



**Water Supply Source Assessment,  
Renewables Integration and Grid  
Security Synchronous  
Condensing/Generation Facility  
Project, Centre Village, NB**

Final Report

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## Glossary

Term	Definition
Aquifer	A geological formation, group of formations or part of a formation that contains sufficient saturated permeable material to yield economical quantities of groundwater to wells or springs.
Transmissivity (T)	Expressed as cubic metres per second per metre of drawdown ( $m^3/s/m$ or $m^2/s$ ), is the volume of groundwater transmitted through a unit width of aquifer over its entire effective or saturated thickness.
Hydraulic Conductivity (K)	The volume of water that is transmitted through a unit area of aquifer under a unit decline in hydraulic head, expressed as cubic metres per second per square metre of aquifer (e.g., $m/s$ ), and is equal to the transmissivity divided by the aquifer thickness contributing to the well.
Storage Coefficient or Storativity (S)	The volume of water that an aquifer releases from storage (pumping) or takes into storage (recharge) per unit surface area, per unit change in hydraulic head, expressed as a percentage.
Specific Capacity (Q/s)	The ratio of well pumping rate to water level drawdown, expressed as $m^3/s/m$ or $m^2/s$ ; this property typically decreases with time of pumping (e.g., 30-minute, two days, or long-term specific capacities).
Safe Well Yield	The practical volume of water discharged from a well within a specific time period (e.g., one day, 10 day, continuous) in litres per minute (L/min), US gallons per minute (gpm), or cubic metres per day ( $m^3/d$ ), based on the apparent transmissivity of the well, and allowable drawdown to a pump intake, top of a screen or a major water-bearing zone.
Safe Aquifer Yield	The practical safe abstraction rate of the host aquifer from one or more pumping wells within about one kilometre (km) radius from a pumping well based on observation well hydraulic properties, and boundary conditions. One a regional scale this is limited by the available groundwater recharge over a specific time period.



# **1 Introduction**

Stantec Consulting Limited was retained by PROENERGY Holding Company, Inc.(PROENERGY) to provide hydrogeological services to support a water supply source assessment for the development of an industrial water supply located in Centre Village, New Brunswick (NB). This report summarizes the hydrogeological setting and outlines the aquifer testing that was completed to evaluate the feasibility of a groundwater supply capable of meeting the needs of the proposed development. The Project location is shown on Figure A-1 in Appendix A.

# **2 Project Description**

The proposed Renewables Integration Grid Security (RIGS) Energy Atlantic project (The Project) is an electricity grid support facility and dispatchable power generation solution for New Brunswick. Developed by PROENERGY, this facility will help to meet growing energy demand while transitioning toward a net-zero electric grid. It will use aeroderivative turbines paired with advanced synchronous condensing technology. This technology serves as a ‘shock absorber’ for the electricity grid – smoothing the effects of sudden changes in wind and solar generation output. It will also deliver up to 500 megawatts (MW) of essential backup support for wind and solar energy. The Project site within Westmorland County was selected due to its proximity to an existing 138 kilovolt (kV) transmission line owned and operated by New Brunswick (NB) Power and the Maritimes and Northeast Pipeline (M&NP) 30” natural gas pipeline. This report summarizes the results of the hydraulic and water quality testing performed across various phases of work as per the New Brunswick Department of Environment and Local Government (NBDELG) Water Supply Source Assessment (WSSA) Guidelines (NBDELG 2017) to provide an opinion on the suitability of groundwater at the site as a requirement of the Environmental Impact Assessment (EIA) regulation (87-83) of the Clean Environment Act.

# **3 Existing Site Conditions**

## **3.1 Location, Physiography, and Drainage**

The Project site lies within the Eastern Lowlands Ecoregion of New Brunswick, which is characterized by relatively smooth topographic relief and low elevation, typically late carboniferous sedimentary bedrock geology, and frequently acidic soils (NBDNR 2007). Within the Eastern Lowlands Ecoregion, the Project is situated in the Kouchibouguac Ecodistrict. This Ecodistrict is characterized by river estuaries, barrier beaches, and peat bogs (NBDNR 2007). Most soils in this ecoregion are a result of marine deposits near the coastline and glacial tills farther inland, resulting in a range of soils from compact, clay, and sandy loams, to quartzose beach soils and glaciolacustrine deposits. The bedrock of the Project site is composed entirely of Pennsylvanian grey and red sandstone, mudstone, and conglomerate (NBDNR 2007).



The Project site is in a relatively flat-lying area with forest cover in the upper reaches of the Tantramar River Watershed. Locally, the site slopes gently toward a nearby topographic depression representing the headwaters of an unnamed tributary located approximately 350 m west of the Project site. Regional topography slopes gently west and south toward the Tantramar River and its tributaries, located approximately 5 km west of the Project. The Tantramar River flows south and discharges to the Cumberland Basin of the Bay of Fundy adjacent to Sackville, NB approximately 20 km south of the Project. The elevation of the Project site is approximately 58 m above sea level (masl).

### **3.2 Climate**

The Project is located within the Eastern Lowlands ecoregion of NB with climate described as humid continental with long and cold winters and warm summers. Due to lack of major topography in the area, the main control of local climate is the distance to the Atlantic Ocean (Rivard et al. 2005).

According to the 1991-2020 Canadian Climate Normals for the nearest weather station in Sackville, NB, the mean annual precipitation is 1147 mm, which includes a mean annual snowfall accumulation of 231 cm (ECCC 2025).

### **3.3 Geology**

The Property is situated in the Maritime Plain physiographic region (Rampton et al. 1984). The surficial geology consists of blanket and veneer of glacial sediments, generally 0.5 m to 3 m thick (Rampton 1984). These sediments consist of loamy lodgment till, minor ablation till, silt, sand, gravel, and rubble from the Late Wisconsinan glaciations (Rampton 1984). These materials are typical of glacial depositional environments and may exhibit variable permeability depending on grain size distribution and degree of compaction. Surficial geology mapping is presented in Figure A-2

Bedrock underlying the site belongs to the Salisbury Formation, which is part of the Carboniferous-aged Pictou Group (St Peter and Johnson 2009). Lithological units within the Salisbury Formation include brownish red to greyish red siltstone and mudstone, very fine- to medium-grained sandstone, pebbly sandstone, and intraformational mud-clast and polymictic conglomerate. Mottled paleosol horizons are also present, indicating periods of subaerial exposure and soil formation. The bedrock is sedimentary in origin and exhibits stratification and structural features consistent with regional tectonic history. Bedrock geology mapping is presented in Figure A-3.

### **3.4 Hydrogeological Setting**

The hydrogeology of the Project site includes both local and regional flow regimes that are expected to be controlled primarily by the bedrock geology and topography. The site is located within the upper reaches of the Tantramar River watershed and regional groundwater flow is expected to follow the topography of the catchment area. Groundwater is inferred to flow towards the west and south with eventual discharge to the Tantramar River and the Bay of Fundy. On a local scale, shallow groundwater is expected to discharge to tributaries of the Tantramar River, including Harper Brook, East Brook, and Long Lake Brook and their respective tributaries. In the absence of major topography in the area (i.e., the maximum ground surface elevation in the watershed is on the order of approximately 70 masl and the Project site is approximately 58 masl), lateral groundwater flow direction at depth is not expected to differ significantly from shallow groundwater.



Based on a review of the New Brunswick online well system (NB OWLS), there were 44 domestic well records within 10 km of the Project site and no records showing within 500 m (NBDELG 2025). Regional groundwater quality in the Maritime Carboniferous Basin is generally characterized as naturally good to excellent, with commonly elevated concentrations of iron and manganese (Rivard et al. 2005). The most common groundwater type in the upper 100 to 200 m of aquifers is calcium bicarbonate with moderate hardness and slightly alkaline pH, while at greater depths, sodium chloride type may also be encountered (Rivard et al. 2005).

## **4 Methodology**

### **4.1 Well Drilling and Construction**

Between November 4, 2025 and December 5, 2025, Eastern Well Drillers completed the initial phase of test well drilling at the locations shown on Figure A-5 in Appendix A. This phase (Phase 1) included two 200 mm diameter test wells, Well 1 and Well 2, and one 150 mm diameter test well, Well 3. Well construction details and preliminary yield estimates are summarized in Table 4.1.

Wells 1 and 2 were initially completed as 200 mm diameter test wells to increase the potential for higher well yields and to accommodate the pumping infrastructure required to evaluate the target pumping rates during hydraulic testing. Well 3 was initially completed as a 150 mm diameter test well; however, the preliminary air-lift yield observed during drilling was notably higher than those observed in Wells 1 and 2. Subsequent step-drawdown testing of Well 3 was limited by the 150 mm borehole diameter and was unable to sufficiently stress the well under the available pumping configuration. Based on the results of the initial step testing, it was recommended that Well 3 be reamed to 200 mm diameter and that step-drawdown testing be repeated to evaluate the potential for greater yield assessment.

Phase 2 of well drilling was completed in March 2026 and included the installation of Wells 4 through 8, shown on Figure A-5. Wells 4 through 8 were completed as 150 mm diameter water wells. Well construction information and preliminary yield estimates (i.e., the driller's air lift estimate) are provided in Table 4.1. The driller's well construction logs are provided in Appendix B.



**Table 4.1 Well Construction and Initial Yield Summary**

Well ID	Date	Preliminary Yield Estimate (L/min) <sup>1</sup>	Casing Depth (mbgs) <sup>2</sup>	Total Depth (mbgs) <sup>2</sup>
1	November 4, 24-25, 2025	150	6.7	244
2	November 26-28 and December 1-3, 2025	190	18.3	305
3	December 4-5, 2025	380	6.7	159
4	March 25-27, 2026	454	24.4	152
5	March 30-31, 2026	38	36.6	152
6	March 24-25, 2026	466	18.3	152
7	March 20-23, 2026	466	24.4	152
8	March 15-17, 19, 2026	409	30.5	152

Notes:

1. Preliminary yield estimate based on the well drillers observation at the time of drilling using air lift methodology.
2. mbgs – meters below ground surface

## 4.2 Hydraulic Testing

### 4.2.1 Step Drawdown Test

Step-drawdown testing was completed as part of the phased hydraulic testing program to evaluate the short-term performance of individual wells and to support selection of pumping rates for subsequent longer-duration constant rate testing.

The step tests were used to support the following objectives:

- evaluate the short-term specific capacity of individual wells at different pumping rates;
- assess whether drawdown response increased disproportionately at higher pumping rates;
- identify practical pumping limitations for individual wells such as excessive drawdown, turbidity, cascading water, or pump limitations;
- support the selection of pumping rates for longer-duration constant rate and multi-well testing; and
- provide a basis for comparing individual well performance with the later combined wellfield response.

The step tests were conducted on select wells following well drilling during Phase 1 and Phase 2 of the assessment. During Phase 1, step testing was completed to evaluate the initial test wells and support selection of a pumping rate for the 72-hour pumping test completed on Well 3. Following modification/reaming of Well 3, additional testing was completed to reassess the well response under the modified well construction. During Phase 2, step testing was completed on selected additional wells to evaluate individual well performance and inform the pumping rate distribution for a multi-well pumping test that is described in Section 4.2.2. Water levels were monitored manually using a Solinst electronic water



level meter and/or electronically using Solinst pressure transducers with data logging capabilities during the step tests. Pumping rates were monitored during each step and adjusted as required based on field conditions and observed well response. The step-test results are summarized in Table 4.2, and the corresponding time-drawdown plots are provided in Appendix C.

**Table 4.2 Summary of Step Drawdown Test**

Well ID	Date	Step	Pumping Rate (Q) (L/min)	Time Interval (min)	Total Time (min)	
Well 1	January 11, 2026	1	152	20	20	
Well 2	December 17, 2025	1	57	60	60	
		2	95	60	120	
		3	133	60	180	
		4	189	60	240	
		5	303	60	300	
Well 3	December 12, 2025	1	76	60	60	
		2	125	60	120	
		3	190	60	180	
		4	303	60	240	
	January 12, 2026	1	235	60	60	
		2	303	60	120	
		3	379	60	180	
		4	454	5	185	
		5	568	70	255	
		6	681	30	275	
		7	738	80	340	
	Well 4	April 1, 2026	1	170	15	15
			2	246	142	157
3			284	37	194	
4			322	38	232	
Well 6	April 2, 2026	1	208	14	14	
		2	246	59	73	
		3	284	45	118	
		4	356	120	238	



**Table 4.2 Summary of Step Drawdown Test**

Well ID	Date	Step	Pumping Rate (Q) (L/min)	Time Interval (min)	Total Time (min)
Well 7	April 7, 2026	1	190	22	22
		2	246	31	53
		3	284	31	85
		4	363	155	240
Well 8	April 8, 2026	1	190	16	16
		2	246	31	47
		3	284	43	91
		4	318	164	254

Step-drawdown testing was completed on Well 2 and Well 3 in December 2025 and January 2026. Well 2 was step-tested on December 17, 2025, at pumping rates ranging from approximately 57 L/min to 303 L/min (15 US gpm to 80 US gpm). Well 3 was initially tested on December 12, 2025, at pumping rates ranging from approximately 76 L/min to 303 L/min (20 US gpm to 80 US gpm), with additional higher-rate step testing completed on January 12, 2026, at rates ranging from approximately 235 L/min to 738 L/min (62 US gpm to 195 US gpm). A shorter step test was also completed on Well 1 on January 11, 2026, at approximately 152 L/min (40 US gpm). The results of these step tests were used to assess individual well response and to select appropriate rates for the subsequent sustained pumping test phase.

Following installation of the additional wells as part of Phase 2 and subsequent to the 72-hour pumping test on Well 3, further step-drawdown testing was completed in April 2026 to evaluate the performance of the new wells and to support selection of pumping rates for the Phase 2 multi-well constant rate test. Well 4 was tested on April 1, 2026, at rates ranging from approximately 170 L/min to 322 L/min (45 US gpm to 85 US gpm). Well 6 was tested on April 2, 2026, at rates ranging from approximately 208 L/min to 356 L/min (55 US gpm to 94 US gpm). Well 7 was tested on April 7, 2026, at rates ranging from approximately 190 L/min to 363 L/min (50 US gpm to 96 US gpm). Well 8 was tested on April 8, 2026, at rates ranging from approximately 190 L/min to 318 L/min (50 US gpm to 84 US gpm). The results of these tests were used to assess the relative productivity of each well, available drawdown, operational constraints, and appropriate pumping rates for the subsequent multi-well testing.

#### **4.2.2 Constant Rate Pumping Test**

Constant rate pumping tests are performed to:

- estimate the hydraulic properties of the pumping well and the aquifer (e.g., if observation wells and data are available);
- estimate the safe yield of the pumping well;
- size appropriate pumping equipment; and
- predict interference between adjacent pumping wells using aquifer hydraulic properties.



A phased pumping test program was completed to evaluate the hydraulic response of the bedrock aquifer and to support assessment of potential groundwater supply development at the site. The testing program was developed progressively based on the results of earlier field testing and interpretation. Initial step-drawdown testing was completed to evaluate individual well performance, assess specific capacity and available drawdown, and identify appropriate pumping rates for subsequent sustained pumping tests.

The initial constant rate pumping testing program was not based on an assumption that a multi-well supply system would be required. Rather, Phase 1 was completed to evaluate the aquifer response to sustained pumping from Well 3, estimate preliminary transmissivity and storage values, assess available drawdown, observe recovery behavior, and evaluate hydraulic connection with nearby wells.

The Phase 1 constant rate pumping test showed that pumping from Well 3 produced measurable responses in nearby wells, demonstrating hydraulic connection within the bedrock aquifer. The test also indicated relatively slow recovery following shutdown. These observations suggested that well interference and cumulative drawdown would be important considerations for future groundwater supply development and that a distributed wellfield approach may be more appropriate than reliance on a single high-capacity well.

Preliminary aquifer parameters derived from the Phase 1 constant rate pumping were used in analytical predictive drawdown modelling to evaluate potential multi-well pumping scenarios. Well 3 had undergone a 72-hour constant rate pumping test at rates starting at 568 L/min (150 US gpm) and later reduced to 379 L/min (100 US gpm). The modelling was used to assess expected interference, available drawdown, and the potential benefit of distributing the required pumping demand among multiple wells. Additional wells were recommended and located based on the modelling results, the preliminary hydraulic parameters, and site constraints, including the property boundary. The objective was to maximize practical well spacing, reduce individual well stress, and evaluate a more distributed wellfield configuration.

Phase 2 consisted of a simultaneous constant rate pumping test from multiple wells to assess the combined response of the proposed wellfield under conditions more representative of operational configuration. Groundwater levels were monitored manually and electronically in the active pumping wells (Well 3, Well 4, Well 6, and Well 7) and available observation wells (Well 5, Well 2, and Well 8) before, during, and after pumping. Pumping rates were measured during the test and adjusted as required based on well performance, available drawdown, pump operation, turbidity, and field conditions. Pumping Rates for each pumping well over the course of the testing period can be found in Table 4.3. Although the test was intended to approximate constant-rate conditions, some rate variability occurred; therefore, the test was interpreted as a controlled operational-scale multi-well pumping test rather than an idealized constant-rate test.



**Table 4.3 Summary of Pumping Test Flow Rates**

Well ID	Pumping Rate (Q) L/min (US gpm) – 3 hr	Pumping Rate (Q) L/min (US gpm) – 24 hr	Pumping Rate (Q) L/min (US gpm) – 48 hr	Pumping Rate (Q) L/min (US gpm) – 72 hr
Well 3	326 (86)	310 (82)	242 (64)	227 (60)
Well 4	231 (61)	155 (41)	140 (37)	151 (40)
Well 6	261 (69)	246 (65)	223 (59)	227 (60)
Well 7	326 (86)	291 (77)	276 (73)	261 (69)
<b>Total</b>	<b>1,143 (302)</b>	<b>1,003 (265)</b>	<b>882 (233)</b>	<b>863 (228)</b>

Notes:

1. Combined total flow from all four pumping wells.

### 4.3 Groundwater Sampling

Water samples were collected by Stantec and submitted to the Research and Productivity Council (RPC) analytical laboratory in Moncton, New Brunswick for analysis of general chemistry, metals, and microbiological parameters, as applicable. Samples were collected in laboratory-supplied bottles, handled in general accordance with laboratory requirements, and stored in a cooler on ice prior to submission to the laboratory.

Water quality sampling was completed during both phases of the pumping test program. During Phase 1, which consisted of sustained pumping from Well 3, samples were collected from Well 3 after approximately 24 hours, 48 hours, and 72 hours of pumping.

During Phase 2, which consisted of simultaneous pumping from multiple wells, the same sampling timeframe was applied to each active pumping well. Samples were collected from the pumping wells after approximately 24 hours, 48 hours, and 72 hours of pumping to assess changes in water quality over time and to evaluate differences in chemistry between wells under sustained pumping conditions.

### 4.4 Hydraulic Data Analysis

The constant-rate pumping test data were analyzed using AQTESOLV® Standard Version 4.51 (Hydrosolv Inc. 2015), a computer software program that supports aquifer test interpretation using established analytical solutions for different aquifer conditions and well configurations. The analytical methods were selected based on the observed water level responses, test configuration, and conceptual understanding of the bedrock aquifer system.

The pumping test data were evaluated using confined aquifer analytical solutions. A confined aquifer is a groundwater-bearing unit that is overlain by lower-permeability materials that restrict vertical groundwater movement. Under ideal confined conditions, drawdown response is controlled primarily by aquifer transmissivity and storage. Although the site is located in a fractured bedrock setting and the aquifer response may not fully conform to ideal confined aquifer assumptions, confined aquifer solutions were considered appropriate for estimating representative hydraulic parameters from the pumping test data.



The Theis (1935) confined aquifer solution was used to evaluate selected pumping and observation well responses. Curve matching focused on portions of the datasets considered most representative of the broader aquifer response. Early-time data were treated cautiously because they may be influenced by pump startup effects, wellbore storage, localized fracture response, short-duration pumping rate variability, or near-well hydraulic losses.

For the Phase 2 multi-well pumping test, the observed drawdown at each monitoring location was interpreted in the context of simultaneous pumping from multiple wells, variable pumping rates, and mutual well interference. Recovery data were evaluated as residual drawdown relative to pre-test static water levels and were used as a supporting check on transmissivity estimates derived from pumping-period drawdown data.

Due to the fractured bedrock setting, multi-well pumping configuration, variable pumping rates, and observed well interference, the analytical results were interpreted as representative estimates rather than unique solutions. The final assessment considered the analytical fits, predictive modelling, observed drawdown and recovery behavior, well interference, available drawdown, pumping rate records, and groundwater quality trends. This phased approach provided a practical basis for assessing the potential capacity and operational sustainability of the proposed wellfield.

## **5 Results and Discussion**

### **5.1 Step Drawdown Test**

Where sufficient step data were available, the relationship between pumping rate and drawdown was evaluated using the standard step-drawdown expression (Jacob 1947):

$$S = BQ + CQ^2$$

where: S = drawdown (m)  
Q = pumping rate (L/min)  
B = coefficient for laminar component of drawdown (intercept)  
C = coefficient for turbulent component of drawdown (slope)

The equation can be rearranged as  $S/Q = B + CQ$ , allowing the B and C coefficients to be estimated by plotting drawdown divided by pumping rate against pumping rate. The BQ term represents the portion of drawdown that increases approximately linearly with pumping rate, while the  $CQ^2$  term represents the non-linear well-loss component that becomes more pronounced at higher pumping rates.

For this assessment, the step-drawdown equation was used as a screening tool to evaluate relative well efficiency and changes in drawdown response with increasing pumping rate. The results were not used as the primary basis for long-term aquifer capacity because the tests were short in duration and several steps did not fully stabilize. Long-term aquifer performance, cumulative well interference, recovery behavior, and operational capacity were assessed using the longer-duration Phase 1 and Phase 2 constant-rate pumping tests.



Table 5.1 presents a summary of pumping rates (Q), drawdown (s), step duration (t), and calculated specific capacities (Q/s) for the step drawdown test. A plot of drawdown versus time for the step drawdown test is shown in Figure C-1 in Appendix C. Data collected during the step drawdown test is presented in Table D.1 in Appendix D.

**Table 5.1 Summary of Specific Capacity Data for Step Drawdown Test**

Well ID	Step	Pumping Rate (Q) (L/min)	Step Duration (t) (min)	Drawdown (s) (m)	Specific Capacity (Q/s) (L/min/m)
Well 1	1	152	20	~*	~*
Well 2	1	57	60	1.39	41.01
	2	95	60	2.45	38.78
	3	133	60	4.85	27.42
	4	189	60	8.24	22.94
	5	303	60	17.08	17.74
Well 3	1	76	60	1.12	67.86
	2	125	60	2.68	46.64
	3	190	60	4.52	42.04
	4	303	60	6.32	47.94
	1	235	60	2.84	82.75
	2	303	60	6.36	47.64
	3	379	60	9.13	41.51
	4	454	5	10.88	41.73
	5	568	70	18.00	31.56
	6	681	30	23.52	28.95
7	738	80	30.18	24.45	
Well 4	1	170	15	9.74	17.46
	2	246	142	32.04	7.68
	3	284	37	44.52	6.38
	4	322	38	55.90	5.76
Well 6	1	208	14	3.58	58.15
	2	246	59	7.79	31.58
	3	284	45	13.22	21.49
	4	356	120	21.63	16.46
Well 7	1	190	22	7.11	26.72
	2	246	31	10.84	22.68
	3	284	31	14.61	19.45
	4	363	155	18.36	19.77



**Table 5.1 Summary of Specific Capacity Data for Step Drawdown Test**

Well ID	Step	Pumping Rate (Q) (L/min)	Step Duration (t) (min)	Drawdown (s) (m)	Specific Capacity (Q/s) (L/min/m)
Well 8	1	190	16	10.61	17.91
	2	246	31	18.12	13.57
	3	284	43	24.77	11.47
	4	318	164	34.58	9.20

Notes:

L/min – litres per minute; m – metres; L/min/m – litres per minute per metre

Well 1 was not carried forward in testing based on limited yield and extensive drawdown at startup.

The results of the step-drawdown tests indicate variable performance across the tested wells. The step tests were used to assess individual well response, evaluate changes in specific capacity with increasing pumping rate, and support selection of pumping rates for the subsequent sustained pumping tests. The detailed step-test data are provided in Appendix D, and plots of drawdown versus time are provided in Appendix C.

Step-drawdown testing completed during Phase 1 included Well 2 and Well 3 in December 2025 and January 2026. Well 2 was tested at pumping rates ranging from 57 L/min to 303 L/min, with end-of-step drawdown increasing from approximately 1.39 m to 17.08 m. Calculated specific capacity decreased from approximately 41.0 L/min/m during the first step to 17.7 L/min/m during the highest-rate step. Well 3 was initially tested on December 12, 2025 at pumping rates ranging from 76 L/min to 303 L/min, with end-of-step drawdown increasing from approximately 1.12 m to 6.32 m. Specific capacity values for this test ranged from approximately 42.0 L/min/m to 67.9 L/min/m. Additional higher-rate step testing was completed on Well 3 on January 12, 2026 at pumping rates ranging from 235 L/min to 738 L/min. During this test, end-of-step drawdown increased from approximately 2.84 m to 30.18 m, and specific capacity decreased from approximately 82.7 L/min/m to 24.5 L/min/m at the highest tested rate. A short-duration test was also completed on Well 1; however, sufficient drawdown data were not available for detailed specific capacity assessment. Well 1 was unable to provide sufficient yield to complete the testing.

Following installation of the additional wells, Phase 2 step-drawdown testing was completed on Wells 4, 6, 7, and 8. Well 5 had poor preliminary yield estimates at the time of drilling and was therefore not considered for testing. Well 4 was tested at pumping rates ranging from 170 L/min to 322 L/min, with end-of-step drawdown increasing from approximately 9.74 m to 55.90 m. Specific capacity decreased from approximately 17.5 L/min/m to 5.8 L/min/m, indicating a relatively strong drawdown response at the higher tested rates. Well 6 was tested at pumping rates ranging from 208 L/min to 356 L/min, with end-of-step drawdown increasing from approximately 3.58 m to 21.63 m. Specific capacity decreased from approximately 58.2 L/min/m to 16.5 L/min/m. Well 7 was tested at pumping rates ranging from 190 L/min to 363 L/min, with end-of-step drawdown increasing from approximately 7.11 m to 18.36 m. Specific capacity values ranged from approximately 26.7 L/min/m to 19.8 L/min/m, indicating a comparatively moderate drawdown response over the tested rate range. Well 8 was tested at pumping rates ranging from 190 L/min to 318 L/min, with end-of-step drawdown increasing from approximately 10.61 m to 34.58 m. Specific capacity decreased from approximately 17.9 L/min/m to 9.2 L/min/m.



Overall, the step-test results indicate that Well 6 and Well 7 showed the most favorable relative performance among the Phase 2 wells, based on lower drawdown and higher specific capacity over the tested rate ranges. Well 4 and Well 8 showed greater drawdown response and lower specific capacities at the higher tested rates. These results were considered when selecting initial pumping rates for the Phase 2 multi-well pumping test.

The step-drawdown data also indicate that water levels did not fully stabilize during several pumping steps, particularly at higher rates. As such, the calculated specific capacity values should be interpreted as short-duration indicators of individual well performance rather than long-term sustainable yields. Continued drawdown during a step indicates that additional drawdown could occur under longer pumping durations at the same rate. Therefore, the step-test results were used primarily to guide rate selection for the sustained pumping tests, while the longer-duration constant-rate pumping tests were used to assess aquifer response, well interference, recovery behavior, and operational wellfield performance.

## **5.2 Constant Rate Pumping Test**

Results of the Phase 1 and Phase 2 constant rate aquifer test conducted in Well 3 and subsequently in multiple wells are presented in this section and time-drawdown plots are presented in Appendix C (Figure C-8 and C-9). Data collected during the constant rate test are provided in Appendix D (Table D.2). Analysis of the constant rate test data was performed using AQTESOLV, and the results are presented in the following section. Graphical interpretations of the constant rate test are presented in Appendix E.

The constant-rate testing program was completed in two phases. Phase 1 consisted of sustained pumping from Well 3 to evaluate the response of the aquifer to pumping from a single production well. Phase 2 consisted of simultaneous pumping from multiple wells to evaluate the combined hydraulic response of the proposed wellfield under a distributed pumping configuration. The Phase 1 test was used to develop preliminary aquifer parameter estimates and evaluate well interference and recovery behavior. The Phase 2 test was then used to assess cumulative drawdown, mutual well interference, available drawdown, recovery behavior, and water quality response under conditions more representative of operational configuration.

The pumping well responses provide an indication of apparent transmissivity because pumping wells are affected by well efficiency, well loss, near-well hydraulic effects, and localized fracture responses. Observation well responses, where available, were used to support interpretation of the broader aquifer response and to evaluate hydraulic connection between wells. For the Phase 2 multi-well test, the drawdown observed at each monitoring location reflects the combined influence of simultaneous pumping from multiple wells.

Table 5.2 presents a summary of pumping and recovery response as a result of the Phase 2 multi-well pumping test.



**Table 5.2 Pumping and Recovery Response Summary**

<b>Well ID</b>	<b>Static Water Level (mbtoc)</b>	<b>Final Water Level at End of Pumping (mbtoc)</b>	<b>Recovery Monitoring Duration (Days)</b>	<b>Residual Drawdown at End of Recovery (m)</b>
Well 3	11.45	53.03	7	5.10
Well 4	2.73	45.46	7	2.93
Well 6	11.96	50.50	7	5.36
Well 7	6.49	46.27	7	0.01

mbtoc = metres below top of casing; m = metres.

During Phase 1, Well 3 was pumped for approximately 72 hours. The initial pumping rate was selected based on the results of the preceding step-drawdown testing. During the test, pumping rates were adjusted as required to maintain the water level above identified hydraulic features and to account for observed field conditions. Water levels were monitored in Well 3 and nearby wells before, during, and after pumping. The Phase 1 test showed that pumping from Well 3 produced measurable drawdown in nearby wells, indicating hydraulic connection within the bedrock aquifer (Figure C-8; Appendix C). Recovery monitoring following shutdown indicated relatively slow recovery, which was considered in the subsequent assessment of wellfield development options.

Based on the Phase 1 results, preliminary aquifer parameters were estimated and used in predictive drawdown modelling to evaluate potential multi-well pumping scenarios. The modelling results supported the installation and testing of additional wells to evaluate whether the required supply could be more appropriately developed through a distributed wellfield configuration.

During Phase 2, multiple wells were pumped simultaneously to evaluate the combined response of the proposed wellfield. Pumping rates were measured throughout the test and adjusted as required based on well performance, available drawdown, pump operation, turbidity, and other field conditions. Although the test was intended to approximate constant-rate operating conditions, some variation in individual well pumping rates and total combined discharge occurred during the test. Accordingly, the Phase 2 test was interpreted as a controlled operational-scale multi-well pumping test rather than as an idealized single-well constant-rate test.

Water levels were monitored in the active pumping wells and available observation wells during Phase 2. The observed responses were used to evaluate individual well performance, cumulative wellfield drawdown, mutual well interference, and recovery behavior. Because pumping occurred simultaneously from multiple wells, the drawdown observed in each well represents the combined response to the distributed pumping stresses rather than the response to a single pumping well.

Recovery monitoring was completed following shutdown of the pumping wells. Recovery data were evaluated as residual drawdown relative to pre-test static water levels. Recovery data were used as a supporting check on aquifer parameter estimates and to assess the rate and extent of recovery following sustained pumping. Due to the multi-well pumping configuration and variable pumping rates, recovery-



derived estimates were interpreted cautiously and were not used as the sole basis for assessing aquifer properties or wellfield capacity.

The constant-rate pumping test data were analyzed using confined aquifer analytical solutions in AQTESOLV. The Theis-Hantush confined aquifer solution was used to evaluate selected pumping and observation well responses. Curve matching focused on portions of the datasets considered most representative of the broader aquifer response. Early-time data were treated cautiously because they may be affected by pump startup effects, wellbore storage, localized fracture response, short-duration pumping rate variability, and near-well hydraulic losses.

The results of the analytical interpretation are summarized in Table 5.3. The values presented in Table 5.3 are interpreted as representative estimates of aquifer hydraulic properties. Due to the fractured bedrock setting, observed well interference, variable pumping rates, and departure from ideal analytical assumptions, the results should not be interpreted as unique solutions. Rather, the analytical results were considered together. AQTESOLV results are presented in Appendix E.

**Table 5.3 Summary of Aquifer Hydraulic Properties**

Phase	Scenario	Analyzed Well	Well Type	Fit Type	T <sup>1</sup> (m <sup>2</sup> /s)	S <sup>2</sup> (unitless)
1	Well 3 Pumping	Well 3	Pumping	—	—	—
	Well 3 Pumping	Well 1	Observation	Drawdown	1.6 × 10 <sup>-4</sup>	1.9 × 10 <sup>-4</sup>
	Well 3 Pumping	Well 2	Observation	Drawdown	1.6 × 10 <sup>-4</sup>	5.6 × 10 <sup>-4</sup>
2	Multi-well Pumping	Well 3	Pumping	Recovery	7.9 × 10 <sup>-5</sup>	2.2 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 4	Pumping	Recovery	1.5 × 10 <sup>-4</sup>	1.5 × 10 <sup>-5</sup>
	Multi-well Pumping	Well 6	Pumping	Recovery	7.7 × 10 <sup>-5</sup>	2.0 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 7	Pumping	Recovery	2.0 × 10 <sup>-4</sup>	3.4 × 10 <sup>-5</sup>
	Multi-well Pumping	Well 1	Observation	Drawdown	1.5 × 10 <sup>-4</sup>	5.9 × 10 <sup>-5</sup>
	Multi-well Pumping	Well 1	Observation	Recovery	7.2 × 10 <sup>-5</sup>	1.9 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 5	Observation	Drawdown	2.6 × 10 <sup>-4</sup>	2.0 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 5	Observation	Recovery	1.7 × 10 <sup>-4</sup>	3.2 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 8	Observation	Drawdown	1.5 × 10 <sup>-4</sup>	3.9 × 10 <sup>-4</sup>
	Multi-well Pumping	Well 8	Observation	Recovery	7.7 × 10 <sup>-5</sup>	2.0 × 10 <sup>-4</sup>
<b>Geometric Mean – All</b>					1.3 × 10 <sup>-4</sup>	1.2 × 10 <sup>-4</sup>
<b>Geometric Mean - Observation Well Recovery</b>					9.9 × 10 <sup>-5</sup>	2.3 × 10 <sup>-4</sup>
<b>Conservative Lowest</b>					7.2 × 10 <sup>-5</sup>	1.5 × 10 <sup>-5</sup>



**Table 5.3 Summary of Aquifer Hydraulic Properties**

Phase	Scenario	Analyzed Well	Well Type	Fit Type	T <sup>1</sup> (m <sup>2</sup> /s)	S <sup>2</sup> (unitless)
Notes:						
1. Transmissivity						
2. Storativity						

Recovery monitoring following the constant-rate pumping tests indicated that water levels recovered gradually after pumping stopped. The prolonged recovery response suggests that the aquifer does not rebound immediately following sustained pumping and that residual drawdown may persist for an extended period after shutdown. This response was considered in the interpretation of wellfield performance and supports the need to evaluate operational pumping rates, pumping duration, and recovery periods when assessing long-term wellfield sustainability.

### 5.3 Multi-Well Cooper-Jacob Assessment

A multi-well Cooper-Jacob analytical drawdown assessment was completed to evaluate potential cumulative drawdown under simultaneous pumping from Wells 3, 4, 6, and 7. The assessment was used to estimate longer-duration drawdown beyond the 72-hour pumping test period and to support selection of a reasonable pumping-rate distribution for the safe yield assessment.

The Cooper-Jacob method (1946) was applied using superposition, where the drawdown contribution from each pumping well was calculated at each pumping well location and summed to estimate cumulative drawdown. The drawdown at each well was calculated using the following equation:

$$s_j = \frac{2.3}{4\pi T} Q_i \log_{10} \left( \frac{2.25Tt}{r_{ij}^2 S} \right)$$

where:  $s_j$  = drawdown at the well being evaluated  
 $Q_i$  = pumping rate from each pumping well  
 $r_{ij}$  = distance from pumping well i to well j  
 $T$  = transmissivity  
 $S$  = storage coefficient  
 $t$  = pumping duration

A Cooper-Jacob coefficient was calculated for each pumping well / observation well pair as follows:

$$C_{ij} = \frac{2.3 \times 6.30902 \times 10^{-5}}{4\pi T} \log_{10} \left( \frac{2.25Tt}{r_{ij}^2 S} \right)$$

The predicted drawdown at each well was then calculated by multiplying each coefficient by the corresponding pumping rate and summing the drawdown contributions from all active pumping wells.

The assessment was completed using parameter values derived from the AQTESOLV curve-fitting results. A representative scenario used the geometric mean transmissivity and storage (i.e., storativity)



values from the accepted curve fits. Because recovery monitoring indicated slow recovery following pumping, a recovery-based conservative scenario was also evaluated using the geometric mean of the observation-well recovery fits. A lower-bound sensitivity case was reviewed to assess the potential effect of more restrictive aquifer parameters but was not used as the sole basis for the recommended pumping rate.

Predicted drawdown was compared to the recommended available drawdown for each pumping well. An operational target equal to 80% of available drawdown was also used as a screening-level margin to account for uncertainty in aquifer response, variable pumping conditions, slow recovery, and operational flexibility.

**Table 5.4 Multi-Well Cooper-Jacob Assessment Summary**

Parameter Basis	Duration	Pumping Rates by Well (Well #: L/min/US gpm)	Total Rate L/min (US gpm)	Limiting Well(s)	Maximum Predicted Drawdown (m)	Available Drawdown at Limiting Well (m)	80% Available Drawdown (m)
Geometric mean of all accepted AQTESOLV fits	30 days	W3: 151/40 W4: 163/43 W6: 170/45 W7: 76/20	560 (148)	Well 6 Well 3 Well 7	51	68	54
Geometric mean of observation-well recovery	30 days	W3: 114/30 W4: 151/40 W6: 114/30 W7: 57/15	435 (115)	Well 7	50	45	36
Geometric mean of observation-well recovery	60 days	W3: 106/28 W4: 151/40 W6: 114/30 W7: 45/12	416 (110)	Well 3 Well 7	53	73	58
Observation well recovery-conservative lowest derived values	30 days	W3: 68/18 W4: 106/28 W6: 76/20 W7: 19/5	269 (71)	Well 3 Well 7	55	73	58

Notes:

1. T and S values for each parameter basis are summarized in Table 4.4.
2. Predicted drawdown was calculated using the Cooper-Jacob analytical solution with multi-well superposition.
3. The 80% available drawdown was used as a screening-level operational target.
4. The lower-bound sensitivity scenario was used to assess sensitivity to more restrictive aquifer parameters.

The representative 30-day scenario indicated that a total pumping rate of 560 L/min (148 US gpm) could remain below the recommended available drawdown and 80% operational target for each pumping well. This scenario used the updated geometric mean aquifer parameter set derived from the accepted AQTESOLV fits. The maximum predicted drawdown was approximately 51 m, with predicted drawdowns remaining below the 80% operational target in each pumping well. Although the maximum predicted



drawdown occurred in Well 6, Wells 3 and 7 had the least remaining margin relative to the 80% operational target.



Given the slow recovery observed during testing, the recovery-based conservative scenarios were considered more appropriate for informing the safe yield assessment. Under the 30-day recovery-based conservative scenario, a total pumping rate of 435 L/min (115 US gpm) remained below the recommended available drawdown and 80% operational target in each pumping well. Under this scenario, the maximum predicted drawdown was approximately 50 m, with Well 7 remaining a practical limiting well due to its lower available drawdown and smaller operational margin.

For the 60-day recovery-based conservative scenario, a slightly reduced total pumping rate of 416 L/min (110 US gpm) was evaluated. This included a reduced pumping rate assigned to Well 7 to maintain drawdown within the 80% operational target over the longer pumping duration. The 60-day scenario resulted in predicted drawdown remaining below the available drawdown and 80% operational target in each pumping well, with a maximum predicted drawdown of approximately 53 m.

The lower-bound sensitivity scenario demonstrated that predicted drawdown is sensitive to the selected aquifer parameters. Under the lower-bound parameter set, a substantially reduced total pumping rate of 269 L/min (71 US gpm) was required to maintain predicted drawdown below the 80% operational target in each pumping well. This scenario was used as a sensitivity check only and was not considered the primary basis for the recommended pumping rate. The results support the need for conservative operational rate selection, water level monitoring, and periodic reassessment of wellfield response during operation.

Overall, the Cooper-Jacob assessment supports a conservative long-duration pumping scenario of approximately 416 L/min (110 US gpm) to 435 L/min (115 US gpm), depending on pumping duration and operational margin. The 435 L/min (115 US gpm) scenario is supported for a 30-day recovery-based assessment, while the 416 L/min (110 US gpm) scenario provides a more conservative basis for longer-duration pumping. These rates should be considered together with the observed pumping response, slow recovery behavior, water quality trends, and future operational monitoring.

## **5.4 Predictive Drawdown Modelling**

Following completion of the Cooper-Jacob multi-well analytical drawdown assessment, AQTESOLV predictive simulations were completed using the same pumping-rate scenarios. The purpose of the AQTESOLV simulations was to provide a complementary assessment of the predicted pumping and recovery response over time using the selected aquifer parameter sets and wellfield pumping configurations. The predictive simulation outputs are provided in Appendix E.

The AQTESOLV simulations were completed using the Theis/Hantush confined aquifer solution. The simulations were used to evaluate the predicted drawdown response during extended pumping, the expected recovery response following shutdown, and the potential for residual drawdown to persist after pumping. The simulations also provided a visual check on the Cooper-Jacob analytical results by illustrating the predicted time-drawdown and recovery behavior for the evaluated wellfield scenarios.



The same representative and recovery-based conservative parameter sets used in the Cooper-Jacob assessment were applied in the AQTESOLV predictive simulations. The representative scenario used the geometric mean transmissivity and storage values from the accepted AQTESOLV curve-fit results. The recovery-based conservative scenarios used the geometric mean of the observation-well recovery fits to account for the slow recovery response observed during testing.

Three predictive simulations were completed:

- representative 30-day pumping followed by 30 days of recovery;
- recovery-based conservative 30-day pumping followed by 30 days of recovery; and
- recovery-based conservative 60-day pumping followed by 30 days of recovery.

The representative 30-day scenario produced AQTESOLV-predicted drawdowns that were generally consistent with the updated Cooper-Jacob analytical assessment. Approximate AQTESOLV-predicted drawdowns at the end of the 30-day pumping period were approximately 47 m in Well 3, 44 m in Well 4, 49 m in Well 6, and 34 m in Well 7. These values are comparable to the Cooper-Jacob predicted drawdowns of 48 m, 45 m, 51 m, and 34 m, respectively. Following 30 days of simulated recovery, residual drawdown was predicted to remain at approximately 4 m.

For the recovery-based conservative 30-day scenario, the AQTESOLV simulation also produced drawdowns that were generally consistent with the Cooper-Jacob assessment. Approximate predicted drawdowns at the end of pumping were approximately 44 m in Well 3, 48 m in Well 4, 44 m in Well 6, and 32 to 33 m in Well 7. These values correspond closely to the Cooper-Jacob predicted drawdowns of 46 m, 50 m, 45 m, and 33 m, respectively. Following 30 days of simulated recovery, residual drawdown was predicted to remain at approximately 4 m to 5 m. Well 7 remained a practical limiting well due to its lower available drawdown and smaller operational margin.

For the recovery-based conservative 60-day scenario, the AQTESOLV simulation predicted drawdowns of approximately 48 m in Well 3, 52 to 53 m in Well 4, 48 m in Well 6, and 36 m in Well 7 at the end of pumping. These values are generally consistent with the Cooper-Jacob predicted drawdowns of 47 m, 53 m, 48 m, and 34 m, respectively. Following 30 days of simulated recovery, residual drawdown was predicted to remain at approximately 6 m to 8 m. The 60-day scenario required reduced pumping rates in Wells 3 and 7 relative to the 30-day recovery-based conservative scenario to maintain predicted drawdown within the operational drawdown targets.

The lower-bound sensitivity simulation predicted substantially greater drawdown and slower recovery relative to the representative and recovery-based conservative scenarios. This scenario was used to evaluate the sensitivity of predicted wellfield response to lower-bound hydraulic parameter values and was not used as the primary basis for the recommended pumping rate. The results indicate that predicted drawdown and recovery response are sensitive to the selected transmissivity and storage values.



The AQTESOLV predictive simulations indicate that drawdown is expected to continue increasing gradually during extended pumping and that recovery following shutdown is also gradual. The simulated recovery curves show that residual drawdown is expected to persist after the simulated recovery period, particularly following the longer-duration and lower-bound sensitivity scenarios. This response is consistent with the slow recovery observed during the pumping test program and supports the use of conservative pumping rates, distributed pumping among wells, and operational water level monitoring.

The AQTESOLV predictive simulations were not used as a standalone determination of safe yield. Rather, they were used as a supporting line of evidence together with the Cooper-Jacob analytical results, observed Phase 2 pumping response, available drawdown, well interference, recovery behavior, and water quality trends. Due to the fractured bedrock setting, observed well interference, variable pumping rates during testing, and simplified analytical assumptions, the AQTESOLV predictive simulations are interpreted as representative estimates of potential wellfield response rather than exact predictions of future water levels.

## 5.5 Safe Well Yield

The maximum theoretical yield of a well is a function of available drawdown, well efficiency, predicted interference from other pumping wells and practical limitations such as pumping lift and cascading water from shallow water-bearing zones. Drawdown below a major water-bearing zone should be avoided, as this can lead to cascading water streams within the well bore that can cause turbidity and declines in specific capacity and pumping levels. By maintaining an operational pumping level above major water-bearing zones, these types of hydraulic head losses will be reduced, and pumping efficiency can be maximized. The available drawdown for a bedrock well is typically estimated as the depth of static water to the top of the first or upper most water bearing zone. Available drawdown for each of the pumping wells is shown below in Table 5.5.

**Table 5.5 Available Drawdown**

Well ID	Static Water Level <sup>1</sup> (mbtoc)	Final Water Level at End of Pumping (mbtoc)	Observed Drawdown at End of Pumping <sup>2</sup> (m)	Recommended Available Drawdown <sup>3</sup> (m)	Remaining Available Drawdown <sup>4</sup> (m)
Well 3	11.45	54.03	42.58	61	18.43
Well 4	2.73	45.46	42.73	73	30.27
Well 6	11.96	50.50	38.54	68	29.46
Well 7	6.49	46.27	39.78	45	5.22

Notes:

1. Static water level measured prior to constant-rate pumping.
2. Observed drawdown was calculated as final water level at the end of pumping minus static water level.
3. Recommended available drawdown represents the practical drawdown allowance used for predictive modelling and safe yield assessment.
4. Remaining available drawdown was calculated as recommended available drawdown minus observed drawdown.
5. mbtoc = metres below top of casing; m = metres.



A safe yield assessment was completed to evaluate the potential long-term pumping capacity of the tested wellfield. For this assessment, safe yield was considered in the context of the pumping rates that can be sustained while maintaining acceptable drawdown in the pumping wells, allowing for recovery, and limiting operational risks associated with well interference and water quality changes.

The safe yield assessment was based on multiple lines of evidence, including the observed Phase 2 multi-well pumping test response, available drawdown in each pumping well, Cooper-Jacob multi-well analytical drawdown estimates, AQTESOLV predictive pumping and recovery simulations, and a screening-level safe-yield calculation. The assessment also considered the slow recovery response observed following pumping and the water quality trends observed during the pumping test program.

Available drawdown was estimated for each pumping well and used as a practical constraint for evaluating pumping scenarios. In addition to the full available drawdown, an operational target equal to 80% of available drawdown was used as a screening-level margin. This operational target was used to account for uncertainty in aquifer response, variable pumping conditions, slow recovery, and operational flexibility. The 80% target is not a regulatory limit but was used to identify pumping scenarios with a reasonable margin below the practical drawdown limit.

The Cooper-Jacob multi-well assessment indicated that a representative 30-day scenario using the updated geometric mean aquifer parameters could support a total pumping rate of approximately 560 L/min (148 US gpm) while remaining below the recommended available drawdown and 80% operational target in each pumping well. Under this scenario, the maximum predicted drawdown was approximately 51 m. Although the maximum predicted drawdown occurred in Well 6, Wells 3 and 7 had the least remaining margin relative to the 80% operational target.

However, the recovery-based conservative scenarios were considered more appropriate for informing the safe yield recommendation because recovery monitoring indicated that residual drawdown persisted after pumping. Under the recovery-based conservative Cooper-Jacob scenario, a total pumping rate of approximately 435 L/min (115 US gpm) was predicted to remain below the recommended available drawdown and 80% operational target during a 30-day pumping period. The maximum predicted drawdown under this scenario was approximately 50 m. Well 7 remained a practical limiting well because it had the lowest available drawdown and relatively limited operational margin.

For the 60-day recovery-based conservative scenario, the total pumping rate was reduced to approximately 416 L/min (110 US gpm) by lowering the rates assigned to Wells 3 and 7 relative to the 30-day recovery-based scenario. This resulted in predicted drawdown remaining below the recommended available drawdown and 80% operational target in each pumping well. The maximum predicted drawdown under the 60-day scenario was approximately 53 m. Wells 3 and 7 had the least remaining margin relative to the 80% operational target and were therefore considered practical limiting wells for longer-duration operation.



AQTESOLV predictive pumping and recovery simulations were completed using the same representative and recovery-based conservative scenarios evaluated in the Cooper-Jacob assessment. The AQTESOLV simulations produced end-of-pumping drawdowns that were generally consistent with the Cooper-Jacob results and showed gradual recovery following shutdown. The simulated recovery response supports the interpretation that residual drawdown may persist following extended pumping, particularly following longer-duration pumping periods.

A screening-level safe-yield calculation was also completed using the modified Cooper-Jacob equation (Cooper and Jacob 1946) and is expressed as:

$$Q_t = \frac{0.7 \times T \times \Delta s}{0.183 \times \log(t)}$$

- where: T = aquifer/well transmissivity (m<sup>2</sup>/s)  
 Δs = available drawdown (m)  
 T = time (minutes)  
 Q<sub>t</sub> = continuous pumping rate for a given time t (m<sup>3</sup>/s)

A safety factor of 0.7 is incorporated into the theoretical safe yield values to account for any uncertainties in the calculated values of transmissivity and to account for undetected boundary conditions, seasonal water level fluctuations and borehole head losses.

The safe-yield screening calculation was completed for 100-day and 20-year durations using the representative, recovery-based conservative, and lower-bound transmissivity values. The screening equation produced yield estimates that were generally higher than the rates identified through the multi-well Cooper-Jacob and AQTESOLV predictive assessments. This is expected because the screening equation does not explicitly account for simultaneous multi-well interference, individual well spacing, fractured bedrock heterogeneity, slow recovery, or water quality trends. As such, the screening calculation was used as a supporting check only and was not used as the controlling basis for the recommended wellfield yield. The results of the modified Cooper-Jacob safe yield estimates are presented in Table 5.6.

**Table 5.6 Theoretical Safe Pumping Yields for the Specified Time Periods**

Scenario	Time Period	T Used (m <sup>2</sup> /s)	Qt (m <sup>3</sup> /s)	Qt (L/min)	Qt (US gpm)
Representative	100 days	1.3 × 10 <sup>-4</sup>	1.77 × 10 <sup>-2</sup>	1,062	281
Representative	20 years	1.3 × 10 <sup>-4</sup>	1.40 × 10 <sup>-2</sup>	837	221
Recovery-Based Conservative	100 days	9.9 × 10 <sup>-5</sup>	1.35 × 10 <sup>-2</sup>	809	214
Recovery-Based Conservative	20 years	9.9 × 10 <sup>-5</sup>	1.06 × 10 <sup>-2</sup>	638	168



**Table 5.6 Theoretical Safe Pumping Yields for the Specified Time Periods**

Scenario	Time Period	T Used (m <sup>2</sup> /s)	Qt (m <sup>3</sup> /s)	Qt (L/min)	Qt (US gpm)
Lower-Bound Sensitivity	100 days	$7.2 \times 10^{-5}$	$9.81 \times 10^{-3}$	588	155
Lower-Bound Sensitivity	20 years	$7.2 \times 10^{-5}$	$7.73 \times 10^{-3}$	464	123

Notes:

1. min = minutes; m<sup>2</sup>/s = meters squared per second; m<sup>3</sup>/s = cubic meters per second; L/min = liters per minute; US gpm = U.S. gallons per minute.
2. Qt values were calculated using the Cooper-Jacob safe-yield screening equation.
3. The calculated Qt values represent total yield based on the available drawdown for Wells 3, 4, 6, and 7.
4. The screening calculation does not explicitly account for multi-well interference.
5. The safe-yield screening results were used as supporting check only. The Cooper-Jacob and AQTESOLV predictive assessments were considered more representative for selecting operational wellfield rates.

Based on the combined assessment, the conservative long-duration hydraulic capacity of the wellfield is interpreted to be approximately 416 L/min (110 US gpm) to 435 L/min (115 US gpm), depending on pumping duration and operational margin. The 435 L/min (115 US gpm) scenario is supported for the 30-day recovery-based conservative assessment, while the 416 L/min (110 US gpm) scenario provides a more conservative basis for longer-duration pumping based on the 60-day recovery-based conservative assessment. These rates are lower than the representative 30-day scenario of approximately 560 L/min (148 US gpm) but are considered more appropriate for safe-yield planning as they account for the slow recovery response observed during testing and provide greater operational margin.

The recommended operational yield should be implemented with distributed pumping across the production wells, with reduced reliance on Well 7 due to its lower available drawdown and greater sensitivity to interference. A conservative long-duration pumping distribution would include approximately 105 L/min (28 US gpm) to 113 L/min (30 US gpm) from Well 3, 151 L/min (40 US gpm) from Well 4, 113 L/min (30 US gpm) from Well 6, and 45 L/min (12 US gpm) to 57 L/min (15 US gpm) from Well 7, depending on the intended pumping duration. Continued operational monitoring is recommended to confirm actual drawdown, recovery, pumping rate stability, and water quality response during future use.

## 5.6 Groundwater Quality

The results of laboratory analysis for general chemistry, metals, and microbiological parameters in water samples collected during and following constant rate pumping tests are summarized in Tables F.1 to F.3, in Appendix F. Full analytical results for the chemical analysis are also presented in certificates of analysis from RPC in Appendix F.



Water quality samples were collected during both phases of the pumping test program. During Phase 1, samples were collected from Well 3 after approximately 24 hours, 48 hours, and 72 hours of pumping. During Phase 2, which consisted of simultaneous pumping from multiple wells, the same sampling timeframe was applied to each active pumping well. Samples were collected from the pumping wells after approximately 24 hours, 48 hours, and 72 hours of pumping to evaluate changes in water quality over time and to assess differences in chemistry between wells under sustained pumping conditions. Samples were submitted to RPC in Moncton, NB for general chemistry and trace metals. Samples collected for microbiology (total coliforms and *E. coli*.) were collected at the end of the pumping test at approximately 72 hours.

Analyzed groundwater parameters were compared to the Guidelines for Canadian Drinking Water Quality (GCDWQ; Health Canada 2025) to evaluate water quality for potable uses. Guidelines listed in this section fall under the following categories:

- Aesthetic Objective (AO) – not considered a health concern; however, problems such as foul taste, deposition, or staining may be experienced.
- Maximum Acceptable Concentration (MAC) – associated with potential health risks.
- Operational Guidance Value (OG) – not considered a health concern; typically associated with municipal water treatment.

The Phase 1 water quality results from Well 3 indicated that water quality changed during sustained pumping. The Phase 2 results further demonstrated that water quality varies between wells across the proposed wellfield. The most notable changes were associated with increasing total dissolved solids, conductivity, chloride, sodium, and selected metals during pumping. These results indicate that some wells produce water with a greater mineralized or brackish component than others, and that the relative contribution of mineralized groundwater can increase during sustained pumping.

Well 6 produced the most mineralized water of the wells tested during Phase 2 and was characterized by elevated total dissolved solids, conductivity, chloride, and sodium throughout the pumping test. Well 4 also showed a substantial increase in mineralization during pumping, with total dissolved solids and chloride concentrations increasing between the start of testing and the later sampling intervals. Well 3 and Well 7 were less mineralized than Well 6 and Well 4; however, both showed increasing chloride and total dissolved solids during pumping, indicating a trend toward more mineralized water with continued pumping.

The major ion chemistry indicates that the groundwater ranges from fresher bicarbonate-influenced water to more mineralized chloride-rich water. The observed increase in chloride and sodium during pumping suggests that sustained pumping may increase the contribution of deeper or more mineralized fracture zones to the extracted water. This interpretation is consistent with the observed brackish nature of some wells and the variation in water quality between individual production wells.



Several parameters exceeded applicable GCDWQ aesthetic, operational, or health-based guideline values in one or more samples. The principal exceedances were associated with salinity-related parameters, including total dissolved solids, chloride, and sodium, as well as selected metals. Elevated concentrations of these parameters were most pronounced in Well 6 and Well 4, although increasing mineralization was also observed in Well 3 and Well 7 during pumping. A summary of GCDWQ exceedances for general chemistry and metals parameters is provided in Table 5.8.

Based on the Phase 2 results, Well 3 should not be considered fully representative of all wells in the proposed wellfield. The chemistry observed during the multi-well pumping test demonstrates that water quality differs between wells and that some wells produce more mineralized or brackish water than others. As such, final assessment of water supply suitability should consider the combined wellfield water quality, the anticipated contribution from each production well, operational pumping rates, and the potential need for treatment to address salinity-related parameters and metals.

The observed water quality indicates that treatment will be required for the proposed industrial use. Treatment requirements should be evaluated based on the final proposed wellfield configuration, blended water quality, operational pumping rates, process compatibility, scaling and corrosion potential, discharge management, and applicable regulatory requirements. Ongoing water quality monitoring is recommended during future operation to assess whether mineralization trends change with pumping duration, pumping rate, and seasonal groundwater conditions.

**Table 5.7 Summary of GCDWQ Exceedances for General Chemistry and Metals Parameters**

Parameter	Unit	GCDWQ <sup>1</sup>			Concentration			
		MAC <sup>2</sup>	AO <sup>3</sup>	OG <sup>4</sup>	Well 3	Well 4	Well 6	Well 7
Total Dissolved Solids	mg/L	–	500	–	779–1,330	2,210–3,970	2,980–5,430	903–1,080
Chloride	mg/L	–	250	–	294–672	1,230–1,940	1,640–3,330	381–595
Sodium	mg/L	–	200	–	281–482	747–1,130	996–1,730	353–461
Turbidity	NTU	–	–	0.3	6.0–242	42.7–62.2	2.9–4.4	1.1–6.8
Aluminum	mg/L	2.9	–	0.1	0.117–0.378	0.181	–	–
Barium	mg/L	2.0	–	–	–	9.56–21.2	5.10–9.70	2.59
Iron	mg/L	–	0.3	–	0.16–0.40	0.64–3.10	0.30–0.50	0.42
Manganese	mg/L	0.12	0.02	–	0.043–0.085	0.025–0.38	0.20–0.61	0.023–0.063
Strontium	mg/L	7.0	–	–	–	7.8–10.3	10.9–11.6	–
Uranium	mg/L	0.02	–	–	0.0461	–	–	–

Notes:

1. Guidelines for Canadian Drinking Water Quality (Health Canada 2025).
2. MAC = Maximum Acceptable Concentration.
3. AO = Aesthetic Objective.
4. OG = Operational Guidance Value.
5. Concentrations are reported in mg/L unless otherwise noted. Turbidity is reported in NTU.
6. Ranges represent concentrations that exceeded the applicable guideline in one or more samples collected during the pumping test program.
7. “–” indicates no applicable guideline or no exceedance for the available samples.



The results of the microbiological analysis indicate that *E. coli* and total coliforms were not detected in the samples collected during the 72-hour pumping tests completed as part of Phase 1 and Phase 2.

Based on the available information, including site observations, well construction details, pumping test response, and water quality results, there is no evidence to indicate that the tested groundwater source is under the direct influence of surface water. The tested wells are completed in a fractured bedrock aquifer, and groundwater flow is interpreted to occur primarily through secondary fracture permeability. No direct hydraulic connection to surface water features was identified during drilling or testing. The absence of *E. coli* and total coliforms in samples collected during pumping further supports the interpretation that the tested groundwater source is likely isolated from direct surface water influence.

Based on these findings, the tested groundwater supply is interpreted as likely to represent a non-GUDI source. This interpretation should be reviewed in the context of applicable regulatory requirements and confirmed through any additional assessment required during the WSSA approval process.

## 6 Water Usage Assessment

The proposed groundwater supply is intended to support the anticipated water requirements associated with site operations. Estimated water demand was provided on a monthly basis and converted to equivalent daily demand and equivalent continuous pumping rate. The water demand estimates are summarized in Table 6.1.

**Table 6.1 Summary of Proposed Facility Water Demand**

Month	Monthly Demand, L/month (USgal/month)	Daily Demand, L/day (USgal/day)	Equivalent Continuous Rate, L/min (US gpm)
January	47,017,800 (12,422,143)	1,516,700 (400,714)	1,053.3 (278.3)
February	29,977,200 (7,920,000)	1,070,600 (282,857)	743.5 (196.4)
March	8,297,300 (2,192,143)	267,700 (70,714)	185.9 (49.1)
April	3,747,100 (990,000)	124,900 (33,000)	86.7 (22.9)
May	3,872,100 (1,023,000)	124,900 (33,000)	86.7 (22.9)
June	3,747,100 (990,000)	124,900 (33,000)	86.7 (22.9)
July	3,872,100 (1,023,000)	124,900 (33,000)	86.7 (22.9)
August	3,872,100 (1,023,000)	124,900 (33,000)	86.7 (22.9)
September	1,605,900 (424,286)	53,500 (14,143)	37.2 (9.8)
October	1,659,500 (438,429)	53,500 (14,143)	37.2 (9.8)
November	1,605,900 (424,286)	53,500 (14,143)	37.2 (9.8)
December	23,508,900 (6,211,071)	758,400 (200,357)	526.6 (139.1)
<b>Annual Total / Average</b>	<b>132,782,900 (35,081,357)</b>	<b>363,800 (96,113)</b>	<b>252.6 (66.7)</b>



The estimated total annual water demand is approximately 132,782,900 L/year (35,081,357 US gallons per year), corresponding to an average annual daily demand of approximately 363,800 L/day (96,113 US gallons per day). This is equivalent to an average continuous pumping rate of approximately 253 L/min (67 US gpm) over the full year. However, the projected water demand is seasonal and varies substantially between months.

The highest estimated water demand occurs in January, with an estimated daily demand of approximately 1,517,000 L/day (400,714 US gallons per day), equivalent to a continuous pumping rate of approximately 1,053 L/min (278 US gpm). February also represents a high-demand month, with an estimated daily demand of approximately 1,070,600 L/day (282,857 US gallons per day), equivalent to approximately 744 L/min (196 US gpm). Demand decreases substantially from March through November, with estimated equivalent continuous pumping rates ranging from approximately 37 L/min (9.8 US gpm) to 186 L/min (49.1 US gpm). December demand is estimated at approximately 758,400 L/day (200,357 US gallons per day), equivalent to approximately 527 L/min (139 US gpm).

The lower-demand months can be supplied at relatively modest continuous pumping rates. However, the January demand exceeds the monthly volume that could be supplied by continuous pumping at rates up to 852 L/min (225 US gpm), resulting in a projected monthly deficit at each of the evaluated rates. February demand would require a continuous pumping rate of approximately 744 L/min (196 US gpm), meaning that a rate of approximately 757 L/min (200 US gpm) or greater would be required to avoid a monthly deficit. December demand would require a continuous pumping rate of approximately 527 L/min (139 US gpm) to avoid a monthly deficit.

These results indicate that the annual water demand is not the limiting factor for the groundwater supply assessment; rather, the limiting condition is the ability of the wellfield to meet short-duration seasonal peak demands, particularly during January and February, and to a lesser extent December. As such, the water supply assessment should consider not only the annual average demand, but also the required peak seasonal pumping rates, available drawdown, observed recovery behavior, water quality changes during sustained pumping, and the potential need for operational storage.

Where practical, the water supply system should be designed to distribute pumping among the available production wells rather than relying on a single high-capacity well. Distributed pumping is expected to reduce stress on individual wells, help manage cumulative drawdown, and provide greater operational flexibility. Given the observed well interference and gradual recovery response during the pumping test program, operational pumping rates should be selected to balance water demand with aquifer response, well recovery, and produced water quality.

Because the projected peak seasonal demands exceed the conservative long-duration pumping rates interpreted for the wellfield, additional operational measures may be required. These may include water storage, demand management, operational scheduling, or refinement of the proposed water use assumptions. Final design should include flow metering, operational water level monitoring, and periodic water quality sampling to confirm that actual withdrawals remain consistent with the assumptions used in this assessment and that wellfield performance remains within acceptable limits.



## 7 Conclusions and Recommendations

Based on the results of the drilling program, step-drawdown testing, 72-hour pumping tests, recovery monitoring, analytical assessments, predictive simulations, and water quality results, the following conclusions are provided.:

- A groundwater supply wellfield has been developed and tested to assess the feasibility of supplying water for the proposed project. The tested production wells include Wells 3, 4, 6, and 7, with Wells 1, 5, and 8 used as observation wells during the Phase 2 multi-well pumping test.
- The wells are completed in a fractured bedrock aquifer where groundwater flow occurs primarily through secondary fracture permeability. Drilling observations indicate that water-bearing zones occur at varying depths and that water quality varies with depth and between individual wells.
- Step-drawdown testing was completed to assess individual well response and to support selection of pumping rates for the subsequent constant-rate and multi-well pumping tests.
- Phase 1 testing of Well 3 indicated that pumping from one well induced measurable drawdown response in nearby wells, confirming hydraulic interference. The Phase 2 multi-well pumping test further confirmed that simultaneous pumping results in cumulative drawdown and well interference across the wellfield.
- During the Phase 2 pumping test, the combined pumping rate declined over the test period, indicating that the higher initial combined pumping rates were not sustained under the initial conditions.
- At the end of the Phase 2 pumping period, observed drawdown remained within the recommended available drawdown for the pumping wells. However, Well 7 had the least remaining available drawdown and was identified as one of the hydraulically limiting wells.
- Recovery following pumping was gradual, with residual drawdown persisting after shutdown. The slow recovery response indicates that extended or repeated pumping events may result in cumulative residual drawdown if sufficient recovery time is not provided.
- AQTESOLV curve-fitting results provided a range of transmissivity and storage estimates. The representative geometric mean values across the dataset were estimated as  $T = 1.3 \times 10^{-4}$  m<sup>2</sup>/s and  $S = 1.2 \times 10^{-4}$ . A recovery-based conservative parameter set was developed using observation-well recovery fits, with estimated values of approximately  $T = 9.9 \times 10^{-5}$  m<sup>2</sup>/s and  $S = 1.2 \times 10^{-4}$ .
- The Cooper-Jacob multi-well assessment indicated that the representative 30-day scenario could support a total pumping rate of approximately 560 L/min (148 US gpm) while remaining below the recommended available drawdown and 80% operational target for each pumping well. The recovery-based conservative scenarios indicated that approximately 435 L/min (115 US gpm) could be maintained for a 30-day period, and approximately 416 L/min (110 US gpm) could be maintained for a 60-day period, while remaining below the recommended available drawdown and 80% operational target.



- The lower-bound sensitivity scenario indicated that, under more restrictive aquifer assumptions, substantially lower pumping rates would be required to maintain similar operational drawdown margins.
- AQTESOLV predictive simulations produced drawdowns generally consistent with the Cooper-Jacob assessment and indicated that recovery remains gradual following pumping, with residual drawdown persisting after the simulated recovery periods.
- The theoretical safe-yield screening calculations produced higher yield estimates than the Cooper-Jacob and AQTESOLV predictive assessments. This is expected because the screening equation does not explicitly account for simultaneous multi-well interference, well spacing or slow recovery. The Cooper-Jacob and AQTESOLV predictive assessments are considered more representative for selecting operational wellfield rates.
- Based on the combined hydraulic assessment, the conservative long-term hydraulic capacity of the wellfield is estimated to be approximately 416 to 435 L/min (110 to 115 US gpm), depending on pumping duration, operational margin, and monitoring results.
- The estimated annual average water demand is approximately 253 L/min (67 US gpm), which is below the interpreted conservative long-term wellfield capacity. However, projected water demand is strongly seasonal. January and February represent the highest-demand months, with equivalent continuous rates of approximately 1,052 L/min (278 US gpm) and 742 L/min (196 US gpm), respectively. December demand is also elevated, with an equivalent continuous pumping rate of approximately 526 L/min (139 US gpm).
- The annual water demand is not considered the primary limiting factor. The limiting condition is the ability of the wellfield to meet short-duration seasonal peak demands, particularly during January and February, and to a lesser extent December. These peak demands exceed the interpreted conservative long-term pumping capacity and may require operational storage, demand management, revised water use assumptions, or other operational measures.
- Water quality results indicate that groundwater quality varies between wells and changes during sustained pumping. The most notable changes were associated with increasing total dissolved solids, conductivity, chloride, sodium, and selected metals. Well 6 produced the most mineralized water of the Phase 2 pumping wells, followed by Well 4. Well 3 and Well 7 were less mineralized, but both showed increasing chloride and total dissolved solids over the course of the pumping period.
- The water quality results indicate that groundwater ranges from fresher bicarbonate-influenced water to more mineralized chloride-rich water. The observed increase in chloride and sodium during pumping suggests that sustained pumping may increase the contribution of deeper or more mineralized fracture zones to the extracted water.
- Several parameters exceeded applicable GCDWQ aesthetic, operational, or health-based guideline values, including total dissolved solids, chloride, sodium, turbidity, aluminum, barium, iron, manganese, strontium, and uranium. The GCDWQ was used as a screening tool only since it will be used for industrial applications (i.e., it is considered non-potable).



- For the proposed industrial use, treatment will be required and should be evaluated based on the final wellfield configuration, blended water quality, process compatibility, scaling potential, corrosion potential, and discharge/wastewater management requirements.
- Microbiological results indicate that *E. coli* and total coliforms were not detected in samples collected during the Phase 1 or Phase 2 pumping tests. Based on the available information, including well construction, site observations, pumping test response, and microbiological results, there is no evidence to suggest that the groundwater source is under the direct influence of surface water. The groundwater source is likely representative of non-GUDI conditions, subject to additional assessment as part of the NBDELG GUDI screening protocol.

Based on the conclusions above, the following recommendations are provided.

- For planning purposes, a conservative long-term operational wellfield yield of approximately 416 L/min (110 US gpm) is recommended. A pumping rate of approximately 435 L/min (115 US gpm) may be feasible for shorter-duration operational needs, if water levels, recovery response, pumping rates, and water quality remain within acceptable limits.
- Operation above approximately 435 L/min (115 US gpm) should be considered cautiously and should only be implemented with additional monitoring, operational controls, and confirmation that drawdown, recovery, and water quality remain acceptable.
- Pumping should be distributed across the production wells rather than relying on one or two higher-yield wells. Reduced reliance should be placed on Well 7 as a result of having the lowest available drawdown and sensitivity to cumulative interference from the wellfield.
- Initial pumping distribution may be guided by the recovery-based conservative scenarios, but final well-specific operating rates should be refined during operation based on observed drawdown, recovery response, water quality, and actual water demand.
- The wellfield should be operated with flow meters on each production well to document individual well pumping rates and total wellfield withdrawal.
- Pressure transducers or other continuous water level monitoring equipment should be installed in the pumping wells and selected observation wells to monitor drawdown and recovery during operation.
- Water level monitoring should be used to confirm that pumping remains within the recommended available drawdown and operational target limits. Monitoring should also track residual drawdown between pumping periods to assess whether the aquifer is fully recovering or whether drawdown is accumulating over time.
- If residual drawdown increases over successive pumping cycles, pumping rates should be reduced, pumping duration should be shortened, pumping should be redistributed, or additional recovery time should be provided.



- Based on the January and February proposed facility demand exceeding the interpreted conservative long-term wellfield capacity, the Project should evaluate operational storage, demand management, revised water use assumptions, staged withdrawal schedules, or supplemental supply options. The system should not be designed solely around annual average demand, as peak monthly demand is the controlling water supply constraint.
- Storage should be considered to help manage short-duration high-demand periods and reduce the need for sustained peak-rate pumping directly from the wellfield.
- Treatment requirements should be evaluated by a qualified water treatment specialist based on the final intended use, blended wellfield water quality, pumping rates, process requirements, and discharge/wastewater management constraints.
- Treatment design should specifically consider elevated total dissolved solids, chloride, sodium, turbidity, iron, manganese, barium, strontium, uranium, scaling potential, corrosion potential, and process compatibility.
- Additional confirmatory water quality sampling should be completed once the final operating configuration and pumping rates are selected. Future water quality monitoring should include general chemistry, trace metals, field parameters, turbidity, sodium, chloride, total dissolved solids, and microbiological parameters.
- Water quality monitoring should be completed during initial operation and during periods of higher demand to assess whether mineralization increases with pumping duration or pumping rate
- The final operating plan should include trigger levels for water level decline, incomplete recovery, and water quality changes. If trigger levels are exceeded, operational responses should include reducing pumping rates, redistributing pumping between wells, increasing recovery periods, or reassessing the sustainable yield.
- Following commissioning of the wellfield, GUDI screening should be completed, if required by NBDELG, in accordance with the applicable GUDI screening protocol. This screening should be based on the final operating wellfield configuration and should include consideration of production well construction, pumping rates, microbiological results, water quality trends, and any additional monitoring requirements identified through the WSSA approval process.
- The recommended wellfield yield should be considered conditional on continued monitoring and confirmation during operation. The safe yield assessment should be revisited after a period of operational data has been collected, particularly if the Project requires sustained pumping above approximately 416 to 435 L/min (110 to 115 US gpm), or if seasonal peak demands are materially different from the current water use estimates.



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# Appendices



## **Appendix A      Figures**



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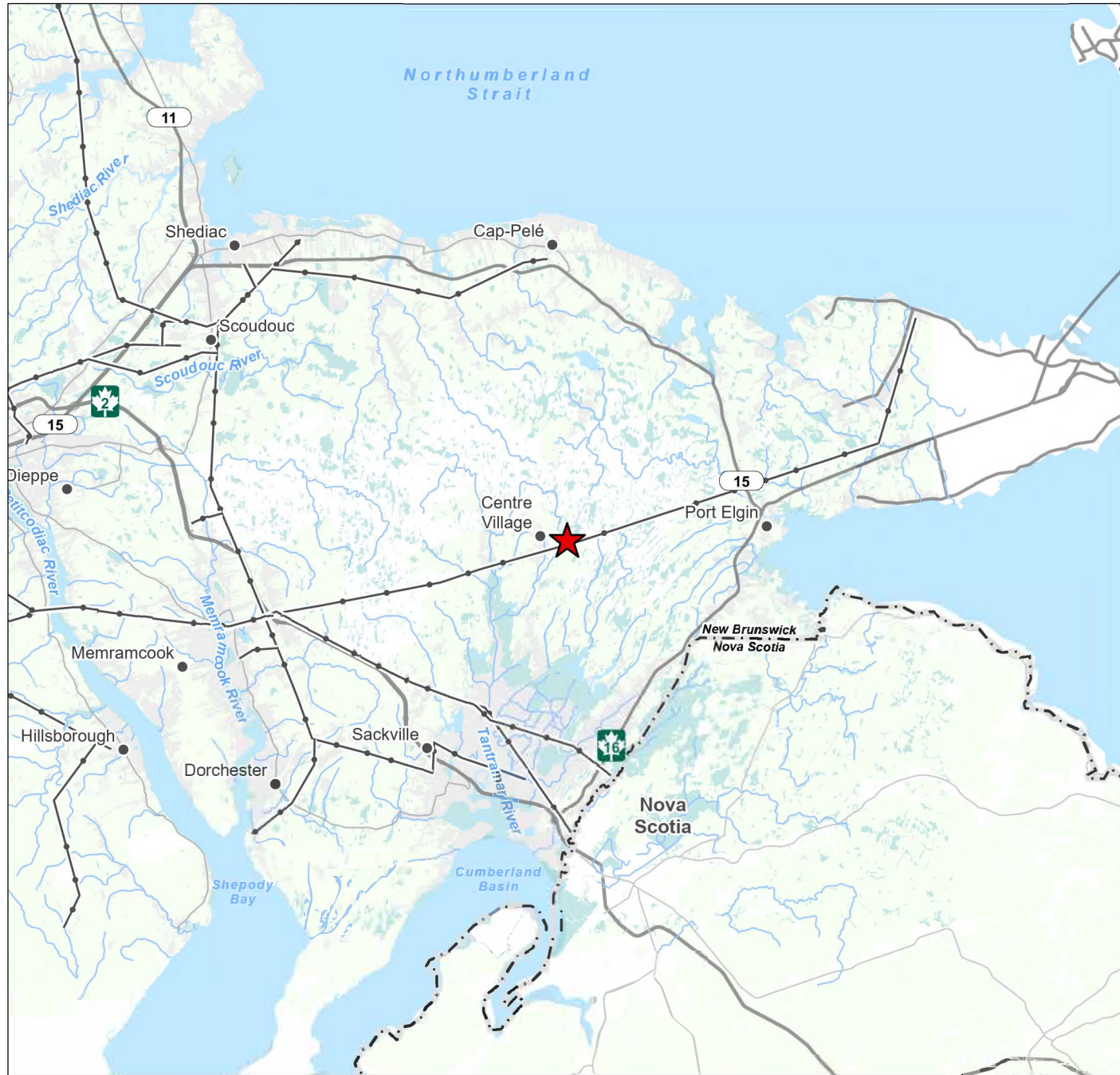


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**A-1**

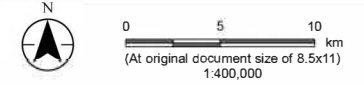
Title

**Project Location**

Client/Project 121418452

ProEnergy Holding Company, Inc.  
 Water Supply Source Assessment, Renewables Integration and  
 Grid Security Synchronous Condensing/Generation Facility Project

Project Location Centre Village, NB  
 Prepared by NWAC on 2026-05-19



**Legend**

- Project Site
- Transmission Line
- Highway
- Collector
- Local Road
- Resource Road; Gravel Road
- Watercourse
- Waterbody
- Wetland
- Provincial Boundary

**Project Location:**



**Notes**

1. Coordinate System: NAD 1983 CSRS New Brunswick
2. Stereographic
3. Data Sources: Client; Service NB
4. Background: Esri, USGS; GeoNB; NB ELG; NB NRED; NS ECC; NS NRR; NRCan CarVec; Service NB



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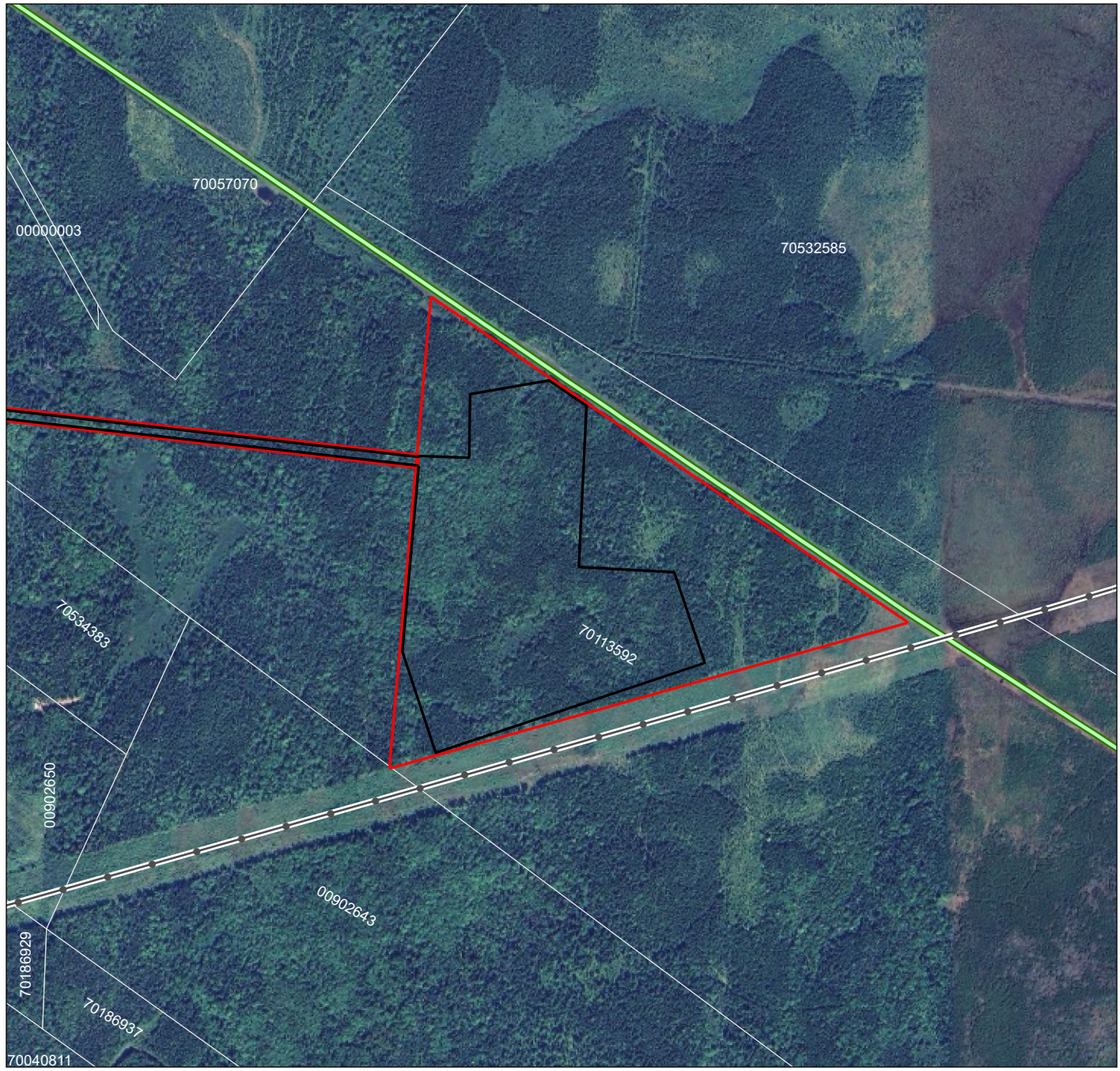


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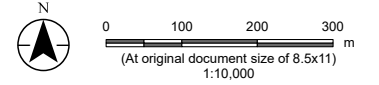
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Title

**Site Plan**

<i>Client/Project</i>	121418452
ProEnergy Holding Company, Inc.	
Water Supply Source Assessment, Renewables Integration and	
Grid Security Synchronous Condensing/Generation Facility Project	

<i>Project Location</i>	Prepared by AC on 2026-05-19
Centre Village, NB	



**Legend**

- Project Area
- Project Development Area
- Pipeline (Existing)
- Transmission Line (Existing)
- Property Boundary

**Project Location:**



**Notes**

1. Coordinate System: NAD 1983 CSRS New Brunswick Stereographic
2. Data Sources: Client; Service NB
3. Background: Esri, USGS, Google Earth; GeoNB; NB ELG; NB NRED; NS ECC; NS NRR; NRCan CanVec; Service NB



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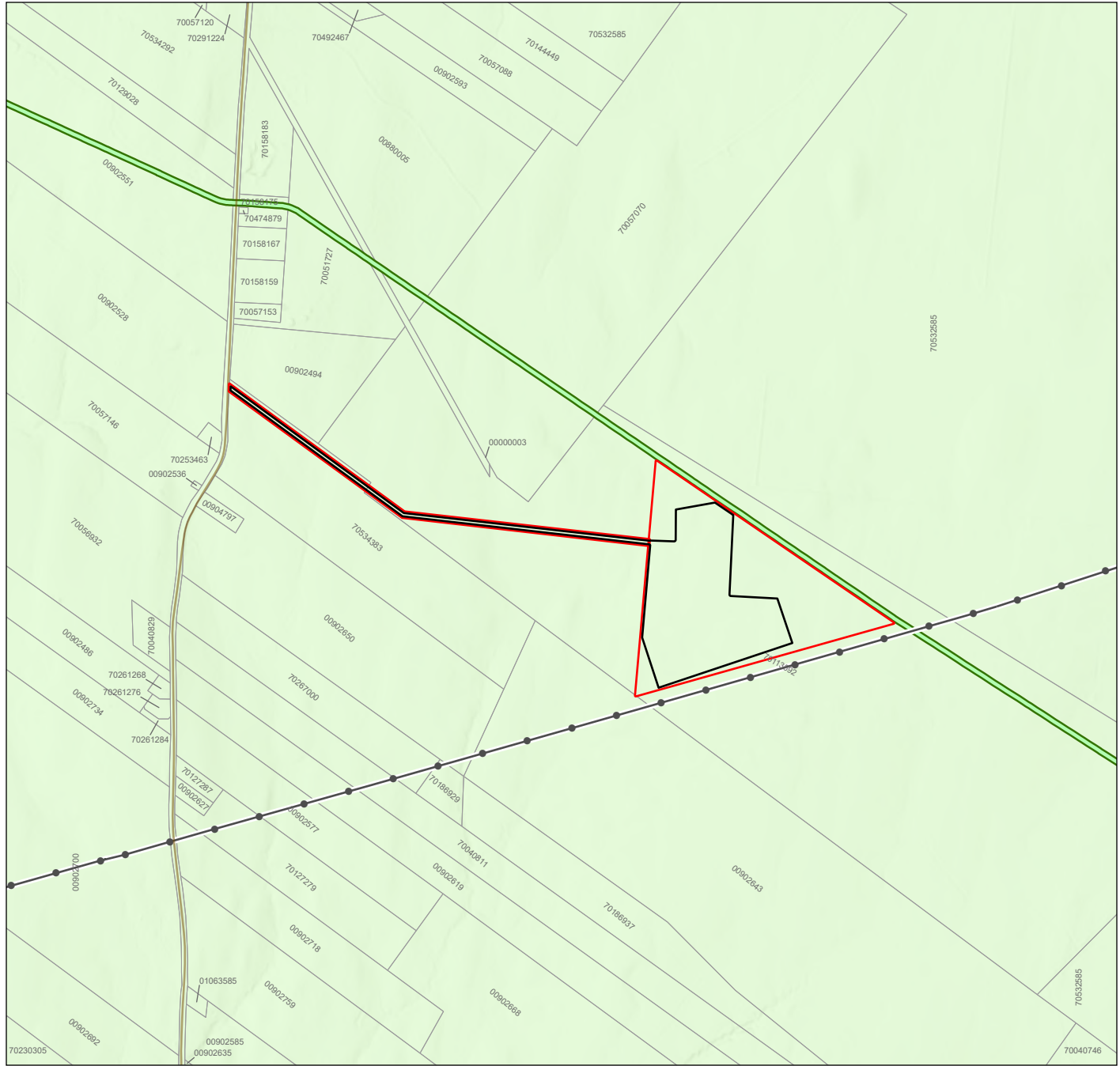


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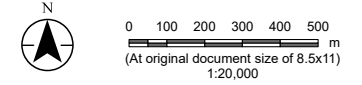
**A-3**

Title

### Surficial Geology Map

Client/Project	121418452
ProEnergy Holding Company, Inc. Water Supply Source Assessment, Renewables Integration and Grid Security Synchronous Condensing/Generation Facility Project	

Project Location	Prepared by AC on 2026-05-19
Centre Village, NB	



#### Legend

- Project Area
- Project Development Area
- Pipeline (Existing)
- Transmission Line (Existing)
- Road
- Property Boundary

#### Surficial Geology<sup>4</sup>

- Till blanket, generally 0.5 to 3 m thick: loamy lodgment till, minor ablation till, silt, sand, gravel, rubble

#### Project Location:



#### Notes

1. Coordinate System: NAD 1983 CSRS New Brunswick Stereographic
2. Data Sources: Client; Service NB
3. Background: Esri, NASA, NGA, USGS, Esri, USGS; GeoNB; NB ELG; NB NRED; NS ECC; NS NRR; NRCan CanVec; Service NB
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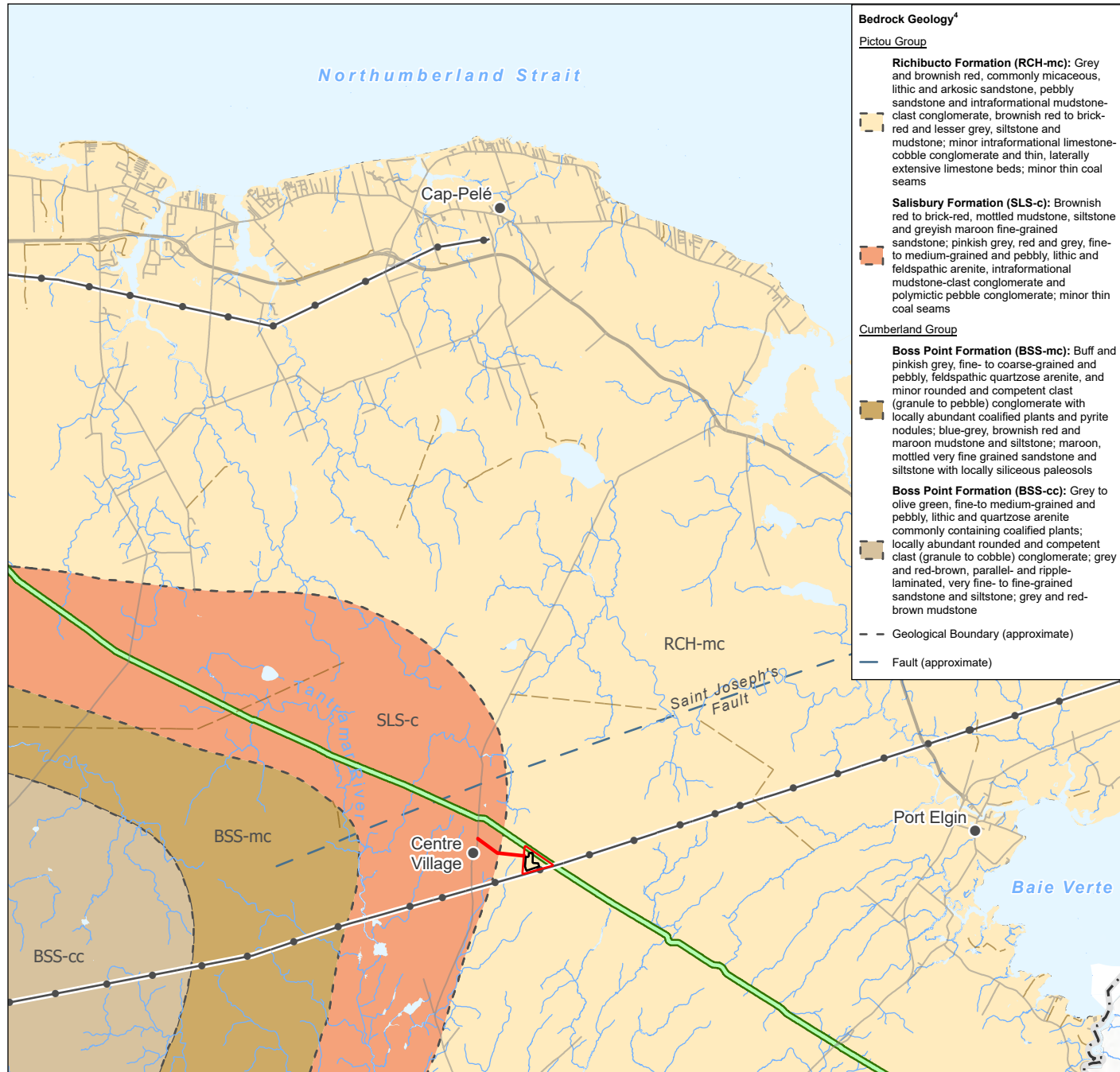


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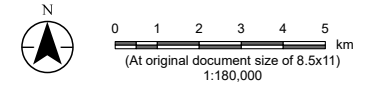
**A-4**

Title

**Bedrock Geology Map**

Client/Project 121418452  
 ProEnergy Holding Company, Inc.  
 Water Supply Source Assessment, Renewables Integration and  
 Grid Security Synchronous Condensing/Generation Facility Project

Project Location Centre Village, NB  
 Prepared by AC on 2026-05-19



**Legend**

- Project Area
- Project Development Area
- Populated Centre
- Provincial Boundary
- Highway
- Road
- Resource Road
- Pipeline (Existing)
- Transmission Line (Existing)
- Watercourse
- Waterbody

**Project Location:**



**Notes**

1. Coordinate System: NAD 1983 CSRS New Brunswick Stereographic
2. Data Sources: Client; Service NB
3. Background: Esri, NASA, NGA, USGS. Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS. © OpenStreetMap contributors, and the GIS User Community, Esri, USGS; GeoNB; NB ELG; NB NRED; NS ECC; NS NRR; NRCAN CanVec; Service NB
4. Smith, E.A. (compiler) 2007. Bedrock geology of the Port Elgin area (NTS 21 I/01). Westmorland County, New Brunswick. New Brunswick Department of Natural Resources, Minerals, Policy and Planning Division. Plate 2007-47.



Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.

\\Ca01811-pp1ss01\workgroup\1214\active\12141813412\_drawings\mapping\aprx\121418452\_CentreVillage\_RIGS\_Desktop\WSSA\_2026.aprx Revised: 2026-05-21 By: acuff

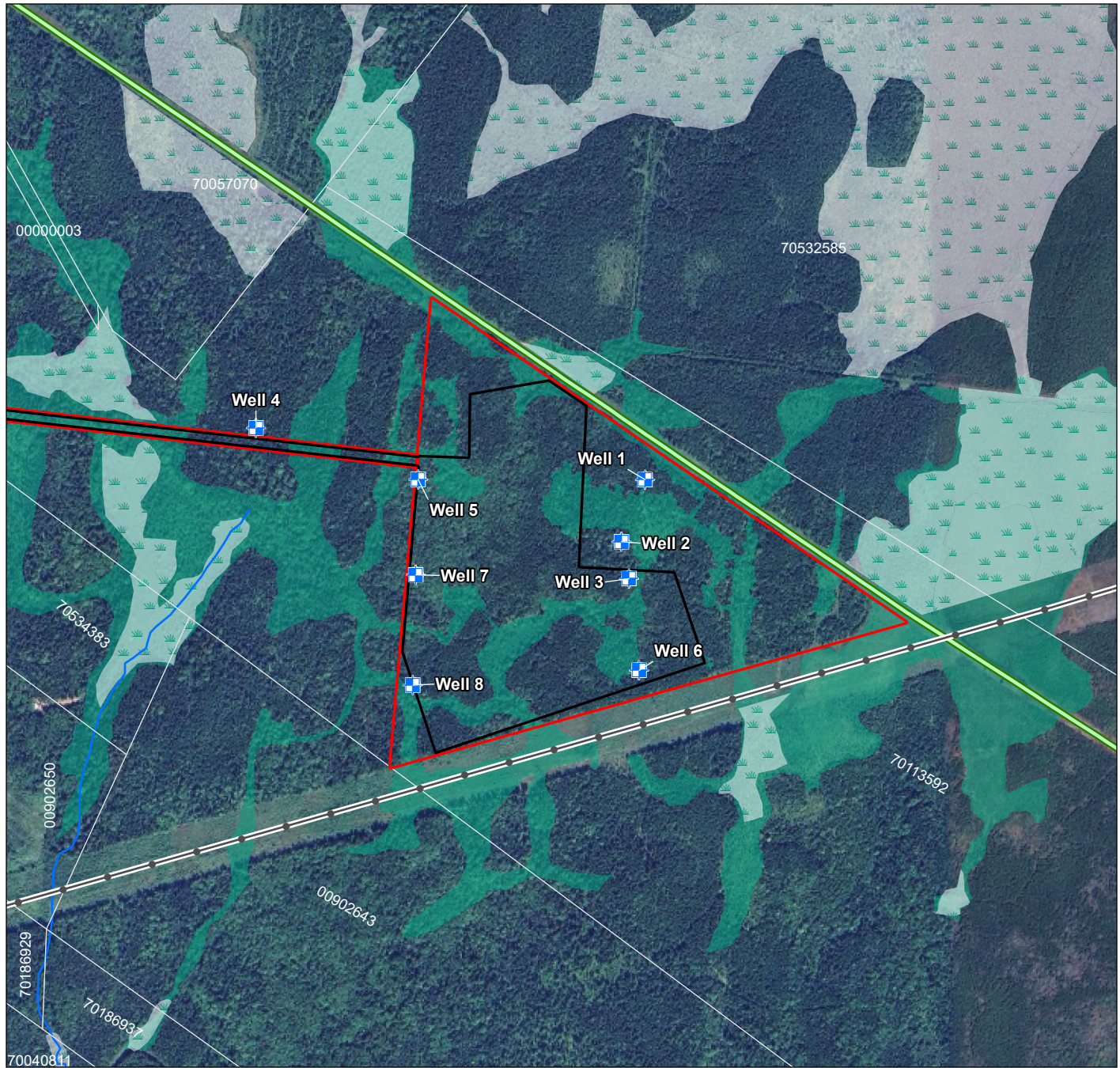
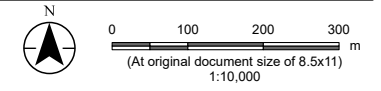


Figure No. **A-5**  
**Title**  
**Well Location Plan**

**Client/Project** ProEnergy Holding Company, Inc. 121418452  
 Water Supply Source Assessment, Renewables Integration and Grid Security Synchronous Condensing/Generation Facility Project  
**Project Location** Centre Village, NB  
 Prepared by AC on 2026-05-19



- Legend**
- Test Well Location
  - Project Area
  - Project Development Area
  - Pipeline (Existing)
  - Transmission Line (Existing)
  - Property Boundary
  - Watercourse
  - Wetland (Stantec)
  - Wetland (NBELG)



- Notes**
1. Coordinate System: NAD 1983 CSRS New Brunswick Stereographic
  2. Data Sources: Client; Service NB
  3. Background: Esri, USGS, Google Earth; GeoNB; NB ELG; NB NRED; NS ECC; NS NRR; NRCAN CanVec; Service NB



## **Appendix B      Well Construction Logs**



OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE		
	HEALTH OFFICE	EVENT NO	YR	MO	DAY
SAMPLE RECEIVED BY					

**TESTING VOUCHER INFORMATION**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

**MANDATORY FOR WATER TEST**

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_

SAMPLE COLLECTED YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_ HR \_\_\_\_\_ MIN \_\_\_\_\_ AM \_\_\_\_\_ PM \_\_\_\_\_

P.I.D. NO. 701135920072327 WELL I.D. NO. \_\_\_\_\_

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS Pro Energy Services  
2001 Pro Energy Blvd

CITY/TOWN/VILLAGE Sedalia Mo USA PROVINCE \_\_\_\_\_ POSTAL CODE 65301

WELL LOCATION SAME AS ABOVE OR CIVIC NUMBER \_\_\_\_\_ STREET NAME NB Route 940

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?**  
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

CITY/TOWN/VILLAGE Centre Village WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
GROUND LEVEL	<u>2</u>		<u>overburden</u>
<u>2</u>	<u>18</u>	<u>brown</u>	<u>Shale</u>
<u>18</u>	<u>20</u>	<u>brown</u>	<u>Shale Stone</u>
<u>20</u>	<u>23</u>	<u>brown</u>	<u>Sand Stone</u>
<u>23</u>	<u>48</u>	<u>brown</u>	<u>Shale</u>
<u>48</u>	<u>49</u>	<u>brown</u>	<u>Shale Stone</u>
<u>49</u>	<u>50</u>	<u>brown</u>	<u>Sand Stone</u>
<u>50</u>	<u>61</u>	<u>brown</u>	<u>Shale</u>
<u>61</u>	<u>65</u>	<u>brown</u>	<u>Sand Stone</u>
<u>65</u>	<u>99</u>	<u>brown</u>	<u>Shale</u>
<u>99</u>	<u>132</u>	<u>grey</u>	<u>Sand Stone</u>
<u>132</u>	<u>143</u>	<u>brown</u>	<u>Shale</u>
<u>143</u>	<u>149</u>	<u>brown</u>	<u>Shale Stone</u>
<u>149</u>	<u>170</u>	<u>grey</u>	<u>Sand Stone</u>
<u>170</u>	<u>182</u>	<u>brown</u>	<u>Shale</u>
<u>182</u>	<u>188</u>	<u>grey</u>	<u>Sand Stone</u>
<u>188</u>	<u>204</u>	<u>brown</u>	<u>Shale Stone</u>
<u>204</u>	<u>208</u>	<u>brown</u>	<u>Shale</u>
<u>208</u>	<u>221</u>	<u>brown</u>	<u>Shale Stone</u>
<u>221</u>	<u>289</u>	<u>brown</u>	<u>Shale</u>
<u>289</u>	<u>303</u>	<u>grey</u>	<u>Shale Stone</u>
<u>303</u>	<u>308</u>	<u>brown</u>	<u>Shale</u>

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

**WELL / WATER USE:**

INDUSTRIAL  ABANDONED  DOMESTIC   
 EXPLORATORY  MUNICIPAL  MONITORING   
 HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPENED

METHOD: CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 8 5/8 IN DIAM FROM 0 FT TO 22 FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_

DRIVE SHOE YES  NO

**SETBACKS: SEE BACK FOR DETAILS**

SEPTIC TANK (1) #1 FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) #2 ROAD (2) \_\_\_\_\_

CENTER OF ROAD (1) #2 (2) \_\_\_\_\_

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 76 FT BELOW TOP OF CASING

PUMPING RATE 40 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 76 FT BELOW TOP OF CASING

ESTIMATED SAFE YIELD: 30-40 igpm

WELL GROUTED? YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 800 FT DEPTH TO BEDROCK: 50 FT

WATER BEARING 1 10-12 igpm AT 111 FT 2 10-12 igpm AT 185 FT

FRACTURE ZONES 3 15-20 igpm AT 400 FT 4 \_\_\_\_\_ igpm AT \_\_\_\_\_ FT

**PUMP INSTALLATION:** INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

PUMP TYPE: SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

DRILLER'S COMMENTS Test well No. 1  
\* Continued on Water  
Well Drillers Report # 62094  
#1 No Septic on Property #2 Approx. 2km From Main Rd.  
\* Test Well only \* No Drive Shoe

DRILLING COMPANY: Eastern Well Drillers Ltd

COMPLETION DATE: 25 11 25 YR MO DAY LICENSE NO. 67

G.P.S. (OPTIONAL) \_\_\_\_\_

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Jacques

Signature of Helper Murphy

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY	SAMPLE RECEIVED BY
	HEALTH OFFICE	EVENT NO		

**TESTING VOUCHER INFORMATION**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_

SAMPLE COLLECTED YR MO DAY HR MIN AM PM

**P.I.D. NO.** 701135920072327

**WELL I.D. NO.**

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

WELL LOCATION: SAME AS ABOVE OR \_\_\_\_\_

CIVIC NUMBER \_\_\_\_\_ STREET NAME \_\_\_\_\_

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?**

**IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:**

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

CITY/TOWN/VILLAGE: Sedalia MD USA 65301

WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO

WELL ALREADY TAGGED? YES  NO

OLD WELL ID \_\_\_\_\_

**WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?**  
YES  NO

**WELL / WATER USE:**

INDUSTRIAL  ABANDONED  DOMESTIC

EXPLORATORY  MUNICIPAL  MONITORING

HEAT PUMP  OBSERVATION  OTHER

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
-----------	---------	--------	-----------

**TYPE OF WORK COMPLETED:** NEW WELL  DEEPENED

OTHER \_\_\_\_\_

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
* continued *			
308	315	grey	Shale
315	320	grey	Shale Stone
320	330	grey	Sand Stone
330	336	grey	Shale Stone
336	343	brown	Shale
343	401	grey	Shale
401	473	brown	Shale
473	478	grey	Shale Stone
478	505	grey	Sand Stone
505	513	brown	Shale
513	735	grey	Shale
735	800	brown	Shale Stone

**METHOD:**  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 2 5/8 FT TO 22 FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_

DRIVE SHOE YES  NO

**SETBACKS: SEE BACK FOR DETAILS**

SEPTIC TANK (1) #1 FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) #2 ROAD (2) \_\_\_\_\_

CENTER OF ROAD (1) #2 (2) \_\_\_\_\_

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

**FLOWING WELL?** YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 40 76 FT BELOW TOP OF CASING

PUMPING RATE 40 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 76 FT. BELOW TOP OF CASING

**ESTIMATED SAFE YIELD:** 30-40 igpm

TOTAL WELL DEPTH: 800 FT DEPTH TO BEDROCK: 50 FT

WATER BEARING 10-12 igpm AT 111 FT 10-12 igpm AT 185 FT

FRACTURE ZONES 15-20 igpm AT 400 FT 4 \_\_\_\_\_ igpm AT \_\_\_\_\_ FT

**WELL GROUTED?** YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

**PUMP INSTALLATION:** INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

**PUMP TYPE:** SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine pellets

DRILLER'S COMMENTS: Test Well No. 1  
\*Continued From Water Well Drillers Report # 62093

DRILLING COMPANY: Eastern Well Drillers Ltd.

COMPLETION DATE: 25 11 25 YR MO DAY

LICENSE NO. 67

#1 - No Septic on Property

G.P.S. (OPTIONAL) #2 - Approx. 2 km from Main Road.

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller: Jacques [Signature]

Signature of Helper: [Signature]

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY
	HEALTH OFFICE	EVENT NO	
SAMPLE RECEIVED BY			

**TESTING VOUCHER INFORMATION**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

**MANDATORY FOR WATER TEST**

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR MO DAY HR MIN AM PM

P.I.D. NO. 701135920072328 WELL I.D. NO. \_\_\_\_\_

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS 2001 Pro Energy Blvd.

CITY/TOWN/VILLAGE Sedalia MD USA PROVINCE USA POSTAL CODE 05301

WELL LOCATION, SAME AS ABOVE OR CIVIC NUMBER, STREET NAME US Route 940

CITY/TOWN/VILLAGE Centre Village WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?**  
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?  
YES  NO

**WELL / WATER USE:**

INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

**TYPE OF WORK COMPLETED:** NEW WELL  DEEPENED

OTHER \_\_\_\_\_

**METHOD:**  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
GROUND LEVEL	<u>3</u>		<u>dreibunden</u>
<u>3</u>	<u>48</u>	<u>brown</u>	<u>Shale</u>
<u>48</u>	<u>51</u>	<u>brown</u>	<u>Sand Stone</u>
<u>51</u>	<u>84</u>	<u>brown</u>	<u>Shale</u>
<u>84</u>	<u>119</u>	<u>grey</u>	<u>Sand Stone</u>
<u>119</u>	<u>140</u>	<u>brown</u>	<u>Shale</u>
<u>140</u>	<u>141</u>	<u>brown</u>	<u>Sand Stone</u>
<u>141</u>	<u>157</u>	<u>grey</u>	<u>Sand Stone</u>
<u>157</u>	<u>162</u>	<u>brown</u>	<u>Shale</u>
<u>162</u>	<u>165</u>	<u>brown</u>	<u>Shale Stone</u>
<u>165</u>	<u>167</u>	<u>grey</u>	<u>Sand Stone</u>
<u>167</u>	<u>169</u>	<u>grey</u>	<u>Shale Stone</u>
<u>169</u>	<u>181</u>	<u>grey</u>	<u>Sand Stone</u>
<u>181</u>	<u>262</u>	<u>brown</u>	<u>Shale</u>
<u>262</u>	<u>282</u>	<u>grey</u>	<u>Shale Stone</u>
<u>282</u>	<u>285</u>	<u>grey</u>	<u>Shale</u>
<u>285</u>	<u>294</u>	<u>brown</u>	<u>Shale</u>
<u>294</u>	<u>322</u>	<u>grey</u>	<u>Shale Stone</u>
<u>322</u>	<u>330</u>	<u>grey</u>	<u>Sand Stone</u>
<u>330</u>	<u>336</u>	<u>grey</u>	<u>Shale Stone</u>
<u>336</u>	<u>348</u>	<u>brown</u>	<u>Shale</u>
<u>348</u>	<u>351</u>	<u>brown</u>	<u>Shale Stone</u>

**CASING INSTALLED:**

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 8 5/8 FT TO 22 FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_

\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

DRIVE SHOE  
 YES  NO

**SETBACKS: SEE BACK FOR DETAILS**

SEPTIC TANK (1) #1 FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD  (1) #2 ROAD (2) \_\_\_\_\_

CENTER OF ROAD  (1) #2 (2) \_\_\_\_\_

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

**FLOWING WELL?** YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 76 FT BELOW TOP OF CASING

PUMPING RATE 40-50 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 76 FT BELOW TOP OF CASING

**ESTIMATED SAFE YIELD:** 40-50 igpm

**WELL GROUTED?** YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 1000 FT DEPTH TO BEDROCK: 84 FT

WATER BEARING 1 1-2 igpm AT 116 FT 2 45 igpm AT 170 FT

FRACTURE ZONES 3 10-12 igpm AT 180 FT 4 8-10 igpm AT 350 FT

30 igpm at 400 FT 8-10 igpm at 470 FT

**PUMP INSTALLATION:** INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

**PUMP TYPE:** SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

DRILLER'S COMMENTS Test Well No. 2

\*Continued on Water Well Driller's Report #62096

#1 No Septic on Property #2 Approx. 2 km from Main Rd.

DRILLING COMPANY: Eastern Well Drillers Ltd

COMPLETION DATE: 25/2/03 YR MO DAY

LICENSE NO. 67

G.P.S. (OPTIONAL) \*Test Well only\* No Drive Shoe

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Jacques L

Signature of Helper M...

WHITE - NB DENV  
BLUE - Homeowner / Voucher  
YELLOW - Homeowner  
PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY
	HEALTH OFFICE	EVENT NO	
SAMPLE RECEIVED BY			

**TESTING VOUCHER INFORMATION**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR MO DAY HR MIN AM PM

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?**  
**IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:**

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

**WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?**  
YES  NO

**WELL / WATER USE:**  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

**TYPE OF WORK COMPLETED:** NEW WELL  DEEPEINED

**METHOD:**  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**  
LENGTH OF CASING ABOVE GROUND 02 FT 0 IN  
STEEL 10-78 FT TO 22 FT  
PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_  
\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

**SETBACKS: SEE BACK FOR DETAILS**  
SEPTIC TANK (1) #1 FT  
SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) #2 ROAD (2) \_\_\_\_\_  
CENTER OF ROAD (1) #2 (2) \_\_\_\_\_  
SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

**FLOWING WELL?** YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL: 76 FT BELOW TOP OF CASING  
PUMPING RATE 40-50 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min  
FINAL WATER LEVEL 76 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 40-50 igpm

**WELL GROUTED?** YES  NO   
FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_  
DRILLING FLUIDS USED: YES  NO   
TYPE \_\_\_\_\_

DRILLER'S COMMENTS Test Well No. 2  
\* Continued from Water Well  
Drillers Report # 62095

DRILLING COMPANY: Eastern Well Drillers Ltd  
COMPLETION DATE: 25 12 03 YR MO DAY  
LICENSE NO. 67

TEST WELL ONLY - NO DRIVE SHOE  
#1 No Septic on property  
G.P.S. (OPTIONAL) #2 Approx. 2 km from Main Road.

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller [Signature]

Signature of Helper [Signature]

P.I.D. NO. 70113592 WELL I.D. NO. 0072328

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME Pro Energy Services LAST NAME \_\_\_\_\_

ADDRESS 2001 Pro Energy Blvd

CITY/TOWN/VILLAGE Sedalia MO USA PROVINCE USA POSTAL CODE 65301

WELL LOCATION, SAME AS ABOVE OR CIVIC NUMBER STREET NAME NB Route 940

CITY/TOWN/VILLAGE Centre Village WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

ATTENTION OF \_\_\_\_\_

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
		* Continued *	
351	363	grey	Shale Stone
363	423	brown	Shale
423	446	grey	Shale Stone
446	456	brown	Shale
456	469	grey	Shale Stone
469	490	grey	Sand Stone
490	495	grey	Shale Stone
495	523	brown	Shale
523	535	grey	Shale
535	539	grey	Shale Stone
539	565	brown	Shale
565	573	brown	Shale Stone
573	584	brown	Shale
584	589	grey	Shale
589	603	brown	Shale Stone
603	607	brown	Shale
607	643	grey	Shale Stone
643	668	brown	Shale
668	682	brown	Shale Stone
682	703	brown	Sand Stone
703	1000	brown	Shale Stone

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 1000 FT DEPTH TO BEDROCK: 84 FT  
WATER BEARING 1 1-2 igpm AT 116 FT 2 45 igpm AT 170 FT  
FRACTURE ZONES 10-12 igpm AT 180 FT 4 8-10 igpm AT 350 FT

**PUMP INSTALLATION:** 30 igpm at 400 ft 8-10 igpm at 470 ft  
INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)  
PUMP TYPE: SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO   
TYPE Chlorine Pellets

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

20160

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY
	HEALTH OFFICE	EVENT NO	
			SAMPLE RECEIVED BY

**TESTING VOUCHER INFORMATION** MANDATORY FOR WATER TEST  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

P.I.D. NO. 701135920072329  
WELL I.D. NO.

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

ADDRESS (MAIL RESULTS TO)

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
Pro Energy Services

CITY/TOWN/VILLAGE PROV POSTAL CODE

ADDRESS  
2001 Pro Energy Blvd

DAYTIME PHONE FAX NO

CITY/TOWN/VILLAGE PROVINCE POSTAL CODE  
Sedalia Mo USA 65301

TEL NO SAMPLE COLLECTED YR MO DAY HR MIN AM PM

WELL LOCATION SAME AS ABOVE OR  
CIVIC NUMBER STREET NAME  
NB Route 940

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? SEE BACK FOR DETAILS

CITY/TOWN/VILLAGE WELL PAID FOR BY PROVINCIAL DEPT OF  
Centre Village

IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID

ATTENTION OF

**DRILLER'S LOG\***

TEL NO FAX NO

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
GROUND LEVEL	<u>3</u>		<u>overburden</u>
<u>3</u>	<u>20</u>	<u>brown</u>	<u>Shale</u>
<u>20</u>	<u>21</u>	<u>grey</u>	<u>Shale</u>
<u>21</u>	<u>22</u>	<u>grey</u>	<u>Shale Stone</u>
<u>22</u>	<u>23</u>	<u>grey</u>	<u>Sand Stone</u>
<u>23</u>	<u>51</u>	<u>brown</u>	<u>Shale</u>
<u>51</u>	<u>59</u>	<u>brown</u>	<u>Sand Stone</u>
<u>59</u>	<u>69</u>	<u>brown</u>	<u>Shale</u>
<u>69</u>	<u>77</u>	<u>brown</u>	<u>Shale Stone</u>
<u>77</u>	<u>109</u>	<u>brown</u>	<u>Shale</u>
<u>109</u>	<u>110</u>	<u>grey</u>	<u>Shale Stone</u>
<u>110</u>	<u>141</u>	<u>grey</u>	<u>Sand Stone</u>
<u>141</u>	<u>150</u>	<u>brown</u>	<u>Shale</u>
<u>150</u>	<u>153</u>	<u>grey</u>	<u>Sand Stone</u>
<u>153</u>	<u>155</u>	<u>grey</u>	<u>Shale Stone</u>
<u>155</u>	<u>171</u>	<u>grey</u>	<u>Sand Stone</u>
<u>171</u>	<u>177</u>	<u>brown</u>	<u>Shale</u>
<u>177</u>	<u>178</u>	<u>brown</u>	<u>Sand Stone</u>
<u>178</u>	<u>182</u>	<u>brown</u>	<u>Shale</u>
<u>182</u>	<u>198</u>	<u>grey</u>	<u>Sand Stone</u>
<u>198</u>	<u>211</u>	<u>brown</u>	<u>Shale Stone</u>
<u>211</u>	<u>287</u>	<u>brown</u>	<u>Shale</u>

SIGNATURE OF WELL OWNER

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

WELL / WATER USE:  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPENED

METHOD:

CABLE TOOL  ROTARY  OTHER

CASING INSTALLED:

LENGTH OF CASING ABOVE GROUND 8 3/8 FT 0 IN

STEEL \_\_\_\_\_ FT TO \_\_\_\_\_ FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_

DRIVE SHOE YES  NO

SETBACKS: SEE BACK FOR DETAILS SEPTIC TANK (1) #1 FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) #2 ROAD (2) \_\_\_\_\_

CENTER OF ROAD (1) #2 (2) \_\_\_\_\_

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

AQUIFER TEST: METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 70 FT BELOW TOP OF CASING

PUMPING RATE 90-100 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 70 FT BELOW TOP OF CASING

ESTIMATED SAFE YIELD: 90-100 igpm

WELL GROUTED? YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 520 FT DEPTH TO BEDROCK: 51 FT

WATER BEARING 30-40 igpm AT 58 FT 10-12 igpm AT 132 FT

FRACTURE ZONES 10-12 igpm AT 170 FT 10-12 igpm AT 192 FT

PUMP INSTALLATION: INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

PUMP TYPE: SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

DRILLER'S COMMENTS Test Well No. 3

DRILLING COMPANY: Eastern Well Drillers Ltd

\*Continued on Water Well Driller's Report # 62098

COMPLETION DATE: 25 12 05 YR MO DAY

#1 No Septic on Property #2 Approx. 2 km from Main Rd

LICENSE NO. 107

G.P.S. (OPTIONAL) TEST WELL ONLY - No Drive Shoe

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Jacques

Signature of Helper Marc

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY
	HEALTH OFFICE	EVENT NO	
SAMPLE RECEIVED BY			

**TESTING VOUCHER INFORMATION** MANDATORY FOR WATER TEST  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
ADDRESS (MAIL RESULTS TO) \_\_\_\_\_  
CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_  
TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR MO DAY HR MIN AM PM

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

P.I.D. NO. 70 113592 00 72329 WELL I.D. NO. \_\_\_\_\_  
FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY/TOWN/VILLAGE \_\_\_\_\_ PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
WELL LOCATION, SAME AS ABOVE OR CIVIC NUMBER STREET NAME  
NB Route 940

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?** SEE BACK FOR DETAILS  
**IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:**

ATTENTION OF \_\_\_\_\_  
TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_  
SIGNATURE OF WELL OWNER \_\_\_\_\_

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
*continued*			
287	291	grey	Shale Stone
291	300	grey	Shale
300	314	Brown	Shale
314	332	grey	Shale Stone
332	344	grey	Shale
344	345	grey	Shale Stone
345	347	brown	Shale
347	361	grey	Shale
361	365	brown	Shale Stone
365	368	brown	Sand Stone
368	369	brown	Shale
369	377	brown	Sand Stone
377	449	brown	Shale
449	462	brown	Shale Stone
462	474	brown	Shale
474	507	grey	Sand Stone
507	520	brown	Shale

**WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?**  
YES  NO

**WELL / WATER USE:**  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

**TYPE OF WORK COMPLETED:** NEW WELL  DEEPENED

**METHOD:**  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**  
LENGTH OF CASING ABOVE GROUND 2 FT 0 IN  
STEEL 8 7/8 FT TO 22 FT  
PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_  
\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
DRIVE SHOE  YES  NO

**SETBACKS: SEE BACK FOR DETAILS**  
SEPTIC TANK (1) #1 FT  
SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) #1 FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD  (1) #2 ROAD (2) \_\_\_\_\_  
CENTER OF ROAD  (1) #2 (2) \_\_\_\_\_  
SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

**FLOWING WELL?** YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL: 70 FT BELOW TOP OF CASING  
PUMPING RATE 90-100 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min  
FINAL WATER LEVEL 70 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 90-100 igpm

**WELL GROUTED?** YES  NO   
FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_  
DRILLING FLUIDS USED: YES  NO   
TYPE \_\_\_\_\_

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 520 FT DEPTH TO BEDROCK: 51 FT  
WATER BEARING 1 30-40 igpm AT 58 FT 2 10-12 igpm AT 132 FT  
FRACTURE ZONES 3 10-12 igpm AT 170 FT 4 10-12 igpm AT 192 FT  
PUMP INSTALLATION: 8-10 igpm at 337 FT 20-25 igpm at 481 FT  
PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING  
PUMP TYPE: SUBMERSIBLE  JET  TURBINE   
OTHER \_\_\_\_\_  
WELL DISINFECTED? YES  NO   
TYPE Chlorine Pellets

DRILLER'S COMMENTS Test Well No.3  
\*Continued from Water Well  
Driller's Report # 62097.

DRILLING COMPANY: Eastern Well Drillers Ltd  
COMPLETION DATE: 25 12 05 YR MO DAY LICENSE NO. 67

Test Well ONLY - No Drive Shoe  
#1 No Septic on property  
G.P.S. (OPTIONAL) #2 Approx. 2 KM from Main Road.

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Dagmar Signature of Helper Marc

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE
	HEALTH OFFICE	EVENT NO	
		YR	MO DAY

SAMPLE RECEIVED BY

TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST

SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME LAST NAME

ADDRESS (MAIL RESULTS TO)

CITY/TOWN/VILLAGE PROV POSTAL CODE

DAYTIME PHONE FAX NO

TEL NO SAMPLE COLLECTED YR MO DAY HR MIN AM PM

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? SEE BACK FOR DETAILS

IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

ATTENTION OF

TEL NO FAX NO

SIGNATURE OF WELL OWNER

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES NO

WELL / WATER USE:  
INDUSTRIAL ABANDONED DOMESTIC  
EXPLORATORY MUNICIPAL MONITORING  
HEAT PUMP OBSERVATION OTHER

TYPE OF WORK COMPLETED: NEW WELL DEEPEINED

OTHER Test Well

METHOD:

CABLE TOOL ROTARY OTHER

CASING INSTALLED:

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 6 3/8 0 FT TO 80 FT

PVC IN DIAM FROM FT TO FT

SLOTTED IN DIAM FROM FT TO FT

SCREENS: TYPE SLOT SIZE

IN DIAM FROM FT TO FT

DRIVE SHOE YES NO

SETBACKS: SEE BACK FOR DETAILS SEPTIC TANK (1) N/A FT

SEPTIC TANK (2) FT FIELD (2) FT FIELD (1) FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) ROAD (2)

CENTER OF ROAD (1) See Comments

SETBACKS MEASURED (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER (EXISTING CONST.)

FLOWING WELL? YES NO IF YES-RATE igpm (approx)

AQUIFER TEST: METHOD AIR BAILER PUMP

INITIAL WATER LEVEL 65 FT BELOW TOP OF CASING

PUMPING RATE 120 igpm DURATION hrs min

FINAL WATER LEVEL 65 FT. BELOW TOP OF CASING

ESTIMATED SAFE YIELD: 120 igpm

WELL GROUTED? YES NO

FROM FT TO FT GROUT TYPE:

DRILLING FLUIDS USED: YES NO

TYPE

DRILLER'S COMMENTS TEST WELL No. 4

45-50 igpm at 240 Ft

15-20 igpm at 274 Ft

20-25 igpm at 346 Ft

CONTINUED ON WATER WELL DRILL LOG # 62180

G.P.S. (OPTIONAL) NO SEPTIC ON PROPERTY, Approx. 2 km from Main Rd. TEST

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Jacques

DRILLING COMPANY: Eastern Well Drillers Ltd.

COMPLETION DATE: 26 03 27 YR MO DAY

LICENSE NO. 67

P.I.D. NO. 70113592 WELL I.D. NO. 0072416

WELL OWNER INFORMATION

INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME LAST NAME

PRO Energy Services

ADDRESS

2001 ProEnergy Blvd

CITY/TOWN/VILLAGE PROVINCE POSTAL CODE

Sedalia MO USA 65301

WELL LOCATION. SAME AS ABOVE OR

CIVIC NUMBER STREET NAME

NB Route 940

CITY/TOWN/VILLAGE WELL PAID FOR BY PROVINCIAL DEPT

Centre Village

WELL ON RESERVE? YES NO

WELL ALREADY TAGGED? YES NO

OLD WELL ID

DRILLER'S LOG\*

FROM (FT) TO (FT) COLOUR ROCK TYPE

GROUND LEVEL 2

2 29 brown overburden

29 31 brown Shale clay

31 32 grey Shale

32 34 brown Shale Stone

34 35 grey Shale

35 36 grey Shale Stone

36 41 brown Shale

41 49 grey Shale Stone

49 54 brown Shale

54 62 grey Shale

62 66 grey Shale Stone

66 94 grey Sand Stone

94 103 grey Shale

103 106 grey Sand Stone

106 109 grey Shale Stone

109 143 grey Sand Stone

143 149 brown conglomerate

149 172 brown Shale

172 173 grey Sand Stone

173 177 grey Shale Stone

177 210 brown Shale

INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 500 FT DERTH TO BEDROCK: 66 FT

WATER BEARING 1 870 igpm AT 68 FT 2 4-5 97 FT

FRACTURE ZONES 870 igpm AT 109 FT 4-5 148 FT

\* See Comments \*

PUMP INSTALLATION:

INSTALLED NOT INSTALLED

PUMP INTAKE SETTING. FT BELOW TOP OF CASING

PUMP TYPE: SUBMERSIBLE JET TURBINE

OTHER

WELL DISINFECTED? YES NO

TYPE Chlorine Pellets

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- BLACK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY  
FIELD NO \_\_\_\_\_  
HEALTH CODE \_\_\_\_\_ LAB NO \_\_\_\_\_  
HEALTH OFFICE \_\_\_\_\_ EVENT NO \_\_\_\_\_  
SAMPLE RECEIVED DATE \_\_\_\_\_  
YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_

SAMPLE RECEIVED BY \_\_\_\_\_

TESTING VOUCHER INFORMATION  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

P.I.D. NO. 70.113592 WELL I.D. NO. 0072416

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

WELL OWNER INFORMATION  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
Pro Energy Services

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

ADDRESS \_\_\_\_\_  
2001 ProEnergy Blvd.

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
Sedalia MO USA 65301

TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_ HR \_\_\_\_\_ MIN \_\_\_\_\_ AM \_\_\_\_\_ PM \_\_\_\_\_

WELL LOCATION, SAME AS ABOVE OR  
CIVIC NUMBER \_\_\_\_\_ STREET NAME \_\_\_\_\_  
NB Route 940

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? \_\_\_\_\_  
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

CITY/TOWN/VILLAGE \_\_\_\_\_ WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_  
Centre Village

ATTENTION OF \_\_\_\_\_

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

\*continued from DRILLER'S LOG # 62179\*

SIGNATURE OF WELL OWNER \_\_\_\_\_

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
210	212	grey	Shale Stone
212	224	grey	Shale
224	232	brown	Shale
232	235	grey	Shale Stone
235	258	grey	Sand Stone
258	272	brown	Shale
272	276	grey	Sand Stone
276	285	brown	Shale
285	288	grey	Sand Stone
288	292	brown	Shale
292	298	grey	Shale Stone
298	306	grey	Shale
306	309	brown	Shale
309	311	grey	Shale
311	334	brown	Shale
334	338	grey	Shale Stone
338	359	grey	Sand Stone
359	383	brown	Shale
383	391	grey	Shale
391	404	grey	Shale Stone
404	413	grey	Shale
413	454	brown	Shale

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

WELL / WATER USE:  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPENED   
OTHER Test Well

METHOD:  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

CASING INSTALLED:  
LENGTH OF CASING ABOVE GROUND 2 FT 0 IN  
STEEL 6518 0 FT TO 20 FT  
PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_  
\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
DRIVE SHOE YES  NO

SETBACKS: SEE BACK FOR DETAILS  
SEPTIC TANK (1) \_\_\_\_\_ FT FIELD (1) N/A FT  
SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) \_\_\_\_\_ ROAD (2) \_\_\_\_\_  
CENTER OF ROAD  (1) See comments  
SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

AQUIFER TEST: METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL: 65 FT BELOW TOP OF CASING  
PUMPING RATE 120 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min  
FINAL WATER LEVEL 65 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 120 igpm

WELL GROUTED? YES  NO   
FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_  
DRILLING FLUIDS USED: YES  NO   
TYPE \_\_\_\_\_

DRILLER'S COMMENTS TEST WELL No. 4  
45-50 igpm at 240 FT  
15-20 igpm at 274 FT  
20-25 igpm at 346 FT

DRILLING COMPANY: Eastern Well Drillers Ltd.  
COMPLETION DATE: 2010327 YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_ LICENSE NO. 167

G.P.S. (OPTIONAL) No septic on property, approx. 2 km from Main Rd.  
I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.  
Signature of Driller: Jacques Signature of Helper: Alfred  
TEST WELL ONLY - No Drive Shoe  
KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

**OFFICE USE ONLY**

FIELD NO \_\_\_\_\_

HEALTH CODE \_\_\_\_\_ LAB NO \_\_\_\_\_

HEALTH OFFICE \_\_\_\_\_ EVENT NO \_\_\_\_\_

SAMPLE RECEIVED DATE \_\_\_\_\_

YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_

SAMPLE RECEIVED BY \_\_\_\_\_

**TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST**

SEE BACK FOR DETAILS PLEASE PRINT

INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

P.I.D. NO. 70113592 WELL I.D. NO. 0072416

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_

SAMPLE COLLECTED YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_ HR \_\_\_\_\_ MIN \_\_\_\_\_ AM/PM \_\_\_\_\_

**WELL OWNER INFORMATION**

INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS ProEnergy Services

2001 ProEnergy Blvd

CITY/TOWN/VILLAGE Sedalia MO USA PROVINCE \_\_\_\_\_ POSTAL CODE 65301

WELL LOCATION, SAME AS ABOVE OR \_\_\_\_\_

CIVIC NUMBER \_\_\_\_\_ STREET NAME NB Route 940

**DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?**

IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

SEE BACK FOR DETAILS

CITY/TOWN/VILLAGE Centre Village WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO

WELL ALREADY TAGGED? YES  NO

OLD WELL ID \_\_\_\_\_

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

*\*Continued From DRILLER'S LOG #62180\**

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
<u>472</u>	<u>472</u>	<u>grey</u>	<u>Sand Stone</u>
<u>472</u>	<u>476</u>	<u>grey</u>	<u>Shale Stone</u>
<u>476</u>	<u>491</u>	<u>brown</u>	<u>Shale</u>
<u>491</u>	<u>500</u>	<u>grey</u>	<u>Sand Stone</u>

**WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?**

YES  NO

**WELL / WATER USE:**

INDUSTRIAL  ABANDONED  DOMESTIC

EXPLORATORY  MUNICIPAL  MONITORING

HEAT PUMP  OBSERVATION  OTHER

**TYPE OF WORK COMPLETED:** NEW WELL  DEEPEINED

OTHER Test well

**METHOD:**

CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 6 3/8 0 FT TO 80 FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_

\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

DRIVE SHOE  YES  NO

**SETBACKS: SEE BACK FOR DETAILS**

SEPTIC TANK (1) N/A FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) \_\_\_\_\_ FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) \_\_\_\_\_ ROAD (2) \_\_\_\_\_

CENTER OF ROAD  (1) See Comments

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

**FLOWING WELL?** YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

**AQUIFER TEST:** METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 65 FT BELOW TOP OF CASING

PUMPING RATE 120 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 65 FT. BELOW TOP OF CASING

**ESTIMATED SAFE YIELD:** 120 igpm

**WELL GROUTED?** YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 500 FT DEPTH TO BEDROCK: 160 FT

WATER BEARING 1 8-10 igpm AT 68 FT 2 4-5 igpm AT 91 FT

FRACTURE ZONES 8-10 igpm AT 109 FT 4 4-5 igpm AT 148 FT

*\* See Comments \**

**PUMP INSTALLATION:** INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING: \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

**PUMP TYPE:** SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

**DRILLER'S COMMENTS** TEST WELL No. 4

45-50 igpm at 240 Ft

15-20 igpm at 274 Ft

20-25 igpm at 340 Ft

**DRILLING COMPANY:** Eastern Well Drillers Ltd

**COMPLETION DATE:** 26 03 27 YR \_\_\_\_\_ MO \_\_\_\_\_ DAY \_\_\_\_\_

**LICENSE NO.:** 167

CONTINUED FROM WATER WELL DRILL REPORT #62179 and

G.P.S. (OF ADJACENT) No Septic on Property; Approx. 2 km from Main Rd.

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Jacques [Signature]

Signature of Helper [Signature]

**WHITE** - NB DENV

**BLUE** - Homeowner / Voucher

**YELLOW** - Homeowner

**PINK** - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE YR MO DAY
	HEALTH OFFICE	EVENT NO	

SAMPLE RECEIVED BY

TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST

SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME LAST NAME

ADDRESS (MAIL RESULTS TO)

CITY/TOWN/VILLAGE PROV POSTAL CODE

DAYTIME PHONE FAX NO

TEL NO SAMPLE COLLECTED YR MO DAY HR MIN AM PM

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? SEE BACK FOR DETAILS

IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

ATTENTION OF

TEL NO FAX NO

SIGNATURE OF WELL OWNER

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

WELL / WATER USE:  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPEMED

METHOD: CABLE TOOL  ROTARY  OTHER

CASING INSTALLED:  
LENGTH OF CASING ABOVE GROUND 2 FT 0 IN  
STEEL 6 FT 8 IN TO 8 FT 5 IN FT TO 120 FT 20 FT  
PVC IN DIAM FROM FT TO FT  
SLOTTED IN DIAM FROM FT TO FT  
SCREENS: TYPE SLOT SIZE IN DIAM FROM FT TO FT DRIVE SHOE YES  NO

SETBACKS: SEE BACK FOR DETAILS SEPTIC TANK (1) N/A FT  
SEPTIC TANK (2) FT FIELD (2) FT FIELD (1) FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) ROAD (2)  
CENTER OF ROAD (1) (2) All Comments  
SETBACKS MEASURED (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE igpm (approx)

AQUIFER TEST: METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL: 125 FT BELOW TOP OF CASING  
PUMPING RATE: 10 igpm DURATION hrs min  
FINAL WATER LEVEL: 125 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 10 igpm

WELL GROUTED? YES  NO   
FROM FT TO FT GROUT TYPE:  
DRILLING FLUIDS USED: YES  NO   
TYPE

DRILLER'S COMMENTS TEST WELL No. 5

DRILLING COMPANY: Eastern Well Drillers Ltd  
COMPLETION DATE: 30.0.31 YR MO DAY LICENSE NO. 107

CONTINUED on water well Drill Report 62183  
No Septic on the property. Approx. 2 km from Main Rd.  
G.P.S. (OPTIONAL) Test Well only - no Drive Shoe

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller: Jacques L. Signature of Helper: [Signature]

P.I.D. NO. 70113592 WELL I.D. NO. 0072417

WELL OWNER INFORMATION  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME LAST NAME  
Pro Energy Services

ADDRESS  
2001 Pro Energy Blvd

CITY/TOWN/VILLAGE PROVINCE POSTAL CODE  
Sedalia Mo USA 65301

WELL LOCATION. SAME AS ABOVE OR CIVIC NUMBER STREET NAME  
NB Route 940

CITY/TOWN/VILLAGE WELL PAID FOR BY PROVINCIAL DEPT OF  
Centre Village

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID

DRILLER'S LOG\*

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
GROUND LEVEL	3		
3	56	brown	overburden
56	60	grey	Clay Shale
60	64	brown	Shale
64	69	grey	Shale
69	73	brown	Shale
73	79	grey	Shale Stone
79	92	grey	Shale
92	113	brown	Shale
113	116	grey	Shale Stone
116	129	grey	Sand Stone
129	148	grey	Shale
148	166	grey	Sand Stone
166	195	brown	Shale
195	201	grey	Shale Stone
201	206	brown	Shale
206	209	grey	Shale
209	238	brown	Shale
238	240	grey	Sand Stone
240	244	grey	Shale
244	247	grey	Shale Stone
247	251	grey	Shale

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

TOTAL WELL DEPTH: 500 FT DEPTH TO BEDROCK: 116 FT  
WATER BEARING 1 8-10 igpm AT 153 FT 2 igpm AT FT  
FRACTURE ZONES 3 igpm AT FT 4 igpm AT FT

PUMP INSTALLATION: INSTALLED  NOT INSTALLED   
PUMP INTAKE SETTING. FT BELOW TOP OF CASING  
PUMP TYPE: SUBMERSIBLE  JET  TURBINE   
OTHER

WELL DISINFECTED? YES  NO   
TYPE Chlorine Pellets

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

<b>OFFICE USE ONLY</b> FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE																																																					
	HEALTH OFFICE	EVENT NO	YR MO DAY	SAMPLE RECEIVED BY																																																				
<b>TESTING VOUCHER INFORMATION</b> SEE BACK FOR DETAILS PLEASE PRINT INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING			<b>P.I.D. NO.</b>	<b>WELL I.D. NO.</b>																																																				
FIRST NAME LAST NAME			70113592	0072417																																																				
ADDRESS (MAIL RESULTS TO)			<b>WELL OWNER INFORMATION</b> INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING																																																					
CITY/TOWN/VILLAGE PROV POSTAL CODE			FIRST NAME LAST NAME																																																					
DAYTIME PHONE FAX NO			Pro Energy Services																																																					
TEL NO			ADDRESS																																																					
SAMPLE COLLECTED YR MO DAY HR MIN AM PM			3001 ProEnergy Blvd																																																					
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SIGNATURE OF WELL OWNER			CITY/TOWN/VILLAGE WELL PAID FOR BY PROVINCIAL DEPT OF																																																					
WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			Centre Village																																																					
WELL / WATER USE:			WELL ON RESERVE? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> WELL READY TAGGED? YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> OLD WELL ID																																																					
INDUSTRIAL <input type="checkbox"/> ABANDONED <input type="checkbox"/> DOMESTIC <input type="checkbox"/>			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>FROM (FT)</th> <th>TO (FT)</th> <th>COLOUR</th> <th>ROCK TYPE</th> </tr> </thead> <tbody> <tr><td>251</td><td>273</td><td>brown</td><td>Shale</td></tr> <tr><td>273</td><td>275</td><td>grey</td><td>Shale Stone</td></tr> <tr><td>275</td><td>292</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>292</td><td>297</td><td>grey</td><td>Shale</td></tr> <tr><td>297</td><td>376</td><td>brown</td><td>Shale</td></tr> <tr><td>376</td><td>377</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>377</td><td>393</td><td>grey</td><td>Shale Stone</td></tr> <tr><td>393</td><td>402</td><td>grey</td><td>Shale</td></tr> <tr><td>402</td><td>404</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>404</td><td>432</td><td>brown</td><td>Shale</td></tr> <tr><td>432</td><td>454</td><td>grey</td><td>Shale</td></tr> <tr><td>454</td><td>500</td><td>brown</td><td>Shale</td></tr> </tbody> </table>		FROM (FT)	TO (FT)	COLOUR	ROCK TYPE	251	273	brown	Shale	273	275	grey	Shale Stone	275	292	grey	Sand Stone	292	297	grey	Shale	297	376	brown	Shale	376	377	grey	Sand Stone	377	393	grey	Shale Stone	393	402	grey	Shale	402	404	grey	Sand Stone	404	432	brown	Shale	432	454	grey	Shale	454	500	brown	Shale
FROM (FT)	TO (FT)	COLOUR			ROCK TYPE																																																			
251	273	brown			Shale																																																			
273	275	grey			Shale Stone																																																			
275	292	grey			Sand Stone																																																			
292	297	grey			Shale																																																			
297	376	brown			Shale																																																			
376	377	grey			Sand Stone																																																			
377	393	grey			Shale Stone																																																			
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404	432	brown	Shale																																																					
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DRILLING FLUIDS USED: YES <input type="checkbox"/> NO <input type="checkbox"/>																																																								
TYPE _____																																																								
DRILLER'S COMMENTS: Test Well No. 5																																																								
DRILLING COMPANY: Eastern Well Drillers Ltd.																																																								
COMPLETION DATE: 20 03 31 YR MO DAY LICENSE NO. 167																																																								
G.P.S. (OPTIONAL) Continued From Water Well Drill Report 62182																																																								
I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.																																																								
Signature of Driller: Jacques L. Signature of Helper: [Signature]																																																								

WHITE - NB DENV  
BLUE - Homeowner / Voucher  
YELLOW - Homeowner  
PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

20204

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO.	SAMPLE RECEIVED DATE YR MO DAY	SAMPLE RECEIVED BY
	HEALTH OFFICE	EVENT NO.		

**TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST**

SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME LAST NAME

ADDRESS (MAIL RESULTS TO)

CITY/TOWN/VILLAGE PROV POSTAL CODE

DAYTIME PHONE FAX NO

TEL NO SAMPLE COLLECTED YR MO DAY HR MIN AM PM

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? SEE BACK FOR DETAILS  
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

ATTENTION OF

TEL NO FAX NO

SIGNATURE OF WELL OWNER

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?  
YES  NO

WELL / WATER USE:  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPEMED   
OTHER Test Well

METHOD:  
CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

CASING INSTALLED:  
LENGTH OF CASING ABOVE GROUND 2 FT 0 IN  
STEEL 6 7/8 FT TO 60 FT  
PVC 8 5/8 IN DIAM FROM 0 FT TO 20 FT  
SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_  
\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
DRIVE SHOE  YES  NO

SETBACKS: SEE BACK FOR DETAILS  
SEPTIC TANK (1) N/A FT  
SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) \_\_\_\_\_ FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) \_\_\_\_\_ ROAD (2) \_\_\_\_\_  
CENTER OF ROAD  (1) see comments  
SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

AQUIFER TEST: METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL: 52 FT BELOW TOP OF CASING  
PUMPING RATE 120 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min  
FINAL WATER LEVEL 52 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 120 igpm

WELL GROUTED? YES  NO   
FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_  
DRILLING FLUIDS USED: YES  NO   
TYPE \_\_\_\_\_

DRILLER'S COMMENTS Test Well No. 6  
40-50 igpm at 269 Ft  
10-12 igpm at 291 Ft  
12-15 igpm at 452 Ft

DRILLING COMPANY: Eastern Well Drillers Ltd.  
COMPLETION DATE: 26.03.25 YR MO DAY  
LICENSE NO. 67

G.P.S. (OPTIONAL) NO SEPTIC ON PROPERTY, Approx. 2 km from Main Rd. Test Well only - No Drilled Shoe  
I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller Dagmar

Signature of Helper MUC 212

P.I.D. NO. 70.11.35920072415  
WELL I.D. NO. \_\_\_\_\_

**WELL OWNER INFORMATION**

INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME LAST NAME Pro Energy Services

ADDRESS 2001 Pro Energy Blvd

CITY/TOWN/VILLAGE PROVINCE POSTAL CODE Sedalia MO USA 65301

WELL LOCATION, SAME AS ABOVE OR CIVIC NUMBER STREET NAME NB Route 940

CITY/TOWN/VILLAGE WELL PAID FOR BY PROVINCIAL DEPT OF Centre Village

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

**DRILLER'S LOG\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
GROUND LEVEL	<u>3</u>		
<u>3</u>	<u>10</u>	<u>brown</u>	<u>(overburden) Shale</u>
<u>10</u>	<u>22</u>	<u>grey</u>	<u>Shale Stone</u>
<u>22</u>	<u>136</u>	<u>brown</u>	<u>Shale</u>
<u>136</u>	<u>138</u>	<u>grey</u>	<u>Shale</u>
<u>138</u>	<u>180</u>	<u>brown</u>	<u>Shale</u>
<u>180</u>	<u>188</u>	<u>brown</u>	<u>Shale Stone</u>
<u>188</u>	<u>192</u>	<u>grey</u>	<u>Sand Stone</u>
<u>192</u>	<u>221</u>	<u>brown</u>	<u>Shale</u>
<u>221</u>	<u>222</u>	<u>grey</u>	<u>Shale</u>
<u>222</u>	<u>297</u>	<u>grey</u>	<u>Sand Stone</u>
<u>297</u>	<u>304</u>	<u>brown</u>	<u>Shale</u>
<u>304</u>	<u>316</u>	<u>grey</u>	<u>Sand Stone</u>
<u>316</u>	<u>341</u>	<u>brown</u>	<u>Shale</u>
<u>341</u>	<u>344</u>	<u>brown</u>	<u>Shale Stone</u>
<u>344</u>	<u>389</u>	<u>brown</u>	<u>Shale</u>
<u>389</u>	<u>414</u>	<u>grey</u>	<u>Shale Stone</u>
<u>414</u>	<u>427</u>	<u>grey</u>	<u>Shale</u>
<u>427</u>	<u>434</u>	<u>brown</u>	<u>Shale</u>
<u>434</u>	<u>445</u>	<u>grey</u>	<u>Shale Stone</u>
<u>445</u>	<u>469</u>	<u>grey</u>	<u>Sand Stone</u>
<u>469</u>	<u>497</u>	<u>grey</u>	<u>Shale</u>
<u>497</u>	<u>500</u>	<u>grey</u>	<u>Sand Stone</u>

TOTAL WELL DEPTH: 100 FT DEPTH TO BEDROCK: 22 FT  
WATER BEARING 1 6-7 igpm AT 19 FT 8-10 igpm AT 225 FT  
FRACTURE ZONES 20-25 igpm AT 247 FT 8-10 igpm AT 253 FT  
\* see comments \*

PUMP INSTALLATION: INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING. \_\_\_\_\_ FT BELOW TOP OF CASING (Recommended)

PUMP TYPE: SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- ORANGE - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

<b>OFFICE USE ONLY</b> FIELD NO.	HEALTH CODE HEALTH OFFICE	LAB NO. EVENT NO.	SAMPLE RECEIVED DATE YR MO DAY	SAMPLE RECEIVED BY																																																																																												
<b>TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST</b> SEE BACK FOR DETAILS PLEASE PRINT INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING			<b>P.I.D. NO.</b> 70113592	<b>WELL I.D. NO.</b> 0072414																																																																																												
<b>WELL OWNER INFORMATION</b> INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING			<table border="1" style="width:100%; border-collapse: collapse;"> <thead> <tr> <th>FROM (FT)</th> <th>TO (FT)</th> <th>COLOUR</th> <th>ROCK TYPE</th> </tr> </thead> <tbody> <tr><td>GROUND LEVEL</td><td>3</td><td></td><td>overburden</td></tr> <tr><td>3</td><td>11</td><td>brown</td><td>clay</td></tr> <tr><td>11</td><td>59</td><td>brown</td><td>Shale</td></tr> <tr><td>59</td><td>61</td><td>grey</td><td>Shale</td></tr> <tr><td>61</td><td>93</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>93</td><td>118</td><td>brown</td><td>Shale</td></tr> <tr><td>118</td><td>130</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>130</td><td>140</td><td>brown</td><td>Shale</td></tr> <tr><td>140</td><td>154</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>154</td><td>157</td><td>brown</td><td>Shale</td></tr> <tr><td>157</td><td>159</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>159</td><td>219</td><td>brown</td><td>Shale</td></tr> <tr><td>219</td><td>227</td><td>grey</td><td>Shale</td></tr> <tr><td>227</td><td>229</td><td>grey</td><td>Shale Stone</td></tr> <tr><td>229</td><td>240</td><td>brown</td><td>Shale</td></tr> <tr><td>240</td><td>244</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>244</td><td>249</td><td>brown</td><td>Shale</td></tr> <tr><td>249</td><td>256</td><td>grey</td><td>Shale</td></tr> <tr><td>256</td><td>275</td><td>brown</td><td>Shale</td></tr> <tr><td>275</td><td>296</td><td>grey</td><td>Sand Stone</td></tr> <tr><td>296</td><td>301</td><td>grey</td><td>Shale</td></tr> <tr><td>301</td><td>342</td><td>grey</td><td>Sand Stone</td></tr> </tbody> </table>		FROM (FT)	TO (FT)	COLOUR	ROCK TYPE	GROUND LEVEL	3		overburden	3	11	brown	clay	11	59	brown	Shale	59	61	grey	Shale	61	93	grey	Sand Stone	93	118	brown	Shale	118	130	grey	Sand Stone	130	140	brown	Shale	140	154	grey	Sand Stone	154	157	brown	Shale	157	159	grey	Sand Stone	159	219	brown	Shale	219	227	grey	Shale	227	229	grey	Shale Stone	229	240	brown	Shale	240	244	grey	Sand Stone	244	249	brown	Shale	249	256	grey	Shale	256	275	brown	Shale	275	296	grey	Sand Stone	296	301	grey	Shale	301	342	grey	Sand Stone
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ATTENTION OF TEL NO FAX NO SIGNATURE OF WELL OWNER			<b>DRILLER'S LOG*</b>																																																																																													
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<b>WELL / WATER USE:</b> INDUSTRIAL <input type="checkbox"/> ABANDONED <input type="checkbox"/> DOMESTIC <input type="checkbox"/> EXPLORATORY <input checked="" type="checkbox"/> MUNICIPAL <input type="checkbox"/> MONITORING <input type="checkbox"/> HEAT PUMP <input type="checkbox"/> OBSERVATION <input type="checkbox"/> OTHER <input type="checkbox"/>			METHOD: CABLE TOOL <input type="checkbox"/> ROTARY <input checked="" type="checkbox"/> OTHER																																																																																													
<b>CASING INSTALLED:</b> LENGTH OF CASING ABOVE GROUND 2 FT 0 IN STEEL 6 3/8 0 FT TO 80 FT PVC IN DIAM FROM FT TO FT SLOTTED IN DIAM FROM FT TO FT SCREENS: TYPE SLOT SIZE IN DIAM FROM FT TO FT DRIVE SHOE YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>			SETBACKS: SEE BACK FOR DETAILS SEPTIC TANK (1) N/A FT SEPTIC TANK (2) FT FIELD (2) FT FIELD (1) N/A FT *RIGHT OF WAY OF ANY PUBLIC ROAD (1) ROAD (2) CENTER OF ROAD (1) See Comments SETBACKS MEASURED (NEW CONSTRUCTION) APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER (EXISTING CONST.)																																																																																													
<b>FLOWING WELL?</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> IF YES-RATE igpm (approx)			TOTAL WELL DEPTH: 500 FT DEPTH TO BEDROCK: 61 FT WATER BEARING 1 2-3 igpm AT 65 FT 2 7-8 igpm AT 79 FT FRACTURE ZONES 30-40 igpm AT 150 FT 15-20 igpm AT 158 FT * See Comments *																																																																																													
<b>AQUIFER TEST:</b> METHOD AIR <input checked="" type="checkbox"/> BAILER <input type="checkbox"/> PUMP <input type="checkbox"/> INITIAL WATER LEVEL: 32 FT BELOW TOP OF CASING PUMPING RATE 120 igpm DURATION hrs min FINAL WATER LEVEL 32 FT. BELOW TOP OF CASING <b>ESTIMATED SAFE YIELD:</b> 120 igpm			<b>PUMP INSTALLATION:</b> INSTALLED <input type="checkbox"/> NOT INSTALLED <input checked="" type="checkbox"/> PUMP INTAKE SETTING (Recommended) FT BELOW TOP OF CASING <b>PUMP TYPE:</b> SUBMERSIBLE <input type="checkbox"/> JET <input type="checkbox"/> TURBINE <input type="checkbox"/> OTHER WELL DISINFECTED? YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> TYPE Chlorine pellets																																																																																													
<b>WELL GROUTED?</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> FROM FT TO FT GROUT TYPE: DRILLING FLUIDS USED: YES <input type="checkbox"/> NO <input type="checkbox"/> TYPE			DRILLER'S COMMENTS Test Well No. 7 25-30 at 289 Ft (igpm continued) 25-30 at 316 Ft, 12-15 at 438 Ft DRILLING COMPANY: Eastern Well Drillers Ltd. COMPLETION DATE: 20.03.23 YR MO DAY LICENSE NO. 67																																																																																													
<b>CONTINUED ON WATER WELL REPORT # 62177</b> G.P.S. (OPTION) NO SEPTIC ON PROPERTY, Approx. 25m from Main Rd. Test Well only - No Drilled Shoe			I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT. Signature of Driller [Signature] Signature of Helper [Signature]																																																																																													

WHITE - NB DENV  
 BLUE - Homeowner / Voucher  
 YELLOW - Homeowner  
 PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO.	HEALTH CODE	LAB NO.	SAMPLE RECEIVED DATE YR MO DAY	SAMPLE RECEIVED BY
	HEALTH OFFICE	EVENT NO.		

**TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS (MAIL RESULTS TO) \_\_\_\_\_

CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_

DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_

TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR MO DAY HR MIN AM PM

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? YES  NO

IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION: SEE BACK FOR DETAILS

ATTENTION OF \_\_\_\_\_

TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_

SIGNATURE OF WELL OWNER \_\_\_\_\_

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

WELL / WATER USE:

INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPENED

OTHER Test Well

METHOD: CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

**CASING INSTALLED:**

LENGTH OF CASING ABOVE GROUND 2 FT 0 IN

STEEL 6 5/8 IN DIAM FROM 0 FT TO 80 FT

PVC \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

DRIVE SHOE YES  NO

SETBACKS: SEE BACK FOR DETAILS SEPTIC TANK (1) N/A FT

SEPTIC TANK (2) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) \_\_\_\_\_ FT

\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) \_\_\_\_\_ ROAD (2) \_\_\_\_\_

CENTER OF ROAD  (1) see comments

SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)

APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ lgpm (approx)

AQUIFER TEST: METHOD AIR  BAILER  PUMP

INITIAL WATER LEVEL: 32 FT BELOW TOP OF CASING

PUMPING RATE 120 lgpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min

FINAL WATER LEVEL 32 FT BELOW TOP OF CASING

ESTIMATED SAFE YIELD: 120 lgpm

WELL GROUTED? YES  NO

FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_

DRILLING FLUIDS USED: YES  NO

TYPE \_\_\_\_\_

P.I.D. NO. 70113592 WELL I.D. NO. 0072414

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_

ADDRESS Pro Energy Services

2001 Pro Energy Blvd

CITY/TOWN/VILLAGE Sedalia MO PROVINCE USA POSTAL CODE 65301

WELL LOCATION: SAME AS ABOVE OR CIVIC NUMBER - STREET NAME NB Route 940

CITY/TOWN/VILLAGE Centre Village WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_

WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

**\*Continued Fr DRILLER'S LOG\* #62176\***

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
399	407	brown	Shale
407	432	grey	Shale Stone
432	453	brown	Shale
453	455	grey	Sand Stone
455	470	grey	Shale
470	486	brown	Shale
486	493	grey	Shale Stone
493	500	brbwn	Shale

**IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS**

TOTAL WELL DEPTH: 500 FT DEPTH TO BEDROCK: 61 FT

WATER BEARING 1 2-3 igpm AT 65 FT 2 7-8 igpm AT 79 FT

FRACTURE ZONES 30-40 igpm AT 150 FT 15-20 igpm AT 158 FT

\*see comments\*

PUMP INSTALLATION: INSTALLED  NOT INSTALLED

PUMP INTAKE SETTING (Recommended) \_\_\_\_\_ FT BELOW TOP OF CASING

PUMP TYPE: SUBMERSIBLE  JET  TURBINE

OTHER \_\_\_\_\_

WELL DISINFECTED? YES  NO

TYPE Chlorine Pellets

DRILLER'S COMMENTS Test Well No. 7

25-30 igpm at 289 Ft

25-30 igpm at 316 Ft

12-15 igpm at 438 Ft

CONTINUED FROM WATER WELL DRILL REPORT #62176

NO SEPTIC ON PROPERTY, Approx. 2km from Main Rd.

Test Well only

No Drive shoe

DRILLING COMPANY: Eastern Well Drillers Ltd.

COMPLETION DATE: 26 03 23 YR MO DAY

LICENSE NO. 167

Signature of Driller Jacques

Signature of Helper M...

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY
FIELD NO
HEALTH CODE
LAB NO
HEALTH OFFICE
EVENT NO

SAMPLE RECEIVED DATE
YR MO DAY
SAMPLE RECEIVED BY

TESTING VOUCHER INFORMATION
MANDATORY FOR WATER TEST
SEE BACK FOR DETAILS PLEASE PRINT

P.I.D. NO.
WELL I.D. NO.
70113592 0072413

WELL OWNER INFORMATION
FIRST NAME
LAST NAME
ADDRESS
CITY/TOWN/VILLAGE
PROV
POSTAL CODE

WELL OWNER INFORMATION
FIRST NAME
LAST NAME
ADDRESS
CITY/TOWN/VILLAGE
PROV
POSTAL CODE
WELL LOCATION SAME AS ABOVE OR
CIVIL NUMBER STREET NAME

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE?
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION:

SEE BACK FOR DETAILS
WELL PAID FOR BY PROVINCIAL DEPT. OF
WELL ON RESERVE?
WELL ALREADY TAGGED?
OLD WELL ID

ATTENTION OF
TEL NO
FAX NO
SIGNATURE OF WELL OWNER

DRILLER'S LOG\*

Table with columns: FROM (FT), TO (FT), COLOUR, ROCK TYPE. Contains handwritten log data from 2 to 301 feet depth.

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING?
YES NO

WELL / WATER USE:
INDUSTRIAL
EXPLORATORY
HEAT PUMP
ABANDONED
MUNICIPAL
OBSERVATION
DOMESTIC
MONITORING
OTHER

TYPE OF WORK COMPLETED:
NEW WELL
DEEPEINED
OTHER TEST WELL

METHOD:
CABLE TOOL
ROTARY
OTHER

CASING INSTALLED:
LENGTH OF CASING ABOVE GROUND
STEEL
PVC
SLOTTED
SCREENS
DRIVE SHOE

SETBACKS: SEE BACK FOR DETAILS
SEPTIC TANK
FIELD
ROAD
SETBACKS MEASURED

FLOWING WELL?
YES NO
IF YES-RATE

AQUIFER TEST:
METHOD
AIR
BAILER
PUMP
INITIAL WATER LEVEL
PUMPING RATE
FINAL WATER LEVEL
ESTIMATED SAFE YIELD

TOTAL WELL DEPTH:
DEPTH TO BEDROCK:
WATER BEARING
FRACTURE ZONES

WELL GROUTED?
YES NO
FROM FT TO FT
GROUT TYPE:

DRILLING FLUIDS USED:
YES NO
TYPE

PUMP INSTALLATION:
INSTALLED NOT INSTALLED
PUMP INTAKE SETTING

PUMP TYPE:
SUBMERSIBLE
JET
TURBINE
OTHER

WELL DISINFECTED?
YES NO
TYPE

DRILLER'S COMMENTS
TEST WELL No. 8
10-12 igpm at 296-Ft
12-15 igpm at 314-Ft
15 igpm at 329-Ft, 10-12 igpm at 346-Ft, 15 igpm at 429-Ft

DRILLING COMPANY:
COMPLETION DATE:
LICENSE NO.

CONTINUED ON WATER WELL DRILL REPORT # 62125
G.P.S. (OPTIONAL) NO SEPTIC ON PROPERTY, Approx. 2km From Main Rd. Test Well only - No Drive Shoe

I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller
Signature of Helper

- WHITE - NB DENV
BLUE - Homeowner / Voucher
YELLOW - Homeowner
PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

OFFICE USE ONLY FIELD NO	HEALTH CODE	LAB NO	SAMPLE RECEIVED DATE	SAMPLE RECEIVED BY
	HEALTH OFFICE	EVENT NO	YR MO DAY	

**TESTING VOUCHER INFORMATION MANDATORY FOR WATER TEST**  
SEE BACK FOR DETAILS PLEASE PRINT  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF SAMPLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
ADDRESS (MAIL RESULTS TO) \_\_\_\_\_  
CITY/TOWN/VILLAGE \_\_\_\_\_ PROV \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
DAYTIME PHONE \_\_\_\_\_ FAX NO \_\_\_\_\_  
TEL NO \_\_\_\_\_ SAMPLE COLLECTED YR MO DAY HR MIN AM PM

P.I.D. NO. 701135920072413 WELL I.D. NO. \_\_\_\_\_

**WELL OWNER INFORMATION**  
INFORMATION INCLUDED HEREIN SHOULD BE THE WELL OWNER AT TIME OF DRILLING

FIRST NAME \_\_\_\_\_ LAST NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
CITY/TOWN/VILLAGE \_\_\_\_\_ PROVINCE \_\_\_\_\_ POSTAL CODE \_\_\_\_\_  
WELL LOCATION SAME AS ABOVE OR  
CIVIC NUMBER \_\_\_\_\_ STREET NAME \_\_\_\_\_

DO YOU NEED A SAMPLE FOR YOUR MORTGAGE? \_\_\_\_\_  
IF YOU WISH THE RESULTS TO BE RELEASED TO A MORTGAGE INSTITUTION PLEASE INCLUDE THE FOLLOWING CONTACT INFORMATION: \_\_\_\_\_  
SEE BACK FOR DETAILS

CITY/TOWN/VILLAGE \_\_\_\_\_ WELL PAID FOR BY PROVINCIAL DEPT OF \_\_\_\_\_  
WELL ON RESERVE? YES  NO  WELL ALREADY TAGGED? YES  NO  OLD WELL ID \_\_\_\_\_

ATTENTION OF \_\_\_\_\_  
TEL NO \_\_\_\_\_ FAX NO \_\_\_\_\_  
SIGNATURE OF WELL OWNER \_\_\_\_\_

\*Continued from DRILLER'S LOG\* 62124\*

FROM (FT)	TO (FT)	COLOUR	ROCK TYPE
307	310	brown	Shale
310	322	grey	Sand Stone
322	326	brown	Shale
326	358	grey	Sand Stone
358	394	brown	Shale
394	399	grey	Sand Stone
399	424	brown	Shale
424	432	grey	Sand Stone
432	434	grey	Shale Stone
434	438	grey	Sand Stone
438	455	grey	Shale
455	484	grey	sand Stone
484	500	brown	Shale

WAS THE COST OF THIS WELL FINANCED BY NB HOUSING? YES  NO

WELL / WATER USE:  
INDUSTRIAL  ABANDONED  DOMESTIC   
EXPLORATORY  MUNICIPAL  MONITORING   
HEAT PUMP  OBSERVATION  OTHER

TYPE OF WORK COMPLETED: NEW WELL  DEEPENED   
OTHER Test well

METHOD: CABLE TOOL  ROTARY  OTHER \_\_\_\_\_

CASING INSTALLED:  
LENGTH OF CASING ABOVE GROUND 2 FT 0 IN  
STEEL 6 3/8 FT TO 100 FT  
PVC 8 5/8 IN DIAM FROM 0 FT TO 20 FT  
SLOTTED \_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT

SCREENS: TYPE \_\_\_\_\_ SLOT SIZE \_\_\_\_\_  
\_\_\_\_\_ IN DIAM FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT  
DRIVE SHOE YES  NO

SETBACKS: SEE BACK FOR DETAILS  
SEPTIC TANK (1) \_\_\_\_\_ FT FIELD (2) \_\_\_\_\_ FT FIELD (1) N/A FT  
\*RIGHT OF WAY OF ANY PUBLIC ROAD (1) \_\_\_\_\_ ROAD (2) \_\_\_\_\_  
CENTER OF ROAD (1) see comments  
SETBACKS MEASURED \_\_\_\_\_ (NEW CONSTRUCTION)  
APPROXIMATE SETBACKS AS INDICATED BY HOMEOWNER \_\_\_\_\_ (EXISTING CONST.)

IF INSUFFICIENT SPACE PLEASE USE ADDITIONAL SHEETS

FLOWING WELL? YES  NO  IF YES-RATE \_\_\_\_\_ igpm (approx)

TOTAL WELL DEPTH: 500 FT DEPTH TO BEDROCK: 86 FT  
WATER BEARING 1 15-18 igpm AT 88 FT 2 8-10 igpm AT 96 FT  
FRACTURE ZONES 5-8 igpm AT 137 FT 25-30 igpm AT 170 FT  
\*see comments\*

AQUIFER TEST: METHOD AIR  BAILER  PUMP   
INITIAL WATER LEVEL 31 FT BELOW TOP OF CASING  
PUMPING RATE 90 igpm DURATION \_\_\_\_\_ hrs \_\_\_\_\_ min  
FINAL WATER LEVEL 31 FT. BELOW TOP OF CASING  
ESTIMATED SAFE YIELD: 90 igpm

PUMP INSTALLATION: INSTALLED  NOT INSTALLED

WELL GROUTED? YES  NO   
FROM \_\_\_\_\_ FT TO \_\_\_\_\_ FT GROUT TYPE: \_\_\_\_\_  
DRILLING FLUIDS USED: YES  NO

PUMP INTAKE SETTING (Recommended) \_\_\_\_\_ FT BELOW TOP OF CASING  
PUMP TYPE: SUBMERSIBLE  JET  TURBINE

DRILLER'S COMMENTS TEST WELL No. 8  
10-12 igpm at 296 Ft  
12-15 igpm at 314 Ft  
15 igpm at 389 Ft; 10-12 igpm at 346 Ft; 15 igpm at 429 Ft  
CONTINUED FROM WATER WELL DRILL REPORT # 62124

DRILLING COMPANY: Eastern Well Drillers Ltd.  
COMPLETION DATE: 26 03 19 YR MO DAY LICENSE NO. 107

G.P.S. (OPTIONAL) No Septic on Property, Approx. 2km from Main Rd. Test Well only - No Drive Shoe  
I CERTIFY THAT THE WELL HEREIN DESCRIBED HAS BEEN CONSTRUCTED IN ACCORDANCE WITH THE WATER WELL REGULATION UNDER THE NEW BRUNSWICK CLEAN WATER ACT.

Signature of Driller \_\_\_\_\_ Signature of Helper \_\_\_\_\_

- WHITE - NB DENV
- BLUE - Homeowner / Voucher
- YELLOW - Homeowner
- PINK - Drilling Company

KEEP THIS REPORT WITH YOUR IMPORTANT DOCUMENTS

## **Appendix C      Plots of Aquifer Test Data**



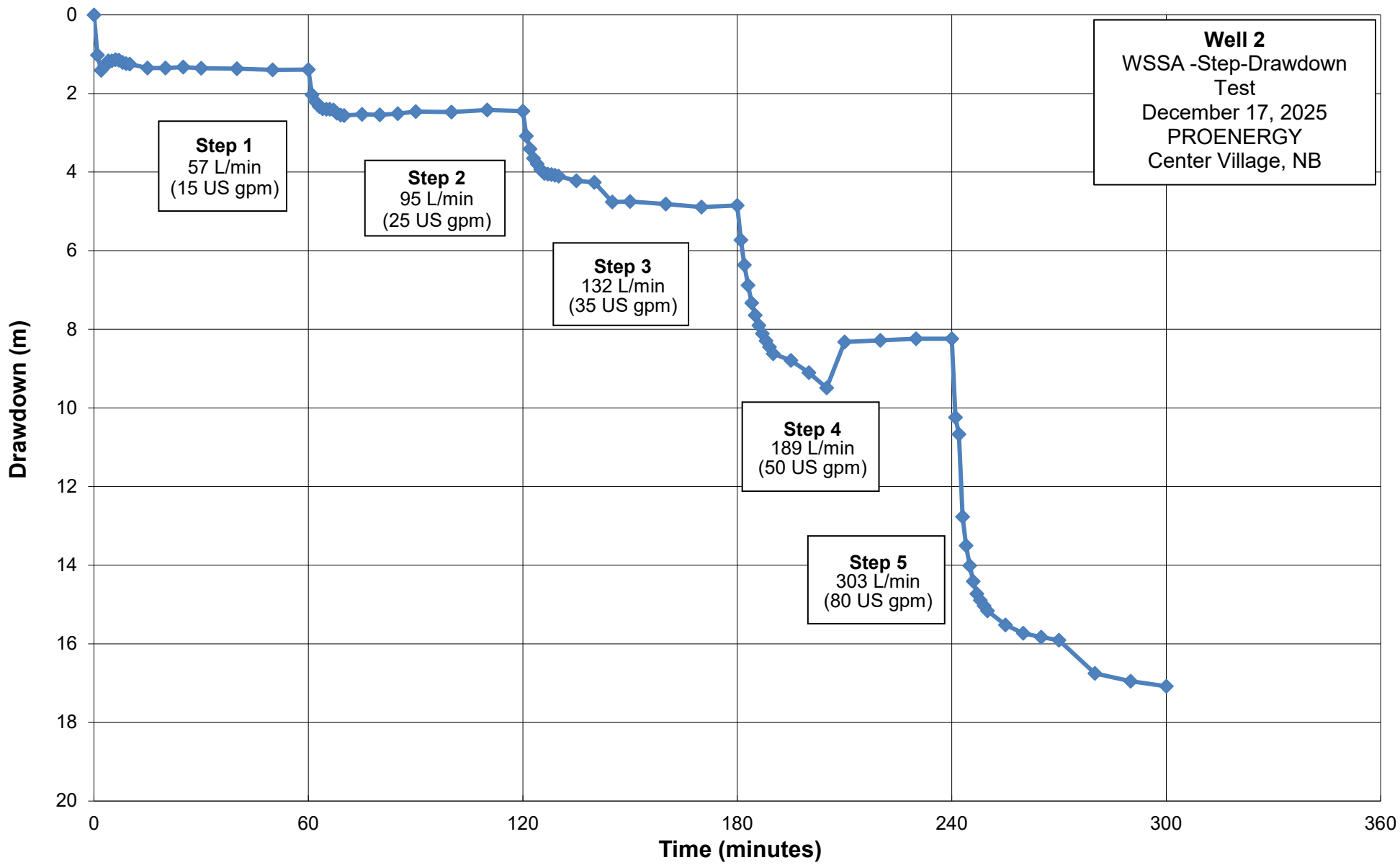


Figure C-1

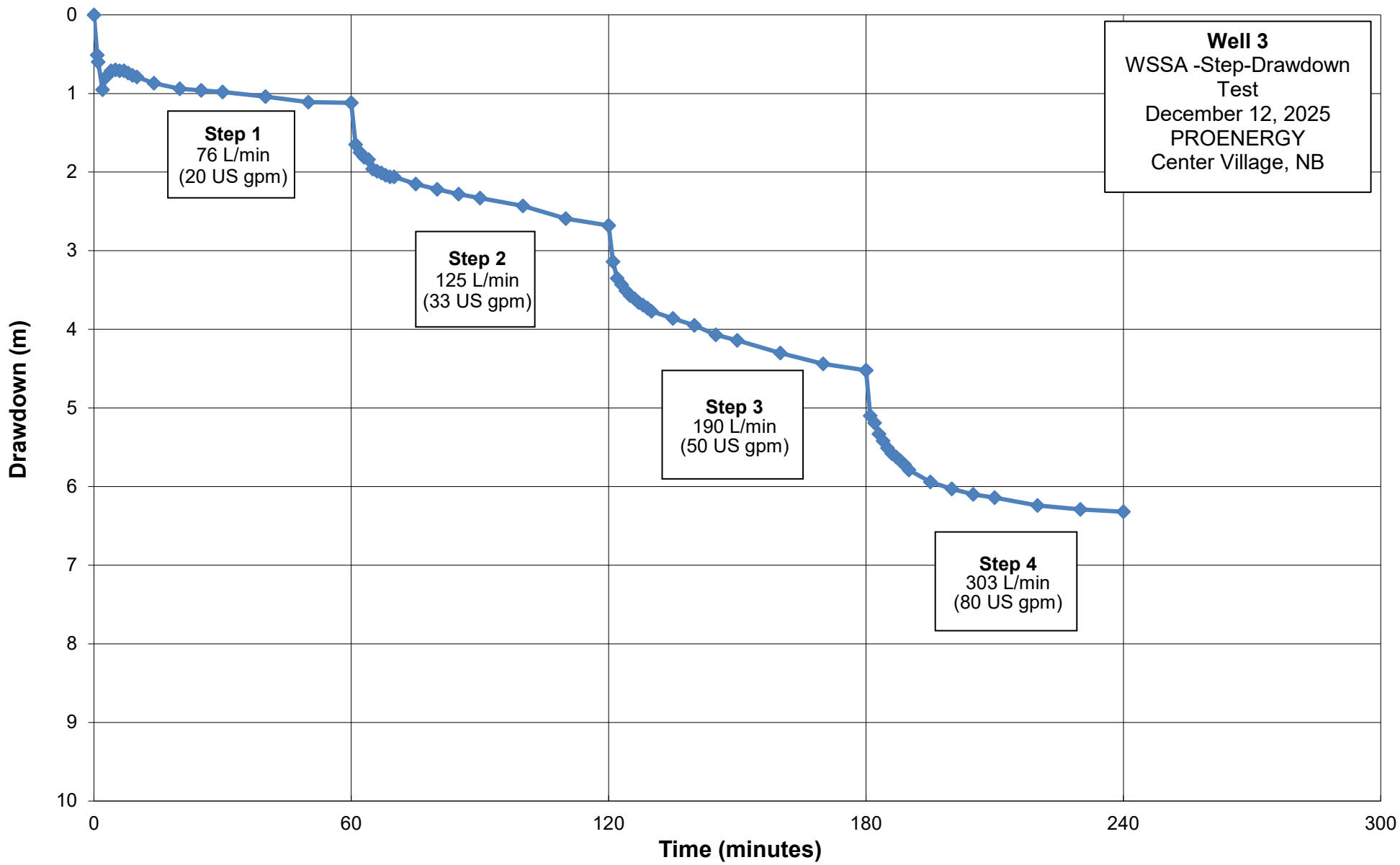


Figure C-2

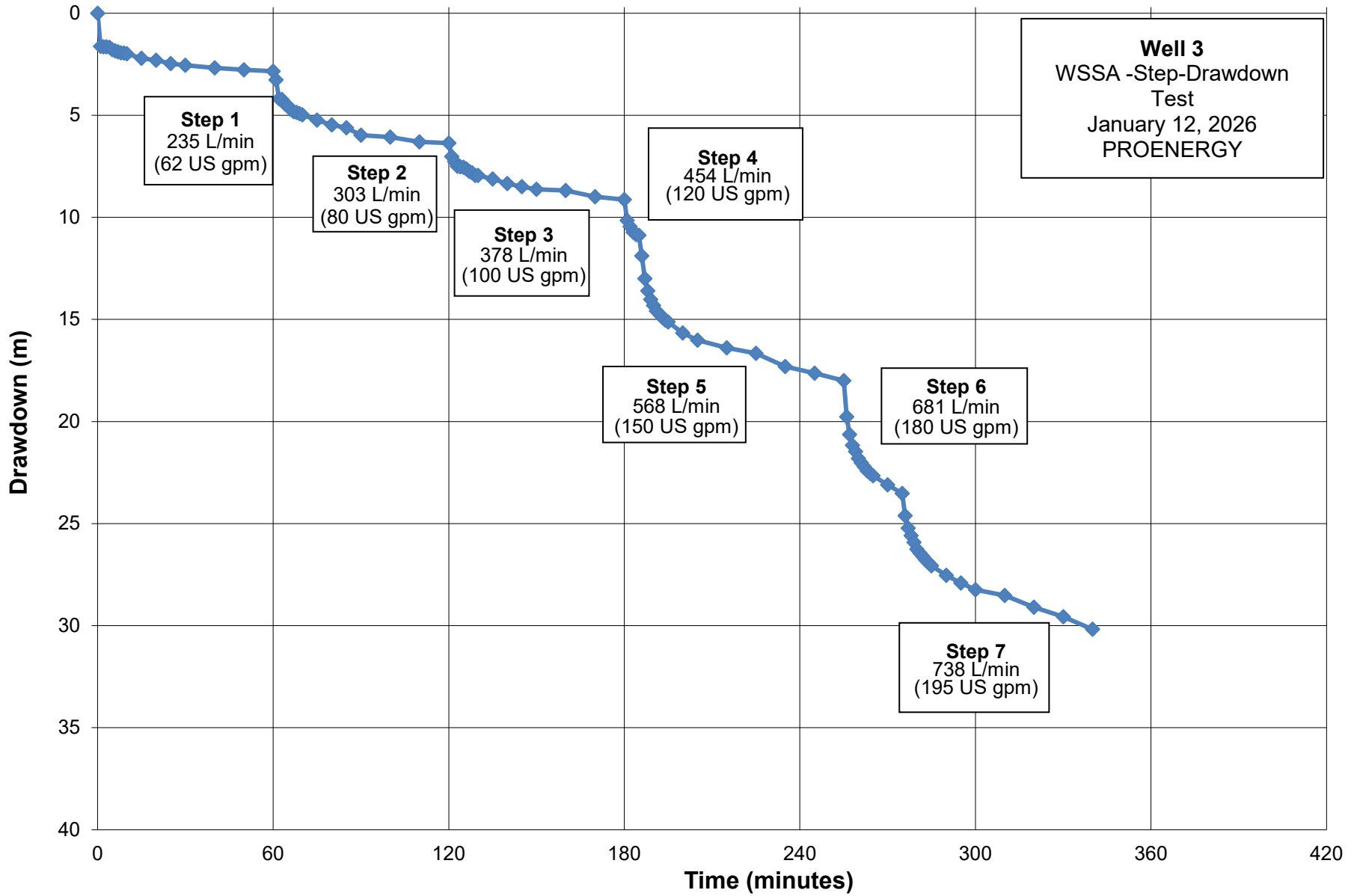


Figure C-3

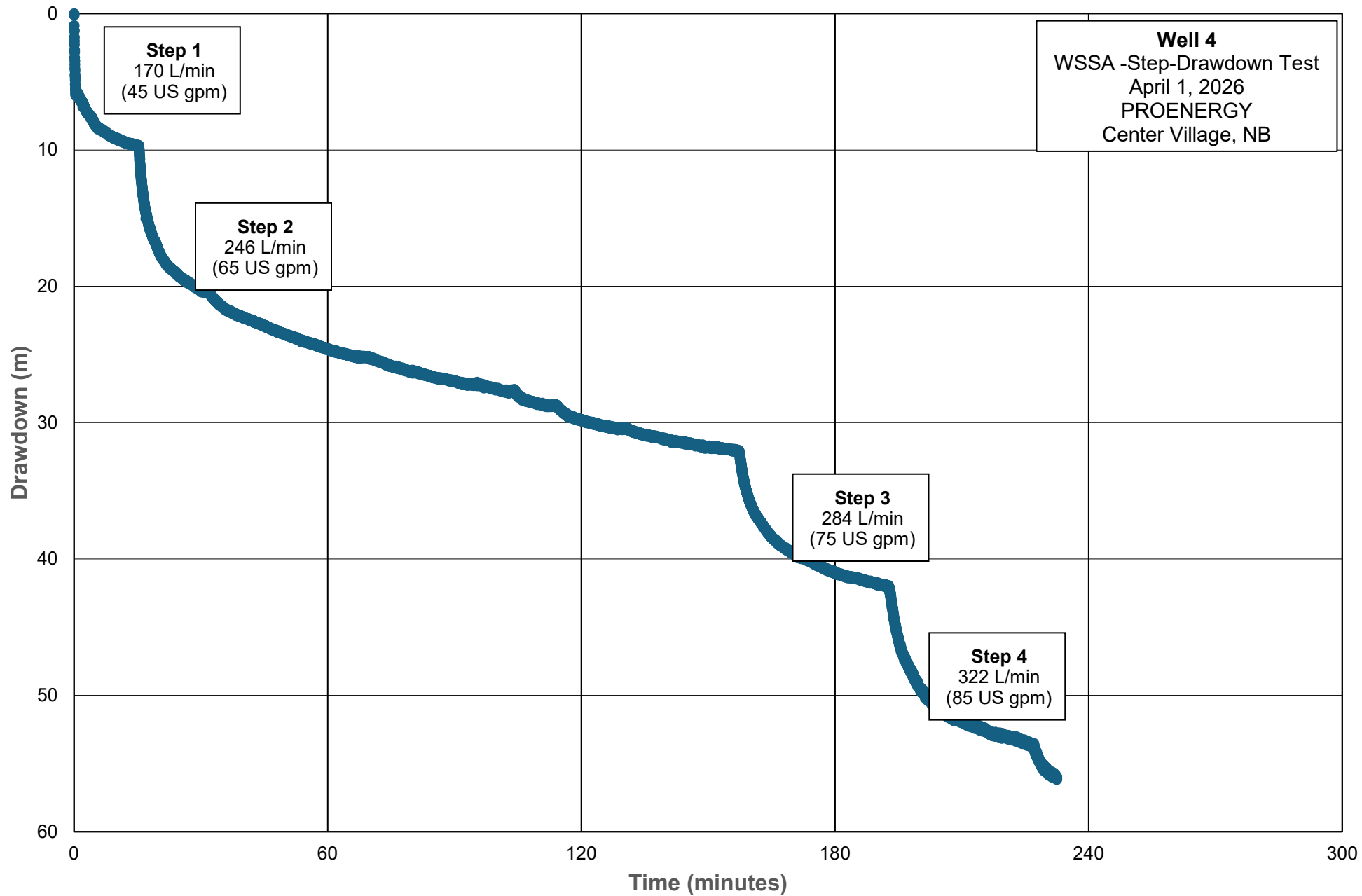


Figure C-4

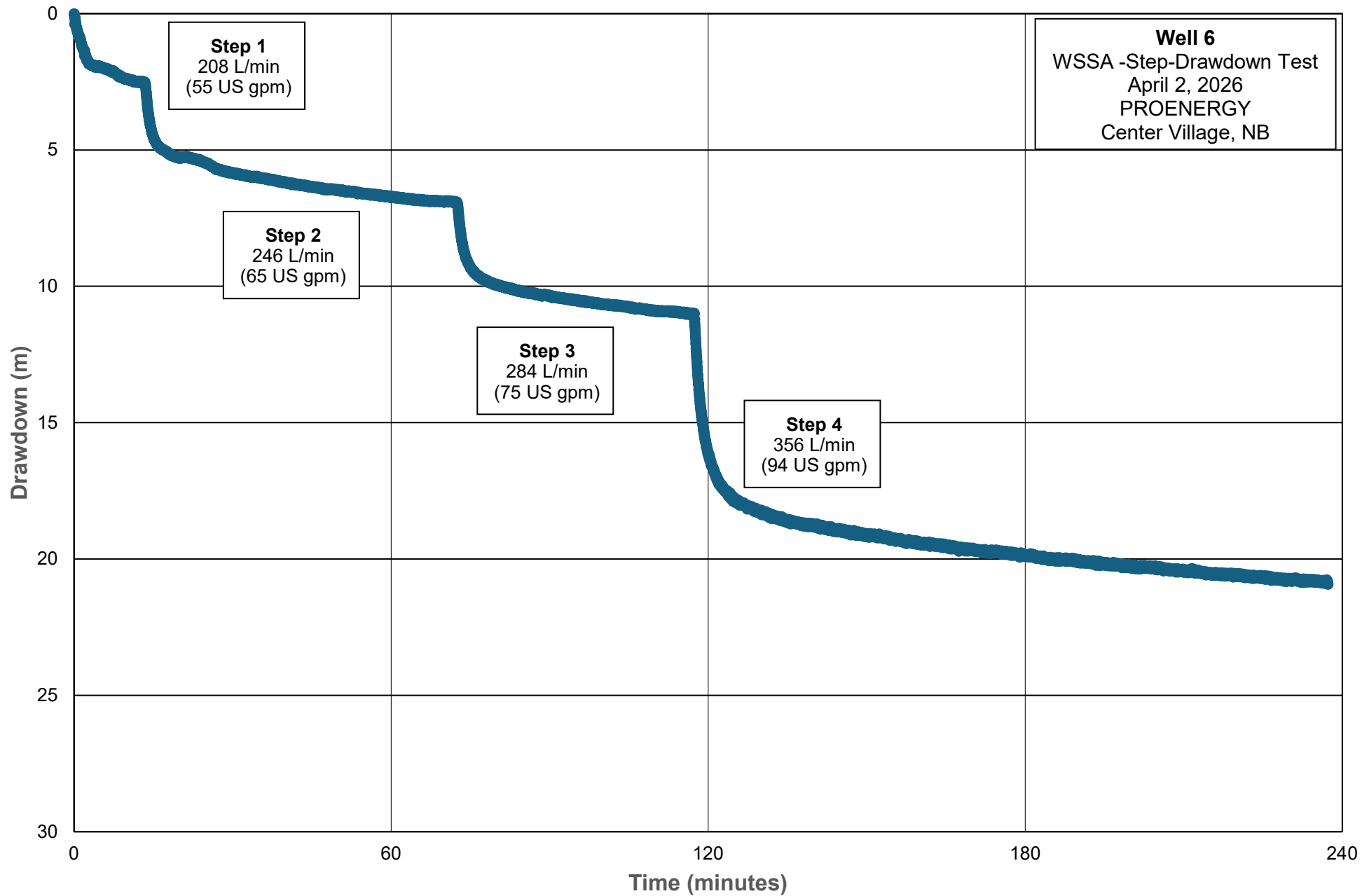


Figure C-5

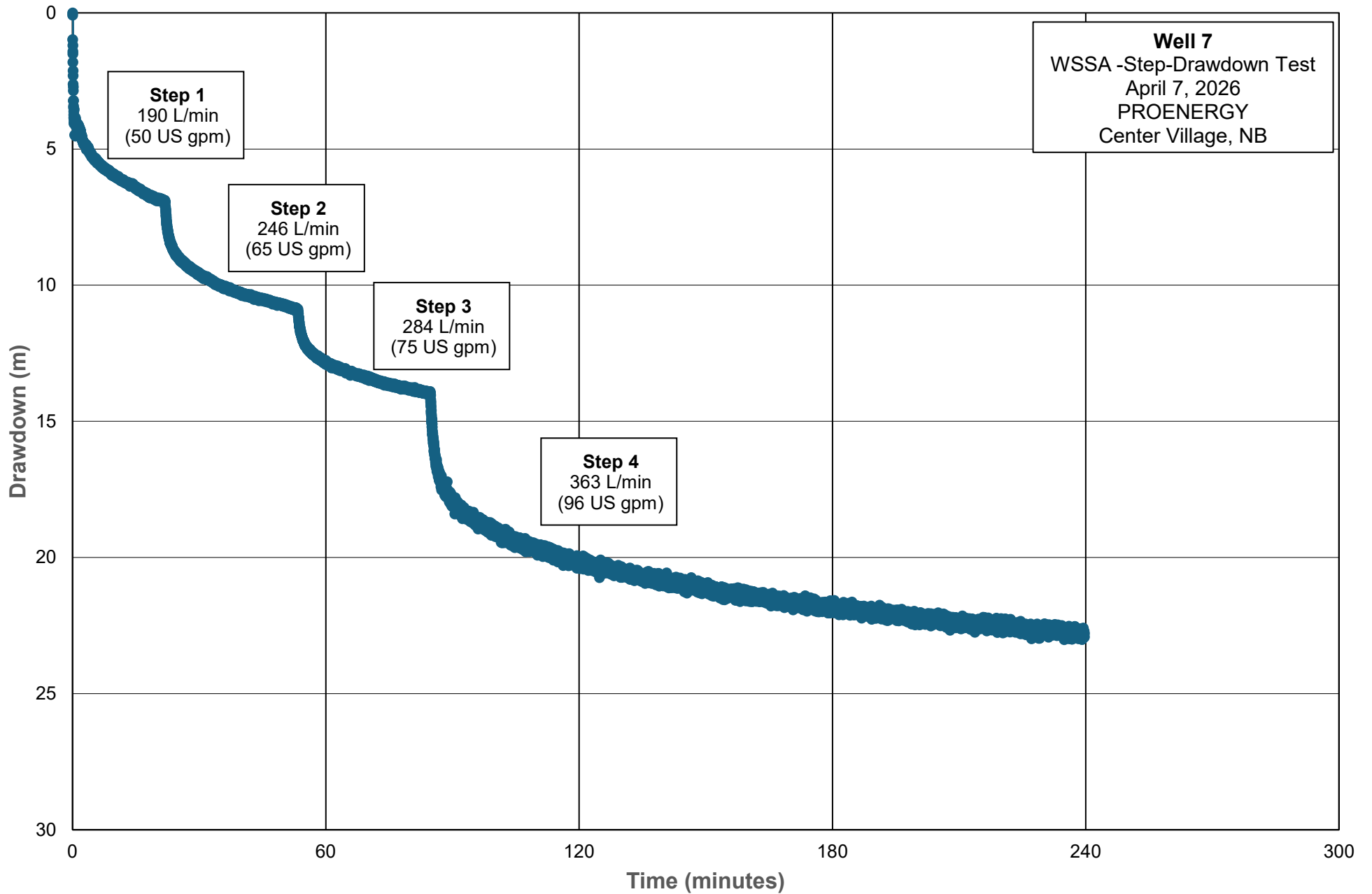


Figure C-6

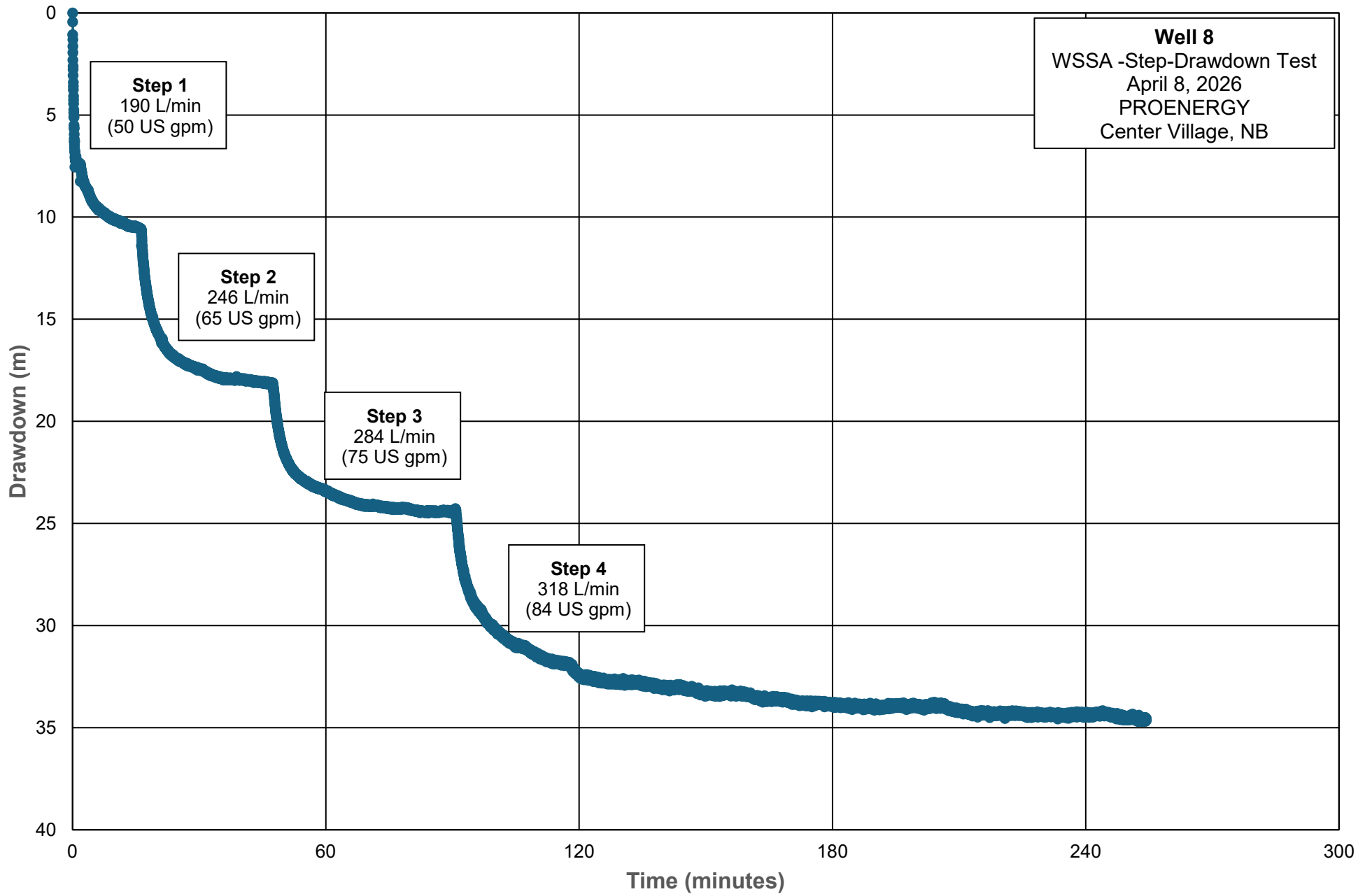


Figure C-7

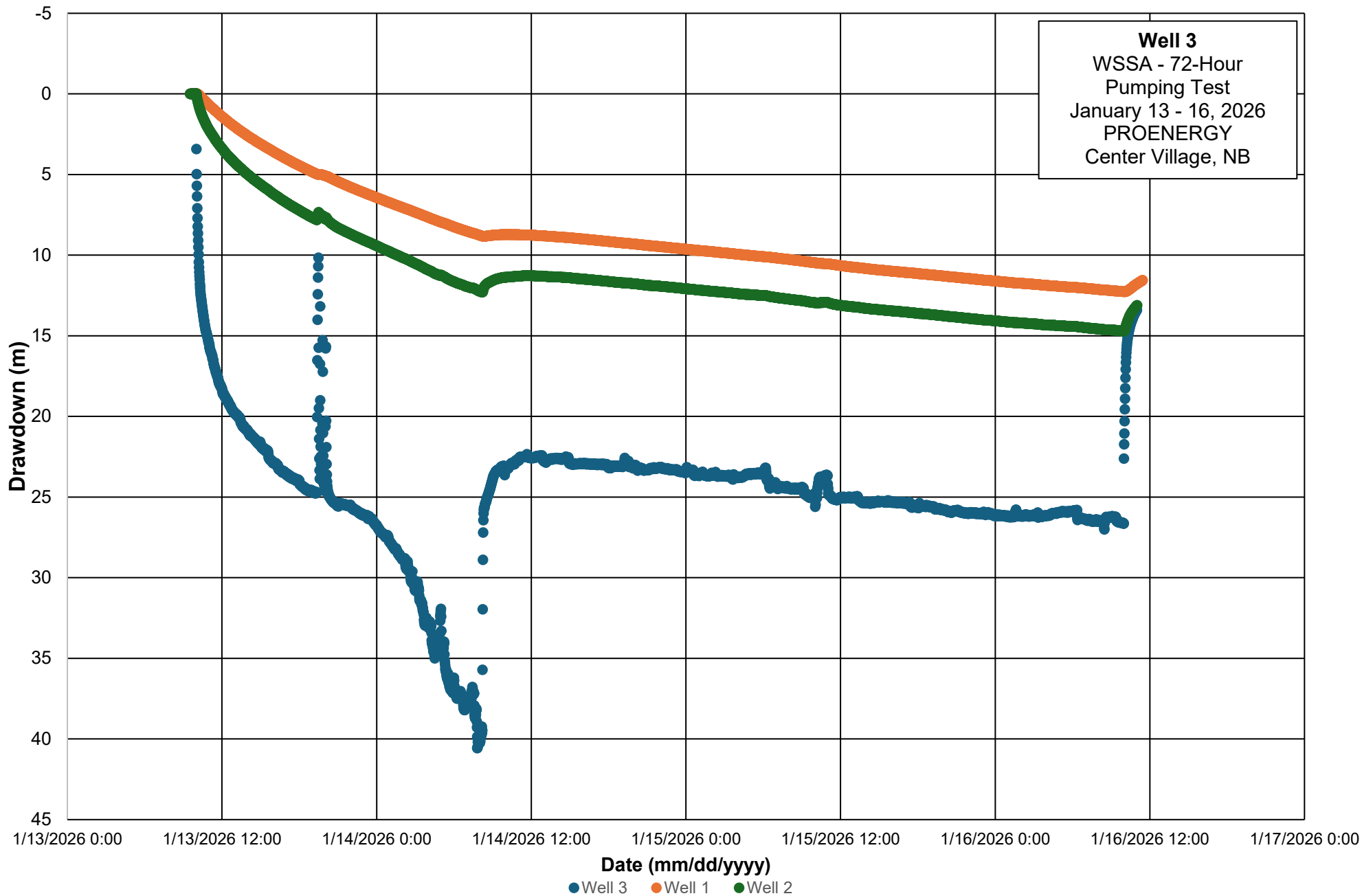


Figure C-8

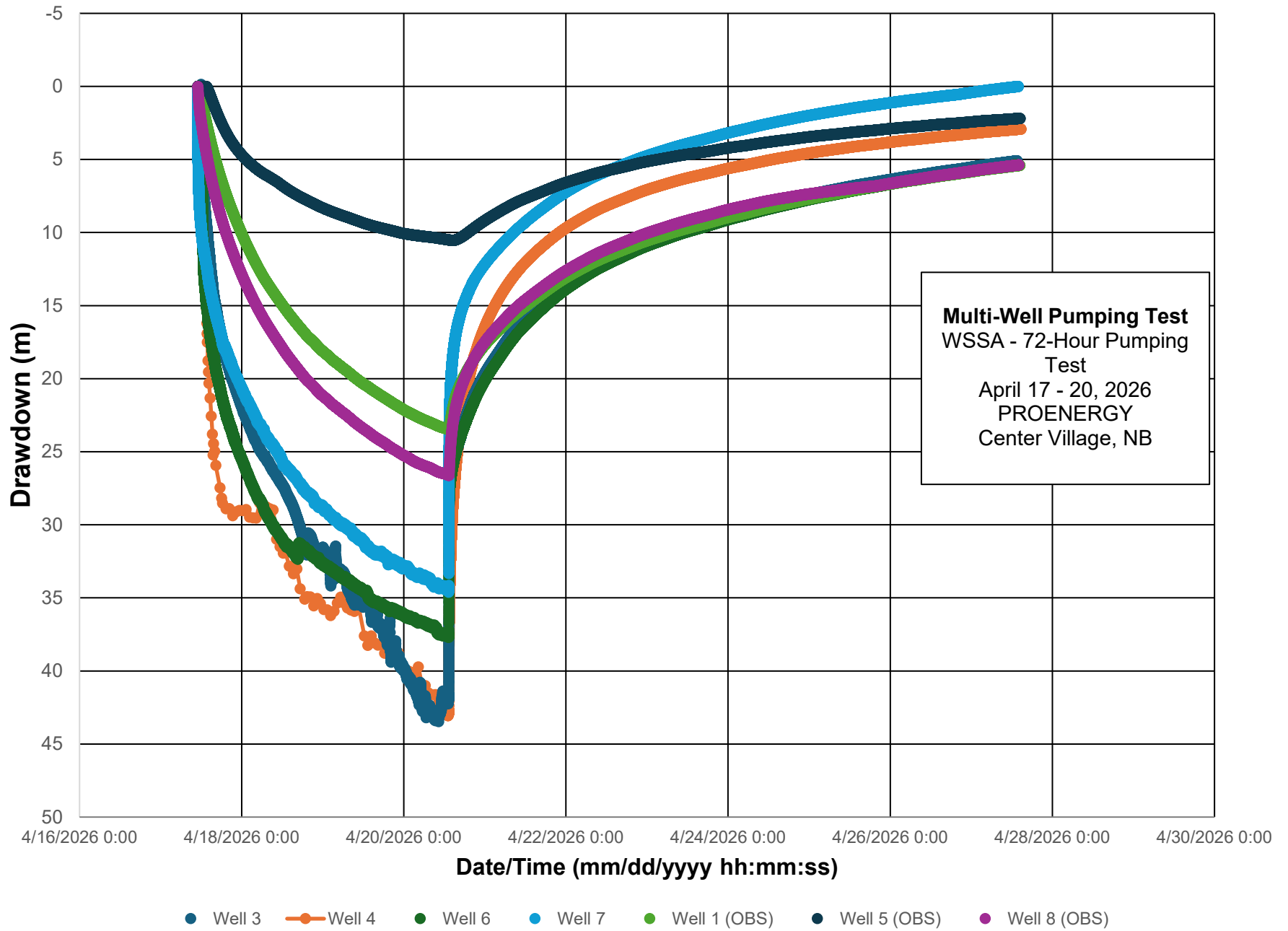


Figure C-9

## **Appendix D**

### **Aquifer Test Data**

**Appendix D contains over 5,000 pages of raw data and is available in either tabular format or native data logger format upon request**

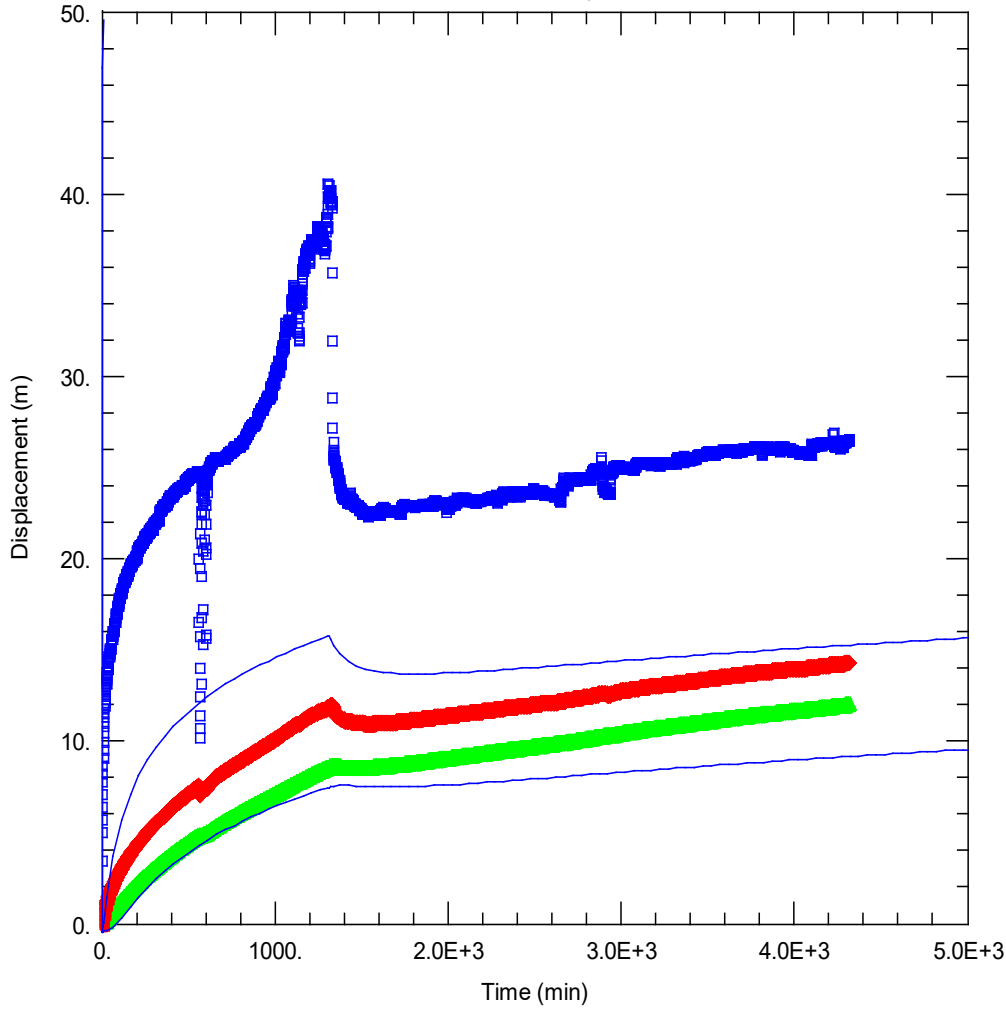


## **Appendix E      Graphical Results of AQTESOLV® Analysis**



# Well 1 – Drawdown Fit (Phase 1)

72 Hour Pumping Test



### Obs. Wells

- Well 3
- Well 1
- Well 2

### Aquifer Model

Confined

### Solution

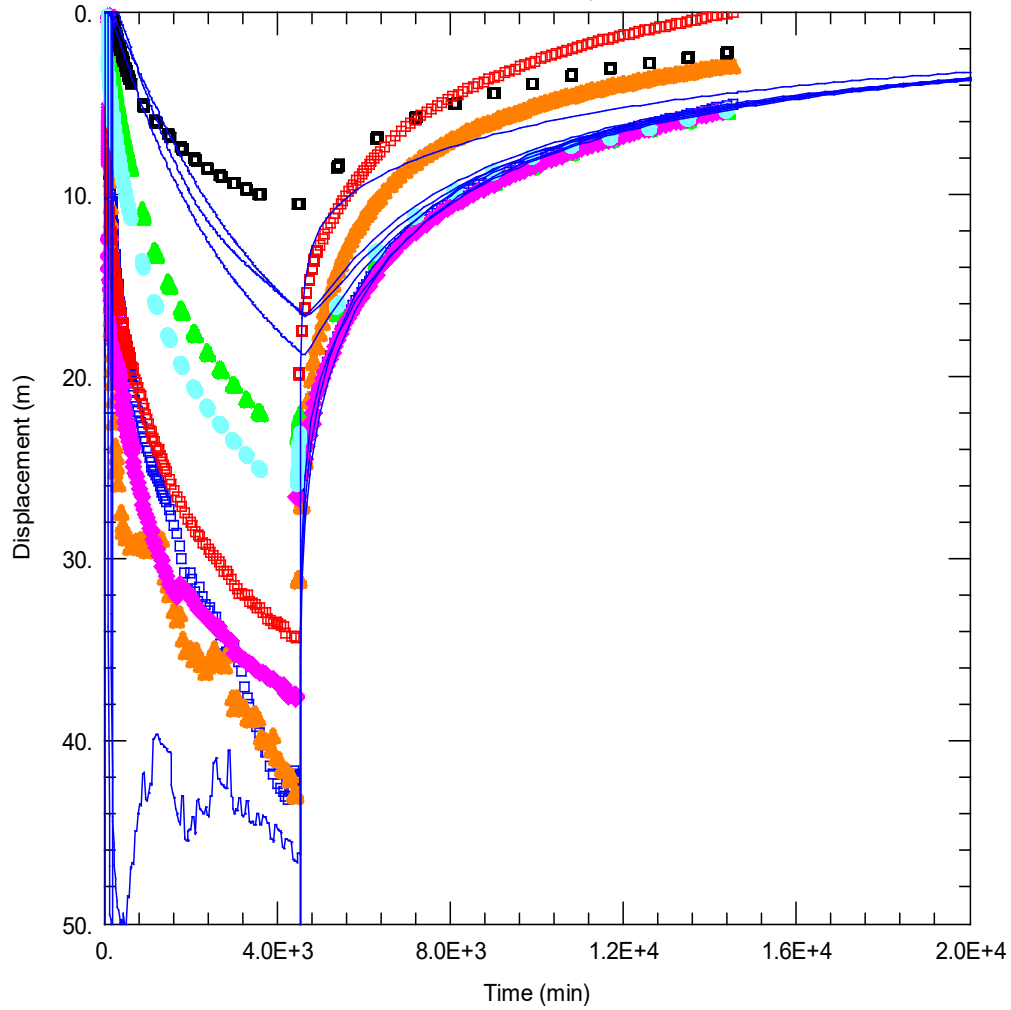
Theis/Hantush

### Parameters

T = 0.00016 m<sup>2</sup>/sec  
S = 0.00019  
Kz/Kr = 0.01  
b = 310. m

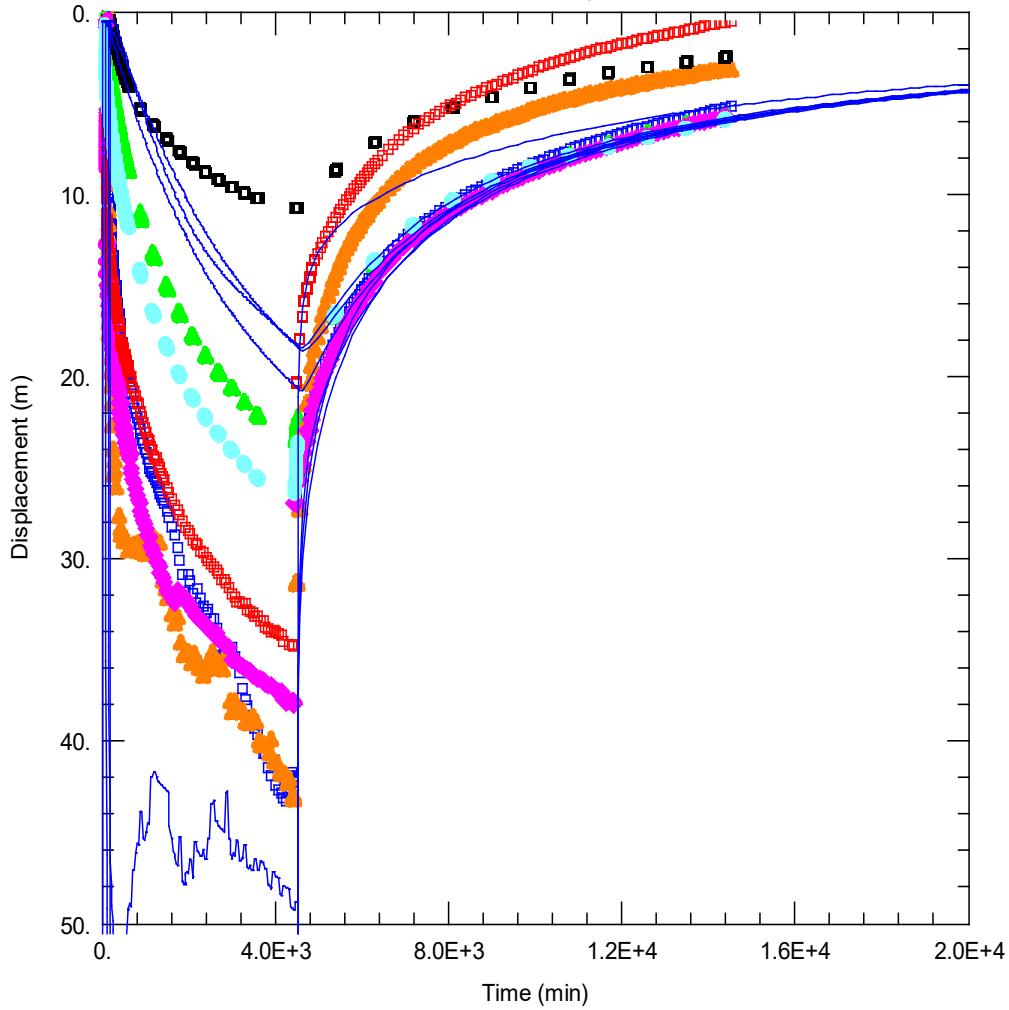
# Well 3 – Recovery Period Fit (Phase 2)

72 Hour Pumping Test



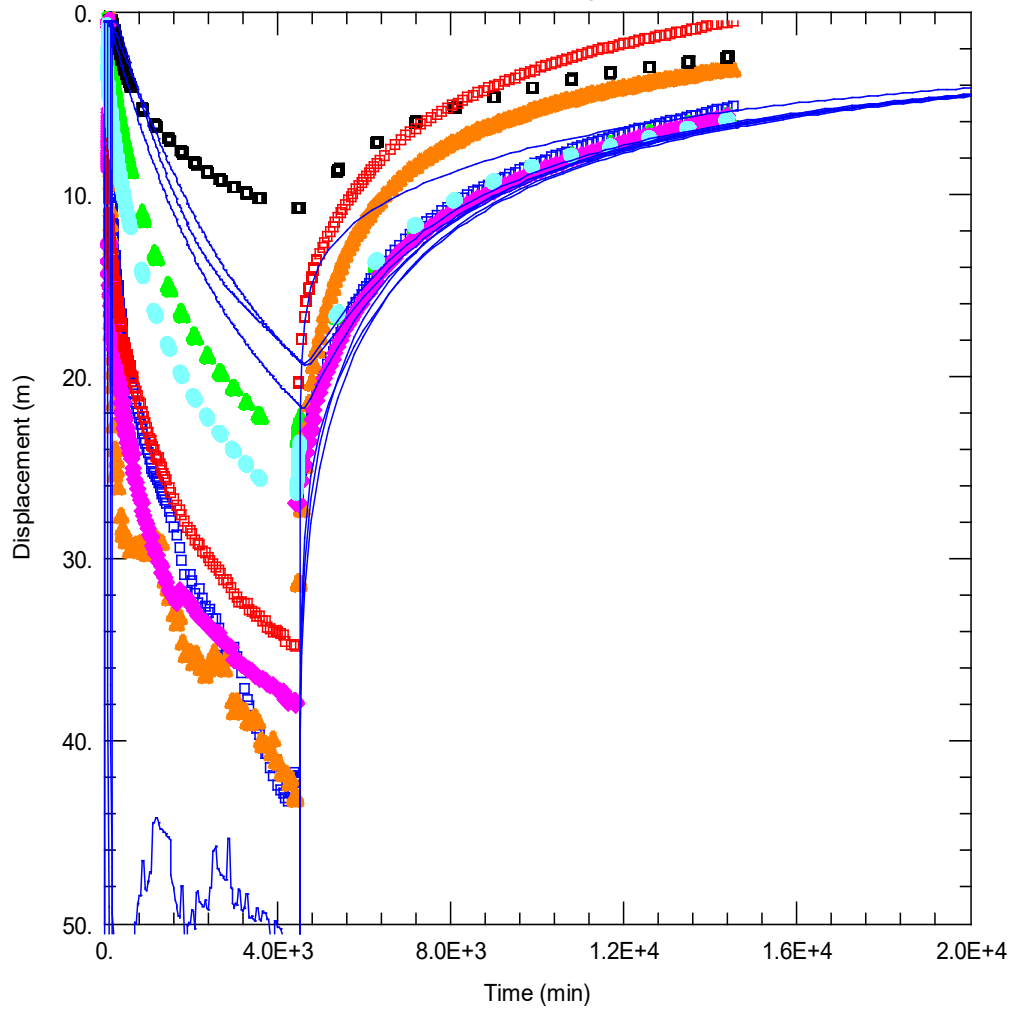
# Well 6 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



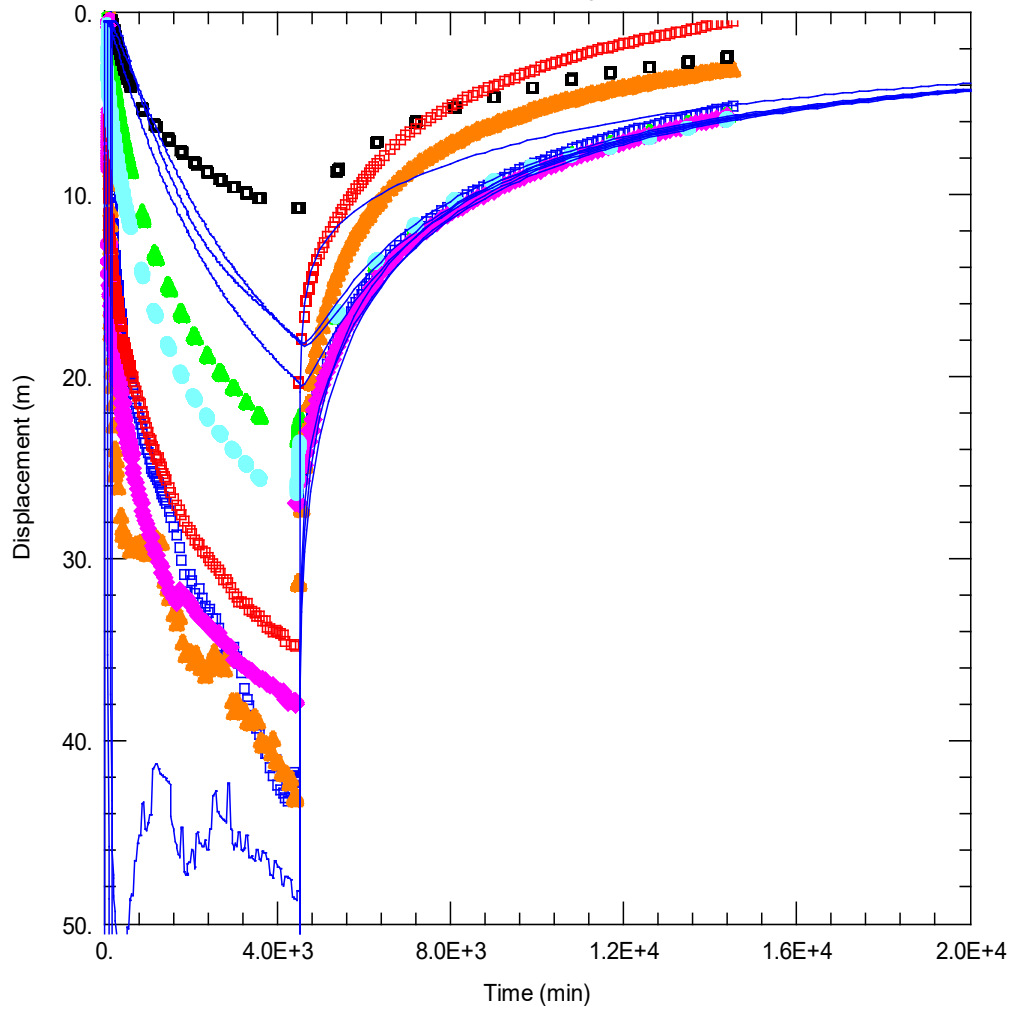
# Well 1 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



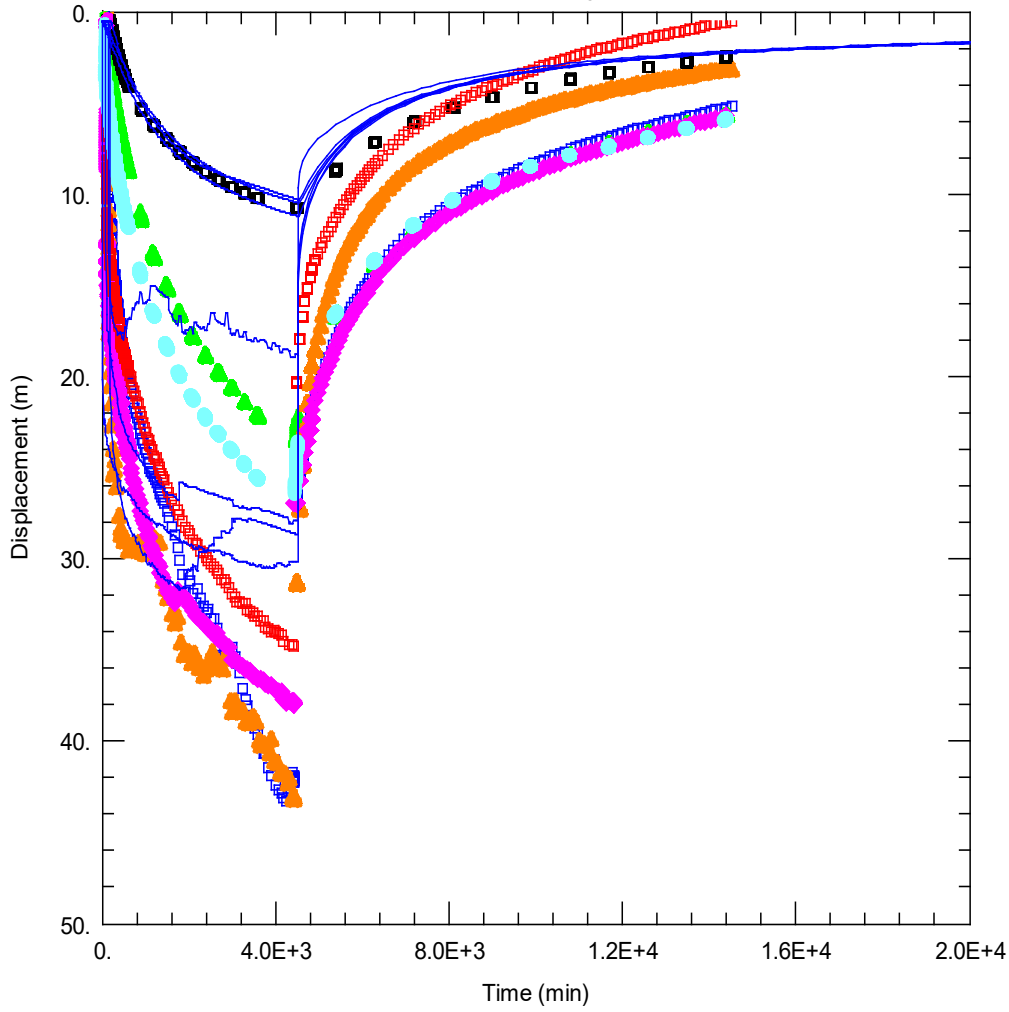
# Well 8 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



### Well 5 – Drawdown Fit (Phase 2)

72 Hour Pumping Test



#### Obs. Wells

- Well 3
- Well 1
- Well 4
- Well 5
- Well 6
- Well 7
- Well 8

#### Aquifer Model

Confined

#### Solution

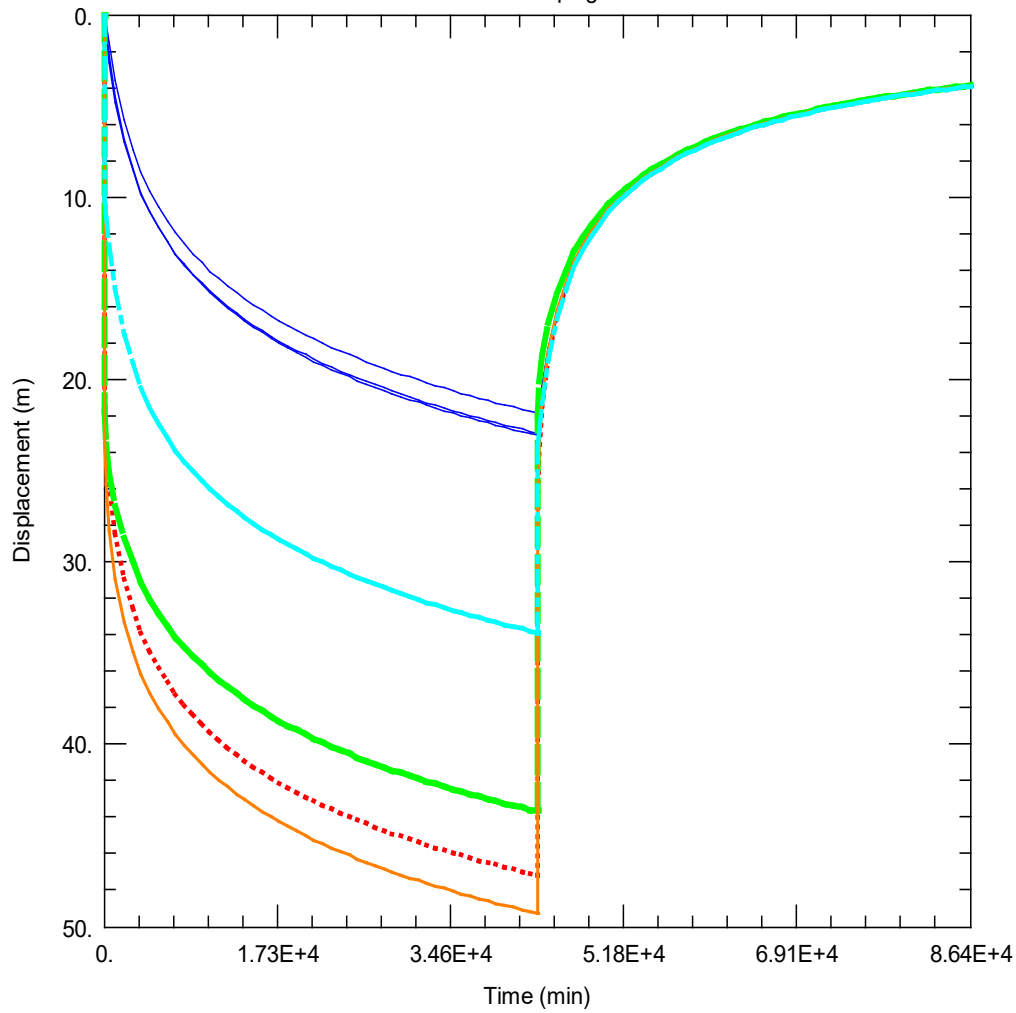
Theis/Hantush

#### Parameters

T = 0.0002568 m<sup>2</sup>/sec  
S = 0.0002019  
Kz/Kr = 1.  
b = 200. m

# Representative 30-day pumping followed by 30 days of recovery

72 Hour Pumping Test



### Obs. Wells

- Well 1
- Well 5
- Well 8
- Well 3
- Well 4
- Well 6
- Well 7

### Aquifer Model

Confined

### Solution

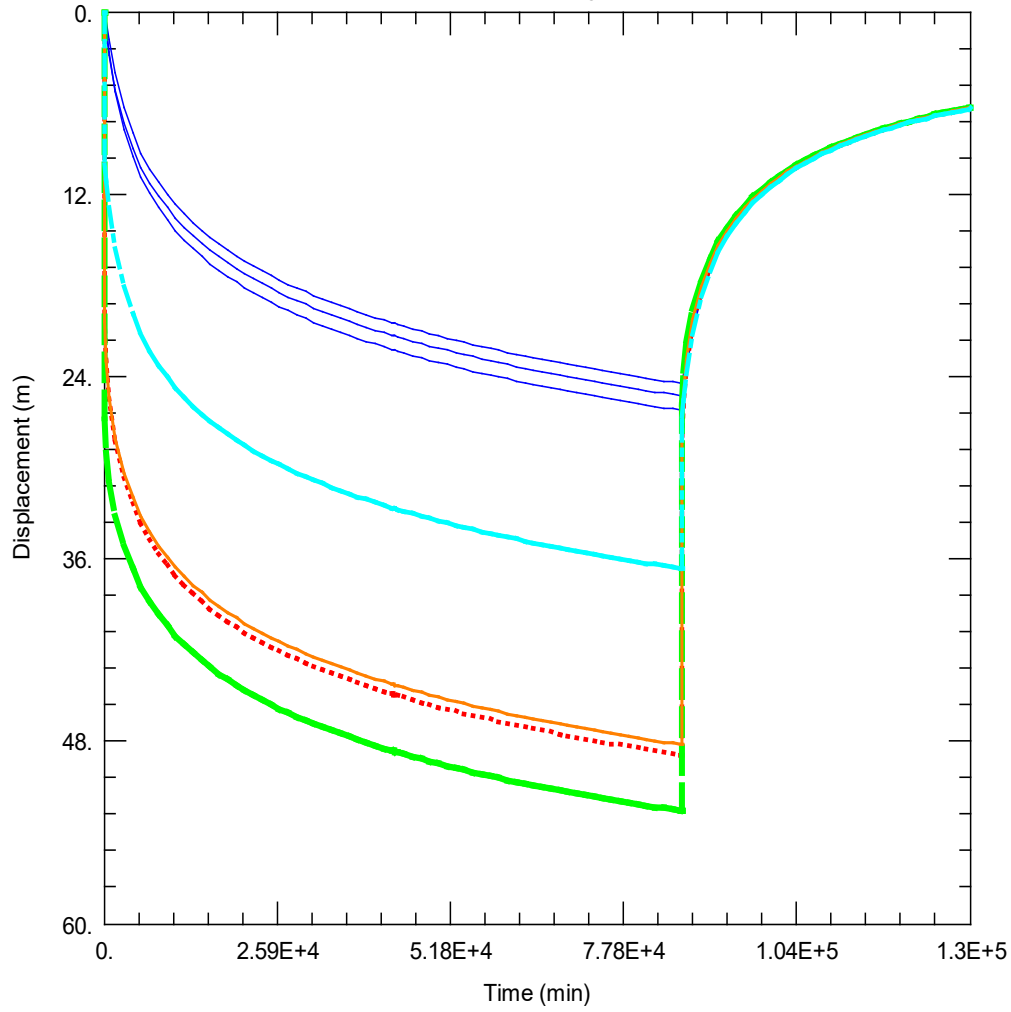
Theis/Hantush

### Parameters

- T = 0.00013 m<sup>2</sup>/sec
- S = 0.00012
- Kz/Kr = 1.
- b = 200. m

# Recovery-based conservative 60-day pumping followed by 30 days of recovery

72 Hour Pumping Test



## Obs. Wells

- Well 1
- Well 5
- Well 8
- Well 3
- Well 4
- Well 6
- Well 7

## Aquifer Model

Confined

## Solution

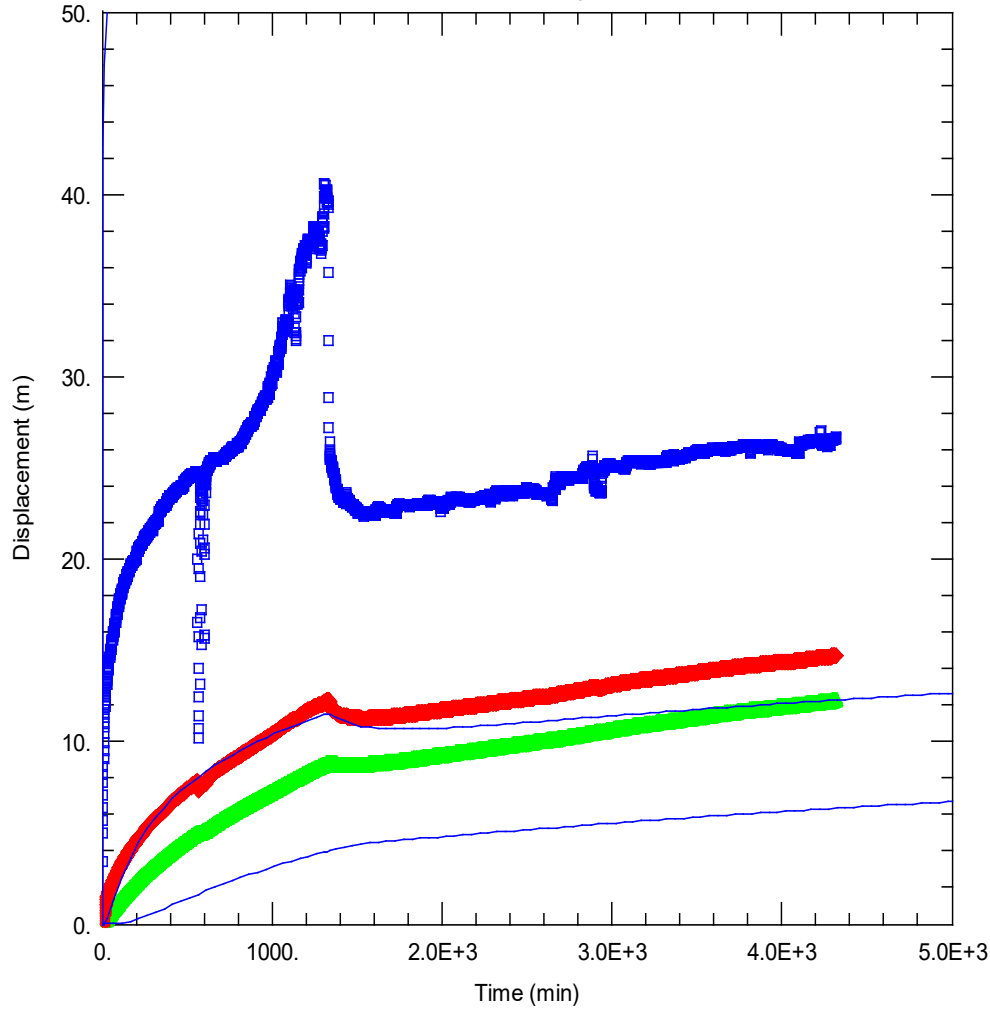
Theis/Hantush

## Parameters

- T =  $9.9E-5$  m<sup>2</sup>/sec
- S = 0.00012
- Kz/Kr = 1.
- b = 200. m

# Well 2 – Drawdown Fit (Phase 1)

72 Hour Pumping Test



### Obs. Wells

□ Well 3

▲ Well 1

◆ Well 2

### Aquifer Model

Confined

### Solution

Theis/Hantush

### Parameters

T = 0.0001614 m<sup>2</sup>/sec

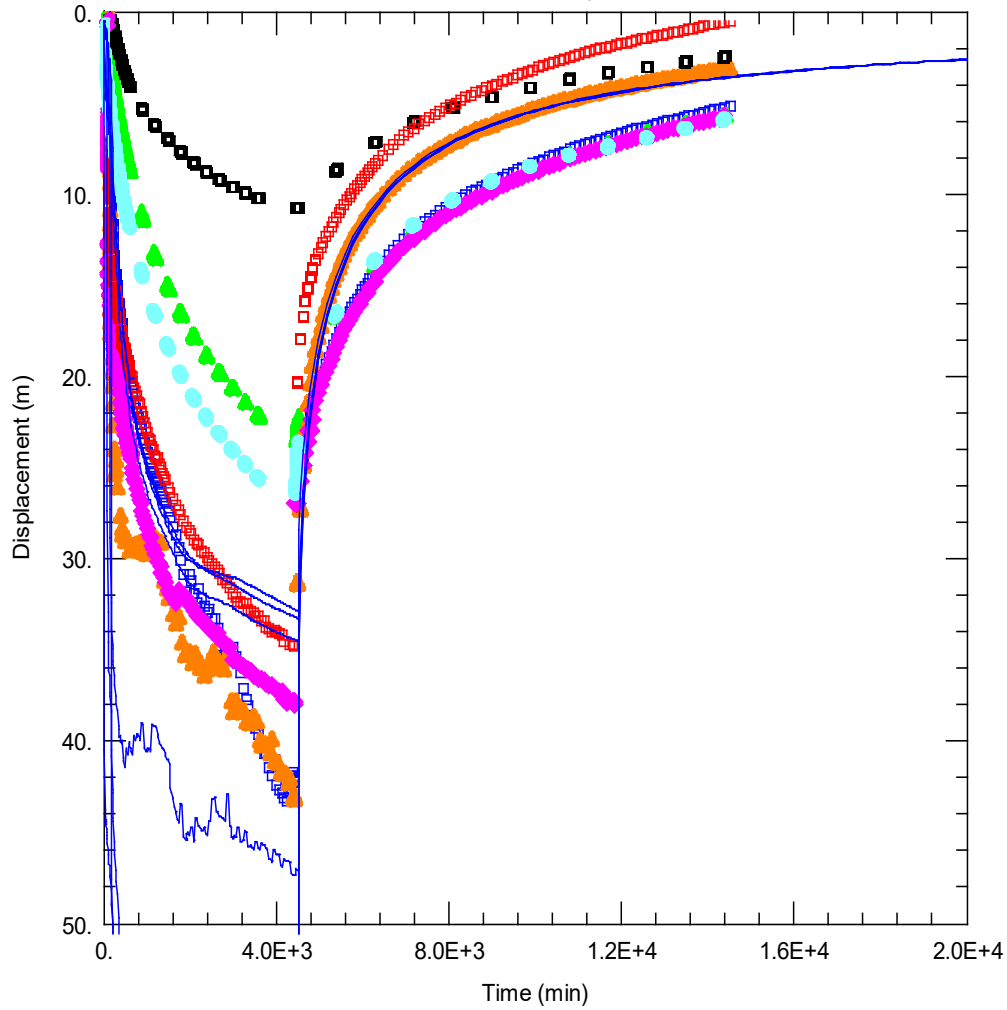
S = 0.000555

Kz/Kr = 0.01

b = 310. m

# Well 4 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



### Obs. Wells

- Well 3
- ▲ Well 1
- ▲ Well 4
- Well 5
- ◆ Well 6
- Well 7
- Well 8

### Aquifer Model

Confined

### Solution

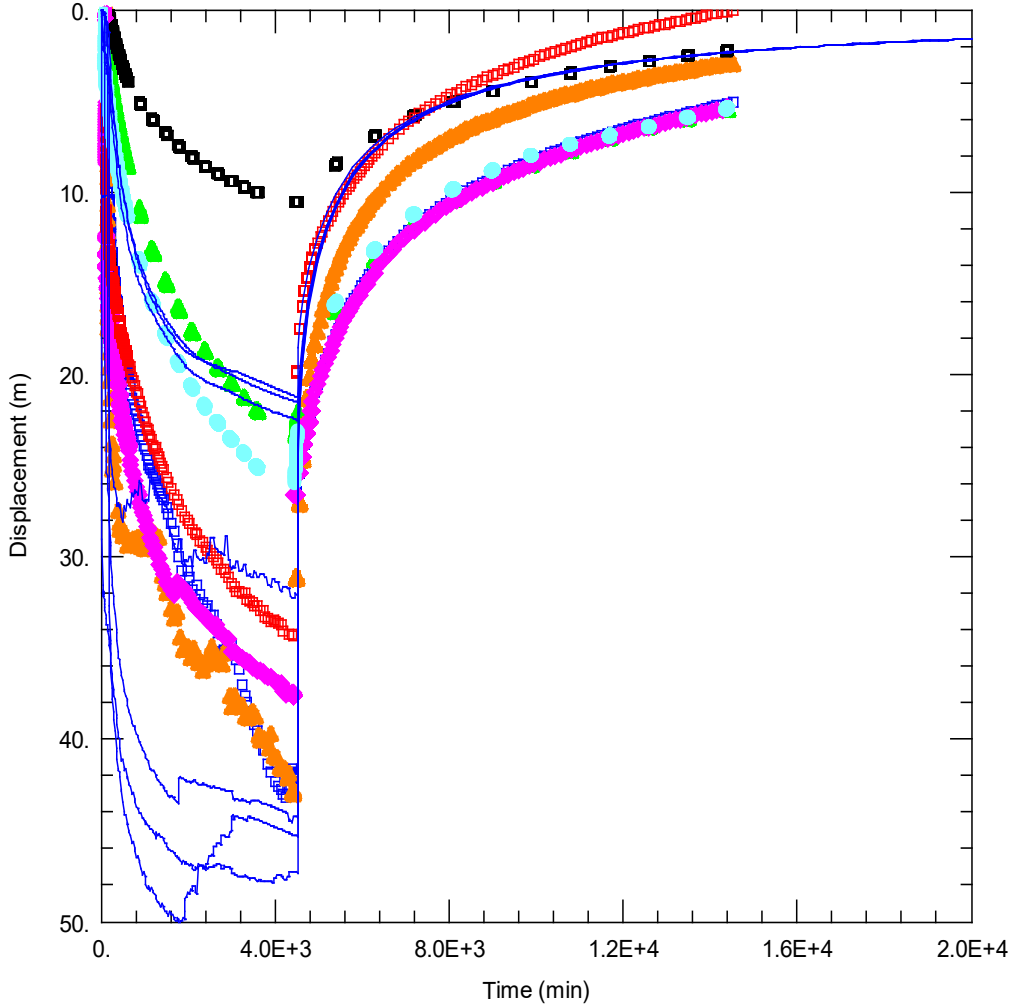
Theis/Hantush

### Parameters

- T = 0.0001491 m<sup>2</sup>/sec
- S = 1.452E-5
- Kz/Kr = 1.
- b = 200. m

# Well 7 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



### Obs. Wells

- Well 3
- Well 1
- Well 4
- Well 5
- Well 6
- Well 7
- Well 8

### Aquifer Model

Confined

### Solution

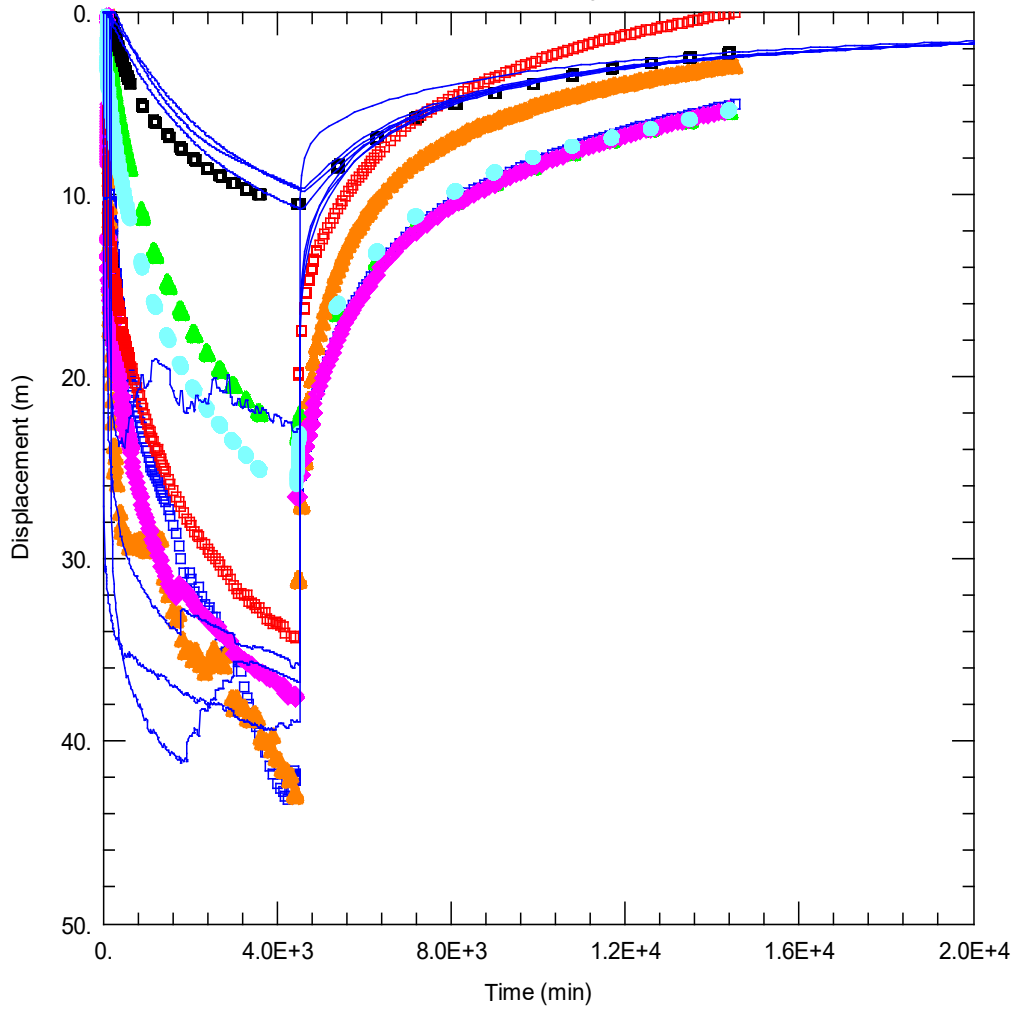
Theis/Hantush

### Parameters

$T = 0.0001966 \text{ m}^2/\text{sec}$   
 $S = 3.395E-5$   
 $Kz/Kr = 1.$   
 $b = 200. \text{ m}$

# Well 5 - Recovery Period Fit (Phase 2)

72 Hour Pumping Test



## Obs. Wells

- Well 3
- Well 1
- Well 4
- Well 5
- Well 6
- Well 7
- Well 8

## Aquifer Model

Confined

## Solution

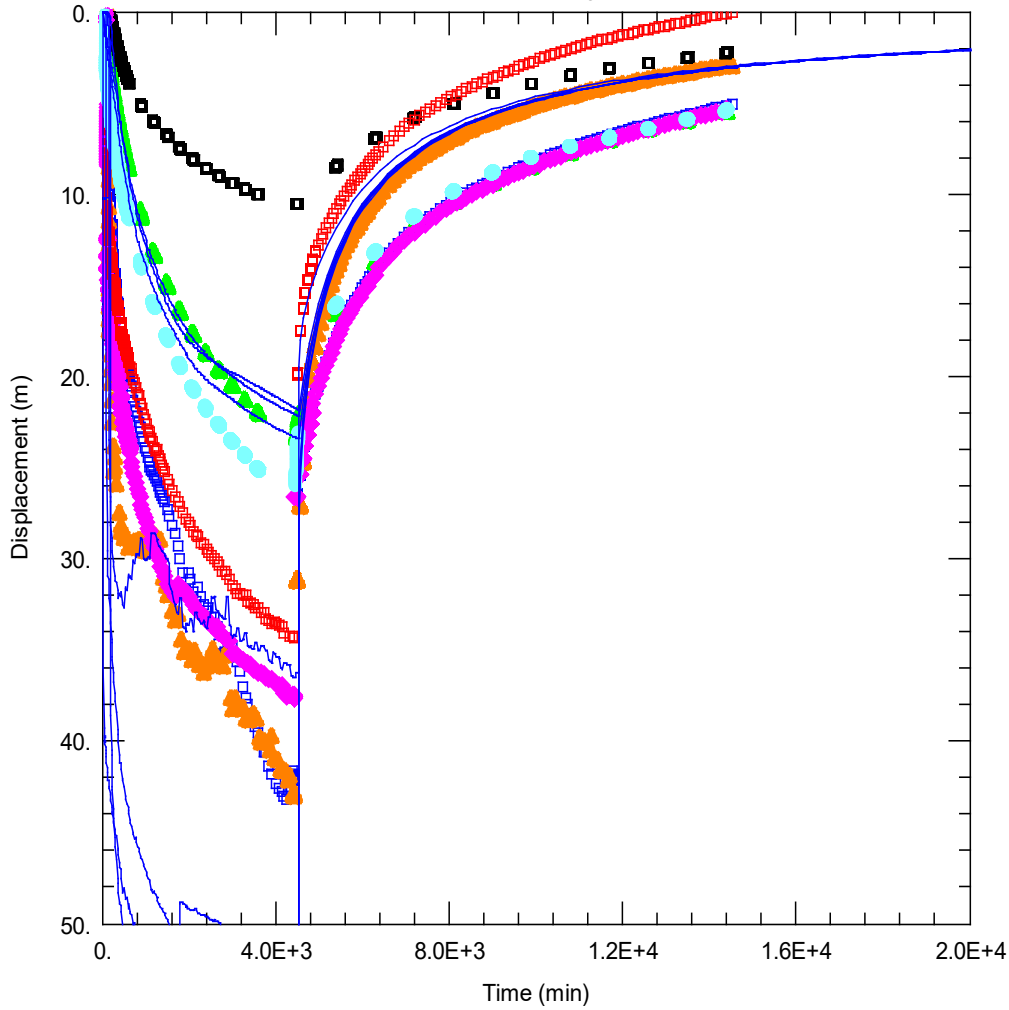
Theis/Hantush

## Parameters

T = 0.0001726 m<sup>2</sup>/sec  
S = 0.0003198  
Kz/Kr = 1.  
b = 200. m

# Well 1 - Drawdown Fit (Phase 2)

72 Hour Pumping Test



### Obs. Wells

- Well 3
- Well 1
- Well 4
- Well 5
- Well 6
- Well 7
- Well 8

### Aquifer Model

Confined

### Solution

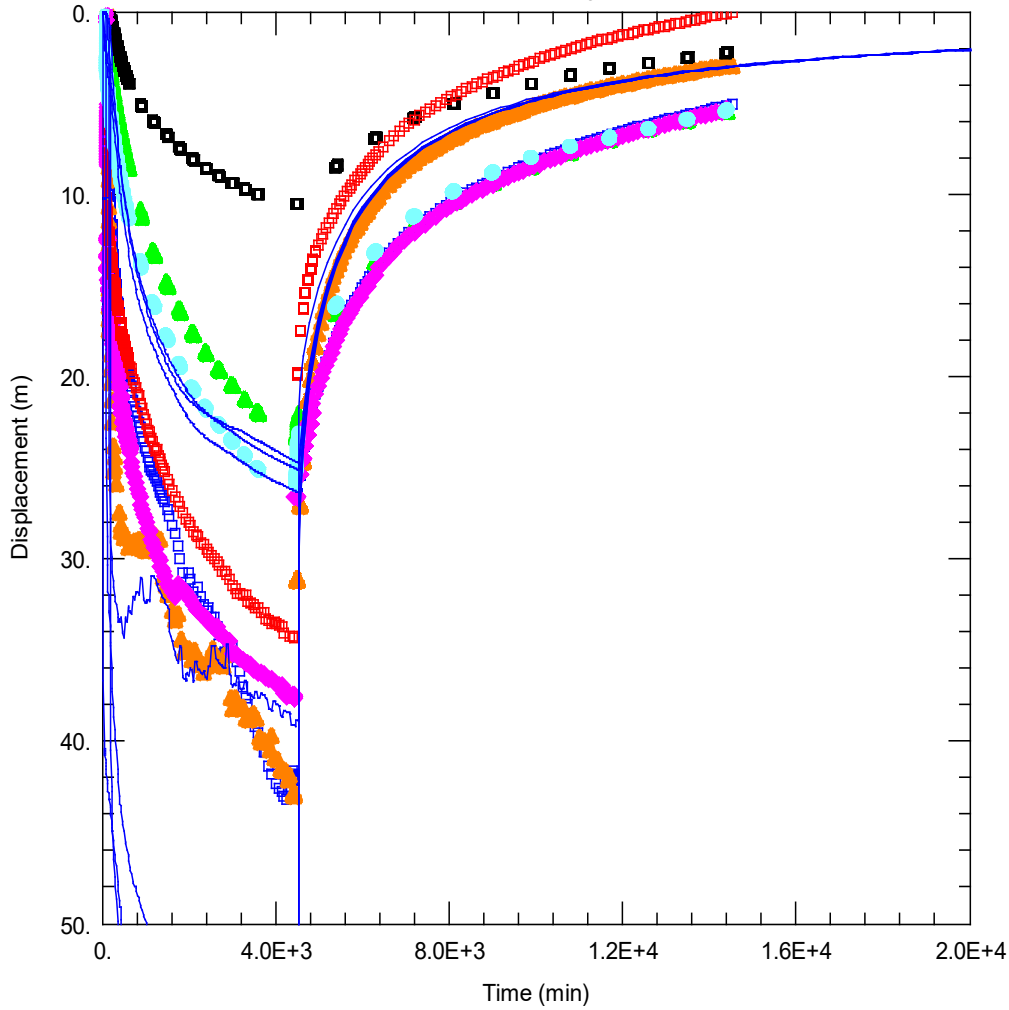
Theis/Hantush

### Parameters

$T = 0.0001486 \text{ m}^2/\text{sec}$   
 $S = 5.947\text{E-}5$   
 $Kz/Kr = 1.$   
 $b = 200. \text{ m}$

### Well 8 - Drawdown Fit (Phase 2)

72 Hour Pumping Test



#### Obs. Wells

- Well 3
- Well 1
- Well 4
- Well 5
- Well 6
- Well 7
- Well 8

#### Aquifer Model

Confined

#### Solution

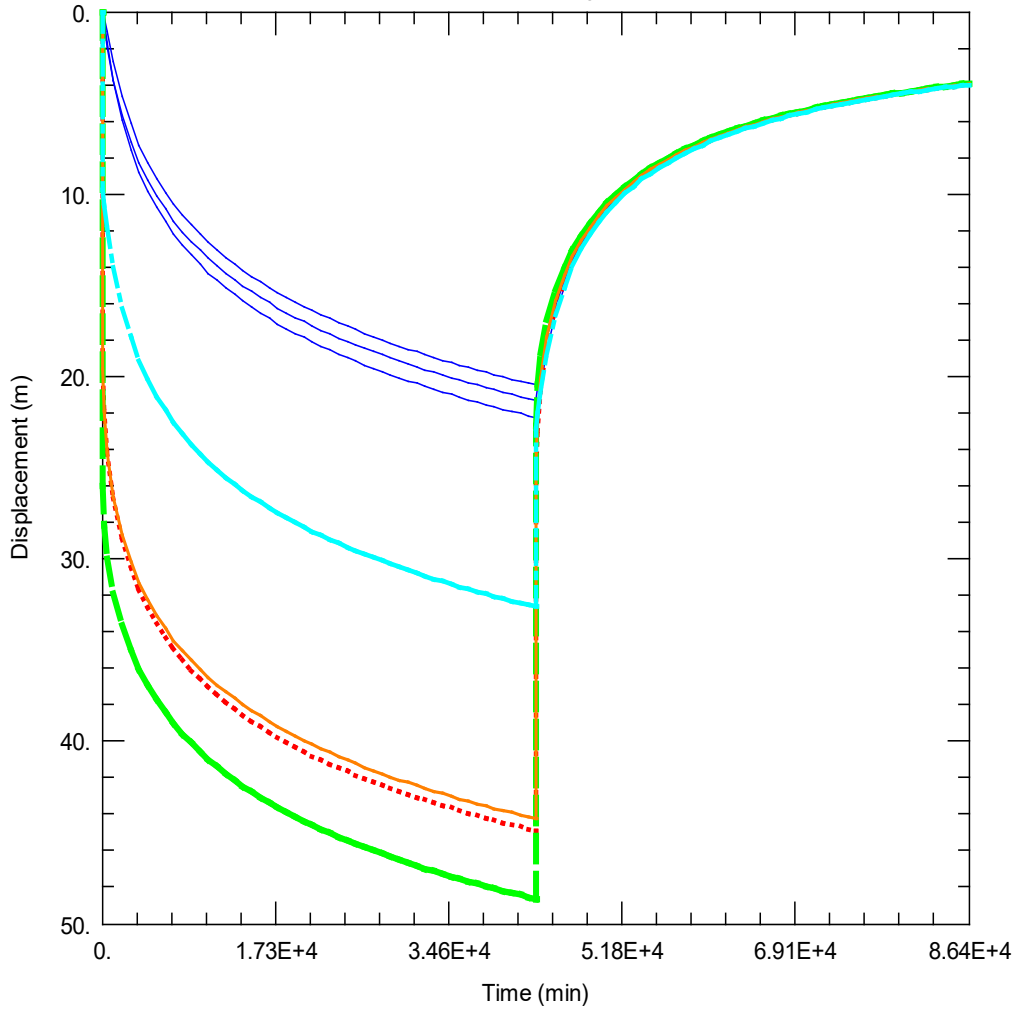
Theis/Hantush

#### Parameters

T = 0.0001509 m<sup>2</sup>/sec  
S = 3.873E-5  
Kz/Kr = 1.  
b = 200. m

# Recovery-based conservative 30-day pumping followed by 30 days of recovery

72 Hour Pumping Test



### Obs. Wells

- Well 1
- Well 5
- Well 8
- Well 3
- Well 4
- Well 6
- Well 7

### Aquifer Model

Confined

### Solution

Theis/Hantush

### Parameters

- T =  $9.9E-5$  m<sup>2</sup>/sec
- S = 0.00012
- Kz/Kr = 1.
- b = 200. m

## **Appendix F      Laboratory Analytical Results & Laboratory Certificates of Analysis**



**Table F.1 - Groundwater General Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #3 (Phase 1)		
				24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>14-Jan-26</b>	<b>15-Jan-26</b>	<b>16-Jan-26</b>
Solids - Total Suspended	mg/L	5	-	N/A	N/A	N/A
Solids - Total Dissolved	mg/L	5	≤500 (AO)	N/A	N/A	N/A
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	-	250	240	270
Ammonia (as N)	mg/L	0.05	-	0.06	<0.05	0.13
Carbon - Total Organic	mg/L	0.5	-	<0.5	<0.5	<0.5
Chloride	mg/L	0.5	≤ 250 (AO)	<b><u>596</u></b>	<b><u>642</u></b>	<b><u>666</u></b>
Conductivity	µS/cm	1	-	2270	2370	2420
Nitrate+Nitrite (as N)	mg/L	0.05	-	<0.05	<0.05	<0.05
o-Phosphate (as P)	mg/L	0.01	-	<0.01	<0.01	<0.01
pH	-	-	7.0-10.5	8.5	8.5	8.4
r-Silica (SiO <sub>2</sub> )	mg/L	0.1	-	8.0	7.7	7.4
Sulfate	mg/L	1	-	7	6	6
Turbidity	NTU	0.1	≤ 0.3 (OG)	<b><u>14.3</u></b>	<b><u>6</u></b>	<b><u>13.5</u></b>
<b>Calculated Parameters</b>						
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1	-	243	233	264
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001	-	7.21	6.92	6.22
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001	-	0.158	0.158	0.126
Cation Sum	meq/L	0.001	-	21.2	21.6	22.2
Anion Sum	meq/L	0.001	-	22.0	23.0	24.3
Percent Difference	%	-	-	-1.87	-3.13	-4.47
Theoretical Conductivity	µS/cm	1	-	1950	2030	2100
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	-	56.2	55.4	56.1
Ion Sum	mg/L	-	-	1250	1300	1350
Saturation pH (5°C)	-	-	-	8.1	8.1	8.1
Langelier Index (5°C)	-	-	-	0.39	0.36	0.32

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; Summary *Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent;
10. NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre
11. N/A = Not Analyzed

**Table F.1 - Groundwater General Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #3			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Solids - Total Suspended	mg/L	5	-	13	< 5	< 5	< 5
Solids - Total Dissolved	mg/L	5	≤500 (AO)	256	<b>779</b>	<b>1100</b>	<b>1330</b>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	-	210	270	270	240
Ammonia (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	0.06
Carbon - Total Organic	mg/L	0.5	-	0.6	0.8	0.8	0.5
Chloride	mg/L	0.5	≤ 250 (AO)	6.4	<b>294</b>	<b>437</b>	<b>672</b>
Conductivity	µS/cm	1	-	430	1400	1900	2440
Nitrate+Nitrite (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
pH	-	-	7.0-10.5	8.2	8.5	8.5	8.5
r-Silica (SiO <sub>2</sub> )	mg/L	0.1	-	14.2	8.7	8.5	8.5
Sulfate	mg/L	1	-	11	10	7	5
Turbidity	NTU	0.1	≤ 0.3 (OG)	<b>14</b>	<b>48.2</b>	<b>242</b>	<b>149</b>
<b>Calculated Parameters</b>							
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1	-	209	264	258	233
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001	-	3.11	7.85	7.66	6.93
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001	-	0.079	0.158	0.158	0.158
Cation Sum	meq/L	0.001	-	4.54	13.3	17.3	22.1
Anion Sum	meq/L	0.001	-	4.64	13.9	17.8	23.9
Percent Difference	%	-	-	-1.08	-2.36	-1.33	-3.75
Theoretical Conductivity	µS/cm	1	-	400	1240	1600	2090
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	-	96.8	47.7	56.1	74.3
Ion Sum	mg/L	-	-	243	772	1000	1330
Saturation pH (5°C)	-	-	-	7.8	8.1	8.1	8
Langelier Index (5°C)	-	-	-	0.37	0.39	0.43	0.48

**Notes:**

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; Summary *Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent;
10. NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre
11. N/A = Not Analyzed

**Table F.1 - Groundwater General Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #4			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Solids - Total Suspended	mg/L	5	-	15	10	17	24
Solids - Total Dissolved	mg/L	5	≤500 (AO)	324	<b>2210</b>	<b>3100</b>	<b>3970</b>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	-	200	350	360	350
Ammonia (as N)	mg/L	0.05	-	< 0.05	0.07	0.1	0.12
Carbon - Total Organic	mg/L	0.5	-	0.9	0.8	< 0.5	0.6
Chloride	mg/L	0.5	≤ 250 (AO)	28	<b>1230</b>	<b>1610</b>	<b>1940</b>
Conductivity	µS/cm	1	-	490	4640	6290	7730
Nitrate+Nitrite (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
pH	-	-	7.0-10.5	8.6	8.1	8.2	8.2
r-Silica (SiO <sub>2</sub> )	mg/L	0.1	-	9.6	9.4	9.3	9.3
Sulfate	mg/L	1	-	20	13	11	9
Turbidity	NTU	0.1	≤ 0.3 (OG)	<b>62.2</b>	<b>45.4</b>	<b>42.7</b>	<b>55.6</b>
<b>Calculated Parameters</b>							
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1	-	188	343	355	346
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001	-	7.03	4.06	5.29	5.16
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001	-	0.199	0.063	0.079	0.079
Cation Sum	meq/L	0.001	-	5.09	38.8	51.4	63.2
Anion Sum	meq/L	0.001	-	5.11	41.9	52.9	61.9
Percent Difference	%	-	-	-0.18	-3.81	-1.38	1.02
Theoretical Conductivity	µS/cm	1	-	451	3450	4310	5050
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	-	7	304	500	682
Ion Sum	mg/L	-	-	287	2320	2980	3560
Saturation pH (5°C)	-	-	-	9	7.3	7.1	7
Langelier Index (5°C)	-	-	-	-0.4	0.81	1.11	1.21

**Notes:**

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; Summary *Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent;
10. NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre
11. N/A = Not Analyzed

**Table F.1 - Groundwater General Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #6			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Solids - Total Suspended	mg/L	5	-	6	< 5	< 5	< 5
Solids - Total Dissolved	mg/L	5	≤500 (AO)	<b>2980</b>	<b>5430</b>	<b>5380</b>	<b>5340</b>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	-	150	110	110	110
Ammonia (as N)	mg/L	0.05	-	0.09	0.19	0.23	0.2
Carbon - Total Organic	mg/L	0.5	-	1.2	< 0.5	< 0.5	< 0.5
Chloride	mg/L	0.5	≤ 250 (AO)	<b>1640</b>	<b>3300</b>	<b>3270</b>	<b>3330</b>
Conductivity	µS/cm	1	-	6160	10400	10300	10500
Nitrate+Nitrite (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
pH	-	-	7.0-10.5	8.1	8	7.9	8.1
r-Silica (SiO <sub>2</sub> )	mg/L	0.1	-	7.3	7.2	7.3	7.4
Sulfate	mg/L	1	-	10	1	2	2
Turbidity	NTU	0.1	≤ 0.3 (OG)	<b>4.4</b>	<b>2.9</b>	<b>3.8</b>	<b>4.1</b>
<b>Calculated Parameters</b>							
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1	-	148	108	110	111
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001	-	1.75	1.01	0.825	1.31
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001	-	0.063	0.05	0.04	0.063
Cation Sum	meq/L	0.001	-	49.5	86.8	92.2	86.7
Anion Sum	meq/L	0.001	-	49.5	95.3	94.5	96.2
Percent Difference	%	-	-	0.07	-4.66	-1.25	-5.19
Theoretical Conductivity	µS/cm	1	-	4200	7220	7320	7260
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	-	297	731	826	747
Ion Sum	mg/L	-	-	2860	5310	5390	5340
Saturation pH (5°C)	-	-	-	7.7	7.5	7.4	7.5
Langelier Index (5°C)	-	-	-	0.42	0.52	0.48	0.64

**Notes:**

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; Summary *Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent;
10. NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre
11. N/A = Not Analyzed

**Table F.1 - Groundwater General Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #7			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Solids - Total Suspended	mg/L	5	-	5	< 5	< 5	< 5
Solids - Total Dissolved	mg/L	5	≤500 (AO)	<b>903</b>	<b>932</b>	<b>1040</b>	<b>1080</b>
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10	-	220	250	240	230
Ammonia (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	0.06
Carbon - Total Organic	mg/L	0.5	-	0.9	0.6	< 0.5	< 0.5
Chloride	mg/L	0.5	≤ 250 (AO)	<b>381</b>	<b>414</b>	<b>444</b>	<b>595</b>
Conductivity	µS/cm	1	-	1710	1800	1920	2200
Nitrate+Nitrite (as N)	mg/L	0.05	-	< 0.05	< 0.05	< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	-	< 0.01	< 0.01	< 0.01	< 0.01
pH	-	-	7.0-10.5	8.5	8.6	8.6	8.5
r-Silica (SiO <sub>2</sub> )	mg/L	0.1	-	7	7.1	7.3	7.2
Sulfate	mg/L	1	-	15	14	14	15
Turbidity	NTU	0.1	≤ 0.3 (OG)	<b>6.8</b>	<b>1.1</b>	<b>1.4</b>	<b>2.3</b>
<b>Calculated Parameters</b>							
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1	-	215	241	227	223
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001	-	6.4	9.04	8.48	6.62
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001	-	0.158	0.199	0.199	0.158
Cation Sum	meq/L	0.001	-	15.9	17.6	18.9	22
Anion Sum	meq/L	0.001	-	15.5	17	17.5	21.7
Percent Difference	%	-	-	1.24	1.92	3.84	0.74
Theoretical Conductivity	µS/cm	1	-	1440	1570	1650	1980
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	-	20.9	36.2	56	92.3
Ion Sum	mg/L	-	-	895	984	1040	1250
Saturation pH (5°C)	-	-	-	8.5	8.3	8.1	7.9
Langelier Index (5°C)	-	-	-	-0.04	0.34	0.49	0.58

**Notes:**

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; Summary *Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent;
10. NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre
11. N/A = Not Analyzed

**Table F.2 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #3		
				24 Hour	48 Hour	72 Hour
Date Sampled:				14-Jan-26	15-Jan-26	16-Jan-26
Aluminum	mg/L	0.001	0.1 (OG); 2.9 (MAC)	0.117	0.042	0.078
Antimony	mg/L	0.0001	0.006 (AO)	0.0006	<0.0005	<0.0005
Arsenic	mg/L	0.001	0.01 (ALARA)	<0.005	<0.005	<0.005
Barium	mg/L	0.001	2.0 (MAC)	1.04	1.10	1.08
Beryllium	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Bismuth	mg/L	0.001	-	<0.005	<0.005	<0.005
Boron	mg/L	0.001	5 (MAC)	0.161	0.162	0.166
Cadmium	mg/L	0.00001	0.007 (MAC)	<0.0005	<0.0005	<0.0005
Calcium	mg/L	0.05	-	17.8	17.7	17.9
Chromium	mg/L	0.001	0.05 (MAC)	<0.005	<0.005	<0.005
Cobalt	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Copper	mg/L	0.001	1 (AO); 2 (MAC)	<0.005	<0.005	<0.005
Iron	mg/L	0.02	≤0.1	<b>0.1</b>	<0.1	<b>0.1</b>
Lead	mg/L	0.0001	0.005 (ALARA)	<0.0005	<0.0005	<0.0005
Lithium	mg/L	0.0001	-	0.0365	0.0381	0.0386
Magnesium	mg/L	0.01	-	2.86	2.73	2.76
Manganese	mg/L	0.001	≤0.02 (AO); 0.12 (ALARA)	<b>0.056</b>	<b>0.052</b>	<b>0.052</b>
Molybdenum	mg/L	0.0001	-	0.152	0.0576	0.052
Nickel	mg/L	0.001	-	<0.005	<0.005	<0.005
Potassium	mg/L	0.02	-	4.9	4.8	4.8
Rubidium	mg/L	0.0001	-	0.0021	0.0019	0.002
Selenium	mg/L	0.001	0.05 (MAC)	<0.005	<0.005	<0.005
Silver	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Sodium	mg/L	0.5	≤200 (AO)	<b>458</b>	<b>469</b>	<b>482</b>
Strontium	mg/L	0.001	7.0 (MAC)	0.842	0.831	0.842
Tellurium	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Thallium	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Tin	mg/L	0.0001	-	<0.0005	<0.0005	<0.0005
Uranium	mg/L	0.0001	0.02 (MAC)	0.0045	0.0033	0.0035
Vanadium	mg/L	0.001	-	<0.005	<0.005	<0.005
Zinc	mg/L	0.001	≤ 5.0 (AO)	0.012	<0.005	<0.005

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre

**Table F.2 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #3			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Aluminum	mg/L	0.001	0.1 (OG); 2.9 (MAC)	0.044	<b>0.156</b>	<b>0.378</b>	<b>0.322</b>
Antimony	mg/L	0.0001	0.006 (AO)	0.0001	0.0003	0.0005	0.0008
Arsenic	mg/L	0.001	0.01 (ALARA)	< 0.001	< 0.002	< 0.002	< 0.005
Barium	mg/L	0.001	2.0 (MAC)	0.239	0.638	1.08	1.53
Beryllium	mg/L	0.0001	-	< 0.0001	< 0.0002	0.0002	< 0.0005
Bismuth	mg/L	0.001	-	< 0.001	< 0.002	< 0.002	< 0.005
Boron	mg/L	0.001	5 (MAC)	0.092	0.134	0.132	0.141
Cadmium	mg/L	0.00001	0.007 (MAC)	< 0.00001	< 0.00002	0.00004	< 0.00005
Calcium	mg/L	0.05	-	29.7	14.9	17.7	23.6
Chromium	mg/L	0.001	0.05 (MAC)	< 0.001	< 0.002	< 0.002	< 0.005
Cobalt	mg/L	0.0001	-	< 0.0001	< 0.0002	0.0003	< 0.0005
Copper	mg/L	0.001	1 (AO); 2 (MAC)	0.001	< 0.002	< 0.002	< 0.005
Iron	mg/L	0.02	≤0.1	<b>0.07</b>	0.16	0.4	0.4
Lead	mg/L	0.0001	0.005 (ALARA)	0.0022	0.0007	0.0013	0.0012
Lithium	mg/L	0.0001	-	0.0248	0.0263	0.0312	0.0392
Magnesium	mg/L	0.01	-	5.49	2.55	2.89	3.73
Manganese	mg/L	0.001	≤0.02 (AO); 0.12 (ALARA)	<b>0.079</b>	<b>0.043</b>	<b>0.069</b>	<b>0.085</b>
Molybdenum	mg/L	0.0001	-	0.0083	0.0615	0.128	0.152
Nickel	mg/L	0.001	-	< 0.001	< 0.002	< 0.002	< 0.005
Potassium	mg/L	0.02	-	6.49	4.27	4.59	5.4
Rubidium	mg/L	0.0001	-	0.0022	0.0018	0.0023	0.0025
Selenium	mg/L	0.001	0.05 (MAC)	< 0.001	< 0.002	< 0.002	< 0.005
Silver	mg/L	0.0001	-	< 0.0001	< 0.0002	< 0.0002	< 0.0005
Sodium	mg/L	0.5	≤200 (AO)	56	<b>281</b>	<b>369</b>	<b>471</b>
Strontium	mg/L	0.001	7.0 (MAC)	1.25	0.674	0.816	1.07
Tellurium	mg/L	0.0001	-	< 0.0001	< 0.0002	< 0.0002	< 0.0005
Thallium	mg/L	0.0001	-	< 0.0001	< 0.0002	< 0.0002	< 0.0005
Tin	mg/L	0.0001	-	< 0.0001	< 0.0002	< 0.0002	< 0.0005
Uranium	mg/L	0.0001	0.02 (MAC)	<b>0.0461</b>	0.0107	0.0102	0.0093
Vanadium	mg/L	0.001	-	0.003	< 0.002	0.003	< 0.005
Zinc	mg/L	0.001	≤ 5.0 (AO)	0.006	< 0.002	0.004	< 0.005

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre

**Table F.2 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #4			
				0 Hour	24 Hour	48 Hour	72 Hour
Date Sampled:				17-Apr-26	18-Apr-26	19-Apr-26	20-Apr-26
Aluminum	mg/L	0.001	0.1 (OG); 2.9 (MAC)	<b>0.181</b>	0.062	0.05	0.06
Antimony	mg/L	0.0001	0.006 (AO)	0.0001	< 0.0005	< 0.001	< 0.001
Arsenic	mg/L	0.001	0.01 (ALARA)	< 0.001	< 0.005	< 0.01	< 0.01
Barium	mg/L	0.001	2.0 (MAC)	0.152	<b>9.56</b>	14.8	21.2
Beryllium	mg/L	0.0001	-	< 0.0001	< 0.0005	< 0.001	< 0.001
Bismuth	mg/L	0.001	-	< 0.001	< 0.005	< 0.01	< 0.01
Boron	mg/L	0.001	5 (MAC)	0.071	0.12	0.12	0.13
Cadmium	mg/L	0.00001	0.007 (MAC)	0.00001	< 0.00005	< 0.0001	< 0.0001
Calcium	mg/L	0.05	-	2.21	99.1	163	223
Chromium	mg/L	0.001	0.05 (MAC)	< 0.001	< 0.005	< 0.01	< 0.01
Cobalt	mg/L	0.0001	-	0.0001	< 0.0005	< 0.001	< 0.001
Copper	mg/L	0.001	1 (AO); 2 (MAC)	< 0.001	< 0.005	< 0.01	< 0.01
Iron	mg/L	0.02	≤0.1	0.64	1.4	2.4	3.1
Lead	mg/L	0.0001	0.005 (ALARA)	0.0007	< 0.0005	< 0.001	< 0.001
Lithium	mg/L	0.0001	-	0.0095	0.0532	0.066	0.079
Magnesium	mg/L	0.01	-	0.35	13.7	22.6	30.5
Manganese	mg/L	0.001	≤0.02 (AO); 0.12 (ALARA)	<b>0.025</b>	<b>0.203</b>	<b>0.3</b>	<b>0.38</b>
Molybdenum	mg/L	0.0001	-	0.0179	0.0192	0.019	0.017
Nickel	mg/L	0.001	-	< 0.001	< 0.005	< 0.01	< 0.01
Potassium	mg/L	0.02	-	1.57	6.9	8.4	9.6
Rubidium	mg/L	0.0001	-	0.001	0.0032	0.004	0.005
Selenium	mg/L	0.001	0.05 (MAC)	< 0.001	< 0.005	< 0.01	< 0.01
Silver	mg/L	0.0001	-	< 0.0001	< 0.0005	< 0.001	< 0.001
Sodium	mg/L	0.5	≤200 (AO)	112	<b>747</b>	<b>944</b>	<b>1130</b>
Strontium	mg/L	0.001	7.0 (MAC)	0.072	4.72	<b>7.8</b>	<b>10.3</b>
Tellurium	mg/L	0.0001	-	< 0.0001	< 0.0005	< 0.001	< 0.001
Thallium	mg/L	0.0001	-	< 0.0001	< 0.0005	< 0.001	< 0.001
Tin	mg/L	0.0001	-	< 0.0001	< 0.0005	< 0.001	< 0.001
Uranium	mg/L	0.0001	0.02 (MAC)	0.0007	< 0.0005	< 0.001	< 0.001
Vanadium	mg/L	0.001	-	< 0.001	< 0.005	< 0.01	< 0.01
Zinc	mg/L	0.001	≤ 5.0 (AO)	0.002	0.009	0.01	0.02

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre

**Table F.2 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #6			
				0 Hour	24 Hour	48 Hour	72 Hour
Date Sampled:				17-Apr-26	18-Apr-26	19-Apr-26	20-Apr-26
Aluminum	mg/L	0.001	0.1 (OG); 2.9 (MAC)	0.04	< 0.02	< 0.02	< 0.02
Antimony	mg/L	0.0001	0.006 (AO)	< 0.001	< 0.002	< 0.002	< 0.002
Arsenic	mg/L	0.001	0.01 (ALARA)	< 0.01	< 0.02	< 0.02	< 0.02
Barium	mg/L	0.001	2.0 (MAC)	<b>5.1</b>	<b>9.57</b>	<b>9.7</b>	<b>9.64</b>
Beryllium	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Bismuth	mg/L	0.001	-	< 0.01	< 0.02	< 0.02	< 0.02
Boron	mg/L	0.001	5 (MAC)	0.2	0.2	0.19	0.19
Cadmium	mg/L	0.00001	0.007 (MAC)	< 0.0001	< 0.0002	< 0.0002	< 0.0002
Calcium	mg/L	0.05	-	98.1	245	278	250
Chromium	mg/L	0.001	0.05 (MAC)	< 0.01	< 0.02	< 0.02	< 0.02
Cobalt	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Copper	mg/L	0.001	1 (AO); 2 (MAC)	< 0.01	< 0.02	< 0.02	< 0.02
Iron	mg/L	0.02	≤0.1	0.3	0.5	0.5	0.5
Lead	mg/L	0.0001	0.005 (ALARA)	0.002	< 0.002	< 0.002	< 0.002
Lithium	mg/L	0.0001	-	0.084	0.131	0.133	0.128
Magnesium	mg/L	0.01	-	12.6	29	32.1	29.9
Manganese	mg/L	0.001	≤0.02 (AO); 0.12 (ALARA)	<b>0.2</b>	<b>0.53</b>	<b>0.61</b>	<b>0.54</b>
Molybdenum	mg/L	0.0001	-	0.02	0.014	0.014	0.015
Nickel	mg/L	0.001	-	< 0.01	< 0.02	< 0.02	< 0.02
Potassium	mg/L	0.02	-	9.6	14.4	14.3	15.6
Rubidium	mg/L	0.0001	-	0.004	0.006	0.006	0.006
Selenium	mg/L	0.001	0.05 (MAC)	< 0.01	< 0.02	< 0.02	< 0.02
Silver	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Sodium	mg/L	0.5	≤200 (AO)	<b>996</b>	<b>1650</b>	<b>1730</b>	<b>1640</b>
Strontium	mg/L	0.001	7.0 (MAC)	4.53	<b>10.9</b>	<b>11.6</b>	<b>10.9</b>
Tellurium	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Thallium	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Tin	mg/L	0.0001	-	< 0.001	< 0.002	< 0.002	< 0.002
Uranium	mg/L	0.0001	0.02 (MAC)	0.005	< 0.002	< 0.002	< 0.002
Vanadium	mg/L	0.001	-	< 0.01	< 0.02	< 0.02	< 0.02
Zinc	mg/L	0.001	≤ 5.0 (AO)	< 0.01	< 0.02	< 0.02	< 0.02

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre

**Table F.2 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	RL	GCDWQ Guidelines	Well #7			
				0 Hour	24 Hour	48 Hour	72 Hour
<b>Date Sampled:</b>				<b>17-Apr-26</b>	<b>18-Apr-26</b>	<b>19-Apr-26</b>	<b>20-Apr-26</b>
Aluminum	mg/L	0.001	0.1 (OG); 2.9 (MAC)	0.081	0.029	0.026	0.03
Antimony	mg/L	0.0001	0.006 (AO)	0.0002	< 0.0002	< 0.0002	< 0.0005
Arsenic	mg/L	0.001	0.01 (ALARA)	< 0.002	< 0.002	< 0.002	< 0.005
Barium	mg/L	0.001	2.0 (MAC)	0.283	0.832	1.39	<b>2.59</b>
Beryllium	mg/L	0.0001	-	< 0.0002	< 0.0002	< 0.0002	< 0.0005
Bismuth	mg/L	0.001	-	< 0.002	< 0.002	< 0.002	< 0.005
Boron	mg/L	0.001	5 (MAC)	0.133	0.133	0.128	0.132
Cadmium	mg/L	0.00001	0.007 (MAC)	< 0.00002	< 0.00002	< 0.00002	< 0.00005
Calcium	mg/L	0.05	-	6.9	12	18.6	30.6
Chromium	mg/L	0.001	0.05 (MAC)	< 0.002	< 0.002	< 0.002	< 0.005
Cobalt	mg/L	0.0001	-	< 0.0002	< 0.0002	< 0.0002	< 0.0005
Copper	mg/L	0.001	1 (AO); 2 (MAC)	< 0.002	< 0.002	< 0.002	< 0.005
Iron	mg/L	0.02	≤0.1	0.42	<b>≤ 0.04</b>	<b>0.04</b>	<b>≤ 0.1</b>
Lead	mg/L	0.0001	0.005 (ALARA)	0.0004	< 0.0002	< 0.0002	< 0.0005
Lithium	mg/L	0.0001	-	0.025	0.0268	0.0289	0.0328
Magnesium	mg/L	0.01	-	0.89	1.52	2.31	3.87
Manganese	mg/L	0.001	≤0.02 (AO); 0.12 (ALARA)	<b>0.026</b>	<b>0.023</b>	<b>0.037</b>	<b>0.063</b>
Molybdenum	mg/L	0.0001	-	0.0376	0.037	0.0336	0.0311
Nickel	mg/L	0.001	-	< 0.002	< 0.002	< 0.002	< 0.005
Potassium	mg/L	0.02	-	3.27	3.39	3.64	4.1
Rubidium	mg/L	0.0001	-	0.0016	0.0015	0.0016	0.0018
Selenium	mg/L	0.001	0.05 (MAC)	< 0.002	< 0.002	< 0.002	< 0.005
Silver	mg/L	0.0001	-	< 0.0002	< 0.0002	< 0.0002	< 0.0005
Sodium	mg/L	0.5	≤200 (AO)	<b>353</b>	<b>387</b>	<b>407</b>	<b>461</b>
Strontium	mg/L	0.001	7.0 (MAC)	0.302	0.543	0.857	1.39
Tellurium	mg/L	0.0001	-	< 0.0002	< 0.0002	< 0.0002	< 0.0005
Thallium	mg/L	0.0001	-	< 0.0002	< 0.0002	< 0.0002	< 0.0005
Tin	mg/L	0.0001	-	0.0004	< 0.0002	< 0.0002	< 0.0005
Uranium	mg/L	0.0001	0.02 (MAC)	0.0008	0.0002	0.0002	< 0.0005
Vanadium	mg/L	0.001	-	< 0.002	< 0.002	< 0.002	< 0.005
Zinc	mg/L	0.001	≤ 5.0 (AO)	< 0.002	< 0.002	< 0.002	< 0.005

Notes:

1. RL = Laboratory reporting limit
2. <# = parameter not detected above laboratory RDL
3. GCDWQ Guidelines = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
4. ALARA = as low as reasonably achievable
5. AO = aesthetic objective
6. MAC = maximum acceptable concentration
7. OG = operational guidance value
8. **Bold & Underlined** = parameter concentration exceeds the GCDWQ AO or OG guideline
9. me/L = milliequivalents per litre; mg/L = milligrams per litre; % = percent; NTU = nephelometric turbidity units; µS/cm = microsiemens per centimetre

**Table F.3 - Groundwater Inorganic Chemistry**

Centre Village, NB

72 Hour Pumping Test

Parameter	Units	GCDWQ Guidelines	Well 3				Well 4	Well 6	Well 7
			24 Hour	48 Hour	72 Hour	72 Hour	72 Hour	72 Hour	72 Hour
<b>Date Sampled:</b>			<b>14-Jan-26</b>	<b>15-Jan-26</b>	<b>16-Jan-26</b>	<b>20-Apr-26</b>	<b>20-Apr-26</b>	<b>20-Apr-26</b>	<b>20-Apr-26</b>
<i>Escherichia coli</i>	MPN/100mL	ND per 100 mL	0	0	0	0	0	0	0
Total Coliforms	MPN/100mL	ND per 100 mL	0	0	0	0	0	0	0

**Notes:**

1. MPN = most probable number
2. mL = millilitre
3. <# = parameter not detected above the laboratory's reportable detection limit
4. ND = not detected at a concentration equal or greater than the detection limit
5. "-" = no guideline available
6. GCDWQ = Guidelines for Canadian Drinking Water Quality; *Summary Table* (March 2025)
7. **Bold & Underlined** = parameter concentration exceeds the GCDWQ guideline



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**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Analysis of Water

			RPC Sample ID	26-011210-1-1	26-011210-2-1
			Client Sample ID	Well 3-Strt	Well 4-Strt
			Date Sampled	2026-04-17	2026-04-17
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	256	324	
Solids - Total Suspended	mg/L	5	13	15	

Matthew Norman  
Inorganic Analytical Services



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## Analysis of Water

			RPC Sample ID	26-011210-3-1	26-011210-4-1
			Client Sample ID	Well 6-Strt	Well 7-Strt
			Date Sampled	2026-04-17	2026-04-17
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	2980	903	
Solids - Total Suspended	mg/L	5	6	5	



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## Analysis of Water

			RPC Sample ID	26-011210-5-1	26-011210-6-1
			Client Sample ID	Well 3-24hr	Well 4-24hr
			Date Sampled	2026-04-18	2026-04-18
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5		779	2210
Solids - Total Suspended	mg/L	5		< 5	10



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## Analysis of Water

			RPC Sample ID	26-011210-7-1	26-011210-8-1
			Client Sample ID	Well 6-24hr	Well 7-24hr
			Date Sampled	2026-04-18	2026-04-18
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5		5430	932
Solids - Total Suspended	mg/L	5		< 5	< 5



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## Analysis of Water

			RPC Sample ID	26-011210-9-1	26-011210-10-1
			Client Sample ID	Well 3-48hr	Well 4-48hr
			Date Sampled	2026-04-19	2026-04-19
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	1100	3100	
Solids - Total Suspended	mg/L	5	< 5	17	



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## Analysis of Water

			RPC Sample ID	26-011210-11-1	26-011210-12-1
			Client Sample ID	Well 6-48hr	Well 7-48hr
			Date Sampled	2026-04-19	2026-04-19
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	5380	1040	
Solids - Total Suspended	mg/L	5	< 5	< 5	



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## Analysis of Water

			RPC Sample ID	26-011210-13-2	26-011210-14-2
			Client Sample ID	Well 3-72hr	Well 4-72hr
			Date Sampled	2026-04-20	2026-04-20
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	1330	3970	
Solids - Total Suspended	mg/L	5	< 5	24	



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## Analysis of Water

			RPC Sample ID	26-011210-15-2	26-011210-16-2
			Client Sample ID	Well 6-72hr	Well 7-72hr
			Date Sampled	2026-04-20	2026-04-20
Analyte	Units	RL			
Solids - Total Dissolved	mg/L	5	5340	1080	
Solids - Total Suspended	mg/L	5	< 5	< 5	



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-1-1	26-011210-2-1
			Client Sample ID	Well 3-Strt	Well 4-Strt
			Date Sampled	2026-04-17	2026-04-17
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		210	200
Ammonia (as N)	mg/L	0.05		< 0.05	< 0.05
Carbon - Total Organic	mg/L	0.5		0.6	0.9
Chloride	mg/L	0.5		6.4	28.0
Conductivity	µS/cm	1		430	490
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.2	8.6
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		14.2	9.6
Sulfate	mg/L	1		11	20
Turbidity	NTU	0.1		14.0	62.2
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		209	188
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		3.11	7.03
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.079	0.199
Cation Sum	meq/L	0.001		4.54	5.09
Anion Sum	meq/L	0.001		4.64	5.11
Percent Difference	%	-		-1.08	-0.18
Theoretical Conductivity	µS/cm	1		400	451
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		96.8	7.0
Ion Sum	mg/L	-		243	287
Saturation pH (5°C)	Units	-		7.8	9.0
Langelier Index (5°C)	-	-		0.37	-0.40



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-3-1	26-011210-4-1
			Client Sample ID	Well 6-Strt	Well 7-Strt
			Date Sampled	2026-04-17	2026-04-17
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		150	220
Ammonia (as N)	mg/L	0.05		0.09	< 0.05
Carbon - Total Organic	mg/L	0.5		1.2	0.9
Chloride	mg/L	0.5		1640	381
Conductivity	µS/cm	1		6160	1710
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.1	8.5
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		7.3	7.0
Sulfate	mg/L	1		10	15
Turbidity	NTU	0.1		4.4	6.8
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		148	215
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		1.75	6.40
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.063	0.158
Cation Sum	meq/L	0.001		49.5	15.9
Anion Sum	meq/L	0.001		49.5	15.5
Percent Difference	%	-		0.07	1.24
Theoretical Conductivity	µS/cm	1		4200	1440
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		297	20.9
Ion Sum	mg/L	-		2860	895
Saturation pH (5°C)	Units	-		7.7	8.5
Langelier Index (5°C)	-	-		0.42	-0.04



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-5-1	26-011210-6-1
			Client Sample ID	Well 3-24hr	Well 4-24hr
			Date Sampled	2026-04-18	2026-04-18
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		270	350
Ammonia (as N)	mg/L	0.05		< 0.05	0.07
Carbon - Total Organic	mg/L	0.5		0.8	0.8
Chloride	mg/L	0.5		294	1230
Conductivity	µS/cm	1		1400	4640
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.5	8.1
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		8.7	9.4
Sulfate	mg/L	1		10	13
Turbidity	NTU	0.1		48.2	45.4
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		264	343
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		7.85	4.06
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.158	0.063
Cation Sum	meq/L	0.001		13.3	38.8
Anion Sum	meq/L	0.001		13.9	41.9
Percent Difference	%	-		-2.36	-3.81
Theoretical Conductivity	µS/cm	1		1240	3450
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		47.7	304
Ion Sum	mg/L	-		772	2320
Saturation pH (5°C)	Units	-		8.1	7.3
Langelier Index (5°C)	-	-		0.39	0.81



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-7-1	26-011210-8-1
			Client Sample ID	Well 6-24hr	Well 7-24hr
			Date Sampled	2026-04-18	2026-04-18
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		110	250
Ammonia (as N)	mg/L	0.05		0.19	< 0.05
Carbon - Total Organic	mg/L	0.5		< 0.5	0.6
Chloride	mg/L	0.5		3300	414
Conductivity	µS/cm	1		10400	1800
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.0	8.6
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		7.2	7.1
Sulfate	mg/L	1		1	14
Turbidity	NTU	0.1		2.9	1.1
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		108	241
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		1.01	9.04
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.050	0.199
Cation Sum	meq/L	0.001		86.8	17.6
Anion Sum	meq/L	0.001		95.3	17.0
Percent Difference	%	-		-4.66	1.92
Theoretical Conductivity	µS/cm	1		7220	1570
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		731	36.2
Ion Sum	mg/L	-		5310	984
Saturation pH (5°C)	Units	-		7.5	8.3
Langelier Index (5°C)	-	-		0.52	0.34



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## Analysis of Water

			RPC Sample ID	26-011210-9-1	26-011210-10-1
			Client Sample ID	Well 3-48hr	Well 4-48hr
			Date Sampled	2026-04-19	2026-04-19
Analyte	Units	RL			
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		270	360
Ammonia (as N)	mg/L	0.05		< 0.05	0.10
Carbon - Total Organic	mg/L	0.5		0.8	< 0.5
Chloride	mg/L	0.5		437	1610
Conductivity	µS/cm	1		1900	6290
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.5	8.2
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		8.5	9.3
Sulfate	mg/L	1		7	11
Turbidity	NTU	0.1		242	42.7
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		258	355
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		7.66	5.29
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.158	0.079
Cation Sum	meq/L	0.001		17.3	51.4
Anion Sum	meq/L	0.001		17.8	52.9
Percent Difference	%	-		-1.33	-1.38
Theoretical Conductivity	µS/cm	1		1600	4310
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		56.1	500
Ion Sum	mg/L	-		1000	2980
Saturation pH (5°C)	Units	-		8.1	7.1
Langelier Index (5°C)	-	-		0.43	1.11



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-11-1	26-011210-12-1
			Client Sample ID	Well 6-48hr	Well 7-48hr
			Date Sampled	2026-04-19	2026-04-19
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		110	240
Ammonia (as N)	mg/L	0.05		0.23	< 0.05
Carbon - Total Organic	mg/L	0.5		< 0.5	< 0.5
Chloride	mg/L	0.5		3270	444
Conductivity	µS/cm	1		10300	1920
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		7.9	8.6
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		7.3	7.3
Sulfate	mg/L	1		2	14
Turbidity	NTU	0.1		3.8	1.4
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		110	227
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		0.825	8.48
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.040	0.199
Cation Sum	meq/L	0.001		92.2	18.9
Anion Sum	meq/L	0.001		94.5	17.5
Percent Difference	%	-		-1.25	3.84
Theoretical Conductivity	µS/cm	1		7320	1650
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		826	56.0
Ion Sum	mg/L	-		5390	1040
Saturation pH (5°C)	Units	-		7.4	8.1
Langelier Index (5°C)	-	-		0.48	0.49



# Certificate of Analysis

Report ID: 26-011210-IAS

Report Date: 2026-04-29

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 845 Prospect Street  
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**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-13-2	26-011210-14-2
			Client Sample ID	Well 3-72hr	Well 4-72hr
			Date Sampled	2026-04-20	2026-04-20
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		240	350
Ammonia (as N)	mg/L	0.05		0.06	0.12
Carbon - Total Organic	mg/L	0.5		0.5	0.6
Chloride	mg/L	0.5		672	1940
Conductivity	µS/cm	1		2440	7730
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.5	8.2
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		8.5	9.3
Sulfate	mg/L	1		5	9
Turbidity	NTU	0.1		149	55.6
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		233	346
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		6.93	5.16
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.158	0.079
Cation Sum	meq/L	0.001		22.1	63.2
Anion Sum	meq/L	0.001		23.9	61.9
Percent Difference	%	-		-3.75	1.02
Theoretical Conductivity	µS/cm	1		2090	5050
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		74.3	682
Ion Sum	mg/L	-		1330	3560
Saturation pH (5°C)	Units	-		8.0	7.0
Langelier Index (5°C)	-	-		0.48	1.21



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## Analysis of Water

Analyte	Units	RL	RPC Sample ID	26-011210-15-2	26-011210-16-2
			Client Sample ID	Well 6-72hr	Well 7-72hr
			Date Sampled	2026-04-20	2026-04-20
Alkalinity (as CaCO <sub>3</sub> )	mg/L	10		110	230
Ammonia (as N)	mg/L	0.05		0.20	0.06
Carbon - Total Organic	mg/L	0.5		< 0.5	< 0.5
Chloride	mg/L	0.5		3330	595
Conductivity	µS/cm	1		10500	2200
Nitrate+Nitrite (as N)	mg/L	0.05		< 0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01		< 0.01	< 0.01
pH	Units	-		8.1	8.5
r-Silica (SiO <sub>2</sub> )	mg/L	0.1		7.4	7.2
Sulfate	mg/L	1		2	15
Turbidity	NTU	0.1		4.1	2.3
<b>Calculated Parameters</b>	-	-		--	--
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	0.1		111	223
Carbonate (as CaCO <sub>3</sub> )	mg/L	0.001		1.31	6.62
Hydroxide (as CaCO <sub>3</sub> )	mg/L	0.001		0.063	0.158
Cation Sum	meq/L	0.001		86.7	22.0
Anion Sum	meq/L	0.001		96.2	21.7
Percent Difference	%	-		-5.19	0.74
Theoretical Conductivity	µS/cm	1		7260	1980
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2		747	92.3
Ion Sum	mg/L	-		5340	1250
Saturation pH (5°C)	Units	-		7.5	7.9
Langelier Index (5°C)	-	-		0.64	0.58



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**Sample Received:** 2026-04-21  
**Client Job Number:** 121418452  
**PO No.:** 121418452.800

## Analysis of Metals in Water

			RPC Sample ID	26-011210-1-1	26-011210-2-1
			Client Sample ID	Well 3-Strt	Well 4-Strt
			Date Sampled	2026-04-17	2026-04-17
Analyte	Units	RL			
Aluminum	mg/L	0.001		0.044	0.181
Antimony	mg/L	0.0001		0.0001	0.0001
Arsenic	mg/L	0.001		< 0.001	< 0.001
Barium	mg/L	0.001		0.239	0.152
Beryllium	mg/L	0.0001		< 0.0001	< 0.0001
Bismuth	mg/L	0.001		< 0.001	< 0.001
Boron	mg/L	0.001		0.092	0.071
Cadmium	mg/L	0.00001		< 0.00001	0.00001
Calcium	mg/L	0.05		29.7	2.21
Chromium	mg/L	0.001		< 0.001	< 0.001
Cobalt	mg/L	0.0001		< 0.0001	0.0001
Copper	mg/L	0.001		0.001	< 0.001
Iron	mg/L	0.02		0.07	0.64
Lead	mg/L	0.0001		0.0022	0.0007
Lithium	mg/L	0.0001		0.0248	0.0095
Magnesium	mg/L	0.01		5.49	0.35
Manganese	mg/L	0.001		0.079	0.025
Molybdenum	mg/L	0.0001		0.0083	0.0179
Nickel	mg/L	0.001		< 0.001	< 0.001
Potassium	mg/L	0.02		6.49	1.57
Rubidium	mg/L	0.0001		0.0022	0.0010
Selenium	mg/L	0.001		< 0.001	< 0.001
Silver	mg/L	0.0001		< 0.0001	< 0.0001
Sodium	mg/L	0.5		56.0	112
Strontium	mg/L	0.001		1.25	0.072
Tellurium	mg/L	0.0001		< 0.0001	< 0.0001
Thallium	mg/L	0.0001		< 0.0001	< 0.0001
Tin	mg/L	0.0001		< 0.0001	< 0.0001
Uranium	mg/L	0.0001		0.0461	0.0007
Vanadium	mg/L	0.001		0.003	< 0.001
Zinc	mg/L	0.001		0.006	0.002



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**Attention:** Nathan Levesque  
**Project:** 26-011210  
**Location:** Centre Village

**Sample Received:** 2026-04-21  
**Client Job Number:** 121418452  
**PO No.:** 121418452.800

## Analysis of Metals in Water

			RPC Sample ID	26-011210-3-1	26-011210-4-1
			Client Sample ID	Well 6-Strt	Well 7-Strt
			Date Sampled	2026-04-17	2026-04-17
Analyte	Units	RL			
Aluminum	mg/L	0.001		0.04	0.081
Antimony	mg/L	0.0001		< 0.001	0.0002
Arsenic	mg/L	0.001		< 0.01	< 0.002
Barium	mg/L	0.001		5.1	0.283
Beryllium	mg/L	0.0001		< 0.001	< 0.0002
Bismuth	mg/L	0.001		< 0.01	< 0.002
Boron	mg/L	0.001		0.20	0.133
Cadmium	mg/L	0.00001		< 0.0001	< 0.00002
Calcium	mg/L	0.05		98.1	6.9
Chromium	mg/L	0.001		< 0.01	< 0.002
Cobalt	mg/L	0.0001		< 0.001	< 0.0002
Copper	mg/L	0.001		< 0.01	< 0.002
Iron	mg/L	0.02		0.3	0.42
Lead	mg/L	0.0001		0.002	0.0004
Lithium	mg/L	0.0001		0.084	0.0250
Magnesium	mg/L	0.01		12.6	0.89
Manganese	mg/L	0.001		0.20	0.026
Molybdenum	mg/L	0.0001		0.020	0.0376
Nickel	mg/L	0.001		< 0.01	< 0.002
Potassium	mg/L	0.02		9.6	3.27
Rubidium	mg/L	0.0001		0.004	0.0016
Selenium	mg/L	0.001		< 0.01	< 0.002
Silver	mg/L	0.0001		< 0.001	< 0.0002
Sodium	mg/L	0.5		996	353
Strontium	mg/L	0.001		4.53	0.302
Tellurium	mg/L	0.0001		< 0.001	< 0.0002
Thallium	mg/L	0.0001		< 0.001	< 0.0002
Tin	mg/L	0.0001		< 0.001	0.0004
Uranium	mg/L	0.0001		0.005	0.0008
Vanadium	mg/L	0.001		< 0.01	< 0.002
Zinc	mg/L	0.001		< 0.01	< 0.002



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**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Analysis of Metals in Water

			RPC Sample ID	26-011210-5-1	26-011210-6-1
			Client Sample ID	Well 3-24hr	Well 4-24hr
			Date Sampled	2026-04-18	2026-04-18
Analyte	Units	RL			
Aluminum	mg/L	0.001		0.156	0.062
Antimony	mg/L	0.0001		0.0003	< 0.0005
Arsenic	mg/L	0.001		< 0.002	< 0.005
Barium	mg/L	0.001		0.638	9.56
Beryllium	mg/L	0.0001		< 0.0002	< 0.0005
Bismuth	mg/L	0.001		< 0.002	< 0.005
Boron	mg/L	0.001		0.134	0.120
Cadmium	mg/L	0.00001		< 0.00002	< 0.00005
Calcium	mg/L	0.05		14.9	99.1
Chromium	mg/L	0.001		< 0.002	< 0.005
Cobalt	mg/L	0.0001		< 0.0002	< 0.0005
Copper	mg/L	0.001		< 0.002	< 0.005
Iron	mg/L	0.02		0.16	1.4
Lead	mg/L	0.0001		0.0007	< 0.0005
Lithium	mg/L	0.0001		0.0263	0.0532
Magnesium	mg/L	0.01		2.55	13.7
Manganese	mg/L	0.001		0.043	0.203
Molybdenum	mg/L	0.0001		0.0615	0.0192
Nickel	mg/L	0.001		< 0.002	< 0.005
Potassium	mg/L	0.02		4.27	6.9
Rubidium	mg/L	0.0001		0.0018	0.0032
Selenium	mg/L	0.001		< 0.002	< 0.005
Silver	mg/L	0.0001		< 0.0002	< 0.0005
Sodium	mg/L	0.5		281	747
Strontium	mg/L	0.001		0.674	4.72
Tellurium	mg/L	0.0001		< 0.0002	< 0.0005
Thallium	mg/L	0.0001		< 0.0002	< 0.0005
Tin	mg/L	0.0001		< 0.0002	< 0.0005
Uranium	mg/L	0.0001		0.0107	< 0.0005
Vanadium	mg/L	0.001		< 0.002	< 0.005
Zinc	mg/L	0.001		< 0.002	0.009



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**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Analysis of Metals in Water

			RPC Sample ID	26-011210-7-1	26-011210-8-1
			Client Sample ID	Well 6-24hr	Well 7-24hr
			Date Sampled	2026-04-18	2026-04-18
Analyte	Units	RL			
Aluminum	mg/L	0.001		< 0.02	0.029
Antimony	mg/L	0.0001		< 0.002	< 0.0002
Arsenic	mg/L	0.001		< 0.02	< 0.002
Barium	mg/L	0.001		9.57	0.832
Beryllium	mg/L	0.0001		< 0.002	< 0.0002
Bismuth	mg/L	0.001		< 0.02	< 0.002
Boron	mg/L	0.001		0.20	0.133
Cadmium	mg/L	0.00001		< 0.0002	< 0.00002
Calcium	mg/L	0.05		245	12.0
Chromium	mg/L	0.001		< 0.02	< 0.002
Cobalt	mg/L	0.0001		< 0.002	< 0.0002
Copper	mg/L	0.001		< 0.02	< 0.002
Iron	mg/L	0.02		0.5	< 0.04
Lead	mg/L	0.0001		< 0.002	< 0.0002
Lithium	mg/L	0.0001		0.131	0.0268
Magnesium	mg/L	0.01		29.0	1.52
Manganese	mg/L	0.001		0.53	0.023
Molybdenum	mg/L	0.0001		0.014	0.0370
Nickel	mg/L	0.001		< 0.02	< 0.002
Potassium	mg/L	0.02		14.4	3.39
Rubidium	mg/L	0.0001		0.006	0.0015
Selenium	mg/L	0.001		< 0.02	< 0.002
Silver	mg/L	0.0001		< 0.002	< 0.0002
Sodium	mg/L	0.5		1650	387
Strontium	mg/L	0.001		10.9	0.543
Tellurium	mg/L	0.0001		< 0.002	< 0.0002
Thallium	mg/L	0.0001		< 0.002	< 0.0002
Tin	mg/L	0.0001		< 0.002	< 0.0002
Uranium	mg/L	0.0001		< 0.002	0.0002
Vanadium	mg/L	0.001		< 0.02	< 0.002
Zinc	mg/L	0.001		< 0.02	< 0.002



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## Analysis of Metals in Water

			RPC Sample ID	26-011210-9-1	26-011210-10-1
			Client Sample ID	Well 3-48hr	Well 4-48hr
			Date Sampled	2026-04-19	2026-04-19
Analyte	Units	RL			
Aluminum	mg/L	0.001		0.378	0.05
Antimony	mg/L	0.0001		0.0005	< 0.001
Arsenic	mg/L	0.001		< 0.002	< 0.01
Barium	mg/L	0.001		1.08	14.8
Beryllium	mg/L	0.0001		0.0002	< 0.001
Bismuth	mg/L	0.001		< 0.002	< 0.01
Boron	mg/L	0.001		0.132	0.12
Cadmium	mg/L	0.00001		0.00004	< 0.0001
Calcium	mg/L	0.05		17.7	163
Chromium	mg/L	0.001		< 0.002	< 0.01
Cobalt	mg/L	0.0001		0.0003	< 0.001
Copper	mg/L	0.001		< 0.002	< 0.01
Iron	mg/L	0.02		0.40	2.4
Lead	mg/L	0.0001		0.0013	< 0.001
Lithium	mg/L	0.0001		0.0312	0.066
Magnesium	mg/L	0.01		2.89	22.6
Manganese	mg/L	0.001		0.069	0.30
Molybdenum	mg/L	0.0001		0.128	0.019
Nickel	mg/L	0.001		< 0.002	< 0.01
Potassium	mg/L	0.02		4.59	8.4
Rubidium	mg/L	0.0001		0.0023	0.004
Selenium	mg/L	0.001		< 0.002	< 0.01
Silver	mg/L	0.0001		< 0.0002	< 0.001
Sodium	mg/L	0.5		369	944
Strontium	mg/L	0.001		0.816	7.8
Tellurium	mg/L	0.0001		< 0.0002	< 0.001
Thallium	mg/L	0.0001		< 0.0002	< 0.001
Tin	mg/L	0.0001		< 0.0002	< 0.001
Uranium	mg/L	0.0001		0.0102	< 0.001
Vanadium	mg/L	0.001		0.003	< 0.01
Zinc	mg/L	0.001		0.004	0.01



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## Analysis of Metals in Water

			RPC Sample ID	26-011210-11-1	26-011210-12-1
			Client Sample ID	Well 6-48hr	Well 7-48hr
			Date Sampled	2026-04-19	2026-04-19
Analyte	Units	RL			
Aluminum	mg/L	0.001		< 0.02	0.026
Antimony	mg/L	0.0001		< 0.002	< 0.0002
Arsenic	mg/L	0.001		< 0.02	< 0.002
Barium	mg/L	0.001		9.7	1.39
Beryllium	mg/L	0.0001		< 0.002	< 0.0002
Bismuth	mg/L	0.001		< 0.02	< 0.002
Boron	mg/L	0.001		0.19	0.128
Cadmium	mg/L	0.00001		< 0.0002	< 0.00002
Calcium	mg/L	0.05		278	18.6
Chromium	mg/L	0.001		< 0.02	< 0.002
Cobalt	mg/L	0.0001		< 0.002	< 0.0002
Copper	mg/L	0.001		< 0.02	< 0.002
Iron	mg/L	0.02		0.5	0.04
Lead	mg/L	0.0001		< 0.002	< 0.0002
Lithium	mg/L	0.0001		0.133	0.0289
Magnesium	mg/L	0.01		32.1	2.31
Manganese	mg/L	0.001		0.61	0.037
Molybdenum	mg/L	0.0001		0.014	0.0336
Nickel	mg/L	0.001		< 0.02	< 0.002
Potassium	mg/L	0.02		14.3	3.64
Rubidium	mg/L	0.0001		0.006	0.0016
Selenium	mg/L	0.001		< 0.02	< 0.002
Silver	mg/L	0.0001		< 0.002	< 0.0002
Sodium	mg/L	0.5		1730	407
Strontium	mg/L	0.001		11.6	0.857
Tellurium	mg/L	0.0001		< 0.002	< 0.0002
Thallium	mg/L	0.0001		< 0.002	< 0.0002
Tin	mg/L	0.0001		< 0.002	< 0.0002
Uranium	mg/L	0.0001		< 0.002	0.0002
Vanadium	mg/L	0.001		< 0.02	< 0.002
Zinc	mg/L	0.001		< 0.02	< 0.002



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**Project:** 26-011210

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## Analysis of Metals in Water

			RPC Sample ID	26-011210-13-2	26-011210-14-2
			Client Sample ID	Well 3-72hr	Well 4-72hr
			Date Sampled	2026-04-20	2026-04-20
Analyte	Units	RL			
Aluminum	mg/L	0.001		0.322	0.06
Antimony	mg/L	0.0001		0.0008	< 0.001
Arsenic	mg/L	0.001		< 0.005	< 0.01
Barium	mg/L	0.001		1.53	21.2
Beryllium	mg/L	0.0001		< 0.0005	< 0.001
Bismuth	mg/L	0.001		< 0.005	< 0.01
Boron	mg/L	0.001		0.141	0.13
Cadmium	mg/L	0.00001		< 0.00005	< 0.0001
Calcium	mg/L	0.05		23.6	223
Chromium	mg/L	0.001		< 0.005	< 0.01
Cobalt	mg/L	0.0001		< 0.0005	< 0.001
Copper	mg/L	0.001		< 0.005	< 0.01
Iron	mg/L	0.02		0.4	3.1
Lead	mg/L	0.0001		0.0012	< 0.001
Lithium	mg/L	0.0001		0.0392	0.079
Magnesium	mg/L	0.01		3.73	30.5
Manganese	mg/L	0.001		0.085	0.38
Molybdenum	mg/L	0.0001		0.152	0.017
Nickel	mg/L	0.001		< 0.005	< 0.01
Potassium	mg/L	0.02		5.4	9.6
Rubidium	mg/L	0.0001		0.0025	0.005
Selenium	mg/L	0.001		< 0.005	< 0.01
Silver	mg/L	0.0001		< 0.0005	< 0.001
Sodium	mg/L	0.5		471	1130
Strontium	mg/L	0.001		1.07	10.3
Tellurium	mg/L	0.0001		< 0.0005	< 0.001
Thallium	mg/L	0.0001		< 0.0005	< 0.001
Tin	mg/L	0.0001		< 0.0005	< 0.001
Uranium	mg/L	0.0001		0.0093	< 0.001
Vanadium	mg/L	0.001		< 0.005	< 0.01
Zinc	mg/L	0.001		< 0.005	0.02



# Certificate of Analysis

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Report Date: 2026-04-29

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 Fax: 506.855.8294  
[www.rpc.ca](http://www.rpc.ca)

Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7

**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Analysis of Metals in Water

			RPC Sample ID	26-011210-15-2	26-011210-16-2
			Client Sample ID	Well 6-72hr	Well 7-72hr
			Date Sampled	2026-04-20	2026-04-20
Analyte	Units	RL			
Aluminum	mg/L	0.001	< 0.02	0.030	
Antimony	mg/L	0.0001	< 0.002	< 0.0005	
Arsenic	mg/L	0.001	< 0.02	< 0.005	
Barium	mg/L	0.001	9.64	2.59	
Beryllium	mg/L	0.0001	< 0.002	< 0.0005	
Bismuth	mg/L	0.001	< 0.02	< 0.005	
Boron	mg/L	0.001	0.19	0.132	
Cadmium	mg/L	0.00001	< 0.0002	< 0.00005	
Calcium	mg/L	0.05	250	30.6	
Chromium	mg/L	0.001	< 0.02	< 0.005	
Cobalt	mg/L	0.0001	< 0.002	< 0.0005	
Copper	mg/L	0.001	< 0.02	< 0.005	
Iron	mg/L	0.02	0.5	< 0.1	
Lead	mg/L	0.0001	< 0.002	< 0.0005	
Lithium	mg/L	0.0001	0.128	0.0328	
Magnesium	mg/L	0.01	29.9	3.87	
Manganese	mg/L	0.001	0.54	0.063	
Molybdenum	mg/L	0.0001	0.015	0.0311	
Nickel	mg/L	0.001	< 0.02	< 0.005	
Potassium	mg/L	0.02	15.6	4.1	
Rubidium	mg/L	0.0001	0.006	0.0018	
Selenium	mg/L	0.001	< 0.02	< 0.005	
Silver	mg/L	0.0001	< 0.002	< 0.0005	
Sodium	mg/L	0.5	1640	461	
Strontium	mg/L	0.001	10.9	1.39	
Tellurium	mg/L	0.0001	< 0.002	< 0.0005	
Thallium	mg/L	0.0001	< 0.002	< 0.0005	
Tin	mg/L	0.0001	< 0.002	< 0.0005	
Uranium	mg/L	0.0001	< 0.002	< 0.0005	
Vanadium	mg/L	0.001	< 0.02	< 0.005	
Zinc	mg/L	0.001	< 0.02	< 0.005	



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**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

## Methods

Test	RPC SOP
Alkalinity (as CaCO <sub>3</sub> )	IAS-M43
Ammonia (as N)	IAS-M47
Analysis of Metals in Water	IAS-M01 / IAS-M29
Chloride	IAS-M44
Conductivity	IAS-M04
Nitrate+Nitrite (as N)	IAS-M48
pH	IAS-M03
r-Silica	IAS-M46
Solids - Total Dissolved	IAS-M64
Solids - Total Suspended	IAS-M05
Sulfate	IAS-M45
Total Organic Carbon	IAS-M57
Turbidity	IAS-M06

## Report Information

This report relates only to the sample(s) and information provided to the laboratory.

Reported results are expressed on an as-received basis.

SOP = Standard Operating Procedure

RL = Reporting Limit

## Lab Comments

Samples 26-011210 - 1 to 8 were past the hold time for o-Phosphate and Nitrate+Nitrite-N analyses upon receipt at the laboratory.

Samples 26-011210 - 1 to 4 were past the hold time for Turbidity analysis upon receipt at the laboratory.



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**PO No.:** 121418452.800

## Summary of Date Analyzed:

RPC Sample ID	Test / Analysis	Date Extracted	Date Analyzed
26-011210-1-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-1-1	Ammonia (as N)	-	2026-04-23
26-011210-1-1	Analysis of Metals in Water	-	2026-04-28
26-011210-1-1	Chloride	-	2026-04-23
26-011210-1-1	Conductivity	-	2026-04-24
26-011210-1-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-1-1	o-Phospate	-	2026-04-23
26-011210-1-1	pH	-	2026-04-24
26-011210-1-1	r-Silica	-	2026-04-23
26-011210-1-1	Solids - Total Dissolved	-	2026-04-28
26-011210-1-1	Solids - Total Suspended	-	2026-04-28
26-011210-1-1	Sulfate	-	2026-04-23
26-011210-1-1	Total Organic Carbon	-	2026-04-23
26-011210-1-1	Turbidity	-	2026-04-28
26-011210-2-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-2-1	Ammonia (as N)	-	2026-04-23
26-011210-2-1	Analysis of Metals in Water	-	2026-04-28
26-011210-2-1	Chloride	-	2026-04-23
26-011210-2-1	Conductivity	-	2026-04-24
26-011210-2-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-2-1	o-Phospate	-	2026-04-23
26-011210-2-1	pH	-	2026-04-24
26-011210-2-1	r-Silica	-	2026-04-23
26-011210-2-1	Solids - Total Dissolved	-	2026-04-28
26-011210-2-1	Solids - Total Suspended	-	2026-04-28
26-011210-2-1	Sulfate	-	2026-04-23
26-011210-2-1	Total Organic Carbon	-	2026-04-23
26-011210-2-1	Turbidity	-	2026-04-28
26-011210-3-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-3-1	Ammonia (as N)	-	2026-04-23
26-011210-3-1	Analysis of Metals in Water	-	2026-04-28
26-011210-3-1	Chloride	-	2026-04-23
26-011210-3-1	Conductivity	-	2026-04-24



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26-011210-3-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-3-1	o-Phospate	-	2026-04-23
26-011210-3-1	pH	-	2026-04-24
26-011210-3-1	r-Silica	-	2026-04-23
26-011210-3-1	Solids - Total Dissolved	-	2026-04-28
26-011210-3-1	Solids - Total Suspended	-	2026-04-28
26-011210-3-1	Sulfate	-	2026-04-23
26-011210-3-1	Total Organic Carbon	-	2026-04-23
26-011210-3-1	Turbidity	-	2026-04-28
26-011210-4-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-4-1	Ammonia (as N)	-	2026-04-23
26-011210-4-1	Analysis of Metals in Water	-	2026-04-28
26-011210-4-1	Chloride	-	2026-04-23
26-011210-4-1	Conductivity	-	2026-04-24
26-011210-4-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-4-1	o-Phospate	-	2026-04-23
26-011210-4-1	pH	-	2026-04-24
26-011210-4-1	r-Silica	-	2026-04-23
26-011210-4-1	Solids - Total Dissolved	-	2026-04-28
26-011210-4-1	Solids - Total Suspended	-	2026-04-28
26-011210-4-1	Sulfate	-	2026-04-23
26-011210-4-1	Total Organic Carbon	-	2026-04-23
26-011210-4-1	Turbidity	-	2026-04-28
26-011210-5-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-5-1	Ammonia (as N)	-	2026-04-23
26-011210-5-1	Analysis of Metals in Water	-	2026-04-28
26-011210-5-1	Chloride	-	2026-04-23
26-011210-5-1	Conductivity	-	2026-04-24
26-011210-5-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-5-1	o-Phospate	-	2026-04-23
26-011210-5-1	pH	-	2026-04-24
26-011210-5-1	r-Silica	-	2026-04-23
26-011210-5-1	Solids - Total Dissolved	-	2026-04-28
26-011210-5-1	Solids - Total Suspended	-	2026-04-28
26-011210-5-1	Sulfate	-	2026-04-23



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26-011210-5-1	Total Organic Carbon	-	2026-04-23
26-011210-5-1	Turbidity	-	2026-04-28
26-011210-6-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-6-1	Ammonia (as N)	-	2026-04-23
26-011210-6-1	Analysis of Metals in Water	-	2026-04-28
26-011210-6-1	Chloride	-	2026-04-23
26-011210-6-1	Conductivity	-	2026-04-24
26-011210-6-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-6-1	o-Phospate	-	2026-04-23
26-011210-6-1	pH	-	2026-04-24
26-011210-6-1	r-Silica	-	2026-04-23
26-011210-6-1	Solids - Total Dissolved	-	2026-04-28
26-011210-6-1	Solids - Total Suspended	-	2026-04-28
26-011210-6-1	Sulfate	-	2026-04-23
26-011210-6-1	Total Organic Carbon	-	2026-04-23
26-011210-6-1	Turbidity	-	2026-04-28
26-011210-7-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-7-1	Ammonia (as N)	-	2026-04-23
26-011210-7-1	Analysis of Metals in Water	-	2026-04-28
26-011210-7-1	Chloride	-	2026-04-23
26-011210-7-1	Conductivity	-	2026-04-24
26-011210-7-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-7-1	o-Phospate	-	2026-04-23
26-011210-7-1	pH	-	2026-04-24
26-011210-7-1	r-Silica	-	2026-04-23
26-011210-7-1	Solids - Total Dissolved	-	2026-04-28
26-011210-7-1	Solids - Total Suspended	-	2026-04-28
26-011210-7-1	Sulfate	-	2026-04-23
26-011210-7-1	Total Organic Carbon	-	2026-04-23
26-011210-7-1	Turbidity	-	2026-04-28
26-011210-8-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-8-1	Ammonia (as N)	-	2026-04-23
26-011210-8-1	Analysis of Metals in Water	-	2026-04-28
26-011210-8-1	Chloride	-	2026-04-23
26-011210-8-1	Conductivity	-	2026-04-24



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26-011210-8-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-8-1	o-Phospate	-	2026-04-23
26-011210-8-1	pH	-	2026-04-24
26-011210-8-1	r-Silica	-	2026-04-23
26-011210-8-1	Solids - Total Dissolved	-	2026-04-28
26-011210-8-1	Solids - Total Suspended	-	2026-04-28
26-011210-8-1	Sulfate	-	2026-04-23
26-011210-8-1	Total Organic Carbon	-	2026-04-23
26-011210-8-1	Turbidity	-	2026-04-28
26-011210-9-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-9-1	Ammonia (as N)	-	2026-04-23
26-011210-9-1	Analysis of Metals in Water	-	2026-04-28
26-011210-9-1	Chloride	-	2026-04-23
26-011210-9-1	Conductivity	-	2026-04-24
26-011210-9-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-9-1	o-Phospate	-	2026-04-23
26-011210-9-1	pH	-	2026-04-24
26-011210-9-1	r-Silica	-	2026-04-23
26-011210-9-1	Solids - Total Dissolved	-	2026-04-28
26-011210-9-1	Solids - Total Suspended	-	2026-04-28
26-011210-9-1	Sulfate	-	2026-04-23
26-011210-9-1	Total Organic Carbon	-	2026-04-23
26-011210-9-1	Turbidity	-	2026-04-28
26-011210-10-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-10-1	Ammonia (as N)	-	2026-04-23
26-011210-10-1	Analysis of Metals in Water	-	2026-04-28
26-011210-10-1	Chloride	-	2026-04-23
26-011210-10-1	Conductivity	-	2026-04-24
26-011210-10-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-10-1	o-Phospate	-	2026-04-23
26-011210-10-1	pH	-	2026-04-24
26-011210-10-1	r-Silica	-	2026-04-23
26-011210-10-1	Solids - Total Dissolved	-	2026-04-28
26-011210-10-1	Solids - Total Suspended	-	2026-04-28
26-011210-10-1	Sulfate	-	2026-04-23



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26-011210-10-1	Total Organic Carbon	-	2026-04-23
26-011210-10-1	Turbidity	-	2026-04-28
26-011210-11-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-11-1	Ammonia (as N)	-	2026-04-23
26-011210-11-1	Analysis of Metals in Water	-	2026-04-28
26-011210-11-1	Chloride	-	2026-04-23
26-011210-11-1	Conductivity	-	2026-04-24
26-011210-11-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-11-1	o-Phospate	-	2026-04-23
26-011210-11-1	pH	-	2026-04-24
26-011210-11-1	r-Silica	-	2026-04-23
26-011210-11-1	Solids - Total Dissolved	-	2026-04-28
26-011210-11-1	Solids - Total Suspended	-	2026-04-28
26-011210-11-1	Sulfate	-	2026-04-23
26-011210-11-1	Total Organic Carbon	-	2026-04-23
26-011210-11-1	Turbidity	-	2026-04-28
26-011210-12-1	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-12-1	Ammonia (as N)	-	2026-04-23
26-011210-12-1	Analysis of Metals in Water	-	2026-04-28
26-011210-12-1	Chloride	-	2026-04-23
26-011210-12-1	Conductivity	-	2026-04-24
26-011210-12-1	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-12-1	o-Phospate	-	2026-04-23
26-011210-12-1	pH	-	2026-04-24
26-011210-12-1	r-Silica	-	2026-04-23
26-011210-12-1	Solids - Total Dissolved	-	2026-04-28
26-011210-12-1	Solids - Total Suspended	-	2026-04-28
26-011210-12-1	Sulfate	-	2026-04-23
26-011210-12-1	Total Organic Carbon	-	2026-04-23
26-011210-12-1	Turbidity	-	2026-04-28
26-011210-13-2	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-13-2	Ammonia (as N)	-	2026-04-23
26-011210-13-2	Analysis of Metals in Water	-	2026-04-28
26-011210-13-2	Chloride	-	2026-04-23
26-011210-13-2	Conductivity	-	2026-04-24



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26-011210-13-2	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-13-2	o-Phospate	-	2026-04-23
26-011210-13-2	pH	-	2026-04-24
26-011210-13-2	r-Silica	-	2026-04-23
26-011210-13-2	Solids - Total Dissolved	-	2026-04-28
26-011210-13-2	Solids - Total Suspended	-	2026-04-28
26-011210-13-2	Sulfate	-	2026-04-23
26-011210-13-2	Total Organic Carbon	-	2026-04-23
26-011210-13-2	Turbidity	-	2026-04-28
26-011210-14-2	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-14-2	Ammonia (as N)	-	2026-04-23
26-011210-14-2	Analysis of Metals in Water	-	2026-04-28
26-011210-14-2	Chloride	-	2026-04-23
26-011210-14-2	Conductivity	-	2026-04-24
26-011210-14-2	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-14-2	o-Phospate	-	2026-04-23
26-011210-14-2	pH	-	2026-04-24
26-011210-14-2	r-Silica	-	2026-04-23
26-011210-14-2	Solids - Total Dissolved	-	2026-04-28
26-011210-14-2	Solids - Total Suspended	-	2026-04-28
26-011210-14-2	Sulfate	-	2026-04-23
26-011210-14-2	Total Organic Carbon	-	2026-04-23
26-011210-14-2	Turbidity	-	2026-04-28
26-011210-15-2	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-15-2	Ammonia (as N)	-	2026-04-23
26-011210-15-2	Analysis of Metals in Water	-	2026-04-28
26-011210-15-2	Chloride	-	2026-04-23
26-011210-15-2	Conductivity	-	2026-04-24
26-011210-15-2	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-15-2	o-Phospate	-	2026-04-23
26-011210-15-2	pH	-	2026-04-24
26-011210-15-2	r-Silica	-	2026-04-23
26-011210-15-2	Solids - Total Dissolved	-	2026-04-28
26-011210-15-2	Solids - Total Suspended	-	2026-04-28
26-011210-15-2	Sulfate	-	2026-04-23



# Certificate of Analysis

Report ID: 26-011210-IAS

Report Date: 2026-04-29

115A Harrisville Blvd  
Moncton, NB E1H 3T3  
Canada Tel: 506.855.6472  
Fax: 506.855.8294  
[www.rpc.ca](http://www.rpc.ca)

Stantec Consulting Ltd  
845 Prospect Street  
Fredericton, NB E3B 2T7

**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452

**PO No.:** 121418452.800

26-011210-15-2	Total Organic Carbon	-	2026-04-23
26-011210-15-2	Turbidity	-	2026-04-28
26-011210-16-2	Alkalinity (as CaCO <sub>3</sub> )	-	2026-04-23
26-011210-16-2	Ammonia (as N)	-	2026-04-23
26-011210-16-2	Analysis of Metals in Water	-	2026-04-28
26-011210-16-2	Chloride	-	2026-04-23
26-011210-16-2	Conductivity	-	2026-04-24
26-011210-16-2	Nitrate+Nitrite (as N)	-	2026-04-23
26-011210-16-2	o-Phosphate	-	2026-04-23
26-011210-16-2	pH	-	2026-04-24
26-011210-16-2	r-Silica	-	2026-04-23
26-011210-16-2	Solids - Total Dissolved	-	2026-04-28
26-011210-16-2	Solids - Total Suspended	-	2026-04-28
26-011210-16-2	Sulfate	-	2026-04-23
26-011210-16-2	Total Organic Carbon	-	2026-04-23
26-011210-16-2	Turbidity	-	2026-04-28



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## Certificate of Analysis

Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7

Report ID: 26-011210-MICRO\_MB  
 Report Date: 2026-04-22

**Attention:** Nathan Levesque  
**Project:** 26-011210  
**Location:** Centre Village

**Sample Received:** 2026-04-21  
**Client Job Number:** 121418452.800  
**PO No.:** 11418452.800

### Microbiological Examination of Water

			26-011210-13-1	26-011210-14-1	26-011210-15-1
RPC Sample ID					
Client Sample ID			Well 3-72hr	Well 4-72hr	Well 6-72hr
Matrix			Water	Water	Water
Date/Time Sampled			2026-04-20 12:39:00	2026-04-20 12:24:00	2026-04-20 11:41:00
Analyte	Units	RL			
Total Coliforms	MPN/100mL	-	0	0	0
E. coli	MPN/100mL	-	0	0	0

Michael Lawlor  
 Microbiology



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## Certificate of Analysis

Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7

Report ID: 26-011210-MICRO\_MB  
 Report Date: 2026-04-22

**Attention:** Nathan Levesque

**Project:** 26-011210

**Location:** Centre Village

**Sample Received:** 2026-04-21

**Client Job Number:** 121418452.800

**PO No.:** 11418452.800

### Microbiological Examination of Water

	<b>RPC Sample ID</b>	26-011210-16-1	
	<b>Client Sample ID</b>	Well 7-72hr	
	<b>Matrix</b>	Water	
	<b>Date/Time Sampled</b>	2026-04-20 11:27:00	
<b>Analyte</b>	<b>Units</b>	<b>RL</b>	
Total Coliforms	MPN/100mL	-	0
E. coli	MPN/100mL	-	0



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## Certificate of Analysis

Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7

Report ID: 26-011210-MICRO\_MB  
 Report Date: 2026-04-22

**Attention:** Nathan Levesque  
**Project:** 26-011210  
**Location:** Centre Village

**Sample Received:** 2026-04-21  
**Client Job Number:** 121418452.800  
**PO No.:** 11418452.800

### Methods

Test	RPC SOP
Total Coliforms and E. coli	MICRO10

### Report Information

This report relates only to the sample(s) and information provided to the laboratory.

Reported results are expressed on an as-received basis.

#### Legend:

RL = Reporting Limit; MAC = Maximum Allowable Concentration; MPN = Most Probable Number; cfu = Colony-Forming Unit;  
 gc/mL = genomic copies/mL; ug/L = micrograms per liter; P = present; A = absent; pp = presumptive positive; E = Estimate;  
 ND = Not Detected; OG = Overgrown; TNTC = Too Numerous to Count

### Lab Comments

26-011210-13-1, results may be affected by sample matrix interference (colour)

### Summary of Date Analyzed:

RPC Sample ID	Test / Analysis	Date Extracted	Date Analyzed
26-011210-13-1	Total Coliforms and E. coli	-	2026-04-21
26-011210-14-1	Total Coliforms and E. coli	-	2026-04-21
26-011210-15-1	Total Coliforms and E. coli	-	2026-04-21
26-011210-16-1	Total Coliforms and E. coli	-	2026-04-21

Report ID: 571683-IAS  
 Report Date: 22-Jan-26  
 Date Received: 14-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7



921 College Hill Rd  
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 Canada E3B 6Z9  
 Tel: 506.452.1212  
 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Water

RPC Sample ID:			571683-1
Client Sample ID:			TW-3 24 Hour
Date Sampled:			14-Jan-26
Analytes	Units	RL	
Sodium	mg/L	0.05	458.
Potassium	mg/L	0.02	4.9
Calcium	mg/L	0.05	17.8
Magnesium	mg/L	0.01	2.86
Iron	mg/L	0.02	0.1
Manganese	mg/L	0.001	0.056
Copper	mg/L	0.001	< 0.005
Zinc	mg/L	0.001	0.012
Ammonia (as N)	mg/L	0.05	0.06
pH	units	-	8.5
Alkalinity (as CaCO <sub>3</sub> )	mg/L	2	250
Chloride	mg/L	0.5	596
Sulfate	mg/L	1	7
Nitrate + Nitrite (as N)	mg/L	0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	< 0.01
r-Silica (as SiO <sub>2</sub> )	mg/L	0.1	8.0
Carbon - Total Organic	mg/L	0.5	< 0.5
Turbidity	NTU	0.1	14.3
Solids - Total Suspended	mg/L	5	< 5
Conductivity	µS/cm	1	2270
<b>Calculated Parameters</b>			
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	-	243.
Carbonate (as CaCO <sub>3</sub> )	mg/L	-	7.21
Hydroxide (as CaCO <sub>3</sub> )	mg/L	-	0.158
Cation Sum	meq/L	-	21.2
Anion Sum	meq/L	-	22.0
Percent Difference	%	-	-1.78
Theoretical Conductivity	µS/cm	-	1950
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	56.2
Ion Sum	mg/L	-	1250
Saturation pH (5°C)	units	-	8.1
Langelier Index (5°C)	-	-	0.39

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit; Organic Carbon and ion chemistries for turbid samples are determined on filtered aliquots.

Troy Smith  
 Supervisor  
 Inorganic Analytical Services

Krista Skinner  
 Senior Chemical Technician  
 Inorganic Analytical Services

Report ID: 571683-IAS  
 Report Date: 22-Jan-26  
 Date Received: 14-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
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 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Metals in Water

RPC Sample ID:			571683-1
Client Sample ID:			TW-3 24 Hour
Date Sampled:			14-Jan-26
Analytes	Units	RL	
Aluminum	µg/L	1	117
Antimony	µg/L	0.1	0.6
Arsenic	µg/L	1	< 5
Barium	µg/L	1	1040
Beryllium	µg/L	0.1	< 0.5
Bismuth	µg/L	1	< 5
Boron	µg/L	1	161
Cadmium	µg/L	0.01	< 0.05
Calcium	µg/L	50	17800
Chromium	µg/L	1	< 5
Cobalt	µg/L	0.1	< 0.5
Copper	µg/L	1	< 5
Iron	µg/L	20	100
Lead	µg/L	0.1	< 0.5
Lithium	µg/L	0.1	36.5
Magnesium	µg/L	10	2860
Manganese	µg/L	1	56
Molybdenum	µg/L	0.1	152.
Nickel	µg/L	1	< 5
Potassium	µg/L	20	4900
Rubidium	µg/L	0.1	2.1
Selenium	µg/L	1	< 5
Silver	µg/L	0.1	< 0.5
Sodium	µg/L	50	458000
Strontium	µg/L	1	842
Tellurium	µg/L	0.1	< 0.5
Thallium	µg/L	0.1	< 0.5
Tin	µg/L	0.1	< 0.5
Uranium	µg/L	0.1	4.5
Vanadium	µg/L	1	< 5
Zinc	µg/L	1	12

Report ID: 571683-IAS  
Report Date: 22-Jan-26  
Date Received: 14-Jan-26

## CERTIFICATE OF ANALYSIS

for  
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Canada E3B 6Z9  
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Fax: 506.452.0594  
www.rpc.ca

### Methods

<u>Analyte</u>	<u>RPC SOP #</u>	<u>Method Reference</u>	<u>Method Principle</u>
Ammonia	IAS-M47	APHA 4500-NH <sub>3</sub> G	Phenate Colourimetry
pH	IAS-M03	APHA 4500-H <sup>+</sup> B	pH Electrode - Electrometric
Alkalinity (as CaCO <sub>3</sub> )	IAS-M43	EPA 310.2	Methyl Orange Colourimetry
Chloride	IAS-M44	APHA 4500-CL E	Ferricyanide Colourimetry
Sulfate	IAS-M45	APHA 4500-SO <sub>4</sub> E	Turbidimetry
Nitrate + Nitrite (as N)	IAS-M48	APHA 4500-NO <sub>3</sub> H	Hydrazine Red., Derivatization, Colourimetry
o-Phosphate (as P)	IAS-M50	APHA 4500-P F	Molybdate/Ascorbic Acid Colourimetry
r-Silica (as SiO <sub>2</sub> )	IAS-M46	APHA 4500-SI F	Heteropoly Blue Colourimetry
Carbon - Total Organic	IAS-M57	APHA 5310 B	Combustion/NDIR
Turbidity	IAS-M06	APHA 2130 B	Nephelometry
Conductivity	IAS-M04	APHA 2510 B	Conductivity Meter - Electrode
Solids - Total Suspended	IAS-M05	APHA 2540 D	Filtration, Gravimetry
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

## CERTIFICATE OF ANALYSIS / CERTIFICAT D'ANALYSE

for/pour  
Stantec Consulting Ltd  
845 Prospect Street  
Fredericton, NB E3B 2T7



115A Harrisville Blvd  
Moncton NB  
Canada E1H 3T3  
Tel: 506.855.6472  
rpc.ca

Attention: Parrish Arnott

**Project/Job #: 121418452**

Location: Centre Village

### Examination of Water/Examen de l'eau

RPC Sample ID/No. d'échantillon de RPC:				571683-1
Client Sample ID/ID d'échantillon du client:				TW-3 24 Hour
Date collected/Date du prélèvement:				14-Jan-26
Time sampled/Heure du prélèvement:				10:00:00 AM
Analytes/Paramètre(s)	Method Méthode	Date Analyzed Date Analysé	Units Unités	
Total Coliforms/Coliformes totaux	MICRO10	14-Jan-26	MPN/100mL	0
E. coli	MICRO10	14-Jan-26	MPN/100mL	0

This report relates only to the sample(s) and information provided to the laboratory.

Le présent rapport ne s'applique qu'aux échantillons et à l'information transmis au laboratoire.

#### LEGEND:

RL/SD = Reporting Limit/Seuil de déclaration cfu/ufc = Colony Forming Units/Unités formant des colonies

MPN/NPP = Most Probable Number/Nombre Plus Probable

Michael Lawlor  
Lab Supervisor  
Moncton Laboratory/Laboratoire de Moncton

Nadine Godin  
Microbiology Technician  
Moncton Laboratory/Laboratoire de Moncton

Report ID: 571757-IAS  
 Report Date: 23-Jan-26  
 Date Received: 15-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7



921 College Hill Rd  
 Fredericton NB  
 Canada E3B 6Z9  
 Tel: 506.452.1212  
 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Water

RPC Sample ID:			571757-1
Client Sample ID:			TW-3 48 hour
Date Sampled:			15-Jan-26
Analytes	Units	RL	
Sodium	mg/L	0.05	469.
Potassium	mg/L	0.02	4.8
Calcium	mg/L	0.05	17.7
Magnesium	mg/L	0.01	2.73
Iron	mg/L	0.02	< 0.1
Manganese	mg/L	0.001	0.052
Copper	mg/L	0.001	< 0.005
Zinc	mg/L	0.001	< 0.005
Ammonia (as N)	mg/L	0.05	< 0.05
pH	units	-	8.5
Alkalinity (as CaCO <sub>3</sub> )	mg/L	2	240
Chloride	mg/L	0.5	642
Sulfate	mg/L	1	6
Nitrate + Nitrite (as N)	mg/L	0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	< 0.01
r-Silica (as SiO <sub>2</sub> )	mg/L	0.1	7.7
Carbon - Total Organic	mg/L	0.5	< 0.5
Turbidity	NTU	0.1	6.0
Solids - Total Suspended	mg/L	5	< 5
Conductivity	µS/cm	1	2370
<b>Calculated Parameters</b>			
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	-	233.
Carbonate (as CaCO <sub>3</sub> )	mg/L	-	6.92
Hydroxide (as CaCO <sub>3</sub> )	mg/L	-	0.158
Cation Sum	meq/L	-	21.6
Anion Sum	meq/L	-	23.0
Percent Difference	%	-	-3.13
Theoretical Conductivity	µS/cm	-	2030
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	55.4
Ion Sum	mg/L	-	1300
Saturation pH (5°C)	units	-	8.1
Langelier Index (5°C)	-	-	0.36

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit; Organic Carbon and ion chemistries for turbid samples are determined on filtered aliquots.

Troy Smith  
 Supervisor  
 Inorganic Analytical Services

Krista Skinner  
 Senior Chemical Technician  
 Inorganic Analytical Services

Report ID: 571757-IAS  
 Report Date: 23-Jan-26  
 Date Received: 15-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7



921 College Hill Rd  
 Fredericton NB  
 Canada E3B 6Z9  
 Tel: 506.452.1212  
 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Metals in Water

RPC Sample ID:			571757-1
Client Sample ID:			TW-3 48 hour
Date Sampled:			15-Jan-26
Analytes	Units	RL	
Aluminum	µg/L	1	42
Antimony	µg/L	0.1	< 0.5
Arsenic	µg/L	1	< 5
Barium	µg/L	1	1100
Beryllium	µg/L	0.1	< 0.5
Bismuth	µg/L	1	< 5
Boron	µg/L	1	162
Cadmium	µg/L	0.01	< 0.05
Calcium	µg/L	50	17700
Chromium	µg/L	1	< 5
Cobalt	µg/L	0.1	< 0.5
Copper	µg/L	1	< 5
Iron	µg/L	20	< 100
Lead	µg/L	0.1	< 0.5
Lithium	µg/L	0.1	38.1
Magnesium	µg/L	10	2730
Manganese	µg/L	1	52
Molybdenum	µg/L	0.1	57.6
Nickel	µg/L	1	< 5
Potassium	µg/L	20	4800
Rubidium	µg/L	0.1	1.9
Selenium	µg/L	1	< 5
Silver	µg/L	0.1	< 0.5
Sodium	µg/L	50	469000
Strontium	µg/L	1	831
Tellurium	µg/L	0.1	< 0.5
Thallium	µg/L	0.1	< 0.5
Tin	µg/L	0.1	< 0.5
Uranium	µg/L	0.1	3.3
Vanadium	µg/L	1	< 5
Zinc	µg/L	1	< 5

Report ID: 571757-IAS  
Report Date: 23-Jan-26  
Date Received: 15-Jan-26

## CERTIFICATE OF ANALYSIS

for  
Stantec Consulting Ltd  
845 Prospect Street  
Fredericton, NB E3B 2T7



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Canada E3B 6Z9  
Tel: 506.452.1212  
Fax: 506.452.0594  
www.rpc.ca

### Methods

<u>Analyte</u>	<u>RPC SOP #</u>	<u>Method Reference</u>	<u>Method Principle</u>
Ammonia	IAS-M47	APHA 4500-NH <sub>3</sub> G	Phenate Colourimetry
pH	IAS-M03	APHA 4500-H <sup>+</sup> B	pH Electrode - Electrometric
Alkalinity (as CaCO <sub>3</sub> )	IAS-M43	EPA 310.2	Methyl Orange Colourimetry
Chloride	IAS-M44	APHA 4500-CL E	Ferricyanide Colourimetry
Sulfate	IAS-M45	APHA 4500-SO <sub>4</sub> E	Turbidimetry
Nitrate + Nitrite (as N)	IAS-M48	APHA 4500-NO <sub>3</sub> H	Hydrazine Red., Derivatization, Colourimetry
o-Phosphate (as P)	IAS-M50	APHA 4500-P F	Molybdate/Ascorbic Acid Colourimetry
r-Silica (as SiO <sub>2</sub> )	IAS-M46	APHA 4500-SI F	Heteropoly Blue Colourimetry
Carbon - Total Organic	IAS-M57	APHA 5310 B	Combustion/NDIR
Turbidity	IAS-M06	APHA 2130 B	Nephelometry
Conductivity	IAS-M04	APHA 2510 B	Conductivity Meter - Electrode
Solids - Total Suspended	IAS-M05	APHA 2540 D	Filtration, Gravimetry
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

## CERTIFICATE OF ANALYSIS / CERTIFICAT D'ANALYSE

for/pour  
Stantec Consulting Ltd  
845 Prospect Street  
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Moncton NB  
Canada E1H 3T3  
Tel: 506.855.6472  
rpc.ca

Attention: Parrish Arnott

**Project/Job #: 121418452**

Location: Centre Village

### Examination of Water/Examen de l'eau

RPC Sample ID/No. d'échantillon de RPC:				571757-1
Client Sample ID/ID d'échantillon du client:				TW-3 48 hour
Date collected/Date du prélèvement:				15-Jan-26
Time sampled/Heure du prélèvement:				10:00:00 AM
Analytes/Paramètre(s)	Method Méthode	Date Analyzed Date Analysé	Units Unités	
Total Coliforms/Coliformes totaux	MICRO10	15-Jan-26	MPN/100mL	0
E. coli	MICRO10	15-Jan-26	MPN/100mL	0

This report relates only to the sample(s) and information provided to the laboratory.

Le présent rapport ne s'applique qu'aux échantillons et à l'information transmis au laboratoire.

#### LEGEND:

RL/SD = Reporting Limit/Seuil de déclaration cfu/ufc = Colony Forming Units/Unités formant des colonies

MPN/NPP = Most Probable Number/Nombre Plus Probable

Michael Lawlor  
Lab Supervisor  
Moncton Laboratory/Laboratoire de Moncton

Luc LeBouthillier  
Lab Technician  
Moncton Laboratory/Laboratoire de Moncton

Report ID: 571802-IAS  
 Report Date: 23-Jan-26  
 Date Received: 16-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
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 Tel: 506.452.1212  
 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Water

RPC Sample ID:			571802-1
Client Sample ID:			TW-3 72 Hour
Date Sampled:			16-Jan-26
Analytes	Units	RL	
Sodium	mg/L	0.05	482.
Potassium	mg/L	0.02	4.8
Calcium	mg/L	0.05	17.9
Magnesium	mg/L	0.01	2.76
Iron	mg/L	0.02	0.1
Manganese	mg/L	0.001	0.052
Copper	mg/L	0.001	< 0.005
Zinc	mg/L	0.001	< 0.005
Ammonia (as N)	mg/L	0.05	0.13
pH	units	-	8.4
Alkalinity (as CaCO <sub>3</sub> )	mg/L	2	270
Chloride	mg/L	0.5	666
Sulfate	mg/L	1	6
Nitrate + Nitrite (as N)	mg/L	0.05	< 0.05
o-Phosphate (as P)	mg/L	0.01	< 0.01
r-Silica (as SiO <sub>2</sub> )	mg/L	0.1	7.4
Carbon - Total Organic	mg/L	0.5	< 0.5
Turbidity	NTU	0.1	13.5
Solids - Total Suspended	mg/L	5	< 5
Conductivity	µS/cm	1	2420
<b>Calculated Parameters</b>			
Bicarbonate (as CaCO <sub>3</sub> )	mg/L	-	264.
Carbonate (as CaCO <sub>3</sub> )	mg/L	-	6.22
Hydroxide (as CaCO <sub>3</sub> )	mg/L	-	0.126
Cation Sum	meq/L	-	22.2
Anion Sum	meq/L	-	24.3
Percent Difference	%	-	-4.47
Theoretical Conductivity	µS/cm	-	2100
Hardness (as CaCO <sub>3</sub> )	mg/L	0.2	56.1
Ion Sum	mg/L	-	1350
Saturation pH (5°C)	units	-	8.1
Langelier Index (5°C)	-	-	0.32

This report relates only to the sample(s) and information provided to the laboratory.

RL = Reporting Limit; Organic Carbon and ion chemistries for turbid samples are determined on filtered aliquots.

Troy Smith  
 Supervisor  
 Inorganic Analytical Services

Krista Skinner  
 Senior Chemical Technician  
 Inorganic Analytical Services

Report ID: 571802-IAS  
 Report Date: 23-Jan-26  
 Date Received: 16-Jan-26

## CERTIFICATE OF ANALYSIS

for  
 Stantec Consulting Ltd  
 845 Prospect Street  
 Fredericton, NB E3B 2T7



921 College Hill Rd  
 Fredericton NB  
 Canada E3B 6Z9  
 Tel: 506.452.1212  
 Fax: 506.452.0594  
 www.rpc.ca

Attention: Parrish Arnott

**Project #: 121418452**

Location: Centre Village

### Analysis of Metals in Water

RPC Sample ID:			571802-1
Client Sample ID:			TW-3 72 Hour
Date Sampled:			16-Jan-26
Analytes	Units	RL	
Aluminum	µg/L	1	78
Antimony	µg/L	0.1	< 0.5
Arsenic	µg/L	1	< 5
Barium	µg/L	1	1080
Beryllium	µg/L	0.1	< 0.5
Bismuth	µg/L	1	< 5
Boron	µg/L	1	166
Cadmium	µg/L	0.01	< 0.05
Calcium	µg/L	50	17900
Chromium	µg/L	1	< 5
Cobalt	µg/L	0.1	< 0.5
Copper	µg/L	1	< 5
Iron	µg/L	20	100
Lead	µg/L	0.1	< 0.5
Lithium	µg/L	0.1	38.6
Magnesium	µg/L	10	2760
Manganese	µg/L	1	52
Molybdenum	µg/L	0.1	52.0
Nickel	µg/L	1	< 5
Potassium	µg/L	20	4800
Rubidium	µg/L	0.1	2.0
Selenium	µg/L	1	< 5
Silver	µg/L	0.1	< 0.5
Sodium	µg/L	50	482000
Strontium	µg/L	1	842
Tellurium	µg/L	0.1	< 0.5
Thallium	µg/L	0.1	< 0.5
Tin	µg/L	0.1	< 0.5
Uranium	µg/L	0.1	3.5
Vanadium	µg/L	1	< 5
Zinc	µg/L	1	< 5

Report ID: 571802-IAS  
Report Date: 23-Jan-26  
Date Received: 16-Jan-26

## CERTIFICATE OF ANALYSIS

for  
Stantec Consulting Ltd  
845 Prospect Street  
Fredericton, NB E3B 2T7



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### Methods

<u>Analyte</u>	<u>RPC SOP #</u>	<u>Method Reference</u>	<u>Method Principle</u>
Ammonia	IAS-M47	APHA 4500-NH <sub>3</sub> G	Phenate Colourimetry
pH	IAS-M03	APHA 4500-H <sup>+</sup> B	pH Electrode - Electrometric
Alkalinity (as CaCO <sub>3</sub> )	IAS-M43	EPA 310.2	Methyl Orange Colourimetry
Chloride	IAS-M44	APHA 4500-CL E	Ferricyanide Colourimetry
Sulfate	IAS-M45	APHA 4500-SO <sub>4</sub> E	Turbidimetry
Nitrate + Nitrite (as N)	IAS-M48	APHA 4500-NO <sub>3</sub> H	Hydrazine Red., Derivatization, Colourimetry
o-Phosphate (as P)	IAS-M50	APHA 4500-P F	Molybdate/Ascorbic Acid Colourimetry
r-Silica (as SiO <sub>2</sub> )	IAS-M46	APHA 4500-SI F	Heteropoly Blue Colourimetry
Carbon - Total Organic	IAS-M57	APHA 5310 B	Combustion/NDIR
Turbidity	IAS-M06	APHA 2130 B	Nephelometry
Conductivity	IAS-M04	APHA 2510 B	Conductivity Meter - Electrode
Solids - Total Suspended	IAS-M05	APHA 2540 D	Filtration, Gravimetry
Trace Metals	IAS-M01/IAS-M29	EPA 200.8/EPA 200.7	ICP-MS/ICP-ES

## CERTIFICATE OF ANALYSIS / CERTIFICAT D'ANALYSE

for/pour  
Stantec Consulting Ltd  
845 Prospect Street  
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115A Harrisville Blvd  
Moncton NB  
Canada E1H 3T3  
Tel: 506.855.6472  
rpc.ca

Attention: Parrish Arnott

**Project/Job #: 121418452**

Location: Centre Village

### Examination of Water/Examen de l'eau

RPC Sample ID/No. d'échantillon de RPC:				571802-1
Client Sample ID/ID d'échantillon du client:				TW-3 72 Hour
Date collected/Date du prélèvement:				16-Jan-26
Time sampled/Heure du prélèvement:				8:00:00 AM
Analytes/Paramètre(s)	Method Méthode	Date Analyzed Date Analysé	Units Unités	
Total Coliforms/Coliformes totaux	MICRO10	16-Jan-26	MPN/100mL	0
E. coli	MICRO10	16-Jan-26	MPN/100mL	0

This report relates only to the sample(s) and information provided to the laboratory.

Le présent rapport ne s'applique qu'aux échantillons et à l'information transmis au laboratoire.

#### LEGEND:

RL/SD = Reporting Limit/Seuil de déclaration cfu/ufc = Colony Forming Units/Unités formant des colonies

MPN/NPP = Most Probable Number/Nombre Plus Probable

Michael Lawlor  
Lab Supervisor  
Moncton Laboratory/Laboratoire de Moncton

Matthew Poole  
Lab Technician  
Moncton Laboratory/Laboratoire de Moncton