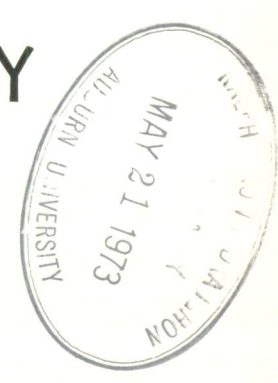


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SOIL  
SURVEY  
of  
the



GULF COAST  
SUBSTATION  
*Fairhope, Alabama*



AGRICULTURAL EXPERIMENT STATION  
AUBURN UNIVERSITY  
E. V. Smith, Director Auburn, Alabama

and  
SOIL CONSERVATION SERVICE  
United States Department of Agriculture  
Auburn, Alabama



# Soil Survey of the Gulf Coast Substation

## Fairhope, Alabama<sup>1</sup>

B. F. HAJEK and C. A. STEERS<sup>2</sup>

### MAPPING UNIT DESCRIPTIONS

#### 1. Grady silty clay loam.

This mapping unit is comprised of poorly drained soils in depressions. They have black silty clay loam A horizons about 6 inches thick and gray clay B horizons that contain a few red mottles and plinthite nodules. These soil areas are often referred to as "Grady ponds."

#### 2A. Malbis fine sandy loam.

This is the predominant mapping unit on the Substation. Typically, this unit consists of soils with dark grayish brown fine sandy loam A horizons about 7 inches thick over yellowish brown loam upper B horizons and mottled yellowish brown sandy clay loam lower B horizons. Plinthite (5 to 15 per cent by volume) occurs below 22 inches. Slopes are predominantly less than 2 per cent.

#### 3. Pansey clay loam, clayey subsoil variant.

This mapping unit is comprised of soils that have very dark gray or dark gray clay loam A horizons about 12 inches thick over mottled gray clay B horizons that have greater than 5 per cent plinthite in lower part. Typically, these soils occur in small shallow depressions with less than 1 per cent slope. These soils differ from Grady soils in that they contain more than 5 per cent plinthite within 60 inches of the surface.

#### 4B. Varina fine sandy loam, 2 to 5 per cent slopes.

This mapping unit is comprised of soils with very dark grayish brown fine sandy loam Ap horizons about 6 inches thick over sandy clay B horizons. The B horizons contain more than 5 per cent plinthite and significant amounts of hard iron concretions throughout the solum. Normally these soils occur on gentle slopes between Malbis and Grady soils and between Malbis and associated hilly soils.

#### 4C. Varina fine sandy loam, 5 to 8 per cent slopes.

This mapping unit consists of soils with dark grayish brown fine sandy loam A horizons about 4 inches thick over mottled red and strong brown sandy clay B horizons. The B horizons contain more than 5 per cent plinthite with significant amounts of hard iron concretions. Soils in this mapping unit occupy slopes which break from nearly level upland flats to narrow drainageways.

#### 5A. Red Bay loam, 0 to 2 per cent slopes.

This mapping unit consists of soils with dark reddish brown loam A horizons about 11 inches thick over dark red sandy clay loam B horizons which extend to depths of more than 60 inches. This mapping unit occurs on broad level flats with slopes of less than 2 per cent.

**T**HIS SOIL SURVEY report includes a soil map, map legend, and a descriptive legend which briefly describes soils in each area delineated on the map. These delineations are referred to as mapping units. The Appendix of this report includes tables giving the taxonomic classification, land capability and woodland classification, acreage of each unit, and detailed characterization data.

A review of the field correlation was held at this Substation in June 1970. The final correlation report was issued by Lindo J. Bartelli, Principal Correlator, in November 1970. One new series, Malbis, was established as a result of this review. Soils of the Malbis series are the most extensive on the Substation.

The authors express thanks and appreciation to M. G. Mattox and E. H. McBride, soil scientists, Soil Conservation Service, for assistance with mapping, descriptions, and sample collection.

### Mapping Unit Legend for the Gulf Coast Substation Fairhope, Alabama

<i>Mapping Unit Symbol</i>	<i>Mapping Unit Name</i>
1.....	GRADY silty clay loam
2A.....	MALBIS fine sandy loam
3.....	PANSEY clay loam, clayey subsoil variant
4B.....	VARINA fine sandy loam, 2 to 5 per cent slopes
4C.....	VARINA fine sandy loam, 5 to 8 per cent slopes
5A.....	RED BAY loam, 0 to 2 per cent slopes
5B.....	RED BAY fine sandy loam, 2 to 5 per cent slopes
5C.....	RED BAY fine sandy loam, 5 to 10 per cent slopes
6A.....	ORANGEBURG fine sandy loam
7B.....	TROUP sand, 1 to 8 per cent slopes
9A.....	EUSTIS loamy sand, 0 to 5 per cent slopes
10.....	ORANGEBURG complex, 5 to 10 per cent slopes
11.....	RIVERVIEW fine sandy loam
12.....	DOROVAN-PONZER-BIBB complex

<sup>1</sup> This was a cooperative effort of Auburn University (Ala.) Agricultural Experiment Station and Soil Conservation Service, USDA.

<sup>2</sup> Assistant Professor, Department of Agronomy and Soils, and Soil Correlator, USDA-Soil Conservation Service, Auburn, Alabama.

**5B. Red Bay fine sandy loam, 2 to 5 per cent slopes.**

Typically, this mapping unit is comprised of soils with brown fine sandy loam A horizons about 10 inches thick over dark red sandy clay loam B horizons which extend to depths of more than 60 inches. This mapping unit occurs on narrow shoulder slopes bordering level flats.

**5C. Red Bay sandy loam, 5 to 10 per cent slopes.**

Soils in this mapping unit typically have dark reddish brown fine sandy loam A horizons about 4 inches thick over dark red sandy clay loam B horizons which extend to depths of more than 60 inches. These soils occur on narrow sloping areas around broad flats.

**6A. Orangeburg fine sandy loam.**

This mapping unit consists of soils with dark grayish brown fine sandy loam A horizons about 8 inches thick over reddish sandy clay loam B horizons which extend to depths of more than 60 inches. This mapping unit occupies long, narrow transitional areas between the redder Red Bay soils and the yellowish brown Malbis soils. Slopes are typically less than 2 per cent.

**7B. Troup sand, 1 to 8 per cent slopes.**

This mapping unit is comprised of soils with brown and yellowish red sand A horizons 40 to 65 inches thick over red sandy clay loam B horizons. This mapping unit occurs on convex sloping landscapes with slopes typically less than 8 per cent.

**9A. Eustis loamy sand, 0 to 5 per cent slopes.**

This mapping unit is typified by soils with thin dark brown loamy sand upper A horizons over yellowish brown loamy sand lower A horizons about 20 inches thick and weakly expressed loamy sand B horizons. The B horizons characteristically have thin discontinuous lamella of sandy loam to loamy sand separated by layers of sand. This mapping unit occurs on gently undulating upland landscape positions.

**10. Orangeburg complex, 5 to 10 per cent slopes.**

This mapping unit consists of soils classified in several series. Individual soil series or types were not delineated because of the complexity of the soil pattern and the small areas occupied by some members of this complex. The Orangeburg soils, which comprise about 40 per cent of this unit, have dark yellowish brown sandy loam A horizons over yellowish red and red sandy clay loam B horizons that extend to depths of more than 60 inches. Cahaba soils (about 22 per cent of the unit) occur on lower slopes and have brown loamy fine sand A horizons and red or yellowish red sandy clay loam B horizons. The solum of Cahaba soils is less than 60 inches thick. The remaining 38 per cent of this unit consists of small areas of various Coastal Plain soils. Response to use and management should be similar to Orangeburg or Cahaba soils.

**11. Riverview fine sandy loam.**

This mapping unit occurs in flood plain positions along small drainageways with slopes of less than 2 per cent. The soils have very dark grayish brown and dark grayish brown fine sandy loam A horizons about 9 inches thick over mottled strong brown sandy loam B horizons.

**12. Dorovan-Ponzer-Bibb complex.**

This mapping unit is comprised chiefly of soils in three soil series. Dorovan soils comprise 53 per cent of this unit and have very dark gray or black muck 0 horizons greater than 50 inches thick over sandy loam mineral soil deposits. Ponzer soils comprise 27 per cent of this unit and are similar to Dorovan soils in all characteristics except that the 0 horizons range from 20 to 50 inches in thickness. The poorly drained Bibb soils comprise 13 per cent of this mapping unit and typically have very dark gray or dark gray sandy loam A horizons over gleyed, sandy loam C horizons. The remaining 7 per cent consists of organic soils with sandy overwash. This mapping unit occurs in wet, frequently flooded areas along broad, low drainage-ways with slopes of less than 2 per cent.

## APPENDIX

APPENDIX TABLE 1. CLASSIFICATION OF SOIL SERIES CORRELATED ON THE GULF COAST SUBSTATION

Series	Symbol	Family <sup>1</sup>	Subgroup	Suborder	Order
Bibb.....	12	coarse-loamy, siliceous, acid	Typic Fluvaquents	Aquents	Entisols
Cahaba.....	10	fine-loamy, siliceous	Typic Hapludults	Udults	Ultisols
Dorovan.....	12	dysic	Typic Medisaprists	Saprists	Histisols
Esto.....	10	clayey, kaolinitic	Typic Paleudults	Udults	Ultisols
Eustis.....	9A	sandy, siliceous	Psammentic Paleudults	Udults	Ultisols
Grady.....	1	clayey, kaolinitic	Typic Paleaquults	Aquults	Ultisols
Malbis.....	2A	fine-loamy, siliceous	Plinthic Paleudults	Udults	Ultisols
Orangeburg.....	6A, 10	fine-loamy, siliceous	Typic Paleudults	Udults	Ultisols
Pansey <sup>2</sup> .....	3	clayey, kaolinitic	Plinthic Paleaquults	Aquults	Ultisols
Ponzer.....	12	loamy, mixed, dysic	Terric Medisaprists	Saprists	Histisols
Red Bay.....	5A, B, C	fine-loamy, siliceous	Rhodic Paleudults	Udults	Ultisols
Riverview.....	11	fine-loamy, mixed	Fluventic Dystrochrepts	Ochripts	Inceptisols
Troup.....	7B	loamy, siliceous	Grossarenic Paleudults	Udults	Ultisols
Varina.....	4B, C	clayey, kaolinitic	Plinthic Paleudults	Udults	Ultisols

<sup>1</sup> All in thermic zone.

<sup>2</sup> These soils are outside the normal textural range for the Pansey series. The Pansey series is included within the fine-loamy, siliceous, thermic family of Plinthic Paleaquults.

APPENDIX TABLE 2. MAPPING UNIT ACREAGE, PER CENT, LAND CAPABILITIES, AND WOODLAND ORDINATION GROUP

Mapping unit symbol and mapping unit name	Acreage	Per cent	Land capability class subclass	Woodland ordination group
1. GRADY silty clay loam.....	18	2	IIIw	2w9
2A. MALBIS fine sandy loam.....	243	30	I	3o1
3. PANSEY clay loam, clayey subsoil variant.....	11	1	IIIw	2w9
4B. VARINA fine sandy loam, 2 to 5% slopes.....	109	14	IIe	3o1
4C. VARINA fine sandy loam, 5 to 8% slopes.....	13	3	IIIe	3o1
5A. RED BAY loam, 0 to 2% slopes.....	55	7	I	2o1
5B. RED BAY fine sandy loam, 2 to 5% slopes.....	6	1	IIe	2o1
5C. RED BAY fine sandy loam, 5 to 10% slopes.....	12	2	IVe	2o1
6A. ORANGEBURG fine sandy loam.....	11	1	I	2o1
7B. TROUP sand, 1 to 8% slopes.....	29	4	IVs	3s2
9A. EUSTIS loamy sand, 0 to 5% slopes.....	44	5	IIIs	3s3
10. ORANGEBURG complex, 5 to 10% slopes.....	159	20	VIe	2o1
11. RIVERVIEW fine sandy loam.....	37	5	IIw	1o7
12. DOROVAN-PONZER-BIBB complex.....	50	6	VIIw	1w9

### 1. GRADY silty clay loam

The typifying soil for this mapping unit is a member of the clayey, kaolinitic, thermic family of Typic Paleaquults. This mapping unit is typified by soils with black silty clay loam Ap horizons and thick mottled gray clay B2t horizons. This mapping unit occurs in depressions and has slopes of less than 2 per cent.

*Representative profile.* Grady silty clay loam - S69Ala. 2-1-(1-4) (Colors are for moist soil.)

Ap - 0-6 in. - Black (10YR2/1) silty clay loam; 0-15 cm. moderate medium granular structure; friable; strongly acid; abrupt smooth boundary.

B21tg - 6-22 in. - Gray (5Y 6/1) silty clay; few fine prominent strong brown mottles in root channels; moderate coarse blocky parting to moderate medium subangular blocky structure; very firm; common fine pores; many patchy clay films; very strongly acid; gradual wavy boundary.

B22tg - 22-72 in. - Gray (5Y 6/1) clay; few fine prominent strong brown and common medium prominent red (2.5YR 4/8) mottles; moderate coarse blocky parting to moderate medium sub-

angular blocky structure; very firm; common pores; many patchy clay films on faces of peds and in larger pores; light gray coatings on the surface of most coarse peds; very strongly acid; gradual wavy boundary.

B23tg - 72-96 in. - Gray (10YR 6/1) clay; massive 182-242 cm. when wet, weak coarse blocky parting to weak subangular blocky structure when moist; very firm; few patchy clay films on faces of peds and in pores; very strongly acid.

*Representative Profile Location.* 507 yards north and 256 yards east of the SW corner of sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Reaction of Ap horizon is medium or strongly acid. A few plinthite nodules are present in the B2t horizons of some pedons. Thickness of Ap horizon ranges from 4 to 8 inches. The Ap horizon is black (10YR 2/1), very dark gray (10YR 3/1), or very dark grayish brown (10YR 3/2). The texture of the Ap horizon is clay loam or silty clay loam. The B2tg horizons are gray (10YR 6/1, 5/1; N6/5Y 6/1). Mottles of strong brown, yellowish brown, and red are common in lower B2tg horizons. Texture of B2tg horizons is silty clay or clay.

*Inclusions.* This mapping unit has soils with 2 to 8 per cent plinthite nodules in B2tg horizons as well as soils with upper B2tg horizons with 30 to 40 per cent clay content. Both of these soil inclusions occupy less than 12 per cent of any delineation and occur as transitions between the Grady soils and the adjoining Malbis soils. The Ap horizon in a few delineations near the very center of depressions is 8 to 12 inches thick, but will include less than 7 per cent of any delineation.

## 2A. MALBIS fine sandy loam

The typifying soil for this mapping unit is a member of the fine-loamy, siliceous, thermic family of Plinthic Paleudults. This mapping unit is typified by soils with dark grayish brown fine sandy loam Ap horizons, yellowish brown loam B21t horizons, and mottled sandy clay loam B23t horizons containing 10 per cent plinthite nodules. These soils occur on broad level uplands with slopes of less than 2 per cent.

*Representative Profile.* Malbis fine sandy loam - S69Ala. 2-2-(1-4) (Colors are for moist soil.)

Ap - 0-7 in. - Dark grayish brown (10YR 4/2)  
0-18 cm. fine sandy loam; weak medium granular structure; friable; medium acid; abrupt smooth boundary.

B21t - 7-26 in. - Yellowish brown (10YR 5/6) loam;  
18-66 cm. weak medium subangular blocky structure; friable; few plinthite nodules in lower part; common very thin

patchy clay films on faces of peds; strongly acid; gradual wavy boundary.

B22t - 26-54 in. - Yellowish brown (10YR 5/6) sandy  
66-137 cm. clay loam; common medium distinct strong brown (7.5YR 5/6) and few medium faint light yellowish brown (10YR 6/4) mottles; moderate medium subangular blocky structure; friable, firm around plinthite nodules, 5 per cent plinthite nodules; common very thin patchy clay films on faces of most peds; strongly acid; gradual wavy boundary.

B23t - 54-71 in. - Yellowish brown (10YR 5/8) sandy  
137-180 cm. clay loam; few medium prominent light gray (2.5YR 7/2), common medium distinct red (2.5YR 4/8) and strong brown (7.5YR 5/8) mottles; weak medium subangular blocky structure; friable, firm around plinthite nodules; common medium pores, 12 per cent plinthite nodules; many patchy clay films on faces of peds and in some pores; very strongly acid.

*Representative Profile Location.* 176 yards south and 50 yards east of NW corner of NE1/4 sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Depth to horizons with 5 per cent plinthite ranges from 22 to 44 inches. The lower Bt horizon has from 8 to 20 per cent plinthite nodules. Commonly, pedons have up to 5 per cent iron concretions. The Ap horizon is dark gray (10YR 4/1), dark grayish brown (10YR 4/2), or grayish brown (10YR 5/2). Texture of the Ap horizon is fine sandy loam. Thickness of the Ap horizon ranges from 6 to 9 inches. The B2t horizons are yellowish brown (10YR 5/6, 5/8) and seldomly strong brown (7.5YR 5/6). Few strong brown or yellowish red mottles are common in the B21t horizon. The lower B2t horizons have common to many mottled colors in various shades of brown, red, and gray.

*Inclusions.* This mapping unit has inclusions of soils with A horizons up to 16 inches thick or with red B21t horizons, both of which occur at contacts with other mapping units. Also, slight depressional areas less than 1 acre in size sometimes have B2t horizons with 35 to 40 per cent clay. All such inclusions occupy less than 10 per cent of any one delineation of this mapping unit. One delineation in the SE1/4 SW1/4 SW1/4 of sec. 4, T.6S., R.2E. has soils with a sandy loam A3 or B1 horizon from 4 to 9 inches thick. About 5 per cent of the total area of this mapping unit has chroma 2 mottles (gray) within depths of 24 to 30 inches of surface.

GRADY (S69ALA.-2-1) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>					<i>Pct.</i>				
Ap	0-6	5.4	5.20	3.43	0.25	17.36	51.2	17.3	46.3	36.4
B21t	6-22	4.6	1.12	0.64	0.12	8.92	21.1	6.2	47.8	46.0
B22t	22-72	4.6	0.64	0.22	0.09	7.43	12.8	20.0	36.9	43.1
B23tg	72-96	4.6	0.60	0.27	0.04	8.03	11.3			

MINERALOGY

Horizon	00.002 mm.	
	Pct.	Mineral
B21t	72	Kaolinite
	6	Gibbsite



## MALBIS FINE SANDY LOAM—S69ALA. 2-2-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>									
Ap	0-7	6.0	5.03	1.00	0.12	8.55	71.9	56.0	30.6	13.4
B21t	7-26	5.4	2.06	0.61	0.06	6.49	42.1	46.3	28.3	25.4
B22t	26-54	5.1	0.73	0.44	0.11	5.12	25.0	-----	-----	31.0
B23t	54-71	5.0	0.37	0.34	0.09	4.64	17.2	52.9	13.1	34.0

## MINERALOGY

Horizon	0.02-2 mm.	
	Pct.	Mineral
B21t	>95	Quartz

## MALBIS CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>									
Ap	0-7	5.8	2.24	0.34	0.20	5.38	70.3	55.4	33.7	6.9
B21t	7-26	4.6	1.20	0.61	0.04	4.25	43.5	42.2	28.1	22.5
B22t	26-54	4.8	0.14	0.31	0.04	4.73	10.4	46.6	18.6	27.9

## MINERALOGY

Horizon	<0.002 mm.	
	Pct.	Mineral
B21t	28	Kaolinite
	22	Gibbsite
	7	Quartz
	4	Mica
	37	V/C
	2.5	Anatase

## 3. PANSEY clay loam, clayey subsoil variant

The typifying soil for this mapping unit is a member of the clayey, kaolinitic, thermic family of Plinthic Paleaquults.<sup>3</sup> This mapping unit is typified by soils with very dark gray clay loam Ap horizons, mottled gray clay upper B2tg horizons, and mottled clay lower B2tg horizons with common plinthite nodules. This mapping unit occurs in small shallow depression and has slopes of less than 1 per cent.

*Representative Profile.* Pansey clay loam, clayey variant — S69Ala. 2-5(1-6). (Colors are for moist soil.)

Ap	— 0-5 in.	— Very dark gray (10YR 3/1) clay loam; moderate medium granular structure; friable; medium acid; gradual wavy boundary.
A3g	— 5-11 in.	— Dark gray (N 4/0) clay loam; moderate medium granular structure; friable; very strongly acid; gradual boundary.
B21tg	— 11-25 in.	— Gray (10YR 6/1) clay; few fine, faint, light gray mottles; moderate medium subangular blocky structure; firm; common thin patchy clay films on ped faces; very strongly acid; gradual boundary.
B22tg	— 25-33 in.	— Dark gray (N 4/0) clay loam; common medium distinct strong brown (7.5YR 5/6), red (2.5YR 4/6), and common medium faint light gray (10YR 7/2) mottles; moderate medium subangular blocky structure; firm; common thin patchy clay films on ped faces; 5 per cent plinthite nodules; very strongly acid; gradual boundary.
B23tg	— 33-48 in.	— Mottled gray (10YR 6/1), light yellowish brown (2.5Y 6/4), strong brown (7.5YR 5/6) and red (2.5YR 5/6) clay; moderate medium sub-

angular blocky structure; firm; common thin patchy clay films on faces of peds; 12 per cent plinthite nodules; very strongly acid; gradual boundary.

B24tg — 48-72 in. — Mottled light gray (10 YR 7/1), yellowish brown (10YR 5/8), strong brown (7.5YR 5/6) and dark red (10R 3/6) clay; weak medium subangular blocky structure; firm; few patchy clay films on faces of peds and in large pores; few plinthite nodules; strongly acid.

*Representative Profile Location.* 2,570 feet north and 600 feet east of SW corner of sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of A horizon ranges from 9 to 15 inches. Color of Ap horizon is very dark gray (10YR 3/1, 2N 3/0). Color of A3 horizon is dark gray (10YR 4/1, 2N 4/0). Texture of the A horizons is clay loam or silty clay loam. The B2t horizons are gray or dark gray in hue of 10YR or 2.5Y of mottled in shades of gray, brown, and red with the gray shades in predominance. Depth to horizon with 5 per cent plinthite ranges from 22 to 40 inches.

*Inclusions.* The upper 20 inches of the B2t horizon averages less than 35 per cent clay in transitions at contact with Malbis soils.

## 4B. VARINA fine sandy loam, 2 to 5 per cent slopes

The typifying soil for this mapping unit is a member of the clayey, kaolinitic, thermic family of Plinthic Paleudults. This mapping unit is typified by soils with very dark grayish brown fine sandy loam Ap horizons and strong brown sandy clay B21t horizons. These soils have B2t horizons containing common amounts of plinthite nodules and have few to common amounts of hard iron oxide concretions throughout solum. This mapping unit occupies gently sloping areas on the critical slopes between the nearly level Malbis soils and the concave Grady soils and is also on long upper side slopes between nearly level Malbis soils and hilly soil associations.

<sup>3</sup> These soils are outside the normal textural range for the Pansey series. The Pansey series is classified within the fine-loamy silicious thermic family of the Plinthic Paleaquults.

PANSEY CLAY LOAM, CLAYEY VARIANT—S69ALA. 2-5-(1-6) CHEMICAL AND PHYSICAL DATA

MINERALOGY

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size			00.002 mm.		
			Exchangeable			Σ CEC		Sand	Silt	Clay	Horizon	Pct.	Mineral
			Ca	Mg	K								
	<i>In.</i>												
Ap	0-5	5.9	5.85	1.01	0.44	12.74	57.3	31.8	34.8	33.4	B21tg	55 20	Kaolinite Gibbsite
A3g	5-11	4.9	1.24	0.61	0.07	8.72	22.0						
B21tg	11-25	4.7	0.96	0.27	0.05	7.44	17.2	26.4	29.0	44.6			
B22tg	25-33	4.7	0.47	0.10	0.05	7.02	8.8	29.8	30.8	39.4			
B23tg	33-48	4.9	0.82	0.25	0.06	5.53	20.4						
B24tg	48-72	5.1	0.92	0.34	0.07	5.81	22.9	37.8	18.3	43.9			

*Representative Profile.* Varina fine sandy loam — S69ALA. 2-3-(1-4) (Colors are for moist soil.)

- Ap — 0-6 in. — Very dark grayish brown (10YR 0-15 cm. 3/2) fine sandy loam; weak fine granular structure; friable; common medium iron oxide concretion; strongly acid; clear smooth boundary.
- A3 — 6-10 in. — Yellowish brown (10YR 5/4) fine sandy loam; weak medium granular structure; friable; common medium iron oxide concretions; medium acid; gradual wavy boundary.
- B21t — 10-30 in. — Strong brown (7.5YR 5/8) sandy clay; weak medium subangular blocky structure; friable; firm around plinthite nodules; common hard iron oxide concretions; few plinthite nodules; common thin patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
- B22t — 30-68 in. — Strong brown (7.5YR 5/8) sandy clay; common medium distinct red (2.5YR 5/6) and yellowish brown (10YR 5/8) mottles; weak medium subangular blocky structure; friable; firm around plinthite nodules; common hard iron oxide concretions; 10 per cent plinthite nodules common thin patchy clay films on faces of peds, strongly acid; gradual wavy boundary.

*Representative Profile Location.* NE corner of NE1/4 SW1/4 SE1/4 sec. 4, T.6S R.2E, or 200 feet south and 50 feet west of the center of SE1/4 sec. 4, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Percentage of hard iron oxide concretions ranges from 2 to 10 per cent in all horizons. The A horizon ranges from 5 to 11 inches in thickness. Color of the Ap horizon is very dark grayish brown (10YR 3/2) or dark grayish brown (10YR 4/2). Texture of the

A horizon is fine sandy loam. The B2t horizons are strong brown (7.5YR 5/6, 5/8) commonly mottled in various shades of red and brown. Plinthite content ranges from 2 to 12 per cent but all pedons have 5 per cent in some parts of the B2t horizon.

*Inclusions.* This mapping unit includes a few pedons which have A horizons 11 to 16 inches in total thickness. Less than 5 per cent of the total area has critical slopes of 5 to 8 per cent.

**4C. VARINA fine sandy loam, 5 to 8 per cent slopes**

The typifying soil for this mapping unit is a member of the clayey, kaolinitic, thermic family of Plinthic Paleudults. This mapping unit is typified by soils with dark grayish brown fine sandy loam Ap horizons and mottled sandy clay B2t horizons with common plinthite nodules and common hard iron concretions. This mapping unit occupies side slopes which break from level upland flats to narrow drainageways.

*Representative Profile.* Varina fine sandy loam (Colors are for moist soil.)

- Ap — 0-4 in. — Dark grayish brown (10YR 4/2) 0-10 cm. fine sandy loam; weak medium platy structure; friable; common hard iron oxide concretions; strongly acid; clear smooth boundary.
- B21t — 4-36 in. — Strong brown (7.5YR 5/6) sandy 10-91 cm. clay; common medium distinct yellowish brown (10YR 5/8); moderate medium subangular blocky structure; friable; few plinthite nodules; few hard iron oxide concretions; many thin patchy clay films on faces of peds; strongly acid; gradual wavy boundary.
- B22t — 36-72 in. — Mottled red (10 R 4/6), yellowish 91-183 cm. brown (10YR 5/6), and gray (10YR 6/1) sandy clay; moderate medium subangular blocky structure; firm; common hard iron oxide concretions; 12 per cent plinthite nodules; many

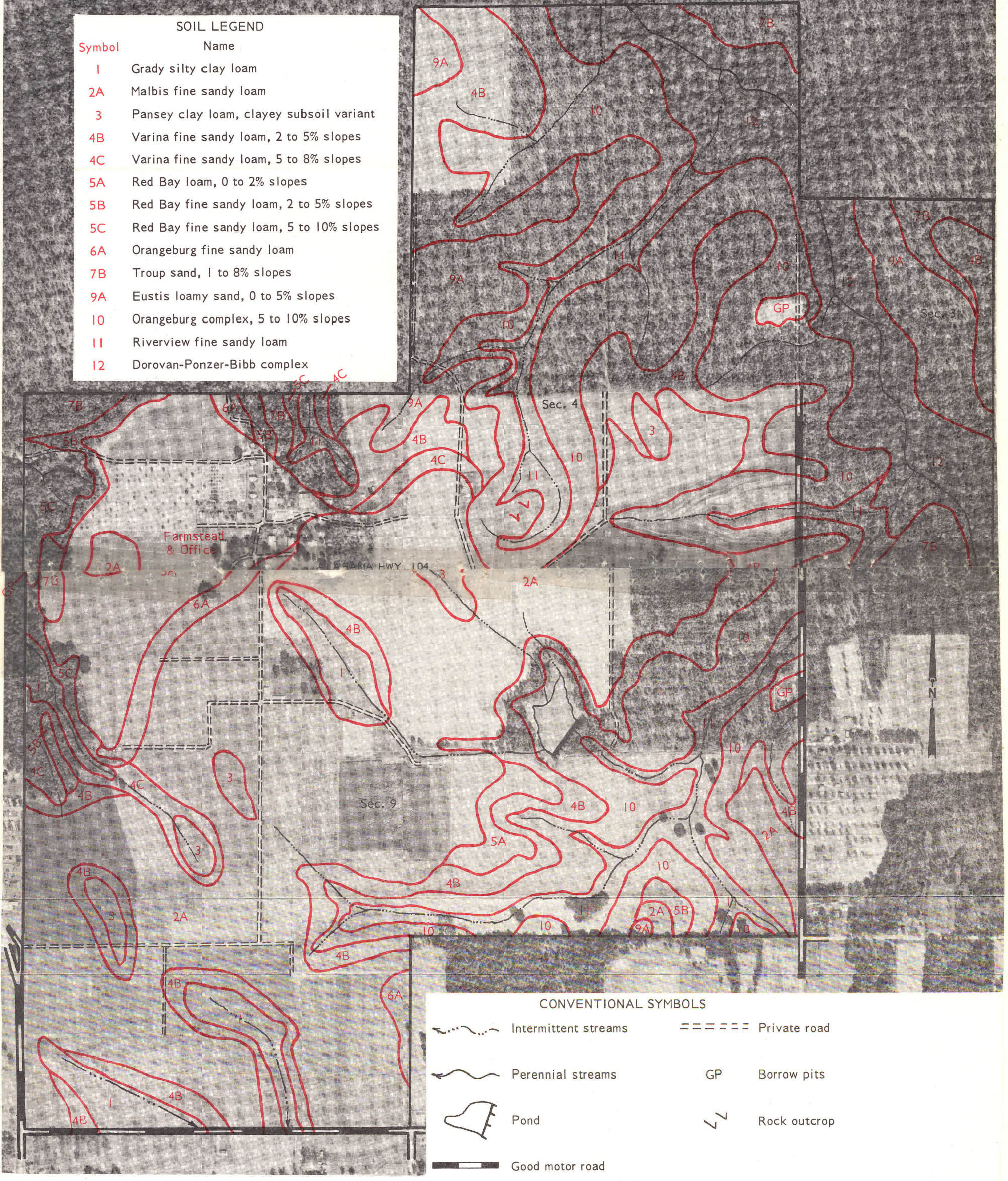
VARINA FINE SANDY LOAM—S69ALA. 2-3-(1-4) CHEMICAL AND PHYSICAL DATA

MINERALOGY

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size			0.02-2 mm.		
			Exchangeable			Σ CEC		Sand	Silt	Clay	Horizon	Pct.	Mineral
			Ca	Mg	K								
	<i>In.</i>												
Ap	0-6	5.3	2.38	0.39	0.19	7.20	41.1	71.9	22.5	5.6	B21t	93 2 5	Quartz Mica Other
A3	6-10	5.6	1.08	0.20	0.13	3.73	37.8	65.6	22.8	11.6			
B21t	10-30	5.1	0.82	0.42	0.11	6.15	21.9	49.1	14.9	36.0			
B22t	30-68	5.2	0.60	0.61	0.13	5.26	25.5						



SOIL LEGEND	
Symbol	Name
1	Grady silty clay loam
2A	Malbis fine sandy loam
3	Pansey clay loam, clayey subsoil variant
4B	Varina fine sandy loam, 2 to 5% slopes
4C	Varina fine sandy loam, 5 to 8% slopes
5A	Red Bay loam, 0 to 2% slopes
5B	Red Bay fine sandy loam, 2 to 5% slopes
5C	Red Bay fine sandy loam, 5 to 10% slopes
6A	Orangeburg fine sandy loam
7B	Troup sand, 1 to 8% slopes
9A	Eustis loamy sand, 0 to 5% slopes
10	Orangeburg complex, 5 to 10% slopes
11	Riverview fine sandy loam
12	Dorovan-Ponzer-Bibb complex



CONVENTIONAL SYMBOLS			
	Intermittent streams		Private road
	Perennial streams	GP	Borrow pits
	Pond		Rock outcrop
	Good motor road		

**SOIL MAP**  
**GULF COAST SUBSTATION**  
**FAIRHOPE, ALABAMA**  
 U. S. DEPARTMENT OF AGRICULTURE  
 SOIL CONSERVATION SERVICE  
 COOPERATING WITH  
 ALABAMA STATE EXPERIMENT STATION





C — 72-88 in. — thin patchy clay films on ped faces; strongly acid; clear wavy boundary.  
 183-224 cm. Mottled weak red (10R 5/4) strong brown (7.5YR 5/6) and light gray (10YR 7/1); loamy sand, single grain structure; loose; stratified; strongly acid.

*Representative Profile Location.* 300 feet south and 450 feet west of the center NW 1/4 sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Percentage of hard iron oxide concretions ranges from few to common in all horizons of the solum. Depth to horizon with 5 per cent plinthite ranges from 8 to 38 inches. Thickness of the Ap horizon ranges from 2 to 7 inches of fine sandy loam. Color of the Ap horizon is dark grayish brown (10YR 4/2) or grayish brown (10YR 5/2). The B2t horizons are mottled in various shades of red and brown. The upper B2t horizons commonly have matrix colors of strong brown and lower B2t horizons normally have mottles which include shades of gray. The B2t horizons are sandy clay or clay loam in texture.

*Inclusions.* Delineations include a few critical slopes of 8 to 12 per cent gradients. Ap horizons of sandy clay loam occur in 5 to 10 per cent of the area. Mottles of chroma 2 or less occur within 24 to 30 inches of surface in a few pedons.

*Remarks.* Typical soils of this unit are mottled higher in the pedon than is defined within the Varina series.

**5A. RED BAY loam, 0 to 2 per cent slopes**

The typifying soil for this mapping unit is a member of the fine-loamy, siliceous, thermic family of Rhodic Paleudults. This mapping unit is typified by soils with dark reddish brown loam Ap horizon and thick dark red sandy clay loam B2t horizon. This mapping unit occurs on broad level flats with slopes of less than 2 per cent.

*Representative Profile.* Red Bay loam—S69Ala. 2-6-(1-4) (Colors are for moist soil unless otherwise noted.)

Ap — 0-11 in. — Dark reddish brown (5YR 3/2)  
 0-28 cm. loam; reddish gray (5YR 5/2) dry; moderate medium granular structure; friable; strongly acid; clear smooth boundary.

B21t — 11-30 in. — Dark red (10R 3/6) sandy clay  
 28-76 cm. loam, moist and dry; moderate coarse blocky parting to weak medium subangular blocky structure; friable; dark reddish brown surface coatings on coarse peds; nearly continuous clay films on faces of coarse peds; strongly acid; gradual boundary.

B22t — 30-68 in. — Dark red (10R 3/6) sandy clay  
 76-173 cm. loam, moist and dry; moderate coarse blocky parting to weak medium subangular blocky structure; friable; nearly continuous clay films on faces of coarse peds; strongly acid; gradual boundary.

B23t — 68-96 in. — Dark red (10R 3/6) sandy clay  
 173-244 cm. loam, moist and dry; weak medium subangular blocky structure; friable; patchy clay films on most faces of peds; very strongly acid.

*Representative Profile Location.* 750 feet south and 700 feet east of NW corner sec. 9, T.6S., R.2E., Baldwin County, Ala.

*Range in Characteristics.* The Ap horizon is dark reddish brown (5YR 3/2, 3/3) or dark brown (7.5YR 3/2). Texture of the Ap horizon is loam, sandy clay loam, or fine sandy loam. Reaction for this horizon is medium, strongly, or very strongly acid. Thickness of the Ap horizon ranges from 8 to 13 inches. The B2 horizons are dark red (2.5YR 3/6, 10R 3/6). The texture of the B1 horizon, when present, is sandy loam or sandy clay loam. The texture of the B2t horizons is sandy clay loam. Reaction of the B2t horizons is strongly or very strongly acid. Below 60 inches reaction is very strongly acid.

*Inclusions.* At contact with Troup soil less than 5 per cent of the area has loamy fine sand A horizons.

Laboratory characterization sample number: S69Ala.-2-7 was sampled within this mapping unit.

**5B. RED BAY fine sandy loam, 2 to 5 per cent slopes**

The typifying soil for this mapping unit is a member of the fine-loamy, siliceous, thermic family of Rhodic Paleudults. This mapping unit is typified by soils with brown

RED BAY LOAM—S69ALA. 2-6-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
<i>In.</i>										
Ap	0-11	5.4	0.92	0.34	0.07	5.81	36.5	47.6	32.6	19.8
B21t	11-30	5.4	2.06	0.67	0.17	7.94	45.7	52.8	18.2	29.0
B22t	30-68	5.3	1.96	0.49	0.11	5.60	29.0	59.4	10.2	30.4
B23t	68-96	4.8	0.88	0.39	0.07	4.62	21.4			

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
B21t	98	Quartz

RED BAY FINE SANDY LOAM—S69ALA. 2-7-(1-2) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
<i>In.</i>										
A1	6-13	4.9	1.12	0.10	0.12	4.38	30.6	64.3	15.6	20.1
B1	13-19	4.9	1.60	0.37	0.09	6.06	34.0	55.8	15.7	28.5

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
B1	98	Quartz

sandy loam A horizons, thin strong brown to dark red fine sandy loam transitional horizons, and thick dark red sandy clay loam B2t horizons. This mapping unit occurs as narrow bands on shoulder slopes bordering broad level flats.

*Representative Profile.* Red Bay Fine sandy loam (Colors are for moist soil unless otherwise noted.)

- A1 — 0-6 in. — Brown (7.5YR 4/4) fine sandy loam; light brown (7.5YR 6/4) dry; weak medium granular structure; friable; very strongly acid; clear wavy boundary.
- A3 — 6-10 in. — Brown (7.5YR 5/4) fine sandy loam; light brown (7.5YR 6/4) dry; weak medium granular structure; friable; strongly acid; gradual wavy boundary.
- B1 — 10-17 in. — Dark red (2.5YR 3/6) fine sandy loam; red (2.5YR 4/6) dry; weak medium subangular blocky structure; friable; patchy very thin dark reddish brown (2.5YR 3/4) clay films on faces of most peds; common dark surface coatings on some peds; strongly acid; gradual wavy boundary.
- B21t — 17-54 in. — Dark red (10R 3/6) sandy clay loam, moist and dry; weak coarse blocky parting to moderate medium subangular blocky; friable; patchy thin dark reddish brown (2.5YR 3/4) clay films on faces of peds; common dark surface coated on coarse peds; very strongly acid; gradual wavy boundary.
- B22t — 54-72 in. — Dark red (10R 3/6) sandy clay loam, moist and dry; weak coarse blocky parting to moderate medium subangular blocky structure; friable; thin patchy dark reddish brown (2.5YR 3/4) clay fibers on faces; very strongly acid.

*Representative Profile Location.* 850 feet north and 500 feet east of SW corner sec. 4, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* The A horizons are dark brown (7.5YR 3/2) or brown (7.5YR 4/4, 5/4). Texture of the A horizons is loam or fine sandy loam. Reaction is strongly or very strongly acid for all horizons. Total A horizon thickness ranges from 6 to 14 inches. The B horizons are dark red (2.5YR 3/6, 10R 3/6). Texture of the B horizons is sandy loam or sandy clay loam with over 18 per cent clay and less than 20 per cent silt.

*Inclusions.* About 20 per cent of this mapping unit has loamy fine sand A horizons with over 5 per cent clay.

*Remarks.* A horizons with color values of 5 are outside series range and are considered a taxadjunct to the series.

### 5C. RED BAY fine sandy loam, 5 to 10 per cent slopes

The typifying soil for this mapping unit is a member of the fine-loamy, siliceous, thermic family of Rhodic Paleudults. This mapping unit is typified by soils with thin dark reddish brown fine sandy loam A horizons and thick dark red sandy clay loam B horizons. This mapping unit occurs on side slopes as narrow bands around broad flats.

*Representative Profile.* Red Bay fine sandy loam — S69Ala. 2-10-(1-4\*) (Colors are for moist soil unless otherwise noted.)

- A1 — 0-4 in. — Dark reddish brown (5YR 3/2) fine sandy loam; reddish gray (5YR 5/2) dry; weak medium granular structure; friable; very strongly acid; clear smooth boundary.
- B1 — 4-13 in. — Dark red (2.5YR 3/6) fine sandy loam, moist and dry; weak medium granular structure; patchy very thin clay films on most faces of peds; dark surface coatings some ped faces; very, very strongly acid; gradual boundary.
- B21t — 13-41 in. — Dark red (10R 3/6) sandy clay loam, moist and dry; moderate medium subangular blocky structure; friable; patchy thin clay films on faces of most peds; strongly acid; gradual boundary.
- B22t — 41-70 in. — Dark red (10R 3/6) sandy clay loam, moist and dry; moderate medium subangular blocky structure; friable; patchy thin clay films on faces of most peds; very strongly acid.

*Representative Profile Location.* 850 feet north and 100 feet east of SW corner sec. 4, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* The A horizon is dark reddish brown (5YR 3/2, 3/3). Reaction of the A horizon is very strongly acid. Thickness of A horizon ranges from 3 to 6 inches. Texture of A horizon is loamy fine sand or fine sandy loam. The B horizons are dark red (10R 3/6, 2.5YR 3/6). Texture of the B horizons is sandy loam or sandy clay loam. Reaction of the B horizons is strongly acid or very strongly acid.

*Inclusions.* About 25 per cent of this unit is eroded and has sandy clay loam Ap horizons if mixed by plowing.

RED BAY FINE SANDY LOAM—S69ALA. 2-10-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth In.	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size			MINERALOGY	
			Exchangeable			Σ CEC		Sand	Silt	Clay	0.02-2 mm.	
			Ca	Mg	K						Pct.	Mineral
A1	0-4	4.8	0.82	0.74	0.10	6.30	26.3	81.1	8.4	10.5		
B1	4-13	5.0	0.12	0.15	0.06	3.05	10.8	80.8	6.2	13.0		
B21t	13-41	5.3	0.12	0.12	0.21	3.09	14.6	68.3	4.3	27.4		
B22t	41-70	5.0	0.12	0.05	0.09	2.66	9.8	74.3	3.7	22.0		
											B21t	>95 Quartz

### 6A. ORANGEBURG fine sandy loam

The typifying soil for this mapping unit is a member of the fine-loamy, siliceous, thermic family of Typic Paleudults. This mapping unit is typified by soils with a dark grayish brown fine sandy loam Ap horizon and thick reddish sandy clay loam B2t horizons. This mapping unit occupies long narrow transitional areas between Red Bay and Malbis soils. Slopes are less than 2 per cent.

*Representative Profile.* Orangeburg fine sandy loam - S69Ala. 2-8-(1-5) (Colors are for moist soil.)

- Ap - 0-8 in. - Dark grayish brown (10YR 4/2)  
0-20 cm. fine sandy loam; weak medium granular structure; friable; strongly acid; clear smooth boundary.
- B1 - 8-14 in. - Yellowish red (5YR 5/6) sandy clay  
20-36 cm. loam; weak medium subangular blocky structure; friable; sandy grains coated and bridged with clay; strongly acid; gradual smooth boundary.
- B21t - 14-48 in. - Yellowish red (5YR 5/6) sandy clay  
36-122 cm. loam; many medium faint red (2.5YR 4/6) and few medium prominent light yellowish brown (2.5Y 6/4) mottles; moderate medium subangular blocky structure; friable; many thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
- B22t - 48-82 in. - Mottled red (2.5YR 4/6), light yellowish brown (2.5Y 6/4), and brownish yellow (10YR 6/6) sandy clay loam; moderate medium subangular blocky structure; friable; many thin patchy clay films on faces of peds; very strongly acid; gradual wavy boundary.
- B3 - 82-92 in. - Mottled red (2.5YR 4/6), light yellowish brown (2.5Y 6/4), and brownish yellow (10YR 6/6) sandy loam; weak medium subangular blocky structure; friable; very strongly acid.

*Representative Profile Location.* 425 feet south and 1,100 feet east of NW corner of sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* The thickness of the Ap horizon ranges from 5 to 14 inches. Color of the Ap horizon is dark grayish brown (10YR 4/2), brown (10YR 4/3), or dark yellowish brown (10YR 4/4). Texture of the Ap horizon is fine sandy loam. The B2t horizons are red (2.5YR 4/8, 5/8) or yellowish red (5YR 4/6, 4/8, 5/8). The lower B2t horizons are commonly mottled with shades

of brown and yellow. Texture of the B2t horizons is sandy clay loam.

*Inclusions.* Ap horizons with loamy fine sand texture make up about 10 per cent of this mapping unit.

### 7B. TROUP sand, 1 to 8 per cent slopes

The typifying soil for this mapping unit is a member of the loamy, siliceous, thermic family of Grossarenic Paleudults. This mapping unit is typified by soils with thick yellowish red sand A2 horizons and red sandy clay loam B2t horizons. This mapping unit occurs on convex landscapes with slopes of less than 8 per cent.

*Representative Profile.* Troup sand - S69Ala. 2-9-(1-3\*) (Colors are for moist soil.)

- Ap - 0-8 in. - Brown (10YR 5/3) sand; weak medium granular; very friable; strongly acid; clear smooth boundary.
- A2 - 8-53 in. - Yellowish red (5YR 5/6) sand; single grained; loose; very strongly acid; gradual wavy boundary.
- B2t - 53-72 in. - Red (2.5YR 4/8) sandy clay loam; 135-183 cm. weak medium subangular blocky structure; friable; sand grains coated and bridged with clay; clay films in pores; strongly acid.

*Representative Profile Location.* 320 feet south and 200 feet east of NW corner of sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of A horizons ranges from 40 to 65 inches. The Ap horizon is brown (10YR 5/3, 4/3). The A2 horizon is yellowish red (5YR 5/6), reddish yellow (5YR 6/6, 7.5YR 6/6), or strong brown (7.5YR 5/6). Texture of the A horizons is loamy sand or sand. The B2t horizon is red (2.5YR 4/6, 4/8, 5/8) or yellowish red (5YR 4/6, 4/8, 5/8). Texture of the B2t horizon is fine sandy loam or sandy clay loam.

*Inclusions.* Approximately 5 to 10 per cent of the area has A horizons from 18 to 40 inches thick. Approximately the same percentage of this mapping has A horizons of over 65 inches in thickness.

*Remarks.* The color of the A2 horizon is redder than allowed in the official series description.

### 9A. EUSTIS loamy sand, 0 to 5 per cent slopes

The typifying soil for this mapping unit is a member of the sandy, siliceous, thermic family of Psammentic Paleudults. This mapping unit is typified by soils with thick loamy sand A horizons and weakly expressed B horizons composed of irregular, discontinuous thin lamella. This mapping unit occurs on gently undulating landscapes.

*Representative Profile.* Eustis loamy sand - S69Ala. 2-11-(1-5) (Colors are for moist soil.)

- A1 - 0-5 in. - Very dark grayish brown (10YR 0-13 cm. 3/2) loamy sand, weak medium

ORANGEBURG FINE SANDY LOAM—S69ALA. 2-8-(1-5) CHEMICAL AND PHYSICAL DATA

Horizon	Depth In.	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size			MINERALOGY	
			Exchangeable			Σ CEC		Sand	Silt	Clay	0.02-2 mm.	
			Ca	Mg	K						Horizon	Pct. Mineral
Ap	0-8	5.4	2.38	0.61	0.12	6.79	45.8	59.6	24.1	16.3		
B1	8-14	5.2	1.68	0.74	0.07	6.09	40.9	49.3	18.4	32.3		
B21t	14-48	5.0	1.92	0.27	0.04	6.55	34.0	50.3	15.7	34.0		
B22t	48-82	4.6	0.34	0.22	0.04	4.52	13.3	57.3	11.6	31.1		

TROUP SAND—S69ALA. 2-9-(1-3) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
<i>In.</i>						<i>Pct.</i>				
Ap	0-8	5.3	0.44	0.22	0.04	2.51	23.5	90.4	4.0	5.6
A2	8-53	5.2	0.16	0.10	0.05	1.38	18.8	90.3	4.8	4.9
B2t	53-72	5.3	0.64	0.05	0.05	3.68	28.3	67.8	11.6	20.6

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
A2	>95	Quartz

EUSTIS LOAMY SAND—S69ALA. 2-11-(1-5) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
<i>In.</i>						<i>Pct.</i>				
A1	0-5	5.1	0.37	0.07	0.04	4.56	10.5	---	---	---
A2	5-22	5.2	0.16	0.07	0.05	2.04	13.7	85.2	11.4	3.4
Bt & A2	22-62	5.1	0.12	0.05	0.03	1.32	15.2	87.7	---	---
A'2 & Bt	62-73	5.2	0.14	0.07	0.03	0.96	25.0	93.4	4.9	1.7
B't	73-120	5.0	0.14	0.12	0.05	1.67	18.6	88.7	1.6	9.7
		5.2	0.14	0.12	0.04	1.10	28.2	---	---	---

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
A2	>95	Quartz

- granular structure; very friable; strongly acid; clear wavy boundary.
- A2 - 5-22 in. - Yellowish brown (10YR 5/4) loamy sand; structureless; loose; many uncoated sand grains; strongly acid; gradual wavy boundary.
- Bt&A2 - 22-62 in. - Brownish yellow (10YR 6/6) loamy sand lamella; 45 per cent very pale brown (10YR 7/3) A2 sand bands; weak fine subangular blocky structure; very friable; most sand grains coated in lamella; lamella are irregular or broken; strongly acid; gradual boundary.
- A'&Bt - 62-73 in. - Very pale brown (10YR 8/3) sand; 158-185 cm. many irregular or broken reddish yellow (7.5YR 6/6) lamella; structureless; loose; most sand grains coated in lamella; strongly acid; gradual wavy boundary.
- B't - 73-120 in. - Mottled yellowish red (5YR 5/8) and 185-305 cm. yellow (10YR 7/6) loamy sand; weak fine subangular blocky structure; loose; few sand grains uncoated; very strongly acid.

*Representative Profile Location.* 1,050 feet S. and 75 feet E. of the center of sec. 4, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* The texture of the A horizons is loamy sand or sand. Color of A1 horizon ranges from very dark grayish brown (10YR 3/2) through grayish brown (10YR 5/2). The A2 horizon is brown (10YR 4/3) or yellowish brown (10YR 5/4). Depth to the top of the B horizon ranges from about 20 to 34 inches. Color of Bt horizon is brownish yellow (10YR 6/6), strong brown (7.5YR 5/8), reddish yellow (7.5YR 6/6), or yellowish red (5YR 5/8). The Bt horizon occurs as lamella or continuous B layers. The Bt horizon is loamy sand. The A'2 has sand texture and is very pale brown (10YR 7/3, 8/3) in color.

*Inclusions.* Some pedons lack the clay buildup to qual-

ify the B horizon as an argillic horizon. Such pedons account for less than 10 per cent of the unit.

**10. ORANGEBURG complex, 5 to 10 per cent slopes**

This mapping unit constitutes intricate patterns of various soils which cannot be delineated at the present mapping scale of 1:7,920. This mapping unit consists of 40 per cent Orangeburg soils, a member of the fine-loamy, siliceous, thermic family of Typic Paleudults; 22 per cent Cahaba soils, a member of the fine-loamy, siliceous, thermic family of the Typic Hapludults; and 38 per cent various other unnamed soils. This mapping unit occurs on side slopes between nearly upland flats and the lower natural drainageways. Delineations are long and narrow, ranging from 50 to 600 feet wide and averaging about 250 feet wide.

*Representative Profile for 40 per cent of unit.* Orangeburg sandy loam. (Colors are for moist soil.)

- Ap - 0-6 in. - Dark yellowish brown (10YR 4/4)  
0-15 cm. sandy loam; weak medium granular structure; friable; few hard iron oxide concretions; strongly acid; clear smooth boundary.
- B1 - 6-10 in. - Yellowish red (5YR 4/6) sandy clay  
15-25 cm. loam; weak medium subangular blocky structure; friable; strongly acid; gradual boundary.
- B21t - 10-30 in. - Red (2.5YR 4/6) sandy clay loam;  
25-76 cm. moderate medium granular structure; friable; very strongly acid; gradual boundary.
- B22t - 30-72 in. - Yellowish red (5YR 4/6) sandy clay  
76-183 cm. loam; common medium distinct brownish yellow (10YR 6/6) and few fine distinct pale brown mottles; moderate medium subangular blocky structure; friable; few fine mica flakes; very strongly acid.

*Representative Profile Location.* 1,800 feet west and 1,100 feet north of center of sec. 9, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of the Ap horizon

CAHABA LOAMY FINE SAND—S69ALA. 2-12-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>									<i>Pct.</i>
A1.....	0-7	4.9	0.12	0.05	0.04	3.41	6.2	79.2	12.5	8.3
B21t.....	7-26	4.9	0.33	0.50	0.04	6.15	14.1	59.3	9.3	31.4
B22t.....	26-46	5.2	0.09	0.12	0.03	2.72	8.8	78.3	6.2	15.5
IIC.....	46-60	5.1	0.06	0.07	0.03	1.20	13.3	92.4	-----	8.1

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
B21t	93	Quartz

ESTO FINE SANDY LOAM—S69ALA. 2-13-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>									<i>Pct.</i>
Ap.....	0-7	5.1	1.24	0.22	0.10	5.24	29.8	-----	-----	-----
B21t.....	7-13	4.9	1.40	0.42	0.07	7.01	27.0	-----	-----	-----
B22t.....	13-86	4.7	0.09	0.25	0.07	6.17	6.6	13.3	40.1	46.6

MINERALOGY		
Horizon	0.02-2 mm.	
	Pct.	Mineral
B22t	84	Quartz
	6	Mica

ranges from 4 to 10 inches. The Ap horizon is dark yellowish brown (10YR 4/4), brown (10YR 4/3), or dark grayish brown (10YR 4/2). Texture of the Ap horizon is sandy loam, fine sandy loam, or loamy sand. The B1 horizon and upper B2t horizons are yellowish red (5YR 4/6, 4/8, 5/6, 5/8), red (2.5YR 4/6, 4/8), yellowish brown (10YR 5/4, 5/6, 5/8), or brownish yellow (10YR 6/6). Lower B2t horizons are yellowish red (5YR 5/6, 5/8, 4/6, 4/8) typically mottled with shades of brown and yellow or are mottled in various shades of red, brown, yellow, and gray. Texture of the B horizons is sandy loam, sandy clay loam, or clay loam. Few hard iron oxide concretions often are present in the various horizons of the solum. Few fine mica flakes occur in many lower B2t horizons.

*Representative Profile for 22 per cent of unit.* Cahaba loamy fine sand — S69Ala. 2-12-(1-4) (Colors are for moist soil.)

- A1 — 0-7 in. — Brown (10YR 4/3) loamy fine sand; 0-18 cm. weak medium granular structure; very friable; very strongly acid; clear smooth boundary.
- B21t — 7-26 in. — Red (2.5YR 4/6) sandy clay loam; 18-66 cm. moderate medium subangular structure; firm; patchy clay films on most faces of peds, very strongly acid; gradual boundary.
- B22t — 25-46 in. — Yellowish red (5YR 4/8) sandy 66-117 cm. loam; moderate medium subangular structure; firm; patchy clay films on most ped faces; strongly acid; clear boundary.
- IIC — 46-60 in. — Yellowish red (5YR 5/8) sand; 117-152 cm. structureless; very friable; very strongly acid.

*Representative Profile Location.* 140 feet north and 950 feet east of center of sec. 4, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of the A horizon ranges from 6 to 20 inches. Thickness of B2t horizons ranges from 38 to 54 inches. The A horizon is very dark grayish brown (10YR 3/2), dark brown (10YR 3/3), dark grayish brown (10YR 4/2), brown (10YR 5/3, 4/3), grayish brown (10YR 5/2), or light yellowish

brown (10YR 6/4). Texture of the A horizon is loamy fine sand or fine sandy loam. The B2t horizons are yellowish red (5YR 5/6, 5/8) or red (2.5YR 4/8, 5/8). Texture of B2t horizons is sandy clay loam or clay loam.

*Inclusions.* Soils similar to Orangeburg with loamy sand surfaces ranging from 20 to 72 inches in thickness account for 14 per cent of this mapping unit. Soils with loamy fine sand texture to a depth of 72 inches and lacking argillic horizons make up 10 per cent of the mapping unit. Soils similar to Esto, correlation sample S69Ala. 2-13-(1-4), make up 12 per cent of the mapping unit. Stratified sandy soils in narrow drainageways occupy 2 per cent of the mapping unit's landscape.

*Representative Profile.* Esto fine sandy loam — pasture (Colors are for moist soil.)

- Ap — 0-7 in. — Brown (10YR 5/3) fine sandy loam; 0-18 cm. weak medium granular structure; friable; strongly acid; clear boundary.
- B21t — 7-13 in. — Yellowish brown (10YR 5/6) clay 18-33 cm. loam; weak medium subangular blocky structure; friable; very strongly acid; gradual boundary.
- B22t — 13-86 in. — Mottled brownish yellow (10YR 33-218 cm. 6/6), red (2.5YR 4/6), light gray (10YR 7/1), and yellowish red (5YR 5/6) silty clay; moderate medium subangular blocky structure; firm; clay films on faces of peds; few plinthite nodules; very strongly acid; gradual boundary.
- C — 86-96 in. — Stratified yellowish red (5YR 5/6), 218-244 cm. brownish yellow (10YR 6/6), and light gray (10YR 7/1) sandy loam; structureless; friable; very strongly acid.

11. RIVERVIEW fine sandy loam

The typifying soil in this mapping unit is a member of the fine loamy, mixed, thermic family of Fluventic Dystrichrepts. This mapping unit is typified by soils with very dark grayish brown fine sandy loam Ap horizons, mottled strong brown heavy sandy loam B horizons, and stratified sandy loam C horizons. This mapping unit oc-



## RIVERVIEW FINE SANDY LOAM—S69ALA. 2-16-(1-4) CHEMICAL AND PHYSICAL DATA

Horizon	Depth	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
	<i>In.</i>									
Ap	0-9	5.2	2.06	0.67	0.98	9.79	37.9			
A12	9-20	5.3	0.96	0.22	0.51	5.61	30.1	61.4	22.3	16.3
B	20-50	5.1	0.60	0.12	0.40	4.00	28.0	55.6	24.4	20.0
C	50-80	5.4	0.76	0.14	0.15	2.33	45.1			

cupies flood plains along small drainageways with slopes of less than 2 per cent.

*Representative Profile.* Riverview fine sandy loam — S69Ala. 2-16-(1-4) (Colors are for moist soil.)

- Ap — 0-9 in. — Very dark grayish brown (10YR 0-23 cm. 3/2) fine sandy loam; moderate medium granular structure; friable; strongly acid; clear smooth boundary.
- A12 — 9-20 in. — Dark grayish brown (10YR 23-51 cm. fine sandy loam; weak medium granular structure; friable; few mica flakes; strongly acid; gradual smooth boundary.
- B — 20-50 in. — Strong brown (7.5YR 51-127 cm. loam; common, medium faint yellowish red (5YR 5/6) mottles; weak medium subangular blocky structure; friable; common mica flakes; strongly acid; clear wavy boundary.
- C — 50-80 in. — Brownish yellow (10YR 127-203 cm. loam; structureless; friable; common strata of loam and loamy sand; common mica flakes; strongly acid.

*Representative Profile location.* 700 feet south and 775 feet west of SE corner sec. 9, T.6S., R.2S., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of the A horizons ranges from 8 through 24 inches. Solum thickness ranges from 35 to 54 inches. Color of A horizons is dark brown (10YR 3/3, 4/3; 7.5YR 3/2, 4/2), grayish brown (10YR 5/2), very dark grayish brown (10YR 3/2), or dark grayish brown (10YR 4/2). Texture of the A horizons is loamy sand, fine sandy loam, or loam. The B horizon is strong brown (7.5YR 5/8, 6/8) or yellowish brown (10YR 5/4, 5/6, 6/8) commonly mottled in shades of red. Texture of the B horizon is sandy loam or loam.

*Inclusions.* Light colored overwashed sandy sediments occur on about 10 per cent of this unit. Pedons with gray mottles occurring within 24 inches of the surface make up about 8 per cent of this mapping unit and occupy low areas.

*Remarks.* The A horizon typified by this mapping unit is outside the 3 to 7 inch thickness range for the Riverview series. This mapping unit also has about 60 per cent of its pedons with sola over 40 inches thick, which is outside the Riverview series range of 20 to 40 inches.

## 12. DOROVAN-PONZER-BIBB complex

This complex includes a delineation of soils representing 3 series occurring together with regularity. Mapping of individual delineations for each of these components would be uneconomical and would serve no present need. The

major components are as follows: Dorovan soil, 53 per cent, a member of the dysic, thermic family of Typic Medisaprists; Ponzer soil, 27 per cent, in the loamy, mixed, dysic, thermic family of Terric Medisaprists; Bibb soil, 13 per cent, in the coarse-loamy, siliceous, acid, thermic family of Typic Fluvaquents; and the remaining 7 per cent is inclusions. This mapping unit occurs along broad low poorly defined drainageways with slopes of less than 2 per cent.

*Representative Profile for 53 per cent of unit.* Dorovan muck — S69Ala. 2-14-(1-4) (Colors are for wet soils.)

- Oe1 — 0-5 in. — Very dark gray (10YR 0-13 cm. partly decomposed leaves, twigs, roots, small limbs; about 55 per cent fibers, 25 per cent rubbed; medium platy structures; slightly sticky; strongly acid; clear boundary.
- Oa1 — 5-30 in. — Black (N2/ ) rubbed and pressed; 13-76 cm. about 25 per cent fiber, less than 10 per cent rubbed; fibers are partly decomposed wood, stems, twigs or roots; massive; nonsticky; very strongly acid; gradual boundary.
- Oa2 — 30-80 in. — Black (N2/ ) rubbed and pressed; 76-203 cm. about 20 per cent fiber, less than 5 per cent rubbed; fibers are mostly partly decomposed wood and roots; massive; nonsticky; very strongly acid; clear boundary.
- IICg — 80-90 in. — Mottled gray (10YR 203-229 cm. gray (10YR 4/1), and brownish yellow (10YR 6/6) sandy loam; structureless; nonsticky; very strongly acid.

*Representative Profile Location.* 200 feet S. and 150 feet E. NW corner SW 1/4 sec. 3, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Depth to the mineral soil is from 50 to over 90 inches. Thickness of Oe1 horizon ranges from 4 to 8 inches. Fiber content in Oa1 horizon ranges from 30 to 65 per cent and ranges from 10 to 35 per cent when rubbed. Oa horizons have fiber content of 15-30 per cent, less than 10 per cent unrubbed. Color for organic layer is black (10 YR 2/1), (N2/ ), very dark gray (10YR 3/1), (N3/ ), or dark gray (10YR 4/1), (N2/ ). The IICg layer is mottled in shades of gray and brown.

*Representative Profile for 27 per cent of unit.* Ponzer muck — S69Ala. 2-17-(1-3) (Colors are for moist soil.)

- Oa1 — 0-6 in. — Very dark brown (10YR 0-15 cm. partly decomposed leaves, roots and twigs; about 20 per cent fibers, 5 per cent rubbed; massive; nonsticky

- very strongly acid; gradual boundary.
- Oa2 - 6-37 in. - Black (N2/ ) rubbed and pressed; 15-94 cm. partly decomposed grass, twigs, roots, and pieces of wood; about 30 per cent fiber, less than 10 per cent rubbed; massive; nonsticky; very strongly acid; gradual boundary.
- IIC - 37-50 in. - Dark brown (10YR 3/3) sandy 94-127 cm. loam; structureless; slightly sticky; strongly acid.

*Representative Profile Location.* 450 feet south and 300 feet east of NW corner SW 1/4 sec. 3, T.6S., R.2E., in Baldwin County, Alabama.

*Range in Characteristics.* Depth to the mineral soil is from 20 to 50 inches. Fiber content of organic layers ranges from 15 to 33 per cent and from 2 to 10 per cent rubbed. Color of the organic layer is black (10YR 2/1), (N2/ ), very dark grayish brown (10YR 2/2), or very dark gray (10YR 3/1), (N3/ ).

*Representative Profile for 13 per cent of unit.* Bibb muck sandy loam - S69Ala. 2-15-(1-15) (Colors are for wet soil.)

- A11 - 0-4 in. - Dark gray (10YR 4/1) mucky 0-10 cm. sandy loam; moderate medium granular structure; slightly sticky; very strongly acid; clear boundary.
- A12g - 4-12 in. - Very dark gray (N3/ ) fine sandy 10-31 cm. loam; moderate medium granular

- structure; slightly sticky; extremely acid; gradual boundary.
- C1g - 12-34 in. - Dark gray (10YR 4/1) fine sandy 31-86 cm. loam; structureless; nonsticky; common medium gray (10YR 6/1) stains around former root channels; very strongly acid; gradual boundary.
- C2g - 34-52 in. - Very dark gray (N3/ ) fine sandy 86-132 cm. loam; common medium distinct gray (10YR 6/1) mottles; structureless; slightly sticky; very strongly acid; gradual boundary.
- C3g - 52-60 in. - Light brownish gray (10YR 6/2) 132-151 cm. sand; structureless; nonsticky; medium acid.

*Representative Profile Location.* 975 feet south and 550 feet east NW corner of SW 1/4 sec. 3, T.6S., R.2E., Baldwin County, Alabama.

*Range in Characteristics.* Thickness of A horizons ranges from 10 to 45 inches. The A11 horizon is very dark grayish brown (10YR 3/2), very dark gray (10YR 3/1), or dark gray (10YR 4/1). Texture of A11 horizon is mucky sandy loam, sandy loam, fine sandy loam, or loam. The Cg horizons are mottled in shades of gray and brown. Texture of C horizon is sandy loam, loam, loamy sand, or sand.

*Inclusions.* Soil pedons with sandy overwash over organic layers make up 7 per cent of this mapping unit.

BIBB MUCKY SANDY LOAM—S69ALA. 2-15-(1-5) CHEMICAL AND PHYSICAL DATA

Horizon	Depth In.	pH H <sub>2</sub> O 1:1	meq./100g.				Base sat'n. Pct.	Particle size		
			Exchangeable			Σ CEC		Sand	Silt	Clay
			Ca	Mg	K					
A11.....	0-4	4.5	0.75	0.27	0.37	3.47	40.0	25.3	48.8	25.9
A12g.....	4-12	4.4	0.06	0.10	0.34	4.50	11.1	46.7	34.8	18.5
C1g.....	12-34	4.6	0.09	0.07	0.19	6.27	5.6	69.1	22.5	8.4
C2g.....	34-52	4.5	0.09	0.07	0.40	8.88	6.3	57.0	24.8	18.2
C3g.....	52-60	5.6	0.06	0.02	0.14	0.46	47.8	-----	-----	-----

MINERALOGY

Horizon	0.02-2 mm.	
	Pct.	Mineral
C1g	92	Quartz

