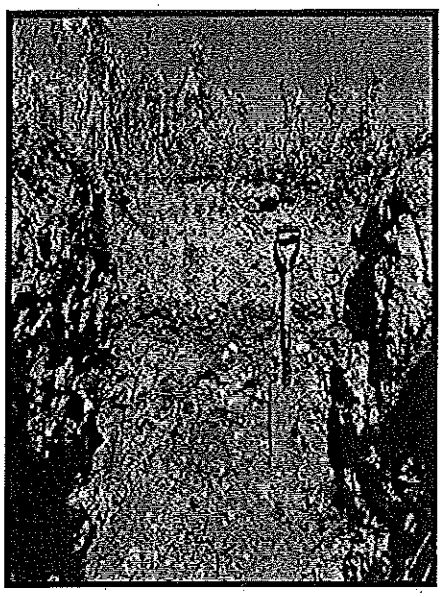
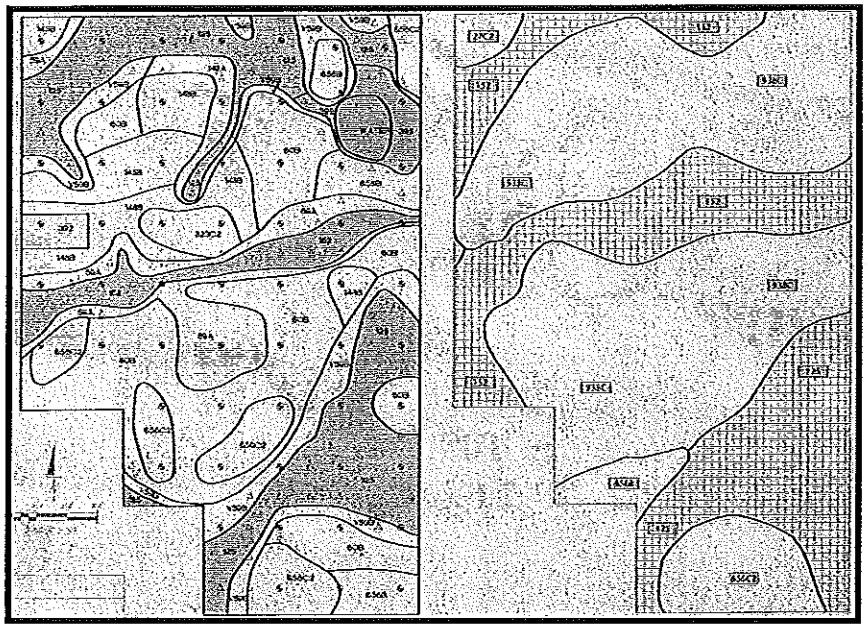
ISCA Fall 2006 Field Tour
Oregon, IL



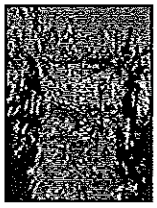


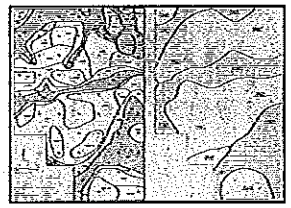
Organized by:
Bruce Putman

Contributions from:
Mike Konen
Bill Kreznor
Steve Zwicker

October 21, 2006

ISCA Fall 2006 Field Tour
Oregon, IL





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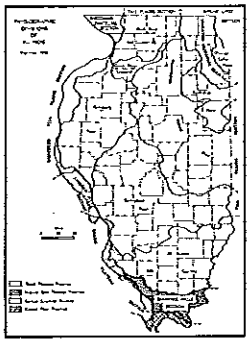
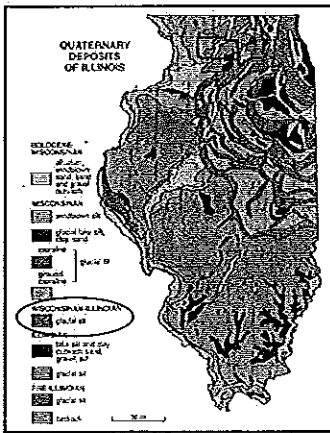
Bill Kreznor
Steve Zwicker

Rock River Hill Country

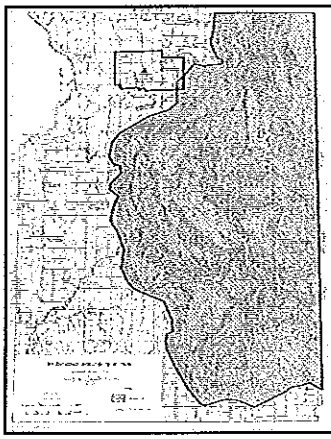
MLRA 108B
Illinois and Iowa Deep Loess and Drift,
East-Central part



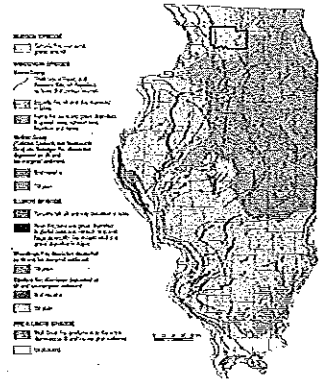


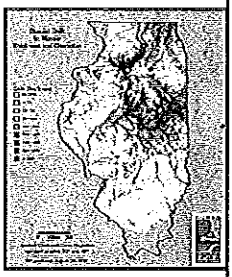
Glacial story not well understood until the 1970's & 80's

We know more today but still a lot of work to do...



- Intense periglacial erosion beyond ice-margin during the late-Wisconsin
- Permafrost, solifluction, & cryoturbation
- Hillslope runoff
- Complete or partial erosion of Sangamon Geosol





Rock River Hill Country

- < 25 feet Quaternary materials common
- Complex geologic sedimentation and post-depositional erosion-sedimentation in many areas

  The glaciers came and the glaciers melted
  The wind blew and the dust flew
  The soils grew
  Several times...

- Multiple materials (Eolian, glaciofluvial, glacial diamictons, fluvial-colluvial...)
- Multiple ages (Illinois Episode, Wisconsin Episode, Hudson Episode...)
- Paleosols eroded, buried, exhumed, welded to modern soil...
- Surface and bedrock topography not always related

Modern sediments

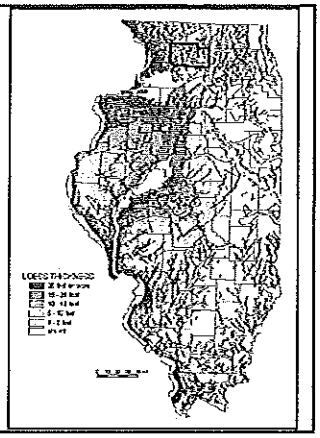
Loess Thickness

•15 to 5' across county (west to east)

•Thinner on less stable landscape positions

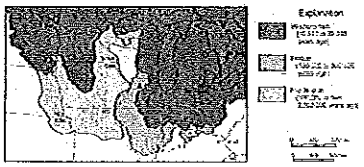
•Mainly Peoria Silt

•Some Roxana Silt present on more stable landscape positions



Idealized Stratigraphy

Peoria Silt
Roxana Silt (Farmdale Geosol)
IL Glacigenic Sediments (Sangamon Geosol)
Dolostone/Limestone/Sandstone



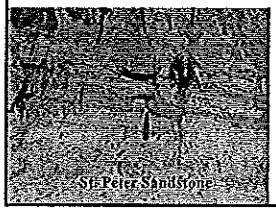
Peoria Silt
- Loess
- Some colluvial silt
- ~25,000 - 12,500 RCYBP (Hansel & Johnson, 1996)

Roxana Silt
- Loess
- Some colluvial silt (Robein Member)
- ~55,000 - 27,000 RCYBP (Leigh & Knox 1993)
- May contain Farmdale Geosol in upper portion
- Brownish pink
- Often grittier (more sand) than Peoria Silt

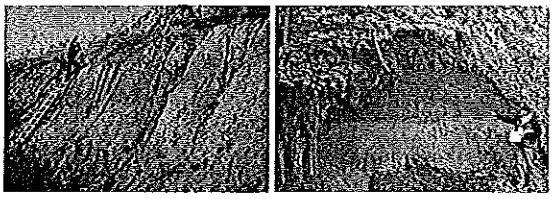
Hansel & Johnson, 1996

Illinois Episode glacial sediments
- Multiple "tills"
- Tills variable in texture
- Local incorporation of sandstone within a till unit
- Outwash…

Bedrock
- Dolostone
- Limestone
- Sandstone

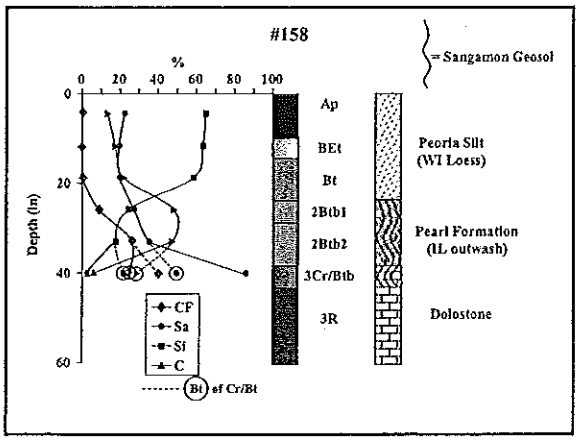


Sangamon Geosol
- Developed in IL Episode or older sediments
- Strongly developed Bt horizons
- 7.5YR or 5YR hues common
- Often partially or completely truncated
- Stone-line sometimes present



Most soils developed in loess or loess and underlying material(s)

Common to have multiple parent materials:
- Loess
- Loess over till
- Loess over till over bedrock
- Loess over paleosol in till
- Loess over paleosol in till over bedrock
- Loess over outwash
- Loess over outwash over bedrock
- Loess over paleosol in outwash
- Loess over paleosol in outwash over bedrock
- Loess over bedrock
- Loess over paleosol in bedrock
- Loess over you get the picture…and remember there are multiple ages of glacigenic & eolian sediments…



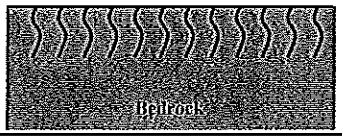
A simplified and idealized pedogeostory...

1

Dolostone exposed

2

Soil develops in dolostone



3

Erosion before and during IL Episode glaciation

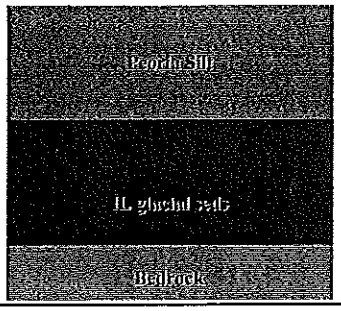
4

Deposition of IL Episode glacigenic sediments (till, outwash...)

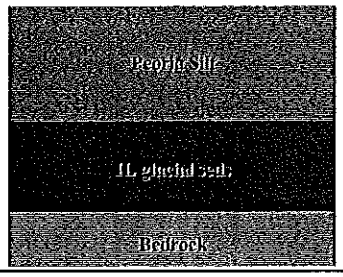
5

Soil formation in IL seds during Sangamon

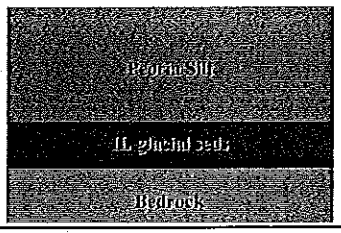
6a
Deposition of Peoria Silt – no erosion of Sangamon



6b
Deposition of Peoria Silt – partial erosion of Sangamon

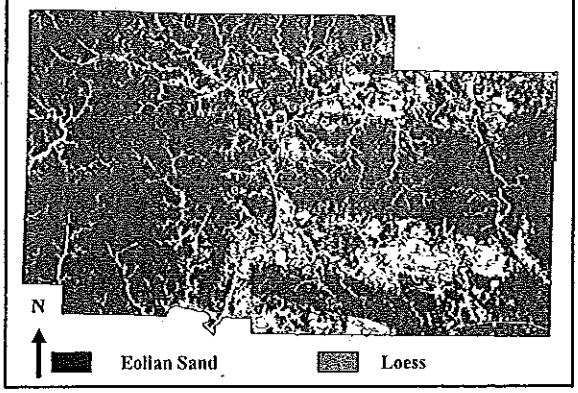


6c
Deposition of Peoria Silt – complete erosion of Sangamon

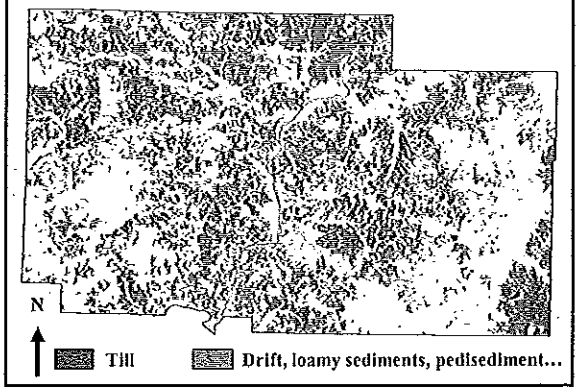


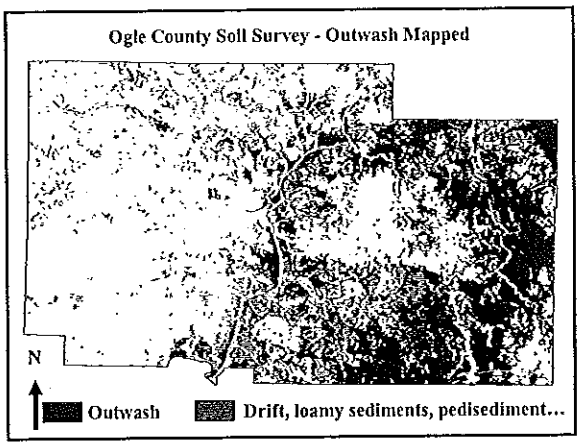
6d
Deposition of Peoria Silt – complete erosion of Sangamon & IL seds

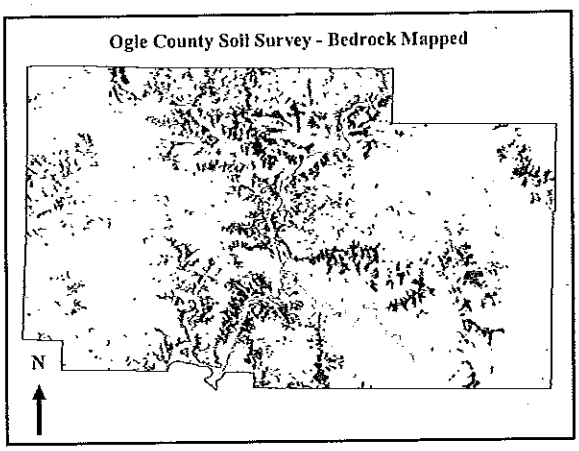
Ogle County Soil Survey - Eolian Mapped

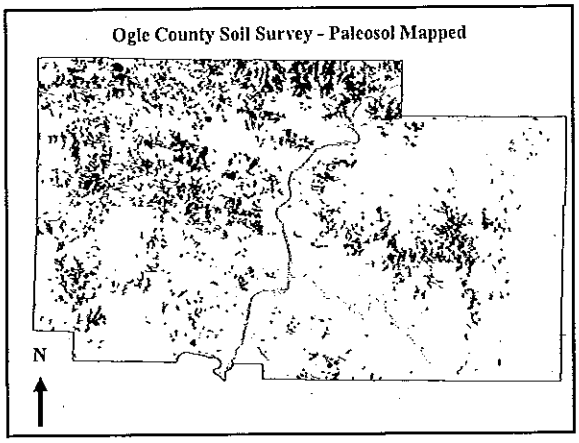


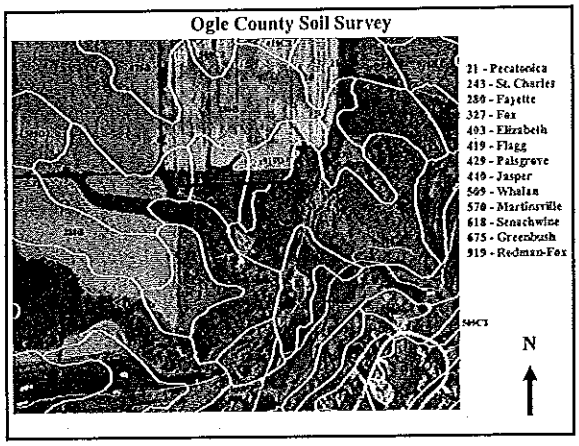
Ogle County Soil Survey - Till Mapped

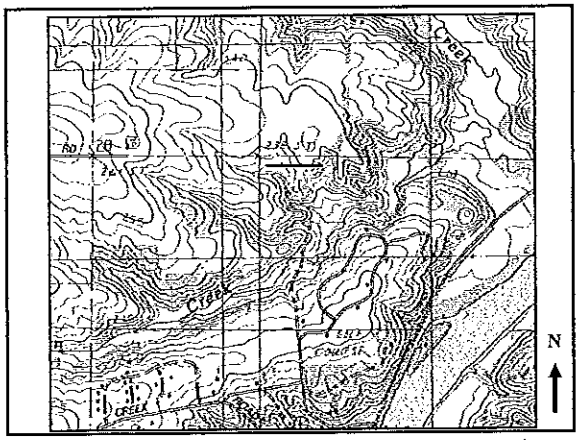



Ogle County Soil Survey - Outwash Mapped
N
Outwash
Drift, loamy sediments, pedisediment...


Ogle County Soil Survey - Bedrock Mapped
N


Ogle County Soil Survey - Paleosol Mapped
N


Ogle County Soil Survey
21 - Pecatonica
243 - St. Charles
280 - Fayette
327 - Fox
403 - Elizabeth
419 - Flagg
429 - Palsgrove
440 - Jasper
569 - Whalan
570 - Martinsville
618 - Senachwine
675 - Greenbush
919 - Redman-Fox
N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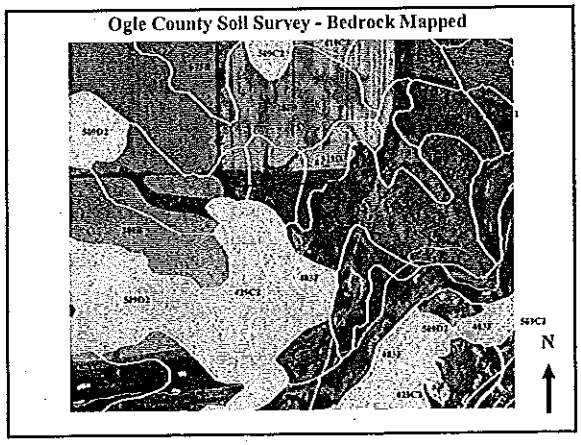
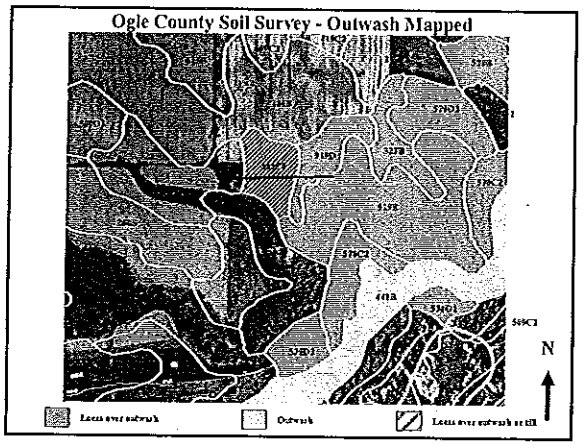
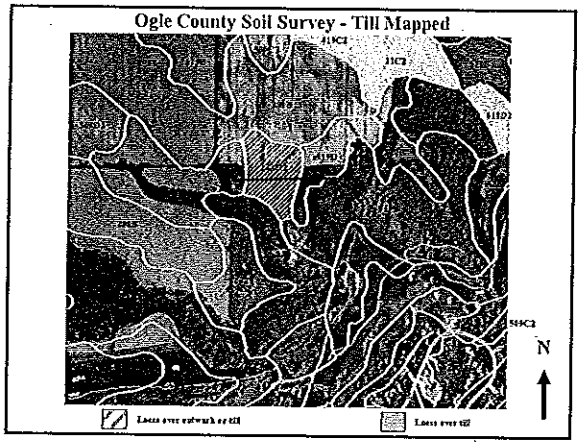
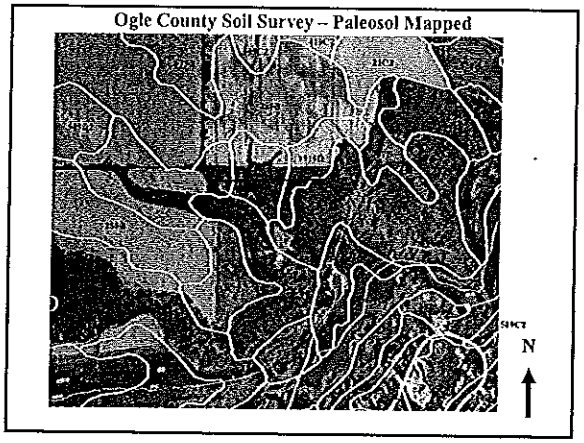

Ogle County Soil Survey - Bedrock Mapped
N



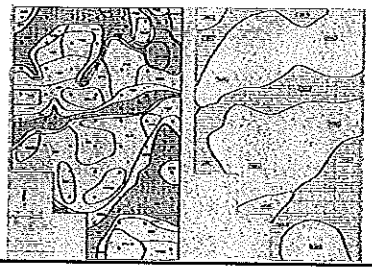




This complex geologic & geomorphic story has led to a complex pedologic distribution.

How can we better understand soil spatial relationships?

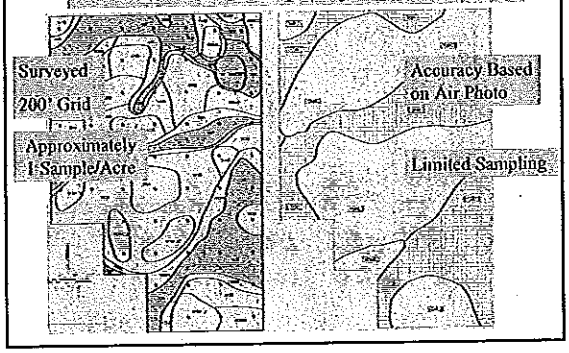
How can we better use & communicate this information in the land-use planning process?



Detailed Soil Mapping For Subdivision Planning

A Prerequisite to On-site Soil Investigation

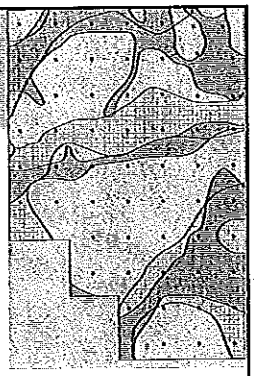
Comparison of Detailed and USDA Soil Map-Hydric Soils.



Overlay of USDA and Detailed Soil Map Hydric Soil Areas

Red Shaded Area: Detailed Map
Blue Hatch Area: USDA Map

Displacement >200 Feet
Unsuitable for Land Planning



Methodology: Detailed Soil Map

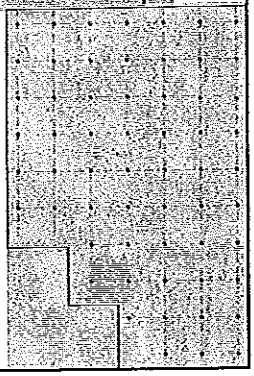
Required by Ordinance in McHenry County Since 1988

Required by Ordinance in 8 Counties in NE Illinois

Based on 200 Foot Grid

Detailed Soil Descriptions at Grid Points

Sampling Method is Standardized



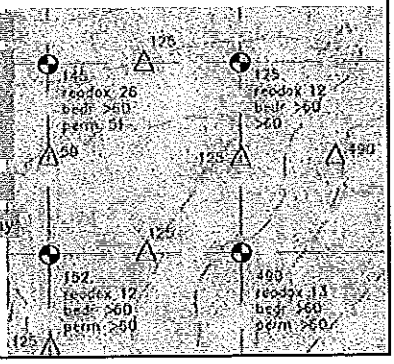
Combine Grid Data and Topography

Plot: Soil Type

Limiting Layers
a) Redox. Depth
b) Bedrock Depth
c) Slow Permeability

Intermediate Borings

1 or 2 Foot Topography

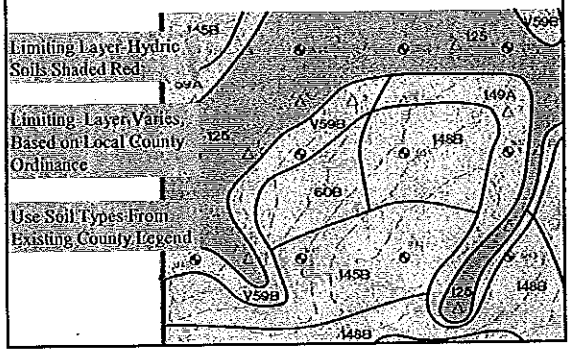


Completed Soil Map

Limiting Layer-Hydric Soils Shaded Red

Limiting Layer Varies, Based on Local County Ordinance

Use Soil Types from Existing County Legend



Examples of Limiting Layer, Per County Codes

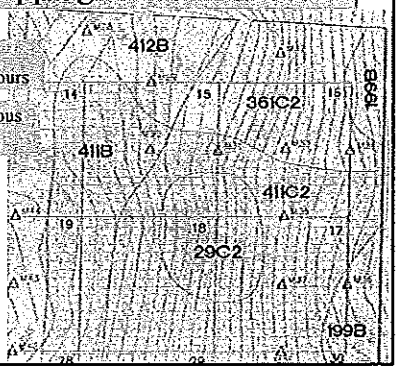
County	Limiting Seasonal Water Table Depth
Lake	12"
McHenry	30"
Kane	Hydric Soils, i.e., Drummer, El Paso, etc.*
Ogle	Hydric Soils*
	*Requires the use of Curtain Drains

Bedrock Separation is 4' for all Counties

Soil Mapping in Bedrock Areas

Bedrock Does Not Always Follow Contours

May Require Numerous Intermediate Borings

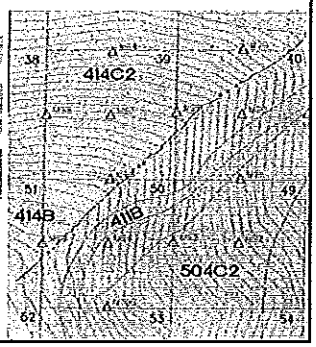


Drainage Features

Show Minor Drainage Areas

Surface Flow Must be Diverted From Proposed Septic Areas

Surface Drainage Is Usually Altered by Roads And Houses



Overall Land Plan-Designated Septic Areas

Septic Areas are Sited in Suitable Soils, 20 Lots on 50 Acres

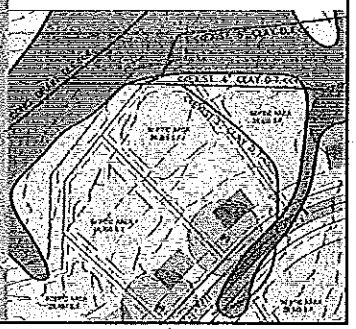
Septic Areas are Typically 12,000 to 20,000 Square Ft.

Land Plan Should Show Typical Locations for House and Well

Septic Areas Must be Cordoned Off Before Construction

Do Not Stagger Houses And Septic Areas

AVoid "Odd" Shaped Septic Areas

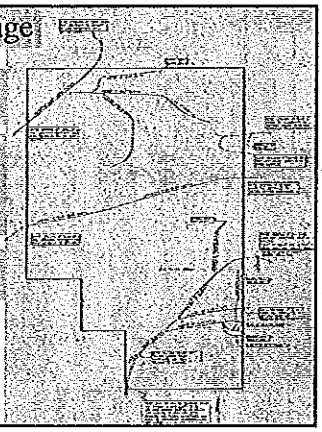


Subdivision Drainage

Subsurface Tile Systems Must be Located

Drainage Law States That The Subdivision Must Accept Off-Site Drainage and Use Current Exit Locations

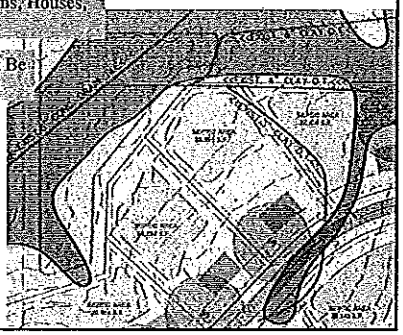
Existing Drain Tiles Should be Abandoned and Relocated



Drain Tile Abandonment

Existing Tile Cannot be Utilized Due to Road Locations, Houses, Detention, Etc.

A New System Must Be Installed

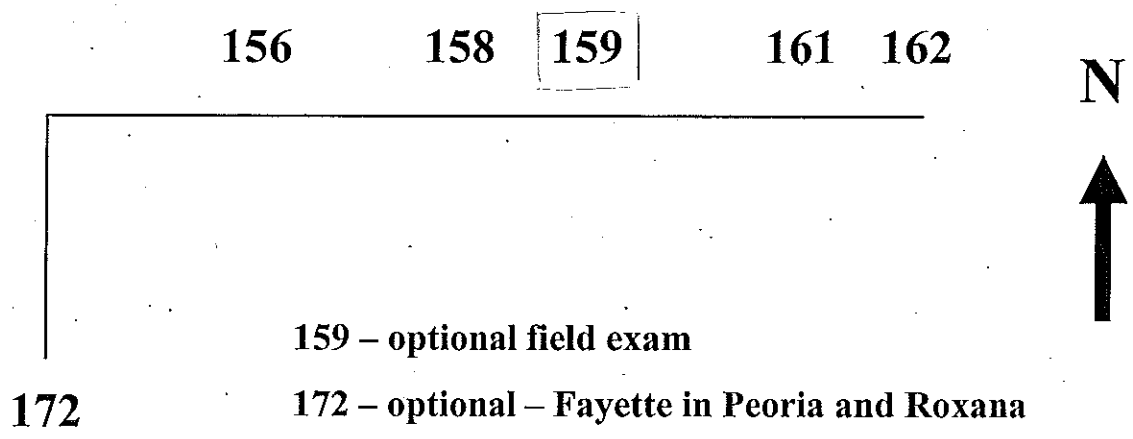


Summary:

Detailed Soil Maps Provide Needed Information for Land Use Planning

Detailed Maps Should be Constructed Using Uniform Standards

Detailed Maps Do Not Eliminate the Need for On-Site Soil Testing



159 – optional field exam

172 – optional – Fayette in Peoria and Roxana

Note - table has been reformated by Mike Konen to make reading it easier. No guarantee is made for accuracy. Consult the current code at: http://www.ilga.gov/commission/jcar/admincode/077/07700905ZZ9996amR.html

Section 905.APPENDIX A Illustrations and Exhibits

Section 905.EXHIBIT B Key for Determining Sewage Loading Rates (Gallons/Square Feet/Day)

Structure and Parent Material		Single grain; Granular; Platy[2]	Angular and Subangular Blocky; Prismatic									Structureless or Massive			
			Loess: Outwash						Till; Lacustrine						
			Weak		Moderate		Strong		Moderate; Strong			Loess; Outwash		Till[3]; Lacustrine	
Moist Consistence		lo vfr fr	lo vfr	fr fi	fr	fi	fr	fi	fr	fi	vfi	vfr	fr	vfr fr	fi vfi
Texture		A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Fragmental Ext. or Very gravelly sand Gravelly sand Coarse sand Gravelly loamy sand	> 1.00[4]	N/A[5]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2	Medium sand Sand Loamy coarse sand Loamy sand Coarse sandy loam	1.00	1.00	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.00	N/A	N/A	N/A
3	Fine sand Loamy fine sand	0.84	0.91	0.84	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.91	0.84	N/A	N/A
4	Sandy loam Fine sandy loam Gravelly sandy loam Gravelly loam Gravelly silt loam	0.75	0.84	0.75	0.75	N/A	N/A	N/A	N/A	N/A	N/A	0.84	0.75	0.75	0.52
5	Loam Silt loam Very fine sandy loam Sandy clay loam Silt Very fine sand Loamy very fine sand	0.62	0.75	0.69	0.75	0.69	N/A	N/A	0.62	0.52	0.45[6]	0.69	0.52	0.45[6]	0.27[6]
6	Silty clay loam (< 35% clay) Clay loam (< 35% clay)	0.52	N/A	0.45[6]	0.62	0.52	0.69	0.52	0.45[6]	0.40[6]	0.27[6]	0.52	0.45[6]	0.27[6]	0.00[6]
7	Silty clay loam (> 35% clay) Clay loam (> 35% clay) Sandy clay (< 40% clay)	0.45[6]	N/A	N/A	0.45[6]	0.40[6]	0.45[6]	0.40[6]	N/A	0.27[6]	0.20[6]	0.27[6]	0.20[6]	0.00[6]	0.00[6]
8	Sandy clay (>40% clay) Silty clay	0.40[6]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.20[6]	0.00[6]	N/A	N/A	N/A	0.00[6]
9	Clay Organics Fragic Fragipan Lithic Paralithic	——SOIL PROPERTIES HAVE VERY SERVERE LIMITATIONS; SUBSURFACE DISPOSAL NOT RECOMMENDED——													

FOOTNOTES:

1 Disturbed soils are highly variable and require special on-site investigations.

2 Moderate or strong platy structure for the soil textures in Group 5 have a loading rate of 0.40 g/d/ft.
Platy structure having firm or very firm consistency and/or caused by mechanical compaction has a loading rate of 0.0 g/d/sq. ft.

3 Weakly structured BC horizons and basal glacial tills structured by geogenic processes have the same loading rates as structureless glacial till.

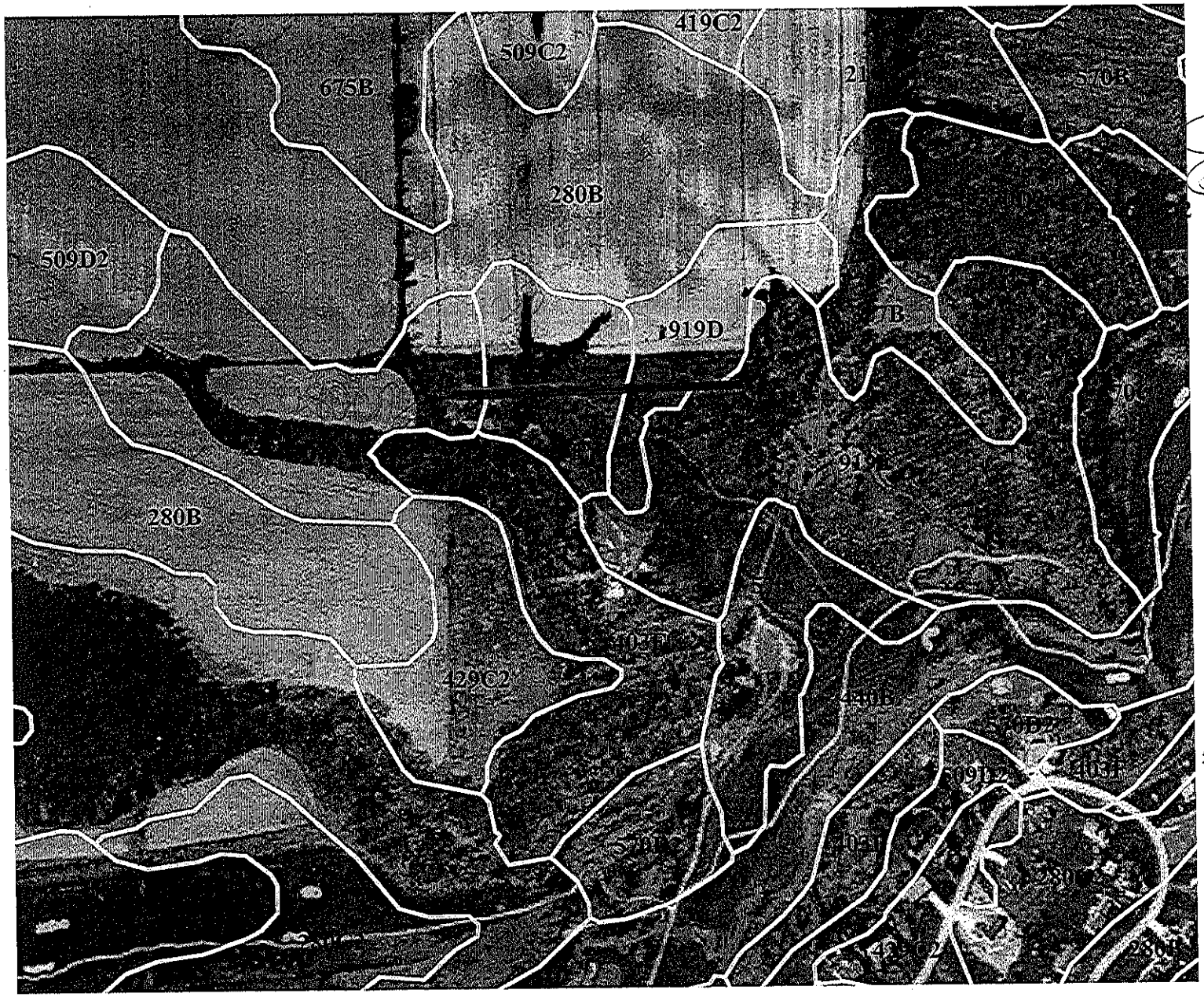
4 This soil group is estimated to have very rapid permeability and exceeds the maximum established rate in Section 905.Illustration H, Exhibit A of this Part.

5 N/A means not applicable.

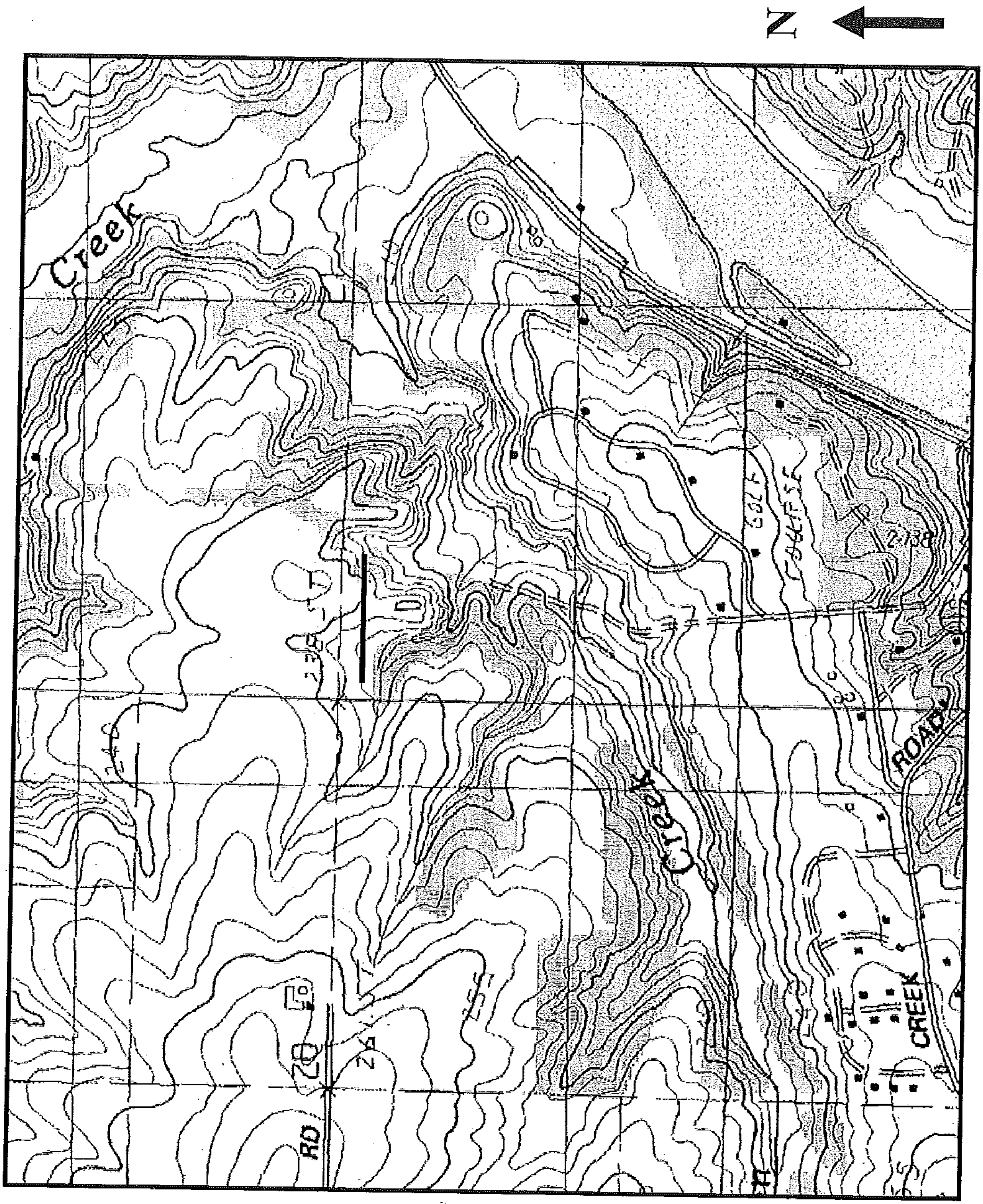
6 These soil groups are estimated to have moderately slow to very slow permeability and are less than the minimum established rate in Section 905.Illustration H, Exhibit A of this Part.

(Source: Section repealed, new Section added at 20 Ill. Reg. 2431, effective March 15, 1996)

Ogle County Soil Survey



21 - Pecatonica
243 - St. Charles
280 - Fayette
327 - Fox
403 - Elizabeth
419 - Flagg
429 - Palsgrove
440 - Jasper
509 - Whalan
570 - Martinsville
618 - Senachwine
675 - Greenbush
919 - Rodman-Fox


N
Creek
Creek
ROAD
CREEK
RD

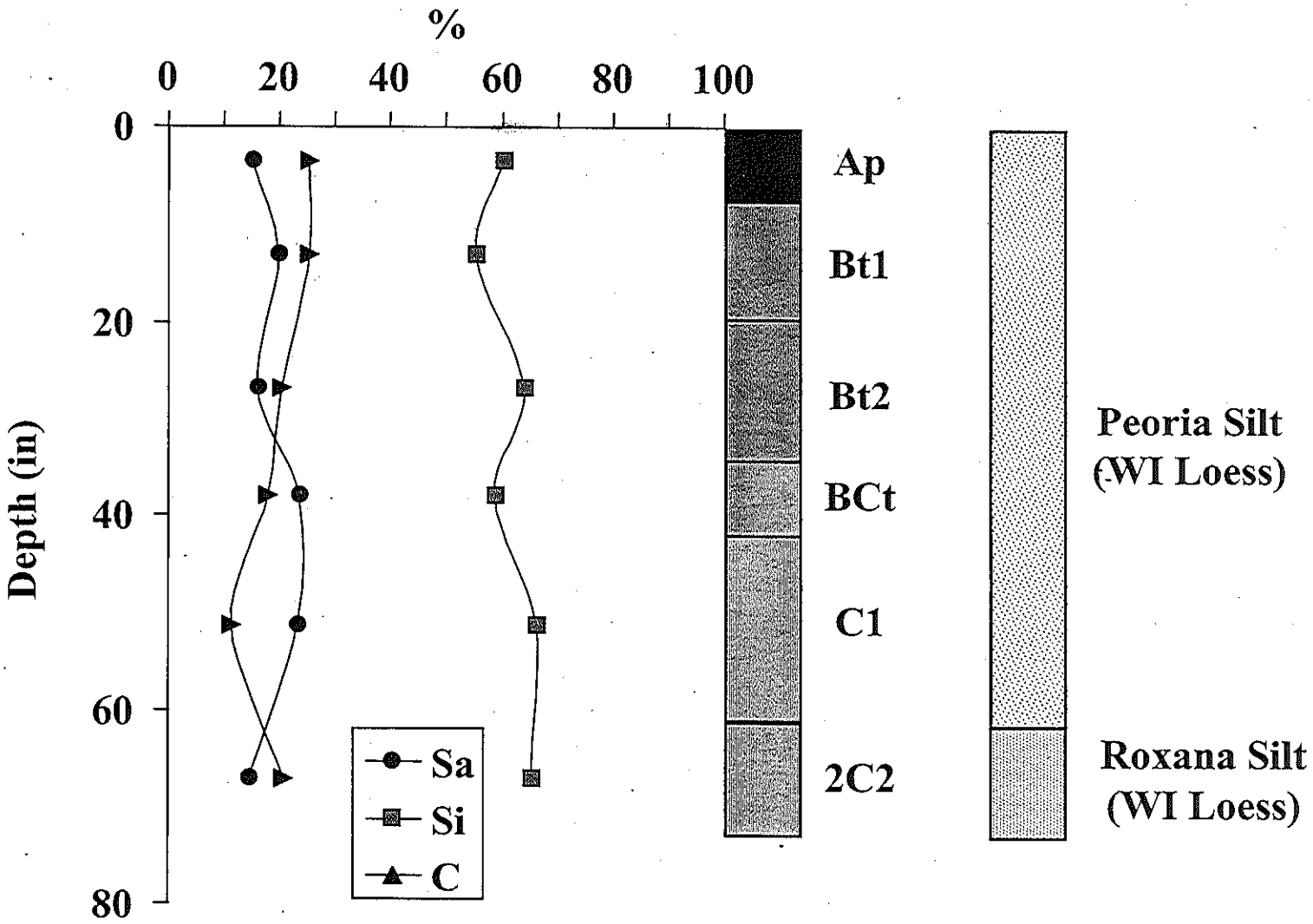
PROFILE: #156 - Rozetta	WEATHER: Sunny, 70°F
PROFILE CLASSIFICATION: 2006 Keys to Soil Taxonomy (mineralogy class presumed to be superactive) Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf	PHYSIOGRAPHY:
	TOPOGRAPHY:
EPIPEDON: Ochric 0-7 in	ELEVATION: ~ 778 ft (237 m) estimated from topo
SUBSURFACE HORIZONS/FEATURES: Argillic - 7-41 in	% SLOPE: 7%
CONTROL SECTION: 7 - 27 in (upper 20 in of argillic) Clay = 23.2%, Sand > 0.1 mm = 4.7%	SLOPE POSITION: Backslope
COUNTY: Ogle	WATER TABLE: Not observed
LOCATION:	DRAINAGE CLASS: Mod well
DATE SAMPLED: 9/20/2006 DATE DESCRIBED: 9/20/2006	VEGETATION: Recently abandoned ag field succession (lots of weeds...)
SAMPLED BY: Zwicker & Kreznor DESCRIBED BY: Zwicker & Kreznor	PARENT MATERIAL: Peoria Silt (loess) over Roxana Silt (loess)
	EXPOSURE: Backhoe pit

Horizon	Lower depth (in)	Matrix color (moist)	Lab Texture (by weight)					% OC	Redox Features				Structure			Coatings				Con	Eff	Boundary		Loading rate (g/d/ft²)
			Class	% Clay	% Sand	% Silt	% CF		Color	Amount	Size	Contrast	Grade	Size	Shape	Type	Amount	Color	Location			Dist	Shape	
Ap	7	10YR 4/3	sil	25.1	14.9	60.0	0	0.53					2	m	gr					fr		a	s	0.62 (5A)
													and											
													2	vf	sbk									
Bt1	19	10YR 4/4	sil	25.3	19.6	55.2	0	0.24	10YR 5/3	c	f	f	2	f	sbk	clf	m	10YR 4/3	pf	fr		c	s	0.75 (5D)
									10YR 5/6	c	f	d												
									Fe-Mn concretions	c	f	p												
Bt2	34	10YR 5/4	sil	20.1	15.9	64.0	0	0.16	10YR 5/2	c	f	d	2	m	pr	clf	m	10YR 4/3	pf	fr		c	s	0.75 (5D)
									10YR 5/6	c	f	d	parting to											
									Fe-Mn concretions	c	f	p	2	m	abk									
BCt	41	10YR 5/4 & 5/6	sil	17.7	23.5	58.7	0	0.16	10YR 5/2	c	f	d	2	m	pr	clf	m	10YR 4/3	pf	fr		c	s	0.75 (5D)
									10YR 5/6	c	f	d												
C1	60	10YR 5/4	sil	11.1	22.9	66.0	0		10YR 5/2	c	f	d	0		ma					fr		a	s	0.52 (5L)
									10YR 5/6	c	f	d												
2C2	72	7.5YR 5/4	sil	20.6	14.2	65.2	0		10YR 5/3	c	f	d	0		ma					fr				0.52 (5L)
									10YR 5/6	c	f	d												
									Fe-Mn concretions	f	f	p												

2C2 - Roxana

Items to discuss:
Roxana vs Peoria Silt properties
Redox depletion depth, amount, and septic design
Landscape position and Roxana presence/absence
Clay max in Ap, erosion

#156


%
0
20
40
60
80
100
Depth (in)
0
20
40
60
80
Sa
Si
C
Ap
Bt1
Bt2
BCt
C1
2C2
Peoria Silt
(WI Loess)
Roxana Silt
(WI Loess)

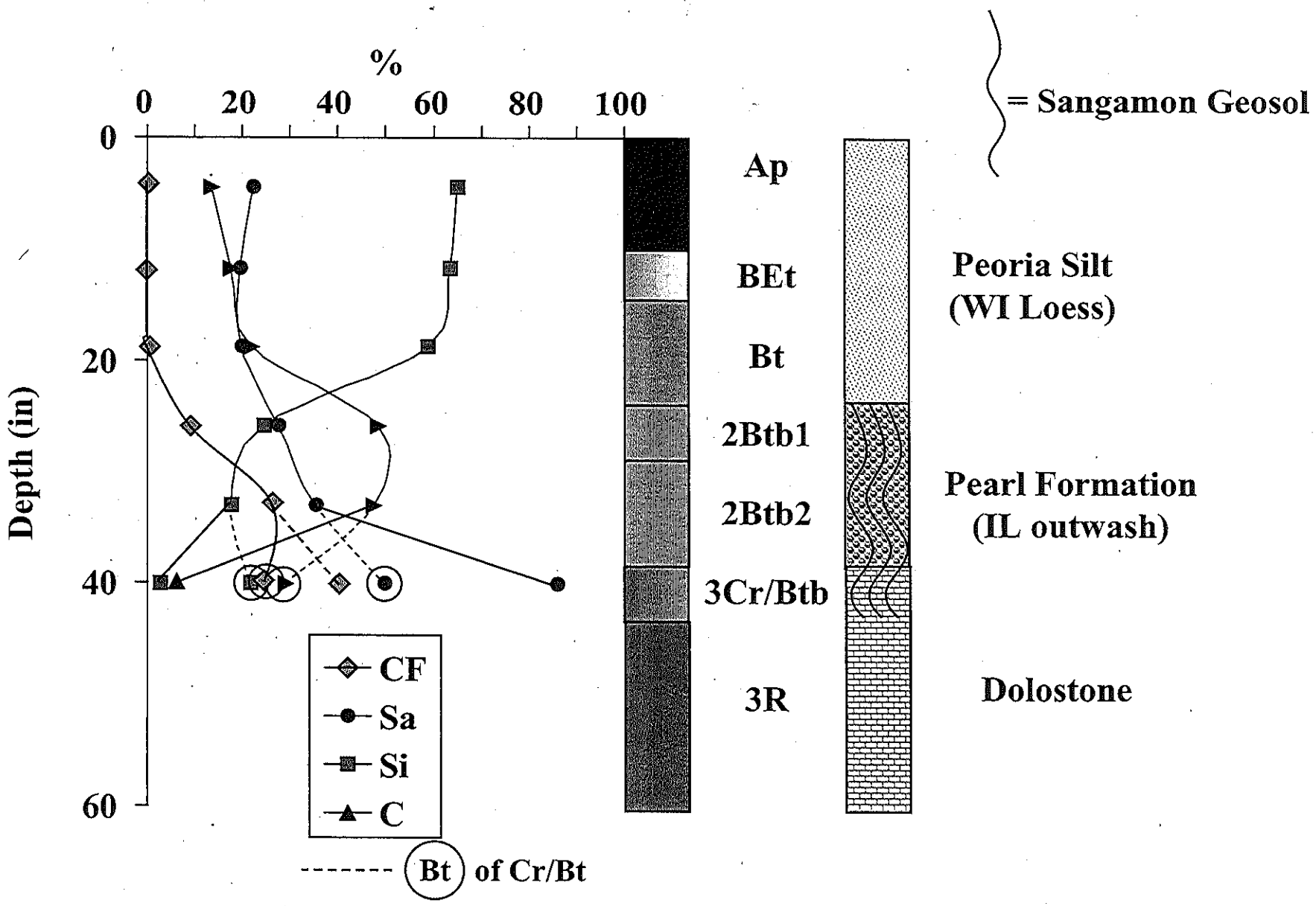
PROFILE: #158 - Woodbine (but with a paleosol in outwash)	WEATHER: Sunny, 70°F
PROFILE CLASSIFICATION: 2006 Keys to Soil Taxonomy (mineralogy class presumed to be superactive) Fine-silty over clayey, mixed, superactive, mesic Typic Hapludalf	PHYSIOGRAPHY:
EPIPEDON: Ochric 0-9 in	TOPOGRAPHY:
SUBSURFACE HORIZONS/FEATURES: Argillic 9 - 37 in; Paralithic contact 37 in.; Lithic contact 42 in.	ELEVATION: ~ 778 ft (237 m) estimated from topo
CONTROL SECTION: UPPER 9-23 in, Clay = 20.2%, Sand > 0.1 mm = 5.0%; LOWER 23-37 in. Clay = 47.6%, Sand > 0.1 mm = 28.8% + CF	% SLOPE: 5%
COUNTY: Ogle	SLOPE POSITION: Backslope in drainageway head
LOCATION:	WATER TABLE: Not observed
DATE SAMPLED: 9/20/2006 DATE DESCRIBED 9/20/2006	DRAINAGE CLASS: Well
SAMPLED BY: Putman & Konen DESCRIBED BY: Putman & Konen	VEGETATION: Recently abandoned ag field succession (lots of weeds...)
	PARENT MATERIAL: Peoria Silt (loess) over IL outwash (Sangamon Geosol) over dolostone
	EXPOSURE: Backhoe pit

Horizon	Lower depth (in)	Matrix color (moist)	Lab Texture (by weight)					Vol		Redox Features				Structure			Coatings				Con	Eff	Boundary		Loading rate (g/d/m²)
			Class	% Clay	% Sand	% Silt	% CF	% CF	% OC	Color	Amount	Size	Contrast	Grade	Size	Shape	Type	Amount	Color				Dist	Shape	
Ap	9	10YR 4/3	sil	13.3	22	64.7	0	0	0.98					1	m	sbk					fr		a	s	0.69 (5C)
														parting to											
														2	f	gr									
BEt	14	10YR 4/4	sil	17.4	19.4	63.2	0	0	0.45					1	f	sbk	clf	c	10YR 4/3	pf	fr		c	s	0.69 (5C)
														and											
														1	thin	pl									
Bt1	23	10YR 4/4	sil	21.7	19.7	58.6	0	0	0.38					2	f	sbk	clf	c	10YR 4/3	pf	fr		g	s	0.75 (5D)
2Btb1	28	5YR 4/4	c	48.3	27.3	24.4	9	3	0.48					3	m	abk	clf	m	7.5YR 4/3	pf	fi		c	s	N/A (9)
2Btb2	37	5YR 4/4 & 7.5YR 4/6	c	47.2	35.3	17.5	7	2	0.78					2&3	m	abk	clf	m	7.5YR 4/3	pf	fi		c	s	N/A (9)
3Cr/Btb	42	10YR 5/4 & 10YR 4/6	Bt - scl	28.9	49.5	21.6	22	8						1	c	sbk	clf	c	7.5YR 3/2 & 3/3	pf & fractures	vfr & fr	sl	g	w	N/A (9)
			Cr - ls	6.3	87.73	6.0	37	14																	
3R	60	Dolostone																							

Ap - Some Bt pieces and smearing mixed in
BEt - platy structure not continuous across pit
2B2 and 2Bt3 - erratics throughout
2Bt3 - 75% 5YR 4/4, 25% 7.5YR 4/6
Strongly contrasting particle size classes - 2006 Keys to Soil Taxonomy, page 297, rule C1 and page 300 rule 28, > 25% absolute difference in clay between upper and lower portions.

Items to discuss:
How is Cr (paralithic) handled in state code?
Paleosol clay, structure, CF impacts on loading rate
Use of / in horizon nomenclature
How is / handled in loading rates?
Use of b
Correlative series with a paleosol in outwash and bedrock present

#158

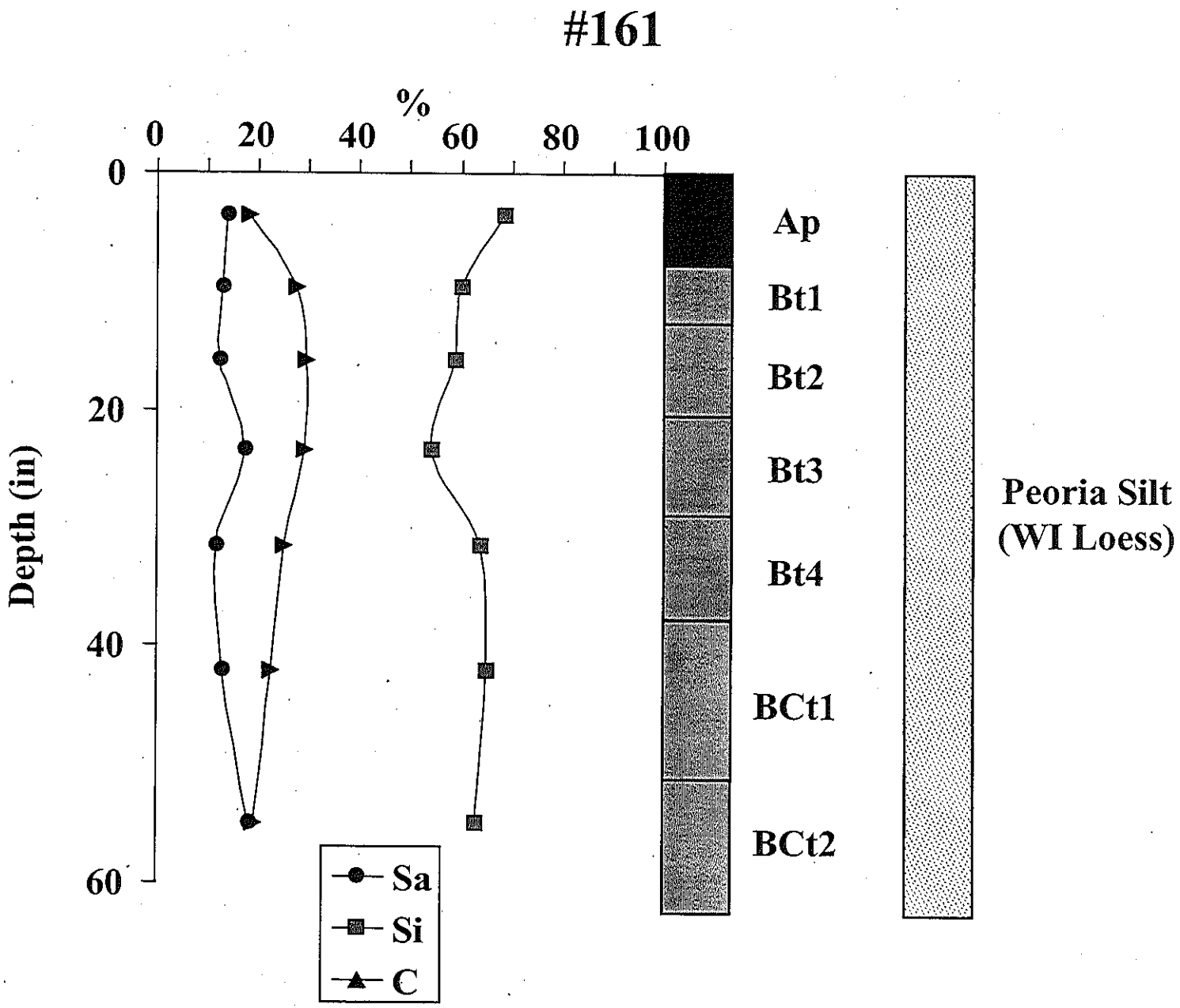

%
0
20
40
60
80
100
Depth (in)
0
20
40
60
CF
Sa
Si
C
Bt of Cr/Bt
Ap
BEt
Bt
2Btb1
2Btb2
3Cr/Btb
3R
= Sangamon Geosol
Peoria Silt
(WI Loess)
Pearl Formation
(IL outwash)
Dolostone

PROFILE: #161 - Rozetta	WEATHER: Sunny, 70°F
PROFILE CLASSIFICATION: 2006 Keys to Soil Taxonomy (mineralogy class presumed to be superactive) Fine-silty, mixed, superactive, mesic Oxyaquic Hapludalf	PHYSIOGRAPHY:
	TOPOGRAPHY:
EPIPEDON: Ochric 0-7 in.	ELEVATION: ~778 ft (237 m) estimated from topo
SUBSURFACE HORIZONS/FEATURES: Argillic 7-60 in.	% SLOPE: 4%
CONTROL SECTION: 7 - 27 in (upper 20 in of argillic) Clay = 28.7%, Sand > 0.1 mm = 1.8%	SLOPE POSITION: Lower backslope in drainageway
COUNTY: Ogle	WATER TABLE: Not observed
LOCATION:	DRAINAGE CLASS: Mod well
DATE SAMPLED: 9/20/2006 DATE DESCRIBED: 9/20/2006	VEGETATION: Recently abandoned ag field succession (lots of weeds...)
SAMPLED BY: Putman & Konen DESCRIBED BY: Putman & Konen	PARENT MATERIAL: Peoria Silt (loess)
	EXPOSURE: Backhoe pit

Horizon	Lower depth (in)	Matrix color (moist)	Lab Texture (by weight) Class	% Clay	% Sand	% Silt	% CF	% OC	Redox Features Color	Amount	Size	Contrast	Structure Grade	Size	Shape	Coatings Type	Amount	Color	Location	Con	Eff	Boundary Dist	Shape	Loading rate (g/d/ft²)
Ap	7	10YR 4/3	sil	18.0	13.8	68.2	0	1.15					2	f	sbk					fr		a	s	0.69 (5C)
													parting to											
													2	f	gr									
Bt1	12	10YR 4/4	sicl	27.5	12.8	59.8	0	0.42					2	f & vf	sbk	clf	c	10YR 4/3	pf	fr		c	s	0.62 (6D)
Bt2	19	10YR 4/4	sicl	29.3	12.2	58.5	0	0.37	10YR 5/6	f	f	d	2	f & m	sbk	clf	c	10YR 4/3	pf	fr		c	s	0.62 (6D)
Bt3	27	10YR 4/4	sicl	28.9	17.0	54.0	0	0.29	10YR 6/2	c	m	d	2	m	sbk	clf	c	10YR 4/3	pf	fr		c	s	0.62 (6D)
									7.5YR 5/6 & 4/6	c	m	d												
Bt4	35	10YR 4/4 & 10YR 5/4	sil	24.9	11.6	63.4	0	0.23	10YR 6/2	m	m	d	2	m	pr	clf	c	10YR 4/3	pf	fr		c	s	0.75 (5D)
									7.5YR 5/6 & 4/6	c	m	d	parting to											
													2	m	sbk									
BCt1	48	10YR 5/4	sil	22.5	12.7	64.7	0	0.21	10YR 6/2	c	m	d	1	m	pr	clf	f	10YR 4/3	pf	fr		g	s	0.69 (5C)
									10YR & 7.5YR 5/6	c	m	d						& 4/4						
BCt2	60	10YR 5/4	sil	19.1	18.2	62.7	0	0.15	10YR 6/2	c	m	d	1	co	pr	clf	f	10YR 4/3	pf	fr				0.69 (5C)
									10YR & 7.5YR 5/6	c	m	d						& 4/4						

BCt2 - Clay films concentrated in coarser prism faces

Items to discuss:
Reworked loess in drainageway
Landscape position and hydrologic relationships


#161
%
0
20
40
60
80
100
Depth (in)
0
20
40
60
Sa
Si
C
Ap
Bt1
Bt2
Bt3
Bt4
BCt1
BCt2
Peoria Silt
(WI Loess)

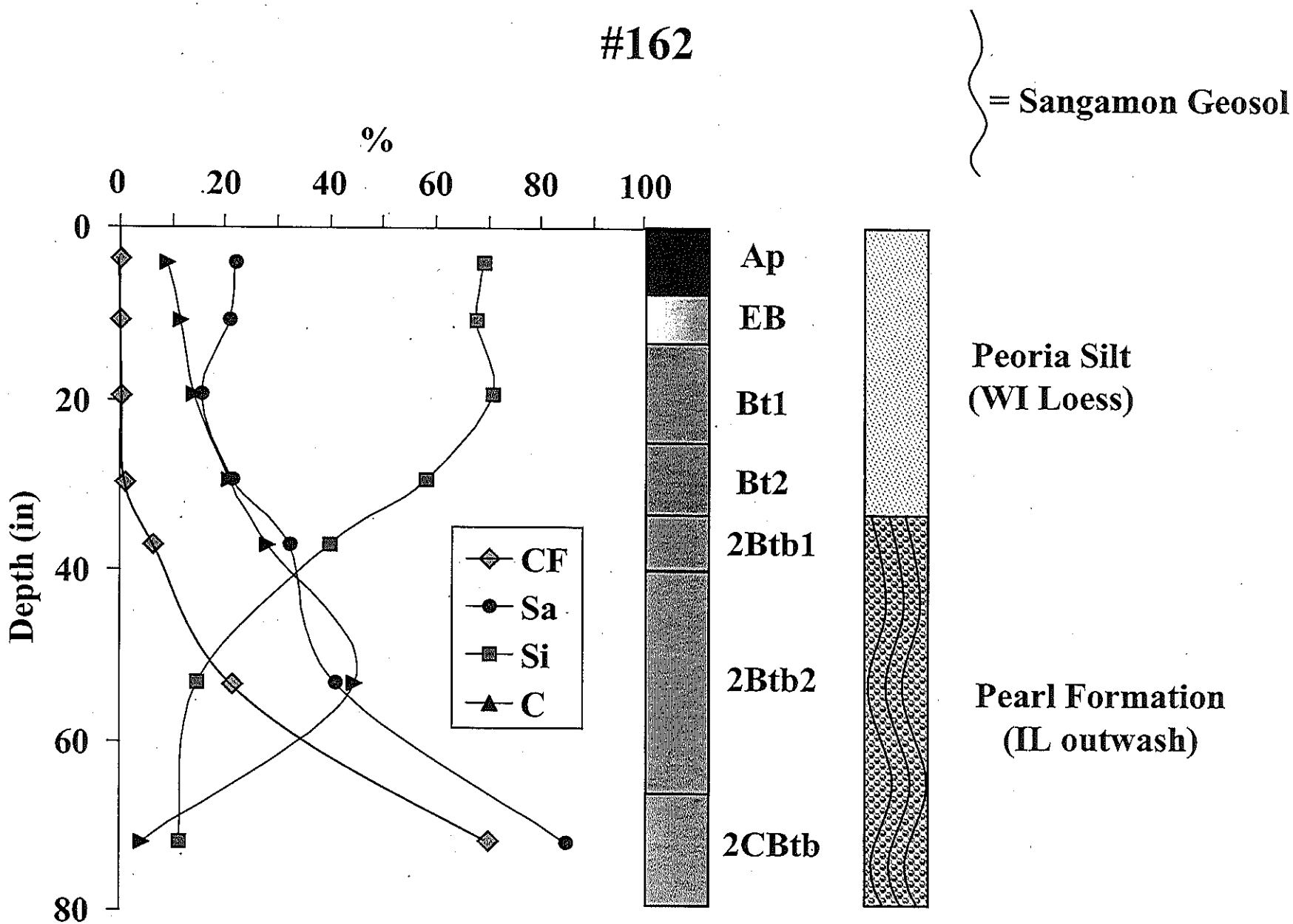
PROFILE: #162 - Myrtle	WEATHER: Sunny, 70°F
PROFILE CLASSIFICATION: 2006 Keys to Soil Taxonomy (mineralogy class presumed to be superactive)	PHYSIOGRAPHY:
Coarse-silty, mixed, superactive, mesic Mollic Hapludalf	TOPOGRAPHY:
EPIPEDON: Ochric 0-13 in.	ELEVATION: ~ 778 ft (237 m) estimated from topo
SUBSURFACE HORIZONS/FEATURES: Argillic 13 - 77 in.	% SLOPE: 9%
CONTROL SECTION: 13 - 33 in (upper 20 in of argillic) Clay = 16.6%, Sand > 0.1 mm = 6.3%	SLOPE POSITION: Backslope
COUNTY: Ogle	WATER TABLE: Not observed
LOCATION:	DRAINAGE CLASS: Well
DATE SAMPLED: 9/20/2006 DATE DESCRIBED: 9/20/2006	VEGETATION: Recently abandoned ag field succession (lots of weeds...)
SAMPLED BY: Zwicker & Kreznor DESCRIBED BY: Zwicker & Kreznor	PARENT MATERIAL: Peoria Silt (loess) over IL outwash (Sangamon Geosol)
	EXPOSURE: Backhoe pit

Horizon	Lower depth (in)	Matrix color (moist)	Lab Texture (by weight)					Vol		Redox Features				Structure			Coatings				Con	Eff	Boundary		Loading rate (g/cm²)
			Class	% Clay	% Sand	% Silt	% CF	% CF	% OC	Color	Amount	Size	Contrast	Grade	Size	Shape	Type	Amount	Color	Location			Dist	Shape	
Ap	8	10YR 3/2	sil	9	21.9	69	0	0	1.85					2	m	gr					fr		a	s	0.62 (5A)
EB	13	10YR 4/4	sil	11.4	20.8	67.7	0	0	0.63					2	m	pl					fr		c	s	0.62 (5A)
Bt1	25	10YR 4/4	sil	14	15.3	70.7	0	0	0.48					2	f	sbk	clf	c	10YR 4/3		fr		c	s	0.75 (5D)
																	sif	f	10YR 7/3						
Bt2	33	10YR 4/4	sil	20.7	21.2	58	1	0	0.29	7.5YR 5/6	c		d	2	f	pr	clf	c	10YR 4/3		fr		c	s	0.75 (5D)
														parting to											
														2	f	abk	sif	f	10YR 7/3						
2Btb1	40	7.5YR 4/6	cl	27.9	32.2	39.9	8	3	0.29	Fe-Mn accum	c			3	m	pr	clf	c	7.5YR 4/4		fi		c	s	0.52 (6G)
														parting to											
														3	m	sbk									
2Btb2	65	5YR 4/6	c	44.5	41	14.5	24	9	0.33					3	co	pr	clf	c	7.5YR 4/4		fi		g	s	N/A (9)
														parting to											
														2	m	sbk									
2CBtb	77	7.5YR 4/4 & 5YR 4/6	grls	4.3	84.6	11.1	66	25						1	co	pr					vfr	sl			N/A (1B)

b

Items to discuss:
Paleosol clay, structure, CF impacts on loading rate
Use of b

#162


= Sangamon Geosol
%
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80
100
Depth (in)
0
20
40
60
80
CF
Sa
Si
C
Ap
EB
Bt1
Bt2
2Btb1
2Btb2
2CBtb
Peoria Silt
(WI Loess)
Pearl Formation
(IL outwash)

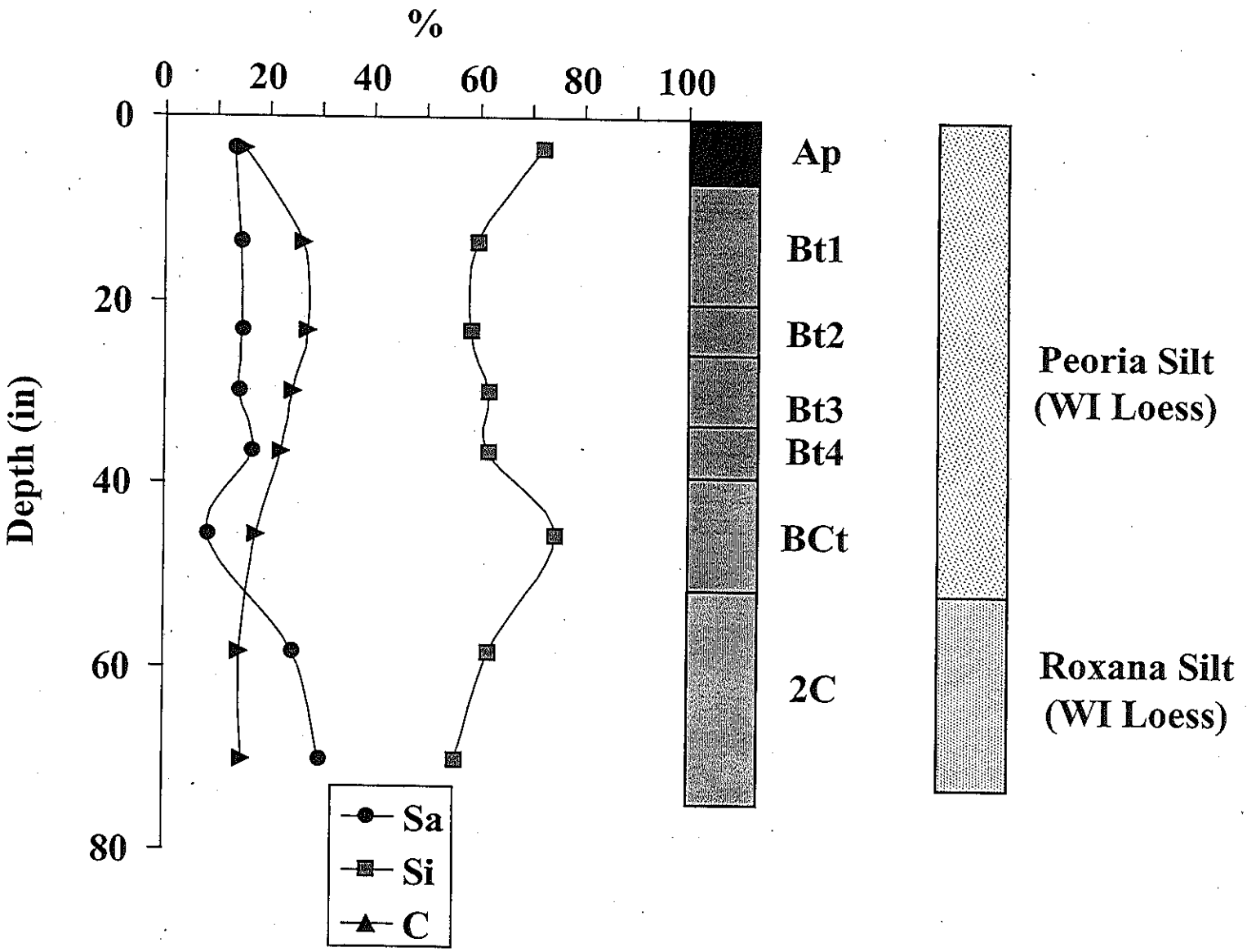
PROFILE: #172 - Fayette	WEATHER: Sunny, 70°F
PROFILE CLASSIFICATION: 2006 Keys to Soil Taxonomy (mineralogy class presumed to be superactive) Fine-silty, mixed, superactive, mesic Typic Hapludalf	PHYSIOGRAPHY:
EPIPEDON: Ochric 0-7 in.	TOPOGRAPHY:
SUBSURFACE HORIZONS/FEATURES: Argillic 7 - 51 in.	ELEVATION: ~ 778 ft (237 m) estimated from topo
CONTROL SECTION: 7 - 27 in (upper 20 in of argillic) Clay = 26.4%, Sand > 0.1 mm = 2.4%	% SLOPE: 6%
COUNTY: Ogle	SLOPE POSITION: Upper backslope
LOCATION:	WATER TABLE: Not observed
DATE SAMPLED: 9/20/2006 DATE DESCRIBED: 9/20/2006	DRAINAGE CLASS: Well
SAMPLED BY: Zwicker, Kreznor, Putman, & Konen DESCRIBED BY: Zwicker & Kreznor	VEGETATION: Recently abandoned ag field succession (lots of weeds...)
	PARENT MATERIAL: Peoria Silt (loess) over Roxana Silt (loess)
	EXPOSURE: Backhoe pit

Horizon	Lower depth (in)	Matrix color (moist)	Lab Texture (by weight)					% OC	Redox Features				Structure			Coatings				Con	Eff	Boundary		Loading rate (g/d/ft²)
			Class	% Clay	% Sand	% Silt	% CF		Color	Amount	Size	Contrast	Grade	Size	Shape	Type	Amount	Color	Location			Dist	Shape	
Ap	7	10YR 4/2	sil	14.8	13.0	72.1	0	1.04					2	vf & f	gr					fr		a	s	0.62 (5A)
Bt1	20	10YR 4/4	sil	26.2	14.2	59.6	0	0.41					2	f	sbk	clf	m	10YR 4/3	pf	fr		c	s	0.75 (5D)
Bt2	26	10YR 4/4	sicl	27.1	14.6	58.3	0	0.27					2	m	sbk	clf	m	10 YR4/3	pf	fr		c	s	0.62 (6D)
																slf	m	10YR 6/3						
Bt3	33	10YR 4/4	sil	24.4	14.0	61.6	0	0.20					2	f	pr	clf	m	10 YR4/3	pf	fr		c	s	0.75 (5D)
													parting to											
													2	f	abk	slf	m	10YR 6/3						
Bt4	39	10YR 4/4	sil	22.0	16.4	61.7	0	0.20					2	m	pr	clf	m	10 YR4/3	pf	fr		g	s	0.75 (5D)
													parting to											
													2	m	sbk	slf	m	10YR 6/3						
BCt	51	10YR 5/4	sil	17.6	8.0	74.4	0	0.17					2	m	pr	clf	m	10 YR4/3	pf	fr		g	s	0.75 (5D)
2C	74	10YR 4/4	sil	14.6	26.9	58.5	1	0.18	Mn concretions	c	f	d	0		ma					fr				0.52 (5L)
									10YR 5/3	c	f	d												

2C - Roxana
51-74 split for lab, 51-64, 64-74.

Items to discuss:
Roxana vs Peoria Silt properties
Landscape position and Roxana presence/absence

#172


%
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Depth (in)
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40
60
80
Sa
Si
C
Ap
Bt1
Bt2
Bt3
Bt4
BCt
2C
Peoria Silt
(WI Loess)
Roxana Silt
(WI Loess)