

92B-11-100

BROWN, ERDMAN & TURNER LTD.
1409 BEWICKE AVENUE, NORTH VANCOUVER, BRITISH COLUMBIA V7M 3C7
TELEPHONE 988-1557

VIA COURIER

1987 06 23

77-039

R.C. Le Noury, P. Eng.
4004 Locarno Lane
Victoria, B.C.
V8N 4A1

Subject: Groundwater Development
Gillian Manor, Sidney, B.C.

Dear Sir:

Attached please find:

1. Map of the subject area showing locations of the five test wells that were drilled and tested prior to March 9, 1978.
2. Logs of wells 1 to 5 inclusive.
3. Chemical analysis of water sample collected near end of Well 5 pump test.

We were retained after the drilling of the first four wells to supervise the drilling of Well No. 5 and the testing of Wells 2 and 3. We have no information on the pumps that are reportedly set in Wells 2, 3 and 5.

We offer the following pertinent remarks concerning the features of the various wells.

Well No. 1

- Drilled 8-inch diameter to 60 feet
- Reportedly pumped at rates of 3 to 5 gpm
- 7-1/2 feet surface casing cemented into rock

Well No. 2

WTN 28360

- Drilled 8-inch diameter to 761 feet and 6-inch diameter to 822 feet
- Reportedly pumped at 3.5 gpm but tested at 3 gpm
- 10 feet surface casing cemented into rock

Well No. 3

WTN 28362

- Drilled 8-inch diameter to 475 feet and 6-inch diameter to 923 feet
- Reportedly pumped at 3 gpm but rating may be as low as 1 gpm
- 9 feet surface casing cemented into rock
- Well No. 2 apparently affected by pumping of Well No. 3 and vice versa

Well No. 4

WTN 30205

- Drilled 8-inch diameter to 220 feet
- Reportedly pumped at 3 gpm
- 20 feet surface casing cemented into rock

Well No. 5

- Drilled 6-inch diameter to 500 feet
- 8-inch diameter surface casing cemented into rock
- Pump tested at 16 Igpm for 3 days and rated at 10 Igpm based upon available data in March 1978. Rating might be increased as production data becomes available.

The information presented above is based upon our file data and memoranda dated prior to March 15, 1978. We have no information regarding the operation or maintenance of these wells since that time. The present condition of the wells and thus their production capacities are unknown to us, after a period of nine years since they were tested.

If you or your client wish more definite ratings of this well field at the present time we would have to conduct a series of pumping tests.

If we can be of further assistance please do not hesitate to call.

Yours truly,

W.L. Brown

BROWN, ERDMAN & TURNER LTD.

WLB/mt
Attachments

COLE BAY - PAUGUACHIN INDIAN RESERVE NUMBER 3

McTAVISH ROAD

Well no. 4

Well no. 1

Well no. 3

Well no. 2

Well no. 5

JOHN DEAN

PARK

SCALE 1" = 500'

FARMER CONSTRUCTION LTD.



INTERNATIONAL GROUNDWATER CONSULTANTS LTD.
NORTH VANCOUVER, BRITISH COLUMBIA

GILLAIN MANOR
NORTH SAANICH

LOCATION SKETCH

BY:
HWR

DATE:
20-1-78

JOB:
77-Q39

DWG:
1

KEN'S DRILLING LTD.

COPY

1706 HOWROYD AVE.
VICTORIA, B.C.
V8P 3C1
TELEPHONE 477-4982

#1

WELL LOG

OWNER Jay GEORGE Holdings LTD.
ADDRESS Box 4277 Station A.
VICTORIA, B.C.
WELL SITE ON BILKIAN RD.
OFF METAUSH RD.

INVOICE

_____ FEET CASING @ \$ _____

_____ FEET WELL HOLE @ \$ _____

TOTAL \$ _____

DATE BEGUN MAR. 9 1973
DATE COMPLETED MAR. 16 1973
YIELD Approx. 8.9 GPM GALLONS PER MINUTE
PUMPING WATER LEVEL _____ FEET FROM SURFACE
CASING USED 8 1/2
BOTTOM OF CASING 7 1/2 FEET FROM SURFACE
STICK-UP ABOVE GROUND 1 FEET

DRILLER: Doug SMITHSON

DEPTH MATERIAL

0
1 1/2' GRANITE CASING CEMENTED.

125'
100' WITH WATER INCREASING TO 4-9 P.M.

323
328' GRANITE WITH GOOD FRACTURE WATER INCREASING TO APPROX 8.9 P.M.

MORE FRACTURE IN GRANITE BUT UNABLE TO ATTAIN PROPER WATER PRODUCTION.

NOTE
APPROX. 8.9 P.M. SHOULD PUMP TEST MUCH HIGHER RATE

610

KEN'S DRILLING LTD.

1706 HOWROYD AVE.
VICTORIA, B.C.
V8P 3C1
TELEPHONE 477-4982

COE PY

WELL LOG

OWNER Fishman Manor Ltd
ADDRESS P.O. Box 2266
SURNEY B.C.
WELL SITE ON MC TRIVISH BLD. (HOLE #2)

INVOICE

11 FEET CASING @ \$ _____
_____ FEET WELL HOLE @ \$ _____

TOTAL \$ _____

DATE BEGUN JUNE 30/73
DATE COMPLETED JULY 11/73
YIELD ESTIMATE 6-8 GALLONS PER MINUTE
PUMPING WATER LEVEL 600 ± FEET FROM SURFACE
CASING USED 11 FEET 8"
BOTTOM OF CASING 10 FEET FROM SURFACE
STICK-UP ABOVE GROUND 1 FEET

DRILLER:

D SMITHSON

DEPTH	MATERIAL
0	ROCK - CEMENT IN CASING.
10	TRACE OF WATER AT 54'
	SMALL INCREASE IN WATER ALL THE WAY DOWN WITH 2.9 P.M. AT 630 FT.
	DRILLED 8" TO 761 FT. & 6" TO 822 FT. USED 3 AIR COMPRESSORS.
	ESTIMATE 6 TO 8 P.M. IN GRANITE THAT IS WELL FRACTURED ALL THE WAY.
822 FT	

KEN'S DRILLING LTD.

1706 HOWROYD AVE.
VICTORIA, B.C.
V8P 3C1
TELEPHONE 477-4982

COPY

WELL LOG

OWNER CILHAIN MANOR LTD
ADDRESS P.O. BOX 2266
SIDNEY B.C.
WELL SITE ON WELL
McTAVISH RD. # 3

INVOICE

_____ FEET CASING @ \$ _____
_____ FEET WELL HOLE @ \$ _____

TOTAL \$ _____

DATE BEGUN SEPT. 17 / 73
DATE COMPLETED SEPT. 27 / 73
YIELD APPROX. 6 GALLONS PER MINUTE
PUMPING WATER LEVEL _____ FEET FROM SURFACE
CASING USED 9 FT.
BOTTOM OF CASING 8 FEET FROM SURFACE
STICK-UP ABOVE GROUND 1 FEET

DRILLER: Doyle
SMITHSON

DEPTH MATERIAL

CASING

HARD GRANITE
WITH FEW
FRACTURES
FIRST WATER
AT 256 FT.

HARD DRILLING
SOME INCREASE
IN WATER AT
361 FT. - 2 G.P.M.

APPROX 6 G.P.M.

AT 475 FT.
CHANGED BITS
AT 511 FT.

SOFTER DRILLING

BUT NO
INCREASE IN
WATER TO
923 FT.

APPROX. 6 G.P.M.

923 FT.

KEN'S DRILLING LTD.

COPY

1706 HOWROYD AVE.
VICTORIA, B.C.
V8P 3C1
TELEPHONE 477-4982

WELL LOG

OWNER: GILKAIN MARSH LTD.
ADDRESS: METAVISH RD.

INVOICE

_____ FEET CASING @ \$ _____
_____ FEET WELL HOLE @ \$ _____

TOTAL \$ _____

DATE BEGUN: APR. 24/74
DATE COMPLETED: APR 29/74
YIELD: APPROX 3 GALLONS PER MINUTE
PUMPING WATER LEVEL: 200 FEET FROM SURFACE
CASING USED: 20
BOTTOM OF CASING: 19 FEET FROM SURFACE
STICK-UP ABOVE GROUND: 1 FEET

DRILLER:

Doag SMITHSON

DEPTH

MATERIAL



CLAY

GRANITE WITH
SOME WATER.
AT 23

SOME GOOD FRACTURE
AT 70 WITH WATER
INCREASING - 2.9 G.P.M.

39.P.M.

GRANITE
HARDER DRILLING

BEDROCK FRACTURE DEPTH & YIELD WHEN PENETRATED

DEPT, FEET			
0		Static water level	4.3' - 5 March 78
	x-x-x	21'-22'	5 gpm
	x-x-x	30'-32'	20 gpm
	x-x-x	35'-36'	5 gpm
	x-x-x	51'	2.9 gpm
	x-x-x	81'	?
100	x-x-x	95'	?
200			
300	x-x-x	314'	?
	x-x-x	335'	?
400	x-x-x x-x-x	420'-425'	?
500			

NOTE:

- Well yield 15 USgpm by airlift at end of drilling.
- Pump tested for 72 hours at 19.5 USgpm with specific capacity of 0.22 USgpm per foot of drawdown.

FARMER CONSTRUCTION - GILLAIN MANOR
LOG OF WELL NUMBER 5

BROWN, ERDMAN & ASSOCIATES LTD.
MARCH 1978 77-039



can test ltd.

1650 PANDORA STREET, VANCOUVER, B.C. V5L 1L6 • TELEPHONE 254-7278 • TELEX 04-54210

Report On Analysis of Water Sample File No. 4921 C
Report No. 2
Reported to Brown, Erdman & Associates Date March 20, 1978
1401 Bewicke Avenue
North Vancouver, B.C.

We have tested the sample of water submitted by you on March 9th 1978 and report as follows:

SAMPLE IDENTIFICATION:

The sample was submitted in plastic bottles labelled:

"GILLAIN MANOR
9-3-78 77-039"

METHOD OF TESTING:

The analyses were carried out in accordance with procedures described in:

"Standard Methods for the Examination of Water and Wastewater (14th Edition)" published by the American Public Health Association, 1975.

RESULTS OF TESTING:

(on following page)

RESULTS OF TESTING:Physical Tests

pH		7.85
Conductance (umhos/cm)		202.
Color (CU)		L 5.
Turbidity (JTU)		0.33
Total Dissolved Solids (mg/L)		163.
Total Suspended Solids (mg/L)		0.2

Dissolved Anions (mg/L)

Bicarbonate	HCO ₃	95.9
Carbonate	CO ₃	Nil
Chloride	Cl ⁻	7.50
Sulfate	SO ₄	14.2
Nitrate	N	L 0.1
Phosphate	O-PO ₄	L 0.01
Fluoride	F	0.088

Dissolved Cations (mg/L)

Total Hardness	CaCO ₃	80.8
Calcium	Ca	28.6
Magnesium	Mg	2.26
Sodium	Na	12.5
Potassium	K	0.38
Iron	Fe	L 0.03
Manganese	Mn	0.044
Copper	Cu	L 0.001
Cadmium	Cd	L 0.001
Lead	Pb	L 0.001
Zinc	Zn	0.007
Total Iron	Fe (mg/L)	L 0.03
Total Manganese	Mn (mg/L)	0.046

L = Less than; mg/L = milligrams per liter (or parts per million for drinking water)
MPN/100 ml - Most Probable Number of microorganisms per 100 ml sample.

REMARKS:

(on following page)

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Page 3
Report 2

REMARKS:

The water represented by the sample submitted can be characterized as moderate with respect to hardness & dissolved mineralization. The water met the Canadian Drinking Water Standards for all parameters tested.

CAN TEST LTD.



pm (Ms) Judi M. Mitchell, B.Sc.,
Chemist

cp