



## Interpreting the VitTellus Soil Health Report

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Account Number:

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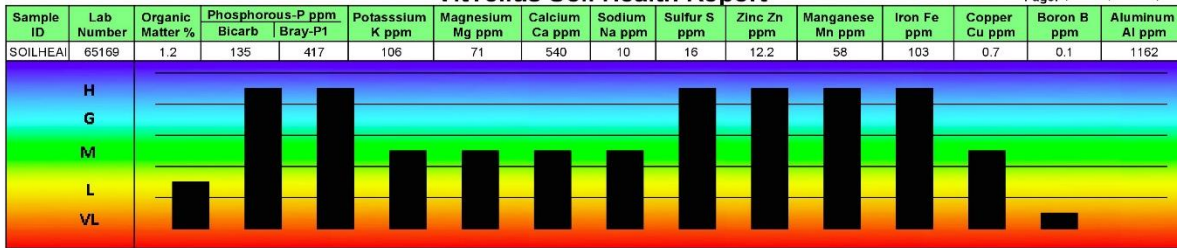
For:

Farm:

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### VitTellus Soil Health Report

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VL=Very Low, L=Low, M=Medium, G=Good, H=High

Parameter	Result	Optimum Level	Parameter	Result	Rating	Parameter	Result	Rating
CEC, meq/100g	4.8		pH	6	M	Solvita CO <sub>2</sub> -C, ppm	44	
K/Mg Ratio	0.46	0.25-0.35	Buffer pH	6.9		Reactive C, ppm	256	
GFI	78	G	EC, ms/cm	0.26	VL	Soil Health Index	40	
%K	5.7	4-6	Saturation %P	46	H			
%Mg	12.3	10-20	Saturation % Al	2.2	MT			
%Ca	56.3	65-72	Nitrate-N, ppm	13	M			
%H	24.8	5-15	Chloride, ppm	17	M			
%Na	0.9	<1	PMN, ppm	30				

Once the VitTellus Soil Health report is complete, the following elements should be reviewed:

#### 1. VitTellus Soil Health Index

The VitTellus Soil Health index is a 0 – 60 relative scale of Soil Health ranging from low (0) to high (60). An Index of 40 or greater is considered indicative of good Soil Health.

#### 2. Reactive C, ppm

This is a measure of the available Carbon sources for soil microbes. Reactive Carbon ranges based on the Cornell Assessment of Soil Health in ppm of Active Carbon for a medium Textured soil are Very Low 0-400, Low 400-500, Medium 500-600, High 600-700 and Very High >700. A result of 600 ppm or greater indicates sufficient Carbon sources are available for soil microbes to flourish.

#### 3. Solvita CO<sub>2</sub>-C Test, ppm

This metric provides a measure of the microbial activity on the soil. 60 – 100 ppm suggests good microbial activity.

4. Soil chemistry parameters

The report outlines soil chemistry ranges for good Soil Health compared to actual test results. Results which fall into the desired ranges provide good nutrient balance for plants to support soil microbe communities. A&L research has identified the soil chemistry parameters highly correlated to Soil Health to be first addressed.

The starting point is Soil pH. There is a unique pH range where different microbes selectively colonize and multiply in the soil. Bacteria prefers (pH 5-9), Actinomycetes (pH 6.5 - 9.5), Fungi (pH 2-7), Blue green bacteria (pH 6-9). In general, lower pH favors fungi and higher pH favors majority of the bacteria. A pH of 6.5 appears to be an ideal point for soil microbe activity and nutrient availability.

After Soil pH, key soil chemistry parameters to address include K/Mg Ratio, %K, %Mg, and %Ca.

Several actions can then be taken to improve your VitTellus Soil Health Index:

1. Review the soil chemistry results to identify soil parameters which are not in the optimal ranges. Making changes to fertility programs is fundamental to moving soil chemistry metrics into ideal ranges. This will ensure plants are properly nourished and providing carbon sources for the microbes in the soil. The following example identifies some parameters that are not in the ideal range and can be addressed with an updated fertility program. In this case, a fertility program can be tailored to address the K/Mg Ratio, %Ca and pH levels that are outside of the preferred ranges.

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2. Consider management practices in your farm operation such as cover crops. Cover crops offer multiple benefits such as providing an additional carbon source for soil micro-organisms to ensure they are maintained throughout the year after the primary crop is removed.
3. Continue to build soil organic matter for the purpose of moisture retention and release of mineralizable Nitrogen. In very dry or drought conditions, microbial activity can be significantly reduced and impact crop yields. Building organic matter will help mitigate the risk of lower microbial activity in such situations.
4. Ensure you are using Best Management Practices such as good crop rotation, ensuring adequate sub-surface drainage, and utilizing erosion control measures to prevent wind or water erosion.
5. Regular soil testing will help assess the effect of management changes and improvement of soil health parameters. Analyze your soil data to help improve soil health and monitor progress on your plan.

For more information on VitTellus Soil Health please visit us at [www.Vittellus.com](http://www.Vittellus.com) or at [www.alcanada.com](http://www.alcanada.com). Please refer to Soil Health Tech Bulletin II for more detailed explanation of the various parameters.