

GEOHAZARD ASSESSMENT PROGRAM

PEACE RIVER / HIGH LEVEL AREA

2009 INSPECTION



Site Number	Location	Name	Hwy	km
PH57	North of Red Earth, AB	Wabasca River Crossing	88:16	Approx. 52
Legal Description		UTM Co-ordinates		
NW1/4 22-102-09-W4M		11V N 6415765	E 595814	

	Date	PF	CF	Total
Previous Inspection:	August 6, 2008	12	2	24
Current Inspection:	May 20, 2009	12	2	24
Road AADT:	260	Year:		2008
Inspected By:	(Gustavo Padros, Thurber Engineering) (Rocky Wang, Alberta Transportation)			
Report Attachments:	<input checked="" type="checkbox"/> Photographs <input checked="" type="checkbox"/> Plans <input type="checkbox"/> Maintenance			

Primary Site Issue:	Back slope failures		
Dimensions:	See drawing		
Date of any remediation:	None in the last year		
Maintenance:	None in the last year		Worsened?
Observations	Description	Yes	No
<input type="checkbox"/> Pavement		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Slope Movement	Shallow slope failures on backslope	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Erosion	Erosion caused by water runoff and continued seepage	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/> Seepage	Continued seepage from the water bearing sand and gravel layer located at the top of the slide	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<input type="checkbox"/> Bridge/Culvert Distress		<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other		<input type="checkbox"/>	<input type="checkbox"/>

Instrumentation:
None

Assessment (Refer to Figure PH57-1):

 The slump appears to be a shallow slope failure produced by erosion and saturation of the clay till caused by seepage from water bearing sand and gravel layers located over the clay till. The seepage that drains from the gravel pit to the north towards the Wabasca River appears to be intercepted by the south backslope of Highway 88. This condition is supported by the observation of the discharge draining in the south highway ditch and subdrain system, which was considerably greater than the discharge draining on the north ditch and subdrain.

Recommendations:

Seepage mitigation measures are recommended. These may consist of gravel drains installed in the south backslope to conduct the water downslope from the gravel and sand layer into the south subdrain system. For this purpose, ditches 1 m wide and 1.5 m deep could be excavated and backfilled with washed gravel enveloped in non-woven geotextile. The surficial 0.3 m of the excavated ditches should be backfilled with clay and topsoil and seeded. The gravel drains should be spaced about 7.5 m center-to-center across the backslope. The upslope end of the gravel drain should extend at least at 6 m (on 3H:1V inclination) upslope of the observed seepage zone. The water from the gravel drains would discharge into perforated stub pipes connecting into the top of the south ditch subdrain system at an estimated depth of about 1.5 m to 2 m. Details of the existing drainage system should be reviewed in developing the design.

After the slope drains have been installed and the slide area has dried, the slide material should be removed (taking care not to disturb the drains) and the lower slope benched and rebuilt to its original line with salvaged, moisture conditioned clay till. It should then be promptly top soiled and seeded.