

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 28882

- 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.

- 3 -

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 - PAUQUACHIN INDIAN RESERVE NUMBER 3

McTAVISH ROAD

Well no. 4

Well no. 1

B

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.

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

COPY

## WELL LOG

OWNER Jay GEORGE Holdings LTD.  
ADDRESS Box 1277 Station A.  
VICTORIA, B.C.  
WELL SITE ON GILMAN RD  
OFF METALSH RD.

## INVOICE

\_\_\_\_ FEET CASING @ \$ \_\_\_\_\_  
\_\_\_\_ FEET WELL HOLE @ \$ \_\_\_\_\_

TOTAL \$ \_\_\_\_\_

DATE BEGUN MAR. 9 / 73  
DATE COMPLETED MAR. 16 / 73  
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

GRANITE  
CASING CEMENTED.

WITH WATER  
INCREASING  
TO 4.9 P.M.

323 GRANITE WITH  
9000 FRACTURE  
328 WATER INCREASING  
TO APPROX 8.9 P.M.

MOIST FRACTURE  
IN GRANITE  
BUT UNABLE  
TO ATTAIN.

PROPER WATER  
PRODUCTION.

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

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COPY

## WELL LOG

OWNER Falkner Manor Ltd

ADDRESS P.O. Box 2266

SIDNEY B.C.

WELL SITE ON McTAVISH BLVD. (HOLE #2)

## INVOICE

42 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

ROCK - CEMENT  
IN CASING

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.

8 6" TO  
822 FT.

USED 3 AIR  
COMPRESSORS.

ESTIMATE  
6 TO 8 9 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:

DOCK  
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 415 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.

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

## WELL LOG

OWNER GILKIN MANOR LTD.  
ADDRESS METAVISH RD.

## INVOICE

FEET CASING @

\$

FEET WELL HOLE @

\$

TOTAL \$

DATE BEGUN

APR. 24/74

DATE COMPLETED

APR 29/74

YIELD

APPR. 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:

DOUG 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



## DEPT, FEET

100

- 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.

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  
Reported to Brown, Erdman & Associates Report No. 2  
1401 Bewicke Avenue Date March 20, 1978  
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)

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# 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 <sub>3</sub>	95.9
Carbonate	CO <sub>3</sub>	N11
Chloride	Cl <sub>3</sub>	7.50
Sulfate	SO <sub>4</sub>	14.2
Nitrate	N	L 0.1
Phosphate	O-PO <sub>4</sub>	L 0.01
Fluoride	F	0.088

## Dissolved Cations (mg/L)

Total Hardness	CaCO <sub>3</sub>	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:

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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.



*per* (Ms) Judi M. Mitchell, B.Sc.,  
Chemist

cp