

Geology

Surficial Deposits Gap Code	Landform-Texture Domain Group	Landform (texture)
1	A3	outwash (coarse)
2	B3	ice-contact (coarse)
3	C1	end-moraine (fine)
4	C2	end-moraine (medium)
5	C3	end-moraine (coarse)
6	D1	ground-moraine (fine)
7	D2	ground-moraine (medium)
8	D3	ground-moraine (coarse)
9	E1	lacustrine (fine)
10	E3	lacustrine (coarse)
11	F0	colluvium
12	G0	alluvium/fluvial
13	I3	stagnation-moraine (coarse)
14	J3	attenuated-drift (coarse)
15	W0	water
16	Z2	no landform (medium)
17	Z3	no landform (coarse)
18	Z4	no landform (peat and muck)
19	G3	alluvium/fluvial (coarse)
20	I2	stagnation moraine (medium)
21	Z0	no landform (no texture)
22	J2	attenuated-drift (medium)
23	G2	alluvium (medium)
24	H1	loess (fine)
26	F2	colluvium (medium)
28	E2	lacustrine (medium)
29	K3	dune (coarse)
30	Z1	no landform (fine)
31	E4	lacustrine (peat and muck)
32	F3	colluvium (coarse)
34	F1	colluvium (fine)
37	K2	dune (medium)
99	Y0	bedrock (no texture)
Landform Domain		Landform Description
A		Outwash
B		Ice-contact
C		End-moraine
D		Ground-moraine
E		Lacustrine
F		Colluvium
G		Alluvium
H		Loess
I		Stagnation moraine
J		Attenuated drift
K		Dune
Y		Bedrock
Z		No landform
Texture Domain		Texture Description
1		Fine
2		Medium
3		Coarse
4		Peat and muck
0		No texture

Bedrock Categories	Gap Bedrock Number Code
Water	0
Sandstone	1
Shale	2
Carbonate	3
Igneous/Metamorphic (Crystalline)	4
Metamorphic	41
Igneous	42
Unknown	5
Water	6
Shale, Sandstone, Limestone	7

Bedrock Depth Codes	Depth (Feet)
201	0-50
202	50-100
203	100-200
204	200-400
205	400-600
206	600-800
207	800-1000
208	1000-1200
209	1200-1400
210	1400-1600
211	> 1600

Land Cover

GAP/EPA LU Code	GAP/EPA Star LU category	Illinois Land Cover Critical Trends Assessment	Wisconsin Land Cover WISCLAND	Michigan Land Cover IFMAP
11	11 Urban - Commercial	1 High Density Urban 2 Medium-High Density Urban	101 High Intensity	123 High Intensity Urban (2) 121 Runways (3)
12	12 Urban - Residential	3 Medium Density Urban 4 Low Density Urban	104 Low Intensity	11 Low Intensity Urban (1)
13	13 Other Urban	11 Urban Grassland	105 Golf Course	350 Parks/Golf Courses (13)
14	14 Urban - Roads and Parking Lots	--	--	122 Roads and Parking Lots (4)
21	21 Agriculture - Non-row Crops	9 Small Grains (Wheat, Oats, etc.) 10 Orchards/Nurseries	124 Forage Crops (includes Hay and Hay/Mix) 148 Cranberry Bog	2113 Forage Crops (7) 212 Non-tilled Herbaceous (7) 222 Orchards (9)
22	22 Agriculture - row crops	8 Row Crop	111 Herbaceous/Field Crops 112 Row Crops 113 Corn 118 Other Row Crops 110 Agriculture	2111 Non-vegetated Farmland (plowed) (5) 2112 Row Crops (6)
30	30 Open/Non-forested	12 Rural Grassland	150 Grassland	310 Herbaceous Openland (10)
41	41 Forest - Deciduous (upland)	13 Deciduous: Undifferentiated Broadleaf Deciduous (closed canopy) 14 Deciduous: Undifferentiated Broadleaf Deciduous (open canopy)	175 Broad-leaved Deciduous 176 Aspen 177 Oak 179 Northern Pin Oak 180 Red Oak 183 Maple 185 Sugar Maple 187 Mixed/Other Broad-leaved Deciduous	411 Northern Hardwoods (14) 413 Aspen Forest (16) 412 Oak Forest (15) 414 Other Upland Deciduous (17) 419 Mixed Upland Forest (18)
42	42 Forest - Coniferous (upland)	15 Coniferous: Undifferentiated	161 Coniferous 162 Jack Pine 163 Red Pine 166 White Spruce 173 Mixed/Other Coniferous	421/422 Pines (19) 423 Other Upland Conifer (20) 429 Mixed Upland Conifer (21)
43	43 Forest - Mixed Deciduous/Coniferous (upland)	--	190 Mixed Deciduous/Coniferous  250 Shrubland	43 Upland Mixed Forest (22)  320/330 Shrub, Low Density Forest (12)
50	50 Open Water	16 Open Water	200 Open Water	50 Open Water (23)
610	610 Wetland - Wooded - shrubland	22 Shallow Water Wetlands	217 Lowland Shrub 218 Broad-leaved Deciduous 219 Broad-leaved Evergreen 220 Needle-leaved	622 Lowland Shrub (28)
611	611 Wetland - Wooded - lowland deciduous forest	20 Forested Wetlands	223 Broad-leaved Deciduous	611 Lowland Deciduous (24)
612	612 Wetland - Wooded - lowland coniferous forest	--	229 Coniferous	612 Lowland Coniferous (25)
613	613 Wetland - Wooded - lowland mixed forest	21 Swamp	234 Mixed Deciduous/Coniferous	613 Lowland Mixed (26)
62	62 Wetland - Nonwooded	18 Shallow Marsh/Wet Meadow 19 Deep Marsh	211 Emergent/Wet Meadow 212 Floating Aquatic Herbaceous Vegetation	623 Emergent Wetland (29) 621 Floating Aquatic (27) 629 Mixed Non-forested (30)
70	70 Barren	23 Barren Land	240 Barren	710 Sand/Soil (31) 720 Rock (32) 730 Mud Flats (33)
99	99 Cloud Cover	--	255 Cloud Cover	--

Land Cover

GAP/EPA LU Code	Minnesota NLCD92	Minnesota NLCD2001	Original Vegetation Cover of Wisconsin
11	22 High Intensity Residential 23 Commercial/Industrial/ Transportation	23 Developed, Medium intensity 24 Developed, High intensity	
12	21 Low Intensity Residential	22 Developed, Low intensity	
13	85 Urban/Recreational Grasses	21 Developed, Open space	
14	--	--	
21	61 Orchards/Vineyards 81 Pasture/Hay	81 Pasture/Hay	
22	82 Row Crops 83 Small Grains 84 Fallow	82 Cultivated crops	
30	71 Grassland/Herbaceous	71 Grassland/Herbaceous	12 Prairie (Grassland and Brush)
41	41 Deciduous Forest	41 Deciduous Forest	8 Beech, sugar maple, basswood red oak, white oak, black oak (Deciduous Forest) 9 Sugar maple, basswood, red oak, white oak, black oak (Deciduous Forest) 10 Oak - white oak, black oak, bur oak (Deciduous Forest) 11 Oak openings - bur oak, white oak, black oak (Deciduous Forest)
42	42 Evergreen Forest	42 Evergreen Forest	1 White spruce, balsam fir, tamarack, white cedar, white birch, aspen (Boreal Forest) 5 White pine, red pine (Mixed conifer - Deciduous Forest) 6 Jack pine, scrub (hill's), oak forest and barrens (Mixed Conifer - Deciduous Forest) 99 Area with vegetation cover type not interpreted on the source map (Other)
43	51 Shrubland	52 Shrub, Scrub	2 Beech, hemlock, sugar maple, yellow birch, white pine, red pine (Mixed Conifer - Deciduous Forest) 3 Hemlock, sugar maple, yellow birch, white pine, red pine (Mixed Conifer - Deciduous Forest) 4 Sugar maple, yellow birch, white pine, red pine (Mixed Conifer - Deciduous Forest) 7 Aspen, white birch, pine (Mixed Conifer - Deciduous Forest) 13 Brush (Grassland and Brush)
50	43 Mixed Forest	43 Mixed Forest	
610	11 Open Water	11 Open Water	0 Hydrographic area from the 1:250,000-scale land use and land cover layer (Other)
611	--	--	
612	--	--	15 Lowland hardwoods - willow, soft maple, box elder, ash, elm, cottonwood, river birch (Wetland Vegetation)
613	91 Woody Wetlands	90 Woody Wetlands	14 Swamp conifers - white cedar, black spruce, tamarack, hemlock (Wetland Vegetation)
62	92 Emergent Herbaceous Wetlands	95 Emergent Herbaceous Wetlands	16 Marsh and sedge meadow, wet prairie, lowland shrubs (Wetland Vegetation)
70	31 Bare Rock/Sand/Clay 32 Quarries 33 Transitional	31 Bare Rock/Sand/Clay	
99	--	--	

Land Cover

GAP/EPA LU Code	Minnesota Presettlement Vegetation	Illinois Early 1800s Land Cover in Illinois	Michigan Land Cover circa 1800
11			See separate worksheet for crosswalk
12			
13			
14			
21			
22			
30	1 = Prairie 3 = Brush Prairie	fa: farm - land where crops are raised, fi: field - cleared land for crops and pasture bp: brushy prairie, pr: prairie, sd: sandy prairie, wp: wet prairie, hr: high ridge in: indian improvements, ll: low and relatively level ground, mo: knoll or mound pa: pasture, rl: rolling land, dg: dry ground	
41	4 = Aspen-Oak Land 5 = Oak openings and barrens 6 = Big Woods - Hardwoods (oak, maple, basswood, hickory) 8 = Aspen-Birch (trending to hardwoods)	gl: glade - open space in a forest ti: timber - a thick growth of trees cover large tract ft: fallen timber hi: hill or: orchard pl: plantation sk: sinkhole	
42	10 = White Pine 11 = Mixed White Pine and Red Pine 12 = Jack Pine Barrens and Openings 13 = Pine Flats (Hemlock, Spruce, Fir, White Pine, Aspen)		
43	14 = Aspen-Birch (trending to Conifers) 9 = Mixed Hardwood and Pine (Maple, White Pine, Basswood, etc)	br: barrens - mixture of trees and grass - forest fringe rg: rugged overgrown ground th: thicket - a thick growth of shrubs or small trees rv: ravine - low tract of land	
50	17 = Lakes (open water)	la: lake, po: pond, ri: river, sp: spring	
610		ss: swampy ground covered with brushes or trees	
611	7 = River Bottom Forest	sw: swampy wet area covered by trees and shrubs is: island - land completely surrounded by water	
612	15 = Conifer Bogs and Swamps 16 = Open Muskeg		
613		bt: lowland - fertile land usually along a stream - alluvial plain ba: bayou	
62	2 = Wet Prairie	ma: low, sl: marsh or shallow undrained depression wl: swamps or marshes sa: swampy depression in level land	
70		bl: bluff cl: cliffs ro: rocky, le: rock ledge, li: salt - natural	
99	0 = Undefined		

GAP_EPA_CODE	MI_VEGCODE2	MI_LEGCODE	MI_COVERTYPE1	MI_COVERTYPE2	MINOTES	GAP_EPA_CODE	GAP-EPA_CAT
30	31	31	HERBACEOUS - UPLAND GRASSLAND	GRASSLAND		30	Open/Non-forested
41	331	331/335/336	LAKEPLAIN OAK OPENING	MIXED OAK SAVANNA		41	Forest - Deciduous (upland)
41	332	332	OAK BARRENS	BLACK OAK BARREN		41	Forest - Deciduous (upland)
41	335	331/335/336	BUR OAK SAVANNA	MIXED OAK SAVANNA		41	Forest - Deciduous (upland)
41	336	331/335/336	OAK OPENING	MIXED OAK SAVANNA		41	Forest - Deciduous (upland)
41	413	413	ASPEN/W BIRCH	ASPEN-BIRCH FOREST	Aspen/White Birch	41	Forest - Deciduous (upland)
41	4117	4117	S MAPLE/BASSWOOD	SUGAR MAPLE-BASSWOOD FOREST	Sugar Maple/Basswood	41	Forest - Deciduous (upland)
41	4121	4121	BEECH'S MAPLE/BASSWOOD/R OAK	BEECH-SUGAR MAPLE FOREST	Beech/Sugar Maple/Basswood/Red Oak	41	Forest - Deciduous (upland)
41	4122	4122	WHITE OAK/HICKORY	OAK-HICKORY FOREST	White Oak/Black Oak/Hickory	41	Forest - Deciduous (upland)
41	4123	4123/4124	BLACK OAK/W OAK	MIXED OAK FOREST	Black Oak/White Oak	41	Forest - Deciduous (upland)
41	4124	4123/4124	PINB OAK	MIXED OAK FOREST	Pin Oak/Black Oak	41	Forest - Deciduous (upland)
42	97	97	JACK PINE	JACK PINE-RED PINE FOREST	Jack Pine - Red Pine Forest	42	Forest - Coniferous (upland)
42	333	31/333	OAK/PINE BARRENS	PINE BARRENS		42	Forest - Coniferous (upland)
42	4211	4211/4212/4216	WHITE PINE	WHITE PINE-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4212	4211/4212/4216	RED PINE	WHITE PINE-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4213	4213/4215	JACK PINE	JACK PINE-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4215	4213/4215	RED PINE/JACK PINE	JACK PINE-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4216	4211/4212/4216	RED PINE/WHITE PINE	WHITE PINE-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4221	4221/4222/4223	WHITE SPRUCE	SPRUCE-FIR-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4222	4221/4222/4223	CEDAR/HEMLOCK	SPRUCE-FIR-RED PINE FOREST		42	Forest - Coniferous (upland)
42	4223	4221/4222/4223	FIR/SPRUCE/CEDAR	SPRUCE-FIR-RED PINE FOREST	Balsam Fir/Spruce/Cedar	42	Forest - Coniferous (upland)
42	4226	4226/4227	HEMLOCK	HEMLOCK-WHITE PINE FOREST		42	Forest - Coniferous (upland)
42	4227	4226/4227	HEMLOCK/WHITE PINE	HEMLOCK-WHITE PINE FOREST		42	Forest - Coniferous (upland)
43	334	334	PINE BARRENS	OAK/PINE BARRENS		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4111	4111/4119/4228	BEACH'S MAPLE	BEECH-SUGAR MAPLE-HEMLOCK FOREST	Beach/Sugar Maple/Yellow Birch	43	Forest - Mixed Deciduous/Coniferous (upland)
43	4115	4115	S MAPLE/Y BIRCH/FIR	SUGAR MAPLE-YELLOW BIRCH FOREST	Sugar Maple/Yellow Birch/Balsam Fir	43	Forest - Mixed Deciduous/Coniferous (upland)
43	4119	4111/4119/4228	BEECH/HEMLOCK	BEECH-SUGAR MAPLE-HEMLOCK FOREST		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4217	4217	WHITE PINE/WHITE OAK	WHITE PINE-WHITE OAK FOREST		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4218	4218	RED PINE/OAK	MIXED PINE-OAK FOREST		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4219	4219	W PINE/BEECH/MAPLE	WHITE PINE-MIXED HARDWOOD FOREST	White Pine/Beech/Red Maple	43	Forest - Mixed Deciduous/Coniferous (upland)
43	4228	4111/4119/4228	HEMLOCK'S MAPLE	SUGAR MAPLE-HEMLOCK FOREST	Hemlock/Sugar Maple	43	Forest - Mixed Deciduous/Coniferous (upland)
43	4229	4229	HEMLOCK/Y BIRCH	HEMLOCK-YELLOW BIRCH FOREST	Hemlock/Yellow Birch	43	Forest - Mixed Deciduous/Coniferous (upland)
50	51	51/52/54	MAJOR RIVER	LAKERIVER		50	Open Water
50	52	51/52/54	LAKE OR POND	LAKERIVER		50	Open Water
50	54	51/52/54	GREAT LAKES	LAKERIVER		50	Open Water
62	6121	6121/6124/6125	BOG	MUSKEG/BOG		62	Wetland - Nonwooded
62	6124	6121/6124/6125	PATTERNED PEATLAND	MUSKEG/BOG		62	Wetland - Nonwooded
62	6125	6121/6124/6125	MUSKEG	MUSKEG/BOG		62	Wetland - Nonwooded
62	6221	6122/6123/6221/6222/6223/6224/6225/6228	EMERGENT MARSH	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
62	6222	6122/6123/6221/6222/6223/6224/6225/6228	GREAT LAKES MARSH	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
62	6223	6122/6123/6221/6222/6223/6224/6225/6228	INTERDUNAL WETLAND	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
62	6224	6122/6123/6221/6222/6223/6224/6225/6228	WET MEADOW	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
62	6225	6122/6123/6221/6222/6223/6224/6225/6228	INLAND SALT MARSH	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
62	6226	6226/6227	LAKEPLAIN PRAIRIE	WET PRAIRIE		62	Wetland - Nonwooded
62	6227	6226/6227	INLAND WET PRAIRIE	WET PRAIRIE		62	Wetland - Nonwooded
62	6228	6122/6123/6221/6222/6223/6224/6225/6228	INTERMITTENT WETLAND	SHRUB SWAMP/EMERGENT MARSH		62	Wetland - Nonwooded
70	72	72/73	BEACH, RIVERBANK	SAND DUNE		70	Barren
70	73	72/73	OPEN SAND DUNE	SAND DUNE		70	Barren
70	74	74/741/742/743/744/745/746	EXPOSED BEDROCK	EXPOSED BEDROCK		70	Barren
70	741	74/741/742/743/744/745/746	ALVAR	EXPOSED BEDROCK		70	Barren
70	742	74/741/742/743/744/745/746	BEDROCK GLADE	EXPOSED BEDROCK		70	Barren
70	743	74/741/742/743/744/745/746	SINKHOLE	EXPOSED BEDROCK		70	Barren
70	744	74/741/742/743/744/745/746	LIMESTONE LEDGE/OUTCROP	EXPOSED BEDROCK		70	Barren
70	745	74/741/742/743/744/745/746	SANDSTONE LEDGE/OUTCROP	EXPOSED BEDROCK		70	Barren
70	746	74/741/742/743/744/745/746	IGNEOUS/METAMORPHIC LEDGE/OUTCROP	EXPOSED BEDROCK		70	Barren
610	6122	6122/6123/6221/6222/6223/6224/6225/6228	ALDER/WILLOW/BOG THicket	SHRUB SWAMP/EMERGENT MARSH		610	Wetland - Wooded - shrubland
610	6123	6122/6123/6221/6222/6223/6224/6225/6228	BUTTONBUSH/DOGWOOD/WILLOW SWAMP	SHRUB SWAMP/EMERGENT MARSH		610	Wetland - Wooded - shrubland
611	414	4141/4142/4143/4144/4145/4146/4147	LOWLAND HARDWOOD	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4141	4141	BLACK ASH	BLACK ASH SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4142	4141/4142/4143/4144/4145/4146/4147	ELM	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4143	4141/4142/4143/4144/4145/4146/4147	SILVER/RED MAPLE	MIXED HARDWOOD SWAMP	Silver Maple/Red Maple	611	Wetland - Wooded - lowland deciduous forest
611	4144	4141/4142/4143/4144/4145/4146/4147	COTTONWOOD	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4145	4141/4142/4143/4144/4145/4146/4147	BALSAM POPLAR	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4146	4141/4142/4143/4144/4145/4146/4147	ASPEN	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
611	4147	4141/4142/4143/4144/4145/4146/4147	W BIRCH	MIXED HARDWOOD SWAMP	White Birch	611	Wetland - Wooded - lowland deciduous forest
611	4148	4141/4142/4143/4144/4145/4146/4147	BLACK WILLOW	MIXED HARDWOOD SWAMP		611	Wetland - Wooded - lowland deciduous forest
612	423	42/423/4232/4233/4234/4235/4236/4237	LOWLAND CONIFER	MIXED CONIFER SWAMP		612	Wetland - Wooded - lowland coniferous forest
612	4231	4231	CEDAR	CEDAR SWAMP		612	Wetland - Wooded - lowland coniferous forest
612	4232	42/423/4232/4233/4234/4235/4236/4237	BLACK SPRUCE	MIXED CONIFER SWAMP		612	Wetland - Wooded - lowland coniferous forest
612	4233	42/423/4232/4233/4234/4235/4236/4237	TAMARACK	MIXED CONIFER SWAMP		612	Wetland - Wooded - lowland coniferous forest
43	4234	42/423/4232/4233/4234/4235/4236/4237	BALSAM FIR/SPRUCE	MIXED CONIFER SWAMP	Balsam Fir/White Spruce	43	Forest - Mixed Deciduous/Coniferous (upland)
43	4235	42/423/4232/4233/4234/4235/4236/4237	BALSAM FIR	MIXED CONIFER SWAMP		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4236	42/423/4232/4233/4234/4235/4236/4237	JACK PINE	MIXED CONIFER SWAMP		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4237	42/423/4232/4233/4234/4235/4236/4237	HEMLOCK	MIXED CONIFER SWAMP		43	Forest - Mixed Deciduous/Coniferous (upland)
43	4238	42/423/4232/4233/4234/4235/4236/4237	WHITE PINE	MIXED CONIFER SWAMP		43	Forest - Mixed Deciduous/Coniferous (upland)
612	6231	6231	MARL FLATS	CEDAR SWAMP	Cedar Swamp	612	Wetland - Wooded - lowland coniferous forest
613	41	4141/4142/4143/4144/4145/4146/4147	HARDWOOD/CONIFER	MIXED HARDWOOD SWAMP		613	Wetland - Wooded - lowland mixed forest
613	42	42/423/4232/4233/4234/4235/4236/4237	CONIFER/HARDWOOD	MIXED CONIFER SWAMP		613	Wetland - Wooded - lowland mixed forest

Darcy

GAP_CODE	DOMAIN	LANDFORM	TEXTURE	LABEL	MI_LABEL	K
1	A3	A	3	outwash (coarse)	Glacial outwash sand and gravel	20.000
2	B3	B	3	ice-contact (coarse)	Ice-contact outwash sand and gravel	100.000
3	C1	C	1	end-moraine (fine)	Fine-textured glacial till, end moraines	0.005
4	C2	C	2	end-moraine (medium)	Medium-textured glacial till, end moraines	0.500
5	C3	C	3	end-moraine (coarse)	Coarse-textured glacial till, end moraines	30.000
6	D1	D	1	ground-moraine (fine)	Fine-textured glacial till	0.005
7	D2	D	2	ground-moraine (medium)	Medium-textured glacial till	0.500
8	D3	D	3	ground-moraine (coarse)	Coarse-textured glacial till	30.000
9	E1	E	1	lacustrine (fine)	Lacustrine clay and silt	0.001
10	E3	E	3	lacustrine (coarse)	Lacustrine sand and gravel	10.000
11	F0	F	0	colluvium	Medium-textured glacial till	0.500
12	G0	G	0	alluvium/fluvial	Postglacial alluvium	5.000
13	I3	I	3	stagnation-moraine (coarse)	Coarse-textured glacial till, end moraines	30.000
14	J3	J	3	attenuated-drift (coarse)	Coarse-textured glacial till	30.000
15	W0	W	0	water	Water	0.000
16	Z2	Z	2	no landform (medium)	Medium-textured glacial till	0.500
17	Z3	Z	3	no landform (coarse)	Coarse-textured glacial till	30.000
18	Z4	Z	4	no landform (peat and muck)	Peat and muck	1.000
19	G3	G	3	alluvium/fluvial (coarse)	Postglacial alluvium	5.000
20	I2	I	2	stagnation moraine (medium)	Medium-textured glacial till, end moraines	0.500
21	Z0	Z	0	no landform (no texture)	Artificial fill	1.000
22	J2	J	2	attenuated-drift (medium)	Medium-textured glacial till	0.500
24	H1	H	1	loess (fine)	--	0.001
29	K3	K	3	dune (coarse)	Dune sand	20.000
30	Z1	Z	1	no landform (fine)	Fine-textured glacial till	0.005
99	Y0	Y	0	bedrock (no texture)	Exposed Bedrock/Thin to discontinuous till over bedrock	0.000

Wisconsin and Illinois Darcy conductivity values taken from above table (using cross-walked surficial geology maps).  
Michigan Darcy conductivity values were assigned to original surficial geology map (pre crosswalk) using values from Table 1.

Deposit	K	K used for EPA Project
Organic Deposits	1.000	1.000
Dunes	20.000	20.000
Lacustrine Clay	0.001	0.001
Lacustrine Sand	10.000	10.000
Glacial Outwash	20.000	20.000
Ice-Contact Terrain	100.000	100.000
Fine Textured Till	0.005	0.005
Medium Textured Till	0.500	0.500
Coarse Textured Till	30.000	30.000
Thin Till Over Bedrock	1.000	0.000 ^
Bedrock	--	0.000 ^
Postglacial Alluvium	--	5.000 ^
Artificial Fill	--	1.000 ^
Loess	--	0.001 ^
Water	--	0.000 ^

Table 1. \*

\* From M.E. Baker, M.J. Wiley, and P.W. Seelbach

"GIS-based models of potential groundwater loading in glaciated landscapes: considerations and development in Lower Michigan"  
Michigan Department of Natural Resources, Fisheries Research Report 2064, 2003

^ Values based on recommendations by P.W. Seelbach and M.J. Wiley

			Landform/Texture		Landform-Texture	
			Surficial Deposits		Texture	
			Gap Code	Domain Group	Landform (texture)	
1	A3	outwash (coarse)	1	A1	outwash (fine)	
2	B3	ice-contact (coarse)	2	A2	outwash (medium)	
3	C1	end-moraine (fine)	3	A3	outwash (coarse)	
4	C2	end-moraine (medium)	4	A4	outwash (peat and muck)	
5	C3	end-moraine (coarse)	5	A0	outwash (no texture)	
6	D1	ground-moraine (fine)	6	B1	ice-contact (fine)	
7	D2	ground-moraine (medium)	7	B2	ice-contact (medium)	
8	D3	ground-moraine (coarse)	8	B3	ice-contact (coarse)	
9	E1	lacustrine (fine)	9	B4	ice-contact (peat and muck)	
10	E3	lacustrine (coarse)	10	B0	ice-contact (no texture)	
11	F0	colluvium	11	C1	End-moraine (fine)	
12	G0	alluvium/fluviol	12	C2	End-moraine (medium)	
13	I3	stagnation-moraine (coarse)	13	C3	End-moraine (coarse)	
14	J3	attenuated-drift (coarse)	14	C4	End-moraine (peat and muck)	
15	W0	water	15	C0	End-moraine (no texture)	
16	Z2	no landform (medium)	16	D1	Ground-moraine (fine)	
17	Z3	no landform (coarse)	17	D2	Ground-moraine (medium)	
18	Z4	no landform (peat and muck)	18	D3	Ground-moraine (coarse)	
19	G3	alluvium/fluviol (coarse)	19	D4	Ground-moraine (peat and muck)	
20	I2	stagnation moraine (medium)	20	D0	Ground-moraine (no texture)	
21	Z0	no landform (no texture)	21	E1	Lacustrine (fine)	
22	J2	attenuated-drift (medium)	22	E2	Lacustrine (medium)	
24	H1	loess (fine)	23	E3	Lacustrine (coarse)	
29	K3	dune (coarse)	24	E4	Lacustrine (peat and muck)	
30	Z1	no landform (fine)	25	E0	Lacustrine (no texture)	
99	Y0	bedrock (no texture)	26	F1	Colluvium (fine)	
			27	F2	Colluvium (medium)	
			28	F3	Colluvium (coarse)	
			29	F4	Colluvium (peat and muck)	
			30	F0	Colluvium (no texture)	
			31	G1	Alluvium (fine)	
			32	G2	Alluvium (medium)	
			33	G3	Alluvium (coarse)	
			34	G4	Alluvium (peat and muck)	
			35	G0	Alluvium (no texture)	
			36	H1	Loess (fine)	
			37	H2	Loess (medium)	
			38	H3	Loess (coarse)	
			39	H4	Loess (peat and muck)	
			40	H0	Loess (no texture)	
			41	I1	Stagnation moraine (fine)	
			42	I2	Stagnation moraine (medium)	
			43	I3	Stagnation moraine (coarse)	
			44	I4	Stagnation moraine (peat and muck)	
			45	I0	Stagnation moraine (no texture)	
			46	J1	Attenuated drift (fine)	
			47	J2	Attenuated drift (medium)	
			48	J3	Attenuated drift (coarse)	
			49	J4	Attenuated drift (peat and muck)	
			50	J0	Attenuated drift ( no texture)	
			51	K1	Dune (fine)	
			52	K2	Dune (medium)	
			53	K3	Dune (coarse)	
			54	K4	Dune (peat & muck)	
			55	K0	Dune (no texture)	
			99	Y0	Bedrock (no texture)	
			56	Z1	no landform (fine)	
			57	Z2	no landform (medium)	
			58	Z3	no landform (coarse)	
			59	Z4	no landform (peat and muck)	
			60	Z0	no landform (no texture)	
			Landform Domain		Landform Description	
				A	Outwash	
				B	Ice-contact	
				C	End-moraine	
				D	Ground-moraine	
				E	Lacustrine	
				F	Colluvium	
				G	Alluvium	
				H	Loess	
				I	Stagnation moraine	
				J	Attenuated drift	
				K	Dune	
				Y	Bedrock	
				Z	No landform	
			Texture Domain		Texture Description	
				1	Fine	
				2	Medium	
				3	Coarse	
				4	Peat and muck	
				0	No texture	

Year	NLCD Class	Description	% impervious
2001/2006	21	<b>Developed, Open Space</b> - areas with a mixture of some constructed materials, but mostly vegetation in the form of lawn grasses. Impervious surfaces account for less than 20% of total cover. These areas most commonly include large-lot single-family housing units, parks, golf courses, and vegetation planted in developed settings for recreation, erosion control, or aesthetic purposes.	10
2001/2006	22	<b>Developed, Low Intensity</b> - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20% to 49% percent of total cover. These areas most commonly include single-family housing units.	35
2001/2006	23	<b>Developed, Medium Intensity</b> - areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50% to 79% of the total cover. These areas most commonly include single-family housing units.	65
2001/2006	24	<b>Developed High Intensity</b> -highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80% to 100% of the total cover.	90
1992	85	<b>Urban/Recreational Grasses</b> - vegetation (primarily grasses) planted in developed settings for recreation, erosion control, or aesthetic purposes. Examples include parks, lawns, golf courses, airport grasses, and industrial site grasses.	10
1992	21	<b>Low Intensity Residential</b> - areas with a mixture of constructed materials and vegetation. Constructed materials account for 30% to 80% of the cover. Vegetation may account for 20% to 70 % of the cover. These areas most commonly include single-family housing units. Population densities will be lower than in high intensity residential areas.	55
1992	22	<b>High Intensity Residential</b> - areas highly developed where people reside in high numbers. Examples include apartment complexes and row houses. Vegetation accounts for less than 20% of the cover. Constructed materials account for 80% to 100% of the cover.	90
1992	23	<b>Commercial/Industrial/Transportation</b> - areas of infrastructure (e.g. roads, railroads, etc.) and all highly developed areas not classified as High Intensity Residential.	90



Notes: See "Land Cover" table for crosswalks from GAP\_LU\_CODE to other land cover dataset classifications such as NLCD and WISLAND

CN\_MCNENROE refers to the suggested Curve Number from McEnroe, B. M. and Gonzalez, P. (2003) Storm duration and antecedent moisture conditions for flood discharge estimation, Report to Kansas Dept. of Transportation, Report No. K-TRAN: KU-02-4  
[http://trb.bts.gov/bids/4000/4000404/KU024\\_Report.pdf](http://trb.bts.gov/bids/4000/4000404/KU024_Report.pdf)

Value	GAP_LU_CODE	GAP_LU_DESC	HSG	HSG_DESC	CN_MCNENROE	NOTES_MCNENROE
110	11	Urban - Commercial	0		92.5	Average of HSGs A, B, C, D.
111	11	Urban - Commercial	1	A	89	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
112	11	Urban - Commercial	2	A/D	89	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG A assuming drained.
113	11	Urban - Commercial	3	B	92	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
114	11	Urban - Commercial	4	B/D	92	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG B assuming drained.
115	11	Urban - Commercial	5	C	94	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
116	11	Urban - Commercial	6	C/D	94	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG C assuming drained.
117	11	Urban - Commercial	7	D	95	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
120	12	Urban - Residential	0		74	Average of HSGs A, B, C, D.
121	12	Urban - Residential	1	A	57	Attributed as NLCD 1992 "Low Intensity Residential."
122	12	Urban - Residential	2	A/D	57	Attributed as NLCD 1992 "Low Intensity Residential," and HSG A assuming drained.
123	12	Urban - Residential	3	B	72	Attributed as NLCD 1992 "Low Intensity Residential."
124	12	Urban - Residential	4	B/D	72	Attributed as NLCD 1992 "Low Intensity Residential," and HSG B assuming drained.
125	12	Urban - Residential	5	C	81	Attributed as NLCD 1992 "Low Intensity Residential."
126	12	Urban - Residential	6	C/D	81	Attributed as NLCD 1992 "Low Intensity Residential," and HSG C assuming drained.
127	12	Urban - Residential	7	D	86	Attributed as NLCD 1992 "Low Intensity Residential."
130	13	Other Urban	0		63.5	Average of HSGs A, B, C, D.
131	13	Other Urban	1	A	39	Attributed as NLCD 1992 "Urban / Recreational / Grasses."
132	13	Other Urban	2	A/D	80	Attributed as NLCD 1992 "Urban / Recreational / Grasses," and HSG D assuming not drained.
133	13	Other Urban	3	B	61	Attributed as NLCD 1992 "Urban / Recreational / Grasses."
134	13	Other Urban	4	B/D	80	Attributed as NLCD 1992 "Urban / Recreational / Grasses," and HSG D assuming not drained.
135	13	Other Urban	5	C	74	Attributed as NLCD 1992 "Urban / Recreational / Grasses."
136	13	Other Urban	6	C/D	80	Attributed as NLCD 1992 "Urban / Recreational / Grasses," and HSG D assuming not drained.
137	13	Other Urban	7	D	80	Attributed as NLCD 1992 "Urban / Recreational / Grasses."
140	14	Urban - Roads and Parking Lots	0		92.5	Average of HSGs A, B, C, D.
141	14	Urban - Roads and Parking Lots	1	A	89	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
142	14	Urban - Roads and Parking Lots	2	A/D	89	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG A assuming drained.
143	14	Urban - Roads and Parking Lots	3	B	92	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
144	14	Urban - Roads and Parking Lots	4	B/D	92	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG B assuming drained.
145	14	Urban - Roads and Parking Lots	5	C	94	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
146	14	Urban - Roads and Parking Lots	6	C/D	94	Attributed as NLCD 1992 "Commercial / Industrial / Transportation," and HSG C assuming drained.
147	14	Urban - Roads and Parking Lots	7	D	95	Attributed as NLCD 1992 "Commercial / Industrial / Transportation."
210	21	Agriculture - Non-row Crops	0		77.75	Average of HSGs A, B, C, D.
211	21	Agriculture - Non-row Crops	1	A	62.67	Attributed as average of NLCD 1992 "Pasture / Hay," "Small Grains," and "Fallow."
212	21	Agriculture - Non-row Crops	2	A/D	74.33	Attributed as average of NLCD 1992 "Pasture / Hay" and HSG D assuming not drained; "Small Grains" and HSG A assuming drained; "Fallow" and HSG A assuming drained.
213	21	Agriculture - Non-row Crops	3	B	76.33	Attributed as average of NLCD 1992 "Pasture / Hay," "Small Grains," and "Fallow."
214	21	Agriculture - Non-row Crops	4	B/D	81.33	Attributed as average of NLCD 1992 "Pasture / Hay" and HSG D assuming not drained; "Small Grains" and HSG A assuming drained; "Fallow" and HSG A assuming drained.
215	21	Agriculture - Non-row Crops	5	C	84	Attributed as average of NLCD 1992 "Pasture / Hay," "Small Grains," and "Fallow."
216	21	Agriculture - Non-row Crops	6	C/D	85.67	Attributed as average of NLCD 1992 "Pasture / Hay" and HSG D assuming not drained; "Small Grains" and HSG A assuming drained; "Fallow" and HSG A assuming drained.
217	21	Agriculture - Non-row Crops	7	D	86	Attributed as average of NLCD 1992 "Pasture / Hay," "Small Grains," and "Fallow."
220	22	Agriculture - Row Crops	0		79.75	Average of HSGs A, B, C, D.
221	22	Agriculture - Row Crops	1	A	67	
222	22	Agriculture - Row Crops	2	A/D	67	Attributed as HSG A assuming drained
223	22	Agriculture - Row Crops	3	B		
224	22	Agriculture - Row Crops	4	B/D	78	Attributed as HSG B assuming drained
225	22	Agriculture - Row Crops	5	C	85	
226	22	Agriculture - Row Crops	6	C/D	85	Attributed as HSG C assuming drained
227	22	Agriculture - Row Crops	7	D	89	
300	30	Open/Non-forested	0		70.25	Average of HSGs A, B, C, D.
301	30	Open/Non-forested	1	A	49	Attributed as NLCD1992 "Grasslands / Herbaceous"
302	30	Open/Non-forested	2	A/D	84	Attributed as NLCD1992 "Grasslands / Herbaceous," and attributed as HSG D assuming not drained
303	30	Open/Non-forested	3	B	69	Attributed as NLCD1992 "Grasslands / Herbaceous"
304	30	Open/Non-forested	4	B/D	84	Attributed as NLCD1992 "Grasslands / Herbaceous," and attributed as HSG D assuming not drained
305	30	Open/Non-forested	5	C	79	Attributed as NLCD1992 "Grasslands / Herbaceous"
306	30	Open/Non-forested	6	C/D	84	Attributed as NLCD1992 "Grasslands / Herbaceous," and attributed as HSG D assuming not drained
307	30	Open/Non-forested	7	D	84	Attributed as NLCD1992 "Grasslands / Herbaceous"
410	41	Forest - Deciduous (Upland)	0		62	Average of HSGs A, B, C, D.
411	41	Forest - Deciduous (Upland)	1	A	36	All forest attributed the same.
412	41	Forest - Deciduous (Upland)	2	A/D	79	All forest attributed the same, HSG assuming not drained.
413	41	Forest - Deciduous (Upland)	3	B	60	All forest attributed the same.
414	41	Forest - Deciduous (Upland)	4	B/D	79	All forest attributed the same, HSG assuming not drained.
415	41	Forest - Deciduous (Upland)	5	C	73	All forest attributed the same.
416	41	Forest - Deciduous (Upland)	6	C/D	79	All forest attributed the same, HSG assuming not drained.
417	41	Forest - Deciduous (Upland)	7	D	79	All forest attributed the same.
420	42	Forest - Coniferous (upland)	0		62	Average of HSGs A, B, C, D.
421	42	Forest - Coniferous (upland)	1	A	36	All forest attributed the same.
422	42	Forest - Coniferous (upland)	2	A/D	79	All forest attributed the same, HSG assuming not drained.
423	42	Forest - Coniferous (upland)	3	B	60	All forest attributed the same.
424	42	Forest - Coniferous (upland)	4	B/D	79	All forest attributed the same, HSG assuming not drained.
425	42	Forest - Coniferous (upland)	5	C	73	All forest attributed the same.
426	42	Forest - Coniferous (upland)	6	C/D	79	All forest attributed the same, HSG assuming not drained.
427	42	Forest - Coniferous (upland)	7	D	79	All forest attributed the same.
430	43	Forest - Mixed Deciduous/Coniferous (Upland)	0		62	Average of HSGs A, B, C, D.
431	43	Forest - Mixed Deciduous/Coniferous (Upland)	1	A	36	All forest attributed the same.
432	43	Forest - Mixed Deciduous/Coniferous (Upland)	2	A/D	79	All forest attributed the same, HSG assuming not drained.
433	43	Forest - Mixed Deciduous/Coniferous (Upland)	3	B	60	All forest attributed the same.
434	43	Forest - Mixed Deciduous/Coniferous (Upland)	4	B/D	79	All forest attributed the same, HSG assuming not drained.
435	43	Forest - Mixed Deciduous/Coniferous (Upland)	5	C	73	All forest attributed the same.
436	43	Forest - Mixed Deciduous/Coniferous (Upland)	6	C/D	79	All forest attributed the same, HSG assuming not drained.
437	43	Forest - Mixed Deciduous/Coniferous (Upland)	7	D	79	All forest attributed the same.
500	50	Open Water	0		100	
501	50	Open Water	1	A	100	
502	50	Open Water	2	A/D	100	
503	50	Open Water	3	B	100	
504	50	Open Water	4	B/D	100	
505	50	Open Water	5	C	100	
506	50	Open Water	6	C/D	100	
507	50	Open Water	7	D	100	
6100	610	Wetland - Wooded - Shrubland	0		62	Average of HSGs A, B, C, D.
6101	610	Wetland - Wooded - Shrubland	1	A	36	Attributed as NLCD 1992 "Woody Wetlands"
6102	610	Wetland - Wooded - Shrubland	2	A/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6103	610	Wetland - Wooded - Shrubland	3	B	60	Attributed as NLCD 1992 "Woody Wetlands"
6104	610	Wetland - Wooded - Shrubland	4	B/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6105	610	Wetland - Wooded - Shrubland	5	C	73	Attributed as NLCD 1992 "Woody Wetlands"
6106	610	Wetland - Wooded - Shrubland	6	C/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6107	610	Wetland - Wooded - Shrubland	7	D	79	Attributed as NLCD 1992 "Woody Wetlands"
6110	611	Wetland - Wooded - Lowland Deciduous Forest	0		62	Average of HSGs A, B, C, D.
6111	611	Wetland - Wooded - Lowland Deciduous Forest	1	A	36	Attributed as NLCD 1992 "Woody Wetlands"
6112	611	Wetland - Wooded - Lowland Deciduous Forest	2	A/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6113	611	Wetland - Wooded - Lowland Deciduous Forest	3	B	60	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6114	611	Wetland - Wooded - Lowland Deciduous Forest	4	B/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6115	611	Wetland - Wooded - Lowland Deciduous Forest	5	C	73	Attributed as NLCD 1992 "Woody Wetlands"
6116	611	Wetland - Wooded - Lowland Deciduous Forest	6	C/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6117	611	Wetland - Wooded - Lowland Deciduous Forest	7	D	79	Attributed as NLCD 1992 "Woody Wetlands"
6120	612	Wetland - Wooded - Lowland Coniferous Forest	0		62	Average of HSGs A, B, C, D.
6121	612	Wetland - Wooded - Lowland Coniferous Forest	1	A	36	Attributed as NLCD 1992 "Woody Wetlands"
6122	612	Wetland - Wooded - Lowland Coniferous Forest	2	A/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6123	612	Wetland - Wooded - Lowland Coniferous Forest	3	B	60	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6124	612	Wetland - Wooded - Lowland Coniferous Forest	4	B/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6125	612	Wetland - Wooded - Lowland Coniferous Forest	5	C	73	Attributed as NLCD 1992 "Woody Wetlands"
6126	612	Wetland - Wooded - Lowland Coniferous Forest	6	C/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6127	612	Wetland - Wooded - Lowland Coniferous Forest	7	D	79	Attributed as NLCD 1992 "Woody Wetlands"
6130	613	Wetland - wooded - Lowland Mixed Forest	0		62	Average of HSGs A, B, C, D.
6131	613	Wetland - wooded - Lowland Mixed Forest	1	A	36	Attributed as NLCD 1992 "Woody Wetlands"
6132	613	Wetland - wooded - Lowland Mixed Forest	2	A/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6133	613	Wetland - wooded - Lowland Mixed Forest	3	B	60	Attributed as NLCD 1992 "Woody Wetlands"
6134	613	Wetland - wooded - Lowland Mixed Forest	4	B/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6135	613	Wetland - wooded - Lowland Mixed Forest	5	C	73	Attributed as NLCD 1992 "Woody Wetlands"
6136	613	Wetland - wooded - Lowland Mixed Forest	6	C/D	79	Attributed as NLCD 1992 "Woody Wetlands," and HSG D assuming not drained.
6137	613	Wetland - wooded - Lowland Mixed Forest	7	D	79	Attributed as NLCD 1992 "Woody Wetlands"
620	62	Wetland	0		70.25	Average of HSGs A, B, C, D.
621	62	Wetland	1	A	49	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands."
622	62	Wetland	2	A/D	84	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands," and HSG D assuming not drained.
623	62	Wetland	3	B	69	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands."
624	62	Wetland	4	B/D	84	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands," and HSG D assuming not drained.
625	62	Wetland	5	C	79	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands."
626	62	Wetland	6	C/D	84	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands," and HSG D assuming not drained.
627	62	Wetland	7	D	84	Attributed as NLCD 1992 "Emergent Herbaceous Wetlands."
700	70	Barren	0		87	Average of HSGs A, B, C, D.
701	70	Barren	1	A	77	Attributed as NLCD 1992 "Bare Rock / sand / Clay."
702	70	Barren	2	A/D	94	Attributed as NLCD 1992 "Bare Rock / sand / Clay," and HSG D assuming not drained.
703	70	Barren	3	B	86	Attributed as NLCD 1992 "Bare Rock / sand / Clay."
704	70	Barren	4	B/D	94	Attributed as NLCD 1992 "Bare Rock / sand / Clay," and HSG D assuming not drained.
705	70	Barren	5	C	91	Attributed as NLCD 1992 "Bare Rock / sand / Clay."
706	70	Barren	6	C/D	94	Attributed as NLCD 1992 "Bare Rock / sand / Clay," and HSG D assuming not drained.
707	70	Barren	7	D	94	Attributed as NLCD 1992 "Bare Rock / sand / Clay."
990	99	Cloud Cover	0	NA		
991	99	Cloud Cover	1	A	NA	
992	99	Cloud Cover	2	A/D	NA	
993	99	Cloud Cover	3	B	NA	
994	99	Cloud Cover	4	B/D	NA	
995	99	Cloud Cover	5	C	NA	
996	99	Cloud Cover	6	C/D	NA	
997	99	Cloud Cover	7	D	NA	