



WorleyParsons Komex

resources & energy

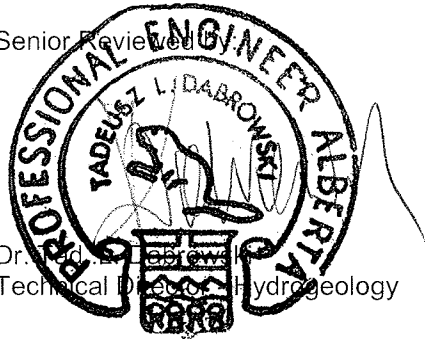
We trust that the contents of this report are suitable for your purposes. If you have any questions, please contact either of the undersigned.

Yours Sincerely,
WorleyParsons Komex

James E. Armstrong, M.Sc., P.Eng.
Principal Hydrogeologist

Kimberley L. McLeish, B.Sc.
Environmental Scientist

Senior Reviewer



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Technical Director Hydrogeology

PERMIT TO PRACTICE	
KOMEX INTERNATIONAL LTD.	
Signature	
Date	2006/03/30
PERMIT NUMBER: P 2306	
The Association of Professional Engineers, Geologists and Geophysicists of Alberta	



Water Well Drilling Report

The data contained in this report is supplied by the Driller. The province disclaims responsibility for its accuracy.

Well I.D.: 0123545
Map Verified: Map
Date Report Received:
Measurements: **Metric**

1. Contractor & Well Owner Information

Company Name: LIN MURRAY DRILLING
Mailing Address: _____ City or Town: _____ Postal Code: _____
Drilling Company Approval No.: _____
Well Owner's Name: PATTERSON, JOE
Well Location Identifier: _____
P.O. Box Number: 718
Mailing Address: ROSEBUD
Postal Code: _____
City: _____ Province: _____ Country: _____

2. Well Location

1/4 or Sec Twp Rge West of
LSD M
SE 11 027 22 4
Location in Quarter
0 M from Boundary
0 M from Boundary
Lot Block Plan
Well Elev: 800.1 M
How Obtain: Estimated

3. Drilling Information

Type of Work: New Well
Reclaimed Well
Date Reclaimed: _____ Materials Used: _____
Method of Drilling: Rotary
Flowing Well: No
Gas Present: No
Rate: Liters
Oil Present: No

Proposed well use:
Domestic & Stock
Anticipated Water
Requirements/day
0 Liters

6. Well Yield

Test Date (yyyy/mm/dd): Start Time:
1977/12/14 11:00 AM
Test Method: Bailor
Non pumping static level: 9.14 M
Rate of water removal: 7.57 Liters/Min
Depth of pump intake: 0 M
Water level at end of pumping: M
Distance from top of casing to ground level: CM

4. Formation Log

Depth from ground level (meters)	Lithology Description
9.14	Sandy Topsoil
9.75	Hard Ledges
30.48	Yellow Clay
48.77	Gray Clay
60.96	Gray Shale

5. Well Completion

Date Started (yyyy/mm/dd): 1977/12/12
Date Completed (yyyy/mm/dd): 1977/12/14
Well Depth: 60.96 M
Borehole Diameter: 0 CM
Casing Type: _____ Liner Type: Steel
Size OD: 0 CM
Size OD: 13.97 CM
Wall Thickness: 0 CM
Wall Thickness: 0.4 CM
Bottom at: 0 M
Top: 0 M Bottom: 60.96 M
Perforations from: 36.58 M to: 60.96 M
Perforations Size: 0.32 CM x 5.08 CM
from: 0 M to: 0 M
0 CM x 0 CM
from: 0 M to: 0 M
0 CM x 0 CM
Perforated by: Torch
Seal: Packer & Cement
from: 15.24 M to: 30.48 M
Seal:
from: 0 M to: 0 M
Seal:
from: 0 M to: 0 M
Screen Type: _____ Screen ID: 0 CM
from: 0 M to: 0 M
Slot Size: 0 CM
Screen Type: _____ Screen ID: 0 CM
from: 0 M to: 0 M
Slot Size: 0 CM
Screen Installation Method:
Fittings
Top: _____ Bottom: _____
Pack:
Grain Size: _____ Amount: _____
Geophysical Log Taken:
Retained on Files:
Additional Test and/or Pump Data
Chemistries taken By Driller: No
Held: 1 Documents Held: 2
Pitless Adapter Type:
Drop Pipe Type:
Length: M Diameter: CM
Comments:

Depth To water level (meters)
Elapsed Time
Drawdown Minutes: Sec Recovery
Total Drawdown: 0 M
If water removal was less than 2 hr duration, reason why:
Recommended pumping rate: 15.14 Liters/Min
Recommended pump intake: 0 M
Type Pump Installed
Pump Type:
Pump Model:
H.P.:
Any further pumptest information?

7. Contractor Certification

Driller's Name: UNKNOWN DRILLER
Certification No.: _____
This well was constructed in accordance with the Water Well regulation of the Alberta Environmental Protection & Enhancement Act. All information in this report is true.
Signature _____ Yr Mo Day

This report was generated on: August 24, 2012 — Data "AS IS"; no warranty either expressed or implied. [51-288761 -112.988062 (WGS 84)], INT

Owner: **Patterson, Joe**
Box 718, Rosebud, AB
 Contractor: **Lin Murray Drilling**
 Field Survey: **January 31, 1983 - Confirmed - Chemical Analysis Available**

METRIC REPORT
 Easting (m): **140236** ** 70/80
 Northing (m): **5681585** **
 Elevation (m): **799** ***
[Google Earth](#)

SE 11-027-22 W4M
M35377.207298

 18263-1

Work Type: **New Well** Date Started: **December 12, 1977**
 Drilling Method: **Rotary** Date Completed: **December 14, 1977**
 Proposed Use: **Domestic & Stock** Well Status: **Producing**
 Completion Type: **Perforated Casing/Liner**

Elog Taken: **No**
 Gamma Taken: **No**
 Flowing: **No**

General Details
 Depth Completed (m): **61.0** Top of Bedrock (m): **9.8 ***
 Depth Drilled (m): **61.0** Completion Interval (m): **36.6 — 61.0 ***
 Completion Aquifer: **Middle Horseshoe Canyon ***

Lithology Details

Elevation (AMSL)	Depth (BGL)	Lithology Descriptions (rate lpm)
790.4	9.1	Sandy Topsoil
789.7	9.8	Hard Ledges
769.0	30.5	Yellow Clay
750.7	48.8	Grey Clay
738.5	61.0	Grey Shale

Completion Details
 Surface Casing: **Steel — 139.7 mm (O.D.) x 3.96 mm (thick) x 60.96 m (bottom)**
 Pack: **[unknown]**

Intervals
 Slotted: **36.6 to 61.0 m - 0.125 x 2 - Method: Torch**
 Packer & Cement: **15.2 to 30.5 m**

Chemistry Summary Details (mg/L, except as noted) (most recent first)

Sampling Details: January 31, 1983
 Analysis Details: **February 16, 1983 - Vegreville (1114)**

Constituent	Result	Constituent	Result	Constituent	Result
Conductivity (µS/cm):	1926	Nitrate as N:		Colour (TCU):	
TDS (Calculated):	1126	Nitrite as N: < 0.05		Turbidity (NTU):	
Hardness (as CaCO3):	7	pH (pH Unit): 8.7		Fluoride: 1.38	
T-Alkalinity (as CaCO3):	671	Ion Balance (%): 95		Carbonate: 266	
P-Alkalinity (as CaCO3):		Total Coliforms**:		Bicarbonate: 766	
Nitrate + Nitrite as N: < 0.05		Fecal Coliforms**:		Hydroxide:	
Total Suspended Solids:		Escherichia coli***:		Total Iron:	
Sulfate Reducing Bacteria*:				Total Mn:	
Iron Related Bacteria*:				Temperature (°C):	

Constituent	Extractable	Dissolved	Constituent	Extractable	Dissolved
Calcium:	< 1		Mercury:		
Chloride:	260		Molybdenum:		
Iron:	2.04		Magnesium:	< 1	
Manganese:			Sodium:	455	
Aluminum:			Potassium:	0.9	
Arsenic:			Vanadium:		
Barium:			Strontium:		
Beryllium:			Nickel:		
Cadmium:			Zinc:		
Chromium:			Copper:		
Cobalt:			Lead:		
Sulfate:	< 5				

Comments: **Sulfate assumed to be Extractable (unfiltered).**

note: constituents have been compared to the maximum acceptable concentration, Health Canada. 2010. Guidelines for Canadian Drinking Water Quality – Summary Table. Water, Air and Climate Change Bureau, Healthy Environments and Consumer Safety Branch, Health Canada, Ottawa, Ontario.

General Comments / Observations

Most Recent Water Level (m): **9.14 m — December 14, 1977**

Oil Present: **No**
 Gas Present: **No**

Water Used For Drilling

Aquifer Tests

No.	Date	Testing Method	Duration (minutes)		Avg. Rate (lpm)	NPWL (metre)	Drawdown (metre)	Level-End (metre)	Pump (metre)	Q20 (m³/day)*		Transmissivity (m²/day)*	
			Pumping	Recovery						Apparent	Effective	Apparent	Aquifer Effective
1	1977-12-14 11:00	Bailer			9.1	9.14	—	—	—				

Alias IDs
 ESRD - GIC (WELLID): **0123545; 123545**
 ESRD - GIC (WellReportID): **123545**

* The Groundwater Centre (TGWC) calculated or determined value.
 ** 70 - Calculated based on legal location — 10TM NAD83
 *** 80 - MT DEM — [Ground; AMSL]