

**GEOHAZARD ASSESSMENT PROGRAM**

**PEACE RIVER / HIGH LEVEL AREA**

**2010 INSPECTION**



Site Number	Location	Name	Hwy	km
PH47	West of Deadwood, AB	Deadwood Slide	690:02	Approx. 2.2
Legal Description		UTM Co-ordinates		
SW1/4 28-89-23-W5M		11V N 6289120	E 462789	

	Date	PF	CF	Total
<b>Previous Inspection:</b>	May 19, 2009	13	3	39
<b>Current Inspection:</b>	June 03, 2010	13	3	39
<b>Road AADT:</b>	100	<b>Year:</b>		2009
<b>Inspected By:</b>	(Don Proudfoot and Gustavo Padros, Thurber Engineering) (Roger Skirrow, Neil Kjelland, Ted Prue and Ed Szmata, Alberta Transportation)			
<b>Report Attachments:</b>	<input checked="" type="checkbox"/> Photographs <input checked="" type="checkbox"/> Plans <input type="checkbox"/> Maintenance Items			

<b>Primary Site Issue:</b>	Slope movement affecting highway		
<b>Dimensions:</b>	See drawing		
<b>Date of any remediation:</b>	None in the last year		
<b>Maintenance:</b>	ACP patch (August 2008)		<b>Worsened?</b>
<b>Observations</b>	<b>Description</b>	<b>Yes</b>	<b>No</b>
<input checked="" type="checkbox"/> Pavement Distress	Slight increase in crack width and drop, reflecting through 2008 ACP patch. Pavement cracking has extended beyond the patch limits to the west.	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Slope Movement	Slow creep movement causing cracks in pavement	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Erosion		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Seepage		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Bridge/Culvert Distress		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other		<input type="checkbox"/>	<input type="checkbox"/>
<b>Instrumentation:</b>	None		
<b>Assessment (Refer to Figure PH47-1):</b>	<ul style="list-style-type: none"> <li>- The slope failure appears to be the result of toe erosion caused by the creek located immediately south of the highway leading to over-steeping of the slope. It is expected that, if left untreated, slow creep movements will continue.</li> </ul>		

**Recommendations:**

Three options have been identified as possible long term solutions.

The first option would involve the installation of a 1500 mm diameter CSP culvert along the toe of the slide, which would prevent further creek erosion of the toe of the slope. In addition to the culvert installation, a toe berm would be constructed and the slide mass regraded to a flatter uniform slope in order to re-establish slope stability. A DFO authorization would be required to carry out this option.

The second solution would be based on the use of a pile wall to stabilize the highway side slope.

The third option would include either partial or full excavation of the slide mass, construction of a deep shear key, and reconstruction of the highway sideslope. This option would also involve the lining of the creek bed with rip rap in order to prevent further toe erosion.

A topographic survey, geotechnical investigation, detailed design and tender package will be required prior to carrying out the remedial measures. The proposed geotechnical program consists of drilling three test holes in which two slope inclinometers and three piezometers would be installed at the appropriate locations shown on Figure PH47-1.