

Who we are



Cesar and I are a
Father-Son team.
We are the principals
and founders of
Riskope.

We are descendants
of a long lineage of
mountaineers.



By Dr. Franco Oboni, Ph.D. & C. H. Oboni

Who we are

Our ancestors lived in the Alps, high in the mountains, carrying farmed, lumber, and mined goods to the valley.

With this, many died of accidents and diseases from natural and man made hazards.

Others prospered. Hazards and Risks made the difference.

Cesar and I have a strong link with our ancestors, the environment, the Mountains and the life our family used to live.

We believe that through information we can better the world

When we walk our mountains people recognize us
because they remember our ancestors faces and looks.

That makes us feel honored and unique, yet belonging to
the Universal society.

Our purpose in life is to bring reason and clarity into
projects, avoid the mistakes that our Grandfathers and
society suffered.

What were we asked to do

We were asked to perform a risk assessment that would answer very specific questions related to accidental likelihood and severity on the All Seasons Road project, based on available public record data.

The road does not exist yet. The only available data are the drawings of less than 15% of the layout and the available pictures. The proponent stated at numerous occasions the drawings were representative of the whole project.

All the assumptions we made, limitations and conditions have been laid out in plain language. There are no “hidden” rules anywhere.

What were we asked to do. Many important elements can be seen in the plans, not on site!

The vehicles are not visible on site. The project is not visible on site. Elevations not visible.



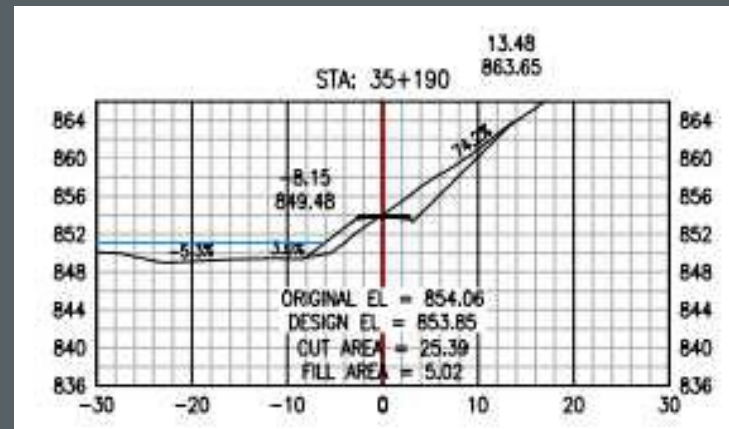
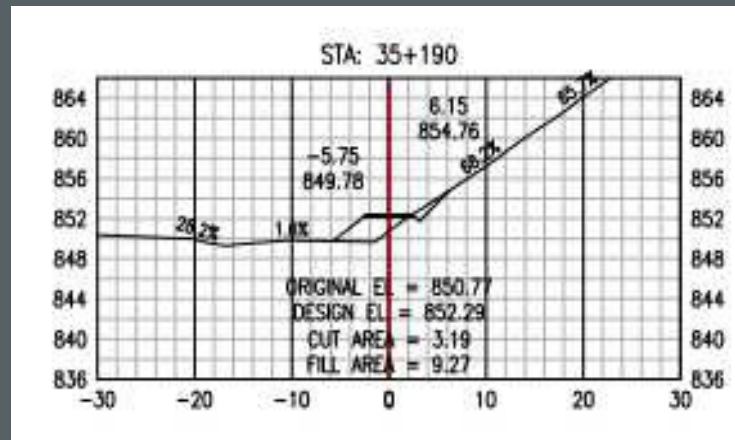
Thus a site visit would not deliver any additional useful information for the analyses...also considering the project changed three times during our study.

What were we asked to do. Alignment and plans kept changing.

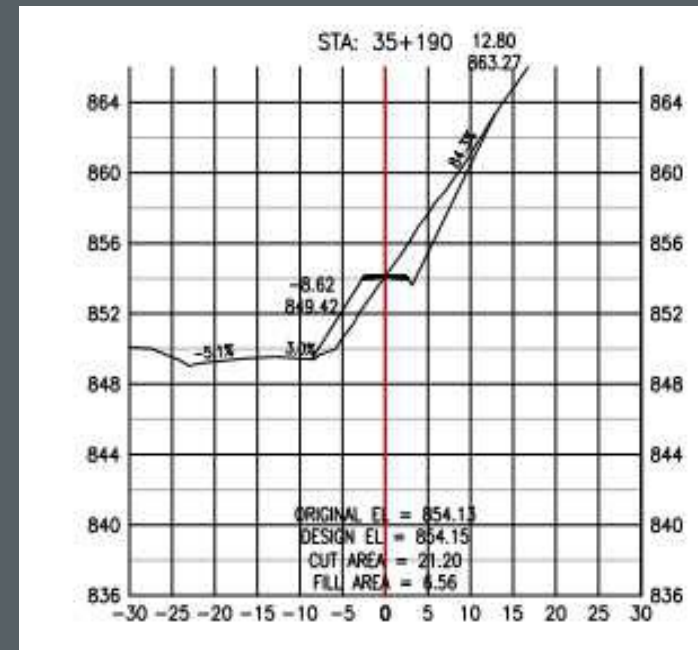
... the alignment kept evolving and thus any observation made on the terrain would become obsolete.

Right: from April 2015,
APPENDICES 1A
Volume 2A
(Zinc/EA1415-
01_Appendix_1_A.PDF)

Right: from Response
to Technical Review
Undertakings August
17, 2016 (EA1415-
01_Undertaking_respo
nses
_from_tech_session_-
_Allnorth_19_23_24_.
PDF)



Below from Responses to
Information Requests May 10,
2016 (EA1415-01_Allnorth_
Responses_to_Information_Req
uests.PDF)



Our mission is in the best interest of everyone

We undertook our study of the project with the utmost respect and the best interest of every party involved.

We firmly believe no one would want to see the traditional land (Nahanni National Park Reserve), people, general public and wildlife be harmed, short or long term, by the future road. The point is to find the right balance between risks and the project, a reportedly very necessary road.

Within that framework Cesar and I are humbly offering our experience and perspective to those who want to listen.

A lot has been said/written

Before summarizing the results already stated in the public record, we feel necessary to review the major points that have been raised to disprove the risk assessment.

There are three main ones, namely:

- 1) A visit with the Elders should have been organized to better understand site conditions.
- 2) The project engineers seem to consider that project conditions are different from the ones we have gathered experience with.
- 3) The project engineers claim the examples we have used for bench-marking are not appropriate.

It has been written that a visit with the Elders should have been organized to better understand the conditions.

We generally do go on site visits if they are pertinent with the study we are asked to perform.

Here no trucks, no road, no elevation/stakes were present.

It would have been an honour to go out there and meet with the Elders, but that wasn't necessary to answer the questions asked as we had topography, “representative” drawings, and a very detailed public record.

Thus we used a systematic approach which included asking CNZ to define their accident tolerance during the life of the project.

The project engineers seem to consider that the conditions of the project are different from the ones we have gathered experience with.

CNZ is not in agreement with the risks of the long and undocumented stratifications because the risk assessment is „only“ based on CNZ documents covering parts of the project. However, they would be „representative“ enough for CNZ using them to extrapolate excavation/fills volumes?

In order to avoid unprofessional tit-for-tat discussion we have summarized below five points the promoter's engineers made against the reality we depicted.

The very publications the engineers attached to their latest reply disproves the criticism they made to the risk assessment.

Forestry Trucks Crashes in BC actually describes very accurately the “real world” the risk assessment refers to:

- 1) Alcohol & Drugs-** crash investigations are finding an increasing amount of drugs and alcohol as causal factors in commercial crashes. Autopsy reports indicate a large number of commercial driver casualties as legally impaired by alcohol, marijuana, cocaine and/or crystal meth.
- 2) Fatigue-** Driver fatigue is a major concern in the commercial vehicle crash picture. It is one of the 4 top causal factors. Drivers over-extending themselves, log book violations, vehicle maintenance issues, and fatigue are ubiquitous.

Forestry Trucks Crashes in BC actually describes very accurately the “real world” the risk assessment refers to:

3) **Speed**- excessive speed and aggressive driving contribute to all crashes, but even more to commercial vehicles because of vehicle weights and the subsequent increased amount of time and distance needed to stop safely.

Other factors related to speed include overdriving the headlights, night driving, and road conditions. Driving the posted road speed is still dangerous when road or weather conditions are poor.

Forestry Trucks Crashes in BC actually describes very accurately the “real world” the risk assessment refers to:

4) In case the road would be openend to private traffic, the same document states:

The sheer size of trucks puts lighter vehicles occupants at a disadvantage. According to BCAA, people in passenger vehicles account for 98% of the deaths in fatal two-vehicle crashes involving a car and a truck over 10,000 pounds. Which is exactly what we noted in the risk assessment.

It becomes apparent we do not even need to infringe our confidentiality agreements with major canadian mining companies. The „reality“ is clearly written in official documents graciously brought forward in CNZ's latest reply.

BC Crashes referenced above states: “We are facing the “Perfect Storm” and the reasons are very interesting:

-...

- large push to increase tourism in the north half of BC.
- resource roads were not designed for the current levels of use.
- lower proportion of experienced driver numbers.
- bigger trucks; more axles and heavier loads.
- inconsistent radio protocols.
- unresolved road maintenance issues.

Thus the statement that the “final detailed design will conform to B.C.MFLNR standards which have been well established and proven” should be taken with care...

Forestry roads code states 5m width does not allow for any slippage: it is not „Oboni's position“, but the code selected by CNZ!

Road design incorporates horizontal and vertical road alignments that provide for user safety. The width of 5m is declared insufficient by the very code CNZ engineers selected to use (Forestry Roads).

Trying to argue using the width of multi-lane road is asking for numerous future accidents, and spills.

BC Crashes referenced above contradicts another statement by CNZ/Allnorth:

„It is not conceivable that there would be any significant number of accidents along this relatively easy terrain.“

Forestry Truck Crashes states: „... when there are good road conditions - long, wide and straight - motorists tend to feel safer and more confident, and therefore accelerate...“

This corresponds to our experience gathered on mining access roads: those are the spots where distractions occur, phone, telecom, etc. and paradoxically accidents are more frequent than one would expect.

It has been written that the examples we have used are not appropriate.

We have indeed used three roads of decreasing quality (and increasing risks). This activity is called bench marking and the idea is precisely to frame reality.

The risk assessment shows that predicted ...max risks for the all season road would be “around” the values of Road #3.

Not all names and locations of the owners of the roads can be revealed because of the investigations related to the death of drivers and other legal and privacy issues.

It has been written that the examples we have used are not appropriate. Cont'd

Road #1
Grand Saint Bernard
International Tunnel
Access road between
Italy and Switzerland.

Only public bus
accidents were
considered to ensure
comparing high
standards of care of
the vehicle and regular
checks of drivers.



It has been written that the examples we have used are not appropriate. Cont'd

Road #2
Private mine
access road.

Only private bus
accidents were
considered to
ensure comparing
high standards of
care of the vehicles
and regular checks
of drivers.



It has been written that the examples we have used are not appropriate. Cont'd



Road #2

It has been written that the examples we have used are not appropriate. Cont'd

Road #3

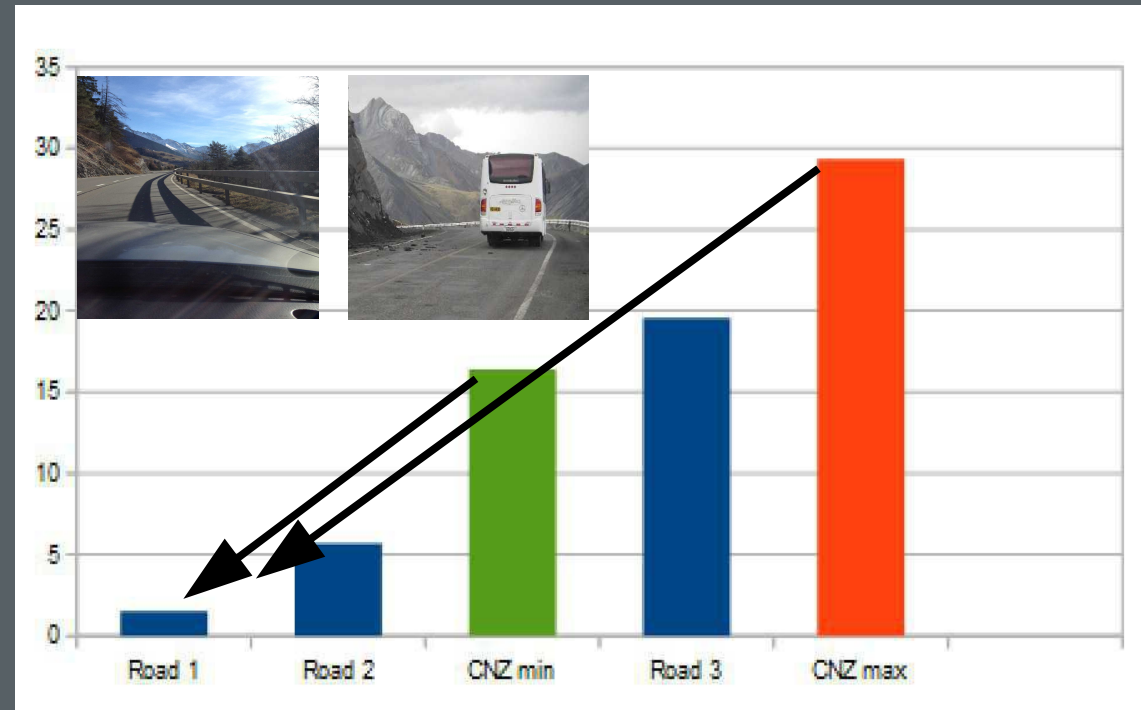
Private mine access road. Only a highly sophisticated fleet of acid tankers accidents were considered to ensure comparing high standards of care of the vehicles and regular checks of drivers.



The bench marking we did brings some light here.

CNZ's engineers claim the risk assessment predicts ten times too many accidents. If that was true, then the Prairie Creek All Season road would have between 1.5 and 3 S-VS accidents over its life.

These values would place it between Road #1 and Road #2 of which we are now delighted to show again a couple pictures... That conclusion is blatantly „out of reality!“



Data acrobatics has been used to „prove“ the factor 10: here is why it should be dismissed

In their last reply CNZ/Allnorth use all sorts of “historic data acrobatics” to show the risk assessment has overestimated by a factor 10 the chances of occurrence of S-VS accidents.

Here is a summary of the reasons why their „proof“ should be refused all together:

Data acrobatics has been used to „prove“ the factor 10: here is why it should be dismissed. Cont'd

1) Oboni Riskope Associates Risk assessment used a scale of accident consequences based on environmental criteria (scattering of concentrate), not on health and safety (fatalities, harm).

It was noted that “Driver or “bypassers” „could be harmed in all classes of accidents.” but mortality was not specifically evaluated due to the scope of work.

So when Allnorth compares any Consequence Class to fatal accidents they introduce a severe error (mixing apples and bananas).

Data acrobatics has been used to „prove“ the factor 10: here is why it should be dismissed. Cont'd

2) Allnorth ARBITRARILY added environmental consequence classes 5,6,7,8,9 in the comparison to Worksafe BC H&S based “major accidents”. This is totally BIASED, AGAIN.

3) Worksafe BC reporting is also likely biased as “scattering wood” is not necessarily reportable UNLESS there is a fatality or harm to a worker or a spill (of fuel). What happens on “private resource roads” is also unsure... There are many hazmat documented truck accidents where a spill occurred, but the driver was not hurt. If they had been forestry trucks reporting of those accidents (on a private road) is uncertain. So, again, using forestry as a comparison is WRONG!

Data acrobatics has been used: here is why it should be dismissed. Cont'd

4) Furthermore, if that factor ten was true, it would mean that the 4-5m wide project, with no efficient barriers, along pristine creeks, crossing the traditional land (Nahanni National Park Reserve) with 60tonnes double trailers concentrate trucks is less risky than ...Road #3, 8m wide, where the longest considered vehicles are 5 axles semi...snowy conditions are rare, vehicles are new, well maintained and drivers checked like astronauts?

Based on the above four points, we cannot be lead to believe such an absurdity and strongly recommend anyone to dismiss these reasoning and accept the risk assessment results.

Data acrobatics has been used: here is why it should be dismissed. Cont'd

Furthermore: Allnorth have since completed a review of forest road accident statistics.

That review is totally misleading insofar they have ARBITRARILY set a 50%-50% split between kilometers driven on forestry roads and highways

AND

used statistics that cover accidents occurring in cities and the south of the province forgetting that more than half of the reported forestry accidents occur in the North!

Data acrobatics has been used: here is why it should be dismissed. Cont'd

In summary, Allnorth performed a biased historic evaluation of accidents to disprove the Risk Assessment.

They looked at casualties and deaths, reported to Worksafe BC for forestry: completely out of subject with the scale of consequences for concentrate spills (focused on the environment) used in the Risk Assessment.

They arbitrarily summed-up predicted environmental accidents from the Risk Assessment report (classes 5 to 9) with no justification!

Data acrobatics has been used: here is why it should be dismissed. Cont'd

These few comments (there are way more) on the biases introduced are sufficient to correct Allnorth numbers towards the predictive values delivered by the risk assessment.

The biases introduced in Allnorth analyses totally underestimate the risks to the traditional land (Nahanni National Park Reserve) and if the road was opened to lighter traffic, to passengers.

Major conclusions of our study

The road is too narrow. At 5m (4m min.) it will not attain CNZ own defined accident tolerance criteria with the intended traffic of concentrate trucks .

From the cross sections we do not see any room for installing serious barriers protecting trucks from „falling out“ and the environment from being damaged.

Should private traffic be allowed, there will be very dire consequences, especially on lighter vehicles.

Time for rescue has been grossly underestimated.

Major conclusions of our study cont'd

Unless serious barriers are installed, vehicles will be able to run out of the road, possibly into watercourses and sensitive areas.



See what happened to this barrier which was neither sufficient nor correctly founded/anchored in the road shoulder.

Major conclusions of our study cont'd

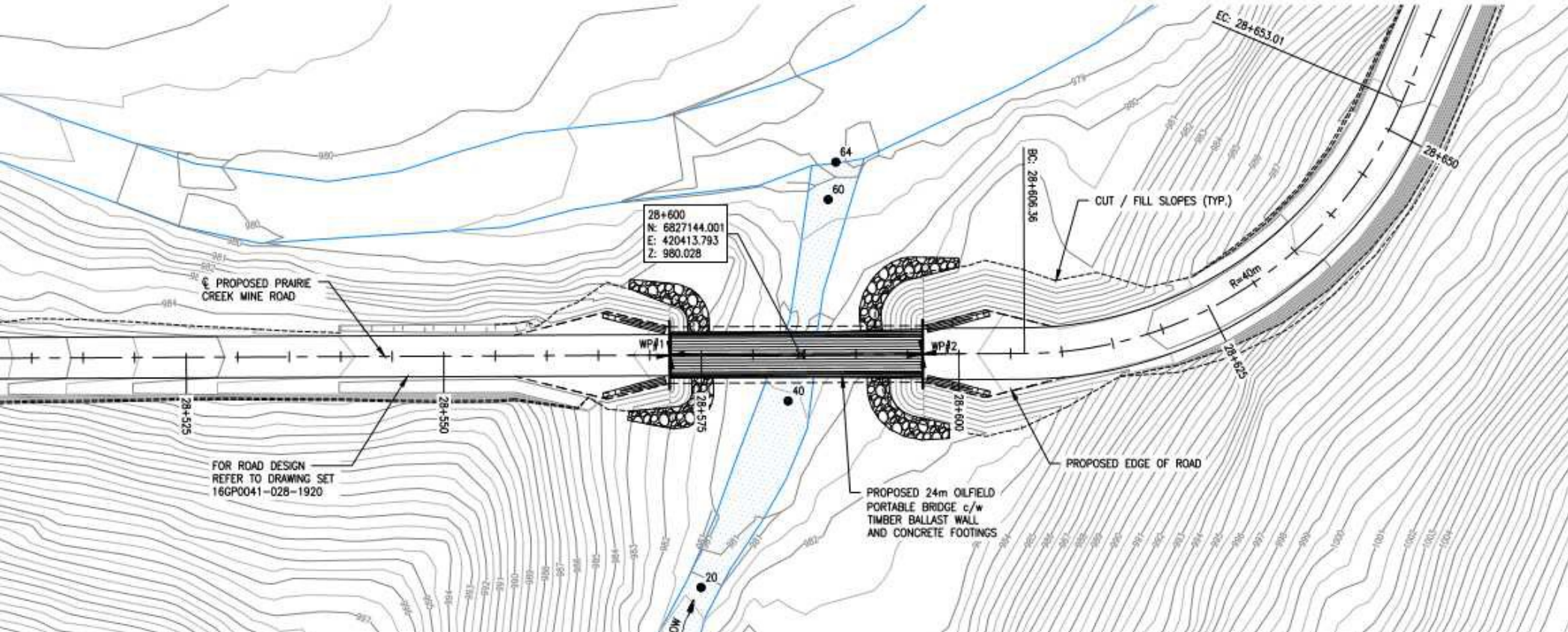
There are locations where scenarios like this one can occur along the road, or, worse, along water courses.

In this accident there was a spill, but no harm to the driver.



Major conclusions of our study. Here is an example of Class 9 location along the road.

5m high down slopes around km 28.525; bridge approx.
6m high with 4-5m high abutments; down slope 9m high
around km 28.635.



Major conclusions of our study. Here is a summary of missing evaluations in case of accidents (Class 9 and lower).

- Impact of retrieval of vehicles and spilled cargo at the bottom of the down slopes in the aftermath of an accident.
- accesses
- disturbed surface during rescue/containment/retrieval operations.
- time for heavy cranes to reach locations.
- duration of business interruption and bottle-neck solutions.

Additional note: Kilometer by kilometer definition of risks

CNZ did not deliver until lately a “final cut” of Stratifications by km and stratifications are oftentimes fragmented in very short segments. Is that „final cut“ really final? And the layout?

Risks on road develop in “black spots” that sometimes may be as short as a turn, a bridge approach, a steep downslope.

An updated risk assessment, once the stratifications are finally defined and preliminary design is completed would lead to a “meter by meter” risk assessment.

That risk assessment should include man-made slopes that have been left aside up to date due to lack of information.

Comparison between Parks Canada March 10th reply and Risk Assessment.

The following Table allows to compare sensitive (high consequences) areas between Parks Canada March 10th report and the risk assessment.

Km 7.4-12	includes Stratification 2
km 12.0-17.2	includes Stratification 2 and Sp.1
km 23.5-28.1	includes Stratification Sp.2
Km 25.0-32.0	includes approximatively Stratification 2,3 and a section of 4
km 53.3-59.9	includes Stratification 7
km 95.8-102.0	includes partial Stratification 7 & 10
Stratifications 2, Sp.1,Sp.2,3,4 7 & 10 are considered as being the source of accidents with Consequences Classes: 1,2,3,4,6,7,9	

Parks Canada March 10th reply and Risk Assessment.

As a matter of fact, continuous variations along the road (environment, cross slopes, alignment) lead to a continuous variation of likelihood of accidents and their potential consequences, hence the variation of consequence classes within any segment of the road.

Given the multiple changes the project has undergone, it is vital that any further attempt to characterize risks along the project be carried out once the project will be clearly defined and there will be no uncertainties on the referenced drawings.

Kilometer by kilometer definition of risks should include man-made slopes, once they will be designed



Hazardous rockfalls can occur on well designed and carefully built man-made slopes, like those of Road #2

**This area along Road #2 costed millions of \$
to fix and there were even discussions to
abandon the road due to accidents.**



Additional note: Mine construction phase

CNZ has declared traffic will be very little compared to service years.

No concentrate loads.

Safety and rescue means will be in place as during service.

Reminder: Risk is probability of an accident “multiplied” by the consequences.

Probability smaller because less traffic, consequences smaller because no concentrates and same safety, rescue as during service,

hence we assumed (Assumption #6) that the risks will be very small compared to any service year.

We will close this presentation by showing you All our traditional Alpine friendship cup.

Had we had the honor to meet you All in person, we would have been pleased to offer the special brew of coffee and spices our ancestors used to share in this cup, as a sign of friendship and respect.

We are ready for questions.

