Attachment C

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 1 **Photo Location:** Wetland A **Direction:** **Survey Date:** 10/30/2020 **Comments:** Wetland Point Associated with Wetland A	
Photograph ID: 2 **Photo Location:** Wetland A **Direction:** **Survey Date:** 10/30/2020 **Comments:** Upland Point Associated with Wetland A	

Stantec **Photographic Log**

<table>
<tr><td>Client:</td><td>Martin County Solar Project, LLC</td><td>Project:</td><td>Wetland Delineation</td></tr>
<tr><td>Site Name:</td><td>Martin County Solar Site</td><td>Site Location:</td><td>Inez, Martin County, Kentucky</td></tr>
</table>

<table>
<tr><td>Photograph ID: 3</td><td rowspan="5"></td></tr>
<tr><td>Photo Location:
Wetland B</td></tr>
<tr><td>Direction:</td></tr>
<tr><td>Survey Date:
10/30/2020</td></tr>
<tr><td>Comments:
Wetland Point Associated with Wetland B</td></tr>
<tr><td>Photograph ID: 4</td><td rowspan="5"></td></tr>
<tr><td>Photo Location:
Wetland B</td></tr>
<tr><td>Direction:</td></tr>
<tr><td>Survey Date:
10/30/2020</td></tr>
<tr><td>Comments:
Upland Point Associated with Wetland B</td></tr>
</table>

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 5 **Photo Location:** Wetland C **Direction:** **Survey Date:** 10/30/2020 **Comments:** Weland Point Associated with Wetland C	
Photograph ID: 6 **Photo Location:** Wetland C **Direction:** **Survey Date:** 10/30/2020 **Comments:** Upland Point Associated with Wetland C	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 7 **Photo Location:** Wetland D **Direction:** **Survey Date:** 10/30/2020 **Comments:** Upland Point Associated with Wetland D	
Photograph ID: 8 **Photo Location:** Wetland E **Direction:** **Survey Date:** 10/30/2020 **Comments:** Wetland Point Associated with Wetland E	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 9 **Photo Location:** Wetland E/F **Direction:** **Survey Date:** 10/31/2020 **Comments:** Upland Point Associated with Wetland E & Wetland F	
Photograph ID: 10 **Photo Location:** Wetland F **Direction:** **Survey Date:** 10/31/2020 **Comments:** Wetland Point Associated with Wetland F	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 11

Photo Location:
Wetland G

Direction:

Survey Date:
10/31/2020

Comments:
Wetland Point Associated with Wetland G

Photograph ID: 12

Photo Location:
Wetland G/H

Direction:

Survey Date:
10/31/2020

Comments:
Upland Point Associated with Wetlands G & Wetland H

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 13 **Photo Location:** Wetland H **Direction:** **Survey Date:** 10/31/2020 **Comments:** Wetland Point Associted with Wetland H	
Photograph ID: 14 **Photo Location:** Wetland I **Direction:** **Survey Date:** 10/31/2020 **Comments:** Wetland Point Associated with Wetland I	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 15

Photo Location: Wetland I

Direction:

Survey Date: 10/31/2020

Comments: Upland Point Associated with Wetland I

Photograph ID: 16

Photo Location: Wetland J

Direction:

Survey Date: 10/31/2020

Comments: Wetland Point Associated with Wetland J

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 17 **Photo Location:** Wetland J **Direction:** **Survey Date:** 10/31/2020 **Comments:** Upland Point Associated with Wetland J	
Photograph ID: 18 **Photo Location:** Wetland K **Direction:** **Survey Date:** 11/1/2020 **Comments:** Wetland Point Associated with Wetland K	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 19 **Photo Location:** Wetland K **Direction:** **Survey Date:** 11/1/2020 **Comments:** Upland Point Associated with Wetland K	
Photograph ID: 20 **Photo Location:** Wetland L **Direction:** **Survey Date:** 11/1/2020 **Comments:** Wetland Point Assciated with Wetland L	

Stantec **Photographic Log**

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 21

Photo Location: Wetland L

Direction:

Survey Date: 11/1/2020

Comments: Upland Point Associated with Wetland L

Photograph ID: 22

Photo Location: Wetland M

Direction:

Survey Date: 11/1/2020

Comments: Wetland Point Associated with Wetland M

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 23 **Photo Location:** Wetland M **Direction:** **Survey Date:** 11/1/2020 **Comments:** Upland Point Associated with Wetland M	
Photograph ID: 24 **Photo Location:** Wetland N **Direction:** **Survey Date:** 11/2/2020 **Comments:** Wetland Point Associated with Wetland N	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 25 **Photo Location:** Wetland N **Direction:** **Survey Date:** 11/2/2020 **Comments:** Upland Point Associated with Wetland N	
Photograph ID: 26 **Photo Location:** Wetland O **Direction:** **Survey Date:** 11/2/2020 **Comments:** Wetland Point Associated with Wetland O	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 27

Photo Location:
Wetland O

Direction:

Survey Date:
11/2/2020

Comments:
Upland Point Associated with Wetland O

Photograph ID: 28

Photo Location:
Wetland P

Direction:

Survey Date:
11/2/2020

Comments:
Wetland Point Associated with Wetland P

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 29

Photo Location:
Wetland P

Direction:

Survey Date:
11/2/2020

Comments:
Upland Point Associated with Wetland P

Photograph ID: 30

Photo Location:
Wetland Q

Direction:

Survey Date:
11/2/2020

Comments:
Wetland Point Associated with Wetland Q

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 31 **Photo Location:** Wetland Q **Direction:** **Survey Date:** 11/2/2020 **Comments:** Upland Point Associated with Wetland Q	
Photograph ID: 32 **Photo Location:** Wetland R **Direction:** **Survey Date:** 11/2/2020 **Comments:** Wetland Point Associated with Wetland R	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 33

Photo Location:
Wetland R

Direction:

Survey Date:
11/2/2020

Comments:
Upland Point Associated with Wetland R

Photograph ID: 34

Photo Location:
Wetland S

Direction:

Survey Date:
11/2/2020

Comments:
Wetland Point Associated with Wetland S

Stantec **Photographic Log**

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 35

Photo Location:
Wetland S

Direction:

Survey Date:
11/2/2020

Comments:
Upland Point Associated with Wetland S

Photograph ID: 36

Photo Location:
Wetland T

Direction:

Survey Date:
11/2/2020

Comments:
Wetland Point Associated with Wetland T

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 37 **Photo Location:** Wetland T **Direction:** **Survey Date:** 11/2/2020 **Comments:** Upland Point Associated with Wetland T	
Photograph ID: 38 **Photo Location:** Wetland U **Direction:** **Survey Date:** 11/2/2020 **Comments:** Wetland Point Associated with Wetland U	

Stantec

Photographic Log

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 39 **Photo Location:** Wetland U **Direction:** **Survey Date:** 11/2/2020 **Comments:** Upland Point Associated with Wetland U	
Photograph ID: 40 **Photo Location:** Wetland V **Direction:** **Survey Date:** 11/2/2020 **Comments:** Wetland Point Associated with Wetland V	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 41 **Photo Location:** Wetland V **Direction:** **Survey Date:** 11/3/2020 **Comments:** Upland Point Associated with Wetland V	
Photograph ID: 42 **Photo Location:** Wetland W **Direction:** **Survey Date:** 11/3/2020 **Comments:** Wetland Point Associated with Wetland W	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 43

Photo Location:
Wetland W

Direction:

Survey Date:
11/3/2020

Comments:
Upland Point Associated with Wetland W

Photograph ID: 44

Photo Location:
Wetland X

Direction:

Survey Date:
11/3/2020

Comments:
Wetland Point Associated with Wetland X

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 45 **Photo Location:** Wetland X **Direction:** **Survey Date:** 11/3/2020 **Comments:** Upland Point Associated with Wetland X	
Photograph ID: 46 **Photo Location:** Wetland Y **Direction:** **Survey Date:** 11/3/2020 **Comments:** Wetland Point Associated with Wetland Y	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 47 **Photo Location:** Wetland Y **Direction:** **Survey Date:** 11/3/2020 **Comments:** Upland Point Associated with Wetland Y	
Photograph ID: 48 **Photo Location:** Wetland Z **Direction:** **Survey Date:** 11/4/2020 **Comments:** Wetland Point Associated with Wetland Z	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 49

Photo Location: Wetland Z

Direction:

Survey Date: 11/4/2020

Comments: Upland Point Associated with Wetland Z

Photograph ID: 50

Photo Location: Wetland AA

Direction:

Survey Date: 11/4/2020

Comments: Wetland Point Associated with Wetland AA

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 51 **Photo Location:** Wetland AA **Direction:** **Survey Date:** 11/4/2020 **Comments:** Upland Point Associated with Wetland AA	
Photograph ID: 52 **Photo Location:** Wetland AB **Direction:** **Survey Date:** 11/4/2020 **Comments:** Wetland Point Associated with Wetland AB	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 53

Photo Location:
Wetland AB

Direction:

Survey Date:
11/4/2020

Comments:
Upland Point Associated with Wetland AB

Photograph ID: 54

Photo Location:
Wetland AC

Direction:

Survey Date:
11/4/2020

Comments:
Wetland Point Associated with Wetland AC

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 55 **Photo Location:** Wetland AC **Direction:** **Survey Date:** 11/4/2020 **Comments:** Upland Point Associated with Wetland AC	
Photograph ID: 56 **Photo Location:** Wetland AD **Direction:** **Survey Date:** 11/4/2020 **Comments:** Wetland Point Associated with Wetland AD	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 57 **Photo Location:** Wetland AD **Direction:** **Survey Date:** 11/4/2020 **Comments:** Upland Point Associated with Wetland AD & AE	
Photograph ID: 58 **Photo Location:** Wetland AE **Direction:** **Survey Date:** 11/4/2020 **Comments:** Wetland Point Associated with Wetland AE	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 59 **Photo Location:** Wetland AF **Direction:** **Survey Date:** 11/4/2020 **Comments:** Wetland Point Associated with Wetland AF	
Photograph ID: 60 **Photo Location:** Wetland AF **Direction:** **Survey Date:** 11/4/2020 **Comments:** Upland Point Associated with Wetland AF	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 61 **Photo Location:** Wetland AG **Direction:** **Survey Date:** 11/5/2020 **Comments:** Wetland Point Associated with Wetland AG	
Photograph ID: 62 **Photo Location:** Wetland AG **Direction:** **Survey Date:** 11/5/2020 **Comments:** Upland Point Associated with Wetland AG	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 63

Photo Location:
Wetland AH

Direction:

Survey Date:
11/5/2020

Comments:
Wetland Point Associated with Wetland AH

Photograph ID: 64

Photo Location:
Wetland AH

Direction:

Survey Date:
11/5/2020

Comments:
Upland Point Associated with Wetland AH

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 65 **Photo Location:** Wetland AJ **Direction:** **Survey Date:** 11/5/2020 **Comments:** Wetland Point Associated with Wetland AJ	
Photograph ID: 66 **Photo Location:** Wetland AJ **Direction:** **Survey Date:** 11/5/2020 **Comments:** Upland Point Associated with Wetland AJ	

Stantec

Photographic Log

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 67

Photo Location:
Wetland AK

Direction:

Survey Date:
11/5/2020

Comments:
Wetland Point Associated with Wetland AK

Photograph ID: 68

Photo Location:
Wetland AL

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AL

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 69

Photo Location:
Wetland AM

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AM

Photograph ID: 70

Photo Location:
Wetland AL/AM

Direction:

Survey Date:
11/6/2020

Comments:
Upland Point Associated with Wetlands AL and AM

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 71

Photo Location:
Wetland AN

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AN

Photograph ID: 72

Photo Location:
Wetland AN

Direction:

Survey Date:
11/6/2020

Comments:
Upland Point Associated with Wetland AN

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 73

Photo Location:
Wetland AO

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AO

Photograph ID: 74

Photo Location:
Wetland AO

Direction:

Survey Date:
11/6/2020

Comments:
Upland Point Associated with Wetland AO

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 75 **Photo Location:** Wetland AP **Direction:** **Survey Date:** 11/6/2020 **Comments:** Wetland Point Associated with Wetland AP	
Photograph ID: 76 **Photo Location:** Wetland AQ **Direction:** **Survey Date:** 11/6/2020 **Comments:** Wetland Point Associated with Wetland AQ	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 77

Photo Location:
Wetland AP/AQ

Direction:

Survey Date:
11/6/2020

Comments:
Upland Point Associated with Wetlands AP and AQ

Photograph ID: 78

Photo Location:
Wetland AR

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AR

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 79 **Photo Location:** Wetland AR **Direction:** **Survey Date:** 11/6/2020 **Comments:** Upland Point Associated with Wetland AR	
Photograph ID: 80 **Photo Location:** Wetland AS **Direction:** **Survey Date:** 11/6/2020 **Comments:** Wetland Point Associated with Wetland AR	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 81

Photo Location:
Wetland AS

Direction:

Survey Date:
11/6/2020

Comments:
Upland Point Associated with Wetland AS

Photograph ID: 82

Photo Location:
Wetland AT

Direction:

Survey Date:
11/6/2020

Comments:
Wetland Point Associated with Wetland AT

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 83	
Photo Location: Wetland AT	
Direction:	
Survey Date: 11/6/2020	
Comments: Upland Point Associated with Wetland AT	

Photograph ID: 84	
Photo Location: Wetland AU	
Direction:	
Survey Date: 11/4/2020	
Comments: Wetland Point Associated with Wetland AU	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 85

Photo Location:
Wetland AU

Direction:

Survey Date:
11/4/2020

Comments:
Upland Point Associated with Wetland AU

Photograph ID: 86

Photo Location:
Wetland AV

Direction:

Survey Date:
11/4/2020

Comments:
Wetland Point Associated with Wetland AV

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 87	
Photo Location: Wetland AV	
Direction:	
Survey Date: 11/4/2020	
Comments: Upland Point Associated with Wetland AV	
Photograph ID: 88	
Photo Location: Wetland AW	
Direction:	
Survey Date: 11/5/2020	
Comments: Wetland Point Associated with Wetland AW	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 89

Photo Location:
Wetland AW

Direction:

Survey Date:
11/5/2020

Comments:
Upland Point Associated with Wetland AW

Photograph ID: 90

Photo Location:
Wetland AX

Direction:

Survey Date:
11/5/2020

Comments:
Wetland Point Associated with Wetland AX

Stantec **Photographic Log**

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 91

Photo Location:
Wetland AY

Direction:

Survey Date:
11/5/2020

Comments:
Wetland Point Associated with Wetland AY

Photograph ID: 92

Photo Location:
Wetland AY

Direction:

Survey Date:
11/5/2020

Comments:
Upland Point Associated with Wetland AY

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 93 **Photo Location:** Wetland AZ **Direction:** **Survey Date:** 11/5/2020 **Comments:** Wetland Point Associated with Wetland AZ	
Photograph ID: 94 **Photo Location:** Wetland BA **Direction:** **Survey Date:** 11/5/2020 **Comments:** Wetland Point Associated with Weland BA	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 95

Photo Location:
Wetland AZ/BA

Direction:

Survey Date:
10/31/2020

Comments:
Upland Point Associated with Wetlands AZ/BA

Photograph ID: 96

Photo Location:
Stream 01

Direction:
Upstream

Survey Date:
11/1/2020

Comments:
Ephemeral

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 97 **Photo Location:** Stream 01 **Direction:** Downstream **Survey Date:** 11/1/2020 **Comments:** Ephemeral	
Photograph ID: 98 **Photo Location:** Stream 02 **Direction:** Upstream **Survey Date:** 10/31/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 99

Photo Location:
Stream 02

Direction:
Downstream

Survey Date:
10/31/2020

Comments:
Ephemeral

Photograph ID: 100

Photo Location:
Stream 03

Direction:
Upstream

Survey Date:
10/31/2020

Comments:
Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 101 **Photo Location:** Stream 03 **Direction:** Downstream **Survey Date:** 10/31/2020 **Comments:** Ephemeral	
Photograph ID: 102 **Photo Location:** Stream 04 **Direction:** Upstream **Survey Date:** 11/1/2020 **Comments:** Intermittent	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 103 **Photo Location:** Stream 04 **Direction:** Downstream **Survey Date:** 11/1/2020 **Comments:** Intermittent	
Photograph ID: 104 **Photo Location:** Stream 05 **Direction:** Upstream **Survey Date:** 11/1/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 105 **Photo Location:** Stream 05 **Direction:** Downstream **Survey Date:** 11/1/2020 **Comments:** Ephemeral	
Photograph ID: 106 **Photo Location:** Stream 06 **Direction:** Upstream **Survey Date:** 11/2/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 107 **Photo Location:** Stream 06 **Direction:** Downstream **Survey Date:** 11/2/2020 **Comments:** Ephemeral	
Photograph ID: 108 **Photo Location:** Stream 08 **Direction:** Upstream **Survey Date:** 11/3/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 109 **Photo Location:** Stream 08 **Direction:** Downstream **Survey Date:** 11/3/2020 **Comments:** Ephemeral	
Photograph ID: 110 **Photo Location:** Stream 09 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 111 **Photo Location:** Stream 09 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	
Photograph ID: 112 **Photo Location:** Stream 10 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Intermittent	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 113

Photo Location:
Stream 10

Direction:
Downstream

Survey Date:
11/4/2020

Comments:
Intermittent

Photograph ID: 114

Photo Location:
Stream 11

Direction:
Upstream

Survey Date:
11/5/2020

Comments:
Intermittent

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 115 **Photo Location:** Stream 11 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Intermittent	
Photograph ID: 116 **Photo Location:** Stream 12 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Perennial - Petercave Fork	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 117 **Photo Location:** Stream 12 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Perennial - Petercave Fork	
Photograph ID: 118 **Photo Location:** Stream 13 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 119

Photo Location:
Stream 13

Direction:
Downstream

Survey Date:
11/5/2020

Comments:
Ephemeral

Photograph ID: 120

Photo Location:
Stream 14

Direction:
Upstream

Survey Date:
11/5/2020

Comments:
Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 121 **Photo Location:** Stream 14 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 122 **Photo Location:** Stream 15 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 123 **Photo Location:** Stream 15 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 124 **Photo Location:** Stream 16 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 125 **Photo Location:** Stream 16 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 126 **Photo Location:** Stream 17 **Direction:** Upstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 127 **Photo Location:** Stream 17 **Direction:** Downstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	
Photograph ID: 128 **Photo Location:** Stream 18 **Direction:** Upstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 129

Photo Location: Stream 18

Direction: Downstream

Survey Date: 11/6/2020

Comments: Ephemeral

Photograph ID: 130

Photo Location: Stream 19

Direction: Upstream

Survey Date: 11/6/2020

Comments: Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 131 **Photo Location:** Stream 19 **Direction:** Downstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	
Photograph ID: 132 **Photo Location:** Stream 20 **Direction:** Upstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	

Stantec **Photographic Log**

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 133 **Photo Location:** Stream 20 **Direction:** Downstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	
Photograph ID: 134 **Photo Location:** Stream 21 **Direction:** Upstream **Survey Date:** 11/6/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 135

Photo Location:
Stream 21

Direction:
Downstream

Survey Date:
11/6/2020

Comments:
Ephemeral

Photograph ID: 136

Photo Location:
Stream 22

Direction:
Upstream

Survey Date:
11/4/2020

Comments:
Perennial - Pigeonroost Fork

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 137 **Photo Location:** Stream 22 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Perennial - Pigeonroost Fork	
Photograph ID: 138 **Photo Location:** Stream 23 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Intermittent	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 139

Photo Location:
Stream 23

Direction:
Downstream

Survey Date:
11/4/2020

Comments:
Intermittent

Photograph ID: 140

Photo Location:
Stream 24

Direction:
Upstream

Survey Date:
11/4/2020

Comments:
Ephemeral

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 141

Photo Location: Stream 24

Direction: Downstream

Survey Date: 11/4/2020

Comments: Ephemeral

Photograph ID: 142

Photo Location: Stream 25

Direction: Upstream

Survey Date: 11/4/2020

Comments: Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 143	
Photo Location: Stream 25	
Direction: Downstream	
Survey Date: 11/4/2020	
Comments: Ephemeral	
Photograph ID: 144	
Photo Location: Stream 26	
Direction: Upstream	
Survey Date: 11/4/2020	
Comments: Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 145 **Photo Location:** Stream 26 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	
Photograph ID: 146 **Photo Location:** Stream 27 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 147 **Photo Location:** Stream 27 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	
Photograph ID: 148 **Photo Location:** Stream 28 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 149

Photo Location: Stream 28

Direction: Downstream

Survey Date: 11/4/2020

Comments: Ephemeral

Photograph ID: 150

Photo Location: Stream 29

Direction: Upstream

Survey Date: 11/4/2020

Comments: Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 151 **Photo Location:** Stream 29 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	
Photograph ID: 152 **Photo Location:** Stream 30 **Direction:** Upstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 153 **Photo Location:** Stream 30 **Direction:** Downstream **Survey Date:** 11/4/2020 **Comments:** Ephemeral	
Photograph ID: 154 **Photo Location:** Stream 31 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 155 **Photo Location:** Stream 31 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 156 **Photo Location:** Stream 32 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Perennial	

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 157

Photo Location:
Stream 32

Direction:
Downstream

Survey Date:
11/5/2020

Comments:
Perennial

Photograph ID: 158

Photo Location:
Stream 33

Direction:
Upstream

Survey Date:
11/5/2020

Comments:
Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 159 **Photo Location:** Stream 33 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 160 **Photo Location:** Stream 34 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Stantec

Photographic Log

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 161 **Photo Location:** Stream 34 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 162 **Photo Location:** Stream 35 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Stantec **Photographic Log**

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 163

Photo Location: Stream 35

Direction: Downstream

Survey Date: 11/5/2020

Comments: Ephemeral

Photograph ID: 164

Photo Location: Stream 36

Direction: Upstream

Survey Date: 11/5/2020

Comments: Ephemeral

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 165 **Photo Location:** Stream 36 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 166 **Photo Location:** Stream 37 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 167 **Photo Location:** Stream 37 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 168 **Photo Location:** Stream 38 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Stantec

Photographic Log

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 169 **Photo Location:** Stream 38 **Direction:** Downstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	
Photograph ID: 170 **Photo Location:** Stream 39 **Direction:** Upstream **Survey Date:** 11/5/2020 **Comments:** Ephemeral	

Stantec

Photographic Log

Client:	Martin County Solar Project, LLC	Project:	Wetland Delineation
Site Name:	Martin County Solar Site	Site Location:	Inez, Martin County, Kentucky

Photograph ID: 171

Photo Location: Stream 39

Direction: Downstream

Survey Date: 11/5/2020

Comments: Ephemeral

Photograph ID: 172

Photo Location: Stream 40

Direction: Upstream

Survey Date: 11/5/2020

Comments: Ephemeral

Stantec

Photographic Log

Client:	**Martin County Solar Project, LLC**	**Project:**	**Wetland Delineation**
Site Name:	**Martin County Solar Site**	**Site Location:**	**Inez, Martin County, Kentucky**

Photograph ID: 173

Photo Location:
Stream 40

Direction:
Downstream

Survey Date:
11/5/2020

Comments:
Ephemeral

Attachment D

United States Department of Agriculture

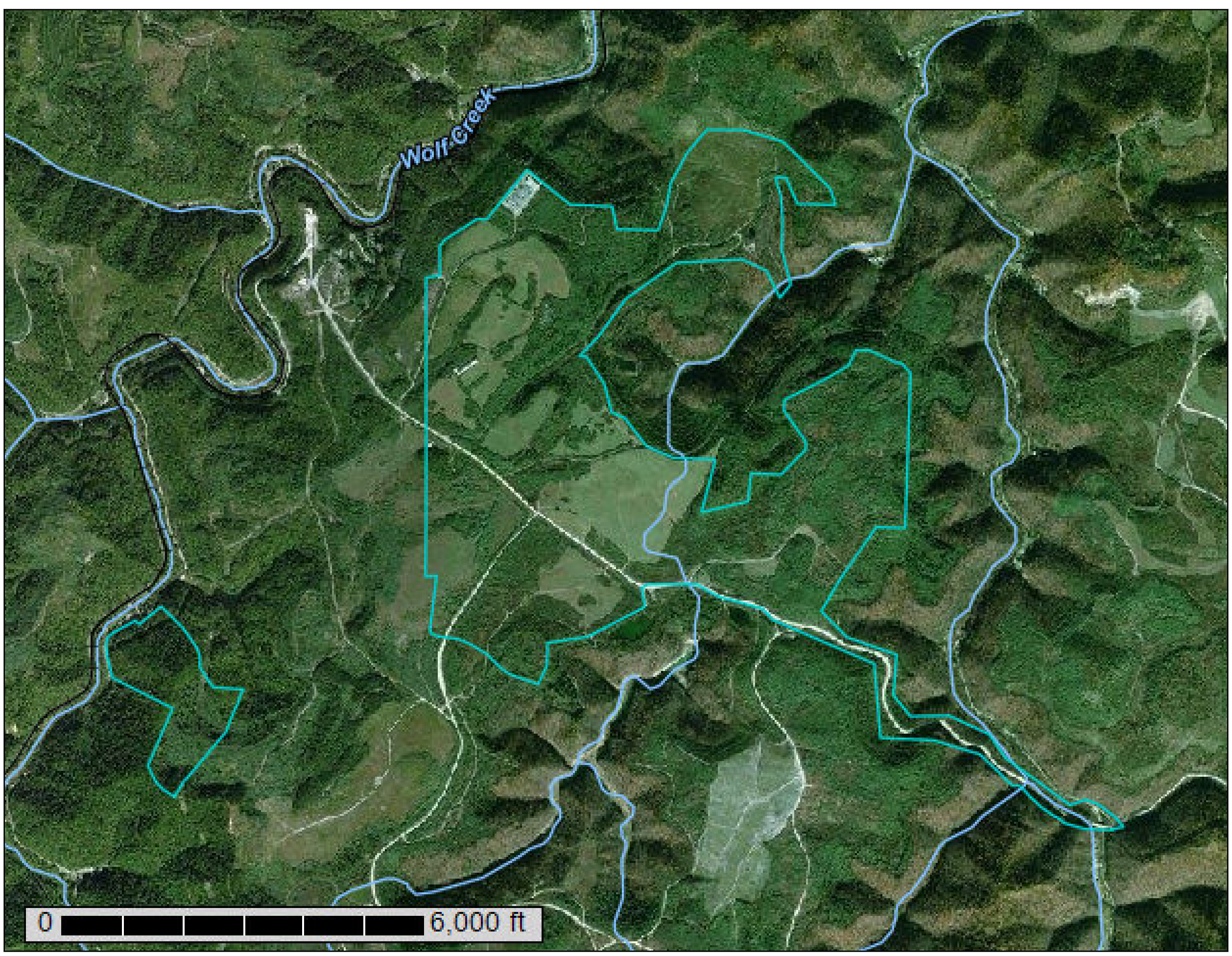
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Lawrence and Martin Counties, Kentucky



December 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:29,800 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 400, 800, 1600, 2400

Feet: 0, 1000, 2000, 4000, 6000

N

Map projection: Web Mercator   Corner coordinates: WGS84   Edge tics: UTM Zone 17N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Lawrence and Martin Counties, Kentucky
Survey Area Data: Version 16, May 29, 2020

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 31, 2015—Mar 7, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
FiB	Fiveblock, Fairpoint, and Kaymine soils, 0 to 6 percent slopes, stony	374.2	35.5%
FiD	Fiveblock, Fairpoint, and Kaymine soils, 6 to 30 percent slopes, stony	161.8	15.4%
FiF	Fiveblock, Fairpoint, and Kaymine soils, 30 to 80 percent slopes, stony	430.6	40.9%
RaF	Rayne-Marrowbone-Dekalb complex, 20 to 80 percent slopes, very rocky	25.5	2.4%
SgC	Shelocta-Grigsby-Orrville complex, 2 to 15 percent slopes	6.3	0.6%
uAdoC	Anthroportic Udorthents-Urban land complex, 0 to 15 percent slopes	2.3	0.2%
uCskF	Cloverlick-Shelocta-Kimper complex, 20 to 80 percent slopes, very stony	39.9	3.8%
uHfsF	Handshoe-Fedscreek-Shelocta complex, 30 to 80 percent slopes, very stony	12.6	1.2%
Totals for Area of Interest		**1,053.3**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Lawrence and Martin Counties, Kentucky

FiB—Fiveblock, Fairpoint, and Kaymine soils, 0 to 6 percent slopes, stony

Map Unit Setting

National map unit symbol: lh80
Elevation: 580 to 1,430 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Fiveblock, unstable fill, and similar soils: 32 percent
Fairpoint, unstable fill, and similar soils: 30 percent
Kaymine, unstable fill, and similar soils: 28 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiveblock, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 4 inches: channery sandy loam
H2 - 4 to 80 inches: extremely flaggy sandy loam

Properties and qualities

Slope: 0 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 80 inches: extremely flaggy silt loam

Properties and qualities

Slope: 0 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Kaymine, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: very channery loam
H2 - 6 to 80 inches: extremely flaggy loam

Properties and qualities

Slope: 0 to 6 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Shelocta
Percent of map unit: 1 percent
Hydric soil rating: No

Hazleton
Percent of map unit: 1 percent
Hydric soil rating: No

Fedscreek
Percent of map unit: 1 percent
Hydric soil rating: No

Other soils
Percent of map unit: 1 percent
Hydric soil rating: No

Blairton
Percent of map unit: 1 percent
Hydric soil rating: No

Cloverlick
Percent of map unit: 1 percent
Hydric soil rating: No

Cruze
Percent of map unit: 1 percent
Hydric soil rating: No

Dekalb
Percent of map unit: 1 percent
Hydric soil rating: No

Marrowbone
Percent of map unit: 1 percent
Hydric soil rating: No

Rayne
Percent of map unit: 1 percent
Hydric soil rating: No

FiD—Fiveblock, Fairpoint, and Kaymine soils, 6 to 30 percent slopes, stony

Map Unit Setting

National map unit symbol: lh81
Elevation: 540 to 1,570 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Fiveblock, unstable fill, and similar soils: 32 percent
Fairpoint, unstable fill, and similar soils: 30 percent
Kaymine, unstable fill, and similar soils: 28 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiveblock, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 4 inches: channery sandy loam
H2 - 4 to 80 inches: extremely flaggy sandy loam

Properties and qualities

Slope: 6 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 80 inches: extremely flaggy silt loam

Properties and qualities

Slope: 6 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Kaymine, Unstable Fill

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: very channery loam
H2 - 6 to 80 inches: extremely flaggy loam

Properties and qualities

Slope: 6 to 30 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Shelocta

Percent of map unit: 1 percent
Hydric soil rating: No

Rayne

Percent of map unit: 1 percent
Hydric soil rating: No

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Cloverlick

Percent of map unit: 1 percent
Hydric soil rating: No

Dekalb

Percent of map unit: 1 percent
Hydric soil rating: No

Blairton

Percent of map unit: 1 percent
Hydric soil rating: No

Cruze

Percent of map unit: 1 percent
Hydric soil rating: No

Fedscreek

Percent of map unit: 1 percent
Hydric soil rating: No

Hazleton

Percent of map unit: 1 percent
Hydric soil rating: No

Marrowbone

Percent of map unit: 1 percent

Hydric soil rating: No

FiF—Fiveblock, Fairpoint, and Kaymine soils, 30 to 80 percent slopes, stony

Map Unit Setting

National map unit symbol: lh82
Elevation: 560 to 1,580 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Fiveblock, unstable fill, and similar soils: 32 percent
Fairpoint, unstable fill, and similar soils: 30 percent
Kaymine, unstable fill, and similar soils: 28 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Fiveblock, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 4 inches: channery sandy loam
H2 - 4 to 80 inches: extremely flaggy sandy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High to very high (1.98 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Fairpoint, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 7 inches: channery silt loam
H2 - 7 to 80 inches: extremely flaggy silt loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 5 percent
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Kaymine, Unstable Fill

Setting

Landform: Mountain slopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Mountainflank
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from sedimentary rock

Typical profile

H1 - 0 to 6 inches: very channery loam
H2 - 6 to 80 inches: extremely flaggy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 0.1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Cloverlick

Percent of map unit: 1 percent
Hydric soil rating: No

Hazleton

Percent of map unit: 1 percent
Hydric soil rating: No

Marrowbone

Percent of map unit: 1 percent
Hydric soil rating: No

Fedscreek

Percent of map unit: 1 percent
Hydric soil rating: No

Shelocta

Percent of map unit: 1 percent
Hydric soil rating: No

Blairton

Percent of map unit: 1 percent
Hydric soil rating: No

Cruze

Percent of map unit: 1 percent
Hydric soil rating: No

Dekalb

Percent of map unit: 1 percent
Hydric soil rating: No

Rayne

Percent of map unit: 1 percent

Hydric soil rating: No

RaF—Rayne-Marrowbone-Dekalb complex, 20 to 80 percent slopes, very rocky

Map Unit Setting

National map unit symbol: lh8b
Elevation: 570 to 1,620 feet
Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Rayne and similar soils: 36 percent
Marrowbone and similar soils: 34 percent
Dekalb and similar soils: 20 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rayne

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Fine-silty residuum weathered from shale and siltstone

Typical profile

H1 - 0 to 3 inches: loam
H2 - 3 to 37 inches: silty clay loam
H3 - 37 to 49 inches: very channery silty clay loam
Cr - 49 to 59 inches: weathered bedrock

Properties and qualities

Slope: 20 to 65 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Marrowbone

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Coarse-loamy residuum weathered from sandstone and siltstone

Typical profile

H1 - 0 to 4 inches: sandy loam
H2 - 4 to 35 inches: channery sandy loam
Cr - 35 to 40 inches: weathered bedrock
R - 40 to 50 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 80 percent
Depth to restrictive feature: 20 to 40 inches to paralithic bedrock; 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Dekalb

Setting

Landform: Ridges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Mountaintop
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Loamy-skeletal residuum weathered from sandstone and shale

Typical profile

H1 - 0 to 4 inches: very channery sandy loam
H2 - 4 to 24 inches: extremely channery sandy loam
R - 24 to 34 inches: unweathered bedrock

Properties and qualities

Slope: 20 to 80 percent
Depth to restrictive feature: 20 to 40 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Very low (about 2.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Rock outcrop

Percent of map unit: 5 percent
Hydric soil rating: No

Blairton

Percent of map unit: 1 percent
Hydric soil rating: No

Cruze

Percent of map unit: 1 percent
Hydric soil rating: No

Other soils

Percent of map unit: 1 percent
Hydric soil rating: No

Rarden

Percent of map unit: 1 percent
Hydric soil rating: No

Upshur

Percent of map unit: 1 percent
Hydric soil rating: No

SgC—Shelocta-Grigsby-Orrville complex, 2 to 15 percent slopes

Map Unit Setting

National map unit symbol: lh8f
Elevation: 520 to 1,000 feet

Mean annual precipitation: 37 to 48 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 135 to 169 days
Farmland classification: Not prime farmland

Map Unit Composition

Shelocta and similar soils: 40 percent
Grigsby, frequently flooded, and similar soils: 35 percent
Orrville, frequently flooded, and similar soils: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Shelocta

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty colluvium derived from shale and siltstone over residuum

Typical profile

H1 - 0 to 3 inches: silt loam
H2 - 3 to 39 inches: channery silt loam
H3 - 39 to 51 inches: very channery silt loam
Cr - 51 to 61 inches: weathered bedrock

Properties and qualities

Slope: 2 to 15 percent
Depth to restrictive feature: 40 to 60 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Description of Grigsby, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Coarse-loamy alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 11 inches: fine sandy loam

H2 - 11 to 64 inches: fine sandy loam
H3 - 64 to 80 inches: stratified sandy loam to loam

Properties and qualities

Slope: 0 to 4 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: About 42 to 72 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water capacity: Moderate (about 8.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Orrville, Frequently Flooded

Setting

Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Fine-silty alluvium derived from sedimentary rock

Typical profile

H1 - 0 to 10 inches: silt loam
H2 - 10 to 30 inches: silt loam
H3 - 30 to 80 inches: clay loam

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat poorly drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 12 to 18 inches
Frequency of flooding: FrequentNone
Frequency of ponding: None
Available water capacity: Moderate (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: B/D
Hydric soil rating: No

Minor Components

Other soils

Percent of map unit: 4 percent
Hydric soil rating: No

Allegheny

Percent of map unit: 1 percent
Landform: Stream terraces
Hydric soil rating: No

Cotaco

Percent of map unit: 1 percent
Landform: Stream terraces
Hydric soil rating: No

Fedscreek

Percent of map unit: 1 percent
Hydric soil rating: No

Chagrin

Percent of map unit: 1 percent
Landform: Flood plains
Hydric soil rating: No

Hazleton

Percent of map unit: 1 percent
Hydric soil rating: No

Holly, frequently flooded

Percent of map unit: 1 percent
Landform: Flood plains
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

uAdoC—Anthroportic Udorthents-Urban land complex, 0 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2x5hs
Elevation: 550 to 1,360 feet
Mean annual precipitation: 28 to 54 inches
Mean annual air temperature: 42 to 68 degrees F
Frost-free period: 140 to 222 days
Farmland classification: Not prime farmland

Map Unit Composition

Anthroportic udorthents, unstable fill, and similar soils: 55 percent
Urban land: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Anthroportic Udorthents, Unstable Fill

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Loamy-skeletal mine spoil or earthy fill derived from interbedded sedimentary rock

Typical profile

^Ap - 0 to 5 inches: very channery silt loam
^C1 - 5 to 15 inches: very channery silt loam
^C2 - 15 to 24 inches: very channery silt loam
^C3 - 24 to 38 inches: extremely parachannery silt loam
^C4 - 38 to 55 inches: extremely parachannery silt loam
Cr - 55 to 65 inches: bedrock

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: 45 to 60 inches to paralithic bedrock
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Low (about 3.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Hydric soil rating: No

Description of Urban Land

Setting

Landform: Hillslopes
Landform position (three-dimensional): Base slope

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

Minor Components

Shelocta

Percent of map unit: 9 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear

Hydric soil rating: No

Clifftop

Percent of map unit: 8 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit, shoulder
Landform position (three-dimensional): Nose slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Handshoe

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Kimper

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

uCskF—Cloverlick-Shelocta-Kimper complex, 20 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2x5jg
Elevation: 700 to 2,000 feet
Mean annual precipitation: 28 to 52 inches
Mean annual air temperature: 46 to 70 degrees F
Frost-free period: 135 to 220 days
Farmland classification: Not prime farmland

Map Unit Composition

Cloverlick, very stony, and similar soils: 30 percent
Shelocta, very stony, and similar soils: 25 percent
Kimper, very stony, and similar soils: 20 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Cloverlick, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loamy-skeletal colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: channery slightly decomposed plant material
A - 2 to 8 inches: channery loam
Bw1 - 8 to 24 inches: channery loam
Bw2 - 24 to 43 inches: very channery loam
BC - 43 to 80 inches: very flaggy loam

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 1.0
Available water capacity: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Shelocta, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: silt loam
BA - 3 to 7 inches: loam
Bt1 - 7 to 23 inches: channery silt loam
2Bt2 - 23 to 34 inches: channery silt loam
2Bt3 - 34 to 45 inches: very channery silt loam
2C - 45 to 59 inches: very parachannery silt loam
2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: 48 to 65 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Sodium adsorption ratio, maximum: 2.0
Available water capacity: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Description of Kimper, Very Stony

Setting

Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: very channery slightly decomposed plant material
A - 2 to 8 inches: very channery loam
BA - 8 to 13 inches: channery loam
Bw1 - 13 to 27 inches: channery loam
Bw2 - 27 to 41 inches: channery loam
Bw3 - 41 to 52 inches: very channery loam
C1 - 52 to 64 inches: very channery fine sandy loam
C2 - 64 to 75 inches: very channery loam
R - 75 to 85 inches: bedrock

Properties and qualities

Slope: 20 to 80 percent
Surface area covered with cobbles, stones or boulders: 1.0 percent
Depth to restrictive feature: 65 to 80 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Minor Components

Fedscreek, very stony
Percent of map unit: 10 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Handshoe, very stony
Percent of map unit: 7 percent
Landform: Mountain slopes
Landform position (three-dimensional): Mountainflank
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: F125XY002WV - Interbedded Sedimentary Colluvium
Hydric soil rating: No

Clifftop, very stony
Percent of map unit: 6 percent
Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Linear
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

Marrowbone, very stony
Percent of map unit: 2 percent
Landform: Mountain slopes
Landform position (three-dimensional): Upper third of mountainflank
Down-slope shape: Convex
Across-slope shape: Convex
Ecological site: F125XY003WV - Interbedded Sedimentary Uplands
Hydric soil rating: No

uHfsF—Handshoe-Fedscreek-Shelocta complex, 30 to 80 percent slopes, very stony

Map Unit Setting

National map unit symbol: 2x5j1

Elevation: 550 to 1,850 feet
Mean annual precipitation: 28 to 58 inches
Mean annual air temperature: 39 to 67 degrees F
Frost-free period: 140 to 222 days
Farmland classification: Not prime farmland

Map Unit Composition

Handshoe, very stony, and similar soils: 30 percent
Fedscreek, very stony, and similar soils: 26 percent
Shelocta, very stony, and similar soils: 20 percent
Minor components: 24 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Handshoe, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Loamy-skeletal colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 2 inches: very channery slightly decomposed plant material
A - 2 to 9 inches: very channery loam
E - 9 to 16 inches: very channery loam
Bw1 - 16 to 34 inches: very channery sandy loam
Bw2 - 34 to 50 inches: very channery loam
Bw3 - 50 to 61 inches: channery loam
BC - 61 to 80 inches: very channery sandy loam

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.20 to 2.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Low (about 5.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Fedscreek, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope

Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Coarse-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: channery slightly decomposed plant material
A - 1 to 4 inches: channery loam
BA - 4 to 8 inches: channery silt loam
Bw1 - 8 to 17 inches: channery loam
Bw2 - 17 to 30 inches: channery loam
Bw3 - 30 to 39 inches: channery loam
Bw4 - 39 to 48 inches: channery loam
C1 - 48 to 60 inches: very channery loam
C2 - 60 to 65 inches: channery silt loam
R - 65 to 75 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent
Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 62 to 70 inches to lithic bedrock
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.01 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 8.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Shelocta, Very Stony

Setting

Landform: Hillslopes
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Fine-loamy colluvium derived from sandstone and shale

Typical profile

Oi - 0 to 1 inches: slightly decomposed plant material
A - 1 to 3 inches: silt loam
BA - 3 to 7 inches: loam
Bt1 - 7 to 23 inches: channery silt loam
2Bt2 - 23 to 34 inches: channery silt loam
2Bt3 - 34 to 45 inches: very channery silt loam
2C - 45 to 59 inches: very parachannery silt loam
2Cr - 59 to 69 inches: bedrock

Properties and qualities

Slope: 30 to 80 percent

Surface area covered with cobbles, stones or boulders: 2.0 percent
Depth to restrictive feature: 48 to 65 inches to paralithic bedrock
Drainage class: Well drained
Runoff class: High
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water capacity: Moderate (about 7.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Marrowbone, very stony

Percent of map unit: 11 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Matewan, very stony

Percent of map unit: 6 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Linear
Hydric soil rating: No

Clifftop, very stony

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Blairton, very stony

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

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