Environmental Impact Assessment (EIA) Registration and Water Supply Source Assessment (WSSA): HSF Foods Water Supply Expansion, HSF Foods Limited, Centreville, New Brunswick

Prepared for:
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1.0 INTRODUCTION

This document is an Environmental Impact Assessment (EIA) Registration for the water supply expansion at the existing potato flake processing facility (the Project) operated by HSF Foods Limited (the Proponent) in Centreville, New Brunswick. An associated Water Supply Source Assessment (WSSA) Initial Application is attached to this EIA Registration document in Appendix B.

The Project is an "undertaking" under the New Brunswick *Environmental Impact Assessment (EIA) Regulation–Clean Environment Act*, under item (s) of Schedule "A" (*"all waterworks with a capacity greater than fifty cubic metres of water daily"*), and therefore must be registered under Section 5(1) of the *EIA Regulation*.

1.1 NAME OF THE UNDERTAKING AND PROJECT PROPONENT

The Project title and details of the Project Proponent are as follows.

Project Title:	HSF Foods Limited Water Supply Expansion
Project Proponent:	HSF Foods Limited 741 Central Street, Centreville, NB E7K 2M4
Principal Contact Person for the Purposes of Environmental Impact Assessment:	Mr. Ben Brake President, HSF Foods Limited
Environmental Consultant for the Proponent:	Mr. Jonathan Keizer, P.Eng. Associate Hydrogeologist, Stantec Consulting Ltd. Tel: (506) 452-7588 Email: jonathan.keizer@stantec.com

1.2 PURPOSE/RATIONALE/NEED FOR THE PROJECT

The purpose of the Project is to expand the water supply at the HSF Foods facility by installing three production wells to supplement the existing three wells supplying the facility. The groundwater extracted from the production wells will be used to supply the facility with additional capacity to satisfy water additional demands from an ongoing expansion at the facility.

The expansion of the facility began in 2015, and included the installation of a new biomass boiler, two steam turbines, a new cooling tower and storage building. Makeup water is required for the cooling tower, with an antipated demand of 981 cubic metres per day (m^3/d). The current water supply at the facility is operated at the maximum approved capacity of 491 m^3/d, and is insufficient to supply this additional requirement. It is anticipated that three wells may be required to provide the required cooling tower demand of 981 m^3/d based on the well yields for water wells in the area.

1.3 PROJECT OVERVIEW

The Project involves the construction and operation of three new production wells at the HSF Foods facility at 741 Central Street in Centreville, Carleton County, New Brunswick (Figure 1) that will be used to supply water to the facility. As described in the attached WSSA Initial Application (Appendix B), a total of six new wells are proposed to be installed for the Project, of which three will be used as production wells. The other three wells will serve as observation wells to be used during the hydraulic testing conducted for the Project, and monitoring activities during the operation of the wells. The three new production wells will supply a total of approximately 981 m^3/d, equivalent to 150 Imperial gallons per minute, of groundwater to a cooling tower at the facility.

1.4 REGULATORY CONTEXT

1.4.1 Provincial Environmental Assessment and Permitting

The Project is an "undertaking" under the New Brunswick *Environmental Impact Assessment (EIA) Regulation–-Clean Environment Act*, under item (s) of Schedule "A" (*"all waterworks with a capacity greater than fifty cubic metres of water daily*"). As such, at minimum it requires registration and review (e.g., Determination Review) under the EIA Regulation.

Water to supply the facility will be obtained from groundwater wells, as there is no municipal water service in this area. As required by the EIA Regulation, a WSSA will be prepared in accordance with the WSSA guidelines (NBDELG 2014). Stantec has completed a WSSA Initial Application accompanying this EIA Registration (Appendix B) for submission to the New Brunswick Department of Environment and Local Government (NBDELG).

1.4.2 Federal Environmental Assessment

The Project does not appear to require an environmental assessment under the *Canadian Environmental Assessment Act, 2012* (*CEAA, 2012*) as there are no aspects of the Project that are listed in the *Regulations Designating Physical Activities* under *CEAA, 2012,* and the Project is not located on federal land.

1.5 FUNDING

The Project will be funded entirely by the Proponent.

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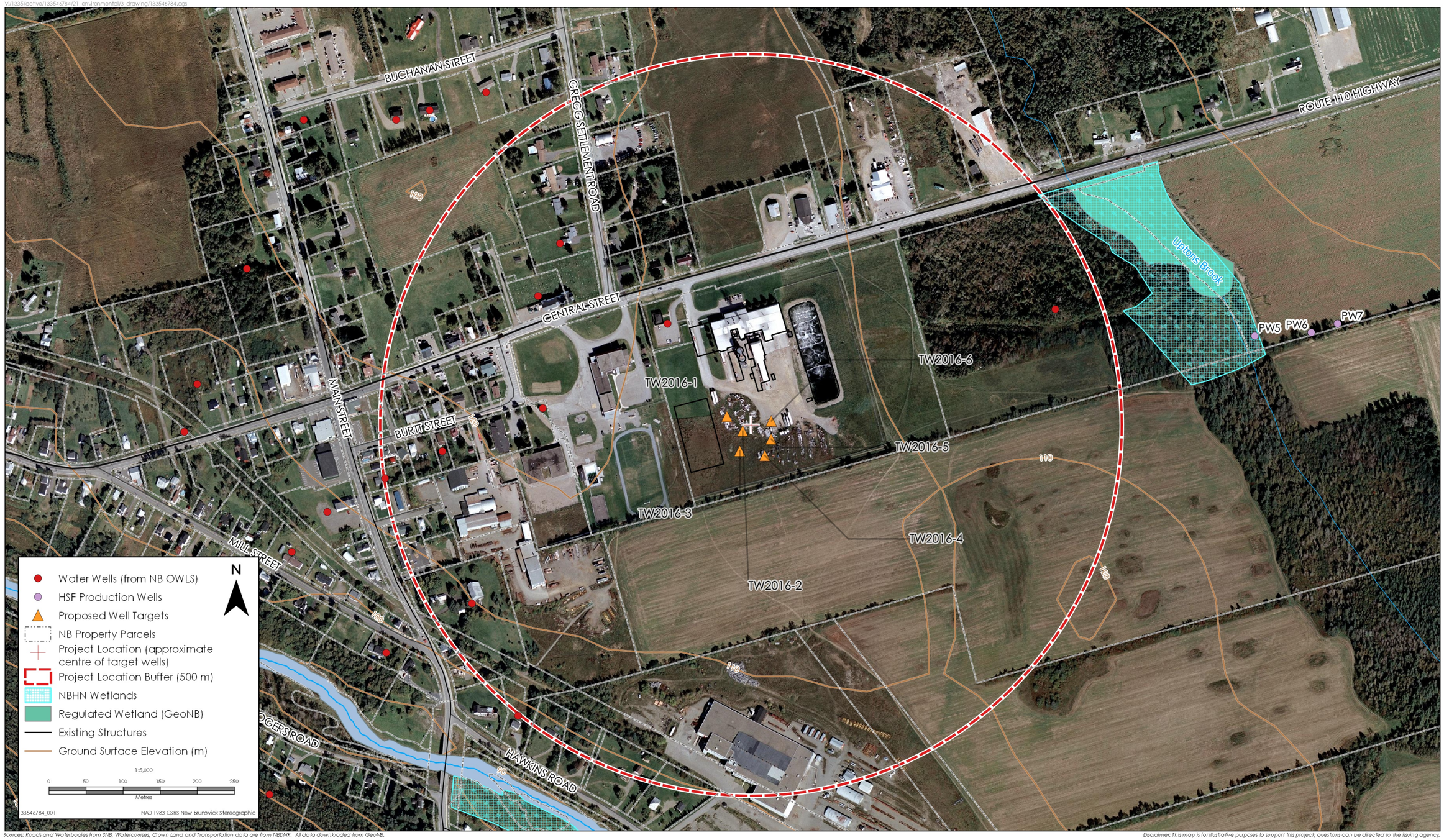

Sources: Roads and Waterbodies from SNB, Watercourses, Crown Land and Transportation data are from NBDNR. All data downloaded from GeoNB.

Disclaimer: This map is for illustrative purposes to support this project; questions can be directed to the issuing agency.

Stantec

133546784 - HSF Foods EIA Registration and WSSA

Project Location Plan

Figure 1

1.6 PURPOSE AND ORGANIZATION OF THIS EIA REGISTRATION

This EIA Registration document has been prepared to meet the requirements of Section 5(1) of the New Brunswick *Environmental Impact Assessment Regulation–Clean Environment Act* to satisfy the requirements for registration of the Project such that a Determination Review of the Project can be conducted. It is organized into eight sections, as follows.

- Section 1.0 provides background information on the Project including the purpose for the Project and the regulatory context.
- Section 2.0 provides a description of the Project. The location, scope, and schedule of the Project are described.
- Section 3.0 provides an overview of the existing environment within which the Project is located.
- Section 4.0 discusses the assessment of potential interactions of the Project with the environment, and proposed mitigation.
- Section 5.0 discusses accidents, malfunctions and unplanned events that may occur with the Project.
- Section 6.0 presents the public and Aboriginal involvement proposed for the Project.
- Section 7.0 presents closing remarks for the report.
- Section 8.0 provides references cited in the report.

Additional information requirements are provided in Appendix A, and the WSSA Initial Application is provided in Appendix B.

2.0 PROJECT DESCRIPTION

2.1 ABOUT THE EXISTING HSF FOODS FACILITY

HSF Foods Limited operates a potato flake processing plant with a production capacity of 26.2 tonnes per day. The potato flakes are produced by dehydrating potates using steam generated from two biomass boilers at the facility.

The Approval to Operate for the facility (I-8812) permits groundwater from three production wells at a combined rate of 491 cubic metres per day (m^3/d), including water for food production and steam generation. The three existing production wells are located approximately 650 m west of the plant on PID No.10153286.

Wastewater from the facility is received primary treatment inside the main plant, which is discharged for secondary treatment to an existing aerated wastewater treatment lagoon. The volume of the lagoon is 10,000 m^3, and has a maximum design flow of 150 m^3/d. Approval I-8812 permits treated effluent from the lagoon to be discharged to a submerged outfall pipe in the Big Presque Isle Stream.

An expansion of the facility began in 2015 including the installation of a third biomass boiler, two steam turbines, a cooling tower, and a new storage building. The addition of the steam turbines will allow the cogeneration of electricity from the facility, generating up to 2,800 kW of electricity for use at the facility with the remainder sold to NB Power.

2.2 GEOGRAPHIC LOCATION

The Project is located at 741 Central Street, within the Town of Centreville, Carleton County, New Brunswick (as shown in Figure 1). The property is identified by Service New Brunswick as Parcel Identifier (PID) No. 11080562. The approximate geographic coordinates of the centre of the proposed wells to be installed for the Project are 46º25'51.564" N, 67º42'17.201" W.

2.3 PROJECT COMPONENTS

The Project will include the installation of six new wells, including three production wells and three observation wells. These three production wells are proposed to supply make-up water for a cooling tower at the facility, to supplement water supplied to the process by the existing three wells at the facility. The three new production wells will extract groundwater at a combined rate of up to 981 m^3/d.

Submersible pumps and piping will be installed in each of the three new production wells. The size of the pumps and piping in each well will be determined based on the long-term sustainable pumping rate from each well, which will be assessed as part of the Water Supply Source Assessment (Appendix B). Each production well will be connected to the water supply system for the facility via pipes and valves. The pipes will run underground, below the frost line to prevent freezing. Flow meters will be installed on the piping from each of the wells prior to entering the water supply system to monitor the individual groundwater extraction rates from the wells.

2.4 PROJECT ACTIVITIES

An overview of the planned activities to be carried out as part of the Project is provided below.

2.4.1 Construction

Construction activities for the new wells include grading the Project property, and the installation of pumping and observation wells by a well driller licensed by the Province of New Brunswick. The installation of the wells will take up to approximately seven days. The drilling work will occur during daylight hours.

Hydraulic testing of the wells (i.e., pumping tests) will occur as outlined in the WSSA Initial Application (Appendix B). The pumping tests will be conducted with temporary pumps in the wells, which will be supplied by the well driller. Hydraulic testing is anticipated to require approximately two weeks to complete.

Once the testing is complete, and the sustainable pumping rates have been determined for the three production wells, permanent pumps will be installed in the production wells. Associated infrastructure (e.g., valves and pipes) will be connect each well to the water supply system for the facility. The pipes will run underground, below the frost line to prevent freezing.

2.4.1.1 Emissions and Wastes

Emissions and wastes during Construction are expected to be minimal and consist mainly of limited amounts of dust, sound, and combustion emissions from the operation of vehicles, machinery, and equipment, and small amounts of general construction wastes to be disposed of at existing approved facilities in New Brunswick. The Project location is located at an active industrial facility, and the addition of new vehicles will not substantively alter the current sound levels at the site.

Groundwater discharged during pumping tests will be discharged to the land surface, and will drain to natural drainage features. The discharge will be directed such that it will not cause erosion or discharge directly to an existing watercourse or water body. Suitable erosion and sedimentation control measures will be put in place.

2.4.2 Operation

During Operation, groundwater will be pumped from the three production wells at a combined rate of approximately 981 m^3/d. The water is anticipated to be used for cooling purposes in a cooling tower at the facility.

The operation of the remainder of the HSF Foods facility will remain unchanged from current operations.

2.4.2.1 Emissions and Wastes

Sound emissions from Operation are expected to be relatively low considering the industrial site and not likely to be distinguishable from existing sound levels at the nearest receptors. The majority of the water

extracted from the wells will be evaporated as part of the existing cooling tower operation, and will not be released as liquid effluent to the surrounding environment.

2.4.3 Decommissioning and Abandonment

While decommissioning or abandonment of the Project is not currently envisioned, the Project will at some point be decommissioned at the end of its useful service life, in accordance with the applicable standards and regulations current at that time. Wells will be decommissioned in accordance with the NBDELG's guideline entitled "Guidelines for Decommissioning (Abandonment) of Water Wells" (NBDELG undated).

2.4.3.1 Emissions and Wastes

Emissions during Decommissioning and Abandonment of the wells are expected to be minimal and consist mainly of dust, sound, and combustion emissions from the operation of vehicles, machinery, and equipment. Project components will be disassembled and either sold or disposed of at approved facilities that accept these types of wastes.

3.0 SUMMARY OF EXISTING ENVIRONMENT

This section provides general background information on the physical setting for the Project, to provide a baseline against the interactions between the Project and the environment can be later evaluated.

3.1 GENERAL ENVIRONMENTAL SETTING

3.1.1 Physical Setting

The Project is located on a private industrial property at 741 Central Street in Centreville, NB on a lot that is approximately 9.5 hectares in size. The property consists of three PIDs (PID Nos. 10080562, 10121937, and 10153278), but the Project will occur on a small portion of PID No. 10080562. This area, referred to as the Project Development Area (PDA), is centred at a point located at 46°25'51.564"N and 67°42'17.201"W. The facility has direct access to the TransCanada Highway via Central Street, also known as Route 110.

3.1.2 Topography and Drainage

The topography of the PDA is flat, with slopes of approximately 2% to the southeast. The ground surface varies from about 120 m above sea level (m ASL) at the northwest corner of PID No. 10080532 to about 108 m ASL in at the southwest corner of PID No. 10121937 near Uptons Brook. The site drains to Uptons Brook in the Gregg Brook subwatershed. A GeoNB-mapped wetland (GeoNB 2016) is located approximately 550 m to the west of the PDA.

3.1.3 Geology

The PDA is located on a local topographic high in the Williamstown Plateau of the Chaleur Uplands physiographic region (Rampton *et al.* 1984). The surficial geology consists of a blanket of morainal sediments, generally 0.5 to 3 m thick (Rampton 1984). These sediments consist of loamy lodgement till, minor ablation till, and associated sand and gravel from the Late Wisconsinan glaciations (Rampton 1984).

The bedrock of the PDA is part of the Whitehead Formation (Smith and Fyffe 2006). The Whitehead Formation is a member of the Matapedia Group, and consists of Ordovician-aged limestone. The limestone is fine-grained, dark grey to bluish grey and may be interbedded with shale (Smith and Fyffe 2006).

3.2 ATMOSPHERIC ENVIRONMENT

3.2.1 Air Quality

The village of Centreville is a small rural community located at considerable distance from other large industrial developments or urban areas. As such, there is no ambient air quality monitoring in existence at or near Centreville. The Province of New Brunswick operates air quality monitoring stations in Grand Falls (located approximately 68 km north of the Project) and Fredericton (located approximately 97 km southeast of the Project). Because these are the closest monitoring stations to the Project, they were

selected to provide air quality measurements representative of Centreville. Measured levels of air contaminants are typically well below air quality objectives. For 2015, there were no exceedances of air quality objectives at the Fredericton or Grand Falls air quality monitoring stations (NBDELG 2016a). This includes measurements of particulate matter less than 2.5 microns in diameter ($PM_{2.5}$) at both stations, and carbon monoxide, nitrogen dioxide, and ozone at the Fredericton station.

3.2.2 Sound Quality

The property is an existing industrial facility, and is subject to sound levels typical of an industrial site located in an otherwise largely rural setting.

3.2.3 Climate

Climate normal and extremes recorded at the Aroostook climate station for 1981 to 2010 (the nearest weather station to the Project) are available on-line from Environment and Climate Change Canada (2016). This climate station is located approximately 31 km north of the PDA. A brief summary of the climate data is provided below to describe the general climate in the area.

3.2.3.1 Temperature

January is typically the coldest month with a daily mean temperature of -12.6°C. July is typically the warmest month with a daily mean temperature of 18.9°C. The extreme maximum and minimum temperatures recorded are -43.9°C recorded on January 27, 1986, and 37.2°C recorded on August 18, 1935 (Environment and Climate Change Canada 2016).

3.2.3.2 Precipitation

The average annual precipitation is 1,047 mm, of which 73% occurs as rainfall, and the remainder as snowfall. On average (1981-2010), July is the rainiest month, with average monthly precipitation of 105.7 mm, and January is the snowiest month, with average monthly snowfall of 72.4 cm.

3.3 BIOPHYSICAL ENVIRONMENT

The Project is located at an existing industrial facility. The habitat present on the Project site is typical of the general area and is not rare or unique. The PID on which the Project is located does not contain any wetland or watercourse. The nearest wetland to the Project property is approximately 525 m to the east. A portion of this wetland has been mapped by GeoNB (GeoNB 2016).

3.3.1 Terrestrial Environment

Known rare and endangered species observations from AC CDC (2016) within 5 km of the Project area are presented on Table 3.1. No species of conservation concern (SOCC) have been observed within the PDA. The majority of the observed species listed on Table 3.1 are flora and fauna that are typical of wetland environments, although some of the species are more typically found in forest environments. The PDA does not provide either type of habitat.

Table 3.1 Rare and Endangered Species Within 5 km of the PDA

Common Name (*Scientific Name*)	*SARA*/COSEWIC/ NB *SARA* Status	CESCC Rank	AC CDC S-Rank	Comment
Flora				
a Moss (*Aphanorrhegma serratum*)	-	Undetermined	S1	
Smaller Fern Moss (*Rauiella scita*)	-	Sensitive	S3	
Swamp Fly Honeysuckle (*Lonicera oblongifolia*)	-	Sensitive	S2	Typically found in wetland areas
Eastern Leatherwood (*Dirca palustris*)	-	May be at Risk	S3	Typically found in wetland areas
Labrador Bedstraw (*Galium labradoricum*)	-	Sensitive	S2S3	Typically found in wetland areas
Few-flowered Spikerush (*Eleocharis quinqueflora*)	-	Secure	S3	Typically found in wetland areas
Showy Lady's-Slipper (*Cypripedium reginae*)	-	Sensitive	S3	Typically found in wetland areas
Northern Maidenhair Fern (*Adiantum pedatum*)	-	Secure	S3	Typically found in wetland areas
Fauna				
Bank Swallow (*Riparia riparia*)	Threatened (COSEWIC only)	Sensitive	S3B	Nests and forages along stream banks
Olive-sided Flycatcher (*Contopus cooperi*)	Threatened	At Risk	S3S4B	May nest at edge of mature softwood or riparian habitat.
Canada Warbler (*Wilsonia Canadensis*)	Threatened	At Risk	S3S4B	May nest and forage in riparian habitat.
Green Heron (*Butorides virescens*)	-	Sensitive	S1S2B	Prefers wetlands, ponds and stream sides
Brown Trasher (*Toxostoma rufum*)	-	Sensitive	S2B	Prefers open bushy country
Great Crested Flycatcher (*Myiarchus crinitus)*	-	Sensitive	S3B	Prefers deciduous or mixed forests and edges of clearings
Bald Eagle (*Haliaeetus leucocephalus*)	Endangered (NB *SARA* only)	-	-	May nest in tall trees, but no known nests in area.

Notes:
SARA = Species at Risk Act
COSEWIC = Committee on the Status of Endangered Wildlife in Canada
CESCC = Canadian Endangered Species Conservation Council
AC CDC = Atlantic Canada Conservation Data Centre

Table 3.1 Rare and Endangered Species Within 5 km of the PDA

Common Name (*Scientific Name*)	*SARA*/COSEWIC/ NB *SARA* Status	CESCC Rank	AC CDC S-Rank	Comment

NB *SARA* = New Brunswick *Species at Risk Act*

AC CDC S-Ranks:

S1 = Critically Imperiled
S2 = Imperiled
S2S3 = Imperiled to Vulnerable
S3 = Vulnerable
S1S2B = Breeding species are Critically Imperiled to Imperiled
S2B = Breeding species are Imperiled
S3B = Breeding species are Vulnerable
S3S4B = Breeding Species are Vulnerable to Apparently Secure

3.3.2 Water Resources

Groundwater is the primary source of water in the village of Centreville and surrounding areas. No municipal water service exists in the village, and all residences and buildings in the area are assumed to be supplied by one or more water wells. As shown on Figure 1, it is anticipated that there are a minimum of 59 properties with wells within 500 m of the PDA, based on the assumption that each dwelling or business has a well.

A query of the New Brunswick Online Well Log Systems (NB OWLS; NBDELG 2016b), which includes all wells constructed beginning in 1994, provides details for eight water wells within 500 m of the PDA. No details on the remainder of the wells are available. The location of the water wells reported in the NB OWLS is shown on Figure 1. The water wells have an average depth of 46.5 m, and are constructed in bedrock. The average well yield from drillers' estimates is 127 m^3/d, ranging from 2.9 to 393 m^3/d. Three production wells are used to supply the water for the current uses at the HSF Foods Limited facility. These are located on PID No. 10153286, as shown on Figure 1. Average groundwater extraction rates for each of these wells in 2015 are presented in Table 3.2.

Table 3.2 Production Wells and Associated Pumping Rates at Existing HSF Foods Facility

HSF Well ID	NBDELG Well Tag ID	Average Pumping Rate in 2015 (m^3/d)
PW#5	0008974	110.6
PW#6	0008973	142.7
PW#7	0008975	77.2

Groundwater quality in the vicinity of the Project was characterized from the water quality data provided in the NB OWLS for water wells within 500 m of the project. The groundwater is generally very hard and alkaline with moderate total dissolved solids. A comparison of the water quality in the area to the Guidelines for Canadian Drinking Water Quality (Health Canada 2014) did not reveal any parameter exceedances for the inorganic parameters included in the NB OWLS database.

The closest watercourses are the Big Presque Isle Stream, located approximately 580 m southwest of the PDA, and Uptons Brook, located approximately 630 m to the east of the PDA (Figure 1). No water uses from either of these sources has been identified within 500 m of the PDA.

3.4 HUMAN ENVIRONMENT

Centreville was first settled and founded by Mr. Thomas Johnston in 1829, and is now situated in the heart of one of the richest and most productive agricultural sections of New Brunswick (Village of Centreville 2016). The village "thrives on industry", and claims to be the industrial capital of New Brunswick on a per capita basis, though the industrial base in Centreville would be more characterized as light industrial than as heavy industry. Industrial activities in the village include equipment and vehicle manufacturers, and food processing at HSF Foods Limited.

3.4.1 Population

According to the 2011 Census, the village of Centreville has a population of approximately 545 (Statistics Canada 2012). The village is located in Carleton County, which has a population of approximately 26,580 (Statistics Canada 2012).

3.4.2 Heritage Resources, and Aboriginal Land and Resource Use

Evidence shows that New Brunswick has been inhabited for at least 10,000 years (Tourism, Heritage & Culture 2013). This Project is located at an existing industrial facility and has experienced development and ground disturbance. If heritage resources were present in the area, it is likely that they have already been lost by previous development.

4.0 POTENTIAL ENVIRONMENTAL INTERACTIONS AND PROPOSED MITIGATION

In this section, the potential interactions between the Project and the environmental components are identified, including a description of the existing environment and mitigation that is planned to avoid or reduce potential interactions between the Project and the environment.

4.1 METHODOLOGY FOR THE IDENTIFYING POTENTIAL INTERACTIONS BETWEEN THE PROJECT AND THE ENVIRONMENT

To determine the potential for and nature of interactions between the Project and the environment, a qualitative rating system is employed. Each interaction between the Project and each Valued Component (VC) is rated based on the following ranking system, with a ranking assigned for each interaction based on the professional judgment and experience of the study team, as follows.

0 = There is no interaction between the Project and the VC. The interactions are therefore not considered further in this report.

1 = An interaction occurs between the Project and the VC; however, based on past experience and professional judgment, the interaction would not likely result in an environmental effect that could be considered significant according to accepted EA practice, even without mitigation; or interaction would not likely be significant due to application of codified environmental protection practices and/or permit conditions. The interactions are not considered further in this report.

2 = Interaction may, even with codified mitigation and/or permit conditions, result in an environmental effect that could potentially be considered to be significant according to accepted EA practice and/or is important to regulatory and/or public interest. Potential interactions between the Project and the VC are considered further and in more detail in this report.

Where an important Project-VC interaction (*i.e.,* a ranking of 2) may occur, further discussion is provided to evaluate the interaction more thoroughly. Where no interaction or no significant interaction is identified (*i.e.,* a ranking of 0 or 1), however, the rationale of why no interaction exists or why a limited interaction can be adequately mitigated is provided, but the interactions are not discussed further in this report.

The evaluation is tabular for ease in evaluation and communication.

4.2 POTENTIAL INTERACTIONS BETWEEN THE PROJECT AND THE ENVIRONMENT

4.2.1 Project-Environment Interaction Matrix

Based on the Project Description and the methodology described briefly above, the potential interactions between the Project and the environment are summarized in Table 4.1.

Table 4.1 Potential Interactions of the Project with the Environment

Project Phase	Atmospheric Environment	Water Resources	Aquatic Environment	Terrestrial Environment	Wetland Environment	Labour and Economy	Land Use	Heritage Resources	Current Use of Land and Resources for Traditional Purposes by	Road Transportation	Public Health and Safety	Effects of Environment on the Project
Construction	1	1	0	1	0	1	0	1	0	1	0	1
Operation	0	2	0	0	0	1	0	0	0	0	0	1
Decommissioning and Abandonment	1	0	0	1	0	1	0	0	0	0	0	1

KEY

0 = There is no interaction between the Project and the VC. The interactions are therefore not considered further in this report.

1 = An interaction occurs between the Project and the VC; however, based on past experience and professional judgment, the interaction would not likely result in an environmental effect that could be considered significant according to accepted EA practice, even without mitigation; or interaction would not likely be significant due to application of codified environmental protection practices and/or permit conditions. The interactions are not considered further in this report.

2 = Interaction may, even with codified mitigation and/or permit conditions, result in an environmental effect that could potentially be considered to be significant according to accepted EA practice and/or is important to regulatory and/or public interest. Potential interactions between the Project and the VC are considered further and in more detail in this report.

4.2.2 VCs with No Interaction with the Project (Ranking of 0)

Based on the ratings provided in Table 4.1 above, the Project is not expected to result in any interaction (*i.e.,* a ranking of 0) with the following VCs, for all Phases of the Project:

- Aquatic Environment;
- Wetland Environment;
- Land Use;
- Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons; and
- Public Health and Safety.

Further discussion is provided below.

4.2.2.1 Aquatic Environment

Interaction between the Project and the Aquatic Environment has been ranked as 0 in Table 4.1 for all phases of the Project. The Project is located approximately 580 m from the closest mapped watercourse, and no Project activity will occur within 30 m of any known watercourse. The Project will not extract water from any watercourses, nor will it release effluent to any watercourse. As such, no Project components will interact with the Aquatic Environment, and the Aquatic Environment is not discussed further in this report.

4.2.2.2 Wetland Environment

Interaction between the Project and the Wetland Environment has been ranked as 0 in Table 4.1 for all phases of the Project because there are no known wetland areas located in the immediate vicinity of the Project. The closest known wetland is approximately 550 m away from the Project, and no Project components will interact with it as no Project activity will occur within 30 m of any known wetland and the Project will not release any liquid effluents to the environment. Project work will occur on disturbed land within an industrial park. The Wetland Environment is thus not discussed further in this report.

4.2.2.3 Land Use

Interaction between the Project and Land Use has been ranked as 0 in Table 4.1, for all phases of the Project, because the Project will not result in a change to the current use of land on and around the Project site. The Project is located within an existing industrial facility. Land Use is thus not discussed further in this report.

4.2.2.4 Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons

Interaction between the Project and Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons has been ranked as 0 in Table 4.1, for all phases of the Project, because the Project property is a privately owned, existing disturbed industrial site with restricted access, as it has been for some time. Accordingly, the Project is not expected to interact with Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons. Current Use of Land and Resources for Traditional Purposes by Aboriginal Persons is thus not discussed further in this report.

4.2.2.5 Public Health and Safety

Public Health and Safety is a component of the environment that relates to the health and safety of the general public. Interactions between the Project and Public Health and Safety have been ranked as 0 in Table 4.1 because Project activities do not pose additional risks to the public, as the public is not permitted to access the HSF Foods facility, and the presence of a groundwater production well is not risk to public health and safety. As no substantive interactions between the Project and Public Health and Safety are anticipated, Public Health and Safety is not discussed further in this report.

4.2.3 VCs with No Significant Interaction with the Project (Ranking of 1)

The Project will result in an interaction with the following VCs (*i.e.,* a ranking of 1), during one or more phases of the Project:

- Atmospheric Environment;
- Water Resources (Construction and Decommissioning and Abandonment phases);
- Terrestrial Environment;
- Labour and Economy;
- Heritage Resources;
- Road Transportation; and
- Effects of the Environment on the Project.

The nature of the interactions between the Project and these VCs is such that industry-standard mitigation can be applied to minimize the interaction, or because of the anticipated low magnitude of the resulting environmental effects. Further discussion is provided in the sub-sections that follow.

4.2.3.1 Atmospheric Environment

Interactions between the Project and the Atmospheric Environment have been ranked as 1 in Table 4.1 for the Construction of the Project because of the potential for air contaminant (including dust), greenhouse gas (GHG), and sound emissions. Similar interactions are expected during Decommisisoning and Abandonment. No interactions with the Atmospheric Environment are expected during the Operation phase.

During Construction, the Project requires the use of heavy equipment and trucks. Air contaminant, GHG and sound emissions will be released to the environment from the operation of heavy equipment associated with the Project (*e.g.,* emissions from the combustion of fuel), and a limited amount of fugitive dust will be generated from the movement of vehicles. Mitigation measures will, as required, minimize the potential environmental effects associated with Project activities, including the use of low sulphur fuels in heavy equipment and proper vehicle maintenance including the use of mufflers and limiting idling time to minimize sound emissions.

The Operation phase of the Project (i.e., operation of the production wells) will not produce air contaminant or sound emissions. Therefore, there is no potential for adverse environmental effects to the Atmospheric Environment as a result of emissions during Operation.

During Decommissioning and Abandonment, air contaminant and sound emissions will be similar to those of Construction, including low levels of emissions from the operation of heavy equipment on-site.

Air contaminant, GHG and sound emissions as a result of Project activities, with the planned mitigation, are expected to be low. Accordingly, there are no substantive interactions between the Project and the Atmospheric Environment. The Atmospheric Environment is therefore not discussed further in this report.

4.2.3.2 Water Resources (Construction and Decommissioning and Abandonment Phases)

Interactions between the Project and Water Resources have been ranked as 1 on Table 4.1 during Construction. The Operation phase of the Project has been ranked as 2 in Table 4.1 and is discussed further in Section 4.4.2.1 below. There are no features of Decommissioning and Abandonment that would result in an interaction with Water Resources. The decommissioning of water wells during the Decommissioning and Abandonment phase will not change the availability or quality of groundwater in the area.

During Construction, the testing of the production wells has the potential to temporarily draw down the water table in the vicinity of the Project, and may alter the ability of existing users to withdraw water from their wells The potential for the interaction to result in decreased well yields depends on several factors including the hydraulic characteristics of the aquifer materials and the location and well construction details for existing water well users As the testing will be short-term, and is designed to assess the potential for interactions with nearby users, it is assumed that Construction and Decommissioning and Abandonment phases of the Project will not adversely affect Water Resources in a substantive way.

4.2.3.3 Terrestrial Environment

Interactions between the Project and the Terrestrial Environment have been ranked as 1 in Table 4.1 during Construction and Decommissioning and Abandonment. There are no features of Operation that would result in an interaction with the Terrestrial Environment.

The Project site is located within an existing industrial facility in the village of Centreville in an existing cleared area. Activities during Construction are limited to clearing the sites of the wells, which may result in increased risk for erosion of soil exposure during clearing operations. Standard mitigation practices will be used including sedimentation and erosion controls.

During Decommissioning and Abandonment, the production wells will likely be removed, and the area will be re-vegetated. As such, no susbtantive interaction between the Project and the Terrestrial Environment is anticipated during this phase.

No substantive adverse interactions between the Project and the Terrestrial Environment are anticipated. The Terrestrial Environment is not discussed further in this report.

4.2.3.4 Labour and Economy

Interactions between the Project and Labour and Economy have been ranked as 1 in Table 4.1 because the Project may result in small-scale local economic benefits.

Construction includes some limited labour requirements, and limited contracting opportunities for local businesses. Decommissioning and Abandonment will also result in some limited labour requirements and contracting opportunities for local businesses. The Project is expected to generate employment opportunities for contractors during Construction. During all phases of the Project, the demands on labour as a result of the Project will be within the capacity of the local labour force and will not lead to

wage inflation or labour shortages. The Project is expected to result in positive environmental effects on Labour and Economy, though of relatively low magnitude. Accordingly, substantive adverse interactions between the Project and Labour and Economy are not anticipated. As such, Labour and Economy is not discussed further in this report.

4.2.3.5 Heritage Resources

Interactions between the Project and Heritage Resources have been ranked as 1 in Table 4.1 for Construction because Construction involves minimal ground disturbance. All other phases have no interaction.

Physical ground disturbance during Construction is limited to a targeted area within the property boundaries of the Project. While any ground disturbance and earth moving activities have the potential to uncover currently undiscovered heritage resources, such discoveries are not anticipated because of the limited amount of ground disturbance required. In the unlikely event that any such resources were present on the site at any time in the past, it is likely that they no longer exist due to previous disturbance. In the highly unlikely event that a heritage resource is discovered during Construction activities, all work would cease immediately and Archaeological Services of the New Brunswick Department of Tourism, Heritage and Culture would be contacted.

Accordingly, substantive adverse environmental effects of the Project on Heritage Resources during all phases of the Project are not anticipated. Heritage Resources are thus not discussed further in this report.

4.2.3.6 Road Transportation

Interactions between the Project and Road Transportation during Construction have been ranked as 1 in Table 4.1 during all phases of the Project because of the potential for a slight increase in traffic. All other phases have no interaction.

The transportation of materials to the Project is required during Construction. As part of this activity, there is a need to transport:

- drilling equipment and well construction materials to the Project site; and
- small amounts of construction waste materials from the Project site.

No additional truck traffic is anticipated during Operation or Decommissioning and Abandonment. No traffic delays are expected as a result of the Project, given the relatively low vehicle volumes required by the Project. All trucks will follow weight limits and follow appropriate trucking routes. There are no aspects of Project related transportation that would be expected to lead to an increase in the local vehicle collision rate.

Based on the above, substantive interactions between the Project and Road Transportation are not anticipated. Road Transportation is not discussed further in this report.

4.2.3.7 Effects of the Environment on the Project

Effects of the Environment on the Project refers to the environmental forces and/or forces of nature that could affect the Project physically or hamper the ability to carry out the Project activities in their normal, planned manner. Interactions between the Project and Effects of the Environment on the Project have been ranked as 1 in Table 4.1 for all phases of the Project because of the potential for environmental forces to disrupt Project activities.

Environmental forces (*e.g.,* severe weather, seismic events) have the potential to adversely affect the infrastructure associated with any project or development if not suitably mitigated. Good engineering design considers and accounts for these effects and the associated loadings or stresses on a project that may be caused by these environmental forces. The methodologies used for mitigating potential effects of the environment on the Project are inherent in the planning, engineering design, construction, and planned operation of a well-designed Project that is expected to be in service for several decades or longer.

Good engineering design and adherence to applicable codes and standards will be incorporated into the Project and will accordingly be protective against potential effects of the environment. Compliance with these codes, standards, and best management practices inherently accounts for environmental forces that, had they not been accounted for, could cause a substantive adverse effect on the Project. Environmental factors such as severe weather, seismicity, and other environmental forces, as relevant, will be addressed by adhering to the relevant codes and standards that are intended to protect infrastructure against these environmental forces.

Based on the above, substantive adverse Effects of the Environment on the Project during all phases of the Project are not anticipated. The Project will be planned and executed in adherence to codes and standards that would be expected to consider and account for potential environmental forces that could otherwise adversely affect the Project. Effects of the environment on the Project are thus not considered further in this document.

4.2.4 VCs with Interactions with the Project that Require Further Evaluation (Ranking of 2)

4.2.4.1 Water Resources (Operation Phase)

During Operation, groundwater extraction from the three new production wells has the potential to draw down the water table in the vicinity of the Project. This draw down may alter the ability of existing users to withdraw water from their wells. This nature of the interactions will be similar to those observed for Construction, but will occur over a longer period of time.

The potential for the interactions of pumping to result in decreased well yields at a nearby well depends on several factors including the hydraulic characteristics of the aquifer materials, the duration of pumping, and the location and well construction details for existing water well users. To assess this potential interaction, a Hydrogeological Investigation will be conducted under the Provincial WSSA process (NBDELG 2014). An Initial Application to conduct this work is included in Appendix B. The nature of the potential interactions of the Project with existing groundwater users during Operation will be assessed as part of a pending WSSA Hydrogeological Investigation. It is assumed that the Project will

not adversely affect Water Resources in a substantive way. This assumption will be confirmed with the testing conducted for the WSSA.

4.3 SUMMARY

Based on the potential interactions between the Project and the environment as ranked and summarized in Table 4.1, it is concluded that the interactions of the Project on all VCs during all phases are not likely to result in significant environmental effects. These conclusions were reached in consideration of the nature of the Project and the nature and extent of its interactions, and the environmental setting.

5.0 ACCIDENTS, MALFUNCTIONS AND UNPLANNED EVENTS

All aspects of the Project will be designed with best practices and safety as a primary consideration. Mitigation measures, control mechanisms and response procedures will be put in place to minimize the potential for accidents and malfunctions and to reduce potential environmental effects in the unlikely event one should occur. The drilling and operation of water wells as part of the Project does not provide many areas for potential malfunctions. Though all are unlikely, credible accidental event scenarios include:

- release of fluids from equipment operation;
- erosion and sedimentation from pumping test discharge; and
- discovery of heritage resources.

The probability of serious accidental events or those causing significant adverse environmental effects is low, particularly as Project procedures incorporate contingency and emergency response planning. Nevertheless, the potential interactions between the Project and the environment arising from these events are discussed below.

5.1 RELEASE OF FLUIDS FROM MOTORIZED EQUIPMENT

During Construction, the use of motorized equipement with internal combustion engines and hydraulics may result in incidental releases of petroleum hydrocarbons or cooling fluids. With the implementation of proper equipment maintenance and standard mitigation, the severity and risk of a fluid release can be reduced. A spill kit with absorbent pads and booms will be present during Construction of the wells, and no vehicle or equipment refueling will occur within 30 m of a wetland or watercourse. Any unlikely spills that could occur would be immediately stabilized to stop the spill and contain the released material, immediate cleanup actions would be initiated, and the spill reported as applicable to the appropriate regulatory authorities.

5.2 EROSION AND SEDIMENTATION FROM PUMPING TEST DISCHARGE

During Construction, the pumping of water during the hydraulic testing of the wells will be discharged to the ground surface, which may cause soil at the discharge location to erode, and potentially be transported to a watercourse or waterbody during the period of testing. With the implementation of standard mitigation, the severity and soil erosion and sedimentation of watercourses can be reduced. The discharge from the pumping tests will be directed into hay bales to dissipate the energy from the discharge, and no discharge will occur within 30 m of a waterbody or watercourse.

5.3 DISCOVERY OF HERITAGE RESOURCES

In the highly unlikely event that a heritage resource is discovered during Construction activities, all work would cease immediately and Archaeological Services of the New Brunswick Department of Tourism, Heritage and Culture would be contacted. The work would not proceed until authorized by Tourism, Heritage and Culture.

6.0 PUBLIC AND ABORIGINAL INVOLVEMENT

6.1 PUBLIC AND STAKEHOLDER ENGAGEMENT

Given the limited nature of the Project, the Proponent proposes a modest public involvement program in respect of the Project. Upon registration, the Proponent will provide written notification to elected officials about the Project, and will make a copy of the EIA Registration document available at the Grand Falls regional office of the New Brunswick Department of Environment and Local Government for public viewing, in accordance with the requirements of the NBDELG's "Guide to Environmental Impact Assessment in New Brunswick" (NBDELG 2012). A 25-day public comment period will be initiated upon registration. Comments or questions from the public on the EIA registration will be documented and responded to (where appropriate). A summary of public involvement activities conducted, issues raised, and responses provided will be prepared and submitted to NBDELG within 60 days of registration.

6.2 ABORIGINAL INVOLVEMENT

Although the Project lies within the traditional territory of the Maliseet First Nation, the PDA is completely located on private land and has been for some time now. The closest First Nations communities to the PDA are the Tobique First Nation and the Woodstock First Nation, which are approximately 36 km north and 37 km south of the PDA, respectively. During the EIA review, the Proponent will inform these communities of the location, details and schedule of the Project via a letter to determine if these communities have any questions or concerns about the Project.

7.0 CLOSING REMARKS

This report has been prepared by Stantec Consulting Ltd. (Stantec) for the sole benefit of HSF Foods Limited. The report may not be relied upon by any other person or entity, other than for its intended purposes, without the express written consent of Stantec and HSF Foods Limited.

This report was undertaken exclusively for the purpose outlined herein and was limited to the scope and purpose specifically expressed in this report. This report cannot be used or applied under any circumstances to another location or situation or for any other purpose without further evaluation of the data and related limitations. Any use of this report by a third party, or any reliance on decisions made based upon it, are the responsibility of such third parties. Stantec accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this report.

Stantec makes no representation or warranty with respect to this report, other than the work was undertaken by trained professional and technical staff in accordance with generally accepted engineering and scientific practices current at the time the work was performed. Any information or facts provided by others and referred to or used in the preparation of this report were assumed by Stantec to be accurate. Conclusions presented in this report should not be construed as legal advice.

The information provided in this report was compiled from existing documents and data provided by HSF Foods Limited and by applying currently accepted industry standard mitigation and prevention principles. This report represents the best professional judgment of Stantec personnel available at the time of its preparation. Stantec reserves the right to modify the contents of this report, in whole or in part, to reflect any new information that becomes available. If any conditions become apparent that differ significantly from our understanding of conditions as presented in this report, we request that we be notified immediately to reassess the conclusions provided herein.

8.0 REFERENCES

Atlantic Canada Conservation Data Centre (AC CDC). 2016. Data Report 5530: Centreville, NB. Prepared March 14, 2016.

Environment and Climate Change Canada. 2016. Canadian Climate Normals 1981-2010 Station Data: Aroostook, New Brunswick. Accessed online on April 8, 2016 at http://climate.weather.gc.ca/climate_normals/results_1981_2010_e.html?stnID=6109&autofwd=1

GeoNB. 2016. GeoNB Interactive Viewer. Accessed online at http://geonb.snb.ca/geonb/

Health Canada. 2014. Guidelines for Canadian Drinking Water Quality – Summary Table. Water and Air Quality Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

New Brunswick Department of Environment and Local Government (NBDELG). Undated. Guidelines for Decommissioning (Abandonment) of Water Wells. Accessed online on June 6, 2016 at http://www2.gnb.ca/content/dam/gnb/Departments/env/pdf/Water-Eau/GuidelinesWaterWells.pdf.

New Brunswick Department of Environment and Local Government (NBDELG). 2012. A Guide to Enviornmental Impact Assessment in New Brunswick.

New Brunswick Department of Environment and Local Government (NBDELG). 2014. Water Supply Source Assessment Guidelines.

New Brunswick Department of Environment and Local Government (NBDELG). 2016a. Air Quality Data Portal. Accessed online at http://www.elgegl.gnb.ca/AirNB/en/SamplingLocation/Index.

New Brunswick Department of Environment and Local Government (NBDELG). 2016b. New Brunswick Online Well Log System (NB OWLS) Water Well Database. Accessed online on April 8, 2016 at http://app.elg-egl.gnb.ca/0375-0001/.

New Brunswick Department of Tourism, Heritage, and Culture. 2013. Archaeology. Accessed online on November 5, 2013 at: http://www2.gnb.ca/content/gnb/en/departments/thc/heritage/content/archaeology.html.

Rampton, V.A. 1984. Generalized surficial geology map of New Brunswick Department of Natural Resources and Engery, Minerals, Policy and Planning Division. NR-8 (scale: 1:500 000).

Rampton, V.N., R.C. Gauthier, J. Thibault, and A.A. Seaman. 1984. Quaternary Geology of New Brunswick. Memoir 416. Geological Survey of Canada, Ottawa.

Smith, E.A. and L.R. Fyffe. 2006. Bedrock geology of the Florenceville area (NTS 21 J/05), Carleton county, New Brunswick. New Brunswick Department of Natural Resources, Minerals, Policy and Planning Division. Plate 2006-6.

Statistics Canada. 2012. Centreville, New Brunswick (Code 1311019) and Carleton, New Brunswick (Code 1311) (table). Census Profile. 2011 Census. Statistics Canada Catalogue no. 98-316-XWE. Ottawa. Released October 24, 2012. Accessed online on April 8, 2016 at http://www12.statcan.gc.ca/census-recensement/2011/dp-pd/prof/index.cfm?Lang=E.

Village of Centreville. 2016. Centreville – Our Community. Accessed online on April 8, 2016 at: http:// http://villageofcentreville.ca/html/ourcommunity.html.

Appendix A

Additional Information Requirements

General Information Requirements

The following is intended to fulfill the additional information required for registration of the Project, as outlined in the New Brunswick EIA Guide, entitled "A Guide to Environmental Impact Assessment in New Brunswick, November 2012" (NBDELG 2012).

1.0 THE PROPONENT

i)	Name of Proponent	HSF Foods Limited
ii)	Address of Proponent	741 Central Street, Centreville, NB
iii)	Chief Executive Officer (or designate)	Ben Brake
iv)	Principal Contact Person for the purposes of Environmental Impact Assessment	Ben Brake
Environmental Consultant		Mr. Jonathan Keizer, P.Eng., Stantec Consulting Ltd. Tel: (506) 452-7588 Email: jonathan.keizer@stantec.com
v)	Property Ownership	PIDs No. 11080562, 10121937 and 10153278 – HSF Foods Limited

2.0 THE PROJECT

i)	Name of the Undertaking	HSF Foods Water Supply Expansion
ii)	Project Overview	Installation of three groundwater production wells and three groundwater observation wells.
iii)	Purpose / Rationale / Need for Undertaking	See Section 1.2 of the EIA Registration document.
iv)	Project Location	For more information, see Section 2.2 of the EIA Registration document.
v)	Siting Considerations	See the WSSA Initial Application in Appendix B.
vi)	Physical Components and Dimensions of the Project	See Section 2.3 of the EIA Registration document.
vii)	Construction Details	See Section 2.4.1 of the EIA Registration document.
viii)	Operation and Maintenance Details	See Section 2.4.2 of the EIA Registration document.
ix)	Future Modifications, Extensions, or Abandonment	See Section 2.4.3 of the EIA Registration document.
x)	Project-Related Documents	None.

3.0 DESCRIPTION OF THE EXISTING ENVIRONMENT

The descriptions of all relevant features that are found within the Project location and surrounding areas that could be potentially affected by the Project are provided in Chapter 3 of the EIA Registration document.

4.0 SUMMARY OF ENVIRONMENTAL IMPACTS

Potential environmental interactions, or "impacts", of the various Project Phases are provided in Section 4 of the EIA Registration document.

5.0 SUMMARY OF PROPOSED MITIGATION

A summary of proposed mitigation is provided in Section 4 of the EIA Registration document.

6.0 PUBLIC INVOLVEMENT

A brief summary of the planned public involvement activities planned as part of the Project is provided in Section 5 of the EIA Registration document.

7.0 APPROVAL OF THE UNDERTAKING

A Water Supply Source Assessment will be required as part this EIA registration.

8.0 FUNDING

Funding for the Project is being provided entirely by the Proponent and its investors, and no provincial or federal funding is anticipated.

9.0 SIGNATURE

J Kmeuy on behalf of Ben Brake

Ben Brake, President
HSF Foods Limited

June 13/16

Date:

Appendix B

Water Supply Source Assessment Initial Application

Water Supply Source Assessment Initial Application Form

1. Name of proponent

HSF Foods Limited

2. Location of drill targets (including property PID) and purpose of the proposed water supply

The location of the six proposed test well (TW) drill targets (TW2016-1 to TW2016-6) to be installed at PID No. 10080562, is shown on Figure B1. The wells are arranged such that one out of every two wells is anticipated to be used as a pumping well, and the other well to be used as an observation well.

3. Required water quantity (in m^3/day) and/or required pumping rate.

The required pumping rate for the Project is 981 m^3/d (150 igpm). It is anticipated that up to three pumping wells will be needed to supply this demand, based on other wells used for water supply at the facility.

4. List alternate water supply sources in area (including municipal systems).

Alternate water supplies are limited to surface water extraction from the Big Presque Isle Stream, located approximately 580 m southeast of the Project area. Municipal water supply sources are not available in the village.

5. Discuss area hydrogeology as it relates to the project requirements.

As discussed in the EIA Registration document, the Project is situated in the Chaleur Uplands physiographic region (Rampton *et al.* 1984). The bedrock of the Project area is part of the Whitehead Formation (Smith and Fyffe 2006). The Whitehead Formation is a member of the Matapedia Group, and consists of Ordovician-aged limestone. The limestone is fine-grained, dark grey to bluish grey and may be interbedded with shale.

Based on the fine-grained nature of the bedrock, it is assumed the bedrock permeability will be dominantly through the fracture network. Water well records obtained from the NB OWLS indicate that the well yields in the area are variable, with average well yields for wells within 500 m of the Project of 126 m^3/d (ranging from 2.9 to 390 m^3/d). It is anticipated that three production wells will be required to supply the demand of 981 m^3/d.

6. Outline the proposed hydrogeological testing and work schedule.

It is understood that the hydrogeological testing may not be started until after approval of this Initial Application has been received by the Proponent. It is the intent of the Proponent to drill the well targets in the June 2016. Hydraulic testing of the wells is proposed to occur within approximately two weeks of the drilling, depending of the weather conditions prior to the testing of the wells.

Three of the six test wells will be used as pumping wells, with the remaining wells used as observation wells. The selection of wells to use as pumping and observation wells will be based on the driller-

estimated well yields, and the arrangement of the highest yield wells. Generally, the three highest yield wells will be selected for testing.

A 3-hour step test and a 72-hour pumping test will be conducted at the three pumping wells installed at the property. The water level responses in the pumped wells and observation wells will be used to assess the capabilities of the local aquifer to sustainably provide water to the wells. Should the testing described above conclude that the tested wells would not supply sufficient water for the development, additional testing would be required for each well that may be connected to the system.

In addition to the information collected from drilled water wells, water level data from existing nearby water wells may be collected, if applicable. This data would be used to assess potential interactions with existing users. The collection of this data will require landowner approval to monitor the water level during the pumping tests.

A water quality sample will be collected from the pumped wells prior to the termination of pumping of each pumping test.

Upon completion of the hydraulic testing, a report will be prepared outlining the methods used, field data, and relevant information used to provide the conclusions and recommendations. This report will also include a discussion of long-term sustainable yields of the well and effects on existing water supplies, if any.

7. Identify any existing pollution or contamination hazards within a minimum radius of 500 m from the proposed drill targets. Historical land use that might pose a contamination hazard (*i.e.* tannery, industrial, waste disposal, etc.) should also be discussed.

A search of the SNB database for properties within 500 m of the limits of the Project revealed the presence of 14 properties with a Petroleum Storage Site report and/or a Remediation Sites Management Program report, as shown on Figure B1. This includes a gas station at 726 Central Street (PID No. 10082854), fuel used at the HSF Foods Limited facility (PID No. 10080562), the neighbouring Centreville Community School (PID No. 10081933), and other sources. An aerated wastewater treatment lagoon is located at the facility, located approximately 110 m east of the proposed well targets shown on Figure B1. The lagoon is lined with a geosynthetic clay liner.

8. Identify any groundwater use problems (quantity or quality) that have occurred in the area.

No groundwater use problems were identified in the area as part of this study.

9. Identify any watercourse(s) (stream, brook, river, wetland, etc.) within 60 m of the proposed drill targets.

No watercourses, water bodies or wetlands have been identified within 60 m of the proposed drill targets.

10. Identify site supervisory personnel involved in the source development (municipal officials, consultants and drillers).

Consultant: Stantec Consulting Ltd.

- Associate Hydrogeologist: Jonathan Keizer, M.Sc.E., P.Eng.

Well Driller: To be determined

11. Attach a 1:10 000 map and/or recent air photo clearly identifying the following:

- Proposed location of drill targets and property PID
- Domestic or production wells with a 500 m radius from the drill target(s)
- Any potential hazards identified in question 7.

Figure B1 (attached) shows the drill targets on PID No. 10080562, and available information for properties within 500 m of the Project overlain on aerial photography taken in 2010. Existing production well locations used by HSF Foods Limited, as well at the location of water wells reported in the NB Online Well Log System are shown on Figure B1.

12. Attach a land use/zone map of the area (if any). Superimpose drill targets on this map.

N/A

Sources: Roads and Waterbodies from SNB, Watercourses, Crown Land and Transportation data are from NBDNR. All basemap data downloaded from GeoNB.

Disclaimer: This map is for illustrative purposes to support this project; questions can be directed to the issuing agency.

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Proposed Drilling Target Plan

Figure B1