PEACE REGION
(GRANDE PRAIRIE DISTRICT – SOUTH) GRMP
SITE INSPECTION FORM

Should be SITE NUMBER AND NAME: **GP044 Cutbank River Slide (North)**	HIGHWAY & KM: 40:40, 1.002	PREVIOUS INSPECTION DATE: June 15, 2022	INSPECTION DATE: **June 11, 2024**
LEGAL DESCRIPTION: NE-21-65-05-W6M	NAD 83 COORDINATES: UTM 11 Northing 6056410 Easting 391477	RISK ASSESSMENT: PF: 9 CF: 2 TOTAL: 18	
AVERAGE ANNUAL DAILY TRAFFIC (AADT): 2,300 (north) & 2,280 (south) (Reference No. 70000761, 2023) 2,520 (north) & 2,300 (south) (Reference No. 70000671, 2023)		CONTRACT MAINTENANCE AREA (CMA): 504	

SUMMARY OF SITE INSTRUMENTATION:	INSPECTED BY:
Inoperable: One slope inclinometer (SI), one vibrating wire piezometer (VWP), and two standpipe piezometers (SPs) installed in 2017. LAST READING DATE: N/A	Chris Gräpel (KCB) Courtney Mulhall (KCB) Robert Senior (TEC) Rishi Adhikari (TEC) Babatunde Awokunle (TEC)

PRIMARY SITE ISSUE: Landslide in backslope along west side of Hwy 40:40 that was repaired in 2020. A bedrock outcrop at south end of site, which would generate rockfalls, was also repaired. The site is located just north of the Cutbank River Bridge.

APPROXIMATE DIMENSIONS: An approximate 450-m length of highway was being impacted before repairs were completed in 2020. Backslope is approximately 30 m high and originally had a slope of 1H:1V to 1.5H:1V before it was flattened.

DATE OF ANY REMEDIAL ACTION: Unknown – backslope flattened. 2020 – backslope flattened again, diversion ditch constructed at crest of backslope, two drainage swales reconstructed on backslope, and riprap check dams placed in west highway ditch.

ITEM	CONDITION EXISTS		DESCRIPTION AND LOCATION	NOTICABLE CHANGE FROM LAST INSPECTION	
	YES	NO		YES	NO
Pavement Distress		X	None observed at time of 2024 inspection, except at GP005 site just south of GP044 site (Photo 1).		X
Slope Movement	X		Scarps on mid-slope and near/ along crest of backslope, and toe rolls on backslope (Photos 1 through 4), which are more apparent than previous inspection. Overall, slide movements appear minimal compared to movements observed prior to repair completed in 2020.	X	
Erosion	X		Rill and small gully erosion on backslope (Photo 5). South drainage swale failing, gully eroded down center which appears deeper than previous inspection (Photos 3 and 4).	X	
Seepage	X		Seepage/erosion feature on backslope (approximately 1 m wide at base, 10 m wide at top, and 10 m high up backslope) near south end of site. Feature appears to be caused by groundwater seepage and possible flow over crest of backslope, and is larger than previous inspection (Photos 1, 2, and 5). Seepage and ponded water have also previously observed by others on backslope.	X	
Culvert Distress		X	No culverts observed by KCB.		X

COMMENTS
Vegetation is beginning to re-establish on slope.
Some thin translational movement observed on backslope with mid-slope toe rolls in areas of sliding.
Pavement distress (cracking and settlement) observed at GP005 site on Hwy 40:40 just south of GP044 site. A call-out inspection was completed at GP005 site in May 2024.

Maintenance/Repair/Monitoring Recommendations:
• Monitor recent repair, including erosion gully forming in drainage swale (Photos 3 and 4) and seepage/erosion feature on backslope (Photo 5). Slope failures, including shallow slope failures, appear to be slow and are not currently impacting highway but should continue to be monitored.
  ○ Drainage swale may need to be armored with riprap if erosion gully worsens.
  ○ Seepage/erosion feature should be repaired before it leads to destabilization of surrounding slope. Possible repair options could include backfilling with granular material or constructing an inverse filter with drainage. Estimated cost: $50,000 to $150,000.

This report is an instrument of service of Klohn Crippen Berger (KCB). The report has been prepared for the exclusive use of Alberta Transportation and Economic Corridors (Client) for the specific application to the Peace Region (Grande Prairie District – South) Geohazard Risk Management Program (Contract No. CON0022166), and it may not be relied upon by any other party without KCB's written consent. KCB has prepared this report in a manner consistent with the level of care, skill and diligence ordinarily provided by members of the same profession for projects of a similar nature at the time and place the services were rendered. KCB makes no warranty, express or implied. Use of or reliance upon this instrument of service by the Client is subject to the following conditions: (i) The report is to be read in full, with sections or parts of the report relied upon in the context of the whole report. (ii) The observations, findings and conclusions in this report are based on observed factual data and conditions that existed at the time of the work and should not be relied upon to precisely represent conditions at any other time. (iii) The report is based on information provided to KCB by the Client or by other parties on behalf of the client (Client-supplied information). KCB has not verified the correctness or accuracy of such information and makes no representations regarding its correctness or accuracy. KCB shall not be responsible to the Client for the consequences of any error or omission contained in Client-supplied information. (iv) KCB should be consulted regarding the interpretation or application of the findings and recommendations in the report. (v) This report is electronically signed and sealed and its electronic form is considered the original. A printed version of the original can be relied upon as a true copy when supplied by the author or when printed from its original electronic file.

Courtney Mulhall, M.Sc., P.Eng.
Geotechnical Engineer

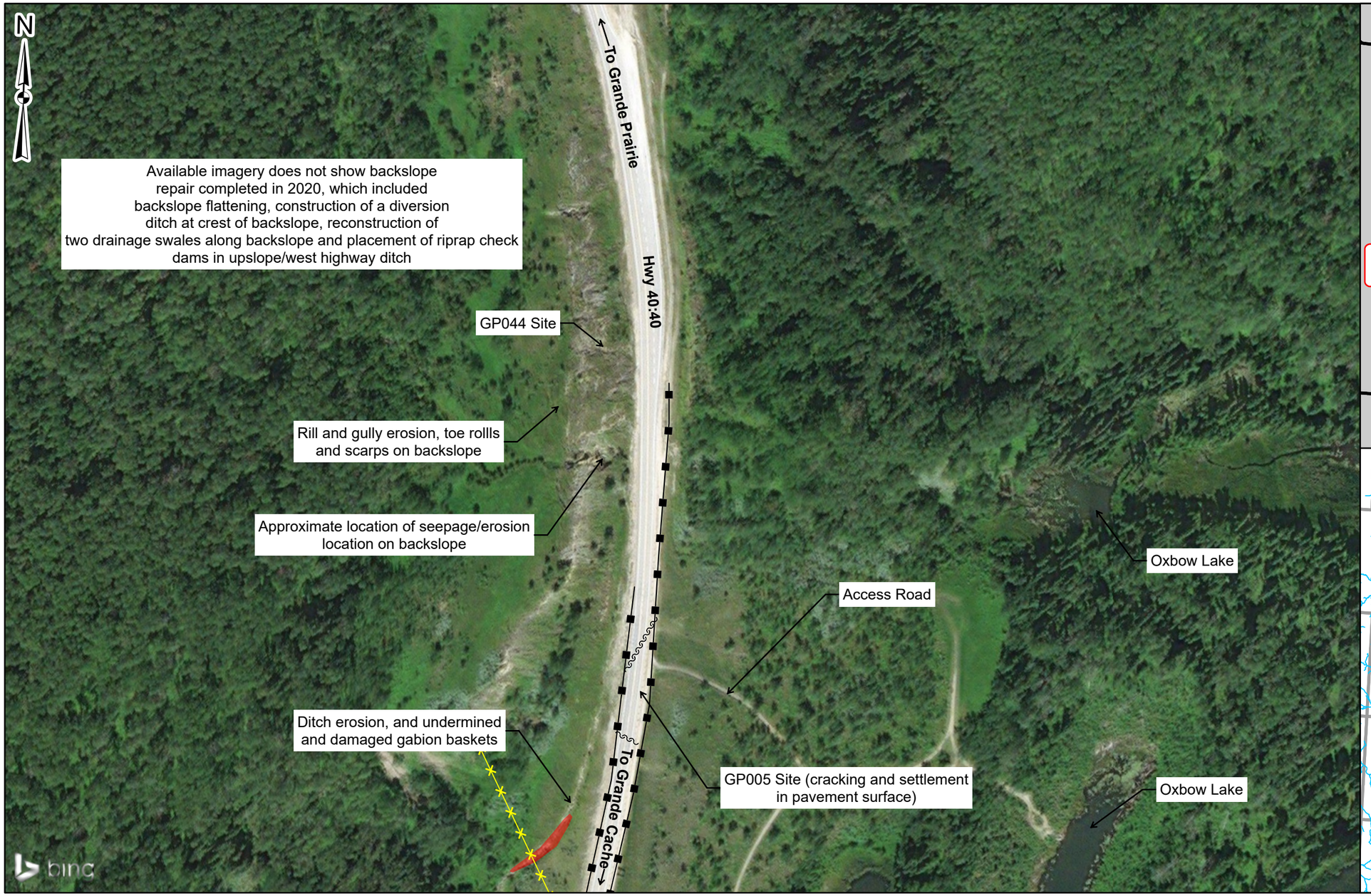
PERMIT TO PRACTICE
KLOHN CRIPPEN BERGER LTD.

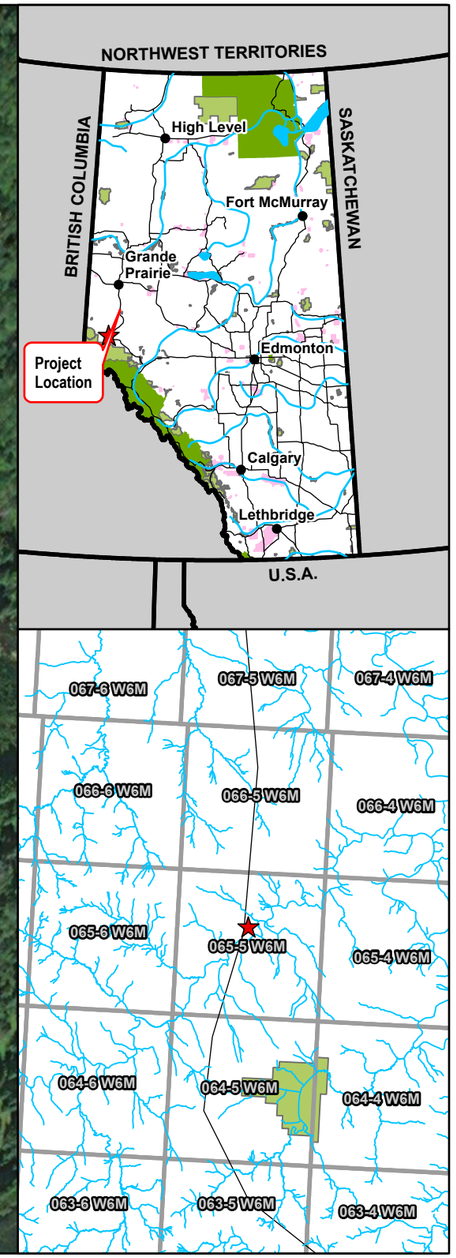
RM SIGNATURE: _____

RM APEGA ID #: 187607

DATE: 15 Oct. 2024

PERMIT NUMBER: P009196
The Association of Professional Engineers and Geoscientists of Alberta (APEGA)





Legend

- Guardrail
- Crack
- Approximate Location of Overhead Powerlines
- Erosion

0 150 Metres

NOTES:
1. HORIZONTAL DATUM: NAD83
2. GRID ZONE: UTM ZONE 11N
3. IMAGE SOURCE: 2024 MICROSOFT CORPORATION, 2024 MAXAR CNES, DISTRIBUTION AIRBUS DS

CLIENT: Alberta

Klohn Crippen Berger

PROJECT: PEACE REGION (GRANDE PRAIRIE DISTRICT-SOUTH) GEOHAZARD RISK MANAGEMENT PROGRAM

TITLE: Site Plan
GP044 - Cutbank River Slide (North)
Hwy 40:40, km 1.002

SCALE	PROJECT No.	FIG No.
1:2,500	A05116A01	1

File: Z:\AE\DM\A05116A01 ABT Grande Prairie South GRMP\400 Drawings\GIS\MXD\2024\Section B\AT_GPSouth_SectionB_241015.aprx Date: Time: Creator: AHarrison

Inspection Photographs

Photo 1 **Overview of GP044 site along backslope on west side of Hwy 40:40. Photo taken with Unmanned Aerial Vehicle (UAV) on May 9, 2024, facing northwest.**

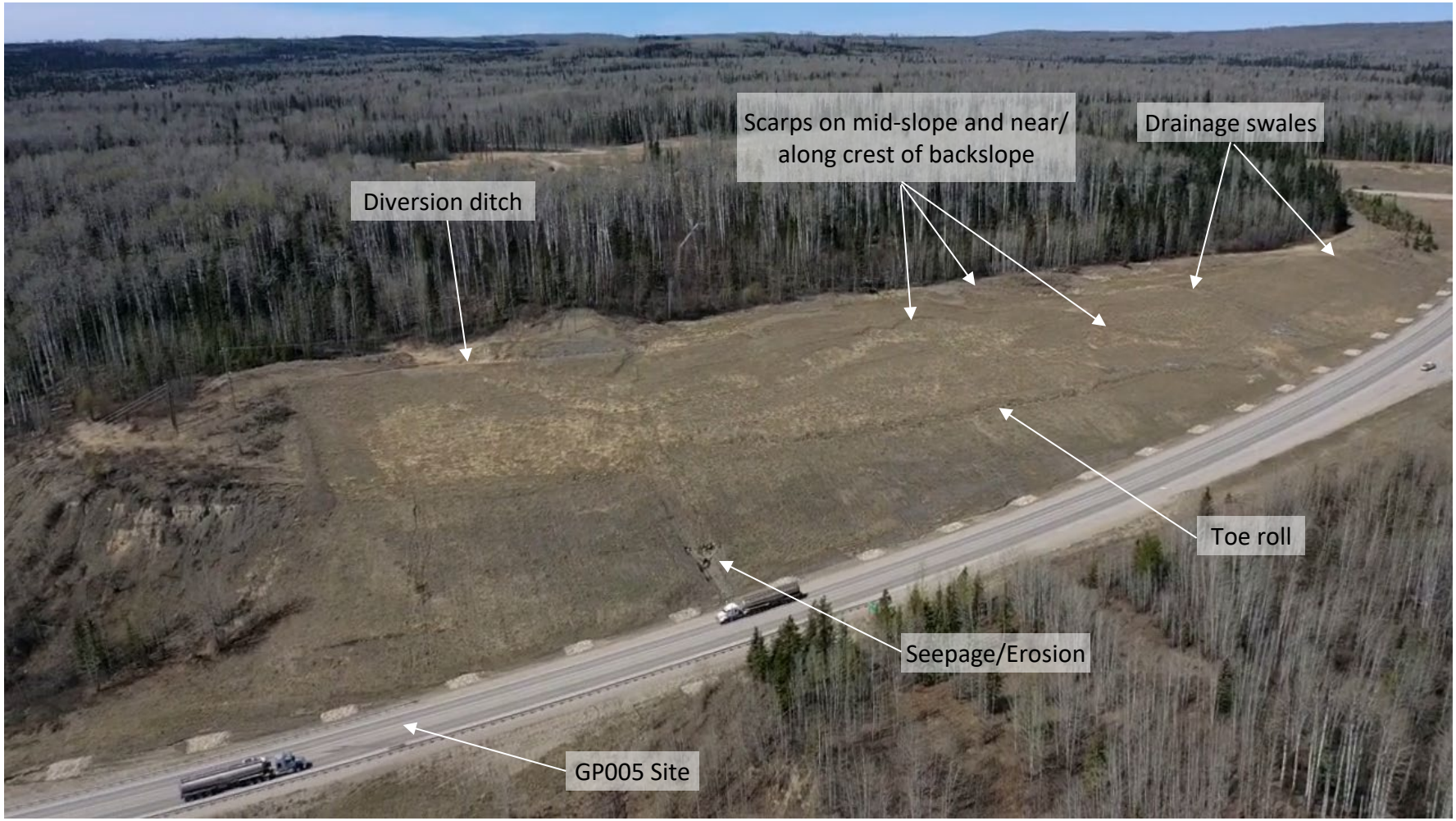


Photo 2 **South end of GP044 site along backslope on west side of Hwy 40:40. Note rill and small gully erosion on backslope. Photo taken with UAV on May 9, 2024, facing west.**

Photo 3 **North end of GP044 site along backslope on west side of Hwy 40:40. Note rill and small gully erosion on backslope and in drainage swale. Photo taken with UAV on May 9, 2024, facing west.**

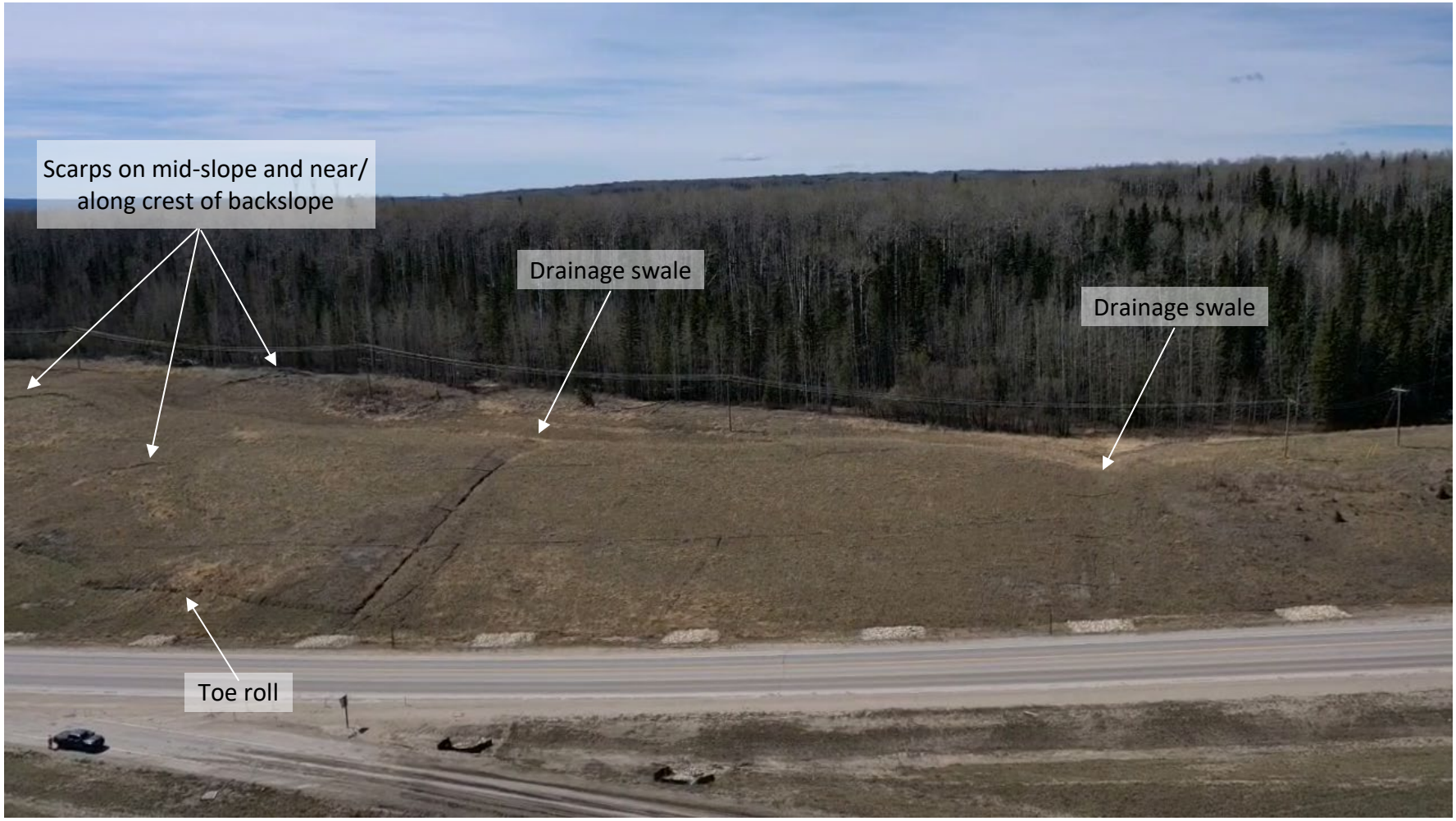


Photo 4 **Scarps on mid-slope and near/along crest of backslope. Note rill and small gully erosion on backslope and in drainage swale. Photo taken with UAV on May 9, 2024, facing south.**

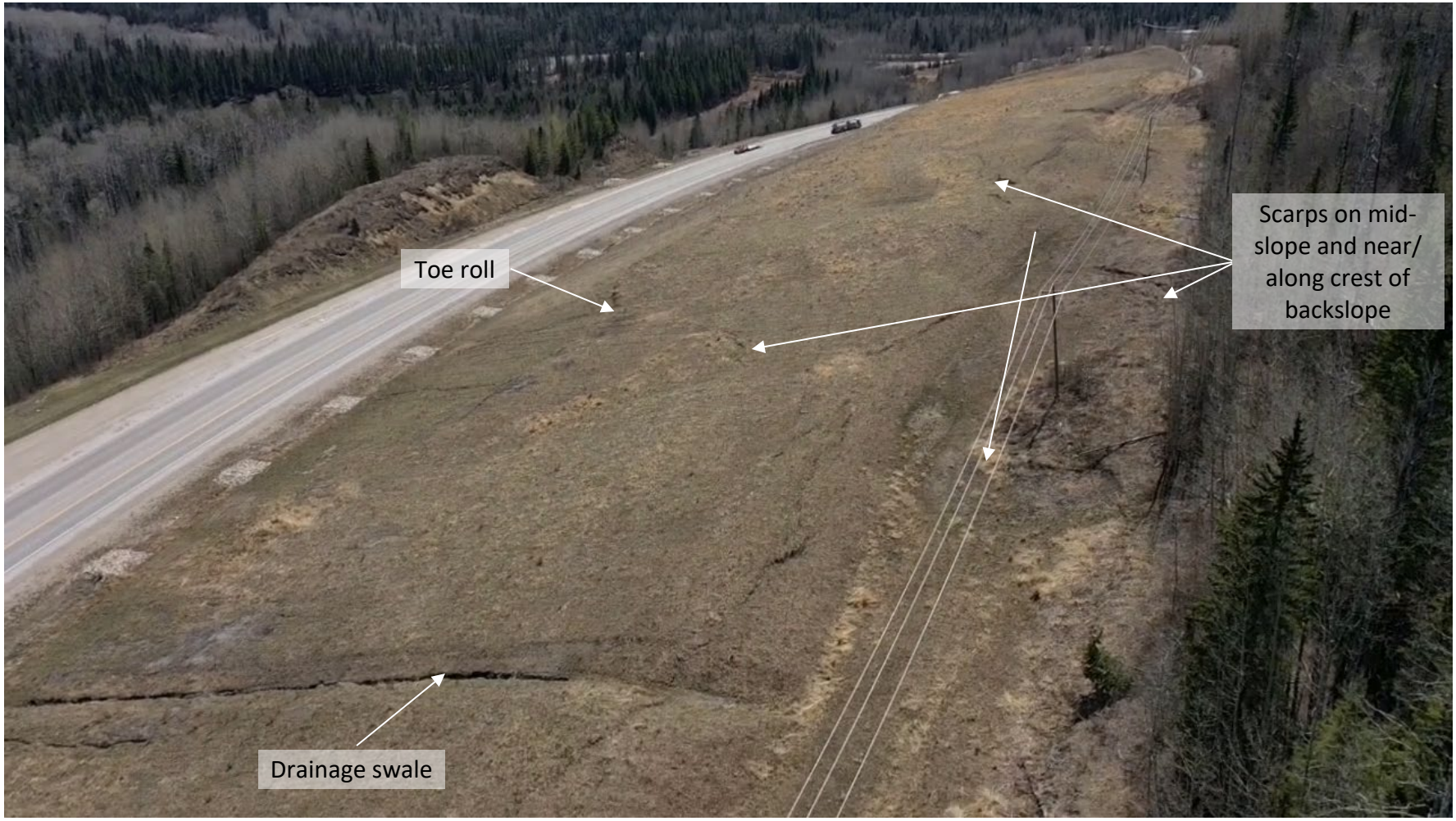


Photo 5 **Diversion ditch on crest of backslope. Photo taken with UAV on May 9, 2024, facing west near south end of the GP044 site.**

Photo 6 **Rill and guy erosion on backslope. Photo taken May 9, 2024, facing west.**

Photo 7 **Erosion and seepage on backslope. Photo taken May 9, 2024, facing west.**