
BASELINE ENVIRONMENTAL DATA COLLECTION FOR RESEARCH AND PRODUCTION FACILITY

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Introduction

Potential environmental impacts associated with intensive livestock operations are recognized as a major factor limiting the establishment of these operations in the Prairies. To determine the true environmental impacts of an intensive livestock operation, one must compare the change in environmental conditions before and after the facility is constructed and in operation. The PSCI Elstow Research Farm is included in this study.



Potential environmental impacts are a limiting factor for intensive livestock operations.

the area, the horizontal gradient of the water table, and shallow groundwater chemistry.

Task III Baseline Well Water Data Collection:

Approximately 10 of the surrounding private water wells were sampled by PFRA to determine current water quality. A complete chemical analysis of the well water will also be done at the end of the project.

Task IV - Baseline Surface

Water Data Surface water bodies will be identified and monitored for current water

quality prior to the first manure application. Samples will be collected three times a year for two years.

Task V Baseline Soil Data Collection:

A soil survey will establish the soil characteristics prior to manure production. The soil survey (through field descriptions of soil, lab analysis, and aerial photo interpretation) will establish soil type, soil chemistry, and soil fertility prior to manure production. Soil cores will be taken to determine the physical and chemical analysis (texture, ions and nutrients).

Objectives

To collect environmental data for a “pre-operation” analysis of the surrounding area including air, soil, and water. This includes collection of odour samples, groundwater samples, well water samples, surface water samples, and soil samples.

Methodology

Task I - Baseline Odour Data Collection:

Odour collection will involve data collection within 2.4 km (at 600, 1200, and 2400 m) of the proposed facility and a selected group of neighbouring farmyards.

To ensure that data collected includes annual variations in weather and activity, the samples will be collected in February, May, August, and November for a total of two years.

Task II - Baseline Groundwater Quality Data Collection:

Installation of piezometers around the earthen manure storage and barn will give the geological cross-section of

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Results Expected

An environmental assessment of the areas prior to facility operation will be established. All future research at the sites will refer to the baseline data established by this project.

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