

File

**CLASSIFICATION AND CORRELATION
OF
THE SOILS OF**

**ST. JOSEPH COUNTY
INDIANA**

APRIL 1974



**U.S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE
MIDWEST TECHNICAL SERVICE CENTER
LINCOLN, NEBRASKA**

UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service
Midwest Technical Service Center
Lincoln, Nebraska 68508

Classification and Correlation
of the Soils of
St. Joseph County, Indiana

The correlation and classification of St. Joseph County, Indiana was held at the MTSC, Lincoln, Nebraska, October 29 through November 2, 1973. Hezekiah Benton, party leader, and Frank W. Sanders, soil correlator, SCS, Indiana assisted Maurice Stout in the review of the draft manuscript documenting the survey and field notes, correlation samples, soil survey field sheets, field correlations, laboratory data, and completed Form SCS-Soils-5's for the Indiana series used. George Holmgren, Soil Survey Investigation Unit, and Paul R. Johnson, SCS, also assisted in portions of the review. Maurice Stout participated in progress field reviews in 1971 and 1972.

Symbol	Field Name	Approved Name	Manuscript* Map Symbol
7140 30	Adrian muck Kerston muck	) Adrian muck, drained)	Ad
512-A-1	Alida loam, 0-2% slopes	) Alida loam,) 0 to 2 percent slopes	AeA
2 12	Alluvial land Shoals loam	) Alluvial land)	Am
422-A-1	Aubbeenaubbee sandy loam, 0-2% slopes	) Aubbeenaubbee sandy loam)	Au
732-A-1	Blount silt loam, 0-2% slopes	) Blount silt loam,) 0 to 2 percent slopes	BbA
Bp	Borrow Pits	Borrow pit	(Will be indicated by appropriate spot symbol. See cultural symbols.)
322-A-1	Brady sandy loam, 0-2% slopes	) Brady sandy loam)	Bd

*The first capital letter is the first one of the series name. The second capital letter indicates the class of slope. Symbols without a slope letter are those with a slope range of 0 to 2 percent. A final number of 2 or 3 in the symbol indicates that the soil is eroded or severely eroded respectively. Symbols without slope or erosion designations are level or nearly level soils or miscellaneous land types.

Symbol	Field Name	Approved Name	Manuscript Map Symbol
303-A-1	Brems fine sand, 0-2% slopes	) Brems fine sand,) 0 to 2 percent slopes	BeA
148	Brookston silty clay loam	Brookston silty clay loam	Br
305-A-1	Plainfield fine sand, 0-2% slopes	) Chelsea fine sand,) 0 to 5 percent slopes	ChA
305-B-1	Plainfield fine sand, 2-6% slopes))	
425-A-1	Chelsea fine sand, 0-2% slopes))	
425-B-1	Chelsea fine sand, 2-6% slopes))	
305-C-1	Plainfield fine sand, 6-12% slopes	) Chelsea fine sand,) 5 to 10 percent slopes	ChC
425-C-1	Chelsea fine sand, 6-12% slopes))	
515-A-1	Dowagiac loam, 0-2% slopes	) Coupee silt loam,) 0 to 2 percent slopes	CoA
525-A-1	Volinia silt loam, 0-2% slopes))	
142-A-1	Crosier loam, 0-2% slopes	) Crosier loam,) 0 to 2 percent slopes	CtA
142-B-1	Crosier loam, 2-4% slopes	) Crosier loam,) 2 to 4 percent slopes	CtB
802-A-1	Del Rey silt loam, 0-2% slopes	) Del Rey silt loam)	De
340	Edwards muck	Edwards muck	Ed
15-A-1	Dickinson fine sandy loam, 0-2% slopes	) Elston sandy loam,) 0 to 2 percent slopes	EsA
475-A-1	Elston sandy loam, 0-2% slopes))	
335-A-1	Fox sandy loam, 0-2% slopes	) Fox sandy loam,) 0 to 2 percent slopes	FsA
335-B-1	Fox sandy loam, 2-6% slopes	) Fox sandy loam,) 2 to 6 percent slopes	FsB
329	Gilford sandy loam	Gilford sandy loam	Gf
	Gravel Pit	Gravel pits	GP

Symbol	Field Name	Approved Name	Manuscript Map Symbol
414-A-1	Hillsdale sandy loam, 0-2% slopes	) Hillsdale sandy loam,) 0 to 2 percent slopes	HdA
414-B-1	Hillsdale sandy loam, 2-6% slopes	) Hillsdale sandy loam,) 2 to 6 percent slopes	HdB
6934-B-1	Riddles sandy loam, 2-6% slopes))	
414-C-1	Hillsdale sandy loam, 6-12% slopes	) Hillsdale complex,) 6 to 12 percent slopes,	HeC2
414-C-2	Hillsdale sandy loam, 6-12% slopes, eroded	) eroded)	
6934-C-1	Riddles sandy loam, 6-12% slopes))	
6934-C-2	Riddles sandy loam, 6-12% slopes, eroded))	
414-D-1	Hillsdale sandy loam, 12-18% slopes	) Hillsdale complex,) 12 to 18 percent slopes,	HeD2
414-D-2	Hillsdale sandy loam, 12-18% slopes, eroded	) eroded)	
6934-D-2	Riddles sandy loam, 12-18% slopes, eroded))	
140W	Houghton muck, wet	Houghton muck	Hm
140	Houghton muck	Houghton muck, drained	Ho
13	Eel loam	Landes loam	La
1	Made land	Made land	Ma
3	Marl beds	Marl spot	(Will be indicated by appropriate spot symbol. See cultural symbols.)
6	Marsh	Marsh	Mc
754-A-1	Martinsville loam, 0-2% slopes	) Martinsville loam,) 0 to 2 percent slopes	MeA
754-B-1	Martinsville loam, 2-6% slopes	) Martinsville loam,) 2 to 6 percent slopes, eroded	MeB2
754-C-1	Martinsville loam, 6-12% slopes	) Martinsville loam,) 6 to 12 percent slopes, eroded	MeC2
289	Maumee loamy fine sand	Maumee loamy fine sand	Mf

Symbol	Field Name	Approved Name	Manuscript Map Symbol
329m	Gilford mucky sandy loam	Maumee mucky loamy fine sand	Mg
424-B-1	Metea loamy fine sand, 2-6% slopes	) Metea loamy fine sand,) 4 to 10 percent slopes	MkB
424-C-2	Metea loamy fine sand, 6-12% slopes, eroded))	
144-B-1	Miami loam, 2-6% slopes	) Miami loam,) 2 to 6 percent slopes	MmB
144-C-1	Miami loam, 6-12% slopes	) Miami loam,) 6 to 12 percent slopes, eroded	MmC2
144-C-3	Miami clay loam, 6-12% slopes, severely eroded	) Miami clay loam,) 6 to 12 percent slopes,) severely eroded	MoC3
144-D-3	Miami clay loam, 12-18% slopes, severely eroded	) Miami clay loam,) 12 to 18 percent slopes,) severely eroded	MoD3
808	Milford silty clay loam	Milford silty clay loam	Mp
734-B-1	Morley silt loam, 2-6% slopes	) Morley silt loam,) 2 to 6 percent slopes, eroded	MrB2
734-C-2	Morley silt loam, 6-12% slopes, eroded	) Morley silt loam,) 6 to 12 percent slopes, eroded	MrC2
734-D-3	Morley silty clay loam, 12-18% slopes, severely eroded	) Morley silty clay loam,) 12 to 18 percent slopes,) severely eroded	MsD3
325-A-1	Oshtemo sandy loam, 0-2% slopes	) Oshtemo sandy loam,) 0 to 2 percent slopes	Osa
325-B-1	Oshtemo sandy loam, 2-6% slopes	) Oshtemo sandy loam,) 2 to 6 percent slopes	Osb
325-C-1	Oshtemo sandy loam, 6-12% slopes	) Oshtemo sandy loam,) 6 to 12 percent slopes,	Osc2
335-C-1	Fox sandy loam, 6-12% slopes	) eroded)	

Symbol	Field Name	Approved Name	Manuscript Map Symbol
325-D-1	Oshtemo sandy loam, 12-18% slopes	) Oshtemo sandy loam,) 12 to 18 percent slopes	OsD
335-D-1	Fox sandy loam, 12-18% slopes))	
5140	Palms muck	Palms muck, drained	Pa
502-A-1	Quinn loam, 0-2% slopes	) Quinn loam)	Qu
278	Rensselaer loam	Rensselaer loam	Re
278m	Rensselaer mucky loam	Rensselaer mucky loam	Rm
934-A-1	Riddles loam, 0-2% slopes	) Riddles loam,) 0 to 2 percent slopes	RtA
6934-A-1	Riddles sandy loam, 0-2% slopes))	
934-B-1	Riddles loam, 2-6% slopes	) Riddles loam,) 2 to 6 percent slopes	RtB
934-C-1	Riddles loam, 6-12% slopes	) Riddles loam,) 6 to 12 percent slopes,	RtC2
934-C-2	Riddles loam, 6-12% slopes, eroded	) eroded)	
934-D-2	Riddles loam, 12-18% slopes, eroded	) Riddles loam,) 12 to 18 percent slopes,	RtD2
6934-D-2	Riddles sandy loam, 12-18% slopes, eroded	) eroded)	
302-A-1	Tedrow fine sand, 0-2% slopes	) Tedrow fine sand)	Te
505-A-1	Tracy loam, 0-2% slopes	) Tracy sandy loam,) 0 to 2 percent slopes	TrA
505-B-1	Tracy loam, 2-6% slopes	) Tracy sandy loam,) 2 to 6 percent slopes	TrB
515-B-1	Dowagiac loam, 2-6% slopes))	
505-C-1	Tracy loam, 6-12% slopes	) Tracy sandy loam,) 6 to 12 percent slopes, eroded	TrC2

Symbol	Field Name	Approved Name	Manuscript Map Symbol
523	Troxel silt loam	Troxel silt loam	Tx
1135-A-1	Tyner loamy sand, 0-2% slopes	) Tyner loamy sand,) 0 to 6 percent slopes	TyA
1135-B-1	Tyner loamy sand, 2-6% slopes))	
1135-C-1	Tyner loamy sand, 6-12% slopes	) Tyner loamy sand,) 6 to 12 percent slopes	TyC
1135-D-1	Tyner loamy sand, 12-18% slopes	) Tyner loamy sand,) 12 to 18 percent slopes	TyD
100	Wallkill silt loam	Wallkill silt loam	Wk
108	Washtenaw silt loam	Washtenaw silt loam	Ws
752-A-1	Whitaker loam, 0-2% slopes	) Whitaker loam)	Wt

Series established by this correlation:

Coupee
Crosier

Series dropped or made inactive:

None

All survey field sheets are joined. The field sheets are also joined with the soil survey in adjacent Elkhart County. The one exception is that Chelsea of St. Joseph County joins Plainfield in Elkhart. No Plainfield was mapped because of banding.

The general soil maps are joined except for one minor placement of lines. Interpretations were checked during the correlation conference against the data on SCS-Soils-5's from Indiana and other parent states. This will be checked further in the revision of the draft manuscript.

The join to Elkhart County is reasonable.

The soil survey field sheets were reviewed during the conference and used to answer various questions. These are very good maps that are clean, neat, and with excellent lines and readable symbols. These maps have been forwarded to the Cartographic Unit for processing. Provisions of Soils Memorandum-8 have been complied with.

The completed draft manuscript was completed and used during this correlation as evidence along with other data already cited. Revisions had been penciled in by the assistant state soil scientist handling manuscripts and interpretations. Further technical and editorial changes were made during our review of the data. In general, it was well prepared and will be in good shape for general review after suggested changes are made.

Instructions for Map Compilation:

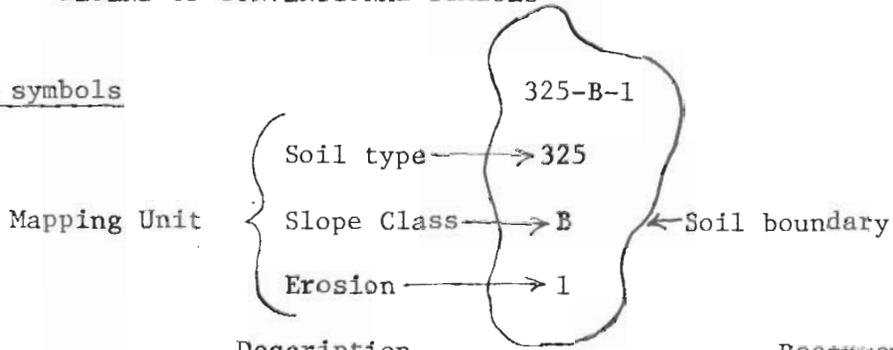
All cultural symbols to be used in map compilation are noted as are those to be deleted. Appropriate symbols will be assigned using the Guide for Map Compilation on Photobase Map Sheets. Ad hoc symbols are suggested for those without assigned symbols. Roads will be shown as per coded county road map furnished with copies of field sheets. These were changed to divided, dual, and good motor roads.

Rural houses will be retained but urban "clusters" and "string" developments along roads and highways will not be compiled.

Marl beds will be symbolized with the ad hoc symbol of the following legend. Delineation lines will not be compiled.

• LEGEND OF CONVENTIONAL SYMBOLS

Soil boundaries and symbols



Symbol

Description

Recommended Disposition

ROADS

	Good motor	
	4 lane highway	Retain
	2 lane highway	Retain
	Poor motor	Retain

RAILROADS

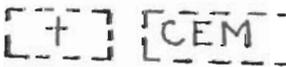
	Single track	Retain
	Multiple track	Retain
	Abandoned	Delete

	(BLUE) Dam	Retain
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	Buildings	(Retain only rural houses and hospitals - delete urban clusters, etc.)
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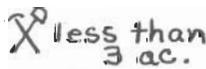
	School	Retain
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	Church	Retain
---	--------	--------

	Cemetery (larger ones Named)	Retain
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	Power-transmission line	Retain
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Gravel pit, includes sand pits

	Small	Retain
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	Large	Retain
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<u>Symbol</u>	<u>Description</u>	<u>Recommended Disposition</u>
	Perennial Streams (Named)	Retain
	Intermittent Streams, not crossable with farm machinery	Retain
	Waterway, crossable with farm machinery	Retain
	Gullies	Retain
	Lake or Pond, perennial	Retain
	Intermittent Lake	Retain
	Drainage ends	Retain
	Wet spot, up to one acre	Retain
RELIEF		
	Escarpment - slopes over 18 percent (other than bedrock)	Retain
	Depression - areas that are depressional and surrounded by higher ground but most areas can be cultivated	Retain
BOUNDARIES		
	State line	Retain
	County line	Retain
	Photo outline	Retain
	City, Park, Airport boundary	Retain
SPECIAL SYMBOLS (one for each 3 ac. area or less)		
	Clay spot	Delete
	Sand spot	Retain
	Severe erosion	Retain
	Iron spot	Retain
	Marl spot	Retain

Symbol

Description

Recommended
Disposition

SPECIAL SYMBOLS (one for each 3 ac. area or less)

B.P.



Borrow pit

Retain

Gravel

Retain

Approved: April 16, 1974

Maurice Stout, Jr.
Principal Soil Correlator
Midwest TSC

CONVERSION LEGEND RELATING FIELD MAP SYMBOLS
TO PUBLICATION SYMBOLS

Field Symbol	Publication Symbol	Field Symbol	Publication Symbol
1	Ma	414-D-1	HeD2
2	Am	414-D-2	HeD2
6	Mc	422-A-1	Au
12	Am	424-B-1	MkB
13	La	424-C-2	MkB
15-A-1	EsA	425-A-1	ChA
30	Ad	425-B-1	ChA
GP	Gp	425-C-1	ChC
100	Wk	475-A-1	EsA
108	Ws	502-A-1	Qu
140	Ho	505-A-1	TrA
140W	Hm	505-B-1	TrB
142-A-1	CtA	505-C-1	TrC2
142-B-1	CtB	512-A-1	AeA
144-B-1	MmB	515-A-1	CoA
144-C-2	MmC2	515-B-1	TrB
144-C-3	MoC3	523	Tx
144-D-3	MoD3	525-A-1	CoA
148	Br	534	Lakes
200	Water -- (St. Joe Riv.)	732-A-1	BbA
278	Re	734-B-1	Mrb2
278m	Rm	734-C-2	Mrc2
289	Mf	734-D-3	MsD3
302-A-1	Te	752-A-1	Wt
303-A-1	BeA	754-A-1	MeA
305-A-1	ChA	754-B-1	MeB2
305-B-1	ChA	754-C-1	MeC2
305-C-1	ChC	802-A-1	De
322-A-1	Bd	808	Mp
325-A-1	OsA	934-A-1	RtA
325-B-1	OsB	934-B-1	RtB
325-C-1	OsC2	934-C-1	RtC2
325-D-1	OsD	934-C-2	RtC2
329	Gf	934-D-2	RtD2
329m	Mg	1135-A-1	TyA
335-A-1	FsA	1135-B-1	TyA
335-B-1	FsB	1135-C-1	TyC
335-C-1	OsC2	1135-D-1	TyD
335-D-1	OsD	5140	Pa
340	Ed	6934-A-1	RtA
414-A-1	HdA	6934-B-1	HdB
414-B-1	HdB	6934-C-1	HeC2
414-C-1	HeC2	6934-C-2	HeC2
414-C-2	HeC2	6934-D-2	HeD2
		7140	Ad

CLASSIFICATION OF PEDONS SAMPLED FOR
LABORATORY ANALYSIS

Beltsville Soils Lab.

Sampled As:	Lab. Numbers:	Approved:
Door series	70B474-70B485 S70IN71-1-(1-12)	Coupee
Quinn series	70B486-70B494 S70IN71-2-(1-9)	Quinn

Purdue University Soils Lab.

Sampled As:	Lab. Numbers:	Approved:
Crosby series	217-222, S70IND71-5-1	Crosier
Del Rey series	70-103-110, S69IND-71-7-(1-8)	Del Rey
Dickinson series	210-216, S70IND71-4-1	Dickinson <u>1/</u>
Hillsdale series	70-81-88, S69IND-71-4-(1-8) 70-73-80, S69IND-71-3-(1-8)	Hillsdale
Martinsville series	70-58-60, S69IND-71-1-(1-9) 70-67-72, S69IND-71-2-(1-6)	Martinsville
Riddles series	70-89-95, S69IND-71-5-(1-7) 70-96-102, S69IND-71-6-(1-7)	Riddles

1/ Acreage small and combined with Elston mapping units for convenience.

Notes to Accompany
Classification and Correlation
of the Soils of
St. Joseph County, Indiana

by
Maurice Stout, Jr.

ADRIAN SERIES

Includes soils having thin sand layers within the lower portion of the organic portion. The unit includes areas within that are in depressions and are designated by wet spot symbols. Nearly all of this unit is cropped and drained.

ALIDA SERIES

These soils have a higher water table than typical, but the interpretations are the same as for the Alida series. They also have a contrasting layer above 40 inches. They are mapped in association with the Coupee series which has a contrasting texture modifier. These soils are taxadjunct to the series and are fine-loamy over sandy or sandy-skeletal, mixed, mesic members of the Aquollic Hapludalfs.

CHELSEA SERIES

The units on 0 to 2 percent and 2 to 6 percent slopes were combined because of the same interpretations on both units. We question whether these soils should be class III on 0 to 12 percent slopes.

COUPEE SERIES

Coupee soils have mollic epipedons but the base status of the underlying horizons are too low to qualify for a Mollisol. The series is properly placed, according to present criteria, as an Ultic Hapludalf. Because of the criteria it does not even qualify for a mollic intergrade. Indiana feels that the genesis of these soils are the same as the Mollisols but the materials are inherently low in base status. The placement of Ultic Hapludalf does not reveal the true processes of these soils. The Hapludalfs and Ultisols are not parallel in this respect in that the latter provides for a mollic intergrade using the Humic subgroup. This will be further explored. Coupee will be established as a fine-loamy over sandy or sandy-skeletal, mixed, mesic member of Ultic Hapludalfs and challenged for (Mollic) intergrades.

CROSIER SERIES

The Crosier differs from Crosby in that it is fine-loamy and contains less sand. It is established with a type location in St. Joseph County, Indiana.

DICKINSON SERIES

The small acreage of Dickinson units were combined with those of the Elston series on the recommendations of the survey party chief and state soil correlator.

DOWAGIAC SERIES

Units called Dowagiac were combined with units of the Coupee and Tracy series on the recommendations of the Indiana personnel.

EEL SERIES

These soils are too sandy for the Eel series with sandy loam at 23 inches and stratified sand at 33 inches. In addition, the surface horizons qualify for a mollic epipedon. They are Fluventic Hapludolls. The evidence places these soils into the Landes series.

FOX SERIES

These soils are poor examples of the Fox series based on the correlation samples and descriptions. They are similar to Boyer and Oshtemo series. Oshtemo is generally too deep and Boyer should be considered with its dark surface. The unit on 6 to 12 percent slopes is too sandy for Fox and is combined with a similar unit of Oshtemo. The remaining units were retained in the Fox series because the Boyer had not been used in this part of the state and because the party chief assured the correlator that these soils were less coarse and less dark than represented.

HILLSDALE SERIES

Michigan is requested to revise the Hillsdale series as coarse-loamy and replace the present typifying pedon which is fine-loamy. The Riddles series will handle the fine-loamy pedons. Units of Hillsdale were renamed as Hillsdale complex to better the composition of the morainic landscapes. Also included are 10 to 30 percent of Oshtemo, 15 to 25 percent of Riddles, 10 to 15 percent unclassified, and about 5 percent inclusions to go with the 35-50 percent Hillsdale soils.

MARL BEDS

These are less than 5 acres in size and of small total acreage. Delineations will be removed in compilation and the specified ad hoc symbol (see Instructions to the Cartographic Unit) will be used.

METEA SERIES

Wind activity will be described in the mapping unit and the "eroded" is dropped from the name of these Arenic Hapludalfs.

SHOALS SERIES

The small acreage of soils called Shoals were combined with Alluvial land. These acres are not feasible to drain and are poorly suited for cropping. The Shoals name and interpretations are inappropriate and misleading in respect to present land use and potential.

TEDROW SERIES

The soils of the survey area are grayer and apparently wetter than the series concept; class IIIw versus IIw of the series. They are taxadjunct in this respect.

WALLKILL SERIES

Indiana has placed this soil into IIw; New York IVw. Yield on these soils in Indiana is 140 bushel corn. Indiana feels that these soils are no more than IIw in difficulty in draining and managing.

WASHTENAW SERIES

The classification of the Washtenaw series is incorrect by present Soil Taxonomy criteria. It is finely stratified throughout and is changed to fine-loamy, mixed, mesic, Aeric Fluvaquents. Michigan and Wisconsin will be advised of this change.

CLASSIFICATION OF SOILS

<u>Soil Series</u>	<u>Classification</u>
Adrian	Terric Medisaprists, sandy or sandy-skeletal, mixed, euic, mesic
Alida*	Aquollic HapludalFs, fine-loamy, mixed, mesic
Aubbeenaubbee	Aeric Ochraqualfs, fine-loamy, mixed, mesic
Blount	Aeric Ochraqualfs, fine, illitic, mesic
Brady	Aquollic HapludalFs, coarse-loamy, mixed, mesic
Brems	Aquic Udipsamments, mixed, mesic
Brookston	Typic Argiaquolls, fine-loamy, mixed, mesic
Chelsea	Alfic Udipsamments, mixed, mesic
Coupee	Ultic HapludalFs, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Crosier	Aeric Ochraqualfs, fine-loamy, mixed, mesic
Del Rey	Aeric Ochraqualfs, fine, illitic, mesic
Edwards	Limnic Medisaprists, marly, euic, mesic
Elston	Typic Argiudolls, coarse-loamy, mixed, mesic
Fox	Typic HapludalFs, fine-loamy over sandy or sandy-skeletal, mixed, mesic
Gilford	Typic Haplaquolls, coarse-loamy, mixed, mesic
Hillsdale	Typic HapludalFs, coarse-loamy, mixed, mesic
Houghton	Typic Medisaprists, euic, mesic
Landes	Fluventic Hapludolls, coarse-loamy, mixed, mesic
Martinsville	Typic HapludalFs, fine-loamy, mixed, mesic
Maumee	Typic Haplaquolls, sandy, mixed, mesic
Metea	Arenic HapludalFs, loamy, mixed, mesic
Miami	Typic HapludalFs, fine-loamy, mixed, mesic

<u>Soil Series</u>	<u>Classification</u>
Milford	Typic Haplaquolls, fine, mixed, mesic
Morley	Typic Hapludalfs, fine, illitic, mesic
Oshtemo	Typic Hapludalfs, coarse-loamy, mixed, mesic
Palms	Terric Medisaprists, loamy, mixed, euic, mesic
Quinn	Typic Ochraqualfs, coarse-loamy, mixed, mesic
Rensselaer	Typic Argiaquolls, fine-loamy, mixed, mesic
Riddles	Typic Hapludalfs, fine-loamy, mixed, mesic
Tedrow	Aquic Udipsamments, mixed, mesic
Tracy	Ultic Hapludalfs, coarse-loamy, mixed, mesic
Troxel	Typic Argiudolls, fine-silty, mixed, mesic
Tyner	Typic Udipsamments, mixed, mesic
Wallkill	Thapto-Histic Fluvaquents, fine-loamy, mixed, nonacid, mesic
Washtenaw	Typic Haplaquents, fine-loamy, mixed, nonacid, mesic
Whitaker	Aeric Ochraqualfs, fine-loamy, mixed, mesic

* Taxadjunct -- See Notes to Accompany Classification and Correlation of the Soils of St. Joseph County, Indiana