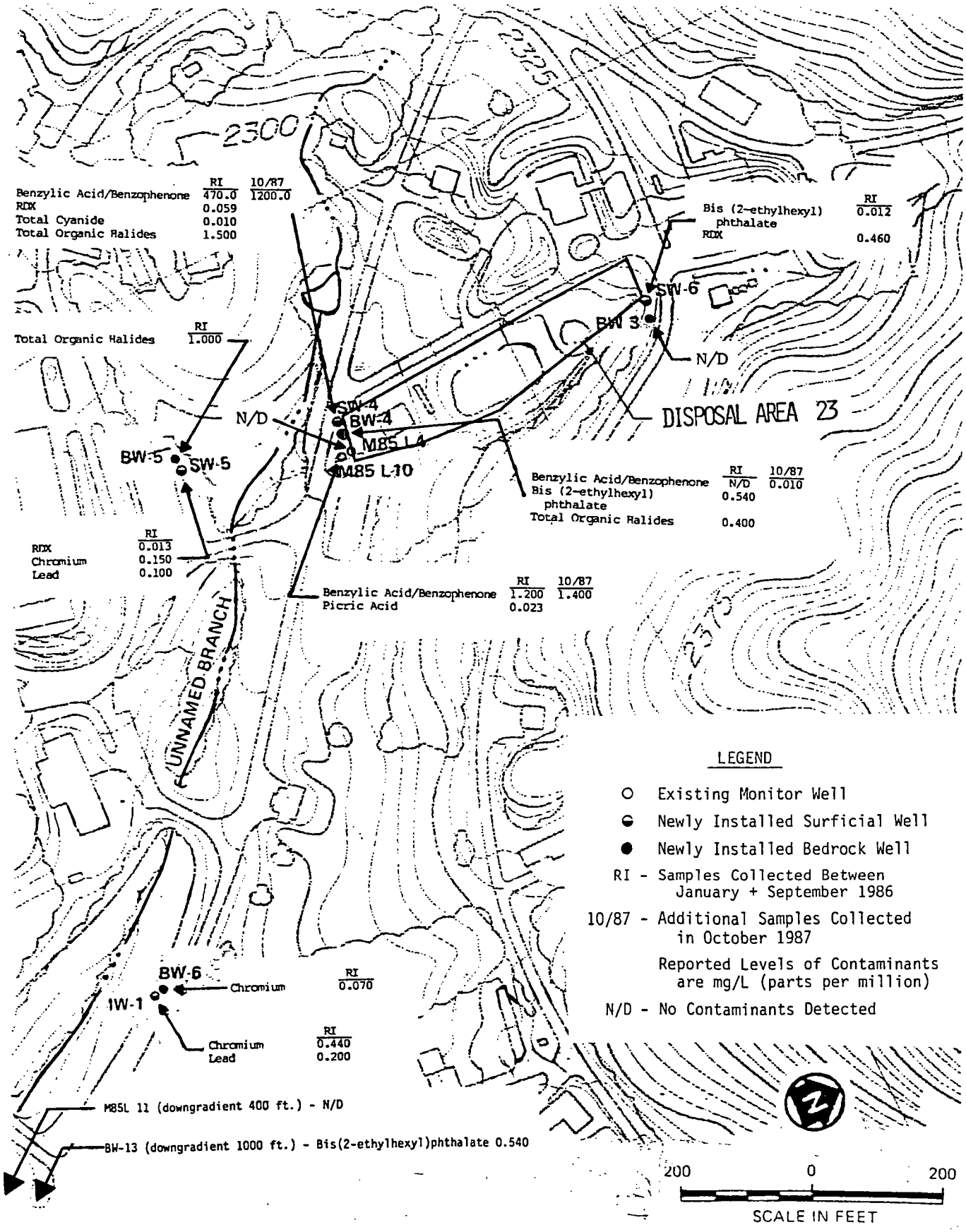


FIGURE NO. 14 LOCATIONS AND CONCENTRATIONS OF NON-VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 23 FOUND IN THE GROUNDWATER IN THE FRONT VALLEY

Well	Type	Volatiles					Extractable	Explosives		Metals			CS/BZ Products		
		1,2-dichloroethane	Trichloroethylene	Methylene chloride	Chloroform	Benzene	Bis (2-ethylexyl) phthalate (2)	RDX	Picric acid	Chromium	Total organic halide	Total cyanide	Benzylic acid/benzophenone	Pesticides/PCBs	pH
Upgradient															
SW 6	Shallow	-	-	-	<0.01	-	0.012	0.046	-	+	*	-	NA	*	6.12
BW 3	Bedrock	-	-	-	-	-	<0.01	-	-	-	*	-	NA	-	6.30
Downgradient															
SW 4	Shallow	2.1	-	-	0.11	-	<0.01	0.059	-	-	1.5	0.01	470	-	6.45
IW 1	Intermediate	-	-	-	-	-	-	-	-	0.54	<0.01	-	NA	-	6.01
BW 4	Bedrock	0.53	<0.01	-	0.03	-	0.054	-	-	+	0.400	-	-	-	6.60
BW 5	Bedrock	0.15	-	-	-	-	<0.01	-	-	+	1.0	-	-	-	8.04
BW 6	Bedrock	<0.01	<0.01	-	<0.01	-	<0.01	-	-	0.07	*	-	NA	-	6.53
BW 13	Bedrock	-	-	-	<0.01	<0.01	<0.040	-	-	-	-	-	-	-	7.45
M85L4	Existing	0.15	<0.01	-	<0.01	-	-	-	-	-	*	-	NA	*	6.42
M85L10	Existing	7.4	<0.2	<0.2	-	<0.2	-	-	0.023	-	*	-	1.2	*	6.76
M85L11	Existing	-	0.170	-	-	-	-	-	-	-	*	-	NA	-	6.41

- = not detected
* = qualified data
NA = not analyzed

(1) Number of wells in this Area: 11
(2) Phthalate concentrations are assumed to be the result of contact between groundwater and phthalate-containing materials during well installations or handling and analysis in the laboratory.
(3) Contaminant Levels Measured in mg/L (parts per million)

TABLE NO. 8 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF DISPOSAL AREA 23

could be DA-23 in that this well is hydraulically downgradient from this disposal area. An essentially horizontal fracture in the bedrock was detected in MW BW-4 that could provide a pathway for this compound. This would explain the appearance of this contaminant in of MW BW-5 but not in MW SW-5, which was completed in the surficial zone.

Three contaminants were detected in MW BW-4: 1,2-dichloroethane, bis (2-ethylhexyl) phthalate, and chloroform (Figures 11 and 12). While the low concentration of bis (2-ethylhexyl) phthalate is likely the result of sample contamination, the presence of 1,2-dichloroethane and chloroform can be directly related to waste disposal in DA-23.

In summary, the only area of the bedrock zone affected by disposal activities in the Front Valley appears to be primarily in the vicinity of wells BW-4 and BW-5. This leads to the conclusion that the contamination of the bedrock zone of the aquifer in this valley is of limited extent and has migrated less than 800 feet from areas of waste disposal as evident by the absence of contaminants in wells BW-6 and intermediate monitor well #1 (IW-1) as can be seen in Figures 11 and 12.

3.5.2 GROUNDWATER CONTAMINATION IN GREGG VALLEY

Groundwater in the central portion of Gregg Valley is primarily contaminated by two volatile organic priority pollutants: 1,2-dichloroethane and trichloroethene (Figures 15, 17 and 19) and (Tables 7-12). These compounds most likely originated from the acid pits disposal area, DA-7/8 and DA-9. In general, concentrations of these compounds are highest near the disposal areas. Concentrations of trichloroethene and 1,2-dichloroethane in monitor wells located approximately 100 to 200 feet downgradient of the acid pit area (Figure 19) range from 0.04 to 9.2 mg/L and 0.014 to 9.2 mg/L, respectively. Concentrations of trichloroethene and 1,2-dichloroethane in MW X-3, approximately 300 feet downgradient of the acid pits, are 0.059 and 0.023 mg/L, respectively. The presence of these two compounds in the groundwater most likely extends further down the center of the valley but not as far as wells BW-11 and IW-3, approximately 600 to 900 feet downgradient as neither contaminant was detected in either of these wells.

The remainder of contaminants detected in the surficial zone of Gregg Valley occur less frequently and generally in lower concentrations than trichloroethene and 1,2-dichloroethane. These contaminants include other volatile organic priority pollutant compounds, extractable organic compounds explosives, metals, cyanide, and BZ degradation products (Tables 7-12). The distribution of these contaminants in the groundwater does not appear to be widespread or to extend further than 300 feet from the disposal areas according to analytical data from the downgradient monitor wells (Figures 16, 18 and 20).

In summary, two volatile organic priority pollutants (1,2-dichloroethane and trichloroethene) are present in the surficial zone of Gregg Valley. While these contaminants are generally more prevalent in the upper reaches of the surficial zone, they were also found in the lower reaches of the surficial zone (wells M85L-5 and IW-2) as can be seen in Figure 19. This indicates that

contaminants within the surficial zone are migrating downward as well as laterally and will enter the bedrock zone. The downgradient lateral extent of this contamination has not yet reached the confluence of the eastern and western tributaries of Gregg Branch. The limit of contaminant migration to date appears to be within the area between wells X-3 and BW-11. Contamination by chemicals other than 1,2-dichloroethane and trichloroethene, however, is generally limited to portions of the aquifer that are close to DA-7/8, DA-9 and the acid pit area.

Finally, no contamination of the groundwater was detected downgradient of DA-6 (Figures 15 and 16).

The bedrock zone in the vicinity of the acid pits and DA-9 contains some of the contaminants detected in the surficial zone. In particular, three out of seven bedrock wells showed one or more analytes (Figures 17 through 20).

Trichloroethene was the only contaminant detected in MW BW-8, which most likely originated from the acid pits disposal area or DA-9. The concentration of trichloroethene was relatively low, at 0.012 mg/L. In contrast, four different contaminants were detected in the bedrock zone approximately 200 feet southeast of the acid pits at MW BW-9, specifically: 0.94 mg/L of 1,2-dichloroethane, 0.26 mg/L of trichloroethene 0.19 mg/L of benzene, and 0.05 mg/L of methylene chloride. The presence of these analytes at this location indicates that chemicals disposed of in the acid pit disposal area have moved downward through the surficial zone and have entered the bedrock zone in the vicinity of well BW-9 through surface joints and fractures.

None of the analytes found in wells BW-8 or BW-9, or in the surficial monitor wells in Gregg Valley were detected in wells BW-11 or BW-12 (Figures 19 and 20, Table 12). This indicates that presently, contaminants from the acid pits, DA-7/8 or DA-9 have not migrated this far (approximately 600 feet to BW-12 and 900 feet to BW-11). A trace quantity (0.002 mg/l) of benzylic acid/benzophenone, a BZ hydrolysis product, was detected in MW BW-11 in the sample collected during the the RI but was absent in the sample taken in October 1987.

In summary, the bedrock zone of Gregg Valley is contaminated by volatile organic priority pollutant compounds The extent of this contamination is more pronounced southeast of the acid pit area, in the vicinity of MW BW-9, but these contaminants have not reached wells BW-11 or BW-12. Therefore, the downgradient lateral extent of this contamination should be within 600 feet of the disposal areas.

3.6 SURFACE WATER AND SEDIMENT CONTAMINATION

The Site, as stated previously, can be subdivided into two small valleys formed on an unnamed stream and the Gregg Branch (Figure 21). These two valleys are referred to as the Front Valley and the Gregg Valley. The sizes of the watersheds encompassed in each valley is 221 acres and 691 acres, respectively, and both drain into Bee Tree Creek. Between the two valleys is a ridge of 44 acres draining directly into Bee Tree Creek. An additional area on the

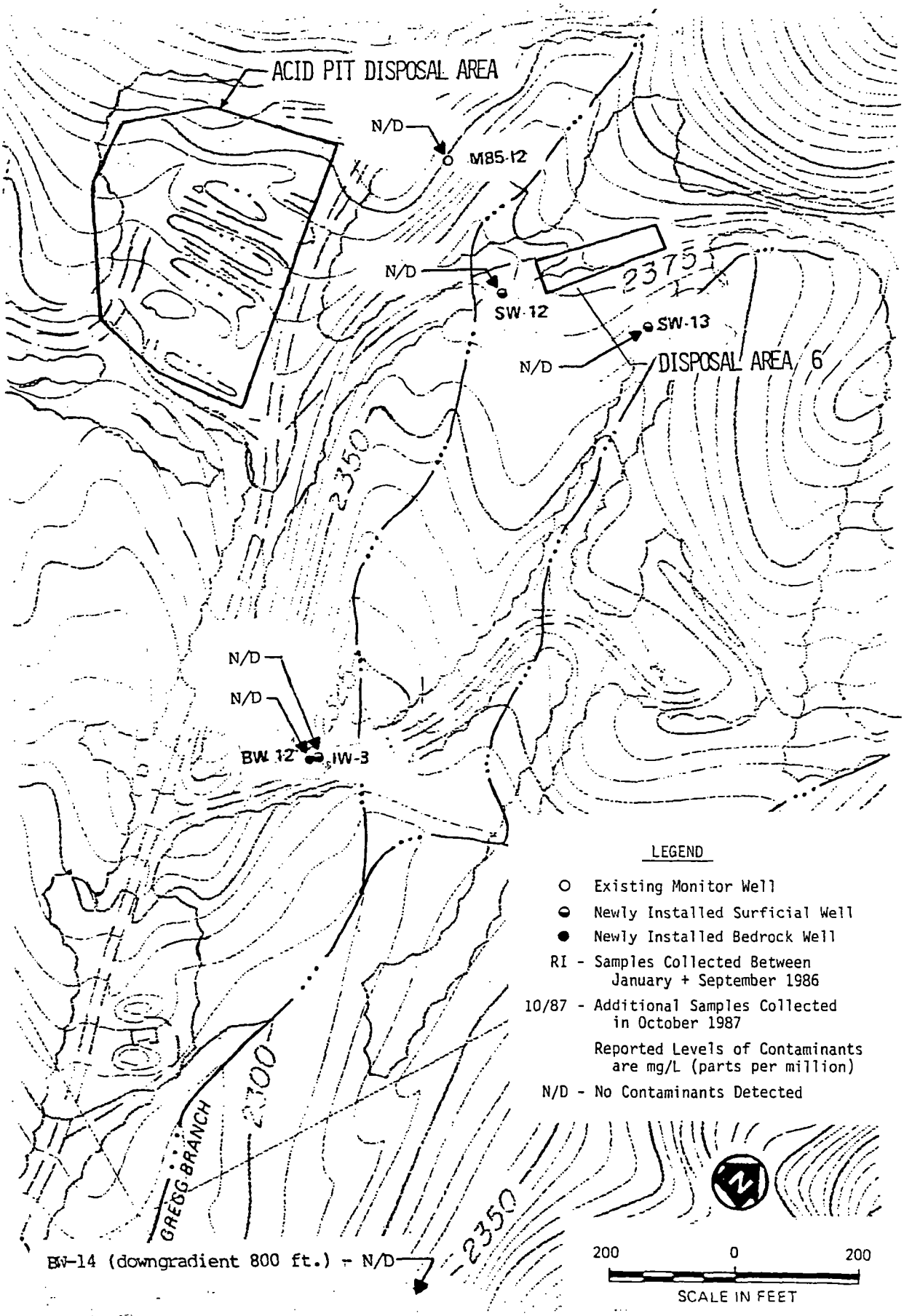


FIGURE NO. 15 LOCATIONS AND CONCENTRATIONS OF VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 6 FOUND IN THE GROUNDWATER IN GREGG VALLEY

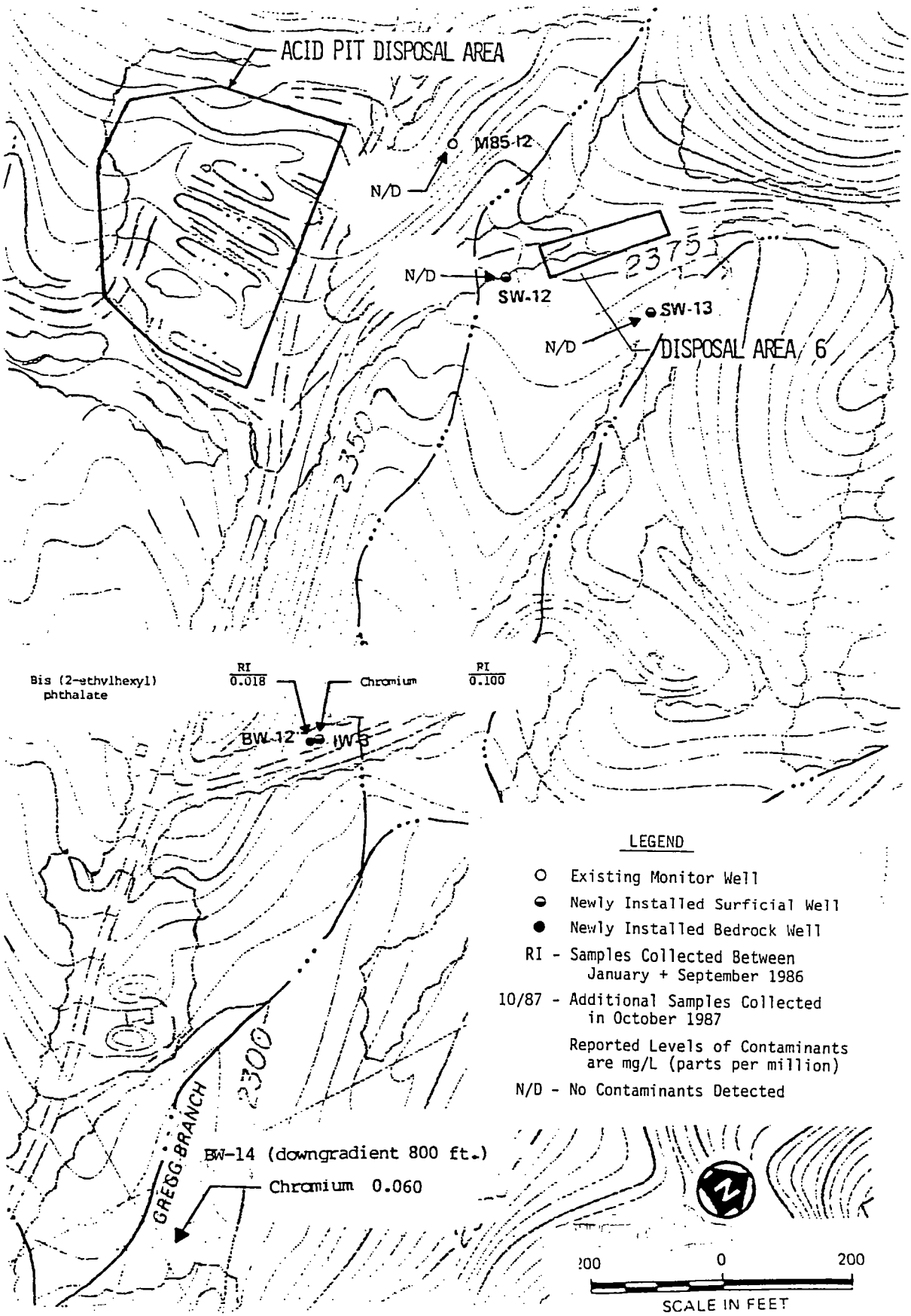


FIGURE NO. 16 LOCATIONS AND CONCENTRATIONS OF NON-VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 6 FOUND IN THE GROUNDWATER IN GREGG VALLEY

Well Location	Well Type	Volatiles	Extractables	Explosives	Total organic halide	Metals	Total cyanide	Pesticides/PCBs	CS/BZ	pH
SW 12	Shallow	-	-	-	-	+	-	-	NA	6.83
SW 13	Shallow	-	-	-	-	+	-	-	NA	6.70
BW 14	Bedrock	-	-	-	-	+	-	-	-	8.48

- = not detected
+ = detected but not in significant levels
NA = not analyzed
(1) - Contaminants Levels Measured in mg/L (part per million)

TABLE NO. 9 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF DISPOSAL AREA 6

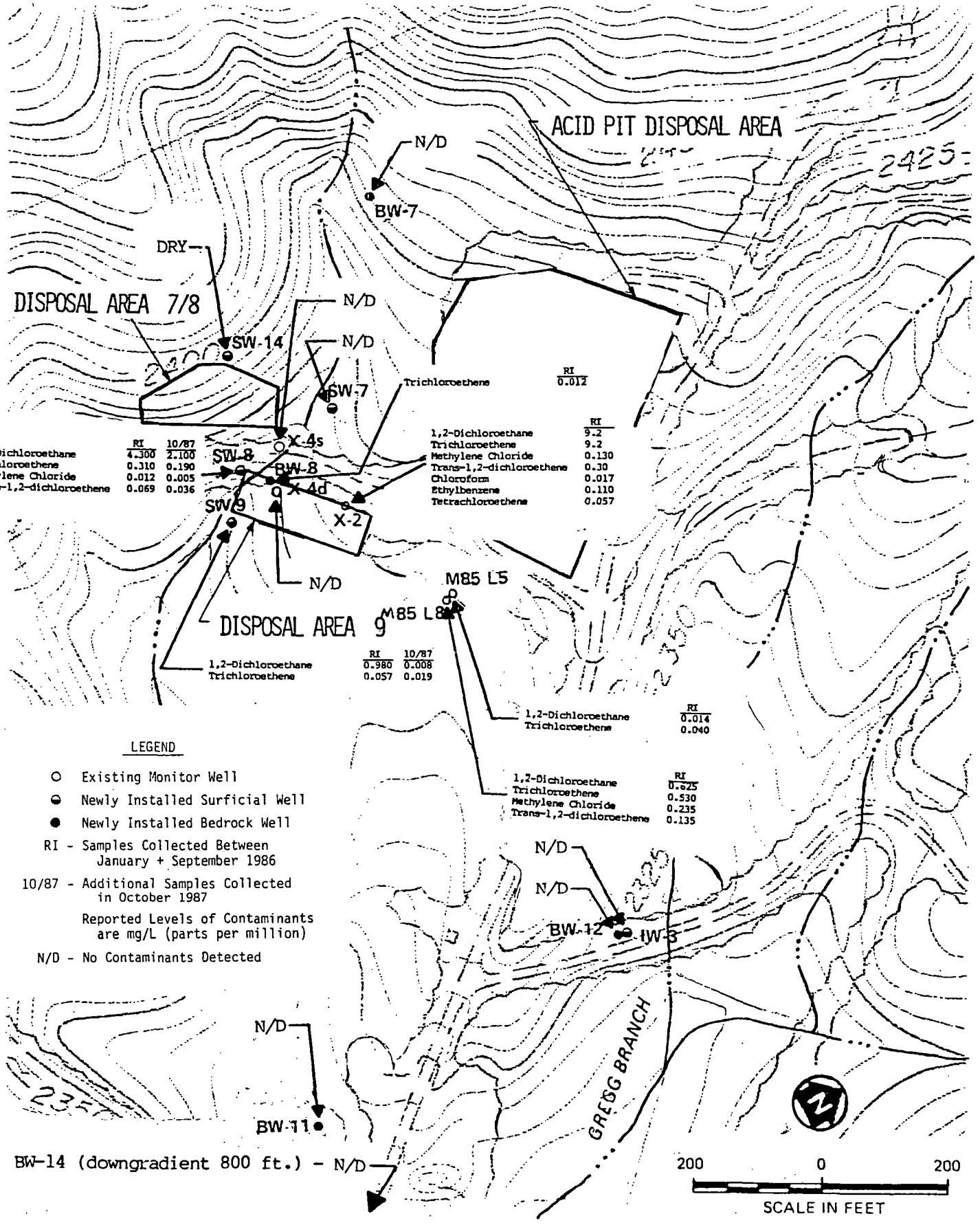


FIGURE NO. 17 LOCATIONS AND CONCENTRATIONS OF VOLATILE CONTAMINANTS ASSOCAITED WITH DISPOSAL AREAS 7/8 AND 9 FOUND IN THE GROUNDWATER IN GREGG VALLEY

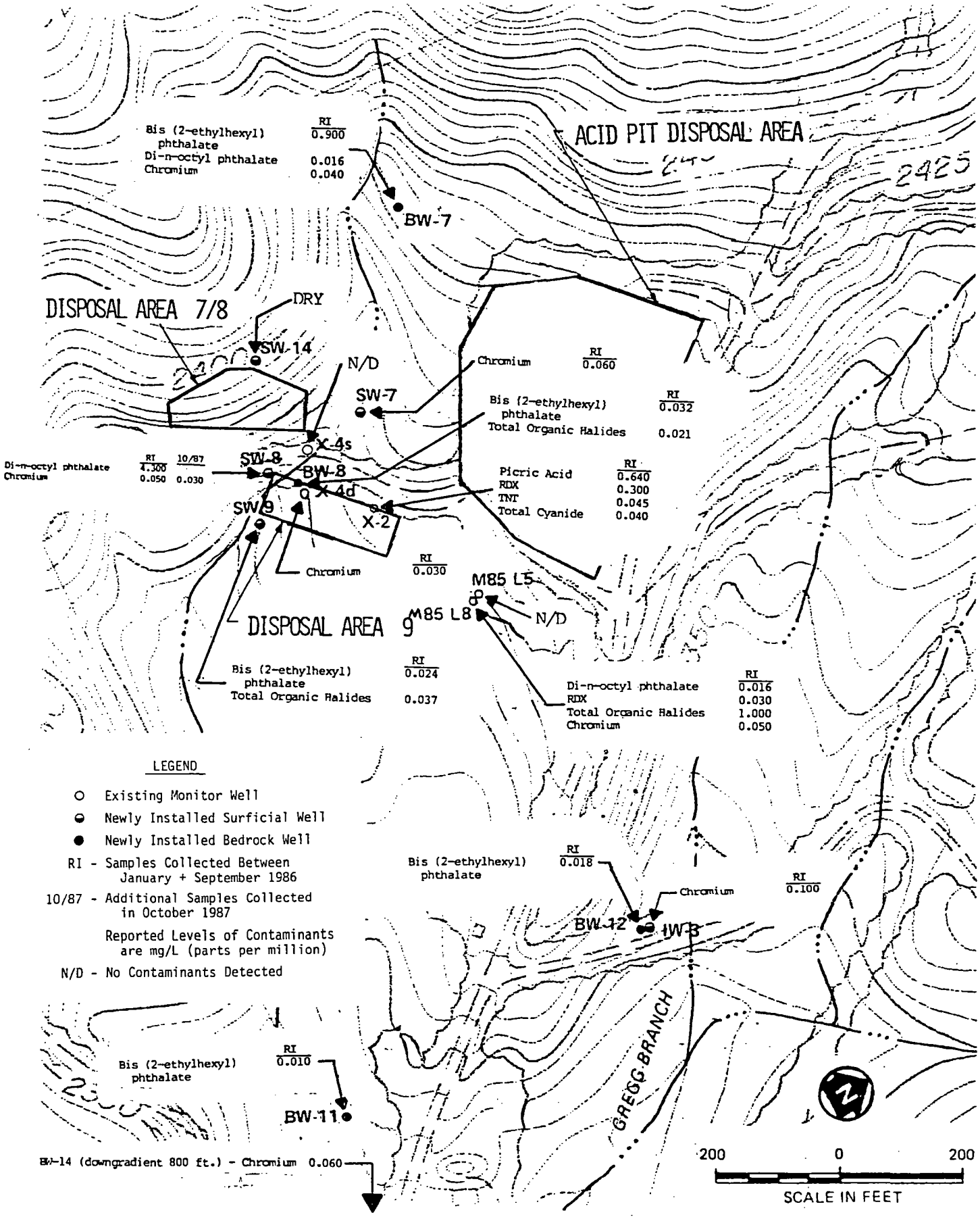


FIGURE NO. 18 LOCATIONS AND CONCENTRATIONS OF NON-VOLATILE CONTAMINANTS ASSOCIATED WITH DISPOSAL AREA 7/8 AND 9 FOUND IN THE GROUNDWATER IN GREGG VALLEY

Well Location	Well Type	Volatiles				Extractables		Metals							
		1,2-dichloroethane	Methylene chloride	Trichloroethylene	Trans 1,2-dichloroethene	Bis (2-ethylhexyl) phthalate (1)	Total organic halide	Chromium	Nickel	Copper	Zinc	Total cyanide	Pesticides/PCBs	CS/Bz	pH
X-4S	Existing	-	-	<0.01	-	-	-	+	+	+	+	-	-	NA	6.48
SW-8	Shallow	4.3	0.012	0.31	0.069	<0.01	-	0.05	0.06	0.09	0.05	-	-	-	6.43
BW-14	Bedrock	-	-	-	-	-	-	0.06	-	-	-	-	-	-	8.5

- = not detected
+ = detected but not in significant levels
NA = not analyzed

(1) Phthalatae concentrations are assumed to be the result of contact between groundwater and phthalate-containing materials during well installation or handling and analysis in the laboratory.

(2) Contaminant Levels Measured in mg/L (parts per million)

TABLE NO. 10 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF DISPOSAL AREA 7/8

Well Location	Well Type	Volatiles: Trichloroethylene	Volatiles: 1,2-dichloroethane	Extractables: Bis (2-ethylhexyl) phthalate (1)	Explosives	Total organic halide	Metals	Total cyanide	Pesticides/PCBs	CS/Bz	pH
X-4D	Existing	<0.01	<0.01	-	-	*	+	-	-	NA	6.25
SW 9	Shallow	0.57	0.98	0.024	-	0.037	+	-	-	NA	5.94
BW 8	Bedrock	0.012	<0.01	0.032	-	0.21	+	-	-	-	5.7(2)
BW 14	Bedrock	-	-	-	-	-	+	-	-	-	8.48

- = not detected
+ = detected but not in significant levels
* = qualified data
NA = not analyzed

(1) Phthalate concentrations are assumed to be the result of contact between groundwater and phthalate-containing materials during well installations or handling and analysis in the laboratory

(2) Reported pH is a field measurement
(3) Contaminant Levels Measured in mg/L (parts per million)

TABLE NO. 11 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF DISPOSAL AREA 9

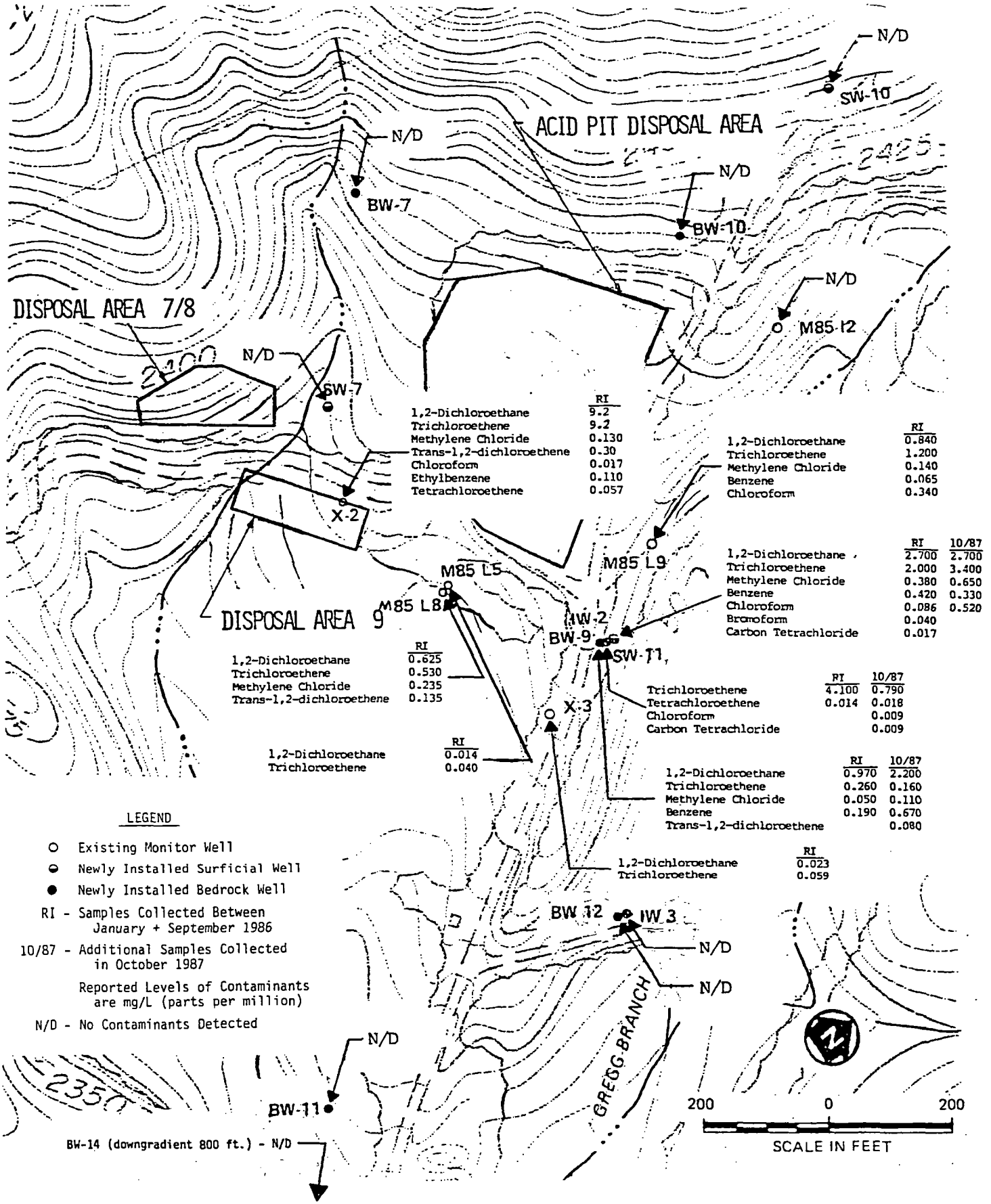


FIGURE NO. 19 LOCATIONS AND CONCENTRATIONS OF VOLATILE CONTAMINANTS ASSOCIATED WITH ACID PIT DISPOSAL AREA FOUND IN THE GROUNDWATER IN GREGG VALLEY

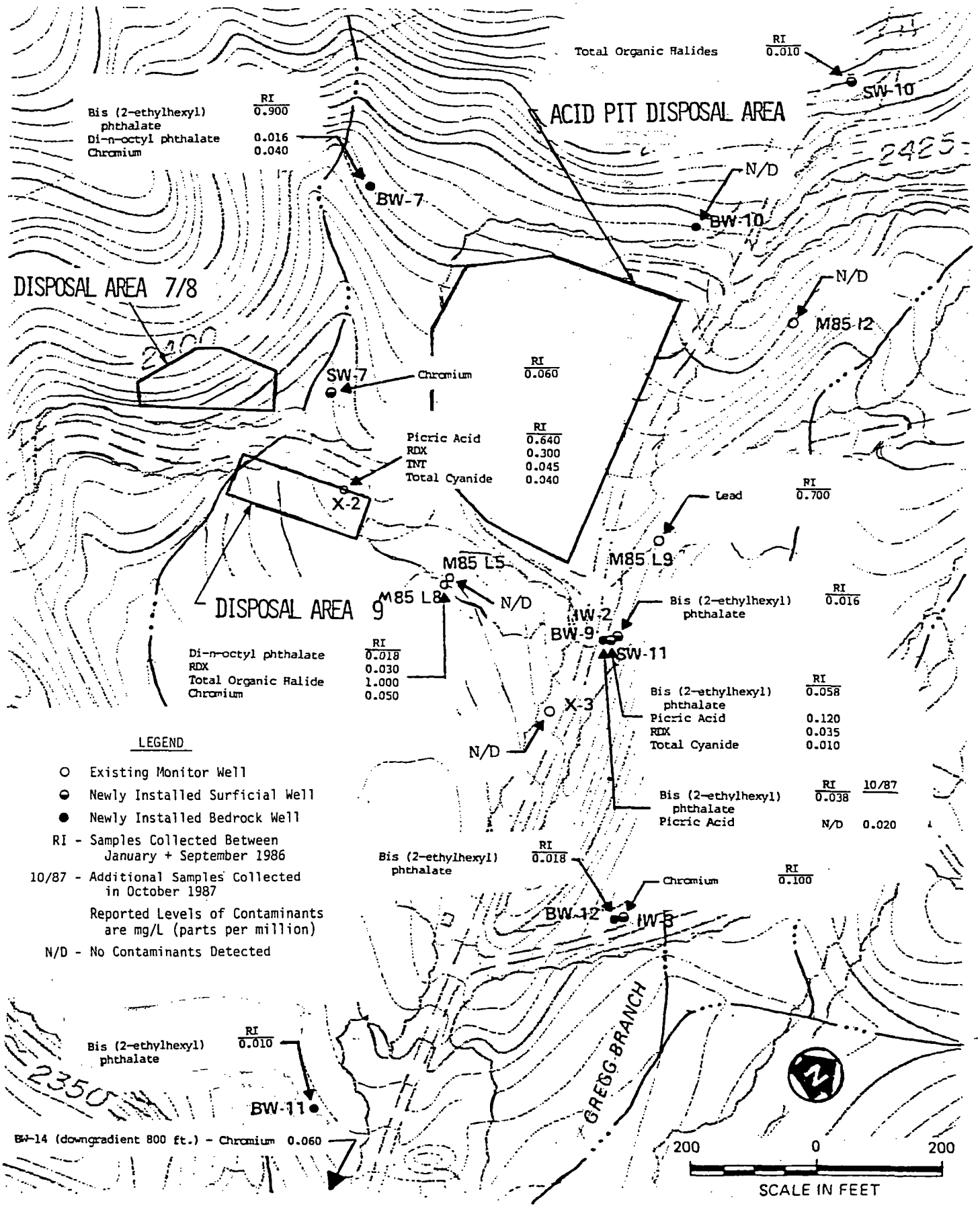


FIGURE NO. 20 LOCATIONS AND CONCENTRATIONS OF NON-VOLATILE CONTAMINANTS ASSOCIATED WITH ACID PIT DISPOSAL AREA FOUND IN THE GROUNDWATER IN GREGG VALLEY

Well Location	Well Type	1,2-dichloroethane	Trichloroethylene	Methylene chloride	Trans 1,2-dichloroethene	Benzene	Chloroform	Ethylbenzene	Tetrachloroethene	Bromoform	Carbon tetrachloride	1,3 Dichlorobenzene
Upgradient												
BW 7		-	-	-	-	-	<0.01	-	-	-	-	-
BW 10		-	-	-	-	-	<0.01	-	-	-	-	-
SW 10		-	-	-	-	-	-	-	-	-	-	-
Downgradient												
M85L5	Existing	0.014	0.040	-	-	-	-	-	-	-	-	-
M85L8	Existing	0.625	0.530	0.235	<0.135	<0.05	-	<0.05	-	-	-	-
M85L9	Existing	0.840	1.2	0.140	-	0.065	0.340	-	-	-	-	-
M85I2	Existing	-	-	-	-	-	-	-	-	-	-	-
SW 7	Shallow	-	-	-	-	-	-	-	-	-	-	-
SW 11	Shallow	<0.01	4.1	<0.01	-	-	<0.01	-	0.014	-	<0.01	-
X2	Existing	9.2	9.2	0.130	0.300	<0.01	0.017	0.110	0.057	-	<0.01	<0.01
X3	Existing	0.023	0.059	<0.01	-	-	-	-	-	-	-	-
IW 2	Intermediate	2.7	2.0	0.38	<0.01	0.42	0.086	-	-	0.040	0.017	-
IW 3	Intermediate	-	-	-	-	-	-	-	-	-	-	-
BW 9	Bedrock	0.97	0.26	0.050	-	0.19	<0.05	-	-	-	-	-
BW 11	Bedrock	-	-	-	-	-	-	-	-	-	-	-
BW 12	Bedrock	-	-	-	-	-	-	-	-	-	-	-
BW 14	Bedrock	-	-	-	-	-	-	-	-	-	-	-

TABLE NO. 12 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF THE ACID PIT DISPOSAL AREA

Well Location	Well Type	Extractables: Di-n-octyl phthalate (1)	Extractables: N-nitrosodimethylamine	Extractables: Bis (2-ethylhexyl) phthalate (1)	Explosives: Picric acid	Explosives: HMX	Explosives: TNT	Total cyanide	Total organic halide	Metals: Lead	Metals: Chromium	Pesticides/PCBs	CS/BZ	pH
Upgradient														
BW 7	Bedrock	0.016	-	0.90	-	-	-	-	-	0.04	-	-	NA	9.13
BW 10	Bedrock	-	-	<0.01	-	-	-	-	-	-	-	-	NA	6.75
SW 10	Shallow	-	-	<0.01	-	-	-	-	0.01	-	-	-	NA	6.60
Downgradient														
M85L5	Existing	-	-	<0.01	-	-	-	-	-	-	-	*	NA	6.31
M85L8	Existing	-	0.018	-	-	0.030	-	-	1.0	-	0.05	-	NA	6.88
M85L9	Existing	-	-	-	-	-	-	-	-	0.7	-	-	NA	4.77
M85I2	Existing	-	-	-	-	-	-	-	-	-	-	-	NA	6.32
SW 7	Shallow	-	-	<0.01	-	-	-	-	-	-	0.06	-	NA	6.06
SW 11	Shallow	-	-	0.016	-	-	-	-	*	-	-	-	NA	5.64
X2	Existing	-	-	-	0.640	0.300	0.045	0.04	*	-	-	-	NA	6.73
X3	Existing	-	-	-	-	-	-	-	-	-	0.03	-	NA	4.92
IW 2	Intermediate	-	-	0.058	0.120	0.035	-	0.01	-	-	-	-	NA	6.42
IW 3	Intermediate	-	-	-	-	-	-	-	-	-	0.10	-	NA	6.08
BW 9	Bedrock	-	-	0.038	-	-	-	-	-	-	-	-	NA	6.53
BW 11	Bedrock	-	-	0.010	-	-	-	-	-	-	-	-	<0.01	6.23
BW 12	Bedrock	-	-	0.018	-	-	-	-	*	-	-	-	NA	8.16
BW 14	Existing	-	-	-	-	-	-	-	-	-	0.06	-	NA	8.18

- = not detected NA = not analyzed * = qualified data

(1) Phthalate concentrations are assumed to be the result of contact between groundwater and phthalate-containing materials during well installations or handling and analysis in the laboratory

(2) Contaminant Levels Measured in mg/L (parts per million)

TABLE NO. 12 CONTAMINANTS FOUND IN THE GROUNDWATER IN THE VICINITY OF THE ACID PIT DISPOSAL AREA

property east of Gregg Branch also drains directly into Bee Tree Creek. These last two areas contain no known disposal areas. It is evident from surface topography that surface runoff from on-site disposal areas discharge directly to the unnamed or Gregg Branch only and not directly to Bee Tree Creek.

Surface water and sediment samples were collected from the unnamed creek draining the Front Valley, Gregg Branch draining Gregg Valley, Bee Tree Creek, and their tributaries (Figures 22 and 23). All sampling was conducted when storm runoff was negligible so that the streamflow in these streams consisted of baseflow only. Therefore, surface water contamination is indicative of contaminated groundwater at or above the sampling point.

Analysis of surface water and sediment samples indicate contaminated baseflow is entering the streams on-site. In all cases, concentrations decrease to levels below detection limits downstream of the suspected sources. The major factors contributing to the reduced levels of contamination downstream are volatilization and/or dilution.

Analysis of sediment samples indicate erosional transport mechanisms at work transporting contaminants away from the disposal areas. The concentrations of the contaminants associated with the sediment also decrease downstream.

In general, metals were detected in sediments from the two on-site branches but not in sediments from Bee Tree Creek. This is most likely due to the different depositional characteristics of the sampling sites which affect the chemical characteristics of the sediment from those on-site.

3.6.1 SURFACE WATER AND SEDIMENT CONTAMINATION IN THE FRONT VALLEY

Figure 22 provides the locations of the sampling points where surface water and sediment samples were collected as well as a compilation of the data associated with this sampling episode.

In summary, surface water data indicates the presence of groundwater sources of volatile organics at DA-23 and near Building 104. Sediment analytical data indicates surface erosion sources at DA-23, above RW-8 and above RW-12. The surface water data also indicates that the groundwater is also contaminated by explosives. These sources are probably either DA-23 or the leach field associated with Process Building 115.

No explosives were detected in any if the sediment samples indicating that surface runoff and erosion have not contributed explosives contaminants to the surface water.

3.6.2 SURFACE WATER AND SEDIMENT CONTAMINATION IN GREGG VALLEY

Figure 23 provides the location of the sampling points where surface water and sediment samples from Gregg Valley were collected. Also presented in Figure 25 are the contaminants found along with their concentrations.

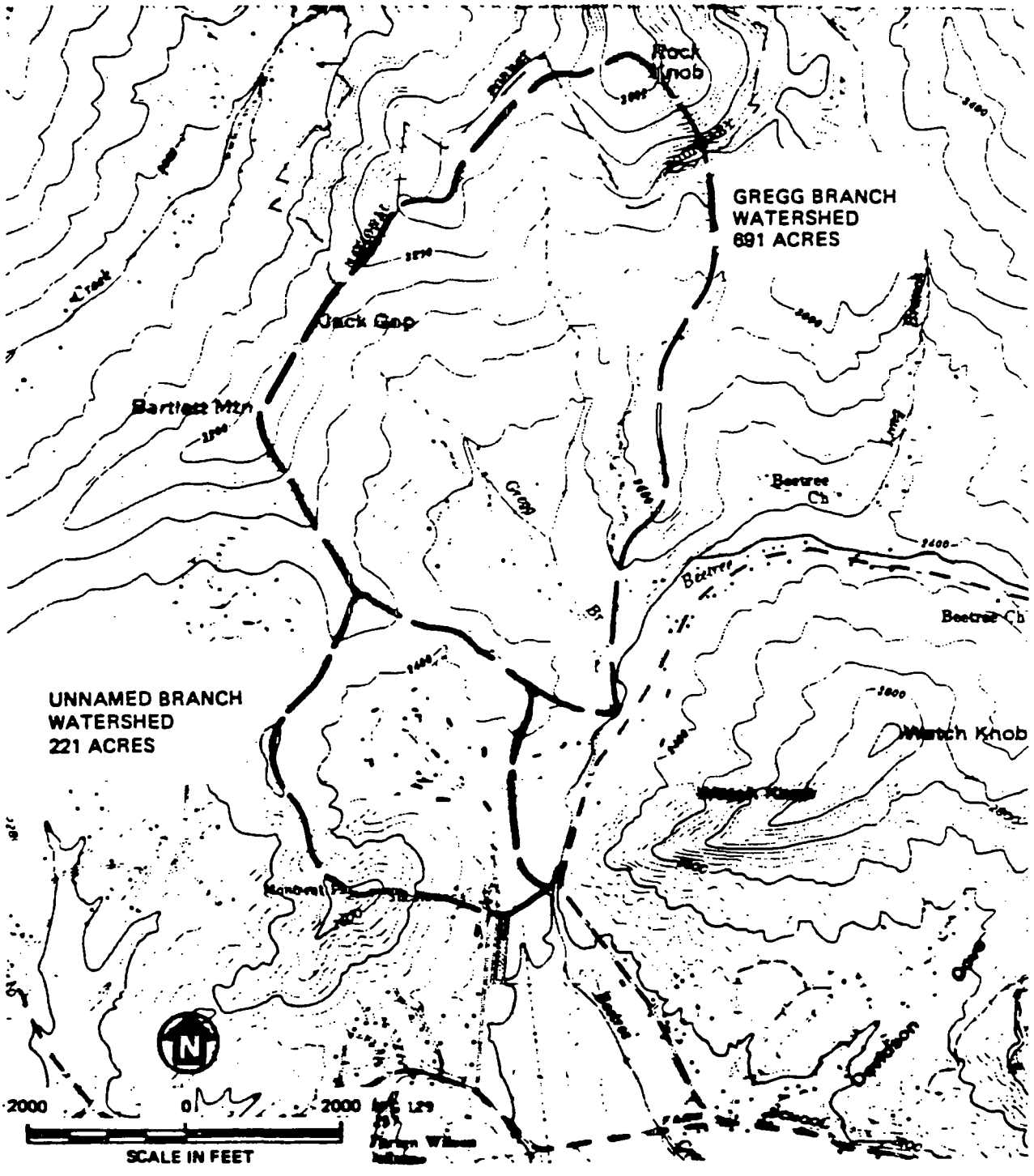


FIGURE NO. 21 DRAINAGE AREAS FOR THE UNNAMED BRANCH AND GREGG BRANCH

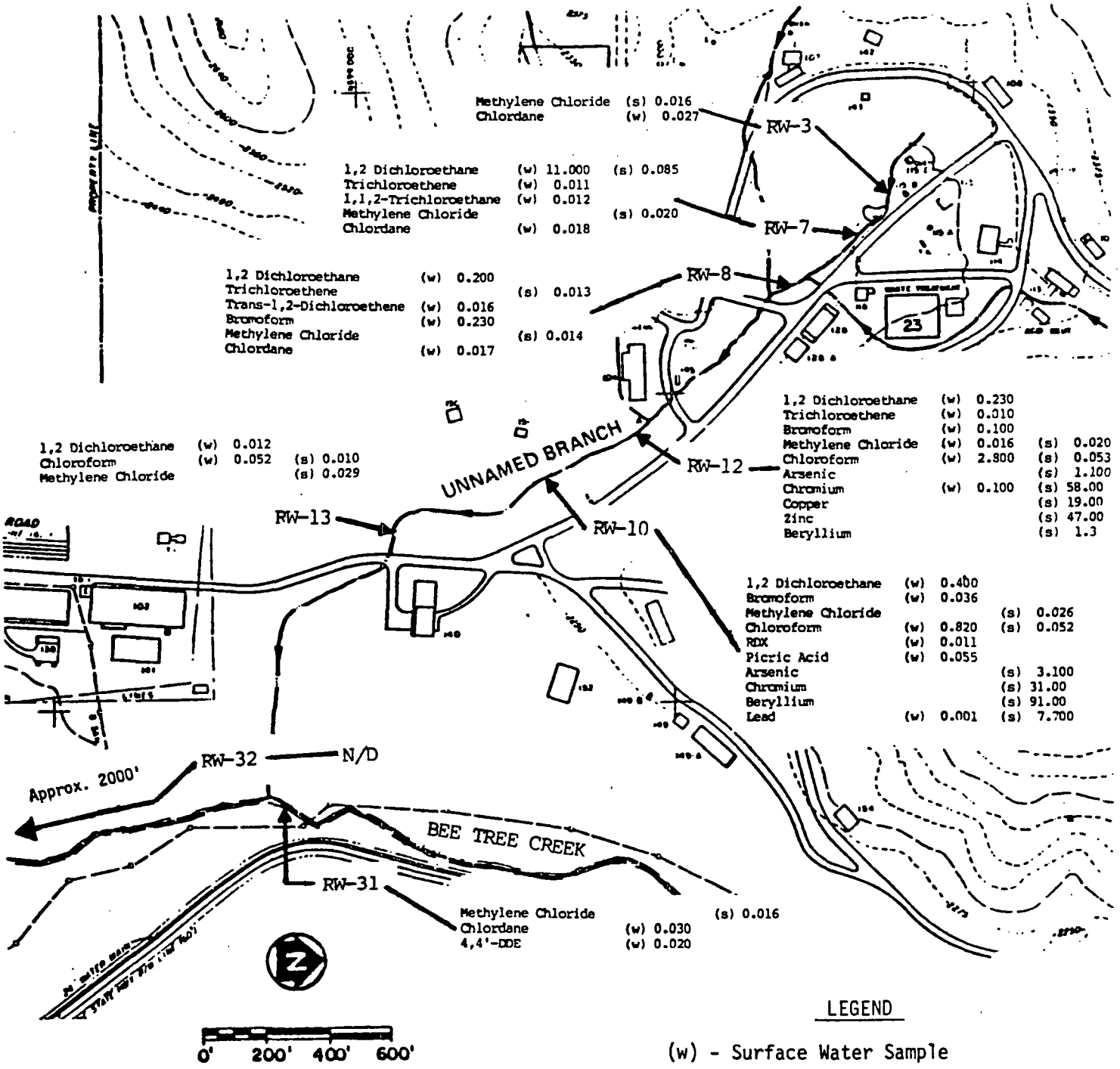


FIGURE NO. 22 LOCATIONS AND CONCENTRATIONS OF CONTAMINANTS FOUND IN THE SURFACE WATER AND SEDIMENT IN THE UNNAMED BRANCH AND BEE TREE CREEK

In summary, the surface water analysis indicates a contaminated groundwater source of volatile organics from DA-7/8 and/or DA-9. No migration of volatile organics to surface water is indicated from the acid pit area or DA-6. Sediment samples indicate that significant volatile organic contamination from surface runoff does not occur from any of the disposal areas in Gregg Valley.

Water and sediment samples from RW-28, at the mouth of Gregg Branch indicates no detectable migration of volatile organics off-site via surface water into Bee Tree Creek.

Cyanide was detected in surface water and sediment samples. Cyanide was found in a sediment sample from RW-21, downstream of DA-6 and the acid pit area. Cyanide was also found in the groundwater in MW IW-2. This well is located downgradient of DA-6 and the acid pit area. Cyanide was also found in soil samples from the following borings: AP-3, AP-4, AP-5, AP-9, AP-11, AP-15, and AP-19. Cyanide was also found in a test pit sample from DA-6. This indicates that sediment cyanide at RW-21 is most likely due to runoff or erosion from the DA-6 and/or the acid pit area. Cyanide was not found in water leaving Gregg Valley as indicated by the analytical results for sample RW-28 (Figure 23).

3.7 RECEPTORS

The routes of exposure examined in the Risk Assessment were:

1) ingestion of contaminated groundwater, surface water and wild life;
2) direct contact with the contaminants in the soil, surface waters or groundwater; and
3) inhalation of vapors or contaminated particles.

The aquifer under the Chemtronics Site is classified as Class IIB, a potential source of drinking water, using the USEPA Groundwater Classifications Guidelines of December 1986. Although the site aquifer is not currently used for drinking water purposes, potential (future) use was incorporated in the baseline risk assessment. Consideration of potential groundwater use is consistent with 40 CFR Section 300.68(e)(2)(v).

Groundwater, as noted, is contaminated on-site. The general flow of groundwater is to the east and west to the unnamed stream and Gregg Branch and east to Bee Tree Creek, discharging to these surface water features. Groundwater contamination was particularly noted downgradient of the Acid Pit Area and DA-23. No drinking water wells exist between the site and the groundwater discharge points, thus a pathway via domestic well usage does not exist.

Currently, fugitive dust particle generation is considered an unlikely event. The majority of the disposal areas are capped by dirt and are vegetated. One area, although vegetated, has numerous empty drums exposed at ground level. This area, DA-9, was identified in the RI to have the greatest degree of risk to exposure to the contaminants present. The chance of exposure is greatly reduced to the remoteness of this disposal area.

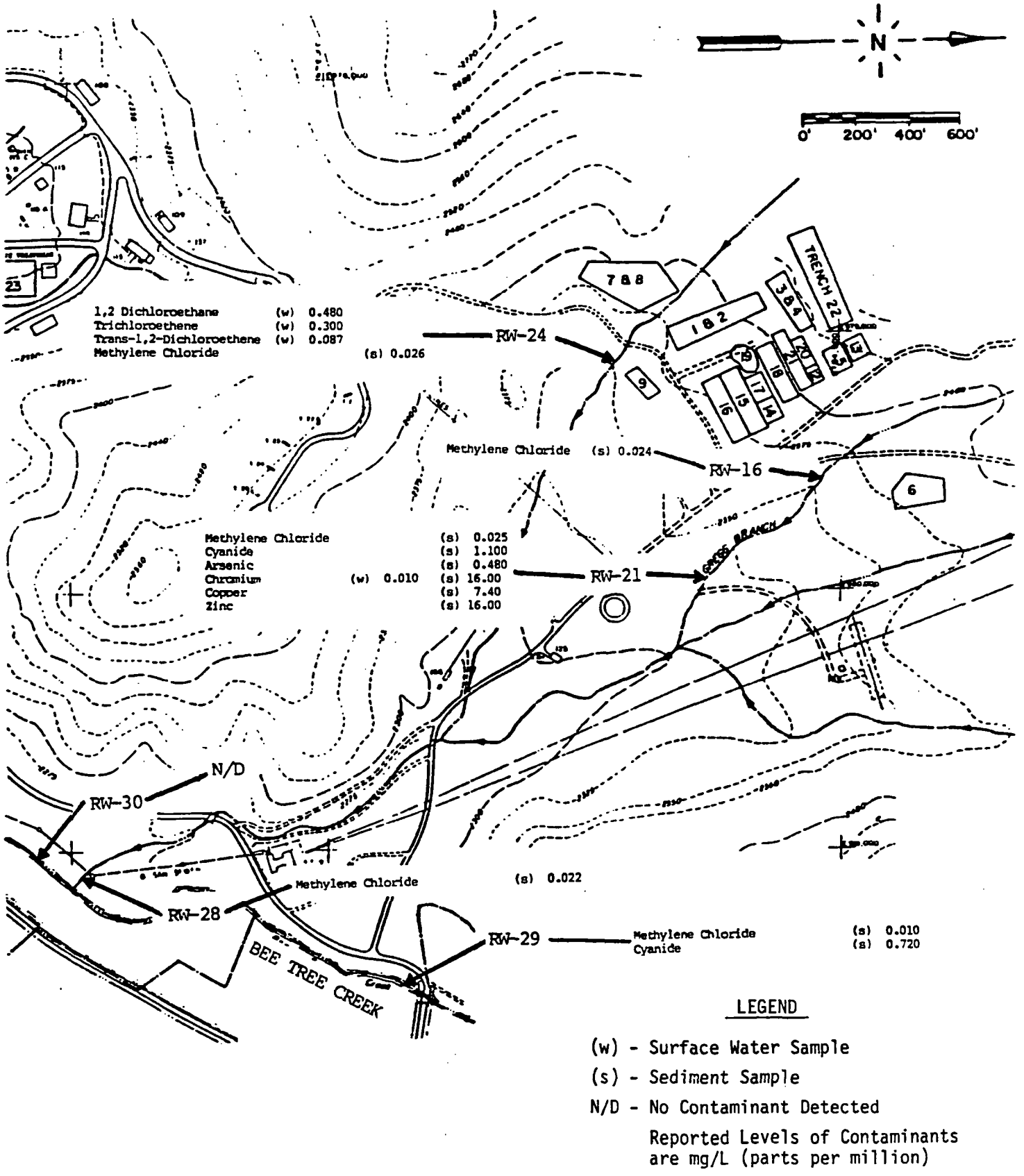


FIGURE NO. 23 LOCATIONS AND CONCENTRATIONS OF CONTAMINANTS FOUND IN THE SURFACE WATER AND SEDIMENT IN GREGG VALLEY AND BEE TREE CREEK

Contaminated soils will continue to leach to surrounding soils and groundwater.

Surface runoff from surface soils may contaminate additional soils and surface waters and sediments, although concentrations would not be expected to be high.

4.0 CLEANUP CRITERIA

The extent of contamination was defined in Section 3.0, Current Site Status. This section examines the "applicable and relevant or appropriate regulations" (ARARs) associated with the contaminants found on site and the environmental medium contaminated. In the cases where no specific ARAR can be identified, a defendable minimum goal of remedial action will be presented.

4.1 GROUNDWATER REMEDIATION

In determining the degree of groundwater clean-up, Section 121(d) of the Superfund Amendment and Reauthorization Act of 1986 (SARA) requires that the selected remedial action(s) establish a level or standard of control which complies with all ARARs.

This remedy is a cost-effective remedy which will achieve a level protective of human health as will as remove the threats this Site poses to the environment. The remedy will meet appropriate requirements, and is cost-effective. Finally, the remedy utilizes permanent treatment technologies to the maximum extent practicable.

The presence of several contaminated found on Site presented some special problems with respect to the establishment of target cleanup levels. Since these chemicals either lack or have only limited human health standards and supporting physiochemical and toxicological data, it was necessary to develop preliminary pollutant limit values (PPLVs) for critical exposure pathways, using estimates of acceptable daily doses (D_T) and partition coefficients. The calculations and supporting references for these PPLVs are presented in Appendix A of the Feasibility Study.

For those contaminants found in the groundwater on-site Table 13 presents the levels the migration control remedial alternative will achieve at a minimum.

4.2 SOIL REMEDIATION

The Public Health and Environmental Assessment in the RI (Chapter 4), determined that risks to human as a result of exposure to on-site contaminants via inhalation, ingestion and dermal contact are very low under present Site conditions. For potential future use scenarios, the risk is slightly higher. Therefore, remediation and institutional controls will be necessary to assure that an increased risk to human health is not posed in the future.

TABLE NO. 13 GROUNDWATER REMEDIATION LEVELS AND CITED REFERENCES

Compound	Remediation Level mg/l	Source
1,2-Dichloroethane	0.005	MCL
Trichloroethylene	0.005	MCL
Methylene Chloride	0.06	RSD
Trans-1,2-Dichloroethylene	0.07	PMCLG
Benzene	0.005	MCL
Chloroform	0.1	MCL(TTHM)
Ethylbenzene	0.68	PMCLG
Tetrachloroethylene	0.007	RSD
Bromoform	0.1	MCL(TTHM)
Carbon Tetrachloride	0.005	MCL
Toluene	2.0	PMCLG
Picric Acid	14.0	PPLV
RDX	0.035	USAIWQC
TNT	0.044	PPLV
Total Cyanides	0.200	RfD
Lead	0.05	MCL
Chromium	0.05	MCL
Nickel	0.5	RfD
Copper	1	MCL
Zinc	5	WQC
Benzilic Acid	0.021	PPLV
Benzophenone	0.152	PPLV

MCL - Maximum Contaminant Level.

MCL(TTHM) - The MCL for Total Trihalomethanes (sum of all concentrations) is 0.1 mg/l. TTHM's include chloroform, bromoform, bromodichloromethane, and chlorodibromomethane.

PMCLG - Proposed Maximum Contaminant Level Goal 50 FR 46936-47022 (November 13, 1985).

PPLV - Preliminary Pollutant Limit Value (see Appendix A).

RfD - Reference Dose 52 FR 29992-29997 (August 12, 1987).

RSD - Risk Specific Dose, 51 FR 21648-21693.

USAIWQC - US Army Water Quality Criteria. The given values have been approved by the Army Surgeon General.

WQC - Clean Water Act, Water Quality Criteria for Human Health - Adjusted for Drinking Water Only, [Gold Book].

From TLV - Calculated from a Threshold Limit Value, based on a 70 kg person who drinks 2 liters of water per day. A safety factor of 100 has also been applied.

TABLE NO. 14 SOIL REMEDIATION LEVELS FOR CONTAMINANTS LACKING PROMULGATED CRITERIA OR STANDARDS

Contaminant Group	Soil Standard (mg/Kg)	Source
PCBs	10	TSCA
3-Quinuclidinol	25.7	PPLV
Benzilic Acid	9.3	PPLV
Benzophenone	9.3	PPLV
CS (2-Chlorobenzal-malononitrile)	43.3	PPLV
Malononitrile	N/A+	PPLV
O-Chlorobenzaldehyde	0.31	PPLV
TNT	305	PPLV
RDX	95	PPLV
Picrate/Picric Acid	38,000	PPLV

+ - Malononitrile would not persist in soil based upon K_d partition coefficient

Table 14 presents remediation levels the source control remedial alternative will achieve. This includes PPLVs for these contaminants lacking promulgated criteria or standards.

4.3 SURFACE WATER/SEDIMENT REMEDIATION

The contaminant levels in the surface waters (the unnamed stream and Gregg Branch) are expected to decline with the implementation of groundwater and soil remediation. Thus, it was concluded that the remediation of surface water is not necessary. A biomonitoring program will be implemented to document that the remediation activities do not have an adverse affect on the surface waters. The RI did not identify any contaminants entering Bee Tree Creek from the Site.

5.0 ALTERNATIVES EVALUATED

The purpose of the remedial action at the Chemtronics Site is to mitigate and minimize contamination in the soils and ground water, and to reduce potential risks to human health and the environment. The following clean-up objectives were determined based on regulatory requirements and levels of contamination found at the Site:

* To protect the public health and the environment from exposure to contaminated on-site soils through inhalation, direct contact, and erosion of soils into surface waters and wetlands;

* To prevent off-site movement of contaminated groundwater; and

* To restore contaminated groundwater to levels protective of human health and the environment.

An initial screening (Table 15) of applicable technologies identified to address both source and migration control was performed to retain those which best meet the criteria of Section 300.65 of the National Contingency Plan (NCP). Following the initial screening of technologies, potential remedial action alternatives for source control were identified and analyzed. These alternatives were further screened and those which best satisfied the clean-up objectives, while also being cost-effective and technically feasible, were developed further.

Table 16 identifies those source control alternatives that were retained following the initial screening of technologies. Table 17 associates the cost of each of these alternatives. The alternatives retained following the cost evaluation are presented in Table 18.

The same sequence of screening and evaluations procedures was conducted on the potential migration control remedial action alternatives that were retained following the evaluation of these technologies on technical merit (Table 15). Following the initial screening, the potential remedial action alternatives for migration control were identified and analyzed (Table 19). Costs for each of

TABLE NO. 15 RESULTS OF TECHNICAL EVALUATION OF SOURCE CONTROL AND MIGRATION CONTROL TECHNOLOGIES

Technology	Status	Reason for Rejection
Off-site		
Landfill	Retained	
Rotary Kiln Incinerator	Retained	(Only for drummed solids)
Industrial Kiln	Rejected	Low BTU value; reservations regarding BZ and CS
Multiple Hearth Incinerator	Rejected	Not recommended for hazardous wastes by EPA
Liquid Injection Incinerator	Retained	(Not appropriate for solid residuals)
Molten Media Incinerator	Rejected	Not developed for hazardous waste destruction
Pine Bluff Arsenal Incinerator	Retained	
In situ		
Soil Flushing - Organics	Rejected	Fractured bedrock; distribution/collection of flushing agent
Soil Flushing - Metals	Rejected	Fractured bedrock; poor removal
Hydrolysis (Base-catalyzed)	Rejected	Not effective for most contaminants at Chemtronics
Adsorption Beds	Rejected	Temporary measure
Organic Oxidation	Rejected	Not effective for most contaminants at Chemtronics
Metal Precipitation	Rejected	Not sufficiently developed
Soil Freezing	Rejected	Temporary measure; not warranted for site conditions
Soil Venting	Retained	
Enhanced Biodegradation	Rejected	Poor removal for contaminants of concern
Radio Frequency Heating	Rejected	Not effective for most contaminants; not sufficiently developed
Vitrification	Rejected	Questions concerning buried drums and explosives
The "Detoxifier"	Rejected	Not sufficiently developed
Enzymatic Degradation	Rejected	Not sufficiently developed
Containment		
Capping	Retained	
Slurry Walls	Rejected	Site conditions unfavorable; Diaphragm wall option also not economical
Grouting	Rejected	Not as effective as slurry walls but more costly
Sheet Piling	Rejected	Uncertain installation
Bottom Sealing	Rejected	Not sufficiently developed
Vibrating Beam Asphalt	Rejected	No advantages over slurry wall for site conditions
Container Piles	Rejected	Site conditions don't warrant difficult implementation
Direct Treatment (On-site)		
Cement-based Stabilization	Rejected	Not effective for organics
Silicate-based Stabilization	Retained	
Thermoplastic Microencapsulation	Rejected	Not sufficiently developed; cost
HWT Chemical Fixation	Retained	
Rotary Kiln Incinerator	Retained	
Infrared Incinerator	Retained	
Plasma Arc Incinerator	Rejected	Not sufficiently developed
Liquid Injection Incinerator	Rejected	Less capable than other incineration systems
Circulating Bed Combustor	Retained	
High Temperature Fluid Wall	Rejected	Less capable than other incineration systems
Thermal Desorption System	Rejected	Less capable than other incineration systems
Low Temperature Thermal Stripping	Rejected	Not as capable for contaminants of concern as incineration
Soil Washing	Retained	
Liquid CO_2 Extraction	Rejected	Poor estimated performance; insufficient development
Soil Farming	Rejected	Uncertain performance
On-site Landfill	Rejected	Not economically or technically justifiable; institutional questions
No Action	Retained	

TABLE NO. 15 (continued) RESULTS OF TECHNICAL EVALUATION OF SOURCE CONTROL AND MIGRATION CONTROL TECHNOLOGIES

Technology	Status	Reason
No Action	Retained	
Secondary Water Supply	Rejected	No impacted receptors
Discharge to POTW	Retained	
Activated Carbon Adsorption	Retained	
Aerobic Biological Treatment	Rejected	Too low COD to support biological growth
Anaerobic Biological Treatment	Rejected	Potentially unstable operation, too low COD to support biological growth
PACT	Rejected	Too low COD to support biological growth
Fixed Film Systems	Retained	
Filtration	Retained	
Precipitation/Flocculation	Retained	
Sedimentation	Retained	
Ion Exchange/Sorptive Resins	Retained	
Reverse Osmosis	Rejected	Potential for growth on membrane and damage to membrane from iron and manganese
Neutralization	Retained	
Chemical Oxidation	Rejected	Technically inferior to ultraviolet/ozonation.
Chemical Reduction	Rejected	Little applicability in treating identified contaminants
Air stripping	Retained	
Steam Stripping	Rejected	No ready source of steam, unsuitable contaminants; cost
Steam Distillation	Rejected	Inability to separate several contaminants from water because of similar boiling points; cost
Liquid/Liquid Extraction	Rejected	Cannot remove compounds to remediation levels
Liquid/CO_2 Extraction	Rejected	Less than 40% recovery rate for many organics
Catalytic Dehydrochlorination	Rejected	Unproven technology on full-scale basis
Wet Air Oxidation	Rejected	Chlorinated species too stable for wet air oxidation; cost
Incineration	Rejected	BTU value of waste stream too low; cost
Hydrolysis	Rejected	Inappropriate technology
Ultraviolet/Ozonation	Retained	
Spray Irrigation	Rejected	Would not remove or degrade all compounds
Horizontal Irrigation	Rejected	Would not remove or degrade all compounds
Extraction Wells	Retained	
Subsurface Drains and Interception Trenches	Retained	

TABLE NO. 16 POTENTIAL SOURCE CONTROL REMEDIAL ACTION ALTERNATIVES (Prior to Cost Evaluation)

Alternative	Description
1A	No Action
1B	Fence DA 9; no action elsewhere
2A	Cap DA 9; no action elsewhere
2B	Off-site landfilling of top 2 feet in DA 9; no action elsewhere
3A	Cap DA 7/8, 9, 10/11, 14, and 23; no action in DA 6 and rest of Acid Pits
3B	Cap DA 6, 7/8, 9, 10/11, 14, and 23; no action in rest of Acid Pits
3C	Cap all on-site areas
4A	Soil vent DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
4B	HWT fixation of soils in DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
4C	Off-site landfilling of DA 14 and DA 23; cap 6, 7/8, 9, and 10/11
4D	On-site incineration of DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
5A	HWT fixation of soils in Table 4.14; off-site incineration of buried drums
5B	Off-site landfilling of soils in Table 4.14; off-site incineration of buried drums
5C	On-site incineration of soils in Table 4.14 and buried drums

TABLE NO. 17 COST EVALUATION OF POTENTIAL SOURCE CONTROL ALTERNATIVES

Alternative	Summary Description	Cost
1A	No Action	$ 280,000
1B	No Action (Fence DA 9)	$ 290,000
2A	Cap DA 9	$ 320,000
2B	Off-site landfilling of DA 9	$ 510,000
3A	Cap DA 7/8, 9, 10/11, 14, 23	$ 670,000
3B	Cap DA 6, 7/8, 9, 10/11, 14, 23	$ 720,000
3C	Cap all on-site disposal areas	$ 1,350,000
4A	Soil vent DA 14, DA 23	$ 2,500,000
4B	HWT fixation of DA 14, 23	$ 4,600,000
4C	Off-site landfilling of DA 14, 23	$ 7,700,000
4D	On-site incineration of DA 14, 23	$ 6,200,000
5A	HWT fixation of all contaminated surficial soils requiring remediation and impacted residual soils; off-site incineration of drums	$12,600,000
5B	Off-site landfilling of all contaminated surficial soils requiring remediaiton and impacted residual soils; off-site incineration of drums	$16,400,000
5C	On-site incineration of all contaminated surficial soils requiring remediation and impacted residual soils and drums	$ 9,400,000

TABLE NO. 18 RETAINED SOURCE CONTROL REMEDIAL ACTION ALTERNATIVES

Alternative	Description
1A	No Action
1B	Fence DA 9; no action elsewhere
2A	Cap DA 9; no action elsewhere
2B	Off-site landfilling of top 2 feet in DA 9; no action elsewhere
3A	Cap DA 7/8, 9, 10/11, 14, and 23; no action in DA 6 and rest of Acid Pits
3B	Cap DA 6, 7/8, 9, 10/11, 14, and 23; no action in rest of Acid Pits
3C	Cap all on-site areas
4A	Soil vent DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
4B	HWT fixation of soils in DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
4D	On-site incineration of DA 14 and DA 23; cap DA 6, 7/8, 9, and 10/11
5C	On-site incineration of soils in Table 4.14 and buried drums

these retained alternatives are given in Table 20. These alternatives were further screened and those which best satisfied the clean-up objectives, while also being cost-effective and technically feasible, were retained. Table 21 identifies these migration control alternatives that were considered in finalizing the remedial action alternative selected for the Chemtronics Site.

Table 22 summarizes all the source control and migration control alternatives considered for determining the remedial action for the Chemtronics Site.

6.0 RECOMMENDED ALTERNATIVES

6.1 DESCRIPTION OF RECOMMENDED REMEDY

The recommended alternative for remediation of groundwater and soil contamination at the Chemtronics Site includes extraction, treatment and discharge of groundwater; capping and fixation/stabilization/solidification for contaminated soils. The capped areas will be fenced with a chain-linked fence and marked accordingly. The disposal area fixated/stabilized/solidified will also be capped.

The water and sediment in the pond on the unnamed stream will be sampled. If evidence of contamination is present, the pond will be drained with the water being sent through the treatment system set up for treating groundwater and the sediment could either be fixated/stabilized/solidified with the soils of DA-23 or transported to another disposal area and be capped along with that disposal area.

A monitoring program, employing bioassays, will be established for the surface water. Monitoring locations will be located on the unnamed stream, Gregg Branch and Bee Tree Creek. The purpose of this monitoring program is 1) to insure no adverse impact on these streams during implementation of the remedial action and 2) to establish a data base to use to measure the success of the remedial action implemented.

Treatability studies will be performed for the contaminated soils in DA-23 to determine the appropriate fixating/stabilizing/solidification process as well as the mixing ratios for the components involved in the process. Following replacement of the fixated/stabilized/solidified soils, DA-23 will be capped. Soils in disposal areas DA-6, DA-7/8, DA-9, DA-10/11, and the Acid Pit Area will be capped with a multi-layered cap which will include an inert synthetic liner. Where determined necessary, a venting system will also be installed.

A groundwater extraction system will be installed in both the Front Valley and in Gregg Valley. The extracted groundwater will either be treated in each valley or combined and treated through a single system. The treated groundwater will be discharged meeting all ARARs.

TABLE NO. 19 POTENTIAL MIGRATION CONTROL REMEDIAL ACTION ALTERNATIVES (Prior to Cost Evaluation)

ALTERNATIVE	DESCRIPTION
Extraction	
GWE-1	No Action
GWE-2	Weathered zone and surficial wells Gregg Valley (DA 7/8, 9, Acid Pits) and Front Valley (DA 23 Area)
GWE-3	Weathered zone and surficial wells Front Valley (DA 23 Area) Weathered zone wells and surficial trench Gregg Valley (DA 7/8, 9, Acid Pits)
Treatment	
GWT-1	No Action
GWT-2	Discharge Untreated Groundwater to POTW
GWT-3	Air Stripping Discharge to POTW
GWT-4A/B	Air Stripping Adsorption with GAC or Oxidation with UV/Ozone Discharge to POTW
GWT-5A/B	Precipitation/Flocculation with Sedimentation and Filtration Air Stripping Adsorption with GAC or Oxidation with UV/Ozone Discharge to Surface Water (Bee Tree Creek)

a) POTW — Buncombe County Metropolitan Sewer District
b) GAC — Granular Activated Carbon

TABLE NO. 20 COST EVALUATION OF POTENTIAL MIGRATION CONTROL ALTERNATIVES

ALTERNATIVE	SUMMARY DESCRIPTION	COST
GWE-1	No Action; Groundwater Monitoring	$300,000
GWE-2	Extraction Wells; Downgradient DA 23 and DA 7/8, Acid Pits, DA 9	$400,000
GWE-3	Extraction Wells; Downgradient DA 23, Combined Interception Trench and Extraction Wells Downgradient DA 7/8, DA 9, Acid Pits	$650,000
Treatment		
GWT-1	No Action (Couples with GWE-1)	($300,000 from above)
GWT-2	Discharge Untreated Groundwater to POTW	$100,000
GWT-3	Air Stripping Discharge to POTW	$225,000
GWT-4A	Air Stripping Adsorption with GAC	$650,000
	or	
GWT-4B	Oxidation with UV/Ozone Discharge to POTW	$1,250,000
GWT-5A	Precipitation/Flocculation with Sedimentation and Filtration with Air Stripping Adsorption with GAC	$1,300,000
	with	
GWT-5B	Oxidation with UV/Ozone Discharge to Surface Water (Bee Tree Creek)	$1,900,000

a) POTW — Buncombe County Metropolitan Sewer District
b) GAC — Granular Activated Carbon

TABLE NO. 21 RETAINED MIGRATION CONTROL REMEDIAL ACTION ALTERNATIVES

ALTERNATIVE	DESCRIPTION
Extraction	
GWE-1	No Action, Groundwater Monitoring
GWE-2	Weathered zone and surficial wells Gregg Valley (DA 7/8, 9, Acid Pits) and Front Valley (DA 23 Area)
GWE-3	Weathered zone and surficial wells Front Valley (DA 23 Area) Weathered zone wells and surficial trench Gregg Valley (DA 7/8, 9, Acid Pits)
Treatment	
GWT-1	No Action, (Couples with GWE-1)
GWT-2	Discharge Untreated Groundwater to POTW
GWT-3	Air Stripping Discharge to POTW
GWT-4	Air Stripping Adsorption with GAC Discharge to POTW
GWT-5	Precipitation/Flocculation with Sedimentation and Filtration Air Stripping Adsorption with GAC Discharge to Surface Water (Bee Tree Creek)

TABLE NO. 22 SUMMARY OF SOURCE AND MIGRATION CONTROL LTERNATIVES

ALTER-NATIVE	DESCRIPTION	PRESENT WORTH COSTS	TECHNICAL ASPECTS	PUBLIC HEALTH ASPECTS	ENVIRONMENTAL ASPECTS	INSTITUTIONAL ASPECTS
1A	No Action; groundwater monitoring (To be coupled with GWE-1)	$282,800	None	Risk of soil contact DA 9 unabated; potential of limited groundwater contamination migration in future	No direct impact on source material; detection monitoring included	May not comply with SARA; Class 5 alternative
1B	No Action; Fence DA-9 groundwater monitoring	$295,000	None	Fence reduces risk of soil contact; potential of limited groundwater contamination migration in future	Sources of ground-water contamination not affected	Class 5 alternative
2A	Cap DA 9 No Action elsewhere; groundwater monitoring	$383,000	Proven technology; readily constructed; effective since waste is above water table	Risk of soil contact DA 9 eliminated; future migration of contaminants still possible	Continued potential of groundwater contamin-ation from areas other than DA 9	Class 1 alternative; cap restricts use of DA 9
2B	Off-site landfilling DA 9 No action elsewhere; groundwater monitoring	$543,000	High level of remediation; uses available equipment	Risk of soil contact DA 9 eliminated; additional health risk during excavation and transportation	Continued potential of future groundwater contamination in all areas	Class 4 alternative
3A	Cap DA 7/8, 9, 10/11, 14, 23; no action DA 6, remainder of Acid Pits; groundwater monitoring	$1,079,600	Proven technology; readily constructed; effective since waste is above water table; special considerations in DA 10/11 and 23	Risk of soil contact eliminated; risk of future groundwater contamination reduced	Potential for ground-water contamination reduced in capped areas	Class 2 alternative; restricted use of capped areas
3B	Cap DA 6, 7/8, 9, 10/11, 14, 23; no action remainder of Acid Pits; groundwater monitoring	$1,155,300	Proven technology; readily constructed; effective since waste is above water table; special considerations in DA 10/11 and 23	Risk of soil contact eliminated; risk of future groundwater contamination reduced	Potential for ground-water contamination reduced in capped areas	Class 2 alternative; restricted use of capped areas

TABLE NO., 22 (continued) SUMMARY OF SOURCE AND MIGRATION CONTROL LTERNATIVES

ALTER-NATIVE	DESCRIPTION	PRESENT WORTH COSTS	TECHNICAL ASPECTS	PUBLIC HEALTH ASPECTS	ENVIRONMENTAL ASPECTS	INSTITUTIONAL ASPECTS
3C	Cap all on-site disposal areas; groundwater monitoring	$1,870,000	Proven technology; readily constructed; effective since waste is above water table; special considerations in DA 10/11 and 23	Risk of soil contact eliminated; risk of off-site groundwater contamination reduced	Potential for groundwater contamination reduced in all capped areas	Class 2 alternative; restricted use of capped areas
4A	Soil vent DA 14, 23 Cap DA 6, 7/8, 9, 10/11; groundwater monitoring	$2,277,200	Proven technologies; soil venting effective with volatile contaminants; mobile source material reduced	Risk of soil contact eliminated most areas; risk of future groundwater contamination reduced; soil venting may require carbon filters for emissions	Potential for groundwater contamination reduced in all areas;	Class 2 alternative; restricted use of capped areas
4B	HWT fixation DA 14, 23 Cap DA 6, 7/8, 9, 10/11; groundwater monitoring	$4,279,400 to $5,994,400	Long-term effectiveness with Chemtronics' soils are unknown, must be verified; mobile source material reduced	Risk of soil contact eliminated most areas; risk of future groundwater contamination reduced; additional health risk during excavation	Potential for groundwater contamination reduced in all areas;	Class 2 alternative; restricted use of capped areas
4D	On-site incineration of DA 14, 23 Cap DA 6, 7/8, 9, 10/11; groundwater monitoring	$5,684,200 to $6,773,500	Proven technology; extremely effective; transportable unit not available until 1988; moble source material reduced; ash may require special handling	Risk of soil contact eliminated; risk of future groundwater contamination reduced; additional health risk during excavation and staging	Potential for groundwater contamination reduced in all areas;	Class 2 alternative; restricted use of capped areas
5C	On-site incineration of all significant soils and all buried drums; groundwater monitoring	$7,313,300 to $8,725,100	Proven technology; extremely effective; transportable unit not available until 1988; significantly reduce source material; ash may require special handling	Risk of soil contact eliminated; greatest reduction in risk of future groundwater contamination; additional health risk during excavation and staging	Greatest reduction in potential for groundwater contamination;	Class 2 alternative; fewest restrictions on future use of disposal areas
	No Action DA 24	$0	None	PCB levels are below remediation standards	None	Class 5 alternative
	Drain on-site Pond	$2,000	None	None, stocking and fishing no longer	None	Class 5 alternative

TABLE NO. 22 SUMMARY OF SOURCE AND MIGRATION CONTROL LTERNATIVES
(continued)

ALTER-NATIVE	DESCRIPTION	PRESENT WORTH COSTS	TECHNICAL ASPECTS	PUBLIC HEALTH ASPECTS	ENVIRONMENTAL ASPECTS	INSTITUTIONAL ASPECTS
GWT-1	No Action; groundwater monitoring (To be coupled only with GWE-1)	$282,800	None No treatment reqired	None	None	None; Class 5 alternative
GWT-2	Untreated discharge to POTW	$280,300	POTW capable of achieving high levels of removal; transmitting groundwater poses no difficulties; possible transmission line limitation	No pass through toxicity anticipated	Expect high level of removal; on-site groundwater is remediated	Modification of pretreatment permit; discharge may exceed standards; potential Class 3 alternative
GWT-3	Air stripping prior to discharge to POTW	$437,600	Air stripping is proven technology; POTW capable of removing contaminants; possible transmission line limitation	No pass through toxicity anticipated	Expect high level of removal; on-site groundwater is remediated	Modification of pretreatment permit; discharge will meet TTO level; Class 1 alternative
GWT-4	Air stripping, GAC prior to discharge	$992,600	Proven technologies; GAC cannot be regenerated because of explosives; possible transmission line limitation	No pass through toxicity anticipated	Expect high level of removal; on-site groundwater is remediated	Modification of pretreatment permit; discharge will meet TTO level; Class 2 alternative
GWT-5	Metals removal, air stripping, GAC prior to discharge to a surface water	$1,594,700	Proven technologies; operator may be required; GAC cannot be regenerated	None, effluent will meet drinking water standards	On-site groundwater is remediated; sludge generated may reqire special handling	Requires NPDES permit may require hazardous waste handling; Class 2 alternative
GWE-1	No Action; groundwater monitoring	$282,800	None	No effect on present groundwater contamination; no present receptors identified	Possible future migration of contaminated groundwater	May not comply with all ARAR's; Class 5 alternative
GWE-2	Extraction wells in Front and Gregg Valleys	$378,500	Proven technologies; extraction wells are capable of recovering groundwater contaminants; expect moderate level of removal due to low aquifer yield	Significantly minimizes potential for groundwater contaminants to reach receptors in future	Significantly reduces future migration of contaminated groundwater	Class 2 alternative

TABLE NO. 22 SUMMARY OF SOURCE AND MIGRATION CONTROL LTERNATIVES
(continued)

ALTER-NATIVE	DESCRIPTION	PRESENT WORTH COSTS	TECHNICAL ASPECTS	PUBLIC HEALTH ASPECTS	ENVIRONMENTAL ASPECTS	INSTITUTIONAL ASPECTS
GWE-3	Extraction wells in Front and Gregg Valleys; interception trench in Gregg Valley	$653,600	Proven technologies; extraction wells are capable of recovering groundwater contaminants; expect moderate level of removal due to low aquifer yield; additional installation considerations	Significantly minimizes potential for groundwater contaminants to reach receptors in future	Significantly reduces future migration of contaminated groundwater	Class 2 alternative

These recommended alternatives meet the requirements of the NCP, 40 CFR Section 300.68(j) and SARA. This recommended remedy permanently and significantly reduces the volume of hazardous substances in the groundwater, reduces the toxicity and/or mobility of contaminants in the soils.

6.2 OPERATIONS AND MAINTENANCE

When the remedy is completed, long-term operation and maintenance (O&M) will be required for the caps along with long-term monitoring of the groundwater. This will assure the effectiveness and permanence of the source control remediation and groundwater remedies. Long-term O&M will also be required for monitoring the groundwater extraction systems and the groundwater treatment system(s).

6.3 COST OF RECOMMENDED ALTERNATIVE

Capital cost for groundwater remediation is estimated to be $239,000 with system O&M cost at $139,500 for 30 years, which includes sampling and analysis. The total present worth cost of the groundwater remediation is $378,500.

Capping disposal areas DA-6, DA-7/8, DA-9, DA-10/11 and the Acid Pit Area with a multi-layered cap is estimated to be less than $1,282,500. Fixation/stabilization/solidification of the soils in DA-23 followed by capping will cost an estimated $3,998,800, with O&M cost at $280,500 for 30 years. The O&M costs for all caps is $362,400. The above costs include engineering, overhead, profit, contingency, and administrative fees.

The present worth cost of this remedy, including both source and migration control remediation ranges from $6,247,300 to $8,242,900.

6.4 SCHEDULE

The planned schedule for remedial activities at the Chemtronics Site is expected to be governed by a Consent Decree to be signed by the PRPs, but tentatively is as follows:

March 1988 - Approve Record of Decision
September 1988 - Begin Remedial Design/Treatability Studies
December 1988 - Install Extraction Wells
March 1989 - Complete Treatability Study
May 1989 - Complete Remedial Design and Mobilize

6.5 FUTURE ACTIONS

Following completion of remedial activities, long-term groundwater monitoring will be required to assure effectiveness of the groundwater cleanup and source control remediation. Maintenance of the caps on disposal areas DA-6, DA-7/8, DA-9, DA-10/11, DA-23, and the Acid Pit Area. Action levels for contaminants in the groundwater will be set with the State of North Carolina's concurrence. If these levels are reached during any sampling episode after the remedial activities achieve goal, this will trigger an immediate permanent remediation of the disposal area responsible for this level of contamination is reached downgradient of that disposal area. The action levels expected to be implemented are MCLs and PPLVs.

6.6 CONSISTENCY WITH OTHER ENVIRONMENTAL LAWS

A remedial action performed under CERCLA must comply with all applicable Federal, State and local regulations. All alternatives considered for the Chemtronics Site were evaluated on the basis of the degree to which they complied with these regulation. The recommended alternatives were found to meet or exceed all applicable environmental laws, as discussed below:

* Resource Conservation and Recovery Act (RCRA)

  The recommended remedy for soil contamination includes capping and fixation/stabilization. This is an on-site remedial action which will meet the requirements of this regulation.

* Clean Water Act

  Trace amounts of contamination were detected in surface water. The soil and groundwater remediation will result in an end top the water contamination.

* Floodplain Management Executive Order 11988

  The CERCLA areas do not lie within a floodplain and thus are not subject top the requirements of E.O. 11988.

* Department of Transportation

  Transport of hazardous substances is regulated by the Department of Transportation (DOT).

* Occupational Safety and Health Administration

  A health and safety plan will be developed during remedial design and will be followed during field activities to assure that regulations of the Occupational Safety and Health Administration (OSHA) are followed.

* Safe Drinking Water Act

  Maximum Contaminant Levels (MCLs) established under the Sate Drinking Water Act were found to be relevant and appropriate to remedial action at the Chemtronics Site. The cleanup goals for groundwater were established in Section 4.

* National Pollutant Discharge Elimination System

  Discharge of treated groundwater is part of the recommended remedial alternative. This discharge will meet effluent limit requirements of the National Pollutant Discharge Elimination System (NPDES). Aquatic life chronic toxicity values, which are used in the NPDES permitting system, were used in determining the groundwater cleanup goals in Section 4.

* Endangered Species Act

  The recommended remedial alternative is protective of species listed as endangered or threatened under the Endangered Species Act. Requirements of the Interagency Section 7 Consultation Process, 50 CFR, Part 402, will be consulted during remedial design to assure that any endangered or threatened species, if identified, are not adversely impacted by implementation of this remedy.

* Ambient Air Quality Standards

  The soil and groundwater treatment systems will be designed and monitored to assure that air emissions meet all State and Federal standards.

* State Drinking Water Standards

  Maximum contaminant levels established by the State of North Carolina regulations; are adopted from those of the Federal Safe Drinking Water Act, and will be met.

7.0 COMMUNITY RELATIONS

Fact sheets were transmitted to interested parties, residents, media, and local, state, and federal officials throughout the RI/FS process. The Agency also conducted several formal and informal public meetings. Two audio-visual presentations were developed by Warren Wilson College to help educate and inform the local community of the Chemtronics Site and the Superfund process.

Four information repositories were established. They are located at:

Buncombe County Emergency Services
P.O. Box 7601
Asheville, NC 28807
Contact: Mr. Jerry VeHaun

Chemtronics Site Information Bureau
70 Woodfin Place
Asheville, NC 28814

University of North Carolina at Asheville
One University Heights
Asheville, NC 28804-3299
Contact: Dr. Gary Miller

Warren Wilson College Library
Warren Wilson College
701 Warren Wilson College Road
Swannanoa, NC 28778
Contact: Ms. Laura Temple-Haney

The Administrative Record is located at Warren Wilson College's library.

A public meeting was held on February 23, 1988, at the Charles D. Owens High School in Swannanoa, NC. At this meeting, the remedial alternatives developed in the FS were reviewed and discussed and EPA's preferred remedial alternative was disseminated. The migration control alternative presented is as described prior in Section 6.1 Description of Recommended Alternative. Several source control remedial alternatives were presented. EPA's preferred source control alternative for Disposal Areas 6, 7/8, 9, and 10/11 was on-site incineration. On-site incineration was preferred because of its permanence in removing/eliminating the contaminants present on-site. A substitute remedial alternative was also described to the public for these disposal areas and this was to cap and monitor. For the other two disposal areas, the source control remedial alternative identified in Section 6.1 Description of Recommended Alternative were the ones presented in the public meeting.

Numerous comments were voiced at the public meeting. Questions and comments fell into six major categories including: concern about public health and a need for a health survey, thoroughness of research efforts to determine the extent and impact of contamination, adequacy or effectiveness of the proposed remedy to protect human health and the environment, time involved in cleaning up the Site and restoring the land, current Chemtronics facility operations, and government responsiveness to community concerns and inquires/availability of Superfund Technical Assistance Grants (TAGs)/extension of the FS public comment period.

The public comment period was initially to conclude on March 18, 1988 but at the request of the attendees at the public meeting, the public comment was extended to April 1, 1988. During the comment period, approximately 340 letters/postcards and a petition containing approximately 830 names was received by the Agency. Over 80 percent of the letters/postcards and the petition requested the Agency to extend the public comment period two months past the day the community received the TAG monies. Approximately 35 percent of the letters/postcards opposed on-site incineration and approximately 15 percent of those who wrote were negative towards capping of the disposal areas. None of the correspondences received discussed or commented on the migration control remedial alternative.

8.0 STATE INVOLVEMENT

Since it is expected that the RD/RA will be undertaken by the PRPs, there has been no request made under CERCLA, Section 104(c) for the State to contribute ten percent of all costs for the remedial action.

APPENDICES

APPENDIX A

RESPONSIVENESS SUMMARY

APPENDIX A

RESPONSIVENESS SUMMARY

This community responsiveness summary is divided into the following sections:

SECTION I. Overview. This action discusses EPA's preferred alternative for remedial action and public reaction to this alternative.

SECTION II. Background on Community Involvement and Concerns. This section provides a brief history of community interest and concerns raised during remedial planning activities at the Chemtronics Site.

SECTION III. Summary of Major Comments Received During the Public Meeting and the Public Comment Period and EPA's Responses to These Comments. Both the comments and EPA's responses are provided.

SECTION IV. Remaining Concerns. This section describes the remaining community concerns that EPA should be aware of in conducting the remedial design and remedial action at the Chemtronics Site.

SECTION I. OVERVIEW

At the time of the public meeting and the beginning of the public comment period, EPA presented its preferred alternative to the public. This alternative addresses both the soil and groundwater contamination problems at the Site. The preferred alternative specified in the Record of Decision (ROD) includes: treatment of contaminated groundwater, soil fixation/stabilization/solidification, capping, and long term monitoring.

In the public meeting, held February 23, 1988, two remedial alternatives were proposed to the public for source control for the four disposal areas that contain buried drums. On-site incineration of the contents of these disposal areas was identified as EPA's preferred alternative. This was selected because it eliminates, permanently, the source of contamination. In case the Agency received negative feed-back on this alternative, we also proposed capping these same disposal areas with a multi-layer cap which includes a synthetic liner.

The community, in general, favors remedial action at the Site.

SECTION II. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

The Chemtronics Site is located in the community of Swannanoa, a rural area of Buncombe County, east of Asheville. The population in this area is increasing as the city of Asheville grows.

Prior to 1984, community concern over the Chemtronics Site was generally low, according to local officials and residents. Only a small number of residents had concerned themselves with Site activities.

The Site was first brought to the attention of state officials in 1979 as a result of complaints from a resident living near the Site. On several occasions the resident contacted state and local officials to complain of the foul odors and air pollution coming from the Site. In addition to the air pollution and odors, the resident complained to state officials of open acid pits existing on the Chemtronics property, claiming that his dog was temporarily blinded after falling into one of the pits. These complaints first to local, then state, then federal officials, led to an investigation by the North Carolina Department of Natural Resources and Community Development (NCDNRCD) in 1979 and subsequent EPA involvement beginning in June 1980.

Monitoring of the Site, conducted by the NCDNRCD in 1979, revealed a definite organic odor in the water. As a result of this finding, personnel from EPA's Surveillance and Analysis Division (SAD) initiated an investigation in June 1980. The combined results from all of the samples taken during this investigation indicated the presence of 62 organic compounds and 20 metals in the waste pits, monitoring wells and streams samples. In addition, EPA detected cyanide in three of the monitoring wells on the Site. The results of this this investigation led to EPA's decision to place the Chemtronics Site on the proposed Superfund National Priorities List (NPL), published by EPA in December 1982.

In February 1984, Warren Wilson College conduct its annual environmental studies seminar and used the Chemtronics Site as a case study. Citizens, faculty members, representatives of local, regional and state agencies, EPA representatives, as well as the president of Chemtronics, attended. As a result of the seminar, the Buncombe County Commissioners established the Buncombe County Hazardous Waste Advisory Board (BCHWAB), which demonstrated an interest in EPA's response activities at the Chemtronics Site.

According to citizens and EPA officials, primary concerns of the community include the groundwater contamination and a lack of sufficient information concerning health and environmental hazards created by the Site. A few isolated concerns were also expressed by several residents. One resident complained about a reported decrease in property value and another resident expressed concern that the French Broad River, which the community has cleaned up in recent years and plans to use soon as a water supply, could be in danger of contamination. The point at which water will be extracted from the French Broad River, however, is upstream from the Swannanoa River.

The following points of concern are common to much of the community and may affect relations at the Chemtronics Site:

a) Perceived Lack of Objective Information From EPA. Area resident have expressed skepticism about the completeness and objectivity of all EPA generated information; both information provided at meetings and information provided in the form of reports or other EPA documents. A core group of citizens, including members of the BCHWAB, and instructors at the Warren Wilson College and the University of North Carolina at Asheville, are highly interested in the details of the scope of work and schedule for Site activities to be conducted by EPA. These citizens have a good technical understanding of the problems and

issues associated with hazardous waste sites and are interested in reviewing and commenting on reports and plans developed for the Chemtronics Site. In addition, these citizens are sensitive to anything that may appear to be a "public relations" campaign; they are interested in knowing about Site activities either first-hand or from what they consider an impartial or objective source of information. If details of Site reports or plans cannot be made available for public review and comment, for example because of enforcement actions, the citizens expressed an interest in being informed of what is not available and why in a timely manner.

b) Effects of BZ Production. Although facts about BZ and its production are now being released, at the time of production, neither the Army nor the BZ-manufacturing companies notified the public that such a chemical was being manufactured at the facility. The true nature of the July 7, 1965 fire that required the evacuation of more than 2,000 residents was for a long time a kept secret. The news media in the area publicized the alleged hallucinogenic effects of BZ. No evidence of the actual chemical BZ have been found on-site; the material in the drums reportedly consisted of contaminated clothes and boots used in BZ production. According to EPA, the material found in the drums poses no real threat to human health. The two exposed drums labeled BZ and CS/BZ were removed from the Site in February 1985.

Since the discovery of the BZ-contaminated materials in August 1984, people have expressed alarm that the production of such a hazardous chemical in their neighborhood was kept secret from them for so long. Because the discovery was made only recently, residents have expressed concern that EPA may not know of everything that is buried at the Site. Some residents fear that any attempted cleanup actions could unearth more serious, unanticipated problems or could pass over unidentified areas of waste disposal.

c) Groundwater and Surface Water Contamination. EPA first detected groundwater contamination at the Chemtronics Site in 1979. Most of the residents in the Swannanoa Valley rely on private residential wells for their drinking water supply. To date, no residential wells have been found to be contaminated due to the disposed material at Chemtronics. Geologic characteristics of the area make a change in the flow and speed of contaminated groundwater a slight possibility. Such a change could increase the potential for contamination in local wells. In November 1984, EPA sample 13 residential and industrial wells in response to citizen fears that groundwater quality in the area had deteriorated. EPA found no evidence of contamination in residential wells, but discovered contaminated wells on the property of Charles D. Owens Manufacturing near Chemtronics. Existing evidence suggests that the contamination of these wells was not due to spills from the Chemtronics facility, according to Donald Link of the NCDNRCD.

d) Employee "Right to Know". Intertwined with community concern over cleanup of existing hazardous wastes at the Chemtronics Site is community concern over current chemical production procedures and release of information to workers and residents concerning the health effects associated with chemicals produced at the Chemtronics Site. The "Right to Know" issue is gaining increasing public attention in Buncombe County. This issue received additional attention because of the announcement that BZ was produced at the Chemtronics Site. Individuals involved with he "Right to Know" campaign have expressed an interest in having EPA, in consultation with Chemtronics officials, prepare and conduct a presentation on the past and present activities at the facility, identifying the substances handled and ways for ensuring worker safety and health.

Another concern expressed by residents involved with the "Right to Know" efforts in Buncombe County was that Chemtronics, Inc. has reportedly hired a group called "Handiskills" to work in manufacturing chemical warfare decontamination kits. The group is comprised of mentally and physically handicapped persons. Several area residents expressed concern that these employees are unaware of the potentially dangerous products manufactured by Chemtronics and the resulting hazards of the positions in which they work and that the Handiskills employees may be less able than other employees to react fast enough to protect themselves in an emergency situation at the Chemtronics facility.

III. SUMMARY OF PUBLIC COMMENTS RECEIVED DURING THE PUBLIC MEETING AND THE PUBLIC COMMENT PERIOD AND AGENCY RESPONSES.

Comments raised during the Chemtronics public meeting and public comment period are summarized briefly below. The comment period was open from February 23 to April 1, 1988 to receive comments from the public on the draft Feasibility Study and proposed remedial alternative.

Since there was a strong response from the community in both the public meeting and the following comment period, the summaries of both are presented separately below.

Public Meeting

The public meeting was held on February 23, 1988 at the Charles D. Owens High School auditorium. Questions and comments fell into six major categories including: concern about public health and a need for a health survey, thoroughness of research efforts to determine the extent and impact of contamination, adequacy or effectiveness of the proposed remedy to protect human health and the environment, time involved in cleaning up the Site and restoring the land, current Chemtronics facility operations, and government responsiveness to community concerns and inquires/availability of Superfund Technical Assistance Grants (TAGs)/extension of the FS public comment period.

Questions and comments from the public are summarized and paraphrased below, followed by a summary of EPA's or another panelists response.

A. Public Health and the Need for a Community Health Survey

Several citizens expressed concern about health hazards and requested that a community health survey be conducted to determine whether many of the health problems noted in the area, particularly cancer cases, were related to the site. The Harrison Hill neighborhood was specified as one area in which residents consider the number of cancer cases to be suspiciously high. Representative questions or comments included:

Q: There are something like nine cancer cases on this road and these seem to be higher than normal statistics. Will the health agency do a survey of this and neighboring areas to check this out?

Q: How can we get a check done on this community and the Bee Tree Valley? Sixteen, of the people I used to work with at Chemtronics are now dead. Do you have to have 24 out of 25?

ATSDR: ATSDR looked at this site and found no evidence of the key factors that indicate a public health risk, tnese being, paths by which the public could be exposed to the chemicals, such as breathing them, swimming in a contaminated creek, or eating vegetables or animals that have absorbed chemicals into their bodies at levels that pose a human health threat. There was no evidence that chemicals migrated off the site where residents could be exposed to them. Sickness exists in every healthy population; the American Cancer Society estimates that one-third of the American population will contract and die from cancer. ATSDR interviewed 16-18 men and women who had worked at Chemtronics to try and determine if the health problems they reported could be linked to chronic historical exposure to working with CS and BZ. We were unable to link them.

Q: How could you determine that without taking tests like blood and urine tests? How can you determine that by just sitting and talking to someone for 15 minutes?

ATSDR: ATSDR's effort, working with Dr. Leffingwell of the U.S. Centers for Disease Control, was to talk with the concerned employees and try and establish whether or not they experienced common symptoms or other factors in common that could link their health problems to chemical exposure at the Chemtronics facility. The information reported by these former employees did not establish a connection to the facility.

Q: Where can we get someone to come out and talk with the people in the area, do a study, or send a questionnaire on health problems.

ATSDR: You would call Dr. Robert Levine at the Buncombe County Health Department, in Raleigh. His program has resources to address community health concerns like cancer, or other abnormalities such as the rashes that you report. ATSDR's involvement with EPA and the State focuses on hazardous waste sites. If we detect that chemical exposures have occurred in concentrations sufficiently high to be a human health risk, ATSDR would proceed with further steps like conducting medical studies, testing of area residents, or setting up a local clinic.

COMMENT: We've called the County dozens of times and we've called the State, now who do we do to?

ATDSR: Call the North Carolina Environmental Epidemiology Group in the Department for Health Services at (919) 733-3410.

COMMENT: A couple of years ago a family moved into a place across from the Chemtronics site and pastured horses on property that had been undisturbed for over twenty years. Within a week both animals died and veterinarians had no idea what killed them. If a horse dies, people die. Horses are a lot stronger than people.

EPA: No response.

Q: Why are you not going to clean up my property? According to a report I received, my property has traces of tear gas and other chemicals. Are you willing to write me a letter stating that these chemicals will not harm my family in any way?

ATSDR: The levels of CS found on your property were extremely low. Nothing was found to be migrating off the site at levels to produce a public health threat. The presence of trace amounts does not constitute a public health threat.

Q: If you found traces at the level at which they sampled how do you know there aren't more chemicals at deeper levels? They've been in there for, what, 20 years?

EPA: The sampling that was done penetrated to bedrock and came up clean.

COMMENT: I was part of the company and am very familiar with the operation, the company's safety program, and the large health problems people are having. I do believe there are health problems related to the chemicals, for workers in any chemical plant as far as that goes, and I think this does need to be looked into more carefully.

B. Thoroughness of RI/FS Research Efforts to Determine Extent and Impact of Contamination

A number of citizens questioned whether researchers performing the remedial investigation had considered all possible sources of contamination at the site or had fully considered chemical characteristics that could influence the extent or the impact of the contamination. Their comments and inquiries were:

Q: Who determined all of the sites that were tested? Were the magnetomtry readings taken in every area, including off-site locations, where workers indicated material had been buried?

EPA: The identification of on- and off-site areas to be tested was made based on site documents belonging to the PRPs, responses from community members to an EPA request issued to the public in 1984 for information that would help the Agency locate disposal areas, and information EPA received from former Chemtronics employees who knew about disposal areas. Magnetometry readings have not been taken in all areas alleged to have been used for drum disposal. However, a geophysical study which provides equivalent information, was carried out for all those areas.

Q: What equipment was used to determine the bedrock pattern at the Chemtronics site? Can you be confident that 37 wells are actually accounting for cracks in the bedrock? It is a complex area here that drains into Bee Tree Creek and other branches where I fish. I want a guarantee that it won't be contaminated so that I can fish in the rivers without worrying about ingesting chemicals.

EPA: Ground-water monitoring wells were placed at distances of 400 feet, 800 feet, and 1200 feet downgradient of the site. Studies of a worst case scenario have shown that if no action were to be taken at the site, contaminants would take over 25 years to migrate to the Bee Tree Creek.

Q: Were ground-water wells drilled in-all locations tested that were supposed to have contained BZ? Is a record available of where and to what depth you drilled?

EPA: Wells were installed at all locations except one. A ground-water monitoring well was not installed directly into one disposal area due to the highly concentrated chemical wastes buried in drums in that area. We did not want to risk puncturing these drums. Subsurface borders were placed around this area as an added safeguard against leakage and migration.

Q: Were the drums found on-site tested to see if they contained BZ by-products?

SIRRINE ENVIRONMENTAL CONSULTANTS: All of the drums were not sampled, because of the risk of leakage. Exposed drums and materials surrounding the drums were tested. The major concern is not so much whether BZ is in the drum but whether any of it has migrated.

Q: Since BZ tends to be soluble in an acidic, as opposed to aklaline condition, won't the presence of acid pits on the site hike the chance that the chemicals will migrate? Has this been considered?

SIRRINE ENVIRONMENTAL CONSULTANTS: BZ does become more soluble where there are acid conditions however at this site the pH levels are neutral. The acid pit area is not a BZ disposal area.

COMMENT: You seem to have used different testing standards for the Chemtronics property where you sampled for BZ, CS and other chemicals, from off-site properties where you tested for indicator chemicals.

EPA: A full testing scan was run on all samples collected from off-site and on-site areas. Those analyses included BZ & CS.

Q: Why was the landfill above Tropigas not mentioned? Did you say that Tropigas was a non-hazardous site?

EPA: The area was investigated. Ground-water sampling was conducted and no contaminants were found in the ground water. According to EPA's data it is a non-hazardous site.

Q: Did Chemtronics provide you with a list of each of the chemicals they've used and would it be available? When you say "hot spots" would that be as much as two drums of cyanide? I remember two drums of cyanide back in 1979 and can give you the name of the director of the lab who can tell you about them.

EPA: Chemtronics is required under the Superfund and other laws to provide that information however there is another list that they requested be held confidential for business purposes. We didnt find Cyanide. We will look into any information that can be provided.

C. Adequacy/Effectiveness of EPA Proposed Remedy to Protect Human Health or the Environment

Several attendees expressed concern over whether the proposed remedy for the site was adequate or the most effective option for protecting the health of community residents and the environment. Many points focused on on-site incineration and ground-water extraction, two components of the remedial alternative. Questions were also raised about long-term monitoring of the site. These points are as follows:

Q: Why was there no consideration of having a hazardous waste management firm remove the drums and transport them to an approved incineration facility?

COMMENT: This area has not been well researched and many incinerators in this vicinity have been problematic.

Q: Will there be an environmental impact study performed on the use of an on-site incinerator? We have problems in this area with air inversions.

Q: Will you check each drum planned for incineration to make sure that any CS contained in it is decontaminated?

Q: If the air becomes contaminated, how will that affect our food chain? We have dairy cattle, raise our own vegetables and raise our own animals for meat.

Q: If you burn the contaminants, won't they be released into the air?

Q: If incineration is not dangerous, why was the valley evacuated in 1967 when the Chemtronics Plant caught fire?

Q: Where else has on-site burning of the same chemicals been successfully performed so that we can compare test burns to those results? Would we be the first such incineration example?

Q: What will the incinerator be used for? How will its use affect local industry? What kinds of toxic regulations are in place?

Q: Will temperatures in the incinerator be sufficient to achieve destruction of the toxics like chromium or lead, and prevent dioxin from forming?

Q: Would the ash from the incinerator be buried and capped?

Q: If you incinerate, will you test milk and dairy animals in the area to see if anything could be escaping or not properly done so that we know if what we are consuming will be healthy?

SIRRINE: There may be some confusion about incineration in the sense of comparing it to burning or an open flame. The incineration of the hazardous wastes at the site would involve temperatures of 1800° and higher where wastes would remain inside the incinerator for at least 30 minutes. Properly designed, constructed, tested and operated incinerators should destroy all the wastes and render the ash non-hazardous. Testing animals and milk in the vicinity goes beyond the normal scope of what is addressed in the FS, which takes information generated by the RI and develops remediation alternatives. Those issues are not at risk at this point. There are numerous sites using on-site incineration. For chemicals like BZ, the U.S. Army facility at Pine Bluff, Arkansas could be contacted to obtain information.

EPA: Before an incinerator would be allowed to operate, pilot studies would be done to ensure that 99.99% destruction of chemical contaminants occurs. Stack tests would also be done to monitor emissions and if the stack test results cause any doubt about the incinerator performance, the engineering design would have to be changed. EPA has the authority to deny issuance of the permit necessary to operate an incinerator if the Agency is not convinced that it would protect human health and the environment. Stack tests are continually run to ensure that the

required level of destruction is taking place. Any residual, or ash, from the incinerator would be tested before it is disposed of and capped to ensure that all the waste, including any metals, are destroyed. If an incinerator were to be selected for treatment of Chemtronics wastes, no contaminants from other sites or industries would be brought to the site.

EPA did consider the alternative of removing wastes from the Chemtronics property, and transporting them to an off-site incinerator. The level of effectiveness of the remedy in each case would be the same, however, off-site incineration would cost roughly an additional 11 million dollars. Transportation safety issues are also involved with the off-site option. For these reasons, EPA would prefer the on-site incineration option to transporting the material.

Q: If your proposed ground-water extraction system were to indicate that there is no longer any contamination, would you cease extraction -- continue to monitor? Would a period of heavy rain in the future cause the water table to rise, come in contact with the contaminant source, and re-contaminate the ground water?

SIRRINE: The waste is buried sufficiently high above the water table to prevent contact, even in abnormal conditions though even then fluctuations in the water table are slight. The capping option being considered for the site is designed to prevent infiltration of rain and other moisture that would carry contaminants down to the ground water. The extraction system would then collect, remove, and treat existing contaminated ground water.

Q: Would Chemtronics still be allowed to test their explosives near ground-water monitoring wells as they did the other day? Private well water levels have dropped as a result of the explosions.

EPA: A monitoring program on the extraction system would be set up to make sure that it was intercepting the entire contaminant plume. This monitoring system would detect any well failures. The thickness of rock layers would protect these wells against failure due to explosions. Once the wells were installed, if Chemtronics' activities distrupted the system, EPA would require them to install a whole new system.

Q: How long will EPA monitor the site? Would this be on- and off-site wells? And how long would the cap be monitored?

ATSDR: ATSDR is recommending that monitoring be done on on-site and off-site wells to make sure nothing goes off-site; EPA will determine the monitoring period.

EPA: Basically the monitoring period is long-term which could range from 10 to 50 years. Most likely there would be a thirty year monitoring period, the lifetime of a cap. The system would be re-evaluated every five years.

D. Time Required to Clean Up the Site, Restore the Land

Questions or comments expressing concern about the length of the Superfund process or time required for recovery of the land or water resources were as follows:

Q: If the area containing waste is to be incinerated, how long will it take to return it to usefulness or to its full potential?

Q: How long will the cleanup take -- three months? Three years?

SIRRINE: That will depend somewhat on the remediation selected. If the decision is based on the fact that exposure to the chemicals is not occurring, the selection would be to cap the area, extract and treat the contaminated ground water, and continue to monitor to make sure no problem develops. Those procedures would take place quickly. Treatability and pumping tests are needed to be able to estimate closely, how long it would take to install and run the ground-water extraction system. Typical time-frames are five to seven years or more. Our conservative estimate (to figure costs) is 30 years but this will become more possible to determine once tests are run. For incineration, depending on the alternative selected, special design, safety and test procedures would have to be set up at the site. After that the actual incineration could take three years.

Once destruction of materials is completed, the ash would be buried and the ground re-vegetated. At that time the land would be available for any use designed for the area.

E. Chemtronics Operating Procedures

The following two questions were posed regarding current practices at the Chemtronics facility:

Q: Is there any explanation as to why on holidays and weekends, we get terrible chemical odors?

Q: I'm concerned about what we breathe every day. I dont understand why it hasn't been fully covered.

EPA: We in the EPA Superfund Program are not in position to respond to the questions of air emissions from the company's day-to-day chemical plant operations. We cannot guarantee that you are not getting exposed to air releases that are not regulated by this program. There are no releases of pure chemicals. The odors mentioned or any releases that may have occurred recently should be reported to the County Health Department the State, or the Occupational Safety and Health Administration (OSHA).

Q: Why, when we call Chemtronics to ask about explosions do they say they are not permitted to tell us?

ROBERT KING,
CHEMTRONICS PRESIDENT: You will get an answer to those questions.

F. Government Responsiveness to Community Concerns or Inquiries/Need to Extend Public Comment Period/Technical Assistance Grants

Several aspects of concern were expressed regarding government responsiveness to citizens or the degree to which EPA and other agencies included citizens in the RI/FS process. Two or three questions regarding Technical Assistance Grants and the RI/FS process were inaudible to the court reporter. This section includes a major point EPA made in response to those questions. Questions or comments representing these concerns are as follows:

COMMENT: Only one copy of the draft FS was sent to the County in December and three people knew about it. I was asked for my comments 48 hours before the PRP's were to meet, and had not been informed that the FS was available. There was no way I could go through four inches of material in 48 hours. When I asked about the date of the public hearing, the official response was "EPA only has to notify the media three days in advance." Also, a videotape prepared by a public interest organization as part of the public relations package for Chemtronics was available in September but not shown to the public until two weeks ago due

to a bureaucratic nightmare. EPA should explain the reason for this and should extend the public comment period. I realize EPA is under pressure to complete certain activities at many sites by the end of March, but three weeks is insufficent time. As of tonight we have two copies of the FS, which we will get out to the public and we will get whatever expertise needed to review this but we cannot do it in three weeks.

EPA: The FS was sent out to all concerned parties however it has been learned that the Buncombe County Hazardous Waste Advisory Board no longer exists. EPA was not informed of its discontinuance. EPA will consider the request to extend the public comment period.

Q: Is there a responsiveness summary for the RI? there were a number of comments from the community on the RI and most of us got no answer.

EPA: The responsiveness summary process is not required for the RI. To our knowledge Issues raised at the RI public meeting were addressed in some form.

COMMENT: I understand there are requirements but also there is the philosophy that community input is encouraged and it is discouraging to put in many questions and receive no answers.

COMMENT: There are people who are not sure their question will be answered, and who fear that they are going to be left out, which has been the case with siting incinerators. It is clear to me there is a problem of trust.

EPA: EPA has not decided upon incineration at this site. If community members submit comments during the comment period, they will be considered. A responsiveness summary will be prepared that will reflect EPA's consideration of questions and comments. As long as there is Superfund activitiy on a site, citizens can apply for Technical Assistance Grants (TAG). Even if the EPA Record of Decision is signed, citizens can have input to the remedial design. Procedures for the TAG program are expected to be published in the Federal Register by the end of March 1988, and the application process is expected to get under way this fall. Interested citizens can send EPA Region IV a letter of intent to apply for the grant. EPA will send the TAG manual and fact sheets to interested parties, upon request as soon as they are available to the Agency.

Public Comment Period

Included are several letters received by the Agency during the public comment period as well as the Agency's response.

IV. REMAINING PUBLIC CONCERNS.

In addition to those concerns voiced at the public meeting, some additional public concerns are described below.

* Additional sampling/analysis of residential wells for volatile organics.
* Responsibility of long term monitoring of the groundwater and maintenance of the caps.
* Effectiveness of the monitoring system.

Anne Noah
140 Riddle Rd.
Swannanoa, N.C.
28778

March 20, 1988

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RECEIVED
MAR 23 1988
EPA — REGION IV
ATLANTA, GA.

Jon Bornholm
Site Project Manager
U.S. E.P.A.
345 Courtland St., N.E.
Atlanta, Georgia 30365

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Dear Sir:

I am concerned about the proposed cleanup of the hazardous waste at the Chemtronics Site in the Swannanoa Valley. Also I feel that not enough testing has been done at the Trop-Gas and Buckeye Cove Sites. I feel that off-site monitoring for health reasons should be done during the cleanup.

I would like to see EPA give a further extension of time to the community, so they can get technical help for an independent review of the EPA plan.

Thank you for your help.

Sincerely,

Anne Noah

MAY 0 3 1988

WD-SFB

Ms. Anne Noah
140 Riddle Road
Swannanoa, NC 28778

Dear Ms. Noah:

This correspondence is in response to your letter the Agency received on March 23, 1988 during the public comment period on the draft Feasibility Study and the proposed remedial alternative for the Chemtronics Superfund Site.

As you know, the original public comment period on the draft Feasibility Study and EPA's proposed remedial action at the Chemtronics Site expired on March 18, 1988. Later, the comment period was extended to April 1, 1988. The community's desire for the public comment period to be extended two months past the date the community receives the Technical Assistance Grant (TAG) was brought to the attention of Mr. Lee DeHihns, Acting Regional Administrator. It was his decision to let stand the April 1, 1988 closing date for the public comment period. His decision was based on the appraisal that even if the community was selected for such a grant, we estimated that it would take approximately eight months to a year for the Agency to make the award and for you to procure a consultant and review the report the consultant develops. The Agency, however, is mandated by Congress in the Superfund Amendments and Reauthorization Act of 1986 (SARA) to have cleanup activities underway at 175 Superfund Sites by October 1989 and any untimely delays will impede the Agency's attempt to achieve this goal.

SARA also encourages the Agency to select permanent solutions for the clean-up at Superfund Sites. After the Agency reviewed all the remedial technologies identified in the draft Feasibility Study for addressing source control for the contaminants found in the disposal areas containing drums, the only remedial alternative that achieves this goal is incineration. Off-site incineration was eliminated from consideration because it was estimated that it would be more cost effective to incinerate these materials on-site.

Under ideal conditions with the incinerator working as designed, the only compounds that would be entering the environment from the incinerator would be the ash/soil residue from the burnt soils and water vapor and carbon dioxide out of the smoke stack. Therefore, virtually complete destruction of the contaminants would be achieved.

This remedial alternative was not selected for several reasons. First and foremost, is the threat posed by live ordnance buried along with the drums to the workers who would be involved in the excavation of these drums in order to prepare them for incineration. The second issue considered was the potential damage that this ordnance would have on the incinerator itself. If these devices exploded inside the incinerator's chamber, it would be difficult to predict the results. One possible scenario is the release of partially destroyed contaminants into the environment. This coupled with the fact that the Asheville area is located in part of the country that experiences frequent air inversions, would increase the potential to exposing the community to these partially destroyed chemicals if a release, for any reason, occurred. And thirdly, a great number of citizens voiced a negative response towards on-site incineration both in the public meeting and during the public comment period.

This left the Agency with basically one other remedial alternative to address source control for these disposal areas that would adequately protect the public health and the environment and that was to place a cap over these disposal areas. It was not advisable to follow a no action alternative since the contaminants disposed of in the majority of these disposal areas are presently migrating with the groundwater from their disposal areas.

SARA also encourages the Agency to implement a remedial alternative that reduces the mobility, toxicity and volume of hazardous waste at a Superfund Site. The capping of the drum disposal areas along with the capping of the acid pit area and the soil fixation/stabilization/solidification process for disposal area 23 along with extracting and treating groundwater will meet these criteria. The security fences to be installed around these capped areas will help maintain the integrity of the caps by preventing unwanted intruders including man and animals alike, from damaging the cap.

In addition to the remedial activities stated above, a long term monitoring system will be instituted for the groundwater in both valleys and surface water. This monitoring system will provide data that will be used to indicate whether or not the remedial action implemented is working as designed.

As directed by the Chemtronics work plan the Agency developed for the Chemtronics Site and the Administrative Order of Consent signed by the Chemtronics, Inc. and Northrop Corporation and the Agency, in any off-site area that was identified with credible information would be investigate as past of the Remedial Investigation (RI). Since these off-site areas are not part of the "Chemtronics Site" as defined under the Comprehensive Environmental Response Compensation and Liability Act of 1980 (CERCLA), even if extensive contamination was found, these areas could not be addressed as part of the Chemtronics Site. For this reason, it was determined by the Agency to require only three soil borings into each identified area. All samples collected by the Agency were analyzed for the hazardous chemicals we normally look for in addition to analyzing for the compounds of BZ and CS. All borings made in the Buckeye/Walnut Cove landfill and the landfill adjacent to the Tropigas building penetrated the entire depth of the landfills and were terminated approximately five feet into the underlying soil.

The purpose of this initiative was not to provide sufficient data to determine how to remediate these areas but to see if these areas posed an immediate hazard to the community. The data generated during the RI indicates that these areas do not pose a hazard.

In their Health Assessment for the Chemtronics Site issued on March 21, 1988, the Agency for Toxic Substances and Disease Registry (ATSDR), recommended that residential wells be sampled and analyzed for volatile organics. This recommendation will be implemented. This is being performed only as a precautionary measure to ensure that the drinking water is not contaminated by any source. This testing of residential wells may be a one time occurrence or included in the long term groundwater monitoring program for the Site.

If I can of be of further help, please do not hesitate to contact me at (404)347-7791.

Sincerely yours,

Jon K. Bornholm
Superfund Project Manager

4WD-SFB	4WD-SFB	4WD-SFB
BORNHOLM	HANKE	GREEN
JKB 4/27/88	4/27/88	

Jon Bornholm Telex DISK CHEMTRONICS, FILE C104, 4/26/88

SKADDEN, ARPS, SLATE, MEAGHER & FLOM
1440 NEW YORK AVENUE, N.W.
WASHINGTON, D.C. 20005-2107
(202) 371-7000

919 THIRD AVENUE
NEW YORK, NEW YORK 10022
(212) 735-3000

ONE BEACON STREET
BOSTON, MASSACHUSETTS 02108
(617) 573-4800

ONE RODNEY SQUARE
WILMINGTON, DELAWARE 19801
(302) 651-3000

300 SOUTH GRAND AVENUE
LOS ANGELES, CALIFORNIA 90071
(213) 687-5000

333 WEST WACKER DRIVE
CHICAGO, ILLINOIS 60606
(312) 407-0700

18 FLOOR, HIBIYA CENTRAL BUILDING
1-2-9 NISHI SHINBASHI,
MINATO-KU, TOKYO 105, JAPAN
011-81-3-595-3850

March 31, 1988

VIA FEDERAL EXPRESS

Mr. Jon K. Bornholm
Site Project Manager
U.S. Environmental Protection Agency
345 Courtland Street, N.E.
Atlanta, Georgia 30365

Re: Chemtronics, Inc. Site
Swannanoa, North Carolina

Dear Jon:

I am enclosing a report prepared on behalf of Hoechst Celanese Corporation by ENVIRON Corporation, which provides comments on the Feasibility Study for the Chemtronics site. I hope you will find these comments helpful.

Very truly yours,

David B. Hunter

David B. Hunter

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COMMENTS ON THE FEASIBILITY STUDY FOR THE CHEMTRONICS SITE, SWANNANOA, BUNCOMBE COUNTY, NORTH CAROLINA

Prepared for

Skadden, Arps, Slate, Meagher & Flom
Washington, DC

Prepared by

ENVIRON Corporation
Princeton, New Jersey

March 31, 1988

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I. INTRODUCTION

This report is being submitted on behalf of Hoechst Celanese Corporation to provide comments on the Feasibility Study prepared for the remediation of the Chemtronics site in Swannanoa, North Carolina. The comments are based on review of the following documents:

- the Feasibility Study prepared by CRS Sirrine, dated December 1987;
- the fact sheet prepared by the EPA, Region IV, dated February 1988;
- the endangerment assessment prepared by CRS Sirrine, dated February 1988;
- comments prepared by the EPA and the North Carolina Department of Human Resources, transmitted in a letter from Jon K. Bornholm, EPA, Region IV to John F. Schultheis, Chemtronics, Inc., dated January 14, 1988; and
- a letter from Jon K. Bornholm, EPA, Region IV to Susan P. Engelman, Hoechst Celanese Corporation, dated February 3, 1988.

The comments provided herein are not intended to be a detailed critique of the Feasibility Study and the above-referenced documents. Rather, they are designed to address issues which we believe are of major importance to (1) the selection of a preferred remedy for the site, and (2) the manner in which such a remedy should be implemented. We have identified one major issue of concern which we believe has been addressed inappropriately or inadequately in the Feasibility Study: the development of ground water cleanup criteria for those chemicals with limited toxicological data. In addition, we have also presented comments on the adequacy of the

characterization of contamination in the biolagoon area; the limited information on the system proposed for recovery and treatment of contaminated ground water; and the risks associated with the excavation of materials potentially containing explosives.

II. DEVELOPMENT OF GROUND WATER CLEANUP CRITERIA

A. Scope of Analysis

Appendix A of the Feasibility Study, "Development of Preliminary Pollutant Limit Values for Chemicals with Limited Toxicological Data" presents the derivation of cleanup levels for soil and ground water for explosives (RDX, TNT, and picric acid), BZ and its breakdown products (3-quinuclidinol, benzilic acid and benzophenone) and CS and its breakdown products (malononitrile and o-chlorobenzaldehyde). Since the proposed remedy for source control, i.e., fixation of the soils in DA-23 and capping of the other disposal units will essentially eliminate exposure via soil contact, our analysis has focused on the development of ground water cleanup criteria.

Our analysis examines those chemicals for which maximum concentrations measured in the ground water of the site currently exceed the calculated cleanup levels or preliminary pollutant limit values (PPLVs) in the Feasibility Study, i.e., benzilic acid, benzophenone, and RDX; and also those chemicals that may have been present in drummed wastes that could result in future ground water contamination, i.e., 3-quinuclidinol, malononitrile and o-chlorobenzaldehyde. BZ and CS were not evaluated for the following reasons: (1) the drummed BZ is believed to have been decontaminated and, therefore, degraded into 3-quinuclidinol, benzilic acid, and benzophenone (based on information gathered from employee interviews); and (2) CS has a half life in water of 41 minutes (Demek et. al. 1970) and would therefore not be expected to be stable in a ground water environment.

The toxicological basis for the ground water PPLVs mentioned above was reviewed using the reference material from a literature search of chemical/toxicological files in Dialog Information Systems. Based on this reference material, the PPLVs or cleanup criteria derived by ENVIRON differed from the values presented in Appendix A of the Feasibility Study for benzilic acid and RDX.

B. Evaluation of Data for Benzilic Acid and RDX

For benzilic acid, the only available toxicological data were three LD_{50} values:

- Oral LD_{50} of 2000 mg/kg for the mouse (NIOSH 1987);
- Subcutaneous LD_{50} of 1300 mg/kg for the mouse (NIOSH 1987), and
- Intravenous LD_{50} of 400 mg/kg for the rat (McNamara 1963).

The LD_{50} value that was chosen in Appendix A (Rosenblatt 1988) was the intravenous LD_{50} cited by McNamara (1963). However, since the exposure route through ground water is ingestion, it is more appropriate to choose the LD_{50} associated with the oral route of administration. A factor of 1.5×10^{-6} (Rosenblatt 1988) was then used to convert the oral LD_{50} (2000 mg/kg) to a chronic human acceptable daily intake (ADI) value:

$$ADI = (2000 \text{ mg/kg})\ (1.5 \times 10^{-6}) = 3 \times 10^{-3} \text{ mg/kg/day}$$

Using this calculated ADI and assuming that a 70 kg adult consumes 2 liters of water per day, the ground water PPLV is:

$$\text{Ground Water PPLV} = \frac{(3 \times 10^{-3} \text{ mg/kg/day})\ (70 \text{ kg body weight})}{2 \text{ liters/day}}$$

$$= 105 \text{ mg/l or } 105 \text{ ppb.}$$

The benzilic acid PPLV presented in Appendix A is 21 ppb. ENVIRON suggests that 105 ppb be used for benzilic acid instead of 21 ppb.

For RDX, the drinking water preliminary pollutant limit value of 35 ppb (Rosenblatt 1988) was based upon toxicity information from Dacre (1980) in which an acceptable daily

intake (ADI) of 1 x 10^{-3} mg/kg/day was derived. The basis for this value was a subchronic (13 week) study in rhesus monkeys (Litton 1974) which identified a NOEL of 1 mg/kg/day; a safety factor of 1000 was used to derive the ADI (Rosenblatt, personal communication, March 25, 1988). We would endorse the use of this safety factor based on the following rationale: a factor of 10 for extrapolation from a subchronic to a chronic study, 10 for extrapolation from monkeys to humans, and 10 to account for interhuman variations in sensitivity.

A more recent chronic (2.5 year) feeding study (Levine et. al. 1983) has been conducted in Fischer 344 rats, which provided a NOEL of 0.3 mg/kg/day. (It is interesting to note that 0.3 mg/kg/day was also identified as a NOEL in a subchronic rat study conducted by Brown [1975].) Applying a safety factor of 100 to the NOEL (10 for extrapolation from rats to humans, and 10 to account for interhuman variations in sensitivity) results in an ADI of 3 x 10^{-3} mg/kg/day. This value has been proposed by the Oak Ridge National Laboratory (ORNL 1986) as the basis for an RDX water quality criterion for protection of human health. ENVIRON recommends using the 3 x 10^{-3} mg/kg/day as the ADI, because it is based upon a chronic study, in which the NOEL and LOEL were fairly close (0.3 and 1.5 mg/kg/day), as opposed to the subchronic study in which the NOEL and LOEL were separated by an order of magnitude (1 and 10 mg/kg/day). The NOEL from the Levine study also represents the lowest NOEL reported in the various RDX toxicity studies (ORNL 1986).

If it is assumed that a 70 kg adult consumes 2 liters of water per day, a water concentration of 105 ppb would correspond to the ADI of 3 x 10^{-3} mg/kg/day. ENVIRON suggests using 105 ppb, rather than 35 ppb, as the RDX limit value for drinking water.

III. OTHER ISSUES

The following section briefly presents comments on three issues pertaining to the Feasibility Study: the risks associated with excavation; the biolagoon failure; and the design of the ground water treatment and recovery system.

A. Risks Associated with Excavation

The comments provided by EPA make note of "the possible presence of explosives that could prove potentially dangerous to field workers" should a source control remedy involving excavation be used. The information presented in the Remedial Investigation (Metcalf & Eddy 1987) suggests the possible presence of explosives on-site. In addition, information provided by interviews with former employees has suggested the possibility of explosives in the fill of the disposal areas.

While we are not aware of any definitive way of confirming or disproving this possibility, short of actually carrying out the excavation work, we would suggest that this approach be avoided if ARARs for the site can be achieved by other remedies.

B. Biolagoon Failure

We endorse EPA's comment number 3 regarding the need for an expanded discussion of the biolagoon, the fate of the mixture that was released when the liner failed, and the significance of this occurrence. No analytical data are presented on the contaminants released from the biolagoon or on how such contamination might be remediated.

C. Design of the Ground Water Treatment and Recovery System

The Feasibility Study refers to the use of ground water recovery and treatment as a method of migration control. However, no explicit reference is made in the document to the design of the recovery system or to the volume of contaminated

ground water which it is expected to handle and treat. Furthermore, no approximation has been attempted for the time period over which the system is expected to have to operate to achieve a satisfactory level of cleanup. We believe that these considerations appropriately form part of the evaluation of technical feasibility, and should therefore be included in the Feasibility Study.

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APPENDIX B

COMMUNITY RELATIONS ACTIVITIES CONDUCTED AT THE CHEMTRONICS SITE

APPENDIX B

COMMUNITY RELATIONS ACTIVITIES CONDUCTED AT THE CHEMTRONICS SITE

The following is a chronological listing of community relations activities performed with respect to the Chemtronics Site.

* In February 1984, EPA attended an annual environmental studies seminar conducted by Warren Wilson College. The Chemtronics Site was used as a case study.

* In November 1984, EPA participated in a series of three meetings held to address community concerns with the Chemtronics Site. The three meetings held were with 1) the Buncombe County Hazardous Waste Advisory Board, 2) the administration and faculty of the college and 3) a group of local citizens and college students.

* In March 1985, EPA released a Fact Sheet describing the history of the Site and the RI/FS process. It also contained a glossary.

* In October 1985, EPA released a second Fact Sheet that described the history of the site, the current status, the RI/FS process and provided the location of the four information repositories.

* In June 1986, EPA released a third Fact Sheet that described past events and the current status at the Site.

* In October 1986, EPA approved the first audio-visual presentation that describes the chronological history of the Site and the objectives of the RI/FS process. This audio-visual presentation was shown to various community groups and organizations.

* In March 1987, EPA helped in presenting the findings of the RI to the public in a meeting held at Swannanoa Elementary School.

* In September 1987, EPA released a Fact Sheet that described the findings and conclusions of the RI report.

* In September 1987, EPA approved the second audio-visual presentation that describes the RI/FS process and the RI findings with regard to the Chemtronics Site. This audio-visual presentation was also shown to various community groups and organizations.

* In February 1988, EPA released a Fact Sheet that described the findings and conclusions of the FS report and the Agency's proposed remedial alternative for the Site.

* In February 1988, EPA conducted a meeting in which the results of the FS were summarized and the Agency's preferred remedial alternative was presented for comment. It was stated at the meeting that the public comment period was to end March 18, 1988.

APPENDIX C

PUBLIC NOTICES/NEWSPAPER ARTICLES

United States Environmental Protection Agency
Region 4
Office of Public Affairs
345 Courtland Street, NE
Atlanta, GA 30365
Alabama
Florida
Georgia
Kentucky
Mississippi
North Carolina
South Carolina
Tennessee

EPA Environmental News

(404) 881-3004

H. Michael Henderson
(404) 347 - 3004

PRESS ADVISORY

ATLANTA, GEORGIA - The U. S. Environmental Protection Agency, Region IV (EPA) will hold a public informational meeting on Tuesday, February 23, 1988, 7 p. m., at the Charles D. Owens High School Auditorium on Old Black Mountain Highway, Buncombe County, North Carolina.

The purpose of the meeting is to discuss the findings of the Feasibility Study and to inform the community of other EPA activities at the Chemtronics, Inc. Superfund Site. The meeting will conclude with a question and answer period designed to answer citizen concerns. A three-week public comment period on the remedial alternatives suggested in the study begins February 23rd. The comment period will end on Friday, March 18, 1988. Written comments should be sent to Jon Bornholm, Remedial Project Manager, USEPA - Region IV, 345 Courtland Street, N. E., Atlanta, Georgia 30365.

- MORE -

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ATLANTA, GA.

Documents relating to EPA activities at the Chemtronics site are available for citizen review at the Warren Wilson College Library, 701 Warren Wilson College Road in Swannanoa, NC, the Buncombe County Office of Emergency Medical Services, 8 New Leicester Highway, Asheville, NC, and the University of North Carolina at Asheville, Ramsey Library, One University Heights, Asheville, NC.

The Chemtronics Superfund site encompasses approximately 1,027 acres along Old Bee Tree Road in the rural Swannanoa Valley of eastern Buncombe County of North Carolina and was placed on EPA's Superfund National Priorities List in December, 1982.

###

U.S. Environmental Protection Agency

Chemtronics Superfund Site

PUBLIC INFORMATION MEETING

TUESDAY, FEBRUARY 23, 1988

at 7:00 p.m.

in the

CHARLES D. OWEN HIGH SCHOOL AUDITORIUM

Old Black Mountian Highway
Swannanoa, North Carolina

The purpose of the meeting is to present the findings of the Feasibility Study and EPA's proposed plan to remedy contamination at the Chemtronics Superfund Site, located in Swannanoa. The meeting will also provide interested citizens the opportunity to express concerns and ask questions regarding EPA's involvement at the site.

A question and answer period will follow a presentation by EPA.

United States
Environmental Protection
Agency

Region 4
Office of Public Affairs
345 Courtland Street, NE
Atlanta, GA 30365

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H. Michael Henderson
(404) 347 - 3004

PRESS ADVISORY

ATLANTA, GEORGIA - The U. S. Environmental Protection Agency, Region IV will extend the three-week public comment on the remedial alternatives suggested in the Chemtronics Superfund site Feasibility Study for two additional weeks. The comment period began on February 23, 1988.

In response to citizen concerns expressed at the February 23, 1988 public informational meeting the new deadline for comments will be Friday, April 1, 1988.

Written comments should be sent to Jon Bornholm, Remedial Project Manager, USEPA - Region IV, 345 Courtland Street, N. E., Atlanta, Georgia 30365.

Documents relating to EPA activities at the Chemtronics site are available for citizen review at the Warren Wilson College Library, 701 Warren Wilson College, Swannanoa, NC, the Buncombe County Office of Emergency Medical Services, 8 New Leicester Highway, Asheville, NC, and the University of North Carolina at Asheville, Ramsey Library, One University Heights, Asheville, NC.

The 1,027 acre Chemtronics Superfund site is located along Old Bee Tree Road in rural Swannanoa Valley of eastern Buncombe County of North Carolina. The site was placed on EPA's Superfund National Priorities List in December 1982.

###

Tear Gas, Lethal Chemical Share Name

By JACK HORAN
And TEX O'NEILL
Staff Writers

Operators of a chemical warfare and munitions plant near Asheville made tear-gas shells in the late 1960s that, in an apparent coincidence, bore the name of a chemical agent that kills by blistering the lungs of its victims.

The designation "CX" for both chemicals has confused federal regulators and led people who live near the plant to wonder whether operators made the blistering agent — and perhaps other lethal agents — at the Buncombe County site.

Last January, The Observer disclosed that operators secretly made 150,000 pounds of the chemical warfare agent BZ for the Army between 1962 and 1966. BZ causes hallucinations similar to those produced by the drug LSD.

A just-released document prepared for the U.S. Environmental Protection Agency (EPA) cites experimental production of "CX" at the plant now owned by Chemtronics Inc. "CX" is the name the Army uses for phosgene oxime, a lethal blistering agent, according to a chemical warfare official for the Army.

The official, Andrew Anderson, said he was certain the plant produced no "surety" agents — those that incapacitate or kill — other than BZ. Tear gas is not considered a surety agent.

"I'm 99.99% sure they never made any CX (blistering agent) at this site," said Anderson, chief of the assessment division of the Toxic and Hazardous Materials Agency in Aberdeen, Md. "... I think it was a designation they used locally. It's not an Army designation."

The mention of CX appeared in a document outlining how an investigation of hazardous wastes buried at the site near Swannanoa will proceed. The EPA is overseeing a "superfund" cleanup of the site.

"At one time," the EPA document says, "Northrop reportedly experimented with production of CX (burning CS)." CS stands for tear gas.

Northrop is Northrop Carolina Inc., a former subsidiary of Northrop Inc., the Los Angeles-based aircraft manufacturer. A Northrop spokeswoman confirmed this week the subsidiary made CX shells but referred further questions to the Army.

Two former Northrop officials also told The Observer the company didn't make the blistering agent.

John Schultheis, now president of Chemtronics, and F.M. Hudson, who was in charge of BZ quality control, said they doubted phosgene oxime was ever produced at the site.

"That CX we never messed with," said Schultheis. Added Hudson: "We never did anything in the way of phosgene or phosgene-type production out there."

On Tuesday, the subject of CX came up in an EPA-sponsored public meeting in Swannanoa. At the meeting was Mary Leslie of Camp Dresser & McKee, Inc., an Atlanta consulting firm that prepared the document and will do the site investigation for EPA.

When a questioner asked about CX, site manager Leslie replied she didn't know whether it referred to tear gas or the blistering agent.

"No one really knows," she said Thursday from a company office in Tampa. "It's something we're going to look into."

CX, the blistering agent, has never been stockpiled by the United States, according to Art Whitney, spokesman for the Army Materiel Command in Alexandria, Va.

Whitney, citing a field manual on chemical warfare agents, said CX causes a bee-stinglike pain on the skin and forms welts that are followed within 24 hours by scabs. He said inhalation of CX is deadly.

Charlotte N.C. Observer 4/3/85

EPA Officials Explain BZ Cleanup Plan

By NANCY WEBB
Staff Writer

SWANNANOA — Environmental Protection Agency (EPA) officials told a gathering of about 80 Swannanoa Valley residents Tuesday their plan for determining how much and what kinds of hazardous waste are buried at a former chemical warfare production site in the area.

During a question-and-answer session, the residents voiced concern about security at the site, immunity for site employees who have information about additional burial sites and testing of private wells for possible contamination.

In January, The Observer reported that wastes from manufacturing 3-quinuclidinyl benzilate, a hallucinogen known as BZ, might not have been properly neutralized before being buried at the site near Swannanoa in Buncombe County. BZ waste is believed buried in 300 to 500 drums in four or five landfills.

Inhalation of even a speck of BZ can cause up to seven days of disorientation and hallucinations similar to those caused by LSD. Both the Army and the EPA have said there is no imminent danger to the public from the BZ waste.

"The sooner this cleanup is done, the sooner it's finished and the sooner we have some of these companies pay the price the better off we'll be," said area resident Henry Kreitzer, a retired Air Force colonel. "They should not have been burying this stuff in the first place."

The plan presented Tuesday is a guide for the EPA's site investigation, which involves taking samples and determining the scope of the cleanup.

Wastes discovered at the site, including BZ and tear gas, were both made for the Army in the 1960s by two previous site owners. The wastes were left after nearly 30 years of manufacturing at the site now owned by Chemtronics Inc.

Audience members listened intently as EPA spokesman Jim Orban explained that the first step will be a preliminary investigation, followed by a feasibility study to determine remedies for the cleanup.

Before the cleanup can begin there will be another public meeting to explain the proposed process to area residents, Orban said. No timetable for the investigation or cleanup was presented.

Lawyer Bob Warren, an area resident, told Orban the EPA should make companies that occupied the site produce lists of employees and those employees should be contacted. Warren also suggested the employees be given immunity from prosecution.

Charlotte Observer 4/3/85

7 More Sites Identified As Waste Dumps

By JACK HORAN
And TEX O'NEILL
Staff Writers

SWANNANOA — The federal cleanup at the Chemtronics Inc. site in Buncombe County may have expanded Tuesday when a former production supervisor revealed seven previously unidentified chemical warfare and munitions waste sites.

The sites identified by Roy Burleson, 47, include six on the 1,027-acre property where the chemical warfare agent BZ — a hallucinogenic compound — was made for the Army in the 1960s.

The seventh site is along U.S. 70, six-tenths of a mile east of Swannanoa and about 2 miles from the Chemtronics property, designated for a "superfund" cleanup by the Environmental Protection Agency (EPA).

EPA officials said they will investigate the sites that Burleson said contain waste from the production of BZ, tear gas and explosives.

The disclosures by Burleson, who worked at the plant from 1963 to 1968, brought to 31 the number of known or suspected waste sites either on the mountainous property or elsewhere in the Swannanoa area.

"I know all the spots probably. Everything was poured on the ground. Trenches dug and filled over," Burleson said.

He made the disclosures at his home to EPA officials from Atlanta just hours before a public meeting on the site cleanup. He based his information on personal experiences and conversations with other workers.

Burleson said he worked for the previous owners, Amcel Propulsion Co., a subsidiary of Celanese Corp., a producer of chemicals, fibers and plastics; and Northrop Carolina Inc., a subsidiary of Northrop Inc., an aircraft manu-

See 7 MORE Next Page

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facturer.

In January, The Observer reported that Army officials thought wastes from BZ — 3-quinuclidinyl benzilate — may not have been properly neutralized before burial.

"There was a lot of waste buried off the site. BZ was not the only thing we were manufacturing. Everything (types of waste) was buried together on the site," Burleson said.

The EPA relied on accounts by Northrop Carolina officials and interviews with former employees of both companies in compiling the 23 original waste sites. The Northrop accounts did not include the sites Burleson named.

Asked about the suspected sites, Northrop spokeswoman Maria Oharenko in Los Angeles said late Tuesday that "we turned in to the EPA all the sites we were aware of."

Burleson also recently revealed in a television interview an eighth burial site near Bee Tree Creek several hundred yards from the Chemtronics property.

The waste site along U.S. 70 begins beside a propane gas company and extends eastward in a vacant field, he said.

EPA official Jim Orban said he expects to learn about more waste sites as EPA's investigation continues.

"If there's a reality to these seven sites," Orban said, "It adds more work, it adds more time to the cleanup."

April 3, 1985
The Asheville Citizen

Next Step In Waste Cleanup

Companies May Hire Contractor

By G. DALE NEAL
Staff Writer

The next step in the cleanup of hazardous waste at the Chemtronics plant in Swannanoa may be taken by the companies responsible for burying the toxic materials, Environmental Protection Agency officials said Tuesday.

Chemtronics Inc. and Northrop, a former owner of the site, may offer to hire a contractor to investigate the 23 burial sites on the 1,037-acre facility and devise a feasibility study to clean up the toxic wastes, according to Jim Orban of the EPA regional office in Atlanta.

The alternative would be for EPA to contract with Camp, Dresser and McKee to do the work, Orban told the some 75 local residents attending the public meeting at Swannanoa Elementary School.

The Chemtronics site was cited on the EPA's original 1982 Superfund list as one of the nation's most dangerous toxic waste dumps, largely on the basis of acid lagoons that drained away years ago.

Last fall, EPA officials learned that BZ, a powerful LSD-like hallucinogen, was manufactured for Army chemical warfare stockpiles during the 1960s by Ameel Propulsion and Northrop — former owners of the facility.

Mary Leslie of Camp, Dresser and McKee outlined the information gathered so far in the proposed work plan for the Chemtronics site.

In the next phase, samples will be taken from deep wells to determine the extent of groundwater contamination. Trenches will be carefully dug through fields where drums of waste from BZ and CS tear gas are buried, Leslie said.

Given the fractured bedrock of the area, locating the flow of any contamination through the groundwater will be difficult. "Can we find it, can we collect it, can we treat it? These are the critical answers we don't have yet," she said.

To date, no contaminants from the Chemtronics site seem to have migrated into neighboring wells, the officials said. There are contaminants in the Charles D. Owen Co. industrial wells, but those have been traced to another source.

Not all of the toxic waste may be removed in the final cleanup, Orban said.

Copies of the EPA work plan for the Chemtronics site are available for inspection at the libraries of Warren Wilson College and the University of North Carolina at Asheville. The EPA will take public comment on the draft plan until April 19.

After a final work plan is approved, the field work on sampling the disposal sites should begin within 60 days.

Section B The Charlotte Observer
Saturday, March 30, 1985

EPA Might Transfer BZ To Army Site

By TEX O'NEILL
And JACK HORAN
Staff Writers

The Environmental Protection Agency (EPA) is considering digging up chemical wastes at a former chemical warfare production site near Asheville and disposing of them at an Army facility, according to a draft plan to clean up the contaminated site.

The proposal is one of five the EPA is considering to dispose of various wastes, including BZ, a hallucinogenic compound, and tear gas, both made for the Army in the 1960s. They were left after nearly 30 years of manufacturing at the site, now owned by Chemtronics Inc. near Swannanoa in Buncombe County.

The plan indicates the EPA may run into difficulty if it tries to dispose of the wastes at two hazardous-waste landfills in Alabama and South Carolina.

"Initial inquiries into potential offsite disposal facilities (Pinewood, S.C., and Emelle, Ala.) have indicated that acceptance of the BZ wastes, with or without neutralization, may be a problem," the draft says. "This may necessitate transporting the wastes a much greater distance from the site, thereby substantially increasing the cost of disposal." No dollar figures are cited for the various disposal scenarios.

The draft suggests the wastes might be excavated, placed in containers and taken to the Army's Pine Bluff, Ark., arsenal.

The draft plan is a guide for the EPA's site investigation, which involves taking samples and determining the scope of the cleanup. After completing that investigation within 15 months, the actual cleanup can begin.

In January, The Observer reported that wastes from manufacturing 3-quinuclidinyl benzilate, a hallucinogen known as BZ, may not have been properly neutralized before burial at the site. Inhalation of only a speck of BZ can cause up to seven days of disorientation and hallucinations similar to those caused by LSD.

The Buncombe County site was placed on the EPA's cleanup list in 1982 because of groundwater contamination apparently unrelated to the BZ production. BZ was manufactured for the Army by two previous owners of the Chemtronics site. Chemtronics does not produce chemical warfare agents.

Other proposals in the draft plan include collecting and treating contaminated groundwater, containing without treatment all wastes in a landfill on the 1,027-acre site, and doing nothing.

The "no action alternative," the work plan says, isn't acceptable, given the level of site contamination.

Although about 150,000 pounds of BZ was produced for the Army by two previous owners of the Chemtronics site, the Army has said it will not accept responsibility for disposal of waste from BZ production.

BZ waste is believed buried in 300 to 500 drums in four or five landfills at the site. Both the Army and the EPA have said there is no imminent danger to the public from BZ.

EPA probes LSD-like chemical in dump

Atlanta Journal 1/28/85

United Press International

ASHEVILLE, N.C. — Officials are seeking to determine if waste from a chemical warfare agent so powerful that one speck can cause a seven-day LSD-like trip is dangerous 20 years after it was buried by the Army in landfills.

The Environmental Protection Agency is questioning workers who buried the waste from a chemical known as BZ, or 3-quinuclidinyl benzilate, near Asheville in the 1960s.

Experts say the chemical is so strong a tiny speck can produce seven days of disorientation and hallucinations similar to those caused by LSD.

BZ was made in strict secrecy for the military by two companies on the site of the present Chemtronics Inc. plant, one mile north of where some 300 to 500 drums of the waste are buried in two landfills, the Charlotte Observer reported Sunday.

Chemtronics does not produce chemical warfare agents.

Neither Army nor EPA officials could be reached for comment. But an Army official raised concern at a meeting in September, saying BZ waste may not have been fully neutralized by a "kill solution" before being buried.

"He wasn't sure," said the EPA's Dennis Manganiello, who attended the meeting with Army official Neil Baker. "He was talking about the worst possible case. If BZ wasn't in a certain form, it would be very dangerous to handle. If it was inert or co-mingled wih other materials, it wouldn't be as dangerous."

The landfills are on the Superfund hazardous waste cleanup list, and the EPA started interviewing former employees last week to determine how they disposed of the chemicals. Officials said the investigation will take at least a year before any hazardous wastes are removed.

The EPA has not estimated cleanup costs, but an official at Chemtronics said it would take five years and $5 million if active BZ is found.

Military officials, however, say the BZ waste, even if active, poses no immediate danger to the public because it is underground.

Amcel Propulsion Co., a subsidiary of the New York-based Celanese Corp., and Northrop Inc., a Los Angeles-based aircraft manufacturer, produced 150,000 pounds of the chemical from 1962 to 1966 at the site.

The BZ waste is part of a legacy of Army efforts dating to the 1950s to expand chemical warfare stockpiles, which it maintained since World War I.

The Army became interested in BZ because, unlike nerve gas, it does not kill or injure. The drug wears off in one to seven days.

EPA probes chemical warfare site danger

United Press International

ASHEVILLE, N.C. — Officials are seeking to determine whether waste from a chemical warfare agent, so powerful that one speck can cause a seven-day LSD-like trip, is dangerous 20 years after it was buried by the Army in landfills.

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Young

FROM 1A

ber, they'll say he hasn't done anything."

Indeed, the $130 million Underground Atlanta entertainment complex and the $25 million renovation of the beleaguered Atlanta Zoo remain on the "to-do" list. Those and other downtown development projects were mentioned in Young's speech. But the best he could say about them was that plans were progressing well.

So Young and his staff put together a list of facts, figures and trends that he ticked off to the council in his first prepared-in-advance State of the City address. And although the mayor was clearly less comfortable than he is in his usual speaking mode and although thus far he has no publicly declared challenger, Young went on record with some figures that are likely to be recited again when the re-election campaign is under way.

He talked, among other things, about the 25,000 new jobs, the $1 billion worth of building permits, the visits to Atlanta by six foreign heads of state, the growing international service industry, the new sewer treatment system, the dropping crime rate and the Davis Cup tennis tournament.

Imagine his staff's frustration when the same old complaint rebounded out of the council chambers: "visionary without specifics." Council members charged that the mayor talked about what he wanted to do in the future — urge developers to work on more of a pedestrian scale, spread economic progress to

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AT&T posts $1.4 billion profit in '84

From Wire Reports

NEW YORK — American Telephone & Telegraph Co. said today that it earned less than expected in the first year after divestiture but still posted a profit of almost $1.4 billion.

The telecommunications giant earned $1.379 billion, or $1.25 per share, on revenue of $33.19 billion in 1984.

DELTAS UP TO 7

Chemical

Weapon Waste Buried Near Asheville

Continued From Page 1A

airborne contamination by BZ. No one was injured or exposed to BZ.

- Manufacturers required BZ workers to play Ping-Pong during the last two hours of each work shift so staff nurses could detect behavioral signs of contamination and place any exposed workers in a padded cell.
- Despite airtight plastic suits and an elaborate decontamination procedure, as many as 20 workers were exposed to BZ. The compound caused reactions ranging from mere dilation of the eyes to an incident in which one disoriented victim broke out of the padded cell, slugged a guard and fled shoeless to nearby woods.

The two BZ waste landfills are located on a 1,027-acre, mountainous tract in the Swannanoa Valley of eastern Buncombe County, less than a mile from Warren Wilson College. The BZ waste landfills — as well as 21 other waste sites EPA has identified on the site of the former chemical warfare and munitions plant — are overgrown with pines and hardwoods.

Officially, the Army maintains there is no reason to suspect active BZ is buried there, because it would have decomposed years ago.

So do the two companies that made BZ: Celanese Corp., a New York-based producer of chemicals, fibers and plastics, and Northrop Inc., a Los Angeles-based aircraft manufacturer. A Northrop spokeswoman says BZ waste "was neutralized in accordance to the formula given to us by DOD (the Department of Defense)."

Celanese produced BZ through a subsidiary, Amcel Propulsion Co., before Northrop bought the subsidiary in 1965 and renamed it Northrop Carolina Inc.

The official who oversaw BZ production for both Amcel and Northrop said he believes the caustic kill solution completely neutralized BZ wastes. "Our experience was that it was effective," said Lewis Rothstein, 64, who now works for the Navy. "I'm confident it would have been broken down by the (solution) a long time ago."

But the Army official and Chemtronics officials cited two possible problems with the kill procedure that suggest active BZ exists.

Chemtronics officials say Army official Neil Baker told them at a meeting on Sept. 6 that research shows the caustic solution used 20 years ago could be inadequate to neutralize BZ particles, which were buried with clothing, floor sweepings and other debris.

That day, Chemtronics President Schultheis said he told Baker that he and safety officer Calvin Leigh interviewed workers in 1971 about the disposal of BZ wastes. Schultheis said one or two workers told them they sometimes simply poured "a little" solution on top before drummed waste was buried.

Staff Photos By DON STURKEY

Aerial View: Numbers (1) and (3) locate burial sites of wastes of chemical warfare agent BZ at Chemtronics Inc. plant east of Asheville. No. (2) shows former BZ production building that caught fire in 1965. Inset shows closeup of former BZ production building. The four lagoons in the right of the photo are fish ponds.

Schultheis said Baker told them that stirring was necessary to ensure complete contact between the wastes and the solution.

The EPA's Dennis Manganiello, who also attended the meeting, remembers Baker had doubts about whether BZ waste was neutralized: "He wasn't sure. He was talking about the worst possible case. If BZ wasn't in a certain form, it would be very dangerous to handle. If it was inert or co-mingled with other materials, it wouldn't be as dangerous."

Schultheis

The Observer was unable to interview Baker about his concerns despite three weeks of repeated efforts.

At the time, Baker was a surety officer from the Rock Island, Ill., Arsenal, headquarters of the Army's Armament, Munitions and Chemical Command. A surety officer is responsible for chemical agents deemed so dangerous or crucial to national security as to require special protection.

Baker and three other Army officials, all dressed in civilian clothes, visited the Chemtronics site last Sept. 6 after the EPA learned that two drums marked "BZ" had popped out of a landfill.

For safety reasons, Schultheis wouldn't allow the officials to sample the drums' contents. Instead, the Army tested residue from the exposed inner wall of a single barrel. The limited testing didn't show active BZ in the black goo.

Despite official Army assurances that there is no active BZ in the barrels, EPA is proceeding with its cleanup plan as if active BZ is buried there.

"We're going to be prepared for the worst," said the EPA's Jon Bornholm, the Atlanta region's project manager for the Chemtronics site. "For safety reasons, we have to assume the worst."

No one has attempted to excavate the buried drums. The EPA doesn't expect to begin for at least a year — after it has devised a detailed plan to remove and dispose of all the wastes at the site.

While Chemtronics wants the Army to take the lead in cleaning up the BZ landfills, the Army has disclaimed responsibility. An Army spokesman says the cleanup is the EPA's and contractors' problem, and it has agreed to give technical assistance only. The EPA hasn't asked the Army to do the cleanup.

The EPA views the BZ waste as a potentially dangerous chemical no worse than others encountered in superfund cleanups.

"It doesn't kill you. And lots of things we deal with will kill you," said Jim Orban, an EPA unit chief in the remedial action section in Atlanta.

BZ was invented about 35 years ago by the Nutley, N.J., pharmaceutical company of Hoffmann-LaRoche Inc. to inhibit gastric secretions.

Amcel began the country's only production of BZ for the Army in 1962.

Together, Amcel and Northrop produced 150,000 pounds of BZ in military secrecy, said F.M. Hudson, who was in charge of BZ quality control. Rothstein, who oversaw BZ production, said Amcel produced about 90% of the BZ at the site.

The Army periodically picked up the BZ and escorted it under guard to its Pine Bluff, Ark., Arsenal, where much of the white powder was loaded into bombs and bomb clusters. But the bombs were never used because BZ's effect is unpredictable, causing some victims to become docile, while others become violent.

Today, Army documents show, Pine Bluff keeps under guard about 10,750 pounds of pure BZ, 85,000 pounds of BZ in bombs and clusters and 300,000 pounds of BZ residue and contaminated material. It's one of four basic types of chemical warfare agents, including nerve and mustard gases, that the Army plans to destroy. The BZ is stockpiled in igloolike bunkers, awaiting destruction when the Army completes a $40 million facility to incinerate it beginning in 1987.

During production, Amcel and Northrop Carolina (NCI) neutralized and disposed of BZ-contaminated materials, according to an NCI memo. That includes at least one batch of perhaps several thousand pounds of substandard BZ in drums, according to Chemtronics officials.

The 1971 memo, entitled "NC Burial Grounds" and written by safety officer Leigh, said of burial ground No. 6: "This was one of the first burial grounds established during the early part of 1963 by Amcel (Celanese). This burial ground was utilized to bury the Agent BZ. The BZ was buried in metal containers after the contents were fully treated with 'kill' solution ...."

The memo said of burial ground No. 10: "... NCI utilized this area to bury BZ Agent from October 1965 through May 1966 ...."

Also buried at the site were spent cyanide, tear gas waste, acids, solvents and the residues of explosives, rocket propellants and flares.

Asked about the memo, a Celanese spokesman said all Amcel records were passed on to NCI in 1965. The spokesman said Celanese "... conducted an extensive investigation of Amcel's operations of 20 years ago, and we have been unable to determine that the company disposed of hazardous substances at the site ...."

He said former Amcel executives and scientists "have assured the corporation today ... that (BZ waste) is fully neutralized if it ever was there and presents no danger."

Disagreement over who disposed of the waste extends to who should clean it up. Under a superfund cleanup using federal money, companies reimburse EPA according to a proportionate share of their liability.

While Chemtronics and Northrop say the Army should take the lead in the cleanup, Celanese says recent federal waste management legislation makes Chemtronics responsible for the entire site.

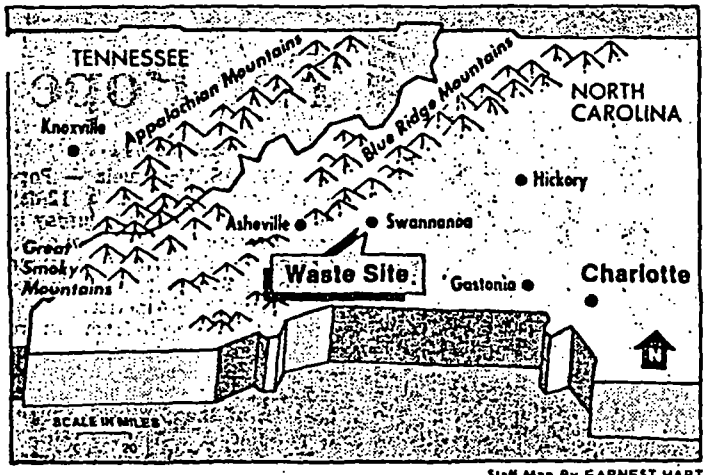
Chemtronics, owned by Halliburton Inc. since 1980, didn't produce BZ. Schultheis said Chemtronics makes no chemical warfare agents. It manufactures commercial explosives, flame retardants and chemical warfare decontamination kits for the military.

The wastes didn't come to the attention of regulators until 1980, when the EPA and state environmental regulators investigated the site after a resident complained of odors from seven open acid waste pits operated by Chemtronics. In 1979, a Chemtronics waste lagoon leaked into the ground.

The inspection eventually led the N.C. Division of Environmental Management to discover groundwater contamination. Two years later, the EPA declared Chemtronics a superfund cleanup site.

See FEDERAL Next Page

Chemical Weapon Waste Buried In N.



Staff Map By EARNEST HART

hemical Dump: BZ waste is buried in two landfills at the present Chemtronics Inc. plant a mile north of Swannanoa. The substance was made for the Army 20 years ago.

Secret Project's Debris Might Remain Pote

By JACK HORAN and TEX O'NEILL
Staff Writers

Waste from a powerful chemical warfare agent produced for the Army 20 years ago is buried near Asheville and may still be dangerous, The Observer has learned.

The chemical is a hallucinogen known as BZ. It is so powerful that only a speck can produce seven days of disorientation and hallucinations similar to those caused by LSD.

BZ was made in strict secrecy on the site of the present Chemtronics Inc. plant, where the waste is buried in two landfills. Until now, most people didn't know the chemical warfare agent was produced there.

An Army official raised concern in September that BZ waste may not have been fully neutralized by a "kill solution" before burial and could remain potent.

"We were told unofficially by the Army that that particular solution didn't always kill BZ," said Chemtronics President John Schultheis. "We were led to believe that since the days of (previous owners) Amcel and Northrop, that ratio of kill solution to waste material had been insufficient."

Federal officials say, however, that the BZ waste — even if active — poses no immediate danger to the public because it remains underground.

The U.S. Environmental Protection Agency (EPA) plans to sample the landfills containing an estimated 300 to 500 drums of BZ waste for active BZ. The EPA is involved because the landfills are on a "superfund" hazardous-waste cleanup site.

The BZ waste at the Chemtronics site a mile north of Swannanoa is a legacy of Army efforts dating to the 1950s to expand chemical warfare stockpiles, which it maintained since World War I.

For reasons that are still classified "secret," the Army ordered "urgent" production of the odorless, white powder in 1961. The BZ — for 3-quinuclidinyl benzilate — v
bombs at an Arkansas arsenal.
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In all, two manufacturers pr
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See CHEMICAL Page

Federal Cleanup Of Sites Planned

Continued From Preceding Page

The EPA said sampling had detected 62 hazardous organic compounds and 20 metals in the waste pits, since closed, and in the groundwater and surface streams. EPA said the compounds include cancer-causing agents such as vinyl chloride and benzene and poisons such as cyanide and mercury.

Chemtronics's Schultheis said no breakdown products of BZ have been found in the monitoring wells at the site.

Felice Johnson, director of environmental affairs for Chemtronics, said the contaminants would take 40 years to reach the nearest property at the current groundwater movement rate.

Nevertheless, the EPA wrote last September, "As a result of such release, the drinking water supply of an estimated 350 people, and the recreational uses of Bee Tree Creek (which borders the site) may be adversely affected."

The EPA's Orban said the potential for contamination exists if the water enters a geologic fault and moves rapidly.

Although the EPA's attention during the past four years apparently focused on the groundwater contamination only, Chemtronics's Schultheis told The Observer he was certain Chemtronics mentioned BZ to the EPA during the 1980 site inspection.

"I said, 'You people are aware there are more burial sites on the property than acid pits and lagoons.'" He said they were furnished with a map of the burial sites.

"I think the EPA was, in one sense, burying their heads for a while," Schultheis said, "because all the media and the public were focusing on the acid pits."

An EPA report of the 1980 inspection noted a drum labeled "Riot Control Agent CS-1 XXXX" but no mention of BZ. CS refers to tear gas, made for the Vietnam War.

The EPA's Bornholm said the EPA first learned about the BZ in July, when it received documents from Northrop. EPA said it discovered the exposed BZ drums last Aug. 23 during a site visit and asked the Army to inspect them.

The Army sent Neil Baker; Capt. Paul Jones and Sgt. Jeffrey Hatcher, members of the Army's Technical Escort Detachment, from the Pine Bluff Arsenal; and Ed Meseke, a civilian specialist in BZ destruction, from the Edgewood Arsenal in Aberdeen, Md.

Joining them at the Sept. 6 inspection was Manganiello, an onscene coordinator of the EPA's Emergency Remedial Response Branch; and, for Chemtronics, Schultheis, Johnson and Leigh. Both Schultheis and Leigh had worked for Amcel and Northrop.

Leigh

After the meeting, at which Baker discussed the possibly ineffective neutralization, Johnson led the two soldiers to the drums, which sat upright in the woods behind Building 104. The drums were marked with yellow tape reading "BZ toxic" and "CS BZ CS" when two Observer reporters visited the site three weeks ago.

The soldiers — wearing air-purifying respirators and dressed in rubber gloves, boots, overalls and aprons — collected a single sample.

Baker then asked Schultheis if Chemtronics would put the drums in larger drums and escort them to the airport, where they would be flown to Pine Bluff for further testing.

Schultheis said he refused because he wasn't licensed to transport hazardous wastes. He said Baker then said the Army might send a team back and helicopter the drums to Pine Bluff.

The Army didn't return.

On Nov. 16, the EPA's Bornholm wrote Brig. Gen. Bobby Robinson, commander of the Army Materiel Command in Alexandria, Va., asking if the Army would help test or remove the BZ waste.

"Because of the unknowns associated with the buried BZ at this site . . . ," Bornholm wrote, "we need to arrange a meeting to clarify (the Defense Department's) role."

Robinson, who died Jan. 14, was in charge of the command that oversees chemical weapons at the Pine Bluff, Rock Island and Edgewood arsenals.

Bornholm said that on Dec. 5 he met with three Army officials from Aberdeen, Richard Roux, Andrew Anderson and Meseke, all members of the Army's Toxic and Hazardous Materials Agency. At this meeting, Bornholm said, the officials told him a review of production contracts indicated all BZ had been properly neutralized.

Recently, Roux told The Observer that even if the waste wasn't disposed of properly, he thought there was no active BZ because it was a chemically unstable compound that would decompose in water.

He said BZ has a five-year shelf life, meaning the Army considers it to be reliably potent for no more than five years.

As part of its inquiry, the EPA last week began interviewing former employees to determine how BZ wastes and other chemicals were disposed of.

Bornholm said the investigation will take at least a year before any hazardous wastes are removed. While the EPA has no estimate of how long the cleanup will take or its cost, Schultheis estimated it would take five years and cost $5 million if active BZ is found.

Schultheis said because BZ was produced for the Army, he wants any BZ waste incinerated at the Pine Bluff Arsenal. When completed, it will be the only facility anywhere capable of destroying the compound.

According to plans filed with the State of Arkansas, the Army says the incineration facility is necessary because "as the munitions age, deterioration is inevitable, hazardous conditions may arise, and the item may become increasingly unstable."

The plans call for incinerating BZ and BZ-filled munitions as well as wooden containers and wastewater contaminated by BZ.

"Anything that has potential contact with BZ, including wastewater, is incinerated," said Schultheis of the Pine Bluff facility. "It sort of belies the other approaches as being acceptable. They're sort of talking out of both sides of their mouth."

Public meeting on Chemtronics Tuesday

Black Mountain News
Feb 18, 1988

Results of an extensive Feasibility Study (FS) for the Chemtronics Superfund site in Swannanoa will be announced at a public meeting at Owen High School on Tuesday, Feb. 23 beginning at 7:00 p.m.

The U.S. Environmental Protection Agency (EPA) from District IV in Atlanta will conduct the meeting. EPA will detail recommended remedial actions to clean up the site. The alternatives considered by EPA range all the way from building caps for contaminated areas to sophisticated chemical solidification of soils.

The public in general and those who reside in the Swannanoa area in particular are urged to attend, according to Jon Bornholm, project manager for EPA.

The feasibility study was prepared for the EPA by Sirrine Environmental Consultants of Greenville, S.C. under the eye of the EPA, the two sponsors of the Chemtronics Site RE/FS action and a panel of environment engineers nationwide.

The purpose of the FS was to examine all possible methods of cleaning up the site, weeding out unworkable technologies and recommending workable site-wide alternatives; and to outline the considerations EPA could use in recommending remedial action (clean up).

In 1987 a Boston-based engineering firm completed the Remedial Investigation (RI) for the site. That study identified specific areas recommended for remedial action.

Investigators concluded that chemicals from the site have not migrated beyond property lines nor are they likely to do so within a span of 25 years.

In the FS phase, next Tuesday's topic, investigators evaluated chemicals found during the investigation. The engineers identified several targets for clean up: areas where organics and metals appeared in groundwater, where drums were buried, where remedial levels or tear gas and tear gas degradation products were detected in the soil, where chemical-agent BA and its degradation products were detected in the soil, where explosives, tear gas and tear gas degradation products were detected on the surface, and others.

The technical screenings of alternatives analyzed how effective the process would be in solving the clean up problems, how reliable it would be and how physically practical the process would be.

The health/environmental screening dealt with the safety of any process. If contaminated material was removed from a site, what would the risks be to human, wild life and the environment?

Cost became a factor only when comparing options that would achieve the same level of treatment. This means that if several alternative remedies were equally effective in terms of cleanup, relative cost would then be considered.

Each alternative will be presented at the public meeting on February 23 at Owen High School. The public will be able to ask questions and make comments. Under the law, the public then has three weeks to make comments and record exceptions to the ERA's recommendations.

After the public comment period, the EPA will prepare a record of decision which will document what will actually be done to implement the cleanup at the Chemtronics Site.

EPA Unveils Chemtronics Cleanup Plan

ASHEVILLE CITIZEN
FEB 18, 1988

By CLARKE MORRISON
Staff Writer

Incineration of contaminated soil and the removal and treatment of tainted groundwater are two methods being considered for cleaning up dump areas at Chemtronics Inc. in Swannanoa.

The U.S. Environmental Protection Agency has come up with recommendations for destroying or containing the explosives, solvents, cyanide and other chemicals at the former munitions plant.

But just what measures are used could depend on the concerns raised at a public hearing on the plan next Tuesday at Owen High School, said EPA project manager Jon Bornholm.

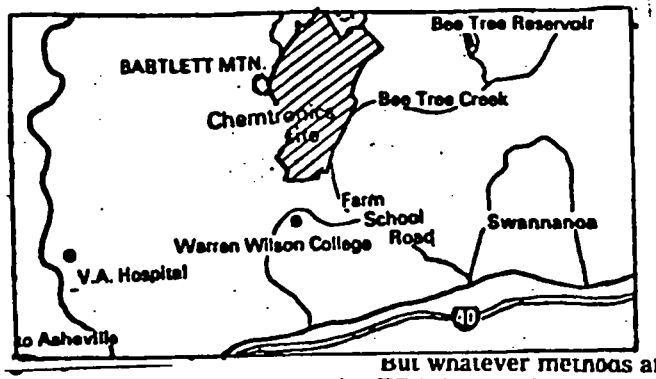
Burning the chemical-laced soil would be the most permanent, effective and costly solution. But if area residents express opposition to incineration, that option may have to be scrapped, he said.

In lieu of incineration, the EPA would allow the contaminants to remain at the various dumps scattered around the 1,027-acre site, but would cap them with layers of plastic, clay and other materials to prevent rain from washing the chemicals into the groundwater, Bornholm said.

In addition, the plans call for groundwater at the site to be pumped out of the ground through wells and treated so it won't contaminate the drinking water of adjacent areas, he said.

The Chemtronics site off Bee Tree Road was placed on the Superfund national priority list in December 1982 after EPA testing revealed 62 organic compounds and metals in wells used to monitor the site. The plant was constructed in the 1950s and has had several owners. Explosives, solid propellants, rocket motors and chemical warfare agents were manufactured there for the military, and the wastes from those operations were dumped in landfills and pits around the property.

The powerful hallucinogen BZ and a form of tear gas called CZ are among the hazardous wastes believed to have been buried there. However, a nine-month study found neither of the chemicals in the 2,200 samples taken.



The study was conducted with EPA supervision by an environmental consulting firm hired by Chemtronics and Northrup Corp., one of the previous owners of the plant.

A draft feasibility study for cleaning up the site was submitted to EPA in December, and the recommendations will be approved after the comment period that begins with the public hearing and ends March 18, Bornholm said.

The cleanup will cost approximately $12 million if incineration is used, and considerably less if it isn't, he said.

"Incineration would be the most permanent remedy," Bornholm said. "Once you burn it, it's gone."

The cleanup probably will begin this fall, and the on-site work will take one to two years. However, the pumping and treatment of groundwater will go on for up to 30 years. How long the pumping is necessary will depend on if and how much of the contaminated material is incinerated, he said.

"The public comments could have an effect on the remedy," Bornholm said. "Incineration is a hot item up there in North Carolina right now, and if significant numbers don't want incineration then we will have to go back and look at our other options."

Another factor in whether the materials are burned is the quantity of explosives that are found, he said.

But whatever methods are used, the EPA is confident the measures will "adequately protect human health and the environment," Bornholm said.

However, Millie Buchanan of Asheville, a staff member of the Clean Water Fund of North Carolina, said she isn't convinced by Bornholm's claim.

"Either of these options involve a lot of risk to the community, but they may be the best we have," she said. "Incineration has the potential for some serious air pollution because of what they're burning. And with capping you're talking about leaving it there, and even though they may take efforts to contain it, there is always the possibility of it getting into the groundwater."

Buchanan said she and other area residents need more information on the proposed cleanup and other available options.

After the public hearing, EPA will begin negotiations with Chemtronics, Northrup and the Celanese Corp. to pay for the cleanup. Bornholm said that if payment is refused, federal monies will be used and EPA will sue the companies to force payment.

The hearing will begin at 7 p.m. in the auditorium of Owen High School in Swannanoa, and the public is urged to attend.

B

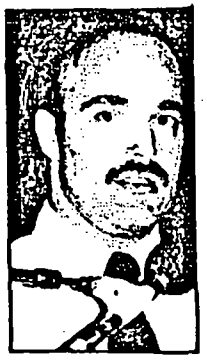
EPA Suggests Incinerating Soil At Chemtronics

Asheville Citizen
Feb 24, 1988

By CLARKE MORRISON
Staff Writer

SWANNANOA — Plans to dig up and burn contaminated soil and explosives at a former military munitions plant were met with skepticism by approximately 200 residents who attended a public hearing on the proposal Tuesday night.

Some told the Environmental Protection Agency officials they should conduct a study on cancer deaths they believe were caused by the solvents, cyanide and other chemicals dumped at various sites around the plant now occupied by Chemtronics Inc.


BORNHOLM

Fears were expressed at the hearing at Owen High School over possible pollution from incineration of the chemical-laced soil and drums.

Environmentalists said they wanted the public comment period, which began with the hearing and is to end March 18, extended to allow more study of the EPA's plans.

"If you burn it, is it not going to go in the air? Will we not be breathing it?" asked Cindy Whithers, who lives near the plant. "I want to stay here. I don't want to run. I don't understand what's going on."

Chuck Pietrosewicz of the U.S. Public Health Service assured Whiters that an incinerator would never be licensed if study showed it's emissions would be hazardous.

"Whatever method we select will be protective of human health and the environment," he said.

"I'm concerned for myself and for my whole family," said Jeanette Hensley of Long Branch Road. "We'd like to get it cleaned up."

EPA Project Manager Bornholm told the crowd that incineration of the chemical-laced soil would be the most permanent, effective and costly solution. But if enough opposition to the burning is expressed, the chemicals may have to be left in the ground and efforts made to merely contain them.

Charles Dennison, representing the Harrison Hill Road Committee, said there has been an abnormally high number of cancer cases in his neighborhood because of the contamination.

Dennison asked if there had been any studies of cancer rates in the area. Pietrosewicz said there was no evidence that any of the chemicals had migrated off the site, so such a study wasn't warranted.

Allen Arnold of Black Mountain, a retired chemist, asked why the contaminated soil and drums couldn't be taken to an established off-site incinerator for disposal. Bornholm said on-site incineration would be just as effective and far less costly.

EPA scheduled the public hearing to explain and get comments on the options for cleaning up the various dumps scattered around the 1,027-acre tract where explosives, solid propellants, rocket motors and chemical warfare agents were manufactured for the military.

Instead of removing and burning the soil,

See EPA, Page 5C

♦ From Page 1B

EPA may decide to cap the pits and landfills where the chemicals were buried with layers of plastic, clay and other materials to prevent rain from washing the chemicals into the groundwater, Bornholm said.

The plans also call for groundwater at the site to be pumped out through wells and treated so it won't contaminate the drinking water of adjacent areas, he said.

The Chemtronics site off Bee Tree Road was placed on the Superfund national priority list in December 1982 after EPA testing revealed 62 organic compounds and metals in wells used to monitor the site.

The powerful hallucinogen BZ and a form of tear gas called CZ are among the hazardous wastes believed to have been buried there. However, a nine-month study found neither of the chemicals in the 2,200 samples taken. The study was conducted with EPA supervision by a environmental consulting firm hired by Chemtronics and the Northrop Corp., one of the previous owners of the plant.

A draft feasibility study for cleaning up the site was submitted to EPA in December, and the recommendations will be approved after the comment period, Bornholm said.

The cleanup will cost approximately $12 million if incineration is used, and closer to $2 million if it isn't, he said.

The cleanup probably will begin this fall, and the on-site work will take one to two years. However, the pumping and treatment of groundwater will go on for up to 30 years.

Asheville Citizen-Times

Jon Bornholm

Other Views

Sunday, Feb. 14, 1988 3D

Credibility Lacking On Waste

Your excellent editorial of Feb. 3 (Another How-Not-To On Hazardous Waste) should be required reading for every state legislator and regulator — and it wouldn't hurt their federal cohorts to study it too.

State officials say they cannot act for a year or more to correct Caldwell County's long-fuming incinerator problem, but in the meantime they cannot tell neighbors whether their children can safely play outside. Unfortunately, this situation is not unique. Neighbors of hazardous waste "Superfund" sites frequently receive similar non-answers from federal officials to their concerns about their drinking water, their air and their children's safety.

Those in charge of protecting our health and environment seem totally incapable of comprehending two basic facts: (1) there is a direct connection between officials' current and past actions and their future ability to inspire the confidence of the public; (2) without public confidence, dealing with our hazardous waste problems will become increasingly more difficult and eventually impossible.

There are serious defects in our environmental laws, the regulations written to enforce them, and the agencies responsible for that enforcement. Until these defects are corrected, and until public health takes precedence over corporate pleadings and concern for the status quo, the public will continue to oppose any siting of hazardous waste facilities, with good reason. And our hazardous waste problems will continue to mount.

Millie Buchanan
Asheville

ERRB
RECEIVED
FEB 16 1988
EPA — REGION IV
ATLANTA, GA.

APPENDIX D

CONCURRENCES FROM STATE AND FEDERAL AGENCIES AND OTHER EPA PROGRAMS

DEPARTMENT OF HEALTH & HUMAN SERVICES

Public Health Service
Agency for Toxic Substances
and Disease Registry

Memorandum

Date March 25, 1988

From Senior Regional Representative
ATSDR-EPA Liaison

Subject ATSDR Health Assessment for the Chemtronics NPL Site; Swannanoa, North Carolina

To Jon Bornholm, Project Manager
EPA WMD Superfund Branch

thru Al Hanke, Chief
NC/TN Unit, Superfund Branch
EPA WMD

ERRB
RECEIVED
MAR 25 1988
EPA – REGION IV
ATLANTA, GA.

The Agency for Toxic Substances and Disease Registry has completed its Health Assessment for the above NPL site. A copy of our assessment, with attendant recommendations to address public health threat and remedial action worker safety concerns is attached for your information and use.

As our Health Assessment for this site is now final, the attached document can become part of the EPA Administrative Record for the site and is now available to the general public. You may also wish to share a copy of our assessment with the PRP's for this site.

Our conclusions and recommendations are basically straight forward in nature and have not changed in substance since the draft assessment document which was shared with you earlier. However, if you would like to discuss our assessment in more detail, please let me know.

Chuck Pietrosewicz

Chuck Pietrosewicz

cc: file
ATSDR/OEA
DHHS/PHS Reg. Off.: Mr. Pesses
NC DHS: Dr. Ted Taylor
NC DHS: Ms. Lee Crosby
Buncombe Co. Health Dept.: Dr. James Tenney
Chemtronics Citizen Advisory Board: Mr. Pat Price

APPENDIX E

ADMINISTRATIVE RECORD

ATTACHMENT I

ADMINISTRATIVE RECORD INDEX INFORMATION FIELDS

DOCUMENT NUMBER - indicates the first and last page numbers of the document. Both page numbers will be the same for one-page documents. The document number consists of a three letter site code followed by a three digit microfilm reel number and a four digit microfilm frame number.

PARENT - indicates (for attached documents) the first page number of the parent document.

DATE - indicates document date by month/day/year. " / / " means no date was available.

TITLE - indicates the title or an enhanced description of the document in parentheses.

TYPE - indicates the document type.

CONDITION - indicates whether the document is illegible, incomplete, a draft, has significant marginalia, is confidential or privileged.

AUTHOR - indicates the author or primary originator and the author's corporate affiliation.

RECIPIENT - indicates the addressee or primary recipient and the address's corporate affiliation.

ATTACHED - indicates the first page number of each related document attached to the parent document, if any.

Document Number: CHE-001-0001 To 0002 Date: 03/01/85

Title: (Letter responding to inquiry for information on Landfill 191 with directive to send questions to the listed State departments which have been delegated to the RCRA program)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Ward, Lucia F: resident

Document Number: CHE-001-0003 To 0003 Date: 10/23/84

Title: (Acknowledgement of receipt regarding the project description)

Type: CORRESPONDENCE
Author: Watkins, Mary: NC Dept of Administration
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0004 To 0004 Date: / /

Title: (Newspaper article titled: "EPA Probes Chemical Warfare Site Danger")

Type: CORRESPONDENCE
Author: none: United Press International
Recipient: none: none

Document Number: CHE-001-0005 To 0006 Date: 06/26/80

Title: Chemtronics Lagoon System

Type: PLAN
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0007 To 0008 Date: 10/23/79

Title: (Letter regarding progress on Chemtronics project with attachments)

Type: CORRESPONDENCE
Author: Messenheimer, Harry H: Chemtronics
Recipient: Mull, William H: County of Buncombe NC
Attached: CHE-001-0009 CHE-001-0013 CHE-001-0014

Document Number: CHE-001-0009 To 0012 Parent: CHE-001-0007 Date: 10/22/79

Title: Industrial User Discharge Permit Application

Type: FINANCIAL/TECHNICAL
Author: none: Chemtronics
Recipient: none: County of Buncombe NC

Document Number: CHE-001-0013 To 0013 Parent: CHE-001-0007 Date: 10/01/79

Title: Composite Sewer Sample 02/14/77 Through 02/18/77

Type: FINANCIAL/TECHNICAL
Author: none: Texidyne
Recipient: none: Chemtronics

Document Number: CHE-001-0014 To 0017 Parent: CHE-001-0007 Date: 10/01/79

Title: (Product #1 through #4 - results of chemicals in pounds/day and concentrations of sewer water)

Type: DATA
Author: none: Chemtronics
Recipient: none: none

Document Number: CHE-001-0018 To 0018 Date: / /

Title: (Memo regarding slide show for the Superfund program)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0019 To 0019 Date: 04/10/86

Title: (Routing and Transmittal Slip enclosing IT data, sampling points and time of sampling)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE MARGINALIA
Author: Bornholm, Jon K: US EPA
Recipient: Leslie, Mary K: Camp Dresser & McKee

Document Number: CHE-001-0020 To 0030 Date: 05/09/85

Title: Administrative Order on Consent

Type: LEGAL DOCUMENT
Condition: DRAFT
Author: none: US EPA
Recipient: none: Northrop

Document Number: CHE-001-0031 To 0031 Date: / /

Title: (Magazine article titled: "Hazardous Waste Management")

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: none: Journal of the Air Pollution Control Association
Recipient: none: none

Document Number: CHE-001-0032 To 0035 Date: / /

Title: (Newsletter titled: "A Summary of Important Issues on Waste Disposal Site Restoration - Fieldwork Underway at Chemtronics Site")

Type: CORRESPONDENCE
Author: none: Chemtronics Site Information Bureau
Recipient: none: none

Document Number: CHE-001-0036 To 0036 Date: / /

Title: (Sign-up sheet for interested parties to be included on a Chemtronics site mailing list)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-0037 To 0046 Date: / /

Title: Well Records (with sketches of well locations)

Type: PLAN
Condition: MARGINALIA
Author: none: NC Dept of Natural & Economic Resources
Recipient: none: none

Document Number: CHE-001-0047 To 0047 Date: 07/01/83

Title: (Brief description of the conditions at the site as given on the National Priorities List)

Type: OTHER
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-0048 To 0055 Date: / /

Title: Site History

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0056 To 0057 Date: / /

Title: (Background information on site)

Type: PLAN
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0058 To 0058 Date: 09/24/84

Title: Exhibit E: Table of Contents for Waste Disposal Area Summary

Type: OTHER
Condition: INCOMPLETE
Author: none: Pepper Hamilton & Sheetz
Recipient: none: none

Document Number: CHE-001-0059 To 0060 Date: / /

Title: (Maps of areas around Monitor Wells)

Type: GRAPHIC
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0061 To 0066 Date: 09/24/84

Title: (Lists of permits used by Chemtronics - Exhibit C)

Type: OTHER
Condition: INCOMPLETE
Author: none: Pepper Hamilton & Sheetz
Recipient: none: none

Document Number: CHE-001-0067 To 0067 Date: 03/09/71

Title: (Inter-office memo regarding Contaminated Burial Grounds)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Leigh, C S: Northrop Carolina
Recipient: Ricketts, J M: Northrop Carolina

Document Number: CHE-001-0071 To 0071 Date: 08/01/65

Title: Programs in Progress List as of 08/00/65

Type: OTHER
Condition: ILLEGIBLE
Author: none: Amcel Propulsion
Recipient: none: none

Document Number: CHE-001-0072 To 0072 Date: 06/14/79

Title: Groundwater Section - Central Laboratory Report

Type: DATA
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-0073 To 0073 Date: 10/15/85

Title: Well Records

Type: FINANCIAL/TECHNICAL
Condition: ILLEGIBLE MARGINALIA
Author: none: NC Dept of Water Resources
Recipient: none: none

Document Number: CHE-001-0074 To 0076 Date: 01/05/83

Title: Well Records of Mrs Roy Franklin, Jeff Banks, Sue Hatfield

Type: FINANCIAL/TECHNICAL
Condition: MARGINALIA
Author: none: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-0077 To 0088 Date: 11/09/76

Title: Well Records (plus attached location sketches)

Type: FINANCIAL/TECHNICAL
Condition: ILLEGIBLE MARGINALIA
Author: none: NC Dept of Natural & Economic Resources
Recipient: none: none

Document Number: CHE-001-0089 To 0089 Date: 06/14/79

Title: Groundwater Section - Central Laboratory Report

Type:
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0090 To 0095 Date: 02/09/70

Title: Well Records (plus attached sketches)

Type: FINANCIAL/TECHNICAL
Condition: ILLEGIBLE MARGINALIA
Author: none: NC Dept of Water Resources
Recipient: none: none

Document Number: CHE-001-0096 To 0096 Date: 01/24/80

Title: (Cover letter with attached vehicle and equipment licenses and management letters)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Young, Roma Skeen: Pepper Hamilton & Sheetz
Recipient: Keith, Susan S: Halliburton
Attached: CHE-001-0097 CHE-001-0098 CHE-001-0103 CHE-001-0105 CHE-001-0106 CHE-001-0108 CHE-001-0110
CHE-001-0114 CHE-001-0134 CHE-001-0144 CHE-001-0159 CHE-001-0161 CHE-001-0163 CHE-001-0164
CHE-001-0169 CHE-001-0171 CHE-001-0175 CHE-001-0177 CHE-001-0182 CHE-001-0183 CHE-001-0184
CHE-001-0187 CHE-001-0188 CHE-001-0190

Document Number: CHE-001-0097 To 0097 Parent: CHE-001-0096 Date: 01/24/80

Title: (List of vehicles used by Chemtronics that are licensed for use on public thoroughfares)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0098 To 0102 Parent: CHE-001-0096 Date: 02/01/80

Title: (Letter labeled Exhibit N regarding sale of stock)

Type: CORRESPONDENCE
Author: none: Pepper Hamilton & Sheetz
Recipient: none: Halchem

Document Number: CHE-001-0103 To 0104 Parent: CHE-001-0096 Date: 02/01/80

Title: (Letter labeled Exhibit O regarding sale of stock)

Type: CORRESPONDENCE
Author: none: Halchem
Recipient: none: VanWinkle Buck Wall Starnes & Davis PA

Document Number: CHE-001-0105 To 0105 Parent: CHE-001-0096 Date: 01/24/80

Title: (List of Key Personnel - Exhibit P)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0106 To 0107 Parent: CHE-001-0096 Date: 02/01/80

Title: (Letter labeled Exhibit Q regarding sale of stock)

Type: CORRESPONDENCE
Author: none: Airtronics
Recipient: Keith, Susan S: Halliburton

Document Number: CHE-001-0108 To 0109 Parent: CHE-001-0096 Date: 09/25/79

Title: (Letter labeled Exhibit B regarding basic tax guidelines)

Type: CORRESPONDENCE
Author: Huffaker, John B: Pepper Hamilton & Sheetz
Recipient: Walker, Joseph: Chantilly Development

Document Number: CHE-001-0110 To 0113 Parent: CHE-001-0096 Date: 09/26/79

Title: Minutes of Regular Meeting of Board of Directors (labeled Exhibit C)

Type: PLAN
Author: Bradley, Emmett H: Airtronics
Recipient: none: none

Document Number: CHE-001-0114 To 0133 Parent: CHE-001-0096 Date: 02/01/80

Title: Proxy Statement (labeled Exhibit D - two copies)

Type: PLAN
Author: none: Airtronics
Recipient: none: none

Document Number: CHE-001-0134 To 0143 Parent: CHE-001-0096 Date: 11/14/79

Title: (Cover letter with attached sketches and descriptions of burial grounds and open pits)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Schultheis, John F: Chemtronics
Recipient: Ratcliffe, J: Jet Research Center

Document Number: CHE-001-0144 To 0158 Parent: CHE-001-0096 Date: 07/27/77

Title: (Memo labeled Exhibit F regarding Burial Ground Status Report with attached sketches and outlines)

Type: CORRESPONDENCE
Author: Messenheimer, Harry H: Chemtronics
Recipient: Mashburn, R N: Chemtronics

Document Number: CHE-001-0159 To 0160 Parent: CHE-001-0096 Date: 01/24/80

Title: (Inspection numbers for equipment and expiration dates)

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: CHE-001-0161 To 0162 Parent: CHE-001-0096 Date: 11/21/79

Title: (Letter regarding attached balance sheets for 10/31/78 and 1979 with Exhibits D through M)

Type: CORRESPONDENCE
Author: none: Peat Marwick Mitchel & Co
Recipient: none: Chemtronics

Document Number: CHE-001-0163 To 0163 Parent: CHE-001-0096 Date: 01/24/80

Title: (Inspection numbers with expiration dates)

Type: FINANCIAL/TECHNICAL
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0164 To 0168 Parent: CHE-001-0096 Date: 10/31/79

Title: Exhibit D

Type: PLAN
Author: none: Peat Marwick Mitchel & Co
Recipient: none: none

Document Number: CHE-001-0169 To 0170 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit E (conditions which might result in adverse change in Chemtronics net assets)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0171 To 0175 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit F

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0175 To 0176 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit D

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0177 To 0181 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit G

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0182 To 0182 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit H

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0183 To 0183 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit I

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0184 To 0186 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit J

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0187 To 0187 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit K

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0188 To 0189 Parent: CHE-001-0096 Date: 01/24/80

Title: (Letter regarding serious negotiation on purchase of Chemtronics by Halchem - Exhibit L)

Type: CORRESPONDENCE
Author: Kennedy, Robert M: Halchem
Recipient: none: Chemtronics

Document Number: CHE-001-0190 To 0197 Parent: CHE-001-0096 Date: 01/24/80

Title: Exhibit M (escrow agreement)

Type: LEGAL DOCUMENT
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0198 To 0203 Date: 04/05/82

Title: Potential Hazardous Waste Site Identification and Attachment

Type: FINANCIAL/TECHNICAL
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: none: none
Attached: CHE-001-0204 CHE-001-0207 CHE-001-0209 CHE-001-0211 CHE-001-0213 CHE-001-0215 CHE-001-0217
CHE-001-0235

Document Number: CHE-001-0204 To 0206 Parent: CHE-001-0198 Date: 04/06/82

Title: Potential Hazardous Waste Site Log (Attachment 1)

Type: OTHER
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-0207 To 0208 Parent: CHE-001-0198 Date: 01/24/80

Title: (Handwritten site description and summary of potential or known problems - attachments I and II)

Type: PLAN
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0209 To 0210 Parent: CHE-001-0198 Date: 01/14/80

Title: (Letter regarding acid pit wastewater disposal - Attachment 2)

Type: CORRESPONDENCE
Author: Davis, Roy M: NC Dept of Natural Resources & Community Development
Recipient: Messenheimer, Harry H: Chemtronics

Document Number: CHE-001-0211 To 0212 Parent: CHE-001-0198 Date: 03/21/80

Title: (Memo regarding Chemtronics - Attachment 3)

Type: CORRESPONDENCE
Author: Hershman, Dave: NC Dept of Justice
Recipient: Davis, Roy M: NC Dept of Natural Resources & Community Development

---

Document Number: CHE-001-0213 To 0214 Parent: CHE-001-0198 Date: 03/21/80

Title: (Letter expressing thanks for the tour of acid pits with statement of efforts to coordinate actions of dealing with the pits - Attachment 4)

Type: CORRESPONDENCE
Author: Edmisten, Rufus L: NC Dept of Justice
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-0215 To 0216 Parent: CHE-001-0198 Date: 08/23/83

Title: (Letter regarding the RCRA inspection noted violations at the facility - Attachment 5)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0217 To 0234 Parent: CHE-001-0198 Date: 01/25/84

Title: (Letter identifying deficiencies in attached Notice of Deficiency to RCRA Part B Hazardous Waste Management Permit Application dated 09/21/83 - Attachment 6)

Type: CORRESPONDENCE
Author: Scarbrough, James H: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-0235 To 0235 Parent: CHE-001-0198 Date: 07/19/84

Title: (Letter regarding intent to withdraw Part B Permit Application - Attachment 7)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0236 To 0237 Date: 01/14/83

Title: (Cover letter regarding the attached Statistical Summary of the Group III parameters for the up-gradient well)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Babb, Gary D: NC Dept of Human Resources
Attached: CHE-001-0238

Document Number: CHE-001-0238 To 0240 Parent: CHE-001-0236 Date: 01/14/83

Title: (Statistical summaries of up-gradient well)

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: CHE-001-0241 To 0241 Date: 03/29/83

Title: (Cover letter plus attached updated statistical summary and results from well resampling)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Babb, Gary D: NC Dept of Human Resources
Attached: CHE-001-0242 CHE-001-0243

Document Number: CHE-001-0242 To 0242 Parent: CHE-001-0241 Date: 03/29/83

Title: Updated Statistical Summary of Up-Gradient Well

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: CHE-001-0243 To 0243 Parent: CHE-001-0241 Date: 02/24/83

Title: Report of Analysis (on up-gradient well)

Type: DATA
Author: Brown, Karen H: Environmental Laboratories
Recipient: none: Chemtronics

Document Number: CHE-001-0244 To 0244 Date: 05/02/83

Title: (Cover letter regarding enclosed revised Groundwater Monitoring Plan - Enclosure 1)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Babb, Gary D: NC Dept of Human Resources
Attached: CHE-001-0245 CHE-001-0253 CHE-001-0254 CHE-001-0256 CHE-001-0257 CHE-001-0258 CHE-001-0261

Document Number: CHE-001-0245 To 0252 Parent: CHE-001-0244 Date: 04/29/83

Title: Groundwater Monitoring Plan for Chemtronics - Revised

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0253 To 0253 Parent: CHE-001-0244 Date: 11/10/81

Title: (Letter enclosing maps regarding installation of groundwater quality monitoring wells)

Type: CORRESPONDENCE
Author: Babb, Gary D: Environment Reporter
Johnson, Felice F: Chemtronics

Document Number: CHE-001-0254 To 0255 Parent: CHE-001-0244 Date: 10/01/81

Title: (Procedures for installation of groundwater monitoring wells and location sketch)

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: CHE-001-0256 To 0256 Parent: CHE-001-0244 Date: 05/02/83

Title: Enclosure 3 - Monitor Well Sampling Sheet (blank form)

Type: FINANCIAL/TECHNICAL
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0257 To 0257 Parent: CHE-001-0244 Date: 05/02/83

Title: Enclosure 4: Chain of Custody Record (blank form)

Type: OTHER
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0258 To 0260 Parent: CHE-001-0244 Date: 05/02/83

Title: Tables I through III (EPA interim primary drinking water standards, parameters establishing groundwater quality, parameters used as indicators of groundwater contamination)

Type: DATA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0261 To 0272 Parent: CHE-001-0244 Date: 05/02/83

Title: Proposed Work Scope - Groundwater Quality Assessment Program, Swannanoa, NC

Type: PLAN
Author: none: D'Appolonia Waste Management Services
Recipient: none: none

Document Number: CHE-001-0273 To 0273 Date: 05/31/83

Title: (Letter enclosing results and recommendations by D'Appolonia regarding the geophysical survey of Chemtronics)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Babb, Gary D: NC Dept of Human Resources
Attached: CHE-001-0274

Document Number: CHE-001-0274 To 0278 Parent: CHE-001-0273 Date: 05/25/83

Title: (Letter giving results with attached maps to the geophysical survey and fracture trace analysis)

Type: CORRESPONDENCE
Author: Andrews, David E: D'Appolonia Waste Management Services
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0279 To 0286 Date: 09/28/83

Title: Report of Analysis (water samples received 08/27/83)

Type: FINANCIAL/TECHNICAL
Author: Brown, Karen H: Environmental Laboratories
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0287 To 0287 Date: 01/15/84

Title: (List of people attending Chemtronics meeting with organizations and phone numbers)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0288 To 0299 Date: 01/13/84

Title: Report of Analysis (well #1 through #12 for samples during 11/00/83)

Type: FINANCIAL/TECHNICAL
Author: Brown, Karen H: Environmental Laboratories
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0300 To 0300 Date: 02/09/84

Title: NWWA/EPA Conference on Surface and Borehole Geophysical Methods in Groundwater Investigations

Type: PLAN
Author: Nielsen, David M: National Water Well Association
Recipient: none: US EPA
Attached: CHE-001-0301

Document Number: CHE-001-0301 To 0318 Parent: CHE-001-0300 Date: / /

Title: (Detection of permeable rock fracture zones within crystalline bedrock by 3D vertical seismic profiling)

Type: PLAN
Author: Cybriwsky, Zenon A: Weston Geophysical
Recipient: none: US EPA

Document Number: CHE-001-0319 To 0341 Date: 02/01/84

Title: Site Analysis Chemtronics, Inc, Swannanoa, NC

Type: PLAN
Author: Baer, William L: Bionetics Corporation
Recipient: none: US EPA

Document Number: CHE-001-0342 To 0342 Date: 04/20/84

Title: (Memo with comments on the contents of Brad Wright's memo regarding the Chemtronics Administrative Order)

Type: CORRESPONDENCE
Author: Redgate, Nancy M: US EPA
Recipient: Mathis, Wayne: US EPA

Document Number: CHE-001-0343 To 0343 Date: 05/24/84

Title: (Letter enclosing analytical test results for groundwater monitoring in the acid pit area)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Babb, Gary D: NC Dept of Human Resources
Attached: CHE-001-0344 CHE-001-0345

Document Number: CHE-001-0344 To 0344 Parent: CHE-001-0343 Date: 05/18/84

Title: (Cover letter enclosing Transmittal Laboratory Test Results for Project #84-6127)

Type: CORRESPONDENCE
Author: Andrews, David E: IT
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0345 To 0346 Parent: CHE-001-0343 Date: 05/24/84

Title: Table I - Groundwater Monitoring Wells Analysis Summary for Chemtronics Project #84-6127

Type: FINANCIAL/TECHNICAL
Author: none: none
Recipient: none: none

Document Number: CHE-001-0347 To 0351 Date: 06/01/84

Title: Work Plan for the Remedial Investigation 102nd St Landfill Site Niagara Falls, NY (contains only pages 51-53 pertaining to Project Oversight and Reporting Requirements)

Type: PLAN
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0352 To 0358 Date: 06/26/84

Title: Civil Action, #79-987 (JTC) (102nd St Landfill Site) - Stipulation

Type: LEGAL DOCUMENT
Author: Habicht, F Henry: US Dept of Justice
Recipient: none: none

Document Number: CHE-001-0359 To 0363 Date: 07/25/84

Title: (Letter submitting responses to questions asked of Northrop in the notification letter of 06/15/84)

Type: CORRESPONDENCE
Condition: INCOMPLETE MARGINALIA
Author: Smith, Frank R: Northrop
Recipient: Casto, Keith M: US EPA
Attached: CHE-001-0364

Document Number: CHE-001-0364 To 0364 Parent: CHE-001-0359 Date: 04/23/71

Title: Bee Tree Facility (Burning Area)

Type: GRAPHIC
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0365 To 0394 Date: 09/01/84

Title: NC Administrative Code Title 15 Dept of Natural Resources and Community Development Environmental Management Subchapter 2C - Well Construction Standards Criteria and Standards Applicable to Water Supply and Certain Other Type Wells

Type: PLAN
Author: none: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-0395 To 0395 Date: 09/05/84

Title: (Handwritten notes on meeting with Army about testing for BZ plus a list of names of people who attended meeting)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0396 To 0397 Date: 09/13/84

Title: (Letter containing list of companies identified by PRP search as previous owners/manufacturers at Chemtronics)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Richard C: Camp Dresser & McKee
Attached: CHE-001-0398

Document Number: CHE-001-0398 To 0398 Parent: CHE-001-0396 Date: 01/01/84

Title: (Handwritten memo naming PRPs for Chemtronics)

Type: CORRESPONDENCE
Author: Bennett, Giezelle S: US EPA
Recipient: none: none

Document Number: CHE-001-0399 To 0400 Date: 09/18/84

Title: (Memo regarding consolidation of RCRA Standards and the RI/FS)

Type: CORRESPONDENCE
Author: Scarbrough, James H: US EPA
Recipient: Smith, Al J: US EPA
Attached: CHE-001-0401

Document Number: CHE-001-0401 To 0419 Parent: CHE-001-0399 Date: 09/13/84

Title: (Excerpts from Code of Federal Regulations 40CFR)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: none: Code of Federal Regulations
Recipient: none: none

Document Number: CHE-001-0420 To 0425 Date: 09/24/84

Title: (Letter documenting reasons for dissolution of Airtronics and extent of Joseph Walkers's involvement in the site)

Type: CORRESPONDENCE
Author: Richman, David: Pepper Hamilton & Sheetz
Recipient: Casto, Keith M: US EPA
Attached: CHE-001-0426 CHE-001-0457 CHE-001-0469

Document Number: CHE-001-0426 To 0456 Parent: CHE-001-0420 Date: 01/30/80

Title: Agreement for Sale of Stock - Exhibit A

Type: PLAN
Author: Seay, O Elwyn: Halchem
Recipient: Bradley, Emmett H: Airtronics

Document Number: CHE-001-0457 To 0465 Parent: CHE-001-0420 Date: 09/24/84

Title: Exhibit A and Exhibit A-1

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0466 To 0008 Date: / /

Title: Exhibit B

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0469 To 0477 Parent: CHE-001-0420 Date: 09/24/84

Title: Exhibit C

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0478 To 0478 Date: 09/25/84

Title: (Letter enclosing groundwater monitoring results for the lagoon and acid pit area)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources
Attached: CHE-001-0479

Document Number: CHE-001-0479 To 0481 Parent: CHE-001-0478 Date: 07/18/84

Title: Groundwater and Water Quality Summary - Tables 1 and 2 Project #84-6127

Type: FINANCIAL/TECHNICAL
Author: none: IT
Recipient: none: none

Document Number: CHE-001-0482 To 0483 Date: 09/25/84

Title: (Letter regarding drums marked BZ found at Chemtronics by joint investigation of US Army and EPA)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Engleman, Susan P: Celanese Corporation

Document Number: CHE-001-0485 To 0485 Date: 10/03/84

Title: (Letter stating desire to cooperate fully but will not at this time conduct a Remedial In vestigation/Feasibility Study though it will participate in a fund financed RI/FS)

Type: CORRESPONDENCE
Author: Engleman, Susan P: Celanese Corporation
Recipient: Bennett, Giezelle S: US EPA

Document Number: CHE-001-0486 To 0486 Date: 10/05/84

Title: (Letter regarding unwillingness to conduct the RI/FS until the question of who the proper response authority should be is resolved and the final Work Plan reviewed)

Type: CORRESPONDENCE
Author: Smith, Frank R: Northrop
Recipient: Bennett, Giezelle S: US EPA

Document Number: CHE-001-0487 To 0489 Date: 10/05/84

Title: (Letter notifying of State intergovernmental review for a Remedial Investigation/Feasibility Study Project)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Little, John A: US EPA
Recipient: Baggett, Chrys: NC Dept of Administration
Attached: CHE-001-0490

Document Number: CHE-001-0490 To 0504 Parent: CHE-001-0487 Date: / /

Title: Statement of Work Remedial Investigation/Feasibility Study (enforcement)

Type: PLAN
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-0505 To 0509 Date: 10/08/84

Title: (Letter expressing Chemtronics willingness to develop the work plan for the RI/FS)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bennett, Giezelle S: US EPA

Document Number: CHE-001-0510 To 0511 Date: 10/11/84

Title: (Letter enclosing documents requested)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Casto, Keith M: US EPA
Attached: CHE-001-0512 CHE-001-0513 CHE-001-0514 CHE-001-0518 CHE-001-0536

Document Number: CHE-001-0512 To 0512 Parent: CHE-001-0510 Date: / /

Title: (List of potential witnesses along with their addresses, phone numbers, age and health status)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0513 To 0513 Parent: CHE-001-0510 Date: 03/09/71

Title: (Memo regarding contaminated burial grounds on NC property)

Type: CORRESPONDENCE
Condition: INCOMPLETE MARGINALIA
Author: Leigh, C S: Northrop Carolina
Recipient: Ricketts, J M: Northrop Carolina

Document Number: CHE-001-0514 To 0517 Parent: CHE-001-0510 Date: 10/11/84

Title: (Contents of NCI Burial Grounds with attached map showing approximate area)

Type: PLAN
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0518 To 0535 Parent: CHE-001-0510 Date: 10/11/84

Title: Dumping Log

Type: OTHER
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0536 To 0539 Parent: CHE-001-0510 Date: 09/13/79

Title: Production Records (dating from 02/01/67 to 09/13/79)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0540 To 0545 Date: 10/12/84

Title: Trip Report (to Raleigh, NC and Chemtronics, NC - from 10/10/84 to 10/12/84 for meeting with State representatives with attached list of attendees)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0546 To 0546 Date: 10/16/84

Title: (Decision memorandum regarding attached Action Memo)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Jeter, Charles R: US EPA
Attached: CHE-001-0547

Document Number: CHE-001-0547 To 0548 Parent: CHE-001-0546 Date: 10/16/84

Title: (Action memo requesting authorization to proceed with Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Jeter, Charles R: US EPA

Document Number: CHE-001-0549 To 0550 Date: 10/18/84

Title: (Handwritten outlines regarding What We Need From Chemtronics and Coordination Activities for Work Plan Preparation)

Type: PLAN
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-0551 To 0551 Date: 10/19/84

Title: (Letter regarding travel plans to Chemtronics on 11/13/84)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Orban, James: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-0552 To 0552 Date: 10/22/84

Title: (Memo regarding Chemtronics RI/FS Work Plan as discussed at planning meeting of 10/18/84 with Jim Orban and Jon K Bornholm)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: file: Camp Dresser & McKee

Document Number: CHE-001-0553 To 0553 Date: 10/22/84

Title: (Letter regarding previous phone conversation to outline work plan preparation)

Type: CORRESPONDENCE
Author: Orban, James: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0554 To 0555 Date: 10/31/84

Title: (Letter submitting revised Work Plan memo)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA
Attached: CHE-001-0556 CHE-001-0573

Document Number: CHE-001-0556 To 0572 Parent: CHE-001-0554 Date: 10/31/84

Title: Chemtronics Remedial Investigation/Feasibility Study (with Attachments C through F)

Type: PLAN
Condition: INCOMPLETE
Author: none: Camp Dresser & McKee
Recipient: none: US EPA

Document Number: CHE-001-0573 To 0573 Parent: CHE-001-0554 Date: 10/31/84

Title: (Memo stating no known conflict of interest has been found - Attachment F)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Curtis, Jonathan G: Camp Dresser & McKee

Document Number: CHE-001-0574 To 0574 Date: 11/05/84

Title: (Transmittal Slip enclosing answers to questions regarding requirements for community relations)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0575 To 0576 Date: 11/05/84

Title: (Memo requesting additional "Historical Photoimagery Analysis" for Chemtronics CERCLA site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Smith, Al J: US EPA
Recipient: Wolle, Frank R: US EPA

Document Number: CHE-001-0577 To 0577 Date: 11/06/84

Title: (Letter expressing State of NC desired involvement with Remedial Investigation Team and giving two state contacts)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Orban, James: US EPA

Document Number: CHE-001-0578 To 0578 Date: 11/06/84

Title: (Transmittal Slip listing chapters from handbook "Community Relations in Superfund")

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0579 To 0579 Date: 11/09/84

Title: (Letter informing of a planned meeting at Chemtronics on 11/15/84)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics
Attached: CHE-001-0580 CHE-001-0581

Document Number: CHE-001-0580 To 0580 Parent: CHE-001-0579 Date: 11/09/84

Title: (Letter informing of a planned meeting at Chemtronics on 11/15/84)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Smith, Frank R: Northrop

Document Number: CHE-001-0581 To 0581 Parent: CHE-001-0579 Date: 11/09/84

Title: (Letter informing of a planned meeting at Chemtronics on 11/15/84)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Engleman, Susan P: Celanese Corporation

Document Number: CHE-001-0582 To 0582 Date: 11/09/84

Title: (Letter regarding illegible documents and maps sent with request for actual copies with identification accopanying them)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Smith, Frank R: Northrop

Document Number: CHE-001-0583 To 0585 Date: 11/15/84

Title: (Trip report to Swannanoa and meetings that were held on 11/13/84 to 11/15/84)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0586 To 0588 Date: 11/14/84

Title: (Handwritten notes)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0589 To 0596 Date: 11/15/84

Title: Site History (notes from meeting on 11/15/84)

Type: PLAN
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0597 To 0597 Date: 11/13/84

Title: (Memo forwarding Sampling Investigation)

Type: CORRESPONDENCE
Author: Kopotic, James D: US EPA
Recipient: Smith, Al J: US EPA

Document Number: CHE-001-0598 To 0607 Date: 11/06/84

Title: Sampling Investigation

Type: PLAN
Author: none: US EPA
Recipient: none: none
Attached: CHE-001-0608 CHE-001-0610 CHE-001-0655

Document Number: CHE-001-0608 To 0609 Parent: CHE-001-0598 Date: 02/20/84

Title: (Letter regarding testing of springs or wells including names of concerned residents - Appendix A)

Type: CORRESPONDENCE
Author: Erbsen, Wayne: resident
Recipient: Fraley, Gregory D: US EPA

Document Number: CHE-001-0610 To 0654 Parent: CHE-001-0598 Date: 11/13/84

Title: Appendix B: Data Samples

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0655 To 0661 Parent: CHE-001-0598 Date: 11/13/84

Title: Appendix C: Photograph Log

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0662 To 0663 Date: 11/16/84

Title: (Letter regarding DOD involvement with buried BZ drums and requesting meeting on 12/29/84)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Robinson: US Army

Document Number: CHE-001-0664 To 0664 Date: 11/19/84

Title: (Handwritten notes on community relations)

Type: OTHER
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0665 To 0665 Date: 11/20/84

Title: (Letter regarding the attached Bee Tree Facility Phase-Out Plan Summary)

Type: CORRESPONDENCE
Author: Smith, Frank R: Northrop
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-0666

Document Number: CHE-001-0666 To 0699 Parent: CHE-001-0665 Date: 03/08/71

Title: Bee Tree Facility Phase-Out Plan Summary

Type: PLAN
Author: none: Northrop
Recipient: none: none

Document Number: CHE-001-0700 To 0700 Date: 11/26/84

Title: (Letter regarding Intergovernmental Review for Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Brook, David: NC Dept of Cultural Resources
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0701 To 0701 Date: 11/27/84

Title: (Letter giving name of manager of the contract waste hauler)

Type: CORRESPONDENCE
Author: Lovelace, W L: Singing Water Antiques
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0702 To 0702 Date: 11/30/84

Title: (Record of Communication)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-0703 To 0704 Date: 11/30/84

Title: (Letter regarding commitments made at 11/15/84 meeting)

Type: CORRESPONDENCE
Author: Smith, Frank R: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0705 To 0705 Date: 12/03/84

Title: (Memo regarding information on BZ)

Type: CORRESPONDENCE
Author: Roux, Richard G: US Army
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-0706 CHE-001-0707 CHE-001-0712

Document Number: CHE-001-0706 To 0711 Parent: CHE-001-0705 Date: 11/09/84

Title: The US Army Installation Restoration Program

Type: PLAN
Author: Anderson, Andrew W: US Army
Recipient: none: none

Document Number: CHE-001-0712 To 0712 Parent: CHE-001-0705 Date: 12/05/84

Title: (Handwritten list of names and phone numbers)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0713 To 0713 Date: 12/04/84

Title: (Letter regarding enclosed maps of disposal sites)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Glendhill-Earley, Renee: NC Dept of Cultural Resources
Attached: CHE-001-0715

Document Number: CHE-001-0715 To 0718 Parent: CHE-001-0713 Date: 12/04/84

Title: (Four maps of disposal area)

Type: GRAPHIC
Condition: MARGINALIA
Author: none: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-0719 To 0721 Date: 12/04/84

Title: (Comments on the Draft Community Relations Plan)

Type: CORRESPONDENCE
Condition: DRAFT
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-0722 To 0725 Date: 12/05/84

Title: (Summary of meeting with DOD reprentatives from US Army Toxic and Hazardous Materials Agency with attached lists)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-0726 To 0736 Date: 12/05/84

Title: (Transmittal Slip forwarding attached compiled site maps)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Orban, James: US EPA

Document Number: CHE-001-0737 To 0758 Date: 12/18/84

Title: (Letter disclaiming responsibility of Celanese Corporation to aid in cleanup of Chemtronics)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Devine, Thomas W: US EPA
Attached: CHE-001-0759 CHE-001-0762 CHE-001-0768 CHE-001-0770 CHE-001-0772 CHE-001-0774 CHE-001-0776
CHE-001-0778 CHE-001-0781 CHE-001-0796

Document Number: CHE-001-0759 To 0761 Parent: CHE-001-0737 Date: 04/05/82

Title: Potential Hazardous Waste Site Log

Type: PLAN
Author: none: US EPA
none: none

Document Number: CHE-001-0762 To 0769 Parent: CHE-001-0737 Date: 04/06/82

Title: Potential Hazardous Waste Site Identification and Preliminary Assessment

Type: PLAN
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-0770 To 0771 Parent: CHE-001-0737 Date: 01/14/80

Title: (Letter requesting return of non-discharging permit applications, in order to construct and operate acid pit wastewater disposal systems)

Type: CORRESPONDENCE
Author: Davis, Roy M: NC Dept of Natural Resources & Community Development
Recipient: Messenheimer, Harry H: Chemtronics

Document Number: CHE-001-0772 To 0773 Parent: CHE-001-0737 Date: 03/21/80

Title: (Memo setting forth strategy for preventing Chemtronics from continuing utilization of acid pits)

Type: CORRESPONDENCE
Author: Hershman, Dave: NC Dept of Justice
Recipient: Davis, Roy M: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-0774 To 0775 Parent: CHE-001-0737 Date: 03/21/80

Title: (Letter expressing thanks for showing acid pit disposal area)

Type: CORRESPONDENCE
Author: Hershman, Dave: NC Dept of Justice
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-0776 To 0777 Parent: CHE-001-0737 Date: 08/23/83

Title: (Letter notifying of RCRA violations at Chemtronics facility)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0778 To 0780 Parent: CHE-001-0737 Date: 01/25/84

Title: (Letter regarding Notice of Deficiency - RCRA Part B Hazardous Waste Management Permit Application)

Type: CORRESPONDENCE
Author: Scarbrough, James H: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-0781 To 0795 Parent: CHE-001-0737 Date: 09/21/83

Title: Notice of Deficiency, RCRA Part B Application

Type: OTHER
Author: none: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-0796 To 0796 Parent: CHE-001-0737 Date: 07/19/84

Title: (Letter withdrawing Part B Permit Application for final status of biological treatment lagoon and storage of hazardous waste at the facility)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0797 To 0797 Date: 12/19/84

Title: (Cover letter for requested information from work plan meeting)

Type: CORRESPONDENCE
Condition: INCOMPLETE MARGINALIA
Author: Johnson, Felice F: Chemtronics
Recipient: Leslie, Mary K: Camp Dresser & McKee

Document Number: CHE-001-0798 To 0798 Date: 07/10/84

Title: (Letter forwarding information from Biolagoon Quality Control Inspection SLT Job #US/982)

Type: CORRESPONDENCE
Author: Ojeshina, Anthony O: Schlegel Lining Technology
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0800 To 0801 Date: 04/20/83

Title: (Letter regarding clarification of company's position on acid pit area)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Hunter, Don: US EPA

Document Number: CHE-001-0802 To 0803 Date: 09/24/81

Title: (Letter setting forth justification for not notifying EPA)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Johnson, Felice F: Chemtronics
Recipient: Fraley, Gregory D: US EPA

Document Number: CHE-001-0804 To 0805 Date: 12/17/80

Title: (Cover letter with enclosure concerning recommendations for abandonment of the pits)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Messenheimer, Harry H: Chemtronics
Attached: CHE-001-0806

Document Number: CHE-001-0806 To 0807 Parent: CHE-001-0804 Date: 12/04/80

Title: (Letter setting forth suggestion for correction actions including draining and refilling of surface impoundments without delay)

Type: CORRESPONDENCE
Author: Alpiser, Francis M: NC Dept of Human Resources
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

Document Number: CHE-001-0808 To 0808 Date: 08/08/84

Title: (Letter serving as the Professional Engineer's Certification of the inspection and testing conducted on the Chemtronics biolagoon liner)

Type: CORRESPONDENCE
Author: Hewitt, Thomas R: CRS Sirrine
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0809 To 0809 Date: 08/29/84

Title: (Letter regarding biolagoon liner testing)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0810 To 0811 Date: 12/26/84

Title: (Letter requesting information regarding BZ and efforts to gather information regarding it's environmental effects and assessment)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0812 To 0812 Date: 12/28/84

Title: (Letter regarding forwarding comments on information concerning archeological investigations)

Type: CORRESPONDENCE
Author: Brook, David: NC Dept of Cultural Resources
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0813 To 0813 Date: 12/31/84

Title: (Memo regarding inability to provide information requested)

Type: CORRESPONDENCE
Author: Robertson, Nettie B: Defense Logistics Agency GA
Recipient: Linton, Art: US EPA

Document Number: CHE-001-0814 To 0815 Date: 01/03/85

Title: (Letter forwarding list of court reporting companies)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-0816 To 0816 Date: 01/03/85

Title: (Handwritten list of those who attended 01/03/85 Celanese/EPA meeting)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-0817 To 0819 Date: / /

Title: (Report of 01/31/85 meeting in Raleigh, NC to discuss and receive comments on the Final Interim Report for Chemtronics with list of attendees)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0820 To 0820 Date: 02/22/85

Title: (Agenda for technical scoping session, Chemtronics, Inc, Swannonoa, NC)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0821 To 0822 Date: 01/14/85

Title: (Letter regarding synopsis of regulatory approach for adressing the environmental concerns at Chemtronics)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-0823 To 0823 Date: 01/04/85

Title: (Record of Communication forwarding documents from EPA for the information repository)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Miller, Gary L: University of NC

Document Number: CHE-001-0824 To 0824 Date: 01/04/85

Title: (Record of Communication enclosing additional documents from EPA and NC files)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-0825 To 0825 Date: 01/04/85

Title: (Record of Communication enclosing information given by Richard Rous of THAMA)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0826 To 0826 Date: 01/11/85

Title: (Letter forwarding Guide to the Management of BZ Casualities and list of US Toxic and Hazardous Materials Agency Analytical Methods)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Anderson, Andrew W: US Army
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-0827 To 0827 Date: 11/09/83

Title: (Unidentified computer generated list of accceptable entries and conditions)

Type: DATA
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0828 To 0839 Dte: 11/09/83

Title: (Unidentified computer generated list of chemical compounds)

Type: DATA
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-0840 To 0875 Date: 12/07/84

Title: USATHAMA Analytical Methods - Test Name Master List Control Data Base - Aberdeen Proving Ground/Edgewood Area, MD

Type: DATA
Author: none: none
Recipient: none: none

Document Number: CHE-001-0876 To 0876 Date: 01/14/85

Title: (Letter confirming arrangements for interviews with Chemtronics employees about disposal activities)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-0877 To 0878 Date: 01/14/85

Title: (Letter regarding synopsis of regulatory approach for addressing the environmental concerns at Chemtronics - duplicate of CHE0010821)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-0879 To 0880 Date: 01/14/85

Title: (Cover letter for list of proposed questions for forthcoming depositions and outlining schedule of interviews)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics
Attached: CHE-001-0881 CHE-001-0882 CHE-001-0883

Document Number: CHE-001-0881 To 0881 Parent: CHE-001-0879 Date: 01/14/85

Title: (Cover letter forwarding list of questions for depositions and schedule for order of witnesses)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Engelman, Susan P: Celanese Corporation

Document Number: CHE-001-0882 To 0882 Parent: CHE-001-0879 Date: 01/14/85

Title: (Cover letter forwarding list of questions for depositions and schedule for order of witnesses)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen

Document Number: CHE-001-0883 To 0887 Parent: CHE-001-0879 Date: 01/14/85

Title: (Cover letter forwarding list of questions for depositions and schedule for order of witnesses)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Smith, Frank R: Northrop

Document Number: CHE-001-0888 To 0891 Date: 01/14/85

Title: (Memo outlining subjects discussed at Celanese/EPA meeting on Chemtronics 01/03/85 concerning applicability of the RCRA amendments, with list of attendees included)

Type: CORRESPONDENCE
Author: Bennett, Giezelle S: US EPA
Recipient: Green, Richard D: US EPA

Document Number: CHE-001-0892 To 1026 Parent: CHE-001-0893 Date: 01/18/85

Title: Final Interim Report, Chemtronics Remedial Investigation/Feasibility Study

Type: PLAN
Author: none: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-0893 To 0893 Date: 01/16/85

Title: (Cover letter for Revised Final Interim Report Chemtronics, Inc)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-0892 CHE-001-0965 CHE-001-0970 CHE-001-0971 CHE-001-0972 CHE-001-0975 CHE-001-0977
CHE-001-0978 CHE-001-0980 CHE-001-0981 CHE-001-0982 CHE-001-0983 CHE-001-0984 CHE-001-0989
CHE-001-0990 CHE-001-0991 CHE-001-1001 CHE-001-1002 CHE-001-1003 CHE-001-1005 CHE-001-1006
CHE-001-1008 CHE-001-1010 CHE-001-1012 CHE-001-1014 CHE-001-1015 CHE-001-1017 CHE-001-1018
CHE-001-1019 CHE-001-1021 CHE-001-1022 CHE-001-1023 CHE-001-1024

Document Number: CHE-001-0965 To 0966 Parent: CHE-001-0893 Date: 09/29/82

Title: (Memo regarding Interim Status Inspection with list of violations)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0970 To 0970 Parent: CHE-001-0893 Date: 10/05/82

Title: (Letter regarding inspection of 09/28/82 with violation noted)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0971 To 0971 Parent: CHE-001-0893 Date: 10/18/82

Title: (Memo stating that material received from Chemtronics indicates full compliance with RCRA)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0972 To 0973 Parent: CHE-001-0893 Date: 08/18/83

Title: (Memo citing violations indentified during 08/12/83 inspections)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0975 To 0975 Parent: CHE-001-0893 Date: 08/23/83

Title: (Letter regarding violations cited during 08/12/83 inspection with compliance date set for 10/01/83)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: none: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0977 To 0977 Parent: CHE-001-0893 Date: 08/12/83

Title: (RCRA Inspection Form for inspection 08/12/83)

Type: PLAN
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: none: NC Dept of Human Resources

Document Number: CHE-001-0978 To 0979 Parent: CHE-001-0893 Date: 10/03/83

Title: (Cover letter for enclosed purchase order for seeding with date for seeding to be done)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Moore, James W Jr: NC Dept of Human Resources

Document Number: CHE-001-0980 To 0980 Parent: CHE-001-0893 Date: 10/17/83

Title: (Memo stating that plan was found to be in compliance with State Hazardous Waste Management Rules)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0981 To 0981 Parent: CHE-001-0893 Date: 10/24/83

Title: (Letter stating that facility was found to be in compliance with standards)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0982 To 0982 Parent: CHE-001-0893 Date: 10/17/83

Title: (Memo indicating full compliance by Chemtronics)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0983 To 0983 Parent: CHE-001-0893 Date: 01/06/84

Title: (Letter stating that EPA has granted State of NC Interim Authoriziation for Phase II Components A and B to operate state's Hazardous Waste Management Program)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-0984 To 0988 Parent: CHE-001-0893 Date: 12/27/83

Title: (Memo regarding inspection conducted 12/22/83 which found full compliance, inspection forms included)

Type: CORRESPONDENCE
Author: Moore, James W Jr: NC Dept of Human Resources
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0989 To 0989 Parent: CHE-001-0893 Date: 05/01/84

Title: (Memo regarding inspection on 04/24/84 in which facility found to be in full compliance)

Type: CORRESPONDENCE
Author: Lawson, Keith: Chemical Leaman
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0990 To 0990 Parent: CHE-001-0893 Date: 08/20/84

Title: (Mem regarding inspection on 08/15/84 noting full compliance by facility)

Type: CORRESPONDENCE
Author: Patterson, James E: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-0991 To 0991 Parent: CHE-001-0893 Date: 09/21/84

Title: (Cover letter forwarding inspection report from 08/15/84 finding non-compliance with compliance date set for 09/26/84)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1001 To 1001 Parent: CHE-001-0893 Date: 10/16/84

Title: (Letter regarding inspection conducted 09/26/84 in which no violations were observed)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1002 To 1002 Parent: CHE-001-0893 Date: 09/26/84

Title: (Memo regarding report of inspection dated 09/26/84 which noted facility was in full compliance)

Type: CORRESPONDENCE
Author: Patterson, James E: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-1003 To 1003 Parent: CHE-001-0893 Date: 08/10/84

Title: (Letter regarding deficiencies found after review of documents for financial assurance)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: none: NC Dept of Human Resources
Recipient: Hardin, J Larry: Chemtronics

Document Number: CHE-001-1004 To 1005 Date: 12/17/80

Title: (Letter regarding recommended procedures for abandonment pits)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Messenheimer, Harry H: Chemtronics

Document Number: CHE-001-1006 To 1007 Parent: CHE-001-0893 Date: 08/10/84

Title: (Letter regarding compliance schedule and penalty assessment)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: none: none

Document Number: CHE-001-1008 To 1009 Parent: CHE-001-0893 Date: 12/04/80

Title: (Letter regarding removal of liquids followed by covering with impermeable barrier, and minimizing public health risks)

Type: CORRESPONDENCE
Author: Alpiser, Francis M: NC Dept of Human Resources
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-1010 To 1011 Parent: CHE-001-0893 Date: 04/20/83

Title: (Letter regarding clarification of Chemtronics position in terms of acid pit area)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Hunter, Don: US EPA

Document Number: CHE-001-1012 To 1013 Parent: CHE-001-0893 Date: 09/24/81

Title: (Letter regarding reasons Chemtronics believes notification is not required by Chemtronics with completed Notification of Hazardous Waste Site form enclosed)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Johnson, Felice F: Chemtronics
Recipient: Fraley, Gregory D: US EPA

Document Number: CHE-001-1014 To 1014 Parent: CHE-001-0893 Date: 08/04/84

Title: (Letter to serve as Professional Engineer's Certification of inspection and testing conducted on Chemtronics biolagoon liner)

Type: CORRESPONDENCE
Author: Hewitt, Thomas R: CRS Sirrine
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1015 To 1015 Parent: CHE-001-0893 Date: 07/10/84

Title: (Letter certifying the biolagoon meets all Schlagel Quality Control procedures, standards and specifications)

Type: CORRESPONDENCE
Author: Ojeshina, Anthony O: Schlegel Lining Technology
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1017 To 1017 Parent: CHE-001-0893 Date: 08/29/84

Title: (Letter accepting certification stating the liner has not leaked since installation)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1018 To 1018 Parent: CHE-001-0893 Date: / /

Title: (Page 2 of letter, document number CHE0011019)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-1019 To 1019 Parent: CHE-001-0893 Date: 06/25/84

Title: (Page 1 of letter regarding closing of biological treatment lagoon resulting in the need to modify Part B Permit Application therefore making extension until 07/20/84 necessary)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-1021 To 1021 Parent: CHE-001-0893 Date: 06/25/84

Title: (Page 3 of letter, document number CHE0011019)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-1022 To 1022 Parent: CHE-001-0893 Date: 09/13/83

Title: (Cover letter forwarding RCRA Trust Fund Agreement, RCRA Performance Bond, revised 1982 and 1983 certificates of insurance)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hardin, J Larry: Chemtronics
Recipient: Dunn, Glenn: NC Dept of Human Resources

Document Number: CHE-001-1023 To 1023 Parent: CHE-001-0893 Date: 07/19/84

Title: (Letter regarding Chemtronics desire to withdraw its Part B permit application for final status of biological treatment lagoon and storage of waste at facilities)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-1024 To 1024 Parent: CHE-001-0893 Date: 08/06/84

Title: (Letter regarding inspection which found no weld failures also noting results of laboratory peel testing)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: none: none
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1027 To 1027 Date: 01/21/85

Title: (Handwritten memo regarding site inspection of 10/00/84)

Type: CORRESPONDENCE
Author: Manganiello, Dennis J: none
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1028 To 1028 Date: 01/22/85

Title: (Letter regarding meeting set for 01/31/85 to review and comment on enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Engelman, Susan P: Celanese Corporation
Attached: CHE-001-1029 CHE-001-1030 CHE-001-1031 CHE-001-1032 CHE-001-1033

Document Number: CHE-001-1029 To 1029 Parent: CHE-001-1028 Date: 01/22/85

Title: (Letter announcing Remedial Response Team meeting 01/31/85 to review and comment on the enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen

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Document Number: CHE-001-1030 To 1030 Parent: CHE-001-1028 Date: 01/22/85

Title: (Letter announcing Remedial Response Team meeting 01/31/85 to review and comment on the enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Smith, Frank R: Northrop

Document Number: CHE-001-1031 To 1031 Parent: CHE-001-1028 Date: 01/22/85

Title: (Letter announcing Remedial Repsonse Team meeting 01/31/85 to review and comment on the enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Karnoski, Thomas C: NC Dept of Human Resources

Document Number: CHE-001-1032 To 1032 Parent: CHE-001-1028 Date: 01/22/85

Title: (Letter announcing Remedial Response Team meeting 01/31/85 to review and comment on the enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-1033 To 1033 Parent: CHE-001-1028 Date: 01/22/85

Title: (Letter announcing Remedial Response Team meeting 01/31/85 to review and comment on the enclosed Final Interim Report from Camp Dresser and McKee)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1034 To 1034 Date: 01/22/85

Title: (Letter regarding role of county/citizen involvement in Regional Response Team)

Type: CORRESPONDENCE
Author: Orban, James: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1035 To 1073 Date: 01/25/85

Title: (Trip notes at site to interview witnesses including list of those who participated and handwritten notes)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1074 To 1076 Date: 01/27/85

Title: (Newspaper article titled: "Chemical Weapon Waste Buried in NC, Secret Project's Debris Might Remain Potent")

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Horan, Jack: Charlotte Observer
Recipient: none: none

Document Number: CHE-001-1077 To 1077 Date: 01/28/85

Title: (Newspaper article titled: "EPA Probes LSD-Like Chemcial in Dump")

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: none: Atlanta Journal
Recipient: none: none

Document Number: CHE-001-1078 To 1078 Date: 02/01/85

Title: (Memo regarding locating labs with the capability to analyze for BZ 3-Quinuclidinyl Benzilate)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Lair, Doug: US EPA

Document Number: CHE-001-1079 To 1093 Date: 02/01/85

Title: Revisions to NC Harzardous Waste Management Rites Adopted at the 01/30/85 Commission for Health Services Meeting

Type: PLAN
Author: none: NC Dept of Human Resources
Recipient: none: none

Document Number: CHE-001-1094 To 1095 Date: 02/07/85

Title: Trip Report to Chemtronics Site 02/04/85 to 02/07/85

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1096 To 1096 Date: 02/05/85

Title: SC Dept of Health and Environmental Control Uniform Hazardous Waste Manifest

Type: OTHER
Author: Moein, George: US EPA
Recipient: none: SC Dept of Health

Document Number: CHE-001-1097 To 1100 Date: 02/07/85

Title: (Memo concerning preliminary summary on groundwater contamination at Owen Manufacturing Company site)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Laymon, Lee: NC Dept of Natural Resources & Community Development
Attached: CHE-001-1101

Document Number: CHE-001-1101 To 1109 Parent: CHE-001-1097 Date: 02/07/85

Title: Groundwater Field/Lab Report Forms for Wellhead Testing at Owen Mfg site Dated 01/10/85 through 06/10/85 (with maps)

Type: DATA
Author: Minnick, H E: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-1110 To 1112 Date: 02/07/85

Title: (Letter presenting comments on Final Interim Report from Camp Dresser & McKee)

Type: CORRESPONDENCE
Author: Engelman, Susan P: Celanese Corporation
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1113 To 1114 Date: 02/08/85

Title: (Letter inquiring about conditions allowing a waste site owner to avoid liability in waste removal operations and commenting on enclosed article in Environment Reporter)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Casto, Keith M: US EPA
Attached: CHE-001-1115

Document Number: CHE-001-1115 To 1115 Parent: CHE-001-1113 Date: 02/01/85

Title: (Journal article quoting James A Rogers of Skadden Arps Slate Meagler & Flom, concerning ability of waste site operators to avoid removal requirements by withdrawing from RCRA proceedings)

Type: CORRESPONDENCE
Author: none: Environment Reporter
Recipient: none: none

Document Number: CHE-001-1116 To 1116 Date: 02/08/85

Title: (Letter requesting development of an audio-visual presentation of Superfund process)

Type: CORRESPONDENCE
Author: Orban, James: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1117 To 1117 Date: 02/11/85

Title: (Letter outlining need to fully discuss legal issues raised by issuing Chemtronics facility on RCRA permit for contamination of the biolagoon area)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Karnoski, Thomas C: NC Dept of Human Resources

Document Number: CHE-001-1118 To 1121 Date: 02/11/85

Title: (Letter submitting comments on Final Interim Report of 01/18/85)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1122 To 1123 Date: 02/11/85

Title: (Letter requesting assistance in discovery and production of documents)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Walker, Lewis D: US Army

Document Number: CHE-001-1124 To 1129 Date: 02/11/85

Title: (Letter presenting comments on Final Interim Report on Chemtronics)

Type: CORRESPONDENCE
Author: McCabe, Thomas J: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1130 To 1130 Date: 02/11/85

Title: (Letter requesting all reports and correspondence on Chemtronics for a master file compilation)

Type: CORRESPONDENCE
Author: VeHaun, M Jerry: County of Buncombe NC
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1131 To 1132 Date: 02/12/85

Title: (Letter presenting comments on Final Interim Report)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1133 To 1134 Date: 02/12/85

Title: (Letter concurring with comments made on previous letter regarding work plan)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1135

Document Number: CHE-001-1135 To 1136 Parent: CHE-001-1133 Date: 02/11/85

Title: (Two pages of previous letter revised)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1137 To 1137 Date: 02/14/85

Title: (Letter concurring with assessment to elicit help for record location and production)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Walker, Lewis D: US Army

Document Number: CHE-001-1138 To 1139 Date: 02/14/85

Title: (Letter clarifying statements in letter dated 01/14/85 concerning RCRA commitments)

Type: CORRESPONDENCE
Author: Casto, Keith M: US EPA
Recipient: Rogers, James A: Skadden Arps Slate Meagher & Flom

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Document Number: CHE-001-1140 To 1140 Date: 02/15/85

Title: (Handwritten notes on background, EPA role, status of commitments, and potential problems at Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1141 To 1142 Date: 02/18/85

Title: (Letter confirming 02/20/85 meeting on current status of the Superfund Remedial Process for Chemtronics)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Devine, Thomas W: US EPA

Document Number: CHE-001-1143 To 1158 Date: 02/18/85

Title: (Handwritten memo transmitting suggestions on subsurface investigations in acid pit and biolagoon areas, rough maps locating presumed fracture zones, and new NC regulations pursuant to landfills)

Type: CORRESPONDENCE
Author: Karnoski, Thomas C: NC Dept of Human Resources
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1159 To 1159 Date: 02/19/85

Title: (Cover letter to enclosed contact report relating to disposal activities by Oerlikon)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Casto, Keith M: US EPA
Attached: CHE-001-1160

Document Number: CHE-001-1160 To 1160 Parent: CHE-001-1159 Date: 02/13/85

Title: (Contact Report disclosing two addtional burial sites)

Type: PLAN
Author: Johnson, Felice F: Chemtronics
Recipient: none: none

Document Number: CHE-001-1161 To 1162 Date: 02/19/85

Title: (Letter concerning Potential Responsible Parties and requesting aid in document location)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Magness, Thomas H: US Army

Document Number: CHE-001-1163 To 1165 Date: 02/21/85

Title: (Letter responding to previous letter concerning clarification of legal obligations and prohibitions under RCRA and CERCLA)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Karnoski, Thomas C: NC Dept of Human Resources
Attached: CHE-001-1166 CHE-001-1167

Document Number: CHE-001-1166 To 1166 Parent: CHE-001-1163 Date: 01/14/85

Title: (Letter noting receipt of request to withdraw permit application for final status of Chemtronic's biolagoon)

Type: CORRESPONDENCE
Author: Karnoski, Thomas C: NC Dept of Human Resources
Recipient: Johnson, Felice F: Moore, Van Allen, Allen & Thigpen

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Document Number: CHE-001-1167 To 1169 Parent: CHE-001-1163 Date: 12/21/84

Title: (Letter requesting the filing of enclosed form regarding potential releases from solid waste management units)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Burford, Steve: Chemtronics

Document Number: CHE-001-1170 To 1171 Date: 02/21/85

Title: (Letter requesting clarification/advice on RCRA standards to a hazardous waste subsurface impoundment at Chemtronics)

Type: CORRESPONDENCE
Author: Meyer, William L: NC Dept of Human Resources
Recipient: Scarbrough, James H: US EPA

Document Number: CHE-001-1173 To 1173 Date: 02/25/85

Title: (Letter confirming commencement of records search for Chemtronics documents)

Type: CORRESPONDENCE
Author: Walker, Lewis D: US Army
Recipient: Rogers, James A: Skadden Arps Slate Meagher & Flom

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Document Number: CHE-001-1174 To 1174 Date: 02/26/85

Title: (Cover letter to draft Community Relations Plan)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics
Attached: CHE-001-1175

Document Number: CHE-001-1175 To 1175 Parent: CHE-001-1174 Date: 02/26/85

Title: (Cover letter to draft Community Relations Plan)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1176 To 1180 Date: 03/01/85

Title: Fact Sheet Chemtronics Site

Type: PLAN
Condition: MARGINALIA
Author: Bornholm, Jon K: US EPA
Recipient: none: none
Attached: CHE-001-1181

Document Number: CHE-001-1181 To 1201 Parent: CHE-001-1176 Date: 03/01/85

Title: Site Analysis Chemtronics, Inc, Swannanoa, NC

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1202 To 1204 Date: 03/01/85

Title: Summary and List of Attendees at Chemtronics Meeting

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1205 To 1206 Date: 03/04/85

Title: (Letter offering comments on the chemical fixation remedy)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1207 To 1208 Date: 03/05/85

Title: (Cover letter and enclosed page of corrections from the draft Community Relations Plan)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Haney, Laura Temple: Warren Wilson College
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1209 To 1211 Date: 03/06/85

Title: (Letter requesting further clarification of work plan process)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1212 To 1213 Date: 03/06/85

Title: (Letter expressing desire to proceed under RCRA rather than CERCLA at Chemtronics)

Type: CORRESPONDENCE
Author: Rogers, James A: Skadden Arps Slate Meagher & Flom
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1214 To 1215 Date: 03/06/85

Title: (Letter expressing opposition to the truncation of the RI/FS process)

Type: CORRESPONDENCE
Author: Molloy, J Brian: Wald Harkrader & Ross
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-1216 To 1216 Date: 03/07/85

Title: (Cover memo to three copies of Site Analysis Report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Wolle, Frank R: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1217 To 1219 Date: 03/07/85

Title: (Letter confirming understanding about Chemtronics comments on the draft Community Relations Plan)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1220 To 1221 Date: 03/12/85

Title: (Memo commenting on the applicability of CHEMFIX treatment to RCRA closure actions)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Brown, Craig: US EPA
Recipient: Scarbrough, James H: US EPA

Document Number: CHE-001-1222 To 1230 Date: 03/14/85

Title: (Letter presenting Chemtronic's comments on the draft Community Relations Plan)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1232 To 1232 Date: 03/14/85

Title: (Letter confirming commencement of document compilation)

Type: CORRESPONDENCE
Author: Magness, Thomas H: US Army
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1233 To 1233 Date: 03/15/85

Title: (Letter announcing public meeting on the draft work plan for Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-1234 To 1234 Date: 03/18/85

Title: (Cover letter to comments from the Superfund Community Relations coordinator on the draft Community Relations Plan)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Henderson, Michael: US EPA
Recipient: Cox, Marion: ICF Incorporated

Document Number: CHE-001-1235 To 1235 Date: 03/28/85

Title: (News release of upcoming public meeting for 04/02/85)

Type: CORRESPONDENCE
Author: Thompson, Charles: US EPA
Recipient: none: none

Document Number: CHE-001-1236 To 1236 Date: 03/28/85

Title: (Letter in repsonse to inquiry concerning waste sites in the Asheville-Spartansburg area)

Type: CORRESPONDENCE
Author: Green, Richard D: US EPA
Recipient: Howitt, Mrs W: resident

Document Number: CHE-001-1237 To 1247 Date: 04/02/85

Title: (Handwritten notes from meeting on Chemtronics work plan)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1248 To 1256 Date: 04/04/85

Title: (Trip report and handwritten notes from Chemtronics, Celanese, Jadco-Hughes, and Martian Scrap Metal site visits)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1257 To 1258 Date: 04/02/85

Title: (Letter outlining the potential problems that may be encountered in pursuing a solidification/fixation remedy on-site)

Type: CORRESPONDENCE
Author: Smith, Frank R: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1259 To 1259 Date: 04/03/85

Title: (Newspaper article titled: "7 More Sites Identified as Waste Dumps")

Type: CORRESPONDENCE
Author: Horan, Jack: Charlotte Observer
Recipient: none: none

Document Number: CHE-001-1260 To 1260 Date: 04/03/85

Title: (Newspaper article titled: "EPA Officials Explain BZ Cleanup Plan")

Type: CORRESPONDENCE
Author: Webb, Nancy: Charlotte Observer
Recipient: none: none

Document Number: CHE-001-1261 To 1261 Date: 04/03/85

Title: (Newspaper article titled: "Next Step in Waste Cleanup - Companies May Hire Contractor")

Type: CORRESPONDENCE
Author: Neal, G Dale: The Ashville Citizen
Recipient: none: none

Document Number: CHE-001-1262 To 1265 Date: 04/04/85

Title: (Letter confirming point of conversation with Charles Jeter concerning the removal of two drums from Chemtronics)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Casto, Keith M: US EPA

Document Number: CHE-001-1266 To 1266 Date: 04/05/85

Title: (Newspaper article titled: "Tear Gas, Lethal Chemical Share Name")

Type: CORRESPONDENCE
Author: Horan, Jack: Charlotte Observer
Recipient: none: none

Document Number: CHE-001-1267 To 1267 Date: 03/30/85

Title: (Newspaper article titled: "EPA Might Transfer BZ To Army Site")

Type: CORRESPONDENCE
Author: O'Neill, Tex: Charlotte Observer
Recipient: none: none

Document Number: CHE-001-1268 To 1288 Parent: CHE-001-1269 Date: 04/04/85

Title: Community Relations Plan for Chemtronics Site, Remedial Investigation/Feasibility Study

Type: PLAN
Author: none: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-1269 To 1269 Date: 04/04/85

Title: (Cover letter to Final Community Relations Plan)

Type: CORRESPONDENCE
Author: Johnson, Richard C: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA
Attached: CHE-001-1268 CHE-001-1270

Document Number: CHE-001-1270 To 1270 Parent: CHE-001-1269 Date: 04/02/85

Title: (Memo submitting final copy of Community Relations Plan)

Type: CORRESPONDENCE
Author: Cox, Marion: ICF Incorporated
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: CHE-001-1271 To 1288 Date: 04/04/85

Title: Final community Relations Plan for Chemtronic 04/04/85

Type: PLAN
Author: Condie, Alison: US EPA
Recipient: none: none

Document Number: CHE-001-1289 To 1289 Date: 04/08/85

Title: (Record of Communication regarding corrections to Final Community Relations Plan)

Type: CORRESPONDENCE
Author: Henderson, Michael: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1290 To 1291 Date: 04/09/85

Title: (Memo regarding the identification of Potential Additional Disposal Sites Associated with Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1292 To 1292 Date: 04/15/85

Title: (Memo confirming request to conduct a flyover of Chemtronics)

Type: CORRESPONDENCE
Author: Smith, Al J: US EPA
Recipient: Wolle, Frank R: US EPA

Document Number: CHE-001-1293 To 1295 Date: 04/16/85

Title: (Letter presenting observations on the Draft Work Plan for the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1296 To 1312 Date: 04/18/85

Title: (Letters from 17 residents expressing opinions on the selection of the contractor for the RI/FS)

Type: CORRESPONDENCE
Author: Burns, Lee: none
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1313 To 1322 Date: 04/18/85

Title: (Letter presenting comments on the draft work plan)

Type: CORRESPONDENCE
Author: Engelman, Susan P: Celanese Corporation
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1323

Document Number: CHE-001-1323 To 1323 Parent: CHE-001-1313 Date: 03/20/85

Title: (Incomplete section of a draft report with corrections - page 10 of 146)

Type: PLAN
Condition: DRAFT INCOMPLETE MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-1326 To 1327 Date: 04/18/85

Title: (Memo announcing meeting with representatives from Chemtronics and Northrop)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1328 To 1342 Date: 04/19/85

Title: (Letter presenting Chemtronics' and Northrop's comments on the draft work plan for the RI/FS)

Type: CORRESPONDENCE
Author: Molloy, J Brian: Wald Harkrader & Ross
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1343 To 1349 Date: 04/19/85

Title: (Letter presenting comments on the draft work plan)

Type: CORRESPONDENCE
Author: Haney, Laura Temple: Buncombe County Hazardous Waste Advisory Board
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1350 To 1352 Date: 04/19/85

Title: (Letter presenting comments on the Chemtronics' draft work plan)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Leslie, Mary K: Camp Dresser & McKee

Document Number: CHE-001-1353 To 1354 Date: 04/22/85

Title: (Letter discussing representation at upcoming 04/26/85 meeting)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1355 To 1356 Date: 04/22/85

Title: (Letter confirming meeting of 04/26/85)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Orban, James: US EPA

Document Number: CHE-001-1358 To 1360 Date: 04/24/85

Title: (Memo presenting comments on draft work plan)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Leslie, Mary K: Camp Dresser & McKee

Document Number: CHE-001-1361 To 1361 Date: 04/24/85

Title: (Letter enclosing copies of Metcalf & Eddy's Qualifications/Experience Package)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1362 To 1367 Date: 04/24/85

Title: (Transmittal Slip and enclosed comments on the Chemtronics draft work plan)

Type: CORRESPONDENCE
Author: Anderson, Andrew W: US Army
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1368 To 1368 Date: 04/25/85

Title: (Record of Communication warning against disturbing potential prehistorical archaeological sites)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Leslie, Mary K: Camp Dresser & McKee

Document Number: CHE-001-1369 To 1371 Date: 04/26/85

Title: (Notes of meeting with PRP's with list of attendees and agenda attached)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1372 To 1372 Date: 04/26/85

Title: (Handwritten letter informing that Laura Temple Haney will represent the Buncombe County Hazardous Waste Advisory Board)

Type: CORRESPONDENCE
Author: West, Earl: Buncombe County Hazardous Waste Advisory Board
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1373 To 1373 Date: 04/29/85

Title: (Letter outlining details of slide/tape program and related issues)

Type: CORRESPONDENCE
Author: Haney, Laura Temple: Warren Wilson College
Recipient: Orban, James: US EPA

Document Number: CHE-001-1374 To 1374 Date: 04/12/85

Title: (Letter announcing bid proposal of $32,000 for EPA/Chemtronics slide/tape program)

Type: CORRESPONDENCE
Author: Rudick, Sally: Skyline Productions
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1375 To 1376 Date: 03/19/85

Title: (Letter requesting joint action in the preparation of the EPA/Chemtronics slide/tape program)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Haney, Laura Temple: Buncombe County Hazardous Waste Advisory Board

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Document Number: CHE-001-1377 To 1378 Date: 04/30/85

Title: (Cover letter and comments on the draft work plan)

Type: CORRESPONDENCE
Author: McCabe, Thomas J: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1379 To 1379 Date: 05/01/85

Title: (Cover letter to technical article on Vertical Seismic Profiling)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1380

Document Number: CHE-001-1380 To 1380 Parent: CHE-001-1379 Date: 02/09/84

Title: (Announcement of NWWA/EPA Conference on Surface and Borehole Geophysical Methods in Groundwater Investigations)

Type: CORRESPONDENCE
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1400 To 1400 Date: 05/06/85

Title: (Memo presenting review comments on the draft work plan)

Type: CORRESPONDENCE
Author: Pietrosewicz, Chuck: US Dept of Health & Human Services
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1401 To 1401 Date: 05/06/85

Title: (Cover letter to document summarizing EPA performance in cleaning up toxic waste sites)

Type: CORRESPONDENCE
Author: Jones, Lindsay: Western NC Alliance
Recipient: none: Buncombe County Hazardous Waste Advisory Board
Attached: CHE-001-1402

Document Number: CHE-001-1402 To 1413 Parent: CHE-001-1401 Date: 05/06/85

Title: Summary of Evaluations of the Six National Priorities List Sites Delisted by the Environmental Protection Agency

Type: PLAN
Author: none: National Campaign Against Toxic Hazards
Recipient: none: none

Document Number: CHE-001-1414 To 1414 Date: 05/06/85

Title: (Letter announcing the commencement of negotiations with Chemtronics and Northrop to perform the RI/FS)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: CHE-001-1415 To 1416 Date: 05/06/85

Title: (Letter showing decision to allow Chemtronics, Northrop, and Metcalf & Eddy to perform the RI/FS)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: McCabe, Thomas J: Northrop

Document Number: CHE-001-1417 To 1417 Date: 05/06/85

Title: (Letter showing decision to allow Chemtronics, Northrop, and Metcalf & Eddy to perform the RI/FS)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-1418 To 1419 Date: 05/07/85

Title: Trip/Meeting Report with Buncombe County Hazardous Waste Advisory Board (to review topics to be discussed at 04/16/00 meeting with Potentially Responsible Party, with list of attendees)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1420 To 1435 Date: 05/07/85

Title: (Cover letter to enclosed agenda/outline from 04/26/85 meeting)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1436 To 1436 Date: 05/08/85

Title: (Transmittal Slip to map locating alleged new disposal areas)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1437 To 1437 Date: 05/17/85

Title: (Letter acknowledging selection of RI/FS contractors)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1438 To 1438 Date: 05/17/85

Title: (Cover letter to copies of well records)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural & Economic Resources
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1439

Document Number: CHE-001-1439 To 1455 Parent: CHE-001-1438 Date: 04/01/85

Title: Series of Well Construction/Drilling Records Dated From 10/09/80 Through 04/01/85

Type: DATA
Author: none: none
Recipient: none: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-1456 To 1456 Date: 05/20/85

Title: (Transmittal Slip enclosing a copy of the SOPs on-hand)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1457 To 1457 Date: 05/20/85

Title: (Transmittal Slip enclosing information which may be helpful)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy
Attached: CHE-001-1458

Document Number: CHE-001-1458 To 1458 Parent: CHE-001-1457 Date: 05/22/85

Title: (Letter acknowledging acceptance of combined company efforts to perform Remedial Investigation/Feasibility Study and expressing comments on ways to improve community relations)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1459 To 1459 Date: 05/22/85

Title: (Blank letter stationery)

Type: OTHER
Condition: INCOMPLETE
Author: none: Chemtronic/Northrop Information Bureau
Recipient: none: none

Document Number: CHE-001-1460 To 1696 Parent: CHE-001-1463 Date: 05/24/85

Title: Work Plan for Chemtronics - Performance of Remedial Response Activities at Uncontrolled Hazardous Waste Sites (REM II) (with Appendices A through D)

Type: PLAN
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: none: US EPA

Document Number: CHE-001-1463 To 1464 Date: 05/24/85

Title: (Letter submitting Final Work Plan for the Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA
Attached: CHE-001-1460 CHE-001-1465 CHE-001-1619 CHE-001-1627 CHE-001-1633

Document Number: CHE-001-1465 To 1465 Parent: CHE-001-1463 Date: 05/24/85

Title: Region IV - Work Plan Approval Form

Type: OTHER
Author: Bornholm, Jon K: US EPA
Recipient: Wright, Russell L: US EPA

Document Number: CHE-001-1619 To 1626 Parent: CHE-001-1463 Date: 07/27/83

Title: Appendix A: Additional Technical Information (from 06/27/83 through 06/30/83)

Type: PLAN
Author: none: Hampton Hintz & Associates
Recipient: none: D'Appolonia Consulting Engineers

Document Number: CHE-001-1627 To 1632 Parent: CHE-001-1463 Date: 10/01/84

Title: Appendix B: EPA Ambient Standards and Criteria for Superfund Remedial Sites

Type: PLAN
Author: none: JRB Associates
Recipient: none: US EPA

Document Number: CHE-001-1633 To 1692 Parent: CHE-001-1463 Date: 02/01/85

Title: Appendix C: State of NC Proposed Surface Water and Groundwater Criteria, and Hazardous Waste Management Rules (revisions to rules adopted at Commission for Health Services meeting on 01/30/85)

Type: PLAN
Author: none: NC Dept of Human Resources
Recipient: none: none

Document Number: CHE-001-1697 To 1698 Date: 05/30/85

Title: (Letter stating there is insufficient time for all comments to be made on the Consent Order)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1699 To 1699 Date: 06/03/85

Title: (Transmittal Slip noting "sent copies of the oversight work plan to the above persons")

Type: CORRESPONDENCE
Author: none: none
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1700 To 1700 Date: 06/03/85

Title: (Letter stating inability to locate requested contracts as they probably were routinely destroyed)

Type: CORRESPONDENCE
Author: Magness, Thomas H: US Army
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1701 To 1701 Date: 06/05/85

Title: (Letter to confirm meeting on 06/14/85 to discuss the proposed Consent Order)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1702 To 1703 Date: 06/11/85

Title: (Letter enclosing technical data on riot control agent CS)

Type: CORRESPONDENCE
Author: Anderson, Andrew W: US Army
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1704 To 1705 Date: 06/11/85

Title: (Letter stating concurrence with comments on draft Consent Order with one change requested by client)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1706 To 1708 Date: 06/12/85

Title: (Letter presenting comments by Northrop and Chemtronics to draft Administrative Order on Consent and RI/FS Work Plan)

Type: CORRESPONDENCE
Author: Young, Anthony L: Wald Harkrader & Ross
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1709 To 1709 Date: 06/12/85

Title: (Letter enclosing copies of Community Relations Plan for Review)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1710 To 1710 Date: 06/13/85

Title: (Letter acknowledging request to establish an information repository in Asheville, NC with request for copies of documents to be sent to all information repositories)

Type: CORRESPONDENCE
Author: none: none
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-1712 To 1712 Date: 06/13/85

Title: (Record of Communication regarding community relations during enforcement actions)

Type: CORRESPONDENCE
Author: Henderson, Michael: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1713 To 1714 Date: 06/14/85

Title: (Meeting notes discussing PRPs comments on the Draft Consent Order with list of meeting attendees attached)

Type: PLAN
Condition: INCOMPLETE
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1715 To 1715 Date: 06/20/85

Title: (Meeting notes discussing technical issues pertaining to work plan and scheduling the events of the RI/FS)

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1716 To 1717 Date: 06/21/85

Title: (Notes on trip to Chemtronics to meet with Noland Radford, a past employee of the site, who was involved with disposal operations)

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1718 To 1718 Date: 06/26/85

Title: (Record of Communication regarding compliance with part 265 groundwater monitoring as stated in work plan)

Type: CORRESPONDENCE
Author: Dickinson, John: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen

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Document Number: CHE-001-1719 To 1719 Date: 06/27/85

Title: (Memo requesting establishment of a target date for concluding negotiations and suggesting 07/24/85 as the possible date)

Type: CORRESPONDENCE
Author: Orban, James: US EPA
Recipient: Cole, Bert: US EPA

Document Number: CHE-001-1720 To 1720 Date: 06/27/85

Title: (Letter informing that a revised RI/FS Work Plan schedule to be incorporated into Final Work Plan will be sent along with issues which need clarification)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1721 To 1723 Date: 06/28/85

Title: (Letter enclosing quantitative methods for chemical analysis for various explosive compounds in soil and water matrices)

Type: CORRESPONDENCE
Author: Anderson, Andrew W: US Army
Recipient: Johnson, Felice F: Chemtronics

Document Number: CHE-001-1724 To 1724 Date: 07/08/85

Title: (Memo requesting meeting to settle issue of date for conclusion of negotiations for Consent Order)

Type: CORRESPONDENCE
Author: none: US EPA
Recipient: Orban, James: US EPA

Document Number: CHE-001-1725 To 1725 Date: 07/10/85

Title: (Handwritten memo containing language to be added to the RI/FS Work Plan regarding upgrading of the groundwater monitoring well system for the pre-treatment biolagoon)

Type: CORRESPONDENCE
Author: Dal Santo, Dario: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1726 To 1726 Date: 07/11/85

Title: (Transmittal Slip enclosing a copy of a POP as requested and a copy of paragraph satisfying RCRA requirements)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1727 To 1731 Date: 07/18/85

Title: (Letter enumerating EPA's position on the 23 issues discussed in the letter of 07/10/85)

Type: CORRESPONDENCE
Author: Bussey, Reuben T Jr: US EPA
Recipient: Young, Anthony L: Wald Harkrader & Ross
Attached: CHE-001-1780

Document Number: CHE-001-1732 To 1732 Date: 07/26/85

Title: (Transmittal Slip enclosing rewritten sections of Work Plan with request for review for comments)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1733 To 1733 Date: 07/26/85

Title: (Meeting notes discussing discrepancies in the Work Plan and Consent Order)

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1734 To 1734 Date: 12/10/85

Title: (Handwritten attendance sheet for Chemtronics NPL Site Meeting)

Type: OTHER
Author: none: County of Buncombe NC
Recipient: none: none

Document Number: CHE-001-1735 To 1735 Date: 07/29/85

Title: (Transmittal Slip requesting action on language changes to Work Plan to satisfy RCRA requirements)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Scarbrough, James H: US EPA

Document Number: CHE-001-1736 To 1736 Date: 07/31/85

Title: (Memo enclosing color infrared photographs of the facility with an analysis and report due by end of August)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Wolle, Frank R: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1737 To 1737 Date: 08/02/85

Title: (Transmittal Slip enclosing final work plan for Chemtronics)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy
Attached: CHE-001-1738 CHE-001-1740 CHE-001-1742

Document Number: CHE-001-1738 To 1779 Parent: CHE-001-1737 Date: 08/02/85

Title: Oversight/Technical Support Work Plan - Remedial Investigation/Feasibility Study, Volume I

Type: PLAN
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: none: US EPA

Document Number: CHE-001-1740 To 1741 Parent: CHE-001-1737 Date: 08/02/85

Title: (Letter submitting the revised Work Plan for oversight and technical support of the RI/FS)

Type: CORRESPONDENCE
Author: Leslie, Mary K: Camp Dresser & McKee
Recipient: Wright, Russell L: US EPA

Document Number: CHE-001-1742 To 1742 Parent: CHE-001-1737 Date: 08/02/85

Title: Region IV - Work Plan Approval Form

Type: OTHER
Author: Bornholm, Jon K: US EPA
Recipient: Wright, Russell L: US EPA

Document Number: CHE-001-1780 To 1787 Parent: CHE-001-1727 Date: 08/05/85

Title: (Letter to confirm comments made at meeting on 07/26/85 concerning proposed consent order that are in reference to letter of 07/18/85 enumeration of issues)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1788 To 1791 Date: 08/08/85

Title: (Letter listing suggested questions for interviews of persons at the site with attached business calling card)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1792 To 1795 Date: 08/09/85

Title: (Memo regarding site background, human health concerns of former site employees, and summary of adverse health effects)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Pietrosewicz, Chuck: US Dept of Health & Human Services
Recipient: Mitchell, Frank: Centers for Disease Control

Document Number: CHE-001-1796 To 1796 Date: 08/12/85

Title: (Letter requesting copy of RFP: PS118-01)

Type: CORRESPONDENCE
Author: Haney, Laura Temple: Warren Wilson College
Recipient: Hutton, Dan: none

Document Number: CHE-001-1797 To 1797 Date: 08/14/85

Title: (Transmittal Slip enclosing a memo from ESD concerning QA needs)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1798 To 1799 Date: 08/19/85

Title: (Letter enclosing Administrative Order on Consent for signature)

Type: CORRESPONDENCE
Author: Bussey, Reuben T Jr: US EPA
Recipient: Young, Anthony L: Wald Harkrader & Ross
Attached: CHE-001-1800

Document Number: CHE-001-1800 To 1813 Parent: CHE-001-1798 Date: / /

Title: Administrative Order on Consent

Type: LEGAL DOCUMENT
Condition: INCOMPLETE
Author: Lynch, Frank W: Northrop
Recipient: Ravan, Jack E: US EPA

Document Number: CHE-001-1814 To 1814 Date: 09/05/85

Title: (Letter notifying of election not to enter into an RI/FS consent order)

Type: CORRESPONDENCE
Author: Bussey, Reuben T Jr: US EPA
Recipient: Young, Anthony L: Wald Harkrader & Ross

Document Number: CHE-001-1815 To 1816 Date: 09/18/85

Title: (Meeting notes discussing the final technical changes in the work plan prior to signing the Consent Order)

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-1817 To 1819 Date: 10/01/85

Title: Fact Sheet (describes site history, current status, remedial investigation activities, and names of contacts)

Type: OTHER
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-1820 To 1820 Date: 10/01/85

Title: (Transmittal Slip enclosing copy of vegetation stress analysis)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1821 To 1821 Date: 10/03/85

Title: (Letter enclosing copies of final Community Relations Plan for Chemtronics RI/FS)

Type: CORRESPONDENCE
Author: Stamberger, Susan L: Northrop
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1822

Document Number: CHE-001-1822 To 1848 Parent: CHE-001-1821 Date: 10/03/85

Title: Community Relations Plan

Type: PLAN
Condition: INCOMPLETE
Author: none: Visual Imagery
Recipient: none: US EPA

Document Number: CHE-001-1849 To 1849 Date: 10/03/85

Title: (Transmittal Slip enclosing memo per request of Jim Orban)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College
Attached: CHE-001-1850

Document Number: CHE-001-1850 To 1850 Parent: CHE-001-1849 Date: 07/02/85

Title: (Memo containing suggestions to improve CERCLA community relations)

Type: CORRESPONDENCE
Author: none: none
Recipient: Gemmill, Daphne: none

Document Number: CHE-001-1852 To 1852 Date: 10/03/85

Title: (Memo verifying hand delivery to John Mann of three sets of photos on 09/23/85)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Wolle, Frank R: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1853 To 1856 Date: 10/09/85

Title: (Letter presenting details of seismic refraction survey and geophysical testing programs for review and approval)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1857 To 1857 Date: 10/10/85

Title: (Letter announcing the agenda for the first official meeting of the Community Advisory board set for 10/24/85 as a result of the Consent Order being signed)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1858 To 1858 Date: 10/11/85

Title: (Letter confirming understanding reached during telephone conversations regarding approval to proceed with geophysical work prior to receiving Agency approval on the Project Operations Plan and QA/QC as long as work plan followed)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1859 To 1860 Date: 10/15/85

Title: (Letter reiterating topics discussed during meeting on 09/19/85 and confirming decisions made)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1861 To 1862 Date: 10/21/85

Title: (Letter enclosing copies of lab analyses of well water samples)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Owen, Charles D: Charles D Owen Mfg Company
Attached: CHE-001-1863

Document Number: CHE-001-1863 To 1876 Parent: CHE-001-1861 Date: 10/10/85

Title: (Lab Analyses of groundwater for purpose of pollution monitoring from samples collected from 08/13/85 through 10/10/85)

Type: DATA
Author: Minnick, H E: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-1877 To 1879 Date: 10/22/85

Title: (Letter containing excerpts from the grant proposal which describes how the desired spectrophotometer will be used)

Type: CORRESPONDENCE
Author: Kahl, Dean C: Warren & Mallonee
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1880 To 1880 Date: 10/23/85

Title: (Letter stating technical issue regarding stake-out of locations for proposed soil borings and installation of monitoring wells with request for approval of locations before work begun)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1881 To 1881 Date: 10/24/85

Title: (Transmittal Slip enclosing copy of final Work Plan and signed Consent Order)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development
Attached: CHE-001-1882 CHE-001-1883 CHE-001-1884 CHE-001-1885 CHE-001-1886

Document Number: CHE-001-1882 To 1882 Parent: CHE-001-1881 Date: 10/24/85

Title: (Transmittal Slip enclosing copy of final Work Plan, signed Consent Order and well sampling results)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Karnoski, Thomas C: NC Dept of Human Resources

Document Number: CHE-001-1883 To 1883 Parent: CHE-001-1881 Date: 10/24/85

Title: (Transmittal Slip enclosing copy of final Work Plan, signed Consent Order and well sampling results)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-1884 To 1884 Parent: CHE-001-1881 Date: 10/24/85

Title: (Transmittal Slip enclosing copy of final Work Plan, signed Consent Order and well sampling results)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1885 To 1885 Parent: CHE-001-1881 Date: 10/29/85

Title: (Letter enclosing signed copy of Consent Agreement for the RI/FS)

Type: CORRESPONDENCE
Author: Bussey, Reuben T Jr: US EPA
Recipient: Young, Anthony L: Wald Harkrader & Ross

Document Number: CHE-001-1886 To 1899 Parent: CHE-001-1881 Date: 10/21/85

Title: Administrative Order on Consent

Type: LEGAL DOCUMENT
Author: Lynch, Frank W: Northrop
Recipient: Ravan, Jack E: US EPA

Document Number: CHE-001-1900 To 1900 Date: 10/30/85

Title: (Meeting notes reviewing geophysical data and observations on seismic refraction survey work)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1901 To 1902 Date: 10/30/85

Title: (Letter forwarding lab analyses from well water samples)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Smith, T E: Tropigas International
Attached: CHE-001-1903

Document Number: CHE-001-1903 To 1904 Parent: CHE-001-1901 Date: 10/25/85

Title: (Lab analyses for background information on groundwater samples collected 08/27/85 at sample interval 165')

Type: DATA
Author: Minnick, H E: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-1905 To 1906 Date: 10/30/85

Title: (Letter forwarding lab analyses from well water samples at Blue Ridge Housing Center)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Wright, Roger: Blue Ridge Housing Center
Attached: CHE-001-1907 CHE-001-1909

Document Number: CHE-001-1907 To 1909 Parent: CHE-001-1905 Date: 09/17/85

Title: (Lab analyses for background information on groundwater samples collected 08/27/85 at sample interval 325')

Type: DATA
Author: Minnick, H E: NC Dept of Natural Resources & Community Development
Recipient: none: none

Document Number: CHE-001-1909 To 1909 Parent: CHE-001-1905 Date: 09/17/85

Title: (Organic Analysis identifying five compounds)

Type: DATA
Author: none: none
Recipient: none: none

Document Number: CHE-001-1910 To 1911 Date: 10/31/85

Title: (Letter listing names of the engineering contractor selected to conduct RI/FS and names of major sub-contractors planned for use)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1912 CHE-001-1913

Document Number: CHE-001-1912 To 1912 Parent: CHE-001-1910 Date: 10/31/85

Title: (Letter of notification as a PRP with attached Section IX of the Order)

Type: CORRESPONDENCE
Condition: DRAFT
Author: Schultheis, John F: Chemtronics
Recipient: Pollard, Carl: Asheville Dyeing & Finishing

Document Number: CHE-001-1913 To 1913 Parent: CHE-001-1910 Date: 10/31/85

Title: Excerpt IX - Site Access from Consent Order

Type: LEGAL DOCUMENT
Author: none: none
Recipient: none: none

Document Number: CHE-001-1914 To 1914 Date: 11/11/85

Title: (Letter notifying as a PRP with attached Section IX excerpt from the Order)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Pollard, Carl: Asheville Dyeing & Finishing
Attached: CHE-001-1915 CHE-001-1916

Document Number: CHE-001-1915 To 1915 Parent: CHE-001-1914 Date: 11/11/85

Title: Excerpt IX - Site Access from Consent Order

Type: LEGAL DOCUMENT
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1916 To 1916 Parent: CHE-001-1914 Date: 11/11/85

Title: (Excerpt) Gravel Pit Disposal Area (#24)

Type: OTHER
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1917 To 1917 Date: 11/13/85

Title: (Letter forwarding Chemtronics Site Progress Report #1 and establishing the monthly delivery schedule)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-1918

Document Number: CHE-001-1918 To 1918 Parent: CHE-001-1917 Date: 10/01/85

Title: Chemtronics Site Progress Report #1

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-1919 To 1928 Date: 11/13/85

Title: (Letter summarizing proposed soil borings to be completed as monitoring wells with attached Figures 1 through 7 identifying potential locations)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1931 To 1933 Date: 11/22/85

Title: (Letter in compliance with requirements of 1984 amendment to RCRA and enclosing letter and plan regarding closure and post-closure)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Meyer, William L: NC Dept of Human Resources
Attached: CHE-001-1934 CHE-001-1936

Document Number: CHE-001-1934 To 1935 Parent: CHE-001-1931 Date: 11/22/85

Title: (Letter memoralizing conversation concerning compliance with RCRA requirements for the facility and submitting a Closure and a Post-Closure Plan)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bussey, Reuben T Jr: US EPA

Document Number: CHE-001-1936 To 1942 Parent: CHE-001-1931 Date: 11/05/85

Title: Proposed Closure Plan - Amended

Type: PLAN
Author: none: Chemtronics
Recipient: none: none

Document Number: CHE-001-1943 To 1943 Date: 11/25/85

Title: (Letter concurring with letter of 11/13/85 and clarifying some points)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-1944 To 1944 Date: 11/26/85

Title: (Transmittal Slip enclosing copy of Consent Order)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: McCall, Eugene C: Eugene C McCall Attorney at Law

Document Number: CHE-001-1945 To 1946 Date: 11/26/85

Title: (Letter enclosing interview schedule for clients with CDC)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: McCall, Eugene C: Eugene C McCall Attorney at Law
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1947 To 1947 Date: 11/26/85

Title: (Letter of request under FOIA to review files)

Type: CORRESPONDENCE
Author: Hayes, Lark: Clean Water Fund of NC
Recipient: Jones, R Walter: US EPA

Document Number: CHE-001-1948 To 1948 Date: 11/02/85

Title: (Letter submitting deliverables for review and comments)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1949 To 1949 Date: 12/06/85

Title: (Letter enclosing response to request for site access to evaluate disposal area #24)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bussey, Reuben T Jr: US EPA
Attached: CHE-001-1950 CHE-001-1951

Document Number: CHE-001-1950 To 1950 Parent: CHE-001-1949 Date: 12/03/85

Title: (Letter granting permission to site access in Gravel Pit Disposal #24 with three conditions)

Type: CORRESPONDENCE
Author: Knox, Fred: Asheville Dyeing & Finishing
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-1951 To 1951 Parent: CHE-001-1949 Date: 12/06/85

Title: Gravel Pit Disposal Areas (#24)

Type: OTHER
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-1952 To 1952 Date: 12/06/85

Title: (Letter enclosing EPIC air photos)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-1953 To 1953 Date: 12/09/85

Title: (Transmittal Slip enclosing copy of final Work Plan)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Engelman, Susan P: Celanese Corporation

Document Number: CHE-001-1954 To 1954 Date: 12/11/85

Title: (Letter providing copies of Information for Bidders and Contract Specifications for work on site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Recipient: Bornholm, Jon K: US EPA
Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-1955 To 1958 Date: / /

Title: CDC Interview Schedule (dates from 12/10/00 to 12/12/00 with handwritten interview questions)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-1959 To 1984 Date: 12/11/85

Title: Interview of Naman Radford (former site employee)

Type: LEGAL DOCUMENT
Author: Radford, Naman: none
Recipient: none: US EPA

Document Number: CHE-001-1985 To 2000 Date: 12/11/85

Title: Interview of George Bumgarner (former site employee)

Type: LEGAL DOCUMENT
Author: Bumgarner, George: none
Recipient: none: US EPA

Document Number: CHE-001-2001 To 2033 Date: 12/11/85

Title: Interview of James Higgins (former site employee)

Type: LEGAL DOCUMENT
Author: Higgins, James: none
Recipient: none: US EPA

Document Number: CHE-001-2034 To 2059 Date: 12/12/85

Title: Interview of Roy Burleson (former site employee of Amcel and Northrop)

Type: LEGAL DOCUMENT
Author: Burleson, Roy: none
Recipient: none: US EPA

Document Number: CHE-001-2060 To 2069 Date: 12/12/85

Title: Interview of Roland Owenby (former site employee)

Type: LEGAL DOCUMENT
Author: Owenby, Roland: none
Recipient: none: US EPA

Document Number: CHE-001-2070 To 2106 Date: 12/12/85

Title: Interivew of Tony Plemmons (former county employee)

Type: LEGAL DOCUMENT
Author: Plemmons, Tony: none
Recipient: none: US EPA

Document Number: CHE-001-2107 To 2107 Date: 12/12/85

Title: (Letter in repsonse to FOIA request to review files)

Type: CORRESPONDENCE
Author: Jones, Walton W: US EPA
Recipient: Hayes, Lark: Clean Water Fund of NC

Document Number: CHE-001-2108 To 2108 Date: 12/13/85

Title: (Letter enclosing copies of the Monthly Report of Activities for Chemtronics RI/FS per the Consent Order)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2109

Document Number: CHE-001-2109 To 2110 Parent: CHE-001-2108 Date: 12/13/85

Title: Chemtronics Site Progress Report #2

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2111 To 2111 Date: 12/13/85

Title: Organic Chemical Analyses - Public Water System (samples collected 11/06/85 through 11/18/85 from seven locations)

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: none: Don's Fish Camp
Attached: CHE-001-2112 CHE-001-2113 CHE-001-2114 CHE-001-2115 CHE-001-2116 CHE-001-2117

Document Number: CHE-001-2112 To 2112 Parent: CHE-001-2111 Date: 12/13/85

Title: Organic Chemical Analyses - Public Water System

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: Jones, Ed: resident

Document Number: CHE-001-2113 To 2113 Parent: CHE-001-2111 Date: 12/13/85

Title: Organic Chemical Analyses - Public Water System

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: Daugherty, Amilia: resident

Document Number: CHE-001-2114 To 2114 Parent: CHE-001-2111 Date: 12/05/85

Title: Organic Chemical Analyses - Public Water System

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: Buckner, Mrs Willie: resident

Document Number: CHE-001-2115 To 2115 Parent: CHE-001-2111 Date: 12/03/85

Title: Organic Chemical Analyses - Petroleum Products

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: none: Macedonia AME Zion Church

Document Number: CHE-001-2116 To 2116 Parent: CHE-001-2111 Date: 12/02/85

Title: Organic Chemical Analyses - Petroleum Products

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: Ledford, Bis: resident

Document Number: CHE-001-2117 To 2117 Parent: CHE-001-2111 Date: 12/02/85

Title: Organic Chemical Analyses - Petroleum Products

Type: DATA
Author: Neal, John L: NC Dept of Human Resources
Recipient: none: L & R Car Care

Document Number: CHE-001-2118 To 2119 Date: 12/16/85

Title: (Letter describing public harrassment of Tony Plemmons after his interview with request for protective order for witnesses)

Type: CORRESPONDENCE
Author: Warren, Bob: Warren & Mallonee
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2120 To 2121 Date: 12/20/85

Title: (Letter stating no evidence was found that firm's clients were involved in threats or bribes and that further incidents be reported to law enforcement officials)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2122 To 2122 Date: 12/23/85

Title: (Letter expressing shared concern for the recent events surrounding Tony Plemmons)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Warren, Bob: Warren & Mallonee

Document Number: CHE-001-2123 To 2123 Date: 12/03/85

Title: (Memo forwarding Quality Assistance Project Plan and Project Operations Plan for review and comments)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Lair, Doug: US EPA

Document Number: CHE-001-2124 To 2125 Date: 12/30/85

Title: (Memo identifying problems/concerns with the Draft Quality Assurance Project Plan)

Type: CORRESPONDENCE
Author: Bokey, William R: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2126 To 2230 Date: 01/01/86

Title: Task 1.0 Project Operations Plan

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2232 To 2239 Date: 01/20/86

Title: (Raw data of soil sample analysis requested from ESD for designated parameters)

Type: DATA
Author: Duffy, Tom: Camp Dresser & McKee
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2240 To 2240 Date: 01/07/86

Title: (Buck slip for invoices from Warren Wilson College for production of first audio-visual presentation)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Wilson, Charlie: Camp Dresser & McKee

Document Number: CHE-001-2241 To 2241 Date: 01/10/86

Title: (Routing Slip sent with requested information on NPL sites for Region IV, monthly activity reports and Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Smith, Paul: none

Document Number: CHE-001-2242 To 2242 Date: 01/13/86

Title: (Letter regarding agreement on points concerning sampling and analysis)

Type: CORRESPONDENCE
Author: Goodwin, Bruce E: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2243 To 2243 Date: 01/14/86

Title: (Cover letter forwarding Monthly Progress Report #3 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2244

Document Number: CHE-001-2244 To 2244 Parent: CHE-001-2243 Date: 01/15/86

Title: Chemtronics Site Progress Report #3

Type: PLAN
Author: none: Chemtronics
Recipient: none: none

Document Number: CHE-001-2245 To 2245 Date: 01/14/86

Title: (Letter on administrative procedures when sending written communications to the RI/FS contractor)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2246 To 2247 Date: 01/15/86

Title: (Letter clarifying procedures during soil boring and monitoring well installation)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2248 To 2248 Date: 01/15/86

Title: (Letter confirming discussions on procedures for sample analysis)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-2249 To 2249 Date: 01/16/86

Title: (Letter on amendment of first paragraph of Part J, Section VI, of the Administrative Order on Consent Docket #86-03-C)

Type: CORRESPONDENCE
Author: Young, Anthony L: Piper & Marbury
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2250 To 2250 Date: 01/17/86

Title: (Letter on the revised pages for the Chemtronics Project Operations Plan and revised RI/FS schedule)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2251

Document Number: CHE-001-2251 To 2252 Parent: CHE-001-2250 Date: 01/17/86

Title: Remedial Investigation/Feasibility Study Schedule

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2253 To 2253 Date: 01/20/86

Title: (Cover letter to amendment to the Consent Order)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2254 To 2254 Date: 01/16/86

Title: (Duplicate of CHE0012249)

Type: CORRESPONDENCE
Author: Young, Anthony L: Piper & Marbury
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2255 To 2315 Date: 04/30/86

Title: (Daily activities and miscellaneous field notes for RI/FS at Chemtronics Site in Swannanoa, NC - 01/20/86 through 04/30/86 - handwritten)

Type: PLAN
Author: Sweet, Carol: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2316 To 2380 Date: 04/07/86

Title: Test Pit Sketch at PIL Locations

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2331 To 2331 Date: 01/02/86

Title: (Letter enclosing comments on the Quality Assurance Project Plan to be incorporated into the draft documents)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-2381 To 2443 Date: 04/21/86

Title: (Daily on-site work notes from 01/26/86 through 04/02/86)

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2444 To 2444 Date: 02/04/86

Title: (Trip and meeting report on overviewing RI field work activity in disposal areas 10 and 11)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2445 To 2445 Date: 02/03/86

Title: (Cover letter to the letter requesting amendment of Consent Order to insert Buckeye Cove for Beacon Hill)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2446 To 2446 Date: 02/05/86

Title: (Memo on QA Project Plan with review comments)

Type: CORRESPONDENCE
Author: Knight, Wade: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2447 To 2447 Date: 02/06/86

Title: (Routing Slip to Region IV's SOP for cleaning field equipment Appendix B - Standard Cleaning Procedures)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-2448 To 2448 Date: 02/07/86

Title: (Certification of authorization to travel to Swannanoa)

Type: CORRESPONDENCE
Author: Kesler, Cindy: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2449 To 2449 Date: 02/07/86

Title: (Routing Slip attached to IR photos)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-2450 To 2450 Date: 02/07/86

Title: (Routing Slip attached to signed amendment to Consent Order)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-2451 To 2451 Date: 02/07/86

Title: (Cover letter forwarding Monthly Progress Report #4 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2452

Document Number: CHE-001-2452 To 2452 Parent: CHE-001-2451 Date: 02/13/86

Title: Chemtronics Site Progress Report #4 12/21/85 to 01/24/86

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2453 To 2453 Date: 02/07/86

Title: (Telecopier request on travel authorization)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Kesler, Cindy: US EPA

Document Number: CHE-001-2454 To 2455 Date: 02/12/86

Title: (Trip and meeting report on overseeing monitor well location selection, decon procedures for cleaning equipment and set up of cleaning station in acid pit area)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2456 To 2515 Date: 04/02/86

Title: (Daily on-site work notes from 02/13/86 to 04/02/86)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2515 To 2575 Date: 03/31/86

Title: (Daily on-site work notes from 02/17/86 to 03/31/86)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2576 To 2635 Date: 04/07/86

Title: (Daily on-site work notes from 02/20/86 to 04/07/86)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2636 To 2636 Date: 01/21/86

Title: (Cover letter to Draft Weston Geophysical Corporation Report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2637 To 2637 Date: 02/21/86

Title: (Letter confirming telephone conversation regarding use of contract laboratory program QA/AC Requirements to assess data on samples)

Type: CORRESPONDENCE
Author: Goodwin, Bruce E: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2638 To 2638 Date: 02/21/86

Title: (Letter confirming telephone discussion on two modifications to the work plan scope)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2639 To 2640 Date: 02/26/86

Title: (Trip report on overseeing remedial field activities)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2643 To 2643 Date: 02/25/86

Title: (Cover letter to Site Access Agreement and Release)

Type: CORRESPONDENCE
Author: Crittenden, Otis S: Tropigas International
Recipient: Young, Anthony L: Piper & Marbury
Attached: CHE-001-2644

Document Number: CHE-001-2644 To 2644 Parent: CHE-001-2643 Date: 02/25/86

Title: Site Access Agreement and Release

Type: LEGAL DOCUMENT
Condition: MARGINALIA
Author: Crittenden, Otis S: Tropigas International
Recipient: none: none

Document Number: CHE-001-2645 To 2645 Date: 02/26/86

Title: (Cover letter to the Analytical Proposal for CS and BZ)

Type: CORRESPONDENCE
Author: Goodwin, Bruce E: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2646 CHE-001-2648 CHE-001-2652 CHE-001-2653 CHE-001-2659 CHE-001-2667 CHE-001-2672

Document Number: CHE-001-2646 To 2647 Parent: CHE-001-2645 Date: 02/26/86

Title: Analytical Proposal for CS and BZ

Type: PLAN
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-2648 To 2651 Parent: CHE-001-2645 Date: 01/30/86

Title: (Laboratory results on BZ and CS)

Type: DATA
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-2652 To 2652 Parent: CHE-001-2645 Date: 02/26/85

Title: Explosives Methodology for RDX, TNT, and Picric Acid

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2653 To 2658 Parent: CHE-001-2645 Date: 01/01/86

Title: (Article titled "Reversed-Phase High-Performance Liquid Chromatographic Determination of Nitro-organics in Munitions Waste Water")

Type: CORRESPONDENCE
Author: Jenkins, Thomas F: US Army Research & Development Laboratories
Recipient: none: none

Document Number: CHE-001-2659 To 2666 Parent: CHE-001-2645 Date: 12/17/80

Title: (Methodology for Picric Acid and 3-Methyl-2-Nitro-phenol in water samples - HPLC screen)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2667 To 2671 Parent: CHE-001-2645 Date: 01/23/81

Title: Identification and Determination of Explosives and Related Materials in Soil Using High Performance Liquid Chromatography (HPLC)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2672 To 2678 Parent: CHE-001-2645 Date: 12/06/84

Title: (Methodology for Nitro-aromatics in Water Samples)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2679 To 2694 Date: 06/12/86

Title: (Daily on-site work notes from 03/01/86 to 06/12/86)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2695 To 2696 Date: 03/03/86

Title: (Agenda of Community Advisory Board Meeting in Grove Park Inn)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-2697 To 2697 Date: 03/04/86

Title: (Routing Slip attached to EPA Region IV's new cleaning procedure)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-2699 To 2699 Date: 03/06/86

Title: (Letter concerning request for data relevant to selection indicator parameters)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-2700 To 2700 Date: 03/10/86

Title: (Cover letter to report for sampling overview)

Type: CORRESPONDENCE
Author: Bokey, William R: US EPA
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-2701 CHE-001-2703 CHE-001-2704

Document Number: CHE-001-2701 To 2702 Parent: CHE-001-2700 Date: 02/26/85

Title: Sampling Overview

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2703 To 2703 Parent: CHE-001-2700 Date: 02/13/86

Title: Checklist CERCLA Sampling Overview

Type: PLAN
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-2704 To 2709 Parent: CHE-001-2700 Date: 02/13/86

Title: (Questionnaire for sampling methods)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-2710 To 2710 Date: 03/11/86

Title: (Trip and meeting report on overseeing RI field activities)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-2711 To 2711 Date: 04/04/86

Title: (Routing Slip attached to 03/10/86 report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hicks, Jesse: IT

Document Number: CHE-001-2712 To 2712 Date: 03/10/86

Title: *(Cover letter to Site Access Agreement and Release)*

Type: CORRESPONDENCE
Author: Young, Anthony L: Piper & Marbury
Recipient: Mongovis, Joseph: Moneyworth
Attached: CHE-001-2713

Document Number: CHE-001-2713 To 2713 Parent: CHE-001-2712 Date: 03/12/86

Title: Site Access Agreement and Release

Type: LEGAL DOCUMENT
Author: none: none
Recipient: none: none

Document Number: CHE-001-2714 To 2715 Date: 03/10/86

Title: (Letter concerning release from liability for direct property damage through sampling)

Type: CORRESPONDENCE
Author: Young, Anthony L: Piper & Marbury
Recipient: Reynolds, Joseph C: Reynolds & Stewart

Document Number: CHE-001-2716 To 2716 Date: 03/10/86

Title: (Cover letter to Site Access Agreement and Release)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Young, Anthony L: Piper & Marbury
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-2717 To 2719 Date: 03/07/87

Title: (Laboratory results of soil samples)

Type: DATA
Author: Bornholm, Jon K: US EPA
Recipient: none: none

NOTE: PAGES 114 THROUGH 128 ARE MISSING FROM THIS DOCUMENT.

Document Number: CHE-001-3157 To 3157 Parent: CHE-001-3156 Date: 05/30/86

Title: (Cover letter to attached review of site)

Type: CORRESPONDENCE
Author: Lybarger, Jeffrey: NC Dept of Human Resources
Recipient: Pietrosewicz, Chuck: US Dept of Health & Human Services

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Document Number: CHE-001-3158 To 3162 Parent: CHE-001-3156 Date: 04/29/86

Title: (Memo regarding examination of employees who had worked at project site, and results of effects on their health)

Type: CORRESPONDENCE
Author: Leffingwell, Sanford: Centers for Disease Control
Recipient: Lybarger, Jeffrey: NC Dept of Human Resources

Document Number: CHE-001-3163 To 3163 Date: 06/27/86

Title: (Memo regarding a consultation arranged to discuss Leffingwell's report on the site)

Type: CORRESPONDENCE
Author: Lybarger, Jeffrey: NC Dept of Human Resources
Recipient: Pietrosewicz, Chuck: US Dept of Health & Human Services

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Document Number: CHE-001-3164 To 3165 Date: 06/06/86

Title: (Letter regarding finalizing the approach to off-site private well sampling)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3166

Document Number: CHE-001-3166 To 3167 Parent: CHE-001-3164 Date: 06/06/86

Title: (Graphs of Chemtronics boundaries)

Type: GRAPHIC
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-3168 To 3169 Date: 06/11/86

Title: (Letter regarding changes to off-site private well sampling)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3170

Document Number: CHE-001-3170 To 3170 Parent: CHE-001-3168 Date: 06/11/86

Title: (Map showing Chemtronic's boundary)

Type: GRAPHIC
Condition: MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-3171 To 3171 Date: 06/11/86

Title: (Cover letter forwarding Monthly Progress Report #8 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3172

Document Number: CHE-001-3172 To 3172 Parent: CHE-001-3171 Date: 05/23/86

Title: Chemtronics Site Progress Report #8

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3173 To 3180 Date: 06/20/86

Title: (Daily site log)

Type: PLAN
Author: Johnson, Felice F: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-3181 To 3181 Date: 06/13/86

Title: (Trip report to project site - overview of stream and private wells samples)

Type: PLAN
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-3183 To 3183 Date: 06/12/86

Title: (Request to sample residents abandoned well)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Franklin, W Pat: resident

Document Number: CHE-001-3184 To 3184 Date: 06/18/86

Title: (Letter mentioning problem of drillers not properly containerizing the drilling mud at the Powersville site)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Lawton, David: Camp Dresser & McKee

Document Number: CHE-001-3185 To 3188 Date: 06/24/86

Title: (Letter regarding request for exemption and Part B of application for lagoon)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Dickinson, John: US EPA

Document Number: CHE-001-3189 To 3191 Date: 01/25/84

Title: (Cover letter regarding notice of deficiency - RCRA Part B hazardous waste management)

Type: CORRESPONDENCE
Author: Scarbrough, James H: US EPA
Recipient: Schultheis, John F: Chemtronics
Attached: CHE-001-3192

Document Number: CHE-001-3192 To 3206 Parent: CHE-001-3189 Date: 09/21/83

Title: Notice of Deficiency - RCRA Part B Application - Storage and Treatment Facility

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3207 To 3208 Date: 02/24/84

Title: (Letter regarding time extension for a response to notice of deficiency for Part B of Permit Application)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-3209 To 3210 Date: 03/26/84

Title: (Letter regarding revisions requested for notice of deficiency for Part B of Permit Application)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources

Document Number: CHE-001-3211 To 3213 Date: 06/25/84

Title: (Letter regarding plan of action for groundwater assessment items and surface impoundment)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Strickland, O W: NC Dept of Human Resources
Attached: CHE-001-3214

Document Number: CHE-001-3214 To 3215 Parent: CHE-001-3211 Date: 06/25/84

Title: (Two copies of NOD items)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-3216 To 3216 Date: 09/13/83

Title: (Cover letter regarding various enclosed documents and a revised performance bond)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hardin, J Larry: Chemtronics
Recipient: Dunn, Glenn: NC Dept of Human Resources

Document Number: CHE-001-3217 To 3218 Date: 06/24/86

Title: (Letter regarding work performed at the site after the inspection date in September)

Type: CORRESPONDENCE
Author: Lank, John: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen

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Document Number: CHE-001-3219 To 3220 Date: 06/26/86

Title: (Letter regarding off-site private well sampling)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3221 To 3222 Date: 06/26/86

Title: (Letter regarding soil permeability tests)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3223

Document Number: CHE-001-3223 To 3223 Parent: CHE-001-3221 Date: 06/26/86

Title: (Map of Surficial Wells Suitable for Slug tests)

Type: GRAPHIC
Condition: MARGINALIA
Author: none: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-3224 To 3224 Date: 06/27/86

Title: (Memo regarding CERCLA review)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Pietrosewicz, Chuck: US Dept of Health & Human Services
Recipient: Siegel, Martin: none

Document Number: CHE-001-3225 To 3225 Date: 07/07/86

Title: (Letter regarding previous letter explaining why resident's wells were not sampled)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Franklin, W Pat: resident
Attached: CHE-001-3226

Document Number: CHE-001-3226 To 3227 Parent: CHE-001-3225 Date: 06/26/86

Title: (Letter regarding problems encountered while obtaining groundwater samples)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3228 To 3228 Date: 07/08/86

Title: (Letter regarding record of samples taken and results from some of those samples)

Type: CORRESPONDENCE
Author: McCall, Eugene C: Eugene C McCall Attorney at Law
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3229 To 3229 Date: 07/09/86

Title: (Cover letter forwarding Monthly Progress Report #9 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3230

Document Number: CHE-001-3230 To 3230 Parent: CHE-001-3229 Date: 06/20/86

Title: Chemtronics Site Progress Report #9

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3231 To 3231 Date: 07/11/86

Title: (Cover letter for analytical data on soil borings)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Goodwin, Bruce E: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3232 To 3233 Date: 07/17/86

Title: (Cover letter to summary description of Bedrock Well Packer Testing and Purging)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3234

Document Number: CHE-001-3234 To 3234 Parent: CHE-001-3232 Date: 07/17/86

Title: Summary Description of Bedrock Well Packer Testing and Purging

Type: DATA
Author: none: none
Recipient: none: none

Document Number: CHE-001-3235 To 3235 Date: 07/17/86

Title: (Cover letter for analytical data on soil borings from Walnut/Buckeye Cove and additional on-site disposal areas)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3236 To 3238 Date: 07/21/86

Title: (Cover letter for attached letters and Notice of Deficiency)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Dickinson, John: US EPA
Attached: CHE-001-3239 CHE-001-3241 CHE-001-3242 CHE-001-3243 CHE-001-3244 CHE-001-3245

Document Number: CHE-001-3239 To 3240 Parent: CHE-001-3236 Date: 04/20/83

Title: (Letter regarding additional groundwater assessment for the acid pit area)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Hunter, Don: US EPA

Document Number: CHE-001-3241 To 3241 Parent: CHE-001-3236 Date: 03/12/84

Title: (Letter approving time extension request for Notice of Deficiency)

Type: CORRESPONDENCE
Author: Strickland, O W: NC Dept of Human Resources
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3242 To 3242 Parent: CHE-001-3236 Date: 03/30/84

Title: (Letter regarding receipt of Part B Application - Hazardous Waste Management Permit, Phase I Addendum)

Type: CORRESPONDENCE
Author: Coats, Roger L: NC Dept of Human Resources
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3243 To 3243 Parent: CHE-001-3236 Date: 04/25/84

Title: (Letter regarding corporate meeting to review proposed plan of action)

Type: CORRESPONDENCE
Author: Johnson, Felice F: Chemtronics
Recipient: Coats, Roger L: NC Dept of Human Resources

Document Number: CHE-001-3244 To 3244 Parent: CHE-001-3236 Date: 05/11/84

Title: (Letter regarding receipt of Part B Application - Hazardous Waste Management Permit)

Type: CORRESPONDENCE
Author: Coats, Roger L: NC Dept of Human Resources
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3245 To 3246 Parent: CHE-001-3236 Date: 06/24/86

Title: (Letter regarding Comprehensive Groundwater Monitoring Evaluation report)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Lank, John: US EPA

Document Number: CHE-001-3247 To 3248 Date: 07/24/86

Title: (Cover letter for several documents and maps related to the logs for soil borings and monitor wells)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: McCall, Eugene C: Eugene C McCall Attorney at Law

Document Number: CHE-001-3249 To 3249 Date: 09/15/86

Title: Phase I Geophysical Investigations

Type: PLAN
Author: none: Weston Geophysical
Recipient: none: Metcalf & Eddy
Attached: CHE-001-3250 CHE-001-3251

Document Number: CHE-001-3250 To 3250 Parent: CHE-001-3249 Date: 08/06/86

Title: (Cover letter enclosing 10 copies of Final Report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Blackey, Mark: Weston Geophysical
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-3251 To 3324 Parent: CHE-001-3249 Date: 08/01/86

Title: Phase I Geophysical Investigations

Type: PLAN
Author: none: Weston Geophysical
Recipient: none: Metcalf & Eddy

Document Number: CHE-001-3325 To 3327 Date: 08/08/86

Title: (Cover letter to proposed low volume pump-aquifer tests for evaluation of potential interconnection between Bedrock and overburden aquifers)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3328

Document Number: CHE-001-3328 To 3331 Parent: CHE-001-3325 Date: 08/08/86

Title: (Plan for low volume pump - aquifers tests)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3333 To 3333 Date: 08/12/86

Title: (Record of Communication regarding phone conversation to discuss proposed aquifer testing program)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Mann, John H: US EPA

Document Number: CHE-001-3334 To 3334 Date: 08/13/86

Title: (Cover letter forwarding Monthly Progress Report #10 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3335

Document Number: CHE-001-3335 To 3335 Parent: CHE-001-3334 Date: 08/13/86

Title: Chemtronics Site Progress Report #10 (06/21/86 through 07/25/86)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3336 To 3338 Date: 08/14/86

Title: (Letter forwarding approval of attached proposals)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3339 To 3339 Date: 08/18/86

Title: (Cover letter for attached paper titled "Detection of Permeable Rock Fracture Zones Within Crystalline Bedrock By 3D Vertical Seismic Profiling")

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3340

Document Number: CHE-001-3340 To 3358 Parent: CHE-001-3339 Date: / /

Title: Detection of Permeable Rock Fracture Zones Within Crystalline Bedrock by 3D Vertical Seismic Profiling

Type: PLAN
Author: none: Weston Geophysical
Recipient: none: none

Document Number: CHE-001-3359 To 3359 Date: 08/20/86

Title: (Routing Slip for Final Interim Report for Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Benkert, Kate: US Fish & Wildlife Services

Document Number: CHE-001-3360 To 3360 Date: 08/22/86

Title: (Routing Slip with information on analytical results to be sent to Jack Sawyer)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Orloff, Ken: none

Document Number: CHE-001-3361 To 3362 Date: 08/25/86

Title: (Cover letter forwarding Certificates of Analysis)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3363

Document Number: CHE-001-3363 To 3364 Parent: CHE-001-3361 Date: 08/25/86

Title: Table 1 Water Samples and Table 2: QC Samples - Water

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3365 To 3366 Date: 08/27/86

Title: (Notes from trip to Chemtronics 08/27/86)

Type: PLAN
Author: Bornholm, Jon K: US EPA
Recipient: none: none

Document Number: CHE-001-3367 To 3367 Date: 08/29/86

Title: (Routing Slip for analytical results for sample of water from Tropigas property)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Orloff, Ken: none

Document Number: CHE-001-3368 To 3368 Date: 09/08/86

Title: (Cover letter forwarding laboratory data for water samples collected 05/12/86)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Patton, William J: US EPA
Recipient: Smith, T E: Tropigas International

Document Number: CHE-001-3369 To 3369 Date: 09/12/86

Title: (Letter to confirm request for development of natural resource damage assessment)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3370 To 3370 Date: 09/12/86

Title: (Cover letter for final report on Phase I Geophysical Investigations)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3371 To 3372 Date: 09/12/86

Title: (Letter regarding model to be used to define areal extent and concentration of contamination and to predict future migration from site disposal areas)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3373 To 3373 Date: 09/12/86

Title: (Cover letter forwarding Monthly Progress Report #11 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schultheis, John F: Brown & Caldwell
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3374

Document Number: CHE-001-3374 To 3374 Parent: CHE-001-3373 Date: 09/12/86

Title: Chemtronics Site Progress Report #11 (07/26/86 through 08/22/86)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3375 To 3375 Date: 09/17/86

Title: (Letter reporting no chemical contamination from water samples collected 06/11/86)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Patton, William J: US EPA
Recipient: Sawyer, Jack: none

Document Number: CHE-001-3376 To 3376 Date: 09/18/86

Title: (Memo regarding review of sediment samples analyzed 09/08/86 advising that a number of residential wells in use down-gradient from landfill be sampled and analyzed for presence of purgeable and extractable organic compounds)

Type: CORRESPONDENCE
Author: Pietrosewicz, Chuck: US Dept of Health & Human Services
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3377 To 3377 Date: 09/23/86

Title: (Cover letter requesting comments on outline for Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3378 To 3385 Date: 09/22/86

Title: Proposed Chemtronics RI Report Outline

Type: PLAN
Condition: DRAFT
Author: none: none
Recipient: none: none

Document Number: CHE-001-3386 To 3387 Date: 09/25/84

Title: (Letter regarding request for written response for development of Remedial Action/Feasibility Study)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Attached: CHE-001-3388 CHE-001-3390

Document Number: CHE-001-3388 To 3389 Parent: CHE-001-3386 Date: 09/25/84

Title: (Letter regarding request for written response for development of Remedial Action/Feasibility Study)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: illegible: Celanese Corporation

Document Number: CHE-001-3390 To 3391 Parent: CHE-001-3386 Date: 09/25/84

Title: (Letter regarding request for written response for development of Remedial Action/Feasibility Study)

Type: CORRESPONDENCE
Author: Devine, Thomas W: US EPA
Recipient: Smith, Frank R: Northrop

Document Number: CHE-001-3392 To 3393 Date: 09/26/86

Title: (Letter regarding findings and preliminary conclusions and informing that Agency has fulfilled specifications in the work place)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Tenney, James: County of Buncombe NC

Document Number: CHE-001-3394 To 3406 Date: 09/30/86

Title: (Memo regarding preliminary Naturual Resource Survey including results of groundwater sampling for priority pollutants with attached maps)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-3407 To 3408 Date: 10/08/86

Title: (Letter regarding clarification of approach to RI Work Plan Task 6.1 - Contaminant Pathway and Transport)

Type: CORRESPONDENCE
Author: Schultheis, John f: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3409 To 3410 Date: 09/17/86

Title: (Letter regarding analysis for surface water samples proposing no additional sediment sampling required except for certain conditions)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3411

Document Number: CHE-001-3411 To 3413 Parent: CHE-001-3409 Date: 09/22/86

Title: (Maps of upstream locations for proposed additional surface water sampling)

Type: GRAPHIC
Author: none: Camp Dresser & McKee
Recipient: none: none

Document Number: CHE-001-3414 To 3415 Date: 10/08/86

Title: (Letter enclosing memo from CDC/Agency concerning the analytical results for contaminants on the Hazardous Substance List)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Crain, Mary L: Northrop

Document Number: CHE-001-3416 To 3416 Date: 10/08/86

Title: (Cover letter forwarding Monthly Progress Report #12 on RI/FS activities)

Type: CORRESPONDENCE
Author: Schulthies, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3417

Document Number: CHE-001-3417 To 3417 Parent: CHE-001-3416 Date: 10/08/86

Title: Chemtronics Site Progress Report #12 (08/23/86 through 09/19/86)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3418 To 3421 Date: 10/10/86

Title: (Letter regarding confirmation of results of meeting 09/29/86 on inactive biological surface impoundment)

Type: CORRESPONDENCE
Author: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Recipient: Meyer, William L: NC Dept of Human Resources

Document Number: CHE-001-3422 To 3422 Date: 10/10/86

Title: (Letter requesting a copy of Preliminary Natural Resource Sruvey Report)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Benkert, Kate: US Fish & Wildlife Services

Document Number: CHE-001-3424 To 3424 Date: 10/20/86

Title: (Routing Slip for copy of PNRS report)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-3425 To 3426 Date: 10/21/86

Title: (Letter forwarding documentation of the conditions where surface water samples could not be collected)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3427

Document Number: CHE-001-3427 To 3433 Parent: CHE-001-3425 Date: 10/21/86

Title: Tables 1 and 2 - Proposed Surface Water Sampling Locations (with attached photos)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3434 To 3434 Date: 10/28/86

Title: (Routing Slip for copy of PNRS report and results from BZ, CS and RDX analyses)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-3435 To 3435 Date: 10/28/86

Title: (Record of Communication for a phone conversation regarding Remedial Investigation findings)

Type: CORRESPONDENCE
Author: Pietrosewicz, Chuck: US Dept of Health & Human Services
Recipient: none: none

Document Number: CHE-001-3436 To 3437 Date: 11/01/86

Title: (Clean Sites newsletter report titled: "EPA Region II's Strategy Advances Settlement")

Type: CORRESPONDENCE
Author: none: Clean Sites
Recipient: none: none

Document Number: CHE-001-3438 To 3438 Date: 02/02/87

Title: (Letter regarding results of preliminary Natural Resources Survey of Chemtronics)

Type: CORRESPONDENCE
Author: Blanchard, Bruce: US Dept of the Interior
Recipient: Lucero, Gene: US EPA

Document Number: CHE-001-3439 To 3440 Date: 11/03/86

Title: (Letter forwarding revised bar chart for Remedial Investigation/Feasibility Study schedule followed for study and requesting review and approval of report outline)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3441 To 3456 Date: 11/14/86

Title: (Handwritten note enclosing the ACQUIRE Toxicity Printout for TNT)

Type: CORRESPONDENCE
Condition: MARGINALIA
Author: none: none
Recipient: Morton, Michael G: none

Document Number: CHE-001-3457 To 3457 Date: 11/14/86

Title: (Letter forwarding Sample Inventory, Monthly Progress Report, and CompuChem analytical results and requesting authorization for surface sampling and analysis)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Schultheis, John F: Chemtronics
Attached: CHE-001-3458 CHE-001-3459 CHE-001-3471 CHE-001-3472 CHE-001-3473 CHE-001-3478 CHE-001-3479 CHE-001-3480

Document Number: CHE-001-3458 To 3458 Parent: CHE-001-3457 Date: 11/14/86

Title: (Cover letter for Sample Inventory collected during Chemtronics Remedial Investigation 02/17/86 through 09/23/86)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3459 To 3470 Parent: CHE-001-3457 Date: 11/14/86

Title: Sample Inventory

Type: DATA
Author: none: none
Recipient: none: none

Document Number: CHE-001-3471 To 3471 Parent: CHE-001-3457 Date: 10/28/86

Title: (Letter enclosing draft letter clarifying RI/FS project schedule requirements and analytical results for additional GW TOX analyses)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3472 To 3472 Parent: CHE-001-3457 Date: 10/07/86

Title: (Letter regarding enclosed data from CompuChem for Total Organic Halides - TOX - analysis)

Type: CORRESPONDENCE
Author: Mitchell, Mary E: CompuChem
Recipient: Goodwin, Bruce E: Metcalf & Eddy

Document Number: CHE-001-3473 To 3477 Parent: CHE-001-3457 Date: / /

Title: Analytical Report of Data

Type: PLAN
Author: none: CompuChem
Recipient: Goodwin, Bruce E: Metcalf & Eddy

Document Number: CHE-001-3478 To 3478 Parent: CHE-001-3457 Date: 11/17/86

Title: (Routing Slip for attached toxicity printout for TNT)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-3479 To 3481 Parent: CHE-001-3457 Date: 12/12/86

Title: (Cover letter enclosing Monthly Reports #13 and #14 for 09/20/86 through 11/21/86)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3480 To 3481 Parent: CHE-001-3457 Date: 12/15/86

Title: Chemtronics Site Progress Reports #13 and #14

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3482 To 3482 Date: 12/17/86

Title: (Letter informing draft Remedial Investigation Report will be sent 01/16/86)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3483 To 3483 Date: 01/08/87

Title: (Letter enclosing set of CLP data packages for soil, water and sediment analyses)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Metzger, Karen K: Metcalf & Eddy
Recipient: Knight, Wade: US EPA

Document Number: CHE-001-3484 To 3485 Date: 01/08/77

Title: (Letter regarding statements concerning waste treatment in the biolagoon)

Type: CORRESPONDENCE
Author: Cloonan, Jim: CRS Sirrine
Recipient: Dickinson, John: US EPA

Document Number: CHE-001-3486 To 3486 Date: 01/16/87

Title: (Cover letter for draft Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3487 To 3487 Date: 01/20/87

Title: (Memo regarding attached draft Remedial Investigation Report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Barrett, Bruce: none

Document Number: CHE-001-3488 To 3488 Date: 01/27/87

Title: (Letter discussing upcoming meeting on the progress of the Remedial Investigation)

Type: CORRESPONDENCE
Author: Freedman, William H: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3489 To 3489 Date: 01/30/87

Title: (Letter enclosing materials to be inserted into draft Remedial Investigation including results, discussion and references)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3490

Document Number: CHE-001-3490 To 3499 Parent: CHE-001-3489 Date: 01/30/87

Title: 3.0 Results and Discussion

Type: OTHER
Condition: INCOMPLETE
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-3500 To 3500 Date: 02/05/87

Title: (Letter requesting a public informational meeting be scheduled following publication of draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3501 To 3501 Date: 02/10/87

Title: (Routing Slip for draft Remedial Investigation Report with request for review and comments)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board

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Document Number: CHE-001-3502 To 3502 Date: 02/10/87

Title: (Letter informing of change being made to draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

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Document Number: CHE-001-3503 To 3503 Date: 02/10/87

Title: (Letter confirming conversation agreeing not to release Draft RI Report to the public)

Type: CORRESPONDENCE
Author: Schulthies, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3504 To 3504 Date: 02/17/87

Title: (Letter reviewing draft Remedial Investigation Report and disagreeing with closing statement)

Type: CORRESPONDENCE
Author: Link, Donald R: NC Dept of Natural Resources & Community Development
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3505 To 3505 Date: 02/13/87

Title: (Letter expressing thanks for meeting on 02/06/87)

Type: CORRESPONDENCE
Author: Freedman, William H: Northrop
Recipient: Orban, James: US EPA

Document Number: CHE-001-3506 To 3506 Date: 02/17/87

Title: (Cover letter for Figure 3.4-4 - Relative Concentrations of Explosive in Acid Pits Disposal Area - to be inserted into draft Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3507

Document Number: CHE-001-3507 To 3507 Parent: CHE-001-3506 Date: 02/17/87

Title: Figure 3.4-4 - Relative Concentrations of Explosives in Acid Pits Disposal Area

Type: GRAPHIC
Author: none: none
Recipient: none: none

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Document Number: CHE-001-3508 To 3530 Date: 02/20/87

Title: (Letter with comments on Remedial Investigation Report)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3531 To 3531 Date: 02/23/87

Title: (Handwritten memo acknowledging receipt of comments on draft Remedial Investigation/Feasibility Study)

Type: CORRESPONDENCE
Author: Dickinson, John: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3532 To 3532 Date: 02/24/87

Title: (Letter acknowledging delay of completion of second slide show due to late publication of Remedial Investigation Study)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-3533 To 3534 Date: 02/26/87

Title: (Letter enclosing analytical results for various compounds with suggestion that Health Department be consulted for health effects)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Crain, Mary L: Northrop

Document Number: CHE-001-3535 To 3535 Date: 02/26/87

Title: (Letter regarding public meeting to be managed by Chemtronics Site Community Advisory Board)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board

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Document Number: CHE-001-3536 To 3536 Date: 02/26/87

Title: (Letter requesting updated schedule for approval)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3537 To 3537 Date: 02/26/87

Title: (Letter enclosing Monthly Reports #15, #16, and #17)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-3538

Document Number: CHE-001-3538 To 3540 Parent: CHE-001-3537 Date: 02/26/87

Title: Chemtronics Site Progress Reports #15, #16 and #17

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-3541 To 3541 Date: 02/27/87

Title: (Cover letter for agenda for 02/20/87 meeting)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

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Document Number: CHE-001-3542 To 3543 Date: 03/03/87

Title: (Letter confirming discussion of meetings)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3544 To 3544 Date: 03/10/87

Title: (List of attendees for Chemtronics draft Remedial Investigation Report meeting)

Type: OTHER
Author: none: none
Recipient: none: none

Document Number: CHE-001-3545 To 3545 Date: 03/17/87

Title: (Trip/Meeting report regarding Press Conference held to prevent reporters from dominating meeting)

Type: CORRESPONDENCE
Author: none: none
Recipient: none: none

Document Number: CHE-001-3546 To 3547 Date: 03/10/87

Title: (Report of meeting to discuss the draft remedial investigation report with agenda)

Type: PLAN
Condition: INCOMPLETE
Author: none: none
Recipient: none: none

Document Number: CHE-001-3548 To 3548 Date: 03/17/87

Title: (Summary on meeting to disseminate the data generated in the Remedial Investigation Phase)

Type: OTHER
Condition: INCOMPLETE MARGINALIA
Author: none: none
Recipient: none: none

Document Number: CHE-001-3549 To 3550 Date: 03/18/87

Title: (Letter with summary of understanding of actions PRPs will take regarding items on 03/10/87 meeting agenda with enclosed draft Remedial Investigation Report comments)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3551 To 3551 Date: 03/17/87

Title: (Letter requesting list of applicable or relevant and appropriate requirments)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Meyer, William L: NC Dept of Human Resources

Document Number: CHE-001-3552 To 3552 Date: 03/25/87

Title: (Memo regarding samples that were analyzed by CLP Laboratories)

Type: CORRESPONDENCE
Author: Knight, Wade: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-3553 To 3553 Date: 03/17/87

Title: (Letter requesting list of ARARs)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Link, Donald R: NC Dept of Natural Resources & Community Development

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Document Number: CHE-001-3554 To 3554 Date: 03/30/87

Title: (Routing Slip for evaluation of analytical data generated as part of Remedial Investigation)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-3555 To 3555 Date: 03/30/87

Title: (Routing Slip for evaluation - QA/QC of the analytical data generated as part of the Remedial Investigation)

Type: CORRESPONDENCE
Condition: ILLEGIBLE INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-3556 To 4556 Date: 04/01/87

Title: Remedial Investigation Report Chemtronics Site, Swannanoa, NC

Type: PLAN
Author: none: Metcalf & Eddy
Recipient: none: none

Document Number: CHE-001-4557 To 4557 Date: 04/01/87

Title: (Letter requesting ARARs that may apply to Chemtronics)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board

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Document Number: CHE-001-4558 To 4558 Date: 04/03/87

Title: (Report on meeting for Chemtronics to discuss several topics with PRP's)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-4559 To 4559 Date: 04/08/87

Title: (Letter regarding documents prepared by PRP's in support of the work plan developed by the Agency for completing RI/FS at site)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-4560 To 4565 Date: 04/10/87

Title: (Letter enclosing comments on the draft Remedial Investigation report for the site)

Type: CORRESPONDENCE
Author: Buchanan, Millie: Clean Water Fund of NC
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4566 To 4567 Date: 04/13/87

Title: (Letter regarding request for a list of ARARs)

Type: CORRESPONDENCE
Author: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4568 To 4568 Date: 04/16/87

Title: (Cover letter to Monthly Report #18 of activities for the site RI/FS)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-4569

Document Number: CHE-001-4569 To 4569 Parent: CHE-001-4568 Date: 03/20/87

Title: Chemtronics Site Progress Report #18 (02/21/87 through 03/20/87)

Type: PLAN
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4570 To 4570 Date: 04/16/87

Title: (Cover letter to copy of final Remedial Investigation Report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4571 To 4571 Date: 04/20/87

Title: (Letter expressing thanks for hospitality)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4572 To 4572 Date: 04/21/87

Title: (Cover memo regarding delegation of remedy selection to Region IV for Chemtronics)

Type: CORRESPONDENCE
Author: Ravan, Jack E: US EPA
Recipient: Porter, J Winston: US EPA
Attached: CHE-001-4573

Document Number: CHE-001-4573 To 4574 Parent: CHE-001-4572 Date: 04/21/87

Title: (Delegation Briefing)

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-4575 To 4575 Date: 04/22/87

Title: (Cover letter to copy of Response to EPA Comments Not Accompanied by RI Report Text Changes)

Type: CORRESPONDENCE
Author: Schultheis, John F: Chemtronics
Recipient: Bornholm, Jon K: US EPA
Attached: CHE-001-4576

Document Number: CHE-001-4576 To 4578 Parent: CHE-001-4575 Date: 04/22/87

Title: Response to EPA Comments Not Accompanied by RI Report Text Changes

Type: PLAN
Author: none: none
Recipient: none: none

Document Number: CHE-001-4579 To 4579 Date: 04/28/87

Title: (Cover letter to replacement pages of RI report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Goodwin, Bruce E: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4580 To 4581 Date: 04/30/87

Title: (Letter regarding changes to be made to RI report)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-4582 To 4582 Date: 04/30/87

Title: (Cover letter to Certificates of Analysis for various wells)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4583 To 4583 Date: 05/08/87

Title: (Cover letter to revised page 5-2 of the site RI report)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Hagger, Christopher L: Metcalf & Eddy
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4584 To 4584 Date: 05/11/87

Title: (Letter regarding revisions in RI document)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Schultheis, John F: Chemtronics

Document Number: CHE-001-4585 To 4585 Date: 05/21/85

Title: (Cover letter to draft Consent Agreement for RI/FS to be performed at site)

Type: CORRESPONDENCE
Author: Cole, Bert: US EPA
Recipient: Case, Charles D: Moore, Van Allen, Allen & Thigpen
Attached: CHE-001-4586

Document Number: CHE-001-4586 To 4596 Parent: CHE-001-4585 Date: 05/21/85

Title: Administrative Order on Consent

Type: LEGAL DOCUMENT
Condition: DRAFT
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-4597 To 4598 Date: 05/27/87

Title: (Letter regarding video slide show of Superfund project)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College

Document Number: CHE-001-4599 To 4603 Date: 05/28/87

Title: (Letter requesting data to initiate a Feasibility Study document review)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Rovers, Frank: Conestoga-Rovers & Associates

Document Number: CHE-001-4604 To 4608 Date: 05/28/87

Title: (Letter requesting data to initiate a Feasibility Study document review)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Vaughan, Clifford: IT

Document Number: CHE-001-4609 To 4613 Date: 05/28/87

Title: (Letter requesting data to initiate a Feasibility Study document review)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Wolff, Mike: Bechtel National

Document Number: CHE-001-4614 To 4618 Date: 05/28/87

Title: (Letter requesting data to initiate a Feasibility Study document review)

Type: CORRESPONDENCE
Author: Serio, Gary F: Northrop
Recipient: Hagger, Christopher L: Metcalf & Eddy

Document Number: CHE-001-4619 To 4621 Date: 05/01/87

Title: (Letter regarding reponses to 04/13/00 correspondence)

Type: CORRESPONDENCE
Author: Bornholm, Jon K: US EPA
Recipient: Knight, T Karlton: Buncombe County Hazardous Waste Advisory Board

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Document Number: CHE-001-4622 To 4622 Date: 06/05/87

Title: (Transmittal Slip to video copy of the first slide show presentation on the Superfund site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Miller, Gary L: University of NC

Document Number: CHE-001-4623 To 4623 Date: / /

Title: (Cover letter to Delegation Briefing Paper)

Type: CORRESPONDENCE
Author: Ravan, Jack E: US EPA
Recipient: Porter, J Winston: US EPA
Attached: CHE-001-4624

Document Number: CHE-001-4624 To 4625 Parent: CHE-001-4623 Date: / /

Title: Delegation Briefing for Superfund Site

Type: PLAN
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-4626 To 4626 Date: 07/10/87

Title: (Transmittal Slip to copy of Feasibility Study submitted by Camp Dresser & McKee for site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Peterson, Gordon: none

Document Number: CHE-001-4627 To 4627 Date: 07/22/87

Title: (Transmittal Slip to letter received from Laura Temple Haney)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Johnson, Richard C: Camp Dresser & McKee

Document Number: CHE-001-4628 To 4628 Date: 07/23/87

Title: (Transmittal Slip to analytical data for two landfills associated with the site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Taylor, Ted: NC Dept of Human Resources

Document Number: CHE-001-4629 To 4629 Date: 07/23/87

Title: (Transmittal Slip to analytical data for two municipal landfills associated with Chemtronics)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Buchanan, Millie: Clean Water Fund of NC

Document Number: CHE-001-4630 To 4630 Date: 07/31/87

Title: (Transmittal Slip to attached draft script for the second slide/video presentation developed by Warren Wilson College for the site)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Henderson, Michael: US EPA

Document Number: CHE-001-4631 To 4631 Date: 07/31/87

Title: (Transmittal Slip to attached resampling document)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Muza, Richard: none

Document Number: CHE-001-4632 To 4636 Date: 08/06/85

Title: (Cover letter to Administrative Order on Consent)

Type: CORRESPONDENCE
Author: Young, Anthony L: Wald Harkrader & Ross
Recipient: Bussey, Reuben T Jr: US EPA
Attached: CHE-001-4637

Document Number: CHE-001-4637 To 4649 Parent: CHE-001-4632 Date: 08/05/85

Title: Administrative Order on Consent

Type: LEGAL DOCUMENT
Author: none: US EPA
Recipient: none: none

Document Number: CHE-001-4650 To 4650 Date: 08/11/87

Title: (Letter regarding recommendations on the proposed additional groundwater sampling)

Type: CORRESPONDENCE
Author: Mitchell, Gail: US EPA
Recipient: Bornholm, Jon K: US EPA

Document Number: CHE-001-4651 To 4651 Date: 08/14/87

Title: (Transmittal Slip for attached copy of comments for second audio visual presentation)

Type: CORRESPONDENCE
Condition: INCOMPLETE
Author: Bornholm, Jon K: US EPA
Recipient: Haney, Laura Temple: Warren Wilson College