WSRC-RP-93-287

FINAL REPORT:

STRATIGRAPHIC MAPS OF THE GENERAL SEPARATIONS AREA (GSA), SAVANNAH RIVER SITE (SRS), AIKEN, SOUTH CAROLINA (U)

January 29, 1993

Westinghouse Savannah River Company
Environmental Restoration
Aiken, SC 29808

WSRC-RP-93-287

FINAL REPORT:

STRATIGRAPHIC MAPS OF THE GENERAL SEPARATIONS AREA (GSA), SAVANNAH RIVER SITE (SRS), AIKEN, SOUTH CAROLINA

By:

P.A. Thayer
A.D. Smits
M.K. Harris
M.B. Amidon
C.M. Lewis

Publication Date:
January 29, 1993

Westinghouse Savannah River Company
Environmental Restoration
Aiken, SC 29808

ABSTRACT

Information regarding the lateral and vertical sedimentologic variations within hydrostratigraphic units is essential for accurate modeling of ground-water flow and contaminant transport. Data from detailed core descriptions for 115 wells and borings are used to construct sub-surface lithofacies maps of the uppermost regulatory aquifer beneath the General Separations Area at the Savannah River Site. Hydrostratigraphic units examined include the Gordon Aquifer, Gordon Confining Unit, and the "lower" aquifer zone and "tan clay" confining zone of the Upper Three Runs Aquifer. A total of 16 lithofacies maps are constructed. The maps include distribution of mud and sand beds, mud- and sand-bed thickness, mud and sand-bed percentage maps, sand/mud ratio and facies-triangle maps. The maps illustrate the areal distribution of sand and mud within each hydrostratigraphic unit. This information is useful for determining preferential fluid-migration pathways within aquifers or through confining units. The lithofacies maps are a useful tool in evaluating hydrostratigraphic units when used in conjunction with whole-unit isopach maps and hydrologic maps. A good distribution of control points greatly enhances the effectiveness of this method.

TABLE OF CONTENTS

TABLE OF CONTENTS (Continued)

LIST OF FIGURES

Page

LIST OF FIGURES (Continued)

Page

LIST OF TABLES

LIST OF APPENDICES

LIST OF APPENDICES (Continued)

FINAL REPORT:

STRATIGRAPHIC MAPS OF THE GENERAL SEPARATIONS AREA (GSA), SAVANNAH RIVER SITE (SRS), AIKEN, SOUTH CAROLINA

January 29, 1993

Prepared By
Science Applications International Corporation
360 Bay Street, Suite 200
Augusta, Georgia 30901

1. INTRODUCTION

1.1. Background

The Savannah River Site (SRS) is a U.S. Department of Energy (DOE) facility that occupies 300 square miles within Aiken, Barnwell, and Allendale counties in southwestern South Carolina (Figure 1). The site was set aside in 1950 as a controlled area for the production of nuclear materials for national defense. The DOE and its contractors are responsible for the operation of the SRS. The SRS is currently managed and operated by the Westinghouse Savannah River Company (WSRC). The General Separations Area (GSA) is located in the central SRS and includes the F- and H-Areas and the Burial Ground Complex (Figure 2). The GSA contains several sites that are undergoing environmental assessments and/or closure under State and Federal regulations.

A significant part of these environmental assessments includes the characterization of the hydrogeology of the subsurface. This hydrogeological characterization involves evaluation of the hydrostratigraphy of the site and the modeling of ground-water flow and potential

contaminant transport from releases by these facilities. Such models require extensive knowledge of the geology of the media through which the water is moving. Subsurface geologic mapping is one method by which this knowledge may be obtained.

Science Applications International Corporation has been contracted by Westinghouse Savannah River Company's Environmental Restoration Department (WSRC-ER) to compile a series of subsurface maps that illustrate lateral variations in sedimentologic character of the uppermost hydrostratigraphic units beneath the GSA. This study will also evaluate the applicability of these types of maps to the evaluation of the specific hydrostratigraphic units and as aids in developing more accurate ground-water models of the GSA.

1.2. **Description of the Study Area**

The SRS is located in south-central South Carolina approximately 100 miles from the Atlantic Coast. The site is centered 22.5 miles southeast of Augusta, Georgia, and is contained within the Upper Atlantic Coastal Plain Physiographic Province (Figure 1). The SRS is bounded on the southwest by the Savannah River (Figure 1). The GSA is located in the central part of the SRS and is bounded on the north by Upper Three Runs Creek and on the south by Fourmile Creek (Figure 2). The GSA has low to moderate topographic relief and is drained by several unnamed perennial streams. The area has been the subject of intense geologic and hydrologic study during the past several years and contains an impressive array of borings and monitoring wells. This study focuses on the area bounded by SRS Northings 67,000 and 80,000, and SRS Eastings 47,000 and 68,000.

1.3. **Geology of the Study Area**

The SRS is underlain by sediments of the Atlantic Coastal Plain (Figure 3). These sediments range from Late Cretaceous to Miocene in age and comprise layers of sand, muddy sand, and mud with subordinate calcareous sediments. The mapping done in this study examines the sedimentary strata above the Ellenton Formation. These include, in ascending order, the Williamsburg, Fishburne, Congaree, Warley Hill, Santee Limestone, and Dry Branch Formations, Tobacco Road Sand, and "upland" unit (Figure 3). A brief discussion of the geology of these units is presented in the following section. Detailed descriptions of the

geology of the SRS and GSA can be found in several recent reports (Colquhoun and others, 1983; Fallaw and others, 1990; Aadland and others, 1991; Dennehy and others, 1989; WSRC, 1991; WSRC, 1992).

1.4. **Hydrostratigraphy of the Study Area**

The hydrostratigraphy of the SRS has been subject to several different classifications over the years. Most recently, Aadland and others (1992) have established a hydrostratigraphic nomenclature for the alpha-numeric units proposed by Aadland and Bledsoe (1990) and Bledsoe and others (1990). The nomenclature of Aadland and others (1992) uses the concepts of the alpha-numeric system in terms of unit delineation, but proposes formal names for the different units. This report utilizes the hydrostratigraphy of Aadland and others (1992). This nomenclature is correlated to the local lithostratigraphy in Figure 3. A thorough description and review of the hydrostratigraphy of the SRS region are available in Aadland and others (1992).

The hydrostratigraphic nomenclature of Aadland and others (1992) allows for the informal break-down of aquifer and confining units into localized aquifer and confining "zones". These zones exist at the local level where site-specific conditions demand a higher resolution of the hydrostratigraphy. The zones are informally named with the name placed in quotation marks. Because they are informal, the zone names are not capitalized unless they are named for a specific place or area.

This study concentrates on the hydrostratigraphic units within the Floridan Aquifer System as found beneath the GSA. In this part of the SRS, the Floridan Aquifer System constitutes the "uppermost aquifer" according to the RCRA Ground Water Monitoring Technical Enforcement Guidance Document (TEGD)(Aadland and others, 1991). This is significant in that it is the reason for studying these upper hydrostratigraphic units in conjunction with the environmental assessment of sites within the GSA.

1.4.1. *Gordon Aquifer*

The lowermost unit addressed in this report is the Gordon Aquifer. The Gordon Aquifer is equivalent to Aquifer Unit IIA of Harris and others (1990) and Aadland and others (1991). Beneath the GSA, this unit is made up of the loose sand and clayey sand of the Congaree Formation and, where present, the sandy parts of the underlying Fishburne and Williamsburg Formations (Aadland and others, 1992). The sand within the Gordon Aquifer is yellowish to grayish orange in color and is sub- to well-rounded, moderately to poorly sorted, and medium to coarse-grained. Pebbly layers and zones of iron and silica cementation are common. Small (less than 6 inches in thickness) clay interbeds are often present near the base of this unit. Small amounts of calcareous sediment have been found sporadically within the Gordon Aquifer in this area.

In the GSA, the Gordon Aquifer overlies the Meyers Branch Confining System (Confining System I-II of Harris and others (1990) and Aadland and others (1991)). The base of the Gordon Aquifer is defined by the contact between loose sand of the Congaree, Fishburne, and Williamsburg Formations and dense clay and sandy clay of the Ellenton Formation. In several locations, clay within the Fishburne Formation is sufficiently thick to serve as the upper boundary of the Meyers Branch Confining System (Aadland and others, 1992).

1.4.2. *Gordon Confining Unit*

The Gordon Aquifer is separated from the Upper Three Runs Aquifer by the Gordon Confining Unit (Figure 3). This unit is commonly referred to as the "green clay" in previous SRS literature and is equivalent to Confining Unit IIA-IIB of Harris and others (1990) and Aadland and others (1991). The Gordon Confining Unit consists of sediment of the Warley Hill Formation. The sediment includes fine-grained, silty and clayey sand, sandy clay and clay. The clay is stiff to hard and is sometimes fissile. Glauconite is common and imparts a distinctive greenish cast to these sediments, hence the informal name "green clay" for this unit. Zones of silica-cemented sand and clay are noted in some cores from the GSA. In the vicinity of the GSA, the Gordon Confining Unit includes some calcareous sediment, primarily calcarenaceous sand and clayey sand with subordinate calcarenaceous and micritic clays.

1.4.3. *Upper Three Runs Aquifer*

The Upper Three Runs Aquifer includes all sediment from the water table down to the top of the Gordon Confining Unit (Figure 3) (Aadland and others, 1992). In the GSA, the Upper Three Runs Aquifer is equivalent to Aquifer Unit IIB of Harris and others (1990) and Aadland and others (1991) and includes part of the "upland" unit, the Tobacco Road Sand, Dry Branch Formation, Clinchfield Formation, and Santee Limestone (Figure 3). Beneath the GSA, the Upper Three Runs Aquifer is divided into three informal hydrostratigraphic zones. The "tan clay" confining zone separates the "lower" and "upper" aquifer zones (Rolf Aadland, personal communication, 1992). The "tan clay" confining zone is equivalent to the "tan clay" zone referred to in previous SRS reports and was previously termed Confining Zone IIB_1-IIB_2 by Harris and others (1990) and Aadland and others (1991). The "tan clay" confining zone consists of a zone of light yellowish tan to orange clay and sandy clay interbedded with clayey sand and sand within the Dry Branch Formation. The clay is lithologically similar to the Twiggs Clay Member but is present at various intervals and is not continuous over long distances (Harris and others, 1990; Aadland and others, 1991; WSRC, 1992).

The "lower" aquifer zone of the Upper Three Runs Aquifer is equivalent to Aquifer Zone IIB_1 as delineated by Harris and others (1990) and Aadland and others (1991). The "lower" aquifer zone comprises the dominantly fine-grained, well-sorted sand and clayey sand of the Santee Limestone and the part of the Dry Branch Formation beneath the "tan clay" confining zone. Both the Santee Limestone and Dry Branch Formation are postulated to have been deposited in a shallow marine environment. The bulk of the calcareous material beneath the GSA is included in the "lower" aquifer zone of the Upper Three Runs Aquifer. Descriptions of drill core indicate that calcareous material in this vicinity has a dominant siliciclastic component, and consists primarily of calcarenaceous sand, micritic sand, shelly sand and some sandy calcarenite and shelly limestone. The "upper" aquifer zone of the Upper Three Runs Aquifer is not addressed in this report (see Section 2.1.1. ***Data Used*** in this report).

2. DISCUSSION

2.1. Methods

2.1.1. *Data Used*

This project utilizes data from 115 wells and borings including locations, elevations, geophysical logs, and drill-core descriptions. The location and elevation data are extracted from the database provided by WSRC-ER to SAIC for use on this project. For the recently drilled borings, SAIC has collected location and elevation data from the surveyor's files maintained at SRS Building 773-7B. The locations and elevations of the wells and borings used in this study are given in Appendices A1, A4, A7, and A10. Down-hole geophysical logs are available for all of the cores used in this study. Caliper, gamma-ray and resistivity logs are used for delineating aquifer and confining units and for correlating specific horizons from hole to hole. Geophysical logs are also used for estimating the lithology of intervals of missing core.

Boundaries or "picks" for hydrostratigraphic units beneath the GSA have been provided to SAIC by WSRC-ER. These "picks" were established initially through work on hydrogeological characterizations for the F and H-Area Seepage Basins. Recent refinements to this database have been made for the hydrogeological characterization of the Mixed Waste Management Facility (MWMF) within the GSA (WSRC, 1992). The hydrostratigraphic boundaries are summarized in Appendices A1, A4, A7, and A10. These hydrostratigraphic boundaries have been used as received with one exception. The boundary for the bottom of the Gordon Confining Unit in SRS well FSB-115C has been revised slightly by SAIC for this report. The original boundary excluded several feet of clay and sandy clay from the base of the unit and placed it within the Gordon Aquifer. During the construction of the maps for this report, SAIC geologists noted an anomalous high value for mud content in the Gordon Aquifer in well FSB-115C. Upon review of the lithologic and geophysical data with WSRC, it was decided to adjust the lower boundary of the Gordon Confining Unit in this well to include the additional mud.

Because the top of the "upper" aquifer zone in the Upper Three Runs Aquifer is defined by the water table, the thickness of this unit is constantly changing. Therefore not only the thickness of the unit, but all of the sedimentological parameters will vary as well. After discussions with WSRC, it was decided to exclude the "upper" aquifer zone of the Upper Three Runs Aquifer from the scope of this report.

Data from detailed, foot-by-foot descriptions of continuous drill core have been compiled for the 115 wells and borings used in this study. All core samples have been described following SRL ESSOP-2-15 (WSRC, 1990). The core descriptions include data on amount of core recovery; degree of induration; color; sedimentary structures; volume percent terrigenous gravel, sand, and mud; maximum and modal size of the terrigenous fraction; volume percent carbonate gravel, sand, and mud; volume percent cement; volume percent total carbonate sediment; sediment/rock name; grain sorting; volume percent porosity and dominant type; fossil types, and volume percent accessory constituents, including muscovite, glauconite, lignite, sulfides, and heavy minerals (WSRC, 1990). The core and well data for each hydrostratigraphic unit included in this report are summarized in Appendix A. Summary statistics for these data are tabulated in Appendix B. Table 1 lists all of the sediment types that are found in the core descriptions of aquifer and confining units studied in this report. Table 2 summarizes the parameters determined from the core descriptions and geophysical logs of hydrostratigraphic units in the GSA. The parameters in Table 2 have been calculated by computer and are used in the preparation of the facies maps presented in this report.

2.1.2. *Hydrostratigraphic Methods*

Hydrostratigraphic unit boundaries for the GSA are taken from the database provided by WSRC-ER. This database is the result of work performed in preparing a recent hydrogeologic characterization for the MWMF and F- and H-Area Seepage Basins. Hydrostratigraphic boundaries for newly completed wells and borings that are not included in the MWMF characterization have been determined by SAIC. Boundaries are determined through evaluation of:

1. Geophysical data. Gamma-ray logs in combination with resistivity logs are used to evaluate the potential confining properties of the strata. In general, low resistivity and high gamma ray values indicate clay-rich sediment that impedes the flow of ground water.
2. Core description data. Core descriptions are used (in conjunction with the geophysical logs) to pick out boundaries between confining and transmissive units. Percentage of mud and estimated porosity are the primary criteria used. If core recovery is good, the foot-by-foot description is an excellent tool for determining the vertical extent of a confining or transmissive lithology.

Table 1. Sediment Types Recorded in Core Descriptions of Aquifer and Confining Units in the General Separations Area, Savannah River Site

Sand	Abbreviation	Lithology
	CASD	Calcarenaceous Sand
	CACLSD	Calcarenaceous, Clayey Sand
	CLSD	Clayey Sand
	CMSD	Calcite-Cemented Sand
	CTSD	Silica-Cemented Sand
	GLSD	Glauconitic Sand
	PBSD	Pebbly Sand
	SD	Sand
	SLSD	Shelly, Siliclastic Sand
	STSD	Silty Sand
Mud	CACL	Calcarenaceous Clay
	CASDCL	Calcarenaceous, Sandy Clay
	CL	Clay
	GLCL	Glauconitic Clay
	MCCL	Micritic Clay
	PBSDCL	Pebbly, Sandy Clay
	SDCL	Sandy Clay
	SLCL	Shelly Clay
	SLSDCL	Shelly, Sandy Clay
	STCL	Silty Clay
Carbonate Sediment	CA	Calcarenite
	CLMC	Clayey Micrite
	CLSL	Clayey, Shell Limestone
	GLSDMC	Glauconitic, Sandy Micrite
	GLSLMC	Glauconitic, Shelly Micrite
	GM	Green Micrite
	MC	Micrite
	MCCA	Micritic Calcarenite
	MCSL	Micritic, Shell Limestone
	SDCLSL	Sandy, Clayey, Shell Limestone
	SDMC	Sandy Micrite
	SDSL	Sandy, Shell Limestone
	SDSLMC	Sandy, Shelly Micrite
	SL	Shell Limestone
	SLCLMC	Shelly, Clayey Micrite
	SLMC	Shelly Micrite
	SLSDMC	Shelly, Sandy Micrite

Table 2. Parameters Determined from Core Descriptions of Aquifer and Confining Units in the General Separations Area, Savannah River Site

Feet No Recovery	The number of feet of missing or non-recovered core within the measured hydrostratigraphic interval.
Feet Estimated Mud	The estimated number of feet of mud (silt + clay) in the interval of non-recovered core. Determined by examination of geophysical logs, including gamma-ray, SP, and resistivity curves.
Feet Estimated Sand	The estimated number of feet of sand in the interval of non-recovered core. Determined by examination of geophysical logs, including gamma-ray, SP, and resistivity curves.
Feet Estimated Carbonate	The estimated number of feet of carbonate sediment in the interval of non-recovered core. Determined by examination of geophysical logs, including gamma-ray, SP, and resistivity curves.
Total Mud Thickness	The total thickness (feet) of mud (silt + clay) in the hydrostratigraphic unit. Determined by summation of the measured mud thickness and the estimated mud thickness. A **mud thickness map** is constructed by recording the total thickness of mud at each map control point, and drawing lines of equal mud thickness through the field of numbers using a contour interval of 4 feet.
Total Sand Thickness	The total thickness (feet) of sand in the hydrostratigraphic unit. Determined by adding the measured sand thickness and the estimated sand thickness. A **sand thickness map** is constructed by posting the net thickness of sand at each map control point, and drawing lines of equal sand thickness through the field of numbers using arithmetic contour intervals of 4 or 10 feet.
Total Carbonate Thickness	The total thickness (feet) of carbonate sediment in the hydrostratigraphic unit. Determined by summation of the measured thickness of carbonate sediment and the estimated thickness of carbonate sediment.

Table 2. Parameters Determined from Core Descriptions of Aquifer and Confining Units in the General Separations Area, Savannah River Site (Continued)

Percent Mud	The percentage of mud (silt + clay) in the hydrostratigraphic unit. Equals the total mud thickness divided by the thickness of the hydrostratigraphic unit, multiplied by 100. A **mud percentage map** is constructed by plotting the mud percentage values at each map control point and contouring the field of numbers using an arithmetic contour interval.
Percent Sand	The percentage of sand in the hydrostratigraphic unit. Equals the total sand thickness divided by the thickness of the hydrostratigraphic unit, multiplied by 100. A **sand percentage map** is constructed by plotting the sand percentage values at each map control point and contouring the field of numbers. Percentage data are contoured on arithmetic intervals of 5, 20, and 25 percent.
Percent Carbonate	The percentage of carbonate sediment in the hydrostratigraphic unit. Equals the total thickness of carbonate sediment divided by the total thickness of the hydrostratigraphic unit, multiplied by 100.
No. Mud Beds > 1 ft	The total number of mud beds greater than 1-foot thick in the hydrostratigraphic unit.
No. Mud Beds = 1 ft	The total number of mud beds 1-foot thick in the hydrostratigraphic unit.
Total No. Mud Beds	The total number of mud beds in the hydrostratigraphic unit. Equals the sum of the number of mud beds 1-foot thick plus the number of mud beds greater than 1-foot thick.
No. Sand Beds ≤5 ft	The total number of sand beds less than or equal to 5-feet thick in the hydrostratigraphic unit.
No. Sand Beds >5 ft	The total number of sand beds greater than 5-feet thick in the hydrostratigraphic unit.
Total No. Sand Beds	The total number of sand beds in the hydrostratigraphic unit. Equals the number of sand beds ≤5-feet thick plus the number of sand beds >5-feet thick.

Table 2. Parameters Determined from Core Descriptions of Aquifer and Confining Units in the General Separations Area, Savannah River Site (Continued)

Sand/Mud Ratio	The thickness ratio of sand to mud (silt + clay). Equals the total sand thickness in the hydrostratigraphic unit divided by the total mud thickness in the hydrostratigraphic unit. The numerical value of the sand/mud ratio varies from zero to infinity (∞). High values in sand-mud ratios represent high percentages of sand and decreasing percentages of mud. Values smaller than 1/32 or larger than 32 indicate that one of the components is present in amounts of about 3 percent, which probably approaches the limit of the accuracy of the data. The sand/mud ratio indicates the number of feet of sand per foot of mud. For example, a sand/mud ratio of 3.2 indicates that the hydrostratigraphic interval contains 3.2 feet of sand per foot of mud. A sand/mud ratio of infinity indicates that mud beds are not present. **A sand/mud ratio map** is constructed by plotting the sand/mud ratio values at each control point and contouring the field of numbers. The ratio lines are commonly contoured using a geometric interval of 1/8, 1, and 8. A contour interval of 8, 16, 32, 64, and ∞ is used for the Gordon aquifer because of the high proportion of sand to mud in that unit. The thickness ratio of sand to mud provides an effective means for displaying the interrelations between two lithologic components with a single set of contours. The sand/mud ratio map contrasts one sediment type with another, whereas the percentage map, such as percent sand or mud, expresses the proportion of a given sediment type in the unit as a whole. A mathematical relationship exists between percentage and ratio maps in two-component systems, in that the percentage lines 20, 50, and 80 correspond to ratio lines 1/4, 1, and 4 respectively (Krumbein and Sloss, 1963).

Table 2. Parameters Determined from Core Descriptions of Aquifer and Confining Units in the General Separations Area, Savannah River Site (Continued)

Clastic Ratio	The thickness ratio of terrigenous clastic sediment to carbonate sediment in the hydrostratigraphic unit. The clastic ratio is calculated by the formula (B + C)/A, where B represents the thickness of coarse detrital components, gravel and sand, and C includes the fine detrital sediments, silt and clay. Component A represents the thickness of chemically or biochemically precipitated carbonate sediment in the hydrostratigraphic unit. The numerical value of the clastic ratio varies from zero to infinity. High clastic ratio values indicate increasing percentages of sand and mud and decreasing percentages of carbonate sediment. A clastic ratio of infinity indicates that carbonate sediment is not present. (Krumbein and Sloss, 1963).

2.1.3. *Map Construction*

Altitude and isopach maps of hydrostratigraphic units in the GSA are adopted directly from the 1992 RCRA Part B Permit Application for the Mixed Waste Management Facility (WSRC, 1992). The isopach maps of the Gordon Aquifer and the Gordon Confining Unit have been modified slightly to reflect the change made for well FSB-115C mentioned in Section 2.1.1. ***Data Used.*** Data for construction of the lithofacies maps in this report have been compiled from core logs of 115 GSA wells and borings using the methods outlined in Table 2.

SAIC used the method given by Sloss and others (1960) and Krumbein and Sloss (1983) to prepare the multiple-ratio facies maps presented in this report. The use of sand-mud ratios and clastic ratios to construct a standard triangular facies map is shown in Figures 4 and 5. The ratios are determined from three components. Component A includes non-clastic sediments (limestone), component B represents sand and gravel, and C represents mud (silt + clay). The ratio B/C compares coarse and fine clastic sediment and is referred to as the sand-mud (sand-shale) ratio (Table 2). The ratio (B + C)/A represents the relationship between terrigenous (clastic) sediments and the non-terrigenous (non-clastic) sediments. This is the clastic ratio (Table 2). The maps in Figure 5 show the steps used in constructing a standard facies-triangle map (adapted from Sloss and others (1960)). The isopach base commonly used in such maps is shown in the upper left of Figure 5. The sand-mud and clastic ratio values are entered at each control point on separate base maps. Contour lines of equal ratio values are then drawn through the fields of numbers, commonly using a geometric contour interval.

Ratio maps are contoured as continuous functions. Thus, the upper three control points on the clastic ratio map of Figure 5 have values of 0.7, 7.0, and 44. The clastic ratio lines 1, 2, and 4 must be drawn between the first and second points, and lines 8, 16, and 32 must pass between the second and third points.

The clastic ratio and sand-mud ratio maps are useful for interpretation of some features of the hydrostratigraphic units. However, for showing the interrelations among all three components it is conventional to superimpose one map upon the other as shown in the lower right of Figure 5. In this map, the triangle (c.f. Figure 4) is divided into segments at sand-mud ratio lines 8, 1, and 1/8, and at clastic ratio lines 8, 1, and 1/4. This selection serves two purposes. First, the lines divide the map into selected groupings (Figure 4) that show where the

hydrostratigraphic unit is mainly sand, mud, or non-clastic sediment, or where a given lithologic component forms more than 50 percent of the unit. Additional simplification is attained by eliminating the sand-mud ratio line where the clastic ratio is less than 1/4 (that is, where the unit is more than 80 percent carbonate sediment), and by using the sand-mud ratio lines 8, 1, and 1/8 only in those map areas where the clastic ratio is greater than 8 (that is, where more than 89 percent of the unit is sand or mud). The limits and groupings shown in Figure 4 are used for all triangular facies maps in this report. Table 3 summarizes the composition of each of the nine lithologic groups associated with the standard triangle shown in Figure 4. Use of the standard triangle facilitates comparison of lithofacies between and within hydrostratigraphic units. It should be noted that the clastic ratio and sand-mud ratio lines may cross each other. When colors or patterns are used on the maps, these crossing ratio lines outline tongue-like or lens-shaped areas. This may cause confusion unless the principles used in this type of map construction are considered.

2.2. Results

2.2.1. *Map Interpretation*

2.2.1.1. Gordon Aquifer

Thirty wells and borings penetrate the Gordon Aquifer within the GSA. Locations are given in Figure 6. Isopach maps of the Gordon Aquifer and the calcareous sediments within it are presented in Figures 7 and 8. The Gordon Aquifer varies in thickness from 44 to 86 feet and the mean thickness is 65 $\pm$12.5 feet. The elevation of the upper surface ranges in elevation from 85.7 to 153.9 feet MSL, with a mean elevation of 117.4 $\pm$13.4 feet. Figure 8 demonstrates the sporadic distribution of the rare calcareous material that is present within the Gordon Aquifer.

Sand bed distribution within the Gordon Aquifer is shown in Figure 9. The number of sand beds increases from one at the eastern and western edges of the GSA to a maximum of eight just east of the Burial Grounds. The mean number of sand beds found is 2$\pm$1.5, and greater than 75% of the sand beds are greater than 5 feet in thickness. A map of sand-bed thickness is shown in Figure 10. Figure 10 indicates an overall eastward increase in sand content and three southeast-trending lows in the vicinity of the H-Area Seepage Basins. Sand-bed thickness within the Gordon Confining Unit ranges from 85 feet in the eastern part of the area, to a low of 44 feet in the western part of the area. The mean sand-bed thickness is 63 $\pm$12

Table 3. Limits and Characteristics of Lithologic Groups (Modified from Krumbein and Sloss, 1963)

Group Name	Clastic Ratio Limit	Sand-Mud Limit	Characteristics
Sand	>8	>8	Greater than 89% sand
Sand-mud	>8	8-1	More sand than mud; less than 11% carbonate material
Mud-sand	>8	1-1/8	More mud than sand; less than 11% carbonate material
Mud	>8	<1/8	Greater than 89% mud
Sand-carbonate	1-8	>1	More sand than mud; 11 to 50% carbonate material
Mud-Carbonate	1-8	<1	More mud than sand; 11 to 50% carbonate material
Carbonate-Sand	1/4-1	>1	50 to 80% carbonate material; more sand than mud
Carbonate-Mud	1/4-1	<1	50 to 80% carbonate material; more mud than sand
Limestone	<1/4	any value	Greater than 80% carbonate material

feet. Figure 11 shows a low sand-bed percentage of 88% east of the Burial Grounds, and highs of 100% on the eastern and western margins of the GSA. The mean sand-bed percentage for the Gordon Aquifer is 97±3%; the remainder is dominantly mud.

Description data indicate that eight of the cores do not contain mud beds. Thus the sand/mud ratio is calculated to be infinity for these eight control points. The remaining 22 cores have sand/mud ratios ranging between 7 and 85, with a mean of 35 ±24. Thus the sand/mud ratios for the Gordon Aquifer are so high that Figure 12 must be contoured using a geometric scale of 8, 16, 32, 64, and infinity (∞). The lowest sand/mud ratios are found east of the Burial Grounds and north of H-Area defining a southeast-trending low, indicating relatively high mud content in this area. In the western part of the GSA south of F-Area there is an elongate area of less than 95% sand with an axis trending northeast-southwest. In general, the ratios increase away from this axis in both directions. The highest sand/mud ratios generally fall in the areas where the number of sand beds is lowest. This is due to the lack of mud beds that split the unit into separate sand beds.

Because of the small amounts of calcareous material within the Gordon Aquifer, calculated values for the clastic ratio are all greater than eight. Since all points would fall within the same sand field, construction of a clastic ratio map serves no useful purpose. Consequently, a triangular-facies has not been prepared.

It should be noted that the map patterns presented result, in part, from the uneven distribution of control points for the Gordon Aquifer within this area. For example, the north-central and southwestern parts of the GSA are virtually devoid of control points.

2.2.1.2. Gordon Confining Unit

Eighty-eight wells and borings penetrate the Gordon Confining Unit within the GSA. Locations are shown in Figure 13. The configuration of the top of the Gordon Confining Unit is shown in Figure 14 and an isopach of the unit is presented in Figure 15. The elevation of the upper surface of the Gordon Confining Unit ranges from 90.7 to 161.7 feet MSL, with a mean elevation of 125.5 ±14.1 feet. The Gordon Confining Unit varies in thickness from 1 to 23 feet with a mean of 7 ±4 feet. An isopach map of calcareous sediment within the Gordon

Confining Unit (Figure 16) indicates several isolated patches of carbonate sediment. For the most part however, the Gordon Confining Unit is free of calcareous material.

The distribution of mud beds is shown in Figure 17. The number of mud beds ranges from zero in several isolated spots to a maximum of four in the vicinity of the H-Area Seepage Basins. Figure 17 indicates two large areas where the number of mud beds exceeds one (1): in the vicinity of Z-Area, and north of the Burial Grounds and F-Area. The mean number of mud beds within the Gordon Confining Unit is 1 $\pm$0.8 and greater than 60% of the mud beds are more than 1 foot in thickness. The thickness of mud within the Gordon Confining Unit ranges from 0 to 10 feet with a mean of 3 $\pm$2.4 feet. A mud-bed thickness map illustrates that the central part of the GSA is marked by a "thick" that thins and subsequently thickens toward the eastern and western boundaries of the area (Figure 18). These "thicks" generally correspond to the high concentrations of mud beds depicted in Figure 17.

A map of the percentage of mud beds within the Gordon Confining Unit shows several isolated areas that indicate pure mud (100%) with an overall increase in mud percentage eastward (Figure 19). The Gordon Confining Unit is free of mud beds in several small patches. The mean mud-bed percentage for the Gordon Confining Unit is 47.4 $\pm$28.6%.

Description data indicate that eleven of the cores do not contain mud beds. Thus the sand/mud ratio is calculated to be infinity for these eleven control points. The remaining 77 cores have a sand/mud ratio between 0 and 85, with a mean of 1.3$\pm$1.4. The clastic ratio for the Gordon Confining Unit ranges from 1 to infinity. The facies triangle map (Figure 20) shows an area of low sand/mud ratios in the center of the GSA. Calcareous influences north and east of the center of the GSA appear to be associated with decreasing sand/mud ratios.

2.2.1.3. "Lower" Aquifer Zone, Upper Three Runs Aquifer

The "lower" aquifer zone of the Upper Three Runs Aquifer is penetrated by 81 wells and borings (with available core descriptions) within the GSA. The locations are given in Figure 21. Figures 22 and 23 are isopach maps of the "lower" aquifer zone and of the calcareous sediment within the "lower" aquifer zone. The thickness of the "lower" aquifer zone ranges from lows of 39 feet to a high of 91 feet southeast of the Burial Grounds (Figure 22). The "lower" aquifer zone has a mean thickness of 62$\pm$12 feet.

A map of the distribution of sand beds within the "lower" aquifer zone (Figure 24) shows areas of high numbers of sand beds that generally correspond to the "thicks" depicted in Figure 22. The mean number of sand beds is 2 ± 1 and ranges from 1 to a maximum of 7. At least 50% of the sand beds are greater than 5 feet in thickness. The total sand-bed thickness is illustrated in Figure 25. The map indicates that sand-bed thickness closely approximates unit thickness except in the areas where significant calcareous sediments are present (c.f. Figure 23). In addition, the map of sand-bed distribution shows high numbers of sand beds in the areas of high concentrations of calcareous material. The total sand-bed thickness ranges from 28 feet to 77 feet, averaging 50 ± 11 feet. The thickest sands are found in the center of the GSA and the isopachs of sand thickness show trends that are similar to those shown in Figure 22.

The variation in sand-bed percentage within the "lower" aquifer zone is illustrated in Figure 26. The percentage of sand beds ranges from a low of 41% north of the Burial Grounds to highs of 100% west of the F-Area Seepage Basins, northeast of the Burial Grounds, northwest of Z-Area, and in isolated highs in the vicinity of the H-Area Seepage Basins. The sand-bed percentage reaches minimum values in the central part of the GSA north and south of the Burial Grounds. The mean sand-bed percentage within the "lower" aquifer zone is $81\pm$ 17%.

The sand/mud ratio within the "lower" aquifer zone ranges from 2.9 to 67.0 with a mean of 26 ±19.4. The clastic ratio ranges from 0.7 to 68.0 with a mean of 7.8 ± 13.9. The distribution of sand, mud, and calcareous material is summarized in a facies-triangle map (Figure 27). The areas of highest carbonate content approximate the extent of significant thickness of calcareous sediment shown in Figure 23.

2.2.1.4. "Tan Clay" Confining Zone, Upper Three Runs Aquifer

One hundred and fifteen wells and borings (with available core descriptions) penetrate the "tan clay" confining zone of the Upper Three Runs Aquifer within the GSA. Locations are given in Figure 28. The configuration of the top of the "tan clay" confining zone is illustrated in Figure 29 and an isopach map of the unit is presented in Figure 30. The elevation of the upper surface of the "tan clay" confining zone ranges from 163 to 230 feet MSL, with a mean

elevation of 198±16 feet MSL. Where present, the "tan clay" confining zone varies in thickness from 2 to 26 feet, with a mean thickness of 11±6 feet.

The distribution of mud beds within the "tan clay" confining zone is shown in Figure 31. The number of mud beds ranges from zero in several isolated areas to as many as five in the vicinity of the H-Area Seepage Basins. The mean number of mud beds within the "tan clay" confining zone is 2±1 and approximately 45% of the beds exceed 1 foot in thickness. Total thickness of mud beds within the "tan clay" confining zone ranges from 0 to 13 feet. The mean thickness of mud beds is 4±3 feet. A map of mud-bed thickness (Figure 32) indicates that the thickest areas are north of the Burial Grounds and near the H-Area Seepage Basins. There appears to be a prominent thickening of mud in an area southeast of the Burial Grounds and northwest of H-Area.

The mud-bed percentage within the "tan clay" confining zone ranges from 0 to 100%, averaging 41±27%. The parts of the "tan clay" confining zone containing 100% mud beds are concentrated north of the Burial Grounds and in the vicinity of Z-Area (Figure 33). There is an overall decrease in the mud-bed percentage southward and westward from the center of the GSA. The mud-bed percentage decreases to 0% at the northern margin of the GSA.

Description data indicate that 11 of the cores do not contain mud beds within the "tan clay" confining zone. Thus the sand/mud ratio is calculated to be infinity for these 11 control points. The remaining 103 cores have sand/mud ratios ranging between 0 and 25, with a mean of 2.5 ±3.4. Calcareous sediments are not present within the "tan clay" confining zone, therefore all clastic ratios are greater than eight. Since all points would fall within the same sand field, construction of a clastic ratio map serves no useful purpose. Consequently, a triangular-facies has not been prepared.

A map of sand/mud ratio for the "tan clay" confining zone is shown in Figure 34. The map patterns closely approximate the trends shown in the map of mud-bed percentage (Figure 33). Furthermore, Figure 34 indicates an overall increase in mud content northeastward.

3. CONCLUSIONS

1. The stratigraphic maps show consistent trends within each unit. These trends are useful for interpreting areas of high and low permeability within hydrostratigraphic units. For example, a sand/mud ratio map can be used to interpret the areal distribution of sand and mud and hence the overall porosity and permeability of an aquifer unit.

2. Hydrostratigraphic units can be best evaluated by integrating information from lithofacies and thickness maps. For example, a mud-thickness map should be used in conjunction with a isopach map of the total unit to evaluate the overall areal effectiveness of a confining unit.

3. Lithofacies maps should be used in conjunction with hydrologic maps to better interpret the hydrologic flow regime beneath a site. For example, areas of high mud content within an aquifer unit may significantly influence ground-water flow paths within that unit. Areas of high sand content may increase the overall vertical permeability of a confining unit in those areas, possibly influencing migration of contaminants between aquifer units.

4. Maps of sand/mud ratio and thickness of mud (sand) beds are probably the most useful for evaluation of hydrologic properties of hydrostratigraphic units.

5. Facies-triangle maps illustrate the transitional relationship of the calcareous and terrigenous sediments more clearly than do the isopach maps of the calcareous sediments.

6. Uneven distribution of control points has a profound influence on the construction of these maps. The level of detail varies significantly within these maps due to the uneven distribution of control points. Additionally, the degree of resolution for the maps decreases down-section due to the fewer control points for the deeper units.

7. The precision of these maps is greatly influenced by the amount of core recovery. Lithology for zones with no core recovery must be interpreted from geophysical data. Hence, lithologic parameters can only be generalized as "sand", "mud", or "carbonate sediment". The availability of core description allows for greater resolution of the lithology.

8. These maps are constructed for hydrostratigraphic units rather than the traditional lithostratigraphic units. Interpretation of depositional environment based on these facies maps

is problematic because the hydrostratigraphic units do not correspond to traditional lithostratigraphic and chronostratigraphic boundaries.

REFERENCES

Aadland, R K., and H. W. Bledsoe, 1990, Classification of Hydrostratigraphic Units at the Savannah River Site, South Carolina (U), USDOE Report WSRC-RP-90-987, Westinghouse Savannah River Company, Aiken, SC 29802, 15p.

Aadland, R. K., M. K. Harris, C. M. Lewis, T. F. Gaughan, and T. M. Westbrook, 1991, *Hydrostratigraphy of the General Separations Area, Savannah River Site (SRS), South Carolina*, USDOE Report WSRC-RP-91-13, Westinghouse Savannah River Company, Aiken, SC 29808, 114p.

Aadland, R. K., A. D. Smits, and P. A. Thayer, 1992, *Geology and Hydrostratigraphy of the A/M Area, Savannah River Site (SRS), South Carolina (U)*, USDOE Report WSRC-RP-92-440, Westinghouse Savannah River Company, Savannah River Site, Aiken, SC 29808, 104p.

Bledsoe, H. W., R. K. Aadland, and K. A. Sargent, 1990, *SRS Baseline Hydrogeologic Investigation – Summary Report.* U.S. DOE Report, WSRC-RP-90-1010, Westinghouse Savannah River Co., Savannah River Laboratory, Aiken, S.C., 40p., 7 appendices.

Colquhoun, D. J., I. D. Woollen, D. S. Van Nieuwenhuise, G. G. Padgett, R. W. Oldham, D. C. Boylan, J. W. Bishop, and P. D. Howell, 1983, *Surface and Subsurface Stratigraphy, Structure and Aquifers of the South Carolina Coastal Plain*, SCDHEC Report ISBN 0-9613154-0-7, 78p.

Dennehy, K. F., D. C. Prowell, and P. B. McMahon, 1989, Reconnaissance Hydrogeologic Investigation of the Defense Waste Processing Facility and Vicinity, Savannah River Plant, South Carolina, U. S. Geological Survey Water Resources Investigations Report 88-4221, 68p.

Fallaw, W. C., V. Price, and P. Thayer, 1990, "Stratigraphy of the Savannah River Site, South Carolina", in Zullo, V. A., W. B. Harris, and V. Price, eds., 1990, *Savannah River Region: Transition Between the Gulf and Atlantic Coastal Plains.* Proceedings of the Second Bald Head Island Conference on Coastal Plains Geology, University of North Carolina at Wilmington, Wilmington, N.C.

REFERENCES (Continued)

Harris, M. K., R. K. Aadland, and T. M. Westbrook, 1990, "Lithological and Hydrological Characteristics of the Tertiary Hydrostratigraphic Systems of the General Separations Area, Savannah River Site, South Carolina," in Zullo, V. A., W. B. Harris, and V. Price, eds., 1990, *Savannah River Region: Transition Between the Gulf and Atlantic Coastal Plains.* Proceedings of the Second Bald Head Island Conference on Coastal Plains Geology, University of North Carolina at Wilmington, Wilmington, N.C., pp. 68-73.

Krumbein, W. C., and L.L. Sloss, 1963, *Stratigraphy and Sedimentation, 2nd ed.* San Francisco, W. H. Freeman and Company, 600p.

Sloss, L. L., E. C. Dapples, and W. C. Krumbein, , 1960, *Lithofacies Maps — An Atlas of the United States and Southern Canada.* New York, John Wiley & Sons, Inc., 108p.

Westinghouse Savannah River Company (WSRC), 1990, *SRL ESSOP-2-15: Microscopic Examination of Sediment Cores.* Environmental Sciences Section, Savannah River Laboratory, Westinghouse Savannah River Company, Aiken, S.C., Revision 1, 11p.

Westinghouse Savannah River Company (WSRC), 1991, *Safety Analysis Report, Savannah River Site, Generic Chapter 3.0: Site Characteristics (DOE Review Draft)*, WSRC-RP-91-188, Westinghouse Savannah River Laboratory, Aiken, SC 29808.

Westinghouse Savannah River Company (WSRC), 1992, "Section E.2: General Hydrogeologic Information", in *RCRA Part B Permit Application, Savannah River Site, Volume VII, Mixed Waste Management Facility (MWMF) Post Closure, WSRC-IM-91-53,* Westinghouse Savannah River Company, Aiken, SC 29808, p. E11-E206.

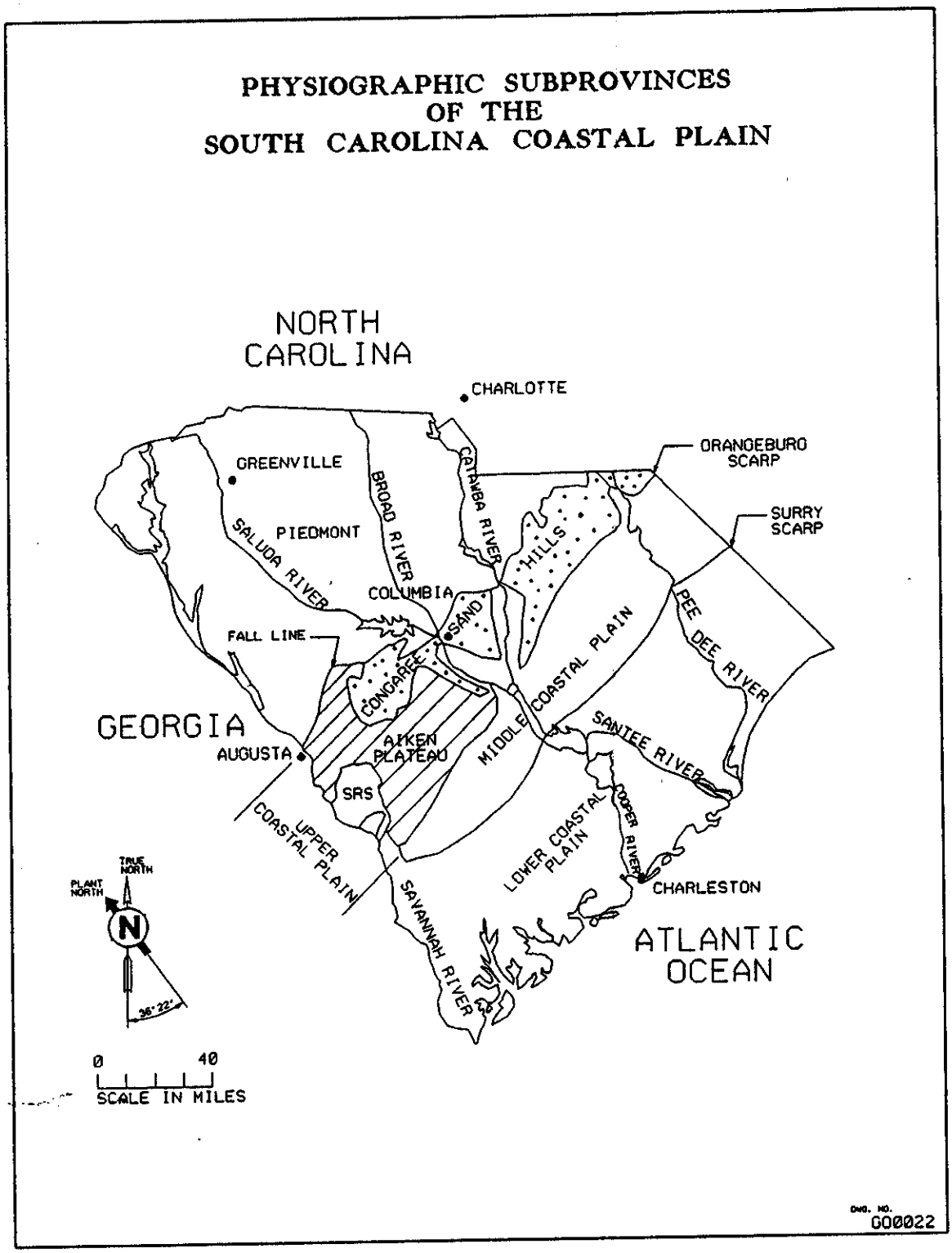


Figure 1. Location of the Savannah River Site and Physiography of the Surrounding Region

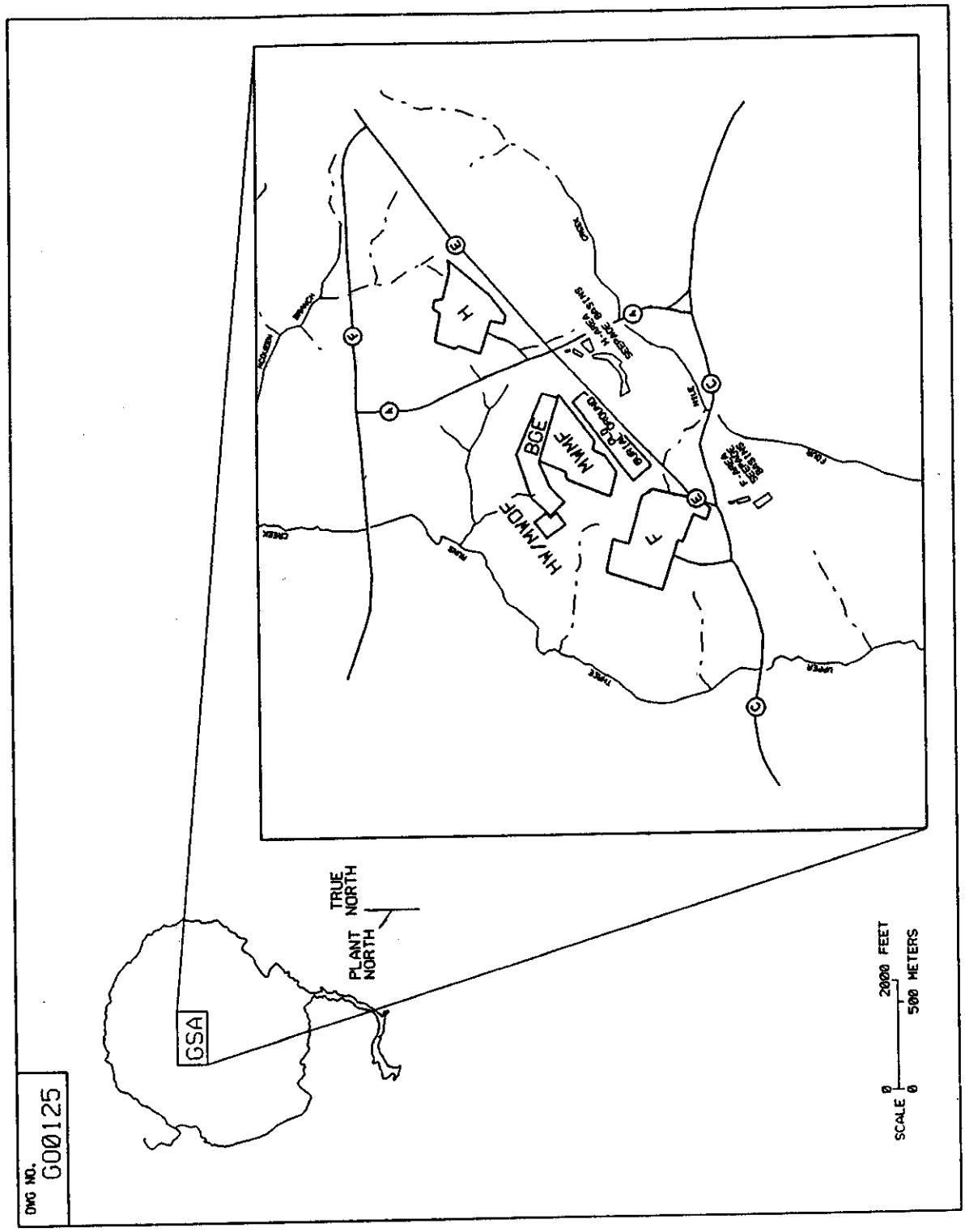


Figure 2. Location of the General Separations Area

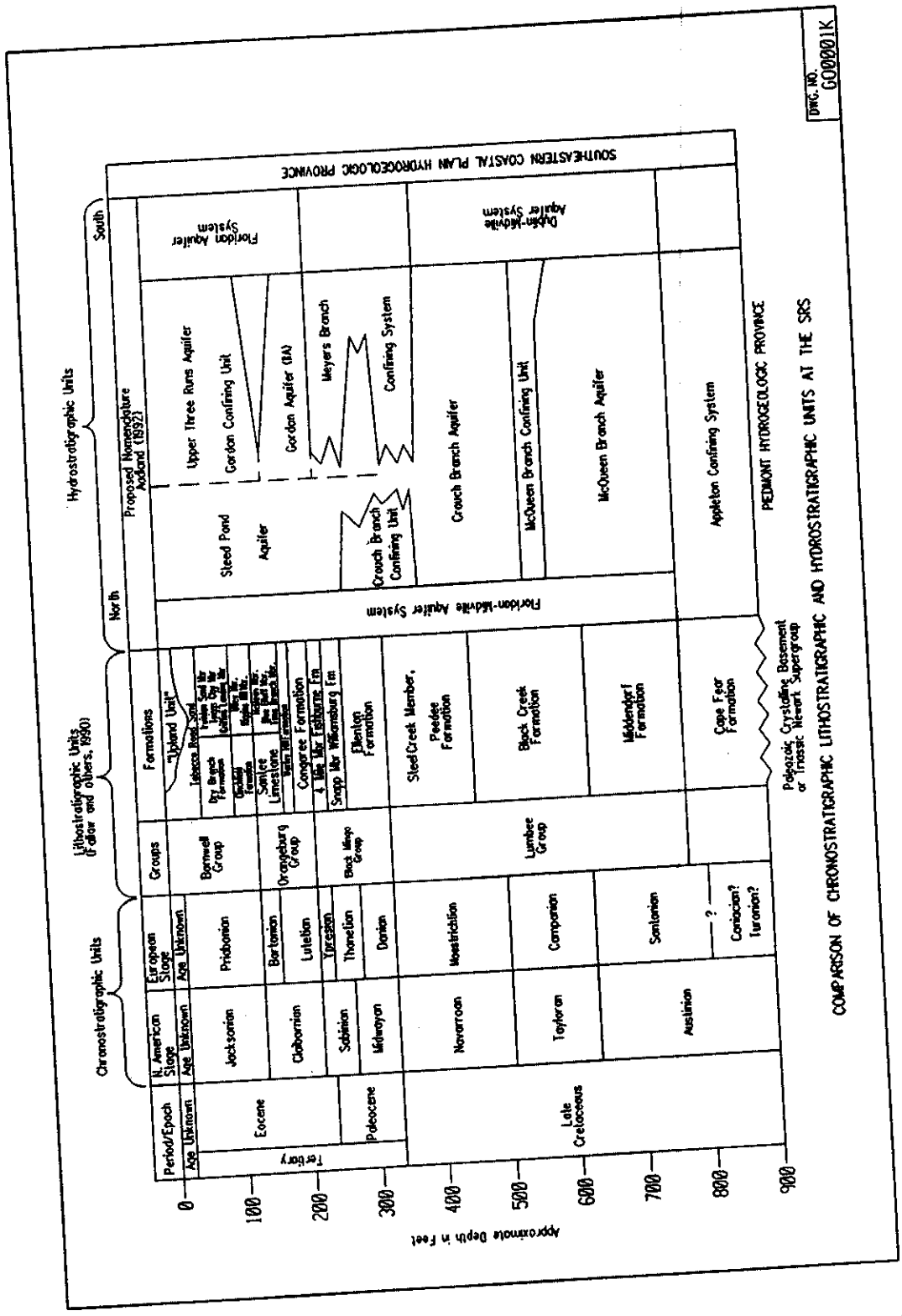


Figure 3. Comparison of Lithostratigraphic and Hydrostratigraphic Units at the SRS

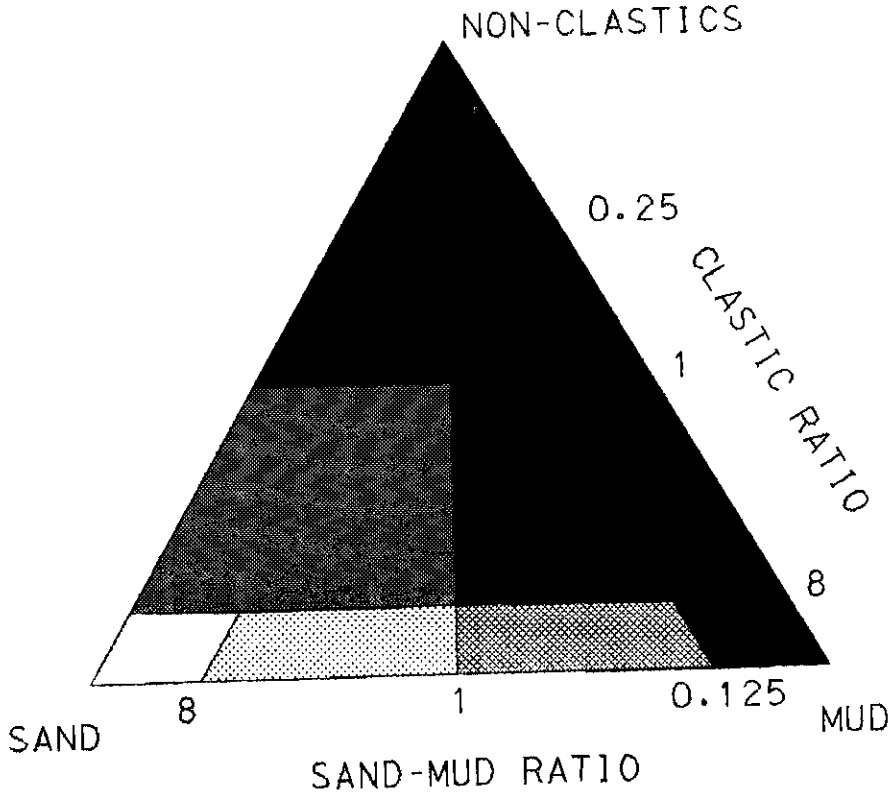


FIGURE 4. FACIES TRIANGLE SHOWING PATTERNS USED TO REPRESENT NINE STANDARD LITHOFACIES

DWG. NO.
G00470

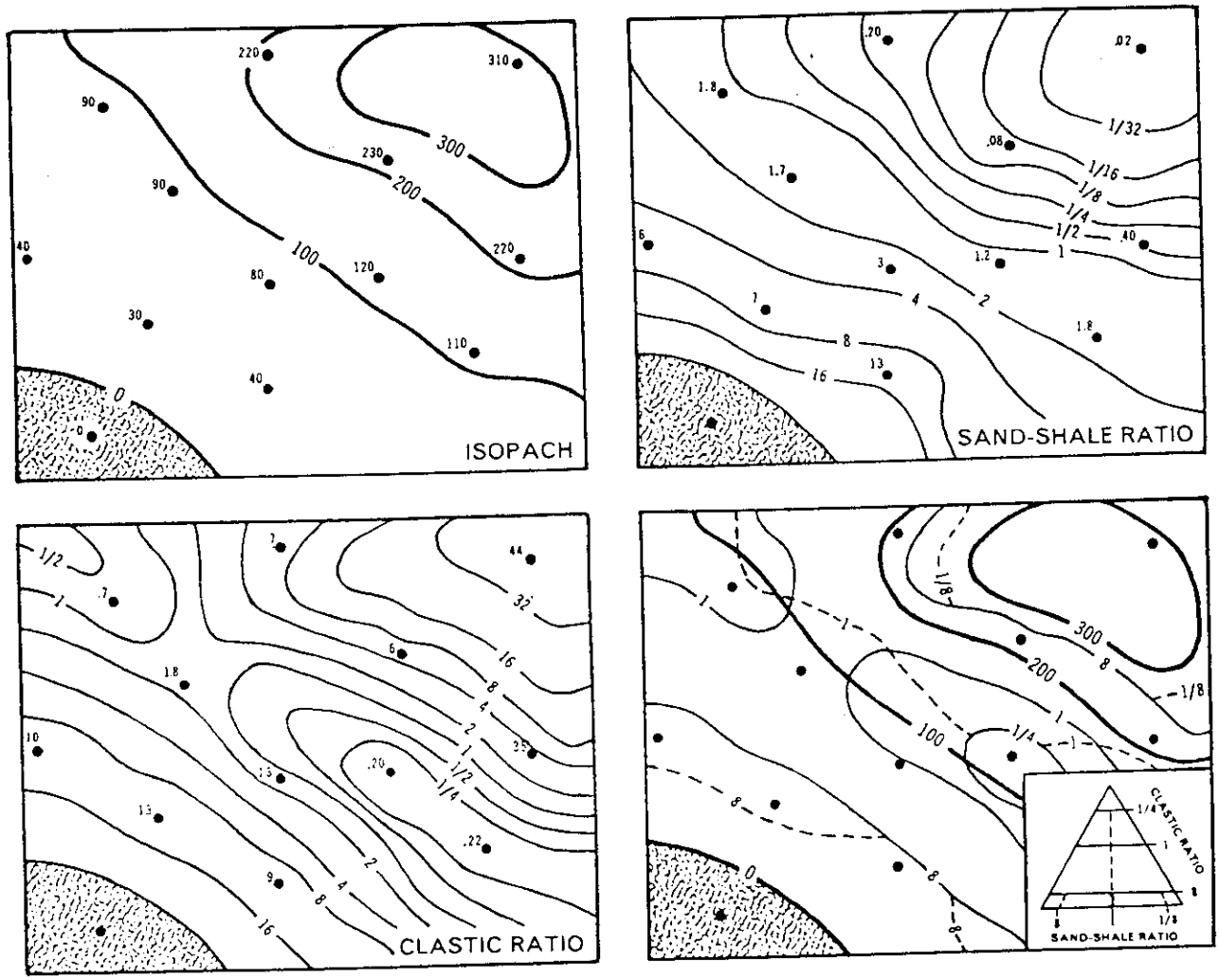
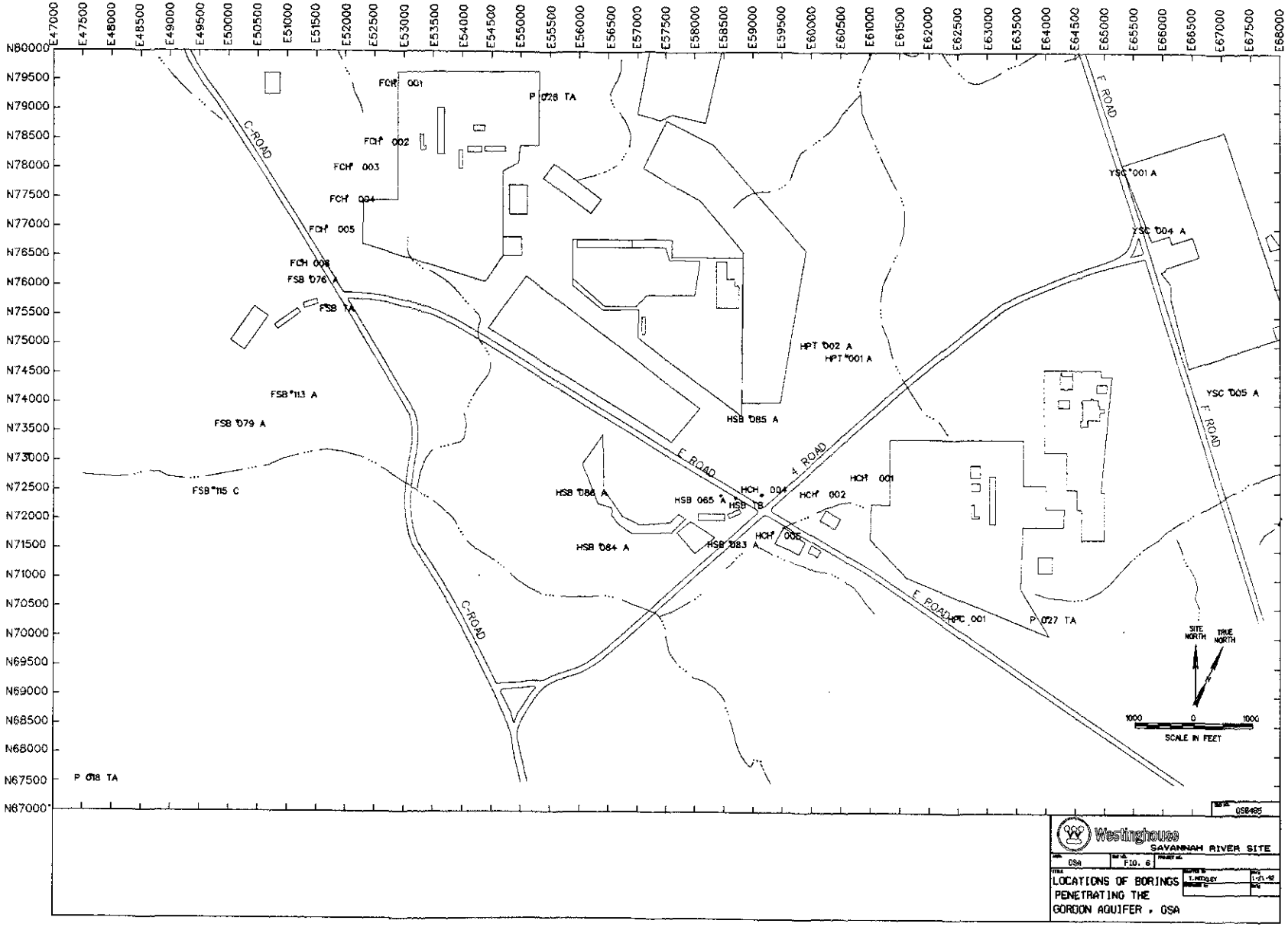


Figure 5 **Procedure Used to Construct Triangular Lithofacies Map**

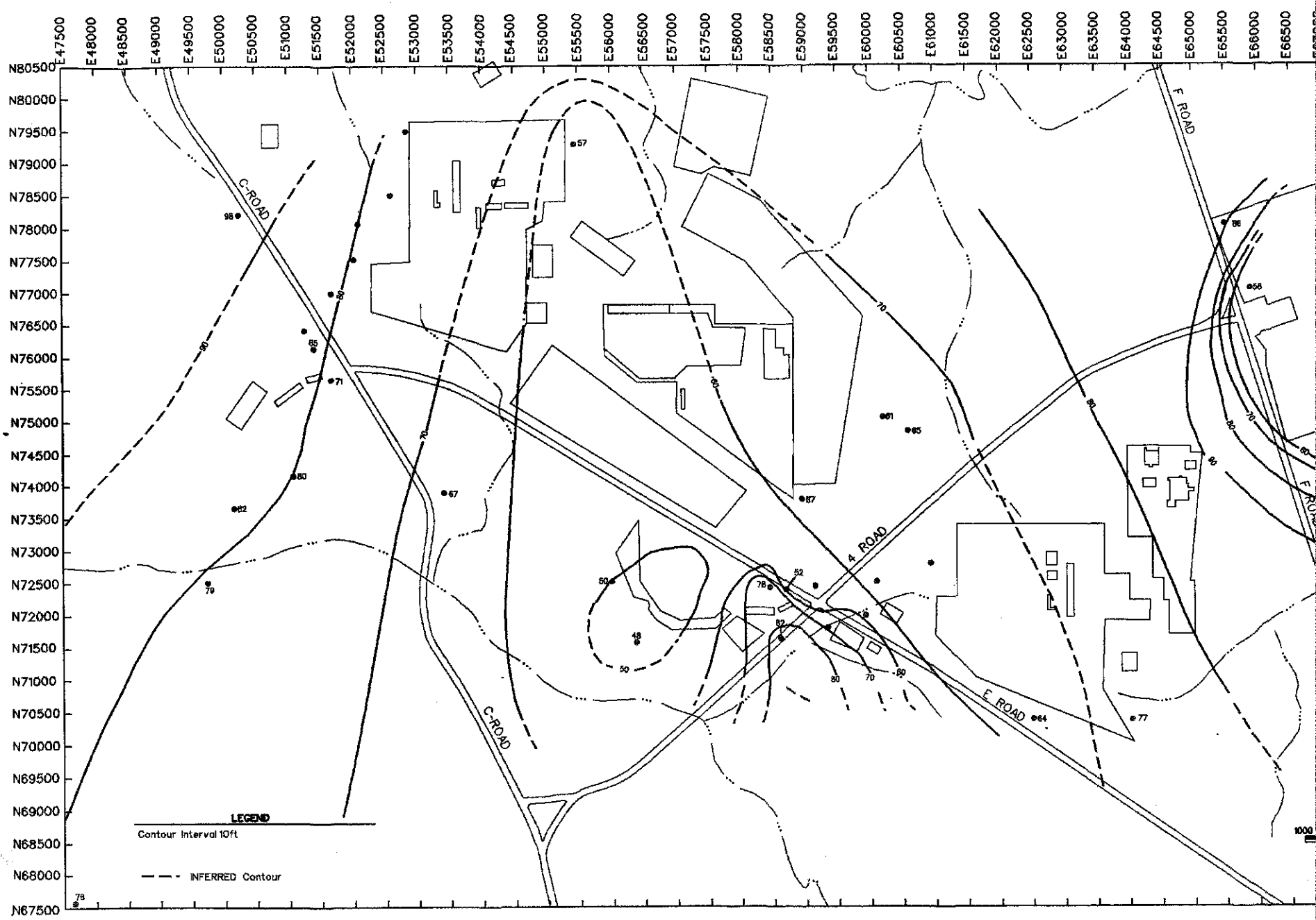


Westinghouse
SAVANNAH RIVER SITE

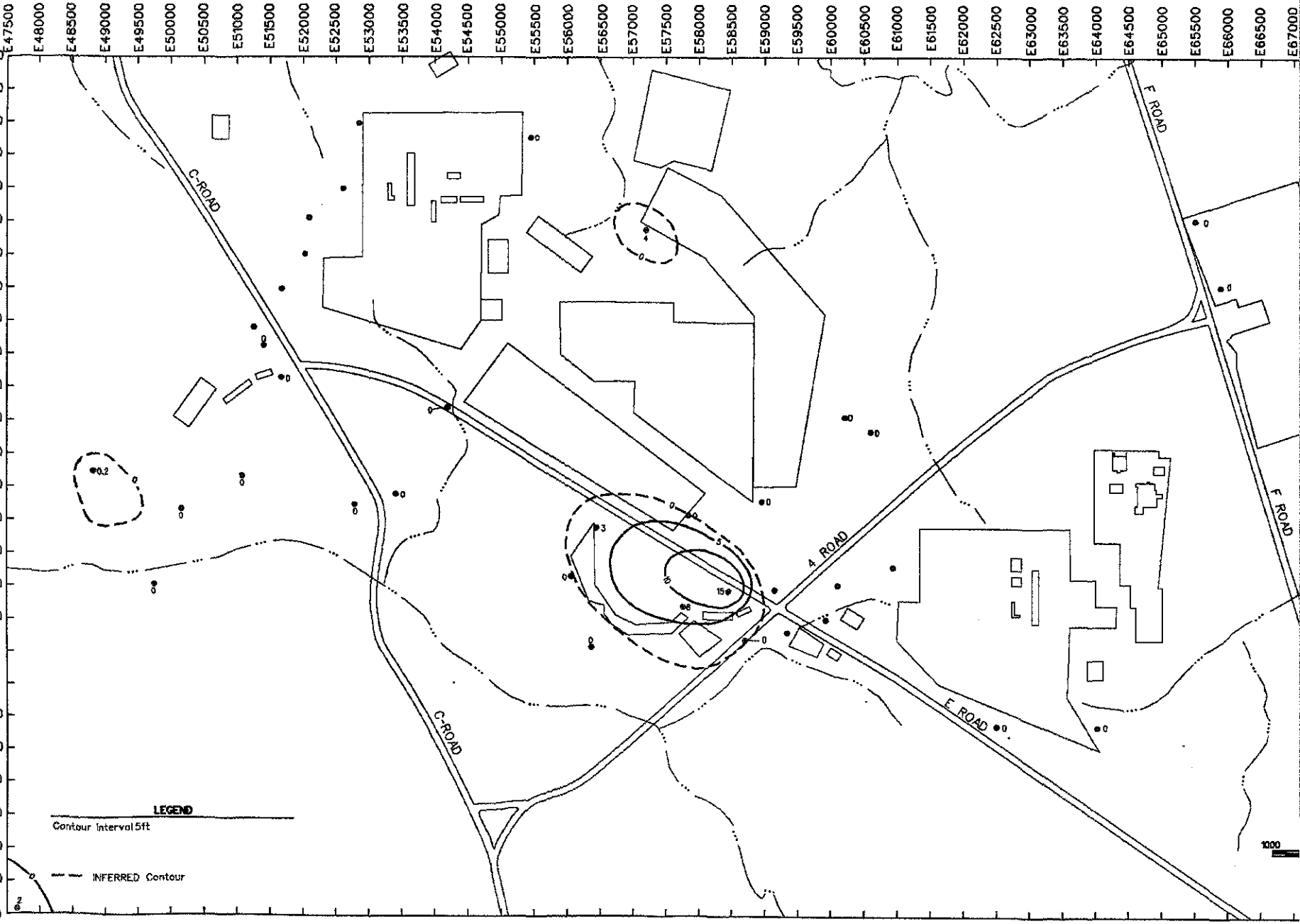
OSA | FIG. 6

LOCATIONS OF BORINGS PENETRATING THE GORDON AQUIFER , OSA

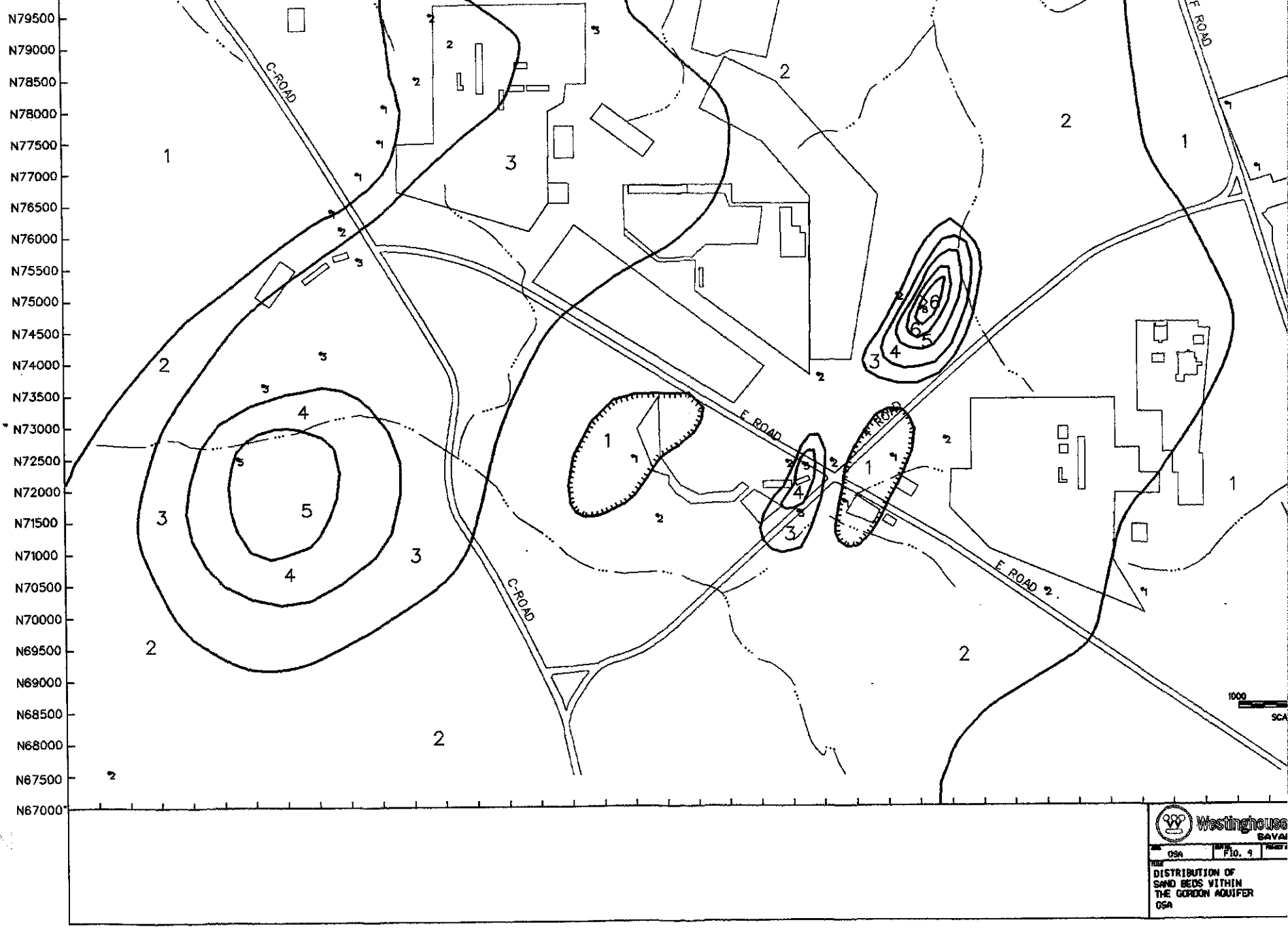
T. HITCHEY | 1-21-92



Isopach Map of Aquifer Unit IIA (Congaree Aquifer) in the GSA



Isopach Map of Calcareous Sediments in Aquifer Unit IIA (Congaree Aquifer) in the GSA

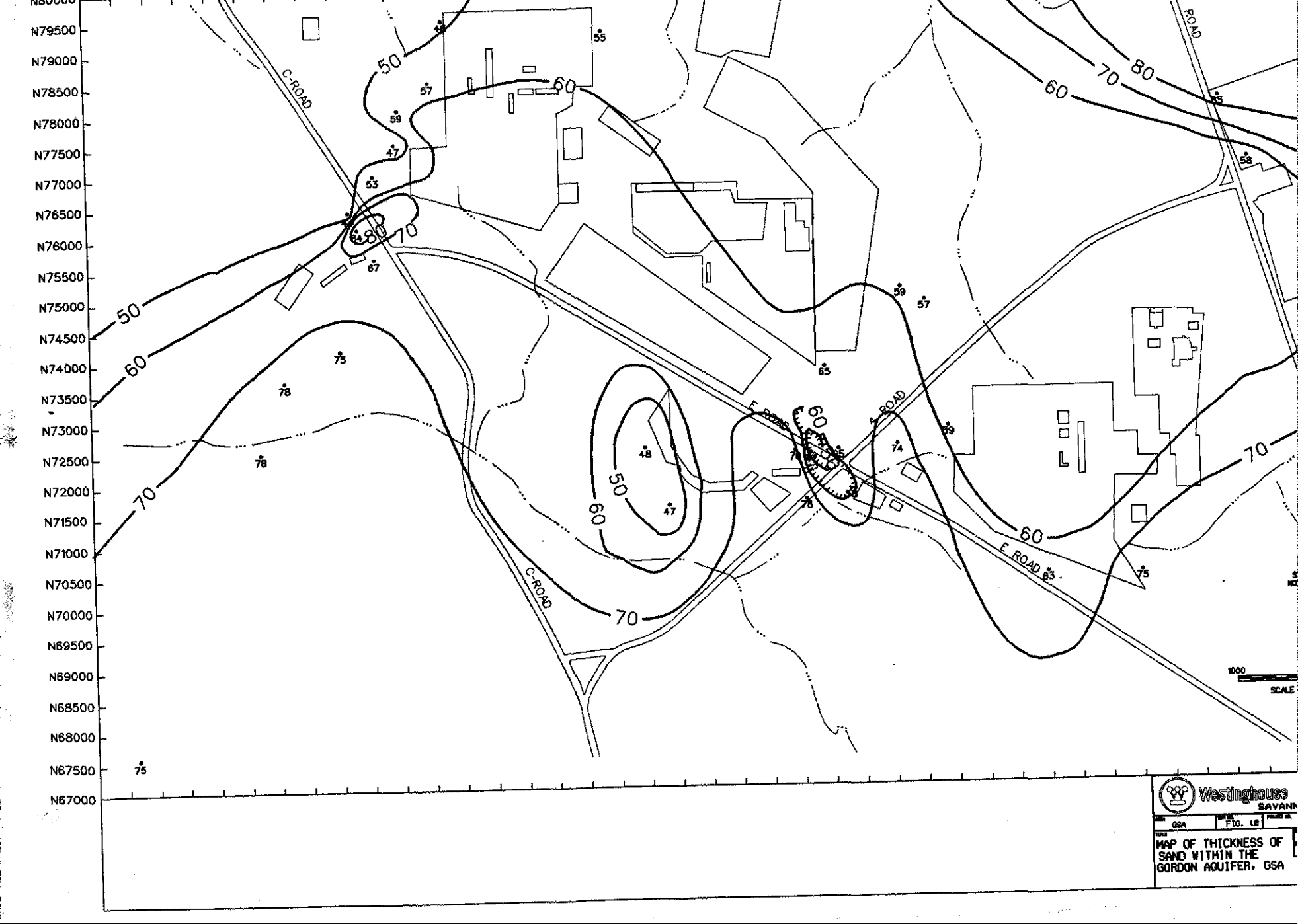


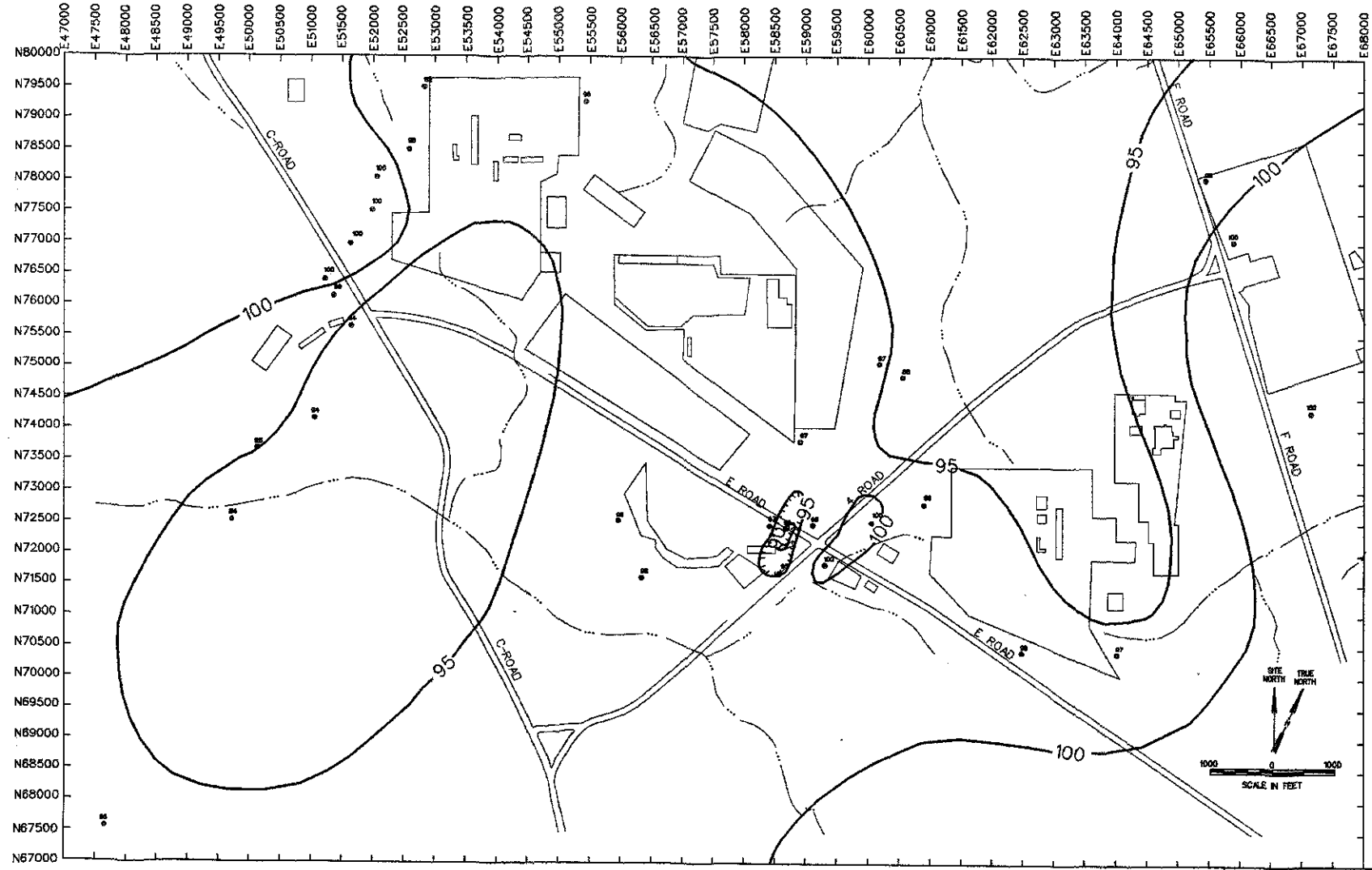
Westinghouse

SAVA

09A | FIG. 9

DISTRIBUTION OF SAND BEDS WITHIN THE GORDON AQUIFER OSA

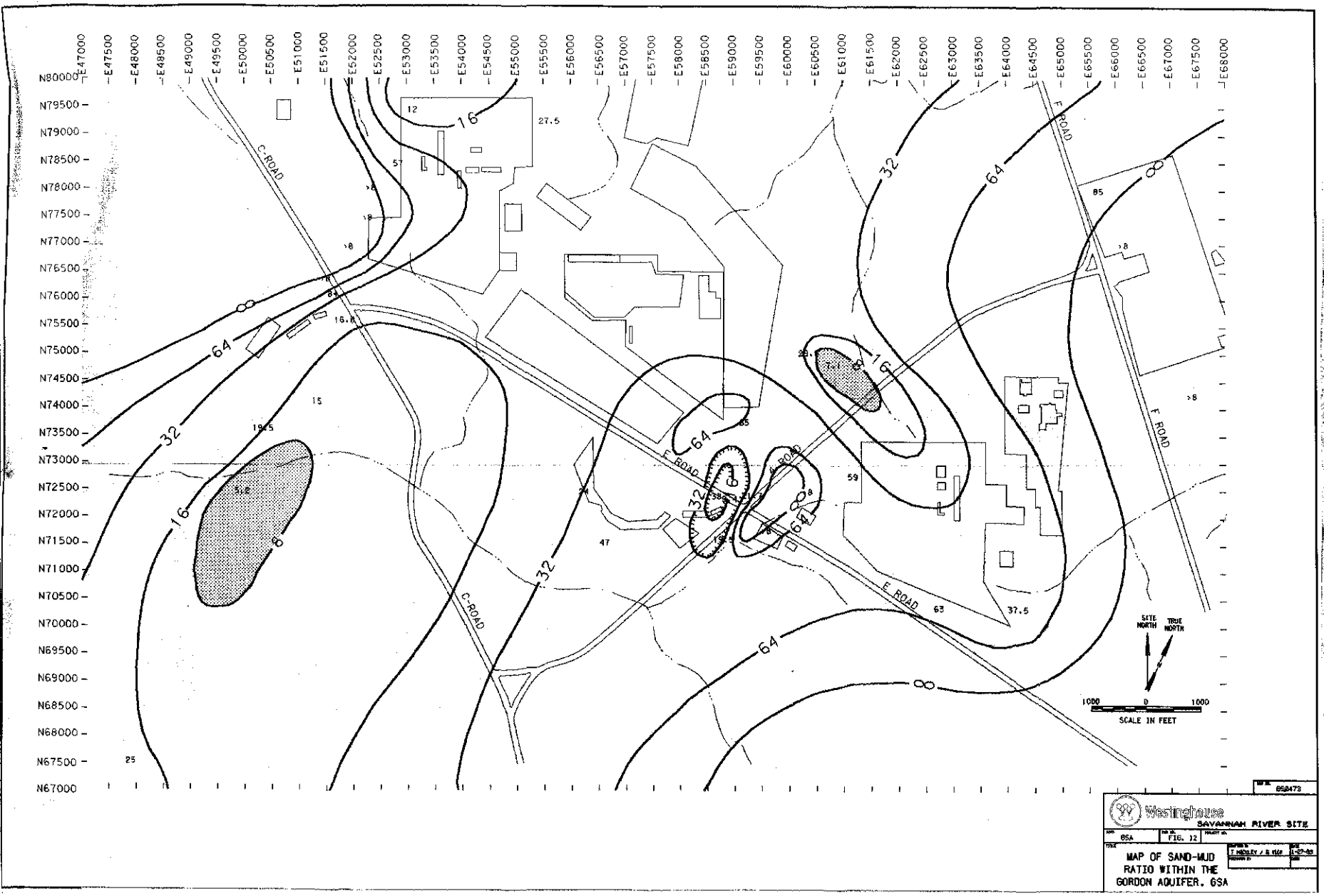

N79500
N79000
N78500
N78000
N77500
N77000
N76500
N76000
N75500
N75000
N74500
N74000
N73500
N73000
N72500
N72000
N71500
N71000
N70500
N70000
N69500
N69000
N68500
N68000
N67500
N67000
C-ROAD
E. ROAD
50
60
70
80
1000
SCALE
Westinghouse
SAVANN
GSA
FIG. 18
MAP OF THICKNESS OF SAND WITHIN THE GORDON AQUIFER, GSA

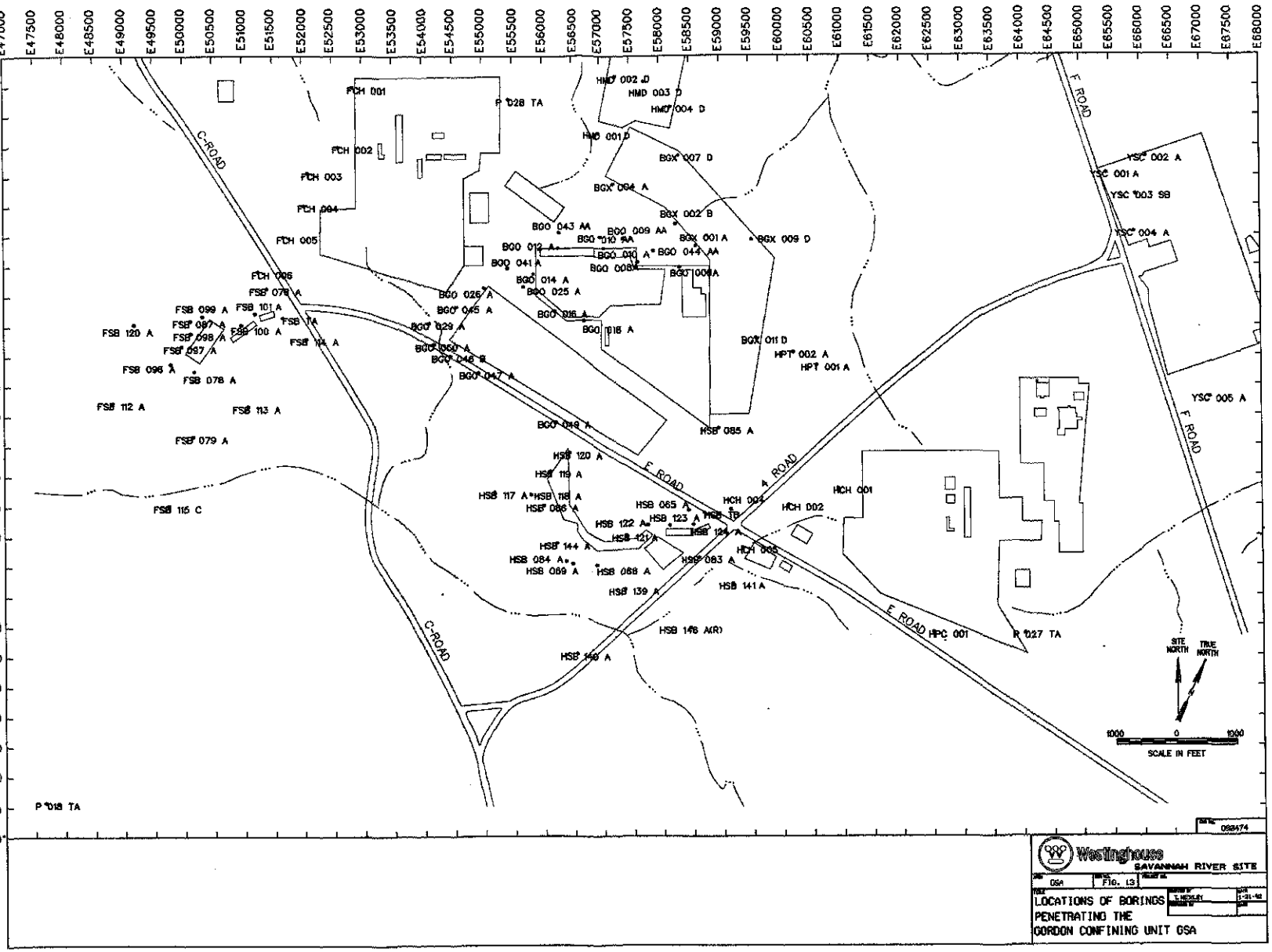


Westinghouse
SAVANNAH RIVER SITE

FIG. 11

MAP OF PERCENT SAND BEDS WITHIN THE GORDON AQUIFER, OSA

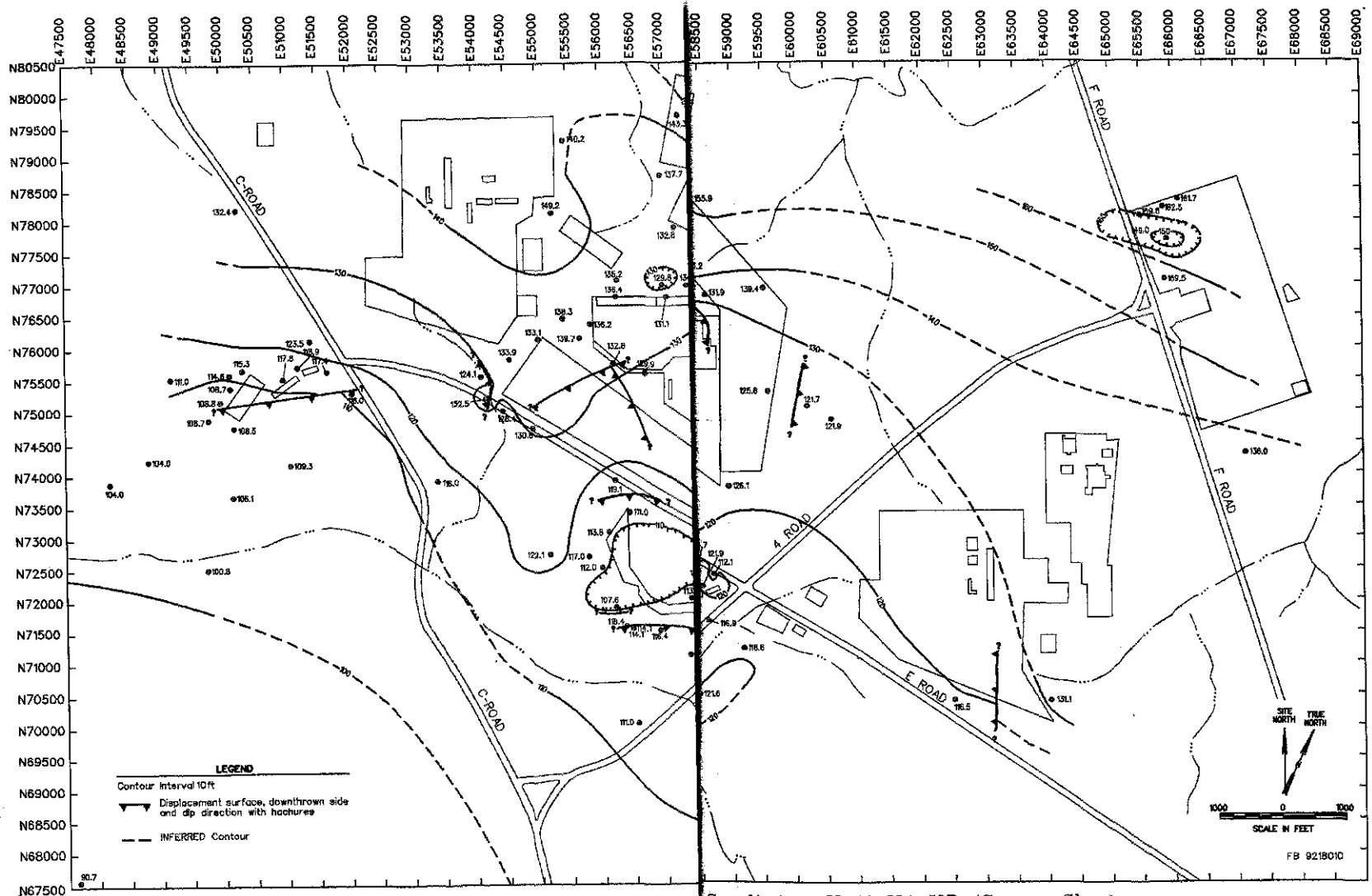

E47000
E47500
E48000
E48500
E49000
E49500
E50000
E50500
E51000
E51500
E52000
E52500
E53000
E53500
E54000
E54500
E55000
E55500
E56000
E56500
E57000
E57500
E58000
E58500
E59000
E59500
E60000
E60500
E61000
E61500
E62000
E62500
E63000
E63500
E64000
E64500
E65000
E65500
E66000
E66500
E67000
E67500
E68000
N80000
N79500
N79000
N78500
N78000
N77500
N77000
N76500
N76000
N75500
N75000
N74500
N74000
N73500
N73000
N72500
N72000
N71500
N71000
N70500
N70000
N69500
N69000
N68500
N68000
N67500
N67000
C-ROAD
F ROAD
E ROAD
SITE NORTH
TRUE NORTH
1000
0
1000
SCALE IN FEET
Westinghouse
SAVANNAH RIVER SITE
MAP OF SAND-MUD RATIO WITHIN THE GORDON AQUIFER, GSA
FIG. 12



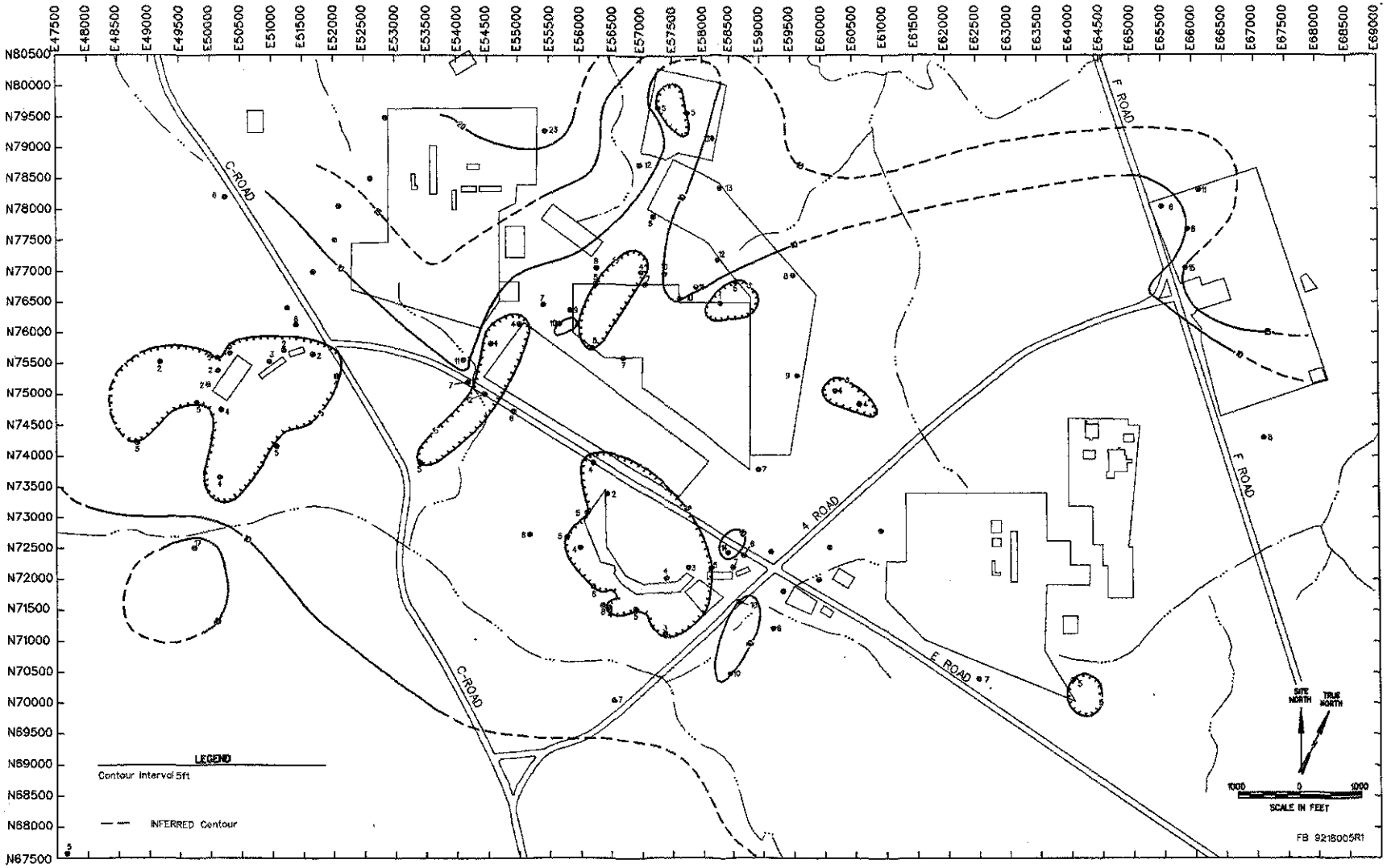
Westinghouse
SAVANNAH RIVER SITE

GSA	FIG. 13		

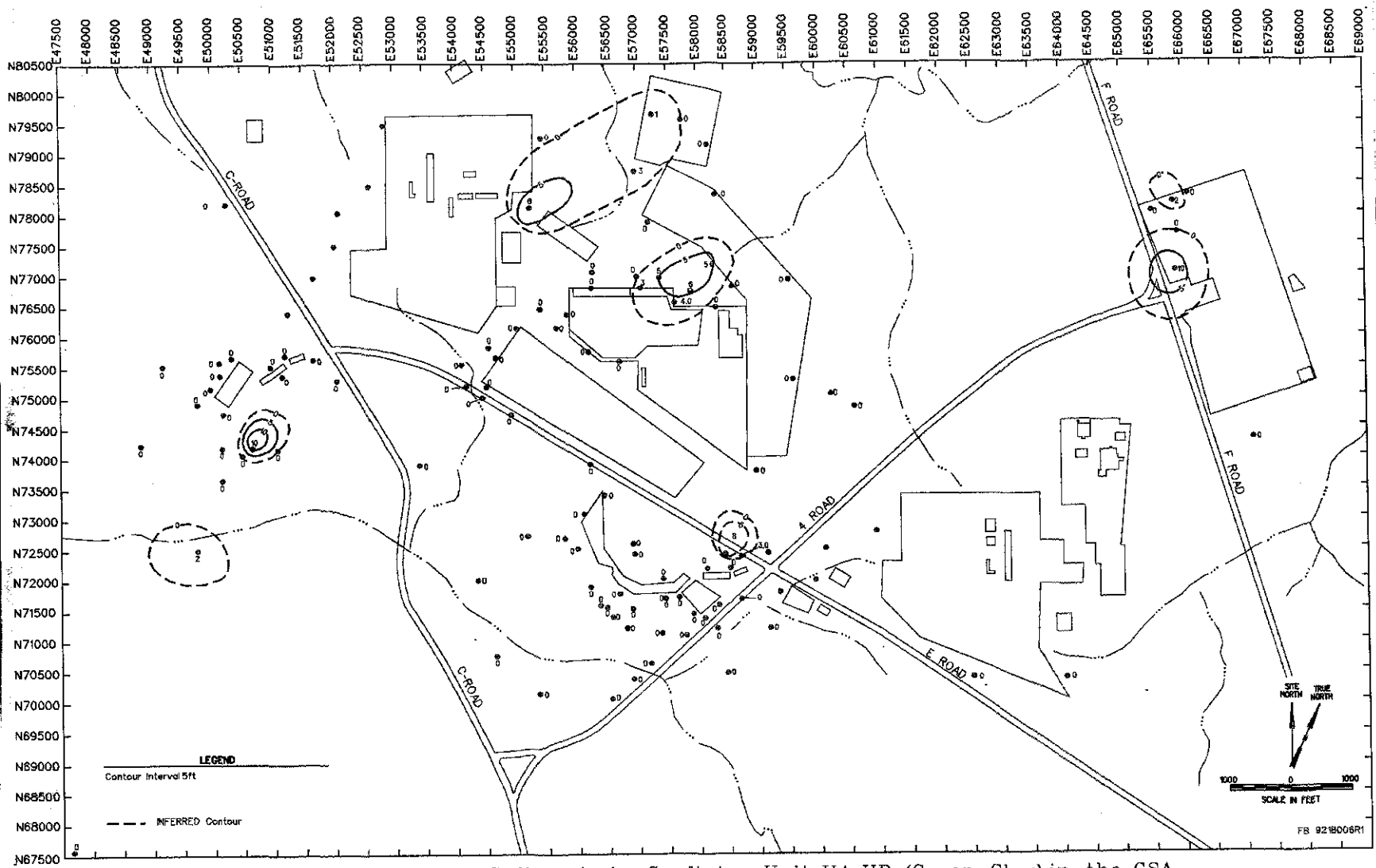
LOCATIONS OF BORINGS PENETRATING THE GORDON CONFINING UNIT GSA



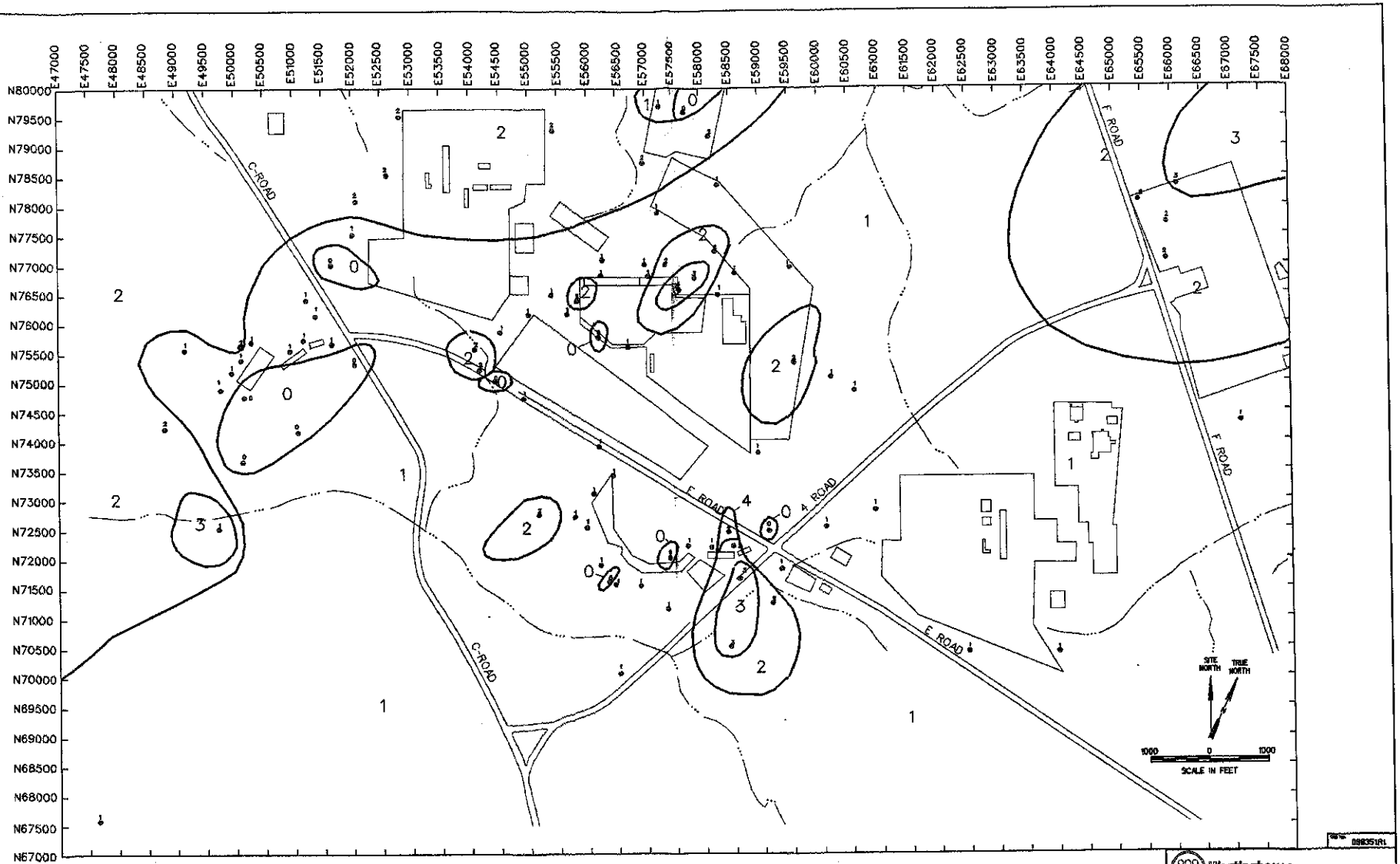
Altitude Contour Map of the Top of Confining Unit IIA-IIB (Green Clay)



Isopach Map of Confining IIA-IIB (Green Clay) in the GSA



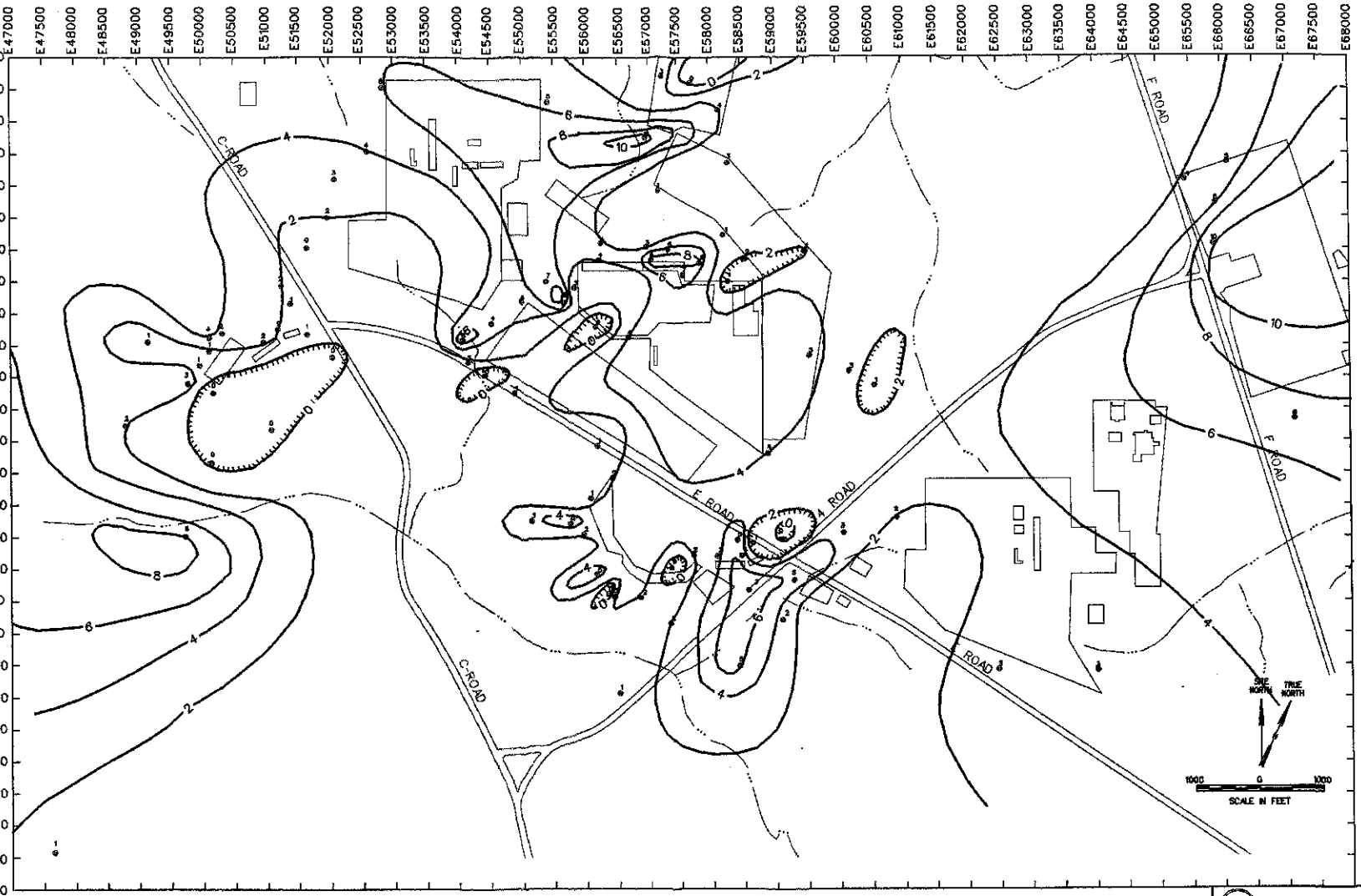
Isopach Map of Calcareous Sediments in Confining Unit IIA-IIB (Green Clay) in the GSA



Westinghouse
SAVANNAH RIVER SITE

FIG. 17

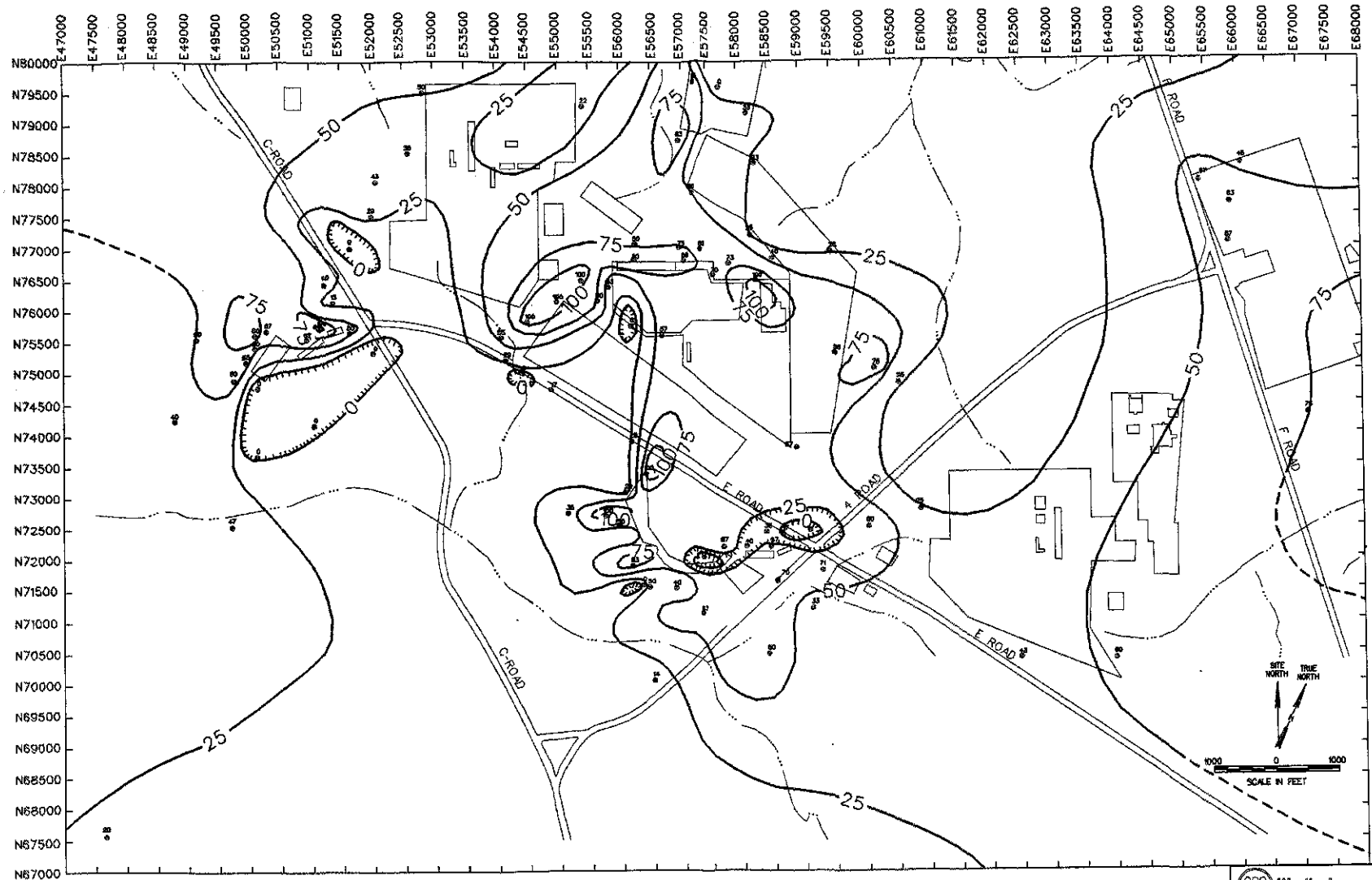
DISTRIBUTION OF MUD BEDS WITHIN THE GORDON CONFINING UNIT, GSA



Westinghouse
SAVANNAH RIVER SITE

FIG. 16

MAP THICKNESS OF MUD BEDS WITHIN THE GORDON CONFINING UNIT, GSA



Westinghouse
SAVANNAH RIVER SITE

FIG. 19

MAP OF PERCENT MUD BEDS WITHIN THE GORDON CONFINING UNIT, GSA

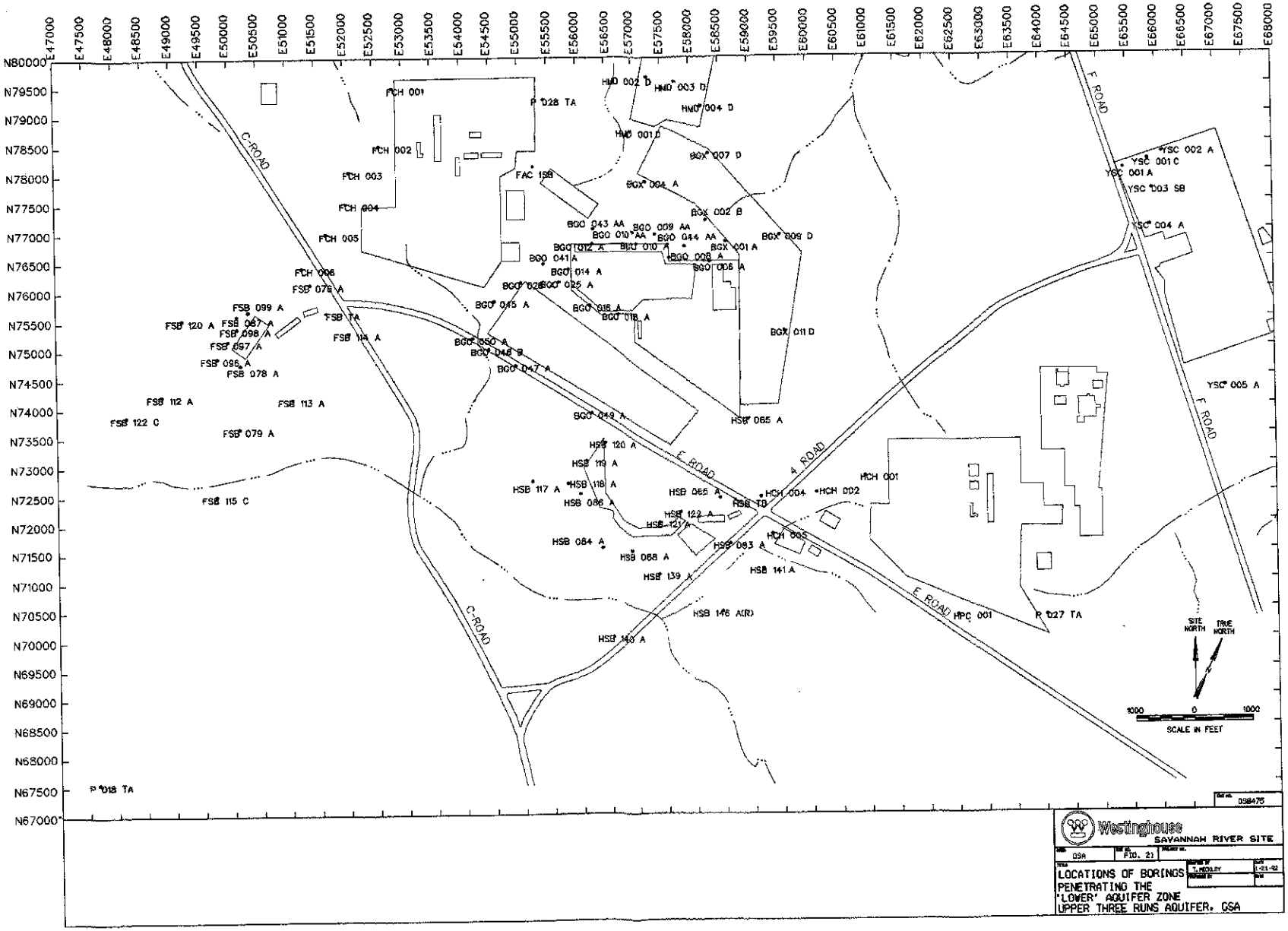
SAVANNAH RIVER SITE

FIG. 28

FACIES-TRIANGLE MAP OF THE GORDON CONFINING UNIT, GSA

11-27-95

B50954R1

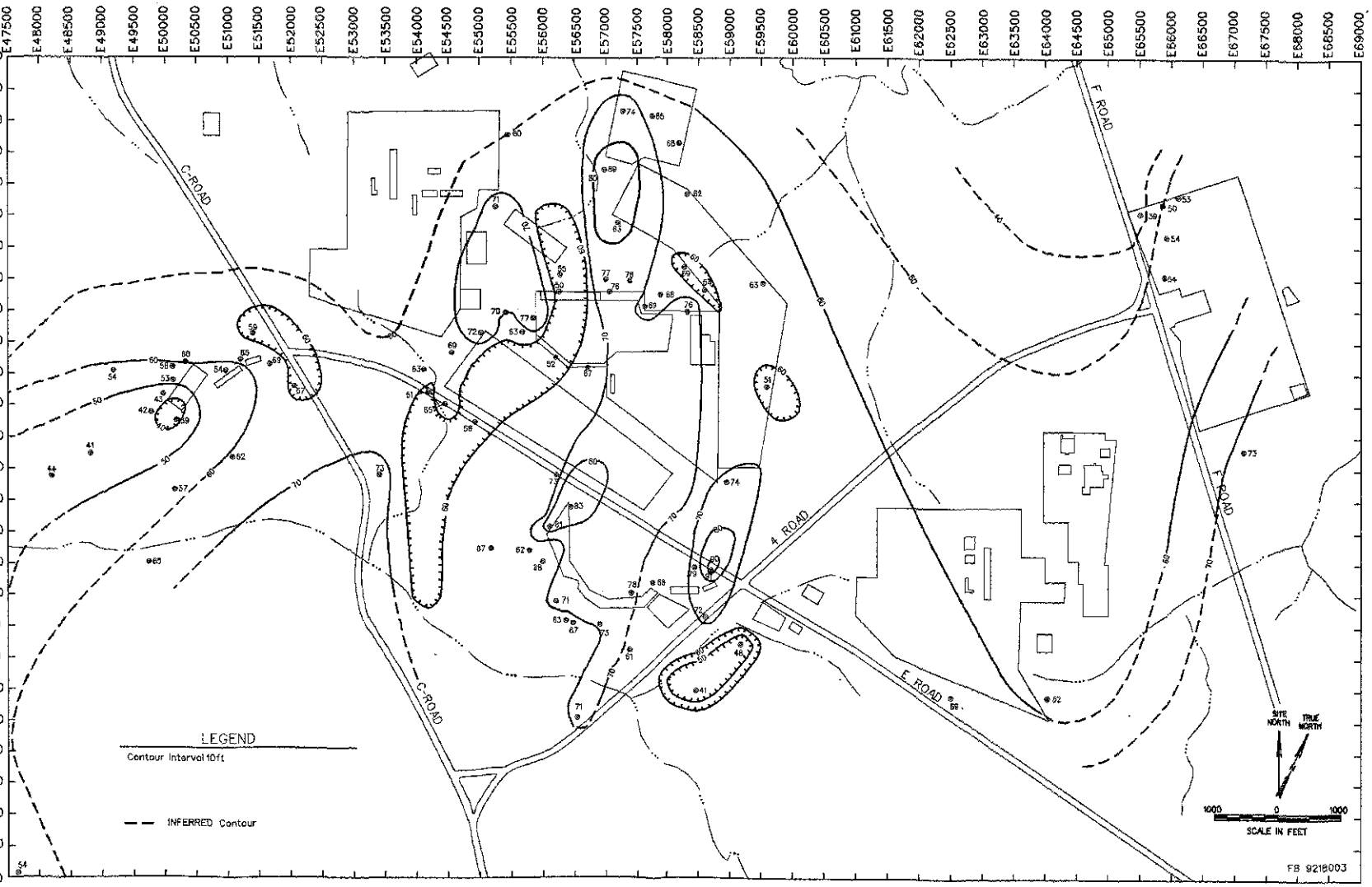


Westinghouse
SAVANNAH RIVER SITE

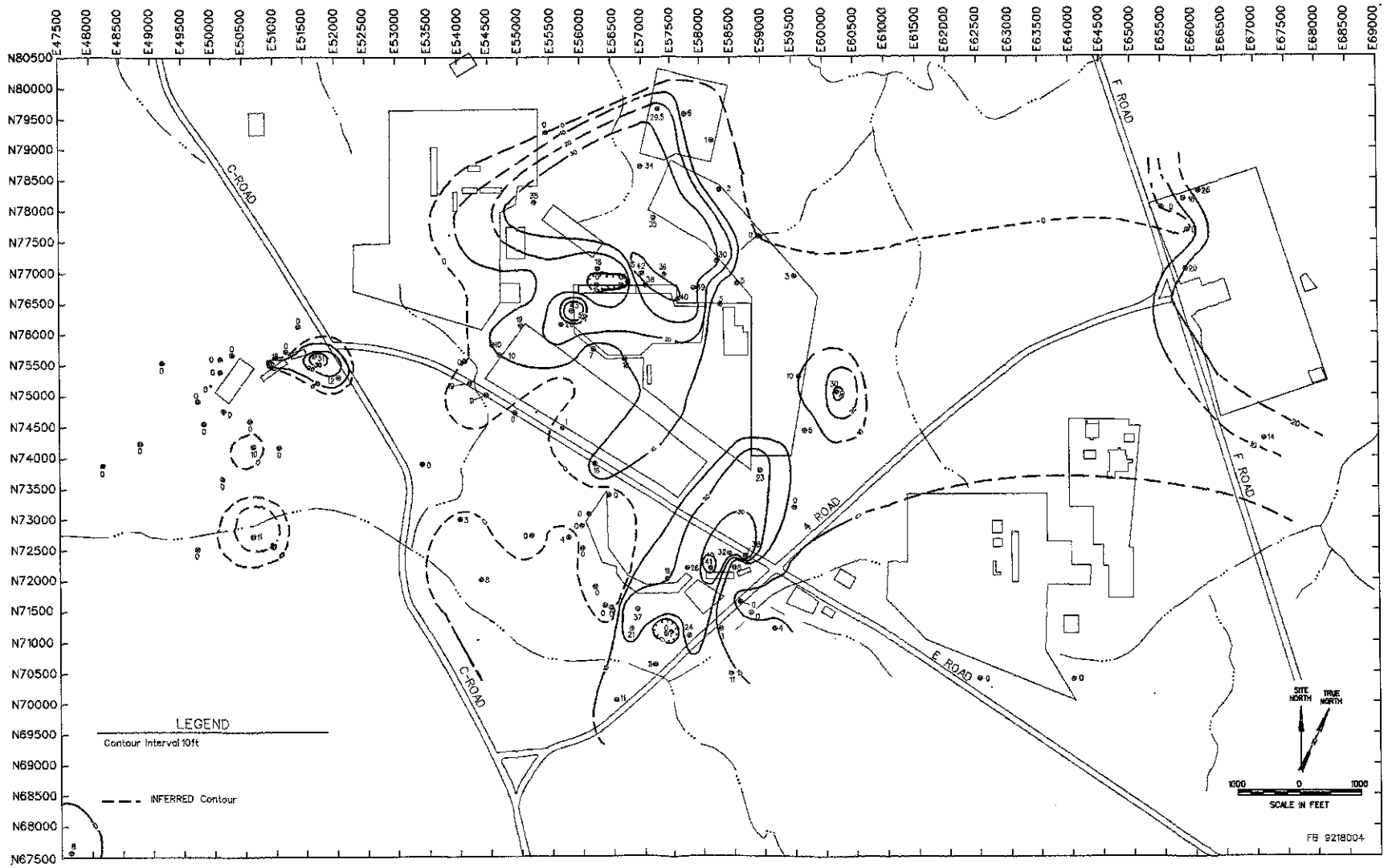
DOE	GSA	FID. 21	

LOCATIONS OF BORINGS PENETRATING THE 'LOWER' AQUIFER ZONE UPPER THREE RUNS AQUIFER, GSA

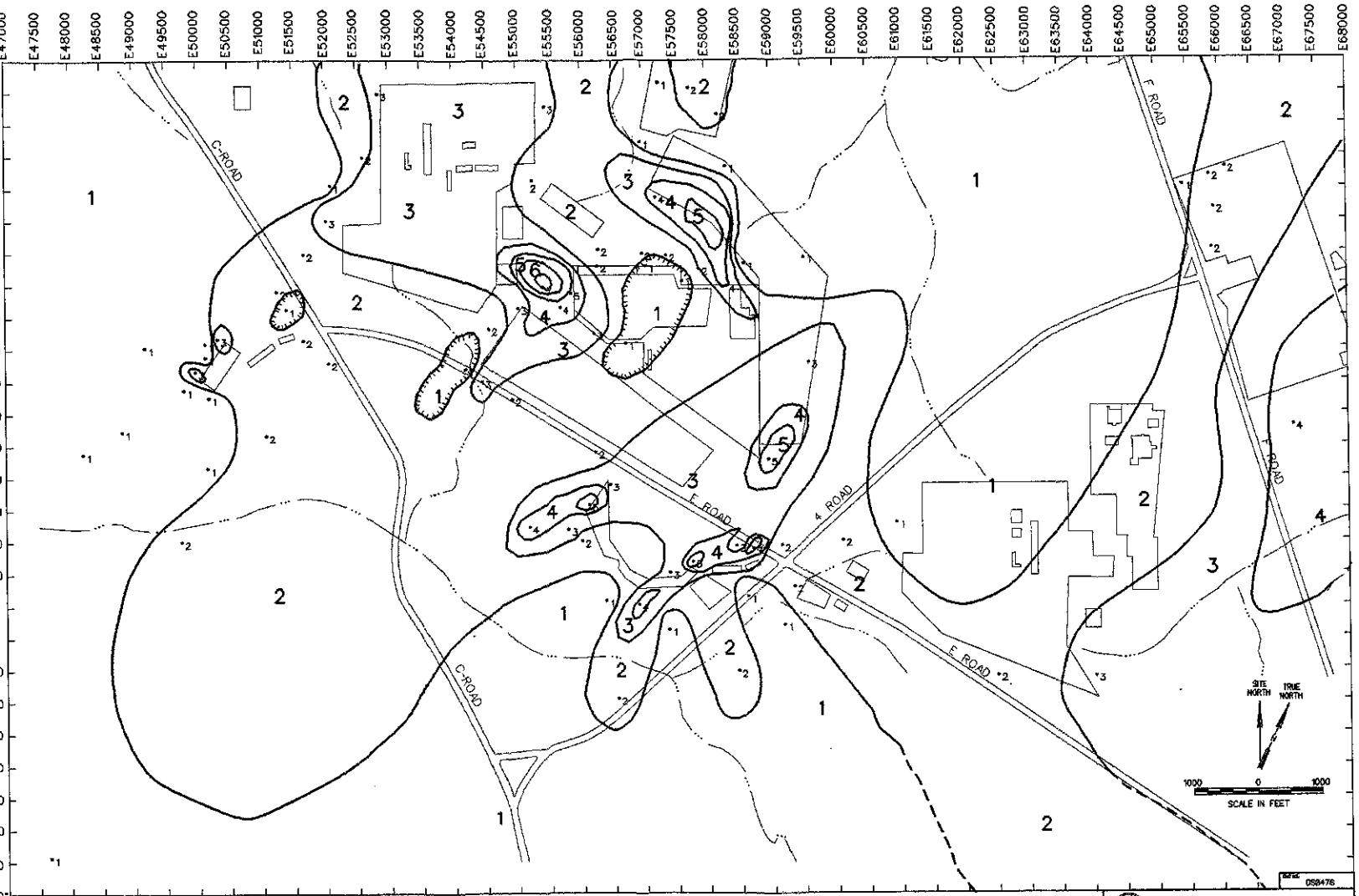
T. MEDLEY 1-21-92

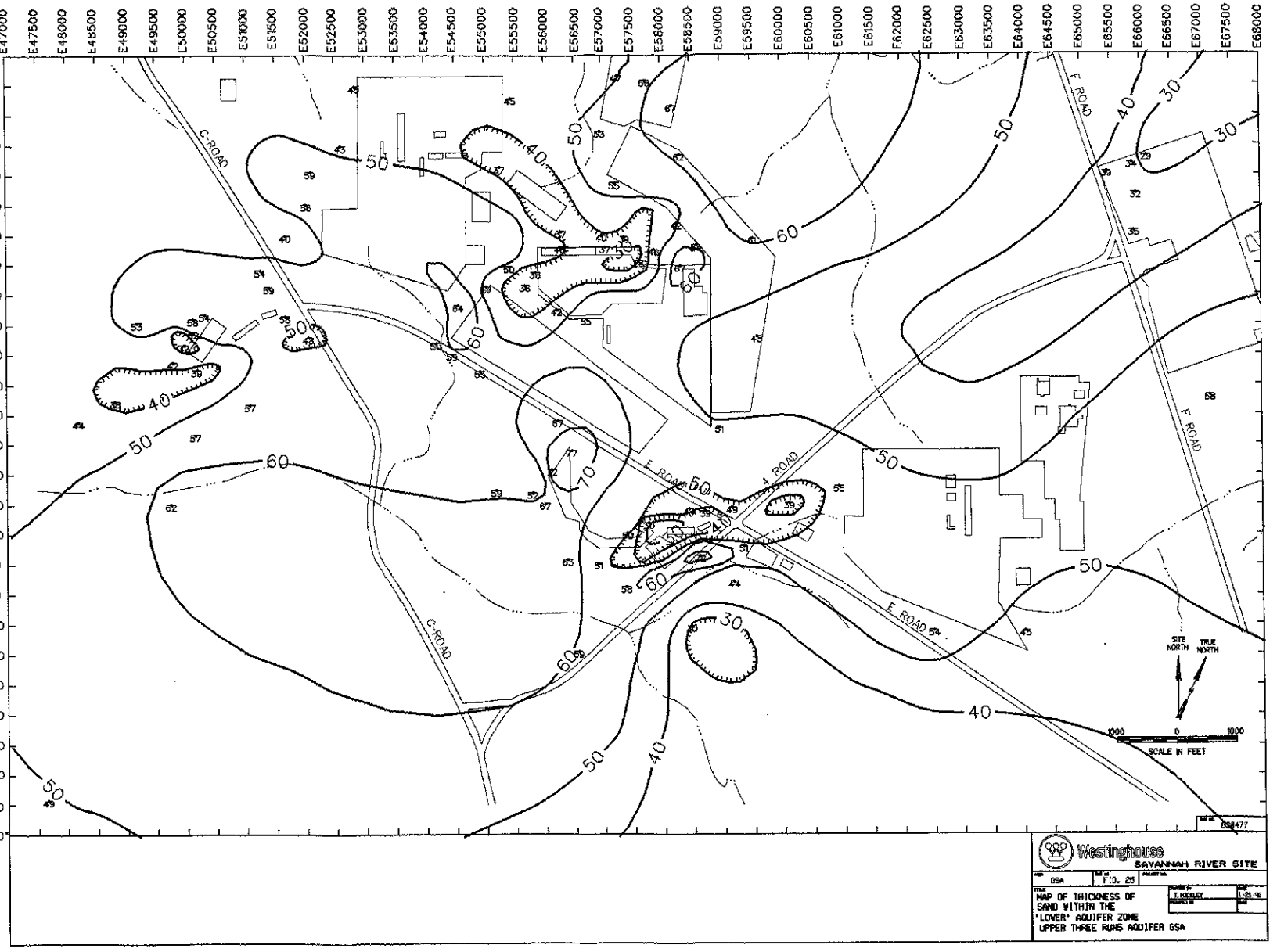


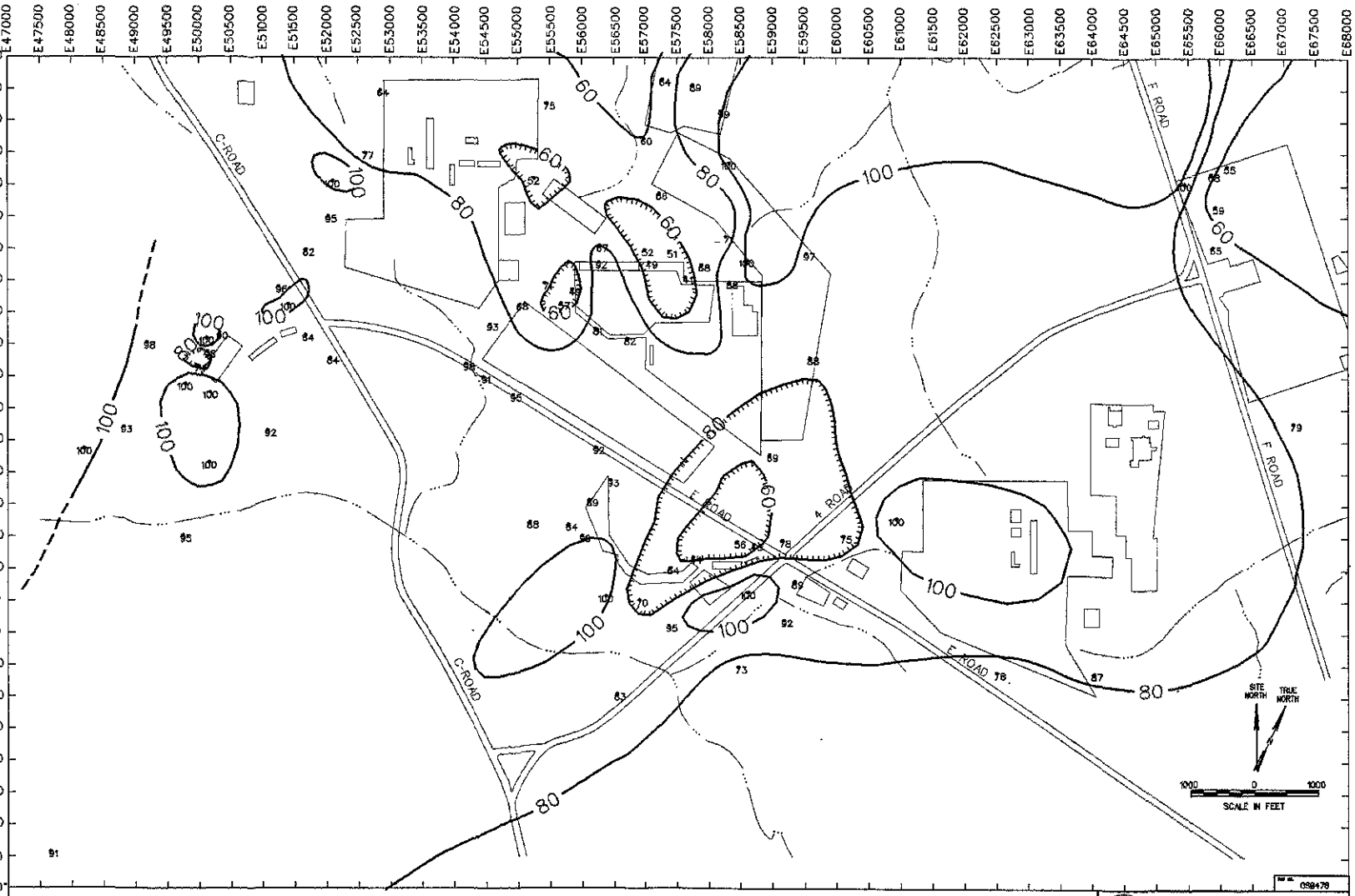
Isopach Map of Aquifer Zone IIB1 (Barnwell/McBean Aquifer) in the GSA



Isopach Map of Calcareous Sediments in Aquifer Zone IIB1(Barnwell/McBean Aquifer) in the GSA


E47000 E47500 E48000 E48500 E49000 E49500 E50000 E50500 E51000 E51500 E52000 E52500 E53000 E53500 E54000 E54500 E55000 E55500 E56000 E56500 E57000 E57500 E58000 E58500 E59000 E59500 E60000 E60500 E61000 E61500 E62000 E62500 E63000 E63500 E64000 E64500 E65000 E65500 E66000 E66500 E67000 E67500 E68000
N80000 N79500 N79000 N78500 N78000 N77500 N77000 N76500 N76000 N75500 N75000 N74500 N74000 N73500 N73000 N72500 N72000 N71500 N71000 N70500 N70000 N69500 N69000 N68500 N68000 N67500 N67000
C-ROAD
E. ROAD
4 ROAD
F ROAD
SITE NORTH
TRUE NORTH
1000 0 1000
SCALE IN FEET
DS8476
Westinghouse
SAVANNAH RIVER SITE
WMF
FIG. 24
DISTRIBUTION OF SAND BEDS WITHIN THE "LOWER" AQUIFER ZONE UPPER THREE RUNS AQUIFER, GSA
T. MCKLEY
1-21-92


E47000 E47500 E48000 E48500 E49000 E49500 E50000 E50500 E51000 E51500 E52000 E52500 E53000 E53500 E54000 E54500 E55000 E55500 E56000 E56500 E57000 E57500 E58000 E58500 E59000 E59500 E60000 E60500 E61000 E61500 E62000 E62500 E63000 E63500 E64000 E64500 E65000 E65500 E66000 E66500 E67000 E67500 E68000
N80000 N79500 N79000 N78500 N78000 N77500 N77000 N76500 N76000 N75500 N75000 N74500 N74000 N73500 N73000 N72500 N72000 N71500 N71000 N70500 N70000 N69500 N69000 N68500 N68000 N67500 N67000
C-ROAD
E. ROAD
4 ROAD
SITE NORTH
TRUE NORTH
1000 0 1000
SCALE IN FEET
Westinghouse
SAVANNAH RIVER SITE
GSA
FID. 25
MAP OF THICKNESS OF SAND WITHIN THE "LOWER" AQUIFER ZONE UPPER THREE RUNS AQUIFER GSA
T. HICKEY
1-31-92

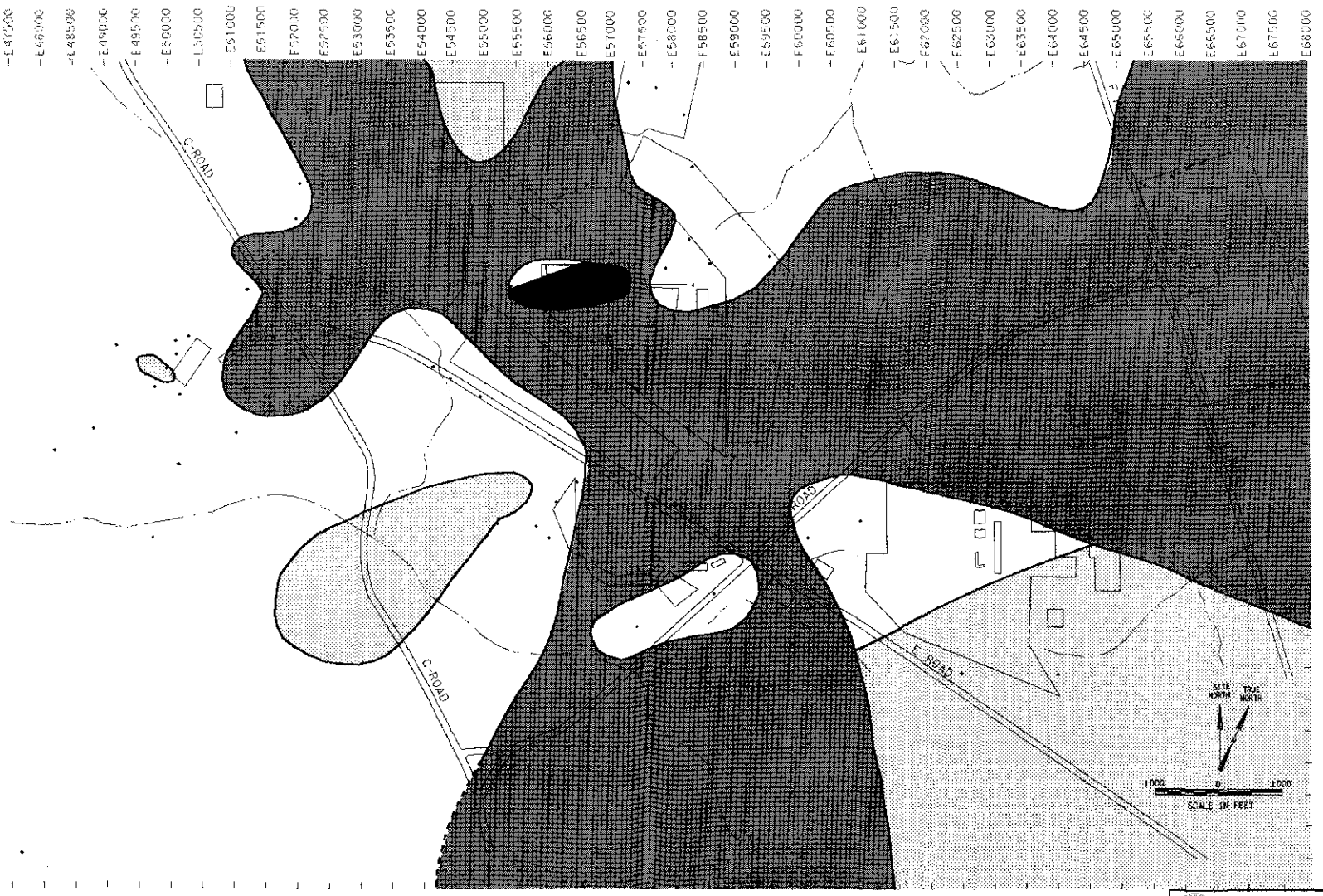


Westinghouse
SAVANNAH RIVER SITE

DSA	FIG. 25		

MAP OF PERCENT SAND BEDS WITHIN THE "LOWER" AQUIFER ZONE: UPPER THREE RUNS AQUIFER, DSA

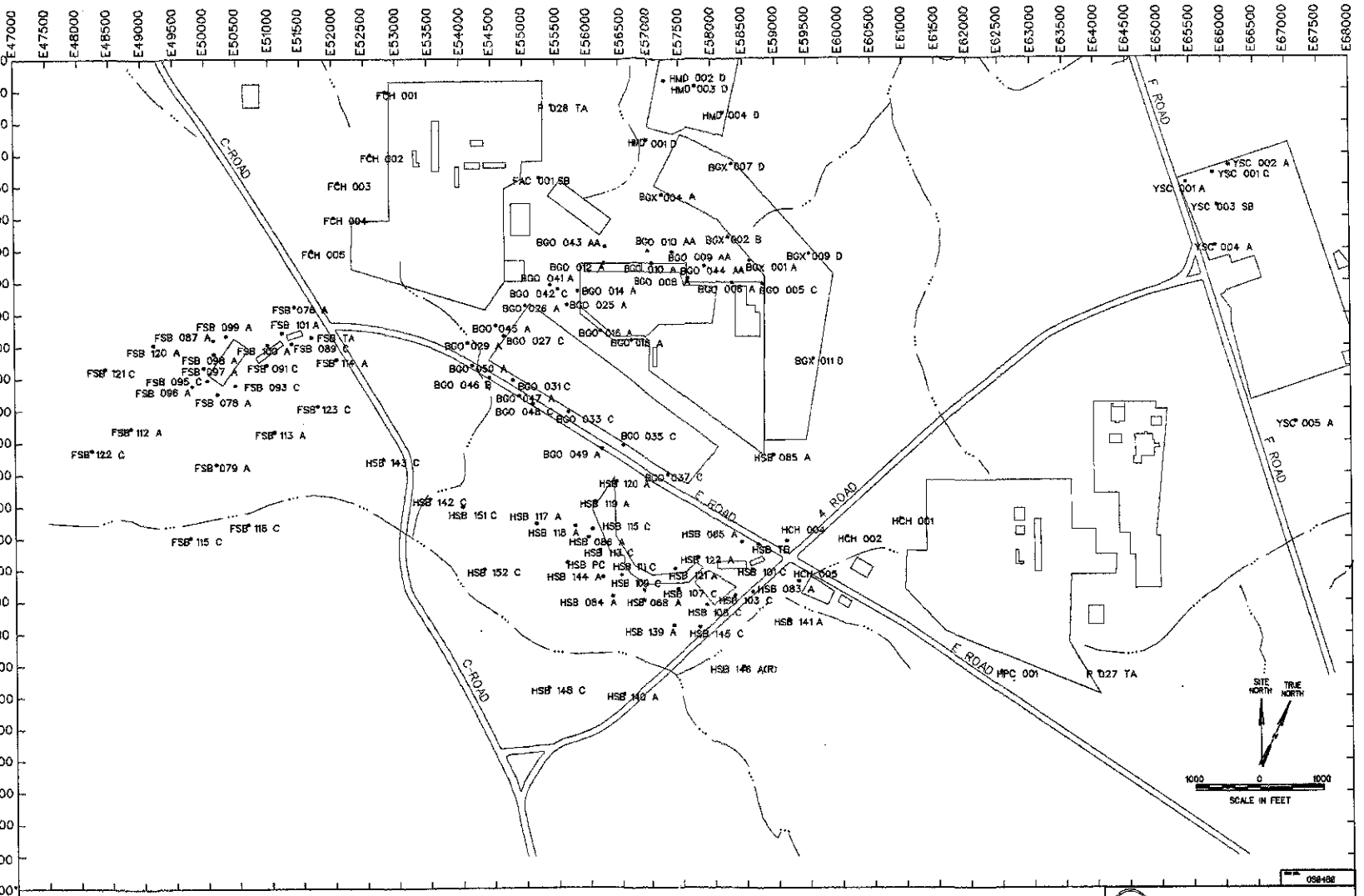
DRAWN BY T. RIDGLEY — DATE 5-21-92



SAVANNAH RIVER SITE

FIG. 27

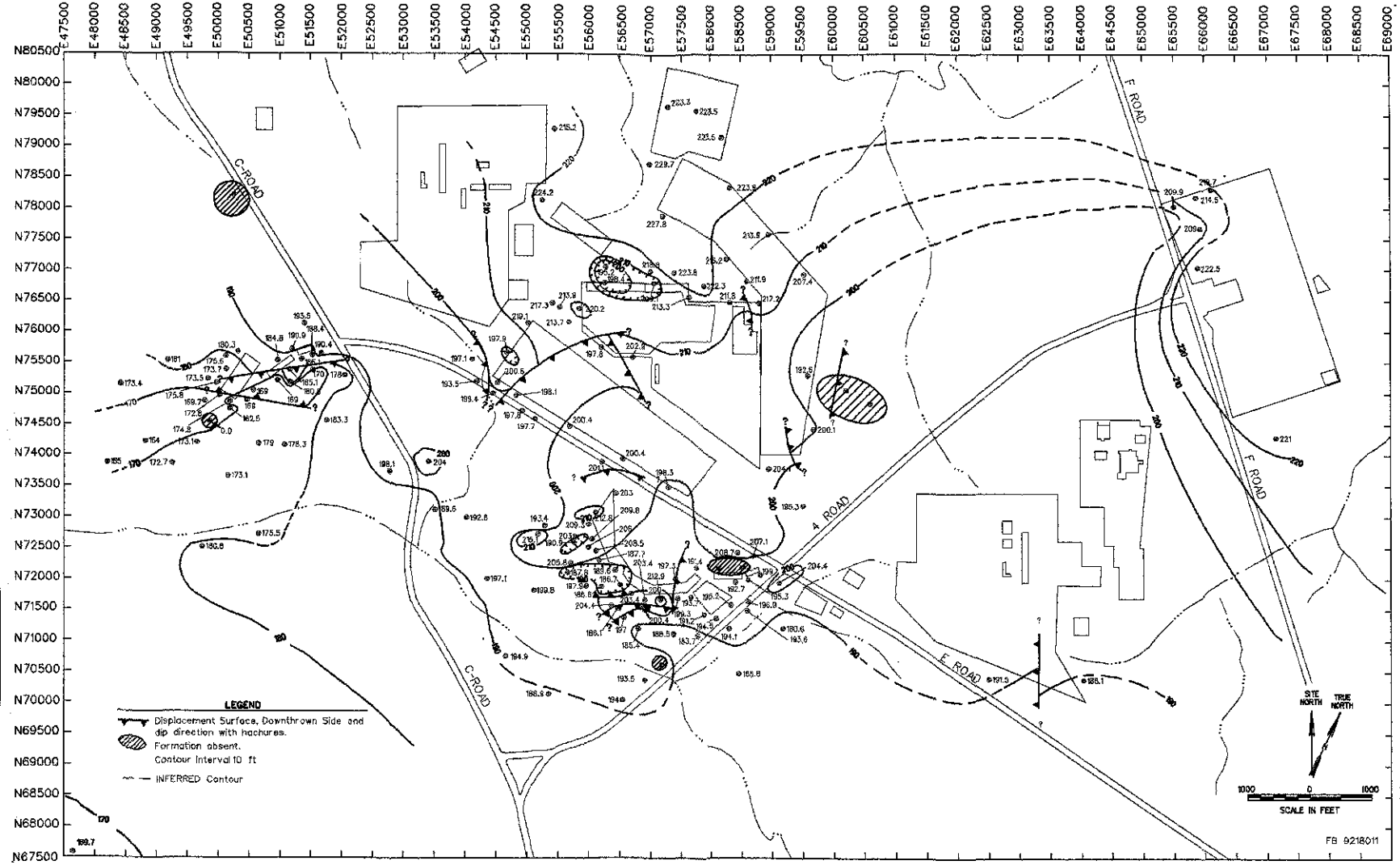
FACIES-TRIANGLE MAP OF THE "LOWER" AQUIFER ZONE UPPER THREE RUNS AQUIFER, GSA



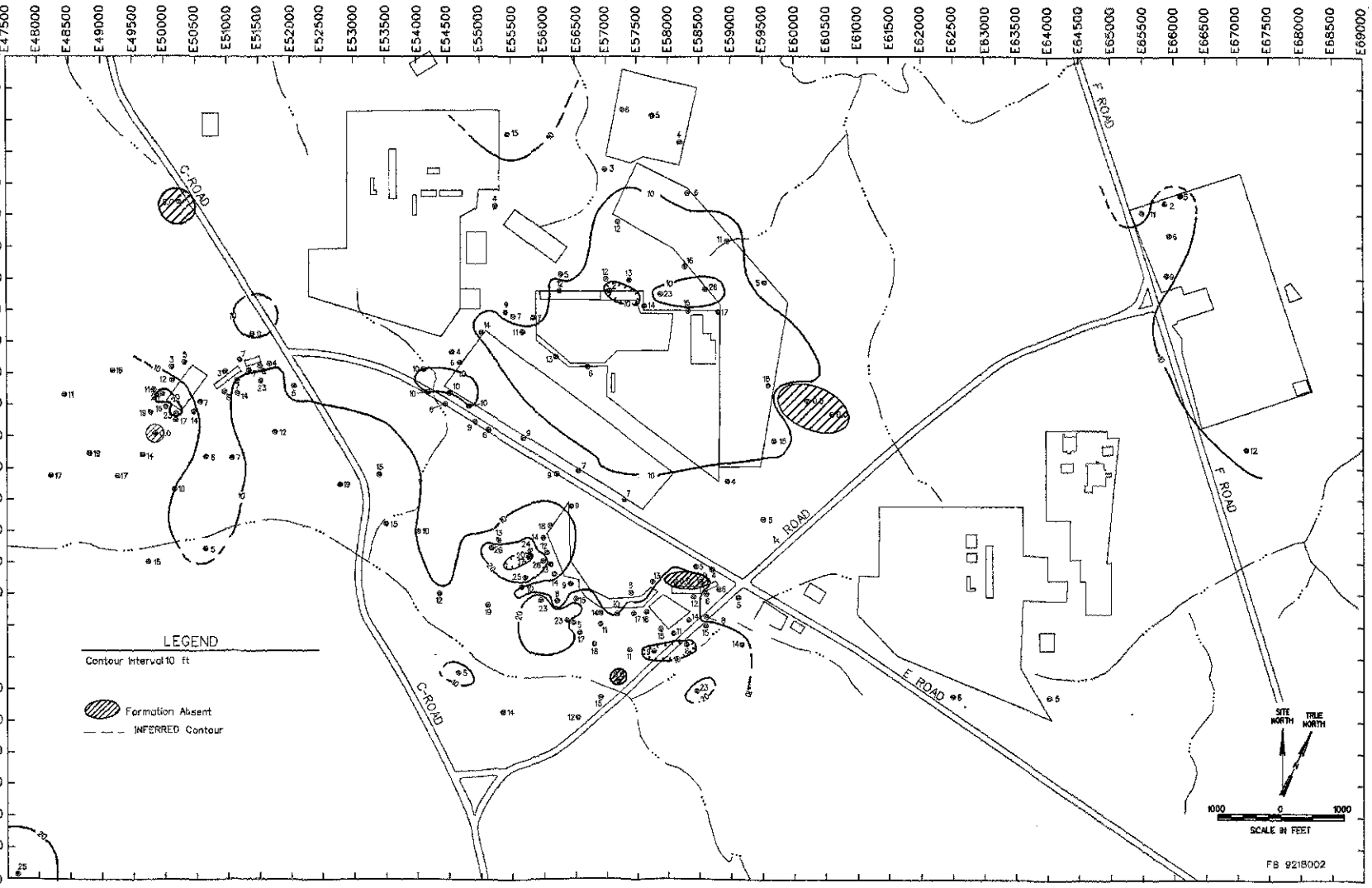
Westinghouse SAVANNAH RIVER SITE

UNIT: GSA	DWG. NO.: FIG. 28	PROJECT NO.:	098488
DRAWN BY: T. MOOLEY	DATE: 1-21-92		
CHECKED BY:	DATE:		

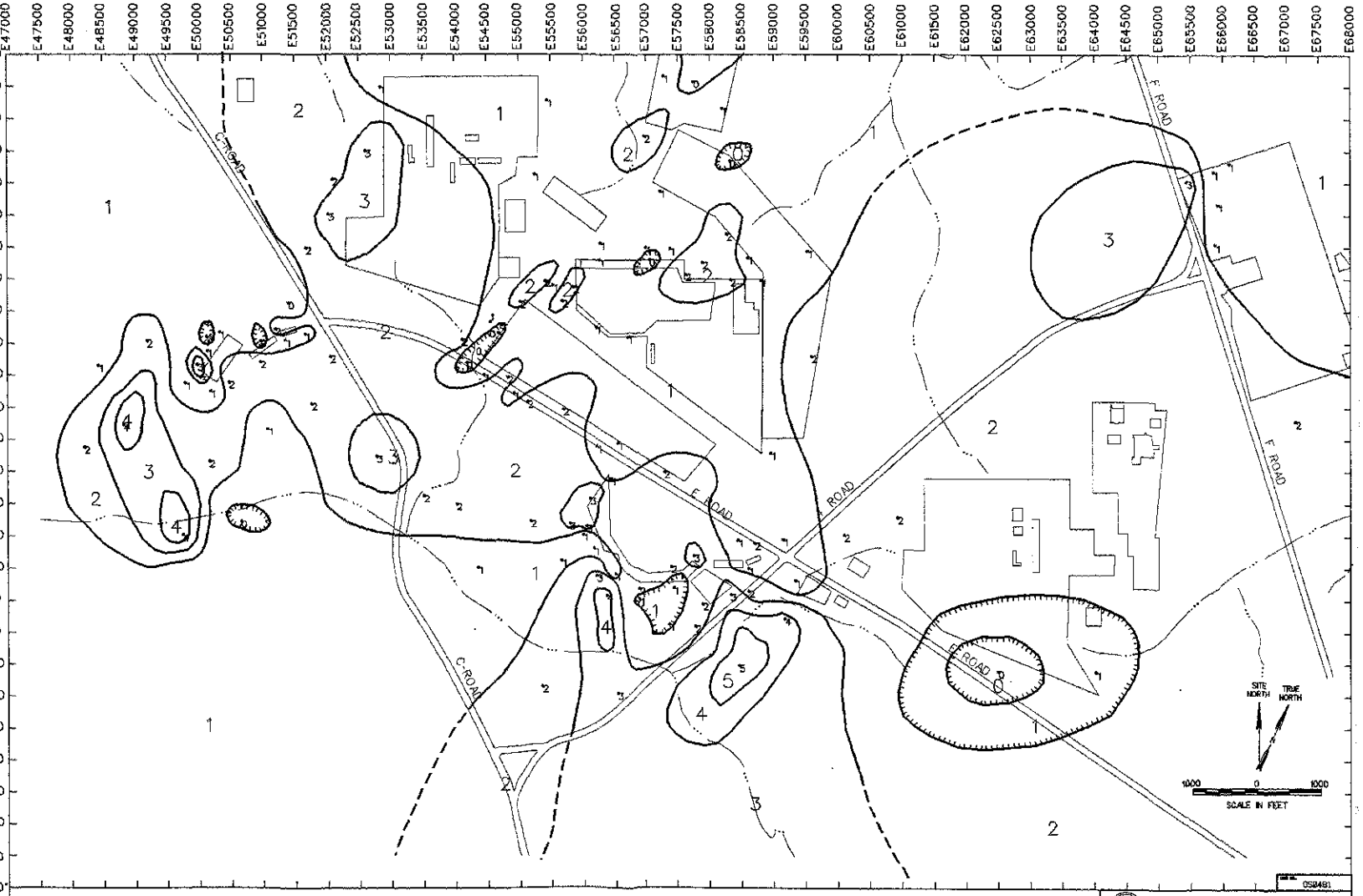
TITLE: LOCATIONS OF BORINGS PENETRATING THE "TAN CLAY" CONFINING ZONE UPPER THREE RUNS AQUIFER, GSA



Altitude contours of confining zone IIB1-IIB2 (tan clay)



Isopach Map of Confining Zone IIB. - IIB (Tan Clay)



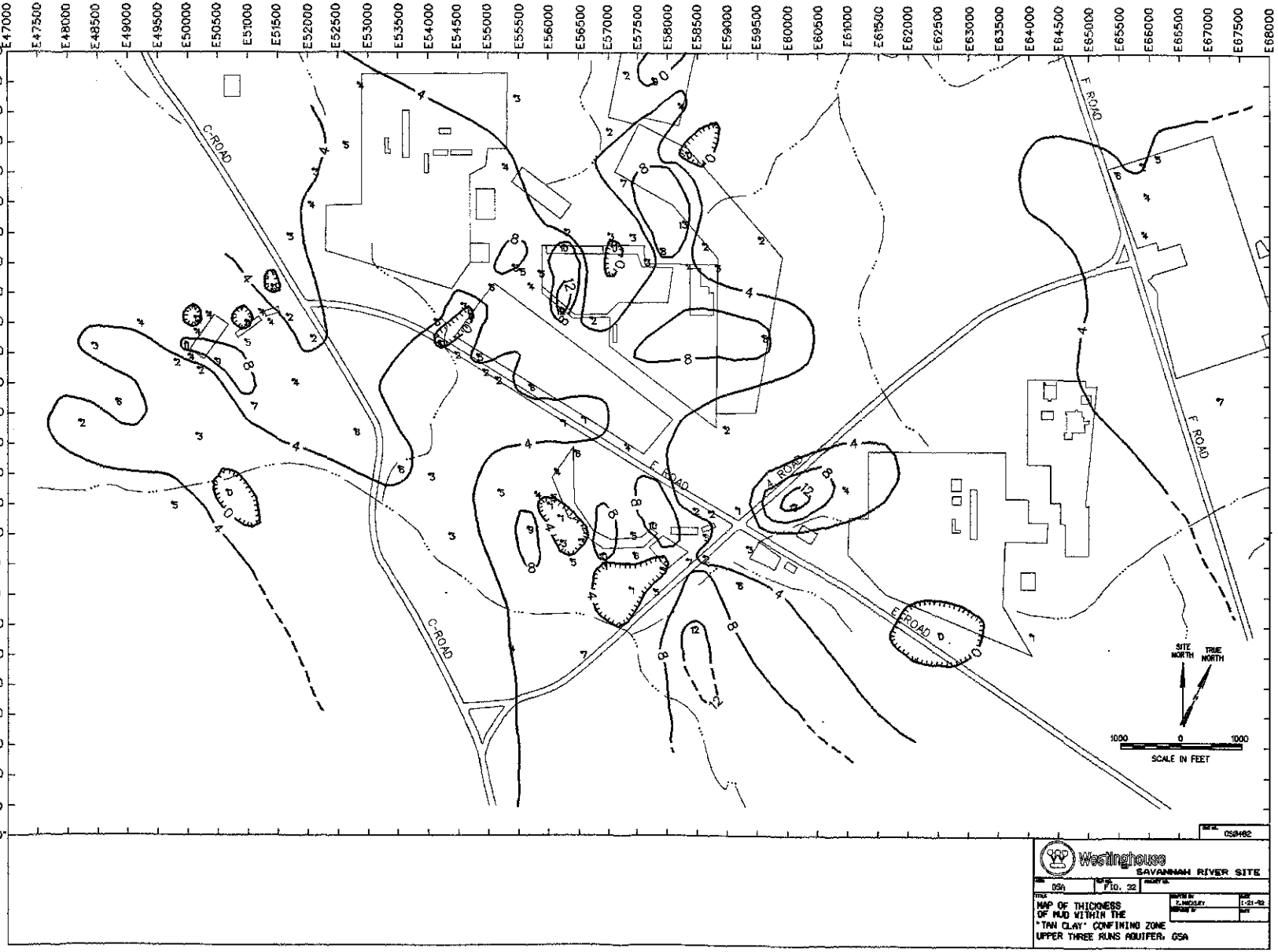
Westinghouse
SAVANNAH RIVER SITE

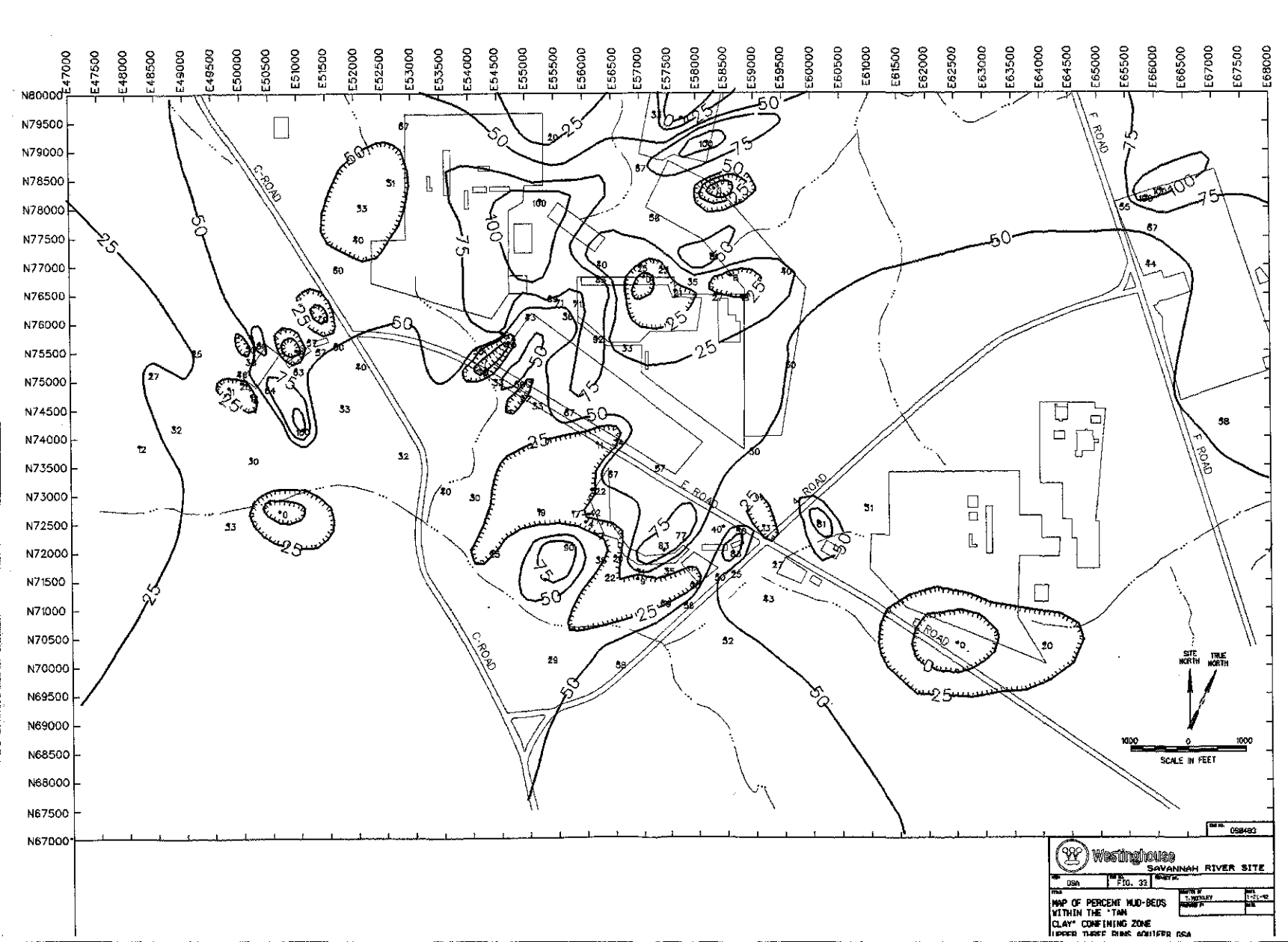
GSA | FIG. 31

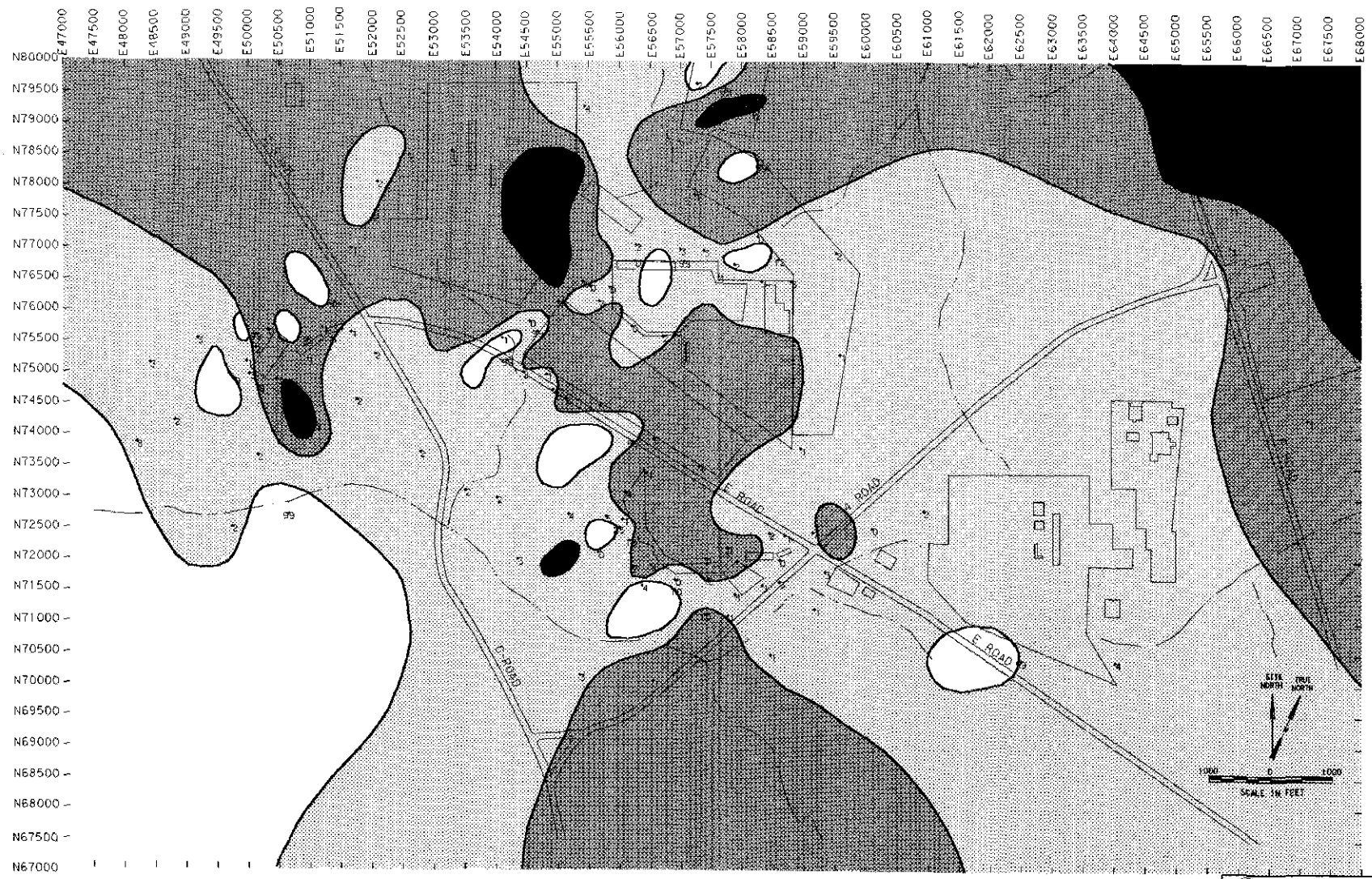
DISTRIBUTION OF MUD BEDS WITHIN THE "TAN CLAY" CONFINING ZONE UPPER THREE RUNS AQUIFER GSA

T. HOLLY

1-28-93


E47000 E47500 E48000 E48500 E49000 E49500 E50000 E50500 E51000 E51500 E52000 E52500 E53000 E53500 E54000 E54500 E55000 E55500 E56000 E56500 E57000 E57500 E58000 E58500 E59000 E59500 E60000 E60500 E61000 E61500 E62000 E62500 E63000 E63500 E64000 E64500 E65000 E65500 E66000 E66500 E67000 E67500 E68000
N80000 N79500 N79000 N78500 N78000 N77500 N77000 N76500 N76000 N75500 N75000 N74500 N74000 N73500 N73000 N72500 N72000 N71500 N71000 N70500 N70000 N69500 N69000 N68500 N68000 N67500 N67000
C-ROAD
F ROAD
A ROAD
E ROAD
SITE NORTH
TRUE NORTH
1000 0 1000
SCALE IN FEET
Westinghouse
SAVANNAH RIVER SITE
FIG. 32
MAP OF THICKNESS OF MUD WITHIN THE "TAN CLAY" CONFINING ZONE UPPER THREE RUNS AQUIFER, GSA
T. MIDDLEY
1-21-92


E47000
E47500
E48000
E48500
E49000
E49500
E50000
E50500
E51000
E51500
E52000
E52500
E53000
E53500
E54000
E54500
E55000
E55500
E56000
E56500
E57000
E57500
E58000
E58500
E59000
E59500
E60000
E60500
E61000
E61500
E62000
E62500
E63000
E63500
E64000
E64500
E65000
E65500
E66000
E66500
E67000
E67500
E68000
N80000
N79500
N79000
N78500
N78000
N77500
N77000
N76500
N76000
N75500
N75000
N74500
N74000
N73500
N73000
N72500
N72000
N71500
N71000
N70500
N70000
N69500
N69000
N68500
N68000
N67500
N67000
C-ROAD
F ROAD
4 ROAD
SITE NORTH
TRUE NORTH
1000
0
1000
SCALE IN FEET
098483
Westinghouse
SAVANNAH RIVER SITE
DSA
FIG. 33
MAP OF PERCENT MUD-BEDS
WITHIN THE "TAN
CLAY" CONFINING ZONE
UPPER THREE RUNS AQUIFER DSA



SRS84S4

Westinghouse

SAVANNAH RIVER SITE

DRAWN: WMF	FIG. 34		
		DRAWN BY: T. HICKLEY/G. VAN	DATE: 1-27-93
		APPROVED BY:	DATE

MAP OF SAND-MUD RATIO WITHIN THE "TAN CLAY" CONFINING ZONE, UPPER THREE RUNS AQUIFER. GSA

APPENDIX A

Table A1. Cored Wells and Borings Penetrating the Gordon Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
FCH 001	52843.1	79488.8	317.0	126.0	191	243	52
FCH 002	52599.6	78500.0	286.6	127.6	159	217	58
FCH 003	52087.2	78059.2	307.4	130.4	177	236	59
FCH 004	52021.0	77514.6	297.6	122.6	175	222	47
FCH 005	51667.7	76992.1	284.8	125.8	159	212	53
FCH 006	51245.7	76410.3	290.8	118.8	172	216	44
FSB 076 A	51391.6	76131.9	291.5	115.5	176	261	85
FSB 079 A	50149.6	73664.5	216.1	102.1	114	196	82
FSB 113 A	51068.1	74167.5	221.3	104.3	117	197	80
FSB 115 C	49736.0	72515.5	205.8	97.8	122	201	79
FSB TA	51658.3	75649.1	275	115	160	231	71
HCH 001	60923.4	72796.4	284.2	127.2	157	217	60
HCH 002	60091.8	72519.6	270.8	122.8	148	222	74
HCH 004	59139.9	72449.6	269.9	117.9	152	220	68
HCH 005	59331.5	71810.4	246.2	107.2	139	197	58
HPC 001	62493.6	70395.4	293.5	109.5	184	248	64
HPT 001 A	60587.0	74847.1	232.9	117.9	115	180	65
HPT 002 A	60200.5	75061.8	257.7	117.7	140	201	61
HSB 065 A	58436.0	72436.2	270.7	110.7	160	238	78
HSB 083 A	58606.1	71648.6	234.9	106.9	128	210	82
HSB 084 A	56359.1	71586.2	226.4	110.4	116	164	48
HSB 085 A	58943.4	73791.9	292.1	119.1	173	240	67
HSB 086 A	55985.9	72520.2	260.0	108.0	152	202	50
HSB TB	58696.1	72394.0	267.1	106.1	161	213	52
P 018 TA	47652.8	67576.5	296.7	85.7	211	289	78
P 027 TA	64022.9	70382.0	274.1	126.1	148	225	77
P 028 TA	55441.1	79284.3	285.2	117.2	168	225	57
YSC 001 A	65438.9	78039.9	268.9	153.9	115	201	86
YSC 004 A	65883.5	77050.1	287.5	144.5	143	201	58
YSC 005 A	67134.9	74295.9	273.0	128.0	145	205	60

Table A2. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Sand (ft)	Pebbly Sand (ft)	Silty Sand (ft)	Clayey Sand (ft)	Calcite-Cemented Sand (ft)	Chert-Cemented Sand (ft)
FCH 001	1	1	25	-	-	3	-	1
FCH 002	1	-	42	-	-	-	-	4
FCH 003	-	-	39	-	-	1	-	1
FCH 004	-	-	46	-	-	1	-	-
FCH 005	-	-	45	-	-	1	-	-
FCH 006	-	-	29	-	-	-	-	-
FSB 076 A	1	-	82	-	-	-	-	-
FSB 079 A	4	-	75	-	-	1	-	-
FSB 113 A	4	-	40	-	-	1	-	-
FSB 115 C	3	3	26	2	-	10	-	-
FSB TA	2	-	47	-	-	-	-	-
HCH 001	-	1	52	-	-	1	-	-
HCH 002	-	-	54	-	-	1	-	-
HCH 004	-	1	42	-	-	3	-	2
HCH 005	-	-	38	-	-	-	-	-
HPC 001	1	-	42	-	-	1	-	-
HPT 001 A	2	3	33	-	-	9	-	-
HPT 002 A	2	-	30	-	-	2	-	-
HSB 065 A	2	-	55	-	-	4	11	-
HSB 083 A	4	-	73	-	-	-	-	-
HSB 084 A	1	-	41	1	-	1	-	-
HSB 085 A	1	-	64	-	-	-	-	-
HSB 086 A	1	1	37	-	-	1	-	-
HSB TB	3	2	30	-	-	-	-	-
P 018 TA	2	1	59	3	-	5	-	-
P 027 TA	1	-	51	-	-	-	-	-
P 028 TA	2	-	50	1	-	4	-	-
YSC 001 A	-	1	65	-	-	3	-	-
YSC 004 A	-	-	51	-	4	-	-	-
YSC 005 A	-	-	56	-	-	-	-	-

Table A3. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Total No. Sand Beds	Thickness Sand (ft)	Percent Sand	Sand/Mud Ratio	Clastic Ratio
FCH 001	21	2	19	1	-	1	4	8	-	2	2	48	92	12	>8
FCH 002	11	-	11	-	1	1	1	2	-	2	2	57	98	57	>8
FCH 003	18	-	18	-	-	-	-	-	-	1	1	59	100	>8	>8
FCH 004	-	-	-	-	-	-	-	-	-	1	1	47	100	>8	>8
FCH 005	7	-	7	-	-	-	-	-	-	1	1	53	100	>8	>8
FCH 006	15	-	15	-	-	-	-	-	-	1	1	44	100	>8	>8
FSB 076 A	2	-	2	-	1	1	1	1	-	2	2	84	99	84	>8
FSB 079 A	2	-	2	2	1	3	4	5	-	3	3	78	95	20	>8
FSB 113 A	35	1	34	2	-	2	5	6	-	3	3	75	94	15	>8
FSB 115 C	35	-	35	2	3	5	6	8	-	5	5	73	92	12	>8
FSB TA	22	2	20	1	1	2	4	6	-	3	3	67	94	17	>8
HCH 001	6	-	6	-	1	1	1	2	-	2	2	59	98	59	>8
HCH 002	19	-	19	-	-	-	-	-	-	1	1	74	100	>8	>8
HCH 004	20	2	18	1	-	1	3	4	-	2	2	65	96	22	>8
HCH 005	20	-	20	-	-	-	-	-	-	1	1	58	100	>8	>8
HPC 001	20	-	20	-	1	1	1	2	1	1	2	63	98	63	>8
HPT 001 A	18	3	15	1	6	7	8	12	4	4	8	57	88	7	>8
HPT 002 A	27	-	27	-	2	2	2	3	1	1	2	59	97	30	>8
HSB 065 A	6	-	6	1	-	1	2	3	-	2	2	76	97	38	>8
HSB 083 A	5	-	5	1	2	3	4	5	1	2	3	78	95	20	>8
HSB 084 A	4	-	4	-	1	1	1	2	1	1	2	47	98	47	>8
HSB 085 A	2	-	2	-	1	1	1	1	1	1	2	66	99	66	>8
HSB 086 A	10	-	10	1	-	1	2	4	-	1	1	48	96	24	>8
HSB TB	17	-	17	1	5	5	5	10	2	3	5	47	90	9	>8

Table A3. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Total No. Sand Beds	Thickness Sand (ft)	Percent Sand	Sand/Mud Ratio	Clastic Ratio
P 018 TA	8	-	8	1	-	1	3	4	-	2	2	75	96	25	>8
P 027 TA	25	1	24	1	-	1	2	3	-	1	1	75	97	38	>8
P 028 TA	-	-	-	-	2	2	2	4	-	3	3	55	96	28	>8
YSC 001 A	17	-	17	-	1	1	1	1	-	1	1	85	99	85	>8
YSC 004 A	3	-	3	-	-	-	-	-	-	1	1	58	100	>8	>8
YSC 005 A	4	-	4	-	-	-	-	-	-	1	1	60	100	>8	>8

Table A4. Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
BGO 006 A	58316.8	76487.2	283.8	120.8	163	164	1
BGO 008 A	57618.3	76569.0	281.3	130.3	151	161	10
BGO 009 AA	57371.9	76975.7	282.8	134.8	148	158	10
BGO 010 A	57050.9	76805.2	299.1	131.1	168	175	7
BGO 010 AA	56990.5	76997.9	298.8	129.8	169	173	4
BGO 012 A	56250.7	76804.6	311.4	136.4	175	180	5
BGO 014 A	55838.3	76377.5	300.2	136.2	164	173	9
BGO 016 A	56194.2	75757.0	302.8	132.8	170	175	5
BGO 018 A	56699.7	75599.9	292.9	129.9	163	170	7
BGO 025 A	55668.1	76158.5	294.7	139.7	155	165	10
BGO 026 A	55014.2	76144.6	285.1	133.1	152	156	4
BGO 029 A	54103.5	75560.0	262.1	124.1	138	149	11
BGO 041 A	55403.7	76469.5	298.3	138.3	160	167	7
BGO 043 AA	56268.6	77066.0	312.2	135.2	177	185	8
BGO 044 AA	57880.5	76757.0	283.3	131.3	152	163	11
BGO 045 A	54550.1	75830.0	276.9	133.9	143	147	4
BGO 046 B	54444.7	75012.1	263.4	128.4	135	137	2
BGO 047 A	54914.0	74728.8	264.8	130.8	134	140	6
BGO 049 A	56205.1	73902.8	269.1	119.1	150	154	4
BGO 050 A	54179.8	75201.2	253.5	132.5	121	128	7
BGX 001 A	58590.4	76831.9	288.9	131.9	157	162	5
BGX 002 B	58256.5	77203.4	289.2	141.2	148	160	12
BGX 004 A	57215.6	77879.2	288.8	132.8	156	162	6
BGX 007 D	58312.8	78349.3	276.9	155.9	121	134	13
BGX 009 D	59522.1	76936.0	277.4	139.4	138	146	8
BGX 011 D	59581.4	75300.7	273.6	125.6	148	157	9
FCH 001	52843.1	79488.8	317.0	138.0	179	191	12
FCH 002	52599.6	78500.0	286.6	138.6	148	159	11
FCH 003	52087.2	78059.2	307.4	137.4	170	177	7
FCH 004	52021.0	77514.6	297.6	129.6	168	175	7
FCH 005	51667.7	76992.1	284.8	129.8	155	159	4
FCH 006	51245.7	76410.3	290.8	123.8	167	172	5
FSB 076 A	51391.6	76131.9	291.5	123.5	168	176	8
FSB 078 A	50172.8	74757.7	270.5	106.5	164	168	4
FSB 079 A	50149.6	73664.5	216.1	106.1	110	114	4

Table A4. Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
FSB 087 A	50115.8	75601.7	285.6	114.6	171	176	5
FSB 096 A	49778.7	74882.2	277.7	108.7	169	174	5
FSB 097 A	49965.7	75171.2	283.8	108.8	175	177	2
FSB 098 A	50121.6	75389.8	280.7	108.7	172	174	2
FSB 099 A	50314.8	75675.6	285.3	115.3	170	173	3
FSB 100 A	50958.4	75534.4	283.8	117.8	166	169	3
FSB 101 A	51191.3	75719.0	282.9	118.9	164	166	2
FSB 112 A	48809.1	74231.4	227.0	104.0	123	128	5
FSB 113 A	51068.1	74167.5	221.3	109.3	112	117	5
FSB 114 A	52046.6	75297.4	250.0	116.0	134	138	4
FSB 115 C	49736.0	72515.5	205.8	100.8	105	122	17
FSB 120 A	49175.7	75538.9	278.0	111.0	167	169	2
FSB TA	51658.3	75649.1	275.4	117.4	158	160	2
HCH 001	60923.4	72796.4	284.2	135.2	149	157	8
HCH 002	60091.8	72519.6	270.8	127.8	143	148	5
HCH 004	59139.9	72449.6	269.9	121.9	148	152	4
HCH 005	59331.5	71810.4	246.2	114.2	132	139	7
HMD 001 D	56973.9	78731.7	262.7	137.7	125	137	12
HMD 002 D	57269.7	79665.8	259.3	143.3	116	121	5
HMD 003 D	57745.2	79578.7	257.5	153.5	104	109	5
HMD 004 D	58188.5	79160.4	248.5	151.5	97	109	12
HPC 001	62493.6	70395.4	293.5	116.5	177	184	7
HPT 001 A	60587.0	74847.1	232.9	121.9	111	115	4
HPT 002 A	60200.5	75061.8	257.7	121.7	136	140	4
HSB 065 A	58436.0	72436.2	270.7	124.7	146	160	14
HSB 068 A	56892.1	71526.9	247.4	116.4	131	136	5
HSB 069 A	56465.1	71549.4	234.1	114.1	120	124	4
HSB 083 A	58606.1	71648.6	234.9	116.9	118	128	10
HSB 084 A	56359.1	71586.2	226.4	118.4	108	116	8
HSB 085 A	58943.4	73791.9	292.1	126.1	166	173	7
HSB 086 A	55985.9	72520.2	260.0	112.0	148	152	4
HSB 117 A	55170.1	72733.6	234.1	122.1	112	120	8
HSB 118 A	55775.6	72696.4	245.0	117.0	128	133	5
HSB 119 A	56100.2	73082.5	254.8	113.8	141	146	5
HSB 120 A	56431.9	73395.1	266.0	111.0	155	157	2

Table A4. Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
HSB 121 A	57389.6	72024.8	272.3	113.3	159	163	4
HSB 122 A	57747.4	72195.9	269.4	110.4	159	162	3
HSB 123 A	58124.8	72189.8	262.3	109.3	153	158	5
HSB 124 A	58514.6	72199.6	263.9	121.9	142	149	7
HSB 139 A	57365.4	71127.4	231.5	116.5	115	118	3
HSB 140 A	56535.4	70050.3	234.0	111.0	123	130	7
HSB 141 A	59168.7	71213.6	252.6	118.6	134	140	6
HSB 144 A	56200.5	71892.1	233.6	107.6	126	132	6
HSB 146 A(R)	58454.0	70478.9	249.6	121.6	128	138	10
HSB TB	58696.1	72394.0	267.1	112.1	155	161	6
P 018 TA	47652.8	67576.5	296.7	90.7	206	211	5
P 027 TA	64022.9	70382.0	274.1	131.1	143	148	5
P 028 TA	55441.1	79284.3	285.2	140.2	145	168	23
YSC 001 A	65438.9	78039.9	268.9	159.9	109	115	6
YSC 002 A	66100.1	78311.5	281.7	161.7	120	131	11
YSC 003 SB	65920.0	77680.0	277.0	149.0	128	136	8
YSC 004 A	65883.5	77050.1	287.5	159.5	128	143	15
YSC 005 A	67134.9	74295.9	273.0	136.0	137	145	8

Table A5. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Calcareous Clay (ft)	Shelly, Sandy Clay (ft)	Calcareous Sandy Clay (ft)	Sand (ft)	Clayey Sand (ft)	Calcareous Clayey Sand (ft)	Glauconitic Sand (ft)	Calcite-Cemented Sand (ft)	Chert-Cemented Sand (ft)	Clayey Shelly Carbonate (ft)	Sandy Shelly Carbonate (ft)
BGO 006 A	1	-	-	-	-	-	-	-	-	-	-	-	-
BGO 008 A	3	-	1	2	1	-	2	-	-	-	-	-	1
BGO 009 AA	3	-	2	-	-	-	-	-	-	-	1	1	2
BGO 010 A	3	-	1	-	-	1	-	-	-	-	-	-	-
BGO 010 AA	1	-	-	-	-	-	-	-	-	-	1	-	-
BGO 012 A	2	1	-	-	-	-	1	-	-	-	-	-	-
BGO 014 A	2	-	-	-	-	-	4	-	-	-	-	-	-
BGO 016 A	-	-	-	-	-	2	3	-	-	-	-	-	-
BGO 018 A	3	-	-	-	-	2	1	-	-	-	-	-	-
BGO 025 A	2	3	-	-	-	-	2	-	-	-	-	-	-
BGO 026 A	3	1	-	-	-	-	-	-	-	-	-	-	-
BGO 029 A	-	3	-	-	-	2	2	-	-	-	-	-	-
BGO 041 A	4	1	-	-	-	-	-	-	-	-	-	-	-
BGO 043 AA	1	3	-	-	-	1	-	3	-	-	-	-	-
BGO 044 AA	4	-	-	1	3	-	-	1	-	-	1	-	1
BGO 045 A	-	3	-	-	-	-	-	-	-	-	-	-	-
BGO 046 B	-	-	-	-	-	1	-	-	-	-	-	-	-
BGO 047 A	-	1	-	-	-	-	4	-	-	-	-	-	-
BGO 049 A	-	1	-	-	-	-	3	-	-	-	-	-	-
BGO 050 A	1	1	-	-	-	1	3	-	-	-	-	-	-
BGX 001 A	-	2	-	-	-	-	3	-	-	-	-	-	-
BGX 002 B	-	2	-	-	-	-	4	-	-	-	3	-	-

Table A5. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Calcareous Clay (ft)	Shelly, Sandy Clay (ft)	Calcareous Sandy Clay (ft)	Sand (ft)	Clayey Sand (ft)	Calcareous Clayey Sand (ft)	Glauconitic Sand (ft)	Calcite-Cemented Sand (ft)	Chert-Cemented Sand (ft)	Clayey Shelly Carbonate (ft)	Sandy Shelly Carbonate (ft)
BGX 004 A	1	1	-	-	-	-	2	-	-	-	-	-	-
BGX 007 D	1	-	-	-	-	1	8	-	-	-	-	-	-
BGX 009 D	-	-	-	-	-	-	6	-	-	-	-	-	-
BGX 011 D	1	2	-	-	-	1	3	-	-	-	-	-	-
FCH 001	5	-	-	-	1	2	2	-	-	1	-	-	-
FCH 002	1	3	-	-	-	2	2	-	-	1	-	-	-
FCH 003	-	3	-	-	-	-	4	-	-	-	-	-	-
FCH 004	-	2	-	-	-	3	2	-	-	-	-	-	-
FCH 005	-	-	-	-	-	3	1	-	-	-	-	-	-
FCH 006	1	1	-	-	-	-	1	-	-	-	-	-	-
FSB 076 A	-	1	-	-	-	4	3	-	-	-	-	-	-
FSB 078 A	-	-	-	-	-	2	2	-	-	-	-	-	-
FSB 079 A	-	-	-	-	-	2	2	-	-	-	-	-	-
FSB 087 A	1	3	-	-	-	-	1	-	-	-	-	-	-
FSB 096 A	-	1	-	-	-	-	2	-	-	-	-	-	-
FSB 097 A	-	1	-	-	-	1	-	-	-	-	-	-	-
FSB 098 A	1	-	-	-	-	1	-	-	-	-	-	-	-
FSB 099 A	1	1	-	-	-	-	1	-	-	-	-	-	-
FSB 100 A	-	2	-	-	-	-	1	-	-	-	-	-	-
FSB 101 A	-	2	-	-	-	-	-	-	-	-	-	-	-
FSB 112 A	-	1	-	-	-	1	2	-	-	-	-	-	-
FSB 113 A	-	-	-	-	-	1	4	-	-	-	-	-	-

Table A5. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Calcareous Clay (ft)	Shelly, Sandy Clay (ft)	Calcareous Sandy Clay (ft)	Sand (ft)	Clayey Sand (ft)	Calcareous Clayey Sand (ft)	Glauconitic Sand (ft)	Calcite-Cemented Sand (ft)	Chert-Cemented Sand (ft)	Clayey Shelly Carbonate (ft)	Sandy Shelly Carbonate (ft)
FSB 114 A	-	-	-	-	-	2	2	-	-	-	-	-	-
FSB 115 C	5	1	-	-	-	-	1	2	-	-	-	-	-
FSB 120 A	-	1	-	-	-	-	1	-	-	-	-	-	-
FSB TA	-	1	-	-	-	-	1	-	-	-	-	-	-
HCH 001	2	-	-	-	-	-	5	-	-	-	-	-	-
HCH 002	-	-	-	-	-	-	2	-	-	-	-	-	-
HCH 004	-	-	-	-	-	1	1	2	-	-	-	-	-
HCH 005	-	2	-	-	-	-	2	-	-	-	-	-	-
HMD 001 D	4	-	-	2	-	-	-	-	-	-	-	-	2
HMD 002 D	1	-	-	-	-	-	-	-	-	-	-	-	2
HMD 003 D	-	-	-	-	-	1	4	-	-	-	-	-	-
HMD 004 D	-	2	-	-	-	2	6	-	-	-	-	-	-
HPC 001	2	1	-	-	-	1	3	-	-	-	-	-	-
HPT 001 A	-	1	-	-	-	1	2	-	-	-	-	-	-
HPT 002 A	2	-	-	-	-	1	-	-	-	-	-	-	-
HSB 065 A	1	2	-	-	2	4	1	-	2	2	-	-	-
HSB 068 A	2	-	-	-	-	-	3	-	-	-	-	-	-
HSB 069 A	1	1	-	-	-	1	1	-	-	-	-	-	-
HSB 083 A	6	-	-	-	-	1	2	-	-	-	-	-	-
HSB 084 A	-	-	-	-	-	7	1	-	-	-	-	-	-
HSB 085 A	-	-	-	-	-	1	2	-	-	-	-	-	-
HSB 086 A	-	2	-	-	-	1	1	-	-	-	-	-	-

Table A5. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay") in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Calcareous Clay (ft)	Shelly, Sandy Clay (ft)	Calcareous Sandy Clay (ft)	Sand (ft)	Clayey Sand (ft)	Calcareous Clayey Sand (ft)	Glauconitic Sand (ft)	Calcite-Cemented Sand (ft)	Chert-Cemented Sand (ft)	Clayey Shelly Carbonate (ft)	Sandy Shelly Carbonate (ft)
HSB 117 A	1	2	-	-	-	1	3	-	-	-	-	-	-
HSB 118 A	1	3	-	-	-	-	-	-	-	-	-	-	-
HSB 119 A	1	-	-	-	-	1	3	-	-	-	-	-	-
HSB 120 A	2	-	-	-	-	-		-	-	-	-	-	-
HSB 121 A	-	-	-	-	-	2	2	-	-	-	-	-	-
HSB 122 A	2	-	-	-	-	-	1	-	-	-	-	-	-
HSB 123 A	2	-	-	-	-	1	2	-	-	-	-	-	-
HSB 124 A	-	3	-	-	-	-	2	-	-	-	-	-	-
HSB 139 A	1	1	-	-	-	-	1	-	-	-	-	-	-
HSB 140 A	-	-	-	-	-	3	1	-	-	-	-	-	-
HSB 141 A	1	1	-	-	-	-	4	-	-	-	-	-	-
HSB 144 A	1	1	-	-	-	1	-	-	-	-	-	-	-
HSB 146 A(R)	-	4	-	-	-	1	2	-	1	-	-	-	
HSB TB	1	-	-	-	-	2	1	-	-	-	-	-	2
P 018 TA	-	-	-	-	-	2	2	-	-	-	-	-	-
P 027 TA	2	1	-	-	-	-	2	-	-	-	-	-	-
P 028 TA	1	-	-	-	-	17		-	-	-	-	-	-
YSC 001 A	-	4	-	-	-	1	1	-	-	-	-	-	-
YSC 002 A	2	2	-	-	-	1	5	-	-	-	-	-	-
YSC 003 SB	2	1	-	-	-	2	1	-	-	-	-	-	-
YSC 004 A	3	3	-	1	-	-	-	1	-	-	-	2	2
YSC 005 A	5	1	-	-	-	-	1	-	1	-	-	-	-

Table A6. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay"), General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	Percent Sand	Sand/Mud Ratio	Clastic Ratio
BGO 006 A	-	-	-	-	1	1	1	100	-	0.0	>8
BGO 008 A	-	-	-	2	1	3	7	70	30	0.3	9
BGO 009 AA	1	1	-	2	-	2	6	60	40	0.2	2
BGO 010 A	2	2	-	1	-	1	6	86	14	0.2	>8
BGO 010 AA	2	2	-	1	-	1	3	75	25	0.3	>8
BGO 012 A	1	1	-	1	-	1	4	80	20	0.3	>8
BGO 014 A	3	1	2	1	1	2	3	33	67	2.0	>8
BGO 016 A	-	-	-	-	-	-	-	-	100	>8	>8
BGO 018 A	1	1	-	1	-	1	4	57	43	0.8	>8
BGO 025 A	3	3	-	1	-	1	8	80	20	0.3	>8
BGO 026 A	-	-	-	1	-	1	4	100	-	0.0	>8
BGO 029 A	4	3	1	1	1	2	6	55	45	0.8	>8
BGO 041 A	2	2	-	1	-	1	7	100	-	0.0	>8
BGO 043 AA	-	-	-	1	-	1	4	50	50	1.0	>8
BGO 044 AA	-	-	-	2	1	3	8	73	27	0.3	10
BGO 045 A	1	1	-	1	-	1	4	100	-	0.0	>8
BGO 046 B	1	-	1	-	-	-	-	-	100	>8	>8
BGO 047 A	1	-	1	-	1	1	1	17	83	5.0	>8
BGO 049 A	-	-	-	-	1	1	1	25	75	3.0	>8
BGO 050 A	1	-	1	-	2	2	2	29	71	2.5	>8
BGX 001 A	-	-	-	1	-	1	2	40	60	1.5	>8
BGX 002 B	3	1	2	1	1	2	3	25	75	3.0	>8
BGX 004 A	2	1	1	1	-	1	3	50	50	1.0	>8

Table A6. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay"), General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	Percent Sand	Sand/Mud Ratio	Clastic Ratio
BGX 007 D	3	2	1	1	-	1	3	23	77	3.3	>8
BGX 009 D	2	2	-	1	-	1	2	25	75	3.0	>8
BGX 011 D	2	2	-	1	1	2	5	56	44	0.8	>8
FCH 001	1	-	1	2	-	2	6	50	50	1.0	5
FCH 002	2	-	2	2	-	2	4	36	64	1.8	>8
FCH 003	-	-	-	1	1	2	3	43	57	1.3	>8
FCH 004	-	-	-	1	-	1	2	29	71	2.5	>8
FCH 005	-	-	-	-	-	-	-	-	100	>8	>8
FCH 006	2	-	2	1	-	1	2	40	60	1.5	>8
FSB 076 A	-	-	-	-	1	1	1	13	88	7.0	>8
FSB 078 A	-	-	-	-	-	-	-	-	100	>8	>8
FSB 079 A	-	-	-	-	-	-	-	-	100	>8	>8
FSB 087 A	-	-	-	1	1	2	4	80	20	0.3	>8
FSB 096 A	2	2	-	1	-	1	3	60	40	0.7	>8
FSB 097 A	-	-	-	-	1	1	1	50	50	1.0	>8
FSB 098 A	-	-	-	-	1	1	1	50	50	1.0	>8
FSB 099 A	-	-	-	1	-	1	2	67	33	0.5	>8
FSB 100 A	-	-	-	1	-	1	2	67	33	0.5	>8
FSB 101 A	-	-	-	1	-	1	2	100	-	0.0	>8
FSB 112 A	1	1	-	-	2	2	2	40	60	1.5	>8
FSB 113 A	-	-	-	-	-	-	-	-	100	>8	>8
FSB 114 A	-	-	-	-	-	-	-	-	100	>8	>8
FSB 115 C	8	2	6	2	1	3	8	47	53	1.1	>8

Table A6. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay"), General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	Percent Sand	Sand/Mud Ratio	Clastic Ratio
FSB 120 A	-	-	-	-	1	1	1	50	50	1.0	>8
FSB TA	-	-	-	-	1	1	1	50	50	1.0	>8
HCH 001	1	-	1	1	-	1	2	25	75	3.0	>8
HCH 002	3	3	-	1	-	1	3	60	40	0.7	>8
HCH 004	-	-	-	-	-	-	-	-	100	>8	1
HCH 005	3	3	-	1	-	1	5	71	29	0.4	>8
HMD 001 D	4	4	-	2	-	2	10	83	17	0.0	5
HMD 002 D	2	2	-	1	-	1	3	60	40	0.0	2
HMD 003 D	-	-	-	-	-	-	-	-	100	>8	>8
HMD 004 D	2	2	-	2	-	2	4	33	67	2.0	>8
HPC 001	-	-	-	1	-	1	3	43	57	1.3	>8
HPT 001 A	-	-	-	-	1	1	1	25	75	3.0	>8
HPT 002 A	1	1	-	1	-	1	3	75	25	0.3	>8
HSB 065 A	-	-	-	1	3	4	5	36	64	1.8	>8
HSB 068 A	-	-	-	1	-	1	2	40	60	1.5	>8
HSB 069 A	-	-	-	1	-	1	2	50	50	1.0	>8
HSB 083 A	1	1	-	2	1	3	7	70	30	0.4	>8
HSB 084 A	-	-	-	-	-	-	-	-	100	>8	>8
HSB 085 A	4	4	-	1	-	1	4	57	43	0.8	>8
HSB 086 A	-	-	-	1	-	1	2	50	50	1.0	>8
HSB 117 A	1	-	1	1	1	2	3	38	63	1.7	>8
HSB 118 A	1	1	-	1	-	1	5	100	-	0.0	>8
HSB 119 A	-	-	-	-	1	1	1	20	80	4.0	>8

Table A6. Lithofacies Data for Cored Wells and Borings Penetrating the Gordon Confining Unit ("Green Clay"), General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	Percent Sand	Sand/Mud Ratio	Clastic Ratio
HSB 120 A	-	-	-	-	1	1	2	100	-	0.0	>8
HSB 121 A	-	-	-	-	-	-	-	-	100	>8	>8
HSB 122 A	-	-	-	1	-	1	2	67	33	0.5	>8
HSB 123 A	-	-	-	1	-	1	2	40	60	1.5	>8
HSB 124 A	2	1	1	1	1	2	4	57	43	0.8	>8
HSB 139 A	-	-	-	1	-	1	2	67	33	0.5	>8
HSB 140 A	3	1	2	-	1	1	1	14	86	6.0	>8
HSB 141 A	-	-	-	-	2	2	2	33	67	2.0	>8
HSB 144 A	3	3	-	1	-	1	5	83	17	0.2	>8
HSB 146 A(R)	2	2	-	3	-	3	6	60	40	0.7	>8
HSB TB	-	-	-	-	1	1	1	17	83	3.0	2
P 018 TA	1	1	-	-	1	1	1	20	80	4.0	>8
P 027 TA	-	-	-	1	-	1	3	60	40	0.7	>8
P 028 TA	5	4	1	1	1	2	5	22	78	3.6	>8
YSC 001 A	-	-	-	2	-	2	4	67	33	0.5	>8
YSC 002 A	1	1	-	1	2	3	5	45	55	1.2	>8
YSC 003 SB	2	2	-	1	1	2	5	63	38	0.6	>8
YSC 004 A	3	3	-	2	-	2	10	67	33	0.1	3
YSC 005 A	-	-	-	1	-	1	6	75	25	0.3	>8

Table A7. Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
BGO 006 A	58316.8	76487.2	283.8	196.8	87	163	76
BGO 008 A	57618.3	76569.0	281.3	199.3	82	151	69
BGO 009 AA	57371.9	76975.7	282.8	210.8	72	148	76
BGO 010 A	57050.9	76805.2	299.1	207.1	92	168	76
BGO 010 AA	56990.5	76997.9	298.8	206.8	92	169	77
BGO 012 A	56250.7	76804.6	311.4	186.4	125	175	50
BGO 014 A	55838.3	76377.5	300.2	213.2	87	164	77
BGO 016 A	56194.2	75757.0	302.8	184.8	118	170	52
BGO 018 A	56699.7	75599.9	292.9	196.9	96	163	67
BGO 025 A	55668.1	76158.5	294.7	202.7	92	155	63
BGO 026 A	55014.2	76144.6	285.1	205.1	80	152	72
BGO 041 A	55403.7	76469.5	298.3	208.3	90	160	70
BGO 043 AA	56268.6	77066.0	312.2	190.2	122	177	55
BGO 044 AA	57880.5	76757.0	283.3	199.3	84	152	68
BGO 045 A	54550.1	75830.0	276.9	202.9	74	143	69
BGO 046 B	54444.7	75012.1	263.4	193.4	70	135	65
BGO 047 A	54914.0	74728.8	264.8	188.8	76	134	58
BGO 049 A	56205.1	73902.8	269.1	192.1	77	150	73
BGO 050 A	54179.8	75201.2	253.5	183.5	70	121	51
BGX 001 A	58590.4	76831.9	288.9	185.9	103	157	54
BGX 002 B	58256.5	77203.4	289.2	200.2	89	148	59
BGX 004 A	57215.6	77879.2	288.8	215.8	73	156	83
BGX 007 D	58312.8	78349.3	276.9	217.9	59	121	62
BGX 009 D	59522.1	76936.0	277.4	202.4	75	138	63
BGX 011 D	59581.4	75300.7	273.6	176.6	97	148	51
FAC 001 SB	55243.0	78138.0	312.2	220.2	92	163	71
FCH 001	52843.1	79488.8	317.0	208.0	109	179	70
FCH 002	52599.6	78500.0	286.6	194.6	92	148	56
FCH 003	52087.2	78059.2	307.4	196.4	111	170	59
FCH 004	52021.0	77514.6	297.6	188.6	109	168	59
FCH 005	51667.7	76992.1	284.8	178.8	106	155	49
FCH 006	51245.7	76410.3	290.8	179.8	111	167	56
FSB 076 A	51391.6	76131.9	291.5	182.5	109	168	59
FSB 078 A	50172.8	74757.7	270.5	145.5	125	164	39
FSB 079 A	50149.6	73664.5	216.1	163.1	53	110	57

Table A7. Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
FSB 087 A	50115.8	75601.7	285.6	172.6	113	171	58
FSB 096 A	49778.7	74882.2	277.7	150.7	127	169	42
FSB 097 A	49965.7	75171.2	283.8	151.8	132	175	43
FSB 098 A	50121.6	75389.8	280.7	161.7	119	172	53
FSB 099 A	50314.8	75675.6	285.3	175.3	110	170	60
FSB 112 A	48809.1	74231.4	227.0	145.0	82	123	41
FSB 113 A	51068.1	74167.5	221.3	171.3	50	112	62
FSB 114 A	52046.6	75297.4	250.0	173.0	77	134	57
FSB 115 C	49736.0	72515.5	205.8	165.8	40	105	65
FSB 120 A	49175.7	75538.9	278.0	165.0	113	167	54
FSB 122 C	48195.0	73881.8	216.0	148.0	68	112	44
FSB TA	51658.3	75649.1	275.4	186.4	89	158	69
HCH 001	60923.4	72796.4	284.2	190.2	94	149	55
HCH 002	60091.8	72519.6	270.8	179.8	91	143	52
HCH 004	59139.9	72449.6	269.9	184.9	85	148	63
HCH 005	59331.5	71810.4	246.2	171.2	75	132	57
HMD 001 D	56973.9	78731.7	262.7	226.7	36	125	89
HMD 002 D	57269.7	79665.8	259.3	217.3	42	116	74
HMD 003 D	57745.2	79578.7	257.5	218.5	39	104	65
HMD 004 D	58188.5	79160.4	248.5	219.5	29	97	68
HPC 001	62493.6	70395.4	293.5	185.5	108	177	69
HSB 065 A	58436.0	72436.2	270.7	203.7	67	146	79
HSB 068 A	56892.1	71526.9	247.4	189.4	58	131	73
HSB 083 A	58606.1	71648.6	234.9	188.9	46	118	72
HSB 084 A	56359.1	71586.2	226.4	181.4	45	108	63
HSB 085 A	58943.4	73791.9	292.1	200.1	92	166	74
HSB 086 A	55985.9	72520.2	260.0	180.0	80	148	68
HSB 117 A	55170.1	72733.6	234.1	189.1	45	112	67
HSB 118 A	55775.6	72696.4	245.0	179.0	66	128	62
HSB 119 A	56100.2	73082.5	254.8	194.8	60	141	81
HSB 120 A	56431.9	73395.1	266.0	194.0	72	155	83
HSB 121 A	57389.6	72024.8	272.3	191.3	81	159	78
HSB 122 A	57747.4	72195.9	269.4	178.4	91	159	68
HSB 139 A	57365.4	71127.4	231.5	177.5	54	115	61
HSB 140 A	56535.4	70050.3	234.0	182.0	52	123	71

Table A7. Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
HSB 141 A	59168.7	71213.6	252.6	166.6	86	134	48
HSB 146 A(R)	58454.0	70478.9	249.6	162.6	87	128	41
HSB TB	58696.1	72394.0	267.1	203.1	64	155	91
P 018 TA	47652.8	67576.5	296.7	144.7	152	206	54
P 027 TA	64022.9	70382.0	274.1	183.1	91	143	52
P 028 TA	55441.1	79284.3	285.2	200.2	85	145	60
YSC 001 A	65438.9	78039.9	268.9	198.9	70	109	39
YSC 001 C	65855.5	78186.2	272.5	212.5	60	110	50
YSC 002 A	66100.1	78311.5	281.7	214.7	67	120	53
YSC 003 SB	65920.0	77680.0	277.0	203.0	74	128	54
YSC 004 A	65883.5	77050.1	287.5	213.5	74	128	54
YSC 005 A	67134.9	74295.9	273.0	209.0	64	137	73

Table A8. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Sand (ft)	Pebbly Sand (ft)	Silty Sand (ft)	Clayey Sand (ft)	Calcareous, Clayey Sand (ft)	Chert-Cemented Sand (ft)	Total Feet Carbonate
BGO 006 A	3	-	48	-	-	3	-	-	5
BGO 008 A	-	-	25	-	-	-	1	-	34
BGO 009 AA	-	1	25	-	-	10	-	-	32
BGO 010 A	-	-	31	-	-	1	-	-	33
BGO 010 AA	-	-	29	-	-	-	2	-	23
BGO 012 A	3	1	40	-	-	4	-	-	-
BGO 014 A	1	-	17	-	-	8	-	-	30
BGO 016 A	1	1	19	-	-	17	-	-	8
BGO 018 A	1	1	41	-	-	2	-	-	9
BGO 025 A	1	3	29	-	-	4	-	-	19
BGO 026 A	1	1	29	-	10	3	-	-	19
BGO 041 A	-	1	25	-	-	12	-	-	11
BGO 043 AA	1	2	24	1	-	4	-	-	14
BGO 044 AA	-	-	6	-	-	1	-	-	20
BGO 045 A	2	-	28	1	-	11	-	-	1
BGO 046 B	-	1	30	-	-	7	-	1	2
BGO 047 A	-	2	41	-	-	3	-	-	-
BGO 049 A	-	-	40	-	-	9	7	-	6
BGO 050 A	1	-	15	-	-	14	9	-	-
BGX 001 A	-	-	31	2	-	3	2	-	-
BGX 002 B	-	-	25	-	-	9	1	1	5
BGX 004 A	-	1	39	-	-	6	-	-	27

Table A8. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Sand (ft)	Pebbly Sand (ft)	Silty Sand (ft)	Clayey Sand (ft)	Calcareous, Clayey Sand (ft)	Chert-Cemented Sand (ft)	Total Feet Carbonate
BGX 007 D	-	-	42	1	-	4	2	-	-
BGX 009 D	-	-	38	3	-	15	-	-	2
BGX 011 D	-	-	41	-	-	2	2	-	6
FAC 001 SB	-	1	21	-	-	8	-	-	23
FCH 001	-	1	31	-	-	11	3	-	14
FCH 002	-	-	38	-	-	2	-	-	13
FCH 003	-	-	40	-	-	12	-	-	-
FCH 004	-	1	49	-	-	4	2	-	2
FCH 005	-	-	36	-	-	1	1	-	7
FCH 006	-	2	27	-	-	4	-	-	-
FSB 076 A	-	-	53	-	-	5	-	-	-
FSB 078 A	-	-	34	-	-	3	-	-	-
FSB 079 A	-	-	53	-	-	1	-	-	-
FSB 087 A	-	-	45	-	-	8	-	-	-
FSB 096 A	-	-	24	-	-	2	-	-	-
FSB 097 A	2	6	13	-	-	10	-	-	-
FSB 098 A	1	-	35	-	-	2	-	-	-
FSB 099 A	3	1	18	-	-	28	-	-	-
FSB 112 A	-	1	16	-	-	10	-	-	-
FSB 113 A	2	3	28	-	-	13	-	-	-
FSB 114 A	-	-	32	-	-	5	-	2	8
FSB 115 C	-	2	28	1	-	21	-	-	-

Table A8. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Sand (ft)	Pebbly Sand (ft)	Silty Sand (ft)	Clayey Sand (ft)	Calcareous, Clayey Sand (ft)	Chert-Cemented Sand (ft)	Total Feet Carbonate
FSB 120 A	-	1	36	-	-	5	-	-	-
FSB 122 C	-	-	23	-	-	5	-	-	-
FSB TA	-	1	28	-	-	5	-	-	1
HCH 001	-	-	43	-	-	10	-	-	-
HCH 002	-	1	26	-	-	2	9	-	12
HCH 004	-	-	37	-	-	1	4	-	14
HCH 005	-	-	41	-	-	-	8	-	6
HMD 001 D	-	1	38	-	-	1	-	-	30
HMD 002 D	-	-	26	-	-	4	-	-	15
HMD 003 D	-	-	34	4	-	1	-	-	3
HMD 004 D	-	-	45	-	-	5	-	-	1
HPC 001	4	11	39	-	-	8	-	-	-
HSB 065 A	4	-	34	-	-	8	-	-	31
HSB 068 A	-	-	44	-	-	4	-	-	22
HSB 083 A	-	-	63	-	-	9	-	-	-
HSB 084 A	-	-	59	-	-	4	-	-	-
HSB 085 A	-	1	38	-	-	2	-	-	20
HSB 086 A	-	1	60	-	-	7	-	-	-
HSB 117 A	-	8	19	-	2	21	-	-	-
HSB 118 A	1	5	19	-	-	27	-	-	4
HSB 119 A	7	2	43	-	-	18	-	-	-
HSB 120 A	4	2	37	-	-	28	-	-	-

Table A8. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Clay (ft)	Sandy Clay (ft)	Sand (ft)	Pebbly Sand (ft)	Silty Sand (ft)	Clayey Sand (ft)	Calcareous, Clayey Sand (ft)	Chert-Cemented Sand (ft)	Total Feet Carbonate
HSB 121 A	5	3	40	-	-	10	-	-	16
HSB 122 A	2	2	18	-	-	9	-	-	25
HSB 139 A	1	2	27	-	-	10	-	-	-
HSB 140 A	1	-	27	-	-	13	-	1	11
HSB 141 A	-	-	23	-	-	5	-	-	4
HSB 146 A(R)	-	-	14	-	-	4	-	-	8
HSB TB	4	3	28	-	-	5	-	-	34
P 018 TA	-	4	24	-	-	15	2	-	-
P 027 TA	6	1	20	-	-	8	-	1	-
P 028 TA	3	10	34	-	-	10	-	-	-
YSC 001 A	-	-	16	-	3	6	-	-	-
YSC 001 C	-	1	18	-	3	2	2	-	11
YSC 002 A	-	-	21	-	6	2	-	-	15
YSC 003 SB	-	-	13	-	7	2	-	-	14
YSC 004 A	-	-	13	-	6	11	1	-	14
YSC 005 A	-	1	36	-	4	15	-	-	12

Table A9. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Feet Estimated Mud	Feet Estimated Sand	Feet Estimated Carbonate	No. Mud Beds >1 ft	No. Mud Beds 1 ft	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Feet Total Mud	Feet Total Sand	Feet Total Carbonate	Percent Mud	Percent Sand	Percent Carbonate	Sand/Mud Ratio	Clastic Ratio
BGO 006 A	17	-	16	1	-	2	2	2	3	67	6	3.9	88.2	7.9	22.3	11.7
BGO 008 A	9	-	2	7	-	-	-	1	-	28	41	-	40.6	59.4	>8	0.7
BGO 009 AA	8	-	4	4	-	1	-	2	1	39	36	1.3	51.3	47.4	39.0	1.1
BGO 010 A	11	-	5	6	1	-	-	1	-	37	39	-	48.7	51.3	>8	0.9
BGO 010 AA	23	-	9	14	-	1	1	1	-	40	37	-	51.9	48.1	>8	1.1
BGO 012 A	2	-	2	-	1	1	-	2	4	46	-	8.0	92.0	-	11.5	>8
BGO 014 A	21	-	13	8	-	1	4	1	1	38	38	1.3	49.4	49.4	38.0	1.0
BGO 016 A	6	-	6	-	-	2	1	2	2	42	8	3.8	80.8	15.4	21.0	5.5
BGO 018 A	13	-	12	1	1	-	-	1	2	55	10	3.0	82.1	14.9	27.5	5.7
BGO 025 A	7	-	3	4	2	-	2	2	4	36	23	6.3	57.1	36.5	9.0	1.7
BGO 026 A	9	2	7	-	-	2	1	2	4	49	19	5.6	68.1	26.4	12.3	2.8
BGO 041 A	21	7	13	1	-	1	4	3	8	50	12	11.4	71.4	17.1	6.3	4.8
BGO 043 AA	9	1	8	-	2	-	1	1	4	37	14	7.3	67.3	25.5	9.3	2.9
BGO 044 AA	41	2	39	-	2	-	1	1	2	46	20	2.9	67.6	29.4	23.0	2.4
BGO 045 A	26	2	24	-	-	2	-	2	4	64	1	5.8	92.8	1.4	16.0	68.0
BGO 046 B	24	1	21	2	-	1	1	2	2	59	4	3.1	90.8	6.2	29.5	15.3
BGO 047 A	12	1	11	-	1	-	-	2	3	55	-	5.2	94.8	-	18.3	>8
BGO 049 A	11	-	11	-	-	-	-	2	-	67	6	-	91.8	8.2	>8	11.2
BGO 050 A	12	-	12	-	-	1	-	1	1	50	-	2.0	98.0	-	50.0	>8
BGX 001 A	16	-	16	-	-	-	-	1	-	54	-	-	100.0	-	>8	>8
BGX 002 B	18	-	6	12	-	-	4	1	-	42	17	-	71.2	28.8	>8	2.5
BGX 004 A	10	-	10	-	-	1	2	2	1	55	27	1.2	66.3	32.5	55.0	2.1

Table A9. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Feet Estimated Mud	Feet Estimated Sand	Feet Estimated Carbonate	No. Mud Beds >1 ft	No. Mud Beds 1 ft	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Feet Total Mud	Feet Total Sand	Feet Total Carbonate	Percent Mud	Percent Sand	Percent Carbonate	Sand/Mud Ratio	Clastic Ratio
BGX 007 D	13	-	13	-	-	-	-	1	-	62	-	-	100.0	-	>8	>8
BGX 009 D	5	-	5	-	-	-	-	1	-	61	2	-	96.8	3.2	>8	30.5
BGX 011 D	-	-	-	-	-	-	1	2	-	45	6	-	88.2	11.8	>8	7.5
FAC 001 SB	18	-	8	10	-	1	1	1	1	37	33	1.4	52.1	46.5	37.0	1.2
FCH 001	10	-	-	10	-	1	-	3	1	45	24	1.4	64.3	34.3	45.0	1.9
FCH 002	3	-	3	-	-	-	-	2	-	43	13	-	76.8	23.2	>8	3.3
FCH 003	7	-	7	-	-	-	-	1	-	59	-	-	100.0	-	>8	>8
FCH 004	1	-	1	-	-	1	-	3	1	56	2	1.7	94.9	3.4	56.0	28.5
FCH 005	4	-	2	2	-	-	-	2	-	40	9	-	81.6	18.4	>8	4.4
FCH 006	23	-	23	-	1	-	-	2	2	54	-	3.6	96.4	-	27.0	>8
FSB 076 A	1	-	1	-	-	-	-	1	-	59	-	-	100.0	-	>8	>8
FSB 078 A	2	-	2	-	-	-	-	1	-	39	-	-	100.0	-	>8	>8
FSB 079 A	3	-	3	-	-	-	-	1	-	57	-	-	100.0	-	>8	>8
FSB 087 A	5	-	5	-	-	-	-	1	-	58	-	-	100.0	-	>8	>8
FSB 096 A	16	-	16	-	-	-	-	1	-	42	-	-	100.0	-	>8	>8
FSB 097 A	12	3	9	-	2	1	2	1	11	32	-	25.6	74.4	-	2.9	>8
FSB 098 A	15	-	15	-	-	1	-	1	1	52	-	1.9	98.1	-	52.0	>8
FSB 099 A	10	2	8	-	1	1	-	3	6	54	-	10.0	90.0	-	9.0	>8
FSB 112 A	14	2	12	-	-	1	-	1	3	38	-	7.3	92.7	-	12.7	>8
FSB 113 A	16	-	16	-	1	1	1	1	5	57	-	8.1	91.9	-	11.4	>8
FSB 114 A	10	-	9	1	-	-	-	2	-	48	9	-	84.2	15.8	>8	5.3
FSB 115 C	13	1	12	-	-	2	-	2	3	62	-	4.6	95.4	-	20.7	>8

Table A9. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Feet Estimated Mud	Feet Estimated Sand	Feet Estimated Carbonate	No. Mud Beds >1 ft	No. Mud Beds 1 ft	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Feet Total Mud	Feet Total Sand	Feet Total Carbonate	Percent Mud	Percent Sand	Percent Carbonate	Sand/Mud Ratio	Clastic Ratio
FSB 120 A	12	-	12	-	-	1	-	1	1	53	-	1.9	98.1	-	53.0	>8
FSB 122 C	16	-	16	-	-	-	-	1	-	44	-	-	100.0	-	>8	>8
FSB TA	34	-	25	9	-	1	-	2	1	58	10	1.4	84.1	14.5	58.0	5.9
HCH 001	2	-	2	-	-	-	-	1	-	55	-	-	100.0	-	>8	>8
HCH 002	2	-	2	-	-	1	-	2	1	39	12	1.9	75.0	23.1	39.0	3.3
HCH 004	7	-	7	-	-	-	-	2	-	49	14	-	77.8	22.2	>8	3.5
HCH 005	2	-	2	-	-	-	-	2	-	51	6	-	89.5	10.5	>8	8.5
HMD 001 D	19	-	14	5	-	1	-	1	1	53	35	1.1	59.6	39.3	53.0	1.5
HMD 002 D	29	-	17	12	-	-	-	1	-	47	27	-	63.5	36.5	>8	1.7
HMD 003 D	23	2	19	2	-	2	-	2	2	58	5	3.1	89.2	7.7	29.0	12.0
HMD 004 D	17	-	17	-	-	-	-	2	-	67	1	-	98.5	1.5	>8	67.0
HPC 001	7	-	7	-	1	2	-	2	15	54	-	21.7	78.3	-	3.6	>8
HSB 065 A	2	-	2	-	1	1	2	1	4	44	31	5.1	55.7	39.2	11.0	1.5
HSB 068 A	3	-	3	-	-	-	2	2	-	51	22	-	69.9	30.1	>8	2.3
HSB 083 A	-	-	-	-	-	-	-	1	-	72	-	-	100.0	-	>8	>8
HSB 084 A	-	-	-	-	-	-	-	1	-	63	-	-	100.0	-	>8	>8
HSB 085 A	13	-	11	2	-	1	3	2	1	51	22	1.4	68.9	29.7	51.0	2.4
HSB 086 A	-	-	-	-	-	1	-	2	1	67	-	1.5	98.5	-	67.0	>8
HSB 117 A	17	-	17	-	2	1	-	4	8	59	-	11.9	88.1	-	7.4	>8
HSB 118 A	6	-	6	-	2	2	1	2	6	52	4	9.7	83.9	6.5	8.7	14.5
HSB 119 A	11	-	11	-	2	3	3	2	9	72	-	11.1	88.9	-	8.0	>8
HSB 120 A	12	-	12	-	1	2	1	2	6	77	-	7.2	92.8	-	12.8	>8

Table A9. Lithofacies Data for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Feet No Recovery	Feet Estimated Mud	Feet Estimated Sand	Feet Estimated Carbonate	No. Mud Beds >1 ft	No. Mud Beds 1 ft	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Feet Total Mud	Feet Total Sand	Feet Total Carbonate	Percent Mud	Percent Sand	Percent Carbonate	Sand/Mud Ratio	Clastic Ratio
HSB 121 A	4	-	-	4	1	1	1	2	8	50	20	10.3	64.1	25.6	6.3	2.9
HSB 122 A	12	-	3	9	1	2	4	1	4	30	34	5.9	44.1	50.0	7.5	1.0
HSB 139 A	21	-	21	-	1	-	-	1	3	58	-	4.9	95.1	-	19.3	>8
HSB 140 A	18	-	18	-	-	1	-	2	1	59	11	1.4	83.1	15.5	59.0	5.5
HSB 141 A	16	-	16	-	-	-	-	1	-	44	4	-	91.7	8.3	>8	11.0
HSB 146 A(R)	15	-	12	3	-	-	-	2	-	30	11	-	73.2	26.8	>8	2.7
HSB TB	17	-	6	11	3	2	7	1	7	39	45	7.7	42.9	49.5	5.6	1.0
P 018 TA	9	1	8	-	1	2	-	1	5	49	-	9.3	90.7	-	9.8	>8
P 027 TA	16	-	16	-	2	-	2	1	7	45	-	13.5	86.5	-	6.4	>8
P 028 TA	3	2	1	-	3	-	1	2	15	45	-	25.0	75.0	-	3.0	>8
YSC 001 A	14	-	14	-	-	-	-	1	-	39	-	-	100.0	-	>8	>8
YSC 001 C	13	-	9	4	-	2	1	2	1	34	15	2.0	68.0	30.0	34.0	2.3
YSC 002 A	9	-	-	9	-	-	1	1	-	29	24	-	54.7	45.3	>8	1.2
YSC 003 SB	18	-	10	8	-	-	1	1	-	32	22	-	59.3	40.7	>8	1.5
YSC 004 A	9	-	4	5	-	-	1	1	-	35	19	-	64.8	35.2	>8	1.8
YSC 005 A	5	-	3	2	-	1	2	2	1	58	14	1.4	79.5	19.2	58.0	4.2

Table A10. Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth Top (ft)	Depth Base (ft)	Thickness of Unit (ft)
BGO 005 C	58794.5	76476.9	294.2	217.2	77	94	17
BGO 006 A	58316.8	76487.2	283.8	211.8	72	87	15
BGO 008 A	57618.3	76569.0	281.3	213.3	68	82	14
BGO 009 AA	57371.9	76975.7	282.8	223.8	59	72	13
BGO 010 A	57050.9	76805.2	299.1	209.1	90	92	2
BGO 010 AA	56990.5	76997.9	298.8	218.8	80	92	12
BGO 012 A	56250.7	76804.6	311.4	198.4	113	125	12
BGO 014 A	55838.3	76377.5	300.2	220.2	80	87	7
BGO 016 A	56194.2	75757.0	302.8	197.8	105	118	13
BGO 018 A	56699.7	75599.9	292.9	202.9	90	96	6
BGO 025 A	55668.1	76158.5	294.7	213.7	81	92	11
BGO 026 A	55014.2	76144.6	285.1	219.1	66	80	14
BGO 027 C	54671.4	75666.3	273.9	197.9	76	82	6
BGO 029 A	54103.5	75560.0	262.1	197.1	65	75	10
BGO 031 C	54816.2	74978.0	271.1	198.1	73	83	10
BGO 033 C	55681.4	74479.7	277.4	200.4	77	86	9
BGO 035 C	56545.7	73953.9	271.4	204.4	67	74	7
BGO 037 C	57279.2	73498.2	284.3	198.3	86	93	7
BGO 041 A	55403.7	76469.5	298.3	217.3	81	90	9
BGO 042 C	55522.3	76404.7	295.9	213.9	82	89	7
BGO 043 AA	56268.6	77066.0	312.2	195.2	117	122	5
BGO 044 AA	57880.5	76757.0	283.3	222.3	61	84	23
BGO 045 A	54550.1	75830.0	276.9	206.9	70	74	4
BGO 046 B	54444.7	75012.1	263.4	199.4	64	70	6
BGO 047 A	54914.0	74728.8	264.8	197.8	67	76	9
BGO 048 C	55124.4	74599.6	274.7	197.7	77	83	6
BGO 049 A	56205.1	73902.8	269.1	201.1	68	77	9
BGO 050 A	54179.8	75201.2	253.5	193.5	60	70	10
BGX 001 A	58590.4	76831.9	288.9	211.9	77	103	26
BGX 002 B	58256.5	77203.4	289.2	216.2	73	89	16
BGX 004 A	57215.6	77879.2	288.8	227.8	61	73	12
BGX 007 D	58312.8	78349.3	276.9	223.9	53	59	6
BGX 009 D	59522.1	76936.0	277.4	207.4	70	75	5
BGX 011 D	59581.4	75300.7	273.6	192.6	81	97	16
FAC 001 SB	55243.0	78138.0	312.2	224.2	88	92	4

Table A10. Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth Top (ft)	Depth Base (ft)	Thickness of Unit (ft)
FCH 001	52843.1	79488.8	317.0	214.0	103	109	6
FCH 002	52599.6	78500.0	286.6	210.6	76	92	16
FCH 003	52087.2	78059.2	307.4	205.4	102	111	9
FCH 004	52021.0	77514.6	297.6	198.6	99	109	10
FCH 005	51667.7	76992.1	284.8	183.8	101	106	5
FSB 076 A	51391.6	76131.9	291.5	193.5	98	109	11
FSB 078 A	50172.8	74757.7	270.5	162.5	108	125	17
FSB 079 A	50149.6	73664.5	216.1	173.1	43	53	10
FSB 087 A	50115.8	75601.7	285.6	175.6	110	113	3
FSB 089 C	51345.2	75553.2	279.1	186.1	93	100	7
FSB 091 C	50953.5	75213.3	277.0	169.0	108	116	8
FSB 093 C	50458.3	74897.3	274.0	169.0	105	119	14
FSB 095 C	50016.7	74971.7	281.8	172.8	109	125	16
FSB 096 A	49778.7	74882.2	277.7	169.7	108	127	19
FSB 097 A	49965.7	75171.2	283.8	175.8	108	132	24
FSB 098 A	50121.6	75389.8	280.7	173.7	107	119	12
FSB 099 A	50314.8	75675.6	285.3	180.3	105	110	5
FSB 100 A	50958.4	75534.4	283.8	184.8	99	102	3
FSB 101 A	51191.3	75719.0	282.9	190.9	92	99	7
FSB 112 A	48809.1	74231.4	227.0	164.0	63	82	19
FSB 113 A	51068.1	74167.5	221.3	178.3	43	50	7
FSB 114 A	52046.6	75297.4	250.0	178.0	72	77	5
FSB 115 C	49736.0	72515.5	205.8	180.8	25	40	15
FSB 116 C	50645.9	72725.5	200.5	175.5	25	30	5
FSB 120 A	49175.7	75538.9	278.0	181.0	97	113	16
FSB 121 C	48413.1	75155.7	254.4	173.4	81	92	11
FSB 122 C	48195.0	73881.8	216.0	165.0	51	68	17
FSB 123 C	51750.5	74566.7	236.3	183.3	53	65	12
FSB TA	51658.3	75649.1	275.4	190.4	85	89	4
HCH 001	60923.4	72796.4	284.2	203.2	81	94	13
HCH 002	60091.8	72519.6	270.8	195.8	75	91	16
HCH 004	59139.9	72449.6	269.9	192.9	77	85	8
HCH 005	59331.5	71810.4	246.2	182.2	64	75	11
HMD 001 D	56973.9	78731.7	262.7	229.7	33	36	3
HMD 002 D	57269.7	79665.8	259.3	223.3	36	42	6

Table A10. Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth Top (ft)	Depth Base (ft)	Thickness of Unit (ft)
HMD 003 D	57745.2	79578.7	257.5	223.5	34	39	5
HMD 004 D	58188.5	79160.4	248.5	223.5	25	29	4
HPC 001	62493.6	70395.4	293.5	191.5	102	108	6
HSB 065 A	58436.0	72436.2	270.7	208.7	62	67	5
HSB 068 A	56892.1	71526.9	247.4	200.4	47	58	11
HSB 083 A	58606.1	71648.6	234.9	196.9	38	46	8
HSB 084 A	56359.1	71586.2	226.4	204.4	22	45	23
HSB 085 A	58943.4	73791.9	292.1	204.1	88	92	4
HSB 086 A	55985.9	72520.2	260.0	206.0	54	80	26
HSB 101 C	58604.4	72001.9	256.3	195.3	61	67	6
HSB 103 C	58323.6	71593.9	245.2	195.2	50	64	14
HSB 105 C	57883.8	71447.3	247.2	191.2	56	71	15
HSB 107 C	57432.0	71698.5	258.3	199.3	59	76	17
HSB 109 C	56895.6	71684.8	259.4	203.4	56	70	14
HSB 111 C	56501.9	71919.4	253.7	186.7	67	82	15
HSB 113 C	56160.4	72312.3	258.7	187.7	71	85	14
HSB 115 C	56043.2	72653.2	266.8	209.8	57	69	12
HSB 117 A	55170.1	72733.6	234.1	215.1	19	45	26
HSB 118 A	55775.6	72696.4	245.0	203.0	42	66	24
HSB 119 A	56100.2	73082.5	254.8	212.8	42	60	18
HSB 120 A	56431.9	73395.1	266.0	203.0	63	72	9
HSB 121 A	57389.6	72024.8	272.3	197.3	75	81	6
HSB 122 A	57747.4	72195.9	269.4	191.4	78	91	13
HSB 139 A	57365.4	71127.4	231.5	188.5	43	54	11
HSB 140 A	56535.4	70050.3	234.0	194.0	40	52	12
HSB 141 A	59168.7	71213.6	252.6	180.6	72	86	14
HSB 142 C	53505.3	73119.0	201.6	189.6	12	27	15
HSB 143 C	52773.2	73738.2	220.1	198.1	22	41	19
HSB 144 A	56200.5	71892.1	233.6	186.6	47	55	8
HSB 145 C	57769.0	71098.9	233.7	183.7	50	59	9
HSB 146 A(R)	58454.0	70478.9	249.6	185.6	64	87	23
HSB 148 C	55344.2	70151.5	248.9	188.9	60	74	14
HSB 151 C	54014.9	72997.9	211.6	192.6	19	29	10
HSB 152 C	54346.7	72012.0	212.1	197.1	15	27	12
HSB PC	55650.0	72119.3	227.8	187.8	40	50	10

Table A10. Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	SRS Easting	SRS Northing	Elevation Pad (ft)	Elevation Top (ft)	Depth Top (ft)	Depth Base (ft)	Thickness of Unit (ft)
HSB TB	58696.1	72394.0	267.1	207.1	60	64	4
P 018 TA	67576.5	47652.8	296.7	169.7	127	152	25
P 027 TA	64022.9	70382.0	274.1	188.1	86	91	5
P 028 TA	55441.1	79284.3	285.2	215.2	70	85	15
YSC 001 A	65438.9	78039.9	268.9	209.9	59	70	11
YSC 001 C	65855.5	78186.2	272.5	214.5	58	60	2
YSC 002 A	66100.1	78311.5	281.7	219.7	62	67	5
YSC 003 SB	65920.0	77680.0	277.0	209.0	68	74	6
YSC 004 A	65883.5	77050.1	287.5	222.5	65	74	9
YSC 005 A	67134.9	74295.9	273.0	221.0	52	64	12

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

	Number of Feet																	
SRS Well/*Boring*	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
BGO 005 C	1	1	7	-	-	2	6	1	5	1	0	1	3	18	1	1	4.7	>8
BGO 006 A	4	-	6	-	-	2	3	-	3	2	0	2	4	27	1	1	2.8	>8
BGO 008 A	-	3	7	-	-	4	0	-	-	1	1	2	3	21	2	1	3.7	>8
BGO 009 AA	2	-	3	-	-	7	1	1	-	1	0	1	3	23	-	1	3.3	>8
BGO 010 A	-	-	2	-	-	-	0	-	-	0	0	0	0	0	1	-	>8	>8
BGO 010 AA	-	1	3	-	-	6	2	2	-	1	0	1	3	25	1	-	3.0	>8
BGO 012 A	8	1	1	-	-	-	2	1	1	1	0	1	10	83	1	-	0.2	>8
BGO 014 A	5	-	1	-	-	1	0	-	-	2	0	2	5	71	2	-	0.4	>8
BGO 016 A	8	4	-	-	-	1	0	-	-	1	0	1	12	92	1	-	0.0	>8
BGO 018 A	1	1	3	-	-	-	1	-	1	1	0	1	2	33	1	-	2.0	>8
BGO 025 A	3	1	4	-	-	3	0	-	-	1	1	2	4	36	3	-	1.8	>8
BGO 026 A	1	5	3	-	3	2	0	-	-	2	0	2	6	43	1	1	1.3	>8
BGO 027 C	-	-	1	-	-	4	1	-	1	0	0	0	0	0	-	1	>8	>8
BGO 029 A	2	-	3	-	-	2	3	3	-	2	0	2	5	50	-	-	1.0	>8
BGO 031 C	3	-	1	-	-	1	5	2	3	2	0	2	5	50	3	-	1.0	>8
BGO 033 C	2	1	1	-	-	1	4	3	1	2	0	2	6	67	2	-	0.5	>8
BGO 035 C	1	-	-	-	4	2	0	-	-	0	1	1	1	14	2	-	6.0	>8
BGO 037 C	2	2	2	-	-	-	1	-	1	2	0	2	4	57	1	-	0.8	>8
BGO 041 A	-	2	-	-	-	1	6	6	-	2	0	2	8	89	1	-	0.1	>8
BGO 042 C	3	2	2	-	-	-	0	-	-	1	0	1	5	71	1	-	0.4	>8
BGO 043 AA	2	-	3	-	-	-	0	-	-	1	0	1	2	40	1	-	1.5	>8
BGO 044 AA	4	1	6	-	-	8	4	3	1	2	0	2	8	35	1	1	1.9	>8

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Number of Feet						Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand												
BGO 045 A	2	-	-	-	-	1	1	1	-	1	0	1	3	75	1	-	0.3	>8
BGO 046 B	2	-	3	-	-	1	0	-	-	1	0	1	2	33	2	-	2.0	>8
BGO 047 A	-	2	1	-	-	4	2	-	2	1	0	1	2	22	1	1	3.5	>8
BGO 048 C	-	2	2	-	-	2	0	-	-	0	2	2	2	33	2	-	2.0	>8
BGO 049 A	-	1	2	-	-	5	1	-	1	0	1	1	1	11	2	-	>8	>8
BGO 050 A	-	-	4	-	-	4	2	-	2	0	0	0	0	0	1	-	>8	>8
BGX 001 A	1	1	7	-	-	12	5	-	5	1	0	1	2	8	1	1	12.0	>8
BGX 002 B	9	1	-	-	-	3	3	3	-	2	0	2	13	81	2	-	0.2	>8
BGX 004 A	-	3	3	-	-	2	4	4	-	1	0	1	7	58	2	-	0.7	>8
BGX 007 D	-	-	2	-	-	3	1	-	1	0	0	0	0	0	1	-	>8	>8
BGX 009 D	-	2	1	-	-	1	1	-	1	1	0	1	2	40	1	-	1.5	>8
BGX 011 D	2	2	4	-	-	3	5	4	1	2	0	2	8	50	1	1	1.0	>8
FAC 001 SB	-	2	-	-	-	-	2	2	-	1	0	1	4	100	-	-	0.0	>8
FCH 001	3	1	-	-	-	2	0	-	-	1	0	1	4	67	1	-	0.5	>8
FCH 002	3	2	1	-	-	7	3	-	3	1	2	3	5	31	4	-	2.2	>8
FCH 003	3	-	-	-	-	4	2	-	2	1	1	2	3	33	3	-	2.0	>8
FCH 004	-	2	-	-	-	4	4	2	2	1	2	3	4	40	4	-	1.5	>8
FCH 005	2	1	2	-	-	-	0	-	-	1	1	2	3	60	1	-	0.7	>8
FSB 076 A	-	-	11	-	-	-	0	-	-	0	0	0	0	0	1	-	>8	>8
FSB 078 A	2	-	14	-	-	1	0	-	-	1	0	1	2	12	1	1	7.5	>8
FSB 079 A	2	1	5	-	-	2	0	-	-	1	1	2	3	30	2	-	2.3	>8
FSB 087 A	-	-	2	-	-	1	0	-	-	0	0	0	0	0	1	-	>8	>8

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Number of Feet						Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand												
FSB 089 C	-	2	2	-	-	-	3	2	-	1	0	1	4	57	1	-	0.5	>8
FSB 091 C	2	1	2	-	-	1	2	2	-	2	0	2	5	63	2	-	0.6	>8
FSB 093 C	6	3	1	-	-	4	0	-	-	2	0	2	9	64	2	-	0.6	>8
FSB 095 C	4	-	4	-	-	8	0	-	-	1	2	3	4	25	2	1	3.0	>8
FSB 096 A	-	-	11	-	-	4	4	2	2	1	0	1	2	11	2	-	8.5	>8
FSB 097 A	2	2	8	-	-	4	8	7	1	2	1	3	11	46	3	1	1.2	>8
FSB 098 A	1	-	8	-	-	-	3	3	0	1	1	1	4	33	-	1	2.0	>8
FSB 099 A	-	1	-	-	-	1	3	3	-	1	1	1	4	80	1	-	0.3	>8
FSB 100 A	-	-	3	-	-	-	0	-	-	0	0	0	0	0	1	-	>8	>8
FSB 101 A	-	3	-	-	-	3	1	1	-	2	0	2	4	57	2	-	0.8	>8
FSB 112 A	4	2	5	-	-	7	1	-	1	2	2	4	6	32	3	-	2.2	>8
FSB 113 A	2	3	-	-	-	-	2	2	-	1	0	1	7	100	-	-	0.0	>8
FSB 114 A	-		2	-	-	1	2	2	-	0	2	2	2	40	1	-	1.5	>8
FSB 115 C	-	1	6	-	-	1	7	4	3	1	3	4	5	33	4	-	2.0	>8
FSB 116 C	-	-	-	-	-	3	2	-	2	0	0	0	0	0	1	-	>8	>8
FSB 120 A	-	-	2	-	-	6	8	4	4	2	0	2	4	25	1	1	3.0	>8
FSB 121 C	-	-	-	-	-	5	6	3	3	1	0	1	3	27	1	1	2.7	>8
FSB 122 C	-	1	7	1	-	4	4	1	3	0	2	2	2	12	1	2	7.5	>8
FSB 123 C	1	3	2	-	-	6	0	-	-	2	0	2	4	33	1	1	2.0	>8
FSB TA	2	-	1	-	-	-	1	-	1	1	0	1	2	50	2	-	1.0	>8
HCH 001	1	3	-	-	-	9	0	-	-	2	0	2	4	31	1	1	2.3	>8
HCH 002	1	12	-	-	-	3	0	-	-	2	0	2	13	81	3	-	0.2	>8

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Number of Feet						Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand												
HCH 004	1	-	1	-	-	2	4	-	4	0	1	1	1	13	1	1	7.0	>8
HCH 005	1	2	2	-	-	4	2	-	2	1	0	1	3	27	1	1	2.7	>8
HMD 001 D	1	-	-	-	-	1	1	1	-	0	2	2	2	67	1	-	0.5	>8
HMD 002 D	-	2	3	-	-	1	0	-	-	1	0	1	2	33	2	-	2.0	>8
HMD 003 D	-	-	2	-	-	3	0	-	-	0	0	0	0	0	1	-	>8	>8
HMD 004 D	1	-	-	-	-	-	3	3	0	1	0	1	4	100	-	-	0.0	>8
HPC 001	-	-	4	-	-	2	0	-	-	0	0	0	0	0	1	-	>8	>8
HSB 065 A	2	-	2	-	-	1	0	-	-	1	0	1	2	40	1	-	1.5	>8
HSB 068 A	1	-	8	-	-	2	0	-	-	0	1	1	1	9	1	-	10.0	>8
HSB 083 A	1	1	4	-	-	2	0	-	-	0	2	2	2	25	3	-	3.0	>8
HSB 084 A	4	1	8	-	-	10	0	-	-	1	3	4	5	22	3	1	3.6	>8
HSB 085 A	2	-	2	-	-	-	0	-	-	1	0	1	2	50	1	-	1.0	>8
HSB 086 A	-	1	19	-	-	6	0	-	-	0	1	1	1	4	1	1	25.0	>8
HSB 101 C	-	-	1	-	-	-	5	5	-	1	0	1	5	83	1	-	0.2	>8
HSB 103 C	6	-	-	-	-	6	2	1	1	1	2	3	7	50	3	-	1.0	>8
HSB 105 C	2	1	4	-	-	8	0	-	-	1	1	2	3	20	1	1	4.0	>8
HSB 107 C	1	4	4	-	-	6	2	1	1	1	0	1	6	35	1	-	1.8	>8
HSB 109 C	7	2	1	-	-	3	1	1	-	2	0	2	10	71	2	-	0.4	>8
HSB 111 C	1	2	1	-	-	10	1	-	1	1	0	1	3	20	-	1	4.0	>8
HSB 113 C	-	1	1	-	-	11	1	-	1	0	1	1	1	7	1	-	13.0	>8
HSB 115 C	-	3	5	-	-	2	2	2	-	2	1	3	5	42	3	-	1.4	>8
HSB 117 A	-	1	10	-	-	1	14	4	10	1	1	2	5	19	1	2	4.2	>8

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

	Number of Feet																	
SRS Well/*Boring*	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
HSB 118 A	1	-	7	-	-	4	12	3	9	1	2	3	4	17	2	1	5.0	>8
HSB 119 A	4	-	3	-	-	5	6	-	6	1	2	3	4	22	3	1	3.5	>8
HSB 120 A	-	3	1	-	-	2	3	3	-	1	0	1	6	67	1	-	0.5	>8
HSB 121 A	1	-	-	-	-	-	5	4	1	1	1	2	5	83	1	-	0.2	>8
HSB 122 A	5	4	-	-	-	3	1	1	-	2	1	3	10	77	2	-	0.3	>8
HSB 139 A	-	-	3	-	-	6	2	1	1	0	1	1	1	9	-	1	10.0	>8
HSB 140 A	3	3	-	-	-	4	2	1	1	2	1	3	7	58	2	-	0.7	>8
HSB 141 A	-	6	-	-	-	8	0	-	-	2	2	4	6	43	5	-	1.3	>8
HSB 142 C	1	1	2	2	-	1	8	4	4	2	0	2	6	40	1	1	1.5	>8
HSB 143 C	1	-	5	2	-	1	10	5	5	2	1	3	6	32	2	1	2.2	>8
HSB 144 A	1	1	-	-	-	4	2	1	1	0	3	3	3	38	2	-	1.7	>8
HSB 145 C	3	1	-	1	-	3	1	1	-	1	1	2	5	56	3	-	0.8	>8
HSB 146 A(R)	1	7	3	-	-	7	5	4	1	4	1	5	12	52	4	-	0.9	>8
HSB 148 C	-	3	4	-	-	4	3	1	2	1	1	2	4	29	1	1	2.5	>8
HSB 151 C	-	-	-	1	-	2	7	3	4	1	1	2	3	30	2	-	2.3	>8
HSB 152 C	-	3	-	-	-	6	3	-	3	1	0	1	3	25	1	1	3.0	>8
HSB PC	6	3	-	-	-	1	0	-	-	1	0	1	9	90	1	-	0.1	>8
HSB TB	1	1	1	-	-	1	0	-	-	0	2	2	2	50	1	-	1.0	>8
P 027 TA	1	-	4	-	-	-	0	-	-	0	1	1	1	20	2	-	4.0	>8
P 028 TA	2	1	9	-	-	3	0	-	-	1	0	1	3	20	-	1	4.0	>8
YSC 001 A	2	3	1	-	-	2	3	1	2	2	1	3	6	55	2	-	0.8	>8
YSC 001 C	1	1	-	-	-	-	0	-	-	1	0	1	2	100	-	-	0.0	>8

Table A11. Lithofacies Data for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

SRS Well/*Boring*	Number of Feet						Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5'	No. Sand Beds >5'	Sand/Mud Ratio	Clastic Ratio
	Clay	Sandy Clay	Sand	Pebbly Sand	Silty Sand	Clayey Sand												
YSC 002 A	-	1	-	-	-	-	4	4	-	1	0	1	5	100	-	-	0.0	>8
YSC 003 SB	1	-	-	-	-	2	3	3	-	1	0	1	4	67	1	-	0.5	>8
YSC 004 A	1	1	-	-	1	-	6	2	4	1	0	1	4	44	-	1	1.3	>8
YSC 005 A	3	3	2	-	-	-	4	1	3	2	0	2	7	58	2	-	0.7	>8

APPENDIX B

Table B1. Summary Statistics for Cored Wells and Borings Penetrating the Gordon Aquifer in the General Separations Area, Savannah River Site

	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
Arithmetic Mean	117.4	152.6	217.7	65.1
Standard Error	2.4	4.5	4.5	2.3
Median	117.8	154.5	216.5	62.5
Mode	117.9	159.0	201.0	58.0
Standard Deviation	13.4	24.8	24.5	12.5
Variance	180.0	614.8	598.6	156.1
Kurtosis	1.5	-0.3	1.7	-1.2
Skewness	0.4	0.1	0.6	0.1
Range	68.2	97.0	125.0	42.0
Minimum	85.7	114.0	164.0	44.0
Maximum	153.9	211.0	289.0	86.0
Sum	3523.1	4577.0	6530.0	1953.0
Count	30	30	30	30
Confidence Level (95%)	4.8	8.9	8.8	4.5

Table B2. Summary Statistics for Lithofacies Data, Gordon Aquifer, General Separations Area, Savannah River Site.

	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Total No. Sand Beds	Thickness Sand (ft)	Percent Sand	Sand/Mud Ratio	Clastic Ratio
Arithmetic Mean	13.3	0.4	12.9	0.5	1.0	1.5	2.1	3.1	0.4	1.8	2.2	63.0	96.9	35	>8
Standard Error	1.8	0.1	1.8	0.1	0.3	0.3	0.4	0.6	0.2	0.2	0.3	2.2	0.6	N/A	N/A
Median	13.0	0.0	13.0	0.0	0.5	1.0	1.5	2.3	0.0	1.5	2.0	59.5	97.7	26	N/A
Mode	2.0	0.0	2.0	0.0	0.0	1.0	0.0	0.0	0.0	1.0	2.0	59.0	100.0	19.5	N/A
Standard Deviation	10.0	0.8	9.7	0.7	1.5	1.7	2.1	3.2	0.9	1.1	1.5	12.0	3.2	23.9	N/A
Variance	100.6	0.7	94.8	0.5	2.2	2.8	4.4	10.0	0.7	1.1	2.4	143.0	10.0	573.6	N/A
Kurtosis	-0.5	3.6	-0.4	-0.2	5.1	3.6	0.7	1.2	11.5	1.5	6.3	-1.1	1.2	-0.4	N/A
Skewness	0.5	2.1	0.6	0.9	2.2	1.9	1.0	1.2	3.2	1.3	2.2	0.2	-1.2	0.8	N/A
Range	35.0	3.0	35.0	2.0	6.0	7.0	8.0	12.3	4.0	4.0	7.0	41.0	12.3	77.9	N/A
Minimum	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0	1.0	44.0	87.7	7.1	N/A
Maximum	35.0	3.0	35.0	2.0	6.0	7.0	8.0	12.3	4.0	5.0	8.0	85.0	100.0	85.0	N/A
Sum	399.0	11.0	388.0	16.0	29.0	44.0	63.0	93.9	11.0	55.0	66.0	1890.0	2906.1	N/A	N/A
Count	30	30	30	30	30	30	30	30	30	30	30	30	30	22	30
Confidence Level (95%)	3.6	0.3	3.5	0.2	0.5	0.6	0.7	1.1	0.3	0.4	0.6	4.3	1.1	N/A	N/A

Table B3. Summary Statistics for Cored Wells and Borings Penetrating the Gordon Confining Unit in the General Separations Area, Savannah River Site

	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
Mean	125.5	145	152	7
Standard Error	1.5	2	2	0
Median	124.0	148	157	6
Mode	111.0	148	173	5
Standard Deviation	14.1	22	21	4
Variance	199.0	480	454	14
Kurtosis	0.1	-1	0	4
Skewness	0.4	0	0	1
Range	71.0	109	102	22
Minimum	90.7	97	109	1
Maximum	161.7	206	211	23
Sum	11048.0	12792	13379	587
Count	88	88	88	88
Confidence Level (95%)	2.9	5	4	1

Table B4. Summary Statistics for Lithofacies Data, Gordon Confining Unit, General Separations Area, Savannah River Site

	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1 ft	No. Mud Beds 1 ft	Total No. Mud Beds	Thickness Mud (ft)	Percent Mud	Percent Sand	Sand/Mud Ratio	Clastic Ratio
Mean	2.2	1.9	1.6	1.2	1.2	1.5	3.5	47.4	52.6	1.3	>8
Standard Error	-	-	-	-	-	-	-	3.0	3.0	-	-
Median	2	2	1	1	1	1	3	50	50	1.0	-
Mode	1	1	1	1	1	1	2	0	100	0	-
Standard Deviation	1.4	1.0	1.2	0.5	0.5	0.7	2.2	28.6	28.6	1.4	-
Variance	1.9	0.9	1.5	0.2	0.2	0.5	4.8	817.9	817.9	2.0	-
Kurtosis	6.5	-0.4	11.6	3.2	7.0	1.7	0.6	-0.7	-0.7	3.8	-
Skewness	2.1	0.8	3.2	2.0	2.7	1.5	1.0	0.0	0.0	1.8	-
Range	7	3	5	2	2	3	9	100	100	¥	¥
Minimum	1	1	1	1	1	1	1	0	0	0.0	1
Maximum	8	4	6	3	3	4	10	100	100	>8	>8
Sum	96	69	27	73	39	112	273	4170.45	4629.55	-	-
Count	44	36	17	60	33	77	77	88	88	77	77
Confidence Level (95%)	0.4	0.3	0.6	0.1	0.2	0.2	0.5	6.0	6.0	-	-

Table B5. Summary Statistics for Cored Wells and Borings Penetrating the "Lower" Aquifer Zone of the Upper Three Runs Aquifer, General Separations Area, Savannah River Site

	Elevation Top (ft)	Depth to Top (ft)	Depth to Base (ft)	Thickness of Unit (ft)
Mean	189.0	83	145	62
Standard Error	2.1	2.8	2.5	1.3
Median	189.4	82	148	62
Mode	199.3	92	148	54
Standard Deviation	19.1	25	23	12
Variance	364.7	620	511	136
Kurtosis	-0.2	0	-1	0
Skewness	-0.5	0	0	0
Range	82	123	109	52
Minimum	144.7	29	97	39
Maximum	226.7	152	206	91
Sum	15306.2	6709	11758	5049
Count	81	81	81	81
Confidence Level (95%)	4.2	5.4	4.9	2.5

Table B6. Summary Statistics for Lithofacies Data, "Lower" Aquifer Zone, Upper Three Runs Aquifer, General Separations Area, Savannah River Site

	Feet No Recovery	Feet Estimated Mud	Feet Estimated Sand	Feet Estimated Carbonate	No. Mud Beds >1 ft	No. Mud Beds 1 ft	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Feet Total Mud	Feet Total Sand	Feet Total Carbonate	Percent Mud	Percent Sand	Percent Carbonate	Sand/Mud Ratio	Clastic Ratio
ArithmeticMean	11.6	0.4	9.3	2.0	0.4	0.7	0.8	1.6	2.3	49.8	10.3	3.7	81.2	15.1	25.7	8.0
Standard Error	0.9	0.1	0.8	0.4	0.1	0.1	0.1	0.1	0.4	1.2	1.4	0.6	1.9	1.9	-	-
Median	11	0	9	0	0	0	0.0	2	1	50	5	1.4	86.5	7.9	20	3
Mode	9	0	2	0	0	0	0	1	0	39	0	0.0	100.0	0.0	39	-
Standard Deviation	8.1	1.0	7.3	3.5	0.8	0.8	1.3	0.6	3.3	11.0	12.6	5.4	16.9	17.3	19.5	14.0
Variance	65.1	1.0	53.8	12.5	0.6	0.6	1.7	0.4	10.8	120.7	159.0	29.1	285.2	300.2	380.2	196.9
Kurtosis	1.4	24.1	2.0	2.4	2.0	-0.4	6.9	1.1	4.4	-0.5	0.2	6.1	-0.6	-0.6	-1.1	12.8
Skewness	0.9	4.3	1.0	1.9	1.7	0.8	2.4	1.0	2.0	0.1	1.1	2.3	-0.7	0.8	0.6	3.5
Range	41	7	39	14	3	3	7	3	15	49	45	25.6	59.4	59.4	64.1	67.3
Minimum	0	0	0	0	0	0	0.0	1	0	28	0	0.0	40.6	0.0	2.9	0.7
Maximum	41	7	39	14	3	3	7.0	4	15	77	45	25.6	100.0	59.4	67.0	68.0
Sum	942	29	755	158	36	55	61	128	187	4031	831	296.6	6580.7	1222.8	-	-
Count	81	81	81	81	81	81	81	81	81	81	81	81	81	81	48	48
Confidence Level (95%)	1.8	0.2	1.6	0.8	0.2	0.2	0.3	0.1	0.7	2.4	2.7	1.2	3.7	3.8	-	-

Table B7. Summary Statistics for Cored Wells and Borings Penetrating the "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

	Elevation Top (ft)	Depth Top (ft)	Depth Base (ft)	Thickness (ft)
Mean	198.1	69	80	11
Standard Error	1.5	2.3	2.3	0.5
Median	197.9	68	81.5	10
Mode	197.8	77	92	6
Standard Deviation	16.1	25.0	25.0	5.8
Variance	260.3	624.5	627.0	33.7
Kurtosis	-0.7	-0.4	0.0	0.1
Skewness	-0.1	-0.1	0.0	0.8
Range	67.2	115	125	24
Minimum	162.5	12	27	2
Maximum	229.7	127	152	26
Sum	22777.4	7969	9243	1274
Count	115	115	115	115
Confidence Level (95%)	2.9	4.6	4.6	1.1

Table B8. Summary Statistics for Lithofacies Data, "Tan Clay" Confining Zone of the Upper Three Runs Aquifer in the General Separations Area, Savannah River Site

	Feet No Recovery	Estimated Mud (ft)	Estimated Sand (ft)	No. Mud Beds >1ft	No. Mud Total Beds 1 ft	Mud Beds	Mud Thickness	Percent Mud	No. Sand Beds <5 ft	No. Sand Beds >5 ft	Sand/Mud Ratio	Clastic Ratio
Mean	2.3	1.2	1.1	1.1	0.6	1.6	4.1	40.8	1.5	0.3	2.5	>8
Standard Error	0.3	0.1	0.2	0.1	0.1	0.1	0.3	2.5	-	0	-	-
Median	2	0	0	1	0	1	4	35.0	1	0	1.5	-
Mode	0	0	0	1	0	1	4	0.0	1	0	2.0	-
Standard Deviation	2.7	1.6	1.8	0.7	0.8	1.0	2.9	27.2	1.0	0.5	3.4	-
Variance	7.2	2.6	3.2	0.6	0.7	1.0	8.5	738.7	1.0	0.3	11.4	-
Kurtosis	3.8	1.1	7.6	0.8	0.7	0.8	1.1	-0.6	1.0	0.3	20.1	-
Skewness	1.7	1.3	2.5	0.4	1.2	0.7	1.0	0.5	1.0	1.2	3.8	-
Range	14	7	10	4	3	5	13	100	5	2	25	-
Minimum	0	0	0	0	0	0	0	0	0	0	0.0	-
Maximum	14	7	10	4	3	5	13	100	5	2	25.0	-
Sum	260	135	124	121	65	184	466	4650.0	168.0	37.0	-	-
Count	114	114	114	114	114	114	114	114	113	114	103	-
Confidence Level (95%)	0.5	0.3	0.3	0.1	0.1	0.2	0.5	5.0	0.2	0.1	-	-

OSR 17-84 (Rev 5-3-91)
Stores: 26-13271.08

Record Indexing

Required with all document record copies sent to IRM/RM.

Call 5-2494 for assistance as needed. 439431

Incomplete or incorrect forms will be returned to originator, with record, for review and correction.

Technical documents may also require OSR 14-357 Approval Sheet

PRINT or TYPE IN BLACK INK

Document Number: WSRC-RP-93-287

Document Revision Number:

Reference Document Number(s), if Appropriate:

Date (YY/MM/DD): 93-1-29

Circle One: (Lifetime) Nonpermanent

Retention Period *(If Nonpermanent)*:

Classification *(If Unclassified, so state. Also include UCNI.)*: Unclassified

Authors: P.A. Thayer, A.D. Smits, MK Harris, MB Amidon, CM Lewis

Originating Department or Corporate Author: WM&ER/ERB

Title: Stratigraphic Maps of the General Separations Area, Savannah River Site, Aiken, South Carolina

Addressee: Distribution

Keywords

- Must be listed in the Master Thesaurus for acceptance
- Must relate specifically to the topic covered
- Should not be a repeat of the title or other items listed above
- Acronyms are discouraged, for sake of accuracy
- Should be unambiguous
- May be up to 30 characters long; or phrases
- May be a maximum of twenty (20); minimum of five (5)

Geology
General Separations/Areas
Stratigraphy
Mixed Waste Management Facility
F-Area Seepage Basins
H-Area ~~Seepage Basins~~

*U.S. GPO: 1991-541-878/41007