

SITE NUMBER AND NAME: S005 Chin Coulee		HIGHWAY & KM: 36:02, 37.101	PREVIOUS INSPECTION DATE: May 31, 2017	INSPECTION DATE: May 9, 2019
LEGAL DESCRIPTION: 10-36-007-17 W4M	NAD 83 COORDINATES: UTM Northing Easting 12 5495465 414771		RISK ASSESSMENT: PF: 9 CF: 2 TOTAL: 18	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 920 (north), 920 (south), Ref No. (70000182)			CONTRACTOR MAINTENANCE AREA (CMA): 24	

SUMMARY OF SITE INSTRUMENTATION: Two slope inclinometers and four vibrating wire piezometers, installed after the 2016 highway realignment LAST READING DATE: May 2019		INSPECTED BY: Chris Gräpel (KCB) Chris Morgan (KCB) Alex Frotten (AT) Roger Skirrow (AT) Nicolas Ropchan (AT)
PRIMARY SITE ISSUE: Large deep seated, retrogressive, translational earth slide. Head scarp no longer affecting road surface due to highway realignment.		
APPROXIMATE DIMENSIONS: Overall slope is approximately 100 m above Chin Coulee Reservoir and overall has a slope of approximately 3H:1V from head scarp to reservoir level.		
DATE OF ANY REMEDIAL ACTION: Highway realignment completed in fall 2016. The highway shoulder is now located approximately 10 m north of the extents of previous asphalt cracking. Ditch constructed on south side of highway. Slide area at the top of the embankment was graded. Previously constructed masonry block wall removed.		

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None since realignment.		X
Slope Movement	X		Previous head scarp at road surface graded. Movement ongoing downslope.		X
Erosion		X			X
Seepage	X		Possibly due to snow melt		X
Culvert Distress		X			X

COMMENTS
Visit site once every second year during annual inspections. The longer-term plan for this site is potentially to reroute the road several hundred metres to the west.
There are 10 geocubes installed at the site for slide monitoring. No visible difference was observed to the slide when compared with the 2017 inspection but the geocube data between July 2018 and April 2019 suggests general deformation in a southerly direction, possibly with an element of toe movement in a southeasterly direction. Cumulative movements during the monitoring period were estimated as between 5 mm and 34 mm, across the various instruments.






The slide is large with multiple back scarps, reverse grabens and a large neutral zone. The size of this slide infers a deep-seated translational failure mode on a sub-horizontal weak layer. Toe of slide is below the fluctuating reservoir level, which may influence slide mobilization.

Check dams in ditches have too steep of an upstream slope and may constitute a traffic hazard if a car leaves the highway.



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Legend

-  Slope Inclinometer and Piezometers
-  Erosion
-  Crack
-  Back Scarp
-  Main Scarp

NOTES:
 1. HORIZONTAL DATUM: NAD83
 2. GRID ZONE: UTM Zone 12N
 3. IMAGE SOURCE: World Imagery from ESRI ArcGIS Online
 Source date January 15, 2015
 4. Instrument locations are approximate.

CLIENT




PROJECT
SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE
Site Plan
S005 - Chin Coulee
Hwy 36:02, km 37.101

SCALE 1:2,000 PROJECT No. A05115J03 FIG No. 1

Time: 16:04:16 PM
 Date: February 21, 2018
 File: Z:\A\EDM\A05115J03\ABT_S005_Chin_Coulee_Slide400_Drawings\MXD\S005_180221.mxd

Photo 1 View of S005 slide taken facing northeast from south side of Chin Coulee Reservoir on May 9, 2019.



Photo 2 New highway alignment north of slide area. Photo taken facing west on May 8, 2019.



Photo 3 **Head scarp of slide, south of highway. Photo taken facing east on May 9, 2019**



Photo 4 **Head scarp cracking. Photo taken facing north on May 9, 2019.**

