

GEOHAZARD ASSESSMENT PROGRAM
PEACE REGION – PEACE RIVER/HIGH LEVEL
2012 INSPECTION



Site Number	Location	Name	Hwy	km
PH29	Grimms Creek	Site #4	682:02	13.54
Legal Description		UTM Co-ordinates (NAD83)		
NW36-81-5-W6		11 N 6214740	E 397620	

	Date	PF	CF	Total
Previous Inspection:	June 8, 2011	5	5	25
Current Inspection:	June 20, 2012	9	5	45
Road AADT:	220		Year:	2010
Inspected By:	Barry Meays, Don Proudfoot (Thurber) Ed Szmata, Ken Szmata, Rocky Wang (AT)			
Report Attachments:	<input checked="" type="checkbox"/> Photographs <input checked="" type="checkbox"/> Plans <input type="checkbox"/> Maintenance Items			

Primary Site Issue:	On-going movement of the downstream embankment overtop of the old (former) culvert location. Subsidence of the road requires patching.	
Dimensions:	Former slide was about 60 m long by 100 m wide.	
Date of any remediation:	Culvert location was rerouted in 2009 by jack and drill. The old culvert was abandoned with partial grouting.	
Maintenance:	Semi-continuous milling, patching and crack sealing.	
Observations:	Description	Worse?
<input checked="" type="checkbox"/> Pavement Distress	A 21m long crack, subsidence, and dips observed. New patching was required on the hwy overtop of both the old and new bridge culverts.	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Slope Movement	The downstream embankment over the old culvert continues to move (the rate has appeared to increase significantly this past year).	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Erosion	Erosion gully on the upstream end of culvert inlet has enlarged significantly. The one on the downstream south embankment from east ditch drainage appears unchanged. Some slight surface erosion on downstream embankment.	<input checked="" type="checkbox"/>
<input type="checkbox"/> Seepage		<input type="checkbox"/>
<input checked="" type="checkbox"/> Bridge/Culvert Distress	Culvert outlet about 1/2 full of sediment.	<input checked="" type="checkbox"/>
<input type="checkbox"/> Other		<input type="checkbox"/>
Instrumentation:		
Last Read on Oct. 2, 2012		
SI1: Sheared off at 14m depth in 2009 (Prev. move zones at 11.5 to 16m); SI2: 3.6mm/yr over 5m to 10.7m); SI3: No discernible movement; and SI4: 1.6mm/yr over 0 to 8m. Water levels in PN-1 at 4.4m BGS; PN-1A at 1.4m BGS; PN-2 at 9.4m BGS; PN-2A at 4.9m BGS; PN-3 at 1.8m BGS; and PN-4 at 5.0m BGS.		

Assessment:

Dips exist overtop of both the old and new culverts at this site. The dip overtop of the new culvert could possibly be due to settlement of the fill since its installation in 2009, but has noticeably increased since last year. Movements continue on the downstream embankment nearer the old culvert, and the rate of movement has appeared to have greatly increased this last year, with additional crack propagation, extensions and widespread slumping observed since last year. The crack that re-appeared last year through the 2010 asphalt patching in the road surface overtop of the old culvert was 5m longer this year, and additional settlements were evident in the pavement surface. The erosion was observed to have gotten worse on the upstream (east) gully, which may be fed from the east ditch runoff further upslope.

Recommendations:

MAINTENANCE: Seal/patch the pavement crack and dips as required. Remove the silt fence from the 2009 repairs.

Repair the small erosion gullies that have developed by: on the upstream end by grading/shaping the erosion, then adding geotextile with riprap placed overtop; the downstream ditch erosion, by grading/shaping, and backfilling with compacted clay using a sheepsfoot, and then seeding and covering it with TRM erosion matting.

Long Term: In order to curtail the rapidly increasing movements on the downstream embankment, it is proposed to flatten the slope further downslope into the old channel and construct a toe berm across it. Common fill for this repair could be obtained from the ridge on the west side of the old channel.