

Site 42 – West of Fir Creek Rock Cut

This site consists of a rock cut along the north side of the highway and immediately west of the crossing over Fir Creek. The maximum height of the near-vertical rock cut was estimated to be 5 m.

The rock exposed in the cut consisted of bedded shale, coal and conglomerate rock with bedding strike roughly perpendicular to the highway and steeply dipping down to the west. Therefore, from a slope stability perspective the bedding is oriented favorably with respect to the highway.

There were minor accumulations of rockfall debris along the toe of the cut slope at the time of the inspection (Photo 2). The debris was typically gravel to cobble sized. The rockfalls are due to ongoing weathering of the exposed rock in the cut slope. There were no signs of rockfall debris being deposited close to the road.

The width of the ditch was approximately 4 m and the depth of the ditch was approximately 1.5 m. Photo 1 shows an overall view of the cut slope. This ditch exceeds the sizing criteria shown on Figure B1 in Appendix B.

AMEC recommends the following Risk Level factors for this site using the rock fall frequency-severity matrix:

- Probability Factor of 13 based on observations of debris from several rockfalls judged to have occurred in the past year.
- Consequence Factor of 1 based on no visual evidence of past rockfalls reaching the paved surface of the road.

Therefore, the recommended Risk Level for this site is 13.

As a proactive measure, it is recommended that the accumulated rockfall debris be cleaned out from the ditch at this site in order to keep the Consequence Factor at 1. In the future, ditch cleaning at this site should be treated as an ongoing maintenance item.



Photo 1 (top) – Facing north across Highway 541 towards the West of Fir Creek Rock Cut site. The exposed rock at this site is generating ongoing minor rockfalls of gravel to cobble sized debris. The existing ditch appears to be sufficient to prevent debris from landing on the road.



Photo 2 (bottom) – Facing west across the West of Fir Creek Rock Cut site. The accumulated rockfall debris along the toe of the slope should be cleaned in order to restore the full capacity of the ditch and maintain the low Consequence Factor for this site.