Province of British Columbia

Forest Appeals Commission

Fourth Floor 747 Fort Street
Victoria British Columbia
**Telephone:** (250) 387-3464
**Facsimile:** (250) 356-9923

Mailing Address:
PO Box 9425 Stn Prov Govt
Victoria BC V8W 9V1

## DECISION NOS. 2003-FOR-005(b) and 2003-FOR-006(b)

In the matter of two appeals under section 131 of the *Forest Practices Code of British Columbia Act*, R.S.B.C. 1996, c. 159.

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| **BETWEEN:** | Kalesnikoff Lumber Co. Ltd. | **APPELLANT** |
| **AND:** | Government of British Columbia | **RESPONDENT** |
| **AND:** | Forest Practices Board | **THIRD PARTY** |
| **AND:** | Interior Lumber Manufacturers Association<br>Council of Forest Industries and<br>Coast Forest and Lumber Association | **INTERVENORS** |
| **BEFORE:** | A Panel of the Forest Appeals Commission<br>Lorraine Shore, Panel Chair<br>Bruce Devitt, Member<br>Robert Wickett, Member | |
| **DATE:** | July 12 to 16, 2004<br>October 18 to 21, 2004<br>December 6 and 7, 2004 | |
| **PLACE:** | Vancouver BC | |

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| **APPEARING:** | For the Appellant: | Kathryn Denhoff, Counsel<br>Jason Fisher, Law Student |
| | For the Respondent: | Anthony Fraser, Counsel<br>Lisa D. McBain, Counsel |
| | For the Third Party: | Ben van Drimmelen, Counsel<br>John Pennington, Counsel |
| | For the Intervenors: | John H.L. Hunter, Q.C., Counsel |

### APPEALS

Kalesnikoff Lumber Co. Ltd. ("Kalesnikoff") filed separate appeals against two determinations by John Wenger, Deputy District Manager (the "Deputy District Manager"), Kootenay Lake Forest District, Ministry of Forests (the "Ministry")[1], as

[1] Effective June 16, 2005, the Ministry of Forests became the Ministry of Forests and Range.

reviewed by two separate Review Panels. Both determinations relate to slides that occurred along the Schroeder Creek Mainline road. The first determination was made following one slide; the second determination was made following three slides.

Determination #1

In a determination dated January 31, 2003, the Deputy District Manager found that Kalesnikoff had contravened section 45(3)(a) of the *Forest Practices Code of British Columbia Act* (the "*Code*") by constructing a forest road, the Schroeder Creek Mainline, which resulted in slumping or sliding of land in the vicinity of 2+500 to 2+610 on that road. He considered the applicability of the defence of due diligence and concluded that Kalesnikoff had not exercised due diligence to prevent the contravention. The Deputy District Manager imposed a penalty of $1,000 for that contravention.

The Deputy District Manager also found that Kalesnikoff had contravened section 12(1)(b) of the *Forest Road Regulation*, B.C. Reg. 106/98 (the "*Regulation*") by failing to ensure that the road construction was carried out in general conformance with the requirements of the road layout and design. He concluded that the defence of due diligence failed, but did not impose a further penalty for the contravention of the *Regulation*.

In an administrative review decision dated September 29, 2003, the Review Panel upheld the determination but increased the penalty to $2,500 for each contravention, for a total penalty of $5,000.

Determination #2

In a determination dated March 28, 2003, the Deputy District Manager found that Kalesnikoff had contravened section 45(3)(a) of the *Code* by constructing the Schroeder Creek Mainline, which resulted in slumping and sliding of land in three locations, all in the vicinity of 6+333 to 6+480 on that road. The Deputy District Manager also found that Kalesnikoff had contravened section 13(1)(c) of the *Regulation* by failing to ensure that the drainage system for the road intercepted surface water and subsurface drainage from the cut slope, and failing to prevent water from being directed onto potentially unstable slopes. He considered the applicability of the defence of due diligence and concluded that Kalesnikoff had not exercised due diligence to prevent the contraventions. The Deputy District Manager imposed a $3,000 penalty for the contravention of the *Code*, and a $600 penalty for the contraventions of the *Regulation*.

In an administrative review decision dated September 24, 2003, the Review Panel confirmed the determinations and penalties.

Appeals

The appeals were filed with the Forest Appeal Commission pursuant to section 131 of the *Code*. The Commission's powers on this appeal are set out in section 138 of the *Code*, which states:

**138** (1) On an appeal of a determination or of the confirmation, variance or rescission of a determination, the commission may consider the findings of

(a) the person who made the determination that is being appealed, or

(b) the reviewer.

(2) On the appeal, the commission may

(a) confirm, vary or rescind the determination appealed from, or

(b) refer the matter with or without directions back to the person

(i) who made the initial determination, or

(ii) in the case of a determination made under section 129(5)(c), the reviewer who made the determination.

Kalesnikoff seeks an order reversing the Deputy District Manager's determinations and the review decisions, and overturning the penalties.

## BACKGROUND

General

These appeals relate to the construction of the Schroeder Creek Mainline which is located in the Schroeder Creek area, approximately 20 kilometers north of Kaslo, British Columbia, in the Kootenay Lake Forest District. Schroeder Creek Mainline was constructed in the summer and fall of 2001 in order to access timber within various blocks in cutting permits 23 and 26 of Forest Licence A30172.

The undeveloped timber in Schroeder Creek was made available to Kalesnikoff sometime prior to 1997, when Kalesnikoff successfully competed for an additional quota position from the Ministry in return for Kalesnikoff committing to invest $600,000 into a value-added facility and creating jobs in a value-added sector.

According to Kalesnikoff's witnesses, this area was a challenge for Kalesnikoff because it was not connected to its normal area of operation, the area was steep, there were significant economic challenges around that particular drainage, and the timber profile was not what Kalesnikoff was accustomed to. Although Kalesnikoff operated in many challenging areas, this one presented more challenges.

Planning for the road to access the area began in 1999. At that time, both the Ministry and Kalesnikoff understood that the project was the most difficult one

Kalesnikoff had undertaken, and one of the most difficult that any forest company in the region had undertaken. Three possible routes for the road were considered. Only the one chosen is relevant to these appeals.

Randy Simpson, a forest technician with Surewood Forest Consultants Ltd. ("Surewood"), was retained to design the road. Surewood later became Timberland Forestry Consultants ("Timberland"). A number of other people were involved in the planning and design of this road, but two of the qualified registered professionals are particularly relevant in this case:

- W.H. Wells, P.Ag, of W.H. Wells Consulting, was retained to perform mapping, to provide terrain stability field assessments of the proposed road, to assess the road corridors that were identified by others working on the project, to provide assessment on the individual harvesting units that had been proposed, and to provide detailed recommendations within his expertise; and

- Bryan E. Woods, P.Eng, of Woods Associates Engineering, was the professional engineer that Kalesnikoff retained to provide ongoing engineering input for the design of the proposed Schroeder Creek Mainline.

The first step in the process was to have Level D Terrain Mapping done. Level D Terrain Mapping is "reconnaissance overview level mapping" which assesses surficial materials, geology and geological processes, and bedrock of the area, which subsequently aids in the identification of terrain stability hazards. This ultimately assists in the creation of a terrain hazard map, which identifies potentially unstable, unstable and stable terrain.

Mr. Wells performed the Level D mapping with Marc Deschênes, who also performed avalanche mapping. The Level D mapping was based on aerial photographs, which were then divided into "polygons" for the purposes of evaluating smaller sections of the general area and identifying areas that appear to be similar in terrain. Approximately 20 per cent to 30 per cent of the polygons were confirmed through field inspections, meaning they were checked to determine whether the assessment of the aerial photographs were consistent with the "on the ground" conditions.

At approximately the same time, Kalesnikoff contracted with Surewood to develop a complete assessment called a Total Chance Plan. This plan examined physical characteristics, timber values, and opportunities of access and harvesting. Mr. Wells was part of the team that developed the Total Chance Plan, which was headed by Marc Reiter, the principal of Surewood.

In January 2000, Mr. Wells and Mr. Deschênes produced a document entitled "Reconnaissance Terrain Hazard Assessment Schroeder Creek Watershed with Additional Interpretations for Planned Developments". This document identifies water drainage and soil surface erosion as a significant concern in the building of

the mainline road, and it also provides recommendations on how to decrease the hazards surrounding these (drainage) issues.

Terrain Stability Assessments

Mr. Wells produced an initial Terrain Stability Field Assessment and a Road Stability Prescription for the proposed route in 1999.

He also conducted a detailed terrain stability field assessment of the road. The detailed assessment was set out in his report titled "Detailed Terrain Stability Field Assessment & Review; Schroeder Creek Mainline Road Design (0+269 - 7+623)" dated June 11, 2000 (the "Terrain Assessment"). In this report, Mr. Wells evaluates the terrain and the risks and hazards present in the terrain. He describes the bedrock, terrain, drainage, terrain stability, surface erosion and sediment delivery found along the proposed road. He also provides a landslide hazard rating along the road, which is based on conventional road construction. However, having an engineer design the road or portions of it may lower the hazard rating. In a previous report, Mr. Wells had requested special engineered design for three sections "because of complex terrain or requirements for special engineering to achieve a stable road section…". One of those sections is relevant to Determination #1, and will be discussed further below.

Of relevance to the drainage issues related to Determination #2 is the following statement from Mr. Wells' conclusions:

> The design of for [sic] this proposed road takes into account the potential and actual problems related to terrain stability and slope drainage encountered in the route corridor. It is my understanding that some extraordinary techniques will be employed during construction to investigate site specific terrain attributes such as rock competence and unforeseen drainage occurrences.

Engineered Sections of Road

As noted above, Mr. Wells had identified the need for an engineered design of three critical sections of road on steep slopes. According to the evidence presented, an engineered design is generally required when the residual risk is considered to be greater than "low" risk. An engineer will change the conventional road design to address the risk factors in an attempt to decrease the risk. Of relevance to these appeals is the engineered design for 2+529 to 2+707, as the slide, which is the subject of Determination #1, occurred within this stretch of road.

Mr. Woods was the engineer who provided the special design for these sections of road. His design is set out in a July 29, 2000 report titled "Proposed Schroeder Creek Mainline Critical Sections Engineering Construction Prescriptions".

The Road Permit

The authorization to construct 8.016 kilometres of the road was contained in Road Permit R11963, Amendment #1, issued on August 1, 2000 by A.W. Bradley, District Manager, Kootenay Lake District. Mr. Wells' Terrain Assessment and Mr. Woods' special design for the three critical sections were expressly included as part of Schedule A1 of the permit, "Road Layout and Design". Other design documents were also included in this section and will be addressed under Issue 3.

The Slides, Determinations and Reviews

The Schroeder Creek Mainline was constructed during the summer of 2001, and the relevant sections of road at issue in this appeal were completed by December of 2001.

In the course of building the first six kilometres of the road, there were six landslides. The last four slides led to the determinations now under appeal. However, the first two are also relevant.

Slide 1 occurred on August 15, 2000 at 0+862, between upper and lower fire trails which had been constructed to fight the "Lost Ledge Fire" in 1985. The slide occurred approximately 35 minutes after the contractor had set off a blast that dislodged approximately 90 cubic metres ("$m^3$") of rock. Workers on the site noted a significant amount of water flowing from the slide site, and noted plastic sheeting and a fire hose in the slide scarp area. A subsequent investigation by Calvin VanBuskirk, an engineer with Terratech Consulting Ltd., concluded that these materials were likely part of the water intake installation used to fight the fire. The sump (i.e., water intake area), however, was not identified on the fire map. A determination dated May 14, 2001, found that Kalesnikoff had contravened section 45(3) of the *Code*, but imposed no penalty since Kalesnikoff would have to bear the costs of remediation measures. An administrative review decision, dated July 27, 2001, upheld the determination. Kalesnikoff spent $56,000 reconstructing this area, which was outside of the planned road.

Slide 2 occurred in the spring of 2001 at 1+050. The land slumped in an area where spoil had been placed. "Spoil" is excess material that has been excavated elsewhere during the road construction.

An investigation determined that the slump occurred as a result of an underlying weak layer of bedrock called talc schist. The existence of the talc schist could not have been foreseen. The Operations Manager for the Ministry of Forests wrote to Kalesnikoff on February 4, 2002, advising that there would not be any formal enforcement action taken in relation to this slide.

*Slide related to Determination #1*

Slide 3 occurred on the Schroeder Creek Mainline road between 2+500 to 2+610. In or around this area, Kalesnikoff had placed fill to support the road, and had used the bench below to place spoil. The volume and placement of the fill and spoil at

this site were matters that received a great deal of scrutiny at the hearing of this appeal.

The final fill slope was initially finished with a 90 per cent angle of repose and the road width was approximately 8.5 metres. After constructing this section of the road, Kalesnikoff noticed active soil movement in the form of "tension cracking" along the road edge in September 2001. Mr. Woods advised Kalesnikoff to rework the original placement of fill to stabilize the slope and stop the movement. The road contractor dug up the material, replaced, reshaped and consolidated it by "tamping" it down. The angle of repose was reduced from a 90 per cent slope to a slope in the range of 60 per cent to 70 per cent. This reworking began on September 26th and was completed in October of 2001.

On Mr. Woods' recommendation, monitoring pins were installed at this location on November 27, 2001, and were subsequently surveyed for analysis. In a letter to Kalesnikoff dated December 3, 2001, and titled "Schroeder Creek Mainline 2+390 to 2+700 Construction Review", Mr. Woods indicates that:

> Two possible mechanisms are currently being considered as causing the displacements, including consolidation as previously discussed and sliding over an underlying bedrock surface. In either case, there does not appear to have been any acceleration of the displacement. At this time, the ongoing displacement of the fill embankment is considered to present a Low hazard of catastrophic failure and presents a Low risk to the creek and forestry resources.

On April 19, 2002, Mr. Woods provided a report to Kalesnikoff. In it, he states that enough displacement at that site had occurred so as to render the road impassable. He instructed Kalesnikoff to remove 50 per cent of the material deposited there, and identified the site between station 0+050 and 0+100 as a suitable one to place the removed material.

Subsequently, 100 per cent of the material and some natural ground was removed. This occurred because, as the crews were working to stabilize the upper part, the lower part was moving away. The excavation began and took approximately one week to complete. To address safety concerns, Kalesnikoff retained Chris Purdue, another geoscientist from Woods Associates Engineering, to act as a spotter on site. Given the steep slope, Kalesnikoff also used equipment to anchor the other equipment working on the lower slope. All of the material was removed by April 30, 2002.

On May 3, 2002, slide 3 occurred at approximately 2+550 of the Schroeder Creek Mainline. Some debris entered Schroeder Creek, which is a domestic watershed and is fish-bearing creek in its lower reaches. The debris restricted the creek's flow for several metres upstream.

On January 31, 2003, the Deputy District Manager issued a determination that Kalesnikoff had contravened section 45(3)(a) of the *Code* and section 12(1)(b) of the *Regulation* in regard to slide 3. Prior to the opportunity to be heard by the

Deputy District Manager, Kalesnikoff was provided with a copy of the Ministry's evidence, which was contained in a document titled "Schroeder Creek Mainline Road Construction (2+500 - 2+610 m) Spoil Site Failure Investigation Report".

Regarding the *Code* contravention, the Deputy District Manager found that Kalesnikoff placed from 24 per cent to 41 per cent more spoil on the site than the designed capacity, resulting in oversteepened slopes. In regard to the contravention of the *Regulation*, the Deputy District Manager said the oversteepened slopes and the weight of the overlying fill material were contributing factors to the slope movement and landslide. He said that the excess amounts were not within an accepted tolerance or variance. He also found that the spoil was constructed on a high-risk site, making the amount of spoil in excess of the design even more critical to the stability of the site. He concluded that the road construction was not in general conformance with the requirements of the road layout and design.

The Deputy District Manager noted that section 119.1(b) of the *Code* provides for the defence of due diligence and described the test as having two parts:

1) Was the event that led to the contravention reasonably foreseeable?

2) Did the person exercise a sufficient amount of care to avoid the event from occurring?

In answer to these questions, the Deputy District Manager found that Kalesnikoff did not meet the elements of the defence in this case.

In determining the penalty, the Deputy District Manager considered the factors set out in section 117 of the *Code*. He assessed a penalty of $1,000 for the contravention of section 45(3), and no penalty for the contravention of section 12(1)(b) of the *Regulation*.

The Forest Practices Board sought an administrative review of the determination, asking for the penalty to be increased to an amount "commensurate with the harm caused by the contraventions." Kalesnikoff also requested a review, asking that both findings of contravention be rescinded.

In a decision dated September 29, 2003, the Review Panel upheld the Deputy District Manager's decision but increased the penalty. This increase was, in part, based on a "without prejudice" agreement reached between Kalesnikoff and the Forest Practices Board. According to that agreement, Kalesnikoff would acknowledge that there had been a contravention of subsection 12(1)(b) of the *Regulation*, that the appropriate penalty for the contravention was $2,500, and that, if a contravention of section 45(3)(a) of the *Code* was found (which it denied), a further penalty of $2,500 would be appropriate. The impact of this agreement on Kalesnikoff's ability to pursue its appeal of the 12(1)(b) contravention is one of the preliminary issues to be decided in this case.

*Slides related to Determination #2*

Slides 4, 5 and 6 occurred along the Schroeder Creek Mainline Road during the spring of 2002. Slide 4 occurred at 6+408, after water from a culvert had been diverted from its intended path by a fallen log. Slide 5 was at 6+333 and Kalesnikoff claimed this occurred when a ditch block, intended to channel water into a culvert, failed. According to the Ministry of Forests, slide 6 was at 6+450 and occurred in the area of a natural seepage or spring.

On March 28, 2003, the Deputy District Manager issued a determination that Kalesnikoff had breached section 45(3)(a) of the *Code* in regard to the three landslides between 6+333 and 6+480[2] of the road (slides 4, 5 and 6).

In regard to section 45(3)(a) of the *Code*, the Deputy District Manager held that the three slides were caused by excessive water flow from three culverts. He found that water had been diverted into the culverts due to Kalesnikoff's failure to construct the road in conformance with the "prescription"[3], and that Kalesnikoff was aware that this section of road contained excessively wet areas that would require extraordinary construction techniques, including rock fill, geotextiles and French drains. The Deputy District Manager concluded that Kalesnikoff only installed additional culverts plus one French drain at 6+630, and that these actions did not constitute the extraordinary techniques that were required.

The Deputy District Manager also found that Kalesnikoff had contravened section 13(1)(c) of the *Regulation*. He accepted Ministry evidence that the subsurface water was intercepted by cut slopes and concluded that this water should have been allowed to "seep through the road fill." He found that the drainage system did not achieve the intent of the *Regulation* and caused the drainage water to be concentrated in the ditch line due to the cut bank interception of the subsurface water. This water, plus the surface water, concentrated the total amount of water and then diverted it through the ditch line into the culverts. The water was then "channelled onto potentially unstable slopes causing the landslides." The Deputy District Manager states, "the concentration of the amount of water could have been reduced by not intercepting the subsurface water and using road construction techniques that allowed this subsurface water to seep through the road fill." While Kalesnikoff used geotextiles and ballast rock for the road fill in some sections of the road, the Deputy District Manager found that it had not used them for the road sections in issue.

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[2] The slide occurred at 6+450 but the evidence and argument often described the broader area of 6+333 to 6+480.

[3] In this case, "prescription" does not simply refer to the road design documents or the permit documents. It is generally used to refer to design or other recommendations made by the qualified professionals involved in this case.

The Deputy District Manager rejected Kalesnikoff's claims that it had been duly diligent. He noted that Kalesnikoff was in receipt of reports which indicated that this section of road would go through an excessively wet area, and that extraordinary construction techniques were necessary to mitigate environmental harm. Kalesnikoff did not employ these techniques in the relevant area. The Deputy District Manager concluded that if these extraordinary techniques had been used, it is more likely than not that the harm would have been avoided. Thus, Kalesnikoff did not take reasonable care to avoid the harm.

The three slides were considered to be minor in nature. They contributed an estimated 37.9 $m^3$ of sediment into Schroeder Creek, and an estimated 8.46 $m^3$ of timber within the riparian management zone was damaged by one of the slides.

In determining the penalty, the Deputy District Manager considered the factors set out in section 117 of the *Code*, and imposed a penalty of $3,000 for the contravention of section 45(3) of the *Code* and $600 for the contraventions of section 13(1)(c) of the *Regulation*.

Kalesnikoff sought an administrative review of the determination. In a review decision dated September 24, 2003, the Review Panel upheld the decision and penalties.

The Appeals

On October 27, 2003, Kalesnikoff filed a Notice of Appeal against both of the determinations and penalties. It alleges 9 specific grounds for appeal against Determination #1, and 15 grounds for appeal against Determination #2. In summary, Kalesnikoff argues that the Deputy District Manager erred on the facts, the law and that, if Kalesnikoff did contravene the legislation as alleged, the Deputy District Manager should have found that Kalesnikoff had exercised due diligence to prevent the contraventions.

It asks the Commission to rescind both determinations.

## RELEVANT LEGISLATION

### Contraventions

Both determinations under appeal involved a finding that Kalesnikoff contravened section 45(3)(a) of the *Code* which states:

**45** (3) A person must not carry out a forest practice if he or she knows or should reasonably know that, due to weather conditions or site factors, the carrying out of the forest practice may result, directly or indirectly, in

(a) slumping or sliding of land,

(b) inordinate soil disturbance, or

(c) other significant damage to the environment.

In addition, Kalesnikoff was found in both determinations to have contravened the *Regulation*. In Determination #1, it was found to have contravened section 12(1)(b) of the *Regulation*. In Determination #2, it was found to have contravened section 13(1)(c) of the *Regulation*. These sections are as follows:

**Follow up to inspection of bridge and major culverts**

**12** (1) A person required to construct or modify a road in compliance with section 62 of the Act must comply with all of the following when constructing or modifying the subgrade of the road:

...

(b) ensure that the construction is carried out in general conformance with requirements of the road layout and design;

...

**13** (1) A person required to construct or modify a road in compliance with section 62(1) of the Act must do all of the following when constructing the drainage system for the road:

(a) construct bridges, culverts, fords and ditches that are necessary to maintain surface drainage patterns;

...

(c) ensure that the drainage system

(i) intercepts surface water and subsurface drainage from the cut slope,

(ii) drains ditches and controls ditch erosion,

(iii) prevents ponding of water where road stability may be compromised,

(iv) prevents water from being directed onto potentially unstable slopes or soil material,

(v) minimizes the amount of sediment entering streams, and

(vi) meets the requirement of any design approved by the district manager.

**Defences**

Kalesnikoff argues that, should the Commission decide that it contravened any or all of the alleged sections of the legislation, it should also find that Kalesnikoff was

duly diligent in its efforts to avoid any contravention, and that its diligence is a full defence against the contraventions.

This defence is found in section 119.1 of the *Code* which states:

**119.1** (1) For the purposes of a determination of a senior official under section 117, 118 or 119, no person may be found to have contravened a provision of this Act, the regulations, the standards or an operational plan if the person establishes that

(a) the person exercised due diligence to prevent the contravention,

...

(2) Subsection (1) does not apply in respect of a determination made under section 117, 118 or 119 before the coming into force of this subsection.

**Penalties**

The penalties were assessed against Kalesnikoff after consideration of section 117 of the *Code* which states:

**117** (1) If a senior official determines that a person has contravened this Act, the regulations, the standards or an operational plan, the senior official may levy a penalty against the person up to the amount and in the manner prescribed.

...

(4) Before the senior official levies a penalty under subsection (1) or section 119, he or she

(a) must consider any policy established by the minister under section 122, and

(b) subject to any policy established by the minister under section 122, may consider the following:

(i) previous contraventions of a similar nature by the person;

(ii) the gravity and magnitude of the contravention;

(iii) whether the violation was repeated or continuous;

(iv) whether the contravention was deliberate;

(v) any economic benefit derived by the person from the contravention;

(vi) the person's cooperativeness and efforts to correct the contravention;

(vii) any other considerations that the Lieutenant Governor in Council may prescribe.

## ISSUES

As a result of arguments made by the parties the focus of the decision is restricted to issues and areas of relevance as determined by the Hearing Panel and, therefore, only the evidence relevant to those issues has been discussed although all other evidence has been considered.

The hearing of these appeals was complicated by a number of factors, one of which was that the Government alleged new grounds for Kalesnikoff's contraventions, over and above those outlined in the determinations. Since Kalesnikoff had an opportunity to properly respond to those new grounds, the Commission has considered all of the Government's new allegations in making its decision.

These appeals were also complicated by a lack of precision in the language used during the hearing. At times, the words spoil and fill were used interchangeably; at other times they were used to mean different things. The Commission has made every effort to use the terms fill and spoil in a consistent fashion (i.e., fill to mean material that supports the road, and spoil as the "waste" material which is, technically, not being used to support the road).

The general issues to be decided are as follows:

A) Preliminary Issue

1. Whether Kalesnikoff was precluded from pursuing its appeal concerning the contravention of section 12(1)(b) of the *Regulation* because of an admission that it made during the administrative review.

B) Determination #1 - Slide 3

2. Whether Kalesnikoff contravened section 45(3)(a) of the *Code* in regard to slide 3. To decide this general issue, the Commission must first address the interpretation of section 45(3) in the context of section 45 generally.

3. Whether Kalesnikoff contravened section 12(1)(b) of the *Regulation*.

4. If there was a contravention(s), did Kalesnikoff establish a defence of due diligence to the contravention(s).

5. If Kalesnikoff did contravene the *Code* or the *Regulation*, whether the penalty was appropriate.

C) Determination #2 - Slides 4, 5 and 6

6. Whether Kalesnikoff contravened section 45(3)(a) of the *Code* in regard to the slides 4, 5 and 6.

7. Whether Kalesnikoff contravened 13(1)(c) of the *Regulation* in regard to the slides 4, 5 and 6.

8. If there was a contravention(s), did Kalesnikoff establish a defence of due diligence to the contravention(s).

9. If Kalesnikoff did contravene the *Code* or the *Regulation*, was the penalty appropriate.

## DISCUSSION AND ANALYSIS

### A) Preliminary Issue

#### 1. Whether Kalesnikoff was precluded from pursuing its appeal concerning the contravention of section 12(1)(b) of the *Regulation* because of an admission that it made during the administrative review.

At the outset of the hearing, the Government made a preliminary objection to Kalesnikoff proceeding with an appeal in regard to section 12(1)(b) of the *Regulation*. This section requires a person constructing a road to "ensure that the construction is carried out in general conformance with requirements of the road layout and design". After hearing submissions from all parties, the Panel dismissed the preliminary objection. The Commission's ruling and its reasons are as follows.

The Government submits that Kalesnikoff should not be allowed to proceed with its appeal of section 12(1)(b) because, at the administrative review level, Kalesnikoff admitted that it had contravened this provision. The Government argues that this was a binding admission that could not be withdrawn - that it was the equivalent to entering into a consent order in civil litigation, or a guilty plea in criminal proceedings. The Government states that, if there was an agreement that this admission was made on a "without prejudice" basis, this basis for the admission was not known to the Government or the Review Panel.

Further, the Government argues that since Kalesnikoff has admitted that it failed to build the road in general conformance with the road design, estoppel by representation applies to prevent Kalesnikoff from making any arguments in relation to the other issues, properly appealed, that are inconsistent with that admission.

Kalesnikoff submits that there was an agreement between itself and the Forest Practices Board. It agreed that if the Forest Practices Board did not participate in the administrative review proceedings, Kalesnikoff would accept the $2,500 penalty proposed by the Board for the section 12(1)(b) contravention. Kalesnikoff submits that this agreement reflected the understanding by both parties that the Board's participation would lengthen the review proceeding, and increase the costs to both parties. Further, Kalesnikoff submits that both parties were aware that there had not been any judicial consideration of the defence of due diligence, and they knew that the matter would be proceeding beyond the administrative review level.

Therefore, Kalesnikoff states that the agreement was made "without prejudice" to the right of either party to appeal to the Commission.

Finally, Kalesnikoff points out that the Government was not a party to the agreement, and, in fact, did not participate in the administrative review other than to provide documents to the Review Panel. Further, both Kalesnikoff and the Board were aware that new legislation made the review process optional. Thus, their agreement was intended to make the existing review process more efficient.

The Forest Practices Board opposes the Government's motion and supports the right of Kalesnikoff to proceed with its appeal of the section 12(1)(b) contravention, and to argue that the road construction conformed to the approved design. The Board submits that the Government's analogy to the court system is flawed in that it overlooks two of the main reasons that the administrative appeal system was created. First, administrative tribunals were created to provide an expeditious way to deal with matters with a level of informality not available in the court system.

Second, the Government's argument overlooks the unique combination of roles played by the Government in the review and appeal system, where various Government representatives are advocates, decision makers and appellate bodies. For instance, Compliance and Enforcement staff with the Ministry act as advocates in presenting a case. They are decision-makers, because the Deputy District Manager made the decision, and they are the "appellate" body, because the people on the Review Panel were also employees of the Government. The appeal to the Commission is the first time this matter has been before an independent appeal body.

Both the Board and Kalesnikoff submit that, even if there had been any prejudice to the Government by the agreement, this appeal is an appeal *de novo* which cures any defect. Further, Kalesnikoff submits that, in light of the *de novo* jurisdiction, what happens in the intermediate process is of no consequence since it is the original determination which is under review.

In reply, the Government points out that Kalesnikoff's admission was made unconditionally to the Review Panel. The Government was not aware of the agreement and it would not have been open to the Review Panel to accept a "without prejudice" agreement.

*The Commission's Findings*

Having heard from all parties on this matter, the Commission accepts that there was an agreement between Kalesnikoff and the Forest Practices Board, and that the agreement was made "without prejudice" to either party's right to further appeal the matter. The Review Panel referred to this agreement at page 1 of its decision dated September 29, 2003 as follows:

> Joint Submission on the FRR [*Forest Road Regulation*] Contravention
>
> In letters submitted to the panel on July 9, 2003, Kalesnikoff and the FPB [Forest Practices Board] jointly proposed a settlement of the FPB Review. A summary of the parties' proposal follows:
>
> - Kalesnikoff withdraws its request for a review of the finding of contravention under subsection 12(1)(b) of the *Regulation* and acknowledges a contravention of this subsection.
>
> - Kalesnikoff and the FPB agree that an appropriate penalty for this contravention if $2,500.
>
> - The review of the finding of contravention of subsection 45(3)(a) of the Act will continue. Kalesnikoff does not concede that there has been a contravention of this subsection of the Act. Kalesnikoff and the FPB agree that if Kalesnikoff is found by the panel to have contravened subsection 45(3)(a), a further penalty of $2,500 is appropriate.
>
> KLFD [Kootenay Lake Forest District] was given the opportunity, but did not provide its own submissions on the above proposal. The panel finds that Kalesnikoff has withdrawn its request for review of the contravention of subsection 12(1)(b) of the FRR. Accordingly, that finding of contravention is no longer in question. Kalesnikoff and the FPB have suggested that a penalty of $2500 is appropriate for the contravention of subsection 12(1)(b). The panel accepts this proposal and varies the penalty for this contravention from nil to $2500.

While the Government may not have been aware of the "without prejudice" nature of the agreement, the Commission does not accept that the Government was prejudiced in this regard. The reality of the situation is that the parties knew that the case involved a question of due diligence, a new legislative provision which had not yet been judicially considered, and that the matter would be appealed to the Commission. Kalesnikoff and the Forest Practices Board made a conscious decision not to expend their resources at the review level.

Furthermore, it is clear from the joint submission that this was a "proposed settlement", and that Kalesnikoff was withdrawing its request for review of the section 12(1)(b) contravention, and "acknowledging" a contravention. It was careful not to admit a contravention, although this is arguably just semantics.

Regardless of whether Kalesnikoff admitted the contravention or not, the Commission finds that the judicial decisions regarding "admissions" are not directly applicable to this situation: they do not take into account the unique features of the administrative tribunal system, such as the purpose of providing more expedited proceedings with less emphasis on technicalities. The Commission accepts the

parties' explanation for the settlement agreement, and finds that Kalesnikoff is not barred from appealing the contravention of section 12(1)(b) of the *Regulation*. The parties will have the opportunity to fully address this contravention through the presentation of direct evidence and cross-examination, procedures which are not normally available at the Opportunity To Be Heard with the District Manager, or at the administrative review. The Commission finds that, in the circumstances, there is no prejudice to the Government.

Finally, since the Commission finds that Kalesnikoff did not admit the section 12(1)(b) contravention for the purposes of this appeal, and is able to pursue its appeal of this contravention, the Government's estoppel argument fails.

## B) Determination #1 - Slide 3

### 2. Whether Kalesnikoff contravened section 45(3)(a) of the *Code* in regard to slide 3.

These appeals raise numerous issues, one of which is how subsection (3) should be interpreted in the context of section 45. At the hearing, there was a great deal of evidence relating to the cause of this slide, but the Government alleges that according to subsection (3), causation is not even a factor that needs to be assessed. Also raised as an issue is the evidentiary "standard" or threshold needed to establish a contravention of subsection 45(3)(a) of the *Code*. Before considering the main issue, these two sub-issues will first be addressed.

The relevant portions of section 45 are as follows:

**Protection of the environment**

**45.** (1) A person must not carry out a forest practice that results in damage to the environment.

(2) Subject to subsection (3), a person does not contravene subsection (1) if, with respect to the forest practice referred to in subsection (1), the person is acting in accordance

(a) with this Part, Part 5 and with the regulations for this Part and Part 5, and

(b) with any of the following:

(i) an operational plan or a site plan;

(ii) an exemption from the requirement to have an operational plan or a site plan;

(iii) a permit issued under this Act or the regulations.

> (3) A person must not carry out a forest practice if he or she knows or should reasonably know that, due to weather conditions or site factors, the carrying out of the forest practice may result, directly or indirectly, in
>
> (a) slumping or sliding of land,
>
> (b) inordinate soil disturbance, or
>
> (c) other significant damage to the environment
>
> …
>
> [emphasis added]

(a) How to interpret section 45(3) in the context of section 45

Kalesnikoff submits that section 45, titled "Protection of the environment", should be interpreted in a manner which establishes "stringent, but achievable, environmental standards" for the forest industry. It submits that the forest regulatory regime should be interpreted in a way that is consistent with the actual field conditions and which ensures that diligent foresters are not punished for events that are beyond their ability to reasonably predict or control. It notes that the Commission appears to recognize the tensions between the reality of allowing logging in the Province, and the need to establish achievable standards in a previous Commission decision: see *Riverside Forest Products v. Government of British Columbia* (1998-FOR-07, May 31, 1999), (unreported) (hereinafter *Riverside*).

In *Riverside*, the Commission accepted the Forest Practice Board's submissions that subsections 45(1) and (2) of the *Code* exist because forest practices, by their very nature, can cause damage to the environment. By virtue of section 45(2), plans and permits authorize how much "damage to the environment" is acceptable under the *Code*. Kalesnikoff submits that subsection 45(3), therefore, should be interpreted as prohibiting environmental damage from occurring that is beyond the acceptable level implicitly allowed under forest plans and permits by the operation of subsection (2).

In this regard, Kalesnikoff submits that for a forestry activity that potentially or actually results in damage to the environment to be in contravention of subsection (3), the Ministry must show two things:

1) the environmental damage, whether potential or actual, must be reasonably foreseeable; and

2) it is a "significant" damaging event.

This second requirement is supported by the following wording in section 45(3), "slumping or sliding of land, inordinate soil disturbance, *or other significant damage* to the environment." [emphasis added]

The Government submits that, to establish a contravention of this subsection, it need *only* establish that the forest practice "may" result in a slump or a slide. This means that there is no need to demonstrate that the act or omission caused any loss or damage in the sense understood by the common law. It notes that, unlike subsection 45(1), subsection 45(3) is not aimed at penalizing persons for *actual* damage to the environment. Rather, subsection 45(3) is aimed at penalizing persons who put the environment "at risk". The Government submits that one only needs to demonstrate that the forest practice might lead to slumping or sliding of land. Whether a slide actually results from the forest practice is, therefore, irrelevant.

In this regard, the Government argues that Kalesnikoff, in constructing the Schroeder Creek Mainline road at approximately 2+550, deposited too much fill and spoil on the side of a bank, when it knew or reasonably should have known that this might result in the slumping or sliding of land. The Government submits that the critical factor in this case is not what actually *caused* the slide. It states,

> This case is not concerned with whether the Appellant knew or ought to have known of the precise hazard which in fact materialised, it is concerned with whether it knew or ought to have known that a slide *might* result whatever the cause of the slide. [emphasis added].

Thus, regardless of the actual cause, the Government submits that the question is: did Kalesnikoff know, or should it have known, that there was an appreciable risk of a slide due to the placement of the fill and spoil in that location? In this regard, the Government submits that all of the evidence heard during the appeal regarding the cause of slide 3 is not helpful, as it does not answer whether the placement and volume of fill and spoil at 2+550 *may have* resulted in a slump or slide, even if, in fact, it did not result in the slide.

*The Commission's findings*

While, in general, the Commission agrees that the legislation should not be interpreted in a manner that places unrealistic or unachievable standards on operators, the Commission's task is ultimately to determine what the Legislature intended when it created this section. It must attempt to determine what "mischief" the Legislature was trying to avoid or address. If the Legislature has created standards in the legislation that are unrealistic or unachievable in the field, that should properly be the subject of an amendment. The task before the Commission is to ascertain Legislative intent.

This panel of the Commission agrees with the conclusion in *Riverside* that subsections 45(1) and (2) reflect a desire to control and regulate the type of damage that will be caused as a result of allowing harvesting in the Province. Whereas certain environmental damage will necessarily occur as a result of logging operations, in particular through road building, the Commission notes that the Legislature has tried to minimize these impacts through the development of plans, requirements for permits and so on. Thus, although logging and associated activities will necessarily involve damaging the environment to some degree, a

licensee has a defence to a general contravention of subsection 45(1), "damage to the environment", provided that the licensee complies with certain legislative provisions and its plans and permits (per subsection 45(2)).

However, there is no question that once the actual operations commence, what was previously "known" or assumed to be true during the planning and permitting stages, can turn out to be incorrect. In the Commission's view, subsection 45(3) was included in the *Code* to address this situation. It prohibits a person from carrying out a forest practice (which, by definition, includes road construction), if he or she knows or should reasonably know that, due to weather conditions or site factors, the carrying out of the forest practice may result, directly or indirectly, in some type of *significant* environmental damage. As stated by the Government, the subsection allows the regulator to issue an administrative penalty to people who put the environment "at risk," regardless of what the plans and permits state, and regardless of whether a damaging event has taken place.

In the Commission's view, this section effectively puts licensees on notice that simple reliance on its plans and permits, in the face of new weather or site related information, will not be tolerated when significant damage may occur. Licensees must remain alert to the conditions encountered in the field as the forest practices take place, and to constantly monitor the situation, evaluate the conditions and make decisions and amendments to plans as required by the circumstances. If a forestry official concludes that a person should reasonably know that a particular forest practice may result in a significant damaging event, the official may determine that the person is in contravention of the *Code*. It is likely that this determination would only be made if a licensee was ignoring or refusing to make changes to address its practices that the official believed was putting the environment at risk.

Thus, the Commission agrees with the Government that, if a significant damaging event occurs, its actual cause is of less interest under this section than whether this type of damaging event was, or could have been, foreseen in light of the site and weather conditions.

b) What is the evidentiary "standard" or threshold needed to establish a contravention of subsection 45(3) of the *Code*

By the time this appeal was heard, the expert evidence disclosed that the slide occurred, at least in part, because of a diamicton layer of colluvium at 2+550. "Diamicton" is a geological feature referring to unstratified sedimentary deposits of unspecified origin, or a soil consisting of a wide range of particle sizes of undetermined origin. "Colluvium" is a heterogeneous mixture of material that as a result of gravitational action has moved down a slope and settled at its base.

The Government acknowledges that a material factor in the slide was this slippery layer of diamicton, and that Kalesnikoff (and its experts), did not know nor ought to have known about this particular material. However, as noted above, the Government submits, and the Commission agrees, that the slide need not have occurred in order to find a contravention of the section.

Furthermore, the Government argues that it is not relevant whether Kalesnikoff knew or ought to have known the "precise hazard" which materialized; they knew or ought to have known that a slide *might* result, whatever the cause of the slide. The Government submits that a contravention will occur if a person knows there is any "possibility of a slide", even if it is not probable, unless the possibility of a slide is so remote that one can discount it altogether.

Kalesnikoff maintains that it was not reasonably foreseeable that there was a higher risk of a slide as a result of the placement of spoil. It submits that it did not know, and had no reason to know, that its placement of spoil at 2+550 might result in a slide. It submits that there were no warning signs pointing to instability of the bench at 2+550. Also, this section of road was less steep and of a different topography than the area of the previous slide at 1+050, and shared almost no characteristics with the location of the 0+862 slide. In addition, it points out that even Ministry personnel did not foresee that the volume of material placed at 2+550 might result in a slide. Kalesnikoff argues that it "cannot be expected to possess greater foreseeability of a slide event at 2+550 than the Ministry staff who participated in a review of the same site." It submits that, for it to have contravened subsection 45(3), its forest practice must result in a "higher risk of a slide" than the risk approved under the road permit. Kalesnikoff argues that if the Commission accepts the Government's position that a contravention occurs if there is a "possibility" of a slide, even if "not probable", a licensee will always be in contravention of this provision unless there is absolutely no risk of a slide. It submits that this cannot be the intention of the Legislature.

The Intervenors (Interior Lumber Manufacturer's Association, Council of Forest Industries and Coast Forest and Lumber Association) submit that the particular event giving rise to the alleged contravention must have been reasonably foreseeable, and the conditions which gave rise to the event must also have been reasonably foreseeable. They submit that "reasonable knowledge" can only be assessed in relation to the advice or information received prior to or at the time of performance of the forestry practice. The Intervenors state that this is implicit in the test of foreseeability, in contrast to a test based on hindsight. They submit that the Commission should ensure that section 45(3) does not become a test based on hindsight, or a test that requires a standard of perfection (i.e., based on all information that *could have been available*).

The Intervenors argue that both the Deputy District Manager and the Review Panel confused the test they applied - they confused the "reasonable foreseeability" test required for a contravention under section 45(3), with some of the inquiry regarding due diligence. The Intervenors state that, in the context of section 45(3) of the *Code*, the appropriate analysis as to whether Kalesnikoff possessed "reasonable knowledge" that a forest practice would likely cause damage to the environment is:

(a) did it seek professional advice regarding risks associated with the construction of the road;

(b) was it advised of the risk of slides or slumping; and

(c) did it obtain and follow professional advice addressing the mitigation or elimination of slides or slumping in the construction of the road.

The Forest Practices Board submits that the question of whether Kalesnikoff "should reasonably have known" requires consideration of whether it made reasonable inquiries to reconcile apparent discrepancies that arose from, for example, site observations or opinions of other professionals. It states, "Such reasonable inquiries need not be highly technical or require consultation with more professionals". However, the Board submits that they should reflect caution by making inquiries to reconcile obvious discrepancies and apparent contradictions, particularly in relation to forest practices that could result in damage to the environment."

*The Commission's findings*

There is no dispute that this section of road was challenging and difficult. There is also no suggestion that Kalesnikoff actually knew that a slide or other significant damage would occur at the site. The question is whether it *should reasonably have known* that significant damage to the environment *may result*. The test is an objective one. The burden of proof to establish the reasonable knowledge is on the Government, as it is maintaining that there has been a contravention of this section.

The Government submits that the standard required by section 45(3) is a high one to overcome, requiring the risk of landslide for all practical purposes to be removed. The Government submits that it only needs to show that Kalesnikoff should have foreseen the possibility of failure – not the likelihood of failure.

As noted above, Kalesnikoff submits that the Government's position is extreme in that a licensee would always be in contravention of this provision unless there was absolutely no risk of a slide.

On the question of the standard or threshold, the Commission rejects the Government's position. If the standard was as the Government suggests, a licensee could never harvest or build roads through difficult terrain because one could always argue that there is a *possibility* of slope failure or significant damage to the environment. The Commission finds that this could not have been the Legislature's intent when it created this section, as it is clear that harvesting and road building through difficult terrain is common in parts of British Columbia; many sections of the *Code* and its regulations were created to address this reality.

The Commission finds that the purpose of this section is to ensure that the licensee continues to be alert for indications that field conditions have changed or are not what they thought (i.e., weather conditions or site factors). They are to monitor the actual conditions and if they know or should reasonably know that significant damage may occur, then despite their permit or plans, a new course of action may be required. In this context, the Commission agrees with the Board that the

inquiry must focus on whether the licensee made reasonable inquiries to reconcile apparent discrepancies between new information and previous information/plans/assumptions. These inquiries may or may not require the involvement of additional professionals. It depends on the nature of the discrepancy. The Commission agrees with the following statement of the House of Lord's in *Union of India v. N.V. Reederij Amersterdam*, [1963] 2 Lloyd's Rep. 223, at 231:

> There must be some compromise or balance in deciding what steps to take in any particular case, keeping in mind both the serious consequences which may flow from failure to detect a defect and the remoteness of the chance that such a defect may exist; for it would plainly be impracticable to make elaborate scientific tests for every defect which could possibly be present in any part of the machinery surveyed.

c) The evidence and argument on the main issue

Even though a slide need not have occurred in order to find a contravention of section 45(3), the Commission cannot disregard the fact that slide 3 did occur. Certain information about the slide is relevant to the inquiry at hand. In particular, the location of the slide, the forest practices taking place there, and the site conditions. This information is relevant to the assessment of what the licensee knew or should reasonably have known about the site, and the impact of its forest practices at the site.

Slide 3 occurred in the natural ground below the fill site at 2+550. Above 2+550 there was a steep slope, whereas there was a gentler break in the slope below the road at 2+550, creating what is referred to in this case as a "bench" – a "relief" from the otherwise continual slope. The road was constructed in this location using fill to support it. Beyond the fill, out toward the bench, the location was used to place "spoil", excess material from the excavation of the road.

In Determination #1, the Deputy District Manager concluded that Kalesnikoff contravened section 45(3)(a) by placing from 24 per cent to 41 per cent more spoil on the site than the designed capacity, resulting in oversteepened slopes. He also determined that Kalesnikoff should have known that, by exceeding the designed capacity, there would be a greater landslide hazard, given the high hazard rating contained in the Terrain Assessment.

In order to determine whether Kalesnikoff knew or should reasonably have known that its placement of spoil at this site may result, directly or indirectly in a significant damaging event, the Commission must ascertain what information was available to Kalesnikoff prior to, during and following its placement of spoil at the site.

*Choice and design of the site for the placement of fill/spoil*

It is accepted that the placement of fill and spoil are common and necessary practices in the construction of a forest road. The material that is excavated from one location must be disposed of in some manner. If it cannot be used elsewhere in the road construction, either as fill or spoil, it must be "end-hauled" which increases the construction costs.

1999

The evidence indicates that, in 1999, Kalesnikoff began to plan for harvesting of this area. This included plans for the road needed to access the timber. The first step was to have Level D Terrain Mapping done. As noted above, this mapping was performed by Mr. Wells, a registered professional agrologist.

Kalesnikoff also had a preliminary road design done by Randy Simpson, of Surewood (later Timberland), in September 1999. This was followed by a joint field review on October 18, 1999. Various people went on this field review including: Kalesnikoff personnel; specifically, Blair McLeod (Kalesnikoff's road superintendent), S. Hadikin, and Reiner Augustin (Kalesnikoff's forestry manager); representatives from three potential road contractors and a drilling company; Mr. Simpson; a number of professionals such as Mr. Wells, Mr. Deschênes and Mr. Woods; and Ministry staff such as Doug Nicol, P.Eng. (regional geotechnical engineer), K. Haynes, A. Davidson, and G. Grunerud. The field review concentrated on the first four kilometres of the road as this section represented the greatest road building challenges. Amongst other things, they considered issues related to the Schroeder Creek Mainline.

The group spent some time at the 2+550 location, having their lunch there. The evidence suggests that spoil sites were also discussed during this joint review. A that time, the bench at 2+550 was considered a good location to place spoil. According to Mr. Augustin, no one expressed any concern regarding the stability of the downslope to accommodate a spoil site.

Mr. Augustin also testified that, while at 2+550, either Mr. Nicol or Mr. Haynes (of the Ministry) suggested that a double switchback might be possible in this location. A double switchback would allow the licensee to gain elevation to get into the valley.

The Commission accepts the evidence that this location was discussed as a spoil site. In an undated document containing Mr. Augustin's notes made after the field review, it states under the heading "road corridors (south facing slope)":

> ...
>
> double switch-back need – room, meeting control points, *impacts re spoil areas*? [emphasis added]

Mr. Augustin testified that if a double switchback was constructed at or near 2+550, they would have had to find other areas for the spoil material - it would have had a ripple effect on the design. Mr. Augustin's notes also state under "construction issues":

> – spoil sites; identify and assess locations (engineer and geotech), stability of sites is key,
>
> ...

The evidence indicates that the group envisioned that the spoil could be placed on the bench at 2+550 up to the level of the road, with the roadbed built on fill to avoid cutting into the weak rock (phyllite) face, which had been identified by Mr. Wells in his Terrain Assessment. The location of the bench at this site thus served two purposes – it allowed fill to be placed there to support the road, which avoided blasting into the rock face, and it provided a site for spoil from construction elsewhere on the road.

The degree of steepness of the slope varied, averaging about 30–40 per cent. In some places it was as gentle as 10 per cent; below the bench, it was closer to 80 per cent. There is no evidence before the Commission of any discussion at this review, or at any other time, concerning a limit as to the amount of spoil material which could be placed at the site. The evidence of Mr. Augustin is that there were no observable indicators of instability, such as leaning trees, during the October 1999 field visit; no stability issues were observed or identified during that visit.

Mr. Wells and Mr. Simpson subsequently investigated the double switchback, but concluded that it wasn't feasible for technical and environmental reasons.

It is worthwhile to note that, in the early stages of this project, Kalesnikoff and the Ministry were working quite closely together on this project. As stated earlier, this was a project involving difficult terrain, and there was a significant degree of cooperation between the licensee and the regulator during the planning stage.

2000

Mr. Wells submitted his Terrain Assessment in June of 2000.

The road design for the mainline was completed in July of 2000. Kalesnikoff submitted its "Road Design Schroeder Cr. Rd. Sta. 0+000 to 8+072" dated July 18, 2000. The design did not address spoil sites.

Also in 2000, Mr. Woods provided his design for the three critical sections of road. His design did not address spoil sites.

The Road Permit was issued on August 1, 2000.

Mr. Woods testified that he observed the staking of the site and the placement of the spoil during the course of the road building. In a site summary dated

December 4, 2002, Mr. Woods described the construction of the waste (spoil) site at 2+550 as follows:

> Large blocky material was placed at the toe of the proposed embankment to key the fill into the slope and buttress the toe. Excess material excavated from full-bench and ¾ bench sections upgrade of the waste site, and rock removed from the road section through the waste site was end dumped with rock trucks and spread periodically with a bulldozer. During the process of filling the site, KLC [Kalesnikoff] observed that the site was capable of accommodating more volume than originally anticipated by the design and continued placing material into the site by building up the embankment from the toe at the prescribed repose angle (90%). It is understood that no action was taken to expand the waste site once the toe had been marked according to the design data.
>
> At the completion of the waste embankment, KLC estimated that the site had accommodated between 3500 $m^3$ and 4000 $m^3$ of material.

Mr. Woods testified that he had no concerns that the recommended angle of repose was not being adhered to, or with the amount of spoil placed in the area.

*Additional information available to Kalesnikoff*

On August 15, 2000, approximately two weeks after the permit was issued, slide 1 occurred at 0+862. Following the slide, Kalesnikoff commissioned Calvin VanBuskirk, of Terratech Consulting Ltd., to assess the cause of the slide. Kalesnikoff learned from Mr. VanBuskirk that he had previously reviewed the slope for the Ministry and that he had a map showing the location of the sumps left from the fire suppression activity. This map and information had never been provided to Kalesnikoff. In his review for Kalesnikoff, Mr. VanBuskirk concluded that the plastic lined flume, possible sump, and the impact of the lower fire trial cutslope were likely significant contributing factors in the landslide.

The following year, in the spring of 2001, slide 2 occurred at 1+050 where spoil had been placed. The matter was investigated by Doug Nicol, Regional Geotechnical Engineer for the Ministry, as well as by Mr. Wells. They concluded that the slumping had been caused by a deep-seated layer of talc schist, which is a greasy, slippery surface, and which could not reasonably have been discoverable. No contraventions or penalties were issued in relation to this slide.

Mr. Augustin testified that, following the other 2 slides, Kalesnikoff undertook extra investigations of the underlying rock composition at 2+550 to determine whether there were any stability issues, and to develop foundations to place material. It removed the overburden (colluvial type material) to expose the rock surfaces and the toe of the area where the fill would be placed. It excavated 4 to 5 feet looking for materials such as the talc schist previously encountered or a slippery layer such as clay. It also looked for any indication of seepage in the area. No test pits were

dug. However, the evidence is that a pilot trail along the bedrock face down to the bottom of the site served the same purpose.

Mr. Augustin testified that Kalesnikoff's qualified professionals were repeatedly on site and saw what was being done. He said there was no indication that a layer such as talc schist was present, nor was there any indication from the contractor or professionals who visited the site that this was a "problem" site. In addition, the slope at 2+550 varied from 10 to 50 per cent, while the site at 1+050 was in excess of 70 per cent.

Mr. Augustin testified that they developed the "toe" (the bottom) of where they were going to place their fill material, they "grubbed down, removed all of the organic materials and started placing rock, coarse material and started building up" the fill and spoil areas.

On August 21, 2001, Mr. Nicol inspected the road to approximately 3+000, looking for anything that would set off "alarm bells", since there had been 2 slides already. He found none.

After completing this section of the road, Kalesnikoff noticed active soil movement at the site in September 2001, as evidenced by tension cracking at the road edge.

Thereafter, there were investigations by Mr. Woods and others, reworking of the site and, ultimately, removal of 100 per cent of the spoil material and some of the native soil. This occurred because, as the crews were working to stabilize the upper part, the lower part was moving away. The excavation took about a week to complete. Despite these efforts, slide 3 occurred on May 3, 2002.

Although there was a great deal of testimony relating to the events following the first signs of cracking, the investigations and recommendations of professionals in relation to the cracking and subsequent events, as well as all of Kalesnikoff's efforts to address the situation, this evidence is not relevant to whether Kalesnikoff knew or ought to have known that the placement and volume of spoil may result in some type of significant damage to the environment.

*The Commission's findings on the main issue, i.e., whether Kalesnikoff knew or should have known that, due to site factors or weather conditions, its forest practices (spoil site) may result in significant damage to the environment*

Although this was difficult terrain, Kalesnikoff had information from relevant professionals that did not raise any issues or concerns regarding the placement or volume of fill or spoil at this location. The Commission accepts that the Terrain Assessment rated this area as being high risk. However, that was based upon conventional road construction. This section was subsequently subject to an engineered design by Mr. Woods, which reduced the rating to "low".

The Commission agrees with Kalesnikoff that the slide at 0+862 did not give any forewarning of a slide at 2+550, as there were significant differences: the terrain was different (at 0+862 there was a very steep rock face while at 2+550 there was

a more gentle slope with a bench), and there had been no human activity at 2+550, unlike the firefighting trails and sump at 0+862.

The Commission finds that Kalesnikoff and the Ministry officials knew that 2+550 was going to be used as a fill and waste site, and that a significant amount of material was going to be deposited there. The Government seems to suggest that it should have been obvious that the amount of spoil or the placement of the spoil would likely trigger a slide. The Commission finds that this is not the case.

The Commission notes the evidence of Mr. Nicol, who walked the road to approximately 3+000 on August 21, 2001. He did this after investigating the cause of slide 2, in order to look for any conditions that would be a cause for concern. Mr. Nicol could not recall how much of the material had been placed at that time; however, the Commission notes that he wrote a memo to Larry Peitzsche, Operations Manager, Kootenay Lake Forest District about his observations. As a result of this memo, Mr. Peitzsche concluded that the construction appeared to be in general conformance with the design, and he so advised Kalesnikoff. Even by the Ministry's evidence, there were no new site factors or weather conditions that would lead one to begin questioning whether the forest practices may lead to a significant damaging event. Things were going as planned and in accordance with what was permitted.

Further, the Commission notes that Mr. Nicol, Regional Geotechnical Engineer for the Ministry, agreed that the assumptions made by Mr. Woods about the ability of the bench to hold the spoil were reasonable, and that the steps that were taken (such as the angle of repose and buttressing the toe) were reasonable. The Government has never suggested that Kalesnikoff did not properly investigate the site; it agreed that the involvement of the two professionals, Mr. Wells and Mr. Woods, met or exceeded the industry standard and that additional investigation, such as drilling or digging test pits, would have exceeded industry standard.

The only Ministry evidence of an increased risk came from Mr. Nicol. He testified that Kalesnikoff placed additional spoil at the site which increased the risk of a slide. Mr. Nicol did not provide any explanation for his opinion or cite any authority or analysis. Nor did he indicate how much additional material would increase the risk or whether the risk was increased by .05 per cent or 50 per cent.

Conversely, the evidence of a number of witnesses (which is discussed in more detail below) is that Mr. Woods was aware that additional material was able to be placed at this site, and that he had no concerns about an increased risk. Mr. Woods has a great deal of experience with forest road building projects and the Commission finds his evidence credible and persuasive. Furthermore, the Commission notes that the Ministry staff also did not foresee that placing additional material at the site may result in a slide. Mr. Nicol agreed that the ultimate reworking (resloping) of the site decreased the risk of a slide. Ministry staff did not disagree that the site could accommodate between 3,000 and 6,000 $m^3$ of material. In fact, the Ministry had initially suggested that a double switchback could be

constructed at the site, and that would have entailed the placement of a much greater volume of material.

In this case, the Commission finds that Kalesnikoff had its mapping, assessments, and designs in place, had the benefit of information and opinions from qualified professionals regarding stability and road building issues, had the appropriate approvals (e.g., the Road Permit as amended) in place for its road construction in this location, and that Kalesnikoff satisfies the legislative intent in that it was "alert" to the conditions encountered as the forest practices were taking place on the ground. It was monitoring the situation, had professionals on site evaluating the conditions and making decisions as required by the circumstances.

Based on all of the information presented, the Commission finds that there was nothing in the information that would support a finding that Kalesnikoff knew or should have known that the placement and/or volume of fill or spoil at this location might result in a slide or slump of any significance – or any other significant damage to the environment. The Commission further finds that, once they were in the field, there were no new indicators that would reasonably lead Kalesnikoff to know, or provide an evidentiary basis for a finding that it should have known, that its forest practice may directly or indirectly result in a significant damaging event.

Finally, the Commission notes that, when the cracks along the road were observed, Kalesnikoff made appropriate inquiries and took reasonable action to investigate the cause and, ultimately, to address the situation.

Thus, the Commission finds that Kalesnikoff did not contravene section 45(3)(a) of the *Code* as a result of its forest practices at or near 2+550, the area of slide 3.

### 3. Whether Kalesnikoff contravened section 12(1)(b) of the *Regulation.*

Section 12(1) of the *Regulation* requires that a person constructing or modifying a road must "ensure that the construction is carried out in general conformance with requirements of the road layout and design."

The Deputy District Manager found as follows regarding 2+550:

> Subsequent information submitted to me as a consensus of the two parties indicated that the amount of spoil material placed on the site exceeded the designed capacity by a minimum of 24% to a maximum of 41%. Regardless of the actual number, the volume of spoil for which the site was designed for was clearly not met.

He concluded,

> I have already found that a contributing factor to the slope movement and landslide was an over-steepened slope and the weight of the overlying fill material placed on the slope. I do not believe that a valid argument can be made that the exceeded amounts should be recognized as being within an accepted tolerance or variance. I have

> also found that the spoil site was constructed on a high-risk site making the amount of spoil in excess of the design volume even more critical to the stability of the site. These findings support my conclusion that the road construction was not carried out in general conformance with the requirements of the road layout and design. I have determined that Kalesnikoff contravened section 12(1)(b) of the *Forest Road Regulation*.

There is no dispute that the slide occurred at a location where Kalesnikoff had placed fill to support the road, and had also placed spoil that had been excavated from elsewhere during road construction, although both the fill and spoil had been removed prior to the slide.

In his determination, the Deputy District Manager only referred to the volume of *spoil* placed at the site. However, it is apparent from the determination, as well as the Government's evidence and submissions at the hearing, that the allegation is that Kalesnikoff contravened section 12(1)(b) by placing too much fill *and* spoil at the site contrary to the design, as well as by placing fill *and* spoil in a location not shown in the road layout and design.

*What is the relevant "design"?*

To determine whether Kalesnikoff has contravened this section, the first question is "what is the design"? As a starting point, the Commission has reviewed the permitting documents.

The cover letter to the Road Permit, Amendment #1, states as follows:

> All of the road construction must be performed to the specifications contained in the attached schedules. If further unforeseen conditions are encountered during construction, please follow the process as defined in the "District Manager Policy for Design Changes During Construction" dated July 18, 1997 and ensure prior District Manager approval is received where required. Any deviation from the submitted prescriptions and Geometric Road Design on Class IV and V terrain are to be reported immediately to the Ministry and when in critical design sections, reviewed by the Engineer prior to construction. [emphasis added]

Schedule A1 to the permit is titled "Road Layout and Design". This schedule states at section 23(a) that "the following plans/profiles, other drawings, maps and prescription/reports, including measures to maintain slope stability or water quality, and measures used to construct roads in areas of moderate or high likelihood of landslides are submitted with the application and form an integral part of the permit". The four documents listed are:

> 1/ Detailed TSFA [Terrain Stability Field Assessment] & Review, Schroeder Creek Mainline Road Design (0+269 – 7+623), June,

2000, W.H. Wells, PAg. [previously defined in this decision as the Terrain Assessment]

2/ Road Design and Plan and Profiles, Schroeder Cr. Road, Sta. 0+00 to 8+072, Timberland Consultants, July 17, 18, 2000 (second submission)

3/ Proposed Schroeder Creek Mainline Critical Sections Engineering Construction Prescriptions, Woods Assoc. Engineering, July 29, 2000

4/ Outstanding Schroeder Creek Mainline Road Design Issues (Prescription Supplement), W.H. Wells Consulting, July 28, 2000

Mr. Augustin explained the process leading to road layout and design. He testified that a detailed terrain stability assessment evaluates the road corridor. The professional performing the terrain assessment, in this case Mr. Wells, makes recommendations with respect to his assessment of landslide hazards assessed on the basis of conventional road building techniques.

Mr. Augustin testified that Kalesnikoff believes in having the terrain mapping professional (Mr. Wells) work closely with the people that develop the road layout and design. He said that the designer "is a computer person that will do the road design." The designer will work with a team of professionals, including the engineer addressing special design issues, "to ensure there is a continuum of information and continuity in that information."

In this case, Mr. Wells prepared a detailed terrain stability assessment (the Terrain Assessment). He assessed the terrain and the risks and hazards present in the terrain. He also made recommendations with respect to what prescriptions or activities may or may not occur, and estimated the residual hazard that would result from a particular type of road construction.

In the Terrain Assessment, Mr. Wells gave the site at 2+550 a hazard rating of high (class 5) using conventional construction techniques. As noted earlier, the landslide risk rating is based on conventional road construction; however, having an engineer design the road or portions of it may lower the hazard rating. Accordingly, he stated that this section of the road (2+380 to 2+696) required a special engineering design to reduce the hazard rating to low. Mr. Wells also noted that phyllite rock existed on the road grade and upslope at this location, and blasting or drilling and deep cuts into the rock bluff should be avoided to prevent slabs of the rock from breaking off.

He states:

> The detailed terrain stability field reviews of the road were incorporated into the road design plans and profiles during the coarse [sic] of developing the final design. This was accomplished by

> coordination between myself and Geoff Methuen, (Timberland Consultants) the principle GIS design person on this project. Special design sections were requested for three sections because of complex terrain or requirements for special engineering to achieve a stable road section; Special Design Section … 3 from 2+380 to 2+696 (a large engineered fill and deep, steep creek crossing). The designs have been developed and completed in collaboration with Bryan Woods, PEng … who is the project engineer. [emphasis added]

The special design was prepared by Mr. Woods, and contained in his July 29, 2000 report identified in the schedule to the Road Permit.

As noted above, Mr. Woods worked in coordination with Mr. Methuen and Mr. Wells on the design. Mr. Methuen used the computer program RoadEng to develop the cross sections for the road design. The cross sections show the ground profile for each station of the proposed road location and provides construction details. Also shown is the "slope of the fill" needed to support the road surface at various points along the proposed road. One such point identified in the cross-section of the road design is 2+558. At that point, the cross sectioning was used to help calculate the volume of cut and fill needed during construction. The evidence is that the designed volume of fill at this location (i.e., the material used to support the road according to the dimensions in the cross section) is estimated at 2,376 $m^3$ (per the Government) or 2,722 $m^3$ (per Kalesnikoff).

Mr. Woods reviewed the cross sections and investigated the three portions of road which required engineered designs. In his final, sealed, July 29, 2000 document, Mr. Woods describes his engineered design for section 2+529 to 2+707:

> From 2+529 to 2+707, the road crosses an area where the bedrock has been identified as relatively weak, and make poor fill material. The road design cross sections show that there is a gentle bench below the alignment from 2+540 to 2+560 which will support a fill slope. A large bench and depression is situated below the alignment between 2+690 and 2+710 which can accommodate a large fill.
>
> The road has been designed with slightly over steepened fills up to 2+565, and oversteepened placed rock fills from 2+585 to 2+625. Full bench cuts have been prescribed for the remaining sections in this interval up to 2+690. From 2+690 to 2+710, a large slightly oversteepened fill has been designed for wasting of excess material from full bench cuts.
>
> The **construction techniques** for the slightly oversteeped (1.1:1) and oversteepened (0.75:1) fill slopes, is discussed above. Material used as fill in the steep sections up to 2+625 should consist of the harder rock in cuts upgrade and downgrade of this design section. The softer rock encountered within this section can be placed in the waste area between 2+690 and 2+710.

> The hazard of landslides occurring from the road in the fill sections up to 2+625 is rated as Low to Moderate. The risk to Schroeder Creek from a landslide in this section would be Low, as it would likely occur as ravel of rock fill material onto the slopes below the road. The hazards of landslides occurring from the road in the section from 2+625 to 2+710 is rated as Low. [emphasis added]

Describing the construction techniques for "slightly oversteepened" (1.1:1) and "oversteepend" (0.75:1) fill slopes, Mr. Woods states:

> It is intended that the oversteepened fills will be constructed using placed rock fills. These fills are to be constructed using large angular rock fragments placed with the excavator bucket and thumb attachment, with their long axis oriented nearly perpendicular to the face of the fill. Voids between the rocks are to be filled with finer rock material.
>
> The construction techniques should be reviewed with the contractor prior to construction, and may be modified to suit the ground conditions and the contractor's preferences. One such alternative may be to further oversteepen the toe of the fill by constructing a stacked rock wall and flattening the upper portion of the fill with a slightly oversteepend (1.1:1) coarse rock fill. In either case, the contractor will be required to construct a pilot trail to the toe of the fill to ensure that the fill is keyed into the slope and the slope beneath the fill is thoroughly stripped.

As noted above, this July 29, 2000 special design is part of the Road Permit. The Commission finds that Mr. Woods' special engineered design specifications for the road and fill slopes at and near 2+550 are the "road design" for the purposes of section 12(1)(b) of the *Regulation*.

The next question is whether Kalesnikoff constructed the road in "general conformance with the requirements" of this design.

*How was this fill/spoil site actually constructed?*

It is important to first understand the general topography and location of this section of road.

The road is located on a south-facing slope which drops down to Schroeder Creek. The road climbs westward, crossing several stream channels, one of which is located at 2+437. As it leaves this stream it heads abruptly southwest to 2+494, then curves gently northward between 2+494 to 2+610 where there is another creek. Below the road there is a gentle bench between 2+540 to 2+589. Slide 3 is located at the western edge of the bench and road before it crosses the stream.

Curt Nixon, compliance and enforcement technician for the Ministry, described the topography of the site at or near 2+564 to 2+588. He recalled standing on the

road sub-grade and looking down at a "sizeable bench" approximately one tree-length (30–40 metres) or so wide by a couple of tree-lengths long. The bench "rolled over, terrain-wise" - "it got steeper on the end of the bench." Mr. Nixon testified that he was aware that Kalesnikoff would be using this bench area as a spoil site.

In his site summary dated December 4, 2002, Mr. Woods provides a concise description of the construction of this fill and spoil site. At page 3 he states:

> Prior to wasting material [placing the spoil] within the subject waste site, it is understood that Mr. Blair MacLeod of KLC [Kalesnikoff] and Mr. Randy Simpson of Surewood Forest Consulting marked both the Top of Cut and Toe of Fill through this section by measuring from the P-Line [preliminary line] off the road design cross sections. The entire area beneath the proposed road prism and waste embankment was stripped of all organic debris to ensure that the base of the fill was keyed into the native ground. The soil on the benched slopes consisted of blocky colluvium and no evidence was observed of a shallow water table or seepage.
>
> Large blocky material was placed at the toe of the proposed embankment to key the fill into the slope and buttress the toe. Excess material excavated from full-bench and ¾ bench sections upgrade of the waste site, and rock removed from the road section through the waste site was end dumped with rock trucks and spread periodically with a bulldozer. During the process of filling the site, KLC observed that the site was capable of accommodating more volume than originally anticipated by the design and continued placing material into the site by building up the embankment from the toe at the prescribed repose angle (90%). It is understood that no action was taken to expand the waste site once the toe had been marked according to the design data.
>
> At the completion of the waste embankment, KLC estimated that the site had accommodated between 3500 $m^3$ and 4000 $m^3$ of material.

According to Bruce Jacobs, the road building contractor, more fill material was placed on the western portion of this stretch (closer to 2+550) in order to accommodate excess fill and create a "turnout location". He testified that at approximately 2+548 the road width was 11 to 12 metres, at 2+558.7 it was 9 metres and, by 2+576, it was approximately 5 metres wide, the narrowest width for this road.

*Was the actual construction (placement of fill and spoil) in "general conformance" with the design?*

The Government submits that Kalesnikoff placed too much material at and around 2+550, placed material where the cross sections did not show any material being placed, and particularly placed too much material at the west side of the site.

Kalesnikoff submits that it complied with the design, and to the extent that there were any differences, the differences "generally conform" with the design.

Volume

There was a great deal of evidence regarding the volume of fill and spoil placed in and around 2+550.

At the opportunity to be heard before the Deputy District Manager, the Ministry submitted that the design called for 2376 $m^3$ of material to be placed at this site, whereas Kalesnikoff submitted that the original design was for 2722 $m^3$. The parties also disputed the amount of "as built" volume that was placed on the site. At the request of the Deputy District Manager, the Ministry and Kalesnikoff reached a consensus on the spoil site volume. The Deputy District Manager states:

> The [consensus] information provided indicated four methods of estimating the design volumes and as built volumes were used. The spoil site designed volumes were also adjusted from the original estimate for each of the four methods. The four methods used indicated a range of spoil design volumes compared to as built volumes placed on the spoil site however in all cases the actual volumes placed on the spoil site exceeded what the site was designed to receive (41%, 41%, 41% and 24%).

These are apparently the volumes for the area from 2+494 to 2+610.

Design

Kalesnikoff submits as follows:

- the road design did not limit the amount of fill that could be placed at 2+550;
- the Ministry placed no limits on the amount of fill which could be placed there;
- spoil volumes are not part of the road design;
- the Ministry expressed no concerns about the volume or placement of spoil on the site;
- the limitations established by the engineer, Bryan Woods, were followed; and
- any excess material placed on the site was within the industry standard of variation with the road design.

The Government accepts that the RoadEng computer program does not take into account small variations in the topography, nor of the topography outside of the parameters it recognizes. It produces cross sections based on information fed into

it by the designer. In this case, the Government submits that the existence of a bench permitted the placement of fill, and the designer would have provided information about the placement of fill on that bench. It produced cross sections showing where fill would be placed.

The Government submits that it is clear from the design, and the evidence, that the cross sections shown in the design prescribe where fill is to be placed, both where fill is necessary to support the road bed, and also where spoil will be placed simply to avoid end hauling the spoil. The Government states,

> … that is why road surfaces vary in width considerably, from 5 metres to nearly 10 metres… A wide road of course provides a passing lane in addition to providing an opportunity to place spoil. Whatever the purpose of placing fill the design cross sections provide for it, and reflect the placement of fill in the volume report at the end of the design. [emphasis added]

The Government submits that large amounts of fill and spoil were placed where the design did not provide for them; in particular, at stations to the west of the site in question, where the bench was at angles approaching 60 per cent, and where the rapid release slide occurred. It refers to Mr. Nicol's January 16, 2003 letter where Mr. Nicol states, "the increase in volume is primarily between 2+559 and 2+590." The Government notes that when the design does not provide for material in a particular location, none should be placed there: "silence" does not mean consent in this circumstance. If the licensee cannot simply "end" the spill of rocky material precisely at a given cross-section or point in a design, the Government submits that the licensee must take this into account in its planning. This would involve a gradual reduction in the amount of material to ensure that it decreases to zero at the point on the cross section where no material is shown.

The Government states that this was not done in this case. It argues that the degree of deviation from the design is such that it cannot be accounted for by the "smoothing" expected when executing the design. The design provided for two cross sections to provide "virtually no fill", and for a very small amount of fill to be placed at the most westerly section, between 2+559 and 2+590. It states, "In fact the volume placed at the western end of the section from 2+559 to 2+590 in the autumn of 2001 after the surface was reworked was nearly six times the amount provided for in the design. The detailed plans reflect this."

The Government submits that Kalesnikoff's deviations from the design were not minor; they were significant changes that, if operationally necessary, should have been included as an amendment to the design as was done on other occasions. The Government disputes that there was any operational necessity for Kalesnikoff to place the amount of fill which was, in fact, placed at 2+550.

The Government argues that the whole purpose of an "approved" design and this regulatory requirement would be circumvented if an engineer in the field could simply depart from the design because he judged it safe to do so. Furthermore, the Government notes that the design "approval letter" (referenced above)

specifically states that any deviation from the submitted prescriptions and road design be submitted and, when in critical design sections, the engineer would review prior to construction.

The Government suggests that, had this process been followed, the Ministry might well have questioned the hazard and risk involved in placing the amount of fill on the slopes referred to. It refers to Mr. Nicol's evidence about standard practice on forest roads which suggests that queries may well have been raised.

The Forest Practices Board took no position on whether there was a contravention of the *Regulation*. The Intervenor made no argument on this point.

*The Commission's Findings*

Spoil

*Was spoil placed in a location and/or in volumes in "general conformance" with the design?*

On the evidence presented, the perimeters of the actual placement of the waste site were not firmly established. The Commission finds that the best evidence of the approximate boundaries of the spoil and fill location came from Kalesnikoff's expert witness, Calvin VanBuskirk, P.Eng P. Geo. Mr. VanBuskirk produced a diagram (Figure 6, June 2004), showing the location of the fill and spoil. This diagram was viewed by virtually all witnesses and none disputed its accuracy. It showed the materials beginning below the road at 2+516.2 and ending just short of 2+588.9. Although the outer boundaries of the fill and spoil are similar, the Commission notes that the spoil is generally placed below the fill.

For that area, there were a number of cross sections produced by RoadEng. They show fill used to support the roadbed. In some cases, the fill provides for a road bed which is wider than required to allow for passing traffic or a place to dispose of material. However, the Commission notes that none of the cross sections show a location for spoil – material not being used to support the road. In fact, after a thorough review of all of Schedule A1, including the attached documents and reports, the Commission can find no specific reference to "spoil."

The Government argues that the absence of spoil sites in the cross-sections should be interpreted to mean that no spoil should be placed there. While this argument may succeed in relation to other material aspects of forest road construction (e.g., a bridge), the Commission finds that it does not succeed in relation to spoil.

First, the Commission has already found that the "design" for this section of road is the special engineered design by Mr. Woods.

In relation to the cross sections, the Commission accepts that the RoadEng program is not sophisticated software; it has limitations in replicating the realities of the terrain and in the detail it provides beyond the road plan. Further, in the Commission's view, the RoadEng cross sections are more in the nature of a design

tool, than the design *per se*. The cross sections are primarily used to create the design as opposed to being the actual design. This is because they produce a small slice of information and nothing in between. On a flat stretch, information may be extrapolated to fill in the gaps. However, where the stretch is curved or has creeks in between those "snapshots", the information is incomplete.

In addition, it is apparent from the evidence that spoil sites are not generally designed by this computer program. Witnesses called by both parties, including Mr. Augustin, Mr. Woods, Mr. Macleod, Mr. Jacobs, Mr. VanBuskirk and Mr. Nixon, acknowledged this. While possible spoil sites may be identified in the planning stages (as was done in this case), the amount of spoil and its origin does not normally come to light until construction. The road design formulas only provide a guide for planning and a rough guide to balance, where possible, the amount of cut and fill required. If more spoil material is created during construction, then it must be disposed of along the route and/or designated by the engineer to avoid side casting on steep slopes. Many of the decisions regarding spoil sites and volumes placed at the sites are made by the project engineer during the actual construction, in consultation with the road crew. In this case, Mr. Woods' testified that "the material was placed on the bench where I prescribed it to be" as part of his field instructions.

In relation to road design, the Commission accepts the evidence of Mr. Woods that only fill is generally addressed in the design, not spoil (waste sites). He stated that it was "standard practice not to show waste sites on the road", that "only where it makes the road" and that "fill is under the road" and "fill supports the road prism and yes spoil is not part" of the road. Mr. Nixon, the compliance and enforcement technician with the Ministry, confirmed this to some degree. He testified that he was not aware of any volume limits placed on the amount of spoil that could be placed on the bench. Further, it was his understanding that the project engineer would be the one to decide whether to put any limits on the volume of spoil, but that he could not recall a limit being imposed by an engineer. In his experience, project engineers are more likely to address issues such as the angle of repose, the location of waste sites between stations and keyed-in rock fills.

In addition, the following evidence regarding the Ministry's action (or lack of action) supports a finding that spoil volume and sites are not generally included in road design, and were not required for the design in this case. Throughout the road construction process, the Ministry was aware of the proposed location of the spoil site at 2+550. The Commission notes that the location of spoil was discussed on October 18, 1999, at the joint field review where both Doug Nicol and Peter Jordan of the Ministry were present. There is no indication that the Ministry required this site to be shown on the design documents, nor did anyone comment when no spoil sites were identified in the design documents.

The most telling evidence that spoil volumes were not required to be in the design was given by Mr. Nixon. Mr. Nixon's job duties included ensuring that licensees were complying with their submitted plans. Mr. Nixon prepared an inspection report based on his visual observations of a section of the road up to approximately

2+570 on August 21, 2001. In his report, he noted that at 2+520 there was a "keyed-in rock fill for width and a waste site…." Mr. Nixon testified that he knew that this was going to be a waste site, that Kalesnikoff had mentioned it was going to be a waste site, and that he remembered speaking to someone saying that it was a good place for waste material. However, he did not raise any concerns with the lack of spoil sites in the design plans, or in relation to the placement or volume of waste at the site generally. In fact, when asked whether he would be content with a spoil site designated by the engineer, he replied, "If the engineer states that's where he wants the waste, then that's where the waste will be." He would not be concerned with the safety of the site.

Thus, although it is undisputed that spoil is something that will always have to be addressed in road building, it is generally dealt with during the actual construction as an operational decision. The Commission finds that the volume and placement of spoil was not identified in the approved designs, and their identification is not a general requirement or general practice in the industry. For items not in the approved design, the qualified professional (e.g., project engineer) will generally set any limits or requirements and the contractors will exercise their discretion within the limits set by the professional.

On the facts of this case, the Commission finds that the volume of spoil and the location of the spoil did not contravene section 12(1)(b) of the *Regulation*.

Fill

*Was fill placed in amounts and/or in a location in general conformance with the approved design?*

*Volume*

The Commission has accepted that fill was placed beginning at or near 2+516.2 and ending just short of 2+588.9 (per Mr. VanBuskirk's diagram – Figure 6). There was a great deal of conflicting evidence regarding the volume of fill actually placed at this site and whether it generally conformed to the designed volume. One of the additional complications is that the table of volumes agreed to by the parties is for a different size of area than other estimates, making comparisons difficult.

Further, calculating volume was not a matter of simply quantifying the amount of material that was deposited on the site. This is because there were initial deposits, the re-working of the site in the fall of 2001, and then the ultimate removal of the material in the spring of 2002. During the re-working of the site, the toe of the fill was moved an average of 7 metres downslope, and the repose angle and the road width was reduced. Blair MacLeod, Kalesnikoff's road superintendent for construction, testified that the volume of material was increased by approximately one-third at this time to support the road bed. Bruce Jacobs, the road-building contractor, said a "minor amount" was added because moving the fill downslope had created a void which needed to be filled; he estimated the additional material at 15–20 per cent.

In April of 2002, almost all of the material was removed from the site because of slope movement. In January of 2003, Mr. Jacobs provided a load tally to Kalesnikoff. He advised that 326 loads of material was end hauled to gain access to the fill site from April 19 to April 24, 2002. The material consisted of "other material" plus a portion of the organic burn pile. Mr. Jacobs said the truck loads were not large because they had trouble keeping the material in the trucks due to the steep access trail. His estimate was that the truckloads averaged 8 $m^3$, instead of the normal 10 $m^3$, because of the steepness. He also said that additional volume was removed later, most of which was native material, including a large rock deposit near the creek. In total, he testified that there were approximately 400 loads. Mr. Jacobs estimated that about 15 per cent of the material removed was native material which had not been placed there by Kalesnikoff. Thus, according to Mr. Jacobs, the initial removal would have been approximately 2,608 $m^3$, with a total removal of approximately 3,200 $m^3$, which included some native material. Thus, the volume estimates include the fill, spoil and some native soil.

Despite the uncertainty in the actual volumes placed at this site, it is clear to the Commission that Kalesnikoff placed more material there than was in the original design. Kalesnikoff's road engineer, Mr. Woods, acknowledged this in his site summary dated December 4, 2002. The questions are, how much more fill was placed at the site, and was that additional amount "in general conformance with" the design?

In this regard, the Commission prefers the evidence of Kalesnikoff's witnesses to those of the Government. While all of the witnesses were knowledgeable, the Commission found Kalesnikoff's professionals generally had far more forest road building experience than did the Ministry witnesses. The Commission found them to be straightforward, knowledgeable, experienced people in relation to forest roads. Although the estimates varied somewhat, and had been "pieced together" after the fill had been totally removed (in addition to some natural soil and all of the spoil), the Commission accepts that the as built volume of fill exceeded the estimates in the design by a *maximum* of 25 per cent. The Commission places considerable weight on the evidence of Mr. Jacobs. Mr. Jacobs actually removed the material from the site, so he had first hand knowledge of the volume, and the Commission found him to be a credible witness.

In addition, the Commission finds that there is some additional support for this figure from Mr. Nicol. In a July 9, 2004 report regarding Mr. Nicol's estimates of the fill volume, Mr. VanBuskirk notes that Mr. Nicol's estimate of the difference between the design "weight" of fill and the as built weight amounted to 23.8 per cent.

This, however, does not automatically lead to a finding of contravention. Section 12(1)(b) of the *Regulation*, states that Kalesnikoff must "ensure that the construction is carried out in general conformance with requirements of the road layout and design" [emphasis added]. The words "general conformance" are not defined in the legislation, nor can the Commission find any judicial consideration of these words. The Commission notes that they are rarely used in B.C. legislation

and, in fact, are only found together in two forest-related regulations, one of which is the regulation at issue in this case.

What is clear from the words is that the actual construction does not have to actually, or strictly, conform with the design. It is something less than that. Kalesnikoff's construction must be in "general conformance" with the design. This appears to reflect recognition that there are various uncertainties and unknowns associated with road building, and that not every change in construction should require an amendment to the design documents - there is some leeway for licensees to make adjustments as and when needed. The question is, how much leeway will be allowed before an amendment to the design is required?

According to the Oxford Concise Dictionary, the word "general" (used in the context of this case) means "**7 a** roughly corresponding or adequate."

"Conformance" is defined as "conformity", and "conformity" is defined as "action or behaviour in accordance with established practice; compliance."

In some contravention cases, the design issue will involve a change to the essential design, such as a change in bridge design from a permanent structure to a temporary structure. In the present case, it is a change in estimated volume of fill material – a change in quantity.

When considering whether a variation in quantity is in "general conformance", the Government submits that it is appropriate to assess the variation in terms of "industry standards", and the degree of departure from the design that is accepted by those in the field as being "in general conformance". The Commission agrees with the Government on this point.

There is no dispute that road building is not an exact science. The more challenging the terrain, the less precise it becomes. Mr. Woods testified that, in generating the special design for this section, he determined that an angle of repose of 90 per cent would be appropriate, based on his experience that fill slopes containing that type of rock would be stable at that angle. In addition, the road was designed and constructed using larger rock at the bottom of the embankment to lock the material together, thus creating a higher friction angle because of the interlocking. The road design indicated that approximately 2,400 $m^3$ of material would be placed there.

Mr. Woods testified that the RoadEng program, which generated a volume report of cut and fill material, is not as sophisticated as some other computer programs in determining the volume that will be deposited at a site. This is because the program uses design volumes based on cross sections, which are between 15 and 30 metres apart: the program does not pick up subtle variations in the terrain, but instead assumes the ground in between is exactly the average of the two cross sections. Blair MacLeod, Kalesnikoff's road superintendent for construction, testified that, in complex terrain, the numbers generated by RoadEng could be "way out", by overestimating cut or underestimating fill.

The evidence at the hearing was that Mr. Woods observed the staking of the fill site and the placement of the fill and spoil during the course of the road building, and had no concerns that the recommended angle of repose was not being adhered to.

Mr. Woods testified that the road builders were never given any restriction on the volume or weight that could be deposited at this site, but they were given direction as to the angle of repose and where the toe of the fill was to be located.

In his written site summary report of December 4, 2002, Mr. Woods writes, "variations of up to 30 per cent should be expected when comparing design to actual volumes over short sections of road in complex terrain, and even greater variations are possible." His reasoning for this is found at page 7:

> Variability, or error, is inherent in forest road design methods. … In rugged terrain such as that crossed by the Schroeder Creek mainline, the terrain model that is developed from the side slope estimates is crude by any standard…
>
> Additional error is introduced by the methods that the RoadEng computer program uses to calculate the cut and fill volumes. The program calculates cut and fill volumes by averaging end areas of cross-sections and multiplying by the distance between the hubs. This calculation assumes that the section lines are parallel, however, as the road alignment curves the section lines remain perpendicular to the design centerline (L-Line) and are rarely parallel to each other.
>
> When averaged out over long sections of road, the errors cancel so that total volume movements measured on a project basis are generally estimated with reasonable accuracy by the design. However, when focusing on a short section of road in complex terrain, such as the subject site, considerable variation between estimated and actual volumes should be expected. To accurately quantify the expected variability, would be a difficult task. However, it is the author's opinion and experience that variations of up to 30% should be expected when analyzing small complex sites, while even greater variations are possible. On a project basis, to expect variations of between 5% and 10% would be reasonable.

Finally, in Mr. VanBuskirk's July 9, 2004 response to statements in the Notice of Expert Evidence for Mr. Nicol, Mr. VanBuskirk states at page 5:

> The level of survey data and more importantly the amount of subsurface information available to the road designer at the time when the road is designed is typically insufficient to expect a significant level of accuracy in computing the actual volume of fill excavation and placement required to construct the road. …
>
> Although it is our understanding that the balancing of cut and fill volumes to within about 15% is a desirable objective over the duration

> of a construction project, a difference of 20 to 30 per cent on the amount of fill moved within any given section of road is likely within an acceptable level of expectation within the forest industry.

Mr. VanBuskirk is a geotechnical engineer who investigated slide 3, reviewed the relevant plans, permits, designs and other documents relating to this stretch of road. He has extensive experience with terrain stability assessments and forest road building. The Commission found him to be a very credible witness and accepts his assessment (which corroborates Mr. Woods' evidence) of the industry "norm" in terms of fill design and expected deviations from the design.

The Commission finds that, in complex terrain, a 25 per cent deviation from the volume estimates in the RoadEng program approved plan is an acceptable level of variation in the industry. Further, the outcome of this departure is not normally expected to have serious consequences. In fact, in Mr. VanBuskirk's opinion, this slide would likely have occurred even if the actual fill volume were reduced by as much as 50 per cent (page 16, June 14, 2004 expert report).

Considering all of the evidence on this matter, the Commission finds that the volume of fill used to construct the road meets the definition of "general conformance" in that it "roughly" or "adequately" complied with the design in this short section of complex terrain.

The Commission acknowledges that there were risks related to this site, but notes that this entire road was fraught with risks. Given the engineer's input and oversight, the lower landslide rating he gave the site with his engineered design, the differences between this site and the other two sites which had experience slides, and the industry standard relating to fill and the deviations in the computer generated design, the Commission finds that the volume of fill was in general conformance with the design.

*Was too much fill placed on west side of the site?*

The Government's main focus was on the fill placed on the west side of the site, which it said was six times the amount set in the design. The Commission does not accept this assertion for a variety of reasons.

First, there is the lack of precision (discussed above) in calculating the volumes generally, and the Commission cannot find any credible evidence to support the allegation that the additional fill on the west side was six times the designed amount.

In addition, there is conflicting evidence about the fill on the west side. Mr. Woods testified that the bench was wider at 2+566 than 2+558, suggesting more fill would have been placed where it was wider in the eastern section. However, Blair MacLeod, Kalesnikoff's road superintendent for construction, testified that the road rose in elevation approximately three metres in the western section, and that accounted for more fill there. He also stated that the additional material was

placed on the west side. There is some evidence that more fill was placed there to accommodate passing of vehicles.

In contrast, Bruce Jacobs, the road-building contractor, was very clear that when the fill was reworked, "we took it all more to the east." Mr. Jacobs not only testified that the fill was "pushed east", but when specifically asked if it was moved from the line of survey pins marked A towards the D pins, or from D to A, he said: "we were taking material from C and D and moving it toward A." The A pins were towards the eastern end of the fill site (east of 2+550) and the D pins were towards the western end (east of 2+588).

As the road contractor, the Commission finds that Mr. Jacobs had direct knowledge of the roadwork, and the Commission accepts his evidence concerning the rework. Therefore, even if the volumes set out were initially deposited on the western end of the site, the Commission is unable to conclude that such volumes remained there after the rework. Therefore, the Commission finds that there was general conformance with the design in this regard.

*The design generally*

In addition to too much fill on the west side, the Government submits that Kalesnikoff did not comply with the design in other ways. In particular, it submits that fill was placed between sections where the design showed "no fill".

The Commission accepts the evidence of Blair MacLeod, Kalesnikoff's road superintendent, and Bruce Jacobs, the road-building contractor (both of whom were called as witnesses by the Government), that it would be impossible for material not to be downslope of 2+556 and 2+576, when material was being deposited on the slope adjacent to those areas. Mr. Jacobs testified that, in those circumstances, it would be virtually impossible to achieve "no fill" in a section without building a wall to partition the fill. Mr. MacLeod noted that 2+566 is less than 10 metres from the adjoining cross section at 2+558, and that the material would apron out around the full bench section as it goes down the slope to the bench below.

The Commission has reviewed the cross sections and finds that the design documents do not outline the details of the design with the degree of precision suggested by the Government. The Commission finds that the design by Mr. Woods is the critical document in this regard. The cross sections are only "snap shots". In this case, the cross sections for this section of road do not constitute the primary design for this section of road. The design of primary relevance is the one contained in Mr. Wood's July 29, 2000 design for the three "critical" sections of road. The design for the section in and around 2+550 is as follows:

(a) slightly over steepened fills (1.1:1) up to 2+565, and oversteepened placed rock fills (0.75:1) from 2+585 to 2+625.

(b) using "placed rock fills" as the construction technique. "These fills are to be constructed using large angular rock fragments

placed with the excavator bucket and thumb attachment, with their long axis oriented nearly perpendicular to the face of the fill. Voids between the rocks are to be filled with finer rock material."

(c) material used as fill in the steep sections up to 2+625 should consist of the harder rock in cuts upgrade and downgrade of this design section. The softer rock encountered within this section can be placed in the waste area between 2+690 and 2+710.

Of note, Mr. Woods also states with respect to construction techniques, "The construction techniques should be reviewed with the contractor prior to construction, and may be modified to suit the ground conditions and the contractor's preferences. One such alternative may be to further oversteepen the toe of the fill by constructing a stacked rock wall and flattening the upper portion of the fill with a slightly oversteepend (1.1:1) coarse rock fill. In either case, the contractor will be required to construct a pilot trail to the toe of the fill to ensure that the fill is keyed into the slope and the slope beneath the fill is thoroughly stripped."

The Commission has already found that this is the design that was approved by the Ministry for this section of road. The Commission also finds that Kalesnikoff constructed this section in accordance with this design. Further, the cross sections included in the design package in this case are a design tool, and do not "show" the extent, shape or precise boundaries of fill used to support the road.

Summary

The Commission finds that Kalesnikoff did not contravene section 12(1)(b) of the *Regulation*.

**4. If there was a contravention(s), did Kalesnikoff establish a defence of due diligence to the contravention(s).**

In light of the Commission's finding that Kalesnikoff did not contravene section 45(3) of the *Code* or section 12(1)(b) of the *Regulation*, the Commission need not address this issue. However, comments on the defence of due diligence are provided later in the decision.

**5. If Kalesnikoff did contravene the *Code* or the *Regulation*, whether the penalty was appropriate.**

The Commission finds that Kalesnikoff did not contravene either section 45(3) of the *Code* or section 12(1)(b) of the *Regulation*. Therefore, no penalty is warranted and the Commission rescinds the previous penalties levied against Kalesnikoff in relation to the area in and around slide 3.

This appeal is allowed.

## C) Determination #2 - Slides 4, 5 and 6

As noted in the background to this decision, slides 4, 5 and 6 occurred in the spring of 2002, a few months after completion of the road building in late November 2001. The slides occurred along the mainline between 6+330 and 6+480. Specifically, slide 4 occurred at 6+408, slide 5 was at 6+333 and slide 6 was at 6+450.

*Slide 4*

On June 13, 2002, Curt Nixon, compliance and enforcement technician for the Ministry, conducted an inspection of the road under construction and noted that an "erosion event" had occurred at 6+408. Mr. Nixon states that the water flowed through the culvert, into an excavated ditch, and flowed along a slash pile and a downed log for approximately 40 metres, paralleling the road on the downslope. It then hit a standing spruce tree and flowed downhill. Kalesnikoff submits that slide 4 was likely caused by a diversion of water exiting the culvert as a result of this "blow down" log or "windfall.

Mr. Nixon's report was not sent to Kalesnikoff until June 25, 2002. On June 26, Kalesnikoff filed a District Landslide and Erosion Report, describing the slide as approximately 25 metres long by 3 metres wide and .75 metres deep.

Peter Jordan, a research geomorphologist for the Nelson Forest Region of the Ministry, estimated the slide volume as roughly 100 $m^3$, with one quarter entering the creek. In contrast, Calvin VanBuskirk, the geotechnical engineer retained by Kalesnikoff to provide an opinion in these proceedings, estimated the slide volume as 146 $m^3$ of which 29.2 $m^3$ entered Schroeder Creek. He noted that there was no change to the water colour, no complaints from water users and no effect on fish. He described the environmental impact as insignificant with respect to both short term and long term impacts on known resources.

*Slide 5*

The Valhalla Wilderness Society reported slide 5 to the Ministry in a letter dated July 22, 2002. Slide 5 was located at 6+333 (sometimes referred to as 6+331).

Peter Jordan, the research geomorphologist for the Nelson Forest Region of the Ministry, described the slide as being 5 metres wide by 12 metres long, with less than half of the debris entering the creek. Mr. VanBuskirk estimated the volume at 21 $m^3$, of which about 18 $m^3$ entered the creek.

Kalesnikoff maintains that this slide was the result of a failed ditch block, and that this was discovered by the road contractor, Bruce Jacobs. It states that Mr. Jacobs fixed the failed block by cleaning out the ditch lines.

*Slide 6*

Slide 6 occurred at 6+450, below a culvert but not directly in line with the culvert. Kalesnikoff submits that this slide predated the road construction. Mr. Wells

concluded that this was an old slide which was continually being eroded every few years depending on the high water and thaw situation at that point. He testified that even though it was downslope from the culvert, there was no direct scour or erosion from the pipe outlet.

In a report dated August 30, 2002, Peter Jordan states that the slide was below a culvert, but not in a direct line below its outfall. He said that the slide was situated within the scar of a much larger, old landslide, and that the slide may be natural or may have been caused by flow from the culvert.

In its letter to the Ministry dated July 22, 2002, the Valhalla Wilderness Society states that the outlet of the culvert flowed into an older non-vegetated slide scar. It did not suggest that a new landslide had occurred here.

### 6. Whether Kalesnikoff contravened section 45(3)(a) of the *Code* in regard to slides 4, 5 and 6.

The forest practice that is at issue in this determination is the drainage system designed and constructed for the section of road from 6+333 to 6+480. To understand the evidence and arguments related to this issue, one first needs to understand what culverts, French drains, geotextiles and overlanding are and why they are used in forest road building.

A culvert is essentially a round pipe.

A cross drain culvert is a culvert used to carry ditch water from one side of the road to the other. The culverts at issue in this case had a ditch line leading to them and a ditch block intended to direct the water through that culvert.

A ditch block is a blockage that is located directly downgrade of a cross-drain culvert or cross ditch and is designed to deflect water flow from a ditch into a cross-drain culvert.

A French drain is a drainage structure and a support structure; it allows something to be on top of it such as a road or a cut bank. The French drains constructed in this case were constructed by placing cloth on the ground and spreading it out. Large rocks were then placed on the cloth and the cloth was wrapped around the top of the rock. This structure provides a permeable path for water to move from upgrade to downgrade. Other materials for the road can then be placed on top of the French drain. There is also a combination type of drain where the French drain has a culvert embedded in it.

Based on the evidence, a French drain might be used instead of an ordinary culvert when there is a short section with considerable seepage. The goal is to have the natural seepage free draining underneath the road surface in that area, to the extent possible, and to ensure the road surface is stable.

Overlanding is defined in the *Regulation* to mean “placing road construction fill over unstripped organic soil, stumps or other vegetative materials for the purpose of

distributing vertical loads over soft ground, whether or not the fill is supported by corduroy or geotextiles." It is essentially, building the road on top of the existing surface of the land, rather than cutting into the land. It is used to give support to the road base in areas where there is not enough strength in the subsurface materials – they are "poor soils". The underlying purpose is to form a structurally sound surface for the vehicles to travel on, with the added benefit of minimizing the interruption of subsurface drainage.

To achieve this purpose, the evidence before the Commission is that the root mat may be left intact to provide strength for the fill that's being placed on top of the ground surface. Geotextile (which is like a large roll of thin, strong carpet) is rolled over top of the soil, or over top of the organic material, and the road fill is placed on that. Other techniques may include laying out low grade wood in rows along the road (corduroy technique), perpendicular to the direction of travel. Fill is then placed on top of that structure. According to Mr. VanBuskirk, the fill used in overlanding is not normally permeable fill.

Mr. VanBuskirk testified that partial overlanding is a "subcategory" of overlanding whereby the organic layer is disturbed by light grubbing" or light stripping of the organic layer and the removal of the stumps.

The Commission will now turn to consider this issue.

*The Contravention*

In his determination, the Deputy District Manager found that Kalesnikoff constructed the Schroeder Creek Mainline at 6+333 to 6+480 and that this forest practice resulted in the slumping or sliding of land. He states that this was based on expert evidence that the three debris slides were caused by excessive water flow from three culverts. The Deputy District Manager found that water had been diverted into the culverts due to Kalesnikoff's failure to construct the road in conformance with the prescription (the approved design and additional recommendations as prescribed by the professionals), and that Kalesnikoff was aware that this section of road contained excessively wet areas that would require extraordinary construction techniques, including rock fill, geotextiles and French drains. The Deputy District Manager concluded that Kalesnikoff only installed additional culverts plus one French drain at 6+630, and that these actions did not constitute the extraordinary techniques that were required. He concluded, "I find that Kalesnikoff should have reasonably known that foregoing the extraordinary construction techniques on this road section would cause directly or indirectly the slumping of land" in contravention of section 45(3)(a) of the *Code*, which is repeated for convenience as follows:

> (3) A person must not carry out a forest practice if he or she knows or should reasonably know that, due to weather conditions or site factors, the carrying out of the forest practice may result, directly or indirectly, in
>
> (a) slumping or sliding of land,

(b) inordinate soil disturbance, or

(c) other significant damage to the environment

*Did Kalesnikoff know, or should it reasonably have known that, due to weather conditions or site factors, its drainage system may result, directly or indirectly, in a slide which constitutes a significant damaging event.*

Choice of drainage design between 6+330 and 6+480

1999

As stated earlier in this decision, Mr. Wells and Marc Deschênes had preparedLevel D reconnaissance level mapping. The area for the proposed road between 6+330 and 6+480 was identified as a stable polygon. However, it was above an area that was identified as unstable. This section of road, was in an area of wet, gently sloping terrain.

Mr. Wells testified that it was clear from his early research of the area that there had been many natural slides and that,

> Schroeder Creek itself was processing many tons of slide material every year from avalanches and other natural slides. I could see evidence of natural slides all up and down the creek, because I walked from the lakeshore to up through the creek canyon along the – in the creek, because you couldn't walk along the side of it.

Mr. Wells described the area as a confluence of the North Fork drainage to the main valley. He described it as a terrace, with a terraced scarp down to the creek. He stated that the creek would have caused this steeper escarpment and its erosion over time as it ran through this glacial fluvial and glacial lacustrine material. From the air, he stated that one would observe a series of prominent areas and scallops inwards, and each of those were caused by surface failure over time and by the creek cutting down through the area.

The road grade along this section was four per cent.

2000

In his Terrain Assessment, Mr. Wells addressed drainage design and drainage issues. In his opening comments about the road generally, he states at page 2:

> Since the proposed road passes through many sites where soil moisture regime is Subhygric or wetter, or where there are actual occurrences of seeps, springs or creeks, these sites are considered to be sediment sources with very high potential for soil surface erosion and road and ditchline erosion. The potential consequences of unmanaged slope drainage or of ditchline drainage is the contribution of sediment to Schroeder Creek. There is also the possibility that malfunctioning

> drainage structures in the road could lead to landslides, which have a high likelihood of reaching Schroeder Creek.

In this assessment, Mr. Wells identified one of the main areas of concern as the wet land between 5+800 and 6+500. In regard to drainage, he said that the central and northwestern block areas are receiving sites where drainage is more "defuse" resulting in slow draining, wet areas, and "builders need to be vigilant for localized wet areas that may not be accounted for in the road design."

Under the heading "Surface Erosion and Sediment Delivery" for 3+200 to 6+600, Mr. Wells wrote in his Terrain Assessment:

The potential for Surface Erosion in much of this section is rated High to Very High, and Road and Ditch Erosion potential is Very High due to the sandy and silty soil texture. Because of the proximity to the creek, the potential for sediment delivery is also high where slope is greater than 30 per cent.

Under "Conclusion and Recommendation" for this section of road, he states,

> The main concern about this area is the potential for impacts on the soils. In general, instability is not an issue, and will not increase in instability after the road is completed. *Overland construction technique (on geo-textile with no excavation into the surface) are in the design for the western section where wet land is encountered, especially between 6+000 and 6+100*. [emphasis added]

At the hearing, Mr. Wells made it clear that this recommendation for overland construction applied to the area from 5+800 to 6+500, which he had already identified as a "wet area" in the Terrain Assessment, although he specifically emphasized the area between 6+000 and 6+100.

Mr. Wells concludes his Terrain Assessment by stating that:

> The design of for [sic] this proposed road takes into account the potential and actual problems related to terrain stability and slope drainage encountered in the route corridor. It is my understanding that some extraordinary techniques will be employed during construction *to investigate site specific terrain attributes such as rock competence and unforeseen drainage occurrences.* … If occurrences of unforeseen, potentially unsafe terrain stability situations are discovered during construction, *it is appropriate that the necessary steps to ensure reasonable stability of the road prism are undertaken before the project is considered complete*. [emphasis added]

Further details on the drainage design were included in the "Road Design and Plan and Profiles, Schroeder Cr. Road, Sta. 0+00 to 8+072, Timberland Consultants, July 17, 18, 2000", which included the RoadEng designs discussed earlier in this decision. According to Blair MacLeod (Kalesnikoff's road superintendent), Mr. Woods and Mr. Wells were both involved in the

development of this design and in formulating the design from station to station.

According to the evidence of Mr. MacLeod, the method of construction in relation to drainage (e.g., overlanding) is evident from the cross sections and volume reports. These documents indicate the presence of things such as excavated ditch lines, stripping and ballasting. The drawings in the design, plan and profiles also show the general placement of culverts and other features.

The design called for four culverts between 6+057 and 6+132 with an excavated ditchline for all but the 6+305 to 6+486 section. It was the area between 6+000 and 6+100 that Mr. Wells had described as being particularly wet in his Terrain Assessment. He testified that it was because the area was wet with a potentially unstable area below the road that he prescribed so many culverts in that section.

Another culvert was in the plan at 6+380, but there were no additional culverts in the original design up to 6+480. Overlanding was his design choice to address the rest of this wet section of road. No French drains were in the design for this section.

On July 14, 2000, Mr. Well's wrote to Kalesnikoff stating, in part, "At this point culvert placement is in the design to facilitate natural drainage, and where they are on the hillside + or – a meter or two will be fine tuned as needed."

Mr. Wells testified that he designed the drainage to go into the natural gullies created by previous erosion events. He said there were ten or so of such natural gullies and that he was not concerned about draining water into them. He testified that he was aware that it was an unstable slope and that slides and erosion events had happened before. However, the road prism, except for 6+331, was "some distance away from the break in the slope". Therefore, Mr. Wells expected that the water would be slow moving and, because it was going over nearly level ground for some distance, he was of the view that there may be some infiltration. In his opinion, the slope "could handle the water".

However, Mr. Wells also testified that he knew that there was some variability in the drainage status of this section of road. In practical terms, he expected that the road builder would be able to deal with it and would consult with him if there were problems. This is why he stated in his Terrain Assessment that "builders need to be vigilant for localized wet areas that may not be accounted for in the road design."

In a July 28, 2000 memorandum regarding "Outstanding Schroeder Creek FSR Mainline Road design issues", from Mr. Wells to Kalesnikoff, Mr. Wells addresses three issues, one of which is overlanding in sections 6+000 to 6+100 and 6+800 to 6+900. This memorandum was apparently written in response to questions from the Ministry staff just prior to the issuance of the Road Permit. The memorandum did not address the area where slides 4, 5 and 6 occurred, that is in the area between 6+333 and 6+480. However, it provides his view on the overall purposes

of his drainage design and his understanding of the type of overlanding he viewed as acceptable in the area. He states:

> In two stretches of the design (6000 – 6100 and 6800 – 7600) on stable terrain, full fill or "overland" construction is called for to keep the hydrological status unchanged as much as practicable. The design follows the advice in general and in spirit, however, local land variation occasionally requires that the organic surface is disturbed. In fact, a light version of stripping the surface is necessary all along the construction zone to get logs off the right of way, and remove stumps. In these cases drainage structures are installed to move the water across the road prism and on down the slope
>
> In both of these sections, the land is stable and the purpose is to minimize exposure of the land (rated as high erosion and sediment delivery potential) while maintaining the hydrologic function of subsurface drainage.

During the hearing, there was evidence regarding ditch blocks. Ditch blocks are a normal part of culvert/ditch line construction and are expected to be part of the work and included in the design. Mr. Wells testified that he did not have any concerns about the use of ditch blocks in this section of road. He testified that he did not expect them to fail along this stretch. He explained that, in his view, they are more prone to failure on steeper grades. Mr. Wells also stated that, where there is a greater risk of damage from a failure, he might put in a "fail safe of some sort", some sort of a backup cross ditch or water bar. However, in this case, he was of the view that there was not enough grade to warrant such measures.

*Additional information available to Kalesnikoff during installation/construction*

The road, as constructed, proceeded upslope from 6+000 to approximately 6+500 where it then dropped down to the bridge at approximately 6+642. Construction on this section appears to have taken place from early September 2001 through to the end of November of 2001, when the road was deactivated for the winter following a deactivation prescription prepared by Wells.

The evidence presented at the hearing by Mr. Augustin, Mr. MacLeod, Mr. Wells and Mr. VanBuskirk was that the road in this section was constructed using a form of "overlanding" in accordance with Mr. Wells' recommendation. This involved a light "grubbing" (removal of some of the organic layer such as large stumps), then the placement of geocloth which allows water to percolate through, with ballast of gravel and rock on top. The culverts shown in the approved design were also installed.

However, during construction, Mr. Wells sought amendments to the design documents based on new site information. He testified that, when construction began, it was evident that the site conditions were different than what was initially expected along portions of the mainline. There were soft wet areas that he hadn't anticipated. Consequently, Mr. Wells, in discussions with Kalesnikoff and Mr. Jacobs decided that certain additional drainage structures were needed. This was confirmed in an "updated memorandum" from Mr. Wells to Kalesnikoff dated

October 30, 2001 titled "Wet site drainage structures on Schroeder Mainline". In it Mr. Wells wrote:

> I feel I missed a call on my level A [the Terrain Assessment] of the Schroeder mainline in the wet area from 5+218 to 5+260. In the fieldwork for my original FSR [Forest Service Road] Level A I noted the wet conditions when I walked along the P line [preliminary line], but did not comment more than that. Indicators are comparatively more visible now the road is being constructed. I feel the strip across the 5+200 -5+285 to be TS Class V – the 5+249 and 5+282 bit is a slow moving failure feature. Consequently an amendment in the June 2000 TSIL A of the road should be amended (pages 4 and 5) to include this section along with the 5+800 – 6+600 and other wet or Subhygric areas…
>
> French drains have been installed (as well as well-placed galvanized steel pipes) near 4+681, 5+200, *and will be installed in the stretch from 6+000 to 6+600*. The first two are Geocloth wrapped rock 0.5 meters thick with 0.3 meters of surfacing on top. The 6+000 to 6+600 section will be Geocloth with 0.7 meters of surfacing on top. These measures should provide adequate pathways for slope drainage interrupted by the road structure.
>
> In my opinion the overlanding, culverting and use of French drains is appropriate and effective for the area. These methods and techniques are in general conformance with the original and newly amended TSIL A for the road, as well as the FSR design. [emphasis added]

In November of 2001, Mr. Wells attended the site to review the drainage system and prepare a seasonal deactivation prescription. Mr. Augustin testified that the purpose was to have Mr. Wells "prescribe seasonal cross-ditches and so on, and any additional measures that would be required to -- to work towards managing the spring flows that would occur." As a result of this visit, Mr. Wells added an additional culvert at 6+238 and 6+571. The additional measures were discussed with the road builder and Kalesnikoff's road superintendent, and then confirmed in a document titled "As built culverts and Rx [prescription] for seasonal deactivation" dated December 1, 2001. This document identified what had been built in accordance with the design, the new measures to be added and what had changed from the design. The new culverts were sited to channel water into existing gullies.

When the overall drainage system for this section was reviewed by Mr. VanBuskirk, he calculated the average culvert spacing as approximately 19 culverts per kilometer.

The slides were discovered in the late spring, early summer of 2002 after the road was reopened.

A succinct summary of the drainage design for 6+300 to 6+600 and a summary of the actual construction was provided by Mr. Wells in a September 23, 2002 letter to Sandi Best, earth science specialist with the Ministry. Mr. Wells states:

- My June, 2000 Terrain Stability Field Assessment (TSFA) refers to the wet ground conditions, and recommends overlanding without opening the forest floor "especially between 6+000 and 6+100." This includes the current area of concern where the two slides occurred at 6+331 and 6+408.

- The approved design for this segment indicates four culverts between 6+057 - 6+132 (Hubs 379, 380, 381, and 383) with an excavated ditchline for all but the 6+305 - 6+486 segment (Hubs 391 – 397). Another culvert is in the plan for 6+380 (Hub 392).

- During construction in the autumn of 2001 the surface of the section of concern (i.e., 6+300 – 6+600) was excavated. Subsequently water ran onto the surface and the road builders utilized various methods to make drainage across the road function. I observed this situation after the pilot trail was constructed on my November 8, 2001 field visit to address seasonal road deactivation.

- Other terrain issues were also revealed in other segments during the road construction and I drafted, as per KLC [Kalesnikoff] de facto protocol (see below), an amended version of the TSFA [Detailed Terrain Stability Assessment & Review AMENDED December 22, 2001] that included commentary on the problem sites and advice to mitigate drainage problems that had developed. In the case of the 6+3 to 6+6 segment this involved using a variety of construction techniques intended to facilitate the drainage across the road in light of the conditions encountered. As part of this process, on November 21, 2001, I recommended the following drainage structures for the 6.0 to 6.6 section, which I prescribed on site for the seasonal wrap-up.

[Note: "450" is the size of the culvert (cross drain) – 450 millimetre culverts]

| **Station** | **RX [Prescription]** | **Comment** |
|---|---|---|
| 6+006 | Water Bar out | |
| 6+057 | 450 | Cross drain In approved design |
| 6+081 | 450 | Cross drain In approved design |
| 6+111 | 500 | Seep In approved design |
| > | Water Bar out | |
| 6+121 | French Drain +450 | Overlanding section to traverse large seepage area In approved design |
| 6+238 | 450 | Cross Drain |

| | | |
|---|---|---|
| 6+320 | 450 | Cross Drain |
| 6+408 | 450 | Cross Drain + Water Bar out<br>In approved design at 6+380 |
| 6+450 | 450 | Cross Drain |
| 6+480 | 450 | Cross Drain |
| ~6+571 | 450 | Cross Drain. Slope ditch bank so it won't sluff and fill ditch |

- It's my understanding that the installation of these structures was completed on November 27, 2001. I did not return to the site until early summer of 2002. At that time the french drain and culverts in the segment between about 6+000 and 6+120 were functional.

- …

In conclusion it's apparent that there are differences between the recommendations that were made in the June 2000 TSFA, written after observations along the P-line on undeveloped land and the road segment as constructed through this section.

During his testimony, Mr. Wells' clarified that his reference in bullet #3 to "various methods used to make the drainage across the road function" included overlanding, culverts, French drains, stripping and ditching techniques - the general techniques referred to in his July 28, 2000 memorandum. He also confirmed that, in his opinion, overland construction and French drains are "extraordinary construction techniques", but culverts are not. Mr. VanBuskirk agreed with this opinion.

Following the discovery of slides 4, 5 and 6, Mr. Wells recommended the installation of flumes to direct water from the culverts past the unstable downslope to the creek below. Mr. Wells testified that, in spite of this later recommendation, his original prescription for the stretch of road between 6+000 and 6+600 was accurate and his opinion unchanged. Based on Mr. Wells' experience, he believed that the prescribed drainage could cope with the predicted water and that flumes were, in the first instance, unnecessary. He testified that, despite the erosion events that occurred, he still believes that his recommendations and the actual construction of the road in this section was "right". Further, of the culverts and ditch blocks that Mr. Wells saw in his field visit on November 21, he testified that he had no concerns that they wouldn't work as intended (e.g., subside).

Mr. VanBuskirk testified that flumes are generally considered for areas that have no apparent place to direct the water. For instance, if the slope is uniform for several hundred metres – there are no natural swales or depressions that could be used to direct the water – one might install a culvert and conduct the water in a flume to the bottom of the slope. Since the particular section of road in this case had natural swales, depressions and gullies in the steep slope, they would be

considered appropriate locations to discharge a certain amount of surface water flows.

Regarding downspouts, Mr. VanBuskirk testified that they are generally a "mitigative strategy" used to reduce sedimentation from water flowing down a landslide surface and the exposed mineral soils. When a slide occurs, the mineral soils are exposed. These soils are susceptible to erosion so downspouts may be appropriate to avoid erosion of these soils. However, where, as in this case, there was a surface mat of organic debris and forest floor roots, etc., this issue does not arise. Water typically just flows down the surface.

*The Commission's Findings on the issue of whether Kalesnikoff knew or should have known that, due to weather conditions or site factors, the carrying out of its forest practices (drainage system) may result, directly or indirectly, in any type of significant damage, e.g., a slide.*

As noted above, there is no dispute that from the beginning, the Ministry, Kalesnikoff and everyone involved in this project understood that this was a difficult drainage for various reasons. Mr. Wells' evidence is that the Ministry, specifically, the District Manager, expected there to be problems along the way including some amount of "dirt getting into the creek".

There is also no dispute that the road constructed through this area was generally of a good standard, and that the slides were relatively minor.

Mr. VanBuskirk reviewed the overall construction of the Schroeder Creek Mainline. He states in his report dated June 14, 2004, titled, "Schroeder Creek Main – 6+333 to 6+544 ("6+333 event")" as follows at pages 8-9:

> … it is the author's opinion that the road was constructed to a standard equal to or better than that of the current industry standard. Reasons for this opinion include:
>
> 1. At a number of locations along this alignment, controlled blasting, rock bolting and retaining wall construction were used. Although commonly used in highway construction, which requires a higher standard than forest road construction because of high road usage, these procedures are not common in forest road construction.
>
> 2. Professional (QRPs) were used during construction to review site conditions and provide advise on: road drainage issues; blasting; rock bolting; …. Typically in forest road construction, once the terrain stability assessment has been completed, the terrain stability professional's (TSP) involvement in the project is complete and forestry personnel take over implementing the terrain stability recommendations/prescriptions. It is the normal industry practice not to require the involvement of the TSP during construction except in extreme circumstances.

3. QRPs were used to design road drainage systems to reduce the potential for drainage related landslide activity. Currently, there is no requirement for professional design of road drainage systems, other than for major culverts and bridges. In addition, no professional association has exclusive rights to carry out this practice. It is understood that KLC [Kalesnikoff] had Wells or WAE [Woods Engineering Associates] plan and/or approve all drainage structures installed along the Schroeder Creek Mainline.

In this report, Mr. VanBuskirk specifically reviewed Mr. Wells' reconnaissance terrain survey intensity Level D mapping, the aerial photographs and the results of his site visit. In Mr. VanBuskirk's opinion, Mr. Wells' classifications of the terrain in the vicinity of 6+441 to 6+544 and downslope of the road in this area were appropriate.

After reading through Mr. Wells' recommendations, it was also his view that Kalesnikoff had followed Mr. Wells' advice in that overlanding, or a subcategory of it, was used where it was needed. He testified that, had this not been the case, there would have been "tremendous ruts in the road right now and that road is not rutted." In his opinion, it is a "very well built piece of road".

Regarding the use and placement of French drains, he testified that the French drains were placed where they were required. In his opinion, the French drains were constructed where cut slope slumping and instability had occurred or was imminent, or where seepage from the cutslope was causing problems with maintenance of the ditchline.

Later in his report, Mr. VanBuskirk states, "KLC acted on the information provided to them by their QRP (Wells) who is registered as a Professional Agrologist. There is no significant information to suggest that the information provided to KLC by Wells should have lead them to expect that the likelihood for landslides at this site would have been anything other than low."

There is no dispute that Kalesnikoff was aware of the wet nature of the area. In the Level D reconnaissance mapping, this area was identified as stable, but it was above an area that was identified as unstable.

In this situation, section 45(3) of the *Code* required Kalesnikoff, including its experts and road contractor, to remain alert for conditions and/or situations that could lead to a slump or slide or other significant environmental damage. Part of Mr. Wells' role in this project was to observe what was occurring during the construction phase and advise on whether the techniques used would maintain slope stability and drainage continuity, and whether the techniques conformed to what he had prescribed, recommended and discussed with Kalesnikoff and its road building crews in relation to terrain stability and drainage.

He was also retained to prepare a seasonal deactivation prescription. Mr. Augustin

testified that this was an added step that is not common to every project. While deactivation prescriptions are required, Kalesnikoff decided to have one done annually because of the various issues in the Schroeder Creek drainage.

In his determination, the Deputy District Manager found that Kalesnikoff only installed additional culverts plus one French drain at 6+630, and that these actions did not constitute the extraordinary techniques that were required. He concluded, that "Kalesnikoff should have reasonably known that foregoing the extraordinary construction techniques on this road section would cause directly or indirectly the slumping of land" in contravention of section 45(3)(a) of the *Code*. The Commission disagrees.

The Commission finds on the facts that Kalesnikoff did use the "extraordinary construction techniques" recommended for this section of road. Specifically, it used overlanding and installed French drains where required. There is no evidence that additional French drains or culverts were reasonably required, or that they would have prevented the slides that did, in fact, occur. Mr. Augustin, Kalesnikoff's forestry manager, and Mr. Wells, both testified that it was their view that this drainage system met the objectives of having a stable road surface and providing for drainage. Mr. VanBuskirk testified that the overlanding, the use of French drains and regularly spaced culverts were appropriate given the site conditions and the Commission agrees.

The Commission accepts that there were some changes to the original Terrain Assessment, in that there was some light stripping of the road surface, which is described as "partial overlanding". However, the Commission also accepts that this change is relatively minor and was done in response to the site conditions. Further, it appears to be consistent with Mr. Wells' memorandum to Kalesnikoff dated July 28, 2000.

It is clear from the evidence presented that forest road construction is an ongoing process. Mr. Wells explained that when road construction ended in November of 2001, this portion of the road was "raw road". It was being shut down for the winter and people would return in the spring to assess and evaluate the situation. This is when melt water is present and "things change". It is a time when further evaluation is conducted. In his experience, almost every road in this kind of terrain needs to be re-evaluated every year, as long as there is a road structure there. That is the usual practice and the context within which they were operating.

The Commission finds that the road builders "were vigilant for localized wet areas"; the builders and Mr. Wells were both alert to weather and site conditions. Mr. Wells modified the design when the actual site conditions differed from what was anticipated. He communicated with the road builder to address issues that arose. This is evident from his October 30, 2001 memorandum, where he states, "Indicators are comparatively more visible now the road is being constructed. I feel the strip across the 5+200 -5+285 to be TS Class V – the 5+249 and 5+282 bit is a slow moving failure feature. Consequently an amendment in the June 2000 TSIL A

of the road should be amended (pages 4 and 5) to include this section along with the 5+800 – 6+600 and other wet or Subhygric areas…."

The Commission finds that Kalesnikoff met the appropriate standard in respect of section 45(3)(a). It made reasonable inquiries to reconcile apparent discrepancies between new information and previous information/plans/assumptions. The Commission notes that the law does not require a standard of perfection but rather that licensees must acquire and act upon the best information available to them to avoid significant environmental harm. In this case, the Commission finds that Kalesnikoff's actions satisfy the legislative intent, in that it was "alert" to the conditions encountered in the field and made changes in order to prevent slumps and slides and other significant environmental damage.

Based on all of the evidence presented, the Commission finds that there was nothing in the information available to Kalesnikoff that would support a finding that Kalesnikoff knew or should have known that the road construction, specifically the drainage system approved for this location, might result in a slide or slump of any significance - or any other significant damage to the environment. The Commission further finds that, once they were in the field, there were no new indicators that would reasonably lead Kalesnikoff to know, or provide an evidentiary basis for a finding that it should have known, that its forest practice (as modified and amended) may directly or indirectly result in a significant damaging event.

Accordingly, the Commission finds that Kalesnikoff did not contravene section 45(3) in regard to slides 4, 5 or 6.

## 7. Whether Kalesnikoff contravened 13(1)(c) of the *Regulation* in regard to slides 4, 5 and 6.

*The Contravention*

As noted in the "Background" to this decision, the Deputy District Manager found that Kalesnikoff had contravened section 13(1)(c) of the *Regulation*. He found that subsurface water was intercepted by cut slopes and concluded that this water should have been allowed to "seep through the road fill." He found that the drainage system did not achieve the intent of the *Regulation* and caused the drainage water to be concentrated in the ditch line due to the cut bank interception of the subsurface water. This water, plus the surface water, concentrated the total amount of water and then diverted it through the ditch line into the culverts. He found that the water was then "channelled onto potentially unstable slopes causing the landslides." The Deputy District Manager states, "the concentration of the amount of water could have been reduced by not intercepting the subsurface water and using road construction techniques that allowed this subsurface water to seep through the road fill." While Kalesnikoff used geotextiles and ballast rock for the road fill in some sections of the road, the Deputy District Manager found that it had not used them for the road sections in issue.

For convenience, section 13(1)(c) of the *Regulation* is repeated as follows:

**13** (1) A person required to construct or modify a road in compliance with section 62(1) of the Act must do all of the following when constructing the drainage system for the road:

(a) construct bridges, culverts, fords and ditches that are necessary to maintain surface drainage patterns;

...

(c) ensure that the drainage system

(i) intercepts surface water and subsurface drainage from the cut slope,

(ii) drains ditches and controls ditch erosion,

(iii) prevents ponding of water where road stability may be compromised,

(iv) prevents water from being directed onto potentially unstable slopes or soil material,

(v) minimizes the amount of sediment entering streams, and

(vi) meets the requirement of any design approved by the district manager.

As previously stated, the road along this section was upslope of a slope identified by Mr. Wells as unstable; Kalesnikoff, the road builders, and the Ministry officials knew this to be the case.

The design for this section of road and the Terrain Assessment was provided to the Ministry, approved and formed part of the Road Permit.

*The Parties' Arguments*

The Government submits that the construction of the road served to collect surface and subsurface water on the upside of the road and to channel the water through a number of culverts to its downside. It submits that the water thus collected and flowed through the culverts onto an unstable slope and was the probable cause of one slide below the culvert outlets and the "clear cause of two more." However, the Government also submits that, as with section 45(3) of the *Code*, causation is not an element that is required to be proven, nor is there a requirement for actual damage to occur (e.g., a slide), in order to establish a contravention of section 45(3) of the *Code* **or** section 13(1)(c) of the *Regulation*. Rather, the Government submits as follows in relation to section 13(1)(c):

> ... it was sufficient to demonstrate that the Appellant had not ensured that the drainage system prevented water from being directed onto

> potentially unstable slopes or soil material. This is a case of strict liability, and it is clear that the Appellant had not in fact ensured that the drainage system prevented water from being directed onto the downside of the road. The potential instability of the land is demonstrated by the fact of the slide or slides ….

It submits that, on the facts, Kalesnikoff did not ensure that the drainage system prevented water from being directed onto potentially unstable slopes or soil material. Therefore, the Government submits that all three contraventions of the *Regulation* have been made out.

Kalesnikoff submits that section 13(1)(a) requires that natural water paths be maintained as much as possible, and that is what Kalesnikoff attempted to do. Since the soils near the road were identified as being fragile and the ground below the break downslope from the road was identified as being unstable, it attempted to "direct water onto the least unstable slopes and soils, aligning culverts with pre-existing gullies." Kalesnikoff points out that the alternative to directing the water into pre-existing gullies was to transport the water down a ditch line to more stable ground. However, it points to the evidence of Mr. VanBuskirk that this practice is risky and could have resulted in disastrous results downslope.

Kalesnikoff argues that, in order to find a breach of subsection (c), there must be evidence that Kalesnikoff directed water onto the unstable slopes to a greater degree than was found in the natural state of the land. It submits that section 13 requires a licensee to preserve natural water paths and, if those paths are on unstable slopes, then section 13 requires those paths to be maintained. At the very least, it submits that, section 13(1)(c) of the *Regulation* should be read as requiring licensees to direct water onto the least unstable slopes available.

Finally, Kalesnikoff submits that by "maintaining" water flow onto unstable slopes it was not "directing" water flow onto unstable slopes. Therefore, it did not contravene section 13 of the *Regulation*. It states that the culverts, which were functioning as designed, discharged water onto slopes stable enough to receive it. But for the "unforeseeable failure of the ditch blocks and the diversion of water by a fallen log there is no reason to believe that the water from the ditchline would even have led to the insignificant slope movement which did occur."

*The Commission's Findings*

Interpretation of section 13(1)(c) of the *Regulation*

The Commission agrees with the Government that, as was the case with section 45(3) of the *Code*, neither a damaging event nor its cause must be established for there to be a contravention of section 13(1)(c) of the *Regulation*.

However, the Commission disagrees with the Government that the only question is whether water was directed onto potentially unstable slopes or soil material. Further analysis must be undertaken because answering "yes" to the question "was water directed onto potentially unstable slopes", would lead to a finding of

contravention. However, if a licensee did not direct water onto such slopes, the licensee may be in contravention of section 13(1)(a) of the *Regulation*, which states "A person required to construct or modify a road in compliance with section 62(1) of the Act must do all of the following when constructing the drainage system for the road: (a) construct …culverts … and ditches that are necessary to maintain surface drainage patterns". [emphasis added] The Commission is of the view that this subsection must mean maintain "natural" surface drainage patterns.

In his June 14, 2004 report regarding these slides, Mr. VanBuskirk specifically comments on this matter. He states that compliance with subsections (a) and (c)(iv) often cannot be achieved in the field at the same time when constructing a road upslope of unstable, or potentially unstable, slopes:

> Like all other sites, "potentially unstable" and "unstable" terrain also have defined catchment areas and when roads are built across these areas or upslope of these areas, surface and shallow subsurface water flows are intercepted by the cutslope. This satisfies Section 13(1)(c)(i). To satisfy 13(1)(a), one must construct culverts to "maintain surface drainage patterns". However, this is in conflict with 13(1)(c)(iv) as the water is directed towards potentially unstable slopes or soil material. The regulation, as written, precludes construction of a road across or upslope of potentially unstable or unstable slopes. In addition, as 13(1) refers to "all of the following", a design approved by the district manager, as outlined in 13(1)(c)(vi), could not contradict the other sections of this regulation. In this case, the District Manager approved a design that included a significant number of culverts that directed water towards "potentially unstable" and "unstable" slopes including the culvert in this section near 6+331." (p. 17)

According to the Government's interpretation of subsection 13(1)(c)(iv) of the *Regulation*, the very fact that the drainage system was constructed in this section to direct the water onto the unstable slopes, is sufficient to trigger a contravention of the section. While the wording of the section alone supports such a conclusion, in this case, it results in an internal conflict within the section.

Further, the Government's position does not address the role/effect/impact of the District Manager's approval of the drainage design for this section of road. If

- a system is designed to direct water into the natural surface drainage patterns,
- those patterns are on unstable slopes,
- the Government approves this design as part of the Road Permit,
- a licensee must "generally conform" with the design and the permit, and

- the licensee does comply,

the question is, has section 13(1)(c)(iv) been contravened?

Legislation is presumed to be coherent. It is a principle of statutory interpretation that legislation be interpreted in a manner that avoids internal conflict. As stated in *Driedger on the Construction of Statutes, Third Edition*, (Sullivan, Ruth ed., Butterworths Canada Ltd. 1994), at page 176,

> It is presumed that provisions of legislation are meant to work together, both logically and teleologically, as parts of a functioning whole.

To determine how to interpret section 13(1)(c)(iv) in order to avoid an internal conflict, the Commission has reviewed the entire *Regulation*.

The *Regulation* addresses road building from beginning to end – from planning to deactivation. It addresses road layout and design and when district manager approval is required. It sets out the content requirements of a road layout and design, which include certain maps, road design specifications, drainage design specifications for the road, and measures to maintain slope stability if the road crosses an area with a moderate or high likelihood of landslides, among other things.

Section 9 of the *Regulation* specifically addresses "drainage design". In addition to requiring bridges and culverts to be structurally sound and addressing fish concerns, the section states that the person must specify designs and measures, including "culverts that will maintain surface drainage patterns", cross drain culvert locations, and ditching to "prevent ditch water accumulation and accelerated ditch erosion".

Part 3 of the *Regulation* addresses "Construction and Modification" of roads. Section 11 addresses road site preparation, section 12 addresses subgrade construction or modification, section 13 (the section now under consideration in this appeal) addresses drainage construction, section 14 addresses road surfacing, and section 15 addresses revegetation.

The final parts of the *Regulation* address maintenance and deactivation.

Considering the *Regulation* as a whole, it appears that its purpose is primarily twofold: to ensure that the road will be safe for use and that the risk of harm to the environment from the construction of, the very existence of, the road will be minimized to the extent possible. The environmental harms that the *Regulation* clearly seeks to minimize or prevent relate to streams (and fish), erosion and landslides.

As noted above, the *Regulation* addresses road building in a chronological manner. Reading it that way, it is evident that one begins with the design. In this case, Mr. Wells' design directed the surface and subsurface water flow from culverts into existing natural gullies or channels. This is consistent with the design criteria set

out in section 9(1)(b) of the *Regulation* which states that the design must specify measures for "bridges, culverts and fords that will maintain surface drainage patterns." Section 9 states:

**Drainage design**

**9** (1) A person must specify designs and measures for all of the following:

(a) crossings of fish streams that will provide safe passage for fish;

(b) bridges, culverts and fords that will maintain surface drainage patterns;

(c) bridges and culverts that

(i) are structurally secure, and

(ii) will prevent or mitigate channel and bank disturbance;

(d) culverts, that remain structurally sound even when debris cannot pass through the culvert during minimum design peak flow;

(e) culvert inlets and outlets that will provide protection from soil erosion and mass wasting for flows at design peak flow;

(f) culverts that will maintain stability of the stream channel on all streams;

(g) cross-drain culvert location and ditching that will prevent ditch water accumulation and accelerated ditch erosion;

(h) new bridges, their approaches, and stream culvert structures that will meet the peak flow criteria set out in the following table:

...

(i) management of anticipated debris for new bridges, their approaches and stream culverts.

The remaining two subsections address bridges and peak flows, and stream culverts in community watersheds.

Based upon the evidence of Mr. VanBuskirk, general industry practice is consistent with section 9(1)(b). He states at page 18 of his June 14, 2004 report that:

> Current professional approaches to deal with surface water flows are to maintain the natural flow patterns as much as practicable. This can result in closely spaced culverts (down to as low as 20 m or less), installation of culverts that do not appear to be needed, and maintenance/direction of natural surface and shallow subsurface water flows towards "potentially unstable" and "unstable" slopes as nature has done prior to road construction. Any broad decision not to construct

> forest road upslope of "potentially unstable" or "unstable" slopes would result in a loss of a very large portion of the operable forest in the province.

At the same time, although the "drainage design" section of the *Regulation* does not expressly require measures to protect slope stability, it is apparent from the purposes of the *Regulation*, as well as from sections of the *Code* (e.g., section 45 – damage to the environment), that the design must address measures to protect slopes, most obviously unstable or potentially unstable slopes. Mr. Wells testified that he added measures such as overlanding, French drains, and numerous culverts to protect the slopes. As noted above, in Mr. Wells' opinion, the prescribed drainage could cope with the predicted water and his design was reasonable and appropriate.

This was the design that was included in the Road Permit approved by the District Manager. The District Manager did not give evidence at the Hearing.

The Commission finds that, unless relevant new information comes to light which warrants a change to the design, Kalesnikoff could legally construct its drainage system to direct water into the natural gullies or channels on the unstable slopes as designed.

The *Regulation* next addresses construction of the road. This is where section 13 becomes applicable. The Commission finds that, during road construction, new conditions may be identified that require a modification or change to the design. It is common ground that not every detail of drainage construction is contained within the design. As with the placement of spoil, some matters are left to be addressed during construction when more is revealed about the precise nature of the site. In accordance with section 45(3)(a) of the *Code*, a licensee must be "alert" to site conditions.

Therefore, if the site conditions found during construction suggest that the drainage system may not properly meet the objectives of the *Regulation* – it may increase the risk of environmental damage – or that the drainage system as designed did not address certain issues, section 13(1) forms a kind of "checklist" for the licensee and the road builders. The drainage design may require either further modification or amendment as a result of the site conditions encountered. According to the evidence, some of these changes require pre-approval by the Ministry, others do not (e.g., minor changes such as to culvert location). In any event, road builders must be vigilant and ensure that construction of the drainage system complies with section 13(1)(c), unless the approved design is inconsistent with this subsection or increases the risk of significant environmental damage due to the site or weather conditions encountered.

Thus, a contravention of section 13(1) may arise when a drainage system is "constructed" in a manner that is not consistent with the design, with subsequent design changes, or it is constructed such that it puts the road prism or the environment at a higher risk of damage; for instance, if the drainage system is constructed to direct water onto unstable slopes contrary to the approved design

(or the design as amended). Applying this rationale, if Kalesnikoff did not construct the system to direct water into the existing channels; rather, it simply directed the water in between the natural gullies where it proceeded down the unstable slopes, Kalesnikoff could be found in contravention of this section.

In the Commission's view, this interpretation is consistent with the overall structure and intent of the *Regulation* and avoids the internal conflict raised by this case. It also avoids the further conflict whereby the Government both approves a drainage system that directs water into natural drainage paths on an unstable slope, and then penalizes the person for complying with the approval.

Findings on the Evidence

On the evidence presented in this case, the Commission finds that the culverts directed the water into the natural gullies as designed.

However, the Government argues that, even though the system did so, the amount of water was different than the design. The Government submits that it is not the design that is at issue, it is the decisions made in the field about whether or not to put in French drains and how to overland. It states that the water was concentrated more than it should have been and then directed down the unstable slopes, putting the environment at greater risk of a slide, contrary to the intent of the *Regulation*.

Sandi Best, an earth science specialist with the Ministry, testified that her concern was the "concentration of water" in the drainage system. Regardless of the windfall and ditchblocks, she felt that the road was built in a way that concentrated that water, and that the water would have ended up in a slide somewhere along this unstable slope, even if not in the places where slides did occur.

Ms. Best understood from the design, and from her discussions with Mr. Wells, that the road itself was not supposed to concentrate the water: there was supposed to be "free-flowing subgrade" that would allow water to go through at all places, "uninterrupted" by the road. She thought that there should have been more French drains along this stretch of road and that Mr. Wells had actually prescribed them in his October 30, 2001 memorandum. In addition, she understood that "overlanding" in the design did not include stripping of the surface – that it would not be partial overlanding.

However, on cross-examination, Ms. Best acknowledged that she misread Mr. Wells' October 30th memorandum which states that that the drainage structures would provide "adequate pathways **interrupted** by the road surface" [emphasis added]. She also agreed that Mr. Wells' July 28, 2000 memorandum makes it clear that a variety of techniques would be used, and that it may be partial overlanding. She agreed that she may have misread or misunderstood Mr. Wells' memos and prescriptions for this stretch of road.

Ultimately, Ms. Best agreed that the culverts were placed and the road was constructed as specified by Mr. Wells in his Terrain Assessment, as clarified or amended by his July 28 and October 30 memos.

Curt Nixon, compliance and enforcement technician for the Ministry, also testified that, when constructing the road along this stretch, water was concentrated and that this contravened section 13(1)(c). He stated that the water was taken through the road in culverts "which is something that had to be done". However, the water was then concentrated and produced "rapid flows of water from the culverts, either because water wasn't taken under the road in other ways, for example by French drains or by more of an attempt to overland." In addition, he questioned the number of culverts that were installed. He notes, "the more culverts you put in, the smaller the amount of water that goes through each culvert. So you've got a concentration of rapid water through culverts."

Doug Nicol, regional geotechnical engineer with the Ministry, testified that the construction essentially conformed with the design, but that the design cross sections did not show an excavated ditch in this section. He believes that during construction, the road builders actually excavated into the ground to create the ditch. As a result, they "likely intercepted more shallow subsurface water than in the design" and the drainage system was inadequate for this concentrated water.

In his expert report and in his testimony at the Hearing, Mr. VanBuskirk commented on whether the road should have been constructed with more French drains to allow water to "flow freely" through the road. He states that "it is very dangerous to allow water to freely disburse through a permeable roadbed because what happens is that you have no control over the disbursement of that water. It goes anywhere." In his opinion, the French drains were placed where they were required. Specifically, they were built where the cut slope slumping and instability had occurred or was imminent, or where seepage from the cutslope was causing problems with maintenance of the ditchline.

Regarding the water draining into existing gullies or channels, Mr. VanBuskirk comments at page 18 of his June 14, 2004 report that:

> It is the author's opinion that the drainage system prescribed by Wells and constructed by KLC attempted to maintain natural drainage patterns on the slope and in doing so, directed surface flows toward terrain mapped as "unstable". However, this was essentially the location of the flows prior to construction and there was no real viable option for redirecting these water flows into other areas. Again, the cause of the landslides was that the flows were significantly augmented by the failure of the ditchblocks.

After reviewing all of the information available to him, Mr. VanBuskirk concluded that "none of these three slides were related to the concentration or diversion of surface water flows by the road."

At the hearing, Mr. Wells was asked whether he took any special measures to ensure the integrity of the drainage system in light of his assessment that the downslope was unstable. Mr. Wells answered "yes, that's why there were so many culverts in that section". He also noted that there was ditching after 6+333, but that, in his view, ditching should be excavated if it is appropriate for the site. In his view, ditching was appropriate along that stretch.

The Panel finds on the evidence that the drainage system was constructed in accordance with the design. Where there is some indication that minor changes were made, such as some additional ditching may have been put in, there is no evidence that this ditching is in contravention of section 13(1)(c). In fact, the evidence is to the contrary – that any of the changes were to meet the objectives in section 13(1). The Commission finds that:

- the road was stable,
- the road, culverts and ditches were constructed to maintain surface drainage patterns,
- the drainage system was constructed to
    - intercept surface water and subsurface drainage from the cut slope,
    - drain ditches and control ditch erosion,
    - prevent ponding of water where road stability may be compromised, and
    - minimize the amount of sediment entering streams.

In particular, the Commission finds that the upslope water was intercepted and was distributed more or less evenly to separate culverts, in spite of ditch block issues, into 3 separate natural drainages. Thus, the concentration of water was ultimately reduced over the length of the road. Further, based on the evidence of Mr. VanBuskirk, the stretch of road had "closely spaced culverts", which was a reasonable way of addressing the conditions at this location.

The Commission found Mr. VanBuskirk to be a highly qualified and credible witness and places significant weight on his opinions in this case. The Commission notes that the Ministry also holds Mr. VanBuskirk's opinion in high regard as is evident from the fact that Ms. Best contacted him to provide an opinion on this case, but he had already been retained by Kalesnikoff.

Finally, although causation is not relevant to a finding of contravention under this section, it is of interest to the Commission that the evidence relating to the cause of slides 4 and 5, suggest that the slides were most likely caused by a ditch block failure and possibly a windfall – not the placement of culverts, the method of overlanding or the absence of a French drain along this section. Most of the

evidence regarding slide 6 suggests that it was a small erosion event that was in the location of an old slide, and was likely a natural occurrence.

Regarding the windfall, the evidence of Bruce Jacobs, the road building contractor, was that the log was out of the cleared right-of-way and, at the time of the culvert installations, there was no water in any of the culverts. In his view, no one would have predicted that the windfall would result in a redirection of water. This similar view was held by both Kalesnikoff witnesses and Government witnesses, such as Mr. Nicol who agreed that the downed log in the woods diverting water was an "unpredictable" event.

Regarding the ditch blocks, there is no evidence that they were constructed improperly or that it was evident from the conditions at the site that any of them would fail.

In accordance with the findings above, the Commission finds that Kalesnikoff did not contravene section 13(1)(c) of the *Regulation*.

**8. If there was a contravention(s), did Kalesnikoff establish a defence of due diligence to the contravention(s).**

Although the Commission has found that Kalesnikoff did not contravene the *Code* or the *Regulation*, there was significant argument on, and a great deal of interest in, how the statutory defence of due diligence will be interpreted and applied by the Commission. The Commission is of the view that it may be of some assistance to address some of the issues and arguments raised by the parties in relation to this defence.

*The Parties' Arguments*

Kalesnikoff argues that it carried out certain preventative actions, such as careful planning, selection of safer alternatives where they were practicable, and reliance on qualified registered professionals for advice when necessary. It argues that, although a licensee must respond to changing circumstances, exercising due diligence does not mean that there must be planning for every possible contingency or unforeseeable event. In addition, it contends that the road was built in conformance with Mr. Wells' design.

The Government submits that it is not sufficient to simply employ experts in order to obtain advice from them. Rather, the Government argues that experts must be supervised, and that it is necessary to ensure that advice is obtained and followed. The Government also submits that whether this is an issue of direct or vicarious liability, Kalesnikoff's senior employees failed to make reasonable inquiries of the expert and contractor, and that the expert and contractor failed to properly deal with the circumstances that were presenting themselves in the field.

The Forest Practices Board submits that Kalesnikoff's reliance on its experts was not reasonable when it consulted with them regarding the portions of the road relevant to section 6+333 to 6+480. In support, the Board asserts that Kalesnikoff relied

only on Mr. Wells' assessment of the immediate site conditions of the road portion, but did not make further inquiries about the area below the road, which had already been identified as unstable. The Board contends that Kalesnikoff should have asked further questions of Mr. Wells, and that, if necessary, a hydrologist could have been retained by Kalesnikoff.

The Intervenors submit that it is not reasonable nor is it feasible to require a licensee to obtain a "second opinion" or review of appropriate professional advice reasonably obtained in relation to a particular risk. The Intervenors argue that a licensee is under no obligation to second guess their expert - it is sufficient that a licensee meets the requirements as set out by the *Code* in order to avoid liability. Furthermore, the Intervenors argue that this should be a situation where section 117(2) of the *Code* ought not to apply, as an expert is neither an employee nor a contractor within the meaning of that section, nor is an expert an agent. Section 117(2) of the *Code* provides as follows:

> (2) If a person's employee, agent or contractor, as that term is defined in section 152 of the *Forest Act,* contravenes this Act, the regulations or the standards in the course of carrying out the employment, agency or contract, the person also commits the contravention.

*The Commission's Findings*

In considering the defence of due diligence, the Commission has adopted the interpretation of the British Columbia Court of Appeal in *R. v. MacMillan Bloedel Ltd.*, 2002 BCCA 2002. The Court wrote at paragraphs 47 and 48:

> 47 Thus, there are two alternative branches of the due-diligence defence. The first applies when the accused can establish that he did not know and could not reasonably have known of the existence of the hazard. The second applies when the accused knew or ought to have known of the hazard. In that case, the accused may escape liability by establishing that he took reasonable care to avoid the "particular event". This point is elucidated in the reasons of Dickson J. in *Sault Ste. Marie*, at pp. 365-66, where, after referring to cases in which the offences turned on the unlawful status of a person or place, he said:
>
> > In such cases, negligence consists of an unreasonable failure to know the facts which constitute the offence. It is clear, however, that in principle the defence is that all reasonable care was taken. In other circumstances, the issue will be whether the accused's behaviour was negligent in bringing about the forbidden event when he knew the relevant facts. Once the defence of reasonable mistake of fact is accepted, there is no barrier to acceptance of the other constituent part of a defence of due diligence.

> 48 The important point to be drawn from this discussion is that whether the accused's conduct was "innocent", under the first branch of the defence, or whether the accused took "all reasonable steps", under the second branch, must be considered in the context of the "particular event."

The Commission agrees with the Intervenors that it is neither feasible nor practical to acquire second opinions when a licensee has already been provided with one by an expert. The Commission rejects, however, the Intervenor's submission that an expert is not a "contractor" within the meaning of section 117(2) of the *Code*. In this case, experts were contracted to undertake the very due diligence required to ensure that the road was built in accordance with the law. The Commission rejects the notion that a licensee can assert due diligence merely by pointing to the retention of a competent expert. Licensees cannot ignore obvious hazards or significant concerns that arise in the course of forestry practices. To turn a blind eye to noticeable issues would be to discharge full responsibility to experts and contractors.

In the present case, the Commission has found no contraventions. Therefore, it is unnecessary and inappropriate for the Commission to make any specific findings regarding whether Kalesnikoff has established the defence of due diligence in this case. Accordingly, further interpretation and application of the statutory defence of due diligence by the Commission will await future appeals.

### 9. If Kalesnikoff did contravene the *Code* or the *Regulation*, was the penalty appropriate.

The Commission finds that Kalesnikoff did not contravene either section 45(3) of the *Code* or section 13(1)(c) of the *Regulation*. Therefore, no penalty is warranted and the Commission rescinds the previous penalties levied against Kalesnikoff in relation to the area in and around slides 4, 5 and 6.

This appeal is allowed.

## DECISION

In making this decision, the Commission has carefully considered all the evidence before it, whether or not specifically reiterated here.

Appeal No. 2003-FOR-005

The Commission finds that Kalesnikoff did not contravene either section 45(3) of the *Code* or section 12(1)(b) of the *Regulation*. Therefore, the Commission rescinds the determination in relation to slide 3 and the associated penalty.

This appeal is allowed.

Appeal No. 2003-FOR-006

The Commission finds that Kalesnikoff did not contravene section 45(3) of the *Code* or section 13(1)(c) of the *Regulation* in relation to slides 4, 5 and 6. The Commission rescinds these contraventions and the associated penalty.

The appeal is allowed.

"Lorraine Shore"

Lorraine Shore, Panel Chair
Forest Appeals Commission

"Bruce Devitt"

Bruce Devitt, Member
Forest Appeals Commission

"Robert Wickett"

Robert Wickett, Member
Forest Appeals Commission

August 2, 2006