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State of North Carolina
Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
P.O. Box 27687 · Raleigh, North Carolina 27611-7687

James G. Martin, Governor
William W. Cobey, Jr., Secretary

William L. Meyer
Director

June 11, 1992

Ms. Kathy Amoroso
EPA NC CERCLA Project Officer
EPA Region IV Waste Division
345 Courtland Street, NE
Atlanta, Georgia 30365

RE: Phase II, Screening Site Investigation
E.R. Squibb & Sons
Kenly, Johnston County, North Carolina
NCD 991 278 730

Dear Ms. Amoroso:

Enclosed herewith is the Phase II, Screening Site Investigation (SSI) Report by Greenhorne & O'Mara, Inc. for E.R. Squibb & Sons (NCD 991 278 730).

Based on the information gathered and presented in this report and on the results of the data validation, it is believed that the site poses minimal threat to the public health and/or the environment.

The following discussion of the analytical results from the Phase II, SSI sampling event for the subject site, reflects data validation.

A total of ten (10) environmental samples were collected to characterize the site. To characterize whether a release of contaminants has occurred, a limited subsurface and surficial investigation was conducted to obtain ground water, surface water, soil and sediment samples for laboratory analysis. The sampling locations are shown on Appendix A, Figure 2. These samples consisted of three (3) surface soil samples, one (1) on-site drinking water well sample, two (2) soil boring samples, two (2) sediment samples and two (2) surface water samples.

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Surface Soils

A background surface soil sample (SQSS01) was collected at the site. No Purgable Organics (VOCs) or Base Neutral Acid Extractable (BNAs) were reported in this sample. See Table 1 for the inorganic results.

A composite soil sample (SQSS02) was collected from three locations around the underground butanol tanks. Acetone (076 ppb) was the only VOC reported in significant concentrations in this sample. No BNAs were reported in this sample. See Table 1 for the inorganic results.

A composite soil sample (SQSS03) was collected from three locations east of the storage facility. No VOCs or BNAs were reported in this sample. See Table 1 for the inorganic results.

An observed release to soils has been documented from the data gathered relative to the soil samples. It appears that there are a releases of acetone, aluminum, arsenic, barium, cadmium, chromium, iron and vanadium. The values reported for all inorganics, except cadmium, were within naturally occurring concentrations for inorganics in soils in the Eastern United States. These contaminants are not known to be attributable to site activities.

Soil Borings

A background soil boring sample (SQSB01) was collected at the site. No VOCs or BNAs were reported in this sample. See Table 1 for the inorganic results.

A downgradient soil boring sample (SQSB02) was collected east of the storage building. No VOCs or BNAs were reported in this sample. See Table 1 for the inorganic results.

An observed release has not been documented from the soil boring samples results. Cadmium was reported at levels which exceeded naturally occurring concentrations for cadmium in the Eastern United States.

Sediments

An upstream sediment sample (SQSED01) was collected at the site. No VOCs, BNAs or inorganics were reported in this sample.

A downstream sediment sample (SQSED02) was collected downstream of the site on the Little River. No VOCs, BNAs or inorganics were reported in this sample.

An observed release to sediments has not been documented from the data gathered relative to sediment samples.

Surface Water

An upstream surface water sample (SQSW01) was collected at the site. No VOCs or BNAs were reported in this sample. Barium (40 ppb) was the only inorganic reported in this sample.

A downstream surface water sample collected on the Little River. No VOCs, BNAs or inorganics were reported in this sample.

An observed release to surface water has not been documented from the data gathered relative to surface water samples.

Ground Water

Groundwater samples were attempted but groundwater was not encountered, therefore, soil boring samples were collected in lieu of groundwater samples (see soil boring samples discussion).

An off-site drinking water well sample (SQDW01) was collected from the nearest off-site drinking water well located southeast of the site. No VOCs or BNAs were reported in this sample. See Table 2 for the inorganic results.

An observed release to groundwater is not believed to have been documented from the data gathered relative to ground water samples. Arsenic (20 ppb) and barium (60 ppb) were the only inorganics reported in the off-site drinking water well. As can be seen from Table 2, arsenic and barium are well within their respective North Carolina Maximum Contaminant Level (NCMCL) and/or Federal Maximum Contaminant Level (MCL).

Based on the information gathered and presented in this report, it is believed that the site poses minimal threat to human health and/or the environment, therefore, the North Carolina Superfund Section is recommending that the site be designated as No Further Remedial Action Planned (NFRAP) at this time. Fishing activities along the Neuse River, Little River and Middle Creek would not be affected by this site. In addition, there are no sensitive environments within the study area or downgradient of the site.

If you have any questions, please contact me at 919-733-2801.

Sincerely,

Grover Nicholson, Head
Contracts Management Branch

Enclosures

TABLE 1
E.R. SQUIBB & SONS
NCD 991 278 730

INORGANICS	SOILS NATURAL RANGE (PPM)	SQSS01 (PPM)	SQSS02 (PPM)	SQSS03 (PPM)	SQSB01 (PPM)	SQSB02 (PPM)
ALUMINUM	0.7->10%	2400	17200	5600	14600	7830
ANTIMONY	<1-8.8	11.3R	11.0R	10.3R	10.5R	10.7R
ARSENIC	<0.1-73	0.29J	1J	0.45J	12.3J	2.7J
BARIUM	10-1500	16.4	10.6	23.4	2.4	9
BERYLLIUM	<1-7	0.50UJ	0.49UJ	0.46UJ	0.47UJ	0.48UJ
CADMIUM	0.01-0.7	0.76U	2.4	0.69U	3.6	2.7
CALCIUM	0.01-20%	177	498	413	1110	111
CHROMIUM	1-1000	3.5	28.5	6.8	17	20.7
COBALT	<0.3-70	2.5U	2.4U	2.3U	14.2	2.4U
COPPER	<1-700	3.0U	2.9U	2.8U	23.5	5.2
IRON	0.01->10%	1910J	22900J	5050J	38400J	28400J
LEAD	<10-300	5.5J	8J	7.4J	20.7J	10.6J
MAGNESIUM	0.005-5%	75.3	169	132	6910	146
MANGANESE	<2-7000	23.7	36.7J	48.8J	370J	55.7J
MERCURY	0.01-3.4	0.06U	0.05U	0.06U	0.05U	0.05U
NICKEL	<3-700	5.0U	4.9U	4.6U	36.4	4.8U
POTASSIUM	0.005-3.7%	310U	324U	292U	297U	293U
SELENIUM	<0.1-3.9	1U	1U	1U	0.24U	1U
SILVER	0.01-5	2.3UJ	2.2UJ	2.1UJ	2.1UJ	2.1UJ
SODIUM	0.05-5%	23.3	24.5	23.2	18.6	14.7
THALLIUM	-	0.48UJ	0.50UJ	0.47UJ	0.48UJ	0.50UJ
VANADIUM	<7-500	3.5	48.2	10	12.3	29.4
ZINC	<5-2900	10U	10U	8U	66.1	9U
CYANIDE	-	2.7J	3.0UJ	2.6UJ	2.6UJ	2.8UJ

NOTES:

1) NA - NOT ANALYZED
2) N - PRESENCE OF CONTAMINANT PRESUMED
3) J - CONCENTRATION ESTIMATED
4) U - NON-DETECT
5) B - CONTAMINANT FOUND IN ASSOCIATED BLANK

TABLE 2
E.R. SQUIBB & SONS
NCD 000 830 646

INORGANICS	WATER NCMCL (PPB)	WATER MCL (PPB)	SQDW01 (PPB)
ALUMINUM	-	-	NA
ANTIMONY	-	10/5	NA
ARSENIC	50	-	20
BARIUM	1000	5000	60
BERYLLIUM	-	1	NA
CADMIUM	5	5	U
CALCIUM	-	-	NA
CHROMIUM	50	100	U
COBALT	-	-	NA
COPPER	1000	1300	NA
IRON	300	-	NA
LEAD	50	50	U
MAGNESIUM	-	-	NA
MANGANESE	50	-	NA
MERCURY	1.1	2	U
NICKEL	150	100	NA
POTASSIUM	-	-	NA
SELENIUM	10	50	U
SILVER	50	-	U
SODIUM	-	-	NA
THALLIUM	-	2/1	NA
VANADIUM	-	-	NA
ZINC	5000	-	NA
CYANIDE	154	200	NA

NOTES:

1) NA - NOT ANALYZED
2) N - PRESENCE OF CONTAMINANT PRESUMED
3) J - CONCENTRATION ESTIMATED
4) U - NON-DETECT
5) R - DATA UNUSABLE
6) B - CONTAMINANT FOUND IN THE ASSOCIATED BLANK
7) NCMCL - NORTH CAROLINA MAXIMUM CONTAMINANT LEVEL
8) MCL - FEDERAL MAXIMUM CONTAMINANT LEVEL

STATE OF NORTH CAROLINA

Department of Environment, Health, and Natural Resources
Division of Solid Waste Management
Superfund Section

E.R. Squibb & Sons
NCD 991278730

Phase II
Screening Site Inspection

Volume I

June 1991

By:

Greenhorne & O'Mara, Inc.

PHASE II

SCREENING SITE INVESTIGATION

FOR THE

E.R. SQUIBB & SONS, INC. SITE

KENLY, NORTH CAROLINA

NCD 991278730

Submitted to:

State of North Carolina
Department of Environment, Health,
and Natural Resources
Division of Solid Waste Management
Superfund Section
Raleigh, North Carolina

Prepared By:

Greenhorne & O'Mara, Inc.
9001 Edmonston Road
Greenbelt, Maryland 20770

June 1991

Revised
December 1991

CERCLA

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EXECUTIVE SUMMARY

The E.R. Squibb Site is located in Kenly, Johnston County, North Carolina. The site was in operation from 1978 until August 1990 as a facility that accepted bulk shipments of unfinished penicillin for processing. The unfinished penicillin was processed into finished forms such as tablets, capsules, and powder. In 1982, the plant discontinued the penicillin drying operation and closed an underground storage tank used for the storage of butyl alcohol derived from the drying process. On January 28, 1982, the North Carolina Solid and Hazardous Waste Management Branch conducted an interim status inspection of the site. Minor deficiencies were noted and a tank closure plan was requested. A closure plan was submitted on March 30, 1982. In January 1990, the site was found to be in compliance with the applicable RCRA regulations. E.R. Squibb & Sons retained its large generator status until it closed in August 1990.

Approximately 125,000 pounds per year of halogenated and non-halogenated solvent wastes were generated at the site. Solvent wastes were stored on-site in drums and tanks. Every 90 days, wastes were transported off-site. Until January 1982, butyl alcohol was stored in the on-site 4,000-gallon underground storage tank. The butyl alcohol was completely removed from the site by March of 1982. After the removal of the butyl alcohol, only fuel oil was recorded as being stored in underground storage tanks. No spills or leaks were documented during the operation of this facility.

The site is relatively flat with slopes of approximately 2 to 3 percent. Overland drainage is to the southwest toward Little River. The site is located in the Fall Zone, a transition between the folded and faulted metamorphic and igneous rocks of the Piedmont Physiographic Province to the north and the sedimentary assemblage of the Atlantic Coastal Plain to the south. The aquifer in the region is an unconfined water table aquifer. The majority of the soil on the site is from the Norfolk Series.

The City of Kenly purchases its drinking water from the Smithfield Public Utility Authority, which has a surface water intake along the Neuse River. Residents not served by the municipal water supply system obtain potable water from private wells. There are approximately 2,096 residents within a four mile radius that depend on private wells.

A Phase I Screening Site Investigation (SSI) performed by NUS Corporation on March 13, 1990, recommended that the site proceed to the next stage of the pre-remedial process. Consequently, on April 30, 1991, Greenhorne & O'Mara, Inc. (G&O) conducted a Phase II SSI for the E.R. Squibb & Sons site. A total of ten (10) environmental samples were taken at the site. Results of the sampling event indicate that acetone, aluminum, cadmium, barium, arsenic and vanadium were found on the site in concentrations above background levels. The contaminants are not expected to pose a threat to human health and/or the environment and it is unlikely that these contaminants are attributable to the site's activities. Therefore, G&O is recommending that the site be designated for "No Further Remedial Action Planned (NFRAP)."

1.0 INTRODUCTION

1.1 OBJECTIVES

Greenhorne and O'Mara, Inc. (G&O) conducted a Phase II Screening Site Inspection (SSI) at the E.R. Squibb & Sons site located in Kenly, Johnston County, North Carolina. The overall objective of the Phase II SSI is to provide information to support the recommendation that a site should move onto the next stage of the pre-remedial process or be designated as "no further remedial action planned (NFRAP)" under the Federal Superfund program. Additional objectives of the Phase II SSI are the following:

- Identify the types of contaminants present.
- Assess whether a release of hazardous substances has occurred.
- Search for evidence of actual human and environmental exposure to contaminants.
- Determine the likelihood of the site scoring high enough on the HRS to be recommended for further pre-remedial action under the Federal Superfund program.

The SSI builds upon data obtained during the preliminary assessment (PA) and Phase I SSI stages to further characterize problems at or near the site and to support a management recommendation.

1.2 SCOPE OF WORK

The scope of work for the Phase II SSI includes the following tasks:

- Reviewing both EPA and state file material.

- Preparing an abbreviated site-specific sampling plan and Health and Safety Plan. This task included developing a site map to illustrate proposed sampling locations, the approximate number of samples, and the type of samples to be collected.

- Conducting a site reconnaissance with the NCDEHNR to determine and flag actual sampling locations based on the sampling plan and existing field conditions, and the professional judgement of the NCDEHNR and the G&O sampling team. During the site reconnaissance, G&O also developed a site layout map to illustrate all of the important site features including location of buildings, access roads, and waste source areas, as well as site drainage.

- Performing field sampling activities by collecting up to five (5) environmental media samples and three (3) QA/QC samples. The five environmental samples usually included two (2) groundwater samples (with a maximum well depth of 15 feet) and three (3) surface soil samples. The three (3) QA/QC samples included one (1) water duplicate, one (1) surface soil duplicate, and one (1) trip blank.

- Analyzing laboratory data and presenting the data in four summary tables: volatile organic compounds, semi-volatile organic compounds, inorganic compounds, and pesticides/PCBs. Any releases that were observed were highlighted on the tables and discussed in the Phase II SSI report.

- Preparing a Phase II SSI report that presents information gathered during the site visit, field observations, and laboratory data with respect to observed releases. Any existing data gaps will be discussed in the text. Greenhorne and O'Mara was not contracted to collect additional background information.

2.0 SITE CHARACTERIZATION

2.1 SITE BACKGROUND AND HISTORY

E.R. Squibb & Sons was in operation from 1978 until August 1990. The company accepted bulk shipments of unfinished penicillin for processing at the Kenly, North Carolina site (Refs. 1, 2). The unfinished penicillin was processed into finished forms such as tablets, capsules, and powder.

The company filed a Resource Conservation and Recovery Act (RCRA) Part A application on November 13, 1980 (Ref. 2). In 1982, the Kenly plant discontinued their penicillin drying operation and closed an underground storage tank used for storage of butyl alcohol derived from the drying process (Ref. 3). On January 28, 1982, the North Carolina Solid and Hazardous Waste Management Branch conducted an interim status inspection of the site. Minor deficiencies were noted and a tank closure plan was requested by February 12, 1982 (Ref. 4). A closure plan was submitted on March 30, 1982 (Ref. 3).

The state conducted another compliance evaluation inspection on January 23, 1990 (Ref. 5). The company was found to be in compliance with applicable RCRA regulations. Until it ceased operations in August of 1990, E.R. Squibb & Sons retained large generator status (Ref. 1).

On December 19, 1985 the North Carolina Department of Human Resources (NCDHR) completed a preliminary assessment (PA) for the E.R. Squibb & Sons site. The NCDHR recommended the site be designated as low priority for a Phase I Screening Site Inspection (SSI) due to the fact that the site did not appear to pose a threat to public health and/or the environment (Ref. 2). As a result of the State's recommendation for further investigation, a Phase I SSI was conducted by NUS Corporation on March 13, 1990 (Ref. 8). NUS recommended that the site progress to the Phase II SSI stage of the pre-remedial process because of the permeability of the confining layer within the study area and the number of people who rely on groundwater for their drinking water supply (Ref. 1).

2.2 SITE DESCRIPTION

2.2.1 Site Location

The site is located off Interstate 95 on Flowers Road, 0.5 mile southwest of Kenly, North Carolina. An access road leads to the plant from Flowers Road (Appendix A, Figure 1) (Refs. 2, 8).

2.2.2 Site Features

The 97-acre site is surrounded by an 8-foot wire fence (Ref. 1). Access to the site is further restricted by a guarded entrance. In addition to the processing plant, the site has a drum storage area and several underground storage tanks (Appendix A, Figure 2) (Refs. 6, 9).

2.2.3 Waste Characteristics

Approximately 125,000 pounds per year of halogenated and non-halogenated solvent wastes were generated at the site (Ref. 2). The wastes were produced through two processes. A mixture of spent methyl alcohol and spent methylene chloride was collected from tablet coatings. Secondly, solvents were recovered from the drying of penicillin cake, which contains n-butyl alcohol (Refs. 3, 9).

Solvent wastes were stored on-site in drums and tanks. Every 90 days, wastes were transported off-site by Seaboard Chemical Company. Carochem, ThermalKem, and Tricil Recovery Services were also known to have handled waste for E.R. Squibb & Sons (Refs. 4, 5).

Until January 18, 1982, butyl alcohol was stored in the on-site 4,000-gallon stainless steel underground storage tank (Ref. 9). The butyl alcohol was regularly shipped to E.R. Squibb & Sons' New Brunswick, New Jersey plant for reuse (Ref. 3). A closure report was submitted on March 30, 1982, for the removal of all butyl alcohol from the site (Ref. 3). Solvent was pumped from the storage tank to tank trucks, leaving approximately five gallons of waste in the tank. The remainder of the waste was removed by rinsing the tank and the accompanying pumps with 200-300 gallons of water and then sewering the rinse. The tanks were then rinsed a second time.

After the removal of the butyl alcohol, only fuel oil was recorded as being stored in underground storage tanks (Ref. 9). No spills or leaks were documented during the operation of the plant (Refs. 1,9).

3.0 ENVIRONMENTAL SETTING

3.1 TOPOGRAPHY

The topography of the land slopes to the south at slopes of 2 to 3 percent. Elevations at the site range from 480 to 500 feet above mean sea level (Appendix A, Figure 3).

3.2 SURFACE WATER

3.2.1 Overland Drainage

Overland drainage is to the southwest along Interstate 95 until reaching the Little River, which flows south for the entire 15-mile surface water pathway (Ref. 7).

3.2.3 Climatology

The mean annual precipitation in the Kenly area is approximately 44 inches. The mean annual lake evaporation is approximately 41 inches (Ref. 10). Therefore, the net annual precipitation is 3.0 inches. The 2-year, 24-hour rainfall is 4.0 inches (Ref. 11).

3.3 GROUNDWATER

3.3.1 Hydrogeology

E.R. Squibb and Sons is located in the Fall Zone, a transition between the folded and faulted metamorphic and igneous rocks of the Piedmont Physiographic Province to the north and the sedimentary assemblage of the Atlantic Coastal Plain to the south. The area is primarily crystalline rock units comprised of slate and schist formed from volcanic origin. A thin blanket of surficial sand (0 to 30 feet) mantle the crystalline rocks along the fall zone. The coarse-grained sands and gravels of the Cretaceous Tuscaloosa formation outcrop in the fall zone and may occur as a thin layer between the surficial sands and the crystalline basement rocks (Ref. 12).

3.3.2 Aquifer Use

The aquifer in the region is an unconfined water-table aquifer. The groundwater resides in the surficial and Tuscaloosa sands, if present, and in the secondary faults and fractures in the slate basement rocks. The average depth of wells in the area ranges from less than 40 feet in unweathered crystalline rock or surficial sand to more than 125 feet in schist and slate. Hydraulic conductivity of the surficial sands is approximately 1×10^{-1} cm/sec (Ref. 12).

3.3.3 Soils

The majority of the soil on the site is from the Norfolk series. Norfolk loamy sand has a slope of 2 to 6 percent and consists of well

drained soils on uplands in the coastal plains. The surface, approximately 9 inches thick, is grayish brown loamy sand. The subsurface is 5 inches thick and is light yellowish brown loamy sand. The subsoil, which extends to a depth of 82 inches, consists of three layers. The top layer is yellowish brown sandy loam, the middle layer is yellowish brown sandy clay loam, and the lower layer is mottled brownish yellow, strong brown, yellowish red sandy clay loam in the lower part.

Norfolk soils have a permeability of 2 to 6 inches per hour. Shrink-swell potential is low. The season high water table is 4 to 6 feet below the surface.

Other soils on the site include State sandy loam, 0 to 3 percent slopes; and Goldsboro sandy loam, 0 to 2 percent slopes. State soils are very deep and well drained. Permeability is 2 to 6 inches per hour and shrink-swell potential is low. The season high water table is 4 to 6 feet below the surface. Goldsboro soils are moderately well drained soils on coastal plain uplands. Permeability is 0.6 to 6.0 inches per hour and shrink-swell potential is low. The season high water table is 2 to 3 feet below the surface (Ref. 13).

3.4 WATER SUPPLY

The City of Kenly purchases drinking water from the Smithfield Public Utility Authority, which has a surface water intake along the Neuse River. This is the only surface water intake in Johnston County (Ref. 14). The City's water supply connects with the Smithfield system at the intersection of Highways 2144 and 301 (Refs. 7, 8). Residents not served by a municipal water system obtain water from private wells (Ref. 8). The nearest resident served by a private drinking water well is located about 2,800 feet north of the facility; the well is completed at a depth of 45 feet (Ref. 15).

The population relying on groundwater for potable water was calculated by conducting a house count from the USGS topographic map of the area served by domestic water supplies. This number was then multiplied by the 1990 census figure for persons/household in Johnston County (Refs. 7, 16, 17). The population utilizing groundwater is estimated below:

Radius	Population	Cumulative Population
1/4-mile	0	0
1/2-mile	42	42
1-mile	89	131
2-mile	353	484
3-mile	526	1010
4-mile	1086	2096

3.5 POPULATION DISTRIBUTION

The population living within a 1/4-, 1/2-, 1-, 2-, 3-, and 4-mile radius of the site was calculated by a topographic house count multiplied by the 1990 census figure for persons/household in Johnston County (Refs.

7, 16, 17). The total number of residents within each radius are listed below:

Radius	Population	Cumulative Population
1/4-mile	0	0
1/2-mile	51	51
1-mile	484	535
2-mile	962	1497
3-mile	526	2023
4-mile	1086	3109

3.6 LAND USE

The facility is located in a sparsely populated area outside the city limits of Kenly. There are a few commercial businesses located within the vicinity of the site. The nearest business is located 0.25 miles south of the property line. A school and some churches are located within 1 mile of the facility (Ref. 7 & 8). The nearest resident is located 0.25 miles east of the site (Ref. 7).

3.7 SENSITIVE ENVIRONMENTS

There are no critical habitats within the study area (Ref. 19). However, several threatened or endangered species are recognized by the state throughout Johnston County (Ref. 19. Freshwater wetlands are assumed to be associated with Little River, which is approximately 2 miles south of the site (Ref. 7).

5.0 RECOMMENDATIONS AND CONCLUSIONS

Based on the analytical results of the sampling event at the subject site, the following areas showed the presence of acetone, aluminum, arsenic, barium, cadmium, chromium, iron, and vanadium at significant levels:

- soils in the area north of the underground tanks,
- soils in the area east of the storage facility.

It is unlikely that these contaminants are associated with site activities since the primary substances of concern are halogenated and nonhalogenated solvents, as well as butyl alcoho;. Fishing activities along the Neuse River, Little River and Middle Creek would not be affected by this site. In addition, there are no sensitive environments within the study area or downgradient of the site. Therefore, G&O is recommending that this site be designated for No Further Remedial Action Planned (NFRAP) at this time.

4.0 FIELD INVESTIGATION

4.1 DESCRIPTION OF SAMPLES AND SAMPLE LOCATIONS

A total of ten (10) environmental samples were collected to characterize the site. To determine whether a release of contaminants has occurred, limited subsurface and surficial investigation was recommended to obtain groundwater, surface water, soil and sediment samples for laboratory analysis (Appendix A, Figure 2). The locations of the sampling points were originally proposed in an abbreviated sampling plan prepared by G&O; however, the NCDEHNR made the final recommendations during the sampling effort on April 30, 1991. Therefore, the final sampling locations as shown in Appendix A, Figure 2 reflect the decision of the NCDEHNR staff.

To determine whether contaminants were released into the environment, three (3) surface soil and two (2) soil boring samples were obtained. A representative of the NCDEHNR collected two (2) sediment and two (2) surface water samples from Little River. An off-site private drinking water well sample was collected by NCDEHNR, as well. Because groundwater was not encountered, the NCDEHNR approved the collection of a soil boring sample in lieu of a groundwater sample. Samples were collected and preserved in accordance with the EPA Region IV Standard Operating Procedures (SOP) (Ref. 20).

4.2 ANALYTICAL RESULTS

Upon completion of the sampling effort, samples were taken to Industrial and Environmental Analysts, Inc. (IEA) in Research Triangle Park, North Carolina (see Volume II). Level IV Routine Analytical Service (RAS) Contract Laboratory Program (CLP) data packages and associated narratives were assembled for this project by IEA. At the request of the NCDEHNR, the data was validated NUS Corp.

NORTH OF UNDERGROUND BUTANOL STORAGE TANKS SURFACE SOIL COMPOSITE (SQSS02) - A composite surface soil sample was collected from three (3) locations around the referenced tanks. Acetone (76 ppb) was the only Purgable Organic (VOC) reported in significant concentrations in this sample. No Base Neutral Acid Extractables (BNAs) were reported in this sample. Aluminum (17200 ppm), arsenic (1J ppm), cadmium (2.4 ppm), chromium (28.5 ppm), iron (22900J ppm), and vanadium (48.2 ppm) were the only inorganics reported in significant concentrations in this sample. All inorganics, except cadium (0.01-0.7 ppm) were within naturally occurring concentrations for inorganics in soils in the Eastern United States.

EAST OF STORAGE FACILITY SURFACE SOIL COMPOSITE (SQSS03) - A composite soil sample was collected from three (3) locations east of the storage facility. No VOCs, BNAs or inorganics were reported in significant concentrations in this sample.

EAST OF STORAGE FACILITY SOIL BORING SAMPLE (SQSB02) - A soil boring sample was collected east of the storage facility. Using SQSB01 as a background, no VOCs, BNAs or inorganics were reported in significant concentrations in this sample.

OFF-SITE DRINKING WATER WELL SAMPLE (SQDW01) - An off-site drinking water well sample was collected. No VOCs or BNAs were reported in this sample. Arsenic (20 ppb) and barium (60 ppb) were the only inorganics reported in this sample. These concentrations were well below North Carolina Maximum Contaminant Levels (NCMCL) and/or Federal Maximum Contaminant Levels (MCL).

In summary, the only hazardous contaminants found in significant concentrations include acetone, aluminum, arsenic, barium, cadmium, chromium, iron, and vanadium. These contaminants are not known to be attributable to site activities.

LIST OF REFERENCES FOR THE E.R. SQUIBB AND SONS SITE
EPA ID NUMBER - NCD 991278730

1. Williams, Alvin L. (NUS). 1990. Letter to Mr. A.R Hanke regarding Screening Site Inspection, Phase I, for E.R. Squibb & Sons. September 17.

2. Potential Hazardous Waste Site Preliminary Assessment (EPA Form 2070-12) and attachments for E.R. Squibb & Sons. Filed by Durway/Crosby, North Carolina Department of Human Resources. December 3, 1985.

3. Pharr, B.H. (E.R. Squibb & Sons). 1982. Letter and attachments to Mr. William Paige regarding closure plan for 4,000-gallon underground storage tank. March 30.

4. Interim Status Inspection for E.R. Squibb & Sons, performed by Larry D. Perry, North Carolina Solid and Hazardous Waste Management Branch. January 28, 1982.

5. RCRA Inspection and Evaluation Report for E.R. Squibb & Sons, performed by Michael E. Willford, North Carolina Department of Human Resources Solid and Hazardous Waste Management Branch. January 23, 1990.

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7. USGS 7.5' Quadrangle Maps: Lucama, NC (1978); Kenly East, NC (1978); Kenly West, NC (1978); and, Stancils Chapel, NC (1978).

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16. Spangenberg, Rachel M. (Greenhorne & O'Mara, Inc.). 1991. Population calculations for E.R. Squibb & Sons. October 22.

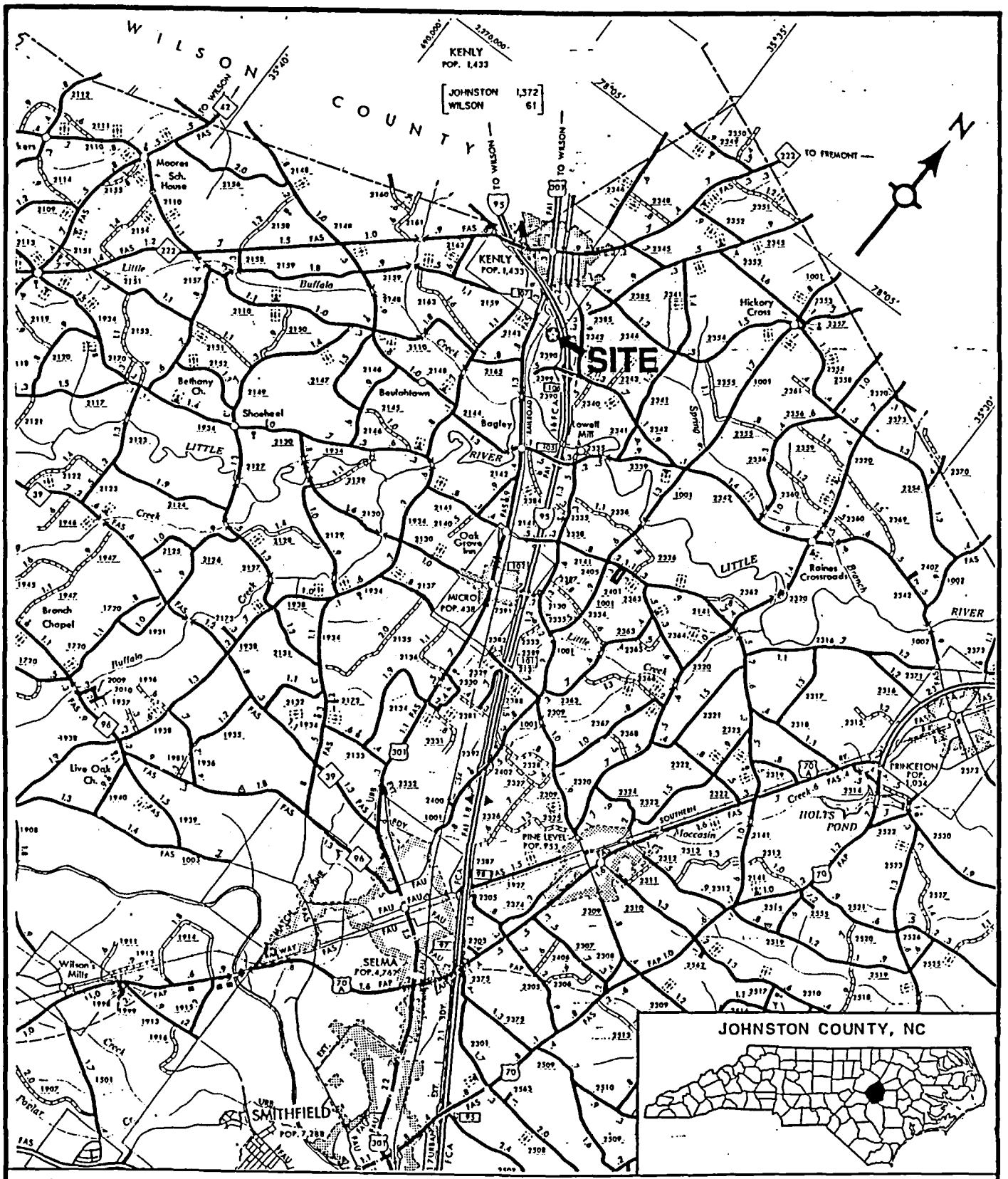
17. DeRosa, Pat (NCDEHNR). 1991. Letter to technical staff, RE: U.S. Census Bureau 1990 Population Data. September 16.

18. Williams, Alvin L. (NUS). 1990. Telecon with Mr. Don Baker (Wildlife Resources Commission), RE: Recreational activity along the Neuse River, Little River, and Middle Creek. March 27.

19. U.S. Fish and Wildlife Service, Endangered and Threatened Species of the Southeastern United States. Atlanta, Georgia, 1988.

20. U.S. Environmental Protection Agency, Region IV, Environmental Services Division. Engineering Support Branch Standard Operating Procedures and Quality Assurance Manual. Athens, Georgia. February 1, 1991.

APPENDIX A
MAPS AND TABLES



E.R. SQUIBB & SONS

SCALE 1 0 1 2 3 4 MILES

FIGURE 1

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS

GREENHORNE & O'MARA, INC.

9001 EDMONSTON ROAD, GREENBELT, MARYLAND 20770

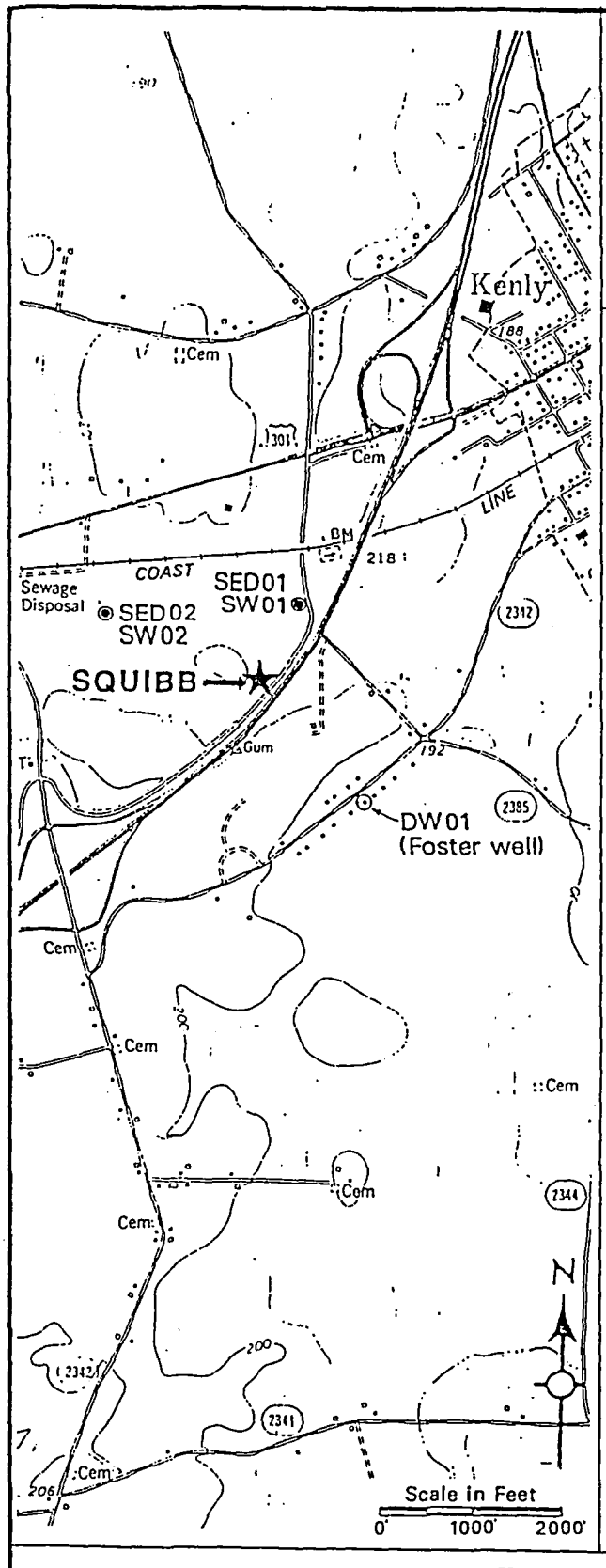
(301) 982-2800

ANNAPOLIS MD • ATLANTA GA • AURORA CO • BALTIMORE MD • CULPEPER VA • DULUTH GA
EXPORT PA • FAIRFAX VA • MANASSAS VA • RALEIGH NC • ROCKVILLE MD • TAMPA FL

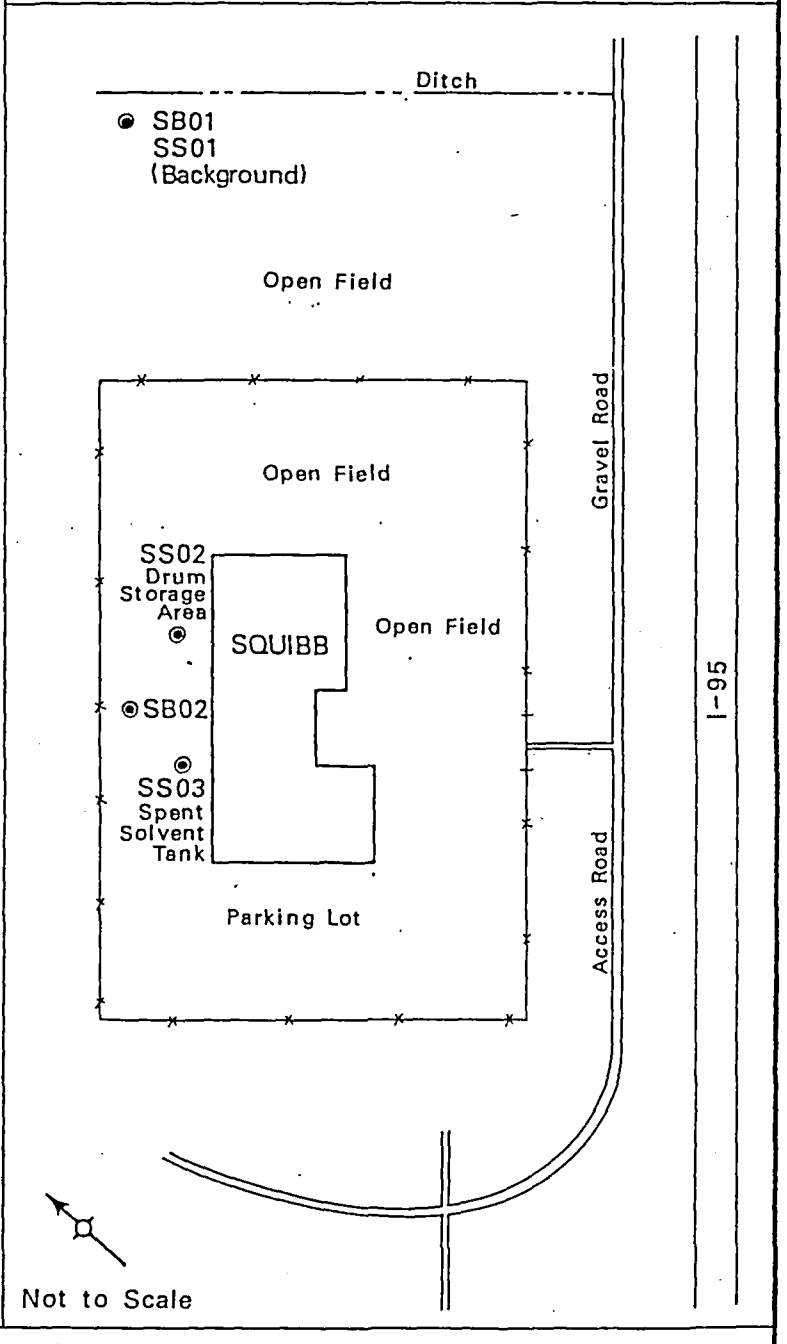
SITE LOCATION

NCD 991 278 730

SOURCE: North Carolina Department of Transportation, County Road Maps, 1990.



JOHNSTON COUNTY, NC



E.R. SQUIBB & SONS

SOURCE: USGS Topographic Map; Kenly West 1978.

FIGURE 2

ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS

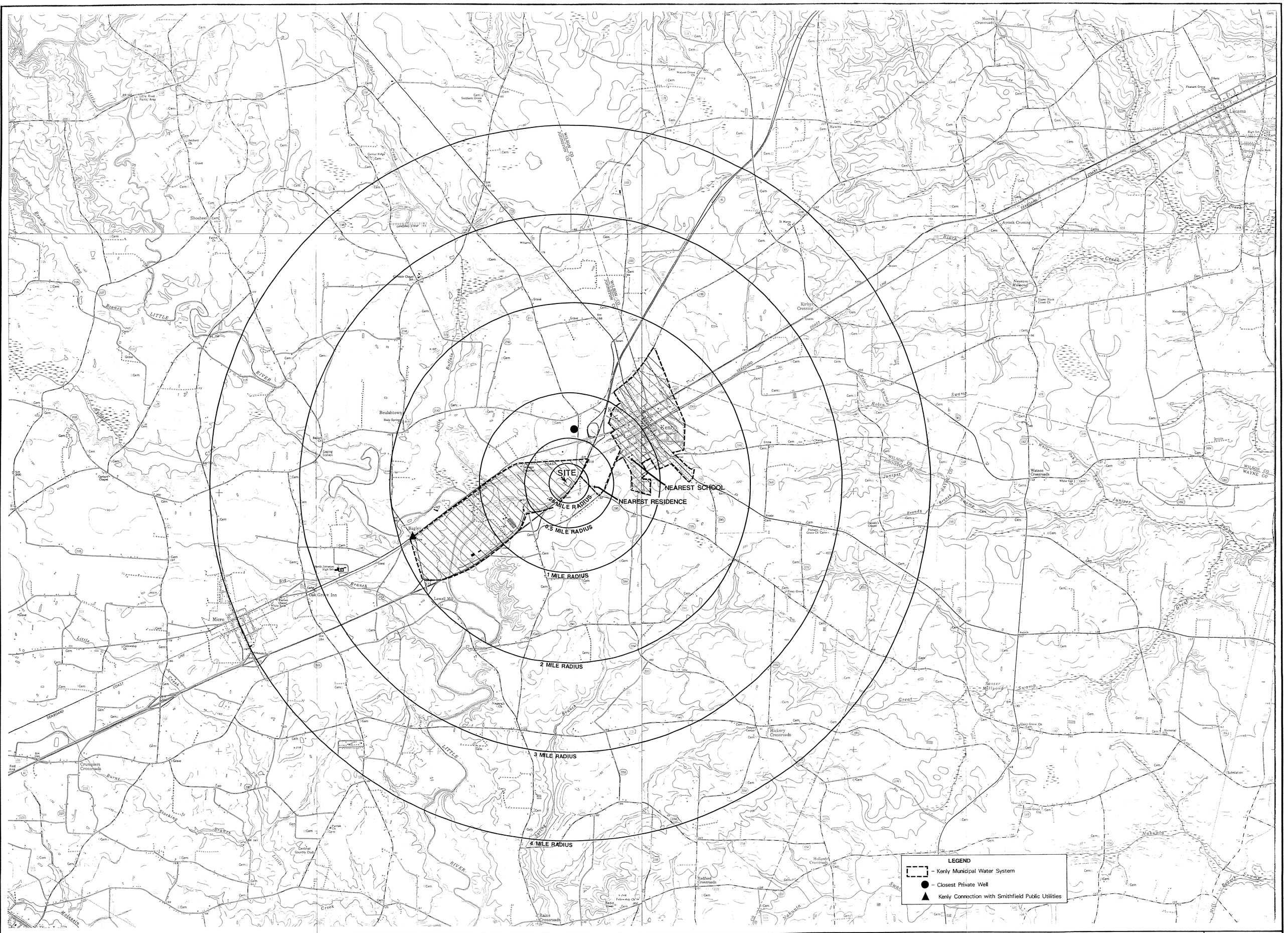
GREENHORNE & O'MARA, INC.

9001 EDMONSTON ROAD, GREENBELT, MARYLAND 20770

(301) 982-2800

SITE LAYOUT SAMPLING POINTS

NCD 991 278 730



ENGINEERS • ARCHITECTS • PLANNERS • SCIENTISTS • SURVEYORS • PHOTOGRAMMETRISTS

GREENHORNE & O'MARA, INC.

9001 EDMONSTON ROAD, GREENBELT, MARYLAND 20770

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MANASSAS, VA • MONROE, MI • RALEIGH, NC • ROCKVILLE, MD • TAMPA, FL

E.R. SQUIBB & SONS

TOPOGRAPHIC MAP

NCD 991 278 730

SOURCE: USGS Topographic Maps; Lucama 1978, Kenly East 1978 Kenly West 1978, Stancils Chapel 1978.

SCALE:

1000 0 1000 2000 FEET

FIGURE 3

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			Date Collected	4/30/91	4/30/91	4/30/91	4/30/91	4/30/91	4/30/91
			Laboratory	IEA	IEA	IEA	IEA	IEA	IEA
			Well Depth (Feet)	NA	NA	NA	NA	NA	NA
			G&O Sample ID No.	SQSS01	SQSS02	SQSS03	SQSB01	SQSB02	SQTB01
			EPA Case No.	A0601	A0602	A0603	A0604	A0605	A0606
			Case No.	1041-016	1041-016	1041-016	1041-016	1041-016	1041-016
			Compounds Detected						
			VOLATILE ORGANICS						
			Matrix	Soil	Soil	Soil	Soil	Soil	Water
			Level	Low	Low	Low	Low	Low	Low
			% Moisture	14	18	10	10	16	100
			Concentration Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
Gas	A,D,G,I	OCC	chloromethane						
Gas	A,D,G,I	OCC	bromomethane						
Gas	A,D,G,I	OCC	vinyl chloride						
Gas	A,D,G,I	OCC	chloroethane						
Liquid	A,D,H,I	SOL	methylene chloride						
Liquid	E,H,I,A	SOL	acetone	[12U]	76*				
Liquid	A,H,I	SOL	carbon disulfide						
Liquid	A,D,G,I	SOL	1,1-dichloroethene						
Liquid	A,D,H,G	SOL	1,1-dichloroethane						
Liquid	A,D,G	SOL	1,2-dichloroethene (total)						
Liquid	A,D	SOL	chloroform						
Liquid	A,D,G	SOL	1,2-dichloroethane						
Liquid	A,E,G	SOL	2-butanone (MEK)						
Liquid	A,D	SOL	1,1,1-trichloroethane						

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			VOLATILE ORGANICS (CONT.)						
Liquid	A,D	SOL	carbon tetrachloride						
Liquid	A,D,G	SOL	vinyl acetate						
Liquid	A,D	OCC	bromodichloromethane						
Liquid	A,D,G	SOL	1,2-dichloropropane						
Liquid	A,D,G	SOL	cis-1,3-dichloropropene						
Liquid	A,D,G,B	SOL	trichloroethene						
Liquid	A,D	OCC	dibromochloromethane						
Liquid	A,D	SOL	1,1,2-trichloroethane						
Liquid	A,G	SOL	benzene						
Liquid	A,D,G	SOL	trans-1,3-dichloropropene						
Liquid	A,D	SOL	bromoform						
Liquid	A,E,G	SOL	4-methyl-2-pentanone						
Liquid	A,E,G	SOL	2-hexanone						
Liquid	A,D	SOL	tetrachloroethene						
Liquid	A,G,E	SOL	toluene						
Liquid	A,D,E	SOL	1,1,2,2-tetrachloroethane						
Liquid	A,D,G	SOL	chlorobenzene						
Liquid	A,G	SOL	ethylbenzene						
Liquid	A,D,G	OCC	styrene						
Liquid	A,G	SOL	xylenes (total)						
			Tentatively Identified Compounds						
			cyclotetrasiloxane, octameth						6YJN

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			SEMIVOLATILE ORGANICS						
			Matrix	Soil	Soil	Soil	Soil	Soil	NA
			Level	Low	Low	Low	Low	Low	NA
			% Moisture	14	18	10	10	16	NA
			Concentration Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	NA
S,thick1	A,B,E	OCC	phenol						NA
Liquid	A,D,B	OCC	bis(2-chloroethyl)ether						NA
Liquid	A,D,B	OCC	2-chlorophenol						NA
Liquid	A,D,H	SOL	1,3-dichlorobenzene						NA
Solid	A,D,H	OCC	1,4-dichlorobenzene						NA
Liquid	A,D,H	SOL	benzyl alcohol						NA
Liquid	A,D,H	OCC	1,2-dichlorobenzene						NA
Liquid	A,B	OCC	2-methylphenol						NA
	A,D	OCC	bis(2-chloroisopropyl)ether						NA
Liquid	A,B	OCC	4-methylphenol						NA
	A	OCC	n-nitroso-di-n-dipropylamine						NA
Solid	A,D	OCC	hexachloroethane						NA
Liquid	A,D	OCC	nitrobenzene						NA
Liquid	A,D	OCC	isophorone						NA
Solid	A,D	OCC	2-nitrophenol						NA
Solid	A,B	OCC	2,4-dimethylphenol						NA
Solid	A	OCC	benzoic acid						NA
	A,D	OCC	bis(2-chloroethoxy)methane						NA
Liquid	A,D	OCC	2,4-dichlorophenol						NA
Liquid	A,D	OCC	1,2,4-trichlorobenzene						NA
Solid	A	OCC	naphthalene						NA
Solid	A,D	OCC	4-chloroaniline						NA

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			SEMIVOLATILE ORGANICS (CONT.)						
Liquid	A,D,B	OCC	hexachlorobutadiene						NA
Solid	A,D	OCC	4-chloro-3-methylphenol						NA
Liquid	A,D	OCC	2-methylnaphthalene						NA
Liquid	A,D,B	OCC	hexachlorocyclopentadiene						NA
Solid	A,D	OCC	2,4,6-trichlorophenol						NA
Solid	A,D	OCC	2,4,5-trichlorophenol						NA
Liquid	A,D	OCC	2-chloronaphthalene						NA
Solid	A,D	OCC	2-nitroaniline						NA
Liquid	A,D	OCC	dimethylphthalate						NA
Solid	A,D	OCC	acenaphthylene						NA
Solid	A,D	OCC	2,6-dinitrotoluene						NA
Solid	A,D	OCC	3-nitroaniline						NA
Solid	A,D	OCC	acenaphthene						NA
Solid	A,D,G	OCC	2,4-dinitrophenol						NA
Solid	A,D	OCC	4-nitrophenol						NA
Solid	A,D	OCC	dibenzofuran						NA
Solid	A,D	OCC	2,4-dinitrotoluene						NA
Liquid	A,D	OCC	diethylphthalate						NA
	A,D	OCC	4-chlorophenyl-Phenylether						NA
Solid	A,D	OCC	fluorene						NA
Solid	A,D,E	OCC	4-nitroaniline						NA
Solid	A,D	OCC	4,6-dinitro-2-methylphenol						NA
Solid	A,D	OCC	n-nitrosodiphenylamine						NA
Liquid	A,D	OCC	4-bromophenyl-phenylether						NA

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			SEMIVOLATILE ORGANICS (CONT.)						
Solid	A,D	OCC	hexachlorobenzene						
Solid	A,D	OCC	pentachlorophenol						
Solid	A,D	OCC	phenathrene						
Solid	A,D	OCC	anthracene						NA
Liquid	A,D	OCC	di-n-butylphthalate						NA
Solid	A,D	OCC	fluoranthene						NA
Solid	A,D	OCC	pyrene						NA
Liquid	A,D	OCC	butylbenzylphthalate						NA
	A,D	OCC	3,3-dichlorobenzidine						NA
Solid	A,D	OCC	benzo[a]anthracene						NA
Solid	A,D	OCC	chrysene						NA
Liquid	A,D	OCC	bis(2-ethylhexyl)phthalate						NA
Liquid	A,D	OCC	di-n-octylphthalate						NA
Solid	A,D	OCC	benzo[b]fluoranthene						NA
Solid	A,D	OCC	benzo[k]fluoranthene						NA
Solid	A,D,K,L	OCC	benzo[a]pyrene						NA
Solid	A,D	OCC	indeno[1,2,3-cd]pyrene						NA
Solid	A,D	OCC	dibenz[a,h]anthracene						NA
Solid	A,D	OCC	benzo[g,h,i]perylene						NA
			Tentatively Identified Compounds	586JN	780JN	863JN	435JN	3370JN	NA
			Unknown (total)	1740JNB	2330JNB	2031JNB	1150JNB	3580JNB	
			2,5-Hexanedione	92JNAB		96JNAB	77JNAB	88JNAB	
			3-Hexene-2,5-Dione	1500JNAB	950JNAB	770JNAB	69BJNAB	230JNAB	
			2,5-cyclohexadiene-1,4-dione					84JN	

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			PESTICIDES/PCBs						
			Matrix	NA	NA	NA	NA	NA	NA
			Level	NA	NA	NA	NA	NA	NA
			% Moisture	NA	NA	NA	NA	NA	NA
			Concentration Units	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	alpha BHC	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	beta BHC	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	delta BHC	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	gamma BHC (Lindane)	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Heptachlor	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Aldrin	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Heptachlor epoxide	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan I	NA	NA	NA	NA	NA	NA
Solid	A,D,E	PSD	Dieldrin	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDE	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endrin	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan II	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDD	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan sulfate	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDT	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Methoxychlor (Mariate)	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endrin ketone	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	alpha Chlordane	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	gamma Chlordane	NA	NA	NA	NA	NA	NA
Solid	A,D	PSD	Toxaphene	NA	NA	NA	NA	NA	NA

TABLE 1A
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	South of Mill Creek Background Surface Soil Composite	North of Underground Butanol Tank Surface Soil Composite	East of Storage Facility Surface Soil Composite	South of Mill Creek Background Soil Boring	East of Storage Facility Soil Boring	Trip Blank
			PESTICIDES/PCBS (CONT.)						
Liquid	A,D	OCC	Aroclor 1016	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1221	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1232	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1242	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1248	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1254	NA	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1260	NA	NA	NA	NA	NA	NA

TABLE 1A
E.R. SQUIBB & SONS
NCD 991 278 730

INORGANICS	SOILS NATURAL RANGE (PPM)	SQSS01 (PPM)	SQSS02 (PPM)	SQSS03 (PPM)	SQSB01 (PPM)	SQSB02 (PPM)
ALUMINUM	0.7->10%	2400	17200	5600	14600	7830
ANTIMONY	<1-8.8	11.3R	11.0R	10.3R	10.5R	10.7R
ARSENIC	<0.1-73	0.29J	1J	0.45J	12.3J	2.7J
BARIUM	10-1500	16.4	10.6	23.4	2.4	9
BERYLLIUM	<1-7	0.50UJ	0.49UJ	0.46UJ	0.47UJ	0.48UJ
CADMIUM	0.01-0.7	0.76U	2.4	0.69U	3.6	2.7
CALCIUM	0.01-20%	177	498	413	1110	111
CHROMIUM	1-1000	3.5	28.5	6.8	17	20.7
COBALT	<0.3-70	2.5U	2.4U	2.3U	14.2	2.4U
COPPER	<1-700	3.0U	2.9U	2.8U	23.5	5.2
IRON	0.01->10%	1910J	22900J	5050J	38400J	28400J
LEAD	<10-300	5.5J	8J	7.4J	20.7J	10.6J
MAGNESIUM	0.005-5%	75.3	169	132	6910	146
MANGANESE	<2-7000	23.7	36.7J	48.8J	370J	55.7J
MERCURY	0.01-3.4	0.06U	0.05U	0.06U	0.05U	0.05U
NICKEL	<3-700	5.0U	4.9U	4.6U	36.4	4.8U
POTASSIUM	0.005-3.7%	310U	324U	292U	297U	293U
SELENIUM	<0.1-3.9	1U	1U	1U	0.24U	1U
SILVER	0.01-5	2.3UJ	2.2UJ	2.1UJ	2.1UJ	2.1UJ
SODIUM	0.05-5%	23.3	24.5	23.2	18.6	14.7
THALLIUM	-	0.48UJ	0.50UJ	0.47UJ	0.48UJ	0.50UJ
VANADIUM	<7-500	3.5	48.2	10	12.3	29.4
ZINC	<5-2900	10U	10U	8U	66.1	9U
CYANIDE	-	2.7J	3.0UJ	2.6UJ	2.6UJ	2.8UJ

NOTES:

1) NA - NOT ANALYZED
2) N - PRESENCE OF CONTAMINANT PRESUMED
3) J - CONCENTRATION ESTIMATED
4) U - NON-DETECT
5) B - CONTAMINANT FOUND IN ASSOCIATED BLANK

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
U	Indicates compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
J	Indicates an estimated value.	Compound value may be semi-quantitative.
UJ	Quantitation limit is estimated due to a quality control (QC) protocol.	Compound was not detected if value is at CRDL, e.g., 10U UJ. If a value is reported with a UJ above CRDL and it is <5x blank concentration (10x for common laboratory artifacts), the compound is detected but may be a laboratory artifac and not attributable to the sample.
C	This flag applies to pesticide results where the identification has been confirmed by GC/MS. Single component pesticides ≥10 ng/uL in the final extract shall be confirmed by GC/MS.	Compound was confirmed by GC/MS and is quantitative. Use pesticide/PCB listed value.
B	This flag is used when the compound is found in the associated blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action.	Compound value may be semi-quantitative if it is <5x the blank concentration (<10x the blank concentrations for common laboratory artifacts: phthalates, methylene chloride, acetone, toluene, 2-butanone).

COMPOUND QUALIFIERS	DEFINITION	INTERPRETATION
E	This flag identifies compounds whose concentrations exceed the calibration range of the GC/MS instrument for the specific analysis. This flag will not apply to presticides/PCBs analyzed by GC/EC methods.	Compound value may be semi-quantitative. There should be another analysis with a D qualifier, which is to be used.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.	Alerts data user to a possible change in the CRDL. Data is quantitative.
A	This flag indicates that a TIC is a suspected aldol-condensation product.	Alerts data user of a laboratory artifact in the TICs only.
R	Results are unusable due to a major violation of QC protocol.	Compound value is not usable.
X	Cannot be confirmed by CLP protocols.	Compound may or may not be present.

ANALYTE QUALIFIERS		DEFINITION	INTERPRETATION
E	E	Estimated or not reported due to interference. See laboratory narrative.	Analyte or element was not detected, or value may be semiquantitative.
s	s	Analysis by Method of Standard Additions.	Value is quantitative.
R	N	Spike recoveries outside QC protocols, which indicates a possible matrix problem. Data may be baised high or low. See spike results and laboratory narrative.	Value may be quantitative or semi-quantitative.

* *	Duplicate value outside QC protocols which indicates a possible matrix problem.	Value may be quantitative or semi-quantitative.
+ +	Correlation coefficient for standard additions is less than 0.995. See review and laboratory narrative.	Data value may be biased.
[ ] B	Value is real, but is above instrument DL and below CRDL.	Value may be quantitative or semi-quantitative.
UJ	DL is estimated because of a QC protocol. DL is possibly above or below CRDL.	Compound or element was not detected.
J	Value is above CRDL and is an estimated value because of a QC protocol.	Value may be semiquantitative.
U U	Compound was analyzed for but not detected.	Compound was not detected at or above the CRDL.
M	Duplicate injection precision not met.	Value may be semiquantitative.
W	Post-digestion spike for furnace AA analysis is out of control limits (35-115%), while sample absorbance is <50% of spike absorbance.	Value may be semiquantitative.
R	Results are unusable due to a major violation of QC protocols.	Analyte value is not usable.

Waste Characteristics Identification*

A - Toxic	D - Persistent	G - Flammable	J - Explosive
B - Corrosive	E - Soluble	H - Ignitable	K - Reactive
C - Radioactive	F - Infectious	I - Highly Volatile	L - Incompatible

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			Date Collected	4/30/91	4/30/91	4/30/91	4/30/91	4/30/91
			Laboratory	State Lab	State Lab	State Lab	State Lab	State Lab
			Well Depth (Feet)	NA	NA	NA	NA	NA
			G&O Sample ID No.	SQSW01	SQSED01	SQSW02	SQSED02	SSQDW01
			NCDEHNR I.D. Nos.	16111/ 14708/ 14709	16112/ 14710	16113/ 14711/ 14712	16114/ 14713	16115/ 14714/ 14715
			Compounds Detected					
			VOLATILE ORGANICS					
			Matrix	Water	Soil	Water	Soil	Water
			Concentration Units	ug/l	ug/kg	ug/l	ug/kg	ug/l
Gas	A,D,G,I	OCC	chloromethane					
Gas	A,D,G,I	OCC	bromomethane					
Gas	A,D,G,I	OCC	vinyl chloride					
Gas	A,D,G,I	OCC	chloroethane					
Liquid	A,D,H,I	SOL	methylene chloride					
Liquid	E,H,I,A	SOL	acetone					
Liquid	A,H,I	SOL	carbon disulfide					
Liquid	A,D,G,I	SOL	1,1-dichloroethene					
Liquid	A,D,H,G	SOL	1,1-dichloroethane					
Liquid	A,D,G	SOL	1,2-dichloroethene (total)					
Liquid	A,D	SOL	chloroform					
Liquid	A,D,G	SOL	1,2-dichloroethane					
Liquid	A,E,G	SOL	2-butanone (MEK)					
Liquid	A,D	SOL	1,1,1-trichloroethane					

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			VOLATILE ORGANICS (CONT.)					
Liquid	A,D	SOL	carbon tetrachloride					
Liquid	A,D,G	SOL	vinyl acetate					
Liquid	A,D	OCC	bromodichloromethane					
Liquid	A,D,G	SOL	1,2-dichloropropane					
Liquid	A,D,G	SOL	cis-1,3-dichloropropene					
Liquid	A,D,G,B	SOL	trichloroethene					
Liquid	A,D	OCC	dibromochloromethane					
Liquid	A,D	SOL	1,1,2-trichloroethane					
Liquid	A,G	SOL	benzene					
Liquid	A,D,G	SOL	trans-1,3-dichloropropene					
Liquid	A,D	SOL	bromoform					
Liquid	A,E,G	SOL	4-methyl-2-pentanone					
Liquid	A,E,G	SOL	2-hexanone					
Liquid	A,D	SOL	tetrachloroethene					
Liquid	A,G,E	SOL	toluene					
Liquid	A,D,E	SOL	1,1,2,2-tetrachloroethane					
Liquid	A,D,G	SOL	chlorobenzene					
Liquid	A,G	SOL	ethylbenzene					
Liquid	A,D,G	OCC	styrene					
Liquid	A,G	SOL	xylenes (total)					
			Tentatively Identified Compounds					
			cyclotetrasiloxane, octameth					

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			SEMIVOLATILE ORGANICS					
			Matrix	Water	Soil	Water	Soil	Water
			Concentration Units	ug/l	ug/kg	ug/l	ug/kg	ug/l
S,thick1	A,B,E	OCC	phenol					
Liquid	A,D,B	OCC	bis(2-chloroethyl)ether					
Liquid	A,D,B	OCC	2-chlorophenol					
Liquid	A,D,H	SOL	1,3-dichlorobenzene					
Solid	A,D,H	OCC	1,4-dichlorobenzene					
Liquid	A,D,H	SOL	benzyl alcohol					
Liquid	A,D,H	OCC	1,2-dichlorobenzene					
Liquid	A,B	OCC	2-methylphenol					
	A,D	OCC	bis(2-chloroisopropyl)ether					
Liquid	A,B	OCC	4-methylphenol					
	A	OCC	n-nitroso-di-n-dipropylamine					
Solid	A,D	OCC	hexachloroethane					
Liquid	A,D	OCC	nitrobenzene					
Liquid	A,D	OCC	isophorone					
Solid	A,D	OCC	2-nitrophenol					
Solid	A,B	OCC	2,4-dimethylphenol					
Solid	A	OCC	benzoic acid					
	A,D	OCC	bis(2-chloroethoxy)methane					
Liquid	A,D	OCC	2,4-dichlorophenol					
Liquid	A,D	OCC	1,2,4-trichlorobenzene					
Solid	A	OCC	naphthalene					
Solid	A,D	OCC	4-chloroaniline					

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			SEMIVOLATILE ORGANICS (CONT.)					
Liquid	A,D,B	OCC	hexachlorobutadiene					
Solid	A,D	OCC	4-chloro-3-methylphenol					
Liquid	A,D	OCC	2-methylnaphthalene					
Liquid	A,D,B	OCC	hexachlorocyclopentadiene					
Solid	A,D	OCC	2,4,6-trichlorophenol					
Solid	A,D	OCC	2,4,5-trichlorophenol					
Liquid	A,D	OCC	2-chloronaphthalene					
Solid	A,D	OCC	2-nitroaniline					
Liquid	A,D	OCC	dimethylphthalate					
Solid	A,D	OCC	acenaphthylene					
Solid	A,D	OCC	2,6-dinitrotoluene					
Solid	A,D	OCC	3-nitroaniline					
Solid	A,D	OCC	acenaphthene					
Solid	A,D,G	OCC	2,4-dinitrophenol					
Solid	A,D	OCC	4-nitrophenol					
Solid	A,D	OCC	dibenzofuran					
Solid	A,D	OCC	2,4-dinitrotoluene					
Liquid	A,D	OCC	diethylphthalate					
	A,D	OCC	4-chlorophenyl-Phenylether					
Solid	A,D	OCC	fluorene					
Solid	A,D,E	OCC	4-nitroaniline					
Solid	A,D	OCC	4,6-dinitro-2-methylphenol					
Solid	A,D	OCC	n-nitrosodiphenylamine					
Liquid	A,D	OCC	4-bromophenyl-phenylether					

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			SEMIVOLATILE ORGANICS (CONT.)					
Solid	A,D	OCC	hexachlorobenzene					
Solid	A,D	OCC	pentachlorophenol					
Solid	A,D	OCC	phenathrene					
Solid	A,D	OCC	anthracene					
Liquid	A,D	OCC	di-n-butylphthalate					
Solid	A,D	OCC	fluoranthene					
Solid	A,D	OCC	pyrene					
Liquid	A,D	OCC	butylbenzylphthalate					
	A,D	OCC	3,3-dichlorobenzidine					
Solid	A,D	OCC	benzo[a]anthracene					
Solid	A,D	OCC	chrysene					
Liquid	A,D	OCC	bis(2-ethylhexyl)phthalate					
Liquid	A,D	OCC	di-n-octylphthalate					
Solid	A,D	OCC	benzo[b]fluoranthene					
Solid	A,D	OCC	benzo[k]fluoranthene					
Solid	A,D,K,L	OCC	benzo[a]pyrene					
Solid	A,D	OCC	indeno[1,2,3-cd]pyrene					
Solid	A,D	OCC	dibenz[a,h]anthracene					
Solid	A,D	OCC	benzo[g,h,i]perylene					
			Tentatively Identified Compounds					
			Unknown (total)					
			2,5-Hexanedione					
			3-Hexene-2,5-Dione					
			2,5-cyclohexadiene-1,4-dione					

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			PESTICIDES/PCBs					
			Matrix	NA	NA	NA	NA	NA
			Concentration Units	NA	NA	NA	NA	NA
Solid	A,D	PSD	alpha BHC	NA	NA	NA	NA	NA
Solid	A,D	PSD	beta BHC	NA	NA	NA	NA	NA
Solid	A,D	PSD	delta BHC	NA	NA	NA	NA	NA
Solid	A,D	PSD	gamma BHC (Lindane)	NA	NA	NA	NA	NA
Solid	A,D	PSD	Heptachlor	NA	NA	NA	NA	NA
Solid	A,D	PSD	Aldrin	NA	NA	NA	NA	NA
Solid	A,D	PSD	Heptachlor epoxide	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan I	NA	NA	NA	NA	NA
Solid	A,D,E	PSD	Dieldrin	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDE	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endrin	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan II	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDD	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endosulfan sulfate	NA	NA	NA	NA	NA
Solid	A,D	PSD	4,4'-DDT	NA	NA	NA	NA	NA
Solid	A,D	PSD	Methoxychlor (Mariate)	NA	NA	NA	NA	NA
Solid	A,D	PSD	Endrin ketone	NA	NA	NA	NA	NA
Solid	A,D	PSD	alpha Chlordane	NA	NA	NA	NA	NA
Solid	A,D	PSD	gamma Chlordane	NA	NA	NA	NA	NA
Solid	A,D	PSD	Toxaphene	NA	NA	NA	NA	NA

TABLE 1B

SUMMARY OF CHEMICAL ANALYSES FOR

THE E.R. SQUIBB & SONS SITE

NCD991278730

SAMPLE IDENTIFICATION

ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			PESTICIDES/PCBS (CONT.)					
Liquid	A,D	OCC	Aroclor 1016	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1221	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1232	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1242	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1248	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1254	NA	NA	NA	NA	NA
Liquid	A,D	OCC	Aroclor 1260	NA	NA	NA	NA	NA

TABLE 1B
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION
ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			ANALYTE DETECTED					
			Matrix	Water	Soil	Watr	Soil	Water
			Concentration Units	mg/l	mg/kg	mg/l	mg/kg	mg/l
Solid	A,D	MES	aluminum					
Solid	A,D	MES	antimony					
Solid	A,D	MES	arsenic					.02
Solid	A,D	MES	barium	0.04				.06
Solid	A,D	MES	beryllium					
Solid	A,D	MES	cadmium					
Solid	D	MES	calcium					
Solid	A,D	MES	chromium					
Solid	A,D	MES	cobalt					
Solid	A,D	MES	copper					
Solid	A,D	MES	iron					
Solid	A,D	MES	lead					
Solid	A,D	MES	magnesium					
Solid	A,D	MES	manganese					
Liquid	A,D	MES	mercury					
Solid	A,D	MES	nickel					
Solid	D	MES	potassium					
Solid	A,D	MES	selenium					
Solid	A,D	MES	silver					
Solid	D	MES	sodium					
Solid	A,D	MES	thallium					

TABLE 1B
SUMMARY OF CHEMICAL ANALYSES FOR
THE E.R. SQUIBB & SONS SITE
NCD991278730
SAMPLE IDENTIFICATION
ANALYZED BY THE STATE LABORATORY OF PUBLIC HEALTH

Physical State	Waste Characteristics*	Category	Sample Collection Information and Parameters	North of Site Background Surface Water Sample	North of Site Background Sediment Sample	Northwest of Site Downstream Surface Water	Northwest of Site Downstream Sediment Sample	Southeast of Site Foster Drinking Water Well
			ANALYTE DETECTED (CONT.)					
Solid	A,D	MES	vanadium					
Solid	A,D	MES	zinc					
Solid	A	IOC	cyanide					

NA - Not Analyzed

* - Concentrations significant, considered to be a release

[] - Below CRDL

APPENDIX B
SITE INSPECTION FORM

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 1 - SITE LOCATION AND INSPECTION INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

II. SITE NAME AND LOCATION

01 SITE NAME (Legal, common, or descriptive name of site)	02 STREET, ROUTE NO. OR SPECIFIC LOCATION IDENTIFIER				
E. R. Squibb & Sons	Flowers Road				
03 CITY	04 STATE	05 ZIP CODE	06 COUNTY	07 COUNTY CODE	08 CONG DIST
Kenly	NC	27542	Johnston	51	2

09 COORDINATES: LATITUDE 35° 35' 0.9" LONGITUDE 78° 08' 27"

10 TYPE OF OWNERSHIP (Check one): ☒ A. PRIVATE ☐ B. FEDERAL ☐ C. STATE ☐ D. COUNTY ☐ E. MUNICIPAL ☐ F. OTHER ☐ G. UNKNOWN

III. INSPECTION INFORMATION

01 DATE OF INSPECTION: 4 / 30 / 91 (MONTH DAY YEAR)

02 SITE STATUS: ☐ ACTIVE ☒ INACTIVE

03 YEARS OF OPERATION: 1978 (BEGINNING YEAR) / 1990 (ENDING YEAR) ___ UNKNOWN

04 AGENCY PERFORMING INSPECTION (Check all that apply): ☐ A. EPA ☐ B. EPA CONTRACTOR ___ (Name of firm) ☐ C. MUNICIPAL ☐ D. MUNICIPAL CONTRACTOR ___ (Name of firm) ☐ E. STATE ☒ F. STATE CONTRACTOR Greenhorne & O'Mara Inc. (Name of firm) ☐ G. OTHER ___ (Specify)

05 CHIEF INSPECTOR	06 TITLE	07 ORGANIZATION	08 TELEPHONE NO.
William Dixon	Environmental Engineer	G&O	(919) 782-9088
09 OTHER INSPECTORS	**10 TITLE**	**11 ORGANIZATION**	**12 TELEPHONE NO.**
Marie Fisher	Environmental Scientist	G&O	(301) 982-2800
Hunt Loftin	Environmental Engineer	G&O	(301) 982-2800
			( )
			( )
			( )

13 SITE REPRESENTATIVES INTERVIEWED	14 TITLE	15 ADDRESS	16 TELEPHONE NO
Ken Acres	Accounting Manager	P.O. Box 1000 Kenly, NC 27542	(919) 284-5131
			( )
			( )
			( )
			( )
			( )

17 ACCESS GAINED BY (Check one)	18 TIME OF INSPECTION	19 WEATHER CONDITIONS
☒ PERMISSION ☐ WARRANT	8:00 a.m.	Clear, warm

IV. INFORMATION AVAILABLE FROM

01 CONTACT	02 OF (Agency/Organization)	03 TELEPHONE NO.
Harvey Allen	NCDEHNR - Superfund Branch	(919) 733-2801

04 PERSON RESPONSIBLE FOR SITE INSPECTION FORM	05 AGENCY	06 ORGANIZATION	07 TELEPHONE NO.	08 DATE
Rachel Spangenberg		G&O	(301) 982-2800	6 / 22 / 91 (MONTH DAY YEAR)

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 2 - WASTE INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

WASTE STATES, QUANTITIES, AND CHARACTERISTICS

PHYSICAL STATES (Check all that apply)

- SOLID
- POWDER, FINES
- SLUDGE
- E SLURRY
- X F LIQUID
- G GAS
- OTHER _____ (Specify)

02 WASTE QUANTITY AT SITE (Measures of waste quantities must be independent)

TONS _____

CUBIC YARDS _____

NO. OF DRUMS _____

03 WASTE CHARACTERISTICS (Check all that apply)

- A TOXIC
- B CORROSIVE
- C RADIOACTIVE
- D PERSISTENT
- E SOLUBLE
- F INFECTIOUS
- G FLAMMABLE
- H IGNITABLE
- I HIGHLY VOLATILE
- J EXPLOSIVE
- K REACTIVE
- L INCOMPATIBLE
- M NOT APPLICABLE

WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			
OLW	OILY WASTE			
SOL	SOLVENTS	125,000	lbs/yr	
PES	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
HMS	HEAVY METALS			

HAZARDOUS SUBSTANCES (See Appendix for most frequently cited CAS Numbers)

CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 MEASURE OF CONCENTRATION
F002	Spent halog. solvents		stored in drums		
F005	Spend non-halog. solvents		stored in drums		
F003	Spent halog. solvents		stored in drums		

FEEDSTOCKS (See Appendix for CAS Numbers)

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

II. HAZARDOUS CONDITIONS AND INCIDENTS

01 [X] A GROUNDWATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED 2096 — 04 NARRATIVE DESCRIPTION

There are approximately 2096 residents within a four-mile radius of the site that depend on groundwater for their potable water supply.
Samples taken from a residential well detected arsenic and barium.

01 [ ] B SURFACE WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

There are no surface water intakes along the surface water path within 15 miles of the site.

01 [X] C CONTAMINATION OF AIR — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED 3109 — 04 NARRATIVE DESCRIPTION

No air samples were obtained at this time. If a release to air occurred, approximately 3109 residents within a four-mile radius could be affected.

01 [ ] D FIRE/EXPLOSIVE CONDITIONS — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

NA

01 [ ] E DIRECT CONTACT — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

NA

01 [X] F CONTAMINATION OF SOIL — 02 [ ] OBSERVED (DATE _____) — [X] POTENTIAL — [ ] ALLEGED
03 AREA POTENTIALLY AFFECTED 97 acres — 04 NARRATIVE DESCRIPTION

Sampling of soils on the site detected acetone, aluminum, chromium, cadmium, and vandium in concentrations above the background levels for these substances.

01 [ ] G DRINKING WATER CONTAMINATION — 02 [ ] OBSERVED (DATE _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

See above

01 [ ] H WORKER EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 WORKERS POTENTIALLY AFFECTED _____ — 04 NARRATIVE DESCRIPTION

NA

01 [ ] I POPULATION EXPOSURE/INJURY — 02 [ ] OBSERVED (DATE: _____) — [ ] POTENTIAL — [ ] ALLEGED
03 POPULATION POTENTIALLY AFFECTED: _____ — 04 NARRATIVE DESCRIPTION

See above

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND INCIDENTS

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

HAZARDOUS CONDITIONS AND INCIDENTS (Continued)

L. DAMAGE TO FLORA NARRATIVE DESCRIPTION	02 ☐ OBSERVED (DATE: _____)	☐ POTENTIAL	☐ ALLEGED
NA			
M. DAMAGE TO FAUNA NARRATIVE DESCRIPTION (Include names of species)	02 ☐ OBSERVED (DATE _____)	☐ POTENTIAL	☐ ALLEGED
NA			
N. CONTAMINATION OF FOOD CHAIN NARRATIVE DESCRIPTION	02 ☐ OBSERVED (DATE _____)	☐ POTENTIAL	☐ ALLEGED
NA			
O. UNSTABLE CONTAINMENT OF WASTES (Spills/Runoff/Standing liquids/Leaking drums) POPULATION POTENTIALLY AFFECTED _____	02 ☐ OBSERVED (DATE _____) 04 NARRATIVE DESCRIPTION	☐ POTENTIAL	☐ ALLEGED
NA			
P. DAMAGE TO OFFSITE PROPERTY NARRATIVE DESCRIPTION	02 ☐ OBSERVED (DATE _____)	☐ POTENTIAL	☐ ALLEGED
NA			
Q. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs NARRATIVE DESCRIPTION	02 ☐ OBSERVED (DATE _____)	☐ POTENTIAL	☐ ALLEGED
NA			
R. ILLEGAL/UNAUTHORIZED DUMPING NARRATIVE DESCRIPTION	02 ☐ OBSERVED (DATE _____)	☐ POTENTIAL	☐ ALLEGED
NA			

DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS

NA

TOTAL POPULATION POTENTIALLY AFFECTED: _____

COMMENTS

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

State Files
Field Notes

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION
PART 4 - PERMIT AND DESCRIPTIVE INFORMATION

I. IDENTIFICATION

01 STATE	02 SITE NUMBER
NC	D991278730

I. PERMIT INFORMATION

01 TYPE OF PERMIT ISSUED (Check all that apply)	02 PERMIT NUMBER	03 DATE ISSUED	04 EXPIRATION DATE	05 COMMENTS
☐ A. NPDES				
☐ B. UIC				
☐ C. AIR				Issued by N.C. Division of
☐ D. RCRA	NCD991278730			Environmental Management
☐ E. RCRA INTERIM STATUS				
☐ F. SPCC PLAN				
☐ G. STATE (Specify)				
☐ H. LOCAL (Specify)				
☐ I. OTHER (Specify)				
☐ J. NONE				

II. SITE DESCRIPTION

01 STORAGE/DISPOSAL (Check all that apply)	02 AMOUNT	03 UNIT OF MEASURE
☐ A. SURFACE IMPOUNDMENT		
☐ B. PILES		
☒ C. DRUMS, ABOVE GROUND	unknown	
☐ D. TANK, ABOVE GROUND	unknown	
☐ E. TANK, BELOW GROUND	4000	gallon
☐ F. LANDFILL		
☐ G. LANDFARM		
☐ H. OPEN DUMP		
☐ I. OTHER (Specify)		

04 TREATMENT (Check all that apply)
☐ A. INCENERATION
☐ B. UNDERGROUND INJECTION
☐ C. CHEMICAL/PHYSICAL
☐ D. BIOLOGICAL
☐ E. WASTE OIL PROCESSING
☒ F. SOLVENT RECOVERY
☐ G. OTHER RECYCLING/RECOVERY
☐ H. OTHER (Specify)

05 OTHER

☐ A. BUILDINGS ON SITE

06 AREA OF SITE

97 (Acres)

07 COMMENTS

IV. CONTAINMENT

01 CONTAINMENT OF WASTES (Check one)

☐ A. ADEQUATE, SECURE ☐ B. MODERATE ☐ C. INADEQUATE, POOR ☐ D. INSECURE, UNSOUND, DANGEROUS

02 DESCRIPTION OF DRUMS, DIKING, LINERS, BARRIERS, ETC

V. ACCESSIBILITY

01 WASTE EASILY ACCESSIBLE ☐ YES ☒ NO

02 COMMENTS

VI. SOURCES OF INFORMATION (Cite specific references, e.g. state files, sample analysis, reports)

1. State File

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

DRINKING WATER SUPPLY

DRINKING SUPPLY	SURFACE	WELL	02 STATUS: ENDANGERED	AFFECTED	MONITORED	03 DISTANCE TO SITE
AUNITY	A. ☒	B. ☐	A ☐	B. ☐	C ☐	A _____ (mi)
COMMUNITY	C. ☐	D ☒	D ☐	E ☐	F ☐	B _____ (mi)

GROUNDWATER

GROUNDWATER USE IN VICINITY (Check one)

A. ONLY SOURCE FOR DRINKING ☒ B. DRINKING (Other sources available) COMMERCIAL, INDUSTRIAL, IRRIGATION (No other water sources available) ☐ C. COMMERCIAL, INDUSTRIAL, IRRIGATION (Other sources available) ☐ D. NOT USED, UNUSEABLE

POPULATION SERVED BY GROUNDWATER 2096 | 03 DISTANCE TO NEAREST DRINKING WATER WELL 2,800 feet (mi)

04 DEPTH TO GROUNDWATER	05 DIRECTION OF GROUNDWATER FLOW	06 DEPTH TO AQUIFER OF CONCERN	07 POTENTIAL YIELD OF AQUIFER	08 SOLE SOURCE AQUIFER
45 (ft)	southwest	_____ (ft)	_____ (gpd)	☐ YES ☒ NO

DESCRIPTION OF WELLS (Including usage, depth, and location relative to population and buildings)

DISCHARGE AREA		11 DISCHARGE AREA	
YES	COMMENTS	☐ YES	COMMENTS
NO		☐ NO	

SURFACE WATER

SURFACE WATER USE (Check one)

A. RESERVOIR RECREATION DRINKING WATER SOURCE ☐ B. IRRIGATION, ECONOMICALLY IMPORTANT RESOURCES ☐ C. COMMERCIAL, INDUSTRIAL ☐ D. NOT CURRENTLY USED

AFFECTED POTENTIALLY AFFECTED BODIES OF WATER

NAME	AFFECTED	DISTANCE TO SITE
Little River	☐	6000 feet (mi)
	☐	_____ (mi)
	☐	_____ (mi)

DEMOGRAPHIC AND PROPERTY INFORMATION

TOTAL POPULATION WITHIN			02 DISTANCE TO NEAREST POPULATION
ONE (1) MILE OF SITE	TWO (2) MILES OF SITE	THREE (3) MILES OF SITE	
535 (NO OF PERSONS)	B 1497 (NO OF PERSONS)	C 2023 (NO OF PERSONS)	Approx 0.25 (mi)

NUMBER OF BUILDINGS WITHIN TWO (2) MILES OF SITE	04 DISTANCE TO NEAREST OFF-SITE BUILDING
14	Approx. 0.75 (mi)

POPULATION WITHIN VICINITY OF SITE (Provide narrative description of nature of population within vicinity of site (e.g., total number, density, distribution, and type)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 5 - WATER, DEMOGRAPHIC, AND ENVIRONMENTAL DATA

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

VI. ENVIRONMENTAL INFORMATION

01 PERMEABILITY OF UNSATURATED ZONE (Check one)

☐ A. 10^{-6} - 10^{-8} cm/sec ☐ B. 10^{-4} - 10^{-6} cm/sec ☐ C. 10^{-4} - 10^{-3} cm/sec ☐ D. GREATER THAN 10^{-3} cm/sec

02 PERMEABILITY OF BEDROCK (Check one)

☐ A. IMPERMEABLE (Less than 10^{-6} cm/sec) ☐ B. RELATIVELY IMPERMEABLE (10^{-4} - 10^{-6} cm/sec) ☐ C. RELATIVELY PERMEABLE (10^{-2} - 10^{-4} cm/sec) ☐ D. VERY PERMEABLE (Greater than 10^{-2} cm/sec)

03 DEPTH TO BEDROCK	04 DEPTH OF CONTAMINATED SOIL ZONE	05 SOIL pH
(ft)	(ft)	

06 NET PRECIPITATION	07 ONE YEAR 24 HOUR RAINFALL	08 SLOPE SITE SLOPE	DIRECTION OF SITE SLOPE	TERRAIN AVERAGE SLOPE
3.0 (in)	TWO 4.0 (in)	2 - 3 %	southwest	2 %

09 FLOOD POTENTIAL

☐ SITE IS IN _____ YEAR FLOODPLAIN

10 ☐ SITE IS ON BARRIER ISLAND, COASTAL HIGH HAZARD AREA, RIVERINE FLOODWAY

11 DISTANCE TO WETLANDS (5 acre minimum)

ESTUARINE: A. NA (mi)

OTHER: B. NA (mi)

12 DISTANCE TO CRITICAL HABITAT (of endangered species)

NA (mi)

ENDANGERED SPECIES. _____

13 LAND USE IN VICINITY

DISTANCE TO

COMMERCIAL/INDUSTRIAL	RESIDENTIAL AREAS, NATIONAL/STATE PARKS, FORESTS, OR WILDLIFE RESERVES	AGRICULTURAL LANDS: PRIME AG LAND	AGRICULTURAL LANDS: AG LAND
A. 0.75 (mi)	B. 0.25 (mi)	C. unknown (mi)	D. _____ (mi)

14 DESCRIPTION OF SITE IN RELATION TO SURROUNDING TOPOGRAPHY

The topography of the site is relatively flat with a 2 to 3 percent slope. Elevations at the site range from 480 to 500 feet above mean sea level.

VII. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. Climatic Atlas of the United States
2. USGS Topographic Maps
3. Soil Survey for Johnston County
4. State File
5. Field Notes

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 6 - SAMPLE AND FIELD INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

LES TAKEN

MPLE TYPE	01 NUMBER OF SAMPLES TAKEN	02 SAMPLES SENT TO	03 ESTIMATED DATE RESULTS AVAILABLE
ROUNDWATER	2	Industrial & Environmental Analysts, Inc.	6/91
RFACE WATER	2	State Analytical Laboratory	10/91
ASTE			
R			
UNOFF			
PILL			
OIL	3	Industrial & Environmental Analysts, Inc.	6/91
EGETATION			
THER (private well)	1	State Analytical Laboratory	10/91
(sediment)	2	State Analytical Laboratory	10/91

IELD MEASUREMENTS TAKEN

PE	02 COMMENTS

PHOTOGRAPHS AND MAPS

PE X GROUND AERIAL | 02 IN CUSTODY OF Greenhorne & O'Mara (Name of organization or individual)

MAPS	04 LOCATION OF MAPS
X YES NO	Greenhorne & O'Mara, Inc.

OTHER FIELD DATA COLLECTED (Provide narrative description)

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. Field Notes

FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 7 - OWNER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

I. CURRENT OWNER(S)

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER
E.R. Squibb & Sons			

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE
P.O. Box 4000			

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE
Princeton	NJ	08540			

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

01 NAME	02 D+B NUMBER	08 NAME	09 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	10 STREET ADDRESS (P.O. Box, RFD #, etc.)	11 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	12 CITY	13 STATE	14 ZIP CODE

II. PREVIOUS OWNER(S) (List most recent first)

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

01 NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER

03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE

05 CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

IV. REALTY OWNER(S) (If applicable, list most recent first)

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 8 - OPERATOR INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

CURRENT OPERATOR (Provide if different from owner) | **OPERATOR'S PARENT COMPANY** (If applicable)

NAME: E.R. Squibb & Sons	02 D+B NUMBER	10 NAME	11 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.): P.O. Box 1000	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
CITY: Kenly; 06 STATE: NC; 07 ZIP CODE: 27542		14 CITY	15 STATE; 16 ZIP CODE
YEARS OF OPERATION	09 NAME OF OWNER		

PREVIOUS OPERATOR(S) (List most recent first, provide only if different from owner) | **PREVIOUS OPERATORS' PARENT COMPANIES** (If applicable)

NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
CITY	06 STATE; 07 ZIP CODE	14 CITY	15 STATE; 16 ZIP CODE
YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
CITY	06 STATE; 07 ZIP CODE	14 CITY	15 STATE; 16 ZIP CODE
YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		
NAME	02 D+B NUMBER	10 NAME	11 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	12 STREET ADDRESS (P.O. Box, RFD #, etc.)	13 SIC CODE
CITY	06 STATE; 07 ZIP CODE	14 CITY	15 STATE; 16 ZIP CODE
YEARS OF OPERATION	09 NAME OF OWNER DURING THIS PERIOD		

V. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

EPA FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 9 - GENERATOR/TRANSPORTER INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

-SITE GENERATOR

NAME	02 D+B NUMBER	
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	
CITY	06 STATE	07 ZIP CODE

FF-SITE GENERATOR(S)

NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

V. TRANSPORTER(S)

NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE
NAME	02 D+B NUMBER	01 NAME	02 D+B NUMBER
STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE	03 STREET ADDRESS (P.O. Box, RFD #, etc.)	04 SIC CODE
CITY	06 STATE	07 ZIP CODE	05 CITY	06 STATE	07 ZIP CODE

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

AST RESPONSE ACTIVITIES

☐ A. WATER SUPPLY CLOSED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ B. TEMPORARY WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ C. PERMANENT WATER SUPPLY PROVIDED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ D. SPILLED MATERIAL REMOVED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ E. CONTAMINATED SOIL REMOVED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ F. WASTE REPACKAGED — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☒ G. WASTE DISPOSED ELSEWHERE — 02 DATE _____ 03 AGENCY _____
DESCRIPTION Every 90 days, wastes were transported off-site by Seaboard Chemical Co. Carochem, Thermalkem, & Tricil Recovery Services were also known to have handled waste. Butyl alcohol was regularly shipped to the E.R. Squibb plant in New Brunswick, NJ.

☐ H. ON SITE BURIAL — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ I. IN SITU CHEMICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ J. IN SITU BIOLOGICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ K. IN SITU PHYSICAL TREATMENT — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ L. ENCAPSULATION — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ M. EMERGENCY WASTE TREATMENT — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ N. CUTOFF WALLS — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ O. EMERGENCY DIKING/SURFACE WATER DIVERSION — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ P. CUTOFF TRENCHES/SUMP — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

☐ Q. SUBSURFACE CUTOFF WALL — 02 DATE _____ 03 AGENCY _____
DESCRIPTION
NA

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 10 - PAST RESPONSE ACTIVITIES

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

PAST RESPONSE ACTIVITIES (Continued)

01 ☐ R. BARRIER WALLS CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ S. CAPPING/COVERING — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ T. BULK TANKAGE REPAIRED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ U. GROUT CURTAIN CONSTRUCTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ V. BOTTOM SEALED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ W. GAS CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ X. FIRE CONTROL — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ Y. LEACHATE TREATMENT — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ Z. AREA EVACUATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ 1. ACCESS TO SITE RESTRICTED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ 2. POPULATION RELOCATED — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

01 ☐ 3. OTHER REMEDIAL ACTIVITIES — 02 DATE _____ — 03 AGENCY _____
04 DESCRIPTION
NA

SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

FORM 2070-13 (7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE
SITE INSPECTION REPORT
PART 11 - ENFORCEMENT INFORMATION

I. IDENTIFICATION	
01 STATE	02 SITE NUMBER
NC	D991278730

II. ENFORCEMENT INFORMATION

01 PAST REGULATORY/ENFORCEMENT ACTION ☐ YES ☒ NO

02 DESCRIPTION OF FEDERAL, STATE, LOCAL REGULATORY/ENFORCEMENT ACTION

III. SOURCES OF INFORMATION (Cite specific references, e.g., state files, sample analysis, reports)

1. State File

FORM 2070-13 (7-81)

APPENDIX C
ANALYTICAL DATA

DATA ANALYZED BY NORTH CAROLINA STATE LABORATORY OF PUBLIC HEALTH

SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

Chain of Custody Record

Hazardous Waste Materials

CERCLA RECEIVED
JUL 19 1991
SUPERFUND SECTION

cation of Sampling: ✓ Generator ___ Transporter ___ Treatment Faci
___ Storage Facility ___ Disposal Facility ___ Landfill
___ Other: ___

pany's Name Squibb & Sons Telephone( ) -

ress Squibb Road, Kenly, NC

llector's Name Harvey Allen (signature) Telephone(919) 733-2801

e Sampled 4/30/91 Time Sampled -

e of Process Generating Waste ___

id Information

___

___

le Sample No. 16111 16112 16113 16114 16115 ___ ___

___ ___ ___ ___ ___ ___ ___

in of Possession:

signature	title	inclusive dates
Harvey H. Allen	Env. Eng.	4/30/91 - 5/1/91
Paul Childers	Chem. Super.	5/1/91

sults reported

signature	title	date
[illegible]	Chemist	18 JUL 91

structions: Complete all applicable information including signatures, and submit with analysis request forms.

C. Department of Human Resources
ision of Health Services

CERCLA

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

umber NCD 991 278 730 Field Sample Number 16111
me of Site Squibb & Sons Site Location Kenly, NC
llected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:00

pe of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SW-01 (upstream) cubes
✓ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
JUN 14 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		✓ Arsenic	<0.02	✓ Silver	<0.05
___ Barium		✓ Barium	0.04	___ Sulfates	
___ Cadmium		✓ Cadmium	<0.020	___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		✓ Chromium	<0.01	___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		✓ Lead	<0.02		
		___ Manganese			
		✓ Mercury	<0.0002		
		___ Nitrate			
		✓ Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received ___ Date Reported 17-June 91
ate Extracted ___ Date Analyzed ___
eported By [signature] Lab Number 009132 MAY 291

HS 3191 (Revised 7/85)

CERCLA

N.C. Department of Human Resources
Division of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

RECEIVED
JUL 19 1991
SUPERFUND SECTION

Number NCD 991 278 730 Field Sample Number

Site of Site Squibb & Sons Site Location Kenly, NC

Collected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:00

Type of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SED-01 (upstream) 250 ml
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
✓ Other (4) Sediment	___ Other (8)	

INORGANIC CHEMISTRY

ppm: X1000

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ Arsenic	Equipment	✓ Arsenic	<4	✓ Silver	<20
✓ Barium	Failure -	✓ Barium	<8	Sulfates	
✓ Cadmium	insufficient	✓ Cadmium	<16	Zinc	
Chromium	sample material	Chloride		Ph	
✓ Lead	for reruns	✓ Chromium	<20	Conductivity	
✓ Mercury	WCW	Copper		TDS	
✓ Selenium		Fluoride		TOC	
✓ Silver		Iron			
		✓ Lead	<20		
		Manganese			
		✓ Mercury	<0.09		
		Nitrate			
		✓ Selenium	<4		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received Date Reported

Date Extracted Date Analyzed

Reported By Lab Number 009135 MAT 291

DHS 3191 (Revised 7/85)

CERCLA

N. C. Department of Human Resources
Division of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Heal
P. O. Box 280
306 N. Wilmington Stre
Raleigh, 276

Number NCD 991 278 730 Field Sample Number 16113

Name of Site Squibb & Sons Site Location Kenly, NC

Collected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:30

Type of Sample:

Environmental	Concentrate
___ Groundwater (1)	___ Solid (5)
✓ Surface Water (2)	___ Liquid (6)
___ Soil (3)	___ Sludge (7)
___ Other (4)	___ Other (8)

Comments: SW-02 (downstream) cubes

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JUN 1 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/l	Parameter	Results mg/l	Parameter	Results mg/l
Arsenic		✓ Arsenic	<0.02	✓ Silver	<0.05
Barium		✓ Barium	<0.04	Sulfates	
Cadmium		✓ Cadmium	<0.030	Zinc	
Chromium		Chloride		Ph	
Lead		✓ Chromium	<0.01	Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		✓ Iron			
		Lead	<0.02		
		✓ Manganese			
		✓ Mercury	<0.0002		
		Nitrate			
		✓ Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/l	Parameter	Results mg/l	Parameter	Results mg/l
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/l
Gross Alpha	
Gross Beta	

Date Received ___ Date Reported ___

Date Extracted ___ Date Analyzed ___

Reported By ___ Lab Number 009133 MAY 291

DHS 3191 (Revised 7/85)

CERCLA

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number NCD 991 278 730 Field Sample Number 16114

me of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:30

pe of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SED-02 (downstream) 250 ml
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
✓ Other (4) Sediment	___ Other (8)	

RECEIVED
JUL 19 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ Arsenic	Equipment	✓ Arsenic	<4	✓ Silver	<20
✓ Barium	Failure -	✓ Barium	<8	Sulfates	
✓ Cadmium	insufficient	✓ Cadmium	<16	Zinc	
✓ Chromium	sample material	Chloride		Ph	
✓ Lead	for rerun -	✓ Chromium	<20	Conductivity	
✓ Mercury	WCW	Copper		TDS	
✓ Selenium		Fluoride		TOC	
Silver		Iron			
		✓ Lead	<19		
		Manganese			
		✓ Mercury	<0.1		
		Nitrate			
		✓ Selenium	<4		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Received ___ Date Reported ___

ate Extracted ___ Date Analyzed ___

eported By ___ Lab Number 009136 MAY 291

HS 3191 (Revised 7/85)

CERCLA

C. Department of Human Resources
ision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Healt
P. O. Box 2804
306 N. Wilmington Stree
Raleigh, 2761

umber NCD 991 278 730 Field Sample Number 16115
me of Site Squibb & Sons Site Location Kenly, NC
llected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 10:30

pe of Sample:

Environmental	Concentrate
✓ Groundwater (1)	___ Solid (5)
___ Surface Water (2)	___ Liquid (6)
___ Soil (3)	___ Sludge (7)
___ Other (4)	___ Other (8)

Comments: DW-01 (Foster Well) cubes

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JUN 2 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		✓ Arsenic	0.02	✓ Silver	<0.05
Barium		✓ Barium	0.016	Sulfates	
Cadmium		✓ Cadmium	<0.010	Zinc	
Chromium		Chloride		Ph	
Lead		✓ Chromium	<0.01	Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		✓ Lead	<0.01		
		Manganese			
		✓ Mercury	<0.0002		
		Nitrate			
		✓ Selenium	<0.005		

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Received ___ Date Reported ___
ate Extracted ___ Date Analyzed ___
eported By ___ Lab Number 009134 MAY 291

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C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number NCD 991 278 730 Field Sample Number 14708

of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:00

/pe of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SW-01 (upstream) VOA
✓ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

RECEIVED
JUN 2 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received 5-1-91 Date Reported 6-20-91

Date Extracted Date Analyzed 6-18-91 mw

eported By John L. Neal Lab Number 911573

HS 3191 (Revised 7/85) #911573 - 911580

C. Department of Human Resources
ivision of Health Services

CERCLA

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number NCD 991 278 730 Field Sample Number 14709

ame of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:00

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SW-01 (upstream) 2L
✓ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

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JUN [illegible] 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
✓ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Date Received ___ Date Reported ___

Date Extracted 5-15-91 AA, JM Date Analyzed 6-19-91 BD

Reported By ___ Lab Number 911574

HS 3191 (Revised 7/85)

CERCLA

..C. Department of Human Resources
..ivision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Healti
P. O. Box 2804
306 N. Wilmington Stree
Raleigh, 2761

..lumber NCD 991 278 730 Field Sample Number 14710
..lame of Site Squibb & Sons Site Location Kenly, NC
..ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:00

..ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SED-01 (upstream) VOA/Ext
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
✓ Other (4) Sediment	___ Other (8)	

RECEIVED
JUN 2.. 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received ___ Date Reported ___
Date Extracted 5-22-91 AA Date Analyzed PT 6-17-91 MMC BNA 6-20-91 BD
Reported By ___ Lab Number ___ 911575

DHS 3191 (Revised 7/85)

CERCLA

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number NCD 991 278 730 Field Sample Number 14711

ame of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:30

ype of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SW-02 (downstream) Vol
✓ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

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JUN 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received ___ Date Reported ___

Date Extracted ___ Date Analyzed 6-18-91 TWS

Reported By ___ Lab Number 911576

DHS 3191 (Revised 7/85)

CERCLA

C. Department of Human Resources
.vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 2804
306 N. Wilmington Stree
Raleigh, 2761

)Number NCD 991 278 730 Field Sample Number 14712

of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:30

/pe of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SW-02 (downstream) 2L
✓ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

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JUN 1 - 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ P&T:GC/MS		___ EDB		___ Methoxychlor	
✓ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Date Received ___ Date Reported ___

Date Extracted 5-15-91 AA, JM Date Analyzed 6-19-91 BD

Reported By ___ Lab Number 911577

DHS 3191 (Revised 7/85)

CERCLA

:. Department of Human Resources
sion of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

mber NCD 991 278 730 Field Sample Number 14713

ne of Site Squibb & Sons Site Location Kenly, NC

lected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 9:30

e of Sample:

Environmental	Concentrate	Comments
___ Groundwater (1)	___ Solid (5)	SED-02 (downstream) VOA/Ext
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
✓ Other (4) Sediment	___ Other (8)	

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JUN 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ P&T:GC/MS		___ EDB		___ Methoxychlor	
✓ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received ___ Date Reported ___

ate Extracted 5-22-91 AA Date Analyzed PT 6-17-91 MW BNA 6-20-91 BD

eported By ___ Lab Number 911578

HS 3191 (Revised 7/85)

CERCLA

C. Department of Human Resources
vision of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Health
P. O. Box 28047
306 N. Wilmington Street
Raleigh, 27611

Number NCD 991 278 730 Field Sample Number 14714

ame of Site Squibb & Sons Site Location Kenly, NC

ollected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 10:30

ype of Sample:

Environmental	Concentrate	Comments
✓ Groundwater (1)	___ Solid (5)	DW-01 (Foster Well) VOA
___ Surface Water (2)	___ Liquid (6)	
___ Soil (3)	___ Sludge (7)	
___ Other (4)	___ Other (8)	

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JUN 1991
SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
___ Arsenic		___ Arsenic		___ Silver	
___ Barium		___ Barium		___ Sulfates	
___ Cadmium		___ Cadmium		___ Zinc	
___ Chromium		___ Chloride		___ Ph	
___ Lead		___ Chromium		___ Conductivity	
___ Mercury		___ Copper		___ TDS	
___ Selenium		___ Fluoride		___ TOC	
___ Silver		___ Iron			
		___ Lead			
		___ Manganese			
		___ Mercury			
		___ Nitrate			
		___ Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
✓ P&T:GC/MS		___ EDB		___ Methoxychlor	
___ Acid:B/N Ext.		___ PCB's		___ Toxaphene	
___ TOX		___ Petroleum		___ 2,4-D	
		___ Endrin		___ 2,4,5-TP (silvex)	
		___ Lindane			

MICROBIOLOGY

Parameter
___ (MF) Coliform Colonies/100mls
___ (MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
___ Gross Alpha	
___ Gross Beta	

Received ___ Date Reported ___

Date Extracted ___ Date Analyzed 6-18-91 TW

Reported By ___ Lab Number 911579

DHS 3191 (Revised 7/85)

CERCLA

N. C. Department of Human Resources
Division of Health Services

SAMPLE ANALYSES REQUEST

State Laboratory of Public Heal
P. O. Box 280-
306 N. Wilmington Stre
Raleigh, 276

Number NCD 991 278 730 Field Sample Number 14715

Name of Site Squibb & Sons Site Location Kenly, NC

Collected By Harvey Allen ID# 76 Date Collected 4/30/91 Time 10:30

Type of Sample:

Environmental	Concentrate	Comments
✓ Groundwater (1)	Solid (5)	DW-01 (Foster well) 2L
Surface Water (2)	Liquid (6)	
Soil (3)	Sludge (7)	
Other (4)	Other (8)	

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SUPERFUND SECTION

INORGANIC CHEMISTRY

Extractables		Total			
Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
Arsenic		Arsenic		Silver	
Barium		Barium		Sulfates	
Cadmium		Cadmium		Zinc	
Chromium		Chloride		Ph	
Lead		Chromium		Conductivity	
Mercury		Copper		TDS	
Selenium		Fluoride		TOC	
Silver		Iron			
		Lead			
		Manganese			
		Mercury			
		Nitrate			
		Selenium			

ORGANIC CHEMISTRY

Parameter	Results mg/1	Parameter	Results mg/1	Parameter	Results mg/1
P&T:GC/MS		EDB		Methoxychlor	
✓ Acid:B/N Ext.		PCB's		Toxaphene	
TOX		Petroleum		2,4-D	
		Endrin		2,4,5-TP (silvex)	
		Lindane			

MICROBIOLOGY

Parameter
(MF) Coliform Colonies/100mls
(MPN) Coliform Colonies/100mls

RADIOCHEMISTRY

Parameter	Results PCi/1
Gross Alpha	
Gross Beta	

Date Received

Date Reported

Date Extracted 5-15-91 AA,JM

Date Analyzed 6-19-91 BD

Reported By

Lab Number 911580

DHS 3191 (Revised 7/85)

SOLID AND HAZARDOUS WASTE MANAGEMENT BRANCH

Chain of Custody Record CERCLA

Hazardous Waste Materials

cation of Sampling: ✓ Generator ___ Transporter ___ Treatment Faci
___ Storage Facility ___ Disposal Facility ___ Landfill
___ Other: ___

RECEIVED
JUN 2 - 1991
SUPERFUND SECTION

mpany's Name Squibb & Sons Telephone(___)

dress Squibb Road, Kenly, NC

llector's Name Harvey Allen (signature) Telephone(919) 733-2801

te Sampled 4/30/91 Time Sampled –

pe of Process Generating Waste

eld Information

ple Sample No. 14708 14709 14710 14711 14712 14713 14714
14715

ain of Possession:

signature	title	inclusive dates
Harvey Allen	Env. Eng.	4/30/91 - 5/1/91
William Clement	Chemist	5-1-91

sults reported

signature	title	date
John L Real	Chemist	6-20-91

nstructions: Complete all applicable information including signatures, and submit with analysis request forms.

STATE LABORATORY OF PUBLIC HEALTH
DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES COMPOUND	LAB NO	911574	911575	911577	911578	911580	
	FIELD #	14709	14710	14712	14713	14715	
	TYPE	(2)	(4)	(2)	(4)	(1)	( )
	UNITS	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	µg/l µg/kg
nitrosodimethylamine	10/330	u	u	u	u	u	
s(2-chloroethyl)ether							
chlorophenol							
enol							
3-dichlorobenzene							
4-dichlorobenzene							
2-dichlorobenzene							
s(2-chloroisopropyl)ether							
xachloroethane							
nitroso-di-n-propylamine							
trobenzene							
ophorone							
nitrophenol							
4-dimethylphenol							
s(2-chloroethoxy)methane							
4-dichlorophenol							
2,4-trichlorobenzene							
phthalene							
xachlorobutadiene							
chloro-m-cresol							
xachlorocyclopentadiene							
4,6-trichlorophenol							
oronaphthalene							
phthylene							
methyl phthalate							
6-dinitrotoluene							
enaphthene							
4-dinitrophenol	50/1650						
4-dinitrotoluene	10/330						
nitrophenol	50/1650						
uorene	10/330						
chlorophenylphenylether							
ethyl phthalate							
6-dinitro-o-cresol	50/1650						
phenylamine							
obenzene							
bromophenylphenylether	10/330						
xachlorobenzene	10/330						
ntachlorophenol	50/1650						
enanthrene	10/330						
thracene							
butyl phthalate							
uoranthene							

MDL
H_2O/SOIL

- Estimated value.
- Actual value is known to be less than value given.
- Actual value is known to be greater than value given.
- Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
- Not analyzed.
- Tentative identification.
- On NRDC List of Priority Pollutants.

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DIVISION OF HEALTH SERVICES, N.C. DEPARTMENT OF HUMAN RESOURCES
P.O. BOX 28047 - 306 N. WILMINGTON, ST., RALEIGH, N.C. 27611

ORGANIC CHEMICAL ANALYSIS

BASE/NEUTRAL AND ACID EXTRACTABLES	LAB NO	911574	911575	911577	911578	911580	
	FIELD #	14709	14710	14712	14713	14715	
COMPOUND	TYPE	(2)	(4)	(2)	(4)	(1)	( )
	UNITS	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	~~µg/l~~ µg/kg	µg/l ~~µg/kg~~	µg/l µg/kg
pyrene	10/330	U	U	U	U	U	
benzidine	50/1650						
butyl benzyl phthalate	10/330						
benz(a)anthracene							
chrysene							
3,3-dichlorobenzidine	50/1650						
bis(2-ethylhexyl)phthalate	10/330						
di-n-octyl phthalate	10/330						
benzo(b)fluoranthene	50/1650						
benzo(k)fluoranthene							
benzo(a)pyrene							
indeno(1,2,3-cd)pyrene							
dibenzo(a,h)anthracene							
benzo(g,h,i)perylene							
aniline	50/1650	U	U	U	U	U	
benzoic acid							
benzyl alcohol							
4-chloroaniline							
dibenzofuran	10/330						
2-methylnaphthalene							
2-methylphenol							
4-methylphenol							
2-nitroaniline	50/1650						
3-nitroaniline							
4-nitroaniline							
2,4,5-trichlorophenol							

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MDL
H_2O/SOIL

J - Estimated value.
K - Actual value is known to be less than value given.
L - Actual value is known to be greater than value given.
U - Material was analyzed for but not detected. The number is the Minimum Detection Limit. MDL
NA - Not analyzed.
1/ - Tentative identification.
2/ - On NRDC List of Priority Pollutants.

N.C. Division of Health Services
DHS 3068-0 (4/86 Laboratory)

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ORGANIC CHEMICAL ANALYSIS

PURGEABLE COMPOUNDS	LAB NO	911573/	911575/	911576/	911578/	911579/	
	FIELD #	14708	14710	14711	14713	14714	
COMPOUND	TYPE	(2)	(4)	(2)	(4)	(1)	( )
	UNITS	(µg/l) µg/kg	µg/l (µg/kg)	(µg/l) µg/kg	µg/l (µg/kg)	(µg/l) µg/kg	µg/l µg/kg
chloromethane	10 ppb	u	u	u	u	u	
bromomethane	10						
dichlorodifluoromethane	5						
vinyl chloride	10						
chloroethane	10						
methylene chloride	5						
trichlorofluoromethane							
ethene, 1,1-dichloro							
ethane, 1,1-dichloro-							
1,2-trans-dichloroethene							
chloroform							
ethane, 1,2-dichloro-							
ethane, 1,1,1-trichloro-							
carbontetrachloride							
bromodichloromethane							
propane, 1,2-dichloro-							
1,3-trans-dichloropropene							
trichloroethylene							
chlorodibromomethane							
benzene							
ethane, 1,1,2-trichloro-							
1,3-cis-dichloropropene							
2-chloroethyl vinyl ether	10						
bromoform	10						
ethane, 1,1,2,2-tetrachloro-	5						
ethene, tetrachloro-							
toluene							
chlorobenzene							
ethylbenzene							
acetone	10	u	u	u	u	u	
2-butanone	10						
carbondisulfide	5						
2-hexanone	10						
4-methyl-2-pentanone	10						
styrene	5						
vinyl acetate	10						
xylenes (total)	5						
MTBE	5	trace					
	MDL						

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J - Estimated value.
< - Actual value is known to be less than value given.
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N.C. Division of Health Services
DHS 3068-O (4/86 Laboratory)

DATA ANALYZED BY IEA

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