Final Well Report

Vulcan Minerals Inc. Flat Bay No. 1
Western Newfoundland
Bay St. George Basin

Vulcan Minerals Inc.

Vulcan Minerals Inc.

July 21, 2000

Department of Dept. of Mines & Energy
Natural Resources Building
50 Elizabeth Ave.
P.O. Box 8700
St. John's, NF A1B 4J6

Attention: Mr. Paul Molloy

Re: Flat Bay No. 1 Well

Dear Mr. Molloy:

Please find enclosed two copies of the Final Well Report for Flat Bay No. 1.

Regards,

PATRICK J. LARACY
PRESIDENT

PJL/gml

366 Thorburn Road
St. John's, NF
Canada
A1B 4R1

Telephone: (709) 754-3186
Fax: (709) 754-3946
E-mail: laracy@thezone.net
Toll-free (Investor Relations): 1-888-819-4449
Website: http://www.info-mine.com/vulcan

Release Date:
SEP 11 2001
Energy Branch
Department of Mines and Energy

Final Well Report

Vulcan Minerals Inc. Flat Bay No. 1
Western Newfoundland
Bay St. George Basin

Prepared by:
Patrick J. Laracy P. Geo.
Vulcan Minerals (Operator)

Mark Stocking
Eastern Oilfield Services Ltd.
(Drilling Contractor)

July 06, 2000

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List of Figures and Appendices

1.00 General Overview

This report summarizes the drilling of Vulcan Minerals Flat Bay #1 onshore petroleum well, in the Bay St. George Basin Western Newfoundland, August 10-September 11 1999 to a total depth of 286 metres.

1.01 Introduction

Flat Bay #1 was operated by Vulcan Minerals Inc. and drilled by Eastern Oilfield Services Ltd. using a Bucyrus Erie 36L Cable Tool rig. The well was spudded on August 10, 1999 and the rig released September 11, 1999. The purpose of the well was to test a shallow Carboniferous aged conglomerate for petroleum. The well was suspended at 286 metres total drilled depth though the bottom portion of the hole was unconsolidated and slumped in to 262 metres. The hole was geophysically logged to a depth of 261.1 metres.

The well penetrated the Codroy Road Fm. and the Anguille – Fischell's Brook conglomerate as projected. The well was still in Fischell's Brook Conglomerate at total depth. Previous results from the London Resources Flat Bay Test hole 1996, approximately 47 metres west of Flat Bay #1 had significant oil shows in the Fischell's Brook Conglomerate.

The Flat Bay well was designed to test this formation for possible flow of oil as well as to extend its depth occurrence. In excess of over 100 metres of conglomerate contained oil shows in the form of fluorescence in cuttings and oil recovery from the drilling fluid. Based on the amount of oil recovery and the results of the geophysical logs it was decided that any testing program would be contingent upon a successful reservoir stimulation program. Thus the well was suspended pending possible stimulation and flow testing in the future and possible deepening of the well.

1.02 Well Location

Figure 1 locates the position of Flat Bay #1 within the Bay St. George Basin, approximately 25 km from Stephenville, the regional service centre for the area.

1.03 General Information

Well Name:

Vulcan Minerals Inc. Flat Bay #1

Exploration Permit

The well was drilled on exploration Permit 96-105 under authority of Drilling Program Approval (DPA) number 99-116-0-01 and Authority to Drill a Well (ADW) #99-116-0-01 both issued on July 23, 1999., (Figure 2 and 3).

Location Co-ordinates

The NAD 27 UTM co-ordinates of the well are as follows:

N 5360237.971

E 384435.373

The survey was carried out by Robin Davis Surveys of Stephenville using conventional surveying techniques and equipment.

1.04 Difficulties and Delays

Difficulties encountered while drilling were as follows:

- Formations encountered had a low rate of penetration, and caused abnormally high frequency of bit changes, for the drilling method used on this well.
- Unconsolidated formation below 250m was prone to caving. The result of this was 25m of lost hole and total depth was limited to 286m rather than the proposed 300m.
- Delays were limited to clutch problems on the rig. This resulted in 3 lost days waiting on replacement parts.

Final Well Report

Vulcan Minerals Flat Bay #1

2:00 Drilling Operations

2.00 Drilling Operations

A summary of the daily drilling operations is contained in Appendix I – Daily Drilling Reports.

2.01 Elevation

Elevations are above mean sea – level as follows.

ground level - 47.0 M
rig floor - 48.3 M

2.02 Total Depth

The following depths are measured from rig floor

total drilled depth:	286 M
total logged depth:	261.1 M
total open hole depth after caving:	262 M

2.03 Spud Date

The well was spudded on August 10, 1999 at 1600 hrs.

2.04 Date Drilling Completed

The well ceased drilling on September 10, 1999 at 2000 hrs.

2.05 Rig Release Date

The rig was released on September 11, 1999 at 1700 hrs.

2.06 Well Status

The well was temporarily abandoned at 286 m. The hole was filled with water to 12m from surface and a corrosion inhibitor was installed. The following well head assembly was installed by screwing attachment to the 178 mm casing collar at approximately 0.5m above ground level:

178 X 50.8 mm swage: pressure rating 21,000 KPA

50.8 mm Balon ball valve: pressure rating 10,500 KPA

50.8 mm Bull plug: pressure rating 21,000 KPA
(reference Figure 4 – well schematic)

2.07 Hole Sizes and Depths

The following depths are measured from rig floor and hole sizes are outside diameters.

Hole Section	Size (mm)	Depth (m)
surface	203	12.35
intermediate	203	125.9
main	161	286

2.08 Bit Records

The surface and intermediate 203 mm hole was drilled using a 203 mm Cable Tool Chisel bit. The main 161 mm hole was drilled using a 161 mm Cable Tool Chisel bit. Bit changes in the form of sharpening frequency is outlined in Appendix II. – Composite Well Record.

2.09 Casing and Cementing Record

The casing used was new ISPSCO J55 grade, 219mm – 35.7 kg/m and 178mm – 29.8 kg/m. All connections utilized existing short thread and couplings and were tonged to the manufacturer's specifications.

The two joints of 219mm casing were driven to a depth of 12.35mfrf. A drive shoe was attached to the bottom joint. The top of the last joint was cut off below grade, and a K55 weld-on coupling was installed to allow for installation of the casing bowl.

The 13 joints of 178mm casing were ran and suspended in the Lowery 10,500 kPa, 219mm x 178mm casing head at a depth of 125.90 mfrf. The casing amount was 124.67m. This included a guide shoe (0.24m) installed on the bottom of joint #1, and a float collar (0.36m) installed between joints #1 and #2. The collar to rig

floor measurement was 1.23m. Centralizers were ran on joints #2, #5, and #8. The 178mm casing was cemented with 2 tonnes (50 sks.) of cement with a 2% calcium chloride additive. The slurry volume was 1.5m^3. The cement top is estimated to be at or near surface, based on the calculations and the 0.3m^3 visible cement returns at surface.

2.10 Side-tracked Hole

Not applicable

2.11 Drilling Fluid

There were no drilling fluids used in the drilling of the well apart from formation water which entered the well at 19-m (fresh water) and 137 m (salt-formation water). Residual pit fluid was used during logging of the well and suspension procedures.

2.12 Fluid Disposal

Residual pit fluid was disposed as part of the suspension procedures. Fluid disposed was a combination of fresh and salt water that was encountered during drilling operations. On September 11, 1999, 4m^3 was pumped into the well for logging operations. Prior to shutting well in for the night, the well was filled to surface with an additional 2m^3 of fluid. On September 12, 1999, the fluid level was tagged at a depth of 71m (08:00hrs). The hole was filled to surface with 1.5 m^3 of fluid At 16:00 hrs the fluid level was tagged at 39m, the hole was filled to surface with 0.8m^3 of fluid and the well was shut in for the night. On September 13, 1999 the fluid level was determined to be 12mfrf. No additional fluid was added.

2.13 Fishing Operations

There were no fishing operations conducted.

2.14 Well Kicks

There were no Kicks encountered during drilling.

2.15 Formation Leak – Off Tests

No formation leak-off tests were conducted, however a pressure integrity test was performed after drilling out of the 178mm casing seat and 0.5m into the formation below the casing seat. A pressure integrity test was performed using fresh water with a gradient of 9.8 kPa/m. Pressure was applied on the formation below the 178mm casing seat at a gradient equal to 18 kPa/m. Surface pressure was 1,050 kPa at a depth of 126.5mfrf. Pressure was held for duration of 15 minutes with no loss of surface pressure.

2.16 Time Distribution

Activity	Total Hours
Drilling/Bailing	541.5 hrs.
Casing	4 hrs.
Cementing	3 hrs.
Drilling Out Cement	11.5 hrs.
Wait On Cement	24 hrs.
Pressure Test	2 hrs.
Logging	10 hrs.
Repairs	12 hrs.

2.17 Deviation Plot

No deviation surveys were conducted as per conventional cable tool procedure.

2.18 Suspension Program

The hole was filled with residual pit fluid to a depth of 12m from surface. Corrosion inhibitor was added to the fluid prior to capping the well. Well was capped with a 178mm x 50.8mm swage and ball valve. Well head locator and sign were attached to well head.

2.19 Well Schematic

A well schematic is attached as Figure 4.

2.20 Fluid Samples

Fluid Samples were taken from on top of the water column at 132 metres. Approximately 1 litre of oil and water was sampled from the outwash of the bailer shortly after penetrating the 195 metre interval when oil was observed coating the outside of the bailer (Sample 195 Oil). Additional oil was skimmed from the pit as an additional sample (approximately 300 millilitres) (Sample Pit). The oil is believed to be sourced from the oil show at 195 m.

2.21 Composite Well Record

A composite Well Record is included as Appendix II. A detailed stratigraphic column is included as Appendix III.

Final Well Report

Vulcan Minerals Inc. Flat Bay #1

3.00 Geology

3.00 Geology

3.01 Drill Cuttings

Drill cuttings were sampled at a minimum of 5 metre intervals. At each interval one sample of approximately 500 grams unwashed was bagged and one sample was washed and dried and placed in 25 ml vials all of which have been shipped to the Department of Mines and Energy, Government of Newfoundland and Labrador.

3.02 Cores

No cores were taken.

3.03 Lithology

A detailed description of drill cuttings was maintained and is included in Appendix IV. Roland Strickland of Stride Consulting Ltd. and Patrick Laracy provided the description of the drill cuttings.

3.04 Stratigraphic Column

A stratigraphic column chart is attached as Appendix III

3.05 Biostratigraphic Data

No biostratigrafic analysis has been carried out on the drill samples.

Final Well Report

Vulcan Minerals Flat Bay #1

4:00 Well Evaluation

4.00 Well Evaluation

4.01 Down Hole Logs

Baker Hughes carried out the geophysical logging operations on September 11, 1999 as follows:

Run # 1	Interval
Dual Induction Focused Log(Resitivity)	
Gamma Ray SP Log	125.2 m-261.1m
Run # 2	
Compensated Z – Densilog	0 – 260.8m
Compensated Neutron Log	
Gamma Ray Log	
X – Y Caliper Log	

The Neutron density log is presented with both a sandstone and limestone matrix porosity. Copies of all logs are contained in Appendix V.

4.02 Synthetic Seismogram

Not applicable

4.03 Vertical Seismic Profile

Not applicable

4.04 Velocity Surveys

Not applicable

4.05 Formation Stimulation

No Stimulation of the formation was conducted, though the well may be a candidate for fracturing and HCL acid stimulation.

4.06 Formation Flow Tests

No formation flow tests were carried out. A bail test at 195m retrieved an oil sample as discussed above – Fluid Samples.

Final Well Report

Vulcan Minerals Flat Bay # 1

5:00 Other Data

5.01 Mud Loggers Report

Not Applicable

5.02 Directional and Deviation Survey

Not applicable

5.03 Final Legal Survey

The final legal survey as carried out by Robin Davies Survey is contained in Appendix VI.

5.04 Core Photos and Analysis

Not applicable

5.05 Fluid Analysis

An oil analysis of sample195 oil is attached as Appendix VII. Further analysis, if any will be forwarded to the Department of Mines and Energy Government of Newfoundland and Labrador.

5.06 Geochemical, Biostratigraphic, Petrological, Palynogical Paleontological Reports

No analysis has yet been made and none is anticipated at this time. The stratigraphic control of this well is considered excellent based on known geochemical and petrological analysis carried out in the London Resources Test hole which this well offsets (see Final Report May 12, 1997 Test hole D. Brett)

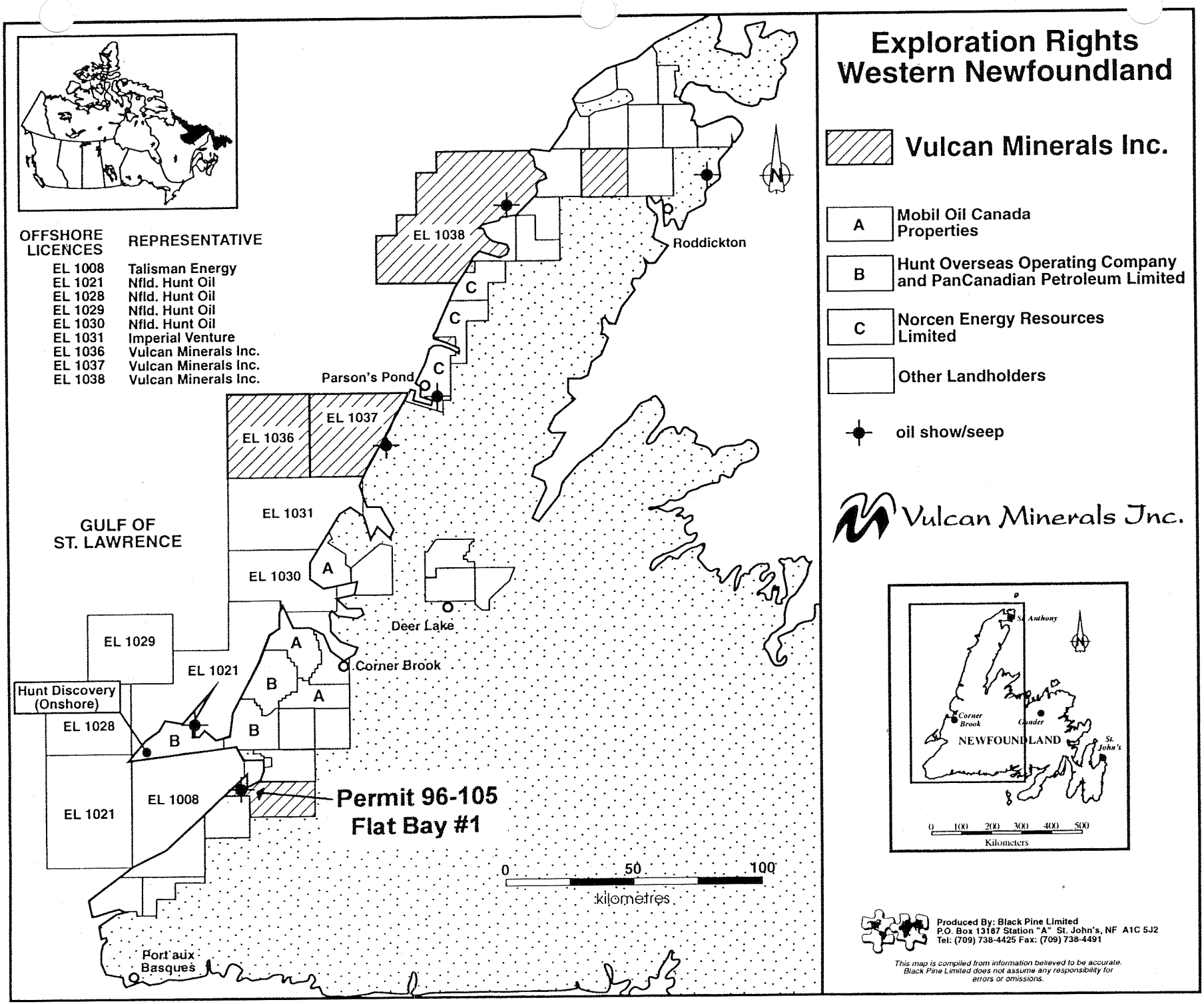
Exploration Rights
Western Newfoundland
Vulcan Minerals Inc.
A
Mobil Oil Canada Properties
B
Hunt Overseas Operating Company and PanCanadian Petroleum Limited
C
Norcen Energy Resources Limited
Other Landholders
oil show/seep
Vulcan Minerals Inc.
OFFSHORE LICENCES
REPRESENTATIVE
EL 1008 Talisman Energy
EL 1021 Nfld. Hunt Oil
EL 1028 Nfld. Hunt Oil
EL 1029 Nfld. Hunt Oil
EL 1030 Nfld. Hunt Oil
EL 1031 Imperial Venture
EL 1036 Vulcan Minerals Inc.
EL 1037 Vulcan Minerals Inc.
EL 1038 Vulcan Minerals Inc.
EL 1038
Roddickton
Parson's Pond
EL 1036
EL 1037
EL 1031
GULF OF ST. LAWRENCE
EL 1030
Deer Lake
EL 1029
EL 1021
Corner Brook
Hunt Discovery (Onshore)
EL 1028
EL 1021
EL 1008
Permit 96-105
Flat Bay #1
0 50 100
kilometres
Port aux Basques
St. Anthony
Corner Brook
Gander
NEWFOUNDLAND
St. John's
0 100 200 300 400 500
Kilometers
Produced By: Black Pine Limited
P.O. Box 13187 Station "A" St. John's, NF A1C 5J2
Tel: (709) 738-4425 Fax: (709) 738-4491
This map is compiled from information believed to be accurate. Black Pine Limited does not assume any responsibility for errors or omissions.

Figure 1

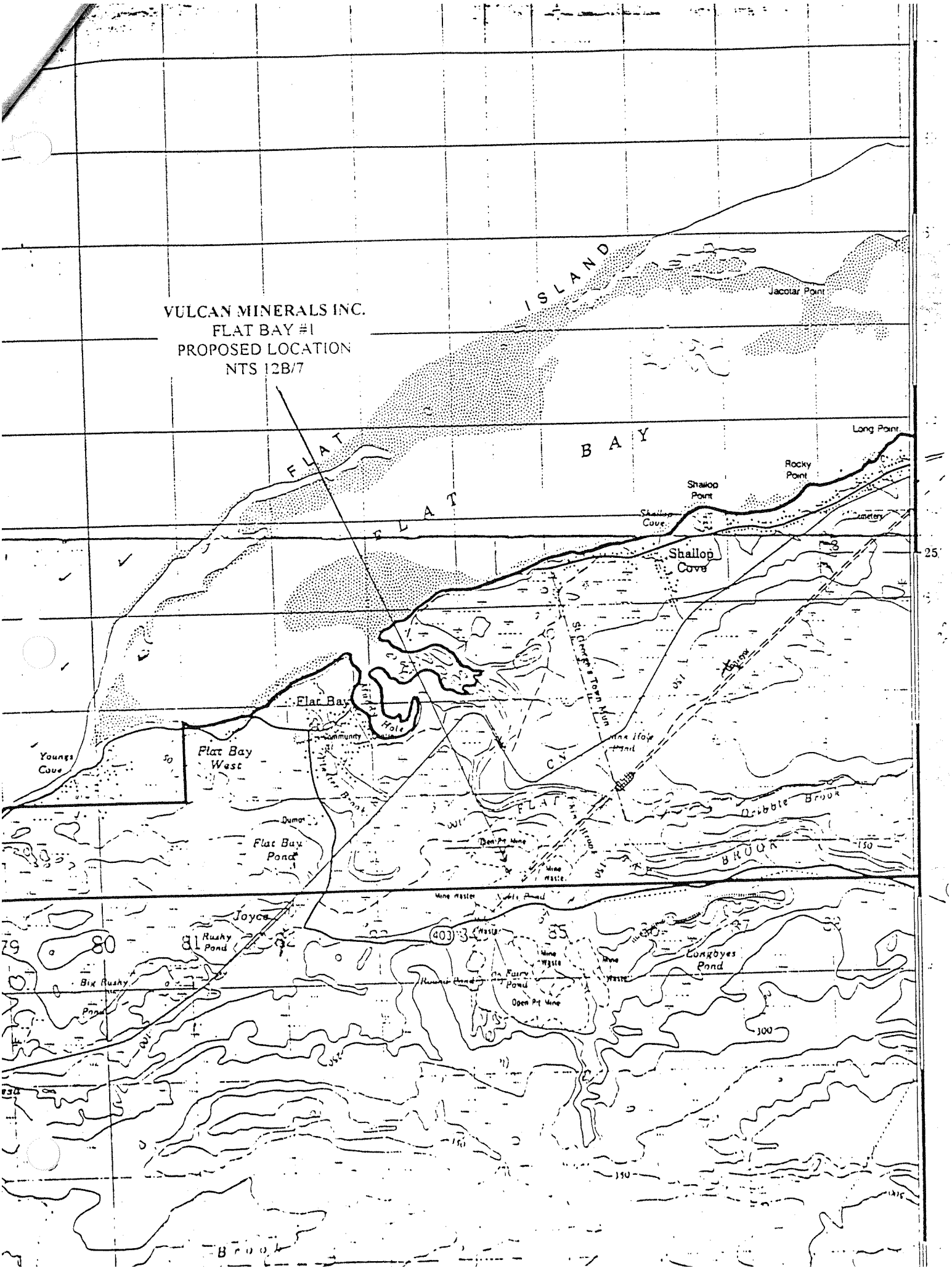
VULCAN MINERALS INC.
FLAT BAY #1
PROPOSED LOCATION
NTS 12B/7
ISLAND
Jacotar Point
FLAT
BAY
Long Point
Rocky Point
Shallop Point
Shallop Cove
Cemetery
Flat Bay
Flat Bay West
Youngs Cove
Flat Bay Pond
Joyce
Rushy Pond
Big Rushy Pond
Conboyes Pond
Dribble Brook
Open Pit Mine
Wine Waste
403
79
80
81
82
83
85
150
100

Figure 2

GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

Department of
Mines & Energy

DRILLING PROGRAM APPROVAL

APPLICATION

Pursuant to sections 8 and 9 of the *Petroleum and Natural Gas Act*[1], Vulcan Minerals Inc., as operator on behalf of London Resources Inc., holding a subsisting licence, permit or lease issued pursuant to the *Petroleum Regulations*[2], namely; 96-105 *(licence, permit, or lease #)* hereby applies for approval to conduct a drilling program using the drilling rig Eastern Oil Field (Bucyrus Erie 36L) and equipment and procedures described in the detailed program dated April 13, 1999.

The undersigned operator's Representative hereby declares that, to the best of the operator's knowledge, the information contained herein and in the attached detailed program is true, accurate and complete.

Signed: Paul R Kinsey Date: April 13/99
Operator's Representative

APPROVAL

Pursuant to sections 8 and 9 of the *Petroleum and Natural Gas Act*, the operator named in the Application is hereby authorized to conduct the proposed drilling program subject to the following conditions:

1. This Drilling Program Approval shall, unless otherwise extended or terminated, expire upon the 23rd day of July, ~~XXXX~~ 2000;
2. This Authorization shall be prominently displayed at the well site at all times during which operations are being conducted;
3. Evidence of financial responsibility, as required pursuant to Section 14 of the *Petroleum Drilling Regulations*[3], shall be provided by the operator to the Minister of Mines and Energy;
4. The operator shall use the equipment and procedures described in the detailed program dated April 13, 1999 as amended unless a change in the equipment or procedures is approved in writing by the Director; and
5. The operator shall comply with such other conditions as are appended to this Approval. See Schedule "A".

Signed: .....
Director

Effective Date: July 23, 1999

Drilling Program Approval No. 99-116-01

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[1] *R.S.N. 1990, c. P-10*
[2] *CNR 1151/96*
[3] *CNR 1150/96*

(Revised: 99-05-12)

DPA-VULC.WPD

SCHEDULE "A"

TO

DRILLING PROGRAM APPROVAL #99-116-01

OTHER CONDITIONS

1. Notwithstanding condition #4 of the Approval (see previous page), the Operator shall comply with the requirements of *The Newfoundland and Labrador Petroleum Drilling Regulations* (the Regulations) unless the Operator has received written approval from the Director to deviate from the Regulations.

2. This conditional approval is for a one-well program only. After completion of this program, the cable tool equipment and techniques employed in this program will be re-evaluated by the Department to assess suitability and acceptability for future petroleum drilling.

3. The maximum well depth under this approval will be the lesser of the depth at which the influx of fluids can be safely controlled, as indicated by a formation leak-off test, or 500 metres.

4. Prior to commencement of drilling operations, the Operator shall supply a letter of credit in the amount of $25,000 to the Department, in compliance with the requirements of subsection 14(a) of the *Petroleum Drilling Regulations*.

July 23, 1999

Figure 3

GOVERNMENT OF
NEWFOUNDLAND
AND LABRADOR

Department of
Mines and Energy

AUTHORITY TO DRILL A WELL

APPLICATION

Pursuant to sections 8 and 9 of the *Petroleum and Natural Gas Act*[1] and in compliance with section 29 of the *Petroleum Drilling Regulations*[2], Vulcan Minerals Inc., as operator, hereby applies for Authority to Drill a Well to be known as Flat Bay #1 using the equipment and procedures described in the well program dated April 13, 1999. Permit, Licence or Lease to which this Program applies: 96-105

Area: Flat Bay, Western Newfoundland Field/Pool:		**CO-ORDINATES**	
		Long: 58° 33' 48" Lat: 48° 23' 20"	**UTM** (NAD 27) Northing: 5360261.54N Easting: 384441.98E
Drilling Rig: Eastern Oil Field (Bucyrus Erie 36L) Rig Type: Cable Tool Drilling Contractor: Eastern Oil Field Services Ltd.		**ELEVATION**	**DEPTH**
		RT/KB/RF: 1.3m G.L.: 47m	T.D.: 300m TVD: 300m
ESTIMATES		**TARGET HORIZONS**	
Spud Date: May 10, 1999 Days on Location: 25 days	Well Cost: $170,000	137 metres - Anguile Conglomerate (Fischell's Brook member)	

EVALUATION PROGRAM

ten-metre sample intervals: unwashed - (palyn.)	Conventional cores at: N/A
Five-metre sample intervals: unwashed cuttings	Logs and Tests: Bail and SWAB Tests as required;
Canned sample intervals: 25ml vials-washed & dried (5-metre)	Atlas GR/N/Z Den to TD

CASING AND CEMENTING PROGRAM

O.D. (mm)	Weight (kg/m)	Grade	Setting Depth (m)	Cementing Program
219	35.7	J55	16	Drive shoe; cement squeeze if necessary
178	29.8	J55	133	Cemented to surf with 2.0 tonnes 0:1:0 + 2% $CaCl_2$ - 30% excess (1900kg/m^3)
114	14.1	J55	300	cemented to surface with 3.4 tonnes
		lpsco		0:1:4 + 1.1 tonnes 0:1:0 + 2% $CaCl_2$ - 30% excess (1719kg/m^3)

Other Equipment: Annular blowout preventer employed 203 mm Regan K type rated at 21,000 kpa

The undersigned operator's Representative hereby declares that, to the best of the Representative's knowledge, the information contained herein and in the attached detailed program is true, accurate and complete.

Signed: .....
Operator's Representative

Date: April 13/99.

AUTHORIZATION

Whereas the Minister of Mines and Energy is successor in jurisdiction to the Minister responsible for the Petroleum Directorate and has jurisdiction under the *Petroleum Drilling Regulations*, ("the Regulations").

In accordance with section 32 of the Regulations, the operator named in the Application is authorized to undertake the proposed well program described above subject to the following conditions:

1. This Authorization shall be prominently displayed at the well site at all times during which operations are being conducted;
2. Copies of all logs and well test data shall be submitted to the director by the operator promptly after their acquisition;
3. The operator shall comply with all conditions of the Drilling Program Approval No. 99-116-01 under which the above well is to be drilled;
4. No change in the well program hereby approved may be made unless it is first approved by the director in writing;
5. This Authorization is conditional upon the operator commencing drilling within 120 days of the effective Authorization date; and
6. The operator shall comply with such other conditions as are appended to this Authorization. See Schedule "A".

Signed: .....
Director

Effective Date: July 23, 1999

Authority to Drill a Well No. 99-116-01-01

[1] *R.S.N. 1990, c. P-10*

[2] *CNR 1150/96*

(Revised 97-01-20)

ADW-VUI C.WPD

SCHEDULE "A"

TO

AUTHORITY TO DRILL A WELL #99-116-01-01

OTHER CONDITIONS

1. The Operator shall, prior to commencement of major site operations, ensure that an approved Operator's representative is on site to supervise all site operations.

2. Notwithstanding condition #3 of the Authorization (see previous page), the Operator shall comply with the requirements of *The Newfoundland and Labrador Drilling Regulations* (the Regulations) unless the Operator has received written approval from the Director to deviate from the Regulations.

3. The Operator shall ensure that the well is drilled in a prudent and reasonable manner, consistent with good exploration practices and with due consideration for the safety of personnel, property and the environment.

4. The Operator shall be liable for its actions and the actions of its agents, contractors, employees and any others acting under the Operator's authority in drilling the well.

5. The Operator's liability for the actions of its agents, contractors, employees and any others acting under the Operator's authority in drilling the well does not limit any liability that those agents, contractors, employees or others acting under the Operator's authority may have to the Operator.

6. The Operator shall provide the Director with a videotape or photographs showing the final condition of the drillsite.

7. The Operator shall ensure that all necessary approvals have been acquired from other government agencies and other rights holders, in respect of access to and use of land for the purpose of the drilling operation, and disposal of all materials.

8. The Operator shall attorn to the jurisdiction of the courts of the Province of Newfoundland.

9. The Operator shall conduct the logging program from surface casing to TD, as outlined in the program, in addition to a resistivity measuring log to allow accurate calculation of fluid saturation for any potential reservoir. No deviation from this logging program shall be permitted without the written approval of the Director.

10. The operator will provide a legal survey to confirm the location of the well after the well is spudded.

11. Prior to commencing drilling operations, the Operator must present an original Insurance Certificate in the amount of $10,000,000 as per the policy wording submitted July 19, 1999 (*Canadian Petroleum Insurance Exchange*).

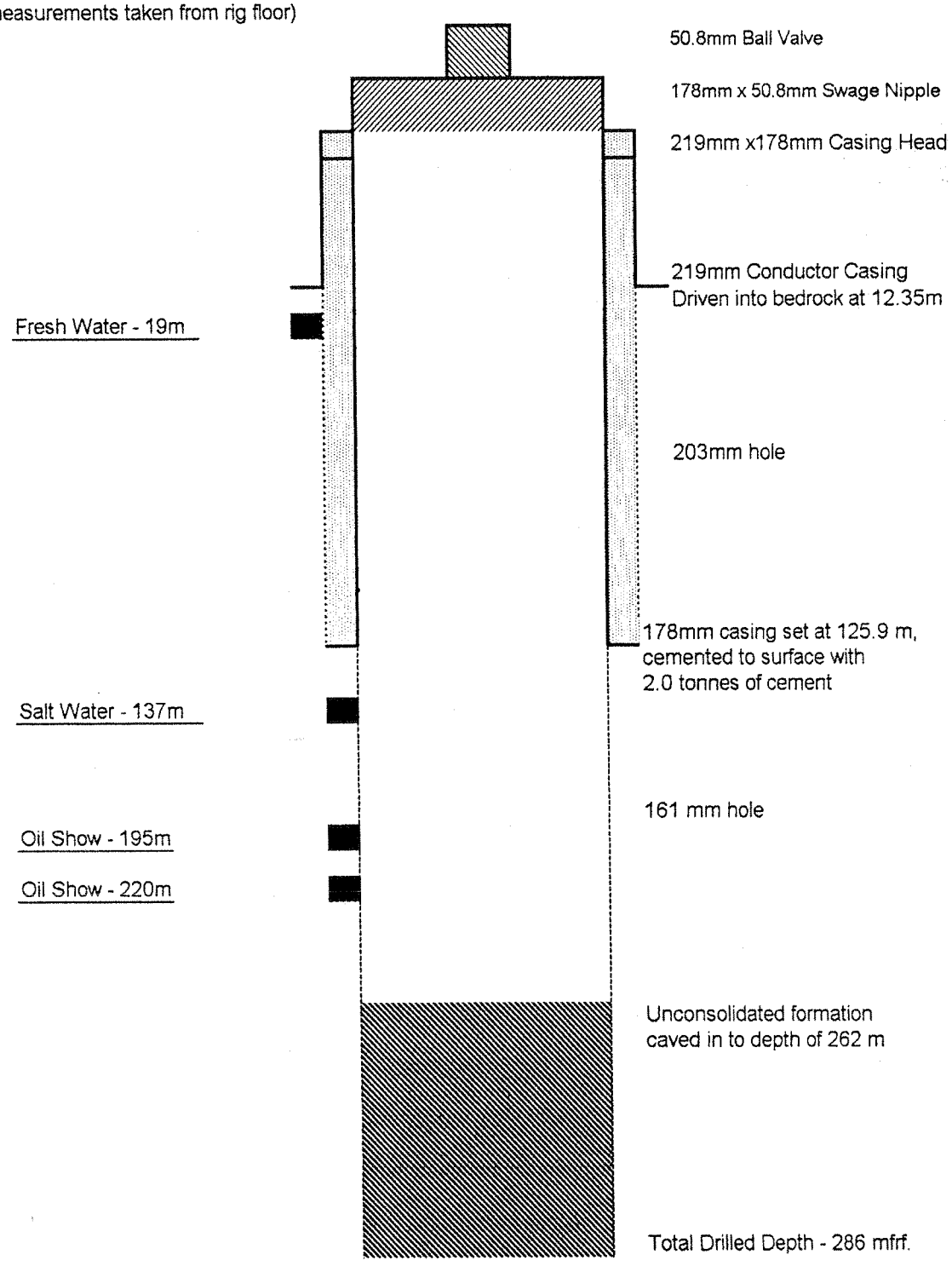
July 23, 1999

3.19

Well Schematic
Flat Bay #1

Figure 4

5360237.971 384435.373
Location: UTM ~~5360261.54~~ North, ~~38441.98~~ East
Surface Elevation: 47.0m
Rig Floor Elevation: 48.3m
(All measurements taken from rig floor)



EASTERN OILFIELD SERVICES

185 McEwan Street
Bothwell, Ontario
N0P 1C0

Phone ~ (519) 695-3852
Facsimile ~ (519) 695-3811

Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*10-Aug-99*
Total depth:	*6m*	Hole made today:	*6m*
Current formation:	*Overburden*	Formation top:	*0m*

Daily Operations:

08:00-16:00 - String up tools, align derrick, tally casing, set up bit guide, set up to drill.

16:00-20:00 - Spud-in, drill-in shoe joint (6.80m), casing following as hole is drilled.

08:00 Status: *(11-Aug-99) Will resume drilling after setting up rig shanty, depth – 6m.*

24 Hr. Forecast: *Continue drilling, bailing, running conductor casing.*

EASTERN OILFIELD SERVICES

185 McEwan Street
Bothwell, Ontario
N0P 1C0

Phone ~ (519) 695-3852
Facsimile ~ (519) 695-3811

Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*11-Aug-99*
Total depth:	*9m*	Hole made today:	*3m*
Current formation:	*Overburden*	Formation top:	*0m*

Daily Operations:

08:00-12:00 - Set up rig shanty.
12:00-14:00 - Repair sand reel clutch.
14:00-20:00 - Drilling and bailing,

08:00 Status: *(12-Aug-99) Resume drilling, depth – 9m.*
24 Hr. Forecast: *Continue drilling, bailing, running conductor casing, (0800-2000 hrs., until bedrock is encountered).*

EASTERN OILFIELD SERVICES

185 McEwan Street
Bothwell, Ontario
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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*12-Aug-99*
Total depth:	*12m*	Hole made today:	*3m*
Current formation:	*Overburden*	Formation top:	*0m*

Daily Operations:

08:00-20:00 - *Drilling and bailing, driving conductor string (driving hard at 11m), set up forge house.*

Weather: *Winds light, temperature – low 12° C, high 24° C.*

08:00 Status: *(13-Aug-99) Resume drilling, depth – 12m.*
24 Hr. Forecast: *Continue drilling, bailing, running conductor casing, (0800-2000 hrs. until bedrock is encountered).*

EASTERN OILFIELD SERVICES

Phone ~ (519) 695-3852
Facsimile ~ (519) 695-3811

185 McEwan Street
Bothwell, Ontario
N0P 1C0

Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*13-Aug-99*
Total depth:	*19m*	Hole made today:	*7m*
Current formation:	*Gypsum*	Formation top:	*12m*

Daily Operations:

08:00-20:00 - *Drilling and bailing, driving conductor string (quit driving at 12.5m), continue drilling 203mm open hole into gyp. / lime conglomerate.*

Weather: *Rain showers, temperature – low 13° C, high 22° C.*

08:00 Status: *(14-Aug-99) Resume drilling, depth – 19m.*
24 Hr. Forecast: *Cut 219mm casing below grade, install weld-on coupling, head up and install diverter line, continue drilling, bailing.*

EASTERN OILFIELD SERVICES

185 McEwan Street
Bothwell, Ontario
N0P 1C0

Phone ~ (519) 695-3852
Facsimile ~ (519) 695-3811

Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*14-Aug-99*
Total depth:	*23m*	Hole made today:	*4m*
Current formation:	*Gypsum*	Formation top:	*12m*

Daily Operations:

09:00-12:00 -	*Cut conductor casing below grade and have weld-on coupling installed.*
12:00-16:00 -	*Install drill spool, drill valve and annular bop.*
16:00-24:00 -	*Drilling and bailing (gypsum / lime conglomerate). Hole is making water from depth of 19m depth, level rose to 2m from rig floor at 23m.*
Weather:	*Rain showers, temperature – low 14° C, high 23° C.*

08:00 Status:	*(15-Aug-99) Resume drilling, depth – 28m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*15-Aug-99*
Total depth:	*38m*	Hole made today:	*15m*
Current formation:	*Gypsum*	Formation top:	*12m*

Daily Operations:

00:00--24:00 - *Drilling and bailing (gypsum / lime conglomerate).*

Weather: *Rain showers, temperature – low 16° C, high 20° C.*

08:00 Status: *(16-Aug-99) Drilling, depth – 43m.*
24 Hr. Forecast: *Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*16-Aug-99*
Total depth:	*52m*	Hole made today:	*14m*
Current formation:	*Codroy Road*	Formation top:	*12m*

Daily Operations:

00:00--24:00 -	*Drilling and bailing 203mm hole (gypsum / lime conglomerate).*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0.6m / hour*
Bit change:	*42m, 47m, 52m.*
Weather:	*Rain showers, temperature – low 16° C, high 18° C.*

08:00 Status:	*(17-Aug-99) Drilling, depth – 56m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*17-Aug-99*
Total depth:	*70m*	Hole made today:	*18m*
Current formation:	*Codroy Road*	Formation top:	*12m*

Daily Operations:

00:00--24:00 -	*Drilling and bailing 203mm hole (gypsum / lime conglomerate).*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0.75m / hour*
Bit change:	*59m, 67m.*
Weather:	*Rain showers, temperature – low 11° C, high 24° C.*

08:00 Status:	*(18-Aug-99) Drilling, bailing, depth – 76m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*18-Aug-99*
Total depth:	*90m*	Hole made today:	*20m*
Current formation:	*Codroy Road*	Formation top:	*12m*

Daily Operations:

00:00--24:00 -	*Drilling and bailing 203mm hole (gypsum / lime conglomerate).*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0.8m / hour*
Bit change:	*85m.*
Weather:	*Rain showers, temperature – low 14° C, high 23° C.*

08:00 Status:	*(19-Aug-99) Drilling, bailing, depth – 96m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*19-Aug-99*
Total depth:	*109m*	Hole made today:	*19m*
Current formation:	*Codroy Road*	Formation top:	*12m*

Daily Operations:

00:00--24:00 -	*Drilling and bailing 203mm hole (anhydrite / lime conglomerate).*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0.8m / hour*
Bit change:	*95m.*
Weather:	*Rain showers, temperature – low 14° C, high 21° C.*

08:00 Status:	*(20-Aug-99) Drilling, bailing, depth – 116m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*20-Aug-99*
Total depth:	*127m*	Hole made today:	*18m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

00:00--24:00 -	*Drilling and bailing 203mm hole (anhydrite / lime conglomerate, brown lime at 123m).*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0.75m / hour*
Bit change:	*122m.*
Weather:	*Windy, temperature – low 16° C, high 22° C.*

08:00 Status:	*(21-Aug-99) Set up to run casing, depth – 127m.*
24 Hr. Forecast:	*Run 178mm casing, wait on cement.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*21-Aug-99*
Total depth:	*127m*	Hole made today:	*0m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

08:00-17:00 -	*String-in hole, tear down well head assembly, conduct prejob meeting, RIH -124.67m of 178mm casing, head up, establish circulation and pump $2m^3$ preflush, mix and pump $1.5m^3$ slurry, 2% $CaCl_2$, displace with $2.45m^3$ fresh water, $0.3m^3$ good cement returns to surface.*
17:00-24:00 -	*Wait on cement.*
Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0m / hour*
Bit change:	*None*
Weather:	*Calm, temperature – low 12° C, high 24° C.*
08:00 Status:	*(22-Aug-99) Waiting on cement, depth – 127m.*
24 Hr. Forecast:	*Wait on cement.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*23-Aug-99*
Total depth:	*127m*	Hole made today:	*0m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

08:00-20:00 - *Drill and case mouse hole. Install drill spool, drill valve, and bop. Measure depth to cement (115m). Set up and pressure test 178mm casing and well head assembly to 6,3000 kPa at surface. Install flanges, swages, etc., for stub lubricator. Dress 161mm bit.*

Drill string:	*Socket, stem and bit (7.85m, 1500 kg.)*
Rate:	*0m / hour*
Bit change:	*None*
Weather:	*Light winds, temperature – low 14° C, high 21° C.*

08:00 Status:	*(24-Aug-99) Resume drilling operations, depth – 127m.*
24 Hr. Forecast:	*Drill out cement residue, float collar, guide shoe and wiper plug. Perform pressure integrity test on formation below 178mm casing. Bail hole dry and continue drilling.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*24-Aug-99*
Total depth:	*127m*	Hole made today:	*0m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

08:00-17:00 -	*Set swivel socket, string up 161mm tools and bailer, install stub lubricator, drilling out wiper plug, cement, etc.*
17:00-24:00 -	*Shut down for repairs to spudding clutch.*
Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0m / hour*
Bit change:	*None*
Weather:	*Light winds, temperature – low 15° C, high 21° C.*
08:00 Status:	*(25-Aug-99) Disassemble spudding clutch from jack shaft, depth – 127m.*
24 Hr. Forecast:	*Wait for clutch parts to be shipped out.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*25-Aug-99*
Total depth:	*127m*	Hole made today:	*0m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

08:00-12:00 - Disassemble spudding clutch from jack-shaft.
12:00-24:00 - Shut down until parts arrive on Friday.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0m / hour*
Bit change:	*None*
Weather:	*Light winds, temperature – low 12° C, high 23° C.*

08:00 Status:	*(26-Aug-99) Waiting on parts for clutch, depth – 127m.*
24 Hr. Forecast:	*Wait for clutch parts to be shipped out.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*27-Aug-99*
Total depth:	*127m*	Hole made today:	*2m*
Current formation:	*Ship Cove*	Formation top:	*123m*

Daily Operations:

08:00-12:00 -	*Reassemble clutch and shields.*
12:00-21:00 -	*Drill out cement and 0.5m of new formation.*
21:00-21:30 -	*Perform P.I.T. on formation at 178mm casing seat to 1,050 kPa at surface, hold for 15 minutes.*
21:30-22:30	*Bail hole dry.*
22:30-24:00	*Drilling and bailing.*

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*1m / hour*
Bit change:	*None*
Weather:	*Windy, temperature – low 14° C, high 23° C.*

08:00 Status:	*(28-Aug-99) Drilling and bailing, depth – 132m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*28-Aug-99*
Total depth:	*140m*	Hole made today:	*11m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - *Drilling and bailing. Salt water encountered at depth of 137m (115mfrf).*

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*132m*
Weather:	*Rain showers, temperature – low 15° C, high 23° C.*

08:00 Status:	*(29-Aug-99) Drilling and bailing, depth – 145m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*29-Aug-99*
Total depth:	*150m*	Hole made today:	*10m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*147m, 149m.*
Weather:	*Rain showers, temperature – low 15° C, high 20° C.*

08:00 Status:	*(30-Aug-99) Drilling and bailing, depth – 155m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*30-Aug-99*
Total depth:	*162m*	Hole made today:	*12m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*152m, 155m, 157m, and 159m.*
Weather:	*Windy, temperature – low 14° C, high 19° C.*

08:00 Status:	*(31-Aug-99) Drilling and bailing, depth – 167m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*31-Aug-99*
Total depth:	*176m*	Hole made today:	*14m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.6m / hour*
Bit change:	*165m, 170m, and 173m.*
Weather:	*Light winds, temperature – low 7° C, high 19° C.*

08:00 Status:	*(01-Sept-99) Drilling and bailing, depth – 179m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*01-Sept-99*
Total depth:	*188m*	Hole made today:	*12m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*179m, 181m, 184m, and 188m.*
Weather:	*Light winds, temperature – low 9° C, high 21° C.*

08:00 Status:	*(02-Sept-99) Drilling and bailing, depth – 192m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*02-Sept-99*
Total depth:	*199m*	Hole made today:	*11m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - *Drilling and bailing (small show of oil on top of fluid column at depth of 195m, < 1gal.).*

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*192m, 195m, and 199m.*
Weather:	*Light winds, temperature – low 13° C, high 24° C.*

08:00 Status:	*(03-Sept-99) Drilling and bailing, depth – 203m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*03-Sept-99*
Total depth:	*212m*	Hole made today:	*13m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*201m, 203m, 206, 209, and 212m.*
Weather:	*Light winds, temperature – low 14° C, high 26° C.*

08:00 Status:	*(04-Sept-99) Drilling and bailing, depth – 215m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*04-Sept-99*
Total depth:	*223m*	Hole made today:	*11m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*218m, 220m, and 223m.*
Weather:	*Light winds, temperature – low of 8° C, high of 19° C.*

08:00 Status:	*(05-Sept-99) Drilling and bailing, depth – 227m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*05-Sept-99*
Total depth:	*237m*	Hole made today:	*14m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.6m / hour*
Bit change:	*227m, 230m, 233m, and 235m.*
Weather:	*Rain showers, temperature – low of 15° C, high of 20° C.*

08:00 Status:	*(06-Sept-99) Drilling and bailing, depth – 242m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*06-Sept-99*
Total depth:	*250m*	Hole made today:	*13m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*238m, 242m, 245m, 247m, and 250m.*
Weather:	*Light winds, temperature – low of 17° C, high of 21° C.*

08:00 Status:	*(07-Sept-99) Drilling and bailing, depth – 253m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*07-Sept-99*
Total depth:	*261m*	Hole made today:	*11m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.5m / hour*
Bit change:	*252m, 256m, and 259m.*
Weather:	*Rain showers, temperature – low of 14° C, high of 21° C.*

08:00 Status:	*(08-Sept-99) Drilling and bailing, depth – 265m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*08-Sept-99*
Total depth:	*275m*	Hole made today:	*14m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-24:00 - Drilling and bailing.

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0.6m / hour*
Bit change:	*263m, and 268m.*
Weather:	*Rain showers, temperature – low of 14° C, high of 20° C.*

08:00 Status:	*(09-Sept-99) Drilling and bailing, depth – 282m.*
24 Hr. Forecast:	*Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*09-Sept-99*
Total depth:	*286m*	Hole made today:	*11m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-11:00 - Drilling and bailing.
11:00-13:00 - Stuck in hole, run bumper, hole bailed dry, 3m of cave in.
13:00-24:00 - Add 20 bbls. of fresh water, drilling out cave in.

Drill string: Socket, jars, stem and bit 10.5m, 1500 kg.)
Rate: 0.5m / hour
Bit change: 277m, and 284m.
Weather: Rain showers, temperature – low of 10° C, high of 15° C.

08:00 Status: *(10-Sept-99) Drilling out cave in, depth – 280m.*
24 Hr. Forecast: *Drilling and bailing.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*10-Sept-99*
Total depth:	*286m*	Hole made today:	*0m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

00:00-20:00:00 - Drilling and bailing out cave in.
20:00-24:00 - Stand by to log hole.

Drill string: Socket, jars, stem and bit 10.5m, 1500 kg.)
Rate: 0m / hour
Bit change: 286m.
Weather: Calm, temperature – low of 14° C, high of 19° C.

08:00 Status: *(11-Sept-99) Set up to log, depth – 286m.*
24 Hr. Forecast: *Log hole, rig out logger's, wait on instructions.*

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Daily Rig Report

Well name:	*Flat Bay #1*	Permit Number:	*96-105*
Spud date:	*10-Aug-99*	Report date:	*11-Sept-99*
Total depth:	*286m*	Hole made today:	*0m*
Current formation:	*Fischels Brook*	Formation top:	*137m*

Daily Operations:

08:00-17:00 - *Set up and log well, rig out loggers, top well with fresh water. Hole was caved back to depth of 262mfrf.*

Drill string:	*Socket, jars, stem and bit 10.5m, 1500 kg.)*
Rate:	*0m / hour*
Bit change:	*N/A.*
Weather:	*Windy, temperature – low of 16° C, high of 26° C.*

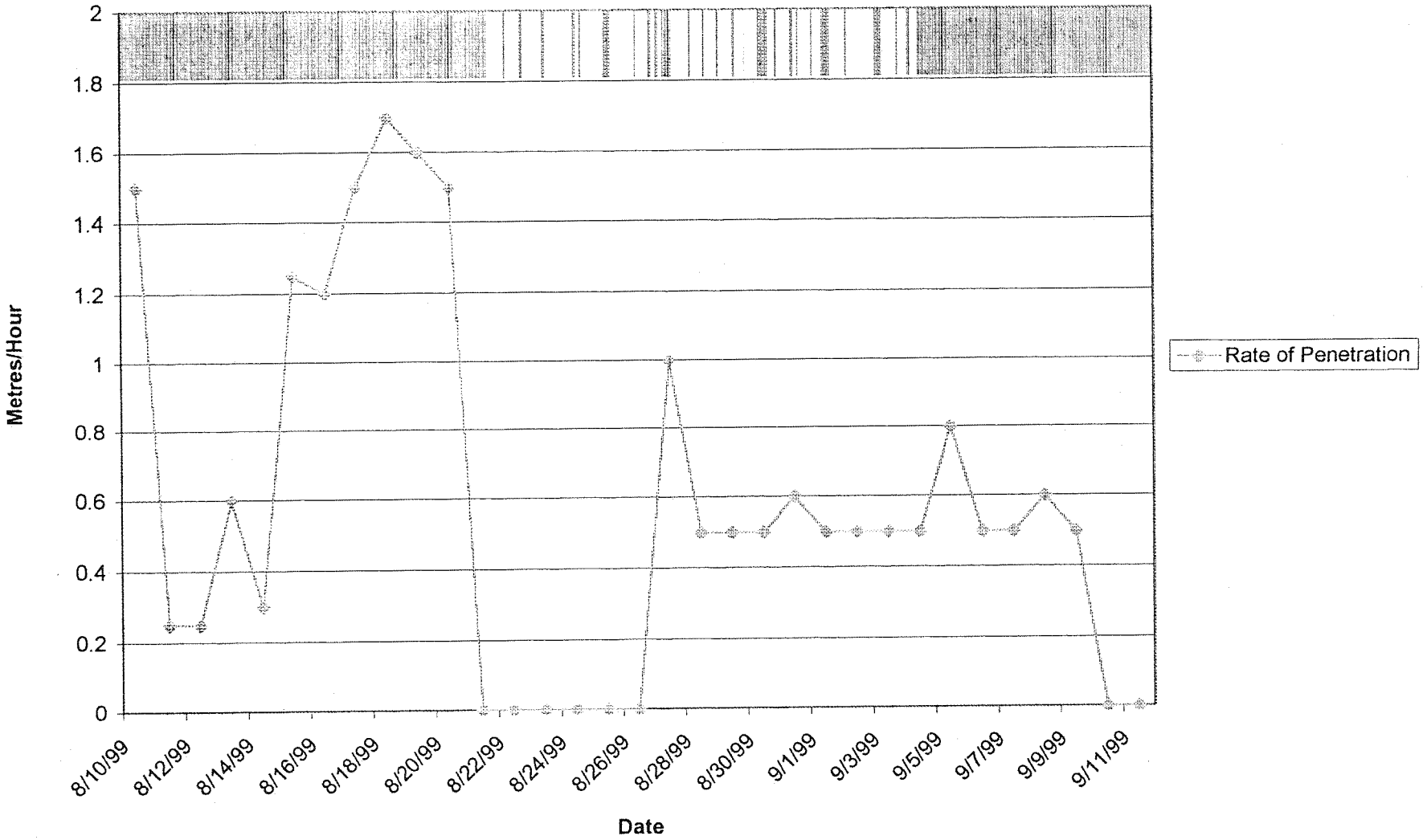
08:00 Status:	*(12-Sept-99) Tear down for rig out.*
24 Hr. Forecast:	*Load up for rig out.*

Composite Well Record

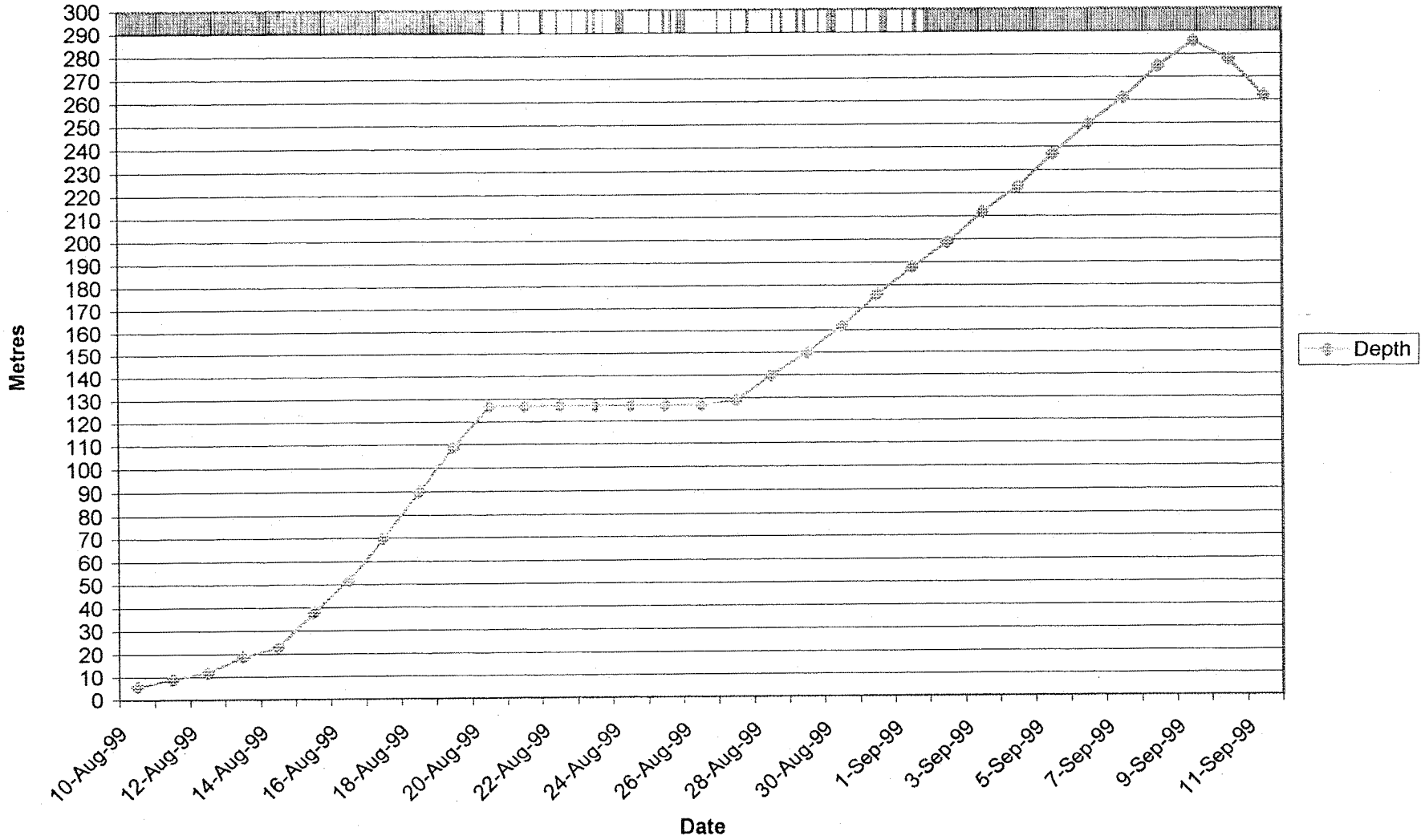
Flat Bay #1

Date M/D/Y	Depth Metres	Rate of Penetration Metres/Hour	Bit Changes Metres	Casing Points (Size) Metres
10-Aug-99	6	1.5		
11-Aug-99	9	0.25		
12-Aug-99	12	0.25		
13-Aug-99	19	0.6	12, 19	(219) 12.35
14-Aug-99	23	0.3		
15-Aug-99	38	1.25	26, 29, 34, 38	
16-Aug-99	52	1.2	42, 47, 52	
17-Aug-99	70	1.5	59, 67	
18-Aug-99	90	1.7	79, 85	
19-Aug-99	109	1.6	95	
20-Aug-99	127	1.5	122	
21-Aug-99	127	0		(178) 125.90
22-Aug-99	127	0		
23-Aug-99	127	0		
24-Aug-99	127	0		
25-Aug-99	127	0		
26-Aug-99	127	0		
27-Aug-99	129	1		
28-Aug-99	140	0.5	134	
29-Aug-99	150	0.5	146, 148, 150	
30-Aug-99	162	0.5	152, 155, 157, 159	
31-Aug-99	176	0.6	165, 170, 173	
1-Sep-99	188	0.5	179, 181, 184, 188	
2-Sep-99	199	0.5	192, 195, 199	
3-Sep-99	212	0.5	201, 203, 206, 209, 212	
4-Sep-99	223	0.5	218, 220, 223	
5-Sep-99	237	0.8	227, 230, 233, 235	
6-Sep-99	250	0.5	238, 242, 245, 247, 250	
7-Sep-99	261	0.5	252, 256, 259	
8-Sep-99	275	0.6	263, 268	
9-Sep-99	286	0.5	277, 284	
10-Sep-99	278	0		
11-Sep-99	262	0		

Compsite Well Record (Flat Bay #1)



Composite Well Record(Flat Bay #1)



Appendix IV

Geologic Descriptions:

0 - 10 metres

overburden – glacial till

10 – 12 metres

overburden – till

12 – 19 m Codroy Road Fm)

gypsum: 90 % - white microcrystalline lesser red-grey gypsum
sandstone: 10% - quartz rich medium to coarse grained

19 – 27 m

Gypsum: white powdery gypsum, red and gray crystalline gypsum mixed with shaley and limestone interlaminae. White gypsum: 20 – 50%

27 – 43 m

Gypsum as above with shaley and limestone interlaminae

43 – 56 m

Gypsum interlaminae of limestone and shale as above

60 – 75 m

White massive to powdery gypsum, occasional red and grey crystalline gypsum, occasional to frequent dark grey shale and limestone inter-laminae with white gypsum. From 70 – 75 m occasional blue – grey laminae of anhydrite.

75 –85 m Gypsum

White massive to powdery gypsum, occasional red and grey crystalline gypsum, occasional to frequent dark grey shale and limestone inter-laminae with white gypsum. Occasional blue – grey laminae of anhydrite.

85 – 95 m Anhydrite

White, slightly blue – grey massive anhydrite, occasional crystalline, glassy appearance, slightly mottled. Minor white, red – grey gypsum with inter – laminae of shale – limestone.

95 – 115 Anhydrite

White, blue – grey, massive anhydrite, frequently crystalline, glassy appearance, slightly mottled, Minor white, red – grey gypsum with frequent inter – laminae of shale – limestone.

115 – 120 m Anhydrite

White, blue – grey, massive anhydrite, frequently crystalline, glassy appearance slightly mottled. Frequent inter – laminae of shale – limestone.

120 – 125 m 60% Anhydrite, 40% Limestone (gradational into Ship Cove Fm)

Anhydrite: white, blue grey, massive, frequently crystalline, hard, laminated, slightly mottled, Frequent inter – laminae of shale – limestone.

Limestone: dark grey, brown, micro – crystalline to crystalline, hard, laminated, slightly brecciated, frequent grey – green shale.

125 – 127 m Anhydrite

White, blue – grey, massive anhydrite, frequently crystalline, slightly mottled. Frequent inter – laminae of shale – limestone. Occasional dark grey to light brown limestone, laminated, slightly brecciated.
No visible porosity. Slow yellow cut fluorescence.

127 – 132 m 70% Anhydrite, 30% Limestone

Anhydrite: white, blue – grey, massive, frequently crystalline, slightly mottled. frequent inter – laminae of shale – limestone.

Limestone: dark grey, brown, micro – crystalline to crystalline, hard, laminated, slightly brecciated, occasional grey – green shale.
No visible porosity. Slow yellow cut fluorescence.

132 – 137 m 80 % Limestone 20 % Anhydrite (Top of Ship Cove Fm 132 m)

Limestone: dark grey, brown, micro – crystalline to crystalline, hard, laminated, slightly brecciated, occasional grey – green shale.
No visible porosity. Slow yellow cut fluorescence.

137 – 142 m 60% Limestone 40% Sandstone

Limestone: Dark grey, brown, micro – crystalline to crystalline, hard, laminated, slightly brecciated, occasional grey - green shale.

Sandstone: dark grey, green – grey, massive, hard, fine to medium grained, sub – angular to sub – rounded, medium to poorly sorted, very well cemented with silica – calcite, slightly conglomeratic, occasional dark brown chert.
No visible porosity. Slow yellow cut fluorescence.
Formational water encountered at 137m to 140 m. Thirty metres (30m) of water remain in the hole.

142 – 152 m Conglomerate/Sandstone: (Top Spout Falls Fm-Fischell's Brook Member)

60% white and clear quartz and orange K- feldspar grains, ? plagioclase grains. minor accessory minerals – medium grained.
40 % Lithic rock fragments – quartzite, limestone, dolomite, igneous (granite, minor mafics). Calcareous cement on grains, no visible granular porosity; good yellow – white natural fluorescence. Very fast white-yellow streaming-jumping cut fluorescence. 30%.

152 – 164 m Conglomerate/Sandstone

Same as above 142 – 152m

164 – 178 m Conglomerate – Sandstone

60 – 70% white, clear, rose quartz grains, orange K- Feldspar, ? plagioclase, calcite grains, some angular quartz grains – generally medium grained, subangular – subrounded – poor sorting; minor accessory grains, ? glauconite (reworked)
30 – 40% Lithic Rock fragments – quartzite, limestone/dolomite, sandstone (minor igneous – mafics) granular calcareous cement on grains, no visible porosity.
Fast to very fast yellow cut fluorescence.

183 – 188 m Sandstone: Conglomeratic

Sandstone: white, frequently clear, fine to medium grained, quartzitic, angular to sub-rounded, medium sorted, hard, calcareous – silica cemented, frequent orange K-Feldspar, minor lithic and mafic grains, occasional fragments of limestone dolomite.
No visible porosity, very fast to fast bright yellow cut fluorescence.

188 – 193 Sandstone: Conglomeratic

Sandstone: white, clear, reddish – brown, fine to medium grained, grading to coarse grained, quartzitic, angular to sub-rounded, medium sorted, hard, vitreous, calcareous – silica cemented, frequent orange K-feldspar, minor lithic and mafic grains.
No visible porosity, slow yellow cut fluorescence

193 – 198 m Sandstone: Conglomeratic

Sandstone: reddish – brown, white clear, arkosic orange, fine to medium grained, angular to sub – rounded, medium sorted, hard, vitreous, quartzitic, calcareous – silica cemented, occasional lithic and mafic grains with fine grained pyrite, occasional grey to light brown limestone-dolomite fragments. No visible porosity, fast bright yellow cut fluorescence.

198 – 201 m Sandstone: Conglomeratic

Sandstone: reddish – brown, white clear, arkosic orange, fine to medium grained, angular to sub – rounded, medium sorted, hard, vitreous, quartzitic, calcareous – silica cemented, occasional grey to light brown limestone – dolomite fragments. No visible porosity, slow yellow cut fluorescence.

201 – 203 m Sandstone: Conglomeratic

Sandstone: reddish – brown, white, buff, clear, arkosic orange, fine to medium grained, grading to coarse grained, angular to sub – rounded, medium sorted, hard, vitreous, translucent quartzitic lenses, calcareous – silica cemented, frequent grey to light brown limestone-dolomite fragments, frequent lithic and mafic grains with pyrite. No visible porosity, slow yellow cut fluorescence.

203 – 206 Sandstone:

Sandstone: white, buff, reddish brown, clear, fine to medium grained, angular to sub-angular, poor-medium sorted, hard, vitreous, translucent quartzitic lenses, calcareous – silica cemented, occasional grey to light brown limestone-dolomite and green lithic and mafic fragments. No visible porosity, slow yellow cut fluorescence.

206 – 209 Sandstone Conglomeratic

Sandstone: buff, white, reddish brown, clear, arkosic orange, fine to medium grained, grading to coarse grained, angular to sub-angular, poor-medium sorted, hard, viterous, frequent translucent quartzitic lenses, calcareous – silica cemented,

frequent grey to light brown limestone-dolomite and green – white lithic an mafic fragments. No visible porosity, very slow faint yellow cut fluorescence.

209 – 214 m Sandstone: Conglomeratic

Sandstone: Buff, white, reddish brown, pink, clear, arkosic orange, fine to medium grained, angular to sub-angular, poor-medium sorted, very hard, abundantly vitreous, frequent translucent quartzitic lenses,calcareous – silica cemented, occasional grey to light brown limestone-dolomite and green-white lithic and mafic fragments, minor K – feldspar. No visible porosity, no cut fluorescence.

214 – 218 m Sandstone: Conglomeratic

Sandstone: Buff, white, reddish brown, pale green, pink, clear, quartz, arkosic orange, fine to medium grained, grading to coarse grained, angular to sub – rounded, poor-medium sorted, hard, vitreous, minor quartzitic lenses, calcareous – silica cemented, occasional grey, massive, slightly oolitic limestone and light brown dolomitic – limestone, frequent green-white lithic and mafic fragments, occasional K – feldspar, minor dark grey shale and light brown chert. No visible porosity, no cut fluorescence.

218 – 223 m Sandstone: Conglomeratic

Sandstone: Buff, white, reddish brown, pale green, pink, clear, quartz, arkosic orange, fine to medium grained, grading to coarse grained, angular to sub – rounded, poor-medium sorted, hard, vitreous, minor quartzitic lenses, calcareous – silica cemented, abundantly grey, massive, slightly oolitic limestone and light brown dolomitic – limestone, frequent green-white lithic and mafic fragments, occasional K – feldspar. No visible porosity, no cut fluorescence.

223 – 228 m Sandstone: Conglomeratic

Sandstone: buff, reddish brown, white, pale green, pink, clear, quartz, arkosic orange, fine to medium grained, grading to coarse grained, angular to sub – rounded, poor- sorted, hard, viterous, minor quartzitic lenses, calcareous – silica cemented, occasional grey, massive, limestone and light brown dolomitic – limestone, frequent green-white lithic and mafic fragments, occasional fragments of orange-red K – feldspar with associated glassy quartz and dark grey mafics. No visible porosity, no cut fluorescence

228 – 233 m Sandstone: Conglomeratic

Sandstone: buff, white, reddish brown, pink, pale green, clear, quartz, fine to medium grained, angular to sub-rounded, poorly sorted, hard, vitreous, slightly quartzitic, calcareous – silica cemented, occasional grey, massive limestone and light brown dolomitic – limestone, occasional green-white lithic and mafic

fragments, frequent fine to medium grained K-feldspar groundmass. No visible porosity, faint yellow cut fluorescence

233 – 238 m Sandstone: Conglomeratic

Sandstone: reddish brown, buff, pink, pale green, clear quartz, fine to medium grained, angular to sub-anglular, poorly sorted, hard, vitreous, slightly quartzitic, calcareous – silica cemented, abundant medium to fine grained groundmass of orange, angular K – feldspar, frequent green-white lithic-mafic fragments, frequent grey, massive limestone and light brown dolomitic-limestone. No visible porosity, faint cut fluorescence.

238 – 243 m Sandstone: Conglomeratic

Sandstone: reddish brown, buff, pink, white, fine to medium grained, grading to coarse grained, angular to sub-rounded, poorly sorted, hard, vitreous, slightly quartzitic, calcareous – silica cemented, arkosic orange, occasional medium to fine grained groundmass of angular K-feldspar, frequent green-white, dark grey lithic-mafic fragments, minor grey, massive limestone and light brown dolomitic-limestone. No visible porosity, faint yellow cut fluorescence

243 – 248 m Sandstone: Conglomeratic

Sandstone: reddish brown, buff, pink, white, fine to medium grained, grading to coarse grained, angular to sub-rounded, poorly sorted, hard, vitreous, slightly quartzitic, calcareous – silica cemented, arkosic orange, occasional medium to fine grained groundmass of angular K-felkspar, frequent green-white, dark grey lithic-mafic fragments, minor grey, massive limestone and light brown dolomitic-limestone. No visible porosity, faint yellow cut fluorescence

248 – 253 m Sandstone: Conglomeratic

Sandstone: reddish brown, orange, pink, buff, white, medium to coarse grained, angular to sub-rounded, poorly sorted, occasional vitreous, slightly quartzitic, calcareous – silica cemented, arkosic orange, occasional medium to fine grained angular K-feldspar, frequent green-white, dark grey lithic –mafic fragments, minor grey, massive limestone and light brown dolomitic-limestone. No visible porosity, faint yellow cut fluorescence.

253 – 258 m Sandstone: Conglomeratic

Sandstone: buff, reddish brown, white, pink, fine to medium grained,angular to sub-rounded, poorly sorted, occasional vitreous, slightly quartzitic, calcareous – silica cemented, arkosic orange, occasional medium to fine grained angular K-feldspar, frequent green-white, dark grey lithic –mafic fragments, minor grey, massive limestone and light brown dolomitic-limestone. No visible porosity, faint yellow cut fluorescence.

258 – 263 m Sandstone: Conglomeratic

Sandstone: reddish brown, orange, buff, white, pink, medium to coarse grained, angular to sub-rounded, poorly sorted, occasional vitreous, slightly quartzitic, calcareous – silica cemented, abundantly arkosic orange, occasional medium to fine grained angular K-feldspar, frequent white-green, lithic –mafic fragments, minor limestone-dolomite. No visible porosity, slow yellow cut fluorescence.

263 – 268 m Sandstone: Conglomeratic

Sandstone: reddish brown, orange, pink, buff, white, abundantly arkosic, fine to medium grained, unconsolidated, angular to sub-rounded, poorly sorted, calcareous cemented, minor medium to fine grained angular K-feldspar, occasional white-green, lithic-mafic fragments, minor limestone-dolomite. No visible porosity, faint spot yellow cut fluorescence.

268 – 273 m Sandstone: Conglomeratic

Sandstone: reddish brown, orange, pale pink, buff, white, abundantly arkosic, fine to medium grained, unconsolidated, angular to sub-rounded, poorly sorted, calcareous cemented, minor medium to fine grained angular K-feldspar, frequent white-green, lithic-mafic fragments, frequent white plagioclase fragments. No visible porosity, faint spot yellow cut fluorescence.

273 – 278 m Sandstone: Conglomeratic

Sandstone: reddish brown, orange, pale pink, buff, white, abundantly arkosic, fine to medium grained, grading to coarse grained, unconsolidated, angular to sub-rounded, poorly sorted, calcareous cemented, frequently associated white-green, lithic-mafic fragments, minor medium to fine grained angular K-feldspar, frequent white plagioclase fragments. Poor porosity, slow bright yellow cut fluorescence.

278 – 283 m Sandstone: Conglomeratic

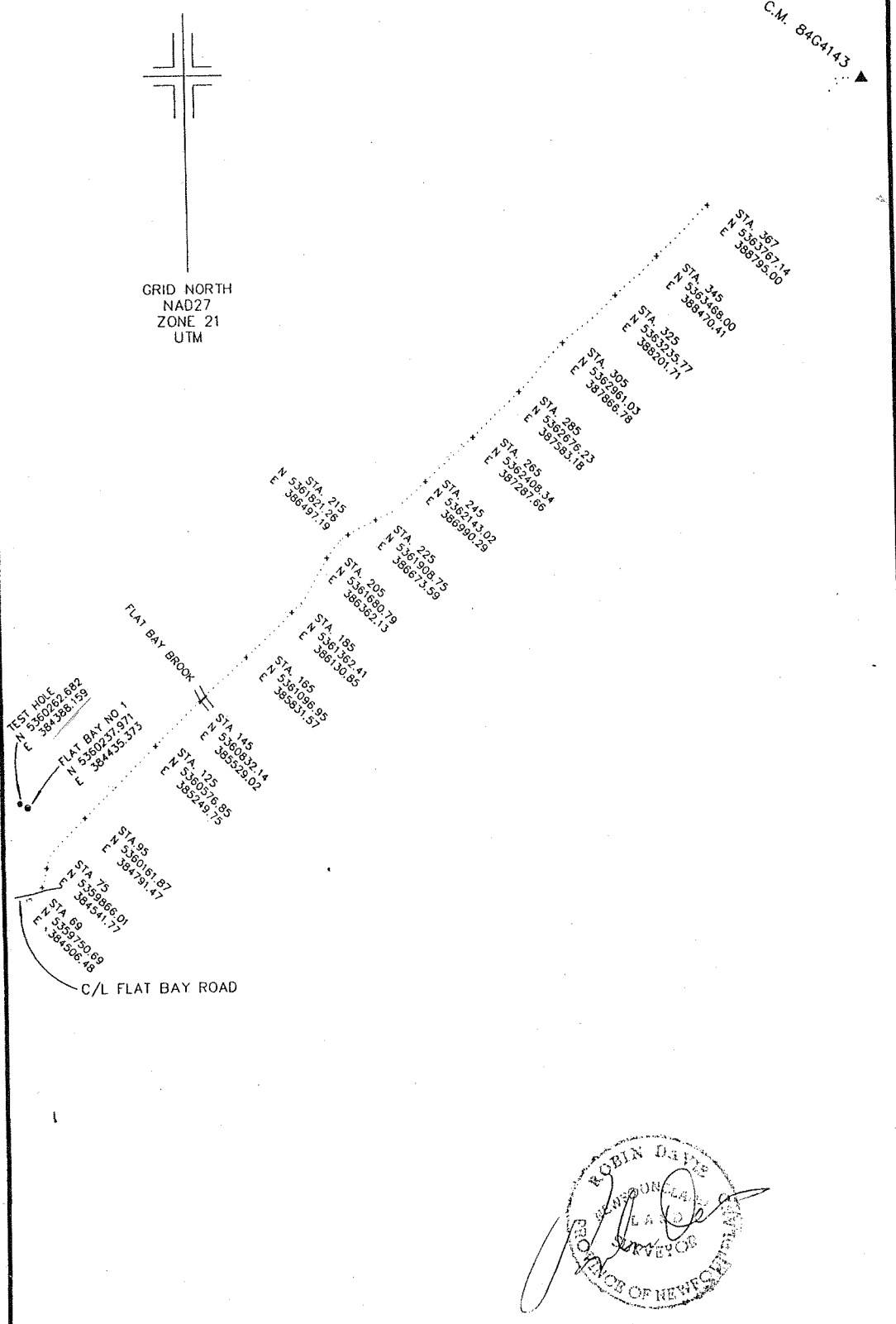
Sandstone: reddish brown, orange, buff, white, clear, abundantly arkosic, fine to meduim grained, grading to coarse grained, unconsolidated, angular to rounded, poorly sorted, calcareous cemented, occasional associated white-green-grey, lithic-mafic fragments, frequent white plagioclase fragments. Poor porosity, moderate to slow yellow cut fluorescence.

283 – 286m Sandstone Conglomeratic

As above

Flat Bay #1

Down Hole Well Logs
See Back Pocket



SCALE: 1 : 30000	PLAN SHOWING TEST HOLE, FLAT BAY # 1 & SEISMIC LINE ST. GEORGE'S TO FLAT BAY VULCAN MINERALS	DWG. NO.: 980102-1
DATE: OCT. 14, 1999	R. DAVIS SURVEYS LTD. P.O. BOX 449 STEPHENVILLE CROSSING, NEWFOUNDLAND	DRAWN BY: R.D.

CORE LABORATORIES

Core Laboratories Reservoir Fluids Report - Calgary

Analysis
for
Vulcan Minerals Inc.
Flat Bay #1

Number Of Pages (including cover page): 2

File Number: 52134-99-5595

Date: November 8, 1999

Report Distribution: Patrick Laracy, Vulcan Minerals (Newfoundland) - 2 copies

APPROVED BY:

Myron Bolding
Supervisor Reservoir Fluids
Phone # 250-4039

Please contact the above person should there be any questions concerning the contents of this report. Atmospheric samples will be kept a maximum of 30 days.

The analysis, opinions or interpretations contained in this report are based upon observations and material supplied by the client for whose exclusive and confidential use this report has been made. The interpretations or opinions expressed represent the best judgement of Core Laboratories. Core Laboratories assumes no responsibility and makes no warranty or representations, expressed or implied, as to the productivity, proper operations, or profitableness however of any oil, gas, coal or other mineral, proper well or sand in connection with which such report is used or relied upon for any reason whatsoever.

CORELAB

OIL ANALYSIS

195 - 1 — CONTAINER IDENTITY

52134-1999-5595 — LABORATORY NUMBER

Vulcan Minerals Inc. — OPERATOR

1 — PAGE

LOCATION

Flat Bay #1 — WELL OR SAMPLE LOCATION

KB ELEV (m)

GR ELEV (m)

West NFLD — FIELD OR AREA

Fischel Brook MB — POOL OR ZONE

SAMPLER

TEST TYPE AND NO.

TEST RECOVERY

POINT OF SAMPLE

AMT. AND TYPE CUSHION

@ °C — MUD RESISTIVITY

Sample
195 - oil
TEST INTERVAL (meters)

PUMPING

FLOWING

GAS LIFT

SWAB X

WATER m³/d

OIL m³/d

GAS m³/d

SEPARATOR

RESERVOIR

@ °C — CONTAINER WHEN SAMPLED

@ °C — CONTAINER WHEN RECEIVED

Pressures, kPa (gauge)

SEPARATOR

Temperatures, °C

1999 09 10	1999 10 28	1999 11 03	TW	
DATE SAMPLED (Y/M/D)	DATE RECEIVED (Y/M/D)	DATE ANALYZED (Y/M/D)	ANALYST	SIGNATURE

SAMPLE PROPERTIES

Black — COLOR OF CLEAN OIL

WATER

BS

TOTAL BS & W

ABSOLUTE DENSITY
kg/m³ @15°C

AS RECEIVED

883.4 — AFTER CLEANING

API GRAVITY @15.6°C

AS RECEIVED

28.6 — AFTER CLEANING

SULPHUR
9.01 grams/kg

SALT
kg/m³

POUR POINT °C
A.S.T.M.

REID VAPOUR PRESSURE
kPa

CARBON RESIDUE
CONRADSON

RAMSBOTTOM

VISCOSITY

TEMP °C	DYNAMIC mPa's	KINEMATIC mm²/s

FRACTION DISTILLED	TEMP °C
FBP	
CRACKED	

ASTM D-86 — METHOD

kPa — BAROM PRESS

°C — ROOM TEMP

°C — INITIAL BOIL PT

DISTILLATION SUMMARY

204 °C NAPHTHA

274 °C KEROSENE

343 °C LIGHT GAS/OIL

RECOVERED

RESIDUE

DISTILLATION LOSS

REMARKS:

GOVERNMENT OF NEWFOUNDLAND AND LABRADOR

Department of Mines and Energy

WELL TERMINATION RECORD

WELL DATA

Well Name: FLAT BAY # 1	CO-ORDINATES
Operator: VULCAN MINERALS INC.	UTM (NAD 27)
Drilling Rig: EASTERN OILFIELD	Long: / Lat: — Northing: 5360237.971 Easting: 384435.373
Rig Type: BUCYRUS ERIE 36L Cable Tool	ELEVATION / DEPTH
Drilling Contractor: EASTERN OILFIELD SERVICES Ltd	~~RT/KB~~/RF: 48.3 m G.L.: 47 m — TD: 286 m TVD: 286 m
Spud Date: August 10 1999	FOR M & E USE ONLY
TD Date: September 10 1999	For the purpose of interpreting subsection 154(5) of the Petroleum Drilling Regulations, the rig release date is deemed to be: .....
Rig Release Date: September 11 1999	
Well Termination Date:	

CASING AND CEMENTING PROGRAM

O.D. (mm)	WEIGHT (kg/m)	GRADE	SETTING DEPTH (m)	CEMENTING DETAILS
219	35.7	J55	12.35m	driven into bed rock
178	29.8	J55	125.9m	cemented to surface with 2.0 tonnes
				0:1:0 + 2% $CaCl_2$ - 30% excess
				(1900 Kg/m³)

PLUGGING PROGRAM

Approval of the following program was obtained by (person) N/A all suspension

~~from (person)~~ well head below of the Department of Mines & Energy by means

of ..... dated .....

Type of Plug	Interval	Felt/Pressure Tested	Cement and Additives

Lost Circulation/Overpressure Zones: N/A

Downhole Completion/Suspension Equipment: Well is suspended - well head assembly installed by screwing attachment to the 178 m.m. casing collar at approximately 0.5 m above ground level.
178 x 50.8 mm Swage, pressure rating 21,000 KPA
50.8 mm Ball Valve, pressure rating 10,500 KPA

(Describe and Attach Sketch) All well schematic sketch attached

DECLARATION

The undersigned operator's Representative hereby declares that on the basis of personal knowledge of operations undertaken at the above named well, the above information is true, accurate and complete.

Signed ..... Operator's Representative — Title President

Name PATRICK J. LARACY — Date July 06/00

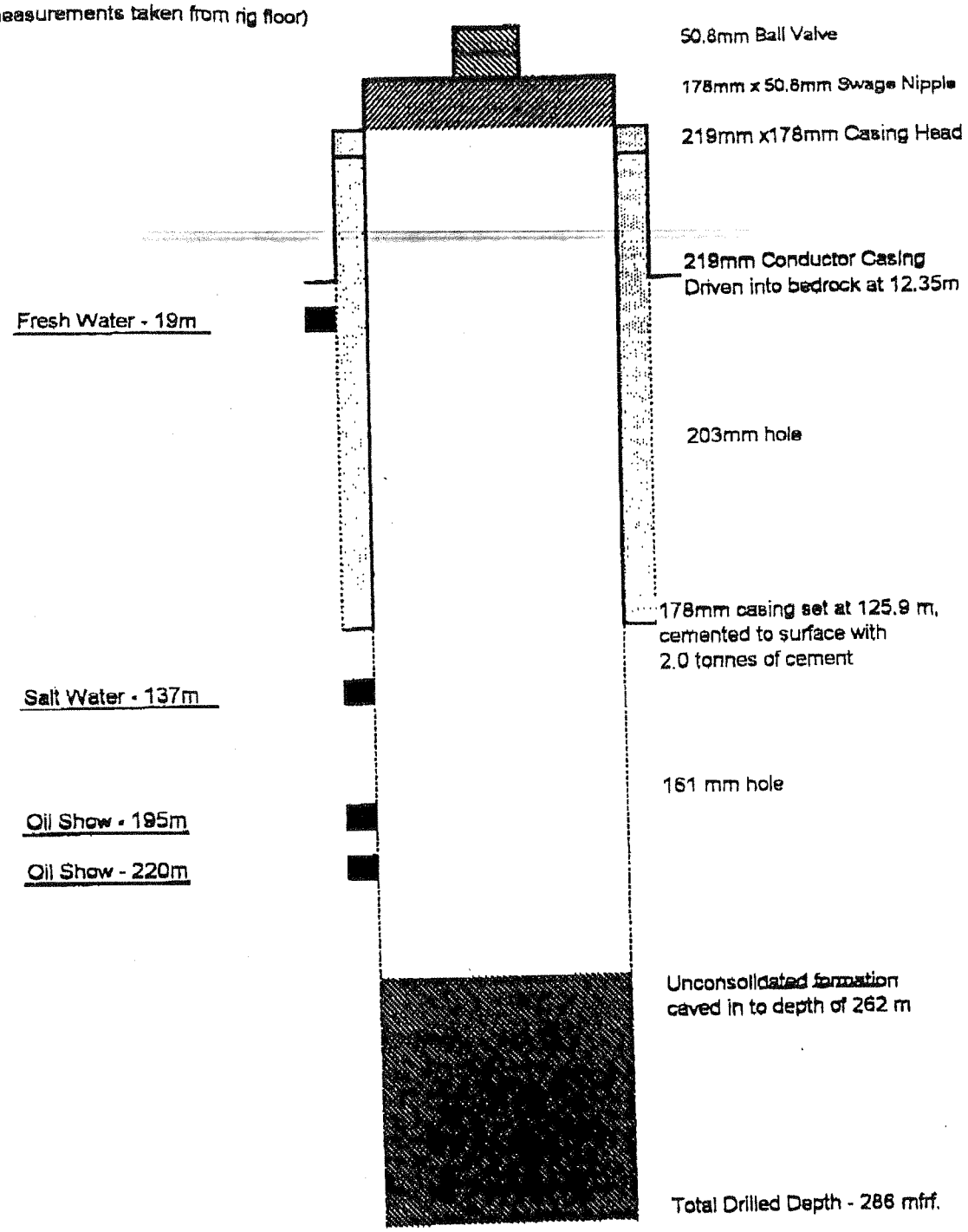
ACKNOWLEDGEMENT

Acknowledged by ..... Director — Date .....

3.18

Well Schematic
Flat Bay #1

Location: UTM ~~5960361.54~~ 5360237.991 North, ~~38441.98~~ 384435.373 East
Surface Elevation: 47.0m
Rig Floor Elevation: 48.3m
(All measurements taken from rig floor)



1 B/L attached to Well Termination Report Flat Bay #1
July 06/00