



Friesen Drillers Ltd.

307 PTH 12 N Steinbach, MB. R5G 1T8 Phone 204-326-2485 Fax 204-326-2483 Toll Free-1-888-794-9355

August 17, 2007

Mr. Brian Cornelsen, G.S.C.
Project Manager
Streetside Development Corporation
30 Speers Road
Winnipeg, MB R2J 1L9

Dear Brian,

**Subject Preliminary Results – Hydrogeological/Geothermal Investigation – Proposed Office Facility
Lot 212 Roman Catholic Mission Property – City of Winnipeg, Manitoba**

Friesen Drillers Limited is pleased to present this report detailing the preliminary results of our hydrogeological/geothermal investigation at the Streetside (Sage Creek) Developments Limited proposed office facility, located along Lagimodiere Boulevard., in the City of Winnipeg, Manitoba.

The following report details the results of the initial test well drilling program as well as our recommendations to comply with the regulatory requirements of the exploration permit issued by Manitoba Water Stewardship.

Background

Streetside Developments Limited (also known as Sage Creek Developments Limited) has obtained a large parcel of land along Lagimodiere Boulevard in the eastern portion of the City of Winnipeg. Up until recently, the land was apparently leased for agricultural operations. During the past summer, Sage Creek Developments Limited has begun to undertake land development for residential/light commercial properties. Some initial infrastructure has been developed along with several new housing starts.

Streetside Developments Limited intends to construct a new office facility for their operations. The lot is located approximately at lot 185 in the Roman Catholic Mission Properties (RCMP) along Lagimodiere Boulevard. The exact details of the facility are not known at this time. Streetside Developments has retained Tower Engineering Limited to undertake the mechanical/electrical design of the facility. Geothermal technology has been suggested for the buildings mechanical requirements.

Streetside Developments Limited retained Friesen Drillers Limited to undertake a geothermal/hydrogeological investigation of the site. The following report details the results. It should be noted this report is limited to the details contained in Friesen Drillers scope of work as approved by Streetside Developments Limited. Also, the report deals solely with the design and proposed implementation of a well to well, or open loop geothermal system.

Test Well Drilling Program

Prior to commencing test drilling, a groundwater exploration study permit was obtained from Manitoba Water Stewardship. A copy, with the supporting documentation is attached.

Test hole drilling at the site undertaken at the site on July 25, 2007. Staff from Streetside Developments Limited arranged for the clearing of all underground services and utilities at the site prior to commencing drilling. Test hole drilling was conducted around the perimeter of the proposed building, which was surveyed and marked within the existing agricultural field. Test well #1 was located on the west side of the proposed facility, while Test well #2 was located along the west side. The approximate test hole locations are shown on the attached figure.

The test wells were constructed using a 125 mm diameter PVC casing set into a three tier step down socket set at the overburden (till) and carbonate bedrock contact. The carbonate bedrock was reached at approximately 50 feet below grade. Drilling then proceeded down through the carbonate bedrock to a final depth of 300 feet below grade in test well#1 and 280 feet below in test well #2. It should be noted that test well #1 encountered a large karstic void at an approximate depth of 280 feet below grade. The void was filled with fine silts and sands, and water pumped from the well contained large percentages of sediment. In test well #2, an additional sinkhole was noted at an approximate depth of 80 feet below grade, which was also infilled with fine silt and sand.

water...the lifeblood of the land

Test Well Drilling Program (cont'd)

Following the completion of the drilling, both test holes were airlifted for a one hour period. However, large amounts of sediment were noted.

Copies of the drilling and geologic logs are attached.

Aquifer Testing

Each well was then pumped for approximately 1.0 hours at a constant rate using a Monarch 1/2 horsepower submersible pump set at a depth of 50 feet below grade. Water levels were monitored at regular intervals during each test using a water level depth sounder. Groundwater flow rates were monitored by timing the rate to fill a 50 gallon drum.

The aquifer testing data was used to calculate the preliminary estimate of the well capacity and aquifer transmissivity. These calculations are approximate only, based on short term yield test completed, and more accurate results could be obtained during a longer duration pumping test.

The aquifer testing results are as follows:

Test Well	Static Water Level	Pumping Water Level	Pumping Rate	Duration	Specific Capacity
1	33.42 ft	37.96 ft	13 I.G.P.M.	1.0 hour	2.9 U.S.G.P.M./ft.
2	33.92 ft	40.83 ft	13 I.G.P.M.	1.0 hour	1.9 U.S.G.P.M./ft.

According to Baracos et. al. 1983, the regional transmissivity in the area at the site was noted to be approximately 50,000 U.S.G.P.D./ft, indicating good capacity wells in the area. However, the map was generated with few data points in the immediate area. The carbonate bedrock aquifer in Winnipeg is known for strong variability in transmissivity and well yield.

Significant sinkholes have also been noted in the immediate area. During test drilling for water supplies at the Royal Canadian Mint in 1974, significant voids and silts/sands were noted to depths of over 200 feet below grade. There is other evidence in Manitoba Water Stewardship's GWDRILL database that significant karstic activity occurred in the area. A copy of a typical log for the area is also attached.

Recommendations

Based on the results of the two test holes drilled at the site, we offer the following recommendations:

- The two existing test wells that were drilled on the site encountered large sediment filled karstic features. Our experience in developing clean water samples from these features has not been that successful. We also note that the well yield from the test wells is far less than required for the project. Significant effort would be required to develop the sediment out of the karstic feature which may not be successful.
- The underlying sandstone aquifer would not be suitable for the implementation of a pumping/returning well to well geothermal system. Our experience shows that great difficulty can result in successfully returning groundwater to this aquifer.
- If Streetside Developments would like to undertake additional test holes and investigations, we recommend moving a large distance from the existing test holes. The test holes should be thoroughly investigated. If sufficient yields are located, all aspects of the permit should be followed with supervision by a licensed hydrogeological engineer/hydrogeologist.
- In the event that Streetside Developments elects not to pursue additional investigations, we recommend the existing test holes be abandoned following provincial guidelines by a licensed drilling contractor. In addition, we recommend closing the groundwater exploration permit with Manitoba Water Stewardship. Until the existing two test wells are abandoned, they should be well marked to prevent damage during the agricultural/construction activities at the site.

We would be pleased to meet with you to discuss the results of the first phase of testing. Should you require anything further, please call me at (204) 326-2485. Thank you for the opportunity to be of service to the Streetside Developments Limited.



Sincerely

Reviewed by

Friesen Drillers Limited

Friesen Drillers Limited


J.J. (Jeff) Bell, B.Sc.(G.E.), P.E.Eng.
Hydrogeological Engineer


John M. Friesen
President



Attachments

References

Baracos, A.G., Shields, D.H., and Kjartenson, B, 1983. Geological Engineering Report for Urban Development of Winnipeg, University of Manitoba – Department of Geological Engineering.

Manitoba Water Stewardship, 2007. GWDRILL database



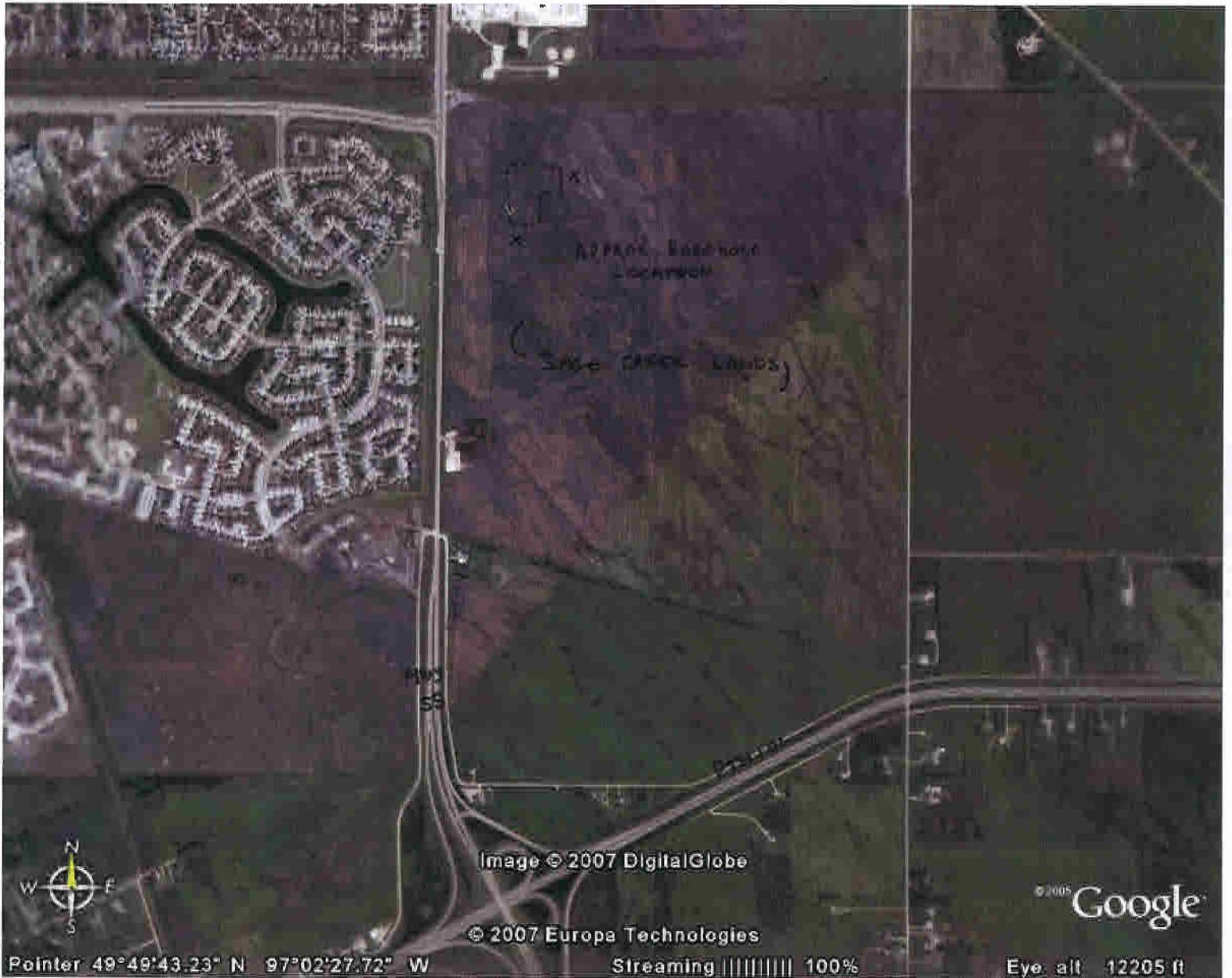
Limitations

The scope of this report is limited to the matters expressly covered and is intended solely for the client to whom it is addressed. Friesen Drillers Limited makes no warranties, expressed or implied, including without limitation, as to the marketability of the site, or fitness to a particular use. The assessment was conducted using standard engineering and scientific judgment, principles, and practices, within a practical scope and budget. It is based partially on the observations of the assessor during the site visit in conjunction with archival information obtained from a number of sources, which is assumed to be correct. Except as provided, Friesen Drillers Limited has made no independent investigations to verify the accuracy or completeness of the information obtained from secondary sources or personal interviews. Generally, the findings, conclusions, and recommendations are based on a limited amount of data (e.g. number of boreholes drilled or water quality samples submitted for laboratory analysis) interpolated between sampling points and the actual conditions on the site may vary from that described above. Any findings regarding the site conditions different from those described above upon which this report was based will consequently change Friesen Drillers Limited's conclusions and recommendations.

Disclaimer

This Friesen Drillers Limited report has been prepared in response to the specific requests for services from the client to whom it is addressed. The content of this document is not intended to be relied upon by any person, firm, or corporation, other than the client of Friesen Drillers Limited, to who it is addressed. Friesen Drillers Limited denies any liability whatsoever to other parties who may obtain access to this document by them, without express prior written authority of Friesen Drillers Limited and the client who has commissioned this document.





APPAK - Base hold
Lockwood
(SAGE CREEK LANDS)



Image © 2007 DigitalGlobe

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© 2005 Google

Pointer 49°49'43.23" N 97°02'27.72" W

Streaming ||||| 100%

Eye alt 12205 ft

LOCATION: RIVER LOT 225 IN PARISH OF R. C. Mission

Owner: ROYAL CANADIAN MINT
Driller: Friesen Drillers Ltd.
Well Name: WELL #1
Well Use: TEST WELL
Water Use:
Date Completed: 1974 Jun 13

WELL LOG

From (ft.)	To (ft.)	Log
0	35.0	CLAY
35.0	60.0	TILL
60.0	77.9	SANDY SHALE
77.9	89.9	LIMESTONE
89.9	93.9	BLUE SHALE
93.9	94.9	LIMESTONE
94.9	96.9	BLUE SHALE
96.9	107.9	RED SHALE
107.9	204.9	SILICA SAND- SMALL LAYERS OF SHALE
204.9	259.8	LIMESTONE

WELL CONSTRUCTION

From (ft.)	To (ft.)	Casing Type	Inside Dia.(in)	Outside Dia.(in)	Slot Size(in)	Type	Material
0	80.9	casing		4.50		INSERT	BLACK IRON
80.9	259.8	open hole		4.00			

Top of Casing: ft. below ground

No pump test data for this well.

REMARKS

S.W.HWY NO.1 + LAGIMODIERE BLVD

Driller's Report

Well Location	QTR	SEC	TWP	RGE	E	<input checked="" type="checkbox"/> W		GPS Reading			
	R. Lot	Parish		Remarks				Lat. 49.83611°	Long. 97.04440°		
Well Owner	Name Sage Creek Developments Ltd.							Location Sketch of Well			
	Address 30 Speers Road										
	Winnipeg, MB. R2J 1L9				Phone						
Well Identification	Test well # 2 (East)										
Well Use	Production	<input type="checkbox"/>	Test Well	<input checked="" type="checkbox"/>	Recharge	<input type="checkbox"/>	Observation	<input type="checkbox"/>			
Water Use	Domestic	<input type="checkbox"/>	Livestock	<input type="checkbox"/>	Industrial	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>			
	Air-condition	<input checked="" type="checkbox"/>	Other	<input type="checkbox"/>	Specify						
Date well completed	August 1 2007										
Depth Below Ground in Feet	DESCRIPTION WELL LOG								Water Record		
0	37	Clay									
37	48	Till									
48	80	Limestone									
80	105	Sand & Silt									
105	280	Limestone									
280	282	Karstic sink holes									
WELL CONSTRUCTION											
Depth Below Ground Level	Casing	Open Hole	Perforations	Gravel Pack	Casing Grout	Inside Diameter	Outside Diameter	Screen Slot size	TYPE	MATERIAL	MAKE
0	66	X				5	5½		Insert Glued	PVC	
66	280		X			4½					
10	65				X				Enviroplug Grout		
Top of Casing 1½ Feet above X Below											
REMARKS:											
Test well only. Should be abandoned and sealed.											
Pumping dirty due to deep karstic fractures and voids in bedrock											
PUMPING TEST						CONTRACTOR					
Date of Test: August 1 2007						License Number 607 7					
Pumping <input checked="" type="checkbox"/> Flowing <input type="checkbox"/> Rate 15 I.G.P.M.						Name Friesen Drillers Ltd.					
Water level before pumping 33' 11" Above <input type="checkbox"/> Below <input checked="" type="checkbox"/>						Address 307 PTH 12 N Steinbach, MB. R5G 1T8					
Pumping level at end of test 40' 9" Above <input type="checkbox"/> Below <input checked="" type="checkbox"/>						Drill Operator Joe Billings					
Duration of test HRS Minutes											
Recommended pumping rate I.G.P.M.											
With pump intake at Feet below ground level											

MP 34' 10 1/2"

FRIESEN DRILLERS LTD. - PUMP TEST

WELL OWNER

DATE 9 August 2007

SIZE OF ORFICE

LOCATION EAST WELL

STATIC LEVEL 33' 11"

SIZE OF PIPE

TIME	ELAPSED TIME	DEPTH TO WATER	PUMPING RATE	REMARKS
	0			
	0.5			
	1	40' 11"		
	2	40' 11 3/4"		18-19 sec 5 GPM
	3	41' 1 1/2"		
	4	41' 3"		20 IMP GPM 1 MIN.
	5	41' 5 3/4"		
	6	41' 8"		
	7	41' 4"		
	8	41' 2 1/4"		
	9	40' 11 3/4"		
	10	40' 10"		
	15	41' 1"		
	20	40' 10 3/4"		
	25	40' 9 1/2"		
	30	40' 9 3/4"		
	35	40' 10"		
	40	40' 10"		
	50	40' 10"		
	60	40' 10"		
	75			
	90			
	105			
	120			
	135			
	150			
	165			
	180			
	210			
	225			
	240			
	300			

Driller's Report

Well Location	QTR	SEC	TWP	RGE	E	<input checked="" type="checkbox"/> W		GPS Reading			
	R. Lot		Parish		Remarks			Lat. 49.83545° Long. 97.04533°			
Well Owner	Name Sage Creek Developments Ltd.							Location Sketch of Well			
	Address 30 Speers Road										
	Winnipeg, MB. R2J 1L9				Phone						
Well Identification	Test well # 1 (West)										
Well Use	Production	<input type="checkbox"/>	Test Well	<input checked="" type="checkbox"/>	Recharge	<input type="checkbox"/>	Observation	<input type="checkbox"/>			
Water Use	Domestic	<input type="checkbox"/>	Livestock	<input type="checkbox"/>	Industrial	<input type="checkbox"/>	Irrigation	<input type="checkbox"/>			
	Air-condition	<input checked="" type="checkbox"/>	Other	<input type="checkbox"/>	Specify						
Date well completed	July 25 2007										
Depth Below Ground in Feet	DESCRIPTION WELL LOG							Water Record			
0	15	Clay									
15	18	Silt									
18	41	Till									
41	50	Limestone									
50	52	Klimestone & Dolomite									
52	262	Limestone									
262	281	Karst viod filled with sand & Siolt									
281	300	Limestone									
WELL CONSTRUCTION											
Depth Below Ground Level	Casing	Open Hole	Perforations	Gravel Pack	Casing Grout	Inside Diameter	Outside Diameter	Screen Slot size	TYPE	MATERIAL	MAKE
0	66	<input checked="" type="checkbox"/>				5	5½		Insert Glued	PVC	
66	300	<input checked="" type="checkbox"/>				4½					
10	60				<input checked="" type="checkbox"/>				Enviroplug Grout		
Top of Casing 1½ Feet above <input checked="" type="checkbox"/> Below <input type="checkbox"/>											
REMARKS:											
Test well only. Should be abandoned and sealed.											
Pumping dirty due to deep karstic fractures and viods in bedrock											
PUMPING TEST						CONTRACTOR					
Date of Test:	July 25 2007		License Number			607 7					
Pumping	<input checked="" type="checkbox"/>	Flowing	<input type="checkbox"/>	Rate	15 I.G.P.M.		Name		Friesen Drillers Ltd.		
Water level before pumping	33' 5"		Above	<input type="checkbox"/>	Below	<input checked="" type="checkbox"/>	Address		307 PTH 12 N Steinbach, MB. R5G 1T8		
Pumping level at end of test	37' 11"		Above	<input type="checkbox"/>	Below	<input checked="" type="checkbox"/>	Drill Operator		Joe Billings		
Duration of test	HRS		Minutes								
Recommended pumping rate	I.G.P.M.										
With pump intake at	Feet below ground level										

M.R 35' 1"

FRIESEN DRILLERS LTD. - PUMP TEST

WELL OWNER

DATE 9 August 2007

SIZE OF ORFICE

LOCATION WEST WELL

STATIC LEVEL 33' 5"

SIZE OF PIPE

TIME	ELAPSED TIME	DEPTH TO WATER	PUMPING RATE	REMARKS
	0			
	0.5			
	1	38' 1 1/2"	151 GPM	18 sec. 5 GAL
	2	38' 2"	↓	0.27 MAGN/SEC
	3	37' 11 1/2"		20 GPM GAL/MIN
	4	37' 11 1/4"		4.56 GPM
	5	37' 11 3/4"		~ 4.38 IMP GAL/MIN
	6	37' 11"		
	7	37' 11 3/4"		
	8	38' -		
	9	38' -		
	10	37' 11 1/2"		
	15	37' 11 1/2"		
	20	37' 11 1/2"		
	25	37' 11 3/4"		
	30	37' 11 1/2"		
	35	37' 11 3/4"		
	40	37' 11 1/2"		
	50	37' 11 3/4"		
	60	37' 11 3/4"		
	75			
	90			
	105			
	120			
	135			
	150			
	165			
	180			
	210			
	225			
	240			
	300			

MANITOBA WATER STEWARDSHIP

200 SAULTEAUX CRESCENT, WINNIPEG, MANITOBA, R3J 3W3

TELECOPIER TRANSMITTAL COVER SHEET

DATE: Jul 16 '07 NO. OF PAGES: 5 (with cover sheet)

TO: Jeff Bell

FROM: Kristine Anderson

FAX PHONE NUMBER 204-945-7419

OPERATOR'S PHONE NUMBER 204-945-_____

REMARKS: Sege Farms - GEP

**Water Stewardship**

Water Use Licensing Section
Regulatory and Operational Services
Box 16, 200 Saulteaux Crescent
Winnipeg, Manitoba, Canada R3J 3W3
T 204-945-6118 F 204-945-7419
Rob.Matthews@gov.mb.ca

July 16, 2007

Sage Creek Development Corporation
30 Speers Road
Winnipeg MB R2J 1L9

Dear Sir or Madam:

Attached herewith is a **Groundwater Exploration Permit** issued in response to your application to construct a well or wells and divert groundwater for air heating and cooling purposes on land described in Certificate of Title No. 2206193 WLTO, located to the east of the intersection of Bishop Grandin Blvd and Blvd Lagimodiere in Winnipeg.

The Permit authorizes Sage Creek Development Corporation to carry out exploration test drilling, construct wells, and conduct aquifer pump testing at the above noted property. The purpose of the pump testing is to determine if sufficient water is available from the wells, and the aquifer, to support the project and to determine drawdown and thermal impacts, on existing area wells, associated with the withdrawal of water from the proposed wells. Please note that during testing, pumping must cease if any local water supplies are negatively impacted as a result of testing. Sage Creek Development Corporation would further be responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of testing.

Please also note the following requirements that would need to be met and the information that would need to be supplied to the Water Use Licensing Section pursuant to the issuance of a water rights licence for your project.

Prior to undertaking any work or construction of any works authorized by this permit the permittee is required to retain the services of a hydrogeologist registered with APEGM, who would be required to:

- Plan and supervise the drilling of boreholes, test wells, production wells, observation wells, and aquifer and well pump testing as authorized by this permit;
- Conduct aquifer pumping tests on project wells, in accordance with Form H (attached), as deemed necessary by the consulting hydrogeologist;
- Carry out an inventory of private and commercial wells within a 1500 m radius of the project well site; and
- Prepare and submit to the Water Use Licensing Section a technical report on the drilling of boreholes and wells, pump testing of wells, and well inventory. The report would contain, but not be limited to, such things as: well driller's reports for test wells, production wells and observation wells, a plan showing the location of these wells with measurements to two property lines and/or GPS locations of the wells, an analysis of aquifer pumping tests, calculations of transmissivity, and a description of the amount of drawdown and thermal

interference that would be expected to occur at local wells within a 1500 m radius of the project well site. The report would also indicate if any local wells are expected to be adversely affected by the proposed use of water and where these wells are located.

A licensing decision on this project will be held pending submission of the required information. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of The Water Rights Act and may be subject to enforcement.

Please contact Kristina Anderson, G.I.T. directly at 945-6009 should you have any questions regarding the requirements outlined in this letter and the attached permit, or the water rights licensing aspects of this project.

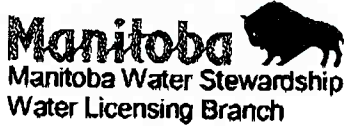
Yours truly,



Rob Matthews, P. Geo.
Manager, Water Use Licensing Section
Regulatory and Operational Services

Attachment - Form H / Permit

c. J. Bell, P.Eng., Friesen Drillers



FORM F

200 Saulteaux Crescent
Winnipeg, Manitoba
R3J 3W3

Groundwater Exploration Permit

Pursuant to The Water Rights Act

Sage Creek Development Corporation

is hereby permitted to construct a water well or wells on the following described lands to explore for groundwater.

	X	X	X	X	X
LSD	OR QUARTER	SECTION	TOWNSHIP	RANGE	E OR W

Or otherwise described on Certificate of Titles 2206193 WLTO for air heating and cooling purposes, subject, however, to the following conditions:

1. Prior to undertaking any work or construction of any works authorized by this permit the permittee is required to retain the services of a hydrogeologist registered with APEGM, who would be required to:
 - Plan and supervise the drilling of boreholes, test wells, production wells, observation wells, and aquifer and well pump testing as authorized by this permit.
 - Conduct aquifer pumping tests on project wells, in accordance with Form H (attached), as deemed necessary by the consulting hydrogeologist.
 - Carry out an inventory of selected private and commercial wells within a 1500 m radius of the project well site.
 - Prepare and submit to the Water Use Licensing Section a technical report on the drilling of boreholes and wells, pump testing of wells, and well inventory. The report would contain, but not be limited to, such things as: well driller's reports for test wells, production wells and observation wells, a plan showing the location of these wells with measurements to two property lines and/or GPS locations of the wells, an analysis of aquifer pumping tests, calculations of transmissivity, and a description of the amount of water level and thermal interference that would be expected to occur at existing local wells that are located within a 1500 m radius of the project well site. The report would also indicate if any local wells are expected to be hydraulically or thermally adversely affected by the proposed use of water and where these wells are located.
2. During any pumping tests that may be conducted, pumping must cease immediately if any local water supplies are negatively impacted as a result of the tests. The permittee is also responsible to correct any water supply problems or provide temporary water supply to anyone whose water supplies are negatively impacted as a result of the tests.
3. This permit expires within twelve (12) months of the date of issuance.
4. Please note that diversion of water without a Water Rights Licence or written authorization would constitute a violation of The Water Rights Act and may be subject to enforcement.

Issued at the City of Winnipeg in the Province of Manitoba, this 16 day of July, A.D. 2007

RMA 07/07/16

[Signature]
for The Honourable Minister of Water Stewardship

Requirements for High Capacity Aquifer Pumping Tests to Support Applications for a Water Rights Licence

Manitoba
Conservation
Water Branch

200 Saulteaux Crescent
Winnipeg, Manitoba
R3J 3W3



FLOW RATE

The flow rate should be kept as constant as possible and should be monitored at least every hour during the test. The flow should be monitored by a device such as a standard orifice meter or a weir box capable of reading the rate to within five percent accuracy. Also, it is desirable that the pumping rate be as close to the desired licence pumping rate as conditions permit.

DISPOSAL OF WATER

Water from the pumped well should be disposed of in such a manner as to prevent recirculation to the water bearing zone being tested.

OBSERVATION WELLS

Where the water bearing zone being tested is buried under a substantial thickness of low permeability material, one observation well should be established at a distance from the pumped well equal to twice the thickness of the water bearing zone being tested, but not further than 91 metres.

Where the water bearing zone being tested is not buried under a substantial thickness of low permeability material, two observation wells should be established in the lower part of the water bearing zone being tested, one being 9 to 12 metres from the pumped well and the other being 24 to 30 metres from the pumped well. Preferably both wells should be established in the same direction from the pumped well.

WATER LEVEL READINGS

Timing:

Very careful observation of time is essential to obtaining accurate test data. The water level readings in the pumped and observation well(s) should be measured at the same instant for the first hour of the test and should be measured as close to the same time as possible for the remainder of the pumping time.

During the first ten minutes of the test the water levels should be read every minute. During the next ten minutes water levels should be read every two minutes. Thence, the water levels should be read once every five minutes until the first hour of testing has elapsed. For the next hour, readings should be taken every 15 minutes. Then for the following two hours, the water levels should be recorded once every half hour. Thence, water levels should be recorded once an hour until the test is completed.

Measurement:

The water level measurements within the observation wells should be recorded with engineering or construction type measuring tapes or preferably with electric measuring tapes commonly used in ground-water observation work. The readings in the observation wells should be measured to within 0.3 centimetres accuracy. In the pumping well, water levels should be recorded either with an electric water level measuring taped or with an airline water level measuring device. The readings in the pumping well should be measured to 3.0 centimetres.

DURATION OF THE TESTING

The pumping test should be run at the same continuous pumping rate until equilibrium conditions are reached or for a minimum of 24 hours. Equilibrium conditions exist when the water levels in all observation wells have remained stable for at least six hours. If, at the end of the 24 hours equilibrium conditions have not been reached, the test should continue at the established pumping rate until these conditions are reached; or a total time of 48 hours has elapsed.

OR

The duration of the pumping test may be as otherwise directed by the Director, Water Branch or his Agents.

RECOVERY TEST

Once the pumping interval of the test has been completed, the recovery water levels in the pumping and the observation wells should be recorded in exactly the same manner, particularly with respect to timing of the readings, as the drawdown readings, for a period equal at least to the duration of the pumping test or until the water levels have returned to normal.

GENERAL

The above test work is required in order to assess the functioning of the pumping well and more importantly the capability of the aquifer to sustain the withdrawal rate that has been requested. The data collected will help make sure that a viable water supply system is established prior to proceeding with full scale development. The information will also be available should there be problems with the pumping well in the future. The original data can also be used to assess future aquifer problems.



Friesen Drillers Ltd.

Box 1, Grp. 15, R.R.#1 Steinbach, MB. R5G 1L9 Phone 204-326-2485 Fax 204-355-4110 Toll Free-1-888-794-9355

July 10, 2007

Mr. John Little, P.Geo.
Groundwater Licensing Section
Manitoba Water Stewardship
200 Saulteaux Crescent
Winnipeg, MB R3J 3W2

Dear John

**Subject Hydrogeological/Geothermal Assessment– Proposed Office Building
Sage Creek Development Corporation – Lots 182-186, Lots 212-214, Plan 433 WLTO – Roman Catholic Mission
Property City of Winnipeg, Manitoba**

Friesen Drillers Limited, acting on behalf Sage Creek Developments Corporation is hereby submitting the attached permit application to undertake a hydrogeological/geothermal assessment of a potential groundwater geothermal system for the proposed office facility, located on various parcels and lots of 182-186, 212-214, Plan 433 WLTO of the Roman Catholic Mission Property (RCMP), in the City of Winnipeg, Manitoba. The scope of this proposed assessment is outlined in the following paragraphs. The results will form part of an application for a water rights license, provided the test hole results are promising.

Project Background

Sage Creek Developments Limited (a division of Qualico Developments Corporation) has acquired property near Lagimodiere Blvd. and Bishop Grandin Boulevard in the southeast portion of the City of Winnipeg. The corporation is currently developing a large section of property that was previously developed for agricultural use.

Sage Creek Developments has retained Tower Engineering Limited to undertake the electrical/mechanical portion of the proposed building design. Geothermal energy has been proposed as a possible alternative for the project. According to very preliminary estimates (without substantial design), a preliminary flow rate of 400 U.S.G.P.M., was determined. It is our understanding that large portions of property are available for development and test drilling. The buildings mechanical designers are interested in investigating the potential for groundwater supplies for geothermal. If suitable quantities are not located, the project may be limited in scope, reduced, or terminated.

Proposed Hydrogeological Study and Preliminary Design

Friesen Drillers will commence the project with a detailed review of the background data available on the general area, including well drilling records, domestic well logs, water quality information, and existing hydrogeological maps and reports. This data will be used to identify existing and potential groundwater/geothermal users in order to ensure that the potential impacts of the proposed groundwater development on off-site users are properly addressed.

Our proposed scope of work includes the following:

Phase I – Permit Application and Data Collection

- Undertake a detailed review of the background data reports.
- Prepare and submit a hydrogeological study permit and application fee for approval to Manitoba Water Stewardship – Water Rights Licensing

Phase II – Hydrogeological Investigations

- Arrange for the location and marking of underground services at the site. Sage Creek Development Corporation will be required to identify exact locations for test drilling. Friesen Drillers will not be held responsible for errors in test well location or errors in underground service location. Test well locations have not been determined at this time.

water...the lifeblood of the land

Proposed Hydrogeological Study and Preliminary Design (cont'd)

- Friesen Drillers will log and design two test wells at the site. The actual locations of the test wells have not been determined at this time. Each test well will be completed as a 125 mm diameter, PVC, Series 200 monitoring well, in the carbonate aquifer. Interim yield tests and 1 hour pumping/recovery tests will be performed on each well, under Friesen Drillers supervision.
- Friesen Drillers will install a data logger equipped pressure transducer in one on-site monitoring well installed during this study. This transducer will measure water levels and aquifer temperature changes, and will be set to collect data every minute. The transducer will be left in place for a one week period.

Phase III – Reporting and Data Analysis

- Preparation of a brief report detailing the geology/hydrogeology of the site. The report will include:
 - Discussion of local and regional hydrogeology
 - Groundwater flow directions.
 - Aquifer hydraulics at the site.
 - Thermal breakthrough analysis.
 - Discussions/recommendations for safe yield of the production wells.
 - Potential impacts to the existing wells on and off site.
- Friesen Drillers will develop a preliminary set of specifications for the final construction of the groundwater based geothermal system, if the results of the study prove successful.

The report will provide site-specific information for Sage Creek Development Corporation to determine the feasibility of implementing a groundwater geothermal system at the site. If the results of this phase of study are successful, production wells will be installed, along with a final groundwater licensing submission.

Project Schedule

Pending your approval, we anticipate that this project will be initiated in July 2007.

We trust this information meets with your requirements. A formal copy of the Application for Licenses to Construct a Well and Divert Groundwater is attached for the purpose of this assessment, along with the applicable fee and supporting documentation. Should you require anything further, please call me at (204) 326-2485.

Sincerely

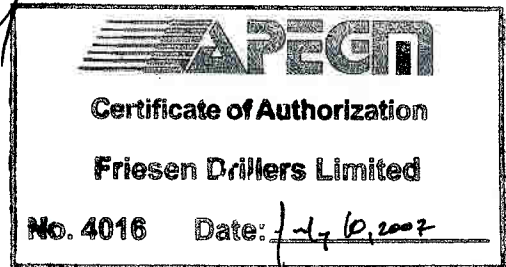
Friesen Drillers Limited



Reviewed by

Friesen Drillers Limited

Ryan O. Rempel, B.Sc.
Operations Manager



Copy Mr. Brian Cornelsen, G.S.C. – Sage Creek Development Corporation

Attachments



Limitations

The scope of this report is limited to the matters expressly covered and is intended solely for the client to whom it is addressed. Friesen Drillers Limited makes no warranties, expressed or implied, including without limitation, as to the marketability of the site, or fitness to a particular use. The assessment was conducted using standard engineering and scientific judgment, principles, and practices, within a practical scope and budget. It is based partially on the observations of the assessor during the site visit in conjunction with archival information obtained from a number of sources, which is assumed to be correct. Except as provided, Friesen Drillers Limited has made no independent investigations to verify the accuracy or completeness of the information obtained from secondary sources or personal interviews. Generally, the findings, conclusions, and recommendations are based on a limited amount of data (e.g. number of boreholes drilled or water quality samples submitted for laboratory analysis) interpolated between sampling points and the actual conditions on the site may vary from that described above. Any findings regarding the site conditions different from those described above upon which this report was based will consequently change Friesen Drillers Limited's conclusions and recommendations.

Disclaimer

This Friesen Drillers Limited report has been prepared in response to the specific requests for services from the client to whom it is addressed. The content of this document is not intended to be relied upon by any person, firm, or corporation, other than the client of Friesen Drillers Limited, to who it is addressed. Friesen Drillers Limited denies any liability whatsoever to other parties who may obtain access to this document by them, without express prior written authority of Friesen Drillers Limited and the client who has commissioned this document.



FORM E

Application for Licence to Construct A Well and Divert Groundwater

Manitoba Conservation
Water Branch
200 Saulteaux Crescent
Winnipeg MB R3J 3W3



Pursuant to The Water Rights Act

APPLICANT'S NAME: <u>SAGE CREEK DEVELOPMENT CORPORATION</u>	TELEPHONE: <u>204-233-2451</u>
POST OFFICE ADDRESS: <u>30 SPEERS ROAD, WINNIPEG, MB R2J 1L9</u>	

hereby applies for authority to construct a water well on the following described lands:

PARCEL 1 LOTS 182-186, 212-214, 433	PLAN W90	WITH ALL EXCLUSIONS LISTED	RCMP
PARCEL 2 LOT 211	PLAN 433	WLTO WITH EXCLUSIONS LISTED	RCMP
LSD	OR QUARTER	SECTION	TOWNSHIP
			RANGE
			E OR W

or otherwise described as SAGE CREEK DEVELOPMENT CORPORATION

and divert groundwater for GEOTHERMAL purposes on the following described land:
(domestic, municipal, agricultural, industrial, irrigation, other)

PARCEL 1 LOTS 182-186, 212-214, 433	PLAN W90	WITH ALL EXCLUSIONS LISTED	RCMP
PARCEL 2 LOTS 211	PLAN 433	WLTO WITH ALL EXCLUSIONS LISTED	RCMP
LSD	OR QUARTER	SECTION	TOWNSHIP
			RANGE
			E OR W

or otherwise described as _____

at the following rates:
 _____ cubic metres per second
 _____ cubic decametres per day
 _____ cubic decametres per year

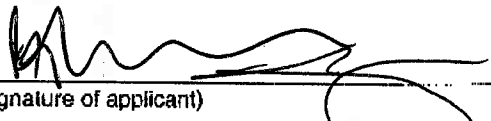
Number of hectares to be irrigated _____ (if applicable)

The above described lands are held as follows: (check applicable box)

- Registered owner purchased under agreement for sale lessee
 to be negotiated

Copy(s) of Certificate(s) of Title or Title Numbers must be included.

Date: June 22 2007


 (signature of applicant)

FOR OFFICE USE ONLY Application filed with the Director, Water Branch, at Winnipeg, Manitoba on _____, 20____ _____ (Signature of Director)	** PLEASE NOTE ** FEE OF \$50.00 MUST ACCOMPANY THIS APPLICATION, CHEQUE AND APPLICATION TO BE MAILED TO: MANITOBA CONSERVATION CASHIER'S OFFICE BOX 42, 200 SAULTEAUX CRESCENT WINNIPEG MB R3J 3W3
--	--

MG-14843 (English)

CHEQUES TO BE MADE PAYABLE TO MINISTER OF FINANCE

DATE: 2007/03/13
TIME: 09:53

MANITOBA
STATUS OF TITLE

TITLE NO: 2206193

PAGE: 1

STATUS OF TITLE..... ACCEPTED
ORIGINATING OFFICE..... WINNIPEG
REGISTERING OFFICE..... WINNIPEG
REGISTRATION DATE..... 2007/02/05
COMPLETION DATE..... 2007/02/19

PRODUCED FOR.. LEEGALS EXPRESS LEGAL SERVICES
ADDRESS..... 503 - 225 VAUGHAN STREET
WINNIPEG MB R3C 1T7

PRODUCED BY... L.DERRY
LTO BOX NO.... 232

LEGAL DESCRIPTION:

SAGE CREEK DEVELOPMENT CORPORATION

IS REGISTERED OWNER SUBJECT TO SUCH ENTRIES RECORDED HEREON, IN THE FOLLOWING DESCRIBED LAND:

PARCEL 1: LOTS 182, 183, 184, 185, 186, 212, 213 AND 214 PLAN 433 WLTO
EXC OUT OF SAID LOTS 182 AND 214, PLAN 41547 WLTO
EXC OUT OF SAID LOTS 183, 184, 212, 213 AND 214, PLAN 45829 WLTO
EXC OUT OF SAID LOT 186, RIGHT OF WAY OF CITY OF WINNIPEG
TRANSMISSION LINE, PLAN 3364 WLTO AND FURTHER
EXC OUT OF SAID LOTS 182, 183, 184, 185 AND 186, RIGHT OF WAY OF
MANITOBA HYDRO POWER TRANSMISSION LINE, PLAN 8986 WLTO
IN THE ROMAN CATHOLIC MISSION PROPERTY.

PARCEL 2: LOT 211 PLAN 433 WLTO
EXC OUT OF SAID PARCEL 2, FIRSTLY: RIGHT OF WAY OF CITY OF WINNIPEG
TRANSMISSION LINE, PLAN 3364 WLTO, AND
SECONDLY: ALL THAT PORTION CONTAINED WITHIN THE FOLLOWING LIMITS:
COMMENCING AT THE POINT OF INTERSECTION OF THE SOUTHERN LIMIT OF THE
RIGHT OF WAY OF CITY OF WINNIPEG POWER TRANSMISSION LINE,
PLAN 3364 WLTO, WITH THE WESTERN LIMIT OF SAID LOT,
THENCE ELY, ALONG SAID SOUTHERN LIMIT, 580.8 FEET
THENCE SLY, PARALLEL WITH SAID WESTERN LIMIT, 450 FEET
THENCE WLY, PARALLEL WITH SAID SOUTHERN LIMIT, TO SAID WESTERN LIMIT,
THENCE NLY, ALONG SAID WESTERN LIMIT, TO THE POINT OF COMMENCEMENT;
IN THE ROMAN CATHOLIC MISSION PROPERTY.

ACTIVE TITLE CHARGES:

174619 WPG ACCEPTED FROM/BY: TO: CONSIDERATION:	CAVEAT MANITOBA POWER COMMISSION	REG'D: 1959/07/17	NOTES: AFF: PART
210171 WPG ACCEPTED FROM/BY: TO: CONSIDERATION:	CAVEAT MANITOBA TELEPHONE SYSTEM	REG'D: 1968/10/15	NOTES: AFF: PART
3393331 WPG ACCEPTED FROM/BY: TO: CONSIDERATION:	MORTGAGE SAGE CREEK DEVELOPMENT CORPORATION ROYAL BANK OF CANADA \$30,000,000.00	REG'D: 2006/12/19	NOTES:

UNCERTIFIED EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2007/03/13 OF TITLE NUMBER 2206193

***** STATUS OF TITLE 2206193 WPG CONTINUED ON NEXT PAGE *****

DATE: 2007/03/13
TIME: 09:53

MANITOBA
STATUS OF TITLE

TITLE NO: 2206193

PAGE: 2

STATUS OF TITLE..... ACCEPTED
ORIGINATING OFFICE..... WINNIPEG
REGISTERING OFFICE..... WINNIPEG
REGISTRATION DATE..... 2007/02/05
COMPLETION DATE..... 2007/02/19

PRODUCED FOR.. LEEGALS EXPRESS LEGAL SERVICES
ADDRESS..... 503 - 225 VAUGHAN STREET
WINNIPEG MB R3C 1

PRODUCED BY... L.DERRY
LTO BOX NO.... 232

ACTIVE TITLE CHARGES:

3409258 WPG ACCEPTED	CAVEAT	REG'D: 2007/02/05
DESCRIPTION:	TEMPORARY EASEMENT - PURPOSES OF SNOW STORAGE & ACCESS	
FROM/BY:	THE CITY OF WINNIPEG	
TO:	BY AGENT: WILLIAM R. STOVEL	
CONSIDERATION:	NOTES: AFF: LOT 214	

ACCEPTED THIS 5TH DAY OF FEBRUARY, 2007
BY G.BILODEAU FOR THE DISTRICT REGISTRAR OF
THE LAND TITLES DISTRICT OF WINNIPEG.

UNCERTIFIED EXTRACT PRODUCED FROM THE LAND TITLES DATA
STORAGE SYSTEM ON 2007/03/13 OF TITLE NUMBER 2206193.

***** END OF STATUS OF TITLE FOR TITLE 2206193 WPG *****

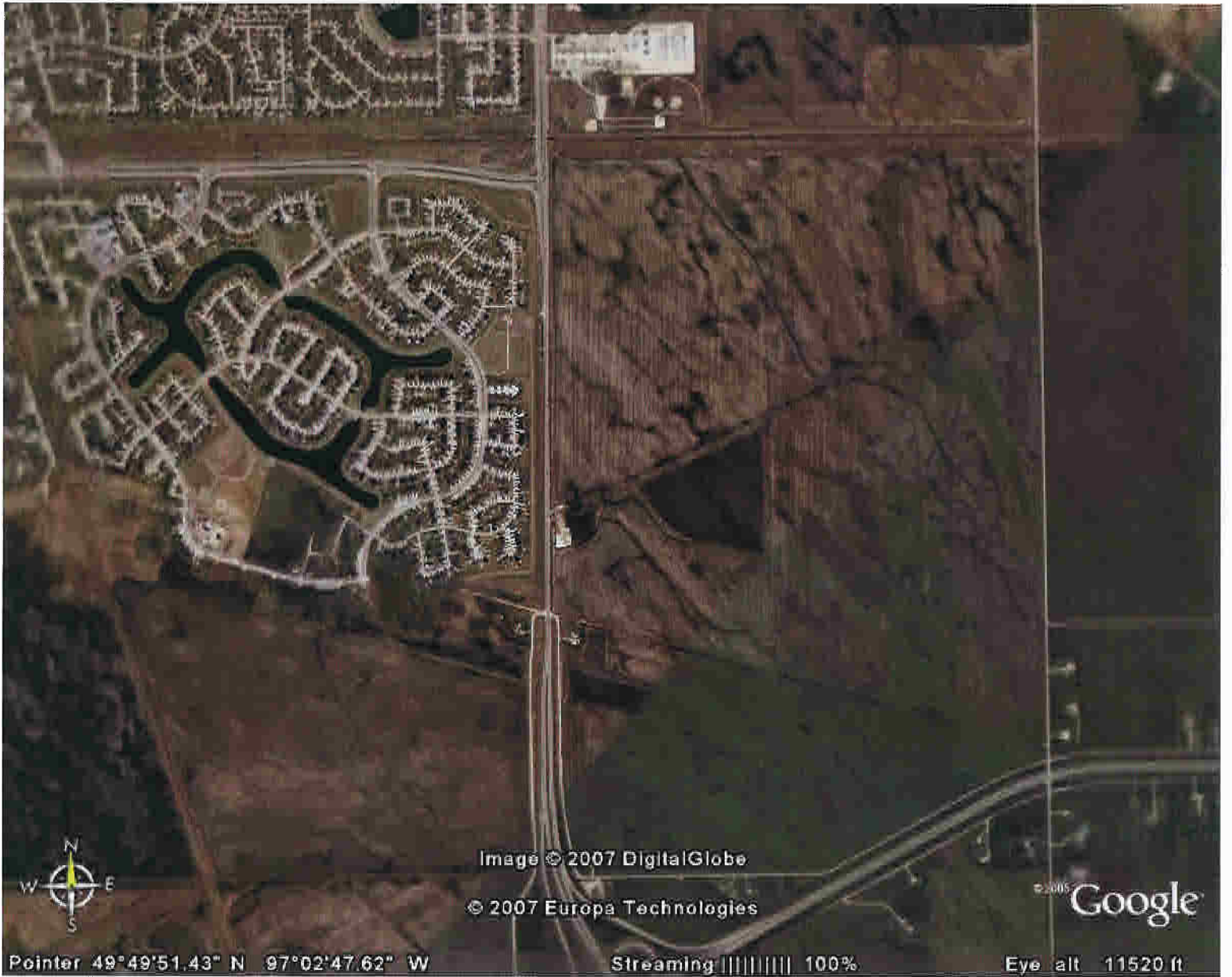


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Pointer 49°49'51.43" N 97°02'47.62" W

Streaming ||||| 100%

Eye alt 11520 ft