

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Prepared by: Stantec Consulting Ltd. 600, 4808 Ross St. Red Deer, AB T4N 1X5

Project: 113928105

May, 2008

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Executive Summary

Skyy Country RV Park has applied to Alberta Environment for an average diversion of 417 cubic metres per day for the tourist season of May 15 to September 15 of each year, or about 120 days per year, for a total of 40,649 cubic metres per year of groundwater from their new wells for the purpose of municipal water supply. It is intended to supply this water to 667 lots for recreational vehicles located within NE-34-39-2-W.5, a short distance north of Sunbreaker Cove on Sylvan Lake. The West Well was used as a production well and the East Well was used as an observation well during the initial test. Further testing used the East Well for pumping and the West Well for observation.

An aquifer test was conducted consisting of 72 hours pumping at 425.7 cubic metres per day, followed by 32.7 hours of recovery, measuring the time-drawdown effects in the production well and an observation well 42.61 m distant. At that time, recovery was complete to over 90 percent. Both wells were completed in the same sandstone aquifer, and the test has shown that the aquifer has a transmissive capacity of at least 239 m²/day. It appeared that the well is completed in a fractured unconfined or partially confined aquifer, which responds slightly to changes in barometric pressure. There was almost no response to the testing in the observation well.

The Moell method for estimating long-term sustainable yield shows that the two wells are theoretically capable of pumping about 248.8 cubic metres per day, above the average daily application amount of 111.4 cubic metres per day.

The East Well was then pumped for 29.3 hours at 200 cubic metres per day, using the West Well as an observation well. Again, the observation well had almost no response to the pumping. There is virtually no hydraulic connection between the two wells despite the small distance between them.

The interference caused by this diversion, if it were to be continuous for 20 years and without recharge, would be less than 0.4 m at the wells of the nearest other well-owners. Considering the amount of available head in neighbouring wells completed in the same hydrostratigraphic zone, this interference may be ignored.

Water samples were analyzed for routine parameters and bacterial parameters. All routine chemical parameters are within the Canadian Drinking Water Guideline, with the single exception of excessive selenium in the East Well. All other parameters meet the Guideline. The quality of water was very similar in both wells.

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Executive Summary May, 2008

The aquifer completed and tested at this location is confined by about 12 m of confining clay and shale. The hydrogeological context of the well and its behaviour during the aquifer test indicate that the groundwater in this aquifer is not under the influence of surface water.

The evaluation shows that there is adequate recharge to meet the needs of this subdivision, and that the supply well will not induce infiltration from the lake. It is therefore recommended that Alberta Environment approve the application for the new license to divert 40,649 cubic metres per year, combined production from both wells, with each well providing approximately half the total production. It is also recommended that monthly water production and monthly dynamic water levels be recorded in both wells and submitted on an annual basis to Environment as data for their long-term purposes of ensuring good management practices within the Sylvan Lake watershed.

Groundwater Evaluation, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

TABLE OF CONTENTS

EXE	ECUTIVE SUMMARY	E.1
1.0	INTRODUCTION	1.1
1.1	BACKGROUND INFORMATION	1.1
1.2	GEOMORPHIC AND GEOLOGIC SETTING	1.1
1.3	WELL COMPLETION DETAILS	1.2
1.4	FIELD VERIFIED SURVEY	1.2
1.5	EXISTING LICENSED DIVERSIONS	1.3
2.0	AQUIFER ANALYSIS – PUMPING WELL	2.1
2.1	TESTING PROCEDURES	2.1
2.2	AQUIFER PARAMETERS	2.2
2.3	INTERPRETATION OF AQUIFER TEST RESULTS	
3.0	IMPACT ASSESSMENT TO SYLVAN LAKE	3.1
3.1	LOCAL IMPACT	3.1
3.2	IMPACT ON LAKE LEVEL	
4.0	GROUNDWATER GEOCHEMISTRY	4.1
5.0	CONCLUSIONS	5.3
6.0	RECOMMENDATIONS	6.1
7.0	REFERENCES	7.1
8.0	CORPORATE AUTHORIZATION	8.1

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Table of Contents May, 2008

FIGURES

- 1. Regional Site Plan
- 2. Details of Subdivision plan
- 3. Schematic of West Well
- 4. Schematic of East Well
- 5. East-West Hydrogeologic Profile
- 6. Locations of Wells Near Skyy Country Subdivision
- 7. Time-drawdown curve, West Well, Papadopulos-Cooper analysis, First Limb
- 8. Time-drawdown curve, West Well, Agarwal-Papadopulos-Cooper analysis, Second Limb
- 9. Time-drawdown curve, West Well, Theis-Jacob analysis
- 10. Time-recovery curve, West Well, Agarwal-Theis-Jacob analysis
- 11. Time-recovery curve, West Well, Agarwal + Papadopulos-Cooper analysis
- 12. Time-drawdown curve, East Well, Theis-Jacob analysis
- 13. Time-drawdown curve, East Well, Papadopulos-Cooper analysis
- 14. Time-recovery curve, East Well, Agarwal-Papadopulos-Cooper analysis
- 15. Time-drawdown curve, East Well, Papadopulos-Cooper analysis
- 16. Time-recovery curve, East Well, Agarwal+Theis-Jacob analysis
- 17. Time-Recovery curve, East Well, Agarwal + Papadopulos-Cooper Analysis
- 18. Time-Recovery curve, East Well, Agarwal + Theis-Jacob analysis
- 19. Time-Drawdown curve, East Well, Agarwal + Theis analysis
- 20. Time-Recovery curve, East Well, Agarwal + Theis analysis
- 21. Pie diagram of groundwater chemistry, West Well
- 22. Pie diagram of groundwater chemistry, East Well

TABLES

- 1. Coordinates of water wells
- 2. Field-verified well survey
- 3. Licenses and registrations near Skyy Country RV Park

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Table of Contents May, 2008

- 4. Aquifer Parameters
- 5. Water wells drilled near Skyy Country RV Park
- 6. Interference Caused by Pumping of Skyy Country Wells
- 7. Groundwater recharge Sylvan Lake area
- 8. Groundwater Geochemistry

APPENDICES

Appendix A	Water Well Drilling Reports for Skyy Country RV Park Wells
Appendix B	Water Well Drilling Reports for Neighbouring Wells
Appendix C	Field Data of Aquifer Tests
Appendix D	Chemical Analysis from Laboratory
Appendix E	Questionnaires from Field-Verified Survey
Appendix F	Hydrographs of Alberta Environment observation wells

1.0 Introduction

1.1 BACKGROUND INFORMATION

Skyy Country R.V. Park is in the process of developing most of the quarter section SE-29-39-2-W5 as a rural residential subdivision (Figure 1), with 667 R.V. lots and associated recreational activities. The subdivision will be serviced from a common groundwater supply. Accordingly, Alken Basin Drilling Ltd. was retained to drill a production well and an observation well in order to evaluate the availability of groundwater within the proposed subdivision area. This report has been prepared therefore in support of an application to divert 62,550 cubic metres of water per year, or 171.37 cubic metres per day average. This is the volume of water required according to Alberta Environment guidelines for the proposed number of recreational residential lots within the subdivision. It is expected that most water production would occur during the May 1 to September 30 tourist season of about 150 days.

Figure 2 shows the details of the proposed subdivision showing the layout of individual lots and locations of both the Production Well and the Observation Well.

1.2 GEOMORPHIC AND GEOLOGIC SETTING

The geological materials at the land surface are composed of Pleistocene till deposits. These are an uncemented mixture of blue and brown clay, silt, sand and gravel with some boulders. These deposits are generally less than 10 m thick, and are draped over the underlying bedrock strata. This area is characterized by numerous flutes and drumlins aligned in a parallel manner from northeast to southwest (Shetsen, 1990). The Pleistocene materials thin somewhat in higher topographic areas.

Below the till is the Paleocene Paskapoo Formation, which consists of grey to greenish grey thick-bedded calcareous cherty sandstone, grey and green siltstone and mudstone, minor conglomerate, thin limestone, coal and tuff beds. The formation was deposited in a non-marine environment (Hamilton, et al, 1999).

The Paskapoo Formation has been subdivided by geologists into several members. In this area, the uppermost or Dalehurst Member is present just below the till. The Dalehurst Member consists of interbedded sandstone, siltstone, mudstone, shale and coal. The sandstones are medium to fine-grained, light grey (salt and pepper appearance) to yellow-brown, predominantly massive or planar bedded with minor planar cross-bedding and wavy-disturbed bedding. Carbonaceous (coaly) laminae are common, siderite staining is common, and plant fragments and rooting are rare. The siltstones, mudstones and shales are light grey to black or olive-green, with few primary sedimentary structures, except for minor planar or wavy-disturbed laminations. Plant fragments are abundant. There are at least five coal seams in this member ranging from 1.3 to 6.1 m in thickness. The strata are almost flat-lying, dipping westward at about 4 m per km.



April, 2008 113928105

GROUNDWATER EVALUATION SKYY COUNTRY Client/Project

Figure No.

REGIONAL SITE PLAN

Stantec

Stantec Consulting Ltd.

600, 4808 Ross Street Red Deer AB Canada T4N 1X5 Tel. 403.341.3320 Fax. 403.342.0969

www.stantec.com



 $\begin{tabular}{ll} V:\1139\active \113928105-skye_country_rv_condos \05a-Drawings_Prelim_Design \xref \EastWest_Wells_SkyyCountry.dwg \\ \underline{2008-04-30} \ \ 06:12PM & By: \ tlabelle \end{tabular} \begin{tabular}{ll} By: \ tlabelle \end{tabular} \begin{tabular}{ll} V:\1139\active \113928105-skye_country_rv_condos \05a-Drawings_Prelim_Design \xref \EastWest_Wells_SkyyCountry.dwg \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabular}{ll} Country \end{tabular} \begin{tabular}{ll} Country \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabular}{ll} Country \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabular}{ll} Country \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabular}{ll} Country \end{tabular} \begin{tabular}{ll} Average \end{tabular} \begin{tabula$

April, 2008 113928105



Stantec Consulting Ltd.

600, 4808 Ross Street

Red Deer AB Canada

T4N 1X5

Tel. 403.341.3320 Fax. 403.342.0969

www.stantec.com

Client/Project

SKYY COUNTRY PROPOSED R.V PARK AND RECREATIONAL FACILITY

Figure No.

 $\frac{2.0}{\text{Title}}$

DETAILS OF SUBDIVISION PLAN

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Introduction May, 2008

A regional groundwater study was carried out by Orest Tokarsky, Alberta Research Council, in 1970 of the Rocky Mountain House mapsheet, at a scale of 1:250,000. It reported that this area could produce 25 to 100 gallons per minute (160 to 650 cubic metres per day) of water from a single properly designed well.

He also suggested that the water would be predominantly of the sodium bicarbonate facies and that iron content might be slightly above the Canadian Drinking Water Guideline. Fluoride content should be within acceptable limits.

The more recent groundwater evaluation carried out for Lacombe County in 2001 with 31 years of additional data indicates that individual wells would yield between 100 and 300 cubic metres per day, and that the water would be mainly of a sodium bicarbonate type. Total dissolved solids range from under 400 to 600 mg/L, sulphate mainly between 10 and 50 mg/L, and chloride under 10 mg/L. The depth to the base of groundwater protection is considered to be about 350 m depth. This is the depth at which groundwater attains a total dissolved solids level of 4000 mg/L, and is hence considered unfit for human consumption.

1.3 WELL COMPLETION DETAILS

Both the Pumping Well and the adjacent Observation Well were drilled on March 8, 2008 by Alken Basin Drilling Ltd., Bentley, Alberta. At the time of report preparation, the two well records had not yet been submitted to Alberta Environment. Figure 3 shows the details of the construction of the Production well and Figure 4 the construction of the Observation well, located 42.61 m to the east.

Table 1 shows the coordinates of the two wells used in the test.

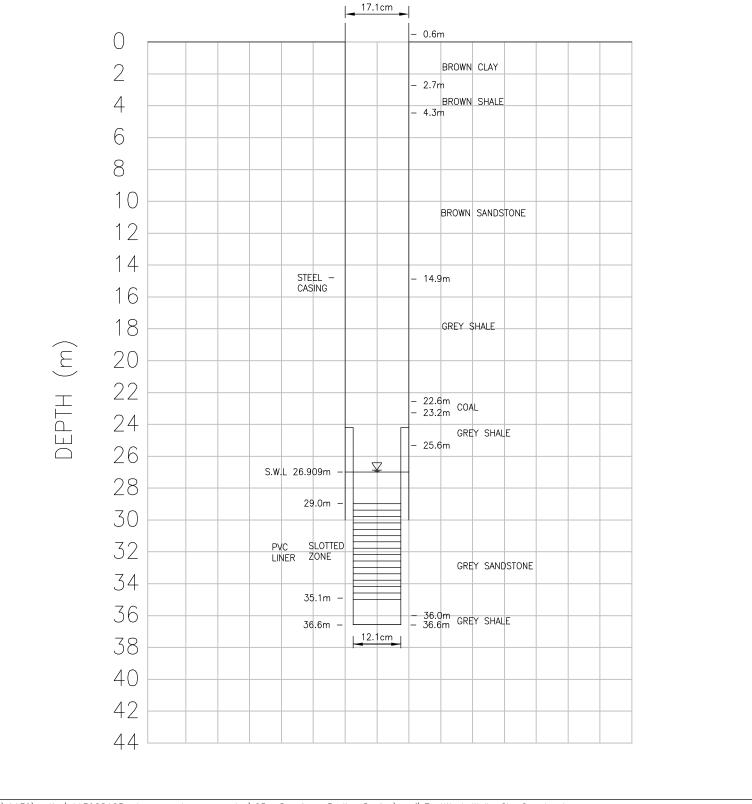
Table 1
Coordinates of Water Wells

Well	Northing	Easting	Casing stickup (m)	S.W.L., March 29, 2008 (m)	Casing Elevation, msl.
West Well	5810415.282	689853.286	0.6	26.909	973.5
East Well	5810404.410	689812.088	0.6	37.652	985.4

Figure 5 is an east-west profile through the pumping wells used in the aquifer test, as well as other wells to the west and east.

1.4 FIELD VERIFIED SURVEY

Stantec Consulting Ltd. prepared a questionnaire to be used for a field verified survey, and carried out a survey of all owners who could be contacted within a 1 km radius of the well. Because the area is largely used for summer cottages, many well-owners were not at home and



V:\1139\active\113928105-skye_country_rv_condos\05a-Drawings_Prelim_Design\xref\EastWest_Wells_SkyyCountry.dwg 2008-04-30 02:40PM By: tlabelle

April, 2008 113928105



Stantec Consulting Ltd.

600, 4808 Ross Street Red Deer AB Canada

T4N 1X5

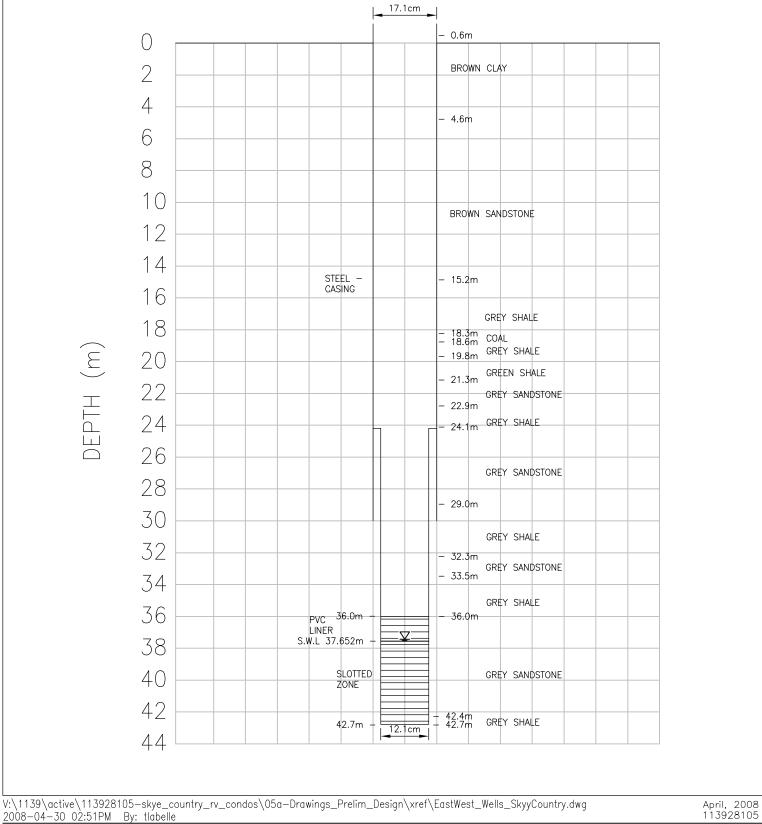
403.341.3320 Tel. Fax. 403.342.0969 www.stantec.com

Project

SCHEMATIC OF WEST WELL

Figure No.

3



April, 2008 113928105



Stantec Consulting Ltd.

600, 4808 Ross Street Red Deer AB Canada

T4N 1X5

403.341.3320 Tel.

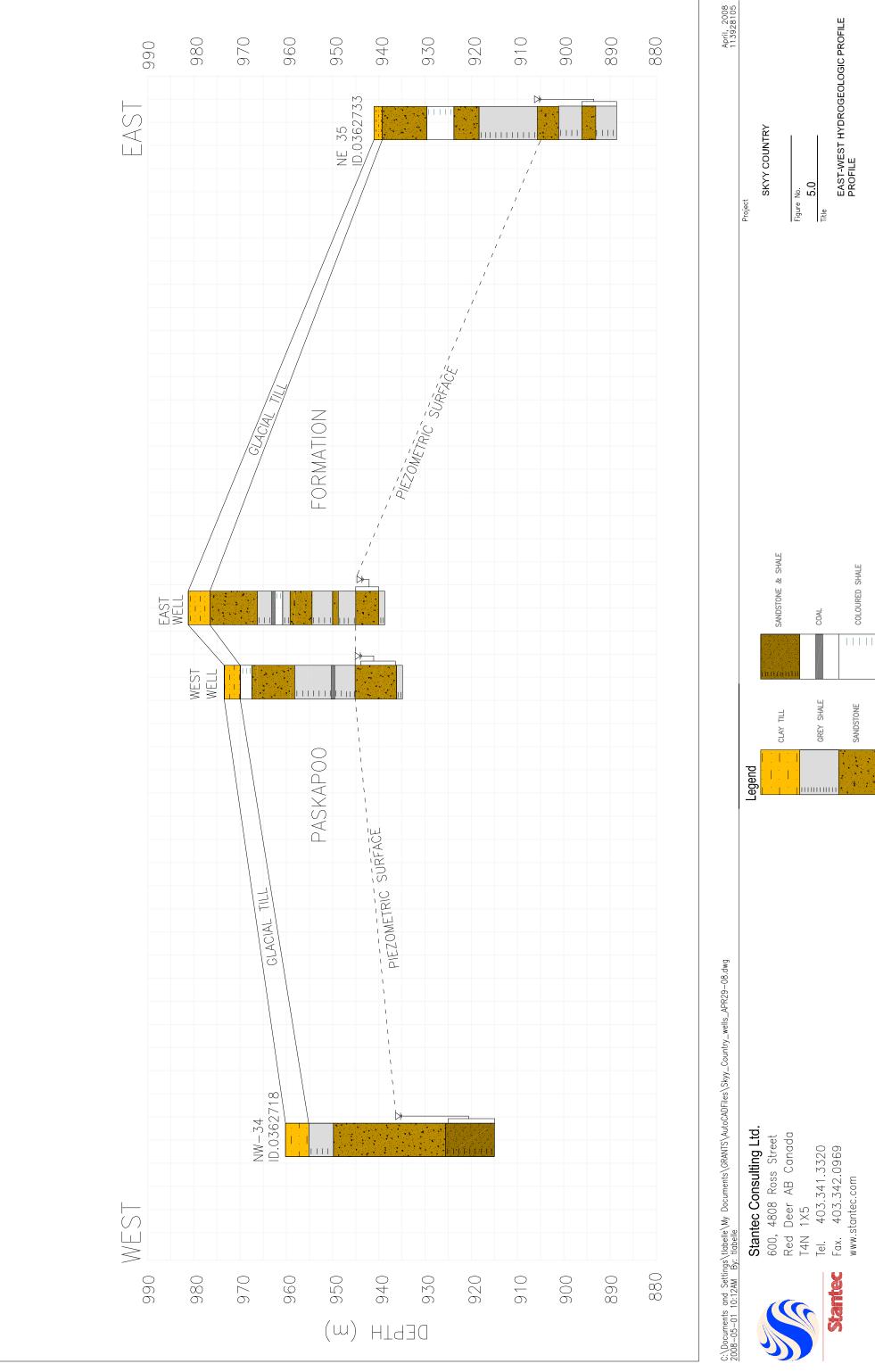
Fax. 403.342.0969

www.stantec.com

SCHEMATIC OF **EAST WELL**

Figure No.

4



GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Introduction May, 2008

could not be contacted. Nevertheless, Table 2 summarizes the information available on the wells which could be identified based on information from their owners.

Figure 6 shows the locations of the wells identified as existing in the immediate vicinity (within a 1 km radius), based on information in the Alberta Environment database, as well as showing the location of the hydrogeologic profile shown in Figure 5.

1.5 EXISTING LICENSED DIVERSIONS

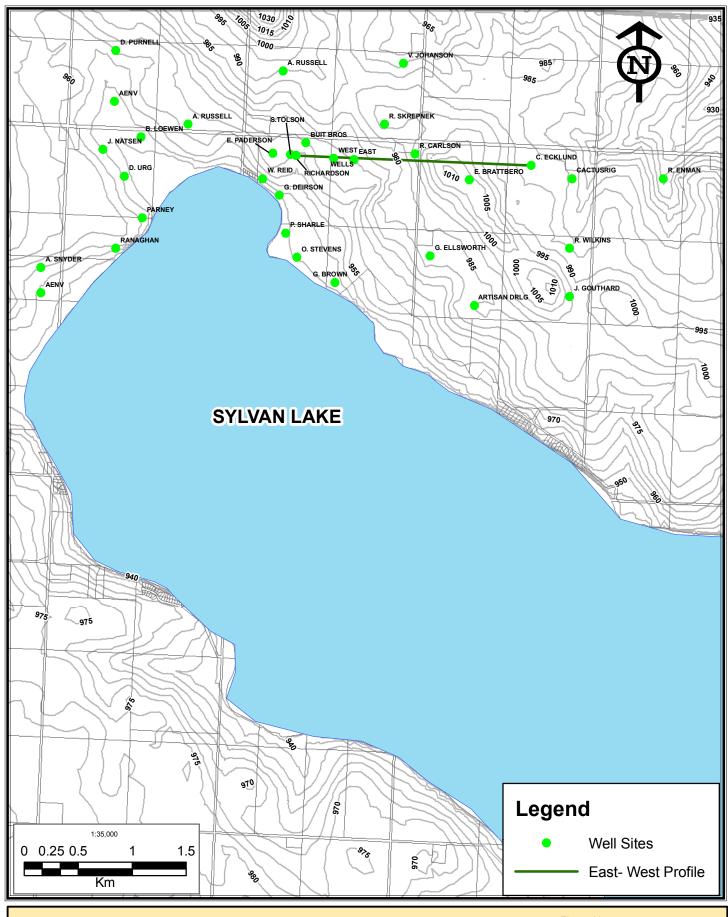
Table 3 is a summary of all licensed and registered groundwater diversions within the section in which the pumping well is located, as well as in all the other sections around it. Traditional Agricultural Registrations (TAR's) are diversions which were not licensed at the time of drilling, because there was no requirement to do so at that time. However it became possible later on to register them up to a cutoff date in 1999, with their priority of use dating from the year of first use. This was done by means of a simple application only, and protects older traditional users of water for stockwatering and pesticide applications, by means of a grandfathering clause.

A license, on the other hand, is obtained through a formal technical study such as this one, which must be prepared by a qualified groundwater specialist who is a member of the Association of Professional Engineers, Geologists and Geophysicists of Alberta. This study must show that the desired amount of water is available for a minimum of 20 years, and that the diversion of this water will not harm any other water well owners in the immediate area. In the future, If the license holder no longer uses or needs his allocation, the license may be cancelled, so that the water will become available to other applicants.

The authorized diversion shown in Table 3 is not necessarily the amount being diverted, but rather the maximum amount that the owner may divert in a year. Generally the actual diversion is lower than the authorized volume, although it normally varies from one year to the next.

Table 2
Field Verified Water Well Survey

Name	Location	GPS Location	Year Drilled	Year Drilled Total Depth (m)	Use
Nicole Jahner	NE-34-39-2 W.5	11U0690800 UTM5809844			Domestic
D. & A Hunt, R. Morse, H. Weselley	NE-34-39-2 W.5	NE-34-39-2 W.5 11U0690770 UTM5809859			Domestic, Livestock (~30)
Brian Russell	SW-4-40-2 W.5	11U0688289 UTM5810055	1980	300,	Domestic
Brian Russell	SW-4-40-2 W.5	11U0688289 UTM5810055	1970		Livestock
Brian Russell	SE-4-40-2 W.5	11U0688881 UTM5809990	~1940		Domestic
Brian Russell	SE-4-40-2 W.5	11U0688881 UTM5809990			Livestock
Ralph Nores	SW-3-40-2 W.5	11U0689351 UTM5810009	~1982	130'	Domestic
Randy Scerpnek	SE-3-40-2 W.5	SE-3-40-2 W.5 11U0690599 UTM5810144		280'	Domestic





Location of Wells Near Skyy Country Subdivision

Figure No. 6.0

Location of Wells

Table 3 Licenses and Registrations near Skyy Country RV Park

		9		ļ	Quantity (m3/year)	Effective Date Evniry Date	Evniny Date	Aquifer Interval (m)
SE 10 40 3 W E	Uorhort Andorson	Approval ID	nterim License #	l ype	(III 1) year)	14 Mar 02	ממכ לוולעם	
	Frederick Brink	00167997-00-00	00167997 00 00	REG	2751	15-Mar-02		? - 18.3
NW-10-40-2-W.5 Paul & Irene Chr	Paul & Irene Christensen	00170501-00-00	00170501 00 00	REG	165	20-Mar-02		2 - 27.4
SE-9-40-2-W.5	Carlyle Farms Ltd	00175140-00-00	00175140 00 00	REG	740	28-Feb-06		? - 53
NE-11-40-2-W.5 Lloyd Anderson	Lloyd Anderson	00177149-00-00	00177149 00 00	REG	44	14-Mar-02		? - 27.4
NE-11-40-2-W.5 Lloyd Anderson	Lloyd Anderson	00177149-00-00	00177149 00 00	REG	1025	14-Mar-02		? - 27.4
SE-2-40-2-W.5	Barbara Anderson	00178614-00-00	00178614 00 00	REG	200	15-Mar-02		5-5
NW-2-40-2-W.5	Dennis Freeman	00184061-00-00	00184061 00 00	STOCK	797	26-Aug-03	25-Aug-28	48.7 - 61
NW-2-40-2-W.5	Dennis Freeman	00184061-00-00	00184061 00 00	STOCK	797	26-Aug-03	25-Aug-28	57.9 - 70.1
NW-4-40-2-W.5	Dell Purnell	00190732-00-00	00190732 00 00	STOCK	1145	30-Jan-03	31-Jan-28	21 - 38
SW-33-39-2-W.5 1087646 Alberta	1087646 Alberta Ltd	00206640-00-00	00206640 00 00	SUBDIV	35856	16-Nov-05	15-Nov-30	28.9 - 38.1
NW-3-40-2-W.5	Steven & Heather Goacher	00207642-00-00	00207642 00 00	STOCK	353	15-Feb-06	14-Feb-31	61 - 67.1
SE-32-39-2-W.5	F00227091	00227091-00-00	00227091 00 00	SUBDIV	41168	26-Sep-06	25-Sep-31	27.4 - 36.6
SE-32-39-2-W.5	F00227091	00227091-00-00	00227091 00 00	SUBDIV	41168	26-Sep-06	25-Sep-31	27.4 - 36.6
Total					126744			

2.0 Aquifer Analysis – Pumping Well

2.1 TESTING PROCEDURES

The well drilling contractor, Alken Basin Drilling Ltd., supplied its own electric generator and submersible pump for the test, which took place on March 29 to April 3, 2008. The discharge from the West Well was set at 425.7 cubic metres per day for the purpose of the aquifer test, with levels being measured in both wells. Water levels were recorded by Alken Basin using dataloggers during the time-drawdown period of the test of 82.1 hours pumping and the recovery period of 48.3 hours. Discharge from the well was verified several times during the test by means of checking the time to fill a 20 litre container.

It was found that there was very little hydraulic connection between the two wells, so another test was performed, this time pumping the East Well and using the West Well as the observation well. The East Well was pumped at 200 m3/day for 29.3 hours with 35.2 hours of recovery. Again, there was seen to be very little hydraulic connection between the two wells. The maximum drawdown in the observation well was just 4.1 cm. Most fluctuations in level appeared to be barometric, rather than due to pumping of the other well.

All the time-drawdown and time-recovery data for both the pumping and observation wells were analyzed using AquiferTest Pro 4.0, a software program developed by Waterloo Hydrogeologic (2005). This software enables the specialist to select the most appropriate aquifer analytical method and to adapt the software to confined, leaky or unconfined aquifers and to calculate the transmissive capacity, storativity (when there is an observation well) and hydraulic conductivity. These parameters are the basis for predicting the future behavior of the aquifer under different conditions and times.

Figures 7 to 20 show the time-drawdown and time-recovery plots and calculations of transmissive capacity during the testing, beginning March 29 and ending April 3, 2008. For the pumping well, the Papadopoulos-Cooper analysis was generally used, which takes into account the displacement of the volume of water within the borehole, and is recommended by Waterloo Hydrogeologic for pumping wells. As a test proceeds, the differences disappear between the Papadopulos-Cooper and the Theis-Jacob procedures. For purposes of comparison, the tests was also analyzed using the Theis and Theis-Jacob procedures, which are normally used only for observation well data or for the data during long tests when the well bore effects tend to disappear. At the end of 72 hours of pumping, the total drawdown in the West pumping well was 2.581 m. There was very little drawdown in the well due to its excellent hydraulic characteristics. The time-drawdown and time-recovery data from the East Well were also analyzed using the Theis-Jacob procedure. However the observation well responded to pumping only after 1000 minutes, and total drawdown was only 0.13 m. Drawdown continued during the recovery portion of the test.

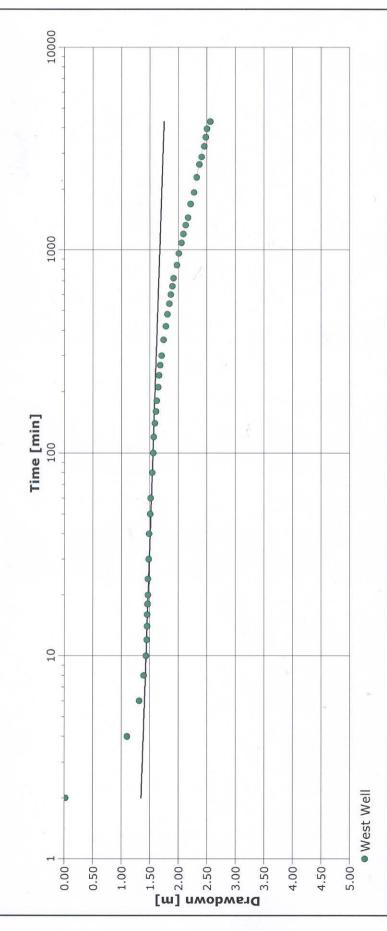


Pumping Test Analysis Report
Project: Skyy Country and RV Park

Number: 113928105

Client: Frank Wilson

Location: Lsd.15-34-39-2-W.5	Pumping Test: Test of Production Well	Pumping well: West Well
Test conducted by: Alken Basin Drilling Ltd.		Test date: 3/28/2008
Analysis performed by: Grant Nielsen	Pumping Well	Date: 4/3/2008
Aquifer Thickness: 6.10 m	Discharge: variable, average rate 425.6 [m³/d]	



Calculation after Papadopulos & Cooper

Observation well	Transmissivity	*	Well-bore storage coeffi	Well-bore storage coefficRadial distance to PW
	[m ² /d]	[m/d]		[m]
West Well	6.55×10^{2}	1.07×10^2	2.09 × 10 ⁻⁹	70.0
		Figure 7.	Time-drawdown	Figure 7. Time-drawdown curve, West Well, Papadopulos-Cooper analysis, First Limb



Pumping Test Analysis Report
Project: Skyy Country and RV Park

Number: 113928105

Stall liter.			Cleff.	L. FIAIIR VVIISOII		
Location: Lsd.15-34-39-2-W.5	ró.	Pumping Te	Pumping Test: Test of Production Well	P	Pumping well: West Well	
Test conducted by: Alken Basin Drilling Ltd.	sin Drilling Ltd.			Te	Test date: 3/28/2008	
Analysis performed by: Grant Nielsen	rt Nielsen	West Well - Pumping	Pumping	O	Date: 4/3/2008	
Aquifer Thickness: 6.10 m		Discharge: 1	Discharge: variable, average rate 425.6 [m³/d]	[m³/d]	*	
0.00		10	Time [min]	[-	1000	10000
1.00 1.50 2.50 3.50 3.50 3.50 3.50 3.50 3.50 3.50 3						
4.50						
S.00 • West Well		ĘĘ	gure 8. Time-drawdornb	νn curve, West Well, A	Figure 8. Time-drawdown curve, West Well, Agarwal-Papadopulos-Cooper analysis, Second Limb	er analysis, Secon
Calculation after Theis with Jacob Correction	Jacob Correction					
Observation well	Transmissivity [m²/d]	K [m/d]	Storage coefficient	Radial distance to PW [m]		
West Well	1.98×10^2	3.24 × 10 ¹	5.00 × 10 ⁻¹	0.07		



Stantec Consulting 600 - 4808 Ross Street Red Deer, AB T4N 1X5 Tel.(403) 341-3320

Project: Skyy Country and RV Park Pumping Test Analysis Report

Number: 113928105

Client: Frank Wilson

0000	1 100						
Location: Lsd. 15-34-39-2-VV.5	-W.5	Pumping Test	Pumping Test: Test of Production Well		Pumping well: Well 1		
Test conducted by: Alken Basin Drilling Ltd.	Basin Drilling Ltd.				Test date: 3/28/2008		
Analysis performed by: Grant Nielsen	rant Nielsen	Pumping of P	Pumping of Production Well		Date: 4/3/2008		
Aquifer Thickness: 6.10 m	و	Discharge: va	Discharge: variable, average rate 425.6 [m³/d]	[m³/d]			1.0
			Time [min]	[4]	5		
0.00		10	100		1000	100	10000
1.00		Z ^r					
1.50		0 00000					
າ [ພ					7		
dow 1						000000	
3.00							
3.50							
4.00							
4.50							
5.00 Well 1							
Calculation after Theis with Jacob Correction	h Jacob Correction						
Observation well	Transmissivity	×	Storage coefficient	Radial distance to PW			
	[m ² /d]	[m/d]		[m]			
Well 1	2.39×10^{2}	3.92 × 10 ¹	4.54 × 10 ⁻¹	0.07			

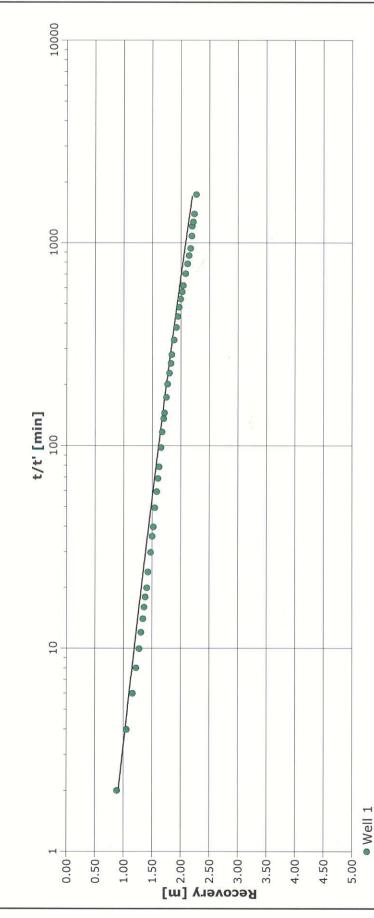
Figure 9. Time-drawdown curve, West Well, Theis-Jacob analysis



Pumping Test Analysis Report
Project: Skyy Country and RV Park

Number: 113928105 Client: Frank Wilson

Location: Lsd.15-34-39-2-W.5	Pumping Test: Test of Production Well	Pumping well: Well 1
Test conducted by: Alken Basin Drilling Ltd.		Test date: 3/28/2008
Analysis performed by: Grant Nielsen	Recovery of Production Well	Date: 4/3/2008
Aquifer Thickness: 6.10 m	Discharge: variable, average rate 425.6 [m³/d]	



Calculation after AGARWAL + Theis with Jacob Correction

Observation well	Transmissivity	¥	Storage coefficient	Radial distance to PW
	[m²/d]	[m/d]		[m]
Well 1	2.39×10^{2}	3.92 × 10 ¹	4.54 × 10 ⁻¹	0.07
			Figure 10. Ti	Figure 10. Time-recovery curve, West Well, Agarwal-Theis-Jacob analysis

	Stantec Consulting		Pumping Test Analysis Report	oort
	600 - 4808 Ross Street		Project: Skyy Country and RV Park	RV Park
	Tel.(403) 341-3320		Number: 113928105	
Stantec			Client: Frank Wilson	
Location: Lsd.15-34-39-2-W.5	-39-2-W.5	Pumping Test: Test of Production Well	n Well	Pumping well:

	Stantec Consulting		Pumping Te	Pumping Test Analysis Report	oort _
	600 - 4808 Ross Street		Project: Sk	Project: Skyy Country and RV Park	RV Park
5	Tel.(403) 341-3320		Number: 113928105	3928105	
Stantec			Client: Frank Wilson	ank Wilson	
Location: Lsd.15-34-39-2-W.5	39-2-W.5	Pumping Test: Test of Production Well	ווeM ר		Pumping well: Well 1
Test conducted by: A	Test conducted by: Alken Basin Drilling Ltd.				Test date: 3/28/2008
Analysis performed by: Grant Nielsen	y; Grant Nielsen	Recovery of Production Well			Date: 4/3/2008
Aquifer Thickness: 6.10 m	.10 m	Discharge: variable, average rate 425.6 [m³/d]	425.6 [m³/d]		

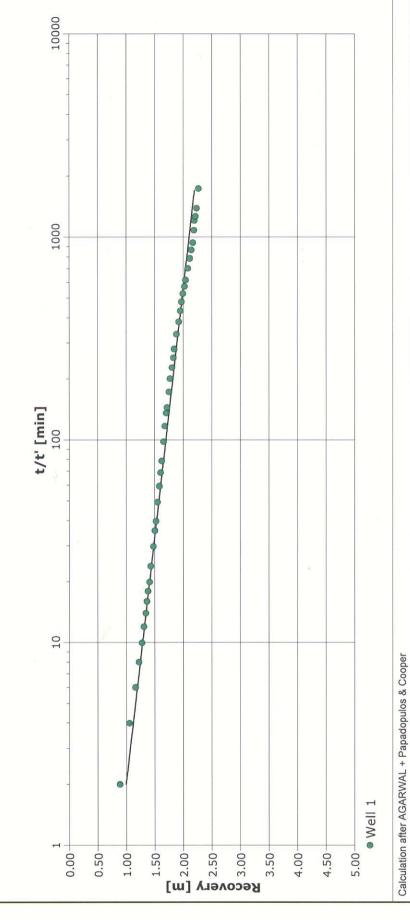


Figure 11. Time-recovery curve, West Well, Agarwal + Papadopulos-Cooper analysis

Well-bore storage coefficiRadial distance to PW

0.07 <u>m</u>

 5.00×10^{-1}

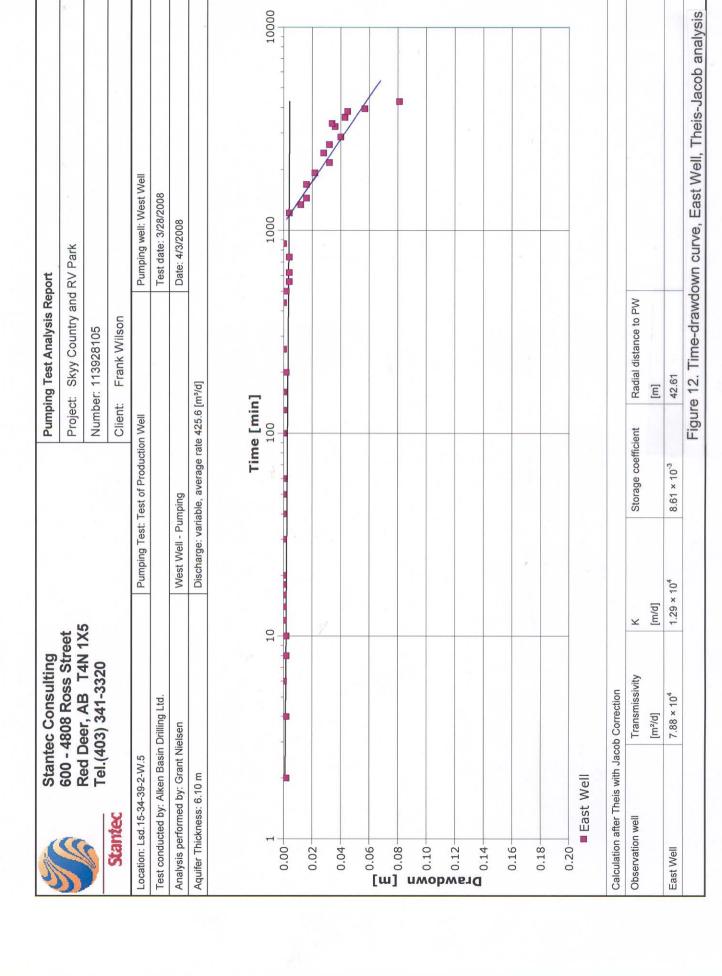
3.13 × 101 [m/d]

 1.91×10^{2} $[m^2/d]$

Well 1

Transmissivity

Observation well





Project: Skyy Country RV Park Pumping Test Analysis Report

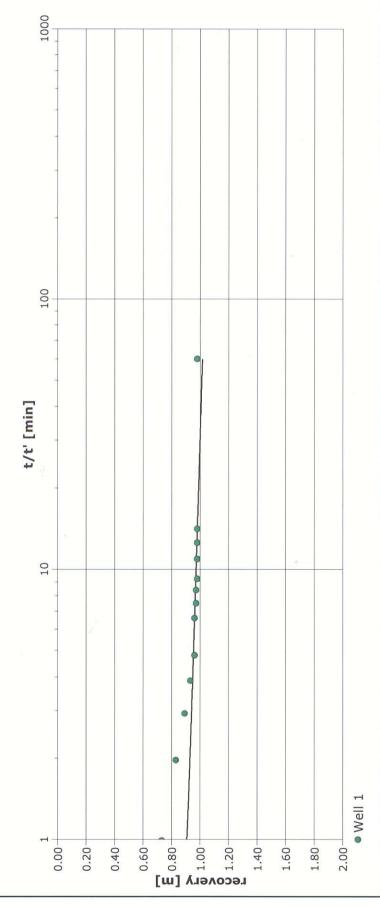
Number: 113928105

Client: Frank Wilson

Figure 13. Time-drawdown curve, East Well, Papadopulos-Cooper analysis 1000 Pumping well: Well 1 Test date: 3/8/2008 Date: 4/8/2008 100 Well-bore storage coefficRadial distance to PW Pumping Test: Preliminary Test-Observation Well Discharge: variable, average rate 208.26 [m3/d] 90.0 <u>E</u> Time [min] 2.95×10^{-14} Short test 10 1.02×10^{2} [p/m] ¥ Transmissivity 6.55×10^{2} Test conducted by: Alken Basin Drilling Ltd. Calculation after Papadopulos & Cooper $[m^2/d]$ Analysis performed by: Grant Nielsen Location: Lsd.15-34-39-2-W.5 Aquifer Thickness: 6.40 m Well 1 Observation well Drawdown [m] 0.80-1.20-1.40-0.00 0.20 0.40 09.0 1.60 1.80 2.00 Well 1

	Stantec Consulting	Pumping Test Analysis Report	eport
	600 - 4808 Ross Street	Project: Skyy Country RV Park	/ Park
	3320	Number: 113928105	
Stantec		Client: Frank Wilson	
Location: Lsd.15-34-39-2-W.5	4-39-2-W.5	Pumping Test: Preliminary Test-Observation Well	Pumping well: Well 1

	Stantec Consulting	Pum	Pumping Test Analysis Report	port
	600 - 4808 Ross Street	Proje	Project: Skyy Country RV Park	Park
	Tel.(403) 341-3320	Num	Number: 113928105	
Stantec		Clier	Client: Frank Wilson	
Location: Lsd.15-34-39-2-W.5	39-2-W.5	Pumping Test: Preliminary Test-Observation Well	rvation Well	Pumping well: Well 1
Test conducted by: A	Test conducted by: Alken Basin Drilling Ltd.			Test date: 3/8/2008
Analysis performed by: Grant Nielsen	y: Grant Nielsen	Short test		Date: 4/8/2008
Aquifer Thickness: 6.40 m	40 m	Discharge: variable, average rate 208.26 [m³/d]	.26 [m³/d]	



Calculation after AGARW	Calculation after AGARWAL + Papadopulos & Cooper				
Observation well	Transmissivity	×	Well-bore storage coef	Well-bore storage coefficRadial distance to PW	
	[m²/d]	[m/d]		[m]	
Well 1	6.88 × 10 ²	1.08 × 10 ²	1.07 × 10 ⁻¹⁴	0.06	
		ĬĬ.	aure 14. Time-recove	Figure 14. Time-recovery curve. East Well. Agarwal-Papadopulos-Cooper analysis	oper analysis



Pumping Test Analysis Report
Project: Skyy Country RV Park

Number: 113928105

Location: Lsd. 15-34-39-2-W.5 Test conducted by: Alken Basin Drilling Ltd. Analysis performed by: Grant Nielsen Aquifer Thickness: 6.70 m	7.5	Pumping T	Pumping Test: Test of East Well		Pumping well: Well 1	
Test conducted by: Alken Ba Analysis performed by: Gran Aquifer Thickness: 6.70 m					6 4	
Aquifer Thickness: 6.70 m 1 0.00	asin Drilling Ltd.				Test date: 4/11/2008	
Aquifer Thickness: 6.70 m	ıt Nielsen	Test of East Well	t Well		Date: 4/14/2008	
0.00		Discharge:	Discharge: variable, average rate 199.59 [m³/d]	59 [m³/d]		
0.00			Time [m	[<u>u</u>		
0.00		10	100		1000	10000
•						
0.40		3f			*	
[m			000000	00000000	0000000	
1.60 wu						2
2.00 x 3.00 x 3.						
Drav 2.40						
2.80						
3.20						
3.60				1		
4.00 • Well 1						
Calculation after Papadopulos & Cooper	os & Cooper					
Observation well	Transmissivity	¥	Well-bore storage coe	Well-bore storage coefficRadial distance to PW		
	[m ² /d]	[m/d]		[m]		
Well 1	2.57×10^2	3.83 × 101	3.15 × 10 ⁻⁶	90.0		



Project: Skyy Country RV Park Pumping Test Analysis Report

Number: 113928105

Client: Frank Wilson

10000 000000 000000 0000000 000000 Pumping well: Well 1 Test date: 4/11/2008 Date: 4/14/2008 1000 Discharge: variable, average rate 199.59 [m³/d] Time [min] Pumping Test: Test of East Well Test of East Well 10 Test conducted by: Alken Basin Drilling Ltd. Analysis performed by: Grant Nielsen Location: Lsd. 15-34-39-2-W.5 Aquifer Thickness: 6.70 m Well 1 [m] 1.20-1.60-2.00-2.40-0.00 0.40 0.80 3.20-3.60 4.00 2.80

Observation well	Transmissivity	×	Storage coefficient	Radial distance to PW	
	[m ² /d]	[p/m]		[m]	
Well 1	3.15×10^{2}	4.70 × 10 ¹	4.23 × 10 ⁻⁷	0.06	



Pumping Test Analysis Report
Project: Skyy Country RV Park

Number: 113928105

Test conducted by: Alken Basin Drilling Ltd.	Basin Drilling Ltd.				Test date: 4/11/2008
Analysis performed by: Grant Nielsen	ant Nielsen	Recovery of	Recovery of East Well (Pumping)		Date: 4/14/2008
Aquifer Thickness: 6.70 m		Discharge: v	Discharge: variable, average rate 199.59 [m³/d]	[p/₅ui	
			t/t' [min]		
I		10	Ą	100	0 1000
0.00					
0.40		<i>y</i>			
0.80			d		
1.20					
ry [n					
5006					
760 2.40					
2.80					
3.20		3.5			
3.60					
4.00 • Well 1					
Salculation after AGARW	Calculation after AGARWAL + Papadopulos & Cooper				
Observation well	Transmissivity	¥	Well-bore storage coefficRadial distance to PW	Radial distance to PW	
	[m²/d]	[m/d]		[m]	
Well 1	3.62 × 10 ²	5.41 × 101	1.40 × 10 ⁻¹⁰	0.06	



Project: Skyy Country RV Park Pumping Test Analysis Report

Number: 113928105

Location: Lsd. 15-34-39-2-W.5	Pumping Test: Test of East Well	Pumping well: Well 1	
Test conducted by: Alken Basin Drilling Ltd.		Test date: 4/11/2008	
Analysis performed by: Grant Nielsen	Recovery of East Well (Pumping)	Date: 4/14/2008	
Aquifer Thickness: 6.70 m	Discharge: variable, average rate 199.59 [m³/d]		
	t/t' [min]		
1	10	100	1000
0.00			
0.80			
1.20			
[m]		0-	9860
S		*	
0Ve2			
rec 2.40			
00000			
07.0			
3.60			
4.00 • Well 1			

Observation well	Transmissivity	×	Storage coefficient	Radial distance to PW	
	[m²/d]	[p/m]		[m]	
Well 1	4.26×10^{2}	6.36 × 10 ¹	3.12 × 10 ⁻¹¹	0.00	
S HESSELL S					



Pumping Test Analysis Report
Project: Skyy Country RV Park

Number: 113928105

Location: Lsd. 15-34-39-2-W.5	2 1/1/ 5	Dimpipa	Dumping Toet: Toet of East Moll		Dumping well East Mell		
	Z-VV.3	Silldillin a	וכאן. וכאן טו במאן עיכוו		r unipling well. East well		
Test conducted by: Alken Basin Drilling Ltd	n Basin Drilling Ltd.				Test date: 4/11/2008		
Analysis performed by: Grant Nielsen	Grant Nielsen	Test of East Well	ist Well		Date: 4/14/2008		
Aquifer Thickness: 6.70 m	m	Discharge	Discharge: variable, average rate 199.59 [m³/d]	[b/ _s m] 6			-
			time [min]	-			
		10	100		1000		10000
00.00	-	-	-				
0.01		o př					V.
20:0					•		
] nw							
0.05 cobw						~	1
Dra /							
0.07							
80:0							
60.0							
■ West Well	ell						
Calculation after Theis							
Observation well	Transmissivity	¥	Storage coefficient	Radial distance to PW			
	[m²/d]	[m/d]		[m]			
West Well	1.09 × 10 ⁴	1.63×10^3	9.92×10^{-3}	42.61			



Pumping Test Analysis Report
Project: Skyy Country RV Park

Number: 113928105 Client: Frank Wilson

Location: Lsd. 15-34-39-2-W.5	-2-W.5	Pumping Test:	Pumping Test: Test of East Well	Pu	Pumping well: East Well	
Test conducted by: Alken Basin Drilling Ltd.	en Basin Drilling Ltd.			ia L	Test date: 4/11/2008	
Analysis performed by: Grant Nielsen	Grant Nielsen	Recovery of East Well	ast Well	Da	Date: 4/14/2008	
Aquifer Thickness: 6.70 m	E	Discharge: var	Discharge: variable, average rate 199.59 [m³/d]	[b/²m]		
		10	t/t' [min]	7	1000	10000
0.00						
0.02		ŭ ^e			•	
0.03						
m] /v						
0.05					ě	h
Rec						
70:0						
0.08						
60.0						
0.10 • West Well	ell					
Calculation after AGARWAL + Theis	WAL + Theis					
Observation well	Transmissivity	Υ .	Storage coefficient	Radial distance to PW		
	[m ² /d]	[m/d]		[m]		

Observation well	Transmissivity	¥	Storage coefficient	Radial distance to PW	
	[m²/d]	[m/d]		[m]	
West Well	4.79 × 10 ³	7.15×10^2	2.54×10^{-1}	42.61	
			Figure	Figure 20. Time-Recovery curve, East Well, Agarwal + Theis analysis	garwal + Theis analys

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Aquifer Analysis – Pumping Well May, 2008

The capacity of the well was severely limited by the deep nonpumping water level and small available head.

The same procedures were then followed, but using the East Well for Pumping and the West Well for observation purposes.

2.2 AQUIFER PARAMETERS

The aquifer parameters were calculated for both the pumping and recovery portions of the test for the pumping well, whether the West or the East Well. Results from the Observation Well were not considered valid or useful for interpreting well behaviour. Table 4 summarizes the results of the testing. In selecting the parameters to be used for the further evaluation of aquifer behaviour, those values considered to be unrepresentative or invalid were discarded, and only valid parameters were used.

Table 4

Aquifer Parameters

			Test	Discharge	Transmissivity	Spec. Cap.
Well	Test	Analysis	Length(hrs)	m3/day	m2/day	m3/day/m
,,,	Pumping-		00.4	40==	0==	400.0
West	1st	Papadopulos-Cooper	82.1	425.7	655	166.3
	Limb					
West	Pumping- 2nd	Theis-Jacob	82.1	425.7	198	166.3
West	limb	111615-34600	02.1	425.7	190	100.5
West	Recovery	Papadopulos-Cooper	48.3	_	191	_
West	Recovery	Theis-Jacob	48.3	_	239	_
West	Obs Well-	Theis	29.3	_	10900	_
VVCSt	Pumping	THOIS	25.5		10000	
West	Obs Well-	Theis	45.3	_	4790	_
	Recovery					
East	Pumping	Papadopulos-Cooper	2	200	655	212.6
East	Recovery	Papadopulos-Cooper	2	200	688	
East	Pumping	Papadopulos-Cooper	29.3	200	257	128.5
East	Pumping	Theis-Jacob	29.3	200	315	128.5
East	Recovery	Theis-Jacob	35.2	-	362	-
East	Recovery	Theis-Jacob	35.2	-	426	
		Values Used - West				
		Well			209	166.3
		Values Used - East			044	400.5
		Well			311	128.5

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Aquifer Analysis – Pumping Well May, 2008

A conservative transmissive capacity of 209 m²/day was selected for the West Well, and 311 m²/day for the East Well. Storativity is assumed to be 0.0005 for all further calculations, as the lack of response of the observation wells made it impossible to obtain a valid storativity value. The East Well is in an unconfined condition, as the water level before pumping was within the aquifer. In this case, therefore, the storativity may be greater than 0.0005.

The specific capacity of a well is given by the productive capacity of a well divided by its drawdown. In the case of the West Well, the discharge during the test was 425.7 m³/day, and the maximum drawdown after 72 hours pumping was 2.561 m. Thus the specific capacity of the well is 425.7/2.561 = 166.3 cubic metres per day per metre of drawdown. That is, for each metre of drawdown during pumping, the well is capable theoretically of producing 166.2 cubic metres of water per day. The specific capacity of the East Well was calculated in the same manner, that is 200/1.56 = 128.5 cubic metres per day per metre of drawdown.

These two wells will be used on a seasonal basis for recreational purposes. For purposes of the analysis which follows, it is assumed that the facility will be open to the public from May 15 to September 15 of each year, that is, 4 full months. It is also assumed that water demand will be just 50 % of full demand during the period May 15 to June 15, and from September 1 to September 15, as most families will still have children in school. The facility is assumed to be 100 % occupied from June 15 to September 1.

Thus water demand will be 667 units X 2.5 persons per family X 0.25 m^3 /person/day = 416.9 m^3 /day for 75 days and 416.9/2 = 208.45 m^3 /day for 45 days each season. Therefore the total annual demand would be 40,649 m^3 . This would be produced during 120 days, but the average daily production over a full year period would be 111.4 m^3 .

The theoretical long-term safe yield of the production well may be calculated by two main methods, the Farvolden Method and the Moell Method, based upon results of the aquifer testing.

The Farvolden Method is expressed as follows:

 $Q_{20} = (0.68)(T)(H_A)(0.7)$, in which

 Q_{20} = calculated safe yield for 20 years continuous pumping, in m³/day

T = transmissive capacity. in m^2/day

H_A = available head, the difference between nonpumping water level and the top of the completion interval of the well, in m.

0.7 = a safety factor, to compensate for unknown limiting factors

The Farvolden Method is suitable when there is little or no well loss in the initial minutes of the test, but in most cases, the well loss is appreciable and must be taken into account. For this reason the Moell Method is usually preferable. It provides a more conservative and more

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Aquifer Analysis – Pumping Well May, 2008

realistic result. Only calculations based on the Moell Method will be used in this report for that reason, for both of the Wells.

The Moell Method is expressed as follows:

$$Q_{20} = \frac{(Q)(H_A)(0.7)}{s_{100} + 5\Delta s}$$
, in which

Q₂₀ = calculated safe yield for 20 years continuous pumping, in m³/day

Q = pumping rate used during the aquifer test, in m³/day

 H_A = available head, the difference between nonpumping water level and the top of the completion interval of the well, in m.

0.7 = a safety factor to compensate for unknown limiting factors

 s_{100} = the observed drawdown after 100 minutes pumping, in m

 Δs = the drawdown per log cycle, in m.

The 20 year sustainable yield of the West Well, as calculated by the Moell Method is as follows:

$$Q_{20} = \frac{(425.7)(2.09)(0.7)}{1.6 + (5)(0.8)}$$
$$= 111.2 \text{ m}^3/\text{day}.$$

The sustainable yield of the East Well is given by:

$$Q_{20} = \frac{(200)(2)(0.7)}{1.3 + 5(0.15)}$$
$$= 136.6 \text{ m}^3/\text{day}$$

Ignoring the very minor level of interference between the wells (which can be included within the safety factor of 0.7), the total available sustainable yield of the two wells is the sum of the two calculations above, or 247.8 m³/day. Although this will result in exceeding the sustainable yield of the two wells during several months, the annual sustainable yield of 247.8 m³/day is almost twice the daily water demand of 111.4 m³/day, when averaged over the entire year. The wells will be in recovery (and recharge) mode during eight months of each year. This is a similar situation to wells used for irrigation of agricultural land and of golf courses.

2.3 INTERPRETATION OF AQUIFER TEST RESULTS

Both the pumping and the recovery portions of the test of the West Well show that the transmissive capacity of the aquifer at this location is about 209 m²/day. The Papadopulos-Cooper analysis indicates a lower transmissive capacity, but the observation well results indicate that the transmissivity of the area is greater than this analysis would indicate. Moreover, the long-term behaviour of an aquifer (such as a 72 hour test) is better described using the Theis-Jacob analysis.

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Aquifer Analysis – Pumping Well May, 2008

The AquiferTest Pro program calculates storativity also, but when calculated from the pumping well measurements, the result is meaningless, as an accurate measurement of the distance between the point of production and the point of measurement is needed.

The West Well has a very deep non-pumping water level, and the available head is only 2.09 m. Indeed, the test drew the water level in the pumping well down slightly into the completion zone. This cannot be permitted during normal operation of the well, and the analysis has taken this situation into consideration. It should be noted that the water level in the East Well is below the top of the aquifer without pumping and hence is unconfined. An arbitrary available head of 2.0 m has been assumed for this well.

3.0 Impact Assessment to Sylvan Lake

3.1 LOCAL IMPACT

In order to calculate the degree of interference at different distances from the pumping wells and at different times, the following parameters have been used, as derived from the aquifer test. Since both wells will be pumped, and both tap the same aquifer, the local impact is calculated as the sum of the impact of the two wells pumping together, as though they were one single well. At distances greater than about 100 m, it would be impossible to separate the impacts of the two wells. The inhomogeneities of the aquifer, as noted in the previous sections, will modify the real-life results to some extent, of course.

Combined pumping rate = 111.4 cubic metres per day Transmissive capacity = 250 m²/day (average of two wells) Storativity, assumed = 0.0005 (dimensionless)

The impact, or interference, at different times and distances from the pumping well is calculated from two basic equations:

$$U = r^2 S/4Tt$$
, or 7.98 E-9* r^2
S = QW(u)/4 π T, or 0.0703 W(u)

Since the calculations using these formulae are somewhat laborious for each time and/or distance increment, the computer program **WELLz** was used. It is based on the same mathematical processes described above and accomplishes the same results much more rapidly. Table 5 shows the known drilled wells of the area, with their available head.

The calculations of interference shown in Table 6 are based on the assumption that the wells will pump without stopping for 20 years, and that there will be no recharge to the aquifers during that time. Obviously, both assumptions are incorrect, as there will certainly be interruptions of the pumping time, especially outside the vacation season, and there will also be some recharge to the aquifer from infiltration of snowmelt and rainfall. This item will be discussed in detail further below. Thus the table shows only a "worst case scenario" of what might happen. In reality, because of the recharge, the aquifer will exhibit even less drawdown and interference than these calculations would indicate. This recharge effect has been quantified and will be discussed later in this report.

In addition, the maximum interference indicated below would take place only in wells which are completed in the same aquifer interval. Wells which are completed in shallower or deeper zones would probably show little or no interference.

Table 5 Water Wells Drilled near Skyy Country RV Park

					Total		NPWL (m) Non		Reported
					Depth	Completion	Pumping	Available	Discharge
Location	Owner	Driller	Year	AENV ID	(m)	Zone (m)	Static Level	Head (m)	(m³/day)
NE-26-39-02-W.5	D. Alfke	Flinn Drilling Ltd	1975	362605	16.8		8.5		130.9
SE-26-39-02-W.5	M.A. Putnam	Forrester	1967	362543	50.3	37.2 - 50.3	12.2	25.0	130.9
SE-26-39-02-W.5	Rod Depaiva	Forrester	1974	362544	41.2		10.7		196.4
SE-26-39-02-W.5	Dale Simmons	Alken Basin Drilling	1995	418029	48.8	42.7 - 48.8	15.2	27.4	58.9
SE-26-39-02-W.5	John Thompson	Alberta Eagle Drilling	1997	469634	33.5	24.4 - 33.5	12.8	11.6	654.6
SE-26-39-02-W.5	Don Jepson	Alken Basin Drilling	1997	469635	36.6		15.2		392.8
SW-26-39-02-W.5 Rick Laye	Rick Laye	Alken Basin Drilling	1991	356224	42.7	36.6 - 42.7	21.3	15.2	98.2
SE-26-39-02-W.5	Ron Wuetherick	Alken Basin Drilling	1996	468805	36.6	30.5 - 36.6	26.8	3.7	163.7
01-25-39-02-W.5	Alta Env #2620E	AB Env Protection	1990	352967	40.5		36.9		
01-25-39-02-W.5	Alta Env #2619E	AB Env Protection	1990	352968	8.99		36.6		
01-25-39-02-W.5	Alta Env #2621E	AB Env Protection	1990	352969	4.9	1.2 - 4.9			
08-25-39-02-W.5	C & T Res	Alberta Eagle Drilling	1984	362540	73.2		47.2		261.8
NE-25-39-02-W.5	Merlyn Wilson	Alken Basin Drilling	1994	396645	79.3	54.9 - 79.3	54.9	0.0	163.7
NW-25-39-02-W.5 Rob Scott	Rob Scott	Alberta Eagle Drilling	1990	351682	64.0	57.9 - 64.0	50.3	9.7	130.9
SE-25-39-02-W.5	Doug Culshaw	Morrill's Water Well Drilling	1992	365585	70.1	54.9 - 70.1	44.8	10.1	130.9
13-36-39-02-W.5	Domex/Cactus 4#RIG	Alken Basin Drilling	1995	418320	103.6	30.5 - 48.8	38.1	0.0	98.2
13-36-39-02-W.5	Domex/Cactus 4#RIG	Alken Basin Drilling	1995	418321	61.0	30.5 - 54.9	24.4	6.1	98.2
NE-36-39-02-W.5	Randy Ehman	Alken Basin Drilling	1990	350289	48.8	36.6 - 42.7	25.9	10.7	130.9
NE-36-39-02-W.5	D. Damron	Erickson & Kangas		362742	36.6		27.4		52.4
SW-36-39-02-W.5 Jerry Gouthro	Jerry Gouthro		1970	362735	73.2	32.9 - 72.5	57.9	0.0	98.2
SW-36-39-02-W.5 Dale Meyers	Dale Meyers		1978	362736	73.2	55.2 - 73.2	54.3	6.0	78.6
SW-36-39-02-W.5 J. Albers	J. Albers	Nelson Drilling & Plumbing	1945	362737	59.7		39.6		
SW-36-39-02-W.5 Julius Albers	Julius Albers	Alken Basin Drilling	1998	491530	85.3	42.7 - 48.8	42.7	0.0	42.6
NE-36-39-02-W.5	K. Olson	Erickson Ernfred	1935	362741	45.7		30.5		
NW-36-39-02-W.5 Rod Wilkens	Rod Wilkens	Alken Basin Drilling	1989	362739	54.9	42.7 - 48.8	24.4	18.3	130.9
SW-36-39-02-W.5	SW-36-39-02-W.5 Bonnie Hetherington	Alken Basin Drilling	1995	380541	73.2	54.9 - 73.2	54.9	0.0	196.4
03-35-39-02-W.5	Dominion Expl	Alken Basin Drilling	1995	406357	67.1	36.6 - 54.9	45.7	0.0	229.1
NE-35-39-02-W.5	C. Ecklund	Erickson & Kangas	1963	362733	53.3		37.2		39.3
NW-35-39-02-W.5 Elmer Brattberg	Elmer Brattberg	Forrester	1974	362728	64.0	29.3 - 64.0	38.1	0.0	137.5
NW-35-39-02-W.5 Elmer Brattberg	Elmer Brattberg	Forrester	1980	362729	61.0	35.7 - 61.0	42.7	0.0	130.9
NW-35-39-02-W.5 H. Brattberg	H. Brattberg	Erickson Ernfred	1932	362731	65.5		50.3		

Table 5
Water Wells Drilled near Skyy Country RV Park

39.3	39.3	130.9	130.9	327.3	26.2	65.5	65.5	65.5	45.8		65.5	65.5	78.6	78.6	170.2	196.4	327.3	196.4	196.4	196.4	65.5	45.8	65.5	13.1	261.8	65.5	65.5	491.0	91.6			19.6		130.9	
	25.3	0.0	n e												8.5	8.2	13.7		6.7		2			4.6	2.1			7.2							
48.8	25.9	50.3	5.8	14.9	9.1	23.5	10.7	45.7	45.7	21.3	3.7	6.0	21.3	15.2	23.8	23.8	12.5	8.2	7.3	8.2	49.4	18.3	18.3	7.6	8.2	23.8	8.2	9.6	12.8	8.5	8.8	3.7		9.5	
	51.2 - 54.3	46.0 - 71.6													32.3 - 36.6	32.0 - 36.6	26.2 - 30.5		15.2 - 18.3					12.2 - 18.3	10.4 - 19.2			16.8 - 24.4							
61.0	26.7	71.6	18.3	25.9	38.1	45.7	24.4	77.7	77.7	82.9	36.6	36.6	39.6	45.7	36.6	36.6	30.5	36.6	18.6	19.2	67.9	42.7	38.1	18.3	19.2	67.9	36.6	24.4	36.6	33.5	19.2	6.4	48.5	32.9	36.6
362727	362734	362730	362715	362716	362717	362718	362720	362722	362723	362724	362709	362711	362712	362713	365978	366507	467432	362710	362714	362671	362676	362678	362668	362669	406356	362665	362666	341885	355186	352619	352623	352624	352626	352966	362661
1959	1986	1980	1970	1976	1976	1981	1963	1978	1979	1934	1971	1971	1972	1969	1992	1992	1997	1981	1976	1962	1970	1976	1979	1984	1995	1970	1971	2002	1985	1990	1990	1990	1990	1990	1962
Erickson Ernfred	All Rite Drilling Ltd	Forrester	Lawson. ME Water Wells	Richmond WW Drlg	Richmond WW Drlg	Alberta Eagle Drilling	Erickson & Kangas	Star Drlg Co	Sylvan Lake Drlg	Erickson Ernfred	Nelson Drilling & Plumbing	Nelson Drilling & Plumbing	Brown Jim	Brown Jim	gle	Alberta Eagle Drilling	Alberta Eagle Drilling	Big Quill Drilling Ltd	Hansen Drlg	Kingsep Robert	Nelson Drilling & Plumbing	Richmond WW Drlg	Forrester	Magnum Drlg	Alken Basin Drilling	Nelson Drilling & Plumbing	Nelson Drilling & Plumbing	Alken Basin Drilling	Medicine Valley Water Wells	AB Env Protection	AB Env Protection	AB Env Protection	AB Env Protection	AB Env Protection	German R E
SW-35-39-02-W.5 Glen Elsworth	NE-35-39-02-W.5 Dave Millar	NW-35-39-02-W.5 Elmer Brattberg	NW-34-39-02-W.5 Jack Richarson	NW-34-39-02-W.5 Garry Weinman	NW-34-39-02-W.5 Gordon Pierson	NW-34-39-02-W.5 Wilf Reid	NW-34-39-02-W.5 Dennis Goutheau	NE-34-39-02-W.5 Peter Carlson	NE-34-39-02-W.5 Peter Carlson	NE-34-39-02-W.5 H. Carlson	SW-34-39-02-W.5 Oliva Stevens	SW-34-39-02-W.5 B. Shapke	SW-34-39-02-W.5 Mccook	SW-34-39-02-W.5 Glen Brown	SW-34-39-02-W.5 Gord Grudgefield	SW-34-39-02-W.5 Ken Tumbach	SW-34-39-02-W.5 Elmer Haack	SW-34-39-02-W.5 R. Hicks	SW-34-39-02-W.5 John Van Bukel	11-33-39-02-W.5 W. Mottus	NE-33-39-02-W.5 Alf Loewen	NE-33-39-02-W.5 Susan Tolson	NW-33-39-02-W.5 Dean Urg	NW-33-39-02-W.5 Wally Mottus	NW-33-39-02-W.5 Alex Sabados	SW-33-39-02-W.5 Ranaghan	SW-33-39-02-W.5 Parney	SW-33-39-02-W.5 Richard Degroat	NE-33-39-02-W.5 Dick Buttynen	01-32-39-02-W.5 Alta Env #2604E	01-32-39-02-W.5 Alta Env #2605E	01-32-39-02-W.5 Alta Env #2606E		01-32-39-02-W.5 Alta Env #2623E	SE-32-39-02-W.5 Alice Snyder

Table 5
Water Wells Drilled near Skyy Country RV Park

26.2		183.3	58.9	130.9	392.8	65.5	58.9	45.8	32.7	65.5	52.4		327.3	52.4	255.3		196.4	130.9	91.6	327.3		98.2	130.9		65.5	98.2	229.1	65.5	39.3	91.6	65.5	78.6
	0.0	13.0		0.0	18.3		27.4			19.8			7.6	7.6	14.9		2.4	9.1	0.0	14.9		0.0	15.2			0.0	0.0			6.5	9.2	14.0
4.3	2.7	14.5	23.8	16.8	18.3	16.5	15.2	4.9	5.5	15.2	10.4		29.0	59.4	6.1	18.3	18.9	51.8	41.8	46.0	42.7	30.5	42.7		19.8	50.3	25.9	31.4	9.8	7.6	12.2	22.6
	0.6 - 3.1	27.41 - 36.6		12.5 - 24.4	36.6 - 42.7		42.7 - 61.0			35.1 - 53.3			36.6 - 61.0	67.1 - 85.3	21.0 - 38.1		21.3 - 38.1	61.0 - 73.2	41.2 - 48.8	61.0 - 67.1		30.5 - 48.8	57.9 - 70.1			48.8 - 61.0	24.4 - 36.6			14.0 - 19.8	21.3 - 27.4	36.6. 18.8
33.5	3.1	36.6	36.6	24.4	42.7	30.5	61.0	18.3	39.6	53.3	22.9	24.1	61.0	85.3	38.1	35.7	38.1	73.2	48.8	73.2	9.89	48.8	70.1	62.5	73.2	61.0	54.9	45.7	32.0	19.8	30.5	ASA
362662	352625	350623	437992	437993	496127	437983	399203	437981	437982	369396	437642	353902	406258	350292	437650	478912	478913	437631	437633	341907	438638	437628	416228	437620	437621	437626	418035	437616	478909	496975	437603	166252
1962	1990	1990	1973	1989	1999	1966	1994	1955		1993	1981	1990	1995	1990	1974	1941	1969	1988	1977	2002	1943	1988	1995	1950	1964	1988	1995	1971	1974	2000	1979	1006
German R E	AB Env Protection	Alberta Eagle Drilling	Richmond WW Drlg	Medicine Valley Water Wells	Tall Pine Drilling Ltd	Nelson Drilling & Plumbing	Alken Basin Drilling	Johanson Victor	Nelson Drilling & Plumbing	Alken Basin Drilling	Alberta Eagle Drilling	AB Env Protection	Alken Basin Drilling	Alken Basin Drilling	Forrester	Erickson Drilling	Moores WW Drlg	Alken Basin Drilling	Lousana Water Wells	Alken Basin Drilling	Nelson Drilling & Plumbing	Alken Basin Drilling	Alken Basin Drilling	Erickson Ernfred	Nelson Drilling & Plumbing	Alken Basin Drilling	Alken Basin Drilling	Nelson Drilling & Plumbing	Three Star Drlg	Medicine Valley Water Wells	Ken's Water Service	Alkon Basin Drilling
SE-32-39-02-W.5 Alex Strong	307E	Ron Shoettler	ocker				NE-10-40-02-W.5 David Anderson	 D		SE-09-40-02-W.5 Carlyle Cattle Co Ltd	03-04-40-02-W.5 Alan Russell	Alta Env #2624E	08-04-40-02-W.5 A. Russell/Gardiner Oil	110	NW-04-40-02-W.5 Del. C. Purnell	SE-04-40-02-W.5 D.H. Russell	01-04-40-02-W.5 Allan Russell	Alan Russell	SW-03-40-02-W.5 Buit Bros.	azy S Farm	NE-03-40-02-W.5 V. Johanson	NE-02-40-02-W.5 Orvil Anderson	Dennis Freeman	SE-02-40-02-W.5 O. Solberg	SW-02-40-02-W.5 Laverne Anderson		14	Andrew Holman	SE-01-40-02-W.5 Andrew Holman	NW-01-40-02-W.5 J.G. Smith	08-01-40-02-W.5 A. Holmen	Don Stanhanson

Impact Assessment to Sylvan Lake

May, 2008

Table 6	
Interference caused by pumping of Skyy Country We	lls

Distance(m)	1 Year	2 Years	5 Years	10 Years	20 Years
100	0.38	0.40	0.43	0.46	0.48
200	0.33	0.35	0.38	0.41	0.43
500	0.26	0.29	0.32	0.34	0.37
750	0.23	0.26	0.29	0.32	0.34

The aguifers of Alberta are known to be generally discontinuous, lenticular, anisotropic and heterogeneous in their configuration. This gives rise to a number of concerns that must be considered in the calculation of long-term pumping rates and the design of water systems. Among these concerns are the following:

- Transmissive capacity is not constant everywhere in an aguifer, nor in time. The hydrogeologic cross-section (Figure 5) shows the extent to which unit thickness and hence transmissive capacity may vary, even in short distances (although part of the variability may result from differences in driller interpretation). Even within the same lithostratigraphic unit, there are significant variations in thickness, permeability, degree of fracturing, variation in cementation, etc. All these factors contribute to create a wide range of transmissive capacity.
- Because of the lenticular nature of most aquifers in Alberta, even neighbouring wells are often completed in different and distinct water-bearing strata. Therefore one cannot necessarily assume that adjacent wells are connected hydraulically to each other.
- Nor is it likely, as the above analysis assumes, that a well will be pumped on a continuous basis over its lifetime. There are always periods of lower or no pumping during well maintenance, or when the owner is absent. In this case, the wells will not be pumped, or very little, outside the summer season.
- The basic assumptions behind the Theis analytical procedures for calculating transmissive capacity are that the aquifer is horizontal, of infinite extent, homogeneous and isotropic, and that the wellbore is of infinitesimal diameter. In reality, none of these assumptions is strictly true. The variations from the ideal can usually be recognized however and corrections made.

The impact of the pumping on the closest well-owners whose wells are or could be completed in the same hydrostratigraphic interval, after twenty years or 7 log cycles of time of pumping from the new proposed diversion would be as shown in Table 6.

It may be seen from the above table that the interference in all cases would be a small fraction of the available head, virtually impossible to measure. This analysis assumes that pumping of the Skyy Country Subdivision well will be continuous for 20 years. With no recharge and constant pumping, the maximum impact on any other existing user would be about 30 to 40 cm after 20 years. However, this analysis ignores 20 years of recharge, which will no doubt eliminate any impact whatsoever. More will be said about this in a later section.

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Impact Assessment to Sylvan Lake May, 2008

3.2 IMPACT ON LAKE LEVEL

Alberta Environment has recognized that Sylvan Lake is maintained largely by flow from springs and diffuse groundwater discharge. For this reason, Environment is concerned with any activity which might modify the natural groundwater flow. It is considered undesirable that pumping increase to the point at which the cones of depression of the wells would extend to the lakeshore, and thus begin to divert water from the lake to the water supply wells.

Alberta Environment maintained a network of 20 observation wells around the west end of Sylvan Lake for varying periods of 5.25 to 12.8 years. Several of these observation wells were located less than 1 km immediately west of the proposed Skyy Country Subdivision. None are still in use at present, as all measurements terminated in late 1997. Several were located in the ditch beside Range Road 2-4, and have been destroyed because of widening of this road. In work done in a previous study, the hydrographs of these observation wells were analyzed by Stantec Consulting Ltd. to determine their long-term behavior and to estimate the recharge in this area. Each rise in water level in each hydrograph was assumed to represent a recharge event. Since measurements were taken only monthly, there are likely additional minor recharge events which are not evident in this analysis. The individual hydrographs are located in Appendix F, and a summary of results is shown in Table 8 below.

There has been considerable concern expressed by those who live near and who use the lake for recreation that the continued development of groundwater resources is impacting discharge to the lake. This reduction of discharge into Sylvan Lake could cause the level to drop and thus would also contribute to deterioration of lake water quality.

The level at which there is surface discharge from the lake is 936.66 m. A few scattered measurements of water levels of Sylvan Lake began starting in 1918 and continued until 1930. One single level was read in each of 1939 and 1940. Systematic readings began again in 1956 and continue to the present, with several readings daily during the season when the lake is not frozen, ie, about May 1 to November 30 of each year.

In an unpublished document prepared by Stantec Consulting Ltd., it was shown that in 68 years of records (updated through 2007), there were 40 years with at least some discharge from the lake, and 29 years with no discharge. Years 2004 to 2006 had no discharge. However, 2007 experienced levels above the discharge outlet during almost the entire ice-free season, ie, from about May 1 until freeze-up in late October. This was a year with almost no beach exposed because of high water. As 2007 has been the year of maximum subdivision development and groundwater use to date, it is evident that there no harm has been done to lake levels due to groundwater production around the lake. In addition, the six months of discharge from the lake would certainly flush out accumulated water from previous years and lake water quality would reflect to a large degree the quality of the surface water and groundwater entering into the lake during 2007.

Impact Assessment to Sylvan Lake May, 2008

Table 7
Groundwater Recharge – Sylvan Lake Area

Well Location*	Well Ref. No.	Years of Record	Total well depth (m)	Confined/ Unconfined Aquifer	Annual Recharge (mm)	Trend of Hydrograph
1-32-39-2	2623E	12.8	32.9	С	3.0	Down
1-32-39-2	2604E	12	33.8	С	2.5	Up
1-32-39-2	2605E	13	19.2	С	1.9	Level
1-32-39-2	2606E	13	6.4	С	4.7	Level
1-19-39-2	2609E	7	25.9	С	3.4	Up
1-19-39-2	2610E	7	11.6	С	2.4	Level
1-19-39-2	2611E	7	6.4	U	15.4	Level
14-9-39-2	2613E	7	30.0	С	4.4	Up
13-26-39-2	2616E	7	42.3	С	2.2	Up
13-26-39-2	2617E	7	24.0	С	3.0	Up
13-26-39-2	2618E	7	5.7	U	11.2	Level
1-25-39-2	2619E	7	51.2	С	3.2	Up
1-25-39-2	2620E	7	40.5	С	2.5	Up
1-25-39-2	2621E	5.25	5.0	U	2.9	Level?
15-9-39-1	2622E	7	36.3	С	2.2	Up
8-10-39-2	2693E	5.25	0.7 ?	U	3.1	Up
8-10-39-2	2694E	5.25	0.64?	С	5.2	Down
9-1-39-2	2696E	5.25	0.68?	С	4.7	Up
9-1-39-2	2697E	5.25	0.63?	С	7.6	Level
9-1-39-2	2698E	5.25	0.54?	U	7.0	Level
	Average r	echarge, C	onfined		3.5	
	Average re	charge, Un	confined		9.1	
	Avera	ge, all aqui	ifers		4.62	

^{*}All locations are West of 5th Meridian.

A trend indicated as "Level" does not mean that there is no change in the water level in this hydrograph. It means rather that the long-term trend over the life of the record is approximately level, with no evident long-term downward or upward trend. It may be seen that there are only

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Impact Assessment to Sylvan Lake May, 2008

two hydrographs with a downward trend, and the other 18 were either level or gradually rising. This suggests that due to the amount of recharge in the immediate area, there is no immediate danger of over-exploiting the aquifers adjacent to Sylvan Lake.

AXYS Environmental Consulting, quoted in the Stantec Consulting Ltd. report, calculated average annual recharge at about 4.75 mm/year in low-lying areas, increasing to as much as 50 mm in upland areas (Stantec Consulting Ltd., 2006, p. 4.4), where there is little till cover on the Paskapoo Formation bedrock. Without groundwater pumping, they estimated total groundwater recharge at 15,727 cubic metres/day or 5,740,355 m³/year within the drainage basin of Sylvan Lake.

If there were any infiltration of lake water to the wells during this testing program, it would be evident in the time-drawdown curves as a recharge boundary. There was no evidence of any recharge boundary in the test, which was carried out at about 2.5 times the long-term design pumping rate when the subdivision will be fully developed.

The nonpumping water level in the West Well was at 946.6 m at the time of the test, which was about 10 m higher than approximate lake level of 936.7 m. Pumping will reduce the piezometric surface in the well to about 945.5 m, which is still over 8 m above lake level. The nonpumping level in the East Well was 947.7 m, about 11 m above lake level. In conclusion, it may be seen that the aquifer is capable of meeting the needs of this subdivision without exceeding the natural recharge rate of the area, and without inducing recharge of lake water into the wells.

4.0 Groundwater Geochemistry

The Lacombe County regional groundwater assessment (2003) indicates that groundwater in this area is of the sodium-bicarbonate type to sodium-sulphate type. It states that chlorides are very low and that fluoride is often excessively high.

Shortly before terminating the aquifer test of 72 hours pumping of the West Well on April 1, 2008, samples of the water were taken for routine analysis and bacteriological analysis. In the same way, samples were taken from the East Well at the end of pumping on April 12, 2008. The samples were refrigerated and sent to WSH Labs (1992) Ltd, Calgary. The results are shown below in Table 8, and the original documents from the laboratory are included in Appendix D.

Table 8
Groundwater Geochemistry

		West	East
Parameter	Units	Well	Well
Date		4/2/2008	4/16/2008
Calcium	mg/L	65.6	68.4
Iron	mg/L	< 0.03	0.28
Magnesium	mg/L	52.9	60
Manganese	mg/L	<0.01	0.04
Potassium	mg/L	1.9	1.9
Sodium	mg/L	30	21
Bicarbonates	mg/L	466	473
Bromides	mg/L	<0.1	<0.1
Carbonates	mg/L	0	0
Chlorides	mg/L	4.3	14.9
Fluorides	mg/L	0.06	0.09
Nitrates as N	mg/L	0.1	0.1
Nitrites as N	mg/L	< 0.02	<0.02
NO3+NO2	mg/L	0.1	0.1
Sulfates	mg/L	42	27
Electrical Conductivity	μS/cm	723	737
рН	pH units	8.11	8.13
Hardness	mg/L	382	418
Total alkalinity	mg/L	382	388
P-alkalinity	mg/L	0	0
Hydroxide	mg/L	0	0
Total dissolved solids	mg/L	426	426
	CFU/100		
Total coliforms	mL	0	0
E coli	CFU/100	0	0
E-coli	mL	0 8.97	9.3
Sum of Cations	-		
Sum of Anions	_	8.65	8.75

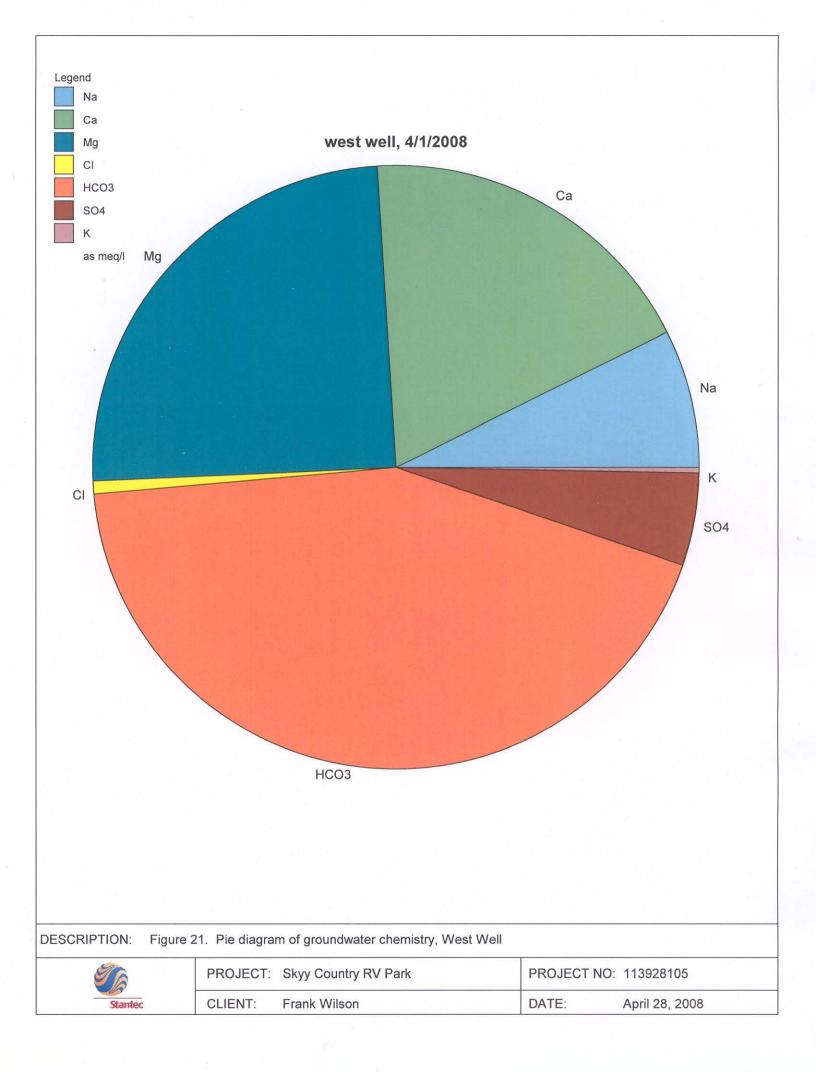
GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

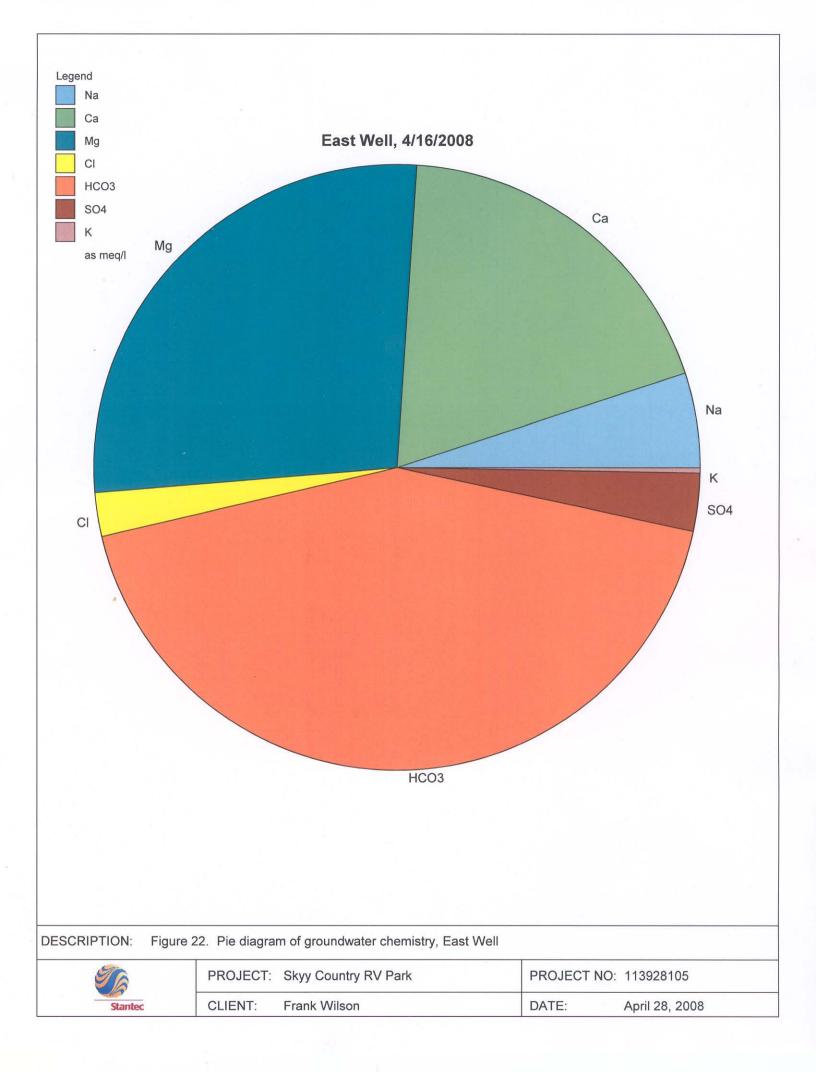
Groundwater Geochemistry May, 2008

Ion balance	_	1.04	1.06
TDS/EC ratio	-	0.59	0.58
SAR	-	0.67	0.45
Saturation Index	-	1.1	1.1
Beryllium	μg/L	<0.05	<0.05
Boron	μg/L	52.5	243
Aluminum	μg/L	1.5	3.3
Phosphorus	μg/L	4.9	4.9
Titanium	μg/L	<0.2	<0.2
Vanadium	μg/L	0.2	<0.08
Chromium	μg/L	<0.1	<0.1
Cobalt	μg/L	<0.1	0.5
Nickel	μg/L	0.3	1.7
Copper	μg/L	<0.08	1.4
Zinc	μg/L	6.4	5.6
Arsenic	μg/L	0.04	0.4
Selenium	μg/L	<0.04	17.2
Strontium	μg/L	628	881
Zirconium	μg/L	0.01	0.1
Molybdenum	μg/L	3.6	6.8
Silver	μg/L	<0.04	<0.04
Cadmium	μg/L	<0.05	< 0.05
Tin	μg/L	<0.02	<0.02
Antimony	μg/L	<0.3	0.8
Tellurium	μg/L	<0.07	<0.07
Barium	μg/L	67.8	84.8
Tungsten	μg/L	<0.04	<0.04
Mercury	μg/L	<0.05	<0.05
Thallium	μg/L	<0.03	<0.03
Lead	μg/L	<0.1	<0.1
Thorium	μg/L	<0.03	<0.03
Uranium	μg/L	3.4	6.2
Temperature	deg. C.	5.86	5.48

As predicted in the Lacombe County groundwater report, the water is a sodium-bicarbonate type, and the two wells have very similar water, as would be expected. Figures 21 and 22 are pie diagrams which show graphically that calcium and magnesium and bicarbonate are the predominant ions, and that all others are minor in comparison. The chemistry of the water indicates that it is typical of a groundwater recharge area.

None of the parameters exceed the Canadian Drinking Water Quality Guideline. A shock chlorination and routine chlorination of the well during operation will protect the well from bacterial contamination. No E.coli bacteria were present. The water meets all chemical guidelines for human use, with only the minimal statutory chlorination required. No chemical parameters in the routine analysis exceeded the Canadian Drinking Water Quality Guidelines. The water is considered very hard, with a hardness of 382 to 418 mg/L.





5.0 Conclusions

- The two wells which were tested were completed in a consolidated sandstone aguifer of the Paskapoo Formation.
- The aquifer is confined and its level responds in minor part to fluctuations in barometric pressure. The aquifer appears to be fractured, based on the low nonpumping level and high but variable transmissive capacity.
- This West Well and the aquifer were tested at a constant rate of 425.7 cubic metres
 per day for seventy-two hours, followed by another seventy-two hours of recovery,
 using the East Well as an observation well. The East Well was tested at 200 cubic
 metres per day for 29.3 hours followed by 35.2 hours of recovery, using the West
 Well as an observation well.
- The aquifer test rate of 425.7 m³/day was almost 2.5 times the pumping rate to be needed with full development of the subdivision.
- A barrier boundary was evident in the West Well after 300 minutes of testing. A
 barrier boundary was also evident in the East Well, which was used for observation,
 but total drawdown in the East Well was just 13 cm after 72 hours pumping.
- The aquifer has a transmissive capacity at this location of about 209 m²/day, a storativity of 0.0005 was assumed, and a specific capacity of 166.3 m³/day/m in the West Well. Specific capacity of the East Well is 128.5 m³/day/m.
- The West Well is shown to be capable theoretically of producing a discharge of about 112.2 cubic metres per day by the Moell calculation. The East Well has a theoretical sustainable yield of 136.6 cubic metres per day, using the same calculation.
- The combined average annual discharge of 111.4 cubic metres per day will not create undue interference to the neighbours' wells, less than 0.40 metre in the closest well constructed within the same hydrostratigraphic zone, ignoring recharge which would serve to reduce the interference.
- At full production rate, the cone of depression will remain about 8 m above lake level, and thus there will be no infiltration of lake water to the well.
- The water has no parameters which exceed the Canadian Drinking Water Guideline.
- The water is very hard, with total hardness of 382 to 418 mg/L.
- No coliforms or fecal coliforms were present, but the water should be chlorinated on a routine basis as a public health precaution.

GROUNDWATER EVALUATION, SKYY COUNTRY R.V. PARK WITHIN NE-34-39-2-W5M

Conclusions May, 2008

- There is sufficient recharge to meet the requirements for the Skyy Country Subdivision, and this production will not induce infiltration from Sylvan Lake.
- The County of Lacombe and Alberta Environment are considering the feasibility of water and waste water pipelines around Sylvan Lake. If they are constructed, the diversion evaluated in this report will no longer be necessary, and the groundwater diversion license could be cancelled at that time.

6.0 Recommendations

- It is recommended to license this well for an annual diversion of 40,649 cubic metres to service the proposed 667 RV lots within the subdivision, the supply to be produced from the two wells jointly.
- The production can be apportioned roughly half to each of the two wells.
- It is recommended that the maximum daily discharge rate should not exceed 425.7 cubic metres per day, which was the discharge during the test.
- It is recommended that the owner measure and record the dynamic water level monthly in both the West Well, and in the East well.
- It is recommended that an inline cumulative water meter be installed at or near the
 wellhead of each well, and that cumulative discharge be recorded each month for
 each well. This should be done preferably at the same time as the water level
 readings.
- It is recommended that an annual summary of monthly water levels and water production be sent to Alberta Environment shortly after the end of each calendar year.
- The well water should be chlorinated on a continuous basis starting at the time when the park opens to the public.
- Because of the very low water levels in the two wells, it is recommended that an
 annual review of production and water levels be carried out by a professional
 hydrogeologist at the end of each of the first two years to ensure that aquifer
 performance is as expected. At that time, it will be possible to readjust the
 apportionment of the production if necessary between the two wells.

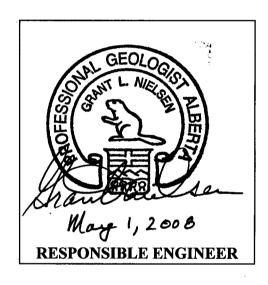
7.0 References

- Alberta Environment, 2003, Groundwater Evaluation Guideline; Government guideline for licensing requirements, revised Feb., 2003.
- Alberta Environment, 2006, Standards and Guidelines for Municipal Waterworks, Wastewater and Storm Drainage Systems; Drinking Water Branch, Environmental Policy Branch, Environmental Assurance Division, Jan., 2006.
- Demchuk, Thomas D. and Hills, L.V., 1991, A Re-examination of the Paskapoo Formation in the Central Alberta Plains: the designation of three new members; Bul. Can. Pet. Geology, vol. 39, No. 3, Sept, 1991, pp. 270-282.
- Nielsen, Grant L., 2007, Review of water levels of Sylvan Lake; unpublished report, Stantec Consulting Ltd.
- Hamilton, W. N., Price, M.C., and Langenberg, C.W. (compilers), 1999, Geological Map of Alberta; Geological Survey of Alberta, Alberta Energy and Utilities Board, Map 236, Edmonton.
- Health Canada, 2004, Summary of Guidelines or Canadian Drinking Water quality; prepared by the federal-provincial-territorial committee on drinking water, Ottawa.
- PFRA, 2001, Regional Groundwater Assessment, Lacombe County; January, 2001
- Shetsen, I., 1990, Quaternary Geology, Central Alberta; Alberta Geological Survey, Alberta Energy and Utilities Board, Edmonton.
- Stantec Consulting Ltd., 2006, Sylvan Lake Regional Partnership Initiative, Regional Water/Wastewater Feasibility Study; Project 112871543, March, 2006, Red Deer.
- Tokarsky, Orest, 1970, Hydrogeology of the Rocky Mountain House Map Sheet, Alberta; Alberta Research Council, Edmonton
- Waterloo Hydrogeologic, 2005, AguiferTest Pro 4.0; Waterloo, Ontario.
- Waterloo Hydrogeologic, 2006, AquaChem v. 5.1, User's Manual; Waterloo, Ontario

8.0 Corporate Authorization

This document entitled "Groundwater Evaluation, Skyy Country R.V. Park, NE-34-39-2-W5M" was prepared by Stantec Consulting Ltd. for Frank Layton. The material in it reflects Stantec Consulting Ltd.'s best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or reliance on or decisions made based on it, are the responsibilities of such third parties. Stantec Consulting Ltd. accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.





APPENDIX A

			Jan et	•			
Alberta Water Well	Myilli	nn C	lann		Well LD		
AIDOIG Water wen		IIM II	IGHA		Map verified	The state of the s	The second of th
The date contained in this report is supplied by	the Odder. The provin	nça disclaima resp	onsibility for its as	curacy. ·	Date report re	en en e	
All miormation on this roport will be retained in a	public database.		· · · · · · · · · · · · · · · · · · ·		Ø Well Lo		
Contractor & Well Owner Information	Approval N	Land Arek Andrewski W		***************************************	1/4 or LSO Sec		Res Wester
Company Name: ALKEN BASIN DRILLING ALD		966			***	1	Menson
Mailing Addresss / Lity or Town:		Postal Code:			NE 3	4 39	2 W5
130 × 47 DENTLES.		<u> </u>	00-030		LOCATON OF DIMENS	1	Bosan □n □s
Well Owner's Name:	Weil Owner	has a copy of th	ie uabair: —	Yes No		m/ft from	
Mailing Address: RANK WILSON City or Town:	· · · · · · · · · · · · · · · · · · ·	Postal Code:			kar Buosx	m/it from	# VV
Mailing Address City or Town:	7 PAKE	 	<u> </u>	73	NOT LEADER	""	
Drilling Information		<u> </u>			6 Well Yi	eld (1)o <	+ 110011
Type of Wark: Testnoin New Well Recons	structed 🔲	Deebeued	Proposed we	ii use:	Tast Y: M	o Day, Start	
Decommissioned	te Completed:	Yr. Mc Day	Househol	ri	Date: Co	320 Time:	
Magniful for Erbling died.			(up to 125	ið m ⁹ þer	Test method:	☐ Bailer	- Āìr
Casing or liner removed (specify):		Amount usour	year with on the pro	a residence operty)	Are moasure	emente in ma	tric or imperiat?
Meterial ; Coment High Solids Bentonite	Hydrated Berrio		Cther Other	. **			······································
Method of Drilling: Auger Boring Cable tool			Specify:	ana	Non pumping static water to	vol: D7	30m
Rotary Combination Backhoe	Other:		CAMPRI	COOP .	Rate of	****	<u>.</u>
Formation Log	6 Well Co	article and the second	Date C	Yı Ma Day	Syomer retay		<u>ာ ရ.ဝက</u>
Depth from	Cate Storted: 4	7 13 26	Date Completed:	08 03 24	Depth of pum if pump tester		声 133m
ground level Lithology Description (effect	Started:	1863.86 monts in metri		<u> </u>	Depth bailed	or	
	Are messura		o Delails:	*	air tested from Water lavel at		<u> </u>
0-9 Clauben 2.7				Liner/inner	water remova	l period: 🙀	<u>8.59m</u>
9-14 SH 15-10 413		Surface Seal	Caeing	Geeing	Distance from casing to grou		a colm
	Diameter of borehole	1,1,1	باهي	5"		ts taken from:	COSINO
	Casing type			TVC		opth to water	rlevel
			STEEL	4.A.C	vn	Elapsed Tir minutes	
and the second s	Size OD		514	1/2	្រីបភាព្រះ ព្រះ	1240	28.59
24-118 RR CH 36.0	Wall thickness		.258	.237		200	77.46
118-130 All Ami 36.6	Bottom at	30.	921	120	3-30	2625	11.28
	Top at	,	1	. 80°		00 Hrs	27.25
A RECORD OF THE PROPERTY OF TH		Cement	☐ Cement	☐ Cement		29.46	27,23
Caractech with		□ Bontonita	E Bentonite	☐ Bentanite	38.		27.33
The state of the s	T Annular Sealant		Cartriven	☐ Orlven ☐ Shale Trap		52 6	27.32
	Zealanii.	From:	From:	From:		54 7	27.32
	7	To:	To: 9 =	To:	19.	55 6	27.31
		Production	Interval Detail	\$7	28.5	5(a 9	21.31
	Perforations:		٠	ť	48.9		27.31
	from:	<u> </u>	to: } E	,	20.	58 12	27.30
	from:	2,4.0	to: 3.5	. (28.	55 14	27.36
	Perforation si	ze:	3/2 x 3	S.	78	59 16	27.30
	Perforated by	: Saw	G forch	<u> </u>	28.9	55 20	
	Pendrales dy	Machine	<u> </u>	11174	29	55 25	
	Screen type:	~	Size OD:		28.	5 5 30	
AND	la famos for		1		A.A.	45 - 35	
Water Used to Brill Well:	Intervals: from:	to:	sjot size:	Mark Control of the C		40	
Location of Water Source: \$100				Comme or more		50	
Water Diversion Date: 68 225 Time: 500 amona.	from:	lo:	slot sixe:	Magazaad	-[60	
Amount Water Taken: /200 Litres/Imp Gallons	Instellation:		7	alescoped		75	
GPS Co-ordinates (Decimal Decrees): 4345 levation: 3194	Fittings: Top	Packer Counter		Wash-down Bail ☐ Plug		90	
Latitude: 1 1 2 Congitude 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2		tifis ai/Mechan		Natural		105	1
Diff, Corr. Hand Held 5-18m, Surveyed GPS < 1m	Pack: L. Ar Grain	massi/wesian	Lor L	reidiui	<i>2</i> 18	.59 120	21.30
Hand Held Auto 20-30m	. ŝi20:		Amount:		if water remo	vai was less	
Geophysical Log taken: Electric Gemma	O Contra	ctor Certifi	cation		than 2 hr. du	ration, reeson	why:
Did you encounter. Mineralized water more than 4000 ppm TDS	Driller's Nami	e Kr	s Sch	undal			
Gas At what depth:	- Certification f		4062	84		<u> </u>	1 4 -
######################################	This well was	s constructed	in accordance	with the Water	- Indiana		ate: (0 9 pm
Remedial action taken:	(Ministerial) F	Regujation of th	e Water Act A	t information in	-	ded pump Inta	
	this report is y	1 ¹⁵	Tar Marie	Ports +2.2.	Pump install	led 🛄 Yes	Depth:

Signature

Model:

_H.P.:

Additional Comments;

roma to recta us a collection

The state of the s					anteriorem despuis	PPONENTAL PROPERTY	· · · · · · · · · · · · · · · · · · ·	
Alberta Water Well	Drill	ina F	?enc	r f	Well f.b.			
Stranding of the stranger of t			MAN	/! 4	Map verti			Andrewson and April April
ENVIRONMENT The data contained in this report is supplied by All information on this report will be relained in a	the Driller, The pre- public detabase.	vince disclairms resp	aonsibility for ha	accuracy.	Date repo	7.77	d.	
Contractor & Well Owner Information			1		Ø Well	Locati	on .	
Company Name: ALKEN BASIN DRILLING	Approval	No.: 966	,		1/4 or LSD	Sec	Twe	Ros Wayr or
Malling Address: City or Town:	CTB.	Póstal Goda:	<u>۔۔۔۔۔</u>		Ně	34	39	2 105
Well Owner's Name: FRANK . WILSON	Well Owner	or has a copy of th	is report:	yes	LOGATION IN C	. !	/ft from	BULDHIAN
Matting Address:/ / City or Town-	1	Postal Code:		No			/ft from	. □E□W
@ Drilling Information	nloke	<u></u>	<u> 745 -</u>	<i>ቧ</i> ₽3			Pux	
	tructed [Deepened		***************************************	O Well	Yield	£Α	ST WELL
[Decommissioned		Yr Ma Dey	Proposed w		Test Date:	(425-7	Start Time:	
Well ID (If applicable): Dai Casing or liner removed (specify):	ie Completed:		☐ Househo	id SO m ³ per	Tast meth	od:		همس
Plugging Anath Level Allah Solids Bentonite Material Cement High Solids Bentonite	41. 3. 4. 3.6	Aratura ased:	year with on the pr	a residence	Arc mea:		s fin et	Air etric o <u>r imperial?</u>
Method of Dritting: Auger Boring Cable tool	Hydrated Bent	onite	C Other		king usas	·		
	Other:		Specify:	นใชงปป	Non pum; static wate	erlevel:	<u> 38</u>	M
Formation Log	⊚ Well Co	ompletion	The second second		Rate of water rem	oval:	22	<u>a pm</u>
Depth from Imetres	Date Started:	863 D7	Date Completed:	එ ජිල327	Dopth of p			Hom
ground level Lithology Description Description		ments in metric			Depth bail air tested		: 4	2
		Casing	Details:	Andrew Laborator	Water leve	at end of		8.98 m
0-15 Clay brn 46		Surface Seal	Casing	Liner/Inner Casing	water rem Distance t			
15-50 SS brn 15.2 50-60 SH aru	Dlamater.of	17	6 3/4	12-1	casing to	<u>ground lev</u>	ol: (J. Glm
50.60 SH ary (3.3)	Cosico tro-	** 1.			Meesuren	ents taker Dopth t		
61-65 SH aru	Casing type		STEE.	PUC		Elap	sed Ti	m ė
65-70 SH OCK	Size OD		546	47	Pump		inutes o	
70 -75 SS aru 229	Wall thickness		258	.237	35 38	Market Ma	1	38.98
15-19 SH GAY	Bottom at	36.0	118.	146'32	38	**************************************	2	38.15
79-95 35 gry	Top at	.6	1 2'	leo'a		96	3	38.09
55-100 SH 4ty 323		□ Coment	□ Cement	☐ Cement	38		4	38.05
106-110 55 ary	Arinular	Bentonite	Effectionite Efficien	☐ Bentonite		(9)	5	38.63
118-139 SS arc 403-4	Sealant		□ Sheis Trap	Shale Trep		197	6	38.62
139-140 SH Ary 42.7			From:	From:		97	7	38.0
	(*************************************	To: Production (r	To: / (8 .	To:		198	B .	38.0
larouted w 17 gacks.	Perforations:		· ·	**		8.98 8.98	10	<u>38.0(</u> <u>3800</u>
	from:	//8	to: / 40 .	,		3.58	12	<u> 38</u>
Dentonite grout.	from:	B 6	to: 42.7			3.48	14	38
	Perforation siz	iė:	3/8×3/8	3	25	8.98	16	38
	Perforated by:		Torch)	3	8.98	20	
The field Michigan and State of the State of		☐ Machine	Tomer: 7	XILL		8.98	25	
Table Shift A	Screen type:		Size OD:			8-98	30	
Water Used to Drill Well:	Intervals:					 -	35	
Location of Water Source: XCULOUS WELL	from:	to:	slot siza	THE STATE OF THE S			40	
Water Diversion Date: 4 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	from:	to:	ot size:			 	50 .	
Amount Water Taken: 66 Litres/Imp Gallons	Installation:	☐ Attached to	casing 🔲 Ta	lescoped	1.No 14 - 1	 	75	
GPS Co-grainates (Decimal Degraes): /	Fluings: Top	☐ Packer	Bottom 🗀 V	Vash-down			75	

Latifurdo: 114 114 3 Institute 2224, 3993 Elevation: 3233 Levol of GPS Accuracy: 🔲 Bail 🔲 Alug Coupler 105 Peck: Artificial/Mechanical Natural ☐ Dill. Corr. Hand Held 5-10m ☐ Surveyed GPS < 1m ☐ Hand Held Auto 20-30m 38.98.120 Grain 5:Z8: Amount If water removel was less O Confractor Certification / Drillers Name: Kris Schind Geophysical Log taken: Electric than 2 hr. duration, reason why: Old you encounter: Mineralized water more than 4000 ppm TOS ☐ Gas 06287 ... At what dopth: __ Certification No.: ._ Recommended pumping rate: 109 pm This well was constructed in accordance with the Water Remedial action taken: Recommended pump Intake: 1308± (Ministerial) Regulation of the Water Apr. All information in Pump installed Yes Depth: Additional Comments: Model:

APPENDIX B

A	a .	Water	Well Drilling	a Rep	ort	Well I.D.: Map Verifie		0352619 Not Verifi	
.(2	The data	contained in this	report is supplied by the l	Driller. The	province disclaims	Date Repo	rt	1990/11/0	09
Fn	´ Alberta vironment		responsibility for its accura		•	Received: Measurem		Metric	
	to the same of the	1.7							#20000E
	tractor & Well Ov	vner Intorma	ition			2. Well L			
Company	,	DDOTECTION/	FECHNICAL SERVICES	Drilling Co	mpany Approval No.	: 1/4 or Se LSD	c Twp	Rge We	esto M
DIVISION		FROIECHON	ECHNICAL SERVICES	9984567		01 32	039	02	5
Mailing A		City or To	wn:	Postal Co	de:	Location in		<u> </u>	
	06 STREET	EDMONT	ON AB CA	T5K 2J6		0 M fro		Boun	ndar
	er's Name:		tion Identifier:			0 M froi	n	Boun	ıdar
	IV #2604E					Lot	Block	Plan	
P.O. Box	: Number:	Mailing Ad		Postal Co	de:				
011		SYLVAN I	AKE.			Well Elev:		v Obtain:	
City:		Province:		Country:		M		Obtain	
D ======						6. Well Y		<u> </u>	
	ing Information				Image and the state of the stat	Test Date		Start Time	e:
i ype or v Reclaime	Work: Piezometer				Proposed well use: Observation	(yyyy/mm/d 1990/10/15		11:00 AM	4
Date Rec		Mate	rials Used:		Anticipated Water	Test Metho		THOU AIV	•
	of Drilling: Rotary				Requirements/day	Non pumpir		8.53 M	
Flowing V	Well: No	Rate	: Liters		0 Liters	static level:			
Gas Pres		Oil P	resent: No		1	Rate of wat	er	0 Liters/N	Лiп
1. Forn	nation Log		5. Well Completio	n		removal:	•	0.17	
Depth		1	<u> </u>	Jale C	ompleted	Depth of		0 M	
rom			Date Started(yyyy/mm/c	ا ^{ر عد} . (yyyy/ز	nm/dd):	pump intake Water level		8.53 M	
ground	Lithology De	escription	1990/10/12	1990/1		end of	aı	Q.OO IVI	
evel			Well Depth: 33.53 M		ole Diameter: 0 CM	pumping:			
meters)).3	Topsoil		Casing Type: Plastic	Liner		Distance fro	om top of	CM	
).91	Brown Sandy Clay		Size OD: 5.08 CM Wall Thickness: 0.39 CM		D: 0 CM hickness: 0 CM	casing to gr			
.52	Sand		vvair (filickness: 0.39 Cr	vi ivvan i	nickness: U Civi	level:			
3.05	Brown Silty Clay		Bottom at: 0 M	Top: 0	M Bottom: 0 M		water le		rs)
1.27	Brown Sandy Clay						lapsed Ti		
7.01	Gray Sandstone		Perforations		ations Size:	Drawdown 8.58	0:00	0.00	
9.14	Brown Siltstone		from: 0 M to: 0 M from: 0 M to: 0 M		k 0 CM	7.84	0:50	0	
9.75	Gray Sandstone		— from: 0 M to: 0 M		k 0 CM k 0 CM	7.95	1:00	0	
10.67	Brown Sandstone		Perforated by:	O CIVI .	X O OIVI	8.03	1:50	0	_
11.89	Gray Siltstone		Seal: Bentonite Chips/T	ablets		8.12	2:00	0)
4.33	Gray Shale		—from: 0 M	to: 31.	09 M	8 <i>.</i> 17	2:50	0)
5.24	Brown Shale		Seal:			8.24	3:00	0)
7.68	Gray Shale		from: 0 M	to: 0 N		8.28	3:50	0	
33.53	Gray Sandstone		Seal:			8.33	4:00	0	
			from: 0 M Screen Type: Plastic	to: 0 N	n ID: 5.08 CM	8,36	4:50	0	
			from: 32.61 M to: 33.	EQ		8.39	5:00	0	
			M	Slot Si	ze: 0.06 CM	8.42 8.45	5:50	0	
			Screen Type:		n ID: 0 CM	8.46	6:00 6:50	0	
			from: 0 M to: 0 M		ze: 0 CM	8.48	7:00	0	
			Screen installation Meth	nod: Attach	ed To Riser	8.49	7:50	0	
			Fittings	.	DI-	8.52	8:00	0	
			Top: Coupler Pack: Artificial	Botton	n: Plug	8.52	8:50	. 0	
		•	Grain Size: 12.20	Δποι	nt: 100 Pounds	8.53	9:00	0)
			Geophysical Log Taken		ic roor outlos	8.54	9:50	0)
			Retained on Files:	•		8.54	10:00		
			Additional Test and/or P	ump Data		8.55	10:50	·····	
			Chemistries taken By D	riller: Yes		8.56	11:00	····	
			Held: 0	Docun	nents Held: 3	8.56	11:50		
			Pitless Adapter Type:			8.57	12:00		1
			Drop Pipe Type:	Diam-	ton CM	Total Draw			
			Length: M Comments:	piame	ter: CM	duration, re			; ∠
			Comments: 2604E. Approx 15' W of	roadway s	annrox 25' F of N C		ason why		
			fence line. Well finish: S						
						Recommen Liters/Min	ded pump	oing rate:	0
						Recommen	ded pumi	ntake: 0	0 N
			<u> </u>						
			7. Contractor Cert	ification	<u> </u>	Type Pump	Installed		

A				manu.		Well I.D.:	03	52623
		Water	Well Drilling	a Rep	ort	Map Verified		ot Verified
.(2)	4	The data contained in this	report is supplied by the	Driller. The	province disclaims	Date Report	19	90/11/09
A	Alberta vironment		responsibility for its accur			Received:		
				·		Measureme		∋tric
		Well Owner Informa	tion			2. Well Lo		
Company		MENTAL PROTECTION/T	ECHNICAL CEDVICES	Drilling Co	mpany Approval No.:		Twp F	Rge West
DIVISION		WENTAL PROTECTION/T	EUTINICAL SERVICES	9984567		LSD 01 32	039	M 02 5
Mailing A		City or Tov	lo,	Postal Co		Location in C	~~~~~	<u> </u>
	06 STREET	EDMONTO		T5K 2J6	uo.	0 M from		Boundar
	er's Name:		ion Identifier:	10112		0 M from		Boundar
ALTA EN	√V #2605E					Lot B	lock	Plan
P.O. Box	Number:	Mailing Ad		Postal Co	de:			
		SYLVAN L	AKE			Well Elev:		Obtain:
City:		Province:		Country:		M	Not O	btain
3 Drilli	ing Inforn	ation		W	<i>10-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-</i>	6. Well Yi		art Time:
	Nork: Piezon				Proposed well use:	(yyyy/mm/dd		all Hille.
Reclaime		10101			Observation	1990/10/15		MA 00:
Date Rec		Mater	rials Used:		Anticipated Water	Test Method		
	of Drilling: Ro	tary			Requirements/day	Non pumping	3.8	34 M
Flowing V			Liters		0 Liters	static level:		
Gas Pres			esent:		1	Rate of wate	r 01	_iters/Min
	nation Lo	g	5. Well Completio			removal: Depth of	10	
Depth			Date Started(yyyy/mm/d		Completed	pump intake:		Vi
from	1 741	In a Para to the		(уууул	nm/dd):	Water level a		34 M
ground level	Litho	logy Description	1990/10/12	1990/1		end of	0.0	- 1 741
(meters)			Well Depth: 19.2 M	. ,	ole Diameter: 0 CM	pumping:		
0.3	Topsoil		Casing Type: Plastic Size OD: 5.08 CM	Liner T	ype: DD: 0 CM	Distance fror		V
0.91	Brown Sand	lv Clav	Wall Thickness: 0.39 Cl		hickness: 0 CM	casing to gro	und	
1.52	Sand		VVali 1111CKI1633. U.U3 CI	ivs vvali i	HICKINGSS, U CIVI	level:		, , ,
3.05	Brown Silty	Clay	Bottom at: 0 M	Top: 0	M Bottom: 0 M		water level apsed Tim	
4.27	Brown Sand	dy Clay				Drawdown N		
7.01	Gray Sand:		Perforations		ations Size:	8.84	0:00	0
9.14	Brown Silts	tone	from: 0 M to: 0 M from: 0 M to: 0 M		< 0 CM < 0 CM	8.15	0:30	0
9.75	Gray Sand			0 CM :		8.29	1:00	0
10.67	Brown San		Perforated by:	0 0.117		8.41	1:30	0
11.89	Gray Siltsto	one	Seal: Bentonite Chips/T	ablets		8.5	2:00	0
14.33	Gray Shale		from: 0 M	to: 15.	85 M	8.58	2:30	. 0
15.24 17.68	Brown Sha Gray Shale		_Seal:			8.63	3:00	0
17.00	Gray Shale		from: 0 M	to: 0 M		8.68	3:30	0
13.2	Gray Sairu	Storie	_Seal: from: 0 M	to: 0 N	1	8.72	4:00	0
			Screen Type: Plastic		n ID: 5.08 CM	8.75	4:30	0
			from: 18.29 M to: 19.			8.77 8.79	5:00	0
			Screen Type:		1D: 0 CM	8.79	5:30 6:00	0
			from: 0 M to: 0 M	Slot Si	ze: 0 CM	8.81	6:30	0
			Screen Installation Meth	nod: Attach	ed To Riser	8.82	7:00	0
			Fittings			8.82	7:30	0
			Top: Coupler	Botton	n: Plug	8.83	8:00	ō
			Pack: Artificial	۸ ــ	st. 100 B	8.83	8:30	0
			Grain Size: 12-20 Geophysical Log Taken		nt: 100 Pounds	8.83	9:00	0
			Retained on Files:	la .		8.83	9:30	0
			Additional Test and/or F	Pump Data		8.84	10:00	0
			Chemistries taken By D			Total Drawdo		
			Held: 0		nents Held: 2	If water remo		ss than 2
			Pitless Adapter Type:		· ··	duration, rea	son wny:	
			Drop Pipe Type:	.	t CM			
			Length: M	Diame	ter: CM	-		
			Comments:	of reachings:	l annroy or E of N o	Recommend	ed pumpin	g rate: 0
			III nestad sparov 16' W/ o			Liters/Min		-
			Located approx 15' W of fence line. Located in di	itch, Well Fi	INISH: MOREO PVI			
			Located approx 15' W of fence line. Located in di Slug test done.	itch. Well F	inish; Siotted PVC.	Recommend		ntake: 0 M
			fence line. Located in di	itch. Well Fi	mish: Siotled PVC.	Recommend Type Pump i		ntake: 0 M
		•	fence line. Located in di	itch. Well F	Inish: Siotled PVC.	Recommend Type Pump I Pump Type:	nstalled	ntake: 0 M
		•	fence line. Located in di Slug test done.			Recommend Type Pump I Pump Type: Pump Model	nstalled	ntake: 0 M
		•	fence line. Located in di	tification		Recommend Type Pump I Pump Type:	nstalled :	

The data contained in this	Well Drilling report is supplied by the lesponsibility for its accura	Driller. The provinc	e disclaims	Well I.D.: Map Verified: Date Report Received:	0352624 Not Verified 1990/11/09
Environment 1. Contractor & Well Owner Informat	· · · · · · · · · · · · · · · · · · ·	aoy.		Measurements: 2. Well Location	Metric
Company Name:	1011	Drilling Company	Approval No :	1/4 or Sec Two	
ALBÈRTA ENVIRONMENTAL PROTECTION/TI DIVISION		9984567	74piovai 140	LSD 01 32 039	М
Mailing Address: City or Tow		Postal Code:		Location in Quarter	
9820 - 106 STREET EDMONTO		T5K 2J6		0 M from	Boundary
ALTA ENV #2606E	on Identifier:			0 M from Lot Block	Boundary Plan
P.O. Box Number: Mailing Add SYLVAN LA		Postal Code:		Well Elev: H	low Obtain:
City: Province:		Country:		M N 6. Well Yield	ot Obtain
3. Drilling Information	, , , , , , , , , , , , , , , , , , , 			Test Date	Start Time:
Type of Work: Piezometer		Propos	ed well use:	(yyyy/mm/dd):	Oldit fillio.
Reclaimed Well	als Used:	Obsen		1990/10/12 Test Method: Air	11:00 AM
Method of Drilling: Rotary		Requir	ements/day	Non pumping	3.66 M
Flowing Well: No Rate: Gas Present: Oil Pre		0 Liter	\$	static level: Rate of water	13.64
4. Formation Log	5. Well Completio	Ď.		removal:	Liters/Min
Depth		Date Complet	ed	Depth of	5.49 M
from	Date Started(yyyy/mm/c	^{aa):} (yyyy/mm/dd)		pump intake: Water level at	0 M
ground Lithology Description	1990/10/12	1990/10/12		end of	0 101
level (meters)	Well Depth: 6.4 M _Casing Type: Plastic	Borehole Diar Liner Type:	neter: 0 CM	pumping:	
0.3 Topsoil	Size OD: 12.7 CM	Size OD: 0 Cl		Distance from top of	of CM
0.91 Brown Clay	Wall Thickness: 0.39 Cf			casing to ground level:	
1.52 Sand			5 0.14	Depth To water	level (meters)
3.05 Brown Silty Clay	Bottom at: 0 M	Top: 0 M	Bottom: 0 M	Elapsed	Time
4.27 Brown Sandy Clay 6.4 Gray Sandstone	Perforations	Perforations S	Size:	Drawdown Minute	
0.4 Gray Gariusione	from: 0 M to: 0 M	0 CM x 0 CM		Total Drawdown: 0 If water removal water	
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM		duration, reason w	
	Perforated by:	O CIVI X O CIVI		1	•
	Seal: Bentonite Chips/T	ablets			
	from: 0 M	to: 4.27 M		Recommended pur	mping rate: 0
	Seal: from: 0 M	to: 0 M		Liters/Min	inping rate. o
	Seal:	to. 0 IVI		Recommended pur	
	from: 0 M	to: 0 M		Type Pump installe	ed
	Screen Type: Plastic from: 5.49 M to: 6.4 M	Screen ID: 5.0 ### Slot Size: 0.0		Pump Type: Pump Model:	•
	Screen Type:	Screen ID: 0	CM.	H.P.:	
	from: 0 M to: 0 M	Slot Size: 0 C	М	Any further pumpte Yes	est information?
	Screen Installation Meth	nod: Attached To F	Riser	1.~~	
	Fittings Top: Coupler	Bottom: Plug			
	Pack: Artificial			1	
	Grain Size: 12-20	Amount: 150	Pounds		
	Geophysical Log Taken Retained on Files:			J	
	Additional Test and/or P				
	Chemistries taken By D Held: 0	riller: Yes Documents H	eld: 2	[
	Pitless Adapter Type:	Documents H		1	
	Drop Pipe Type:				
	Length: M Comments:	Diameter: CN	<u> </u>	1	
	Located 15' W of roadw line. Piezometer situate PVC. Slug test done.				
	7 Contractor Cont	lification	-	4	
	7. Contractor Cert Driller's Name:	UNKNOWN E	RII I FR	1	
	Certification No.:	VA3321	ri visalainit\		

The data contained in this in	Well Drilling eport is supplied by the lesponsibility for its accura-	Driller. The pi		Map Verified: Ne Date Report 19 Received:	352626 ot Verified 990/11/09
1. Contractor & Well Owner Informat		*		Measurements: M 2. Well Location	<u>etric</u>
Company Name:		Drilling Com	pany Approval No.:		Rge Westof
ALBÉRTA ENVIRONMENTAL PROTECTION/TE DIVISION		9984567	· • , .	LSD 01 32 039	M 02 5
Mailing Address: City or Towl 9820 - 106 STREET EDMONTO		Postal Code T5K 2J6	:	Location in Quarter 0 M from	Boundary
WellOwner's Name: Well Location		1011 400		0 M from	Boundary
ALTA ENV #2603E		D		Lot Block	Plan
P.O. Box Number: Mailing Add SYLVAN LA		Postal Code		Well Elev: How	Obtain:
City: Province:		Country:		M Not C	
2 Drilling Information		***************************************		6. Well Yield	L1 T'
3. Drilling Information Type of Work: Test Hole-Abandoned			roposed well use:	Test Date St (yyyy/mm/dd):	tart Time:
Reclaimed Well					
	als Used: Bentonite Prod		nticipated Water	Test Method:	
Method of Drilling: Rotary Flowing Well: No Rate: I	iters			Non pumping M static level:	
Gas Present: Oil Pre		ľ		Rate of water Liters/M	1in
4. Formation Log	5. Well Completio	n		removal:	
Depth	Date Started(yyyy/mm/c	Jay. Date Co		Depth of M pump intake:	
from	j	(AAAA\iii	n/aa):	Water level at M	
ground Lithology Description	1990/10/11 Well Depth: 48,46 M	1990/10/ Borebole	Diameter: 0 CM	end of	
(meters)	Casing Type:	Liner Ty		pumping:	
0.3 Topsoil	Size OD: 0 CM	Size OD	: 0 CM	Distance from CM top of casing	
0.91 Brown Sandy Clay	Wall Thickness: 0 CM		ckness: 0 CM	top of casing to ground	
1.52 Sand 3.05 Brown Silty Clay	Bottom at: 0 M	Top: 0 N	1 Bottom: 0 M	level:	
3.05 Brown Silty Clay 4.27 Brown Sandy Clay				Depth To water leve	
6.1 Brown Sandstone	Perforations		ons Size:	Elapsed Tim Drawdown Minutes:Se	
6.71 Gray Sandstone	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x (PISWGOWN WIITIU(65:26	recovery
7.01 Brown Sandstone	from: 0 M to: 0 M	0 CM x 0 0 CM x 0			
9.14 Brown Siltstone	Perforated by:				
9.75 Gray Sandstone 10.67 Brown Sandstone	Seal:			Total Drawdown: M If water removal was le	see than 0 to
11.89 Gray Siltstone	from: 0 M Seal:	to: 0 M		If water removal was le duration, reason why:	.ออ แเซก Z ท ั
14.33 Gray Shale	from: 0 M	to: 0 M		.,	
15.24 Brown Shale	Seal:				
17.68 Gray Shale	from: 0 M	to: 0 M	D. 0.084	Recommended pumpir	n rate:
22.25 Gray Sandstone 22.86 Gray Sandstone Stringers	Screen Type: from: 0 M to: 0 M	Screen I Slot Size	~ ~	Liters/Min	
27.13 Gray Sandstone	Screen Type:	Screen	D: 0 CM	Recommended pump i	ntake: M
27.43 Gray Sandstone	from: 0 M to: 0 M	Slot Size		Type pump installed	
33.53 Gray Sandstone	Screen Installation Meth	nod:		Pump type: Pump model:	
37.49 Green Shale	Fittings Top:	Bottom:		H.P.:	
38.71 Gray Shale 39.01 Gray Sandstone	Pack:	DOMONT.		Any further pumptest ir	nformation?
46.33 Gray Shale	Grain Size:	Amount:			
48.46 Gray Shale	Geophysical Log Taken				
	Retained on Files: ELE0 Additional Test and/or P		id GAIVIIVIA yes		
	Chemistries taken By D				
	Held: 0		nts Held: 6		
	Pitless Adapter Type: Drop Pipe Type:				
	Drop Pipe Type: Length:	Diamete	r:		
	Comments:				
	7. Contractor Cert				
	Driller's Name:		WN DRILLER		
	Certification No.:	VA3321		ı	

	Well Drilling			Well (.D.: Map Verified: Date Report	0352966 Not Verified 1990/11/29
	responsibility for its accurac		·	Received: Measurements:	Metric
1. Contractor & Well Owner Informa	6 to so			2. Well Locatio	
Company Name:		Orilling Com	pany Approval No.:	8.,	
ALBERTA ENVIRONMENTAL PROTECTION/T DIVISION	ECHNICAL SERVICES	9984567	party Approva No	LSD 01 32 039	M
Mailing Address: City or Tov 9820 - 106 STREET EDMONTO		Postal Code	: :	Location in Quarter 0 M from	Boundar
	ion Identifier:	Г5К 2J6		0 M from	Boundar
ALTA ENV #2623E				Lot Block	Plan
P.O. Box Number: Mailing Ad SYLVAN L		Postal Code	2;	Well Elev: Ho	ow Obtain:
City: Province:		Country:			ot Obtain
0.00				6. Well Yield	
3. Drilling Information Type of Work: New Well		ir:	roposed well use:	Test Date (yyyy/mm/dd):	Start Time:
Reclaimed Well	ials Used:		Diservation Inticipated Water	1990/11/09 Test Method: Air	11:00 AM
Method of Drilling: Rotary		F	Requirements/day	Non pumping	9.45 M
	Liters esent:	O	Liters	static level: Rate of water	90.92
4. Formation Log	5. Well Completion			removal:	Liters/Min
Depth	Date Started(yyyy/mm/dd	Date Co		Depth of pump intake:	30.48 M
from ground Lithology Description	1990/11/07	^{1):} (yyyy/mi 1990/11		Water level at	0 M
level	Well Depth: 32.92 M		e Diameter: 0 CM	end of	
(meters)	Casing Type: Steel		pe: Steel	pumping: Distance from top o	of CM
0.3 Topsoil 0.91 Brown Sandy Clay	Size OD: 14.12 CM Wall Thickness: 0.48 CM		: 11.43 CM ckness: 0.4 CM	casing to ground	
1.52 Sand		Top: 24.		level: Depth To water l	aval (matera)
3.05 Brown Silty Clay	Bottom at: 27.13 M	31.39 M		Elapsed	
4.27 Brown Sandy Clay 7.01 Gray Sandstone	Perforations	Perforat	ions Size:	Drawdown Minutes	
9.14 Brown Siltstone	from: 0 M to: 0 M	0 CM x (Total Drawdown: 0 If water removal wa	
9.75 Gray Sandstone Stringers	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0		duration, reason wh	
10.67 Brown Sandstone 11.89 Gray Siltstone	Perforated by:			1	
14.33 Gray Shale	Seal: Bentonite Chips/Tal from: 0 M	blets to: 27.13			
15.24 Brown Shale	Seal:	(U, Z7.30) (VI	Recommended pur	nping rate:
17.68 Gray Shale 32.92 Gray Sandstone	from: 0 M	to: 0 M		90.92 Liters/Min Recommended pur	nn intake: 0 M
32.92 Gray Sandstone	_Seal: from: 0 M	to: 0 M		Type Pump Installe	
	Screen Type: Stainless		D: 10.16 CM	Pump Type: Pump Model:	
	Steel from: 31.39 M to: 32.92	า		H.P.:	
	M	SIOT SIZE	e: 0.18 CM	Any further pumpte	st information
	Screen Type: from: 0 M to: 0 M	Screen Slot Size	ID: 0 CM ≘: 0 CM		
	Screen Installation Metho				
	Fittings Top: Neoprene (Figure K) Bottom:	Bail	-	
	Pack: Natural Grain Size:	Amount:	: 0		
	Geophysical Log Taken: Retained on Files:				
	Additional Test and/or Pu			1	
	Chemistries taken By Dril Held: 0		ints Held: 1		
	Pitless Adapter Type:		The second of		
	Drop Pipe Type: Length: M	Diamete	er: CM		
	Comments: Well approx 15'W of N-S S fence line.			Permission CLUS MARKET	
	7. Contractor Certif	fication		**************************************	

Water The data contained in this	Well Drilling report is supplied by the D responsibility for its accura	Oriller. The province	disclaims	Well I.D.: Map Verified: Date Report Received:	0362664 Not Verified		
1. Contractor & Well Owner Informa	etion			Measurements: 2. Well Location	<u>Metric</u> nn		
Company Name:	XLIOI I	Drilling Company A	pproval No.:	1/4 or Sec Tw			
UNKNOWN DRILLER Mailing Address: City or To	****	99999 Postal Code:	······································	LSD NE 32 039	M 02 5		
UNKNOWN UNKNOW	N AB CA	Postal Code.		Location in Quarter			
WellOwner's Name: Well Loca NATSEN, J.	tion Identifier:			0 M from 0 M from	Boundary Boundary		
P.O. Box Number: Mailing Ac ECKVILLE		Postal Code:		Lot Block	Plan		
City: Province:		Country:			low Obtain:		
3. Drilling Information				6. Well Yield			
Type of Work: Federal Well Survey		1	d well use:	Test Date	Start Time:		
Reclaimed Well Date Reclaimed: Mate	rials Used:		c & Stock ed Water	(yyyy/mm/dd):	11:00 AM		
Method of Drilling: Hand Dug		Requirer	nents/day	Test Method: Baile	r		
	: Liters resent:	0 Liters		Non pumping static level:	4.57 M		
4. Formation Log	5. Well Completion	1		Rate of water	0 Liters/Min		
Depth	· · · · · · · · · · · · · · · · · · ·	Data Camplata	d	removal:	0.14		
from	Date Started(yyyy/mm/d	a): (yyyy/mm/dd):		Depth of pump intake:	0 M		
ground Lithology Description	Well Depth: 9.14 M	Borehole Diame	eter: 0 CM	Water level at	0 M		
(meters)	Casing Type:	Liner Type:		end of pumping:			
9.14 Blue Clay	Size OD: 0 CM	Size OD: 0 CM	. 0: 014	Distance from top	of CM		
	Wall Thickness: 0 CM Bottom at: 0 M	Wall Thickness Top: 0 M E	Bottom: 0 M	casing to ground level: Depth To water	level (meters)		
	Perforations	Perforations Siz	ze:	Elapsed Time Drawdown Minutes:Sec Recover			
	from: 0 M to: 0 M	0 CM x 0 CM		Drawdown Minute Total Drawdown: 0			
·	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM		If water removal w			
	Perforated by:			duration, reason w	hy:		
	Seal: from: 0 M Seal:	to: 0 M					
	from: 0 M	to: 0 M		Recommended pu	mping rate: 0		
	Seal:	4 O M		Liters/Min Recommended pu	mn intake: 0 M		
	from: 0 M Screen Type:	to: 0 M Screen ID: 0 Cl		Type Pump Installe			
	from: 0 M to: 0 M	Siot Size: 0 CM		Pump Type: Pump Model:			
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 Cf Slot Size: 0 CM		H.P.:			
	Screen Installation Meth		· · · · · · · · · · · · · · · · · · ·	Any further pumpte	est information?		
	Fittings	D _45 -					
	Top: Pack:	Bottom:		1			
	Grain Size:	Amount: 0					
	Geophysical Log Taken: Retained on Files:						
	Additional Test and/or P			1			
	Chemistries taken By Dr Held: 0	iller: No Documents Hel	A. 1				
·	Pitless Adapter Type:	Documents : lei	u. 1	1			
	Drop Pipe Type:	Diamatan Chi					
	Length: M Comments:	Diameter: CM		1			
	PASKAPOO FORMATIC	ON.					
		•					
			· · · · · · · · · · · · · · · · · · ·				
	7. Contractor Cert]			
	Driller's Name: Certification No.:	ÜNKNOWN DR					
	This well was constructed	ia in accordance wi	n the Water	1			

The data contained in this	Well Drilling report is supplied by the Dr esponsibility for its accurace	riller. The province disclaims	Well I.D.: 0362661 Map Verified: Not Verified Date Report Received: Magus monte: Metric
1. Contractor & Well Owner Informat	ion		Measurements: Metric
Company Name:		Orilling Company Approval No.:	2. Well Location 1/4 or Sec Twp Rge Westot
GERMAN R E	**	Shilling Company Approval No.:	LSD M
Mailing Address: City or Tow	n: F	Postal Code:	SÉ 32 039 02 5
WellOwner's Name: Well Location	on Identifier:		Location in Quarter 0 M from Boundary
SNYDER, ALICE	on identifier.		0 M from Boundary
P.O. Box Number: Mailing Add		Postal Code:	Lot Block Plan
SYLVAN LA City: Province:		Country:	Well Elev: How Obtain:
			960.12 M Estimated
3. Drilling Information			6. Well Yield
Type of Work: New Well Reclaimed Well		Proposed well use: Domestic	Test Date Start Time: (yyyy/mm/dd):
	als Used:	Anticipated Water	(уууулынаа).
Method of Drilling: Drilled		Requirements/day	Test Method:
Flowing Well: No Rate: I Gas Present: Oil Pre		0 Liters	Non pumping M static level:
4. Formation Log	5. Well Completion	(Rate of water Liters/Min
Depth	1	Data Camplated	removal:
from	Date Started(yyyy/mm/dd	^{):} (yyyy/mm/dd):	Depth of M pump intake:
ground Lithology Description level	Well Depth: 36.58 M	1962/01/01 Borehole Diameter: 0 CM	Water level at M
(meters)	Casing Type: Unknown	Liner Type:	end of
25.6 Clay	Size OD: 5.08 CM	Size OD: 0 CM	pumping: Distance from CM
36.58 Shale	Wall Thickness: 0 CM	Wall Thickness: 0 CM	top of casing
	Bottom at: 29.26 M	Top: 0 M Bottom: 0 M	to ground level:
	Darfarakiana		Depth To water level (meters)
	Perforations from: 0 M to: 0 M	Perforations Size: 0 CM x 0 CM	Elapsed Time
	from: 0 M to: 0 M	0 CM x 0 CM	Drawdown Minutes:Sec Recovery
	from: 0 M to: 0 M Perforated by:	0 CM x 0 CM	
	Seal: Driven		
	from: 0 M	to: 0 M	Total Drawdown: M If water removal was less than 2 hr
	Seal: from: 0 M	to: 0 M	in water removal was less than 2 hr duration, reason why:
	Seal:	(O. O W	,
	from: 0 M	to: 0 M	
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Recommended pumping rate:
	Screen Type:	Screen ID: 0 CM	Liters/Min
	from: 0 M to: 0 M	Slot Size: 0 CM	Recommended pump intake: M Type pump installed
	Screen installation Metho Fittings	α;	Pump type:
	Top:	Bottom:	Pump model:
	Pack:	A	H.P.: Any further pumptest information?
	Grain Size: Geophysical Log Taken:	Amount: 0	
	Retained on Files:		
	Additional Test and/or Pu		
	Chemistries taken By Drill Held: 0	Documents Held: 1	
	Pitless Adapter Type:		
	Drop Pipe Type: Length:	Diameter:	
	Comments:	Diameter.	
		* •	,
	7. Contractor Certif	ication	1
	Driller's Name:	UNKNOWN DRILLER	
	Certification No.: This well was constructed	in accordance with the Water	

The data contained in this	Well Drilling report is supplied by the Dri responsibility for its accuracy	ler. The	o rt province disclaims	Well I.D.: Map Verified: Date Report Received:	0362662 Not Verified			
Environment				Measurements:	<u>Metric</u>			
 Contractor & Well Owner Informa Company Name: 		400 m m C	·	2. Well Location				
GERMAN R E	D	illing Co	ompany Approval No.:	: 1/4 or Sec Twr LSD	p Rge weston			
Mailing Address: City or Tov	vn; Po	ostal Co	ode:	SE 32 039 Location in Quarter				
WellOwner's Name: Well Locat	ion Identifier:			0 M from	Boundary			
STRONG, ALEX P.O. Box Number: Mailing Ad			·	0 M from Lot Block	Boundary Plan			
P.O. Box Number: Ivialing Ad SYLVAN L		ostal Co	ede:	LOI BIOCK	ridi)			
City: Province:	Ç	ountry:			low Obtain: stimated			
3. Drilling Information			· (main and a main and	6. Well Yield	stillated			
Type of Work: New Well			Proposed well use:	Test Date	Start Time:			
Reclaimed Well Date Reclaimed: Mater	rials Used:		Domestic Anticipated Water	(yyyy/mm/dd): 1962/08/15	11:00 AM			
Method of Drilling: Drilled	1210 0304.		Requirements/day	Test Method: Pump	р			
Flowing Well: No Rate:	Liters esent:		O Liters	Non pumping static level:	4.27 M			
4. Formation Log	5. Well Completion			Rate of water	18.18			
Depth	Date Started(yyyy/mm/dd)		Completed	removal: Depth of	Liters/Min 0 M			
from ground Lithology Description	Date Glanea(yyyyminiad)	(yyyy/ 1962/	mm/dd): 08/15	pump intake:				
level	Well Depth: 33.53 M		ole Diameter: 0 CM	Water level at	0 M			
(meters) 18.29 Clay	Casing Type: Unknown Size OD: 5.08 CM	Liner	Type: DD: 0 CM	end of pumping:				
33.53 Shale	Wall Thickness: 0 CM		hickness: 0 CM	Distance from top o casing to ground	of CM			
	Bottom at: 21.34 M	Top: () M Bottom: 0 M	level:				
				Depth To water i Elapsed				
	Perforations from: 0 M to: 0 M		ations Size: x 0 CM	Drawdown Minutes	s:Sec Recovery			
	from: 0 M to: 0 M	0 CM	x 0 CM	Total Drawdown: 2 If water removal wa				
	from: 0 M to: 0 M Perforated by:	U CIVI	x 0 CM	duration, reason why:				
	Seal: Driven			1				
	from: 0 M Seal:	to: 0 N	/I					
	from: 0 M Seal:	to: 0 N	Л	Recommended pur Liters/Min	mping rate: 0			
	from: 0 M	to: 0 N	Л	Recommended pur				
•	Screen Type:		n ID: 0 CM	Type Pump Installe Pump Type:	∌d 			
	from: 0 M to: 0 M Screen Type:		ize: 0 CM n ID: 0 CM	Pump Model:				
	from: 0 M to: 0 M		ize: 0 CM	H.P.: Any further pumpte	est information?			
	Screen Installation Method Fittings	<u>:</u>		1	= remarant k			
	Тор:	Bottor	m:	1				
	Pack: Grain Size:	Amou	nt: 0					
	Geophysical Log Taken:			1				
	Retained on Files: Additional Test and/or Pun	np Data	,	1				
	Chemistries taken By Drille	r: No						
	Held: 0 Pitless Adapter Type:	Docur	nents Held: 1	4				
	Drop Pipe Type:	D :	-t OM					
	Length: M Comments:	Diame	eter: CM	1				
				1				
	7. Contractor Certifi							
	Driller's Name: Certification No.:		OWN DRILLER					
	This well was constructed in	n accor	riance with the Water	1				

Contractor & Well Owner Information	The data contained in this	Well Drilling report is supplied by the D esponsibility for its accura	oriller. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0352625 Not Verified 1990/11/09
Design D	Enwonment	*	*	· · · · · · · · · · · · · · · · · · ·	Measurements:	
ALBERTAL ENVIRONMENTAL PROTECTIONTECHNICAL SERVICES 9844677 11 3 2 0.39 0 2 5 1 3 2 0.39 0 2 0 2 0.39 0 2 0 2 0 2 0.39 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0 2 0	Company Name:		Drilling Co	mpany Approval No.:	4	
Mailing Address: SYLVAN LAKE Postal Code: SY	ALBERTA ENVIRONMENTAL PROTECTION/T	ECHNICAL SERVICES	9984567		LSD 01 32 039	M
Viell Coverée Name: Well Location Identifier: Dit A Stock Plan Dit Stock Plan Pla				e:	1	Roundon
LTA ENV #2807E J. Dax Number: SYLVAN LAKE Postal Code: SYLVAN LAKE Province: Country: B. Drilling Information ype of Work: Piezometer keclaimed Well aber Reclaimed: Materials Used: Proposed well use; Jan Present: Proposed well use; Anticipated Water January Well: No Rate: Liters Jowning Well: No Rate: Liters Joseph Jowning Rate Well: Well Reptile Well: Well Reptile Well:	WellOwner's Name: Well Location		IUN ZJO			Boundary
SYLVAN LAKE Well Elev: How Obtain: Not Obtain Street Proposed well user; Start Time: Not Obtain Street Start Start Start Street Start Start Start	ALTA ENV #2607E					
3. Drilling Information Frogosed well user Test Date Start Time: Yee of Work: Plezometer Yee of Yee Yee of Yee	SYLVĂN LA		Postal Cod	e:	3	
Test Date Start Time: Test Date Star	City: Province:	-	Country:	***************************************		ot Obtain
ype of Work: Plezometer keelalimed Wale Calamed Wale Reclaimed Wale Reclaimed: Materials Used: Anticipated Water Apolitopital Office of Wale Reclaimed: Materials Used: Anticipated Water Apolitopital Wale Reclaimed: Materials Used: Anticipated Water Apolitopital Wale Reclaimed: Materials Used: Anticipated Water Apolitopital Wale Reclaimed: Materials Used: Completion Server Wale Depth of Completion Server Wale Depth of Date Started(yyyymmidd): Date Completed (yyymmidd): Popth of Date Started(yyymmidd): Popth of Date Started(yymmidd): Popth o	3. Drilling Information		**************************************			Start Time:
Date Recolament: Materials Used: Anticipated Water Requirements/day Normal Materials Used: Requirements/day Normal Materials Used: No Bate: Liters OLIPresent: OLIPresent: OLIPresent: Dill Present: OLIPresent: Dill Present: OLIPresent: Date Starked(yyyy/mm/dd): 1990/10/12 Starked for Materials Used: OLIPresent: OLM Present: Date Starked(yyyy/mm/dd): 1990/10/12 Starked for Materials Used: OLIPresent: OLM Present: OLIPresent: OLI	Type of Work: Piezometer	· · · · · · · · · · · · · · · · · · ·			(yyyy/mm/dd):	
Accommended pumping 2,74 M State Liters Diller's Non pumping 2,74 M State Non mymping 2,74 M State Non pumping 2,74 M State Non mymping State Non mymping 2,74 M State Non mymping State Non mymping 2,74 M State Non mymping Non mymping State Non mymping Non mymping Non mymping Non mymping Non mymping Non mymping	Date Reclaimed: Materi	als Used:				3 1100 CHM
As Present: Oil Present: Rate of water O Liters/Min	Method of Drilling: Rotary			Requirements/day		2.74 M
S. Well Completion Date Completed Cypyrimm/dd; Cypyrimm/dd	Flowing Well: No Rate::			U Liters		O Litere/Min
Trough and the properties of t			3		J	0 F1619/MH
Trough and the properties of t	Depth		Data C	ompleted	Depth of	3.05 M
Inthology Description well well bear the property of the perits of the property of the perits of the property of the perits of t	from		a): (yyyy/n	nm/dd):		0.84
Casing Type: Liner Type: Plastic Size OD: 0 CM Size OD: 5.08 CM Casing Type: Liner Type: Plastic		\$				U IVI
Size OD: 0 CM Size OD: 5.08 CM Casing to ground	level (meters)				pumping:	
Brown Sandy Clay Wall Thickness: 0 CM Wall Thickness: 0.39 CM Chevil: 52 Sand Chevil: 52 San	0.3 Topsoil					f CM
Bottom at: 0 M	0.91 Brown Sandy Clay					
Perforations Perforations Size: from: 0.61 M to: 3.05 M 0 CM x 0 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: Seal: from: 0 M to: 0 M Seal: from: 0 M to: 0 M Screen Type: From: 0 M Sicreen Type: Screen Type		Bottom at: 0 M		M Bottom: 3.05	Depth To water le	
from: 0.61 M to: 0.05 M	2.00 0					
from: 0 M to: 0 M					i e	•
ifrom: 0 M to: 0 M Perforated by: Seal: from: 0 M Soreen Type: from: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Soreen Type: Screen ID: 0 CM From: 0 M Soreen Type: Screen ID: 0 CM From: 0 M Soreen ID: 0 CM From: 0 M From: 0 M Soreen ID: 0 CM From: 0 CM From: 0 M Fr		•			If water removal wa	s less than 2 hr
Seal: from: 0 M Screen Type: from: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Sold Size: 0 CM From: 0 M Sold Size: 0 CM Screen Type: Screen ID: 0 CM From: 0 M Sold Size: 0 CM Screen Type: Screen ID: 0 CM From: 0 M Sold Size: 0 CM Sold Size:		from: 0 M to: 0 M			duration, reason wh	ıy:
from: 0 M Seal: from: 0 M to: 0 M Seal: from: 0 M to: 0 M Seal: from: 0 M to: 0 M Screen Type: from: 0 M to: 0 M Screen Type: from: 0 M to: 0 M Screen Type: from: 0 M to: 0 M Soreen Type: Screen ID: 0 CM From: 0 M to: 0 M Slot Size: 0 CM From: 0 M to: 0 M Slot Size: 0 CM Screen Installation Method: Fittings Top: Pack: Artificial Grain Size: 12-20 Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pittess Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. Priller's Name: UNKNOWN DRILLER		\$			4	
Seal: from: 0 M Seai: from: 0 M Screen Type: From: 0 M Screen Type: Screen ID: 0 CM From: 0 M Screen Type; Screen ID: 0 CM From: 0 M Screen Type; Screen ID: 0 CM From: 0 M Screen Type; Screen ID: 0 CM From: 0 M From: 0 M Screen ID: 0 CM From: 0 M Solot Size: 0 CM Screen ID: 0 CM From: 0 M Screen ID: 0 CM From: 0 M			to: 0 M	•		
Recommended pump intake: 0 M from: 0 M to: 0 M Screen Type: from: 0 M to: 0 M Screen Type: Screen ID: 0 CM From: 0 M to: 0 M Screen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M to: 0 M Soreen ID: 0 CM From: 0 M F		Seal:				nping rate: 0
from: 0 M to: 0 M Type Pump Installed Pump Type: from: 0 M to: 0 M Slot Size: 0 CM Pump Model: Screen Type: Screen ID: 0 CM Pump Model: Screen Type: Screen ID: 0 CM From: 0 M to: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M to: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M to: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M to: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M To: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M To: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M To: 0 M Slot Size: 0 CM Screen ID: 0 CM From: 0 M To: 0		2	to: 0 M		<u> </u>	np intake: 0 M
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: Artificial Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		1	to: 0 M		Type Pump Installe	
Screen Type: from: 0 M to: 0 M Slot Size: 0 CM Screen Installation Method: Fittings Top: Pack: Artificial Grain Size: 12-20 Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pittess Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. H.P.: Any further pumptest information? H.P.: Any further pumptest information?						
from: 0 M to: 0 M Slot Size: 0 CM Screen Installation Method: Fittings Top: Bottom: Pack: Artificial Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pittess Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		<u> </u>			H.P.:	
Fittings Top: Bottom: Pack: Artificial Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pittess Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER					Any further pumpter	st information?
Top: Bottom: Pack: Artificial Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		L	od:			
Pack: Artificial Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER			Rattom			
Grain Size: 12-20 Amount: 130 Pounds Geophysical Log Taken: Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER			טטנטווו	*		
Retained on Files: Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		Grain Size: 12-20		t: 130 Pounds	4	
Additional Test and/or Pump Data Chemistries taken By Driller: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER						
Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		Additional Test and/or Pu			1	
Pitless Adapter Type: Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER				ante Haid: 1		
Drop Pipe Type: Length: M Diameter: CM Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER			DOGUIII	DIRO HEIU. I		
Comments: Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER		Drop Pipe Type:	D: :	one CNA		
Located approx 15' W of roadway & approx 25' E of N-S fence line in ditch. 7. Contractor Certification Driller's Name: UNKNOWN DRILLER			Diamet	er: UM	-	
Driller's Name: UNKNOWN DRILLER		Located approx 15' W of	roadway 6	approx 25' E of N-S		
		Driller's Name: Certification No.:	UNKNO VA332			

Alberta	The data contained in this	Well Drilling	Driller. The provir	nce disclaims	Well I.I Map Vo Date R Receiv	erified: leport	N	350623 lot Verific 990/05/1	77.7
Environment		esponsibility for its accur	racy.		Measu	rements		4etric	
	Well Owner Informat	ion			2. We				
Company Name: ALBERTA EAGLE DR	RILLING LTD		Drilling Compan 117793	y Approval No.:	1/4 or LSD	Sec	Twp	Rge We	estof M
Mailing Address:	City or Tow	n:	Postal Code:	· · · · · · · · · · · · · · · · · · ·	SE	32	039		5
BOX 9036	SYLVAN LA		T4S 1S6			n in Qua		D	
WellOwner's Name: SHOETTLER, RON	vveii Locatio	on Identifier:			0 M	from from	S W	Boun- Boun-	•
P.O. Box Number:	Mailing Ado 6 MCLEVIN	ress: I CRESCENT	Postal Code:		Lot	Blo		Plan	
City: RED DEER	Province: AB		Country: CA		Well El	ev:		Obtain: Obtain	
3. Drilling Inform	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				6. We	II Yiel	d		
Type of Work: New W			Propo	sed well use:	Test Da		S	tart Time	e:
Reclaimed Well		aia lla adi llalaana	Stock		(yyyy/m 1990/0		٥	:00 AM	
Date Reclaimed: Method of Drilling: Ro		als Used: Unknown		pated Water irements/day		∠ı∠o ethod: F	_		
Flowing Well: No	Rate:	Liters	0 Lite		Non pu	mping		4.48 M	
Gas Present: Yes	Oil Pre	esent: No			static le			07.00	
4. Formation Log	g	5. Well Completion			Rate of			27.29 .iters/Min	,
Depth		Date Started(yyyy/mm/	dd): Date Comple		Depth o			M	
from ground Litho	logy Description	1990/02/28	^{dd}). (yyyy/mm/dd 1990/02/28	1):	pump ii	ntake:			
level Little	may practipition	Well Depth: 36.58 M		meter: 0 CM	-Water I	evel at	3	2 M	
(meters)	·····	Casing Type: Plastic	Liner Type:		end of pumpin	iu.			
6.4 Brown Sand		Size OD: 13.97 CM	Size OD: 11			e from 1	top of C	CM	
16.46 Brown San 23.47 Gray Shale		Wall Thickness: 0.64 C		ess: 0.54 CM	casing	to grour			
36.27 Gray Sands		Bottom at: 23.47 M	Top: 22.86 N	A Bottom:	level:	6 Ta	-tou (a)	nl (mastan	٠١
36.58 Gray Silty S			36.58 M		рері		ster leve sed Tin	el (meter ne	S)
		Perforations from: 27,43 M to: 36,58	Perforations BM 0 CM x 0 CN			own Mir		ec Recov	very
		from: 0 M to: 0 M	0 CM x 0 CN		14.4		0:00	16	~~~~
		from: 0 M to: 0 M	0 CM x 0 CM	Λ	15.0 15.		1:00 2:00	15.4 15.	
,		Perforated by:	w , , ,		15.1		3:00	15.3	
		Seal: Bentonite Chips/1 from: 0 M	to: 23.47 M		15.1		4:00	15.3	
		Seal:	10. 25.47 101		15.2	22	5:00	15.3	
		from: 0 M	to: 0 M		15.2		6:00	15.2	
		Seal:	to. 0 M		15.2		7:00	15.2	
		from: 0 M Screen Type:	to: 0 M Screen ID: 0	CM	15.2 15.3		8:00 9:00	15.2	
		from: 0 M to: 0 M	Slot Size: 0		15.3		10:00	15.2 15.2	***************************************
		Screen Type:	Screen ID: 0		15.3		12:00	15.	***********
		from: 0 M to: 0 M	Slot Size: 0	CM	15.4	4	14:00	15.1	16
		Screen Instaliation Met Fittings	nod:	·	15.4		16:00	15.1	
		Fittings Top:	Bottom:		15.4 15.4		18:00 20:00	15.1	_
		Pack:			15.4		25:00	15. 15.(
		Grain Size:	Amount: 0		15,5		30:00	15.0	
		Geophysical Log Taker Retained on Files:	n:		15.6	32	35:00	14.9	
		Additional Test and/or F	Pumo Data		15.3		40:00	14.9	
		Chemistries taken By D	Driller: No		15.4		50:00	14.9	
		Held: 0	Documents	Held: 2	15.7 15.8		60:00 75:00	14.8 14.8	
		Pitless Adapter Type: Drop Pipe Type:			15.9		90:00	14.8	
		Length: M	Diameter: C	М	15.9		105:00	14.	************
		Comments:			<u>. </u>	rawdow			
		Soft WATER, low iron,	8.8 ph, H2S ODC	RS.		r remova n, reasc		ess than	. 2 h
					Recom	mendec	d pumpi	ing rate:	0
		7. Contractor Cer	tification		Liters/N	Лin			
		Driller's Name:	UNKNOWN	DRILLER				intake: 0) M
ĺ		Certification No.:	VA7724				stalled		
		Driller's Name:	UNKNOWN VA7724		Liters/M Recom Type P	Min Imended Tump Ins	d pump		

The data contained in this	Well Drilling report is supplied by the responsibility for its accur-	Driller. The province d	isclaims	Well I.D.: Map Verified: Date Report Received:	0362671 Map
Environment	*			Measurements:	<u>Metric</u>
1. Contractor & Well Owner Information Company Name:	ation	Drilling Company Ap		2. Well Location 1/4 or Sec Twi	
KINGSEP ROBERT		· · · · · · · · · · · · · · · · · · ·		LSD	_ М
Mailing Address: City or To	wn:	Postal Code:		11 33 039 Location in Quarte	
MOTTUS, W	tion Identifier:			0 M from 0 M from	Boundary Boundary
P.O. Box Number; Mailing Ad	ldress: ITN HOUSE	Postal Code:		Lot Block	Plan
City; Province:	111111111111111111111111111111111111111	Country:			low Obtain: stimated
3. Drilling Information				6. Well Yield	
Type of Work: New Well		Proposed	well use:	Test Date (yyyy/mm/dd):	Start Time:
Reclaimed Well Date Reclaimed: Mate	rials Used:	Domestic Anticipate	d Water	1962/05/02	11:00 AM
Method of Drilling: Cable Tool		Requirem		Test Method: Unkn	
	: Liters resent:	0 Liters		Non pumping static level:	8.23 M
4. Formation Log	5. Well Completio	n		Rate of water	136.38
Depth	Date Started(yyyy/mm/d	Date Completed		removal: Depth of	Liters/Min 0 M
from ground Lithology Description	Date Glartod(yyyymmine	(yyyy/mm/dd): 1962/05/01		pump intake:	
level	Well Depth: 19.2 M	Borehole Diamet	er: 0 CM	Water level at end of	0 M
(meters) 3.05 Clay	Casing Type: Unknown	Liner Type:		pumping:	
6.1 Brown Shale	Size OD: 12.7 CM Wall Thickness: 0 CM	Size OD: 0 CM Wall Thickness: () CM	Distance from top of casing to ground	of CM
9.75 Blue Shale				level:	
19.2 Brown Sandstone	Bottom at: 10.97 M	Top: 0 M Bo	ttom: 0 M	Depth To water	
· .	Perforations from: 0 M to: 0 M	Perforations Size	:	Elapsed Drawdown Minute	
	from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM		Total Drawdown: 1	
	from: 0 M to: 0 M	0 CM x 0 CM		If water removal warduration, reason w	
	Perforated by: Seal: Driven				
	from: 0 M	to: 0 M			
	Seal: from: 0 M	to: 0 M		Recommended pu	mping rate: 0
	Seal:			Liters/Min Recommended pu	mn intake: 0 M
	from: 0 M Screen Type:	to: 0 M Screen ID: 0 CM		Type Pump Installe	
	from: 0 M to: 0 M	Slot Size: 0 CM	····	Pump Type:	
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM		H.P.:	
	Screen Installation Meth			Any further pumpte	est information?
	Fittings	Bottom:			
	Top: Pack:	DOROIII.		1	
٠.	Grain Size:	Amount: 0			
	Geophysical Log Taken Retained on Files:	:			
	Additional Test and/or F				
	Chemistries taken By D Held: 0	riller: Yes Documents Held	1		
	Pitless Adapter Type:				
	Drop Pipe Type: Length: M	Diameter: CM			
	Comments:	Diamotor, OW			
	MEDIUM HARD WATE	₹.			
	7. Contractor Cert		1 law law	one or the contract of the con	
	Driller's Name: Certification No.:	UNKNOWN DRII	LEK		
	This well was constructed	ed in accordance with	the Water	ŀ	

The data contained in this	Well Drilling	ller. The province disclaims	Well I.D.: 0362676 Map Verified: Not Verified Date Report Received:
Environment	esponsibility for its accurac	y.	Measurements: Metric
1. Contractor & Well Owner Information			2. Well Location
Company Name: NELSON DRILLING & PLUMBING	D	rilling Company Approval No.	: 1/4 or Sec Twp Rge Westof LSD M
Mailing Address: City or Tow	rn: P	ostal Code:	NE 33 039 02 5 Location in Quarter
WellOwner's Name: Well Locati LOEWEN, ALF	on Identifier:		0 M from Boundary 0 M from Boundary
P.O. Box Number: Mailing Add		ostal Code:	Lot Block Plan
City: Province:		ountry:	Well Elev: How Obtain: 960.12 M Estimated
3. Drilling Information			6. Well Yield
Type of Work: New Well		Proposed well use:	Test Date Start Time:
Reclaimed Well	:_}_	Domestic	(yyyy/mm/dd): 1970/07/01 11:00 AM
Date Reclaimed: Mater Method of Drilling: Rotary	ials Used:	Anticipated Water Requirements/day	Test Method: Pump
Flowing Well: No Rate:	Liters	0 Liters	Non pumping 49.38 M
Gas Present: Oil Pr	esent:		static level:
4. Formation Log	5. Well Completion		Rate of water 45.46 removal: Liters/Min
Depth	Date Started(yyyy/mm/dd)	Date Completed	Depth of 0 M
from ground Lithology Description	_ =====================================	ʻ (yyyy/mm/dd): 1970/07/01	pump intake:
level	Well Depth: 57.91 M	Borehole Diameter: 0 CM	Water level at 49.38 M
(meters)	Casing Type: Galvanized		end of pumping:
7.32 Brown Clay	Steel	Liner Type:	Distance from top of CM
8.53 Sandstone Stringers 25.6 Brown See Comments Shale	Size OD: 5.08 CM	Size OD: 0 CM	casing to ground
26.82 Hard Sandstone Stringers	Wall Thickness: 0 CM	Wali Thickness: 0 CM	level:
32 Blue Shale	Bottom at: 53.34 M	Top: 0 M Bottom: 0 M	Depth To water level (meters) Elapsed Time
38.1 Blue Soft Shale	Perforations from: 0 M to: 0 M	Perforations Size: 0 CM x 0 CM	Drawdown Minutes:Sec Recovery
56.39 Blue Water Bearing Shale	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 0 M
57.91 Blue Shale	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 hr
	Perforated by:		duration, reason why:
	Seal: Driven from: 0 M	to: 0 M	
	Seal:	(O. U IVI	
	from: 0 M	to: 0 M	Recommended pumping rate: 0 Liters/Min
	Seal:		Recommended pump intake:
	from: 0 M Screen Type:	to: 0 M Screen ID: 0 CM	53.34 M
	from: 0 M to: 0 M	Slot Size: 0 CM	Type Pump Installed
•	Screen Type:	Screen ID: 0 CM	Pump Type: SUB Pump Model: MYERS
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.:
	Screen Installation Method Fittings	3;	-Any further pumptest information?
	Top:	Bottom:	
	Pack:		-
	Grain Size:	Amount: 0	
	Geophysical Log Taken: Retained on Files:		
	Additional Test and/or Pur	np Data	1
	Chemistries taken By Drille		
	Held: 0 Pitiess Adapter Type:	Documents Held: 1	
	Drop Pipe Type:		
	Length: M	Diameter: CM	
	Comments:	IN COUT MAKEUR	
	25' 85' 125' 160' DRY SEA	NVI. SUFT WATEK.	
			·
•	7. Contractor Certifi	cation	1
	Driller's Name:	UNKNOWN DRILLER	1
	Certification No.:		.1
	I i nis well was constructed	in accordance with the Water	'1

	Well Drilling			Well I.D.: Map Verified: Date Report	0362677 Not Verified
	responsibility for its accurac		province discialitis	Received: Measurements:	Metric
1. Contractor & Well Owner Informa	ition			2. Well Loca	
Company Name:	D	~	mpany Approval No.:	: 1/4 or Sec T	wp Rge West
UNKNOWN DRILLER Mailing Address: City or To		9999 ostal Co	de:	LSD NE 33 0	M 39 02 5
UNKNOWN UNKNOW WellOwner's Name: Well Loca	N AB CA tion Identifier:			Location in Quar 0 M from	ter Boundar
PADERSON, E. Well Local	ion identiner:			0 M from	Boundai
P.O. Box Number: Mailing Ac ECKVILLE		ostal Co	de:	Lot Block	(Plan
City: Province:		ountry:		Well Elev:	How Obtain:
3. Drilling Information		·		960.12 M 6. Well Yield	Estimated
Type of Work: Federal Well Survey			Proposed well use:	Test Date	Start Time:
Reclaimed Well Date Reclaimed: Mate	rials Used:		Domestic & Stock Anticipated Water	(yyyy/mm/dd):	11:00 AM
Method of Drilling: Drilled	nais Cscu.		Requirements/day	Test Method: Un	known
	: Liters resent:		0 Liters	Non pumping static level:	9.14 M
4. Formation Log	5. Well Completion		•	Rate of water	0 Liters/Min
Depth from	Date Started(yyyy/mm/dd)		Completed	removal: Depth of	0 M
ground Lithology Description		(уууу/г	mm/dd): 	pump intake: Water level at	0 M
level (meters)	Well Depth: 26.21 M Casing Type: Galvanized	Boreho	ole Diameter: 0 CM	end of	O IVI
	Steel	Liner 1		pumping: Distance from to	n of CM
	Size OD: 15.24 CM Wall Thickness: 0 CM		D: 0 CM hickness: 0 CM	casing to ground	
·	Bottom at: 0 M	Top: 0	· · · · · · · · · · · · · · · · · · ·	level: Depth To wate	er level (meters)
	Perforations		ations Size:	Elaps	ed Time tes:Sec Recover
	from: 0 M to: 0 M from: 0 M to: 0 M		< 0 CM < 0 CM	Total Drawdown	
	from: 0 M to: 0 M	0 CM 2		If water removal duration, reason	was less than 2 h
	Perforated by: Seal:			duration, reason	**15y.
	from: 0 M	to: 0 M	1		
	Seal: from: 0 M	to: 0 N	1	Recommended p	oumping rate: 0
	Seal: from: 0 M	to: 0 N	•	Liters/Min Recommended i	oump intake: 0 M
	Screen Type:	Screer	ID: 0 CM	Type Pump Insta	alled
	from: 0 M to: 0 M Screen Type:		ze: 0 CM 1 ID: 0 CM	Pump Type: SP Pump Model:	
•	from: 0 M to: 0 M	Slot Si	ze: 0 CM	H.P.: Any further pumi	otest information
	Screen Installation Method Fittings	1:		1	
	Top:	Botton	n:		
	Pack: Grain Size:	Amour	nt: 0		
	Geophysical Log Taken: Retained on Files:			1	
	Additional Test and/or Pur			-	
	Chemistries taken By Drille Held: 0		rents Held: 1		
	Pitless Adapter Type:			1	
	Drop Pipe Type: Length: M	Diame	ter: CM		
	Comments:			1	
	7. Contractor Certifi	ication		1	
	Driller's Name: Certification No.:		OWN DRILLER	1	
	This well was constructed	in accord	dance with the Water		

Alberta Environment The data contained in this research 1. Contractor & Well Owner Informat Company Name:		er. The pr	ovince disclaims	2. We 1/4 or	erified: eport ed: rements:	tion	0362678 Not Verified 1976/05/28 Metric Rge Wes	
RICHMOND WW DRLG Mailing Address: City or Town). Po:	stal Code		LSD NE	33 0	39	02 5	9
				Locatio	n in Quar			
WellOwner's Name: Well Location TOLSON, SUSAN	in Identifier:			0 M 0 M	from from		Bound: Bound	
P.O. Box Number: Mailing Add 286 ECKVILLE	ress: Po	stal Code	•	Lot	Block	(Plan	
City: Province:	Со	untry:		Well Ele			Obtain:	
2 Drilling Information		***************************************		949.45	M II Yield	***********	nated	
Method of Drilling: Rotary Flowing Well: No Rate: I Gas Present: Oil Pre	sent:	D A R	roposed well use: omestic nticipated Water equirements/day Liters	Test Da (yyyy/m 1976/05 Test Me Non pur static le	ite im/dd): 5/13 ethod: Pu mping ivel:	1 mp 1	Start Time: 11:00 AM 18.29 M	
4. Formation Log	5. Well Completion			Rate of remova			31.82 Liters/Min	
Depth from ground Lithology Description level (meters)	Date Started(yyyy/mm/dd): 1976/05/12 Well Depth: 42.67 M Casing Type: Galvanized	Date Co (yyyy/mr 1976/05/ Borehole Liner Ty	n/dd): 13 Diameter: 0 CM	Depth of pump in Water In end of pumpin	of ntake: evel at	2	27.43 M 27.43 M	
12.19 Sandy Clay & Rocks 21.34 Brown Shale	Steel Size OD: 11,43 CM	Size OD	. 0. 03.8	Distanc	e from to		CM	
25.91 Black Shale 42.67 Gray Shale & Sandstone	Wall Thickness: 0.36 CM		ckness: 0 CM	levei:	to ground		el (meters	
	Perforations from: 0 M to: 0 M from: 0 M to: 0 M from: 0 M to: 0 M Perforated by: Seal: Driven from: 0 M	Perforati 0 CM x 0 0 CM x 0 0 CM x 0 to: 39.62	O CM O CM	Total D	rawdown	ites:S : 0 M was l	ec Recove	
	Seal: from: 0 M Seal:	to: 0 M		Recommended pumping rate: (Liters/Min				
	from: 0 M	to: 0 M			mended ump Insta		intake: 0	V
	Screen Type: from: 0 M to: 0 M	Screen I	· O CM	Pump 1	Гуре:	alleu		
	Screen Type:	Screen	D: 0 CM	Pump N H.P.:	/lodel:			
	from: 0 M to: 0 M Screen Installation Method: Fittings Top:	Slot Size	o: O CM	ਸ.ਸ.: Any further pumptest informa			informatio	n?
	Pack: Grain Size: Geophysical Log Taken: Retained on Files:	Amount:	0					
	Additional Test and/or Pump Data Chemistries taken By Driller: No Held: 1 Documents Held: 2		nts Held: 2					
	Pitless Adapter Type: Drop Pipe Type: Length: M Comments:	Diamete	r: CM					
	7. Contractor Certific Driller's Name: Certification No.: This well was constructed in	UNKNO	WN DRILLER					

Ó	The data contained in this	Well Drilling	riller. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0362668 Not Verified 1979/06/12
En	Alberta responsibility for its accuracy. Environment					<u>Metric</u>
1. Contractor & Well Owner Information					2. Well Location	
Company		Drilling Company Approval No. TD. 2318		: 1/4 or Sec Tw LSD	/p Rge Westof M	
FORRESTER WATER WELL DRILLING (1981) I Mailing Address: City or Town				NW 33 03		
RR 1	RED DEER				Location in Quarte	
URG, DE		on Identifier:			0 M from 0 M from	Boundary Boundary
	Number: Mailing Add				Lot Block	Plan
City:	RR2, RED Province:	DEER T4N 5E2 Country:			Well Elev:	How Obtain:
ony, country.						Estimated
	ng Information				6. Well Yield	
Type of V Reclaime	Vork: New Well	Proposed well use: Domestic Anticipated Water		Test Date (yyyy/mm/dd):	Start Time:	
Date Rec				Anticipated Water	1979/03/01	11:00 AM
	f Drilling: Cable Tool	Requirements/day		Requirements/day	Test Method: Bail	
Flowing V Gas Pres	Liters esent:	0 Liters		Non pumping static level:	18.29 M	
	nation Log	5. Well Completion	<u> </u>			45.46
Depth		Date Started(yyyy/mm/dd	, Date (Completed	removal: Depth of	Liters/Min 30.48 M
from around	Lithology Description	1979/02/26	^{).} (yyyy/: 1979/(mm/dd): 03/01	pump intake:	
level	Litilology Description	Well Depth: 38.1 M		ole Diameter: 0 CM	-Water level at -end of	38.1 M
(meters)	Tanaall	Casing Type: Steel		Туре:	ena or -pumping:	·
0.3 8.84	Topsoil Light Brown Sandy Clay	Size OD: 13.97 CM Wall Thickness: 0.66 CM		DD: 0 CM hickness: 0 CM	Distance from top	of CM
	Light Brown Hard Clay	Wall Hillickness, 0.00 Clvi	IVVall 1	TIICKHESS, U CIVI	casing to ground level:	
11.58	Brown Soft Sandstone	Bottom at: 32 M	Top: 0	M Bottom: 0 M	Depth To water	· level (meters)
12.5 13.11	Gray Soft Shale & Coal Gray Shale	Perforations	Perfor	ations Size:	Elapse	d Time
13.72	Gray Hard Sandstone	from: 0 M to: 0 M		x 0 CM	Drawdown Minut Total Drawdown:	
15.24	Blue Shale	from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM x 0 CM	If water removal v	••••
19.2	Blue Bentonitic Sandstone	Perforated by:	0 0101	X O OM	duration, reason v	vhy:
19.81 21.95	Blue Gray Hard Sandstone Blue Sticky Shale	Seal: Driven] .	
26.52	Blue Gray Sandy Shale	from: 0 M Seal:	to: 32	IVI		
28.35	Blue Gray Hard Shale	from: 0 M	to: 0 N	Λ	Recommended po Liters/Min	umping rate: 0
31.7 35.05	Dark Gray Sticky Shale Dark Gray Water Bearing Sandstone	Seal: from: 0 M	to: 0 N	đ.	Recommended p	ump intake: 0 M
37.8	Bluish Green Water	Screen Type:		n ID: 0 CM	Type Pump Instal	led
L	Bearing Sandstone	from: 0 M to: 0 M		ize: 0 CM	Pump Type: Pump Model:	
38.1	Greenish Gray Sandy Shale	Screen Type: from: 0 M to: 0 M			H.P.:	
		Screen Installation Method:			Any further pumptest information?	
ļ		Fittings	D - M			
		Top: Pack:	Botton	117	_	
		Grain Size:	Amou	nt: 0		
		Geophysical Log Taken: Retained on Files:				
		Additional Test and/or Pump Data				
ŀ		Chemistries taken By Driller: Yes				
		Held: 0 Pitiess Adapter Type:	Docur	nents Held: 1	-	
		Drop Pipe Type:				
		Length: M	Diame	eter: CM	-	
		Comments: MEDIUM HARD WATER.				-
]						
7 Contractor Contilloction						
		Driller's Name:	7. Contractor Certification Driller's Name: UNKNOWN DRILLER			
		Certification No.:				
		This well was constructed	l in accor	dance with the Water	•	

The data contained in this	Well Drilling report is supplied by the last seponsibility for its accurate.	Driller. The	Ort province disclaims	Well I.D.: Map Verified: Date Report Received: Measurements:	0362669 Map 1984/10/02 Metric
1. Contractor & Well Owner Information	tion	· · · · · · · · · · · · · · · · · · ·		2. Well Location	
Company Name:		Drilling Cor	npany Approval No.:	1/4 or Sec Twi	
MAGNUM DRLG		5	· · · · · · · · · · · · · · · · · · ·	LSD	M
Mailing Address: City or Tow	n:	Postal Cod	e:	NW 33 039 Location in Quarter	
WellOwner's Name: Well Locati	on Identifier:			0 M from	Boundary
MOTTUS, WALLY	,	<u> </u>		0 M from	Boundary Plan
P.O. Box Number: Mailing Add 215 ECKVILLE	iress:	Postal Cod	e:	Lot Block	rian
215 ECKVÏLLE City; Province:		Country:			low Obtain:
					stimated
3. Drilling Information Type of Work: New Well		-	Dunana and wall was	6. Well Yield Test Date	Start Time:
Reclaimed Well			Proposed well use: Domestic	(yyyy/mm/dd):	Start Time:
Date Reclaimed: Mater	ials Used:		Anticipated Water	1984/07/31	11:00 AM
Method of Drilling: Rotary	Litoro		Requirements/day 0 Liters	Test Method: Baile Non pumping	<u>г</u> 7.62 М
Flowing Well: No Rate: Gas Present: No Oil Pr	Liters esent: No	Î	U LITOI O	static levei:	1.02 IVI
4. Formation Log	5. Well Completio	n		Rate of water	9.09
Depth	Date Started(yyyy/mm/d	ری. Date C	ompleted	removal: Depth of	Liters/Min 10.36 M
from ground Lithology Description	1984/07/31	· (yyyy/rr		pump intake:	10.30 W
ground Lithology Description level	Well Depth: 18.29 M	1984/0 Borebo	le Diameter: 0 CM	Water level at	9.14 M
(meters)	Casing Type: Steel		ype: Steel	end of pumping:	
4.57 Brown Sand 9.14 Brown Clay & Sand	Size OD: 11.43 CM		D: 7.62 CM	Distance from top	of CM
9.14 Brown Clay & Sand 18.29 Blue Sandstone	Wall Thickness: 0.4 CM		nickness: 0 CM	casing to ground	
	Bottom at: 10.67 M	Top: 9. 18,29 N		level: Depth To water	level (meters)
	Perforations		tions Size:	Elapsed	
	from: 12.19 M to: 18.29		и x 30.48 СМ	Drawdown Minute	
	from: 0 M to: 0 M	0 CM x		Total Drawdown: 1 If water removal water	
	from: 0 M to: 0 M Perforated by: Torch	0 CM x	UCIVI	duration, reason w	
	Seal: Driven			1	
	from: 0 M	to: 10.3	6 M		
	Seal: from: 0 M	to: 0 M		Recommended pur	mping rate:
	Seal:			13.64 Liters/Min	on intaka
	from: 0 M Screen Type:	to: 0 M	ID: 0 CM	Recommended put 10.36 M	пр шаке.
•	from: 0 M to: 0 M		:e: 0 CM	Type Pump Installe	ed
	Screen Type:		ID: 0 CM	Pump Type: SUB Pump Model:	
	from: 0 M to: 0 M Screen Installation Meth		te: 0 CM	H.P.: .5	
	Fittings	iou.		Any further pumpte	est information?
	Top:	Bottom	•	1	
	Pack: Grain Size:	Amoun	t· n		
	Geophysical Log Taken		<u> v</u>	†	
	Retained on Files:			_	
	Additional Test and/or P Chemistries taken By Di				
	Held: 0		ents Held: 1		
	Pitless Adapter Type:		······································	1	
·	Drop Pipe Type: Length: 7.92 M	Diamet	er: 2.54 CM		
	Comments:	Pidiritt	2.0 r O.M	1	
					. 13.
	7. Contractor Cert	ification		1	
	Driller's Name:		OWN DRILLER	1	
	Certification No.: This well was constructed	ed in accord	ance with the Meter		
	THE WALL AND COMPANIES	Julii avvoltu	CHOO MICH CIC TYCLES	-	

Alberta Environment The data contained in this	Well Drilling report is supplied by the Dri responsibility for its accuracy	iller. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received: Measurements:	0406356 Not Verified 1995/06/26 Metric
1. Contractor & Well Owner Informa				2. Well Locat	
Company Name: ALKEN BASIN DRILLING LTD.		rilling Co 8394	mpany Approval No.:	1/4 or Sec Tv LSD	vp Rge Westo M
Mailing Address: City or Tov	n: P	ostal Cod	le:	NW 33 03	39 02 5
BOX 47 BENTLEY		0C 010		Location in Quart	
WellOwner's Name: Well Locat SABADOS, ALEX	on Identifier:			0 M from 0 M from	Boundar Boundar
P.O. Box Number: Mailing Ad		ostal Cod	le:	Lot Block	Plan
City: 42 MALIBL	· · · · · · · · · · · · · · · · ·	2V 1W8 ountry:		Well Elev:	How Obtain:
oity. Flovisce.	· ·	oursiry.	•		Not Obtain
3. Drilling Information				6. Well Yield	
Type of Work: New Well Reclaimed Well			Proposed well use:	Test Date (yyyy/mm/dd):	Start Time:
	ials Used:		Domestic Anticipated Water	(yyyy/mm/aa): 1995/06/08	11:00 AM
Method of Drilling: Rotary			Requirements/day	Test Method: Air	
	Liters		1591.1 Liters	Non pumping static level:	8.23 M
Gas Present: No Oil Pr 4. Formation Log	esent: No	1		Rate of water	181.84
Depth	5. Well Completion	Date C	ompleted	removal:	Liters/Min
from	Date Started(yyyy/mm/dd)	i: (yyyy/n	nm/dd):	Depth of pump intake:	19.2 M
ground Lithology Description	1995/06/08	1995/0	6/08	Water level at	19.2 M
level (meters)	Well Depth: 19.2 M _Casing Type: Steel		le Diameter: 0 CM ype: Plastic	end of	
3.05 Brown Clay & Rocks	Size OD: 13.97 CM		D: 11.43 CM	pumping: Distance from top	of CM
7.62 Brown Sandstone	Wall Thickness: 0.62 CM	Wali Ti	nickness: 0.6 CM	casing to ground	OI CIVI
11.58 Gray Shale 17.98 Brown Sandstone	Bottom at: 10.36 M	Top: 7.		level:	
19.2 Gray Sandstone		19.2 M		Depth To wate	r level (meters) d Time
	Perforations from: 10.36 M to: 19.2 M		tions Size: VI x 0.95 CM	Drawdown Minut	
	from: 0 M to: 0 M	0 CM x		Lancius Commission of the Comm	00 19.2
	from: 0 M to: 0 M Perforated by: Hand Drill	0 CM x	<u>0 CM</u>	£	00 14.63 00 10.97
	Seal: Drive Shoe		······	<u> </u>	00 8.23
	from: 0 M	to: 10.3	16 M		00 8.23
	Seal: from: 0 M	to: 0 M			2:00 8.23 0:00 8.23
	Seal:	10. 0 101			:00 8.23
	from: 0 M	to: 0 M		9	0:00 8.23
	Screen Type: from: 0 M to: 0 M		ID: 0 CM ze: 0 CM	Total Drawdown:	
	Screen Type:		ID: 0 CM	If water removal widuration, reason v	
	from: 0 M to: 0 M		ze: 0 CM	1	•
	Screen Installation Method Fittings	d:		1	
•	Top:	Bottom		Recommended p	umping rate:
	Pack:	Δ		45.46 Liters/Min	- town on the total
	Grain Size: Geophysical Log Taken:	Amoun	<u>[</u>	Recommended p	ump intake:
	Retained on Files:			Type Pump Instal	led
	Additional Test and/or Pur			Pump Type:	
	Chemistries taken By Drille Held: 0			Pump Model: H.P.:	
	Pitless Adapter Type:			Any further pump	test information?
	Drop Pipe Type: Length: M	Diamet	er: CM		
	Comments:	Diamet	CI. CIVI	1	
	DRILLER REPORTS DIST CASING TO GROUND LE		ROM TOP OF		
	7. Contractor Certifi	cation			
	Driller's Name:	UNKNO	OWN DRILLER	1	
4	Certification No :	5881AI	7	i	

The data contained in this r	Well Drilling eport is supplied by the Dri esponsibility for its accurac	iller. The provin		Well I.D.: Map Verified: Date Report Received:	0362665 Not Verified
Environment	•		# <u>####################################</u>	Measurements:	Metric
 Contractor & Well Owner Information Company Name: 		rillina Compan	y Approval No.:	2. Well Location 1/4 or Sec Twi	
NELSON DRILLING & PLUMBING			۱۹۷۰ امام ۱۹۷۰ مرم.	LSD	М
Mailing Address: City or Towr	n: P	ostal Code:		SW 33 039 Location in Quarte	
WellOwner's Name: Well Location	on Identifier:			0 M from	Boundary
RANAGHAN	roce:	netal Code		0 M from Lot Block	Boundary Plan
CABIÑ N SI CALGARY	ress: P DE OF SYLVAN LAKE,	ostal Code:		Well Elev: H	low Obtain:
City: Province:	С	Country:		\$	Estimated
3. Drilling Information		· · · · · · · · · · · · · · · · · · ·	<u></u>	6. Well Yield Test Date	Start Time:
Type of Work: New Well		Prono	sed well use:	Test Date (yyyy/mm/dd):	olari ilme:
Reclaimed Well	ala the est	Dome	estic	1970/08/01	11:00 AM
Date Reclaimed: Materia Method of Drilling: Rotary	als Used:		pated Water irements/day	Test Method: Pum Non pumping	p 23.77 M
Flowing Well: No Rate: L		0 Lite	ers	static level:	
Gas Present: Oil Pre	esent:			Rate of water	45.46
	5. Well Completion	N-7 - 0		removal: Depth of	Liters/Min 0 M
Depth from	Date Started(yyyy/mm/dd)): Date Comple (yyyy/mm/dd	1\-	pump intake:	
ground Lithology Description		1970/08/01		Water level at lend of	23.77 M
level (meters)	Well Depth: 57.91 M	Borehole Dia	ameter: U CM	pumping:	
6.1 Brown Sandy Clay	Casing Type: Galvanized Steel	Liner Type:		Distance from top	of CM
17.98 Brown Shale	Size OD: 5.08 CM	Size OD: 0 C	iΜ	casing to ground level:	
18.29 Sandstone Stringers 20.12 Brown Shale	Wall Thickness: 0 CM	Wall Thickne		Depth To water	
20.12 Brown Shale 20.42 Sandstone Stringers	Bottom at: 30.48 M	Top: 0 M	Bottom: 0 M	Elapsed	l Time
25.91 Brown Hard Shale	Perforations	Perforations		Drawdown Minute Total Drawdown: 0	
28.96 Brown Shale	ffrom: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	Λ	If water removal w	as less than 2 hr
42.67 Water Bearing Shale & Sandstone 57.91 Blue Shale & Sandstone Ledges	from: 0 M to: 0 M	0 CM x 0 CN		duration, reason w	
57.91 Blue Shale & Sandstone Ledges	Perforated by:			septement to	
	Seal: Driven from: 0 M	to: 0 M			
	Seal:			Recommended pu	mping rate: 0
	from: 0 M Seal:	to: 0 M		Liters/Min Recommended pu	mp intake:
	Seal: from: 0 M	to: 0 M		30.48 M	
	Screen Type:	Screen ID: 0		Type Pump Installe Pump Type: HANE	ed
	from: 0 M to: 0 M Screen Type:	Slot Size: 0 (Screen ID: 0	O:11	Pump Type: HANL Pump Model:	J F UIVIF
	from: 0 M to: 0 M	Screen ID: 0 Slot Size: 0 (CM	H.P.:	
	Screen Installation Method			Any further pumpte	est information?
	Fittings Ton:	Rottom:		T. C.	
	Top: Pack:	Bottom:			
	Grain Size:	Amount: 0			
	Geophysical Log Taken:				
	Retained on Files: Additional Test and/or Pur	np Data		į	
	Chemistries taken By Drill	er: Yes			
	Held: 0 Pitless Adapter Type:	Documents I	Held: 1	Language Control of Co	
	Pitless Adapter Type: Drop Pipe Type:			ł	
	Length: M	Diameter: CI	M		
i 	Comments:				
I	SOFT WATER.			MERCHAN	
				•	
	7. Contractor Certif				
	Driller's Name: Certification No.:	UNKNOWN	DRILLER		

Alberta The data contained in th	r Well Drilling is report is supplied by the D responsibility for its accura	riller. The province disclaims	Well I.D.: 0362666 Map Verified: Not Verified Date Report 1971/10/25 Received:
Environment		- 3 -	Measurements: Metric
 Contractor & Well Owner Inform Company Name: 		Drilling Company Approval No	2. Well Location .: 1/4 or Sec Twp Rge Westof
NELSON DRILLING & PLUMBING			LSD ` M
Mailing Address: City or To	own:	Postal Code:	SW 33 039 02 5 Location in Quarter
WellOwner's Name: Well Loc PARNEY	ation Identifier:		0 M from Boundary 0 M from Boundary
P.O. Box Number: Mailing A		Postal Code:	Lot Block Plan
COTTAG LAKE, C	E @ N END OF SYLVAN ALGARY	•	Well Elev: How Obtain:
City: Province		Country:	944.88 M Estimated
2 Drilling Information			6. Well Yield
3. Drilling Information Type of Work: New Well		Proposed well use:	Test Date Start Time: (yyyy/mm/dd):
Reclaimed Well	indata (Inna)	Domestic	1971/08/01 11:00 AM
Date Reclaimed: Mat Method of Drilling: Rotary	terials Used:	Anticipated Water Requirements/day	Test Method: Bailer Non pumping 8.23 M
Flowing Well: No Rat	e: Liters	0 Liters	static level:
	Present:	<u> </u>	Rate of water 45.46 removal: Liters/Min
4. Formation Log	5. Well Completion	Data Completed	Depth of 0 M
Depth from	Date Started(yyyy/mm/do	^{a);} (yyyy/mm/dd):	pump intake: Water level at 0 M
ground Lithology Description level	Well Depth: 36.58 M	1971/08/01 Borehole Diameter: 0 CM	end of
(meters)	Casing Type: Galvanized	4	pumping: Distance from top of CM
5.18 Brown Clay	Steel	Liner Type:	casing to ground
12.19 Brown Shale 32 Blue Shale	Size OD: 5.08 CM Wall Thickness: 0 CM	Size OD: 0 CM Wall Thickness: 0 CM	—level:
32.31 Sandstone Stringers	Bottom at: 30.78 M	Top: 0 M Bottom: 0 N	Depth To water level (meters) Elapsed Time
34.14 Water Bearing Shale 36.58 Blue Shale	Perforations	Perforations Size:	Drawdown Minutes:Sec Recovery
50.50 Dide Stiale	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 15.24 M If water removal was less than 2 hr
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	duration, reason why:
	Perforated by:		
	Seal: from: 0 M	to: 0 M	
	Seal:		Recommended pumping rate: 0 Liters/Min
	from: 0 M Seal:	to: 0 M	Recommended pump intake: 0 M
	from: 0 M	to: 0 M	Type Pump Installed
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type: Pump Model:
	Screen Type:	Screen ID: 0 CM	─ H .P.:
	from: 0 M to: 0 M	Slot Size: 0 CM	Any further pumptest information?
	Screen Installation Methor Fittings	ou.	
	Top:	Bottom:	
	Pack: Grain Size:	Amount: 0	
	Geophysical Log Taken:		
	Retained on Files: Additional Test and/or Pu	ımn Data	· ·
	Chemistries taken By Dri	ller: Yes	
	Held: 0 Pitless Adapter Type:	Documents Held: 1	
	Drop Pipe Type:		
	Length: M	Diameter: CM	
	Comments: SOFT WATER.		
	7. Contractor Certi	fication	
	Driller's Name:	UNKNOWN DRILLER	
İ	Certification No.:		İ

A	V	ater \	Well Drilling	Ren	ort	Well I.D.: Map Verif	îed:	034188 Not Ver	
10	The data contain	ed in this r	eport is supplied by the Di	riller The	province disclaims	Date Rep		2002/1	
/>=	Alberta		esponsibility for its accurac		province discialins	Received			1/29
·	áronment .	.,		· ·		Measurer		Metric	wer conserv
l. Cont	ractor & Well Owner I	nformat	ion			2. Well	Locatio		
Company				Ų.	mpany Approval No.:		ec Twp	Rge \	
	ASIN DRILLING LTD.	V2		8394	d	LSD SW 3	3 039	02	M 5
/lailing A 3OX 47		City or Town		Postal Co TOC 0J0	de:		33 039 n Quarter	- 02	3
			on Identifier:	00 000		~!	om	Boi	unda
	AT, RICHARD	TON LOCALIC	m raditation.				om		unda
	Number: N	Mailing Add	ress: F	ostal Co	de:	Lot	Block	Plan	
				2P 1G1		<u> </u>			
ity:	F	rovince:	. (Country:		Well Elev: M		ow Obtair of Obtain	
						6. Well		A Obtain	***************************************
. Drilli	ng Information Vork: New Well				3 	Test Date		Start Ti	m a:
ype or vi eclaime					Proposed well use: Domestic	(yyyy/mm/		Start	me.
ate Reci		Materia	als Used:		Anticipated Water	2002/11/1		11:00 A	M
	f Drilling: Rotary				Requirements/day	Test Meth			
lowing V	Vell: No	Rate: I			0 Liters	Non pump		9.6 M	
as Pres		Oil Pre	sent: No		1	static leve		340.95	
	nation Log		5. Well Completion			Rate of war	а(ег	340.95 Liters/N	
epth			Date Started(yyyy/mm/dd		Completed	Depth of		19.81 N	
om round	Lithology Docari	tion	2002/11/13	'' (yyyy/i 2002/1	mm/dd):	pump inta	ke:		
vel	Lithology Descrip	ALIOH	Well Depth: 24.38 M		ole Diameter: 0 CM	Water leve	el at	11.28 N	Л
neters)			Casing Type: Steel		Type: Plastic	end of			
.49	Brown Sandy Clay		Size OD: 14.12 CM		D: 11.43 CM	pumping: Distance f	rom ton o	f C 1 f	
.14	Brown Sandstone		Wall Thickness: 0.66 CM	Wall T	hickness: 0.54 CM	casing to		Civi	
	Brownish Gray Sandstone S		10.0	Top: 6	.1 M Bottom:	ievel:	-		
4.38	Gray Coarse Grained Sands	tone	Bottom at: 12.5 M	24.38		Depth 7	To water le		ers)
			Perforations	Perfor	ations Size:	1	Elapsed		
			from: 16.76 M to: 24.38 N		M x 0.95 CM	Drawdow 9.61	n Minutes 0:00		cove 1.39
			from: 0 M to: 0 M		x 0 CM	11.26	1:00		1.63
			from: 0 M to: 0 M Perforated by: Hand Drill	U CIVI	x 0 CM	11.31	2:00		0.61
			Seal: Driven & Bentonite	· · · · · · · · · · · · · · · · · · ·		11.34	3:00) 9	9.61
			from: 0 M	to: 16.	76 M	11.38	4:00) 9	.61
			Seal:		*	11.39	5:00		0.61
			from: 0 M	to: 0 N	†	11.39	120:0		0.61
			Seal: from: 0 M	to: 0 N	•		wdown: 1.: moval wa		~~ ?
			Screen Type:		n ID: 0 CM	duration, r			311 <u>~</u>
			from: 0 M to: 0 M		ze: 0 CM		0000171111	,	
			Screen Type:		n ID: 0 CM	1			
			from: 0 M to: 0 M		ze: 0 CM	L			
			Screen Installation Metho	d:		Recomme		nping rate	e:
			Fittings Top:	Botton	1,	68.19 Lite Recomme		nn intake	
			Pack:	בטונטוו	1.	18.29 M	masa pan	ip intake	•
			Grain Size:	Amou	nt:	Type Pum		d	
			Geophysical Log Taken:			Pump Typ	e:		
			Retained on Files:		······································	Pump Mo H.P.:	del:		
			Additional Test and/or Pu		٠.	Any furthe	er numntes	st informs	ation
			Chemistries taken By Drif Held: 0		nents Held: 1	1,	panipioi		
			Pitless Adapter Type:	200ui		1			
			Drop Pipe Type:			1			
			Length: M	Diame	ter: CM	4			
			Comments:						
			1			1			
	•								
	•					j			
			7 0	TE = - 4.1 -		1			
			7. Contractor Certif Driller's Name:			-			
			Driller's Name: Certification No.:	40628	OWN DRILLER	I			

A	Water	Well Drilling	Ren	ort	Well I.D.: Map Verified:	0355186 Map
The date	a contained in this	report is supplied by the D	riller. The	province disclaims	Date Report	1985/06/14
Alberta Environment		responsibility for its accura	ісу,		Received: Measurements:	
. Contractor & Well O	woor locaron	4ian				Metric
Contractor & Well O	wner informa		Dellina C	Annual Manual Ma	2. Well Location	
MEDICINE VALLEY WATER	WELLS		119346	ompany Approval No.	: 1/4 or Sec Twp LSD	p Rge West M
Mailing Address:	City or Tov	vn:	Postal Co	de:	NE 33 039	
RR 3	ECKVILLE		TOM OXO		Location in Quarter	
VellOwner's Name: BUTTYNEN, DICK	Well Locat	ion Identifier:			0 M from	Bounda
P.O. Box Number:	Mailing Ad	dress.	Postal Co	no,	0 M from Lot Block	Bounda Plan
101 007 110111001		AVE, EDMONTON	r ostai Co	ue.	LOT DIOCK	Fiall
City:	Province:		Country:		Well Elev: H	low Obtain:
						stimated
3. Drilling Information					6. Well Yield	
ype of Work: New Well Reclaimed Well				Proposed well use:	Test Date	Start Time:
keciaimed weii Date Reclaimed:	Mate	rials Used:		Domestic & Stock Anticipated Water	(yyyy/mm/dd): 1982/05/12	11.00 014
Method of Drilling: Cable Tool	Wate	1815 USEU.		Requirements/day	Test Method: Baile	11:00 AM
lowing Well: No	Rate:	Liters		0 Liters	Non pumping	12.8 M
Bas Present:		esent:		<u> </u>	static level:	
l. Formation Log		5. Well Completion	<u> </u>		Rate of water	63.64
Depth		Date Started(yyyy/mm/do	Date 0	Completed	removal: Depth of	Liters/Min 0 M
rom rround Lithology D	acarin4ian	1982/05/10	(yyyy/i	mm/dd):	pump intake:	O IVI
evel	escription	1982/05/10 Well Depth: 36.58 M	1982/(Boreb	05/12 ole Diameter: 0 CM	Water level at	36.58 M
meters)		Casing Type: Steel	Liner		end of	
.27 Brown Clay		Size OD: 13.97 CM		DD: 0 CM	pumping:	(011
.14 Brown Shale		Wall Thickness: 0.62 CM	Wali T	hickness: 0 CM	Distance from top or casing to ground	of CIVI
3.11 Gray Shale Stringer 8.29 Brown Sandy Shale	S	D-44: 00 57.44			level:	
8.29 Brown Sandy Shale 7.43 Gray Sandstone		Bottom at: 29.57 M	Top: 0	M Bottom: 0 M	Depth To water I	evel (meters)
2.92 Blue Gray Shale		Perforations	Perfor	ations Size:	Elapsed	
3.83 Gray Sandstone		from: 0 M to: 0 M		x 0 CM	Drawdown Minutes Total Drawdown: 2	
36.58 Gray Shale		from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM x 0 CM	If water removal wa	
		Perforated by:	U CIVI	X O CIVI	duration, reason wh	
		Seal: Driven			-	
		from: 0 M	to: 29.	57 M		
		Seal: from: 0 M	to: O.N.	A	Recommended pur	noing rate: 0
		Seal:	to: 0 N	1	Liters/Min	
		from: 0 M	to: 0 N	1	Recommended pur	
		Screen Type:		n ID: 0 CM	Type Pump Installe	:d
		from: 0 M to: 0 M		ze: 0 CM	Pump Type: Pump Model:	**
		Screen Type: from: 0 M to: 0 M		n ID: 0 CM ze: 0 CM	H.P.:	
		Screen Installation Metho		~~. V O(V)	Any further pumpte	st information
		Fittings			1	
		Top:	Botton	1:	_	
		Pack: Grain Size:	Λ	a+- ∩		
		Geophysical Log Taken:	Amour	It. U	1	
		Retained on Files:				
		Additional Test and/or Pu			1	
		Chemistries taken By Dril		camba llate d		
		Held: 0 Pitless Adapter Type:	Docum	ents Held: 1	-	
		Drop Pipe Type:				
		Length: M	Diame	ter: CM		
		Comments:				
		Originally @ SW-33-39-2	-W5.			
						•
		7 Continues to Continues	C			
		7. Contractor Certif	rication	O14/4 CON1 P	,	
•		Driller's Name: Certification No.:	UNKN	OWN DRILLER		
		This well was constructed	lio gonore	tance with the Water		

*			Well I.D.: 0362715
■ Water \	Well Drilling	Report	Map Verified: Not Verified
			Date Report
The data contained in this re	eport is supplied by the Dril esponsibility for its accuracy		Received: 1970/11/05
Environment	apportaining for its accuracy		Measurements: Metric
1. Contractor & Well Owner Informati	on		2. Well Location
Company Name:		rilling Company Approval No.:	1/4 or Sec Twp Rge Westof
LAWSON, M.E. WATER WELLS			LSD M
Mailing Address: City or Town	1: Po	ostal Code:	NW 34 039 02 5
WellOwner's Name: Well Locatio	n Idantifiar		Location in Quarter 0 M from Boundary
WellOwner's Name: Well Locatio RICHARSON, JACK	n ruentmer:		0 M from Boundary 0 M from Boundary
P.O. Box Number: Mailing Addr	·ess: Po	ostal Code:	Lot Block Plan
NORTH EN	D SYLVAN LAKE, OLDS		
City: Province:	Co	ountry:	Well Elev: How Obtain:
			960.12 M Estimated
3. Drilling Information	-· · · · · · · · · · · · · · · · · · ·	bea	6. Well Yield
Type of Work: New Well Reclaimed Well	•	Proposed well use: Domestic	Test Date Start Time: (yyyy/mm/dd):
	als Used:	Anticipated Water	1970/08/18 11:00 AM
Method of Drilling: Rotary		Requirements/day	Test Method: Pump
Flowing Well: No Rate: L		0 Liters	Non pumping 5.79 M
Gas Present: Oil Pre	Ç		static level:
	5. Well Completion		Rate of water 90.92 removal: Liters/Min
Depth	Date Started(yyyy/mm/dd):	Date Completed	Depth of 0 M
HO!U		(yyyy/mini/dd):	pump intake:
ground Lithology Description level	Well Depth: 18,29 M	1970/08/18 Borehole Diameter: 0 CM	Water level at 0 M
(meters)	Casing Type: Steel	Liner Type:	end of
5.18 Sandy Clay	Size OD: 12.7 CM	Size OD: 0 CM	pumping:
6.1 Sand	Wall Thickness: 0 CM	Wall Thickness: 0 CM	Distance from top of CM casing to ground
15.24 Clay & Boulders			level:
18.29 Sandstone	Bottom at: 15.54 M	Top: 0 M Bottom: 0 M	Depth To water level (meters)
١	Perforations	Perforations Size:	Elapsed Time
	from: 0 M to: 0 M	0 CM x 0 CM	Drawdown Minutes:Sec Recovery
į	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 6.4 M If water removal was less than 2 hr
1	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 hr duration, reason why:
	Perforated by: Seal:		.,,
Ì	Seal: from: 0 M	to: 0·M	j
	Seal:	the or the	
	from: 0 M	to: 0 M	Recommended pumping rate: 0 Liters/Min
	Seal:	4 0 **	Liters/Min Recommended pump intake: 0 M
	from: 0 M	to: 0 M Screen ID: 0 CM	Type Pump Installed
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type:
	Screen Type:	Screen ID: 0 CM	Pump Model:
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.: Any further pumptest information?
	Screen Installation Method		nny restrict pumptest information?
	Fittings	Dotto	
	Top: Pack:	Bottom:	4
	маск: Grain Size:	Amount: 0	manada
	Geophysical Log Taken:		1
	Retained on Files:]
·	Additional Test and/or Pur		
	Chemistries taken By Drille Held: 0	er: No Documents Held: 1	
	Pitiess Adapter Type:	Documents Field: 1	1
	Drop Pipe Type:		
	Length: M	Diameter: CM	1
	Comments:		
Ì			
. •			1
-			THE PROPERTY OF THE PROPERTY O
İ			and the same of th
•			4
	7. Contractor Certific		4
	Driller's Name: Certification No.:	UNKNOWN DRILLER	
		in accordance with the Water	

	Well Drilling F			Well I.I Map Ve Date R	erified:	03627 Not Ve	erified
Alberta re	eport is supplied by the Drillesponsibility for its accuracy.		rovince disclaims	Receiv	ed:	1976/0	
F Enwronment				Sheether County	rements:	Metric	
1. Contractor & Well Owner Informati					II Locati		10/
Company Name: RICHMOND WW DRLG	Dri	lling Con	npany Approval No.:	1/4 or LSD	Sec Tw	/p Kge	Westof M
Mailing Address: City or Town	ı: Po	stal Code	e:	NW	34 03		5
WellOwner's Name: Well Locatio	n Identifier:			Locatio 0 M	n in Quarte from		oundary
WEINMAN, GARRY				0 M	from	В	oundary
P.O. Box Number: Mailing Addi	ress: Po: S RD SW, CALGARY	stal Code): 	Lot	Block	Plar	1
City: Province:		untry:		Well Ele		How Obta	
3 Drilling Information				975.36 6. We	ll Yield	Estimated	<u> </u>
3. Drilling Information Type of Work: New Well		ŀ	Proposed well use:	Test Da		Start 1	Time:
Reclaimed Well		0	Domestic	(yyyy/n			
Date Reclaimed: Materia	als Used:		Anticipated Water	1976/08	8/13 ethod: Pun	11:00	AM
Method of Drilling: Rotary Flowing Well: No Rate: L	itore		Requirements/day Liters	Non pu		14.94	M
Gas Present: Oil Pre				static le	vel:		
4. Formation Log	5. Well Completion			Rate of		227.3	h Alim
Depth	Date Started(yyyy/mm/dd):		mpleted	remova Depth o		Liters/ 19.81	
from	1976/08/12	(yyyy/m	,	pump ir			
ground Lithology Description level	Well Depth: 25.91 M	1976/08 Borehol	e Diameter: 0 CM	Water I	evel at	19.81	M
(meters)	Casing Type: Galvanized			end of pumpin	ıc.		
8.53 Brown Shale	Steel	Liner Ty			e from top	of CM	
20.73 Brown Sandstone 25.91 Gray Sandstone	Size OD: 11.43 CM Wall Thickness: 0.36 CM	Size Of	0: 0 CM ickness: 0 CM	casing	to ground		
20.31 Gray Gandstone	Bottom at: 21.64 M			level:	h To wate	r lovol (m	otorol
		Top: 0 I		Debi		d Time	eters)
	Perforations from: 0 M to: 0 M	0 CM x	ions Size: 0 CM		own Minut	es:Sec Ro	ecovery
	from: 0 M to: 0 M	0 CM x	0 CM		rawdown: removal v		han 2 hr
	from: 0 M to: 0 M	0 CM x	0 CM		n, reason v		nan z m
	Perforated by: Seal: Driven						
	from: 0 M	to: 0 M					
	Seal:	to: 0 M		Recom	mended p	umping ra	te: 0
	from: 0 M Seal:	to. U ivi		Liters/N			
	from: 0 M	to: 0 M			mended pour ump Instal		e: 0 M
	Screen Type: from: 0 M to: 0 M		ID: 0 CM e: 0 CM	Pump		ieu	
	Screen Type:		ID: 0 CM	Pump I	Model:		
	from: 0 M to: 0 M	Slot Siz		H.P.:	ther pump	test inform	nation?
	Screen Installation Method:			rely lui	arer parrip	iost silon	nadon:
	Fittings Top:	Bottom:					
	Pack:			1			
	Grain Size:	Amoun	: 0				
	Geophysical Log Taken: Retained on Files:						
	Additional Test and/or Pum			1			
	Chemistries taken By Drille		onto Lipide 1				
	Held: 0 Pitless Adapter Type:	Docum	ents Held: 1				
	Drop Pipe Type:						
	Length: M	Diamet	er: CM	1			
	Comments: MEDIUM HARD WATER.						
·	THE PART OF THE PA						
		, <u>-</u>		-			
	7. Contractor Certific			4			
	Driller's Name: Certification No.:	UNKNO	WN DRILLER				
	This well was constructed in	n accord	ance with the Water				

1. Contractor & Well Owner Information Company Name: RICHMOND WW DRLG Mailing Address: City or Town: WellOwner's Name: Well Location Identifier: PIERSON, GORDON P.O. Box Number: Mailing Address: 12 VARNA PLACE NW, CALGARY City: Province: 3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	Postal Code: Postal Code: Postal Code: T3A 0E8 Country: Proposed well use Domestic Anticipated Water Requirements/day 0 Liters	LSD
RICHMOND WW DRLG Mailing Address: City or Town: WellOwner's Name: Well Location Identifier: PIERSON, GORDON P.O. Box Number: Mailing Address: 12 VARNA PLACE NW, CALGARY City: Province: 3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	Postal Code: Postal Code: T3A 0E8 Country: Proposed well use Domestic Anticipated Water Requirements/day	LSD
Mailing Address: City or Town: WellOwner's Name: Well Location Identifier: PIERSON, GORDON P.O. Box Number: Mailing Address: 12 VARNA PLACE NW, CALGARY City: Province: 3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	Postal Code: T3A 0E8 Country: Proposed well use Domestic Anticipated Water Requirements/day	NW 34 039 02 5
PIERSON, GORDON P.O. Box Number: Mailing Address: 12 VARNA PLACE NW, CALGARY City: Province: 3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	T3A 0E8 Country: Proposed well use Domestic Anticipated Water Requirements/day	0 M from Boundary Lot Block Plan Well Elev: How Obtain: 969.26 M Estimated 6. Well Yield e: Test Date Start Time: (yyyy/mm/dd): 11:00 AM
12 VARNA PLACE NW, CALGARY City: Province: 3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	T3A 0E8 Country: Proposed well use Domestic Anticipated Water Requirements/day	Well Elev: How Obtain: 969.26 M Estimated 6. Well Yield e: Test Date Start Time: (yyyy/mm/dd): 11:00 AM
3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	Proposed well use Domestic Anticipated Water Requirements/day	969.26 M Estimated 6. Well Yield e: Test Date Start Time: (yyyy/mm/dd): 11:00 AM
Type of Work: New Well Reclaimed Well Date Reclaimed: Materials Used:	Domestic Anticipated Water Requirements/day	e: Test Date Start Time: (yyyy/mm/dd): - 1976/07/15 11:00 AM
Reclaimed Well Date Reclaimed: Materials Used:	Domestic Anticipated Water Requirements/day	(yyyy/mm/dd): - 1976/07/15 11:00 AM
		. Toot Mathadi Suma
Method of Drilling: Rotary	0 Liters	/ <u> </u>
Flowing Well: No Rate: Liters Gas Present: Oil Present:	. 1	Non pumping 9.14 M static level:
4. Formation Log 5. Well Completic	on ·	Rate of water 18.18
Depth Date Started(www/mm.	(dal). Date Completed	removal: Liters/Min Depth of 18.29 M
from ground Lithology Description 1976/07/14	^{/dd}): (yyyy/mm/dd): 1976/07/15	pump intake:
level Well Depth: 38.1 M	Borehole Diameter: 0 CN	Water level at 0 M
(meters) Casing Type: Galvaniz	ed Liner Type:	end of pumping:
10.67 Clay & Rocks Steel 25.91 Brown Sandstone Size OD: 11.43 CM	Size OD: 0 CM	Distance from top of CM
38.1 Gray Shale & Sandstone Wall Thickness: 0.36 C		——casing to ground ——level:
Bottom at: 31.09 M	Top: 0 M Bottom: 0	M Depth To water level (meters)
Perforations	Perforations Size:	Elapsed Time Drawdown Minutes:Sec Recovery
from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 0 M
from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	lf water removal was less than 2 h
Perforated by:		duration, reason why:
Seal: Driven from: 0 M Seal:	to: 31.09 M	
from: 0 M Seal:	to: 0 M	Recommended pumping rate: 0 Liters/Min
from: 0 M	to: 0 M	Recommended pump intake: 0 M Type Pump Installed
Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type: HAND PUMP
Screen Type:	Screen ID: 0 CM	Pump Model:
from: 0 M to: 0 M	Slot Size: 0 CM	H.P.: Any further pumptest information?
Screen Installation Met Fittings	thod:	— Tarator paripteer assessmaness
Тор:	Bottom:	
Pack: Grain Size:	Amount O	
Grain Size: Geophysical Log Take Retained on Files:	Amount: 0 n:	
Additional Test and/or		
Chemistries taken By [Held: 0	Oriller: Yes Documents Held: 1	
Pitless Adapter Type:	Documents Held: 1	—
Drop Pipe Type:	Minus et al. Obt	
Length: M Comments:	Diameter: CM	
SOFT WATER.		
7. Contractor Cer	tification	
Driller's Name: Certification No.:	UNKNOWN DRILLER	

â	The data conta	Vater '	Well Drilling	J Rep Oriller. The	Ort province disclaims	Date	Verified: Report		036271 Not Ver	rified
	Alberta ronment	ŗ	esponsibility for its accura	асу.		Rece Meas	ived: surements	:	Metric	
	actor & Well Owner	Informat	ion				ell Loc	atio		
Company	Name: EAGLE DRILLING LTD.			Drilling Co 117793	mpany Approval No	.: 1/4 o LSD		Twp	Rge '	Westof M
Mailing Ad		City or Tow	n:	Postal Co	de:	NW	34	039	02	5
BOX 9036		SYLVAN LA		T4S 1S6			ion in Qua	ırter	D-	
WellOwner REID, WIL		Well Location	on Identifier:				from			undary undary
P.O. Box N		Mailing Add 23 BAINES	ress: CRES, RED DEER	Postal Co	de:	Lot	Bloo	ck	Plan	
City:		Province:		Country:		Well E 969.2			w Obtai timated	n:
3. Drillin	ng Information			***************************************			ell Yiel			
Type of Wo	ork: New Well				Proposed well use:	Test I			Start Ti	ime:
Reclaimed Date Recla		Materi	als Used:		Domestic Anticipated Water	(уууу/ 1981/	/mm/dd): 04/30		11:00 A	MA
Method of	Drilling: Rotary	Maton	aio ooda.		Requirements/day	Test N	viethod: P	ump		
Flowing W	ell: No	Rate:			0 Liters	Non p	umping		23.47 N	VI
Gas Prese	ent: ation Log	Oil Pre		^	I		of water		45.46	
4. FORMa Depth	auvii LVG		5. Well Completion	Data	Completed	remo\	/al:		Liters/N	
from			Date Started(yyyy/mm/d	(yyyy/r	nm/dd):	Depth	ı of intake:		30.48 N	√I
ground level	Lithology Descr	iption	1981/04/28 Well Depth: 45.72 M	1981/0 Boreh	i4/30 ble Diameter: 0 CM	Water	level at		27.43 N	VI
(meters)			Casing Type: Galvanize	d		end o				
3.66	Clay		Steel	rinei	•	pump —Distar	ing: ace from∘t	op of	СМ	
9.14 33.53 E	Shale Brown Sandstone		Size OD: 11.43 CM Wall Thickness: 0.36 CM		D: 0 CM hickness: 0 CM	_casin	g to groun			
45.72	Shale & Sandstone Ledg	es	Bottom at: 37.19 M	Top: 0		level:	pth To wa	ter le	vel (me	ters)
			Perforations		ations Size:	_	Elap	sed T	ime	•
			from: 0 M to: 0 M	0 CM >	c0 CM		down Min Drawdow			covery
			from: 0 M to: 0 M from: 0 M to: 0 M	0 CM : 0 CM :	CO CM	If water	er remova	l was	less th	an 2 hr
			Perforated by:	O CIVI A	CO OIVI		on, reaso			
			Seal: Driven	, .=	40.14					
			from: 0 M Seal:	to: 37.	19 M					····
			from: 0 M	to: 0 N	1		mmended Liters/Mi		ping rat	e:
			Seal: from: 0 M	to: 0 N	1		mmended		p intake	·····
			Screen Type:		ID: 0 CM	30.48	M			
			from: 0 M to: 0 M	Slot Si	ze: 0 CM	Type	Pump Ins Type: St	talled IR	1	
			Screen Type: from: 0 M to: 0 M		n ID: 0 CM ze: 0 CM	Pump	Model:	,,,		
			Screen Installation Meth		20, 0 0771	H.P.:	urther pun	antac	t inform	otion?
			Fittings	D-44-		T-uly It	armer pun	ihie2	CHIOHI	auOH (
			Top: Pack:	Botton	1.	-				
			Grain Size:	Amour	nt: 0	_				
			Geophysical Log Taken Retained on Files:	:						
			Additional Test and/or P	ump Data						
			Chemistries taken By Di	riller: Yes		į				
			Held: 0 Pitless Adapter Type:	Docun	nents Held: 1	-				
			Drop Pipe Type:							
			Length: M Comments:	Diame	ter: CM	4				
		4	Comments: MEDIUM HARD WATER	₹.		ı				
			7 Contractor Cort	ification		-				
			7. Contractor Cert Driller's Name:		OWN DRILLER	-				
			Certification No.: This well was constructed			or				

The data contained in this	Well Drilling report is supplied by the Dr esponsibility for its accurace	iller. The province disclaims	Well I.D.; 0362720 Map Verified: Not Verified Date Report Received:
1. Contractor & Well Owner Informat	ian		Measurements: Metric 2. Well Location
Company Name:		Drilling Company Approval No.:	
ERICKSON & KANGAS		IONE	LSD M
Mailing Address: City or Tow UNKNOWN	n: F	Postal Code:	NW 34 039 02 5 Location in Quarter
	on Identifier:		0 M from Boundary 0 M from Boundary
GOUTHEAU, DENNIS P.O. Box Number: Mailing Add		ostal Code:	Lot Block Plan
SYLVAN L/ City: Province:		Country:	Well Elev: How Obtain: 960.12 M Estimated
3. Drilling Information			6. Well Yield
Type of Work: New Well		Proposed well use:	Test Date Start Time:
Reclaimed Well		Domestic	(yyyy/mm/dd):
Date Reclaimed: Materi Method of Drilling: Cable Tool	als Used:	Anticipated Water Requirements/day	1963/06/27 11:00 AM Test Method: Unknown
Flowing Well: No Rate:	Liters	0 Liters	Non pumping 10.67 M
Gas Present: Oil Pre			static level:
4. Formation Log	5. Well Completion		Rate of water 45.46 removal: Liters/Min
Depth	Date Started(yyyy/mm/dd	, Date Completed	Depth of 0 M
from	Date Glartea(yyyy/minoda	(yyyy/iiiii/dd).	pump intake:
ground Lithology Description	Well Depth: 24.38 M	1963/06/27 Borehole Diameter: 0 CM	Water level at 0 M
(meters)	Casing Type: Unknown	Liner Type:	end of
3.05 Clay	Size OD: 11.43 CM	Size OD: 0 CM	pumping: Distance from top of CM
12.19 Sandstone	Wall Thickness: 0 CM	Wali Thickness: 0 CM	casing to ground
21.95 Blue Shale 24.38 Sandstone	Bottom at: 17.37 M	Top: 0 M Bottom: 0 M	level:
24.38 Sandstone	DOLLOIN AL. 17.37 W	Top. O M Bottom. O M	Depth To water level (meters)
	Perforations	Perforations Size:	Elapsed Time Drawdown Minutes:Sec Recovery
·	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 0.61 M
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	If water removal was less than 2 hr
	Perforated by:	O OMI X O OMI	duration, réason why:
	Seal: Loose		•
	from: 0 M	to: 0 M	ļ
	Seal: from: 0 M	to: 0 M	Recommended pumping rate: 0
	Seal:	IO, O IVI	Liters/Min
·	from: 0 M	to: 0 M	Recommended pump intake:
·	Screen Type:	Screen ID: 0 CM	13.41 M Type Pump Installed
	from: 0 M to: 0 M	Slot Size: 0 CM	Pump Type: HAND
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Stot Size: 0 CM	Pump Model:
	Screen Installation Metho		H.P.:
	Fittings		Any further pumptest information?
	Тор:	Bottom:	_
	Pack:	Amount: 0	
	Grain Size: Geophysical Log Taken:	Amount: 0	-
	Retained on Files:		
	Additional Test and/or Pu		1
	Chemistries taken By Dril		
	Held: 0 Pitless Adapter Type:	Documents Held: 1	4
	Drop Pipe Type:		
	Length: M	Diameter: CM	
	Comments:		
	SOFT WATER.		
,			
	7 Contractor Conti	ication	1
	7. Contractor Certif Driller's Name:	UNKNOWN DRILLER	-
	Certification No.:	ONKINOWN DRILLER	
		I in accordance with the Water	

The data contained in this re		er. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0362722 Мар
Environment re	sponsibility for its accuracy.	-		Measurements:	<u>Metric</u>
1. Contractor & Well Owner Informati	on			2. Well Locatio	
Company Name:	Dri	lling Co	ompany Approval No.:	1/4 or Sec Twp LSD	Rge Westof M
STAR DRLG CO Mailing Address: City or Towr	r: Po	stal Co	de:	NE 34 039 Location in Quarter	02 5
WellOwner's Name: Well Locatio CARLSON, PETER	n Identifier:			0 M from 0 M from	Boundary Boundary
P.O. Box Number: Mailing Addi	ress: Po	stal Co	de:	Lot Block	Plan
451 BENTLEY City: Province:	Co	untry:		Well Elev: Ho	ow Obtain:
					stimated
3. Drilling Information Type of Work: New Well				6. Well Yield Test Date	Start Time:
Type of Work: New Well Reclaimed Well			Proposed well use: Stock	(yyyy/mm/dd):	Start rime.
Date Reclaimed: Materia	ils Used:		Anticipated Water	1978/03/13	11:00 AM
Method of Drilling: Rotary	14		Requirements/day 4546 Liters	Test Method: Pump Non pumping	45.72 M
Flowing Well: No Rate: L Gas Present: Oil Pre			TOTO MILOIS	static level:	
	5. Well Completion			Rate of water	45.46 Liters/Min
4. Formation Log Depth	Date Started(yyyy/mm/dd):		Completed	removal: Depth of	0 M
from ground Lithology Description	1978/03/09	(yyyy/ 1978/	mm/dd): 13/13	pump intake:	
ground Lithology Description level	Well Depth: 77.72 M		ole Diameter: 0 CM	Water level at end of	54.86 M
(meters)	Casing Type: Steel	Liner		pumping:	
9.14 Clay 45.72 Shattered Shale	Size OD: 11.43 CM		DD: 0 CM hickness: 0 CM	Distance from top o	f CM
45.72 Shattered Shale 77.72 Hard Shale Stringers	Wall Thickness: 0.36 CM	vvali	nickness, o Civi	casing to ground	
	Bottom at: 65.53 M	Top: 0	M Bottom: 0 M	level: Depth To water le	evel (meters)
	Perforations	Perfor	ations Size:	Elapsed	Time
	from: 0 M to: 0 M		x 0 CM	Drawdown Minutes Total Drawdown: 9.	
	from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM x 0 CM	If water removal wa	
	Perforated by:	O CIVI	X U OW	duration, reason wh	
	Seal: Driven				
	from: 0 M Seal:	to: 1.2	22 M		
	from: 0 M	to: 0 N	A ·	Recommended pur	nping rate:
·	Seal:		i	45.46 Liters/Min Recommended pur	nn intake
	from: 0 M Screen Type:	to: 0 1	л ID: 0 CM	60.96 M	·
	from: 0 M to: 0 M		ize: 0 CM	Type Pump Installe	d
	Screen Type:		n ID: 0 CM	Pump Type: Pump Model:	
	from: 0 M to: 0 M Screen Installation Method:		ize: 0 CM	H.P.:	
	Fittings			Any further pumpte	st information?
	Top:	Bottor	n:	-	
	Pack: Grain Size:	Amou	nt· 0	·	
· -	Geophysical Log Taken:	7 111100		1	
	Retained on Files:			_	
	Additional Test and/or Pum Chemistries taken By Drille				
·	Held: 0		ments Held: 1		
	Pitless Adapter Type:				
	Drop Pipe Type: Length: M	Diame	eter: CM		
	Comments:				
	MEDIUM HARD.				
	EL CONTRACTOR DE				
	7. Contractor Certific	catio	1	1	
·	Driller's Name:		NOWN DRILLER		
	Certification No.:	0 0000	rdance with the Water		

The data contained in this in the contractor & Well Owner Information Company Name: SYLVAN LAKE DRLG Mailing Address: City or Town	Dri n: Po on identifier:	er. The	province disclaims impany Approval No.: de:	2. Wel 1/4 or LSD NE Locatior 0 M	erified: eport ed: rements; I I Locatic	Rge Westof M 02 5
City: Province:	Co	untry:	-	Well Ele 990.6 M		ow Obtain: stimated
Method of Drilling: Rotary Flowing Well: No Rate: Gas Present: Oil Pre	esent:		Proposed well use: Stock Anticipated Water Requirements/day 1818.4 Liters	6. Wel Test Da (yyyy/m 1979/08	Il Yield Ite m/dd): 8/29 ethod: Pump mping vel:	Start Time:
4. Formation Log	5. Well Completion			remova		Liters/Min
Depth from ground Lithology Description level (meters)	Date Started(yyyy/mm/dd): 1979/08/28 Well Depth: 77.72 M Casing Type: Steel	(yyyy/i 1979/0 Boreh Liner	ole Diameter: 0 CM Type:	Depth o pump in Water le end of pumping	of otake: evel at	0 M 67.06 M
4.57 Clay & Rocks 77.72 Shale & Sandstone	Size OD: 11.43 CM Wall Thickness: 0.36 CM		DD: 0 CM hickness: 0 CM		e from top o	of CM
	Bottom at: 69.8 M Perforations from: 0 M to: 0 M from: 0 M to: 0 M from: 0 M to: 0 M Perforated by: Seal: Driven from: 0 M	0 CM:	ations Size: x 0 CM x 0 CM x 0 CM	level: Depti Drawdo Total Di If water	Elapsed own Minute: rawdown: 2	s:Sec Recovery 1.34 M as less than 2 hr
	Seal: from: 0 M Seal: from: 0 M Screen Type: from: 0 M Screen Type: from: 0 M to: 0 M from: 0 M to: 0 M	Slot S Scree		Liters/M Recomi Type Po Pump T Pump M H.P.:	fin mended pur ump Installe ype: Model:	
	Screen Installation Method: Fittings Top: Pack: Grain Size: Geophysical Log Taken: Retained on Files: Additional Test and/or Pum	Botton	n:	Any turi	mer pumpte	est information?
	Chemistries taken By Drille Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: M Comments:	r: No Docun Diame	nents Held: 3	Andreas de la companya del la companya de la compan		
	Driller's Name: Certification No.: This well was constructed in	UNKN	OWN DRILLER			

The data contained in this	Well Drilling F report is supplied by the Drill esponsibility for its accuracy.	er. The		Date R Receiv	erified: eport	Ň	036272 //ap //etric	24
1. Contractor & Well Owner Informat	ion			Account of the last	II Loca	onione pinks		
Company Name:		llina Co	mpany Approval No.:	1			Rae	Westof
ERICKSON ERNFRED				LSD			-	М
Mailing Address: City or Tow	n: Po	stal Co	de:	NE		39	02	5
WellOwner's Name: Well Location	on Identifier:			Locatio 0 M	n in Quar from	ter	Ro	undarv
CARLSON, H.	on identifier.			ОМ				undary
P.O. Box Number: Mailing Add	ress: Po	stal Co	de:	Lot	Block	(Plan	
BENTLEY				Well El	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	Ном	Obtai	m.
City: Province:	Co	untry:		994.87		-	nated	111.
3. Drilling Information				6. We	ll Yield			
Type of Work: Federal Well Survey			Proposed well use:	Test Da		S	Start T	ime:
Reclaimed Well	-111		Domestic & Stock	(yyyy/n 1934/0	ım/dd):	4	1:00 /	^ ^
Date Reclaimed: Materi Method of Drilling: Drilled	als Used:		Anticipated Water Requirements/day		ethod: Un			-NVI
Flowing Well: No Rate:	Liters		0 Liters	Non pu	mping		21.34 [VI
Gas Present: Oil Pre	esent:		1	static le			\ '+	- 18 A'
4. Formation Log	5. Well Completion			Rate of remova		C) Liters	s/Min
Depth	Date Started(yyyy/mm/dd):		Completed	Depth (C	M	
from ground Lithology Description		(yyyy/r 1934/0	mm/dd): 31/01	pump ii	ntake:			
level	Well Depth: 65.84 M		ole Diameter: 0 CM		evel at	C) M	
(meters)	Casing Type: Unknown	Liner [^]		end of pumping	ıa:			
	Size OD: 5.08 CM		D: 0 CM		e from to	p of C	CM	
	Wall Thickness: 0 CM	Wall	hickness: 0 CM		to ground	İ		
	Bottom at: 0 M	Top: 0	M Bottom: 0 M	level: Dept	th To wate			ters)
	Perforations		ations Size:	Drawd	Elaps own Minu			COVERV
	from: 0 M to: 0 M from: 0 M to: 0 M		×0 CM ×0 CM		rawdown		00110	covery
	from: 0 M to: 0 M		k 0 CM	Į.	r removal			an 2 hr
	Perforated by:			duratio	n, reason	why:		
	Seal: from: 0 M	to: 0 N						
	Seal:	(O. O IV	1		 			
	from: 0 M	to: 0 N	1	Recom Liters/N	mended (oump	ing ra	te: 0
	Seal:	to: 0 N		1	mended (gump	intak	e: 0 M
	from: 0 М Screen Type:		i n ID: 0 CM		ump Insta			
	from: 0 M to: 0 M		ze: 0 CM	Pump	Type: SP	M		
	Screen Type:		n ID: 0 CM	Pump I H.P.:	viodel;			
	from: 0 M to: 0 M Screen Installation Method:		ze: 0 CM		ther pum	ptest	inform	ation?
·	Fittings			1				
	Тор:	Botton	n:					
	Pack: Grain Size:	Amoui	atr O					
	Geophysical Log Taken:	Amour	II. U	1				
	Retained on Files:]				
	Additional Test and/or Purn			j				
·	Chemistries taken By Drille Held: 0		nents Held: 1					
	Pitless Adapter Type:			1				
	Drop Pipe Type:	 .		1				
	Length: M Comments:	Diame	ter: CM	-				
	PASKAPOO FORMATION.							
							٠	
				4				
	7. Contractor Certific			-				
	Driller's Name: Certification No.:	UNKN	OWN DRILLER					
	This well was constructed in	accor	dance with the Water					

	Well Drilling report is supplied by the Dril responsibility for its accuracy	ller. The		Date Recei Meas	Verified: Report Ived: urements	WANTED WATER	0362709 Not Verifie 1971/10/2 Metric	
1. Contractor & Well Owner Informa					ell Loc			
Company Name: NELSON DRILLING & PLUMBING	Di	rilling Co	mpany Approval No.:	1/4 or LSD	Sec	Twp	Rge We	estof M
Mailing Address: City or To	wn: Po	ostal Cod	de:	SW	34	039		5
			······	3	on in Qu	arter		
WellOwner's Name: Well Loca STEVENS, OLIVA	tion Identifier:			OM	from from		Bound Bound	
P.O. Box Number: Mailing Ac		ostal Cod	de:	Lot	Blo	ck	Plan	
City: Province:		ountry:		Well E 944.88			w Obtain: timated	
3. Drilling Information				6. W	ell Yiel	d	***************************************	***************************************
Type of Work: New Well			Proposed well use:	Test L			Start Time	ð:
Reclaimed Well	alada I I maadi.		Domestic	(yyyy/ 1971/	mm/dd):		11:00 AM	.
Date Reclaimed: Mate Method of Drilling: Rotary			Anticipated Water Requirements/day		Jethod: F	ump	11.00 AW	
	: Liters				umping	G, T, T	3.66 M	
	resent:			static	level:			
4. Formation Log	5. Well Completion				of water		45.46	
Depth	Date Started(yyyy/mm/dd)		ompleted	remov Depth			Liters/Min 0 M	
from	Date Started(yyyy/mm/dd)	(уууу/г	nm/dd):		intake:		O IVI	
ground Lithology Description level	Well Depth: 36.58 M	1971/0	8/01 ole Diameter: 0 CM	Water	level at		0 M	
(meters)	Casing Type: Galvanized			end of				
7.62 Brown Clay	Steel	Liner T	ype:	pumpi		of	C 1 4	
17.37 Blue Clay	Size OD: 5.08 CM	Size C	D: 0 CM		ice from to grour		CIVI	
33.22 Water Bearing Shale	Wall Thickness: 0 CM	Wall T	hickness: 0 CM	level:	, (O 9, OU)	1,4		
36.58 Blue Shale	—Bottom at: 27.43 M	Top: 0	M Bottom: 0 M	Dep			vel (meter	s)
	Perforations	Perfora	ations Size:	1		sed T		
	from: 0 M to; 0 M		OCM-		down iviir Drawdow		Sec Recov	/егу
	from: 0 M to: 0 M	0 CM >		-	~~~		less than	2 h
	from: 0 M to: 0 M Perforated by:	0 CM >	K U CIVI		on, reaso			
	Seal: Driven			1				
	from: 0 M	to: 0 N	1					
	Seal:		•	Recor	nmendec	d pum	ping rate:	0
	from: 0 M Seal:	to: 0 IV		Liters/		- p		
	from: 0 M	to: 0 M	1				p intake: 0	М
	Screen Type:		n ID: 0 CM		Pump Ins	stalled	1 .	
	from: 0 M to: 0 M		ze: 0 CM		Type: Model:			
	Screen Type: from: 0 M to: 0 M		ı ID: 0 CM ze: 0 CM	H.P.:				
	Screen Installation Method		Ze. O Civi			mptes	t information	on?
	Fittings			1				
	Тор:	Botton	1:					
	Pack:							
	Grain Size:	Amour	nt: 0	4				
	Geophysical Log Taken: Retained on Files:							
	Additional Test and/or Pun	np Data		1				
	Chemistries taken By Drille							
	Heid: 0 Pitless Adapter Type:	Docum	nents Held: 1	-				
	Pitiess Adapter Type: Drop Pipe Type:							
	Length: M	Diame	ter: CM	_				
	Comments: COTTAGE @ MANOR IN OF SYLVAN LAKE, SOFT	VESTME	ENTS NORTH SIDE]				
	7. Contractor Certifi	cation	· · · · · · · · · · · · · · · · · · ·	-				
·	Driller's Name:		OWN DRILLER	1				
	Certification No.: This well was constructed	in accor	dance with the Water					

The data contained in this	Well Drilling report is supplied by the D responsibility for its accura	riller. The		Well I.D.: Map Verified: Date Report Received: Measurements:	0362711 Not Verified 1971/08/24 Metric
1. Contractor & Well Owner Informa	tion			2. Well Location	arragina aga kamarin termalah sebagai salagabiga
Company Name:		Drilling Co	mpany Approval No.:		
NELSON DRILLING & PLUMBING Mailing Address: City or Tov		Postal Cod		LSD SW 34 039	M 02 5
Maining Address. City of Fox	VIII.	Postar Cod	le:	Location in Quarter	
WellOwner's Name: Well Locat SHAPKE, B.	ion Identifier:			0 M from 0 M from	Boundary Boundary
P.O. Box Number: Mailing Ad CALGARY		Postal Cod	le:	Lot Block	Plan
City: Province:		Country:		1	ow Obtain: stimated
3. Drilling Information				6. Well Yield	**************************************
Type of Work: New Well			Proposed well use:	Test Date	Start Time:
Reclaimed Well Date Reclaimed: Mate	rìals Used:		Domestic Anticipated Water	(yyyy/mm/dd): 1971/07/01	11:00 AM
Method of Drilling: Rotary	iaio Osea.		Requirements/day	Test Method: Pump	
Flowing Well: No Rate:	Liters		0 Liters	Non pumping	0.91 M
	resent:			static level: Rate of water	45.46
4. Formation Log Depth	5. Well Completion	Data C	ompleted	removal:	Liters/Min
from ground Lithology Description	Date Started(yyyy/mm/do	d): (yyyy/n 1971/0	nm/dd):	Depth of pump intake:	0 M
level	Well Depth: 36.58 M		le Diameter: 0 CM	Water level at	- 0 M
(meters)	Casing Type: Galvanized			end of pumping:	
3.05 Brown Clay & Sand 17.07 Blue Clay	Steel Size OD: 5.08 CM			Distance from top o	f CM
22.86 Sandstone Stringers	Wall Thickness: 0 CM		D: 0 CM nickness: 0 CM	casing to ground	
27.43 Blue Soft Shale	Bottom at: 30.18 M	Top: 0	·····	level: Depth To water l	evel (meters)
32.92 Water Bearing Shale	Perforations		itions Size:	Elapsed	
36.58 Blue Shale	from: 0 M to: 0 M	0 CM x		Drawdown Minutes	
	from: 0 M to: 0 M	0 CM x		Total Drawdown: 0. If water removal wa	
	from: 0 M to: 0 M Perforated by:	0 CM x	O CM	duration, reason wh	
	Seal: Driven			-	•
	from: 0 M	to: 0 M			
	Seal: from: 0 M	to: 0 M	•	Recommended pur	nping rate: 0
	Seal:	(0, 0 10)		Liters/Min	· -
	from: 0 M	to: 0 M		Recommended pur	
	Screen Type:		ID: 0 CM	Type Pump Installe Pump Type:	a
	from: 0 M to: 0 M Screen Type:		ze: 0 CM ID: 0 CM	Pump Model:	
	from: 0 M to: 0 M		ze: 0 CM	H.P.:	at information?
	Screen Installation Metho	od:		Any further pumpte	st information?
	Fittings Top:	Bottom		'	
	Pack:	, JOC(011)	,	1	
·	Grain Size:	Amoun	t: 0		
	Geophysical Log Taken: Retained on Files:				
	Additional Test and/or Pu	umo Data		1	
	Chemistries taken By Dri	iller: Yes			
	Held: 0	Docum	ents Held: 1		
	Pitless Adapter Type: Drop Pipe Type:				
	Length: M	Diamet	er: CM		
	Comments: MANOR INVESTMENTS LAKE, SOFT WATER.	NORTH S	SIDE OF SYLVAN		
			·		
	7 Controctor Cont	flantin-		1	
	7. Contractor Certi Driller's Name:		OWN DRILLER	-	
	Certification No.:				
•	This well was constructed	u III accord	iance with the water	•	

	Well Drilling		Well I.D.: 0362712 Map Verified: Not Verified Date Report 1072/09/49
Alberta The data contained in this r	eport is supplied by the E esponsibility for its accura		Received:
Environment	· · · · · · · · · · · · · · · · · · ·		Measurements: Metric
 Contractor & Well Owner Information Company Name: 		Drilling Company Approva	2. Well Location No.: 1/4 or Sec Twp Rge Westor
BROWN JIM		Dilling Company Approva	LSD M
Mailing Address: City or Town	1:	Postal Code:	SW 34 039 02 5 Location in Quarter
WellOwner's Name: Well Location	n Identifier:		0 M from Boundary
MCCOOK P.O. Box Number: Mailing Add		Postal Code:	0 M from Boundary Lot Block Plan
•	SYLVAN LAKE NORTH	rosiai Code.	Well Elev: How Obtain:
City: Province:		Country:	944.88 M Estimated
3. Drilling Information			6. Well Yield Test Date Start Time:
Type of Work: New Well		Proposed well u	use: (yyyy/mm/dd):
Reclaimed Well	ola I la a di	Domestic	1972/06/12 11:00 AM ter Test Method: Pump
Date Reclaimed: Materia Method of Drilling: Rotary	als Used:	Anticipated Wal	
Flowing Well: No Rate: L		0 Liters	static level:
Gas Present: Oil Pre	sent: 5. Well Completion	<u> </u>	Rate of water 54.55 removal: Liters/Min
4. Formation Log Depth	· · · · · · · · · · · · · · · · · · ·	Date Completed	Depth of 0 M
from	Date Started(yyyy/mm/d	a): (yyyy/mm/dd):	pump intake: Water level at 0 M
ground Lithology Description level	Well Depth: 39.62 M	1972/06/12 Borehole Diameter: 0 0	
(meters)	Casing Type: Steel	Liner Type:	pumping:
15.24 Clay & Rocks	Size OD: 11.43 CM	Size OD: 0 CM	Distance from top of CM casing to ground
18.29 Shale 21.34 Blue Lost Circulation Shale	Wall Thickness: 0 CM	Wall Thickness: 0 CM	level:
39.62 Lost Circulation Shale & Sandstone	Bottom at: 19.2 M	Top: 0 M Bottom:	Elapsed Time
	Perforations from: 0 M to: 0 M	Perforations Size: 0 CM x 0 CM	Drawdown Minutes:Sec Recovery Total Drawdown; 0 M
	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 hi
	from: 0 M to: 0 M	0 CM x 0 CM	duration, reason why:
	Perforated by: Seal: Driven		
	from: 0 M	to: 0 M	Recommended pumping rate: 0
	Seal: from: 0 M	to: 0 M	Liters/Min
	Seal:		Recommended pump intake: 25.91 M
	from: 0 M Screen Type:	to: 0 M Screen ID: 0 CM	Type Pump Installed
	from: 0 M to: 0 M	Slot Size: 0 CM	Pump Type: SUB
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Model: H.P.:
	Screen Installation Meth		Any further pumptest information?
	Fittings		
	Top: Pack:	Bottom:	
	Grain Size:	Amount: 0	
	Geophysical Log Taken: Retained on Files:		
	Additional Test and/or P		
	Chemistries taken By Dr Held: 0	iller: Yes Documents Held: 1	
	Pitless Adapter Type:	pocumenta Heig. (
	Drop Pipe Type:	Diameter CM	
	Length: M Comments:	Diameter: CM	
	SOFT WATER.		
		•	
	7. Contractor Cert		
	Driller's Name: Certification No.:	UNKNOWN DRILLER	

The data contained in the	r Well Drilling his report is supplied by the responsibility for its accur	Driller. The province disclaims	Well I.D.: 0362713 Map Verified: Not Verified Date Report Received:
Environment	-	•	Measurements: Metric
 Contractor & Well Owner Inform Company Name: 	nation	Drilling Company Approval No.	2. Well Location 1/4 or Sec Twp Rge Westof
BROWN JIM		Draining Company Approval No.	LSD M
Mailing Address: City or T	own:	Postal Code:	SW 34 039 02 5
WellOwner's Name: Well Loc	cation Identifier:	**************************************	Location in Quarter 0 M from Boundary
BROWN, GLEN	,		0 M from Boundary
	Address: OTTAGE, N.S. OF SYLVAN	Postal Code:	Lot Block Plan 21 Well Elev: How Obtain:
City: Province	3 :	Country:	944.88 M Estimated
2 Pullium Inf.	MOTHUM CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONTRACTOR CONT		6. Well Yield
3. Drilling Information Type of Work: New Well		Proposed well use:	Test Date Start Time: (yyyy/mm/dd):
Reclaimed Well		Domestic	1969/08/04 11:00 AM
Date Reclaimed: Ma	terials Used:	Anticipated Water	Test Method: Bailer
Method of Drilling: Unknown	to: Litoro	Requirements/day 0 Liters	Non pumping 15.24 M static level:
	te: Liters Present:	O Liters	Rate of water 54.55
4. Formation Log	5. Well Completion	n	removal: Liters/Min
Depth	· ·	dd). Date Completed	Depth of 0 M
from	Date Started(yyyy/mm/	^{dd):} (yyyy/mm/dd):	pump intake: Water level at 0 M
ground Lithology Description	Well Depth: 45.72 M	1969/08/04 Borehole Diameter: 0 CM	end of
(meters)	Casing Type: Unknown		pumping:
15.24 Clay & Sand	Size OD: 13.97 CM	Size OD: 0 CM	Distance from top of CM casing to ground
25.91 Clay & Rocks	Wall Thickness: 0 CM	Wall Thickness: 0 CM	level:
33.53 Shale	Bottom at: 28.04 M	Top: 0 M Bottom: 0 M	Depth To water level (meters)
42.67 Sandstone Stringers 45.72 Shale	DOLLOIN AL. 20.04 IVI	TOP, O IN BULLOTIE, O IN	Elapsed Time
107 Citalo	Perforations	Perforations Size:	Drawdown Minutes:Sec Recovery Total Drawdown: 0 M
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	If water removal was less than 2 hr
	from: 0 M to: 0 M	0 CM x 0 CM	duration, reason why:
	Perforated by:		1
	Seal: Driven		
	from: 0 M Seal:	to: 0 M	Recommended pumping rate: 0
	from: 0 M	to: 0 M	Liters/Min
	Seal:		Recommended pump intake: 0 M
	from: 0 M	to: 0 M Screen ID: 0 CM	Type Pump Installed Pump Type:
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Stot Size: 0 CM	Pump Model:
	Screen Type:	Screen ID: 0 CM	H.P.:
	from: 0 M to: 0 M	Slot Size: 0 CM	Any further pumptest information?
	Screen Installation Met	hod:	-
	Fittings Top:	Bottom:	<u>]</u>
	Pack:		
	Grain Size:	Amount: 0	-
	Geophysical Log Taker Retained on Files:	1:	
	Additional Test and/or F	Pump Data	·
	Chemistries taken By D	Oriller: Yes	
	Held: 0 Pitless Adapter Type:	Documents Held: 1	-
	Drop Pipe Type:		
	Length: M	Diameter: CM	
	Comments:		
	SOFT WATER.		
	7. Contractor Cer	tification	1
	Driller's Name:	UNKNOWN DRILLER	
•	Certification No.:		

A	The data contained in this	Well Drilling report is supplied by the Dri	iller. The pr	rt ovince disclaims	Well I. Map V Date F Receiv	′erified: Report		036597 Not Ve 1992/0	rified
Ent	Alberta ironment	responsibility for its accuracy	У-			remen	ts:	Metric	
	ractor & Well Owner Informa				2. We				
Company	Name: A EAGLE DRILLING LTD.		rilling Com 17793	pany Approval No.:	1/4 or LSD	Sec	Twp	Rge	Westot M
Mailing A	ddress: City or To	wn: P	ostal Code	•	SW	34	039	02	5
BOX 903		_AKE AB CA T- tion Identifier:	4\$ 1\$6			on in Qu from	Jarter	Bo	undary
	FIELD, GORD	ion identifier.			0 M	from		Bo	undarý
P.O. Box	Number: Mailing Ac		ostal Code	•	Lot 16	BI 8	ock	Plan	
	CALGAR)	DFORD DR SW, T.	2W 4C2		Well E		Ho	w Obtai	n;
City:	Province:	С	ountry:		M	11 > 22		ot Obtair	}
3 Drilli	ng Information				Test D	ell Yie	id	Start T	ime:
	Vork: New Well	· .	P	roposed well use:	(yyyy/r	nm/dd)	:		
Reclaime		rials Used:		omestic nticipated Water	1992/0)7/20 lethod:	Δir	11:00 /	MΑ
Date Rec Method o	f Drilling: Combination			equirements/day	Non pu	ımping		23.77	V
Flowing V	Vell: No Rate	: Liters	0	Liters	static I			1100	
Gas Pres		5. Well Completion	1		remov	f water al:		118.2 Liters/f	Min
Depth	nation Log		Date Co	mpleted	Depth			36.58	VI
from		Date Started(yyyy/mm/dd)	^{):} (yyyy/mr	n/dd):		intake: Ievel at		36.581	vi
ground level	Lithology Description	1992/07/20 Well Depth: 36.58 M	1992/07. Borehole	Diameter: 0 CM	end of				-
(meters)		Casing Type: Plastic		pe: Plastic	Dietan	ng: ce from	ton o	f CNA	
2.74 3.35	Brown Till & Clay Brown Shale	Size OD: 14.12 CM Wall Thickness: 0.67 CM		: 11.43 CM ckness: 0.54 CM		to grou		0.41	
7.32	Brown Sandstone	Wati Thickness: 0.67 Civi	Top: 30.		level:	th To v	vater la	evel (me	tore\
11.89	Brown Shale	Bottom at: 32.31 M	36.58 M	40 W DOROM.		Ela	psed '	Time	•
15.24 16.76	Brown Fine Grained Sandstone Brown Shale	Perforations		ons Size:		down M Drawdo		:Sec Re	covery
17.98	Brown Sandstone	from: 32.31 M to: 36.58 M from: 0 M to: 0 M	1.59 CM 0 CM x (s less th	an 2 h
20.12 25.91	Brownish Gray Shale Brownish Gray Sandstone	from: 0 M to: 0 M	0 CM x (duratio	on, reas	on wh	y:	
28.65	Gray Silty Shale	Perforated by: Machine Seal: Driven & Bentonite			ł				
36.58	Brownish Gray Sandstone	from: 27.43 M	to: 31.7	М	Posses	amand	od avia	nping rat	:a: 0
		Seal: from: 0 M	to: 0 M		Liters/		su pun	iping ra	e. u
		Seal:	(O, O IVI					np intake	e: 0 M
		from: 0 M	to: 0 M	D. A.CM		⊃ump li Type: ∜		a	
		Screen Type: from: 0 M to: 0 M	Screen I		Pump	Model:	10\$0	5-9	
		Screen Type:		D: 0 CM	H.P.: Anv fu	rther p	umpte	st inform	ation?
		from: 0 M to: 0 M Screen Installation Method	Slot Size	9: U CIVI	1	•	,		
		Fittings							
		Top: Pack:	Bottom:		1				
		Grain Size:	Amount						
		Geophysical Log Taken: Retained on Files:							
		Additional Test and/or Pur	mp Data		1				
	·	Chemistries taken By Drill Held: 0		nts Held: 1					
]		Pitless Adapter Type:	Podaine	ing croid. I	1				
		Drop Pipe Type:	Diamete	~. CN4					
		Length: M Comments:	Diamete	UIV!	1				
		DRILLER REPORT 18 GF	R HARD.						
					1				
		7. Contractor Certif		W. DD. 155	4				
Ī		Driller's Name:	UNKNO	WN DRILLER	1				

Wat	er Well Drilling	g Report	disolaims	Well I.I Map Ve Date R	erified:	03665 Not Ve	erified
Alberta Environment	responsibility for its accur		GISCIAIIIIS	Received: Measurements:		1992/11/02 Metric	
1. Contractor & Well Owner Info	mation	***************************************		TOTAL PROPERTY AND ADDRESS OF THE PERSONS AND AD	I Locat		
Company Name:		Drilling Company Ap	proval No.:	1/4 or			Westo
ALBERTA EAGLE DRILLING LTD. Mailing Address: City or	Town:	117793 Postal Code:		LSD SW	34 03	39 02	M 5
3OX 9036 SYLV	AN LAKE AB CA	T4S 1S6		Locatio	n in Quart		
VellOwner's Name: Well L TUMBACH, KEN	ocation Identifier:			O M O M	from		oundar oundar
	Address:	Postal Code:		Lot	Block	Plan	
	JNNYVALE CRES,	T2X 2S3		MAZE EL		I I ave Obta	
CALG City: Provin		Country:		Well Ele M		How Obtain	
	WAAAAA AA AA AA AA AA AA AA AA AA AA AA			6. We	ll Yield	***************************************	***********
. Drilling Information				Test Da		Start T	ime:
ype of Work: New Well teclaimed Well		Proposed Domestic	l well use:	(yyyy/m 1992/08		11:00	AM
	Naterials Used:	Anticipate	ed Water	Test Me	ethod: Air		
Method of Drilling: Combination		Requirements/day		Non pu		23.77	M
	Rate: Liters Dil Present: No	0 Liters		static le Rate of		136.38	₹
I. Formation Log	5. Well Completio			remova		Liters/	
epth		Date Completed		Depth c		36.58	М
rom	Date Started(yyyy/mm/	^{da}): (yyyy/mm/dd):		pump ir Water k		36.58	M
round Lithology Description		1992/08/17	1 0.001	end of	sve: at	30.30	141
evel meters)	Well Depth: 36.58 M Casing Type: Plastic	Borehole Diame Liner Type: Plas		pumpin			
.4 Brown Till & Clay	Size OD: 14.12 CM	Size OD: 11.43			e from top to ground	of CM	
.62 Brown Shale	Wall Thickness: 0.95 C	M Wall Thickness:	0.54 CM	level:	o grouna		
5.24 Brown Sandstone 5.85 Gray Shale	Bottom at: 31.7 M	Top: 30.48 M	Bottom:		h To wate	r level (me	eters)
5.85 Gray Shale 6.15 Coal	DOLLOTT AL. ST.7 IVI	36.58 M]		d Time	
8.29 Brown Shale	Perforations	Perforations Siz			Drawdown Minutes:Sec Recov Total Drawdown: 12.8 M If water removal was less than		
4.08 Brown Sandstone	from: 32 M to: 36.58 M from: 0 M to: 0 M	1.59 CM x 0 CM 0 CM x 0 CM	}	-			
6.82 Brownish Gray Shale	from: 0 M to: 0 M	0 CM x 0 CM		duration	n, reason v	why:	
6.58 Brownish Gray Sandstone	Perforated by: Machine						
	Seal: Driven & Bentonit from: 27.43 M	te to: 31.09 M					
	Seal:	to. 01.00 W			mended p	umping ra	te:
	from: 0 M	to: 0 M			iters/Min mended p	umn intak	ρ.
	Seal: from: 0 M	to: 0 M		30.48 N	1		.
	Screen Type:	Screen ID: 0 CN	1	Type P	ump Instal	lled	
	from: 0 M to: 0 M	Slot Size: 0 CM			ype: SUB /lodel: 103		
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	1	H.P.;	AUGGI, TOC	300-3	
	Screen Installation Met			Any fur	ther pump	test inforn	nation
	Fittings	**		1			
	Top:	Bottom:		4			
	Pack: Grain Size:	Amount:					
	Geophysical Log Taker			1			
	Retained on Files:			4			
	Additional Test and/or F Chemistries taken By D						
	Held: 0	Documents Held	<u>:</u> 1	1			
	Pitless Adapter Type:			1			
	Drop Pipe Type: Length: M	Diameter: CM					
	Comments:	Diameter, OW		1			
	DRILLER REPORT 15	GR HARD 7.7 PH LC	OW IRON.				
	7. Contractor Cer	tification					
	Driller's Name:	UNKNOWN DR	ILER	-			
	Certification No.:	VA7724	(1)				

Â	Wa The data contains	iter '	Well Drilling	Rep	ort	Well I.D.: Map Verified: Date Report	0467432 Not Verified
En	Alberta vironment		eport is supplied by the D esponsibility for its accura		province disclaims	Received: Measurements:	1997/04/11 Metric
1. Con	tractor & Well Owner In	format	ion	•		2. Well Location	n
Compan	y Name:				ompany Approval No.	1/4 or Sec Twp	Rge Westo
ALBERT Mailing A	A EAGLE DRILLING LTD.	or Tow		117793 Postal Co	de:	LSD SW 34 039	M 02 5
BOX 903	36 SYÎ			T4S 1S6	ue,	Location in Quarter	
		II Locatio	n Identifier:			0 M from	Boundary
HAACK, P.O. Box		ling Add	ress:	Postal Co	de:	0 M from Lot Block	Boundary Plan
	151	13 42 A	VE, EDMONTON	T6H 5P6	~ · ·	21 9	8922703
City:	Pro	vince:	·	Country:		1	ow Obtain: ot Obtain
3. Drill	ing Information					6. Well Yield	
Type of V	Nork: New Well	······································	*		Proposed well use:	Test Date	Start Time:
Reclaime Date Rec		Materia	als Used:		Domestic Anticipated Water	(yyyy/mm/dd): 1996/05/29	12:00 PM
Method o	of Drilling: Combination	water	AIO OGGG		Requirements/day	Test Method: Air	
Flowing \	Well: No	Rate: L			1363.8 Liters	Non pumping	12.5 M
Gas Pres		Oil Pre	esent: No			static level: Rate of water	227.3
4. FORN Depth	nation Log			Data	Completed	removal:	Liters/Min
from			Date Started(yyyy/mm/do	а): (уууу/і	mm/dd):	Depth of pump intake:	30.48 M
ground level	Lithology Descripti	on	1996/05/29 Well Depth: 30.48 M	1996/(05/29 ole Diameter: 0 CM	Water level at	M
(meters)			Casing Type: Plastic		Type: Plastic	end of	
2.44	Fill		Size OD: 14.12 CM	Size C	D: 11.43 CM	pumping: Distance from top o	of CM
6.71 14.94	Brown Till Gray Till		Wall Thickness: 1.06 CN	l Wall T	hickness: 0.59 CM	casing to ground	
15.54	Gray Sandstone		Bottom at: 26.21 M	Top: 2 30,48	4.38 M Bottom:	level: Depth To water i	aval (matara)
23.77	Brown Sandstone		Perforations		ations Size:	Elapsed	
30.48	Gray Water Bearing Sandstone	9	from: 26.21 M to: 30.48 f		M x 10.16 CM	Drawdown Minutes	•
			from: 0 M to: 0 M		x 0 CM	1;0 2:0	
			from: 0 M to: 0 M Perforated by: Hand Drill		x 0 CM	3:0	
			Seal: Driven & Bentonite			4:0	
			from: 12.19 M Seal:	to: 26.	21 M	5:0	
			from: 0 M	to: 0 N	1 .	7:0	
			Seal: from: 0 M	to: C.D		8:0	100.0
			Screen Type:	to: 0 N Scree	1 1 ID: 0 CM	10:0 120:	
			from: 0 M to: 0 M	Slot S	ze: 0 CM	Total Drawdown: 0	······································
			Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM	If water removal wa	
			Screen Installation Metho		20. 0 OW	duration, reason wh	19:
			Fittings	m = # :			
			Top: Pack:	Botton	1.	Recommended pur	mping rate:
			Grain Size:	Amou	nt:	45.46 Liters/Min	. •
i 			Geophysical Log Taken: Retained on Files:			Recommended pur 24.38 M	np intake:
			Additional Test and/or Pu	ımp Data		Type Pump Installe	d
			Chemistries taken By Dri	ller: No	annta tulcida d	Pump Type: SUB	
			Held: 0 Pitless Adapter Type:	poenu	nents Held: 1	Pump Model: H.P.:	
			Drop Pipe Type:			Any further pumpte	st information?
			Length: M Comments:	Diame	ter: CM	-	
			DRILLER REPORTS DIS CASING TO GROUND L				
	•						
Ī			7 Contractor Co-4	finati		1	
			7. Contractor Certi Driller's Name:		I OWN DRILLER	4	
			Certification No.:	11184		1	

The data contained in this r	Well Drilling	iller. The province disclaims	Well I.D.: Map Verified: Date Report Received:	0362710 Not Verified 1981/07/21
Alberta re Environment	sponsibility for its accurac	cy.	Measurements:	Metric
1. Contractor & Well Owner Informati	on		2. Well Locatio	
Company Name:		Orilling Company Approval No.		
BIG QUILL DRILLING LTD. Mailing Address: City or Towr	: F	Postal Code:	LSD SW 34 039 Location in Quarter	02 5
WellOwner's Name: Well Location	n Identifier:		0 M from 0 M from	Boundary Boundary
P.O. Box Number: Mailing Add 6315 DALM	ARNOCK ORES NIM	Postal Code: T3A 1H3	Lot Block	Plan
CALGARY			_	ow Obtain:
City: Province:	(Country:	944.88 M Es	stimated
3. Drilling Information			Test Date	Start Time:
Type of Work: New Well		Proposed well use:	(yyyy/mm/dd):	
Reclaimed Well		Domestic	1981/06/05 Test Method: Air	11:00 AM
Date Reclaimed: Materia Method of Drilling: Rotary	als Used:	Anticipated Water Requirements/day	Non pumping	8.23 M
Flowing Well: No Rate: L		0 Liters	static level:	
Gas Present: Oil Pre	y	<u> </u>	Rate of water removal:	136.38 Liters/Min
4. Formation Log	5. Well Completion		Depth of	0 M
Depth from	Date Started(yyyy/mm/dd): Date Completed (yyyy/mm/dd):	pump intake:	
ground Lithology Description	1981/06/05	1981/06/05	Water level at end of	36.58 M
level	Well Depth: 36.58 M	Borehole Diameter: 0 CM	pumping:	
(meters) 9.45 Brown Clay & Rocks	Casing Type: Galvanized Steel	Liner Type:	Distance from top o	f CM
23.77 Brown Water Bearing Sandstone	Size OD: 11.43 CM	Size OD: 0 CM	casing to ground level:	
32.31 Gray Medium Grained Sandstone	Wall Thickness: 0.36 CM	Wall Thickness: 0 CM	Depth To water le	evel (meters)
35.05 Gray Shale 36.58 Light Blue Shale	Bottom at: 27.74 M	Top: 0 M Bottom: 0 M		
20.00 Light Dido Officio	Perforations	Perforations Size:	Drawdown Minutes Total Drawdown: 0	
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	If water removal wa	s less than 2 hr
	from: 0 M to: 0 M	0 CM x 0 CM	duration, reason wh	ıy:
	Perforated by:			
	Seal: Driven from: 0 M	to: 27.43 M		
·	Seal:	6, 27, 10 111	Recommended pun Liters/Min	nping rate: 0
	from: 0 M	to: 0 M	Recommended pur	no intake: 0 M
	Seal: from: 0 M	to: 0 M	Type Pump Installe	
	Screen Type:	Screen ID: 0 CM	Pump Type:	
	from: 0 M to: 0 M	Slot Size: 0 CM	Pump Model: H.P.:	
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Any further pumpter	st information?
	Screen Installation Metho			
	Fittings	D-44		
	Top: Pack:	Bottom:	1	
	Grain Size:	Amount: 0	_	
	Geophysical Log Taken:			
	Retained on Files: Additional Test and/or Pu	mp Data	1	
	Chemistries taken By Dril	ller: No		
	Held: 1 Pitless Adapter Type:	Documents Held: 2	-	
	Drop Pipe Type:		·	
	Length: M	Diameter: CM	_	
	Comments:			
			_	
	7. Contractor Certi		_	
	Driller's Name:	UNKNOWN DRILLER		

The data contained in this Environment 1. Contractor & Well Owner Information Company Name: HANSEN DRLG Mailing Address: City or Towner Contractor & City or Towner Company Name: Co	esponsibility for its accuration n: on Identifier:	oriller. The pacy.	rovince disclaims npany Approval No.:	Well I.D.: Map Verified: Date Report Received: Measurements: 2. Well Locatio 1/4 or Sec Twp LSD SW 34 039 Location in Quarter 0 M from 0 M from Lot Block	
City: Mailing Act SYLVAN L	AKE	Country:			ow Obtain:
		Journay,		950.98 M Es	stimated
3. Drilling Information Type of Work: New Well Reclaimed Well Date Reclaimed: Mater Method of Drilling: Cable Tool Flowing Well: No Rate: Gas Present: Oil Pr	esent:	E A F	Proposed well use: Domestic Anticipated Water Requirements/day Liters	6. Well Yield Test Date (yyyy/mm/dd): 1976/08/05 Test Method: Bailer Non pumping static level: Rate of water	Start Time: 11:00 AM 7.32 M
4. Formation Log Depth	5. Well Completion	Date Co	mpleted	removal:	Liters/Min
from ground Lithology Description level (meters) 8.23 Brown Clay	Date Started(yyyy/mm/di 1976/08/05 Well Depth: 18.59 M Casing Type: Steel Size OD: 14.12 CM	(yyyy/m 1976/08 Borehol Liner Ty Size Of	m/dd): 6/05 e Diameter: 0 CM cpe: Steel 0: 11.43 CM	Depth of pump intake: Water level at end of pumping: Distance from top o	0 M 13.72 M f CM
13.11 Gray Clay 18.59 Sandstone	Wall Thickness: 0.4 CM	Wall Th Top: 0 1	ickness: 0 CM Bottom:	casing to ground level:	
	Perforations from: 15.24 M to: 18.29 I from: 0 M to: 0 M from: 0 M to: 0 M Perforated by: Torch Seal: Driven from: 0 M			Elapsed Drawdown Minutes Total Drawdown: 0 If water removal wa duration, reason wh	s:Sec Recovery M s less than 2 hr
	Seal: from: 0 M Seal:	to: 0 M		Recommended pun Liters/Min	nping rate: 0
	from: 0 M Screen Type: from: 0 M to: 0 M Screen Type: from: 0 M to: 0 M Screen Installation Methor Fittings Top: Pack: Grain Size: Geophysical Log Taken: Retained on Files: Additional Test and/or Proceed to the screen in the s	Slot Siz Screen Slot Siz od: Bottom:	ID: 0 CM e: 0 CM	Recommended pur Type Pump Installe Pump Type: Pump Model: H.P.: Any further pumpte	d
	Chemistries taken By Dr Held: 0 Pitless Adapter Type: Drop Pipe Type: Length: M Comments: SOFT WATER. 7. Contractor Certi Driller's Name: Certification No.: This well was constructe	iller: Yes Docume Diamete	WN DRILLER		

A Envir	The data conta Alberta conment	ained in this r	Well Drilling eport is supplied by the Dr esponsibility for its accurac	iller. The	Ort province disclaims	Well I.D.: Map Verified: Date Report Received: Measurements:	0406357 Not Verified 1995/06/19 Metric
1. Contr	actor & Well Owner	Informat	ion			2. Well Locat	ion
Company I	Name:				mpany Approval No		vp Rge Westo
	ASIN DRILLING LTD.	City or Town		8394 Postal Cod	40:	LSD 03 35 03	M 39 02 5
Mailing Add BOX 47	uress.			OC 010	16.	Location in Quart	
	r's Name: N EXPL/ARTISAN	Well Location	on Identifier:			0 M from 0 M from Lot Block	Boundary Boundary Plan
16#RIG P.O. Box N	lumber:	Mailing Add	ress: F	Postal Cod	de:	LOC BIOCK	riaii
		1250 255 5	AVE SW, CALGARY T	2P 3G6			How Obtain:
City:	÷ .	Province:	C	Country:		M 6. Well Yield	Not Obtain
3 Drillin	ng Information					Test Date	Start Time:
Type of Wo	ork: New Well				Proposed well use:	(yyyy/mm/dd):	otare timo.
Reclaimed	Well				Industrial	1995/06/08	11:00 AM
	aimed: 1995/06/26 Drilling: Rotary	Materi	als Used: Unknown		Anticipated Water Requirements/day	Test Method: Air Non pumping	45.72 M
Flowing W		Rate: I	Liters		36368 Liters	static level:	
Gas Prese	nt: No		sent: No			Rate of water	159.11 Liters/Min
4. Forma	ation Log		5. Well Completion			removal: Depth of	67.06 M
Depth from			Date Started(yyyy/mm/dd		Completed mm/dd):	pump intake:	
ground	Lithology Descr	iption	1995/06/08	1995/0		Water level at	67.06 M
level			Well Depth: 67.06 M		ole Diameter: 0 CM	end of pumping:	
(meters)	Proup Clay & Books		Casing Type:		Type: Steel	Distance from top	of CM
	Brown Clay & Rocks Brown Sandstone		Síze OD: 0 CM Wall Thickness: 0 CM		DD: 11.43 CM hickness: 0.4 CM	casing to ground	
B	Brown Shale			Top: 0		level: 	r level (meters)
	Gray Sandstone		Bottom at: 0 M	54.86			ed Time
	Brown Sandstone		Perforations	Perfor	ations Size:	8	es:Sec Recovery
	Gray Shale Brown Sandstone		from: 36.58 M to: 54.86 M		M x 0.95 CM		:00 67.06 :00 60.35
	Gray Shale	, , , , , , , , , , , , , , , , , , , 	from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM x 0 CM		:00 54.56
41.15 (Gray Sandstone		Perforated by: Hand Drill	U CIVI .	X O CIVI		:00 50.29
B	Gray Shale		Seal: Shale Trap	· · · · · · · · · · · · · · · · · · ·			:00 47.24
	Gray Sandstone Gray Shale		from: 0 M	to: 3.0	5 M		:00 45.72 0:00 45.72
	Gray Sandstone		Seal: from: 0 M	to: 0 N	1		0:00 45.72
	Gray Sandstone		Seal:				0:00 45.72
			from: 0 M	to: 0 N			0:00 45.72
	•		Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM	Total Drawdown: If water removal v	
			Screen Type:		n ID: 0 CM	duration, reason	
			from: 0 M to: 0 M		ize: 0 CM		,
			Screen Installation Methor Fittings	od:		-	
			Fittings Top:	Botton	n:	Recommended p	umping rate:
			Pack:	_		122.74 Liters/Min	1
			Grain Size: Geophysical Log Taken:	Amou	nt:	Recommended p 51.82 M	ump intake:
1			Retained on Files:			Type Pump Insta	lled
			Additional Test and/or Pu		1	Pump Type: SUE	3 gt:
			Chemistries taken By Dril Held: 0		nents Held: 3	Pump Model: GR H.P.: 3	UNDFOS
			Pitless Adapter Type:	וטטטט	none neig. 3	Any further pump	test information?
			Drop Pipe Type:			, ,,	
			Length: M	Diame	eter: CM		
			Comments: DRILLER REPORTS DIS CASING TO GROUND L				
	·		The state of the s				
			7 040	£!£!_		 	
Ī			7. Contractor Certin		IOWN DRILLER	_	
1			Driller's Name: Certification No.:	5881 <i>A</i>			

The data contained in this	Well Drilling F	er. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0362733 Map
Environment	esponsibility for its accuracy.			Measurements:	Metric
1. Contractor & Well Owner Informat				2. Well Location	
Company Name: ERICKSON & KANGAS		lling Co NE	mpany Approval No.:	1/4 or Sec Twp LSD	Rge Westof M
Mailing Address: City or Tow UNKNOWN		stal Co	de:	NE 35 039 Location in Quarter	02 5
WellOwner's Name: Well Location	on Identifier:			0 M from	Boundary
ECKLUND, C P.O. Box Number: Mailing Ado	ress: Po	stal Co	de:	0 M from Lot Block	Boundary Plan
BENTLEY City: Province:	Co	untry:			ow Obtain:
3. Drilling Information				6. Well Yield	Stillateu
Type of Work: New Well			Proposed well use:	Test Date	Start Time:
Reclaimed Well			Domestic	(yyyy/mm/dd):	44.00.434
Date Reclaimed: Materi Method of Drilling: Cable Tool	als Used:		Anticipated Water Requirements/day	1963/03/15 Test Method: Unkn	11:00 AM
Flowing Well: No Rate:	Liters		0 Liters	Non pumping	37.19 M
Gas Present: Oil Pre	esent:			static level:	07.00
4. Formation Log Depth	5. Well Completion			Rate of water removal:	27.28 Liters/Min
Depth	Date Started(yyyy/mm/dd):		Completed	Depth of	0 M
from ground Lithology Description	,	(yyyy/i 1963/(mm/dd): 13/15	pump intake:	
level	Well Depth: 53.34 M		ole Diameter: 0 CM	Water level at end of	0 M
(meters)	Casing Type: Unknown	Liner		pumping:	
1.83 Clay 12.19 Sandstone	Size OD: 10.16 CM Wall Thickness: 0 CM		D: 0 CM hickness: 0 CM	Distance from top o	f CM
18.29 Blue Clay	waii inickitess; o civi	vvali	mckness. o civi	casing to ground	
24.38 Sandstone	Bottom at: 46.33 M	Top: 0	M Bottom: 0 M	level: Depth To water I	evel (meters)
36.58 Shale	Perforations	Perfor	ations Size:	Elapsed	
39.62 Hard Rocks 45.72 Shale	from: 0 M to: 0 M		x 0 CM	Drawdown Minutes	
47.24 Hard Rocks	from: 0 M to: 0 M		x 0 CM	Total Drawdown: 0 If water removal wa	
53.34 Shale	from: 0 M to: 0 M Perforated by:	0 CM:	x 0 CM	duration, reason wi	
	Seal: Driven			1	•
	from: 0 M	to: 0 N	1		
	Seal: from: 0 M	to: 0 N	4	Recommended pur	nping rate: 0
	Seal:	10.01	1	Liters/Min	
	from: 0 M	to: 0 N	1	Recommended pur	np intake:
	Screen Type:		n ID: 0 CM	50.29 M Type Pump Installe	-d
	from: 0 M to: 0 M Screen Type:		ize: 0 CM n ID: 0 CM	Pump Type: SUB	
•	from: 0 M to: 0 M		ize: 0 CM	Pump Model:	
	Screen Installation Method:			H.P.: Any further pumpte	st information?
	Fittings Top:	Botton	n.*	,, ,, ,,	
	Pack:	BUILUI	II s	-[
	Grain Size:	Amou	nt: 0		
	Geophysical Log Taken:				
	Retained on Files: Additional Test and/or Pum	n Data		1	
	Chemistries taken By Drille				
	Held: 0	Docur	nents Held: 1	4	
	Pitless Adapter Type: Drop Pipe Type:				
	Length: M	Diame	iter: CM		
	Comments:				
	SOFT WATER.				
	7. Contractor Certific	ation	}	1	
	Driller's Name:		OWN DRILLER		
	Certification No.:				
	TUDIO WOLLWOO CONSTRUCTED IS	n ඉሶሶሲስ	gance with the Water	· R	

Water The data contained in this	Well Drilling I	Rep	ort		.D.: Verified: Report	03627 Map 1975/0	
Alberta Environment	responsibility for its accuracy	ei. ille	province discialins	Rece			
1. Contractor & Well Owner Informa					urements: ell Loca	Metric	
Company Name:		illina Co	mpany Approval No.:				Westo
FORRESTER WATER WELL DRILLING (1981)) LTD. 23	18		LSD		wp .vgc	M
Mailing Address: City or Tov		stal Co	de:	NW	***************************************	39 02	5
RR 1 RED DEE WellOwner's Name: Well Local	ion Identifier:			Locati 0 M	on in Quai from		oundar
BRATTBERG, ELMER	JOH NOTERION			B	from	Во	oundar
P.O. Box Number: Mailing Ad		stal Co	de:	Lot	Block	c Plan	
300 BENTLEY City: Province:		untry:		Well E	lev:	How Obta	in ·
orty.	00	ruma y.		990.6		Estimated	
3. Drilling Information				6. W	ell Yield		
Type of Work: New Well			Proposed well use:	Test L		Start T	ime:
Reclaimed Well Date Reclaimed: Mate	rials Used:		Domestic & Stock Anticipated Water	(уууу/ 1974/	mm/dd): 11/05	11:00	AM
Method of Drilling: Cable Tool	naio Osea.		Requirements/day	R	/iethod: Ba		
Flowing Well: No Rate	Liters		0 Liters		umping	38.1 N	1
	resent:		l	static Rate o	level: of water	95.47	
4. Formation Log	5. Well Completion	M-1- /		remov		Liters/	Min
Depth from	Date Started(yyyy/mm/dd):		ompleted nm/dd):	Depth		0 M	
ground Lithology Description	1974/10/31	1974/1	1/05		intake: level at	50.29	N.A
level	Well Depth: 64.01 M		ole Diameter: 0 CM	end of		50.29	IVI
(meters) 12.19 Brown Sandy Clay	Casing Type: Steel Size OD: 17.78 CM		ype: Steel D: 14.12 CM	pump			
18.29 Gray Conglomerate	Wall Thickness: 0.59 CM		hickness: 0.79 CM		ice from to	1	
21.95 Brown Sandstone		Top: 0	* *	level:	g to ground		
24.38 Gray Sandstone	Bottom at: 29.26 M	64.01		Depth To water level (meter Elapsed Time Drawdown Minutes:Sec Recortotal Drawdown: 0 M		eters)	
26.82 Gray Hard Sandstone 38.1 Gray Sandy Shale	Perforations	Perfora	ations Size:			•	
41.76 Gray Hard Sandstone	from: 29.26 M to: 64.01 M		M x 15.24 CM			covery	
43.28 Dark Gray Water Bearing Shale &	—from: 0 M to: 0 M from: 0 M to: 0 M		c 0 CM c 0 CM			ian 2 h	
Sandstone Ledges	Perforated by: Torch	U CIVI /	(00)	durati	on, reason	why:	
48.46 Light Gray Bentonitic Shale 53.95 Water Bearing Coal	Seal: Driven			1			
64.01 Light Gray Bentonitic Shale	—from: 0 M Seal:	to: 29.	26 M				
	from: 0 M	to: 0 N	· I			pumping ra	te: 0
	Seal:			Liters		arram intale	a. O 14
	from: 0 M	to: 0 N	I 1 ID: 0 CM		nmenaea Pump Inst	pump intak alled	e: U IVI
	Screen Type: from: 0 M to: 0 M		ze: 0 CM	Pump	Type:	anou	
·	Screen Type:		i ID: 0 CM		Model:		•
	from: 0 M to: 0 M		ze: 0 CM	H.P.: Anv fi	irther pum	ptest inform	nation?
	Screen Installation Method: Fittings			``', ``	p-u///	p. 1001 11.110111	
	Top:	Botton	1:	l			
	Pack:		***************************************	1			
	Grain Size:	Amour	nt: 0	ļ			
	Geophysical Log Taken: Retained on Files:						
	Additional Test and/or Pum	p Data		1			
	Chemistries taken By Drille						
	Held: 0 Pitless Adapter Type:	Docum	ients Held: 1	-			
	Drop Pipe Type:			İ			
	Length: M	Diame	ter: CM	1			
	Comments: SOFT WATER.						
	SOFT WATER.						
			<u> </u>	J			
	7. Contractor Certific	cation					
	Driller's Name:	UNKN	OWN DRILLER	1			
1	Certification No.:						

Å	, Water \	Well Drilling I	Report	Well I.D.: Map Verified:	0362729 Map
	Alberta re	eport is supplied by the Drill esponsibility for its accuracy		Date Report Received:	1980/09/03
	Mouweut		,	Measurements:	Metric
	tractor & Well Owner Informat			2. Well Locatio	
	y Name: STER WATER WELL DRILLING (1981) L	TD. 23	illing Company Approval No.	: 1/4 or Sec Twp LSD	Rge Westot M
Mailing A	Address: City or Town	ı: Po	stal Code:	NW 35 039	02 5
RR 1	RED DEER			Location in Quarter	Davisalas
	ner's Name: Well Location BERG, ELMER	n identitier:	•	0 M from 0 M from	Boundary Boundary
P.O. Box	Number: Mailing Add	ress: Po	stal Code:	Lot Block	Plan
300 City:	BENTLEY Province:	Co	ountry:	Well Elev: Ho	ow Obtain:
		\$1.00 million 100			timated
	ing Information	· · · · · · · · · · · · · · · · · · ·	<u></u>	6. Well Yield Test Date	Start Time:
Reclaime	Work: New Well ed Well		Proposed well use: Stock	(yyyy/mm/dd):	Start Time:
Date Red		als Used:	Anticipated Water	1980/06/12	11:00 AM
	of Drilling: Cable Tool Well: No Rate: L	Hara	Requirements/day 0 Liters	Test Method: Bailer Non pumping	42.67 M
Gas Pres			O Liters	static level:	42.07 IVI
4. Forn	nation Log	5. Well Completion		Rate of water	90.92
Depth		Date Started(yyyy/mm/dd):	Date Completed	removal: Depth of	Liters/Min 57.91 M
from ground	Lithology Description	1980/06/09	(yyyy/mm/dd): 1980/06/12	pump intake:	
level	Emology Description	Well Depth: 60.96 M	Borehole Diameter: 0 CM	Water level at end of	51.82 M
(meters)		Casing Type: Steel	Liner Type: Steel	end of pumping:	
0.3 1.52	Topsoil Yellow Sandy Clay	Size OD: 17.78 CM Wall Thickness: 0.59 CM	Size OD: 14.12 CM Wall Thickness: 0.79 CM	Distance from top o	f CM
5.49	Yellow Soft Sandstone	Wali Thickness: 0.59 CM	**	casing to ground	
6.1	Yellow Hard Sandstone	Bottom at: 32.31 M	Top: 0 M Bottom: 60.96 M	ievel: Depth To water le	evel (meters)
10.36	Gray Sandy Clay	Perforations	Perforations Size:	Elapsed *	Time
15.24	Brownish Gray Sandstone Light Brown Coarse	from: 35.66 M to: 60.96 M	0.95 CM x 15.24 CM	Drawdown Minutes	
18.59	Grained Sandstone	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 9. If water removal wa	
20.12	Gray Hard Sandstone	Perforated by: Torch	0 CM x 0 CM	duration, reason wh	
20.42 21.03	Gray Fine Grained Sandstone Gray Hard Sandstone	Seal: Driven			
23.47	Dark Gray Soft Sandstone	from: 0 M Seal:	to: 32.31 M		
25.6	Gray Sticky Shale	from: 0 M	to: 0 M	Recommended pun	nping rate: 0
29.26 30.78	Blue Sandy Shale Gray Water Bearing Sandstone	Seal:	(0.54	Liters/Min Recommended pun	n intake: 0 M
31.7		from: 0 M Screen Type:	to: 0 M Screen ID: 0 CM	Type Pump Installe	
35.36	Blue Gray Coarse Grained Sandstone		Slot Size: 0 CM	Pump Type:	
38.71	Gray Sticky Shale	Screen Type:	Screen ID: 0 CM	Pump Model: H.P.:	
44.5 45.72	Blue Sandy Shale Gray Carbonaceous Shale	from: 0 M to: 0 M Screen Installation Method:	Slot Size: 0 CM	Any further pumptes	st information?
48.77	Blue Shale	Fittings		1	
51.21	Gray Water Bearing Sandstone	Top:	Bottom:		
54.56	Blue Gray Water Bearing Shale & Sandstone Ledges	Pack: Grain Size:	Amount: 0		
56.69	Blue Gray Water Bearing Sandstone	Geophysical Log Taken:		1	
60.96	Blue Sandy Shale & Sandstone	Retained on Files: Additional Test and/or Pum	n Dota		
	Ledges	Additional Test and/or Pum Chemistries taken By Drille			
	•	Held: 1	Documents Held: 2		
		Pitless Adapter Type: Drop Pipe Type:			
		Length: M	Diameter: CM		
	İ	Comments:			
		7. Contractor Certific			
ľ		Driller's Name:	UNKNOWN DRILLER		
		Certification No.: This well was constructed in	n accordance with the Water		
	1	irnis well was constructed l	n accordance with the Water	1	

The data contained in this r	Well Drilling Interpretation of the Drilling Interpretation of	er. Tĥe		Well I.D.: Map Verified: Date Report Received:	0362731 Map
Environment	esponsibility for its accuracy.			Measurements:	Metric
1. Contractor & Well Owner Informat				2. Well Location	
Company Name: ERICKSON ERNFRED	Dri	lling Co	mpany Approval No.:	1/4 or Sec Twr LSD	Rge Westof M
Mailing Address: City or Town	n: Po	stal Co	de:	NW 35 039 Location in Quarter	02 5
WellOwner's Name: Well Location BRATTBERG, H.	on Identifier:			0 M from 0 M from	Boundary Boundary
P.O. Box Number: Mailing Add BENTLEY	ress: Po	stal Co	de:	Lot Block	Plan
City: Province:	Co	untry:			low Obtain: stimated
3. Drilling Information				6. Well Yield	
Type of Work: Federal Well Survey			Proposed well use:	Test Date	Start Time:
	als Used:		Domestic & Stock Anticipated Water Requirements/day	(yyyy/mm/dd): 1932/01/01 Test Method: Unkn	11:00 AM
Method of Drilling: Drilled Flowing Well: No Rate: I	iters		0 Liters	Non pumping	50.29 M
Gas Present: Oil Pre				static level:	
4. Formation Log Depth	5. Well Completion			Rate of water removal:	0 Liters/Min
from	Date Started(yyyy/mm/dd):	(yyyy/ı	Completed mm/dd):	Depth of pump intake:	ОМ
ground Lithology Description	Well Depth: 65.53 M	1932/0 Boreh	ole Diameter: 0 CM	Water level at	0 M
(meters)	Casing Type: Galvanized	Liner "	ľvpe:	end of pumping:	
	Steel Size OD: 5.08 CM		D: 0 CM	Distance from top	of CM
	Wall Thickness: 0 CM		hickness: 0 CM	casing to ground level:	
	Bottom at: 0 M	Top: 0	M Bottom: 0 M	Depth To water	
	Perforations		ations Size:	Elapsed Drawdown Minute	
	from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM x 0 CM	Total Drawdown: 0	• 1
	from: 0 M to: 0 M		x O CM	If water removal wa	
	Perforated by:			duration, reason w	ny:
	Seal: from: 0 M Seal:	to: 0 N	1		
	from: 0 M Seal:	to: 0 N	1	Recommended pur Liters/Min	
	from: 0 M	to: 0 N		Recommended pur	
	Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM	Type Pump Installe Pump Type: SP E	ea
	Screen Type:		n ID: 0 CM	Pump Model:	
	from: 0 M to: 0 M		ze: 0 CM	H.P.: Any further pumpte	est information?
	Screen Installation Method: Fittings			1	
	Top:	Botton	1:	1	
	Pack: Grain Size:	Amou	at: O		
	Geophysical Log Taken:	7411041	10. 0		
	Retained on Files: Additional Test and/or Pum	n Doto			
	Chemistries taken By Drille				
	Held: 0	Docun	nents Held: 1		
	Pitless Adapter Type: Drop Pipe Type:				
	Length: M	Diame	ter: CM		
	Comments: PASKAPOO FORMATION.				
	7. Contractor Certific	ation	<u> </u>	1	
	Driller's Name:		OWN DRILLER	1	;
	Certification No.: This well was constructed in	accor	dance with the Water		

The data contained in this	Well Drilling I report is supplied by the Drill esponsibility for its accuracy	ler. The province disclaims	Weil I.D.: 0362727 Map Verified: Map Date Report Received: Measurements: Metric
	ion		2. Well Location
 Contractor & Well Owner Informat Company Name: 		illing Company Approval No.:	
ERICKSÓN ERNFRED		, , , , ,	LSD M
Mailing Address: City or Tow	n: Po	ostal Code:	SW 35 039 02 5 Location in Quarter
	on Identifier:		0 M from Boundary 0 M from Boundary
ELSWORTH, GLEN P.O. Box Number: Mailing Add	lress: Po	ostal Code:	Lot Block Plan
BENTLEY City: Province:	Co	ountry:	Well Elev: How Obtain: 984.5 M Estimated
3 Drilling Information			6. Well Yield
3. Drilling Information Type of Work: New Well		Proposed well use:	Test Date Start Time:
Reclaimed Well		Domestic	(yyyy/mm/dd): 1959/08/01 11:00 AM
Date Reclaimed: Mater Method of Drilling: Jet	als Used:	Anticipated Water Requirements/day	Test Method: Unknown
Flowing Well: No Rate:	Liters	0 Liters	Non pumping 48.77 M
Gas Present: Oil Pr		<u> </u>	static level: Rate of water 27.28
4. Formation Log	5. Well Completion	Data Campiated	removal: Liters/Min
Depth from	Date Started(yyyy/mm/dd):	Date Completed (yyyy/mm/dd):	Depth of 0 M
ground Lithology Description		1959/08/01	pump intake: Water level at 0 M
level (meters)	Well Depth: 60.96 M Casing Type: Unknown	Borehole Diameter: 0 CM Liner Type:	end of
30.48 Clay	Size OD: 0 CM	Size OD: 0 CM	pumping: Distance from top of CM
33.53 Water Bearing Shale	Wall Thickness: 0 CM	Wall Thickness: 0 CM	_casing to ground
42.67 Sandstone 54.86 Water Bearing Shale	Bottom at: 57.91 M	Top: 0 M Bottom: 0 M	level:
60.96 Sandstone			Depth To water level (meters) Elapsed Time
	Perforations from: 0 M to: 0 M	Perforations Size: 0 CM x 0 CM	Drawdown Minutes:Sec Recovery
	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 0 M If water removal was less than 2 h
	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 n duration, reason why:
	Perforated by: Seal: Driven	Walter Control of the	
	from: 0 M	to: 0 M	
	Seal: from: 0 M	to: 0 M	Recommended pumping rate: 0
	Seal:		Liters/Min Recommended pump intake: 0 M
	from: 0 M	to: 0 M Screen ID: 0 CM	Type Pump Installed
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type: SUB
	Screen Type:	Screen ID: 0 CM	Pump Model: B.T. 22C0 H.P.:
	from: 0 M to: 0 M Screen Installation Method	Slot Síze: 0 CM	Any further pumptest information?
	Screen installation Method Fittings	, d s	-
	Top:	Bottom:	-
,	Pack: Grain Size:	Amount: 0	
	Geophysical Log Taken:	/ enounce o	1
	Retained on Files:	an Dot-	-
	Additional Test and/or Pun Chemistries taken By Drille		
	Held: 0	Documents Held: 1	4
	Pitless Adapter Type:		
	Drop Pipe Type: Length: M	Diameter: CM	_
	Comments:		
	SOFT WATER.		
		***************************************	4
	7. Contractor Certifi		4
	Driller's Name: Certification No.:	UNKNOWN DRILLER	
	This well was as a serviced	in accordance with the Mate	,

Ô	The data contained in this	Well Drilling report is supplied by the Dril	ler. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0362734 Not Verified 1987/03/17
Env	Alberta ironment	responsibility for its accuracy	•		Measurements:	Metric
	ractor & Well Owner Informa				2. Well Location	on
Company	Name: DRILLING LTD.		illing Co 478	ompany Approval No.	: 1/4 or Sec Twp LSD	Rge Westo M
Mailing A	ddress: City or Tov	vn: Po	stal Co	de:	NE 35 039	******
	AVENUE RED DEER er's Name: Well Locat	R AB AB ion Identifier:			Location in Quarter 0 M from	Boundary
MILLAR,	DAVE				0 M from	Boundary
P.O. Box	Number: Mailing Ad		ostal Co L 0J0	de:	Lot Block	Plan
City:	Province:		ountry:			ow Obtain:
0 5-1111					1005.84 M E	stimated
	ng Information Vork: New Well	4.1		Proposed well use:	Test Date	Start Time:
Reclaime	d Well			Stock	(yyyy/mm/dd): 1986/05/30	11:00 AM
Date Rec	laimed: Mate f Drilling: Rotary	rials Used:		Anticipated Water Requirements/day	Test Method: Air	
Flowing V	Vell: No Rate:	Liters		0 Liters	Non pumping	25.91 M
Gas Pres	<u> </u>	esent: 5. Well Completion		I	static level: Rate of water	27.28
4. FORT	nation Log		Date (Completed	removal:	Liters/Min
from	I felicin for any Manager of the 69	Date Started(yyyy/mm/dd)	(уууу/	mm/dd):	Depth of pump intake:	0 M
ground levei	Lithology Description	1986/05/29 Well Depth: 56.69 M	1986/ Boreh	05/30 ole Diameter: 0 CM	Water level at	54.86 M
(meters)		Casing Type: Steel	Liner	Type: Steel	end of pumping:	
3.66 4.27	Clay Sandy Clay	Size OD: 11.43 CM Wall Thickness: 0.48 CM		DD: 11.43 CM Thickness: 0.48 CM	Distance from top	of CM
4.88	Brown Sandstone		Top: (casing to ground level:	
12.8 14.63	Shale Sandstone	Bottom at: 56.69 M	56.69		Depth To water	
43.28	Shale & Siltstone	Perforations		rations Size:	Elapsed Drawdown Minute	
51.82	Siltstone & Sandstone	from: 51.21 M to: 54.25 M from: 0 M to: 0 M		CM x 0.95 CM x 0 CM	Total Drawdown: 2	8.96 M
53.64 56.69	Water Bearing Sandstone Shale	from: 0 M to: 0 M		x 0 CM	If water removal water removal water removal water	
		Perforated by: Torch Seal: Shale Trap			-	•
		from: 0 M	to: 44	.5 M	ł	
		Seal: from: 0 M	to: 0 l	Л	Recommended pu	mping rate:
		Seal:	to: O F	. 6	22.73 Liters/Min Recommended pu	mp intake: 0 M
	•	from: 0 M Screen Type:		n ID: 0 CM	Type Pump Install	
		from: 0 M to: 0 M		lize: 0 CM	Pump Type: Pump Model:	
		Screen Type: from: 0 M to: 0 M		n ID: 0 CM lize: 0 CM	H.P.:	
		Screen Installation Method			Any further pumpte	est iniormation's
	•	Fittings Top:	Botto	n ;		
		Pack:				
j		Grain Size: Geophysical Log Taken:	Amou	INT: U	-	
		Retained on Files:			_	
		Additional Test and/or Pur Chemistries taken By Drille				
		Held: 0		ments Held: 1	_	
		Pitless Adapter Type: Drop Pipe Type:				
		Length: M	Diam	eter: CM	_[
		Comments:				
			•			
		7. Contractor Certif	catio	1	1	
		Driller's Name:	UNKI	NOWN DRILLER		
		Certification No.: This well was constructed	VA02		r	

The data contained in this r	Well Drilling F eport is supplied by the Drille sponsibility for its accuracy.	er. The i	Ort province disclaims	Well I.D.: Map Verified: Date Report Received:	0362730 Map 1980/09/03
Environment				Measurements:	Metric
1. Contractor & Well Owner Informati			A	2. Well Location 1/4 or Sec Tw	
Company Name: FORRESTER WATER WELL DRILLING (1981) [mpany Approval No.:	1/4 or Sec Tw LSD	p Rge Westof M
Mailing Address: City or Towr	n: Pos	stal Cod	le:	NW 35 039	
RR 1 RED DEER WellOwner's Name: Well Locatio				Location in Quarte 0 M from	r Boundarvi
BRATTBERG, ELMER	iii ideilbiiei.			0 M from	Boundary
P.O. Box Number: Mailing Add	ress: Pos	stal Coc	le:	Lot Block	Plan
300 BENTLEY City: Province:	Co	untry:			low Obtain:
					stimated
3. Drilling Information			D	6. Well Yield Test Date	Start Time:
Type of Work: New Well Reclaimed Well			Proposed well use: Domestic & Stock	(yyyy/mm/dd):	State same.
Date Reclaimed: Materia	als Used:		Anticipated Water	1980/06/09	11:00 AM
Method of Drilling: Cable Tool Flowing Well: No Rate: I	itere		Requirements/day 0 Liters	Test Method: Baile Non pumping	50.29 M
Gas Present: Oil Pre				static level:	
4. Formation Log	5. Well Completion			Rate of water removal:	90.92 Liters/Min
Depth	Date Started(yyyy/mm/dd):		ompleted nm/dd):	Depth of	68.58 M
from ground Lithology Description	1980/05/21	1980/0		pump intake:	56.39 M
level	Well Depth: 71.63 M	Boreho	ie Diameter: 0 CM	Water level at end of	วช.วช พ
(meters) 1.22 Dark Brown Sandy Clay	Casing Type: Steel Size OD: 17.78 CM		ype: Steel D: 14.12 CM	pumping:	
2.44 Light Brown Sandy Clay	Wall Thickness: 0.59 CM		hickness: 0.79 CM	Distance from top casing to ground	of CM
4.27 Dark Gray Sticky Clay		Top: 0		level:	
6.1 Brownish Gray Clay & Shale	Bottom at: 36.88 M	71.63 I		Depth To water	
8.53 See Comments Clay & Silt 10.97 Yellow Sticky Clay	Perforations		ations Size:	Elapsed Drawdown Minute	
13.72 Brown Clay & Shale	from: 46.02 M to: 71.63 M from: 0 M to: 0 M	0.95 C 0 CM >	M x 15.24 CM	Total Drawdown: 6.1 M	
15,24 Blue Gray Shale	from: 0 M to: 0 M	0 CM >		If water removal w	
16.46 Blue Shale	Perforated by: Torch			duration, reason v	/hy:
19.2 Clay & Shale 21.03 Brown Soft Sandstone	Seal: Driven	40.00			
21.34 Gray Hard Sandstone	from: 0 M Seal:	to: 36.8	DO IVI		
22.25 Gray Sandy Shale	from: 0 M	to: 0 M	!	Recommended pu Liters/Min	imping rate: 0
23.77 Gray Hard Sandstone 27.74 Gray Sandy Shale & Sandstone	Seal: from: 0 M	to: 0 M	I	Recommended pu	ımp intake: 0 M
29.57 Gray Sticky Shale	Screen Type:		i ID: 0 CM	Type Pump Install	ed
32 Blue Shale	from: 0 M to: 0 M	Slot Si	ze: 0 CM	Pump Type: Pump Model:	
39.32 Gray Sandy Shale 47.24 Gray Sandstone	Screen Type: from: 0 M to: 0 M		i ID: 0 CM ze: 0 CM	H.P.:	
47.24 Gray Sandstone 55.17 Gray Shale & Sandstone Ledges	Screen Installation Method:			Any further pumpt	est information?
58.52 Dark Gray Sandstone	Fittings	Do#==			
61.87 Gray Hard Sandstone	Top: Pack:	Botton	1.	-	
64.31 Black Silty Shale 67.36 Gray Sticky Shale	Grain Size:	Amour	nt: 0	_	
68.88 Carbonaceous Shale	Geophysical Log Taken: Retained on Files:	-			
69.19 Blue Gray Sandy Shale	Additional Test and/or Pum	p Data		-	
71.63 Gray Hard Sandstone	Chemistries taken By Drille	r: Yes			
	Held: 0 Pitless Adapter Type:	Docum	nents Held: 2	4	
BARROCOM	Pritiess Adapter Type: Drop Pipe Type:			1	
	Length: M	Diame	ter: CM	-	
	Comments: 28'- GRAVEL & COAL CON	VG. SO	FT WATER.		
	7. Contractor Certific	nation		1	
	Driller's Name:	UNKN	OWN DRILLER	1	
	Certification No.:				
t .	This well was constructed in	n accor	dance with the Water	r B	

≜ Water	Well Drilling	Report		Well I.D.: Map Verified:	0418320 Not Verifie	ad
The data contained in this	report is supplied by the Di responsibility for its accurac	riller. The province	disclaims	Date Report Received:	1995/11/2	2
Environment	responsibility for its accurat	Jy.		Measurements	s: Metric	
. Contractor & Well Owner Informa	tion			2. Well Loca		
Company Name:		Drilling Company A	pproval No.:		Twp Rge We	
LKEN BASIN DRILLING LTD.		38394		LSD		М 5
Mailing Address: City or Too SOX 47 BENTLEY		Postal Code: F0C 0J0		13 36 Location in Qua		<u> </u>
	tion Identifier:	100 030		0 M from	Bound	dar
OMEX/CACTUS 4#RIG	3017 AONANOT	•		0 M from	Bound	
.O. Box Number: Mailing Ac		Postal Code:		Lot Bloc	ck Plan	
	CK ENG 1660 717 7AVE	Г2Р 0Z3		Well Elev:	How Obtain:	
SW, CALC		Country:		M	Not Obtain	
ity.	`	ouridy.		6. Well Yield		1007454
. Drilling Information				Test Date	Start Time	 a:
ype of Work: New Well		Propose	d well use:	(yyyy/mm/dd):		
eclaimed Well		Industria	ıl .	1995/10/26	11:00 AM	
	rials Used:		ed Water nents/day	Test Method: P Non pumping	² ump 38.1 M	—
lethod of Drilling: Rotary lowing Well: No Rate	Liters	Kequirei 45460 L		static level:	30.1 IVI	
	resent: No	1.0 100 E	-	Rate of water	68.19	
. Formation Log	5. Well Completion		***************************************	removal:	Liters/Min	
epth		Date Complete	d	Depth of	45.72 M	
om	Date Started(yyyy/mm/do	^{1):} (yyyy/mm/dd):		pump intake: Water level at	45.72 M	
round Lithology Description	1995/10/26	1995/10/26		end of	7U,12 (VI	
evel meters)	Well Depth: 103,63 M	Borehole Diame		pumping:		
.05 Till & Clay	Casing Type: Size OD: 0 CM	Liner Type: Ste Size OD: 11.43		Distance from t		
1.89 Brown Sandstone	Wall Thickness: 0 CM	Wall Thickness		casing to groun	ıd	
7.37 Gray Shale	11011 131101111000110 03111	Top: 0.91 M	Bottom:	level:	ater level (meters	<u>~</u>
9.26 Brown Sandstone Stringers	Bottom at: 0 M	48.77 M	DOTTOHI.		sed Time	٥)
5.05 Gray Shale	Perforations	Perforations Siz	76.		nutes:Sec Recov	ver
9.62 Gray Sandstone	from: 30.48 M to: 48.77 N			38.1	0:00 45.7	
9.07 Gray Shale 6.39 Gray Sandstone	from: 0 M to: 0 M	0 CM x 0 CM		39.62 41.15	1:00 44.3 2:00 42.6	
2.79 Gray Shale	—from: 0 M to: 0 M	0 CM x 0 CM		41.15	3:00 42.0	
6.75 Gray Sandstone	Perforated by: Hand Drill Seal: Rubber Seal			44.2	4:00 39.6	
7.48 Gray Shale	from: 0 M	to: 7.01 M		45.72	5:00 39.0	~
3.57 Gray Sandstone	Seal:				10:00 38.	
6.93 Gray Shale	from: 0 M	to: 0 M		g	120:00 38.	1
9.06 Gray Sandstone 03.63 Gray Shale	Seal: from: 0 M	to: 0 M		Total Drawdow	n: 7.62 M al was less than	-
oo.oo oray onac	Screen Type:	Screen ID: 0 CI	M	duration, reaso		2
	from: 0 M to: 0 M	Slot Size: 0 CM			.,	
	Screen Type:	Screen ID: 0 CI				
	from: 0 M to: 0 M	Slot Size: 0 CM	<u> </u>		d pumping rate:	_
	Screen Installation Methor Fittings	ou:		68.19 Liters/Mi		
	Top:	Bottom:		Recommended		_
	Pack:			45.72 M	. ,	
	Grain Size:	Amount:		Type Pump Ins		
	Geophysical Log Taken: Retained on Files:			Pump Type: St Pump Model: (
	Additional Test and/or Pu	ımn Data		H.P.:	JOOLDO 10E0	
	Chemistries taken By Dri				mptest information	on
	Held: 0	Documents He	d: 1	_		
	Pitless Adapter Type:					
	Drop Pipe Type: Length: M	Diameter: CM) 		
	Comments:	Didition Civi		1		
	DRILLER REPORTS DIS		OP OF			
	CASING TO GROUND L	EVEL: 3'.				
	7. Contractor Certi	fication		1		
	Driller's Name:	UNKNOWN DE	RILLER	1		
	Certification No.:	12389Q				

The data contained in this	Well Drilling report is supplied by the E	Driller. The province disclaims	Well I.D.: 0418321 Map Verified: Not Verified Date Report 1995/11/22 Received:
Environment		10y.	Measurements: Metric
1. Contractor & Well Owner Informat	ion	- 121	2. Well Location
Company Name: ALKEN BASIN DRILLING LTD.		Drilling Company Approval N 38394	lo.: 1/4 or Sec Twp Rge Westof LSD M
Mailing Address: City or Tow		Postal Code:	13 36 039 02 5
	AB CANADA on Identifier:	TOC 0J0	Location in Quarter 0 M from Boundary
DOMEX/CACTUS 14#RIG SHACK			0 M from Boundary
P.O. Box Number: Mailing Add	L ENG 4660 247 241/E	Postal Code:	Lot Błock Plan
SW, CALG		T2P 0Z3	Well Elev: How Obtain:
City: Province:		Country:	M Not Obtain
3. Drilling Information			6. Well Yield Test Date Start Time:
Type of Work: New Well	•	Proposed well us	
Reclaimed Well		Industrial	1995/10/27 11:00 AM
Date Reclaimed: Materi Method of Drilling: Rotary	als Used:	Anticipated Water Requirements/da	
Flowing Well: No Rate:		22730 Liters	static level:
<u> </u>	esent: No		Rate of water 68.19 removal: Liters/Min
4. Formation Log	5. Well Completion	n Date Completed	Depth of 60.96 M
Depth from	Date Started(yyyy/mm/d	d): (yyyy/mm/dd):	pump intake: Water level at 60.96 M
ground Lithology Description	1995/10/27	1995/10/27	ond of
level (meters)	Well Depth: 60.96 M Casing Type:	Borehole Diameter: 0 CN Liner Type: Steel	panping.
0.91 Clay	Size OD: 0 CM	Size OD: 11.43 CM	Distance from top of CM casing to ground
10.67 Brown Sandstone 17.07 Gray Shale	Wall Thickness: 0 CM	Wall Thickness: 0.4 CM	— level:
26.52 Brownish Gray Sandstone Stringers	Bottom at: 0 M	Top: 0.91 M Bottom 54.86 M	n: Depth To water level (meters) Elapsed Time
35.05 Gray Shale	Perforations	Perforations Size:	Drawdown Minutes:Sec Recovery
39.62 Gray Sandstone 49.07 Gray Shale	from: 30.48 M to: 54.86		0:00 60.96
58.52 Gray Sandstone	from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	2:00 42.67 4:00 32
60.96 Gray Siltstone	from: 0 M to: 0 M Perforated by: Other	U CIVI X U CIVI	5:00 28,96
	Seal: Rubber Seal		6:00 27.74 7:00 27.13
ing controlled to the controll	from: 0 M Seal:	to: 6.71 M	8:00 26.82
Manufacture ()	from: 0 M	to: 0 M	9:00 26.52
**************************************	Seal: from: 0 M	to: 0 M	10:00 26.52 12:00 26.21
	Screen Type:	Screen ID: 0 CM	20:00 24.38
	from: 0 M to: 0 M Screen Type:	Slot Size: 0 CM Screen ID: 0 CM	120:00 24.38
	from: 0 M to: 0 M	Slot Size: 0 CM	Total Drawdown: 36.58 M If water removal was less than 2 hr
	Screen Installation Meth	od:	duration, reason why:
	Fittings Top:	Bottom:	
	Pack:		
	Grain Size: Geophysical Log Taken:	Amount:	Recommended pumping rate:
	Retained on Files:		68.19 Liters/Min Recommended pump intake:
	Additional Test and/or P		51.82 M
	Chemistries taken By Di Held: 0	Documents Held: 1	Type Pump Installed Pump Type: SUB
	Pitless Adapter Type:		Pump Model: GOULD 10EJ
	Drop Pipe Type: Length: M	Diameter: CM	H.P.: Any further pumptest information?
	Comments:		
	DRILLER REPORTS DI CASING TO GROUND	STANCE FROM TOP OF	
·	CAUING TO GROUND	LL ¥ LL, V.	
	7. Contractor Cert		
**************************************	Driller's Name: Certification No.:	UNKNOWN DRILLER 12389Q	
-		· — · 	

The data contained in this	Well Drilling I report is supplied by the Drill responsibility for its accuracy	er. The province disclaims	Well I.D.: 0350289 Map Verified: Not Verified Date Report 1990/03/29 Received: Measurements: Metric
Contractor & Well Owner Informa	fion		2. Well Location
Company Name:		iling Company Approval N	
ALKÈN BASIN DRILLING LTD.	38	394	LSD M
Mailing Address: City or Tov		stal Code:	NE 36 039 02 5 Location in Quarter
	AB CANADA TO ion Identifier:	C 0J0	Location in Quarter 0 M from Boundary
EHMAN, RANDY	on identifier.		0 M from Boundary
P.O. Box Number: Mailing Ad		stal Code:	Lot Block Plan
RR1, BEN		C 010	Well Elev: How Obtain:
City: Province:	Co	untry:	M Not Obtain
3. Drilling Information			6. Well Yield
Type of Work: New Well		Proposed well use	: Test Date Start Time:
Reclaimed Well		Domestic	(yyyy/mm/dd):
	rials Used:	Anticipated Water	
Method of Drilling: Rotary	Litoro	Requirements/day 0 Liters	Non pumping 25.91 M
	Liters esent:	21.010	static level:
4. Formation Log	5. Well Completion		Rate of water 90.92
Depth		Date Completed	removal: Liters/Min Depth of 0 M
from	Date Started(yyyy/mm/dd):	(yyyy/mm/dd):	pump intake:
ground Lithology Description	1990/03/05	1990/03/05 Borehole Diameter: 0 CM	Motor loval at 48.77 M
level (meters)	Well Depth: 48.77 M Casing Type: Steel	Liner Type: Plastic	end of
1.52 Clay	Size OD: 13.97 CM	Size OD: 11.43 CM	pumping:
15.24 Brown Sandstone	Wall Thickness: 0.62 CM	Wall Thickness: 0.59 CM	Distance from top of CM casing to ground
21.95 Gray Shale		Top: 30,48 M Bottor	
25.3 Gray Sandstone	Bottom at: 39.01 M	48.77 M	Depth To water level (meters)
28.65 Gray Fractured Shale	Perforations	Perforations Size:	Elapsed Time
32.92 Gray Shale 34.14 Gray Sandstone	from: 36.58 M to: 42.67 M	0.95 CM x 0 CM	Drawdown Minutes:Sec Recovery Total Drawdown: 22.86 M
40.23 Gray Shale	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 hr
43.59 Gray Sandstone	from: 0 M to: 0 M Perforated by: Machine	0 CM x 0 CM	duration, reason why:
48.77 Gray Shale	Seal: Driven		
	from: 0 M	to: 39.01 M	
	Seal:	to: 0 M	Recommended pumping rate: 0
	from: 0 M Seal:	to: U ivi	Liters/Min
	from: 0 M	to: 0 M	Recommended pump intake:
	Screen Type:	Screen ID: 0 CM	Type Pump installed
	from: 0 M to: 0 M	Slot Size: 0 CM Screen ID: 0 CM	Pump Type:
	Screen Type: from: 0 M to: 0 M	Slot Size: 0 CM	Pump Model:
	Screen Installation Method		H.P.:
	Fittings		Any further pumptest information?
	Top:	Bottom:	
·	Pack: Grain Size:	Amount: 0	
	Geophysical Log Taken:	TATOURK O	-
	Retained on Files:		
	Additional Test and/or Pur		
	Chemistries taken By Drille Held: 1	er: No Documents Held: 2	
	Pitless Adapter Type:	DOOGNIDISIO 1 10(d. 2	
	Drop Pipe Type:		
	Length: M	Diameter: CM	
	Comments:		
	7. Contractor Certifi	cation	
	Driller's Name:	UNKNOWN DRILLER	
	Certification No.:	VC6418	, 1
	This well was constructed	in accordance with the Wa	ater I

The data contained in this	Well Drilling report is supplied by the E esponsibility for its accura	Oriller. The		Well I.D.: Map Verified: Date Report Received: Measurements:	0362742 Map Metric
1. Contractor & Well Owner Information	ion			2. Well Locati	
Company Name:		Drilling Co	mpany Approval No.:	1/4 or Sec Tw	
ERICKSON & KANGAS		NONE		LSD	M
Mailing Address: City or Tow UNKNOWN	n:	Postal Cod	le:	NE 36 03 Location in Quarte	
	on Identifier:			0 M from	., Boundary
DAMRON, D.				0 M from	Boundary
P.O. Box Number: Mailing Add BENTLEY	iress:	Postal Cod	e:	Lot Block	Plan
City: Province:		Country:		Well Elev:	low Obtain:
					Estimated
3. Drilling Information				6. Well Yield	01-17
Type of Work: New Well Reclaimed Well			Proposed well use: Domestic & Stock	Test Date (yyyy/mm/dd):	Start Time:
	ials Used:		Anticipated Water	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	11:00 AM
Method of Drilling: Cable Tool			Requirements/day	Test Method: Unk	
Flowing Well: No Rate: Gas Present: Oil Pr			0 Liters	Non pumping static level:	27.43 M
4. Formation Log	5. Well Completion	n		Rate of water	36.37
Depth		Data C	ompleted	removal:	Liters/Min
from	Date Started(yyyy/mm/d	ld): (yyyy/n		Depth of pump intake:	0 M
ground Lithology Description				Water level at	0 M
level (meters)	Well Depth: 36.58 M Casing Type: Unknown	Boreho Liner T	le Diameter: 0 CM	end of	
1.83 Clay	Size OD: 11.43 CM		D: 0 CM	pumping:	-£ C)
12.19 Sandstone	Wall Thickness: 0 CM		nickness: 0 CM	Distance from top casing to ground	OT CIVI
18.29 Blue Clay	Bottom at: 32.92 M	Top: 0	M Bottom: 0 M	level:	
22.86 Sandstone 30.48 Blue Clay	BOROIT AL 32.92 W	Top. 0	IVI DOLLOIN. O IVI	Depth To water	
36.58 Shale	Perforations		itions Size:	Elapsed Drawdown Minute	
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM x		Total Drawdown:	
	from: 0 M to: 0 M	0 CM x		if water removal w	
	Perforated by:			duration, reason v	vny:
	Seal: Driven from: 0 M	to: 0 M			
	Seal:	10.0 30			
·	from: 0 M	to: 0 M		Recommended pu Liters/Min	amping rate: 0
	Seal: from: 0 M	to: 0 M		Recommended pu	ump intake:
	Screen Type:		ID: 0 CM	35.05 M	
	from: 0 M to: 0 M		ze: 0 CM	Type Pump Install Pump Type: HAN	
	Screen Type: from: 0 M to: 0 M		ID: 0 CM ze: 0 CM	Pump Model:	•••
	Screen Installation Meth		26, 0 0(1)	H.P.:	
	Fittings		······	Any further pumpt	test information?
·	Top:	Bottom		-	
	Pack: Grain Size:	Amour	ıt: 0		
	Geophysical Log Taken Retained on Files:	;			
	Additional Test and/or P				
	Chemistries taken By Di Held: 0		ents Held: 1		
	Pitless Adapter Type:	Docum	romo i roma. I	1	
	Drop Pipe Type:				
	Length: M Comments:	Diame	ter: CM		
	MEDIUM HARD WATER	R.			
	1				
	7 0	151		-	
	7. Contractor Cert		OWN DRILLER		
	Certification No.:	UNKN	OVVIN DISELECT		
	This well was constructed	ed in accord	dance with the Water	· 	

The data contained in this	Well Drilling I	ler. The province disclaims	Well I.D.: 0362735 Map Verified: Not Verified Date Report Received:	
Alberta Environment	(esponsionity for as alignative			
1. Contractor & Well Owner Informa	tion	William Committee of the Committee of th	2. Well Location	
Company Name:	. Dri	illing Company Approval No	o.: 1/4 or Sec Twp Rge Westo	
FORRESTER WATER WELL DRILLING (1981)			LSD M	
Mailing Address: City or Tov RR 1 RED DEEF		stal Code:	SW 36 039 02 5 Location in Quarter	
	on Identifier:		0 M from Boundary	
GOUTHRO, JERRY	on identifier.		0 M from Boundary	
P.O. Box Number: Mailing Ad	dress: Po	stal Code:	Lot Block Plan	
RR1 BENT				
City: Province:	Co	ountry:	Well Elev: How Obtain: 990.6 M Estimated	
2 Duilling Information			6. Well Yield	
3. Drilling Information Type of Work: New Well		Proposed well use		
Reclaimed Well		Domestic & Stock	(yyyy/mm/dd):	
Date Reclaimed: Mater	ials Used:	Anticipated Water	1970/10/14 11:00 AM	
Method of Drilling: Cable Tool		Requirements/day	Test Method: Bailer	
•	Liters	0 Liters	Non pumping 57.91 M static level:	
	esent:	I	Rate of water 68.19	
4. Formation Log	5. Well Completion		removal: Liters/Min	
Depth from	Date Started(yyyy/mm/dd):	Date Completed (yyyy/mm/dd):	Depth of 0 M	
ground Lithology Description		1970/10/14	pump intake:	
level	Well Depth: 73.15 M	Borehole Diameter: 0 CM	─Water level at 0 M ─end of	
(meters)	Casing Type:	Liner Type: Unknown	— end of — pumping:	
2.44 Brown Clay	Size OD: 0 CM	Size OD: 11.43 CM	Distance from top of CM	
12.19 Brown Sandy Shale 23.77 Brownish Gray Sandy Shale	Wall Thickness: 0 CM	Wall Thickness: 1.27 CM	casing to ground	
30.18 Gray Shale	Bottom at: 0 M	Top: 0 M Bottom:	level:	
30.78 Gray Hard Sandstone	—	72.54 M	Depth To water level (meters) Elapsed Time	
38.4 Gray Shale	Perforations	Perforations Size:	Drawdown Minutes:Sec Recovery	
39.62 Green Water Bearing Shale	from: 32.92 M to: 72.54 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	Total Drawdown: 60.96 M	
49.38 Dark Gray Shale	from: 0 M to: 0 M	0 CM x 0 CM	If water removal was less than 2 h	
49.99 Gray Hard Sandstone	Perforated by: Unknown		duration, reason why:	
52.43 Gray Bentonitic Sandstone 59.13 Blue Gray Sandy Shale	Seal:			
65.53 Blue Sandy Shale	_from: 0 M _Seal:	to: 0 M		
67.06 Blue Water Bearing Sandstone	from: 0 M	to: 0 M	Recommended pumping rate: 0	
70.41 Gray Soft Sandstone	Seal:		Liters/Min	
71.93 Water Bearing Sandstone	from: 0 M	to: 0 M	Recommended pump intake: 0 M Type Pump Installed	
73.15 Blue Sandy Shale	Screen Type:	Screen ID: 0 CM	Pump Type:	
	from: 0 M to: 0 M Screen Type:	Slot Size: 0 CM Screen ID: 0 CM	Pump Model:	
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.:	
	Screen Installation Method		Any further pumptest information?	
	Fittings	_		
	Top:	Bottom:		
	Pack: Grain Size:	Amount: 0		
	Geophysical Log Taken:	7 Billouite G	-1	
	Retained on Files:			
	Additional Test and/or Pum			
	Chemistries taken By Drille Held: 0	r: Yes Documents Held: 1		
	Pitless Adapter Type:	Dodniomo Heid. I	╡	
	Drop Pipe Type:		·	
	Length: M	Diameter: CM	_	
	Comments: MEDIUM HARD WATER.			
	7. Contractor Certific	ration		
	Driller's Name:	UNKNOWN DRILLER		
	Certification No.: This well was constructed in		er	

Ô	The data contained in this	Well Drilling report is supplied by the Dril	ler. The	Ort province disclaims	Well I.D.: Map Verified; Date Report Received;	0362736 Not Verified
	Alberta ronment	esponsibility for its accuracy	'.		Measurements:	<u>Metric</u>
1. Contr	actor & Well Owner Informat	ion			2. Well Locatio	n
Company N	Name:	Dr	illing Co	ompany Approval No.:	1/4 or Sec Twp	Rge Westof
	ER WATER WELL DRILLING (1981)	LTD. 23	118	-f	LSD SW 36 039	02 5
Mailing Add	dress: City or Tow RED DEER		stal Co	de:	Location in Quarter	02 5
WellOwner		on Identifier:			0 M from	Boundary
MEYERS,		<u> </u>			0 M from	Boundary
P.O. Box N 34	lumber: Mailing Add ECKVILLE	lress: Po	ostal Co	de:	Lot Block	Plan
City:	Province:	Co	ountry:			w Obtain: timated
3. Drillin	g Information				6. Well Yield	
Type of Wo	ork; New Well			Proposed well use:	Test Date	Start Time:
Reclaimed		-1- 11		Domestic	(yyyy/mm/dd): 1978/07/11	11:00 AM
Date Recla Method of	nmed: Mater Drilling: Cable Tool	als Used:		Anticipated Water Requirements/day	Test Method: Bailer	3 1.00 UN
Flowing W		Liters		0 Liters	Non pumping	54.25 M
Gas Prese	nt: Oil Pr	and the second section of the second section is a second s		1	static level:	EAEE
	ation Log	5. Well Completion			Rate of water removal:	54.55 Liters/Min
Depth		Date Started(yyyy/mm/dd):		Completed	Depth of	60.96 M
from ground	Lithology Description	1978/07/06	(уууу/ 1978/	mm/dd): 07/11	pump intake:	
level		Well Depth: 73.15 M		ole Diameter: 0 CM	Water level at end of	59.44 M
(meters)		Casing Type: Steel		Type: Steel	end of pumping:	
	Brown Clay Hard Sandstone Stringers	Size OD: 13.97 CM		DD: 11.43 CM	Distance from top of	CM
	Brown Soft Sandstone	Wall Thickness: 0.48 CM		hickness: 0.64 CM	casing to ground	
	Blue Shale	Bottom at: 58.22 M	Top: 0		level: Depth To water le	wel (metere)
17.68 E	Brown Soft Sandstone	Dorforations		ations Size:	Elapsed	
	Dark Gray Shale	Perforations from: 55,17 M to: 73,15 M		M x 20.32 CM	Drawdown Minutes	
	Green Shale Brown Shale	from: 0 M to: 0 M		x 0 CM	Total Drawdown: 5.	
	Dark Gray Shale	from: 0 M to: 0 M	0 CM	x 0 CM	if water removal was duration, reason wh	
	Blue Silty Shale	Perforated by: Torch Seal: Driven			daration, reason wit	y .
39.62	Gray Sandy Shale	from: 0 M	to: 58	.22 M		
	Blue Sandy Shale	Seal:			Recommended pur	ning rate:
	Gray Hard Sandstone Gray Silty Shale	from: 0 M	to: 0 N	Λ	36.37 Liters/Min	iping rate.
	Brown Sandstone	Seal: from: 0 M	to: 0 N	Λ	Recommended pur	np intake: 0 M
	Gray Sandstone	Screen Type:		n ID: 0 CM	Type Pump installed	d d
$\overline{}$	Gray Bentonitic Sandstone	from: 0 M to: 0 M		ize: 0 CM	Pump Type: Pump Model:	
	Gray Water Bearing Sandstone	Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM	H.P.:	
73.15 E	Dark Gray Shale	Screen Installation Method		12G. 0 OIVI	Any further pumpte:	st information?
		Fittings				
		Top:	Bottor	<u>n:</u>	_	
l		Pack: Grain Size:	Amou	nt- N		
ļ		Geophysical Log Taken:	741100			
		Retained on Files:				
		Additional Test and/or Pun				
		Chemistries taken By Drille Held: 0		nents Held: 1		
		Pitless Adapter Type:			1	
		Drop Pipe Type:	D:	stan Chi		
		Length: M Comments:	Diame	eter: CM	1	
		MEDIUM HARD WATER.				
		7 Contracts October			_	
		7. Contractor Certifi Driller's Name:		IOWN DRILLER	-	
		Certification No.: This well was constructed				

18/-41	A/- II Parillian	. D	Well I.D.: 0362737
	Well Drilling		Map Verified: Map
		Driller. The province disclaims	Date Report Received:
Alberta re	esponsibility for its accura	icy.	Measurements: Metric
1. Contractor & Well Owner Informat	ian		2. Well Location
Company Name:		Drilling Company Approval No.:	1/4 or Sec Twp Rge Westof
NELSON DRILLING & PLUMBING		Drining Company Approvativo	LSD M
Mailing Address: City or Town	1:	Postal Code:	SW 36 039 02 5
			Location in Quarter
WellOwner's Name: Well Location	n Identifier:		0 M from Boundary
ALBERS, J.			0 M from Boundary
P.O. Box Number: Mailing Add	ress:	Postal Code:	Lot Block Plan
City: BENTLEY Province:		Country:	Well Elev: How Obtain:
i		Coulmy.	989.99 M Estimated
3. Drilling Information			6. Well Yield
Type of Work: Federal Well Survey		Proposed well use:	Test Date Start Time:
Reclaimed Well		Domestic & Stock	(yyyy/mm/dd):
	als Used:	Anticipated Water	1945/01/01 11:00 AM
Method of Drilling: Drilled		Requirements/day	Test Method: Unknown
Flowing Well: No Rate: I		0 Liters	Non pumping 39.62 M static level:
Gas Present: Oil Pre		1	Rate of water 0 Liters/Min
4. Formation Log	5. Well Completion		removal:
Depth	Date Started(yyyy/mm/d	d): Date Completed (yyyy/mm/dd):	Depth of 0 M
from ground Lithology Description		1945/01/01	pump intake:
level	Well Depth: 59.74 M	Borehole Diameter: 0 CM	Water level at 0 M
(meters)	Casing Type: Steel	Liner Type:	end of pumping:
	Size OD: 5.08 CM	Size OD: 0 CM	Distance from top of CM
	Wall Thickness: 0 CM	Wall Thickness: 0 CM	casing to ground
	D-11	T 0.44 - D-# 0.44	level:
	Bottom at: 0 M	Top: 0 M Bottom: 0 M	Depth To water level (meters)
	Perforations	Perforations Size:	Elapsed Time
	from: 0 M to: 0 M	0 CM × 0 CM	Drawdown Minutes:Sec Recovery
	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 0 M If water removal was less than 2 hr
	from: 0 M to: 0 M	0 CM x 0 CM	duration, reason why:
	Perforated by: Seal:		-
	Seal: from: 0 M	to: 0 M	
	Seal:	(0. 0 10)	
	from: 0 M	to: 0 M	Recommended pumping rate: 0
	Seal:		Liters/Min Recommended pump intake: 0 M
	from: 0 M	to: 0 M	Type Pump installed
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type:
	Screen Type:	Screen ID: 0 CM	Pump Model: PRESSURE E
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.:
	Screen Installation Meth		Any further pumptest information?
	Fittings		1
	Top:	Bottom:	_
	Pack:	A 4. O	
,	Grain Size: Geophysical Log Taken:	Amount: 0	-
	Retained on Files:	•	
	Additional Test and/or P	ump Data	•
	Chemistries taken By Dr		
	Held: 0	Documents Held: 1	
	Pitless Adapter Type:		
	Drop Pipe Type:	Diamotor CM	
	Length: M Comments:	Diameter: CM	4
	PASKAPOO FORMATIO)N	
	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	7. Contractor Cert	ification	1
	Driller's Name:	UNKNOWN DRILLER	1
	Certification No.:	Service Service Med (Challed Int.)	
		ed in accordance with the Water	. 🛮

The data contained in this	Well Drilling report is supplied by the Dri responsibility for its accuracy	iller. The province disclaims	Well I.D.: 0491530 Map Verified: Map Date Report 1998/09/09 Received: 1998/09/09
Environment		у.	Measurements: Metric
1. Contractor & Well Owner Informa	tion	rilling Company Approval No	2. Well Location o.: 1/4 or Sec Twp Rge Westot
Company Name: ALKEN BASIN DRILLING LTD.		8394	LSD M
Mailing Address: City or Tov		ostal Code:	SW 36 039 02 5
		OC 0J0	Location in Quarter 0 M from Boundary
WellOwner's Name: Well Locat ALBERS, JULIUS	ion Identifier:		0 M from Boundary
P.O. Box Number: Mailing Ad		ostal Code:	Lot Block Plan
RR1, BEN	TLEY T	0C 0J0	The state of the s
City: Province:	C	Country:	Well Elev: How Obtain: M Not Obtain
3. Drilling Information			6. Well Yield
Type of Work: New Well		Proposed well use	
Reclaimed Well		Domestic	(yyyy/mm/dď):
	rials Used:	Anticipated Water	1998/08/25 11:00 AM Test Method: Air
Method of Drilling: Rotary	1 itara	Requirements/day	Non pumping 42.67 M
	Liters esent: No	1.00 1.1 E1.010	static level:
4. Formation Log	5. Well Completion		Rate of water 29.55
Depth Depth		, Date Completed	removal: Liters/Min Depth of 76.2 M
from	Date Started(yyyy/mm/dd)	(yyyymini/du).	pump intake:
ground Lithology Description	1998/08/25 Well Depth: 85.34 M	1998/08/25 Borehole Diameter: 0 CM	Water level at M
(meters)	Casing Type: Steel	Liner Type: Plastic	end of
2.44 Brown Clay	Size OD: 13.97 CM	Size OD: 11.43 CM	pumping: Distance from top of CM
5.18 Brown Sandstone	Wall Thickness: 0.62 CM	Wall Thickness: 0.6 CM	casing to ground
11.58 Gray Shale	Dattam at 14.00.14	Top: 12.19 M Bottom	n: level:
12.19 Brown Sandstone 13.72 Gray Sandstone	Bottom at: 14.02 M	85.34 M	Depth To water level (meters)
15.24 Gray Shale	Perforations	Perforations Size:	Elapsed Time Drawdown Minutes:Sec Recovery
21.34 Gray Sandstone	from: 42.67 M to: 48.77 M		2:00 77.42
24.38 Green Shale	from: 54.86 M to: 79.25 Mfrom: 0 M to: 0 M	1 0 CM x 0 CM 0 CM x 0 CM	3:00 73.46
28.04 Gray Shale	Perforated by: Hand Drill		4:00 69.49
28.96 Gray Sandstone 33.53 Green Shale	Seal: Drive Shoe		5:00 65.53 6:00 61.57
35.36 Gray Sandstone	—from: 0 M —Seal:	to: 14.02 M	7:00 57.61
41.15 Green Shale	from: 0 M	to: 01M	8:00 53.64
42.06 Gray Sandstone	Seal:		9:00 49.99
45.72 Gray Shale	from: 0 M	to: 0 M Screen ID: 0 CM	10:00 46.63
46.33 Gray Sandstone 54.25 Gray Shale	Screen Type: from: 0 Mto: 0 M	Streen ID: 0 CW Stot Size: 0 CM	12:00 42.67 20:00 42.67
56.08 Gray Sandstone	Screen Type:	Screen ID: 0 CM	60:00 42.67
57.91 Gray Shale	from: 0 M to: 0 M	Slot Size: 0 CM	120:00 42.67
60.35 Gray Sandstone	Screen Installation Metho	d:	Total Drawdown: 0 M
61.57 Green Shale	Fittings Top:	Bottom:	If water removal was less than 2 h
64.01 Gray Shale 65.23 Gray Sandstone	Pack:		duration, reason why:
67.06 Gray Shale	Grain Size:	Amount:	
73.15 Gray Shale & Sandstone Ledges	Geophysical Log Taken:		
78.94 Gray Sandstone	Retained on Files: Additional Test and/or Pu	mn Data	Recommended pumping rate: 27.28 Liters/Min
79.25 Green Shale	Chemistries taken By Drill	ler: No	Recommended pump intake: 76.2
79.86 Gray Sandstone 85.34 Gray Shale	Held: 0	Documents Held: 1	M
Oldy Onalo	Pitiess Adapter Type: Drop Pipe Type:		Type Pump Installed
	Length: M	Diameter: CM	Pump Type: Pump Model:
	Comments:		H.P.:
	DRILLER REPORTS DIS CASING TO GROUND LE		Any further pumptest information?
	7. Contractor Certif		
	Driller's Name: Certification No.:	UNKNOWN DRILLER 12389Q	
	This well was constructed	in accordance with the Wat	ter

The data contained in this	Well Drilling report is supplied by the E responsibility for its accura	Driller. The p		Well I.D.: Map Verified: Date Report Received:	0362741 Map
z enviorment				Measurements:	<u>Metric</u>
1. Contractor & Well Owner Information	tion			2. Well Locat	
Company Name: ERICKSON ERNFRED		Drilling Cor	npany Approval No.:	1/4 or Sec Tv LSD	vp Rge Westof M
Mailing Address: City or Tow	'n:	Postal Cod	e:	NE 36 03	39 02 5
WellOwner's Name: Well Locati OLSON, K	on Identifier:	·····	**************************************	0 M from 0 M from	Boundary Boundary
P.O. Box Number: Mailing Add BENTLEY	dress:	Postal Cod	e:	Lot Block	Plan
City: Province:		Country:		Well Elev: 967.13 M	How Obtain: Estimated
3. Drilling Information				6. Well Yield	
Type of Work: Federal Well Survey			Proposed well use:	Test Date	Start Time:
Reclaimed Well Date Reclaimed: Mater	ials Used:		Domestic & Stock Anticipated Water	(yyyy/mm/dd): 1935/01/01	11:00 AM
Method of Drilling: Drilled	als Oscu.		Requirements/day	Test Method: Uni	
Flowing Well: No Rate:			O Liters	Non pumping	30.48 M
Gas Present: Oil Pr		ĺ	· · · · · · · · · · · · · · · · · · ·	static level: Rate of water	0 Liters/Min
4. Formation Log	5. Well Completion			removal:	U LITERS/IVIIII
Depth from	Date Started(yyyy/mm/d	^{ia):} (yyyy/m		Depth of pump intake:	0 M
ground Lithology Description	Well Depth: 45.72 M	1935/01 Boreho	le Diameter: 0 CM	Water level at	0 M
(meters)	Casing Type: Unknown	Liner T		end of pumping:	
	Size OD: 7.62 CM		D: 0 CM	Distance from tor	of CM
	Wall Thickness: 0 CM	Wall Tr	ickness: 0 CM	casing to ground	
	Bottom at: 0 M	Top: 0	M Bottom: 0 M	8 '	r level (meters)
	Perforations	Perfora	tions Size:		d Time
	from: 0 M to: 0 M	0 CM x		Total Drawdown:	es:Sec Recovery
	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM x			vas less than 2 hr
	Perforated by:	O OW A	O OIM	duration, reason	why:
	Seal: from: 0 M	to: 0 M			
	Seal: from: 0 M	to: 0 M		Recommended p Liters/Min	umping rate: 0
	Seal: from: 0 M	to: 0 M		Recommended p	ump intake: 0 M
	Screen Type:		ID: 0 CM	Type Pump Insta	
	from: 0 M to: 0 M	Slot Siz	e: 0 CM	Pump Type: FP N	/I
	Screen Type:		ID: 0 CM	Pump Model: H.P.:	
	from: 0 M to: 0 M Screen Installation Meth		e: 0 CM	Any further pump	test information?
	Fittings		<u> </u>	1	
	Top:	Bottom	,		
	Pack: Grain Size:	Ameun	H- A		
	Geophysical Log Taken:	Amoun	ı. U	1	
	Retained on Files:	,			
	Additional Test and/or P				
	Chemistries taken By Dr Held: 0		ents Held: 1		
·	Pitless Adapter Type:	Doonis	CITO I ICIG. I	1	
	Drop Pipe Type:				
	Length: M	Diamet	er: CM	4	
	Comments: PASKAPOO FORMATION	ON.			
	7. Contractor Cert			1	
	Driller's Name: Certification No.:	UNKNO	OWN DRILLER		
	This well was constructed	ed in accord	ance with the Water		

â	Water Contained	ater \	Well Drilling	Rep	ort	Well I.D.; Map Verified: Date Report	0362739 Not Verified 1989/06/23
Fou	The data contained in this report is supplied by the Driller. The province disclaims responsibility for its accuracy.				Received: Measurements:	Metric	
	ractor & Well Owner In	format	ion	***************************************		2. Well Location	e any ang pantaya da war ara ye we a se este seaso
Company		TOTTILAL		illing Co	mpany Approval No.:	1/4 or Sec Two	
	ASIN DRILLING LTD.		38	394	. , , , ,	LSD	M
Mailing A BOX 47		y or Towi		stal Co	de:	NW 36 039 Location in Quarter	
			AB CANADA TO on Identifier:	C 010		Location in Quarter 0 M from	Boundary
WILKENS	S, ROD					0 M from	Boundary
P.O. Box		iling Add	ress: Po	ostal Co	de:	Lot Block	Plan
470 City:		NTLEY ovince:	C	ountry:		Well Elev: H	ow Obtain:
Oity.	* 10	JVII 100.		JOI 10 y .			stimated
3. Drilli	ng Information					6. Well Yield	
	Vork: New Well				Proposed well use:	Test Date	Start Time:
Reclaime Date Rec		Materi	als Used:		Stock Anticipated Water	(yyyy/mm/dd): 1989/05/16	11:00 AM
	f Drilling: Rotary	IVICICIE	als Osca,		Requirements/day	Test Method: Air	11.00 AW
Flowing V	Vell: No	Rate: l			2273 Liters	Non pumping	24.38 M
Gas Pres		Oil Pre				static level: Rate of water	90.92
	nation Log		5. Well Completion			rate of water removal:	90.92 Liters/Min
Depth from			Date Started(yyyy/mm/dd):		Completed mm/dd):	Depth of	39.62 M
ground	Lithology Descript	ion	1989/05/16	(yyyy/i 1989/0		pump intake:	
level	3) =ip-		Well Depth: 54.86 M	Borehe	ole Diameter: 0 CM	Water level at end of	54.86 M
(meters) 2:44	Clay		Casing Type: Steel		Type: Plastic	pumping:	
	Brown Soft Shale		Size OD; 13.97 CM Wall Thickness: 0.62 CM		D: 11.43 CM hickness: 0.6 CM	Distance from top o	of CM
	Brown Sandstone					casing to ground level:	
	Greenish Gray Shale		Bottom at: 40.23 M	54.86	6.58 M Bottom: M	Depth To water I	evel (meters)
	Brown See Comments Sands	tone	Perforations		ations Size:	Elapsed	
	Gray Shale Gray Sandstone		from: 42.67 M to: 48.77 M		M x 0.95 CM	Drawdown Minutes	,
	Gray Shale		from: 0 M to: 0 M		k 0 CM	Total Drawdown: 3	
42.67	Light Gray Sandstone		from: 0 M to: 0 M Perforated by: Machine	U CIVI :	<u> </u>	duration, reason wh	
44.2	Shale		Seal: Drive Shoe				
44.5 45.72	Sandstone Shale		from: 0 M	to: 40.	23 M		
	Gray Sandstone		Seal: from: 0 M	to: 0 N	1	Recommended pur	mping rate: 0
	Green Shale & Sandstone		Seal:	10. U IV	ı	Liters/Min	
			from: 0 M	to: 0 N		Recommended pur 40.23 M	mp intake:
			Screen Type:		TID: 0 CM	Type Pump Installe	h
			from: 0 M to: 0 M Screen Type:		ze: 0 CM n ID: 0 CM	Pump Type: SUB	
			from: 0 M to: 0 M		ze: 0 CM	Pump Model: WEB	TROL
			Screen Installation Method	:		H.P.; Any further pumpte	st information?
			Fittings Top:	Botton	. '	,,	
			Pack:	Dotton		1	
			Grain Size:	Amour	nt: 0		
			Geophysical Log Taken: Retained on Files:				
			Additional Test and/or Pun	no Data			
			Chemistries taken By Drille	r: No			
			Held: 0	Docum	nents Held: 1		
			Pitless Adapter Type: Drop Pipe Type:				
			Length: M	Diame	ter: CM		
			Comments:				
			80'- 2 GPM.				
						ł	
₹			F			1	
			7. Contractor Certific	cation		ľ	
			7. Contractor Certification Priller's Name:		OWN DRILLER		

The data contained in this	Well Drilling report is supplied by the less responsibility for its accurate.	Driller. The p)rt rovince disclaims	Well I.D.: Map Verified: Date Report Received: Measurements:	0380541 Not Verified 1995/11/29 Metric
1. Contractor & Well Owner Informa	fion			2. Well Locati	
Company Name:		Drilling Com	pany Approval No.:	1/4 or Sec Tw	p Rge Westof
ALKÉN BASIN DRILLING LTD.		38394		LSD SW 36 03	M 9 02 5
Mailing Address: City or Tov BOX 47 BENTLEY	/n: AB CANADA	Postal Code T0C 0J0):	Location in Quarte	
	on Identifier:		· · · · · · · · · · · · · · · · · · ·	0 M from	Boundary
HETHERINGTON, BONNIE	2	m		0 M from Lot Block	Boundary Plan
P.O. Box Number: Mailing Ad RR1, BEN		Postal Code T0C 0J0	3:	LOI DIOCK	ridii
City: Province:	I am box 1	Country:		1	How Obtain:
					Not Obtain
3. Drilling Information				6. Well Yield Test Date	Start Time:
Type of Work: New Well Reclaimed Well			Proposed well use: Domestic	(yyyy/mm/dd):	Start Time.
Date Reclaimed: Mate	ials Used:	<i> </i>	Inticipated Water	1995/11/17	11:00 AM
Method of Drilling: Rotary	1 14	,	Requirements/day 1591.1 Liters	Test Method: Air Non pumping	54.86 M
	Liters esent: No		US I. I LIICIS	static level:	O-1.00 IVI
4. Formation Log	5. Well Completio	n		Rate of water	136.38
Depth	Date Started(yyyy/mm/d	Data Ca	mpleted	removal: Depth of	Liters/Min 73,15 M
from		у (уууулг		pump intake:	75.15 W
ground Lithology Description level	1995/11/17 Well Depth: 73.15 M	1995/11 Borehol	e Diameter: 0 CM	Water level at	73.15 M
(meters)	Casing Type: Steel		pe: Plastic	end of pumping:	
5.18 Brown Clay	Size OD: 13.97 CM	Size OD): 11.43 CM	Distance from top	of CM
6.4 Gray Shale 10.06 Brown Sandstone	Wall Thickness: 0.62 CI		ickness: 0.4 CM	casing to ground	
12.5 Gray Shale	Bottom at: 35.05 M	Top: 30		level: Depth To water	r loval (motoro)
17.98 Brown Shale		73.15 M		Elapse	
24.99 Gray Shale	Perforations from: 54.86 M to: 73.15		ions Size: 1 x 0.95 CM	Drawdown Minute	es:Sec Recovery
27.13 Gray Sandstone 36.88 Green Shale	from: 0 M to: 0 M	0 CM x	0 CM		00 64.01 00 58.52
38.71 Gray Sandstone	- from: 0 M to: 0 M	0 CM x	0 CM	I	00 54.86
40.54 Green Shale	 Perforated by: Hand Dr. Seal: Driven & Shale Tr 			Total Drawdown:	
45.72 Gray Shale	from: 0 M	to: 48.7	7 M	If water removal w	
47.85 Green Shale 53.34 Gray Shale	Seal:	4 0.14		duration, reason v	vhy:
66.75 Gray Sandstone	from: 0 M Seal:	to: 0 M			
70.1 Black Shale	from: 0 M	to: 0 M			
73.15 Gray Shale	Screen Type:		ID: 0 CM	Recommended pu 136.38 Liters/Min	umping rate:
	from: 0 M to: 0 M Screen Type:	~~~~~ ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	e: 0 CM ID: 0 CM	Recommended pu	
	from: 0 M to: 0 M		e: 0 CM	64.01 M	•
	Screen Installation Met	hod:		Type Pump Instal Pump Type:	led
	Fittings Top:	Bottom:		Pump Model:	
	Pack:	DOROISIA		H.P.	
	Grain Size:	Amount		Any further pumpt	test information?
·	Geophysical Log Taker Retained on Files:	n;			
	Additional Test and/or F	Pump Data		-	
	Chemistries taken By D	riller: No			
	Held: 0	Docume	ents Held: 1	-	
	Pitiess Adapter Type: Drop Pipe Type:				
	Length: M	Diamet	er: CM	_	
、	Comments: DRILLER REPORTS D	10TA KIOF F			
	CASING TO GROUND		COM FOR O		
	7. Contractor Cer			_	
	Driller's Name:		WN DRILLER		
200	Certification No.: This well was construct	123890 ted in accord			

Water The data contained in thi	* Well Drillin s report is supplied by the responsibility for its accu	Driller. The province disclaims	Well I.D.: 0437631 Map Verified: Map Date Report 1988/10/19 Received:			
Environment	Environment					
1. Contractor & Well Owner Inform						
Company Name: ALKEN BASIN DRILLING LTD.						
Mailing Address: City or To		Postal Code:	SE 03 040 02 5			
	/ AB CANADA	TOC 0J0	Location in Quarter 0 M from Boundary			
WellOwner's Name: Well Loca SCREPNEK, RANDY	ation Identifier:		0 M from Boundary			
P.O. Box Number: Mailing A		Postal Code:	Lot Block Plan			
RR1, BE City: Province		T0C 0J0 Country:	Well Elev: How Obtain:			
City.		Country.	M Not Obtain			
3. Drilling Information			6. Well Yield			
Type of Work: New Well		Proposed well use Domestic	: Test Date Start Time: (yyyy/mm/dd);			
Reclaimed Well Date Reclaimed: Mat	erials Used:	Anticipated Water	1988/10/15 11:00 AM			
Method of Drilling: Rotary		Requirements/day				
	e: Liters Present: No	0 Liters	Non pumping 51.82 M static level:			
Gas Present: No Oil 4. Formation Log	5. Well Completi		Rate of water 90.92			
Depth		Date Completed	removal: Liters/Min			
from	Date Started(yyyy/mm	^{1/dd}): (yyyy/mm/dd):	Depth of 73.15 M pump intake:			
ground Lithology Description	1988/08/15 Well Depth: 73.15 M	1988/08/16 Borehole Diameter: 0 CM	Water level at 73.15 M			
(meters)	Casing Type: Steel	Liner Type: Plastic	end of			
3.05 Clay	Size OD: 13.97 CM	Size OD: 11.43 CM	— pumping: — Distance from top of CM			
9.14 Shale 16.76 Sandstone	Wall Thickness: 0.62		casing to ground			
18.9 Lost Circulation	Bottom at: 60.96 M	Top: 48.77 M Botton 73.15 M	n: level: Depth To water level (meters)			
21.95 Shale	Perforations	Perforations Size:	Elapsed Time			
73.15 Interbedded Shale & Sandstone	from: 60.96 M to: 73.1		Drawdown Minutes:Sec Recovery			
	from: 0 M to: 0 M	0 CM x 0 CM	Total Drawdown: 21.34 M If water removal was less than 2 h			
	from: 0 M to: 0 M Perforated by: Machir	0 CM x 0 CM	duration, reason why:			
	Seal: Drive Shoe	10				
	from: 0 M	to: 60.96 M	ELC.			
	Seal: from: 0 M	to: 0 M	Recommended pumping rate:			
	Seal:		68.19 Liters/Min Recommended pump intake:			
	from: 0 M	to: 0 M	67.06 M			
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Stot Size: 0 CM	Type Pump Installed			
	Screen Type:	Screen ID: 0 CM	Pump Type: GOULD Pump Model: 13 EM			
	from: 0 M to: 0 M Screen Installation Me	Slot Size: 0 CM	H.P.: 1.5			
	Fittings	aurou.	Any further pumptest information			
	Top:	Bottom:				
	Pack: Grain Size:	Amount:				
	Geophysical Log Tak					
	Retained on Files:					
	Additional Test and/o Chemistries taken By	r Hump Data Driller: No				
	Held: 1	Documents Held: 2				
·	Pitless Adapter Type:					
	Drop Pipe Type: GAL Length: 64.01 M	.v Diameter: 2.54 CM				
	Comments:					
			Į.			
	7. Contractor Ce		_			
	Driller's Name: Certification No.:	UNKNOWN DRILLER VA4790	1. 1.			
		vA4790 icted in accordance with the Wa	ter			

Alberta Environment The data contained in this	Well Drilling report is supplied by the Dril esponsibility for its accuracy	ler. The	ort province disclaims	Date F Receiv Measu	/erified: Report ved: urement	en mederam	0437633 Map Metric	}
1. Contractor & Well Owner Informat				<u> </u>	Il Loc			
Company Name: LOUSANA WATER WELLS (1987) LTD.		illing Co 18963	empany Approval No.:	1/4 or LSD	Sec	Twp	Rge V	Vestot M
Mailing Address: City or Tow		ostal Co	de:	SW	03	040	02	5
BOX 88 LOUSANA	AB CA TO	M 1KO			on in Qu	arter		
1	on Identifier:			MO				ndary
BUIT BROS. P.O. Box Number: Mailing Add SYLVAN LA		ostal Co	de:	Lot	from Blo	ck	Plan	ındary
City: Province:		ountry:		Well E 968.35			w Obtain imated	:
3. Drilling Information			· · · · · · · · · · · · · · · · · · ·	***************	ell Yiel		«notou	
Type of Work: New Well			Proposed well use:	Test D			Start Tin	ne:
Reclaimed Well	-1- i 16.		Domestic & Stock		nm/dd):		44.00 4	,
	als Used:		Anticipated Water Requirements/day	1988/0 Test M	16/08 lethod: E	Baller	11:00 Ai	VI
Method of Drilling: Rotary Flowing Well: No Rate:	liters		0 Liters		umping	-41171	41.76 M	
	esent: No			static l				
4. Formation Log	5. Well Completion				f water		63.64	
Depth		Date 0	Completed	remova			Liters/M	
from	Date Started(yyyy/mm/dd):	yyyy/ı	mm/dd):	Depth pump i			42.06 M	ļ
ground Lithology Description	A 1 21 Mg 12 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2 A 2	1977/0			level at		42.06 M	
level	Well Depth: 48.77 M		ole Diameter: 0 CM	end of			72.00 10	
(meters) 0.91 Brown Clay	Casing Type: Steel Size OD: 14.12 CM		Гуре: Steel DD: 11.43 СМ	pumpi	ng:			
3.66 Brown Fractured Shale	Wall Thickness: 0.48 CM		hickness: 0.64 CM		ce from		CM	
6.71 Brown Sandstone	Wall HillCRITESS. 0.40 CW				to grou	nd		
7.01 Hard Sandstone	Bottom at: 33.83 M	Top: 0 48.77		level:	th To w	ater le	vel (mete	ere\
17.07 Brown Sandstone	Perforations		ations Size:	1 266		sed T		21.01
18.59 Brown Shale	from: 41.15 M to: 48.77 M		ations Size. x 0 CM		iM nwot	nutes:	Sec Rec	overy
23.77 Brown Sandstone	from: 0 M to: 0 M		k 0 CM		Drawdow			
24.69 Hard Sandstone 25.6 Brown Sandstone	from: 0 M to: 0 M	0 CM :	x 0 CM		r remov m, reaso		less tha	n 2 hr
26.52 Hard Sandstone	Perforated by: Torch			uurauc	ni, ieasi	JII VVIII	<i>(</i> .	
33.22 Brown Sandstone	Seal: Driven from: 0 M	to: 0 N	A					
35.05 Gray Shale	Seal:	to. U iv	1					
35.97 Gray Sandy Shale	from: 0 M	to: 0 N	1			d pum	ping rate	: O
36.58 Gray Shale & Coal	Seal:			Liters/		d num	p intake:	
39.32 Gray Sandstone	from: 0 M	to: 0 N		45.72		u puiii	р пааке.	
39.62 Shale & Coal	Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM		oump In:	stalled		
40.23 Gray Shale 48.77 Gray Sandstone	from: 0 M to: 0 M Screen Type:		n ID: 0 CM	Pump	Type:			
Total State of the	from: 0 M to: 0 M	Slot S	ize: 0 CM		Model:			
	Screen Installation Method	:		H.P.: Anv fu	rther no	mntee	t informa	fion?
	Fittings	m		T ", iu	.a.a. pu	.,,,,,,,,	· ····oiiid	40(1)
	Top: Pack:	Botton	n:	┨				
	Grain Size:	Amou	nt:					
	Geophysical Log Taken:			1				
	Retained on Files:			1				
	Additional Test and/or Pun							
	Chemistries taken By Drille Held: 0		nents Held: 1					
	Pitless Adapter Type:	DOCUI1	TORRO LIGIU. 1	1				l
1	Drop Pipe Type:							
	Length: M	Diame	ter: CM]				
	Comments: DRILLER REPORTS HAR	D WATI	ĒR.					
	economic and the control of the cont							
	7. Contractor Certifi	cation	1					
	Driller's Name:		OWN DRILLER	1				
	Certification No.: This well was constructed							

The data contained in this	Well Drilling	Repo	Ort province disclaims	Date I	/erified: Report	N	34190 lot Ve	rified
Alberta Environment	responsibility for its accuracy	/.		Recei Measi	vea: urements	. <u>N</u>	/letric	
1. Contractor & Well Owner Informa	ation			2. W	ell Loca			
Company Name: ALKEN BASIN DRILLING LTD.		rilling Co 3394	mpany Approval No.:	1/4 or LSD	Sec	Twp	Rge	Westo M
Mailing Address: City or To		ostal Cod	e;	NW		040	02	5
	' AB CANADA TO tion Identifier:	OC 010		Locati 0 M	on in Qua from	rter	Bo	undar
SUNRISE LAZY S FARM	tion identifier.				from		Во	undary
P.O. Box Number: Mailing Ac 22 RR1 SITE		ostal Cod OC 0J0	le:	Lot	Bloc	:k	Plan	
City: Province:		ountry:		Well E	lev:		Obtai	
				M	- 11 V: - I-		Obtair)
3. Drilling Information Type of Work: New Well			Proposed well use:	Test L	ell Yield ate		Start T	ime:
Reclaimed Well			Stock	(yyyy/	mm/dd):		4.00	
Date Reclaimed: Mate Method of Drilling: Rotary	erials Used:		Anticipated Water Requirements/day	2002/0 Test N	J8/23 1ethod: Ai		1:00 /	ΨM
Flowing Well: No Rate	: Liters		0 Liters		umping	4	6.02 1	M
	resent: No			static Rate o	level: of water	2	27.3	
4. Formation Log Depth	5. Well Completion	Date C	ompleted	remov	ai:	L	iters/l	
from	Date Started(yyyy/mm/dd):	: (yyyy/n	nm/dd):	Depth pump	of intake:	7	3.15 [M
ground Lithology Description level	2002/08/23 Well Depth: 73.15 M	2002/0 Boreho	8/23 lle Diameter: 0 CM	Water	level at	7	3.15	М
(meters)	Casing Type: Steel		ype: Plastic	end of pumpi				
4.27 Brown Clay 5.79 Brown Shale	Size OD: 14.12 CM Wall Thickness: 0.65 CM		D: 11.43 CM nickness; 0.54 CM	Distan	ice from to		M	
7.32 Gray Shale		Top: 2		casinç level:	to groun	d		
41.15 Brown Sandstone 50.29 Gray Shale	Bottom at: 31.39 M	73.15			oth To wa			ters)
50.29 Gray Shale 53.34 Gray Fine Grained Sandstone	Perforations		tions Size:	Draw	Elap: down Min	sed Tir		cover
64.01 Gray Shale	from: 60.96 M to: 67.06 M from: 0 M to: 0 M	1.27 Cr 0 CM x	M x 1.27 CM : 0 CM			1:00	5	7.91
68.58 Gray Sandstone 73.15 Gray Shale	from: 0 M to: 0 M	0 CM x	0 CM			2:00 3:00		1.82 18.77
	Perforated by: Hand Drill Seal: Drive Shoe					4:00	4	17.24
	from: 0 M	to: 31.3	39 M			5:00 6:00		16.63 16.33
	Seal: from: 0 M	to: 0 M				7:00		16.02
	Seal: from: 0 M	+a. ∩ 3.4			Drawdowi			0 1
	Screen Type:		ID: 0 CM	_	er remova on, reaso			ıan ∠ r
	from: 0 M to: 0 M		ze: 0 CM	1		·		
	Screen Type: from: 0 M to: 0 M		i ID: 0 CM ze: 0 CM					
	Screen Installation Method			_3	nmended		ing rat	te:
	Fittings Top:	Bottom	1;		Liters/Mir nmended		intake	e:
	Pack:			64.01	M			
	Grain Size: Geophysical Log Taken:	Amour	IT.		Pump ins Type:	tatied		
	Retained on Files:			Pump	Model:			
	Additional Test and/or Pun Chemistries taken By Drille			H.P.: Any fu	arther pun	nptest	inform	nation?
	Held: 0		ents Held: 1	1	•			
	Pitless Adapter Type: Drop Pipe Type:							
	Length: M	Diame	ter: CM	_				
	Comments:							
	7. Contractor Certifi]				
	Driller's Name: Certification No.:	UNKN VA312	OWN DRILLER					
	This well was constructed			-[

Water Well Report Page 1 of 2

Well I.D.: 0437638 Water Well Drilling Report Map Verified: Map Date Report The data contained in this report is supplied by the Driller. The province disclaims Received: Alberta responsibility for its accuracy. Environment Measurements: Metric 1. Contractor & Well Owner Information 2. Well Location Company Name: Drilling Company Approval No. Rge Westo 1/4 or Sec Twp NELSON DRILLING & PLUMBING LSD M ΝE 03 040 5 City or Town: Postal Code: Mailing Address: ocation in Quarter 0 M from Boundary WellOwner's Name: Well Location Identifier: Boundary JOHANSON, V. 0 M from Block Plan of P.O. Box Number: Mailing Address: Postal Code: **BENTLEY** Well Elev: How Obtain: City: Province: Country: Not Obtain 6. Well Yield 3. Drilling Information Test Date Start Time: . Type of Work: New Well Proposed well use: (yyyy/mm/dd): Reclaimed Well Domestic Anticipated Water 1943/11/30 11:00 AM Date Reclaimed: Materials Used: Test Method: Pump Method of Drilling: Jet Requirements/day 0 Liters Non pumping 42.67 M Flowing Well: No Rate: Liters static level: Gas Present: No Oil Present: No Rate of water Liters/Min 4. Formation Log 5. Well Completion removal: Depth Date Completed Date Started(yyyy/mm/dd): Depth of 47.24 M (yyyy/mm/dd): from pump intake: 1943/11/30 ground **Lithology Description** Water level at М evel Well Depth: 68.58 M Borehole Diameter: 0 CM end of (meters) Casing Type: Galvanized pumping: Liner Type: Steel Distance from top of CM Size OD: 5.08 CM Size OD: 0 CM casing to ground Wall Thickness: 0 CM Wall Thickness: 0 CM level: Bottom at: 47.24 M Top: 0 M Bottom: 0 M Depth To water level (meters) Elapsed Time Perforations Perforations Size: Drawdown Minutes:Sec Recovery from: 0 M to: 0 M 0 CM x 0 CM Total Drawdown: 0 M from: 0 M to: 0 M 0 CM x 0 CM If water removal was less than 2 hr from: 0 M to: 0 M 0 CM x 0 CM duration, reason why: Perforated by: Seal: from: 0 M to: 0 M Seal: Recommended pumping rate: 0 from: 0 M to: 0 M _iters/Min Seal: Recommended pump intake: 0 M from: 0 M to: 0 M Type Pump Installed Screen ID: 0 CM Screen Type: Pump Type: HAND PUMP from: 0 M to: 0 M Slot Size: 0 CM Pump Model: Screen Type: Screen ID: 0 CM from: 0 M Slot Size: 0 CM Any further pumptest information? 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: Yes Held: 0 Documents Held: 1 Pitless Adapter Type: Drop Pipe Type: Length: 47.24 M Diameter: CM Comments: DRILLER REPORTS SOFT WATER, PUMP IS 480 MAROY (?) HCECK & 4 LEATHER PLUNGER, 3/8 PUMP RÒD. WELL JETTED & PUMP TESTED, BUT LITTLE INFO. LITH: BROWN CLAY OVER BLUE SHALE & SST LEDGES. WATER @ 225', ROSE TO 140' 7. Contractor Certification Driller's Name: UNKNOWN DRILLER Certification No.: ic wall was constructed in accordance with the Mata

Ê	Water Well Drilling Report The data contained in this report is supplied by the Driller. The province disclaims					Map \	Well I.D.; Map Verified: Date Report		04376 Map	
△	Alberta vironment		esponsibility for its accurac		province discialins	Recei	ved:		1981/0	9/28
	tractor & Well Owner	r Informat	ion			Personal services	ureme	nts: ocatio	Metric	
Company		illiQillia		rilling C	ompany Approval No.					Westof
	A EAGLE DRILLING LTD.		1	17793		LSD		•	•	M
Mailing A BOX 903		City or Tow SYLVAN LA		ostal Co 4S 1S6	de:	03	04	040 Quarter	02	5
	er's Name:		on Identifier:	40 100		0 M			Во	undary
RUSSEL							from			undarý
P.O. Box 305	Number:	Mailing Add	Iress: P	ostal Co	de:	Lot	E	Block	Plan	
City:		Province:		ountry:		Well E	lev:	Ho	w Obta	in:
						967.74	************		timated	
	ing Information					6. W		eld	- · · · · ·	
Type of V Reclaime	Vork: New Well				Proposed well use: Domestic & Stock	Test D		{ }•	Start T	ime:
Date Rec		Materi	als Used:		Anticipated Water	1981/0		17.	11:00	AΜ
	f Drilling: Rotary				Requirements/day			: Pump		
Flowing \ Gas Pres		Rate:			2273 Liters	Non po static l		9	10.36	M
	nation Log	Oli Pre	esent: No 5. Well Completion			Rate)r	36.37	
Depth	ration Log			Date (Completed	remov			Liters/I	
from			Date Started(yyyy/mm/dd)	^{):} (уууу/	mm/dd):	Depth pump			16.76 i	VI
ground level	Lithology Descr	ription	1981/09/15	1981/		-	level a		16.76	<u></u>
(meters)			Well Depth: 22.86 M Casing Type: Galvanized		ole Diameter: 0 CM	end of				
7.01	Clay & Rocks		Steel	Liner	Type:	pumpi Diatan		m top of	F C N A	
13.72	Shale	······································	Size OD: 11.43 CM		DD: 0 CM	casing			CIVI	
15.85 18.9	Brown Sandstone Shale		Wall Thickness; 0.36 CM		hickness: 0 CM	level:				
22.25	Sandstone		Bottom at: 19.2 M	Top: (Dep		water le apsed	evel (me	ters)
22.86	Shale		Perforations from: 0 M to: 0 M		ations Size: x 0 CM	Drawo			:Sec Re	covery
			from: 0 M to: 0 M		x 0 CM	Total [<u>Drawd</u>	own: 6.4	4 M	
			from: 0 M to: 0 M	0 CM	x 0 CM			oval wa: ison wh	s less th	an 2 hr
			Perforated by: Seal: Driven			- Guran);i, i C O	19011 1411	у.	
			from: 0 M Seal:	to: 19	.2 M					
			from: 0 M Seal:	to: 0 N	Λ	36.37	Liters/	Min	nping rat	
			from: 0 M	to: 0 N		Recon 16.76		ied pum	np intake	e:
			Screen Type: from: 0 M to: 0 M		n ID: 0 CM ize: 0 CM			nstalle	d	
			Screen Type:		n ID: 0 CM	Pump	Type:			
			from: 0 M to: 0 M	Slot S	ize: 0 CM	Pump H.P.:	Model	l:		
			Screen Installation Method	<u>:</u>			rther p	oumptes	st inform	ation?
			Fittings Top:	Bottor	n:			•		
			Pack:	201101		1				
			Grain Size:	Amou	nt:	4				
			Geophysical Log Taken: Retained on Files:							
			Additional Test and/or Pur			1				
			Chemistries taken By Drill		- made Italië. A					
			Held: 0 Pitless Adapter Type:	Docur	nents Held: 1	┨				
			Drop Pipe Type:							
			Length: M	Diame	eter: CM	-				
			Comments: DRILLER REPORTS MED) HARD	WATER.					
			7.0		**************************************	-				
			7. Contractor Certif) IOWN DRILLER	-				
			Driller's Name: Certification No.: This well was constructed							

Alberta Environment The data contained in this	responsibility for its accur	Driller. The province of	lisclaims	Well I.D.: 0353902 Map Verified: Not Verified Date Report 1990/12/20 Received: Measurements: Metric
1. Contractor & Well Owner Informa	tion			2. Well Location
Company Name: ALBERTA ENVIRONMENTAL PROTECTION/T DIVISION	ECHNICAL SERVICES	Drilling Company Ap 9984567	proval No.:	1/4 or Sec Twp Rge Westof LSD M 05 04 040 02 5
Mailing Address: City or Tow 9820 - 106 STREET EDMONTO		Postal Code: T5K 2J6	··-	Location in Quarter 0 M from Boundary
WellOwner's Name: Well Locati ALTA ENV #2624E	on Identifier:	THE STANSACTION OF THE STANSACTI		0 M from Boundary Lot Block Plan
P.O. Box Number: Mailing Add SYLVAN L.		Postal Code:		Well Elev: How Obtain:
City: Province:		Country:	,,,,,,	M Not Obtain 6. Well Yield
3. Drilling Information		A 444		Test Date Start Time:
Type of Work: Test Hole-Abandoned		Proposed	well use:	(yyyy/mm/dd):
Reclaimed Well		Unknown		
	ials Used: Cement	Anticipate		Test Method:
Method of Drilling: Rotary Flowing Well: Yes Rate:	68.19 Liters	Requirem 0 Liters	ents/day	Non pumping M static level:
	esent: No	O Ellers		Rate of water Liters/Min
4. Formation Log	5. Well Completio	n		removal:
Depth	7	Data Campiated		Depth of M
from	Date Started(yyyy/mm/c	(yyyy/mm/dd):		pump intake:
ground Lithology Description	1990/11/09	1990/11/10		Water level at M lend of
level (meters)	Well Depth: 24.08 M	Borehole Diamet	er: 0 CM	pumpina:
(meters) 0.3 Topsoil	Casing Type:	Liner Type:		Distance from CM
3.35 Tan Sandy Clay	Size OD: 0 CM	Size OD: 0 CM		top of casing
14.33 Gray Sandy Clay	Wall Thickness: 0 CM	Wall Thickness: () CM	to ground
17.07 Gray Sandstone	Bottom at: 0 M	Top: 0 M Bo	ttom: 0 M	level:
19.81 Gray Shale	1	, op. o	COSTS. O IVI	Depth To water level (meters)
22.86 Gray Shale	Perforations	Perforations Size	:	Elapsed Time
23.16 Gray Hard Sandstone Stringers	from: 0 M to: 0 M	0 CM x 0 CM		Drawdown Minutes:Sec Recovery
24.08 Gray Shale	from: 0 M to: 0 M	0 CM x 0 CM		
	from: 0 M to: 0 M Perforated by:	0 CM × 0 CM		
	Seal:		w	Total Drawdown: M
	from: 0 M	to: 0 M		If water removal was less than 2 hr
	Seal:			duration, reason why:
	from: 0 M	to: 0 M		
	Seal:			
	from: 0 M	to: 0 M		Recommended pumping rate:
· ·	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM		Liters/Min
	Screen Type:	Screen ID: 0 CM		Recommended pump intake: M
	from: 0 M to: 0 M	Slot Size: 0 CM		Type pump installed
j .	Screen Installation Meth			Pump type:
	Fittings	***************************************		Pump model:
	Тор:	Bottom:		H.P.:
	Pack:			Any further pumptest information?
	Grain Size: Geophysical Log Taken	Amount: 0		
	Retained on Files:			
	Additional Test and/or P	ump Data	·· · · · · · · · · · · · · · · · · · ·	
	Chemistries taken By Di			
Table 1	Held: 0	Documents Held:	2	
	Pitless Adapter Type:			
	Drop Pipe Type:	Diamatan		
	Length: Comments:	Diameter:		
	WELL SEALED FULL LI	ENGTH.		
	7. Contractor Cert	ification		
	Driller's Name:	UNKNOWN DRIL	LER	
I	Certification No.:	VA3321		

Water Alberta Environment	Well Drilling s report is supplied by the Dr responsibility for its accuracy	riller. The province disclaims	Well I.D.: 0406258 Map Verified: Not Verified Date Report 1995/06/19 Received: Measurements: Metric
1. Contractor & Well Owner Informa	ation		2. Well Location
Company Name:		Drilling Company Approval N	
ALKEN BASIN DRILLING LTD. Mailing Address: City or To		38394 Postal Code:	LSD M 08 04 040 02 5
BOX 47 BENTLE	'AB CANADA 1	roc ojo	Location in Quarter
WellOwner's Name: Well Loca RUSSELL, A./GARDINER OIL & GAS	tion Identifier:		0 M from Boundary 0 M from Boundary Lot Block Plan
P.O. Box Number: Mailing A		Postal Code:	
		Γ2P 2Z1 Country:	Well Elev: How Obtain: M Not Obtain
City: Province:		Journary.	6. Well Yield
3. Drilling Information			Test Date Start Time:
Type of Work: New Well	···········	Proposed well use	; (yyyy/mm/dd): 1995/06/12 11:00 AM
Reclaimed Well Date Reclaimed: Mate	erials Used:	Industrial Anticipated Water	Test Method: Air
Method of Drilling: Rotary		Requirements/day	Non pumping 28.96 M
Flowing Well: No Rate	: Liters	27276 Liters	static level: Rate of water 227.3
	Present: No		removal: Liters/Min
4. Formation Log Depth	5. Well Completion	Data Completed	Depth of 60.96 M
from	Date Started(yyyy/mm/do	(yyyy/mm/dd):	pump intake: Water level at 60.96 M
ground Lithology Description	1995/06/12	1995/06/12	and of
level (meters)	Well Depth: 60.96 M Casing Type: Steel	Borehole Diameter: 0 CM Liner Type: Steel	pumping.
4.57 Brown Clay	Size OD: 13.97 CM	Size OD: 11.43 CM	Distance from top of CM casing to ground
9.75 Brown Sandstone	Wall Thickness: 0.62 CM	Wall Thickness: 0.4 CM	— level:
17.07 Gray Fractured Sandstone 19.81 Brown Sandstone	Bottom at: 7.62 M	Top: 0 M Bottom:	Depth To water level (meters)
20.73 Gray Sandstone	— <u></u>	60.96 M	Elapsed Time Drawdown Minutes:Sec Recovery
24.38 Brown Sandstone	Perforations from: 36.58 M to: 60.96 N	Perforations Size: N 0.95 CM x 0.95 CM	2:00 45.72
29.57 Gray Shale	from: 0 M to: 0 M	0 CM x 0 CM	3:00 38.1
36.88 Gray Siltstone 37.8 Green Shale	from: 0 M to: 0 M	0 CM × 0 CM	4:00 32.92 5:00 28.96
42.67 Gray Siltstone	 Perforated by: Hand Drill Seal: Drive Shoe 		Total Drawdown: 0 M
43.59 Gray Shale	from: 0 M	to: 7.62 M	If water removal was less than 2 hi
45.72 Gray Sandstone	Seat:	. 0.44	duration, reason why:
48.46 Gray Shale 60.96 Gray Sandstone	from: 0 M Seal:	to: 0 M	
3,3) 33,43	from: 0 M	to: 0 M	
	Screen Type:	Screen ID: 0 CM	Recommended pumping rate: 227.3 Liters/Min
	from: 0 M to: 0 M Screen Type:	Slot Size: 0 CM Screen ID: 0 CM	Recommended pump intake:
	from: 0 M to: 0 M	Slot Size: 0 CM	48.46 M
	Screen Installation Metho	od:	Type Pump Installed Pump Type: SUB
	Fittings Top:	Bottom:	Pump Model: GRUNDFOS
	Pack:	· · · · · · · · · · · · · · · · · · ·	H.P.: 3 Any further pumptest information?
	Grain Size:	Amount:	Any further pumptest information?
	Geophysical Log Taken: Retained on Files:		
	Additional Test and/or Pเ	•	
	Chemistries taken By Dri		
	Held: 0 Pitless Adapter Type:	Documents Held: 3	
	Drop Pipe Type:		
	Length: M	Diameter: CM	\dashv
		STANCE FROM TOP OF LEVEL: 3'. TRANSFER OF 1995	
	7. Contractor Certi	fication	
	Driller's Name:	UNKNOWN DRILLER	
I	Certification No.:	12389Q	*

L. Env	The data contain	ed in this re	Vell Drilling F port is supplied by the Drille sponsibility for its accuracy.	Rep er. The	ort province disclaims	Date f Recei	erified/ Report		03502 Not Ve 1990/0 Metric	erified 04/10
1. Cont	tractor & Well Owner I	nformatio	on			2. W	ell Lo	catio		
Company	/ Name:		Dri		mpany Approval No.:		Sec	Twp	Rge	Westof
	BASIN DRILLING LTD.	N		394 stal Cod	dar	LSD	04	040	02	M 5
Mailing A BOX 47	ddress: C	ity or Town: ENTLEY A		stai Coo	je:		on in Q		- 72	
		Vell Location		3 000		0 M			В	oundary
RUSSEL	-, -, , , -, , , -, , , , , , , , , , ,						from		~~~	oundary
P.O. Box		Mailing Addre		stal Co	de:	Lot	В	lock	Plar	1
305		CKVILLE		√1 0X0		Well E	love	Н	w Obta	ain:
City:	H	rovince:	Co	untry:		M	.1¢v.		t Obtai	
2 D-:11:	ina Information					6. W	ell Yie	eld.		
	ing Information Vork: New Well				Proposed well use:	Test D			Start 7	Time:
Reclaime					Stock		mm/dd):		
Date Rec		Materia	ls Used:		Anticipated Water	1990/0			11:00	AM
	of Drilling: Rotary				Requirements/day		Method:		59.44	A.A
Flowing V		Rate: Li			0 Liters	Non p	umping level:	;	J9.44	łVł
Gas Pres			sent: No		1		of water	r	36.37	
	nation Log		5. Well Completion	D=1 1	Sampletor	remov	al:		Liters	
Depth			Date Started(yyyy/mm/dd):		Completed mm/dd):	Depth			0 M	
from ground	Lithology Descrip	_{ntion} I	1990/03/23	1990/0			intake:		05.04	* *
level	Eltilology Descrip		Well Depth: 85.34 M		ole Diameter: 0 CM	Water end of	level a	ŧŧ	85.34	M
(meters)			Casing Type: Steel	Liner	Type: Plastic	pumpi				
3.05	Clay		Size OD: 13.97 CM		D: 11.43 CM			n top o	f CM	
38.1	Shale		Wall Thickness: 0.62 CM	Wall T	hickness: 0.63 CM		to gro	und		
40.23	Brown Sandstone		Bottom at: 44.2 M		6.58 M Bottom:					
60.96 65.53	Gray Sandstone Shale		DOMONII da. 44.2 W	85.34		De		water le apsed	evel (m Time	eters)
68.58	Sandstone	i i	Perforations		ations Size:	Draw				ecovery
76.2	Shale		from: 67.06 M to: 85.34 M		CM x 0.95 CM x 0 CM	Total	Drawdo	own: 25	5.91 M	
80.77	Gray Sandstone		from: 0 M to: 0 M from: 0 M to: 0 M		x 0 CM	If wate	er remo	val wa	s less t	han 2 h
81.99	Shale		Perforated by: Machine			durati	on, rea	son wh	ıy:	
83.52	Gray Sandstone		Seal: Driven							
85.34	Shale		from: 0 M	to: 44.	2 M					
			Seal: from: 0 M	to: 0 N	A	Reco	mmend	ed pun	nping ra	ate:
			Seal:	to, o n	<i>t</i> 1		Liters/			
			from: 0 M	to: 0 N	Λ					ke: 0 M
			Screen Type:		n ID: 0 CM	ype	Pump : Type:	Installe	a	
			from: 0 M to: 0 M		ize: 0 CM	Pump	Model	:		
			Screen Type:		n ID: 0 CM ize: 0 CM	H.P.:				
			from: 0 M to: 0 M Screen Installation Method		EZE. O GNI	Any fi	urther p	oumpte	st infor	mation?
1			Fittings			1				
			Top:	Bottor	<u>n: </u>	1				
			Pack:							
1			Grain Size: Geophysical Log Taken:	Amou	int: U					
			Geophysical Log Taken: Retained on Files:			1				
			Additional Test and/or Pur	p Data		7				
			Chemistries taken By Drille	r: No						
			Held: 0		ments Held: 1	4				
1		-	Pitless Adapter Type:			1				
			Drop Pipe Type: Length: M	Diame	eter: CM					
			Comments:			7				
						_				
Į.			7. Contractor Certifi							
1										
			Driller's Name: Certification No.:	UNKI VC03	NOWN DRILLER					

The data contained in this	Well Drilling I	er. The province disclaims	Well I.D.: 0437650 Map Verified: Map Date Report 1974/08/20
Alberta r Environment	esponsibility for its accuracy		Received: Measurements: Metric
1. Contractor & Well Owner Informat	ion		2. Well Location
Company Name:	Dri	illing Company Approval No.:	1/4 or Sec Twp Rge Westof
FORRESTER WATER WELL DRILLING (1981)		18 estal Code:	LSD M NW 04 040 02 5
Mailing Address: City or Tow RR 1 RED DEER	• • •	istal Code:	Location in Quarter
	on Identifier:		0 M from Boundary
PURNELL, DEL. C.		estal Code:	0 M from Boundary Lot Block Plan
P.O. Box Number: Mailing Add 239 ECKVILLE		M 0X0	
City; Province:		ountry:	Well Elev: How Obtain:
			M Not Obtain 6. Well Yield
3. Drilling Information		Proposed well use:	Test Date Start Time:
Type of Work: New Well Reclaimed Well		Domestic & Stock	(yyyy/mm/dd):
Date Reclaimed: Mater	als Used:	Anticipated Water	1974/05/27 11:00 AM Test Method: Bailer
Method of Drilling: Cable Tool Flowing Well: No Rate:	Litoro	Requirements/day 0 Liters	Non pumping 6.1 M
Gas Present: No Oil Pr	esent: No		static level:
4. Formation Log	5. Well Completion		Rate of water 177.29 removal: Liters/Min
Depth	Date Started(yyyy/mm/dd):	Date Completed	Depth of 19.81 M
from ground Lithology Description	1974/05/27	(yyyy/mm/dd): 1974/05/29	pump intake:
level	Well Depth: 38.1 M	Borehole Diameter: 0 CM	Water level at M end of
(meters)	Casing Type: Steel	Liner Type: Steel	-pumping:
7.92 Yellow Sandy Clay & Rocks 14.94 Gray Soft Shale	Size OD: 17.78 CM Wall Thickness: 0.59 CM	Size OD: 14.12 CM Wall Thickness: 0.8 CM	Distance from top of CM
17.68 Brown Soft Sandstone	Was TrickHess, 0.09 Civi	Top: 0 M Bottom: 38.1	casing to ground
20.42 Blue Sandy Shale	Bottom at: 24.69 M	M Bottom: 00:1	Depth To water level (meters)
24.08 Gray Shale & Sandy Stringers	Perforations	Perforations Size:	Elapsed Time Drawdown Minutes;Sec Recovery
26.82 Blue Gray Shale 28.65 Gray Sandy Shale	from: 21.03 M to: 38.1 M	0.64 CM x 15.24 CM	Total Drawdown: 0 M
29.87 Gray Hard Sandstone	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM 0 CM x 0 CM	if water removal was less than 2 hi
38.1 Gray Shale & Sandy Stringers	Perforated by: Torch		duration, reason why:
	Seal: Driven from: 0 M Seal:	to: 24.69 M	
	from: 0 M Seal:	to: 0 M	Recommended pumping rate: 0 Liters/Min
	from: 0 M	to: 0 M	Recommended pump intake: 0 M Type Pump Installed
	Screen Type: from: 0 M to: 0 M	Screen ID: 0 CM Slot Size: 0 CM	Pump Type:
o vivilla de la constanta de l	Screen Type:	Screen ID: 0 CM	Pump Model:
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.: -Any further pumptest information?
	Screen Installation Method Fittings	1:	1
*	Top:	Bottom:	was a second
	Pack:		
	Grain Size: Geophysical Log Taken:	Amount:	1
	Retained on Files:		
	Additional Test and/or Pun	np Data	
	Chemistries taken By Drille Held: 2	er: Yes Documents Held: 3	
	Pitless Adapter Type:		one to the second secon
	Drop Pipe Type: Length: M	Diameter: CM	
	Comments:	Diameter. OM	
	DRILLER REPORTS SOF BEARING @ : 49-58', 94-' FROM 69-81', SEAL @ 81	125', LINER INSIDE CASING	
	7. Contractor Certifi	ication	
	Driller's Name: Certification No.:	UNKNOWN DRILLER in accordance with the Wate	,

Alberta The data contained in this r	Well Drilling R report is supplied by the Drille esponsibility for its accuracy.	ep r. The	ort province disclaims	Well I.D.: Map Verified: Date Report Received: Measurements:	0478911 Not Verified 1969/10/23 Metric
1. Contractor & Well Owner Informat	ion			2. Well Local	<u></u>
Company Name: UNKNOWN DRILLER	999		mpany Approval No.:	: 1/4 or Sec T LSD	wp Rge Westof M
Mailing Address: City or Tow	n: Pos	tal Co	de:		40 02 5
UNKNOWN UNKNOWN				Location in Quar 0 M from	ter Boundary
WellOwner's Name: Well Location RUSSELL, ALLAN	on Identifier:			0 M from	Boundary
P.O. Box Number: Mailing Add	iress: Pos	tal Co	de:	Lot Block	
City: Province:	Соц	ntry:		Well Elev: M	How Obtain: Not Obtain
3. Drilling Information				6. Well Yield	
Type of Work: Chemistry			Proposed well use:	Test Date	Start Time:
Reclaimed Well			Domestic Anticipated Water	(yyyy/mm/dd): 1969/10/23	11:00 AM
Date Reclaimed: Mater Method of Drilling: Unknown	ials Used:		Anticipated vvater Requirements/day	Test Method:	
Flowing Well: Rate:	Liters		0 Liters	Non pumping	18.29 M
Gas Present: No Oil Pr	esent: No			static level: Rate of water	Liters/Min
4. Formation Log	5. Well Completion	<u> </u>	Na	removal:	
Depth from	Date Started(yyyy/mm/dd):		Completed mm/dd):	Depth of	0 M
ground Lithology Description				pump intake: Water level at	M
level	Well Depth: 36.58 M		ole Diameter: 0 CM	end of	
(meters)	_Casing Type: Size OD: 0 CM	Liner) ype: DD: 0 CM	pumping:	
	Wall Thickness: 0 CM		hickness: 0 CM	Distance from to casing to ground	
	Bottom at: 0 M	Top: 0) M Bottom: 0 M	level:	er level (meters)
	Perforations	Perfor	ations Size:		ed Time
	from: 0 M to: 0 M	0 CM	x 0 CM	Drawdown Mini Total Drawdowr	ites:Sec Recovery
	from: 0 M to: 0 M		x 0 CM x 0 CM		was less than 2 hr
	from: 0 M to: 0 M Perforated by:	U CIVI	XUCM	duration, reasor	
	Seal: from: 0 M	to: 0 N	Λ		
	Seal:			Recommended	pumping rate: 0
	from: 0 M Seal:	to: 0 N	И	Liters/Min	
	from: 0 M	to: 0 1			pump intake: 0 M
	Screen Type:		n ID: 0 CM	Type Pump Inst Pump Type:	alled
	from: 0 M to: 0 M Screen Type:		ize: 0 CM n ID: 0 CM	Pump Model:	
	from: 0 M to: 0 M		ize: 0 CM	H.P.:	ptest information?
	Screen Installation Method:			Arry luraner puil	ptest information:
	Fittings Top:	Botto	n;		
	Pack:	Amai	unt:		
	Grain Size: Geophysical Log Taken:	Amou	11111.		
	Retained on Files: Additional Test and/or Pum	n Deta			
H	Chemistries taken By Drille		ı		
	Held: 1	Docu	ments Held: 1		
	Pitless Adapter Type: Drop Pipe Type:				
	Length: M	Diam	eter: CM	_	
	Comments:				
	7.0			-	
	7. Contractor Certific		<u>n</u> NOWN DRILLER	-	
	Driller's Name: Certification No.:			2	
I	This well was constructed i	n acco	roance with the water	ਤਾ ।	

Δ	Matar 1	Well Drilling	Dane		Well I.D.: Map Verified:	0478912 Field
<i>a</i>	vvalei v	wen binning	I Nobe	/ L rovince displaims	Date Report	· · · · · · · · · · · · · · · · · · ·
Alberta	ne data contained in this r	eport is supplied by the Desponsibility for its accura	iriller. The p	rovince disciairiis	Received:	1950/07/04
Environment		soponoiomy for its accord	.0,,		Measurements:	Metric
1. Contractor & W	ell Owner Informat				2. Well Locati	
Company Name:			Drilling Con	pany Approval No.:		
ERICKSON DRILLING	City or Towi		Postal Code	· · · · · · · · · · · · · · · · · · ·	LSD SE 04 04	.0 02 5
Mailing Address:	City of Town	1.	rostal Cout	5,	Location in Quarte	
WellOwner's Name:	Well Location	on Identifier:			0 M from	Boundary
RUSSELL, D.H.			. <u>. </u>		0 M from	Boundary Plan
P.O. Box Number:	Mailing Add	ress:	Postal Code	: :	Lot Block	Plati
City:	ECKVILLE Province:		Country:		Well Elev:	How Obtain:
Oity.	r rovinos.				961.95 M	Survey-Air
3. Drilling Informa	ation				6. Well Yield	
Type of Work: Federal		***************************************		roposed well use:	Test Date	Start Time:
Reclaimed Well	** * *			Domestic & Stock	(yyyy/mm/dd): 1950/07/04	11:00 AM
Date Reclaimed:		als Used:		Anticipated Water Requirements/day	Test Method:	11.00 /10
Method of Drilling: Drilli Flowing Well:	eo Rate:	Liters		Liters	Non pumping	18.29 M
Gas Present: No		esent: No	Affective		static level:	1 24 74 47
4. Formation Log		5. Well Completion	n		Rate of water removal:	Liters/Min
Depth		Date Started(yyyy/mm/d	L. Date Co	mpleted	Depth of	0 M
from	m	Date Startes(yyyymmia	· (yyyy/m		pump intake:	
ground Lithol level	ogy Description	Well Depth: 35.66 M	1941/01 Borehol	e Diameter: 0 CM	Water level at	M
(meters)		Casing Type: Galvanize	4		end of	Ī
<u> </u>		Steel	Liner T	/pe:	pumping: Distance from top	of CM
		Size OD: 5.08 CM		D: 0 CM	casing to ground	0, 0, 1
		Wall Thickness: 0 CM	Wall Th	ickness: 0 CM	level:	
		Bottom at: 0 M	Top: 0	M Bottom: 0 M	Depth To wate	
		Perforations		tions Size:		d Time es:Sec Recovery
		from: 0 M to: 0 M	0 CM x		Total Drawdown:	· · · · · · · · · · · · · · · · · · ·
		from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM x			vas less than 2 hr
		Perforated by:	O OIVI X	0 0101	duration, reason v	why:
		Seal:			1	
		from: 0 M	to: 0 M			
		Seal:			Recommended p	umping rate: 0
		from: 0 M Seal:	to: 0 M		Liters/Min	
		from: 0 M	to: 0 M		Recommended p	
		Screen Type:		ID: 0 CM	Type Pump Instal	lled
		from: 0 M to: 0 M		e: 0 CM	Pump Type: Pump Model:	
		Screen Type: from: 0 M to: 0 M		ID: 0 CM e: 0 CM	H.P.:	
		Screen Installation Meth		.e. 0 OW	Any further pump	test information?
		Fittings			1	
		Тор:	Bottom		4	
		Pack:	A	L.		
		Grain Size: Geophysical Log Taken	Amoun	C	-	
		Retained on Files:	١.			
		Additional Test and/or P	Pump Data		1	
		Chemistries taken By D			İ	
		Held: 0	Docum	ents Held: 1	4	
		Pitless Adapter Type: Drop Pipe Type:				
		Length: M	Diamet	er: CM		
		Comments:]	
		SURVEY REPORTS W	ATER IS C	EAR AND SOFT		
			4.1.C 4.1		-	
		7. Contractor Cert		OWN DRILLER		
		Driller's Name: Certification No.:	UNKIN	JVVN DRILLER		
		This well was constructed	ed in accord	lance with the Water	۲ ا	

A Water	Well Drilling	ı Report		Not Verified
The data contained in this	report is supplied by the D	Oriller. The province disclaims	Date Report . Received:	1969/06/09
Alberta Environment	esponsibility for its accura	асу.		Metric
1. Contractor & Well Owner Information	ion		2. Well Location	
Company Name:		Drilling Company Approval No.	: 1/4 or Sec Twp	Rge Westof
MOORES WW DRLG		M1-10-3	LSD 01 04 040	02 5
Mailing Address: City or Tow	n:	Postal Code:	Location in Quarter	
	on Identifier:		0 M from	Boundary
RUSSELL, ALLAN P.O. Box Number: Mailing Ado	drocc:	Postal Code:	0 M from Lot Block	Boundary Plan
305 SOX Number: Walling Add	11622.	rostal code.		
City: Province:		Country:		v Obtain: Obtain
2 D.::::			M Not 6. Well Yield	Obtain
3. Drilling Information Type of Work: New Well		Proposed well use:		Start Time:
Reclaimed Well		Domestic	(yyyy/mm/dd):	
	ials Used:	Anticipated Water Requirements/day	1969/05/01 Test Method: Pump	11:00 AM
Method of Drilling: Cable Tool Flowing Well: Rate:	Liters	0 Liters		18.9 M
	esent: No		static level:	
4. Formation Log	5. Well Completion	n		136.38 Liters/Min
Depth	Date Started(yyyy/mm/c	td). Date Completed		0 M
from	Date Otartod(yyyymmire	^{(yyyy} /mm/dd): 1969/05/01	pump intake:	
ground Lithology Description level	Well Depth: 38.1 M	Borehole Diameter: 0 CM		23.47 M
(meters)	Casing Type: Steel	Liner Type: Steel	end of pumping:	I
13.72 Light Brown Sand & Gravel	Size OD: 16.84 CM	Size OD: 14.12 CM	Distance from top of	CM
15.24 Gray Shale	Wall Thickness: 0 CM	Wall Thickness: 0 CM	casing to ground	1
20.42 Gray Soft Sandstone	Bottom at: 21.34 M	Top: 0 M Bottom: 38.1		
25.6 Shale 25.91 Water Bearing Coal	DOILO(1) at. 21.34 W	M	Depth To water lev Elapsed Ti	
30.18 Shale	Perforations	Perforations Size:	Drawdown Minutes:	1
30.78 Hard Rocks	from: 21.34 M to: 38.1 N	M 0 CM x 0 CM 0 CM x 0 CM	Total Drawdown: 4.5	7 M
34.44 Shale	from: 0 M to: 0 M from: 0 M to: 0 M	0 CM x 0 CM	if water removal was	
34.75 Gray Hard Rocks	Perforated by:	O OM X O OM	duration, reason why	: [
38.1 Shale	Seal: Driven		1	1
	from: 0 M	to: 21.34 M		
	Seal: from: 0 M	to: 0 M	Recommended pump	ping rate: 0
	Seal:	io. 5 14	Liters/Min	
	from: 0 M	to: 0 M	Recommended pump Type Pump Installed	
	Screen Type:	Screen ID: 0 CM	Pump Type:	
	from: 0 M to: 0 M Screen Type:	Slot Size: 0 CM Screen ID: 0 CM	Pump Model:	
	from: 0 M to: 0 M	Slot Size: 0 CM	H.P.:	
	Screen Installation Meth		Any further pumptest	information?
	Fittings			
	Top:	Bottom:	_	
	Pack: Grain Size:	Amount:	1	
	Geophysical Log Taken			
	Retained on Files:		_	
	Additional Test and/or F		1	
	Chemistries taken By D	riller: Yes Documents Held: 2		
	Held: 1 Pitless Adapter Type:	Documents Held. 2		
	Drop Pipe Type:			
	Length: M	Diameter: CM		
	Comments:	**************************************		
	DRILLER REPORTS W	ATER IS MEDIUM HARD		
	7. Contractor Cer	tification	┪	:
	Driller's Name:	UNKNOWN DRILLER	┪	
	Certification No.:			
		ed in accordance with the Wate	er l	

ADDENINTY C



Pumping Test - Water Level Data

Page 1 of 2

Project: Skyy Country and RV Park

Number: 113928105

Client: Frank Wilson

Location: Lsd.15-34-39-2-W.5

Pumping Test: Test of Production Well

Pumping well: Well 1

Test conducted by: Alken Basin Drilling Ltd.

Test date: 3/28/2008

Discharge rate: 425.7 [m³/d]

Radial distance to PW [m]: -

West Well

servatio	servation well: Well 1		Static water level [m]: 26.91	
	Time [min]	Water Level [m]	Drawdown [m]	
1	2	26.932	0.023	
2	4	28.01	1.101	
3	6	28.225	1.316	
4	8	28.303	1.394	
5	10	28.342	1.433	
6	12	28.355	1.446	
7	14	28.365	1.456	
8	16	28.363	1.454	
9	18	28.371	1.462	
10	20	28.374	1.465	
11	24	28.378	1.469	
12	30	28.392	1.483	
13	40	28.397	1.488	
14	50	28.413	1.504	
15	60	28.421	1.512	
16	80	28.446	1.537	
17	100	28.469	1.56	
18	120	28.476	1.567	
19	140	28.498	1.589	
20	160	28.515	1.606	
21	180	28.532	1.623	
22	210	28.555	1.646	
23	240	28.571	1.662	
24	270	28.592	1.683	
25	300	28.615	1,706	
26	360	28.652	1.743	
27	420	28.688	1.779	
28	480	28.719	1.81	
29	540	28.75	1.841	
30	600	28.773	1.864	
31	660	28.804	1.895	
32	720	28.821	1.912	
33	840	28.881	1.972	
34	960	28.919	2.01	
35	1080	28.961	2.052	
36	1200	28.996	2.087	
37	1320	29.035	2.126	
38	1440	29.075	2.166	
39	1680	29.121	2.212	
40	1920	29.181	2.272	
41	2280	29.231	2.322	
42	2640	29.277	2.368	
43	2880	29.318	2.409	
44	3240	29.362	2.453	
45	3600	29.391	2.482	
	3960	29.41	2.501	



Pumping Test - Water Level Data

Page 2 of 2

Project: Skyy Country and RV Park

Number: 113928105

Client: Frank Wilson

	Time [min]	Water Level [m]	Drawdown [m]
47	4298	29.47	2.561
48	4300	28.586	1.677
49	4302	28.417	1.508
50	4304	28.312	1.403
51	4306	28.247	1.338
52	4308	28.198	1.289
53	4310	28.162	1.253
54	4312	28.131	1.222
55	4314	28.11	1.201
56	4316	28.089	1.18
57	4318	28.064	1.155
58	4322	28.04	1.131
59	4328	27.998	1.089
60	4334	27.97	1.061
61	4338	27.953	1.044
62	4348	27.922	1.013
63	4358	27.892	0.983
64	4368	27.87	0.961
65	4378	27.852	0.943
66	4398	27.819	0.91
67	4418	27.794	0.885
68	4438	27.772	0.863
69	4448	27.756	0.847
70	4478	27.723	0.814
71	4508	27.70	0.791
72	4538	27.669	0.76
73	4568	27.644	0.735
74	4598	27.628	0.719
75	4658	27.588	0.679
76	4718	27.553	0.644
77	4778	27.522	0.613
78	4838	27.501	0.592
79	4898	27.474	0.565
80	4958	27.453	0.544
81	5018	27.429	0.52
82	5138	27.391	0.482
83	5258	27.354	0.445
84	5378	27.331	0.422
85	5498	27.302	0.393
86	5738	27.285	0.376
87	5978	27.277	0.368
88	6098	27.258	0.349
89	6338	27.237	0.328
90	7198	27.204	0.295



Pumping Test - Water Level Data

Page 1 of 2

Project: Skyy Country and RV Park

Frank Wilson

Number: 113928105

Client:

Location: Lsd.15-34-39-2-W.5

Pumping Test: Test of Production Well

Pumping well: Well 1

Test conducted by: Alken Basin Drilling Ltd.

Test date: 3/28/2008

Discharge: variable, average rate 425.6 [m³/d]

Radial distance to PW [m]: 60

Observa	ation well: Well 2	tatic water level [m]: 37.65	
	Time [min]	Water Leve	l Drawdown [m]
1	2	37.654	0.002
2	4	37.654	0.002
3	6	37.652	0.00
4	8	37.654	0.002
5	10	37.654	0.002
6	12	37.652	0.00
7	14	37.652	0.00
8	16	37.652	0.00
9	18	37.652	0.00
10	20	37.652	0.00
11	30	37.652	0.00
12	40	37.652	0.00
13	50	37.652	0.00
14	60	37.652	0.00
15	80	37.65	-0.002
16	100		
		37.652	0.00
17	130	37.652	0.00
18 19	160	37.652	0.00
	200	37.654	0.002
20	260	37.652	0.00
21	320	37.65	-0.002
22	380	37.65	-0.002
23	440	37.652	0.00
24	500	37.654	0.002
25	560	37.656	0.004
26	620	37.656	0.004
27	740	37.656	0.004
28	860	37.652	0.00
29	980	37.65	-0.002
30	1100	37.65	-0.002
31	1220	37.656	0.004
32	1340	37.664	0.012
33	1440	37.668	0.016
34	1680	37.668	0.016
35	1920	37.674	0.022
36	2160	37.684	0.032
37	2400	37.68	0.028
38	2640	37.684	0.032
39	2880	37.692	0.04
40	3240	37.688	0.036
41	3360	37.686	0.034
42	3600	37,695	0.043
43	3840	37.697	0.045
44	3960	37.709	0.057
45	4298	37.733	0.081
46	4300	37.731	0.079



Pumping Test - Water Level Data

Page 2 of 2

Project: Skyy Country and RV Park

Number: 113928105

Client: Frank Wilson

	Time [min]	Water Level [m]	Drawdown [m]
47	4302	37.733	0.081
48	4304	37.733	0.081
49	4306	37.733	0.081
50	4308	37.733	0.081
51	4310	37.733	0.081
52	4312	37.733	0.081
53	4314	37.733	0.081
54	4316	37.733	0.081
55	4318	37.735	0.083
56	4328	37.735	0.083
57	4338	37.733	0.081
58	4348	37.735	0.083
59	4358	37.735	0.083
60	4368	37.735	0.083
61	4378	37.735	0.083
62	4408	37.737	0.085
63	4438	37.737	0.085
64	4448	37.737	0.085
65	4478	37.735	0.083
66	4508	37.733	0.081
67	4538	37.733	0.081
68	4598	37.731	0.079
69	4658	37.735	0.083
70	4718	37.737	0.085
71	4778	37.739	0.087
72	4838	37.741	0.089
73	4898	37.745	0.093
74	4958	37.747	0.095
75	5078	37.743	0.091
76	5198	37.739	0.087
77	5318	37.739	0.087
78	5438	37.741	0.089
79	5558	37.747	0.095
80	5678	37.762	0.11
81	5798	37.768	0.116
82	6038	37.776	0.124
83	6278	37.782	0.13
84	6284	37.782	0.13



Water Level

[m]

39.088

Pumping Test - Water Level Data

Page 1 of 2

Project: Skyy Country RV Park

Number: 113928105

Client: Frank Wilson

Location: Lsd. 15-34-39-2-W.5

Pumping Test: Test of East Well

Pumping well: Well 1

Test conducted by: Alken Basin Drilling Ltd.

Time

[min]

2

Test date: 4/11/2008

Discharge: variable, average rate 199.59 [m³/d]

Observation well: Well 1

1

39

40

41

42

43

44

45

46

1320

1440

1560

1680

1758

1760

1762

1764

Static water level [m]: 37.91

Drawdown

[m]

1.177

1.548

1.546

1.548

1.55

1.556

0.297

0.279

0.265

Radial distance to PW [m]: -

'		30.000	1.177
2	4	39.107	1.196
3	6	39.121	1.21
4	8	39.121	1.21
5	10	39.131	1.22
6	12	39.137	1.226
7	14	39.143	1.232
8	16	39.151	1.24
9	18	39.151	1.24
10	20	39.156	1.245
11	24	39.166	1.255
12	30	39.176	1.265
13	40	39.186	1.275
14	50	39.196	1.285
15	60	39.204	1.293
16	70	39.217	1.306
17	80	39.223	1.312
18	90	39.225	1.314
19	110	39.235	1.324
20	130	39.237	1.326
21	150	39.245	1.334
22	180	39.259	1.348
23	210	39.265	1.354
24	240	39.28	1,369
25	270	39.288	1.377
26	300	39.30	1.389
27	360	39.32	1.409
28	420	39.337	1.426
29	480	39.361	1.45
30	540	39.369	1.458
31	600	39.381	1.47
32	660	39.40	1.489
33	720	39.40	1.489
34	780	39.408	1.497
35	840	39.418	1.507
36	900	39.434	1.523
37	1080	39.449	1.538
38	1200	39.459	1.548

39.459

39.457

39.459

39.461

39.467

38.208

38.19

38.176





Pumping Test - Water Level Data

Page 2 of 2

Project: Skyy Country RV Park

Number: 113928105

Client: Frank Wilson

	Time [min]	Water Level [m]	Drawdown [m]
47	1766	38.164	0.253
48	1768	38.15	0.239
49	1770	38.14	0.229
50	1772	38.133	0.222
51	1774	38.13	0.219
52	1776	38.125	0.214
53	1780	38.122	0.211
54	1784	38.118	0.207
55	1790	38.112	0.201
56	1800	38.104	0.193
57	1810	38.096	0.185
58	1820	38.092	0.181
59	1830	38.087	0.176
60	1840	38.083	0.172
61	1850	38.079	0.168
62	1860	38.075	0.164
63	1880	38.068	0.157
64	1900	38.066	0.155
65	1920	38.059	0.148
66	1940	38.057	0.146
67	1960	38.051	0.14
68	1980	38.046	0.135
69	2000	38.04	0.129
70	2030	38.032	0.121
71	2060	38.027	0.116
72	2120	38.017	0.106
73	2181	38.009	0.098
74	2240	38.00	0.089
75	2300	37.992	0.081
76	2360	37.99	0.079
77	2420	37.988	0.077
78	2480	37.986	0.075
79	2540	37.988	0.077
80	2580	37.988	0.077
81	2700	37.986	0.075
82	2820	37.978	0.067
83	2940	37.965	0.054
84	3060	37.957	0.046
85	3180	37.959	0.048
86	3200	37.967	0.056
87	3320	37.982	0.071
88	3440	37.986	0.075
89	3560	37.969	0.058
90	3680	37.967	0.056
91	3800	37.961	0.05
92	3868	37.957	0.046
	<u> </u>		



Pumping Test - Water Level Data

Page 1 of 2

Project: Skyy Country RV Park

Number: 113928105

Client: Frank Wilson

Location: Lsd. 15-34-39-2-W.5

Pumping Test: Test of East Well

Pumping well: East Well

Test conducted by: Alken Basin Drilling Ltd.

Test date: 4/11/2008

Discharge: variable, average rate 199.59 [m³/d]

Observation well: West Well

Static water level [m]: 0.00

Radial distance to PW [m]: 42.61

Observation well: West Well		Static water level [m]: 0.00	
	Time [min]	Water Level [m]	Drawdown [m]
1	2	0.002	0.002
2	4	0.002	0.002
3	6	-0.004	-0.004
4	8	0.004	0.004
5	10	0.004	0.004
6	14	0.004	0.004
7	20	0.004	0.004
8	30	0.004	0.004
9	40	0.00	0.00
10	50	0.008	0.008
11	60	0.008	800.0
12	80	0.01	0.01
13	100	0.01	0.01
14	120	0.01	0.01
15	150	0.014	0.014
16	180	0.013	0.013
17	210	0.012	0.012
18	240	0.01	0.01
19	300	0.008	800.0
20	360	0.008	0.008
21	420	0.006	0.006
22	480	0.004	0.004
23	540	0.006	0.006
24	600	0.006	0.006
25	660	0.004	0.004
26	720	0.004	0.004
27	780	0.002	0.002
28	900	0.008	0.008
29	1020	0.006	0.006
30	1240	0.006	0.006
31_	1260	0.001	0.001
32	1380	0.016	0.016
33	1500	0.012	0.012
34	1620	0.019	0.019
35	1758	0.025	0.025
36	1760	0.025	0.025
37	1762	0.025	0.025
38	1764	0.042	0.042
39	1766	0.025	0.025
40	1768	0.023	0.023
41	1772	0.023	0.023
42	1778	0.023	0.023
43	1788	0.023	0.023
44	1798	0.023	0.023
45	1808	0.025	0.025
46	1818	0.025	0.025



Pumping Test - Water Level Data

Page 2 of 2

Project: Skyy Country RV Park

Number: 113928105

Frank Wilson

Stantec				
	Time	Water Level	Drawdown	
	[min]	[m]	[m]	
47	1838	0.023	0.023	
48	1868	0.023	0.023	
49	1888	0.041	0.041	
50	1908	0.021	0.021	
51	1938	0.021	0.021	
52	1968	0.023	0.023	
53	1998	0.023	0.023	
54	2058	0.031	0.031	
55	2118	0.029	0.029	
56	2178	0.031	0.031	
57	2238	0.031	0.031	
58	2298	0.031	0.031	
59	2358	0.029	0.029	
60	2418	0.027	0.027	
61	2478	0.035	0.035	
62	2538	0.021	0.021	
63	2598	0.017	0.017	
64	2658	0.017	0.017	
65	2718	0.016	0.016	
66	2778	0.017	0.017	
67	2838	0.019	0.019	
68	2958	0.027	0.027	
69	3078	0.023	0.023	
70	3198	0.021	0.021	
71	3418	0.004	0.004	
72	3638	0.00	0.00	
73	3758	-0.004	-0.004	
74	3878	0.008	0.008	
75	3998	0.006	0.006	
76	4118	0.01	0.01	
77	4238	0.008	0.008	
78	4358	0.014	0.014	
79	4478	0.008	0.008	

YDDEMUTX D



Website: www.wshlabs.com

Ilken Basin Drilling Phone: (403) 748-4340 Lab Number: 60009

ox 47 Fax: (403) 748-2880

entley, AB TOC 0J0 Email: PO Number:

ttention: Sampled By: Wade Balon | Date Sampled: 4/1/2008

 ocation:
 New West Well
 Date Received:
 4/2/2008

 Legal:
 NE-34-39-2-W5
 Date Reported:
 4/9/2008

Legan	146-04-00-740		Date Reported: 470/2000
nalyte	Units	Result	Canadian Drinking Water Guideline Maximum
alcium	mg/L	65.6	No Guideline
on	mg/L	< 0.03	0.3
lagnesium	mg/L	52.9	No Guideline
langanese	mg/L	< 0.01	0.05
otassium	mg/L	1.9	No Guideline
odium	mg/L	30	200
icarbonates	mg/L	466	No Guideline
romides	mg/L	< 0.1	No Guideline
arbonates	mg/L	O .	No Guideline
hlorides	mg/L	4.3	250
luorides	mg/L	0.08	1.5
itrates as N	mg/L	0.1	10
itrites as N	mg/L	< 0.02	1
O ₃ + NO ₂ as N	mg/L	0,1	No Guideline
ulfates	mg/L	42	500
arameter	Units	Result	Canadian Drinking Water Guideline Maximum
lectrical Conductivity	µS/cm	723	No Guideline
귀	pΗ	8.11	6.5 - 8.5
ardness (as CaCO ₃)	mg/L	382	No Guideline
otal Alkalinity (as CaCO ₃)	mg/L	382	No Guideline
-Alkalinity (as CaCO ₃)	mg/L	0	No Guideline
ydroxide (as CaCO₃)	.mg/L	0	No Guide ine
otal Dissolved Solids	₩.		
	ma/L	426	500
ulfides as S	mg/L ma/L	426	500
ulfides as S urbidity	mg/L	426	
urbidity	mg/L NTU	426 -	500
urbidity otal Organic Carbon	m g /L NTU mg/L	42 6 - - -	500 0:05 1
urbidity otal Organic Carbon otal Kjeldahl Nitrogen	mg/L NTU mg/L mg/L	42 6 - - - -	500 0.05 1 No Guideline
urbidity otal Organic Carbon otal Kjeldahl Nitrogen mmonia Nitrogen	mg/L NTU mg/L mg/L mg/L	42 6 - - - -	500 0:05 1 No Guideline No Guideline
urbidity otal Organic Carbon otal Kjeldahl Nitrogen mmonia Nitrogen otal Phosphorus as P	mg/L NTU mg/L mg/L	42 6	500 0:05 1 No Guideline No Guideline No Guideline
urbidity otal Organic Carbon otal Kjeldahl Nitrogen mmonia Nitrogen otal Phosphorus as P	mg/L NTU mg/L mg/L mg/L mg/L	426 - - - - - Result	500 0:05 1 No Guideline No Guideline No Guideline No Guideline
urbidity otal Organic Carbon otal Kjeldahl Nitrogen mmonia Nitrogen otal Phosphorus as P henol	mg/L NTU mg/L mg/L mg/L mg/L		500 0.05 1 No Guideline No Guideline No Guideline No Guideline No Guideline
urbidity otal Organic Carbon otal Kjeldahl Nitrogen mmonia Nitrogen otal Phosphorus as P henol icrobiology	mg/L NTU mg/L mg/L mg/L mg/L mg/L	- - - Result	500 0.05 1 No Guideline No Guideline No Guideline No Guideline No Guideline Canadian Drinking Water Guideline Maximum

Sum of Cations	8.97	TDS / EC Ratio	0.59
Sum of Anions	8.65	SAR	0.67
Ion Releace	1.04	Saturation Index	4.1



Website: www.wshlabs.com

Iken Basin Drilling

Phone:

(403) 748-4340

Lab Number:

60009

ox 47 entley, AB TOC 0J0

Fax: Email: (403) 748-2880

PO Number:

ttention: :lient ID: ocation:

Legal:

Frank Wilson New West Well NE-34-39-2-W5

Sampled By: Date Sampled: Date Received: Wade Balon 4/1/2008 4/2/2008

Date Reported:

4/9/2008

race Metals	Units	Result	Canadian Drinking Water Guideline Maximum
eryliium	µg/L	< 0.05	No Guideline
oron	µg/L	52.5	5000
uminum	hā\r Ha\r	1.5	100
nosphorus	μg/L	4.9	No Guideline
tanium	μg/L	< 0.2	No Guideline
anadium	ha\r ha\r	0.2	No Guideline
aromium	ha\r ha\r	< 0.1	50
obalt	hã\r hã\r	< 0.1	No Guideline
ckel		0.3	No Guideline
· · · · · · · · · · · · · · · · · · ·	µg/L		
opper nc	µg/L	< 0.08	1000
	µg/L.	6.4	5000
senic	µg/L	0.04	10
elenium.	µg/L	< 0.04	10
rontium	μg/L	628	No Guideline
rconium	hã/r	0.01	No Guideline
olybdenum	µg/L	3.6	No Guideline
ver	μg/L	< 0.04	No Guideline
admium	μg/L	< 0.05	5
**	µg/L	< 0.02	No Guideline
itimony	μg/L	< 0.3	6
illerium	μg/L	< 0.07	No Guideline
irium:	µg/L	67.8	1000
ingsten	μg/L	< 0.04	No Guideline
ercury	μg/L	< 0.05	1
ıallıum	µg/L	< 0.03	No Guideline
ad	µg/L	< 0.1	10
oïijum:	μ g/L	< 0.03	No Guideline
antum:	µg/L	3.4	20

Certified By:

redited by CAEAL to ISO/IEC 17025 for specific tests.

R = Sodium Adsorption Ratio, TNTC = Too Numerous To Count (>200 colonies), < denotes less than detection limit results above are related only to the items analyzed. Total Dissolved Solids is determined by calculation:



p. 0

Website: www.wshlabs.com

Alken Basin Drilling Phone: (403) 748-4340 Lab Number: 60096

Fax: (403) 748-2880 Email:

il: PO Number:

Attention:Sampled By:JohnClient ID:Frank WilsonDate Sampled:4/16/2008Location:East WellDate Received:4/17/2008

Location:	East Well		Date Reported: 4/24/2008
Legal:	NE-34-39-2-W5		Date Reported: 4/24/2008
Analyte	Units	Result	Canadian Drinking Water Guideline Maximum
Dalcium	mg/L	68.4	No Guideline
ron	mg/L	0.28	0.3
Vagnesium	mg/L	60.0	No Guideline
Vanganese:	mg/L	0.04	0.05
Potassium	mg/L	1.9	No Guideline
Sodium	mg/L	21	200
3icarbonates	mg/L	473	No Guideline
3romides	mg/L	< 0.1	No Guideline
Carbonates	mg/L	Ø :	No Guideline
Shlorides	mg/L	14.9	250
Fluorides	mg/L	0.09	1.5
Vitrates as N	mg/L	0.1	10
Vitrites as N	mg/L	< 0.02	7
VO ₃ + NO ₂ as N	mg/L	0.1	No Guideline
Sulfates	mg/L	27	500
Junates		•	
Parameter	Units	Result	Canadian Drinking Water Guideline Maximum
Electrical Conductivity	µS/cm	737	No Guideline
Нс	рН	8.13	65-85
Hardness (as CaCO ₃)	mg/L	418	No Guideline
Total Alkalinity (as CaCO ₅)	mg/L	388	No Guideline
P-Alkalinity (as CaCO ₃)	mg/L	_ 0	No Guideline
Hydroxide (as CaCO ₃)	mg/L	Ø	No Guideline
Total Dissolved Solids	mg/L	426	590
Sulfides as S	mg/L		0.05
Turbidity	NTU	•••	7
Total Organic Carbon	mg/£	44 3	No Guideline
Total Kjeldahi Nitrogen	mg/L	·**	No Guideline
Ammonia Nitrogen	mg/L		No Guideline
Total Phosphorus as P	mg/L	'æ	No Guideline
Phenol	mg/L	Mi.	No Guideline
rnenoi	11386		
Microbiology	Units	Result	Canadian Drinking Water Guideline Maximum
Total Coliform	CFU/100 mL	0	Zero
Escherichia Coliform	CFU/100 mL	Ö	Zero
Fecal Coliform	CFU/100 mL	-	Zéro

Sum of Cations	9.30	TDS / EC Ratio	0.58
Sum of Anions	8.75	SAR	0,45
Ion Balance	1.06	Saturation Index	1,1



Website: www.wshlabs.com

Uken Basin Drilling

Phone:

(403) 748-4340

Lab Number:

60096

ox 47 entley, AB TOC 0J0

Fax: Email:

(403) 748-2880

PO Number:

ttention: Client ID: .ocation:

Legal:

Frank Wilson East Well NE-34-39-2-W5

Sampled By: Date Sampled:

Date Received: Date Reported:

4/16/2008 4/17/2008 4/24/2008

John

race Metals	Units	Result	Canadian Drinking Water Guideline Maximum
eryllium	μg/L	< 0.05	No Guideline
oron	μg/L	243	5000
Juminum	μg/Ľ	3.3	100
hosphorus	μg/L	4.9	No Guideline
itanium	μg/L	< 0.2	No Guideline
'anadium	μg/L	< 0.08	No Guideline
hromium	μg/L	< 0.1	50
obalt	µg/L	0.5	No Guideline
lickel	µg/L	1.7	No Guideline
opper	μg/L	1.4	1000
inc	μg/L	5.6	5000
rsenic	μg/L	0.4	10
elenium	μg/L	17.2	10
trontium	μg/L	881	No Guideline
irconium	μg/L	0.1	No Guideline
lolybdenum	μg/L	6.8	No Guideline
ilver	μg/L	< 0.04	No Guideline
admium	μg/L	< 0.05	5
in	μg/L	< 0.02	No Guideline
ntimoriy	μg/L	0.8	6
ellerium	hg/L	< 0.07	No Guideline
erium	μg/L	84.8	1000
ungsten	μg/L	< 0.04	No Guideline
lercury	µg/L	< 0.05	. 1
hallium	µg/L	< 0.03	No Guideline
ead.	μg/L	< 0.1	10
horium	hā\r ha\r	< 0.03	No Guideline
ranium	μg/Ľ	6.2	20

ADDEMNTX E

WATER WELL QUESTIONNAIRE

Project Name Skyy Country Project No. 1139 28105
Date200 , Time
Owner's Name Nicole Jahrer Phone 405-748-4180
Owner's Address RRI Site 1 Box la Berstley Toc 000
Location, Legal: Lsd_NE_S_34_Twp_39_R_2_W.5
Location, GPS: 11 U Co 800 UTM 5809844 Elev
Well location: Pit ✓, Inside building, Near Dugout, Near barn
Other Not house
Total depth Casing Diam. 82 Casing Material Steel. Height above gnd 6
Casing wall thickness Completion zone to
Depth to water, measured Reported
DrillerYear drilled
Pump depth, HP
Intake depth of pumpHeight csg. above ground
Water quality: Hard, Med/, Soft, Rusty, Black,Smell, Other
Elect. ConductivitypHTemperature0 C. Water treated?
Taste: Good . Appearance Clear Gas present? Supply
Jse of well: Domestic ✓, Livestock (how many) , Industrial (type) , Poultry , Commercial Other
Seasonal use? YesNo_✓. Increase in use in last 5 years?
Other (specify) Estimated annual production

WATER WELL QUESTIONNAIRE

Project Name Skyy Country Project No. 1139a8105
Date200 , Time
Date 200, Time Owner's Name Analyze Hunt, RayMorse, Phone 748-419-6661 (D. Hovst Wescher, S. Address Site 1 RR 1 Box 30 Republic Toc OTO
Owner's Address Site 1 RRI I Box 30 Bently Tocoto
Location, Legal: Lsd NE S 34 Twp 39 R 3 W. 5
Location, GPS: <u>1111 0690770 117m 5809855</u> Elev.
Well location: Pit, Inside building, Near Dugout, Near barn
Otheron Janner Property
Total depthCasing Diam 555 Casing Material Sree! Height above gnd #
Casing wall thickness Completion zone to
Depth to water, measured Reported
Driller Avcan Well Ser Basin Year drilled
Pump depth, HP
Intake depth of pumpHeight csg. above ground
Water quality: Hard, Med, Soft _v_, Rusty, Black,Smell, Suphur.
Elect. ConductivitypHTemperature0 C. Water treated?
Taste: Supply Appearance Clear Gas present? Supply
Use of well: Domestic \checkmark , Livestock (how many) , Industrial (type) , Dairy , Poultry , Commercial Other
Seasonal use? YesNo_√. Increase in use in last 5 years?
Other (specify) Estimated annual production
Any dugouts or springs on property?

WATER WELL QUESTIONNAIRE

	Project Name Skyy Country Project No. 113928105
	Date200 , Time
	Owner's Name Brian Russell Phone 748-2013
	Owner's Address Box 305 ECWILL
	Location, Legal: Lsd SW S 4 Twp 40 R 2 W.5
	Location, GPS: 11 U 06 8 8 289 UTm 58 100 55 Elev.
	Well location: Pit, Inside building, Near Dugout, Near barn
	Other Eofhaise, *
•	Total depth Casing Diam. Casing Material Height above gnd
	Casing wall thickness Completion zone to
	Depth to water, measuredReported
	Driller Alken Basin Year drilled 1980.
	Pump depth N Pump make Submessible, , HP
	Intake depth of pumpHeight csg. above ground
	Water quality: Hard, Med, Soft, Rusty, Black, Smell, Other
·	Elect. ConductivitypHTemperature0 C. Water treated?
	Taste: No good Appearance Color Sometime Gas present? Supply
	Use of well: Domestic \(\), Livestock (how many) \(\), Industrial (type) \(\), Dairy \(\), Poultry \(\), Commercial \(\) Other
	Seasonal use? YesNo_✓. Increase in use in last 5 years?
	Other (specify) Estimated annual production
•	Any dugouts or springs on property? Job of source
2nd h	Vert.
	house.
- Lives	
- Casir	94'abq.
- 200 10	to' to water

WATER WELL QUESTIONNAIRE

	Project Name Skyy Country	Project No. 1139 a 8105	
	Date200 , Time		
	Owner's Name Brian Russell	Phone 748-2013	
٠,	Owner's Address Rox 305 ECKVILLE.		
	Location, Legal: Lsd SE S 4 Twp 40		
	Location, GPS: 114 0688881 UTm 958099	96Elev	
	Well location: Pit, Inside building ✓, Near Du	gout, Near barn	
	Other		
	Total depthCasing Diam Casing Material_	Stel Height above gnd Ø	
	Casing wall thickness Completion zone	,	
	Depth to water, measured Report	ed	
	DrillerYear	drilled	
	Pump depth Pump make	, HP	
	Intake depth of pumpHeight csg. above gro	ound	
	Water quality: Hard, Med, Soft, Rusty,	Black,Smell, Other	
·	Elect. Conductivity pH Temperature	⁰ C. Water treated?	
	Taste: Good Appearance Clear Gas presen	t? Supply	
	Use of well: Domestic, Livestock (how many)	_, Industrial (type), Other	
·	Seasonal use? YesNoNo Increase in use in last 5	·	
	Other (specify) Estimated	l annual production	
	Any dugouts or springs on property? Dugat east	of house.	
Well #	4		
-located behind sted - a livestock			

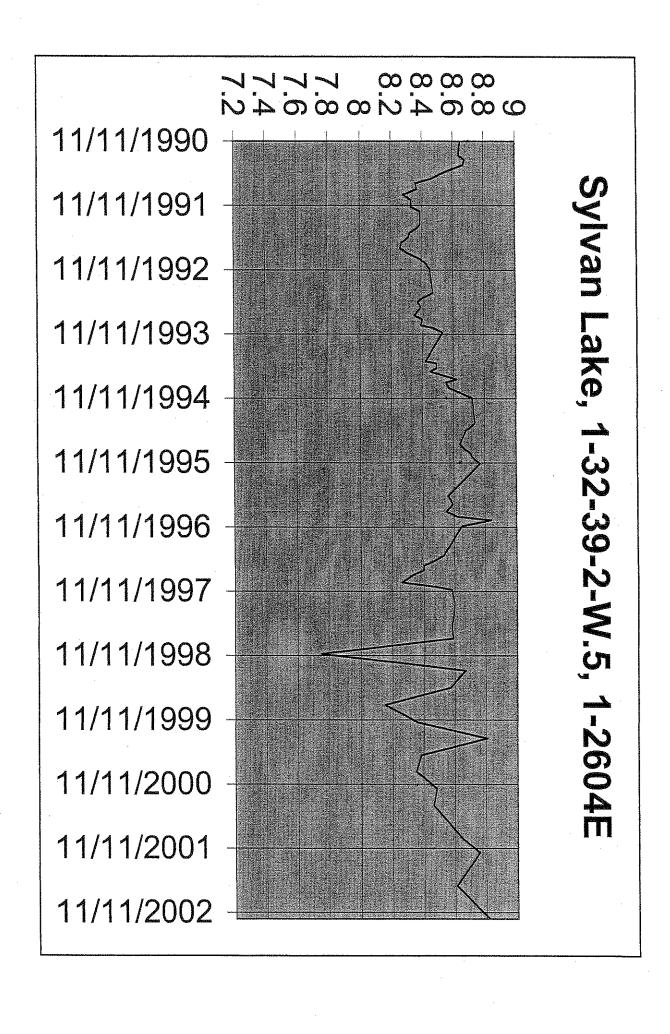
WATER WELL QUESTIONNAIRE

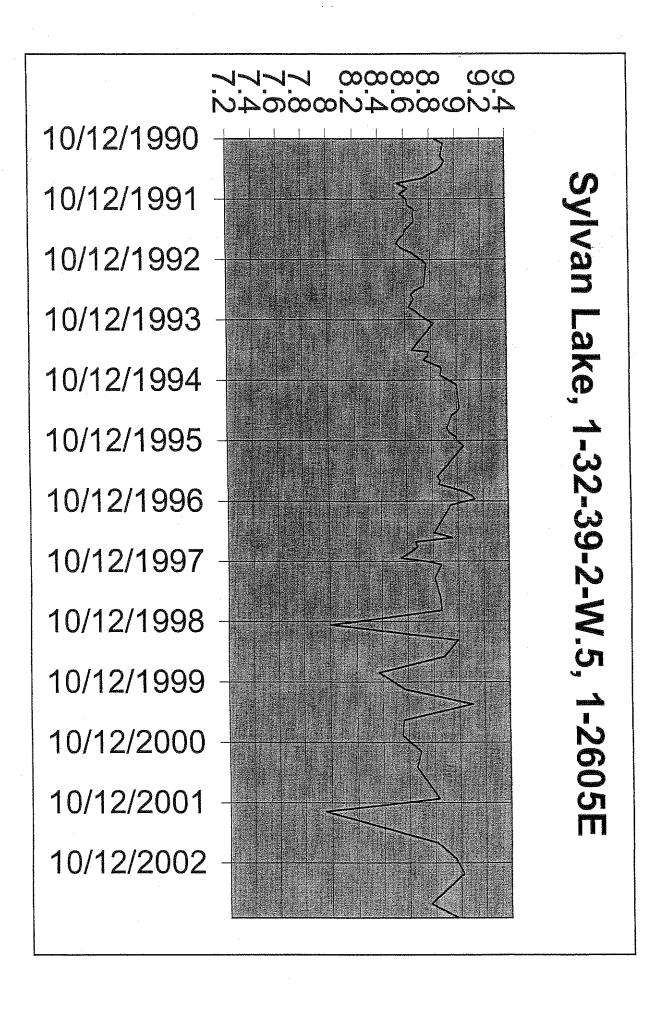
Project Name Skyy Country Project No. 1139 28105				
Date200 , Time				
Owner's Name Raiph Nores Phone 748-2000				
Owner's Address Box I Site I RRI Rentley				
Location, Legal: Lsd SW S 3 Twp 40 R 2 W.5				
Location, GPS: 11 U 0689351 WM 5810009 Elev. 986.6				
Well location: Pit, Inside building, Near Dugout, Near barn				
Other N of house				
Total depth Casing Diam. 44" Casing Material Steel Height above gnd 8"				
Casing wall thickness Completion zone to				
Depth to water, measuredReported_130'				
Driller Cliff Richmond Year drilled ~1982				
Pump depth, HP				
Intake depth of pumpHeight csg. above ground				
Water quality: Hard, Med. 🗸 , Soft, Rusty, Black,Smell, Other				
Elect. ConductivitypHTemperature0 C. Water treated?				
Taste: Good Appearance Clear Gas present? Supply				
Jse of well: Domestic ✓, Livestock (how many), Industrial (type), Dairy, Poultry, CommercialOther				
Seasonal use? YesNo_\(\subseteq\). Increase in use in last 5 years?				
Other (specify) Estimated annual production				
Any dugouts or springs on property?No				

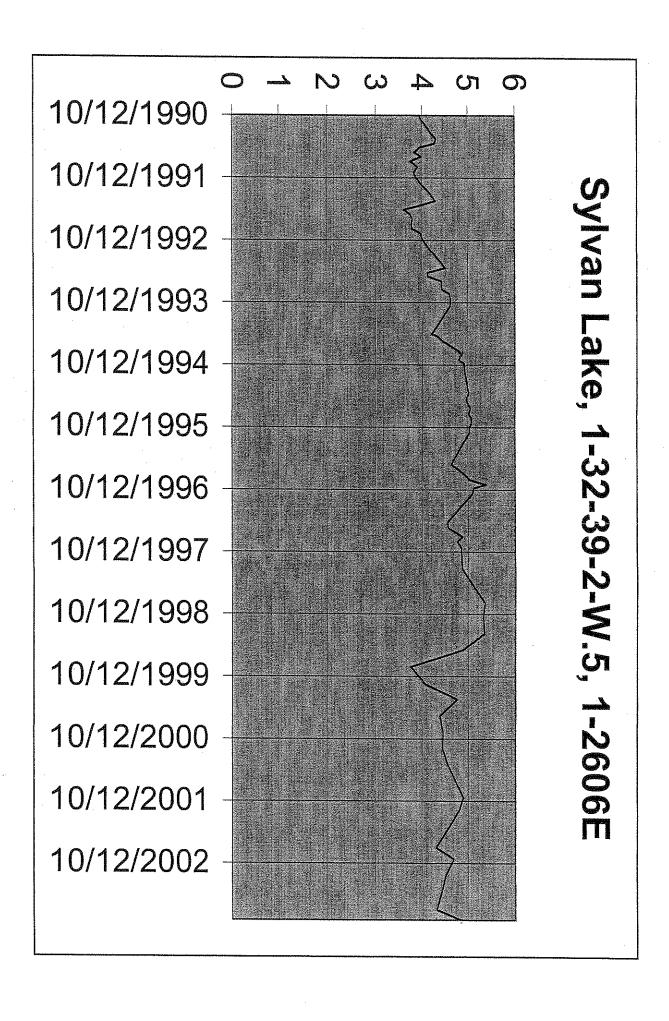
WATER WELL QUESTIONNAIRE

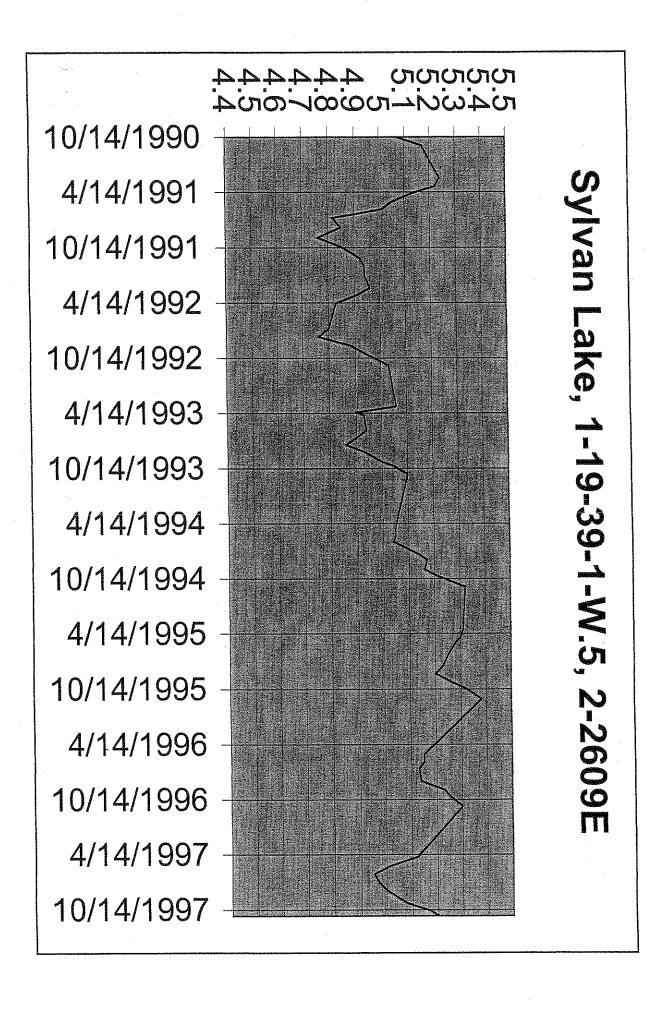
Project Name Skyy Courty Project	No. 1139 a8105		
Date200 , Time			
Owner's Name Roady Scerpnek Phone	748-2491		
Owner's Address RRI Box 177 Bentley Toc DI	-0		
Location, Legal: Lsd SE S 3 Twp 40 R			
Location, GPS: Notes 1988			
Well location: Pit, Inside building, Near Dugout			
Other NW of house.			
Total depth 380' Casing Diam. 62" Casing Material Secu	Height above gnd 29		
Casing wall thickness Completion zone to	· ·		
Depth to water, measured Reported 19			
Driller Alkan Basin Year drilled_			
Pump depth Pump make			
Intake depth of pumpHeight csg. above ground			
Water quality: Hard, Med. <a>	Smell,Other		
Elect. ConductivitypHTemperature0 C. V			
Taste: Good Appearance Clear Gas present?	Supply		
Jse of well: Domestic √, Livestock (how many), Indus Dairy, Poultry, Commercial C	strial (type), Other		
Seasonal use? YesNo Increase in use in last 5 years?			
Other (specify) Estimated annual			
Any dugouts or springs on property? No			

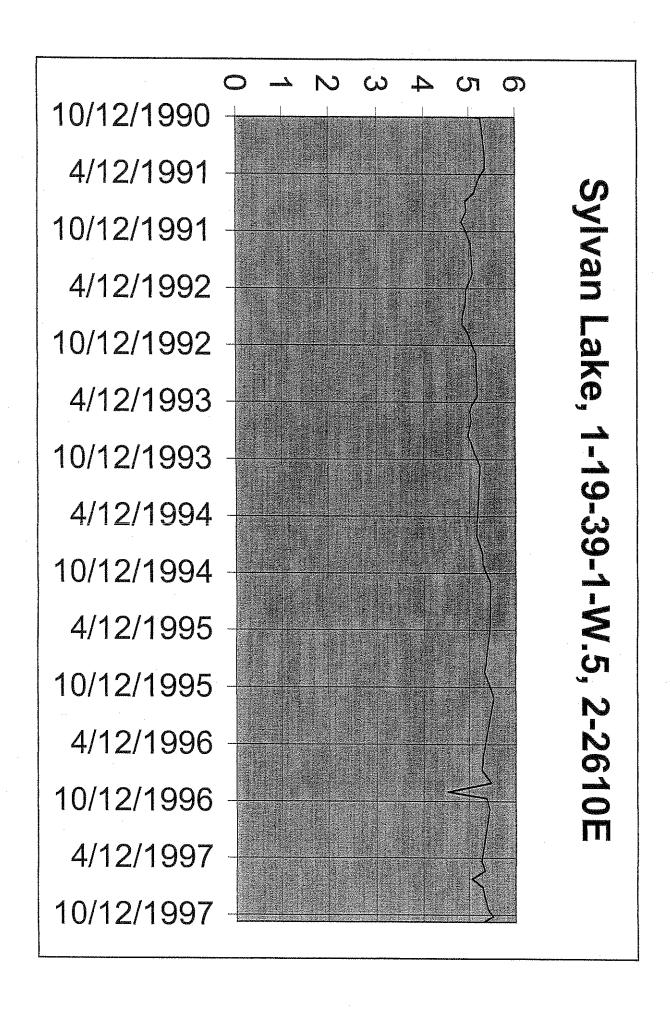
ADDEMNTX F

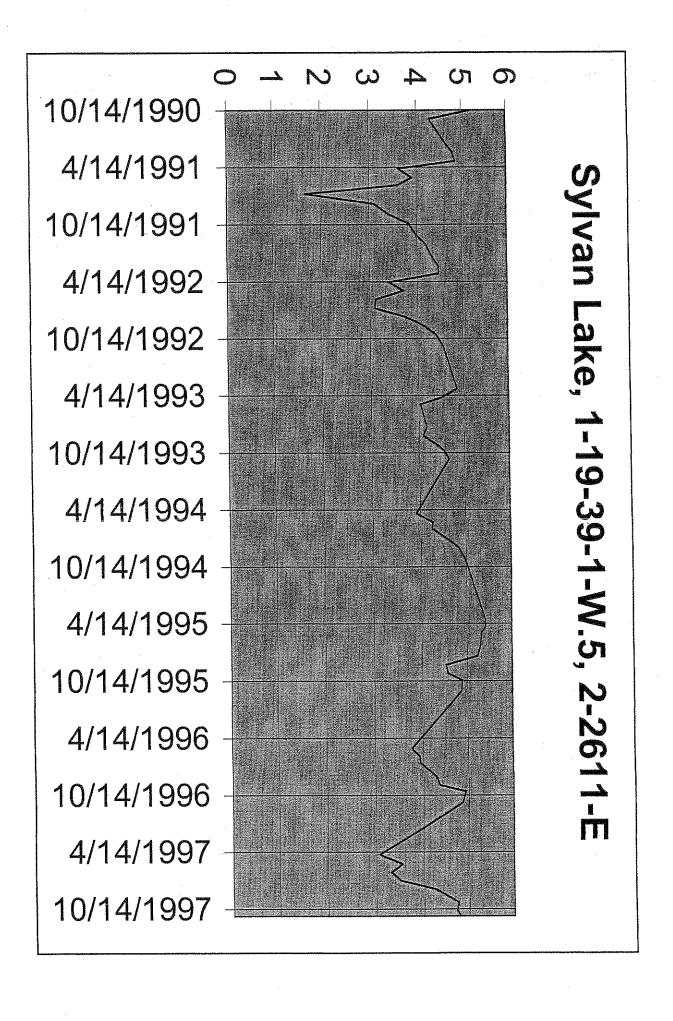


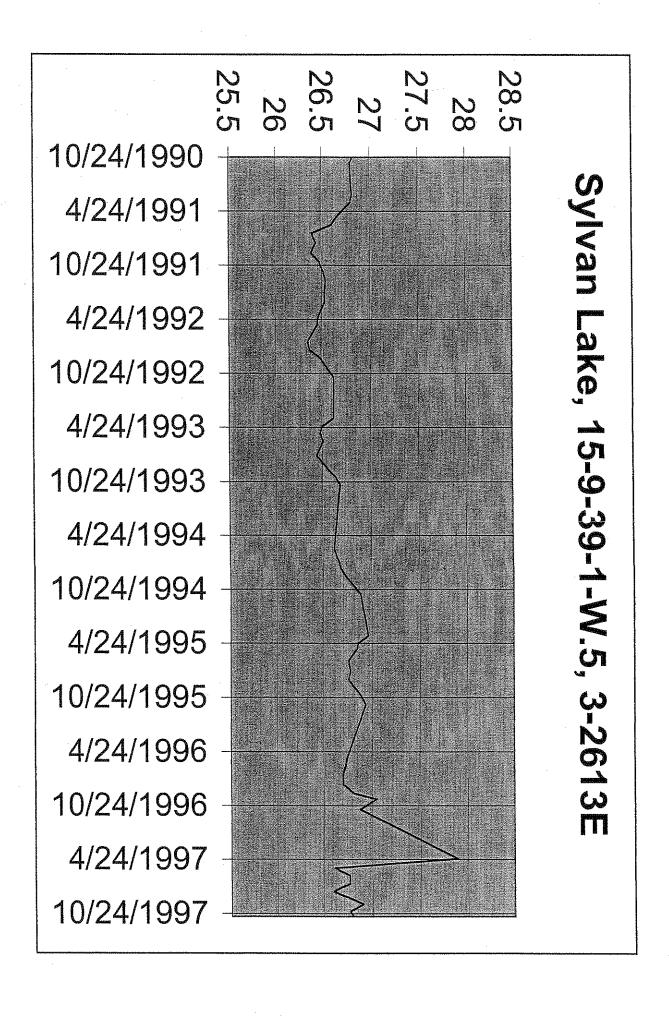


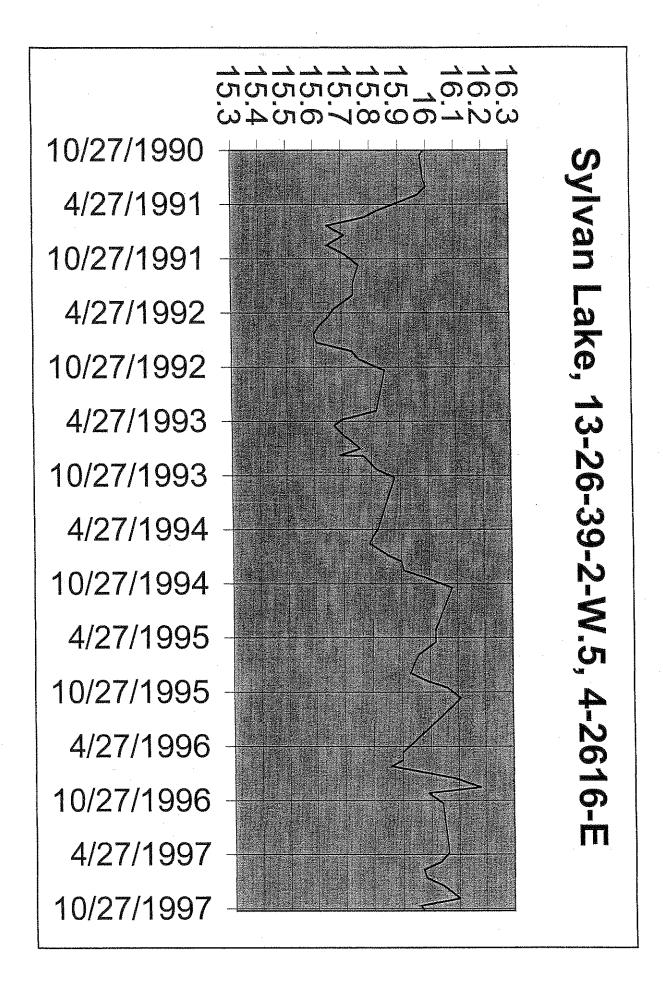


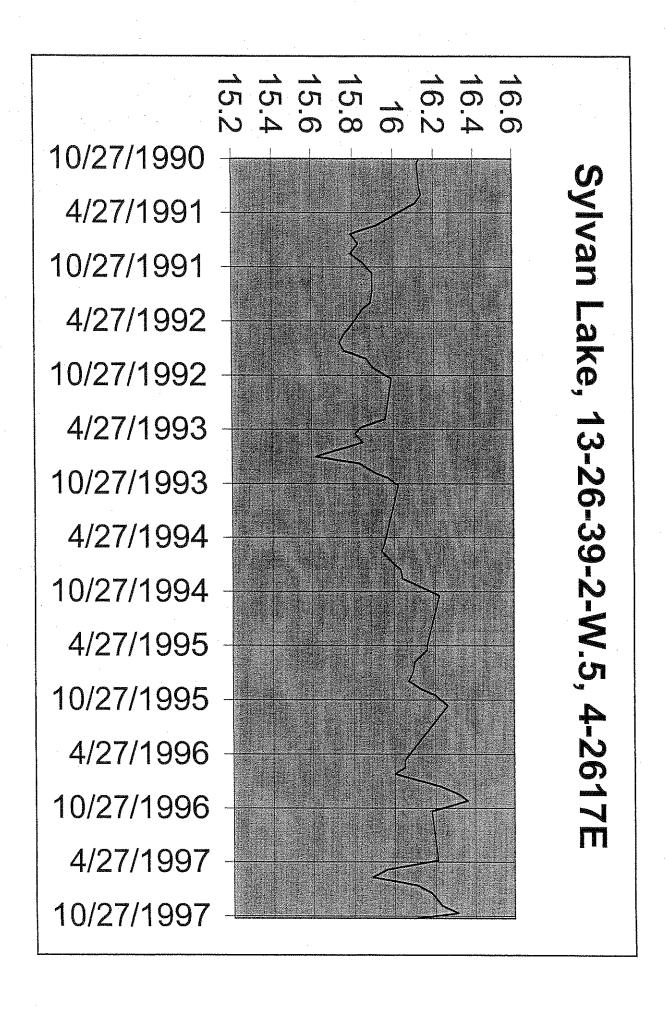


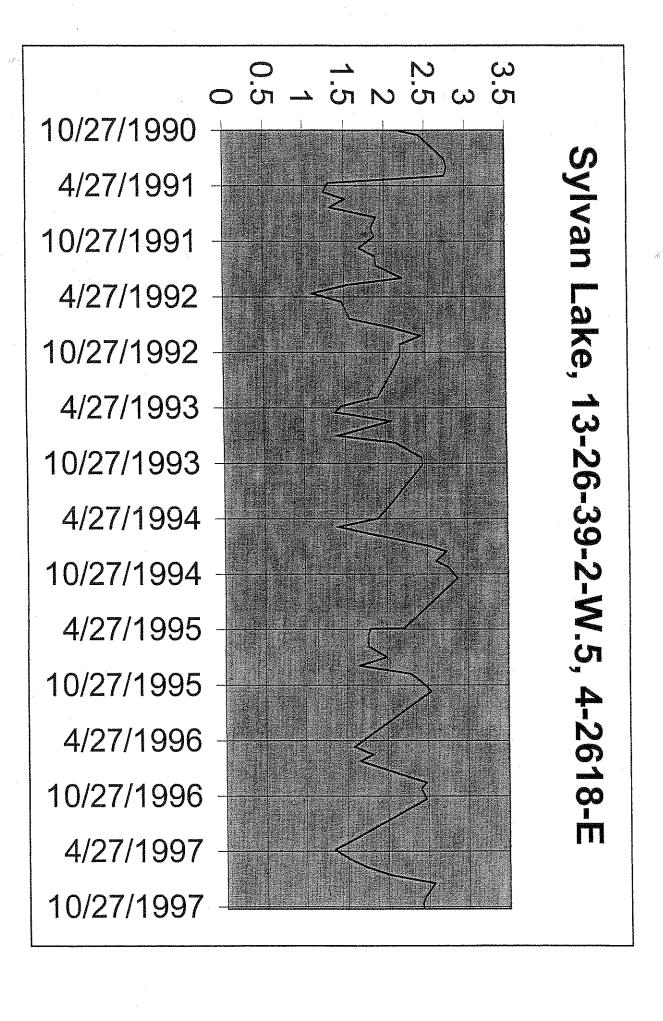


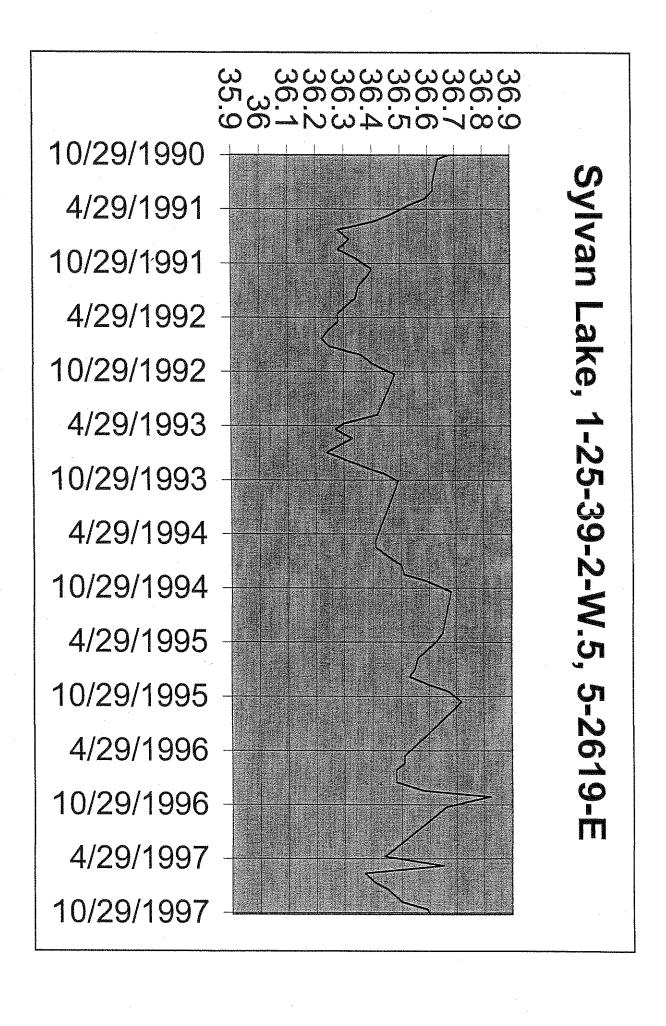


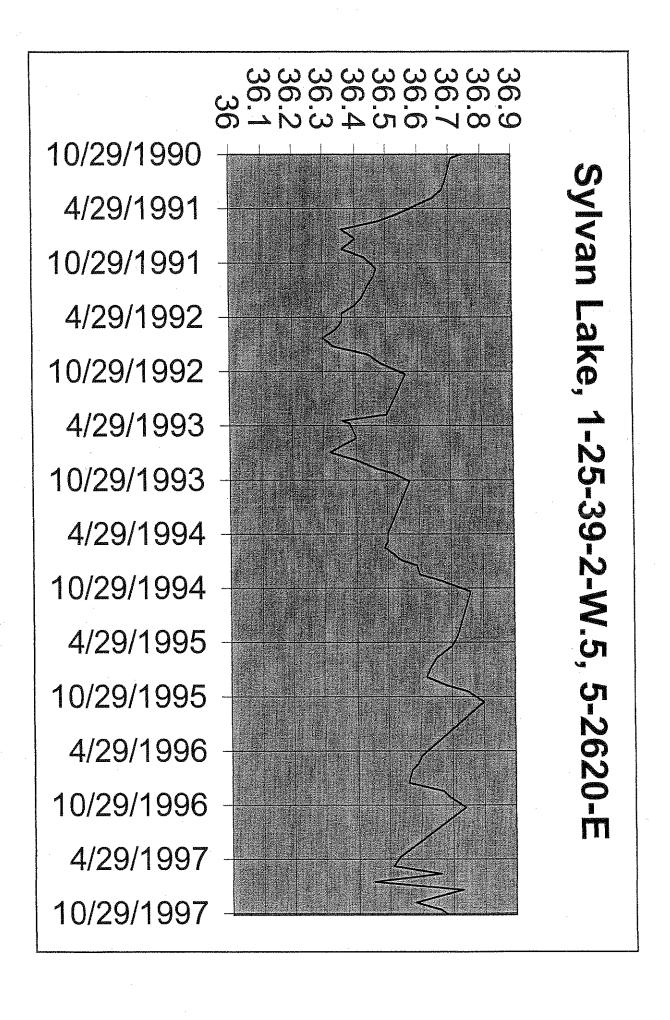


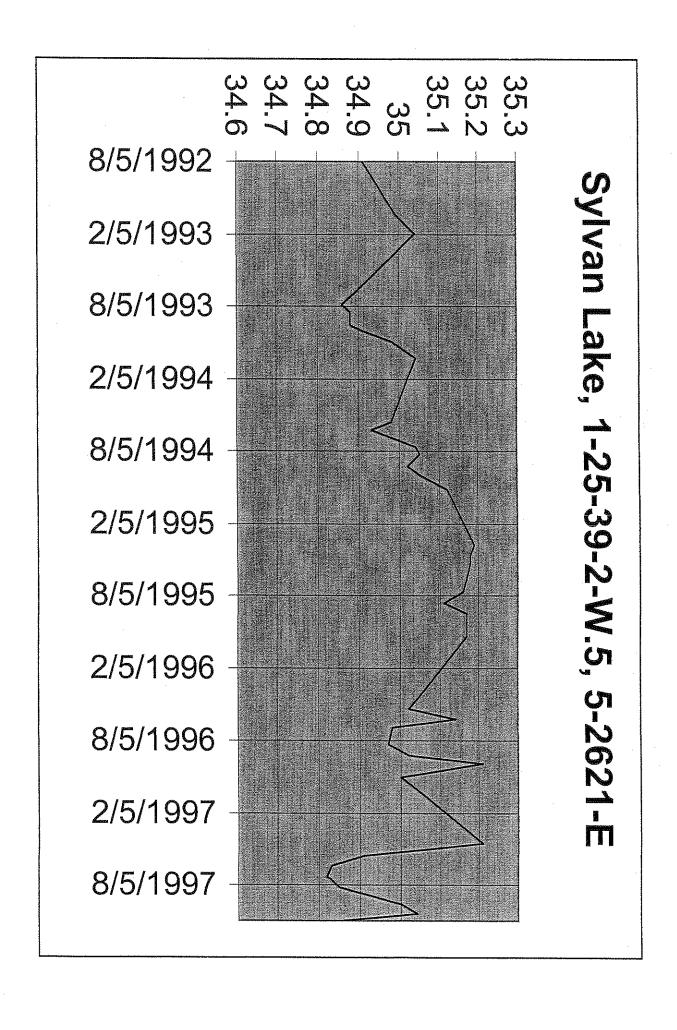


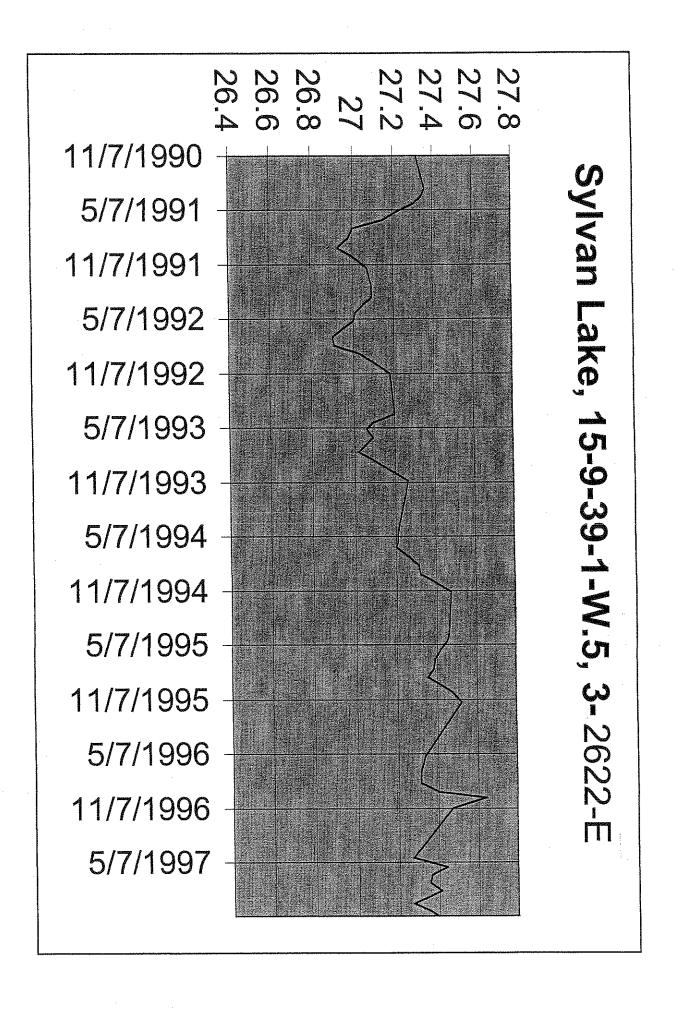






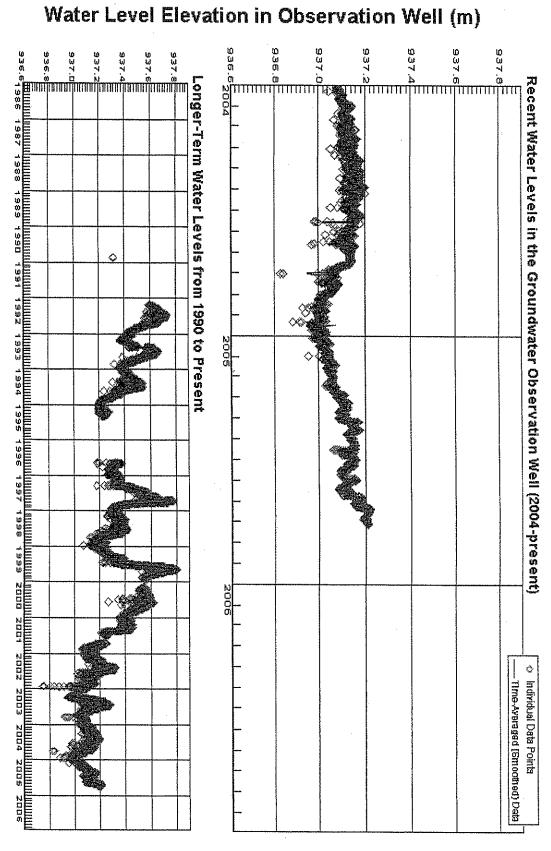






Sylvan Lake 2623E (Obs. Well #391) Lat 52" 23" 38.6" N Long: 114" 14" 37.5" W Formation: Bedrock Aquifer: Paskapoo Depth Class: Intermediate





ittporn .. Worzer. abour 11/ Lawr gronny date water water coulg trans of Brown S. Copy B. Whomas - 3

