

Stanley Associates Engineering Ltd.

WELL CONSTRUCTION DETAILS - SUMMARY

9-19

Location WATSON LAKE, Y.T.

Legal Description _____

U.T.M. APPROX. 9:5168/66588

Well No. WATSON LAKE No. 1

Status of Well PERMANENT -- MAIN PRODUCTION

Date Constructed DECEMBER, 1963

Rig Type ROTARY

Contractor _____

Elev. Surface _____

Elev. Top of Casing 2281.62' (PIT)

Elev. From _____

E. log	Y <input type="checkbox"/>	N <input type="checkbox"/>	Well Log	Casing
			0-19 GRAVEL and BOULDERS, SOME CLAY.	
			19-42 GRAVEL and BOULDERS	

WELL CASING

Note: 19' OF 8.625" SURFACE CASING

Diameter of Reamed Hole _____

Depth of Reamed Hole _____

Casing I.D. 6.255" Casing O.D. 6.625"

Casing Length 30.4'

Material STEEL

Wall _____

Joints _____

UngROUTED , GROUTED from _____ to _____

Casing Top Above Ground _____

WELL DEVELOPMENT

Remarks _____

PUMP TEST

Date APRIL, MAY, 1973 Pumping Rate 121 gpm

Static W.L. 19.5' Water Temp. _____

Pump Intake _____ Drawdown 3.57'

Pump Time 10,000 min Avail. D.D. 9'

Specific Capacity = 33.89 @ 10,000 min

Water Condition While Pumping _____

Recovery: 1516 min. to 19.5'

Max. Long-term, Continuous Pump Rate 85 gpm

Estimated Drawdown _____

Estimated Dynamic Water Level _____

Proposed Pump Intake _____

WELL SCREEN

Screen Diameter 6"

Total Length 13.6"

Effective Length 12' (?)

Material EVERDURE

Type JOHNSON

Slot Arrangement 0.125"

Attachment to Casing LEAD PACKER

Top of Screen 28.9'

Gravel Pack Size NIL

Gravel Pack Amount NIL

Bottom of Screen _____

Bottom Depth 42.5'

WATER QUALITY (Mg/l)

Ca _____	CO ₃ _____
Mg _____	HCO ₃ _____
Na _____	SO ₄ <u>7</u>
Fe <u>< 0.02</u>	Cl _____
Mn <u>< 0.02</u>	NO ₃ (NITROGEN) <u>1.6</u>
T.D.S. <u>175</u>	T. Hardness <u>191</u>
T. Alkalinity <u>179</u>	pH <u>7.7</u>

Table 1: Well Drilling and Completion Summary
Town of Watson Lake
GUDI Assessment for Wells 1, 1A, 3 and 4

Well ID	Date Drilled	Lithology (m)	Screened Interval (m)	Slot Size ¹	Pumping Rates
Well 1	December 1973	0 - 5.8 Gravel, Boulders, some clay 5.8 - 12.8 Gravel and Boulders	8.8 - 13	0.125" (125 slot)	11.7 L/sec (186 USgpm)
Well 1A	May 1977	0 - 14.3 Gravel and Sand 14.3 - 15.2 Till 15.2 - 25.9 Sand and Gravel 25.9 - 32 Sand, trace silt & wood	20 - 23.2	0.040" (40 slot)	10.1 L/sec (160 USgpm); later reduced to 8.3 L/sec (132 USgpm)
Well 2	September 1993	0 - 24.9 Gravel 24.9 - 25.6 Silt	21.85 - 24.9 ²	0.200" (200 slot)	11.9 L/sec (189 USgpm)
Well 3	November 2005	0 - 11.9 Sand and Gravel 11.9 - 16.5 Silt and Sand (Till) 16.5 - 23.8 Silty Sand 23.8 - 29 Silt and Sand, wood 29 - 35 Peat 35 - 36 Silty Sand 36 - 41.1 Sand and Gravel	36.4 - 38.8	0.080" (80 slot) 36.4 - 37.6 m 0.040" (40 slot) 37.6 - 38.8 m	12.7 L/sec (202 USgpm)
Well 4 ³	April 2012	0 - 12.2 Sand and Gravel 12.2 - 13.8 Till 13.8 - 22.9 Gravelly Sand 22.9 - 29.9 Sand, trace gravel	28.3 - 31.34	0.060" (60 slot)	30 L/sec (475 USgpm) ⁴

Notes:

Well details from EBA 2006, unless otherwise noted.

1. Slot sizes are given in 1/1000 inch. So, a 100 slot well screen is 1/10 inch or 2.54 mm. The maximum typically manufactured slot size is 250 slot or 1/4 inch, 6.25 mm.

2. Screen depths from RCPL 1993.

3. Well information from AECOM, 2012.

4. Estimated long-term yield