

GEOHAZARD RISK MANAGEMENT PROGRAM North Central Region – Edson / Stony Plain Area

2017 Inspection Report

Site Number	Site Name		Hwy	km
NC32	North of Tomahawk		759:04	N/A
Legal Land Description	NW 13-51-6-W5M and NE 14-51-6-W5M			
UTM Coordinates (NAD 83)	Zone 11U	N5920211	E648666	
Operational Site Instrumentation	Slope Inclinometers		2	
	Pneumatic Piezometers		5 (2 damaged and 1 could not be located)	
	Vibrating Wire Piezometers		0	
	Standpipe Piezometers		0	
Date of Last Instrumentation Readings	May 15, 2017			

Risk Assessment	Date	PF	CF	Risk Ranking
Current Inspection	July 12, 2017	5	2	10
Previous Inspection	June 6, 2016	5	3	15
Report Attachments	<input checked="" type="checkbox"/> Photographs (5 photos)		<input checked="" type="checkbox"/> Site Plan (1 Page)	

	Stantec	Alberta Transportation
Inspected By	Carrie Murray and Leslie Cho	Roger Skirrow, Ali Khalid, and Kathleen Davis
Date of Remediation	Berms constructed on both sides of highway in 2013.	

Recent Maintenance	June 2017 – Milled and paved.		
Primary Site Issue	High groundwater level, weak foundation soils combined with increased truck volume.		
Observations	Description and Location	Change from Previous Inspection	
<input checked="" type="checkbox"/> Pavement Distress	Transverse cracks on each end of site.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> Culvert Distress		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Bridge Distress		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Slope Movement	Slumping in back slope at southwest extent. Tension cracks and toe bulging in area.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
<input type="checkbox"/> Erosion		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input type="checkbox"/> Seepage		<input type="checkbox"/> Yes	<input type="checkbox"/> No
<input checked="" type="checkbox"/> Other	Thick grasses at bottom of ditch. Shallow water table.	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No

Discussion	<p>Pavement cracks were not observed as the highway was recently milled and paved as shown in Photo 1. As a result of the paving, a relatively steep pavement edge was observed on the northbound lane near the north limits of the site as shown in Photo 2. The highway also appeared to be "rolling" as shown in Photo 3.</p> <p>The culvert that was observed with standing water on the north side of the site near the overhead powerline crossing was removed. A patch of rip rap was left at the culvert location as shown in Photo 4.</p> <p>Thick grass growth had covered the tension cracks observed on top of the hill on the south end of the site. In general, the slumping hill/backslope appears unchanged since the previous inspection. An overall view of the backslope is shown on Photo 5.</p>
Assessment	<p>Only 2 of the 5 piezometers were functional at the time of measurement with both being within historic trends. The groundwater levels at the site are still relatively high with readings up to approximately 2.5 m below ground surface (bgs).</p> <p>Slope inclinometer readings indicate movement rates less than 1 mm/year indicating that the slope has stabilized since berm construction in 2013. The pavement distresses observed in previous years may be due to increased truck traffic from a nearby gravel pit.</p> <p>The thick grass growth coupled with the lack of fresh tension cracks suggest that the backslope had not moved much since the previous inspection. Ditch drainage has not been impinged.</p>

Recommendations	<p>Since the highway was recently milled and paved, no crack sealing is required at this time. However, due to the steepness of the edge of the northbound lane, consideration for installing rumble strips should be given to improve traffic safety.</p> <p>Long term remediation is not required since the constructed berms appear to be reducing the amount of slope movement.</p> <p>During the site inspection, it was decided by Alberta Transportation and Stantec that NC32 be removed from the annual inspection list. Additionally, instrumentation readings at the site should continue to be collected once per year in the spring.</p>
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Reference: 2017 Annual Inspection Photographs at NC32 – North of Tomahawk
File Number: 123312435



Photo 1: Pavement recently overlayed. Looking north.



Photo 2: Steep east edge from recent overlay. Looking north.

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Photo 3: North end of highway has “rolling” appearance. Looking north.



Photo 4: Culvert paralleling overhead powerline missing. Patch of riprap remains. Looking south.

Reference: 2017 Annual Inspection Photographs at NC32 – North of Tomahawk
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Photo 5: Grass growth over slumping hill at south end of site. Looking southwest.