

## **Highway 742 – Goat Pond, North Fan (Km 12.8)**

This site is located approximately 13 km southbound from the junction between Highway 742 and Three Sisters Parkway in Canmore, AB and adjacent to the north end of Goat Pond in the upper end of the Goat Creek valley. The site location is shown on Figures A1 and A2 in Appendix A. The site coordinates are listed in Table A1 in Appendix A.

The site inspection was performed on October 18, 2008 by Mr. Andrew Bidwell, P.Eng. of AMEC.

### **Background**

AMEC is not aware of any previously reported problems at this site.

A general description of the physical setting and conditions around this site is presented in Section 4.2 of this report.

### **Site Observations**

- The highway crosses the lowermost portion of a fluvial/colluvial fan at this site. This fan has been deposited below a drainage basin in the southwest facing slopes above the valley and has developed over time since the last glaciation. Photo 742-38 shows a typical view of the fan as seen from the highway.
- The creek channel visible in the fan appears to carry only seasonal flows, and the surface channel tapers out a short distance upslope of the highway (see Photo 742-38). It appears that seasonal flows along the channel percolate into the lowermost portion of the fan and cross the highway alignment as subsurface flow.
- As shown in Photo 742-39, granular material from portions of the southern side of the fan above the highway have been excavated in recent years for use as construction material.

### **Assessment and Risk Level**

There appears to be very little to no risk to the highway from debris flows along the creek channel. It does not appear that significant amounts of debris have been deposited on the fan in proximity to the highway in recent years, nor is there an active creek channel incised into the surface of the fan around the highway right-of-way.

The recommended Risk Level for this site, based on AT's debris flow risk matrix, is as follows:

- Probability Factor of 2 to reflect the apparently inactive debris deposition on the fan around the highway in recent years and allowing for a very low to low probability of debris deposition around the highway elevation in the future.
- Consequence Factor of 1.

Therefore, the recommended Risk Level for this site is 2.

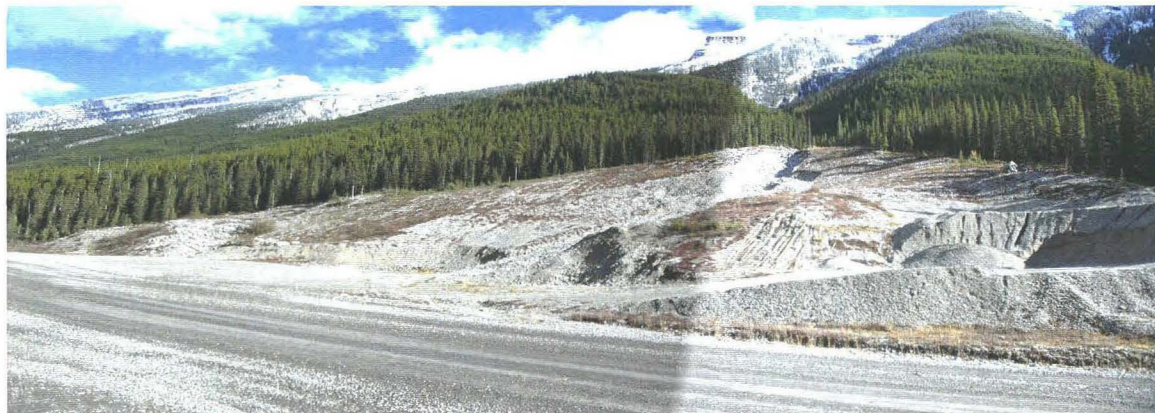
### **Recommendations**

No further assessment or monitoring work is recommended for this site.

## Hwy 742 – Goat Pond, North Fan



**Photo 742-38** (top) – Facing northeast along the seasonal creek channel. The surface channel tapers out a short distance upslope of the highway and it appears that any seasonal flow along the creek percolates down into the fan and flows below the highway.



**Photo 742-39** (bottom) – Facing north from the highway. Note how portions of the fan along the highway have been excavated for use as construction material.