

SITE C11: H837:02 DITCH EROSION

LEGAL LOCATION: **5-30-21-W4**

REFERENCE LOCATION
ALONG HIGHWAY: 1 km N of Highway 575

UTM COORDINATES (NAD 83): **N 5,711,595 E 368,490**

AT FILE: **H837:02**

AT PLAN & PROFILE:

Date of Initial Observation: May 2000

Dates of Previous Inspections:
(Inspected by) May 12, 2000 (KCCL)
November 10, 2000 (KCCL)
May 22, 2001 (KCCL)
May 16, 2002 (KCCL)
May 21, 2003 (KCCL)
May 18, 2004 (KCCL)

Instruments Installed: none

Instruments Operational: none

Reading Dates:
(Read by) none

Risk Assessment: **PF(9) * CF(1) = 9**

Last Updated by: Klohn-Crippen Consultants Ltd. (KCCL)
Date: June 2004

Location and General Description of Instability

H837:02 is located about 20 km northwest of Drumheller, on the steep approach into the Red Deer River valley, above the town of Nacmine. The highway is located at the base of steep backslopes, which are about 20 m to 30 m high. The erosion at this site had initially been reviewed on May 12, 2000 and November 10, 2000. There had been noticeable deterioration of the ditch over the 6 months between these two observations.

The ditch depth on May 12, 2000 was about 2 m to 3 m deep and 4 m to 5 m wide. The scarp of the ditch was about 0.5 m off the road edge. The erosion comprised an overdeepened ditch with undermining of rock-filled gabion baskets installed previously as flow check structures. Between the site visits in November 2000 and May 2001, the ditch was backfilled with fill material imported from a nearby ditch excavation.

In October 2002, gravel filled Geo-Cell protection was placed on the surface.

Geotechnical Conditions

Highly erodable silts and clays of the Horseshoe Canyon Formation.

Chronology (Refer to Section G for Further Information)

2000

Up to 3 m deep erosion channel in highway ditch very close to pavement edge.

Spring 2001

Erosion channel backfilled with local material.

Fall 2002

Gravel filled Geo-Cell protection was installed over a length of about 120 m with 3 gabion weirs at about 50 m spacing. Project cost approx. \$22,000.

Reports and Documents

May 2001 Inspection Report (KCCL)

May 2002 Inspection Report (KCCL)

May 2003 Inspection Form (KCCL)

May 2004 Inspection Form (KCCL)

Ditch Erosion Remediation Study and Recommendations (KCCL), March 27, 2001.

Ditch Erosion Protection Recommendations (KCCL), July 18, 2001 revised July 8, 2002.