

8 Anthropogenic Soils of Central America

Mexico

USDA - NATURAL RESOURCES CONSERVATION SERVICE
PEDON DESCRIPTION

Description Date: 11/02/1991 Print Date: 08/20/2002
Describer: J. Rivera, E. Guerrero, R. Burt, D. Lytle

Site ID: 91FN595005 Pedon ID: 91FN595005
Lab Pedon #: 92P0235 Lab Source ID: SSL

Soil Name as Described/Sampled: Juandho

Pedon Type: Pedon Purpose:
Taxon Kind: Pedon Rec ID: 100,796

Location Description: 200 m W of Juandho.

Geomorphic Setting: basin
Slope Shapes - Up: linear Across:

Earth Covers - Primary: Secondary:

Parent Material:
Geologic Formation:
Bedrock Kind: Bedrock Depth:
Bedrock Hardness: Bedrock Fracture Interval:

Particle Size Control Section: 46 to 96 cm.

Diagnostic Features: **anthropic epipedon - 0 to 165 cm.**
 cambic horizon - 20 to 165 cm.
 calcic horizon - 165 to 210 cm.

Top Depth (cm)	Bottom Depth (cm)	Restriction Kind	Restriction Hardness

Slope (%)	Elevation (meters)	Aspect (deg)	MAAT (C)	MSAT (C)	MWAT (C)	MAP (mm)	Frost- Free Days	Drainage Class	Slope Length (meters)	Upslope Length (meters)
1.0	1,920.0	0	16.0	19.0	13.0	600		well		

Ap--0 to 20 cm; very dark gray (10YR 3/1), clay loam, grayish brown (10YR 5/2), dry; massive; firm, extremely hard, very sticky, moderately plastic; common very fine and fine roots throughout and common medium roots throughout; common very fine and fine tubular and common medium tubular pores; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1550. abundant earthworm activity

B--20 to 46 cm; very dark brown (10YR 2/2), clay loam; weak medium subangular blocky parting to strong medium granular structure; friable, moderately sticky, moderately plastic; common very fine and fine roots throughout; common fine and medium tubular and common very fine tubular pores; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1551. abundant earthworm activity

Bt1--46 to 76 cm; very dark brown (10YR 2/2), clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; few very fine roots throughout; common fine and medium tubular and common very fine tubular pores; 10 percent patchy faint clay films on faces of

pedes and in pores and 10 percent patchy distinct organic stains on faces of pedes and in pores; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1552

Bt2--76 to 109 cm; very dark brown (10YR 2/2), clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; common very fine and fine tubular pores; 30 percent patchy faint clay films on faces of pedes and in pores and 30 percent patchy distinct organic stains on faces of pedes and in pores; 1 percent fine spherical carbonate masses; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1553. contains a discontinuous 1-5 cm layer of loam texture

Bt3--109 to 140 cm; very dark brown (10YR 2/2), clay loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; common very fine and fine tubular pores; 30 percent patchy faint clay films on vertical faces of pedes and 30 percent patchy distinct organic stains on faces of pedes and in pores and 30 percent continuous distinct clay films in root channels and/or pores; 1 percent fine spherical carbonate masses; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1554. A discontinuous 1-5 cm layer of loam texture is at 109 cm.

Bt4--140 to 150 cm; very dark brown (10YR 2/2), loam; weak medium subangular blocky structure; friable, moderately sticky, moderately plastic; common very fine and fine tubular pores; 30 percent patchy faint clay films on vertical faces of pedes and 30 percent patchy distinct organic stains on faces of pedes and in pores and 30 percent continuous distinct clay films in root channels and/or pores; 1 percent fine spherical carbonate masses; 1 percent subrounded 2 to 75 millimeter mixed rock fragments; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1555

Bt5--150 to 165 cm; black (N 2/0), clay loam; moderate medium subangular blocky structure; friable, very sticky, moderately plastic; 30 percent patchy faint clay films on vertical faces of pedes and 75 percent patchy distinct organic stains on faces of pedes and in pores; 1 percent fine spherical carbonate masses; slight effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; abrupt smooth boundary. Lab sample # 92P1556

Ck--165 to 180 cm; 50 percent black (10YR 2/1) and 50 percent brown (10YR 4/3), sandy clay loam; massive; friable, slightly sticky, slightly plastic; 30 percent patchy distinct organic stains on faces of pedes and in pores; 1 percent fine spherical carbonate masses and 1 percent fine threadlike carbonate threads; strong effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1557. Carbonate in seams and 1-5 mm layers.

Ckq--180 to 210 cm; 30 percent very pale brown (10YR 7/4) and 70 percent dark brown (7.5YR 3/2); massive; extremely firm*, strongly cemented; 3 percent fine carbonate masses and 3 percent fine and medium platy carbonate masses and 21 percent very coarse and extremely coarse platy carbonate masses; violent effervescence, by HCl, unspecified; moderately alkaline, pH 8.0, Hellige-Truog. Lab sample # 92P1558. Cemented but not indurated by silica and carbonate; carbonate in seams and 1-5 mm layers.

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S91FN-595-005

PRINT DATE 08/21/02

SAMPLED AS : JUANDHO ; FINE-LOAMY, MIXED, HYPERTHERMIC TYPIC CAMBORTHID
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 235, SAMPLE 92P 1550- 1558

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
DEPTH (CM)	(- NH4OAC EXTRACTABLE BASES -) ACID-SUM					(- -CEC- -) EXCH			SAR	BASE SATURATION		CARBONATE AS CACO3		CASO4 AS GYPSUM		(- - -PH - - -) SAT			CAACL2 H2O	
	5B5a	5B5a	5B5a	5B5a	BASES	6H5a	5A3a	5A8b	5D2	5E	5C3	5C1	6E1g	6E4	6F1a	6F4	8C1b	8C1f	8C1f	8C1f
	6N2e	6O2d	6P2b	6Q2b																
	<- -MEQ / 100 G - - - - ->						<- -PCT - ->				<- -PCT - ->		<- -PCT - ->					1:2	1:1	
0- 20	44.1	14.1	3.4	4.7	66.3		66.3	48.5	5	4	100	100	TR					7.2	7.2	7.3
20- 46		13.8	3.3	4.4					6	5	100	100	3					7.6	7.7	8.1
46- 76		--	--	--					--	6		TR	3					7.6	7.7	8.2
76-109		12.9	3.6	4.2					7	5	100	100	2					7.6	7.6	8.2
109-140		10.8	3.5	3.4					8	7	100	100	1					7.6	7.6	8.3
140-150	23.3	7.2	2.8	2.4	35.7		35.7	28.1	9	7	100	100	TR					7.5	7.5	8.1
150-165	28.8	11.6	5.1	3.4	48.9		48.9	45.7	10	7	100	100	TR					7.3	7.3	8.0
165-180		12.5	5.1	3.6					12	8	100	100	10					7.7	7.8	8.5
180-210		11.9	4.7	3.6					11	7	100	100	10					8.0	7.8	8.3

(- -NA PYROPHOSPHATE EXTRACTABLE- -) (- -) INDEX

DEPTH (CM)	C	FE	AL	FE+AL	FE+AL	AL+C	OF
	(- -DIVIDED BY- -) ACCUM						
	6A4a	6C8a	6G10	DI-CI	PCT	PCT	
	<- PCT OF <2MM ->			FE+AL	CLAY	CLAY	
0- 20		--	0.1	0.2	--		TR

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S91FN-595-005

PRINT DATE 08/21/02

SAMPLED AS : JUANDHO ; FINE-LOAMY, MIXED, HYPERTHERMIC TYPIC CAMBORTHID
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 235, SAMPLE 92P 1550- 1558

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

		CLAY MINERALOGY (<.002mm)															
SAMPLE	FRACT ION	X-RAY	THERMAL				ELEMENTAL				EGME		INTER				
NUMBER			DTA	TGA	SiO2	AL2O3	Fe2O3	MgO	CaO	K2O	Na2O	RETN	PRETA				
		7A2i	7A6	7A4b							7C3	7D2	TION				
		peak size	Percent				Percent										
92P1550	TCLY MT 2	KK 1 MC 1 CR 1	FD 1		18.0	7.3				1.2							
92P1550	TCLY MI 1																
92P1551	TCLY MT 2	MI 1 KK 1 MC 1 CR 1			19.0	7.7				1.2							
92P1551	TCLY FD 1																
92P1552	TCLY MC 2	MT 1 MI 1 KK 1 CR 1			18.0	7.4				1.0							
92P1552	TCLY FD 1	CA 1															
92P1553	TCLY MT 2	KK 1 MC 1 MI 1 CR 1			19.0	7.9				1.2							
92P1553	TCLY CA 1	FD 1															
92P1554	TCLY MC 2	MT 1 KK 1 MI 1 CR 1			20.0	8.3				1.1							
92P1554	TCLY CA 1																
92P1555	TCLY MT 2	MI 2 MC 1 KK 1 CR 1			20.0	8.3				1.1							
92P1555	TCLY FD 1																
92P1556	TCLY MC 2	MI 1 KK 1 CR 1			22.0	8.7				1.1							
92P1557	TCLY CA 2	MC 1 MI 1 KK 1			14.0	6.3				1.0							
92P1558	TCLY CA 3	MT 1 MC 1 MI 1 KK 1			10.0	5.0				1.1							

		SAND - SILT MINERALOGY (2.0-0.002mm)															
SAMPLE	FRACT ION	X-RAY	THERMAL				OPTICAL				INTER		PRETA				
NUMBER			DTA	TGA	TOT RE	GRAIN COUNT				TION							
		7A2i	7A3b	7A4b		7B1a				7D2							
		Peak Size	Percent			Percent											
92P1550	CSi		38	QZ24	FP24	PO13	GM10	GS 9	FK 8								
92P1550	CSi			GC 4	OW 3	HN 1	MI 1	OP 1	AM 1								
92P1550	CSi			PRtr	CLtr	CATR	TMtr	ZRtr									
92P1551	CSi		34	FP28	PO17	QZ14	OW 7	GS 7	FK 7								
92P1551	CSi			GC 6	HN 4	CB 4	OP 3	CA 2	MI 1								
92P1551	CSi			BTtr	MStr	PRtr	TMtr	ZRtr									
92P1552	CSi		26	FP33	GS13	QZ11	PO10	OW 9	GC 7								
92P1552	CSi			FK 6	OP 4	AM 2	HN 2	CA 2	TM 1								
92P1552	CSi			MI 1	CB 1	BTtr	PRtr	ZRtr									
92P1553	CSi		33	FP26	QZ17	OW14	PO13	GS11	FK 5								
92P1553	CSi			GC 5	OP 2	AM 2	HN 2	PR 1	CA 1								
92P1553	CSi			CB 1	MI 1	CD 1	BTtr	SStr	TMtr								
92P1553	CSi			ZRtr													
92P1554	CSi		39	FP26	QZ21	PO13	OW 9	GS 9	FK 5								
92P1554	CSi			GC 4	OP 5	HN 2	AM 1	CA 1	BT 1								
92P1554	CSi			MItr	CDtr	TMtr	PRtr	CBtr	ZRtr								

throughout; few fine tubular pores; 1 percent insect casts; neutral, pH 7.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1428. As horizon above. Plasma is as above but is slightly aggregated and there is a thin layer of argillans around the aggregates.

Bw1--17 to 33 cm; dark red (2.5YR 3/6), clay, dark reddish brown (2.5YR 3/4) crushed, dry; weak fine and medium subangular blocky structure; very friable, slightly sticky, moderately plastic; few very fine and fine roots throughout; many very fine and fine tubular pores; discontinuous distinct dark yellowish brown (10YR 3/6) coats on all faces of peds; 1 percent insect casts; neutral, pH 7.0, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1429. As horizon above. There are few fine, rounded, nodules. No cutans, no stress.

Bw2--33 to 65 cm; dark red (2.5YR 3/6), clay, dark red (2.5YR 3/6) crushed, dry; weak coarse prismatic and weak fine and medium subangular blocky structure; very friable, slightly sticky, moderately plastic; few very fine and fine roots throughout; many very fine and fine tubular pores; continuous distinct dark yellowish brown (10YR 3/6) coats on all faces of peds; slightly acid, pH 6.5, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1430. There appears to be slight increase in silt content. No other changes in s-matrix.

Bw3--65 to 90 cm; dark red (2.5YR 3/6), clay, dark reddish brown (5YR 3/4) crushed, dry; moderate fine and medium subangular blocky and weak coarse prismatic structure; very friable, slightly sticky, moderately plastic; few very fine and fine roots throughout; many very fine and fine tubular pores; continuous distinct dark yellowish brown (10YR 3/6) coats on all faces of peds; slightly acid, pH 6.5, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1431

Bw4--90 to 120 cm; dark red (2.5YR 3/6), clay, dark reddish brown (5YR 3/4) crushed, dry; weak coarse prismatic and moderate fine subangular blocky structure; very friable, moderately sticky, moderately plastic; few very fine and fine roots throughout; many very fine and fine tubular and few medium tubular pores; continuous distinct dark yellowish brown (10YR 3/6) coats on all faces of peds; slightly alkaline, pH 7.5, Hellige-Truog; abrupt irregular boundary. Lab sample # 92P1432. There is a significant increase in silt content. Plasma is more birefringent. Nodules are larger and more frequent. No cutans, no stress.

2R--120 to 125 cm; strong effervescence, by HCl, 1 normal; limestone unweathered bedrock.

*** PRIMARY CHARACTERIZATION DATA ***
(MEXICO)

S91FN-595-022

PRINT DATE 08/21/02

SAMPLED AS : HAPLIC ALISOL ; FINE-LOAMY, MIXED, ISOHYPERThERMIC TYPIC EUTROPEPT
REVISED TO : ; VERY-FINE, MIXED, ISOHYPERThERMIC TYPIC USTROPEPT

SSL - PROJECT 92P 32, (CP92FN045) YUCATAN MEXICO
- PEDON 92P 220, SAMPLES 92P 1427- 1433
- GENERAL METHODS 1B1a, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
NATURAL RESOURCES CONSERVATION SERVICE
NATIONAL SOIL SURVEY CENTER
SOIL SURVEY LABORATORY
LINCOLN, NEBRASKA 68508-3866

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

SAMPLE NO.	DEPTH (CM)	HORIZON	(- - -TOTAL - - -)(- -CLAY- -)(- -SILT- -)(- - - - -SAND- - - - -)(-COARSE FRACTIONS(MM)-)(>2MM)																
			CLAY LT	SILT .002	SAND .05	FINE LT	CO3 LT	FINE .002	COARSE .02	VF .05	F .10	M .25	C .5	VC 1	2	5	20	.1- 75	PCT OF WHOLE
92P1427S	0- 6	AP	79.5	17.5	3.0	46.1		14.7	2.8	0.8	0.9	0.6	0.5	0.2	TR	--	--	2	TR
92P1428S	6- 17	BA	80.6	17.0	2.4	53.6		15.3	1.7	0.6	0.7	0.4	0.4	0.3	TR	TR	--	2	TR
92P1429S	17- 33	BW1	78.8	19.1	2.1	47.3		16.4	2.7	0.9	0.6	0.3	0.2	0.1	TR	--	--	1	--
92P1430N	33- 65	BW2	76.4	21.3	2.3	45.3		18.5	2.8	0.7	0.7	0.4	0.3	0.2					
92P1431S	65- 90	BW3	77.6	20.4	2.0	48.7		18.7	1.7	0.7	0.6	0.4	0.2	0.1	--	--	--	1	--
92P1432S	90-120	BW4	72.7	24.2	3.1	44.8		23.8	0.4	0.5	0.6	0.5	0.9	0.6	--	--	--	3	--
92P1433N	120-120	R																	

DEPTH (CM)	ORGN TOTAL		EXTR P	TOTAL (- - DITH-CIT - -)(RATIO/CLAY)(EXTRACTABLE)				(- BULK DENSITY -) COLE (- - -WATER CONTENT - -) WRD												
	C	N		FE	AL	MN	CEC	15	- LIMITS -	FIELD 1/3	OVEN WHOLE	FIELD 1/10	1/3	15	WHOLE					
0- 6	6A1c	6B3a	6S3	6R3b	6C2b	6G7a	6D2a	8D1	8D1	4F1	4F	4A3a	4A1d	4A1h	4D1	4B4	4B1c	4B1c	4B2a	4C1
	PCT	<2MM	PPM	<- PERCENT	OF	<2MM	-->			PCT	<0.4MM	<- - G/CC	- - ->	CM/CM	<- -	-PCT OF	<2MM	- ->	CM/CM	
0- 6	4.07	0.317	TR	TR	5.1	0.4	0.1	0.50	0.33	62	31	0.79	1.02	0.089		44.5	44.5	26.1	0.15	
6- 17	2.23	0.515	TR	TR	5.2	0.4	0.1	0.39	0.31			0.79	0.95	0.063			48.5	25.2	0.18	
17- 33	1.75	0.312	--	TR	5.0	0.4	0.1	0.37	0.31			0.93	1.05	0.041		41.2	40.6	24.2	0.15	
33- 65	0.74	0.159	TR	--	5.1	0.4	0.1	0.33	0.35	61	32	1.05	1.13	0.025		39.6	36.8	26.4	0.11	
65- 90	0.49	0.131	--	--	5.1	0.4	0.1	0.31	0.33			1.04	1.12	0.025		40.8	37.9	25.6	0.13	
90-120	0.40				5.1	0.4	0.1	0.34	0.35			1.15	1.27	0.034		39.2	35.4	25.5	0.11	
120-120																				

AVERAGES, DEPTH 25-100: PCT CLAY 77

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-022

PRINT DATE 08/21/02

SAMPLED AS : HAPLIC ALISOL ; FINE-LOAMY, MIXED, ISOHYPERThERMIC TYPIC EUTROPEPT
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 220, SAMPLE 92P 1427- 1433

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-
	(- NH4OAC EXTRACTABLE BASES -) ACID- EXTR (- - - -CEC - - -) AL -BASE SAT- CO3 AS RES. COND.(- - - -PH - - -)																			
DEPTH	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS	MMHOS	CACL2	H2O		
(CM)	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM					
	6N2e	6O2d	6P2b	6Q2b		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1g	8E1	8I	8C1f	8C1f		
	<- - - - -MEQ / 100 G - - - - -> <- - - - -PCT - - - - ->																			
0- 6	41.3	7.3	TR	3.2	51.8	9.3		61.1	39.7			85	100	--			7.0	7.2		
6- 17	29.8	4.0	--	1.1	34.9	11.5		46.4	31.7			75	100				6.6	7.0		
17- 33	26.4	6.0	TR	0.6	33.0	12.0		45.0	28.8			73	100				6.5	6.9		
33- 65	16.5	3.5	0.6	0.2	20.8	12.2		33.0	25.3			63	82				6.1	6.6		
65- 90	15.9	2.9	0.2	0.2	19.2	12.5		31.7	24.3			61	79				6.0	6.5		
90-120	25.0	3.0	0.2	0.2	28.4	10.1		38.5	24.8			74	100				6.4	6.9		
120-120	98																			

	(- -NA PYROPHOSPHATE EXTRACTABLE- -)(- -)						
DEPTH	C	FE	AL	FE+AL	FE+AL	AL+C	INDEX
(CM)	6A4a	6C8a	6G10	DI-CI	PCT	PCT	OF
	(- -DIVIDED BY- -) ACCUM						
	<- PCT OF <2MM -> FE+AL CLAY CLAY						
0- 6		0.1	0.1	TR	--		

ANALYSES: S= ALL ON SIEVED <2mm BASIS N= >2mm FRACTIONS NOT DETERMINED

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-022

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SAMPLED AS : HAPLIC ALISOL ; FINE-LOAMY, MIXED, ISOHYPERTHERMIC TYPIC EUTROPEPT
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 220, SAMPLE 92P 1427- 1433

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

		CLAY MINERALOGY (<.002mm)															
SAMPLE	ION	X-RAY				THERMAL				ELEMENTAL				EGME INTER			
NUMBER		7A2i				7A6				7A4b				7C3			
		peak size				Percent				Percent				Percent			
92P1427	TCLY	KK 3	MI 2	LE 1	GI 1	HE 1					32.0	8.0			1.2		
92P1430	TCLY	KK 3	HE 2	LE 1	MI 1						33.0	7.9			1.0		
92P1432	TCLY	KK 3	HE 2	LE 1	MI 1						34.0	7.9			0.9		

		SAND - SILT MINERALOGY (2.0-0.002mm)															
SAMPLE	ION	X-RAY				THERMAL				OPTICAL				INTER			
NUMBER		7A2i				7A3b				7A4b				7B1a			
		Peak Size				Percent				Percent				Percent			
92P1427	CSi					99	FE99	FPtr	CAtr	QZtr	GStr	AMtr					
92P1427	CSi							POTr	FKtr								
92P1430	CSi					96	FE85	QZ 9	FK 3	PR 1	OP 1	ZR 1					
92P1430	CSi							AMtr	GNtr	FCtr	POTr						
92P1432	FS					99	FE95	QZ 4	FK 1	CAtr	BTtr						

FRACTION INTERPRETATION:

TCLY Total Clay, <0.002mm CSi Coarse Silt, 0.02-0.05mm FS Fine Sand, 0.1-0.25mm

MINERAL INTERPRETATION:

KK kaolinite MI mica LE lepidocrocit GI gibbsite HE hematite FE iron oxides
 FP plag-feldspa CA calcite QZ quartz GS glass AM amphibole PO plant opal
 FK potas feldsp PR pyroxene OP opaques ZR zircon GN garnet FC microcline
 BT biotite

RELATIVE PEAK SIZE: 5 Very Large 4 Large 3 Medium 2 Small 1 Very Small 6 No Peaks

INTERPRETATION (BY HORIZON):

PEDON MINERALOGY

BASED ON SAND/SILT:

BASED ON CLAY:

characteristics. Black siliceous pebbles. One percent pebbles (limestone or gypsum).

Bt1--23 to 44 cm; dark reddish brown (2.5YR 3/4), clay, dark reddish brown (5YR 3/4) crushed, dry; moderate medium subangular blocky structure; firm, very sticky, very plastic; many very fine and fine roots throughout; few fine pores; 1 percent fine spherical iron-manganese concretions; 1 percent gypsum crystals; 5 percent subrounded 2 to 75 millimeter; neutral, pH 7.0, Hellige-Truog; clear wavy boundary. Lab sample # 92P1449. Few diffuse iron nodules in matrix similar to overlying horizon. Black siliceous pebbles.

Bt2--44 to 57 cm; dark red (2.5YR 3/6), clay, dark reddish brown (5YR 3/4) crushed, dry; weak fine and medium subangular blocky and weak fine and medium prismatic structure; firm, very sticky, very plastic; few fine roots throughout; few fine pores; 1 percent fine spherical iron-manganese concretions; 5 percent gypsum crystals; 1 percent 75 to 250 millimeter limestone-shale fragments; neutral, pH 7.0, Hellige-Truog; clear smooth boundary. Lab sample # 92P1450. Matrix is argillasepic to isotic. Cutans are poorly expressed. Nodules are few. Fabric features suggest oxic characteristics.

Bt3--57 to 80 cm; red (2.5YR 4/6), clay, reddish brown (5YR 4/4) crushed, dry; weak fine and medium prismatic and moderate fine and medium subangular blocky structure; firm, very sticky, very plastic; few fine roots throughout; few fine pores; 30 percent distinct red (2.5YR 4/6) coats on all faces of peds; 1 percent fine spherical iron-manganese concretions; 5 percent fine and medium spherical gypsum crystals; neutral, pH 7.0, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1451

Bt4--80 to 120 cm; red (2.5YR 4/6), clay, brown (7.5YR 4/4) crushed, dry; moderate fine and medium prismatic and moderate fine angular blocky structure; firm, very sticky, very plastic; few fine roots throughout; few fine pores; 30 percent distinct red (2.5YR 4/6) coats on all faces of peds; 1 percent fine spherical iron-manganese concretions; 2 percent fine and medium spherical gypsum crystals; 3 percent 2 to 75 millimeter; slightly acid, pH 6.5, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1452. Appears to be a discontinuity when compared to overlying horizon. Increase in silt and sesquioxidic nodules. Slight development of stress features. Black siliceous pebbles.

Btss1--120 to 164 cm; red (2.5YR 4/6), clay, reddish brown (5YR 4/4) crushed, dry; 1 percent fine distinct reddish yellow (7.5YR 6/8) mottles; moderate fine and medium prismatic and moderate fine angular blocky structure; firm, very sticky, very plastic; few fine roots throughout and few medium roots throughout; few fine pores; continuous distinct slickensides (pedogenic) and continuous distinct red (2.5YR 4/6) coats on all faces of peds; fine and medium platy iron-manganese masses and 2 percent fine spherical iron-manganese concretions; 2 percent fine and medium spherical gypsum crystals; 3 percent 2 to 75 millimeter; slightly acid, pH 6.5, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1453. This horizon resembles horizon above. There is about 2% cutans and stress features are slightly better developed. Slickenside faces are thin and striated, angle about 20 percent.

Btss2--164 to 258 cm; red (2.5YR 4/6), clay, reddish brown (5YR 4/4) crushed, dry; 1 percent fine distinct reddish yellow (7.5YR 6/8) mottles; moderate fine angular blocky and moderate fine and medium prismatic structure; firm, very sticky, very plastic; few fine roots throughout and few medium roots throughout; few fine pores; continuous distinct slickensides (pedogenic) and continuous distinct red (2.5YR 4/6) coats on all faces of peds; fine and medium platy iron-manganese masses and 2 percent fine spherical iron-manganese concretions; 2 percent fine and medium spherical gypsum crystals; 3 percent 2 to 75 millimeter; slightly acid, pH 6.5, Hellige-Truog; gradual smooth boundary. Lab sample # 92P1454. Slickenside faces are thin and striated, angle about 20 percent.

Btss3--258 to 293 cm; red (2.5YR 4/6), clay, brown (7.5YR 4/4) crushed, dry; 1 percent fine distinct reddish yellow (7.5YR 6/8) mottles; firm, very sticky, very plastic; few fine pores; continuous distinct red (2.5YR 4/6) coats on all faces of peds; 1 percent fine spherical iron-manganese concretions; 1 percent fine and medium spherical gypsum crystals; slightly acid, pH 6.5, Hellige-Truog; clear smooth boundary. Lab sample # 92P1455. Auger sample.

By--293 to 306 cm; red (2.5YR 4/6), clay, brown (7.5YR 5/4) crushed, dry; firm, very sticky, very plastic; few fine pores; 1 percent fine spherical iron-manganese concretions; 15 percent fine and medium spherical gypsum crystals; moderately alkaline, pH 8.0, Hellige-Truog. Lab sample # 92P1456. Auger sample.

306 cm.. Bedrock or large stone.

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-025

(MEXICO)

PRINT DATE 08/21/02

SAMPLED AS : STAGNIC LUVISOL ; FINE, MIXED ISOHYPERThERMIC MOLLIC PALEUDALF
 REVISED TO : ; VERY-FINE, KAOLINITIC, ISOHYPERThERMIC KANDIC PALEUSTALF

SSL - PROJECT 92P 32, (CP92FN045) YUCATAN MEXICO
 - PEDON 92P 223, SAMPLES 92P 1447- 1456
 - GENERAL METHODS 1B1a, 2A1, 2B

UNITED STATES DEPARTMENT OF AGRICULTURE
 NATURAL RESOURCES CONSERVATION SERVICE
 NATIONAL SOIL SURVEY CENTER
 SOIL SURVEY LABORATORY
 LINCOLN, NEBRASKA 68508-3866

SAMPLE NO.	DEPTH (CM)	HORIZON	(- - -TOTAL - - -)(- -CLAY- -)(- -SILT- -)(- - - - -SAND- - - - -)(-COARSE FRACTIONS(MM)-)(>2MM)																		
			CLAY LT	SILT .002	SAND .05	FINE LT	CO3 LT	FINE .002	COARSE .02	VF .05	F .10	M .25	C .5	VC 1	WEIGHT - - - -			WT			
			.002	-.05	-2	.0002	.002	-.02	-.05	-.10	-.25	-.50	-1	-2	-5	-20	-75	.1-	PCT OF		
			PCT OF <2MM (3A1)										PCT OF <75MM(3B1)->								SOIL
92P1447S	0- 12	AP1	70.6	13.9	15.5	40.5		12.4	1.5	1.6	3.1	4.6	3.7	2.5	TR	1	--	15	1		
92P1448S	12- 23	AP2	68.6	16.5	14.9	37.8		15.0	1.5	1.7	3.2	4.7	3.7	1.6	1	TR	--	14	1		
92P1449S	23- 44	BT1	76.4	7.3	16.3	51.1		7.3	TR	1.2	1.9	3.3	5.5	4.4	2	1	--	18	3		
92P1450S	44- 57	BT2	75.4	5.6	19.0	57.8		5.5	0.1	0.7	1.6	2.5	6.2	8.0	5	6	1	28	12		
92P1451S	57- 80	BT3	73.7	6.9	19.4	57.7		6.3	0.6	0.7	1.7	2.9	7.4	6.7	5	2	--	24	7		
92P1452S	80-120	BT4	73.7	10.9	15.4	56.2		8.5	2.4	1.0	2.0	3.1	5.1	4.2	3	1	--	18	4		
92P1453S	120-164	BTSS1	77.7	11.1	11.2	55.2		9.4	1.7	1.0	1.7	2.0	3.6	2.9	2	TR	--	12	2		
92P1454S	164-258	BTSS2	78.6	14.6	6.8	57.5		12.8	1.8	1.2	1.5	1.5	1.5	1.1	TR	TR	--	6	TR		
92P1455S	258-293	BTSS3	69.4	25.3	5.3	52.5		22.8	2.5	2.2	1.3	0.7	0.6	0.5	1	1	--	5	2		
92P1456S	293-306	BY	50.5	35.9	13.6	24.5		29.2	6.7	7.0	4.0	1.2	0.8	0.6	2	11	--	19	13		

DEPTH (CM)	ORGN TOTAL C N		EXTR TOTAL P S		EXTRACTABLE FE AL MN				CEC BAR		LIMITS - LL PI		FIELD 1/3 MOIST BAR DRY		OVEN WHOLE SOIL MOIST BAR		COLE (- - -WATER CONTENT - -) FIELD 1/10 1/3 15 WHOLE		WRD
	6A1c PCT	6B3a <2MM	6S3 PPM	6R3b PERCENT	6C2b OF	6G7a <2MM	6D2a -->	8D1	8D1	4F1 PCT	4F <0.4MM	4A3a G/CC	4A1d -->	4A1h CM/CM	4D1	4B4	4B1c	4B1c	4B2a
0- 12	2.34	0.321	5	TR	4.6	0.4	0.3	0.33	0.32	54	26	1.27	1.41	0.035	34.0	32.1	22.8	0.12	
12- 23	1.52	0.265	TR	TR	4.7	0.4	0.3	0.30	0.32			1.31	1.42	0.027	30.5	29.3	22.1	0.09	
23- 44	0.76	0.176	TR	--	4.4	0.3	0.2	0.21	0.29	53	27	1.31	1.41	0.024	31.5	28.9	22.0	0.09	
44- 57	0.50	0.147	--	--	4.1	0.3	0.2	0.17	0.28			1.41	1.47	0.013	25.5	24.4	20.8	0.05	
57- 80	0.27	0.113	TR	--	4.0	0.3	0.2	0.15	0.27			1.55	1.69	0.028	23.4	21.0	19.6	0.02	
80-120	0.20	0.101	--	--	4.1	0.3	0.2	0.16	0.27			1.54	1.64	0.021	24.1	23.1	20.2	0.04	
120-164	0.15	0.088	--	--	3.6	0.2	0.2	0.16	0.27			1.49	1.61	0.026	26.4	25.3	20.9	0.06	
164-258	0.10	0.082	TR	--	4.2	0.3	0.2	0.18	0.28			1.49	1.61	0.026	27.0	25.3	21.8	0.05	
258-293	0.11	0.073	--	TR	3.9	0.2	0.2	0.26	0.34									23.8	
293-306	0.10	0.076	TR	TR	3.1	0.2	0.2	0.60	0.53									26.7	

AVERAGES, DEPTH 23- 73: PCT CLAY 75 PCT .1-75MM 22

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-025

PRINT DATE 08/21/02

SAMPLED AS : STAGNIC LUVISOL ; FINE, MIXED ISOHYPERThERMIC MOLLIC PALEUDALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 223, SAMPLE 92P 1447- 1456

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

		CLAY MINERALOGY (<.002mm)																									
SAMPLE	ION	X-RAY				THERMAL				ELEMENTAL				EGME INTER													
NUMBER		7A2i		7A6		7A4b		7C3		SiO2		AL2O3		Fe2O3		MgO		CaO		K2O		Na2O		RETN		PRETA	
		peak size		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent		Percent	
92P1447	TCLY	KK 4	GE 2	HE 2	MI 1					33.0	7.0							0.5									
92P1449	TCLY	KK 4	GE 2	HE 1						33.0	6.6							0.4									
92P1451	TCLY	KK 5	GE 2	HE 1						32.0	6.3							0.3									
92P1456	TCLY	KK 4	MT 3	MC 2	GE 1	HE 1				29.0	5.0							0.2									

		SAND - SILT MINERALOGY (2.0-0.002mm)															
SAMPLE	ION	X-RAY				THERMAL				OPTICAL				GRAIN COUNT			
NUMBER		7A2i		7A3b		7A4b		7B1a		7B1a		7B1a		7B1a		7B1a	
		Peak Size		Percent		Percent		Percent		Percent		Percent		Percent		Percent	
92P1447	FS					97	FE69	QZ27	CA 2	BT 1	QI 1	OPtr					
92P1447	FS						FKtr										
92P1449	FS					99	FE56	QZ38	QI 5	BT 1	FKtr						
92P1451	FS					100	QZ46	FE45	QI 8	CD 1							
92P1456	VFS					86	FE82	CA14	QZ 3	QI 1	OPtr	FKtr					

FRACTION INTERPRETATION:

TCLY Total Clay, <0.002mm FS Fine Sand, 0.1-0.25mm VFS Very Fine Sand, 0.05-0.10mm

MINERAL INTERPRETATION:

KK kaolinite GE goethite HE hematite MI mica FE iron oxides QZ quartz
 CA calcite BT biotite QI iron-coat qz OP opaques FK potas feldsp CD chalcedony
 MT montmorillon MC mont-chlorit

RELATIVE PEAK SIZE: 5 Very Large 4 Large 3 Medium 2 Small 1 Very Small 6 No Peaks

INTERPRETATION (BY HORIZON):

PEDON MINERALOGY

BASED ON SAND/SILT:

BASED ON CLAY:

FAMILY MINERALOGY:

COMMENTS:

to 75 millimeter; very strongly acid, pH 4.5, Hellige-Truog; clear smooth boundary. Lab sample # 92P1500. The sandy fabric is composed of coarse grains. The minerals are glass shards and hornblende. Plagioclases are mainly the medium and fine sand sized grains. Under crossed nicols. The hornblende is well seen. Plasmic fabric is almost isotropic. No evidence of clay illuviation.

2Bt1--30 to 46 cm; brown (7.5YR 5/4), clay loam, yellowish brown (10YR 5/4) crushed, dry; moderate fine and medium subangular blocky structure; friable, very sticky, very plastic; many fine and medium roots throughout; many very fine and fine moderate continuity pores; discontinuous distinct clay films on faces of peds and in pores; 3 percent subrounded 2 to 75 millimeter; very strongly acid, pH 4.5, Hellige-Truog; clear wavy boundary. Lab sample # 92P1501. Lithologic discontinuity. Minerals present in the overlying horizon are absent. So overlying horizon is recent alluvial deposit. Plasma is brownish yellow and few thin argillans (<1%) present.

2Bt2--46 to 58 cm; brown (7.5YR 5/4), clay, yellowish brown (10YR 5/4) crushed, dry; weak fine and medium prismatic and moderate fine and medium subangular blocky structure; friable, very sticky, very plastic; few fine and medium roots throughout; many very fine and fine moderate continuity pores; discontinuous distinct clay films on faces of peds and in pores; 3 percent subrounded 2 to 75 millimeter; very strongly acid, pH 4.5, Hellige-Truog; clear wavy boundary. Lab sample # 92P1502. Matrix as in overlying horizon. Few small biotite flakes are present. Argillans are thin and <1%.

2Bt3--58 to 100 cm; yellowish red (5YR 5/6), silty clay loam, yellowish brown (10YR 5/4) crushed, dry; weak fine and medium prismatic and weak fine and medium subangular blocky structure; few fine and medium roots throughout; few very fine and fine moderate continuity pores; discontinuous distinct clay films on faces of peds and in pores; very strongly acid, pH 4.5, Hellige-Truog; abrupt smooth boundary. Lab sample # 92P1503. Matrix as in overlying horizon. There is slight increase in cutans >1%.

3Cr--100 to 120 cm; unweathered bedrock, yellowish brown (10YR 5/4) crushed, dry; strong thick platy structure; very strongly acid, pH 4.5, Hellige-Truog. Lab sample # 92P1504. Paralithic shale. Lithologic discontinuity. Significant increase in silt. No plasma differentiation. Possibly old C horizon.

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-031

PRINT DATE 08/21/02

SAMPLED AS : ORTIC ACRISOL ; FINE, MIXED, ISOHYPERTHERMIC TYPIC HAPLUDALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 229, SAMPLE 92P 1498- 1505

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-										
	(- NH4OAC EXTRACTABLE BASES -)															ACID-	EXTR	(- - - -CEC - - -)			AL	-BASE	SAT-	CO3	AS	RES.	COND.(- - - -PH - - -)			
DEPTH	CA	MG	NA	K	SUM	ITY	AL	SUM	NH4-	BASES	SAT	SUM	NH4	CACO3	OHMS	MMHOS	KCL	CACL2	H2O											
(CM)	5B5a	5B5a	5B5a	5B5a	BASES			CATS	OAC	+ AL			OAC	<2MM	/CM	/CM	IN	.01M												
	6N2e	6O2d	6P2b	6Q2b		6H5a	6G9c	5A3a	5A8b	5A3b	5G1	5C3	5C1	6E1g	8E1	8I	8C1g	8C1f	8C1f											
	<- - - - -MEQ /					100	G	<- - - - ->					<- - - - -PCT - - ->																	
0- 2	11.8	2.1	--	0.2	14.1	3.7		17.8	10.0			79	100						5.1	5.4										
2- 5	1.7	0.4	--	0.1	2.2	2.1	--	4.3	2.5			51	88						4.8	5.2										
5- 30	7.0	1.3	--	0.2	8.5	16.6	1.9	25.1	16.8	10.4	18	34	51						4.5	4.9										
30- 46	11.4	2.2	TR	0.2	13.8	15.0	4.9	28.8	22.2	18.7	26	48	62						4.2	4.7										
46- 58	11.8	2.5	--	0.3	14.6	18.0	5.1	32.6	25.0	19.7	26	45	58						4.2	4.9										
58-100	10.9	3.2	--	0.3	14.4	21.3	11.3	35.7	29.6	25.7	44	40	49						4.1	4.8										
100-120	8.2	3.4	TR	0.2	11.8	16.1	8.4	27.9	23.1	20.2	42	42	51				3.7	4.1	4.8											
98-100	10.0	3.4	--	0.2	13.6	25.0		38.6	30.3			35	45																	

	(- -NA PYROPHOSPHATE EXTRACTABLE- -)(- -)										INDEX		
DEPTH	C	FE	AL	FE+AL	FE+AL	AL+C	OF	(- -DIVIDED BY- -) ACCUM					
(CM)	6A4a	6C8a	6G10	DI-CI	PCT	PCT							
	<- PCT OF <2MM ->		FE+AL	CLAY	CLAY								
0- 2		0.1	0.1	0.3	TR							.3	0.2

*** PRIMARY CHARACTERIZATION DATA ***

S91FN-595-031

PRINT DATE 08/21/02

SAMPLED AS : ORTIC ACRISOL ; FINE, MIXED, ISOHYPERTHERMIC TYPIC HAPLUDALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 92P 229, SAMPLE 92P 1498- 1505

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

		CLAY MINERALOGY (<.002mm)																				
SAMPLE	FRACT	X-RAY				THERMAL				ELEMENTAL				EGME		INTER						
NUMBER	ION	7A2i				DTA				TGA				SiO2	AL2O3	Fe2O3	MgO	CaO	K2O	Na2O	RETN	PRETA
		peak size				Percent				Percent				7C3		7D2		TION				
92P1498	TCLY	MI 2	VR 2	KK 1	GE 1					10.0	4.4							1.2				
92P1500	TCLY	KK 2	VR 2	MI 2	VC 1					22.0	7.6							1.2				
92P1501	TCLY	VR 2	KK 2	MM 2	MI 2	VC 1				23.0	9.6							1.5				
92P1501	TCLY	GE 1																				
92P1503	TCLY	MT 3	VR 2	KK 2	MI 2	VC 1				23.0	10.6							1.5				
92P1503	TCLY	MM 1	GE 1	LE 1																		

		SAND - SILT MINERALOGY (2.0-0.002mm)														
SAMPLE	FRACT	X-RAY				THERMAL				OPTICAL				INTER		
NUMBER	ION	7A2i				DTA				TGA				TOT RE	GRAIN COUNT	PRETA
		Peak Size				Percent				Percent				7B1a		TION
92P1498	FS					3	FP58	HN15	GS10	PR 7	FG 5	FK 2				
92P1498	FS						OP 1	BT 1	FE 1	QZ 1	OW 1	TMtr				
92P1498	FS						GCtr	GMtr								
92P1499	FS						OT79	GS10	FG 6	GC 5	GM 1					
92P1500	FS						OT89	FG 8	GC 2	HG 1	GStr	GMtr				
92P1501	CSi						OT97	GS 2	FG 1	POtr	GCtr					
92P1502	CSi						OT97	PO 1	GS 1							
92P1503	CSi						OT99	GStr								

FRACTION INTERPRETATION:

TCLY Total Clay, <0.002mm FS Fine Sand, 0.1-0.25mm CSi Coarse Silt, 0.02-0.05mm

MINERAL INTERPRETATION:

MI mica	VR vermiculite	KK kaolinite	GE goethite	FP plag-feldspa	HN hornblende
GS glass	PR pyroxene	FG gc feldspar	FK potas feldsp	OP opaques	BT biotite
FE iron oxides	QZ quartz	OW oth-weath mn	TM tourmaline	GC glas-coat gr	GM glassy mater
OT other	VC verm-chlorit	HG gc hornblend	MM mont-mica	PO plant opal	MT montmorillon
LE lepidocrocit					

RELATIVE PEAK SIZE: 5 Very Large 4 Large 3 Medium 2 Small 1 Very Small 6 No Peaks

Panama

NARRATIVE PEDON DESCRIPTION

Pedon: Jacu
Soil Survey Number S82-FN-710-002
Location: Panama
2 and 7 tenths km E of Almendro town in Asentamiento 11 de Octubre
No. 1, Progreso Compartment, Baru District.
Physiography: Flood plain in level or undulating uplands
Slope:
Precipitation: 30 cm - Udic Moisture Regime.
Drainage: Well drained
Stoniness: Erosion or Deposition:
Parent Material: alluvium from sedimentary material
Classification: Coarse-loamy, mixed, isohyperthermic Aquic Dystropept
Diagnostic Horizons:
Described By: O. L. Rice, Jr., C. Burgos, W. Bejarano

NSSL Pedon Number: 83P0082
Print Date: 08/20/02
Elevation: 20 m MSL
Land Use: Cropland irrigated
Runoff:
Sample Date: 05/82

Ap -- 0 to 15 cm; dark brown (7.5YR 3/2) interior moist sandy loam and pale brown (10YR 6/3) interior dry sandy loam; few fine distinct mottles; weak fine granular structure; , friable, nonsticky, nonplastic; common very fine roots; common very fine and fine tubular pores; abrupt smooth boundary.
83P0352

Ac -- 15 to 35 cm; brown to dark brown (7.5YR 4/4) interior moist very fine sandy loam; massive parting to weak fine granular; soft, very friable, nonsticky, nonplastic; common very fine roots; common very fine and fine tubular pores; clear wavy boundary. One 8 by 20 cm **krotavina** of loamy sand.
83P0353

C1 -- 35 to 57 cm; brown to dark brown (10YR 4/3) interior moist loamy very fine sand; few fine prominent and few fine prominent mottles; massive; loose, very friable, nonsticky, nonplastic; few very fine roots; few very fine tubular pores; gradual wavy boundary.
83P0354

C2 -- 57 to 72 cm; brown to dark brown (10YR 4/3) interior moist loamy fine sand; common medium prominent and common coarse prominent mottles; massive; loose, very friable, nonsticky, nonplastic; few very fine roots; common very fine tubular pores; abrupt smooth boundary.
83P0355

C3 -- 72 to 100 cm; brown (10YR 5/3) interior moist loamy fine sand; common coarse prominent and common coarse prominent mottles; massive; loose, very friable, nonsticky, nonplastic; few very fine roots; common very fine tubular pores. Groundwater at about 80 cm.
83P0356

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S82FN-710-002

PRINT DATE 08/20/02

SAMPLED AS : JACU' ; COARSE-LOAMY, MIXED, ISOHYPERThERMIC AQUIC DYSTROPEPT
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 83P 82, SAMPLE 83P 352- 356

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-																														
	CLAY MINERALOGY (<.002mm)																																																	
	X-RAY										THERMAL										ELEMENTAL																													
SAMPLE	ION										DTA										TGA										SiO2 AL2O3 Fe2O3 MgO CaO K2O Na2O										EGME INTER									
	7A2i										7A6										7A4b										7C3										7D2 TION									
NUMBER	peak size										Percent										Percent																													
83P 353	TCLY	KH 1	NX 6																		4.7																			0.4										
83P 354	TCLY	KH 1	NX 6																		4.6																			0.3										
83P 355	TCLY	NX 6																		4.4																			0.4											

FRACTION INTERPRETATION:

TCLY Total Clay, <0.002mm

MINERAL INTERPRETATION:

KH halloysite NX n-crystalline

RELATIVE PEAK SIZE: 5 Very Large 4 Large 3 Medium 2 Small 1 Very Small 6 No Peaks

INTERPRETATION (BY HORIZON):

PEDON MINERALOGY

BASED ON SAND/SILT:

BASED ON CLAY:

FAMILY MINERALOGY:

COMMENTS:

NARRATIVE PEDON DESCRIPTION

Pedon: Panama 006
 Soil Survey Number S82-FN-710-006
 Location: Panama

NSSL Pedon Number: 83P0319
 Print Date: 08/20/02

Physiography: in coastal plains
 Geomorphic Position: summit interfluve
 Slope: 1% plane
 Water Table Depth:
 Drainage: Poorly drained
 Stoniness: Class 0 Erosion or Deposition:
 Particle Size Control Section: 25 to 100 cm
 Parent Material: marine from mixed material
 Classification: Fine, mixed, isohyperthermic
 Diagnostic Horizons:
 Described By: R. Bryant, S. Jaramillo, B. Name, J. Kimble
 Clean quartz grains throughout profile

Elevation: 15 m MSL
 Permeability: Slow
Land Use: Cropland
 Runoff:

Sample Date: 10/82

Ap1 -- 0 to 10 cm; dark gray (10YR 4/1) interior moist clay loam; common distinct mottles; weak medium subangular blocky structure; hard, firm, very sticky, very plastic; few fine roots throughout; neutral (pH=6.5); abrupt smooth boundary.
 83P1465

Ap2 -- 10 to 23 cm; dark grayish brown (10YR 4/2) interior moist clay loam; many distinct mottles; weak medium subangular blocky structure; hard, firm, very sticky, very plastic; few fine roots throughout; few medium pores; very strongly acid (pH=4.5); clear smooth boundary.
 83P1466

Bw -- 23 to 36 cm; grayish brown (10YR 5/2) interior moist clay; many distinct mottles; moderate medium subangular blocky structure; hard, firm, very sticky, very plastic; few fine roots throughout; few medium pores; strongly acid (pH=5.0); clear smooth boundary.
 83P1467

Bg1 -- 36 to 71 cm; gray (2.5Y 5/0) interior moist clay; common distinct mottles; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, very sticky, very plastic; few very fine and fine roots throughout; few medium pores; many patchy intersecting slickensides on faces of peds; strongly acid (pH=5.0); gradual smooth boundary.
 83P1468

Bg2 -- 71 to 98 cm; grayish brown (2.5Y 5/2) interior moist clay; many faint mottles; weak medium prismatic structure parting to moderate medium subangular blocky; hard, firm, very sticky, very plastic; few very fine and fine roots throughout; few fine pores; strongly acid (pH=5.0); gradual wavy boundary.
 83P1469

2Bg3 -- 98 to 127 cm; light brownish gray (2.5Y 6/2) interior moist clay; common distinct and common distinct mottles; weak medium prismatic structure parting to weak medium subangular blocky; hard, firm, slightly sticky; very strongly acid (pH=4.5); clear wavy boundary.
 83P1470

3Bw --127 to 164 cm; light brownish gray (10YR 6/2) interior moist clay loam; many distinct and common faint mottles; weak coarse prismatic structure parting to weak coarse subangular blocky; hard, friable, slightly sticky; strongly acid (pH=5.0).
 83P1471

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S82FN-710-006

PRINT DATE 08/20/02

SAMPLED AS : PANAMA NO. 6 ; FINE, MIXED, ISOHYPERTHERMIC AERIC TROPAQUALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 83P 319, SAMPLE 83P 1465- 1471

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

		CLAY MINERALOGY (<.002mm)															
SAMPLE	ION	X-RAY	DTA	TGA	SiO2	AL2O3	Fe2O3	MgO	CaO	K2O	Na2O	RETN	PRETA				
NUMBER	peak size	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
83P1467	TCLY	KK 4														4.6	
83P1468	TCLY	KK 5 MT 2 QZ 1														5.1	
83P1469	TCLY	KK 5 MT 2 QZ 1														5.3	

		SAND - SILT MINERALOGY (2.0-0.002mm)															
SAMPLE	ION	X-RAY	DTA	TGA	TOT RE	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	GRAIN COUNT	
NUMBER	Peak Size	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	
83P1467	VFS		76	RE76	WE24												
83P1469	VFS		21	WE79	RE21												

FRACTION INTERPRETATION:

TCLY Total Clay, <0.002mm VFS Very Fine Sand, 0.05-0.10mm

MINERAL INTERPRETATION:

KK kaolinite RE resist miner WE wthr mineral MT montmorillon QZ quartz

RELATIVE PEAK SIZE: 5 Very Large 4 Large 3 Medium 2 Small 1 Very Small 6 No Peaks

INTERPRETATION (BY HORIZON):

PEDON MINERALOGY

BASED ON SAND/SILT:

BASED ON CLAY:

FAMILY MINERALOGY:

COMMENTS:

NARRATIVE PEDON DESCRIPTION

Pedon: Panama 008	NSSL Pedon Number: 83P0321
Soil Survey Number S82-FN-710-008	Print Date: 08/20/02
Location: Panama	
Physiography: Hillside or mountainside in level or undulating uplands	
Geomorphic Position: backslope sideslope	
Slope: 3% complex southeast facing	Elevation: 14 m MSL
Precipitation: 100 cm - Moisture Regime.	
Water Table Depth:	Permeability: Rapid
Drainage: Well drained	Land Use: Cropland
Stoniness: Class 0 Erosion or Deposition:	Runoff:
Particle Size Control Section: 30 to 80 cm	
Parent Material: marine from mixed material	
Classification: Fine, montmorillonitic, isohyperthermic Udic Haplustalf	
Diagnostic Horizons:	
Described By: R. Bryant, S. Jaramillo, B. Name, J. Kimble	Sample Date: 10/82

Line of broken pottery at 61 cm

Ap -- 0 to 15 cm; strong brown (7.5YR 4/6) interior moist clay; moderate medium subangular blocky structure; slightly hard, firm, slightly sticky, slightly plastic; many very fine and fine roots throughout; few fine pores; neutral (pH=6.5); clear smooth boundary.
83P1479

AB -- 15 to 30 cm; strong brown (7.5YR 4/6) interior moist clay; moderate medium subangular blocky structure; hard, firm, sticky, slightly plastic; many very fine and fine roots throughout; common very fine and fine pores; neutral (pH=6.5); clear smooth boundary.
83P1480

Bt1 -- 30 to 61 cm; reddish brown (5YR 4/4) interior moist clay; moderate medium subangular blocky structure; hard, firm, sticky, slightly plastic; common very fine and fine roots throughout; common very fine and fine pores; continuous clay films on faces of peds; neutral (pH=7.0); clear smooth boundary.
83P1481

Bt2 -- 61 to 89 cm; reddish brown (5YR 4/4) interior moist clay; moderate medium subangular blocky structure; hard, firm, sticky, slightly plastic; common very fine and fine roots throughout; few very fine and fine pores; continuous clay films on faces of peds and few continuous intersecting slickensides on faces of peds; mildly alkaline (pH=7.5); diffuse smooth boundary.
83P1482

Bt3 -- 89 to 128 cm; reddish brown (5YR 4/4) interior moist clay; weak coarse prismatic structure parting to moderate medium subangular blocky; hard, firm, sticky, slightly plastic; common very fine and fine roots throughout; few fine pores; continuous clay films on faces of peds and many continuous intersecting slickensides on faces of peds; mildly alkaline (pH=7.5); clear smooth boundary. Coarse fragments highly weathered and 8 to 15 cm in diameter
83P1483

2Bt4 --128 to 179 cm; reddish brown (5YR 4/4) interior moist clay; weak coarse prismatic structure parting to moderate coarse subangular blocky; slightly hard, firm, slightly sticky, slightly plastic; few fine roots throughout; many fine pores; many continuous clay films on faces of peds and many continuous black stains on faces of peds; few fine rounded iron-manganese concretions; moderately alkaline (pH=8.0); 15 percent stones.
83P1484

*** P R I M A R Y C H A R A C T E R I Z A T I O N D A T A ***

S82FN-710-008

PRINT DATE 08/20/02

SAMPLED AS : PANAMA NO. 8 ; FINE, MONTMORILLONITIC, ISOHYPERThERMIC UDIC HAPLUSTALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 83P 321, SAMPLE 83P 1479- 1484

	-1--	-2--	-3--	-4--	-5--	-6--	-7--	-8--	-9--	-10-	-11-	-12-	-13-	-14-	-15-	-16-	-17-	-18-	-19-	-20-		
DEPTH (CM)	5B5a	5B5a	5B5a	5B5a	6Q2b	6H5a	5A3a	5A8b	5D2	5E	5C3	5C1	6E1g	8E1	6F1a	6F4	8C1b	8C1f	8C1f			
	(- NH4OAC EXTRACTABLE BASES -)				ACID-		(- -CEC- -)		EXCH	SAR	BASE	CO3 AS	RES.	CASO4 AS	(- - - -PH - - -)							
	CA	MG	NA	K	SUM	ITY	SUM	NH4-	NA		SATURATION	CACO3	OHMS	GYP SUM	SAT	CACL2	H2O					
	6N2e	6O2d	6P2b	6Q2b	BASES		CATS	OAC			SUM NH4OAC	<2MM	/CM	<2MM	<20MM	PASTE	.01M					
	<- - - - -MEQ / 100 G - - - - ->						<- - - - ->		PCT		<- -PCT- >	PCT		<- -PCT- >			1:2	1:1				
0- 15	29.8	11.7	0.3	0.9	42.7	9.0	51.7	41.8	1		83	100								6.4	6.4	
15- 30	27.2	10.2	0.6	0.4	38.4	8.9	47.3	40.3	1		81	95								6.3	6.6	
30- 61	25.0	10.1	0.9	0.5	36.5	7.6	44.1	37.8	2		83	97								6.5	6.5	
61- 89	21.5	10.9	1.2	0.4	34.0	5.6	39.6	34.2	3		86	99	--							7.0	7.0	
89-128	26.9	13.9	1.6	0.6	43.0	4.7	47.7	35.6	4	3	90	100	TR	1400						7.7	7.8	8.0
128-179	29.3	20.3	3.3	0.6	53.5	4.5	58.0	46.8	6	5	92	100	TR		--					7.8	7.9	8.0

DEPTH (CM)	CA	MG	NA	K	CO3	HCO3	F	CL	PO4	Br	OAC	SO4	NO2	NO3	H2O	TOTAL SALTS EST.	ELEC. COND. 8A3a	ELEC. COND. 8I	PRED.
0- 15																			
15- 30																			
30- 61																			
61- 89																			0.13
89-128	1.1	0.9	3.2	0.1	--	2.8	0.1	1.4				0.8	--	--	85.3	TR	0.54	0.36	
128-179	1.8	1.8	6.5	0.1	--	1.8	0.3	6.8				1.8	--	--	84.7	0.1	1.11	0.63	

MMHOS/CM OF 1:2 WATER EXTRACT (8I) & EXCH NA AS EXTRACTABLE NA FOR LAYERS 1, 2, 3, 4,

ANALYSES: S= ALL ON SIEVED <2mm BASIS

*** PRIMARY CHARACTERIZATION DATA ***

S82FN-710-008

PRINT DATE 08/20/02

SAMPLED AS : PANAMA NO. 8 ; FINE, MONTMORILLONITIC, ISOHYPERThERMIC UDIC HAPLUSTALF
 USDA-NRCS-NSSC-SOIL SURVEY LABORATORY ; PEDON 83P 321, SAMPLE 83P 1479- 1484

-1-- -2-- -3-- -4-- -5-- -6-- -7-- -8-- -9-- -10- -11- -12- -13- -14- -15- -16- -17- -18- -19- -20-

CLAY MINERALOGY (<.002mm)														
SAMPLE	FRACT	ION	X-RAY	DTA	TGA	SiO2	AL2O3	Fe2O3	MgO	CaO	K2O	Na2O	EGME	INTER
NUMBER	<	<	7A2i	>	7A6	>	7A4b	>	7C3	>	7D2	>	RETN	PRETA
	peak size	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
83P1481	TCLY	KH 3	MT 2	GE 1									13.0	0.6
83P1482	TCLY	KH 4	MT 1	GE 1									12.2	0.4
83P1484	TCLY	KH 3	MT 1	GE 1									9.7	0.5

SAND - SILT MINERALOGY (2.0-0.002mm)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
SAMPLE	FRACT	ION	X-RAY	DTA	TGA	TOT RE	GRAIN COUNT	7B1a	7B1b	7B1c	7B1d	7B1e	7B1f	7B1g	7B1h	7B1i	7B1j	7B1k	7B1l	7B1m	7B1n	7B1o	7B1p	7B1q	7B1r	7B1s	7B1t	7B1u	7B1v	7B1w	7B1x	7B1y	7B1z	7B1aa	7B1ab	7B1ac	7B1ad	7B1ae	7B1af	7B1ag	7B1ah	7B1ai	7B1aj	7B1ak	7B1al	7B1am	7B1an	7B1ao	7B1ap	7B1aq	7B1ar	7B1as	7B1at	7B1au	7B1av	7B1aw	7B1ax	7B1ay	7B1az	7B1ba	7B1bb	7B1bc	7B1bd	7B1be	7B1bf	7B1bg	7B1bh	7B1bi	7B1bj	7B1bk	7B1bl	7B1bm	7B1bn	7B1bo	7B1bp	7B1bq	7B1br	7B1bs	7B1bt	7B1bu	7B1bv	7B1bw	7B1bx	7B1by	7B1bz	7B1ca	7B1cb	7B1cc	7B1cd	7B1ce	7B1cf	7B1cg	7B1ch	7B1ci	7B1cj	7B1ck	7B1cl	7B1cm	7B1cn	7B1co	7B1cp	7B1cq	7B1cr	7B1cs	7B1ct	7B1cu	7B1cv	7B1cw	7B1cx	7B1cy	7B1cz	7B1da	7B1db	7B1dc	7B1dd	7B1de	7B1df	7B1dg	7B1dh	7B1di	7B1dj	7B1dk	7B1dl	7B1dm	7B1dn	7B1do	7B1dp	7B1dq	7B1dr	7B1ds	7B1dt	7B1du	7B1dv	7B1dw	7B1dx	7B1dy	7B1dz	7B1ea	7B1eb	7B1ec	7B1ed	7B1ee	7B1ef	7B1eg	7B1eh	7B1ei	7B1ej	7B1ek	7B1el	7B1em	7B1en	7B1eo	7B1ep	7B1eq	7B1er	7B1es	7B1et	7B1eu	7B1ev	7B1ew	7B1ex	7B1ey	7B1ez	7B1fa	7B1fb	7B1fc	7B1fd	7B1fe	7B1ff	7B1fg	7B1fh	7B1fi	7B1fj	7B1fk	7B1fl	7B1fm	7B1fn	7B1fo	7B1fp	7B1fq	7B1fr	7B1fs	7B1ft	7B1fu	7B1fv	7B1fw	7B1fx	7B1fy	7B1fz	7B1ga	7B1gb	7B1gc	7B1gd	7B1ge	7B1gf	7B1gg	7B1gh	7B1gi	7B1gj	7B1gk	7B1gl	7B1gm	7B1gn	7B1go	7B1gp	7B1gq	7B1gr	7B1gs	7B1gt	7B1gu	7B1gv	7B1gw	7B1gx	7B1gy	7B1gz	7B1ha	7B1hb	7B1hc	7B1hd	7B1he	7B1hf	7B1hg	7B1hh	7B1hi	7B1hj	7B1hk	7B1hl	7B1hm	7B1hn	7B1ho	7B1hp	7B1hq	7B1hr	7B1hs	7B1ht	7B1hu	7B1hv	7B1hw	7B1hx	7B1hy	7B1hz	7B1ia	7B1ib	7B1ic	7B1id	7B1ie	7B1if	7B1ig	7B1ih	7B1ii	7B1ij	7B1ik	7B1il	7B1im	7B1in	7B1io	7B1ip	7B1iq	7B1ir	7B1is	7B1it	7B1iu	7B1iv	7B1iw	7B1ix	7B1iy	7B1iz	7B1ja	7B1jb	7B1jc	7B1jd	7B1je	7B1jf	7B1jg	7B1jh	7B1ji	7B1jj	7B1jk	7B1jl	7B1jm	7B1jn	7B1jo	7B1jp	7B1jq	7B1jr	7B1js	7B1jt	7B1ju	7B1jv	7B1jw	7B1jx	7B1jy	7B1jz	7B1ka	7B1kb	7B1kc	7B1kd	7B1ke	7B1kf	7B1kg	7B1kh	7B1ki	7B1kj	7B1kk	7B1kl	7B1km	7B1kn	7B1ko	7B1kp	7B1kq	7B1kr	7B1ks	7B1kt	7B1ku	7B1kv	7B1kw	7B1kx	7B1ky	7B1kz	7B1la	7B1lb	7B1lc	7B1ld	7B1le	7B1lf	7B1lg	7B1lh	7B1li	7B1lj	7B1lk	7B1ll	7B1lm	7B1ln	7B1lo	7B1lp	7B1lq	7B1lr	7B1ls	7B1lt	7B1lu	7B1lv	7B1lw	7B1lx	7B1ly	7B1lz	7B1ma	7B1mb	7B1mc	7B1md	7B1me	7B1mf	7B1mg	7B1mh	7B1mi	7B1mj	7B1mk	7B1ml	7B1mm	7B1mn	7B1mo	7B1mp	7B1mq	7B1mr	7B1ms	7B1mt	7B1mu	7B1mv	7B1mw	7B1mx	7B1my	7B1mz	7B1na	7B1nb	7B1nc	7B1nd	7B1ne	7B1nf	7B1ng	7B1nh	7B1ni	7B1nj	7B1nk	7B1nl	7B1nm	7B1nn	7B1no	7B1np	7B1nq	7B1nr	7B1ns	7B1nt	7B1nu	7B1nv	7B1nw	7B1nx	7B1ny	7B1nz	7B1oa	7B1ob	7B1oc	7B1od	7B1oe	7B1of	7B1og	7B1oh	7B1oi	7B1oj	7B1ok	7B1ol	7B1om	7B1on	7B1oo	7B1op	7B1oq	7B1or	7B1os	7B1ot	7B1ou	7B1ov	7B1ow	7B1ox	7B1oy	7B1oz	7B1pa	7B1pb	7B1pc	7B1pd	7B1pe	7B1pf	7B1pg	7B1ph	7B1pi	7B1pj	7B1pk	7B1pl	7B1pm	7B1pn	7B1po	7B1pp	7B1pq	7B1pr	7B1ps	7B1pt	7B1pu	7B1pv	7B1pw	7B1px	7B1py	7B1pz	7B1qa	7B1qb	7B1qc	7B1qd	7B1qe	7B1qf	7B1qg	7B1qh	7B1qi	7B1qj	7B1qk	7B1ql	7B1qm	7B1qn	7B1qo	7B1qp	7B1qq	7B1qr	7B1qs	7B1qt	7B1qu	7B1qv	7B1qw	7B1qx	7B1qy	7B1qz	7B1ra	7B1rb	7B1rc	7B1rd	7B1re	7B1rf	7B1rg	7B1rh	7B1ri	7B1rj	7B1rk	7B1rl	7B1rm	7B1rn	7B1ro	7B1rp	7B1rq	7B1rr	7B1rs	7B1rt	7B1ru	7B1rv	7B1rw	7B1rx	7B1ry	7B1rz	7B1sa	7B1sb	7B1sc	7B1sd	7B1se	7B1sf	7B1sg	7B1sh	7B1si	7B1sj	7B1sk	7B1sl	7B1sm	7B1sn	7B1so	7B1sp	7B1sq	7B1sr	7B1ss	7B1st	7B1su	7B1sv	7B1sw	7B1sx	7B1sy	7B1sz	7B1ta	7B1tb	7B1tc	7B1td	7B1te	7B1tf	7B1tg	7B1th	7B1ti	7B1tj	7B1tk	7B1tl	7B1tm	7B1tn	7B1to	7B1tp	7B1tq	7B1tr	7B1ts	7B1tt	7B1tu	7B1tv	7B1tw	7B1tx	7B1ty	7B1tz	7B1ua	7B1ub	7B1uc	7B1ud	7B1ue	7B1uf	7B1ug	7B1uh	7B1ui	7B1uj	7B1uk	7B1ul	7B1um	7B1un	7B1uo	7B1up	7B1uq	7B1ur	7B1us	7B1ut	7B1uu	7B1uv	7B1uw	7B1ux	7B1uy	7B1uz	7B1va	7B1vb	7B1vc	7B1vd	7B1ve	7B1vf	7B1vg	7B1vh	7B1vi	7B1vj	7B1vk	7B1vl	7B1vm	7B1vn	7B1vo	7B1vp	7B1vq	7B1vr	7B1vs	7B1vt	7B1vu	7B1vv	7B1vw	7B1vx	7B1vy	7B1vz	7B1wa	7B1wb	7B1wc	7B1wd	7B1we	7B1wf	7B1wg	7B1wh	7B1wi	7B1wj	7B1wk	7B1wl	7B1wm	7B1wn	7B1wo	7B1wp	7B1wq	7B1wr	7B1ws	7B1wt	7B1wu	7B1wv	7B1ww	7B1wx	7B1wy	7B1wz	7B1xa	7B1xb	7B1xc	7B1xd	7B1xe	7B1xf	7B1xg	7B1xh	7B1xi	7B1xj	7B1xk	7B1xl	7B1xm	7B1xn	7B1xo	7B1xp	7B1xq	7B1xr	7B1xs	7B1xt	7B1xu	7B1xv	7B1xw	7B1xx	7B1xy	7B1xz	7B1ya	7B1yb	7B1yc	7B1yd	7B1ye	7B1yf	7B1yg	7B1yh	7B1yi	7B1yj	7B1yk	7B1yl	7B1ym	7B1yn	7B1yo	7B1yp	7B1yq	7B1yr	7B1ys	7B1yt	7B1yu	7B1yv	7B1yw	7B1yx	7B1yy	7B1yz	7B1za	7B1zb	7B1zc	7B1zd	7B1ze	7B1zf	7B1zg	7B1zh	7B1zi	7B1zj	7B1zk	7B1zl	7B1zm	7B1zn	7B1zo	7B1zp	7B1zq	7B1zr	7B1zs	7B1zt	7B1zu	7B1zv	7B1zw	7B1zx	7B1zy	7B1zz
NUMBER	<	<	7A2i	>	7A3b	>	7A4b	>	7B1a	>	7B1b	>	7B1c	7B1d	7B1e	7B1f	7B1g	7B1h	7B1i	7B1j	7B1k	7B1l	7B1m	7B1n	7B1o	7B1p	7B1q	7B1r	7B1s	7B1t	7B1u	7B1v	7B1w	7B1x	7B1y	7B1z	7B1aa	7B1ab	7B1ac	7B1ad	7B1ae	7B1af	7B1ag	7B1ah	7B1ai	7B1aj	7B1ak	7B1al	7B1am	7B1an	7B1ao	7B1ap	7B1aq	7B1ar	7B1as	7B1at	7B1au	7B1av	7B1aw	7B1ax	7B1ay	7B1az	7B1ba	7B1bb	7B1bc	7B1bd	7B1be	7B1bf	7B1bg	7B1bh	7B1bi	7B1bj	7B1bk	7B1bl	7B1bm	7B1bn	7B1bo	7B1bp	7B1bq	7B1br	7B1bs	7B1bt	7B1bu	7B1bv	7B1bw	7B1bx	7B1by	7B1bz	7B1ca	7B1cb	7B1cc	7B1cd	7B1ce	7B1cf	7B1cg	7B1ch	7B1ci	7B1cj	7B1ck	7B1cl	7B1cm	7B1cn	7B1co	7B1cp	7B1cq	7B1cr	7B1cs	7B1ct	7B1cu	7B1cv	7B1cw	7B1cx	7B1cy	7B1cz	7B1da	7B1db	7B1dc	7B1dd	7B1de	7B1df	7B1dg	7B1dh	7B1di	7B1dj	7B1dk	7B1dl	7B1dm	7B1dn	7B1do	7B1dp	7B1dq	7B1dr	7B1ds	7B1dt	7B1du	7B1dv	7B1dw	7B1dx	7B1dy	7B1dz	7B1ea	7B1eb	7B1ec	7B1ed	7B1ee	7B1ef	7B1eg	7B1eh	7B1ei	7B1ej	7B1ek	7B1el	7B1em	7B1en	7B1eo	7B1ep	7B1eq	7B1er	7B1es	7B1et	7B1eu	7B1ev	7B1ew	7B1ex	7B1ey	7B1ez	7B1fa	7B1fb	7B1fc	7B1fd	7B1fe	7B1ff	7B1fg	7B1fh	7B1fi	7B1fj	7B1fk	7B1fl	7B1fm	7B1fn	7B1fo	7B1fp	7B1fq	7B1fr	7B1fs	7B1ft	7B1fu	7B1fv	7B1fw	7B1fx	7B1fy	7B1fz	7B1ga	7B1gb	7B1gc	7B1gd	7B1ge	7B1gf	7B1gg	7B1gh	7B1gi	7B1gj	7B1gk	7B1gl	7B1gm	7B1gn	7B1go	7B1gp	7B1gq	7B1gr	7B1gs	7B1gt	7B1gu	7B1gv	7B1gw	7B1gx	7B1gy	7B1gz	7B1ha	7B1hb	7B1hc	7B1hd	7B1he	7B1hf	7B1hg	7B1hh	7B1hi	7B1hj	7B1hk	7B1hl	7B1hm	7B1hn	7B1ho	7B1hp	7B1hq	7B1hr	7B1hs	7B1ht	7B1hu	7B1hv	7B1hw	7B1hx	7B1hy	7B1hz	7B1ia	7B1ib	7B1ic	7B1id	7B1ie	7B1if	7B1ig	7B1ih	7B1ii	7B1ij	7B1ik	7B1il	7B1im	7B1in	7B1io	7B1ip	7B1iq	7B1ir	7B1is	7B1it	7B1iu	7B1iv	7B1iw	7B1ix	7B1iy	7B1iz	7B1ja	7B1jb	7B1jc	7B1jd	7B1je	7B1jf	7B1jg	7B1jh	7B1ji	7B1jj	7B1jk	7B1jl	7B1jm	7B1jn	7B1jo	7B1jp	7B1jq	7B1jr	7B1js	7B1jt	7B1ju	7B1jv	7B1jw	7B1jx	7B1jy	7B1jz	7B1ka	7B1kb	7B1kc	7B1kd	7B1ke	7B1kf	7B1kg	7B1kh	7B1ki	7B1kj	7B1kk	7B1kl	7B1km	7B1kn	7B1ko	7B1kp	7B1kq	7B1kr	7B1ks	7B1kt	7B1ku	7B1kv	7B1kw	7B1kx	7B1ky	7B1kz	7B1la	7B1lb	7B1lc	7B1ld	7B1le	7B1lf	7B1lg	7B1lh	7B1li	7B1lj	7B1lk	7B1ll	7B1lm	7B1ln	7B1lo	7B1lp	7B1lq	7B1lr	7B1ls	7B1lt	7B1lu	7B1lv	7B1lw	7B1lx	7B1ly	7B1lz	7B1ma	7B1mb	7B1mc	7B1md	7B1me	7B1mf	7B1mg	7B1mh	7B1mi	7B1mj	7B1mk	7B1ml	7B1mm	7B1mn	7B1mo	7B1mp	7B1mq	7B1mr	7B1ms	7B1mt	7B1mu	7B1mv	7B1mw	7B1mx	7B1my	7B1mz	7B1na	7B1nb	7B1nc	7B1nd	7B1ne	7B1nf	7B1ng	7B1nh	7B1ni	7B1nj	7B1nk	7B1nl	7B1nm	7B1nn	7B1no	7B1np	7B1nq	7B1nr	7B1ns	7B1nt	7B1nu	7B1nv	7B1nw	7B1nx	7B1ny	7B1nz	7B1																																																																																																																																																																																																																																																																																																																				