



WATER ASSESSMENT

Presented by **NuLeaf Farms Inc.**

NuLeaf Farms Inc.

www.NuLeafFarms.ca

A vertical photograph of water being poured into a clear glass. The water is captured in mid-pour, creating a dynamic splash with many bubbles. The background is a soft, light blue gradient. The glass sits on a reflective surface, creating a clear reflection of the water and bubbles.

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Introduction



Clean water is essential for a healthy community, and contaminated water poses significant risks to the safety of food sources. NuLeaf Farms Inc. is dedicated to maintaining high water quality as part of its sustainable agricultural goals, ensuring the availability of safe and nutritious food, protecting the environment, and promoting human health.

To achieve these goals, we propose a comprehensive water monitoring program to detect and mitigate contamination at the source before it enters growth operations and accumulates in food. This proactive approach to sustainable agriculture will help secure and maintain water quality for locally grown food while contributing to the health and well-being of communities.

Ryan Wright

President | NuLeaf Farms



Phone: 403-899-4218

Email: Ryan.Wright@nuleaffarms.ca #8030

Address: 11500 35 Street SE Calgary, AB, Canada T2Z 3W4

www.NuLeafFarms.ca

Objectives of Assessment

NuLeaf Farms Inc. believes that communities deserve to know what is in their water to ensure a healthier, more sustainable future. Understanding water quality is crucial for the safety of food sources and the well-being of the community. To address this need, the objective of our assessment is to implement a comprehensive water monitoring program to assess water quality for local agriculture in communities. This program is rooted in sustainability, driven by advanced technology, and fosters community engagement through capacity building and a shared purpose. By empowering communities with the knowledge and tools to monitor their water, we aim to promote environmental stewardship and sustainable agricultural practices.



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Project Phases

Phase 1: Project Launch

1.a. Historical Review of Documents and Site Visit

- Conduct a desktop review to characterize accessible water sources and assess water quality for community use.
- Coordinate an initial site visit to gain knowledge of the watershed, meet with the community, and identify areas of concern.
- Provide initial onsite training for sampling technology and offer remote support.

1.b. Water Quality Monitoring

- Determine the best sampling method in collaboration with NuLeaf Farms Inc.
- Collect water samples using composite, time-delineated, and event sampling modes.

1.c. Water Quality Analysis

- Develop a tailored list of water quality analytes of interest during Phase 1.
- Aid in identifying and quantifying potential impacts on water quality.

1.d. Innovative Water Analysis

- Offer analysis of a wide range of emerging contaminants such as industrial pollutants, municipal pollutants, and compounds associated with industries like pesticides and herbicides.

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Project Phases

Table 1: Example of Water Analysis for Agriculture

Water Analysis	Reason
Metals (dissolved & total)	Consumption of high levels of metals in water can lead to health risks and can accumulate in plants.
Routine analysis (pH, TSS, TDS, major Anions/Cations, Hardness, EC)	Ensure water meets quality guidelines and is free from harmful substances.
Nutrients (Nitrate/Nitrite, Phosphorus)	Essential for maintaining healthy plants; excessive amounts can cause crop loss.
COD, BOD, DO	Overall assessment of water quality; high levels can indicate organic pollution.
Pathogen (E. coli, cyanobacteria)	Early detection of waterborne and foodborne illnesses.
C.E.C. Scan	Detection of compounds that can be toxic to aquatic environments and humans.



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Project Phases

Phase 2: Establishing a Monitoring Program

- Schedule sampling events as determined in Phase 1.
- Collect samples as needed and submit reports to NuLeaf Farms Inc.
- Provide a final report summarizing findings and recommendations for ongoing monitoring.

Proposed Project Timeline

Phase 1:

Duration - 1 month

- Desktop Review
- Site Visit
- Technology Selection for Monitoring
- Water Quality Analysis Selection
- Initial sample collection event

Phase 2:

Duration - 3 months for water sampling study depending on site requirements and sampling schedule determined in Phase 1

- Sampling events
- Interim reporting, interpretation, and review
- Annual monitoring report

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Project Phases



Why C.E.C. Analytics and NuLeaf Farms Inc.

- **Data-Driven Approach:** We use structured and data-driven methods to keep communities healthy.
- **Community Engagement:** We provide job opportunities and help develop new skills within the community.
- **Sustainability:** Our programs are tailored to community needs, keeping costs down and resources local.
- **Environmental Stewardship:** We prioritize safeguarding natural resources and encourage responsible care of land and water.
- **Shared Knowledge:** We believe in sharing information to benefit everyone, contributing to impactful environmental stewardship.

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About NuLeaf Farms

At **NuLeaf Farms**, we're growing the next generation of farmers. Combining plant science and technology, we work extensively with communities to understand their needs and support indoor farming objectives that can **bring economic development and food security**.

From our state-of-the-art facility in Calgary, Alberta, we provide indoor farming solutions tailored to **grow affordable, fresh produce all year round**. Helping customers grow their own nutritious food on site while saving over 50% of the cost of food and saving up to 95% less water and land, food waste, pesticides and transportation used in traditional supply chains. With post project support through training and support programs and onsite training, **NuLeaf Farms takes every customer from seed to success**.



Working with communities to grow a sustainable and secure food future.



Reduce the financial and environmental costs of food.



Delivering all-in-one indoor hydroponic farms




Growing fresh, nutritious food year-round with a fraction of the natural resources.

Contact - Ryan Wright

 403-899-4218

 Ryan.Wright@NuLeafFarms.ca

 8030-11500 35 Street SE,
Calgary, AB

 www.NuLeafFarms.ca