HYDRIC SOIL MATRIX INDICATORS AND DETERMINATION PROCESS

To be used with "Field Indicators of Hydric Soils in the United States"[1]

All Landforms in South Dakota

Dig a hole to a depth of at least 20 inches.

No

Is the soil **Sandy**? — **Yes** → **Refer to Sandy Soil Indicators, Back Page**

No

Is the soil loamy with a gleyed color (Hue N, 10Y, 5GY, 10GY, 5G, 10G, 5BG, 10BG, 5B, 10B, or 5PB, with value 4 or more) within 12 inches of the surface?[1/] — **Yes** → **Use Indicator F2 to verify**

No

Does the soil have, starting within 12 inches of the surface, a layer at least 6 inches thick with a gray color (Value ≥4 and Chroma ≤2) and iron stains or masses (redox)?[1/] — **Yes** → **Use Indicator A11 to verify**

No

Is the soil dark colored (Value ≤3 and Chroma ≤2), and has a layer at least 4 inches thick with iron stains or masses within 12 inches of the surface (2% or more redox if Chroma of 1 or less; 5% or more if Chroma of 2)?[1/] — **Yes** → **Use Indicator F6 to verify**

No

Is the soil in a closed depression and has a 2 inch layer with iron stains or masses within 6 inches of the surface?[1/] — **Yes** → **Use Indicator F8 to verify**

No

Is the soil in an upland closed depression and has a 6 inch layer with depleted colors starting below 12 inches and the surface 12 inches has value ≤2.5 and chroma ≤1; the remainder of the dark colored soil has value ≤3 and chroma of 1 or less?[1/] — **Yes** → **Use Indicator A12 to verify**

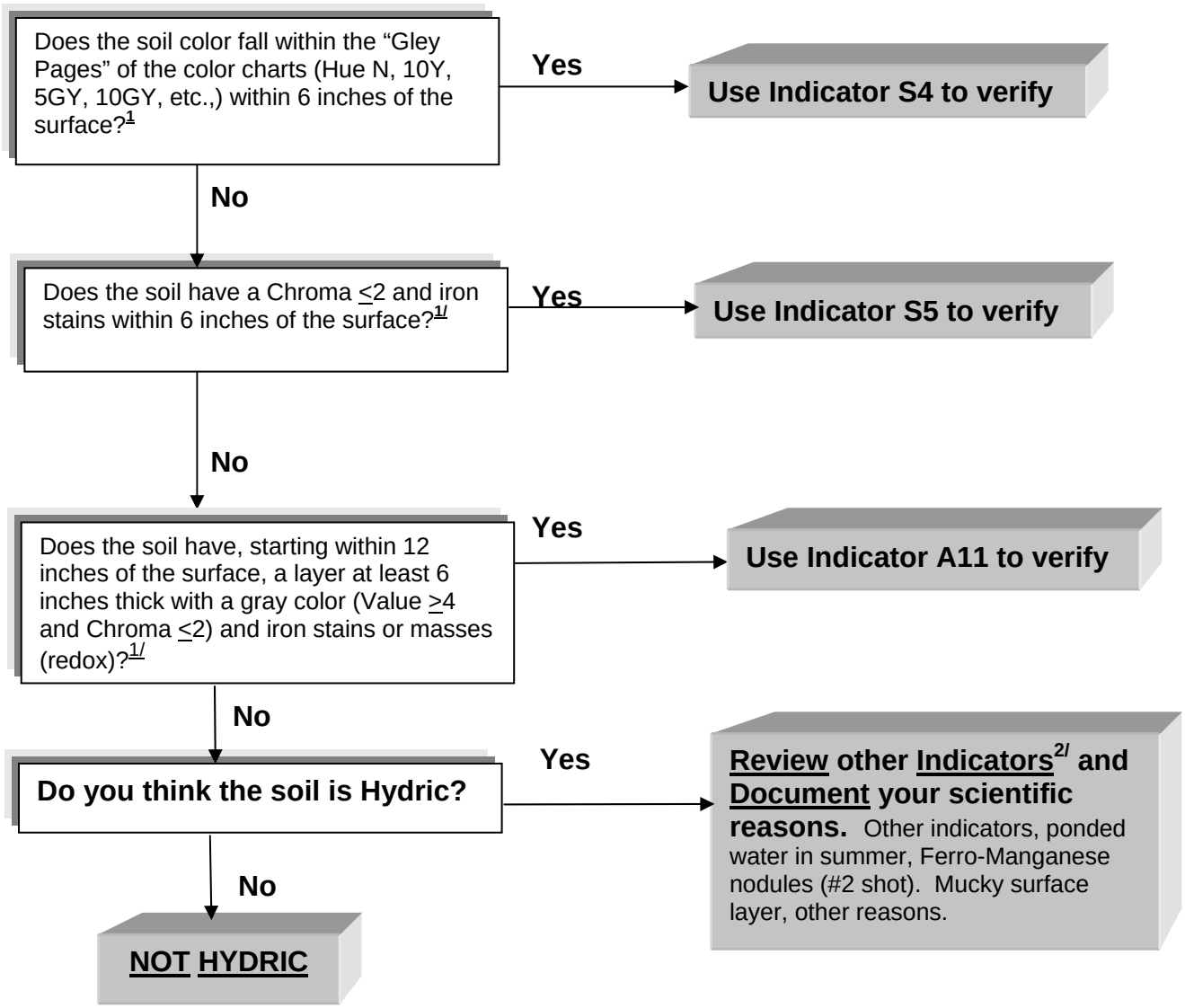
No

Do you think the soil is Hydric? — **Yes** → **Review other Indicators[2/] and Document your scientific reasons.** Other indicators, ponded water in summer, Ferro-Manganese nodules (#2 shot), Mucky surface layer, other reasons.

No

NOT HYDRIC

SANDY SOILS



1/Be sure to refer to the latest version of "Field Indicators of Hydric Soils in the United States," to verify the indicator chosen for the soil meets all criteria.

2/Other indicators to be used in South Dakota are:
Region M: A1, A2, A3, A4, A5, A10, S1, S3, S6, F1, F3, F7, F12(test), F18(test)
Region F: A1, A2, A3, A4, A5, A9, S1, S3, S6, F1, F3, F7, F18(test)
Region G: A1, A2, A3, A4, A9, S1, S2, S6, F1, F3, F7, F18(test), TF2(test-"red beds")

Guidelines for Hydric Soil Determination

In 2005, the National Technical Committee on Hydric Soils (NTCHS) issued version 5.9 of "Field Indicators of Hydric Soils in the United States." With this version, the NTCHS combined the old indicators F4 and TS4 into indicator A11 – "Depleted Below Dark Surface." This version also combined the old indicators TS2, F5, and TF7 into indicator A12 - "Thick Dark Surface." Test indicator TF5 was deleted.

Field experience, in South Dakota (SD), has shown the reliability of indicator A12 (old TF7) is very dependent on landscape and landform. Experience has shown that many sites in linear, flood plain, slope, and other open drainage landforms have a plant community that is not hydrophytic, hydrology is not present, the soils do not meet indicator F6, yet still meet indicator A12. In upland closed depressions and potholes, indicator A12 has been found to be reliable. Therefore, indicator A12 is approved only in upland closed depressions and potholes in SD.

If a soil in an upland closed depression or pothole does not meet field indicator A11 or F6, and does not meet any other indicator, the site will need to be investigated to see if it meets indicator A12.

Note: This is not a change in policy, as SD has not used the test indicators TF5 or TF7 since 2000 in flood plains and other open drainage landforms because of the false positives. The SD-LTP-30 has been updated to reflect these changes. The SD-LTP-30 was designed, by field request, as a quick one-page reference guide for the most common hydric soil indicators in SD. It does not list all possible indicators for the state. It also does not carry a complete description of the indicators. The complete description for all indicators can be found in the publication "Field Indicators Of Hydric Soils In The United States" at: ftp://ftp-fc.sc.egov.usda.gov/NSSC/Hydric_Soils/FieldIndicators_v6_0.pdf.

When determining hydric soils, use a spade or shovel to investigate the top 20 inches. The use of a spade will help make those determinations much easier. It allows you to see more surface area than can be seen using a push probe or auger. Also, remember that when using any of the hydric indicators, in any landscape, investigate starting from the edge of the suspected hydric area. If needed, a push probe or hand auger maybe used to investigate below the 20 inch depth. If you must use Field Indicator A12, remember that **no** layers above the depleted or gleyed matrix may have a moist value greater than three, or a moist chroma greater than one. Go no deeper than 48 inches from the soil surface. If the soil is dark colored to more than a depth of 48 inches, move closer to the edge of the upland closed depression or pothole until the dark soil is less than 48 inches thick. When using any indicator, if the edge of the suspected hydric landform has a hydric soil indicator, all lower elevations within that landform are hydric soils.