


**PEACE REGION – SWAN HILLS
GEOHAZARD RISK ASSESSMENT
SITE INSPECTION FORM**

SITE NUMBER SH 29	SITE NAME Driftpile River Bank Erosion	HIGHWAY & KM HWY 2:50	PREVIOUS INSPECTION DATE June 17, 2013	INSPECTION DATE July 2, 2014
LEGAL DESCRIPTION LSD 16-20-73-12-W5M	NAD 83 COORDINATES N 6,133,779 E 575,973	PREVIOUS RISK ASSESSMENT		
		PF: 9	CF: 2	TOTAL: 18
		CURRENT RISK ASSESSMENT		
		PF: 9	CF: 2	TOTAL: 18

<p>SUMMARY OF SITE INSTRUMENTATION:</p> <p>No Instruments</p> <p>LAST READING DATE: N/A</p>	<p>INSPECTED BY:</p> <p>AMEC: John Richmond, Vincent Huang Alberta Transportation: Roger Skirrow</p> <p>Prepared by: Vincent Huang, E.I.T. Geotechnical Engineer</p>  <p>John Richmond, P.Eng. Senior Geotechnical Engineer</p> <p>Reviewed by: Curtis R. Treen, M.Eng., P.Eng. Senior Associate Geotechnical Engineer</p> <p>AMEC Environment and Infrastructure Permit Number: P 04546</p>
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PRIMARY SITE ISSUE:

The Driftpile River flows from South to North in the area of the site. The west river bank, located on the outside of a bend in the channel, is undergoing active toe erosion and bank slumping that encroaches on the adjacent local road to the west and could endanger the roadway. The local gravel road is located immediately west of the top of the escarpment of the west river bank. Historical retrogression rate of the erosion scarp has been reported as gradual.

Note: Refer to previous inspection reports for further details

APPROXIMATE DIMENSIONS:

- ~ 40 m stretch of west river bank with erosion scarp ~10 m high undergoing slight to moderate toe erosion;
- West river bank slope is approximately 0.3H:1V
- At closest point the top of erosion scarp was measured to be 6.4 m (no change from the 2013 inspection) from the edge of the adjacent local gravel road
- During the initial call-out inspection in 2008, the setback distance from the crest of erosion the scarp to the edge of the road was estimated to be approximately 7 m.

DATE OF ANY REMEDIAL ACTION:

None

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION		
	YES	NO		YES	NO	SEE COMMENTS
PAVEMENT DISTRESS		X			X	
SLOPE MOVEMENT	X		At time of inspection crest of scarp was 6.4 m from edge of gravel road at closest point. No noticeable retrogression was observed since the 2012 inspection.		X	
EROSION	X		Toe erosion along 40 m stretch of west river bank adjacent to local gravel road. Toe erosion along the west river bank. Erosion scarp ~10 m high.		X	
SEEPAGE		X			X	
COMMENTS:						
<p>At the site, the west bank of the Driftpile River is located on an outside bend of the river channel and has been undergoing toe erosion causing bank slumping and retrogression of the crest of the escarpment toward the adjacent local gravel road. During the site inspection, no observed scarp retrogression was noted. At its closest point, the top of scarp was measured at 6.4 m from the roadway edge. Based on previous inspection reports and observations, lateral degradation of the river bank at the site has been slowly on-going over many years and toe erosion, bank slumping, and scarp retrogression is expected to continue. Over time, or accelerated due to high flow or flooding of the Driftpile River, retrogression of the scarp could encroach on the local road.</p> <p>Based on the historically slow rate of bank retrogression, sudden retrogression of the bank would only be expected to occur in response to extreme river flow or flooding. Therefore, in the short term, annual inspections should be carried out to assess toe erosion and slumping along the river bank and scarp retrogression. A guard rail would be required along the roadway if the top of the bank retrogresses into the Clear Zone of the roadway. Longer term remedial measures may include stabilization of the river bank and/or realignment of the road. In the area of the site, a sewage dugout is located approximately 15 m west of the local road which restricts the space available for shifting of the road away from the crest of the river bank. However, this 15 m wide space could be considered for use in temporary or permanent realignment of the roadway.</p> <p>Design for roadway realignment and/or bank stabilization would require additional investigation and assessment.</p>						



REFERENCE: IMAGERY DATED SEPT. 24, 2009, PROVIDED BY DIGITALGLOBE. ACCESSED ON DEC. 9, 2014.



CLIENT: 	DWN BY: VH	PROJECT: GEO HAZARD ASSESSMENT PEACE REGION (SWAN HILLS)	DATE: DECEMBER, 2014
	CHK'D BY: JAR		PROJECT No.: EG10030
 AMEC Environment & Infrastructure 5681-70 STREET, EDMONTON, ALBERTA, T6B 3P6 PHONE 780-436-2152, FAX 780-435-8425	DATUM: NAD 83	TITLE: SH29: HWY2:50 DRIFTPILE RIVER BANK EROSION SITE PLAN	REV. No.: A
	PROJECTION: UTM Zone 11N		FIGURE No.: FIGURE 1
	APPROXIMATE SCALE: ~ 1:7500		



Photo 1 (left): Looking west at the inside (east) bank of the river directly across from the site location. River level at the time of inspection was lower than the 2013 inspection, exposing river banks.

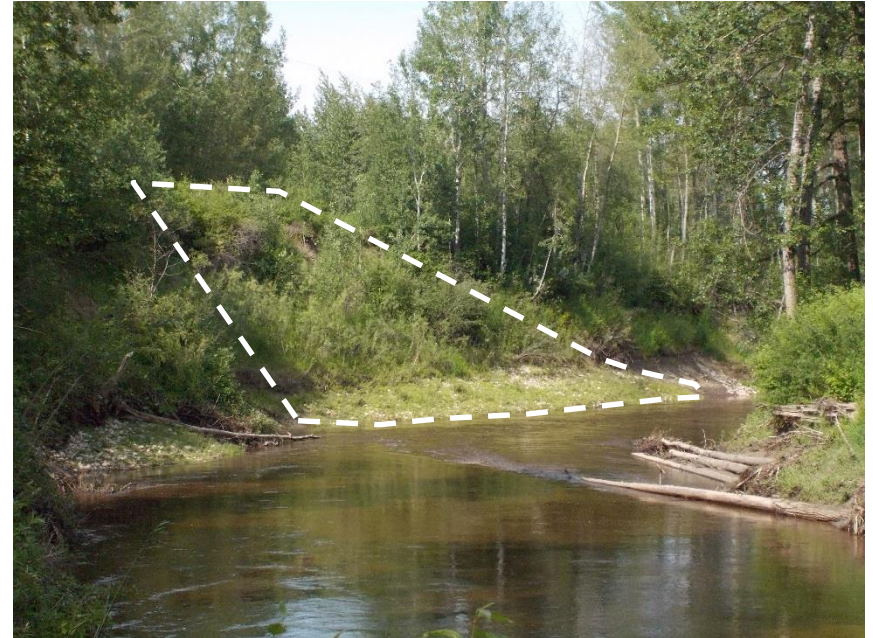


Photo 2 (right): Looking northeast from the top of the scarp. Slumping has occurred and debris was observed in the river.