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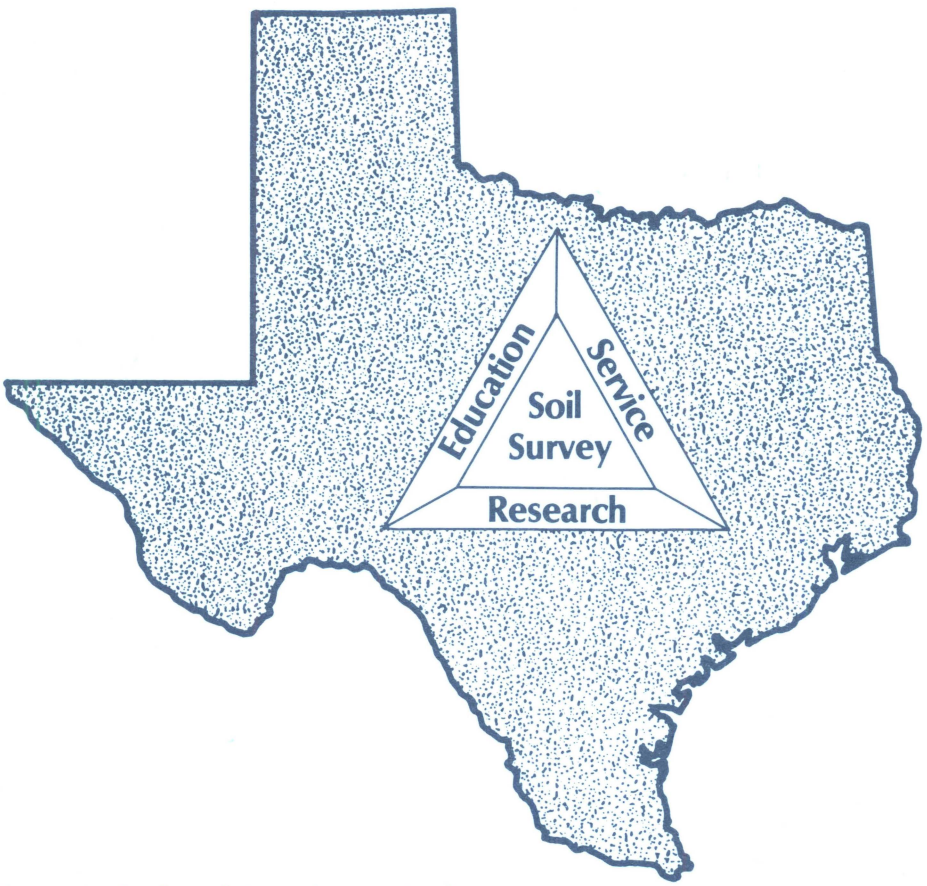
January, 1986

CHARACTERIZATION DATA FOR SELECTED TEXAS SOILS



The Texas Agricultural Experiment Station
in cooperation with the
United States Department of Agriculture,
Soil Conservation Service,
The Texas Agricultural Extension Service
and
The Texas State Soil and Water Conservation Board.

Characterization Data for Selected Texas Soils

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Department of Soil and Crop Sciences,
Soil Characterization Laboratory
College Station, TX 77843

in cooperation with

U.S. Department of Agriculture,
Soil Conservation Service
Temple, TX 76501

Texas Agricultural Extension Service
College Station, TX 77843

and the

Texas State Soil and Water Conservation Board
Temple, TX 76501

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Foreword

The Soil Characterization Program

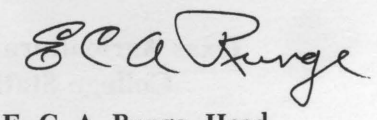
There is an ever-increasing recognition in Texas and nationally that soil is a basic non-renewable resource of critical importance to the economy and well being of society. Awareness of this resource has enhanced the urgency for increased analytical data to document important physical, chemical and mineralogical properties of soils so they can be more accurately inventoried, classified and managed. The Texas Agricultural Experiment Station (TAES) established a Soil Characterization Laboratory within the Soil and Crop Sciences Department in 1978 to augment this capability in support of the National Cooperative Soil Survey Program (NCSS) and the Pedology Research Group. This report summarizes the data base generated through this laboratory from 1978 to 1983. Many of the soils sampled were part of research projects or in support of the Texas Soil Survey Program.

The Characterization Labortory functions as an integral support facility under the Soil Genesis, Morphology and Classification of Texas and Related Soils project (H-6222). It contributes to numerous research needs of the TAES Five-Year Plan for Research and Development of Soils and Land Use (R.P. 1.01). Since 1981, it has received significant financial support through the Texas State Soil and Water Conservation Board in support of the Texas Accelerated Soil Survey Program.

The intended audience includes researchers, extension specialists, educators and service personnel with expertise in soil and water resources. The data presented will provide baseline soils information for those personnel conducting soil surveys, interpreting the behavior and management of soils and utilizing these resources for farming, ranching, forestry, residential development, road construction, and waste disposal. This report is to serve as a data reference document and is not intended to serve as a summary for research conducted by the Pedology Group.

On behalf of the Soil and Crop Sciences Department and the TAES, let me express appreciation to the many research leaders and contributors for this cooperative effort. Special recognition is made to the Soil Conservation Service and the Texas State Soil and Water Conservation Board.

Sincerely,



E. C. A. Runge, Head
Soil and Crop Sciences Department

Introduction

This is the first in a series of planned publications to release compiled laboratory and morphological soils data resulting from soil survey and related research activities of the Soil Characterization Laboratory, Texas Agricultural Experiment Station, in cooperation with the USDA Soil Conservation Service and the Texas Agricultural Extension Service and supported in part by accelerated soil survey funds through the Texas State Soil and Water Conservation Board. Portions of this data have been released in theses, dissertations, and articles in scientific journals. The majority, however, has been released in unpublished form, and this publication serves to make the data available to all potential users.

The publication contains essentially all the data from soils that have been sampled, described, and analyzed by the Soil Characterization Laboratory from its inception in 1978 until an arbitrary cut-off date of July 1, 1983. During this period, two systems of horizon nomenclature were in use, the first based upon the Soil Survey Manual (Soil Survey Staff, 1951) and the second on the revised Chapter 4 of the new Soil Survey Manual (Soil Survey Staff, 1981). The soil descriptions use the horizon nomenclature format in effect at the time of describing and sampling the respective soils.

Soil descriptions compiled in this publication were intended to meet specific needs of soil survey or research activities. In some cases, the soil scientists were not aware the descriptions would be published. However, the descriptions are a source of vital information, greatly enhancing our understanding of the laboratory data. For that reason, field estimates of texture have been retained.

Descriptions and laboratory data sheets are obtained from computer-generated output on a Xerox 9700 printing system. Descriptions are stored on disks in the Texas A&M University mainframe system in coded format. A PL/C program is used to decode and print the descriptions in the traditional paragraph format. Laboratory data are stored on disks and compiled and printed using a FORTRAN program. Additional information or copies of the data on tape can be obtained from the senior author.

Methods

Sampling Procedures

Except where indicated in the description, soils were sampled from freshly dug pits. Descriptions of genetic horizons were made using the Soil Survey Manual (Soil Survey Staff, 1951) if sampled before Oct. 1, 1981, or Chapter 4 of the new Soil Survey Manual (Soil Survey Staff, 1981) if sampled later. Samples of about 4 liters in volume were obtained for each genetic horizon. Three clods of about 200 cm^3 each were also obtained, coated with Saran in the field, and transported to the laboratory for water content and bulk density determinations (Brasher et al., 1966).

Laboratory Analyses

The bulk samples were dried in a forced-draft oven at about 35° C and crushed between electric motor-driven wooden rollers, which were spring loaded to allow passage of coarse fragments. The soil fines were passed through a 2-mm diameter sieve and mixed, and a representative sample was stored in a liter cardboard carton. Any significant quantities of coarse fragments were soaked overnight in water and washed upon a 2-mm sieve, collected, dried, weighed and related back to the quantity of soil as a percentage by weight.

Particle-size distribution was obtained in duplicate using the pipette method of Kilmer and Alexander (1949). Samples (10g) were dispersed in 400 ml of distilled water containing 5 ml of 10 percent sodium hexametaphosphate by shaking overnight on a horizontal oscillating shaker. Aliquots of 5 ml were taken at a 5-cm depth following a settling time as calculated by Stokes' equation (Baver, 1965). Water from the aliquots was evaporated, the fines dried at 105° C, and the amount of suspended solids weighed. The remaining dispersed sample was passed through a 300-mesh sieve; the retained sands were washed, dried at 105° C, and fractionated using a nest of sieves (18-, 35-, 60-, 140-, and 300-mesh) mounted on an oscillating shaker.

Any soluble salts or gypsum in the samples were removed prior to particle-size analysis. Gypsum was removed by heating the sample to 105° C and dialysis (Rivers et al., 1982). Soluble salts were removed by dialysis against water.

Soil reaction (pH) was determined in duplicate on 1:1 soil-to-water mixtures. An electronic pH meter equipped with a combination glass-calomel electrode standardized against pH 4.0 and 7.0 buffer solutions was used.

Bases extractable in 1N NH_4OAc (pH 7.0) were determined following procedure 5B5 of the National Soil Survey Laboratory (SCS, 1984); however, Ca and Mg were determined using a nitrous oxide-acetylene flame on the atomic absorption unit. Extractable Al was determined by 30-minute extraction in 1N KCl (procedure 6G9, SCS, 1984). Effective cation exchange capacity expressed as the sum of extractable bases in 1N NH_4OAc and exchangeable Al in 1N KCl were reported only for samples containing measurable KCl, extractable Al, and low quantities of soluble salts. Cation exchange capacity using 1N NaOAc (pH 8.2) was determined by a modified procedure of USDA Handbook 60 (U.S. Salinity Laboratory Staff, 1969). Leachings and extractions were performed using a mechanical variable-rate extractor (Holmgren et al., 1977).

Percentages of calcite and dolomite were determined using the gasometric procedure of Dreimanis (1962). The $CaCO_3$ equivalent was calculated from calcite and dolomite percentages. Gypsum percentage was determined by precipitation with acetone (U.S. Salinity Laboratory Staff, 1969).

A saturated paste was prepared (U.S. Salinity Laboratory Staff, 1969) and extracted using an automatic extractor (SCS, 1984). Electrical conductivity and solu-

ble cation and anion concentrations to include Ca, Mg, Na, K, CO_3, HCO_3, Cl, and SO_4 were determined on the saturated paste extract. Calcium and Mg were analyzed by atomic absorption. Flame emission was used for Na and K analyses. The titrometric procedures of Handbook 60 were used for CO_3, HCO_3, and Cl (U.S. Salinity Laboratory Staff, 1969). Sulfate was determined turbidometrically (Jackson, 1958).

Total carbon was determined by dry combustion in a medium-temperature resistance furnace (Nelson and Sommers, 1982). Organic carbon was calculated as the difference of total carbon and inorganic carbon as quantified in the $CaCO_3$ equivalent analyses.

Clay Mineralogy

Mineralogical composition of the clay fraction (< 2 μm) was determined on a semi-quantitative basis by X-ray diffraction. To better understand the soil system *in situ* and its physical-chemical behavior as a natural system, we have followed the philosophy of minimal pretreatment for fractionation and analysis. Organic matter was removed with H_2O_2 only if the content of organic matter exceeded 3 percent. Free iron oxides and carbonates were seldom removed, and then only after a duplicate sample had been fractionated without pretreatment. Soluble salts were removed by the fractionation procedure. If sufficient gypsum was present to flocculate the sample, the cycles of suspension, sedimentation, and decantation were repeated until full suspension was attained.

Detailed procedures for sample fractionation follow: The whole soil (< 2 mm) was disaggregated and dispersed by overnight shaking in 350 ml of distilled water that had 1 ml of 5 percent sodium carbonate per 1 g of soil added to aid dispersion. Initial weight of total soil varied from 20 g to 50 g. Upon disaggregation, the sands were wet sieved using a 300-mesh sieve. The < 50 μm suspension was then placed in a suitable sedimentation container or on an automatic fractionator and allowed to settle until total silts (2-50 μm) fell below a predetermined depth. The clays (< 2 μm) were then decanted and suspension, sedimentation, and decantation cycles repeated until the supernatant was clear. The clay suspension was flocculated with 1N $MgCl_2$, the clear supernatant decanted, and clays centrifuged to remove excess $MgCl_2$ before storage in 10 percent ethanol.

For X-ray diffraction analyses, the above Mg-saturated clays are washed free of salts and sedimented on ceramic-tile plates via suction. This prevents serious segregation errors from differential clay-size settling rates (Gibbs, 1965). Ceramic tile has been used as a carrier for preferential oriented clay aggregates by Kinter and Diamond (1956), and Rich and Barnhisel (1977). Suction of a suspension onto ceramic tile is considered the preferred method by Gibbs (1965, 1968). Because the ceramic tile may yield diffraction spectra of contained minerals, it is important that the oriented clay is sufficiently thick to fully attenuate the X-ray beam at all 2 θ positions of interest. This requires about 25 mg clay/cm^2 plate area; this thickness will attenuate 99 percent of the beam at 35° 2 θ.

Pretreatments used for Mg-saturated clays were air dry, eythylene glycolated (E.G.), and 350° C and 550° C heat treatments. One plate was leached with 5 ml of 10 percent E.G. and then placed in an E.G.-saturated atmospheric environment. Heated samples were maintained at respective temperatures for at least 2 hours before analysis. Expandable minerals (mostly smectite) were identified by the variable expansion beyond 14 A° upon glycolation. The collapse of a 14-A° air-dry peak to nearly 10 A° upon heating to 350° C was used as evidence of vermiculite. No evidence of rehydration of the Mg-saturated clays was observed as long as they were X-rayed while still warm. This was further substantiated on selective samples by comparing similar treatments with K-saturated samples, and noting the comparable line profiles of peaks. Interstratified and/or chloritized vermiculite (pedogenic chlorite) minerals were identified by their thermal resistance to collapse from 14 A° to 10 A° upon 350° C and 550° C heat treatments. This resulted in a broad shoulder or peak in the 12-A° region. Broad backgrounds or peaks in the 12-A° region of air-dry and glycolated treatments further substantiate identification of interstratified components. Chlorite is identified by 14-A° to 14.4-A° peaks that persist or are enhanced by 550° C heat treatments. Kaolinite was identified by the presence of 7.1-A° and 3.54-A° peaks during the 350° C heat treatment but loss of these peaks during 550° C heat treatments. Quartz was identified on the basis of the 4.26-A° and 3.34-A° peaks, feldspars by the peaks in the 3.20-A° to 3.24-A° region, calcite by the 3.04-A° peak, and dolomite by the 2.89-A° peak of air-dry patterns.

To estimate clay mineral quantities in soil clays, comparative standards of known reference or soil clays were prepared in various ratiosiThe soil clay diffractograms were then compared to the prepared standards to arrive at semi-quantitative estimates.

Clays were scanned from 2° 2θ to 32° 2θ at a scan speed of 2° 2θ/min. For this and subsequent diffraction analysis of sands and silts, Cu Kα radiation was used with a Philips X-ray diffractometer.

Sand and Silt Mineralogy

Mineralogy of the skeletal fraction was determined by X-ray diffraction, X-ray spectroscopy, or optical microscopy. Since feldspars make up the greater part of the non-quartz fraction, attempts have been made to quantify feldspars, especially the K-feldspars that are more common to soils. X-ray diffraction is adequate to detect the presence or absence of feldspars but not adequate for quantitative estimates at low percentages. Therefore, total K analysis by X-ray spectroscopy and feldspar identification by optical microscopy have been employed to supplement X-ray diffraction for quantitative mineralogy of the coarse fractions.

For X-ray diffraction analysis, sands (0.05-2mm) and silts (2-50 μm) were ground for one minute in a disc mill grinder to reduce particle size. The powder was then

front loaded into aluminum box mounts for X-ray analysis and scanned from 20° 2θ to 35° 2θ at a scan speed of 1° 2θ/min.

Optical microscopy, apparently the most accurate and quantitative of the methods, is being used for quantitative estimates of skeletal mineralogy. The skeletal fractions are impregnated with polyester resin. Upon hardening, they are cut and mounted and a thin-section prepared such that the optical properties of each mineral are evident. Grains are then counted as to their mineralogy, and quantitative estimates are calculated from total grain counts of 300 to 500 or more.

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SOIL SERIES: ABILENE TAXADJUNCT PEDON: S79TX-503-002 COUNTY: YOUNG

PEDON CLASSIFICATION: TYPIC ARGIUSTOLL; FINE-SILTY, MIXED, THERMIC

LOCATION:

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE ALLUVIUM

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: MILES, STAHNKE, RIVERS, AND KACY DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP1	0-15	DARK REDDISH BROWN (5YR 3/4) LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; FEW FINE ROOTS; ABRUPT SMOOTH BOUNDARY.
AP2	15-25	DARK REDDISH BROWN (5YR 3/4) LOAM; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW FINE ROOTS; FEW BLACK CONCRETIONS; ABRUPT SMOOTH BOUNDARY.
B21T	25-48	DARK REDDISH BROWN (5YR 3/4) CLAY LOAM; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; DARK REDDISH BROWN (5YR 3/3) COATINGS ON PED FACES; THICK CONTINUOUS CLAY FILMS ON PED FACES; FEW FINE BLACK CONCRETIONS; GRADUAL SMOOTH BOUNDARY.
B22T	48-64	YELLOWISH RED (5YR 4/6) CLAY LOAM; STRONG MEDIUM ANGULAR BLOCKY PARTING TO STRONG FINE ANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THICK CONTINUOUS DARK REDDISH BROWN (5YR 3/3) CLAY FILMS ON PED FACES; FEW BLACK CONCRETIONS; CLEAR SMOOTH BOUNDARY.
B23T	64-79	YELLOWISH RED (5YR 4/6) CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THICK CONTINUOUS DARK REDDISH BROWN (5YR 3/3) CLAY FILMS ON PED FACES; FEW FINE BLACK CONCRETIONS; CLEAR SMOOTH BOUNDARY.
B24T	79-107	YELLOWISH RED (5YR 4/6) CLAY LOAM; MODERATE COARSE PRISMATIC PARTING TO MODERATE MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THICK CONTINUOUS REDDISH BROWN (5YR 4/3) CLAY FILMS ON PED FACES; FEW FINE BLACK CONCRETIONS; FEW FAUNAL CASTS; MUCH OF THE GRAVEL (50%) IS CARBONATE CONCRETIONS OF 2-15 MM SIZE; CLEAR WAVY BOUNDARY.
IIB31TCA	107-140	YELLOWISH RED (5YR 4/6) VERY GRAVELLY LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK FINE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THIN CONTINUOUS DARK REDDISH BROWN (5YR 3/2) CLAY FILMS ON PED FACES; 60% COARSE FRAGMENTS; GRADUAL SMOOTH BOUNDARY.
IIB32CA	140-160	DARK REDDISH BROWN (5YR 3/4) VERY GRAVELLY SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW FINE ROOTS; FEW THIN PATCHY CLAY FILMS ON PED FACES; ABOUT 30% OF MATERIAL IS LIGHT REDDISH BROWN (5YR 6/4) AND 10% IS YELLOWISH BROWN (10YR 5/6) SANDSTONE PEBBLES; GRADUAL SMOOTH BOUNDARY.
IIIC1	160-191	REDDISH BROWN (5YR 4/4) VERY GRAVELLY SANDY LOAM; STRUCTURELESS MASSIVE; 65% COARSE FRAGMENTS; CLEAR WAVY BOUNDARY.
IIIC2	191-213	YELLOWISH RED (5YR 4/6) VERY GRAVELLY SANDY LOAM; STRUCTURELESS MASSIVE; FRIABLE; 20% OF MATERIALS IS LIGHT RED (2.5YR 6/8) AND 10% IS LIGHT REDDISH BROWN (2.5YR 6/4); MANY GRAVELS IN THE 10-20 MM SIZE RANGE; FEW (1%) FIRST SIZE FRAGMENTS; STRATA OF SANDY LOAM (2.5 CM THICK) EXIST IN UPPER PORTIONOF HORIZON; CLEAR WAVY BOUNDARY.
IVC3R	213-239	REDDISH BROWN (5YR 5/3) SILTY CLAY LOAM; WEAK COARSE PLATY PARTING TO WEAK FINE PLATY STRUCTURE; VERY FIRM; POCKETS OF DARK REDDISH BROWN (5YR 3/3) AND LIGHT RED (2.5YR 6/6) MATERIAL; ABOUT 10% DARK REDDISH BROWN (5YR 2.5/2) LOAM BALLS; CLEAR SMOOTH BOUNDARY.
IVC4R	239+	DARK REDDISH BROWN (2.5YR 3/4) SILTY CLAY LOAM; MODERATE MEDIUM PLATY STRUCTURE; EXTREMELY FIRM; POCKETS OF YELLOWISH RED (2.5YR 5/6) AND PINK (2.5YR 7/4) MATERIAL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ABILENE TAXAJUNCT
SOIL FAMILY: TYPIC ARGIUSTOLL; FINE-SILTY, MIXED, THERMIC
LOCATION: YOUNG COUNTY, TEXAS

PEDON NUMBER: S79TX-503-002

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
668	0- 15	AP1	0.2	0.1	1.0	12.5	21.1	34.9	10.1	38.5	17.0	26.6	L	0
669	15- 25	AP2	0.0	0.0	1.0	8.4	22.8	32.2	10.1	42.0	16.9	25.8	L	0
670	25- 48	B21	0.0	0.1	0.5	3.0	19.6	23.3	8.8	38.4	27.5	38.4	CL	0
671	48- 64	B22T	0.1	0.1	0.7	7.3	21.8	30.0	8.1	34.1	25.7	35.9	CL	0
675	64- 79	B23T	0.1	0.2	0.4	11.7	20.8	33.2	7.6	32.6	24.8	33.8	CL	0
676	79-107	B24T	0.1	0.2	0.5	12.4	23.8	37.0	8.2	33.6	19.2	29.4	CL	0
677	107-140	IIB31TCA	4.9	3.1	3.0	12.5	22.1	45.6	13.2	31.6	12.5	22.8	L	51
678	140-160	IIB32CA	22.0	14.8	9.2	11.3	8.7	66.0	7.7	16.3	8.4	17.7	SL	71
679	160-191	IIIC1	27.5	16.9	6.5	9.1	9.4	69.4	6.8	15.6	7.5	15.0	SCL	65
683	191-213	IIIC2	11.9	5.1	3.6	14.2	24.4	59.2	12.9	25.7	8.3	15.1	FSL	64
684	213-239	IVC3R	3.9	4.7	2.2	0.9	1.5	13.2	35.8	52.6	8.9	34.2	SICL	0
685	239-	IVC4R	0.3	0.4	0.2	0.1	0.8	1.8	41.5	63.3	7.8	34.9	SICL	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
668	0.53	6.7	8.8	3.4	0.1	0.9	13.2		15.3		86	1					
669	0.58	6.6	8.8	3.4	0.1	0.7	13.0		15.5		84	1					
670	0.55	6.7	13.1	5.3	0.1	0.6	19.1		22.1		86	0					
671	0.41	6.9	12.7	4.6	0.2	0.5	18.0		19.8		91	1					
675	0.36	7.0	13.1	4.8	0.2	0.5	18.6		19.5		95	1					
676	0.21	7.1	13.4	4.9	0.2	0.4	18.9		18.4		100	1					
677	0.26	7.5	45.0	3.7	0.2	0.3	49.2		13.5		100	1		16.5	0.5	17.0	
678	0.01	7.4	35.2	3.6	0.2	0.2	39.2		12.3		100	2		25.2	1.4	26.7	
679	0.26	7.6	35.2	3.3	0.3	0.5	39.3		11.5		100	3		35.6	2.5	38.3	
683	0.23	7.5	37.0	2.9	0.4	0.2	40.5		10.6		100	4		15.3	1.8	17.3	
684	0.07	7.5	41.7	5.8	0.7	0.2	48.4		16.1		100	4		17.8	1.8	19.8	
685	0.07	7.7	27.9	5.7	0.8	0.2	34.6		16.9		100	5		1.4	0.3	1.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
668	0.1										1.48	1.72	0.051		21.4	
669	0.1										1.60	1.76	0.036		16.1	
670	0.1															
671	0.1										1.58	1.83	0.050		19.7	
675	0.1															
676	0.1										1.60	1.81	0.042		18.3	
677	0.2										1.54	1.83	0.059		20.6	
678	0.2										1.27	1.45	0.051		28.4	
679	0.2										1.40	1.51	0.024		23.1	
683	0.3										1.59	1.70	0.022		18.1	
684	0.3															
685	0.0										1.83	2.11	0.049		16.0	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
668			***		*		*					
669												
670			**		**		*					
671	T	T	**		**		*					
675												
676	*	*	**		***		*					
677												
678	*	*	**		***		*					
679	T	*	**		***		*					
683	T	*	**		***		*					
684	*	**	*		***		*					
685	T	**	*		***		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ADDICKS VARIANT PEDON: S78TX-201-002 COUNTY: HARRIS

PEDON CLASSIFICATION: AQUIC HAPLUSTOLL; COARSE-LOAMY, SILICEOUS, THERMIC

LOCATION: APPROXIMATELY, 29 DEG, 50 MIN, 10 SEC N AND 95 DEG, 36 MIN, 40 SEC W.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: MONTGOMERY

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PASTURE

COLLECTORS: SOBECKI, VEPRASKAS, RIVERS, DREES AND G. CRENWELGE DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-18	VERY DARK GRAY (10YR 3/1) LOAM, GRAY (10YR 5/1) DRY; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON ROOTS; FEW FINE BLACK CONCRETIONS; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
A3	18-39	DARK GRAYISH BROWN (10YR 4/2) LOAM; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON ROOTS; COMMON FAUNAL CASTS; FEW MEDIUM BLACK CONCRETIONS; NONCALCAREOUS; ABRUPT WAVY BOUNDARY.
B21CA	39-60	LIGHT BROWNISH GRAY (10YR 6/2) LOAM; MANY FAINT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY PARTING TO WEAK FINE AND MEDIUM GRANULAR STRUCTURE; FRIABLE; FEW ROOTS; COMMON GRAYISH BROWN (10YR 5/2) KROTOVINAS; THIN VERY PATCHY COATINGS ON PED FACES; FEW MEDIUM BLACK CONCRETIONS; ABOUT 10% CARBONATE AS NODULES AND SEGREGATIONS; PED COATINGS NOT CLEARLY IDENTIFIED AS CLAY FILMS; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B22CA	60-100	LIGHT GRAY (10YR 7/2) LOAM; MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND COMMON MEDIUM DISTINCT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY PARTING TO MODERATE MEDIUM GRANULAR STRUCTURE; FIRM; COMMON LIGHT BROWNISH GRAY (10YR 6/2) KROTOVINAS; FEW MEDIUM BLACK CONCRETIONS; ABOUT 30% WHITE (10YR 8/1) CARBONATE AS SOFT MASSES AND COMMON MEDIUM NODULES; THIN VERY PATCHY GRAYISH BROWN (10YR 5/2) PED COATINGS NOT CLEARLY IDENTIFIED AS CLAY FILMS; STRONGLY EFFERVESCENT; GRADUAL SMOOTH BOUNDARY.
B23CA	100-137	LIGHT GRAY (10YR 7/2) GRAVELLY LOAM; MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND FEW FINE DISTINCT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY PARTING TO WEAK FINE AND MEDIUM GRANULAR STRUCTURE; FIRM; FEW ROOTS; COMMON DARK GRAY (10YR 4/1) KROTOVINAS; COMMON MEDIUM BLACK CONCRETIONS; ABOUT 35% WHITE (10YR 8/1) CARBONATES AS SOFT MASSES AND COMMON MEDIUM TO COARSE NODULES; THIN PATCHY COATINGS ON PEDS AND ROOT CAHNNELS, NOT CLAY FILMS; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B24GCA	137-205	LIGHT GRAY (2.5Y 7/2) LOAM; COMMON MEDIUM DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON MEDIUM BLACK CONCRETIONS; FEW CONTINUOUS CALCIUM CARBONATE CONCRETIONS; LIGHT BROWNISH GRAY (10YR 6/2) GRAINY PED COATS, THIN TO THICK PATCHY; WEAKLY CALCAREOUS MATRIX IN SPOTS; CLEAR BOUNDARY.
IIB25TGCA	205-240	LIGHT BROWNISH GRAY (10YR 6/2) GRAVELLY SILT LOAM; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON DARK GRAY (10YR 4/1) KROTOVINAS; COMMON FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS ON PED FACES; ABOUT 40% CARBONATE AS SOFT MASSES AND COMMON MEDIUM AND COARSE NODULES; SLIGHTLY EFFERVESCENT; GRADUAL BOUNDARY.
IIB3TGCA	240-268	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY LOAM; COMMON FINE PROMINENT YELLOWISH BROWN (10YR 5/8) AND COMMON FINE DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW PRESSURE FACES; COMMON FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS ON PED FACES; ABOUT 15% CARBONATE AS SOFT MASSES AND COMMON FINE AND MEDIUM NODULES; NONCALCAREOUS; CLEAR BOUNDARY.
IIICCA	268-328	PALE YELLOW (5Y 7/3) SILTY CLAY LOAM; MANY COARSE PROMINENT YELLOWISH RED (5YR 4/8) MOTTLES; STRUCTURELESS MASSIVE; VERY FIRM; COMMON FINE BLACK CONCRETIONS; ABOUT 35% CARBONATE AS SOFT MASSES AND COMMON FINE AND MEDIUM NODULES; SLIGHTLY EFFERVESCENT; CLEAR BOUNDARY.
IIIC	328-405	LIGHT GRAY (2.5Y 7/2) CLAY; MANY COARSE PROMINENT YELLOWISH RED (5YR 4/6) AND COMMON MEDIUM FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; VERY FIRM; COMMON PRESSURE FACES; SLIGHTLY EFFERVESCENT.

REMARKS: THE B22CA HORIZON WAS SAMPLED AT 60-80 AND 80-100 CM DEPTHS AND THE B24GCA WAS SAMPLED AT 137-171 AND 171-205 CM DEPTHS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ADDICKS VARIANT
SOIL FAMILY: AQUIC HAPLUSTOLL; COARSE-LOAMY, SILICEOUS, THERMIC
LOCATION: HARRIS COUNTY, TEXAS

PEDON NUMBER: S78TX-201-002

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
629	0- 18	A1	0.1	0.1	1.5	11.9	26.9	40.5	15.6	49.4	7.2	10.1	L	0
630	18- 39	A3	0.0	0.1	1.5	13.5	23.2	38.3	16.2	46.1	12.3	15.6	L	0
631	39- 60	B21CA	0.1	0.2	1.2	14.3	22.4	38.2	17.0	45.8	12.6	16.0	L	1
632	60- 80	B22CA-1	2.3	2.7	1.8	10.5	15.0	32.3	20.3	47.4	8.3	20.3	L	11
633	80-100	B22CA-2	2.0	2.0	2.0	7.8	17.4	31.2	22.0	46.8	8.7	22.0	L	11
634	100-137	B23CA	3.3	2.4	1.4	7.5	19.2	33.8	18.6	47.7	11.5	18.5	L	23
635	137-171	B24GCA-1	1.1	0.9	1.4	7.8	20.5	31.7	20.5	47.8	16.3	20.5	L	1
636	171-205	B24GCA-2	0.4	0.4	1.0	9.3	20.2	31.3	20.7	48.0	16.1	20.7	L	1
637	205-240	IIB25TGC	3.7	2.5	2.5	5.5	10.3	24.5	31.4	57.7	14.4	17.8	SIL	20
638	240-268	IIB3TGCA	1.0	0.0	4.4	5.7	9.8	21.8	27.3	48.3	20.7	29.9	CL	10
639	268-328	IIICCA	2.8	3.0	1.1	2.4	3.6	12.9	36.7	49.3	23.1	37.8	SICL	10
640	328-405	IIIC	0.1	0.1	0.1	1.1	1.9	3.3	19.3	29.5	34.6	67.2	C	1

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR NAOAC AL MEQ/100G	CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
629	1.02	6.3												0.0	0.0	0.0	
630	0.26	7.4												0.0	0.0	0.0	
631	0.17	8.3												3.1	1.2	4.4	
632	0.17	8.5												29.1	3.5	32.9	
633	0.27	8.4												28.7	1.5	30.3	
634	0.24	8.4												17.6	1.7	19.4	
635	0.08	8.2												0.9	0.7	1.7	
636	0.00	8.3												0.0	0.0	0.0	
637	0.00	8.6												38.4	1.0	39.5	
638	0.00	8.3												15.3	2.5	18.0	
639	0.00	8.4												34.1	0.8	35.0	
640	0.10	8.0												4.5	1.7	6.4	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
629	0.4										1.53	1.67	0.029			
630	0.4										1.60	1.77	0.034			
631	0.5										1.61	1.74	0.026			
632	0.5										1.80	1.88	0.014			
633	0.4										1.80	1.88	0.014			
634	0.4										1.79	1.88	0.016			
635	0.3										1.75	2.00	0.045			
636	0.3										1.75	2.00	0.045			
637	0.4															
638	0.7															
639	0.5										1.54	2.02	0.094			
640	0.4										1.39	2.04	0.135			

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
629	***				*		**					
630												
631	***				*		**					
632												
633												
634												
635												
636												
637												
638												
639	***		*		*		**					
640	***		*		*		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ALGOA PEDON: S78TX-167-002 COUNTY: GALVESTON

PEDON CLASSIFICATION: AERIC CALCIAQUOLL; FINE-LOAMY, MIXED, THERMIC

LOCATION: FROM INTERSECTION OF TEXAS 6 AND TEXAS 646, 4.3 KM NNE TO POWERS ROAD/CLOUD BAYOU INTERSECTION, 1.7 KM SE ON POWERS ROAD TO SHELL ROAD, 672 M NE ON SHELL ROAD, 132 M NW INTO PASTURE.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PASTURE

COLLECTORS: T. SOBECKI, R. MILES, E. RIVERS, M. VEPRASKAS AND L. WILDING DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-17	BLACK (10YR 2/1) SILT LOAM, VERY DARK BROWN (10YR 2/2) DRY; WEAK MEDIUM AND COARSE SUBANGULAR BLOCKY PARTING TO WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; MANY FAUNAL CASTS; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
A12	17-29	VERY DARK GRAY (10YR 3/1) SILT LOAM, VERY DARK GRAYISH BROWN (10YR 3/2) DRY; WEAK COARSE SUBANGULAR BLOCKY PARTING TO MODERATE MEDIUM GRANULAR STRUCTURE; FIRM; MANY ROOTS; MANY FAUNAL CASTS; FEW FINE BLACK CONCRETIONS; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B1CA	29-37	VERY DARK GRAY (10YR 3/1) SILTY CLAY LOAM; MANY FAINT GRAYISH BROWN (10YR 5/2) MOTTLES; MODERATE COARSE SUBANGULAR BLOCKY PARTING TO MODERATE MEDIUM GRANULAR STRUCTURE; FIRM; COMMON ROOTS; FEW FINE BLACK CONCRETIONS; COMMON FINE CALCIUM CARBONATE SEGREGATIONS; SLIGHTLY CALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21CA	37-48	GRAYISH BROWN (2.5Y 5/2) CLAY LOAM; MANY FAINT GRAYISH BROWN (10YR 5/2) AND MANY DISTINCT LIGHT GRAY (2.5Y 7/2) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY PARTING TO STRONG MEDIUM GRANULAR STRUCTURE; FIRM; FEW ROOTS; FEW KROTOVINAS; MANY FINE CALCIUM CARBONATE SEGREGATIONS; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B22CA	48-89	GRAYISH BROWN (10YR 5/2) CLAY LOAM; MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND MANY FAINT LIGHT GRAY (10YR 7/2) MOTTLES; STRONG FINE AND MEDIUM GRANULAR STRUCTURE; FRIABLE; FEW ROOTS; FEW KROTOVINAS; COMMON FINE BLACK CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B23CA	89-112	VERY PALE BROWN (10YR 7/3) GRAVELLY CLAY LOAM; COMMON MEDIUM FAINT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO STRONG FINE AND MEDIUM GRANULAR STRUCTURE; FIRM; FEW ROOTS; FEW BLACK (7.5YR 2/0) KROTOVINAS; COMMON FINE BLACK CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; GRAVEL IN FORM OF CARBONATE NODULES; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
B24CA	112-135	YELLOWISH BROWN (10YR 5/6) CLAY LOAM; COMMON FINE DISTINCT LIGHT BROWNISH GRAY (2.5Y 6/2) AND COMMON FINE DISTINCT LIGHT GRAY (2.5Y 7/2) MOTTLES; WEAK FINE SUBANGULAR BLOCKY PARTING TO STRONG FINE AND MEDIUM GRANULAR STRUCTURE; FIRM; FEW ROOTS; MANY FEW BLACK CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; THIN VERY PATCHY CLAY FILMS ALONG ROOT CHANNELS; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B25T	135-160	YELLOWISH BROWN (10YR 5/6) CLAY LOAM; MANY FINE DISTINCT LIGHT BROWNISH GRAY (2.5Y 6/2) MOTTLES; STRONG COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW ROOTS; COMMON VERY DARK GRAYISH BROWN (10YR 3/2) KROTOVINAS; MANY VERY DARK GRAYISH BROWN (10YR 3/2) ROOT CHANNELS; MANY FEW BLACK CONCRETIONS; THIN PATCHY CLAY FILMS ON PED FACES AND ALONG PORES AND CHANNELS; NONCALCAREOUS; ABRUPT WAVY BOUNDARY.
IIB26TCA	160-190	GRAYISH BROWN (2.5Y 5/2) SILT LOAM; MANY DISTINCT YELLOWISH BROWN (10YR 5/6) AND MANY DISTINCT BROWN (7.5YR 4/4) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; FIRM; NO ROOTS; COMMON VERY DARK GRAYISH BROWN (10YR 3/2) KROTOVINAS; MANY FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS ON PED FACES; 40% CARBONATES IN FORM OF COMMON MEDIUM AND FINE NODULES AND SEGREGATIONS; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
IIB27TG	190-210	LIGHT BROWNISH GRAY (2.5Y 6/2) SILTY CLAY LOAM; MANY MEDIUM DISTINCT STRONG BROWN (7.5YR 5/8) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; FEW KROTOVINAS; MANY DARK GRAYISH BROWN (10YR 4/2) ROOT CHANNELS; MANY FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS ON PED FACES; GRAY AREAS (2.5Y 6/2) COMPRISES ABOUT 60% OF THE HORIZON; 40% OF THE HORIZON WAS STRONG BROWN (7.5YR 5/8) FRIABLE SILT LOAM; NONCALCAREOUS; CLEAR BOUNDARY.
IIB3T	210-235	BROWN (7.5YR 5/4) SILT LOAM; MANY DISTINCT YELLOWISH RED (5YR 4/6) AND MANY COARSE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK FINE PLATY STRUCTURE; FRIABLE; FEW VERY DARK GRAYISH BROWN (10YR 3/2) ROOT CHANNELS; MANY MEDIUM BLACK CONCRETIONS; MIXED LIGHT BROWNISH GRAY (10YR 6/2) AND YELLOWISH RED (5YR 4/6) SILT LOAM INTERBEDED WITH SILTY CLAY LOAM AND VERY FINE SANDY LOAM; MODERATE FINE PLATY STRUCTURE (ROCK STRUCTURE); MANY MEDIUM SOFT FE-MN NODULES; 2-5% CARBONATE IN NODULES AND SEGREGATIONS; NONCALCAREOUS IN RED MATRIX, CALCAREOUS IN GRAY MATRIX; SLIGHTLY EFFERVESCENT; CLEAR BOUNDARY.
IICCA	235-260	BROWN (7.5YR 5/4) SILT LOAM; CLEAR BOUNDARY.
IIICCA	260-310	LIGHT BROWNISH GRAY (2.5Y 6/2) SILTY CLAY; MANY COARSE PROMINENT BROWN (7.5YR 5/4) AND MANY COARSE PROMINENT YELLOWISH RED (5YR 5/6) MOTTLES; MODERATE MEDIUM PLATY STRUCTURE; VERY FIRM; FEW VERY DARK GRAYISH BROWN (10YR 3/2) ROOT CHANNELS; COMMON MEDIUM BLACK CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; SLIGHTLY EFFERVESCENT.

REMARKS: THE B22CA HORIZON WAS DIVIDED FOR SAMPLING AT 48-68 AND 68-89 CM DEPTHS. GRAY AREAS AND RED AREAS OF THE IIB27TG HORIZON WERE SAMPLED SEPARATELY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ALGOA
SOIL FAMILY: AERIC CALCIAQUOLL; FINE-LOAMY, MIXED, THERMIC
LOCATION: GALVESTON COUNTY, TEXAS

PEDON NUMBER: S78TX-167-002

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
601	0- 17	A11				2.0	21.3	23.5		60.4		16.1	SIL	
602	17- 29	A12				1.4	17.9	19.8		54.1		26.1	SIL	0
603	29- 37	B1CA				1.2	11.9	16.7		49.7		33.6	SICL	0
604	37- 48	B21CA				1.5	7.9	21.6		45.3		33.1	CL	1
605	48- 68	B22CA-1						33.1		38.2		28.7	CL	7
606	68- 89	B22CA-2				0.8	8.5	22.1		49.0		28.9	CL	8
607	89-112	B23CA				1.1	8.9	26.1		45.4		28.5	CL	8
608	112-135	B24CA				0.7	13.2	22.5		48.7		28.8	CL	15
609	135-160	B25T				1.0	22.9	24.6		45.4		30.0	CL	12
610	160-190	IIB26TCA				0.8	5.3	16.7		59.9		23.4	SIL	0
611	190-210	IIB27TG				0.1	12.0	12.7		58.8		28.5	SICL	14
612	190-210	IIB27T				0.3	14.1	15.0		62.5		22.5	SIL	0
613	210-235	IIB3T				0.3	14.5	15.3		62.3		22.4	SIL	0
614	235-260	IICCA				0.2	8.0	8.8		67.1		24.1	SIL	2
615	260-310	IIICCA				0.1	4.2	4.9		53.9		41.2	SIC	1

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
601	1.84	7.2												0.0	0.0	0.0	
602	0.74	8.2												1.3	0.8	2.2	
603	0.45	8.4												12.5	1.9	14.5	
604	0.44	8.5												41.4	2.7	44.3	
605	0.29	8.4												48.2	2.7	51.1	
606	0.25	8.4												37.1	2.3	39.6	
607	0.21	8.4												33.6	0.5	34.1	
608	0.16	8.2												17.2	0.6	17.9	
609	0.00	7.4												0.0	0.0	0.0	
610	0.00	8.2												37.6	1.8	39.6	
611	0.00	8.0												0.0	0.0	0.0	
612	0.00	7.8												0.0	1.0	1.1	
613	0.00	8.1												0.8	0.0	0.8	
614	0.09	8.1												2.0	0.0	2.0	
615	0.08	8.1												11.5	1.6	13.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
601											1.42	1.65	0.051			
602	0.8										1.47	1.69	0.047			
603	0.8										1.57	1.82	0.050			
604	0.8										1.56	1.70	0.029			
605	0.6										1.53	1.75	0.035			
606	0.6										1.53	1.75	0.035			
607	0.5										1.58	1.75	0.034			
608	0.5										1.62	1.80	0.035			
609	0.4										1.67	1.95	0.052			
610	0.5										1.61	1.76	0.030			
611	0.4										1.63	1.91	0.054			
612	0.4										1.60	1.84	0.047			
613	0.5											1.84				
614	0.5											1.84				
615	0.4											1.90				

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
601	***				**		**					
602												
603	***			T	**		**					
604												
605	***			T	**		**					
606												
607	***			T	**		**					
608												
609	***			T	**		**					
610												
611	***		*	T	**		**					
612												
613	***		*	T	**		**					
614												
615	***		*	T	**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: AUSTIN PEDON: S78TX-027-006 COUNTY: BELL

PEDON CLASSIFICATION: ENTIC HAPLUSTOLL; FINE-SILTY, CARBONATIC, THERMIC

LOCATION: APPROXIMATELY 2 MI S OF TEMPLE IN CROPLAND ON SOUTH PART OF THE BLACKLAND RESEARCH CENTER.

LANDFORM: UPLAND ELEVATION (M): 188 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/11/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (10YR 3/2) SILTY CLAY, DARK GRAYISH BROWN (10YR 4/2) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; COMMON FAUNAL CASTS; COMMON SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A1	15-38	VERY DARK GRAYISH BROWN (10YR 3/2) SILTY CLAY, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; HARD; FIRM; FEW FINE ROOTS; COMMON FAUNAL CASTS; COMMON SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B21	38-61	BROWN (10YR 5/3) SILTY CLAY, PALE BROWN (10YR 6/3) DRY; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; COMMON FAUNAL CASTS; COMMON SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B22	61-99	LIGHT YELLOWISH BROWN (10YR 6/4) SILTY CLAY, VERY PALE BROWN (10YR 7/4) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON FAUNAL CASTS; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
C1R	99-124	VERY PALE BROWN (10YR 8/3) WEAKLY CONSOLIDATED CHALKY MARL; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; FEW FINE SALT SEGREGATIONS; FEW FINE DECAYED ROOTS; SOME SHALE INTERBEDDING; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
C2R	124-180	LIGHT GRAY (10YR 7/1) WEAKLY CONSOLIDATED CHALKY MARL; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; FEW FINE SALT SEGREGATIONS; FEW FINE DECAYED ROOTS; SOME SHALE INTERBEDDING; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
C3R	180-244	WHITE (10YR 8/1) WEAKLY CONSOLIDATED CHALKY MARL; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; FEW FINE SALT SEGREGATIONS; FEW FINE DECAYED ROOTS; SOME SHALE INTERBEDDING; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
C4R	244-315	WHITE (10YR 8/1) WEAKLY CONSOLIDATED CHALKY MARL; FEW FINE FAINT YELLOW (10YR 7/6) MOTTLES; FEW FINE SALT SEGREGATIONS; SOME SHALE INTERBEDDING; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: AUSTIN
SOIL FAMILY: ENTIC HAPLUSTOLL; FINE-SILTY, CARBONATIC, THERMIC
LOCATION: BELL COUNTY, TEXAS

PEDON NUMBER: S78TX-027-006

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
370	0- 15	AP												
374	15- 38	A1												
375	38- 61	B21												
376	61- 99	B22												
380	99-124	C1												
381	124-180	C2												
382	180-244	C3												
386	244-315	C4												
387	315-366	C5												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC MG	NH4OAC NA	NH4OAC K	NH4OAC TOTAL	KCL EXTR AL	NAOAC CEC MEQ/100G	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
370		7.7			0.2				28.8			1				60.9	
374		7.9			0.3				28.4			1				64.4	
375		7.9			0.3				28.4			1				70.7	
376		7.9			0.2				22.0			1				77.1	
380		8.0			0.2				17.1			1				76.1	
381		8.0			0.2				16.3			1				71.7	
382		8.0			0.2				18.7			1				71.5	
386		8.0			0.3				13.9			2				72.4	
387		8.0			0.3				15.3			2				66.4	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
370																
374																
375																
376																
380																
381																
382																
386																
387																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
370												
374												
375												
376												
380												
381												
382												
386												
387												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: AUSTIN VARIANT PEDON: S81TX-491-002 COUNTY: WILLIAMSON

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: IVAN HEIMER FARM. FROM INTERSECTION OF TEXAS 95 AND FM 973 IN TAYLOR, 3.5 MI SW ON FM 973, 0.2 MI E IN COTTON FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: CHALK FORMATION: AUSTIN CHALK

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. BATTE, C.L. GIRDNER, G. LANE, T. HALLMARK, AND T. MOORE DATE: 08/05/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-26	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE ROOTS; FEW LIGHT GRAY (10YR 7/1) WORM CASTS; FEW VERY FINE SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A1	26-53	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; FEW LIGHT GRAY (10YR 7/1) WORM CASTS; FEW VERY FINE SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
AC	53-81	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; COMMON DARK GRAY (10YR 4/1) STREAKS ALONG CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
C1	81-133	PALE BROWN (10YR 6/3) SILTY CLAY LOAM, VERY PALE BROWN (10YR 7/3) DRY; COMMON FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; MANY CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE SMOOTH BOUNDARY.
C2	133-178	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM, LIGHT GRAY (10YR 7/2) DRY; COMMON FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; MANY CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SITE WAS PLANTED IN COTTON AT TIME OF SAMPLING. NO EVIDENCE OF COTTON ROOT ROT WAS NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: AUSTIN VARIANT
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: WILLIAMSON COUNTY, TEXAS

PEDON NUMBER: S81TX-491-002

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1070	0- 26	AP	0.3	0.3	0.5	2.0	3.9	7.0	25.2	47.8	13.2	45.2	SIC	
1071	26- 53	A1	0.2	0.3	0.6	1.9	4.0	7.0	27.3	47.0	27.3	46.0	SIC	
1072	53- 81	AC	0.7	0.7	0.8	1.9	3.7	7.8	34.2	52.2	25.8	40.0	SIC	
1073	81-133	C1	0.8	0.5	0.2	1.1	3.9	6.5	50.3	68.2	15.9	25.3	SIL	
1074	133-178	C2	0.1	0.0	0.1	1.3	6.3	7.8	50.7	71.2	11.9	21.0	SIL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1070	1.65	8.1	76.6	2.0	0.1	0.6	79.4		48.3		100	0	0	8.4	2.6	11.2	
1071	1.14	8.0	71.3	1.4	0.1	0.4	73.2		45.1		100	0	0	15.8	2.9	18.9	
1072	0.54	8.0	65.2	1.2	0.1	0.3	66.8		34.0		100	0	0	33.1	3.1	36.4	
1073	0.12	8.1	56.1	1.0	0.1	0.2	57.4		19.8		100	0	1	61.9	0.0	61.9	
1074	0.01	8.1	50.0	1.0	0.2	0.2	51.4		13.8		100	1	1	72.8	0.0	72.8	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1070	0.3	66	3.0	0.1	0.2	0.0	0.0	1.8	0.0	0.1	1.33	1.88	0.123		33.7	
1071	0.4	64	3.4	0.1	0.2	0.0	0.0	1.9	0.1	0.4	1.33	1.79	0.106		31.9	
1072	0.5	57	4.0	0.1	0.3	0.0	0.0	1.3	0.2	0.6	1.41	1.79	0.084		27.8	
1073	0.5	44	3.6	0.2	0.7	0.0	0.0	1.0	0.4	0.5	1.55	1.80	0.051		20.8	
1074	0.6	39	3.6	0.2	1.5	0.1	0.0	1.2	0.7	0.6						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1070												
1071												
1072												
1073												
1074												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BASTROP TAXADJUNCT PEDON: S79TX-503-001 COUNTY: YOUNG

PEDON CLASSIFICATION: UDIC PALEUSTALF; FINE-SILTY, MIXED, THERMIC

LOCATION:

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: MILES, WILDING, STAHNKE, RIVERS AND KACY DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	DARK REDDISH BROWN (5YR 3/4) SILT LOAM; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; MANY FINE ROOTS; COMMON ANT EXCRETA; ABRUPT SMOOTH BOUNDARY.
A12	20-36	REDDISH BROWN (5YR 4/4) SILT LOAM; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO WEAK MEDIUM GRANULAR STRUCTURE; VERY FRIABLE; MANY FINE ROOTS; COMMON ANT CASTS; COMMON SMALL PEBBLES; ABRUPT WAVY BOUNDARY.
IIB1	36-61	YELLOWISH RED (5YR 4/6) SILT LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; COMMON FAUNAL CASTS; FEW FINE CALCIUM CARBONATE FILAMENTS; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON SUBROUNDED SILICEOUS PEBBLES; FEW SECONDARY CARBONATES ON LOWER SURFACES OF PEBBLES; CLEAR SMOOTH BOUNDARY.
IIB21T	61-89	REDDISH BROWN (5YR 4/4) SILT LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; COMMON FAUNAL CASTS; COMMON FINE CALCIUM CARBONATE FILAMENTS; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON SMALL SUBROUNDED SILICEOUS PEBBLES; CLEAR WAVY BOUNDARY.
IIIA1BT	89-114	DARK REDDISH BROWN (5YR 3/3) SILT LOAM; MODERATE COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE ROOTS; MANY DARK REDDISH BROWN (5YR 3/2) COATINGS ON PED FACES; THIN CONTINUOUS CLAY FILMS ON PED FACES; COMMON FAUNAL CASTS; MANY (25%) INDURATED CARBONATE NODULES ELONGATED ALONG OLD ROOT CHANNELS; COMMON (5%) SUBROUNDED SILICEOUS PEBBLES; CLEAR WAVY BOUNDARY.
IIIB22T	114-137	DARK REDDISH BROWN (5YR 3/4) SILT LOAM; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW FAUNAL CASTS; COMMON FINE CALCIUM CARBONATE FILAMENTS; MANY INDURATED CARBONATE NODULES ELONGATED ALONG OLD ROOT CAHNNELS; 2-5% SUBROUNDED SILICEOUS PEBBLES WITH SOME PEBBLES SERVING AS NUCLEI FOR LARGER CARBONATE NODULES; CLEAR SMOOTH BOUNDARY.
IIIB23T	137-157	YELLOWISH RED (5YR 4/6) LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; COMMON DARK REDDISH BROWN (5YR 3/3) COATINGS ON PED FACES; THIN PATCHY CLAY FILMS ON PED FACES; FEW FAUNAL CASTS; COMMON INDURATED CARBONATE CONCRETIONS ELONGATED ALONG ROOT CHANNELS; 5-10% SUBROUNDED TO ROUNDED SILICEOUS PEBBLES; CLEAR SMOOTH BOUNDARY.
IVB24T	157-183	DARK REDDISH BROWN (2.5YR 3/4) LOAM; WEAK VERY COARSE PRISMATIC PARTING TO WEAK COARSE PRISMATIC STRUCTURE; FIRM; FEW FINE ROOTS; THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; FEW FINE CARBONATE NODULES MOSTLY ORIENTED ALONG OLD ROOT CHANNELS; 10-15% SUBANGULAR TO SUBROUNDED SILICEOUS PEBBLES; SOME CEMENTING OF PEBBLES BY CARBONATES; GRADUAL SMOOTH BOUNDARY.
IVB25T	183-198	RED (2.5YR 4/6) SANDY LOAM; WEAK COARSE PRISMATIC STRUCTURE; FIRM; FEW FINE ROOTS; DARK RED (2.5YR 3/6) COATINGS ON PED FACES; FEW THIN VERY PATCHY YELLOWISH RED (5YR 5/8) CARBONATE COATINGS ON PED FACES; FEW THIN VERY PATCHY CLAY FILMS ON PED FACES; CEMENTATION BY CARBONATES GIVES BRITTLE-LIKE CIONSISTENCE; OCCASIONAL ANT CAST; FEW FINE CARBONATE FILAMENTS; GRADUAL SMOOTH BOUNDARY.
IVB31	198-213	RED (2.5YR 4/6) GRAVELLY LOAM; WEAK COARSE PRISMATIC STRUCTURE; FIRM; FEW FINE ROOTS; YELLOWISH RED (5YR 5/8) COATINGS ON PED FACES; FEW THIN VERY PATCHY CARBONATE COATINGS; FEW FINE CALCIUM CARBONATE FILAMENTS; 15-20% GRAVEL THAT IS POORLY SORTED AND WELL GRADED; GRADUAL SMOOTH BOUNDARY.
IVB32	213-239	DARK RED (2.5YR 3/6) GRAVELLY LOAM; WEAK VERY COARSE PRISMATIC STRUCTURE; FIRM; FEW FINE ROOTS; 20% COARSE FRAGMENTS; GRADUAL SMOOTH BOUNDARY.
IVB33CA	239-279	RED (2.5YR 4/6) LOAM; COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON CARBONATE COATINGS.
VC1	279-335	RED (2.5YR 4/6) SANDY LOAM; FRIABLE.
VIC2	335-381	DARK RED (2.5YR 3/6) SANDY LOAM; FRIABLE.
VIIR	381+	HARD CONSOLIDATED SANDSTONE OF PENNSYLVANIAN AGE (?).

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BASTROP TAXAJUNCT
SOIL FAMILY: UDIC PALEUSTALF; FINE-SILTY, MIXED, THERMIC
LOCATION: YOUNG COUNTY, TEXAS

PEDON NUMBER: S79TX-503-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
686	0- 20	AP	0.2	0.4	1.0	0.8	17.8	20.2	8.3	64.0	9.2	15.8	SIL	0
687	20- 36	A12	0.1	0.4	0.6	1.0	15.7	17.8	9.6	67.4	7.5	14.8	SIL	0
691	36- 61	IIB1	0.3	0.9	1.3	0.9	14.0	17.4	14.3	67.4	6.7	15.2	SIL	0
692	61- 89	IIB21T	1.0	1.8	2.7	2.8	12.8	21.1	10.9	60.7	9.0	18.2	SIL	0
693	89-114	IIIA1BT	0.6	1.6	3.2	2.8	12.2	20.4	17.0	52.7	14.5	26.9	SIL	0
694	114-137	IIIB22T	0.4	1.8	3.8	3.8	12.8	22.6	15.2	53.5	13.0	23.9	SIL	0
698	137-157	IIIB23T	0.8	2.5	5.0	5.9	15.2	29.4	9.0	47.2	14.8	23.4	L	0
699	157-183	IVB24T	1.2	3.0	6.4	9.4	12.8	32.8	11.8	45.5	14.5	21.7	L	4
700	183-198	IVB25T	1.4	4.0	7.0	8.3	14.4	35.1	10.1	44.3	14.2	20.6	L	6
701	198-213	IVB31	2.0	4.8	8.2	9.9	14.2	39.1	7.1	40.3	14.2	20.6	L	7
702	213-239	IVB32	2.1	5.4	8.6	8.7	13.8	38.6	7.4	43.4	12.8	18.2	L	13
706	239-279	IVB33CA	3.7	8.0	9.2	14.4	10.4	45.7	14.1	41.9	7.6	12.4	L	13
708	279-335	VC1	5.5	9.5	22.6	9.8	3.7	56.1	9.6	31.5	7.0	12.4	SL	19
710	335-381	VIC2	4.6	8.8	19.2	10.7	9.9	53.2	11.9	33.0	8.4	13.8	SL	18

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
686	0.24	7.6	10.2	2.3	0.0	0.4	12.9		12.2		100	0					
687	0.25	7.5	16.2	2.2	0.0	0.2	18.6		12.0		100	0		0.1	0.2	0.3	
691	0.18	7.7	30.6	2.3	0.1	0.2	33.2		11.9		100	1		5.9	0.7	6.7	
692	0.08	7.7	36.3	3.1	0.1	0.2	39.7		13.0		100	1		4.6	1.8	6.7	
693	0.23	8.0	36.3	6.2	0.1	0.4	43.0		17.4		100	1		3.6	1.4	5.3	
694	0.27	8.1	36.5	6.9	0.1	0.3	43.8		14.6		100	1		2.0	0.6	2.7	
698	0.02	8.2	34.4	8.0	0.2	0.3	42.9		13.7		100	1		2.4	1.1	3.7	
699	0.14	8.2	33.5	7.8	0.1	0.3	41.7		12.1		100	1		0.8	0.6	1.5	
700	0.10	8.1	27.0	7.8	0.1	0.3	35.2		11.7		100	1		0.4	0.5	1.0	
701	0.13	8.2	36.1	8.9	0.2	0.3	45.5		11.3		100	2		1.2	0.6	1.9	
702	0.12	8.1	26.6	7.8	0.1	0.2	34.7		10.7		100	1		0.7	0.4	1.1	
706	0.10	8.2	33.9	6.6	0.1	0.2	40.8		9.1		100	1		15.2	0.2	15.4	
708	0.05	8.2	35.4	4.8	0.1	0.3	40.6		7.8		100	1		6.7	1.8	8.8	
710	0.21	8.2	39.1	5.0	0.1	0.2	44.4		8.9		100	1		9.1	1.0	10.6	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
686	0.0										1.53	1.62	0.017		13.4	
687	0.0										1.37	1.45	0.020		14.5	
691	0.1										1.49	1.53	0.016		14.7	
692	0.1										1.46	1.56	0.021		15.7	
693	0.1										1.45	1.62	0.036		18.3	
694	0.2										1.49	1.60	0.025		16.1	
698	0.1															
699	0.2										1.57	1.67	0.022		13.6	
700	0.2										1.52	1.64	0.025		14.3	
701	0.2															
702	0.2										1.56	1.67	0.024		13.3	
706	0.2															
708	0.2															
710	0.2															

ENCE;

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
686	*	*	***		**		*					
687	**	*	**		**		*					
691												
692	**	*	**		**		*					
693	**	**	**		**		*					
694	*	*	**		**		*					
698												
699	*	T	**		**		*					
700												
701	T	*	**		**		*					
702	*	*	**		**		*					
706	**	*	**		**		*					
708	*	*	**		**		*					
710		*	**		**		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BLEVINS PEDON: S80TX-405-002 COUNTY: SAN AUGUSTINE

PEDON CLASSIFICATION: TYPIC PALEUDULT; FINE-SILTY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF TEXAS 103 AND FR 1277, 0.5 MI N ON FR 1277, 2.0 MI E ON COUNTY ROAD, 150 FT N IN FOREST.

LANDFORM: BACKSLOPE ELEVATION (M): 100 SLOPE: 3% SLOPE ASPECT: E

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: COOK MOUNTAIN

TOPOGRAPHY: MODERATELY SLOPING DRAINAGE: WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, GRAY, PETERS DATE: 08/12/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-5	DARK GRAYISH BROWN (10YR 4/2) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; ABOUT 4% SMALL IRONSTONE GRAVEL; SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
A12	5-20	BROWN (10YR 4/3) FINE SANDY LOAM; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; ABOUT 4% SMALL IRONSTONE GRAVEL; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
A2	20-30	LIGHT YELLOWISH BROWN (10YR 6/4) FINE SANDY LOAM; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; COMMON FINE PORES; ABOUT 4% SMALL IRONSTONE GRAVEL; MEDIUM ACID; CLEAR WAVY BOUNDARY.
B21T	30-50	BROWNISH YELLOW (10YR 6/8) SANDY CLAY LOAM; FEW MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON MEDIUM AND COARSE ROOTS; COMMON FINE PORES; FEW THIN PATCHY CLAY FILMS; ABOUT 2% SMALL IRONSTONE CONCRETIONS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B22T	50-66	BROWNISH YELLOW (10YR 6/8) SANDY CLAY LOAM; MANY MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON MEDIUM AND COARSE ROOTS; COMMON PALE BROWN (10YR 6/3) COATINGS ON PED FACES; COMMON FINE PORES; FEW THIN PATCHY CLAY FILMS; ABOUT 5-8% FINE IRONSTONE CONCRETIONS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B23T	66-85	YELLOWISH BROWN (10YR 5/8) SANDY CLAY LOAM; MANY MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON MEDIUM AND COARSE ROOTS; COMMON THICK PALE BROWN (10YR 6/3) COATINGS ON PED FACES; COMMON FINE PORES; COMMON THIN PATCHY CLAY FILMS; ABOUT 10-15% BLACK AND RED IRONSTONE CONCRETIONS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B24T	85-102	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM; MANY MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON THICK PALE BROWN (10YR 6/3) COATINGS ON PED FACES; CONTINUOUS CLAY FILMS ON PED FACES; ABOUT 5% FINE IRONSTONE CONCRETIONS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B25T&A2	102-136	RED (2.5YR 4/6) SANDY CLAY LOAM; MANY DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON THICK PALE BROWN (10YR 6/3) ALBIC MATERIAL ON PED FACES; COMMON FINE ROOTS MOSTLY IN ALBIC MATERIALS; ABOUT 2-4% IRONSTONE CONCRETIONS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B26T&A2	136-152	YELLOWISH BROWN (10YR 5/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH RED (5YR 5/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON THICK PALE BROWN (10YR 6/3) ALBIC MATERIAL ON PED FACES; FEW POCKETS OF UNCOATED SAND; ABOUT 2-4% IRONSTONE CONCRETIONS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B27T	152-190	RED (2.5YR 4/6) CLAY LOAM; MANY DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW POCKETS OF LIGHT BROWNISH GRAY (10YR 6/2) ALBIC MATERIALS; VERY STRONGLY ACID.

REMARKS: VERTICAL FACES OF PRISMS HAVE THICKEST INTERFINGERS OF ALBIC MATERIAL. INTER-PRISM STRUCTURE HAS CLAY FILMS AND NO CLEAN SAND GRAINS. A PROBE CORE WAS OBTAINED TO ABOUT 5 METERS. THE MAXIMUM ARGILLIC HORIZON DEVELOPMENT WAS BETWEEN 180 AND 250 CM DEPTH. AT DEPTHS BETWEEN 3 AND 5 METERS, STRONGLY DEVELOPED SLICKENSIDES WERE NOTED IN DENSE CLAY STRATA. THE ARGILLIC HORIZON AND CLAYEY STRATA SERVE AS A BARRIER TO DOWNWARD WATER MOVEMENT. SOIL WAS SAMPLED AT THE JOINER SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BLEVINS
SOIL FAMILY: TYPIC PALEUDULT; FINE-SILTY, SILICEOUS, THERMIC
LOCATION: SAN AUGUSTINE COUNTY, TEXAS

PEDON NUMBER: S80TX-405-002

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
890	0- 5	A11	2.3	1.0	1.2	13.6	33.5	51.6	13.5	45.4	0.7	3.0	VFSL	
891	5- 20	A12	3.0	0.9	0.9	12.9	33.0	50.7	14.1	45.9	0.9	3.4	VFSL	
892	20- 30	A2	2.9	0.7	0.9	12.3	34.0	50.8	13.1	44.4	2.0	4.8	VFSL	
893	30- 50	B21T	1.6	0.9	0.8	8.5	23.5	35.3	13.4	41.6	19.0	23.1	L	
894	50- 66	B22T	3.2	1.1	0.8	8.2	21.6	34.9	15.5	40.5	19.9	24.6	L	
895	66- 85	B23T	7.4	2.8	1.3	7.5	20.0	39.0	13.9	36.2	19.3	24.8	L	
896	85-102	B24T	2.3	0.5	0.5	8.5	22.1	33.9	15.3	40.3	19.7	25.8	L	
897	102-136	B25T&A2	1.8	0.3	0.5	9.2	23.5	35.3	16.3	40.2	17.4	24.5	L	
898	136-152	B26T+A2	1.6	0.5	0.8	9.5	23.6	36.0	14.2	36.4	18.8	27.6	CL	
899	152-190	B27T	2.5	0.8	0.9	8.5	19.9	32.6	11.5	32.0	26.9	35.4	CL	
900	210-295	B3												
901	295-380	C1												
902	400-533	C3												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
890	2.37	4.9	1.3	0.2	0.2	0.1	1.8	0.7	10.7	2.5	17	2					
891	0.84	5.1	0.5	0.3	0.2	0.1	1.1	0.4	7.2	1.5	15	3					
892	0.43	5.0	2.1	0.2	0.2	0.1	2.6	0.8	6.4	3.4	41	3					
893	0.29	4.9	1.3	0.2	0.3	0.1	1.9	2.7	10.6	4.6	18	3					
894	0.17	5.0	1.1	0.2	0.2	0.1	1.6	3.0	10.7	4.6	15	2					
895	0.20	5.1	1.3	0.2	0.3	0.1	1.9	2.7	10.1	4.6	19	3					
896	0.17	5.1	1.4	0.2	0.4	0.1	2.1	3.2	10.6	5.3	20	4					
897	0.12	5.1	1.3	0.2	0.4	0.1	2.0	2.1	10.4	4.1	19	4					
898	0.13	5.2	1.7	0.5	0.5	0.1	2.8	1.8	11.2	4.6	25	4					
899	0.17	5.1	2.9	0.7	0.7	0.2	4.5	2.1	15.8	6.6	28	4					
900			4.3	1.5	1.2	0.3	7.3		26.1		28	5					
901			4.4	2.9	2.0	0.8	10.1		47.1		21	4					
902			2.2	2.9	1.8	0.9	7.8		43.6		18	4					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
890																
891																
892											1.63	1.79	0.021		16.9	
893											1.59	1.72	0.027		18.7	
894																
895											1.66	1.78	0.022		19.5	
896											1.66	1.77	0.022		18.7	
897											1.73	1.83	0.019		17.7	
898											1.69	1.84	0.028		19.5	
899											1.63	1.89	0.050		22.2	
900																
901																
902																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
890												
891												
892												
893												
894												
895												
896												
897												
898												
899												
900												
901												
902												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S78TX-027-007 COUNTY: BELL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: APPROXIMATELY 1 MI N OF LITTLE RIVER ON PAVED ROAD, ABOUT 200 FT W OF ROAD IN FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): 158 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/11/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-48	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	48-107	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	107-155	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; BLACK (10YR 2/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	155-188	BROWN (10YR 4/3) CLAY, BROWN (10YR 5/3) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON FINE BLACK (10YR 2/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SHELL FRAGMENTS; FEW FINE SALT SEGREGATIONS; FEW WORM CASTS. MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CA	188-295	YELLOWISH BROWN (10YR 5/4) SILTY CLAY, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE SALT SEGREGATIONS; COMMON FAUNAL CASTS; COMMON (15%) FINE AND MEDIUM CARBONATE CONCRETIONS AND SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1CA	295-338	LIGHT YELLOWISH BROWN (10YR 6/4) SILTY CLAY, VERY PALE BROWN (10YR 7/4) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; COMMON FAUNAL CASTS; MANY (30%) FINE AND MEDIUM CARBONATE CONCRETIONS AND SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2CA	338-396	LIGHT YELLOWISH BROWN (10YR 6/4) SILTY CLAY, VERY PALE BROWN (10YR 7/4) DRY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; FEW FINE SALT SEGREGATIONS; FEW FAUNAL CASTS; COMMON (15%) FINE AND MEDIUM CARBONATE CONCRETIONS AND SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BELL COUNTY, TEXAS

PEDON NUMBER: S78TX-027-007

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
388	0- 15	AP												
392	15- 48	A11												
393	48- 79	A12												
394	79-107	A12												
398	107-137	A13												
399	137-155	A13												
400	155-188	AC1												
401	188-241	AC2CA												
402	241-295	AC2CA												
406	295-338	C1CA												
407	338-396	C2CA												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG MEQ/100G	NA MEQ/100G	K MEQ/100G	TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
388		8.0			0.2				46.4			0				10.6	
392		7.9			0.2				46.1			0				10.3	
393		7.9			0.3				46.9			1				10.1	
394		7.9			0.3				46.3			1				8.8	
398		7.9			0.2				44.5			0				10.6	
399		7.9			0.2				42.5			0				16.1	
400		8.0			0.2				31.5			1				36.0	
401		8.1			0.2				21.5			1				52.9	
402		8.0			0.2				19.8			1				58.4	
406		8.0			0.2				18.6			1				58.6	
407		8.1			0.2				19.3			1				57.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
388	0.5															
392	0.4															
393	0.4															
394	0.3															
398	0.4															
399	0.3															
400	0.3															
401	0.3															
402	0.4															
406	0.5															
407	0.3															

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
388												
392												
393												
394												
398												
399												
400												
401												
402												
406												
407												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S82TX-051-001 COUNTY: BURLESON

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: SOUTH OF SNOOK ON VAJDAK FARM. FROM INTERSECTION OF FR 60 AND 2156, 2.0 MI SE, 0.8 MI SW ON GRAVEL ROAD, 150 FT SE IN FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): 77 SLOPE: 0-1% SLOPE ASPECT: SE

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK, R. B. SMITH AND D. A. ZUBERER DATE: 09/03/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-18	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM ANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; VERY FIRM; MANY FINE BLACK CONCRETIONS; COMMON CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT BOUNDARY.
A1	18-38	VERY DARK GRAY (10YR 3/1) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON BLACK CONCRETIONS; FEW FINE SHELL FRAGMENTS; COMMON MEDIUM CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
A2	38-84	VERY DARK GRAY (10YR 3/1) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON BLACK CONCRETIONS; FEW FINE SHELL FRAGMENTS; COMMON INTERSECTING SLICKENSIDES; COMMON CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK1	84-119	DARK GRAY (10YR 4/1) CLAY; COMMON MEDIUM FAINT LIGHT BROWNISH GRAY (2.5Y 6/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; COMMON PED COATINGS; FEW SHELL FRAGMENTS; FEW CARBONATE PIPES ALONG OLD ROOT CHANNELS; COMMON CARBONATE CONCRETIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK2	119-170	DARK GRAY (10YR 4/1) CLAY; COMMON MEDIUM FAINT LIGHT BROWNISH GRAY (2.5Y 6/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW BLACK CONCRETIONS; FEW INTERSECTING SLICKENSIDES; COMMON PRESSURE FACES; COMMON CARBONATE PIPES ALONG OLD ROOT CHANNELS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT BOUNDARY.
2BK3	170-216	REDDISH BROWN (2.5YR 4/4) SILTY CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; DARK GRAY (10YR 4/1) STAINS ON VERTICAL PED FACES; FEW FINE BLACK CONCRETIONS; FEW INTERSECTING SLICKENSIDES; FEW CARBONATE SEGREGATIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT WITH KILL AREAS OF 30 FT IN DAIAMETER.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
SOIL FAMILY: UDIC PELLUSTERT; FINE MONTMORILLONITIC, THERMIC
LOCATION: BURLESON COUNTY, TEXAS

PEDON NUMBER: S82TX-051-001

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1463	0- 18	AP	0.6	0.5	1.7	6.8	5.6	15.2	23.9	36.0	7.4	48.8	C	0
1464	18- 38	A1	1.2	0.9	1.8	6.7	5.6	16.2	21.1	32.4	24.6	51.4	C	0
1465	38- 84	A2	0.9	1.0	1.7	6.3	5.3	15.2	22.2	32.0	32.2	52.8	C	0
1466	84-119	BK1	1.5	1.2	1.7	5.6	4.7	14.7	22.5	31.4	33.7	53.9	C	0
1467	119-170	BK2	1.4	1.4	1.7	6.2	5.2	15.9	22.9	26.2	36.5	57.9	C	0
1468	170-216	2BK3	0.3	0.2	0.2	1.0	1.2	2.9	36.3	41.5	32.2	55.6	SIC	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR				
			MEQ/100G								%			%			
1463	0.91	7.0	69.8	2.8	0.1	1.0	73.6		38.3		100	0	0	2.8	0.6	3.5	
1464	0.77	7.3	72.0	4.3	0.1	0.5	76.9		39.3		100	0	0	4.4	0.4	4.8	
1465	0.58	7.5	71.4	6.9	0.1	0.5	78.9		40.7		100	0	0	5.0	0.5	5.5	
1466	0.53	7.6	65.5	9.7	0.3	0.6	76.1		39.0		100	1	0	6.1	0.1	6.2	
1467	0.44	7.7	70.8	12.3	0.6	0.6	84.3		38.6		100	1	1	7.1	0.7	7.9	
1468	0.28	7.9	59.5	9.7	0.7	0.5	70.4		30.7		100	2	0	21.9	0.6	22.7	

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1463	0.5	64	3.0	0.3	0.0	0.1	0.0	1.5	0.1	1.0	1.12	1.66	0.140		37.6	
1464	0.3	65	2.1	0.3	0.0	0.0	0.0	1.7	0.0	0.1	1.32	1.87	0.123		33.4	
1465	0.3	67	1.7	0.2	0.0	0.0	0.0	2.1	0.0	0.1	1.31	1.90	0.132		35.1	
1466	0.4	71	1.5	0.5	0.4	0.0	0.0	2.4	0.4	0.3	1.34	1.96	0.135		33.7	
1467	0.4	85	1.2	0.5	0.9	0.0	0.0	2.3	0.8	0.5						
1468	0.4	72	1.1	0.6	0.4	0.0	0.0	2.8	0.0	0.5						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1463												
1464												
1465												
1466												
1467												
1468												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S80TX-145-005 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: PETE EJEMS FARM. 2 MI NE OF WESTPHALIA, 200 FT E IN FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND B. RAMSEY DATE: 07/18/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-3 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	13-58	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	58-127	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE PORES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	127-170	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE PORES; FEW FINE CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	170-206	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CS	206-246	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; COMMON THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CS	246-287	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; MANY THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4CS	287-325	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; MANY THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC5	325-353	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; FEW THREADS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC6	353-399	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE DISTINCT REDDISH YELLOW (7.5YR 6/8) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; FEW THREADS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	399-439	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW THREADS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON WAS SAMPLED AND DESCRIBED IN A MICRO-LOW. THE WATER TABLE WAS AT DEPTH OF ABOUT 14 FT; AT TIME OF SAMPLING THE SITE WAS PLANTED IN COTTON. NO COTTON ROOT ROT WAS EVIDENT AT THE IMMEDIATE SITE LOCATION.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S80TX-145-005

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
851	0- 13	AP												
852	13- 58	A11												
853	58- 94	A12												
854	94-127	A12												
855	127-170	A13												
856	170-206	AC1												
857	206-246	AC2CS												
858	246-287	AC3CS												
859	287-325	AC4CS												
860	325-353	AC5												
861	353-399	AC6												
862	399-439	C												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
851	1.30	8.1	64.9	1.7	0.2	0.7	67.5		26.3		100	1	0	8.4	1.9	10.4	
852	1.30	8.0	76.8	2.4	0.3	0.5	80.0		39.2		100	1	1	8.1	1.6	9.8	
853	1.30	8.1	81.6	3.6	0.8	0.6	86.6		40.7		100	2	3	9.2	0.9	10.2	
854	1.30	8.1	72.7	4.0	1.6	0.6	78.9		40.4		100	3	4	9.0	1.5	10.6	
855	0.90	8.3	68.1	6.2	5.5	0.6	80.4		38.3		100	13	7	11.0	1.3	12.5	
856	0.50	7.9	82.9	8.2	6.3	0.5	97.9		35.4		100	14	5	9.3	1.4	10.8	
857	0.30	7.9	149.2	8.3	6.4	0.6	164.5		32.5		100	16	6	4.5	1.7	6.4	
858	0.20	7.9	154.5	8.4	6.5	0.5	169.9		34.4		100	15	5	3.7	2.0	5.8	
859	0.20	7.9	95.0	7.4	5.6	0.5	108.5		34.5		100	13	5	3.6	1.7	5.4	
860	0.20	7.9	54.2	7.4	5.4	0.5	67.5		33.8		100	13	4	2.7	1.6	4.4	
861	0.10	8.1	50.5	7.4	4.9	0.3	63.1		28.9		100	15	5	2.9	1.7	4.7	
862	0.20	8.1	49.9	5.6	4.4	0.5	60.4		24.4		100	15	5	4.0	1.4	5.5	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	BULK DEN COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
851	0.4	53	3.7	0.2	0.0	0.2	0.0	0.7	0.4							
852	0.2	60	2.8	0.2	0.9	0.1	0.0	0.5	0.3							
853	0.3	63	2.1	0.2	2.8	0.1	0.0	0.5	0.3							
854	0.3	64	1.4	0.2	4.0	0.0	0.0	0.5	2.6							
855	0.6	72	1.0	0.4	5.7	0.1	0.0	2.1	3.0							
856	2.8	64	22.0	4.9	19.8	0.1	0.0	1.2	2.0							
857	3.1	63	24.0	6.6	21.5	0.1	0.0	1.2	3.0							
858	3.2	62	24.0	8.2	21.3	0.1	0.0	1.0	3.5							
859	3.1	64	24.0	8.2	19.0	0.1	0.0	0.8	3.5							
860	3.0	65	23.0	8.2	17.5	0.2	0.0	1.0	3.5							
861	1.6	64	7.0	2.7	11.0	0.1	0.0	1.4	3.3							
862	1.4	62	7.0	2.5	11.0	0.2	0.0	1.6	3.8							

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
851												
852												
853												
854												
855												
856												
857												
858												
859												
860												
861												
862												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S80TX-145-006 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: PETE EJEMS FARM. 2 MI NE OF WEST PHALIA ON TEXAS 320, 200 FT E IN FIELD. ABOUT 12 FEET FROM S80TX-145-005.

LANDFORM: STREAM TERRACE ELEVATION (M): 140 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND B. RAMSEY DATE: 07/18/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-10	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-3 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	10-41	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	41-76	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE PORES; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	76-109	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE PORES; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A14	109-147	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE PORES; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	147-178	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE PORES; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	178-206	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CREACKS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW THREADS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CS	206-239	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE PORES; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; COMMON THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4CS	239-264	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE PORES; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS. MANY THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC5CS	264-300	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE PORES; FEW SLICKENSIDES; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; COMMON THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC6	300-345	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW DARK STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC7	345-386	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE DISTINCT REDDISH YELLOW (7.5YR 6/8) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW GRAY STREAKS IN FILLED CRACKS. FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW THREADS, SEAMS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	386-455	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW THREAD AND CRYSTALS OF SALT. MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-HIGH. WATER TABLE WAS AT ABOUT 14 FEET. SITE WAS PLANTED IN COTTON AT TIME OF SAMPLING AND COTTON ROOT ROT WAS EVIDENT. SOIL MAP SHOWS AREA WAS MAPPED AS HOUSTON BLACK CLAY, 0-1% SLOPE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S80TX-145-006

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
863	0- 10	AP												
864	10- 41	A11												
865	41- 76	A12												
866	76-109	A13												
867	109-147	A14												
868	147-178	AC1												
869	178-206	AC2												
870	206-239	AC3CS												
871	239-264	AC4CS												
872	264-300	AC5CS												
873	300-345	AC6												
874	345-386	AC7												
875	386-417	C1												
876	417-455	C2												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
863	1.20	8.0	51.4	1.5	0.2	0.7	53.8		23.1		100	1	0	9.1	1.1	10.3	
864	1.30	8.0	63.1	2.2	0.2	0.5	66.0		33.1		100	-2	5	9.1	1.4	10.7	
865	1.10	8.1	64.9	3.0	0.4	0.5	68.8		34.3		100		5	12.3	1.1	13.4	0.0
866	0.90	8.3	63.0	5.7	2.6	0.5	71.8		34.5		100	4	5	12.9	0.7	13.7	
867	0.80	8.4	56.8	7.5	4.2	0.5	69.0		34.5		100	9	5	12.9	0.7	13.7	
868	0.60	8.4	58.3	8.5	5.5	0.5	72.8		35.3		100	12	4	10.9	0.6	11.6	
869	0.40	7.9	77.4	9.4	5.8	0.6	93.2		33.9		100	15	3	8.6	1.1	9.7	
870	0.50	7.9	88.8	8.5	6.7	0.6	104.6		32.7		100	20	0	6.4	0.6	7.1	
871	0.30	7.9	94.7	9.5	6.0	0.6	110.8		33.8		100	17	1	5.8	0.9	6.8	
872	0.40	7.9	125.0	8.5	4.7	0.6	138.8		33.8		100	13	1	2.8	0.8	3.7	
873	0.40	7.9	94.0	9.6	5.9	0.6	110.1		32.8		100	17	6	3.0	0.7	3.7	
874	0.20	7.9	52.6	7.7	5.3	0.5	66.1		30.0		100	16	7	3.2	0.7	4.0	
875	0.20	8.1	45.9	5.8	1.9	0.4	54.0		21.2		100	4	9	4.9	1.3	6.3	
876	0.20	8.2	50.6	5.7	2.0	0.4	58.7		20.9		100	7	3	5.9	1.2	7.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
863	0.5	49	5.0	0.2	0.5	0.2	0.0	2.6	0.5	0.0						
864	2.9	61	23.0	7.0	20.2	0.1	0.0	0.9	2.5	0.0						
865	3.0	58	24.0	7.0	20.3	0.1	0.0	1.1	2.0	0.1						
866	3.1	58	24.0	7.4	19.6	0.2	0.0	0.8	3.0	0.0						
867	3.0	61	25.0	7.4	19.6	0.2	0.0	0.8	2.5	0.0						
868	2.8	65	25.0	7.0	16.9	0.2	0.0	1.0	3.0	0.0						
869	1.3	65	22.0	2.5	10.4	0.1	0.0	1.2	3.5	0.0						
870	0.3	63	8.0	0.2	0.8	0.1	0.0	3.1	0.5	0.0						
871	0.4	63	8.0	0.2	1.5	0.1	0.0	2.4	0.5	0.0						
872	0.3	65	40.0	0.2	3.3	0.0	0.0	2.5	0.8	0.0						
873	0.4	63	1.0	0.4	4.7	0.0	0.0	2.6	1.0	0.0						
874	0.8	64	1.0	0.6	6.3	0.1	0.0	2.2	1.3	0.0						
875	3.0	58	2.0	7.0	18.9	0.1	0.0	1.4	1.3	0.0						
876	1.3	58	20.0	2.7	10.2	0.2	0.0	16.0	1.7	0.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
863												
864												
865												
866												
867												
868												
869												
870												
871												
872												
873												
874												
875												
876												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S81TX-145-002 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WERNER FUCHS FARM. FROM TRAVIS, 2.7 MI W ON FR 431, 2400 FT S IN FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, T. MOORE AND B. RAMSEY DATE: 08/07/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 2-5 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-61	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY MATERIAL IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	61-114	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; DARK GRAY MATERIAL IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	114-152	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; FEW FINE SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; DARK GRAY MATERIAL IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	152-201	DARK GRAY (10YR 4/1) CLAY, GRAY (10YR 5/1) DRY; FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; FEW FINE SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; DARK GRAY MATERIAL IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	201-234	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; DARK GRAY MATERIAL IN FILLED CRACKS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
C1CA	234-262	GRAYISH BROWN (10YR 5/2) SILTY CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; ABOUT 1-2% SEGREGATIONS; FEW FINE THREADS, SEAMS, AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2	262-325	GRAYISH BROWN (10YR 5/2) SILTY CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; MANY MEDIUM DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-LOW. SITE WAS PLANTED IN COTTON AND NO COTTON ROOT ROT WAS NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
PEDON NUMBER: S81TX-145-002
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: FALLS COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1104	0- 15	AP	0.1	0.2	0.2	1.9	11.4	13.8	20.2	45.0	10.6	41.2	SIC	
1105	15- 61	A11	0.0	0.0	0.2	1.5	10.0	11.7	20.0	42.3	31.0	46.0	SIC	
1106	61-114	A12	0.2	0.1	0.2	1.5	9.2	11.2	19.6	39.1	34.6	49.7	SIC	
1107	114-152	A13	0.9	0.5	0.4	1.4	8.4	11.6	21.1	39.5	35.3	48.9	SIC	
1108	152-201	AC1	0.4	0.4	0.3	1.0	7.0	9.1	22.8	43.5	31.0	47.4	SIC	
1109	201-234	AC2	0.6	0.4	0.2	0.8	6.3	8.3	26.5	44.6	33.2	47.1	SIC	
1110	234-262	C1CA	1.7	0.7	0.2	0.8	8.1	11.5	27.3	51.9	25.0	36.6	SICL	
1111	262-325	C2	0.3	0.1	0.1	1.9	15.8	18.2	21.2	50.3	20.1	31.5	SICL	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1104	0.82	7.7	60.6	2.1	0.1	0.8	63.6		40.8		100	0	0	1.7	1.2	2.9	
1105	0.74	7.7	56.6	2.5	0.4	0.5	60.0		44.9		100	1	1	0.4	0.3	0.7	
1106	0.61	7.7	68.4	2.7	1.9	0.5	73.5		44.3		100	4	4	2.0	0.5	2.6	
1107	0.69	7.8	69.9	3.0	3.1	0.6	76.6		42.0		100	7	6	3.7	0.1	3.8	
1108	0.55	7.4	103.3	3.1	3.8	0.6	110.9		40.2		100	6	5	5.2	0.3	5.5	1.6
1109	0.18	7.6	70.9	3.2	3.8	0.6	78.5		36.0		100	8	7	12.4	2.2	14.8	
1110	0.22	7.7	63.6	2.6	2.9	0.5	69.7		27.8		100	8	7	18.3	1.0	19.4	
1111	0.31	7.8	57.3	2.0	2.0	0.4	61.7		20.0		100	8	6	13.9	1.2	15.3	

LAB NO	ELEC COND MMHOS/CM	H2O CONT %	SATURATED PASTE EXTRACT CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1104	0.4	64	3.3	0.2	0.1	0.1	0.0	2.9	0.1	0.1	1.41	1.90	0.105		28.3	
1105	0.4	75	2.9	0.2	0.8	0.0	0.0	2.5	0.1	0.3	1.36	1.90	0.118		30.4	
1106	0.5	73	1.5	0.0	3.1	0.0	0.0	3.2	0.2	0.4	1.34	1.90	0.124		31.5	
1107	0.6	77	1.2	0.0	4.6	0.0	0.0	3.3	0.2	1.6	1.38	1.97	0.125		28.9	
1108	3.6	77	25.0	1.6	17.7	0.1	0.0	1.4	0.5	27.5						
1109	2.0	77	6.8	0.5	12.4	0.1	0.0	1.7	0.5	11.0						
1110	1.6	63	4.9	0.4	10.7	0.1	0.0	2.0	0.9	8.3						
1111	1.1	56	3.2	0.2	7.9	0.1	0.0	2.2	0.7	5.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1104												
1105												
1106												
1107												
1108												
1109												
1110												
1111												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON PEDON: S81TX-257-002 COUNTY: KAUFMAN

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: J. W. PINSON, JR. FARM. FROM INTERSECTION OF FR 740 AND I-20, 0.75 MI NE ON FR 740, 0.25 MI NW ON FR 740, 0.75 MI NE ON UNPAVED ROAD, 200 FT NW IN FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, T. MOORE AND M. ROTH DATE: 08/11/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	BLACK (10YR 2/1) SILTY CLAY; WEAK MEDIUM SUBANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
A12	20-51	VERY DARK GRAY (10YR 3/1) SILTY CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
A13	51-132	VERY DARK GRAY (10YR 3/1) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SILICEOUS PEBBLES; DISTINCT PRESSURE FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
A14CA	132-170	DARK GRAY (10YR 4/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; COMMON INTERSECTING SLICKENSIDES; MANY PRESSURE FACES; CARBONATE FILAMENTS ALONG OLD ROOT CANNELS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
AC1CA	170-211	GRAY (10YR 5/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; MANY INTERSECTING SLICKENSIDES; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; DARK GRAY (10YR 4/1) MATERIAL ALONG MAJOR VERTICAL STRUCTURE FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
AC2CA	211-241	LIGHT OLIVE GRAY (5Y 6/2) CLAY; FEW FAINT PALE OLIVE (5Y 6/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; MANY PRESSURE FACES; FEW INTERSECTING SLICKENSIDES; COMMON WHITE (10YR 8/2) CALCIUM CARBONATE SEGREGATIONS; ABRUPT BOUNDARY.
C1CA	241-262	LIGHT GRAY (5Y 7/2) CLAY; COMMON FAINT PALE OLIVE (5Y 6/3) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON WHITE (10YR 8/1) CALCIUM CARBONATE SEGREGATIONS; FEW BLACK (10YR 2/1) MANGANESE COATINGS ON PED FACES; DARK GRAY (10YR 4/1) BODIES FROM OVERLYING HORIZONS CONSTITUTE 5% OF HORIZON; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
C2	262-287	LIGHT GRAY (5Y 7/2) CLAY; MANY DISTINCT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; COMMON BLACK (7.5YR 2/0) MANGANESE COATINGS ON PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: PEDON WAS SAMPLED AND DESCRIBED IN A MICRO-LOW. MAPPING UNIT WAS HOUSTON BLACK, A SLOPE. SITE WAS PLANTED IN COTTON. COTTON ROOT ROT HAD KILLED AN AREA OF ABOUT 2 ACRES IN WHICH ABOUT 99% OF THE PLANTS WERE DEAD.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: KAUFMAN COUNTY, TEXAS

PEDON NUMBER: S81TX-257-002

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1081	0- 20	AP	0.3	0.3	0.2	0.6	1.5	2.9	28.4	51.0	7.0	46.1	SIC	
1082	20- 51	A12	0.3	0.3	0.2	0.5	1.2	2.5	29.7	44.8	34.4	52.7	SIC	
1083	51-132	A13	0.4	0.4	0.3	0.5	1.1	2.7	31.1	43.5	36.6	53.8	SIC	
1084	132-170	A14CA	0.4	0.3	0.2	0.4	1.0	2.3	29.9	41.0	40.3	56.7	SIC	
1085	170-211	AC1CA	0.3	0.3	0.1	0.3	0.9	1.9	30.9	43.0	40.5	55.1	SIC	
1086	211-241	AC2CA	0.8	0.5	0.4	0.5	1.0	3.2	31.8	46.6	36.4	50.2	SIC	
1087	241-262	C1CA	0.1	0.2	0.1	0.4	1.0	1.8	26.9	50.1	27.6	48.1	SIC	
1088	262-287	C2	0.0	0.0	0.1	0.4	2.2	2.7	19.5	55.7	23.6	41.6	SIC	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1081	1.09	7.7	77.3	1.6	0.1	0.7	79.8		42.5		100	0	0	11.2	3.4	14.9	
1082	1.50	7.8	80.9	1.6	0.1	0.6	83.2		44.0		100	0	0	13.4	0.1	13.5	
1083	1.24	7.8	79.5	2.1	0.3	0.6	82.6		44.3		100	1	0	12.6	0.3	12.9	
1084	0.91	7.9	79.3	3.2	1.7	0.8	85.0		46.3		100	3	3	11.6	1.0	12.7	
1085	0.84	8.0	77.5	3.4	2.1	0.6	83.7		45.0		100	4	4	13.2	1.9	15.2	
1086	0.32	8.1	72.3	3.3	2.2	0.6	78.5		39.9		100	5	4	17.7	3.6	21.7	
1087	0.31	8.1	64.8	2.6	1.8	0.6	69.9		29.8		100	5	4	32.0	3.9	36.3	
1088	0.01	8.1	60.0	2.3	1.7	0.6	64.6		26.0		100	5	4	34.8	2.1	37.1	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1081	0.4	76	3.7	0.1	0.1	0.1	0.0	3.4	0.0	0.4	1.36	1.87	0.113		31.2	
1082	0.4	82	3.9	0.2	0.2	0.0	0.0	2.4	0.3	0.1	1.36	1.85	0.107		29.9	
1083	0.5	83	3.9	0.2	0.7	0.0	0.0	2.1	0.1	0.5	1.36	1.92	0.121		31.0	
1084	0.6	90	2.1	0.2	3.1	0.0	0.0	2.9	0.3	0.6						
1085	0.6	90	1.6	0.1	3.5	0.0	0.0	2.0	0.0	1.3						
1086	0.5	86	1.4	0.1	3.7	0.0	0.0	2.2	0.4	0.9						
1087	0.6	76	1.5	0.1	3.8	0.0	0.0	2.1	0.1	1.4						
1088	0.6	73	1.4	0.1	3.7	0.0	0.0	2.2	0.1	1.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1081												
1082												
1083												
1084												
1085												
1086												
1087												
1088												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON, SALINE PHASE PEDON: S78TX-027-009 COUNTY: BELL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC THERMIC

LOCATION: FROM SEATON, 0.25 MI SSE ON TEXAS 53.

LANDFORM: STREAM TERRACE ELEVATION (M): 153 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/12/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW SHELL FRAGMENTS; MANY FINE SALT SEGREGATIONS; MANY SALT FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-64	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; COMMON SHELL FRAGMENTS; MANY FINE SALT SEGREGATIONS; MANY SALT FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	64-137	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; MANY SALT SEGREGATIONS AND FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	137-163	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; MANY FINE SALT SEGREGATIONS AND FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	163-216	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; COMMON MEDIUM FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
C2	216-292	PALE BROWN (10YR 6/3) CLAY, VERY PALE BROWN (10YR 7/3) DRY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/6) AND COMMON FINE FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
C3	292-366	LIGHT GRAY (2.5Y 7/2) CLAY; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
C4CA	366-417	BROWNISH YELLOW (10YR 6/6) CLAY; COMMON FINE DISTINCT LIGHT GRAY (2.5Y 7/2) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; COMMON FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW FINE SALT SEGREGATIONS; FEW LIMESTONE AND CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: THICKNESS OF THE A HORIZONS RANGES FROM 46 TO 81 CM WITHIN A DISTANCE OF 90 CM.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON, SALINE PHA. PEDON NUMBER: S78TX-027-009
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: BELL COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
431	0- 15	AP												
432	15- 41	A11												
433	41- 64	A11												
434	64-102	AC1												
435	102-137	AC1												
438	*137-163*	*AC2*												
439	163-216	C1												
440	216-254	C2												
441	254-292	C2												
444	*292-366*	*C3*												
445	*366-417*	*C4CA*												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	NAOAC ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
431		8.0			21.0				30.5			31	80			23.2	
432		8.0			22.3				41.6			35	41			22.2	
433		8.0			19.5				43.3			29	34			24.3	
434		7.9			13.5				36.3			23	28			21.2	
435		7.9			12.1				37.3			21	22			26.9	
438		8.4			11.3				33.7			30	10			34.8	
439		8.6			7.1				25.0			25	7			43.1	
440		8.7			5.4				21.3			22	7			49.2	
441		8.4			4.1				16.1			21	9			52.0	
444		8.2			6.4				28.3			18	10			21.5	
445		8.4			4.1				16.8			20	10			46.4	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
431	19.7	61	6.2	4.9	189.5		0.0	2.5	146.0	47.9						
432	9.0	82	7.7	2.9	95.5		0.0	3.5	35.0	56.0						
433	7.2	85	7.6	3.5	79.3		0.0	2.5	13.0	68.2						
434	6.4	77	7.1	3.9	65.3		1.0	5.0	8.0	65.3						
435	5.2	84	7.6	3.4	50.7		0.0	3.0	4.0	54.1						
438	1.5	94	0.5	3.0	12.7		0.0	5.5	3.7	6.5						
439		79	2.1	2.0	10.1		0.0	5.0	1.2	5.2						
440	0.8	66	1.8	1.5	9.6		0.0	5.0	1.3	2.8						
441	0.8	55	2.8	1.6	13.1		0.0	5.0	1.8	7.5						
444	1.7	92	2.0	1.7	13.3		0.0	5.3	4.5	6.7						
445	1.3	64	1.6	1.8	12.7		0.0	6.0	3.2	6.3						

LAB NO	*CLAY MINERALOGY* SM	VR	MI	IN	KK	GI	QZ	FD	CA	*SKELETAL MINERALOGY* QZ	FD	CA
431												
432												
433												
434												
435												
438												
439												
440												
441												
444												
445												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON TAXADJUNCT PEDON: S81TX-145-001 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WERNER FUCHS FARM. FROM TRAVIS, 2.7 MI W ON FR 431, ABOUT 1400 FT S IN COTTON FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, T. MOORE AND B. RAMSEY DATE: 08/07/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-46	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; STREAKS OF DARK GRAY IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	46-99	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW INTERSECTING SLICKENSIDES; FEW FINE SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; STREAKS OF DARK GRAY IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	99-163	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; STREAKS OF DARK GRAY IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	163-191	DARK GRAY (10YR 4/1) CLAY, GRAY (10YR 5/1) DRY; FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; STREAKS OF DARK GRAY IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	191-218	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; STREAKS OF DARK GRAY IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS IN LOWER PART; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
C1CA	218-244	GRAYISH BROWN (10YR 5/2) CLAY LOAM, LIGHT BROWNISH GRAY (10YR 6/2) DRY; MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; 15% BY VOLUME OF FINE AND MEDIUM CONCRETIONS AND SEGREGATIONS OF CARBONATE; FEW FINE THREADS, SEAMS, AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2	244-333	GRAYISH BROWN (10YR 5/2) CLAY LOAM, LIGHT BROWNISH GRAY (10YR 6/2) DRY; MANY MEDIUM DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE SEGREGATIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW THIN STRATA AND POCKETS OF SANDY SEDIMENTS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-LOW. SITE WAS PLANTED IN COTTON AND COTTON ROOT ROT HAD INFECTED AN AREA OF ABOUT 3 ACRES. THE PEDON IS A TAXADJUNCT TO THE BRANYON SERIES AS IT HAS LESS THAN 40% CLAY IN THE A HORIZONS TO A DEPTH OF 99 CM.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON TAXADJUNCT
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S81TX-145-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1096	0- 15	AP	0.1	0.1	0.3	3.4	18.1	22.0	16.7	47.0	20.4	31.0	CL	
1097	15- 46	A11	0.0	0.1	0.4	3.5	18.3	22.3	17.3	40.0	29.5	37.7	CL	
1098	46- 99	A12	0.1	0.1	0.3	3.1	15.9	19.5	16.7	41.3	30.2	39.2	SICL	
1099	99-163	A13	0.0	0.1	0.3	3.0	14.5	17.9	18.0	40.5	31.0	41.6	SIC	
1100	163-191	AC1	0.5	0.4	0.4	2.6	12.7	16.6	20.8	42.7	30.9	40.7	SIC	
1101	191-218	AC2	0.8	0.5	0.4	3.4	14.8	19.9	19.5	42.7	28.7	37.4	SICL	
1102	218-244	C1CA	2.6	1.0	0.4	4.6	19.2	27.8	21.0	45.0	19.4	27.2	CL	
1103	244-333	C2	0.0	0.0	0.1	6.8	31.1	38.0	12.9	34.1	19.8	27.9	CL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1096	1.10	7.8	49.6	1.4	0.0	0.7	51.7		32.7		100	0	2				
1097	0.75	7.7	40.1	1.4	0.1	0.6	42.2		40.4		100	0	0				
1098	0.76	7.6	39.7	1.9	0.1	0.6	42.4		38.2		100	0	1				
1099	0.64	7.5	42.4	2.0	0.3	0.6	45.3		39.6		100	1	1				
1100	0.46	7.5	68.0	2.7	0.5	0.5	71.8		34.5		100	1	1	4.2	1.4	5.6	
1101	0.22	7.6	64.9	2.6	0.4	0.4	68.3		30.4		100	1	1	3.6	1.8	5.4	
1102	0.24	7.6	59.7	2.0	0.4	0.3	62.4		21.7		100	1	1	15.1	2.4	17.6	
1103	0.08	7.7	59.0	2.5	0.5	0.4	62.4		22.9		100	2	1	4.9	2.0	6.9	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1096	0.4	54	1.0	0.1	1.3	0.1	0.0	3.1	0.1	0.5	1.10	1.49	0.107		35.9	
1097	0.4	62	0.7	0.0	0.2	0.0	0.0	1.7	0.5	0.1	1.41	1.81	0.086		26.8	
1098	0.4	66	0.7	0.1	0.4	0.1	0.0	2.7	0.2	0.5	1.44	1.90	0.096		27.6	
1099	0.4	66	3.1	0.2	0.8	0.0	0.0	2.6	0.3	0.3	1.45	1.94	0.103		27.0	
1100	0.5	70	3.2	0.2	1.4	0.0	0.0	2.3	0.2	0.5						
1101	0.5	65	3.2	0.2	1.6	0.0	0.0	2.1	0.4	1.2						
1102	0.6	53	3.7	0.3	1.7	0.1	0.0	1.9	0.1	0.9						
1103	0.5	56	2.7	0.3	1.7	0.0	0.0	2.0	0.4	0.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1096												
1097												
1098												
1099												
1100												
1101												
1102												
1103												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON TAXADJUNCT PEDON: S81TX-217-001 COUNTY: HILL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ABOUT 16 MI SE OF HILLSBORO ON SCHULZE FARM. FROM MALONE, 1.4 MI NE ON FR 744, 0.5 MI NE ON COUNTY ROAD, 1000 FT SW ON FIELD ROAD, 50 FT S IN FIELD (SHEET 53 OF HILL COUNTY SOIL SURVEY).

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0.5% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE. AND D. ZUBERER DATE: 07/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-17	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE GRANULAR STRUCTURE; HARD; FIRM; FEW SMALL SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A11	17-60	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SMALL SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	60-78	DARK GRAY (10YR 4/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SMALL INTERSECTING SLICKENSIDES; FEW SMALL PRESSURE FACES; FEW SMALL SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
AC1	78-105	LIGHT OLIVE BROWN (2.5Y 5/4) CLAY; COMMON MEDIUM DISTINCT LIGHT BROWNISH GRAY (2.5Y 6/2) AND COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE SILICEOUS PEBBLES; COATING OF DARK GRAY (10YR 4/1) ON MOST VERTICAL FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	105-155	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; MANY FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) AND COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW PRESSURE FACES; FEW FINE SILICEOUS PEBBLES; FEW DARK GRAY (10YR 4/1) COATINGS ON VERTICAL FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
AC3	155-250	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; COMMON MEDIUM DISTINCT LIGHT YELLOWISH BROWN (2.5Y 6/4) AND COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; FIRM; COMMON CALCIUM CARBONATE SEGREGATIONS; BEDDING PLANES EVIDENT THAT HAVE ANGULAR BLOCKY BREAKAGE; BLACK COATINGS ON SOME FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	250-315	BROWNISH YELLOW (10YR 6/6) CLAY; FEW FINE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; HARD; FIRM; HORIZONTAL BEDDING PLANES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C2	315-365	YELLOWISH BROWN (10YR 5/6) CLAY; HARD; FIRM; HORIZONTAL BEDDING PLANES; GRAY COATINGS ALONG OLD CRACKS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL WAS PLANTED IN COTTON AT TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT AT THE SITE. PEDON IS A TAXADJUNCT TO THE BRANYON SERIES AS THE CONTROL SECTION HAS LESS THAN 40% CLAY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON TAXADJUNCT — PEDON NUMBER: S81TX-217-001
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1034	0- 17	AP	0.6	0.5	0.6	4.9	12.7	19.3	18.2	50.9	10.3	29.8	SICL	
1035	17- 60	A11	0.6	0.8	0.5	3.6	9.5	15.0	23.6	48.0	24.3	37.0	SICL	
1036	60- 78	A12	1.6	0.8	0.6	3.4	8.9	15.3	26.4	49.4	24.5	35.3	SICL	
1037	78-105	AC1	1.5	0.9	0.8	3.2	8.2	14.6	27.2	49.8	26.6	35.6	SICL	
1038	105-155	AC2	1.5	1.1	0.8	3.5	9.2	16.1	32.9	55.9	19.5	28.0	SICL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1034	1.26	7.5	66.5	1.9	0.2	0.6	69.2		31.5		100	1	0	5.5	0.7	6.3	
1035	0.60	7.8	66.0	2.1	1.2	0.3	69.6		33.1		100	3	3	10.1	1.7	11.9	
1036	0.41	8.0	65.2	2.8	3.4	0.3	71.7		31.3		100	9	8	15.2	1.4	16.7	
1037	0.64	8.0	62.2	3.0	7.2	0.3	72.8		32.7		100	17	15	14.3	0.9	15.3	
1038	0.05	8.0	57.2	3.3	6.6	0.3	67.5		22.3		100	21	17	29.8	3.1	33.2	

			SATURATED PASTE EXTRACT								BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1034	0.5	47	4.0	0.3	0.5	0.1	0.0	2.7	0.7	1.2	1.49	1.76	0.057		22.4	
1035	0.6	50	2.7	0.3	3.2	0.0	0.0	3.3	0.6	1.4	1.40	1.85	0.095		28.1	
1036	1.3	55	2.6	0.3	9.8	0.0	0.0	3.3	2.3	5.8	1.53	1.97	0.087		24.7	
1037	3.0	65	4.4	0.7	24.2	0.0	0.0	2.2	7.9	14.5						
1038	4.5	53	7.7	1.6	37.4	0.0	0.0	1.9	13.2	31.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1034												
1035												
1036												
1037												
1038												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRANYON VARIANT PEDON: S81TX-257-001 COUNTY: KAUFMAN

PEDON CLASSIFICATION: UDORTHENTIC PELLUSTERT; FINE, MONMORILLONITIC, THERMIC

LOCATION: FROM INTERSECTION OF FR 740 AND I-20, 0.75 MI NE ON FR 740, 0.25 MI NW ON FR 740, 0.25 MI NE ON UNPAVED ROAD, 300 FT NW IN FIELD (J.W. PINSON, JR. FARM).

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY ALLUVIUM FORMATION: PLEISTOLENE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, T. MOORE AND M. ROTH DATE: 08/11/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-25	BLACK (10YR 2/1) SILTY CLAY; WEAK MEDIUM SUBANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; VERY HARD; FIRM; COMMON FINE ROOTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
A12	25-55	DARK GRAY (10YR 4/1) SILTY CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
A13	55-128	DARK GRAY (10YR 4/1) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; FEW SMALL SILICEOUS PEBBLES; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
AC1	128-163	GRAY (10YR 5/1) CLAY; FEW FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW BLACK (10YR 2/1) CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
AC2CA	163-218	GRAY (10YR 5/1) CLAY; FEW FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MANY INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
CCA	218-243	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; EXTREMELY HARD; FIRM; MANY PRESSURE FACES; COMMON INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; ABOUT 5% MIXING OF GRAY (10YR 5/1) MATERIAL FROM ABOVE ALONG MAJOR VERTICAL PLANES; COMMON BLACK (10YR 2/1) CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: PEDON SAMPLED WITHIN MAPPING UNIT OF HOUSTON BLACK, A SLOPE. SOIL WAS SAMPLED AND DESCRIBED IN A MICRO-LOW. SOIL WAS PLANTED IN COTTON AND COTTON ROOT ROT INFECTION WAS NOT NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRANYON VARIANT
SOIL FAMILY: UDORTHENTIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: KAUFMAN COUNTY, TEXAS

PEDON NUMBER: S81TX-257-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1075	0- 25	AP	0.2	0.1	0.1	0.5	2.0	2.9	27.9	43.2	10.4	53.9	SIC	
1076	25- 55	A12	0.3	0.1	0.1	0.6	2.3	3.4	24.6	43.1	32.5	53.5	SIC	
1077	55-128	A13	0.2	0.2	0.2	0.6	2.4	3.6	26.2	42.1	35.0	54.3	SIC	
1078	128-163	AC1	0.3	0.3	0.1	0.5	2.1	3.3	24.9	42.7	36.2	54.0	SIC	
1079	163-218	AC2CA	0.4	0.3	0.2	0.8	2.4	4.1	25.5	44.9	33.8	51.0	SIC	
1080	218-243	CCA	0.1	0.1	0.2	1.3	4.8	6.5	25.9	51.0	24.3	42.5	SIC	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1075	2.00	8.0	80.4	2.2	0.1	1.0	83.6		49.4		100	0	0	8.0	0.9	8.9	
1076	0.79	8.1	78.8	1.6	0.3	0.4	81.2		44.2		100	1	1	13.4	2.8	16.4	
1077	0.51	8.1	72.8	1.1	1.1	0.4	75.4		42.2		100	2	2	16.1	2.7	19.0	
1078	0.23	8.2	76.6	1.8	3.4	0.6	82.4		41.5		100	7	7	13.6	4.0	17.8	
1079	0.30	7.7	74.1	1.6	3.7	0.6	80.0		39.0		100	8	7	14.4	3.7	18.5	
1080	0.24	7.9	62.4	1.4	2.8	0.6	67.3		27.2		100	9	7	24.7	3.1	28.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
1075	0.4	82	3.6	0.1	0.3	0.1	0.0	2.9	0.1	0.4	1.29	1.85	0.128		34.0	
1076	0.3	76	2.5	0.0	0.6	0.0	0.0	1.9	0.3	1.0	1.34	1.86	0.116		31.5	
1077	0.4	73	1.9	0.0	1.9	0.0	0.0	2.1	0.1	0.9	1.39	1.95	0.119		30.4	
1078	0.8	83	1.4	0.0	5.6	0.0	0.0	1.6	0.4	2.9						
1079	0.9	83	1.8	0.1	6.8	0.0	0.0	1.8	0.4	3.9						
1080	0.9	73	1.6	0.0	6.5	0.0	0.0	2.1	0.5	3.6						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1075												
1076												
1077												
1078												
1079												
1080												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: BRUNDAGE PEDON: S80TX-479-001 COUNTY: WEBB

PEDON CLASSIFICATION: USTOLLIC NATRARGID, FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF US 59 AND ARKANSAS STREET IN LAREDO, 34.2 MI NE ON US 59 TO WELHAUSEN COUNTY ROAD, 8.9 MI S ON WELHAUSEN COUNTY ROAD, 60 FT W OF ROAD IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-3% SLOPE ASPECT: W

PARENT MATERIALS: ALLUVIUM FORMATION: ALLUVIUM FROM JACKSON GROUP

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: GABRIEL, SANDERS, GIRDNER, WILDING, DREES, AGRO 689A CLASS DATE: 01/18/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-6	DARK GRAYISH BROWN (10YR 4/2) FINE SANDY LOAM, YELLOWISH BROWN (10YR 5/4) DRY; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON FINE ROOTS; FEW FINE PORES; MILDLY ALKALINE; ABRUPT SMOOTH BOUNDARY.
A12	6-15	DARK BROWN (10YR 3/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON MEDIUM AND COARSE ROOTS; FEW FINE PORES; LOCALIZED AREAS OF B MATERIAL PERHAPS BROUGHT UP BY INSECTS; SMALL POCKETS OF SAND ALONG PED FACES; MODERATELY ALKALINE; NONCALCAREOUS; CLEAR WAVY BOUNDARY.
B21TCA	15-24	BROWN (10YR 4/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON MEDIUM ROOTS; CALCAREOUS ALONG ROOT CHANNELS AND LOWER PART OF HORIZON; MODERATELY ALKALINE; CLEAR WAVY BOUNDARY.
B22TCA	24-43	BROWN (7.5YR 4/4) SANDY CLAY, BROWN (7.5YR 5/4) DRY; WEAK PRISMATIC PARTING TO MODERATE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW CLAY FILMS ON PED FACES; FEW CALCIUM CARBONATE FILAMENTS ALONG ROOT CHANNELS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B23TCA	43-66	BROWN (7.5YR 5/4) SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; COMMON SILICEOUS PEBBLES; 12% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
B31CA	66-97	LIGHT BROWN (7.5YR 6/4) VERY FINE SANDY LOAM, PINK (7.5YR 7/4) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW FINE ROOTS; COMMON SILICEOUS PEBBLES; CALCIUM CARBONATE FILAMENTS ALONG ROOT CHANNELS; 10% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
B32CA	97-131	PINK (7.5YR 7/4) LOAM, PINK (7.5YR 8/4) DRY; WEAK PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; VERY FINE ROOTS; MANY CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; DIFFUSE BOUNDARY.
B33CACS	131-154	PINK (7.5YR 7/4) LOAM, PINK (7.5YR 8/4) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; VERY FINE ROOTS; CALCIUM CARBONATE SEGREGATIONS; GYPSUM SEGREGATIONS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
B34CACS	154-183	PINK (7.5YR 7/4) SANDY CLAY LOAM, PINK (7.5YR 8/4) DRY; WEAK PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; CARBONATE COATINGS ON VERTICAL PED FACES; SOME SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
C1CACS	183-209	PINK (7.5YR 7/4) LOAM, PINK (7.5YR 8/4) DRY; WEAK SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW SILICEOUS PEBBLES; FEW SELENITE CRYSTALS; COMMON CALCIUM CARBONATE CONCRETIONS; CLEAR BOUNDARY.
IIC2CACS	209-246	PINK (7.5YR 7/4) FINE SANDY LOAM, PINK (7.5YR 8/4) DRY; WEAK PLATY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW SELENITE CRYSTALS.

REMARKS: THE VEGETATION AT THE SITE INCLUDED A THICK CANOPY OF GUAJILLO, MESQUITE, GUAYCAN, BLACKBRUSH ACACIA, LEATHERSTEM, TASAJILLO, COMA, PRICKLYPEAR, AND CENIZO WITH AN UNDERSTORY OF MID AND SHORT GRASSES (TRICHLOROUS AND TEXAS BRISTLEGRASS). THIS PEDON WAS SAMPLED IN AN AREA OF AGUILARES 0-3% MAP UNIT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: BRUNDAGE
PEDON NUMBER: S80TX-479-001
SOIL FAMILY: USTOLLIC NATRARGID; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: WEBB COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
772	0- 6	A11	0.1	0.5	6.4	37.8	23.9	68.6	6.3	18.3	6.2	13.1	FSL	0
773	6- 15	A12	0.2	0.4	4.3	39.5	23.1	67.4	7.1	16.8	10.6	15.8	FSL	0
774	15- 24	B21TCA	0.2	0.5	5.1	30.8	20.4	56.8	7.5	18.4	18.5	24.8	SCL	0
775	24- 43	B22TCA	0.7	0.7	4.4	30.8	18.3	54.8	7.6	19.3	18.5	25.9	SCL	3
776	43- 66	B23TCA	1.0	0.6	4.1	24.1	15.6	45.4	9.4	21.2	20.6	33.4	SCL	10
777	66- 97	B31CA	0.9	0.6	3.5	22.3	14.3	41.3	10.8	21.3	19.0	37.4	CL	10
778	97-131	B32CA	0.6	0.5	4.2	26.0	15.7	46.9	12.0	22.1	16.9	31.0	SCL	3
779	131-154	B33CACS	0.5	0.5	4.6	26.2	16.9	48.6	10.6	23.0	16.4	28.4	SCL	6
780	154-183	B34CACS	1.3	0.5	4.3	24.2	13.7	43.9	11.8	27.7	14.4	28.4	CL	9
781	183-209	C1CACS	1.0	0.7	4.1	25.7	15.1	46.5	12.6	27.2	14.0	26.3	SCL	7
782	209-246	IIC2CACS	1.1	0.7	5.0	26.5	17.9	51.1	12.7	26.4	10.0	22.5	SCL	6

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
772	0.80	7.8	16.6	1.6	0.2	0.7	19.1		12.1		100	1	1	0.0	0.0	0.0	
773	0.61	8.0	13.3	2.1	0.8	0.5	16.7		14.4		100	4	6	0.2	0.0	0.2	
774	0.50	8.2	37.1	4.6	8.4	0.5	50.6		21.1		100	29	21	1.1	0.4	1.5	
775	0.31	8.2	47.2	4.9	10.9	0.5	63.5		20.5		100	34	21	2.7	1.3	4.1	0.0
776	0.09	8.2	57.3	5.9	14.4	0.5	78.1		20.3		100	33	26	10.6	2.1	12.9	0.0
777	0.03	8.2	50.6	5.2	13.3	0.4	69.5		13.1		100	42	28	19.8	3.1	22.1	0.0
778	0.00	8.2	48.8	4.2	12.1	0.4	65.5		12.4		100	46	27	16.6	2.7	19.5	0.0
779	0.00	8.2	72.4	4.0	12.5	0.4	89.3		10.1		100	63	25	14.4	2.1	16.7	1.5
780	0.33	8.2	84.6	4.2	12.7	0.3	101.8		11.1		100	57	25	12.8	2.6	15.6	2.1
781	0.10	8.0	78.3	4.1	12.9	0.3	95.6		12.6		100	53	27	14.6	1.7	16.4	1.6
782	0.00	8.0	71.2	4.3	13.5	0.3	89.3		11.6		100	60	30	12.2	2.0	14.4	1.2

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
772	0.4	32	3.5	0.4	1.4	0.3	0.0	4.6	0.7	1.3	1.70	1.84	0.027		14.3	
773	0.9	35	2.7	0.4	6.9	0.2	0.0	5.1	3.6	0.9	1.61	1.84	0.046		16.0	
774	5.5	49	7.5	2.1	46.2	0.2	0.0	4.6	45.0	1.8	1.53	1.87	0.070		24.2	
775	9.6	55	17.5	6.2	71.8	0.3	0.0	4.1	85.0	10.3	1.51	1.80	0.059		22.8	
776	21.0	56	42.5	14.4	139.2	0.4	0.0	2.0	140.0	39.2	1.33	1.60	0.063		27.8	
777	21.0	54	40.0	14.4	144.1	0.3	0.0	1.5	135.0	44.8	1.39	1.64	0.057		25.6	
778	20.0	49	35.0	12.3	131.1	0.3	0.0	1.5	135.0	44.8	1.54	1.76	0.046		21.3	
779	19.0	51	36.3	12.3	120.8	0.3	0.0	1.0	110.0	51.3	1.50	1.78	0.057		21.8	
780	19.0	52	36.3	12.3	122.4	0.2	0.0	1.0	105.0	50.4	1.46	1.72	0.055		24.2	
781	20.0	47	35.0	12.3	132.7	0.2	0.0	1.5	110.0	50.4	1.46	1.65	0.042		23.1	
782	21.0	43	37.5	12.3	151.7	0.2	0.0	1.5	135.0	51.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
772												
773												
774												
775												
776												
777												
778												
779												
780												
781												
782												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CART PEDON: S81TX-225-002 COUNTY: HOUSTON

PEDON CLASSIFICATION: TYPIC FRAGLOSSUDALF; COARSE-LOAMY, SILICEOUS, THERMIC

LOCATION: DAVY CROCKETT NATIONAL FOREST. ABOUT 4 MI SE OF THE COMMUNITY OF WECHES.

LANDFORM: STREAM TERRACE ELEVATION (M): 90 SLOPE: 1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE-AGE TERRACE

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: BROCKMANN, DOLEZEL, FUCHS, HOLT, STEPTOE, GRAY, HALLMARK, PETERS DATE: 10/06/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	BROWN (10YR 4/3) FINE SANDY LOAM; WEAK FINE GRANULAR STRUCTURE; SOFT; VERY FRIABLE; MANY MEDIUM ROOTS; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
A21	13-36	PALE BROWN (10YR 6/3) FINE SANDY LOAM; WEAK FINE GRANULAR STRUCTURE; SOFT; VERY FRIABLE; MANY MEDIUM ROOTS; EXTREMELY ACID; GRADUAL SMOOTH BOUNDARY.
A22	36-91	LIGHT YELLOWISH BROWN (10YR 6/4) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; MANY MEDIUM ROOTS; EXTREMELY ACID; GRADUAL SMOOTH BOUNDARY.
B1	91-117	PALE BROWN (10YR 6/3) FINE SANDY LOAM; BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; FEW MEDIUM ROOTS; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
B2T&A'2	117-155	REDDISH YELLOW (7.5YR 6/6) LOAM; COMMON FINE FAINT REDDISH YELLOW (7.5YR 6/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW MEDIUM ROOTS; VERY PALE BROWN (10YR 7/3) TONGUES EXTEND THROUGH HORIZON; ABOUT 20% OF THE MATRIX IS BRITTLE; EXTREMELY ACID; GRADUAL SMOOTH BOUNDARY.
BX&A'2	155-203	BROWNISH YELLOW (10YR 6/6) LOAM; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK SUBANGULAR BLOCKY STRUCTURE; A'2 MATERIAL IS LIGHT GRAY (10YR 7/2); EXTREMELY ACID; GRADUAL IRREGULAR BOUNDARY.
IIBT	203-234	GRAYISH BROWN (2.5Y 5/2) LOAM; LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; DARK GRAYISH BROWN (2.5Y 4/2) SURFACES ON PED FACES; EXTREMELY ACID.

REMARKS: ALLUVIUM OVERLIES THE SPARTA FORMATION. THE SOIL OCCURS IN A COMPLEX WITH MOLLVILLE. CART OCCUPIES THE MOUNDS IN THE LANDSCAPE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CART
PEDON NUMBER: S81TX-225-002
SOIL FAMILY: TYPIC FRAGLOSSUDALF; COARSE-LOAMY, SILICEOUS, THERMIC
LOCATION: HOUSTON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1120	0- 13	A1	0.4	0.7	4.2	27.9	26.4	59.6	10.7	38.3	1.0	2.1	FSL	
1121	13- 36	A21	0.0	0.3	3.2	29.4	26.4	59.3	12.2	38.7	1.0	2.0	FSL	
1122	36- 64	A22	0.0	0.2	3.8	28.4	25.4	57.8	12.8	40.6	0.5	1.6	FSL	
1123	64- 91	A22	0.0	0.3	3.0	28.9	25.5	57.7	13.8	40.9	0.4	1.4	FSL	
1124	91-117	B1	0.0	0.2	3.8	27.4	24.8	56.2	13.7	41.4	0.8	2.4	FSL	
1125	117-155	B2T&A'2	0.0	0.3	2.4	28.2	23.7	54.6	11.1	36.5	5.3	8.9	FSL	
1126	155-203	BX&A'2	0.0	0.3	5.1	28.5	21.9	55.8	12.4	36.6	4.0	7.6	FSL	
1127	203-234	IIBT	0.0	0.1	1.8	18.6	18.6	39.1	19.8	42.1	12.1	18.8	L	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL	MEQ/100G			%			%			
1120	1.39	4.1	0.7	0.2	0.0	0.1	1.0	1.4	3.5	2.4	29	0	1				
1121	0.22	4.3	0.4	0.2	0.0	0.0	0.6	0.7	3.0	1.3	20	0	1				
1122	0.08	4.4	0.1	0.2	0.1	0.0	0.4	1.0	1.1	1.4	36	6	3				
1123	0.08	4.6	0.1	0.2	0.1	0.0	0.4	1.0	0.9	1.4	44	10	1				
1124	0.09	4.6	0.1	0.2	0.1	0.0	0.4	1.3	1.2	1.7	33	8	1				
1125	0.10	4.5	0.5	0.2	0.1	0.1	0.9	2.1	3.6	3.0	25	2	1				
1126	0.07	4.4	0.5	0.2	0.1	0.1	0.9	1.9	3.2	2.8	28	3	2				
1127	0.18	4.6	0.5	2.0	1.0	0.1	3.6	7.6	11.1	11.2	32	9	3				

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1120	0.2	37	0.9	0.3	0.4	0.3	0.0	0.5	1.0	3.0						
1121	0.1	23	0.2	0.1	0.4	0.1	0.0	0.7	0.0	0.8	1.48	1.48	0.000		8.4	
1122	0.3	21	0.3	0.2	1.7	0.1	0.0	0.3	2.5	0.8	1.55	1.55	0.000		6.2	
1123	0.1	19	0.2	0.2	0.3	0.1	0.0	0.9	0.7	1.0	1.65	1.65	0.000		8.0	
1124	0.1	23	0.1	0.1	0.4	0.0	0.0	0.5	0.5	1.3	1.74	1.74	0.000		7.0	
1125	0.1	25	0.3	0.2	0.6	0.0	0.0	0.7	0.8	1.0	1.76	1.83	0.013		12.2	
1126	0.1	24	0.2	0.1	0.7	0.0	0.0	0.8	0.5	1.0	1.85	1.90	0.010		9.1	
1127	0.2	29	0.1	0.2	1.2	0.1	0.0	1.2	0.5	2.5	1.72	1.87	0.028		16.0	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1120												
1121												
1122												
1123												
1124												
1125												
1126												
1127												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CATARINA PEDON: S82TX-479-002 COUNTY: WEBB

PEDON CLASSIFICATION: TYPIC TORRERT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: UNIROYAL TIRE TEST FACILITY. APPROXIMATELY 4 MI ESE OF ENTRANCE TO FACILITY ON I35; 75 FT N AND 250 FT W OF THE SE CORNER OF THE PLANT MATERIALS TEST PLOTS.

LANDFORM: TOESLOPE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT: N

PARENT MATERIALS: ALLUVIUM FORMATION: LOCAL OUTWASH FROM YEGUA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: RANGE

COLLECTORS: GIRDNER, GABRIEL, WILDING, WEST, DRESS, AND ABBOTT DATE: 01/29/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-8	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (2.5Y 6/2) DRY; MODERATE FINE AND VERY FINE GRANULAR STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A2	8-36	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (2.5Y 6/2) DRY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FRIABLE; FEW FINE ROOTS; FEW SILICEOUS PEBBLES; FEW FILMS OF SALT IN ABOUT 10% OF THE CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
BKYZ1	36-64	BROWN (10YR 5/3) CLAY, PALE BROWN (10YR 6/3) DRY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FRIABLE; FEW FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; FEW FILMS, THREADS AND SOFT BODIES OF CARBONATES AND OTHER SALTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
BKYZ2	64-90	BROWN (10YR 5/3) CLAY, PALE BROWN (10YR 6/3) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; COMMON FINE FILMS, THREADS AND SOFT BODIES OF CARBONATES AND OTHER SALTS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
BKYZ3	90-127	BROWN (10YR 5/3) CLAY, PALE BROWN (10YR 6/3) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; ABOUT 10% FILMS, THREADS AND SOFT BODIES OF CARBONATES AND OTHER SALTS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
BKYZ4	127-185	VERY PALE BROWN (10YR 7/3) CLAY, VERY PALE BROWN (10YR 7/3) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; ABOUT 5% FILMS, THREADS AND SOFT BODIES OF CARBONATES AND OTHER SALTS; MODERATELY ALKALINE; CALCAREOUS.
BKYZ5	185-243	LIGHT YELLOWISH BROWN (10YR 6/4) CLAY, VERY PALE BROWN (10YR 7/4) DRY; WEAK ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; ABOUT 5% FILMS, THREADS AND SOFT BODIES OF CARBONATES AND OTHER SALTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
2BKYZ6	243-343	MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COLOR IS MOTTLED REDDISH, PURPLISH AND OLIVE WITH FEW REDDISH AND OLIVE BODIES OF PARTIALLY WEATHERED CLAYEY SHALE; COMMON FINE AND MEDIUM FILMS, THREADS AND BODIES OF CARBONATES AND OTHER SALTS WITH THE MAXIMUM CONCRETION IN THE LOWER 30 CM; CLEAR BOUNDARY.
2CRKYZ1	343-405	MOTTLED DARK GRAYISH BROWN (2.5Y 4/2) AND WEAK RED (10R 4/3) CLAYEY SHALE; FEW OLIVE AND GREENISH FINE STRATA; FEW GYPSUM CRYSTALS AND FILMS OF OTHER SALTS; DIFFUSE BOUNDARY.
2CRKYZ2	405-545	PALE OLIVE (5Y 6/3) CLAYEY SHALE WITH COMMON YELLOWISH AND REDDISH STRATA MOSTLY LESS THAN 2 CM THICK; FEW BLACK STRAINS ALONG HORIZONTAL FRACTURE PLANES; FEW SALT CRYSTALS MOSTLY CONCRETIONS IN INDIVIDUAL STRATA; DIFFUSE BOUNDARY.
3CRKYZ3	545-675	PALE OLIVE (5Y 6/3) CLAYEY SHALE WITH FEW REDDISH AND YELLOWISH STRATA; BLACK STRAINS SAME AS HORIZON ABOVE; SLIGHTLY LESS CRYSTALLINE SALT AS NOTED ABOVE.

REMARKS: THE MAXIMUM ZONE OF CRACKING IS TO THE BASE OF THE BKYZ1 HORIZON. FEW SILICEOUS PEBBLES (ABOUT 1%) OCCUR IN THE SOIL ABOVE 343 CM. THE DEPTH OF AND KIND OF SALT SEGREGATIONS ARE WEAKLY CYCLIC ACROSS THE PIT FACE. FEW VERY FINE SEGREGATIONS OF SALT OCCUR IN TWO LOCAL AREAS OF THE PEDON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CATARINA
SOIL FAMILY: TYPIC TORRERT; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: WEBB COUNTY, TEXAS

PEDON NUMBER: S82TX-479-002

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1291	0- 8	A1	0.2	0.1	0.1	1.5	7.6	9.5	21.6	40.7	22.2	49.8	SIC	0
1292	8- 36	A2	0.1	0.1	0.1	1.5	7.7	9.5	21.9	39.3	27.8	51.2	C	0
1293	36- 64	BKYZ1	0.0	0.1	0.1	1.5	7.2	8.9	21.5	39.3	30.7	51.8	C	0
1294	64- 90	BKYZ2	0.1	0.1	0.1	1.8	8.6	10.7	20.6	38.3	30.0	51.0	C	0
1295	90-127	BKYZ3	0.1	0.1	0.1	2.3	9.8	12.4	18.8	39.0	28.5	48.6	C	0
1296	127-185	BKYZ4	0.1	0.1	0.1	1.7	10.1	12.1	18.3	40.8	27.6	47.1	SIC	0
1297	185-243	BKYZ5	0.2	0.2	0.2	2.7	12.2	15.5	17.2	37.6	28.5	46.9	C	0
1298	243-330	2BKYZ6	0.1	0.1	0.2	4.2	15.4	20.0	17.1	38.0	27.9	42.0	C	0
1299	330-343	2BKYZ6	0.0	0.0	0.0	1.3	10.6	11.9	22.6	49.5	16.6	38.6	SICL	0
1300	343-405	2CRKYZ1	0.2	0.2	0.1	0.4	11.1	12.0	25.4	52.0	12.5	36.0	SICL	0
1301	405-545	2CRKYZ2	0.1	0.1	0.0	0.1	1.5	1.8	28.3	40.0	14.2	58.2	SIC	0
1302	545-675	3CRKYZ3	0.0	0.0	0.0	0.3	1.6	1.9	28.9	38.2	9.3	59.9	C	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1291	0.90	7.4	66.4	2.5	1.6	1.6	72.0		35.8		100	4	3	9.5	1.8	11.4	
1292	0.77	7.8	60.7	3.3	6.5	1.3	71.8		36.3		100	14	13	10.2	2.1	12.5	
1293	0.61	7.6	62.9	3.7	15.9	1.4	83.9		38.2		100	23	21	11.7	0.6	12.5	
1294	0.29	7.6	84.2	3.6	19.2	0.9	107.9		34.6		100	27	26	10.7	2.1	13.1	1.3
1295	0.39	7.2	99.7	3.4	18.6	0.8	122.5		33.2		100	28	25	10.6	0.8	11.5	2.3
1296	0.27	7.3	90.7	3.4	17.7	0.8	112.6		35.0		100	27	24	10.5	0.9	11.4	1.8
1297	0.29	7.6	78.0	3.1	17.7	0.8	99.7		33.0		100	29	27	7.5	1.0	8.7	0.7
1298	0.35	7.6	67.4	2.9	16.7	0.8	87.8		28.7		100	28	26	5.6	1.0	6.8	0.2
1299	0.23	7.6	120.6	3.4	16.4	0.8	141.2		32.6		100	27	27	4.3	0.8	5.3	3.5
1300	0.07	7.7	70.5	3.4	15.5	0.8	90.3		31.9		100	27	23	11.6	2.6	14.5	0.7
1301	0.03	7.8	67.3	4.5	19.8	1.1	92.6		37.4		100	28	26	13.5	2.8	16.6	
1302	0.05	7.7	73.0	5.8	23.9	0.8	103.6		39.8		100	35	30	10.3	2.0	12.4	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1291	0.8	74	3.1	0.2	3.8	0.3	0.0	7.1	1.5	2.3	1.23	1.88	0.153		40.4	
1292	2.8	76	3.8	0.4	18.4	0.2	0.0	2.4	17.2	5.0	1.35	1.87	0.116		31.9	
1293	11.8	86	30.4	3.6	85.7	0.5	0.0	1.8	80.9	46.3	1.33	1.92	0.130		34.4	
1294	16.0	82	38.4	4.1	118.3	0.5	0.0	1.3	105.4	52.5	1.38	1.86	0.106		30.2	
1295	17.0	78	40.9	4.1	120.0	0.5	0.0	1.3	112.7	48.8	1.42	1.90	0.101		28.9	
1296	14.5	81	34.4	4.0	103.5	0.5	0.0	1.0	78.4	51.3	1.40	1.89	0.105		29.7	
1297	14.0	76	29.9	3.6	109.0	0.4	0.0	0.8	80.0	56.3	1.41	1.91	0.107		29.2	
1298	14.0	80	30.4	3.6	108.3	0.4	0.0	1.3	76.0	61.3	1.45	1.89	0.092		27.9	
1299	14.5	74	25.0	3.4	103.1	0.5	0.0	1.3	71.1	55.0						
1300	13.0	71	30.4	3.6	95.7	0.4	0.0	1.5	49.0	63.8						
1301	10.5	114	17.0	3.0	81.7	0.7	0.0	1.3	34.3	62.5						
1302	13.5	94	22.0	4.1	108.7	0.7	0.0	1.0	39.2	77.5						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1291	***		T		T		*					
1292	***		T		T		*					
1293	***		T		T		*					
1294	***		T		T		*					
1295	***		T		T		*					
1296	***		T		T		*					
1297	***		T		T		*					
1298	***		T		T		*					
1299	***		T		T		*					
1300	***		T		T		*					
1301	***		T		T		*					
1302	***		T		T		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CHILICOTAL PEDON: S80TX-043-011 COUNTY: BREWSTER

PEDON CLASSIFICATION: USTOLLIC CALCIORTHID; LOAMY-SKELETAL, MIXED, THERMIC

LOCATION: FROM BIG BEND NATIONAL PARK HEADQUARTERS AT PANTHER JUNCTION, 3.2 MI W ON PAVED ROAD, 2.9 MI N ON GRAPE HILLS ROAD, 275 M W. SITE IN S BANK OF DEEP SANITARY LANDFILL PIT.

LANDFORM: ALLUVIAL FAN ELEVATION (M): 1055 SLOPE: 1-2% SLOPE ASPECT: N

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE-AGE ALLUVIUM

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: NATIVE

COLLECTORS: ALLEN, COCHRAN, HALLMARK, RIVES, THOMPSON, WILDING, WILLIAMS DATE: 08/27/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-5	BROWN (7.5YR 4/4) VERY GRAVELLY LOAM, BROWN (7.5YR 5/4) DRY; WEAK FINE GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; MANY ROOTS; 40% COARSE FRAGMENTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY
B21	5-19	BROWN (7.5YR 4/4) GRAVELLY CLAY LOAM, BROWN (7.5YR 4/4) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON ROOTS; FEW FINE CALCIUM CARBONATE FILAMENTS; 30% COARSE FRAGMENTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B22CA	19-36	BROWN (7.5YR 4/4) VERY GRAVELLY CLAY LOAM, BROWN (7.5YR 4/4) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON ROOTS; COMMON CALCIUM CARBONATE FILAMENTS; PATCHY CARBONATE COATINGS ON UNDERSIDE OF GRAVEL; 50% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B23CA	36-58	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON ROOTS; COMMON CALCIUM CARBONATE FILAMENTS; PATCHY CARBONATE COATINGS ON COARSE FRAGMENTS; 55% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B24CA	58-71	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; MODERATE VERY FINE GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON ROOTS; COMMON CALCIUM CARBONATE FILAMENTS; COMMON CARBONATE COATINGS ON COARSE FRAGMENTS; 60% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
B31CA	71-101	BROWN (7.5YR 5/4) VERY GRAVELLY SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK VERY FINE GRANULAR STRUCTURE; VERY HARD; FRIABLE; FEW ROOTS; PATCHY CARBONATE COATINGS ON COARSE FRAGMENTS; UPPER 7 CM IS WEAKLY CEMENTED, BECOMING MODERATELY CEMENTED IN LOWER PART; 70% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B32CA	101-130	BROWN (7.5YR 5/4) VERY GRAVELLY SANDY LOAM, PINK (7.5YR 7/4) DRY; WEAK VERY FINE GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW ROOTS; THICK CARBONATE COATINGS ON COARSE FRAGMENTS; 50% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B33CA	130-156	BROWN (7.5YR 5/4) VERY GRAVELLY SANDY LOAM, PINK (7.5YR 7/4) DRY; WEAK VERY FINE GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW ROOTS; PATCHY CARBONATE COATINGS ON COARSE FRAGMENTS; 70% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
B34CAM	156-200	LIGHT BROWN (7.5YR 6/4) VERY GRAVELLY SANDY LOAM, PINK (7.5YR 7/4) DRY; WEAK VERY FINE GRANULAR STRUCTURE; EXTREMELY HARD; VERY FRIABLE; ROOTS PENETRATE ONLY THROUGH CRACKS; INDURATED WITH ABOUT 75% OF THE PORE SPACE PLUGGED WITH CARBONATE AND THE REMAINDER FILLED WITH B SOIL MATERIAL; 70% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; GRADUAL SMOOTH BOUNDARY.
C1CA	200-243	LIGHT BROWN (7.5YR 6/4) VERY GRAVELLY SANDY LOAM, PINK (7.5YR 7/4) DRY; STRUCTURELESS MASSIVE; VERY HARD; FRIABLE; THICK CARBONATE COATINGS ON COARSE FRAGMENTS; ROOTS PENETRATE THROUGH CRACKS; WEAKLY CEMENTED WITH ABOUT 50% OF THE PORE SPACE PLUGGED WITH CARBONATE; 60% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
C2CA	243-268	LIGHT BROWN (7.5YR 6/4) VERY GRAVELLY SANDY LOAM, PINK (7.5YR 7/4) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; CARBONATE COATINGS ON COARSE FRAGMENTS; ROOTS PENETRATE THROUGH CRACKS; PARTIALLY CEMENTED; 55% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
B21CAB	268-310	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; 50% COARSE FRAGMENTS; MODERATELY ALKALINE; NONCALCAREOUS; CLEAR WAVY BOUNDARY.
B22TB	310-366	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY LOAM, BROWN (7.5YR 5/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; 50% COARSE FRAGMENTS; MODERATELY ALKALINE; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B23TB	366-400	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK FINE GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW SELENITE CRYSTALS; FEW THIN CALCIUM CARBONATE CONCRETIONS; 70% COARSE FRAGMENTS; MODERATELY ALKALINE; NONCALCAREOUS; CLEAR WAVY BOUNDARY.
B24TCAB	400-430	BROWN (7.5YR 4/4) VERY GRAVELLY SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK MEDIUM GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW CALCIUM CARBONATE FILAMENTS; CALCIUM CARBONATE CONCRETIONS ON COARSE FRAGMENTS; 40% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: CARBONATE COATINGS ON UNDERSIDE OF COARSE FRAGMENTS; THE COARSE FRAGMENTS ARE OF IGNEOUS ORIGIN PRESUMEABLY FROM THE CHISOS MOUNTAINS. THE UPPER B HORIZON CONTAINS ABOUT 1% OR LESS ILLUVIAL CLAY AND THUS IS NOT CONSIDERED TO BE AN ARGILLIC HORIZON. COARSE FRAGMENTS ARE DOMINATELY SUBROUNDED GRAVEL AND COBBLES. DOMINANT VEGETATION INCLUDES CHINO GRAMA, SLIM TRIDENS, BLACK GRAMA, THREE-AWN, LECHUGUILLA, CREOSOTEBUSH, SKELETONLEAF GOLDENEYE, CATCLAW, SOTOL, YUCCA, AND BIG BEND SILVERLEAF.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CHILICOTAL
SOIL FAMILY: USTOLLIC CALCIORTHID; LOAMY-SKELETAL, MIXED, THERMIC
LOCATION: BREWSTER COUNTY, TEXAS

PEDON NUMBER: S80TX-043-011

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
947	0- 5	A1	4.3	4.8	7.4	16.3	22.4	55.2	10.2	31.5	0.8	13.3	FSL	43
948	5- 19	B21	4.3	3.5	4.0	10.9	21.1	43.8	12.2	37.9	3.9	18.3	L	54
949	19- 36	B22CA	7.1	3.8	3.8	9.6	17.4	41.7	13.0	35.8	6.9	22.5	L	73
950	36- 58	B23CA	9.3	3.6	3.4	7.6	13.5	37.4	13.5	35.1	7.5	27.5	CL	76
951	58- 71	B24CA	8.8	3.8	3.8	7.6	14.3	38.3	14.6	36.2	5.0	25.5	L	81
952	71-101	B31CA	9.8	5.4	5.2	9.5	15.7	45.6	16.5	39.3	1.6	15.1	L	80
953	101-130	B32CA	13.9	7.5	6.0	13.3	18.5	59.2	12.9	34.8	0.0	6.0	SL	69
954	130-156	B33CA	11.5	5.6	6.6	16.7	20.0	60.4	11.4	34.4	0.4	5.4	SL	81
955	156-200	B34CAM	12.0	7.8	8.8	15.3	19.4	63.3	11.6	30.4	0.4	6.3	SL	80
956	200-243	C1CA	13.1	6.4	7.8	17.1	21.4	65.8	11.4	30.5	0.5	3.7	SL	66
957	243-268	C2CA	18.9	12.0	11.8	14.9	13.0	70.6	11.3	24.3	0.9	5.1	SL	76
958	268-310	B21TCAB	14.1	10.3	10.9	15.1	12.1	62.5	7.4	23.6	3.4	13.9	SL	71
959	310-366	B22TB	16.6	15.7	13.0	16.0	11.6	72.9	6.1	18.0	2.2	9.1	SL	78
960	366-400	B23TB	16.8	12.0	6.9	5.5	4.9	46.1	13.5	25.5	11.4	28.4	SCL	73
961	400-430	B24TCAB	8.9	6.4	6.0	8.7	9.2	39.2	15.1	33.6	12.0	27.2	CL	69

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
947	0.33	8.0	10.7	2.3	0.2	1.0	14.2		13.2		100	1	0	0.5	0.3	0.8	
948	0.53	7.8	17.4	1.9	0.2	0.7	20.2		16.9		100	1	1	0.7	0.3	1.0	
949	0.69	7.8	41.1	1.7	0.4	0.5	43.7		20.6		100	2	1	1.6	0.3	1.9	
950	0.43	7.9	56.9	1.6	0.9	0.5	59.9		22.6		100	4	1	3.5	0.6	4.1	
951	0.08	7.9	50.2	1.7	1.1	0.5	53.5		21.4		100	5	1	8.0	0.9	9.0	
952	0.05	7.8	44.9	1.3	1.4	0.3	47.9		15.2		100	8	2	13.1	0.7	13.8	
953	0.00	8.0	40.5	1.1	0.7	0.2	42.5		13.1		100	4	3	11.6	2.9	14.8	
954	0.00	8.3	43.9	3.2	2.6	0.3	50.0		18.3		100	11	11	9.8	2.4	12.4	
955	0.17	8.7	46.2	3.6	3.7	0.3	53.8		16.8		100	18	16	15.8	1.3	17.1	
956	0.13	8.9	39.1	3.8	5.3	0.3	48.5		13.7		100	32	24	12.3	1.2	13.6	
957	0.13	8.8	38.7	3.5	6.5	0.3	49.0		12.5		100	35	31	6.1	3.5	10.0	
958	0.03	8.2	34.5	3.5	8.1	0.3	46.4		13.4		100	37	24	1.2	0.3	1.5	
959	0.08	8.4	17.1	2.4	6.3	0.3	26.1		11.6		100	29	25	0.6	0.3	0.9	
960	0.03	8.1	16.8	5.5	14.2	0.6	37.1		22.0		100	36	32	0.4	0.3	0.7	
961	0.01	8.1	47.7	5.6	13.5	0.6	67.4		22.3		100	35	29	3.1	0.6	3.8	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
			MEQ/L													
947	0.4	27	4.0	0.7	0.5	0.7	0.0	0.0	0.0	2.4						
948	0.8	32	8.0	1.0	1.3	0.5	0.0	3.1	1.2	3.0						
949	1.0	39	9.5	0.8	1.5	0.1	0.0	3.3	1.0	3.0						
950	0.9	43	8.0	0.6	2.0	0.0	0.0	2.9	1.2	3.3						
951	0.9	41	7.0	0.5	2.0	0.1	0.0	2.7	2.0	3.3						
952	1.2	35	8.5	0.6	3.7	0.1	0.0	2.4	6.1	4.5						
953	1.3	31	8.0	0.7	5.4	0.0	0.0	2.6	9.8	2.6						
954	1.5	38	3.5	0.6	16.1	0.0	0.0	2.6	10.7	2.3						
955	1.7	37	2.0	0.5	17.4	0.0	0.0	3.6	9.8	2.7						
956	2.5	35	1.5	0.6	24.3	0.0	0.0	4.1	19.4	5.7						
957	6.1	30	6.5	4.1	71.3	0.2	0.0	2.6	39.2	29.1						
958	10.7	32	21.0	13.1	97.4	0.4	0.0	2.0	78.4	75.7						
959	11.0	30	20.0	9.8	97.4	0.4	0.0	1.0	73.5	54.5						
960	11.5	50	20.0	9.8	123.5	0.4	0.0	1.8	98.0	46.9						
961	10.8	51	20.0	9.0	111.3	0.4	0.0	1.5	68.6	72.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
947	**		**		**		**					
948	**		**		**		**					
949	**		**		**		**					
950	***		**		**		**					
951												
952	***		*		*		**					
953												
954	***		*		*		**					
955	***		*		*		**					
956	***		*		*		**					
957	***		*		*		**					
958	***		*		*		**					
959												
960	***		*		*		**					
961	***		*		*		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CHO PEDON: S81TX-435-002 COUNTY: SUTTON

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY, CARBONATIC, THERMIC, SHALLOW

LOCATION: BOBBY MARTIN RANCH; 0.7 MI N OF RT 189 APPROXIMATELY 6 MI E OF INTERSECTION WITH RT 1989 (SHEET 90, SOIL SURVEY REPORT).

LANDFORM: SUMMIT ELEVATION (M): 668 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: SOFT LIMESTONE FORMATION: SEGOVIA (EDWARDS)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WEST, AND T. MOORE DATE: 08/18/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-4	VERY DARK BROWN (10YR 2/2) STONY SILTY CLAY LOAM; MODERATE MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; 30% COARSE FRAGMENTS; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
A12	4-14	VERY DARK BROWN (10YR 2/2) SILTY CLAY; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; 10% COARSE FRAGMENTS; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
A13&CCAM	14-22	VERY DARK BROWN (10YR 2/2) VERY STONY SILTY CLAY; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; 60% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
C1CAM	22-32	WHITE (10YR 8/1, DRY) INDURATED CARBONATE MATERIAL; MASSIVE; UPPER PART APPEARS CASE HARDENED; LOWER PART ALSO HAS ZONES WHICH ARE VERY PALE BROWN (10YR 7/3, DRY); CLEAR SMOOTH BOUNDARY.
C2CAM	32-45+	WHITE (2.5Y 8/2, DRY) INDURATED CARBONATE MATERIAL; MASSIVE.

REMARKS: FROM FIELD OBSERVATIONS, IT IS UNCERTAIN WHETHER THE MATERIAL BELOW 22 CM IS PETROCALCIC OR SOFT LIMESTONE. SIMILAR QUESTIONS EXIST REGARDING THE COARSE FRAGMENTS IN THE A13 HORIZON. HARD LIMESTONE WAS NOT ENCOUNTERED WITHIN THE PIT. A NEARBY CALICHE PIT HAD NO HARD LIMESTONE WITHIN 10 FT OF THE SOIL SURFACE. DOWNSLOPE FROM THE SAMPLED PEDON, HARD LIMESTONE WAS EXPOSED. AREAS IN THE SAMPLING VICINITY HAVE LARGE QUANTITIES OF LARGE COARSE FRAGMENTS (UP TO 0.5 M ACROSS) ON THE SURFACE WHILE OTHER ADJACENT AREAS HAD VERY LITTLE. IF THE CARBONATE MATERIAL IS INTERPRETED TO BE PETROCALCIC, THEN THE CORRECT CLASSIFICATION OF THE SOIL WOULD BE PETROCALCIC CALCIUSTOLL. IF HOWEVER THE MATERIAL WAS CONSIDERED LITHIC (BARELY DIGABLE WITH A SPADE) THIS SOIL WOULD BE A LITHIC CALCIUSTOLL. IF A LITHIC CONTACT WAS NOT RECOGNIZED, THEN THE SOIL WOULD BE A TYPIC CALCIUSTOLL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CHO
PEDON NUMBER: S81TX-435-002
SOIL FAMILY: PETROCALCIC CALCIUSTOLL, LOAMY, CARBONATIC, THERMIC, SHALLOW
LOCATION: SUTTON COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1255	0- 4	A11	2.2	0.7	0.5	0.5	2.1	6.0	35.4	65.9	3.4	28.1	SICL	42
1256	4- 14	A12	1.3	0.5	0.4	0.4	1.1	3.7	31.4	56.1	10.2	40.2	SIC	18
1257	14- 22	A13&CCAM	1.8	0.8	0.5	0.6	1.2	4.9	31.4	50.3	12.5	44.8	SIC	72
1258	22- 32	C1CAM												0
1259	32- 45	C2CAM												0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR NAOAC AL MEQ/100G	CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
1255	4.25	7.6	74.8	1.7	0.1	1.5	78.1		44.8		100	0	0	13.3	2.9	16.5	
1256	3.85	7.7	76.5	1.5	0.5	0.9	79.4		45.9		100	1	0	18.7	2.2	21.2	
1257		7.6	74.1	0.8	0.3	0.6	75.8		39.5		100	1	0			92.7	
1258																90.4	
1259																89.9	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
1255	0.8	71	7.5	0.4	0.3	0.3	0.0	5.8	0.0	0.4						
1256	0.6	74	5.3	0.2	0.2	0.1	0.0	4.1	5.8	0.2	1.05	1.71	0.177		47.5	
1257	1.1	68	10.2	0.3	1.0	0.1	0.0	5.2	1.9	1.2						
1258																
1259																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1255												
1256												
1257												
1258												
1259												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CHO VARIANT PEDON: S81TX-267-001 COUNTY: KIMBLE

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW

LOCATION: 11 MI W OF JUNCTION ON I 10 THEN S (ACROSS THE LLANO RIVER) ON THE EDWARD DUNBAR RANCH; 99 DEGREES 55'53" W 30 DEGREES 26'24" N.

LANDFORM: SUMMIT ELEVATION (M): 698 SLOPE: SLOPE ASPECT:

PARENT MATERIALS: SOFT LIMESTONE FORMATION: SEGOVIA MEMBER (EDWARDS)

TOPOGRAPHY: DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: M. RABENHORST, L. WILDING, C. GIRDNER DATE: 07/24/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-1	VERY DARK GRAYISH BROWN (10YR 3/2) GRAVELLY SILT LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; WEAK MEDIUM PLATY AND MODERATE FINE GRANULAR STRUCTURE; SOFT; MANY FINE ROOTS; 15% COARSE FRAGMENTS; SLIGHTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
A12	1-6	VERY DARK GRAYISH BROWN (10YR 3/2) GRAVELLY SILTY CLAY LOAM, VERY DARK GRAYISH BROWN (10YR 3/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; HARD; COMMON FINE ROOTS; NONCALCAREOUS MATRIX WITH SPOTS SLIGHTLY EFFERVESCENT; 15% COARSE FRAGMENTS; ABRUPT SMOOTH BOUNDARY.
CCAM&A1	6-20	WHITE (10YR 8/2, DRY) INDURATED CARBONATE MATERIAL; MASSIVE WITH SOME VERTICAL FRACTURES; FRACTURES CONTAIN VERY DARK GRAYISH BROWN (10YR 3/2) SILTY CLAY; THE FINE MATERIAL IS ALSO FOUND BENEATH THE INDURATED CARBONATE AND ABOVE THE UNDERLYING ROCK; THE A1 MATERIAL HAS MODERATE FINE GRANULAR STRUCTURE AND IS NONCALCREOUS; MANY FINE ROOTS IN THE ABRUPT BOUNDARY.
CR1CA	20-28	WHITE (10YR 8/2, DRY) SOFT LIMESTONE BEDROCK; LIMESTONE IS CASE HARDENED AND OVERLAIN BY THIN (1-8 MM) LAMINAR CAP OF PALE BROWN (10YR 6/3) SECONDARY CARBONATE.
CR2CA	28-39	WHITE (10YR 8/1, DRY) SOFT LIMESTONE BEDROCK; SOMEWHAT SOFTER THAN THE HORIZON ABOV.
CR3CA	39-56	WHITE (2.5Y 8/2, DRY) SOFT LIMESTONE BEDROCK.

REMARKS: THE SITE HAS AN UNDULATING SURFACE TOPOGRAPHY AND THIS PEDON WAS SAMPLED AT A HIGH SPOT. NEARBY AREAS IN LOCAL LOW SPOTS APPEAR TO BE DEEPER CRACKING SOILS. A FEW HARD CRYSTALLINE LIMESTONE BOULDERS OCCUR ON THE SURFACE IN THE VICINITY BUT NO SUCH MATERIAL WAS ENCOUNTERED IN THIS PEDON. THE PARENT MATERIAL OF THIS PEDON APPEARS TO BE A SOFT LIMESTONE. THE CR MATERIAL SAMPLED APPEARS TO HAVE SOME ENRICHMENT WITH SECONDARY CARBONATE. MANY OF THE COARSE FRAGMENTS ON THE SOIL SURFACE APPEAR TO BE CASE HARDENED, SOFT LIMESTONE MATERIAL. FIELD IDENTIFICATION OF A PETROCALCIC HOIZON NEEDS LABORATORY VERIFICATION, AS THE POSSIBILITY EXISTS THAT THE MASSIVE MATERIAL IS A SOFT LIMESTONE RATHER THAN A PETROCALCIC HORIZON. IF SOIL ACTUALLY LACKS A PETROCALCIC HORIZON, THEN IT WOULD BE CLASSIFIED AS A LITHIC HAPLUSTOLL. IT IS ALSO POSSIBLE THAT THE MATERIAL IDENTIFIED AS SOFT LIMESTONE IS IN FACT PETROCALCIC MATERIAL. PEDON IS CLASSIFIED AS A VARIANT OF THE CHO SERIES SINCE IT IS IN A MIXED FAMILY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CHO VARIANT
SOIL FAMILY: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW
LOCATION: KIMBLE COUNTY, TEXAS

PEDON NUMBER: S81TX-267-001

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1218	0- 1	A11	1.2	0.9	0.6	1.0	1.3	5.0	33.6	69.8	4.4	25.2	SIL	30
1219	1- 6	A12	0.7	0.4	0.3	0.7	1.1	3.2	33.8	60.8	7.8	36.0	SICL	31
1220	6- 20	CCAM&A1	0.4	0.2	0.2	0.5	1.0	2.3	28.3	50.4	25.4	47.3	SIC	19
1221	20- 23	CR1CA												
1222	23- 28	CR1CA												
1223	28- 39	CR2CA												
1224	39- 56	CR3CA												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
			CA	MG	NA	K	TOTAL										
	%	1:1	MEQ/100G								%			%			
1218	9.19	7.2	80.5	5.1	0.1	2.4	88.1		60.3		100	0	0	6.2	1.7	8.2	
1219	6.75	7.3	75.6	3.4	0.2	2.5	81.7		63.9		100	0	0	2.2	1.8	4.3	
1220		7.4	85.3	2.7	0.2	0.9	89.2		65.5		100	0	0			99.9	
1221																93.7	
1222																94.9	
1223																92.6	
1224																86.8	

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1218	1.2	38	12.7	1.5	0.2	0.6	0.0	9.7	1.8	1.3						
1219	0.7	82	5.0	0.4	0.5	0.3	0.0	4.8	0.6	0.7						
1220	0.8	99	7.3	0.5	0.5	0.1	0.0	5.9	0.7	0.4						
1221																
1222																
1223																
1224																

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1218												
1219												
1220												
1221												
1222												
1223												
1224												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: COLIBRO VARIANT PEDON: S82TX-273-003 COUNTY: KLEBERG

PEDON CLASSIFICATION: TYPIC USTOCHREPT; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: SOUTH OF KINGSVILLE. FROM INTERSECTION OF FR 772 AND US BUSINESS 77, 0.5 MI N ON US 77, 0.2 MI W ON DIRT ROAD, 300 FT N IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK, AND R. B. SMITH DATE: 07/12/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	VERY DARK GRAY (10YR 3/1) SANDY CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK FINE GRANULAR STRUCTURE; FRIABLE; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR BOUNDARY.
BW1	20-43	DARK GRAYISH BROWN (10YR 4/2) SANDY CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR BOUNDARY.
BW2	43-76	GRAYISH BROWN (2.5Y 5/2) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW VERY DARK GRAY (10YR 3/1) STAINS ON PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK1	76-117	PALE BROWN (10YR 6/3) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW DARK GRAY (10YR 4/1) STAINS ON PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK2	117-162	PALE BROWN (10YR 6/3) CLAY LOAM; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW DARK GRAY (10YR 4/1) STAINS ON PED FACES; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK3	162-203	VERY PALE BROWN (10YR 7/3) CLAY LOAM; FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
CY	203-218	LIGHT GRAY (2.5Y 7/2) CLAY LOAM; COMMON MEDIUM FAINT PALE BROWN (10YR 6/3) MOTTLES; STRUCTURELESS MASSIVE; FIRM; GYPSUM CRYSTALS PRESENT IN SEAMS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT AS APPROXIMATELY 35% OF THE COTTON WAS DEAD. VARIANT BECAUSE THE SOLUM THICKNESS IS OUTSIDE SERIES RANGE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: COLIBRO VARIANT
SOIL FAMILY: TYPIC USTOCHREPT; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

PEDON NUMBER: S82TX-273-003

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1347	0- 20	AP	0.5	0.0	0.7	33.4	26.4	61.0	5.2	15.6	14.6	23.4	SCL	0
1348	20- 43	BW1	0.0	0.0	0.7	28.0	24.2	52.9	6.5	17.6	18.0	29.5	SCL	0
1349	43- 76	BW2	0.3	0.2	0.6	21.1	20.7	42.9	10.3	22.1	21.5	35.0	CL	0
1350	76-117	BK1	0.5	0.3	0.5	15.4	16.7	33.4	21.9	32.3	20.5	34.3	CL	0
1351	117-162	BK2	0.4	0.4	0.6	16.0	15.7	33.1	23.4	33.1	21.6	33.8	CL	0
1352	162-203	BK3	1.2	0.7	0.8	20.7	18.5	41.9	18.5	29.4	20.6	28.7	CL	0
1353	203-218	CY	0.7	0.5	0.6	19.3	18.0	39.1	19.3	33.8	18.0	27.1	CL	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1347	0.68	8.0	35.8	1.4	0.1	1.2	38.6		16.6		100	1	0	1.7	0.1	1.8	
1348	0.55	8.0	51.7	1.1	0.1	0.7	53.7		17.9		100	1	0	5.6	0.3	5.9	
1349	0.42	8.0	56.6	1.3	0.1	0.5	58.5		18.9		100	0	0	13.0	0.3	13.4	
1350	0.29	8.0	54.5	1.6	0.1	0.6	56.8		17.0		100	1	0	26.5	0.6	27.3	
1351	0.28	7.9	55.8	1.9	0.2	0.7	58.6		16.6		100	1	0	25.5	1.0	26.6	
1352	0.45	7.6	104.0	1.4	0.2	0.6	106.2		15.9		100	1	0	19.0	0.3	19.3	4.7
1353	0.16	7.6	220.7	0.8	0.2	0.5	222.3		13.1		100	1	0	19.1	1.7	20.8	12.4

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1347	0.7	40	4.0	0.4	0.4	0.5	0.0	3.4	0.5	1.5	1.35	1.54	0.045		21.7	
1348	0.5	47	3.6	0.2	0.3	0.1	0.0	2.8	0.3	0.5	1.41	1.65	0.054		26.2	
1349	0.5	52	3.7	0.2	0.3	0.1	0.0	2.0	0.2	0.5	1.47	1.75	0.060		23.4	
1350	0.4	51	3.1	0.3	0.3	0.1	0.0	1.9	0.3	0.5	1.50	1.76	0.055		22.9	
1351	0.6	54	4.6	0.4	0.6	0.1	0.0	1.5	0.2	2.3						
1352	2.7	52	29.4	1.8	1.0	0.3	0.0	1.7	0.6	17.5						
1353	2.8	47	31.4	1.5	1.2	0.4	0.0	1.8	0.8	14.5						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1347												
1348												
1349												
1350												
1351												
1352												
1353												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: COY PEDON: S82TX-273-001 COUNTY: KLEBERG

PEDON CLASSIFICATION: VERTIC ARGIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM SOUTH JUNCTION OF US 77 AND US BUSINESS 77, 600 FT SE ON US 77, 450 FT SE IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R.B. SMITH DATE: 07/12/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP1	0-10	BLACK (10YR 2/1) SANDY CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO WEAK FINE GRANULAR STRUCTURE; FRIABLE; MILDLY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
AP2	10-41	BLACK (10YR 2/1) CLAY LOAM; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; DISCERNABLE POCKETS OF BT MATERIAL MIXED IN HORIZON; NEUTRAL; NONCALCAREOUS; ABRUPT BOUNDARY.
BT	41-68	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; PRESSURE FACES ON PED FACES; NEUTRAL; NONCALCAREOUS; CLEAR BOUNDARY.
BTK1	68-86	VERY DARK GRAY (10YR 3/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; PRESSURE FACES ON PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; MILDLY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
BTK2	86-117	DARK GRAY (10YR 4/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; DISCONTINUOUS VERY DARK GRAY (10YR 3/1) COATINGS ON PED FACES; COMMON CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
BCK	117-157	GRAYISH BROWN (10YR 5/2) CLAY; MANY FAINT DARK GRAY (10YR 4/1) AND FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; VERY DARK GRAY (10YR 3/1) STREAKS ON PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
CY	157-203	LIGHT GRAY (2.5Y 7/2) CLAY LOAM; STRUCTURELESS MASSIVE; FEW FINE BLACK CONCRETIONS; FEW FINE SELENITE CRYSTALS; MILDLY ALKALINE; CALCAREOUS.

REMARKS: AT TIME OF SAMPLING, SITE WAS PLANTED IN COTTON. COTTON ROOT ROT HAD KILLED ABOUT 20% OF THE COTTON IN THE FIELD. ISOLATED KILL AREAS WERE 30-40 FT IN DIAMETER AND WERE CIRCULAR TO OVAL IN SHAPE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: COY PEDON NUMBER: S82TX-273-001
SOIL FAMILY: VERTIC ARGIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1334	0- 10	AP1	0.0	0.0	0.7	30.1	26.2	57.0	6.1	17.1	11.9	25.9	SCL	0
1335	10- 41	AP2	0.0	0.0	0.7	24.3	21.2	46.2	9.8	18.0	22.3	35.8	SC	0
1336	41- 68	BT	0.1	0.0	0.5	17.6	14.9	33.1	8.0	17.7	38.6	49.2	C	0
1337	68- 86	BTK1	0.5	0.3	0.9	18.6	15.1	35.4	9.1	16.3	35.3	48.3	C	0
1338	86-117	BTK2	1.3	0.7	1.0	20.3	14.3	37.6	11.5	19.9	30.1	42.5	C	0
1339	117-157	BCK	0.3	0.2	0.6	17.4	16.0	34.5	16.2	26.2	28.1	39.3	CL	0
1340	157-203	CY	0.2	0.3	0.5	15.2	15.8	32.0	17.8	29.7	25.1	38.3	CL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1334	1.20	7.3	34.9	1.8	0.1	2.0	38.7		19.5		100	0	0	0.5	0.1	0.6	
1335	1.55	7.1	34.9	2.2	0.2	1.3	38.6		28.4		100	1	0	0.2	0.0	0.2	
1336	1.30	7.2	43.2	4.6	0.5	1.0	49.3		39.5		100	1	1	0.2	0.1	0.3	
1337	0.92	7.5	65.6	5.6	0.7	0.9	72.7		33.2		100	2	1	6.6	0.2	6.8	
1338	0.61	7.6	60.5	5.7	1.0	0.8	68.0		25.4		100	2	2	10.3	0.4	10.7	
1339	0.53	7.6	56.7	5.2	1.2	0.9	64.0		21.5		100	3	2	16.7	0.3	17.0	
1340	0.21	7.5	68.4	3.8	1.5	0.9	74.6		17.0		100	5	3	19.2	2.0	21.4	0.3

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1334	1.4	43	8.0	0.9	0.7	1.8	0.0	4.6	5.2	1.0						
1335	1.0	56	6.0	0.7	0.7	0.3	0.0	3.0	3.5	0.8	1.22	1.46	0.062		28.3	
1336	1.4	68	8.5	1.3	1.6	0.1	0.0	2.4	5.9	3.9	1.23	1.63	0.098		36.2	
1337	2.0	71	12.0	2.5	3.5	0.1	0.0	1.8	6.9	7.5	1.31	1.69	0.089		31.8	
1338	2.2	65	12.0	3.3	5.1	0.1	0.0	1.7	6.8	9.4	1.37	1.72	0.079		29.0	
1339	2.3	64	11.5	3.3	6.7	0.2	0.0	1.5	6.6	8.8						
1340	3.8	63	28.4	4.1	10.5	0.4	0.0	1.4	7.2	25.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1334												
1335												
1336												
1337												
1338												
1339												
1340												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CROCKETT PEDON: S82TX-289-031 COUNTY: LEON

PEDON CLASSIFICATION: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM JUNCTION OF FR 977 AND US 75 IN LEONA, 1.65 MI SE ON US 75; 0.04 MI E ON COUNTY ROAD; 1.3 MI SE ON PRIVATE ROAD; 125 FT E IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 91 SLOPE: 0-1% SLOPE ASPECT: S

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: COOK MOUNTAIN

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: NEITSCH, CASTILLE, JURENA, CHEVENKA, BROCKMANN, AND HALLMARK DATE: 04/08/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BROWN (10YR 4/3) LOAM; WEAK MEDIUM GRANULAR AND WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; FEW FINE PORES; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
BT1	15-48	RED (2.5YR 4/6) CLAY; MANY MEDIUM PROMINENT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON FINE ROOTS; FEW THIN CONTINUOUS CLAY FILMS; FEW FINE PORES; FEW FINE BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH A HORIZON MATERIAL; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BT2	48-75	BROWNISH YELLOW (10YR 6/6) CLAY; MANY MEDIUM PROMINENT RED (2.5YR 4/8) AND MANY MEDIUM DISTINCT GRAYISH BROWN (10YR 5/2) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE ROOTS; THIN CONTINUOUS CLAY FILMS; FEW FINE PORES; FEW FINE BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH A HORIZON MATERIAL; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BT3	75-125	BROWNISH YELLOW (10YR 6/8) CLAY LOAM; COMMON MEDIUM DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) AND FEW FINE FAINT STRONG BROWN (7.5YR 5/8) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; THIN CONTINUOUS CLAY FILMS; FEW FINE PORES; FEW BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH A HORIZON MATERIAL; NEUTRAL; GRADUAL SMOOTH BOUNDARY.
BK	125-180	BROWNISH YELLOW (10YR 6/8) CLAY LOAM; MANY MEDIUM DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) AND FEW FINE DISTINCT YELLOWISH RED (5YR 5/6) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; ABOUT 4% WHITE CALCIUM CARBONATE CONCRETIONS; MATRIX IS NONCALCAREOUS; CALCAREOUS IMMEDIATELY AROUND CONCRETIONS; MODERATELY ALKALINE; GRADUAL IRREGULAR BOUNDARY.
BW	180-200	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; MANY MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; MODERATE MEDIUM PRISMATIC STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; FEW FINE BLACK CONCRETIONS; ABOUT 2% WHITE CALCIUM CARBONATE CONCRETIONS; MATRIX IS NONCALCAREOUS; CALCAREOUS IMMEDIATELY AROUND CONCRETIONS; MODERATELY ALKALINE.

REMARKS: SOIL SAMPLED FROM BACKHOE PIT. THIS SOIL IS A COMPONENT OF WILSON-CROCKETT COMPLEX. SITE IS ABOUT 25 FEET FROM S82TX-289-032.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CROCKETT
SOIL FAMILY: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: LEON COUNTY, TEXAS

PEDON NUMBER: S82TX-289-031

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1314	0- 15	AP	1.1	0.8	1.8	20.1	25.4	49.2	9.6	32.4	13.7	18.4	L	0
1315	15- 48	BT1	1.2	0.9	1.2	10.4	13.3	27.0	12.5	26.8	40.1	46.2	C	0
1316	48- 75	BT2	1.1	0.6	1.4	12.3	15.1	30.5	14.0	30.6	32.3	38.9	CL	0
1317	75-125	BT3	1.1	0.4	1.4	12.7	16.0	31.6	17.3	35.6	26.0	32.8	CL	0
1318	125-180	BK	0.6	0.4	1.3	11.9	14.6	28.8	18.7	36.7	26.3	34.5	CL	0
1319	180-200	BW	0.2	0.3	1.2	12.4	14.9	29.0	17.5	35.0	27.9	36.0	CL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
1314	0.72	5.4	7.5	2.9	0.1	0.1	10.5	0.2	13.0	10.7	81	1					
1315	0.61	5.5	14.0	6.9	0.6	0.1	21.7		26.6		82	2					
1316	0.38	5.6	13.7	6.5	0.8	0.1	21.2		23.4		91	4					
1317	0.14	6.5	14.8	6.5	1.0	0.1	22.4		22.1		100	5					
1318	0.09	7.2	18.1	7.1	1.6	0.1	26.9		24.1		100	7					
1319	0.08	7.6	17.3	7.1	1.6	0.1	26.1		24.7		100	6					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1314											1.59	1.83	0.048		20.6	
1315											1.35	1.85	0.111		33.3	
1316											1.43	1.95	0.109		30.2	
1317											1.66	2.12	0.085		22.8	
1318											1.56	2.04	0.094		27.4	
1319											1.52	2.03	0.101		26.3	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1314	***				**		**					
1315												
1316	***				**		**					
1317												
1318												
1319	***				**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: CROCKETT TAXADJUNCT PEDON: S78TX-041-001 COUNTY: BRAZOS

PEDON CLASSIFICATION: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WEST CAMPUS, TEXAS A&M UNIVERSITY, 250 FT NW OF KLEBERG ANIMAL ANSD FOOD SCIENCE BUILDING.

LANDFORM: UPLAND ELEVATION (M): SLOPE: SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM OVER COASTAL PLAIN SEDIMENTS FORMATION: PLEISTOCENE ALLUVIUM AND YEGUA

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PASTURE

COLLECTORS: L. WILDING, B. HARRIS, T. SOBECKI AND K. KACY DATE: /00/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	VERY DARK GRAYISH BROWN (10YR 3/2) FINE SANDY LOAM, GRAYISH BROWN (10YR 5/2) DRY; STRUCTURELESS MASSIVE; EXTREMELY HARD; FRIABLE; COMMON FINE ROOTS; FEW ANGULAR PETRIFIED WOOD FRAGMENTS; LESS THAN 5% ROUNDED SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; CLEAR WAVY BOUNDARY.
IIB21T	13-46	DARK GRAYISH BROWN (10YR 4/2) CLAY, BROWN (10YR 5/3) DRY; COMMON FINE DISTINCT RED (2.5YR 4/8) AND COMMON FINE FAINT STRONG BROWN (7.5YR 5/8) MOTTLES; MODERATE VERY COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; MEDIUM VERY PATCHY CLAY FILMS ON PED FACES; LESS THAN 5% ROUNDED SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; CLEAR WAVY BOUNDARY.
IIB22T	46-84	OLIVE (5Y 5/3) CLAY, PALE OLIVE (5Y 6/3) DRY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE VERY COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; THIN VERY PATCHY CLAY FILMS ON PED FACES; CLAY FILMS IN PORES; SOME ROOTS FLATTENED ALONG STRUCTURE FACES; COMMON BLACK CONCRETIONS; LESS THAN 5% ROUNDED SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; CLEAR WAVY BOUNDARY.
IIB31TCA	84-97	OLIVE (5Y 5/3) CLAY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON SLICKENSIDES; COMMON BLACK CONCRETIONS; SAME PARALLELIPIPEDS; COMMON CARBONATE NODULES WITH POWDERY EXTERIORS AND HARD CRYSTALLINE INTERIORS; LESS THAN 5% SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; CLEAR WAVY BOUNDARY.
IIB32TCACS	97-127	OLIVE (5Y 5/3) CLAY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO COARSE SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; MANY SELENITE CRYSTALS; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON BLACK CONCRETIONS; MANY SALT NESTS AND INFILLINGS; SOME PARALLELIPIPEDS; CLEAR SMOOTH BOUNDARY.
IIB33CS	127-160	OLIVE (5Y 5/3) CLAY LOAM; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; MANY SELENITE CRYSTALS; THIN VERY PATCHY CLAY FILMS ON PED FACES; FEW BLACK CONCRETIONS; MANY SALT NESTS; CLEAR SMOOTH BOUNDARY.
IIIC1	160-191	OLIVE GRAY (5Y 5/2) SANDY CLAY; COMMON PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; VERY FIRM; FEW WEAK SLICKENSIDES; FE-MN STAINS ALONG BEDDING PLANES; ORGANIC STAINS ALONG BEDDING PLANES; DOMINATELY ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKS; GRADUAL SMOOTH BOUNDARY.
IIIC2	191-241	OLIVE GRAY (5Y 5/2) SANDY CLAY; COMMON PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; VERY FIRM; FE-MN STAINS ALONG BEDDING PLANES; DOMINATELY ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKS WITH LAMINATED BEDS 1-10 MM THICK.

REMARKS: PEDON WAS SAMPLED FROM A CONTINUOUS TRENCH. BECAUSE OF THE HIGH REACTION IN THE B21T HORIZON, THIS PEDON IS A TAXADJUNCT TO THE CROCKETT SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: CROCKETT TAXADJUNCT
SOIL FAMILY: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BRAZOS COUNTY, TEXAS

PEDON NUMBER: S78TX-041-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
501	0- 13	A1	0.9	0.9	2.7	17.9	29.9	52.3	11.5	36.9	6.8	10.8	VFSL	0
502	13- 46	IIB21T	1.1	0.8	1.6	11.5	18.8	33.8	11.6	26.6	30.4	39.6	CL	0
503	46- 84	IIB22T	1.0	1.2	1.9	12.6	20.1	36.8	5.8	20.5	28.7	42.7	C	0
504	84- 97	IIB31TCA	3.0	1.2	1.8	11.8	18.8	36.6	4.8	18.9	28.8	44.5	C	0
505	97-127	IIB32TCA	1.6	1.1	1.8	9.8	18.2	32.5	2.8	24.3	29.6	43.2	C	0
506	127-160	IIB33CS	0.1	0.1	0.3	6.1	16.6	23.2	2.9	41.6	20.6	35.2	CL	0
507	160-191	IIIC1	0.1	0.1	0.3	10.8	35.6	46.9	4.8	14.7	21.8	38.4	SC	0
508	191-216	IIIC2	0.0	0.1	0.3	10.1	36.5	47.0	4.8	14.2	22.4	38.8	SC	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
501	1.22	7.7	23.1	1.4	0.8	0.6	25.9		11.4		100	5	2	1.0	0.3	1.4	
502	0.47	7.8	23.0	6.6	1.4	1.2	32.2		26.5		100	4	2				
503	0.31	8.1	18.6	7.0	2.8	0.7	29.1		23.4		100	9	8				
504	0.25	8.1	23.0	6.9	3.5	0.5	33.9		24.9		100	10	7	0.2	0.3	0.6	0.0
505	0.22	7.8	102.7	6.2	4.2	0.3	113.4		23.9		100	11	6				4.6
506	0.14	7.8	234.7	6.0	4.2	0.3	245.2		23.0		100	11	6				13.0
507	0.06	7.7	30.9	6.1	4.5	0.4	41.9		23.7		100	12	6	0.2	0.4	0.7	0.3
508	0.07	7.6	22.9	5.9	4.4	0.4	33.6		24.0		100	12	5				0.2

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
501	1.9	35	11.5	1.8	5.5	1.1	0.0	5.9	3.7	8.4						
502	1.9	58	10.0	3.3	5.1	1.0	0.0	2.4	4.3	10.4						
503	1.5	58	3.8	1.5	13.1	0.3	0.0	2.9	3.1	7.9						
504	2.1	60	6.5	2.5	15.7	0.3	0.0	3.2	2.9	13.9						
505	4.8	58	27.0	7.4	25.2	0.2	0.0	2.1	6.4	52.3						
506	5.5	63	30.0	8.2	26.5	0.2	0.0	1.6	18.1	41.3						
507	5.4	66	29.0	8.2	23.9	0.2	0.0	1.8	18.4	43.0						
508	5.1	68	38.0	7.4	22.2	0.2	0.0	1.8	16.8	41.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
501												
502												
503												
504												
505												
506												
507												
508												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: DARCO VARIANT PEDON: S80TX-405-003 COUNTY: SAN AUGUSTINE

PEDON CLASSIFICATION: GROSSARENIC PALEUDULT; LOAMY, SILICEOUS, THERMIC

LOCATION: FROM INTERSECTION OF TEXAS 103 AND FR 1277, 2 MI S ON FR 1277 TO FOREST SERVICE ROAD, 0.5 MI E, 100 FT N IN FOREST

LANDFORM: BACKSLOPE ELEVATION (M): SLOPE: 10% SLOPE ASPECT: SW

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: YEGUA

TOPOGRAPHY: STRONGLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, GRAY, AND PETERS DATE: 08/12/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-10	DARK GRAYISH BROWN (10YR 4/2) FINE SAND; WEAK FINE GRANULAR STRUCTURE; LOOSE; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; SLIGHTLY ACID; CLEAR WAVY BOUNDARY.
A21	10-35	BROWN (10YR 5/3) FINE SAND; STRUCTURELESS SINGLE GRAIN; LOOSE; VERY FRIABLE; MANY FINE ROOTS; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
A22	35-90	PALE BROWN (10YR 6/3) FINE SAND; STRUCTURELESS SINGLE GRAIN; LOOSE; VERY FRIABLE; COMMON FINE ROOTS; MEDIUM ACID; CLEAR WAVY BOUNDARY.
A23&BT	90-113	PALE BROWN (10YR 6/3) FINE SAND; STRUCTURELESS SINGLE GRAIN; LOOSE; VERY FRIABLE; FEW FINE ROOTS; FEW THIN BROWNISH YELLOW (10YR 6/6) LAMELLA; MEDIUM ACID; CLEAR WAVY BOUNDARY.
A24	113-141	VERY PALE BROWN (10YR 7/3) FINE SAND; STRUCTURELESS SINGLE GRAIN; LOOSE; VERY FRIABLE; FEW FINE ROOTS; FEW FINE PORES; MEDIUM ACID; CLEAR WAVY BOUNDARY.
BT&A	141-160	BROWNISH YELLOW (10YR 6/6) FINE SANDY LOAM; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; ABOUT 10% INTERFINGERING OF PALE BROWN (10YR 6/3) A2 MATERIAL; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B21T	160-190	YELLOWISH RED (5YR 5/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT RED (2.5YR 4/6) AND MANY COARSE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; MODERATE VERY COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; PATCHY CLAY FILMS ON PED FACES; FEW FINE PORES; FEW VERTICAL SEAMS OF ALBIC MATERIAL ABOUT 2 MM THICK; STRONGLY ACID.

REMARKS: COMPOSITE THICKNESS OF LAMELLA IN A23&BT TOTALS ABOUT 2 CM. THE UPPER 18 CM OF THE ARGILLIC HORIZON SHOWS MARKED DEGRATION. A SAMPLE WAS TAKEN AT 266 CM DEPTH FOR BASE SATURATION. THIS PEDON IS CONSIDERED A VARIANT DUE TO THE DEGRATION OF THE UPPER BT HORIZON AND BECAUSE THE DARCO SERIES IS NOT TYPICALLY FOUND ON THE YEGUA GEOLOGY. ALSO, THE EXCHANGEABLE SODIUM LEVEL IS HIGHER THAN TYPICAL FOR THE DARCO SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: DARCO VARIANT — PEDON NUMBER: S80TX-405-003
SOIL FAMILY: GROSSARENIC PALEUDULT; LOAMY, SILICEOUS, THERMIC
LOCATION: SAN AUGUSTINE COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
903	0- 10	A1	0.1	0.3	30.0	47.3	9.3	87.0	6.0	11.5	1.4	1.5	S	
904	10- 35	A21	0.0	0.2	31.3	46.3	9.1	86.9	7.7	11.5	0.8	1.6	S	
905	35- 90	A22	0.0	0.1	28.5	49.4	9.8	87.8	6.4	11.3	0.8	0.9	S	
906	90-113	A23&BT	0.0	0.3	31.8	46.5	9.8	88.4	6.3	11.1	1.0	0.5	S	
907	113-141	A24	0.0	0.5	35.3	46.8	8.3	90.9	4.3	8.7	0.0	0.4	S	
908	141-160	BT&A	0.0	0.2	25.8	41.8	5.8	73.6	5.5	8.4	5.9	18.0	FSL	
909	160-190	B21T	0.0	0.2	22.1	43.5	4.4	70.2	3.6	6.7	11.2	23.1	SCL	
910	261-273	B3												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
903	0.83	5.8	1.5	0.2	0.1	0.1	1.9	0.7	7.5	2.6	25	1					
904	0.30	5.3	0.1	0.2	0.2	0.1	0.6	0.2	4.6	0.8	13	4					
905	0.07	5.0	0.1	0.0	0.1	0.1	0.3	0.2	2.4	0.5	13	4					
906	0.05	5.0	0.1	0.0	0.1	0.1	0.3	0.3	1.3	0.6	23	8					
907	0.04	5.0	0.1	0.0	0.1	0.1	0.3	0.3	1.0	0.6	30	10					
908	0.08	5.1	0.2	0.2	0.1	0.2	0.7	0.4	7.0	1.1	10	1					
909	0.08	4.9	1.4	0.5	0.2	0.2	2.3	0.3	9.5	2.6	24	2					
910			2.4	1.5	0.2	0.2	4.3		9.1		47	2					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
903																
904																
905																
906																
907																
908																
909																
910																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
903												
904												
905												
906												
907												
908												
909												
910												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: DENHAWKEN TAXADJUNCT PEDON: S82TX-273-005 COUNTY: KLEBERG

PEDON CLASSIFICATION: VERTIC USTOCHREPT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF US 77 AND COUNTY ROAD E2130, 4.0 MI E ON COUNTY ROAD, 60 FT S IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/13/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-18	VERY DARK GRAY (10YR 3/1) CLAY; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK FINE GRANULAR STRUCTURE; FIRM; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
BW	18-43	GRAYISH BROWN (10YR 5/2) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; DARK GRAY (10YR 4/1) COATINGS ALONG CRACKS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK	43-79	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; DARK GRAY (10YR 4/1) COATINGS ALONG CRACKS; FEW MEDIUM CALCIUM CARBONATE SEGREGATIONS; FEW FINE FE-MN STAINS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
B'W1	79-155	PALE BROWN (10YR 6/3) CLAY; COMMON FINE FAINT LIGHT YELLOWISH BROWN (10YR 6/4) AND FEW FINE FAINT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
B'W2	155-208	PALE BROWN (10YR 6/3) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; FEW BLACK CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
CY	208-229	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE FAINT GRAYISH BROWN (2.5Y 5/2) MOTTLES; STRUCTURELESS MASSIVE; FIRM; FEW BLACK CONCRETIONS; COMMON GYPSUM SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: VERY FEW PRESSURE FACES NOTED IN PEDON AND NO SLICKENSIDES WERE FOUND. THE SITE WAS PLANTED IN COTTON AND COTTON ROOT ROT WAS NOT EVIDENT. SOLUM THICKNESS IS OUTSIDE RANGE OF SERIES AS PRESENTLY DEFINED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: DENHAWKEN TAXADJUNCT — PEDON NUMBER: S82TX-273-005
SOIL FAMILY: VERTIC USTOCHREPT; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1360	0- 18	AP	0.1	0.1	0.2	13.0	19.2	32.6	10.6	25.6	21.1	41.8	C	0
1361	18- 43	BW	0.1	0.0	0.2	10.5	14.8	25.6	13.6	26.1	30.8	48.3	C	0
1362	43- 79	BK	0.1	0.0	0.1	9.5	13.5	23.2	13.3	25.2	31.3	51.6	C	0
1363	79-155	B'W1	0.1	0.0	0.1	8.1	12.0	20.3	14.4	26.3	33.5	53.4	C	0
1364	155-208	B'W2	0.2	0.2	0.2	7.4	11.1	19.1	14.0	28.1	36.0	52.8	C	0
1365	208-229	CY	0.1	0.1	0.2	6.9	10.1	17.4	12.8	34.7	36.7	47.9	C	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1360	0.77	8.0	51.5	4.7	0.2	2.4	58.8		28.7		100	1	0	2.5	0.7	3.4	
1361	0.35	7.9	52.3	7.2	0.7	1.5	61.7		26.7		100	2	2	15.9	0.3	16.2	
1362	0.23	8.2	50.7	10.2	2.1	1.6	64.6		27.7		100	6	6	17.5	0.2	17.7	
1363	0.23	8.7	50.0	13.6	6.0	1.9	71.5		29.8		100	17	17	16.3	0.3	16.6	
1364	0.22	7.9	79.2	11.7	8.7	1.9	101.6		27.5		100	15	12	13.2	0.6	14.0	0.0
1365	0.19	7.7	228.4	10.0	8.4	1.6	248.5		24.9		100	16	13	7.5	0.9	8.4	12.7

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1360	0.6	57	2.7	0.6	0.6	0.4	0.0	2.9	0.6	0.5	1.29	1.55	0.063		34.4	
1361	0.4	82	1.4	0.6	1.8	0.2	0.0	2.6	0.4	0.6	1.24	1.67	0.104		37.8	
1362	0.5	91	0.5	0.3	3.9	0.1	0.0	3.1	0.2	1.2	1.27	1.80	0.123		38.1	
1363	0.8	132	0.2	0.2	7.4	0.1	0.0	3.6	0.7	2.1	1.29	1.84	0.126		38.1	
1364	6.8	95	21.0	12.3	47.8	0.7	0.0	1.4	3.8	50.0						
1365	7.6	81	23.0	13.2	53.9	0.7	0.0	1.5	7.0	52.5						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1360												
1361												
1362												
1363												
1364												
1365												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: DENTON PEDON: S82TX-099-001 COUNTY: CORYELL

PEDON CLASSIFICATION: TYPIC CALCIUSTOLL; FINE-SILTY, CARBONATIC, THERMIC

LOCATION: FROM JUNCTION OF TEXAS 36 AND FR 929, 8.6 MI E AND N ON FR 929 TO INTERSECTION WITH COUNTY ROAD; 0.3 MI E ON FR 929, 85 FT N IN CULTIVATED FIELD.

LANDFORM: UPLAND ELEVATION (M): 305 SLOPE: 2% SLOPE ASPECT:

PARENT MATERIALS: MARL AND LIMESTONE FORMATION: LOWER WASHITA GROUP

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: N. MCCALEB, D. WILLIAMSON, L. KINIRY, L. BROCKMANN, AND G. LANE DATE: 01/21/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	DARK BROWN (7.5YR 3/2) SILTY CLAY; MODERATE FINE AND VERY FINE GRANULAR STRUCTURE; VERY FRIABLE; PLASTIC; FEW MEDIUM ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A	15-33	DARK BROWN (7.5YR 3/2) SILTY CLAY; MODERATE FINE AND VERY FINE SUBANGULAR BLOCKY STRUCTURE; FIRM; PLASTIC; FEW FINE ROOTS; MANY PRESSURE FACES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW SMALL SLICKENSIDES LESS THAN 25 MM ACROSS FORMING WEDGE-SHAPED PEDS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
BW	33-48	DARK REDDISH BROWN (5YR 3/4) SILTY CLAY; MODERATE FINE AND VERY FINE ANGULAR BLOCKY STRUCTURE; FIRM; PLASTIC; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MANY PRESSURE FACES FORMING WEDGE-SHAPED PEDS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
2BK	48-91	REDDISH YELLOW (7.5YR 6/6) SILT LOAM; WEAK MEDIUM AND FINE SUBANGULAR BLOCKY STRUCTURE; FIRM; PLASTIC; FEW FINE ROOTS; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; COMMON MEDIUM STRONG BROWN (7.5YR 5/6) MASSES; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; CLEAR IRREGULAR BOUNDARY.
2CK	91-132	STRONG BROWN (7.5YR 5/6) LOAMY EARTH; MASSIVE; WITH 5% MASSES OF REDDISH YELLOW (7.5YR 6/6) BK MATERIAL; 10% BY VOLUME LIMESTONE FRAGMENTS 1 TO 8 INCHES ACROSS AND 2 TO 4 INCHES THICK; 25% LARGE SOFT MASSES AND DISCONTIN OF CALCIUM CARBONATE; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
R	142-178	INDURATED SLIGHTLY WEATHERED LIMESTONE BEDROCK; INTERBEDDED WITH MARL OR CHALKY LIMESTONE AT VERTICAL INTERVALS OF 6 TO 12 INCHES; MATERIAL HAS MAINLY TIGHT (<0.25 INCH) FRACTURES AND COULD NOT BE EXCAVATED WITH BACKHOE MACHINE.

REMARKS: THIS IS THE NEW SITE LOCATION FOR THE DENTON SERIES. THE SECTION FROM 43-59 CM WAS RESAMPLED IN AN ATTEMPT TO BETTER DEFINE THE FAMILY PARTICLE-SIZE CLASS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: DENTON — PEDON NUMBER: S82TX-099-001
SOIL FAMILY: TYPIC CALCIUSTOLL; FINE-SILTY, CARBONATIC, THERMIC
LOCATION: CORYELL COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1303	0- 15	AP	0.3	0.2	0.1	0.4	1.6	2.6	30.1	44.4	7.1	53.0	SIC	0
1304	15- 33	A	0.2	0.3	0.2	0.8	2.0	3.5	28.6	39.7	23.1	56.8	C	0
1305	33- 48	BW	0.4	0.4	0.3	1.3	2.5	5.0	30.5	41.6	27.4	53.5	SIC	0
1306	48- 91	2BK	2.8	1.6	1.8	5.1	6.4	17.8	40.6	59.0	11.6	23.9	SIL	0
1307	91-132	2CK	1.7	1.2	1.4	5.5	7.9	17.7	46.2	66.4	6.6	15.9	SIL	0
514	43- 59	B & 2BK	0.2	0.2	0.5	2.3	3.4	6.4	45.0	60.3	17.1	33.3	SICL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM
			MEQ/100G														
1303	1.91	7.8	86.1	1.6	0.1	1.3	89.1		52.6		100	0		7.1	3.9	11.3	
1304	1.64	8.0	81.5	1.1	0.1	0.8	83.4		47.2		100	0		15.2	2.2	17.6	
1305	1.50	8.2	74.5	0.8	0.1	0.6	76.0		38.9		100	0		26.5	1.1	27.7	
1306	0.42	8.2	50.0	0.2	0.0	0.2	50.4		13.7		100	0		71.9	1.8	73.9	
1307	0.74	8.2	45.8	0.2	0.0	0.1	46.1		8.2		100	0		79.1	1.0	80.1	
514																	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1303																
1304											1.23	1.81	0.138		36.6	
1305											1.32	1.77	0.103		32.6	
1306											1.47	1.59	0.030		21.7	
1307																
514																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1303	***		T		**		**					
1304												
1305	***		T		**		**					
1306												
1307	***		T		**		**					
514												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: DIMEBOX PEDON: S82TX-289-030 COUNTY: LEON

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM FARM RD 977 AND US 75 IN LEONA, 1.65 MI S ON US 75; 1.7 MI W ON COUNTY RD TO INTERSECTION WITH ANOTHER COUNTY RD; 0.4 MI S THEN 400 FT W ON COUNTY RD; 250 FT S IN MEADOW.

LANDFORM: UPLAND ELEVATION (M): 104 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: COOK MOUNTAIN (EOCENE)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: MEADOW

COLLECTORS: NEITSCH, CASTILLE, JURENA, CHERVENKA, BROCKMANN AND HALLMARK DATE: 04/08/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-10	VERY DARK GRAY (10YR 3/1) SILTY CLAY; STRONG FINE ANGULAR BLOCKY PARTING TO STRONG FINE GRANULAR STRUCTURE; VERY FIRM; MANY FINE ROOTS; MANY FEW PORES; SLIGHTLY ACID; GRADUAL WAVY BOUNDARY.
A2	10-85	BLACK (2.5Y 2/0) CLAY; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; MANY FINE ROOTS; FEW SLICKENSIDES; MANY FEW PORES; 1% IRONSTONE GRAVEL; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BW	85-125	VERY DARK GRAY (10YR 3/1) CLAY; COMMON MEDIUM DISTINCT LIGHT OLIVE BROWN (2.5Y 5/4) AND COMMON FINE DISTINCT OLIVE (5Y 4/3) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON FINE ROOTS; COMMON FEW PORES; A DISCONTINUOUS 5 CM WIDE BAND OF OLIVE BROWN (2.5Y 4/4) IS PRESENT; SLICKENSIDE WITH VERTICAL AXIS TILTING 10-60 DEGREES FROM HORIZINTAL; COMMON PARALLELEPIPEDS PRESENT; 2% IRONSTONE GRAVEL 3 TO 20 MM IN DIAMETER; FEW NODULES OF CALCIUM CARBONATE; MATRIX IS NONCALCAREOUS; NEUTRAL; CLEAR BOUNDARY.
BK	125-180	OLIVE YELLOW (2.5Y 6/6) CLAY; COMMON FINE DISTINCT GRAY (10YR 5/1) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON FINE ROOTS; FEW VERY FINE PORES; INTERSECTING SLICKENSIDES TILTED 10-60 DEGREES FROM HORIZONTAL; COMMON PARALLELEPIPEDS PRESENT; 3% IRONSTONE GRAVEL 5-30 MM IN DIAMETER; ABOUT 8% CONCRETIONS OF CALCIUM CARBONATE; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
BC	180-210	LIGHT GRAY (10YR 6/1) CLAY; MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) AND COMMON MEDIUM DISTINCT VERY PALE BROWN (10YR 7/3) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE ROOTS; FEW VERY FINE PORES; COMMON SLICKENSIDES; FEW CARBONATE NODULES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	210-230	BROWNISH YELLOW (10YR 6/8) CLAY; COMMON MEDIUM DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE PLATY PARTING TO MODERATE MEDIUM PLATY STRUCTURE; VERY FIRM; FEW FINE ROOTS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AT TYPE LOCATION. THE DESCRIPTION REPRESENTS MORE THAN HALF OF THE EXPOSED FACE. SOIL HAS WELL EXPRESSED GILGAI RELIEF; 53% OF THE AREA IS IN MICRO-LOW POSITION AND 47% IS IN THE MICRO-HIGH POSITION. THE MICRO-HIGH IS THE PROTRUDING CALCAREOUS BK HORIZON. APPROXIMATELY 10% A MATERIAL IS PRESENT IN FILLED CREVICES WITHIN THE BK HORIZON. IN SOME POCKETS OF THE BK HORIZON, CACO3 NODULES ARE 20% BY VOLUME.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: DIMEBOX
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: LEON COUNTY, TEXAS

PEDON NUMBER: S82TX-289-030

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1308	0- 10	A1	0.2	0.2	0.3	2.6	4.9	8.2	22.5	45.5	29.8	46.3	SIC	
1309	10- 85	A2	0.3	0.2	0.3	2.5	5.8	9.1	25.5	35.1	38.5	55.8	C	
1310	85-125	BW	0.9	0.6	0.5	3.8	8.2	14.0	19.9	33.8	40.2	52.2	C	
1311	125-180	BK	2.5	1.7	0.9	2.5	4.9	12.5	22.0	31.7	39.9	55.8	C	
1312	180-210	BC	0.1	0.0	0.0	0.2	0.8	1.1	20.2	26.1	35.0	72.8	C	
1313	210-230	C	1.9	1.0	0.3	1.0	1.6	5.8	20.6	26.2	25.3	68.0	C	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG	NA	K	TOTAL	KCL EXTR NAOAC AL MEQ/100G	CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM
1308	5.16	4.8	34.0	7.2	0.2	0.7	42.0	0.1	48.6	42.1	86	0		0.0	0.0	0.0	
1309	2.14	5.9	42.2	5.9	0.2	0.2	48.5		49.3		98	0		0.0	0.0	0.0	
1310	0.79	6.6	37.5	5.5	0.2	0.2	43.5		41.8		100	1		0.0	0.1	0.1	
1311	0.24	8.2	70.1	7.0	0.3	0.2	77.7		40.3		100	1		12.1	1.1	13.3	
1312	0.14	7.6	43.3	7.5	0.2	0.4	51.5		43.7		100	1		0.2	0.0	0.2	
1313	0.07	7.8	75.3	8.2	0.3	0.5	84.4		47.0		100	1		6.7	1.3	8.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1308											1.02	1.74	0.195		50.3	
1309											1.17	1.94	0.184		39.0	
1310											1.32	1.95	0.139		33.7	
1311											1.39	1.97	0.123		30.9	
1312											1.17	1.92	0.180		42.8	
1313																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1308	***				**		**					
1309												
1310	***				**		**					
1311												
1312												
1313	***				**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ECKRANT VARIANT PEDON: S81TX-171-001 COUNTY: GILLESPIE

PEDON CLASSIFICATION: LITHIC HAPLUSTOLL; CLAYEY-SKELETAL, MONTMORILLONITIC, THERMIC

LOCATION: ROGER DITTMAR RANCH; APPROX. 13 MI W OF FREDERICKSBURG ON RT 290; S ONTO DITTMAR RANCH AND FOLLOW ROAD PAST RESIDENCE APPROX. 1 MI TO HILL TOP; PEDON SAMPLED 100 FT E OF ROAD (SHEET 41, SOIL SURVEY REPORT).

LANDFORM: SUMMIT ELEVATION (M): 630 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: HARD DOLOMITIC LIMESTONE FORMATION: FT TERRET MEMBER (EDWARDS)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WEST AND T. MOORE DATE: 08/19/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-8	VERY DARK BROWN (10YR 2/2) SILTY CLAY LOAM; WEAK FINE AND VERY FINE GRANULAR STRUCTURE; VERY FRIABLE; MANY FINE ROOTS; MILDLY ALKALINE; CLEAR SMOOTH BOUNDARY.
A12	8-20	VERY DARK BROWN (10YR 2/2) STONY SILTY CLAY; MODERATE VERY FINE GRANULAR STRUCTURE; VERY FRIABLE; MANY FINE ROOTS; 80% COARSE FRAGMENTS; MILDLY ALKALINE; CLEAR WAVY BOUNDARY.
R1	20-28	HARD DOLOMITIC LIMESTONE BEDROCK; SOME CALCAREOUS BROWNER MATERIAL PRESENT IN SOME FRACTURES (<5%); CLEAR SMOOTH BOUNDARY.
R2	28-43	WHITE (10YR 8/1) LIMESTONE BEDROCK.

REMARKS: THIS SITE CONTAINED A NUMBER OF CHERT AND LIMESTONE FRAGMENTS ON THE SOIL SURFACE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ECKRANT VARIANT
SOIL FAMILY: LITHIC HAPLUSTOLL; CLAYEY-SKELETAL, MONTMORILLONITIC, THERMIC
LOCATION: GILLESPIE COUNTY, TEXAS

PEDON NUMBER: S81TX-171-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1273	0- 8	A11	0.4	0.9	1.6	2.9	2.9	8.7	29.2	56.8	8.4	24.5	SICL	5
1274	8- 20	A12	1.0	1.2	2.1	3.0	1.4	8.7	27.0	48.0	17.7	43.3	SIC	80
1275	20- 28	R1												0
1276	28- 43	R2												0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1273	5.47	7.5	48.3	14.1	0.1	2.4	64.9		54.7		100	0	0				
1274	4.95	7.5	61.4	14.5	0.1	1.4	77.4		57.3		100	0	0				
1275																	
1276	3.39													43.2	53.8	99.9	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1273	0.7	82	5.5	2.4	0.1	0.4	0.0	6.0	1.4	0.4	0.99	1.75	0.209		57.1	
1274	0.9	85	7.0	2.7	0.2	0.1	0.0	7.0	0.0	0.1						
1275																
1276																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1273												
1274												
1275												
1276												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ECKRANT VARIANT PEDON: S81TX-265-001 COUNTY: KERR

PEDON CLASSIFICATION: LITHIC HAPLUSTOLL; CLAYEY, MONTMORILLONITIC, THERMIC

LOCATION: BLACK BULL RANCH; 10 MI W ON RT 41 FROM INTERSECTION WITH RT 27; AFTER ENTERING BLACK BULL RANCH TAKE PASTURE ROAD E 1.3 MI FROM THE ENTRANCE ROAD. SITE IS 232 YARDS N OF RT 41.

LANDFORM: SUMMIT ELEVATION (M): 700 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: SOFT LIMESTONE FORMATION: SEGOVIA MEMBER (EDWARDS)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WEST AND T. MOORE DATE: 08/19/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-5	VERY DARK BROWN (10YR 2/2) SILTY CLAY; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
A12	5-20	VERY DARK BROWN (10YR 2/2) SILTY CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; NEUTRAL; ABRUPT SMOOTH BOUNDARY.
R&A13	20-33	VERY DARK BROWN (10YR 2/2) VERY COBBLY CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; HARD; MANY FINE ROOTS; APPROXIMATELY 50% LIMESTONE FRAGMENTS HAVING A HORIZONTAL ORIENTATION IN THE PEDON; A FEW VEINS OF BROWNER MATERIAL LIKE THE UNDERLYING HORIZON PRESENT; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
R&BCA	33-43	DARK YELLOWISH BROWN (10YR 4/4) VERY COBBLY CLAY; WEAK FINE SUBANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; SOFT; FEW FINE ROOTS; APPROXIMATELY 70% LIMESTONE FRAGMENTS SHOWING HORIZONATAL ORIENTATION; VIOLENTLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
R	43-61	WHITE (10YR 8/1) SOFT LIMESTONE BEDROCK.

REMARKS: WHILE THIS PEDON CONTAINED A ZONE OF BROWNER MATERIAL WITHIN THE ZONE OF ROCK FRAGMENTS, SOME SOILS IN THE VICINITY WERE OBSERVED TO HAVE CALCAREOUS CAMBIC HORIZONS ABOVE THE ROCK MATERIAL. THIS SOIL IS LIKE THE ECKRANT EXCEPT THAT IT LACKS THE ABUNDANCE OF COARSE FRAGMENTS IN THE UPPER HORIZONS; THE BROWNER CAMBIC-LIKE MATERIAL AT 33-43 CM IS ALSO ATYPICAL FOR ECKRANT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ECKRANT VARIANT — PEDON NUMBER: S81TX-265-001
SOIL FAMILY: LITHIC HAPLUSTOLL; CLAYEY, MONTMORILLONITIC, THERMIC
LOCATION: KERR COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1267	0- 5	A11	0.1	0.2	0.5	1.0	1.2	3.0	32.7	54.3	18.2	42.7	SIC	1
1268	5- 20	A12	0.2	0.4	0.4	1.0	0.7	2.7	26.3	41.3	32.3	56.0	SIC	0
1269	20- 33	R&A13	1.3	1.0	0.9	1.1	1.1	5.4	25.9	38.6	26.8	56.0	C	57
1270	33- 43	R&BCA	6.1	4.3	3.0	2.5	1.9	17.8	23.8	29.3	16.8	52.9	C	66
1271	43- 52	R UPPER												0
1272	52- 61	R LOWER												0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG MEQ/100G	NA MEQ/100G	K MEQ/100G	TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
1267	3.41	7.0	41.0	3.5	0.1	2.2	46.9		42.4		100	0	0				
1268	2.57	7.0	46.9	3.5	0.1	1.7	52.2		48.9		100	0	0				
1269	4.08	7.2	78.3	3.9	0.2	1.1	83.6		53.1		100	0	0	7.9	1.7	9.5	
1270	2.74	7.5	65.0	3.2	0.3	0.6	69.1		35.2		100	1	1	51.0	2.8	54.0	
1271	2.60															95.4	
1272	2.60															92.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1267	0.5	77	4.5	0.6	0.2	0.5	0.0	1.3	0.5	0.5						
1268	0.4	86	3.7	0.4	0.2	0.2	0.0	2.2	0.5	0.1	1.08	1.79	0.183		53.5	
1269	0.8	88	7.7	0.7	0.4	0.1	0.0	2.6	9.8	0.1						
1270	1.2	70	9.0	1.0	1.3	0.1	0.0	4.7	2.7	0.4						
1271																
1272																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1267												
1268												
1269												
1270												
1271												
1272												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ECTOR VARIANT PEDON: S81TX-271-001 COUNTY: KINNEY

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, THERMIC, SHALLOW

LOCATION: 300 FT N OF RT 2523; APPROX 2.2 MI E (ALONG 2523) FROM THE VAL VERDE COUNTY LINE; 0.4 MI E OF RANCH GATE (SHEET 17, SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): 380 SLOPE: 0-1% SLOPE ASPECT: E

PARENT MATERIALS: LIMESTONE FORMATION: POSSIBLY THE SALMON PEAK

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, C. GIRDNER AND J. STEVENS DATE: 07/20/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	VERY DARK GRAYISH BROWN (10YR 3/2) STONY SILT LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; WEAK FINE GRANULAR PARTING TO WEAK MEDIUM GRANULAR STRUCTURE; SOFT; COARSE FRAGMENTS ARE MOSTLY SHATTERED FLAGS OF PETROCALCIC MATERIAL ORIENTED MAINLY HORIZONTALLY AND HAVE PENDANTS OF SECONDARY CARBONATE ON THE LOWER SIDE; MANY FINE ROOTS IN UPPER 1 CM AND AT THE CCAM CONTACT, OTHERWISE MANY MEDIUM ROOTS; 60% COARSE FRAGMENTS; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
C1CAM	13-26	WHITE (10YR 8/1, DRY) INDURATED CARBONATE MATERIAL; NUMEROUS THIN SEQUENCES OF LAMINAE OVERLYING MORE MASSIVE CEMENTED CARBONATE; MAXIMUM THICKNESS OF LAMINAR MATERIAL LESS THAN 1 CM; THIS LAYER CONTAINED SOME INTERCONNECTING VOIDS WITH A DENDRITIC PATTERN WHICH ARE INCOMPLETELY FILLED WITH ROOTS AND A1 MATERIAL; CLEAR WAVY BOUNDARY.
C2CAM	26-43	WHITE (10YR 8/2, DRY) TO PINKISH WHITE (7.5YR 8/2, DRY) SEQUENCES OF LAMINAE OVERLYING MORE MASSIVE CEMENTED CARBONATE; CLEAR SMOOTH BOUNDARY.
C3CAM	43-53	WHITE (10YR 8/1, DRY) INDURATED CARBONATE MATERIAL; STRUCTURELESS MASSIVE; SOMEWHAT SOFTER THAN ABOVE, CAN BE CUT WITH A SPADE WITH DIFFICULTY.
C4CAM	53-75	WHITE (10YR 8/1, DRY) INDURATED CARBONATE MATERIAL; STRUCTURELESS MASSIVE; SOFTER THAN ABOVE, CAN BE CUT EASILY WITH A SPADE.

REMARKS: TOPOGRAPHIC SURFACE OF UNDERLYING LIMESTONE IS VERY IRREGULAR; A LARGE MASSIVE LIMESTONE BOULDER WAS EXPOSED AT THE SURFACE 1 METER FROM THE PIT WHILE NO HARD LIMESTONE WAS ENCOUNTERED WITHIN 75 CM IN THE PIT. MOST OF THE COARSE FRAGMENTS ON THE SURFACE WERE PETROCALCIC MATERIAL ALTHOUGH SOME HARD LIMESTONE BOULDERS WERE ALSO OBSERVED. THIS PEDON WAS ASSSOCIATED WITH AREAS OF DEEPER SOILS CONTAINING LITTLE OR NO COARSE FRAGMENTS AT THE SURFACE SUGGESTING LOCALIZD AREAS OF INWASH. THE UPPER LAMINAR SURFACE OF THE C1CAM CONTAINED A NUMBER OF FRACTURES IN AN EXPOSED AREA OF ROUGHLY 2 SQUARE FEET. UPPER SURFACE OF THE C1CAM WAS VERY HARD AND MAY EASILY BE MISTAKEN FOR LIMESTONE BEDROCK. BECAUSE OF THIS, THE SOILS OF THIS AREA HAVE BEEN MISTAKENLY MAPPED AS ECTOR. THIS PEDON IS SIMILAR TO THE KIMBROUGH SOIL MAPPED IN THE COUNTY EXCEPT THAT THE PEDON IS IN A SKELETAL PARTICLE SIZE FAMILY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ECTOR VARIANT — PEDON NUMBER: S81TX-271-001
SOIL FAMILY: PETROCALCIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, THERMIC, SHALLOW
LOCATION: KINNEY COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1213	0- 13	A1	7.4	2.5	1.7	2.9	10.2	24.7	25.7	53.2	4.1	22.1	SIL	76
1214	13- 26	CCAM1												0
1215	26- 43	CCAM2												0
1216	43- 53	CCAM3												0
1217	53- 75	CCAM4												0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	BASE ESP	BASE SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL	MEQ/100G			%			%			
1213	3.90	7.3	69.2	1.7	0.1	0.8	71.8		38.2		100	0	0	19.8	4.1	24.3	
1214	3.74															94.4	
1215	3.74															96.8	
1216	3.74															88.4	
1217	3.74															95.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC	CM/CM		WT%		
1213	0.7	59	5.7	0.5	0.5	0.2	0.0	4.9	1.2	0.3						
1214																
1215																
1216																
1217																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1213	***		*		**		**	T				
1214												
1215												
1216												
1217												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: EDGE PEDON: S81TX-287-002 COUNTY: LEE

PEDON CLASSIFICATION: UDIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM INTERSECTION OF FR 696 AND FR 619 IN NW LEE COUNTY, 3 MI E ON FR 696; N ON COUNTY ROAD 1.5 MI; THEN 0.2 MI E; 0.7 MI N; 0.6 MI W; 0.3 MI N; 0.1 MI W; THEN S 0.4 MI IN PASTURE.

LANDFORM: BACKSLOPE ELEVATION (M): 135 SLOPE: 2% SLOPE ASPECT: SW

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: CALVERT BLUFF (WILCOX GROUP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: CRENWELGE, GREENWADE, LANE, CHERVENKA, BROCKMANN, HALLMARK, WEST DATE: 12/15/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-10	PALE BROWN (10YR 6/3) FINE SANDY LOAM, VERY PALE BROWN (10YR 7/3) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE ROOTS; FEW FINE SILICEOUS PEBBLES; STRONGLY ACID; ABRUPT SMOOTH BOUNDARY.
BT1	10-30	DARK RED (2.5YR 3/6) CLAY, RED (2.5YR 4/6) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; DARK RED (2.5YR 3/6) COATINGS ON PED'FACES; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT2	30-56	YELLOWISH RED (5YR 5/6) CLAY LOAM, REDDISH YELLOW (5YR 6/6) DRY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; RED (2.5YR 5/6) COATINGS ON PED FACES; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT3	56-74	STRONG BROWN (7.5YR 5/6, DRY) CLAY LOAM; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; DARK RED (2.5YR 3/6) COATINGS ON PED FACES; FEW FINE MASSES OF WHITE SALTS (BASO4); STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT4	74-122	STRONG BROWN (7.5YR 5/6, DRY) SANDY CLAY LOAM; COMMON FINE DISTINCT PALE BROWN (10YR 6/3) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE SEGREGATIONS; FEW FINE MASSES OF WHITE SALTS (BASO4); MILDLY ALKALINE; GRADUAL WAVY BOUNDARY.
2BC	122-132	YELLOWISH RED (5YR 5/6, DRY) FINE SANDY LOAM; MANY MEDIUM DISTINCT LIGHT BROWN (7.5YR 6/4) MOTTLES; STRUCTURELESS MASSIVE; VERY HARD; FRIABLE; MILDLY ALKALINE; ABRUPT SMOOTH BOUNDARY.
2C	132-158	VERY PALE BROWN (10YR 7/4, DRY) LOAMY FINE SAND; STRUCTURELESS MASSIVE; VERY HARD; FRIABLE; STRATA OF LOAMY FINE SAND ABOUT 1 CM THICK PRESENT; MILDLY ALKALINE; ABRUPT SMOOTH BOUNDARY.
3C1	158-193	LIGHT GRAY (5Y 7/1, DRY) SHALY CLAY; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; EXTREMELY HARD; VERY FIRM; PLATY ROCK STRUCTURE; MILDLY ALKALINE; ABRUPT SMOOTH BOUNDARY.
3C2	193-215	LIGHT GRAY (5Y 7/1, DRY) SHALY CLAY; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) AND COMMON MEDIUM DISTINCT WHITE (10YR 8/1) MOTTLES; EXTREMELY HARD; VERY FIRM; PLATY ROCK STRUCTURE; MILDLY ALKALINE.

REMARKS: PEDON WAS SAMPLED AS THE ROSANKY SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: EDGE
SOIL FAMILY: UDIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: LEE COUNTY, TEXAS

PEDON NUMBER: S81TX-287-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1198	0- 10	A	0.5	0.6	3.0	20.9	36.1	61.1	7.5	29.0	5.5	9.9	VFSL	0
1199	10- 30	BT1	0.1	0.3	1.6	8.4	15.8	26.2	7.5	23.3	42.1	50.5	C	0
1200	30- 56	BT2	0.1	0.2	0.9	6.8	31.3	39.3	8.4	26.5	27.2	34.2	CL	0
1201	56- 74	BT3	0.0	0.1	0.7	4.9	37.7	43.4	7.2	28.6	18.7	28.0	CL	0
1202	74- 99	BT4	0.0	0.2	0.9	11.9	43.4	56.4	6.1	22.2	14.1	21.4	SCL	0
1203	99-122	BT4	0.0	0.2	1.6	10.2	45.3	57.3	6.0	23.9	11.5	18.8	VFSL	0
1204	122-132	2BC	0.0	0.8	6.4	61.1	13.9	82.2	2.3	5.5	8.8	12.3	FSL	0
1205	132-158	2C	0.1	1.8	19.4	52.0	12.1	85.4	2.5	4.9	6.1	9.7	LFS	0
1206	158-193	3C1	0.0	0.1	0.6	7.7	15.1	23.5	22.0	41.9	8.7	34.6	CL	0
1207	193-215	3C2	0.0	0.0	0.2	3.8	9.4	13.4	26.4	50.4	7.5	36.2	SICL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1198	0.47	6.3	2.2	1.4	0.1	0.2	3.9		5.3		74	2					
1199	0.42	5.1	8.9	7.5	0.7	0.4	17.5	4.6	23.1	22.1	76	3					
1200	0.29	4.8	7.8	6.1	0.9	0.3	15.1	2.4	17.1	17.5	89	5					
1201	0.26	6.7	11.6	6.8	1.3	0.3	20.0		15.7		100	9					
1202	0.11	7.2	9.4	5.1	1.5	0.3	16.3		12.5		100	12					
1203	0.08	7.5	7.3	4.9	1.5	0.3	14.1		12.1		100	13					
1204	0.06	7.4	4.1	2.1	1.0	0.1	7.4		6.8		100	15					
1205	0.07	7.3	3.6	1.8	1.0	0.1	6.6		5.4		100	19					
1206	0.08	7.0	14.9	7.2	4.6	0.5	27.2		23.0		100	20					
1207	0.07	6.9	13.8	7.7	4.7	0.5	26.6		23.1		100	20					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1198											1.59	1.68	0.019		19.9	
1199											1.40	1.82	0.091		28.8	
1200											1.59	1.88	0.058		20.8	
1201											1.57	1.86	0.057		20.8	
1202											1.52	1.68	0.034		17.3	
1203											1.49	1.69	0.043		20.8	
1204											1.57	1.72	0.031		17.7	
1205											1.56	1.67	0.022		9.9	
1206											1.39	1.78	0.085		29.5	
1207											1.31	1.72	0.097		32.8	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1198	**		*		**		**			***	*	
1199												
1200	**		*		**		**			***	*	
1201												
1202												
1203												
1204	**		*		**		**			***	*	
1205												
1206												
1207												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: FALBA PEDON: S83TX-185-001 COUNTY: GRIMES

PEDON CLASSIFICATION: TYPIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM THE JUNCTION OF TEXAS 30 AND TEXAS 90 IN ROANS PRAIRIE, 1.9 MI W ON TEXAS 30, 0.1 MI N AND E ON COUNTY ROAD, 150 FT N OF ROAD IN PASTURE.

LANDFORM: SIDESLOPE ELEVATION (M): SLOPE: 2% SLOPE ASPECT: SE

PARENT MATERIALS: TUFFACEOUS SILTSTONE FORMATION: CATAHOULA

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: IMPROVED PASTURE

COLLECTORS: GREENWADE, CRENWELGE, SCHLAPPI, SMITH, HALLMARK AND WEST DATE: 04/07/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BROWN (10YR 5/3) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; MANY ROOTS; MANY PORES; STRONGLY ACID; ABRUPT SMOOTH BOUNDARY.
BTG1	15-35	DARK GRAYISH BROWN (10YR 4/2) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; COMMON ROOTS; COMMON DISCONTINUOUS CLAY FILMS ON PED FACES; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
BTG2	35-61	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; COMMON FINE ROOTS; CLAY FILMS ON PED FACES; STRONGLY ACID; CLEAR WAVY BOUNDARY.
BTG/C	61-75	DARK GRAYISH BROWN (10YR 4/2) CLAY; COMMON MEDIUM DISTINCT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON THIN VERY DARK GRAY (10YR 3/1) CLAY FILMS; ABOUT 60% OF THE HORIZON IS BT MATERIAL AND 40% IS C MATERIAL; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
CR1	75-94	LIGHT YELLOWISH BROWN (10YR 6/4) TUFFACEOUS SILTSTONE; EXTREMELY FIRM; FEW FINE ROOTS ALONG BEDDING PLANES; FEW DARK CLAY FLOWS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
CR2	94-120	LIGHT GRAY (2.5Y 7/2) TUFFACEOUS SILTSTONE; FEW MEDIUM PROMINENT YELLOWISH BROWN (10YR 5/8) MOTTLES; FEW CLAY FILMS ALONG BEDDING PLANES; FEW FINE SEGREGATIONS OF BARITE; VERY STRONGLY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: FALBA
SOIL FAMILY: TYPIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: GRIMES COUNTY, TEXAS

PEDON NUMBER: S83TX-185-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1637	0- 15	AP	0.6	4.8	19.7	38.2	14.0	77.3	4.7	16.5	3.1	6.2	LS	0
1638	15- 35	BTG1	0.4	2.3	8.5	15.3	6.7	33.2	8.7	14.9	45.3	51.9	C	0
1639	35- 61	BTG2	0.5	3.2	9.1	16.2	6.9	35.9	9.9	16.0	40.8	48.1	C	0
1640	61- 75	BTG&C	1.1	2.4	6.1	27.6	8.6	45.8	13.9	17.2	16.1	37.0	SC	0
1641	75- 94	CR1	0.5	1.2	2.3	25.8	8.9	38.7	13.8	18.5	12.6	42.8	C	0
1642	94-120	CR2	0.6	0.7	3.0	36.9	5.3	46.5	10.3	13.8	9.6	39.7	SC	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1637	0.50	4.1	0.8	0.4	0.0	0.1	1.3	0.3	3.4	1.6	38	0	1				
1638	0.52	4.3	9.5	5.7	1.6	0.3	17.1	4.1	30.3	21.1	56	5	7				
1639	0.51	4.0	8.9	5.5	1.8	0.3	16.4	3.0	27.5	19.4	60	6	5				
1640	0.40	4.1	10.1	6.1	2.9	0.2	19.3	1.7	29.3	21.0	66	9	7				
1641	0.22	4.0	12.6	7.4	3.9	0.3	24.2	1.2	33.1	25.3	73	9	8				
1642	0.13	4.1	10.8	6.6	3.4	0.2	21.0	0.7	27.2	21.8	77	9	8				

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1637	0.8	30	2.5	1.1	0.8	0.2	0.0	0.2	0.3	9.0	1.54	1.67	0.027		15.9	
1638	0.3	54	0.1	0.0	1.5	0.0	0.0	0.1	0.5	1.0	1.26	1.93	0.153		36.1	
1639	0.4	71	0.4	0.1	2.7	0.0	0.0	0.0	1.8	1.4	1.34	2.01	0.145		33.3	
1640	1.2	57	1.3	0.7	7.3	0.1	0.0	0.3	7.3	1.8	1.23	1.29	0.016		30.5	
1641	2.2	64	3.2	1.8	12.4	0.1	0.0	0.1	14.4	5.3	1.19	1.31	0.033		30.1	
1642	2.9	59	4.7	2.9	15.8	0.2	0.0	0.1	0.1	10.5	1.45	1.54	0.020		19.8	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1637	***				**		**					
1638	***				**		*					
1639												
1640												
1641												
1642	***				**		T					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: FETZER TAXADJUNCT PEDON: S83TX-473-001 COUNTY: WALLER

PEDON CLASSIFICATION: AQUIC PALEUDALF; FINE, MIXED, THERMIC (SEE REMARKS)

LOCATION: FROM THE INTERSECTION OF FR 362 AND FM 1488, 8.7 MI E ON FM 1488, 3.1 MI S ON JOSEPH ROAD, 0.5 MI S ON ROBIN HOOD LANE, 100 FT W OF ROAD IN WOODLAND.

LANDFORM: FOOTSLOPE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: WILLIS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: PINE FOREST

COLLECTORS: GREENWADE, SCHLAPPI, SMITH, BROCKMANN, CHERVENKA, AND HALLMARK DATE: 06/22/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	LIGHT BROWNISH GRAY (10YR 6/2) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
E1	15-60	LIGHT BROWN (7.5YR 6/4) LOAMY FINE SAND; STRUCTURELESS SINGLE GRAIN; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
E2	60-77	LIGHT BROWN (7.5YR 6/4) LOAMY FINE SAND; COMMON MEDIUM FAINT REDDISH YELLOW (7.5YR 6/6) MOTTLES; STRUCTURELESS SINGLE GRAIN; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
E/B	77-92	PINK (7.5YR 7/4) LOAMY FINE SAND; COMMON MEDIUM FAINT REDDISH YELLOW (7.5YR 6/6) MOTTLES; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
BT1	92-103	LIGHT GRAY (10YR 7/2) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) AND FEW MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE ROOTS; FEW CLAY BRIDGES BETWEEN SAND GRAINS; FEW THIN PATCHY CLAY FILMS ON PED FACES; EXTREMELY ACID; CLEAR WAVY BOUNDARY.
BT2	103-135	GRAYISH BROWN (10YR 5/2) CLAY LOAM; MANY COARSE PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE ROOTS; MANY MEDIUM CONTINUOUS GRAY (10YR 5/1) CLAY FILMS ON VERTICAL PED FACES; MANY THIN CONTINUOUS CLAY FILMS ON HORIZONTAL PED FACES; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
BT3	135-160	LIGHT GRAY (10YR 7/2) CLAY LOAM; COMMON COARSE PROMINENT REDDISH BROWN (2.5YR 4/4) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE ROOTS; MANY THICK CONTINUOUS GRAY (10YR 5/1) CLAY FILMS ON VERTICAL PED FACES; MANY MEDIUM CONTINUOUS CLAY FILMS ON HORIZONTAL PED FACES; EXTREMELY ACID.

REMARKS: SAMPLING PIT WAS OPENED TO A DEPTH OF 170 CM. A SAMPLE WAS OBTAINED BY AUGER AT THE 210-220 CM DEPTH FOR BASE SATURATION ANALYSIS. SOIL WAS SAMPLED AT THE TYPE LOCATION FOR THE SERIES. THE PEDON IS CONSIDERED A TAXADJUNCT OF THE FETZER SERIES DUE TO FINE RATHER THAN FINE-LOAMY PARTICLE-SIZE FAMILY PLACEMENT. SUBGROUP PLACEMENT WOULD BE AN AQUIC ARENIC PALEUDALF IF THE SUBGROUP EXISTED IN SOIL TAXONOMY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: FETZER TAXADJUNCT
SOIL FAMILY: AQUIC PALEUDALF; FINE, MIXED, THERMIC
LOCATION: WALLER COUNTY, TEXAS

PEDON NUMBER: S83TX-473-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1740	0- 15	A	2.0	2.2	12.7	43.6	17.9	78.4	7.5	19.4	1.5	2.2	LFS	0
1741	15- 60	E1	0.3	2.5	13.5	46.2	18.2	80.7	6.7	16.9	1.0	2.4	LFS	0
1742	60- 77	E2	0.2	2.5	13.4	46.4	18.0	80.5	6.5	16.7	1.5	2.9	LFS	0
1743	77- 92	E/B	0.7	3.2	15.9	43.9	16.1	79.8	5.2	14.9	3.4	5.3	LFS	0
1744	92-103	BT1	0.7	2.8	13.9	24.3	8.9	50.6	4.7	11.7	29.5	37.7	SC	0
1745	103-135	BT2	0.4	1.6	10.6	27.6	10.6	50.8	6.5	12.4	30.9	36.8	SC	0
1746	135-160	BT3	0.7	1.2	9.0	29.5	11.9	52.3	6.7	14.7	27.1	33.0	SCL	0
1747	210-220		0.1	0.6	7.8	40.9	15.5	64.9	4.7	11.1	17.2	24.0	SCL	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLOMITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1740	1.32	4.4	0.9	0.1	0.0	0.1	1.1	0.2	4.9	1.3	22	0					
1741	0.16	5.1	0.1	0.0	0.0	0.3	0.4	0.1	1.1	0.5	36	0					
1742	0.16	5.0	0.1	0.0	0.0	0.0	0.1	0.2	1.1	0.3	9	0					
1743	0.36	5.0	0.2	0.1	0.0	0.0	0.3	0.4	1.8	0.7	17	0					
1744	0.11	4.6	1.2	0.8	0.2	0.2	2.5	5.1	14.1	7.6	17	1					
1745	0.07	4.6	1.5	2.2	0.3	0.2	4.2	5.2	15.6	9.3	27	2					
1746	0.19	4.7	1.8	2.8	0.5	0.2	5.3	5.0	15.0	10.3	35	3					
1747	0.10	4.1	3.4	2.6	0.7	0.1	6.7	2.9	13.7	9.6	49	5					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1740											1.52	1.55	0.007		19.5	
1741											1.69	1.69	0.000		6.4	
1742											1.69	1.69	0.000		11.3	
1743											1.65	1.68	0.006		7.1	
1744											1.46	1.62	0.035		26.2	
1745											1.61	1.75	0.028		20.6	
1746											1.66	1.79	0.025		17.0	
1747																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1740		T			*		***					
1741												
1742												
1743												
1744	*				**		**					
1745												
1746												
1747	***				**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: FETZER VARIANT PEDON: S83TX-185-005 COUNTY: GRIMES

PEDON CLASSIFICATION: AQUIC PALEUDALF; COARSE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF FR 2 AND FR 362, 0.3 MI S ON FM 362, 3.8 MI E ON DYER MILL ROAD, 0.3 MI S ON COUNTY ROAD, 0.1 MI E ON LOGGING TRAIL, 30 FT N OF TRAIL IN WOODLAND.

LANDFORM: FOOTSLOPE ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT:

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: WILLIS

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: GREENWADE, SCHLAPPI, SMITH, BROCKMANN, CHERVENKA, AND HALLMARK DATE: 06/22/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-20	BROWN (10YR 5/3) FINE SANDY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
E	20-60	PALE BROWN (10YR 6/3) FINE SANDY LOAM, VERY PALE BROWN (10YR 7/3) DRY; COMMON MEDIUM DISTINCT BROWN (7.5YR 5/4) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; MEDIUM ACID; CLEAR WAVY BOUNDARY.
E/BT	60-100	LIGHT BROWNISH GRAY (10YR 6/2) FINE SANDY LOAM; COMMON MEDIUM PROMINENT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE AND MEDIUM ROOTS; FEW CLAY FILMS IN PORES; FEW THIN PATCHY CLAY FILMS ON PED FACES; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT1	100-132	LIGHT GRAY (10YR 7/1) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT BROWN (7.5YR 5/4) AND FEW MEDIUM PROMINENT REDDISH BROWN (5YR 5/4) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE AND MEDIUM ROOTS; COMMON CLAY FILMS IN PORES; FEW MEDIUM PATCHY CLAY FILMS ON PED FACES; COMMON FINE BLACK CONCRETIONS; BRITTLE BODIES WHICH EXCLUDE ROOTS OCCUPY ABOUT 35-40% OF HORIZON; COMMON VESICULAR PORES; COMMON FE-MN STAINS; EXTREMELY ACID; CLEAR WAVY BOUNDARY.
BT2	132-156	STRONG BROWN (7.5YR 5/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT LIGHT GRAY (10YR 7/1) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON FINE AND MEDIUM ROOTS; COMMON MEDIUM PATCHY CLAY FILMS ON PED FACES; COMMON MEDIUM BLACK CONCRETIONS; EXTREMELY ACID.

REMARKS: PEDON IS A VARIANT OF THE FETZER SERIES BASED ON THE TEXTURE OF THE EPIPEDON (NON-ARENIC) AND THE PLACEMENT AS COARSE-LOAMY RATHER THAN FINE-LOAMY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: FETZER VARIANT
PEDON NUMBER: S83TX-185-005
SOIL FAMILY: AQUIC PALEUDALF; COARSE-LOAMY, SILICEOUS, THERMIC
LOCATION: GRIMES COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1735	0- 20	A	0.5	6.6	21.7	29.6	11.5	69.9	12.4	25.1	1.4	5.0	FSL	0
1736	20- 60	E	0.5	5.0	16.2	28.9	12.2	62.8	19.0	31.8	1.6	5.4	FSL	0
1737	60-100	E/BT	0.8	6.7	19.6	25.4	9.1	61.6	19.9	30.5	2.0	7.9	FSL	0
1738	100-132	BT1	0.8	7.1	19.8	23.8	7.7	59.2	21.7	30.1	4.0	10.7	FSL	0
1739	132-156	BT2	2.2	13.0	30.3	14.0	2.8	62.3	7.0	8.6	19.6	29.1	SCL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES				KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G							%			%			
1735	0.29	6.0	1.2	0.1	0.1	0.2 1.6		2.2		73	5					
1736	0.13	5.3	0.5	0.1	0.0	0.1 0.7	0.1	1.8	0.8	39	0					
1737	0.11	4.8	0.5	0.1	0.0	0.0 0.6	0.4	2.1	1.0	29	0					
1738	0.09	5.1	0.7	0.2	0.1	0.1 1.1	0.4	3.0	1.5	37	3					
1739	0.15	5.0	2.8	1.9	0.7	0.1 5.6	1.0	10.2	6.6	54	7					

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1735											1.69	1.71	0.004		11.5	
1736											1.72	1.75	0.006		12.1	
1737											1.82	1.82	0.000		11.3	
1738											1.82	1.82	0.000		10.9	
1739											1.80	1.90	0.018		14.7	

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1735			*		**		**					
1736												
1737												
1738	T		*		**		**					
1739	*		*		***		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: FREESTONE PEDON: S82TX-449-001 COUNTY: TITUS

PEDON CLASSIFICATION: GLOSSAQUIC PALEUDALF; FINE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE JUNCTION OF LOOP 271 AND OLD PARIS ROAD NW OF MT. PLEASANT, 1.2 MI W ON OLD PARIS ROAD; 200 FT S OF ROAD IN PASTURE.

LANDFORM: UPLAND ELEVATION (M): 135 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: WILCOX GROUP

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: IMPROVED PASTURE

COLLECTORS: HALLMARK, BRUBAKER, LANE, FOX, DOUGLASS, AND ROBERTS DATE: 08/02/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	DARK BROWN (10YR 3/3) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; FRIABLE; MANY FINE ROOTS; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
E	13-28	YELLOWISH BROWN (10YR 5/4) LOAM; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; LOOSE; FRIABLE; COMMON FINE ROOTS; SLIGHTLY ACID; CLEAR WAVY BOUNDARY.
BT	28-48	YELLOWISH BROWN (10YR 5/6) LOAM; FEW FINE PROMINENT YELLOWISH RED (5YR 5/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON FINE ROOTS; MANY FINE PORES; THIN PATCHY CLAY FILMS; FEW FINE BLACK CONCRETIONS; SLIGHTLY ACID; GRADUAL WAVY BOUNDARY.
BT/E1	48-68	YELLOWISH BROWN (10YR 5/6) LOAM; COMMON FINE PROMINENT RED (2.5YR 4/8) AND FEW FINE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; MANY FINE PORES; THIN PATCHY CLAY FILMS; STREAKS OF LIGHT BROWNISH GRAY (10YR 6/2) UNCOATED SAND ON SURFACES OF PEDS AND IN ROOT CHANNELS 1-5 MM THICK OCCUPYING ABOUT 5-8% OF THE VOLUME; MEDIUM ACID; CLEAR WAVY BOUNDARY.
BT/E2	68-99	GRAYISH BROWN (10YR 5/2) CLAY; MANY PROMINENT RED (2.5YR 4/8) AND MANY DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; FEW INTERSECTING SLICKENSIDES; STREAKS OF LIGHT BROWNISH GRAY (10YR 6/2) UNCOATED SAND MAKE UP ABOUT 5-8% OF THE VOLUME; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT1	99-127	RED (2.5YR 4/8) CLAY; MANY PROMINENT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW PATCHY CLAY FILMS; FEW STREAKS OF UNCOATED SAND ALONG THE SURFACE OF SOME PRISMS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT2	127-160	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; COMMON FINE PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW PATCHY CLAY FILMS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
C1	160-185	LIGHT BROWNISH GRAY (10YR 6/2) SHALY CLAY; COMMON MEDIUM PROMINENT YELLOWISH RED (5YR 5/8) AND COMMON FINE DISTINCT STRONG BROWN (7.5YR 5/8) MOTTLES; MODERATE FINE AND MEDIUM PLATY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW BARITE CRYSTALS BETWEEN MAJOR BEDDING PLANES; MANY FINE MICA FLAKES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
2C2	185+	STRATIFIED LIGHT BROWNISH GRAY (10YR 6/2) SHALE AND YELLOWISH BROWN (10YR 5/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES IN THE SHALE; WEAK FINE AND COARSE PLATY STRUCTURE; VERY HARD; FIRM; VERY STRONGLY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: FREESTONE
SOIL FAMILY: GLOSSAQUIC PALEUDALF; FINE-LOAMY, SILICEOUS, THERMIC
LOCATION: TITUS COUNTY, TEXAS

PEDON NUMBER: S82TX-449-001

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1410	0- 13	AP	0.2	0.4	0.9	27.6	21.4	50.5	18.6	43.2	3.0	6.3	FSL	0
1411	13- 28	E	0.3	0.4	0.9	25.8	20.1	47.5	19.6	42.2	4.9	10.3	L	0
1412	28- 48	BT	0.1	0.3	0.6	21.4	18.0	40.4	17.2	37.4	13.5	22.2	L	0
1413	48- 68	BT/E1	0.4	0.2	0.6	20.7	17.4	39.3	16.4	34.0	16.2	26.7	L	0
1414	68- 99	BT/E2	0.5	0.3	0.4	11.2	8.4	20.8	13.4	21.7	44.5	57.5	C	0
1415	99-127	BT1	0.1	0.1	0.4	13.4	8.3	22.3	17.9	25.9	33.7	51.8	C	0
1416	127-160	BT2	0.1	0.1	0.8	21.8	9.7	32.5	18.3	25.0	21.2	42.5	C	0
1417	160-185	C1	0.0	0.1	0.2	5.3	4.5	10.1	31.1	37.4	18.4	52.5	C	0
1418	185-216	2C2	0.1	0.1	1.3	43.8	12.0	57.3	10.8	16.7	11.4	26.0	SCL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								%			%			
1410	2.37	6.0	4.9	0.7	0.0	0.3	5.9		6.3		94	0					
1411	0.30	6.2	3.1	0.4	0.0	0.2	3.7		4.5		82	0					
1412	0.29	6.2	5.2	1.5	0.1	0.3	7.1		8.4		84	1					
1413	0.23	5.7	3.8	3.0	0.2	0.2	7.1		9.1		79	2					
1414	0.24	4.7	4.7	8.7	0.6	0.4	14.5	5.6	24.9	20.1	58	3					
1415	0.17	4.7	5.3	9.9	0.7	0.4	16.4	4.1	24.4	20.5	67	3					
1416	0.16	4.9	5.0	9.5	0.8	0.3	15.6	2.6	20.3	18.2	77	4					
1417	0.15	4.8	8.5	15.1	1.4	0.4	25.4	1.8	28.2	27.2	90	5					
1418	0.11	4.8	4.3	7.5	0.8	0.2	12.8	0.6	14.2	13.5	91	6					

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1410											1.56	1.65	0.019		20.3	
1411											1.54	1.63	0.019		15.1	
1412											1.49	1.64	0.032		20.7	
1413											1.52	1.66	0.030		21.2	
1414											1.29	1.82	0.122		36.9	
1415											1.34	1.82	0.107		33.9	
1416											1.42	1.67	0.056		28.6	
1417											1.30	1.76	0.106		36.9	
1418											1.44	1.55	0.025		26.0	

LAB NO	CLAY MINERALOGY								SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1410	T		*		**		**			***	T	
1411												
1412												
1413	*		*		**		**			***	T	
1414												
1415												
1416												
1417												
1418	***		*		**		**			***	*	

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: GESSNER VARIANT PEDON: S78TX-201-001 COUNTY: HARRIS

PEDON CLASSIFICATION: TYPIC GLOSSAQUALF; FINE-SILTY, SILICEOUS, THERMIC

LOCATION: APPROXIMATELY 29 DEG, 50 MIN, 10 SEC N AND 95 DEG, 36 MIN, 40 SEC W.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: MONTGOMERY

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: SOBECKI, VEPRASKAS, RIVERS, DREES, AND G. CRENWELGE DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-11	GRAYISH BROWN (10YR 5/2) SILT LOAM, LIGHT GRAY (10YR 6/1) DRY; WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; CLEAR SMOOTH BOUNDARY.
A12	11-24	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM, LIGHT GRAY (10YR 6/1) DRY; FEW FINE FAINT STRONG BROWN (7.5YR 5/8) MOTTLES; WEAK MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON ROOTS; GRADUAL SMOOTH BOUNDARY.
A&B	24-63	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM, LIGHT BROWNISH GRAY (10YR 6/2) DRY; COMMON FINE DISTINCT STRONG BROWN (7.5YR 5/8) AND COMMON FINE DISTINCT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW ROOTS; COMMON SMALL KROTOVINAS; THIN CONTINUOUS CLAY FILMS ALONG ROOT CHANNELS; CLEAR WAVY BOUNDARY.
B21TG	63-120	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM; COMMON MEDIUM DISTINCT REDDISH YELLOW (7.5YR 6/8) AND MANY FINE DISTINCT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; COMMON KROTOVINAS; THIN CONTINUOUS CLAY FILMS IN PORES; THIN PATCHY CLAY FILMS ON PED FACES; CLEAR WAVY BOUNDARY.
B22TG	120-156	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) AND COMMON FINE DISTINCT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO STRONG COARSE ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW ROOTS; FEW PRESSURE FACES; THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; THICK CONTINUOUS GRAY (10YR 5/1) GRAINY COATS ON PED FACES; CLEAR WAVY BOUNDARY.
IIB23TG	156-230	LIGHT GRAY (10YR 6/1) LOAM; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRONG COARSE ANGULAR BLOCKY STRUCTURE; FIRM; COMMON MEDIUM BLACK CONCRETIONS; THIN CONTINUOUS CLAY FILMS IN PORES; THICK CONTINUOUS GRAY (10YR 5/1) GRAINY COATS ON PED FACES; CLEAR BOUNDARY.
IIB31T	230-310	LIGHT GRAY (2.5Y 7/2) CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; MODERATE COARSE ANGULAR BLOCKY PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON BLACK CONCRETIONS; THIN CONTINUOUS CLAY FILMS IN PORES; CLEAR BOUNDARY.
IIB32	310-361	LIGHT GRAY (5Y 7/2) SILT LOAM; COMMON COARSE PROMINENT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE BLACK CONCRETIONS; CLEAR BOUNDARY.
IIIB33	361-404	LIGHT GRAY (5Y 7/2) SILTY CLAY LOAM; COMMON MEDIUM PROMINENT YELLOWISH RED (5YR 5/8) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; THIN VERY PATCHY CLAY FILMS ON PED FACES; CLEAR BOUNDARY.
IIIC	404-434	LIGHT GRAY (5Y 7/2) SILTY CLAY; MANY COARSE PROMINENT YELLOWISH RED (5YR 4/8) MOTTLES; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON PRESSURE FACES.

REMARKS: THE IIB23TG WAS SUBDIVEDED AT 156-186 AND 186-230 CM FOR SAMPLING.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: GESSNER VARIANT
SOIL FAMILY: TYPIC GLOSSAQUALF; FINE-SILTY, SILICEOUS, THERMIC
LOCATION: HARRIS COUNTY, TEXAS

PEDON NUMBER: S78TX-201-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
616	0- 11	A11	0.0	0.4	1.1	8.9	23.0	33.4	25.0	55.7	3.8	10.9	SIL	0
617	11- 24	A12	0.0	0.1	0.8	8.1	17.1	26.1	34.1	61.2	4.7	12.7	SIL	0
618	24- 63	A&B	0.0	0.3	0.8	5.9	14.2	21.2	36.0	60.8	7.7	18.0	SIL	0
619	63- 91	B21TG-1	0.0	0.3	0.8	4.5	14.5	20.1	28.6	54.0	16.2	25.9	SIL	0
620	91-120	B21TG-2	0.0	0.1	0.3	4.8	13.3	18.5	27.6	53.5	19.0	28.0	SICL	0
621	120-156	B22TG	0.0	0.4	0.5	6.3	13.9	21.1	24.4	49.8	19.9	29.1	OCL	0
622	156-186	IIB23TG1	0.2	0.5	0.9	9.7	18.7	29.8	17.4	46.1	17.8	24.1	L	0
623	186-230	IIB23TG2	0.1	0.1	0.8	7.8	21.3	30.1	17.3	43.2	18.6	26.7	L	0
624	230-310	IIB31T	0.1	0.1	0.6	2.7	26.8	30.3	15.1	42.4	19.8	27.3	CL	0
625	310-361	IIB32	0.0	0.0	0.1	2.5	21.2	23.8	11.2	50.5	14.6	25.7	SIL	0
626	361-404	IIIB33	0.0	0.0	0.1	0.8	5.7	6.6	20.8	61.6	17.3	31.8	SICL	0
627	404-434	IIIC	0.0	0.0	0.2	0.4	2.6	3.2	25.0	48.0	23.5	48.8	SIC	0
628	-		0.0	0.0	0.1	0.5	0.9		17.6				-10	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	BASE ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
616	1.25	5.0	3.6	0.8	0.2	0.2	4.8		8.3		58	2					
617	0.54	5.1	2.5	0.8	0.0	0.1	3.4		7.4		46	0					
618	0.49	5.0	4.3	0.9	0.4	0.1	5.7		9.9		58	4					
619	0.37	5.1	6.3	1.0	0.5	0.0	7.8		15.7		50	3					
620	0.30	5.1	10.5	1.2	0.7	0.2	12.6		17.3		73	4					
621	0.15	6.2	10.7	1.4	1.2	0.0	13.3		18.6		72	6					
622	0.06	7.2	13.8	1.2	1.0	0.2	16.2		18.4		88	5					
623	0.08	7.6	11.3	1.3	1.1	0.1	13.8		19.8		70	6					
624	0.00	7.9	13.1	1.6	0.9	0.1	15.7		23.4		67	4					
625	0.00	8.1	13.7	1.5	0.7	0.2	16.1		22.1		73	3					
626	0.00	7.8	16.6	2.0	0.8	0.3	19.7		27.8		71	3					
627	0.00	7.7	20.4	2.9	0.8	0.5	24.6		38.1		65	2					
628									34.2								

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
616	0.5											1.60				
617	0.4											1.70				
618	0.3											1.70				
619	0.2											1.90				
620	0.1															
621	0.3											2.10				
622	0.4											2.10				
623	0.6															
624	0.6											2.00				
625	0.7											1.90				
626	0.8															
627	0.6															
628																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
616	***				*		**					
617												
618	***				*		**					
619												
620												
621												
622	***				*		**					
623												
624	***				*		**					
625												
626	***				T		**					
627												
628												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: GOMERY PEDON: S83TX-185-004 COUNTY: GRIMES

PEDON CLASSIFICATION: ARENIC HAPLUDULT; LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF TEXAS 30 AND TEXAS 90 IN ROANS PRAIRIE, 1.9 MI N ON TEXAS 90, 0.3 MI W ON COUNTY ROAD, 0.1 MI N, 100 FT E IN WOODS.

LANDFORM: SUMMIT ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT:

PARENT MATERIALS: SANDSTONE FORMATION: WHITSETT (JACKSON GROUP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: GREENWADE, CRENWELGE, SCHLAPPI, SMITH, HALLMARK AND WEST DATE: 04/08/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	BROWN (10YR 4/3) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; COMMON PORES; 4CM OF PINE LITTER ON SURFACE; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
E1	15-35	YELLOWISH BROWN (10YR 5/4) LOAMY FINE SAND; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
E2	35-46	BROWN (10YR 5/3) LOAMY FINE SAND; COMMON MEDIUM FAINT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
E3	46-60	PALE BROWN (10YR 6/3) LOAMY FINE SAND; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; STRONGLY ACID; CLEAR WAVY BOUNDARY.
BT	60-77	BROWN (10YR 5/3) SANDY CLAY LOAM; COMMON COARSE DISTINCT YELLOWISH BROWN (10YR 5/8) AND COMMON MEDIUM FAINT GRAYISH BROWN (10YR 5/2) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; THIN PATCHY CLAY FILMS ON PED FACES; THIN CONTINUOUS CLAY FILMS IN PORES; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
BTG1	77-110	LIGHT GRAY (10YR 7/1) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) AND MANY MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW SILICEOUS PEBBLES; THIN PATCHY CLAY FILMS ON VERTICAL PED FACES; THIN CONTINUOUS CLAY FILMS IN PORES; LIGHT GRAY (10YR 7/1) IS MAINLY ALONG VERTICAL PRISM FACES; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
BTG2	110-154	LIGHT GRAY (10YR 7/1) SANDY CLAY LOAM; COMMON MEDIUM PROMINENT RED (2.5YR 4/6) AND FEW MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW SILICEOUS PEBBLES; THIN PATCHY CLAY FILMS ON VERTICAL PED FACES; THIN CONTINUOUS CLAY FILMS IN PORES; LIGHT GRAY (10YR 7/1) IS MAINLY ALONG VERTICAL PED FACES; THIN (1 CM) LAYER OF DECAYED ROOTS ALONG CONTACT WITH THE CR; EXTREMELY ACID; ABRUPT SMOOTH BOUNDARY.
CR	154+	LIGHT GRAY (10YR 7/1) WEAKLY CONSOLIDATED SANDSTONE; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; HARD TO CHIP WITH SPADE; EXTREMELY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: GOMERY — PEDON NUMBER: S83TX-185-004
SOIL FAMILY: ARENIC HAPLUDULTS; LOAMY, SILICEOUS, THERMIC
LOCATION: GRIMES COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1657	0- 15	A	2.0	17.0	34.9	23.0	5.7	82.6	7.1	14.0	1.6	3.4	LS	0
1658	12- 35	E1	3.1	18.3	32.5	21.2	5.1	80.2	8.0	15.7	2.2	4.1	LS	0
1659	35- 46	E2	2.8	18.2	30.6	22.0	5.5	79.1	9.3	16.6	1.7	4.4	LS	0
1660	46- 60	E3	3.5	18.0	29.4	21.1	5.5	77.5	9.7	16.3	2.6	6.2	LS	0
1661	60- 77	BT	4.9	18.0	24.9	15.6	3.5	66.9	6.3	11.1	15.6	22.0	SCL	0
1662	77-110	BTG1	5.9	21.0	24.8	15.2	3.1	70.0	5.1	7.3	16.1	22.7	SCL	0
1663	110-154	BTG2	3.6	16.0	22.9	25.1	2.1	69.7	2.3	3.0	20.1	27.3	SCL	0
1664	154-158	CR												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1657	0.60	5.0	0.5	0.0	0.0	0.1	0.6	0.0	2.7	0.6	22	0					
1658	0.22	5.2	0.0	0.0	0.0	0.0	0.0	0.1	1.9	0.1	0	0					
1659	0.11	5.3	0.0	0.0	0.0	0.0	0.0	0.0	1.5	0.0	0	0					
1660	0.10	5.3	1.4	0.3	0.0	0.1	1.8	0.0	1.8	1.8	100	0					
1661	0.24	4.4	1.7	0.8	0.1	0.1	2.7	2.2	6.2	4.9	44	2					
1662	0.18	4.3	1.4	1.0	0.1	0.1	2.6	2.6	6.9	5.2	38	1					
1663	0.13	4.1	1.2	1.7	0.1	0.1	3.1	3.3	9.0	6.5	35	1					
1664																	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1657											1.61	1.66	0.010		10.7	
1658											1.61	1.65	0.008		12.6	
1659											1.73	1.79	0.011		8.0	
1660											1.68	1.76	0.016		10.6	
1661											1.56	1.69	0.027		15.0	
1662											1.60	1.68	0.016		13.4	
1663											1.62	1.75	0.026		15.6	
1664																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1657			*		**		***					
1658												
1659												
1660												
1661	*		*		***		**					
1662												
1663	*				***		*					
1664												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HEIDEN PEDON: S78TX-027-008 COUNTY: BELL

PEDON CLASSIFICATION: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM HEIDENHEIMER, 1.5 MI SE ON TEXAS 36, 0.75 MI NE ON COUNTY ROAD, 200 FT N OF ROAD IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 168 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/12/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-53	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW SILICEOUS PEBBLES; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	53-97	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	97-117	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; FEW FINE FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; VERY DARK GRAYISH BROWN (2.5Y 3/2) STREAKS ALONG CRACKS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	117-140	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; COMMON MEDIUM FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; VERY DARK GRAYISH BROWN (2.5Y 3/2) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	140-213	LIGHT OLIVE BROWN (2.5Y 5/6) SHALY CLAY, OLIVE YELLOW (2.5Y 6/6) DRY; COMMON MEDIUM FAINT LIGHT GRAY (2.5Y 7/2) AND FEW MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2	213-345	YELLOWISH BROWN (10YR 5/8) SHALY CLAY, BROWNISH YELLOW (10YR 6/8) DRY; FEW MEDIUM DISTINCT LIGHT GRAY (2.5Y 7/2) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
C3	345-462	LIGHT OLIVE BROWN (2.5Y 5/4) SHALY CLAY, LIGHT YELLOWISH BROWN (2.5Y 6/4) DRY; FEW FINE FAINT LIGHT GRAY (2.5Y 7/2) AND FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: THICKNESS OF THE A HORIZONS RANGED FROM 79 TO 112 CM WITHIN A DISTANCE OF 90 CM.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HEIDEN
SOIL FAMILY: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BELL COUNTY, TEXAS

PEDON NUMBER: S78TX-027-008

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
408	0- 15	AP												
412	15- 53	A11												
413	53- 76	A12												
414	76- 97	A12												
415	97-117	AC1												
416	117-140	AC2												
420	140-178	C1												
421	178-213	C1												
422	213-277	C2												
426	277-345	C2												
427	345-406	C3												
428	406-462	C3												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	NH4OAC EXTR BASES MG	NH4OAC EXTR BASES NA	NH4OAC EXTR BASES K	NH4OAC EXTR BASES TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR %	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
408		8.0			0.3				41.0			1				15.3	
412		8.0			1.3				42.4			3				15.1	
413		8.1			2.2				43.3			5				14.9	
414		8.2			3.6				42.3			9				15.6	
415		8.2			4.5				38.5			12				15.4	
416		8.1			5.4				33.6			16				15.0	
420		7.8			5.1				29.0			17				10.6	
421		7.9			5.3				27.4			19				11.6	
422		8.0			5.4				25.3			21				15.4	
426		8.0			4.2				21.4			19				22.7	
427		8.0			4.4				23.6			18				20.0	
428		8.0			4.9				26.3			18				17.3	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
408																
412																
413																
414																
415	0.8	79			0.4											
416	1.2	87			0.7											
420	4.4	84			2.0											
421	4.5	85			2.2											
422	3.0	88			1.7											
426	2.9	79			1.3											
427	2.8	81			1.1											
428	2.9	87			1.2											

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
408												
412												
413												
414												
415												
416												
420												
421												
422												
426												
427												
428												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HEIDEN PEDON: S78TX-145-001 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM BARCLAY, 1.7 MI E ON TEXAS 53, 200 FT N OF ROAD IN CROPLAND.

LANDFORM: UPLAND ELEVATION (M): 150 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/13/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-51	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	51-76	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; FEW FINE FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON VERY DARK GRAYISH BROWN (2.5Y 3/2) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW FINE BLACK CONCRETIONS; FEW SALT SEGREGATIONS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	76-99	OLIVE BROWN (2.5Y 4/4) CLAY, LIGHT OLIVE BROWN (2.5Y 5/4) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW VERY DARK GRAYISH BROWN (2.5Y 3/2) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW FINE SALT SEGREGATIONS AND FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3	99-132	OLIVE (5Y 5/4) CLAY, PALE OLIVE (5Y 6/4) DRY; FEW FINE PROMINENT BROWNISH YELLOW (10YR 6/6) AND FEW FINE DISTINCT LIGHT GRAY (2.5Y 7/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW VERY DARK GRAYISH BROWN (2.5Y 3/2) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW BLACK CONCRETIONS; FEW FINE SALT SEGREGATIONS AND FILAMENTS; FEW THIN INTERBEDDED LAYERS OF SHALE IN LOWER PART; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	132-152	LIGHT GRAY (2.5Y 7/2) SHALY CLAY; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; MANY THICK BROWNISH YELLOW (10YR 6/8) BEDDING PLANES WITHIN THE HORIZON; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2	152-305	LIGHT GRAY (2.5Y 7/2) SHALY CLAY; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; SOME FE-MN STAINS ALONG BEDDING PLANES; MANY THICK BROWNISH YELLOW (10YR 6/8) BEDDING PLANES WITHIN THE HORIZON; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HEIDEN
SOIL FAMILY: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S78TX-145-001

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
457	0- 15	AP												
458	15- 51	A11												
460	51- 76	AC1												
461	76- 99	AC2												
462	99-132	AC3												
466	132-152	C1												
467	152-203	C2												
468	203-254	C2												
469	254-305	C2												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
457		8.1			0.6				48.3			1	1			11.3	
458		8.1			2.5				52.4			4	3			10.1	
460		8.2			4.9				49.3			9	6			13.3	
461		7.9			5.7				39.1			9	12			19.3	
462		7.8			5.6				32.4			9	13			21.5	
466		7.8			6.2				33.2			10	13			19.9	
467		8.0			6.5				32.6			15	10			18.0	
468		8.0			6.1				31.0			14	10			20.4	
469		8.2			5.5				30.9			13	10			21.0	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
457	0.4	74	4.8	0.2	1.0		0.0	3.8	0.7	0.8						
458	0.5	81	2.8	0.3	3.6		0.0	4.5	0.6	0.6						
460	0.7	83	2.1	0.3	6.5		0.0	4.0	1.5	2.3						
461	3.6	87	7.9	1.7	25.9		0.0	3.0	2.9	36.4						
462	3.9	90	8.0	2.1	28.6		0.0	3.0	2.3	37.3						
466	4.2	95	8.0	2.5	29.2		0.0	3.8	5.7	41.8						
467	2.1	100	4.3	0.4	15.4		0.0	4.0	6.3	9.8						
468	2.5	96	5.1	0.6	17.4		0.0	3.0	10.3	9.8						
469	2.4	98	5.2	0.8	16.5		0.0	4.5	10.9	8.4						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
457												
458												
460												
461												
462												
466												
467												
468												
469												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HEIDEN PEDON: S81TX-217-003 COUNTY: HILL

PEDON CLASSIFICATION: UDIC CHROMUSTERT: FINE, MONTMORILLONITIC, THERMIC

LOCATION: ABOUT 11 MI SE OF HILLSBORO ON GASKAMP FARM. FROM BYNUM, 3.2 MI SE ON TEXAS 171, 100 FT NE IN FIELD (SHEET NO 52, HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1% SLOPE ASPECT: SW

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE, AND D. ZUBERER DATE: 07/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY; STRONG FINE GRANULAR STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-50	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY; STRONG MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	50-125	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SMALL INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC	125-213	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW INTERSECTING SLICKENSIDES; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C1	213-275	LIGHT OLIVE BROWN (2.5Y 5/6) CLAY; MANY FINE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; STRONG COARSE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE CONCRETIONS; STRUCTURE INHERITED FROM THE PARENT MATERIAL; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C2	275-350	LIGHT OLIVE BROWN (2.5Y 5/6) SHALY CLAY; MANY DISTINCT LIGHT BROWNISH GRAY (2.5Y 6/2) MOTTLES; HARD; FIRM; COMMON LARGE CALCIUM CARBONATE SEGREGATIONS; BEDDING PLANES WITH ANGULAR BREAKAGE; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL DESCRIBED AND SAMPLED IN MICRO-LOW. SOIL WAS PLANTED TO COTTON AT THE TIME OF SAMPLING AND NO COTTON ROOT ROT WAS NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HEIDEN
PEDON NUMBER: S81TX-217-003
SOIL FAMILY: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1044	0- 15	AP	0.6	0.7	1.1	2.4	4.3	9.1	27.4	50.2	9.7	40.7	SIC	
1045	15- 50	A11	0.8	1.0	1.1	2.3	3.8	9.0	28.9	47.8	22.3	43.2	SIC	
1046	50-125	A12	1.0	0.8	1.0	2.2	3.6	8.6	27.5	47.9	27.3	43.5	SIC	
1047	125-213	AC	1.3	1.0	0.8	1.9	3.2	8.2	29.6	49.2	29.0	42.6	SIC	
1048	213-275	C	0.1	0.1	0.1	0.1	0.5	0.9	33.6	42.8	17.6	56.3	SIC	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1044	1.13	8.1	78.0	2.8	0.1	0.6	81.5		40.2		100	0	0	14.0	2.9	17.1	
1045	1.00	8.0	68.5	2.8	0.2	0.4	71.9		39.7		100	0	0	17.8	2.7	20.7	
1046	0.58	8.0	66.1	3.8	0.8	0.3	71.1		38.5		100	2	2	18.6	2.6	21.4	
1047	0.17	8.2	64.4	6.5	3.3	0.4	74.6		37.7		100	8	7	17.3	3.8	21.5	
1048	0.22	8.1	59.4	7.1	3.5	0.4	70.4		31.4		100	9	8	16.9	3.1	20.2	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1044	0.3	59	2.9	0.2	0.2	0.1	0.0	2.1	0.1	2.0	1.42	1.82	0.086		27.3	
1045	0.5	58	4.2	0.2	0.4	0.0	0.0	2.6	0.0	2.2	1.38	1.77	0.086		28.0	
1046	0.5	61	2.6	0.2	2.1	0.0	0.0	1.8	0.2	0.7	1.51	1.88	0.077		24.8	
1047	0.8	69	1.5	0.2	6.3	0.0	0.0	2.0	0.9	1.9						
1048	1.2	88	2.5	0.2	8.9	0.1	0.0	1.2	3.6	5.0						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1044												
1045												
1046												
1047												
1048												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HEIDEN PEDON: S81TX-491-001 COUNTY: WILLIAMSON

PEDON CLASSIFICATION: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: DAVIS FARM (LAMAR ZRUBEK, OPERATOR). FROM I-35 AND FM 971, ABOUT 6 MI E ON FM 971, 0.4 MI N ON COUNTY ROAD, 0.1 MI N OF ROAD IN COTTON FIELD.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 2% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: SAN GABRIEL RIVER TERRACE

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. BATTE, C.L. GIRDNER, G. LANE, T. HALLMARK AND T. MOORE DATE: 08/05/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW SILICEOUS PEBBLES; FEW FINE SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; ABRUPT WAVY BOUNDARY.
AC1	13-125	BROWN (10YR 4/3) CLAY, BROWN (10YR 5/3) DRY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; COMMON CALCIUM CARBONATE CONCRETIONS; FEW WEAK INTERSECTING SLICKENSIDES; COMMON THIN (0.3 CM) STREAKS OF A1 MATERIAL IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	125-175	YELLOWISH BROWN (10YR 5/4) CLAY, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; FEW VERY THIN STREAKS OF A1 MATERIAL IN FILLED CRACKS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
C	175-270	VERY PALE BROWN (10YR 7/4) CLAY, VERY PALE BROWN (10YR 8/4) DRY; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SILICEOUS PEBBLES; MANY CALCIUM CARBONATE SEGREGATIONS; FEW ROUNDED BROWN CONCRETIONS 2MM ACROSS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON WAS SAMPLED IN A MICRO-HIGH. THE AC1 HORIZON WAS SAMPLED AT 13-61 CM AND 61-125 CM. AT TIME OF SAMPLING, SOIL WAS PLANTED IN COTTON AND COTTON ROOT ROT INFESTED ABOUT 30% OF THE PLANTS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HEIDEN
PEDON NUMBER: S81TX-491-001
SOIL FAMILY: UDIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: WILLIAMSON COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1065	0- 13	AP	0.2	0.2	0.3	1.3	5.1	7.1	24.1	47.2	5.7	45.7	SIC	
1066	13- 61	AC1	0.4	0.2	0.2	1.0	3.7	5.5	27.7	44.3	28.2	50.2	SIC	
1067	61-125	AC1	1.2	1.0	0.5	1.3	3.0	7.0	31.2	46.0	29.8	47.0	SIC	
1068	125-175	AC2	2.3	1.1	0.8	1.9	3.7	9.8	40.2	57.4	19.3	32.8	SICL	
1069	175-270	C	0.9	0.8	0.8	2.7	5.7	10.9	34.8	54.7	19.5	34.4	SICL	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1065	1.40	8.0	76.3	1.5	0.1	1.1	78.9		48.7		100	0	0	6.4	2.2	8.9	
1066	0.97	8.0	73.9	1.1	0.1	0.4	75.5		43.8		100	0	0	17.0	3.3	20.6	
1067	0.43	8.0	68.4	0.4	0.1	0.4	69.4		37.2		100	0	0	29.5	3.4	33.3	
1068	0.10	8.1	54.9	0.4	0.1	0.4	55.8		21.3		100	0	0	55.0	2.8	58.0	
1069	0.10	8.1	53.0	0.4	0.1	0.4	53.9		19.6		100	0	0	51.7	3.7	55.8	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1065	0.4	64	3.9	0.0	0.2	0.1	0.0	3.0	0.2	0.5	1.28	1.76	0.114		32.5	
1066	0.3	63	3.0	0.0	0.1	0.0	0.0	2.0	0.1	0.1	1.33	1.81	0.110		31.0	
1067	0.4	59	3.2	0.0	0.2	0.0	0.0	1.5	0.0	0.1	1.41	1.87	0.098		28.1	
1068	0.4	47	3.4	0.0	0.2	0.0	0.0	1.4	0.1	0.6						
1069	0.4	51	3.3	0.0	0.2	0.0	0.0	1.3	0.0	0.6						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1065												
1066												
1067												
1068												
1069												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HODGINS PEDON: S83TX-371-003 COUNTY: PECOS

PEDON CLASSIFICATION: USTOLLIC CAMBORTHID; FINE-SILTY, MIXED, THERMIC

LOCATION: APPROXIMATELY 3 MI W OF BAKERSFIELD ON I-10 TO THE UNIV OF TEXAS EXPERIMENTAL VINEYARDS. SITE IS IN THE 10 ACRE VINEYARD BETWEEN ROWS 26 AND 27 AND VINES 9 AND 10.

LANDFORM: BAJADA ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT: E

PARENT MATERIALS: ALLUVIUM FORMATION: QUARTERNARY SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: IRRIGATED CROP

COLLECTORS: J. L. RIVES, C. M. THOMPSON AND C. T. HALLMARK DATE: 05/03/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BROWN (10YR 4/3) SILT LOAM, PALE BROWN (10YR 6/3) DRY; WEAK MEDIUM SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
BW1	15-39	BROWN (7.5YR 4/4) SILT LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON FINE AND MEDIUM ROOTS; VERY FINE PORES; SLIGHTLY COMPACTED ZONE AT 15-22 CM DEPTH; MEDIUM ROOTS CONCENTRATED IN LOWER PART OF HORIZON; FEW FUNGUS MYCELIA ASSOCIATED WITH DEAD ROOTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
BW2	39-77	BROWN (7.5YR 5/4) SILT LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW SMALL LIMESTONE PEBBLES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
BK1	77-109	BROWN (7.5YR 5/4) SILTY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW SMALL LIMESTONE PEBBLES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW PATCHY FILAMENTS AND COATINGS OF CARBONATE ON PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
BK2	109-143	BROWN (7.5YR 5/4) SILTY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FIRM; FEW FINE ROOTS; COMMON FINE PORES; NO PEBBLES; ABOUT 3% BY VOLUME OF SEGREGATIONS AND CONCRETIONS OF CARBONATE; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
BK3	143-200	BROWN (7.5YR 5/4) SILTY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FIRM; NO ROOTS; COMMON FINE PORES; FEW FINE CALCIUM CARBONATE SEGREGATIONS; NO PEBBLES; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT.

REMARKS: MAXIMUM VOLUME OF ROOTS WAS IN THE 15-39 CM DEPTH.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HODGINS
SOIL FAMILY: USTOLLIC CAMBORTHIDS; FINE-SILTY, MIXED, THERMIC
LOCATION: PECOS COUNTY, TEXAS

PEDON NUMBER: S83TX-371-003

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1679	0- 15	AP	3.4	0.8	0.8	3.1	10.8	18.9	33.9	62.7	3.6	18.4	SIL	
1680	15- 39	BW1	0.3	0.4	0.9	2.9	10.2	14.7	36.9	63.7	5.7	21.6	SIL	
1681	39- 77	BW2	0.3	0.6	0.2	3.5	12.5	17.1	40.1	61.5	7.9	21.4	SIL	
1682	77-109	BK1	0.2	0.2	0.5	2.2	8.3	11.4	35.0	59.5	8.9	29.1	SICL	
1683	109-143	BK2	0.0	0.2	0.3	0.8	3.5	4.8	44.8	67.2	10.8	28.0	SICL	
1684	143-200	BK3	0.0	0.1	0.3	0.9	3.2	4.5	44.4	63.8	11.5	31.7	SICL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1679	1.41	7.6	73.1	5.6	5.5	0.3	84.6		19.9		100	6	9	24.6	1.7	26.4	0.0
1680	1.05	7.8	63.7	4.5	2.7	0.3	71.2		19.5		100	5	6	29.0	1.2	30.3	0.0
1681	0.85	7.8	58.3	5.2	3.5	0.3	67.3		17.3		100	4	10	32.4	1.3	33.8	
1682	0.48	7.9	57.7	7.2	5.6	0.2	70.8		15.7		100	11	12	35.2	1.6	37.0	
1683	0.32	7.8	43.1	7.7	6.0	1.3	58.1		15.1		100	9	13	43.5	0.5	44.0	
1684	0.41	7.9	44.9	8.5	6.7	1.4	61.5		17.3		100	8	14	38.4	0.9	39.4	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1679	35.0	42	230.5	46.1	101.7	7.0	0.0	1.6	279.3	28.8						
1680	10.8	47	54.9	14.8	37.0	4.3	0.0	3.6	83.3	27.5	1.02	1.17	0.047		31.3	
1681	12.9	50	45.9	24.7	57.0	4.5	0.0	1.5	117.6	13.8	1.05	1.35	0.087		32.4	
1682	18.0	50	56.9	37.0	79.1	3.1	0.0	2.0	161.7	8.8	1.14	1.28	0.039		37.2	
1683	20.0	51	60.9	41.1	90.9	2.3	0.0	2.0	188.7	10.0	1.28	1.49	0.052		29.7	
1684	20.0	55	54.9	39.5	94.3	2.3	0.0	1.3	174.0	13.8	1.37	1.60	0.053		28.3	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1679												
1680												
1681												
1682												
1683												
1684												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOULA VARIANT PEDON: S80TX-131-001 COUNTY: DUVAL

PEDON CLASSIFICATION: ARIDIC CALCIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 16 AND US 59, 7.3 MI N ON TEXAS 16, 100 FT W IN RANGELAND.

LANDFORM: ELEVATION (M): SLOPE: SLOPE ASPECT:

PARENT MATERIALS: FORMATION:

TOPOGRAPHY: DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: MINZENMAYER, GUCKIAN, MOLINA, SANDERS AND GABRIEL DATE: 05/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-23	DARK BROWN (10YR 3/3) CLAY LOAM, BROWN (10YR 5/3) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21	23-46	YELLOWISH BROWN (10YR 5/4) SILTY CLAY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B22	46-74	LIGHT YELLOWISH BROWN (10YR 6/4) SILTY CLAY LOAM, VERY PALE BROWN (10YR 7/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B3CA	74-99	VERY PALE BROWN (10YR 7/4) SILT LOAM, VERY PALE BROWN (10YR 8/4) DRY; WEAK ANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	99-165	VERY PALE BROWN (10YR 7/3) SILT LOAM, VERY PALE BROWN (10YR 8/3) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; COMMON VERY FINE AND FINE PORES; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOULA VARIANT
SOIL FAMILY: ARIDIC CALCIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

PEDON NUMBER: S80TX-131-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
783	0- 23	A1	0.3	0.8	1.8	3.7	6.9	13.5	19.5	44.0	11.7	42.5	SIC	
784	23- 46	B21	0.3	0.8	1.5	3.3	6.2	12.1	21.7	41.6	14.5	46.3	SIC	
785	46- 74	B22	0.2	0.7	1.4	2.7	5.1	10.1	21.4	42.5	11.0	47.4	SIC	
786	74- 99	B3CA	0.2	0.7	1.2	2.7	6.1	10.9	31.0	55.9	5.5	33.2	SICL	
787	99-165	CCA	0.8	1.1	2.0	6.3	13.4	23.6	31.5	63.4	1.8	13.0	SIL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
783	1.23	7.8	61.1	4.0	0.1	4.7	69.9		35.5		100	0	0	3.5	0.8	4.4	
784	0.99	7.9	67.1	4.0	0.1	3.9	75.1		34.3		100	0	0	6.6	1.4	8.1	
785	0.83	8.0	71.4	4.7	0.3	3.3	79.7		34.3		100	0	2	8.7	1.6	10.4	
786	0.51	8.2	72.0	5.7	1.0	2.8	81.5		34.0		100	2	4	14.1	1.4	15.6	
787	0.19	8.5	58.5	5.8	5.7	3.0	73.0		25.5		100	21	11	20.6	2.4	23.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
783	1.3	59	11.0	1.0	0.6	1.9	0.0	2.6	2.8	0.8						
784	0.9	62	6.3	0.6	0.6	0.9	0.0	2.9	1.5	0.5						
785	0.6	62	3.8	0.4	2.3	0.6	0.0	2.6	0.5	0.7						
786	0.5	55	1.8	0.2	4.4	0.3	0.0	3.4	0.4	1.1						
787	1.0	41	1.0	0.2	8.3	0.3	0.0	3.1	1.4	2.7						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
783												
784												
785												
786												
787												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S78TX-027-004 COUNTY: BELL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: APPROXIMATELY 2 MI S OF TEMPLE IN NATIVE PASTURE ON SOUTH PART OF THE BLACKLAND RESEARCH CENTER.

LANDFORM: ELEVATION (M): 183 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: NATIVE

COLLECTORS: WILDING, RIVERS, AND RAMSEY DATE: 10/10/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-46	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE FINE SUBANGULAR BLOCKY AND ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	46-119	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW MEDIUM DARK GRAY (10YR 4/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	119-188	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE DARK GRAY (10YR 4/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3	188-251	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	251-315	PALE BROWN (10YR 6/3) CLAY, VERY PALE BROWN (10YR 7/3) DRY; COMMON FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
C2	315-432	VERY PALE BROWN (10YR 7/3) CLAY, VERY PALE BROWN (10YR 8/3) DRY; COMMON MEDIUM FAINT YELLOW (10YR 7/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON WAS SAMPLED IN A MICRO-HIGH. THE THICKNESS OF THE A HORIZON RANGED TO 56 CM WITHIN A LATERAL DISTANCE OF 90 CM. PEDON S78TX-027-005 IS THE CORRESPONDING MICROLOW.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BELL COUNTY, TEXAS

PEDON NUMBER: S78TX-027-004

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
332	0- 30	A1												
333	30- 46	A1												
334	46- 71	AC1												
335	71- 97	AC1												
336	97-119	AC1												
340	119-150	AC2												
341	150-188	AC2												
342	188-251	AC3												
343	251-274	C1												
347	274-305	C1												
348	305-315	C1												
349	315-373	C2												
350	373-432	C2												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
332		8.0			0.3				48.1			1	0			28.3	
333		8.1			0.4				46.6			1	0			26.4	
334		8.1			0.4				45.5			1	0			34.0	
335		8.2			0.5				44.0			1	0			35.5	
336		8.3			0.5				42.7			1	1			37.7	
340		8.2			0.6				41.0			1	1			41.4	
341		8.3			0.9				40.1			2	1			41.4	
342		8.3			1.0				35.4			3	1			45.2	
343		8.3			0.7				28.3			2	1			57.1	
347		8.2			0.6				24.2			2	1			62.2	
348		8.0			0.5				25.7			2	1			66.4	
349		8.1			0.5				24.3			2	1			65.9	
350		8.0			0.7				44.1			1	1			56.4	

LAB NO	ELEC COND MMHOS/CM	H2O CONT %	SATURATED PASTE EXTRACT CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
332	0.7	91	6.8	2.7	0.2	0.3		4.5	0.8	0.6						
333	0.6	76	7.1	3.3	0.2	0.0		6.0	0.2	0.4						
334	0.6	75	7.3	2.5	0.4	0.0		3.5	0.2	0.9						
335	0.4	76	3.6	2.9	0.6	0.0		4.0	0.5	0.5						
336	0.3	72	3.1	2.8	1.1	0.0		4.0	0.4	0.3						
340	0.3	69	4.2	2.8	1.1	0.0		5.3	0.4	0.3						
341	0.4	65	2.8	2.7	2.0	0.0		3.5	0.8	0.3						
342	0.4	65	2.9	2.8	1.7	0.0		4.0	0.6	1.1						
343	0.5	61	2.7	2.8	1.4	0.0		4.5	0.5	0.6						
347	0.4	56	2.7	2.7	1.8	0.0		3.6	0.6	0.5						
348	0.4	49	2.4	2.6	1.7	0.0		3.5	0.4	0.4						
349	0.4	59	4.4	2.3	1.7	0.0		3.5	0.9	0.4						
350	0.5	78	3.7	2.4	1.8	0.0		5.0	0.6	0.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
332												
333												
334												
335												
336												
340												
341												
342												
343												
347												
348												
349												
350												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S78TX-027-005 COUNTY: BELL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: APPROXIMATELY 2 MI S OF TEMPLE IN NATIVE PASTURE IN SOUTH PART OF THE BLACKLAND RESEARCH CENTER.

LANDFORM: ELEVATION (M): 183 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: NATIVE

COLLECTORS: WILDING, RIVERS AND RAMSEY DATE: 10/10/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-76	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE SUBANGULAR BLOCKY AND ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
A12	76-140	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	140-183	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW MEDIUM VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	183-218	GRAYISH BROWN (10YR 5/2) CLAY, LIGHT BROWNISH GRAY (10YR 6/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C1	218-284	PALE BROWN (10YR 6/3) CLAY, VERY PALE BROWN (10YR 7/3) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW FINE BLACK CONCRETIONS; FEW FINE DECAYED ROOTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C2	284-363	VERY PALE BROWN (10YR 7/3) CLAY, VERY PALE BROWN (10YR 8/3) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW FINE BLACK CONCRETIONS; FEW FINE DECAYED ROOTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
C3	363-371	BROWNISH YELLOW (10YR 6/6) SHALY CLAY; MANY DISTINCT VERY PALE BROWN (10YR 7/3) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE SALT SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: THE THICKNESS OF THE A HORIZONS RANGED FROM 130 TO 160 CM WITHIN A DISTANCE OF 90 CM. THE PEDON WAS SAMPLED AND DESCRIBED IN A MICROLOW. PEDON S78TX-027-004 IS THE CORRESPONDING MICROHIGH.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: BELL COUNTY, TEXAS

PEDON NUMBER: S78TX-027-005

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
354	0- 30	A11												
355	30- 50	A11												
356	50- 76	A11												
357	76-107	A12												
361	107-140	A12												
362	140-183	AC1												
363	183-218	AC2												
364	218-284	C1												
368	284-315	C2												
369	315-363	C2												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								---%			---%			
354		7.6			0.3				55.7			0	0			21.1	
355		7.8			0.5				55.5			1	0			21.0	
356		7.8			0.8				55.2			1	1			23.1	
357		7.9			1.8				55.7			3	1			24.4	
361		7.9			2.5				53.1			4	3			25.7	
362		8.0			2.7				43.9			5	4			37.6	
363		8.1			2.3				36.3			5	3			49.5	
364		8.2			1.8				26.9			6	2			60.8	
368		8.1			0.6				22.4			2	1			67.5	
369		8.2			0.6				20.9			3	1			70.0	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
354	0.6	98	8.1	2.4	0.3		0.0	7.5	0.5	0.7						
355	0.5	98	5.1	2.9	0.4		0.0	6.0	0.1	0.9						
356	0.4	96	1.9	3.2	1.2		0.0	5.5	0.1	0.4						
357	0.4	95	1.9	3.1	2.2		0.0	4.5	0.3	0.6						
361	0.6	94	3.1	2.9	4.4		0.0	5.0	0.7	1.0						
362	1.0	76	4.6	2.7	6.7		0.0	3.5	2.4	3.4						
363	0.8	66	3.4	2.7	5.4		0.0	4.5	1.8	2.5						
364	0.4	56	2.0	2.8	2.5		0.0	4.5	0.6	0.5						
368	0.7	53	4.3	2.4	1.9		0.5	4.9	0.5	0.6						
369	0.3	54	4.9	2.2	1.4		0.0	3.5	0.4	3.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
354												
355												
356												
357												
361												
362												
363												
364												
368												
369												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S78TX-145-002 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM BARCLAY, 1.6 MI E ON TEXAS 53, 200 FT N OF ROAD IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 152 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: WILDING, RIVERS, AND RAMSEY DATE: 10/13/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	15-64	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	64-112	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	112-152	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; COMMON SALT FILAMENTS; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	152-178	DARK GRAYISH BROWN (10YR 4/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON BLACK (10YR 2/1) STREAKS ALONG CRACKS; COMMON SLICKENSIDES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MANY SALT FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	178-221	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW BLACK (10YR 2/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3	221-292	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; VERY DARK GRAY (10YR 3/1) STREAKS ALONG CRACKS; FEW SLICKENSIDES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW INTERBEDDED SHALY LAYERS IN LOWER PART; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	292-457	BROWNISH YELLOW (10YR 6/8) SHALY CLAY; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; MANY THICK LIGHT GRAY (2.5Y 7/2) BEDDING PLANES WITHIN THE HORIZON; FEW SLICKENSIDES; FEW SALT FILAMENTS; REDDISH IRON STAINS ON FACES OF SOME LAYERS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S78TX-145-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
473	0- 15	AP												
476	15- 46	A11												
477	46- 64	A11												
478	64- 89	A12												
479	89-112	A12												
480	112-132	A13												
481	132-152	A13												
484	152-178	AC1												
485	178-221	AC2												
486	221-292	AC3												
489	292-368	C												
490	368-457	C												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
473		8.4			0.6				46.0			1	1			2.2	
476		8.2			2.0				48.5			4	3			1.5	
477		8.4			4.2				47.9			8	6			1.2	
478		8.6			6.2				47.1			12	10			2.6	
479		8.6			8.5				48.1			16	14			3.2	
480		8.4			10.7				49.5			19	17			3.5	
481		8.0			11.4				44.1			17	13			5.4	
484		8.1			10.8				41.1			15	13			6.3	
485		8.1			11.2				42.4			15	14			8.8	
486		8.3			11.0				38.5			16	15			16.9	
489		8.3			10.2				35.8			18	17			17.5	
490		8.3							37.0				17			14.5	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
473	0.3	69	3.6	0.0	1.0		0.0	4.0	0.9	0.4						
476	0.5	74	2.3	0.1	3.2		0.0	5.5	0.7	0.2						
477	0.4	60	0.8	0.3	4.4		0.0	5.0	0.7	0.3						
478	0.6	86	0.6	0.2	6.1		0.0	4.5	1.0	0.4						
479	0.9	92	0.5	0.2	8.0		0.0	4.0	2.8	0.4						
480	1.3	94	1.7	0.0	15.5		0.0	4.0	5.0	9.5						
481	4.9	84	24.6	3.0	49.0		0.0	4.0	8.5	52.3						
484	4.9	89	25.4	3.2	51.0		0.0	2.7	10.5	47.9						
485	5.5	90	27.1	3.4	52.9		0.0	3.0	15.0	51.3						
486	5.0	106	18.0	2.7	47.1		0.0	3.0	19.0	42.0						
489	3.8	106	6.7	1.3	34.2		0.0	3.0	23.0	10.4						
490	3.9	103	6.6	1.6	33.7		0.0	3.0	26.5	8.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
473												
476												
477												
478												
479												
480												
481												
484												
485												
486												
489												
490												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S80TX-145-001 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ELMER HOELSCHER FARM. FROM WILSON, 1 MI SW ON GRAVEL ROAD, 300 FEET N IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 138 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND B. RAMSEY DATE: 07/16/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW CHERT PEBBLES; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-4 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	13-79	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	79-124	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS; FEW CHERT PEBBLES; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13	124-142	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS; FEW CHERT PEBBLES; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A14CS	142-168	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW VERY DARK GRAY STREAKS IN FILLED CRACKS; FEW CHERT PEBBLES; COMMON THREADS AND CRYSTALS OF SALT; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1CS	168-191	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; VERY DARK GRAY STREAKS IN FILLED CRACKS; MANY THREADS CRYSTALS AND SEGREGATIONS OF SALT; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CA	191-213	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; FEW FINE FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS ON FILLED CRACKS; FEW FINE CARBONATE CEONCRETIONS; FEW THREADS CRYSTALS AND SEGREGATIONS OF SALT; FEW CHERT PEBBLES; FEW REDDISH IRON STAINS ON FACES OF SOME PEDS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CA	213-234	LIGHT OLIVE BROWN (2.5Y 5/4) CLAY, LIGHT YELLOWISH BROWN (2.5Y 6/4) DRY; FEW FINE FAINT OLIVE YELLOW (2.5Y 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM CARBONATE SEGREGATIONS; FEW THREADS AND CRYSTALS OF SALT; FEW CHERT PEBBLES; FEW REDISH IRON STAINS ON FACES OF SOME PEDS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4CA	234-297	OLIVE (5Y 5/3) CLAY, PALE OLIVE (5Y 6/3) DRY; FEW FINE FAINT OLIVE YELLOW (5Y 6/6) MOTTLES; WEAK MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW CHERT PEBBLES; GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM CARBONATE SEGREGATIONS; FEW REDDISH IRON STAINS IN SOME PED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	297-434	PALE OLIVE (5Y 6/3) SHALY CLAY; MANY FAINT OLIVE YELLOW (2.5Y 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM CARBONATE SEGREGATIONS THAT ARE MORE EVIDENT IN THE UPPER PART; FEW REDDISH IRON STAINS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-LOW. SITE WAS PLANTED IN COTTON AND NO COTTON ROOT ROT WAS NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S80TX-145-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
804	0- 13	AP												
805	13- 51	A11												
806	51- 79	A11												
807	79-104	A12												
808	104-124	A12												
809	124-142	A13												
810	142-168	A14CS												
811	168-191	AC1CS												
812	191-213	AC2CA												
813	213-234	AC3CA												
814	234-267	AC1CA												
815	267-297	AC4CA												
816	297-338	C1												
817	338-386	C2												
818	386-434	C3												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC CA MEQ/100G	NH4OAC MG MEQ/100G	NH4OAC NA MEQ/100G	EXTR BASES K MEQ/100G	BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM
804	1.50	8.0	55.8	0.5	0.3	0.7	57.3		44.4		100	1	1	8.8	0.9	9.9	
805	1.30	8.1	53.0	1.0	0.8	0.5	55.3		45.8		100	2	2	9.2	0.6	10.0	
806	1.10	8.2	51.7	0.9	3.5	0.4	56.5		44.9		100	7	4	9.8	0.8	10.7	
807	1.10	8.0	53.6	0.9	5.6	0.4	60.5		44.8		100	10	9	9.6	0.8	10.5	
808	1.00	8.1	52.8	0.9	6.4	0.5	60.6		44.3		100	12	11	10.2	0.9	11.1	
809	0.70	7.9	54.6	1.4	7.2	0.5	63.7		45.1		100	13	6	10.4	0.9	11.4	
810	0.70	7.8	94.2	1.4	7.2	0.5	103.3		42.0		100	12	8	9.2	0.9	10.2	
811	0.50	7.8	94.6	1.4	6.9	0.5	103.4		42.8		100	13	9	9.6	0.8	10.5	
812	0.40	8.1	50.1	1.4	6.6	0.5	58.6		42.3		100	13	10	13.5	1.1	14.7	
813	0.40	8.2	48.9	1.4	6.1	0.5	56.9		38.5		100	14	9	19.9	0.8	20.7	
814	0.40	8.2	54.8	1.4	5.7	0.5	62.4		35.4		100	15	11	21.6	1.0	22.7	
815	0.30	8.3	68.7	2.6	5.6	0.5	77.4		30.8		100	17	7	26.9	1.3	28.4	
816													10				
817													13	8.4	0.9	9.0	
818													8	5.9	0.7	6.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
804	0.3	60	3.3	0.1	0.9	0.0	0.0	2.7	0.4	2.1						
805	0.3	64	2.3	0.1	1.8	0.0	0.0	3.1	0.5	2.0						
806	0.4	63	1.4	0.1	3.6	0.0	0.0	3.1	2.2	2.5						
807	0.9	70	4.5	0.2	13.9	0.0	0.0	2.0	4.3	6.4						
808	1.4	71	5.0	0.4	17.4	0.0	0.0	1.8	5.4	11.1						
809	2.2	73	26.0	0.8	21.3	0.0	0.0	1.4	6.2	22.3						
810	3.0	71	27.0	1.6	30.5	0.0	0.0	1.2	5.4	43.0						
811	3.0	70	7.0	1.6	19.1	0.0	0.0	1.2	4.4	48.0						
812	1.5	72	3.0	0.4	13.4	0.0	0.0	1.2	1.8	13.6						
813	0.9	69	1.8	0.2	9.4	0.0	0.0	1.5	2.2	6.3						
814	0.7	71	0.7	0.2	7.4	0.0	0.0	1.7	1.4	4.3						
815	0.6	77	1.6	0.2	6.3	0.0	0.0	1.6	1.3	3.5						
816	0.6	103	0.8	0.2	7.2	0.0	0.0	1.6	2.0	3.8						
817	0.8	98	0.3	0.4	7.8	0.0	0.0	1.4	3.3	4.7						
818	0.7	101	0.8	0.2	5.9	0.0	0.0	1.4	2.6	3.1						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
804												
805												
806												
807												
808												
809												
810												
811												
812												
813												
814												
815												
816												
817												
818												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S80TX-145-002 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ELMER HOELSCHER FARM. 1 MI SW OF WILSON ON GRAVEL ROAD, 300 FT N IN FIELD. SITE IS ABOUT 8 FT FROM S80TX-145-001.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND R. RAMSEY DATE: 07/16/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW CHERT PEBBLES; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-4 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	13-76	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	76-137	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS; FEW CHERT PEBBLES; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A13CACS	137-160	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW CHERT PEBBLES; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1CACS	160-178	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; VERY DARK GRAY STREAKS; IN FILLED CRACKS; FEW THREADS, CRYSTALS, AND SOFT MASSES OF SALT; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CACS	178-196	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; FEW FINE FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS; FEW THREADS CRYSTALS AND SOFT MASSES OF SALT; FEW CHERT PEBBLES; FEW REDDISH IRON STAINS ON SOME PED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CA	196-229	LIGHT OLIVE BROWN (2.5Y 5/4) CLAY, LIGHT YELLOWISH BROWN (2.5Y 6/4) DRY; FEW FINE FAINT OLIVE YELLOW (2.5Y 6/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW THREADS AND CRYSTALS OF SALT; FEW CHERT PEBBLES; FEW REDDISH IRON STAINS ON SOME PED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4CA	229-254	OLIVE (5Y 5/3) CLAY, PALE OLIVE (5Y 6/3) DRY; FEW FINE FAINT OLIVE YELLOW (5Y 6/6) MOTTLES; WEAK MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW CHERT PEBBLES; GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW REDDISH IRON STAINS IN SOME RED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	254-439	PALE OLIVE (5Y 6/3) SHALY CLAY; MANY DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE BLACK CONCRETIONS; FEW SALT FILAMENTS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS THAT ARE MORE EVIDENT IN THE UPPER PART; FEW REDDISH IRON STAINS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-LOW. SOIL WAS PLANTED IN COTTON AT TIME OF SAMPLING AND COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
PEDON NUMBER: S80TX-145-002
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
819	0- 13	AP												
820	13- 43	A11												
821	43- 76	A11												
822	76-107	A12												
823	107-137	A12												
824	137-160	A13CACS												
825	160-178	AC1CACS												
826	178-196	AC2CACS												
827	196-229	AC3CA												
828	229-254	AC4CA												
829	254-295	C1CA												
830	295-335	C2CA												
831	335-376	C3												
832	376-439	C4												

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
819	1.60	7.9	78.3	1.2	0.3	1.0	80.8		42.7		100	1	1	11.3	0.3	11.6	
820	1.50	7.9	78.1	1.2	0.5	0.5	80.3		46.4		100	1	2	6.9	0.7	7.7	
821	1.10	8.0	80.9	1.2	1.5	0.5	84.1		46.0		100	3	5	9.8	0.8	10.7	
822	1.00	8.0	80.3	1.3	5.0	0.5	87.1		46.1		100	10	5	10.6	1.0	11.7	
823	0.70	7.9	77.2	1.7	6.7	0.5	86.1		43.5		100	13	7	11.1	1.1	12.3	
824	0.50	7.8	92.8	1.9	7.3	0.4	102.4		41.3		100	12	8	12.8	0.8	13.7	
825	0.20	7.8	131.8	2.0	7.1	0.4	141.3		35.0		100	14	9	16.4	0.8	17.3	
826	0.10	7.9	80.3	1.4	4.9	0.7	87.3		33.0		100	9	9	23.7	1.6	25.4	
827	0.10	8.1	84.4	1.7	4.6	0.5	91.2		31.6		100	11	8	28.9	1.2	30.2	
828	0.10	8.1	76.2	2.0	4.4	0.4	83.0		29.7		100	12	7	29.4	1.4	31.0	
829	0.20	8.1	78.1	2.1	4.4	0.4	85.0		30.3		100	12	8	23.7	0.9	24.7	
830	0.00	8.1	77.4	2.4	4.8	0.5	85.1		36.6		100	11	13	12.0	1.0	13.1	
831	0.10	8.0	76.6	3.7	4.7	0.5	85.5		36.3		100	10	7	9.2	0.9	10.2	
832	0.00	8.0	78.7	3.9	4.4	0.6	87.6		37.8		100	10	6	8.0	1.2	9.3	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
819	0.4	61	3.6	0.0	1.2	0.0										
820	0.3	63	2.6	0.0	2.3	0.0										
821	0.3	64	1.1	0.0	3.6	0.0										
822	0.8	73	4.0	0.2	6.7	0.1	0.0	2.3	3.8							
823	1.6	75	8.0	0.4	14.4	0.1	0.0	1.9	4.2							
824	3.0	71	26.0	1.2	30.5	0.1	0.0	1.1	8.5							
825	3.0	68	25.0	1.4	31.3	0.1	0.0	1.0	7.3							
826	2.9	66	23.0	1.4	30.5	0.1	0.0	1.0	6.8							
827	2.0	64	10.0	0.8	19.0	0.1	0.0	1.1	6.5							
828	1.3	68	7.0	0.4	14.3	0.1	0.0	2.0	5.5							
829	0.9	85	2.0	0.2	8.9	0.1	0.0	1.5	3.0							
830	0.9	98	0.8	0.2	9.0	0.1	0.0	1.8	4.0							
831	1.1	94	4.1	0.4	10.2	0.1	0.0	1.3	5.0							
832	0.8	108	2.1	0.4	6.9	0.1	0.0	1.5	4.3							

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
819												
820												
821												
822												
823												
824												
825												
826												
827												
828												
829												
830												
831												
832												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S80TX-145-003 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ELMER HOELSCHER FARM. 1 MI SW OF WILSON ON GRAVEL ROAD, 500 FT N IN FIELD. ABOUT 200 FT FROM S80TX-145-002.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND B. RAMSEY DATE: 07/17/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW CHERT PEBBLES; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-4 CM WIDE; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A1	15-36	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	36-56	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW CHERT PEBBLES; VERY DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CA	56-81	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; COMMON FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CA	81-112	GRAYISH BROWN (2.5Y 5/2) CLAY, LIGHT BROWNISH GRAY (2.5Y 6/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; COMMON FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4CA	112-152	LIGHT BROWNISH GRAY (2.5Y 6/2) MARLY CLAY, LIGHT GRAY (2.5Y 7/2) DRY; COMMON FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; FEW DECAYED ROOTS; FEW FINE CARBONATE CONCRETIONS AND SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	152-236	PALE YELLOW (2.5Y 7/4) MARLY CLAY, PALE YELLOW (2.5Y 8/4) DRY; COMMON FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW CALCIUM CARBONATE SEGREGATIONS; FEW DECAYED ROOTS; FEW THIN INTERBEDDED LAYERS OF SHALE; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN MICRO-HIGH. SITE WAS PLANTED IN COTTON AND NO COTTON ROOT ROT WAS AT THE IMMEDIATE SITE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S80TX-145-003

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
833	0- 15	AP												
834	15- 36	A1												
835	36- 56	AC1												
836	56- 81	AC2CA												
837	81-112	AC3CA												
838	112-152	AC4CA												
839	152-170	C1												
840	170-236	C2												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
833	1.50	7.9	80.0	1.4	0.2	0.8	82.4		40.6		100	0	0	13.6	0.9	14.6	
834	1.00	8.0	82.7	1.1	0.3	0.4	84.5		36.4		100	1	1	20.3	0.7	21.1	
835	0.80	8.0	67.7	1.0	0.3	0.3	69.3		32.3		100	1	1	30.1	0.7	30.8	
836	0.60	8.1	75.5	1.2	0.4	0.3	77.4		32.4		100	1	2	33.2	0.4	33.7	
837	0.30	8.2	73.1	1.3	0.5	0.3	75.2		29.5		100	1	2	38.7	1.3	40.2	
838	0.30	8.1	65.8	1.0	0.5	0.3	67.6		19.9		100	2	2	57.4	1.0	58.5	
839	0.30	8.2	57.4	0.8	0.4	0.2	58.8		16.1		100	2	3	66.4	3.0	69.7	
840	0.10	8.3	55.2	1.2	0.5	0.3	57.2		16.0		100	3	0	67.5	2.1	69.8	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR	15 BAR
833	0.4	62	4.9	0.1	0.5	0.1										
834	0.3	58	3.3	0.1	0.9	0.0	0.0	0.0	0.0	0.0						
835	0.3	53	3.1	0.1	1.2	0.0										
836	0.3	50	2.4	0.1	2.0	0.0										
837	0.3	51	2.6	0.1	2.7	0.0										
838	0.3	48	2.5	0.1	2.8	0.0										
839	0.3	55	2.1	0.2	2.7	0.1										
840	0.3	60	2.3	0.2	0.1	0.1										

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
833												
834												
835												
836												
837												
838												
839												
840												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S80TX-145-004 COUNTY: FALLS

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ELMER HOELSCHER FARM. 1 MI SW OF WILSON ON GRAVEL ROAD, 500 FT N IN FIELD. ABOUT 33 FT FROM S80TX-145-003.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: L. WILDING, L. WEST, E. RIVERS AND B. RAMSEY DATE: 07/17/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK FINE GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW SHELL FRAGMENTS; FEW CHERT PEBBLES; SURFACE MULCH OF FINE AND MEDIUM GRANULES IN UPPER 5 CM; SURFACE CRACKS 1-4 CM IN WIDTH; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A1	13-28	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	28-43	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY, DARK GRAYISH BROWN (2.5Y 4/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2CA	43-69	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; DARK GRAY STREAKS IN FILLED CRACKS; COMMON FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3CA	69-94	GRAYISH BROWN (2.5Y 5/2) CLAY, LIGHT BROWNISH GRAY (2.5Y 6/2) DRY; FEW FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; COMMON FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC4	94-122	LIGHT YELLOWISH BROWN (2.5Y 6/4) MARLY CLAY, PALE YELLOW (2.5Y 7/4) DRY; COMMON FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW SLICKENSIDES; FEW SHELL FRAGMENTS; FEW FINE BLACK CONCRETIONS; GRAY STREAKS IN FILLED CRACKS; FEW DECAYED ROOTS; FEW FINE CARBONATE CONCRETIONS AND MEDIUM SEGREGATIONS; FEW CHERT PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC5	122-152	LIGHT YELLOWISH BROWN (2.5Y 6/4) MARLY CLAY, PALE YELLOW (2.5Y 7/4) DRY; COMMON FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; WEAK FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE CALCIUM CARBONATE SEGREGATIONS; GRAY STREAKS IN FILLED CRACKS; FEW DECAYED ROOTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
C	152-246	PALE YELLOW (2.5Y 7/4) MARLY CLAY, PALE YELLOW (2.5Y 8/4) DRY; COMMON FINE FAINT YELLOW (2.5Y 7/8) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY HARD; VERY FIRM; FEW CALCIUM CARBONATE SEGREGATIONS; FEW DECAYED ROOTS; FEW THIN INTERBEDDED LAYERS OF SHALE; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON SAMPLED AND DESCRIBED IN A MICRO-HIGH. SITE WAS PLANTED IN COTTON AND COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: FALLS COUNTY, TEXAS

PEDON NUMBER: S80TX-145-004

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
841	0- 13	AP												
842	13- 28	A1												
843	28- 43	AC1												
844	43- 69	AC2CA												
845	69- 94	AC3CA												
846	94-122	AC4												
847	122-152	AC5												
848	152-183	C1												
849	183-213	C2												
850	213-246	C3												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG MEQ/100G	NA MEQ/100G	K MEQ/100G	TOTAL MEQ/100G	KCL EXTR NAOAC AL MEQ/100G	CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
841	1.50	8.1	84.0	1.3	0.3	0.7	86.3		41.4		100	1	0	13.1	1.1	14.4	
842	1.30	8.0	78.8	1.0	0.3	0.4	80.5		40.6		100	1	0	16.2	1.1	17.4	
843	0.70	8.0	76.6	1.0	0.3	0.4	78.3		36.9		100	1	0	24.7	1.5	26.3	
844	0.50	8.0	77.2	1.0	0.4	0.3	78.9		34.0		100	1	0	28.0	1.0	29.1	
845	0.50	7.9	71.1	1.2	0.4	0.3	73.0		29.8		100	1	0	37.6	1.0	38.6	
846	0.40	7.7	71.7	1.5	0.6	0.3	74.1		27.8		100	2	0	39.7	1.4	41.2	
847	0.40	8.2	55.7	1.2	0.5	0.2	57.6		14.8		100	3	0	67.2	1.7	69.1	
848	0.30	8.3	56.5	1.0	0.4	0.2	58.1		10.6		100	4	0	73.8	0.8	74.7	
849	0.50	8.3	55.1	1.3	0.5	0.2	57.1		11.4		100	4	0	67.1	1.8	69.0	
850	0.30	8.3	61.7	1.3	0.5	0.3	63.8		11.6		100	4	0	66.5	1.4	67.9	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
841	0.3	58	3.6	0.1	0.0	0.1	0.0	3.2	0.1							
842	0.2	58	3.1	0.1	0.0	0.0	0.0	2.7	0.1							
843	0.3	61	3.0	0.1	0.0	0.0	0.0	0.6	0.3							
844	0.3	55	2.5	0.1	0.1	0.0	0.0	0.4	0.3							
845	0.3	56	2.9	0.1	0.1	0.0	0.0	0.5	0.7							
846	0.3	53	2.4	0.1	0.1	0.0	0.0	0.4	0.8							
847	0.4	53	2.5	0.2	0.1	0.0	0.0	0.3	1.2							
848	0.4	52	2.1	0.2	0.1	0.1	0.0	0.3	1.1							
849	0.3	59	1.4	0.2	0.1	0.1	0.0	0.4	1.0							
850	0.3	66	2.0	0.2	0.1	0.1	0.0	0.4	0.9							

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
841												
842												
843												
844												
845												
846												
847												
848												
849												
850												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S81TX-217-002 COUNTY: HILL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ABOUT 14 MI SE OF HILLSBORO ON MAREK FARM (HUSEY PLACE). FROM MALONE 1.7 MI NW ON TEXAS 171, 50 FT NE IN FIELD (SHEET 53 OF HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): SLOPE: 2% SLOPE ASPECT: SW

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE, AND D. ZUBERER DATE: 07/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-12	BLACK (10YR 2/1) CLAY; STRONG FINE GRANULAR STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	12-55	BLACK (10YR 2/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW PRESSURE FACES; FEW INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
A12	55-105	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW PRESSURE FACES; MODERATELY ALKALINE; CALCAREOUS; CLEAR BOUNDARY.
A13	105-163	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
AC1	163-238	BROWNISH YELLOW (10YR 6/6) CLAY; MANY FINE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK COARSE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW DARK GRAY (10YR 4/1) VERTICAL STREAKS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
AC2	238-340	YELLOWISH BROWN (10YR 5/6) CLAY; MANY COARSE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK COARSE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; MANY LARGE INTERSECTING SLICKENSIDES; COMMON CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON DESCRIBED AND SAMPLED IN MICRO-LOW. SOIL WAS PLANTED IN COTTON AT TIME OF SAMPLING. NO COTTON ROOT WAS EVIDENT AT THE SITE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

PEDON NUMBER: S81TX-217-002

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1039	0- 12	AP	0.6	0.6	0.7	3.0	5.3	10.2	24.5	50.4	10.8	39.4	SICL	
1040	12- 55	A11	0.3	0.3	0.5	2.1	3.9	7.1	25.4	47.2	27.1	45.7	SIC	
1041	55-105	A12	0.2	0.3	0.4	2.0	3.6	6.5	26.2	47.5	28.2	46.0	SIC	
1042	105-163	A13	0.4	0.4	0.5	1.9	3.5	6.7	26.3	46.2	29.6	47.1	SIC	
1043	163-238	AC1	0.1	0.3	0.4	1.5	2.7	5.0	34.2	50.1	25.4	44.9	SIC	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
			CA	MG	NA	K	TOTAL										
	%	1:1	MEQ/100G								%			%			
1039	1.06	8.0	75.2	2.3	0.1	0.8	78.5		40.0		100	0	0	7.4	1.3	8.8	
1040	0.83	7.9	80.5	2.2	0.6	0.6	84.0		46.2		100	1	1	6.6	1.3	7.9	
1041	0.73	7.9	79.8	2.5	1.7	0.6	84.6		45.6		100	3	3	8.8	1.4	10.3	
1042	0.81	7.9	79.2	3.4	3.5	0.5	86.7		41.3		100	7	6	10.1	2.2	12.6	
1043	0.26	8.0	67.6	3.3	3.0	0.4	74.3		31.5		100	8	7	27.0	3.4	30.6	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1039	0.5	61	3.3	0.3	0.2	0.1	0.0	2.8	0.1	0.9	1.33	1.79	0.103		30.7	
1040	0.5	70	3.7	0.2	1.5	0.0	0.0	3.4	0.2	1.1	1.27	1.82	0.127		35.1	
1041	0.7	74	3.3	0.3	3.8	0.0	0.0	2.9	0.1	1.6	1.27	1.86	0.136		36.5	
1042	1.5	74	5.0	0.5	10.0	0.0	0.0	1.7	1.3	9.5						
1043	1.4	65	3.7	0.4	9.6	0.0	0.0	1.3	1.1	8.3						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1039												
1040												
1041												
1042												
1043												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S81TX-217-004 COUNTY: HILL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ABOUT 15 MI SE OF HILLSBORO ON EDMUND MAREK FARM. FROM PENELOPE, 1.5 MI W ON FARM ROAD 2114, 0.9 MI N ON GRAVEL ROAD, 100 FT W IN FIELD (SHEET NO 68, HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1% SLOPE ASPECT:

PARENT MATERIALS: MARL FORMATION: LOWER TAYLOR MARL

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE, AND D. ZUBERER DATE: 07/22/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO FINE GRANULAR STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	13-55	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW INTERSECTING SLICKENSIDES; FEW SMALL PRESSURE FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	55-88	DARK GRAY (10YR 4/1) CLAY; STRONG ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SMALL CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS: GRADUAL WAVY BOUNDARY.
AC1	88-113	DARK GRAY (10YR 4/1) CLAY; FEW COARSE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW INTERSECTING SLICKENSIDES; FEW SMALL CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	113-140	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON SMALL INTERSECTING SLICKENSIDES; COMMON SELENITE CRYSTALS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3	140-183	OLIVE YELLOW (2.5Y 6/6) CLAY; MANY DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW INTERSECTING SLICKENSIDES; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C	183-200	LIGHT OLIVE BROWN (2.5Y 5/6) SHALY CLAY; MANY DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; HARD; FIRM; COMMON CALCIUM CARBONATE SEGREGATIONS; BEDDING PLANES EVIDENT WITH ANGULAR BREAKAGE; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL DESCRIBED AND SAMPLED IN MICRO-LOW. SOIL WAS PLANTED TO COTTON AT THE TIME OF SAMPLING AND NO COTTON ROOT ROT WAS NOTED.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
PEDON NUMBER: S81TX-217-004
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1049	0- 13	AP	0.4	0.3	0.4	1.5	2.8	5.4	24.3	39.9	12.8	54.7	C	
1050	13- 55	A11	0.2	0.3	0.3	1.3	2.3	4.4	23.0	34.4	35.9	61.2	C	
1051	55- 88	A12	0.4	0.4	0.3	1.2	1.9	4.2	23.0	34.4	40.4	61.4	C	
1052	88-113	AC1	0.5	0.4	0.3	0.9	1.9	4.0	23.4	36.2	43.7	59.8	C	
1053	113-140	AC2	0.2	0.3	0.2	0.9	1.5	3.1	22.0	40.6	34.0	56.3	SIC	
1054	140-183	AC3	0.0	0.0	0.0	0.2	0.7	0.9	29.0	41.7	19.6	57.4	SIC	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
	%	1:1	CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
			MEQ/100G								%			%			
1049	1.18	8.1	72.7	4.2	0.2	1.2	78.3		49.0		100	0	0	3.4	1.7	5.3	
1050	0.97	8.0	73.8	4.3	1.9	0.8	80.8		49.9		100	3	3	2.7	1.5	4.3	
1051	0.77	8.1	70.7	4.9	4.6	0.8	81.1		49.8		100	8	6	3.8	1.6	5.5	
1052	0.62	7.7	96.8	5.4	5.9	0.9	109.0		47.5		100	8	6	3.0	1.8	5.1	1.7
1053	0.54	7.7	148.9	5.6	6.6	0.8	161.9		42.8		100	10	8	3.9	1.5	5.6	7.5
1054	0.18	7.7	83.1	4.5	5.4	0.4	93.4		30.7		100	9	7	13.4	1.4	14.8	2.0

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1049	0.4	74	3.1	0.2	0.4	0.1	0.0	2.7	0.0	0.9	1.21	1.70	0.119		34.3	
1050	0.5	72	2.0	0.2	3.1	0.0	0.0	2.9	0.3	1.3	1.28	1.82	0.124		34.5	
1051	0.7	83	1.3	0.7	6.3	0.0	0.0	3.6	0.2	2.5	1.28	1.93	0.147		36.5	
1052	4.1	84	29.0	2.2	24.8	0.2	0.0	1.3	2.7	30.7	1.26	1.92	0.152		37.3	
1053	4.7	82	24.8	2.8	29.3	0.2	0.0	1.2	4.6	38.5						
1054	4.3	93	24.8	2.9	26.7	0.3	0.0	1.2	3.9	39.5						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1049												
1050												
1051												
1052												
1053												
1054												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S81TX-217-005 COUNTY: HILL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC THERMIC

LOCATION: ABOUT 7 MI S OF HILLSBORO ON SULLINS FARM. FROM JUNCTION OF I-35 AND FARM ROAD 310, 4.8 MI SW ON 310, 150 FT S IN FIELD (SHEET NO 50, HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1% SLOPE ASPECT: N

PARENT MATERIALS: CALCAREOUS SHALE FORMATION: SOUTH BOSQUE (EAGLE FORD GP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE, AND D. ZUBERER DATE: 07/22/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-10	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO STRONG FINE GRANULAR STRUCTURE; HARD; FIRM; ABOUT 5 TO 6% GRAVEL BY VOLUME; MODERATELY ALKALINE; SLIGHTLY CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	10-50	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW SMALL INTERSECTING SLICKENSIDES; COMMON SMALL SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	50-78	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW SMALL SILICEOUS PEBBLES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	78-103	VERY DARK GRAYISH BROWN (2.5Y 3/2) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW FINE SILICEOUS PEBBLES; FEW CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
AC2	103-130	YELLOWISH BROWN (10YR 5/6) CLAY LOAM; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW FINE SILICEOUS PEBBLES; FEW CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
AC3	130-150	YELLOWISH BROWN (10YR 5/6) CLAY; FEW MEDIUM DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MASSIVE; HARD; FIRM; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C1	150-183	LIGHT BROWNISH GRAY (2.5Y 6/2) SHALY CLAY; MANY PROMINENT WHITE (10YR 8/1) AND FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; FIRM; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C2	183-245	LIGHT BROWNISH GRAY (2.5Y 6/2) SHALY CLAY; MANY PROMINENT LIGHT OLIVE BROWN (2.5Y 5/6) AND FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; HARD; THIN BEDDING PLANES; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL WAS DESCRIBED AND SAMPLED IN A MICRO-LOW. SILICEOUS PEBBLES WERE BELIEVED TO BE UVALDE GRAVEL LAG. SOIL WAS PLANTED IN COTTON AT TIME OF SAMPLING AND COTTON ROOT-ROT AFFECTED 35-40% OF PLANTS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

PEDON NUMBER: S81TX-217-005

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1055	0- 10	AP	0.2	0.8	2.7	4.6	5.6	13.9	19.0	43.8	9.6	42.3	SIC	
1056	10- 50	A11	0.6	0.6	1.8	3.0	3.5	9.5	19.7	39.0	30.3	51.5	C	
1057	50- 78	A12	0.9	1.1	1.6	3.2	3.4	10.2	20.9	37.9	35.1	51.9	C	
1058	78-103	AC1	1.4	1.4	1.5	3.1	3.8	11.2	20.9	38.4	34.6	50.4	C	
1059	103-130	AC2	3.3	2.4	2.2	5.7	7.1	20.7	30.4	45.7	15.8	33.6	CL	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ	GYP SUM
			MEQ/100G														
1055	1.69	8.0	65.6	2.5	0.3	0.6	69.1		47.1		100	1	0	1.0	1.1	2.1	
1056	1.45	8.0	74.7	1.7	1.8	0.4	78.7		50.9		100	3	4	2.6	1.4	4.1	
1057	1.14	8.1	73.7	1.6	5.6	0.4	81.2		49.1		100	10	9	5.6	1.8	7.6	
1058	0.93	8.1	68.5	1.6	6.7	0.4	77.2		45.5		100	13	12	12.7	3.9	17.0	
1059	0.05	8.2	51.2	0.7	2.8	0.2	54.9		18.9		100	12	11	60.1	3.3	63.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1055	0.6	71	3.9	0.1	0.5	0.1	0.0	3.3	0.0	1.2	1.29	1.76	0.110		30.7	
1056	0.2	79	1.7	0.1	3.5	0.0	0.0	3.5	0.4	0.4	1.36	1.87	0.110		29.6	
1057	0.8	84	1.1	0.0	7.0	0.0	0.0	4.5	0.1	2.6	1.36	1.97	0.131		30.9	
1058	1.3	86	1.6	0.0	10.7	0.0	0.0	4.1	0.3	5.8	1.33	1.97	0.138		33.1	
1059	1.2	56	1.5	0.0	9.7	0.0	0.0	3.7	0.2	4.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1055												
1056												
1057												
1058												
1059												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK PEDON: S81TX-217-006 COUNTY: HILL

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: ABOUT 3 MI SE OF HILLSBORO ON SCHRONK FARM. FROM INTERSECTION OF TEXAS 22 AND 171, 2.5 MI SE ON 171, 0.5 MI S, 0.5 MI W, 0.3 MI N AND 0.5 MI W ON COUNTY ROAD, 75 FEET N IN FIELD (SHEET 43, HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: TOESLOPE ELEVATION (M): SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM AND COLLUVIUM FORMATION: SEDIMENTS FROM AUSTIN CHALK

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, L. BROCKMANN, T. MOORE, AND D. ZUBERER DATE: 07/22/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-13	BLACK (10YR 2/1) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO STRONG FINE GRANULAR STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
A11	13-35	BLACK (10YR 2/1) CLAY; STRONG FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
A12	35-80	VERY DARK GRAY (10YR 3/1) CLAY; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW BLACK (10YR 2/1) STREAKS ON VERTICAL PED FACES; FEW INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC1	80-145	DARK GRAYISH BROWN (10YR 4/2) CLAY; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; STRONG FINE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC2	145-213	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; MANY FINE DISTINCT YELLOWISH BROWN (10YR 5/8) AND MANY FINE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
AC3	213-245	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; MANY FINE DISTINCT YELLOWISH BROWN (10YR 5/8) AND MANY FINE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: PEDON WAS DESCRIBED AND SAMPLED IN A MICRO-LOW. WATER TABLE WAS ABOUT 245 CM. AT TIME OF SAMPLING, SOIL WAS PLANTED IN COTTON AND COTTON ROOT ROT INFECTED APPROXIMATELY 10% OF THE PLANTS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK
PEDON NUMBER: S81TX-217-006
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1060	0- 13	AP	0.0	0.1	0.1	0.4	1.2	1.8	34.2	49.3	4.5	48.9	SIC	
1061	13- 35	A11	0.0	0.0	0.1	0.5	1.4	2.0	30.6	42.6	19.5	55.4	SIC	
1062	35- 80	A12	0.2	0.1	0.2	0.6	1.3	2.4	31.0	42.7	25.7	54.9	SIC	
1063	80-145	AC1	0.8	0.5	0.4	0.8	1.6	4.1	31.1	44.4	28.1	51.5	SIC	
1064	145-213	AC2	0.1	0.1	0.2	0.8	2.1	3.3	38.5	53.9	23.4	42.8	SIC	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1060	2.24	8.0	85.1	1.7	0.1	1.0	87.9		61.5		100	0	0	12.8	3.6	16.6	
1061	2.24	7.9	84.0	1.4	0.1	0.5	86.1		57.9		100	0	0	23.6	2.6	26.4	
1062	1.14	7.9	77.6	0.9	0.1	0.4	78.9		47.7		100	0	0	34.9	3.1	38.3	
1063	0.68	7.9	71.9	0.6	0.1	0.3	73.0		39.4		100	0	0	37.9	2.9	41.1	
1064	0.43	8.0	62.7	0.6	0.1	0.3	63.8		32.5		100	0	0	45.0	1.9	47.0	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1060	0.4	70	2.9	0.1	0.1	0.1	0.0	2.9	0.0	0.1	1.23	1.77	0.131		34.6	
1061	0.5	71	4.7	0.0	0.1	0.0	0.0	3.2	0.3	0.1	1.27	1.84	0.133		33.5	
1062	0.5	65	4.4	0.1	0.2	0.0	0.0	3.3	0.0	0.1	1.40	1.87	0.102		28.5	
1063	0.6	58	5.1	0.0	0.2	0.0	0.0	2.6	0.1	0.5	1.48	1.90	0.087		25.3	
1064	0.6	63	4.3	0.0	0.2	0.0	0.0	1.9	0.0	0.5						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1060												
1061												
1062												
1063												
1064												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: HOUSTON BLACK TAXADJUNCT PEDON: S81TX-257-003 COUNTY: KAUFMAN

PEDON CLASSIFICATION: UDIC PELLUSTERT; VERY-FINE, MONTMORILLONITIC, THERMIC

LOCATION: JERRY MALONE FARM NEAR TALTY. FROM INTERSECTION OF FR 1641 AND FR 148, 1.4 MI SW TO FR 2932, 500 FT NW ON 2932, 300 FT SW ON UNPAVED ROAD, 30 FT SE IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT: W

PARENT MATERIALS: MARL FORMATION: UPPER TAYLOR MARL (MARLBORO)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: T. HALLMARK, T. MOORE AND M. ROTH DATE: 08/12/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP1	0-15	BLACK (10YR 2/1) CLAY; WEAK FINE SUBANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; VERY HARD; FIRM; COMMON FINE ROOTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
AP2	15-28	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
A13	28-84	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; EXTREMELY FIRM; FEW FINE ROOTS; MANY INTERSECTING SLICKENSIDES; COMMON FINE ROOTS ALONG SLICKINSIDES; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
A14CACS	84-145	VERY DARK GRAY (10YR 3/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW INTERSECTING SLICKENSIDES; COMMON LIGHT GRAY (10YR 7/1) CALCIUM CARBONATE SEGREGATIONS; FEW CRYSTALS OF GYPSUM (SELENITE) AND CALCITE; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
AC	145-173	GRAY (10YR 5/1) CLAY; MANY FAINT VERY DARK GRAY (10YR 3/1) AND COMMON DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW CALCITE CRYSTALS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
C1	173-203	GRAYISH BROWN (10YR 5/2) CLAY; MANY PROMINENT YELLOWISH BROWN (10YR 5/8) AND MANY PROMINENT BROWNISH YELLOW (10YR 6/6) MOTTLES; VERY HARD; VERY FIRM; FEW CALCITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
C2	203-231	GRAYISH BROWN (10YR 5/2) POORLY CONSOLIDATED SHALE; COMMON DISTINCT YELLOWISH BROWN (10YR 6/6) MOTTLES; COMMON CALCITE CRYSTALS; WHITE (10YR 8/1) MARL BODIES CONSTITUTE ABOUT 10% OF HORIZON.

REMARKS: PEDON SAMPLED IN MICRO-LOW. PEDON WAS IN MAPPING UNIT OF HOUSTON BLACK, B SLOPE. SITE WAS PLANTED IN COTTON AT TIME OF SAMPLING AND NO COTTON ROT INFESTATION WAS NOTED. THE PEDON IS A TAXADJUNCT TO THE HOUSTON BLACK SERIES AS THE CONTROL SECTION IS VERY-FINE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: HOUSTON BLACK TJD. PEDON NUMBER: S81TX-257-003
SOIL FAMILY: UDIC PELLUSTERT; VERY FINE, MONTMORILLONITIC, THERMIC
LOCATION: KAUFMAN COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1089	0- 15	AP1	0.4	0.2	0.2	0.9	1.3	3.0	22.5	36.7	14.9	60.3	C	
1090	15- 28	AP2	0.0	0.1	0.1	0.7	1.0	1.9	21.1	29.6	41.8	68.5	C	
1091	28- 84	A13	0.1	0.3	0.2	0.5	0.9	2.0	21.8	27.8	49.6	70.2	C	
1092	84-145	A14CACS	0.9	0.7	0.4	0.7	0.7	3.4	1.1	32.9	44.4	63.7	C	
1093	145-173	AC	0.2	0.1	0.1	0.6	1.4	2.4	20.1	26.1	37.2	71.5	C	
1094	173-203	C1	1.5	0.7	0.5	1.8	3.3	7.8	19.5	26.0	22.8	66.2	C	
1095	203-231	C2	0.3	0.3	0.3	1.9	3.2	6.0	20.8	27.4	20.6	66.6	C	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1089	1.15	8.1	85.5	3.3	0.5	0.8	90.1		67.0		100	1		2.0	1.1	3.0	
1090	1.19	8.1	84.4	3.5	2.6	0.7	91.2		66.0		100	4	4	1.9	1.0	3.1	
1091	1.19	8.1	78.9	4.6	7.2	0.8	91.5		66.5		100	10	11	2.7	0.8	3.6	
1092	0.80	7.1	102.7	5.5	12.5	0.8	121.4		57.1		100	15	12	4.7	1.2	6.0	1.9
1093	0.31	7.4	72.7	5.5	12.8	0.6	91.6		54.0		100	17	15	9.9	2.4	12.4	0.0
1094	0.31	7.6	65.8	4.8	10.2	0.6	81.4		45.3		100	17	16	20.7	2.6	23.5	
1095	0.26	7.6	65.5	5.0	9.4	0.6	80.5		41.6		100	16	14	18.5	3.2	22.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1089											1.20	1.87	0.160		39.6	
1090	0.4	87	1.3	0.0	3.1	0.0	0.0	3.2	0.2	0.3	1.19	1.85	0.159		38.3	
1091	0.6	101	0.5	0.0	5.6	0.0	0.0	4.6	0.9	0.9	1.19	1.92	0.175		39.2	
1092	5.7	99	23.8	2.9	42.2	0.2	0.0	1.4	7.6	45.0	1.24	1.98	0.168		37.0	
1093	4.0	119	7.8	1.1	31.3	0.2	0.0	1.7	10.1	25.0						
1094	2.7	117	3.0	0.5	21.1	0.2	0.0	1.7	8.4	12.0						
1095	3.1	109	5.3	0.8	24.3	0.3	0.0	1.7	8.4	15.5						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1089												
1090												
1091												
1092												
1093												
1094												
1095												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: IMOGENE VARIANT PEDON: S82TX-273-006 COUNTY: KLEBERG

PEDON CLASSIFICATION: TYPIC NATRUSTALF; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF FR 1717 AND FR 2619, 0.1 MI S, 60 FT W IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/13/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (10YR 3/2) FINE SANDY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; NEUTRAL; NONCALCAREOUS; ABRUPT BOUNDARY.
BT1	15-56	DARK GRAYISH BROWN (10YR 4/2) CLAY LOAM; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; THIN CONTINUOUS CLAY FILMS ON PED FACES; MILDLY ALKALINE; NONCALCAREOUS; CLEAR BOUNDARY.
BT2	56-96	GRAYISH BROWN (10YR 5/2) CLAY LOAM; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; DARK GRAY (10YR 4/1) COATINGS ON PED FACES; THIN CONTINUOUS CLAY FILMS ON VERTICAL PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; SLIGHTLY CALCAREOUS; CLEAR BOUNDARY.
BTK1	96-168	PALE BROWN (10YR 6/3) CLAY; FEW FINE DISTINCT BROWN (10YR 4/3) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY DARK GRAY (10YR 3/1) COATINGS ON PED FACES; THIN PATCHY CLAY FILMS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; SLIGHTLY CALCAREOUS; GRADUAL BOUNDARY.
BTK2	168-190	PALE BROWN (10YR 6/3) CLAY; COMMON FINE FAINT BROWN (10YR 5/3) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; THIN PATCHY CLAY FILMS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BW	190-221	VERY PALE BROWN (10YR 7/3) CLAY; COMMON FINE DISTINCT BROWN (10YR 5/3) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS NOT EVIDENT. SOLUM THICKNESS IS OUTSIDE RANGE OF SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: IMOGENE VARIANT — PEDON NUMBER: S82TX-273-006
SOIL FAMILY: TYPIC NATRUSTALF; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1366	0- 15	AP	0.0	0.0	0.4	31.2	32.3	63.9	4.9	22.6	8.9	13.5	VFSL	0
1367	15- 56	BT1	0.0	0.0	0.3	25.5	25.7	51.5	4.9	20.3	21.5	28.2	SCL	0
1368	56- 96	BT2	0.0	0.0	0.4	22.5	25.0	47.9	7.5	24.5	19.6	27.6	SCL	0
1369	96-168	BTK1	0.0	0.0	0.1	14.0	18.6	32.7	18.5	34.8	19.1	32.5	CL	0
1370	168-190	BTK2	0.1	0.0	0.1	10.6	16.0	26.8	19.3	37.3	22.2	35.9	CL	0
1371	190-221	BW	0.0	0.0	0.0	13.0	19.9	32.9	13.6	29.0	25.0	38.1	CL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
			MEQ/100G											%			
1366	0.59	6.8	6.9	1.7	0.1	1.0	9.7		9.2		100	1	0				
1367	0.44	7.5	12.7	5.4	0.5	0.7	19.3		18.3		100	2	2				
1368	0.24	8.2	44.0	6.1	2.7	0.6	53.4		15.6		100	15	17	4.4	0.4	4.8	
1369	0.38	8.8	44.4	5.7	5.2	0.7	56.1		28.2		100	16	32	20.2	0.7	21.0	
1370	0.15	9.1	42.9	7.7	6.3	0.9	57.9		32.7		100	16	32	19.6	0.7	20.4	
1371	0.18	9.0	44.3	8.9	7.0	1.0	61.3		37.7		100	16	33	13.9	0.4	14.3	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1366	0.7	32	1.3	0.6	0.3	0.7	0.0	1.3	0.4	1.4	1.59	1.75	0.032		16.7	
1367	0.6	54	1.8	0.8	2.3	0.1	0.0	3.4	0.4	0.8	1.42	1.75	0.072		24.8	
1368	0.9	56	0.1	0.2	6.5	0.1	0.0	3.9	0.3	0.8	1.45	1.78	0.071		23.3	
1369	0.9	82	0.1	0.1	10.0	0.1	0.0	4.7	0.2	1.0	1.36	1.86	0.110		32.8	
1370	0.9	105	0.1	0.1	10.0	0.1	0.0	4.6	0.7	0.9						
1371	0.9	113	0.1	0.1	10.4	0.1	0.0	4.4	0.4	1.1						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1366												
1367												
1368												
1369												
1370												
1371												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: KIRVIN PEDON: S80TX-405-001 COUNTY: SAN AUGUSTINE

PEDON CLASSIFICATION: TYPIC HAPLUDULT; CLAYEY, MIXED, THERMIC

LOCATION: FROM THE INTERSECTION OF TEXAS 103 AND TEXAS 147, 2.3 MI SW ON TEXAS 147 TO FOREST SERVICE ROAD, 0.35 MI SE ON FOREST ROAD, 75 FT E INTO FOREST.

LANDFORM: SHOULDER ELEVATION (M): SLOPE: 2% SLOPE ASPECT: W

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: YEGUA (LOWER SECTION)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, AND PETERS DATE: 08/11/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-7	DARK GRAYISH BROWN (10YR 4/2) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SOFT; VERY FRIABLE; MANY FINE ROOTS; ABOUT 2% IRONSTONE GRAVEL; MEDIUM ACID; CLEAR WAVY BOUNDARY.
A21	7-17	BROWN (10YR 5/3) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE ROOTS; ABOUT 2% IRONSTONE GRAVEL; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
A22	17-26	PALE BROWN (10YR 6/3) FINE SANDY LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE ROOTS; STRONGLY ACID; ABRUPT SMOOTH BOUNDARY.
B21T	26-44	RED (2.5YR 4/6) CLAY; WEAK FINE PRISMATIC PARTING TO STRONG MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON FINE ROOTS; COMMON FINE PORES; THICK CONTINUOUS CLAY FILMS ON PED FACES; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
B22T	44-68	RED (2.5YR 4/8) CLAY; FEW FINE DISTINCT YELLOWISH RED (5YR 4/6) MOTTLES; WEAK FINE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON FINE ROOTS; COMMON FINE PORES; THICK CONTINUOUS CLAY FILMS ON PED FACES; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
B23T	68-86	RED (2.5YR 4/6) CLAY; FEW MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; THICK CONTINUOUS CLAY FILMS ON PED FACES; ABOUT 1% IRONSTONE GRAVEL; EXTREMELY ACID; CLEAR SMOOTH BOUNDARY.
B24T	86-104	RED (2.5YR 4/6) CLAY; MANY MEDIUM PROMINENT LIGHT YELLOWISH BROWN (10YR 6/4) AND MANY MEDIUM PROMINENT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; COMMON DISTINCT CLAY FILMS; FEW HORIZONTAL REMNANTS OF LIGHT BROWNISH GRAY (10YR 6/2) UNWEATHERED SHALE; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
B31T	104-127	LIGHT BROWNISH GRAY (10YR 6/2) SANDY CLAY LOAM; MANY MEDIUM FAINT PALE BROWN (10YR 6/3) AND COMMON MEDIUM PROMINENT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON YELLOWISH RED (5YR 5/6) COATINGS ON PED FACES; CONTINUOUS CLAY FILMS ON VERTICAL PED FACES; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
B32T	127-147	LIGHT BROWNISH GRAY (10YR 6/2) SANDY CLAY LOAM; MANY MEDIUM FAINT PALE BROWN (10YR 6/3) AND FEW COARSE PROMINENT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW PATCHY CLAY FILMS ON VERTICAL PED FACES; FEW ROOTS ALONG CRACKS; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
C	147-165	COMMON HORIZONTAL LIGHT BROWNISH GRAY (10YR 6/2) SHALE FRAGMENTS; STRATIFIED BROWNISH YELLOW (10YR 6/8), PALE BROWN (10YR 6/3) AND LIGHT BROWNISH GRAY (10YR 6/2) SANDSTONE AND SHALE; STRUCTURELESS MASSIVE; VERY HARD; VERY FIRM; FEW PATCHY CLAY FILMS AND ROOTS ALONG VERTICAL CRACKS THA AT INTERVALS OF 40-60 CM; EXTREMELY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: KIRVIN
SOIL FAMILY: TYPIC HAPLUDULT; CLAYEY, MIXED, THERMIC
LOCATION: SAN AUGUSTINE COUNTY, TEXAS

PEDON NUMBER: S80TX-405-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
877	0- 7	A1	0.9	0.7	0.8	15.4	51.3	69.1	8.1	26.6	1.1	4.3	VFSL	
878	7- 17	A21	2.5	1.1	0.9	15.6	50.8	70.9	8.0	25.5	0.8	3.6	VFSL	
879	17- 26	A22	2.3	0.7	0.5	13.8	52.8	70.1	7.6	26.0	0.1	3.9	VFSL	
880	26- 44	B21T	0.3	0.1	0.1	3.2	18.8	22.5	7.6	24.7	39.3	52.8	C	
881	44- 68	B22T	0.1	0.1	0.1	1.0	11.2	12.5	11.6	34.0	40.4	53.5	C	
882	68- 86	B23T	0.1	0.1	0.1	0.8	18.1	19.2	11.7	34.7	33.2	46.1	C	
883	86-104	B24T	0.3	0.2	0.2	0.5	22.4	23.6	12.9	39.3	24.1	37.1	CL	
884	104-127	B31T	1.0	0.7	0.4	0.5	22.0	24.6	15.1	42.7	19.7	32.7	CL	
885	127-147	B32T	0.1	0.2	0.1	0.2	17.8	18.4	18.2	50.2	15.1	31.4	SICL	
886	147-165	C1	2.6	1.5	0.8	1.0	24.9	30.8	17.8	41.5	9.5	27.7	CL	
887	305-427	C2												
888	427-508	C3												
889	508-	C4												

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
877	1.82	4.3	1.1	0.3	0.1	0.1	1.6	2.1	9.2	3.7	17	1					
878	0.88	4.4	0.4	0.2	0.1	0.1	0.8	2.2	6.3	3.0	13	2					
879	0.56	4.5	0.2	0.2	0.1	0.1	0.6	1.6	5.7	2.2	11	2					
880	0.51	4.5	0.1	2.8	0.2	0.3	3.4	11.8	18.3	15.2	19	1					
881	0.34	4.6	0.2	2.9	0.2	0.3	3.6	13.1	19.5	16.7	18	1					
882	0.29	4.6	0.2	2.4	0.2	0.3	3.1	13.4	18.2	16.5	17	1					
883	0.20	4.6	0.1	1.9	0.2	0.2	2.4	11.5	15.6	13.9	15	1					
884	0.16	4.5	0.1	1.6	0.3	0.2	2.2	13.7	15.6	15.9	14	2					
885	0.13	4.1	0.1	1.6	0.3	0.3	2.3	14.4	17.1	16.7	13	2					
886	0.12	4.1	0.1	1.4	0.3	0.2	2.0	11.4	16.2	13.4	12	2					
887			0.2	1.3	0.4	0.3	2.2		18.2		12	2					
888			0.1	0.2	0.3	0.3	0.9		11.6		8	3					
889			0.1	0.5	0.5	0.5	1.6		20.8		8	2					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
877																
878											1.44	1.51	0.017		20.4	
879																
880											1.33	1.74	0.092		31.8	
881											1.33	1.65	0.075		32.7	
882											1.40	1.65	0.058		29.8	
883											1.49	1.67	0.038		25.2	
884											1.47	1.66	0.042		25.6	
885											1.46	1.87	0.084		27.0	
886											1.63	1.76	0.024		21.0	
887																
888																
889																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
877												
878												
879												
880												
881												
882												
883												
884												
885												
886												
887												
888												
889												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: KOURY PEDON: S80TX-005-011 COUNTY: ANGELINA

PEDON CLASSIFICATION: FLUVAQUENTIC DYSTROCHREPT; COARSE-SILTY, SILICEOUS, THERMIC

LOCATION: FROM INTERSECTION OF US 69 AND BOYKIN SPRINGS ROAD (FOREST SERVICE 302), 7.2 MI E, 0.35 MI SE ACROSS GREEN CREEK FLOODPLAIN.

LANDFORM: FLOODPLAIN ELEVATION (M): 40 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: HOLOCENE SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, GRAY, ZIMMERMAN DATE: 08/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-7	PALE BROWN (10YR 6/3) SILT LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; MANY MEDIUM AND COARSE ROOTS; COMMON FINE PORES; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
A12	7-25	PALE BROWN (10YR 6/3) VERY FINE SANDY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; COMMON FINE PORES; COMMON FINE BLACK CONCRETIONS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
A2	25-44	PALE BROWN (10YR 6/3) LOAM; STRUCTURELESS MASSIVE; SLIGHTLY HARD; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; MANY MEDIUM PORES; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B21	44-70	PALE BROWN (10YR 6/3) SILT LOAM; COMMON MEDIUM FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE AND MEDIUM ROOTS; COMMON FINE PORES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B22	70-100	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B23	100-126	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; COMMON COATS OF LIGHT BROWNISH GRAY SAND ON PED EXTERIORS; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
A1B	126-158	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; FEW FINE PORES; MANY COATS OF LIGHT BROWNISH GRAY SAND ON PED EXTERIORS; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
B2B	158-178	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM; COMMON MEDIUM DISTINCT OLIVE YELLOW (2.5Y 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; FEW FINE PORES; FEW COATS OF LIGHT BROWNISH GRAY SAND ON PED EXTERIORS; EXTREMELY ACID.

REMARKS: PROBE INVESTIGATIONS REVEALED DENSE COMPACT BEDROCK AT 2.75 M. THE SITE IS FREQUENTLY FLOODED. THIS IS THE TYPE LOCATION FOR THE KOURY SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: KOURY
PEDON NUMBER: S80TX-005-011
SOIL FAMILY: FLUVAQUENTIC DYSTROCHREPT; COARSE-LOAMY, SILICEOUS, THERMIC
LOCATION: ANGELINA COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
911	0- 7	A11	0.0	0.4	1.0	9.8	27.8	39.0	23.8	50.2	4.3	10.8	SIL	
912	7- 25	A12	0.0	0.1	0.8	13.0	34.4	48.3	21.6	45.2	2.8	6.5	VFSL	
913	25- 44	A2	0.0	0.1	0.8	10.9	31.9	43.7	23.5	47.1	4.9	9.2	L	
914	44- 70	B21	0.0	0.0	0.9	6.7	21.8	29.4	30.5	56.3	9.0	14.3	SIL	
915	70-100	B22	0.0	0.1	1.1	7.3	22.0	30.5	32.0	57.3	7.5	12.2	SIL	
916	100-126	B23	0.0	0.1	1.3	7.9	21.3	30.6	30.7	57.6	6.7	11.6	SIL	
917	126-158	A1B	0.0	0.2	1.3	8.1	20.3	29.9	33.8	57.1	7.7	13.0	SIL	
918	158-178	B2B	0.0	0.2	1.2	7.9	19.5	28.8	33.9	56.5	8.9	14.7	SIL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
911	1.61	4.1	1.7	0.7	0.2	0.2	2.8	4.1	11.5	6.9	24	2	1				
912	0.33	4.2	0.1	0.2	0.2	0.1	0.6	2.9	7.8	3.5	8	2	1				
913	0.22	4.4	0.1	0.7	0.2	0.1	1.1	3.3	8.6	4.4	13	2	1				
914	0.19	4.1	0.4	0.7	0.2	0.2	1.5	5.6	10.8	7.1	14	2	2				
915	0.17	3.7	0.6	0.5	0.4	0.1	1.6	4.9	9.9	6.5	16	3	5				
916	0.16	3.5	0.6	0.6	0.5	0.1	1.8	3.6	9.9	5.4	18	3	6				
917	0.15	3.5	1.7	0.7	0.7	0.1	3.2	3.3	10.5	6.5	30	4	6				
918	0.16	3.4	2.7	1.2	1.0	0.2	5.1	3.3	11.2	8.4	46	5	7				

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
911	0.2	39	0.6	0.4	0.4	0.2										
912	0.1	28	0.1	0.2	0.3	0.1					1.53	1.63	0.022		17.9	
913	0.1	30	0.1	0.2	0.3	0.1					1.55	1.66	0.023		17.2	
914	0.2	36	0.1	0.3	0.7	0.1					1.52	1.64	0.026		21.4	
915	0.7	33	0.5	0.7	3.5	0.1					1.58	1.69	0.022		18.1	
916	1.1	32	1.4	1.1	6.5	0.1					1.60	1.68	0.018		18.7	
917	1.7	33	2.9	1.7	9.7	0.1					1.56	1.67	0.024		20.5	
918	1.8	36	3.4	1.6	10.7	2.2					1.53	1.70	0.038		21.5	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
911												
912												
913	***		T		**		*					
914	***		T		**		*					
915	***		T		**		*					
916	***		T		**		*					
917												
918												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LAKE CHARLES PEDON: S82TX-481-002 COUNTY: WHARTON

PEDON CLASSIFICATION: TYPIC PELLUDERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: SOUTH OF EAST BERNARD. FROM INTERSECTION OF TEXAS 60 AND 90A, 4.3 MI S, 0.2 MI NE ALONG DIRT ROAD, 150 FT S IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 34 SLOPE: 0-1% SLOPE ASPECT: S

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK, AND R. B. SMITH DATE: 07/27/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY; MODERATE FINE GRANULAR STRUCTURE; VERY FIRM; COMMON BLACK CONCRETIONS; NEUTRAL; NONCALCAREOUS; ABRUPT BOUNDARY.
A1	15-61	BLACK (10YR 2/1) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK CONCRETIONS; MANY INTERSECTING SLICKENSIDES; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
A2	61-102	BLACK (10YR 2/1) CLAY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW BLACK CONCRETIONS; COMMON INTERSECTING SLICKENSIDES; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
A3	102-130	VERY DARK GRAY (10YR 3/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK CONCRETIONS; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
BK1	130-155	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; COMMON FINE FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW INTERSECTING SLICKENSIDES; FEW FINE CALCIUM CARBONATE SEGREGATIONS; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
BK2	155-180	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; COMMON FINE DISTINCT REDDISH BROWN (5YR 4/4) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW FINE CALCIUM CARBONATE CONCRETIONS; MILDLY ALKALINE; SLIGHTLY EFFERVESCENT; GRADUAL BOUNDARY.
BK3	180-241	DARK YELLOWISH BROWN (10YR 4/6) CLAY; COMMON FINE DISTINCT DARK GRAY (10YR 4/1) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW BLACK CONCRETIONS; COMMON INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. NO COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LAKE CHARLES
SOIL FAMILY: TYPIC PELLUDERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: WHARTON COUNTY, TEXAS

PEDON NUMBER: S82TX-481-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1403	0- 15	AP	0.1	0.1	0.3	2.8	7.3	10.6	18.8	34.2	36.8	55.2	C	0
1404	15- 61	A1	0.1	0.2	0.2	2.4	7.6	10.5	16.3	28.2	46.1	61.3	C	0
1405	61-102	A2	0.0	0.1	0.3	2.6	7.5	10.5	16.7	30.0	46.1	59.5	C	0
1406	102-130	A3	0.1	0.2	0.3	2.4	6.7	9.7	15.8	28.1	47.0	62.2	C	0
1407	130-155	BK1	0.2	0.1	0.2	2.6	6.7	9.8	17.5	23.5	48.7	66.7	C	0
1408	155-180	BK2	0.0	0.1	0.1	1.8	6.2	8.2	17.3	29.6	42.9	62.2	C	0
1409	180-241	BK3	0.3	0.3	0.2	1.2	8.1	10.1	22.9	30.9	35.1	59.0	C	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1403	1.58	6.6	23.3	14.1	0.2	1.0	38.6		39.9		97	0	1				
1404	1.05	6.6	29.9	12.5	0.6	0.5	43.6		45.5		96	1	2				
1405	0.92	6.6	26.0	16.3	1.2	0.5	44.0		42.2		100	2	3				
1406	0.69	6.9	32.0	14.8	1.6	0.5	48.9		40.1		100	4	0				
1407	0.48	7.2	33.1	21.4	1.9	0.7	57.1		43.9		100	4	4	0.1	0.2	0.3	
1408	0.29	7.4	39.0	19.0	1.8	0.6	60.4		38.7		100	4	5	1.0	0.1	1.1	
1409	0.33	7.7	55.4	12.6	1.6	0.6	70.1		32.8		100	4	5	11.9	0.9	12.9	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1403	0.2	65	0.7	0.3	0.4	0.1	0.0	0.4	0.0	0.6	1.07	1.73	0.174		51.2	
1404	0.3	79	0.7	0.3	1.3	0.0	0.0	0.9	0.1	0.8	1.26	2.01	0.168		37.8	
1405	0.4	80	0.8	0.4	2.2	0.0	0.0	0.6	0.3	1.3						
1406	0.6	81	0.9	0.6	0.3	0.0	0.0	0.3	1.4	1.0	1.25	1.98	0.166		38.3	
1407	0.6	99	0.9	0.6	3.5	0.1	0.0	1.5	0.7	1.0						
1408	0.6	82	0.8	0.7	3.9	0.1	0.0	3.0	1.6	0.8						
1409	0.5	85	0.6	0.3	3.5	0.1	0.0	2.4	0.2	0.6						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1403												
1404												
1405												
1406												
1407												
1408												
1409												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LAKE CHARLES TAXADJUNCT PEDON: S82TX-481-001 COUNTY: WHARTON

PEDON CLASSIFICATION: TYPIC PELLUDERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: SOUTH OF EAST BERNARD. FROM INTERSECTION OF TEXAS 60 AND FR 2919, 1.0 MI E, 0.6 MI N ON PAVED ROAD, 300 FT SW IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 36 SLOPE: 0-1% SLOPE ASPECT: S

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/27/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-18	BLACK (10YR 2/1) CLAY; MODERATE FINE GRANULAR STRUCTURE; FIRM; LOWER 5 CM COMPACTED AS A PLOW PAN; NEUTRAL; NONCALCAREOUS; ABRUPT BOUNDARY.
A1	18-61	VERY DARK GRAY (10YR 3/1) CLAY; COMMON FINE FAINT OLIVE GRAY (5Y 5/2) MOTTLES; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK (10YR 2/1) MASSES; COMMON INTERSECTING SLICKENSIDES; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
A2	61-99	DARK GRAYISH BROWN (10YR 4/2) CLAY; COMMON FINE FAINT DARK GRAYISH BROWN (2.5Y 4/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK CONCRETIONS; FEW PRESSURE FACES; COMMON INTERSECTING SLICKENSIDES; SCLEROTIA AND HYPHAL GROWTH NOTED ON PRESSURE FACE; COMMON BLACK (10YR2/1) MASSES AND STREAKS ALONG CRACKS; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
BK1	99-127	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; FEW FINE DISTINCT BROWN (7.5YR 4/4) MOTTLES; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW BLACK CONCRETIONS; COMMON MEDIUM CALCIUM CARBONATE CONCRETIONS; NEUTRAL; NONCALCAREOUS; GRADUAL BOUNDARY.
2BK2	127-170	REDDISH BROWN (5YR 4/4) CLAY LOAM; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW BLACK CONCRETIONS; MANY MEDIUM CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT BOUNDARY.
3C	170-218	REDDISH YELLOW (7.5YR 6/6) VERY FINE SANDY LOAM; STRUCTURELESS MASSIVE; FINE STRATIFICATION EVIDENT; THIN STRATA OF FINE AND VERY FINE SAND; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT. TAXADJUNCT BECAUSE CHROMA OF 2 IS IN A2 AND BK1 HORIZONS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LAKE CHARLES TDJ. PEDON NUMBER: S82TX-481-001
SOIL FAMILY: TYPIC PELLUDERT; FINE, MONTMORILLONITIC,THERMIC
LOCATION: WHARTON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1397	0- 18	AP	0.1	0.2	0.5	4.2	13.7	18.7	21.7	41.5	24.3	39.8	SICL	0
1398	18- 61	A1	0.2	0.4	0.7	3.5	11.5	16.3	19.5	35.8	33.5	47.9	C	0
1399	61- 99	A2	0.2	0.3	0.7	3.6	13.0	17.8	18.2	35.0	34.8	47.2	C	0
1400	99-127	BK1	1.2	1.0	0.8	3.4	11.1	17.5	18.9	34.8	34.6	47.7	C	0
1401	127-170	2BK2	2.1	0.8	0.4	2.1	19.2	24.6	19.9	48.1	17.8	27.3	CL	0
1402	170-218	3C	0.0	0.0	0.0	8.3	39.3	47.6	10.6	42.0	6.2	10.4	L	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1397	1.78	7.3	27.4	7.1	0.5	0.8	35.8		33.8		100	1	0				
1398	0.87	7.1	28.6	7.2	0.2	0.4	36.4		37.1		98	0	1				
1399	0.65	6.0	29.7	6.5	0.2	0.3	36.7		36.6		100	0	1	0.0	0.2	0.2	
1400	0.49	6.5	37.2	6.4	0.2	0.3	44.2		34.6		100	0	1	1.4	0.2	1.6	
1401	0.26	7.1	55.5	3.2	0.1	0.2	59.0		18.6		100	0	1	17.6	0.5	18.1	
1402	0.21	7.3	43.5	1.8	0.1	0.1	45.6		6.5		100	1	1	13.4	0.4	13.8	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1397	1.0	53	2.7	1.1	0.6	0.2	0.0	2.1	0.3	2.5	1.01	1.58	0.161		62.3	
1398	3.8	65	2.0	0.5	0.6	0.0	0.0	2.7	0.3	0.5	1.31	1.90	0.132		37.2	
1399	3.5	64	1.9	0.4	0.6	0.0	0.0	2.0	0.2	1.5	1.38	1.94	0.120		34.1	
1400	4.8	65	3.2	0.7	0.8	0.0	0.0	3.3	2.8	2.5	1.40	1.98	0.122		31.4	
1401	0.4	48	1.9	0.4	0.8	0.0	0.0	1.4	3.1	0.3						
1402	0.3	33	1.3	0.4	0.7	0.0	0.0	1.0	0.0	0.6						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1397												
1398												
1399												
1400												
1401												
1402												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LANGTRY VARIANT PEDON: S81TX-465-001 COUNTY: VAL VERDE

PEDON CLASSIFICATION: LITHIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, HYPERTHERMIC

LOCATION: ON THE ROSE RANCH; 13.7 MI N OF COMSTOCK ON RT 163; 40 YD W OF FENCE AND 50 YD S OF GATE.

LANDFORM: UPLAND ELEVATION (M): 600 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: DEVILS RIVER

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING. C.L. GIRDNER, AND J. STEVENS DATE: 07/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-5	VERY DARK BROWN (10YR 2/2) STONY SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; MODERATE FINE AND MEDIUM GRANULAR STRUCTURE; SOFT; MANY FINE ROOTS; 50% COARSE FRAGMENTS; SLIGHTLY EFFERVESCENT; CLEAR IRREGULAR BOUNDARY.
A12CA	5-18	VERY DARK BROWN (10YR 2/2) STONY SILT LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; SOFT; COMMON FINE ROOTS; FRAGMENTS ARE FLAGGY, HORIZONATLLY ORIENTED, AND COATED WITH SECONDARY CARNONATES RANGING FROM 1-10 MM IN THICKNESS AND COATING BOTH UPPER AND LOWER SURFACES; SOME HAVE PENDANTS ON LOWER SURFACES; INTERSTICES ARE FILLED WITH FINE EARTH; 80% COARSE FRAGMENTS; SLIGHTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
CCAM&R	18-25	VERY PALE BROWN (10YR 8/3 AND 7/3, DRY) LAMINAR CAP OVER HARD ROCK; LAMINAR CAP IS CONTINUOUS AND HAS A MAXIMUM THICKNESS OF ABOUT 1 CM; UPPER SURFACE OF LIMESTONE IS SOLUTION PITTED.
R	25-35+	LIGHT GRAY (2.5Y 7/2, DRY) HARD LIMESTONE BEDROCK; WHAT FEW FRACTURES PRESENT CONTAIN INFILLINGS OF SECONDARY CARBONATES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LANGTRY VARIANT
PEDON NUMBER: S81TX-465-001
SOIL FAMILY: LITHIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, HYPERTHERMIC
LOCATION: VAL VERDE COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1225	0- 5	A11	1.2	0.3	0.3	1.2	5.0	8.0	32.7	71.5	2.5	20.5	SIL	64
1226	5- 18	A12CA	2.3	0.4	0.4	1.2	4.9	9.2	31.6	66.8	4.6	24.0	SIL	86
1227	18- 25	CCAM&R												0
1228	25- 35	R												0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1225	4.19	7.4	75.2	2.1	0.1	1.2	78.5		48.7		100	0	0	2.8	1.7	4.6	
1226	4.15	7.5	75.5	1.3	0.1	0.7	77.6		51.2		100	0	0	3.8	1.8	5.8	
1227	3.90															90.4	
1228	3.90															92.6	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1225	0.8	69	6.0	0.5	0.2	0.2	0.0	6.5	0.4	0.7	0.89	1.26	0.123		69.7	
1226	0.5	74	3.6	0.2	0.2	0.1	0.0	3.8	0.1	0.3						
1227																
1228																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1225	***		*		**		**					
1226	***		*		**		**					
1227												
1228												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LAPARITA VARIANT PEDON: S82TX-273-004 COUNTY: KLEBERG

PEDON CLASSIFICATION: VERTIC ARGIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF US 77 AND COUNTY ROAD E2130, 4.1 MI E ON COUNTY ROAD, 0.6 MI S ON COUNTY ROAD, 0.4 MI E ON DIRT ROAD, 150 FT IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/13/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-25	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK FINE GRANULAR STRUCTURE; FIRM; FEW SHELL FRAGMENTS; MILDLY ALKALINE; NONCALCAREOUS; ABRUPT BOUNDARY.
BT	25-41	DARK GRAY (10YR 4/1) CLAY; FEW FINE DISTINCT DARK REDDISH BROWN (2.5YR 3/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON BLACK (10YR 2/1) COATINGS ON PED FACES; THIN PATCHY CLAY FILMS ON PED FACES; MILDLY ALKALINE; NONCALCAREOUS; GRADUAL BOUNDARY.
BK1	41-76	GRAYISH BROWN (10YR 5/2) CLAY; FEW FINE FAINT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW VERY DARK GRAY (10YR 3/1) STAINS ON PED FACES; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK2	76-142	GRAYISH BROWN (2.5Y 5/2) CLAY; FEW FINE FAINT BROWN (10YR 4/3) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW VERY DARK GRAY (10YR 3/1) STAINS ON PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BK3	142-201	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE DISTINCT BROWN (10YR 4/3) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW DARK GRAY (10YR 4/1) STAINS ON PED FACES; FEW FE-MN STAINS ALONG OLD ROOT CHANNELS; FEW CALCITE CRYSTALS OCCURING IN POCKETS WITHIN THE MATRIX; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
CY	201-226	LIGHT OLIVE GRAY (5Y 6/2) CLAY; FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; STRUCTURELESS MASSIVE; VERY FIRM; FEW DARK GRAY (10YR 4/1) STAINS; THIN SEAMS OF SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. NO COTTON ROOT ROT WAS NOTED. SOLUM THICKNESS AND ESP ARE OUTSIDE SERIES RANGE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LAPARITA VARIANT
SOIL FAMILY: VERTIC ARGIUSTOLL; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

PEDON NUMBER: S82TX-273-004

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (< 0.0002)	TOTAL (< 0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1354	0- 25	AP	0.1	0.0	0.4	19.0	22.2	41.7	8.8	22.2	21.7	36.1	CL	0
1355	25- 41	BT	0.0	0.0	0.4	16.4	19.7	36.5	7.4	18.7	35.2	44.8	C	0
1356	41- 76	BK1	0.4	0.2	0.3	12.9	16.7	30.5	11.1	23.4	32.0	46.1	C	0
1357	76-142	BK2	0.2	0.2	0.3	11.4	15.7	27.8	13.3	25.0	32.4	47.2	C	0
1358	142-201	BK3	0.2	0.1	0.2	9.9	14.1	24.5	14.7	24.5	36.4	51.0	C	0
1359	201-226	CY	1.1	1.0	0.6	10.2	13.4	26.3	13.7	22.0	38.8	51.7	C	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE SAT			CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL	AL	CEC	ECEC		ESP	SAR				
			MEQ/100G								%			%			
1354	1.05	7.6	17.9	4.7	0.3	2.3	25.2		24.1		100	1	1				
1355	0.88	7.5	19.4	7.2	0.9	1.2	28.7		28.5		100	2	2				
1356	0.41	8.3	53.9	9.9	2.2	1.1	67.1		27.6		100	7	5	11.0	0.5	11.5	0.0
1357	0.36	8.5	51.3	11.6	6.4	1.5	70.8		26.8		100	21	15	13.8	0.7	14.7	0.0
1358	0.27	8.1	49.7	11.0	9.9	1.8	72.4		28.5		100	24	17	11.8	1.2	13.1	0.0
1359	0.22	8.1	48.2	11.6	11.7	1.9	73.4		30.6		100	24	18	9.3	1.4	10.8	0.7

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1354	0.7	52	3.0	1.0	0.8	0.6	0.0	3.0	0.7	1.3	1.35	1.73	0.086		28.9	
1355	0.6	72	2.2	1.0	2.5	0.1	0.0	3.6	0.0	1.0	1.41	1.78	0.081		29.2	
1356	0.6	86	0.8	0.4	4.0	0.0	0.0	3.3	5.1	1.1	1.34	1.80	0.103		32.6	
1357	0.8	128	0.2	0.2	6.5	0.1	0.0	3.8	0.5	1.6	1.38	1.84	0.101		32.3	
1358	3.1	125	2.4	2.0	24.8	0.3	0.0	1.8	4.2	17.5						
1359	4.6	116	4.5	3.9	37.4	0.4	0.0	1.6	7.6	20.8						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1354												
1355												
1356												
1357												
1358												
1359												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LETON PEDON: S78TX-167-001 COUNTY: GALVESTON

PEDON CLASSIFICATION: TYPIC GLOSSAQUALF; FINE-SILTY, MIXED, THERMIC

LOCATION: FROM INTERSECTION OF POWERS ROAD AND CLOUD BAYOU, 1.7 KM SE ON POWERS ROAD TO A SHELL ROAD, 612 M NE ON SHELL ROAD, 87 M NW IN PASTURE.

LANDFORM: ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: SOBECKI, MILES, RIVERS, VEPRASKAS, DREES AND WILDING DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAY (10YR 3/1) SILT LOAM, LIGHT GRAY (10YR 7/2) DRY; WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; ABRUPT WAVY BOUNDARY.
A1	15-30	DARK GRAY (10YR 4/1) SILT LOAM, LIGHT GRAY (10YR 6/1) DRY; FEW FINE FAINT GRAYISH BROWN (10YR 5/2) MOTTLES; WEAK COARSE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; MANY ROOTS; COMMON KROTOVINAS; CLEAR SMOOTH BOUNDARY.
A&B	30-47	DARK GRAY (10YR 4/1) SILT LOAM; COMMON FINE FAINT YELLOWISH BROWN (10YR 5/8) AND FEW FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK MEDIUM AND COARSE PRISMATIC PARTING TO MODERATE MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON ROOTS; COMMON GRAYISH BROWN (10YR 5/2) KROTOVINAS; POCKETS OF GRAY (10YR 6/1) MATERIAL; CLEAR SMOOTH BOUNDARY.
B&A	47-67	DARK GRAY (10YR 4/1) SILT LOAM; COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON ROOTS; SOME VERY DARK GRAY (10YR 3/1) COATINGS ON PED FACES; COMMON DARK GRAY (10YR 4/1) KROTOVINAS; THIN VERY PATCHY CLAY FILMS ALONG ROOT CHANNELS; GRADUAL SMOOTH BOUNDARY.
B21TG	67-87	DARK GRAY (10YR 4/1) SILT LOAM; COMMON FINE FAINT LIGHT GRAY (10YR 6/1) AND COMMON FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON ROOTS; SOME VERY DARK GRAY (10YR 3/1) COATINGS ON PED FACES; COMMON DARK GRAY (10YR 4/1) KROTOVINAS; THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; THIN VERY PATCHY CLAY FILMS ON PED FACES; THIN PATCHY SKELETANS ON PED FACES; CLEAR SMOOTH BOUNDARY.
B22TG	87-100	GRAY (10YR 5/1) SILTY CLAY LOAM; COMMON FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; SOME DARK GRAY (10YR 4/1) COATINGS ON PED FACES; COMMON KROTOVINAS; FEW PRESSURE FACES; FEW FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS IN PORES, ROOT CHANNELS AND ON PED FACES; THIN VERY PATCHY SKELETANS ON PED FACES; CLEAR SMOOTH BOUNDARY.
B23TG	100-128	GRAY (10YR 5/1) SILTY CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; DARK GRAY (10YR 4/1) COATINGS ON PED FACES; COMMON KROTOVINAS; FEW FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS IN PORES AND ROOT CHANNELS; THIN AND THICK PATCHY SKELETANS ON PED FACES; CLEAR SMOOTH BOUNDARY.
B24TG	128-147	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; GRAY (10YR 5/1) COATINGS ON PED FACES; COMMON KROTOVINAS; COMMON MANY BLACK CONCRETIONS; THIN PATCHY CLAY FILMS IN PORES AND CANNELS; MODERATE PATCHY SKELETANS ON PED FACES; CLEAR BOUNDARY.
IIB25TG	147-166	LIGHT BROWNISH GRAY (2.5Y 6/2) SILTY CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; GRAY (10YR 5/1) COATINGS ON PED FACES; COMMON KROTOVINAS; COMMON MANY BLACK CONCRETIONS; THIN VERY PATCHY CLAY FILMS IN PORES AND CAHNNELS; MODERATE PATCHY SKELETANS ON PED FACES; GRADUAL SMOOTH BOUNDARY.
IIB31TG	166-186	LIGHT BROWNISH GRAY (2.5Y 6/2) SILT LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW ROOTS; GRAY (10YR 5/1) COATINGS ON PED FACES; COMMON KROTOVINAS; FEW FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS IN PORES AND CHANNELS; THIN VERY PATCHY SKELETANS ON PED FACES; CLEAR IRREGULAR BOUNDARY.
IIB32TG	186-235	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; WEAK COARSE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW ROOTS; KROTOVINAS; THIN VERY PATCHY CLAY FILMS IN CHANNELS; DISTINCT AREAS OF REDDISH BROWN (5YR 5/4) SILT LOAM; ABRUPT BOUNDARY.
IIIC	235-260	OLIVE BROWN (2.5Y 4/4) SILTY CLAY; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) AND COMMON MEDIUM DISTINCT LIGHT BROWN (7.5YR 6/4) MOTTLES; STRUCTURELESS MASSIVE; VERY FIRM; FEW ROOT CHANNELS; MANY BLACK CONCRETIONS; NONCALCAREOUS.
IVC	260-275	LIGHT BROWNISH GRAY (10YR 6/2) VERY FINE SANDY LOAM; NONCALCAREOUS.

REMARKS: THE GRAY AND REDDISH BROWN AREAS OF IIB32TG HORIZON WERE SAMPLED SEPARATELY. THE DEEPEST HORIZON SAMPLED WAS THE IIIC.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LETON
SOIL FAMILY: TYPIC GLOSSAQUALF; FINE-SILTY, MIXED, THERMIC
LOCATION: GALVESTON COUNTY, TEXAS

PEDON NUMBER: S78TX-167-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
588	0- 15	AP				1.7	22.8	24.7		65.1	4.9	10.2	SIL	
589	15- 30	A1				1.4	20.4	21.8		66.7	6.4	11.5	SIL	
590	30- 47	A&B				1.5	19.6	21.1		64.0	8.6	14.9	SIL	
591	47- 67	B&A				1.6	18.0	19.6		61.2	12.7	19.2	SIL	
592	67- 87	B21TG				0.9	16.3	17.2		57.5	18.2	25.3	SIL	
593	87-100	B22TG				0.8	13.1	13.9		54.5	23.3	31.6	SICL	
594	100-128	B23TG				1.3	15.1	16.4		54.7	21.8	28.9	SICL	
595	128-147	B24TG				1.5	19.3	20.8		51.7	21.4	17.5	SIL	
596	147-166	IIB25TG				0.4	9.5	10.2		61.7	21.0	28.1	SICL	
597	166-186	IIB31TG				0.4	16.2	17.2		59.0	16.0	23.8	SIL	
598	186-235	IIBTG				0.6	16.8	18.1		59.9	14.9	22.0	SIL	
599	186-235	IIB32T				1.4	23.5	25.1		59.3	10.4	15.6	SIL	
600	235-260	IIIC				0.1	0.9	1.0		47.4	29.9	51.6	SIC	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
588	1.41	5.1	3.4	1.3	0.2	0.1	5.0		9.5		53	2					
589	0.61	5.5	4.7	1.5	0.2	0.1	6.5		9.3		70	2					
590	0.50	5.6	4.6	1.6	0.2	0.1	6.5		10.8		60	2					
591	0.50	5.5	7.1	2.3	0.4	0.1	9.9		13.0		76	3					
592	0.46	5.5	9.3	2.8	0.4	0.2	12.7		17.1		74	2					
593	0.39	5.6	12.0	3.9	0.3	0.2	16.4		19.8		83	2					
594	0.23	5.8	12.2	3.4	0.4	0.2	16.2		20.0		81	2					
595	0.13	6.0	12.8	3.4	0.3	0.3	16.8		20.1		84	2					
596	0.12	6.3	14.6	3.8	0.4	0.3	19.1		22.1		86	2					
597	0.15	6.6	12.3	2.7	0.3	0.3	15.6		17.8		88	2					
598	0.06	6.7	11.5	2.8	0.2	0.3	14.8		17.4		85	1					
599	0.10	6.7	8.4	1.7	0.2	0.2	10.5		12.6		83	2					
600		7.5	16.7	5.8	0.5	0.6	23.6		34.0		69	1					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
588	0.5										1.46	1.52	0.013			
589	0.4										1.57	1.61	0.008			
590	0.4										1.54	1.64	0.021			
591	0.3										1.67	1.77	0.019			
592	0.2										1.60	1.86	0.051			
593	0.2										1.57	1.92	0.069			
594	0.2										1.66	1.98	0.060			
595	0.2										1.61	1.94	0.063			
596	0.2										1.61	1.94	0.063			
597	0.2										1.63	1.86	0.044			
598	0.2										1.57	1.67	0.021			
599	0.2										1.62	1.71	0.018			
600																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
588												
589												
590												
591												
592												
593												
594												
595												
596												
597												
598												
599												
600												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LIVIA PEDON: S81TX-057-001 COUNTY: CALHOUN

PEDON CLASSIFICATION: TYPIC NATRAQUALF; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF FR 172 AND FR 159, 0.75 MI S ON FR 172, 0.25 MI S ON COUNTY SHELL ROAD, 0.5 MI E, 0.25 MI S ON PRIVATE SHELL ROAD, 0.5 MI E, 0.75 MI S, 0.9 MI SE, 100 FT SW IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FORMATION:

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: RANGE

COLLECTORS: MILLER, LANE, GIRDNER, HALLMARK AND WEST DATE: 11/19/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE AND VERY FINE ROOTS; FEW FINE PORES; MEDIUM ACID; ABRUPT SMOOTH BOUNDARY.
BTGN1	15-36	BLACK (10YR 2/1) SILTY CLAY, VERY DARK GRAY (10YR 3/1) DRY; WEAK MEDIUM AND COARSE COLUMNAR PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW THIN CLAY FILMS ON PED FACES; FEW FINE AND MEDIUM PORES; FEW THIN SILT COATS ON FACES OF SOME COLUMNS IN UPPER PART; UPPER 3 CM OF COLUMN CAP IS MASSIVE AND DISPERSED; SLIGHTLY SALINE; SLIGHTLY ACID; GRADUAL SMOOTH BOUNDARY.
BTGN2	36-69	VERY DARK GRAY (10YR 3/1) SILTY CLAY, DARK GRAY (10YR 4/1) DRY; WEAK MEDIUM AND COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW FINE AND MEDIUM PORES; FEW INTERSECTING SLICKENSIDES; FEW THIN CLAY FILMS ON PED FACES; FEW PITTED CONCRETIONS OF CALCIUM CARBONATE 1-5 MM IN DIAMETER; STRONGLY SALINE; NEUTRAL; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
BTGN3	69-114	DARK GRAYISH BROWN (10YR 4/2) SILTY CLAY LOAM, GRAYISH BROWN (10YR 5/2) DRY; COMMON FINE PROMINENT OLIVE BROWN (2.5Y 4/4) MOTTLES; WEAK MEDIUM AND COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE AND MEDIUM PORES; FEW INTERSECTING SLICKENSIDES; FEW THIN CLAY FILMS ON PED FACES; FEW FINE (1-5 MM) PITTED CALCIUM CARBONATE CONCRETIONS; STRONGLY SALINE; MILDLY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
BTN1	114-140	LIGHT OLIVE BROWN (2.5Y 5/4) SILTY CLAY LOAM, LIGHT YELLOWISH BROWN (2.5Y 6/4) DRY; MANY COARSE PROMINENT GRAY (10YR 5/1) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE AND MEDIUM PORES; FEW FINE BLACK CONCRETIONS; COMMON GRAY (10YR 5/1) STAINS ALONG ROOT CHANNELS; FEW FINE (1-5 MM) PITTED CALCIUM CARBONATE CONCRETIONS; STRONGLY SALINE; MILDLY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
BTN2	140-163	YELLOWISH BROWN (10YR 5/6) SILTY CLAY LOAM, BROWNISH YELLOW (10YR 6/6) DRY; MANY COARSE PROMINENT GRAY (10YR 5/1) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE BLACK CONCRETIONS; COMMON GRAY (10YR 5/1) STAINS ALONG ROOT CHANNELS; FEW FINE (1-2 MM) PITTED CALCIUM CARBONATE CONCRETIONS; STRONGLY SALINE; MILDLY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
BTN3	163-191	YELLOWISH BROWN (10YR 5/6) SILTY CLAY LOAM, BROWNISH YELLOW (10YR 6/6) DRY; COMMON COARSE PROMINENT LIGHT GRAY (10YR 6/1) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; COMMON LIGHT GRAY (10YR 6/1) STAINS ALONG ROOT CHANNELS; FEW FINE (1-2 M) PITTED CALCIUM CARBONATE CONCRETIONS; STRONGLY SALINE; MILDLY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
2BTN4	191-213	RED (2.5YR 4/6) SILTY CLAY LOAM, RED (2.5YR 5/6) DRY; FEW FINE PROMINENT LIGHT GRAY (10YR 6/1) AND COMMON MEDIUM PROMINENT YELLOWISH BROWN (10YR 5/4) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE BLACK CONCRETIONS; FEW LIGHT GRAY (10YR 6/1) STAINS ALONG ROOT CHANNELS; FEW FINE (1-2 MM) PITTED CALCIUM CARBONATE CONCRETIONS; STRONGLY SALINE; MILDLY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LIVIA
PEDON NUMBER: S81TX-057-001
SOIL FAMILY: TYPIC NATRAQUALF; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: CALHOUN COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1164	0- 15	A	0.0	0.1	0.2	6.9	15.7	22.9	25.5	66.0	4.8	11.1	SIL	0
1165	15- 36	BTGN1	0.1	0.0	0.1	3.1	7.6	10.9	21.6	41.5	34.6	47.6	SIC	0
1166	36- 69	BTGN2	0.2	0.2	0.2	3.0	8.6	12.2	23.1	44.2	31.9	43.6	SIC	0
1167	69-114	BTGN3	3.4	1.7	0.7	3.4	8.8	18.0	20.9	43.5	27.7	38.5	SICL	0
1168	114-140	BTN1	3.1	1.4	0.8	2.9	7.7	15.9	25.8	47.2	27.2	36.9	SICL	0
1169	140-163	BTN2	0.5	0.5	0.2	1.3	6.0	8.5	35.3	52.7	26.3	38.8	SICL	0
1170	163-191	BTN3	0.3	0.3	0.1	0.7	4.5	5.9	36.2	53.6	26.5	40.5	SIC	0
1171	191-213	2BTN4	0.0	0.0	0.0	0.2	1.1	1.3	33.3	37.8	30.3	60.9	C	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								---%			---%			
1164	1.28	6.0	4.7	2.0	0.7	0.4	7.9		9.0		88	6	6				
1165	1.51	6.3	15.0	14.1	10.7	0.8	40.6		37.6		100	22	21				
1166	0.71	6.9	14.4	14.4	17.1	0.6	46.4		34.2		100	28	29				
1167	0.06	7.5	35.3	13.2	16.9	0.6	66.0		29.2		100	31	29	6.3	2.0	8.5	
1168	0.00	7.5	47.2	12.7	15.3	0.5	75.7		25.9		100	31	28	12.6	2.7	15.2	
1169	0.04	7.5	42.6	11.3	13.9	0.5	68.3		22.9		100	32	27	19.8	2.3	22.4	
1170	0.02	7.6	44.6	11.0	13.7	0.5	69.8		23.6		100	29	27	18.1	1.6	19.9	
1171	0.01	7.6	45.5	12.2	15.5	0.8	74.1		27.9		100	27	27	21.1	2.7	24.0	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
1164	0.7	36	1.0	0.9	5.7	0.3	0.0	3.1	3.0	1.1	1.60	1.62	0.005		15.7	
1165	3.8	83	1.6	2.2	29.6	0.1	0.0	1.8	27.0	2.3	1.29	1.83	0.124		34.0	
1166	11.8	78	8.0	13.9	95.2	0.2	0.0	1.8	107.8	10.3	1.43	1.98	0.115		26.9	
1167	13.7	74	9.9	16.4	105.7	0.2	0.0	2.6	117.6	10.4	1.54	2.01	0.092		23.6	
1168	15.0	67	11.4	17.3	107.8	0.1	0.0	1.0	132.3	10.4	1.64	2.02	0.070		20.3	
1169	13.4	65	10.8	16.4	101.3	0.1	0.0	1.0	129.9	8.6	1.67	1.98	0.059		19.9	
1170	13.0	70	10.8	14.8	97.8	0.1	0.0	1.3	112.7	7.3	1.67	1.94	0.052		19.8	
1171	11.8	88	9.3	13.2	89.1	0.2	0.0	0.5	102.9	7.3	1.68	2.02	0.068		21.0	

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1164			**		**		**					
1165												
1166	***		**		**		**					
1167												
1168												
1169												
1170												
1171	***		**		**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LOMA (PROPOSED) PEDON: S80TX-131-002 COUNTY: DUVAL

PEDON CLASSIFICATION: USTOLLIC CAMBORTHID; LOAMY-SKELETAL, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 16 AND US 59, 6.0 MI N ON TEXAS 16, 100 FT W IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: TUFFACEOUS SANDSTONE FORMATION:

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: MINZENMAYER, GUCKIAN, MOLINA, SANDERS AND GABRIEL DATE: 05/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-15	BROWN (10YR 5/3) SANDY CLAY LOAM, VERY PALE BROWN (10YR 7/3) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW FEW CALCIUM CARBONATE CONCRETIONS; FEW NONCALCAREOUS TUFFACEOUS SANDSTONE FRAGMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
B2	15-25	VERY PALE BROWN (10YR 7/3) GRAVELLY SANDY CLAY LOAM, VERY PALE BROWN (10YR 8/3) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW FEW CALCIUM CARBONATE CONCRETIONS; ABOUT 35% FRAGMENTS OF NONCALCAREOUS TUFFACEOUS SANDSTONE; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
CR&B2	25-46	PALE OLIVE (5Y 6/4) WEAKLY CONSOLIDATED TUFFACEOUS SANDSTONE, PALE YELLOW (5Y 7/4) DRY; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; SANDSTONE IS NONCALCAREOUS; ABOUT 40% POCKETS AND SEAMS FILLED WITH VERY PALE BROWN (10YR 8/3) SANDY CLAY LOAM; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CR&B3CA	46-97	PALE OLIVE (5Y 6/4) WEAKLY CONSOLIDATED TUFFACEOUS SANDSTONE, PALE YELLOW (5Y 7/4) DRY; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; SANDSTONE IS NONCALCAREOUS; ABOUT 40% POCKETS AND SEAMS FILLED WITH PALE YELLOW (2.5Y 8/4) FINE SANDY LOAM; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
C	97-183	PALE BROWN (10YR 6/3) GRAVELLY FINE SANDY LOAM, VERY PALE BROWN (10YR 8/3) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; FEW FINE CALCIUM CARBONATE CONCRETIONS; ABOUT 30% NONCALCAREOUS TUFFACEOUS SANDSTONE FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LOMA (PROPOSED) PEDON NUMBER: S80TX-131-002
SOIL FAMILY: USTOLLIC CAMBORTHID; LOAMY-SKELETAL, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
788	0- 15	A	0.5	0.6	1.2	6.3	18.6	27.3	28.9	56.9	1.8	15.9	SIL	
789	15- 25	B2	0.3	0.7	1.6	6.0	17.4	26.0	29.6	61.6	2.1	12.4	SIL	
790	25- 46	CR&B2	0.3	0.5	0.8	3.7	14.2	19.5	35.4	67.6	1.9	12.9	SIL	
791	46- 97	CR&B3CA	0.4	0.6	1.2	5.8	17.1	25.1	29.9	63.1	1.2	11.8	SIL	
792	97-183	C	0.0	0.3	1.1	5.2	16.8	23.4	27.7	70.2	1.5	6.4	SIL	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL	MEQ/100G			%			%			
788	1.00	7.9	67.1	1.2	0.2	4.1	72.6		32.5		100	1	0	7.3	1.8	9.3	
789	0.50	8.0	65.6	0.5	0.3	2.7	69.1		29.8		100	1	0	9.4	1.3	10.8	
790	0.20	8.0	64.6	0.5	0.4	2.7	68.2		29.6		100	1	2	12.2	2.6	15.0	
791	0.10	7.7	61.7	1.0	1.3	3.1	67.1		33.8		100	3	1	6.1	3.1	9.5	
792		7.7	146.6	0.5	2.3	3.9	153.3		30.5		100	6	3	6.9	4.5	11.8	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
788	0.6	50	4.9	0.2	0.4	1.3	0.0	4.4	0.4	2.2						
789	0.7	52	5.2	0.2	0.8	0.6	0.0	2.6	1.6	1.8						
790	0.6	50	3.9	0.2	2.6	0.5	0.0	3.1	1.0	1.3						
791	2.4	53	25.0	0.4	3.8	0.9	0.0	3.1	1.5	23.0						
792	3.2	49	26.6	0.8	11.5	2.2	0.0	2.0	2.1	33.8						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
788												
789												
790												
791												
792												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: LUFKIN TAXADJUNCT PEDON: S78TX-041-004 COUNTY: BRAZOS

PEDON CLASSIFICATION: VERTIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WEST CAMPUS OF TEXAS A&M UNIVERSITY ABOUT 250 FT NW OF KLEBERG ANIMAL AND FOOD SCIENCE BUILDING.

LANDFORM: UPLAND ELEVATION (M): SLOPE: SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM OVER COASTAL PLAIN SEDIMENTS FORMATION: PLEISTOCENE ALLUVIUM AND YEGUA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: K. KACY AND T. SOBECKI DATE: 01/03/79

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	VERY DARK GRAYISH BROWN (10YR 3/2) LOAM, GRAYISH BROWN (10YR 5/2) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; COMMON FINE ROOTS; COMMON FINE PORES; LESS THAN 5% ROUNDED SILICEOUS PEBBLES LESS THAN 1.5 CM IN DIAMETER; ABRUPT WAVY BOUNDARY.
B21T	20-41	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY, GRAYISH BROWN (10YR 5/2) DRY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; FEW FINE SILICEOUS PEBBLES; CLEAR WAVY BOUNDARY.
B22T	41-81	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; FEW FINE FAINT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; FEW FINE SILICEOUS PEBBLES; FEW FINE BLACK CONCRETIONS; COMMON PRESSURE FACES; CLEAR WAVY BOUNDARY.
B31TCA	81-107	GRAYISH BROWN (2.5Y 5/2) CLAY, GRAYISH BROWN (2.5Y 5/2) DRY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON PRESSURE FACES; COMMON MEDIUM AND FINE CARBONATE CONCRETIONS WITH WHITE POWDERY EXTERIORS AND GRAY INDURATED INTERIORS; FEW CARBONATE INFILLINGS IN OLD ROOT CHANNELS; CLEAR SMOOTH BOUNDARY.
B32TCACS	107-147	LIGHT GRAY (2.5Y 7/2) CLAY LOAM, LIGHT GRAY (2.5Y 7/2) DRY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; COMMON VERY FINE BLACK CONCRETIONS; COMMON SELENITE CRYSTALS; COMMON SALT SEGREGATIONS; COMMON MEDIUM AND FINE CARBONATE CONCRETIONS AND SEGREGATIONS; THIN PATCHY CLAY FILMS ALONG PED FACES; CLEAR SMOOTH BOUNDARY.
IIC1	147-173	LIGHT BROWNISH GRAY (2.5Y 6/2) SILTY CLAY; HARD; FIRM; FE-MN STAINS ALONG BEDDING PLANES; COMMON FINE BLACK CONCRETIONS; FEW SILICEOUS PEBBLES; ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKS; LAMINATED BEDS 1-10 MM THICK; GRADUAL SMOOTH BOUNDARY.
IIC2	173-198	LIGHT OLIVE GRAY (5Y 6/2) SILTY CLAY; FEW FINE FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; EXTREMELY HARD; VERY FIRM; FE-MN STAINS ALONG BEDDING PLANES; ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKS; LAMINATED BEDS 1-10 MM THICK.

REMARKS: PEDON DESCRIBED AND SAMPLED FROM A TRENCH. SOIL IS A TAXADJUNCT TO THE LUFKIN SERIES BECAUSE THE REACTION IS TOO ALKALINE FOR LUFKIN.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: LUFKIN TAXADJUNCT
SOIL FAMILY: VERTIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BRAZOS COUNTY, TEXAS

PEDON NUMBER: S78TX-041-004

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
525	0- 20	AP	0.4	0.4	2.1	13.5	24.4	40.8	16.5	46.6	5.8	12.6	L	0
526	20- 41	B21T	0.1	0.2	1.2	9.3	18.4	29.2	11.1	34.7	25.7	36.1	CL	0
527	41- 81	B22T	0.1	0.2	1.6	10.5	18.5	30.9	10.9	35.7	24.1	33.4	CL	0
528	81-107	B31TCA	1.6	1.4	1.6	7.4	14.1	26.1	15.7	39.1	22.6	34.8	CL	0
529	107-147	B32TCACS	0.9	0.8	1.0	5.0	10.1	17.8	19.5	47.0	21.5	35.2	SICL	0
530	147-173	IIC1	0.4	0.3	0.2	0.6	1.4	2.9	29.8	55.4	12.9	41.7	SIC	0
531	173-198	IIC2	0.1	0.3	0.2	1.1	3.8	5.5	29.0	55.1	11.0	39.4	SICL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								---%			---%			
525	1.26	6.7	11.2	1.9	0.8	0.6	14.5		13.7		100	5	1				
526	0.54	6.7	21.9	7.8	1.7	0.8	32.2		26.6		100	6	2				
527	0.24	7.5	17.1	7.8	3.0	0.3	28.2		23.2		100	11	6	0.2	0.5	0.7	
528	0.09	7.9	64.6	7.1	4.8	0.3	76.8		23.6		100	13	7	8.7	0.9	9.7	0.2
529	0.00	7.8	110.1	6.8	6.5	0.3	123.7		25.1		100	15	10	8.8	1.5	10.4	1.9
530	0.00	7.7	52.5	7.8	10.0	0.4	70.7		40.1		100	15	11	2.3	0.4	2.8	0.0
531	0.00	7.5	10.6	1.9	8.4	0.4	21.3		31.8		67	15	13	0.7	0.1	0.8	0.0

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
525	0.9	39	5.0	1.1	2.1	0.8	0.0	6.2	1.3	1.8						
526	1.2	55	5.5	2.3	3.3	0.6	0.0	1.4	2.9	5.3						
527	0.1	54	2.0	0.8	6.5	0.1	0.0	2.2	2.5	4.0						
528	5.2	58	26.0	9.0	31.3	0.2	0.0	1.6	11.3	53.7						
529	6.9	64	29.0	10.7	44.4	0.2	0.0	1.8	5.6	55.3						
530	7.3	88	23.0	9.0	44.8	0.3	0.0	1.7	9.8	29.9						
531	6.2	78	24.0	0.2	45.2	0.4	0.0	1.7	10.0	28.7						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
525												
526												
527												
528												
529												
530												
531												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: MABANK PEDON: S78TX-041-003 COUNTY: BRAZOS

PEDON CLASSIFICATION: VERTIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WEST CAMPUS, TEXAS A&M UNIVERSITY, 250 FT NW OF THE KLEBERG ANIMAL AND FOOD SCIENCE BUILDING.

LANDFORM: UPLAND ELEVATION (M): SLOPE: SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM OVER COASTAL PLAIN SEDIMENTS FORMATION: PLEISTOCENE ALLUVIUM AND YEGUA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: L. WILDING, B. HARRIS, T. SOBECKI AND K. KACY DATE: 08/00/78

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-25	VERY DARK GRAYISH BROWN (10YR 3/2) FINE SANDY LOAM, GRAY (10YR 5/1) DRY; STRUCTURELESS MASSIVE; HARD; VERY FRIABLE; COMMON FINE ROOTS; FEW SMALL SILICEOUS PEBBLES; ABRUPT WAVY BOUNDARY.
B21T	25-43	VERY DARK GRAY (10YR 3/1) CLAY, GRAY (10YR 5/1) DRY; MODERATE VERY COARSE COLUMNAR AND PRISMATIC STRUCTURE; EXTREMELY HARD; VERY FIRM; THIN VERY PATCHY CLAY FILMS ON VERTICAL PED FACES; LIGHT GRAY (10YR 6/1) A2 MATERIAL ON PRISM TOPS; CLEAR WAVY BOUNDARY.
B22T	43-86	VERY DARK GRAY (10YR 3/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE VERY COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SLICKENSIDES; COMMON PRESSURE FACES; THIN PATCHY CLAY FILMS ON VERTICAL PED FACES; SOME PARELLELIPIPEDS; FEW ROUNDED SILICEOUS PEBBLES; FEW FINE CARBONATE NODULES IN LOWER PART OF HORIZON; CLEAR SMOOTH BOUNDARY.
B31TCACS	86-100	DARK GRAY (10YR 4/1) CLAY; MODERATE VERY COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; SOME CALCIUM CARBONATE SEGREGATIONS; COMMON SALT SEGREGATIONS; SOME PARELLELIPIPEDS; FEW FINE ROOTS CROSSCUTTING RELIC SLICKENSIDE SURFACES; COMMON CARBONATE NODULES WITH WHITE POWDERY EXTERIORS AND GRAY CRYSTALLINE INTERIORS; CLEAR SMOOTH BOUNDARY.
B32TCACS	100-130	OLIVE YELLOW (5Y 6/6) CLAY; MODERATE COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; HARD; VERY FIRM; THIN CONTINUOUS GRAYISH BROWN (2.5Y 5/2) CLAY FILMS ON VERTICAL PED FACES; MANY SELENITE CRYSTALS; COMMON CALCIUM CARBONATE SEGREGATIONS; BODIES OF OLIVE (5Y 4/4) CLAY LOAM; FEW FINE ROOTS RESTRICTED TO PRISM FACES; FEW KROTOVINAS FILLED WITH FECAL PELLETS; FEW RELIC SLICKENSIDES IN UPPER PORTION; MANY SALT SEGREGATIONS; CLEAR SMOOTH BOUNDARY.
IIC1	130-155	OLIVE GRAY (5Y 5/2) SILTY CLAY, YELLOWISH BROWN (10YR 5/6) DRY; COMMON PROMINENT () MOTTLES; HARD; VERY FIRM; FEW SMALL SLICKENSIDES; FE-MN STAINS ALONG BEDDING PLANES; ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKY; GRADUAL SMOOTH BOUNDARY.
IIC2	155-180	OLIVE GRAY (5Y 5/2) SILTY CLAY; COMMON PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; VERY FIRM; FE-MN STAINS ALONG BEDDING PLANES; ROCK STRUCTURE RESEMBLING COARSE ANGULAR BLOCKY WITH SOME LAMINATED BEDS 1-10 MM THICK.

REMARKS: PEDON WAS DESCRIBED AND SAMPLED FROM A DEEP TRENCH.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: MABANK PEDON NUMBER: S78TX-041-003
SOIL FAMILY: VERTIC ALBAQUALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BRAZOS COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (< 0.0002)	CLAY TOTAL (< 0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
518	0- 25	A1	0.3	0.3	2.1	15.1	22.6	40.4	18.0	45.6	8.1	14.0	L	0
519	25- 43	B21T	0.0	0.1	1.2	10.0	15.1	26.4	17.2	37.4	22.2	36.2	CL	0
520	43- 86	B22T	0.1	0.2	1.5	10.2	13.8	25.8	16.2	35.8	29.5	38.4	CL	0
521	86-100	B31TCA	0.4	0.2	1.2	7.9	12.2	21.9	11.8	38.7	23.9	39.4	CL	0
522	100-130	B32TCA	0.1	0.1	0.6	4.2	6.4	11.4	7.9	56.9	21.6	31.7	SICL	0
523	130-155	IIC1	0.0	0.1	0.0	1.5	4.5	6.1	9.5	46.0	25.4	47.9	SIC	0
524	155-180	IIC2	0.0	0.0	0.0	0.9	2.6	3.5	8.1	42.2	26.7	54.3	SIC	0

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
			MEQ/100G								%			%			
518	0.95	7.0	12.5	1.7	0.7	0.4	15.3		12.7		100	4	2	0.1	0.3	0.4	
519	0.62	7.4	26.1	4.8	0.5	0.5	31.9		27.3		100	2	1				
520	0.43	7.6	27.7	5.4	0.9	0.3	34.3		29.5		100	3	1				
521	0.22	7.6	181.0	2.4	1.4	0.3	185.1		24.8		100	4	2	0.9	0.6	1.6	10.0
522	0.13	7.6	267.1	2.4	1.7	0.3	271.5		22.1		100	5	2	0.4	0.7	1.1	17.9
523	0.06	7.6	29.2	5.7	4.0	0.4	39.3		32.1		100	7	6	0.3	0.6	1.0	14.7
524	0.09	7.5	24.6	5.8	4.5	0.5	35.4		34.0		100	8	5	0.3	0.5	0.8	13.3

SATURATED PASTE EXTRACT

LAB NO	ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	BULK DEN AIR DRY	COLE CM/CM	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
			MEQ/L								G/CC			WT%		
518	2.6	35	14.5	2.9	5.2	1.0	0.0	0.6	6.9	13.0						
519	1.2	54	6.5	1.5	1.7	0.2	0.0	3.9	2.9	4.3						
520	0.8	57	4.6	1.0	2.1	0.1	0.0	2.7	1.0	3.7						
521	3.1	59	31.0	4.9	6.6	0.2	0.0	3.3	0.8	35.9						
522	3.3	56	30.0	4.9	8.7	0.2	0.0	2.0	1.0	39.2						
523	3.8	79	27.0	5.6	23.5	0.2	0.0	1.6	1.8	51.3						
524	4.0	87	27.0	5.2	19.6	0.3	0.0	1.4	2.3	45.7						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
518												
519												
520												
521												
522												
523												
524												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: MIDLAND VARIANT PEDON: S81TX-481-001 COUNTY: WHARTON

PEDON CLASSIFICATION: VERTIC OCHRAQUALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM INTERSECTION OF COUNTY ROAD 422 AND COUNTY ROAD 418 ABOUT 10 MI SE OF EL CAMPO, 2000 FT S AND 1700 FT W IN IRRIGATED RICE FIELD (SHEET 77 OF WHARTON COUNTY SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): 23 SLOPE: 0% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: IRRIGATED CROP

COLLECTORS: HALLMARK, WILDING, GIRDNER, BROCKMANN, CRENWELGE, AND ABBOTT DATE: 03/12/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
B21T	15-40	DARK GRAY (10YR 4/1) CLAY LOAM; MANY MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) AND FEW FINE DISTINCT YELLOWISH RED (5YR 4/6) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; SOME PRESSURE FACES; MEDIUM ACID; GRADUAL SMOOTH BOUNDARY.
B22T	40-86	GRAY (10YR 5/1) CLAY; COMMON FINE DISTINCT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW SMALL INTERSECTING SLICKENSIDES; COMMON PRESSURE FACES; FEW SMALL BLACK CONCRETIONS; MODERATELY ALKALINE; GRADUAL WAVY BOUNDARY.
B23T	86-140	OLIVE GRAY (5Y 5/2) CLAY; FEW FINE DISTINCT YELLOWISH RED (5YR 5/6) MOTTLES; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW SLICKENSIDES; COMMON PRESSURE FACES; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; GRADUAL WAVY BOUNDARY.
B24T	140-160	LIGHT OLIVE GRAY (5Y 6/2) CLAY; FEW MEDIUM FAINT REDDISH GRAY (5YR 5/2) AND FEW MEDIUM FAINT DARK REDDISH GRAY (5YR 4/2) MOTTLES; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE CONCRETIONS; FEW FINE SELENITE CRYSTALS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; GRADUAL WAVY BOUNDARY.
B25T	160-185	LIGHT OLIVE GRAY (5Y 6/2) SILTY CLAY; FEW FINE DISTINCT BROWN (7.5YR 4/4) MOTTLES; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON COARSE SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
B26T	185-265	PALE OLIVE (5Y 6/3) SILTY CLAY; COMMON COARSE DISTINCT BROWN (7.5YR 5/4) MOTTLES; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON COARSE SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
B31	265-550	PALE OLIVE (5Y 6/3) CLAY; MANY COARSE PROMINENT YELLOWISH RED (5YR 4/6) MOTTLES; FEW COARSE SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
B32	550-625	OLIVE GRAY (5Y 5/2) CLAY; FEW FINE PROMINENT REDDISH BROWN (5YR 5/4) MOTTLES; FEW COARSE SLICKENSIDES; FEW CALCIUM CARBONATE SEGREGATIONS; FEW CALCIUM CARBONATE CONCRETIONS; MATRIX IS NONCALCAREOUS; MODERATELY ALKALINE; GRADUAL BOUNDARY.
B33	625-725	OLIVE GRAY (5Y 5/2) CLAY; COMMON FINE PROMINENT REDDISH BROWN (5YR 5/4) MOTTLES; COMMON CALCIUM CARBONATE SEGREGATIONS; COMMON CALCIUM CARBONATE CONCRETIONS; NO SLICKENSIDES; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL BELOW 185 CM DEPTH WAS SAMPLED FROM POWER PROBE CORE. THE PEDON WILL BELONG TO THE PROPOSED VERLAND SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: MIDLAND VARIANT
SOIL FAMILY: VERTIC OCHRAQUALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: WHARTON COUNTY, TEXAS

PEDON NUMBER: S81TX-481-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
980	15- 40	B21T	0.1	0.2	2.5	11.0	13.3	27.1	14.8	38.1	26.1	34.8	CL	0
981	40-140	B22T&B23	0.2	0.3	1.4	7.0	8.4	17.3	16.9	37.7	33.0	45.0	C	0
982	140-160	B24T	0.2	0.2	1.7	5.0	6.8	13.9	15.0	40.7	33.4	45.4	C	
983	160-265	B25T&B26	0.4	0.2	1.3	4.5	6.3	12.7	18.5	41.9	32.4	45.4	SIC	0
984	265-464	B31	0.2	0.2	0.2	1.2	1.8	3.6	29.2	41.2	30.2	55.2	SIC	0
985	464-550	B31	0.9	0.9	1.0	3.6	4.5	10.9	18.4	38.1	33.7	51.0	C	0
986	550-625	B32	0.4	0.3	0.6	4.7	7.9	13.9	17.2	41.7	31.4	44.4	SIC	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
980	0.66	5.4	11.2	6.5	1.9	0.3	19.9	0.4	22.4	20.3	89	7	4				
981	0.64	7.6	18.2	10.6	3.7	0.4	32.9		31.1		100	10	8				0.0
982	0.16	7.6	113.5	10.8	4.4	0.4	129.1		30.3		100	9	6	0.6	0.3	0.9	3.9
983	0.12	7.9	47.3	10.5	4.1	0.5	62.4		29.1		100	9	7	2.8	0.8	3.6	0.0
984	0.15	8.1	53.8	13.3	3.4	0.6	71.1		28.8		100	9	6	15.2	0.9	16.6	0.0
985	0.26	8.2	53.0	8.4	3.5	1.0	65.9		28.5		100	11	6	6.1	0.8	7.0	
986	0.09	8.2	35.7	7.3	3.1	1.1	47.2		24.6		100	11	5	1.1	0.4	1.6	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR	15 BAR
			MEQ/L													
980	1.0	72	1.8	0.9	4.5	0.0	0.0	0.7	2.3	3.2						
981	1.3	68	1.9	1.0	10.0	0.0	0.0	2.8	5.3	3.2						
982	4.9	71	23.5	8.2	25.1	0.1	0.0	2.4	9.5	38.3						
983	2.5	79	10.0	4.1	19.1	0.1	0.0	1.9	10.3	13.3						
984	1.4	69	5.0	1.6	10.9	0.0	0.0	1.7	5.3	5.2						
985	0.7	69	1.7	0.7	6.3	0.0	0.0	1.7	0.9	4.0						
986	0.6	65	1.4	0.5	5.1	0.0	0.0	2.7	0.9	3.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
980												
981												
982												
983												
984												
985												
986												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: MOLLVILLE PEDON: S81TX-225-001 COUNTY: HOUSTON

PEDON CLASSIFICATION: TYPIC GLOSSAQUALF; FINE-LOAMY, MIXED, THERMIC

LOCATION: DAVY CROCKETT NATIONAL FOREST. ABOUT 4 MI SE OF THE COMMUNITY OF WECHES.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE-AGE TERRACE

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: PINE FOREST

COLLECTORS: BROCKMANN, DOLEZEL, FUCHS, HOLT, STEPTOE, GRAY, HALLMARK, PETERS DATE: 10/06/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-5	VERY DARK GRAYISH BROWN (10YR 3/2) LOAM; WEAK MEDIUM GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; MANY ROOTS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
A2G	5-13	GRAYISH BROWN (10YR 5/2) LOAM; FEW FINE DISTINCT REDDISH YELLOW (7.5YR 6/8) MOTTLES; WEAK MEDIUM PLATY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON MEDIUM ROOTS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B21TG&A2G	13-28	YELLOWISH BROWN (10YR 5/4) CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON MEDIUM ROOTS; GRAYISH BROWN (10YR 5/2) COATINGS ON PED FACES; ABOUT 20% OF HORIZON IS TONGUES AND STREAKS OF LIGHT BROWNISH GRAY (10YR 6/2) A2 MATERIAL; NEUTRAL; GRADUAL WAVY BOUNDARY.
B22TG&A2G	28-48	BROWN (10YR 5/3) CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON MEDIUM ROOTS; DARK GRAYISH BROWN (10YR 4/2) COATINGS ON PED FACES; ABOUT 15% OF THE HORIZON CONSISTS OF TONGUES AND STREAKS OF LIGHT BROWNISH GRAY (10YR 6/2) A2 MATERIAL; NEUTRAL; GRADUAL WAVY BOUNDARY.
B23TG&A2G	48-64	BROWN (10YR 5/3) CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON MEDIUM ROOTS; DARK GRAYISH BROWN (10YR 4/2) COATINGS ON PED FACES; COMMON BLACK CONCRETIONS; ABOUT 10% TONGUES AND STREAKS OF LIGHT GRAY (10YR 7/2) A2 MATERIAL; NEUTRAL; GRADUAL WAVY BOUNDARY.
B24TG	64-107	GRAYISH BROWN (10YR 5/2) CLAY LOAM; COMMON MEDIUM PROMINENT YELLOWISH BROWN (10YR 5/8) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW MEDIUM ROOTS; KROTOVINA THINLY BANDED WITH DARK GRAY (10YR 4/1) MATERIAL AT ABOUT A 45-DEGREE ANGLE; EVIDENCE OF FEW WHITE SALTS; NEUTRAL; GRADUAL WAVY BOUNDARY.
B25TG	107-147	GRAYISH BROWN (2.5Y 5/2) CLAY LOAM; FEW MEDIUM FAINT LIGHT OLIVE BROWN (2.5Y 5/4) AND MANY MEDIUM PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW MEDIUM ROOTS; COMMON BLACK CONCRETIONS; NEUTRAL; GRADUAL WAVY BOUNDARY.
B26T	147-178	LIGHT OLIVE BROWN (2.5Y 5/4) CLAY LOAM; COMMON MEDIUM PROMINENT BROWNISH YELLOW (10YR 6/8) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; NEUTRAL.

REMARKS: SOIL OCCURS IN MOUNDED COMPLEX WITH CART SERIES. MOLLVILLE OCCUPIES THE INTER-MOUND AREA. SOIL REACTION REPORTED ABOVE WAS DETERMINED WITH GLASS ELECTRODE. CORRESPONDING REACTION CLASSES AS DETERMINED BY PH KIT WERE RESPECTIVELY: STRONGLY ACID, SLIGHTLY ACID, STRONGLY ALKALINE; STRONGLY ALKALINE, STRONGLY ALKALINE, STRONGLY ALKALINE, STRONGLY ALKALINE, AND STRONGLY ALKALINE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: MOLLVILLE
PEDON NUMBER: S81TX-225-001
SOIL FAMILY: TYPIC GLOSSAQUALF; FINE-LOAMY, MIXED, THERMIC
LOCATION: HOUSTON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1112	0- 5	A1	0.1	0.2	1.8	18.7	18.2	39.0	25.9	52.7	4.9	8.3	SIL	
1113	5- 13	A2G	0.0	0.2	1.8	18.7	17.7	38.4	27.7	51.6	6.8	10.0	SIL	
1114	13- 28	B21TG&2G	0.0	0.3	2.6	16.1	15.6	34.6	27.0	48.0	13.9	17.4	L	
1115	28- 48	B22TG&2G	0.0	0.8	1.8	15.8	16.3	34.7	23.8	44.9	17.3	20.4	L	
1116	48- 64	B23TG&2G	0.0	0.1	1.9	15.1	15.6	32.7	23.0	44.7	18.0	22.6	L	
1117	64-107	B24TG	0.0	0.1	1.2	15.1	15.3	31.7	23.3	44.8	18.7	23.5	L	
1118	107-147	B25TG	0.2	0.2	1.2	13.2	15.0	29.8	24.6	44.6	18.1	25.6	L	
1119	147-178	B26T	0.0	0.1	1.1	14.6	17.5	33.3	21.3	41.6	16.3	25.1	L	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								%			%			
1112	2.09	5.3	5.4	0.9	0.2	0.1	6.6	0.1	10.9	6.7	61	2					
1113	1.04	5.2	3.9	0.9	0.5	0.1	5.4	0.4	7.9	5.8	68	6					
1114	0.78	5.0	4.9	3.0	1.3	0.1	9.3	0.9	12.0	10.2	78	9	8				
1115	0.29	5.0	6.1	4.8	3.5	0.1	14.5	0.3	14.5	14.8	100	19	14				
1116	0.19	6.5	7.2	5.4	5.7	0.1	18.4		16.0		100	26	17				
1117	0.10	7.0	8.1	5.6	6.1	0.1	19.9		16.9		100	27	19				
1118	0.08	7.2	8.8	5.6	6.7	0.2	21.3		17.7		100	27	18				
1119	0.09	7.2	8.4	5.1	6.2	0.2	19.9		16.2		100	26	19				

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1112																
1113											1.55	1.61	0.014		14.1	
1114	0.9	29	0.7	0.5	5.9	0.0	0.0	0.1	5.7	1.0	1.44	1.56	0.025		16.1	
1115	2.9	39	1.9	1.6	18.3	0.0	0.0	0.7	15.7	4.0	1.71	1.89	0.035		12.0	
1116	4.6	46	3.8	3.3	32.6	0.1	0.0	1.1	31.9	8.5	1.61	1.88	0.052		17.6	
1117	4.9	46	4.0	3.2	35.2	0.1	0.0	1.3	29.4	10.3	1.69	1.92	0.044		14.9	
1118	5.0	52	4.4	3.2	35.7	0.1	0.0	1.4	34.8	9.3	1.63	1.82	0.038		20.9	
1119	5.6	49	5.0	3.8	39.4	0.1	0.0	1.3	40.2	6.8	1.54	1.92	0.076		25.3	

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1112												
1113												
1114												
1115												
1116												
1117												
1118												
1119												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: MULA (PROPOSED) PEDON: S80TX-131-003 COUNTY: DUVAL

PEDON CLASSIFICATION: ARIDIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM THE INTERSECTION OF US 59 AND TEXAS 16, 7.8 MI N ON TEXAS 16, 1.3 MI W ON CALICHE RD, 0.3 MI N TO CATTLE GUARD, 2.2 MI SW ALONG FENCE, 50 FT SE IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FORMATION:

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: MINZENMAYER, GUCKIAN, MOLINA, SANDERS AND GABRIEL DATE: 05/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-25	VERY DARK GRAYISH BROWN (10YR 3/2) SANDY CLAY LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW FAUNAL CASTS; FEW SHELL FRAGMENTS; MILDLY ALKALINE; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21T	25-43	BROWN (10YR 4/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW SHELL FRAGMENTS; FEW FAUNAL CASTS; FEW FINE CARBONATE FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B22T	43-69	DARK YELLOWISH BROWN (10YR 4/4) SANDY CLAY LOAM, YELLOWISH BROWN (10YR 5/4) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW SHELL FRAGMENTS; FEW FAUNAL CASTS; FEW FINE CARBONATE FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B3CA	69-94	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW CALCIUM CARBONATE FILAMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	94-165	YELLOWISH BROWN (10YR 5/4) FINE SANDY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; COMMON VERY FINE AND FINE PORES; FEW FAUNAL CASTS; COMMON CALCIUM CARBONATE FILAMENTS; FEW FINE CARBONATE CONCRETIONS; ABOUT 10-20% DARK BROWN (10YR 4/3) SANDY CLAY LOAM IN POCKETS, SEAMS AND BURROWS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: MULA (PROPOSED) PEDON NUMBER: S80TX-131-003
SOIL FAMILY: ARIDIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
793	0- 25	A	0.8	8.8	13.1	10.1	7.9	40.7	15.9	27.9	13.0	31.4	CL	
794	25- 43	B21T	1.6	10.3	14.4	8.4	6.7	41.4	15.3	24.6	19.8	34.0	CL	
795	43- 69	B22T	2.1	9.0	10.4	7.3	6.3	35.1	17.9	28.1	18.2	36.8	CL	
796	69- 94	B3CA	1.9	6.6	8.3	5.6	6.1	28.5	20.5	31.8	12.1	39.7	CL	
797	94-165	CCA	1.5	8.0	10.6	12.5	13.8	46.5	17.0	39.1	2.8	14.5	L	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
793	0.99	7.8	35.0	2.1	0.2	5.7	43.0		26.1		100	0	1	0.5	0.1	1.6	
794	0.49	8.0	50.9	3.1	0.3	3.2	57.5		24.1		100	1	1	3.3	1.4	4.8	
795	0.51	8.1	58.8	3.4	0.3	2.4	64.9		24.5		100	1	1	8.1	2.0	10.3	
796	0.47	8.1	59.5	3.4	0.9	1.8	65.6		26.3		100	3	2	11.6	1.6	13.3	
797	0.15	8.2	55.8	3.5	1.8	1.9	63.0		23.7		100	7	3	7.1	2.3	9.6	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
793	1.0	44	6.3	0.5	2.2	1.5	0.0	2.8	0.6	1.3						
794	0.5	48	3.1	0.3	0.8	0.6	0.0	2.9	0.6	0.6						
795	0.4	50	2.8	0.2	0.7	0.3	0.0	3.1	0.3	0.4						
796	0.4	52	2.5	0.2	2.1	0.2	0.0	2.6	0.1	0.5						
797	0.4	40	2.0	0.2	3.4	0.1	0.0	3.4	0.2	1.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
793												
794												
795												
796												
797												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: NAHATCHE VARIANT PEDON: S81TX-213-001 COUNTY: HENDERSON

PEDON CLASSIFICATION: AERIC FLUVAQUENT; FINE-SILTY, SILICEOUS, NONACID, THERMIC

LOCATION: L. O. ROBERTSON FARM, ADJACENT TO PRIMARY SPILLWAY ON DOWN SLOPE SIDE OF SITE 2 OF THE EAST LATERALS OF THE TRINITY RIVER WATERSHED PROJECTION TURKEY CREEK. SITE LOCATED ON SHEET 56 OF HENDERSON COUNTY SOIL SURVEY REPORT.

LANDFORM: FLOODPLAIN ELEVATION (M): 90 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: HOLOCENE AGE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: WILDING, RIVERS, ABBOTT, AND GIRDNER DATE: 11/24/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-30	DARK GRAYISH BROWN (10YR 4/2) LOAM, GRAYISH BROWN (10YR 5/2) DRY; COMMON FINE DISTINCT DARK YELLOWISH BROWN (10YR 4/6) AND COMMON FINE FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SOFT; FRIABLE; COMMON FINE ROOTS; MILDLY ALKALINE; ABRUPT SMOOTH BOUNDARY.
AG	30-66	VERY DARK GRAYISH BROWN (10YR 3/2) SILT LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; MILDLY ALKALINE; GRADUAL SMOOTH BOUNDARY.
BG1	66-107	DARK GRAYISH BROWN (10YR 4/2) SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; FEW FINE FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND FEW FINE DISTINCT DARK YELLOWISH BROWN (10YR 4/6) MOTTLES; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; MODERATELY ALKALINE; GRADUAL SMOOTH BOUNDARY.
BG2	107-157	DARK GRAY (10YR 4/1) SILTY CLAY LOAM, GRAY (10YR 5/1) DRY; FEW FINE DISTINCT DARK YELLOWISH BROWN (10YR 4/6) MOTTLES; MODERATE FINE SUBANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; HARD; FIRM; FEW FINE ROOTS; FEW WEAKLY CEMENTED FE-MN MASSES AND CONCRETIONS; MODERATELY ALKALINE; GRADUAL SMOOTH BOUNDARY.
2AB	157-193	DARK GRAY (10YR 4/1) SILTY CLAY LOAM, GRAY (10YR 5/1) DRY; COMMON FINE DISTINCT DARK YELLOWISH BROWN (10YR 4/6) MOTTLES; MODERATE FINE ANGULAR BLOCKY PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE BLACK CONCRETIONS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CLEAR SMOOTH BOUNDARY.
2BKYG	193-274	GRAY (10YR 5/1) SILTY CLAY LOAM, LIGHT GRAY (10YR 6/1) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW BLACK CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW GYPSUM SEGREGATIONS; MODERATELY ALKALINE; GRADUAL SMOOTH BOUNDARY.
2BYG	274-348	GRAY (10YR 5/1) CLAY LOAM; MANY FAINT LIGHT GRAY (10YR 7/1) AND MANY DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK ANGULAR BLOCKY STRUCTURE; FEW GYPSUM SEGREGATIONS ON PED FACES; MODERATELY ALKALINE; CLEAR SMOOTH BOUNDARY.
3CYG	348-500	STATIFIED YELLOWISH AND GRAYISH LOAMY FINE SAND TO SANDY CLAY LOAM THAT IS SATURATED; LOOSE IN SANDY STRATA, FIRM IN LOAMY STRATA; FEW GYPSUM SEGREGATIONS IN LOAMY STRATA; FEW MICA FLAKES; MODERATELY ALKALINE; ABRUPT SMOOTH BOUNDARY.
3CR	500-589	UNOXIDIZED CLAYEY SHALE; MASSIVE; FEW FOSSILS; FEW MICA FLAKES; FEW GYPSUM SEGREGATIONS; MODERATELY ALKALINE.

REMARKS: SOIL REACTION DETERMINED BY HELLIGE-TRUOG FIELD KIT. PEDON IS A VARIANT OF THE NAHATCHE SERIES BECAUSE THE CONTROL SECTION IS FINE-SILTY RATHER THAN FINE-LOAMY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: NAHATCHE VARIANT
PEDON NUMBER: S81TX-213-001
SOIL FAMILY: AERIC FLUVAQUENT; FINE-SILTY, SILICEOUS, NONACID, THERMIC
LOCATION: HENDERSON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1172	30- 66	AG	0.0	0.1	0.1	0.8	11.1	12.1	28.9	63.8	11.8	24.1	SIL	0
1173	66-107	BG1	0.0	0.1	0.2	1.6	17.9	19.8	22.9	59.9	11.3	20.3	SIL	0
1174	107-157	BG2	0.1	0.1	0.1	1.8	13.6	15.7	27.4	57.0	18.0	27.3	SICL	0
1175	157-193	2AB	0.1	0.1	0.1	2.0	11.2	13.5	28.0	56.5	21.8	30.0	SICL	0
1176	193-274	2BKYG	0.0	0.1	0.1	1.0	11.0	12.2	28.7	52.3	23.3	35.5	SICL	0
1177	274-348	2BYG	0.1	0.2	0.2	9.1	16.8	26.4	21.2	36.1	21.6	37.5	CL	0
1178	348-500	3CYG	0.0	0.0	0.0	0.5	41.0	41.5	8.6	40.4	9.8	18.1	L	0
1179	500-589	3CR	0.0	0.0	0.0	0.1	0.8	0.9	41.7	54.1	11.3	45.0	SIC	0

				NH4OAC EXTR BASES				KCL EXTR	NAOAC		BASE					
LAB NO	ORGN C	PH (H2O)	CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1172	0.96	7.2	11.6	2.1	0.4	0.2	14.4		14.5		99	2	2				
1173	0.50	7.2	15.1	3.4	0.9	0.3	19.7		19.2		100	5	2				
1174	0.35	7.2	15.5	3.4	0.9	0.3	20.1		19.1		100	4	3				
1175	0.28	7.2	18.1	4.6	1.4	0.3	24.5		20.3		100	6	5				
1176	0.10	7.1	18.2	6.5	4.5	0.4	29.7		22.0		100	14	11	0.2	0.7	0.9	
1177	0.19	7.3	19.6	5.5	1.9	0.4	27.4		20.3		100	8	6	0.4	0.5	0.9	
1178	0.05	7.3	10.2	2.5	0.8	0.2	13.7		10.2		100	5	4	0.2	0.4	0.6	
1179	0.46	7.3	21.9	10.1	4.1	0.6	36.7		29.9		100	9	7	0.1	0.3	0.5	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1172	0.9	50	2.3	0.7	2.1	0.1	0.0	4.0	2.0	0.3						
1173	0.3	38	0.5	0.2	1.1	0.0	0.0	0.0	0.5	1.3						
1174	0.3	41	0.4	0.2	1.9	0.0	0.0	1.5	0.4	2.5						
1175	0.4	46	0.4	0.2	2.8	0.0	0.0	1.5	0.7	3.0						
1176	3.2	63	5.5	2.8	22.2	0.1	0.0	1.0	5.6	18.5						
1177	1.3	58	1.8	0.8	6.8	0.1	0.0	4.6	0.5	4.5						
1178	1.3	49	4.0	1.7	6.8	0.1	0.0	4.1	1.0	6.8						
1179	2.5	88	6.0	3.7	16.1	0.2	0.0	2.0	6.9	12.5						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1172												
1173												
1174												
1175												
1176												
1177												
1178												
1179												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: NIMROD VARIANT PEDON: S81TX-287-001 COUNTY: LEE

PEDON CLASSIFICATION: AQUIC ARENIC PALEUSTALF; LOAMY, SILICEOUS, THERMIC

LOCATION: FROM INTERSECTION OF FR 696 AND FR 619 IN NW LEE COUNTY, 3 MI E ON FR 696; 1.5 MI N ON GRAVEL ROAD; 400 FT N ON PRIVATE ROAD; 20 FEET E OF ROAD IN FIELD.

LANDFORM: FOOTSLOPE ELEVATION (M): 130 SLOPE: 2% SLOPE ASPECT: S

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: CALVERT BLUFF (WILCOX GROUP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: CRENWELGE, GREENWADE, LANE, CHERVENKA, BROCKMANN, HALLMARK, WEST DATE: 12/15/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP1	0-13	BROWN (10YR 5/3) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON MEDIUM ROOTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
AP2	13-26	BROWN (10YR 4/3) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON MEDIUM ROOTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
A	26-36	BROWN (10YR 5/3) LOAMY FINE SAND; FEW FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON MEDIUM ROOTS; NEUTRAL; GRADUAL SMOOTH BOUNDARY.
E/B	36-58	LIGHT GRAY (10YR 7/2) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON MEDIUM ROOTS; FEW FINE BLACK CONCRETIONS; ABOUT 10% ROUNDED MEDIUM YELLOWISH BROWN (10YR 5/6) "B" BODIES; SLIGHTLY ACID; GRADUAL SMOOTH BOUNDARY.
B/E	58-71	STRONG BROWN (7.5YR 5/8) FINE SANDY LOAM; FEW FINE PROMINENT RED (2.5YR 4/8) AND COMMON MEDIUM DISTINCT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON MEDIUM ROOTS; FEW FINE BLACK CONCRETIONS; ABOUT 5% INTERFINGERS OF LIGHT GRAY (10YR 6/2) LOAMY FINE SAND (E PART); STRONGLY ACID; ABRUPT WAVY BOUNDARY.
BT1	71-97	STRONG BROWN (7.5YR 5/8) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/8) AND COMMON MEDIUM DISTINCT RED (2.5YR 4/8) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON FINE ROOTS; CLAY FILMS ON PED FACES; FEW MEDIUM BLACK CONCRETIONS; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
BT2	97-127	GRAYISH BROWN (10YR 5/2) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT REDDISH YELLOW (7.5YR 6/8) AND FEW FINE PROMINENT RED (2.5YR 4/8) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FIRM; COMMON FINE ROOTS; VERY DARK GRAYISH BROWN (10YR 3/2) STAINS ON PED FACES; CLAY FILMS ON PED FACES; FEW SOFT MASSES OF WHITE SALTS (BASO4); SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
BT3	127-163	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON MEDIUM VERY DARK GRAYISH BROWN (10YR 3/2) STAINS ON PED FACES; COMMON DISTINCT CLAY FILMS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW SOFT MASSES OF WHITE SALTS (BASO4); MODERATELY ALKALINE; CLEAR SMOOTH BOUNDARY.
BT4	163-180	YELLOWISH BROWN (10YR 5/6) FINE SANDY LOAM; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON DISTINCT PINKISH GRAY (7.5YR 7/2) STREAKS; FEW CLAY FILMS; FEW SOFT MASSES OF WHITE SALTS (BASO4); MODERATELY ALKALINE; ABRUPT SMOOTH BOUNDARY.
2BT5	180-200	PINKISH GRAY (7.5YR 6/2) SILTY CLAY; COMMON MEDIUM PROMINENT YELLOWISH RED (5YR 5/8) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON CLAY FILMS; FEW SOFT MASSES OF WHITE SALTS (BASO4); MODERATELY ALKALINE.

REMARKS: SOIL IS CONSIDERED A VARIANT SINCE IT IS DEVELOPING IN A MORE HUMID ENVIRONMENT AND HAS A DEGRADED LAYER IN THE UPPER B HORIZON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: NIMROD VARIANT
PEDON NUMBER: S81TX-287-001
SOIL FAMILY: AQUIC ARENIC PALEUSTALF; LOAMY, SILICEOUS, THERMIC
LOCATION: LEE COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1188	0- 13	AP1	0.2	2.6	16.2	31.7	22.9	73.6	8.1	23.1	0.6	3.3	LFS	0
1189	13- 26	AP2	0.4	2.8	15.9	29.2	22.3	70.6	9.0	25.2	0.4	4.2	FSL	0
1190	26- 36	A	0.4	3.1	16.9	37.3	21.0	78.7	10.4	17.9	0.5	3.4	LFS	0
1191	36- 58	E/B	0.4	3.4	16.4	29.3	21.6	71.1	10.6	26.2	1.5	2.9	LFS	0
1192	58- 71	B/E	0.7	3.3	12.9	24.8	19.1	60.8	9.1	24.7	9.2	14.5	FSL	0
1193	71- 97	BT1	0.6	3.0	12.0	21.7	15.2	52.5	5.5	17.6	22.8	29.9	SCL	0
1194	97-127	BT2	0.2	3.0	5.2	32.0	17.5	57.9	5.5	18.9	16.4	23.2	SCL	0
1195	127-163	BT3	0.2	2.5	4.0	22.6	14.7	44.0	10.0	21.6	23.4	34.4	CL	0
1196	163-180	BT4	0.8	5.3	16.0	23.3	21.2	66.6	4.7	16.1	12.0	17.3	FSL	0
1197	180-200	2BT5	0.0	0.1	0.4	1.6	5.7	7.8	27.4	44.2	23.2	48.0	SIC	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								%			%			
1188	0.39	5.2	0.7	0.4	0.0	0.1	1.2	0.2	2.1	1.4	57	0					
1189	0.25	5.8	1.2	0.2	0.1	0.1	1.6		2.1		76	5					
1190	0.12	6.2	1.0	0.2	0.1	0.1	1.4		1.5		93	7					
1191	0.07	6.3	0.8	0.2	0.1	0.0	1.1		1.1		100	9					
1192	0.11	5.3	2.2	1.2	0.4	0.1	3.9	0.7	5.4	4.6	72	7					
1193	0.18	5.2	5.5	2.9	1.1	0.3	9.8	0.9	11.7	10.7	84	10					
1194	0.10	5.6	5.5	3.0	1.5	0.3	10.3		10.2		100	15					
1195	0.10	6.7	10.5	6.0	3.4	0.4	20.4		19.1		100	18					
1196	0.11	7.5	5.9	2.9	1.8	0.2	10.8		9.8		100	19					
1197	0.10	7.2	15.1	8.2	4.7	0.6	28.7		27.3		100	17					

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1188											1.63	1.65	0.005		17.8	
1189											1.70	1.71	0.002		15.4	
1190											1.81	1.82	0.002		7.2	
1191											1.76	1.77	0.001		6.8	
1192											1.79	1.86	0.012		8.9	
1193											1.69	1.89	0.037		16.1	
1194											1.68	2.04	0.067		20.8	
1195											1.41	2.06	0.135		32.0	
1196											1.64	1.87	0.045		19.4	
1197											1.37	1.95	0.126		34.2	

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1188			**		**		**			***	*	
1189												
1190												
1191												
1192												
1193	*		**		**		**			***	*	
1194												
1195												
1196	***		**		**		**			***	*	
1197												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: NOELKE PEDON: S81TX-435-001 COUNTY: SUTTON

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, THERMIC, SHALLOW

LOCATION: LEA ALLISON RANCH; APPROXIMATELY 18 MI E OF SONORA, 0.75 MI S OF THE NORTH LLANO RIVER; ON TOP OF A BROAD HILL, 250 YDS E OF WINDMILL (SHEET 52 OF SOIL SURVEY REPORT)

LANDFORM: UPLAND ELEVATION (M): 705 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: SEGOVIA MEMBER (EDWARDS LS)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, AND C. L. GIRDNER DATE: 07/24/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-2	VERY DARK BROWN (10YR 2/2) STONY SILT LOAM, DARK BROWN (10YR 3/3) DRY; MODERATE FINE AND VERY FINE GRANULAR STRUCTURE; SOFT; MANY FINE ROOTS; 30% COARSE FRAGMENTS; SLIGHTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A12	2-15	VERY DARK GRAYISH BROWN (10YR 3/2) VERY GRAVELLY SILTY CLAY LOAM, VERY DARK GRAYISH BROWN (10YR 3/2) DRY; MODERATE FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; HARD; COARSE FRAGMENTS COMPOSED OF MAINLY PETROCALCIC MATERIAL AND LIMESTONE COATED WITH SECONDARY CARBONATES; SOME FINE FILMS OF SECONDARY CARBONATES PRESENT IN THE LOWER PART OF THE HORIZON; 50% COARSE FRAGMENTS; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
C1CAM	15-30	WHITE (10YR 8/1, DRY) AND PINKISH WHITE (7.5YR 8/2, DRY) INDURATED CARBONATE MATERIAL; FRACTURED IN UPPER PART WITH VERTICL FRACTURES APPROXIMATELY 15 CM APART; SOME (<10%) BROWNISH "B BODIES" PRESENT WITHIN THE CARBONATE MATERIAL WITH SOME LOCALIZED CONCENTRATIONS OF SPHERICAL CARBONATE NODULES APPROXIMATELY 2 MM IN DIAMETER; ABRUPT WAVY BOUNDARY.
C2CAM	30-34	VERY PALE BROWN (10YR 8/3, DRY) AND PALE BROWN (10YR 6/3, DRY) CONTINUOUS LAMINAR CAP OF SECONDARY CARBONATE; ACTUAL RANGE IN THICKNESS OF 5-20 MM; ABRUPT BOUNDARY.
R1CA	34-39	VERY PALE BROWN (10YR 7/4, DRY) AND YELLOW (10YR 7/6, DRY) SOFT LIMESTONE WHICH HAS SOME ENRICHMENT WITH WHITE (10YR 8/2, DRY) SECONDARY CARBONATE.
R2	39+	VERY PALE BROWN (10YR 7/3, DRY) VERY HARD LIMESTONE BEDROCK; YELLOW (10YR 7/6) MOTTLES.

REMARKS: IT IS UNCERTAIN IF THE LIMESTONE ENCOUNTERED AT 39 CM WAS THICK MASSIVE BEDROCK OR A THINNER SEAM OF HARD MATERIAL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: NOELKE PEDON NUMBER: S81TX-435-001
SOIL FAMILY: PETROCALCIC CALCIUSTOLL; LOAMY-SKELETAL, MIXED, THERMIC, SHALLOW
LOCATION: SUTTON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1249	0- 2	A11	1.1	0.5	0.3	1.0	1.6	4.5	36.4	74.1	2.7	21.4	SIL	42
1250	2- 15	A12	0.9	0.5	0.4	1.0	1.7	4.5	35.7	62.1	8.8	33.4	SICL	62
1251	15- 30	C1CAM												
1252	30- 34	C2CAM												
1253	34- 39	R1CA												
1254	39-	R2												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR				
	%	1:1	MEQ/100G								-%-			-%			
1249	4.60	7.7	78.5	2.1	0.1	1.6	82.3		49.6		100	0	0	3.8	2.2	6.1	
1250	4.39	7.8	83.6	1.5	0.1	0.8	86.0		53.0		100	0	0	10.0	1.9	12.1	
1251	4.08															92.9	
1252	4.08															94.2	
1253	4.08															95.2	
1254	4.08															94.6	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1249	0.7	77	7.5	0.4	0.2	0.3	0.0	6.2	0.5	0.3	0.81	1.34	0.183		77.9	
1250	0.4	76	4.1	0.2	0.1	0.0	0.0	3.3	0.0	0.1	1.04	1.56	0.145		43.4	
1251																
1252																
1253																
1254																

LAB	CLAY MINERALOGY								SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1249												
1250												
1251												
1252												
1253												
1254												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: NOELKE VARIANT PEDON: S81TX-105-001 COUNTY: CROCKETT

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW

LOCATION: AUSTIN MILLSPAUGH RANCH; ENTER THROUGH PIE PIERCE RANCH, ON MESA TOP; BETWEEN N AND NW SHOOTING FINGERS OF SW PORTION OF MESA BETWEEN HOWARDS CREEK AND GOVERNMENT CANYON; 4 MI NNE OF RT 2083 AND UNPAVED ROAD AT HOWARDS CREEK.

LANDFORM: MESA ELEVATION (M): 730 SLOPE: 0-1% SLOPE ASPECT: S

PARENT MATERIALS: SOFT LIMESTONE FORMATION: BUDA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, C. GIRDNER, AND C. WIEDENFELD DATE: 07/23/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-2	VERY DARK GRAYISH BROWN (10YR 3/2) GRAVELLY SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK THIN PLATY AND MODERATE MEDIUM GRANULAR STRUCTURE; SLIGHTLY HARD; MANY FINE ROOTS; 15% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A12	2-12	VERY DARK GRAYISH BROWN (10YR 3/2) GRAVELLY SILTY CLAY LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO GRANULAR STRUCTURE; HARD; MANY FINE ROOTS; 20% COARSE FRAGMENTS; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
C1CAM&A1	12-24	WHITE (10YR 8/2, DRY) INDURATED CARBONATE MATERIAL; ABOUT 10% OF HORIZON IS DARK BROWN (10YR 3/3) LOAM WITHIN 0.5-2 CM WIDE FRACTURES; ABRUPT WAVY BOUNDARY.
C2CAM	24-45	WHITE (10YR 8/2) INDURATED CARBONATE MATERIAL, WHITE (10YR 8/1) DRY.
C3CAM	45-55	LIGHT GRAY (10YR 6/1, DRY) INDURATED CARBONATE MATERIAL.

REMARKS: NO HARD LIMESTONE ENCOUNTERED WITHIN 55 CM. THE LOWEST HORIZON COULD NOT BE CONCLUSIVELY IDENTIFIED ON FIELD EVIDENCE AS BEING SOFT LIMESTONE WITH SOME ENRICHMENT WITH SECONDARY CARBONATES OR AS A PETROCALCIC HORIZON. AN INTERMITTENT SEAM OF BROWNER MATERIAL (10YR 4/3) OF 2-3 CM THICKNESS WAS OBSERVED BETWEEN THE C1CAM&A1 HORIZON AND THE C2CAM HORIZON. PEDON CONSIDERED A VARIANT OF THE NOELKE SERIES AS IT IS NON-SKELETAL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: NOELKE VARIANT — PEDON NUMBER: S81TX-105-001
SOIL FAMILY: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW
LOCATION: CROCKETT COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1208	0- 2	A11	1.5	1.3	0.8	1.0	3.8	8.4	33.3	72.8	2.1	18.8	SIL	26
1209	2- 12	A12	0.8	1.1	0.8	1.2	3.5	7.4	30.7	64.8	5.9	27.9	SICL	35
1210	12- 24	C1CAM&A1												
1211	24- 45	C2CAM												
1212	45- 55	C3CAM												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1208	3.53	7.2	66.3	1.9	0.1	1.4	69.6		35.4		100	0	0	14.6	4.1	18.9	
1209	3.57	7.3	71.1	1.5	0.1	0.6	73.3		28.9		100	0	0	16.6	3.7	20.5	
1210	3.39															94.1	
1211	3.39															94.6	
1212	3.39															94.7	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1208	0.8	59	7.0	0.5	0.1	0.4	0.0	5.8	0.8	0.3						
1209	0.5	62	4.9	0.2	0.1	0.1	0.0	4.1	0.4	0.3						
1210																
1211																
1212																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1208												
1209												
1210												
1211												
1212												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: NOELKE VARIANT PEDON: S81TX-371-002 COUNTY: PECOS

PEDON CLASSIFICATION: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW

LOCATION: ASA STONE RANCH; APPROXIMATELY 30 MI W OF FT. STOCKTON ON US 290 TO HOVEY RD; S ON HOVEY RD 10.6 MI TO FORK; E 1.8 MI TO GATE ON W SIDE OF ROAD; SITE ON TOP OF KNOB APPROXIMATELY 0.25 MI W OF HOVEY RD.

LANDFORM: SUMMIT ELEVATION (M): 1100 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: WASHITA GROUP

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, B. ALLEN, AND C. GIRDNER DATE: 07/22/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-3	VERY DARK GRAYISH BROWN (10YR 3/2) GRAVELLY SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK THIN PLATY PARTING TO WEAK FINE GRANULAR STRUCTURE; SOFT; MANY FINE ROOTS; 20% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A12	3-10	DARK BROWN (10YR 3/3) GRAVELLY SILT LOAM, BROWN (10YR 5/3) DRY; MODERATE FINE SUBANGULAR BLOCKY PARTING TO MODERATE FINE GRANULAR STRUCTURE; SLIGHTLY HARD; COMMON FINE ROOTS; SOME THIN CARBONATE FILMS PRESENT ALONG PED FACES AND THE SURFACES OF SOME SMALL STONES; 15% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
CCAM&A1	10-22	WHITE (10YR 8/2, DRY) INDURATED CARBONATE MATERIAL; VERTICAL FRACTURES PRESENT COATED WITH SECONDARY CARBONATES; THE UPPER SURFACE IS SMOOTH WHILE THE LOWER SURFACE HAS PENDANTS OF SECONDARY CARBONATES; WITHIN THE FRACTURES IS SOME FINE MATERIAL SIMILAR IN TEXTURE AND COLOR TO A12 HORIZON; ABRUPT WAVY BOUNDARY.
C1CAM	22-25	PINKISH WHITE (7.5YR 8/2, DRY) AND VERY PALE BROWN (10YR 8/3, DRY) LAMINAR CAP MATERIAL; STRONGLY INDURATED AND EXTREMELY HARD; SHOWS DISTINCT HORIZONTAL LAMINAE OF <1 MM IN SCALE; ABRUPT SMOOTH BOUNDARY.
C2CAM&R	25-29	PALE BROWN (10YR 6/3, DRY) AND WHITE (10YR 8/2, DRY) INDURATED CARBONATE MATERIAL; CONTAINS SOME ZONES AND FRAGMENTS OF HARD LIMESTONE; IDENTIFICATION OF THE MATERIAL AS PETROCALCIC AS OPPOSED TO SOFT LIMESTONE IS UNSURE.
R1	29-34	WHITE (2.5Y 8/2, DRY) HARD LIMESTONE SEAM WITH A THIN (2-3 MM) COATING OF SECONDARY CARBONATE ON THE UPPER SURFACE.
C3CAM&R	34-36	VERY PALE BROWN (10YR 8/3, DRY) INDURATED CARBONATE MATERIAL SURROUNDING FRAGMENTS OF PALE YELLOW (2.5Y 8/4, DRY) HARD LIMESTONE.
R2	36-42	WHITE (10YR 8/1, DRY) LIMESTONE BEDROCK; MASSIVE; VERY HARD.

REMARKS: SOME LARGE LIMESTONE BOULDERS OCCUR IN THE UPPER 25 CM OF THE PEDON AND ARE COATED WITH 1-3 CM OF SECONDARY CARBONATES ON ALL SIDES; MANY CHERT FRAGMENTS WERE NOTICED ON THE SURFACE BUT NOT WITHIN THE SOLUM INDICATING THEIR ORIGIN TO BE A LAG CONCENTRATE. A FEW RHYOLITE PEBBLES WERE NOTICED ON THE SURFACE. THEIR ORIGIN IS MOST LIKELY THE BARRILLA MOUNTAINS TO THE WEST OF THIS SITE. THIS SUGGESTS THAT THERE MAY BE SOME IGNEOUS INFLUENCE ON THIS SOIL. THE SITE OCCURS WITHIN A LOZIER MAPPING UNIT. SOIL IS CONSIDERED A VARIANT OF THE NOELKE SERIES BECAUSE IT IS NOT SKELETAL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: NOELKE VARIANT — PEDON NUMBER: S81TX-371-002
SOIL FAMILY: PETROCALCIC CALCIUSTOLL; LOAMY, MIXED, THERMIC, SHALLOW
LOCATION: PECOS COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1241	0- 3	A11	2.3	0.9	0.7	2.2	9.6	15.7	28.3	70.8	1.0	13.5	SIL	38
1242	3- 10	A12	1.7	0.9	0.6	2.1	9.4	14.7	29.2	67.5	2.1	17.8	SIL	29
1243	10- 22	CCAM&A1												
1244	22- 25	C1CAM												
1245	25- 29	C2CAM&R												
1246	29- 34	R1												
1247	34- 36	C3CAM&R												
1248	36- 42	R2												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CALCITE	DOLOMITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1241	2.27	7.7	55.0	1.4	0.1	1.1	57.7		24.0		100	0	0	12.7	3.4	16.4	
1242	2.55	7.7	59.4	1.2	0.1	0.9	61.6		29.2		100	0	0	11.8	4.1	16.3	
1243																	
1244	2.46															78.1	
1245	2.46															78.4	
1246	2.46															93.4	
1247	2.46															88.8	
1248	2.46															98.2	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1241	0.6	51	5.5	0.4	0.1	0.4	0.0	4.9	0.4	0.8						
1242	0.4	51	3.8	0.2	0.1	0.2	0.0	3.5	0.3	0.6	1.19	1.35	0.043		37.2	
1243																
1244																
1245																
1246																
1247																
1248																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1241												
1242												
1243												
1244												
1245												
1246												
1247												
1248												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: PEDERNALES PEDON: S81TX-171-001 COUNTY: GILLESPIE

PEDON CLASSIFICATION: UDIC PALEUSTALF; FINE, MIXED, THERMIC

LOCATION: FROM BRIDGE ACROSS PALO ALTO CREEK ON FR 1631, 660 FT W AND 700 FT S. SITE IS 75 FT S OF ABANDONED RAILROAD RIGHT-OF-WAY AND SHEET 45 OF GILLESPIE COUNTY SOIL SURVEY REPORT.

LANDFORM: STREAM TERRACE ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT: E

PARENT MATERIALS: ALLUVIUM FORMATION: PLEISTOCENE OUTWASH

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: WILDING, HALLMARK, GIRDNER, BROCKMANN, ABBOTT AND PATTY DATE: 04/02/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	BROWN (10YR 4/3) FINE SANDY LOAM, BROWN (10YR 5/3) DRY; WEAK FINE GRANULAR STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
B21T	13-55	RED (2.5YR 4/6) CLAY, RED (2.5YR 5/6) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; COMMON FINE ROOTS; FEW FINE PORES; CONTINUOUS CLAY FILMS ON PED FACES; FEW FINE KROTOVINAS; FEW ORGANIC COATINGS ON PED FACES AND IN PORES; FEW SILICEOUS PEBBLES MOSTLY LESS THAN 1 CM IN DIAMETER; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
B22T	55-90	STRONG BROWN (7.5YR 5/6) CLAY; MANY MEDIUM DISTINCT RED (2.5YR 4/6) AND MANY MEDIUM DISTINCT BROWN (10YR 5/3) MOTTLES; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; CONTINUOUS CLAY FILMS ON PED FACES; FEW ORGANIC STAINS ON PED FACES; FEW SILICEOUS PEBBLES MOSTLY LESS THAN 1 CM IN DIAMETER; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
B23T	90-114	RED (2.5YR 4/6) CLAY, RED (2.5YR 5/6) DRY; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; CONTINUOUS CLAY FILMS ON PED FACES; FEW SLICKENSIDES; NEUTRAL; ABRUPT WAVY BOUNDARY.
B31TCA	114-170	LIGHT BROWN (7.5YR 6/4) CLAY LOAM; MANY COARSE DISTINCT YELLOWISH RED (5YR 5/6) MOTTLES; MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW VERY FINE ROOTS; COMMON MEDIUM PINKISH WHITE (7.5YR 8/2) CALCIUM CARBONATE SEGREGATIONS; FEW FINE PORES; ORGANIC STAINS ALONG ROOT CHANNELS; FEW FE-MN CONCRETIONS AND NODULES; PATCHY CLAY FILMS ON PEDS AND IN PORES; REDDISH COLORED SOIL LOCALLY NONCALCAREOUS; MILDLY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
B32TCA	170-201	LIGHT BROWN (7.5YR 6/4) CLAY LOAM; MANY COARSE DISTINCT YELLOWISH RED (5YR 5/6) AND FEW FAINT BROWN (10YR 5/3) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW VERY FINE ROOTS; COMMON MEDIUM PINKISH WHITE (7.5YR 8/2) CALCIUM CARBONATE SEGREGATIONS; FEW FINE PORES; ORGANIC STAINS ALONG ROOT CHANNELS; FEW FE-MN CONCRETIONS AND NODULES; PATCHY CLAY FILMS ON PEDS AND IN PORES; REDDISH COLORED SOIL LOCALLY NONCALCAREOUS; MILDLY ALKALINE; CALCAREOUS; DIFFUSE WAVY BOUNDARY.
B33TCA	201-221	LIGHT BROWN (7.5YR 6/4) CLAY LOAM; MANY COARSE DISTINCT YELLOWISH RED (5YR 5/6) AND FEW FAINT BROWN (10YR 5/3) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW VERY FINE ROOTS; COMMON MEDIUM PINKISH WHITE (7.5YR 8/2) CALCIUM CARBONATE SEGREGATIONS; FEW FINE PORES; ORGANIC STAINS ALONG ROOT CHANNELS; FEW FE-MN CONCRETIONS AND NODULES; PATCHY CLAY FILMS ON PEDS AND IN PORES; REDDISH COLORED SOIL LOCALLY NONCALCAREOUS; MILDLY ALKALINE; CALCAREOUS; ABRUPT SMOOTH BOUNDARY.
C1	221-287	PINK (5YR 8/3) WEAKLY CONSOLIDATED SANDSTONE; MANY FAINT PALE BROWN (10YR 6/3) MOTTLES; FEW SILICEOUS PEBBLES; DIFFUSE BOUNDARY.
C2	287-338	PINK (5YR 8/3) WEAKLY CONSOLIDATED SANDSTONE; MANY FAINT PALE BROWN (10YR 6/3) MOTTLES; FEW SILICEOUS AND LIMESTONE PEBBLES.

REMARKS: THE C HORIZON WERE SAMPLED BY AUGER. VEGETATION INCLUDES POST OAK, BLACKJACK OAK, MESQUITE, HAIRY TRIDENS, AND BUFFALOGRASS. SITE HAS A HISTORY OF OVERGRAZING.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: PEDERNALES
SOIL FAMILY: UDIC PALEUSTALF; FINE, MIXED, THERMIC
LOCATION: GILLESPIE COUNTY, TEXAS

PEDON NUMBER: S81TX-171-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
987	13- 55	B21T	5.9	6.8	6.4	8.5	5.8	33.4	4.9	18.0	44.0	48.6	C	3
988	55- 90	B22T	2.8	3.8	6.4	10.3	7.4	30.7	5.9	21.9	41.5	47.4	C	0
989	90-114	B23T	2.0	3.9	3.9	13.8	10.1	33.7	7.8	22.9	36.8	43.4	C	0
990	114-170	B31TCA	3.8	4.6	6.5	9.2	7.6	31.7	24.2	36.7	18.8	31.6	CL	0
991	170-221	B32&B33T	2.8	6.0	8.9	10.4	8.8	36.9	23.2	36.2	10.5	26.9	L	0
992	221-287	C1	7.0	9.0	7.8	13.2	8.8	45.8	15.2	23.3	6.7	30.9	SCL	0
993	287-338	C2	6.3	7.7	7.6	16.5	12.7	50.8	16.8	28.2	6.0	21.0	L	11

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	NAOAC ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
987	0.55	6.3	17.2	4.4	0.4	1.6	23.6		40.4		58	1	1				
988	0.50	7.2	21.0	4.7	1.1	1.6	28.4		44.2		64	2	1				
989	0.41	7.7	23.1	5.1	1.5	1.4	31.1		41.3		75	3	2				
990	0.02	8.0	50.3	3.4	1.1	0.9	55.7		25.2		100	4	1	30.2	0.4	30.6	
991	0.10	8.0	50.3	2.8	0.5	0.7	54.3		17.4		100	2	2	30.3	0.7	31.2	
992	0.12	8.1	47.4	2.0	1.1	0.3	50.8		13.4		100	6	3	33.6	0.6	34.2	
993	0.12	8.1	48.8	2.0	1.3	0.3	52.4		12.6		100	7	4	29.8	0.7	30.6	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	BULK DEN COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
987	0.2	60	1.3	0.3	0.7	0.2	0.0	0.9	0.3	1.9						
988	0.4	76	2.1	0.5	1.5	0.1	0.0	1.0	0.7	2.5						
989	0.7	63	4.5	1.0	2.7	0.1	0.0	1.9	2.0	3.2						
990	0.7	57	6.0	1.1	2.8	0.2	0.0	2.7	2.2	3.1						
991	1.2	43	7.5	1.6	4.2	0.3	0.0	2.6	7.9	2.5						
992	2.0	34	17.5	3.3	8.3	0.5	0.0	3.3	17.2	2.4						
993	3.0	33	18.5	4.9	12.2	0.8	0.0	2.7	29.4	2.2						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
987												
988												
989												
990												
991												
992												
993												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: PERNITAS PEDON: S81TX-131-001 COUNTY: DUVAL

PEDON CLASSIFICATION: TYPIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 3196 AND TEXAS 44, 2.2 MI N ON CALICHE ROAD, 0.55 MI NE ON DIRT ROAD, 0.4 MI SE ON RANCH ROAD, 0.5 MI NE AND 0.9 MI SE TO PENS, 0.5 MI SE ALONG FENCE, 0.1 MI SW ALONG FENCE, 150 FT NW IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: LISSIE

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: FRED MINZENMAYER DATE: 11/04/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-13	VERY DARK GRAY (10YR 3/1) SANDY CLAY LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; MANY FINE ROOTS; FEW WORM CASTS; FEW ROOT CHANNELS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A12	13-28	VERY DARK GRAYISH BROWN (10YR 3/2) SANDY CLAY LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE ROOTS; FEW ROOT CHANNELS; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
B21T	28-41	DARK BROWN (7.5YR 3/2) SANDY CLAY LOAM, BROWN (7.5YR 4/2) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; THIN PATCHY CLAY FILMS ON PED FACES; FEW WORM CASTS; FEW ROOT CHANNELS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
B22T	41-66	BROWN (10YR 4/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; THIN PATCHY CLAY FILMS ON PED FACES; FEW WORM CASTS; FEW ROOT CHANNELS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
B23TCA	66-94	BROWN (7.5YR 5/4) SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW WORM CASTS; FEW ROOT CHANNELS; COMMON CARBONATE FILMS AND THREADS ALONG PED FACES AND IN PED MATRICES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B24TCA	94-125	LIGHT BROWN (7.5YR 6/4) SANDY CLAY LOAM, PINK (7.5YR 7/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE AND VERY FINE ROOTS; THIN PATCHY CLAY FILMS ON PED FACES; COMMON CALCIUM CARBONATE FILAMENTS; COMMON CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	125-165	PINK (7.5YR 7/4) SANDY CLAY LOAM, PINK (7.5YR 8/4) DRY; STRUCTURELESS MASSIVE; VERY HARD; FIRM; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: PERNITAS — PEDON NUMBER: S81TX-131-001
SOIL FAMILY: TYPIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1137	0- 13	A11	0.0	0.1	2.7	34.6	29.0	66.4	4.1	16.8	9.9	16.8	FSL	0
1138	13- 28	A12	0.0	0.1	3.6	33.8	27.1	64.6	4.7	15.9	13.3	19.5	FSL	0
1139	28- 41	B21T	0.0	0.1	3.7	32.5	26.4	62.7	5.3	16.6	13.5	20.7	SCL	0
1140	41- 66	B22T	0.0	0.1	3.4	31.0	25.2	59.7	5.3	17.7	13.7	22.6	SCL	0
1141	66- 94	B23TCA	0.3	0.2	2.6	23.8	20.7	47.6	11.1	24.2	14.2	28.2	SCL	0
1142	94-125	B24TCA	0.3	0.3	2.5	21.9	16.8	41.8	19.3	39.0	9.3	19.2	L	0
1143	125-165	CCA	0.0	0.1	2.2	27.3	19.9	49.5	8.4	25.5	17.8	25.0	SCL	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								---%			---%			
1137	0.85	7.9	26.8	1.4	0.1	0.9	29.3		15.0		100	1	0	0.5	0.2	0.7	
1138	0.68	8.1	42.1	1.4	0.1	0.6	44.2		14.4		100	1	0	2.1	0.7	2.9	
1139	0.52	8.2	45.9	1.4	0.1	0.4	47.8		15.0		100	1	0	3.4	1.0	4.5	
1140	0.32	8.2	52.0	1.0	0.2	0.4	53.7		14.8		100	1	1	4.5	2.8	7.5	
1141	0.28	8.1	51.7	1.4	0.1	0.5	53.8		15.1		100	1	0	10.9	2.5	13.5	
1142	0.47	8.2	53.6	1.4	0.1	0.4	55.5		13.9		100	1	0	18.1	1.7	20.0	
1143	0.16	8.2	47.2	1.7	0.1	0.2	49.2		8.7		100	1	0	41.9	1.2	43.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
1137	0.5	37	3.9	0.4	0.2	0.5	0.0	4.0	0.0	0.8						
1138	0.4	40	3.6	0.3	0.3	0.2	0.0	3.7	0.0	0.3						
1139	0.3	41	3.2	0.2	0.4	0.1	0.0	3.2	0.0	0.5						
1140	0.4	42	2.9	0.2	0.8	0.1	0.0	2.4	0.2	0.5						
1141	0.3	46	2.8	0.3	0.4	0.1	0.0	2.3	0.6	0.3						
1142	0.3	46	2.4	0.2	0.4	0.1	0.0	2.1	0.4	0.5						
1143	0.3	42	2.1	0.2	0.5	0.1	0.0	2.3	0.1	0.5						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1137												
1138												
1139												
1140												
1141												
1142												
1143												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: PERNITAS PEDON: S81TX-131-004 COUNTY: DUVAL

PEDON CLASSIFICATION: TYPIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 3196 AND TEXAS 44, 2.2 MI N ON CALICHE ROAD, 0.55 MI NE ON DIRT ROAD, 0.4 MI SE TO JUNCTION, 0.1 MI S ON ROAD TO FENCE, 1.5 MI SE ALONG FENCE, 100 FT NE IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: LISSIE

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: FRED MINZENMAYER DATE: 11/06/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-15	DARK BROWN (7.5YR 3/2) SANDY CLAY LOAM, BROWN (7.5YR 5/2) DRY; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; FEW FINE PORES; FEW ROOT CHANNELS; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A12	15-36	DARK BROWN (7.5YR 3/2) SANDY CLAY LOAM, BROWN (7.5YR 4/2) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW FINE ROOTS; FEW FINE PORES; FEW ROOT CHANNELS; FEW SHELL FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
B21T	36-53	BROWN (7.5YR 4/4) SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; FEW FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW SHELL FRAGMENTS; FEW WORM CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
B22T	53-84	BROWN (7.5YR 5/4) SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; COMMON FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW SHELL FRAGMENTS; FEW CARBONATE FILAMENTS AND CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
B23TCA	84-107	BROWN (7.5YR 5/4) SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW SHELL FRAGMENTS; COMMON CARBONATE FILAMENTS AND CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	107-178	LIGHT BROWN (7.5YR 6/4) SANDY CLAY LOAM, PINK (7.5YR 7/4) DRY; STRUCTURELESS MASSIVE; VERY HARD; FIRM; COMMON CALCIUM CARBONATE CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: PERNITAS
PEDON NUMBER: S81TX-131-004
SOIL FAMILY: TYPIC ARGIUSTOLL, FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1158	0- 15	A11	0.0	0.1	2.2	42.5	23.8	68.6	3.1	18.2	7.5	13.2	FSL	0
1159	15- 36	A12	0.0	0.1	2.7	40.2	23.8	66.8	3.8	17.0	10.9	16.2	FSL	0
1160	36- 53	B21T	0.1	0.2	2.6	42.7	18.2	63.8	5.0	17.3	13.5	18.9	FSL	0
1161	53- 84	B22T	0.1	0.3	3.6	28.9	26.6	59.5	6.0	18.2	13.1	22.3	SCL	0
1162	84-107	B23TCA	0.2	0.3	2.6	31.6	23.9	58.6	10.2	15.4	14.7	26.0	SCL	0
1163	107-178	CCA	0.5	0.5	2.8	25.7	12.0	41.5	23.3	38.9	10.6	19.6	L	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
	%	1:1	CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
			MEQ/100G								---%			---%			
1158	0.57	8.0	32.5	1.0	0.0	0.5	34.1		11.6		100	0	0	1.4	1.1	2.7	
1159	0.53	8.0	45.9	1.1	0.1	0.4	47.5		13.3		100	1	0	2.9	0.9	3.9	
1160	0.38	8.0	50.7	1.5	0.1	0.4	52.8		13.9		100	1	0	7.5	2.8	10.4	
1161	0.30	8.0	53.2	0.9	0.1	0.3	54.6		14.2		100	1	0	5.4	2.2	7.9	
1162	0.23	7.9	52.5	1.3	0.2	0.4	54.5		14.7		100	1	1	13.6	2.6	16.5	
1163	0.02	8.0	49.6	1.3	0.2	0.2	51.3		10.0		100	2	1	37.6	1.7	39.5	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
1158	0.4	35	3.6	0.4	0.2	0.2	0.0	3.7	0.3	0.3						
1159	0.4	36	3.6	0.4	0.2	0.2	0.0	3.3	0.3	0.3						
1160	0.4	40	3.8	0.4	0.3	0.1	0.0	3.6	0.3	0.3						
1161	0.4	40	3.6	0.2	0.2	0.1	0.0	2.9	0.3	0.4						
1162	0.5	42	3.3	0.2	1.0	0.1	0.0	2.3	0.5	0.5						
1163	0.5	38	2.9	0.3	1.4	0.1	0.0	2.4	0.2	1.1						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1158												
1159												
1160												
1161												
1162												
1163												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: PHARR PEDON: S82TX-273-002 COUNTY: KLEBERG

PEDON CLASSIFICATION: TYPIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF US BUSINESS 77 AND FR 772, 0.7 MI N ON US 77, 150 FT E IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: MODERATELY WELL DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/12/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	VERY DARK GRAY (10YR 3/1) SANDY CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK FINE GRANULAR STRUCTURE; FRIABLE; MILDLY ALKALINE; NONCALCAREOUS; ABRUPT BOUNDARY.
BTK1	20-48	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY LOAM; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; MANY CALCIUM CARBONATE FILAMENTS ALONG ROOT CHANNELS; MILDLY ALKALINE; SLIGHTLY EFFERVESCENT; GRADUAL BOUNDARY.
BTK2	48-79	DARK GRAYISH BROWN (10YR 4/2) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW VERY DARK GRAYISH BROWN (10YR 3/2) STAINS ON PED FACES; FEW CALCIUM CARBONATE FILAMENTS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
BTK3	79-119	GRAYISH BROWN (2.5Y 5/2) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW DARK GRAYISH BROWN (10YR 4/2) STAINS ON PED FACES; FEW BLACK CONCRETIONS; COMMON CARBONATE CONCRETIONS AND SEGREGATIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
BTK4	119-178	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE DISTINCT DARK YELLOWISH BROWN (10YR 4/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW VERY DARK GRAY (10YR 3/1) STAINS ON PED FACES; FEW BLACK CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; MILDLY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
C	178-218	LIGHT GRAY (2.5Y 7/2) CLAY; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/6) AND BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW VERY DARK GRAY (10YR 3/1) STAINS ON PED FACES; MILDLY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT AND APPROXIMATELY 20% OF THE COTTON WAS DEAD.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: PHARR — PEDON NUMBER: S82TX-273-002
SOIL FAMILY: TYPIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: KLEBERG COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1341	0- 20	AP	0.0	0.0	0.6	30.8	28.9	60.3	5.7	19.3	10.1	20.4	SCL	0
1342	20- 48	BTK1	0.0	0.0	0.7	27.9	25.9	54.5	5.6	17.1	18.2	28.4	SCL	0
1343	48- 79	BTK2	0.1	0.1	0.6	23.7	22.7	47.2	9.8	20.6	19.0	32.2	SCL	0
1344	79-119	BTK3	0.5	0.3	0.6	18.8	20.4	40.6	14.5	25.2	19.0	34.2	CL	0
1345	119-178	BTK4	0.9	0.7	0.6	14.0	15.7	31.9	22.9	32.4	20.5	35.7	CL	0
1346	178-218	C	0.6	0.2	0.4	15.2	17.0	33.4	21.5	31.4	19.6	35.2	CL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES				KCL EXTR NAOAC			BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G							%			%			
1341	1.00	7.7	16.7	1.5	0.1	1.5 19.9		16.5		100	1	0	0.0	0.1	0.1	
1342	0.71	7.8	48.6	1.1	0.1	0.7 50.6		17.0		100	1	0	2.1	0.4	2.5	
1343	0.42	7.8	55.0	1.3	0.2	0.5 57.0		15.1		100	1	1	11.5	0.7	12.3	
1344	0.46	7.9	53.8	2.0	0.4	0.5 56.7		14.5		100	2	1	20.0	0.5	20.5	
1345	0.39	7.8	51.4	3.3	0.7	0.6 56.1		15.6		100	3	2	26.7	0.9	27.7	
1346	0.36	7.8	49.2	3.6	0.8	0.7 54.4		15.1		100	4	2	25.9	0.6	26.6	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1341	0.8	42	4.5	0.6	0.4	0.8	0.0	3.2	1.2	0.5	1.46	1.63	0.037		17.4	
1342	0.6	50	4.2	0.3	0.4	0.1	0.0	3.0	0.9	0.3	1.37	1.57	0.046		19.0	
1343	0.7	49	4.3	0.3	0.9	0.1	0.0	2.1	1.8	0.8	1.41	1.63	0.050		20.4	
1344	1.2	49	6.0	0.8	2.7	0.1	0.0	1.8	4.9	2.0	1.44	1.67	0.051		21.4	
1345	1.9	52	8.0	2.2	5.0	0.5	0.0	1.5	7.1	5.3						
1346	1.6	55	7.5	2.2	5.1	0.2	0.0	1.4	5.3	5.5						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1341												
1342												
1343												
1344												
1345												
1346												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: PICKTON VARIANT PEDON: S83TX-185-002 COUNTY: GRIMES

PEDON CLASSIFICATION: GROSSARENIC PALEUDALF; LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF TEXAS 30 AND TEXAS 90 IN ROANS PRAIRIE, 2.8 MI W ON TEXAS 30, 300 FT S ON PRIVATE ROAD, 100 FT W IN WOODS.

LANDFORM: SHOULDER ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT: E

PARENT MATERIALS: SANDSTONE FORMATION: WHITSETT (JACKSON GROUP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: GREENWADE, CRENWELGE, SCHLAPPI, SMITH, HALLMARK AND WEST DATE: 05/07/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-12	DARK GRAYISH BROWN (10YR 4/2) LOAMY FINE SAND; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON FINE AND MEDIUM ROOTS; FEW FINE SILICEOUS PEBBLES; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
E1	12-51	LIGHT YELLOWISH BROWN (10YR 6/4) LOAMY FINE SAND; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON FINE AND MEDIUM ROOTS; FEW SILICEOUS PEBBLES; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
E2	51-98	PALE BROWN (10YR 6/3) LOAMY FINE SAND; FEW FINE PROMINENT YELLOWISH RED (5YR 5/6) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON FINE AND MEDIUM ROOTS; FEW SILICEOUS PEBBLES; NEUTRAL; CLEAR SMOOTH BOUNDARY.
E3	98-137	PALE BROWN (10YR 6/3) LOAMY FINE SAND; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; LOOSE; COMMON FINE ROOTS; FEW SILICEOUS PEBBLES; FEW THIN STRONG BROWN (7.5YR 5/6) LAMELLA ABOUT 1 CM THICK THAT COLLECTIVELY COMPRISE LESS THAN 5% OF THE HORIZON; NEUTRAL; ABRUPT SMOOTH BOUNDARY.
BT1	137-157	YELLOWISH RED (5YR 5/6) SANDY CLAY LOAM; FEW FINE FAINT RED (2.5YR 4/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW DISCONTINUOUS CLAY FILMS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
BT2	157-175	RED (2.5YR 5/8) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT GRAYISH BROWN (10YR 5/2) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW ROOTS; THIN PATCHY CLAY FILMS; REDUCTION ALONG ROOT CHANNELS; A 1 CM THICK CLAY LAYER AT CONTACT WITH CR; NEUTRAL; ABRUPT WAVY BOUNDARY.
CR1	175-196	LIGHT GRAY (10YR 7/2) WEAKLY CONSOLIDATED SANDSTONE; FEW MEDIUM PROMINENT YELLOWISH RED (5YR 5/6) MOTTLES; EXTREMELY FIRM; FEW FINE ROOTS ALONG CRACKS; VERY STRONGLY ACID.
CR2	196-215	YELLOWISH RED (5YR 5/6) WEAKLY CONSOLIDATED SANDSTONE; COMMON MEDIUM PROMINENT PALE BROWN (10YR 6/3) MOTTLES; EXTREMELY FIRM; FEW FINE ROOTS ALONG CRACKS; VERY STRONGLY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: PICKTON VARIANT
SOIL FAMILY: GROSSARENIC PALEUDALF, LOAMY, SILICEOUS, THERMIC
LOCATION: GRIMES COUNTY, TEXAS

PEDON NUMBER: S83TX-185-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1643	0- 12	A	1.4	4.9	40.7	38.0	3.4	88.4	4.2	8.2	1.4	3.4	S	0
1644	12- 51	E1	0.5	4.9	41.0	37.6	3.7	87.7	4.2	8.3	1.9	4.0	S	0
1645	51- 98	E2	0.4	4.5	39.7	38.7	3.9	87.2	4.8	8.9	1.4	4.0	S	0
1646	98-137	E3	0.6	3.9	36.2	41.0	4.2	85.9	5.1	9.9	2.0	4.3	LS	0
1647	137-157	BT1	0.2	1.9	33.1	32.6	1.5	69.3	4.0	5.0	11.1	25.7	SCL	0
1648	157-175	BT2	0.2	1.2	28.3	41.8	1.7	73.2	2.0	2.6	14.1	24.2	SCL	0
1649	175-196	CR1	1.2	16.9	46.6	18.5	2.5	85.7	0.5	1.3	5.8	13.0	LS	0
1650	196-215	CR2	1.4	12.8	44.9	18.9	1.8	79.8	1.6	2.2	9.3	18.0	SL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	BASE ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
1643	1.34	5.5	1.6	0.4	0.0	0.0	2.0		5.3		38	0					
1644	0.12	6.2	0.6	0.0	0.0	0.0	0.6		1.2		50	0					
1645	0.08	6.8	0.8	0.0	0.0	0.0	0.8		1.1		73	0					
1646	0.07	6.5	0.3	0.2	0.0	0.0	0.5		1.0		50	0					
1647	0.16	6.8	4.2	0.8	0.0	0.2	5.2		7.1		73	0					
1648	0.12	6.6	5.4	1.2	0.1	0.2	6.9		7.8		88	1					
1649	0.05	4.6	1.1	0.6	0.1	0.1	1.9	0.9	3.9	2.8	49	3					
1650	0.09	4.0	1.1	0.6	0.1	0.1	1.9	1.4	5.2	3.3	37	2					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1643																
1644																
1645											1.59	1.65	0.012		11.9	
1646											1.58	1.63	0.010		10.4	
1647											1.64	1.76	0.024		13.9	
1648											1.46	1.59	0.029		22.2	
1649											1.62	1.63	0.002		22.3	
1650											1.52	1.56	0.009		15.0	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1643		*			**		**					
1644												
1645												
1646												
1647	**	T	*		***		**					
1648												
1649												
1650	**				***		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: POPHERS PEDON: S81TX-225-003 COUNTY: HOUSTON

PEDON CLASSIFICATION: AERIC FLUVAQUENT; FINE-SILTY, SILICEOUS, ACID, THERMIC

LOCATION: DAVY CROCKETT NATIONAL FOREST; ABOUT 4 MI SE OF THE COMMUNITY OF WECHES; ABOUT 100 FT SW OF NECHES RIVER.

LANDFORM: FLOODPLAIN ELEVATION (M): 60 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: QUATERNARY ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: FOREST

COLLECTORS: HALLMARK, BROCKMANN, DOLEZEL, FUCHS, HOLT, STEPTOE, GRAY, PETERS DATE: 10/07/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-13	DARK BROWN (10YR 3/3) SILTY CLAY LOAM; COMMON MEDIUM DISTINCT REDDISH BROWN (5YR 4/4) AND COMMON MEDIUM DISTINCT GRAYISH BROWN (10YR 5/2) MOTTLES; WEAK FINE GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; MANY ROOTS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
A12	13-41	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM; MANY PROMINENT STRONG BROWN (7.5YR 5/8) AND MANY PROMINENT YELLOWISH RED (5YR 5/8) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; MANY ROOTS; DARK GRAY (10YR 4/1) STAINS ALONG ROOT CHANNELS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B21	41-66	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; MANY MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; MANY ROOTS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B22	66-79	GRAYISH BROWN (10YR 5/2) SILT LOAM; COMMON MEDIUM DISTINCT BROWN (7.5YR 4/4) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
AB	79-84	DARK GRAY (10YR 4/1) SILT LOAM; FEW MEDIUM DISTINCT BROWN (7.5YR 4/4) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW MEDIUM ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
B21B	84-94	LIGHT BROWNISH GRAY (10YR 6/2) LOAM; FEW MEDIUM FAINT BROWN (7.5YR 4/4) AND COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW MEDIUM ROOTS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B22B	94-109	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; MANY DISTINCT BROWN (7.5YR 4/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
B23B	109-150	GRAY (10YR 5/1) CLAY LOAM; FEW FINE FAINT BROWN (7.5YR 4/4) AND COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; CONTAINS HORIZONTAL POCKETS ABOUT 5 CM THICK OF GRAY (10YR 6/1) FINE SANDY LOAM; FEW SMALL WHITE SALT SPOTS; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B24B	150-178	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM; MANY DISTINCT STRONG BROWN (7.5YR 5/6) AND MANY DISTINCT BROWN (7.5YR 4/4) MOTTLES; WEAK COARSE ANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; STRONGLY ACID.

REMARKS: SOIL REACTION WAS DETERMINED BY BOTH GLASS ELECTRODE AND PH KIT; REACTION CLASS WAS THE SAME FOR BOTH METHODS EXCEPT AS NOTED HERE-IN FOR PH KIT: B23B-SLIGHTLY ACID, B24B-NEUTRAL.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: POPHERS PEDON NUMBER: S81TX-225-003
SOIL FAMILY: AERIC FLUVAQUENT; FINE-SILTY, SILICEOUS, ACID, THERMIC
LOCATION: HOUSTON COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1128	0- 13	A11	0.0	0.0	0.0	0.1	0.9	1.0	31.0	60.4	16.7	38.6	SICL	
1129	13- 41	A12	0.0	0.0	0.0	0.8	7.6	8.4	27.5	54.1	20.8	37.5	SICL	
1130	41- 66	B21	0.0	0.0	0.0	2.0	19.5	21.5	19.6	50.1	16.0	28.4	CL	
1131	66- 79	B22	0.0	0.0	0.0	1.6	23.2	24.8	15.9	51.9	12.9	23.3	SIL	
1132	79- 84	AB	0.0	0.0	0.1	1.3	21.9	23.3	15.3	53.2	12.4	23.5	SIL	
1133	84- 94	B21B	0.0	0.0	0.1	3.1	27.7	30.9	13.9	47.6	11.9	21.5	L	
1134	94-109	B22B	0.0	0.0	0.0	2.5	20.4	22.9	18.0	52.5	14.7	24.6	SIL	
1135	109-150	B23B	0.0	0.0	0.0	5.9	17.7	23.6	21.6	44.2	20.0	32.2	CL	
1136	150-178	B24B	0.1	0.1	0.1	1.5	14.5	16.3	19.8	48.3	19.8	35.4	SICL	

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC	BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								%			%			
1128	5.07	4.3	0.3	2.1	1.1	0.1	3.6	5.0	26.9	8.6	13	4	1				
1129	0.71	4.6	6.9	2.8	0.3	0.5	10.5	2.3	27.1	12.8	39	1	1				
1130	0.43	4.8	6.5	3.9	0.2	0.2	10.8	0.7	18.0	11.5	60	1	1				
1131	0.40	5.0	6.0	3.8	0.2	0.2	10.2	0.3	13.6	10.5	75	1	1				
1132	0.59	5.1	5.7	3.9	0.2	0.2	10.0	0.2	12.8	10.2	78	1	1				
1133	0.31	5.0	5.4	3.5	0.3	0.2	9.4	0.1	11.9	9.5	79	2	1				
1134	0.31	5.2	6.2	4.5	0.3	0.2	11.2	0.1	13.8	11.3	81	2	1				
1135	0.46	5.3	8.9	6.4	0.3	0.3	15.9	0.1	17.5	16.0	91	1	1				
1136	0.28	5.4	9.8	7.2	0.4	0.3	17.7	0.1	19.5	17.8	91	2	1				

			SATURATED PASTE EXTRACT								BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1128	0.5	75	2.1	1.3	1.2	0.4	0.0	0.5	1.6	3.0						
1129	0.2	53	0.5	0.3	0.5	0.1	0.0	0.3	0.0	1.5	1.37	1.70	0.076		29.7	
1130	0.2	48	0.5	0.4	0.6	0.1	0.0	0.5	0.0	1.3	1.49	1.72	0.049		23.9	
1131	0.2	42	0.5	0.4	0.6	0.1	0.0	0.3	0.0	1.5	1.46	1.61	0.035		22.6	
1132	0.2	30	0.5	0.5	0.7	0.1	0.0	0.7	0.2	1.3						
1133	0.2	42	1.5	0.8	1.1	0.1	0.0	0.8	1.6	1.3	1.46	1.61	0.033		19.6	
1134	0.2	42	0.5	0.4	0.7	0.0	0.0	0.2	0.0	1.3	1.53	1.76	0.046		21.8	
1135	0.3	47	0.7	0.7	0.9	0.0	0.0	0.5	1.1	1.5	1.55	1.86	0.064		23.4	
1136	0.3	54	0.9	0.8	1.3	0.0	0.0	0.5	1.0	2.0	1.54	1.87	0.067		23.8	

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1128												
1129												
1130												
1131												
1132												
1133												
1134												
1135												
1136												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: RAYLAKE TAXADJUNCT PEDON: S80TX-005-012 COUNTY: ANGELINA

PEDON CLASSIFICATION: AQUENTIC CHROMUDERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM INTERSECTION OF BOYKIN SPRINGS ROAD AND US 69, 5.5 MI E, 200 FT N IN FOREST

LANDFORM: BACKSLOPE ELEVATION (M): 55 SLOPE: 2% SLOPE ASPECT: NW

PARENT MATERIALS: CLAYEY COASTAL PLAIN SEDIMENTS FORMATION: MANNING

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: PINE FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, GRAY, ZIMMERMAN DATE: 08/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-8	PALE BROWN (10YR 6/3) SILT LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; STRUCTURELESS MASSIVE; SLIGHTLY HARD; FRIABLE; FEW MEDIUM AND COARSE ROOTS; COMMON FINE PORES; FEW MEDIUM PORES; VERY STRONGLY ACID; ABRUPT WAVY BOUNDARY.
B21	8-40	DARK RED (2.5YR 3/6) CLAY; COMMON MEDIUM DISTINCT DARK GRAYISH BROWN (10YR 4/2) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON MEDIUM ROOTS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B22	40-54	DARK GRAYISH BROWN (10YR 4/2) CLAY; COMMON MEDIUM PROMINENT DARK RED (2.5YR 3/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON MEDIUM ROOTS; FEW INTERSECTING SLICKENSIDES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B23	54-82	BROWN (7.5YR 4/2) CLAY; COMMON MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; COMMON SLICKENSIDES 5-10 CM ACROSS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B24	82-116	BROWN (7.5YR 4/2) CLAY; COMMON MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE ROOTS; FEW LARGE SLICKENSIDES 15-30 CM ACROSS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B3	116-127	REDDISH BROWN (2.5YR 5/4) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
C	127-166	GRAYISH (2.5Y 5/2) AND OLIVE YELLOW (2.5Y 6/6) THINLY BEDDED SHALE WITH SANDY MATERIAL OF OLIVE GRAY (5Y 5/2) AND BROWNISH YELLOW (10YR 6/8); SANDY MATERIAL IS MASSIVE; VERY STRONGLY ACID.

REMARKS: PEDON WAS SAMPLED IN A MICRO-LOW POSITION. MICRO-LOWS HAVE UP TO 40 CM OF AN A HORIZON AND DEGRADED A & B HORIZON. THE MICRO-LOWS WOULD NOT CLASSIFY AS VERTISOLS. TRANSECT AT 2 FEET INTERVALS ACROSS 2 CYCLES SHOWS THAT 75% OF THE PEDON HAS BETWEEN 10 AND 38 CM OF LOAM AND SILTY CLAY LOAM ON THE SURFACE. THE SOIL IS A TAXADJUNCT BECAUSE OF THE THIN SILT LOAM SURFACE WHICH IS OUTSIDE THE RANGE OF THE SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: RAYLAKE TAXADJUNCT — PEDON NUMBER: S80TX-005-012
SOIL FAMILY: AQUENTIC CHROMUDERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: ANGELINA COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
929	0- 8	A1	1.1	1.6	1.3	3.9	29.5	37.4	18.5	52.8	5.9	9.8	SIL	
930	8- 40	B21	0.0	0.2	0.3	0.6	6.1	7.2	12.2	29.9	52.0	62.9	C	
931	40- 54	B22	0.2	0.1	0.2	0.4	6.1	7.0	16.3	34.8	47.3	58.2	C	
932	54- 82	B23	0.0	0.1	0.2	0.5	8.5	9.3	20.6	38.8	39.3	51.9	C	
933	82-116	B24	0.0	0.1	0.1	0.4	12.8	13.4	17.8	36.8	32.4	49.8	C	
934	116-127	B3	0.1	0.0	0.0	0.4	37.2	37.8	12.2	25.9	16.7	36.3	CL	
935	127-166	C	0.2	0.1	0.1	1.1	36.9	38.4	12.5	25.9	15.8	35.7	CL	
936	0- 18	A1+A+B	0.2	0.4	0.6	2.1	21.6	24.9	25.6	58.7	9.7	16.4	SIL	
937	44- 60	B21T	0.0	0.1	0.3	1.2	13.9	15.5	20.1	46.6	30.6	37.9	SICL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
929	1.40	3.9	1.5	0.8	0.2	0.1	2.6	3.5	10.7	6.1	24	2					
930	0.57	4.0	8.3	5.6	1.3	0.7	15.9	16.8	36.7	32.7	43	3	4				
931	0.53	4.0	9.1	5.5	1.7	0.6	16.9	14.8	34.2	31.7	49	5	6				
932	0.39	3.9	10.2	5.6	2.0	0.6	18.4	10.1	31.1	28.5	59	6	6				
933	0.48	3.7	11.6	5.8	4.1	0.6	22.1	7.1	31.2	29.2	71	10	12				
934	0.18	3.7	9.3	5.7	5.9	0.7	21.6	4.0	25.6	25.6	84	18	11				
935	0.14	3.6	9.7	5.6	7.1	1.1	23.5	2.9	24.1	26.4	98	21	9				
936																	
937	0.41	4.1	2.8	3.6	1.3	0.4	8.1	10.4	24.2	18.5	33	5					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
929																
930	0.1	71	0.1	0.1	1.3	0.1	0.0	0.2	0.3	0.0	1.12	1.84	0.183		43.0	
931	0.2	72	0.1	0.1	1.8	0.1	0.0	0.2	0.8	0.0	1.24	1.98	0.169		36.9	
932	0.4	67	0.3	0.2	3.1	0.1	0.0	0.1	2.7	0.0	1.31	1.98	0.148		33.6	
933	1.1	70	1.5	0.9	13.1	0.2	0.0	0.4	8.4	0.0	1.31	2.00	0.155		35.3	
934	2.2	68	3.0	3.3	20.0	0.2	0.0	0.2	18.1	0.0	1.32	1.72	0.094		33.1	
935	3.6	71	12.0	6.6	28.7	0.3	0.0	0.2	21.8	0.0	1.41	1.84	0.092		24.8	
936																
937																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
929												
930												
931												
932												
933												
934												
935												
936												
937												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: REAGAN PEDON: S83TX-371-001 COUNTY: PECOS

PEDON CLASSIFICATION: USTOLLIC CALCIORTHID; FINE-SILTY, MIXED, THERMIC

LOCATION: APPROXIMATELY 3 MI W OF BAKERSFIELD ON I-10 TO THE UNIV OF TEXAS EXPERIMENTAL VINEYARD. SITE IS 100 FT E OF 10 ACRE VINEYARD FENCE IN RANGELAND AND DUE E OF ROWS 76 AND 77.

LANDFORM: BAJADA ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT: E

PARENT MATERIALS: ALLUVIUM FORMATION: QUATERNARY SEDIMENTS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: J. L. RIVES, C. M. THOMPSON AND C. T. HALLMARK DATE: 05/02/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AK1	0-7	GRAYISH BROWN (10YR 5/2) SILT LOAM, LIGHT GRAY (10YR 7/2) DRY; MODERATE FINE AND MEDIUM PLATY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
AK2	7-15	BROWN (10YR 5/3) SILT LOAM, LIGHT GRAY (10YR 7/2) DRY; WEAK FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; COMMON FINE PORES; FEW CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
BK1	15-47	BROWN (10YR 4/3) SILTY CLAY LOAM, LIGHT GRAY (10YR 7/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE AND MEDIUM ROOTS; COMMON VERY FINE PORES; FEW CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; FEW LIMESTONE PEBBLES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
BK2	47-73	BROWN (10YR 5/3) CLAY LOAM, PALE BROWN (10YR 6/3) DRY; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; FEW VERY FINE PORES; FEW LIMESTONE PEBBLES; COMMON CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
BK3	73-106	PALE BROWN (10YR 6/3) SILTY CLAY LOAM, VERY PALE BROWN (10YR 7/3) DRY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; VERY FEW FINE ROOTS; FEW VERY FINE PORES; FEW LIMESTONE PEBBLES; MANY SEGREGATIONS, FILMS AND FILAMENTS OF CALCIUM CARBONATE; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
BK4	106-145	BROWN (7.5YR 5/4) CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; NO ROOTS; COMMON FINE PORES; FEW CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; DIFFUSE SMOOTH BOUNDARY.
BK5	145-267	BROWN (7.5YR 5/4) SILTY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; NO ROOTS; COMMON FINE PORES; FEW LIMESTONE PEBBLES; FEW CALCIUM CARBONATE FILAMENTS ON VERTICAL PED FACES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: THE BK5 HORIZON WAS SAMPLED FROM 145-200 CM IN DEPTH.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: REAGAN
PEDON NUMBER: S83TX-371-001
SOIL FAMILY: USTOLLIC CALCIORTHID; FINE-SILTY, MIXED, THERMIC
LOCATION: PECOS COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1665	0- 7	AK1	0.7	1.0	1.3	3.7	12.1	18.8	32.3	62.5	2.5	18.7	SIL	
1666	7- 15	AK2	0.5	0.8	1.1	3.6	12.7	18.7	35.8	57.5	2.8	23.8	SIL	
1667	15- 47	BK1	0.5	0.5	0.6	2.4	10.4	14.4	31.9	52.7	8.2	32.9	SICL	
1668	47- 73	BK2	4.6	4.2	4.3	2.4	9.4	24.9	32.3	39.4	10.7	35.7	CL	
1669	73-106	BK3	1.6	3.7	3.4	1.9	6.9	17.5	35.8	43.3	11.9	39.2	SICL	
1670	106-145	BK4	0.4	3.8	6.5	2.6	9.1	22.4	34.3	43.4	12.7	34.2	CL	
1671	145-200	BK5	0.1	1.2	3.2	1.8	5.7	12.0	38.8	50.8	15.4	37.2	SICL	

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1665	1.29	7.6	59.3	3.0	0.0	1.4	63.7		18.0		100	0	0	25.2	0.2	25.4	
1666	1.25	7.9	58.9	2.9	0.1	1.3	63.2		18.5		100	1	0	28.3	0.2	28.5	
1667	0.94	7.7	57.4	3.2	0.5	0.9	62.0		18.9		100	2	2	33.2	0.4	33.6	
1668	0.80	7.5	59.0	3.8	1.4	0.6	64.8		18.4		100	4	4	36.9	0.0	36.9	
1669	0.57	7.6	57.9	4.7	2.4	0.3	65.3		17.0		100	6	7	43.8	0.0	43.8	
1670	0.34	7.8	54.7	4.8	3.5	0.5	63.5		15.3		100	11	11	42.2	0.7	43.0	
1671	0.32	8.0	54.5	6.3	6.2	0.3	67.3		18.0		100	19	17	36.9	0.0	36.9	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1665	0.7	42	3.6	0.7	0.2	0.9	0.0	4.0	0.7	1.3	1.22	1.33	0.029		23.9	
1666	0.7	42	4.0	0.6	0.2	0.3	0.0	2.4	1.1	1.4	1.23	1.32	0.024		25.8	
1667	1.8	50	8.2	1.6	3.6	0.2	0.0	1.6	8.5	2.3	1.19	1.30	0.030		28.6	
1668	5.3	49	22.0	5.8	14.4	0.2	0.0	0.8	36.0	2.5	1.17	1.28	0.030		29.4	
1669	7.3	50	24.7	9.0	26.7	0.1	0.0	1.2	56.8	2.5	1.30	1.45	0.037		27.4	
1670	7.2	47	16.0	7.6	38.0	0.1	0.0	0.2	72.8	2.5	1.44	1.60	0.036		23.1	
1671	7.2	57	9.8	5.9	48.3	0.1	0.0	0.2	62.5	2.5	1.27	1.48	0.052		27.0	

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1665												
1666												
1667												
1668												
1669												
1670												
1671												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: ROSENWALL TAXADJUNCT PEDON: S80TX-005-013 COUNTY: ANGELINA

PEDON CLASSIFICATION: AQUIC HAPLUDULT; CLAYEY, MIXED, THERMIC

LOCATION: FROM INTERSECTION OF FR 2109 AND FR 2201, 1.2 MI S ON FR 2109 TO COUNTY ROAD, 3.5 MI W ON COUNTY ROAD AND FOREST SERVICE ROAD, 50 FT S IN FOREST. SITE IS 0.75 MI E OF PIPELINE.

LANDFORM: BACKSLOPE ELEVATION (M): 80 SLOPE: 4% SLOPE ASPECT: W

PARENT MATERIALS: SHALE FORMATION: YEGUA

TOPOGRAPHY: MODERATELY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PINE FOREST

COLLECTORS: WILDING, HALLMARK, WEST, BROCKMANN, FUCHS, HOLT, GRAY, PETERS DATE: 08/14/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-5	BROWN (10YR 4/3) SILT LOAM, GRAYISH BROWN (10YR 5/2) DRY; MODERATE FINE GRANULAR STRUCTURE; SOFT; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
A2	5-18	PALE BROWN (10YR 6/3) SILT LOAM, VERY PALE BROWN (10YR 7/3) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; MANY FINE AND MEDIUM ROOTS; FEW FINE PORES; STRONGLY ACID; CLEAR WAVY BOUNDARY.
B&A	18-33	BROWN (7.5YR 4/4) LOAM, BROWN (7.5YR 5/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SOFT; FRIABLE; COMMON FINE AND MEDIUM ROOTS; COMMON FINE PORES; BROWN (7.5YR 5/2) ALBIC MATERIAL ON PED FACES; STRONGLY ACID; CLEAR IRREGULAR BOUNDARY.
B21T	33-53	RED (2.5YR 4/6) CLAY; COMMON MEDIUM PROMINENT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE AND MEDIUM ROOTS; FEW FINE PORES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B22T	53-76	RED (2.5YR 4/6) CLAY; MANY MEDIUM DISTINCT REDDISH GRAY (5YR 5/2) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW SLICKENSIDES; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
B23T	76-95	BROWN (7.5YR 5/2) CLAY; MANY MEDIUM PROMINENT RED (2.5YR 4/6) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; COMMON SLICKENSIDES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B31	95-115	BROWN (7.5YR 4/2) CLAY; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) AND FEW FINE PROMINENT RED (2.5YR 4/6) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; COMMON SLICKENSIDES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
B32	115-130	BROWN (7.5YR 4/2) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW SLICKENSIDES; AREAS OF LIGHT OLIVE BROWN (2.5Y 5/4) SHALE STRATA; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
C	130-145	FEW FINE; LIGHT OLIVE BROWN (2.5Y 5/4), BROWNISH YELLOW (10YR 6/8), AND DARK BROWN (7.5YR 3/2) THINLY BEDDED WEATHERED SHALE; VERY STRONGLY ACID.
CR1	145-174	LIGHT OLIVE (2.5Y 5/4) BROWNISH YELLOW (10YR 6/8) AND DARK BROWN (7.5YR 3/2) THINLY BEDDED SHALE OF SILTY CLAY TEXTURE; FEW FINE ROOTS ALONG BEDDING PLANES; VERY STRONGLY ACID.
CR2	174-240	LIGHT OLIVE BROWN (2.5Y 5/4) FIRM THINLY BEDDED SHALE; MOTTLES AND STRATA OF BROWNISH YELLOW (10YR 6/8); VERY STRONGLY ACID.
CR3	240-280	BROWN (10YR 4/3) FIRM THINLY BEDDED SHALE; VERY STRONGLY ACID.

REMARKS: SOIL IS CONSIDERED A TAXADJUNCT OF THE ROSENWALL SERIES AS THE SURFACE LAYER IS SILT LOAM TEXTURE AND THE CLAY CONTENT FOR THE CONTROL SECTION IS SLIGHTLY LESS THAN 60% AS REQUIRED FOR THE SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: ROSENWALL TAXADJNCT
SOIL FAMILY: AQUIC HAPLUDULT; CLAYEY, MIXED, THERMIC
LOCATION: ANGELINA COUNTY, TEXAS

PEDON NUMBER: S80TX-005-013

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
919	0- 5	A1	0.4	1.8	2.2	10.1	24.2	38.7	20.8	54.3	1.7	7.0	SIL	
920	5- 18	A2	0.2	0.3	0.4	7.4	25.2	33.5	19.1	53.4	4.5	13.1	SIL	
921	18- 33	B&A	0.1	0.2	0.3	5.7	20.6	26.9	16.7	47.4	10.9	25.7	L	
922	33- 53	B21T	0.1	0.0	0.1	1.4	7.3	8.9	18.7	41.6	20.6	49.5	SIC	
923	53- 76	B22T	0.0	0.0	0.1	0.7	4.1	4.9	16.6	36.7	23.5	58.4	C	
924	76- 95	B23T	0.0	0.0	0.1	0.6	4.6	5.3	16.3	38.0	25.5	56.7	C	
925	95-115	B31	0.0	0.1	0.1	0.4	3.0	3.6	20.5	37.9	23.8	58.5	C	
926	115-130	B32	0.0	0.1	0.1	0.6	3.6	4.4	22.3	39.5	19.8	56.1	C	
927	130-145	C	0.3	0.2	0.2	0.9	3.9	5.5	26.9	43.7	14.5	50.8	SIC	53
928	145-174	CR												93

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG	NA	K	TOTAL	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
919	2.97	5.2	6.2	1.9	0.2	0.3	8.6	0.1	14.4	8.7	60	1					
920	0.52	4.2	1.3	1.2	0.2	0.3	3.0	4.3	11.0	7.3	27	2					
921	0.40	4.3	1.9	2.3	0.3	0.4	4.9	8.4	13.9	13.3	35	2					
922	0.57	4.2	1.5	3.5	0.6	0.7	6.3	19.5	29.2	25.8	22	2					
923	0.55	4.1	1.6	4.2	0.9	0.9	7.6	23.4	36.1	31.0	21	3					
924	0.48	3.9	1.6	4.0	1.0	0.8	7.4	23.0	35.1	30.4	21	3					
925	0.38	3.8	1.9	4.4	1.3	0.8	8.4	23.4	38.0	31.8	22	3					
926	0.42	3.6	2.2	4.5	1.5	0.8	9.0	21.2	38.4	30.2	23	4					
927	0.33	3.6	2.5	4.5	1.5	0.8	9.3	21.9	36.5	31.2	25	4					
928																	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
919																
920																
921																
922											1.20	1.68	0.116		36.8	
923											1.13	1.65	0.134		40.7	
924											1.17	1.74	0.142		39.6	
925											1.17	1.74	0.142		39.7	
926											1.14	1.70	0.144		41.7	
927											1.07	1.46	0.109		47.7	
928																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
919												
920	***		*		**		*					
921												
922	***		*		**		*					
923	***		*		**		*					
924	***		*		**		*					
925												
926	***		*		**		*					
927	***		*		**		*					
928												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: RUMPLE PEDON: S81TX-091-001 COUNTY: COMAL

PEDON CLASSIFICATION: UDIC ARGIUSTOLL; CLAYEY-SKELETAL, MIXED, THERMIC

LOCATION: WILLIAM PFEUFFER RANCH; IN PASTURE 40 YDS EAST OF FM 306, 0.6 MI SOUTH OF ENTRANCE TO RANCH, 0.15 MI NORTH OF JUNCTION WITH COUNTY ROAD; ABOUT 5 MI NORTH OF NEW BRAUNFELS, APPROX. 98 DEGREES6′ W 29 DEGREES 48′ N.

LANDFORM: SUMMIT ELEVATION (M): 265 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: EDWARDS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: M. RABENHORST, L. WEST, T. MOORE AND C. BATTE. DATE: 08/20/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-7	DARK BROWN (7.5YR 3/2) SILT LOAM; WEAK FINE PLATY AND MODERATE MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
A12	7-20	DARK BROWN (7.5YR 3/2) CHERTY SILTY CLAY LOAM; MODERATE FINE SUBANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; FRIABLE; COMMON FINE ROOTS; 15% COARSE FRAGMENTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
B21T	20-31	DARK REDDISH BROWN (2.5YR 3/4) CHERTY SILTY CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; THIN CONTINUOUS CLAY FILMS ON PED FACES; 40% COARSE FRAGMENTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
B22T	31-51	DARK REDDISH BROWN (2.5YR 3/4) CHERTY CLAY; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; THIN PATCHY CLAY FILMS ON PED FACES; ZONES WITH LARGER CRYSTALS HAVE BEEN SOLUTION PITTED AND HAVE SOIL MATERIAL IN CAVITIES; ZONES WHICH HAVE VERY FINE CRYSTALS ARE VERY HARD AND MASSIVE AND HAVE NO CAVITIES. 60% COARSE FRAGMENTS; NEUTRAL; ABRUPT SMOOTH BOUNDARY.
R	51	LIGHT BROWNISH GRAY (2.5Y 6/2) LIMESTONE BEDROCK.

REMARKS: A FEW LIMESTONE AND CHERT FRAGMENTS WERE PRESENT ON THE SOIL SURFACE. MOST OF THE COARSE FRAGMENTS IN THE SOIL WERE CHERT ALTHOUGH A FEW LARGE LIMESTONE FLOATERS WERE OBSERVED. THE SOLUM THICKNESS OF THIS PEDON IS VERY CLOSE TO THE 50 CM DEPTH CUTOFF FOR LITHIC SUBGROUPS. IT IS THE OPINION OF LOCAL SOIL SCIENTISTS THAT SOILS IN THIS LANDSCAPE POSTION DO ON THE AVERAGE HAVE SOLA THICKNESSES GREATER THAN 50 CM.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: RUMPLE
PEDON NUMBER: S81TX-091-001
SOIL FAMILY: UDIC ARGIUSTOLL; CLAYEY-SKELETAL, MIXED, THERMIC
LOCATION: COMAL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1281	0- 7	A11	0.4	0.8	1.3	2.0	4.4	8.9	40.9	67.6	9.0	23.5	SIL	4
1282	7- 20	A12	0.8	1.0	1.2	1.7	3.3	8.0	37.7	61.2	15.2	30.8	SICL	23
1283	20- 31	B21T	2.3	1.3	0.7	1.1	2.0	7.4	30.4	48.4	27.5	44.2	SIC	51
1284	31- 51	B22T	4.0	1.5	0.5	0.6	1.5	8.1	19.3	28.8	46.6	63.1	C	73
1285	51- 0	R												0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	BASE ESP	BASE SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K	TOTAL										
			MEQ/100G								%			%			
1281	2.55	6.4	13.5	1.8	0.0	0.8	16.2		15.4		100	0	0				
1282	1.66	6.5	12.3	1.4	0.1	0.6	14.4		14.8		97	1	0				
1283	1.44	6.5	13.9	1.7	0.1	0.5	16.2		17.2		94	1	0				
1284	1.70	6.6	22.0	2.2	0.1	0.6	25.0		24.1		100	0	0				
1285	0.01													66.9	3.1	70.3	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1281	0.5	54	3.5	1.0	0.2	0.6	0.0	2.4	0.9	0.5	1.22	1.47	0.064		37.5	
1282	0.5	50	7.6	0.7	0.2	0.3	0.0	3.4	0.4	0.1	1.29	1.57	0.068		34.3	
1283	0.5	55	4.1	0.7	0.3	0.1	0.0	2.2	0.3	0.2	1.29	1.66	0.088		35.7	
1284	0.7	76	6.2	0.7	0.3	0.0	0.0	3.7	0.2	0.1						
1285																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1281												
1282												
1283												
1284												
1285												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: RUMPLE VARIANT PEDON: S81TX-385-001 COUNTY: REAL

PEDON CLASSIFICATION: UDIC HAPLUSTALF; CLAYEY-SKELETAL, MONTMORILLONITIC, THERMIC

LOCATION: SIDNEY WELLS RANCH; ON RT 337, 10.25 MI W OF JUNCTION WITH RT 83 AT LEAKEY; N OF ROAD JUST INSIDE GATE AND 50 FT W UNDER SOME TREES.

LANDFORM: UPLAND ELEVATION (M): 715 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: HARD CHERTY LIMESTONE FORMATION: DEVILS RIVER

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: M. RABENHORST, L. WEST, AND T. MOORE DATE: 08/18/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-8	VERY DARK BROWN (10YR 2/2) CHERTY SILTY CLAY LOAM; WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
A12	8-20	VERY DARK GRAYISH BROWN (10YR 3/2) CHERTY SILTY CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY AND WEAK MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY FINE ROOTS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
B21T	20-35	DARK REDDISH BROWN (5YR 3/4) CHERTY CLAY; MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE ROOTS; MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; 40% COARSE FRAGMENTS; NEUTRAL; GRADUAL SMOOTH BOUNDARY.
B22T	35-65	DARK REDDISH BROWN (2.5YR 3/4) CHERTY CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE ROOTS; MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; 30% COARSE FRAGMENTS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
B3TCA	65-80	REDDISH BROWN (5YR 4/4) CHERTY CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW MEDIUM ROOTS; MEDIUM PATCHY CLAY FILMS; SOME CARBONATE COATINGS ON COARSE FRAGMENTS; MATRIX MATERIAL NONCALCAREOUS AND NEUTRAL; WHITE NODULES STRONGLY EFFERVESCENT; 35% COARSE FRAGMENTS; ABRUPT IRREGULAR BOUNDARY.
R	80-84+	LIGHT GRAY (5Y 7/1) HARD LIMESTONE BEDROCK.

REMARKS: SOIL IS LIKE THE RUMPLE BUT LACKS A MOLLIC EPIPEDON. SOIL SHOULD BE CLASSIFIED IN THE IMPLIED SUBGROUP OF MOLLIC HAPLUSTALFS BUT PRESENTLY SOIL TAXONOMY HAS NO SUCH SUBGROUP. THIS PEDON CONTAINS MANY CHERT FRAGMENTS BOTH WITHIN THE SOIL AND ON THE SURFACE. THESE FRAGMENTS RANGE BETWEN 1-25 CM ALONG THE LONG AXIS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: RUMPLE VARIANT
PEDON NUMBER: S81TX-385-001
SOIL FAMILY: UDIC HAPLUSTALF; CLAYEY-SKELETAL, MONTMORILLONITIC, THERMIC
LOCATION: REAL COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1260	0- 8	A11	0.8	1.2	0.9	1.2	0.9	5.0	41.7	67.5	11.9	27.5	SICL	19
1261	8- 20	A12	1.8	1.5	0.9	1.4	0.5	6.1	37.8	57.2	21.1	36.7	SICL	14
1262	20- 35	B21T	2.4	1.2	0.5	1.1	0.6	5.8	22.3	32.3	46.6	61.9	C	56
1263	35- 50	B22T	1.9	0.8	0.6	0.8	1.0	5.1	16.0	23.2	57.5	71.7	C	36
1264	50- 65	B22T	0.8	0.4	0.3	0.6	0.8	2.9	14.5	21.7	53.8	75.4	C	36
1265	65- 80	B3TCA	6.4	3.2	1.6	1.7	1.6	14.5	16.2	22.8	21.5	62.7	C	38
1266	80- 84	R												0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1260	5.98	7.2	40.5	1.8	0.1	0.8	43.3		37.9		100	0	0				
1261	2.51	7.2	36.3	1.4	0.1	0.5	38.2		28.8		100	0	0				
1262	1.75	7.0	47.9	1.9	0.1	0.6	50.6		46.4		100	0	0				
1263	1.46	7.0	51.7	2.1	0.2	0.6	54.5		50.9		100	0	0				
1264	1.29	7.0	57.3	2.2	0.3	0.6	60.4		57.0		100	1	0				
1265	0.72	7.2	77.5	1.8	0.2	1.0	80.5		45.4		100	0	0	15.3	3.7	19.3	
1266	0.67															94.8	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1260	0.7	73	6.2	0.6	0.2	0.3	0.0	4.9	1.6	0.6						
1261	0.6	59	5.4	0.4	0.3	0.1	0.0	3.8	0.9	0.3	1.29	1.77	0.111		37.1	
1262	0.6	84	5.9	0.3	0.3	0.1	0.0	3.3	0.6	0.3						
1263	0.4	89	3.6	0.2	0.3	0.0	0.0	2.2	0.3	0.4						
1264	0.3	94	1.5	0.2	0.3	0.0	0.0	1.3	0.6	0.4	1.00	1.83	0.223		64.3	
1265	0.6	80	6.0	0.2	0.6	0.0	0.0	2.8	0.7	0.6						
1266																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1260	***		**		**		**	*				
1261	***		**		**		**	*				
1262	***		**		**		**	*				
1263	***		**		**		*	T				
1264	***		**		**		*	T				
1265	***		**		**		*	T				
1266												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: RUNGE VARIANT PEDON: S81TX-131-002 COUNTY: DUVAL

PEDON CLASSIFICATION: TYPIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 3196 AND TEXAS 44, 2.2 MI N ON CALICHE ROAD, O.55 MI NE ON DIRT ROAD, O.4 MI SE TO JUNCTION, O.1 MI S TO FENCE, O.5 MI SE ALONG FENCE TO PIPELINE, O.6 MI SW ALONG PIPELINE, 50 FT N IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: O-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: LISSIE

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: FRED MINZENMAYER DATE: 11/04/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	O-18	VERY DARK GRAYISH BROWN (10YR 3/2) SANDY CLAY LOAM, GRAYISH BROWN (10YR 5/2) DRY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; FEW ROOT CHANNELS; NEUTRAL; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
A12	18-33	VERY DARK GRAYISH BROWN (10YR 3/2) SANDY CLAY LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE ROOTS; FEW ROOT CHANNELS; NEUTRAL; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21T	33-48	DARK BROWN (7.5YR 3/2) SANDY CLAY LOAM, BROWN (7.5YR 4/2) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW ROOT CHANNELS; FEW CALCIUM CARBONATE FILAMENTS; MILDLY ALKALINE; CLEAR SMOOTH BOUNDARY.
B22T	48-61	BROWN (7.5YR 4/4) SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW CALCIUM CARBONATE FILAMENTS; FEW ROOT CHANNELS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B23TCA	61-84	BROWN (7.5YR 5/4) SANDY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; STRONG MEDIUM PRISMATIC PARTING TO STRONG MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW ROOT CHANNELS; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B24TCA	84-99	LIGHT BROWN (7.5YR 6/4) SANDY CLAY LOAM, PINK (7.5YR 7/4) DRY; WEAK MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW ROOT CHANNELS; COMMON FINE CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B25TCA	99-130	YELLOWISH RED (5YR 5/6) SANDY CLAY LOAM, REDDISH YELLOW (5YR 6/6) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; COMMON CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	130-183	YELLOWISH RED (5YR 5/6) SANDY CLAY LOAM, REDDISH YELLOW (5YR 6/6) DRY; STRUCTURELESS MASSIVE; VERY HARD; FIRM; MANY CALCIUM CARBONATE CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: SOIL IS A VARIANT OF THE RUNGE SERIES SINCE IT DOES NOT HAVE SUFFICIENT CLAY INCREASE FOR AN ARGILLIC HORIZON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: RUNGE VARIANT
PEDON NUMBER: S81TX-131-002
SOIL FAMILY: TYPIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1144	0- 18	A11	0.0	0.1	3.2	26.0	19.4	48.7	8.9	24.1	19.1	27.2	SCL	0
1145	18- 33	A12	0.0	0.1	2.6	26.8	19.3	48.8	8.9	23.4	19.3	27.8	SCL	0
1146	33- 48	B21T	0.0	0.0	3.3	27.1	18.6	49.0	7.9	22.8	20.5	28.2	SCL	0
1147	48- 61	B22T	0.0	0.0	3.2	27.8	18.8	49.8	7.7	22.0	19.4	28.2	SCL	0
1148	61- 84	B23TCA	0.0	0.1	2.4	25.4	17.7	45.6	8.9	23.1	19.1	31.3	SCL	0
1149	84- 99	B24TCA	0.1	0.0	2.4	24.6	15.9	43.0	9.9	24.7	17.6	32.3	CL	0
1150	99-130	B25TCA	1.3	0.8	1.6	17.3	10.5	31.5	12.8	34.3	14.6	34.2	CL	0
1151	130-183	CCA	0.0	0.1	1.5	23.4	13.2	38.2	27.8	35.6	18.6	26.2	L	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								%			%			
1144	1.45	7.6	25.6	2.2	0.1	1.0	28.9		22.5		100	0	0	0.0	0.0	0.0	
1145	1.31	7.6	29.7	1.7	0.1	0.8	32.3		23.6		100	0	0	0.0	0.0	0.0	
1146	1.07	7.6	29.3	1.6	0.1	0.8	31.8		22.1		100	0	0	0.0	0.0	0.0	
1147	0.82	7.7	49.6	1.8	0.1	0.7	52.2		20.9		100	0	0	1.5	0.7	2.2	
1148	0.58	7.8	55.7	2.1	0.1	0.6	58.5		20.3		100	0	0	8.2	1.1	9.4	
1149	0.37	7.8	52.5	2.8	0.2	0.6	56.1		19.9		100	1	0	11.8	2.4	14.4	
1150	0.34	7.9	56.0	3.1	0.1	0.6	59.9		19.1		100	0	0	16.0	2.6	18.8	
1151	0.20	7.9	49.6	3.1	0.1	0.5	53.3		13.1		100	1	1	38.9	2.3	41.3	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1144	0.5	46	4.0	0.6	0.2	0.4	0.0	4.1	0.1	0.5						
1145	0.5	52	3.9	0.3	0.2	0.2	0.0	3.8	0.0	0.5						
1146	0.3	54	2.9	0.2	0.3	0.1	0.0	2.5	0.0	0.5						
1147	0.5	51	3.7	0.1	0.3	0.2	0.0	2.3	1.2	0.5						
1148	0.3	48	2.5	0.3	0.3	0.1	0.0	2.0	0.3	0.3						
1149	0.3	47	2.3	0.4	0.5	0.1	0.0	1.9	0.2	0.3						
1150	0.3	47	2.1	0.5	0.5	0.1	0.0	1.8	0.9	1.0						
1151	0.4	44	2.3	0.7	0.8	0.2	0.0	1.9	1.2	1.3						

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1144												
1145												
1146												
1147												
1148												
1149												
1150												
1151												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: RUNGE VARIANT PEDON: S81TX-131-003 COUNTY: DUVAL

PEDON CLASSIFICATION: TYPIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF TEXAS 3196 AND TEXAS 44, 2.2 MI N ON CALICHE ROAD, 0.55 MI NE ON DIRT ROAD, 0.4 MI SE TO JUNCTION, 0.25 MI NE, 50 FT N IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: LISSIE

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: FRED MINZENMAYER DATE: 11/06/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-20	DARK BROWN (7.5YR 3/2) SANDY CLAY LOAM, BROWN (7.5YR 5/2) DRY; WEAK MEDIUM PRISMATIC PARTING TO WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON FINE AND MEDIUM ROOTS; FEW FINE PORES; FEW ROOT CHANNELS; NEUTRAL; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21T	20-46	VERY DARK GRAYISH BROWN (10YR 3/2) SANDY CLAY LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW WORM CASTS; NEUTRAL; NONCALCAREOUS; CLEAR SMOOTH BOUNDARY.
B22T	46-74	REDDISH BROWN (5YR 4/3) SANDY CLAY LOAM, REDDISH BROWN (5YR 5/3) DRY; MODERATE COARSE PRISMATIC PARTING TO STRONG COARSE SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW WORM CASTS; CARBONATE FILAMENTS ON PED FACES AND ROOT CHANNELS; MILDLY ALKALINE; GRADUAL SMOOTH BOUNDARY.
B23T	74-112	BROWN (7.5YR 4/4) SANDY CLAY LOAM, BROWN (7.5YR 5/4) DRY; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE PORES; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW WORM CASTS; CARBONATE FILAMENTS ON PED FACES AND ROOT CHANNELS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B24TCA	112-152	STRONG BROWN (7.5YR 5/6) SANDY CLAY LOAM, REDDISH YELLOW (7.5YR 6/6) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; FEW ROOT CHANNELS; FEW WORM CASTS; COMMON CARBONATE FILAMENTS IN PED MATRICES; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
CCA	152-183	REDDISH YELLOW (7.5YR 6/6) SANDY CLAY LOAM, REDDISH YELLOW (7.5YR 7/6) DRY; STRUCTURELESS MASSIVE; VERY HARD; FIRM; MANY CALCIUM CARBONATE CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: VARIANT TO THE RUNGE SERIES SINCE THE SOIL DOES NOT HAVE SUFFICIENT CLAY INCREASE FOR AN ARGILLIC HORIZON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: RUNGE VARIANT
PEDON NUMBER: S81TX-131-003
SOIL FAMILY: TYPIC HAPLUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1152	0- 20	A1	0.0	0.0	3.4	34.2	19.1	56.7	8.6	22.8	13.0	20.5	SCL	0
1153	20- 46	B21T	0.0	0.1	3.1	32.8	24.5	60.5	6.3	17.7	14.1	21.8	SCL	0
1154	46- 74	B22T	0.0	0.1	2.9	35.5	20.4	58.9	5.8	18.2	16.8	22.9	SCL	0
1155	74-112	B23T	0.0	0.1	3.2	35.6	20.0	58.9	5.4	19.4	15.1	21.7	SCL	0
1156	112-152	B24TCA	0.0	0.1	2.8	34.1	23.4	60.4	7.3	14.9	16.1	24.7	SCL	0
1157	152-183	CCA	0.2	0.3	1.6	24.0	13.5	39.6	23.1	36.3	12.0	24.1	L	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES				KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G							%			%			
1152	1.09	7.8	16.9	1.4	0.1	0.6 19.1		18.8		100	0	0	0.0	0.0	0.0	
1153	0.87	7.7	15.9	1.2	0.1	0.6 17.9		17.9		100	0	0	0.0	0.0	0.0	
1154	0.41	7.6	27.1	1.0	0.1	0.5 28.8		15.1		100	1	0	0.7	0.3	1.0	
1155	0.34	7.7	29.2	1.1	0.1	0.5 30.9		15.2		100	1	0	0.9	0.3	1.2	
1156	0.17	7.9	49.8	1.1	0.1	0.5 51.5		15.3		100	1	0	4.9	1.7	6.8	
1157	0.10	7.9	49.9	1.1	0.1	0.4 51.5		13.1		100	1	0	28.9	1.2	30.3	

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1152	0.6	41	4.7	0.6	0.6	0.2	0.0	3.4	1.5	1.1						
1153	0.5	40	4.3	0.5	0.4	0.2	0.0	3.2	0.0	0.4						
1154	0.7	41	5.6	0.4	0.6	0.1	0.0	2.2	1.8	1.0						
1155	0.6	40	4.5	0.4	0.6	0.1	0.0	2.3	4.4	1.5						
1156	0.4	42	3.2	0.2	0.5	0.1	0.0	2.3	3.1	0.9						
1157	0.4	40	2.8	0.3	0.6	0.1	0.0	2.1	0.7	0.8						

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1152												
1153												
1154												
1155												
1156												
1157												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SALCO PEDON: S80TX-131-004 COUNTY: DUVAL

PEDON CLASSIFICATION: ARIDIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC

LOCATION: FROM THE INTERSECTION OF TEXAS 16 AND US 59, 7.8 MI N ON TEXAS 16, 1.3 MI W ON CALICHE ROAD, 0.4 MI N, 0.55 MI MAINLY NW, 20 FT S OF ROAD IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: FORMATION:

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: MINZENMAYER, GUCKIAN, MOLINA, SANDERS AND GABRIEL DATE: 05/13/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-18	DARK BROWN (10YR 3/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW VERY FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
B21T	18-41	DARK BROWN (10YR 3/3) SANDY CLAY LOAM, BROWN (10YR 5/3) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW VERY FINE AND FINE CALCIUM CARBONATE CONCRETIONS; FEW CARBONATE FILAMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B22T	41-66	DARK YELLOWISH BROWN (10YR 4/4) SANDY CLAY LOAM, YELLOWISH BROWN (10YR 5/4) DRY; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW VERY FINE AND FINE CALCIUM CARBONATE CONCRETIONS; FEW CARBONATE FILAMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B23T	66-97	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW VERY FINE AND FINE CALCIUM CARBONATE CONCRETIONS; FEW CARBONATE FILAMENTS; FEW FAUNAL CASTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B24TCA	97-132	LIGHT YELLOWISH BROWN (10YR 6/4) SANDY CLAY LOAM, VERY PALE BROWN (10YR 7/4) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; COMMON VERY FINE AND FINE PORES; FEW SHELL FRAGMENTS; FEW VERY FINE AND FINE CALCIUM CARBONATE CONCRETIONS; FEW CARBONATE FILAMENTS; FEW FAUNAL CASTS; FEW FINE SILICEOUS PEBBLES; FEW FINE SANDSTONE FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
CCA	132-203	LIGHT YELLOWISH BROWN (10YR 6/4) FINE SANDY LOAM, VERY PALE BROWN (10YR 7/4) DRY; STRUCTURELESS MASSIVE; HARD; FRIABLE; COMMON VERY FINE AND FINE PORES; FEW CALCIUM CARBONATE CONCRETIONS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW SANDSTONE FRAGMENTS; MODERATELY ALKALINE; CALCAREOUS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SALCO
SOIL FAMILY: ARIDIC ARGIUSTOLL; FINE-LOAMY, MIXED, HYPERTHERMIC
LOCATION: DUVAL COUNTY, TEXAS

PEDON NUMBER: S80TX-131-004

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
798	0- 18	A	2.1	8.3	18.4	14.8	10.8	54.4	11.5	24.0	7.2	21.6	SCL	
799	18- 41	B21T	1.7	9.4	19.7	12.8	7.4	51.0	13.3	23.5	10.6	25.5	SCL	
800	41- 66	B22T	1.2	7.8	16.3	12.3	7.8	45.4	13.9	25.2	12.2	29.4	SCL	
801	66- 97	B23T	2.9	6.7	13.7	11.1	8.7	43.1	15.9	29.3	11.8	27.6	SCL	
802	97-132	B24TCA	5.7	7.2	14.2	11.7	7.8	46.6	14.8	27.3	8.2	26.1	SCL	
803	132-203	CCA	4.4	6.5	15.2	14.8	9.4	50.3	15.6	29.4	3.2	20.3	L	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR NAOAC AL MEQ/100G	CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
798	0.92	8.0	47.3	1.4	0.1	5.8	54.6		21.3		100	0	0	1.5	0.7	2.3	
799	0.73	8.0	51.8	1.5	0.3	4.8	58.4		20.9		100	1	1	3.5	1.3	4.9	
800	0.49	8.0	59.2	1.5	0.3	3.0	64.0		21.6		100	1	1	5.1	2.6	7.9	
801	0.30	8.0	60.8	2.0	0.5	1.6	64.9		19.5		100	2	1	11.3	3.4	15.0	
802	0.28	8.0	60.1	2.0	0.8	1.2	64.1		18.5		100	4	2	14.3	3.0	17.6	
803	0.09	8.2	55.6	2.0	1.3	1.8	60.7		16.0		100	7	3	18.8	3.1	22.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
798	0.5	53	3.4	0.2	0.5	1.2	0.0	3.4	0.4	0.6						
799	0.7	45	5.2	0.2	2.1	0.9	0.0	4.1	0.7	0.7						
800	0.5	47	6.8	0.3	1.8	0.4	0.0	3.4	1.2	1.1						
801	1.2	44	5.0	0.4	1.9	0.4	0.0	2.8	1.4	3.4						
802	1.2	44	9.4	0.5	3.4	0.3	0.0	2.3	4.2	4.2						
803	0.7	40	3.6	0.4	3.6	0.4	0.0	2.6	2.6	0.9						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
798												
799												
800												
801												
802												
803												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SANDERSON VARIANT PEDON: S83TX-371-002 COUNTY: PECOS

PEDON CLASSIFICATION: USTOLLIC CAMBORTHID; LOAMY-SKELETAL, CARBONATIC, THERMIC

LOCATION: APPROXIMATELY 6 MI W OF BAKERSFIELD ON I-10 TO THE UNIV OF TEXAS ESCONDIDO VINEYARDS. SITE IS APPROXIMATELY 1 MI SW OF ESCONDIDO HEADQUARTERS IN RIGHT-OF-WAY BETWEEN VINEYARD SECTIONS.

LANDFORM: BAJADA ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT: NE

PARENT MATERIALS: ALLUVIUM FORMATION: QUATERNARY SEDIMENTS

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: IRRIGATED CROP

COLLECTORS: J. L. RIVES, C. M. THOMPSON AND C. T. HALLMARK DATE: 05/02/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	BROWN (10YR 4/3) CLAY LOAM, PALE BROWN (10YR 6/3) DRY; STRUCTURELESS MASSIVE; VERY HARD; FIRM; FEW ROOTS; FEW LIMESTONE FRAGMENTS; FEW CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
BK1	20-48	BROWN (10YR 4/3) GRAVELLY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK MEDIUM SUBANGULAR BLOCKY AND FINE GRANULAR STRUCTURE; HARD; FIRM; FEW ROOTS; FEW CALCIUM CARBONATE FILAMENTS; 25% COARSE FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL SMOOTH BOUNDARY.
BK2	48-84	BROWN (7.5YR 5/4) VERY GRAVELLY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; HARD; FIRM; FEW ROOTS; COMMON CALCIUM CARBONATE FILAMENTS; 40% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
BK3	84-130	BROWN (7.5YR 5/4) GRAVELLY CLAY LOAM, LIGHT BROWN (7.5YR 6/4) DRY; MODERATE FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE PORES; COMMON CALCIUM CARBONATE FILAMENTS; BROKEN FRAGMENTS OF PETROCALCIC HORIZON FROM 5-20 CM IN LENGTH AT ANGLES OF 5 TO 25 DEGREES FROM HORIZONTAL; 30% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
BK4	130-141	LIGHT BROWN (7.5YR 6/4) GRAVELLY SILTY CLAY LOAM, PINKISH WHITE (7.5YR 8/2) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; NO ROOTS; COMMON FINE PORES; ABOUT 30% OF HORIZON CONSISTS OF POCKETS OF LIGHT BROWN (7.5YR 6/4) GRAVELLY SILTY CLAY LOAM, PINK (7.5YR 7/4) DRY WITH FEW ROOTS; FINELY DISSEMINATED CALCIUM CARBONATE ON PED FACES WITH A FEW POCKETS OF SOIL OF LOWER CARBONATE CONTENT; 20% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
BCK	141-205	BROWN (7.5YR 5/4) LOAM, PINK (7.5YR 7/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; NO ROOTS; MANY FINE PORES; CALCIUM CARBONATE FILAMENTS ON PED FACES; 10% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
CBK	205-238	BROWN (7.5YR 5/4) GRAVELLY LOAM, PINK (7.5YR 7/4) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; NO ROOTS; COMMON VERY FINE PORES; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; 20% COARSE FRAGMENTS; MODERATELY ALKALINE; VIOLENTLY EFFERVESCENT.

REMARKS: THE AREA WAS ROOT PLOWED APPROXIMATELY 50 CM DEEP, THEN RIPPED APPROXIMATELY 120 CM DEEP ON A 1.8 M SPACING IN 1980. ESSENTIALLY ALL GRAVEL AND COARSE FRAGMENTS ARE LIMESTONE. SOIL IS RECOGNIZED AS A VARIANT AS IT HAS BEEN ROOT PLOWED AND THE PETROCALCIC HORIZON HAS BEEN BROKEN.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SANDERSON VARIANT
SOIL FAMILY: USTOLLIC CAMBORTHID; LOAMY-SKELETAL, CARBONATIC, THERMIC
LOCATION: PECOS COUNTY, TEXAS

PEDON NUMBER: S83TX-371-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1672	0- 20	AP	2.3	2.6	2.0	3.3	12.1	22.3	26.8	47.2	5.8	30.5	CL	
1673	20- 48	BK1	3.5	2.8	1.7	2.9	10.6	21.5	27.3	45.8	8.7	32.7	CL	
1674	48- 84	BK2	3.9	2.3	1.3	2.8	10.8	21.1	27.3	45.4	10.3	33.5	CL	
1675	84-130	BK3	5.0	2.3	1.4	3.3	10.8	22.8	25.7	45.1	10.5	32.1	CL	
1676	130-141	BK4	7.7	3.7	2.8	4.4	10.1	28.7	21.7	58.4	5.6	12.9	SIL	
1677	141-205	BCK	5.6	6.2	7.7	14.7	17.0	51.2	29.3	36.4	3.1	12.4	L	
1678	205-238	CBK	3.2	3.6	5.3	13.6	21.9	47.6	19.4	44.4	2.1	8.0	L	

LAB NO	ORGN C %	PH 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
1672	1.41	8.0	60.0	2.4	0.1	1.3	63.8		21.0		100	0	0	28.4	0.1	28.5	
1673	0.90	8.1	63.4	2.2	0.1	0.6	66.3		21.2		100	0	2	34.1	0.3	34.4	
1674	0.70	8.0	67.0	1.9	0.2	0.4	69.6		21.3		100	1	1	38.7	0.0	38.7	
1675	0.67	8.0	60.2	2.4	0.3	0.3	63.2		17.2		100	1	1	42.7	0.4	43.1	
1676	0.57	7.9	56.7	2.0	0.3	0.2	59.3		11.6		100	2	1	57.0	0.4	57.4	
1677	0.54	8.2	56.3	2.6	0.4	0.2	59.5		11.7		100	3	2	52.1	0.0	52.1	
1678	0.49	8.3	57.6	3.6	0.8	0.3	62.3		15.4		100	4	4	43.6	0.5	44.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
1672	0.8	45	3.0	0.5	0.5	0.4	0.0	1.9	0.2	1.1	1.35	1.48	0.031		29.2	
1673	2.3	51	3.7	0.4	3.0	0.1	0.0	1.9	0.1	1.8	1.22	1.36	0.037		29.6	
1674	1.0	48	3.2	0.5	1.1	0.0	0.0	1.6	0.2	5.1	1.21	1.45	0.062		24.8	
1675	1.3	45	5.5	1.0	1.9	0.1	0.0	0.9	2.1	1.3	1.38	1.55	0.039		26.2	
1676	2.0	42	10.2	2.1	2.7	0.1	0.0	0.9	4.3	0.5	1.48	1.66	0.039		20.8	
1677	1.0	40	2.5	0.9	2.5	0.1	0.0	1.7	1.7	1.0	1.44	1.62	0.040		20.8	
1678	0.8	48	1.2	0.5	3.8	0.0	0.0	1.5	2.2	1.3	1.28	1.46	0.045		28.6	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1672												
1673												
1674												
1675												
1676												
1677												
1678												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SEGNO PEDON: S78TX-339-001 COUNTY: MONTGOMERY

PEDON CLASSIFICATION: PLINTHIC PALEUDALF; FINE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF FR 1488 AND I45, ABOUT 5 MI W ON FR 1488 AND 3 MI S IN SUBDIVISION OF THE WOODLANDS.

LANDFORM: BACKSLOPE ELEVATION (M): 12 SLOPE: 3% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BENTLEY

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: FOREST

COLLECTORS: M. VEPRASKAS, L. WILDING, R. MILES AND R. DREES DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-8	VERY DARK GRAY (10YR 3/1) FINE SANDY LOAM; WEAK FINE GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
A12	8-13	VERY DARK GRAY (10YR 3/1) FINE SANDY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO WEAK FINE AND MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; ABOUT 35% OF HORIZON CONTAINS DARK GRAYISH BROWN (10YR 4/2) MATERIAL DUE TO FAUNAL ACTIVITY; MANY WORM AND ANT CASTS; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
A2	13-28	PALE BROWN (10YR 6/3) LOAMY VERY FINE SAND; WEAK COARSE SUBANGULAR BLOCKY PARTING TO WEAK FINE GRANULAR STRUCTURE; FRIABLE; COMMON MEDIUM ROOTS; ABOUT HALF THE HORIZON IS BROWN (10YR 5/3) MATERIAL DUE TO FAUNAL ACTIVITY; MANY BROWN (10YR 5/3) WORM AND ANT CASTS; MEDIUM ACID; ABRUPT SMOOTH BOUNDARY.
B1TCN	28-48	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM; FEW FAINT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; COMMON FINE ROOTS; COMMON LIGHT BROWNISH GRAY (10YR 6/2) ALBIC MATERIAL IN CHANNELS; THIN PATCHY BROWN (10YR 5/3) CLAY FILMS ON PED FACES; FEW MEDIUM PEDOTUBLES; FEW FINE DISTINCT YELLOWISH RED (5YR 5/8) IRON STAINS IN CHANNELS; FEW FINE IRON NODULES WITH 2-5% IRONSTONE AGGREGATES; MEDIUM ACID; CLEAR WAVY BOUNDARY.
B21TCN	48-78	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM; COMMON DISTINCT RED (2.5YR 4/8) AND COMMON DISTINCT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW THIN LIGHT YELLOWISH BROWN (10YR 6/4) ALBIC MATERIAL IN CHANNELS; THIN PATCHY BROWN (10YR 5/3) CLAY FILMS ON PED FACES; FEW MEDIUM PEDOTUBLES; ABOUT 15-20% IRONSTONE NODULES WITH ABUNDANCE INCREASING WITH DEPTH; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
B22TCN	78-110	YELLOWISH BROWN (10YR 5/6) CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH RED (5YR 5/8) AND COMMON MEDIUM DISTINCT RED (2.5YR 4/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW PALE BROWN (10YR 6/3) ALBIC MATERIAL IN CHANNELS; THIN PATCHY CLAY FILMS ON VERTICAL PED FACES; ABOUT 15% IRONSTONE NODULES WITH LITTLE PLINTHITE SHOWING NO PREFERENTIAL ORIENTATION WITH ANY FEATURES; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B23TCN	110-143	LIGHT YELLOWISH BROWN (10YR 6/4) GRAVELLY CLAY LOAM; COMMON MEDIUM DISTINCT RED (2.5YR 4/8) AND COMMON DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK VERY COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW FINE ROOTS; COMMON THIN LIGHT GRAY (10YR 7/2) ALBIC MATERIAL ON PED FACES; THIN PATCHY LIGHT GRAY (10YR 7/2) CLAY FILMS ON VERTICAL PED FACES; THIN CONTINUOUS CLAY FILMS ALONG ROOT CHANNELS; VERY FIRM WEAKLY INDURATED IRON-RICH NODULES; IRONSTONE NODULES COMPRISE ABOUT 25% AND ARE RANDOMLY DISTRIBUTED THROUGHOUT THE MATRIX; SOME RED MOTTLES ARE PLINTHITE WHICH COMPRISE 5-10% OF HORIZON; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
B24TCN	143-170	LIGHT YELLOWISH BROWN (10YR 6/4) LOAM; COMMON MEDIUM DISTINCT RED (2.5YR 4/8) AND COMMON DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM AND COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; MEDIUM PATCHY CLAY FILMS ON PED FACES; MANY MEDIUM ALBIC MATERIAL ON PED FACES; COARSE IRONSTONE NODULES COMPRISE 15% OF HORIZON; COMMON (<5%) VERY FIRM PLINTHITE; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
B25TCN	170-205	LIGHT YELLOWISH BROWN (10YR 6/4) LOAM; MANY DISTINCT STRONG BROWN (7.5YR 5/8) AND COMMON DISTINCT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE AND MEDIUM ROOTS; MANY MEDIUM LIGHT GRAY (10YR 7/2) ALBIC MATERIAL ON PED FACES; COMMON MEDIUM RED (10R 4/8) MOTTLES; THIN PATCHY CLAY FILMS ON PED FACES; HARD IRON NODULES OCCUR AT PED INTERIORS; IRONSTONE AND PLINTHITE EACH CONSTITUTE <2% OF THE HORIZON; LARGER SKELETANS FORM TONGUES ABOUT 50 CM APART; VERY STRONGLY ACID.
B26T	205-270	RED (10R 5/8) CLAY LOAM; MANY DISTINCT LIGHT GRAY (10YR 7/2) AND COMMON FAINT DARK YELLOWISH BROWN (10YR 4/8) MOTTLES; FIRM; FEW ROOTS; FEW CLAY FILMS IN CHANNELS.
IIB27T	270-355	YELLOWISH BROWN (10YR 5/8) CLAY LOAM; MANY DISTINCT LIGHT GRAY (10YR 7/2) AND MANY PROMINENT RED (10R 4/8) MOTTLES; VERY FIRM; FEW ROOTS; FEW CLAY FILMS IN CHANNELS.
IIB28T	355-415	LIGHT GRAY (10YR 7/1) CLAY LOAM; MANY PROMINENT YELLOWISH BROWN (10YR 5/8) AND MANY PROMINENT DUSKY RED (10R 3/2) MOTTLES; FIRM; VERY FEW ROOTS; FEW LIGHT GRAY (10YR 6/1) CLAY FILMS IN CHANNELS.
IIB29T	415-460	LIGHT GRAY (10YR 7/1) CLAY LOAM; MANY PROMINENT YELLOWISH BROWN (10YR 5/8) AND MANY PROMINENT DUSKY RED (10R 3/2) MOTTLES; FIRM; VERY FEW ROOTS; FEW LIGHT GRAY (10YR 6/1) CLAY FILMS IN CHANNELS.
IIB31T	460-543	LIGHT GRAY (10YR 7/1) LOAM; COMMON PROMINENT BROWNISH YELLOW (10YR 6/8) AND MANY PROMINENT RED (10R 4/8) MOTTLES; FIRM; FEW LIGHT GRAY (10YR 6/1) CLAY FILMS IN CHANNELS.
IIB32T	543-600	LIGHT GRAY (10YR 7/1) LOAM; COMMON PROMINENT BROWNISH YELLOW (10YR 6/8) AND MANY PROMINENT RED (10R 4/8) MOTTLES; FIRM; FEW LIGHT GRAY (10YR 6/1) CLAY FILMS IN CHANNELS.

REMARKS: HORIZONS BELOW 205 CM DEPTH WERE SAMPLED AND DESCRIBED USING CORE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SEGNO
PEDON NUMBER: S78TX-339-001
SOIL FAMILY: PLINTHIC PALEUDALF; FINE-LOAMY, SILICEOUS, THERMIC
LOCATION: MONTGOMERY COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
552	0- 8	A11	0.0	0.6	8.2	17.5	31.7	58.0	14.6	37.9	1.9	4.1	VFSL	0
553	8- 13	A12	0.0	0.6	8.5	22.9	28.6	60.0	14.2	35.4	1.5	4.0	VFSL	0
554	13- 28	A2	0.1	0.4	5.6	20.9	19.0	46.0	18.6	40.4	9.9	13.6	L	0
555	28- 48	B1TCN	0.2	0.8	7.0	25.2	19.2	52.4	10.2	28.4	15.8	19.2	FSL	1
556	48- 66	B21TCN	0.9	0.9	6.5	23.7	17.7	49.7	10.0	26.7	19.2	23.6	SCL	9
557	66- 78	B21TCN	1.8	1.2	6.0	22.4	16.8	48.2	8.9	25.0	22.4	26.8	SCL	22
558	78- 94	B22TCN	1.0	1.0	5.7	21.4	16.6	45.7	9.5	26.2	22.7	28.1	SCL	12
559	94-110	B22TCN	0.5	0.9	5.6	21.1	16.3	44.4	10.0	27.4	23.2	28.2	CL	12
560	110-143	B23TCN	1.2	0.9	5.5	21.6	17.4	46.6	10.7	27.8	19.8	25.6	SCL	25
561	143-170	B24TCN	0.3	0.6	5.6	22.4	18.1	47.0	10.3	26.8	21.3	26.2	SCL	9
562	170-205	B25TCN	0.3	0.6	6.0	22.8	17.7	47.4	9.7	24.8	21.8	27.8	SCL	5
563	205-270	B26T	0.3	0.7	6.9	21.4	13.9	43.2	7.6	19.1	29.4	37.7	CL	0
564	270-355	IIB27T	0.2	0.7	6.8	17.3	12.8	37.8	7.7	22.0	33.4	40.2	C	0
565	355-415	IIB28T	0.1	0.6	3.5	15.5	15.8	35.5	11.0	28.1	28.8	36.4	CL	0
566	415-460	IIB29T	0.1	0.4	2.7	13.5	16.7	33.4	17.2	34.9	23.9	31.7	CL	0
567	460-543	IIB31T	0.1	0.4	2.7	12.6	14.1	29.9	23.1	43.7	18.6	26.4	L	0
568	543-600	IIB32T	0.2	0.5	4.7	20.7	19.8	45.9	13.2	33.7	15.1	20.4	L	0
569	600-675	IIIB33T	1.0	4.7	26.0	27.1	8.4	67.2	4.2	11.8	16.7	21.0	SCL	0
570	675-743	IIIC1	0.3	2.1	16.8	43.5	12.7	75.4	3.9	10.7	11.3	13.9	FSL	0
571	743-810	IVC2	0.4	2.7	20.8	43.7	12.0	79.6	3.2	6.8	11.8	13.6	FSL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR NAOAC		BASE		SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
		1:1	CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP				
	%		MEQ/100G								%		%			
552	1.79	4.9	3.9	0.7	0.1	0.1	4.8		11.2		43	1				
553	0.80	5.3	1.7	0.3	0.2	0.0	2.2		6.2		35	3				
554	0.33	5.6	0.7	0.2	0.2	0.0	1.1		3.1		35	6				
555	0.16	5.4	2.1	1.2	0.2	0.0	3.5		6.7		52	3				
556	0.19	5.3	2.0	1.4	0.2	0.0	3.6		7.9		46	3				
557	0.19	5.2	1.8	1.6	0.2	0.0	3.6		8.3		43	2				
558	0.16	5.3	1.7	1.5	0.2	0.0	3.4		8.4		40	2				
559	0.14	5.3	1.5	1.5	0.4	0.0	3.4		8.1		42	5				
560	0.09	5.3	1.2	1.3	0.4	0.0	2.9		8.0		36	5				
561	0.10	5.3	1.1	1.6	0.2	0.0	2.9		7.5		39	3				
562	0.07	5.3	1.1	1.7	0.2	0.0	3.0		7.8		38	3				
563	0.08	5.3	1.5	1.6	0.4	0.0	3.5		9.5		37	4				
564	0.04	5.3	2.7	4.0	0.4	0.1	7.2		10.9		66	4				
565	0.05	5.3	2.3	3.6	0.4	0.1	6.4		10.8		59	4				
566	0.04	5.4	1.9	2.4	0.3	0.0	4.6		9.1		51	3				
567	0.07	5.4	1.1	1.5	0.3	0.1	3.0		8.1		37	4				
568	0.07	4.7	1.9	2.2	0.4	0.1	4.6		6.6		70	6				
569	0.04	5.7	2.1	2.1	0.3	0.0	4.5		6.8		66	4				
570		5.5	3.2	3.3	0.3	0.0	6.8		4.4		100	7				
571	0.05	5.7	2.8	2.7	0.3	0.0	5.8		4.4		100	7				

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
552											1.44	1.45	0.002		22.3	
553																
554											1.64	1.62			19.0	
555											1.73	1.75	0.004		22.0	
556																
557											1.77	1.79	0.004		23.4	
558																
559											1.77	1.79	0.044		25.2	
560											1.84	1.85	0.002		25.2	
561											1.82	1.84	0.004		25.6	
562											1.83	1.86	0.005		26.6	
563																
564																
565																
566												1.99				
567												1.99				
568												2.01				
569												2.08				
570																
571																

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
552	T		*	**	***		*					
553												
554	T		*	**	***		*					
555	T		*	*	***		*					
556												
557	T		*	*	***		*					
558												
559	T		*	*	***		*					
560	T		*	*	***		*					
561												
562	T		*	*	***		*					
563												
564	T		*	*	***		*					
565												
566	T		*	T	***		*					
567	T		*	T	***		*					
568												
569			*	T	***		*					
570												
571				**	***		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SHIRO PEDON: S83TX-185-003 COUNTY: GRIMES

PEDON CLASSIFICATION: AQUIC PALEUSTALF; FINE, MIXED, THERMIC

LOCATION: FROM INTERSECTION OF TEXAS 30 AND TEXAS 90 IN ROANS PRAIRIE, 2.8 MI W ON TEXAS 30, 0.6 MI S ON PRIVATE ROAD, 50 FT W OF ROAD IN WOODS.

LANDFORM: LOWER SIDESLOPE ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT:

PARENT MATERIALS: SILTSTONE FORMATION: WHITSETT (JACKSON GROUP)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: GREENWADE, CRENWELGE, SCHLAPPI, SMITH, HALLMARK AND WEST DATE: 04/07/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	DARK BROWN (7.5YR 3/2) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE ROOTS; COMMON FINE PORES; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
E	15-31	BROWN (7.5YR 5/4) LOAMY FINE SAND; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; VERY FRIABLE; COMMON FINE ROOTS; COMMON FINE PORES; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
BT	31-49	REDDISH BROWN (5YR 4/4) CLAY; COMMON FINE DISTINCT GRAYISH BROWN (10YR 5/2) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON ROOTS; COMMON DISCONTINUOUS CLAY FILMS ON PED FACES; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
BTG1	49-75	GRAYISH BROWN (10YR 5/2) CLAY LOAM; COMMON MEDIUM FAINT REDDISH BROWN (5YR 4/4) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON ROOTS; COMMON PORES; MANY CLAY FILMS; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
BTG2	75-94	REDDISH GRAY (5YR 5/2) FLAGGY CLAY; FEW FINE FAINT REDDISH BROWN (5YR 4/4) AND FEW FINE FAINT GRAYISH BROWN (10YR 5/2) MOTTLES; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON ROOTS; ABOUT 20% BY VOLUME OF FLAGSTONE THAT IS 8 CM THICK AND ABOUT 20 CM LONG; VERY STRONGLY ACID; ABRUPT SMOOTH BOUNDARY.
CR	94-112	DARK BROWN (7.5YR 3/2) SILTSTONE; VERY STRONGLY ACID.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SHIRO
SOIL FAMILY: AQUIC PALEUSTALF; FINE, MIXED, THERMIC
LOCATION: GRIMES COUNTY, TEXAS

PEDON NUMBER: S83TX-185-003

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1651	0- 15	A	1.4	4.1	41.1	25.5	13.5	85.6	4.2	10.4	2.4	4.0	LS	0
1652	15- 31	E	0.4	3.4	40.1	26.0	14.9	84.8	2.8	8.8	3.1	6.4	LS	0
1653	31- 49	BT	0.2	2.2	27.8	14.4	5.4	50.0	2.6	4.3	38.0	45.7	SC	0
1654	49- 75	BTG1	0.1	4.9	40.6	10.4	1.0	57.0	1.0	1.9	34.1	41.1	SC	0
1655	75- 94	BTG2	2.0	3.5	15.5	6.4	5.1	32.5	7.0	7.9	39.2	59.6	C	0
1656	94-112	CR												0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1651	1.52	4.6	1.4	0.2	0.1	0.1	1.8	0.5	6.5	2.3	28	2					
1652	0.33	5.2	0.7	0.2	0.0	0.0	0.9	0.2	2.7	1.1	33	0					
1653	0.63	4.4	1.7	1.7	0.1	0.2	3.8	4.4	16.0	8.2	24	1					
1654	0.36	4.1	0.3	1.1	0.2	0.2	1.8	7.9	14.9	9.8	12	1					
1655	0.31	3.8	0.6	2.9	0.6	0.3	4.5	10.7	27.1	15.2	16	2					
1656																	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1651											1.41	1.54	0.030		19.5	
1652											1.50	1.57	0.015		16.7	
1653											1.34	1.56	0.052		27.2	
1654											1.38	1.57	0.044		26.7	
1655											1.04	1.36	0.094		46.0	
1656																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1651	T	T	T		**		***					
1652												
1653	**				***		*					
1654												
1655	**				**		*					
1656												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SHUMLA VARIANT PEDON: S81TX-371-001 COUNTY: PECOS

PEDON CLASSIFICATION: TYPIC PALEORTHID; LOAMY, MIXED, THERMIC, SHALLOW

LOCATION: MESA TOP ON ONE OF THE SOUTH EXTENSIONS OF BIG MESA; 5.2 MI E OF INTERSECTION OF I10 AND RT 67; APPROX 14 MI E OF FT STOCKTON (SHEET 52 IN SOIL SURVEY REPORT).

LANDFORM: MESA ELEVATION (M): 930 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: WASHITA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, B. ALLEN AND C. GIRDNER DATE: 07/22/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-3	DARK GRAYISH BROWN (10YR 4/2) GRAVELLY SILT LOAM, LIGHT GRAY (10YR 7/2) DRY; WEAK THIN PLATY AND MODERATE FINE GRANULAR STRUCTURE; SOFT; MANY FINE ROOTS; 15% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A12	3-16	BROWN (10YR 4/3) GRAVELLY SILT LOAM, PALE BROWN (10YR 6/3) DRY; MODERATE MEDIUM SUBANGULAR BLOCKY PARTING TO MODERATE MEDIUM GRANULAR STRUCTURE; SLIGHTLY HARD; COMMON FINE ROOTS; COARSE FRAGMENTS PRIMARILY COMPOSED OF FRACTURED PETROCALCIC HORIZON MATERIAL WHICH HAS NO PREFERRED ORIENTATION; 35% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
C1CAM	16-31	WHITE (10YR 8/2, DRY) INDURATED CARBONATE MATERIAL; SEVERAL SEQUENCES OF LAMINAE; SOME FINES SIMILAR TO A1 HORIZON PRESENT WITHIN FRACTURES AND BETWEEN LAMINAR ZONES; FEW ROOTS WITHIN VERTICAL FRACTURES AND BETWEEN SUCCESSIVE LAMINAR ZONES.
C2CAM	31-62	WHITE (10YR 8/2, DRY) AND VERY PALE BROWN (10YR 7/3, DRY) CARBONATE CEMENTED MATERIAL COMPRISED OF SEVERAL SEQUENCES OF LAMINAR ZONES; SOME FINE MATERIAL SIMILAR TO A1 HORIZON FOUND BETWEEN LAMINAE; LOWER PART CONTAINS SOME LIMESTONE FRAGMENTS WHICH HAVE BEEN INCORPORATED INTO THE HORIZON.
R	62-75	WHITE (10YR 8/1, DRY) LIMESTONE BEDROCK.

REMARKS: RANGE IN DEPTH TO PETROCALCIC HORIZON OF 10 TO 20 CM. WITHIN THE PETROCALCIC HORIZON, AT LEAST 5 SETS OF LAMINAE WERE OBSERVED, EACH RANGING FROM 5-10 CM IN THICKNESS WITH SOME FINE MATERIAL SIMILAR TO THE A1 HORIZONS OCCURRING BETWEEN THEM. THE C2CAM HORIZON WAS DIVIDED INTO AN UPPER AND LOWER PART FOR SAMPLING. VARIANT OF THE SHUMLA SERIES SINCE THE PETROCALCIC HORIZON IS SHALLOWER THAN 18 CM.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SHUMLA VARIANT
SOIL FAMILY: TYPIC PALEORTHID; LOAMY, MIXED, THERMIC, SHALLOW
LOCATION: PECOS COUNTY, TEXAS

PEDON NUMBER: S81TX-371-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1235	0- 3	A11	3.5	1.8	0.6	2.3	7.2	15.4	29.2	68.1	1.6	16.5	SIL	24
1236	3- 16	A12	2.6	1.7	1.0	1.7	5.6	12.6	29.6	62.7	4.5	24.7	SIL	47
1237	16- 31	C1CAM												
1238	31- 50	C2CAM												
1239	50- 62	C2CAM												
1240	62- 75	R												0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1235	2.45	7.5	62.2	1.7	0.1	1.2	65.2		25.7		100	0	0	16.8	7.3	24.8	
1236	2.06	7.6	50.4	1.4	0.1	1.0	53.0		25.2		100	0	0	22.0	6.2	28.8	
1237	1.99															88.5	
1238	1.99															90.8	
1239	1.99															73.6	
1240	1.99															94.0	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1235	0.7	49	4.5	0.4	0.1	0.5	0.0	5.4	1.0	1.1						
1236	0.5	58	4.4	0.3	0.1	0.2	0.0	3.3	0.4	0.2	1.11	1.31	0.057		45.9	
1237																
1238																
1239																
1240																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1235	**		**		**		**	*				
1236	**		**		**		**	*				
1237												
1238												
1239												
1240												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SHUMLA VARIANT PEDON: S81TX-443-001 COUNTY: TERRELL

PEDON CLASSIFICATION: USTOLLIC PALEORTHID; LOAMY-SKELETAL, CARBONATIC, THERMIC, SHALLOW

LOCATION: APPROXIMATELY 6.5 MI SW OF SANDERSON; ON MESA TOP BETWEEN WASHBOARD CANYON AND HAGLER CANYON (SHEET 50, SOIL SURVEY REPORT).

LANDFORM: UPLAND ELEVATION (M): 900 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: SANTA ELENA

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: M. RABENHORST, L. WILDING, AND C. L. GIRDNER DATE: 07/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-10	BROWN (10YR 5/3) STONY SILT LOAM, VERY PALE BROWN (10YR 7/3) DRY; WEAK THIN PLATY PARTING TO MODERATE MEDIUM GRANULAR STRUCTURE; SLIGHTLY HARD; MANY FINE ROOTS; SOME CALCIUM CARBONATE FILAMENTS; A FEW BIOLOGICAL CASTS PRESENT; HALF OF COARSE FRAGMENTS ARE LIMESTONE COATED WITH SECONDARY CARBONATES AND HALF OF WHICH ARE PETROCALCIC FRAGMENTS, SHOWING NO PREFERRED ORIENTATION; 20% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; CLEAR IRREGULAR BOUNDARY.
A12	10-18	BROWN (10YR 5/3) STONY SILT LOAM, VERY PALE BROWN (10YR 7/3) DRY; WEAK MEDIUM GRANULAR STRUCTURE; SOFT; COMMON FINE ROOTS; COARSE FRAGMENTS ARE BROKEN PETROCALCIC MATERIAL WHICH IS ORIENTED HORIZONTALLY; 60% COARSE FRAGMENTS; VIOLENTLY EFFERVESCENT; ABRUPT IRREGULAR BOUNDARY.
C1CAM	18-23	NUMEROUS SEQUENCES OF HARD LAMINAR MATERIAL 2-5 MM THICK OVER PALE YELLOW (2.5Y 8/4, DRY) MASSIVE AND SOFTER CEMENTED CARBONATES 2-3 CM IN THICKNESS; THIS HORIZON CONTAINS FINE EARTH MATERIAL SIMILAR TO THE A1 IN BETWEEN THE HORIZONTAL LAYERS AND FLAGS, THE TOTAL VOLUME BEING LESS THAN 5%; THE FINE EARTH IS BROWN (10YR 5/3) WITH WEAK FINE GRANULAR STRUCTURE AND SOFT CONSISTENCE; FEW ROOTS BETWEEN FLAGS OR SUCCESSIVE LAMINAR SURFACES; ABRUPT WAVY BOUNDARY.
C2CAM	23-35	NUMEROUS SEQUENCES OF LAMINAR AND LIGHT GRAY (10YR 7/2, DRY) MASSIVE CEMENTED CARBONATE 2-4 CM IN THICKNESS; THIS HORIZON CONTAINS <5% FINE EARTH MATERIAL SIMILAR TO THE A1 HORIZON IN BETWEEN LAYERS; SOME PRIMARY HARD LIMESTONE IS INCORPORATED IN THIS HORIZON AND INCREASES IN AMOUNT WITH DEPTH TO ROUGHLY 50%; FEW ROOTS BETWEEN SUCCESSIVE LAMINAR ZONES; ABRUPT WAVY BOUNDARY.
R	35-50+	LIGHT GRAY (2.5Y 7/2, DRY) AND VERY PALE BROWN (10YR 7/4, DRY) HARD FOSSILIFEROUS LIMESTONE OVERLAIN AT SURFACE BY THIN LAMINAR CAP OF SECONDARY CARBONATE.

REMARKS: THE THICKNESS OF THE A11 HORIZON RANGED FROM 2-10 CM IN THE IMMEDIATE SAMPLING AREA. THERE IS SUBSTANTIAL LATERAL VARIABILITY IN THE SAMPLING VICINITY. WITHIN 50 M OF THE SITE SOILS WERE OBSERVED WHICH HAD ALMOST NO COARSE FRAGMENTS ON THE SURFACE SUGGESTING A POSITION OF LOCAL INWASH WHILE OTHER AREAS HAD LARGE AREAS OF BEDROCK 2-7 M WIDE EXPOSED AT THE SURFACE. ALTHOUGH THIS PEDON IS MAPPED IN THE UPTON SERIES, OC VALUES ARE TOO HIGH FOR A TYPIC PALEORTHID. THIS IS HOWEVER MARGINAL SINCE THE DEPTH OF THE PETROCALCIC HORIZON IS 18 CM WHICH IS THE BREAK BETWEEN TYPIC AND USTOLLIC SUBGROUPS. PEDON IS CONSIDERED A VARIANT OF THE SHUMLA SERIES AS IT IS BOTH LOAMY-SKELETAL AND CARBONATIC.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SHUMLA VARIANT — PEDON NUMBER: S81TX-443-001
SOIL FAMILY: USTOLLIC PALEORTHID; LOAMY-SKELETAL, CARBONATIC, THERMIC, SHALLOW
LOCATION: TERRELL COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1229	0- 10	A11	3.9	3.2	3.2	4.0	7.9	22.2	30.2	57.1	2.1	20.7	SIL	47
1230	10- 18	A12	5.2	3.9	3.2	3.4	6.8	22.5	29.7	54.0	5.2	23.5	SIL	77
1231	18- 23	C1CAM												
1232	23- 35	C2CAM												
1233	35- 40	CCAM&R												0
1234	40- 50	R												0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR	NAOAC		BASE			CAL-	DOLO-	CACO3	GYP
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR	CITE	MITE	EQ	SUM
	%	1:1	MEQ/100G								---%			---%			
1229	1.49	7.7	60.6	1.4	0.1	1.1	63.2		19.3		100	0	0	40.0	3.2	43.5	
1230	1.88	7.7	59.6	1.2	0.1	0.4	61.4		18.7		100	0	0	43.3	5.2	48.9	
1231	1.83															90.1	
1232	1.83															90.5	
1233																	
1234	1.83															90.4	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	------WT%------		
1229	0.6	45	5.7	0.6	0.2	0.5	0.0	4.8	0.4	0.8	1.14	1.27	0.037		39.3	
1230	0.6	51	5.1	0.4	0.6	0.1	0.0	3.7	0.8	1.1						
1231																
1232																
1233																
1234																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1229												
1230												
1231												
1232												
1233												
1234												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SORTER PEDON: S78TX-339-003 COUNTY: MONTGOMERY

PEDON CLASSIFICATION: TYPIC OCHRAQUALF; COARSE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF FR 1488 AND I45 ABOUT 5 MI W ON FR 1488 AND 3 MI S IN SUBDIVISION DEVELOPMENT OF THE WOODLANDS.

LANDFORM: TOESLOPE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BENTLY

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: FOREST

COLLECTORS: M. VESPRASKAS, T. SOBECKI, E. RIVERS, AND R. DREES DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-20	GRAY (10YR 5/1) SILT LOAM; MODERATE THIN PLATY STRUCTURE; FIRM; MANY ROOTS; PALE BROWN (10YR 7/3) IRREGULAR LAMINAE CONSTITUTES UP TO 50% OF HORIZON; VESSICULAR WITH LAYERS HIGHER IN ORGANIC MATTER; ABRUPT BOUNDARY.
A2	20-45	GRAY (10YR 5/1) LOAM; MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND MANY FAINT PINKISH GRAY (7.5YR 6/2) MOTTLES; WEAK VERY COARSE PLATY STRUCTURE; FIRM; VERY FEW FINE AND MEDIUM ROOTS; OCCASIONAL VESICULAR ZONES; MANY KROTOVINAS WITH INCLINED LAMINAE OF SAND, SILT, CLAY, AND ORGANIC MATERIAL; CLEAR IRREGULAR BOUNDARY.
A2&B1T	45-83	GRAYISH BROWN (10YR 5/2) SANDY LOAM; FEW FINE FAINT BROWN (7.5YR 4/4) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW FINE AND MEDIUM ROOTS; COMMON FINE BLACK CONCRETIONS; THIN PATCHY CLAY FILMS; COMMON PINKISH WHITE (7.5YR 8/2) BY FAUNA ACTIVITY; CLEAR WAVY BOUNDARY.
A2&B2T	83-108	LIGHT BROWNISH GRAY (10YR 6/2) LOAM; MANY FAINT GRAY (10YR 5/1) AND FEW FINE DISTINCT BROWN (7.5YR 4/4) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW FINE AND MEDIUM ROOTS; FEW FINE IRONSTONE NODULES; THIN PATCHY GRAYISH BROWN (10YR 5/2) CLAY FILMS IN CHANNELS; UP TO 70% OF HORIZON CONSISTS OF INTERSECTING KROTOVINAS FILLED WITH ALTERNATING SAND-CLAY LAMINAE; CLEAR WAVY BOUNDARY.
B21T	108-148	PALE BROWN (10YR 6/3) LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; VERY FEW FINE AND MEDIUM ROOTS; FEW FINE IRONSTONE NODULES; MEDIUM CONTINUOUS DARK GRAY (10YR 4/1) CLAY FILMS IN CHANNELS; PATCHY CLAY FILMS ON PED FACES; ABOUT 40% OF HORIZON IS KROTOVINAS; GRADUAL SMOOTH BOUNDARY.
B22T	148-190	LIGHT BROWNISH GRAY (10YR 6/2) FINE SANDY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; FEW MEDIUM IRONSTONE NODULES; THICK CONTINUOUS CLAY FILMS IN CHANNELS; FEW MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; ABOUT 40% OF HORIZON ARE KROTOVINAS; GRADUAL WAVY BOUNDARY.
B23T	190-228	BROWNISH YELLOW (10YR 6/8) CLAY LOAM; MANY DISTINCT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK VERY COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; FIRM; VERY FEW ROOTS; FEW MEDIUM IRONSTONE NODULES; THIN CONTINUOUS CLAY FILMS IN CHANNELS; SOME CLAY FILMS ON PED FACES; GRADUAL WAVY BOUNDARY.
IIB24T	228-259	BROWNISH YELLOW (10YR 6/8) SANDY CLAY LOAM; MANY DISTINCT LIGHT GRAY (10YR 7/1) MOTTLES; WEAK VERY COARSE PRISMATIC PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY FEW ROOTS; MEDIUM CONTINUOUS DARK GRAY (10YR 4/1) CLAY FILMS ON PED FACES; THIN PATCHY YELLOWISH RED (5YR 4/6) CLAY FILMS ON PED FACES; FEW FINE FE-MN STAINS ON PED FACES.
IIB25T	259-305	BROWNISH YELLOW (10YR 6/8) SANDY CLAY LOAM; MANY DISTINCT LIGHT GRAY (10YR 6/1) MOTTLES; WEAK MEDIUM PRISMATIC STRUCTURE; FRIABLE; FEW THIN CONTINUOUS YELLOWISH RED (5YR 5/6) CLAY FILMS IN CHANNELS; COMMON FINE PORES.
IIB26T	305-350	LIGHT GRAY (10YR 6/1) SANDY CLAY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; FRIABLE; FEW FINE ROOT CHANNELS; COMMON THIN CONTINUOUS YELLOWISH RED (5YR 5/6) CLAY FILMS IN CHANNELS.
IIB27T	350-403	LIGHT GRAY (10YR 6/1) SANDY CLAY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) AND MANY FAINT PINKISH GRAY (7.5YR 7/2) MOTTLES; STRUCTURELESS MASSIVE; FRIABLE; FEW FINE PORES; COMMON THIN CONTINUOUS REDDISH BROWN (5YR 5/4) CLAY FILMS IN CHANNELS; VERY THIN CLAY FILMS IN CHANNELS.
IIB3T	403-450	PINKISH GRAY (7.5YR 7/2) SANDY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/6) AND MANY FAINT LIGHT GRAY (10YR 6/1) MOTTLES; STRUCTURELESS MASSIVE; FRIABLE; VERY FINE PORES; FEW SILICEOUS PEBBLES; FEW THIN YELLOWISH RED (5YR 5/6) CLAY FILMS IN CHANNELS.
IIC1	450-480	LIGHT GRAY (10YR 7/1) SANDY LOAM; STRUCTURELESS MASSIVE; FRIABLE; FEW SILICEOUS PEBBLES.
IIC2	480-510	LIGHT GRAY (10YR 7/1) SANDY LOAM; MANY PROMINENT DUSKY RED (10R 3/4) AND COMMON DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; STRUCTURELESS MASSIVE; FRIABLE.

REMARKS: HORIZONS BELOW 228 CM DEPTH WERE SAMPLED AND DESCRIBED FROM CORES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SORTER
SOIL FAMILY: TYPIC OCHRAQUALF; COARSE-LOAMY, SILICEOUS, THERMIC
LOCATION: MONTGOMERY COUNTY, TEXAS

PEDON NUMBER: S78TX-339-003

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
729	0- 20	A1	0.0	1.1	7.2	11.5	26.1	45.9	25.2	51.4	1.6	2.7	SIL	0
730	20- 45	A2	0.0	0.9	6.3	12.1	22.8	42.1	28.8	52.6	4.0	5.3	SIL	0
731	45- 83	A2&B1T	0.0	0.9	6.0	14.9	17.5	39.3	31.2	53.4	6.0	7.3	SIL	0
732	83-108	A2&B2T	0.3	0.6	5.3	16.2	15.5	37.9	32.2	52.7	7.9	9.4	SIL	0
733	108-128	B21T	0.3	0.7	5.4	12.4	17.1	35.9	34.0	54.4	7.6	9.7	SIL	0
734	128-148	B21T	0.2	1.0	5.5	12.1	17.3	36.1	35.8	55.9	6.7	8.0	SIL	0
735	148-168	B22T	0.0	0.7	5.5	14.5	16.8	37.5	34.6	55.0	6.3	7.5	SIL	0
736	168-190	B22T	0.2	0.8	5.5	15.8	14.3	36.6	34.5	54.0	8.0	9.4	SIL	0
737	190-210	B23T	0.4	1.4	6.0	13.8	15.2	36.8	32.2	47.9	11.5	15.3	L	0
738	210-228	B23T	0.5	1.5	7.0	13.0	18.6	40.6	27.1	42.7	12.8	16.7	L	1
739	228-259	IIB24T	0.4	1.4	7.1	16.4	22.3	47.6	18.0	30.6	16.1	21.8	L	0
740	259-305	IIB25T	0.1	0.5	7.3	18.8	24.0	50.7	10.3	24.8	19.9	24.5	SCL	0
741	305-350	IIB26T	0.0	0.3	7.2	19.0	27.7	54.2	8.2	23.6	19.5	22.2	SCL	0
742	350-403	IIB27T	0.0	0.6	8.2	19.5	28.3	57.2	7.9	23.9	15.6	18.9	VFSL	0
743	403-450	IIB3T	0.3	1.4	11.0	20.2	25.1	58.0	8.1	22.3	14.5	19.7	VFSL	1
744	450-480	IIC1	0.1	1.4	10.1	18.4	26.9	56.9	9.9	25.6	12.3	16.9	VFSL	0
745	480-510	IIC2	0.0	1.6	10.3	21.7	25.2	58.8	8.8	23.0	12.5	18.2	VFSL	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
729	1.26	4.7	2.7	0.6	0.1	0.2	3.6		6.8		53	1					
730	0.26	5.2	2.6	0.7	0.3	0.2	3.8		4.9		78	6					
731	0.20	6.8	3.4	1.2	0.6	0.2	5.4		7.3		74	8					
732	0.08	7.0	3.8	1.6	0.6	0.2	6.2		7.6		82	8					
733	0.08	7.2	3.3	1.4	0.7	0.2	5.6		6.8		82	10					
734	0.07	7.1	2.6	1.0	0.5	0.2	4.3		4.1		100	12					
735	0.07	6.9	2.3	0.9	0.5	0.2	3.9		4.5		87	11					
736	0.04	6.9	2.1	0.9	0.4	0.2	3.6		3.8		95	11					
737	0.05	7.3	2.4	1.1	0.5	0.2	4.2		5.6		75	9					
738	0.04	7.2	2.2	1.0	0.6	0.3	4.1		4.3		95	14					
739	0.10	7.1	2.3	4.1	0.6	0.2	7.2		5.8		100	10					
740	0.04	6.1	2.4	1.4	0.7	0.2	4.7		4.7		100	15					
741	0.03	4.8	2.3	1.6	0.5	0.2	4.6		5.6		82	9					
742	0.03	4.8	2.0	1.3	0.4	0.2	3.9		4.8		81	8					
743	0.04	5.4	2.0	1.4	0.3	0.2	3.9		5.0		78	6					
744		5.4	1.7	1.2	0.3	0.2	3.4		4.1		83	7					
745	0.05	5.0	1.7	1.2	0.3	0.2	3.4		4.2		81	7					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
729												1.70				
730												1.81				
731												1.75				
732												1.88				
733												1.94				
734																
735												1.96				
736																
737												1.98				
738																
739												1.98				
740																
741												2.02				
742																
743																
744																
745																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
729	***				**		*					
730												
731												
732	***				**		*					
733												
734	***				**		*					
735												
736	***				**		*					
737												
738	***				**		*					
739												
740	***		T		T		*					
741												
742	***		T				*					
743												
744	***		T				*					
745												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SPECK TAXADJUNCT PEDON: S81TX-325-001 COUNTY: MEDINA

PEDON CLASSIFICATION: LITHIC ARGIUSTOLL; CLAYEY, MONTMORILLONITIC, THERMIC

LOCATION: RALPH SNAVELEY RANCH; TAKE ROAD TRAVELING NW OUT OF RIO MEDINA 6.5 MI FROM THE JUNCTION WITH RT 471; N 55 YARDS TO SAMPLING LOCATION (SHEET 20 OF SOIL SURVEY REPORT).

LANDFORM: SUMMIT ELEVATION (M): 375 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: EDWARDS

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: M. RABENHORST, L. WEST AND T. MOORE DATE: 08/21/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-5	BLACK (10YR 2/1) GRAVELLY SILTY CLAY LOAM; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; MANY FINE ROOTS; THIN PATCHY VERY DARK BROWN (10YR 2/2) CLAY FILMS ON HORIZONTAL PED FACES; 20% COARSE FRAGMENTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
A12	5-19	BLACK (10YR 2/1) GRAVELLY SILTY CLAY; STRONG MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; COMMON FINE ROOTS; 20% COARSE FRAGMENTS; SLIGHTLY ACID; CLEAR WAVY BOUNDARY.
B2T	19-35	DARK BROWN (10YR 3/3) CLAY; MODERATE MEDIUM PRISMATIC AND STRONG MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; COMMON FINE ROOTS; NEUTRAL; ABRUPT WAVY BOUNDARY.
R	35+	LIGHT GRAY (2.5Y 7/2) HARD LIMESTONE BEDROCK.

REMARKS: THE UPPER 1 CM OF THE A11 HORIZON WAS SAMPLED SEPARATELY AS A MULCH. THIS MATERIAL WAS LIGHTER IN COLOR (10YR 2/2, 3/2 DRY), HAD WEAK FINE PLATY STRUCTURE, WAS SOFT, AND HAD A LOWER CLAY CONTENT THAN THE BULK OF THE A11 HORIZON. PRESSURE FACES WERE OBSERVED IN BOTH THE A12 AND B2T HORIZONS MAKING IDENTIFICATION OF ILLUVIATION CLAY FILMS DIFFICULT IN THE FIELD. SOIL IS CONSIDERED A TAXADJUNCT TO THE SPECK SERIES BECAUSE THE CLAY MINERALOGY IS MONTMORILLONITIC AS INDICATED BY CEC.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

OIL SERIES: SPECK TAXADJUNCT — PEDON NUMBER: S81TX-325-001
OIL FAMILY: LITHIC ARGIUSTOLL; CLAYEY, MONTMORILLONITIC, THERMIC
OCATION: MEDINA COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1286	0- 1	MULCH	0.5	0.5	0.5	1.1	3.6	6.2	28.3	65.2	10.9	28.6	SICL	23
1287	0- 5	A11	0.6	0.5	0.6	1.2	3.6	6.5	28.7	54.1	22.9	39.4	SICL	34
1288	5- 19	A12	1.2	0.6	0.9	1.3	3.2	7.2	23.6	40.3	34.4	52.5	SIC	21
1289	19- 35	B2T	1.0	0.7	0.8	1.1	2.8	6.4	21.1	32.8	40.6	60.8	C	8
1290	35--10	R												

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								---%			---%			
286	6.55	6.4	32.9	4.1	0.1	1.1	38.2		38.4		99	0	0				
287	3.91	6.5	34.5	3.7	0.1	0.7	39.0		38.9		100	0	0				
288	3.54	6.3	41.8	3.3	0.1	0.6	45.9		46.5		99	0	0				
289	2.71	6.6	48.9	3.3	0.1	0.7	52.9		50.8		100	0	0				
290	3.74															96.3	

	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
LAB NO	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								---G/CC--		CM/CM	---WT%---		
1286	0.6	77	4.9	1.1	0.2	0.4	0.0	3.6	0.9	0.2						
1287	0.4	61	3.0	0.5	0.2	0.2	0.0	2.3	0.4	0.2						
1288	0.3	77	2.2	0.2	0.2	0.1	0.0	1.3	0.3	0.1	1.25	1.83	0.135		38.8	
1289	0.5	76	4.9	0.4	0.3	0.1	0.0	3.3	0.3	0.1	1.18	1.77	0.145		41.7	
1290																

LAB	CLAY MINERALOGY									SKELETAL MINERALOGY		
NO	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1286												
1287												
1288												
1289												
1290												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SPECK VARIANT PEDON: S81TX-171-002 COUNTY: GILLESPIE

PEDON CLASSIFICATION: LITHIC HAPLUSTALF; CLAYEY, MONTMORILLONITIC, THERMIC

LOCATION: ROGER DITTMAR RANCH; APPROX 13 MI W OF FREDERICKSBURG ON RT 290; S ONTO DITTMAR RANCH AND PAST RESIDENCE APPROX 1 MI JUST BEFORE REACHING HILLTOP; PEDON SAMPLED ON LEVEL BENCH 100 FT W OF ROAD (SHEET 41, SOIL SURVEY REPORT).

LANDFORM: SIDESLOPE BENCH ELEVATION (M): 625 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: HARD LIMESTONE FORMATION: FT TERRET MEMBER (EDWARDS)

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: WELL DRAINED LANDUSE: PASTURE

COLLECTORS: M. RABENHORST, L. WEST AND T. MOORE DATE: 08/19/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	DARK BROWN (7.5YR 3/2) SILT LOAM; WEAK MEDIUM SUBANGULAR BLOCKY AND MODERATE MEDIUM GRANULAR STRUCTURE; FRIABLE; MANY ROOTS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
B21T	13-27	DARK REDDISH BROWN (2.5YR 3/4) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
B22T	27-41	DARK REDDISH BROWN (2.5YR 3/4) CLAY; MODERATE MEDIUM PRISMATIC PARTING TO SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; SOME WORM CASTS OBSERVED; SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
R	41+	WHITE (10YR 8/2) BEDROCK; PARTIALLY WEATHERED YET HARD.

REMARKS: MANY CHERT FRAGMENTS ON THE SOIL SURFACE BUT VERY FEW COARSE FRAGMENTS WITHIN THE SOLUM. THE SOIL IS VERY SIMILAR TO SPECK SERIES BUT LACKS A MOLLIC EPIPEDON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SPECK VARIANT
SOIL FAMILY: LITHIC HAPLUSTALF; CLAYEY, MONTMORILLONITIC
LOCATION: GILLESPIE COUNTY, TEXAS

PEDON NUMBER: S81TX-171-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1277	0- 13	A1	0.6	1.6	3.0	4.8	6.2	16.2	29.5	58.4	14.2	25.4	SIL	18
1278	13- 27	B21T	0.7	1.3	2.1	3.6	4.5	12.2	19.6	37.1	40.0	50.7	C	2
1279	27- 41	B22T	0.4	1.3	1.9	2.8	3.1	9.5	17.8	29.7	48.2	60.8	C	0
1280	41- 41	R												0

LAB NO	ORGN C %	PH (H20) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1277	2.12	6.7	19.2	1.9	0.1	1.0	22.1		19.2		100	0	0				
1278	1.13	6.4	28.2	2.4	0.1	1.0	31.7		28.0		100	0	0				
1279	1.23	6.5	29.7	2.9	0.1	0.7	33.4		33.3		100	0	0				
1280	3.39													89.0	1.9	91.0	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1277	0.5	50	2.9	0.7	0.3	0.6	0.0	2.7	0.6	0.4	1.29	1.61	0.077		36.4	
1278	0.4	69	3.0	0.4	0.3	0.2	0.0	1.1	0.7	0.6	1.25	1.85	0.140		40.7	
1279	0.3	76	2.5	0.2	0.2	0.1	0.0	1.2	0.2	0.3	1.25	1.84	0.138		39.7	
1280																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1277												
1278												
1279												
1280												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: SPLENDORA VARIANT PEDON: S78TX-339-002 COUNTY: MONTGOMERY

PEDON CLASSIFICATION: FRAGIC GLOSSAQUALF; FINE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF FR 1488 AND I45, ABOUT 5 MI W ON FR 1488 AND 3 MI S IN SUBDIVISION DEVELOPMENT OF THE WOODLANDS.

LANDFORM: FOOTSLOPE ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BENTLY

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: FOREST

COLLECTORS: M. VEPRASKAS, L. WILDING, R. MILES, AND T. SOBECKI DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1CN	0-8	BROWN (10YR 4/3) FINE SANDY LOAM; WEAK FINE GRANULAR STRUCTURE; SOFT; FRIABLE; MANY ROOTS; CLEAR SMOOTH BOUNDARY.
A2CN	8-30	BROWN (7.5YR 5/3) FINE SANDY LOAM; MANY FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; MANY FINE ROOTS; FEW MEDIUM DARK BROWN (7.5YR 3/2) IRONSTONE NODULES; BROWN (7.5YR 5/2) COLOR ON PED SURFACES AND ALONG SOME ROOT CHANNELS; OCCASIONAL WORM AND ANT EXCRETA IN CHANNELS; GRADUAL SMOOTH BOUNDARY.
A2&B1TCN	30-50	BROWN (7.5YR 5/3) FINE SANDY LOAM; MANY FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FRIABLE; COMMON FINE ROOTS; THIN VERY PATCHY CLAY FILMS IN PORES; COMMON MEDIUM DARK BROWN (7.5YR 3/2) IRONSTONE NODULES; BROWN (7.5YR 5/2) COLOR ON PED SURFACES AND ALONG SOME ROOT CAHNNELS; PED AND CHANNEL NEOALBANS AND SKELETANS SURROUND SOME VOIDS; CLEAR SMOOTH BOUNDARY.
A2&B2TCN	50-65	LIGHT YELLOWISH BROWN (10YR 6/4) FINE SANDY LOAM; MANY MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) AND MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON FINE ROOTS; THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; COMMON IRONSTONE NODULES; CLEAR SMOOTH BOUNDARY.
B&A1TCN	65-95	YELLOWISH BROWN (10YR 5/6) LOAM; MANY FAINT LIGHT YELLOWISH BROWN (10YR 6/4) AND MANY DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK VERY COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; COMMON IRONSTONE NODULES; MAJOR PRISM FACES COVERED BY THICK CONTINUOUS VESICULAR PALE BROWN (10YR 6/3) COATINGS; SOME ROOT CHANNELS SURROUNDED BY LIGHT GRAY (10YR 7/2) SKELETANS; CLEAR WAVY BOUNDARY.
B&A2TCN	95-118	PALE BROWN (10YR 6/3) SANDY CLAY LOAM; MANY DISTINCT REDDISH BROWN (5YR 4/4) AND MANY PROMINENT YELLOWISH RED (5YR 5/8) MOTTLES; WEAK VERY COARSE PRISMATIC STRUCTURE; FIRM; FEW FINE ROOTS; FEW THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; THICK CONTINUOUS LIGHT BROWNISH GRAY (10YR 6/2) SKELTANS ON VERTICAL PED FACES; HIGH CHROMA AREAS SLIGHTLY BRITTLE; VERTICAL ROOTS SPACED AT LESS THAN 10 CM INTERVALS; CLEAR WAVY BOUNDARY.
A'2CN	118-143	PINKISH GRAY (7.5YR 6/2) GRAVELLY FINE SANDY LOAM; MANY PROMINENT RED (2.5YR 4/8) AND COMMON DISTINCT YELLOWISH RED (5YR 4/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE PRISMATIC STRUCTURE; FRIABLE; VERY FEW ROOTS; FEW THIN PATCHY CLAY FILMS ALONG ROOT CHANNELS; MANY THICK CONTINUOUS PINKISH GRAY (7.5YR 6/2) SKELTANS ON VERTICAL PED FACES; MANY IRONSTONE NODULES; COMMON (10%) PLINTHITE WITHIN PED INTERIORS; FEW FINE DISTINCT FE- MN STAINS ON CHANNELS WITHIN PED UNITS; CLEAR WAVY BOUNDARY.
IIBX1TCN	143-165	STRONG BROWN (7.5YR 5/8) SANDY CLAY LOAM; COMMON DISTINCT STRONG BROWN (7.5YR 5/6) AND COMMON DISTINCT WHITE (2.5Y 8/2) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK FINE ANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; CONTINUOUS CLAY FILMS ON PED FACES; COMMON MEDIUM IRONSTONE NODULES; HIGH CHROMA AREAS SLIGHTLY BRITTLE AND ROOTS ARE RESTRICTED TO GRAY ZONES; TONGUES COMPOSED OF SKELETANS AND ARGILLANDS EXTENDING 20 CM INTO HORIZON AND SPACED 20 CM APART; CLEAR WAVY BOUNDARY.
IIBX2TCN	165-183	YELLOWISH BROWN (10YR 5/8) SANDY CLAY LOAM; MANY PROMINENT RED (2.5YR 4/8) AND COMMON DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE FINE AND MEDIUM ANGULAR BLOCKY STRUCTURE; FEW FINE AND MEDIUM ROOTS; THICK CONTINUOUS CLAY FILMS ON PED FACES; COMMON REDDISH BROWN (5YR 4/4) IRONSTONE NODULES IN MATRIX; BRITTLE PED INTERIORS; PRIMARY VERTICAL FACES CENTERED AT 10 CM INTERVALS; GRADUAL SMOOTH BOUNDARY.
IIBX3TCN	183-200	YELLOWISH BROWN (10YR 5/6) SANDY CLAY LOAM; COMMON DISTINCT BROWN (7.5YR 4/4) AND COMMON DISTINCT LIGHT GRAY (10YR 7/2) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FINE ROOTS; FEW SOFT DUSKY RED (10R 3/4) IRONSTONE NODULES; FEW MEDIUM CONTINUOUS CLAY FILMS ON PED FACES; ROOTS RESTRICTED TO GRAY PRIMARY STRUCTURAL FACES; DARK GRAY CLAY FILMS OCCUR AS CUPS AT THE BASE OF SOME VOIDS.
IIB21T	200-240	YELLOWISH BROWN (10YR 5/8) LOAM; COMMON PROMINENT DUSKY RED (10R 3/4) MOTTLES; WEAK COARSE PLATY PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON COARSE LIGHT GRAY (10YR 7/2) CHANNEL NEOALBANS.
IIIB22T	240-290	YELLOWISH BROWN (10YR 5/8) CLAY LOAM; SIMILAR TO ABOVE.
IVB23T	290-343	LIGHT GRAY (10YR 7/2) CLAY LOAM; COMMON DISTINCT STRONG BROWN (7.5YR 5/8) AND FEW PROMINENT DARK RED (10R 3/6) MOTTLES; WEAK COARSE PLATY STRUCTURE; HARD; FRIABLE; COMMON THICK CONTINUOUS LIGHT GRAY (10YR 6/1) CLAY FILMS ON PED FACES; FEW FINE ROOT CHANNELS.
IVB24T	343-395	LIGHT GRAY (10YR 7/2) LOAM; COMMON DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; HARD; FRIABLE; FEW FINE ROOT CHANNELS; FEW THIN PATCHY BROWN (7.5YR 4/2) CLAY FILMS ON PED FACES; FEW THIN CONTINUOUS LIGHT GRAY (10YR 6/1) CLAY FILMS IN CHANNELS.
IVB3T	395-460	LIGHT YELLOWISH BROWN (10YR 6/4) SANDY LOAM; COMMON DISTINCT LIGHT GRAY (10YR 7/1) AND FEW DISTINCT YELLOWISH RED (5YR 4/8) MOTTLES; WEAK MEDIUM PLATY STRUCTURE; HARD; FRIABLE; FEW FINE PORES; FEW THIN CONTINUOUS CLAY FILMS ON HORIZONTAL PED FACES.

REMARKS: HORIZONS BELOW 200 CM DEPTH WERE DESCRIBED AND SAMPLED BY CORES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: SPLENDORA VARIANT
SOIL FAMILY: FRAGIC GLOSSAQUALF; FINE-LOAMY, SILICEOUS, THERMIC
LOCATION: MONTGOMERY COUNTY, TEXAS

PEDON NUMBER: S78TX-339-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
572	0- 8	A1CN	0.1	0.6	5.8	21.8	23.3	51.6	18.9	43.4	2.3	5.0	VFSL	1
573	8- 30	A2CN	0.0	0.3	5.4	21.5	22.7	49.9	18.1	43.6	3.1	6.5	VFSL	2
574	30- 50	A2&B1TCN	0.4	0.4	5.5	21.6	17.9	45.8	17.8	41.3	8.9	12.9	L	2
575	50- 65	A2&B2TCN	0.5	0.6	5.7	20.9	17.0	44.7	15.3	38.3	12.5	17.0	L	4
576	65- 95	B&A1TCN	0.5	0.6	5.3	17.8	21.2	45.5	14.5	36.0	14.3	18.6	L	11
577	95-118	B&A2TCN	0.4	0.4	5.3	20.6	18.6	45.3	14.0	34.6	15.4	20.1	L	10
578	118-143	A'2CN	0.5	0.5	6.2	21.4	20.2	48.8	13.7	34.3	12.2	16.9	L	17
579	143-165	IIBX1TCN	0.5	0.6	7.3	21.5	21.2	51.1	9.6	26.7	18.0	22.2	SCL	5
580	165-183	IIBX2TCN	0.4	0.6	6.3	18.7	15.7	41.7	7.8	23.1	28.3	35.2	CL	8
581	183-200	IIBX3TCN	0.4	0.8	5.8	18.3	14.5	39.8	7.8	21.3	32.3	38.9	CL	4
582	200-240	IIB21T	1.3	1.9	4.6	11.2	20.7	39.7	7.2	22.2	28.3	38.1	CL	2
583	240-290	IIIB22T	0.5	1.6	11.7	21.6	16.6	52.0	4.6	15.0	24.7	33.0	SCL	2
584	290-343	IVB23T	0.0	0.1	1.4	13.5	23.1	38.1	11.9	35.5	20.3	26.4	L	0
585	343-395	IVB24T	0.0	0.2	1.9	16.5	22.4	41.0	12.9	28.0	15.8	21.0	L	0
586	395-460	IVB3T	0.3	1.9	15.3	21.9	10.0	59.4	7.5	21.6	12.7	19.0	FSL	0
587	460-570	VC	0.2	4.2	19.2	45.5	15.5	84.6	3.7	8.1	4.9	7.3	LFS	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	BASE ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
572	1.59	5.9	2.5	2.2	0.1	0.0	4.8		8.9		54	1					
573	0.39	6.0	1.6	1.3	0.2	0.0	3.1		4.8		65	4					
574	0.27	5.8	2.7	0.7	0.2	0.0	3.6		6.6		55	3					
575	0.19	5.6	3.6	1.0	0.2	0.0	4.8		7.0		69	3					
576	0.15	5.3	2.9	2.0	0.2	0.0	5.1		7.1		72	3					
577	0.15	5.3	2.1	3.2	0.2	0.0	5.5		7.8		71	3					
578	0.15	5.3	3.6	5.3	0.3	0.0	9.2		7.4		100	4					
579	0.09	5.3							7.6								
580	0.12	5.2	1.8	2.8	0.3	0.1	5.0		9.1		55	3					
581	0.10	5.1	2.6	3.1	0.5	0.1	6.3		9.2		68	5					
582	0.08	5.8							9.0								
583	0.08	5.3	1.6	2.7	1.3	0.1	5.7		8.4		68	15					
584	0.03	4.8							7.3								
585	0.07	4.8	2.0	4.5	0.5	0.1	7.1		6.4		100	8					
586	0.03	4.8	1.2	3.0	0.5	0.1	4.8		5.4		89	9					
587	0.03	5.2	0.7	1.6	0.3	0.1	2.7		3.6		75	8					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
572																
573											1.66	1.66	0.000		17.4	
574											1.64	1.68	0.008		20.4	
575											1.76	1.81	0.009		23.7	
576											1.78	1.83	0.009		22.1	
577																
578											1.75	1.77	0.004		21.1	
579											1.81	1.87	0.011		22.6	
580																
581											1.74	1.79	0.010		27.7	
582																
583																
584																
585																
586																
587																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
572	T			**	***		*					
573												
574	T		T	**	***		*					
575	T		T	*	***		*					
576												
577												
578	T		T	*	***		*					
579	T		T	T	***		*					
580												
581	T		T	T	***		*					
582	T		T	T	***		*					
583												
584			T	T	***		*					
585												
586	T		T	T	***		*					
587			T		***		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE

T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: TABOR TAXADJUNCT PEDON: S78TX-041-002 COUNTY: BRAZOS

PEDON CLASSIFICATION: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: WEST CAMPUS, TEXAS A&M UNIVERSITY, 250 FT NW OF THE KLEBERG ANIMAL AND FOOD SCIENCE BUILDING.

LANDFORM: UPLAND ELEVATION (M): SLOPE: SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM OVER COASTAL PLAIN SEDIMENTS FORMATION: PLEISTOCENE ALLUVIUM AND YEGUA

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: PASTURE

COLLECTORS: L. WILDING, B. HARRIS, T. SOBECKI AND K. KACY DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-30	VERY DARK GRAYISH BROWN (10YR 3/2) FINE SANDY LOAM, DARK GRAYISH BROWN (10YR 4/2) DRY; STRUCTURELESS MASSIVE; EXTREMELY HARD; FRIABLE; COMMON FINE ROOTS; COMMON (10%) ROUNDED SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; FEW PETRIFIED WOOD FRAGMENTS; CLEAR WAVY BOUNDARY.
A2	30-53	DARK GRAYISH BROWN (10YR 4/2) FINE SANDY LOAM, LIGHT BROWNISH GRAY (10YR 6/2) DRY; COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) AND YELLOWISH BROWN (10YR 5/8) MOTTLES; STRUCTURELESS MASSIVE; HARD; FRIABLE; COMMON FINE ROOTS; WEAK SUBANGULAR BLOCKY STRUCTURE NEAR A2-BT CONTACT; COMMON (10%) ROUNDED SILICEOUS PEBBLES SMALLER THAN 2 CM IN DIAMETER; FEW ANGULAR PETRIFIED WOOD FRAGMENTS; CLEAR SMOOTH BOUNDARY.
B21T	53-64	BROWN (10YR 4/3) CLAY, BROWN (10YR 5/3) DRY; COMMON FINE DISTINCT RED (2.5YR 4/6) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; THIN VERY PATCHY VERY DARK GRAYISH BROWN (10YR 3/2) CLAY FILMS ON VERTICAL PED FACES; PRESSURE FACES ON VERTICAL PED FACES; FEW ROUNDED PEBBLES AND ANGULAR PETRIFIED WOOD FRAGMENTS SMALLER THAN 1CM IN DIAMETER; CLEAR WAVY BOUNDARY.
B22T	64-99	DARK GRAYISH BROWN (2.5Y 4/2) CLAY, LIGHT BROWNISH GRAY (2.5Y 6/2) DRY; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; MANY SLICKENSIDES; COMMON FINE BLACK CONCRETIONS; SOME PARALLELIPIPEDS; FEW SILICEOUS PEBBLES SMALLER THAN 1 CM IN DIAMETER; FEW PETRIFIED WOOD FRAGMENTS; CLEAR WAVY BOUNDARY.
B31TCA	99-122	OLIVE BROWN (2.5Y 4/4) CLAY; COMMON FINE FAINT YELLOWISH BROWN (10YR 5/8) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW SMALL SILICEOUS PEBBLES; COMMON CARBONATE NODULES SMALLER THAN 2 CM IN A NONCALCAREOUS MATRIX,NODULES HAVE SOFT WHITE POWDERY EXTERIORS WITH EMBEDED SKELETON GRAINS AND HARD GREY INTERIORS, LARGE NODULES ARE SURROUNDED BY SMALL NODULES EMBEDDED IN THE MATRIX; CLEAR SMOOTH BOUNDARY.
B32TCACS	122-140	YELLOWISH BROWN (10YR 5/8) CLAY; WEAK VERY COARSE PRISMATIC PARTING TO WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; MANY SELENITE CRYSTALS; COMMON FEW BLACK CONCRETIONS; COMMON SMALL SILICEOUS PEBBLES; SOME PARALLELIPIPEDS; SOME PED FACES COVERED WITH SANDIER MATERIAL 1-2 MM THICK; COMMON PRESSURE FACES AND RELIC SLICKENSIDES WITH CROSSCUTTING ROOTS; MANY SALT NESTS AND LINEAR PORE INFILLINGS; FEW CARBONATE ACCUMULATIONS IN SOFT MASSES AND NODULES; CLEAR SMOOTH BOUNDARY.
IIB33CS	140-152	PALE OLIVE (5Y 6/3) CLAY LOAM; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; MANY SELENITE CRYSTALS; THIN VERY PATCHY GRAYISH BROWN (2.5Y 5/2) CLAY FILMS ON PED FACES; MANY SALT SEGREGATIONS IN PORES; SLIGHTLY CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
IIC1	152-183	OLIVE GRAY (5Y 5/2) SILTY CLAY; COMMON PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; VERY FIRM; FEW SMALL SLICKENSIDES; FE-MN STAINS ALONG BEDDING PLANES; ROCK STRUCTURES SIMILAR TO COARSE ANGULAR BLOCKY; GRADUAL SMOOTH BOUNDARY.
IIC2	183-208	OLIVE GRAY (5Y 5/2) SILTY CLAY; COMMON PROMINENT YELLOWISH BROWN (10YR 5/6) MOTTLES; HARD; VERY FIRM; FE-MN STAINS ALONG BEDDING PLANES; ROCK STRUCTURE SIMILAR TO COARSE ANGULAR BLOCKY WITH AREAS OF LAMINATED 1-10 MM THICK BEDDING PLANES.

REMARKS: PEDON SAMPLED FROM A DEEP TRENCH. SOIL IS A TAXADJUNCT TO THE SERIES AS IT IS TOO ALKALINE FOR TABOR.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: TABOR TAXADJUNCT
SOIL FAMILY: UDERTIC PALEUSTALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: BRAZOS COUNTY, TEXAS

PEDON NUMBER: S78TX-041-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
509	0- 30	A1	0.7	0.5	2.4	18.8	30.8	53.2	10.7	36.3	5.6	10.5	VFSL	0
510	30- 53	A2	0.8	0.7	2.4	19.2	32.1	55.2	10.6	35.1	4.9	9.7	VFSL	0
511	53- 64	B21T	0.3	0.4	1.1	12.2	21.0	35.0	6.1	27.5	24.1	37.5	CL	0
512	64- 99	B22T	1.1	0.7	1.5	11.9	19.5	34.7	7.9	28.0	26.3	37.3	CL	0
513	99-122	B31TCA	1.6	1.2	1.8	12.2	20.2	37.0	9.0	29.0	25.0	34.0	CL	0
514	122-140	B32TCA	1.9	1.1	1.4	9.2	16.8	30.4	9.2	38.2	22.4	31.4	CL	0
515	140-152	IIB33CS	0.1	0.1	0.5	6.4	16.8	23.9	5.8	46.5	19.8	29.6	CL	0
516	152-183	IIC1	0.1	0.1	0.2	9.4	27.3	37.1	6.0	24.1	23.6	38.8	CL	0
517	183-208	IIC2	0.0	0.0	0.4	11.9	34.3	46.6	5.2	18.0	17.7	35.4	SC	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
509	0.62	7.7	11.8	0.6	0.6	0.5	13.5		9.8		100	4	3				
510	0.62	7.2	7.0	0.8	0.5	0.4	8.7		8.3		100	5	2				
511	0.43	7.6	18.3	3.4	1.8	1.4	24.9		24.2		100	6	3				
512	0.30	7.7	18.6	6.3	2.4	1.0	28.3		24.5		100	8	5				
513	0.09	7.9	22.7	5.1	3.3	0.5	31.6		24.6		100	11	9	0.7	0.4	1.1	
514	0.07	7.6	134.4	4.3	3.9	0.3	142.9		23.4		100	13	5	0.7	0.6	1.4	5.8
515	0.12	7.6	240.2	4.4	3.7	0.3	248.6		21.2		100	13	6				14.1
516	0.08	7.6	30.9	5.9	4.3	0.5	41.6		26.6		100	12	5	0.4	0.4	0.8	0.2
517	0.08	7.5	23.0	5.4	3.6	0.4	32.4		23.0		100	10	4				0.1

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
509	1.6	32	6.0	1.3	5.0	0.9	0.0	3.7	2.8	5.6						
510	1.6	30	7.0	2.7	4.0	1.1	0.0	2.2	2.7	8.4						
511	1.5	60	5.5	2.1	5.4	0.9	0.0	1.7	4.3	6.3						
512	1.5	58	3.4	1.6	7.4	0.6	0.0	2.3	2.5	6.6						
513	1.4	47	3.5	0.9	13.5	0.2	0.0	2.9	3.1	6.8						
514	4.1	40	34.0	4.9	20.4	0.2	0.0	1.8	6.5	51.3						
515	5.4	41	29.0	7.4	23.5	0.2	0.0	1.9	22.1	35.6						
516	4.9	54	26.0	6.6	21.3	0.3	0.0	1.3	17.2	39.2						
517	4.4	67	37.0	6.2	19.1	0.3	0.0	1.2	12.7	33.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
509												
510												
511												
512												
513												
514												
515												
516												
517												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: TALCO PEDON: S82TX-449-003 COUNTY: TITUS

PEDON CLASSIFICATION: AERIC GLOSSAQUALF; FINE-SILTY, SILICEOUS, THERMIC

LOCATION: FROM JUNCTION OF FR 1402 AND FR 71 IN WILKINSON, 2.4 MI E ON FR 71; 100 FT N OF HIGHWAY IN PASTURE.

LANDFORM: STREAM TERRACE ELEVATION (M): 97 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM OVER SHALE FORMATION: PLEISTOCENE ALLUVIUM

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: IMPROVED PASTURE

COLLECTORS: HALLMARK, BRUBAKER, LANE, GOLDEN, FOX, BROWN, DOUGLASS, ROBERTS DATE: 08/03/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-8	GRAYISH BROWN (10YR 5/2) SILT LOAM; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; FRIABLE; MANY FINE ROOTS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
E/B	8-20	PALE BROWN (10YR 6/3) SILT LOAM; MANY DISTINCT YELLOWISH BROWN (10YR 5/4) AND MANY FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; MANY FINE ROOTS; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
BT/E	20-33	BROWNISH YELLOW (10YR 6/6) SILT LOAM; MANY COARSE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON FINE ROOTS; MANY THIN CLAY FILMS ON PED FACES; 5-10% LIGHT GRAY (10YR 7/2) STREAKS OF SILT AND UNCOATED SAND (E) 3-8 MM WIDE AND 1-2.5 CM LONG; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
BTG/E1	33-56	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) AND MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; MANY THIN CLAY FILMS ON PED FACES; 10-15% BY VOLUME LIGHT GRAY (10YR 7/2) STREAKS OF SILT AND UNCOATED SAND (E) 3-8 MM WIDE AND 2-3 CM LONG WITH FEW POCKETS LESS THAN 1CM ACROSS; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
BTG/E2	56-89	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) AND MANY FINE DISTINCT LIGHT YELLOWISH BROWN (10YR 6/4) MOTTLES; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; THIN CLAY FILMS ON PED FACES; 15-20% BY VOLUME LIGHT GRAY (10YR 7/2) STREAKS OF SILT AND UNCOATED SAND 3-10 MM WIDE AND 3-5 CM LONG; FEW POCKETS LESS THAN 1 CM ACROSS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
BTG1	89-124	GRAY (10YR 5/1) SILTY CLAY; COMMON FINE DISTINCT BROWN (7.5YR 5/2) AND FEW FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; VERY FIRM; FEW FINE ROOTS; THIN CLAY FILMS ON PED FACES; FEW BLACK CONCRETIONS; SOME FACES OF DARK PEDS STAINED WITH IRON OXIDE; COMMON VERTICAL STEAKS OF GRAY (10YR 4/1) MATERIAL; FEW COARSE POCKETS OF PALE BROWN (10YR 6/3) SILTY CLAY LOAM; FEW STREAKS LESS THAN 5 MM WIDE OF LIGHT GRAY (10YR 7/2) SILT AND UNCOATED GRAINS ON SURFACE OF SOME PEDS; VERY STRONGLY ACID; IRREGULAR BOUNDARY.
BTG2	124-168	GRAYISH BROWN (10YR 5/2) CLAY LOAM; FEW MEDIUM PROMINENT RED (2.5YR 4/8) AND COMMON FINE DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; THIN CLAY FILMS ON PED FACES; FEW BLACK CONCRETIONS; FACES OF SOME PEDS STAINED WITH IRON OXIDE; FEW COARSE POCKETS OF PALE BROWN (10YR 6/3) SILTY CLAY LOAM; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BTG3	168-203	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; MANY MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK FINE SUBANGULAR BLOCKY STRUCTURE; HARD; FIRM; FEW FINE ROOTS; THIN CLAY FILMS ON PED FACES; FEW BLACK CONCRETIONS; VERY STRONGLY ACID.

REMARKS: INTERFINGERING OF (E) UNCOATED SAND IS BOTH HORIZONTALLY AND VERTICALLY ORIENTED. THE SOIL DOES NOT HAVE TONGUES OF UNCOATED SAND BUT IS HIGHLY DEGRADED IN THE B/E LAYERS. ALTHOUGH THE AREA IS MAPPED AS WILCOX GROUP, IT IS ABOUT 13 FT OF STRATIFIED ALLUVIUM OVER A SHALY MEMBER OF WILCOX. THE SOIL IS IN BAHIAGRASS, DALLISGRASS, FESCUE, AND COMMON BERMUDAGRASS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: TALCO
PEDON NUMBER: S82TX-449-003
SOIL FAMILY: AERIC GLOSSAQUALF; FINE-SILTY, SILICEOUS, THERMIC
LOCATION: TITUS COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1430	0- 8	A	0.1	0.1	0.1	8.1	20.9	29.3	25.6	60.1	5.6	10.6	SIL	0
1431	8- 20	E/B	0.1	0.1	0.1	8.1	20.0	28.4	25.2	57.9	7.7	13.7	SIL	0
1432	20- 33	BT/E	0.3	0.1	0.1	7.1	17.7	25.3	24.5	54.7	12.7	20.0	SIL	0
1433	33- 56	BTG/E1	0.2	0.1	0.1	6.6	16.8	23.8	24.8	54.1	14.5	22.1	SIL	0
1434	56- 89	BTG/E2	0.2	0.1	0.1	6.6	17.4	24.4	25.0	54.1	13.5	21.5	SIL	0
1435	89-124	BTG1	0.3	0.1	0.1	5.1	12.8	18.4	18.8	40.0	33.9	41.6	SIC	0
1436	124-168	BTG2	0.1	0.1	0.1	5.3	14.8	20.4	17.6	41.3	30.2	38.3	CL	0
1437	168-203	BTG3	0.0	0.1	0.1	7.6	21.2	29.0	14.6	41.1	21.1	29.9	CL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1430	1.35	6.6	7.3	0.6	0.1	0.2	8.2		7.7		100	1					
1431	0.50	5.2	2.7	0.6	0.1	0.1	3.5	0.6	6.9	4.1	51	1					
1432	0.26	4.9	2.1	1.1	0.1	0.1	3.5	3.1	8.9	6.5	39	1					
1433	0.21	4.8	1.1	1.2	0.1	0.1	2.5	4.0	10.0	6.5	26	1					
1434	0.18	4.9	0.9	1.0	0.2	0.1	2.2	4.0	9.9	6.2	23	2					
1435	0.24	4.9	2.3	3.3	1.4	0.2	7.2	9.4	22.0	16.6	33	6					
1436	0.20	4.8	3.2	3.9	1.8	0.3	9.2	7.9	19.8	17.1	47	9					
1437	0.11	4.7	3.9	4.5	1.9	0.2	10.5	6.0	18.9	16.5	55	10					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1430																
1431											1.58	1.66	0.017		18.0	
1432											1.56	1.69	0.027		20.8	
1433											1.39	1.51	0.028		24.8	
1434											1.38	1.53	0.035		30.0	
1435											1.24	1.65	0.100		40.8	
1436											1.42	1.85	0.092		31.2	
1437											1.52	1.87	0.072		26.5	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1430	T		*		**		**			***	*	
1431												
1432												
1433	*		*		**		**			***	*	
1434												
1435												
1436												
1437	***		*		**		**			***	*	

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: TERLINGUA PEDON: S80TX-043-012 COUNTY: BREWSTER

PEDON CLASSIFICATION: LITHIC TORRIORTHENT; LOAMY-SKELETAL, MIXED (CALCAREOUS), THERMIC

LOCATION: BIG BEND NATIONAL PARK. ABOUT 9.2 MI SE OF CASTALON RANGER STATION ON RIVER ROAD FROM THE BUENOS AIRES CUTOFF, 2.35 MI E ON RIVER ROAD, 76 M S ON SUMMIT.

LANDFORM: SUMMIT ELEVATION (M): 700 SLOPE: 3% SLOPE ASPECT: W

PARENT MATERIALS: EXTRUSIVE IGNEOUS ROCK FORMATION: CHISOS

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: NATIVE

COLLECTORS: THOMPSON, ALLEN, WILLIAMS, RIVES, COCHRAN, WILDING, HALLMARK DATE: 08/28/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-10	DARK YELLOWISH BROWN (10YR 4/4) VERY GRAVELLY SANDY LOAM, YELLOWISH BROWN (10YR 5/4) DRY; MODERATE VERY FINE GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON ROOTS; ABOUT 50% IGNEOUS FRAGMENTS 2-15 MM ACROSS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
B2CA	10-20	DARK YELLOWISH BROWN (10YR 4/4) VERY GRAVELLY LOAM, YELLOWISH BROWN (10YR 5/4) DRY; WEAK VERY FINE GRANULAR STRUCTURE; SLIGHTLY HARD; FRIABLE; COMMON ROOTS; ABOUT 50% IGNEOUS GRAVEL COATED WITH CARBONATE; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
CR1CA	20-30	WEAK RED (2.5YR 5/2, DRY) PARTIALLY WEATHERED IGNEOUS ROCK; MANY SEAMS OF CALCITE; ROCK WEATHERED TO 0.5 CM THICK PLATES THAT ARE COATED WITH CARBONATE ON UPPER AND LOWER SURFACES; CLEAR WAVY BOUNDARY.
CR2CA	30-40	WEAK RED (2.5YR 5/2, DRY) PARTIALLY WEATHERED IGNEOUS ROCK; FEW SEAMS OF CALCITE; ABRUPT WAVY BOUNDARY.
RCA	40+	MANY PORES; COMMON CALCITE AND OPAL INTERBEDDED BODIES.

REMARKS: THE BEDROCK OUTCROPS AS BLOCKS OF 0.5 TO 1.5 M ABOVE THE PRESENT SURFACE. THE ROCK CONTAINS MANY GAS VOIDS, HAS A HARDNESS OF ABOUT 3 ON MOH'S SCALE AND IS WEAKLY MAGNETIC. THE ROCK IS VOLCANIC AND IS PROBABLY A DACITE OR ANDESITE. VEGETATION IS SPARCE AND INCLUDES WHITETHORN, LECHUGUILLA, CREOSOTEBUSH, SKELETONLEAF GOLDENEYE, PRICKLYPEAR, CHINO GRAMA, THREEAWN, FLUFFGRASS AND SLIM TRIDENS.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: TERLINGUA PEDON NUMBER: S80TX-043-012
SOIL FAMILY: LITHIC TORRIORTHENT; LOAMY-SKELETAL, MIXED, (CALCAREOUS), THERMIC
LOCATION: BREWSTER COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
962	0- 10	A1	17.2	9.8	9.2	11.4	11.8	59.4	11.0	33.4	0.0	7.2	COSL	40
963	10- 20	B2CA	14.3	8.6	9.4	10.4	12.3	55.0	12.6	34.5	0.7	10.5	SL	56
964	20- 30	CR1CA												
965	30- 40	CR2CA												

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
962	0.37	8.4	41.9	0.7	0.1	0.4	43.1		15.1		100	1	1	4.1	0.8	5.0	
963	0.75	8.2	49.8	0.4	0.2	0.2	50.6		17.9		100	1	1	7.4	0.9	8.4	
964																	
965																	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
962	0.4	25	3.5	0.2	0.8	0.5	0.0	2.6	2.0	2.4						
963	0.4	31	4.0	0.1	1.2	0.2	0.0	2.8	0.5	2.2						
964																
965																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
962	***				*		**					
963	***				*		**					
964	***						T		*			
965	***						*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: TORNILLO PEDON: S80TX-043-010 COUNTY: BREWSTER

PEDON CLASSIFICATION: FLUVENTIC CAMBORTHID; FINE-LOAMY, MIXED, THERMIC

LOCATION: FROM JUNCTION OF RIO GRAND VILLAGE ROAD AND RIVER ROAD IN BIG BEND NATIONAL PARK, 8.0 MI SW ON RIVER ROAD, 0.35 MI SE ON CASA DE PIEDRE ROAD, 30 M E IN THE SW BANK OF ARROYA.

LANDFORM: ALLUVIAL FLAT ELEVATION (M): 580 SLOPE: SLOPE ASPECT:

PARENT MATERIALS: ALLUVIUM FORMATION: HOLOCENE-AGE

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: NATIVE

COLLECTORS: ALLEN, HALLMARK, WILDING, RIVES, COCHRAN, WILLIAMS, THOMPSON DATE: 08/26/80

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-22	YELLOWISH BROWN (10YR 5/4) LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; WEAK VERY FINE SUBANGULAR BLOCKY AND GRANULAR STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON ROOTS; COMMON PORES; FEW LIMESTONE PEBBLES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
B21	22-44	BROWN (10YR 4/3) SILTY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK VERY COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; COMMON ROOTS; COMMON PORES; FEW CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B22CA	44-65	BROWN (10YR 4/3) SILTY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK VERY COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW ROOTS; COMMON PORES; COMMON CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B23CA	65-85	BROWN (10YR 4/3) LOAM, PALE BROWN (10YR 6/3) DRY; WEAK VERY COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW ROOTS; FEW PORES; COMMON CALCIUM CARBONATE FILAMENTS; FEW PEBBLES UP TO 1.5 CM ACROSS AND 3 CM LONG; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
B24CA	85-109	BROWN (10YR 4/3) LOAM, PALE BROWN (10YR 6/3) DRY; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; FEW ROOTS; FEW MEDIUM PORES; FEW REMNANTS OF FINE STRATIFICATION OF SIMILAR TEXTURED MATERIALS; FEW THIN PATCHY CARBONATE COATINGS ON IGNEOUS FRAGMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT WAVY BOUNDARY.
A11B	109-126	BROWN (10YR 5/3) CLAY LOAM; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW ROOTS; MANY MEDIUM PORES; FEW CALCIUM CARBONATE FILAMENTS ON PED FACES; COMMON THIN BEDDING PLANES; FEW FRAGMENTS UP TO 3 CM ACROSS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A12B	126-162	BROWN (10YR 4/3) SILTY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW ROOTS; MANY MEDIUM PORES; COMMON CALCIUM CARBONATE FILAMENTS; COMMON THIN BEDDING PLANES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR SMOOTH BOUNDARY.
A13B	162-190	BROWN (10YR 5/3) SILTY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW ROOTS; COMMON PORES; FEW CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR WAVY BOUNDARY.
B2B	190-210	BROWN (10YR 5/3) SILTY CLAY LOAM, PALE BROWN (10YR 6/3) DRY; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW ROOTS; COMMON PORES; FEW CALCIUM CARBONATE FILAMENTS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: THE AREA IS GENTLY SLOPING TO THE SOUTHEAST TOWARD THE RIO GRANDE RIVER WHICH IS ABOUT 1 MILE AWAY. RANGE VEGETATION IS DOMINATED BY CREOSOTEBUSH WITH A HIGH PERCENTAGE OF BARE GROUND.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: TORNILLO
SOIL FAMILY: FLUVENTIC CAMBORTHID; FINE-LOAMY, MIXED, THERMIC
LOCATION: BREWSTER COUNTY, TEXAS

PEDON NUMBER: S80TX-043-010

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
938	0- 22	A1	0.6	0.5	2.8	15.0	19.8	38.7	19.6	40.3	1.6	21.0	L	
939	22- 44	B21	0.1	0.2	1.0	5.8	12.3	19.4	28.5	51.4	2.8	29.2	SICL	
940	44- 65	B22CA	0.1	0.2	0.6	3.2	10.5	14.6	31.4	57.6	3.9	27.8	SICL	
941	65- 85	B23CA	0.6	1.1	2.3	9.3	14.1	27.4	24.8	46.2	4.4	26.4	L	
942	85-109	B24CA	1.1	1.1	4.5	20.8	21.8	49.3	15.1	30.2	2.5	20.5	L	
943	109-126	A11B	0.1	0.2	1.4	8.4	17.5	27.6	23.7	43.6	5.2	28.8	CL	
944	126-162	A12B	0.1	0.2	0.9	6.1	12.7	20.0	28.7	52.4	4.3	27.6	SICL	
945	162-190	A13B												
946	190-210	B2B	0.0	0.0	0.1	1.3	9.8	11.2	33.5	59.3	5.8	29.5	SICL	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
938	0.16	8.3	58.1	1.2	1.4	0.4	61.1		27.0		100	4	7	2.7	1.0	3.7	
939	0.17	7.7	59.5	1.9	2.1	0.4	63.9		34.8		100	4	5	5.4	0.9	6.4	
940	0.14	7.9	63.3	1.9	1.9	0.4	67.5		34.0		100	4	5	6.2	1.0	7.3	
941	0.12	7.7	59.5	1.9	2.2	0.3	63.9		30.5		100	5	6	7.1	1.4	8.7	
942	0.02	8.4	49.6	1.8	3.0	0.2	54.6		25.4		100	10	10	7.4	1.4	8.9	
943	0.10	8.5	56.2	2.5	4.7	0.3	63.7		34.1		100	12	18	6.9	1.3	8.3	
944	0.10	8.6	59.5	2.9	5.6	0.3	68.3		36.5		100	14	21	8.7	1.2	10.0	
945	0.07	8.7	57.5	2.9	5.7	0.3	66.4		36.6		100	14	23	8.7	0.9	9.6	
946	0.09	8.6	56.0	3.1	7.2	0.4	66.7		38.0		100	17	24	9.0	0.9	10.0	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
938	0.5	33	1.9	0.1	7.0	0.1	0.0	3.3	0.0	2.6	1.28	1.47	0.047		28.6	
939	2.9	44	13.9	1.2	14.4	0.2	0.0	1.6	1.8	10.3	1.31	1.55	0.059		26.3	
940	2.0	47	9.5	0.7	12.2	0.2	0.0	1.6	1.8	2.3	1.39	1.58	0.045		22.8	
941	1.9	42	9.5	0.7	13.9	0.3	0.0	1.4	1.0	2.3	1.39	1.55	0.037		19.6	
942	1.0	33	3.0	0.2	12.2	0.0	0.0	2.2	0.9	2.4	1.39	1.56	0.038		20.9	
943	0.9	38	0.8	0.1	12.2	0.0	0.0	2.9	0.9	3.0	1.35	1.58	0.054		25.0	
944	0.8	38	0.6	0.1	12.2	0.2	0.0	3.1	0.8	3.0	1.42	1.64	0.049		22.9	
945	0.9	39	0.6	0.1	13.5	0.0	0.0	3.3	1.6	3.1	1.38	1.60	0.051		28.8	
946	1.1	45	0.7	0.1	15.2	0.1	0.0	3.1	1.4	4.1						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
938	***		*		**		**					
939	***		T		*		*					
940	***		T		*		**					
941	***		T		*		**					
942	***				*		**					
943	***				*		**					
944	***				*		**					
945	***				*		**					
946	***				*		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: UNDESIGNATED SERIES PEDON: S81TX-005-001 COUNTY: ANGELINA

PEDON CLASSIFICATION: AERIC OCHRAQUALF; FINE-LOAMY, SILICEOUS, THERMIC

LOCATION: FROM INTERSECTION OF FR 58 AND FR 1818, 1 MI N ON FR 58, 1 MI W ON DIRT ROAD, 900 FT S ON COUNTY DIRT ROAD.

LANDFORM: FOOTSLOPE ELEVATION (M): 64 SLOPE: 0-1% SLOPE ASPECT: SE

PARENT MATERIALS: TUFFACEOUS SILTSTONE FORMATION: CADDELL (JACKSON GROUP)

TOPOGRAPHY: DRAINAGE: POORLY DRAINED LANDUSE:

COLLECTORS: WILDING, RIVERS, ABBOTT, DENUM, FUCHS, GRAY, DOLEZEL AND GIRDNER DATE: 11/23/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	GRAYISH BROWN (10YR 5/2) VERY FINE SANDY LOAM; WEAK MEDIUM GRANULAR STRUCTURE; SOFT; FRIABLE; MANY ROOTS; YELLOWISH BROWN (10YR 5/6) STAINS ALONG ROOT CHANNELS; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
E	15-23	LIGHT BROWNISH GRAY (10YR 6/2) VERY FINE SANDY LOAM; STRUCTURELESS MASSIVE; SOFT; FRIABLE; MANY ROOTS; EXTREMELY ACID; ABRUPT WAVY BOUNDARY.
BT1	23-69	DARK GRAYISH BROWN (10YR 4/2) SILTY CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; MANY FINE ROOTS; STRONG BROWN (7.5YR 5/6) STAINS ALONG ROOT CHANNELS; FEW SMALL BARITE SEGREGATIONS; FEW SMALL SELENITE CRYSTALS; FEW SMALL TONGUES AND PED COATINGS OF LIGHT BROWNISH GRAY (10YR 6/2) LOAM MOSTLY IN UPPER PART; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
BT2	69-94	DARK GRAYISH BROWN (10YR 4/2) CLAY; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; YELLOWISH RED (5YR 5/8) STAINS ALONG ROOT CHANNELS; COMMON SELENITE CRYSTALS; FEW BLACK CONCRETIONS; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
B/CYZ	94-117	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; MANY FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; MANY SELENITE CRYSTALS; POCKETS OF LIGHT YELLOWISH BROWN (2.5Y 6/4) AND YELLOWISH RED (5YR 5/8) PARTIALLY WEATHERED MUDSTONE; EXTREMELY ACID; GRADUAL WAVY BOUNDARY.
C/BYZ	117-160	LIGHT BROWNISH GRAY (10YR 6/2) AND LIGHT YELLOWISH BROWN (2.5Y 6/4) PARTIALLY WEATHERED MUDSTONE WITH GRAYISH BROWN (10YR 5/2) CLAY LOAM IN VERTICAL CRACKS WITH STAINS OF STRONG BROWN (7.5YR 5/6) IN WIDE WAVES IN MUDSTONE; MANY GYPSUM CRYSTALS; FEW FINE ROOTS; SILICEOUS PEBBLE LINE ABOUT 5 CM THICK IN LOWER PART; EXTREMELY ACID; CLEAR WAVY BOUNDARY.
CRZ	160-183	PALE BROWN (10YR 6/3) AND LIGHT GRAYISH BROWN (10YR 6/2) WEAKLY CEMENTED MUDSTONE WITH GRAYISH BROWN (10YR 5/2) IN THIN CRACKS WHICH ARE COATED WITH GYPSUM AND FILLED WITH FINE FLAT ROOTS; EXTREMELY ACID.
CR1	183-411	PALE BROWN (10YR 6/3) AND LIGHT YELLOWISH BROWN (2.5YR 6/3) WEAKLY CEMENTED MUDSTONE WITH WAVES OF STRONG BROWN (7.5YR 5/6) CRACKS FILLED WITH GYPSUM CRYSTALS AND FINE FLAT TREE ROOTS; EXTREMELY ACID.
CR2	411-670	DARK OLIVE GRAY (5Y 3/2) SHALE WITH LEAF FOSSILS.

REMARKS: SOIL REACTION WAS DETERMINED BY GLASS ELECTRODE. FIELD ECE READINGS WERE AS FOLLOWS: 0.72 (15-23 CM), 1.7 (23-69 CM), 2.6 (69-94 CM), 3.3 (94-117CM), AND 1.4 (160-183 CM) MMHOS/CM. PEDON WAS SAMPLED AS THE HERTY SERIES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: UNDESIGNATED SERIES
SOIL FAMILY: AERIC OCHRAQUALF, FINE-LOAMY, SILICEOUS, THERMIC
LOCATION: ANGELINA COUNTY, TEXAS

PEDON NUMBER: S81TX-005-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1180	23- 38	BT1	0.0	0.0	0.5	16.9	31.3	48.7	13.2	36.7	11.3	14.6	L	0
1181	48- 69	BT1	0.1	0.0	0.3	14.0	24.9	39.3	15.8	36.9	17.7	23.8	L	0
1182	69- 94	BT2	0.0	0.0	0.5	15.7	23.6	39.8	15.0	34.1	19.5	26.1	L	0
1183	94-117	B/CYZ	2.7	0.9	1.1	14.7	21.6	41.0	11.8	30.1	17.4	28.9	CL	0
1184	117-300	C/BYZCR1	0.0	0.0	0.0	10.1	31.5	41.6	9.9	28.1	10.3	30.3	CL	0
1185	300-457	CR1&CR2	0.0	0.0	0.0	2.6	20.3	22.9	14.4	40.1	8.0	37.0	CL	0
1186	457-518	CR2	0.0	0.0	0.1	1.2	14.4	15.7	17.4	38.8	15.1	45.5	C	0
1187	518-610	CR2	0.1	0.1	0.1	0.1	3.8	4.2	24.0	40.1	10.9	55.7	SIC	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
1180	0.45	4.7	5.4	0.1	0.2	0.1	5.8	1.4	9.5	7.2	61	2	1				
1181	0.44	4.3	16.0	1.5	0.4	0.3	18.2	1.2	15.2	19.4	100	2	1				0.1
1182	0.33	4.4	27.7	1.6	0.4	0.4	30.2	0.5	17.0	30.7	100	1	1				0.6
1183	0.20	4.6	163.2	2.1	0.4	0.4	166.1	0.2	18.2	166.3	100	1	1				10.6
1184	0.08	4.5	40.6	4.0	1.2	0.6	46.5	0.3	23.1	46.8	100	3	2				0.9
1185	0.20	4.9	19.4	4.8	2.5	0.7	27.4	0.2	26.7	27.6	100	6	5				
1186	0.39	7.4	24.2	6.7	2.6	1.2	34.7		27.7		100	6	4	0.2	0.6	0.8	
1187	0.53	7.5	28.7	9.3	3.9	1.4	43.4		33.4		100	9	5	0.3	0.0	1.1	

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
1180	0.3	36	0.8	0.2	1.0	0.1	0.0	0.2	0.7	3.5						
1181	1.5	47	13.5	2.1	3.7	0.3	0.0	0.1	1.1	14.0						
1182	2.7	51	26.4	3.1	3.9	0.3	0.0	0.1	1.4	28.0						
1183	2.7	55	26.9	3.2	3.3	0.4	0.0	0.1	0.9	26.0						
1184	3.6	64	24.7	4.9	8.9	1.0	0.0	0.0	2.5	29.0						
1185	2.8	67	11.2	3.1	13.3	0.9	0.0	0.1	6.1	20.5						
1186	2.3	88	10.2	3.0	10.3	1.2	0.0	3.1	3.2	15.0						
1187	2.4	81	7.5	2.5	11.7	1.0	0.0	2.7	3.4	16.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1180												
1181												
1182												
1183												
1184												
1185												
1186												
1187												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: UNDESIGNATED SERIES PEDON: S81TX-041-001 COUNTY: BRAZOS

PEDON CLASSIFICATION: TYPIC ALBAQUALF; FINE-LOAMY, SILICEOUS, THERMIC

LOCATION: RANGE SCIENCES EXPERIMENTAL AREA

LANDFORM: FOOTSLOPE ELEVATION (M): SLOPE: 1-2% SLOPE ASPECT: W

PARENT MATERIALS: ALLUVIUM OVER SILTSTONE FORMATION: ALLUVIUM OVER YEGUA FORMATION

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: RANGE

COLLECTORS: WILDING, HALLMARK, WEST, THOMPSON, GIRDNER, BROCKMANN, AND ABBOTT DATE: 01/28/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-28	VERY DARK GRAYISH BROWN (10YR 3/2) FINE SANDY LOAM, GRAYISH BROWN (10YR 5/2) DRY; WEAK FINE GRANULAR STRUCTURE; VERY FRIABLE; MANY FINE AND MEDIUM ROOTS; FEW SILICEOUS PEBBLES; BOTH MASSIVE AND HARD WHEN DRY; MEDIUM ACID; ABRUPT SMOOTH BOUNDARY.
B21T	28-60	DARK GRAYISH BROWN (10YR 4/2) CLAY; COMMON MEDIUM FAINT DARK GRAY (10YR 4/1) AND COMMON FINE DISTINCT RED (2.5YR 4/6) MOTTLES; MODERATE COARSE ANGULAR BLOCKY PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON FINE ROOTS; FEW FINE PORES; CONTINUOUS CLAY FILMS ON PED FACES; FEW SILICEOUS PEBBLES; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B22T	60-80	GRAYISH BROWN (10YR 5/2) CLAY; MODERATE COARSE PRISMATIC PARTING TO STRONG COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; DARK GRAYISH BROWN (10YR 4/2) PED COATINGS; CONTINUOUS CLAY FILMS ON PED FACES; FEW FINE ROOTS ALONG CRACKS; FEW PATCHES OF CLEAN SAND ON PED FACES; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
B31T&C	80-120	GRAYISH BROWN (10YR 5/2) CLAY; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; DARK GRAYISH BROWN (10YR 4/2) PED COATINGS; THIN PATCHY CLAY FILMS ON PED FACES; FEW FINE ROOTS ALONG CRACKS; ABOUT 30-35% IS PARTIALLY WEATHERED LIGHT BROWNISH GRAY (10YR 6/2) FINE SANDY LOAM BODIES 1-4 CM ACROSS; THESE BODIES HAVE THIN STRATIFICATION OR ROCK STRUCTURE IN THE INTERIORS; STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
B32T&C	120-167	GRAYISH BROWN (10YR 5/2) CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; DARK GRAYISH BROWN (10YR 4/2) PED COATINGS; FEW PATCHY CLAY FILMS ON VERTICAL PED FACES; FEW FINE ROOTS ALONG CRACKS; ABOUT 50% BODIES OF LIGHT BROWNISH GRAY (10YR 6/2) FINE SANDY LOAM THAT HAVE ROCK STRUCTURE IN THE INTERIORS; COMMON FINE BODIES OF WHITE SALT ON PED SURFACES AND FEW WHITE SALT BODIES IN PED INTERIORS; MEDIUM ACID; CLEAR SMOOTH BOUNDARY.
IIB3	167-183	GRAYISH BROWN (10YR 5/2) CLAY; COMMON COARSE DISTINCT LIGHT BROWNISH GRAY (10YR 6/2) AND COMMON COARSE DISTINCT BROWN (10YR 5/3) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; DARK BROWN (7.5YR 3/2) PED COATINGS; FEW CLAY FILMS; FEW FINE ROOTS ALONG CRACKS; COMMON PATCHES OF CLEAN SAND; COMMON SALT BODIES ON PED SURFACES; FEW SALT BODIES IN PED INTERIORS; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
IIIC1	183-250	BROWN (10YR 5/3) CLAY LOAM, PALE BROWN (10YR 6/3) DRY; VERY HARD; FIRM; FEW FINE ROOTS ON VERTICAL PED FACES; COMMON THIN BEDDING PLANES; COMMON FINE SALT SEGREGATIONS; NEUTRAL; CLEAR SMOOTH BOUNDARY.
IIIC2	250-310	YELLOWISH BROWN (10YR 5/4) CLAY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; STRONG BROWN (7.5YR 4/6) MOTTLES ALONG BEDDING PLANES; FEW YELLOW (2.5Y 7/6) JAROSITE BODIES; FEW MEDIUM SALT SEGREGATIONS ALONG BEDDING PLANES; GRADUAL BOUNDARY.
IIIC3	310-400	LIGHT YELLOWISH BROWN (10YR 6/4) CLAY LOAM; COMMON COARSE FAINT BROWN (7.5YR 5/4) AND COMMON COARSE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; COMMON FINE YELLOW (2.5Y 7/6) JAROSITE BODIES; COMMON SALT SEGREGATIONS ALONG BEDDING PLANES.
IIIC4	400-470	PALE BROWN (10YR 6/3) LOAM; FEW FINE DISTINCT DARK BROWN (7.5YR 3/4) MOTTLES; COMMON FINE YELLOW (2.5Y 7/6) JAROSITE BODIES; THIN BEDDING PLANES.
IIIC5	470-520	BROWN (7.5YR 5/4) CLAY LOAM; FEW FINE FAINT STRONG BROWN (7.5YR 4/6) MOTTLES; FEW COARSE YELLOW (2.5Y 7/6) JAROSITE BODIES; MANY FINE SELENITE CRYSTALS; DISTINCT BEDDING PLANES.
IIIC6	520-615	DARK GREENISH GRAY (5GY 4/1) CLAY; MANY COARSE FAINT DARK GRAY (5Y 4/1) AND MANY COARSE FAINT GREENISH GRAY (5GY 5/1) MOTTLES; FEW BARITE SEGREGATIONS; NO BEDDING PLANES; THIN COAL SEAM IN LOWER PART.

REMARKS: VEGETATION IS A POST OAK SAVANNAH WITH AN UNDERSTORY OF GRASSES AND SHRUBS. SOIL BELOW 250 CM WAS SAMPLED AS POWER PROBE CORES.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: UNDESIGNATED SERIES
SOIL FAMILY: TYPIC ALBAQUALF; FINE-LOAMY, SILICEOUS, THERMIC
LOCATION: BRAZOS COUNTY, TEXAS

PEDON NUMBER: S81TX-041-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (≤0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
966	28- 80	B2T	0.1	0.1	1.3	29.1	17.3	47.9	7.9	23.1	21.1	29.0	SCL	
967	80-167	B3T&C	0.0	0.0	0.5	32.3	25.0	57.8	10.8	25.2	9.4	17.0	FSL	
968	167-250	IIB&IIIC	0.0	0.0	0.2	15.3	21.5	37.0	16.8	40.5	8.4	22.5	L	
969	250-400	IIIC	0.0	0.0	0.2	23.4	18.8	42.4	19.7	33.6	8.5	24.0	L	
970	400-470	IIIC4	0.1	0.0	0.1	14.4	37.3	51.9	7.7	28.6	8.7	19.5	L	
971	470-520	IIIC5	0.1	0.1	0.2	3.5	8.0	11.9	23.3	58.9	7.3	29.2	SICL	
972	520-615	IIIC6	0.0	0.0	0.1	0.3	2.1	2.5	35.3	63.7	5.5	33.8	SICL	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
			MEQ/100G														
966	0.34	4.7	11.1	3.7	1.7	0.4	16.9	3.3	17.1	20.2	99	10	5				
967	0.11	4.7	5.8	2.7	3.8	0.6	12.9	0.5	12.5	13.4	100	30	5				
968	0.13	6.2	13.6	3.5	5.4	1.0	23.5	0.2	17.2	23.7	100	25	12				0.0
969	0.19	4.9	13.2	3.6	4.2	0.8	21.8	0.2	17.5	22.0	100	15	8				0.0
970	0.20	4.5	11.0	3.6	3.6	0.7	18.9	0.8	16.8	19.7	100	15	8				0.0
971	0.52	4.0	25.1	5.5	4.0	1.0	35.6	2.2	23.8	37.8	100	11	7				0.4
972	1.73	6.7	17.7	8.2	4.2	1.9	32.0	0.1	26.7	32.1	100	10	5				0.0

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
			MEQ/L													
966	0.2	48	0.1	0.0	1.2	0.0	0.0	0.3	0.4	1.9						
967	0.3	42	0.1	0.0	1.2	0.0	0.0	0.3	2.4	2.1						
968	2.0	46	5.5	1.2	22.2	0.3	0.0	0.8	11.8	10.0						
969	3.5	54	22.5	2.5	27.8	0.8	0.0	0.4	10.8	30.7						
970	2.3	58	9.0	3.5	20.0	1.0	0.0	0.4	12.0	13.3						
971	3.6	61	24.0	3.3	24.4	1.5	0.0	0.4	8.6	43.3						
972	3.7	81	15.0	8.6	18.1	1.6	0.0	1.1	5.1	27.4						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
966												
967												
968												
969												
970												
971												
972												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: UNDESIGNATED SERIES PEDON: S81TX-217-007 COUNTY: HILL

PEDON CLASSIFICATION: UDORTHENTIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM INTERSECTION OF US 77 AND US 81, 1.25 MI N ON US 81, 0.4 MI W ON DIRT ROAD, 0.2 MI N ON DIRT ROAD, 1000 FT W TO POND DAM, 10 FT N OF DAM (SE CORNER OF SHEET 27 OF HILL COUNTY SOIL SURVEY REPORT).

LANDFORM: BACKSLOPE ELEVATION (M): SLOPE: 2% SLOPE ASPECT: W

PARENT MATERIALS: MARL FORMATION: TAYLOR

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: PASTURE

COLLECTORS: HALLMARK, WILDING, BROCKMANN, GIRDNER, BENNETT, LONG, AND ABBOTT DATE: 02/25/81

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A11	0-10	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; WEAK VERY FINE GRANULAR STRUCTURE; VERY HARD; FIRM; MANY FINE AND MEDIUM ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A12	10-46	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; WEAK MEDIUM ANGULAR BLOCKY PARTING TO WEAK VERY FINE GRANULAR STRUCTURE; VERY HARD; VERY FIRM; COMMON FINE AND MEDIUM ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR SMOOTH BOUNDARY.
A11B	46-92	VERY DARK GRAYISH BROWN (10YR 3/2) CLAY; FEW FINE FAINT BROWN (10YR 5/3) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
A12B	92-120	VERY DARK GRAY (10YR 3/1) CLAY; FEW FINE FAINT BROWN (10YR 5/3) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE FILAMENTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
A13B	120-158	VERY DARK GRAY (10YR 3/1) CLAY; FEW FINE FAINT BROWN (10YR 5/3) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; MANY INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE CONCRETIONS; FEW SMALL LIMESTONE PEBBLES; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
AC1B	158-183	DARK GRAYISH BROWN (2.5Y 4/2) CLAY; FEW FINE FAINT BROWN (10YR 5/3) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW FINE ROOTS; MANY INTERSECTING SLICKENSIDES; FEW CALCIUM CARBONATE CONCRETIONS; FEW SMALL LIMESTONE PEBBLES; MODERATELY ALKALINE; CALCAREOUS; CLEAR WAVY BOUNDARY.
AC2B	183-236	LIGHT OLIVE BROWN (2.5Y 5/4) CLAY; WEAK COARSE ANGULAR BLOCKY STRUCTURE; VERY HARD; VERY FIRM; FEW CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C1	236-300	YELLOWISH BROWN (10YR 5/6) CLAY; MANY DISTINCT VERY DARK GRAY (10YR 3/1) MOTTLES; VERY HARD; VERY FIRM; FEW CALCIUM CARBONATE CONCRETIONS; THIN BEDDING PLANES; MODERATELY ALKALINE; CALCAREOUS; GRADUAL BOUNDARY.
C2	300-500	VERY DARK GRAY (5Y 3/1) SHALY CLAY; MANY COARSE DISTINCT LIGHT OLIVE BROWN (2.5Y 5/4) MOTTLES; EXTREMELY HARD; MODERATELY ALKALINE; CALCAREOUS.
CR	500-625	VERY DARK GRAY (5Y 3/1) BEDROCK; EXTREMELY HARD; BEDROCK IS UNOXIDIZED SHALE; MODERATELY ALKALINE; CALCAREOUS.

REMARKS: THE SOIL WAS SAMPLED INTERMEDIATE BETWEEN MICRO-HIGH AND LOW. DEPTH TO THE AC HORIZON RANGES FROM 190 CM IN MICRO-LOWS TO 105 CM IN MICRO-HIGHS. SMALL SILICEOUS PEBBLES WERE NOTED THROUGHOUT THE PEDON. FEW SMALL GROUPS OF SELENITE CRYSTALS OCCUR BELOW 46 CM. SITE VEGETATION IS COMMON BERMUDAGRASS WITH SOME NATIVE SHRUBS AND GRASSES. SOIL PREVIOUSLY CLASSIFIED IN HEIDEN SERIES; HOWEVER IT LACKS MOLLIC COLORS IN UPPER 45 CM AND THEREFORE CLASSIFIES IN AN UDORTHENTIC RATHER THAN UDIC SUBGROUP.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: UNDESIGNATED SERIES
PEDON NUMBER: S81TX-217-007
SOIL FAMILY: UDORTHENTIC CHROMUSTERT; FINE, MONTMORILLONITIC, THERMIC
LOCATION: HILL COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
973	10- 46	A12	1.3	0.6	0.4	0.8	2.6	5.7	25.4	45.5	20.7	48.8	SIC	0
974	46- 92	A1B	0.9	0.5	0.3	0.5	1.7	3.9	25.9	45.7	22.4	50.4	SIC	0
975	92-158	A12&A13B	0.6	0.6	0.4	1.0	1.2	3.8	22.5	41.7	26.5	54.5	SIC	0
976	158-236	AC1&AC2B	0.3	0.3	0.3	0.6	0.5	2.0	18.2	49.9	24.9	48.1	SIC	0
977	236-300	C1	0.1	0.1	0.1	0.3	3.0	3.6	23.2	38.0	15.6	58.4	C	0
978	300-500	C2	0.3	0.3	0.3	0.9	4.8	6.6	26.0	45.3	15.2	48.1	SIC	0
979	500-625	CR	0.9	0.1	0.1	0.4	2.2	3.7	22.6	39.0	18.0	57.3	C	

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC	BASE SAT %	ESP %	SAR	CAL-CITE %	DOLO-MITE %	CACO3 EQ %	GYP SUM %
973	4.89	8.1	63.8	1.6	1.6	0.8	67.8		38.1		100	4	2	30.2	0.8	31.1	
974	1.60	8.0	70.9	1.6	5.3	0.8	78.6		40.0		100	10	11	25.3	0.7	26.1	0.0
975	1.14	7.9	73.8	2.4	14.0	0.8	91.0		41.5		100	22	19	25.3	2.0	27.5	0.7
976	0.53	7.9	225.8	4.2	9.7	0.5	240.2		27.8		100	13	18	23.4	2.0	25.6	12.5
977	0.68	7.7	60.7	2.2	2.6	0.4	65.9		22.8		100	8	3	38.6	3.2	42.0	0.7
978	2.64	7.7	60.3	2.9	4.0	0.5	67.7		21.3		100	9	7	37.5	5.0	43.0	0.8
979	3.20	7.6	53.5	4.6	3.5	0.8	62.4		19.9		100	11	5	38.6	0.7	39.4	0.2

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
973	0.5	50	3.4	0.1	2.3	0.0	0.0	3.1	1.1	2.6						
974	1.7	65	5.5	0.2	17.8	0.0	0.0	3.6	5.8	8.5						
975	6.5	69	27.0	1.6	72.2	0.0	0.0	2.4	24.9	59.1						
976	6.5	87	25.0	4.1	69.2	0.1	0.0	1.8	22.5	50.0						
977	3.0	64	30.0	2.5	12.2	0.3	0.0	1.6	3.9	26.3						
978	4.0	75	29.0	3.3	29.1	0.5	0.0	2.3	8.3	36.3						
979	3.5	54	29.0	6.7	23.1	1.6	0.0	2.7	2.0	36.7						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
973												
974												
975												
976												
977												
978												
979												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: VICTORIA PEDON: S82TX-355-001 COUNTY: NUECES

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: WEST OF PETRONILA. FROM INTERSECTION OF FR 665 AND FR 892, 1.0 MI E, 0.9 MI N ALONG DIRT ROAD, 450 FT W IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 15 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/14/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-20	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
A1	20-51	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
A2	51-96	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW BLACK CONCRETIONS; MANY INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
AC1	96-124	GRAYISH BROWN (10YR 5/2) CLAY; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MANY DARK GRAY (10YR 4/1) MASSES WITHIN THE HORIZON; COMMON VERY DARK GRAY (10YR 3/1) STREAKS; FEW FINE BLACK CONCRETIONS; FEW FINE CARBONATE SEGREGATIONS AND CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
AC2	124-168	PALE BROWN (10YR 6/3) CLAY; MANY MEDIUM DISTINCT DARK GRAY (10YR 4/1) AND FEW MEDIUM FAINT BROWN (10YR 5/3) MOTTLES; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW BLACK CONCRETIONS; FEW VERY DARK GRAY (10YR 3/1) MASSES WITHIN THE HORIZON; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
CY1	168-193	PALE BROWN (10YR 6/3) CLAY; COMMON FINE DISTINCT BROWN (10YR 4/3) AND FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MANY SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
CY2	193-234	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON FE-MN STAINS; MANY SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. NO COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: VICTORIA
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: NUECES COUNTY, TEXAS

PEDON NUMBER: S82TX-355-001

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1372	0- 20	AP	0.1	0.2	0.6	5.4	10.9	17.2	14.4	25.5	20.5	57.3	C	0
1373	20- 51	A1	0.2	0.2	0.6	4.8	10.0	15.8	13.5	23.7	37.0	60.5	C	0
1374	51- 96	A2	0.1	0.2	0.5	4.6	9.6	15.0	14.4	22.0	43.0	63.0	C	0
1375	96-124	AC1	0.3	0.2	0.4	4.0	8.8	13.7	16.1	22.5	44.1	63.8	C	0
1376	124-168	AC2	0.1	0.2	0.4	3.7	8.5	12.9	12.2	20.5	43.4	66.6	C	0
1377	168-193	CY1	0.1	0.2	0.6	5.1	10.3	16.3	13.2	25.6	40.1	58.1	C	0
1378	193-234	CY2	0.2	0.1	0.8	6.3	13.2	20.6	7.7	20.2	38.6	59.2	C	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT %	ESP	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
372	1.20	8.3	70.8	6.0	0.4	1.8	79.1		43.1		100	1	1	5.1	0.5	5.7	
373	1.07	8.0	68.3	7.2	2.1	1.2	78.8		40.6		100	5	4	6.1	0.6	6.9	
374	0.84	8.0	62.9	8.7	5.2	1.3	78.1		41.5		100	11	10	7.6	0.6	8.3	
375	0.51	8.7	61.7	8.9	7.2	1.4	79.2		37.4		100	18	15	8.0	0.5	8.5	
376	0.23	7.6	101.0	7.8	8.7	1.4	118.9		39.2		100	12	10	7.2	0.9	8.2	2.5
377	0.19	7.5	168.3	6.9	9.0	1.2	185.5		31.8		100	17	11	8.2	0.3	8.5	6.2
378	0.08	7.7	146.5	6.4	9.0	1.2	163.2		29.6		100	16	14	8.0	0.5	8.6	4.9

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR G/CC	AIR DRY	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR	15 BAR
1372	0.4	73	2.1	0.3	0.9	0.1	0.0	2.7	0.1	0.4	1.19	1.80	0.148		41.7	
1373	0.5	90	1.3	0.2	3.4	0.0	0.0	3.2	0.4	0.5	1.16	1.86	0.170		41.7	
1374	0.8	103	0.8	0.1	6.7	0.0	0.0	3.8	0.4	1.5	1.13	1.88	0.185		45.4	
1375	0.9	75	0.5	0.1	8.3	0.0	0.0	3.2	1.0	2.3	1.15	1.91	0.184		46.7	
1376	5.6	97	24.0	4.9	39.6	0.2	0.0	1.8	3.7	52.5						
1377	6.7	86	25.0	5.8	43.5	0.2	0.0	1.6	8.4	87.5						
1378	7.2	80	22.5	5.8	52.6	0.2	0.0	1.7	15.0	100.0						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1372												
1373												
1374												
1375												
1376												
1377												
1378												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: VICTORIA PEDON: S82TX-355-002 COUNTY: NUECES

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: WEST OF PETRONILA. FROM INTERSECTION OF FR 665 AND FR 892, 1.0 MI N, 0.9 MI W ON DIRT ROAD, 150 FT N IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 15 SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/14/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY; WEAK MEDIUM ANGULAR BLOCKY AND MODERATE FINE GRANULAR STRUCTURE; EXTREMELY FIRM; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
A1	15-61	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK (10YR 2/1) MASSES; FEW INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
A2	61-94	VERY DARK GRAY (10YR 3/1) CLAY; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON BLACK (10YR 2/1) MASSES; FEW LIGHT GRAY (10YR 7/2) MASSES; FEW INTERSECTING SLICKENSIDES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
AC	94-127	PALE BROWN (10YR 6/3) CLAY; WEAK MEDIUM AND FINE ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MANY DARK GRAY (10YR 4/1) MASSES; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
ACKY	127-157	VERY PALE BROWN (10YR 7/3) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; SOME DARK GRAY (10YR 4/1) MASSES; COMMON CALCIUM CARBONATE SEGREGATIONS; COMMON SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
CY	157-231	VERY PALE BROWN (10YR 7/3) CLAY; COMMON MEDIUM DISTINCT BROWN (10YR 5/3) MOTTLES; STRUCTURELESS MASSIVE; EXTREMELY FIRM; SOME GRAYISH BROWN (10YR 5/2) MASSES; FEW BLACK CONCRETIONS; FEW CALCITE CRYSTALS; FEW SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT AND APPROXIMATELY 30% OF THE COTTON IN THE GENERAL SITE AREA WAS DEAD.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: VICTORIA
PEDON NUMBER: S82TX-355-002
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: NUECES COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1379	0- 15	AP	0.0	0.1	1.3	9.7	15.7	26.8	12.2	21.9	19.3	51.3	C	0
1380	15- 61	A1	0.1	0.1	1.3	8.8	14.1	24.4	12.3	21.3	36.5	54.4	C	0
1381	61- 94	A2	0.1	0.1	0.9	6.9	12.9	20.9	12.7	22.0	39.5	57.1	C	0
1382	94-127	AC	0.0	0.1	0.8	6.3	12.0	19.2	13.2	20.1	41.9	60.7	C	0
1383	127-157	ACKY	0.1	0.1	0.6	4.6	9.8	15.2	11.6	31.0	37.0	53.8	C	0
1384	157-231	CY	0.1	0.1	0.7	5.4	10.6	16.9	12.2	28.7	37.0	54.4	C	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES				KCL EXTR	NAOAC		BASE SAT			CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	CA	MG	NA	K TOTAL	AL	CEC	ECEC	---%	ESP	SAR	---%			
			MEQ/100G													
1379	0.93	8.1	63.6	6.4	0.6	1.8 72.4		36.0		100	2	1	2.1	0.3	2.5	
1380	0.69	8.1	61.7	8.1	4.8	1.1 75.7		35.5		100	12	6	4.1	0.3	4.4	
1381	0.70	8.5	58.5	9.0	9.4	1.4 78.3		34.1		100	23	12	4.3	0.8	5.2	
1382	0.44	8.3	59.1	8.9	11.1	1.5 80.6		33.3		100	25	24	4.9	0.8	5.7	
1383	0.22	7.7	217.6	7.7	12.1	1.3 238.7		28.9		100	20	18	5.4	0.8	6.3	7.3
1384	0.09	7.6	170.0	6.8	15.0	1.2 193.0		30.4		100	24	20	5.9	1.3	7.3	6.2

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1379	0.9	69	3.1	0.5	1.4	0.2	0.0	3.5	0.5	0.9	1.22	1.83	0.145		39.2	
1380	0.8	89	0.6	1.3	5.9	0.0	0.0	3.5	1.1	1.4	1.15	1.88	0.178		48.1	
1381	1.3	137	0.5	1.2	10.7	0.4	0.0	3.3	2.9	2.5	1.18	1.87	0.166		44.6	
1382	2.4	137	1.1	0.5	21.7	0.1	0.0	2.6	13.0	8.5	1.13	1.89	0.187		49.7	
1383	7.9	93	22.0	7.4	67.4	0.3	0.0	1.8	15.2	53.8						
1384	9.1	95	22.5	8.2	79.6	0.3	0.0	1.8	25.5	58.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1379												
1380												
1381												
1382												
1383												
1384												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: VICTORIA PEDON: S82TX-409-001 COUNTY: SAN PATRICIO

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: EAST OF SINTON. FROM INTERSECTION OF US 181 AND FR 1074, 1.4 MI SW, 0.3 MI W ON DIRT ROAD, 150 FT N IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 0-1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/26/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	BLACK (10YR 2/1) CLAY; WEAK MEDIUM GRANULAR STRUCTURE; VERY FIRM; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
AK1	15-68	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; MANY INTERSECTING SLICKENSIDES; COMMON MEDIUM CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; GRADUAL BOUNDARY.
AK2	68-99	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; COMMON MEDIUM CALCIUM CARBONATE CONCRETIONS; COMMON LIGHT BROWNISH GRAY (10YR 6/2) SAND POCKETS WITHIN VERTICAL CRACKS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; GRADUAL BOUNDARY.
AC	99-122	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE DISTINCT BROWN (7.5YR 4/4) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; MANY GRAY (10YR 5/1) MASSES; FEW FINE CALCIUM CARBONATE CONCRETIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
CK	122-175	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW MEDIUM FAINT GRAY (10YR 5/1) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON VERY FINE FE-MN STAINS ON PED FACES; FEW COARSE CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
CKY	175-234	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW MEDIUM DISTINCT LIGHT OLIVE BROWN (2.5Y 5/6) MOTTLES; STRUCTURELESS MASSIVE; FIRM; FEW CALCIUM CARBONATE SEGREGATIONS; FEW GYPSUM SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE PLANTED IN COTTON AT TIME OF SAMPLING. NO COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: VICTORIA
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,HYPERTHERMIC
LOCATION: SAN PATRICIO COUNTY,TEXAS

PEDON NUMBER: S82TX-409-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS %
			%											
1385	0- 15	AP	0.4	0.3	1.3	23.3	24.0	49.3	8.3	10.9	16.3	39.8	SC	0
1386	15- 68	AK1	1.2	0.8	1.2	16.2	16.7	36.1	9.2	16.0	31.9	47.9	C	0
1387	68- 99	AK2	0.6	0.4	0.8	14.4	15.1	31.3	9.6	17.1	34.8	51.6	C	0
1388	99-122	AC	0.1	0.2	0.9	16.4	15.0	32.6	10.5	18.6	29.7	48.8	C	0
1389	122-175	CK	0.0	0.1	1.0	18.9	15.7	35.7	12.3	19.2	28.5	45.1	C	0
1390	175-234	CKY	0.0	0.1	1.4	24.1	19.5	45.1	9.2	18.1	22.1	36.8	SC	0

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%		MEQ/100G								%			%			
1385	0.69	7.7	39.2	4.6	0.6	1.1	45.4		28.6		100	1	2	0.8	0.6	1.3	
1386	0.47	7.7	50.6	8.0	5.3	0.6	64.4		30.6		100	15	13	2.9	0.9	4.0	
1387	0.39	8.0	47.0	8.7	10.2	0.8	66.8		33.8		100	27	22	2.4	0.6	3.2	
1388	0.27	7.6	56.2	7.6	10.5	0.9	75.3		29.3		100	17	17	3.1	0.5	3.6	0.0
1389	0.13	7.8	50.6	6.8	10.7	0.8	68.9		26.9		100	24	22	5.9	0.6	6.6	0.0
1390	0.14	7.8	50.2	5.5	8.8	0.6	65.1		22.4		100	22	23	3.9	0.3	4.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1385	1.1	63	3.1	0.7	2.1	0.2	0.0	3.5	0.9	1.3	1.31	1.81	0.114		36.8	
1386	1.3	83	0.5	0.2	7.8	0.1	0.0	4.5	0.8	1.5	1.28	1.84	0.129		35.6	
1387	1.4	102	0.2	0.2	9.7	0.0	0.0	3.6	2.1	2.8	1.40	1.85	0.097		25.1	
1388	6.8	91	19.5	6.6	60.9	0.2	0.0	1.9	6.5	56.3	1.46	1.87	0.086		21.6	
1389	4.7	102	4.7	2.2	41.7	0.2	0.0	2.9	20.4	24.5						
1390	7.5	76	3.4	6.6	50.4	0.3	0.0	2.3	20.6	38.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1385												
1386												
1387												
1388												
1389												
1390												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: VICTORIA PEDON: S82TX-409-002 COUNTY: SAN PATRICIO

PEDON CLASSIFICATION: UDIC PELLUSTERT; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: SOUTHEAST OF SINTON. FROM INTERSECTION OF FR 1074 AND FR 893, 2.6 MI W, 0.4 MI N ALONG DIRT ROAD, 0.2 MI E OF DRAINAGE CANAL IN FIELD.

LANDFORM: UPLAND ELEVATION (M): SLOPE: 1-3% SLOPE ASPECT: W

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. T. HALLMARK AND R. B. SMITH DATE: 07/26/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-18	BLACK (10YR 2/1) CLAY; WEAK MEDIUM GRANULAR AND WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON SHELL FRAGMENTS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; ABRUPT BOUNDARY.
A	18-66	BLACK (10YR 2/1) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW SHELL FRAGMENTS; FEW SLICKENSIDES; COMMON PRESSURE FACES; FEW LIGHT BROWNISH GRAY (10YR 6/2) SAND COATINGS AND POCKETS; MODERATELY ALKALINE; SLIGHTLY EFFERVESCENT; CLEAR BOUNDARY.
AK	66-109	VERY DARK GRAY (10YR 3/1) CLAY; MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY FIRM; FEW GRAYISH BROWN (10YR 5/2) MASSES; FEW FINE SHELL FRAGMENTS; FEW CALCIUM CARBONATE CONCRETIONS; FEW CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
ACK	109-152	GRAYISH BROWN (10YR 5/2) CLAY; FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; MANY VERY PALE BROWN (10YR 7/3) MASSES; FEW DARK GRAY (10YR 4/1) STAINS ON PED FACES; COMMON COARSE CALCIUM CARBONATE SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL BOUNDARY.
CKY1	152-190	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW BLACK CONCRETIONS; COMMON CALCIUM CARBONATE SEGREGATIONS; COMMON SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; CLEAR BOUNDARY.
CKY2	190-234	YELLOWISH BROWN (10YR 5/4) SILTY CLAY LOAM; FEW MEDIUM FAINT LIGHT OLIVE BROWN (2.5Y 5/4) AND FEW MEDIUM FAINT LIGHT YELLOWISH BROWN (2.5Y 6/4) MOTTLES; WEAK MEDIUM SUBANGULAR BLOCKY PARTING TO MODERATE FINE ANGULAR BLOCKY STRUCTURE; VERY FIRM; FEW FE-MN STAINS ON PED FACES; COMMON MEDIUM CALCIUM CARBONATE CONCRETIONS; MANY CALCIUM CARBONATE SEGREGATIONS; MANY SELENITE CRYSTALS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.

REMARKS: SITE WAS PLANTED IN COTTON AT THE TIME OF SAMPLING. COTTON ROOT ROT WAS EVIDENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: VICTORIA
SOIL FAMILY: UDIC PELLUSTERT; FINE, MONTMORILLONITIC,HYPERTHERMIC
LOCATION: SAN PATRICIO COUNTY,TEXAS

PEDON NUMBER: S82TX-409-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1391	0- 18	AP	0.1	0.1	0.5	8.2	17.9	26.8	14.8	29.0	13.2	44.2	C	0
1392	18- 66	A	0.0	0.1	0.5	7.9	17.1	25.6	13.5	25.7	32.0	48.7	C	0
1393	66-109	AK	0.2	0.1	0.5	7.1	15.1	23.0	14.7	26.4	35.1	50.6	C	0
1394	109-152	ACK	0.2	0.1	0.3	5.3	11.0	16.9	17.8	30.3	31.7	52.8	C	0
1395	152-190	CKY1	0.5	0.2	0.1	2.0	9.8	12.6	20.9	36.4	29.7	51.0	C	0
1396	190-234	CKY2	1.1	0.8	0.4	2.8	12.1	17.2	24.5	46.4	20.9	36.4	SICL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1391	1.15	8.1	64.8	4.7	1.2	2.0	72.7		34.8		100	3	2	2.9	0.2	3.2	
1392	0.94	8.0	66.3	5.9	3.6	0.6	76.4		35.7		100	9	8	2.4	0.4	2.9	
1393	0.64	8.0	61.4	7.4	7.5	0.7	77.1		36.7		100	18	14	3.3	0.7	4.1	
1394	0.25	7.6	66.2	5.9	9.3	1.0	82.4		33.0		100	16	13	7.2	0.7	8.1	0.1
1395	0.22	7.5	90.4	6.0	10.3	0.7	107.5		32.8		100	18	15	10.5	0.9	11.6	1.5
1396	0.33	7.6	65.2	4.4	7.9	0.4	77.8		23.8		100	17	16	18.9	0.4	19.3	0.7

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1391	1.0	63	3.4	0.5	2.8	0.2	0.0	4.3	0.8	1.3	1.30	1.90	0.135		36.3	
1392	0.8	75	1.0	0.2	6.0	0.0	0.0	4.3	0.7	1.6	1.30	1.89	0.133		35.9	
1393	1.6	99	0.6	0.2	8.9	0.0	0.0	4.4	0.8	3.3	1.20	1.93	0.172		45.6	
1394	6.8	92	18.5	4.9	45.2	0.2	0.0	2.4	1.8	47.5						
1395	6.0	84	20.5	4.9	53.9	0.2	0.0	2.3	1.9	43.8						
1396	6.9	69	19.5	4.9	55.7	0.2	0.0	2.0	2.0	41.3						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1391												
1392												
1393												
1394												
1395												
1396												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: VICTORIA TAXADJUNCT PEDON: S83TX-355-001 COUNTY: NUECES

PEDON CLASSIFICATION: UDIC PELLUSTERT; VERY-FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM JUNCTION OF COUNTY ROAD AND TEXAS 44 IN VIOLET, 3.6 MI S ON COUNTY ROAD TO DEAD END INTO ANOTHER NON-NUMBERED COUNTY ROAD; 500 FT W TO SITE ON A. SCHROEDER FARM.

LANDFORM: UPLAND ELEVATION (M): 17 SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: BEAUMONT

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: C. L. GIRDNER, F. MINZENMAYER, J. CANFIELD, AND T. HALLMARK DATE: 01/26/83

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-25	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE MEDIUM ANGULAR BLOCKY PARTING TO MODERATE VERY FINE ANGULAR BLOCKY STRUCTURE; FIRM; VERY PLASTIC; FEW FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE SHELL FRAGMENTS; MANY SMALL SLICKENSIDES IN LOWER PORTION OF HORIZON; FEW HORIZONTAL SAND LENSES AT BOTTOM OF HORIZON; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; ABRUPT SMOOTH BOUNDARY.
A1	25-61	BLACK (10YR 2/1) CLAY, VERY DARK GRAY (10YR 3/1) DRY; MODERATE COARSE ANGULAR BLOCKY PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY PLASTIC; FEW VERY FINE ROOTS; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE SHELL FRAGMENTS; COMMON INTERSECTING SLICKENSIDES; PARALLELEPIPEDS TILTED ABOUT 30 DEGREES FROM HORIZONTAL; FEW VERTICAL CRACKS FILLED WITH SANDY LOAM MATERIAL; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
A2	61-104	VERY DARK GRAY (10YR 3/1) CLAY, DARK GRAY (10YR 4/1) DRY; MODERATE COARSE ANGULAR BLOCKY PARTING TO MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; FIRM; VERY PLASTIC; FEW VERY FINE ROOTS; FEW CALCIUM CARBONATE SEGREGATIONS; FEW FINE SHELL FRAGMENTS; CRACKS REPEATING AT ABOUT 40 CM INTERVAL FILLED WITH BLACK (10YR 2/1) CLAY; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; DIFFUSE WAVY BOUNDARY.
BA	104-137	DARK GRAY (10YR 4/1) CLAY, GRAY (10YR 5/1) DRY; MANY MEDIUM DISTINCT VERY PALE BROWN (10YR 7/3) MOTTLES; MODERATE COARSE ANGULAR BLOCKY STRUCTURE; FIRM; VERY PLASTIC; FEW VERY FINE ROOTS; FEW MEDIUM CALCIUM CARBONATE CONCRETIONS; FEW FINE SHELL FRAGMENTS; FEW SOFT SEGREGATIONS OF SALTS; COMMON LARGE SLICKENSIDES AT 45 DEGREES; VERTICAL CRACKS FILLED WITH BLACK (10YR 2/1) CLAY; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL SMOOTH BOUNDARY.
BKY	137-157	VERY PALE BROWN (10YR 7/3) CLAY, VERY PALE BROWN (10YR 8/3) DRY; COMMON FINE FAINT LIGHT BROWNISH GRAY (10YR 6/2) AND COMMON FINE DISTINCT DARK GRAY (10YR 4/1) MOTTLES; WEAK COARSE ANGULAR BLOCKY STRUCTURE; FIRM; VERY PLASTIC; FEW FINE CALCIUM CARBONATE SEGREGATIONS; FEW FINE SHELL FRAGMENTS; COMMON GYPSUM SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT; GRADUAL WAVY BOUNDARY.
BY1	157-228	VERY PALE BROWN (10YR 7/4) CLAY; FEW FINE DISTINCT STRONG BROWN (7.5YR 5/6) AND FEW FINE FAINT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; WEAK COARSE ANGULAR BLOCKY PARTING TO WEAK FINE ANGULAR BLOCKY STRUCTURE; FIRM; VERY PLASTIC; COMMON FINE GYPSUM SEGREGATIONS; MODERATELY ALKALINE; STRONGLY EFFERVESCENT.
BY2	228-305	REDDISH YELLOW (7.5YR 6/6) CLAY; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY PLASTIC; FEW FINE BLACK CONCRETIONS; FEW FINE GYPSUM SEGREGATIONS; FEW FINE SELENITE CRYSTALS; SLICKENSIDES AT ANGLES OF 30-40 DEGREES FROM HORIZONTAL; STRONGLY EFFERVESCENT.
BY3	305-457	LIGHT YELLOWISH BROWN (10YR 6/4) CLAY; FEW FINE FAINT REDDISH YELLOW (7.5YR 6/6) AND FEW FINE FAINT STRONG BROWN (7.5YR 5/6) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY PLASTIC; FEW FINE BLACK CONCRETIONS; FEW FINE GYPSUM SEGREGATIONS; SLICKENSIDES AT ANGLES OF 30-40 DEGREES FROM HORIZONTAL; STRONGLY EFFERVESCENT.
BY4	457-640	LIGHT YELLOWISH BROWN (10YR 6/4) CLAY; FEW FINE DISTINCT WHITE (2.5Y 8/2) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY PLASTIC; SLICKENSIDES AT ANGLES OF 30-40 DEGREES FROM HORIZONTAL; GYPSUM SEGREGATIONS NOTED IN UPPER PORTION OF HORIZON ONLY; STRONGLY EFFERVESCENT.
C	640-686	VERY PALE BROWN (10YR 7/4) CLAY; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY PLASTIC; FEW FINE CALCIUM CARBONATE CONCRETIONS; FEW FINE BLACK CONCRETIONS; SLICKENSIDES AT ANGLES OF 30-40 DEGREES FROM HORIZONTAL; STRONGLY EFFERVESCENT.

REMARKS: SOIL SAMPLED FROM BACKHOE PIT TO DEPTH OF 180 CM THEN FROM PROBE CORE AT GREATER DEPTH. SAMPLES ALSO TAKEN FOR MINIMUM RESISTANCE. FIELD RESISTANCE WAS ALSO DETERMINED IN THREE TRANSECTS. SOIL WAS MOIST AT TIME OF SAMPLING. SOIL IS CONSIDERED A TAXADJUNCT TO THE SERIES SINCE THE FAMILY PARTICLE-SIZE CLASS IS VERY-FINE INSTEAD OF FINE.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: VICTORIA TAXADJUNCT — PEDON NUMBER: S83TX-355-001
SOIL FAMILY: UDIC PELLUSTERT; VERY-FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: NUECES COUNTY, TEXAS

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1627	0- 25	AP	0.1	0.1	0.4	6.0	9.7	16.3	15.6	22.5	29.4	61.2	C	0
1628	25- 61	A1	0.1	0.2	0.2	4.1	7.3	11.9	16.7	22.2	44.0	65.9	C	0
1629	61-104	A2	0.0	0.1	0.2	3.6	6.4	10.3	18.6	23.6	46.5	66.1	C	0
1630	104-137	BA	0.0	0.0	0.1	2.9	5.8	8.8	18.2	23.4	47.9	67.8	C	0
1631	137-157	BKY	0.0	0.1	0.1	2.4	5.0	7.6	18.4	23.2	46.2	69.2	C	0
1632	157-228	BY1	0.1	0.0	0.0	1.8	4.0	5.9	17.8	25.6	34.2	68.5	C	0
1633	228-305	BY2	0.0	0.0	0.0	1.4	3.6	5.0	9.3	29.1	34.0	65.9	C	0
1634	305-457	BY3	0.3	0.4	0.1	0.3	0.5	1.6	35.1	40.8	32.4	57.7	SIC	0
1635	457-640	BY4	0.1	0.3	0.2	4.9	9.6	15.1	24.1	29.4	36.1	55.5	C	0
1636	640-686	C	0.1	0.1	0.0	4.5	12.8	17.5	19.3	30.7	32.6	51.8	C	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1627	1.32	7.8	70.4	6.1	1.6	1.8	80.0		44.1		100	3	3	3.9	0.6	4.6	
1628	1.21	8.0	66.2	7.3	6.2	1.2	80.9		44.6		100	13	13	3.3	0.5	3.9	
1629	1.06	8.1	64.3	8.0	11.0	1.5	84.9		45.9		100	21	28	3.8	0.5	4.3	
1630	0.67	8.0	56.9	8.3	15.7	2.0	82.8		46.3		100	30	30	5.1	0.4	5.5	
1631	0.37	7.8	83.6	6.4	14.5	1.7	106.3		41.6		100	20	14	6.6	0.5	7.2	0.0
1632	0.19	7.7	134.2	7.3	14.4	0.8	156.8		40.0		100	20	14	8.1	0.4	8.6	5.8
1633	0.19	7.7	98.0	6.3	14.4	1.5	120.1		40.8		100	24	13	9.7	0.7	10.6	2.7
1634	0.13	7.8	63.6	5.4	16.1	1.1	86.1		35.5		100	26	17	15.5	1.1	16.6	0.0
1635	0.21	7.7	59.5	5.1	15.4	1.2	81.1		33.0		100	25	20	10.6	1.1	11.8	0.0
1636	0.11	7.6	62.3	4.7	14.9	1.0	83.0		29.0		100	29	21	12.0	0.3	12.3	0.4

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	BULK DEN AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	WATER CONTENT 0.33 BAR WT%	WATER CONTENT 15 BAR WT%
1627	0.3	80	0.9	0.2	2.5	0.1	0.0	2.4	1.0	0.5	1.13	1.74	0.155		43.6	
1628	0.6	101	0.3	0.1	5.7	0.0	0.0	5.1	5.3	0.8	1.13	1.84	0.176		45.0	
1629	0.8	136	0.1	0.1	8.7	0.0	0.0	3.7	1.5	0.3	1.14	1.89	0.184		46.2	
1630	1.2	117	0.3	0.1	13.5	0.1	0.0	3.0	2.9	3.8	1.10	1.85	0.189		49.3	
1631	6.0	120	22.5	3.8	52.2	0.3	0.0	1.2	5.1	43.8	1.11	1.85	0.186		47.3	
1632	6.9	102	31.9	5.8	60.9	0.3	0.0	1.2	6.6	52.5	1.12	1.78	0.167		47.5	
1633	6.7	102	23.0	4.4	47.2	0.3	0.0	0.9	3.1	46.0						
1634	7.2	116	19.5	4.3	58.5	0.3	0.0	1.4	5.9	52.5						
1635	8.3	100	20.5	4.8	70.0	0.3	0.0	0.7	18.6	53.8						
1636	10.4	83	23.8	5.8	79.1	0.4	0.0	0.5	48.0	48.8						

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1627												
1628												
1629												
1630												
1631												
1632												
1633												
1634												
1635												
1636												

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: WALLER TAXADJUNCT PEDON: S78TX-339-004 COUNTY: MONTGOMERY

PEDON CLASSIFICATION: TYPIC OCHRAQUALF; FINE-SILTY, SILICEOUS, THERMIC

LOCATION: FROM THE INTERSECTION OF FR 1488 AND I45, ABOUT 5 MI W ON FR 1488 AND 3 MI S IN SUBDIVISION DEVELOPMENT OF THE WOODLANDS.

LANDFORM: TOESLOPE ELEVATION (M): SLOPE: <1% SLOPE ASPECT:

PARENT MATERIALS: FLUVIATILE SEDIMENTS FORMATION: BENTLEY

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: VERY POORLY DRAINED LANDUSE: FOREST

COLLECTORS: M. VESPRASKAS, T. SOBECKI, E. RIVERS AND K. KACY DATE:

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A1	0-13	LIGHT GRAY (10YR 7/1) SILT LOAM; FEW FINE FAINT YELLOWISH BROWN (10YR 5/8) MOTTLES; COARSE PLATY PARTING TO WEAK FINE GRANULAR STRUCTURE; FRIABLE; MANY FINE AND MEDIUM ROOTS; ABRUPT SMOOTH BOUNDARY.
A2	13-23	VERY PALE BROWN (10YR 7/3) SILT LOAM; COMMON FINE FAINT YELLOWISH BROWN (10YR 5/6) AND COMMON FINE FAINT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK THICK PLATY STRUCTURE; FIRM; FEW FINE AND MEDIUM ROOTS; FEW CHARCOAL FRAGMENTS LESS THAN 3 CM; ABOUT 20% OF HORIZON COMPOSED OF SAND AND SILT FILLED KROTOVINAS; CLEAR SMOOTH BOUNDARY.
A2&B1T	23-53	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; FEW FINE FAINT YELLOWISH BROWN (10YR 5/6) MOTTLES; STRUCTURELESS MASSIVE; FIRM; FEW FINE AND MEDIUM ROOTS; THIN PATCHY CLAY FILMS IN PORES; ABOUT 75% OF HORIZON OSIS AZ MATERIAL; SOME CHANNEL FERRANS AND NEOFERRANS; DARK BROWN AND BROWN (7.5YR 4/2 TO 5/4) ORGANOFERRIARGILLANS ALONG VERTICAL FRACTURE PLANES AND EXTERIORS OF SOME KROTOVINAS; COMMON KROTOVINAS (<5CM IN DIAMETER) CONTAINING STRATIFIED SAND AND SILT LAMINAE; GRADUAL SMOOTH BOUNDARY.
A2&B2T	53-78	LIGHT BROWNISH GRAY (10YR 6/2) SILT LOAM; FEW FINE FAINT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE ROOTS; THIN CONTINUOUS CLAY FILMS IN PORES; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW SMALL SILICEOUS PEBBLES; ABOUT 75% OF HORIZON IS A2 MATERIAL OF WHICH HALF IS WHITE (10YR 8/1) CELLULAR KROTOVINA INFILLINGS; GRADUAL WAVY BOUNDARY.
B21T	78-125	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM; FEW FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; WEAK VERY COARSE PRISMATIC PARTING TO MODERATE MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; FEW FINE AND MEDIUM ROOTS; THIN PATCHY GRAYISH BROWN (10YR 5/2) CLAY FILMS ON PED FACES; SOME CONTINUOUS VERY DARK GRAYISH BROWN (10YR 3/2) CLAY FILMS ON VERTICAL PED FACES; FEW SMALL SILICEOUS PEBBLES; ABOUT 50% OF HORIZON CONTAINS CELLULAR KROTOVINA MATERIAL; GRADUAL SMOOTH BOUNDARY.
B22TCSCA	125-150	LIGHT BROWNISH GRAY (10YR 6/2) SILTY CLAY LOAM; COMMON MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM AND COARSE ANGULAR BLOCKY STRUCTURE; FIRM; VERY FEW FINE AND MEDIUM ROOTS; THIN PATCHY GRAYISH BROWN (10YR 5/2) CLAY FILMS ON PED FACES; FEW SMALL SILICEOUS PEBBLES; COMMON KROTOVINAS FILLED WITH ALTERNATING SAND AND SILTY CLAY LOAM LAMINAE; FEW SALT FILAMENTS, SOME OF WHICH ARE WEAKLY CALCAREOUS; GRADUAL SMOOTH BOUNDARY.
B23TCA	150-163	LIGHT GRAY (10YR 6/1) SILTY CLAY LOAM; MANY COARSE DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; VERY FEW FINE AND MEDIUM ROOTS; THIN PATCHY VERY DARK GRAY (10YR 3/1) CLAY FILMS ON VERTICAL PED FACES; FEW FINE CARBONATE COATINGS ON PED FACES; FEW SILICEOUS PEBBLES; FEW SOFT CARBONATE SEGREGATIONS; COMMON KROTOVINAS; GRADUAL SMOOTH BOUNDARY.
IIB24TCACN	163-190	LIGHT GRAY (10YR 6/1) CLAY LOAM; MANY COARSE PROMINENT YELLOWISH RED (5YR 4/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; FIRM; VERY FEW FINE ROOTS; THICK CONTINUOUS GRAY (10YR 5/1) CLAY FILMS ON PED FACES; FEW FINE FE-MN STAINS ON PED FACES; SOME PRESSURE FACES; COMMON SOFT STRONG BROWN (7.5YR 5/8) IRON NODULES INSIDE PEDS; FEW SILICEOUS PEBBLES THAT ARE WEAKLY CEMENTED BY IRON NODULES; FEW COARSE CARBONATE NODULES WITH SOFT EXTERIORS; COMMON KROTOVINAS; GRADUAL SMOOTH BOUNDARY.
IIB25TCACN	190-248	STRONG BROWN (7.5YR 5/6) CLAY LOAM; MANY COARSE FAINT STRONG BROWN (7.5YR 5/8) MOTTLES; WEAK COARSE PRISMATIC PARTING TO MODERATE VERY COARSE SUBANGULAR BLOCKY STRUCTURE; VERY FIRM; VERY FEW ROOTS; MANY THICK CONTINUOUS GRAYISH BROWN (10YR 5/2) CLAY FILMS ALONG ROOT CHANNELS; FEW MEDIUM CALCIUM CARBONATE CONCRETIONS; COMMON KROTOVINAS; FEW FINE DISTINCT IRON-MANGANESE COATINGS ON PED FACES; COMMON ROUNDED IRON NODULES.
IIB26T	248-325	LIGHT BROWNISH GRAY (10YR 6/2) SANDY CLAY LOAM; MANY COARSE DISTINCT YELLOWISH BROWN (10YR 5/8) AND COMMON FAINT LIGHT GRAY (10YR 7/1) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; THIN CONTINUOUS LIGHT GRAY (10YR 6/1) CLAY FILMS; FEW THICK CONTINUOUS RED (2.5YR 4/8) CLAY FILMS IN CHANNELS; FEW THIN VERY DARK GRAY (10R 3/1) IRON COATINGS ON PLANES AND CHANNELS.
IIB27T	325-380	YELLOWISH BROWN (10YR 5/8) SILTY CLAY LOAM; MANY DISTINCT PALE RED (2.5YR 6/2) AND COMMON DISTINCT LIGHT GRAY (10YR 7/1) MOTTLES; WEAK FINE SUBANGULAR BLOCKY STRUCTURE; FRIABLE; FEW KROTOVINAS; CUTANS SIMILAR TO THE HORIZON ABOVE.
IIB31T	380-460	LIGHT GRAY (10YR 7/2) SILTY CLAY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/8) MOTTLES; WEAK MEDIUM PLATY STRUCTURE; FRIABLE; FEW SILICEOUS PEBBLES; FEW CLAY FILMS IN CHANNELS; VERY RED (10R 4/8) FE-MN STAINS.
IIB32T	460-513	LIGHT GRAY (10YR 7/2) SANDY LOAM; MANY DISTINCT BROWNISH YELLOW (10YR 6/8) AND COMMON PROMINENT DARK BROWN (10YR 3/3) MOTTLES; WEAK COARSE PLATY STRUCTURE; FRIABLE; FEW SILICEOUS PEBBLES; FEW THIN CONTINUOUS CLAY FILMS IN CHANNELS; FEW THIN CONTINUOUS FE-MN STAINS IN CHANNELS.

REMARKS: HORIZONS BELOW 190 CM DEPTH WERE SAMPLED AND DESCRIBED USING CORES. PEDON IS CONSIDERED A TAXADJUNCT TO THE WALLER SERIES SINCE IT IS IN A FINE-SILTY FAMILY.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: WALLER TAXADJUNCT
SOIL FAMILY: TYPIC OCHRAQUALF; FINE-SILTY, SILICEOUS,THERMIC
LOCATION: MONTGOMERY COUNTY, TEXAS

PEDON NUMBER: S78TX-339-004

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
747	0- 13	A1	0.0	0.7	6.5	17.5	13.0	37.7	36.8	54.0	3.5	8.3	SIL	0
748	13- 23	A2	0.0	0.6	6.1	15.0	16.4	38.1	39.0	54.3	3.6	7.6	SIL	0
749	23- 53	A2&B1T	0.2	0.7	5.7	13.7	13.4	33.7	40.6	57.1	5.1	9.2	SIL	0
750	53- 78	A2&B2T	0.0	0.3	4.3	11.8	10.5	26.9	44.6	58.6	8.5	14.5	SIL	1
751	78-103	B21T	0.0	0.3	3.3	6.6	12.7	22.9	44.4	57.4	11.6	19.7	SIL	0
752	103-125	B21T	0.0	0.4	2.9	9.4	8.1	20.8	43.1	56.1	13.7	23.1	SIL	0
753	125-150	B22TCSCA	0.0	0.4	4.0	7.5	13.9	25.8	36.0	50.6	14.1	23.6	SIL	1
754	150-163	B23TCA	0.5	0.6	4.7	12.7	12.1	30.6	27.3	41.4	16.8	28.0	CL	2
755	163-190	IIB24TCA	1.5	1.3	6.4	8.0	18.1	35.3	15.5	31.6	22.7	33.1	CL	8
756	190-220	IIB25TCA	0.0	0.7	6.5	11.6	18.4	37.2	15.3	34.2	20.6	28.7	CL	1
757	220-248	IIB25TCA	0.3	0.8	7.5	17.4	19.1	45.1	10.7	25.6	21.5	29.3	SCL	0
758	248-275	IIB26T	0.2	0.8	8.0	21.5	17.7	48.2	10.0	25.9	18.8	25.9	SCL	1
759	275-325	IIB26T	0.0	0.7	9.1	21.1	19.9	50.8	7.5	20.9	22.2	28.3	SCL	1
760	325-380	IIB27T	0.2	0.7	9.4	22.7	23.0	56.0	6.4	17.3	20.4	26.7	SCL	0
761	380-405	IIB31T	0.2	2.1	15.5	23.2	20.1	61.1	6.1	16.1	16.3	22.8	SCL	0
762	405-460	IIB31T	0.2	3.3	19.8	25.5	19.2	68.0	4.8	12.8	15.4	19.2	FSL	0
763	460-513	IIB32T	1.3	6.9	24.6	21.5	16.1	70.4	3.6	10.4	13.4	19.2	FSL	3

LAB NO	ORGN C	PH (H2O) 1:1	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR NAOAC AL	CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
747	1.00	4.9	2.1	0.5	0.3	0.2	3.1		7.7		40	4					
748	0.39	5.6	1.7	0.3	0.3	0.1	2.4		6.7		36	4					
749	0.25	6.1	2.0	0.4	0.7	0.2	3.3		5.3		62	13					
750	0.17	5.7	3.1	0.9	1.2	0.2	5.4		7.0		77	17					
751	0.17	5.2							10.4								
752	0.14	5.1	5.9	1.6	1.2	0.3	9.0		10.3		87	12					
753	0.12	5.2							12.3								
754	0.13	5.4							14.3								
755	0.12	7.1	11.5	2.5	1.0	0.2	15.2		18.4		83	5					
756	0.05	7.1	8.8	2.1	0.4	0.0	11.3		13.5		84	3					
757	0.05	7.0	8.4	1.9	0.4	0.1	10.8		14.1		77	3					
758	0.05	7.2	7.5	2.1	0.3	0.0	9.9		11.7		85	3					
759	0.03	7.1	6.4	1.9	0.2	0.0	8.5		9.8		87	2					
760	0.05	7.3	5.1	1.8	0.2	0.0	7.1		8.4		85	2					
761	0.06	7.0	3.7	1.4	0.1	0.0	5.2		6.4		81	2					
762	0.05	7.6	3.1	1.3	0.1	0.0	4.5		5.4		83	2					
763	0.06	7.6	3.1	1.3	0.1	0.0	4.5		5.8		78	2					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA	MG	NA	K	CO3	HCO3	CL	SO4 (MEQ/L)	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
747											1.46	1.53	0.016		34.6	
748											1.78	1.83	0.009		27.8	
749											1.72	1.77	0.010		28.9	
750	2.4										1.69	1.79	0.019		30.9	
751	3.7															
752	4.2										1.66	1.77	0.022		33.4	
753	3.4										1.68	1.88	0.038		31.6	
754	2.8										1.64	1.90	0.050		34.0	
755	2.1										1.67	2.08	0.076		34.9	
756	2.1															
757	2.8										1.69	1.95	0.049		30.5	
758																
759											1.80	2.01	0.038		28.1	
760																
761																
762											1.88	2.01	0.023		23.7	
763																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
747	**				**		*					
748												
749												
750	***				**		*					
751												
752	***				**		*					
753	***				**		*					
754												
755	**				**		*					
756												
757	**				***		*					
758												
759	*				***		*					
760												
761	T				***		*					
762												
763	T				***		*					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: WEBB PEDON: S82TX-163-001 COUNTY: FRIO

PEDON CLASSIFICATION: ARIDIC PALEUSTALF; FINE, MONTMORILLONITIC, HYPERTHERMIC

LOCATION: FROM INTERSECTION OF US 81 AND FR 140 IN PEARSALL, 14.3 MI E ON FR 140, 0.35 MI S ON FR 472, 225 FT W OF FENCE IN RANGELAND.

LANDFORM: UPLAND ELEVATION (M): 168 SLOPE: 2.5% SLOPE ASPECT: N

PARENT MATERIALS: SANDSTONE FORMATION: QUEEN CITY (EOCENE)

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: WELL DRAINED LANDUSE: RANGE

COLLECTORS: GABRIEL, GROVES, STEVENS, GIRDNER, HALLMARK, AND BRUBAKER DATE: 07/01/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-25	DARK BROWN (7.5YR 3/4) VERY FINE SANDY LOAM; WEAK FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; SLIGHTLY HARD; VERY FRIABLE; COMMON FINE ROOTS; FEW FINE PORES; FEW KROTOVINAS FILLED WITH LIGHTER COLORED VERY FINE SANDY LOAM; SLIGHTLY ACID; ABRUPT SMOOTH BOUNDARY.
BT	25-47	DARK REDDISH BROWN (5YR 3/4) SANDY CLAY; MODERATE MEDIUM PRISMATIC PARTING TO STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; MANY FINE ROOTS IN UPPER PART GRADING TO COMMON FINE ROOTS IN LOWER PART; ROOTS ARE MAINLY ALONG PED FACES; FEW FINE PORES; THIN NEARLY CONTINUOUS CLAY FILMS ON VERTICAL AND HORIZONTAL PED FACES; THIN NEARLY CONTINUOUS DARK REDDISH BROWN COATINGS ON PRISM FACES; FEW IRONSTONE FRAGMENTS 2 TO 75 MM ACROSS NEAR THE UPPER BOUNDARY; SLIGHTLY ACID; GRADUAL SMOOTH BOUNDARY.
BTK1	47-66	DARK REDDISH BROWN (5YR 3/4) SANDY CLAY LOAM; MODERATE MEDIUM PRISMATIC PARTING TO STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; COMMON FINE ROOTS ON PED FACES; FEW FINE PORES; FEW CALCIUM CARBONATE CONCRETIONS; THIN NEARLY CONTINUOUS CLAY FILMS ON VERTICAL AND HORIZONTAL PED FACES; THIN NEARLY CONTINUOUS DARK REDDISH BROWN COATINGS ON PRISM FACES; FEW FINE SOFT MASSES OF WEATHERED SANDSTONE; MATRIX IS NONCALCAREOUS; NEUTRAL; CLEAR WAVY BOUNDARY.
BTK2	66-96	YELLOWISH RED (5YR 4/6) SANDY CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; FEW FINE PORES; FEW THIN CARBONATE COATINGS ON PED FACES; FEW CALCIUM CARBONATE CONCRETIONS; THIN NEARLY CONTINUOUS CLAY FILMS AND CLAY BRIDGING ON VERTICAL PED FACES; THIN MODERATELY PATCHY CLAY FILMS AND CLAY BRIDGING ON HORIZONTAL PED FACES; FEW FINE SOFT MASSES OF WEATHERED SANDSTONE; MODERATELY ALKALINE; CALCAREOUS; GRADUAL WAVY BOUNDARY.
BTK3	96-127	YELLOWISH RED (5YR 4/6) SANDY CLAY LOAM; WEAK COARSE PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; FEW CALCIUM CARBONATE CONCRETIONS; THIN MODERATELY PATCHY CLAY FILMS AND CLAY BRIDGING MAINLY ON VERTICAL FACES OF PEDS; THIN PATCHY CLAY FILMS AND CLAY BRIDGING ON HORIZONTAL PED FACES; FEW FINE SOFT MASSES OF WEATHERED SANDSTONE; MATRIX IS NONCALCAREOUS; SLIGHTLY SALINE; MODERATELY ALKALINE; GRADUAL WAVY BOUNDARY.
BTYZ1	127-165	YELLOWISH RED (5YR 4/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS; FEW FINE PORES; THIN MODERATELY PATCHY CLAY FILMS AND CLAY BRIDGING ON VERTICAL FACES OF PRISMS; THIN PATCHY CLAY FILMS AND CLAY BRIDGING ON HORIZONTAL FACES OF PRISMS; FEW FINE SOFT MASSES OF WEATHERED SANDSTONE; FEW FERRO-MANGANESE STAINS ON VERTICAL PED FACES; ABOUT 5% BY VOLUME OF THREADS, FILMS, AND CRYSTALS OF GYPSUM MAINLY ON PRISM FACES; MODERATELY SALINE; MILDLY ALKALINE; NONCALCAREOUS; GRADUAL WAVY BOUNDARY.
BTYZ2	165-183	STRONG BROWN (7.5YR 4/6) SANDY CLAY LOAM; COMMON MEDIUM DISTINCT BROWNISH YELLOW (10YR 6/6) MOTTLES; WEAK COARSE PRISMATIC PARTING TO WEAK FINE SUBANGULA BLOCKY STRUCTURE; HARD; FRIABLE; FEW FINE ROOTS ON PED FACES; THIN MODERATELY PATCHY CLAY FILMS AND CLAY BRIDGING ON VERTICAL PRISM FACES; THIN PATCHY CLAY FILMS AND CLAY BRIDGING ON HORIZONTAL PRISM FACES; COMMON SOFT MASSES OF WEATHERED SANDSTONE; FEW THREADS, FILMS, AND CRYSTALS OF GYPSUM MAINLY ON PRISM FACES; MODERATELY SALINE; NEUTRAL; NONCALCAREOUS; CLEAR IRREGULAR BOUN
C	183-206	LIGHT GRAY (5Y 7/2) WEAKLY CONSOLIDATED BEDROCK; STRUCTURELESS MASSIVE; HARD; FRIABLE; WEAKLY CONSOLIDATED SANDSTONE CRUSHES TO SANDY CLAY LOAM; HORIZONTAL BANDS OF WEAK RED (10R 4/4) AND REDDISH YELLOW (7.5YR 6/8) COLORS PRESENT; FEW FINE ROOTS IN UPPER PART; MODERATELY SALINE; NEUTRAL; NONCALCAREOU

REMARKS: VEGETATION IDENTIFIED WAS MESQUITE, TWISTED ACACIA, WHITEBRUSH, LEATHERSTEM, PRICKLEYPEAR, HOODED WINDMILLGRASS, THREE-AWN, RAGWEED, AND HORSEMINT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: WEBB
PEDON NUMBER: S82TX-163-001
SOIL FAMILY: ARIDIC PALEUSTALF; FINE, MONTMORILLONITIC, HYPERTHERMIC
LOCATION: FRIO COUNTY, TEXAS

			PARTICLE SIZE DISTRIBUTION (MM)											
			SAND						SILT		CLAY			
LAB NO	DEPTH (CM)	HORIZON	VC (2.0-1.0)	C (1.0-0.5)	M (0.5-0.25)	F (0.25-0.10)	VF (0.10-0.05)	TOTAL (2.0-0.05)	FINE (0.02-0.002)	TOTAL (0.05-0.002)	FINE (<0.0002)	TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1326	0- 25	A	0.0	0.0	0.9	25.8	49.1	75.8	4.2	11.1	7.0	13.1	VFSL	0
1327	25- 47	BT	0.3	0.2	0.7	17.3	33.8	52.3	4.1	8.3	32.7	39.4	SC	0
1328	47- 66	BTK1	0.1	0.2	0.7	19.2	38.3	58.5	3.6	8.4	25.8	33.1	SCL	0
1329	66- 96	BTK2	0.6	0.5	0.7	17.3	39.8	58.9	3.0	9.2	22.8	31.9	SCL	0
1330	96-127	BTK3	0.2	0.3	0.8	19.3	40.0	60.6	3.0	8.3	20.5	31.1	SCL	0
1331	127-165	BTYZ1	0.1	0.2	1.0	20.7	42.2	64.2	3.1	5.3	21.0	30.5	SCL	0
1332	165-183	BTYZ2	0.2	0.1	0.6	17.9	43.3	62.1	3.6	6.8	19.6	31.1	SCL	0
1333	183-206	C	0.1	0.1	0.2	8.7	50.4	59.5	6.5	9.1	14.5	31.4	SCL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES					KCL EXTR NAOAC		BASE			CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
			CA	MG	NA	K	TOTAL	AL	CEC	ECEC	SAT	ESP	SAR				
	%	1:1	MEQ/100G								%			%			
1326	0.67	6.1	5.1	1.1	0.1	0.7	7.0		8.2		85	1	0				
1327	0.61	6.2	14.2	5.4	1.0	0.9	21.5		22.5		96	4	3				
1328	0.44	7.0	14.5	5.3	1.7	0.7	22.2		20.4		100	6	5				
1329	0.30	8.0	37.3	6.2	2.6	0.7	46.9		20.4		100	9	7	1.5	0.2	1.7	
1330	0.12	7.8	16.5	5.5	3.2	0.8	26.1		19.7		100	10	8	0.5	0.2	0.7	0.5
1331	0.08	7.4	34.4	5.2	3.1	0.8	43.4		18.8		100	8	7	0.0	0.2	0.2	4.5
1332	0.13	7.2	21.5	5.4	3.5	0.8	31.3		20.5		100	9	7	0.0	0.0	0.0	2.3
1333	0.16	7.0	20.3	6.7	5.1	0.8	32.9		25.5		100	11	8	0.0	0.0	0.0	1.4

LAB NO	SATURATED PASTE EXTRACT										BULK DEN			WATER CONTENT		
	ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	0.33 BAR	AIR DRY	COLE	0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1326	0.2	31	0.7	0.3	0.3	0.6	0.0	1.5	0.6	2.5	1.49	1.59	0.022		19.2	
1327	0.4	61	1.6	0.4	2.6	0.2	0.0	1.8	0.9	1.5	1.46	1.83	0.078		25.6	
1328	1.0	56	2.0	1.0	6.1	0.2	0.0	7.4	3.5	2.3	1.55	1.87	0.065		23.9	
1329	1.9	57	4.1	1.8	12.2	0.4	0.0	5.9	9.5	5.5	1.48	1.77	0.061		23.1	
1330	3.6	55	9.5	4.6	22.2	0.6	0.0	2.1	21.6	15.5	1.50	1.76	0.055		23.8	
1331	6.0	53	29.4	11.1	31.3	0.9	0.0	1.3	36.8	50.0	1.53	1.77	0.050		23.6	
1332	6.4	54	30.4	11.5	32.2	1.1	0.0	1.2	42.1	47.5	1.37	1.63	0.060		27.8	
1333	6.8	62	29.4	11.1	35.7	1.1	0.0	0.8	51.9	43.8	1.33	1.56	0.055		31.7	

LAB NO	CLAY MINERALOGY									SKELETAL MINERALOGY		
	SM	VR	MI	IN	KK	GI	QZ	FD	CA	QZ	FD	CA
1326	T		**		**		**			***	*	
1327												
1328	***		*		**		**			***	*	
1329												
1330												
1331												
1332												
1333	***				*		*			***	*	

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: WILSON TAXADJUNCT PEDON: S82TX-289-032 COUNTY: LEON

PEDON CLASSIFICATION: VERTIC OCHRAQUALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM JUNCTION OF FR 977 AND US 75 IN LEONA; 1.65 MI SE ON US 75; 0.4 MI E ON COUNTY ROAD; 1.3 MI SE ON PRIVATE ROAD; 100 FT E IN FIELD.

LANDFORM: UPLAND ELEVATION (M): 91 SLOPE: 0-1% SLOPE ASPECT: S

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: COOK MOUNTAIN

TOPOGRAPHY: NEARLY LEVEL DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: DRYLAND CROP

COLLECTORS: NEITSCH, CASTILLE, JURENA, CHERVENKA, BROCKMANN, AND HALLMARK DATE: 04/08/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
AP	0-15	VERY DARK GRAY (10YR 3/1) CLAY LOAM; MODERATE MEDIUM GRANULAR AND SUBANGULAR BLOCKY STRUCTURE; FIRM; COMMON FINE ROOTS; FEW FINE PORES; SLIGHTLY ACID; CLEAR SMOOTH BOUNDARY.
BT1	15-43	VERY DARK GRAY (10YR 3/1) CLAY LOAM; COMMON FINE DISTINCT YELLOWISH BROWN (10YR 5/6) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON FINE ROOTS; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW FEW PORES; COMMON BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH AP HORIZON MATERIAL; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BT2	43-107	DARK GRAY (10YR 4/1) CLAY LOAM; COMMON MEDIUM PROMINENT STRONG BROWN (7.5YR 5/8) AND COMMON FINE PROMINENT RED (2.5YR 4/8) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; THIN CONTINUOUS CLAY FILMS ON PED FACES; FEW FEW PORES; COMMON FEW BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH AP HORIZON MATERIAL; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BT3	107-152	LIGHT OLIVE BROWN (2.5Y 5/6) CLAY LOAM; COMMON MEDIUM DISTINCT DARK GRAY (10YR 4/1) MOTTLES; STRONG MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; COMMON FEW BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH AP HORIZON MATERIAL; NEUTRAL; GRADUAL WAVY BOUNDARY.
BK	152-190	BROWNISH YELLOW (10YR 6/8) CLAY LOAM; COMMON MEDIUM DISTINCT GRAY (10YR 5/1) AND FEW FINE FAINT YELLOWISH RED (5YR 5/8) MOTTLES; MODERATE MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; COMMON FEW BLACK CONCRETIONS; FEW VERTICAL CRACKS FILLED WITH AP HORIZON MATERIAL; ABOUT 2% WHITE CALCIUM CARBONATE CONCRETIONS; MATRIX IS NONCALCAREOUS; CALCAREOUS IMMEDIATELY AROUND CONCRETIONS; MODERATELY ALKALINE; GRADUAL IRREGULAR BOUNDARY.
BW	190-200	LIGHT BROWNISH GRAY (10YR 6/2) CLAY LOAM; MANY MEDIUM DISTINCT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; VERY FIRM; COMMON INTERSECTING SLICKENSIDES; FEW FEW BLACK CONCRETIONS; ABOUT 1% WHITE CALCIUM CARBONATE CONCRETIONS; MATRIX NONCALCAEOUS; CALCAREOUS IMMEDIATELY AROUND CONCRETIONS; MODERATELY ALKALINE.

REMARKS: SOIL SAMPLED FROM BACKHOE PIT. THIS SOIL IS A COMPONENT OF WILSON-CROCKETT COMPLEX. SITE IS ABOUT 25 FEET FROM S82TX-289-031. SOIL IS A TAXADJUNCT SINCE THE BT1 HORIZON DOES NOT MEET CLAY INCREASE REQUIREMENT FOR AN ARGILLIC HORIZON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: WILSON TAXADJUNCT
PEDON NUMBER: S82TX-289-032
SOIL FAMILY: VERTIC OCHRAQUALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: LEON COUNTY, TEXAS

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1320	0- 15	AP	0.4	0.3	1.0	9.7	17.7	28.5	21.5	45.4	19.7	26.1	L	0
1321	15- 43	BT1	0.4	0.2	1.3	12.2	17.7	31.8	17.3	38.8	24.2	29.4	CL	0
1322	43-107	BT2	0.3	0.2	1.1	11.3	15.8	28.7	15.1	34.4	31.3	36.9	CL	0
1323	107-152	BT3	0.4	0.2	0.7	7.7	14.6	23.6	18.8	38.5	31.8	37.9	CL	0
1324	152-190	BK	0.3	0.4	1.2	9.8	15.0	26.7	16.2	34.1	30.8	39.2	CL	0
1325	190-200	BW	0.1	0.1	0.6	13.3	20.6	34.7	13.7	31.4	26.6	33.9	CL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								%			%			
1320	1.03	6.3	15.3	4.7	0.1	0.1	20.2		22.2		91	0					
1321	0.61	5.1	13.1	5.1	0.3	0.0	18.5	1.4	22.5	19.9	82	1					
1322	0.41	5.4	15.6	6.2	0.6	0.0	22.5	1.2	25.6	23.6	88	2					
1323	0.18	7.1	20.0	7.4	1.2	0.1	28.7		26.6		100	4					
1324	0.12	7.7	24.8	7.1	1.3	0.1	33.3		25.1		100	5		0.4	0.3	0.7	
1325	0.05	7.6	17.4	5.8	1.1	0.1	24.5		22.6		100	5		0.0	0.2	0.2	

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1320											1.39	1.69	0.067		26.2	
1321											1.50	1.78	0.059		24.7	
1322											1.52	1.98	0.092		26.0	
1323											1.55	2.03	0.094		25.3	
1324											1.56	2.02	0.090		24.9	
1325																

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1320	***				**		**					
1321												
1322	***				**		**					
1323												
1324												
1325	***				**		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: WOLFPEN PEDON: S82TX-223-001 COUNTY: HOPKINS

PEDON CLASSIFICATION: ARENIC PALEUDALF; LOAMY, SILICEOUS, THERMIC

LOCATION: ABOUT 15 MI E OF SULPHUR SPRINGS ON I30, 3.8 MI S ON FM 269 TO PINE FOREST COMMUNITY CENTER, 250 FT NW OF CENTER IN PASTURE.

LANDFORM: UPLAND ELEVATION (M): 160 SLOPE: 1-3% SLOPE ASPECT:

PARENT MATERIALS: COASTAL PLAIN SEDIMENTS FORMATION: LENTIL SANDS OF WILCOX GROUP

TOPOGRAPHY: GENTLY SLOPING DRAINAGE: SOMEWHAT POORLY DRAINED LANDUSE: MEADOW

COLLECTORS: G. LANE, J. DOUGLASS, K. ROBERTS, T. HALLMARK, AND C. BRUBAKER DATE: 08/04/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-15	BROWN (10YR 4/3) LOAMY FINE SAND, BROWN (10YR 5/3) DRY; WEAK MEDIUM GRANULAR STRUCTURE; LOOSE; MANY VERY FINE ROOTS; COMMON FINE BLACK CONCRETIONS; MEDIUM ACID; CLEAR WAVY BOUNDARY.
E	15-69	PALE BROWN (10YR 6/3) LOAMY FINE SAND, VERY PALE BROWN (10YR 7/3) DRY; STRUCTURELESS SINGLE GRAIN; LOOSE; MANY VERY FINE ROOTS; SLIGHTLY ACID; CLEAR WAVY BOUNDARY.
BT1	69-79	YELLOWISH BROWN (10YR 5/6) SANDY CLAY LOAM, BROWNISH YELLOW (10YR 6/6) DRY; COMMON MEDIUM FAINT YELLOWISH BROWN (10YR 5/4) AND COMMON MEDIUM FAINT DARK YELLOWISH BROWN (10YR 3/4) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FRIABLE; COMMON VERY FINE ROOTS; FEW VERY FINE PORES; THICK CONTINUOUS DARK YELLOWISH BROWN (10YR 4/4) CLAY FILMS ON PED FACES; SLIGHTLY ACID; CLEAR WAVY BOUNDARY.
BT2	79-96	YELLOWISH BROWN (10YR 5/4) SANDY CLAY LOAM, LIGHT YELLOWISH BROWN (10YR 6/4) DRY; COMMON MEDIUM FAINT STRONG BROWN (7.5YR 5/6) AND FEW MEDIUM DISTINCT YELLOWISH RED (5YR 4/8) MOTTLES; MODERATE COARSE PRISMATIC PARTING TO WEAK MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FRIABLE; COMMON VERY FINE ROOTS; FEW VERY FINE PORES; THICK CONTINUOUS DARK YELLOWISH BROWN (10YR 4/4) CLAY FILMS ON PED FACES; STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT3	96-140	YELLOWISH BROWN (10YR 5/8) SANDY CLAY LOAM, BROWNISH YELLOW (10YR 6/8) DRY; FEW MEDIUM FAINT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE MEDIUM PRISMATIC PARTING TO MODERATE MEDIUM SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FRIABLE; COMMON VERY FINE ROOTS; FEW VERY FINE PORES; THICK CONTINUOUS DARK YELLOWISH BROWN (10YR 4/4) CLAY FILMS ON PED FACES; FEW STREAKS OF UNCOATED SAND IN LOWER PART; MEDIUM ACID; GRADUAL WAVY BOUNDARY.
BT/E	140-178	YELLOWISH BROWN (10YR 5/6) SANDY CLAY LOAM, BROWNISH YELLOW (10YR 6/6) DRY; COMMON COARSE DISTINCT RED (2.5YR 4/6) MOTTLES; MODERATE COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FRIABLE; COMMON FINE ROOTS; FEW VERY FINE PORES; CLAY FILMS ON SURFACE OF SOME PEDS; VERTICAL STREAKS 1-3 CM WIDE OF LIGHT GRAY (10YR 7/2) UNCOATED SAND EXTEND THROUGHOUT THE HORIZON AND ARE 20-35 CM APART; FEW POCKETS UP TO 12 CM ACROSS OF UNCOATED SAND GRAINS ARE IN THE LOWER PART; UNCOATED SANDS MAKE UP LESS THAN 10% BY VOLUME; FEW BLACK CONCRETIONS 5-10 CM IN DIAMETER; SLIGHTLY ACID; GRADUAL WAVY BOUNDARY.
BT	178-221	LIGHT GRAY (10YR 6/1) SANDY CLAY LOAM; MANY PROMINENT RED (2.5YR 4/6) AND MANY PROMINENT YELLOWISH BROWN (10YR 5/8) MOTTLES; WEAK MEDIUM AND COARSE SUBANGULAR BLOCKY STRUCTURE; VERY HARD; FIRM; FEW FINE ROOTS; FEW VERY FINE PORES; THIN PATCHY CLAY FILMS ON PED FACES; SLIGHTLY ACID.

REMARKS: VEGETATION WAS WELL MANAGED COASTAL BERMUDAGRASS. THE SECOND CUTTING OF HAY HAD BEEN RECENTLY BALED. THE REACTION OF THE A AND E HORIZONS IS SLIGHTLY MORE ACID THAN THE SERIES RANGE. HOWEVER, IT IS CLOSE ENOUGH TO BE IN THE LIMIT OF ERROR FOR THE PROCEDURE AND WILL NOT AFFECT MANAGEMENT.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: WOLFPEN
SOIL FAMILY: ARENIC PALEUDALF; LOAMY, SILICEOUS, THERMIC
LOCATION: HOPKINS COUNTY, TEXAS

PEDON NUMBER: S82TX-223-001

PARTICLE SIZE DISTRIBUTION (MM)

LAB NO	DEPTH (CM)	HORIZON	SAND VC (2.0-1.0)	SAND C (1.0-0.5)	SAND M (0.5-0.25)	SAND F (0.25-0.10)	SAND VF (0.10-0.05)	SAND TOTAL (2.0-0.05)	SILT FINE (0.02-0.002)	SILT TOTAL (0.05-0.002)	CLAY FINE (<0.0002)	CLAY TOTAL (<0.002)	TEXTURE CLASS	COARSE FRAGMENTS
			%											%
1438	0- 15	A	0.0	0.0	5.8	66.0	11.1	82.9	7.0	14.6	1.5	2.5	LFS	0
1439	15- 69	E	0.0	0.1	5.3	64.5	10.7	80.6	9.8	15.9	3.2	3.5	LFS	0
1440	69- 79	BT1	0.1	0.1	4.9	51.2	8.1	64.4	7.9	12.9	14.2	22.7	SCL	0
1441	79- 96	BT2	0.2	0.1	4.3	46.6	7.9	59.1	4.8	9.7	23.0	31.2	SCL	0
1442	96-140	BT3	0.0	0.0	4.3	51.9	9.8	66.0	3.2	10.3	17.7	23.7	SCL	0
1443	140-178	BT/E	0.0	0.0	4.9	61.9	11.2	78.0	4.0	10.9	9.4	11.1	FSL	0
1444	178-221	BT	0.0	0.0	4.1	49.5	9.0	62.6	5.4	11.3	17.7	26.1	SCL	0

LAB NO	ORGN C	PH (H2O)	NH4OAC EXTR BASES CA	MG	NA	K	TOTAL	KCL EXTR AL	NAOAC CEC	ECEC	BASE SAT	ESP	SAR	CAL-CITE	DOLO-MITE	CACO3 EQ	GYP SUM
	%	1:1	MEQ/100G								---%			---%			
1438	0.79	4.2	0.2	0.1	0.0	0.1	0.4	1.3	3.3	1.7	12	0					
1439	0.11	4.4	0.0	0.0	0.0	0.1	0.1	1.3	1.4	1.4	7	0					
1440	0.19	5.1	3.8	0.8	0.0	0.4	5.0	1.2	7.1	6.2	71	0					
1441	0.15	5.7	6.1	1.9	0.0	0.4	8.4		11.1		76	0					
1442	0.09	5.7	4.4	2.2	0.0	0.3	7.0		8.3		84	0					
1443	0.08	5.7	2.1	0.9	0.0	0.1	3.1		3.9		79	0					
1444	0.07	5.4	3.5	2.3	0.0	0.3	6.2		8.0		77	0					

LAB NO	SATURATED PASTE EXTRACT ELEC COND	H2O CONT	CA	MG	NA	K	CO3	HCO3	CL	SO4	BULK DEN 0.33 BAR	AIR DRY	COLE	WATER CONTENT 0.10 BAR	0.33 BAR	15 BAR
	MMHOS/CM	%	MEQ/L								G/CC		CM/CM	WT%		
1438											1.34	1.43	0.022		16.7	
1439											1.64	1.66	0.004		13.2	
1440											1.55	1.76	0.043		21.7	
1441											1.57	1.78	0.043		22.0	
1442											1.57	1.72	0.031		15.9	
1443											1.61	1.73	0.024		14.4	
1444											1.66	1.83	0.033		19.3	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1438		*	*		*		***					
1439												
1440	*	T	*		**		**					
1441												
1442												
1443												
1444	*		*		***		**					

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

SOIL SERIES: WOODTELL TAXADJUNCT PEDON: S82TX-449-002 COUNTY: TITUS

PEDON CLASSIFICATION: VERTIC HAPLUDALF; FINE, MONTMORILLONITIC, THERMIC

LOCATION: FROM JUNCTION OF LOOP 271 AND OLD PARIS ROAD NW OF MT PLEASANT, 5.6 MI W OF OLD PARIS ROAD; 50 FT N OF ROAD IN WOODS

LANDFORM: UPLAND ELEVATION (M): 118 SLOPE: 2-5% SLOPE ASPECT:

PARENT MATERIALS: CLAYEY SEDIMENTS FORMATION: WILCOX GROUP

TOPOGRAPHY: MODERATELY SLOPING DRAINAGE: MODERATELY WELL DRAINED LANDUSE: FOREST

COLLECTORS: HALLMARK, BRUBAKER, LANE, ROBERTS, GOLDEN, FOX, BROWN, DOUGLASS DATE: 08/03/82

HORIZON	DEPTH (CM)	SOIL DESCRIPTION (COLORS FOR MOIST SOIL UNLESS STATED)
A	0-5	BROWN (7.5YR 4/4) FINE SANDY LOAM; WEAK FINE GRANULAR STRUCTURE; LOOSE; MANY FINE ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
E	5-15	BROWN (7.5YR 5/4) FINE SANDY LOAM; WEAK FINE PLATY PARTING TO WEAK FINE SUBANGULAR BLOCKY STRUCTURE; LOOSE; FRIABLE; MANY FINE ROOTS; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
BT1	15-28	RED (2.5YR 4/6) CLAY; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; FEW PATCHY CLAY FILMS; FEW CRACKS AND KROTOVINAS FILLED WITH A HORIZON MATERIAL; VERY STRONGLY ACID; GRADUAL SMOOTH BOUNDARY.
BT2	28-43	RED (2.5YR 4/6) CLAY; COMMON FINE PROMINENT STRONG BROWN (7.5YR 5/6) AND FEW MEDIUM PROMINENT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; CONTINUOUS CLAY FILMS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT3	43-56	RED (2.5YR 4/8) CLAY; COMMON MEDIUM PROMINENT STRONG BROWN (7.5YR 5/6) AND FEW MEDIUM PROMINENT LIGHT BROWNISH GRAY (10YR 6/2) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; CONTINUOUS CLAY FILMS; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT4	56-76	RED (2.5YR 4/8) CLAY; MANY COARSE PROMINENT LIGHT BROWNISH GRAY (10YR 6/2) AND MANY MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; FEW INTERSECTING SLICKENSIDES; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
BT5	76-104	LIGHT BROWNISH GRAY (10YR 6/2) CLAY; MANY COARSE PROMINENT RED (2.5YR 4/8) AND MANY MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) MOTTLES; MODERATE FINE AND MEDIUM SUBANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; COMMON INTERSECTING SLICKENSIDES; VERY STRONGLY ACID; CLEAR WAVY BOUNDARY.
BC	104-119	LIGHT BROWNISH GRAY (2.5Y 6/2) CLAY; COMMON COARSE DISTINCT STRONG BROWN (7.5YR 5/6) AND COMMON MEDIUM PROMINENT RED (2.5YR 4/8) MOTTLES; WEAK MEDIUM PRISMATIC PARTING TO WEAK MEDIUM ANGULAR BLOCKY STRUCTURE; EXTREMELY HARD; VERY FIRM; COMMON FINE ROOTS; 20 TO 30% BY VOLUME STRATIFIED LENSES OF DISCONTINUOUS C MATERIAL; DISCONTINUOUS PLATY STRUCTURE; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
CB	119-135	LIGHT BROWNISH GRAY (2.5Y 6/2) SHALY CLAY; COMMON MEDIUM DISTINCT STRONG BROWN (7.5YR 5/6) AND COMMON FINE PROMINENT YELLOWISH RED (5YR 4/6) MOTTLES; WEAK FINE AND MEDIUM PLATY STRUCTURE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; COMMON THIN LENSES OF SHALE AND SANDSTONE; VERY STRONGLY ACID; CLEAR SMOOTH BOUNDARY.
C1	135-163	STRATIFIED LIGHT BROWNISH GRAY (2.5Y6/2) SHALE AND YELLOWISH RED (5YR 4/6) SANDSTONE; MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; HORIZONTAL SHALE 10-30 MM THICK; FEW LENSES OF IRONSTONE 5-8 MM THICK; FEW POCKETS OF CLEAN SAND; VERY STRONGLY ACID; GRADUAL WAVY BOUNDARY.
C2	163-203	LIGHT BROWNISH GRAY (2.5Y 6/2) SHALE AND YELLOWISH BROWN (10YR 5/6) SANDSTONE; MASSIVE; EXTREMELY HARD; VERY FIRM; FEW FINE ROOTS; SHALE STRATA 15-50 MM THICK; FEW LENSES OF SANDSTONE 5-8 MM THICK; STRONGLY ACID.

REMARKS: THE PEDON IS A TAXADJUNCT TO THE WOODTELL SERIES. OR MORE THICK WITH A COLE OF 0.09 OR MORE. EXCHANGEABLE AL IS HIGHER THAN OTHER PEDONS OF WOODTELL SOILS CHECKED. THIS PROBABLY ACCOUNTS FOR THE SLIGHTLY LOWER COLE VALUES FOR THIS PEDON.

SOIL CHARACTERIZATION LABORATORY
SOIL AND CROP SCIENCES DEPT., THE TEXAS AGRICULTURAL EXPERIMENT STATION

SOIL SERIES: WOODTELL TAXADJUNCT
SOIL FAMILY: VERTIC HAPLUDALF; FINE, MONTMORILLONITIC, THERMIC
LOCATION: TITUS COUNTY, TEXAS

PEDON NUMBER: S82TX-449-002

LAB NO	DEPTH (CM)	HORIZON	PARTICLE SIZE DISTRIBUTION (MM) SAND VC (2.0-1.0) %	SAND C (1.0-0.5) %	SAND M (0.5-0.25) %	SAND F (0.25-0.10) %	SAND VF (0.10-0.05) %	SAND TOTAL (2.0-0.05) %	SILT FINE (0.02-0.002) %	SILT TOTAL (0.05-0.002) %	CLAY FINE (<0.0002) %	CLAY TOTAL (<0.002) %	TEXTURE CLASS	COARSE FRAGMENTS %
1419	0- 5	A	0.2	0.3	0.5	14.2	21.8	37.0	9.6	54.9	4.9	8.1	SIL	0
1420	5- 15	E	2.1	0.7	0.5	19.4	28.4	51.1	14.3	40.6	3.3	8.3	L	0
1421	15- 28	BT1	0.1	0.1	0.2	6.3	11.7	18.4	15.2	25.6	38.9	56.0	C	0
1422	28- 43	BT2	0.2	0.1	0.1	5.8	10.9	17.1	15.5	25.9	41.0	57.0	C	0
1423	43- 56	BT3	0.0	0.0	0.1	4.5	10.6	15.2	18.0	31.5	34.5	53.3	C	0
1424	56- 76	BT4	0.0	0.1	0.1	5.7	13.0	18.9	19.1	34.3	26.6	46.8	C	0
1425	76-104	BT5	0.1	0.1	0.2	6.4	13.5	20.3	19.7	35.2	24.2	44.5	C	0
1426	104-119	BC	0.1	0.1	0.2	8.2	13.3	21.9	21.6	37.0	19.7	41.1	C	0
1427	119-135	CB	0.0	0.1	0.2	5.8	15.3	21.4	21.5	39.4	16.2	39.2	CL	0
1428	135-163	C1	0.2	0.3	0.3	6.1	25.0	31.9	17.1	36.3	11.5	31.8	CL	0
1429	163-203	C2	0.0	0.0	0.1	10.4	15.1	25.6	22.8	37.6	11.4	36.8	CL	0

LAB NO	ORGN C %	PH (H2O) 1:1	NH4OAC EXTR BASES CA MEQ/100G	NH4OAC EXTR BASES MG MEQ/100G	NH4OAC EXTR BASES NA MEQ/100G	NH4OAC EXTR BASES K MEQ/100G	NH4OAC EXTR BASES TOTAL MEQ/100G	KCL EXTR AL MEQ/100G	NAOAC CEC MEQ/100G	ECEC MEQ/100G	BASE SAT %	ESP %	SAR	CALCITE %	DOLOMITE %	CACO3 EQ %	GYP SUM %
1419	10.45	5.0	17.5	2.9	0.1	0.5	21.0	0.1	29.0	21.1	73	0					
1420	0.73	4.2	0.5	0.4	0.1	0.1	1.1	2.2	5.2	3.3	21	2					
1421	0.64	4.5	1.3	7.0	0.2	0.4	8.9	14.8	27.3	23.7	33	1					
1422	0.50	4.6	1.1	7.2	0.2	0.4	8.9	17.1	28.4	26.0	31	1					
1423	0.30	4.7	0.9	7.0	0.3	0.4	8.6	17.9	29.7	26.6	29	1					
1424	0.26	4.8	0.7	7.3	0.5	0.4	9.0	16.3	27.4	25.3	33	2					
1425	0.20	4.7	1.3	8.7	0.7	0.4	11.1	14.7	26.9	25.9	41	3					
1426	0.18	4.8	1.7	9.8	1.0	0.3	12.8	13.1	27.7	25.9	46	3					
1427	0.16	4.8	2.4	11.3	1.2	0.4	15.3	10.3	27.8	25.6	55	4					
1428	0.17	4.5	3.8	11.5	1.5	0.3	17.0	5.0	24.1	22.0	71	6					
1429	0.14	4.6	6.7	12.2	2.8	0.4	22.2	1.0	23.9	23.2	93	12					

LAB NO	SATURATED PASTE EXTRACT ELEC COND MMHOS/CM	H2O CONT %	CA MEQ/L	MG MEQ/L	NA MEQ/L	K MEQ/L	CO3 MEQ/L	HCO3 MEQ/L	CL MEQ/L	SO4 MEQ/L	BULK DEN 0.33 BAR G/CC	AIR DRY G/CC	COLE CM/CM	WATER CONTENT 0.10 BAR WT%	0.33 BAR WT%	15 BAR WT%
1419																
1420											1.55	1.61	0.013		15.5	
1421											1.26	1.58	0.078		33.4	
1422											1.28	1.65	0.088		32.7	
1423											1.32	1.66	0.079		31.2	
1424											1.37	1.68	0.070		28.1	
1425											1.32	1.69	0.086		32.5	
1426											1.36	1.68	0.073		30.4	
1427											1.37	1.66	0.066		29.7	
1428											1.34	1.61	0.063		28.1	
1429											1.39	1.67	0.063		27.6	

LAB NO	CLAY MINERALOGY SM	VR	MI	IN	KK	GI	QZ	FD	CA	SKELETAL MINERALOGY QZ	FD	CA
1419	T		*		**		**			***	*	
1420												
1421												
1422												
1423	***		*		**		**			***	*	
1424												
1425												
1426												
1427												
1428												
1429	***		*		**		**			***	*	

SM=SMECTITE VR=VERMICULITE MI=MICA IN=INTERSTRATIFIED
KK=KAOLINITE GI=GIBBSITE QZ=QUARTZ FD=FELDSPAR CA=CALCITE
T=TRACE *=0-10% **=10-50% ***=GREATER THAN 50%

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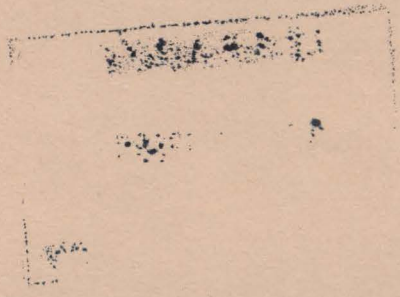

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The Texas Agricultural Experiment Station, Neville P. Clarke, Director, The Texas A&M University System, College Station, Texas