

Instructions:

1. Complete this form once the GSHP system is installed and operational.
2. Email this form along with the completed **Installed Equipment Summary** (Form E), and **Project System Design Summary** (Form F), along with a **copy of project invoice(s), Start-up Verification and Manufacturer Test Data Sheets, Certificate of Electrical Approval, Occupancy Certificate** (if applicable), and **License to Use Water for Heating/Cooling Purposes from Manitoba Water Stewardship** (if applicable) to Efficiency Manitoba at hvac@efficiencyMB.ca

Call 1-204-944-8181 for further assistance.

Note: Efficiency Manitoba will not issue the Incentive cheque unless all the above information is received. Failure to do so will prevent payment.

Applicant & Cheque Payment Information

Application no.	Manitoba Hydro account no.	Electrical permit no.	
Business name			
Mailing address	City/Town	Province	Postal code
Building permit no.	Manitoba Water Stewardship - Water Use license no. <i>(Attach copy of the completed license)</i>		

Applicant Statement

I, the Applicant, declare that the energy-efficient products and equipment for which an Incentive is being applied for, has been fully installed and is operational. The Product(s) which has been replaced will not be resold except for scrap purposes, nor will they be installed elsewhere. I declare that all terms and conditions of the Agreement set forth by Efficiency Manitoba have been, and will be, complied with. I authorize Efficiency Manitoba to release the financial Incentive to the Applicant listed on my Application.

Signed by (Applicant)	yyyy mm dd
Print name	
Print title	

Applicant Feedback

1. How did you hear about this program? (check all that apply)

Efficiency Manitoba Sales Rep	Efficiency Manitoba website	Brochure/Print materials
Contractor/Installer	Manitoba Hydro website	Presentation
Designer/Engineer/Consultant	Social media	Trade show
Word of mouth	Online advertisement	Other:

2. Is your organization planning other commercial renovations/upgrades? (check all that apply)

Space heating equipment	Window/Doors	Kitchen appliances
Air conditioning/Chiller	Insulation	Refrigeration
Lighting	Ventilation	Water heating
New building/Additions	Other:	

For more information on the above, visit efficiencyMB.ca or call 204-944-8181 or 1-844-944-8181.

Add any comments or suggestions about Efficiency Manitoba's Ground Source Heat Pump for Business Program:

Instructions: The Project Installer/Engineer will complete the sections below for **each type** of GSHP installed.

Unit type	Manufacturer	Model no.	Quantity installed	Per unit nominal cooling tons	Per unit auxiliary electric heat (kW)	Motor size of ground loop or well pump (HP)
Unit type no. 1						
Unit type no. 2						
Unit type no. 3						
Unit type no. 4						
Unit type no. 5						
Unit type no. 6						

HEATING OUTPUT *			
Unit type (from above)	Manufacturer rated heating capacity (Btu/h) / unit	Quantity installed	Total heating capacity (per unit Btu/h x Quantity Installed)
Unit type no. 1		x	=
Unit type no. 2		x	=
Unit type no. 3		x	=
Unit type no. 4		x	=
Unit type no. 5		x	=
Unit type no. 6		x	=
TOTALS →			Btu/h

/ 1000

TOTAL SYSTEM HEATING CAPACITY → MBH

COOLING OUTPUT ** (if applicable)			
Unit type (from above)	Manufacturer rated cooling capacity (Btu/h) / unit	Quantity installed	Total cooling capacity (per unit Btu/h x Quantity Installed)
Unit type no. 1		x	=
Unit type no. 2		x	=
Unit type no. 3		x	=
Unit type no. 4		x	=
Unit type no. 5		x	=
Unit type no. 6		x	=
TOTALS →			Btu/h

/ 1000

TOTAL SYSTEM COOLING CAPACITY → MBH

Units capacity based on CAN/CSA - C13256-1-01 Standard rating test - Liquid entering heat exchanger:

* Unit heating capacity @ 32 F EWT for closed loop ground heat exchangers OR 50 F for open loop ground heat exchangers.

** Unit cooling capacity @ 77 F EWT for closed loop ground heat exchangers OR 59 F for open loop ground heat exchangers.

Installed forced air (water-to-air) GSHP units must be certified by CSA or ARI/ISO 13256-1.

Instructions: The Project Installer/Engineer will complete this form to estimate the annual building loads, operational characteristics, system cost and ground heat exchanger details. Note: Paid invoices and a copy of the completed Licence to Use Water for Heating/Cooling Purposes from Manitoba Water Stewardship (including a site plan showing the well locations), Dimensioned Loop Design/Site Plan Drawing (if applicable) must be submitted with this completed form.

Building design heating/cooling loads

Complete the tables below to outline the building's annual heating/cooling loads.

	Winter	Summer
Outdoor design temperature	°C	°C
Indoor design temperature	°C	°C
Average weekly hours building is occupied	hrs/wk	hrs/wk

Ground Source Heat Pump Sizing

Percentage of design heat loss	%
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DESIGN LOADS	HEAT LOSS AT WINTER DESIGN TEMP.		HEAT GAIN AT SUMMER DESIGN TEMP.	
	MBH	kW	MBH	kW
Building envelope transmission				
Infiltration – continuous <i>(maximum 0.3 AC/H)</i>				
Total Eligible Load				
Infiltration – intermittent <i>(not eligible)</i>				
Ventilation – continuous <i>(not eligible)</i>				
Ventilation – intermittent <i>(not eligible)</i>				
Internal heat gain	N/A	N/A		
Solar heat gain	N/A	N/A		
Total Design Load				

Ground Source Heat Pump Sizing

Total installed cost of GSHP system (\$)	Estimated cost for a base case electrical heating system (\$)
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Open loop groundwater wells (if applicable)

Total supply flow rate	USGPM	litres/sec.
Total return flow rate	USGPM	litres/sec.
Total return flow rate	°F	°C.
Describe manual calculation methods or software used to size well system:		

	WATER FLOW RATE		WELL BORE DEPTH	
	USGPM	L/S	feet	metres
Supply well no. 1				
Supply well no. 2				
Supply well no. 3				
Return well no. 1				
Return well no. 2				
Return well no. 3				

Licence to use water for heating/cooling purposes from Manitoba Water Stewardship

License no.	Water quality test completed Yes No <i>(If Yes, attach a copy of the test report)</i>
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Closed loop ground heat exchanger (if applicable)

Attach dimensioned loop design/site plan drawing.

Ground conditions obtained from Assumed table values Measured values If measured, describe test methods:			
Ground thermal conductivity (<i>select unit</i>)	Btu/h ft.	°F W/m °K	Ground thermal diffusivity (<i>select unit</i>)
			ft. ² /day m ² /day
Specific heat capacity (<i>select unit</i>)	Btu/lb °F	kJ/kg °K	Constant ground temperature (<i>select unit</i>)
			°F °C
Describe ground conditions:			

Vertical Closed Loop

No. of boreholes	Borehole grid pattern (e.g. 4x5) x	Depth of boreholes (<i>select unit</i>)	ft.	m	Borehole pipe diameter (<i>select unit</i>)	in.	mm
Borehole spacing (<i>select unit</i>)	ft.	m	Grout material		Grout conductivity (<i>select unit</i>)	Btu/h ft. °F	W/m °K

Horizontal Closed Loop

Select pipe configuration 2 pipe 4 pipe Slinky Other _____	No. of trenches				
No. of pipes per trench	Loop pipe diameter (<i>select unit</i>)	Total trench length (<i>select unit</i>)			
	in.	mm	ft.	m	
Pipe depth in trench (<i>select unit</i>)	Total trench length (<i>select unit</i>)	Total pipe length (<i>select unit</i>)			
ft.	m	ft.	m	ft.	m

Surface Water - Closed Loop

Select source Lake River Pond	Pipe configuration Slinky Other (<i>specify</i>) _____				
Loop pipe diameter (<i>select unit</i>)	Total pipe length (<i>select unit</i>)	Submerged depth (<i>select unit</i>)			
in.	mm	ft.	m	ft.	m
Describe manual calculation methods or software used to size loop:					

Mechanical system designers' declaration

To the best of my knowledge, the designed mechanical system was designed and installed in accordance with all applicable municipal building codes, provincial and federal regulations, and installation standards.

Name	Title/Position		
Signature	Date	yyyy mm dd	
Company	Phone no.		

Engineer: affix seal, sign & date here (if applicable)

Ground heat exchanger designers' declaration

To the best of my knowledge, the well systems or closed loop ground heat exchanger(s) were designed and installed in accordance with all applicable municipal building codes, provincial and federal regulations, and installation standards.

Name	Title/Position		
Signature	Date	yyyy mm dd	
Company	Phone no.		

Engineer: affix seal, sign & date here (if applicable)