

SITE NUMBER AND NAME: <b>S044 Cow Creek Washouts</b>		HIGHWAY & KM: 22:06, 11.745	PREVIOUS INSPECTION DATE: June 1, 2017	INSPECTION DATE: <b>May 2, 2018</b>
LEGAL DESCRIPTION: 04/05-35-008-02 W5M 09-34-008-02 W5M	NAD 83 COORDINATES: UTM Northing Easting 11 5507840 703272		RISK ASSESSMENT: PF: 9 CF: 1 TOTAL: 9	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 1425 (north), 1440 (south), (Ref No. 60220660)			CONTRACTOR MAINTENANCE AREA (CMA): 26	

SUMMARY OF SITE INSTRUMENTATION:  None  LAST READING DATE: n/a	INSPECTED BY: Chris Gräpel (KCB) Peter Roy (KCB) Alex Frotten (AT) Roger Skirrow (AT)
PRIMARY SITE ISSUE: Creek erosion adjacent to highway.	
APPROXIMATE DIMENSIONS: Four erosion sites with near vertical erosion scarps 2 to 3 m high, between 10 and 20 m long. The four sites are located along an 800-m length of highway.	
DATE OF ANY REMEDIAL ACTION: Sheet pile walls installed approximately 1.5 m from the highway shoulder in March 2018 at all five erosion locations. The sheet pile walls were designed to stop to the creek erosion from reaching the highway.	

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	Asphalt not affected by erosion sites		X
Slope Movement	X		Sink holes present as site at the time of inspection due to construction activities.	X	
Erosion	X		Retreating erosion scarps are approaching highway.	X	
Seepage		X			X
Culvert Distress		X			X

<b>COMMENTS</b>	
Erosion scarps within as little as 3.2 m from edge of pavement at four different sites. Sites named as follows from north to south:	
	<u>Attack Angle</u>
Site D (west side of highway), waypoint 352 guard rail installed	80°
Site C North, waypoint 351	130°
Site C South, waypoint 350	155°
Site B – guard rail installed, waypoint 347	115°
Site A, waypoint 348	125°
Exposed soils are moist silt and clay, some sand and gravel with occasional cobbles and boulders throughout.	
Cow Creek, in this reach, is a freely meandering stream in a wide silt-sand-gravel plain, showing cut-offs, ox-bow lakes, meander scars and point bars.	
All cut banks have high attack angles, gravel beds, scour hole formed, and erodible material in cut bank. With gravel/cobble beds significant changes to the bed and channel that only occurs during high energy runoff events.	

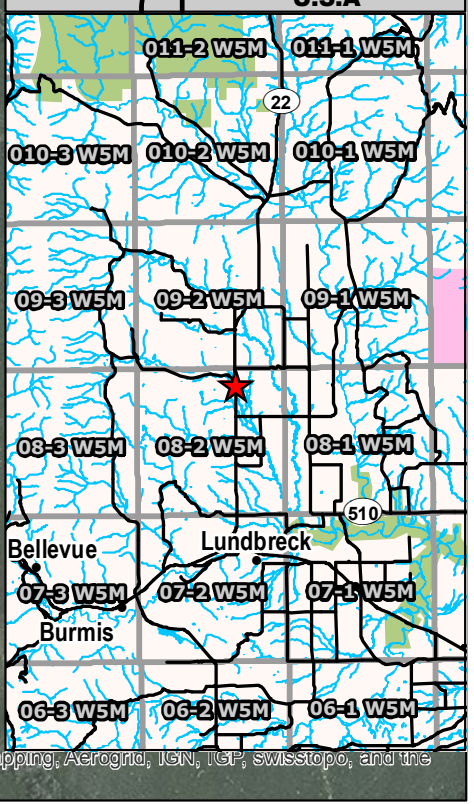
Main scarps from erosion have retrogressed into the ditch at Site A and B, but gully erosion between ditch and creek into creek has not started yet.

The bridge sized culverts south of Site D are partially plugged with wood debris. The wood debris should be cleared by the maintenance contractor.

Utility cable exposed at Site A where erosion has retrogressed into ditch.

The presence of sink holes and excavations for utility locates at the site were communicated to the contractor to get the holes filled as soon as possible. The holes are a hazard to the public who walk at the edge of the highway.

Time: 15:49:53 PM  
 Date: August 08, 2018  
 File: Z:\AEDM\A05115A03\ABT Southern Region GRMP\400 Drawings\2018\2\_Section BIMXD\S044\_180808.mxd



**Legend**

- GPS Track (May 2, 2018)
- ➔ Flow Direction



**NOTES:**  
 1. HORIZONTAL DATUM: NAD83  
 2. GRID ZONE: UTM Zone 11N  
 3. IMAGE SOURCE: World Imagery, ESRI ArcGIS Online.  
 Southern Alberta 2015 Imagery

CLIENT

*Alberta*

**Klohn Crippen Berger**

PROJECT SOUTHERN REGION GEOHAZARD RISK MANAGEMENT PROGRAM		
TITLE Site Plan S044 - Cow Creek Hwy 22:06 km, 11.745		
SCALE 1:4,000	PROJECT No. A05115A03	FIG No. 1

**Photo 1**      **Site D – Sheet pile wall was installed 1.5 m off the highway shoulder. Guard rail replaced. Photo was taken facing south on May 2, 2018.**



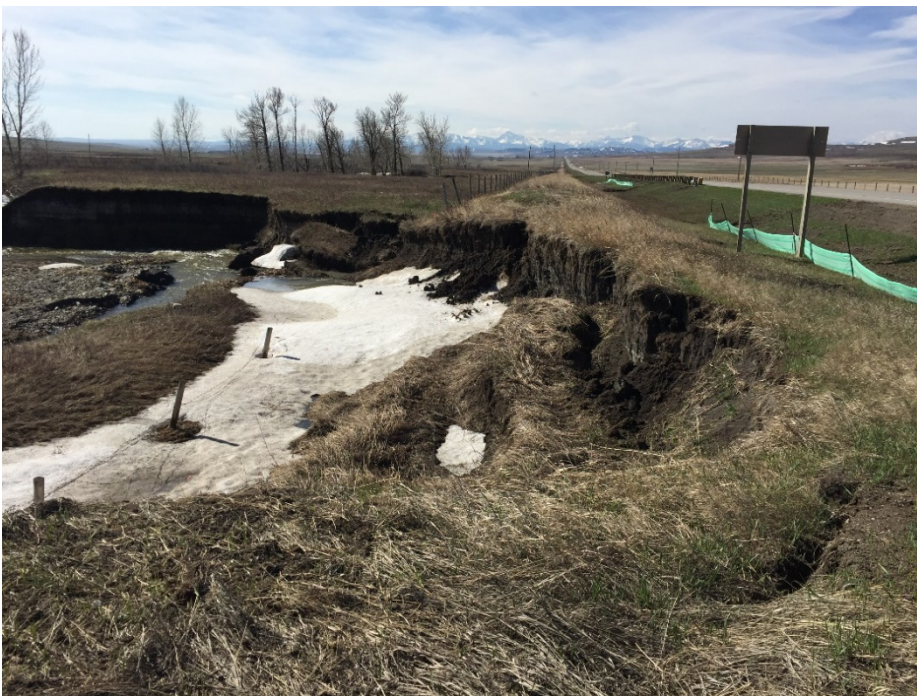
**Photo 2**      **Site C (north) – Erosion has occurred in a side channel which had some ponded water at the time of inspection. Main channel 15 m to right of side channel. Sheet pile wall installed 1.5 m off the highway shoulder. Photo was taken facing north on May 2, 2018.**



**Photo 3** Site C (south) - Sheet pile wall installed between highway and edge of scarp. Photo was taken facing south on May 2, 2018.



**Photo 4** Site B - erosion scarp undermining fence with retrogressing back scarp instability approaching ditch. Sheet pile wall installed 1.5 m off the highway shoulder. Photo was taken facing north west on south on May 2, 2018.



**Photo 5** Site A - erosion scarp with retrogressing back scarp instability extending into ditch. Sheet pile wall installed 1.5 m off the highway shoulder. Guard rail replaced. Photo was taken facing north on May 2, 2018.



**Photo 6** Sink holes up to 1 m deep where noted across all 4 sites due to the recent construction activities. The contractor who installed the sheet piles were contacted instructed to get these remediated as soon as possible.

