

**GEOHAZARD ASSESSMENT PROGRAM**

**PEACE RIVER / HIGH LEVEL AREA**

**2009 INSPECTION**



Site Number	Location	Name	Hwy	km
PH11	North of Town of Peace River	Whitemud River (Stations 42+600 and 43+200)	743:02	Approx. 42.6 and 43.2
<b>Legal Description</b>		<b>UTM Co-ordinates</b>		
36-87-21-5		11V N 6272376	E 486574	

	Date	PF	CF	Total
<b>Previous Inspection:</b>	May 22, 2008	9	2	18 (Station 42+600)
		5	2	10 (Station 43+200)
<b>Current Inspection:</b>	May 19, 2009	11	2	22 (Station 42+600)
		9	2	18 (Station 43+200)
<b>Road AADT:</b>	100	<b>Year:</b>		2008
<b>Inspected By:</b>	(Don Proudfoot and Gustavo Padros, Thurber Engineering) (Ed Szmata and Rocky Wang, Alberta Transportation)			
<b>Report Attachments:</b>	<input checked="" type="checkbox"/> Photographs <input checked="" type="checkbox"/> Plans <input type="checkbox"/> Maintenance			

<b>Primary Site Issue:</b>	Backslope and sideslope slumping		
<b>Dimensions:</b>	See drawing		
<b>Date of any remediation:</b>	None in the last year		
<b>Maintenance:</b>	None in the last year.		<b>Worsened?</b>
<b>Observations:</b>	<b>Description</b>	<b>Yes</b>	<b>No</b>
<input type="checkbox"/> Pavement	- Gravel road (not affected by movement)	<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Slope Movement	STATION 42+600: - Backslope slumping - New sideslope slump 12 m wide by 30 m long - Existing graben is more pronounced indicating ongoing slope movement toward river STATION 43+200: - Additional shallow sloughing of shale slope	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Erosion	STATION 42+600: - Minor erosion in east ditch at culvert outlet - Sinkhole is now 2 m in diameter by 1.2 m deep - Some erosion along gabions at culvert outlet	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Seepage		<input type="checkbox"/>	<input type="checkbox"/>
<input checked="" type="checkbox"/> Culvert Distress	STATION 42+600: Main culvert is bowed in middle	<input checked="" type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/> Other		<input type="checkbox"/>	<input type="checkbox"/>

**Instrumentation:**

None

**Assessment (Refer to Figure PH11-1):****STATION 42+600:**

- The repaired slope appears stable and drainage is good based on the performance of the existing culverts.
- A new sideslope slump 12 m wide by 30 m long has occurred in the west sideslope of the highway. The backscarp is located at 15 m from the guardrail.
- The active slide area located further north on the west side of the highway is likely deep-seated extending all the way down to the creek beyond the outlet of the culvert.
- The shallow slide located in the west backslope of the highway, south of the culvert is also not presently affecting the highway but may block the drainage of the ditch.
- It is understood that a new larger diameter culvert will be installed this year under the direction of MPA Engineering to replace the existing culvert.

**STATION 43+200:**

- The shale slope appears to have sufficient global stability and the spalling is considered to be more of a maintenance issue. There are no signs of movement in the roadway. The subdued scarp with a good vegetative cover indicates that the sideslope is currently stable.

**Recommendations:****STATION 42+600:****a) New slump on west sideslope:**

- Subexcavate and rebuild with flatter inclination with clay extending out onto the toe berm. Carry this out in conjunction with the culvert replacement work.

**b) Sink hole:**

- The existing culverts are to be grouted after the new one is installed. Extra grout should be placed to fill up to the top of the sink hole.

**c) Main Culvert Outlet:**

- A new dissipation structure will be required at the outlet of the new centerline pipe. The existing one should be decommissioned and backfilled to match the sideslope.

**d) Backslope failure west of the highway:**

- Clean ditch on the short term. Dispose of dirt outside valley. Long term side slope requires a flatter angle with 3 m wide benches at 6 m height intervals. This could be done in conjunction with future grading work for highway alignment improvements.

**e) East ditch erosion:**

- Repair by backfilling with compacted material and cover with coconut mat and synthetic ditch checks.

**STATION 43+200:**

- (a) Continue to clean sloughed material from ditch when required.