Appendix A

ROM : WILD	ROSE WA	TER WEL	LS	FAX	NO. :	1 403 556	6700 N	ov. 19	3 2010 11:	33AM	P13	*
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Formation Log			ructed well	in: 🗋 Metric		O Well Com	pletion	Me	asurements in:	1 Metri	c imperial	
	lcate if			Description		Total Depth Drilled:	Finished V Depth:	^{vell} 35	Start Date	78		
ground level Wat	ter Bearing	ا الاسبية	20			Borehole:	0"				261	
19		<u>114-</u>	<u>100-0</u>	147 ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~		Diamete Diamete		From: From:	26'	_ To: To:	35	
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WFML WAS RUMED WITH AR IR OR TO WHAL SUB. Rump 6 Recommended Pump Rate: 5-10 L/min organs Pump installed Yes Depth: 9, 27, 7 Recommended Pump Intake Depth (From TOC) 35 Type: Model: 9, 32, 8 Did you Encounter: Seline Water (>4000 ppm TDS) Depth: 9, 37, 9 9 Did you Encounter: Gas Depth: m/n Model: 9, 37, 9 Gas Depth: m/n Medi Disinfected Upon Completion 9, 41, 10 8, 75' Remedial Action Taken: m/n Electric Gemma 12 Charles Comments on Well: Sample Collected for Potability: 18 Water Diversion Date: Time: 9, 92, 20 8, 47 Water Amount Diversion Date: Time: 9, 92, 20 8, 43 Cophractor Certification 40 25 0 10, 09, 40 2, 20 Water Diversion Date: Time: am/pm 10, 09, 40 2, 20 Cophractor Certification Gourservan responsible for drilling/construction of well: Certification No: 10, 09, 40	Depth Pumped Fr	om: 35		From:	m/	Depth Air Tested From:	35' m	<i>m</i>		4.05
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Water Diverted for Drilling 25 Water Source: Amount Diversion Date: Time: Source: Taken: Coptractor Certification 35 Copy of Drilling Report Given to Owner 10,09,40 Same of Journeyman responsible for drilling/construction of well: Certification No: Copary Name: 10,09,40 Company Name: 75 Company that this well was constructed in accordance with the Mater Ministerial? Regulation of the Water Act. All information in this records of is true and describes the works of Ministerial? Regulation of the Water Act. All information in this records to the works of Ministerial? Regulation of the Water Act. No							u)	97		8.47
Vater Amount Diversion Date: Time: 9.92 30 8.31 Source: Taken: Maintenance Maintenance Time: am/pm 9.92 30 8.31 Coptractor Certification	@ Water Dive	rted for Drill	ing						~	<u> </u>
Source: 1aken: am/pm -35 2 Coptractor Certification -35 10,09 40 -32 2 Coptractor Certification No: -10,17 50 -35 2 Coptractor Certification No: -10,17 -10,17 50 -35 2 Coptractor Name: -10,17 -10,17 -10,17 -10,17 -10,17 2 Coptractor Name	Water		Amount .					992		8.31
Copy of Drilling Report Given to Owner IO.09.40 8.20 Name of Journeyman responsible for drilling/construction of well: Certification No: IO.17.50 8.20 MOR (MALDUREYMAN responsible for drilling/construction of well: Certification No: IO.09.40 8.06 Sompany Name: IO.05.50 8.06 8.06 VI (LA) ROSE MATER LANGE (Ministerial) Regulation of the Water Act. 90 I Centry that this well was constructed in accordance with the Mater (Ministerial) Regulation of the Water Act. 90 I Centry that this well was constructed in accordance with the Mater (Ministerial) Regulation of the Water Act. 105	Source:	Carlificatio		L			am/j	om	S	
Varies of Journeyman responsible for drilling/construction of well: Certification No: 10.17 50 8.13 VOR (WAWER) 10.25 60 8.06 Company Name: 75 VI Low ROSE WATER LANGE Ministerial) 80 I centry that this well was constructed in accordance with the Marge Ministerial) Regulation of the Water Act. Ninformation in this record is true and describes the works of metrographic optic conditions and the metro were completion only. 105						•		10.04		8.20
Company Name: 75 WILLD ROSE WATER LOEUS 90 I cerrity that this well was constructed in accordance with the Marge Ministerial) Regulation of the Water Act. 90 All information in this record is true and describes the works of the marge ologic conditions at the time of went completion only. 105				struction of well;	Certific	ation No:	10	10.17	50	8.3
WIND ROSE WHERE 90 I certify that this well was constructed in accordance with the Marser Ministerially Regulation of the Water Act. 90 105	KOR	1 WA	WER			1400	IL	10.2	J	8.06
Centry that this well was constructed in accordance with the Marce (Ministerial) Regulation of the Water Act. All Information in this record is true and describes the works and margeologic conditions at the time of went completion only.	Company Name		ALEIANTE	O POZILI						
All information in this record is true and describes the works and methode light operation of the true of went completion only.	h	VD 1C	UTE WITE	C Ministerials Room	lation of	he Water Act				
	 I centry that the All information 	ns well was con n in this record i:	true and describes the works	and hydrogeologic condi	tions at a		· 10 11 -	_		

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FROM : WILD ROSE	JATER WELLS FAX NO. :	1 403 556 6700 Nov. 2	24 2010 08:52AM P2
Alberta	Water Well Drilling R The driller supplies the date contained in this report. The		Vell I.D.
Well Identification a	in its accuracy, the invintation on this report will h	e relained in a public database. Date	Report Received
Owner Name:	CARTWRIGHT BOX 130) Town: COCHRAI	JE Postal Code TY INII
Location ther LED: BEC:	1 28 ROE WOMMER	Block: Plan:	
Measured from Boundary		FS Coordinatos in Decimal Degrees (NAD 83)	# 3 WELL
		atitude: <u>JI6, 79944</u> Longitude: <u>57.</u> I Hand Held Auto 20-30m Diff. Corr. Hand	0/162 Elevation: 1214
O Drilling Information Method of Drilling;	Type of Work:	Proposed We	
Auger Backhoe/Dug Boring	Test Hole or (1) New Well (Dry) Plugged: 1011	D Household	
Cable Tool		nite Chips 🔲 Cement 🛛 🖬 Other (Spe	city): LONE
Rotary (mud)	Amount Used:		
	Deepened Well Well ID (If applicable); Reconstructed Well	Alberta Envirg	s, except housahold walls, must be licenced by ament to diven and usc groundwater)
Depth from Indicate if	Measurements In: I Metric I Impe		leasurements In: A tetric Amperial
ground level Water Bearing	Lithology Description	Total Depth Drilled: 50 Finished Wolf Depth: 43	10 11 5 10 IN 5
15	Till-BRN-CIAY	Diameter: From:	0 To: 28
20	FU- W- CLAY		28 To: 50'
36	SS- BRAI-F	D Steel D Galvanized Steel	J Steel □ Galvanized Steel PVC □ Fiberglass
50	59 - CR-IBR-F		Other:
	f	D Other	ize OD: 7.77 Wall Thickness: 4.44
		Size OD: P	erforations:
			rom: <u>33</u> To: <u>45</u>
		S	ze:x
			artorated by: 🛛 Machine 🛛 🖓 Sāw 🗋 Drill 🛄 Other:
· · · · · · · · · · · · · · · · · · ·		Annular Seal: B Bentonite Slurry Ben Placed From:	tonite Chips Li Cement
	· · · · · · · · · · · · · · · · · · ·	Amount 150CBS	
		Drive Shoe, at:	Welded Ring, at: U Other, at:
		Screen Type: Li Stainless Steel D Pv	
		Size OD:To;To;	Slot Size:
	understandigen verste state die der sterne verste sterne verste sterne verste sterne verste sterne verste stern	Interval From: To: Telescoped Li Attached to Casing	Slot Size:
		Top Fittings: D Packer D Coupler Bott	om Filtings: 🗋 Wash-down 🗋 Bail 🔲 Plug
		Pack:	Size: Arnount:
G Yield Test	Start Distance From Top of	surrements in: Matric Umperial Taken F Static Water Level: / ///	rom:] Top of Casing] Ground Level Depth to water level
Test Date: 10 11 10	am/pm	75 m m/t Level: 6654 mm	Elapsed Time Pumping Minutes Recovery
Artesian Flow Rate:	Yes, flow control installed Describe; Umin or igpm	•	0
Method of Water Remova	l:		2
Pumping Rate: 15	_Umin (ippm) Water Removal Rate: Umin / ig		3
Depth Pumped From: 30	hours, explain why:	viti Depth Air Tested From: m/ft	5
	24 HOUR PUMP TEST	NAS PONE	6
Recommended Pump Rate:	L/min or igpm Pump insi	ailed 🛛 Yes Depth:	7
Recommended Pump Intake D		Model: H.R:	9
Did you Encounter: Saline	Water (>4000 ppm TDS) Depth: m/tt Depth: m/tt	Geophysical Log Takan:	10
Remedial Action Taken:		Electric Gamma	12
Additional Comments on Well:		Other (Specify):	16
Address Columents on Men		Sample Collected for Polability:	18
Water Diverted for Drill	ing ·	□ No	20 25
Water Source:		Diversion Date: Time: am/pm	30
O Contractor Certification	<u>v</u>	(nq)//h=	
Copy of Drilling Report Give Name of Journeyman resp		cation No:	50
KORY WAI	INFER	- 14061Q	60
Company Name:	WATER WELLS		75 90
Certify that this well was cons	ructed in accordance with the Welsr (Ministerial) Regulation o true and describes the works end geologic conditions a	the Water Act. the time of well completion only.	105

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Allegerezza	Water	r Well	Drillin	g Rer	1 403 556 670 D ort		IC Well I.D	***		
	The driller supp for its accurat	oiles the date c y. The Inform	ontained in this re ation оп this rep	port. The Prov	Ince disclaims responsio alned in a public databa	ility se. D	oA Well Ya ate Report	g No. Received		
Nell Identification a	nd Location					Town	1	Postal		111
wher Name: CHOE	e/Heinki	WHT		130	Block: Plan	COCHRA	Ad	litional	40	1A4
SEC: 3	1 28	3					De	ecription:		
leasured from Boundary	y of: Quar	ter 🗋 Lot	K		Coordinates in Decim					
m/tt from		_	m/ft from 🗋 E	EQ W Q Ha	ide: Ind Held Auto 20-30m	Longlude: Diff. Corr. H	and Held	5-10m C	ion: Surveye	ad GPS<1m
Drilling Information	Type of Wo	-1				Froposo	d Well Use			
lethod of Drilling: Auger		(Producing)				D House	hold	r with residen	ce on oro	operty)
Backhoe/Dug Boring	Pluaped	≥ or □ New V with: GrBent	Vell (Dry) Plugg onite Slurry	geo: [O] Bentonite	Chips 🖸 Cement	Other	(Specify):	LODGE		F97
Cable Tool Rotary (eir)				errouts						
Rotary (mud)			Well ID (if an			(Note: A	ll wells, exc avironmen	ept household t to divert and i	wells, mus usa arcum	it be licenced by dweter)
Fauncel	C Recons	tructed Well	- Well ID (if ap	i Imperiel	O Well Completi					Imperial
) Formation Log		leasu(ements			Total Depth	Finished We		Start Date	ə	End Date
Depth from Indicate if ground level Water Bear	Ing		y Description		Drilled: Borcholo;	Depth:		- SAN - 1241	27	<u> 07 181 10 1</u>
18	Till-	BRN-			Diameter:		rom:		To: To:	
27	Till	<u>- QR - C</u>	107- SIL	J/SH mi		(if applicable)		asing/Liner:		
60	SH -	LR/BRN	1-51LT5	TR	Steel			ieel DiGa VC DiFil		Steel
-		<i>I</i> .		<u></u>	Galvanized S	teel	0 P 0 0		perglass	
					Cement	,	Size (vv	Vall Thicks	ness:
					Size OD:			r1	Bottom at:	·
								rations:	Ta:	
					Wall Thickness:_					
				<u></u>	Bottom at:					L) Saw 🖸 Drill
							<u> </u>	<u> </u>	Ditter:	
						Bentonite Slurry (
								To		
						t		Welded Ring,	at:	
					🗌 🗌 Shale Trap, a'			Other, at:		•
					Screen Type: [Size OD:	Stainless Steel	D PVC			
					Interval From:	To: .				
						To:		Slot	Size:	
					Top Fittings: 🛄 I	acker 🗋 Coupler		Fittings: 🗋 W	ash-dowr	Ball D Plug
					Pack:	nical 🗍 Natural	Grain Siz	e:	_ Amou	nt:
	· · · · · · · · · · · · · · · · · · ·				surements in: 🖸 Metri	c 🗌 Imperial 🐧		n: 📋 Top of C	asing 🗖	Ground Lovel
9 Yield Test	Front		Distance From T Casing to Groun	fop of nd Level:	Static Wi Level:	ter			to water	
csl	pg Start Time:	and lare					m/h		lapsed Tim	
csl	Time:		Yes, flow control in		m/ft		m/ft	Pumping	Minutes	Récovery
bst Jate: <u>NN JAM</u> II	pig Time:	<u> </u>					m/łţ		Minutes	
est <u>ante: any AM</u> 2 Artesian Flow Rate: Method of Water Rem	juj Time: L/mir	n or Igpm	Yes, flow control in		m/tt		m/ft		Minutes 0 1 2	
Let are:	23 Time: //min /oval: //min / igpm	n or lgpm Bailer Water Remo	Yes, flow control in Describe:	nstalled	m/t D Air' m Water Romoval Ra	1e:Vmin	/ igpm		Minutes 0 1 2 3	
Lest Antesian Flow Rate: Aethod of Water Rem Depunp Pumping Rate: Depun Pumped From;	Umir Umir Umir / igpm 	o or lgpm Bailer Water Remo Depth Bailed F	Yes, flow control in Describe:	nstalled	m/t D Air' m Water Romoval Ra	1e:Vmin			Minutes 0 1 2 3 4	
Let are:	Umir Umir Umir / igpm 	o or lgpm Bailer Water Remo Depth Bailed F	Yes, flow control in Describe:	nstalled	m/t D Air' m Water Romoval Ra	1e:Vmin	/ igpm		Minutes 0 1 2 3	
eate: <u>NY AN</u> 2] Artesian Flow Rate: Aethod of Water Rem] Pump Pumping Rate: Leptin Pumped From; water removal period wa	Umin / igpm ////////////////////////////////////	n or igpm Bailer Water Remo Depth Bailed F	Yes, flow control in Describe: val Rate: Yom:	nstalled L/min / Igp m/	m/t D Air' m Water Romoval Ra	ie:UrminU	./ igpm m/ft		Minutes 0 1 2 3 4 5	
ate: <u>Window</u> Artesian Flow Rete: Aethod of Water Rem Pumping Rate: Pumping Rate: water removal period wa Recommended Pump Rate	Umir Ivoval: Umin / Igpm w/lt us <2 hours, expla	Der lepm Dealler Water Remo Depin Bailed R	Yes, flow control in Describe: wal Rate: Yom: L/min or igpm	nstalled U/min / lgp m/ Pump insta	m/tt Air Water Romoval Ra th Depth Air Tested From	e: Umun :: Depth:	/ igpm m/ft		Minutes 0 1 2 3 4 5 6	
eat Artesian Flow Rete: Method of Water Rem Pumping Rate: Pumping Rate: Water removal period wa tecommended Pump Rate Recommended Pump Inta	Umir / Igpm 	Derigpm Delifer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: 	nstalled L/min / lap m/ Pump insta Type:	m/tt Mater Romoval Ra Mater Romoval Ra Depth Air Tested From	e:Umin : Depth: H.P:	/ igpm m/ft		Minutes 0 1 2 3 4 5 6 7 8 9 9	
ate: <u>Window</u> Artesian Flow Rete: Aethod of Water Rem Pumping Rate: Pumping Rate: water removal period wa Recommended Pump Rate	L/min Ioval: L/min / igpm M/II is <2 hours, expla e: 	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: 	nstalled L/min / lap m/ Pump insta Type: m/ft (m/tt Mater Romoval Ra th Depth Air Tested From 	e:Umin :: Depih: H.P: an Completion	/ igpm m/ft		Minutes 0 1 2 3 4 5 6 7 8 9 10	Recovery
ate: <u>WY</u>	L/min Ioval: L/min / igpm M/II is <2 hours, expla e: 	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	nstalled L/min / lap m/ Pump insta Type: m/ft (m/tt Mater Removal Ra th Depth Air Tested From Uled Yes Model: Model: Geophysical Log Taker Electric Gamr	e:Umin :: Depth: H.P: on Completion :: 1a			Minutes 0 1 2 3 4 5 6 7 8 9 9	Recovery
eat ante: <u>WY EAH</u> 2 Artasian Flow Rate: Method of Water Rem Pumping Rate: Pumping Rate:	Umin / Japan Umin / Japan w/lt as <2 hours, expla e: eke Depth (From T aline Water (>4000	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	nstalled L/min / tap m/ Type: 	m/tt Muter Removal Ra Muter Removal Ra Depth Air Tested From Iled Pres Model: Geophysical Log Taker Electric Gamm Other (Specify):	e:U/min : Depth: man Completion : na			Minutes 0 1 2 3 4 5 6 7 8 9 10 12 2	Recovery
eat ante: <u>www.add</u>	Umin / Japan Umin / Japan w/lt as <2 hours, expla e: eke Depth (From T aline Water (>4000	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	nstalled L/min / tap m/ Type: 	m/tt Mater Removal Ra th Depth Air Tested From Uled Yes Model: Model: Geophysical Log Taker Electric Gamr	e:Umin Depth: H.P: on Completion : 12 Dtability;			Minutes 0 1 2 3 4 5 6 7 8 9 10 12 14	Recovery
eat ante: <u>WY EAH</u> 2 Artasian Flow Rate: Method of Water Rem Pumping Rate: Pumping Rate:	Umin / Japan Umin / Japan w/lt as <2 hours, expla e: eke Depth (From T aline Water (>4000	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	nstalled L/min / tap m/ Type: 	m/tt Multer Removal Ra Multer Removal Ra Depth Air Tested From Iled Yes Model: Model: Geophysical Log Taker Electric Gamr U Other (Specify): Sample Collected for P	e:Umin Depth: H.P: on Completion : 12 Dtability;			Minutes 0 1 2 3 3 4 5 6 7 8 9 10 12 14 16 18 20	Recovery
eader Antesian Flow Rete: Attasian Flow Rete: Attasian Flow Pumping Rate: Pumping Rate: Secommended Pump Rate Pump Inte Did you Encounter: Dia Did you Encounter: Dia Qea Remedial Action Taken: Midditional Comments on W Water Diverted for I	L/mir Ioval: 	Depin Bailer Water Remo Depin Bailed F In why: OC): Doppm TOS) I	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	Pump insta Pump insta Type:	m/tt Mater Romoval Ra Water Romoval Ra Depth Air Tested From Uled □ Yes Model: Geophysical Log Taker □ Electric □ Gam Ü Other (Specify): Sample Collected for P Yes (□ Result Att No	e:Umin Depth: H.P: on Completion : 12 Dtability;			Minutes 0 1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 25	Recovery
eat and the set of th	Umin / Japan Umin / Japan w/lt as <2 hours, expla e: eke Depth (From T aline Water (>4000 as Well: Drilling	Depth Bailer Water Remo Depth Bailed F In why:	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	Pump insta Pump insta Type:	m/tt Mater Romoval Ra bepth Air Tested From Uled Yes Model: Geophysical Log Taker Electric Gammi Uother (Specify): Sample Collected for P Yes (Besult Att	e:Umin : Depth: on Completion : ached) Time:			Minutes O 0 1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 25 30	Recovery
ate: <u>Attesian Flow</u> Rete: Attesian Flow Rete: Method of Water Rem Pumping Rate: <u></u> Pumping Rate: <u></u> Pumping Rate: <u></u> Pumping Rate: <u></u> restit Pumped From; water removal period wa tecommended Pump Rate Recommended Pump Inta Did you Encounter: Sa Ga Remedial Action Taken: Sa Ga Remedial Action Taken: Miditional Comments on V <u>Water Diverted for I</u> Water Source: D Cgetractor Certifict	Umin / Igpm nviti us <2 hours, expla e: ke Depth (From T aline Water (>4000 as Well: Drilling	an or Igpm Bailer Water Remo Depth Bailed F In why: OCC): Oppm TOS) C C	Yes, flow control in Describe: val Rate: rom: L/min or igpmm/ft Depth:	Pump insta Pump insta Type:	m/tt Water Removal Ra Bepth Air Tested From Iled Pres Model: Geophysical Log Taker Geophysical Log Taker Other (Specify): Sample Collected for P Yes (D Result Att No Diversion Date:	e:Umin : Depth: on Completion : ached) Time:	/ igpm		Minutes 0 1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 25	Recovery
eat atte: YY AM Constraints of the second Artesian Flow Rete: Acthod of Water Rem Pumpp Pump Rate:	L/min / igpm m/min	Armount Taken:	Yes, flow control in Describe: val Rate: Yom: L/min or igpm m/ft Depth: Depth:	Pump insta Type:	m/tt Multer Removal Ra Multer Removal Ra Depth Air Tested From Uled UYes Model: Model: Geophysical Log Take Uother (Specify): Sample Collected for P Yes (DResult Att No Diversion Date: Sation No:	e: Umin : Depth: mon Completion : ta ptability; ached) Time:	/ igpm		Minutes O 0 1 2 3 4 5 6 7 6 7 8 9 10 12 14 16 18 20 25 30 35	Recovery
eat ante:	L/min / igpm m/min	Armount Taken:	Yes, flow control in Describe: val Rate: Yom: L/min or igpm m/ft Depth: Depth:	Pump insta Type:	m/tt Mater Removal Ra Water Removal Ra Depth Air Tested From Iled □ Yes Model: Model: Model: Geophysical Log Taker □ Electric □ Gamr U Other (Specify): Sample Collected for P □ Yes (□ Result Att □ Yes (□ Result Att □ No Diversion Date:	e: Umin : Depth: mon Completion : ta ptability; ached) Time:	/ igpm		Minutes O 0 1 2 3 4 5 6 7 6 7 8 9 10 12 14 16 18 20 25 30 35 40 50 60	Recovery
Eat Artesian Flow Artesian Flow Rate: Actinod of Water Rem Pump umping Rate: petit Pumped from: twater removal period wa tecommended Fump Rate tecommended Pump Inta Did you Encounter: Sa Gatemedial Action Taken: Viditional Comments on V Water Diverted for I Source: Copy of Drilling Report Copy of Journeyman Company Name: Anney Arter	Imre:	Arnount Taken:	Ves, flow control in Describe: val Rate: rom: L/min or igpm m/ft 	ell: Certilic	m/tt Multiple Air Multiple A	e:Umin Depth: on Completion : 12 Dtability: ached) Time: (&	/ igpm		Minutes 0 1 2 3 4 5 6 7 8 9 10 12 14 16 18 20 25 30 35 40 50 60 75	Recovery
ate: YY AMA SAME SAME SAME SAME SAME SAME SAME	Imre:	Arnount Taken:	Ves, flow control in Describe: val Rate: rom: L/min or igpm m/ft 	ell: Certilic	m/tt Multiple Air Multiple A	e:Umin Depth: on Completion : 12 Dtability: ached) Time: (&	/ igpm		Minutes O 0 1 2 3 4 5 6 7 6 7 8 9 10 12 14 16 18 20 25 30 35 40 50 60	Recovery

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A N	later Wo	ell Drilling	Repor	et.	Well I.D.: Map Verified:	ħ	023705 lot Verified
Alberta The data contained in this	report is suppli	ed by the Driller. The pr accuracy.	rovince disc	taims responsibility for its	Date Report I Measuremen		009/05/04 nperial
Environment	analisation and a sec				2. Well Loc	ana	
L. Contractor & Well Owner Inform	nation		Drilling Cor	mpany Approval No.:	1/4 or Sec	and the second se	Rge Westo
ELL DONE WATER WELLS INC.			205702	npany npprovanes.	LSD	•	M
Mailing Address: City	y or Town:		Postal Cod	ê:	SE 31 Location in Qu	028	03 5
	LGARY AB CA	tilin n	T2J 2T9		FT fron		Boundar
CARTWRIGHT, CHLOE	In Location Iden	uner.			FT from		Boundar
P.O. Box Number: Ma	iling Address:	₩,₩₩₩₩₩,₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩	Postal Cod	le:	Lot I	Block	Plan
RR		<u></u>	TOM OSO		Well Elev:	How	Obtain:
City: Pro CROSSFIELD AB	vince:		Country: CA		FT GIEV.		Obtain .
3. Drilling Information		edinaktur kanaktula ay kanaktur kanaktur kanaktur kanaktur kanaktur kanaktur kanaktur kanaktur kanaktur kanaktu			6. Well Yie	ld	adaiminintooranaa yoo shaaddaa
Type of Work: New Well		*****	ann an aithightean an ann an	Proposed well use:	Test Date(yyy		
Reclaimed Well				Other	2008/11/13		1:00 AM
Date Reclaimed:	Materials Us	ed: Unknown		Anticipated Water Requirements/day	Test Method: Non pumping		52.7 FT
Method of Drilling: Rotary	Rate: Gallon	S		Gallons	static level:		
Gas Present: No	Oil Present:				Rate of water	4	Gallons/Min
4. Formation Log	5. V	Vell Completion			removal:		05 FT
Depth from	Date	e Started(yyyy/mm/dd):	Date C	completed(yyyy/mm/dd):	Depth of pum intake:	p 4	14 600
ground Lithology Description	on 200	8/11/03	2008/1		-Water level at		50.4 FT
evel (feet) 1 Topsoil		Depth: 420 FT		ole Diameter: 8 Inches	end of		
1 Topson 15 Brown Clay		OD: 6.625 Inches		D: 4,94 Inches	-pumping:	the at	6 Inches
18 Brown Shale		Thickness: 0.188 Inch		hickness: 0.219 Inches	 Distance from casing to group 		io incres
35 Gray Sandstone			Top: 2	50 FT Boltom: 420	Depth	To water le	vel (feet)
149 Gray Shale	Bott	om at: 261 FT	FT			Elapsed Tin	ne
152 Gray Sandstone 178 Gray Shale	Perf	orations	Perfon	ations Size:		Minutes:Se 0:00	ec Recovery 350.4
185 Gray Sandstone		1: 270 FT to: 415 FT		Inches x 10 Inches	252.7	1:00	347.2
195 Gray Shale		n: FT to: FT n: FT to: FT		x Inches x Inches	256.6	2:00	344.6
260 Lost Circulation		orated by: Saw	Interior		259.9	3:00	342.3
415 Gray Sandy Shale		l: Driven & Bentonite			261.9	4:00	340.6
420 Gray Shale		1:2 FT	to: 261	FT	264.6 266.4	5:00	<u>339.3</u> 338.1
		l: Unknown 1: FT	to: FT		267.8	7:00	337.1
		Unknown			269.6	8:00	336.4
		<u>): FT</u>	to: FT		270.8	9:00	335.8
		en Type: Unknown		1 ID: Inches	272.2	10:00	334.9
		en Type: Unknown		ze: Inches n ID: Inches	275.1	12:00	333.7
		i; FT to: FT		ize: Inches	277.8	14:00	<u>332</u> 330.4
	Scre	en Installation Method.	Unknown		285.9	20:00	327.3
	Fitti		(* a the -	a. I Internation	291.5	25:00	323.7
		: Unknown k: Unknown	Botton	n: Unknown	- 296.7	30:00	320.3
	Grai	in Size:	Amour	nt; Unknown	<u> </u>	<u>35:00</u> 40:00	<u>317.5</u> 314.7
	Geo	physical Log Taken:		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	305.9	50:00	308.9
		ained on Files:	mas-		321.1	60:00	302.4
		itional Test and/or Pum mistries taken By Drille			330.5	75:00	294.8
	Hek	J:		nents Held:	338.5	90:00	288.4
		ess Adapter Type:		n an	345.1	105:00	283.1
		o Pipe Type:	Diam-	tor Inches	350.4 Total Drawdo		278.3
		gth: FT nments:	Luame	ter: Inches	If water remo		
	260		RES, BORE	EHOLE DIAMTER ALSO	duration, reas	ion why:	
		".			MEASUREM	ENTS FRO	M CASING
					Recommende		
			and the second secon	an da kana kana kana kana kana kana kana	Gallons/Min		
		Contractor Certifi			Recommend		ake: 400 FT
		er's Name: tification No.: 🕻	TIM K 20573		Type Pump I Pump Type:	Istailed	
		well was constructed i			Pump Model:		
HAYBARN WELL	reği Enh	lation of the Alberta Er ancement ActuAll infor	nvironmenta	I Protection &	H.P. Any further p		ormation? No
	<u>Iĝi</u> GI	nature			Report 1 F		4 4 ppp 4

Appendix B

f Alb	ert	uoouruoy.			ned in this report. be retained in a pu		nce disclaims respons ase.	ibility for its	Go	C Well ID DA Well Tag No. ate Report Recei	376846 ved 1994/04/08
. Well Ident Owner Nam HELM, STE	ie	and Location		dress N DEL, MA	DDEN		Town		Provii	nce	Measurement in Met Postal Code TOM 1L0
Location	1/4 or 04	30	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block I	Plan	Additional	Description	
Measured fi	274	lary of 4.32 m from South 3.36 m from West	_		Latitude <u>51</u> How Location Not Verified	.419200	Longitude	· · · · ·	Но	vation v Elevation Obta Obtained	
2. Drilling Inf Method of Rotary				be of Work v Well					roposed Well omestic & Sto		
B. Formation	n Log			Meas	surement in M	letric	4. Well Complet				Measurement in Met
Depth from ground level (m)	Water Bearing		Lithology	Description			Total Depth Dril 22.86 m Borehole			1994/03/14	End Date 1994/03/14
5.49		Sandy Clay					Diameter 0.00			m (m) 0.00	To (m) 22.86
10.67 12.19		Shale Sandstone					Surface Casing Steel			Well Casing/L	
17.37		Shale							14.12 cm).478 cm	Size (Wall Thickne	DD: <u>11.43 cm</u> sss: 0.544 cm
18.90		Sandstone					Wall Thicknes Bottom a	s. <u> </u>			at: 5.49 m
22.86		Shale & Sandstone	e Ledges				201101110		0.10	Bottom	
							Amount	0.0	To (m) 22.86	Diameter (c 0.635 6.10 m	m) Interval (cm) 30.48
							Other Seals				

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD. Certification No

1

Screen Type

Pack Type

Amount

Size OD :

From (m)

Attachment

Top Fittings

<u>0.00 cm</u>

To (m)

Bottom Fittings

Grain Size

Copy of Well report provided to owner Date approval holder signed

Slot Size (cm)

Government Wate	er Well Dri	Iling Repor	rt <u>View in Li</u>	<u>mperial</u>
Df Alberta The driller supplies accuracy. The information on	the data contained in this report. The P this report will be retained in a public date	Province disclaims responsibility for its	GIC Well ID GoA Well Tag I	376846 No. eceived 1994/04/08
	ddress EN DEL, MADDEN	Town	Province	Measurement in Metri Postal Code TOM 1L0
Location 1/4 or LSD SEC TWP 04 30 028	03 5	ot Block Plan	Additional Description	
Measured from Boundary of 274.32 m from South 213.36 m from West		n Decimal Degrees (NAD 83) 200 Longitude <u>-114.42029</u> ined	9 Elevation How Elevation C Not Obtained	
Additional Information	•		-	Measurement in Metri
Distance From Top of Casing to Ground Level _ Is Artesian Flow RateL/min	cm	Is Flow Control Installed Describe		
Recommended Pump Rate Recommended Pump Intake Depth (From TOC)		Pump Installed	Depth	m
Did you Encounter Saline Water (>4000 ppm 7	DS) Depth	m Well Disinfecte m Geophys Su	ed Upon Completion sical Log Taken Ibmitted to GIC	
5. Yield Test		Measuremen	t in Metric Depth to water level	Taken From Ground Leve
Test Date Start Time 1994/03/14 12:00 AM	Static Water Level 15.24 m	Drawdown (m)	Elapsed Time Minutes:Sec	Recovery (m)
Method of Water Removal Type <u>Air</u> Removal Rate <u>90.92 L/min</u> Depth Withdrawn From <u>22.86 m</u>			3:00 4:00 5:00	16.15 15.54 15.24
If water removal period was < 2 hours, explain w	hy			
6. Water Diverted for Drilling				

7.	Contractor Certification
1	Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD. Certification No

1

Copy of Well report provided to owner Date approval holder signed

I

Government Water Well Drilling Report View in Imperial GIC Well ID 392000 GoA Well Tag No. The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database. Date Report Received 1981/05/06 1. Well Identification and Location Measurement in Metric Owner Name Address Province Postal Code Town DAVIES, JIM P.O. BOX 673 COCHRANE al Description 1219.20 m levation ow Elevation Obtained stimated ell Use Stock Measurement in Metric epth Start Date End Date 1981/03/13 1981/03/24 rom (m) To (m) 0.00 53.95 Well Casing/Liner Galvanized Steel Size OD : 12.70 cm Wall Thickness : 0.000 cm Top at : 0.00 m Bottom at 53.95 m Diameter (cm) Interval (cm) 0.953 40.64 9.14 m Water Bearing Sandstone Yes 32.92 Other Seals 53.95 Gray Shale At (m) Туре

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name

PARSONS DRILLING

Certification No 1

Screen Type

Pack Type

Amount

Size OD :

From (m)

Attachment Top Fittings 0.00 cm

To (m)

Bottom Fittings

Grain Size

Copy of Well report provided to owner Date approval holder signed

Slot Size (cm)

Location	1/4 or SW	LSD	SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block	Plan	Addition
Measured t	from Bound	m	from from				434730	cimal Degrees (Longitude		
2. Drilling In Method of Cable Tool					be of Work w Well	[Proposed W Domestic & S
3. Formation Depth from ground	n Log Water				Mea	surement in M	etric	4. Well Comp Total Depth I 53.95 m Borehole		Finished Well De
level (m) 0.91	Bearing	Black	Clay	Lithology	Descriptior	1		Diamete		Fi
6.10 6.40		Brown Boulde	n Clay ers					Surface Casi Steel	ng (if app	
7.01		Brown	Firm Clay							16.81 cm
9.14		Gray F	irm Clay							0.478 cm 9.14 m
12.19		Gray H	Hard Sands	stone				Dotton		<u> </u>
13.41		Brown	Fractured	Sandstone				Perforations		
15.54		Brown	Hard San	dstone				From (m	ı)	To (m)
16.76		Gray H	Hard Sands	stone				29.87		53.34
21.64		Gray	Shale					Perforated by	/ То	rch
24.69		Brown	Shale					Annular Sea	Driver	n
31.09		Gray F	irm Shale							0.00 m to
22.02		14/	De entre en C					Amou	nt	

of Alberta

Govern	men	h W	/ate	er V	Vell D	rilli	ng F	Repo	rt <u>v</u>	/iew in I	mperi	<u>al</u>
of Albe		The drille	er supplies th	ne data cont	ained in this report. T	The Provinc	e disclaims res		0	GIC Well ID GoA Well Tag Date Report R		392000 1981/05/06
1. Well Identifica	ation and Lo	cation									Me	asurement in Metri
Owner Name DAVIES, JIM				dress D. BOX 67	3 COCHRANE		Town		Prov	ince	Post	al Code
	1/4 or LSD SW	SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block	Plan	Additiona	al Description		
Measured from	m	from from			GPS Coordina Latitude <u>51.</u> How Location (Map	434730	0	· · · · · · · · · · · · · · · · · · ·	He	evation ow Elevation stimated		20 m
Additional Inform	nation			I							Ме	asurement in Metr
Distance From Is Artesian Flo Ra	, ,							ol Installed Describe				
Recommended			<u> </u>		18.18 L/min							
Recommended	I Pump Intake	Depth (Fro	om TOC)		0.00 m	Туре	,	M	lodel		H.P.	
	omments on V	Vell	G		Depth Depth		m	Geophy S	rsical Log Ta Submitted to (ken GIC		Attached Yes
5. Yield Test								Measuremer	nt in Metric		Taken	From Ground Leve
Test Date 1981/03/24	-	Start Time 2:00 AM		Static	Water Level 29.87 m		Drawd	own (m)	Elaps	water level ed Time ites:Sec	F	Recovery (m)
Method of Wa Remo Depth Withdra If water remova	Type <u>Bai</u> oval Rate wn From	18.1 52.4	13 m	/		_			1			
6. Water Diverte Water Source	ed for Drilling	9		Amc	ount Taken L				Diversion Da	ate & Time		

7.	Contractor Certification
1	Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRILLING Certification No
1

f Alk					ntained in this report. The				GoA Well Ta Date Report		
		Ind Location					-		D /		asurement in Me
Owner Nan CARTWRIC		E	RR	dress 2			Town CROSSFIELD		Province AB	Post T0M	al Code 0S0
Location	1/4 or SE	LSD SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block Pla	an Ad	dditional Description	า	
Measured f	-	-	020	03	-	in Deci	mal Degrees (NAD	83)			
Measureu i		m from			Latitude 51.434	4800	Longitude -11	4.406000	Elevation		m
		m from			How Location Obt	ained			How Elevation	Obtained	
					Not Verified				Not Obtained		
Drilling In	formation										
Method of	Drilling			pe of Wo	rk				sed Well Use		
Rotary			Nev	w Well				Other			
Formation	n Log			Me	easurement in Metri	ic 4	. Well Completion				asurement in Me
Depth							1	d Finished V	Vell Depth Start L		End Date
from ground	Water						128.02 m		2008/1	1/03	2008/11/10
level (m)	Bearing		Lithology	Descripti	on		Borehole		5 ()		T ()
0.30		Topsoil					Diameter (cr 20.32	n)	From (m) 0.00		To (m) 128.02
4.57		Brown Clay					Surface Casing (if	applicable)		ing/Liner	
5.49		Brown Shale					Steel		Plastic		
10.67		Gray Sandstone						16.83			12.55 cm
45.42		Gray Shale					Wall Thickness :			Top at : _	0.556 cm
46.33		Gray Sandstone					Bottom at :	/9.55		ottom at :	
54.25		Gray Shale					Perforations		D		120.02 111
56.39		Gray Sandstone					From (m)	To (ter (cm)	Interval (cm)
59.44		Gray Shale					82.30	126.	49 0.	239	25.40
79.25		Lost Circulation					Perforated by	Saw			
126.49		Gray Sandy Shale					Annular Seal Dr	iven & Rento	nite		
128.02		Gray Shale							_ to79.55	m	
							Other Seals				
							7	Гуре		At ((m)
							Screen Type				
							Size OD :		cm		

Attachment Top Fittings

Type Unknown

Amount

Pack

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well $\mathsf{TIM}\ \mathsf{KLAASSEN}$ Company Name

WELL DONE WATER WELLS INC.

Certification No 205734 Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Unknown

	accuracy.		ntained in this report. Th		aims responsibility for its	GIC Well ID GoA Well Tag Date Report F	
Well Identification and Locat	tion						Measurement in M
Owner Name		Address			wn	Province	Postal Code
CARTWRIGHT, CHLOE		RR 2		CR	OSSFIELD	AB	TOM 0S0
	SEC TW 31 028		5		Block Plan	Additional Descriptior	7
Measured from Boundary of					<mark>egrees (NAD 83)</mark> Longitude114.4060	00 Elevation	m
m from	m		How Location O		_0/19/lude _114.4000	How Elevation	
m from	m			Diamed			Oblained
			Not Verified			Not Obtained	
Iditional Information							Measurement in Me
Distance From Top of Casing to	Ground Level		91 <i>11</i> cm				
Is Artesian Flow	Olound Level		91. 44 Cm	Is Flow	Control Installed		
Is Artesian Flow Rate Recommended Pump Rate	L/min	-		1011011	Describe		
	L/IIIII	-					
Recommended Pump Rate			13.64 L/min	Pump Insta	lled	Depth	<u> </u>
Recommended Pump Intake De	epth (From TOC	C)	121.92 m	Туре		lodel	Н.Р.
Did you Encounter Saline Wat	ter (>4000 ppm	TDS)	Depth	m	Well Disinfect	ted Upon Completion	
		· · · · · · · · · · · · · · · · · · ·					
		Gas	Depth	m	Geophy	sical Log Takeri	
		Gas	Depth	m			
Additional Comments on Well 260' - 415' ALSO FRACTURES,					S	Submitted to GIC	Result Attached
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start	, BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected	Submitted to GIC d for Potability nt in Metric Depth to water level	Result Attached
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start	, BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m)	Submitted to GIC	Result Attached
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start	, BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02	Submitted to GIC d for Potability nt in Metric Depth to water level Elapsed Time Minutes:Sec 0:00	Result Attached
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal	, BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m)	Submitted to GIC	Result Attached
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump	, BOREHOLE t Time 0 AM	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45	Submitted to GIC d for Potability nt in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate	, BOREHOLE t Time 0 AM 18.18 L/m	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00	Result Attached Taken From Ground La Recovery (m) 106.80 105.83 105.03 104.33 103.81
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump	, BOREHOLE t Time 0 AM 18.18 L/m	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00	Result Attached Taken From Ground Lu Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	, BOREHOLE t Time 0 AM 18.18 L/m 123.44 m	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 103.05
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00	Result Attached Taken From Ground Lu Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54	Submitted to GIC d for Potability Int in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.75 102.53 102.35
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00	Result Attached Taken From Ground Lu Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 103.05 102.75 102.53 102.08
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.54 82.54 82.97 83.85	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.42 103.42 102.75 102.35 102.08 101.71
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From If water removal period was < 2	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67	Submitted to GIC d for Potability Int in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.53 102.53 102.35 102.08 101.71 101.19
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From If water removal period was < 2	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.54 82.54 82.97 83.85	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.42 103.42 102.75 102.35 102.08 101.71
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From If water removal period was < 2	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes: Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.05 102.75 102.35 102.35 101.71 101.19 100.71
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00	Result Attached Taken From Ground Lu Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.82 102.75 102.75 102.35 102.08 101.71 99.76 98.66 97.63
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From If water removal period was < 2	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 30:00 35:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.42 103.05 102.75 102.35 102.08 101.11 99.76 98.66 97.63 96.77
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93 93.24	Submitted to GIC d for Potability Int in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 30:00 35:00 40:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.53 102.53 102.75 102.76 98.66 97.63 96.77 95.92
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93 93.24 95.86	Submitted to GIC d for Potability It in Metric Depth to water level Elapsed Time Minutes: Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 30:00 35:00 40:00 50:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.75 102.75 102.35 102.75 101.11 101.71 99.76 98.66 97.63 96.77 95.92 94.15
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93 93.24 95.86 97.87	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 30:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 3:00 4:00 5:00 30:00 35:00 40:00 50:00 60:00	Result Attached Taken From Ground La Recovery (m) 106.80 105.83 105.03 104.33 103.42 103.81 102.75 102.75 102.53 102.68 101.71 101.71 99.76 98.66 97.63 96.77 95.92 94.15 92.17
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collecter Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93 93.24 95.86	Submitted to GIC d for Potability It in Metric Depth to water level Elapsed Time Minutes: Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 30:00 35:00 40:00 50:00	Result Attached Taken From Ground L Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.75 102.75 102.35 102.75 101.11 101.71 99.76 98.66 97.63 96.77 95.92 94.15
Additional Comments on Well 260' - 415' ALSO FRACTURES, Yield Test Test Date Start 2008/11/13 12:00 Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	BOREHOLE	DIAMTER AI	LSO 6" FOR LINER		Sample Collected Measureme Drawdown (m) 77.02 77.45 78.21 79.22 79.83 80.65 81.20 81.63 82.17 82.54 82.97 83.85 84.67 85.50 87.14 88.85 90.43 91.93 93.24 95.86 97.87 100.74	Submitted to GIC d for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 40:00 50:00 60:00 75:00	Result Attached Taken From Ground Lu Recovery (m) 106.80 105.83 105.03 104.33 103.81 103.42 102.75 102.75 102.83 101.71 99.76 98.66 97.63 96.77 95.92 94.15 92.17 89.86

7. Contractor Certification Name of Journeyman responsible for drilling/construction of well TIM KLAASSEN Company Name WELL DONE WATER WELLS INC.

Certification No 205734 Copy of Well report provided to owner Date approval holder signed

Government Water Well Drilling Report View in Imperial 492979 GIC Well ID of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. 1999/04/30 Date Report Received 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province BOSCH, ROBERT P.O. BOX 55 WATER VALLEY T0M 2E0 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description 028 SE 30 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Latitude 51.420350 Longitude -114.406012 Elevation m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use New Well Combination Domestic 3. Formation Log Measurement in Metric 4. Well Completion Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 45.72 m 1998/10/15 1998/10/20 from Water around Borehole level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 3.05 Clay 0.00 0.00 45.72 3.66 Sandstone Surface Casing (if applicable) Well Casing/Liner Steel Plastic 4.88 Soft Shale Size OD : 16.81 cm Size OD : 12.55 cm 14.63 Soft Shale & Sandstone 0.478 cm Wall Thickness : Wall Thickness : 0.630 cm 15.24 Hard Shale 7.01 m Bottom at : 9.75 m Top at : 15.85 Hard Sandstone Bottom at : 45.72 m 17.07 Dark Shale Perforations From (m) To (m) Diameter (cm) Interval (cm) 20.73 Soft Shale

33 53

Perforated by Saw			
Annular Seal Driven Placed from 0 Amount Other Seals			
Туре			At (m)
Screen Type	0.00		
Size OD : From (m)		(m)	Slot Size (cm)
Attachment			
Top Fittings		Bottom Fitt	ings
Pack			
Туре		Grain Size	
Amount			

0 157

25 40

45 72

7. Contractor Certification

23.77

34.75 36.27

40.54

42.67

45.72

Sandstone Soft Shale

Sandstone

Shale & Sandstone

Soft Shale & Sandstone

Hard Sandstone

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

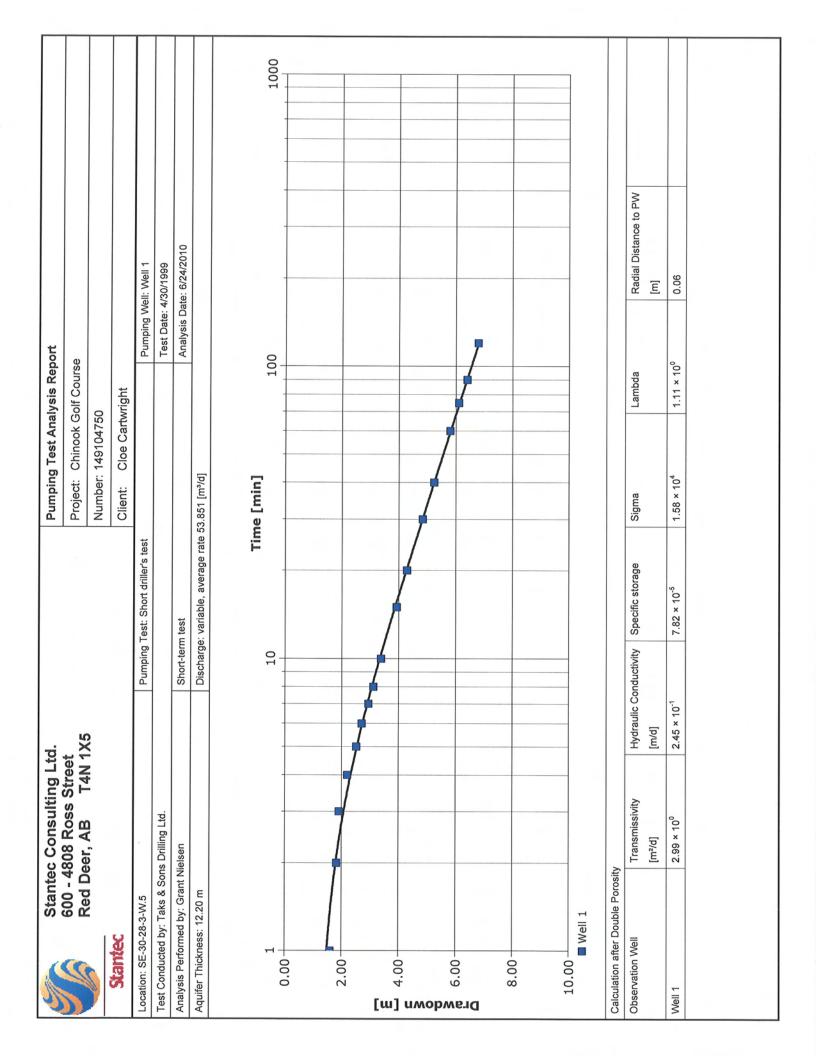
Company Name TAKS & SONS DRILLING LTD. Certification No

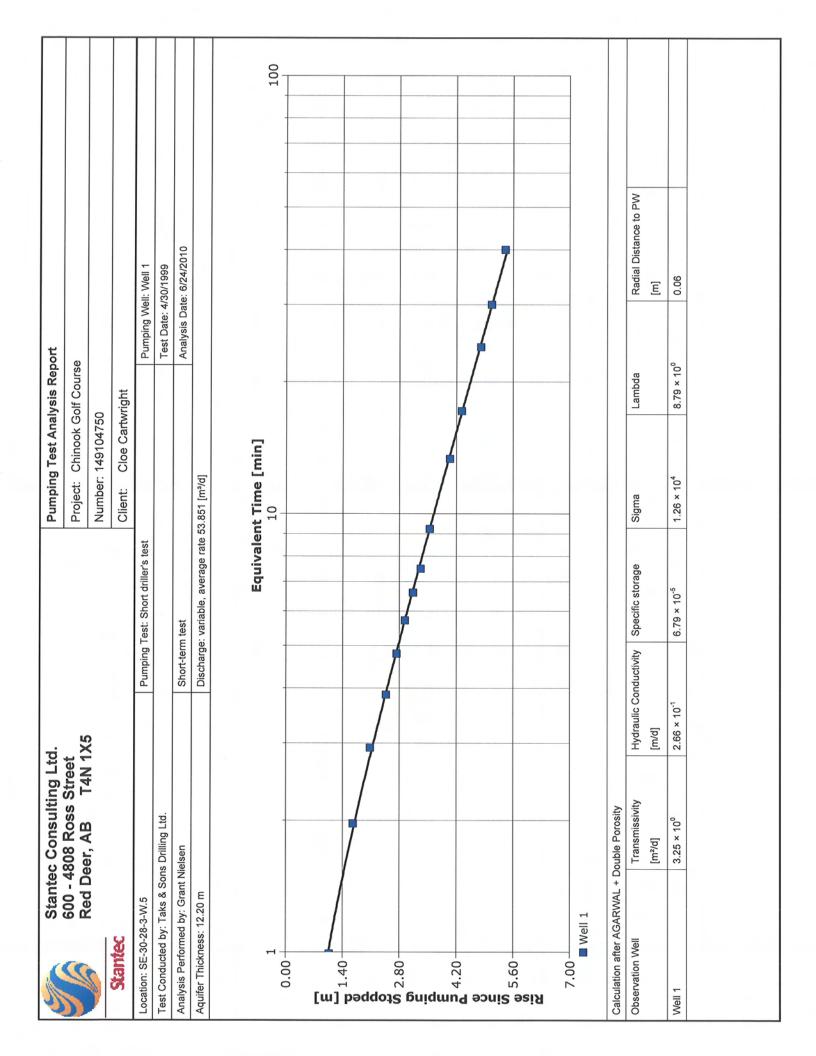
1

D SEC TWP 30 028 of m from m from asing to Ground Level L/min tate tat	BOX 55 WATER VALLEY RGE W of MER Lo 03 5 GPS Coordinates in I Latitude 51.42035 How Location Obtain Not Verified	Decimal Degrees (NAD 83) 0 Longitude -114.4066 ed Is Flow Control Installed Describe ump Installed	How Elevation Not Obtained	m n Obtained Measurement in M m
30 028 v of m from m from comparison asing to Ground Level L/min tate take Depth (From TOC) line Water (>4000 ppm TDS, Gas on Well	03 5 GPS Coordinates in I Latitude <u>51.42035</u> How Location Obtain Not Verified 	Decimal Degrees (NAD 83) 0 Longitude -114.4066 ed Is Flow Control Installed Describe ump Installed	012 Elevation How Elevation Not Obtained	m Measurement in M m
m from m from asing to Ground Level L/min tate tat	Latitude 51.42035 How Location Obtain Not Verified	0 Longitude <u>-114.4060</u> ed Is Flow Control Installed <u>Describe</u> ump Installed <u>Mell Disinfec</u> <u>m</u> Well Disinfec <u>m</u> Geoph Sample Collecte	How Elevation Not Obtained	m Obtained Measurement in M m
L/min late atake Depth (From TOC) line Water (>4000 ppm TDS, Gas on Well	45.46 L/min Pl 44.20 m 7 j Depth s Depth	Describe ump Installed	Depth Model ted Upon Completion ysical Log Taken Submitted to GIC	<u>m</u> H.P
L/min late atake Depth (From TOC) line Water (>4000 ppm TDS, Gas on Well	45.46 L/min Pl 44.20 m 7 j Depth s Depth	Describe ump Installed	Depth Model ted Upon Completion ysical Log Taken Submitted to GIC	H.P
ate take Depth (From TOC) line Water (>4000 ppm TDS, Gas on Well	45.46 L/min Pi 44.20 m 7 ') Depth	ump Installed N Type N Well Disinfec Geoph Sample Collecte	Depth Model ted Upon Completion ysical Log Taken Submitted to GIC	H.P
ntake Depth (From TOC) line Water (>4000 ppm TDS, Gas on Well	44.20 m 7	ype N Well Disinfec Geoph Sample Collecte	Model	H.P
line Water (>4000 ppm TDS, Gas on Well) Depth s Depth	m Well Disinfec m Geoph Sample Collecte	cted Upon Completion ysical Log Taken Submitted to GIC	
		Measureme	ent in Metric Depth to water level	Taken From Ground L
Start Time 12:00 AM	Static Water Level 28.96 m	Drawdown (m)	Elapsed Time Minutes:Sec	Recovery (m)
Pump 37.73 43.59 mass		29.10 30.70 30.92 31.01 31.30 31.62 31.81 32.05	0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00	35.84 34.82 33.81 33.42 33.16 32.95 32.75
au v z nouro, oxprant why		32.22 32.49 33.04 33.94 34.34 34.90 35.20 35.50 35.89	7.00 8:00 10:00 15:00 20:00 30:00 40:00 60:00 75:00 90:00 120:00	32.57 32.34 31.85 31.56 31.08 30.82 30.49
n	Pump 37.73 L/min	Pump <u>37.73 L/min</u> <u>43.59 m</u> vas < 2 hours, explain why ling	30.70 Pump 30.92 31.01 31.01 31.30 31.62 31.81 32.05 32.22 32.49 33.04 33.04 33.94 34.34 34.90 35.20 35.50 35.89 lling 30.70	state 30.70 1:00 9ump 30.92 2:00 31.01 3:00 31.01 43.59 m 31.62 5:00 31.81 6:00 32.05 32.05 7:00 32.49 33.04 15:00 33.40 33.94 30:00 34.34 34.34 40:00 34.90 35.50 90:00 35.50 35.89 120:00

7. Contractor Certification Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name TAKS & SONS DRILLING LTD.

Certification No
1





Government Water Well Drilling Report View in Imperial GIC Well ID 399551 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1995/01/05 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province CARTWRIGHT, CHLOE P.O. BOX 370 CREMONA TOM ORO Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description SE 31 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude 51.434730 Longitude -114.405993 m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Type of Work Proposed Well Use Method of Drilling Cable Tool New Well Domestic 3. Formation Log Measurement in Metric 4. Well Completion Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 45.72 m 1994/11/28 1994/12/13 from Water around Borehole level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 0.61 Black Clay 0.00 0.00 45.72 2.13 Brown Gritty Clay Surface Casing (if applicable) Well Casing/Liner Steel Plastic Brown Hard Sandstone 2.74 Size OD : 14.12 cm Size OD : 11.43 cm 4.27 Brownish Gray Gritty Clay Wall Thickness : 0.478 cm Wall Thickness : 0.673 cm 4.88 Gray Hard Sandstone 4.57 m Bottom at : Top at : 3.05 m 5.49 Gray Firm Shale Bottom at : 45.72 m Gray Hard Sandstone 6.40 Perforations From (m) To (m) Diameter (cm) Interval (cm) 8.23 Gray Hard Shale 28.65 44 20 0 953 40 64 9.14 Gray Hard Sandstone Perforated by Saw Gray Hard Shale 10.06 10.97 Gray Hard Sandstone Annular Seal Driven 12.19 Gray Hard Shale 0.00 m to Placed from 4.27 m Amount 13.41 Gray Hard Sandstone Other Seals Gray Hard Shale 16.76 Gray Hard Sandstone Type At (m) 17.37 18.59 Gray Firm Shale Screen Type Gray Hard Sandstone 21.03 Size OD : 0.00 cm 21.64 Gray Firm Shale From (m) To (m) Slot Size (cm) 23.16 Gray Hard Sandstone Attachment Gray Hard Shale 28.65 Top Fittings Bottom Fittings Gray Hard Sandstone 29.57 34.75 Gray Hard Shale Pack Type Grain Size 37.80 Yes Gray Water Bearing Sandstone Amount 45.72 Hard Shale & Sandstone Ledges

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRILLING 1992 Certification No

		contained in this report. T		responsibility for its	GIC Well ID GoA Well Tag Date Report F	399551 g No. Received 1995/01/05
Well Identification and Location						Measurement in Me
Owner Name CARTWRIGHT, CHLOE	Address P.O. BOX	(370 CREMONA	Town		Province	Postal Code TOM 0R0
ocation 1/4 or LSD SEC SE 31	TWP R0 028 03	GE W of MER 5	Lot Block	k Plan	Additional Descriptior	7
Measured from Boundary of m from m from			es in Decimal Degre 134730 Long Dotained		3 Elevation How Elevation Not Obtained	m Obtained
ditional Information						Measurement in Me
Distance From Top of Casing to Ground Is Artesian Flow			Is Flow Col	ntrol Installed		
Rate L	/min					
Recommended Pump Rate		0.00 L/min	Pump Installed		Depth	m
Recommended Pump Intake Depth (From	m TOC)	44.20 m	Туре	Mo	del	Н.Р.
Did you Encounter Saline Water (>400	00 ppm TDS)		m	Well Disinfected Geophysi	d Upon Completion	
Additional Comments on Well				Sample Collected	for Potability	Result Attached
Yield Test				Measurement		Taken From Ground Le
Yield Test Test Date Start Time 1994/12/13 12:00 AM	S	tatic Water Level 28.65 m	Drav	Measurement	in Metric Depth to water level Elapsed Time Minutes:Sec	Taken From Ground Le Recovery (m)
Test DateStart Time1994/12/1312:00 AM	S		Drav		Depth to water level Elapsed Time Minutes:Sec 0:00	Recovery (m)
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal	s			wdown (m)	Depth to water level Elapsed Time Minutes:Sec	
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer				wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00	Recovery (m) 43.89 43.59 43.28
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate <u>4.5</u>	5 <u>5 L/mi</u> n			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00	Recovery (m) 43.89 43.59 43.28 42.98
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer	5 <u>5 L/mi</u> n			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate <u>4.5</u>	<u>i5 L/mi</u> n 10 m			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m			wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 41.15
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 41.15 40.84
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 41.15
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 40.84 40.54 40.23 39.93
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00 25:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.37 42.06 41.76 41.45 40.84 40.54 40.23 39.93 38.40
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00 25:00 30:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 41.15 40.84 40.54 39.93 38.40 37.49
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00 25:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.45 41.15 40.54 40.23 39.93 38.40 37.49 36.88
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.76 41.76 41.45 40.54 40.23 39.93 38.40 37.49
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 10:00 12:00 14:00 20:00 25:00 30:00 35:00 40:00 50:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.67 42.98 42.67 42.98 42.67 42.98 42.67 42.98 42.67 42.98 42.67 42.98 42.67 42.98 42.67 42.98 42.98 40.23 39.93 38.40 37.49 36.88 36.58 36.58 36.27 35.97
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 12:00 14:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.66 41.76 41.45 41.15 40.84 40.23 39.93 38.40 37.49 36.88 36.27 35.97 35.66
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00 90:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.06 41.45 41.45 40.54 40.23 39.93 38.40 37.49 36.88 36.58 36.27 35.97 35.66 35.36
Test Date Start Time 1994/12/13 12:00 AM Method of Water Removal Type Bailer Removal Rate 4.5 Depth Withdrawn From 0.0	<u>i5 L/mi</u> n 10 m		- Drav	wdown (m)	Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 12:00 14:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00	Recovery (m) 43.89 43.59 43.28 42.98 42.67 42.37 42.66 41.76 41.45 41.15 40.84 40.23 39.93 38.40 37.49 36.88 36.27 35.97 35.66

 7. Contractor Certification

 Name of Journeyman responsible for drilling/construction of well
 Certification No

 UNKNOWN NA DRILLER
 1

 Company Name
 Copy of Well report provided to owner

 PARSONS DRILLING 1992
 Date approval holder signed

Government Water Well Drilling Report View in Imperial GIC Well ID 399552 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1995/01/05 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province CARTWRIGHT, CHLOE P.O. BOX 370 CREMONA TOM ORO Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description SE 31 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude 51.434730 Longitude -114.405993 m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Type of Work Proposed Well Use Method of Drilling Cable Tool New Well Domestic 3. Formation Log Measurement in Metric 4. Well Completion Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 66.14 m 1994/11/03 1994/12/14 from Water around Borehole level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 0.61 Black Clay 0.00 0.00 66.14 3.05 Brown Hard Sandstone Surface Casing (if applicable) Well Casing/Liner Steel Plastic Brown Gritty Clay 4.27 Size OD : 14.12 cm Size OD : 11.43 cm 5.18 Gray Hard Shale Wall Thickness : 0.478 cm Wall Thickness : 0.673 cm 6.10 Gray Hard Sandstone Bottom at : 5.18 m Top at : 3.66 m 25.60 Gray Hard Shale & Sandstone Ledges Bottom at : 66.14 m Gray Wapiti Sandstone 26.21 Perforations Diameter (cm) From (m) To (m) Interval (cm) 28.65 Gray Fine Grained Shale 24.38 65 23 1 588 40 64 35.36 Gray Hard Shale Perforated by Saw Gray Coarse Grained Sandstone 37 80 40.54 Gray Fine Grained Shale Annular Seal Driven Gray Hard Sandstone 0.00 m to 41.76 Placed from 5.18 m Amount 44.50 Gray Hard Shale Other Seals Gray Hard Sandstone 45.11 Gray Hard Shale Type At (m) 60.66

7. Contractor Certification

61.87

62.79

64.62

66.14

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Light Gray Hard Sandstone

Gray Fine Grained Shale

Gray Hard Sandstone

Gray Firm Shale

Company Name PARSONS DRILLING 1992 Certification No

Screen Type

Pack Type

Amount

Size OD :

From (m)

Attachment ______ Top Fittings _____ 0.00 cm

To (m)

Bottom Fittings

Grain Size

Copy of Well report provided to owner Date approval holder signed

Slot Size (cm)

🛛 Alberta 🗖	accuracy.		a contained in this report. T ort will be retained in a pub		s responsibility for its	GIC Well ID GoA Well Tag Date Report F	399552 g No. Received 1995/01/05
Well Identification and Loca							Measurement in Me
Owner Name CARTWRIGHT, CHLOE		Address P.O. BO	X 370 CREMONA	Town		Province	Postal Code T0M 0R0
		TWP R 028 03	RGE W of MER 3 5	Lot Bloc	ck Plan	Additional Descriptior	7
	rom rom	_			rees (NAD 83) ngitude <u>-114.40599</u>	3 Elevation How Elevation Not Obtained	m Obtained
ditional Information							Measurement in Me
Distance From Top of Casing to Is Artesian Flow				Is Flow Co	ontrol Installed		
Rate	L/mi	in					
Recommended Pump Rate			0.00 L/min	Pump Installed	d	Depth	m
Recommended Pump Intake D	Depth (From	TOC)	64.01 m	Туре	Ma	odel	H.P.
Did you Encounter Saline Wa		ppm TDS)		m	Well Disinfecte Geophys	d Upon Completion sical Log Taken	
Additional Comments on We	ell				Su Sample Collected	Ibmitted to GIC	Result Attached
Yield Test					Measuremen	t in Metric	Taken From Ground Le
Test Date Sta	art Time 2 AM	Ś	Static Water Level 24.38 m	Dra			
Test Date Sta 1994/12/14 7:12		ę		Dra	Measuremen	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00	Taken From Ground Le Recovery (m)
Test Date Sta 1994/12/14 7:12 Method of Water Removal	2 AM	S		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec	Taken From Ground Le
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type Bailer	2 AM r			Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00	Recovery (m) 61.75 61.57 61.45
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type Bailer Removal Rate	2 AM r 3.00	<u>L/mi</u> n		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00	Recovery (m) 61.75 61.57 61.45 61.26
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type Bailer	2 AM r 3.00	<u>L/mi</u> n		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00	Recovery (m) 61.75 61.57 61.45 61.26 61.14
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00	Recovery (m) 61.75 61.57 61.45 61.26
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type Bailer Removal Rate	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00	Contract Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.53 60.35
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00	Contract Contract of the second
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00	Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.35 60.23 60.05
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00	Contract Contract of the second
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00	Contract Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 14:00 14:00	Contract Recovery (m) 61.75 61.57 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74 59.44 59.83 58.83
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00 25:00	Recovery (m) 61.75 61.57 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74 59.31 58.83 58.22
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00	Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.35 60.23 60.05 59.74 59.44 59.31 58.83 58.22 57.61
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00 25:00	Recovery (m) 61.75 61.57 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74 59.31 58.83 58.22
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m			Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 14:00 16:00 20:00 25:00 30:00 35:00	Contract Contract of the second
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 14:00 14:00 20:00 25:00 30:00 35:00 40:00 50:00	Contract Contract of the second
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00	Taken From Ground Le Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74 59.44 59.31 58.83 58.22 57.61 57.00 56.39 54.86 53.34 51.51
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00	Taken From Ground Le Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.35 60.23 60.05 59.74 59.44 59.31 58.83 58.22 57.61 57.00 56.39 54.86 53.34 51.51 49.68
Test Date Sta 1994/12/14 7:12 Method of Water Removal Type <u>Bailer</u> Removal Rate Depth Withdrawn From	2 AM r 3.00 0.00	<u>L/mi</u> n m		- Dra	Measuremen awdown (m)	t in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00 60:00 75:00	Taken From Ground Le Recovery (m) 61.75 61.57 61.45 61.26 61.14 60.66 60.53 60.23 60.05 59.74 59.44 59.31 58.83 58.22 57.61 57.00 56.39 54.86 53.34 51.51

 7. Contractor Certification

 Name of Journeyman responsible for drilling/construction of well

 UNKNOWN NA DRILLER

 Company Name

 PARSONS DRILLING 1992

Government Water Well Drilling Report View in Imperial GIC Well ID 416470 of Alberta GoA Well Tag No. The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database. Date Report Received 1976/01/16 1. Well Identification and Location Measurement in Metric Owner Name Address Postal Code Town Province MCNEILL, TERRY RR4, CALGARY Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description SE 31 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of 1<u>226.82 m</u> Elevation Latitude 51.434730 Longitude -114.405993 m from How Location Obtained How Elevation Obtained m from Мар Estimated 2. Drilling Information Method of Drilling Type of Work Proposed Well Use Cable Tool New Well Domestic & Stock 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 79.25 m 1975/07/29 from Water around **Borehole** level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 0.30 Topsoil 0.00 0.00 79.25 8.53 Brown Clay Surface Casing (if applicable) Well Casing/Liner Steel Steel 14.02 Brown Shale Size OD : 16.84 cm Size OD : 12.70 cm 21.34 Gray Shale Wall Thickness : 0.478 cm 0.000 cm Wall Thickness : 23.16 Yes Gray Water Bearing Sandstone Bottom at : 9.14 m Top at : 0.00 m 27.43 Gray Shale Bottom at : 79.25 m 42.67 Brown Shale Perforations From (m) To (m) Diameter (cm) Interval (cm) 56.69 Gray Shale 19 81 1 270 30.48 24.38 57.91 Yes Gray Water Bearing Sandstone 54.86 59.44 0.000 0.00 79.25 Gray Shale Perforated by Torch Annular Seal Driven Placed from <u>0.00 m</u> to 9.14 m Amount _ Other Seals Туре At (m) Screen Type Size OD : 0.00 cm

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS Certification No

1

From (m)

Attachment

Pack

Top Fittings

Copy of Well report provided to owner Date approval holder signed

To (m)

Bottom Fittings

Grain Size

Slot Size (cm)

Goveri	nmen	t Wa	ater	Well D)rilli	ing I	Repo	rt <u>Y</u>	View in I	mperi	al
of Alb	erta 🛛	The driller s accuracy.	upplies the data	a contained in this report.	The Provinc	ce disclaims re	sponsibility for its	(GIC Well ID GoA Well Tag Date Report F		416470
			tion on this repo	ort will be retained in a p	ublic databas	se.		L			
1. Well Identifi Owner Name MCNEILL, TE		ocation	<i>Address</i> RR4, CA			Town		Prov	vince		asurement in Metric al Code
Location	1/4 or LSD SE		<i>TWP R</i> 028 03				Plan	Additiona	al Description		
Measured froi		n from n from	_	GPS Coordina Latitude <u>5</u> How Location Map	1.434730	0	s (NAD 83) ude <u>-114.4059</u>	H	levation ow Elevation stimated		<u>32 m</u>
Additional Info	rmation			•				<u> </u>		Me	asurement in Metri
Is Artesian I	m Top of Casin Flow			cm		's Flow Conti	rol Installed				
ŀ	Rate	L/m	in				Describe				
	ed Pump Rate	Ponth (From		0.00 L/min 73.15 m			Λ/		Depth		
Additional	counter Saline Comments on	Well	Gas	Depth		m	Geophy S	vsical Log Ta Submitted to (ken GIC		ttached
5. Yield Test							Measureme			Taken	From Ground Leve
Test Date 1975/07/29		Start Time 12:00 AM	S	Static Water Level 24.38 m		Drawo	lown (m)	Elaps	water level sed Time utes:Sec	F	Recovery (m)
Rei Depth Withd	Vater Removal Type <u>Ba</u> moval Rate Irawn From Irawn period was	iler 11.37 0.00	<u>m</u>		_						
6. Water Diver Water Source		g		Amount Taken L				Diversion D	ate & Time		

7. C	Contractor Certification
	ame of Journeyman responsible for drilling/construction of well NKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS

Certification No 1

f Alb	erta	a 🗖	accuracy	/.		tained in this repor			e disclaims responsibility fo	or its	GoA	Well ID Well Tag No. Report Rece		392001 1985/10/16
. Well Identi <i>Owner Name</i> DAVIES, JIN	э	ind Locat	ion		ldress D. BOX 67	3 COCHRANE			Town		Province)		asurement in Met al Code
Location	1/4 or SW		SEC 31	<i>TWP</i> 028	<i>RGE</i> 03	W of MER 5	Lc	ot	Block Plan	Ac	lditional De	escription		
Measured fr	om Bound	ary of m fro m fro					51.43473	30	imal Degrees (NAD 83 Longitude <u>-114.4</u>		How E	tion Elevation Obta		<u>m</u>
Drilling Info						-								
Method of L Rotary	Drilling				pe of Wor w Well	[.] k				Propos Stock	sed Well L	lse		
. Formation	Log				Me	asurement in	Metric	4	4. Well Completion Total Depth Drilled	- 	/oll Donth	Start Data	Mea	asurement in Met
Depth from ground	Water								16.76 m Borehole	inisned M	en Depur	1985/09/17		1985/09/17
level (m) 10.67	Bearing	Clay & Ro	ocks	Lithology	Descriptio	n			Diameter (cm) 0.00		From 0.0			To (m) 16.76
16.76		Shale & S		ne					Surface Casing (if ap Steel	plicable)		Vell Casing/L	iner	10.70
									Size OD :				_	11.68 cm
									Wall Thickness :					0.635 cm
									Bottom at :	6.10	m	Bottom		0.00 m 16.76 m
									Perforations					
									From (m) 10.67	To (r 16.7		Diameter (c 0.635	:m)	Interval (cm) 20.32
									Perforated by M	achine				
									Annular Seal Drive Placed from Amount Other Seals	6.10 m		0.00 m		
									Тур	e			At ((m)
									Screen Type Size OD :	0.00	cm			
								- L	5126 00.	0.00	CIII			

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD. Certification No

1

Top Fittings

Pack

Type ____ Amount ___

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Gover	nmen	t W	'ate	rV	Vell D	rilli	ing F	Repo	rt <u>r</u>	/iew in I	mperi	<u>al</u>
of Alb		The drille accuracy	r supplies the	e data cont	tained in this report. T	The Provin	ce disclaims res		(GIC Well ID GoA Well Tag Date Report R		392001 1985/10/16
1. Well Identif	ication and Lo	ocation									Ме	asurement in Metri
Owner Name DAVIES, JIM				ress . BOX 67	3 COCHRANE		Town		Prov	vince	Post	al Code
Location	1/4 or LSD SW	SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block	Plan	Additiona	al Description		
Measured fro		i from i from			GPS Coordina Latitude <u>51.</u> How Location (Map	434730	Longitu		Н	levation ow Elevation ot Obtained		
Additional Info	ormation										Me	asurement in Metri
Is Artesian	om Top of Casin Flow Rate				cm		Is Flow Contro	ol Installed Describe				
	ded Pump Rate				0.00 L/min	Pum	o Installed	December				
Recomment	ded Pump Intake	e Depth (Fro	m TOC)		15.24 m	Тур	9	M	lodel		H.P.	
	ncounter Saline Comments on N			5) as	Depth Depth _		m	Geophy. S	sical Log Ta ubmitted to	ken GIC		Attached
5. Yield Test								Measuremer			Taken	From Ground Leve
Test Date 1985/09/17	-	Start Time 2:00 AM		Statio	c Water Level 12.19 m		Drawdo	own (m)	Elaps	water level sed Time utes:Sec	f	Recovery (m)
Re Depth With	Water Removal Type <u>Air</u> moval Rate drawn From oval period was	<u>90.9</u> 0.0	0 m			-			1			
6. Water Dive	erted for Drilling	g		Amo	ount Taken L				Diversion D	ate & Time		

7. Contractor Certification Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD.

Certification No 1

f Alb	erta	The driller supplies the accuracy. The information on thi			ovince disclaims responsibi abase.	lity for its	GIC Well ID GoA Well Tag N Date Report Re	lo.	92003
. Well Iden Owner Nan STONE, BA	ne		lress GPOUND		Town		Province	Meas Postal	surement in Met Code
Location	1/4 or NW	LSD SEC TWP 31 028		W of MER Lo 5	t Block Pl	an Ad	ditional Description		
Measured f	rom Bound	ary of m from m from	La	titude <u>51.44196</u> ww.Location Obtain		1 A A A A A A A A A A A A A A A A A A A	Elevation How Elevation O. Estimated		<u>m</u>
. Drilling Int Method of Cable Tool		Тур	e of Work / Well			Propos Domesi	sed Well Use tic		
. Formation Depth from ground	N Log Water		Measure	ement in Metric	4. Well Completic Total Depth Drille 23.77 m Borehole		ell Depth Start Date		End Date 1967/04/24
level (m)	Bearing	0,7	Description		Diameter (c	m)	From (m)		To (m)
3.05		Yellow Clay			0.00		0.00		23.77
6.40		Gray Clay & Boulders			Surface Casing (i Steel	f applicable)	Well Casing Steel	₃/Liner	
7.62		Hard Sandstone & Rocks			Size OD	0.00		e OD :	0.00 cm
10.36		Gray Clay & Shale			Wall Thickness	0.000	cm Wall Thick	kness :	0.000 cm
11.28	Yes	Light Gray Water Bearing Sa	ndstone		Bottom at	10.97	<u>m</u> 7	op at :	9.75 m
11.89		Dark Hard Sandstone					Botto	om at :	23.77 m
23.77	Yes	Gray Water Bearing Shale &	Sandstone		Perforations From (m) 11.28	To (r 22.8			Interval (cm) 0.00
					_	0.00 m	_ <i>to</i> 0.00 m	_	
						Туре		At (m)
					Screen Type Size OD	0.00	cm		
					From (m)		To (m)		ot Size (cm)

Type _____ Grain Size ____ Amount _____

Top Fittings _____

Pack

7. Contractor Certification Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name

PARSONS DRLG

Certification No
1

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

_	erta	The drille accuracy	er supplies ti	ne data conta	Ained in this report. T	he Province	e disclaims resp		(; (GIC Well ID GoA Well Taç Date Report I	
Well Ident	ification and Lo		mation on t	iis report will	be retained in a put						Measurement in Me
Owner Nam STONE, BA	е	oution		dress GPOUND			Town		Pro	vince	Postal Code
Location	1/4 or LSD NW	SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5			Plan	Addition	al Descriptior	n
Measured fr		from			GPS Coordinat Latitude <u>51.</u> How Location (Map	441961		1 C C C C C C C C C C C C C C C C C C C	Н	levation low Elevation stimated	1219.20 m Obtained
ditional Inf	formation			I					•		Measurement in Me
	rom Top of Casin n Flow Rate							ol Installed Describe			
Recommen	nded Pump Rate										<u>m</u>
Recommen	nded Pump Intake	e Depth (Fro									H.P.
	Encounter Saline			0S) Cas	Depth Depth		m	Geophy S	ysical Log Ta Submitted to	iken GIC	Result Attached
Yield Test								Measureme	nt in Metric	:	Taken From Ground L
Test Date 1967/04/24		Start Time 2:00 AM		Static	Water Level 16.46 m	[Drawdo	own (m)	Elap	water level sed Time utes:Sec	Recovery (m)
R Depth With	Water Removal Type <u>Bai</u> emoval Rate ndrawn From	45.4 0.0	00 m	Ŷ		-					
Water Div	erted for Drilling	g		Amou	unt Taken L				Diversion D	ate & Time	

7. Contractor Certification	
Name of Journeyman responsible for UNKNOWN NA DRILLER	drilling/construction of well
Company Name	

PARSONS DRLG

Certification No 1

Government Water Well Drilling Report View in Imperial GIC Well ID 443049 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1996/03/29 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province RR2, CROSSFIELD HOSKINS, DAN TOM 0S0 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description NE 31 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude 51.441961 Longitude -114.405994 m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Type of Work Proposed Well Use Method of Drilling Cable Tool New Well Domestic 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 38.10 m 1995/11/13 1995/11/23 from Water around Borehole level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) Brown Clay & Rocks 1.52 0.00 0.00 38.10 2.13 Gray Firm Shale Surface Casing (if applicable) Well Casing/Liner Steel Plastic 3.05 Boulders Size OD : 14.12 cm Size OD : 11.43 cm 4.57 Brown Hard Sandstone Wall Thickness : 0.478 cm Wall Thickness : 0.673 cm 5.79 Brownish Gray Hard Sandstone <u>7.32 m</u> Bottom at : Top at : 6.10 m Gray Firm Sandstone 7.01 Bottom at : 38.10 m 8.84 Gray Hard Sandstone Perforations From (m) To (m) Diameter (cm) Interval (cm) 9.75 Gray Hard Shale 30.48 36 58 0 953 30 48 10.36 Gray Hard Sandstone Perforated by Saw Gray Fine Grained Shale 11.28 12.19 Gray Hard Sandstone Annular Seal Driven Gray Hard Shale 4.57 m to 13.11 Placed from 7.32 m Gray Firm Shale Amount 14.63 Other Seals Gray Hard Sandstone 15.24 Gray Hard Shale Type At (m) 16.15 16.76 Dark Gray Hard Sandstone Screen Type 21.95 Gray Firm Shale Size OD : 0.00 cm 22.56 Gray Hard Shale From (m) To (m) Slot Size (cm) 32.00 Gray Hard Sandstone Attachment Gray Hard Shale 32.61 Top Fittings Bottom Fittings Gray Hard Sandstone 33.22 37.19 Gray Hard Shale Pack Type Grain Size 38.10 Gray Hard Sandstone Amount

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRILLING 1992 Certification No

f Alberta	The drille accuracy	er supplies th y.	e data cont	tained in this report. T	he Province o				GIC Well ID GoA Well Tag Date Report R		443049 1996/03/29
. Well Identification and Lo	ocation		· ·							Me	asurement in Me
Owner Name HOSKINS, DAN	Joalion		lress 2, CROSS	SFIELD		Town		F	Province	Pos	tal Code I 0S0
Location 1/4 or LSD NE	SEC 31	<i>TWP</i> 028	<i>RGE</i> 03	W of MER 5	Lot	Block	Plan	Addit	ional Description		
	n from n from			GPS Coordinate Latitude <u>51.4</u> How Location C Not Verified	141961	0	· · · · · · · · · · · · · · · · · · ·	94	Elevation How Elevation Not Obtained		
dditional Information										Me	asurement in Me
Distance From Top of Casir Is Artesian Flow Rate				cm			l Installed Describe				
Recommended Pump Rate		_		45.46 L/min							
Recommended Pump Intak											
Did you Encounter Saline Additional Comments on DRILLER REPORTS DISTA	Water (>400 Well	00 ppm TD Ga	S) as	Depth Depth		m 1 m	Vell Disinfect Geophy S	ted Upon vsical Log Submitted	Completion Taken to GIC		
Did you Encounter Saline Additional Comments on	Water (>400 Well	00 ppm TD Ga	S) as	Depth Depth		m V m Sarr	Vell Disinfect Geophy S	ted Upon vsical Log Submitted d for Pota nt in Met	Completion Taken to GIC bility tric	Result A	
Did you Encounter Saline Additional Comments on DRILLER REPORTS DISTA . Yield Test Test Date	Water (>400 Well	00 ppm TD Ga	S) as CASING 1	Depth Depth		m V m Sarr	Vell Disinfect Geophy S nple Collected <mark>Aeasureme</mark> l	ted Upon vsical Log Submitted d for Pota nt in Mer Depth	Completion Taken to GIC bility iric a to water level apsed Time	Result A	Attached
Did you Encounter Saline Additional Comments on DRILLER REPORTS DISTA Yield Test Test Date	Water (>400 Well ANCE FROM Start Time 3:36 AM I ailer 90.5	00 ppm TD: Ga 1 TOP OF (92 L/min	S) as CASING 1	Depth Depth TO GROUND LEVE		m k m Sarr	Vell Disinfect Geophy S nple Collected <mark>Aeasureme</mark> l	ted Upon vsical Log Submitted d for Pota nt in Mer Depth	Completion Taken to GIC bility iric to water level	Result A	Attached

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER
Company Name

PARSONS DRILLING 1992

Certification No

1

Government Water Well Drilling Report View in Imperial 404736 GIC Well ID of Alberta GoA Well Tag No. The driller supplies the data contained in this report. The Province disclaims responsibility for its accuracy. The information on this report will be retained in a public database. Date Report Received 1995/05/05 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province WARNER, JILL P.O. BOX 32 SITE 1 RR1. TOL OWO COCHRANE TWP Location 1/4 or LSD SEC RGE W of MER Lot Block Plan Additional Description 028 03 16 31 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Latitude 51.443112 Longitude -114.401522 Elevation m 274.32 m from North How Location Obtained How Elevation Obtained 91.44 m from East Not Verified Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use New Well Rotary Stock 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 45.72 m 1995/04/25 1995/04/25 from Water around **Borehole** level (m) Bearing Lithology Description From (m) Diameter (cm) To (m) 3.66 Clay & Rocks 0.00 0.00 45.72 15.24 Shale Surface Casing (if applicable) Well Casing/Liner Steel Plastic 18.29 Sandstone Size OD : 14.12 cm Size OD : 11.43 cm 22.86 Shale 0.478 cm Wall Thickness : 0.544 cm Wall Thickness : 25.91 Sandstone Bottom at : 6.10 m Top at : 4.57 m Shale 36.58 Bottom at : 45.72 m 38.10 Sandstone Perforations From (m) To (m) Diameter (cm) Interval (cm) 45.72 Shale & Sandstone Ledges 33.53 30.48 45 72 0.635 Perforated by Saw Annular Seal Driven 0.00 m to Placed from 6.10 m Amount Other Seals Type At (m)

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD. Certification No

1

Screen Type

Pack Type

Amount

Size OD :

From (m)

Attachment ______ Top Fittings ______ 0.00 cm

To (m)

Bottom Fittings

Grain Size

Copy of Well report provided to owner Date approval holder signed

Slot Size (cm)

Alberta	accuracy.	•			aims responsibility for its		ag No. t Received 1995/05/05
Nell Identification and L		n on this report will	I be retained in a pub	olic database.		· .	Measurement in M
owner Name VARNER, JILL	ocation	Address P.O. BOX 32 COCHRANE	SITE 1 RR1,	То	wn	Province	Postal Code TOL 0W0
ocation 1/4 or LSD 16	SEC 71 31 02	WP RGE 28 03	W of MER 5	Lot	Block Plan	Additional Descripti	on
	f m from North m from East			443112	Degrees (NAD 83) Longitude <u>-114.401</u>	Elevation How Elevation Not Obtained	
ditional Information							Measurement in M
Distance From Top of Casi Is Artesian Flow				Is Flov	Control Installed		
Rate				Dump Inote	lled	Donth	m_
1							H.P
Did you Encounter Saline		Gas	Depth	m	Geoph	/sical Log Taken	
Additional Comments or	ı Well						Result Attached
	n Well				Sample Collecte	d for Potability	Result Attached
Yield Test		Statio	Materiana			d for Potability	Result Attached
	o Well Start Time 12:00 AM	Static	Water Level 24.38 m		Sample Collecte	d for Potability nt in Metric Depth to water leve Elapsed Time Minutes:Sec	Result Attached
/ield Test	Start Time 12:00 AM	Static			Sample Collecte	d for Potability nt in Metric Depth to water level Elapsed Time	Result Attached
/ield Test Test Date 1995/04/25	Start Time 12:00 AM	Static			Sample Collecte	d for Potability nt in Metric Depth to water level Elapsed Time Minutes:Sec 3:00 4:00 5:00	Result Attached
Yield Test Test Date 1995/04/25 Method of Water Remova Type <u>A</u>	Start Time 12:00 AM				Sample Collecte	d for Potability nt in Metric Depth to water leve. Elapsed Time Minutes:Sec 3:00 4:00 5:00 6:00	Result Attached
/ield Test Test Date 1995/04/25 Method of Water Remova Type <u>A</u> Removal Rate	Start Time 12:00 AM al ir 36.37 L/	/ <u>mi</u> n		-	Sample Collecte	d for Potability nt in Metric Depth to water level Elapsed Time Minutes:Sec 3:00 4:00 5:00	Result Attached
Yield Test Test Date 1995/04/25 Method of Water Remova Type <u>A</u>	Start Time 12:00 AM al ir <u>36.37 L/</u> 45.72 m	/ <u>mi</u> n 1			Sample Collecte	d for Potability Depth to water lever Elapsed Time Minutes:Sec 3:00 4:00 5:00 6:00 7:00	Result Attached

7.	Contractor Certifica	ation
	Name of Journeyman	responsible

for drilling/construction of well UNKNOWN NA DRILLER

Company Name DEN-ALTA DRILLING LTD.

Certification No 1

f Alb	erta		cy.		ained in this report. T			onsibility for its	G	GIC Well ID GoA Well Tag No. Nate Report Received	416469
	ification		ormation on th	nis report wil	I be retained in a pub	lic databa	ise.				
Owner Nam		and Location	Ad	dress			Town		Prov		easurement in Me stal Code
MCNEILL, 1				4, CALGA	RY						
ocation	1/4 or SE	LSD SEC 31	<i>TWP</i> 028	<i>RGE</i> 03	W of MER 5	Lot	Block	Plan	Additiona	I Description	
Aeasured fi	rom Bound	lary of			GPS Coordinat	es in De	cimal Degrees	(NAD 83)			
		m from			Latitude 51.4			de <u>-114.4059</u>		evation 1226	
		m from			How Location C	Obtained				w Elevation Obtaine	d
					Мар				Es	timated	
Drilling Inf	ormation										
Method of Cable Tool	Drilling			<mark>be of Wor</mark> l w Well	k				Proposed We Domestic & St		
			INE			_					
ormatior	Log			Mea	asurement in Me	etric	4. Well Com				easurement in M
Depth							18.29 m	Drilled Finis	nea vveli Dep	oth Start Date	End Date 1975/08/27
from ground	Water						Borehole				1313/00/21
evel (m)	Bearing		Lithology	Descriptio	n			ter (cm)	Fre	om (m)	To (m)
0.30		Topsoil						.00		0.00	18.29
8.53		Brown Clay						sing (if applica	able)	Well Casing/Liner	
12.19		Brown Shale				_	Steel	e OD :	16.84 cm	Steel Size OD :	12.70 cm
14.63		Gray Shale					Wall Thick		0.478 cm	Wall Thickness :	
15.54	Yes	Gray Water Bea	ring Sandsto	one				m at :	9.14 m	Top at :	
18.29		Gray Shale								Bottom at :	
							Perforation	S			
							From (r 13.72		To (m) 16.76	Diameter (cm) 0.635	Interval (cm) 30.48
							Perforated b		10.70	0.035	50.40
							i enorateu b	loron			
							Annular Se				
								om <u>0.0</u>	<u>00 m</u> to	<u>9.14 m</u>	
							Other Seals	unt			
								Туре		A	t (m)
								. 100			·
							Screen Typ				
									0.00 cm		
							Eror	n (m)	I T	o (m)	Slot Size (cm)

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS Certification No

1

Attachment Top Fittings

Pack Type

Amount _

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Governm	ent V	/ate	er W	Vell Di	^illi	ng F	Repo	rt	<u>View in I</u>	<u>mperi</u>	al
of Albert	The drill	er supplies th	ne data conta	ained in this report. T I be retained in a pub	he Province	e disclaims res			GIC Well ID GoA Well Tag Date Report R		416469 1976/01/16
1. Well Identification Owner Name MCNEILL, TERRY	and Location		dress 4, CALGA	RY		Town		Pro	ovince		asurement in Metri al Code
Location 1/4 of SE	r LSD SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5			Plan	Additior	al Description		
Measured from Bound	dary of m from m from			GPS Coordinate Latitude <u>51.4</u> How Location C Map	134730	0	· · · · ·	ŀ	Elevation How Elevation Estimated		32 m
Additional Information	n									Me	asurement in Metri
Distance From Top o Is Artesian Flow Rate	0						ol Installed Describe				
Recommended Pum	p Rate	-		0.00 L/min	Pump	Installed			Depth		m
Recommended Pum	p Intake Depth (Fre	om TOC)		16.76 m	Туре		<i>N</i>	lodel		H.P.	
Did you Encounter Additional Comme DRILLER REPORTS	ents on Well	G		Depth Depth		m	Geophy S	sical Log Ta ubmitted to	aken GIC		\ttached
5. Yield Test							Measureme			Taken	From Ground Leve
Test Date 1975/08/27	Start Time 12:00 AM		Static	Water Level 9.14 m	[Drawd	own (m)	Elap	o water level osed Time outes:Sec		Recovery (m)
	ype Bailer Pate 18. rom 0.	00 m	/		- 			<u> </u>			
6. Water Diverted for Water Source	Drilling		Amo	unt Taken L				Diversion L	Date & Time		

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS Certification No
1



REPORT TO:		PRIVATE DRINKIN	
HEALTH REGION 3 ENVIRONMENTAL HEALTH		CARTWRIGI RR 2	11
10101 SOUTHPORT ROAD SW		CROSSFIEL	
CALGARY AB		TOM OSO	
T2W 3N2			(403) 650-0888
IZVY JINZ		Land Description:	SE-31-28-3-5
		Collected:	6/8/2009
		By:	CHLOE CARTWRIGHT
		Site:	KITCHEN FAUCET
Req. ID No: T104630		Source:	Well
Lab Code: 2009070234		Depth:	280
		Comments:	
CERTIFICATE OF CHEMICAL ANALYSIS	0.07		CDW GUIDELINES (2007)
pH	8.57		6.5-8.5 units AO
Conductivity	1017		
- Sodium	218,7	•	≤ 200 mg/L AO
Potassium	2.36		
Calcium	15.78		
Magnesium	6.94		
Total Hardness (CaCO3)(Calc)	67.97		
Iron	0.02	1 	\leq 0.3 mg/L AO
Total Alkalinity (CaCO3)	560.3	•	
Carbonate	21.1	0	
Bicarbonate	640.6	mg/L	
Hydroxide	0	mg/L	
Chloride	0,9	mg/L	≤ 250 mg/L AO
- Fluoride	1.7		1.5 mg/L MAC
Nitrite (N)	0	mg/L	1.0 mg/L MAC
Nitrate (N)	0.6	mg/L	10 mg/L_MAC
Sulfate	10.8	mg/L	≤ 500 mg/L_AO
Total Dissolved Solids (Calc)	592.27	mg/L	≤ 500 mg/L AO
Cation Sum	10.93	mEq/L	
Anion Sum	11.5	mEq/L	
Ion Balance(Cation/Anion)	95.03	%	
Ion Balance (% Difference)	-2.55	%	

Comments: Results relate only to the sample tested.

Received: Reported: Certified By: 6/18/2009 7/13/2009

10

For: David W. Kinniburgh, PhD, FCACB Director Alberta Centre for Toxicology CDW = Canadian Drinking Water

AO = Aesthetic Objectives

MAC = Maximum Acceptable Concentration

f Alb	erta		cy.		ained in this report. T			onsibility for its	G	GIC Well ID GoA Well Tag No. Nate Report Received	416469
	ification		ormation on th	nis report wil	I be retained in a pub	lic databa	ise.				
Owner Nam		and Location	Ad	dress			Town		Prov		easurement in Me stal Code
MCNEILL, 1				4, CALGA	RY						
ocation	1/4 or SE	LSD SEC 31	<i>TWP</i> 028	<i>RGE</i> 03	W of MER 5	Lot	Block	Plan	Additiona	I Description	
Aeasured fi	rom Bound	lary of			GPS Coordinat	es in De	cimal Degrees	(NAD 83)			
		m from			Latitude 51.4			de <u>-114.4059</u>		evation 1226	
		m from			How Location C	Obtained				w Elevation Obtaine	d
					Мар				Es	timated	
Drilling Inf	ormation										
Method of Cable Tool	Drilling			<mark>be of Wor</mark> l w Well	k				Proposed We Domestic & St		
			INE			_					
ormatior	Log			Mea	asurement in Me	etric	4. Well Com				easurement in M
Depth							18.29 m	Drilled Finis	nea vveli Dep	oth Start Date	End Date 1975/08/27
from ground	Water						Borehole				1313/00/21
evel (m)	Bearing		Lithology	Descriptio	n			ter (cm)	Fre	om (m)	To (m)
0.30		Topsoil						.00		0.00	18.29
8.53		Brown Clay						sing (if applica	able)	Well Casing/Liner	
12.19		Brown Shale				_	Steel	e OD :	16.84 cm	Steel Size OD :	12.70 cm
14.63		Gray Shale					Wall Thick		0.478 cm	Wall Thickness :	
15.54	Yes	Gray Water Bea	ring Sandsto	one				m at :	9.14 m	Top at :	
18.29		Gray Shale								Bottom at :	
							Perforation	S			
							From (r 13.72		To (m) 16.76	Diameter (cm) 0.635	Interval (cm) 30.48
							Perforated b		10.70	0.035	50.40
							i enorateu b	loron			
							Annular Se				
								om <u>0.0</u>	<u>00 m</u> to	<u>9.14 m</u>	
							Other Seals	unt			
								Туре		A	t (m)
								. 100			·
							Screen Typ				
									0.00 cm		
							Eror	n (m)	I T	o (m)	Slot Size (cm)

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS Certification No

1

Attachment Top Fittings

Pack Type

Amount _

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Governm	ent V	/ate	er W	Vell Di	^illi	ng F	Repo	rt	<u>View in I</u>	<u>mperi</u>	al
of Albert	The drill	er supplies th	ne data conta	ained in this report. T I be retained in a pub	he Province	e disclaims res			GIC Well ID GoA Well Tag Date Report R		416469 1976/01/16
1. Well Identification Owner Name MCNEILL, TERRY	and Location		dress 4, CALGA	RY		Town		Pro	ovince		asurement in Metri al Code
Location 1/4 of SE	r LSD SEC 31	<i>TWP</i> 028	RGE 03	W of MER 5			Plan	Additior	al Description		
Measured from Bound	dary of m from m from			GPS Coordinate Latitude <u>51.4</u> How Location C Map	134730	0	· · · · ·	ŀ	Elevation How Elevation Estimated		32 m
Additional Information	n									Me	asurement in Metri
Distance From Top o Is Artesian Flow Rate	0						ol Installed Describe				
Recommended Pum	p Rate	-		0.00 L/min	Pump	Installed			Depth		m
Recommended Pum	p Intake Depth (Fre	om TOC)		16.76 m	Туре		<i>N</i>	lodel		H.P.	
Did you Encounter Additional Comme DRILLER REPORTS	ents on Well	G		Depth Depth		m	Geophy S	sical Log Ta ubmitted to	aken GIC		\ttached
5. Yield Test							Measureme			Taken	From Ground Leve
Test Date 1975/08/27	Start Time 12:00 AM		Static	Water Level 9.14 m	[Drawd	own (m)	Elap	o water level osed Time outes:Sec		Recovery (m)
	ype Bailer Pate 18. rom 0.	00 m	/		- 			<u> </u>			
6. Water Diverted for Water Source	Drilling		Amo	ount Taken L				Diversion L	Date & Time		

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name INTERPROVINCIAL DRILLING CONTRACTORS Certification No
1

of Alk	perta		y.		ntained in this report. The			y for its	GIC Well ID GoA Well Tag Date Report F		2022505
1. Well Iden	tification a	Ind Location								Me	asurement in Metr
Owner Nan ROBERTS		_ILA		ldress R 2			Town CROSSFIELD		Province AB	Post T0M	tal Code 0S0
Location	1/4 or NW	LSD SEC 32	<i>TWP</i> 028	RGE 03	5	Lot	Block Plar		lditional Description	1	
Measured f	from Bound	ary of					cimal Degrees (NAD 8	1 A A A A A A A A A A A A A A A A A A A			
		m from					Longitude <u>-114</u>	1.394000	Elevation		<u>m</u>
		m from			How Location Obta	ained			How Elevation Not Obtained	Obtained	
2. Drilling In	formation										
<i>Method of</i> Rotary	Drilling			pe of Wo w Well	rk			Propos Domes	sed Well Use tic		
3. Formatio	n Log			Me	easurement in Metri	С	4. Well Completion	1		Me	asurement in Metr
Depth							Total Depth Drilled	Finished V	/ell Depth Start D	ate	End Date
from							33.53 m		2004/0	9/09	2004/09/10
ground level (m)	Water Bearing		Lithology	Descripti	ion		Borehole				
0.30	bearing	Topsoil	Littiology	Descripti			Diameter (cm	ı)	From (m)		To (m)
6.71		Brown Clay & B	ouldors				13.02 Surface Casing (if a	applicable)	0.00 Well Cas	ing/Linor	33.53
11.28		3	oulders				Steel	applicable)	Plastic	ng/Linei	
		Gray Soft Clay					Size OD :	14.13	<u>cm</u> S	Size OD :	11.43 cm
13.11		Gray Hard Shale					Wall Thickness :	0.478	cm Wall Th		0.635 cm
14.02		Dark Gray Soft S					Bottom at :	11.58			10.67 m
17.07		Gray Hard Shale					Destautour		Bo	ottom at :	33.53 m
17.37		Gray Hard Sands	stone				From (m)	To (I	m) Diamet	er (cm)	Interval (cm)
17.98		Gray Shale					18.29	30.4		818	15.24
18.59		Gray Hard Sands	stone				Perforated by	Saw			
21.95		Gray Shale					I chorated by	Ouw			
22.56	Yes	Gray Water Bear		one			Annular Seal Ber				
24.08		Dark Gray Shale							to 11.58	m	
		Gray Sandstone					Amount				
25.30		Gray Shale					Other Seals				
25.30 28.04 30.18		Gray Sandstone						vpe			(m)

From (m)

Attachment Top Fittings

Type Unknown

Amount

Pack

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well WAYNE LEASK Company Name A&W DRILLING Certification No 2883Q Copy of Well report provided to owner Date approval holder signed

To (m)

Unknown

Bottom Fittings

Grain Size

Slot Size (cm)

AINVILA 🔜 ac	curacy.		be retained in a public		sclaims responsibility for it	ts GoA Well Ta Date Report	
Well Identification and Location Owner Name ROBERTSON, IAN & LILA		lress 2			Town CROSSFIELD	Province AB	Measurement in Me Postal Code T0M 0S0
ocation 1/4 or LSD SE NW 32		RGE 03	W of MER 5	Lot	Block Plan	Additional Description	on
Measured from Boundary of m from m from				442000	I Degrees (NAD 83) Longitude <u>-114.394</u>	Elevation How Elevation Not Obtained	on Obtained
ditional Information						·	Measurement in Me
Distance From Top of Casing to G Is Artesian Flow			60.96 cm		ow Control Installed		
Rate Recommended Pump Rate			14 41 1/min			Depth	m
Recommended Pump Intake Dept							
Did you Encounter Saline Water							
	Ga	as	Depth	1			
Additional Comments on Well WATER BEARING FORMATION		as	Depth		Sample Collecte	Submitted to GIC	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecte	Submitted to GIC ed for Potability ent in Metric Depth to water level	Result Attached
WATER BEARING FORMATION	YIELDS 4 IGPM	DURING E	Depth		Sample Collecte Measureme Drawdown (m)	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time Minutes:Sec	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecte	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 /	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecte Measureme Drawdown (m) 12.60 14.70 13.98	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level	-	Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00	
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level	-	Sample Collecte Measureme Drawdown (m) 12.60 14.70 13.98	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level	-	Sample Collecte Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.05 13.02 13.03
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level	-	Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.18	Submitted to GIC ed for Potability ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 1:00 2:00 4:00 5:00 6:00 7:00 8:00	Result Attached
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level	-	Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.05 13.02 13.03
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.18 13.16 13.30 13.37	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00	Result Attached Taken From Ground Le Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.01 13.00 12.99 12.97
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.18 13.16 13.30 13.37 13.39	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00	Result Attached Taken From Ground Le Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.01 13.00 12.99 12.97 12.95
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.18 13.16 13.30 13.37 13.39 13.56	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.05 13.02 13.03 13.00 12.99 12.97 12.95 12.95
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.20 13.18 13.16 13.30 13.37 13.39 13.56 13.74	Submitted to GIC ed for Potability Ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 14:00 16:00 20:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.05 13.02 13.03 13.00 12.99 12.95 12.95 12.95 12.93
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.18 13.16 13.30 13.37 13.39 13.56	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.05 13.02 13.03 13.00 12.99 12.97 12.95 12.95
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.28 13.20 13.20 13.20 13.30 13.37 13.39 13.56 13.74 13.91 14.05 14.18	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 112:00 14:00 20:00 20:00 25:00 30:00	Result Attached Taken From Ground Le Recovery (m) 15.59 14.35 13.65 13.65 13.05 13.02 13.03 13.01 13.00 12.99 12.97 12.95 12.91 12.91 12.89 12.87
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.20 13.20 13.37 13.39 13.56 13.74 13.91 14.05 14.18 14.29	Submitted to GIC ed for Potability Bent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 10:00 112:00 114:00 16:00 225:00 30:00 335:00	Result Attached Taken From Ground La Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.03 13.01 13.00 12.99 12.97 12.95 12.93 12.91 12.89 12.87 12.86
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.20 13.30 13.37 13.39 13.56 13.74 13.91 14.05 14.18 14.29 14.45	Submitted to GIC ed for Potability Ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.03 13.00 12.99 12.95 12.95 12.95 12.89 12.87 12.86 12.83
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.18 13.16 13.30 13.37 13.39 13.56 13.74 13.99 13.56 13.74 13.91 14.05 14.18 14.29 14.45 14.59	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 112:00 14:00 12:00 10:00 12:00 10:00 14:00 25:00 30:00 35:00 40:00 50:00 60:00	Result Attached Taken From Ground Le Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.03 13.01 13.00 12.99 12.95 12.95 12.95 12.89 12.87 12.83 12.82
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.20 13.20 13.20 13.20 13.30 13.37 13.39 13.56 13.74 13.91 14.05 14.18 14.29 14.45	Submitted to GIC ed for Potability Ent in Metric Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 14:00 16:00 20:00 25:00 30:00 35:00 40:00 50:00	Result Attached Taken From Ground Lu Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.03 13.00 12.99 12.95 12.95 12.95 12.89 12.87 12.86 12.83
WATER BEARING FORMATION Yield Test Test Date Start T 2004/09/15 12:00 / Method of Water Removal Type Pump Removal Rate Depth Withdrawn From	YIELDS 4 IGPM	DURING E	Depth DRILLING Water Level		Sample Collecter Measureme Drawdown (m) 12.60 14.70 13.98 13.74 13.50 13.28 13.20 13.28 13.20 13.18 13.16 13.30 13.37 13.39 13.56 13.74 13.99 13.56 13.74 13.91 14.05 14.18 14.29 14.88	Submitted to GIC ed for Potability Depth to water level Elapsed Time Minutes:Sec 0:00 1:00 2:00 3:00 4:00 5:00 6:00 7:00 8:00 9:00 10:00 12:00 10:00 12:00 10:00 225:00 30:00 35:00 40:00 55:00	Result Attached Taken From Ground Le Recovery (m) 15.59 14.35 13.96 13.65 13.12 13.05 13.02 13.03 13.01 13.00 12.99 12.95 12.93 12.91 12.89 12.83 12.82 12.79

7. Contractor Certification Name of Journeyman responsible for drilling/construction of well WAYNE LEASK Company Name A&W DRILLING

Certification No 2883Q Copy of Well report provided to owner Date approval holder signed

Government Water Well Drilling Report View in Imperial GIC Well ID 352191 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1990/10/03 1. Well Identification and Location Measurement in Metric Owner Name Address Postal Code Town Province CANADIAN HUNTER/BRELCO 11 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description 06 32 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Latitude 51.436539 Longitude -114.391226 Elevation m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use New Well Industrial Rotarv 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 91.44 m 1990/09/25 1990/09/26 from Water around **Borehole** level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 1.52 Clay 0.00 0.00 91.44 17.07 Brown Sandstone Surface Casing (if applicable) Well Casing/Liner Steel Steel 23.47 Gray Shale Size OD : 13.97 cm Size OD : 11.43 cm 35.97 Gray Sandstone Wall Thickness : 0.620 cm 0.396 cm Wall Thickness : 38.71 Gray Shale Bottom at : Top at : 12.19 m 3.05 m 41.45 Gray Sandstone

Attachment Top Fittings Bottom Fittings Pack Type _ Grain Size 0.00 Amount

Perforations From (m)

Perforated by

Screen Type

12 19

48.77

60.96

Annular Seal Driven

Amount Other Seals

Size OD :

From (m)

To (m)

42 67

54.86

67.06

Placed from 0.00 m to 12.19 m

0.00 cm

To (m)

Torch

Туре

7. Contractor Certification

52.12

56.69

60.05

64 31

91.44

Gray Shale

Gray Shale

Gray Shale

Gray Sandstone

Gray Sandstone

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name

ALKEN BASIN DRILLING LTD.

Certification No 1

Copy of Well report provided to owner Date approval holder signed

Bottom at :

At (m)

Slot Size (cm)

Diameter (cm)

0.000

0.000

0.000

91.44 m

Interval (cm)

0.00

0.00

0.00

Governmei	nt M	/ate	er W	Vell Dr	rilli	ng F	Repo	ort <u>View</u>	/ in Imper	<u>'ial</u>
of Alberta	The drill accurac	ler supplies th	ne data conta	ained in this report. Th I be retained in a publ	The Province	e disclaims res		GIC We GoA W	ell ID /ell Tag No. eport Received	352191 1990/10/03
1. Well Identification and Owner Name CANADIAN HUNTER/BRE		Adı	dress			Town		Province		easurement in Metr stal Code
Location 1/4 or LSE 06) SEC 32	<i>TWP</i> 028	RGE 03	W of MER 5	Lot	Block	Plan	Additional Desc	cription	
Measured from Boundary	of m from m from			GPS Coordinate Latitude <u>51.4</u> How Location O Not Verified	436539	0	· · · · · · · · · · · · · · · · · · ·		n evation Obtained ained	
Additional Information								I	M	easurement in Metr
Distance From Top of Ca Is Artesian Flow Rate				cm	ls	Flow Contro				
Recommended Pump Ra				136.38 L/min	Pump	Installed <u>Y</u> e			pth	
Recommended Pump Inte	ake Depth (Fro	om TOC)		67.06 m	Туре	SUB	<i>N</i>	Iodel <u>GOULD</u>	H.P.	
Did you Encounter Salii Additional Comments of Rig Well. Ownership trans	on Well	G	àas	Depth		m	Geophy S	ysical Log Taken Submitted to GIC		Attached
5. Yield Test							Measureme	nt in Metric		n From Ground Lev
Test Date 1990/09/26	Start Time 12:00 AM		Static	Water Level 15.85 m		Drawdo	own (m)	Elapsed Tin Minutes:Se	ne	Recovery (m)
Method of Water Remov Type Removal Rate Depth Withdrawn From	Pump 136. 0.	.00 m	/		-				I	
6. Water Diverted for Dril Water Source	ling		Amo	ount Taken L				Diversion Date & 1	Time	

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER
Company Name ALKEN BASIN DRILLING LTD.

Certification No

1

Government Water Well Drilling Report View in Imperial GIC Well ID 392004 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1974/11/01 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province RR2, CROSSFIELD ROBERTSON, LOY Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description NW 32 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude 51.441963 Longitude -114.394122 m m from How Location Obtained How Elevation Obtained m from Phone Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use Cable Tool New Well Stock 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 15.24 m 1974/07/04 from Water around **Borehole** level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) 0.91 Black Clay 0.00 0.00 15.24 3.66 Yellow Clay Surface Casing (if applicable) Well Casing/Liner Steel Steel Gray Clay & Boulders 8.23 Size OD : 13.97 cm Size OD : 11.68 cm 10.06 Blue Gray Clay 0.000 cm 0.000 cm Wall Thickness : Wall Thickness : 10.67 Brown Hard Sandstone Bottom at : 10.06 m Top at : 0.00 m 11.28 Gray Shale Bottom at : 15.24 m 12.19 Hard Sandstone Perforations Diameter (cm) From (m) To (m) Interval (cm) 14.02 Gray Firm Shale 0.000 9 7 5 14 33 0.00 14.63 Black Sandstone Perforated by 14 94 Gray Soft Shale 15.24 Hard Sandstone Annular Seal Drive Shoe 0.00 m to Placed from 0.00 m Amount Other Seals Type At (m) Screen Type Size OD : 0.00 cm

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRLG Certification No

1

From (m)

Attachment ______ Top Fittings ______

Pack Type

Amount

Copy of Well report provided to owner Date approval holder signed

To (m)

Bottom Fittings

Grain Size

Slot Size (cm)

Governm	ent 🕅	/ate	r V	Vell D	rilli	ng F	Repo	rt <u>View in I</u>	mperi	al
of Alberta	The drille accuracy	er supplies th /.	e data conta	ained in this report. T Il be retained in a pub	The Provinc	e disclaims res		GIC Well ID GoA Well Tag Date Report F		392004 1974/11/01
1. Well Identification a	nd Location								Me	asurement in Metri
Owner Name ROBERTSON, LOY			dress 2, CROSS	SFIELD		Town		Province	Post	al Code
Location 1/4 or NW	LSD SEC 32	<i>TWP</i> 028	<i>RGE</i> 03	W of MER 5			Plan	Additional Description	1	
Measured from Bound	ary of m from m from			GPS Coordinate Latitude <u>51.4</u> How Location C Phone	441963	-		22 Elevation How Elevation Not Obtained		
Additional Information								I	Me	asurement in Metri
Distance From Top of Is Artesian Flow Rate					1:	s Flow Contr				
Recommended Pump					Pumr	o Installed		Depth		
1		om TOC)		0.00 m	Туре)	M	lodel	H.P.	
Did you Encounter S Additional Commer				Depth Depth		m	Geophy S	ed Upon Completion sical Log Taken ubmitted to GIC I for Potability		
5. Yield Test							Measureme	nt in Metric	Taken	From Ground Leve
Test Date 1974/07/04	Start Time 12:00 AM		Static	Water Level 8.84 m		Drawd	own (m)	Depth to water level Elapsed Time Minutes:Sec	F	Recovery (m)
	be <u>Bailer</u> ate <u>136.3</u> om <u>0.0</u>	00 m			-					
6. Water Diverted for Water Source	Drilling		Amo	ount Taken L				Diversion Date & Time		

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER
Company Name PARSONS DRLG

Certification No

1

Government Water Well Drilling Report View in Imperial 392007 GIC Well ID of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1989/05/16 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province RR2, CROSSFIELD ROBERTSON, LOY J. TOM 0S0 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description NW 32 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude 51.441963 Longitude -114.394122 m m from How Location Obtained How Elevation Obtained m from Мар Not Obtained 2. Drilling Information Proposed Well Use Type of Work Method of Drilling Cable Tool New Well Domestic & Stock 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 42.67 m 1989/03/06 1989/03/25 from Water around Borehole level (m) Bearing Lithology Description Diameter (cm) From (m) To (m) Black Clay 0.30 0.00 0.00 42.67 1.52 Brown Clay & Rocks Surface Casing (if applicable) Well Casing/Liner Steel Plastic Brown Silty Clay & Shale 3.96 Size OD : 13.97 cm Size OD : 11.43 cm 6.71 Gray Firm Shale 0.478 cm Wall Thickness : Wall Thickness : 0.673 cm 8.23 Gray Hard Sandstone Bottom at : 7.92 m Top at : 6.10 m 9.14 Gray Firm Shale Bottom at : 42.67 m 10.06 Gray Hard Sandstone Perforations From (m) To (m) Diameter (cm) Interval (cm) 10.67 Gray Firm Shale 35.05 42.06 0 953 45 72 11.58 Gray Hard Sandstone Perforated by Machine Gray Firm Shale 12 80 13.11 Gray Hard Sandstone Annular Seal Drive Shoe 18.59 Gray Water Bearing Shale 7<u>.92 m</u> to Yes Placed from 0.00 m Gray Hard Sandstone Amount 19.51 Other Seals Gray Firm Shale 24.69 Gray Hard Shale Type At (m) 26.52 27.74 Gray Firm Shale Screen Type 29.26 Gray Hard Shale Size OD : 0.00 cm 42.67 Gray Water Bearing Shale Yes From (m) To (m) Slot Size (cm)

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRILLING Certification No

1

Attachment ______ Top Fittings ______

Pack Type

Amount

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Gover	'nmen	t W	/ate	er V	Vell D	rilli	ing	Repo	ort	View in L	<u>mperi</u>	<u>al</u>
of Alb		The drille accuracy.	er supplies th	ne data conta	tained in this report. T Il be retained in a pub	The Provinc	ce disclaims re			GIC Well ID GoA Well Tag Date Report Re		392007 1989/05/16
1. Well Ident Owner Nam ROBERTSC		cation		dress 2, CROSS			Town		F	Province	Post	asurement in Metri al Code 0S0
Location	1/4 or LSD NW	SEC 32	TWP 028	2, CROSS RGE 03	W of MER	Lot	Block	Plan	Addit	ional Description		030
Measured fr	rom Boundary of m	-			GPS Coordinat Latitude <u>51.</u> How Location C Map	.441963	Longit		22	Elevation How Elevation (Not Obtained		
Additional Int	formation								I		Me	asurement in Metri
	rom Top of Casin n Flow Rate	-						trol Installed Describe				
Recommer	nded Pump Rate				27.28 L/min							
Recommer	nded Pump Intake) Depth (Fro			41.15 m							
	Encounter Saline al Comments on N			9S) as	Depth Depth		m	Geophy S	ysical Log Submitted	to GIC		\ttached
5. Yield Test								Measureme			Taken	From Ground Leve
Test Date 1989/03/25		Start Time 12:00 AM		Static	c Water Level 22.56 m		Draw	down (m)	E	h to water level lapsed Time Minutes:Sec	F	Recovery (m)
R Depth With	Water Removal Type <u>Bai</u> lemoval Rate hdrawn From noval period was	iler 31.8 37.1	19 m			-						
6. Water Div	erted for Drilling	g		Ame	ount Taken				Diversio	n Date & Time		
water oour				Amo	L				Diversion	i Date & Time		

7. Contractor Certification
Name of Journeyman responsible for drilling/construction of well
UNKNOWN NA DRILLER

Company Name PARSONS DRILLING

Certification No 1

Government Water Well Drilling Report View in Imperial GIC Well ID 352190 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1990/10/03 1. Well Identification and Location Measurement in Metric Owner Name Address Postal Code Town Province CANADIAN HUNTER/BRELCO 11 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description 06 32 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Latitude 51.436539 Longitude -114.391226 Elevation m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use New Well Industrial Rotarv 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 67.06 m 1990/09/25 1990/09/25 from Water around **Borehole** level (m) Bearing Lithology Description From (m) Diameter (cm) To (m) 1.83 Clay 0.00 0.00 67.06 11.28 Brown Sandstone Surface Casing (if applicable) Well Casing/Liner Steel 19.20 Brown Shale Size OD : 0.00 cm Size OD : 11.43 cm 47.55 Gray Shale Wall Thickness : 0.000 cm 0.396 cm Wall Thickness : 60.35 Gray Sandstone Bottom at : 0.00 m Top at : 0.00 m 67.06 Gray Shale Bottom at : 60.96 m Perforations From (m) To (m) Diameter (cm) Interval (cm) 42.67 0.000 60.96 0.00 Perforated by Torch Annular Seal Shale Trap <u>9.14 m</u> to

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name

ALKEN BASIN DRILLING LTD.

Certification No

1

Placed from

Screen Type

Pack Type

Amount

Amount Other Seals

Size OD :

From (m)

Attachment Top Fittings

Туре

0.00

0.00 cm

To (m)

Copy of Well report provided to owner Date approval holder signed

42.67 m

Bottom Fittings

Grain Size

At (m)

Slot Size (cm)

Governmer	nt Wa	ater	Well D	rillin	q R	2epo	rt <u>View in I</u>	<u>mperi</u>	<u>al</u>
of Alberta	The driller s accuracy.	supplies the data	a contained in this report. ⁻ port will be retained in a pul	The Province dise			GIC Well ID GoA Well Tag Date Report R		352190 1990/10/03
1. Well Identification and I Owner Name CANADIAN HUNTER/BRE		Address	\$	7	own		Province		asurement in Metr al Code
Location 1/4 or LSD 06		TWP R 028 03			Block	Plan	Additional Description		
	of m from m from	-	GPS Coordina Latitude <u>51</u> How Location Not Verified	.436539		· · · · · ·	26 Elevation How Elevation Not Obtained		
Additional Information							I	Me	asurement in Metr
Distance From Top of Cas Is Artesian Flow Rate				ls Flc					
Recommended Pump Rat			54.55 L/min	Pump Ins					
Recommended Pump Inta	ke Depth (From	TOC)	59.74 m	Type <u>SU</u>	В	M			
Did you Encounter Salin Additional Comments o Camp Well. Ownership tra	n Well	Gas	Depth		1	Geophy: Si	ed Upon Completion sical Log Taken ubmitted to GIC I for Potability		
5. Yield Test					N	leasuremer	nt in Metric Depth to water level	Taken	From Ground Le
Test Date 1990/09/25	Start Time 12:00 AM		Static Water Level 47.85 m		Drawdo	wn (m)	Elapsed Time Minutes:Sec	F	Recovery (m)
Method of Water Remov Type <u>P</u> Removal Rate _ Depth Withdrawn From _ If water removal period wa	Nir 54.55 0.00	<u>m</u>		_					
6. Water Diverted for Drill Water Source	ing		Amount Taken				Diversion Date & Time		

1	. Contractor Certification
	Name of Journeyman responsible for drilling/construction of well
	UNKNOWN NA DRILLER
	Company Name
	ALKEN BASIN DRILLING LTD.

Certification No

1

Government Water Well Drilling Report View in Imperial GIC Well ID 491258 of Alberta The driller supplies the data contained in this report. The Province disclaims responsibility for its GoA Well Tag No. accuracy. The information on this report will be retained in a public database. Date Report Received 1998/12/17 1. Well Identification and Location Measurement in Metric Owner Name Postal Code Address Town Province PHIL POLLOCK RANCHES LTD P.O. BOX 293 CROSSFIELD TOM 0S0 Location 1/4 or LSD SEC TWP RGE W of MER Lot Block Plan Additional Description SW 32 028 03 5 GPS Coordinates in Decimal Degrees (NAD 83) Measured from Boundary of Elevation Latitude <u>51.434731</u> Longitude <u>-114.394119</u> m m from How Location Obtained How Elevation Obtained m from Not Verified Not Obtained 2. Drilling Information Method of Drilling Type of Work Proposed Well Use New Well Domestic Rotarv 3. Formation Log 4. Well Completion Measurement in Metric Measurement in Metric Total Depth Drilled Finished Well Depth Start Date End Date Depth 35.05 m 1998/10/24 1998/10/26 from Water around **Borehole** level (m) Bearing Lithology Description From (m) Diameter (cm) To (m) Clay & Boulders 3.66

0.00

Size OD :

Bottom at :

Wall Thickness :

Perforations

Perforated by

Screen Type

Pack Type

Amount

From (m)

22.86

Annular Seal Driven

Amount Other Seals

Size OD :

From (m)

Attachment Top Fittings

Placed from

Steel

Surface Casing (if applicable)

0.00

13.97 cm

0.620 cm

5.49 m

To (m)

33 53

0.00 m to

0.00 cm

To (m)

Saw

Туре

Plastic

Well Casing/Liner

Wall Thickness :

Diameter (cm)

0.318

5.49 m

Bottom Fittings

Grain Size

Size OD :

Top at :

At (m)

Slot Size (cm)

Bottom at :

35.05

11.43 cm

0.544 cm

4.57 m

35.05 m

Interval (cm)

15 24

1 Copy of Well report provided to owner Date approval holder signed

Certification No

7. Contractor Certification

7.92

9.75

14.63

35.05

Brown Shale

Brown Shale

Gray Shale

Brown Sandstone

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER Company Name

M.E. LAWSON WATER WELLS

lovernm						rt <u>View in I</u> GIC Well ID	<u>mperial</u> 491258
of Albert		ler supplies the data cor y. prmation on this report w			esponsibility for its	GoA Well Tag Date Report R	No. eceived 1998/12/17
1. Well Identification Owner Name PHIL POLLOCK RAM		Address P.O. BOX 29	93 CROSSFIELD	Town		Province	Measurement in Metr Postal Code TOM 0S0
Location 1/4 c SW	or LSD SEC 32	TWP RGE 028 03	W of MER 5	Lot Block		Additional Description	
Measured from Bour	ndary of m from m from	_		es in Decimal Degre 134731 Long Obtained		Elevation How Elevation Not Obtained	
Additional Informatio	n						Measurement in Met
Is Artesian Flow		d Level	cm	Is Flow Cor			
Recommended Pun	np Rate	om TOC)	45.46 L/min 31.39 m	Pump Installed Type	Yes	Depth	
Additional Comm	ents on Well	Gas	Depth	m	Geophy: Si	ubmitted to GIC	Result Attached
5. Yield Test					Measuremer		Taken From Ground Lev
Test Date 1998/10/27	Start Time 2:23 AM	Stati	c Water Level 12.80 m		vdown (m)	Depth to water level Elapsed Time Minutes:Sec	Recovery (m)
	Type Pump Rate 36				12.80	0:00 2:00 120:00	12.80
If water removal per 6. Water Diverted fo		explain why					
Water Source		Am	ount Taken L			Diversion Date & Time	

7.	Contractor Certification
	Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name M.E. LAWSON WATER WELLS Certification No

1

f Alb	erta	- uoouruoy.		tained in this report. T			oonsibility for	its C	GIC Well ID GoA Well Tag No. Date Report Receive	354778 d 1991/01/10
Owner Nam	е	and Location	Address	NGTON RD NW,		Town		Prov	vince P	<mark>Aeasurement in M</mark> ostal Code 2N 3P4
Location	1/4 or NE	LSD SEC 32	<i>TWP RGE</i> 028 03	W of MER 5	Lot	Block	Plan	Additiona	al Description	
Measured fr		m from m from	_	GPS Coordinat Latitude <u>51.</u> How Location (Phone	441963		(NAD 83) de <u>-114.38</u>	H	levation ow Elevation Obtaine ot Obtained	
Drilling Inf Method of I Cable Tool			Type of Wo l New Well	'k				Proposed We Domestic	ell Use	
Formation Depth from ground level (m)	Log Water Bearing		.ithology Descripti	asurement in M	etric	4. Well Com Total Depth 26.52 m Borehole		nished Well De	pth Start Date	Aeasurement in M End Date 1963/10/17
3.66	Беанну	Brown Clay	Innology Description				ter (cm)		om (m) 0.00	To (m) 26.52
4.57 17.98 18.90 19.51		Hard Sandstone Gray Clay & Shale Gray Clay Hard Shale				Wall Thick	e OD :	licable) 12.70 cm 0.000 cm 23.47 m	Wall Thickness	r : 0.00 cm : 0.000 cm : 0.00 m
21.95 22.56		Gray Soft Shale Brown Sandstone				Perforation	ie.		Bottom at	. 0.00 m
24.38 25.91		Gray Shale Sandstone				From (m)	To (m)	Diameter (cm)	Interval (cm)
26.52		Gray Shale					al Loose om unt Type	<u>0.00 m</u> to _		At (m)
						Siz	e OD : m (m)		Го (m)	Slot Size (cm)

7. Contractor Certification

Name of Journeyman responsible for drilling/construction of well UNKNOWN NA DRILLER

Company Name PARSONS DRLG Certification No

1

Attachment Top Fittings

0.00

Pack Type

Amount _

Copy of Well report provided to owner Date approval holder signed

Bottom Fittings

Grain Size

Gover	'nmen	t Wa	ater	r We	II D	rilli	ng F	Repc	ort	<u>View in L</u>	mperi	al
_	erta	The driller s accuracy.	supplies the o		n this report. 7	The Province	disclaims res	- sponsibility for its		GIC Well ID GoA Well Tag Date Report Re		354778 1991/01/10
1. Well Ident	ification and Lo	ocation									Me	asurement in Metr
<mark>Owner Nam</mark> WYATT, GC	e)RDON \OCKERI	MUELLER, H	Addre 1131 CALG	KENSINGTO	N RD NW,		Town		ŀ	Province		tal Code 3P4
Location	1/4 or LSD NE	SEC 32	<i>TWP</i> 028	03 5		Lot	Block	Plan	Addit	tional Description		
Measured fi		i from i from	_	Lat. Hor	S Coordinat itude <u>51.</u> w Location (one	441963	0	<mark>s (NAD 83)</mark> ude <u>-114.382</u>	546	Elevation How Elevation (Not Obtained		
Additional In	formation			<u> </u>						Not Obtained	Me	asurement in Metr
	rom Top of Casin n Flow Rate	0			<u>cm</u>			ol Installed Describe				
Recommer	nded Pump Rate				.00 L/min					Depth		
Recommer	, nded Pump Intake	e Depth (From	TOC)	0	.00 m	Туре		Λ	/lodel		H.P.	
	Encounter Saline al Comments on						<u>m</u>	Geoph	ysical Log Submitted	to GIC		Attached
5. Yield Test								Measureme	nt in Me	tric	Taken	From Ground Lev
Test Date 1963/10/17		Start Time 2:00 AM		Static Wate 21	r Level .95 m	[Drawd	lown (m)	E	h to water level Iapsed Time Minutes:Sec		Recovery (m)
R Depth Witt	emoval Rate	0.00	<u>L/mi</u> n m			_				vind(53.366		
	noval period was		olain why									
Water Sour		-		Amount Ta	aken L				Diversio	n Date & Time		

7. Contractor Certification	
Name of Journeyman responsible for drilling/construction UNKNOWN NA DRILLER	of well
Company Name PARSONS DRLG	

Certification No
1

Appendix C

in a constant	ILD R	SE Pum	PING WATER WELL FLOW TEST
	RWEL		Well Site Location: # 3 WELL PUMPark
VVAL A	Olds, AB		AFE#:
	Phone: 403-556-67		File#:
Date Tested: NC	V/0/10 Tested	by: <u>RW.</u>	GPS: 116. 79944 57.01162 1214 M
Time Tested: $\underline{J}\underline{\lambda}$	00 PM Position):	Well Owner: <u>CALOE CARTWRIGHT</u>
1/4 or LSD 1/4	or LSD 1/4 or LSD	1/4 or LSD 1/4 or LSD	Address:
15	21 20	2/1-	
SE	51 28	7 5	Location on Property:
Elapsed Time In	Depth to Water Level	Depth to Water Level	Phone No.:
Minutes	During Pumping	During PUMPING	Remarks
0	6.54	180 6.84	Measurements in: METTERS meters
1	6.59	240 6.87	
2	6.605	300 6.90	
3	6.62	360 6.92	
4	6.63	420 6.94	
5	6.64	480 6-96	
6	6.64	540 6.96	1997 P. (1997 - 199
7	6.65	600 6.98	Water Samples
B	6.655	660 700	Taken From: FND OF DISCHARLE HOSE
9	6.66	720 7.01	Sediment: NO
10	6.665	780 7.03	Colour:CLEAR
15	6.68	840	Odour:
20	6.70	900 7.055	Gas:
25	6.71	960	Water Well Information
30	6.72	1020 7.075	Well I.D. #;
35		1080	Depth:
40	6.73	1140 7.10	Completion Date:
50	6.75	1200 7.12	Well Use:
60	6.755	1260 7.13	Expected Yield:
70	6.77	1320 7.145	Condition of Well:
80	6.78	1380 7.15	Weil Diameter:
90	6.79	1440 7.165	Screen Interval:
100	6.795		Static Level:
120	6.81		Landowner/Occupant Testimonials:
	est Requeste		Flow Rate Information 98.2 - 3/d
• •			Pumped at:IS
			Pressure gauge reading: PS I
			Measured from: TOP OF CASING
Contact Person:			Distance to ground level:

WAI	ER	WEI	LS 1	LTD.	Well Site Locat	tion: $\frac{\mu'3}{2}$	WELL Pamping
	Mar	Olds, AB	C700		AFE#:	000-0000000000000000000000000000000000	
		ne: 403-556-			File#:		anan menopanan menopanan kan da arawa yang kanan ka
					GPS:		
ime Tested:		Posit	ion:		Well Owner:	CHLOE	CARTWRIGHT
1/4 or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD	Address:		
SF	31	28	3	5	********		55596 567 567 567 577 577 577 577 577 577 57
110			<u> </u>		Location on Pr	operty:	
lapsed Tim Minutes	e in Depth Dur	to Water Lev Ing R Ecolo	el Depth to クター During	Water Level Recovery	Phone No.:		
0		165 M	180	6.915			marks
1		$\frac{0 > M}{1}$		and the second secon	Measurements in	n:	meters
2		$\frac{11}{nQC}$	360	6.88		9978 CLADA - 1995 - 11 - 7 - 1997 - 199	
-	and the second	085	540	6.81	and management and a state of the state of t		upa and a second sec
4		08	1200	6.725		****	
5	and the second	07	1990	6.01			NAMES AND ADDRESS OF A DECEMBER OF A DECE
6	7.0				₩ 309/2021 94 640		an
7		055		Nale Factor of the State State of the State		888 _ A	A a a B
8	Concernsion of the owner	25					Samples
9	NAMES OF TAXABLE PARTY OF TAXABLE PARTY.	045					
10	2						
15	7.0	and the second se					
20	7.1	ana and the feature of the second					
25	7.0			<u>an an a</u>			li information
30)05					
35	7.0				Depth:		
40	7,0	195			Completion Date		
50	A REAL PROPERTY OF THE PARTY OF	99			Well Use:		
60	7. '	18		and an and a second	Expected Yield:		a and a state of the
70	and the second s	975			Condition of Wel	li:	,
80	CONTRACTOR OF THE OWNER OF THE OWNER OF	965		pçumeranı anı anı anı anı anı anı anı	Well Diameter: _		anna an an ann an an ann an ann an ann an a
90	7.	96			Screen Interval:		
100		And a succession of the local data and the the local data an	ALTERNA CONTRACTOR	Charlen and an	Static Level:		
120	<u>Z</u> ,	945			Landowner/Occu	upant Testim	onials:

Flow Rate Information

Pumped at:	G.P.M.
Pressure gauge reading:	P.S.I.
Measured from:	
Distance to ground level:	

Address:	anna an an ann an an an an an Arthold Arge tractar ann an Arthold Arge tractar ann an Argent an Argent ann an A
c/o:	
Phone No.:	
Contact Person:	and a construction of the

Name: ____

• •				N	PUMP
			DR		·
WAI	E	R	WEL	LS I	TD.
		Dhor	Olds, AB ne: 403-556-0	5708	
	11				
			10 Teste		
Time Tested:			Positi	on:	
1/4 or LSD	1/4	l or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD
SE		31	28	3	5
Elapsed Tim Minutes	e in		to Water Leve ng Pumping	el Depth to During	Water Level
0		7,	77m	180	7.80
1				240	7.81
2				300	7.81
3				360	2.82
4				420	7.83
5				480	7.83
6			TANK TO GRAFT WELL FROM A STORY CARE A TO AN A STARTAN	540	7.84
7				600	7.84
8				660	7.86
9				720-	7.85
10			www.www.www.com/thesay	780 -	2.86
15			an sama an	840	
20 J	3.	. 7.	775	900	7.87
25			and some state of the source o	960	
30 ?	3	7.	78	1020	
35		1		1080	
40		p ggar ar ga strikken anne kteren		1140	7.89 7.90 7.90
ک 50	3	7.7	78	1200	7.90
60		and the second secon		1260	7.90
70 -7	2	7:7	18	1320	7.91
80				1380	
90 9	6	7.7	185	1440	7.915
100	والأمد			and the second	
120		7.7	19		and the second
_					

Test Requested by:

Name: ___

Address:

WATER WELL FLOW TEST
Well Site Location: # 1 MON ITOR WIFIL
AFE#
File#: GPS: 116.80001 57.01130 1217m
GPS: 110. 20001 57.01150 121/m
Well Owner: CHLOE CARTWRILHT
Address:
₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩
Location on Property:
Phone No.:
Remarks
Measurements in:
Water Samples
Taken From:
Sediment:
Colour:
Odour:
Gas:
Water Well Information
Well I.D. #:
Depth:
Completion Date:
Well Use:
Expected Yield:
Condition of Well:
Well Diameter:
Screen Interval:
Static Level:
Landowner/Occupant Testimonials:

Flow Rate Information

Pumped at:

	W		DR	SF	KE
WAT	'n		Olds, AB	ISI	TD
₩ ₩ <u>48</u> . 484.	, series				
	44.		ne: 403-556-6		
Date Tested:-	<u> </u>		0 Teste	d by:	an and a state of the
Time Tested:	and the second s		Positio		
1/4 ar LSD	1/4	or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD
SE		31	28	3	5
Elapsed Time Minutes	e în	Depth Duri	to Water Leve ng RELOVER	Depth to	Water Level Recovery
0	herean		915m		7.9.0
d.					7.90
2				1	7.90
3				1200 -	7.90
4			ann ann an ann an ann an ann an ann an a	1440 -	1.295
5		e er ver en men er geskill Mannet på stads at			ala la descrite a la consecution de la
6					
7					
8					
9					
10			a ya Chonya kuta kuta kuta kuta kuta k		
15					
2023	,	7.9	1		
25					
303-	7	7.9	[
35					
40 4	7	7.9	1		
50					
60		7.9	05		
70					
80					
90		7.90	15		
100					
120		7.90	25	CTUDE CONTRACTOR CONTRACTOR	
0.000.000.000.000.000.000.000.00000000			nya kana kana kana kana kana kana kana k		

Test Requested by:

Name:

Address:

ERY	
	ER WELL FLOW TE
Well Site Location:	# 1 MONITOR WELL
AFE#:	
File#:	
GPS:	
Well Owner:	
Address:	
Location on Proper	rty:
Phone No.:	
	Romarks
Measurements in:	meters
Nichter Harton bereiter von State Barton beiter	
	······································
Remonant de la composition de la compos	
	NI SECTION DE LA COMPANY D
	ator Samolos
	ater Samples
Taken From:	
Taken From:	
Taken From: Sediment: Colour:	
Taken From: Sediment: Colour: Odour:	
Taken From: Sediment: Colour: Odour: Gas:	
Taken From: Sediment: Colour: Odour: Gas: Watu	
Taken From: Sediment: Colour: Odour: Gas: Wate Well I.D. #:	er Well Information
Taken From: Sediment: Colour: Odour: Gas: Gas: Wate Well I.D. #: Depth:	er Well Information
Taken From: Sediment: Colour: Odour: Gas: Gas: Well I.D. #: Depth: Completion Date:	er Well Information
Taken From: Sediment: Colour: Odour: Gas: Gas: Well I.D. #: Depth: Completion Date: Well Use:	* * Well Information
Taken From: Sediment: Colour: Odour: Gas: Gas: Well I.D. #: Depth: Completion Date: Well Use: Expected Yield:	»r Well Information
Taken From:	>r Well Information
Taken From:	er Well Information
Taken From:	er Well Information

Flow Rate Information

Pumped at: _____

	Surroum to read Weblinks Life		ξ.,	Pun		
		DR		1		
WAT	ER	WEL	LS 1	LTD.		
		Olds, AB ne: 403-556-				
K		1	<u>^</u>	W		
			u by	$\sim \infty$		
Time Tested:	12400	Positi	on:			
1/4 or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD	1/4 or LSD		
SE.	31	28	3	5		
Elapsed Time Minutes	in Depth Dur	to Water Leve ing Pumping	el Depth to During	Depth to Water Level During Pamping		
0	7.	60 m	180			
1			240	7.90		
2			300	7.93		
3			360	7.96		
4			420	7.97		
5		and all following the spectrum and the second se	480	7.99		
6		***********	540	8,00		
7			600	8.005		
8			660	8.02		
. 9	gangaang decontrinsing decontri		720	8.04		
1012	7	67	780	8.05		
15	and an and a second		840			
20			900	\$ 075		
_25			960			
30	7.	23	1020			
35			1080			
40 42	7.	75	1140	8.12 8.135		
⁵⁰ 56	7,-	77	1200	8.135		
60			1260	8.145		
70 75	7.7	19	1320	8.145		
80		1997 - AN AN AND AND AND AND AND AND AND AND A	1380	8.18		
9093	7.8		1440	8,19		
100						
120	7.8	835				

Test Requested by:

Name: _

Address: ____

FAX NO. : 1 403 556 6700 Nov. 19 2010 11:30AM P6

WATER WELL FLOW TEST
Well Site Location: #2 MONTOR WELL
AFE#:
File#:
Well Owner: CHLOF CARTWRIGHT
Address:
Location on Property:
Phone No.:
Remarks
Measurements in:
Water Samples
Taken From:
Sediment:
Colour:
Odour:
Gas:
Water Well Information
Well I.D. #:
Depth:
Completion Date:
Well Use:
Expected Yield:
Condition of Well;
Well Diameter:
Screen Interval:
Static Level:

Flow Rate Information

Pumped at: ____

RECOVERY WILD R SE WATER WELLS LTD. Olds, AB Phone: 403-556-6700 Date Tested NOV/110 Tested by: Time Tested: Position 1/4 or LSD SE 31 5 28 Elapsed Time In Depth to Water Level Depth to Water Level During RECOVERY Minutes **During Recovery** 0 8.19 120 7.92 1 360 2 540 7.89 3 1200 4 1440 5 6 7 8 9 8.13 1012 15 20 25 8.085 3032 35 4043 8.07 50 8.05 60 70 80 8.03 90 100 8.01 120

WATER WELL FLOW TEST Well Site Location: #2 MONITOR WELL AFE#: File#: GPS: 116.79927 57.01110 1216m Well Owner: Address: _____ Location on Property: Phone No.: Remarks Measurements in: meters Water Samples Taken From: Sediment: Colour: Odour: Gas: Water Well Information Well I.D. #: Depth: Completion Date: Well Use: Expected Yield: Condition of Well: Well Diameter:

FAX NO. : 1 403 556 6700 Nov. 19 2010 11:31AM P7

Landowner/Occupant Testimonials:

Static Level:

Flow Rate Information

Screen Interval:

Pumped at:

Name:

Address:

Test Requested by:

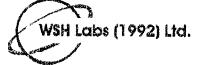
5				Pumpin	ng Test - Wat	er Level Data	Page 1 of 2
			onsulting Ltd.	Project: Chinook Ridge Lodge and Golf Course Number: 149104750			
	?		B Ross Street				
CL	antos	Tel. 403-3	AB T4N 1X5 41-3320	Client:	Chloe Carty	vright	
	antec	101. 400-0			Childe Carty		
Location: S	SE-31-28-3-W.5		Pumping Test: Aquifer	Test		Pumping Well: Well 1	
Test Cond	lucted by: Wild Rose	Water Wells Ltd.	Test Date: 11/10/2010			Discharge: variable, average r	rate 98.132 [m³/d]
Observatio	on Well: Well 1		Static Water Level [m]:	6.54		Radial Distance to PW [m]: -	
	Time [min]	Water Leve [m]	I Drawdow [m]	n			
1	1	6.59	0.05				
2	2	6.605	0.065				
3	3	6.62	0.08				
4	4	6.63	0.09				
5	5	6.64	0.10				
6	6	6.64	0.10				
7	7	6.65	0.11				
8	8	6.655	0.115				
9	9 10	6.66	0.12				
10 11	10	6.665	0.125				
12	20	6.70	0.14				
13	25	6.71	0.17				
14	30	6.72	0.18				
15	40	6.73	0.19				
16	50	6.75	0.21				
17	60	6.755	0.215				
18	70	6.77	0.23				
19	80	6.78	0.24				
20	90	6.79	0.25				
21	100	6.795	0.255				
22 23	120 180	6.81	0.27				
23	240	6.87	0.30				
25	300	6.90	0.35				
26	360	6.92	0.38				
27	420	6.94	0.40				
28	480	6.96	0.42				
29	540	6.96	0.42				
30	600	6.98	0.44				
31	660	7.00	0.46				
32	720	7.01	0.47				
33	780	7.03	0.49				
34 35	900	7.055	0.515				
35	1020 1140	7.10	0.535				
37	1200	7.10	0.58				
38	1260	7.12	0.59				
39	1320	7.145	0.605	,			
40	1380	7.15	0.61				
41	1440	7.165	0.625				
42	1441	7.11	0.57				
43	1442	7.085	0.545				
44	1443	7.08	0.54				
45	1444	7.07	0.53				
46	1445	7.065	0.525				

5				Pum	ping	g Test - Water Level Data	Page 2 of 2
		Stantec Consu		Proje	ect:	Chinook Ridge Lodge and Golf Course	
	2	600 - 4808 Ros Red Deer, AB		Num	ber:	149104750	
Sta	antec	Tel. 403-341-3		Clien	ıt:	Chloe Cartwright	
	Time [min]	Water Level [m]	Drawdown [m]				
47	1446	7.06	0.52				
48	1447	7.055	0.515				
49	1448	7.05	0.51				
50	1449	7.045	0.505				
51	1450	7.04	0.50				
52	1455	7.03	0.49				
53	1460	7.02	0.48				
54	1465	7.01	0.47				
55	1470	7.005	0.465				
56	1475	7.00	0.46				
57	1480	6.995	0.455				
58	1490	6.99	0.45				
59	1500	6.98	0.44				
60	1510	6.975	0.435				
61	1520	6.965	0.425				
62	1530	6.96	0.42				
63	1560	6.945	0.405				
64	1620	6.915	0.375				
65	1800	6.88	0.34				
66	1980	6.81	0.27				
67	2640	6.725	0.185				
68	2880	6.69	0.15				

S					Pum	ping Test - Wa	ter Level Data	Page 1
Stantec Co 600 - 4808				Proje	ect: Chinook R	idge Lodge and Golf Co	ourse	
	·	Red Deer			Num	ber: 14910475	0	
Sta	antec	Tel. 403-3			Clier	nt: Chloe Car	twright	
	SE-31-28-3-W.5		Pump	ing Test: Aquifer T	est		Pumping Well: Well 1	
Test Cond	ucted by: Wild Rose	e Water Wells Ltd.	Test D	Date: 11/10/2010			Discharge: variable, ave	erage rate 98.132 [m ³
Observatio	on Well: Monitoring	well #1	Static	Water Level [m]: 7	.77		Radial Distance to PW [[m]: 49
	Time	Water Leve	el	Drawdown				
	[min]	[m]		[m]				
1	23	7.775		0.005				
2	38	7.78		0.01				
3	53	7.78		0.01				
4	72	7.78		0.01				
5	96	7.785		0.015				
6	120	7.79		0.02				
7	180	7.80		0.03				
8	240			0.04				
9 10	300 360	7.81		0.04				
10	420	7.83		0.05				
12	420	7.83		0.06				
12	540	7.84		0.00				
13	600	7.84		0.07				
14	660	7.86		0.09				
16	720	7.85		0.08				
17	780	7.86		0.09				
18	900	7.87		0.10				
19	1140	7.89		0.12				
20	1200	7.90		0.13				
20	1260	7.90		0.13				
22	1320	7.91		0.14				
23	1380	7.915		0.145				
24	1440	7.915		0.145				
25	1460	7.91		0.14				
26	1477	7.91		0.14				
27	1487	7.91		0.14				
28	1500	7.905		0.135				
29	1530	7.905		0.135				
30	1560	7.905		0.135				
31	1620	7.90		0.13				
32	1800	7.90		0.13				
33	1980	7.90		0.13				
34	2640	7.90		0.13				
35	2880	7.895		0.125				

			onsulting Ltd.	Project Ch	inook Ridge Lodge and Golf Course
			8 Ross Street	Number: 149	
			, AB T4N 1X5		
Sta	ntec	Tel. 403-3	341-3320	Client: Ch	loe Cartwright
Location: S	E-31-28-3-W.5		Pumping Test: Aquifer	Fest	Pumping Well: Well 1
Test Condu	icted by: Wild Ros	e Water Wells Ltd.	Test Date: 11/10/2010		Discharge: variable, average rate 98.132 [m³/
Observatio	n Well: Monitoring	well 2	Static Water Level [m]:	7.60	Radial Distance to PW [m]: 50
	Time	Water Leve		1	
	[min]	[m]	[m]		
1	12	7.67	0.07		
2	30	7.73	0.13		
3	42	7.75	0.15		
4	56	7.77	0.17		
5	75	7.79	0.19		
6	93	7.81	0.21		
7	120	7.835			
8	240	7.90	0.30		
9	300	7.93	0.33		
10	360	7.96	0.36		
11	420	7.97	0.37		
12	480	7.99	0.39		
13	540	8.00	0.40		
14	600	8.005			
15	660	8.02	0.42		
16	720	8.04	0.44		
17	780	8.05	0.45		
18	900	8.075	0.475		
19	1140	8.12			
20	1200	8.135			
21	1260	8.145			
22	1320	8.17	0.57		
23	1380	8.18	0.58		
24 25	1440 1453	8.19	0.59		
25	1453	8.085			
20	1473	8.07	0.485		
27	1500	8.07	0.47		
28	1530	8.03	0.43		
30	1560	8.01	0.43		
31	1620	7.98	0.38		
32	1820	7.945			
33	1980	7.89	0.29		
34	2640	7.78	0.18		
35	2880	7.76	0.16		
001	2000	1.70	0.10		

Appendix D



Wild Rose Water Well Ltd. Box 4028 Dids, AB T4H 1P6 3851B - 21 Street N.E. • Calgary, Alberta, Canada • T2E 6T5 Phone: 403-250-9164 • Fax: 403-291-4597 • www.wshlabs.com

Phone:	(403) 556-6700	Lab Number:	66687
Fax:	(403) 556-6700		
Email:		PO Number:	

Sample Info: Chinoak Ridge Lodge & Golf Course

Sampled By:	
Date Sampled:	11/11/2010
Date Received:	11/11/2010
Date Reported:	11/24/2010

Analyte	Units	Result	Canadian Drinking Water Guideline Maximum
Calcium	mg/L	109	No Guideline
ron	mg/L	0.03	0.3
Magnesium	mg/L	37.6	No Guideline
Vlanganese	mg/L	0.01	0.05
Potassium	mg/L	4.1	No Guideline
Sodium	mg/L	22	200
Bicarbonates	mg/L	511	No Guideline
Bromides	mg/l.	< 0.1	No Guideline
Carbonates	mg/L	Ó	No Guideline
Chlorides	mg/L	4.4	250
Fluorides	mg/L	0.17	1.5
Nitrates as N	mg/L	1.2	10
Nitrites as N	mg/L	< 0.02	1
$NO_3 + NO_2$ as N	mg/L	1.2	No Guideline
Sulfates	mg/L	27	500
arameter	Units	Result	Canadian Drinking Water Guideline Maximum
lectrical Conductivity	µS/cm	796	No Guideline
H	pН	7.82	6.5 - 8.5
lardness (as CaCO ₃)	mg/L	427	No Guideline
otal Alkalinity (as CaCO₃)	mg/L	419	No Guideline
P-Alkalinity (as CaCO ₃)	mg/L	0	No Guideline
Hydroxide (as CaCO ₃)	mg/L	0	No Guideline
Fotal Dissolved Solids (calculated)	mg/L	457	500
Microbiology	Units	Result	Canadian Drinking Water Guideline Maximum
lotal Coliform	CFU/100 mL	0	Zero / Absent
Escherichla Coliform	CFU/100 mL	0	Zerc / Absent

Sum of Cations	9,59	TDS / EC Ratio	0.57
Sum of Anions	9.15	Sodium Adsorption Ratio	0.46
Ion Balance	1.05	Saturation Index	1.02

Page 1



3851B - 21 Street N.E. • Calgary, Alberta, Canada • T2E 6T5 Phone: 403-250-9164 • Fax: 403-291-4597 • www.wshlabs.com

Wild Rose Water Well Ltd.	Phone:	(403) 556-6700	Lab Number:	66687
Box 4028 Olds, AB_T4H 1P6	Fax: Email:	(403) 556-6700	PO Number:	

Sample Info: Chinook Ridge Lodge & Golf Course

Sampled By:	
Date Sampled:	11/11/2010
Date Received:	11/11/2010
Date Reported:	11/24/2010

Trace Metals	Units	Result	Canadian Drinking Water Guideline Maximum
Boron	µg/L	29.3	5000
Aluminum	µg/L	6.2	100
Chromium	µg/L	< 0.1	50
Copper	µg/L	0.3	1000
Zinc	µg/L	1.2	5000
Arsenic	µg/L	0.4	10
Selenium	µg/L	3.4	10
Cadmium	μg/L	< 0.05	5
Antimony	µg/L	0.6	6
Barium	µg/L	149	1000
Viercury	µg/L	< 0.05	1
_ead	µg/L	< 0.1	10
Jranium	hâ/l'	71	20

Certified B

Accredited by CALA to ISO/IEC 17025 for specific tests. The results above are related only to the items enelyzed c denotes less than detection limit. TNTC = Too Numerous To Count (>200 colonies)

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Control No: WSH-8KW041409-Rev1.0

Page 2

Guidelines for Chemical Drinking Water Quality as of May 2008

Aluminum 0.1 Antimony 0.006 Arsenic 0.010 Barium 1 Benzene 0.005 Boron 5 Bromate 0.01 Bromate 0.016 Cadmium 0.005 Coloramines (Total) 3 Chloramines (Total) 3 Choramines (Total) 3 Colour \$250 Chromium 0.05 Colour \$15 TCU ¹ Copper \$10 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene \$0.3 Fluoride 1.5 Iron \$0.3 Lead 0.01 Manganese 0.01 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) PH \$6.5 - 8.5 Selenium \$500 Soluphide (as H ₂ S) \$0.05 Stulphate \$600	Parameter	Health Guideline (mg/L)	AO (mg/L)
Antimony 0.006 Arsenic 0.010 Barium 1 Benzene 0.005 Bromate 0.01 Bromate 0.01 Bromate 0.01 Bromodichloromethane 0.016 Cadmium 0.006 Chloradines (Total) 3 Chloradines (Total) 3 Chloradines (Total) 3 Colour ≤15 TCU ¹ Colour ≤15 TCU ¹ Colour ≤15 TCU ¹ Colour ≤10 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤0.0024 Fluoride 1.5 Iron ≤0.3 Lead 0.01 Manganese 0.005 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) Seleinium 0.01 Sodium ≤200 Sodium ≤500 Sulphide (as H ₂ S) ≤0.024 <		0.1	
Arsenic 0.010 Barium 1 Bernzene 0.005 Boron 5 Bromate 0.01 Bromodichloromethane 0.016 Cadmium 0.005 Chloride ≤ 250 Chloride ≤ 250 Chornium 0.05 Colour $\leq 15 \text{ TCU}^1$ Colour $\leq 15 \text{ TCU}^1$ Copper ≤ 1.0 Cyanide 0.2 Cyanide 0.2 Cyanide 0.2 Cyanide 0.0015 Ethylbenzene ≤ 0.0024 Fluoride 1.5 Iron ≤ 0.3 Lead 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) PH ≤ 500 Soluphide (as H ₂ S) ≤ 0.05 Sulphide (as H ₂ S) ≤ 0.05 Total Dissolved Solids (TDS) ≤ 500			
Barium 1 Benzene 0.005 Boron 5 Bromate 0.01 Bromodichloromethane 0.016 Cadmium 0.005 Chloramines (Total) 3 Chromium 0.005 Chromium 0.005 Chromium 0.005 Colour \leq 15 TCU ¹ Copper \leq 10 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene 1.5 Iron \leq 0.024 Ethylbenzene \leq 0.05 Manganese 0.001 Manganese \leq 0.05 Manganese \leq 0.05 Manganese \leq 0.05 Solium \leq 2.00 Solium \leq 2.00 Solium \leq 2.00 Solium \leq 2.00 Soliuphide (as H ₂ S) \leq 0.05 Total Discolved Solids (TDS) \leq 0.02 <td></td> <td>0.010</td> <td></td>		0.010	
Benzene 0.005 Boron 5 Bromate 0.01 Bromodichloromethane 0.016 Cadmium 0.005 Chloramines (Total) 3 Choride ≤250 Chromium 0.05 Colour ≤15 TCU ¹ Colour ≤15 TCU ¹ Copper ≤1.0 Cyanide 0.2 Cyanide 0.2 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤0.3 Fluoride 1.5 Iron ≤0.3 Lead 0.01 Marganese ≤0.05 Mercury 0.001 Nitrite 3.2(1 mg/L as N) Nitrite 3.2(1 mg/L as N) Selenium 0.01 Sodium ≤200 Sulphate ≤500 Sulphate ≤500 Sulphate ≤0.024 Total Discolved Solids (TDS) ≤5		-	
Boron 5 Bromate 0.01 Bromotichloromethane 0.016 Cadmium 0.005 Chioramines (Total) 3 Choride ≤ 250 Chromium 0.05 Colour $\leq 15 \text{ TCU}^1$ Colour $\leq 15 \text{ TCU}^1$ Copper ≤ 1.0 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.0024 Fluoride 1.5 Iron ≤ 0.3 Iron ≤ 0.05 Manganese 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) Nitrite ≤ 200 Solium ≤ 0.05 Selenium 0.01 Solium ≤ 0.00 Sulphate ≤ 500 Sulphate ≤ 0.00 Sulphate ≤ 0.00 <tr< td=""><td></td><td></td><td></td></tr<>			
Bromate 0.01 Bromodichloromethane 0.016 Cadmium 0.005 Choranines (Total) 3 Choride ≤ 250 Choranines (Total) 3 Colour ≤ 15 TCU ¹ Copper ≤ 1.0 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.0024 Fluoride 1.5 Iron ≤ 0.001 Marganese ≤ 0.05 Marganese ≤ 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) pH ≤ 200 Sodium ≤ 0.005 Sulphate ≤ 500 Sulphate ≤ 0.024 Total Dissolved Solids (TDS) ≤ 0.024 Trihalomethanes (Total) 0.1 Turbidity ⁶ 1.0 NTU ² Uranium			
Bromodichloromethane 0.016 Cadmium 0.005 Chloride \leq 250 Chromium 0.05 Corport \leq 15 TCU ¹ Copper \leq 10 CC Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene \leq 0.0024 Fluoride 1.5 Iron \leq 0.03 Lead 0.01 Marganese \leq 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrate 3.2 (1 mg/L as N) PH $6.5 - 8.5$ Selenium 0.01 Sodium \leq 0.05 Sulphate \leq 0.05 Sulphide (as H ₂ S) \leq 0.05 Tetrachioroethylene \leq 0.024 Total Dissolved Solids (TDS) \leq 500 Trihalomethanes (Total) 0.1 Turbidity ⁶ 1.0 NTU ² Uranium 0.02			
Cadmium 0.005 Chloride 3 Chloride ≤ 250 Chromium 0.05 Colour $\leq 15 \text{ TCU}^1$ Copper $\leq 10 \text{ Copper}$ Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.024 Fluoride 1.5 Iron ≤ 0.03 Lead 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrate 3.2 (1 mg/L as N) Solium ≤ 200 Sodium ≤ 500 Sulphate ≤ 500 Sulphate ≤ 500 Total Dissolved Solids (TDS) ≤ 500 Trinalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02			
Chloride ≤ 250 Chromium 0.05 Colour $\leq 15 \text{ TCU}^1$ Copper ≤ 1.0 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.024 Fluoride 1.5 Iron ≤ 0.3 Lead 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate 45 (10 mg/L as N) Nitrite 3.2 (1 mg/L as N) PH 6.5 - 8.5 Selenium 0.01 Sodium ≤ 200 Sulphate ≤ 500 Sulphate ≤ 0.024 Total Dissolved Solids (TDS) < 0.02 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) < 0.3			
Chloride 1230 Chromium 0.05 Colour $\leq 15 \text{ TCU}^1$ Copper ≤ 1.0 Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.0024 Fluoride 1.5 Iron ≤ 0.3 Lead 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate $45 (10 \text{ mg/L as N})$ Nitrite $3.2 (1 \text{ mg/L as N})$ Selenium 0.01 Sodium ≤ 500 Sulphate ≤ 500 Sulphide (as H_2S) ≤ 0.03 Total Dissolved Solids (TDS) 0.1 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) 0.02	Chloramines (Total)	3	070
Chindmin $≤15 \text{ TCU}^1$ Colour $≤1.0$ Copper $≤1.0$ Cyanobacterial toxins - microcystin-LR 0.0015 Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene $≤0.0024$ Fluoride 1.5 Iron $≤0.3$ Lead 0.01 Manganese $≤0.05$ Mercury 0.001 Nitrate $45 (10 \text{ mg/L as N})$ Nitrate $3.2 (1 \text{ mg/L as N})$ pH $6.5 - 8.5$ Selenium 0.01 Sodium $≤200$ Sulphate $≤500$ Sulphate $≤0.05$ Toluene <0.02 Total Dissolved Solids (TDS) <10.11 Turbidity ^a 0.01 Turbidity ^a 0.02 Xylenes (Total) 0.02 Xylenes (Total) 0.02			≤250
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Copper ≤ 1.0 Cyanide0.2Cyanobacterial toxins - microcystin-LR0.0015Ethylbenzene ≤ 0.0024 Fluoride1.5Iron ≤ 0.3 Lead0.01Marganese ≤ 0.05 Mercury0.001Nitrate45 (10 mg/L as N)Nitrate3.2 (1 mg/L as N)pH $6.5 - 8.5$ Selenium0.01Sodium ≤ 200 Sulphate ≤ 500 Sulphate ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Toluene ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤ 0.3	Colour		
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Cyanobacterial toxins - microcystin-LR 0.0015 Ethylbenzene ≤ 0.0024 Fluoride 1.5 Iron ≤ 0.3 Lead 0.01 Manganese ≤ 0.05 Mercury 0.001 Nitrate $45 (10 mg/L as N)$ Nitrite $3.2 (1 mg/L as N)$ pH $6.5 - 8.5$ Selenium 0.01 Sodium ≤ 0.05 Sulphate ≤ 500 Sulphate ≤ 0.05 Total Dissolved Solids (TDS) ≤ 0.024 Turbidity ⁸ $1.0 NTU^2$ Uranium 0.02 Xylenes (Total) 0.02			
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Fluoride1.5Iron ≤ 0.3 Lead0.01Manganese ≤ 0.05 Mercury0.001Nitrate45 (10 mg/L as N)Nitrite3.2 (1 mg/L as N)pH $6.5 - 8.5$ Selenium0.01Sodium ≤ 200 Sodium ≤ 500 Sulphate ≤ 500 Sulphate ≤ 0.05 Tetrachloroethylene0.03Total Dissolved Solids (TDS) ≤ 500 Turbidity ^a 1.0 NTU ² Uranium0.02Xylenes (Total) ≤ 0.3			≤0.0024
Iron0.01Lead0.01Marganese 0.001 Mercury0.001Nitrate45 (10 mg/L as N)Nitrite 3.2 (1 mg/L as N)pH $6.5 - 8.5$ Selenium 0.01 Sodium ≤ 200 Sulphate ≤ 500 Sulphate ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) < 0.3		1.5	
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Manganese0.001Mercury0.001Nitrate45 (10 mg/L as N)Nitrite3.2 (1 mg/L as N)pH6.5 - 8.5Selenium0.01Sodium ≤ 200 Sodium ≤ 0.01 Soluphate ≤ 500 Sulphate ≤ 0.05 Sulphate ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤ 0.3	Lead	0.01	-0.05
Mercury 0.001 Nitrate $45 (10 \text{ mg/L as N})$ Nitrite $3.2 (1 \text{ mg/L as N})$ pH $6.5 - 8.5$ Selenium 0.01 Sodium ≤ 200 Sodium ≤ 500 Sulphate ≤ 500 Sulphate ≤ 0.05 Sulphate 0.03 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) ≤ 0.3	Manganese		≤0.05
Nitrite $3.2 (1 \text{ mg/L as N})$ pH $6.5 - 8.5$ Selenium 0.01 Sodium ≤ 200 Sodium ≤ 500 Sulphate ≤ 500 Sulphide (as H ₂ S) ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) ≤ 0.3			
hinto $6.5 - 8.5$ Selenium 0.01 Sodium ≤ 200 Sulphate ≤ 500 Sulphide (as H ₂ S) ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤ 0.3	Nitrate		
pH0.01Selenium0.01Sodium ≤ 200 Sulphate ≤ 500 Sulphide (as H ₂ S) ≤ 0.05 Tetrachloroethylene0.03Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total)0.1Turbidity ^a 1.0 NTU ² Uranium0.02Xylenes (Total) ≤ 0.3	Nitrite	3.2 (1 mg/L as N)	CE OE
Selential ≤ 200 Sodium ≤ 500 Sulphate ≤ 0.05 Sulphide (as H ₂ S) ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤ 0.3			0.0 - 0.0
Sodium ≤500 Sulphate ≤0.05 Sulphide (as H ₂ S) ≤0.05 Tetrachloroethylene 0.03 Toluene ≤0.024 Total Dissolved Solids (TDS) ≤500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤5.0	Selenium	0.01	~200
Sulphate ≤ 0.05 Sulphide (as H2S) ≤ 0.05 Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) ≤ 0.3			
Sulphile (as H_2O)Tetrachloroethylene 0.03 Toluene ≤ 0.024 Total Dissolved Solids (TDS) ≤ 500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU^2 Uranium 0.02 Xylenes (Total) ≤ 0.3			
Tetraction octary lend ≤0.024 Total Dissolved Solids (TDS) ≤500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤5.0	Sulphide (as H ₂ S)		≤0.05
Total Dissolved Solids (TDS) ≤500 Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤5.0	Tetrachloroethylene	0.03	0.001
Total Dissolved Solids (TDS) Trihalomethanes (Total) 0.1 Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) ≤0.3			
Turbidity ^a 1.0 NTU ² Uranium 0.02 Xylenes (Total) <5.0	Total Dissolved Solids (TDS)		≤500
Uranium 0.02 Xylenes (Total) ≤0.3	Trihalomethanes (Total)		
Uranium 0.02 Xylenes (Total) <5.0			
Xylenes (Total) ≤0.3		0.02	
	Zinc		<u>≤5.U</u>

Guidelines for Microbiological Parameters

The MAC for *total coliforms* and *Escherichia coli*. in public, semi-public and private drinking water systems is none detectable per 100 mL. No MAC is specified for *heterotrophic plate count (HPC)* bacteria. However, increases in HPC concentrations above baseline levels are considered undesirable.

Saturation Index (SI)

Saturation Index is used to evaluate the need for corrosion control.

(a) A positive SI indicates scaling tendencies, but non-corrosive water

(b) A negative SI indicates non-scaling tendencies, but corrosive water

Note:

¹ TCU = True Colour Unit	MAC = Maximum Acceptable Concentration
² NTU = Nephelometric Turbidity Unit	
\leq less than or equal to	^a Turbidity value based on slow sand or diatomaceous earth filtration.

Guidelines for Canadian Drinking Water Quality are provided courtesy of Health Canada. May 2008. http://www.hc-sc.gc.ca/ewh-semt/alt_formats/hecs-sesc/pdf/pubs/water-eau/sum_guide-res_recom/summary-sommaire-eng.pdf