

Summary Table of Best Estimates for Bedrock and Overburden Hydraulic Properties					
Group, Formation or Unit, Location	Hydraulic Conductivity, K (m/s)	Porosity, n (m³/ m³)	Basis for Estimates	Comments	Reference
PreCambrian Bedrock					
5 to 50 m depth, Almonte	1 x 10 ⁻⁷	0.001	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2003a)
50 to 90 m depth, Almonte	1 x 10 ⁻⁸	0.005	Calibrated 3-D WHPA modeling, MOE water well pumping tests	Regional aquitard	INTERA Engineering Ltd. (2003a)
8 to 50 m depth, Killaloe	8 x 10 ⁻⁷	0.01	Calibrated 3-D WHPA Modeling, MOE water well pumping tests	Local municipal supply Aquifer	INTERA Engineering Ltd. (2003b)
50 to 125 m depth, Killaloe	5 x 10 ⁻⁸	0.005	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Regional aquitard	INTERA Engineering Ltd. (2003b)
5 to 40 m depth, Haley Townsite	1 x 10 ⁻⁶	0.007	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2003c)
20 to 60 depth, Beachburg	1 x 10 ⁻⁷	0.001	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2003c)
40 to 100 m depth, Haley Townsite	1 x 10 ⁻⁷	0.007	Calibrated 3-D WHPA modeling, MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2003c)
100 to 150 m depth, Haley Townsite	1 x 10 ⁻⁸	0.01	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Regional aquitard	INTERA Engineering Ltd. (2003c)
10 to 50 m depth, Kanata Rural Area	5 x 10 ⁻⁸	NV	Calibrated 3-D groundwater flow modeling. MOE water	Local domestic supply aquifer	Raven Beck Environmental Ltd.

			well pumping tests		(1994b)
50 to 100 m depth, Kanata Rural Area	5×10^{-9}	NV	Calibrated 3-D groundwater flow modeling. MOE water well pumping tests	Local domestic supply aquifer	Raven Beck Environmental Ltd. (1994b)
10 to 50 m depth, Chalk River	6×10^{-8}	0.0001 & 0.005	Calibrated 3-D groundwater flow modeling. MOE water well pumping tests, straddle packer testing.	Local domestic supply aquifer. Porosity values are for fractures and rock matrix, respectively.	Raven Beck Environmental Ltd. & INTERA Information Technologies Corp. (1995).
50 to 150 m depth, Chalk River	6×10^{-9}	0.0001 & 0.005	Calibrated 3-D groundwater flow modeling. MOE water well pumping tests, straddle packer testing.	Local domestic supply aquifer. Porosity values are for fractures and rock matrix, respectively.	Raven Beck Environmental Ltd. & INTERA Information Technologies Corp. (1995).
Overall Assessment	1×10^{-7} & 1×10^{-8}	0.01	High K value for 10 to 50 m Low K value for 50 to 100 m	Regional domestic supply aquifer	
Nepean Formation					
40 m thick unit, Almonte	1×10^{-4} & 1×10^{-5}	0.04	Calibrated 3-D WHPA modeling. Pumping tests of municipal wells	Different Ks for each side of Mississippi River. Regional municipal supply aquifer	INTERA Engineering Ltd.(2003a)
40 m thick unit, Shirley's Bay	1×10^{-4} & 1×10^{-5}	0.04	Calibrated 3-D WHPA modeling. Pumping tests of municipal wells	Upper 10 m has highest K, remainder of Fm has lower K. Regional municipal supply aquifer	INTERA Engineering Ltd. (2003d)
36 to 44 m thick unit, Beckwith Township	4×10^{-4} & 6×10^{-5}	0.01	Calibrated TCE transport model. Hydraulic testing of monitoring wells	Upper 10 m has highest K, remainder of Fm has lower K. Regional municipal supply aquifer.	Aqua Terre Solutions Inc. (2001)
Upper 10 m, Beckwith Township	1×10^{-5} to 4×10^{-4}	NV	Hydraulic testing of monitoring wells.	Testing at landfill site. Regional domestic supply aquifer	Duke Engineering & Services (Canada), Inc. (2000).

45 m thick unit, Manotick	1×10^{-4} & 1×10^{-5}	0.08	Calibrated 3-D PCE transport model. Packer testing, hydraulic testing of monitoring wells.	Upper 6 m has highest K, remainder of Fm has lower K. Regional domestic supply aquifer	Raven Beck Environmental Ltd. (1994a, 1996)
40 m thick unit, Kanata Rural Area	1×10^{-5} to 1×10^{-4}	NV	Calibrated 3-D groundwater flow modeling. MOE water well pumping tests.	Regional domestic supply aquifer.	Raven Beck Environmental Ltd. (1994b)
50 to 60 m thick unit, Shirley's Bay.	1×10^{-5} to 5×10^{-5}	NV	Pumping tests of water supply wells.	Regional communal and domestic supply aquifer.	INTERA Technologies Ltd (1990)
Overall Assessment	1×10^{-4}	0.05		Regional municipal supply aquifer	
Oxford and March Formations					
5 to 22 m thick unit, Almonte	3×10^{-9} & 2×10^{-8}	0.05	Calibrated 3-D WHPA modeling, MOE water well pumping tests	Different Ks for each side of Mississippi River. Regional aquitard	INTERA Engineering Ltd. (2003a)
20 m thick unit, Shirley's Bay	2×10^{-4} & 1×10^{-7}	0.05	Calibrated 3-D WHPA modeling. Vertical response testing of monitoring wells.	Highest Ks from vertical response testing. Regional aquitard	INTERA Engineering Ltd. (2003d)
14 to 21 m thick unit, Beckwith Township	3×10^{-8}	0.01	Calibrated 3-D TCE transport model. Slug testing of monitoring wells	Regional aquitard	Aqua Terre Solutions Inc. (2001)
14 to 21 m thick unit, Beckwith Township	8×10^{-11} to 4×10^{-8}	NV	Hydraulic testing of monitoring wells	Testing at landfill site. Local aquitard.	Duke Engineering & Services (Canada), Inc. (2000).
15 to 17 m thick unit, Manotick	4×10^{-9}	0.2	Calibrated 3-D PCE transport model. Packer testing, hydraulic testing of monitoring wells.	Regional aquitard	Raven Beck Environmental Ltd. (1994a, 1996)
10 to 40 m thick unit, Kanata Rural Area	5×10^{-6}	NV	Calibrated 3-D groundwater flow modeling. MOE water well	Regional domestic supply aquifer. March Fm is more	Raven Beck Environmental Ltd.

			pumping tests .	permeable than Oxford.	(1994b)
20 m thick unit, proposed Dibblee Quarry ,Osgoode	1×10^{-5}	NV	Packer tests and pumping tests. MOE water well pumping tests .	Regional domestic supply aquifer.	Raven Beck Environmental Ltd. (1993)
Overall Assessment	1×10^{-8} & 1×10^{-6}	0.05	High K value for aquifer Low K value for aquitard	Regional domestic supply aquifer and aquitard	
Ottawa Group					
2 to 39 m thick, Gull River and Rockcliffe Fm., Almonte	3×10^{-9}	0.05	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Aquitard on northeast side of Mississippi River	INTERA Engineering Ltd. (2003a)
Gull River and Rockcliffe Fm, Kanata Rural Area	1×10^{-8} to 1×10^{-7}	NV	Calibrated 3-D groundwater modeling. MOE water well pumping tests .	Poor domestic supply aquifer. Regional aquitard.	Raven Beck Environmental Ltd. (1994b)
Gull River, Clark Quarry, Stittsville	1×10^{-8} to 1×10^{-7}	NV	Packer testing of boreholes.	Poor domestic supply aquifer. Regional aquitard.	INTERA Information Technologies Corp. (1990)
Overall Assessment	1×10^{-7}	0.05		Regional aquitard and poor domestic supply aquifer	
Upper Bedrock Unit (0 – 5/10 m, Independent of Lithology and Formation)					
Russell, PreCambrian	1×10^{-6} to 1×10^{-5}	0.1	Calibrated 3-D landfill leachate migration model. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2005)
Almonte, Ottawa Group	5×10^{-6}	0.01	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Analysis of MOE specific capacity data. Local domestic supply aquifer	INTERA Engineering Ltd. (2003a)
Killaloe, PreCambrian	1×10^{-5}	0.01	Calibrated 3-D WHPA modeling, MOE water well pumping tests	Permeability due to fractures. Local domestic supply aquifer	INTERA Engineering Ltd. (2003b)

Haley Townsite & Beachburg, PreCambrian	1×10^{-5}	0.01	Calibrated 3-D WHPA modeling, MOE water well pumping tests	Analysis of MOE specific capacity data, Local domestic supply aquifer	INTERA Engineering Ltd. (2003c)
Shirley's Bay, Oxford Fm	9×10^{-6}	0.1	Calibrated 3-D WHPA modeling. Slug testing of monitoring wells	Local domestic supply aquifer	INTERA Engineering Ltd. (2003d)
Beckwith Township, Gull River, Rockcliffe, Oxford Fm	5×10^{-6}	0.01	Slug testing of monitoring wells	Local domestic supply aquifer	Aqua Terre Solutions Inc. (2001)
Manotick, Oxford Fm	4×10^{-6}	0.2	Calibrated 3-D PCE transport model. Packer testing, hydraulic testing of monitoring wells.	Local domestic supply aquifer	Raven Beck Environmental Ltd. (1994, 1996)
Shirley's Bay, Oxford and March Fm	4×10^{-6}	NV	Slug testing of monitoring wells.	Local domestic supply aquifer.	INTERA Technologies Ltd (1990)
Chalk River, PreCambrian	1×10^{-7}	0.01	Calibrated 3-D groundwater flow modeling. MOE water well pumping tests, straddle packer testing.	Local domestic supply aquifer.	Raven Beck Environmental Ltd. & INTERA Information Technologies Corp. (1995).
Overall Assessment	5×10^{-6}	0.05		Regional domestic supply aquifer	
Surficial Sand Units					
1 to 15 m thick unit, Russell	1×10^{-5}	0.3	Calibrated 3-D landfill leachate migration model. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2005)
5 to 20 m thick unit, Beachburg	1×10^{-6} to 1×10^{-5}	0.3	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2003c)
3 to 10 m thick unit, various	1×10^{-5} to	NV	MOE water well pumping	Local domestic supply	Golder Associates

locations in MVC area	1×10^{-4}		tests	aquifer	Ltd. (2003)
Variable thickness, EOWRC municipal water supplies	1×10^{-5} to 4×10^{-4}	0.25	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local domestic supply aquifer.	Robinson Consultants Inc. (2003)
Overall Assessment	1×10^{-4}	0.3		Regional domestic supply aquifer	
Silt, Clay and Clay Till Units					
2 to 20 m thick unit, Russell	1×10^{-7}	0.3	Calibrated 3-D WHPA modeling. MOE water well pumping tests. Grain size analyses.	Local aquitard	INTERA Engineering Ltd. (2005)
10 to 20 m thick unit, Beachburg	1×10^{-8}	0.3	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local aquitard	INTERA Engineering Ltd. (2003c)
Variable thickness, various locations in MVC area	1×10^{-9} to 1×10^{-7}	NV	Slug tests of monitoring wells, grain size analyses.	Local aquitard	Golder Associates Ltd. (2003)
Variable thickness, EOWRC municipal water supplies	1×10^{-9} to 1×10^{-7}	0.25	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Regional aquitard	Robinson Consultants Inc. (2003)
Overall Assessment	1×10^{-8}	0.3		Regional aquitard	
Basal Sand and Gravel Units					
1 to 5 m thick unit, Russell	1×10^{-4}	0.3	Calibrated 3-D landfill leachate migration model. MOE water well pumping tests	Local domestic supply aquifer	INTERA Engineering Ltd. (2005)
1 to 5 m thick unit, Beachburg	2×10^{-4}	0.3	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local municipal supply aquifer.	INTERA Engineering Ltd. (2003c)
Variable thickness, EOWRC	3×10^{-4} to	0.25	Calibrated 3-D WHPA modeling. MOE water well	Local municipal supply	Robinson Consultants

municipal water supplies	1×10^{-3}		pumping tests	aquifer.	Inc. (2003)
3 to 10 m thick units, various locations in MVC area	1×10^{-5} to 1×10^{-4}	NV	MOE water well pumping tests	Local domestic supply aquifer	Golder Associates Ltd. (2003)
Overall Assessment	2×10^{-4}	0.3		Regional domestic and municipal supply aquifer	
Sand and Gravel Eskers					
5 to 15 thick unit, Russell	3×10^{-4} & 3×10^{-3}	0.3	Calibrated 3-D landfill leachate migration model. MOE water well pumping tests	Esker and esker core Ks, respectively. Municipal supply aquifer	INTERA Engineering Ltd. (2005)
3 to 10 m thick units, various locations in MVC area	1×10^{-4} to 1×10^{-2}	NV	MOE water well pumping tests	Municipal supply aquifer	Golder Associates Ltd. (2003)
Variable thickness, EOWRC municipal water supplies	1×10^{-3}	0.25	Calibrated 3-D WHPA modeling. MOE water well pumping tests	Local municipal supply aquifer.	Robinson Consultants Inc. (2003)
Overall Assessment	1×10^{-3}	0.3		Regional municipal supply aquifer	

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