ASSURED BIO LABS, LLC

ENVIRONMENTAL MICROBIOLOGY & WATER

Tennessee Division of Water Resources Lab ID: 03147

228 Midway Ln, Ste B, Oak Ridge, TN 37830

REVIEWED

By Mikayla Mangrum, PhD at 1:40 pm, Oct 19, 2026

CERTIFICATE OF WATER ANALYSIS

Advanced Water Panel

PREPARED FOR:

Inspector:	customer name
Company:	
Project Name:	
Project Number:	
Number of Samples:	1

SUMMARY

Assured Bio ID:	unique identifier
Date Collected:	10/13/2026
Date Received:	10/13/2026
Date Reported:	10/19/2026
Analyst(s):	Dr. E. Sobek, D. Sobek, A. Olejnik

TN Department of Environment & Conservation

SAMPLE RESULTS

AB Identifier	Sample ID	Description
unique identifier-1	1-3	Well Water

	Result	Reporting Limit	Unit
Microbiology			
Coliform	Present	1 organism/100 ml	P/A
E. coli	BDL	1 organism/100 ml	P/A
Property			
Color	BDL	5	PtCo
Conductivity	16	0	µS/cm
Hardness	BDL	20	ppm
pH	6.05	1.0	
Turbidity	0.81	0	NTU
Inorganic			
Chloride	BDL	1.0	ppm
Nitrate (NO_3^--N)	11.2	0.23	ppm
Nitrite (NO_2-N)	BDL	0.15	ppm
Total Phosphate	BDL	0.15	ppm
Sulfate	BDL	40	ppm
Metals			
Arsenic	BDL	0	ppm
Total Copper	BDL	0.25	ppm
Total Iron	BDL	0.10	ppm
Lead	0.009	0.005	ppm
Magnesium	BDL	0.50	ppm
Manganese	BDL	0.02	ppm
Potassium	1.9	0.10	ppm

Reporting Limit (RL): The lowest concentration of an analyte that can be reported with a defined and reproducible level of certainty. Results reported as "<" indicate that the analyte was not detected at or above the stated Reporting Limit. BDL = less than reporting limit. For Colisure Presence/Absence testing, the stated reporting limit represents the method's detection capability. The test detects total coliforms and *E. coli* at 1 organism per 100 mL sample.

For EPA standards, reference levels, abbreviations, and result interpretation, see the Water Analysis Reference Guide included with this report.

WATER ANALYSIS REFERENCE GUIDE

EPA Standard / Reference Level: Values may include EPA Maximum Contaminant Levels (MCLs), Action Levels (ALs), Secondary Maximum Contaminant Levels (SMCLs), Maximum Contaminant Level Goals (MCLGs), or other interpretive reference values. EPA drinking-water regulations apply to public water systems and generally do not regulate private wells or untreated source waters such as springs, ponds, and rivers. Values are provided for comparison and interpretation only and do not, by themselves, establish potability.

Coliform / E. coli: No detection is recommended for drinking water from private wells and other untreated sources. For public water systems, EPA regulates total coliform through treatment-technique and assessment requirements rather than a simple numerical MCL. The E. coli MCLG is zero. Positive results indicate a potential pathway for microbial contamination and warrant investigation and appropriate corrective action. For positive private-well results, refer to the Tennessee Healthy Well Manual for well-disinfection guidance.

Key abbreviations: MCL = Maximum Contaminant Level | AL = Action Level | SMCL = Secondary Maximum Contaminant Level | MCLG = Maximum Contaminant Level Goal | ND = Not Detected | nps = no published standard | P/A = Presence / Absence | MPN = Most Probable Number | NTU = Nephelometric Turbidity Units | ppm = mg/L | µS/cm = microsiemens per centimeter | PtCo = platinum-cobalt color units

Analyte	EPA Standard / Reference Level	Interpretation / significance
Arsenic	0.010 ppm MCL	Naturally occurring toxic element; long-term exposure above the MCL is associated with serious health effects.
Chloride	250 ppm SMCL	Common dissolved ion; elevated levels may cause salty taste and increase corrosivity.
Coliform / *E. coli*	ND recommended*	Coliform indicates possible contamination pathways; *E. coli* is a stronger indicator of fecal contamination.
Color	15 PtCo SMCL	May result from dissolved organic matter, iron, manganese, or other dissolved constituents.
Conductivity	nps	Reflects dissolved ionic material; elevated values may indicate high mineral or salt content.
Copper, total	1.0 ppm SMCL / 1.3 ppm AL	May arise naturally or from plumbing corrosion; elevated levels may cause taste, staining, or health concerns.
Hardness, total	nps	Primarily calcium and magnesium; may cause scale and reduce soap effectiveness.
Iron, total	0.30 ppm SMCL	May cause reddish-brown staining, sediment, metallic taste, and discoloration.
Lead	0.015 ppm AL	Usually associated with plumbing or service-line corrosion; toxic, especially to children and developing fetuses.
Magnesium	nps	Naturally occurring mineral and major contributor to water hardness.
Manganese	0.05 ppm SMCL	May cause black/brown staining, discoloration, sediment, and metallic taste; SMCL is aesthetic, not health-based.
Nitrate (as N)	10 ppm MCL	Often linked to fertilizers, septic systems, sewage, or animal waste; elevated levels are hazardous to infants.
Nitrite (as N)	1 ppm MCL	Similar sources to nitrate; elevated levels can cause methemoglobinemia in infants.
pH	6.5-8.5 SMCL	Influences corrosion, metal solubility, treatment effectiveness, and taste.
Phosphate, total	nps	May occur naturally or originate from fertilizers, wastewater, detergents, or corrosion-control treatment.
Potassium	nps	Naturally occurring mineral; may also reflect fertilizer or agricultural inputs.
Sulfate	250 ppm SMCL	Elevated concentrations may affect taste and, at sufficiently high levels, have a laxative effect.
Turbidity	nps; <1 NTU recommended	Measures water cloudiness caused by suspended particles. Elevated turbidity may indicate sediment intrusion, source disturbance, or inadequate filtration and can reduce disinfection effectiveness.

**ND = Not Detected. EPA public-water compliance requirements vary by analyte and system; values above are provided as report interpretation references.*

Selected References

- EPA Manual of the Certification of Laboratories Analyzing Drinking Water, 5th Edition. EPA 815-R-05-004, January 2005.
- IDEXX SimPlate® for HPC Unit Dose Instructions. 06-03208-10, 2016..
- Environmental Protection Agency. 2005. EPA Manual for the Certification of Laboratories Analyzing Drinking Water. Criteria and Procedures Quality Assurance. Fifth Edition. Cincinnati, Ohio

Methods of Analysis

Assured Bio Labs, LLC uses the following Standard Operating Procedures for the analysis of samples:

CD 205: Coliform Presence Absence Test According to the EPA Manual for the Certification of Laboratories Analyzing Drinking Water, CD 219: Hach Water Testing (DR 3900) Using TNT, Powder Pillow, or Other Photospectroscopic Methods.

Assured Bio Labs, LLC uses the following Standard Operating Procedures for the analysis of samples:

CD 224 Heterotrophic Plate Count Using the SimPlate® Method

Reporting Limits

Method Detection Limit: The American Industrial Hygiene Association defines this term in AIHA LAP, LLC Policy Document – Module 9 as "The minimum concentration of an analyte that, in a given matrix and with a specific method, has a 99 percent probability of being identified, qualitatively or quantitatively measured, and reported to be greater than zero."

Reporting Limit: The American Industrial Hygiene Association defines this term in AIHA LAP, LLC

Policy Document – Module 9 as "The lowest concentration of analyte in a sample that can be reported with a defined, reproducible level of certainty."

Range of Detection: The reporting limit to the maximum reporting limit giving the currently used testing methodology at Assured Bio labs LLC. Any amount reported outside of this range should be considered an estimate. Values outside of this range may be reported as greater than (">") or less than ("<").

Additional Comments

The analytical data included in this report reflect only the conditions of the material sampled and submitted to the laboratory for analysis at the time of collection. We can make no claims to the safety or potability of water. The results included in this report may not be used for past or future environmental conditions. The results apply to the sample(s) as received. Potential interferences may exist for certain tests. When such interferences are detected, they will be report when potentially affecting the result and the Maximum Contaminant Level. A list of methods used can be provided upon request. If you require a certain method please contact us for further guidance.

The results are reported as the Most Probable Number per milliliter (MPN/ml) with the upper and lower 95% confidence limits provided per sample. These values are derived from the IDEXX SimPlate® Most Probable Number Table. Samples with less than one positive well are reported as below detectable limits with a 95% confidence interval of <0.03-<1.4 MPN/ml.

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