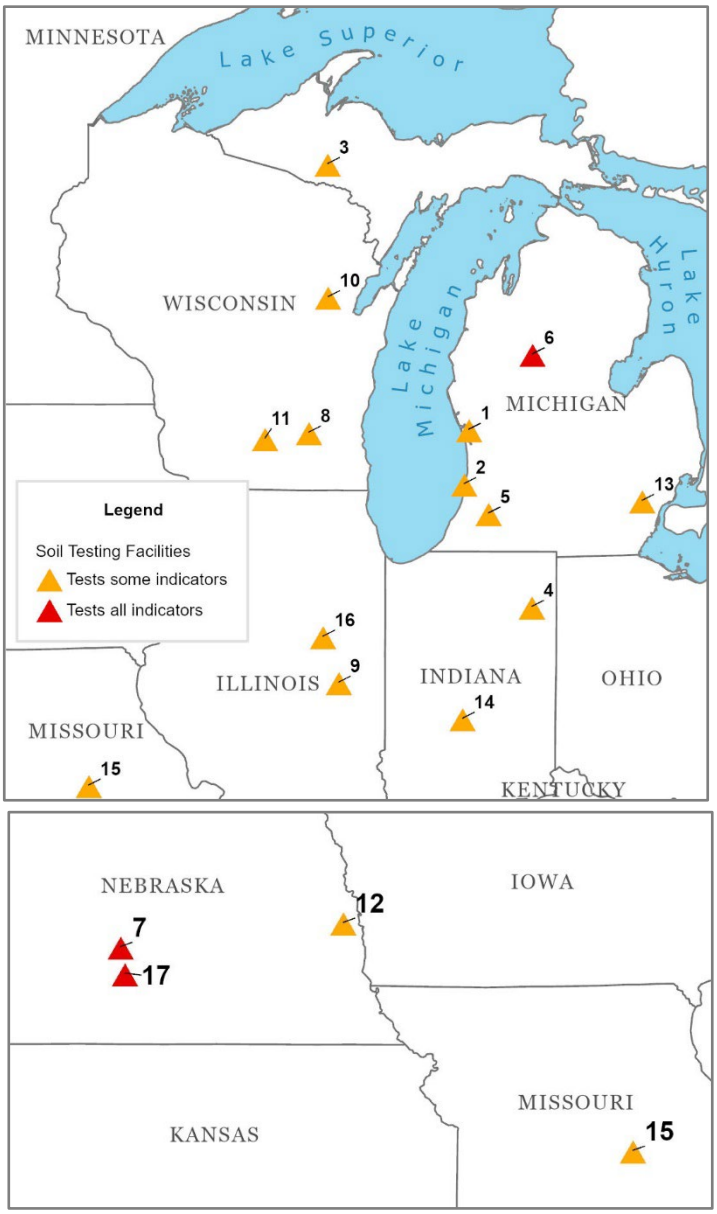
MIDWESTERN SOIL HEALTH TESTING FACILITIES

1. Trace Analytical Laboratories, Inc.
   2241 Black Creek Rd.
   Muskegon, MI 49444
   800-733-5998
   https://trace-labs.com/contact/
2. NEWAGE Laboratories
   160 Veterans Blvd.
   South Haven, MI 49090
   (269) 637-5658
   https://newagelaboratories.com/contact-newage/
3. White Water Associates, Inc.
   429 River Lane, Amasa, MI 49903
   (906) 822-7889 / bette.premo@white-water-associates.com
   http://www.white-water-associates.com/
4. A&L Great Lakes Laboratories
   3505 Conestoga Dr.
   Fort Wayne, IN 46808
   (260) 483-4759 / lab@algreatlakes.com
   http://www.algreatlakes.com/
5. Crop Services International
   29246 Lake St.
   Marcellus, MI 49067
   (800) 260-7933 / team@cropservicesintl.com
   http://www.cropservicesintl.com/
6. Morgan Composting, Inc.
   4353 US 10
   Sears, MI 49679
   (231) 734-2451 / theo@dairydoo.com
   https://dairydoo.com/soil-testing-services/
7. Regen Ag Lab
   31740 Hwy 10
   Pleasanton, NE 68866
   (308) 627-0065 / customerservice@regenaglab.com
   https://regenaglab.com/services/soil-health-analysis/
8. Rock River Labs
   710 Commerce Dr.
   Watertown, WI 53094
   (920) 261-0446 / office@rockriverlab.com
   https://rockriverlab.com/
9. Agricultural Soil Management
   2106 County Road 1000
   East Champaign, IL 61822
   (217) 356-5756 / abean@asmlabs.net
   https://www.asmlabs.net/
10. AgSource Cooperative Services
    106 North Cecil Street
    Bonduel, WI 54107
    (715) 758-2178 / bonduel@agsource.com
    https://agsource.com/
11. University of Wisconsin-Madison Soil and Forage Lab
    4702 University Avenue
    Madison, WI 53705
    (608) 262-4364 / soil-lab@mailplus.wisc.edu
    https://uwlab.soils.wisc.edu/
12. Midwest Labs
    13611 B Street
    Omaha, NE 68144
    (402) 334-7770 / contactus@midwestlabs.com
    https://midwestlabs.com/
13. Paragon Laboratories, Inc.
    12649 Richfield Ct.
    Livonia, MI 48150
    (734) 462-3900 / richm@paragonlaboratories.com
    https://www.paragonlaboratories.com/



14. Sure-Tech Labs
    7501 Miles Drive
    Indianapolis, IN 46231
    (317) 243-1502 / jmjaynes@landolakes.com
    https://www.winfieldunited.com/research-and-innovation/suretech-laboratories
15. University of Missouri Soil and Plant Testing Laboratory
    1100 University Avenue
    Columbia, MO 65211
    (573) 882-0623 / soiltestingservices@missouri.edu
    https://extension.missouri.edu/programs/soil-and-plant-testing-laboratory
16. United Soils Inc.
    108 South Crystal Lane
    Fairbury, IL 61739
    (815) 692-2626 / info@unitedsoilsinc.com
    https://unitedsoilsinc.com/home
17. Ward Laboratories
    4007 Cherry Ave
    Kearney, NE 68847
    (308) 234-2418 / customerservice@wardlab.com
    https://www.wardlab.com/

Table 1. Surveyed Midwestern Soil Testing Facilities with Confirmed Soil Health Indicator Testing Capabilities.

#	Facility Name	Do they test for organic Carbon?	Do they test Carbon Mineralization?	Do they test Aggregate Stability?	Do they provide results interpretation?	Average turnaround time	Average cost
1	Trace Analytical Laboratories, Inc.	Y	Y	Unknown	N	standard 10 business days, rushes available	Unknown
2	NEWAGE Laboratories	Y	Y	Unknown	N	3-5 days, depending on time of year	Unknown
3	White Water Associates, Inc.	Y	N	Y	Y	10-15 business days	$60
4	A&L Great Lakes Laboratories	Y	N	N	N	Unknown	$30
5	Crop Services International	Y	Y	N	Y	7-10 days	Avg. $60
6	Morgan Composting, Inc.	Y	Y	Y	Unknown	7-14 days, depending on time of year	$40
7	Regen Ag Lab	Y	Y	Y	Y	3-5 days, depending on time of year	Avg $55
8	Rock River Labs	Y	N	N	N	5-7 days	$10 per sample
9	Agricultural Soil Management	Y	Y	Unknown	N	2-3 weeks	$30-$150
10	AgSource Cooperative Services	Y	Y	N	Unknown	Unknown	Unknown
11	UW-Madison Soil and Forage Lab	Y	N	N	Unknown	Unknown	Unknown
12	Midwest Labs	Y	Y	N	Y	3-5 business days	$ 55 - $65 per sample
13	Paragon Laboratories, Inc.	N	N	N	N	5 business days	Varies
14	Sure-Tech Labs	Y	N	N	Y	Unknown	$13.75 per sample
15	U of Missouri Soil and Plant Testing Laboratory	Y	N	N	Unknown	Unknown	$18 per sample
16	United Soils Inc	Y	Unknown	N	Y	Unknown	$27.83 per sample
17	Ward Laboratories	Y	Y	Y	Y	1-3 business days	$81.71 per sample

SOIL TESTING FOR MICHIGAN FARMLAND APPRAISERS

Why Should Appraisers Start Thinking About Soil Health?

Michigan farmers may improve their soil health and protect local water quality by adopting Soil Health Management Systems (SHMS), such as cover crops or no-till. However, prior stages of work by Delta Institute have shown that despite evidence that suggests improved soil health may create more profitable farming operations (American Farmland Trust, 2019; American Farmland Trust, 2020; Soil Health Institute, 2021), Michigan farmers require greater financial incentives to adopt SHMS.

Farmers may be incentivized to adopt SHMS if building soil health can demonstrably increase the value of their land, helping to provide a clear value proposition to undertake soil health- and water quality- focused efforts. To do so, soil health must be valued as a property characteristic and a replicable process to incorporate soil health into commonly accepted appraisal practices must be created. However, in Michigan (and more broadly in the Midwest), no real estate appraisal approaches currently exist to empirically assess the value ($/acre) of soil health. Instead, land values are closely tied to productivity index scores, which are derived from measurements of inherent soil properties (e.g., texture, drainage, and parent material). In other words, the condition (or health) of the soil is not considered due to a lack of commonly accepted metrics by real estate professionals.

Through generous support from the Fred and Barbara Erb Family Foundation, Delta Institute tested a proof-of-concept approach to incorporating measurements of soil health into the farm real estate appraisal process in Michigan. Delta Institute piloted this approach on 4 subject properties in southeastern Michigan in 2024 that

were viewed to be reasonably indicative of many Midwestern farm properties. The modified appraisal methodology allows appraisers to create a Soil Health Index for each subject property by measuring three soil health indicators.

For soil health to be valued in the agricultural real estate marketplace, soil health must be observable to market players through testing. Hence, accurate testing needs to be available at relatively low costs to bridge this gap in information. At present, this condition is not met due to several reasons: testing is expensive and may be cost prohibitive for farmers or appraisers; the timeline for testing and analysis may not align with appraisal timelines (testing soil health indicators is ideally performed in Spring – creating a small window of opportunity for appraisers and farmers); recognition and testing methodologies of soil health indicators are not standardized across soil testing labs; and, soil labs that do test soil health indicators may lack capacity to provide services at scale. To make matters worse, state-wide baseline soil health indicator data and standardized soil health data collection methodology is lacking across the Midwest.

To remedy these gaps, Delta Institute recommends following the guidance of the Soil Health Institute, who have identified a "minimum suite of widely applicable measurements for assessing soil health" that are "cost-effective, interpretable, and responsive to soil health promoting practices" following a 3-year study of over 100 long-term agricultural research sites.

A standardized method ensures that soil health assessments are comparable across regions, time, and different laboratories, reducing variability caused by differing proprietary techniques. This standardized soil health assessment methodology was designed to be applied across diverse soil types and agricultural systems and has achieved broad consensus among soil scientists. Furthermore, adherence to a standardized methodology may facilitate participation in government and conservation programs that require alignment with standardized soil health metrics for funding.

To quickly and simply assess the soil health of a farm field or subject property, the Soil Health Institute recommends measuring the following three soil health indicators:

- **Organic C Concentration:** Soil organic Carbon is an essential component of high–functioning soils, as it builds soil structure, thereby improving water and nutrient cycling and retention as well as sequestration of atmospheric carbon. Management that increases organic carbon content promotes greater soil structure, microbial activity, available water, and available nutrients. The Soil Health Institute's standard operating procedure for measuring Organic C concentration can be found here.
- **Carbon Mineralization Potential (Burst of CO2):** Soil nutrient cycling depends on a vibrant soil microbial community. Quantifying Carbon mineralization (e.g., the breakdown of organic matter by soil microbes) provides insight into the soil's microbial activity. This method measures the abundance of carbon dioxide (CO2) produced by soil microbes (metabolic activity/decomposition) following a 24-hour incubation period. The Soil Health Institute's standard operating procedure for this method can be found here.
- **Aggregate Stability:** Soil aggregates are formed through physical and chemical interactions between mineral particles and organic matter. Improved aggregation reduces erodibility, enhances water retention, and provides better habitat for microbes and larger soil organisms. Aggregates also play a role in carbon sequestration by physically protecting organic matter. Aggregate stability is measured by Image Quantification using a smartphone. The Soil Health Institute's standard operating procedure for this method can be found here.

To learn more about these recommended measurements of soil health, please see the Soil Health Institute's Soil Health Measurements Fact Sheet.

Current Conditions of Soil Health Testing in the Midwest

Key agricultural real estate market participants (e.g., agricultural banks, lenders, buyers and sellers) may be hesitant to adopt an SHI if testing is not easily accessible or reliable. To better understand the landscape of soil

health analysis capabilities among testing facilities, Delta Institute surveyed 33 soil testing facilities across the greater Midwest in Fall 2024.

Only 17 labs confirmed that they had testing capabilities for at least one of the above recommended soil health indicators (Table 1). This represents a major barrier to the widespread adoption of a standardized methodology to create a Soil Health Index as appraisers may struggle to find labs that offer comprehensive soil health testing, leading to inconsistent or incomplete assessments. Limited availability often drives up testing costs, making routine soil health monitoring for appraisal purposes financially burdensome. Without widespread lab capabilities, different regions may rely on varying methods, preventing the creation of a uniform Soil Health Index. Finally, a lack of standardized testing infrastructure can result in inconsistent or incompatible data, weakening the credibility and usefulness of the Soil Health Index for decision-making. This may be also problematic for appraisers looking to obtain soil health measurements quickly, as they may have to sort through pages of facilities to find one that can offer acceptable services.

In addition to the time taken to search for an applicable facility, pricing for these soil testing services varies widely. Survey results showed that tests can range from $18 to $150 per sample depending on the lab. To further complicate matters, some testing facilities charge clients by the sample, others will charge for bulk measurements, and some do not advertise their pricing at all.

We also found that the turnaround times can range from 1-3 days to 3 weeks depending on the lab. This may make testing more difficult for appraisers as the timeline for testing and analysis may not align with appraisal timelines. Testing soil health indicators is ideally performed in Spring – creating a small window of opportunity for appraisers and farmers.

Finally, less than half of labs surveyed confirmed that they provide an interpretation of results. If farmers or appraisers receive raw soil health data without guidance on how to apply or interpret it, the results are less actionable. Clients unfamiliar with soil science may struggle to understand this often-complex data, discouraging them from using soil health testing altogether. Additionally, without expert interpretation, users might overlook key soil health issues or misapply management strategies, reducing the effectiveness of conservation and improvement efforts.

Takeaways & Recommendations

Taken as a whole, our findings suggest that despite the growing recognition of the importance of soil health there are still barriers for those seeking to develop a baseline understanding of their soil. Few soil testing facilities confirmed that they can measure and interpret recommended soil health indicators and pricing and turnaround time varies greatly among testing facilities. Delta Institute recommends those seeking to understand their soil health utilize the standardized soil health sample collection methodology described in the above section and that soil testing facilities expand their measurement and interpretation capabilities to better serve the growing interest and market importance of soil health. In other words, expanding lab capabilities and standardizing methods across more facilities is critical for overcoming these barriers.

To ultimately standardize and improve soil health testing access for appraisers, it may be required for government bodies and agencies like the U.S. Department of Agriculture - Natural Resources Conservation Service or the Environmental Protection Agency to set standards and guidelines for soil health testing and allow accrediting bodies –such as the American Association for Laboratory Accreditation (A2LA) or International Organization for Standardization (ISO) (e.g., ISO/IEC 17025 for testing laboratories) to provide accreditation to ensure labs meet rigorous testing and quality standards.

In the meantime, land-grant universities and their Cooperative Extension Services can help develop and validate soil health testing methods or even pursue accrediting or recommending labs based on research-backed criteria. Additionally, industry and professional associations like the Soil Science Society of America (SSSA) or North American Proficiency Testing Program (NAPT) can be called upon to help standardize

methodologies and ensure testing consistency. For more information on soil health and technical assistance, contact your Michigan State University County Extension Office (list of counties and contact information here), Michigan Natural Resources Conservation Service (here), or contacting a Certified Crop Advisor (CCA) near you using the American Society of Agronomy's professional locator, here.

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