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Memo

To:	Amy Driessen Transportation and Economic Corridors	From:	Leslie Cho and Lawrence Onwude Stantec Consulting Ltd.
File:	123315222	Date:	October 31, 2025

Reference: North Central Region, Stony Plain, Site NC057 - Highway 624:02, Fall 2025 Instrumentation Monitoring Report

1.0 OBSERVATIONS

1.1 FIELD PROGRAM AND INSTRUMENTATION STATUS

The Fall 2025 reading cycle consisted of instrument readings of two vibrating wire piezometers (VW17-02a and VW17-02b) and one standpipe piezometer (SP17-06). An instrumentation location plan is provided in the attached Figure 1. The instruments were read by Akintola Fakinlede, GIT and Adham Zahr, Geotechnical EIT on October 3, 2025.

The vibrating wire piezometers (VW) were read with a Slope Indicator VW Data Recorder 52613500 readout box. Standpipe piezometer (SP) was read with a Heron Instruments water tape.

GPS coordinates of all instruments were obtained using a Garmin eTrex 10 handheld GPS unit.

2.0 INSTRUMENTATION READINGS

2.1 GENERAL

There are no slope inclinometers installed at this site.

The standpipe and vibrating wire piezometer readings are summarized in **Table NC57-1**.

2.2 MONITORING RESULTS

2.2.1 Piezometers

The water levels in most of the piezometers remained relatively steady since the first reading in December 2017.

Compared with the water level measured during the Spring 2025 reading cycle, the water level in VW17-02a showed a decrease of less than 0.1 m during the Fall 2025 reading cycle. The water level in VW17-02b also showed little to no change. The water level in VW17-02a and VW17-02b is about 0.4 m above ground surface (artesian) and approximately 5.1 m below ground surface respectively.

SP17-06 showed a decrease in water level of 0.1 m since the previous reading in Spring 2025 and indicated a piezometric level of 0.2 m above ground surface.

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3.0 RECOMMENDATIONS

3.1 FUTURE WORK

It is recommended that all instruments are read in Spring 2026.

3.2 INSTRUMENT REPAIR

SP17-01, SP07-03, and SP17-05 were blocked at 0.2 m, 0.0 m, and 0.8 m, respectively during the Spring 2021 reading cycle. The standpipes could potentially be fixed by removing the protective casing and cutting the standpipes below the blockage depth. An attempt to remove the blockage can be carried out upon approval by Alberta Transportation and Economic Corridors.

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Table NC57-1: Fall 2025 Standpipe and Vibrating Wire Piezometer Reading Summary

INSTRUMENT NAME	DATE INITIALIZED	GROUND ELEVATION (m aMSL) [1]	COORDINATES (UTM 11U, NAD1983) (m)		PIEZOMETER TIP ELEVATION OR SCREEN ELEVATION (m aMSL)	CURRENT STATUS	MAXIMUM PIEZOMETRIC ELEVATION (m aMSL)	MEASURED PIEZOMETRIC ELEVATION (m aMSL)	PREVIOUS PIEZOMETRIC ELEVATION (Spring 2025) (m aMSL)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)[3]
			NORTHING	EASTING						
VW17-02a (1702901)	Dec 6, 2017	810.6	5915079	637126	807.5	Operational	811.0 May 2019	810.9	811.0	-<0.1
VW17-02b (1702902)	Dec 6, 2017	810.6	5915079	637126	803.7	Operational	805.6 Sept. 2019	805.5	805.5	-<0.1
VW17-04 (1702903)	Dec 6, 2017	811.2	5915064	637090	808.5	Damaged	n/a	Damaged or dry since 2017. Stick-up found damaged in 2019.		
SP17-01	Dec 6, 2017	809	5915085	637077	808.8 – 805.8	Non-Operational	811.1 Sep. 2019	Blocked at 0.2 m since Spring 2021		
SP17-03	Dec 6, 2017	807	5915090	637162	804.3 – 801.3	Non-Operational	809.1 Dec. 2017	Blocked at ground surface in Fall 2021		
SP17-05	Dec 6, 2017	809	5915061	637127	806.8 – 803.8	Non-Operational	809.9 Sept. 2019	Blocked at 0.8 m Spring 2021		
SP17-06	Dec 6, 2017	812	5915065	637164	805.3 – 802.3	Operational	810.5 Dec. 2017	810.2	810.3	-0.1

Notes:
(1) aMSL = Above Mean Sea Level
(2) Operational Instruments were updated October 3, 2025, with approximate accuracy of ± 3 m
(3) Negative (-) indicates decrease in water level

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4.0 CLOSING

We trust this instrumentation report meets your requirements. If you have any questions, please do not hesitate to contact the undersigned.

Stantec Consulting Ltd.

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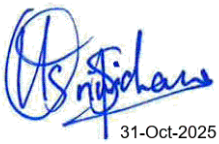

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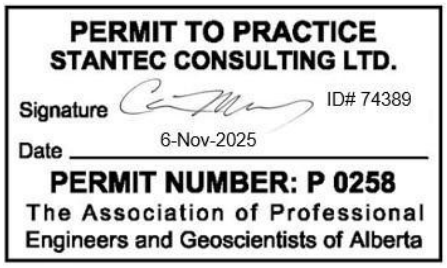
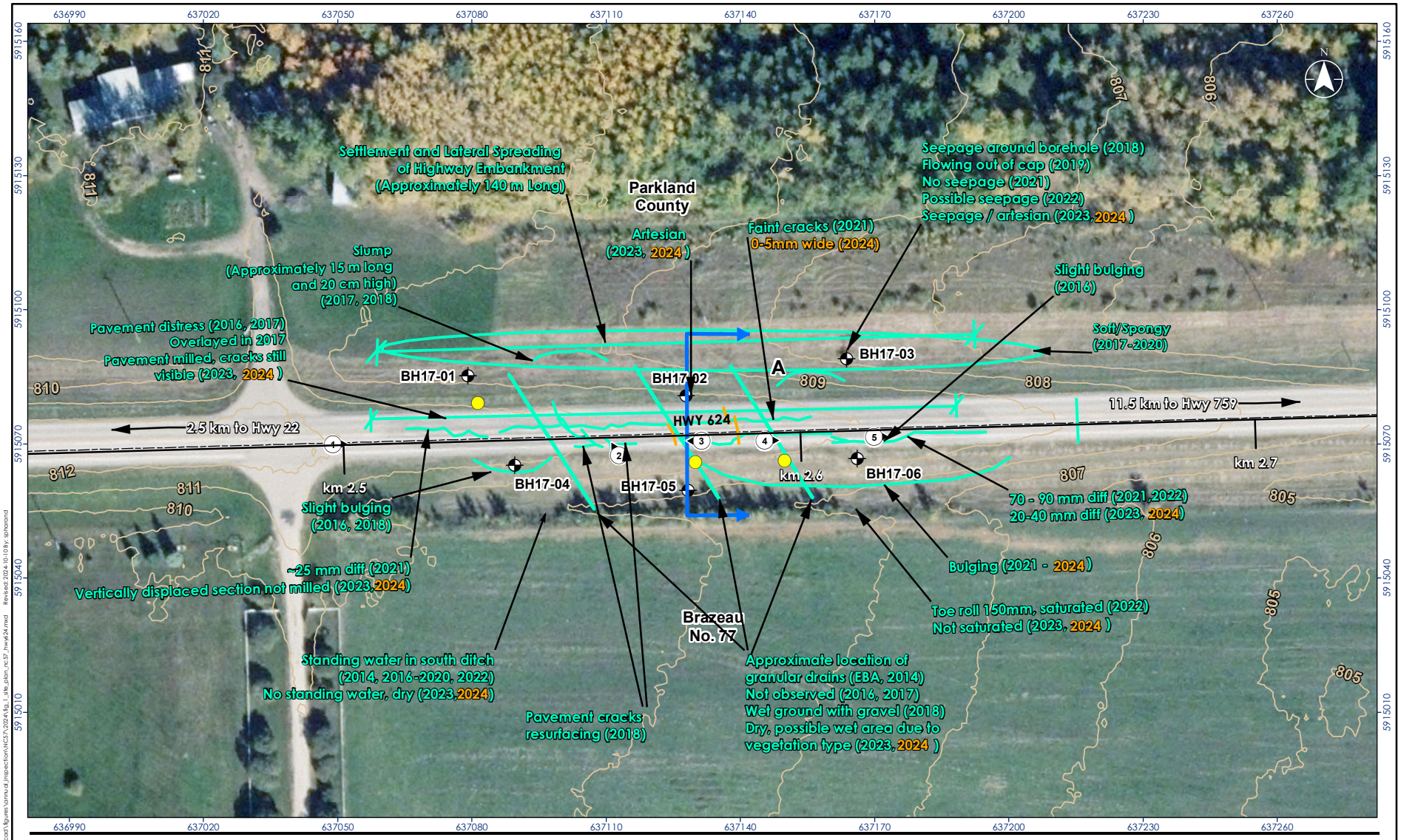
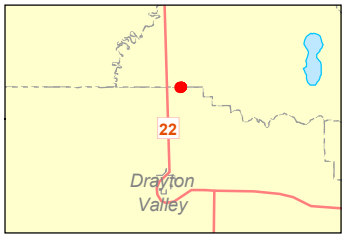
Attachment: Figure 1 – Site Plan
Standpipe and Vibrating Wire Piezometer Depth vs. Time Plot
Standpipe and Vibrating Wire Piezometer Elevation vs. Time Plot







- Borehole Location
- Gravel Drain
- Previous Observation
- 2024 Observation
- Municipality Boundary
- Cross Section Location

0 10 20 30 metres

1:1,250 (At original document size of 8.5x11)

Notes

1. Coordinate System: NAD 1983 UTM Zone 11U
2. Base features: Geogratis, ©Department of Natural Resources Canada, All rights reserved.
3. Imagery: Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

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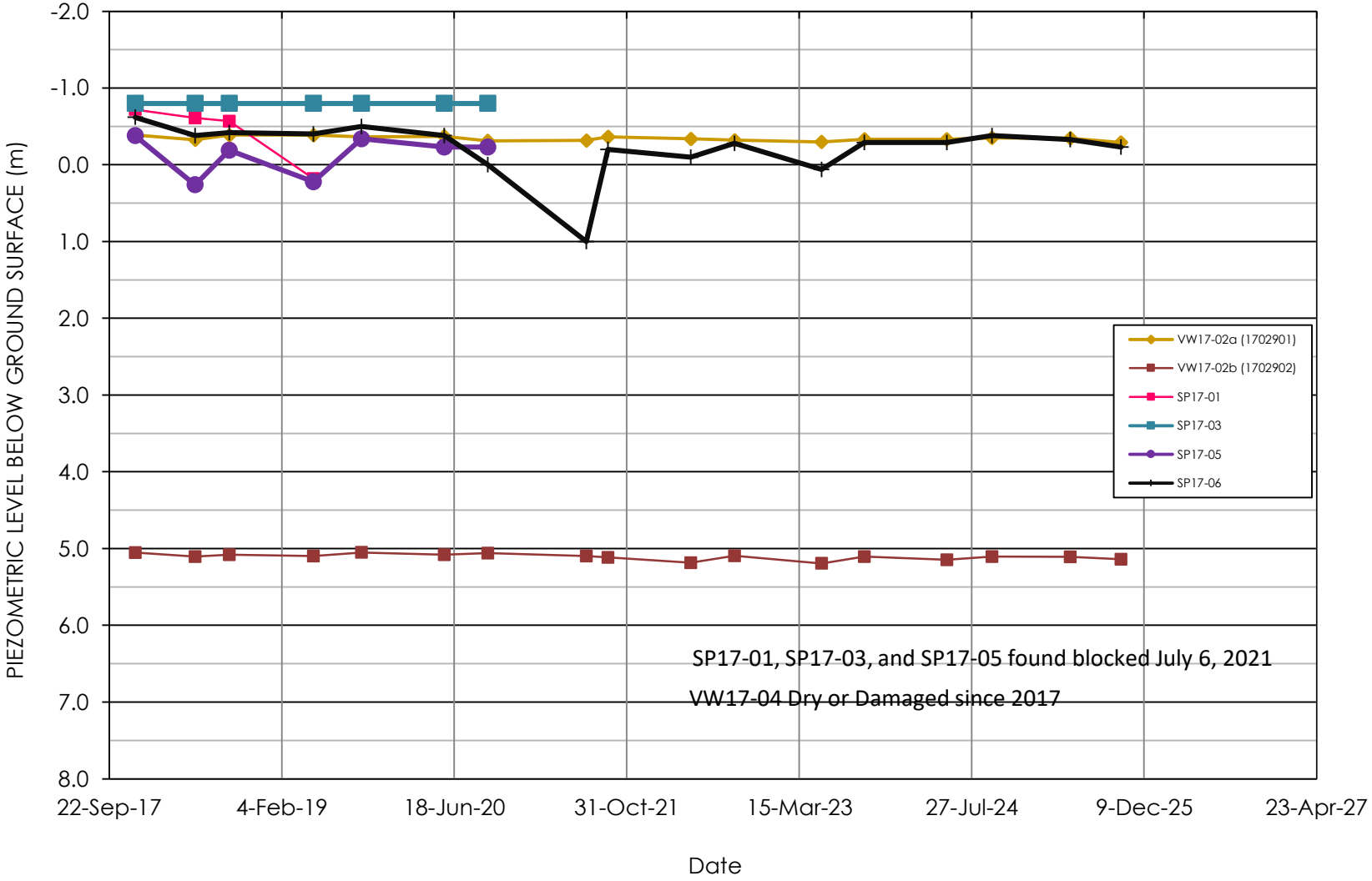
Project Location	123315222
NE & NW-34-50-07-W5	Prepared bySP on 2024-10-07
Hwy 624:02, km 2.57	QR by LC on 2024-10-07
Alberta	IR by XL on 2024-10-07

Client/Project
Transportation and Economic Corridors
Geohazard Monitoring Program
NC57 Hwy 624 Embankment Failure

Figure No.
1

Title
Site Plan

PIEZOMETER DATA



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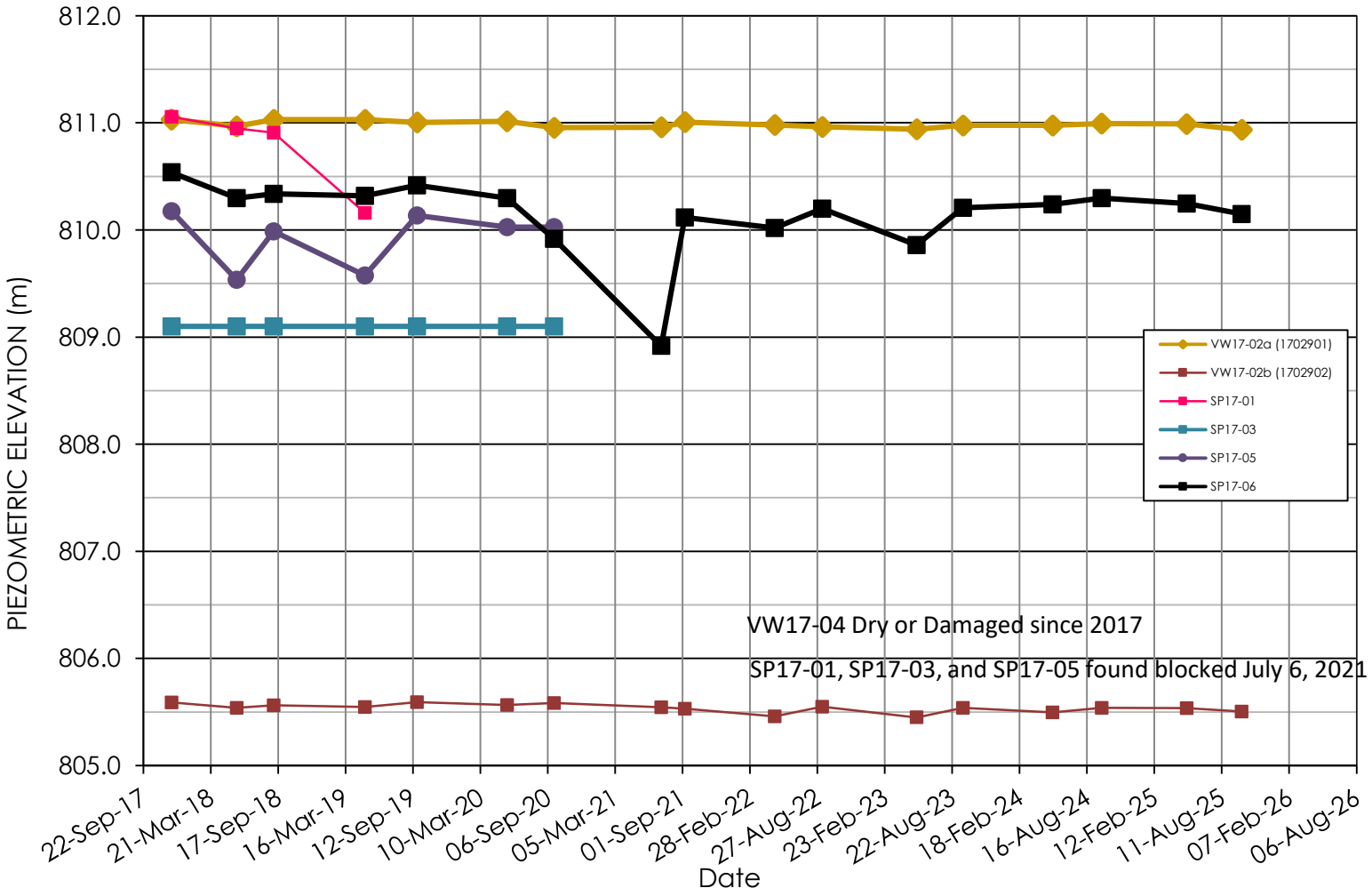

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