ALBERTA INFRASTRUCTURE AND TRANSPORTATION
INSTRUMENTATION MONITORING RESULTS
FALL 2005

SECTION C

NORTH CENTRAL REGION

SITE NC7: BERRYMOOR BRIDGE

1. OBSERVATIONS

1.1 Field Program and Instrumentation Status

Seven slope inclinometers (SI01-1, 02-1, 02-2, 02-3, 03-1, 04-1 and 04-2) and three standpipe piezometers (SP01-1,01-2 and 01-3) were read at the Berrymoor Bridge slide site on September 30, 2005 by Mr. Jim MacTaggart of Thurber Engineering Ltd. (Thurber).

The SI's were read using a SINCO Digitilt probe with 2 ft wheelbase and a Digitilt Datamate readout. Inclinometer reading depths were defined as per cable markings with respect to the top of the inclinometer casing. The standpipe piezometers were read using a SINCO dipmeter.

2. INTERPRETATION

2.1 General

SI plots for A and B directions are presented in Section D and are summarized below. Where movement has been recorded the resultant plot for (X direction) and rate of movement have also been provided. Standpipe piezometer results are also provided in Section D.

2.2 Zones of Movement

Zones of new movement were not observed in the SI's since the last set of readings in the Spring of 2005.

Zones of old movement are summarized on Table NC7-1 at the end of this report. Table NC7-1 also provides a historical account of the total movement that has

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occurred at this site since the initialization of the slope inclinometers, the depth of movement, and the maximum rate of movement.

2.3 Interpretation of Monitoring Results

Overall, there has been no significant measured movement since the pile wall was installed in Spring/Summer 2004. Since the last set of readings in the Spring of 2005 slight movement (2 to 4 mm/yr) has been recorded in SI02-3 which is located downslope of the wall.

Since the last set of reading, the water levels remained steady (+/- 0.2 m) in all three pneumatic piezometers.

3. RECOMMENDATIONS

3.1 Future Work

It is recommended that no action be taken until the next scheduled reading in the Spring of 2006.

3.2 Instrumentation Repairs

No instrumentation repair is required at this time.

TABLE NC7-1
Fall 2005 – Berrymoor Bridge
Slope Inclinometer
Instrumentation Reading Summary

Date Monitored: September 30, 2005

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AND DEPTH OF MOVEMENT TO DATE (mm)	MAXIMUM RATE OF MOVEMENT (mm/yr)	CURRENT STATUS OF SI	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	CURRENT RATE OF MOVEMENT (mm/yr)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)
SI01-1	24 May, 2001	N/A	N/A	Operational	12 May 2005	N/A	N/A	N/A
SI01-2	*24 May, 2001*	*NA*	*NA*	*Sheared off*	*01 Nov, 2003*	*N/A*	*N/A*	*N/A*
SI01-3	*24 May, 2001*	*NA*	*NA*	*Sheared off*	*01 Nov, 2003*	*N/A*	*N/A*	*N/A*
SI02-1	19 July, 2002	17.8 over 6.2 to 8.6 m depth in 0^0 direction	11.6 between May and Nov 2003	Operational	12 May 2005	0.15 over 6.2 to 8.6 m depth in 0^0 direction	0.04	-2.5
SI02-2	19 July, 2002	20.6 over 3.9 to 5.7 m depth in -63^0 direction	19.0 between May and Nov 2003	Operational	12 May 2005	0.1 over 3.9 to 5.7 m depth in -63^0 direction	0.3	-0.5
		25.7 over 5.7 to 7.0 m depth in -63^0 direction	28.9 between Sept and Oct 2002			0.1 over 3.9 to 5.7 m depth in -63^0 direction	0.4	+0.04
SI02-3	19 July, 2002	34.2 over 2.2 to 5.3 m depth	40.7 between July and Sept. 2002	Operational	12 May 2005	0.6 over 2.2 to 5.3 m depth	2.4	+2.0

Figure 1 in Section D provides a sketch of the approximate location of the monitoring instrumentation for this site

(SP) standpipe (for water level monitoring, 1" diameter PVC);

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TABLE NC7-1 (Continued)
Fall 2005 – Berrymoor Bridge
Slope Inclinometer
Instrumentation Reading Summary

Date Monitored: September 30, 2005

INSTRUMENT #	DATE INITIALIZED	TOTAL CUMULATIVE RESULTANT MOVEMENT AND DEPTH OF MOVEMENT TO DATE (mm)	MAXIMUM RATE OF MOVEMENT (mm/y)	CURRENT STATUS OF SI	DATE OF PREVIOUS READING	INCREMENTAL MOVEMENT SINCE PREVIOUS READING (mm)	CURRENT RATE OF MOVEMENT (mm/yr)	CHANGE IN RATE OF MOVEMENT SINCE PREVIOUS READING (mm/yr)
SI03-1	23 Dec. 2003	4.9 over 4.8 to 7.2 m depth in 8^0 direction	37.1 between Feb. and March 2004	Operational	12 May 2005	N/A	0.0	+0.3
SI04-1	11 March 2003	No discernible movement	N/A	Operational	12 May 2005	N/A	N/A	N/A
SI04-2	11 March 2003	No discernible movement	N/A	Operational	12 May 2005	N/A	N/A	N/A

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TABLE NC7-2
Fall 2005 – Berrymoor Bridge
Standpipe Piezometer
Instrumentation Reading Summary

Date Monitored: September 30, 2005

INSTRUMENT #	DATE INITIALIZED	TIP ELEV. (m)	GROUND ELEV. * (m)	CURRENT STATUS	MAXIMUM. WATER LEVEL ELEVATION (m)	MEASURED WATER LEVEL ELEVATION (m) (Fall 2005)	PREVIOUS READING (m) (Spring 2005)	CHANGE IN WATER LEVEL SINCE PREVIOUS READING (m)
SP 01-1	23 May, 2001	990.99	1000.90	Active	1000.74 on Sept 6, 2001 (0.2 mBGS)	1000.4 (0.5 mBGS)	1000.6 (0.3 mBGS)	-0.2
SP 01-2	23 May, 2001	988.98	1000.41	Active	1000.07 on Sept 6, 2001 (0.3 mBGS)	999.3 (1.1 mBGS)	999.2 (1.2 mBGS)	+0.1
SP 01-3	23 May, 2001	986.58	996.67	Active	996.04 on Sept 6, 2001 (0.3 mBGS)	994.5 (2.2 mBGS)	994.4 (2.3 mBGS)	+0.1

Figure NC7-1 in Section D provides a sketch of the approximate locations of the monitoring instrumentation for this site

NOTES:

SP - standpipe (for water level monitoring, 1" PVC);
BGS - below ground surface

* Site local elevation (Not Geodetic)

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ALBERTA INFRASTRUCTU AND TRANSPORTATION
NORTH CENTRAL REGION
SLOPE INCLINOMETER MONITORING FIELD SUMMARY (NC7)
FALL 2005

Location: Berrymoor Bridge	**Readout:** Datamate
File Number: 15-85-10	**Extension:** 3' Extension for SI04-1 and -2
Probe: Sinco 26988	**Temp:** N/A
Cable: 250'Sinco	**Read by:** JM

SLOPE INCLINOMETER (SI) READINGS

SI#	GPS Location		Date	Stickup (ft)	Depth from top of casing (ft)	Magn. North A+ Groove	Current Bottom Depth Readings				Remarks
	Northing	Easting					A+	A-	B+	B-	
TH01-1	N53° 18' 19.1"	W114° 45' 27.4"	30-Sep-05	2.43	34 to 4	50°	-413	395	171	-145	
TH02-1	N53° 18' 17.9"	W114° 45' 26.4"	30-Sep-05	3.71	53 to 5	50°	-21	6	55	-45	
TH02-2	N53° 18' 18.7"	W114° 45' 26.3"	30-Sep-05	3.18	53 to 5	58°	635	-645	-637	674	
TH02-3	N53° 18' 19.9"	W114° 45' 26.2"	30-Sep-05	2.55	53 to 5	62°	792	-810	-145	206	
TH03-1	N53° 18' 17.4"	W114° 45' 26.3"	30-Sep-05	2.30	53 to 5	78°	429	-441	-944	998	
TH04-1	N53° 18' 18.6"	W114° 45' 26.5"	30-Sep-05	0.00	47 to 5	15	-75	65	-541	562	
TH04-2	N53° 18' 19.1"	W114° 45' 26.4"	30-Sep-05	0.00	41 to 5	330	-361	345	-99	124	
TH04-1	N53° 18' 18.6"	W114° 45' 26.5"	30-Sep-05	0.00	47 to 5	15	-88	74	-533	564	
TH04-2	N53° 18' 19.1"	W114° 45' 26.4"	30-Sep-05	0.00	41 to 5	330	-292	279	-119	143	

STANDPIPE PIEZOMETER (SP) READINGS

GPS Location		SP#	Date	Stick-up (m)	Reading below top of casing (m)	Bottom pipe depth below top of casing (m)
Northing	Easting					
N53° 18' 19.1"	W114° 45' 27.4"	TH01-1	30-Sep-05	0.71	1.2	9.9
N53° 18' 19.1"	W114° 45' 26.1"	TH01-2	30-Sep-05	0.73	1.8	11.6
N53° 18' 19.6"	W114° 45' 24.6"	TH01-3	30-Sep-05	0.78	2.9	10.1

DAILY INSPECTOR REPORT

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