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# Drainage Class

Jason Nemecek

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**“Drainage class (natural)”** refers to the frequency and duration of wet periods under conditions similar to those under which the soil formed. Alterations of the water regime by human activities, either through drainage or irrigation, are not a consideration unless they have significantly changed the morphology of the soil. Seven classes of natural soil drainage are recognized: excessively drained, somewhat excessively drained, well drained, moderately well drained, somewhat poorly drained, poorly drained, and very poorly drained. These classes are defined in the “Soil Survey Manual.”

## Script Breakdown

#### Insert identifier(s) string and WKT geometry for each area of interest (AOI) polygon

SELECT @aoiGeom = GEOMETRY::STGeomFromText('MULTIPOLYGON (((-102.12335160658608 45.959173206572416, -102.13402890980223 45.959218442561564, -102.13386921506947 45.944643788188387, -102.12327175652177 45.944703605814198, -102.12335160658608 45.959173206572416)))', 4326);

SELECT @aoiGeomFixed = @aoiGeom.MakeValid().STUnion(@aoiGeom.STStartPoint());

INSERT INTO #AoiTable ( landunit, aoigeom )

VALUES ('T9981 Fld3', @aoiGeomFixed);

SELECT @aoiGeom = GEOMETRY::STGeomFromText('MULTIPOLYGON (((-102.1130336443976 45.959162795100383, -102.12335160658608 45.959173206572416, -102.12327175652177 45.944703605814198, -102.1128892282776 45.944710506326032, -102.1130336443976 45.959162795100383)))', 4326);

SELECT @aoiGeomFixed = @aoiGeom.MakeValid().STUnion(@aoiGeom.STStartPoint());

INSERT INTO #AoiTable ( landunit, aoigeom )

VALUES ('T9981 Fld4', @aoiGeomFixed);

| **aoiid** | **landunit** | **aoigeom** |
| --- | --- | --- |
| 1 | T9981 Fld3 | POLYGON ((-102.13386921506947 45.944643788188387, -102.12327175652177 45.9447036058142, -102.12335160658608 45.959173206572416, -102.13402890980223 45.959218442561564, -102.13386921506947 45.944643788188387)) |
| 2 | T9981 Fld4 | POLYGON ((-102.12327175652177 45.9447036058142, -102.1128892282776 45.944710506326032, -102.1130336443976 45.959162795100383, -102.12335160658608 45.959173206572416, -102.12327175652177 45.9447036058142)) |

#### Create summary acres for each landunit

CREATE TABLE #AoiAcres

( aoiid INT,

landunit CHAR(20),

landunit\_acres FLOAT

);

INSERT INTO #AoiAcres (aoiid, landunit, landunit\_acres )\

SELECT aoiid, landunit,

SUM( ROUND( ( ( GEOGRAPHY::STGeomFromWKB(aoigeom.STAsBinary(), 4326 ).STArea() ) / 4046.8564224 ), 3 ) ) AS landunit\_acres

FROM #AoiTable

GROUP BY aoiid, landunit;

| **aoiid** | **landunit** | **landunit\_acres** |
| --- | --- | --- |
| 1 | T9981 Fld3 | 328.952 |
| 2 | T9981 Fld4 | 318.722 |

#### Populate intersected soil polygon table with geometry

-- Create intersected soil polygon table with geometry

CREATE TABLE #AoiSoils

( polyid INT IDENTITY (1,1),

aoiid INT,

landunit CHAR(20),

mukey INT,

soilgeom GEOMETRY

);

INSERT INTO #AoiSoils (aoiid, landunit, mukey, soilgeom)

SELECT A.aoiid, A.landunit, M.mukey, M.mupolygongeo.STIntersection(A.aoigeom ) AS soilgeom

FROM mupolygon M, #AoiTable A

WHERE mupolygongeo.STIntersects(A.aoigeom) = 1;

#### Populate soil geometry with landunit attribute

-- Soil geometry with landunits

CREATE TABLE #AoiSoils2

( aoiid INT,

polyid INT,

landunit CHAR(20),

mukey INT,

poly\_acres FLOAT,

soilgeog GEOGRAPHY

);

-- Populate Soil geometry with landunit attribute

INSERT INTO #AoiSoils2

SELECT aoiid, polyid, landunit, mukey, ROUND((( GEOGRAPHY::STGeomFromWKB(soilgeom.STAsBinary(), 4326 ).STArea() ) / 4046.8564224 ), 3 ) AS poly\_acres, GEOGRAPHY::STGeomFromWKB(soilgeom.STAsBinary(), 4326 ) AS soilgeog

FROM #AoiSoils;

#### Populate soil map unit acres, aggregated by mukey (merges polygons together)

INSERT INTO #M2

SELECT DISTINCT M1.aoiid, M1.landunit, M1.mukey,

ROUND (SUM (M1.poly\_acres) OVER(PARTITION BY M1.landunit, M1.mukey), 3) AS mapunit\_acres

FROM #AoiSoils2 AS M1

GROUP BY M1.aoiid, M1.landunit, M1.mukey, M1.poly\_acres;

#### Component level data and mapunit sum-of-comppct\_r (major components only)

CREATE TABLE #M4

( aoiid INT,

landunit CHAR(20),

mukey INT,

mapunit\_acres FLOAT,

cokey INT,

compname CHAR(60),

comppct\_r INT,

majcompflag CHAR(3),

mu\_pct\_sum INT,

major\_mu\_pct\_sum INT,

drainagecl CHAR(254)

);

---Populate component level data with cokey, comppct\_r and mapunit sum-of-comppct\_r

INSERT INTO #M4

SELECT M2.aoiid, M2.landunit, M2.mukey, mapunit\_acres, CO.cokey, CO.compname, CO.comppct\_r, CO.majcompflag, (SELECT SUM (CCO.comppct\_r)

FROM #M2 AS MM2

INNER JOIN component AS CCO ON CCO.mukey=MM2.mukey AND M2.mukey=MM2.mukey AND majcompflag = 'Yes' ) AS major\_mu\_pct\_sum,

SUM (CO.comppct\_r) OVER(PARTITION BY M2.landunit, M2.mukey) AS mu\_pct\_sum, drainagecl

FROM #M2 AS M2

INNER JOIN component AS CO ON CO.mukey = M2.mukey

| **aoiid** | **landunit** | **mukey** | **mapunit\_acres** | **cokey** | **compname** | **comppct\_r** | **majcompflag** | **mu\_pct\_sum** | **major\_mu\_pct\_sum** | **drainagecl** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464493 | Slickspots | 2 | No | 90 | 100 | Well drained |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464494 | Daglum | 25 | Yes | 90 | 100 | Well drained |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464495 | Farnuf | 65 | Yes | 90 | 100 | Well drained |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464496 | Grail | 3 | No | 90 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464497 | Rhoades | 3 | No | 90 | 100 | Well drained |
| 1 | T9981 Fld3 | 354627 | 0.426 | 16464498 | Tally | 2 | No | 90 | 100 | Well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464607 | Amor | 25 | Yes | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464608 | Arnegard | 4 | No | 85 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464609 | Belfield | 4 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464610 | Heil | 1 | No | 85 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464611 | Lantry | 3 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464612 | Reeder | 60 | Yes | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 354648 | 0.287 | 16464613 | Vebar | 3 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2494708 | 1.729 | 16663928 | Regent | 5 | No | 81 | 100 | Well drained |
| 1 | T9981 Fld3 | 2494708 | 1.729 | 16663929 | Chama | 5 | No | 81 | 100 | Well drained |
| 1 | T9981 Fld3 | 2494708 | 1.729 | 16663930 | Amor | 49 | Yes | 81 | 100 | Well drained |
| 1 | T9981 Fld3 | 2494708 | 1.729 | 16663931 | Cabba | 32 | Yes | 81 | 100 | Well drained |
| 1 | T9981 Fld3 | 2494708 | 1.729 | 16663932 | Shambo | 9 | No | 81 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663899 | Daglum | 33 | Yes | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663900 | Savage | 3 | No | 176 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663901 | Barkof | 2 | No | 176 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663902 | Rhoades | 2 | No | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663903 | Rhoades | 55 | Yes | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525720 | 56.699 | 16663904 | Belfield | 5 | No | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663795 | Lakota | 4 | No | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663796 | Ekalaka | 55 | Yes | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663797 | Yegen | 17 | Yes | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663798 | Desart | 14 | No | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663799 | Parshall | 6 | No | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663800 | Rhoades | 2 | No | 72 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525732 | 1.35 | 16663801 | Vebar | 2 | No | 72 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663950 | Beisigl | 7 | No | 75 | 100 | Somewhat excessively drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663951 | Vebar | 50 | Yes | 75 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663952 | Cohagen | 25 | Yes | 75 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663953 | Tally | 14 | No | 75 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663954 | Amor | 2 | No | 75 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525733 | 0.129 | 16663955 | Arnegard | 2 | No | 75 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525739 | 28.479 | 16663915 | Parshall | 20 | Yes | 78 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525739 | 28.479 | 16663916 | Tally | 12 | No | 78 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525739 | 28.479 | 16663917 | Vebar | 58 | Yes | 78 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525739 | 28.479 | 16663918 | Arnegard | 8 | No | 78 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525739 | 28.479 | 16663919 | Cohagen | 2 | No | 78 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525745 | 4.983 | 16663920 | Farnuf | 12 | No | 150 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525745 | 4.983 | 16663921 | Shambo | 75 | Yes | 150 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525745 | 4.983 | 16663922 | Arnegard | 10 | No | 150 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525745 | 4.983 | 16663923 | Amor | 3 | No | 150 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525746 | 16.106 | 16663924 | Arnegard | 10 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525746 | 16.106 | 16663925 | Farnuf | 8 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525746 | 16.106 | 16663926 | Amor | 4 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525746 | 16.106 | 16663927 | Shambo | 78 | Yes | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663598 | Heil | 3 | No | 150 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663599 | Rhoades | 4 | No | 150 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663600 | Daglum | 2 | No | 150 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663601 | Vanda | 5 | No | 150 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663602 | Harriet | 75 | Yes | 150 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663603 | Regan | 6 | No | 150 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525754 | 12.638 | 16663604 | Glenross | 5 | No | 150 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663605 | Peta | 2 | No | 55 | 100 | Somewhat poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663606 | Dimmick | 6 | No | 55 | 100 | Very poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663607 | Arveson | 12 | No | 55 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663608 | Regan | 10 | No | 55 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663609 | Harriet | 7 | No | 55 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663610 | Straw | 3 | No | 55 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663611 | Regan | 55 | Yes | 55 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525764 | 17.691 | 16663612 | Marysland | 5 | No | 55 | 100 | Poorly drained |
| 1 | T9981 Fld3 | 2525766 | 0.032 | 16663539 | Water | 100 | Yes | 100 | 100 | NULL |
| 1 | T9981 Fld3 | 2525769 | 181.356 | 16663985 | Belfield | 48 | Yes | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525769 | 181.356 | 16663986 | Grail | 5 | No | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525769 | 181.356 | 16663987 | Daglum | 40 | Yes | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2525769 | 181.356 | 16663988 | Savage | 5 | No | 176 | 100 | Well drained |
| 1 | T9981 Fld3 | 2525769 | 181.356 | 16663989 | Rhoades | 2 | No | 176 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663766 | Reeder | 58 | Yes | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663767 | Janesburg | 20 | Yes | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663768 | Amor | 10 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663769 | Dogtooth | 5 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663770 | Regent | 3 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663771 | Belfield | 2 | No | 156 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2755648 | 2.449 | 16663772 | Barkof | 2 | No | 156 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663846 | Reeder | 60 | Yes | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663847 | Amor | 25 | Yes | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663848 | Belfield | 4 | No | 85 | 100 | Moderately well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663849 | Regent | 3 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663850 | Vebar | 3 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663851 | Chama | 3 | No | 85 | 100 | Well drained |
| 1 | T9981 Fld3 | 2755654 | 4.599 | 16663852 | Arnegard | 2 | No | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663899 | Daglum | 33 | Yes | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663900 | Savage | 3 | No | 176 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663901 | Barkof | 2 | No | 176 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663902 | Rhoades | 2 | No | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663903 | Rhoades | 55 | Yes | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525720 | 8.623 | 16663904 | Belfield | 5 | No | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664017 | Savage | 30 | Yes | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664018 | Daglum | 20 | Yes | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664019 | Grail | 8 | No | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664020 | Regent | 5 | No | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664021 | Rhoades | 2 | No | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525724 | 0.458 | 16664022 | Belfield | 35 | Yes | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663990 | Daglum | 2 | No | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663991 | Regent | 68 | Yes | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663992 | Savage | 17 | Yes | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663993 | Cabba | 2 | No | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663994 | Grail | 6 | No | 85 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525730 | 31.514 | 16663995 | Moreau | 5 | No | 85 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525745 | 62.205 | 16663920 | Farnuf | 12 | No | 150 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525745 | 62.205 | 16663921 | Shambo | 75 | Yes | 150 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525745 | 62.205 | 16663922 | Arnegard | 10 | No | 150 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525745 | 62.205 | 16663923 | Amor | 3 | No | 150 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525746 | 63.55 | 16663924 | Arnegard | 10 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525746 | 63.55 | 16663925 | Farnuf | 8 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525746 | 63.55 | 16663926 | Amor | 4 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525746 | 63.55 | 16663927 | Shambo | 78 | Yes | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663598 | Heil | 3 | No | 150 | 100 | Poorly drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663599 | Rhoades | 4 | No | 150 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663600 | Daglum | 2 | No | 150 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663601 | Vanda | 5 | No | 150 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663602 | Harriet | 75 | Yes | 150 | 100 | Poorly drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663603 | Regan | 6 | No | 150 | 100 | Poorly drained |
| 2 | T9981 Fld4 | 2525754 | 23.138 | 16663604 | Glenross | 5 | No | 150 | 100 | Poorly drained |
| 2 | T9981 Fld4 | 2525767 | 3.86 | 16663540 | Water | 100 | Yes | 100 | 100 | NULL |
| 2 | T9981 Fld4 | 2525769 | 103.909 | 16663985 | Belfield | 48 | Yes | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525769 | 103.909 | 16663986 | Grail | 5 | No | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525769 | 103.909 | 16663987 | Daglum | 40 | Yes | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2525769 | 103.909 | 16663988 | Savage | 5 | No | 176 | 100 | Well drained |
| 2 | T9981 Fld4 | 2525769 | 103.909 | 16663989 | Rhoades | 2 | No | 176 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663552 | Regent | 3 | No | 80 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663553 | Lawther | 2 | No | 80 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663554 | Savage | 62 | Yes | 80 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663555 | Grail | 18 | Yes | 80 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663556 | Belfield | 8 | No | 80 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663557 | Daglum | 2 | No | 80 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2755639 | 0.443 | 16663558 | Farland | 5 | No | 80 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663956 | Telfer | 3 | No | 88 | 100 | Somewhat excessively drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663957 | Flasher | 30 | Yes | 88 | 100 | Somewhat excessively drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663958 | Vebar | 40 | Yes | 88 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663959 | Tally | 18 | Yes | 88 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663960 | Parshall | 5 | No | 88 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755643 | 9.641 | 16663961 | Amor | 4 | No | 88 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663766 | Reeder | 58 | Yes | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663767 | Janesburg | 20 | Yes | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663768 | Amor | 10 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663769 | Dogtooth | 5 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663770 | Regent | 3 | No | 156 | 100 | Well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663771 | Belfield | 2 | No | 156 | 100 | Moderately well drained |
| 2 | T9981 Fld4 | 2755648 | 11.382 | 16663772 | Barkof | 2 | No | 156 | 100 | Well drained |

### Adjusting Component Percent

CREATE TABLE #drain

( aoiid INT ,

landunit CHAR(20),

landunit\_acres FLOAT,

mukey INT,

mapunit\_acres FLOAT,

cokey INT,

compname CHAR(280),

comppct\_r INT,

majcompflag CHAR(4),

mu\_pct\_sum INT,

major\_mu\_pct\_sum INT,

drainagecl CHAR(40),

adj\_comp\_pct FLOAT

)

;

INSERT INTO #drain

SELECT #M4.aoiid, #M4.landunit, #AoiAcres.landunit\_acres, mukey, mapunit\_acres, cokey, compname, comppct\_r, majcompflag, mu\_pct\_sum, major\_mu\_pct\_sum , drainagecl, FORMAT ((1.0 \* comppct\_r / major\_mu\_pct\_sum), '#,###,##0.00') AS adj\_comp\_pct

FROM #M4

LEFT OUTER JOIN #AoiAcres ON #AoiAcres.aoiid=#M4.aoiid WHERE majcompflag = 'Yes' ;

| **aoiid** | **landunit** | **landunit\_acres** | **mukey** | **mapunit\_acres** | **cokey** | **compname** | **comppct\_r** | **majcompflag** | **mu\_pct\_sum** | **major\_mu\_pct\_sum** | **drainagecl** | **adj\_comp\_pct** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | T9981 Fld3 | 328.952 | 354627 | 0.426 | 16464494 | Daglum | 25 | Yes | 100 | 90 | Well drained | 0.28 |
| 1 | T9981 Fld3 | 328.952 | 354627 | 0.426 | 16464495 | Farnuf | 65 | Yes | 100 | 90 | Well drained | 0.72 |
| 1 | T9981 Fld3 | 328.952 | 354648 | 0.287 | 16464607 | Amor | 25 | Yes | 100 | 85 | Well drained | 0.29 |
| 1 | T9981 Fld3 | 328.952 | 354648 | 0.287 | 16464612 | Reeder | 60 | Yes | 100 | 85 | Well drained | 0.71 |
| 1 | T9981 Fld3 | 328.952 | 2494708 | 1.729 | 16663930 | Amor | 49 | Yes | 100 | 81 | Well drained | 0.6 |
| 1 | T9981 Fld3 | 328.952 | 2494708 | 1.729 | 16663931 | Cabba | 32 | Yes | 100 | 81 | Well drained | 0.4 |
| 1 | T9981 Fld3 | 328.952 | 2525720 | 56.699 | 16663899 | Daglum | 33 | Yes | 100 | 88 | Moderately well drained | 0.38 |
| 1 | T9981 Fld3 | 328.952 | 2525720 | 56.699 | 16663903 | Rhoades | 55 | Yes | 100 | 88 | Moderately well drained | 0.63 |
| 1 | T9981 Fld3 | 328.952 | 2525732 | 1.35 | 16663796 | Ekalaka | 55 | Yes | 100 | 72 | Well drained | 0.76 |
| 1 | T9981 Fld3 | 328.952 | 2525732 | 1.35 | 16663797 | Yegen | 17 | Yes | 100 | 72 | Well drained | 0.24 |
| 1 | T9981 Fld3 | 328.952 | 2525733 | 0.129 | 16663951 | Vebar | 50 | Yes | 100 | 75 | Well drained | 0.67 |
| 1 | T9981 Fld3 | 328.952 | 2525733 | 0.129 | 16663952 | Cohagen | 25 | Yes | 100 | 75 | Well drained | 0.33 |
| 1 | T9981 Fld3 | 328.952 | 2525739 | 28.479 | 16663915 | Parshall | 20 | Yes | 100 | 78 | Well drained | 0.26 |
| 1 | T9981 Fld3 | 328.952 | 2525739 | 28.479 | 16663917 | Vebar | 58 | Yes | 100 | 78 | Well drained | 0.74 |
| 1 | T9981 Fld3 | 328.952 | 2525745 | 4.983 | 16663921 | Shambo | 75 | Yes | 100 | 75 | Well drained | 1 |
| 1 | T9981 Fld3 | 328.952 | 2525746 | 16.106 | 16663927 | Shambo | 78 | Yes | 100 | 78 | Well drained | 1 |
| 1 | T9981 Fld3 | 328.952 | 2525754 | 12.638 | 16663602 | Harriet | 75 | Yes | 100 | 75 | Poorly drained | 1 |
| 1 | T9981 Fld3 | 328.952 | 2525764 | 17.691 | 16663611 | Regan | 55 | Yes | 100 | 55 | Poorly drained | 1 |
| 1 | T9981 Fld3 | 328.952 | 2525766 | 0.032 | 16663539 | Water | 100 | Yes | 100 | 100 | NULL | 1 |
| 1 | T9981 Fld3 | 328.952 | 2525769 | 181.356 | 16663985 | Belfield | 48 | Yes | 100 | 88 | Moderately well drained | 0.55 |
| 1 | T9981 Fld3 | 328.952 | 2525769 | 181.356 | 16663987 | Daglum | 40 | Yes | 100 | 88 | Moderately well drained | 0.45 |
| 1 | T9981 Fld3 | 328.952 | 2755648 | 2.449 | 16663766 | Reeder | 58 | Yes | 100 | 78 | Well drained | 0.74 |
| 1 | T9981 Fld3 | 328.952 | 2755648 | 2.449 | 16663767 | Janesburg | 20 | Yes | 100 | 78 | Well drained | 0.26 |
| 1 | T9981 Fld3 | 328.952 | 2755654 | 4.599 | 16663846 | Reeder | 60 | Yes | 100 | 85 | Well drained | 0.71 |
| 1 | T9981 Fld3 | 328.952 | 2755654 | 4.599 | 16663847 | Amor | 25 | Yes | 100 | 85 | Well drained | 0.29 |
| 2 | T9981 Fld4 | 318.722 | 2525720 | 8.623 | 16663899 | Daglum | 33 | Yes | 100 | 88 | Moderately well drained | 0.38 |
| 2 | T9981 Fld4 | 318.722 | 2525720 | 8.623 | 16663903 | Rhoades | 55 | Yes | 100 | 88 | Moderately well drained | 0.63 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664017 | Savage | 30 | Yes | 100 | 85 | Well drained | 0.35 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664018 | Daglum | 20 | Yes | 100 | 85 | Moderately well drained | 0.24 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664022 | Belfield | 35 | Yes | 100 | 85 | Moderately well drained | 0.41 |
| 2 | T9981 Fld4 | 318.722 | 2525730 | 31.514 | 16663991 | Regent | 68 | Yes | 100 | 85 | Well drained | 0.8 |
| 2 | T9981 Fld4 | 318.722 | 2525730 | 31.514 | 16663992 | Savage | 17 | Yes | 100 | 85 | Well drained | 0.2 |
| 2 | T9981 Fld4 | 318.722 | 2525745 | 62.205 | 16663921 | Shambo | 75 | Yes | 100 | 75 | Well drained | 1 |
| 2 | T9981 Fld4 | 318.722 | 2525746 | 63.55 | 16663927 | Shambo | 78 | Yes | 100 | 78 | Well drained | 1 |
| 2 | T9981 Fld4 | 318.722 | 2525754 | 23.138 | 16663602 | Harriet | 75 | Yes | 100 | 75 | Poorly drained | 1 |
| 2 | T9981 Fld4 | 318.722 | 2525767 | 3.86 | 16663540 | Water | 100 | Yes | 100 | 100 | NULL | 1 |
| 2 | T9981 Fld4 | 318.722 | 2525769 | 103.909 | 16663985 | Belfield | 48 | Yes | 100 | 88 | Moderately well drained | 0.55 |
| 2 | T9981 Fld4 | 318.722 | 2525769 | 103.909 | 16663987 | Daglum | 40 | Yes | 100 | 88 | Moderately well drained | 0.45 |
| 2 | T9981 Fld4 | 318.722 | 2755639 | 0.443 | 16663554 | Savage | 62 | Yes | 100 | 80 | Well drained | 0.78 |
| 2 | T9981 Fld4 | 318.722 | 2755639 | 0.443 | 16663555 | Grail | 18 | Yes | 100 | 80 | Moderately well drained | 0.23 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663957 | Flasher | 30 | Yes | 100 | 88 | Somewhat excessively drained | 0.34 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663958 | Vebar | 40 | Yes | 100 | 88 | Well drained | 0.45 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663959 | Tally | 18 | Yes | 100 | 88 | Well drained | 0.2 |
| 2 | T9981 Fld4 | 318.722 | 2755648 | 11.382 | 16663766 | Reeder | 58 | Yes | 100 | 78 | Well drained | 0.74 |
| 2 | T9981 Fld4 | 318.722 | 2755648 | 11.382 | 16663767 | Janesburg | 20 | Yes | 100 | 78 | Well drained | 0.26 |

#### Calculating component acres

CREATE TABLE #drain2

( aoiid INT ,

landunit CHAR(20),

landunit\_acres FLOAT,

mukey INT,

mapunit\_acres FLOAT,

cokey INT,

compname CHAR(280),

comppct\_r INT,

majcompflag CHAR(4),

mu\_pct\_sum INT,

drainagecl CHAR(40),

adj\_comp\_pct FLOAT,

co\_acres FLOAT

)

;

INSERT INTO #drain2

SELECT aoiid, landunit, landunit\_acres, mukey, mapunit\_acres, cokey, compname, comppct\_r, majcompflag, mu\_pct\_sum, drainagecl, adj\_comp\_pct, ROUND ( (adj\_comp\_pct \* mapunit\_acres), 2) AS co\_acres

FROM #drain;

| **aoiid** | **landunit** | **landunit\_acres** | **mukey** | **mapunit\_acres** | **cokey** | **compname** | **comppct\_r** | **majcompflag** | **mu\_pct\_sum** | **drainagecl** | **adj\_comp\_pct** | **co\_acres** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 1 | T9981 Fld3 | 328.952 | 354627 | 0.426 | 16464494 | Daglum | 25 | Yes | 100 | Well drained | 0.28 | 0.12 |
| 1 | T9981 Fld3 | 328.952 | 354627 | 0.426 | 16464495 | Farnuf | 65 | Yes | 100 | Well drained | 0.72 | 0.31 |
| 1 | T9981 Fld3 | 328.952 | 354648 | 0.287 | 16464607 | Amor | 25 | Yes | 100 | Well drained | 0.29 | 0.08 |
| 1 | T9981 Fld3 | 328.952 | 354648 | 0.287 | 16464612 | Reeder | 60 | Yes | 100 | Well drained | 0.71 | 0.2 |
| 1 | T9981 Fld3 | 328.952 | 2494708 | 1.729 | 16663930 | Amor | 49 | Yes | 100 | Well drained | 0.6 | 1.04 |
| 1 | T9981 Fld3 | 328.952 | 2494708 | 1.729 | 16663931 | Cabba | 32 | Yes | 100 | Well drained | 0.4 | 0.69 |
| 1 | T9981 Fld3 | 328.952 | 2525720 | 56.699 | 16663899 | Daglum | 33 | Yes | 100 | Moderately well drained | 0.38 | 21.55 |
| 1 | T9981 Fld3 | 328.952 | 2525720 | 56.699 | 16663903 | Rhoades | 55 | Yes | 100 | Moderately well drained | 0.63 | 35.72 |
| 1 | T9981 Fld3 | 328.952 | 2525732 | 1.35 | 16663796 | Ekalaka | 55 | Yes | 100 | Well drained | 0.76 | 1.03 |
| 1 | T9981 Fld3 | 328.952 | 2525732 | 1.35 | 16663797 | Yegen | 17 | Yes | 100 | Well drained | 0.24 | 0.32 |
| 1 | T9981 Fld3 | 328.952 | 2525733 | 0.129 | 16663951 | Vebar | 50 | Yes | 100 | Well drained | 0.67 | 0.09 |
| 1 | T9981 Fld3 | 328.952 | 2525733 | 0.129 | 16663952 | Cohagen | 25 | Yes | 100 | Well drained | 0.33 | 0.04 |
| 1 | T9981 Fld3 | 328.952 | 2525739 | 28.479 | 16663915 | Parshall | 20 | Yes | 100 | Well drained | 0.26 | 7.4 |
| 1 | T9981 Fld3 | 328.952 | 2525739 | 28.479 | 16663917 | Vebar | 58 | Yes | 100 | Well drained | 0.74 | 21.07 |
| 1 | T9981 Fld3 | 328.952 | 2525745 | 4.983 | 16663921 | Shambo | 75 | Yes | 100 | Well drained | 1 | 4.98 |
| 1 | T9981 Fld3 | 328.952 | 2525746 | 16.106 | 16663927 | Shambo | 78 | Yes | 100 | Well drained | 1 | 16.11 |
| 1 | T9981 Fld3 | 328.952 | 2525754 | 12.638 | 16663602 | Harriet | 75 | Yes | 100 | Poorly drained | 1 | 12.64 |
| 1 | T9981 Fld3 | 328.952 | 2525764 | 17.691 | 16663611 | Regan | 55 | Yes | 100 | Poorly drained | 1 | 17.69 |
| 1 | T9981 Fld3 | 328.952 | 2525766 | 0.032 | 16663539 | Water | 100 | Yes | 100 | NULL | 1 | 0.03 |
| 1 | T9981 Fld3 | 328.952 | 2525769 | 181.356 | 16663985 | Belfield | 48 | Yes | 100 | Moderately well drained | 0.55 | 99.75 |
| 1 | T9981 Fld3 | 328.952 | 2525769 | 181.356 | 16663987 | Daglum | 40 | Yes | 100 | Moderately well drained | 0.45 | 81.61 |
| 1 | T9981 Fld3 | 328.952 | 2755648 | 2.449 | 16663766 | Reeder | 58 | Yes | 100 | Well drained | 0.74 | 1.81 |
| 1 | T9981 Fld3 | 328.952 | 2755648 | 2.449 | 16663767 | Janesburg | 20 | Yes | 100 | Well drained | 0.26 | 0.64 |
| 1 | T9981 Fld3 | 328.952 | 2755654 | 4.599 | 16663846 | Reeder | 60 | Yes | 100 | Well drained | 0.71 | 3.27 |
| 1 | T9981 Fld3 | 328.952 | 2755654 | 4.599 | 16663847 | Amor | 25 | Yes | 100 | Well drained | 0.29 | 1.33 |
| 2 | T9981 Fld4 | 318.722 | 2525720 | 8.623 | 16663899 | Daglum | 33 | Yes | 100 | Moderately well drained | 0.38 | 3.28 |
| 2 | T9981 Fld4 | 318.722 | 2525720 | 8.623 | 16663903 | Rhoades | 55 | Yes | 100 | Moderately well drained | 0.63 | 5.43 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664017 | Savage | 30 | Yes | 100 | Well drained | 0.35 | 0.16 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664018 | Daglum | 20 | Yes | 100 | Moderately well drained | 0.24 | 0.11 |
| 2 | T9981 Fld4 | 318.722 | 2525724 | 0.458 | 16664022 | Belfield | 35 | Yes | 100 | Moderately well drained | 0.41 | 0.19 |
| 2 | T9981 Fld4 | 318.722 | 2525730 | 31.514 | 16663991 | Regent | 68 | Yes | 100 | Well drained | 0.8 | 25.21 |
| 2 | T9981 Fld4 | 318.722 | 2525730 | 31.514 | 16663992 | Savage | 17 | Yes | 100 | Well drained | 0.2 | 6.3 |
| 2 | T9981 Fld4 | 318.722 | 2525745 | 62.205 | 16663921 | Shambo | 75 | Yes | 100 | Well drained | 1 | 62.2 |
| 2 | T9981 Fld4 | 318.722 | 2525746 | 63.55 | 16663927 | Shambo | 78 | Yes | 100 | Well drained | 1 | 63.55 |
| 2 | T9981 Fld4 | 318.722 | 2525754 | 23.138 | 16663602 | Harriet | 75 | Yes | 100 | Poorly drained | 1 | 23.14 |
| 2 | T9981 Fld4 | 318.722 | 2525767 | 3.86 | 16663540 | Water | 100 | Yes | 100 | NULL | 1 | 3.86 |
| 2 | T9981 Fld4 | 318.722 | 2525769 | 103.909 | 16663985 | Belfield | 48 | Yes | 100 | Moderately well drained | 0.55 | 57.15 |
| 2 | T9981 Fld4 | 318.722 | 2525769 | 103.909 | 16663987 | Daglum | 40 | Yes | 100 | Moderately well drained | 0.45 | 46.76 |
| 2 | T9981 Fld4 | 318.722 | 2755639 | 0.443 | 16663554 | Savage | 62 | Yes | 100 | Well drained | 0.78 | 0.35 |
| 2 | T9981 Fld4 | 318.722 | 2755639 | 0.443 | 16663555 | Grail | 18 | Yes | 100 | Moderately well drained | 0.23 | 0.1 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663957 | Flasher | 30 | Yes | 100 | Somewhat excessively drained | 0.34 | 3.28 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663958 | Vebar | 40 | Yes | 100 | Well drained | 0.45 | 4.34 |
| 2 | T9981 Fld4 | 318.722 | 2755643 | 9.641 | 16663959 | Tally | 18 | Yes | 100 | Well drained | 0.2 | 1.93 |
| 2 | T9981 Fld4 | 318.722 | 2755648 | 11.382 | 16663766 | Reeder | 58 | Yes | 100 | Well drained | 0.74 | 8.42 |
| 2 | T9981 Fld4 | 318.722 | 2755648 | 11.382 | 16663767 | Janesburg | 20 | Yes | 100 | Well drained | 0.26 | 2.96 |

#### Summary by landunit

SELECT DISTINCT aoiid, landunit, landunit\_acres, drainagecl , ROUND (SUM (co\_acres) over(partition by aoiid, drainagecl),2) AS drainage\_class\_acres,

CASE WHEN drainagecl = 'Excessively drained' THEN CONCAT ('Drainage Class', ':', 1)

WHEN drainagecl = 'Somewhat excessively drained' THEN CONCAT ('Drainage Class', ':', 2)

WHEN drainagecl = 'Well drained' THEN CONCAT ('Drainage Class', ':', 3)

WHEN drainagecl = 'Moderately well drained' THEN CONCAT ('Drainage Class', ':', 4)

WHEN drainagecl = 'Somewhat poorly drained' THEN CONCAT ('Drainage Class', ':', 5)

WHEN drainagecl = 'Poorly drained' THEN CONCAT ('Drainage Class', ':', 6)

WHEN drainagecl = 'Very poorly drained' THEN CONCAT ('Drainage Class', ':', 7)

WHEN drainagecl = 'Subaqueous' THEN CONCAT ('Drainage Class', ':', 8)

WHEN drainagecl IS NULL THEN CONCAT ('Drainage Class', ':', 9) END

AS rating\_key ,

'Drainage class' AS attributename

FROM #drain2

ORDER BY aoiid, drainage\_class\_acres DESC

;

| **aoiid** | **landunit** | **landunit\_acres** | **drainagecl** | **drainage\_class\_acres** | **rating\_key** | **attributename** |
| --- | --- | --- | --- | --- | --- | --- |
| 1 | T9981 Fld3 | 328.952 | Moderately well drained | 238.63 | Drainage Class:4 | Drainage class |
| 1 | T9981 Fld3 | 328.952 | Well drained | 60.53 | Drainage Class:3 | Drainage class |
| 1 | T9981 Fld3 | 328.952 | Poorly drained | 30.33 | Drainage Class:6 | Drainage class |
| 1 | T9981 Fld3 | 328.952 | NULL | 0.03 | Drainage Class:9 | Drainage class |
| 2 | T9981 Fld4 | 318.722 | Well drained | 175.42 | Drainage Class:3 | Drainage class |
| 2 | T9981 Fld4 | 318.722 | Moderately well drained | 113.02 | Drainage Class:4 | Drainage class |
| 2 | T9981 Fld4 | 318.722 | Poorly drained | 23.14 | Drainage Class:6 | Drainage class |
| 2 | T9981 Fld4 | 318.722 | NULL | 3.86 | Drainage Class:9 | Drainage class |
| 2 | T9981 Fld4 | 318.722 | Somewhat excessively drained | 3.28 | Drainage Class:2 | Drainage class |