BY-LAW NUMBER 2013/43

BY-LAW NO. 2013/35 is a by-law of the County of Wetaskiwin No. 10 in the Province of Alberta, to authorize the adoption of an Area Structure Plan for the purpose of providing a framework for a proposed subdivision and development of Country Residential land use, known as 'Solara Acres' within SW 24-47-1-W5M in accordance with Section 633 of the Municipal Government Act, Chapter M-26.1, Revised Statutes of Alberta 2000, and amendments thereto.

WHEREAS: at the requirements of County Council, as per Policy 6606, an Area Structure Plan has been prepared SW 24-47-1-W5M.

AND WHEREAS: the proposed Area Structure Plan has been widely circulated and discussed within the County pursuant to Section 230, 606(1), and 633(1) of the Municipal Government Act, 2000, Chapter M-26.1, and amendments thereto.

NOW THEREFORE: the County of Wetaskiwin No. 10, duly assembled, hereby enacts as follows:

(a) The document attached to this By-law as "Appendix A", together with accompanying maps, is hereby adopted as "Solara Acres" SW 24-47-1-W5M.

2. This by-law comes into effect on the date of third reading.

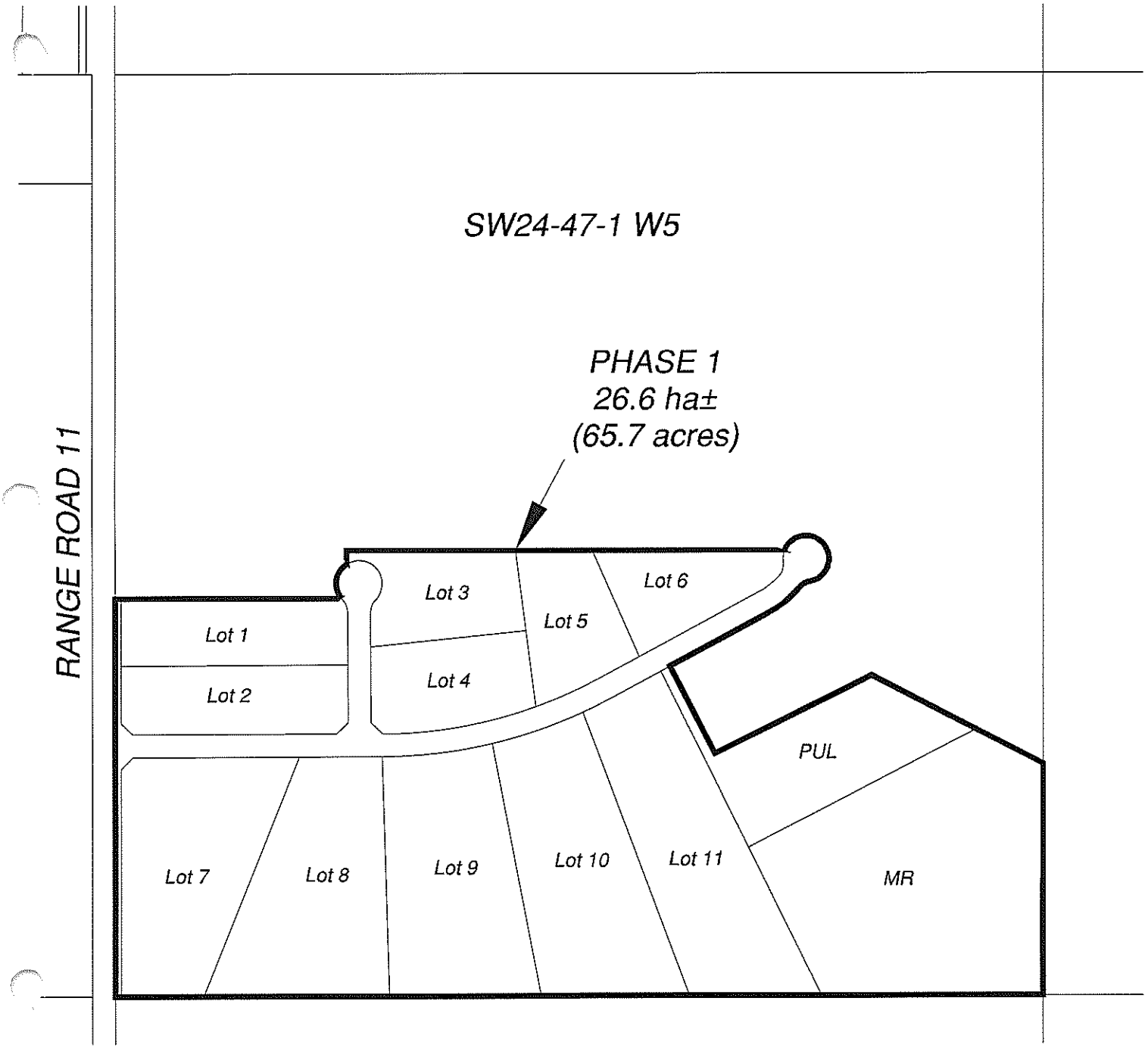
READ: A First time this 10 day of October, A.D., 2013.

READ: A Second time this 10 day of October, A.D., 2013.

READ: A Third time and finally passed this 10 day of October, A.D., 2013.

REEVE

SECRETARY-TREASURER


SW24-47-1 W5
PHASE 1
26.6 ha±
(65.7 acres)
RANGE ROAD 11
Lot 1
Lot 2
Lot 3
Lot 4
Lot 5
Lot 6
PUL
Lot 7
Lot 8
Lot 9
Lot 10
Lot 11
MR

County of Wetaskiwin

Solara Acres
Area Structure Plan

Prepared on behalf of:

Lynn Oberle

by

Fitzner Consulting Ltd.

September 2013

Solara Acres Area Structure Plan
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1.0 INTRODUCTION

1.1 Vision

The design of the development, a total of 40 sites (in two phases), provides a low-density "rural" living atmosphere that will have minimal impact on the lake.

The residences themselves will be architecturally controlled. The owner may choose plans for a residence from a list of hundreds. All building materials and equipment will be from Canadian manufacturing if possible. Each home will be built to far exceed minimum code.

Another environmental feature of each home will be a large, in-ground rainwater collection tank. This will dramatically reduce runoff during large rains and will also dramatically reduce the demand on the well water supply for the homes.

We anticipate the price per site (2 ½ to 5 acres) to be from $90,000 to $120,000.

1.2 Purpose

This Area Structure Plan has been prepared on behalf of Mr. Lynn Oberle and is in accordance with County of Wetaskiwin Policy #6606 (Requirements for Area Structure Plans). The plan provides a framework for the proposed country residential subdivision and development of SW 24-47-1-W5M comprising 65.0 hectares (160.6 acres). This Area Structure Plan is being prepared for the creation of 11 lots. The second phase of this proposed subdivision is shown to illustrate how the remainder of the quarter section would be developed should the county modify it's policy towards the development of Productive Agricultural Lands. The *Pigeon Lake Area Concept Plan*, (Draft February 2012), indicates that because of the recreational value of land near Pigeon Lake, the County may allow residential subdivision on land with a farmland assessment rating up to 50%. The subject quarter is within the area outlined in the Pigeon Lake Area Concept Plan. The County of Wetaskiwin is considering approval of this 11 lot proposal at this time. Should the *Pigeon Lake Area Concept Plan* be adopted, then the County of Wetaskwin could consider approval of the remaining 29 lots, for a total of 40 lots.

1.3 Regional Context

The Solara Acres Subdivision plan area is located as shown on Figure 1. The plan area is bounded by Range Road 11 to the west and by quarter section lines on the south, east and north. The Summer Village of Argentia, on Pigeon Lake, is located approximately 0.8 kilometers south of the plan area. Lakeland Estates is immediately northwest of the plan area. The quarter section immediately to the south is the Graves Wildlife Sanctuary, with the registered owner being Alberta Sport, Recreation, Parks and Wildlife Foundation. Appendix A contains a copy of the Land Title Certificate.

1.4 Background and Ownership

The Solara Acres plan area contains no improvements and has not been previously subdivided. The land is presently in hay. There is approximately 14% tree cover with the majority of the tree

cover being in the south east portion of the property. The plan area has been owned by Mr. Lynn Oberle since 1983. A copy of the Land Title Certificate is attached in Appendix A.

1.5.1 Policy Context

This Area Structure Plan has been prepared in accordance with Section 633 of the Municipal Government Act. As such, it describes the land uses proposed, the sequence of development, general future population levels, and infrastructure requirements.

This plan also conforms to the County of Wetaskiwin 2010 Municipal Development Plan.

The plan area is currently zoned AG (Agricultural). An amendment to the Land Use Bylaw No. 95/54 to redistrict the plan area to CR (Country Residential) will be required prior to subdivision. This Area Structure Plan provides the rationale for the required amendment. At this time it is proposed to only redistrict the Area for Phase 1. Phase 1 is the area that meets the criteria for development based on Agricultural Land Assessment data provided by the County of Wetaskiwin. The land in Phase 1 has an average soil rating of 29.2 %, meeting the minimum rating requirement of 30%. The Farmland Calculation Report can be referenced in Appendix B. Refer to Figure 2 for land soils classification for the plan area. Figure 3 shows the development concept and the proposed dedication of lands as Municipal Reserve and Public Utility Lots. It is proposed to dedicate 7.1 hectares of the total 65 hectares to Municipal Reserve. Figure 4 shows the proposed phasing for the plan area.

1.5.2 Expiry Date of ASP

As Council may approve Policies from time to time that may benefit new development and/or abutting lands to development, it is the wish of Council to ensure that should this Area Structure Plan (ASP) not have proceeded with the registration and development of at least one lot within three years of the adoption of this ASP will, at the discretion of the County, be subject to the application of any new policy that would normally be applied to the Area Structure Plan and related development thereof if it were to be approved at the time of the expiry of the aforementioned three year term.

2.0 EXISTING CONDITIONS

2.1 Surrounding Development

The Solara Acres plan area is bounded to the west by RR 11 and quarter sections to the north, east and south. Lakeland Estates is situated immediately northwest of the plan area. The Graves Wildlife Sanctuary is located to the south of the plan area. The Summer Village of Argentia, on Pigeon Lake, is located approximately 0.8 kilometers south of the plan area.

2.2 Topography and Natural Drainage

The plan area is characteristically sloped from the northwest to the southeast. There is approximately 36 metres of relief across the plan area. Drainage flows to the southeast corner of the site.

2.3 Natural Vegetation

Treed areas cover approximately 14% of the plan area with the remainder being cleared and is used primarily to harvest hay. Figure 5 shows existing conditions. Agricultural Land Assessment data was obtained from the County of Wetaskiwin.

2.4 Existing Improvements and Rights-of-Way

There are no existing improvements or rights–of–way. Range Road 11 to the west of the development is developed to gravel standard. Overhead power is located along the east side of the range road and extends to the south extremity of the plan area.

3.0 COMMUNITY CONSULTATION

3.1 Initial Public Meeting

An initial public meeting was held on March 16, 2009 at the Mulhurst Community Hall. Approximately 30 area residents attended the meeting. The developer and representatives from Bionest (an advanced sewage treatment system) were present. Bionest made a presentation describing their technology.

Two weeks prior to this meeting, four handbills were posted: one each at the Sandholm store, Mulhurst Post Office, Mulhurst General Store, and the door of the Community Hall. Two ads were placed in the Pipestone Flyer two weeks before the meeting and one the week of the meeting. Additionally, 15 handbills were hand-delivered to neighbours. Most interest seemed to develop from the handbills.

The following concerns were expressed after our promotion and leaflets were distributed:

- Water supply
- Sewage disposal
- Rainwater flow/volume from 50 year "floods"
- Number of sites
- Traffic volume

No negative expressions regarding the proposal were voiced at this meeting.

3.2 Response to Public Input

3.2.1 Water Supply

It is proposed that each lot be serviced by an individual well. Appendix C contains a report prepared by Sabatini Earth Technologies Inc. (Domestic Groundwater Evaluation). The report was prepared in February 2007. At the time, the proposed number of lots was 23. The report concludes that the bedrock aquifer underlying the subject site is adequate to service at least 23 lots.

3.2.2 Sewage Disposal

In consultation with County of Wetaskiwin officials, it was agreed that holding tanks would be acceptable for the property. The holding tanks will be compatible in location and construction with being connected to a possible future sewage gathering system.

3.2.3 Stormwater

In addition to a central stormwater management facility designed to control flows up to the 1:200 year event, each lot will have 1000 gallon rain water collection tank for use in watering lawns, trees and gardens.

3.2.4 Density

It is proposed to develop the lands in two phases with Phase 1 consisting of 11 lots. Upon completion of the second phase, the proposed subdivision would have 40 lots.

3.2.5 Traffic Volume

A traffic impact assessment was performed by Scheffer Andrew Ltd. and can be referred to in Appendix D. The report concludes that the road system in the surrounding area can accommodate the increase in traffic without requiring modifications to the road system.

4.0 CIRCULATION AND MUNICIPAL SERVICES

4.1 Traffic Circulation

A Traffic Impact Assessment was undertaken by Scheffer Andrew Ltd. for the plan area to assess the impact of traffic generated by the development. Appendix D contains the report by Scheffer Andrew Ltd. The intersection of SR 616 and RR 11 was analyzed. The report concludes that the intersection can accommodate the proposed development without improvement for the next 20 years. The development concept shown in Figure 3 includes an east–west link to the proposed development in the quarter section to the east of the plan area, as well as a link to the quarter section to the north. The roads for Phase 1 will be built to a pre-paved standard. The County of Wetaskiwin would typically require the internal subdivision roads for the first eleven (11) lots to be paved, as per the Pavement and Per Lot Road Fee Policy #6615. However in recognition that the second phase is dependent on a change in County of Wetaskiwin policy, the County will relax that standard and require the internal subdivision roads for Phase 1 to be built to a pre-paved standard. However, the County will require security to be posted to enable the paving of the internal subdivision roads if need be. This security would be returned if the *Pigeon Lake Area Concept Plan* is not adopted. If the second phase is allowed to proceed, Council will require either RR 11 be constructed to a standard to allow for future pavement and/or pave RR 11 from the subdivision entrance to Highway 616.

4.2 Water System

It is proposed that each lot be serviced by an individual well. Appendix C contains a report prepared by Sabatini Earth Technologies Inc. (Domestic Groundwater Evaluation). The report was prepared in February 2007. At the time the proposed number of lots was 23. The report concludes that the bedrock aquifer underlying the subject site is adequate to service the proposed

23 lots. Therefore, there is adequate water supply for the proposed 11 lots in Phase 1. Proposed phasing is shown in Figure 4. In the interim, the proposed total number of lots has increased to 40. If the lots of Phase 2 are to be registered a new Water Study will be necessary verifying adequate water supply for 40 lots.

4.3 Sanitary Sewage

County of Wetaskiwin Policy 6611 (Requirement for Sewer Service at Named Lakes Including Buck Lake and Pigeon Lake and Other Sensitive Areas) is being adhered to. The proposed lots vary is size from a minimum of 1.0 ha (2.47 ac) to 2.0 ha (4.94 ac.). Appendix E contains a report prepared by Hagstrom Geotechnical Services Ltd. (Shallow Water Table Testing and Soil Percolation Testing) Figure 6 shows the extent of areas on the property where the ground water table is within 2.0 metres of the ground surface. Field percolation tests were conducted. The report indicates that the majority of the soils are not suitable for the development of conventional sewage disposal systems. In consultation with County of Wetaskiwin officials it was agreed that holding tanks would be acceptable for the property. The holding tanks will be compatible in location and construction with being connected to a possible future sewage gathering system. The sewage system will be subject to Provincial Safety Codes approval (by an Accredited Safety Codes Agency). The County of Wetaskiwin will register caveats on the lot titles informing lot owners that in future they may be a required, at their own cost to connect to a regional sewer gathering system. The Offsite Sewer Levy will be charged at the prevailing rate at the time of the signing of the Development Agreement or Registration of Plan of Subdivision.

4.4 Stormwater Management

Stormwater management for the property will be achieved with a combination of road ditches, culverts and drainage ditches. XP – SWMM was used to model the storm water flows on the subject property. Stormwater flows are directed to a proposed Stormwater Management Facility located in Lot PUL. The storm water management facility will be sized to accommodate storm events of up to a 1:200 year event. The proposed facility directly controls run off from sixty one percent of the entire property including ninety three percent of the road system. The discharge rate from the storm water management facility is 1.2 l/s/ha while the predevelopment discharge rate from the south portion of the property is an average 7.9 l/s/ha. The proposed facility is a 'wet pond' with a permanent pool of water. The permanent pool of water enhances the quality of the water discharged from the facility by allowing suspended solids to settle out. Figure 7 shows the Storm Drainage Concept. In addition to the SWMF, each lot will have 1000 gallon rain water collection tank for use in watering lawns, trees and gardens

4.5 Shallow Utilities

The proposed subdivision will be fully serviced with power, natural gas, telephone and cable

4.6 Fire Protection

The proposed stormwater management facility will double as a fire pond with adequate volume of water for 40 lots. An access road is proposed to provide access to the facility. A dry hydrant will be installed to allow municipal firefighting equipment to draw water from the stormwater pond / fire pond.

4.7 Groundwater Conditions

With reference to Figure 6 – Developable Areas, lots with high water table will have a restrictive covenant informing landowners of the high water table. The County of Wetaskiwin does not enforce Restrictive Covenants and that in the case of a conflict between a restrictive covenant and the County's Land Use Bylaw, the Land Use Bylaw takes precedence over the Restrictive Covenant.

5.0 STAGING AND IMPLEMENTATION

Staging (see Figure 4) is proposed as follows:

Phase 1	11 lots
Phase 2	29 lots (future)

It is proposed to develop Phase 1 at this time. An amendment to the Land Use Bylaw will be required prior to subdivision. It is proposed to redistrict the area in Phase 1 as Country Residential.

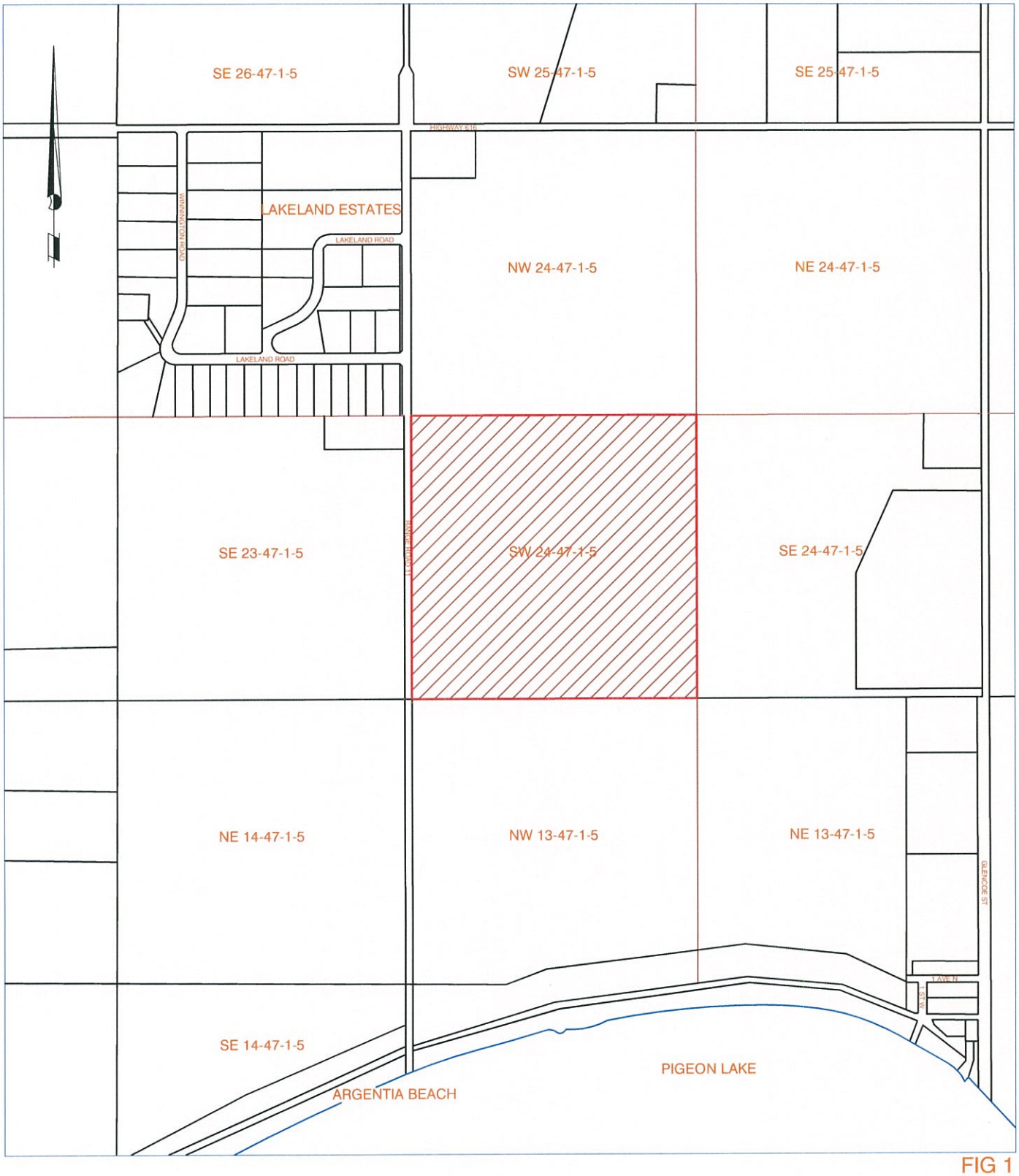


FIG 1

LEGEND

PLAN AREA

REGIONAL CONTEXT

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:15000
JUNE 2013

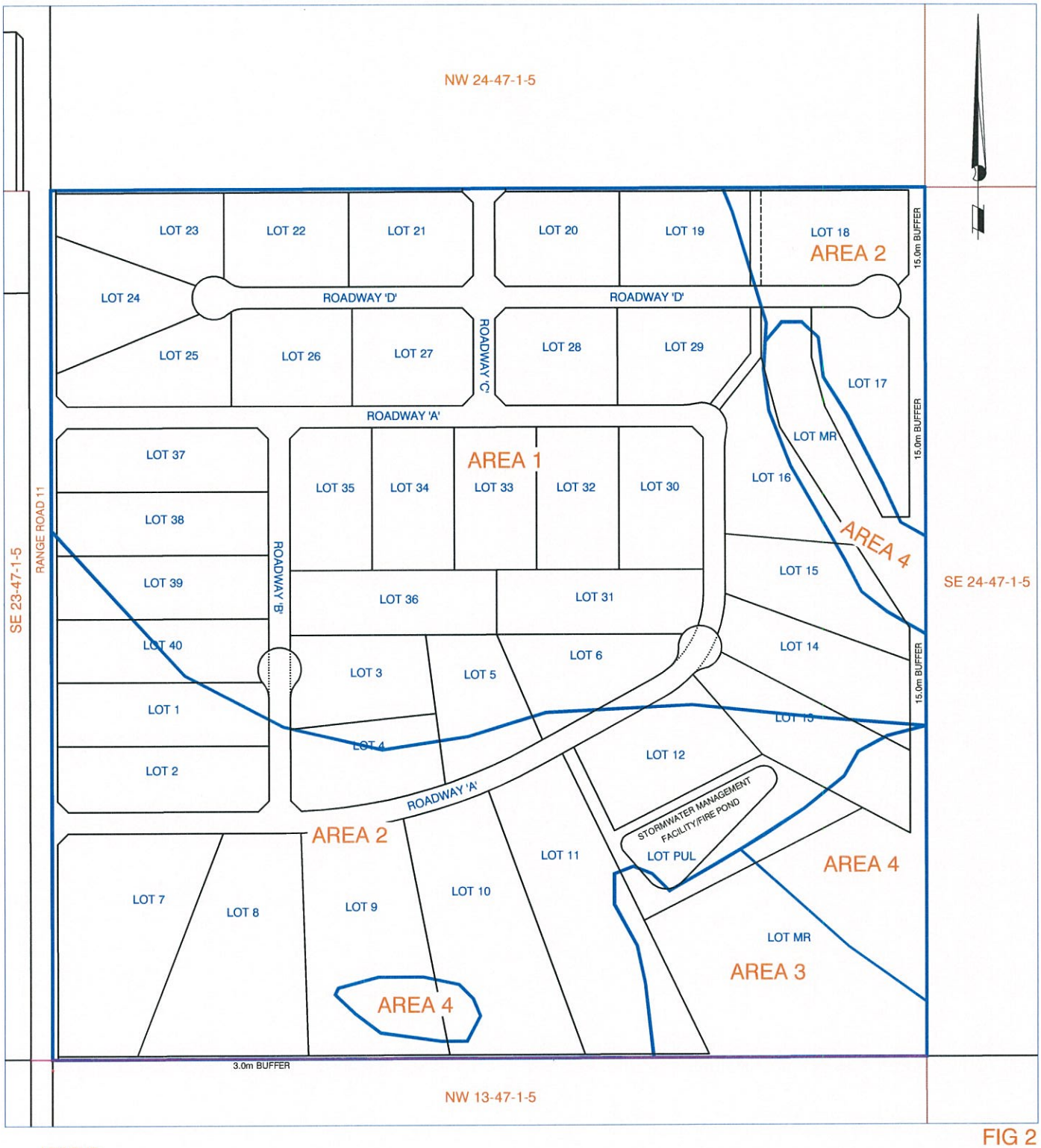


FIG 2

LEGEND

LAND SOILS CLASSIFICATION BOUNDARY

SOIL VALUE INFORMATION

AREA 1	=	49.5%
AREA 2	=	34.5%
AREA 3	=	19.0%
AREA 4	=	7.0%

LAND SOILS CLASSIFICATION

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013

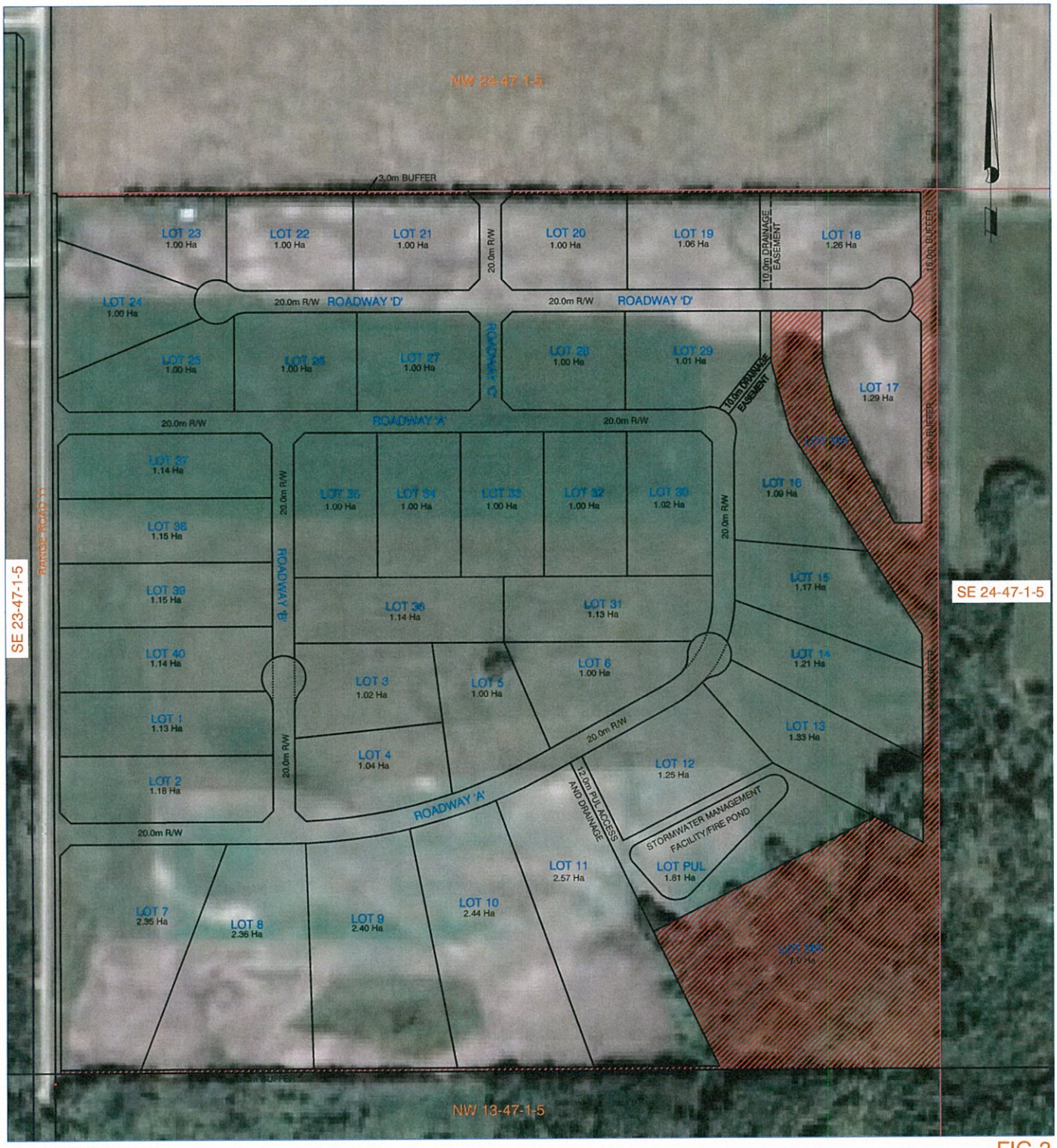


FIG 3

LEGEND

MUNICIPAL RESERVE (MR)

DEVELOPMENT STATISTICS

GROSS PLAN AREA	=	65.0 Ha
COUNTY ROAD WIDENING	=	0.4 Ha
INTERNAL ROADWAY AREA	=	5.5 Ha
MUNICIPAL RESERVE (MR) AREA	=	7.1 Ha
PUBLIC UTILITY LOT (PUL) AREA	=	1.81 Ha
DRAINAGE EASEMENT	=	0.19 Ha
RESIDENTIAL LOT AREA	=	50.1 Ha

DEVELOPMENT CONCEPT

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013

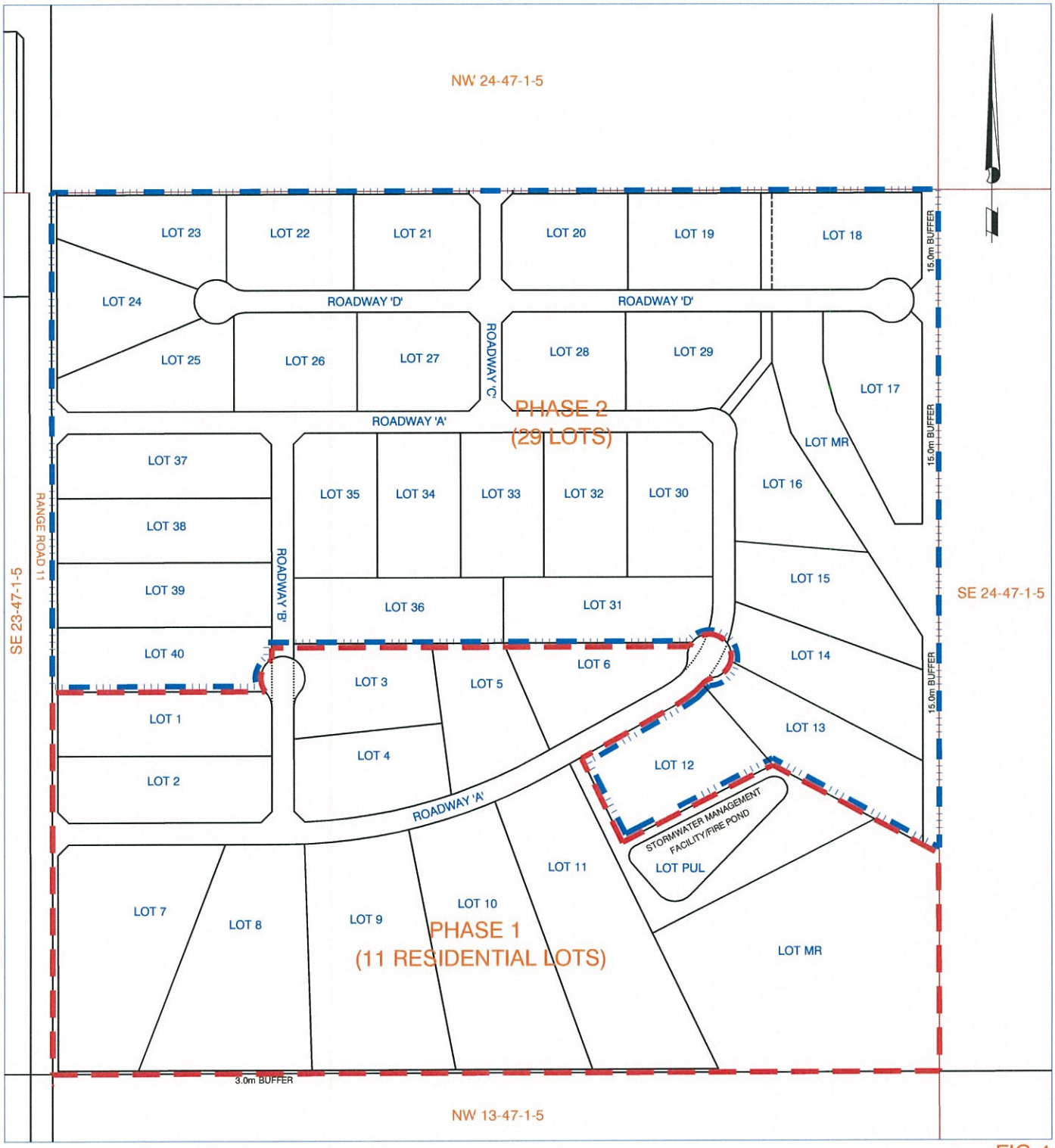


FIG 4

LEGEND

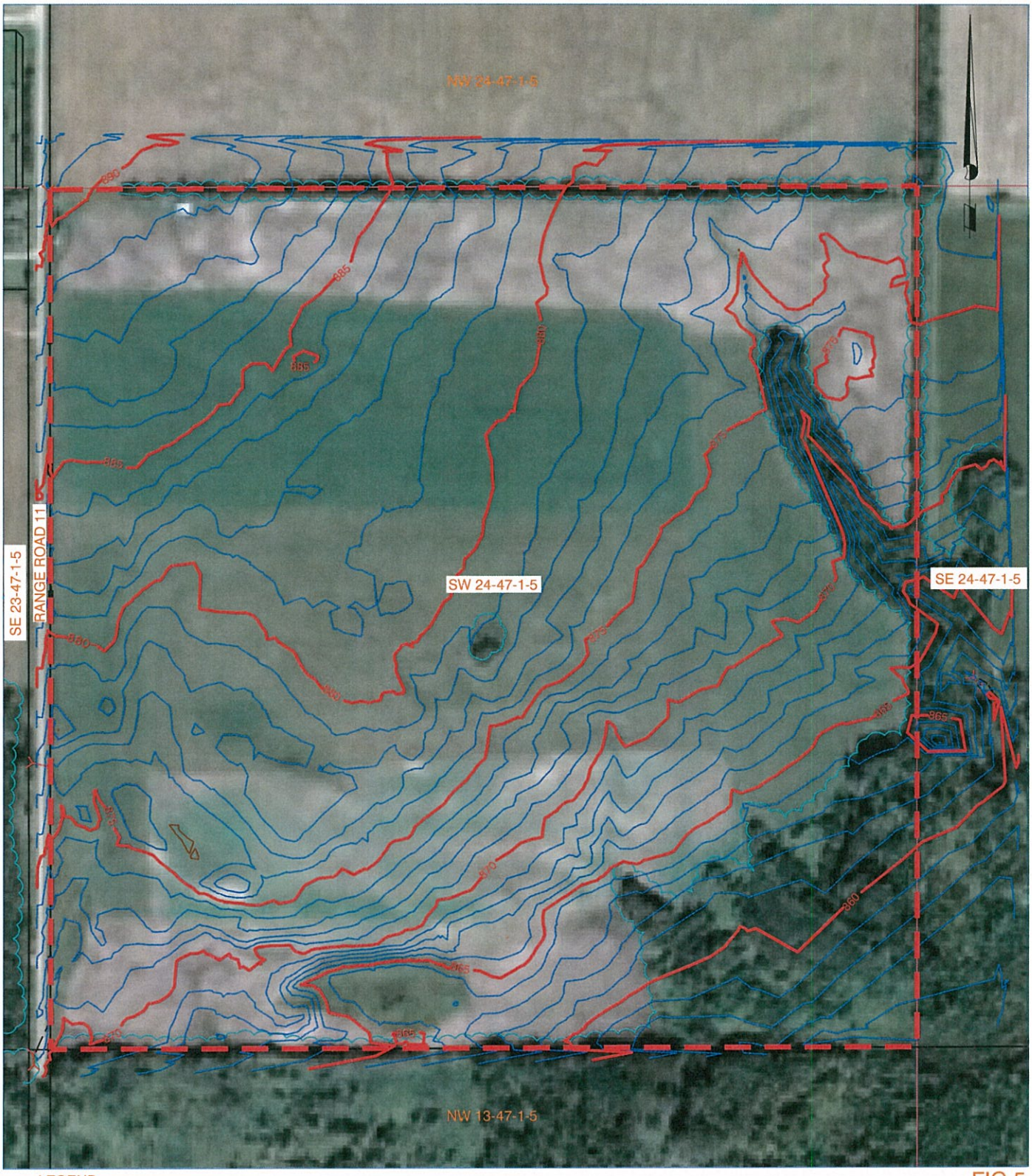
PHASE 1 BOUNDARY

PHASE 2 BOUNDARY

PROPOSED PHASING

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013



LEGEND

- PLAN BOUNDARY
- EXISTING CONTOURS 865
- EXISTING CULVERT
- EXISTING POWERPOLE
- EXISTING TREELINE

FIG 5

EXISTING CONDITIONS

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013

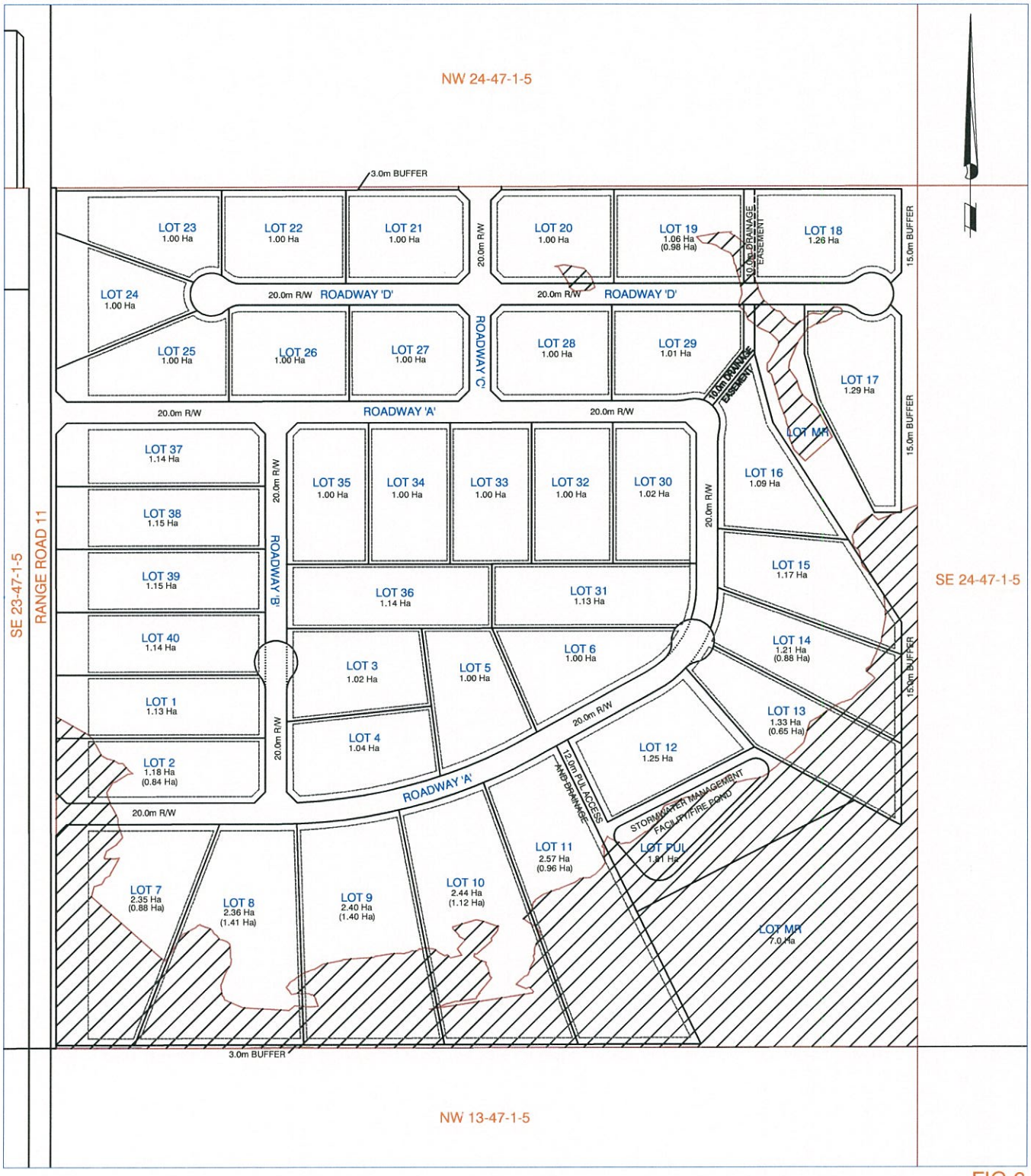


FIG 6

LEGEND

2.0m WATER TABLE (NOT SUITABLE FOR DEVELOPMENT)

SETBACKS

DEVELOPABLE AREA (0.81 Ha)

DEVELOPABLE AREAS

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013

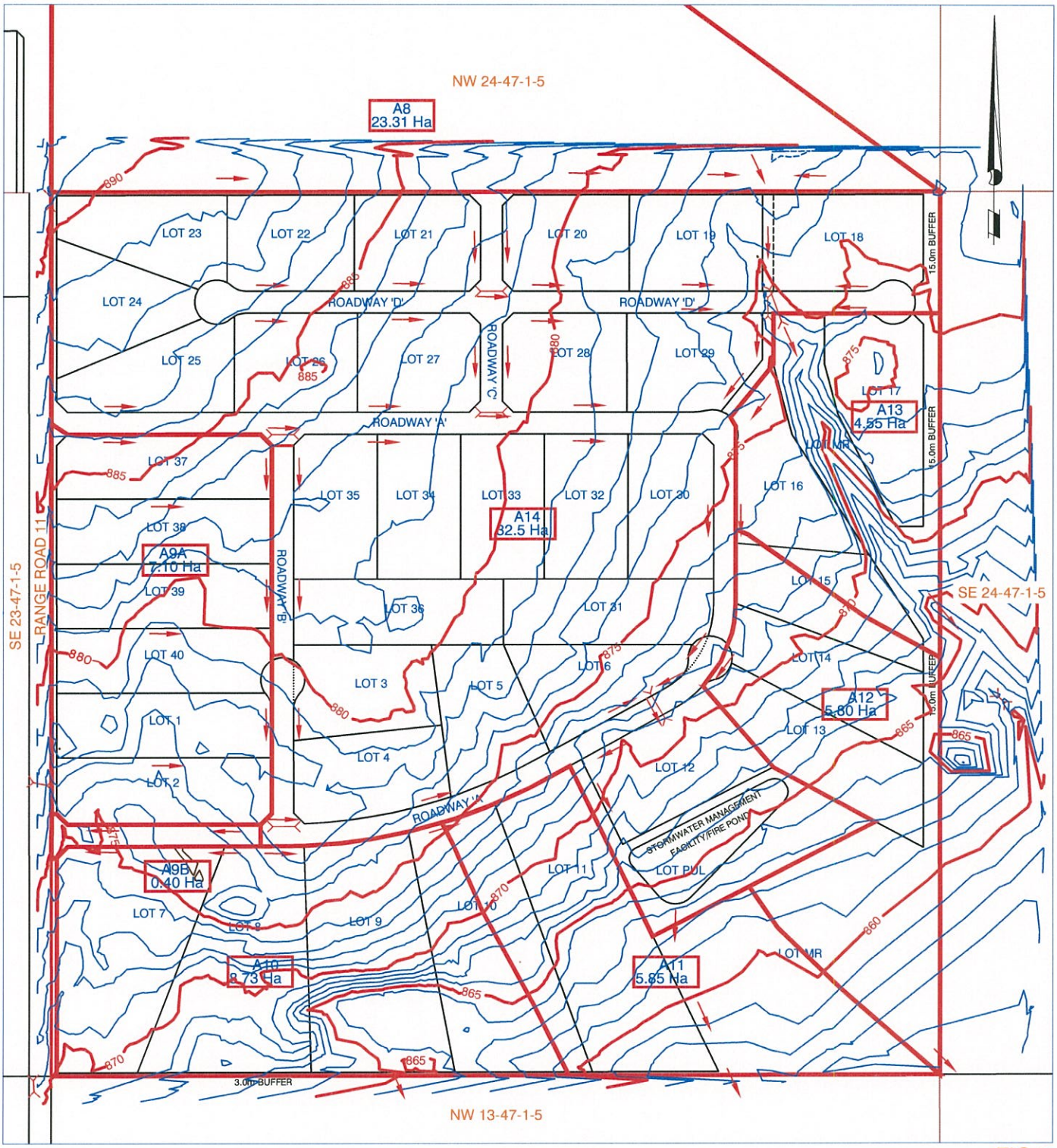


FIG 7

LEGEND

EXISTING CONTOURS 865

EXISTING CULVERT

PROPOSED CULVERT

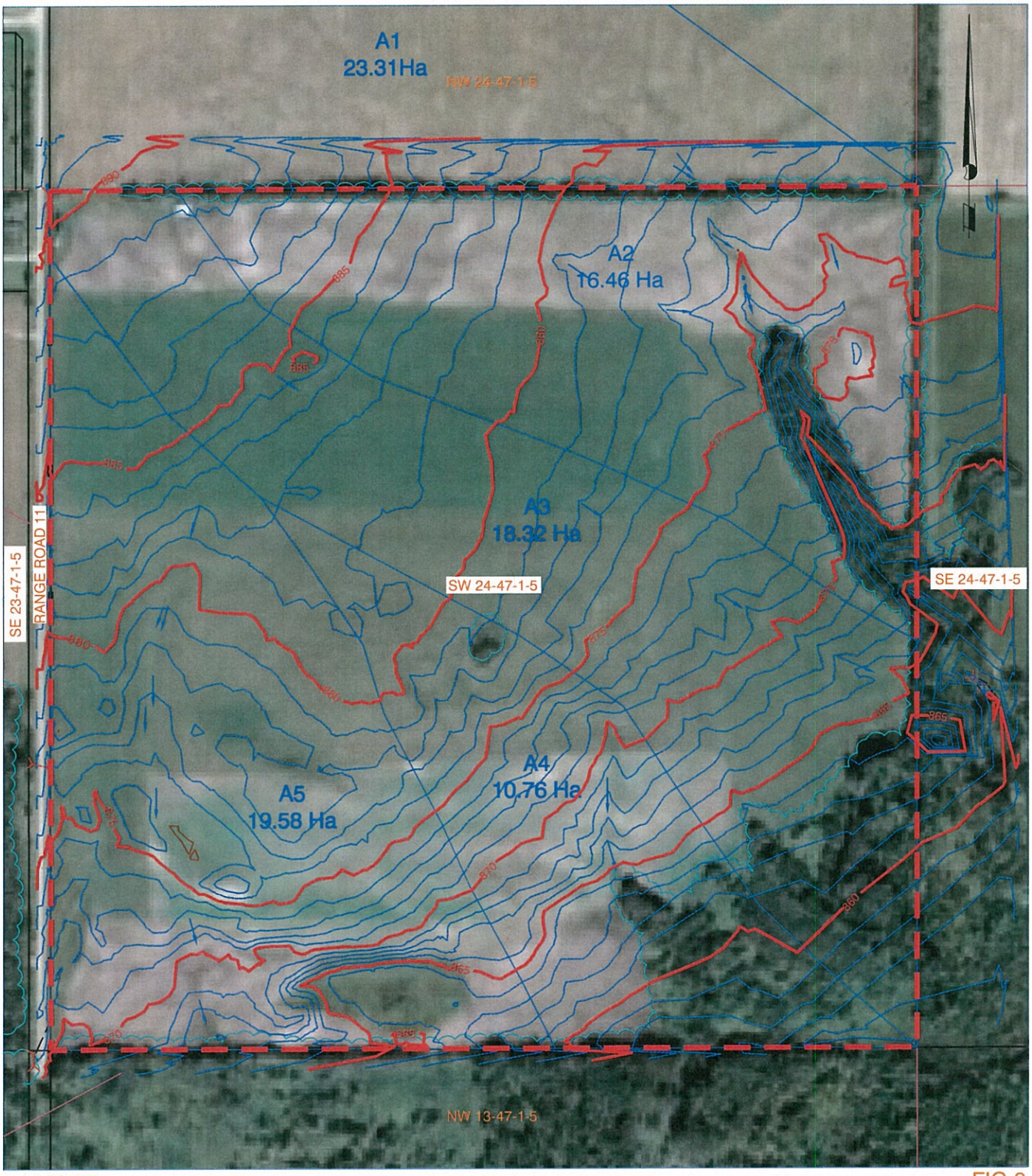
DRAINAGE AREA A20 14.74 Ha

DRAINAGE BOUNDARY

STORM DRAINAGE CONCEPT

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013



LEGEND

- PLAN BOUNDARY
- EXISTING CONTOURS 865
- EXISTING CULVERT
- EXISTING POWERPOLE
- EXISTING TREELINE
- FLOW DIRECTION
- DRAINAGE RIDGE LINE

FIG 8

PREDEVELOPMENT CONDITIONS

SOLARA ACRES
AREA STRUCTURE PLAN
COUNTY OF WETASKIWIN

SCALE: 1:5000
JUNE 2013

APPENDIX A:

TITLE SEARCHES

LAND TITLE CERTIFICATE

S

LINC	SHORT LEGAL	TITLE NUMBER
0022 870 802	5;1;47;24;SW	832 140 532

LEGAL DESCRIPTION
MERIDIAN 5 RANGE 1 TOWNSHIP 47
SECTION 24
QUARTER SOUTH WEST
EXCEPTING THEREOUT ALL MINES AND MINERALS
AREA: 65.2 HECTARES (161 ACRES) MORE OR LESS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF WETASKIWIN NO. 10

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
832 140 532	14/06/1983		$70,000	

OWNERS

LYNN OBERLE
OF BRETON
ALBERTA

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS

NO REGISTRATIONS

TOTAL INSTRUMENTS: 000

(CONTINUED)

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 28 DAY OF JUNE, 2013 AT 10:21 A.M.

ORDER NUMBER: 23857769

CUSTOMER FILE NUMBER:

END OF CERTIFICATE

LAND TITLE CERTIFICATE

S

LINC	SHORT LEGAL	TITLE NUMBER
0026 876 946	5;1;47;13;NW	962 301 063

LEGAL DESCRIPTION

MERIDIAN 5 RANGE 1 TOWNSHIP 47
SECTION 13
QUARTER NORTH WEST
CONTAINING 64.7 HECTARES(160 ACRES) MORE OR LESS
EXCEPTING THEREOUT:

	HECTARES	(ACRES) MORE OR LESS
A) PLAN 9623958 SUBDIVISION	2.82	6.97

EXCEPTING THEREOUT ALL MINES AND MINERALS

ESTATE: FEE SIMPLE

MUNICIPALITY: COUNTY OF WETASKIWIN NO. 10

REFERENCE NUMBER: 962 301 049 +2

REGISTERED OWNER(S)

REGISTRATION	DATE(DMY)	DOCUMENT TYPE	VALUE	CONSIDERATION
962 301 063	31/10/1996	TRANSFER OF LAND	$218,107	$218,107

OWNERS

ALBERTA SPORT, RECREATION, PARKS AND WILDLIFE FOUNDATION.
OF C/O PARKS AND WILDLIFE VENTURES
903,10405 JASPER AVE
EDMONTON
ALBERTA T5J 4R7
(DATA UPDATED BY: CHANGE OF ADDRESS 122287538)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER	DATE (D/M/Y)	PARTICULARS
962 301 056	31/10/1996	CAVEAT RE : DEFERRED RESERVE CAVEATOR - THE COUNTY OF WETASKIWIN NO. 10. WEST CENTRAL PLANNING AGENCY

(CONTINUED)

ENCUMBRANCES, LIENS & INTERESTS

REGISTRATION NUMBER | DATE (D/M/Y) | PARTICULARS

#105, 5111 - 50 AVENUE
WETASKIWIN
ALBERTA T9A0S5

TOTAL INSTRUMENTS: 001

THE REGISTRAR OF TITLES CERTIFIES THIS TO BE AN ACCURATE REPRODUCTION OF THE CERTIFICATE OF TITLE REPRESENTED HEREIN THIS 28 DAY OF JUNE, 2013 AT 10:21 A.M.

ORDER NUMBER: 23857769

CUSTOMER FILE NUMBER:

END OF CERTIFICATE

APPENDIX B:

FARMLAND CALCULATION REPORT
SW 24-47-1-W5M
COUNTY OF WETASKIWIN

County of Wetaskiwin

Farmland Calculation Report

Roll:303200 Alternate Key:
SW-24-47-1-5
Agroclimatic Zone: 16 2H-NW Photo: 142 Type:

Thorsby 11 miles 94 %
Access: 100 %
Net Location: 94 %

No: 1 82.00 Acres Soil: 62 GL — Dryland Arable — Adjusted Rating: 64.0 %

				%Fld	NPR	ICP
30	Ap Depth/Color	1	AP0-AP1 (avg)	50 100 %	-1.5	0.0
41	Subsoil	8	CL	50 100 %	0.0	0.0
51	Ap Texture	11	SiL-L (avg)	50 100 %	0.0	0.0
64	Flooding	1	FD1	50 100 %	-3.0	0.0
71	Topography	6	U	50 100 %	0.0	-2.0
72	Stone Cover	22	S1	50 100 %	0.0	-4.0
73	Miscellaneous	2	Irreg. / Size	2 100 %	0.0	-2.0
73	Miscellaneous	5	See Comments	2 100 %	0.0	-2.0
99	Description	21	Water Course	50 100 %	0.0	0.0
					-4.5	-10.0

Group ID: 186021198 — 82.00 Acres x 350.0 Acres x 1.0000 x 49.5 % = 14207

No: 2 60.00 Acres Soil: 62 GL — Dryland Arable — Adjusted Rating: 64.0 %

				%Fld	NPR	ICP
30	Ap Depth/Color	2	AP1	50 100 %	-3.0	0.0
41	Subsoil	8	CL	50 100 %	0.0	0.0
51	Ap Texture	12	L	50 100 %	0.0	0.0
71	Topography	9	GR-R	50 100 %	0.0	-10.0
72	Stone Cover	23	S1-S2 (avg)	90 100 %	0.0	-9.5
73	Miscellaneous	1	Obstacles	5 100 %	0.0	-5.0
73	Miscellaneous	5	See Comments	2 100 %	0.0	-2.0
99	Description	21	Water Course	50 100 %	0.0	0.0
					-3.0	-26.5

Group ID: 186021199 — 60.00 Acres x 350.0 Acres x 1.0000 x 34.5 % = 7245

No: 3 9.00 Acres Soil: 80 Pasture — Dryland Pasture

				%Fld	NPR	ICP
10	Soil Group	72	M5	50 100 %	0.0	0.0
61	Native	28	28 Ac/AU	50 100 %	19.0	0.0
99	Description	15	Reverting	50 100 %	0.0	0.0
99	Description	17	Depressional Area	50 100 %	0.0	0.0
					19.0	0.0

Group ID: 186021200 — 9.00 Acres x 350.0 Acres x 1.0000 x 19.0 % = 599

No: 4 10.00 Acres Soil: 80 Pasture — Dryland Pasture

				%Fld	NPR	ICP
61	Native	60	60 Ac/AU	50 100 %	7.0	0.0
99	Description	3	Sls/Runs	50 100 %	0.0	0.0
99	Description	9	Trees	50 100 %	0.0	0.0
					7.0	0.0

Group ID: 186021201 — 10.00 Acres x 350.0 Acres x 1.0000 x 7.0 % = 245

Areas	Asmt Code
Parcel: 161.00	1 100 %
@ F/L Rates: 161.00	

	Areas	A.U.V.
Arable Dry:	142.00	21452
Arable Irr:	0.00	0
Pasture Dry:	19.00	844
Pasture Irr:	0.00	0
Waste:	0.00	0

Total: A.U.V. 22296
x 94 %
F.A.V. 20960

COUNTY OF WETASKIWIN #10	PART	1/4	SEC.	TWP.	RGE.	MER.	ASSESSABLE AREA	ASSESSED VALUE LAND	REVISION CR./AAAB	REC. ZONE	ROLL NUMBER
		[illegible]	34	47		4	161.00	15510			3022.00

Area	Soil Group	R%	Topsoil	R%	Subsoil	R%	Texture	R%	Topography	R%	Stones	R%	Trees	R%	Miscel.	R%	Miscel.	R%	Final Rating	Acres/Hectares	Value/Acre Hectare	Value
I	GW	60	2/5"	✓	N	✓	L-CL	85	GS-H	95	S1	90	To		Irr Wtr-Drain	95	NC1	95	.39	93	93.60	7769
II	GW	40	2/5"	✓	N	✓	L-CL	85	Slopes GR-A	85	S1-S2	85	To	✓	Wtr-Irr Irr	90	NC1	95	.32	60	76.80	4608

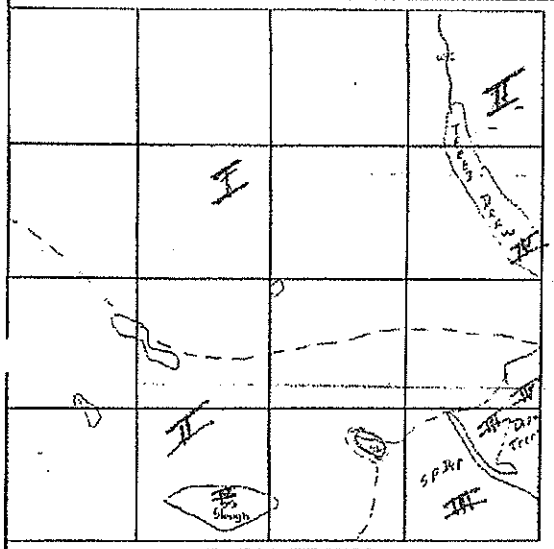
	Area			
Pasture and Woodland	III	S.P Dug Pasture (open) 24 a./hd	.17	9.00	40.80	367
	IV	Medium Tame Pasture @ 45a./hd	.08	9.00	19.20	173
Wild Hay						
Waste						
		SUB-TOTAL		161.00	SUB-TOTAL	12,917

LOCATION ADJUSTMENTS	URBAN CENTRE	ACCESS AND ROAD	NET % CHANGE		SUB-TOTAL	258
	+5% -	+ -1%	+2% -		SUB-TOTAL	13175
BASE YEAR MODIFIED						1,177
					SUB-TOTAL	15507
					@	—
					TOTAL LAND	15507
					IMPROVEMENTS	—
					FINAL TOTAL	15507

REMARKS
E32 14 532
Original Town

NON-AGRICULTURAL USE
EXEMPT OR OTHERWISE ASSESSED

TOTAL ACREAGE IN 1/4 SECTION 161.00



MAP OF ONE QUARTER SECTION

ASSESSOR: R. S. McALPINE Jun/04/82

DATE: DEC 31 1981

See next page for updated values.

APPENDIX C:

DOMESTIC GROUNDWATER EVALUATION
PROPOSED COUNTRY RESIDENTIAL SUBDIVISION
SW 24-47-1-W5M
SABATINI EARTH TECHNOLOGIES INC.

SABATINI EARTH TECHNOLOGIES INC.

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CALGARY, ALBERTA T3B 0K6
TEL: (403) 247-1813
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12323 - 67th STREET
EDMONTON, ALBERTA T5B 1N1
TEL: (780) 438-0844
FAX: (780) 435-1812

Mr. Lynn Oberle
Box 40
Brenton, Alberta
T0C 0P0

February 22, 2007
Our File: E0610-1619

Dear: **Mr. Oberle**

Re: Domestic Groundwater Evaluation
Proposed Country Residential Subdivision
SE 1/4 - 24 - 47 - 1 – W5M
Wetaskiwin County, Alberta

1.0 INTRODUCTION

It is our understanding that Wetaskiwin County requires an assessment to determine whether there is sufficient domestic groundwater at the above referenced subdivision to service approximately twenty-three new country residential lots. The Alberta Water Act (1999)[1] requires that 0.523 igpm (Imperial gallons per minute) be available for each lot (for example, a long-term capacity of about 1 igpm would be sufficient to supply 2 lots) in order to avoid interfering with existing household or traditional agricultural users in the area. Based on the current data, there are also 2 existing wells on the quarter section. Therefore, the total water well yield requirement for the site, based on 23 proposed lots and 2 existing wells, is approximately 13 igpm.

A review of water well records available for a 2.0-kilometer (1.5 mile) radius from the site was carried out. Please note that all water well data on record is recorded in Imperial units of measurement. Therefore, to avoid confusion and possible errors from conversion to metric units, Imperial units are used for this evaluation.

2.0 PROJECT DESCRIPTION

The parcel of land is legally described as the southeast quarter of Section 24, Township 47, Range 1, west of the Fifth Meridian located near the north end of Pigeon Lake within Wetaskiwin County, Alberta (refer to Figure 1, following). The subject site is comprised of approximately 160 acres (64.8 hectares) and is bounded on the west by Range Road 11 and on the north, east and south by quarter section lines.

[1] Province of Alberta. Water Act. 1999. Queen's Printer for Alberta.

3.0 SURFICIAL GEOLOGY

According to published surficial geology reports[2], the terrain in the area is broadly classified as stagnation moraine glacial deposits of uneven thickness. This terrain consists of local water-sorted material, up to 30 meters thick. The topography in the general area is defined as undulating to hummocky reflecting variations in till thickness. The local relief is less than 3 metres.

4.0 HYDROGEOLOGY

The upper bedrock in the general area of interest is the Paskapoo Formation, which extends to a depth of approximately 1500 feet (450 meters) below ground surface and consists mainly of sandstone and shale units. The projected long term yield for individual water wells completed through the Paskapoo aquifer is mainly 10 to 100 m^3/day (1.5 to 15 igpm). The Paskapoo Formation is underlain by the Edmonton Formation. Water wells completed in the Edmonton Formation are expected to have long-term yields of less than 1 igpm (5 m^3/day).

5.0 REVIEW OF DRILLERS' RECORDS FOR WATER WELLS

There is numerous water well data available within a 2.0-kilometer (1.5 mile) radius from the site. The water well data is summarized in Table 1, attached. A total of 487 water well records were available within a 2.0-kilometer (1.5 mile) radius of the site. The wells range in depth from 10 to 300 feet, with the typical depths ranging from 50 to 130 feet. The recorded static water levels range from less than 1 to 131 feet. The bedrock surface is typically encountered at depths ranging from 5 to 178 feet.

Of the 487 water wells within a 2.0-kilometer (1.5 mile) radius of the site, 89 of the wells were abandoned, dry or drilled for chemical and/or test hole purposes. Of the 398 water wells remaining, 260 were completed with open hole or casing, 138 were completed with a perforated liner in the bedrock below the outer casing down to depths ranging from 40 to 240 feet.

The drillers' tests performed to determine short term water well yields consisted of bailing, air and/or pump testing for a period of approximately 1 to 24 hours, with the typical test duration being in the range of 1 to 3 hours. Test rates varied from less than 1 to more than 50 igpm, with the typical rates being between 5 and 25 igpm. Transmissivity values of about 17 igpd/ft to 9755 igpd/ft were determined.

Of the 487 water well records available, 113 have sufficient information for the theoretical apparent yield calculations. The calculated theoretical apparent yields (Q_{20A}) range from 5 to about 178 igpm. About 30 percent of these wells have calculated 20-year apparent yields of greater than the required 13 igpm.

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[2] Shetsen, I. 1990. Quaternary Geology, Central Alberta, Alberta Research Council. Map Scale 1:500000.

6.0 REVIEW OF GROUNDWATER CHEMISTRY DATA

Available chemical analysis of the water from the wells within a 2.0-kilometer (1.5 mile) radius of the site are summarized in Table 2, attached. Water was tested for the following parameters: Total Dissolved Solids (TDS), Conductivity, pH, Hardness, Alkalinity, Calcium, Magnesium, Sodium, Potassium, Bicarbonate, Sulphate, Chloride, Nitrate & Nitrite, Nitrate, Iron, Fluoride, and Silica. It is evident from the analyses that water from numerous wells exceed the Canadian Drinking Water Quality Guidelines (CDWG) (1996)[3] Aesthetic Objective (AO) standards for TDS, Sodium and pH. As well, Iron and Fluoride parameters occasionally exceed the recommended limits. These exceedances are considered aesthetic in nature and may affect the appearance and palatability of a water supply, in turn affecting its acceptance by consumers. The CDWG (1996) states that:

> *"Aesthetic objectives (AO) apply to certain substances or characteristics of drinking water that can affect its acceptance by consumers or interfere with practices for supplying good-quality water. . . . [AO] values are below those considered to constitute a health hazard. However, if a concentration in drinking water is well above an aesthetic objective, there is a possibility of a health hazard."*

As noted above, the water still meets the requirements of CDWG. In this case, the water from the bedrock aquifer can be treated with reverse osmosis, iron removal methods, or distillation methods to make it more palatable, if so desired.

7.0 SUMMARY AND CONCLUSIONS

It is apparent from the above review of the hydrogeology that the Paskapoo Formation bedrock aquifer is the major aquifer underlying the property. Apparent water well yields of greater than the required 13 igpm were calculated from the bedrock aquifer wells. The Alberta Water Act (1999) requires that 0.523 igpm (1250 m^3 per year) be available for each household to avoid interfering with existing household users, licenses or traditional agricultural users. It is understood that 23 country residential lots are planned for the proposed subdivision in addition to the 2 existing water wells. The above data is sufficient to show that the 13 igpm needed to service the proposed lots is available from the bedrock aquifer underlying the subject site. Therefore, a pump test is not required for this site.

Should you have any questions or concerns regarding our findings and/or recommendations, do not hesitate to contact our office at (780) 438-0844.

---

[3] Health Canada. 1996. Canadian Drinking Water Guidelines, 6th Edition.

Yours truly,
Sabatini Earth Technologies Inc.

Kerry Garrity
Geological Technologist
Edmonton Office

Distribution: (4) addressee

Attachments: Tables 1 and 2

PROFESSIONAL ENGINEER
HAGSTROM
ALBERTA

22, 2007

Merle Hagstrom, B.Sc. P.Eng.
Senior Engineer, Edmonton Office

PERMIT TO PRACTICE
Sabatini Earth Technologies Inc.
Signature
Date February 22, 2007
PERMIT NUMBER: P-5773
The Association of Professional Engineers, Geologists and Geophysicists of Alberta

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
1	00-14-47-28-W4	Rowland, J. A.	No	Unknown	186	95	Unknown	Unknown	-	-	-	-	-	-	Chemistry
2	00-14-47-28-W4	Plateau Development Ltd.	No	Bob's Drilling & Backhoe Service/1977	120	14	Open Hole	Clay, Sand, Coal, Shale, Sandstone	Bailer	5	-	-	-	-	Bedrock at 75 ft
3	00-14-47-28-W4	Edgerly, Kenneth & Patricia	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
4	02-14-47-28-W4	Dirbert, D.	No	Starkey Drilling/1971	148	48	Open Hole	Clay, Shale, Sand	-	5	1	-	-	-	Bedrock at 130 ft
5	03-14-47-28-W4	Malowski, Alex B.	No	Fiveland N/1956	126	30	Casing/Perforated Liner	Clay, Sand, Shale	-	5	-	-	-	-	Bedrock at 126 ft
6	03-14-47-28-W4	Dimmick, Gord	Map	Unknown	90	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
7	04-14-47-28-W4	Ranson, H. G.	Field	Bob's Drilling & Backhoe Service	140	8	Casing	Unknown	-	-	-	-	-	-	Chemistry
8	04-14-47-28-W4	Dowler, J. H.	No	Bob's Drilling & Backhoe Service/1967	130	18	Open Hole	Clay, Sand, Shale, Sandstone	Bailer	-	1	62	-	-	Bedrock at 97 ft
9	04-14-47-28-W4	Roth, Percy	No	Inglis Water Well Drilling/1993	90	10	Casing/Perforated Liner/80-85	Clay, Sandstone, Shale	Bailer	10	2	40	203.2	4.7	Bedrock at 70 ft
10	06-14-47-28-W4	Canry, Russel	No	Sneller Water Well Drilling Ltd./1995	125	18	Casing/Perforated Liner/98-118	Clay, Sand, Coal, Shale, Sandstone	Pump	12	24	122	108.0	2.9	Bedrock at 105 ft
11	06-14-47-28-W4	Gameau, Maurice	No	Inglis Water Well Drilling/1994	110	14.6	Casing/Perforated Liner/95-110	Clay, Sand, Coal, Shale, Sandstone	Bailer	20	2	95	171.1	4.5	Bedrock at 90 ft
12	06-14-47-28-W4	Hawthorne, Bob	No	Sneller Water Well Drilling Ltd./1995	95	25	Casing/Perforated Liner	Clay, Coal, Sand, Shale, Sandstone	Pump	5	2	35	116.1	-	Bedrock at 67 ft
13	07-14-47-28-W4	Milliton, Collin	No	Sneller Water Well Drilling Ltd./1999	155	44	Casing/Perforated Liner/115-145	Clay, Sandstone, Shale, Gravel, Limestone	Pump	10	2	31	262.2	6.1	Bedrock at 12 ft
14	12-14-47-28-W4	Meaver, Robert	No	Bob's Drilling & Backhoe Service/1972	96	21	Open Hole	Clay, Sand, Sandstone, Shale	Pump	17	5	-	-	-	Bedrock at 52 ft
15	15-14-47-28-W4	Pigeon Lake #TH 2	Map	Grove Drilling Enterprises <1980> Ltd./1984	240	88	Open Hole	Clay, Shale, Sandstone	Bailer	14	2.5	-	-	-	Bedrock at 172 ft
16	NE-14-47-28-W4	Lindberg, James	Map	Bob's Drilling & Backhoe Service/1977	60	22	Open Hole	Clay, Sandstone, Shale	Pump	6	-	-	-	-	Bedrock at 34 ft
17	NW-14-47-28-W4	Lindgren	Map	Bob's Drilling & Backhoe Service/1984	60	20	Open Hole	Clay, Shale, Sandstone	Bailer	5	1	-	-	-	Bedrock at 48 ft
18	NW-14-47-28-W4	Charlers, Ken	No	Bob's Drilling & Backhoe Service/1987	70	8	Open Hole	Clay, Shale, Sandstone	Air	4	2	-	-	-	Bedrock at 46 ft
19	NW-14-47-28-W4	Therrien, N.	Map	Bob's Drilling & Backhoe Service/1987	60	22	Open Hole	Clay, Sandstone, Shale	Bailer	5	2	6	677.4	-	Bedrock at 32 ft
20	NW-14-47-28-W4	Michleau	No	Bob's Drilling & Backhoe Service/1987	70	8	Open Hole	Clay, Shale, Sandstone	-	10	2	-	-	-	Bedrock at 60 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
21	NW-14-47-28-W4	Cooper, R.	No	Starkey Drilling/1973	178	59	Open Hole	Clay, Shale	-	5	2	-	-	-	Bedrock at 178 ft
22	NW-14-47-28-W4	Sonnenbeig, Vivian	No	Fraser, Ron/1972	185	80	Open Hole	Clay, Sand, Shale, Sandstone	Pump	6	3	5	1031.3	-	Bedrock at 136 ft
23	NW-14-47-28-W4	Walker, Robert E.	No	Bob's Drilling & Backhoe Service/1973	120	12	Open Hole	Sand, Clay, Shale, Sandstone, Coal	Bailer	-	-	22	-	-	Bedrock at 96 ft
24	NW-14-47-28-W4	Mills	No	Bob's Drilling & Backhoe Service/1973	130	10	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	-	-	70	-	-	Bedrock at 82 ft
25	NW-14-47-28-W4	Sommerville, Jack	No	Bob's Drilling & Backhoe Service/1973	100	8	Open Hole	Clay, Gravel, Sandstone, Shale, Coal	Bailer	-	-	40	-	-	Bedrock at 44 ft
26	NW-14-47-28-W4	Stahn, C.	No	Bob's Drilling & Backhoe Service/1977	90	-	Open Hole	Clay, Shale, Sandstone, Coal	Pump	4	-	-	-	-	Bedrock at 76 ft
27	NW-14-47-28-W4	Olsen, Hugh	No	Bob's Drilling & Backhoe Service/1980	80	11	Open Hole	Clay, Shale, Sandstone	Bailer	5	1	-	-	-	Bedrock at 50 ft
28	NW-14-47-28-W4	Schurmar, C.	No	Bob's Drilling & Backhoe Service/1980	60	15	Open Hole	Clay, Shale, Sandstone	Bailer	4	1	-	-	-	Bedrock at 54 ft
29	NW-14-47-28-W4	Stauffer, R.	No	Bob's Drilling & Backhoe Service/1980	110	5	Open Hole	Clay, Sandstone, Shale	Bailer	5	1	15	244.5	-	Bedrock at 42 ft
30	NW-14-47-28-W4	SAS	No	Bob's Drilling & Backhoe Service/1980	180	60	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	6	20	140.8	-	Bedrock at 120 ft
31	NW-14-47-28-W4	Winstan Services	Map	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
32	NW-14-47-28-W4	Locke, D.	No	Bob's Drilling & Backhoe Service/1981	85	52	Open Hole	Clay, Sandstone, Shale	Bailer	8	1.5	-	-	-	Bedrock at 65 ft
33	NW-14-47-28-W4	Mann, Ken	No	Bob's Drilling & Backhoe Service/1983	120	12	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	1	38	57.9	-	Bedrock at 86 ft
34	NW-14-47-28-W4	Oliver, Ralph	Map	Bob's Drilling & Backhoe Service/1983	60	20	Open Hole	Clay, Sandstone, Shale	Bailer	5	0.5	-	-	-	Bedrock at 38 ft
35	NW-14-47-28-W4	Nixion, Ken	Map	Bob's Drilling & Backhoe Service/1984	60	20	Open Hole	Clay, Shale, Sandstone	Bailer	-	0.5	-	-	-	Bedrock at 55 ft
36	NW-14-47-28-W4	Bruyer, Joyce	No	Bob's Drilling & Backhoe Service/1990	120	8	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	8	2	32	203.2	-	Bedrock at 78 ft
37	NW-14-47-28-W4	Everson, Martin	No	Bob's Drilling & Backhoe Service/1973	100	20	Casing/Perforated Liner	Clay, Sandstone, Shale, Coal	-	-	-	-	-	-	Bedrock at 75 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
38	NW-14-47-28-W4	Gorgon, Dick	Map	Bar-K Water Well Drilling Ltd./1992	70	-	Casing/Perforated Liner/50-70	Clay, Shale, Sandstone	Air	20	-	-	-	-	Bedrock at 48 ft
39	NW-14-47-28-W4	Diletzoy, Ernie	No	Vino's Water Well Drilling/1992	70	-	Open Hole	Sand, Gravel, Shale	N/A	15	2	-	-	-	Bedrock at 40 ft
40	NW-14-47-28-W4	Painchaud, G.	No	Unknown	-	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
41	NW-14-47-28-W4	Smith, W. L.	No	Bar-K Water Well Drilling Ltd./1993	60	-	Casing/Perforated Liner/50-60	Clay, Shale, Siltstone, Sandstone	-	-	-	-	-	-	Bedrock at 35 ft
42	NW-14-47-28-W4	Wilson, Brian	No	Bar-K Water Well Drilling Ltd./1997	210	72.1	Casing/Perforated Liner/170-180	Clay, Topsoil, Sandstone, Shale, Siltstone	Air	6	2	91	53.6	1.7	Bedrock at 75 ft
43	NW-14-47-28-W4	Cgall, Doug	No	Bar-K Water Well Drilling Ltd./1997	80	11.6	Casing/Perforated Liner/60-80	Clay, Shale, Siltstone	Air	8.5	2	3	2303.2	36.8	Bedrock at 32 ft
44	NW-14-47-28-W4	Billington, Garth	No	Bar-K Water Well Drilling Ltd./1997	79	26	Casing/Perforated Liner/61-71	Clay, Sandstone, Sand, Shale, Siltstone	Air	8	2	-	-	-	Bedrock at 16 ft
45	NW-14-47-28-W4	Benning, Mike/Betty	No	Bar-K Water Well Drilling Ltd./1997	100	0.1	Casing/Perforated Liner/70-80	Clay, Shale, Siltstone, Sandstone	Air	12	2	7	1393.5	32.1	Bedrock at 48 ft
46	NW-14-47-28-W4	Tally, Wayne	No	Bar-K Water Well Drilling Ltd./1998	40	0.1	Casing/Open Hole	Clay, Shale	Air	10	2	-	-	-	Bedrock at 40 ft
47	NW-14-47-28-W4	Bob's Drilling & Backhoe SCHET	No	Bar-K Water Well Drilling Ltd./1999	77	12	Casing/Perforated Liner/61-71	Clay, Sandstone, Shale, Siltstone	Pump	8.5	2	3	2303.2	37.2	Bedrock at 33 ft
48	NW-14-47-28-W4	Hargest, Al	No	Bar-K Water Well Drilling Ltd./1999	197	61.8	Casing/Perforated Liner/187-197	Clay, Shale, Siltstone, Sandstone	Pump	8	2	34	191.3	7.9	Bedrock at 97 ft
49	NW-14-47-28-W4	Edwards, Robert/Karen	No	Bar-K Water Well Drilling Ltd./2000	200	61.5	Casing/Perforated Liner/160-170	Clay, Sand, Sandstone, Shale, Siltstone	Pump	8	2	42	154.8	5.0	Bedrock at 41 ft
50	NW-14-47-28-W4	Lougheed, Allan	No	Bar-K Water Well Drilling Ltd./2000	207	65.5	Casing/Perforated Liner/197-207	Clay, Shale, Siltstone, Sandstone	Pump	6	2	24	203.2	8.8	Bedrock at 74 ft
51	NW-14-47-28-W4	Beothuck Trailer Ltd.	No	Papley Drilling/2000	100	0.1	Casing/Perforated Liner/80-100	Clay, Shale, Sandstone	Air	30	2	-	-	-	Bedrock at 34 ft
52	NW-14-47-28-W4	Kenner, Arnold	No	Bar-K Water Well Drilling Ltd./2001	110	0.1	Casing/Perforated Liner/100-110	Clay, Shale, Siltstone, Sandstone	Pump	10	2	2	4064.5	134.0	Bedrock at 28 ft
53	NW-14-47-28-W4	Norton, W.	No	Bob's Drilling & Backhoe Service/1973	110	5	Open Hole	Clay, Gravel, Shale, Coal, Sandstone	-	-	-	-	-	-	Bedrock at 90 ft
54	NW-14-47-28-W4	Alspach, Ed	No	Med-West Drilling Ltd./1997	200	67	Casing/Perforated Liner/140-200	Till, Clay, Gravel, Sandstone, Sand, Shale, Coal, Siltstone	Air	10	2	103	78.9	1.9	Bedrock at 40 ft
55	NW-14-47-28-W4	Fehr, Chris	No	Vino's Water Well Drilling/1990	70	18	Open Hole	Clay, Gravel, Shale, Sand	Bailer	5	2	19	213.9	-	Bedrock at 35 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
56	NW-14-47-28-W4	Thompson, Larry	No	Vino's Water Well Drilling/1992	60	15	Open Hole	Clay, Sand, Shale	Bailer	10	2	5	1625.8	-	Bedrock at 50 ft
57	NW-14-47-28-W4	Stone, Sandra	No	Vino's Water Well Drilling/1993	120	13	Open Hole	Clay, Gravel, Sand, Shale	Pump	10	2	22	369.5	-	Bedrock at 65 ft
58	NW-14-47-28-W4	Grant, K.	Map	Bar-K Water Well Drilling Ltd./1993	70	13	Casing/Perforated Liner/60-70	Clay, Shale, Sandstone	Pump	7.5	2	11	554.3	8.6	Bedrock at 34 ft
59	NW-14-47-28-W4	Gazaskan, John	No	Bar-K Water Well Drilling Ltd./1993	200	56	Casing/Perforated Liner/180-200	Clay, Shale, Siltstone, Sandstone	Pump	7.5	3	26	247.9	10.1	Bedrock at 56 ft
60	NW-14-47-28-W4	Kirton, Thomas	No	Vino's Water Well Drilling/1993	70	12	Open Hole	Sand, Coal, Shale	Bailer & Pump	10	2	10	812.9	-	Bedrock at 50 ft
61	NW-14-47-28-W4	Shein, Barry	No	Bob's Drilling & Backhoe Service/1976	130	-	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	4	-	-	-	-	Bedrock at 68 ft
62	SE-14-47-28-W4	Knull, WM B.	No	Unknown	140	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
63	SE-14-47-28-W4	Starling, William	Map	Bob's Drilling & Backhoe Service/1974	150	-	Open Hole	Clay, Sand, Shale, Coal, Sandstone	Bailer	1	-	-	-	-	Bedrock at 110 ft
64	SE-14-47-28-W4	Easterby, E.	Map	Bob's Drilling & Backhoe Service/1977	115	-	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	5	-	-	-	-	Bedrock at 68 ft
65	SE-14-47-28-W4	Sylvester, Lou	Map	Bob's Drilling & Backhoe Service/1977	80	-	Open Hole	Clay, Shale, Sandstone	Bailer	5	-	-	-	-	Bedrock at 65 ft
66	SE-14-47-28-W4	Holladay, J.	Map	Bob's Drilling & Backhoe Service/1976	110	-	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	5	-	-	-	-	Bedrock at 68 ft
67	SE-14-47-28-W4	Suyette, Lyle	Map	Bob's Drilling & Backhoe Service/1976	150	90	Open Hole	Clay, Sand, Coal, Shale, Sandstone	Pump	1.5	-	-	-	-	Bedrock at 125 ft
68	SE-14-47-28-W4	Oldham, M.	Map	Bob's Drilling & Backhoe Service/1976	100	44	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	2	-	-	-	-	Bedrock at 55 ft
69	SE-14-47-28-W4	Marchan	Map	Bob's Drilling & Backhoe Service/1976	80	44	Open Hole	Clay, Sandstone, Shale	Bailer	3	-	-	-	-	Bedrock at 45 ft
70	SE-14-47-28-W4	Jackson, Steve	No	Bob's Drilling & Backhoe Service/1975	170	-	Open Hole	Clay, Shale, Sandstone	Bailer	1.5	-	-	-	-	Bedrock at 116 ft
71	SE-14-47-28-W4	Rankin, Melvin	Map	Bob's Drilling & Backhoe Service/1975	40	0.1	Open Hole	Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 38 ft
72	SE-14-47-28-W4	Alberts, R.	Map	Bob's Drilling & Backhoe Service/1975	80	-	Open Hole	Clay, Shale, Sandstone	Bailer	5	-	-	-	-	Bedrock at 65 ft
73	SE-14-47-28-W4	Alexandra, Harry #Hole 2	Map	Bob's Drilling & Backhoe Service/1974	160	18	Open Hole	Clay, Sand, Shale, Coal, Sandstone	Pump	-	-	60	-	-	Bedrock at 110 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
74	SE-14-47-28-W4	Alexandra, Harry #Hole 1	Map	Bob's Drilling & Backhoe Service/1974	180	-	Unknown	Clay, Sand	-	-	-	-	-	-	New Well
75	SE-14-47-28-W4	Scullion	Map	Bob's Drilling & Backhoe Service/1978	85	30	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	5	-	-	-	-	Bedrock at 58 ft
76	SE-14-47-28-W4	Johnston, Stan	Map	Bob's Drilling & Backhoe Service/1978	180	60	Open Hole	Clay, Sand, Shale, Sandstone, Coal	Bailer	3	-	-	-	-	Bedrock at 100 ft
77	SE-14-47-28-W4	Wyman, B. J.	No	Unknown	125	20	Unknown	Unknown	-	-	-	-	-	-	Test Hole
78	SE-14-47-28-W4	United Church	No	Starkey Drilling/1979	198	63	Open Hole	Clay, Sand, Shale	Unknown	5	2	-	-	-	Bedrock at 198 ft
79	SE-14-47-28-W4	Mane, Lyle	No	Bob's Drilling & Backhoe Service/1979	190	32	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	2	-	68	-	-	Bedrock at 42 ft
80	SE-14-47-28-W4	Radis, Clare	No	Bob's Drilling & Backhoe Service/1984	90	4	Open Hole	Clay, Shale, Sandstone	Bailer	6	1	-	-	-	Bedrock at 65 ft
81	SE-14-47-28-W4	Tardiff, J.	No	Bob's Drilling & Backhoe Service/1984	70	6	Open Hole	Clay, Shale, Sandstone	Bailer	5	0.5	-	-	-	Bedrock at 65 ft
82	SE-14-47-28-W4	Spiess, George	No	Unknown	130	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
83	SE-14-47-28-W4	Rowland, J. Albert	No	Unknown	185	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
84	SE-14-47-28-W4	Robinson, G.	No	Fraser, Ron/1987	145	53	Open Hole	Clay, Sandstone, Shale	Bailer & Pump	10	2	2	4064.5	-	Bedrock at 60 ft
85	SE-14-47-28-W4	Webb, Garth	Map	Bob's Drilling & Backhoe Service/1977	80	46	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	2.5	-	-	-	-	Bedrock at 35 ft
86	SE-14-47-28-W4	Gilbertson, A. E. & M. V.	No	Unknown	160	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
87	SE-14-47-28-W4	Cooper, Ron	No	Bar-K Water Well Drilling Ltd./1991	220	66	Casing/Perforated Liner/200-220	Clay, Sand, Shale, Siltstone, Sandstone	Pump	8	2.5	10	670.8	29.7	Bedrock at 92 ft
88	SE-14-47-28-W4	Kirwer, Dallan	No	Unknown	-	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
89	SE-14-47-28-W4	Webb, Garth	Map	Unknown	50	46	Unknown	Unknown	-	-	-	-	-	-	Chemistry
90	SE-14-47-28-W4	Archibald, Melvin	No	Big Iron Drilling Ltd./1993	220	75	Casing/Perforated Liner/200-220	Clay, Sand, Gravel, Shale, Sandstone	Air	4	1.5	145	21.5	0.9	Bedrock at 78 ft
91	SE-14-47-28-W4	Archibald, Melvin	No	Big Iron Drilling Ltd./1993	125	-	Unknown	Clay, Sand, Sandstone, Shale	-	-	-	-	-	-	Bedrock at 62 ft
92	SE-14-47-28-W4	Mercier, Ray	No	Bob's Drilling & Backhoe Service/1978	80	42	Open Hole	Clay, Sandstone, Shale	Bailer	3	-	-	-	-	Bedrock at 56 ft
93	SE-14-47-28-W4	Gordon, Jack	No	Bob's Drilling & Backhoe Service/1984	140	74	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Bailer	5	1	-	-	-	Bedrock at 130 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(lgpm)	(h)	(ft)	(lgpd/ft)	(lgpm)	
94	SE-14-47-28-W4	World, Marlc/Phil	No	Bar-K Water Well Drilling Ltd./1997	90	10.7	Casing/Perforated Liner/65-75	Clay, Shale, Sandstone, Siltstone	Air	8	2	2	3251.6	58.3	Bedrock at 24 ft
95	SE-14-47-28-W4	Bob's Drilling & Backhoe Service	No	Bar-K Water Well Drilling Ltd./1998	105	14.4	Casing/Perforated Liner/95-105	Clay, Sand, Sandstone, Shale	Air	8.5	2	3	2303.2	61.3	Bedrock at 67 ft
96	SE-14-47-28-W4	Matthews, Ed	No	Papley Drilling/1999	170	52.8	Casing/Perforated Liner/130-170	Clay, Sand, Shale, Sandstone	Pump	10	2	22	369.5	9.4	Bedrock at 135 ft
97	SE-14-47-28-W4	Joasma, John/Betty	No	Bar-K Water Well Drilling Ltd./2000	100	45	Casing/Perforated Liner/80-90	Clay, Sandstone, Shale, Siltstone	Pump	7.5	2	5	1219.4	14.1	Bedrock at 35 ft
98	SE-14-47-28-W4	Robinson, Grant	No	Bob's Drilling & Backhoe Service/1979	110	42	Casing/Open Hole	Clay, Sandstone, Shale	Bailer	3	1	14	157.2	-	Bedrock at 12 ft
99	SE-14-47-28-W4	Saynl, Terry #Hole 1	Map	Bob's Drilling & Backhoe Service/1976	140	38	Open Hole	Clay, Sand	Unknown	3	-	-	-	-	New Well
100	SE-14-47-28-W4	Saynl, Terry #Hole 2	Map	Bob's Drilling & Backhoe Service/1976	70	-	Unknown	Clay, Sand	-	-	-	-	-	-	New Well
101	SE-14-47-28-W4	Saynl, Terry #Hole 3	Map	Bob's Drilling & Backhoe Service/1976	110	-	Unknown	Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 100 ft
102	SE-14-47-28-W4	Sand, Ron	No	Bob's Drilling & Backhoe Service/1974	180	-	Open Hole	Clay, Shale, Sandstone, Coal	-	-	-	-	-	-	Bedrock at 110 ft
103	SE-14-47-28-W4	Walker, Terry	Map	Bob's Drilling & Backhoe Service/1973	170	30	Open Hole	Clay, Sand, Shale, Sandstone, Coal	Bailer	-	-	60	-	-	Bedrock at 110 ft
104	SE-14-47-28-W4	Kruper, Mike	Map	Bob's Drilling & Backhoe Service/1975	140	-	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	1.5	-	-	-	-	Bedrock at 108 ft
105	SE-14-47-28-W4	Smith, Ted	Map	Bob's Drilling & Backhoe Service/1974	180	20	Open Hole	Clay, Sand, Shale, Sandstone	Bailer	-	-	60	-	-	Bedrock at 120 ft
106	SE-14-47-28-W4	Fillion, S.	Map	Bob's Drilling & Backhoe Service/1976	50	-	Open Hole	Clay, Sandstone, Shale	-	-	-	-	-	-	Bedrock at 22 ft
107	SE-14-47-28-W4	Fagon, Brian	Map	Bob's Drilling & Backhoe Service/1975	80	-	Open Hole	Clay, Sandstone, Shale	-	-	-	-	-	-	Bedrock at 42 ft
108	SE-14-47-28-W4	Kirwer, Dallan	No	Snetler Water Well Drilling Ltd./1992	230	49	Casing/Perforated Liner/145-165	Clay, Coal, Shale, Sandstone	Bailer	12	2	151	64.6	2.0	Bedrock at 64 ft
109	SE-14-47-28-W4	Ouimette, Phyllis	Map	Big Iron Drilling Ltd./1984	160	90	Casing/Perforated Liner/125-160	Clay, Shale, Coal, Sandstone	Bailer	1.5	2	70	17.4	0.2	Bedrock at 105 ft
110	SE-14-47-28-W4	Doyle, Dale	No	Morrill's Water Well Drilling Ltd./1997	150	36.8	Casing/Perforated Liner/120-150	Clay, Sand, Sandstone, Shale	Air	20	2	71	229.0	6.3	Bedrock at 48 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(Igpm)	(h)	(ft)	(Igpd/ft)	(Igpm)	
111	SE-14-47-28-W4	Wrulats, Don	Map	Bob's Drilling & Backhoe Service/1976	180	-	Open Hole	Clay, Sand, Shale, Coal, Sandstone	-	1.5	-	-	-	-	Bedrock at 110 ft
112	SE-14-47-28-W4	Osbourn, Bill	Map	Bob's Drilling & Backhoe Service/1973	200	22	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	-	-	60	-	-	Bedrock at 110 ft
113	SE-14-47-28-W4	Gaboury, Frank	No	Bar-K Water Well Drilling Ltd./1992	240	87	Casing/Perforated Liner/220-240	Clay, Sand, Shale, Sandstone, Siltstone	Pump	6	2.5	33	152.5	6.7	Bedrock at 94 ft
114	SW-14-47-28-W4	Pigeon Lake Golf & Country Club	Map	Bob's Drilling & Backhoe Service/1976	100	-	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Bailer	3	-	-	-	-	Bedrock at 76 ft
115	SW-14-47-28-W4	Dowler's Golf & Trailers	Map	Unknown	123	18	Unknown	Unknown	-	-	-	-	-	-	Chemistry
116	SW-14-47-28-W4	Ward, G.	No	Bob's Drilling & Backhoe Service/1972	100	7	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	-	-	30	-	-	Bedrock at 68 ft
117	SW-14-47-28-W4	Scott & Knox	No	Bob's Drilling & Backhoe Service/1972	150	28	Open Hole	Sand, Clay, Shale, Sandstone, Coal	Bailer	-	-	20	-	-	Bedrock at 85 ft
118	SW-14-47-28-W4	Arnell, Mabel	No	Bob's Drilling & Backhoe Service/1970	100	12	Open Hole	Clay, Sand, Coal, Shale, Sandstone	Bailer	-	-	28	-	-	Bedrock at 75 ft
119	SW-14-47-28-W4	MacPherson, S.	Field	Fiveland N/1957	74	17	Open Hole	Clay, Sand, Shale	-	-	-	-	-	-	Bedrock at 74 ft
120	SW-14-47-28-W4	Alexander, Gordon	Field	Fiveland N/1958	75	5	Open Hole	Clay, Sand, Shale	-	5	3	-	-	-	Bedrock at 75 ft
121	SW-14-47-28-W4	Dowler, Bob	No	Bob's Drilling & Backhoe Service/1973	120	22	Open Hole	Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 98 ft
122	SW-14-47-28-W4	Dowler, J.	Map	Bob's Drilling & Backhoe Service/1973	100	12	Open Hole	Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 86 ft
123	SW-14-47-28-W4	Reading, Don	No	Bob's Drilling & Backhoe Service/1972	100	22	Open Hole	Clay, Sand, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 94 ft
124	SW-14-47-28-W4	Walker, Bob	No	Bob's Drilling & Backhoe Service/1977	140	22	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	3	-	-	-	-	Bedrock at 103 ft
125	SW-14-47-28-W4	Nangon, Frank	No	Bob's Drilling & Backhoe Service/1977	90	28	Open Hole	Clay, Shale, Sandstone	Bailer	7	-	-	-	-	Bedrock at 85 ft
126	SW-14-47-28-W4	Workun, Morley	No	Unknown	152	24	Unknown	Unknown	-	-	-	-	-	-	Chemistry
127	SW-14-47-28-W4	Grosal, Fred	No	Bob's Drilling & Backhoe Service/1977	120	22	Open Hole	Clay, Shale, Sandstone	Bailer	3	-	-	-	-	Bedrock at 98 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
128	SW-14-47-28-W4	McFe	No	Bob's Drilling & Backhoe Service/1976	90	-	Open Hole	Clay, Sandstone, Shale, Coal	-	4	-	-	-	-	Bedrock at 50 ft
129	SW-14-47-28-W4	Mercier, Ray	No	Bob's Drilling & Backhoe Service/1975	130	16	Open Hole	Clay, Sand, Gravel, Shale, Sandstone	Bailer	2	-	-	-	-	Bedrock at 96 ft
130	SW-14-47-28-W4	Wier, Pat	No	Bob's Drilling & Backhoe Service/1975	150	-	Open Hole	Clay, Sand, Sandstone, Shale, Coal	Bailer	6	-	-	-	-	Bedrock at 72 ft
131	SW-14-47-28-W4	Huber, Hessmar	No	Bob's Drilling & Backhoe Service/1980	90	10	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	3	1.5	20	117.0	-	Bedrock at 72 ft
132	SW-14-47-28-W4	Johnson, Ken	No	Bob's Drilling & Backhoe Service/1980	200	28	Open Hole	Sand, Clay, Shale, Sandstone	Bailer	4	3	12	286.5	-	Bedrock at 56 ft
133	SW-14-47-28-W4	Dowler, Lloyd	Map	Bob's Drilling & Backhoe Service/1979	185	60	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	3	1.5	30	78.0	-	Bedrock at 95 ft
134	SW-14-47-28-W4	Cameron, D. F.	No	Fiveland N/1960	145	30	Open Hole	Clay, Gravel, Sand, Shale, Sandstone	Pump	2.5	2	-	-	-	Bedrock at 76 ft
135	SW-14-47-28-W4	Shispire, Vern	No	Bob's Drilling & Backhoe Service/1982	90	20	Open Hole	Clay, Sand, Sandstone, Shale	Bailer	6	1	20	220.0	-	Bedrock at 74 ft
136	SW-14-47-28-W4	Rosewell	No	Bob's Drilling & Backhoe Service/1980	130	28	Open Hole	Clay, Shale, Sandstone	Bailer	2.5	1	32	57.3	-	Bedrock at 96 ft
137	SW-14-47-28-W4	Striker, Ted	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
138	SW-14-47-28-W4	Reed, Grant	No	Bob's Drilling & Backhoe Service/1987	150	30	Open Hole	Clay, Shale, Sandstone	Bailer	5	1.5	8	487.5	-	Bedrock at 110 ft
139	SW-14-47-28-W4	Dibiln, C.	No	Bob's Drilling & Backhoe Service/1986	150	22	Open Hole	Clay, Shale, Sandstone	Pump	3	5	40	68.8	-	Bedrock at 96 ft
140	SW-14-47-28-W4	Wolfe, Tom	No	Bob's Drilling & Backhoe Service/1987	100	15	Open Hole	Clay, Shale, Sandstone	Unknown	4	2	31	104.9	-	Bedrock at 76 ft
141	SW-14-47-28-W4	Wager, Gordon	No	Bob's Drilling & Backhoe Service/1987	110	18	Open Hole	Clay, Shale, Sandstone	Unknown	10	2	2	4064.5	-	Bedrock at 96 ft
142	SW-14-47-28-W4	Rowswell, Jim	No	Bob's Drilling & Backhoe Service/1987	110	18	Open Hole	Clay, Shale, Sandstone	Pump	12	3	-	-	-	Bedrock at 98 ft
143	SW-14-47-28-W4	Goble, Ken	No	Bob's Drilling & Backhoe Service/1987	60	-	Open Hole	Clay, Sandstone, Shale	Bailer	6	-	10	-	-	Bedrock at 40 ft
144	SW-14-47-28-W4	Jorgorson	No	Bob's Drilling & Backhoe Service/1987	130	22	Open Hole	Clay, Shale, Sandstone	Bailer & Pump	5	3	7	613.9	-	Bedrock at 76 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(Igpm)	(h)	(ft)	(Igpd/ft)	(Igpm)	
145	SW-14-47-28-W4	Pick, Reginald L.	Map	Unknown	90	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
146	SW-14-47-28-W4	Pezderic, Gene A.	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
147	SW-14-47-28-W4	Pigeon Lake Golf Club 1991 Ltd.	Map	Vino's Water Well Drilling/1991	200	34	Open Hole	Sand, Gravel, Shale, Limestone	Bailer	10	2	20	406.5	-	Bedrock at 90 ft
148	SW-14-47-28-W4	Peterson, Ron	No	Bob's Drilling & Backhoe Service/1991	110	36	Open Hole	Clay, Shale, Sandstone	Bailer & Pump	6	2	10	487.7	-	Bedrock at 78 ft
149	SW-14-47-28-W4	Gall, Charles	No	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
150	SW-14-47-28-W4	Dillabough, M.	No	Bob's Drilling & Backhoe Service/1983	70	8	Open Hole	Clay, Shale, Sandstone	Bailer	4	1	-	-	-	Bedrock at 65 ft
151	SW-14-47-28-W4	Pigeon Lake Golf Club	Map	Bob's Drilling & Backhoe Service/1970	120	19	Open Hole	Clay, Sand, Shale, Coal, Sandstone	-	-	-	-	-	-	Bedrock at 88 ft
152	SW-14-47-28-W4	Walters, Brian	No	Bar-K Water Well Drilling Ltd./1998	120	25.1	Casing/Perforated Liner/70-80	Clay, Shale, Siltstone, Sandstone	Air	8	2	14	464.5	6.9	Bedrock at 62 ft
153	SW-14-47-28-W4	Mulhurst Cedar Crest	No	Fraser, Ron/1997	140	31.2	Perforated Casing/Liner/120-140	Clay, Sandstone, Shale	Bailer & Pump	5	2	82	49.6	1.8	Bedrock at 77 ft
154	SW-14-47-28-W4	Mulhurst Bay Memorial Park	No	Bar-K Water Well Drilling Ltd./1998	96	14.2	Casing/Perforated Liner/86-96	Clay, Shale, Sandstone	Air	7	2	31	183.6	4.3	Bedrock at 71 ft
155	SW-14-47-28-W4	Waschuck, John/Ollie	No	Mid-West Drilling Ltd./1998	160	30	Casing/Perforated Liner/100-160	Clay, Till, Shale, Coal, Sandstone	Air	>50	2	80	-	-	Bedrock at 32 ft
156	SW-14-47-28-W4	McPherson, Dan	No	Bar-K Water Well Drilling Ltd./1998	99	23.8	Casing/Perforated Liner/89-99	Clay, Shale, Siltstone, Sandstone	Pump	8.5	2	12	575.8	12.4	Bedrock at 68 ft
157	SW-14-47-28-W4	Staples, Ernie	No	Bar-K Water Well Drilling Ltd./1998	111	27.1	Casing/Perforated Liner/101-111	Clay, Shale, Siltstone, Coal, Sandstone	Air	8	2	-	-	-	Bedrock at 68 ft
158	SW-14-47-28-W4	Vany, J.	No	Boyd's Water Well Drilling/1989	133	17	Slotted & Open Hole	Clay, Sand, Gravel, Sandstone, Shale	Air	2.5	3	68	31.6	-	Bedrock at 62 ft
159	SW-14-47-28-W4	Galfimore, George	Field	Fiveland N/1959	82	6	Open Hole	Sand, Clay, Shale	-	5	4	-	-	-	Bedrock at 66 ft
160	SW-14-47-28-W4	Burrows, H. R. <Mulhurst Beach>	No	Unknown	100	15	Unknown	Unknown	-	-	-	-	-	-	Chemistry
161	SW-14-47-28-W4	Reksten, Roy	No	Bob's Drilling & Backhoe Service/1969	120	12	Open Hole	Clay, Shale, Sandstone	Bailer	-	-	36	-	-	Bedrock at 95 ft
162	SW-14-47-28-W4	Brown, Olive	No	Bob's Drilling & Backhoe Service/1972	80	15	Open Hole	Clay, Shale, Coal, Sandstone	-	-	-	-	-	-	Bedrock at 60 ft
163	SW-14-47-28-W4	Darius, R. J.	Field	Fiveland N	80	4	Open Hole	Sand, Clay, Shale	-	5	3	-	-	-	Bedrock at 88 ft
164	SW-14-47-28-W4	Wylie, R. D.	No	Unknown	90	10	Unknown	Unknown	-	-	-	-	-	-	Chemistry

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
165	SW-14-47-28-W4	Alexander	No	Bob's Drilling & Backhoe Service/1972	80	9	Casing/Open Hole	Sand, Clay, Sandstone, Shale, Coal	Bailer	-	-	29	-	-	Bedrock at 22 ft
166	SW-14-47-28-W4	Shirley, R.	Field	Scott, H. A. Drilling/1960	80	6	Open Hole	Sand, Muskeg, Clay, Gravel, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 76 ft
167	SW-14-47-28-W4	Crumb, S.	No	Bob's Drilling & Backhoe Service/1976	130	-	Open Hole	Clay, Sand, Gravel, Shale, Sandstone	-	4	-	-	-	-	Bedrock at 86 ft
168	SW-14-47-28-W4	Knight, Charles	Field	Fiveland N/1960	107	18	Open Hole	Clay, Sand, Shale, Limestone	Pump	6	4	-	-	-	Bedrock at 60 ft
169	SW-14-47-28-W4	Tomack, Murray	No	Morrill's Water Well Drilling Ltd./1992	150	43	Casing/Perforated Liner/130-150	Clay, Shale, Sandstone, Sand, Coal	Air	25	2	27	752.7	21.6	Bedrock at 14 ft
170	SW-14-47-28-W4	Ross, N.	No	Morrill's Water Well Drilling Ltd./1996	153	51.5	Casing/Perforated Liner/123-153	Clay, Sandstone, Shale, Sand	Air	10	2	96	84.7	2.0	Bedrock at 5 ft
171	SW-14-47-28-W4	Taylor, F.	No	Bob's Drilling & Backhoe Service/1969	130	14	Open Hole	Clay, Shale, Sandstone	Bailer	-	-	36	-	-	Bedrock at 96 ft
172	SW-14-47-28-W4	Kokas, J. JR	No	Fiveland N/1960	103	14	Open Hole	Clay, Sand, Sandstone, Shale	Pump	6	3	-	-	-	Bedrock at 38 ft
173	SW-14-47-28-W4	Smith, J.	No	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
174	SW-14-47-28-W4	Loveseth, T. R.	Map	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
175	SW-14-47-28-W4	Dowler, Lloyd	Map	Alberta Eagle Drilling Ltd./1983	105	23	Open Hole	Clay, Gravel, Shale, Sandstone	Pump	20	2	22	739.0	-	Bedrock at 90 ft
176	SW-14-47-28-W4	Ron Koch Trucking Ltd.	No	Bar-K Water Well Drilling Ltd./1993	80	16.8	Casing/Perforated Liner/63-73	Clay, Shale, Sandstone	Pump	7.5	4	5	1338.6	20.4	Bedrock at 60 ft
177	SW-14-47-28-W4	Hodgert, Maureen	No	Bar-K Water Well Drilling Ltd./1991	94	9.5	Casing/Perforated Liner/75-94	Clay, Shale, Siltstone, Sandstone	Air	18	2.5	65	232.2	5.0	Bedrock at 71 ft
178	SW-14-47-28-W4	Eskow, Albert	No	Westar Water Well Drilling Ltd./1993	155	23	Casing/Perforated Liner/110-150	Clay, Gravel, Sand, Shale, Sandstone	Pump	7	2	87	65.4	1.9	Bedrock at 72 ft
179	00-23-47-28-W4	Stewart,Gordon	No	Bob's Drilling & Backhoe Service/1976	70	-	Open Hole	Clay, Sandstone, Shale	Unknown	-	-	-	-	-	Bedrock at 62 ft
180	NW-23-47-28-W4	Bartman, L. J.	No	Bob's Drilling & Backhoe Service/1976	50	-	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	2	-	-	-	-	Bedrock at 36 ft
181	NW-23-47-28-W4	Evans, G.	No	Bob's Drilling & Backhoe Service/1976	80	22	Open Hole	Clay, Shale, Sandstone	Bailer	3	-	-	-	-	Bedrock at 65 ft
182	NW-23-47-28-W4	Windiate, Dale	No	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
183	NW-23-47-28-W4	King, Dennis	No	Bar-K Water Well Drilling Ltd./1994	116	27.4	Casing/Perforated Liner/103-113	Clay, Shale, Sandstone, Siltstone	Pump	6	2	42	116.1	2.9	Bedrock at 18 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
184	NW-23-47-28-W4	Chinnery, Al	No	Fraser, Ron/1997	130	55.5	Perforated Casing/Liner/110-130	Clay, Sandstone, Shale	Bailer & Pump	10	2	27	301.1	5.4	Bedrock at 27 ft
185	NW-23-47-28-W4	Kramps, Gordon	No	Bar-K Water Well Drilling Ltd./1997	110	32.2	Casing/Perforated Liner/70-80	Sand, Sandstone, Shale, Siltstone	Air	9	2	3	2438.7	30.4	Bedrock at 36 ft
186	NW-23-47-28-W4	Stewart, Randy C.	No	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
187	NW-23-47-28-W4	Hayes, Danny	No	Vino's Water Well Drilling/1993	60	30	Perforated Casing/Liner/40-60	Clay, Sand, Shale	Bailer & Pump	5	2	10	406.5	1.3	Bedrock at 60 ft
188	NW-23-47-28-W4	McDonald, Gord	Map	Warnke Drilling Ltd./1993	160	49	Casing/Perforated Liner/100-120	Sand, Clay, Shale, Sandstone, Coal	Pump	6	3	40	128.9	2.2	Bedrock at 38 ft
189	NW-23-47-28-W4	Belly, George	No	Bar-K Water Well Drilling Ltd./2000	110	50.6	Casing/Perforated Liner/93-103	Clay, Sand, Sandstone, Shale, Siltstone	Air	8	2	10	650.3	9.1	Bedrock at 27 ft
190	SE-23-47-28-W4	Clark, Jim	Map	Fiveland N/1960	160	50	Open Hole	Clay, Sand, Sandstone, Shale	Pump	3.5	3	-	-	-	Bedrock at 35 ft
191	SW-23-47-28-W4	Hardy, Joe	Map	Bob's Drilling & Backhoe Service/1977	120	26	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	2	-	-	-	-	Bedrock at 84 ft
192	03-26-47-28-W4	#SP 372	Field	Ashton O. W./1966	0	-	Unknown	Unknown	-	-	-	-	-	-	Flowing Shot Hole
193	NE-26-47-28-W4	Glubish, Eugene	Map	Bob's Drilling & Backhoe Service/1975	90	-	Open Hole	Clay, Shale, Sandstone	-	6	-	-	-	-	Bedrock at 64 ft
194	NE-26-47-28-W4	Fox, Glen	Map	Unknown	90	7	Unknown	Unknown	-	-	-	-	-	-	Chemistry
195	NE-26-47-28-W4	Fox, Glen	Map	Bob's Drilling & Backhoe Service/1982	60	3	Open Hole	Clay, Shale, Sandstone	Bailer	6	1	17	258.9	-	Bedrock at 45 ft
196	NW-26-47-28-W4	Halladay, Calvin	Map	Bob's Drilling & Backhoe Service/1986	300	50	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	4	2.5	80	41.9	-	Bedrock at 80 ft
197	NW-26-47-28-W4	Peterson, Cindy	Map	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
198	NW-26-47-28-W4	Halladay, Vern	Map	Pecos Drilling Ltd./1976	130	38	Open Hole	Clay, Shale	Pump	10	3	2	4297.0	-	Bedrock at 130 ft
199	NW-26-47-28-W4	Peterson, Wes	No	Bar-K Water Well Drilling Ltd./1999	126	80.8	Casing/Perforated Liner/106-116	Clay, Shale, Sandstone, Coal	Pump	8	2	4	1625.8	13.5	Bedrock at 39 ft
200	SE-26-47-28-W4	Peterson, Bruce	Map	Bob's Drilling & Backhoe Service/1983	190	12	Open Hole	Clay, Shale, Sandstone	Bailer	3	1	48	45.8	-	Bedrock at 94 ft
201	SE-26-47-28-W4	Peterson, Bruce	Map	Big Iron Drilling Ltd./1996	100	11.3	Casing/Perforated Liner/60-80	Clay, Sand, Shale, Sandstone	Bailer	15	2	8	1524.2	24.5	Bedrock at 40 ft
202	SW-26-47-28-W4	Sutton, Glen	Map	IRMC Water Well Service & Supply Co. Ltd./1983	187	20	Open Hole	Clay, Sandstone, Till, Shale, Coal	Air	8	4	120	59.5	-	Bedrock at 17 ft
203	08-13-47-1-W5	Crozui	No	Snetler Water Well Drilling Ltd./1991	120	16	Open Hole	Clay, Sand, Gravel, Coal, Shale, Sandstone	Bailer	12	2	29	336.4	-	Bedrock at 71 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(lgpm)	(h)	(ft)	(lgpd/ft)	(lgpm)	
204	NE-13-47-1-W5	Hodgert, Maureen	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
205	NE-13-47-1-W5	Gibson, Brent	No	Bar-K Water Well Drilling Ltd./1993	79	12	Casing/Perforated Liner/69-79	Clay, Sand, Shale, Siltstone, Sandstone	Pump	7.5	2	12	508.1	9.6	Bedrock at 55 ft
206	NE-13-47-1-W5	Mulhurst Community League	Map	Bob's Drilling & Backhoe Service/1975	190	-	Open Hole	Clay, Shale, Coal, Sandstone	-	2.5	-	-	-	-	Bedrock at 102 ft
207	NE-13-47-1-W5	Mulhurst Fire Department	No	Hostyn Drilling Co. Ltd./1984	50	20	Open Hole	Gravel, Clay, Shale, Sand, Sandstone	Bailer	12	2.5	8	1257.7	-	Bedrock at 38 ft
208	NE-13-47-1-W5	Cameron, D. T.	No	Fiveland N/1960	78	4	Casing/Open Hole	Sand, Clay, Shale	Pump	8	3	-	-	-	Bedrock at 78 ft
209	NE-13-47-1-W5	Anderson, L.	No	Papley Drilling/1997	160	6	Casing/Perforated Liner/100-140	Clay, Shale, Siltstone, Sandstone, Coal	Pump	20	12	-	-	-	Bedrock at 37 ft
210	NW-13-47-1-W5	Palechek, C. E.	Map	Unknown	100	20	Unknown	Unknown	-	-	-	-	-	-	Chemistry
211	NW-13-47-1-W5	Welk, Bill	No	Inglis Water Well Drilling/1989	80	25	Casing/Perforated Liner/60-80	Clay, Sand, Shale, Sandstone, Coal	Bailer	5	1	55	66.7	0.8	Bedrock at 55 ft
212	SE-13-47-1-W5	Vanbullon, E.	No	Bob's Water Well Drilling/1982	80	60	Casing/Perforated Liner/60-80	Clay, Sandstone	Unknown	5	1	20	183.4	1.2	Bedrock at 55 ft
213	SE-13-47-1-W5	Baydala, Walter	Map	Hostyn Drilling Co. Ltd./1990	103	8	Perforated Casing/Liner/93-100	Sand, Gravel, Clay, Shale	Bailer	4	3.3	72	48.4	1.4	Bedrock at 90 ft
214	SE-13-47-1-W5	Fishburne, Fred	Map	Bar-K Water Well Drilling Ltd./1991	94	8	Casing/Perforated Liner/74-94	Muskeg, Clay, Shale, Siltstone, Sandstone	Pump	8	2.5	42	159.7	3.5	Bedrock at 66 ft
215	SE-13-47-1-W5	Foster, Bob	Map	Bob's Drilling & Backhoe Service/1971	100	12	Open Hole	Sand, Clay, Shale, Coal, Sandstone	Pump	-	-	6	-	-	Bedrock at 62 ft
216	SE-13-47-1-W5	Anderson, G.	Map	Fraser, Ron/1986	95	63	Open Hole	Sandstone, Shale	Bailer & Pump	8	2	1	6503.2	-	Bedrock at 12 ft
217	SE-13-47-1-W5	Summerville, Boyd	No	Bar-K Water Well Drilling Ltd./1995	95	16	Casing/Perforated Liner/80-90	Clay, Sand, Shale, Sandstone, Siltstone	Pump	10	2	-	-	-	Bedrock at 69 ft
218	SE-13-47-1-W5	Berreth, Del	No	Bar-K Water Well Drilling Ltd./1995	96	16.7	Casing/Perforated Liner/80-90	Clay, Siltstone, Shale	Pump	10	2	-	-	-	Bedrock at 74 ft
219	SE-13-47-1-W5	Hudson	Map	Bob's Drilling & Backhoe Service/1972	60	3	Casing/Open Hole	Sand, Clay, Shale, Sandstone	Pump	-	-	10	-	-	Bedrock at 48 ft
220	SE-13-47-1-W5	Graves, H. L.	No	Fiveland N/1960	107	12	Casing/Open Hole	Clay, Sand, Shale	Pump	6	3	-	-	-	Bedrock at 92 ft
221	SE-13-47-1-W5	James, D. L.	Map	Bob's Drilling & Backhoe Service/1972	100	12	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Bailer	-	-	40	-	-	Bedrock at 78 ft
222	SE-13-47-1-W5	Plaxton, C.	Map	Bob's Drilling & Backhoe Service/1972	90	8	Casing/Open Hole	Muskeg, Clay, Shale, Coal, Sandstone	Bailer	-	-	30	-	-	Bedrock at 72 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
223	SE-13-47 1-W5	Christerson, John	No	Fraser, Ron/1971	83	12	Casing/Open Hole	Clay, Sand, Shale	Pump	20	2	-	-	-	Bedrock at 80 ft
224	SE-13-47-1-W5	McGavin, Bud	Map	Bob's Drilling & Backhoe Service/1974	80	-	Casing/Open Hole	Muskeg, Clay, Sandstone, Shale, Coal	Bailer	5	-	-	-	-	Bedrock at 45 ft
225	SE-13-47-1-W5	Ofrim, Don	Map	Bob's Drilling & Backhoe Service/1972	78	8	Casing/Open Hole	Muskeg, Clay, Sand, Shale, Coal, Sandstone	-	-	-	-	-	-	Bedrock at 68 ft
226	SE-13-47-1-W5	Yanes, Tony	Phone	Fraser, Ron/1981	105	10	Casing/Open Hole	Sand, Clay, Sandstone, Shale	Bailer	10	2	8	1016.1	-	Bedrock at 54 ft
227	SE-13-47-1-W5	Swist, Ron	Map	Bob's Drilling & Backhoe Service/1981	100	12	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Bailer	6	1.5	-	-	-	Bedrock at 76 ft
228	SE-13-47-1-W5	Conroy, D.	Map	Bob's Drilling & Backhoe Service/1978	110	5	Casing/Open Hole	Sand, Clay, Shale, Coal, Sandstone	Bailer	5	-	-	-	-	Bedrock at 76 ft
229	SE-13-47-1-W5	Warren, Don	Map	Bob's Drilling & Backhoe Service/1977	90	21	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	3	-	-	-	-	Bedrock at 56 ft
230	SE-13-47-1-W5	Stebner, Art	No	Bob's Drilling & Backhoe Service/1987	90	15	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Bailer	8	2	-	-	-	Bedrock at 84 ft
231	SE-13-47-1-W5	Adams, Albert	No	Bob's Drilling & Backhoe Service/1987	60	8	Casing/Open Hole	Clay, Shale, Sandstone	Pump	10	2	-	-	-	Bedrock at 56 ft
232	SE-13-47-1-W5	McKay, Dave	No	Bob's Drilling & Backhoe Service/1987	120	10	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	4	2	28	116.1	-	Bedrock at 86 ft
233	SE-13-47-1-W5	Banister, Harold	Map	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
234	SE-13-47-1-W5	Suensen, Gilbert	No	Bob's Drilling & Backhoe Service/1988	110	22	Casing/Open Hole	Clay, Shale, Sandstone	Pump	10	4	-	-	-	Bedrock at 86 ft
235	SE-13-47-1-W5	Lindberg, H. B.	No	Bob's Drilling & Backhoe Service/1970	100	20	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Pump	10	1	-	-	-	Bedrock at 85 ft
236	SE-13-47-1-W5	Standefer, Harold	No	Bob's Drilling & Backhoe Service/1970	90	12	Casing/Open Hole	Clay, Sand, Shale, Coal, Sandstone	Bailer	-	-	6	-	-	Bedrock at 78 ft
237	SE-13-47-1-W5	Allen, Fraser	No	Bar-K Water Well Drilling Ltd./1998	105	15	Casing/Perforated Liner/95-105	Sand, Clay, Shale, Siltstone, Sandstone	Pump	8.5	2	2	3454.8	91.2	Bedrock at 69 ft
238	SE-13-47-1-W5	Unknown	Map	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
239	SE-13-47-1-W5	Prytuluk, Bruce	Map	Bob's Drilling & Backhoe Service/1972	110	8	Casing/Open Hole	Muskeg, Sand, Gravel, Clay, Shale, Coal, Sandstone	Pump	-	-	32	-	-	Bedrock at 76 ft
240	SE-13-47-1-W5	Shockey, Roy	Map	Bob's Drilling & Backhoe Service/1972	90	12	Casing/Open Hole	Sand, Clay, Shale, Sandstone, Coal	Pump	-	-	20	-	-	Bedrock at 62 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
241	SE-13-47-1-W5	Sigstad, B.	No	Bob's Drilling & Backhoe Service/1979	90	6	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	2	1	39	37.6	-	Bedrock at 65 ft
242	SE-13-47-1-W5	Olsen, Dr.	No	Bob's Drilling & Backhoe Service/1978	90	8	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	5	-	24	-	-	Bedrock at 65 ft
243	SE-13-47-1-W5	Gardener, Dr.	No	Bob's Drilling & Backhoe Service/1983	90	10	Casing/Open Hole	Muskeg, Clay, Shale, Coal, Sandstone	Bailer	5	1	-	-	-	Bedrock at 76 ft
244	SE-13-47-1-W5	Kryko, John	No	Bob's Drilling & Backhoe Service/1980	110	11	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	3	1	29	75.9	-	Bedrock at 76 ft
245	SE-13-47-1-W5	Unknown	No	Bob's Drilling & Backhoe Service/1980	110	9	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	3	1	31	71.0	-	Bedrock at 76 ft
246	SE-13-47-1-W5	Starko, Joe	No	Bob's Drilling & Backhoe Service/1983	80	6	Casing/Open Hole	Muskeg, Clay, Shale	Bailer	10	1	-	-	-	Bedrock at 80 ft
247	SE-13-47-1-W5	Grousel, Kay	No	Bar-K Water Well Drilling Ltd./1999	130	22.7	Casing/Perforated Liner/120-130	Clay, Sandstone, Shale, Coal, Siltstone	Air	4	2	57	57.0	1.8	Bedrock at 26 ft
248	SE-13-47-1-W5	Holliday, Mr. & Mrs.	No	Bar-K Water Well Drilling Ltd./1999	105	18.5	Casing/Perforated Liner/95-105	Clay, Sand, Shale, Siltstone, Sandstone	Pump	8.5	2	6	1151.6	29.1	Bedrock at 66 ft
249	SE-13-47-1-W5	Stables, Ernie	No	Bar-K Water Well Drilling Ltd./2001	117	10.6	Casing/Perforated Liner/99-109	Sand, Clay, Sandstone, Shale, Siltstone	Pump	8	2	49	132.7	3.9	Bedrock at 74 ft
250	SE-13-47-1-W5	Plewes, Gordon/Joyann	No	Bar-K Water Well Drilling Ltd./2001	140	39.5	Casing/Perforated Liner/130-140	Muskeg, Clay, Shale, Sandstone, Siltstone	Pump	7	2	20	284.5	8.5	Bedrock at 81 ft
251	SE-13-47-1-W5	Mulhurst Bay Legion	No	Bar-K Water Well Drilling/2001	100	14.4	Casing/Perforated Liner/90-100	Clay, Shale, Sandstone, Siltstone	Pump	10	2	2	4064.5	101.4	Bedrock at 66 ft
252	SE-13-47-1-W5	Smith, Jack	No	Bob's Drilling & Backhoe Service/1970	120	28	Casing/Open Hole	Clay, Sandstone, Shale, Coal	Bailer	-	-	32	-	-	Bedrock at 85 ft
253	SE-13-47-1-W5	Jarvis, Bill	Map	Bob's Drilling & Backhoe Service/1971	95	8	Open Hole	Sand, Muskeg, Clay, Shale, Coal, Sandstone	Bailer	-	-	45	-	-	Bedrock at 78 ft
254	SE-13-47-1-W5	Marcinkowski, Z.	Map	Bob's Drilling & Backhoe Service/1971	90	8	Open Hole	Sand, Clay, Shale, Coal, Sandstone	Bailer	-	-	18	-	-	Bedrock at 65 ft
255	SE-13-47 1-W5	Honey, Gladys	No	Bar-K Water Well Drilling Ltd./1993	135	35	Casing/Perforated Liner/125-135	Sand, Clay, Shale, Siltstone, Sandstone	Pump	5	2	27	150.5	4.4	Bedrock at 80 ft
256	SE-13-47-1-W5	Bailey, Bryan	No	Papley Drilling/1990	100	14	Open Hole	Sand, Shale, Sandstone	Air	10	2.5	-	-	-	Bedrock at 56 ft

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Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
257	SE-13-47-1-W5	Olsen, Martin	Map	Bob's Drilling & Backhoe Service/1971	100	10	Open Hole	Sand, Clay, Shale, Sandstone, Coal	Bailer	-	-	38	-	-	Bedrock at 65 ft
258	SE-13-47-1-W5	Wyley, Tom	Map	Bob's Drilling & Backhoe Service/1974	80	8	Casing/Open Hole	Muskeg, Sand, Clay, Shale, Sandstone	Pump	-	-	-	-	-	Bedrock at 65 ft
259	SE-13-47-1-W5	Arndt, Art	No	Bob's Drilling & Backhoe Service/1970	90	15	Casing/Open Hole	Clay, Sand, Sandstone, Shale, Coal	Bailer	-	-	23	-	-	Bedrock at 65 ft
260	SE-13-47-1-W5	Holmgren, Mrs. R.	Map	Unknown	94	75	Unknown	Unknown	-	-	-	-	-	-	Chemistry
261	SH-13-47-1-W5	Adair, T. A.	Phone	Unknown	93	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
262	SH-13-47-1-W5	Gander, E. Mary	Phone	Unknown	90	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
263	SH-13-47-1-W5	Schiebel, Conrad	Map	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
264	SH-13-47-1-W5	Walker, John/Manning M. O/OWN	Map	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
265	SH-13-47-1-W5	Sereda	Map	Hostyn Drilling Co. Ltd./1986	111	-	Casing/Open Hole	Sand, Gravel, Clay, Shale, Sandstone	Bailer	10	2.5	-	-	-	Bedrock at 100 ft
266	SH-13-47-1-W5	Krynko, Jean	Phone	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
267	SH-13-47-1-W5	Myhre, O. O.	Map	Unknown	95	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
268	SW-13-47-1-W5	Spargo, John	Map	Bob's Drilling & Backhoe Service/1990	95	10	Open Hole	Sand, Clay, Sandstone, Shale	Pump	8	2.5	20	335.4	-	Bedrock at 52 ft
269	SW-13-47-1-W5	McDonald, Robert	Map	Bob's Drilling & Backhoe Service/1990	95	12	Open Hole	Clay, Sandstone, Shale	Bailer	6	2	-	-	-	Bedrock at 52 ft
270	SW-13-47-1-W5	Gabore, Phil	Map	Bob's Drilling & Backhoe Service/1982	120	18	Open Hole	Sand, Clay, Shale, Sandstone	Bailer	4	1.5	42	74.3	-	Bedrock at 86 ft
271	SW-13-47-1-W5	Bosse, Ray	No	Bob's Drilling & Backhoe Service/1984	80	15	Open Hole	Clay, Shale, Sandstone	Bailer	6	0.5	25	157.0	-	Bedrock at 68 ft
272	SW-13-47-1-W5	Adair, T. A.	No	Unknown	105	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
273	SW-13-47-1-W5	Hiebert, Dave	Map	Hostyn Drilling Co. Ltd./1992	96	10	Perforated Casing/Liner/75-95	Muskeg, Sand, Clay, Shale, Sandstone	Bailer	10	2.5	25	335.4	7.2	Bedrock at 75 ft
274	SW-13-47-1-W5	Dunbar	Map	Hostyn Drilling Co. Ltd./1992	105	9	Perforated Casing/Liner/80-98	Muskeg, Sand, Gravel, Clay, Shale, Sandstone	Bailer	10	3.5	-	-	-	Bedrock at 85 ft
275	SW-13-47-1-W5	Maday, Ron	No	Bob's Drilling & Backhoe Service	90	22	Open Hole	Clay, Sand, Gravel, Shale, Sandstone	Bailer	5	0.5	22	148.6	-	Bedrock at 76 ft
276	SW-13-47-1-W5	Albert, Bob	No	Lunar Drilling/1973	110	12	Casing/Open Hole	Clay, Sandstone	Pump	4	0.5	-	-	-	Bedrock at 65 ft
277	SW-13-47-1-W5	McMannix	Map	Bob's Drilling & Backhoe Service/1974	70	-	Casing/Open Hole	Sand, Muskeg, Clay, Shale, Sandstone	Bailer	10	-	-	-	-	Bedrock at 62 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
278	SW-13-47-1-W5	Alberts, Jim	Map	Bob's Drilling & Backhoe Service/1975	100	-	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 75 ft
279	SW-13-47-1-W5	Whittmore, Don	Map	Double H Drilling/1979	89	8	Casing/Open Hole	Sand, Clay, Sandstone, Shale	Bailer	7	2	39	145.9	-	Bedrock at 55 ft
280	SW-13-47-1-W5	Dunn, Bob A.	Map	Bob's Drilling & Backhoe Service/1976	80	-	Casing/Open Hole	Muskeg, Clay, Shale, Coal, Sandstone	Unknown	10	-	-	-	-	Bedrock at 65 ft
281	SW-13-47-1-W5	Lucyk, Don	No	Bob's Drilling & Backhoe Service/1986	80	8	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Unknown	12	2	-	-	-	Bedrock at 68 ft
282	SW-13-47-1-W5	Wood, Reg	No	Bob's Drilling & Backhoe Service/1988	90	35	Casing/Open Hole	Clay, Sandstone, Shale	Bailer & Pump	4	2.5	11	304.9	-	Bedrock at 51 ft
283	SW-13-47-1-W5	Gottstein, Ernie	Map	Bob's Drilling & Backhoe Service/1989	100	12	Casing/Open Hole	Unknown	Bailer	3	2	24	101.6	-	New Well
284	SW-13-47-1-W5	Baydalk, Walter	Map	Bob's Drilling & Backhoe Service/1975	90	-	Casing/Open Hole	Muskeg, Clay, Shale, Coal, Sandstone	Bailer	3	-	-	-	-	Bedrock at 72 ft
285	SW-13-47-1-W5	Kucy, B.	No	Papley Drilling/1997	100	10.7	Casing/Perforated Liner/80-100	Clay, Sand, Shale, Sandstone	Pump	10	2	3	2709.7	62.0	Bedrock at 80 ft
286	SW-13-47-1-W5	Dougherty, G.	Map	Bob's Drilling & Backhoe Service/1971	80	8	Casing/Open Hole	Muskeg, Sand, Clay, Shale, Sandstone	Pump	-	-	10	-	-	Bedrock at 65 ft
287	SW-13-47-1-W5	Lade, C.	No	Fraser, Ron/1983	125	9	Casing/Open Hole	Clay, Sand, Shale	Bailer	10	2	11	739.0	-	Bedrock at 85 ft
288	SW-13-47-1-W5	Odell, W. H.	Map	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
289	SW-13-47-1-W5	Foster, Bert A.	Phone	Unknown	108	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
290	SW-13-47-1-W5	McEwen, Mr. Bud	Map	Unknown	83	8	Casing	Unknown	-	-	-	-	-	-	Chemistry
291	SW-13-47-1-W5	Hall, Bruce	No	Bar-K Water Well Drilling Ltd./1995	123	10	Casing/Perforated Liner/93-103	Sand, Clay, Shale, Sandstone, Siltstone	Pump	10	2	23	353.4	9.7	Bedrock at 62 ft
292	00-14-47-1-W5	Manzanillo, Domenico	No	Unknown	76	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
293	00-14-47-1-W5	Alberts, Bob	No	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
294	00-14-47-1-W5	Alberts, Jim	No	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
295	07-14-47-1-W5	Poole, Ernie	No	Inglis Water Well Drilling/1994	85	8	Casing/Perforated Liner/45-55	Topsoil, Clay, Gravel, Coal, Sand, Shale, Sandstone	Bailer	-	2	77	-	-	Bedrock at 48 ft
296	13-14-47-1-W5	Groin, Eric	No	Bob's Drilling & Backhoe Service/1970	60	50	Casing/Open Hole	Clay, Sandstone	Bailer	10	-	-	-	-	Bedrock at 35 ft
297	NH-14-47-1-W5	Molnar, S.	Map	Bob's Drilling & Backhoe Service/1972	60	38	Casing/Open Hole	Clay, Sandstone	-	-	-	-	-	-	Bedrock at 38 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
298	NW-14-47-1-W5	Morrow, Thomas	Map	Hostyn Drilling Co. Ltd./1991	196	40	Perforated Casing/Liner/110-190	Sand, Clay, Shale, Sandstone	Bailer	4	6	95	39.5	0.9	Bedrock at 140 ft
299	NW-14-47-1-W5	Newbury, Jim	No	Big Iron Drilling Ltd./1993	120	30	Casing/Perforated Liner/100-120	Clay, Sandstone, Shale, Coal	Bailer	10	2.5	-	-	-	Bedrock at 35 ft
300	NW-14-47-1-W5	Kish, E.	No	Unknown	30	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
301	NW-14-47-1-W5	Mason, John	Map	Bob's Drilling & Backhoe Service/1979	140	-	Casing/Open Hole	Clay, Sandstone, Shale, Coal	Bailer	4	-	-	-	-	Bedrock at 68 ft
302	NW-14-47-1-W5	Grohn, Eric	No	Unknown	85	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
303	NW-14-47-1-W5	Chamberlain, Ross	No	Bob's Drilling & Backhoe Service/1988	90	8	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	10	3.5	14	626.5	-	Bedrock at 75 ft
304	NW-14-47-1-W5	Schemmen, Garry	No	Bob's Drilling & Backhoe Service/1988	60	8	Casing/Open Hole	Clay, Sandstone, Shale	Bailer	8	2.5	-	-	-	Bedrock at 42 ft
305	NW-14-47-1-W5	Lytlluds, Cameron	No	Bob's Drilling & Backhoe Service/1988	70	38	Casing/Open Hole	Clay, Sandstone, Shale	Pump	5	2	6	677.4	-	Bedrock at 48 ft
306	SE-14-47-1-W5	Carry, Kathy	No	Bar-K Water Well Drilling Ltd./1990	100	5	Casing/Perforated Liner/66-86	Clay, Sandstone, Shale	Pump	8	2.5	13	516.0	10.4	Bedrock at 39 ft
307	SE-14-47-1-W5	Kraft, T.	Map	Bob's Drilling & Backhoe Service/1977	70	8	Open Hole	Clay, Shale, Coal, Sandstone	Bailer	4	-	-	-	-	Bedrock at 46 ft
308	SE-14-47-1-W5	Strashok, Ray	No	Midwest Water Well Ltd./1992	120	15	Casing/Perforated Liner/90-110	Till, Clay, Sand, Gravel, Shale, Sandstone	Air	30	2	105	232.3	5.7	Bedrock at 62 ft
309	SE-14-47-1-W5	Collins, J. F.	Map	Bob's Drilling & Backhoe Service/1975	90	-	Casing/Open Hole	Sand, Muskeg, Clay, Shale, Coal, Sandstone	Bailer	5	-	-	-	-	Bedrock at 65 ft
310	SE-14-47-1-W5	Manning, M. E.	Map	Unknown	70	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
311	SE-14-47-1-W5	McCreary, Ron	No	Fraser, Ron/1983	55	8	Casing/Open Hole	Clay, Sandstone	Bailer	12	2	2	4877.4	-	Bedrock at 55 ft
312	SE-14-47-1-W5	Diamond Shamrock	No	Alken Basin Drilling Ltd./1986	180	60	Casing/Perforated Liner/150-180	Clay, Shale, Sandstone	Air	5	1.25	120	31.6	0.9	Bedrock at 83 ft
313	SE-14-47-1-W5	Schebelhofer, R.	Map	Bob's Drilling & Backhoe Service/1977	85	6	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone	Bailer	5	-	-	-	-	Bedrock at 48 ft
314	SE-14-47-1-W5	Kreler, W.	Map	Bob's Drilling & Backhoe Service/1976	90	-	Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	-	-	-	-	Bedrock at 48 ft
315	SE-14-47-1-W5	Prytuluk, Bruce	No	Big Iron Drilling Ltd./1983	120	6	Casing/Perforated Liner/100-120	Sand, Gravel, Shale, Sandstone	Bailer	10	2.5	22	381.1	11.8	Bedrock at 71 ft
316	SE-14-47-1-W5	Webb, Geoffrey	Map	Other/1961	100	9	Casing/Open Hole	Sand, Muskeg, Shale, Sandstone	Unknown	10	-	40	-	-	Bedrock at 85 ft
317	SW-14-47-1-W5	Warrens, Ron	No	Bar-K Water Well Drilling Ltd./1990	100	7	Casing/Perforated Liner/80-100	Clay, Shale, Siltstone, Sandstone	Pump	6	2.5	53	94.9	2.3	Bedrock at 64 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(lgpm)	(h)	(ft)	(lgpd/ft)	(lgpm)	
318	SW-14-47-1-W5	MacGregor, Jack	No	Bar-K Water Well Drilling Ltd./1992	92	8	Casing/Perforated Liner/72-92	Sand, Sill, Clay, Shale, Sandstone	Pump	7.5	2.5	11	571.7	12.1	Bedrock at 46 ft
319	SW-14-47-1-W5	Meaver, Glen	No	Bob's Drilling & Backhoe Service/1979	70	29	Open Hole	Sandstone, Shale	Bailer	8	1	18	326.0	-	Bedrock at 38 ft
320	SW-14-47-1-W5	Garneau, Glen	No	Bar-K Water Well Drilling Ltd./1994	93	11.7	Casing/Perforated Liner/83-93	Sand, Clay, Siltstone, Sandstone, Shale	Air	8	2	21	309.7	7.3	Bedrock at 51 ft
321	SW-14-47-1-W5	Dubetz, Jack	Map	Bob's Drilling & Backhoe Service/1972	80	10	Casing/Open Hole	Sand, Clay, Shale, Coal, Sandstone	Bailer	-	-	28	-	-	Bedrock at 56 ft
322	SW-14-47-1-W5	Givins, J.	Map	Hostyn Drilling Co. Ltd./1972	75	10	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Pump	10	3	20	429.7	-	Bedrock at 50 ft
323	SW-14-47-1-W5	Hughes	Map	Bob's Drilling & Backhoe Service/1968	120	15	Casing/Open Hole	Sand, Clay, Shale, Coal, Sandstone	Bailer	5	-	30	-	-	Bedrock at 84 ft
324	SW-14-47-1-W5	Kautine, Ray	Map	Bob's Drilling & Backhoe Service/1979	110	12	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	6	2	38	128.4	-	Bedrock at 65 ft
325	SW-14-47-1-W5	Camp Baldon	No	Bob's Drilling & Backhoe Service/1980	70	36	Casing/Open Hole	Clay, Sandstone, Shale	Bailer	3	1.5	-	-	-	Bedrock at 36 ft
326	SW-14-47-1-W5	Balhor Camp	No	Bob's Drilling & Backhoe Service/1980	60	46	Casing/Open Hole	Clay, Sandstone	Bailer	3	1.5	-	-	-	Bedrock at 50 ft
327	SW-14-47-1-W5	Murphy, Ken	No	Bar-K Water Well Drilling Ltd./1983	140	32	Casing/Perforated Liner/120-140	Sand, Muskeg, Clay, Shale, Sandstone	Pump & Air	3	-	-	-	-	Bedrock at 73 ft
328	SW-14-47-1-W5	O'Connor, Dennis	Map	Bob's Drilling & Backhoe Service/1978	80	14	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone, Coal	Bailer	2.5	-	-	-	-	Bedrock at 46 ft
329	SW-14-47-1-W5	Mason, Phyllis	No	Warnke Drilling Ltd./1986	140	20	Casing/Open Hole	Sand, Clay, Shale, Sandstone	Pump	8	2	40	162.6	-	Bedrock at 90 ft
330	SW-14-47-1-W5	Pick, Reg.	No	Bob's Drilling & Backhoe Service/1986	90	8	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Pump	4	2	32	101.6	-	Bedrock at 76 ft
331	SW-14-47-1-W5	Florence, Rod/Edyth	No	Bar-K Water Well Drilling Ltd./1988	114	6	Casing/Perforated Liner/94-114	Clay, Shale, Siltstone, Sandstone	Pump	10	2.5	2	4192.4	121.7	Bedrock at 42 ft
332	SW-14-47-1-W5	Gall, Charlie	No	Bob's Drilling & Backhoe Service/1988	120	18	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Bailer	5	2	28	145.2	-	Bedrock at 96 ft
333	SW-14-47-1-W5	Wager	No	Bob's Drilling & Backhoe Service/1988	125	18	Casing/Open Hole	Clay, Sand, Gravel, Shale, Sandstone	Bailer & Pump	3	2	36	67.7	-	Bedrock at 86 ft
334	SW-14-47-1-W5	Knoll, Jake	No	Bob's Drilling & Backhoe Service/1988	75	36	Casing/Open Hole	Clay, Sandstone, Shale	Pump	10	3	-	-	-	Bedrock at 70 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
335	SW-14-47-1-W5	McReowy, Mickey	No	Bob's Drilling & Backhoe Service/1981	100	40	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	6	1.5	-	-	-	Bedrock at 86 ft
336	SW-14-47-1-W5	Backstrom, A./R./Thompson, E.	No	Bar-K Water Well Drilling Ltd./1997	71	12.3	Casing/Perforated Liner/60-70	Clay, Shale, Silt, Sandstone	Air	10	2	1	8129.0	126.0	Bedrock at 39 ft
337	SW-14-47-1-W5	Clark, A.	Map	Bob's Drilling & Backhoe Service/1989	90	10	Casing/Open Hole	Clay, Shale, Sandstone	Bailer & Pump	4	2	25	130.1	-	Bedrock at 68 ft
338	SW-14-47-1-W5	Fitzgerald	Map	Bob's Drilling & Backhoe Service/1972	70	-	Casing/Open Hole	Muskeg, Clay, Shale, Sandstone, Coal	-	-	-	-	-	-	Bedrock at 44 ft
339	SW-14-47-1-W5	Dobranski, Glen A.	No	Bar-K Water Well Drilling Ltd./1999	115	15.7	Casing/Perforated Liner/95-105	Clay, Sand, Gravel, Shale, Sandstone, Siltstone	Pump	9	2	12	609.7	16.0	Bedrock at 53 ft
340	SW-14-47-1-W5	McTavish, Gordon	No	Bar-K Water Well Drilling Ltd./2000	115	12.7	Casing/Perforated Liner/95-105	Clay, Shale, Sandstone	Pump	7	2	31	183.6	5.0	Bedrock at 62 ft
341	SW-14-47-1-W5	Gates, Bob 473102 Alta Ltd.	No	Bar-K Water Well Drilling Ltd./105-115	115	11	Casing/Perforated Liner/105-115	Clay, Silt, Shale, Siltstone, Sandstone	Pump	5	2	57	71.3	2.2	Bedrock at 54 ft
342	SW-14-47-1-W5	Roberge, Greg	No	Bar-K Water Well Drilling Ltd./1994	92	10.1	Casin/Perforated Liner/82-92	Sand, Clay, Siltstone, Sandstone, Shale	Pump	8	2	2	3251.6	77.2	Bedrock at 47 ft
343	SW-14-47-1-W5	Reier, K.	Phone	Unknown	66	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
344	SW-14-47-1-W5	Starco, Dave	No	Bar-K Water Well Drilling Ltd./1996	104	12.9	Casing/Perforated Liner/90-100	Clay, Muskeg, Sand, Sandstone, Shale	Pump	7.5	2	13	469.0	11.9	Bedrock at 56 ft
345	SW-14-47-1-W5	MacLure, Paul	No	Bar-K Water Well Drilling Ltd./1993	90	7.5	Casing/Perforated Liner/80-90	Muskeg, Clay, Shale, Sandstone	Air	8	1.5	57	109.5	2.6	Bedrock at 62 ft
346	00-15-47-1-W5	Delany, Ron	Map	Unknown	75	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
347	01-15-47-1-W5	Unknown	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
348	07-15-47-1-W5	Bellamy, Jim	No	Inglis Water Well Drilling/1993	90	21	Casing/Perforated Liner/65-85	Clay, Sand, Coal, Shale, Sandstone	Bailer	5	2	69	58.9	0.9	Bedrock at 57 ft
349	07-15-47-1-W5	Gable Planning	No	Inglis Water Well Drilling/1998	70	18	Casing/Perforated Liner/52-60	Clay, Coal, Shale, Sandstone	Bailer	20	2	10	1625.8	18.2	Bedrock at 52 ft
350	NE-15-47-1-W5	Camp Bar-V-Nok C/O M Yurkiwsky	No	Unknown	250	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
351	NE-15-47-1-W5	Camp Barvomok	No	Bob's Drilling & Backhoe Service/1978	110	18	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	4	-	-	-	-	Bedrock at 76 ft
352	NE-15-47 1-W5	St. Johns Institute	Map	Big Iron Drilling Ltd./1982	150	20	Casing/Perforated Liner/130-150	Clay, Shale, Sandstone, Coal	Unknown	6	1	80	55.0	2.0	Bedrock at 65 ft
353	NE-15-47-1-W5	Grabia, Mel	No	Papley Drilling/1997	100	32	Casing/Perforated Liner/70-90	Clay, Shale, Sandstone	Pump	4	2	7	464.5	5.8	Bedrock at 75 ft
354	NE-15-47-1-W5	Marr, Gordon	No	Papley Drilling/1997	140	36.6	Casing/Perforated Liner/120-140	Clay, Shale, Sandstone	Pump	6	2	9	541.9	14.6	Bedrock at 120 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
355	NE-15-47-1-W5	Fields, Bill	No	Inglis Water Well Drilling/1994	85	25	Casing/Perforated Liner/75-80	Clay, Sand, Coal, Shale, Sandstone	Bailer	20	2	-	-	-	Bedrock at 58 ft
356	NH-15-47-1-W5	Hughes, Walter	No	Bob's Drilling & Backhoe Service/1975	120	18	Open Hole	Clay, Sandstone, Shale, Coal	Bailer	5	-	-	-	-	Bedrock at 72 ft
357	SE-15-47-1-W5	McEvoy, Andy/Karen	No	Unknown	90	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
358	SE-15-47-1-W5	Bernier, Jaques	No	Unknown	88	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
359	SE-15-47-1-W5	MacDonald, J.	Map	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
360	SE-15-47-1-W5	McEachren, Mr.	Map	Hostyn Drilling Co. Ltd./1991	90	20	Perforated Casing/Liner/56-75	Clay, Sand, Sandstone, Shale	Bailer	5	3.5	40	109.6	1.3	Bedrock at 75 ft
361	SE-15-47-1-W5	Simpson, Ron	No	Bar-K Water Well Drilling Ltd./1994	80	21.3	Casing/Perforated Liner/70-80	Clay, Shale, Siltstone, Sandstone	Pump	5	2	33	123.2	2.0	Bedrock at 61 ft
362	SE-15-47-1-W5	Melnyk, Walter	No	Bar-K Water Well Drilling Ltd./1993	90	12	Casing/Perforated Liner/80-90	Clay, Shale, Siltstone, Sandstone	Pump	7.5	1.5	6	974.9	21.9	Bedrock at 51 ft
363	SE-15-47-1-W5	Karpluk, Doug	No	Bar-K Water Well Drilling Ltd./1994	130	18.3	Perforated Casing/Liner/100-110	Sand, Clay, Shale, Siltstone, Sandstone	Air	6	2	31	157.3	4.2	Bedrock at 64 ft
364	SE-15-47-1-W5	Simpson, Ron	No	Bar-K Water Well Drilling Ltd./1994	80	19.8	Casing/Perforated Liner/70-80	Clay, Shale, Sandstone	Pump & Air	6.64	2	24	224.9	3.7	Bedrock at 59 ft
365	SE-15-47-1-W5	Boisvert, Stan	No	Bar-K Water Well Drilling Ltd./1996	158	71.4	Casing/Perforated Liner/148-158	Clay, Siltstone, Sandstone, Shale	Bailer	6	2	22	221.7	5.6	Bedrock at 72 ft
366	SE-15-47-1-W5	Sisters of Charity	Map	Bob's Drilling & Backhoe Service/1978	70	12	Open Hole	Clay, Sandstone, Shale	Bailer	6	-	-	-	-	Bedrock at 65 ft
367	SE-15-47-1-W5	Halladay, Lawrence	Map	Unknown	125	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
368	SE-15-47-1-W5	Rose, G.	Map	Unknown	125	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
369	SE-15-47-1-W5	Backstrom, A. R.	Map	Unknown	70	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
370	SE-15-47-1-W5	Hougan, A. D.	Map	Bob's Drilling & Backhoe Service/1972	90	14	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Bailer	-	-	25	-	-	Bedrock at 68 ft
371	SE-15-47-1-W5	Shell, Don	Map	Bob's Drilling & Backhoe Service/1968	90	18	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	5	1	42	87.3	-	Bedrock at 85 ft
372	SE-15-47-1-W5	Kay, W. C.	Map	Bob's Drilling & Backhoe Service/1973	80	8	Casing/Open Hole	Clay, Shale, Coal, Sandstone	-	-	-	-	-	-	Bedrock at 68 ft
373	SE-15-47-1-W5	Wright, H. P. W.	Map	Other/1963	110	12	Casing/Open Hole	Clay, Sand, Shale, Coal, Sandstone	Unknown	5	1.5	44	88.6	-	Bedrock at 74 ft
374	SE-15-47-1-W5	Floyd, R.	Map	Bob's Drilling & Backhoe Service/1975	90	-	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Bailer	4	-	-	-	-	Bedrock at 68 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
375	SE-15-47-1-W5	Falkenberg	Map	Bob's Drilling & Backhoe Service/1979	100	12	Casing/Open Hole	Sand, Clay, Shale, Sandstone	Bailer	3	1	48	45.8	-	Bedrock at 74 ft
376	SE-15-47 1-W5	Michlar, B.	Map	Bob's Drilling & Backhoe Service/1981	100	10	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	5	1	20	183.4	-	Bedrock at 65 ft
377	SE-15-47-1-W5	Unknown	Map	Bob's Drilling & Backhoe Service/1981	70	12	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	6	1	-	-	-	Bedrock at 65 ft
378	SE-15-47-1-W5	Blair, Hanna	Map	Bob's Drilling & Backhoe Service/1983	90	12	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	4	1	28	104.8	-	Bedrock at 76 ft
379	SE-15-47-1-W5	Bowell, Lucy	Map	Bob's Drilling & Backhoe Service/1984	130	12	Casing/Open Hole	Clay, Shale, Sandstone	Bailer & Pump	6	0.75	34	123.6	-	Bedrock at 76 ft
380	SE-15-47-1-W5	Foal, Jack	Map	Bob's Drilling & Backhoe Service/1975	70	-	Casing/Open Hole	Clay, Shale, Coal	Bailer	3	-	-	-	-	Bedrock at 65 ft
381	SE-15-47-1-W5	Brant, Thomas	Map	Bob's Drilling & Backhoe Service/1975	90	-	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	-	-	-	-	Bedrock at 68 ft
382	SE-15-47-1-W5	Dick C/O Mechanical Services	No	Hostyn Drilling Co. Ltd./1986	150	-	Casing/Open Hole	Clay, Gravel, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 90 ft
383	SE-15-47-1-W5	Thomas, A.	Map	Fraser, Ron/1986	90	18	Casing/Open Hole	Clay, Shale	Bailer	8	2	12	541.9	-	Bedrock at 85 ft
384	SE-15-47-1-W5	Samuelson, Donald	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
385	SE-15-47-1-W5	Pearson, T. W.	Phone	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
386	SE-15-47-1-W5	Sheppard, R. M.	No	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
387	SE-15-47-1-W5	Ogren, Andy	No	Bob's Drilling & Backhoe Service/1983	90	12	Casing/Open Hole	Clay, Shale, Coal, Sandstone	Bailer	5	1	15	244.5	-	Bedrock at 76 ft
388	SE-15-47-1-W5	Fawcett, M.	No	Bob's Drilling & Backhoe Service	110	12	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3.5	1.5	28	97.5	-	Bedrock at 68 ft
389	SE-15-47-1-W5	Dumond, W. C.	Map	Bob's Drilling & Backhoe Service/1975	90	-	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	-	-	-	-	Bedrock at 56 ft
390	SE-15-47-1-W5	Durrand, W. C.	Map	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
391	SE-15-47-1-W5	Belmont, Mrs.	No	Bar-K Water Well Drilling Ltd./1996	150	49.9	Casing/Perforated Liner/120-130	Clay, Shale, Sandstone, Siltstone	Air	9	2	6	1219.4	28.2	Bedrock at 61 ft
392	SE-15-47-1-W5	Mathieson, Jim	No	Fraser, Ron/1997	132	26.3	Perforated Casing/Liner/100-120	Clay, Sandstone, Shale	Bailer & Pump	3	2	50	48.8	1.2	Bedrock at 22 ft
393	SE-15-47-1-W5	Olson, Al	No	Bar-K Water Well Drilling Ltd./1983	140	12	Casing/Perforated Liner/120-140	Clay, Shale, Sand, Sandstone	Air	5	1	113	32.5	1.2	Bedrock at 42 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
394	SE-15-47-1-W5	Golden Days, Village of	No	Hostyn Drilling Co. Ltd./1982	117	15	Casing/Open Hole	Clay, Sand, Shale, Sandsone	Bailer	4	4.5	55	65.9	-	Bedrock at 85 ft
395	SE-15-47-1-W5	Sheppard	Map	Bob's Drilling & Backhoe Service/1978	80	30	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	2.5	-	-	-	-	Bedrock at 68 ft
396	SE-15-47-1-W5	Cynamon, H.	No	Papley Drilling/1997	120	25	Casing/Perforated Liner/100-120	Clay, Shale, Sandstone	Pump	4	2	34	95.6	2.4	Bedrock at 97 ft
397	SE-15-47-1-W5	Karpluk, Doug	No	Bar-K Water Well Drilling Ltd./2000	119	30.5	Casing/Perforated Liner/109-119	Sand, Clay, Shale, Siltstone, Sandstone	Pump	8	2	23	282.7	7.3	Bedrock at 58 ft
398	SE-15-47-1-W5	Lloyd, Robert	No	Bar-K Water Well Drilling Ltd./2001	95	39.7	Casing/Perforated Liner/90-95	Clay, Shale, Siltstone, Sandstone	Pump	7	2	7	812.9	13.5	Bedrock at 62 ft
399	SE-15-47-1-W5	Bobl Drilling & Backhoe Service	No	Bar-K Water Well Drilling Ltd./2001	75	23.7	Casing/Perforated Liner/60-70	Clay, Shale, Sandstone	Pump	8	2	2	3251.6	39.0	Bedrock at 58 ft
400	SE-15-47 1-W5	Jones, Mason	Map	Unknown	175	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
401	SE-15-47-1-W5	Fee, Lenor	Map	Bar-K Water Well Drilling Ltd./1992	89	8	Casing/Perforated Liner/69-89	Clay, Shale, Sandstone	Pump	5	2.5	14	299.5	6.0	Bedrock at 67 ft
402	SE-15-47-1-W5	Homula, Walter	Map	Hostyn Drilling Co. Ltd./1986	130	30	Casing/Open Hole	Clay, Sand, Shale, Sandstone	Bailer	25	3	30	716.2	-	Bedrock at 70 ft
403	SE-15-47-1-W5	Sisters of Charity	Phone	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
404	SE-15-47-1-W5	Eklund, Leo	No	Bar-K Water Well Drilling Ltd./1983	80	11	Casing/Perforated Liner/60-80	Clay, Shale, Sandstone	Pump & Air	4	2	46	70.7	1.1	Bedrock at 46 ft
405	SE-15-47-1-W5	Alexander, W. E.	Map	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
406	SE-15-47-1-W5	Carry, K.	No	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
407	SE-15-47-1-W5	Kay, Randal/Louise	Map	Hostyn Drilling Co. Ltd./1989	74	8	Perforated Casing/Liner/65-72	Clay, Shale, Sandstone	Bailer	10	3.5	10	877.1	16.5	Bedrock at 50 ft
408	SE-15-47-1-W5	MacKenzie, Jim	No	Bar-K Water Well Drilling Ltd./1986	160	71.8	Casing/Perforated Liner/140-160	Clay, Shale, Siltstone, Sandstone	Unknown	4	2	1	3251.6	73.2	Bedrock at 62 ft
409	SE-15-47-1-W5	Stephens, G.	Phone	Unknown	172	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
410	SE-15-47-1-W5	Sisters of Charity	Phone	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
411	SE-15-47-1-W5	Kelly, Bruce	Map	Gemini Drilling/1976	75	20	Casing/Open Hole	Clay, Shale, Sandstone	Bailer	5	3	-	-	-	Bedrock at 55 ft
412	SE-15-47-1-W5	Ares, J. L.	Phone	Unknown	25	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
413	SE-15-47-1-W5	Wickman, Dean	No	Papley Drilling/1995	120	22.3	Casing/Perforated Liner/80-120	Clay, Shale, Sandstone	Pump	6	2	25	195.1	3.7	Bedrock at 63 ft
414	SE-15-47-1-W5	Hannas, Alec	Map	Hostyn Drilling Co. Ltd./1985	90	25	Casing/Open Hole	Muskeg, Clay, Sandstone, Shale	Bailer	7	3	35	171.9	-	Bedrock at 55 ft
415	SE-15-47-1-W5	Peterson, Lennort	No	Big Iron Drilling Ltd./1986	100	12	Casing/Perforated Liner/52-100	Clay, Shale, Sandstone	Bailer	10	3	13	661.1	8.7	Bedrock at 89 ft
416	SE-15-47-1-W5	Knutson, Glen	No	Morrill's Water Well Drilling Ltd./2001	148	48	Casing/Perforated Liner/108-148	Clay, Shale, Sandstone	Air	8	2	100	65.0	1.3	Bedrock at 108 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
417	SH-15-47-1-W5	Bredeur, Rene	Map	Bob's Drilling & Backhoe Service/1973	90	9	Casing/Open Hole	Clay, Sandstone, Shale, Coal	Pump	-	-	21	-	-	Bedrock at 64 ft
418	SH-15-47-1-W5	Baker, Peter	Map	Bob's Drilling & Backhoe Service/1976	100	-	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	3	-	-	-	-	Chemistry
419	SH-15-47-1-W5	Redpath, R.	Map	Bob's Drilling & Backhoe Service/1976	100	-	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	2.5	-	-	-	-	Bedrock at 68 ft
420	NE-22-47-1-W5	Alta Housing/Fish & Wildlife	No	Richmond WW Drilling/1976	95	3	Casing/Perforated Liner/85-95	Fill, Clay, Sand, Shale, Sandstone	Pump	10	2	1	8129.0	220.0	Bedrock at 95 ft
421	NE-22-47-1-W5	Ritter, Al	Field	Fraser, Ron/1976	85	6	Casing/Open Hole	Clay, Sand, Shale	Pump	10	2	-	-	-	Bedrock at 80 ft
422	NE-22-47-1-W5	Dale	No	Fraser, Ron/1976	67	6	Casing/Open Hole	Sand, Clay, Shale	Pump	10	1	-	-	-	Bedrock at 60 ft
423	NE-22-47-1-W5	Parson, Don	No	Fraser, Ron/1976	84	14	Casing/Open Hole	Clay, Sand, Shale	Bailer	12	2	-	-	-	Bedrock at 80 ft
424	NE-22-47-1-W5	Sandhome Construction	Map	Bob's Drilling & Backhoe Service	68	30	Casing/Open Hole	Clay, Sandstone, Shale	Bailer	8	1	-	-	-	Bedrock at 32 ft
425	NE-22-47-1-W5	Shymansky, Alex	Map	Bob's Drilling & Backhoe Service/1984	80	51	Casing/Open Hole	Clay, Sandstone, Shale	Bailer & Pump	8	2.5	-	-	-	Bedrock at 35 ft
426	NE-22-47-1-W5	Sandholm Community Hall	Map	Bar-K Water Well Drilling Ltd./1998	75	30.5	Casing/Perforated Liner/64-75	Clay, Sandstone, Shale	Pump	10	2	-	-	-	Bedrock at 28 ft
427	SE-22-47-1-W5	Geoscience Consulting #TH1-9	Field	Unknown	10	-	Unknown	Unknown	-	-	-	-	-	-	Test Hole
428	SE-22-47-1-W5	Ankurstine, E.	No	Bob's Drilling & Backhoe Service/1973	70	57	Casing/Open Hole	Clay, Sandstone	Pump	-	-	-	-	-	Bedrock at 62 ft
429	09-23-47-1-W5	Marchand, Henry	No	Inglis Water Well Drilling/1997	90	5	Casing/Perforated Liner/70-85	Clay, Chert, Shale, Sandstone	Bailer	10	2	85	95.6	2.1	Bedrock at 70 ft
430	12-23-47-1-W5	Lange, Joe	Map	Hostyn Drilling Co. Ltd./1983	120	78	Unknown	Clay, Shale, Sandstone	Bailer	20	2.5	-	-	-	Bedrock at 22 ft
431	16-23-47-1-W5	Lange, Jerry	No	Double H Drilling/1977	58	-	Casing/Open Hole	Sand, Clay, Sandstone, Shale	Bailer	6	2	-	-	-	Bedrock at 35 ft
432	NE-23-47-1-W5	Pura, Steve	No	Big Iron Drilling Ltd./1987	130	107	Casing/Perforated Liner/110-130	Clay, Shale, Sandstone	Bailer	10	2.5	5	1677.0	1.7	Bedrock at 106 ft
433	NE-23-47-1-W5	Simser, Lester	No	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
434	NE-23-47-1-W5	Gander, T. A.	No	Fiveland N/1959	60	35	Casing/Open Hole	Clay, Sand, Sandstone, Shale	Pump	6	-	-	-	-	Bedrock at 16 ft
435	NE-23-47-1-W5	Beath, Ray	No	Fraser, Ron/1976	54	8	Casing/Open Hole	Clay, Sand, Shale	Bailer & Pump	15	2	-	-	-	Bedrock at 39 ft
436	NE-23-47-1-W5	Dorin, Inga	No	Fraser, Ron/1976	64	6	Casing/Open Hole	Clay, Shale, Sand	Bailer & Pump	13	2	-	-	-	Bedrock at 30 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
437	NE-23-47-1-W5	Anderson, Alle	No	Bob's Drilling & Backhoe Service/1981	120	97	Casing/Perforated Liner/80-120	Clay, Sandstone, Shale	Bailer	5	0.5	-	-	-	Bedrock at 26 ft
438	NE-23-47-1-W5	Doy, Joe	No	Bob's Drilling & Backhoe Service/1982	120	96	Casing/Perforated Liner/100-120	Clay, Sandstone	Bailer	4	1	-	-	-	Bedrock at 70 ft
439	NE-23-47-1-W5	Moore, Fred	No	Bar-K Water Well Drilling Ltd./1996	140	105.5	Casing/Perforated Liner/130-140	Clay, Shale, Sandstone, Till	Air	10	2	-	-	-	Bedrock at 62 ft
440	NE-23-47-1-W5	Larsen, Dale	No	Bar-K Water Well Drilling Ltd./2000	145	101.2	Casing/Perforated Liner/135-145	Clay, Sandstone, Shale, Siltstone	Air	6	2	2	2438.7	27.2	Bedrock at 6 ft
441	NE-23-47-1-W5	Wenger, Dave/Chris	No	Bar-K Water Well Drilling Ltd./2000	120	89.2	Casing/Perforated Liner/110-120	Clay, Shale, Sandstone, Siltstone	Pump	6	2	-	-	-	Bedrock at 29 ft
442	NE-23-47-1-W5	Bob's Drilling & Backhoe Service	No	Bar-K Water Well Drilling Ltd./2000	119	87.9	Casing/Perforated Liner/109-119	Clay, Shale, Sandstone, Siltstone	Pump	6	2	-	-	-	Bedrock at 30 ft
443	NE-23-47-1-W5	Smith, Rob	No	Wamke Drilling Ltd./1997	100	79.5	Casing/Open Hole	Clay, Shale, Sandstone	Pump	12	2	1	9754.8	-	Bedrock at 78 ft
444	NE-23-47-1-W5	Klatt, Brad	No	Action Water Wells Ltd./1996	120	98	Casing/Perforated Liner/100-120	Clay, Siltstone, Sandstone, Shale	Air	10	4	12	743.6	0.5	Bedrock at 70 ft
445	NE-23-47-1-W5	Corelli, Micheal	No	Big Iron Drilling Ltd./1991	130	90	Casing/Perforated Liner/85-130	Clay, Shale, Sandstone	Bailer	10	2	40	203.2	-	Bedrock at 82 ft
446	NE-23-47-1-W5	Fairway, Steve	No	Snetler Water Well Drilling Ltd./1990	110	78	Open Hole	Clay, Shale, Sand	Bailer	0.5	2	7	58.1	-	Bedrock at 50 ft
447	NE-23-47-1-W5	Griffin, Jack	No	Bob's Drilling & Backhoe Service/1981	120	92	Casing/Perforated Liner/80-120	Clay, Sandstone, Shale	Unknown	5	-	8	-	-	Bedrock at 26 ft
448	NE-23-47-1-W5	Flake, Mervyn	No	Bar-K Water Well Drilling Ltd./2000	130	98.5	Casing/Perforated Liner/120-130	Clay, Sandstone, Shale, Siltstone	Air	10	2	1	8129.0	57.7	Bedrock at 37 ft
449	NW-23-47-1-W5	Ingram, Bob	No	Bob's Drilling & Backhoe Service/1978	100	48	Casing/Open Hole	Clay, Sandstone, Shale	Bailer	3	-	-	-	-	Bedrock at 45 ft
450	NW-23-47-1-W5	Caudron, Marie/Dennis	No	Big Iron Drilling Ltd./2000	120	34.3	Casing/Perforated Liner/55-80	Topsoil, Clay, Siltstone, Sandstone, Shale, Limestone	Air	7	2	-	-	-	Bedrock at 40 ft
451	SE-23-47-1-W5	McDonald, Brian	No	Snetler Water Well Drilling Ltd./1989	112	94	Perforated Casing/Liner/92-112	Clay, Shale, Gravel, Sandstone, Sand	Bailer	6	2	6	812.9	-	Bedrock at 49 ft
452	SE-23-47-1-W5	Kueffer, Lorne #Well 2	No	Bob's Drilling & Backhoe Service	170	118	Open Hole	Clay, Shale, Sandstone	Bailer	4.5	1	-	-	-	Bedrock at 64 ft
453	SE-23-47-1-W5	Kueffer, Lorne #Well 1	No	Bob's Drilling & Backhoe Service	250	-	Unknown	Clay, Shale, Sandstone	-	-	-	-	-	-	Bedrock at 86 ft
454	SE-23-47-1-W5	Hueffer, Lorne	No	Bob's Drilling & Backhoe Service/1983	190	28	Casing/Perforated Liner/155-190	Clay, Sandstone, Shale	Bailer & Pump	5	4	138	32.3	1.4	Bedrock at 86 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
455	SE-23-47-1-W5	Scott, L. E.	Map	Bob's Drilling & Backhoe Service/1985	160	95	Casing/Perforated Liner/140-160	Clay, Sandstone, Shale	Pump	7	4.5	-	-	-	Bedrock at 115 ft
456	SE-23-47-1-W5	James, Kelly	No	Big Iron Drilling Ltd./2000	195	131	Casing/Perforated Liner/147-187	Till, Sandstone, Shale	Air	12	2	49	199.1	1.1	Bedrock at 136 ft
457	SW-23-47-1-W5	Dean, Loralee	Map	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
458	SW-23-47-1-W5	Olson, F.	No	Bob's Drilling & Backhoe Service/1972	58	52	Casing/Open Hole	Clay, Sand, Sandstone	Pump	-	-	-	-	-	Bedrock at 58 ft
459	SW-23-47-1-W5	McAmmond, Matthew Jackson	No	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
460	SW-23-47-1-W5	Lichon, Roman	Map	Unknown/1976	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
461	SW-23-47-1-W5	Vold, George	No	Unknown	70	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
462	03-24-47-1-W5	# SP 457	Field	Unknown/1978	70	-	Unknown	Unknown	-	-	-	-	-	-	Flowing Shot Hole
463	03-24-47-1-W5	# SP 449	Field	Unknown/1978	70	-	Unknown	Unknown	-	-	-	-	-	-	Flowing Shot Hole
464	SE-24-47-1-W5	Jacksett, Carl	No	Warnke Drilling Ltd./1993	110	30	Open Hole	Clay, Sandstone, Shale, Coal	Pump	12	3	26	396.6	-	Bedrock at 46 ft
465	SE-24-47-1-W5	Ayers, H.	Map	Unknown	110	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
466	SE-24-47-1-W5	Lailsity, Carl	No	Vino's Water Well Drilling/1989	100	35	Casing/Open Hole	Clay, Sand, Sandstone	Bailer	5	2	5	812.9	-	Bedrock at 62 ft
467	SE-24-47-1-W5	Douglas, Les/Stewart, Terrie	Map	Unknown	90	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
468	SE-24-47-1-W5	Gruninger, Gordon	No	Papley Drilling/2000	150	7.3	Casing/Perforated Liner/110-150	Clay, Shale, Siltstone, Coal, Sandstone	Pump	14	2	54	210.8	7.1	Bedrock at 60 ft
469	SE-24-47-1-W5	Anderson, Lorne	No	Papley Drilling/1999	160	6	Casing/Perforated Liner/130-150	Clay, Sand, Gravel, Shale, Sandstone	Pump	12	2	10	975.5	39.9	Bedrock at 137 ft
470	05-25-47-1-W5	Unknown	Map	Unknown	0	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
471	07-25-47-1-W5	Stadelman, Allen	No	Inglis Water Well Drilling/1996	130	90	Casing/Perforated Liner/90-120	Clay, Sand, Shale, Sandstone	Bailer	10	2	10	812.9	8.0	Bedrock at 80 ft
472	NE-25-47-1-W5	Wilson, R. L.	No	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
473	NW-25-47-1-W5	Beswick-Arthur, Marian	No	Unknown	100	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
474	SE-25-47-1-W5	Scott, Roy	No	Bar-K Water Well Drilling Ltd./1995	140	72.8	Casing/Perforated Liner/118-138	Clay, Shale, Sandstone	Air	9	2	5	1463.2	21.8	Bedrock at 24 ft
475	12-26-47-1-W5	Lange, R. # SP 17	Field	Unknown/1973	75	-	Open Hole	Unknown	-	-	-	-	-	-	Flowing Shot Hole
476	NE-26-47-1-W5	Unknown	Field	Alberta Environment/Earth Sciences Division/1987	10	-	Open Hole	Till, Clay, Sandstone	-	-	-	-	-	-	Bedrock at 10 ft
477	NW-26-47-1-W5	Lange, Milton	Map	Bob's Drilling & Backhoe Service/1989	80	64	Slotted & Open Hole/75-80	Clay, Sandstone, Shale	Bailer & Pump	12	4	4	2677.1	9.7	Bedrock at 56 ft

PORTION OF SW - 24 - 47 - 1 - W5M
Wetaskiwin County, ALBERTA

TABLE 1: DRILLERS' RECORDS FOR WATER WELLS

No.	Location	Owner	Location Verified	Driller/Year	Well Depth	Water Level	Zone of Completion		Testing				Transmissivity	Q_{20A}	Other
							Completion Type /	Lithology	Type	Rate	Duration	Drawdown			
					(ft)	(ft)	Depth (ft)	(permeable zones)		(igpm)	(h)	(ft)	(igpd/ft)	(igpm)	
478	NW-26-47-1-W5	Lange, Milton	Map	Bob's Drilling & Backhoe Service/1983	75	58	Casing/Open Hole	Clay, Shale, Sandstone	Pump	8	1	-	-	-	Bedrock at 43 ft
479	16-27-47-1-W5	Lang, R.	Map	Bob's Drilling & Backhoe Service/1968	160	100	Casing/Open Hole	Sandstone, Shale	Bailer	-	-	-	-	-	Bedrock at 125 ft
480	NE-27-47-1-W5	Lang, R.	Map	Lindburg Drilling/1952	110	66	Casing/Open Hole	Sand, Sandstone, Shale, Coal, Clay	Unknown	-	1	-	-	-	Bedrock at 26 ft
481	NE-27-47-1-W5	Anderson, Alan	No	Unknown	120	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
482	SE-27-47-1-W5	Aberdeen, G. E. #Well 1	No	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
483	SE-27-47-1-W5	Aberdeen, G. E. #Well 3	No	Unknown	80	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
484	SE-27-47-1-W5	Aberdeen, G. E. #Well 2	No	Unknown	55	-	Unknown	Unknown	-	-	-	-	-	-	Chemistry
485	SE-27-47-1-W5	Sandhome Trucking	No	Bob's Drilling & Backhoe Service/1983	160	30	Casing/Open Hole	Clay, Shale, Sandstone, Coal	Bailer	5	2	30	135.5	-	Bedrock at 78 ft
486	SE-27-47-1-W5	Askilot, Kaape	No	Big Iron Drilling Ltd./1999	110	48	Casing/Perforated Liner/70-90	Clay, Shale, Sandstone, Coal	Air	60	2	62	786.7	5.7	Bedrock at 38 ft
487	SH-27-47-1-W5	Clement, Kyler	No	Warnke Drilling Ltd./2000	135	22.9	Casing/Perforated Liner/115-135	Sand, Sandstone, Shale	Pump	8	2	38	171.1	5.2	Bedrock at 35 ft

Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
1	00-14-47-28-W4	Rowland, J. A.	186	31-Jan-75	8.9	1100	1.93	678	541	-	-0.1	18	6	-1	0.5	261	-0.099	-	3	77	611
2	04-14-47-28-W4	Ronson, H. G.	140	26-Jan-73	8.3	1190	1.25	908	512	-	-0.1	16	6	-1	0.8	290	-	-0.099	-1	190	614
3	04-14-47-28-W4	Wylie, R. D.	90	14-Aug-63	-	-	-	892	510	-	0	30	-	-	-	-	0	-	0	188	-
4	12-14-47-28-W4	Meaver, Robert	96	26-Jan-73	8.2	990	0.95	769	469	-	-0.1	26	6	2	2.6	290	-	-0.099	1	130	563
5	12-14-47-28-W4	Meaver, G.	96	16-Oct-79	8.4	803	0.07	460	418	12.7	0.37	250	48	32	1.7	92	-0.05	-0.05	-1	35	498
6	NW-14-47-28-W4	Sonnenbeig, Vivian	185	1-Dec-72	8.7	1260	-	889	590	-	-0.1	20	5	1	-	-	-	0.5	6	107	-
7	NW-14-47-28-W4	Locke, D.	85	25-Jan-82	8.3	665	0.1	328	317	9.7	1.7	296	48	43	3	10	-0.05	0.65	-1	30	386
8	NW-14-47-28-W4	Mann, Ken	120	11-May-83	8.9	1017	1.32	618	408	6.8	0.27	-5	-1	-1	0.6	235	-0.05	-0.05	-1	135	446
9	NW-14-47-28-W4	Oliver, Ralph	60	29-Jul-83	8.2	792	0.06	462	438	12.6	0.13	396	83	46	2.9	36	-0.05	-0.05	-1	30	534
10	SE-14-47-28-W4	Knoll, WM B.	140	17-Mar-78	8	787	0.06	477	453	12.9	0.21	241	51	28	2.3	106	-0.099	-0.099	-1	17	553
11	SE-14-47-28-W4	Wyman, B. J.	125	14-Jun-79	8.5	1285	0.63	832	644	8	0.1	12	4	-1	0.6	354	-0.05	-0.05	-1	85	770
12	SE-14-47-28-W4	Spiess, George	130	22-Jul-86	9	1192	1.54	824	446	7.3	-0.02	-5	-1	-1	0.6	300	-0.05	-0.05	-1	253	488
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

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NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
Underlined values indicate exceedance of Canadian Drinking Water Standards.

TDS = Total Dissolved Solids
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MAC = Maximum Acceptable Concentration
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Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
13	SE-14-47-28-W4	Rowland, J. Albert	185	16-Jul-86	9	1178	1.69	810	480	7.2	-0.02	8	3	-1	0.6	300	-0.05	-0.05	-1	217	514
14	SE-14-47-28-W4	Webb, Garth	50	6-Jun-79	8.3	787	0.08	459	432	12.7	0.39	2200	44	27	1.8	100	-0.05	-0.05	-1	26	526
15	SE-14-47-28-W4	Fillion, S.	50	26-Aug-76	8.7	1020	0.52	608	467	-	0.2	19	4	2	1.3	226	-0.099	-0.099	3	90	532
16	SE-14-47-28-W4	Ouimette, Phyllis	160	29-Jul-86	8.9	1102	2.09	626	462	6.6	0.33	-5	-1	-1	0.6	250	-0.05	-0.05	-1	95	519
17	SW-14-47-28-W4	Dowler's Golf & Trailers	123	25-Aug-70	-	1330	-	976	579	-	0.08	12	-	-	-	-	0	-	2	275	-
18	SW-14-47-28-W4	Dowler's Golf & Trailers	123	30-Jun-72	8.3	1330	-	1160	684	-	-0.1	56	8	8	-	-	-	0.401	-1	215	-
19	SW-14-47-28-W4	Workun, Morley	152	19-Oct-77	8.8	1340	1.26	849	579	10.6	0.33	16	4	1	0.7	340	-0.099	-0.099	2	154	675
20	SW-14-47-28-W4	Burrows, H. R. <Mulhurst Beach>	100	16-Sep-70	-	1370	-	910	550	-	0.12	27	-	-	-	-	0	-	2	207	-
21	SW-14-47-28-W4	Smith, J.	120	28-Jan-72	8.6	1200	-	850	545	-	-0.1	30	7	3	-	-	-	-0.099	5	190	-
22	SW-14-47-28-W4	Mulhurst Golf Club	120	27-May-74	7.9	1450	1.28	992	693	-	-0.1	10	2	-1	0.9	380	-0.099	-	2	185	846
23	SE-23-47-28-W4	Clark, Jim	160	5-Dec-68	-	-	4.8	718	403	-	0.31	8	-	-	-	-	0	-	4	127	-
24	SE-23-47-28-W4	Clark, E. J.	160	17-May-71	-	1070	1.38	724	409	-	0.22	10	-	-	-	-	0	-	6	161	-
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤600 AO	

NOTES:
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Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
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Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
25	NE-26-47-28-W4	Fox, Glen	90	27-Oct-78	6.9	1101	1.2	-	515	8.2	-0.05	12	3	1	1	250	-0.05	-0.05	2	105	507
26	NW-13-47-1-W5	Palechek, C. E.	100	20-Aug-76	7.9	2380	0.24	1733	496	-	1	248	50	30	5.3	474	-0.099	-0.099	2	875	605
27	SE-13-47-1-W5	Anderson, G.	95	25-Apr-86	7.8	811	0.11	474	402	11.2	-0.02	161	30	21	2	134	-0.05	-0.05	-1	45	490
28	SE-13-47-1-W5	Yanes, Tony	105	17-Sep-82	8.6	1153	0.79	673	532	8.2	0.23	-5	-1	-1	1	260	-0.05	0.07	-1	90	622
29	SE-13-47-1-W5	Warren, Don	90	19-Aug-81	8.5	1308	1.77	803	691	10.6	0.19	94	25	8	2.3	290	-0.05	-0.05	3	61	825
30	SE-13-47-1-W5	Banister, Harold	0	4-Jun-86	8.7	1250	0.8	756	594	8.2	-0.02	9	2	-1	0.9	305	-0.05	-0.05	-1	90	680
31	SE-13-47-1-W5	Unknown	100	24-Jun-76	8.8	1475	0.76	934	660	-	0.2	-	6	1	0.6	360	0.099	0.099	1	169	761
32	SE-13-47-1-W5	Wyley, Tom	80	9-Sep-76	8.3	1040	0.91	673	527	-	-0.1	8	3	-1	1.3	275	-0.099	-0.099	1	76	643
33	SE-13-47-1-W5	Holmgren, Mrs. R.	84	11-Dec-72	8.3	1375	0.53	976	579	-	0.5	42	12	2	-	-	-	-0.099	2	174	-
34	SE-13-47-1-W5	Holmgren, Mrs. R.	84	16-Apr-73	8.1	1300	-	1290	575	-	0.4	58	12	6.8	-	-	-0.099	-0.099	8	380	-
35	SH-13-47-1-W5	Adair, T. A.	93	4-Jun-85	8.4	1362	0.62	837	661	8.9	0.03	19	6	-1	1.3	340	-0.05	-0.05	2	90	796
36	SH-13-47-1-W5	Gander, E. Mary	90	13-Jul-83	8.8	1409	0.84	891	632	7.4	0.71	13	2	2	0.9	360	-0.05	-0.179	-1	145	719
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
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Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
37	SH-13-47-1-W5	Krynko, Jean	110	17-Sep-82	9.4	1290	1.18	753	619	6.5	-0.02	62	-1	15	0.8	272	-0.05	-0.05	3	90	520
38	SW-13-47-1-W5	Dougherty, G.	80	24-Jun-76	8.3	1325	0.37	839	658	-	1	82	24	5	1.4	300	0.099	0.099	1	112	801
39	SW-13-47-1-W5	Odell, W. H.	100	11-Sep-85	8.6	1201	1.54	723	503	10.5	0.22	-5	-1	-1	0.6	290	-0.05	-0.05	-1	128	589
40	SW-13-47-1-W5	Fosier, Bert A.	108	30-Jul-82	8.5	1001	0.77	577	473	6.7	0.15	14	4	-1	0.9	237	-0.05	-0.05	5	45	563
41	SW-13-47-1-W5	McEwen, Mr. Bud	83	20-Aug-75	7.9	1340	0.22	776	689	-	-0.1	99	30	5	1.6	287	-0.099	-0.099	2	31	841
42	00-14-47-1-W5	Alberts, Bob	100	24-Jun-76	8.3	1350	0.4	851	680	-	0.6	43	13	3	1.2	313	-0.099	-0.099	-1	112	829
43	00-14-47-1-W5	Alberts, Jim	100	24-Jun-76	9	1525	0.84	963	720	-	0.1	23	6	2	0.8	367	-0.099	-0.099	-1	154	803
44	NW-14-47-1-W5	Kish, E.	30	7-Jul-64	-	-	-	528	370	-	-	430	-	-	-	-	-	-	0	75	-
45	NW-14-47-1-W5	Mason, John	140	9-Jul-84	7.77	620	0.14	462	340	-	0.03	269	45.3	37.9	-	59	0	-	1	48	-
46	NW-14-47-1-W5	Grohn, Eric	85	2-Feb-73	8.3	650	0.23	530	346	-	-0.1	140	22	20	-	-	-	0.099	-1	47	-
47	SE-14-47-1-W5	Manning, M. E.	70	8-Jan-75	8.5	1050	0.67	715	553	-	-0.1	2	-1	-1	0.6	294	-0.099	-	2	81	645
48	SE-14-47-1-W5	Webb, Geoffrey	100	24-Jun-76	8.5	1425	0.49	900	707	-	0.2	30	9	2	0.9	347	-0.099	-0.099	-1	116	846
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
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Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
49	SE-14-47-1-W5	Webb, Geoffrey	100	5-Jul-73	8.6	1390	-	1280	659	-	0.7	20	8	-1	1.2	353	-0.05	-	4	107	782
50	SW-14-47-1-W5	Reter, K.	68	19-May-83	8.5	1247	0.38	774	609	9.6	0.39	23	6	2	1.5	320	0.05	0.05	1	78	718
51	01-15-47-1-W5	Unknown	0	7-Aug-69	8.4	-	0.84	674	504	-	0.01	51	14.5	3.5	1.3	233	-	-	5	68	492
52	NE-15-47-1-W5	Camp Bar-V-Nok C/O M Yurkiwsky	250	21-Aug-69	-	-	1	962	497	-	0.58	37	-	-	-	-	0	-	2	521	-
53	SE-15-47-1-W5	Halladay, Lawrence	125	21-Oct-75	8.3	900	0.39	580	520	-	0.2	52	10	6	1.8	194	-0.099	-0.099	-1	56	634
54	SE-15-47-1-W5	Rose, G.	125	27-Aug-71	8.3	1400	-	1030	660	-	-	50	6	9	-	-	-	0.099	2	210	-
55	SE-15-47-1-W5	Backstrom, A. R.	70	27-Aug-71	8.6	1140	-	800	595	-	-	40	17	0	-	-	0	-	1	110	-
56	SE-15-47-1-W5	Samuelson, Donald	0	31-Dec-86	8.4	1390	0.29	858	626	10.8	-0.02	17	5	-1	1.4	338	0.15	0.2	-1	135	748
57	SE-15-47-1-W5	Pearson, T. W.	80	29-Jun-82	8.5	1503	0.36	927	631	9.5	0.19	18	7	-1	1.5	344	-0.05	0.06	-1	195	744
58	SE-15-47-1-W5	Jones, Mason	175	28-Sep-72	8.7	1275	0.77	819	481	-	-0.1	10	3	-1	-	-	-	0.099	1	156	-
59	SE-15-47-1-W5	Sisters of Charity	0	14-Feb-86	8.8	1550	1.05	978	765	7.8	-0.02	13	5	-1	1.1	360	-0.05	-0.05	2	330	528
60	SE-15-47-1-W5	Sisters of Charity	0	14-Feb-86	8.3	946	0.19	577	490	7.8	0.98	123	31	11	2.3	190	-0.05	-0.05	-1	48	597
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
Underlined values indicate exceedance of Canadian Drinking Water Standards.

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Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
61	SE-15-47-1-W5	Alexander, W. E.	80	6-Nov-72	8.5	1270	-	745	478	-	1.4	11	3	1	-	-	-	0.099	1	108	-
62	SE-15-47-1-W5	Carry, K.	0	26-Aug-68	-	-	-	828	452	-	0.22	6	-	-	-	-	-	-	6	204	-
63	SE-15-47-1-W5	Stephens, G.	172	27-Jun-83	8.6	1393	0.74	934	597	7.5	0.06	8	3	-1	1.4	380	-0.05	0.099	-1	190	682
64	SE-15-47-1-W5	Stephens, G.	172	13-Sep-68	-	-	-	936	576	-	0.13	17	-	-	-	-	0	-	4	176	-
65	SE-15-47-1-W5	Ares, J. L.	25	24-Jun-85	8.3	1207	0.25	742	576	10.7	0.18	-5	-1	-1	1.2	295	0.15	0.3	-1	96	702
66	SE-15-47-1-W5	Ares, J. L.	25	10-Oct-86	8.7	1230	0.23	767	590	10.3	3.08	28	8	2	1.4	300	-0.05	-0.05	-1	100	678
67	NE-22-47-1-W5	Shymansky, Alex	80	23-Oct-86	8.5	633	-0.05	378	349	11	0.12	201	46	21	2.2	78	-0.05	-0.05	-1	20	413
68	NE-23-47-1-W5	Gander, T. A.	60	13-Jul-83	8.2	728	0.11	430	378	7.9	0.24	155	31	19	1.7	110	-0.05	0.12	-1	40	461
69	NE-23-47-1-W5	Griffin, Jack	120	23-Dec-85	7.7	706	0.08	382	383	9.3	-0.02	372	65	51	2.9	11	-0.05	0.249	-1	20	467
70	SW-23-47-1-W5	McAmmond, Matthew Jackson	100	23-Feb-77	8.6	670	0.07	376	356	9	0.06	308	48	46	2.6	29	-0.099	-0.099	-1	37	415
71	SW-23-47-1-W5	Lichon, Roman	100	22-Mar-77	8.2	690	0.07	410	364	9.6	0.12	331	65	41	2.5	36	-0.099	-0.099	-1	46	444
72	SW-23-47-1-W5	Vold, George	70	18-Nov-86	7.8	678	-0.05	381	361	9	-0.02	367	63	51	3	9	-0.05	0.45	-1	35	440
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO					≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
Underlined values indicate exceedance of Canadian Drinking Water Standards.

TDS = Total Dissolved Solids
AO = Aesthetic Objective
MAC = Maximum Acceptable Concentration
CDWG = Canadian Drinking Water Guidelines
* NO_2 & NO_2+NO_3 are expressed as N

Portion of SW ¼ - 24 – 47 – 1 - W4M
Near Mulhurst, Alberta
TABLE 2 – CHEMICAL ANALYSIS FOR WATER WELLS

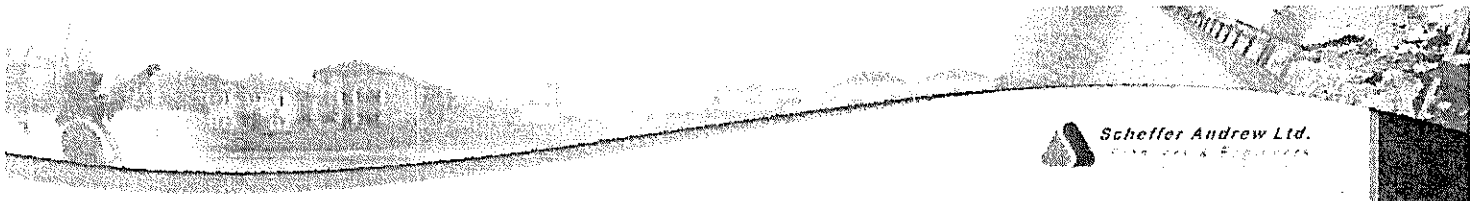
No.	Location	Well Owner	Well Depth (ft)	Date of Analysis	pH	Conductivity	Fluoride	TDS	Alkalinity	Silica	Iron	Hardness	Calcium	Magnesium	Potassium	Sodium	Nitrite*	Nitrate* & Nitrite*	Chloride	Sulphate	Bicarbonate
73	SE-24-47-1-W5	Ayers, H.	110	29-Oct-70	-	910	-	554	420	-	0.06	20	-	-	-	-	0	-	2	31	-
74	05-25-47-1-W5	Unknown	0	-	8.2	-	0.09	406	412	8.8	-0.01	426	83	53	2.1	5	-	-	4	0	412
75	NE-25-47-1-W5	Wilson, R. L.	120	7-Jul-75	7.8	750	0.85	369	419	-	0.4	359	84	36	2.1	8	-0.099	-0.099	-1	-	511
76	NW-25-47-1-W5	Beswick-Arthur, Marian	100	3-May-84	8.1	684	0.08	389	361	8.7	-0.02	305	63	36	2.5	35	-0.05	1.54	-1	28	441
77	16-27-47-1-W5	Lang, R.	160	24-May-77	7.8	1125	0.21	690	492	12.9	0.14	98	27	7	1.7	233	-0.099	-0.099	-1	126	599
78	NE-27-47-1-W5	Lang, R.	110	15-Sep-83	8.6	1090	0.32	715	493	-	0.07	93	27	6	2	251	-	-	-2	132	558
79	NE-27-47-1-W5	Anderson, Alan	120	13-Jan-82	8.3	743	0.1	357	364	11.5	0.4	195	24	33	2.3	54	-0.05	-0.05	-1	25	443
80	SE-27-47-1-W5	Aberdeen, G. E. #Well 1	80	8-Sep-81	8.8	832	0.36	496	423	7.1	0.06	-5	-1	-1	0.5	200	-0.05	-0.05	-1	39	470
81	SE-27-47-1-W5	Aberdeen, G. E. #Well 3	80	8-Sep-81	8.7	1585	1.05	1052	500	7.1	-0.02	-5	-1	-1	0.7	397	-0.05	-0.05	1	352	570
82	SE-27-47-1-W5	Aberdeen, G. E. #Well 2	55	21-Sep-81	8.8	783	0.38	486	416	7.3	0.03	10	4	-1	0.5	198	-0.05	-0.05	1	33	471
					6.5-8.5 AO		1.5 MAC	≤500 AO			≤0.3 AO	.				≤200 AO	0.71 MAC	10.0 MAC	≤250 AO	≤500 AO	

NOTES:
All constituents reported in mg/L except Conductivity in microsiemens/cm, and pH in pH units.
Alkalinity and Hardness expressed as $CaCO_3$.
Hardness generally considered unacceptable if >500 mg/L.
Underlined values indicate exceedance of Canadian Drinking Water Standards.

TDS = Total Dissolved Solids
AO = Aesthetic Objective
MAC = Maximum Acceptable Concentration
CDWG = Canadian Drinking Water Guidelines
* NO_2 & NO_2+NO_3 are expressed as N

APPENDIX D:

TRAFFIC IMPACT ASSESSMENT
RURAL RESIDENTIAL SUDIVISION IN
SW 24-47-1-W5M
SCHEFFER ANDREW LTD.



Pigeon Lake, Alberta

Traffic Impact Assessment

Rural Residential Subdivision in SW 24-47-1-W5M

Prepared for: Fitzner Consulting Ltd.

April 2009

File # 74507-07-2.6

Contents

List of Tables

List of Figures

1 Introduction

1.1 General

Scheffer Andrew Ltd. was retained by Fitzner Consulting Ltd. to undertake a traffic impact assessment in April 2009, in support of the application of a rural residential development in Pigeon Lake, Alberta. The land is located in SW 24-47-1-5, and contains approximately 64 ha developable land. The subject site is located south of Highway 616 and east of Range Road 11 illustrated in Figure 1.

1.2 Proposed Development

The study area will be developed into 42 rural residential lots with average 1-2 ha sized parcels. The tentative subdivision-phasing plan is included in Appendix A.

1.3 Study Purpose

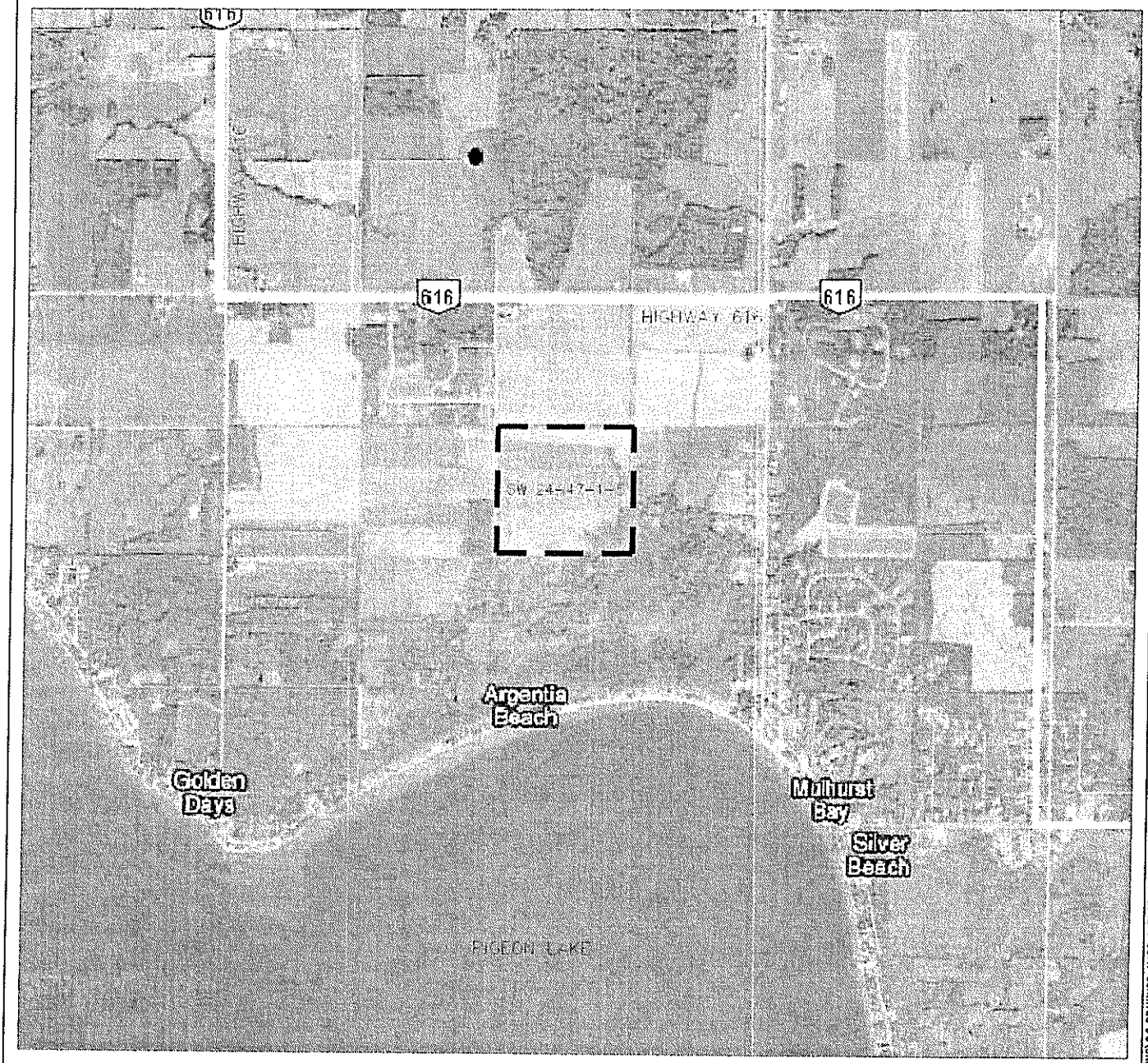
The primary purpose for completing the assignment was to:

- Forecast non-site background traffic.
- Forecast traffic generated from the proposed development.
- Evaluate the incremental increase in traffic activity on key intersections and the existing roadway system.
- Assess the traffic impact on the surrounding roadway system, and identify any needed roadway improvements.

1.4 Study Methodology

The Traffic Impact Assessment used the following methodology:

- An examination of the development area with respect to existing traffic conditions: land use, roadways, peak hour traffic conditions, key intersection operational characteristics, etc.;
- Projection of future peak hour traffic situation without site developed for 20-year horizon;
- Trip generation: Selection of appropriate trip generation rates;
- Trip distribution: Estimation of future vehicular trip patterns generated to and from the development area based on the population, employment, land use concept, and the existing roadway patterns;
- Trip assignment: An estimate of vehicle demands on adjacent roadways based on the proposed access management strategy and the estimated roadway trip distribution characteristic;
- An overall analysis and assessment of the roadway within the study area to identify possible roadway capacity restrictions, and to assess the overall traffic impacts of the development area.



Pigeon Lake

SW 24-47-1-5 Traffic Impact Assessment

Figure 1: SITE CONTEXT

NOT TO SCALE
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69705

Scheffer Andrew Ltd.
Planners & Engineers

K:\PROJECTS\ACTIVE\697-05 SW 24-47-1-5 PIGEON LAKE TIA\ENGINEERING\2.2 DRAWINGS, MAPS & PHOTOS\69705 BASE.DWG PLOTTED: 4/27/2009 BY: HW

2 Infrastructure & Conditions

2.1 Existing Road Network

The existing area road network is illustrated in Figure 2.

Highway 616 is a west-east secondary highway, currently developed as a two-lane undivided road, with 9.8 m of paved road width. The posted speed limit of Highway 616 is 100 km/h.

Range Road 11 is a local gravel road with approximately 7.0 m surface. No speed limit is posted along Range Road 11.

2.2 Existing Traffic Volumes

The most current information on the historical Weekday Average Traffic Volumes was obtained from the Alberta Transportation, illustrated in Table 1.

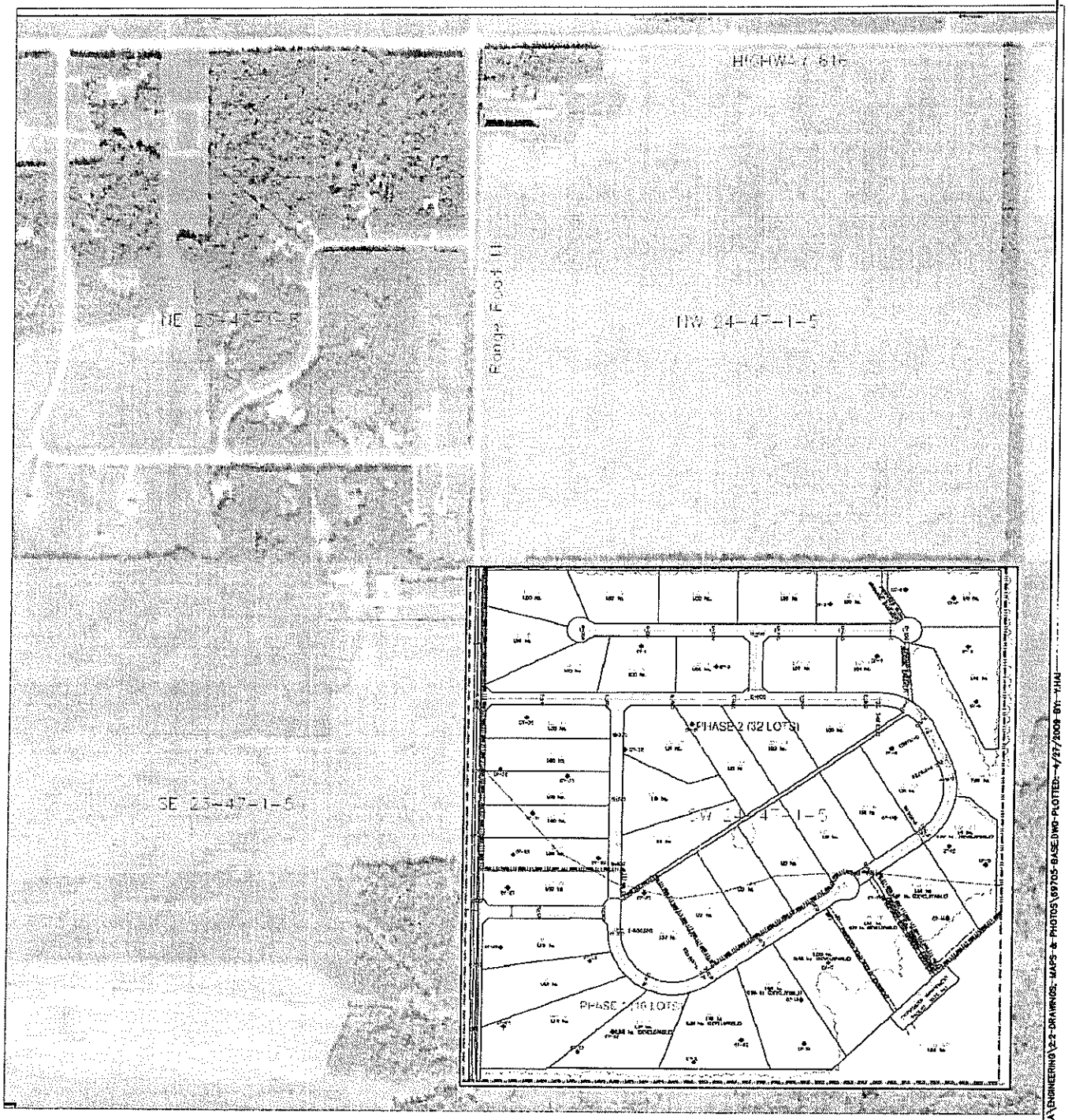
Table 1: Traffic Volume History 1999 - 2008 AADT & ASDT

Hwy 616 E of 778 E of ITASKA	520	640	670	670	670	670	610	610	630	620	700

Trends over the past ten years on Hwy 616 have yield overall traffic growth rates at approximately 3.85% per year in the last ten years, and -1.49% in the last five years.

2.3 Intersection of Highway 616 and Range Road 11

The intersection of Highway 616 and Range Road 11 is a typical Type Ib intersection with stop sign control on the south and north legs. One and half hour p.m. traffic counts were undertaken on Range Road 11 south of Hwy 616 from 16:00 p.m. to 17:30 p.m. on Tuesday April 7, 2009. The p.m. peak hour occurred from 16:00 to 17:00. The peak hour traffic volume on Range Road 11 south of Highway 616 was 3 veh/h. Using the factor obtained from 2008 Automated Traffic Recorder (ATR) Number 67780210, it is estimated that the AADT of Range Road 11 is 30 vehicle per day.



Pigeon Lake

SW 24-47-1-2 Traffic Impact Assessment

Figure 2: ROAD NETWORK

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3 Traffic Projections

3.1 Trip Generation

The proposed rural residential development will develop into a recreation and permanent residential community. In order to estimate the number of recreation and permanent homes in the proposed subdivision, six similar communities in the surrounding area were studied. Table 2 shows the census statistic information from the *Statistic Canada*.

Table 2: Recreation Home Rates of Surrounding Communities (From 2006 Census Canada)

Golden Days	Pigeon Lake	274	95	2.2	179	65%
Mameo Beach	Pigeon Lake	232	84	1.8	148	64%
Argentia Beach	Pigeon Lake	90	26	2.0	64	71%
Crystal Spring	Pigeon Lake	124	48	2.3	76	61%
Silver Beach	Pigeon Lake	35	22	2.1	13	59%
Itaska Beach	Pigeon Lake	70	15	2.3	55	78%
Average				**2.1**		**66%**

Notes: Recreation Home rate is the percentage of recreation home developed in the total developed lots.

The average recreation home rate was used to estimate the number of recreation and permanent homes. The population per dwelling was used to estimate the number of permanent population in the study area. On that basis, it was estimated that 28 recreation homes and 14 permanent homes will be developed, and the total number of permanent residents is 30 in the proposed development.

The *Trip Generation*[1], published by the Institute of Transportation Engineers was used to estimate trip generation rates. Trip generation for the proposal development was estimated utilizing data as published under Land Use Code 210 – Single-Family Detached Housing and Land Use Code 260 – Recreational Homes. Table 3 shows vehicle trips generated from the proposal development in the Wetaskiwin County.

[1] Institute of Transportation Engineers, Trip Generation – 7th Edition, Washington, D.C., 2003.

Table 3: Traffic Generation Based on ITE Handbook and Survey Date

Time Period	Trip Generation per Person	Generated Total Vehicle Trip	Direction Distribution		Trips Generated	
			Inbound	Outbound	Inbound	Outbound
Weekday (AADT)	2.55	77	50%	50%	38	38
A.M. Peak Hour	0.33	10	31%	69%	3	7
P.M. Peak Hour	0.40	12	66%	34%	8	4
Time Period	Trip Generation per Unit	Generated Total Vehicle Trip	Direction Distribution		Trips Generated	
			Inbound	Outbound	Inbound	Outbound
Weekday (AADT)	3.00	84	50%	50%	42	42
A.M. Peak Hour	0.16	4	67%	33%	3	1
P.M. Peak Hour	0.26	7	41%	59%	3	4
Weekday (AADT)		161	50%	50%	80	80
A.M. Peak Hour		14	42%	58%	6	8
P.M. Peak Hour		19	57%	43%	11	8

The total trips generated from the development site are 161 AADT, 14 A.M. peak hour, and 19 P.M. peak hour.

3.2 Trip Distribution & Trip Assignment

Trip distribution describes where traffic originates or where traffic is destined. Peak hour trips generated by the projected land use are distributed to the adjacent roadways based on the existing traffic characteristics and the surrounding land used. The major nearby employments and service centers are located east of the study site. In general, it was estimated that approximately 60 percent of the generated traffic would travel to and from east and the remaining 40 percent will travel to and from west.

3.3 Projected Background Traffic Volume

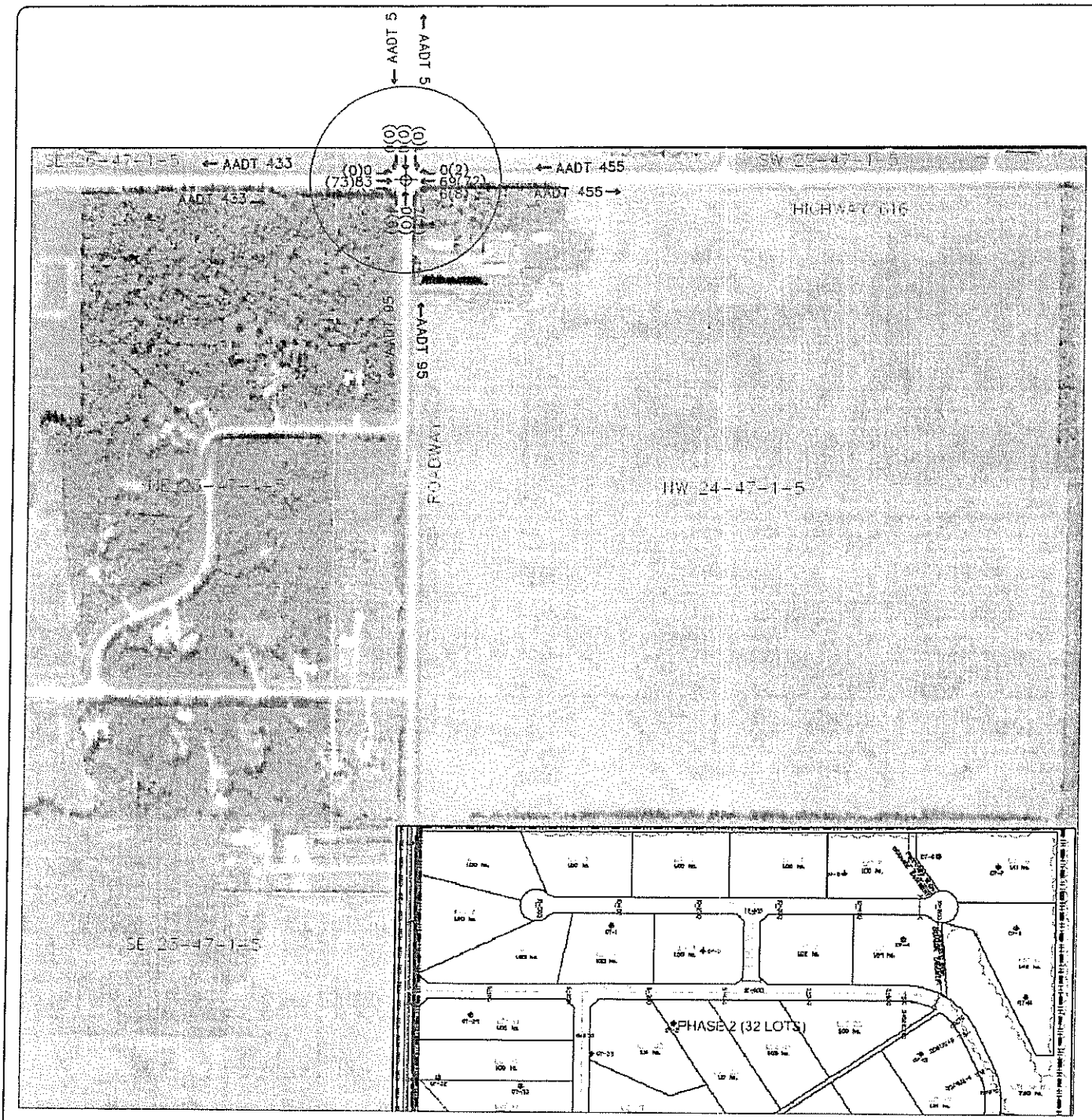
Background traffic is the component of the traffic on the adjacent streets that would be present regardless of the proposed development. The non-site traffic consists of two components: through traffic and traffic generated by all other developments in the study area. No significant future potential development in the surrounding area is identified up to date. A general growth rate was applied to the existing through traffic to project future through movements. Because the historical five-year growth rate of Highway 616 is negative, to be conservative, a 0% growth rate was used for in the first five year and a 2% growth rate was used for next fifty years.

3.4 Development Stage

The first stage of development will be developed in short-term period. The remainder of the stages will be developed in response to market demand. The stage plan is included in Appendix A.

3.5 Construct Post-Development Traffic Volume

The site traffic volumes generated from the proposed development were added to the non-site background traffic volumes to develop the post-development traffic volumes. The estimated post development volume during a.m. and p.m. peak-hour for full build-out conditions were presented in Figure 3.



LEGEND

XX(XX) AM PEAK HOUR(PM PEAK HOUR)

Pigeon Lake

SW 23-47-1-5 Traffic Impact Assessment

Figure 3: Site Traffic Plan

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Planners & Engineers

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4 Intersection and Roadway Assessment

The intersection analysis includes intersection capacity analysis, signal installation warrant, intersection lighting warrant, and intersection layout analysis.

4.1 Methodology

A capacity analysis for the various traffic scenarios was conducted in the document. For stop-controlled intersections, the level-of-service (LOS) is based on the estimated average delay per vehicle among all traffic passing through the intersection. LOS 'A' represents minimal delays for traffic movements on a minor street and LOS 'F' represents an insufficient number of gaps on a major street for minor street motorists to complete their movement without significant delays. For signalized intersections, the methodology considers the intersection geometry, the traffic volumes, the posted speed limit, the traffic signal phasing/timing plan, as well as pedestrian volumes. The average delay for each lane, lane group and the overall intersection are calculated. The level of service criteria for both unsignalized and signalized intersections is documented in the Highway Capacity Manual[2], and is summarized in Table 4.

Table 4: Level of Service Criteria

A	0-10	0-10
B	10-15	10-20
C	15-25	20-35
D	25-35	35-55
E (Capacity)	35-50	55-80
F (Failure)	> 50	> 80

The volume-to-capacity (V/C) ratio is also another measure of capacity of intersection operations. The VC ratio describes the extent to which the traffic volumes can be accommodated by the physical capacity of the road configuration and signal control. A value less than 0.90 indicates that generally there is ample capacity and good traffic condition. A value between 0.90 and 1.0 suggests unstable operations may occur and volumes are nearing capacity conditions. A calculated value over 1.0 indicates that traffic volumes are theoretically exceeding capacity.

The intersection capacity analysis was performed using the Synchro 6.0, and all reports of the intersection capacity analysis are included in Appendix B.

[2] Transportation Research Board, Highway Capacity Manual 2000, Washington D.C. 2000.

4.2 Traffic Capacity Analysis

Table 5 presented the analysis result of the 2029 full build-out operating condition.

Table 5: Full build-out Operating Conditions – 2029

EB	0.00	A	0.0	0.00	A	0.0
WB	0.00	A	0.6	0.01	A	0.8
NB	0.01	A	9.1	0.02	A	9.2
SB	0.00	A	9.8	0.01	A	0.0
ICU	18.6%			20.6%		
Overall LOS	A			A		

The Synchro results demonstrate that the intersection of Highway 616 and Range Road 11 will operate at a good LOS A. All turning movements will operate at LOS A, which indicates the intersection has ample capacity to accommodate more traffic in 2029.

4.3 Traffic Control Signal Warrants

Because the unsignalized intersection of Highway 616 and Range Road 11 will operate at LOS A, and all turning movements will operate at LOS A, there is no need for a traffic control signal before 2029.

4.4 Warrants for Intersection Lighting

A lighting installation warrant was performed using the TAC's Guide for the Design of Roadway Lighting3. The intersection lighting warrant calculation sheets are provided in Appendix C. The warrant score based on the year 2029 post development traffic volume is 56. It indicates that the partial intersection lighting is not warranted before 2029.

4.5 Intersection Layout Assessment

The intersection layout analysis was performed using the Alberta Transportation's Geometric Design Guide. The intersection analysis sheets are provided in Appendix D. The existing intersection of Highway 616 and Range Road 11 is a typical Type Ib intersection. The analysis result indicates that the existing intersection geometric treatment can accommodate the proposed development without improvement.

[3] Transportation Association of Canada, Guide for the Design of Roadway Lighting, 2006 Edition, Ottawa, Canada, 2006.

5 Conclusions and Recommendations

This study analyzed the traffic impact of the proposed rural residential subdivision located in SW 24-47-1-W5M in Pigeon Lake. The proposed development contains approximately 64 ha developed land. The land will be developed into 42 rural residential lots with average 1-2 ha sized parcels in two stages. The total trips generated from the development site are 161 AADT, 14 A.M. peak hour, and 19 P.M. peak hour.

After the proposed development is fully developed, the intersection of Highway 616 and Range Road 11 still has ample capacity in 2029. An installation of traffic control signal is not warranted before 2029, based on the post-development traffic volume.

The intersection of Highway 616 and Range Road 11 is a Type Ib intersection, which can accommodate the proposed development without improvement for the next 20 years.

Intersection lighting will not be required before 2029, based on the projected 2029 post development traffic volume.

Your truly,

Scheffer Andrew Ltd.

April 26, 2009

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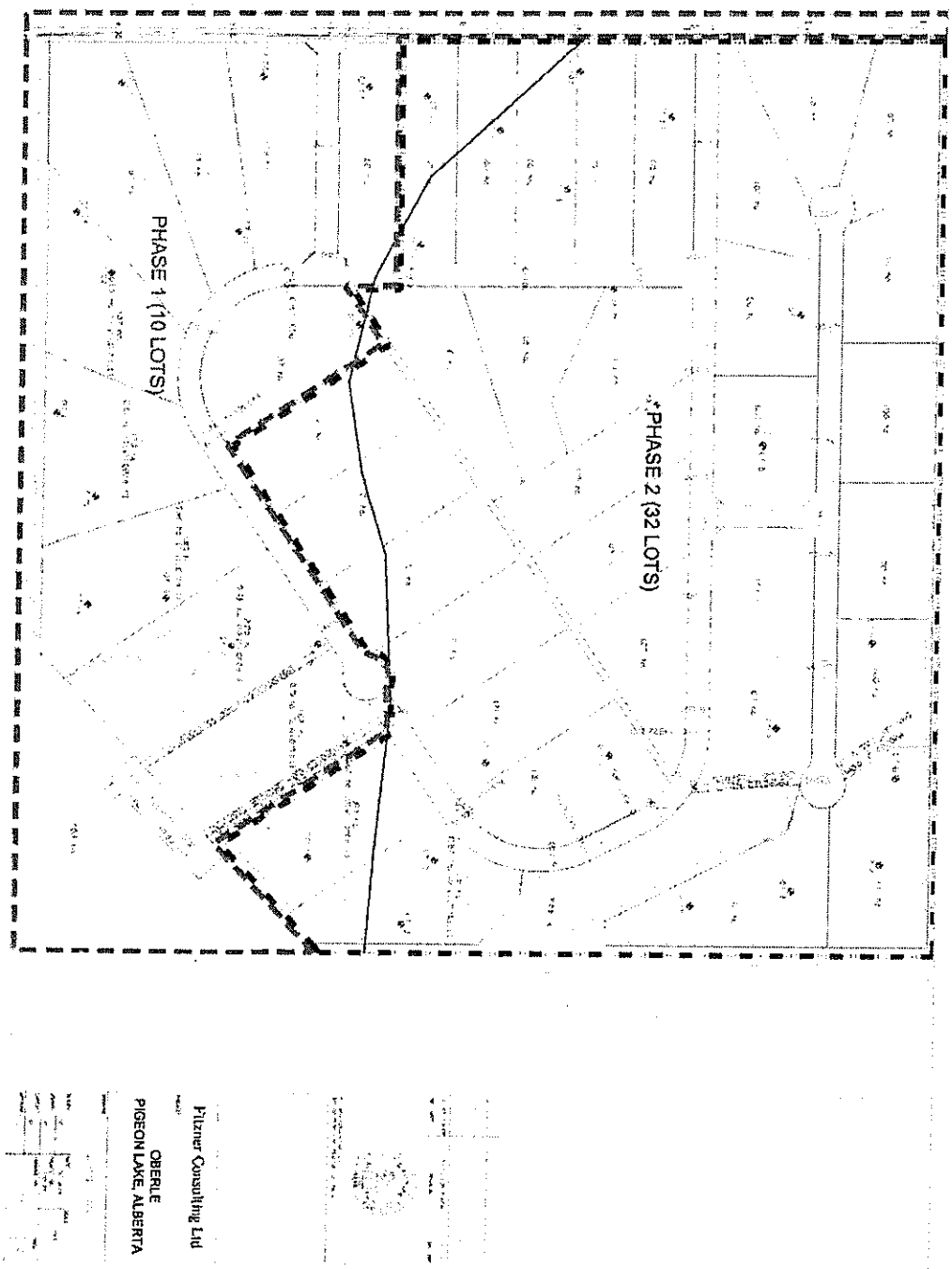
Appendix A

Tentative Subdivision Staging Plan


PHASE 1 (10 LOTS)
PHASE 2 (32 LOTS)
Pitzner Consulting Ltd
OBERLE
PIGEON LAKE, ALBERTA

Appendix B

Synchro Report

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	83	3	6	69	0	4	0	7	1	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	93	3	7	78	0	4	0	8	1	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	78			97			186	186	95	194	188	78
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	78			97			186	186	95	194	188	78
tC, single (s)	4.3			4.3			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			99	100	99	100	100	100
cM capacity (veh/h)	1437			1413			772	705	962	757	704	983

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	97	84	12	1
Volume Left	0	7	4	1
Volume Right	3	0	8	0
cSH	1437	1413	883	757
Volume to Capacity	0.00	0.00	0.01	0.00
Queue Length 95th (m)	0.0	0.1	0.3	0.0
Control Delay (s)	0.0	0.6	9.1	9.8
Lane LOS		A	A	A
Approach Delay (s)	0.0	0.6	9.1	9.8
Approach LOS			A	A

Intersection Summary			
Average Delay	0.9		
Intersection Capacity Utilization	18.6%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Volume (veh/h)	0	73	4	8	72	2	6	0	7	0	0	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Hourly flow rate (vph)	0	82	4	9	81	2	7	0	8	0	0	0
Pedestrians												
Lane Width (m)												
Walking Speed (m/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (m)												
pX, platoon unblocked												
vC, conflicting volume	83			87			184	185	84	192	187	82
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	83			87			184	185	84	192	187	82
tC, single (s)	4.3			4.3			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.3			2.3			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			99			99	100	99	100	100	100
cM capacity (veh/h)	1430			1426			773	705	975	758	703	978

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	87	92	15	0
Volume Left	0	9	7	0
Volume Right	4	2	8	0
cSH	1430	1426	870	1700
Volume to Capacity	0.00	0.01	0.02	0.01
Queue Length 95th (m)	0.0	0.1	0.4	0.0
Control Delay (s)	0.0	0.8	9.2	0.0
Lane LOS		A	A	A
Approach Delay (s)	0.0	0.8	9.2	0.0
Approach LOS			A	A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	20.6%	ICU Level of Service	A
Analysis Period (min)	15		

Appendix C

Intersection Lighting Warrant

Guide for the Design of Roadway Lighting Volume 2 – Design TAC

Intersection: Highway 616 & Range Road 11– Year 2029 Full Build-out Condition

Item No.	Classification Factore	Rating Factor "R:					Weight Subcategory (If applicable)	Weight "W"	Enter "R" Here	Score "R"*"W"
		0	1	2	3	4				
Geometric Factors										
1	Channelization	None	Right and/or Left Turn Approach only	Right Turn Lanes only on Major Leg(s)	Left Turn Lane(s) on Major Leg(s)	Left and Right Turn Lanes on all legs	Raised and Operating Speed Less than 70 km/h on at least One Channelized Approach or	15		
							Raised and Operating Speed Less than 70 km/h or More on at least One Channelized Approach or	20		
							Painted Only	5		
2	Approach Sight Distance on the Most Constrained Approach (Relative to Recommended Minimum Intersection Sight Distance)	100% or More	75% to 99%	50% to 74%	25% to 49%	< 25%		10	1	10
3	Horizontal Curvature Radius at or immediately Before Intersection on Any leg for Posted Speed limit of									
	110 km/hr	Tangent	>1800m	1150 to 1800m	750 to 1150 m	<750m		5		
	90 or 100 km/hr	Tangent	>1400m	950 to 1400m	600 to 950 m	<600m				
	70 or 80 km/hr	Tangent	>950m	550 to 950m	340 to 550 m	<340m				
	60 km/hr	Tangent	>575m	320 to 575m	190 to 320 m	<190m				
4	Angle of Intersection or offset intersection	90 Degree Angle	80 or 100 Degree Angle		70 or 110 Degree Angle	<70 or >110 Degree or Offset Intersection		5		
5	Downhill Approach Grades at or immediately Before Intersection on Any Leg	< 3.0%	3.1 to 3.9% and Meets Design Guidelines for Type and Speed of Road	4.0 to 4.9% and Meets Design Guidelines for Type and Speed of Road	5.0 to 7.0% and Meets Design Guidelines for Type and Speed of Road	>7% or Exceeds Maximum Guidelines for Type and Speed of Road		3		
6	Number of Legs		3	4	5	>=6		3	2	6
Subtotal Geometric Factors										16
Operational Factors (O)										
7	Either AADT (2-Way)									
	On Major Road and	<1000	1000 to	2000 to	3000 to	> 5000		10	1	10

			2000	3000	5000					
	On Minor Road or	<500	500 to 1000	1000 to 1500	1500 to 2000	> 2000		20		
	Signalization Warrant	Intersection Not Signalized and Volume based Signal Warrant is Less than 20% Satisfied	Intersection Not Signalized and Volume based Signal Warrant is 20% to 40% Satisfied	Intersection Not Signalized and Volume based Signal Warrant is 40% to 60% Satisfied	Intersection Not Signalized and Volume based Signal Warrant is 60% to 80% Satisfied	Intersection Not Signalized and Volume based Signal Warrant is over 80%Satisfied		30		
8	Regular Nighttime Hourly Pedestrian Volume	No Pedestrian	Up to 10	10 to 30	30 to 50	Over 50		10		
9	Intersection Roadway Classifications	No Primary Road Involved	Primary/Rural Major, Primary/Rural Minor, o Primary/Designated Community Access	Primary/Secondary	Primary/Primary	Intersection includes Divided Highway		5		
10	Operating Speed or Posted Speed Limit on Major Road	50 km/h or less	60 km/h	70 km/h	80 km/h	90 km/h or Over		5	4	20
11	Operating Speed or Posted Speed Limit on Minor Road	50 km/h or less	60 km/h	70 km/h	80 km/h	90 km/h or Over		5	2	10
Subtotal Operational Factors										40
Environmental Factors (E)										
12	Lighted Development Within 150 m Radius of Intersection	-	In One Quadrant	In Two Quadrant	In Three Quadrant	In Four Quadrant		5		
Subtotal Environmental Factors										
Collision Factors (A)										
13	Average Annual Nighttime Collision Frequency or Rate over Last Three Year (Only Collisions Potentially Attributable to Inadequate Lighting)	0 Collisions per year	1 Collisions per year		3 or More Collisions per year or At least 1.5 Collisions per Million Entering Vehicles per Year and an Average Ratio of All Night-to-Day Collisions of at least 1.5	1 or 2 Collisions per year 1 or 2 Collisions per year		15		
Subtotal Collision Factors										
Total Warranting Points										56

Warrant for Partial or Delineation Lighting: Greater or equal to 120 points, but less than 240 Points. Warrant for Full Illumination: Greater than 240 Points.

Appendix D

Intersection Layout Assessment

TABLE D.7.4

PROJECT: 6970507 Pigeon Lake

INTERSECTION ANALYSIS PROCEDURE

Intersection at :Highway 616 & Range Road 11
Main (or through) Road Classification _Secondary Highway _ Intersecting Road Classification_Local Road__
Main (or through) Road AADT/ASDT Current 630 (Year 2009) Future 910 (design year 2029)
Intersecting Road AADT/ASDT Current 30 (Year 2009) Future 190 (design year 2029)
Design Speed ____110 km/h_____ Posted Speed _____100 km/h_____
Type of Treatment (preliminary assessment)_Type Ib
(refer to Figure D-7.4, Traffic Volume Warrant Chart for At-Grade Intersection Treatment)

FUNCTIONAL CHARACTERISTICS

PART I (General Information for all treatment types)
Collision Analysis _N/A_____
Access Requirements_Existing Intersection_____
Access Control __N/A_____
Future Development_N/A_____
Type of Vehicles for Design _____WB-15 _____
Percentage of Trucks ___about 16 % on Hwy 616___

PART II (Specific Information for main (or through) and intersecting road with daily traffic volumes greater than 1800)
Turning Movement Diagram_____
Warrant for Exclusive Left Turn Lane_____
Warrant for Exclusive Right Turn Lane__ _____
Any Proposed Improvement to Other Highways that would impact the traffic movement at this intersection (evaluate network)? _____ _____

GEOMETRIC CHARACTERISTICS

Intersection Sight Distances

	Available		*Required
	left (m)	right(m)	(m)
WB21			
WB15			
SU	>355 m	> 355 m	355 m
P	> 250 m	> 250 m	250 m
Other			

*Adjust length for gradient if necessary (see Table D.6.2.6)

Decision Sight Distance:_____ 330 - 430 m_____
Skew Angle: ____ about 90 Degree_____
Intersection on Horizontal Curve_____ NO_ If yes, superelevation rate = _____ m/m
Profile grade of Main Road__about -1% ~1%_ Intersecting Roadway_____

OTHER CHARACTERISTICS

Utility Impact_____N/A_____
Right-of-Way Impact_____N/A_____
Warrant for Future Signalization_____ No Warrant
(Check with Traffic Operations Branch if necessary)
Warrant for Illumination __Not Warrant _____
(Check with Traffic Operations Branch if necessary)
Recommendation of Type of Intersection Treatment based on Functional, Geometric and Other Characteristics:
Type Ib

Designer: ___Iris Ye_____Date:_April 8 2009_
Approved:_____Date:_____

APPENDIX E:

SHALLOW WATER TABLE TESTING AND SOIL PERCOLATION TESTING PROPOSED COUNTRY RESIDENTIAL SUBDIVISION SW 24-47-1-W5M HAGSTROM GEOTECHNICAL SERVICES LTD.

HAGSTROM GEOTECHNICAL SERVICES LTD.
5607-134A Avenue, Edmonton, Alberta T5A 0M3
Phone (780) 996-5621 Fax (780) 475-5671

Mr. Lynn Oberle
Box 40
Breton, Alberta
T0C 0P0

August 7, 2007
Our File: H0704-004

Dear **Mr. Oberle:**

Re: Shallow Water Table Testing and Soil Percolation Testing
Proposed Country Residential Subdivision
SW 24-47-1-W5M
Wetaskiwin County, Alberta

1.0 INTRODUCTION

Hagstrom Geotechnical Services Ltd. (HGSL) was retained by Mr. Lynn Oberle to carry out an evaluation of the soil and shallow water table conditions for the above referenced project. Alberta Environmental Protection (AEP) requires that each proposed lot have adequate natural area for the development of a residence and suitable soils for treatment of sewage effluent. Interim guidelines for soil and water table testing are provided by Alberta Environmental Protection (1998)[1]. This letter report presents our test procedures, test results and evaluation of results.

2.0 SITE DESCRIPTION

The proposed country residential subdivision is located within the southwest quarter of Section 24, Township 47, Range 1, west of the Fifth Meridian in Wetaskiwin County, Alberta. The site is comprised of approximately 160 acres (64.8 hectares) of agricultural land that is bounded on the west by Range Road 11 and on the south, east and north by quarter section boundary lines. There is a country residential subdivision immediately to the north west direction called Lakeland Estate. The north shore of Pigeon Lake is located about 800 metres south of the site.

A majority of the site is hayland with the south east corner heavily treed. A shallow coulee that is partially treed within the south limits is located along the east boundary. The surface topography on the site can be classified as undulating with a maximum elevation difference of about 30 meters. The site

[1] "Environmental Guidelines for the Review of Subdivisions in Alberta." Standards and Guidelines Branch, Environmental Assessment Division, Environmental Regulatory Service. September 1998. Alberta Environment. 10 Jan 2007 <http://environment.gov.ab.ca/info/library/6710.pdf>.

is generally well drained except for the south limits and the south east corner that is poorly drained. The site is occupied by several small farm type buildings located in the northwest corner.

It is understood it is proposed to subdivide the site into about 20 lots of about 1.0 to 3.0 hectares each where each parcel is to have at least 0.40 hectares of high and dry developable land.

3.0 SURFICIAL GEOLOGY

According to published surficial geology reports[2], the terrain in the area is broadly classified as draped moraine glacial clay till deposit consisting of unsorted mixture of clay, silt, sand and gravel with local water sorted material and bedrock located on bedrock uplands and plains. The thickness is generally less than 3 metres and is located on flat to undulating topography.

4.0 SOIL CONDITIONS AND WATER TABLE LEVELS

Thirty five boreholes were drilled at the subject site on May 24, 2007 to depths ranging from 2.2 to 4.5 metres below the ground surface. The boreholes were drilled with a truck mounted drill rig. The boreholes were drilled in areas where the water table was anticipated to be at depths of 1 to 3 metres. No boreholes were drilled on the top of hills or in bottom of fens, marshes or coulee. A site plan showing the approximate borehole locations is shown on Plate 1, Appendix A. During drilling, the soil and groundwater conditions were logged by Mr. Merle Hagstrom, P. Eng. The soil stratigraphy encountered at the borehole locations during drilling generally consists of topsoil over clay followed by an extensive deposit of weathered bedrock. The bedrock consisted of siltstone, sandstone and/or clay shale and was encountered at depths ranging from 1.8 to 4.4 metres in twenty two boreholes. Thin silt layers was encountered in seven boreholes and thin sand layers was encountered in eleven boreholes. Clay till was encountered below the clay in ten boreholes. The topsoil thickness ranged from 8 to 58 centimeters with an average thickness of 28 centimeters. Groundwater seepage was observed in nine boreholes during drilling. Lithologic descriptions of the subsoils encountered are presented in Table 1, Appendix A.

The groundwater levels in each borehole were monitored during borehole drilling, at drilling completion, and 26 days following drilling completion. The individual water table measurements are presented in Table 1, Appendix A. A tabular summary of the final water levels (26 days later) in each of the boreholes which should be used for design purposes is provided in Table 1, below.

A high water table is defined by AEP as any area where the water table is within 6 feet (1.8 meters) of the ground surface during the frost-free period until the end of August, and within 8 feet (2.4 meters) of the ground surface during the remainder of the year. Generally, groundwater levels can be expected to be at the highest level during the spring snowmelt or after periods of prolonged rainfall. The water levels will typically decrease until late fall when the lowest levels are maintained throughout the winter

[2] Shetsen, I. 1990. Quaternary Geology, Central Alberta, Alberta Research Council. Map Scale 1:500000.

months. For this site, it is appropriate to use a groundwater level criterion of 2.0 meters below ground surface.

TABLE 1: SUMMARY OF BOREHOLE WATER LEVELS

Borehole Number	26 days After Drilling
07-1	4.4(dry)
07-2	4.3(dry)
07-3	2.2(dry)
07-4	4.4(dry)
07-5	2.3(dry)
07-6	2.7
07-7	3.7
07-8	3.0(dry)
07-9	4.1(dry)
07-10	3.4
07-11	4.1
07-12	4.2(dry)
07-13	1.1
07-14	0.4
07-15	3.7
07-16	4.1
07-17	1.7
07-18	0.6
07-19	1.1
07-20	1.8
07-21	2.0
07-22	4.1(dry)
07-23	1.6
07-24	3.1(dry)
07-25	4.0(dry)
07-26	1.5
07-27	4.0(dry)
07-28	1.5
07-29	3.2
07-30	4.1(dry)
07-31	4.2(dry)
07-32	4.0(dry)
07-33	4.2(dry)
07-34	4.0
07-35	4.1(dry)

The low and wet areas where the water table is less than 2.0 metres below ground level are shown on Plate 1, Appendix A. As shown, about 20 percent of the land is low and wet and thus undevelopable in its present state.

5.0 PERCOLATION TESTS

Field percolation tests were conducted at eighteen locations adjacent to the deep boreholes of which the boreholes were drilled at the same time as the deep water table boreholes. The boreholes were approximately 90 centimeters deep and were drilled approximately 3 to 4 meters from each water table borehole. The boreholes were pre-soaked for a minimum period of 24 hours prior to commencing the percolation tests. The testing method was performed according to the procedure specified in Alberta Environment Protection's Interim Guidelines of April 26, 1998. According to the Guidelines:

> *"It is Alberta Environmental Protection's position that percolation rates between 2.0 and 23.6 min/cm are indicative of moderately permeable soils and are generally suitable for sewage treatment provided that low water table conditions are present and the Sodium Absorption Ratio of the disposal field effluent water does not exceed 8. Percolation rates that are either faster (<2.0 min/cm) or slower (>23.6 min/cm) reveal soil permeability conditions which are not suitable for sewage treatment".*

The results for the percolation tests are summarized in Table 2, Appendix A. The percolation rates were based on the average of four trials. As shown, only three tests met the AEP guidelines, as stated above. Based on these results, the majority of the soils are not suitable for the development of conventional sewage disposal septic fields. Therefore, modified septic fields such as raised mounds should be considered for a majority of the lots.

It should be noted that the above percolation test results obtained during this study are only preliminary. During building construction, Plumbing Inspection Services require a total of 3 percolation tests be performed at any lot chosen for sewage field system prior to the installation of the sewage field. In all cases, the sewage septic field should be located at least 2.0 metres above the groundwater table.

6.0 CONCLUSIONS

The purpose of the investigation was to determine the subsurface soils as well as to determine the depth of the water table and percolation rates in the proposed country residential subdivision. It is understood that it is proposed to subdivide the site into about 20 lots. Based on the shallow water table tests, about 20 percent of the site is considered low and wet and undevelopable in its present state. The subdivision design should be carried out such that each proposed lot has at least 0.40 hectares of high and dry developable land. The percolation rates indicate that the native soils are generally unsuitable for conventional sewage septic fields. Modified fields should be considered for a majority of the site.

Yours truly,
Hagstrom Geotechnical Services Ltd.

Merle Hagstrom, B.Sc., P. Eng.
Senior Engineer

Distribution: (4) addressee

Attachments: Appendix A

APPENDIX A

Water Table Boreholes - Table 1
Percolation Test Results - Table 2
Site Plan - Plate 1

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-1	
From 0.0 – 0.38 m	**TOPSOIL;** clayey, silty, moist, compressible, black, 38 cm thick
From 0.38 – 0.8 m	**CLAY;** silty, moist, medium plasticity, stiff, occasional $CaCO_3$ mottling, light olive brown
From 0.8 – 1.9 m	**SILT;** sandy, trace of clay, dry, desiccated, light olive brown
From 1.9 – 4.5 m	**BEDROCK (Siltstone);** sandy, some clay, dry, highly weathered bedrock, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.4 m (dry), 26 days later	
BOREHOLE 07-2	
From 0.0 – 0.25 m	**TOPSOIL;** silty, clayey, moist, soft, highly compressible, black, 25 cm thick
From 0.25 – 1.8 m	**CLAY;** silty, medium plasticity, moist, stiff, occasional silt lenses, light olive brown
From 1.8 – 4.5 m	**BEDROCK (Siltstone);** silty, some sand, highly weathered bedrock, hard consistency soil, light olive brown
At 4.0 m	Light brown, difficult to drill
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.3 m (dry), 26 days later	
BOREHOLE 07-3	
From 0.0 – 0.20 m	**TOPSOIL;** silty, clayey, moist, soft, compressible, dark brown, 20 cm thick
From 0.20 – 1.9 m	**CLAY;** silty, moist, medium plasticity, occasional silt lenses, light olive brown
From 1.9 – 2.2 m	**BEDROCK (Siltstone);** silty, damp, highly weathered bedrock, light olive brown
At 2.1 m	No evidence of groundwater seepage
At 2.2 m	Auger refusal at 2.2 m
End of Borehole = 2.2 m Slough = 2.2 m, 0 hours Water level = 2.2 m (dry), 0 hours Water level = 2.2 m (dry), 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-4	
From 0.0 – 0.09 m	**TOPSOIL;** moist, compressible, soft, black, 9 cm thick
From 0.09 – 2.5 m	**CLAY;** silty, moist, stiff, occasional $CaCO_3$ mottling, light olive brown
From 2.5 – 4.5 m	**BEDROCK (Siltstone);** silty, moist, highly weathered bedrock, light olive brown
At 3.5 m	Clay shale in nature, less siltstone with depth
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.5 m, 0 hours Water level = 4.5 m, 0 hours Water level = 4.4 m (dry), 26 days later	
BOREHOLE 07-5	
From 0.0 – 0.08 m	**TOPSOIL;** silty, moist, compressible, clayey, dark brown, 8 cm thick
From 0.08 – 1.9 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional silt lenses, dark olive brown
From 1.9 – 2.4 m	**BEDROCK (Siltstone);** silty, highly weathered bedrock, dense soil, light olive brown
At 2.3 m	No evidence of groundwater seepage
At 2.4 m	Auger refusal at 2.4 m
End of Borehole = 2.4 m Slough = 2.4 m, 0 hours Water level = 2.4 m, 0 hours Water level = 2.3 m (dry), 26 days later	
BOREHOLE 07-6	
From 0.0 – 0.38 m	**TOPSOIL;** clayey, silty, very moist, compressible, brownish black, 38 cm thick
From 0.38 – 1.6 m	**CLAY;** silty, damp to moist, occasional gravel size rocks, medium plasticity, stiff, light olive brown
From 1.6 – 1.9 m	**SAND;** fine grained, damp, loose, poorly graded, light brown
From 1.9 – 4.1 m	**CLAY;** very silty, trace of sand, stiff to very stiff, light olive brown
From 4.1 – 4.5 m	**BEDROCK (Clay shale);** silty, moist, highly weathered bedrock, hard consistency soil, light brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level =4.4 m, 0 hours Water level = 2.7 m, 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-7	
From 0.0 – 0.20 m	**TOPSOIL;** silty, moist, clayey, compressible, dark brown, 20 cm thick
From 0.20 – 3.6 m	**CLAY;** silty, moist, medium plasticity, occasional $CaCO_3$ mottling, light olive brown
At 3.2 m	Occasional sand lenses
From 3.6 – 4.5 m	**BEDROCK (Sandstone);** very silty, highly weathered bedrock, poorly cemented, dark yellowish brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.5 m, 0 hours Water level = 4.5 m (dry), 0 hours Water level = 3.7 m, 26 days later	
BOREHOLE 07-8	
From 0.0 – 0.34 m	**TOPSOIL;** silty, moist, compressible, soft, black, 34 cm thick
From 034 – 1.7 m	**CLAY;** silty, sandy, stiff, moist, medium plasticity, occasional silt lenses, light olive brown
From 1.7 – 4.1 m	**SAND;** silty, moist, dense, poorly graded, light brown
From 4.1 – 4.3 m	**BEDROCK (Sandstone);** silty, moist, highly weathered bedrock, very dense soil, light olive brown
At 4.2 m	No evidence of groundwater seepage
At 4.3 m	Auger refusal at 4.3 m
End of Borehole = 4.3 m Slough = 4.2 m, 0 hours Water level = 4.2 m (dry), 0 hours Water level = 3.0 m (dry), 26 days later	
BOREHOLE 07-9	
From 0.0 – 0.30 m	**TOPSOIL;** silty, moist, loose, compressible, black, 30 cm thick
From 0.30 – 1.7 m	**CLAY;** silty, moist, medium plasticity, occasional sand lenses and $CaCO_3$ mottling, light olive brown
From 1.7 – 3.0 m	**SAND;** very silty, fine grained, dense, poorly graded, light yellowish brown
From 3.0 – 4.5 m	**BEDROCK (Clay Shale);** silty, moist, highly weathered bedrock, hard consistency, light olive brown
At 4.0 m	Occasional silt stone lenses
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.5 m, 0 hours Water level = 4.5 m (dry), 0 hours Water level = 4.1 m (dry), 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-10	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, compressible, clayey, dark brown, 25 cm thick
From 0.25 – 1.3 m	**CLAY;** silty, moist, medium plasticity, stiff, some sand, light olive brown
From 1.3 – 2.4 m	**SAND;** fine grained, very silty, damp to moist, dense, light olive brown
From 2.4 – 4.2 m	**BEDROCK (Siltstone);** sandy, highly weathered bedrock, light olive brown
From 4.2 – 4.5 m	**BEDROCK (Clay shale);** silty, damp, highly weathered, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.5 m, 0 hours Water level = 4.5 m (dry), 0 hours Water level = 3.4 m, 26 days later	
BOREHOLE 07-11	
From 0.0 – 0.37 m	**TOPSOIL;** clayey, silty, very moist, compressible, black, 37 cm thick
From 0.37 – 3.2 m	**CLAY;** silty, stiff, medium plasticity, occasional coal chips and sand lenses, light olive brown
From 3.2 – 3.6 m	**BEDROCK (Sandstone);** silty, highly weathered bedrock, very dense soil, light olive brown
From 3.6 – 4.5 m	**BEDROCK (Clay Shale);** silty, dry, highly weathered bedrock, hard consistency soil, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.1 m, 26 days later	
BOREHOLE 07-12	
From 0.0 – 0.56 m	**TOPSOIL;** silty, clayey, moist, compressible, black, 56 cm thick
From 0.56 – 2.5 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional gravel chips, light olive brown
At 1.2 m	Cobble size rock, difficult to drill
From 2.5 – 2.9 m	**SILT;** clayey, sandy, dense, occasional sand lenses, light olive brown
From 2.9 – 4.5 m	**SAND;** fine grained, dense, damp, poorly graded, dark yellowish brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.2 m (dry), 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-13	
From 0.0 – 0.56 m	**TOPSOIL;** silty, some clay, very moist, compressible, loose, black, 58 cm thick
At 0.5 m	Cobble size rock at 0.5 m
From 0.56 – 2.0 m	**CLAY;** silty, firm to stiff, medium plasticity, moist, occasional coal chips, light olive brown
From 2.0 – 3.0 m	**SAND;** fine grained, very silty, damp, loose, light olive brown
From 3.0 – 3.1 m	**BEDROCK (Siltstone);** silty, moist, highly weathered bedrock, very dense, light olive brown
At 2.2 m	No evidence of groundwater seepage
At 3.3 m	Auger refusal at 3.2 m
End of Borehole = 3.3 m Slough = 3.2 m, 0 hours Water level = 3.2 m (dry) , 0 hours Water level = 1.1 m, 26 days later	
BOREHOLE 07-14	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, occasional small roots, compressible, black, 25 cm thick
From 0.25 – 0.9 m	**CLAY;** silty, moist, medium plasticity, stiff, occasional thin sand lenses, light olive brown
From 0.9 – 2.6 m	**SAND;** fine grained, very silty, moist, medium dense, moist, light olive brown
At 1.8 m	Free Water
From 2.6 – 4.5 m	**BEDROCK (Sandstone);** silty, fine grained, poorly cemented, very dense soil, light olive brown
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 1.1 m, 0 hours Water level = 0.4 m, 26 days later	
BOREHOLE 07-15	
From 0.0 – 0.10 m	**TOPSOIL;** silty, moist, compressible, loose, black, 10 cm thick
At 0.6 m	Frequent gravel size rocks at 0.6 m
From 0.10 – 0.6 m	**CLAY;** silty, moist, firm, occasional $CaCO_3$ mottling to 1.0 m, light olive brown
From 0.6 – 1.2 m	**CLAY TILL;** silty, moist, stiff, medium plasticity, occasional coal chips and gravel chips, dark olive brown
From 1.2 – 4.5 m	**SAND;** fine grained, silty, moist, dense, poorly graded, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 3.7 m, 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-16	
From 0.0 – 0.37 m	**TOPSOIL;** silty, clayey, compressible, loose, dark brown, 37 cm thick
From 0.37 – 2.5 m	**CLAY;** silty, moist, medium plasticity, stiff, occasional small gravel chips, light olive brown
At 2.7 m	Cobble size rock at 2.7 m
From 2.5 – 3.6 m	**SILT;** sandy, some sand, dense, damp, light olive brown
From 3.6 – 4.5 m	**SAND;** fine grained, silty, dense to very dense, poorly graded, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.3 m, 0 hours Water level = 4.3 m (dry), 0 hours Water level = 4.1 m, 26 days later	
BOREHOLE 06-17	
From 0.0 – 0.58 m	**TOPSOIL;** silty, moist, compressible, loose, occasional small roots, black, 58 cm thick
From 0.58 – 3.2 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional gravel chips and soft coal chips, light olive brown
From 3.2 – 4.2 m	**SILT;** sandy, loose, trace of clay, moist, light olive brown
At 3.6 m	Free water
From 4.2 – 4.5 m	**SAND;** fine grained, silty, moist, poorly graded, dense, light olive brown
End of Borehole = 4.5 m Slough = 4.1 m, 0 hours Water level = 1.1 m , 0 hours Water level = 1.7 m, 26 days later	
BOREHOLE 06-18	
From 0.0 – 0.33 m	**TOPSOIL;** silty, moist, compressible, black, 33 cm thick
From 0.33 – 1.3 m	**CLAY;** silty, moist, firm to stiff, medium plasticity, occasional silt lenses, light olive brown
From 1.3 – 4.5 m	**CLAY TILL;** silty, trace of sand, stiff, medium plasticity, occasional gravel chips and coal chips, dark grey
At 2.8 m	Groundwater seepage
At 3.5 m	Very stiff, medium plasticity, dark brown
End of Borehole = 4.5 m Slough = 4.1 m, 0 hours Water level = 1.6 m, 0 hours Water level = 0.6 m, 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 06-19	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, loose, compressible, black, 25 cm thick
From 0.25 – 1.7 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional silt lenses, light olive brown
From 1.7 – 4.3 m	**CLAY TILL;** silty, stiff, moist, medium plasticity, occasional gravel chips and coal chips, dark olive brown
At 4.0 m	Free water
At 4.4 m	Stiffer with depth
End of Borehole = 4.5 m Slough = 4.2 m, 0 hours Water level = 4.1 m, 0 hours Water level = 1.1 m, 26 days later	
BOREHOLE 07-20	
From 0.0 – 0.33 m	**TOPSOIL;** silty, clayey, compressible, black, 33 cm thick
From 0.33 – 3.1 m	**CLAY;** silty, moist, medium plasticity, stiff, occasional gravel chips and coal chips, dark olive brown
From 3.1 – 3.6 m	**CLAY TILL;** silty, very stiff, medium plasticity, moist, occasional clay shale lense and coal chips, dark brown
From 3.6 – 4.5 m	**SAND;** fine grained, silty, free water, loose, uniform dark grey
End of Borehole = 4.5 m Slough = 4.1 m, 0 hours Water level = 4.0 m, 0 hours Water level = 1.8 m, 26 days later	
BOREHOLE 07-21	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, compressible, black, 25 cm thick
From 0.25 – 1.2 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional gravel chips, dark olive brown
From 1.2 – 1.6 m	**SAND;** fine grained, silty, loose, damp, poorly graded, light brown
From 1.6 – 4.5 m	**CLAY TILL;** silty, stiff, medium plasticity, occasional gravel chips and rust stained fissures, dark brown
At 3.6 m	Free water, sand lense from 3.6 to 3.8 m
End of Borehole = 4.5 m Slough = 4.2 m, 0 hours Water level = 4.0 m, 0 hours Water level = 2.0 m, 26 days later	

TABLE 1
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Wetaskiwin County, Alberta

BOREHOLE 07-22	
From 0.0 – 0.10 m	**TOPSOIL;** silty, moist, some clay, compressible, dark brown, 10 cm thick
From 0.10 – 1.4 m	**CLAY;** silty, low to medium plasticity, stiff, moist, occasional thin sand lense, light olive brown
From 1.4 – 4.2 m	**CLAY TILL;** silty, moist, stiff, medium plasticity, occasional gravel chips and coal chips, dark olive brown
From 4.2 – 4.5 m	**SAND;** fine grained, silty, free water at 4.3 m, dark brown
At 4.3 – 4.4 m	Clay till lense from 4.3 to 4.4 m
End of Borehole = 4.5 m Slough = 4.0 m, 0 hours Water level = 3.8 m, 0 hours Water level = 4.1 m (dry), 26 days later	
BOREHOLE 07-23	
From 0.0 – 0.13 m	**TOPSOIL;** silty, moist, compressible, black, 13 cm thick
From 0.13 – 1.5 m	**CLAY;** silty, moist, stiff, medium plasticity, occasional rust staining and $CaCO_3$ mottling, light olive brown
From 1.5 – 4.3 m	**CLAY TILL;** silty, moist, very stiff, medium plasticity, occasional gravel chips and clay shale chips, dark olive brown
From 4.3 – 4.5 m	**SAND;** fine grained, silty, free water, severe borehole sloughing, light brown
End of Borehole = 4.5 m Slough = 4.3 m, 0 hours Water level = 4.1 m, 0 hours Water level = 1.6 m, 26 days later	
BOREHOLE 07-24	
From 0.0 – 0.10 m	**TOPSOIL;** clayey, moist, compressible, silty, brownish black, 10 cm thick
From 0.10 – 2.4 m	**CLAY;** silty, very moist, firm, medium plasticity, occasional silt lenses and sand lenses, light olive brown
From 2.4 – 4.5 m	**BEDROCK (Clay Shale);** silty, highly weathered bedrock, hard consistency soil, light olive brown
At 2.6 m	Harder with depth
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.5 m, 0 hours Water level = 4.5 m (dry), 0 hours Water level = 3.1 m (dry), 26 days later	

TABLE 1
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Wetaskiwin County, Alberta

BOREHOLE 07-25	
From 0.0 – 0.20 m	**TOPSOIL;** silty, clayey, very moist, compressible, dark brown, 20 cm thick
From 0.20 – 1.8 m	**CLAY;** silty, trace of sand, firm, very moist, frequent thin sand and silt lenses, light olive brown
At 1.5 m	Stiff, medium plasticity, drier with depth
From 1.8 – 4.1 m	**SILT;** sandy, trace of clay, damp, loose, light olive brown
From 4.1 – 4.5 m	**BEDROCK (Siltstone);** dry, difficult to drill, weathered bedrock, light brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.0 m (dry), 26 days later	
BOREHOLE 07-26	
From 0.0 – 0.55 m	**TOPSOIL;** silty, moist, compressible, soft, dark brown, 50 cm thick
From 0.55 – 1.8 m	**CLAY;** silty, very moist, medium plasticity, soft to firm, occasional sand lenses and coal chips, pale olive brown
From 1.8 – 3.5 m	**SAND;** fine grained, silty, damp, dense, poorly graded, light olive brown
From 3.5 – 4.5 m	**SILT;** sandy, some clay, moist, dense, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.3 m, 0 hours Water level = 4.3 m (dry), 0 hours Water level = 1.5 m, 26 days later	
BOREHOLE 07-27	
From 0.0 – 0.23 m	**TOPSOIL;** silty, moist, compressible, clayey, dark brown, 23 cm thick
From 0.23 – 0.9 m	**CLAY;** silty, moist, medium plasticity, firm, occasional $CaCO_3$ mottling to 1.2 m, light olive brown
From 0.9 – 2.5 m	**CLAY TILL;** silty, stiff, moist, medium plasticity, occasional rust staining and coal chips, dark brown
From 2.5 – 4.5 m	**BEDROCK (Clay Shale);** silty, highly weathered bedrock, hard consistency soil, medium plasticity, light brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.0 m (dry), 26 days later	

TABLE 1
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Proposed Country Residential Subdivision
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Wetaskiwin County, Alberta

BOREHOLE 07-28	
From 0.0 – 0.30 m	**TOPSOIL;** silty, moist, compressible, dark brown, 30 cm thick
From 0.30 – 1.8 m	**CLAY;** silty, moist, firm, occasional gravel chips and coal chips, light olive brown
At 1.6 m	Cobble size rock
At 1.8 m	Stiff, occasional rust stained fissures
From 1.8 – 4.5 m	**CLAY TILL;** silty, very stiff, medium plasticity, moist, occasional gravel chips and coal chips, dark brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 1.5 m, 26 days later	
BOREHOLE 07-29	
From 0.0 – 0.35 m	**TOPSOIL;** silty, compressible, moist, occasional clay lenses, dark brown, 35 cm thick
From 0.35 – 21.4 m	**CLAY;** silty, medium plasticity, moist, stiff, occasional coal chip and gravel chips, dark olive brown
From 1.4 – 1.7 m	**SILT;** sandy, trace of sand, dry, dense, light brown
From 1.7 – 4.4 m	**CLAY TILL;** silty, very stiff, some sand, medium plasticity, occasional clay shale lenses and coal chips, dark brown
At 3.7 – 3.9 m	Sand lense, free water
From 4.4 – 4.5 m	**BEDROCK (Clay Shale);** silty, highly weathered bedrock, hard consistency soil, light olive brown
End of Borehole = 4.5 m Slough = 4.3 m, 0 hours Water level = 4.2 m, 0 hours Water level = 3.2 m, 26 days later	
BOREHOLE 07-30	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, compressible, some clay, dark brown, 25 cm thick
From 0.25 – 1.9 m	**CLAY;** silty, medium plasticity, moist, stiff, occasional $CaCO_3$ mottling, light olive brown
At 1.2 m	Very silty, moist
From 1.9 – 4.0m	**SILT;** sandy, very dense, damp, occasional clay lenses, light olive brown
From 4.0 – 4.5 m	**BEDROCK (Siltstone);** sandy, highly weathered bedrock, very dense soil, damp, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.1 m (dry), 26 days later	

TABLE 1
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Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

BOREHOLE 07-31	
From 0.0 – 0.25 m	**TOPSOIL;** silty, moist, compressible, occasional clay lenses, dark brown, 25 cm thick
From 0.25 – 2.5 m	**CLAY**; silty, moist, medium plasticity, occasional rust stained fissures, light olive brown
From 2.5 – 4.5 m	**BEDROCK (Clay Shale); ;** silty, damp, highly weathered bedrock, dark brown
At 4.3 m	Harder with depth
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.3 m, 0 hours Water level = 4.3 m (dry), 0 hours Water level = 4.2 m (dry), 26 days later	
BOREHOLE 07-32	
From 0.0 – 0.23 m	**TOPSOIL;** silty, moist, compressible, loose, dark brown, 23 cm thick
From 0.23 – 2.6 m	**CLAY;** silty, moist, medium plasticity, stiff to very stiff, occasional soft coal lenses and gravel chips, light olive brown
At 2.5 m	Very stiff, damp, light olive brown
From 2.9 – 4.5 m	**BEDROCK (Clay Shale);** silty, highly weathered bedrock, hard consistency soil, light olive brown
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.0 m (dry), 26 days later	
BOREHOLE 07-33	
From 0.0 – 0.30 m	**TOPSOIL;** silty, moist, soft, compressible, black, 30 cm thick
From 0.30– 1.6 m	**CLAY;** silty, moist, very stiff, low to medium plasticity, occasional clay shale inclusions
From 1.6 – 2.5 m	**SAND;** fine grained, silty, damp, dense to very dense, poorly graded
From 2.5 – 3.1 m	**BEDROCK (Siltstone);** sandy, highly weathered bedrock, very dense soil, occasional clay shale lenses, light brown
At 3.0 m	No evidence of groundwater seepage
At 4.4 m	Auger refusal at 3.1 m
End of Borehole = 3.1 m Slough = 3.1 m, 0 hours Water level = 3.1 m (dry), 0 hours Water level = 4.2 m (dry), 26 days later	

TABLE 1
SHALLOW WATER TABLE BOREHOLES
Proposed Country Residential Subdivision
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Wetaskiwin County, Alberta

BOREHOLE 07-34	
From 0.0 – 0.28 m	**TOPSOIL;** clayey, silty, moist, soft, compressible, dark brown, 28 cm thick
From 0.28 – 4.5 m	**CLAY;** silty, damp to moist, medium plasticity, occasional coal chips and clay shale lenses, light olive brown
At 1.5 m	Stiff, light olive brown
At 3.0 m	Very stiff, medium plasticity, occasional silt lenses
At 4.0 m	Very stiff to hard, medium plasticity
At 4.3 m	Medium plasticity, damp, increasing shale content with depth
At 4.4 m	No evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.0 m, 26 days later	
BOREHOLE 07-35	
From 0.0 – 0.28 m	**TOPSOIL;** clayey, silty, soft, moist, occasional gravel chips, compressible, dark brown, 28 cm thick
From 0.28 – 1.9 m	**CLAY;** silty, moist, medium plasticity, stiff, occasional silt lenses and coal chips, light olive brown
From 1.9 – 3.7 m	**SILT;** sandy, trace of clay, dense, damp, light olive brown
From 3.7 – 4.5 m	**BEDROCK (Siltstone);** sandy, some clay, highly weathered bedrock, light olive brown
At 4.4 m	Denser with depth, no evidence of groundwater seepage
End of Borehole = 4.5 m Slough = 4.4 m, 0 hours Water level = 4.4 m (dry), 0 hours Water level = 4.1 m (dry), 26 days later	

TABLE 2
PERCOLATION TEST RESULTS
Proposed Country Residential Subdivision
Portion of SW 24-47-1-W5M
Wetaskiwin County, Alberta

Borehole	Trial	Depth of Drop (cm)	Time Increment (min)	Percolation Rate (min/cm)
07-1	1	3.0	231	77.0
	2	3.0	297	99.0
	3	3.5	300	85.7
	4	4.5	358	79.6
				Average = 85.3
07-3	1	3.5	206	58.9
	2	3.5	300	85.7
	3	5.0	300	60.0
	4	7.0	360	51.4
				Average = 64.0
07-5	1	3.0	181	60.3
	2	4.0	301	75.3
	3	3.5	301	86.0
	4	7.5	359	47.9
				Average = 67.4
07-7	1	12.0	134	11.2
	2	15.0	300	20.0
	3	15.5	301	19.4
	4	16.5	361	21.9
				Average = 18.1
07-9	1	0.5	132	264.0
	2	1.5	302	201.3
	3	2.0	300	150.0
	4	1.5	362	241.3
				Average = 239.1

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Wetaskiwin County, Alberta

Borehole	Trial	Depth of Drop (cm)	Time Increment (min)	Percolation Rate (min/cm)
07-11	1	2.0	451	225.5
	2	1.5	189	126.0
	3	2.0	300	150.0
	4	2.5	360	144.0
				Average = 161.4
07-13	1	1.0	420	420.0
	2	1.0	185	185.0
	3	1.5	300	200.0
	4	1.5	359	239.3
				Average = 261.1
07-15	1	1.0	385	385.0
	2	1.0	189	189.0
	3	1.5	301	200.7
	4	3.0	358	119.0
				Average = 223.5
07-17	1	26.0	355	13.7
	2	7.5	189	25.2
	3	11.5	301	26.2
	4	17.5	362	20.7
				Average = 21.5
07-19	1	1.0	322	322.0
	2	1.0	188	188.0
	3	1.5	299	199.3
	4	1.5	362	241.3
				Average = 237.7

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Wetaskiwin County, Alberta

Borehole	Trial	Depth of Drop (cm)	Time Increment (min)	Percolation Rate (min/cm)
07-21	1	1.0	286	286.0
	2	1.5	190	126.7
	3	1.5	300	200.0
	4	1.5	360	240.0
				Average = 213.2
07-23	1	2.0	289	144.5
	2	1.5	162	108.0
	3	3.0	300	100.0
	4	3.0	360	120.0
				Average = 118.1
07-25	1	40.0	268	6.7
	2	17.5	160	9.1
	3	33.5	301	9.0
	4	22.5	359	16.0
				Average = 10.2
07-27	1	1.0	177	177.0
	2	1.5	153	102.0
	3	1.5	302	201.3
	4	1.5	361	240.7
				Average = 180.3
07-29	1	2.0	152	76.0
	2	2.5	208	83.2
	3	3.5	300	85.7
	4	3.5	362	103.4
				Average = 87.1

TABLE 2
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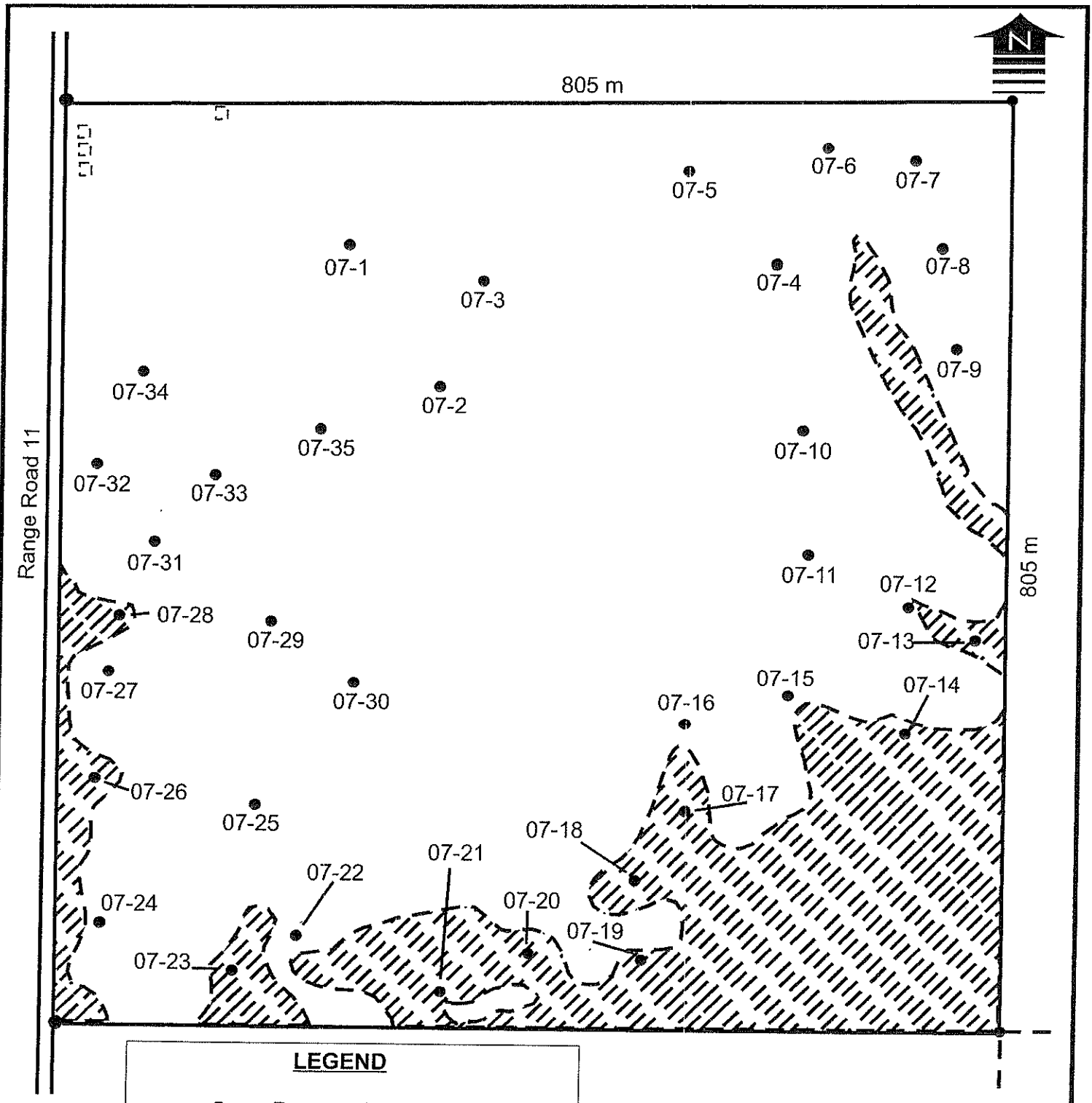
Wetaskiwin County, Alberta

Borehole	Trial	Depth of Drop (cm)	Time Increment (min)	Percolation Rate (min/cm)
07-31	1	1.0	118	118.0
	2	2.0	210	105.0
	3	3.0	299	99.7
	4	3.0	362	120.7
				Average = 120.7
07-33	1	4.0	89	22.3
	2	7.0	207	29.6
	3	10.5	299	28.5
	4	30.0	362	12.1
				Average = 23.1
07-35	1	1.0	68	68.0
	2	3.0	217	72.3
	3	3.5	300	85.7
	4	5.0	351	70.2
				Average = 74.1



HAGSTROM GEOTECHNICAL SERVICES LTD.
Edmonton, Alberta

Mr. Lynn Oberle
Proposed Country Residential Subdivision
SW 24-47-1-W5M, Wetaskiwin County, Alberta
Site Plan

Job No: H0704-004	Date: August 8, 2007	Plate: 1