

**Dunn-Rite Food Products Ltd.  
Environmental Assessment of  
Upgraded Food-Processing  
Facility**

FINAL REPORT



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111440256

November 4, 2014



**DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY**

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# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Introduction  
November 4, 2014

## 1.0 INTRODUCTION

### 1.1 PROJECT OVERVIEW

Dunn-Rite Food Products Ltd. has owned and operated a poultry-processing plant in Winnipeg for decades. The original family-owned business began in 1940 (Manitoba Chicken Producers 2014). Dunn-Rite was acquired in 2012 by Sunrise Farms. The facility as it operates is capable of processing up to 75,000 live chickens into market-ready products on a daily basis (~300,000 birds per week). The facility specializes in the slaughter of live chickens, processing of fresh or frozen whole, and portioned, marinated and non-marinated chicken. The facility has not been operated pursuant to nor regulated by the provincial *Environment Act*. A recently-announced Upgrade and expansion of the existing plant included provisions for a sophisticated industrial pre-treatment plant for processing raw wastewater prior to its discharge to the City of Winnipeg sewer system for subsequent secondary treatment. Manitoba Conservation and Water Stewardship subsequently deemed, pursuant to s. 16 of *The Environment Act* and consistent with MR 164/88 ("Classes of Development Regulation"), that the upgraded facility should be licenced under the statute as a "Class 1 development". Stantec was retained by Dunn-Rite to develop this Environmental Impact Assessment to support its application for an *Environment Act* licence.

For purposes of licensing under the statute, the applicant and the prospective licensee is Dunn-Rite Food Products Ltd. rather than Sunrise Farms.

### 1.2 ENVIRONMENTAL ASSESSMENT PROCESS

The following sets out the character of the impact assessment process in the context of the major factors driving the scoping and schedule for the assessment.

#### 1.2.1 Manitoba Conservation and Water Stewardship Determination for Licensing

On April 25, 2014, a public news article and various media releases from industry groups (e.g. Manitoba Chicken Producers) noted that Dunn-Rite Food Products Ltd. (Dunn-Rite) would receive a \$1.5 M joint federal-provincial grant towards installation of a \$4.5 M state-of-the-art wastewater pre-treatment system as part of its ongoing plant Upgrade, renovation and expansion project. The grant was provided pursuant to the "Growing Forward Fund", a five-year federal-provincial-territorial policy framework to advance the agriculture industry (Manitoba Chicken Producers 2014). Manitoba Conservation and Water Stewardship (Manitoba Conservation) advised Dunn-Rite by letter dated May 8, 2014, that its meat-processing facility was deemed to be a Class 1 Development under the *Classes of Development Regulation (M.R. 164/88)* and that Manitoba Conservation required licensing under the (Manitoba) *Environment*



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*Act* (Bridges pers. comm. 2014). Manitoba Conservation indicated an *Environment Act* application would be required by June 30, 2014.

On June 16, 2014, Stantec Consulting Ltd. (Stantec) was retained by Dunn-Rite to provide environmental-assessment services in support of an application for *Environment Act* licensing of its existing expanded and upgraded facility. The facility is located at 199 Hamelin Street ("the facility"), Winnipeg, Manitoba (Figure 1-1). In part, Stantec's retainer related to its highly relevant experience (when operating as the legacy company TetrES Consultants Ltd. in 2002) with the assessment and licensing process completed in respect of a plant Upgrade undertaken by Granny's Poultry Co-Operative Ltd. at its major processing plant in Blumenort (TetrES Consultants Inc. 2002).

After Stantec was retained, a formal request letter for extension of the submission date to October 31, 2014, was prepared by Stantec on behalf of Dunn-Rite. Manitoba Conservation accepted the revised submission date by letter dated October 1, 2014 (Labossiere pers. comm. 2014).

Dunn-Rite has instructed Stantec to provide Manitoba Conservation with information required to support its licensing application under the *Environment Act* within this report.

## 1.2.2 Dunn-Rite Food Products Ltd. Capital Investment Program/R & D Program

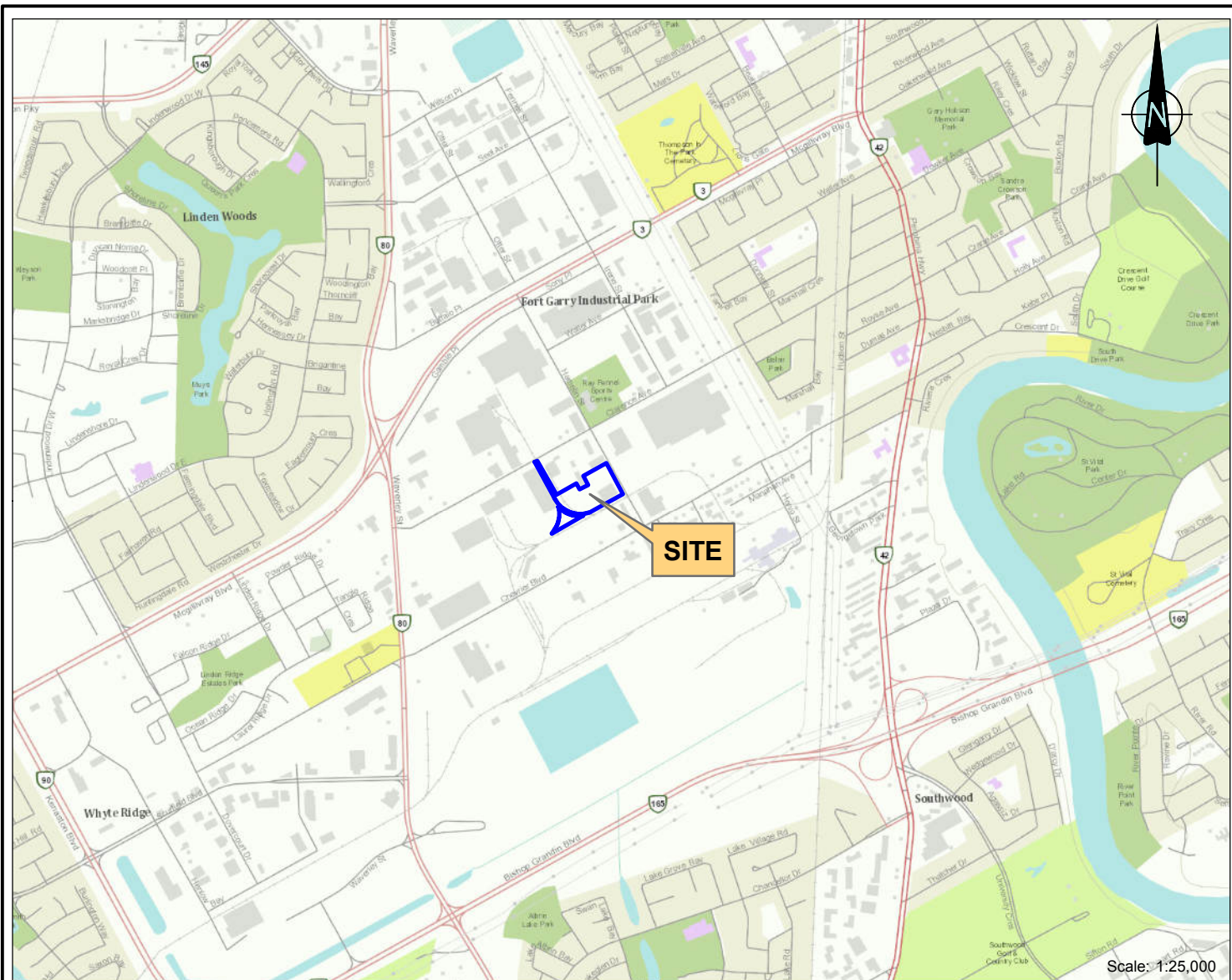
Over the years, Dunn-Rite Food Products has sought ways to enhance its processes, both to speed up production, and to decrease its environmental impact. Stantec is advised that this has usually been achieved by installing more efficient and state-of-the-art processing equipment. The existing plant will be expanded or altered in ways which accommodate new processing, control and waste-management technologies to meet these goals.

Since 2012, Dunn-Rite's facility has been in the process of a \$26-million renovation and expansion project to respond to opportunities in the growing meat-processing sector in Manitoba. Several of the noteworthy initiatives having significant environmental benefits that were achieved through the ongoing upgrading of the plant include:

- 2013 – Overall plant expansion incorporating the most energy-efficient processes available to reduce plant runtime (by ~30%), and energy consumption, while accomplishing desired production goals.
- 2013 – Installation of a Taifun® dry vacuum system, which uses air pressure instead of water, to deliver production wastes from the kill and evisceration departments to the outbound-shipment bay, thereby greatly reducing production of wastewater requiring treatment.
- 2012 and 2013 – Installation of two high-efficiency boilers in the plant's expanded production area and in the existing plant, thereby reducing natural gas consumption and particulate and greenhouse-gas emissions.







G:\GIS Project Folder\111440256

REF: ESRI Canada Topo Map

NOTE: THIS DRAWING ILLUSTRATION SUPPORTING INFORMATION SPECIFIC TO A STANTEC CONSULTING LIMITED REPORT AND MUST NOT BE USED FOR OTHER PURPOSES.

**SITE LOCATION PLAN**  
 ENVIRONMENTAL ASSESSMENT AND LICENCING FOR  
 UPGRADED FOOD PROCESSING FACILITY  
 199 HAMELIN STREET, WINNIPEG, MANITOBA

**Client:** DUNN-RITE FOOD PRODUCTS LTD.

**Job No.:** 111440256

**Scale:** AS SHOWN

**Date:** 26-Aug-2014

**Original Drawing By:** SS

**Updated By:** AC

**Figure No.:** 1-1





## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Introduction

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- 2009 – Installation of Magikist® instantaneous high-pressure hot-water heaters to reduce natural gas consumption.
- Continuous facility improvements which incorporate Best Practices and technologies from across the globe.

### 1.2.3 Relevant Food-Processing Accreditation

The Dunn-Rite facility holds the following certificates and/or demonstrations of its compliance with applicable standards and regulations for protecting public health (see Appendix A):

- Government of Canada Food Inspection Agency (CFIA) – Achievement of HACCP (Hazard Analysis Critical Control Point) system.
- CFIA – Licence to Operate a Registered Establishment under the Canadian *Meat Inspection Act* and its regulations.
- National Sanitation Foundation (NSF International) – Audit and achievement in Food Safety and Quality Systems Gold Standard.



# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Consultation and Engagement  
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## 2.0 CONSULTATION AND ENGAGEMENT

Dunn-Rite was informed about the regulatory requirements for public engagement during the course of impact assessments intend to secure licensing under *The Environment Act*. Dunn-Rite advised Stantec that this regulatory need was consistent with its public consultation and engagement policies and goals. Accordingly, Stantec was instructed to design and execute a practical process to advise the neighbouring public about the plant Upgrade, and the opportunity for public expressions of interest or concern.

Accordingly, Stantec executed a broad regional public-consultation plan to gain input from the surrounding community in Winnipeg about the facility-upgrading process. The combined outreach/feedback mechanism consisted of a two-stage advertisement posted in the *Sou'wester* regional newspaper, which included a clip-out, mail-back form pre-addressed to Stantec. Stantec had used the same concept, and virtually the same form, when engaging with the public in respect of another planned Upgrade to another poultry-processing plant in 2001 that was approved by Manitoba Conservation (then Manitoba Environment) (TetrES Consultants Inc. 2002).

The advertisement was designed for two purposes: 1) to notify the public that Dunn-Rite was proceeding with a formal environmental assessment of their existing facility, and would be submitting the assessment to Manitoba Conservation for determining whether to approve continued operations of the upgraded facility, and; 2) to solicit expression of public concerns that Stantec could address in the assessment or that Dunn-Rite could address in the Upgrade-design process. The advertisements were posted in *The Sou'wester* newspaper on the August 27 and September 10, 2014 (Figure 2-1) issue dates. The *Sou'wester* newspaper services areas within a large catchment area of southwest Winnipeg including Tuxedo, River Heights, Fort Rouge, Lindenwoods, Fort Garry, Whyte-ridge, Fort Garry, Waverley Heights, University Heights, Fort Richmond, Richmond West and St. Norbert.

Neither posting resulted in any comments or questions received by Stantec. Dunn-Rite also indicated that to its knowledge, it had not received any complaints about its operations from the surrounding community, although it acknowledged occasional social media (Flickr) postings by an animal-rights activist (i.e., in Aug 2008 and May 2009).

No comments or concerns were expressed to either Stantec or Dunn-Rite about either past operations or the current Upgrade. Accordingly, there were no specific or implied directions to either Stantec or Dunn-Rite that could affect the design, construction or operation of the upgraded facility, or the scope of the assessment.





# We're Upgrading!

As part of its expansion at 199 Hamelin Street in Winnipeg, Dunn-Rite Food Products is investing in new technology to improve wastewater quality. This investment will also reduce its environmental "footprint" by pre-treating its wastewater before sending it to the municipal sewer system. The new pre-treatment system, or Dissolved Air Flootation unit ("DAF"), will use tiny air bubbles to separate sludge and chemicals from wastewater. The DAF will help us manage growth of our facility in an environmentally responsible manner.

Our upgraded facility will be licenced under *The Environment Act*, so we're completing an environmental assessment of the facility and its proposed improvements.

If you want more information, or have concerns to express, please contact Mr. Terry Duddridge at Stantec Consulting Ltd. by email [terry.duddridge@stantec.com](mailto:terry.duddridge@stantec.com) or phone at 204-944-3790.



Figure 2-1: Public Consultation Advertisement





# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Regulatory Framework  
November 4, 2014

## 3.0 REGULATORY FRAMEWORK

The central elements of the relevant regulatory framework are grouped by jurisdiction and described below. The contributions by both governments totaling \$1.5 M (Winnipeg Free Press 2014) mean that the environmental regulatory requirements of both jurisdictions' must be met.

### 3.1 GOVERNMENT OF CANADA

#### 3.1.1 *Canadian Environmental Assessment Act (CEAA)*

The upgrade and expansion is not anticipated to require federal an environmental impact assessment pursuant to the provisions of the *Canadian Environmental Assessment Act*, due to the absence of a Federal Authority or other trigger identified under the *Act*.

### 3.2 PROVINCE OF MANITOBA

#### 3.2.1 *The Environment Act*

*The Environment Act* provides for the environmental assessment of projects, or "developments" which are likely to have significant effects on the environment. Meat processing has the potential to affect air, land or water. As a meat-processing facility, Dunn-Rite's facility operations are defined by the *Classes of Development Regulation (MR 164/88)* as a "Class 1 Development." The facility therefore requires licensing pursuant to the statute.

### 3.3 CITY OF WINNIPEG

#### 3.3.1 *Sewer Bylaw*

The City of Winnipeg *Sewer By-Law No. 92/2010*, Part 7 restricts discharges of "...substances with concentrations that exceed the limits set out in Schedule B..." of the bylaw to the City's sewer system. The bylaw allows for the generator's discharges to exceed concentrations outlined in Schedule B if allowed by provisions of an Over-strength Discharge Licence received from the City of Winnipeg. The Over-strength Discharge Licence may provide limits or conditions for specific substances associated with the generator's facility.

Dunn-Rite's current wastewater discharges do not meet the required concentrations of substances as indicated in Schedule B in the *By-Law*. However, they are compliant with the *By-law* because Dunn-Rite currently holds a City of Winnipeg Over-strength Discharge Licence for its 2011-2015 operating years (Appendix B).

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City of Winnipeg over-strength surcharges are billed to generators using the following rates:

- \$0.85/kg of total suspended solids (TSS) in excess of 350 mg/L.
- \$1.12/kg of biochemical oxygen demand (BOD) in excess of 300 mg/L.
- \$1.00/kg of total nitrogen (TN) in excess of 60 mg/L.
- \$2.00/kg of total phosphorus (TP) in excess of 10 mg/L.

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Project Description  
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## 4.0 PROJECT DESCRIPTION

Dunn-Rite is seeking an *Environment Act* Licence for its upgraded and expanded meat-processing facility in order to bring operations of the upgraded facility into compliance with the *Act*. Specific aspects of the development as they relate to the licence application are described below.

### 4.1 NEED FOR EXPANSION AND UPGRADING

To meet the growing demands of Manitoba's chicken producers, and to supply its markets with high-quality food products, Dunn-Rite has invested substantially over recent years in upgrading and expanding its meat-processing facility. Dunn-Rite anticipates that through these investments, its facility will grow in production capability from approximately 75,000 chickens to 100,000 chickens daily.

Expansion of the facility requires upgrades to critical pieces of internal infrastructure, including installation of a wastewater pre-treatment system, in order to manage projected increased loadings of effluent to the municipal sewer and treatment system and to meet substance concentration requirements of the City of Winnipeg's Sewer Bylaw, while reducing water use.

#### 4.1.1 Existing Development

Dunn-Rite currently processes and packages 75,000 live chickens each day, drawing on a workforce of ~300 employees within a facility footprint of 165,000 ft<sup>2</sup>. A site plan of the facility is illustrated in Figure 4-1 which shows the general layout, major production areas, and personnel, material and process flows. Photos illustrating the existing operations are included in Appendix C.

The facility's production areas are divided into two major components: 1) live haul, slaughter, evisceration, chill and 2) deboning, final processing, packaging, cold storage and shipping. Production areas are described in detail below.

#### 4.1.2 Process Description

The process (Figure 4-2) begins with the arrival of live birds in shipping modules at the upgraded live-bird handling area. The area is designed to minimize human interaction with the chickens to reduce stress, injuries, and improve final product quality. Once unloaded from the trucks, the modules containing live birds are moved by forklift to the conveyor and transported to the live handling platform. Employees remove birds from the modules and hang them inverted by their feet onto the overhead conveyor system. The overhead conveyor system then transports the birds to the kill area, where the birds are first stunned (the head of the bird makes contact with electrically-charged water) and then immediately killed by automated transport through a



## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Project Description  
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machine which decapitates the bird. Instances where a bird was not successfully killed by machine, an employee is positioned to finish killing of birds manually with a knife.

The overhead conveyor then transports birds through the bleeding room's trough, which uses heated water and a mechanical picking process to remove feathers and blood. Discard materials are drained through a sub-floor trough and collected into a concrete rendering tank located in the out-bay.

The birds are then transported through head-puller and foot-removing machines and transferred to an evisceration overhead conveyor where the birds are eviscerated, inspected, necks removed, and rinsed. Discard materials are suctioned by the Taifun® and delivered to the out-bay. Birds are then conveyed to the chill room where they are sterilized with 'Cecure' and directed to the spin chill basin (110,000-litre capacity) or tunnel freezers. Chilling water is recycled several times during this process and is monitored for quality and safety by onsite CFIA officers.

After chilling, the birds are manually rehung on an overhead sizing conveyor, weighed, and sorted by mass using automated scales and either transported in bins to be packaged as whole birds or conveyed to the cooled cut-up room where they are dropped at various workstations. At the workstations, a combination of machine and manual processing produces wings, drums, breasts, seasoning-injected products, etc. The products are then transferred to packaging and placed in the appropriate cooler storage area or sent directly for shipping. The facilities' expanded plant uses ammonia as a refrigerant, while the original plant maintains the use of Freon in its cooling systems.

Chemicals used in production include:

- 12% Sodium Hypochlorite(bleach) – used for cleaning by the sanitation contractor
- 'Laundri Prep' – used for removing the tag in tub wash
- 'Fluff 2000' – used for laundry
- 'Fisan Brite' – used for cleaning our MSM(Mechanically Separated Meat) equipment
- 'Benefit' – used for cleaning our tub wash(returnable plastic tubs) and spin chill
- 'Spectrum' – used by sanitation contractor for general cleaning
- SU 393-wipes – used by the QA lab
- 'Fatsolve' – used for the central foaming system(e.g., boot foamers at doors)
- 'Cecure' – sprayed on the chicken to kill bacteria



# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

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## 4.1.2.1 Production

The facility processes an average of 75,000 live birds per day. This number is expected to increase in the near future as a result of the recent expansion and upgrading, and is expected to reach 100,000 live birds processed daily.

During the 2013-2014 fiscal year, the facility processed a total of 15.5 million birds with an average weight of 1.77 kilograms. The total weight of birds received in 2013-2014 was 27.5 million kilograms, which yielded 17.8 million kilograms of finished meat products. It took approximately 17 litres of water to process each bird. Since introduction of the Taifun® dry vacuum system, which greatly reduced both wastewater generation and colloidal solid wastes requiring landfilling, continuous-improvement programs continue to seek ways to reduce the unit production-rate use of water in the process.

The facility operates its production period weekly Monday to Friday for about 8-10 hours per day. There is a variety of employee positions within the facility and presently includes a total workforce of 294 individuals. An employee position breakdown is found below in Table 4-1.

**Table 4-1: Employee Position Breakdown**

Employee Breakdown – Total 294	
Admin (Front Office) – 8	Maintenance – 17
Quality Control – 12	Plant Manager & Floor Supervisors – 4
Delivery – 7	Shipping – 16
Scaling – 4	Live Receivals – 19
Evisceration – 23	Cryo Chill – 4
Packing – 19	Cut 9 – 12
Boning – 54	Tray Pack – 27
Cleaning – 7	MSM – 2
Box Room – 2	Individual Quick Frozen (IQF) – 9
Deli Birds – 7	Floater – 6
Auto Cut – 17	Fork Lift – 3
Portioning – 6	Part-timers (Saturday) – 9

## 4.1.3 Wastewater and Related Solid Wastes

The facility requires significant volumes of water to be consumed and discharged within the City of Winnipeg's water and sewer system. In the 2013 fiscal year, 273,695 measured kilolitres of municipal water were used for production and discharged to the sewer for treatment.



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During this time, the City's Water and Waste Department conducted routine effluent-quality checks at the facility to monitor discharge quality in comparison with the *Sewer By-Law's* requirements for concentration limits. As a result of the continual monitoring process, the City concluded that Dunn-Rites' effluent quality could not continually meet the *By-Law's* concentration requirements and therefore over-strength wastewater surcharges have been issued to (and paid by) Dunn-Rite. A summary of Dunn-Rite's wastewater discharge volumes and effluent quality is shown in Table 4-2 below.

In 2012, Dunn-Rite contracted Diversey Inc. to review water usage throughout the facility's production streams. Diversey produced a report intended to deliver efficiency strategies for overall reduction of water use. This led to Dunn-Rite proceeding with reorganization of selective production components and investment in new technologies (Diversey 2012).

Recent elements of the current ongoing Upgrade program have reduced the total volume of water required for annual production. The plant is considered state-of-the-art in North America for its emphasis on reduced wastewater and related waste sludge generation (Rempel pers. comm. 2014). One example is the recent installation of a Taifun dry-vacuum system that reduces the need for water use in the evisceration department. Wastes are removed from the working area automatically by vacuum and no waste is left to accumulate near the equipment. Wastes are transported through isolated tunnels to the truck bay on the north side of the building (Figure 4-1). Isolation of these wastes from production areas provides for improved hygiene of the facility while reducing the need to transport wastes with water pressure.

Another key way in which environmental considerations have been incorporated with production capacity increases and changes to facility infrastructure is the planned installation of an industrial wastewater-treatment system to achieve increases in production while also securing reductions of effluent concentrations. Seeking to create compliance with the City's *Sewer By-Law*, and prevention of over-strength discharge penalties, Dunn-Rite is planning to install a Dissolved Air Flotation (DAF) module as the key element of the planned industrial wastewater pre-treatment system. Existing rotary-mesh screens will intercept solids in the raw wastewater conveyed to the new DAF, to improve its performance and to divert solids capable of rendering (Rempel pers. comm. 2014). An overview of system is provided in Section 4.1.5.

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Table 4-2: 2013 City of Winnipeg Facility Effluent Monitoring Data Summary

Date	pH		TSS				BOD				TN				TP				No. of Samples	Consumption (KL)
	Min	Max	Min	Max	Average	Excess Mass Discharged*	Min	Max	Average	Excess Mass Discharged*	Min	Max	Average	Excess Mass Discharged*	Min	Max	Average	Excess Mass Discharged*		
Quarter 1: Dec 5/2012 to Feb 27/2013	6.51	8.9	238	495	413	4,289	376	1320	842	36,902	82	157	115	3,745	9.1	18.8	15.6	381	14	68,084
Quarter 2: Mar 4/2013 to May 22/2013	6.28	9.72	206	654	406	4,061	464	936	727	30,963	64	186	96	2,610	7.7	20.4	13.7	268	16	72,512
Quarter 3: Jun 5/2013 to Aug 27/2013	6.1	9.23	320	737	518	11,744	444	1030	732	30,200	60	124	100	2,796	8.3	19.5	14.9	343	12	69,907
Quarter 4: Sept 3/2013 to Nov 27/2013	6.19	9.63	380	835	599	15,735	618	993	810	32,228	70	125	100	2,528	11.1	17	13.7	234	13	63,192
Average	6.27	9.37	286	680	484		476	1070	778		69	148	103		9.1	18.9	14.5			

\*Note: Mass in excess of concentration limits for discharges to the wastewater system under the *By-law*

## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

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### 4.1.4 Waste Management

Dunn-Rite seeks to incorporate sustainable practices throughout its operations, including responsible management of solid wastes. Care is taken when managing the diversion of solids from the facility's various waste streams by contracting third-party handlers with experience in responsible disposal methods. The facility typically manages three varieties of solid waste: blood and offal, cardboard, and generic solid waste. Each category requires a specific type of waste handler who carries the expertise, technologies, and facilities to adequately handle and dispose of Dunn-Rite's special wastes associated with the processing of live chickens.

Rothsay Waste Management provides pickup and rendering services of Dunn-Rite's biological wastes including blood, fats, grease and feathers. In 2013, approximately 17,600 metric tons of biological wastes were delivered to Rothsay's rendering facility.

Waste Management of Canada Corporation delivers the facility's generic solid wastes to the Brady Road landfill. In 2013, approximately 300 metric tons of such generic wastes were relocated to landfill.

Cardboard recycling services are provided by Cascades Recovery Inc., and in 2013 approximately 18 metric tons were diverted from landfill and processed at Cascade's facility, for a diversion rate of about 5% of the facilities generic solid wastes

Of the total mass of biological and non-biological solids generated in 2013 (~17,920 tonnes), about 98% is diverted for processing and some form of reuse.

### 4.1.5 Industrial Pre-Treatment System

As noted in Section 4.1.3, Dunn-Rite's facility produces a significant amount of wastewater which consistently exceeds the City of Winnipeg's concentration requirements for discharges to the sewer. Currently there is a series of three consecutive rotary mesh (0.02-inch) screens built into the facility's wastewater pipe, upstream from the discharge point to the City's sewer. The screens provide primary end-of-pipe filtering of effluent to remove solid materials. This however does not currently provide adequate treatment of wastewater to achieve desired concentrations required by the City's limits.

During the current Upgrade in 2013, Dunn-Rite contracted Nijhuis Water Technology to plan and design a suitable industrial pre-treatment system to manage the facility's wastewater with the overall goals of securing compliance with the City's *Sewer Bylaw* while achieving cost savings by eliminating over-strength surcharges. The cost of the pre-treatment system, at an estimated \$4.5 M, is a very significant component of the \$26 M Upgrade Program (Winnipeg Free Press 2014).



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The Nijhuis plan centers on the use of the DAF to achieve Dunn-Rite's effluent requirements (Nijhuis Water Technology 2014). The use of DAF technology in industrial pre-treatment plants in meat-processing facilities is well-established, including in Manitoba (TetrES Consultants Inc. 2002).

Installation and commissioning of the system is expected this fall. The new treatment system will be located at the southwest corner of the live-haul department. The system will provide pre-treatment of wastewater downstream from the rotary screens prior to end-of-pipe discharge to the City's sewer (pers. comm. Rempel Sept 24 2014).

### 4.1.5.1 Treatment Process

The Nijhuis system design utilizes the facility's existing two-level equalization pit, having a volume of approximately 45,000 gallons (Nijhuis Water Technology 2014). The new system will provide a two-step treatment process:

- 1) Wastewater is pumped from the equalization pit into a flocculator and receives timed doses of CESCO flocculant-polymer, which binds to target pollutants.
- 2) Wastewater is pumped into the flotation unit where separation of water from sludge is accelerated by aeration, a process where tiny air bubbles promote sludge buoyancy and accumulation at the surface where it can be easily separated and removed. Treated wastewater (i.e. effluent) can then be released to the City sewer.

Both the flocculator and flotation units have a design capacity of 300 gallons of influent wastewater per minute (68 m<sup>3</sup>/hr).

The chemicals added to the DAF treatment process in order to effectively skim solids for rendering will all be CFIA-approved. The presence of the chemicals in the flocculant sludge means, however, that these skimmed solids cannot be included in the waste stream diverted for rendering (Rempel pers. comm. 2014).

See Appendix D for additional DAF design drawings and Appendix E for MSDS information.

### 4.1.5.2 Design and Performance

Design parameters for the DAF were based on information provided by Dunn-Rite, including type of wastewater, quantity of wastewater, flow rate, and measured wastewater concentrations. See Appendix D for system and performance information.



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Nijhuis provided Dunn-Rite with the following DAF Design Parameters (Nijhuis Water Technology 2014), based on the facility's wastewater-concentration characteristics:

- Type of wastewater: poultry processing
- Quantity of wastewater: approximately 234,000 gallons (900 m<sup>3</sup>) per day
- Loading timeframes: 1 shift (8 hours) + 5 hours of cleaning, 6 days per week
- Wastewater flow rate: 300 gallons per minute (68 m<sup>3</sup>/hr)
- Influent concentrations\*:

Parameter	Average Concentration	Maximum Concentration
BOD	740 mg/l	2,270 mg/l
TSS	592 mg/l	1,060 mg/l
Fats, oil and grease (FOG)	235 mg/l	539 mg/l
TKN	101 mg/l	318 mg/l
P	15 mg/l	45 mg/l

\*note: effluent concentration values are based on samples collected by Dunn-Rite on April 30 and May 1, 2014.

Nijhuis has provided an estimate for wastewater-treatment performance based on the parameters discussed above and its experience with design of DAF systems previously sited at similar clients' food-processing facilities. According to Nijhuis, Dunn-Rite's DAF performance is expected to achieve the following effluent-concentration characteristics after the flocculation and flotation treatment process (Nijhuis Water Technology 2014):

- TSS: ≤350 mg/l
- Fats, Oils and Grease (FOG): ≤100 mg/l (excluding dissolved oil and grease)
- pH: 6-9
- Biochemical Oxygen Demand (BOD): ≤300 mg/l (with the *caveat* noted that overall reduction is difficult to predict due to high variability of influent-sample concentrations)
- Phosphorus (P): performance has not been estimated
- Total Kjeldahl Nitrogen (TKN): performance has not been estimated

A review of the Nijhuis design-basis information ((Nijhuis Water Technology 2014) completed by Stantec (Basu pers. comm. 2014) identified a number of uncertainties which were



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communicated to Dunn-Rite for consideration with Nijhuis and discussed with Dunn-Rite on September 24, 2014.

### 4.1.5.3 Commissioning and Maintenance

A five-day commissioning period will be conducted by a joint Nijhuis/Dunn-Rite commissioning team, led by an experienced Nijhuis representative. Congruently, Dunn-Rite's maintenance staff will be trained in the proper operation, maintenance, monitoring and troubleshooting of the new system. In the event an upset beyond a designated limit occurs, Nijhuis will be available to assist with further troubleshooting if required (Nijhuis Water Technology 2014). Surveillance of the DAF's performance will occur by reviewing results from the City of Winnipeg's sewer-discharges sampling program and supplemented by Dunn-Rite's periodic sampling events. A follow-up visit by Nijhuis six months from the initial commissioning period will occur to review overall system performance, to troubleshoot possible issues, to receive feedback on system performance, to review on-site operational practices, and to re-evaluate system performance, if required (Rempel pers. comm. 2014).

Sludge which has been separated from the wastewater (e.g., the accumulated 'float') will be added to the waste stream described in Section 4.1.4. Dunn-Rite anticipates these wastes will be removed by BFI Canada Inc. and delivered to their private landfill.

### 4.1.6 Health and Safety

Dunn-Rite maintains a health and safety program which provides a work environment supporting the welfare of its employees. There are several key elements of the program including a policy framework, a workplace hazardous materials information system (WHMIS), a Workplace Safety and Health Committee, an Emergency Response Plan, health and safety bulletin boards, and Health and Safety Standard Operating Procedures (SOPs).

The policy framework establishes Dunn-Rite's health and safety program and clearly explains the commitments, roles and responsibilities of management, supervisors, lead hands, workers, and the Workplace Safety and Health Committee.

The Workplace Safety and Health Committee provides a critical role in supporting the program through collaboration between management and workers. Committee representation includes members from management and workers and union representatives from the United Food and Commercial Workers of Canada (UFCW). The Committee meets once per month to review safety-related incidents, corrective actions, results of inspections and investigations, worker or management safety concerns, and the overall status of the program. The Committee also plays an important role in promoting Dunn-Rite's safety culture to workers at all levels of authority.

Additional details on Dunn-Rite's health and safety program including the policy framework, WHMIS program, Emergency Response Plan, and SOPs are found in Appendix F. A summary of



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chemicals used in Dunn-Rite's processes are discussed in section 4.1.2, and associated MSDS sheets are included in Appendix E.

### 4.1.6.1 Food Safety

There are several mechanisms in place to support food safety at Dunn-Rite's facility which includes third-party certification, audits, and in-house federal food inspectors.

Dunn-Rite currently holds registration and a Gold Standard certification for food safety with the National Sanitation Foundation (NSF). The certification was achieved through an independent third-party audit and is valid until April 28, 2015.

Additional third-party audits, which include review of animal-welfare conditions related to guidelines set by the National Chicken Council (NCC), have been conducted at the facility. Dunn-Rite has received a certificate acknowledging their conformance with guidelines for animal welfare according to the NCC. Copies of the noted certificates are found in Appendix A.

The Canadian Food Inspection Agency (CFIA) oversees production at Dunn-Rite's facility and has appointed full-time inspectors at the facility to enforce their mandate for compliance with the Canadian *Meat Inspection Act* and associated regulations as a federally licenced meat-processing establishment. The dedicated inspectors are present at the facility during all hours of operation and provide additional supervision of all production activities.

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Setting and Existing Conditions  
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## 5.0 SETTING AND EXISTING CONDITIONS

The Upgrade Project occurs at an existing facility, operating for decades in the middle of an extensive Industrial park, with the nearest residence more than a half-mile away from the plant.

Current operations result in consistently over-strength discharges to City sewers, accommodated within the parameters of a City-issued permit, and non-regulated and non-problematic emissions of fine particulate and steam to the atmosphere, and solid wastes delivered for disposal at a licenced landfill.

There is no record of persistent accidents, odour nuisances, or complaints from adjoining businesses or regional residences.

One key element of the 'Project Setting' is Dunn-Rite's track record of responding to City concerns about the overstrength discharges to the City's sewers, and the degree of responsiveness to the City's suggestions for performance improvement. In this regard, Stantec is mindful that:

- Dunn-Rite took corrective action when the City noted a concern about Total Suspended Solids (TSS) in the discharge to the sewer (Rempel pers. comm. 2014).
- Dunn-Rite also responded positively to the concerns about plugging of a downstream lift station in the sewer system, installing the rotary screens to address this problem that remain key elements of the pre-treatment system (Rempel pers. comm. 2014).

Another aspect of the Project Setting is the degree of uncertainty noted by Nijhuis when providing its DAF design about the variability of the BOD of the raw wastewater to be treated by the DAF. Nijhuis noted (Nijhuis Water Technology 2014) that its design might require 'reconsideration' if the mean BOD values used to underpin its design are actually more than 5% variable. This *caveat* underscores the need for monitoring set out in Section 8.1 – Monitoring.

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment Methods  
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## 6.0 ASSESSMENT METHODS

This assessment departs from broadly accepted environmental assessment methods because;

- The Upgrade Project is incremental to the physical existence and decades of operation of the existing facility, and is thus incremental in character.
- The historic operations of the facility have apparently resulted in no reported environmental or socioeconomic impact or expressions of concern.
- There has never been an accident creating biophysical or socioeconomic impacts from the existing facility.
- The nature of the Upgrade Project is to reduce the potential for current and future environmental impact.

These facts have truncated the range of probable interactions between elements of the receiving environment and elements (and time phases) of the Upgrade. As a consequence, the range of potential adverse effects of the Upgrade is also relatively narrow.

Because of the abbreviated range of possible environmental impacts, and because of the absence of public concerns, the scope of the assessment is also substantially narrowed. "Valued Components" of the ambient biophysical and socioeconomic environment are identified (Section 7) for which there is reasonable potential that the Project could cause effects of concern. "Mitigation Measures" are considered to avoid or reduce potential effects, and the resulting "Residual Effects" are characterized by their 'significance'. The significance of the Project-related environmental effects is determined based on predefined effects criteria or thresholds of effect where this is possible.

Determinations of the significance of residual effects are then made for both Project and cumulative effect (the Project's effect in combination with past, present, and reasonably foreseeable projects), where and if appropriate. The determination for each residual effect is based, where possible, on an evaluation of whether a quantitative threshold of acceptable change is exceeded. Uncertainties about the strength of data addressed in the assessment are considered in relation to the judgments made and/or the recommendations for additional monitoring.

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment Methods  
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## 6.1 SCOPE OF THE EIS

The scope of the Upgrade Project for the purposes of the assessment includes the construction, operation and maintenance, and decommissioning of the following components:

- Recent expansion and continuing upgrades of the facility.
- Installation, commissioning and operation of the industrial pre-treatment system, especially the DAF.

The scope of the assessment includes the anticipated effects of the Project components on the biophysical and socioeconomic elements of the ambient environment, given the environmental design features, intended operations (and reliance on existing and future SOPs), mitigation measures and the VCs of the ecological or socio-cultural and economic environments (by themselves or in combination with other past, present and reasonably foreseeable future developments). Additionally, monitoring and follow-up programs to be established with respect to identified potential environmental effects on identified VCs are included in the conduct of the assessment summarized in Table 8-1.

VCs were selected in consideration of their susceptibility to change (especially negative change) as a consequence of the Upgrade Project and/or as a result of cumulative environmental effects. The benefits of the Project are identified and considered in this process.

The approach to the assessment is outlined below. The approach is consistent with the requirements of the provincial EA process and, to some extent, other relevant jurisdictions. Further, the assessment is based on a structured approach that:

- Focuses on issues of greatest concern.
- Considers that no issues were raised by the public during the assessment-related consultation process or at any time in the plant's operating history.
- Considers Dunn-Rite's engineering designs, SOPs and programs for mitigation and monitoring as core elements of a comprehensive environmental planning and management process.

Monitoring measures that are required to verify the environmental effects predictions, or to assess the effectiveness of the planned mitigation or to give effect to corporate commitments (e.g., ongoing R&D) are considered in the assessment, where applicable. The existing commitment to, or expected requirements for, DAF-system-effluent monitoring have been considered in the evaluation summarized in Table 8-1.

Dunn-Rite is committed to incorporating life-of-Project environmental management approaches and strategies into Project planning and execution so that not only is the Upgrade Project compliant with provincial and federal regulatory requirements, but benefits and positive effects



## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

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are enhanced and optimized. Dunn-Rite will use a variety of tools for environmental management, including:

- Integration of impact- prevention or mitigation measures into ongoing and any future project design and operations.
- Environmentally sensitive facility-management procedures.
- Environmental monitoring.
- Emergency prevention and response planning, including contingency plans for preventing or managing accidents and malfunctions.
- Waste-management planning.
- Water-management planning.

These commitments and systems have been considered in the assessment documented in Table 8-1.



Valued Components Selected for Impact Assessment  
November 4, 2014

## 7.0 VALUED COMPONENTS SELECTED FOR IMPACT ASSESSMENT

Precedent for many environmental assessments has established 19 environmental and socio-economic elements that are usually worthy of consideration. For each, a determination is made of the Upgraded Project's potential to cause an effect of concern. For those elements with no potential for an effect of concern, further consideration in section 8 is not warranted.

'Valued Components' are environmental or socio-economic components that the Upgrade Project could potentially substantially affect and be of primary concern to interested parties. Table 7-1 identifies those elements that may be affected by the Upgrade Project and Table 7-2 provides justification of which elements are being carried forward in the assessment summarized in section 8, as Valued Components, and which are not.

DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Valued Components Selected for Impact Assessment  
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Table 7-1: Project Upgrade Elements/Phases interactions with Biophysical and Socio-economic Elements

Project Component and Physical Activities	Physical\meteorological environment	Soil and soil productivity	Vegetation	Water quality and quantity	Fish and fish habitat	Wetlands	Wildlife and wildlife habitat	Species at risk or of special status	Air emissions	Green- house gas (GHG) emissions	Acoustic environment	Human occupancy and resource use	Heritage resources	Navigation and navigation safety	Traditional land and resource use	Social and cultural well-being	Human health and aesthetics	Infrastructure and services	Employment and economy
Construction	✓	✓								✓	✓					✓		✓	✓
Operation	✓			✓					✓	✓		✓				✓		✓	✓
Decommissioning	✓									✓	✓					✓		✓	✓
NOTES: "✓" = Potential interactions that might cause an effect.																			

## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Valued Components Selected for Impact Assessment  
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**Table 7-2: Designation of Valued Components**

Component Name	Included/ Excluded	Valued Component	Rationale for Exclusion or Inclusion, Designation, and Project Potential Effect	Presentation in Assessment
Physical and meteorological environment	Excluded	No	Loadings to airshed either acceptable, fully mitigable, or immeasurable.	N/A
Soil and soil productivity	Excluded	No	Soils already compromised by prior construction.	N/A
Vegetation	Excluded	No	All vegetation removed by prior construction.	N/A
<b>Water quality and quantity</b>	<b>Included</b>	<b>Yes</b>	<b>Substantial water use, wastewater generation and loadings to city sewers for treatment at SEWPCC.</b>	<b>s.8</b>
Fish and fish habitat	Excluded	No	Not applicable. No habitat present.	N/A
Wetlands	Excluded	No	Not applicable. No wetlands present.	N/A
Wildlife and wildlife habitat	Excluded	No	Not applicable. No wildlife habitat present.	N/A
Species at risk (SAR) or of special status and related habitat	Excluded	No	Not applicable. No designated SAR species or habitat present.	N/A
Air emissions	Included	No	New loadings are consistent with previous loadings at a minor increment.	N/A
Green- house gas (GHG) emissions	Included	No	New loadings are consistent with previous loadings at a minor increment.	N/A
Acoustic environment	Excluded	No	Incremental noise arising only during construction, diminishing to acceptable levels during operations.	N/A
Human occupancy and resource use	Excluded	No	Not relevant	N/A

**DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY**

Valued Components Selected for Impact Assessment  
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**Table 7-2: Designation of Valued Components**

<b>Component Name</b>	<b>Included/ Excluded</b>	<b>Valued Component</b>	<b>Rationale for Exclusion or Inclusion, Designation, and Project Potential Effect</b>	<b>Presentation in Assessment</b>
Heritage resources	Excluded	No	Site significantly impacted by previous construction and prior industrial history.	N/A
Navigation and navigation safety	Excluded	No	Not relevant. No watercourses present.	N/A
Traditional land and resource use	Excluded	No	Not relevant	N/A
Social and cultural well-being	Included	No	No potential for adverse significant interaction with socio-cultural systems in community or workforce. Intense CFIA presence/monitoring to prevent health risk to food products or workers.	N/A
Human health and aesthetics	Excluded	No	Effects are modest and incremental in an existing industrial area, with no immediate proximity to residences.	N/A
<b>Infrastructure and services</b>	<b>Included</b>	<b>Yes</b>	<b>Incremental uses of power and water, but more significant loadings to city sewers.</b>	<b>s. 8</b>
<b>Employment and economy</b>	<b>Included</b>	<b>Yes</b>	<b>Effects are positive, not negative, and of substantial magnitude (increases in employment related to construction and expanded workforce payroll).</b>	<b>s. 8</b>

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment of Potential Environmental and Socio-economic Effects  
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## 8.0 ASSESSMENT OF POTENTIAL ENVIRONMENTAL AND SOCIO-ECONOMIC EFFECTS

The prior review of potential interactions between elements of the receiving environment and activities/phases of the Project Upgrade identified that only three potential interactions were likely to create an effect of substantial magnitude or interest to regulators or the public. This section uses a standardized analytical framework to assist in the evaluation of the types, magnitude, spatial extent, frequency, duration or persistence, reversibility (or "mitigability") and significance of these effects when considering whether and how effectively negative effects ("impacts") can be mitigated. The meanings of these analytical terms are set out below:

- **Type** – the ultimate long-term trend of the environmental effect (i.e., positive or adverse).
- **Magnitude** – the amount of change in a measurable parameter or variable relative to existing conditions, defined for each VC as 'low,' 'moderate' or 'high.'
- **Geographic Extent** – the area where an environmental effect of a defined magnitude occurs, defined for each VC, based on definitions of 'local', or 'regional', as appropriate.
- **Frequency** – the number of times during the Project Upgrade or a specific Project phase or activity that an environmental effect might reasonably be expected to occur (e.g., 'one time' or 'multiple times') in a specified time period.
- **Duration** – the estimated period of time required until the VC returns to its baseline condition or the environmental effect can no longer be measured or otherwise perceived (e.g., 'short-term,' 'mid-term,' 'long-term,' or in some cases 'permanent').
- **Reversibility** – the likelihood that a measurable parameter will fully recover from an environmental effect, including through active management techniques (e.g., reclamation); the impacts ability to be mitigated (i.e., "mitigability").

Table 8-1 summarizes the application of this analytical framework and the results of the evaluation process.

Only two of the potential effects on Valued Components (VC) are considered to be negative, and the third probable effect is clearly positive. The magnitudes and mitigabilities of both impacts are assessed as "Almost immeasurable," and "high," respectively, resulting in judgments that residual (post-mitigation) impacts for these two VCs are "not significant."

The magnitude of the third effect, on local and regional economies and employment is considered of "modest magnitude." Clearly, there is no need for 'mitigation' of this effect.



# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment of Potential Environmental and Socio-economic Effects  
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**Table 8-1: Evaluation of Effects on Valued Components**

	Water Quality and Quantity	Infrastructure and Services	Employment and Economy	Comments
Regulatory and Policy Setting	City of Winnipeg Sewer ByLaw; policy-based design capacity and SOPs for SEWPCC	City of Winnipeg Sewer ByLaw; policy-based design capacity and SOPs for SEWPCC	Provincial (and federal) economic development strategy "Growing Forward Fund" (MCP 2014)	Province has goal of establishing value-added food industry worth \$5B by 2020 (WFP 2014)
Potential Effects, Measurable Parameters, and Significance Thresholds	Increased hydraulic loadings to City WWTP; significant if >2% of annual flow loads	Increased organic loadings to City WWTP; significant if >2% of annual loadings	Increases in construction and operations-related employment; significant if construction costs >\$20M or if payroll increment >20%	All potential effects occur during Operations phase; capital-investment effect occurs only during construction phase
Spatial Boundaries	As far downstream as SEWPCC	As far downstream as SEWPCC	City of Winnipeg boundary	Loadings are cumulative within the catchment but immeasurable
Analytical Assessment Techniques	Estimated annual DAF discharge as % of annual flow to SEWPCC	Estimated annual DAF effluent BOD load as % of annual BOD loading to SEWPCC	Estimated total capital and construction cost; estimated % increase in annual gross payroll	Total capital and construction cost is reported at \$26M
Assumptions comprising Conservative Approach	Plant operates 360 days/yr., at maximum nominal capacity	Plant operates 360 days/yr., at maximum nominal capacity; incremental loadings of Total Phosphorus and Total Nitrogen attributable to DAF discharge can be measured at SEWPCC intake	All construction cost budgets exceeded by 5%; all new hires remain employed	Estimation of total project Upgrade costs complicated by effects of lengthy construction period, government supports, etc.
Assessment of Effects	<b>Negative;</b> Persistent; Almost immeasurable; <b>Mitigable</b>	<b>Negative;</b> Persistent; Almost immeasurable; <b>Mitigable</b>	<b>Positive;</b> Persistent; modest magnitude;	Effluent monitoring from DAF must be consistent, as must diligent proactive system operation

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment of Potential Environmental and Socio-economic Effects  
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**Table 8-1: Evaluation of Effects on Valued Components**

	Water Quality and Quantity	Infrastructure and Services	Employment and Economy	Comments
Impact Mitigation	Optimized DAF operation; Incremental flows can be accommodated within unused hydraulic capacity of SEWPCC	Optimized DAF operation; Incremental loadings can be accommodated within unused treatment capacity of SEWPCC	N/A (effects are positive)	Preventative maintenance, regular updating of SOPs, operator training and consistent operations documentation are important
Characterization of Residual Environmental Effect	<b>NOT SIGNIFICANT</b>	<b>NOT SIGNIFICANT</b>	<b>SIGNIFICANT</b>	Capital cost (\$26M) exceeds 'significance' threshold of \$20M
Uncertainties and/or Monitoring Needs	Monitoring needed of flows; all Over-strength Permit parameters, plus TP and TKN, at minimum; and organic loadings	Nijhuis design qualified by uncertainties about BOD dataset. Monitoring of flows needed; all Over-strength Permit parameters, plus TP and TKN, at minimum; and organic loadings		Monitoring data should be provided to Manitoba Conservation to satisfy licence conditions, and with the City

## 8.1 MONITORING

There is uncertainty about the peak-to-mean ratio of the raw wastewater-quality data provided to Nijhuis to support its specification of the DAF performance (Nijhuis Water Technology 2014, Basu pers. comm. 2014), especially with regards to the BOD and FOG parameters. Regular and sustained monitoring for these parameters will be important to maintain and should be undertaken.

As well, the concentrations of TP and TKN that will be released from the industrial pre-treatment system are not known at this time. Monitoring for these parameters should be included in the ongoing surveillance of the plant, and the data should be shared with the City of Winnipeg. All other monitoring data should be made available to the City, as part of Dunn-Rite's efforts to demonstrate the effectiveness of the pre-treatment system, and the improved compliance with the City's Sewer ByLaw. Other monitoring (e.g., 'compliance monitoring' to fulfill conditions of

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment of Potential Environmental and Socio-economic Effects  
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formal approvals or legal permits; conditions of the *Environment Act* licence), may also be sharable with the City, as applicable and appropriate.

## 8.2 SATISFACTION OF MANITOBA'S PRINCIPLES AND GUIDELINES OF SUSTAINABLE DEVELOPMENT

The project's satisfaction of Manitoba's Principles and Guidelines of Sustainable Development include the following:

- Integration of Environmental and Economic Decisions:
  - The design of the Dunn-Rite plant ensures that a maximum amount of the production byproducts are recovered for use by a rendering company (Rothsay). The cost of effluent pre-treatment is offset over time by the significant reduction in penalties paid for the over-strength discharges. All new technologies that assist higher throughput per unit amount of energy, time, space or raw materials result in reduced unit consumption of water and power, and lower unit rates of atmospheric emissions and solid waste.
- Stewardship:
  - Over 98 % of the live mass of the birds processed and of the solid waste produced by the plant is utilized by the plant or by secondary processors. Waste generation has thus been greatly minimized.
- Shared Responsibility:
  - Dunn-Rite is collaborating with the Nijhuis and the City of Winnipeg to design and develop a new industrial wastewater pre-treatment system that shares the responsibilities for treating the wastewater loadings either by Dunn-Rite, at its plant, or by the City, at the South End Water Pollution Control Centre.
- Prevention/Conservation and Waste Minimization:
  - Over 98% of the live mass of the birds processed and the solid wastes generated from production is utilized in poultry products or products from commodity rendering.

## 8.3 CONCLUSIONS

**The existing poultry-processing plant has not created significant adverse effects of operations on the environmental and socio-economic elements of the ambient environment over the years, and expansion and upgrading of the facility will not result in any new significant unmitigated impacts.**





## DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

Assessment of Potential Environmental and Socio-economic Effects  
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On the basis of the design of the Industrial Pre-Treatment System component of the Upgrade Program, and the substantial reputation for such work enjoyed by its designers (Nijhuis), it is anticipated that the **diligent operation of the upgraded and expanded processing plant should satisfy all applicable provincial (and federal) regulatory requirements**. Presuming that the pre-treatment system meets the performance parameters specified by the system designers, **the plant should not require reliance upon the provisions of its Over-Strength Discharge Permit beyond its expiry in 2015**. Diligent application of plant SOPs and other operating procedures, and operations-supportive monitoring, should contribute to the facility achieving the regulatory compliance it seeks.

The effectiveness of nutrient removal by the new DAF is not known, nor is the certainty with which the BOD performance target will be met. These uncertainties require attention by Dunn-Rite. **A consistent program of industrial effluent-quantity and -quality monitoring that includes the BOD, FOG, TP and TKN parameters should be implemented by Dunn-Rite to assist its management of the new pre-treatment system and to ensure regulatory compliance.**

The presence of procedures for anticipating and managing adverse/upset operating conditions should preclude, or minimize the effects from, any emergency. The ERP should assist Dunn-Rite to prevent or manage any upset conditions with effectiveness and low risk to its neighbours.

**There are no evident impediments to the upgraded facility being licenced under *The Environment Act*.**

Recommendations  
November 4, 2014

## 9.0 RECOMMENDATIONS

The concentrations of TP and TKN that will be released from the industrial pre-treatment system are not known at this time (Nijhuis Water Technology 2014). Because Nijhuis has not prescribed nor quantified the performance parameters of the DAF for removal of TP and TKN (Section 4.1.5.2), there is uncertainty whether there will be consistent measurable nutrient loadings from this facility to the SEWPCC. **Monitoring for these parameters should be included in the ongoing surveillance of the plant. During commissioning and for the first six months thereafter, monitoring should occur on a weekly frequency for all key operating parameters.** While the testable hypotheses in this case is that these Upgrade-specific nutrient loadings are likely to be *immeasurable* at the SEWPCC, there is value in Dunn-Rite committing to monitoring of DAF-effluent quality for these parameters, and sharing the data with the City.

In addition, there is uncertainty about the peak-to-mean ratio of the raw wastewater-quality data provided to Nijhuis to support its specification of the DAF performance ((Nijhuis Water Technology 2014; Basu pers. comm. 2014), especially as regards the BOD and FOG parameters. **Regular and sustained monitoring for these parameters will be important to maintain and should be undertaken. These and all other pre-treatment plant monitoring data should be made available to the City, as part of Dunn-Rite's efforts to demonstrate the effectiveness of the pre-treatment system, and the improved compliance with the City's Sewer ByLaw.** Other monitoring (e.g., 'compliance monitoring' to fulfill conditions of formal approvals or legal permits, like conditions of the *Environment Act* licence), may also be sharable with the City, as applicable and appropriate.

# DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-PROCESSING FACILITY

References AND CITATIONS  
November 4, 2014

## 10.0 REFERENCES AND CITATIONS

### 10.1 CITATIONS

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DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY

Appendix A Certificates  
November 4, 2014

## Appendix A CERTIFICATES

DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY

Appendix B Overstrength Licence  
November 4, 2014

## Appendix B OVERSTRENGTH LICENCE

**DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY**

Appendix C Production Photographs  
November 4, 2014

## **Appendix C PRODUCTION PHOTOGRAPHS**

**DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY**

Appendix D DAF Design Details  
November 4, 2014

## **Appendix D DAF DESIGN DETAILS**

DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY

Appendix E MSDS Sheets  
November 4, 2014

## Appendix E MSDS SHEETS



**DUNN-RITE FOOD PRODUCTS LTD. ENVIRONMENTAL ASSESSMENT OF UPGRADED FOOD-  
PROCESSING FACILITY**

Appendix F Health and Safety Program  
November 4, 2014

## **Appendix F HEALTH AND SAFETY PROGRAM**