

**Joint Review Panel
Public Hearing**

**Commission d'examen conjoint
Audience publique**

**Frontier Oil Sands Mine
Project**

**Projet de mine de sables bitumineux
Frontier**

Joint Review Panel

Commission d'examen conjoint

William (Bill) Klassen
Alex Bolton
Robert McManus

William (Bill) Klassen
Alex Bolton
Robert McManus

MacDonald Island
1 CA Knight Way
Fort McMurray, Alberta

l'île MacDonald
1, CA Knight Way
Fort McMurray (Alberta)

September 25, 2018

Le 25 septembre 2018

This publication is the recorded verbatim transcript and, as such, is recorded and transcribed in either of the official languages, depending on the languages spoken by the participant at the public hearing.

Printed in Canada

Cette publication est un compte rendu textuel des délibérations et, en tant que tel, est enregistrée et transcrite dans l'une ou l'autre des deux langues officielles, compte tenu de la langue utilisée par le participant à l'audience publique.

Imprimé au Canada

TABLE OF CONTENTS / TABLE DES MATIÈRES

	PAGE
AFFIRMED: KIERON McFADYEN	30
AFFIRMED: LYNDON CHIASSON	
AFFIRMED: WAYNE SPELLER	
AFFIRMED: ROBIN JOHNSTONE	
AFFIRMED: REID PERSON	
AFFIRMED: BART KOPPE	
AFFIRMED: PEARCE SHEWCHUK	
AFFIRMED: IAN GRAY	
AFFIRMED: ANNA BRACE	
AFFIRMED: JERRY VANDENBERG	
AFFIRMED: GETU BIFTU	
AFFIRMED: DEREK EBNER	
AFFIRMED: MARTIN JALKOTZY	
AFFIRMED: DAVE BRESCIA	
AFFIRMED: STEVEN HILTS	
AFFIRMED: NEIL SANDSTROM	
AFFIRMED: KRISTEN SIBBEL	
AFFIRMED: MICHAEL DI MARCO	
AFFIRMED: DEJIANG LONG	
AFFIRMED: JANAIS TURUK	
AFFIRMED: YVONNE WALSH	
AFFIRMED: CHRIS BJORNSON	
AFFIRMED: IVAN WHITSON	
AFFIRMED: JONATHAN CHUI	
AFFIRMED: SCOTT DONALD	
AFFIRMED: RICHARD SISSON	
Examination in-chief by Mr. Ignasiak	67
Cross-examination by Mr. Stilwell	116
Cross-examination by Mr. Robinson	171

1 Fort McMurray, Alberta / Fort McMurray (Alberta)

2 --- Upon commencing on Tuesday, September 25, 2018

3 at 0901 / L'audience débute le mardi

4 25 septembre 2018 à 0901

5 THE CHAIRPERSON: Good morning,
6 everyone. Please be seated.

7 Good morning, ladies and gentlemen.
8 Thanks for taking the time to participate in this
9 hearing.

10 My name is Alex Bolton and I'll be
11 chairing this proceeding.

12 On my right is Rob McManus and on my
13 left, Bill Klassen.

14 Before proceeding I would like to
15 acknowledge that we are on the Traditional Territory of
16 the Indigenous Peoples of Treaty 8 and within the
17 homeland of the Métis people of the Métis Nation
18 Region 1.

19 Counsel assisting the Panel during
20 these proceedings are Meaghan LaCasse and Alison Doebele
21 of the AER Law Branch, and Charles Birchall representing
22 the Canadian Environmental Assessment Agency, which I
23 will refer subsequently to as CEAA.

24 Present from the AER Authorizations
25 Branch we have Renato Chiarella, Kenneth Yap, Adriana

1 Ledi, Africa Gerenuw, Yetimgeta Mihiretu, Charly Wang,
2 Rod Drummond, Wally Qiu, Steven Stryde, Dan Slavik,
3 Leanne Erickson, Margaret Magai, Agnes Wajda-Plytta,
4 Ernst Kerkhoven, Chris Teichreb, Eva Kilinska, Geoff
5 Granville and Blair Bailey.

6 Present from Hearing Services are Tara
7 Wheaton and Dean Campbell.

8 The Panel Manager from CEAA is David
9 Haddon.

10 Analysts from CEAA present are Jason
11 Patchell, Elyse Maisonneuve, Claudette Bois and
12 Robin-Lynne Virtue.

13 A CEAA Registry Officer, Monica Losier,
14 is located at the back of the room.

15 Jordan Fitzgerald from the AER's
16 Communications and International Relations Branch and
17 Lucille Jamault from the Panel's Communications Advisor
18 from CEAA are also in the room.

19 I would also like to note the presence
20 of Dennis Naas over there and Cheolho Ham from the AER's
21 Corporate Security Group. The presence of security
22 staff is common at larger hearings such as this. It's
23 intended to ensure the safety of all of the participants
24 in the proceeding and to help ensure that the hearing
25 process goes smoothly and that the schedule can be

1 maintained and all of the participants have an
2 opportunity to be heard.

3 The Panel also understands that there
4 are members of Teck's security team present both within
5 the hearing room and outside.

6 All of the AER and CEAA staff in
7 attendance will be wearing nametags for the duration of
8 the hearing. If anyone has any questions, please feel
9 free to approach David Haddon, Tara Wheaton, Meighan
10 LaCasse, Alison Doebele or Charles Birchall for
11 assistance.

12 Please do not attempt to communicate
13 directly with the Panel Members other than in the course
14 of the hearing process. We are not trying to be
15 unfriendly but in our roles as quasi-judicial
16 decision-makers it's very important that any
17 communication with the Panel occurs within the hearing
18 process in an open and transparent manner. We
19 appreciate everybody's understanding and adherence to
20 this request.

21 As noted on the signs about the room
22 there are live audio and video streams of this
23 proceeding available to the public through the AER's
24 website. Anyone in the hearing room could be captured
25 in the broadcast. So if you have any concerns about

1 this, please see the AER or CEAA counsel during one of
2 the breaks to explain your concerns.

3 The audio and video webcasts are not
4 the official transcripts of the proceeding. The
5 official transcripts will be posted daily to the
6 Canadian Environmental Assessment Registry page for the
7 project or the CEAA Registry.

8 To make the audio webcast work well
9 everyone must use the microphones when speaking, and the
10 audio technicians will control the microphones and only
11 one person may speak at a time.

12 Also, for the benefit of the Court
13 Reporter, when you're approaching the microphone for the
14 first time, please state your name so that it's clear
15 who is speaking.

16 Mr. Haddon, could you please read out
17 the safety procedures as well as the particulars of this
18 proceeding and the publication of the Notice of Hearing.

19 MR. HADDON: Yes, Mr. Chairman.

20 So for the safety procedures, if you
21 hear a fire alarm, listen to the instructions.

22 A first-stage alarm will have no strobe
23 lights and a loud audible alarm sounding. Remain calm
24 and move in an orderly and controlled manner. Muster in
25 the main concord areas but away from the immediate area

1 of exits and prepare for evacuation. Wait for
2 instructions from Fire Wardens who will be wearing
3 yellow-orange high visibility vests to identify
4 themselves.

5 In the event of a second-stage alarm
6 you will observe strobe lights as well as the active and
7 loud audible alarm. In the case of a secondary alarm,
8 evacuate via the nearest fire exit. Walk, don't run.
9 Help persons requiring assistance. Assemble at a Muster
10 Point clear of and away from any building or fire
11 equipment. Follow the directions provided by Emergency
12 Responders and RRC Fire Wardens. Do not re-enter the
13 building until given an all clear by the Chief Fire
14 Warden. Assemble at a Muster Point clear and away from
15 any building or fire equipment.

16 Evacuation routes. So when the fire
17 alarm sounds, proceed to the double doors in the
18 northwest corner of the room, which are the ones you
19 came in from; turn right, go down the stairs and proceed
20 to Muster Point B, which is the public parking lot
21 between the Community Centre and the Miskanaw Golf
22 Course. If the primary route is blocked, exit out the
23 back of the room to the deck and then turn left; go to
24 the end of the deck, down the stairs and proceed to the
25 Muster Point.

1 In the event of a medical emergency,
2 phone 9-1-1 immediately. Have someone notify AER or
3 CEAA staff and have someone contact RRC Safety and
4 Security at 780-881-0101 or by radio so they can attend
5 and assist with providing First Aid and coordinate a
6 response to the incident.

7 Now, just a few words about this Panel
8 and proceeding.

9 This Joint Review Panel was established
10 to review the proposed Frontier Oil Sands Mine
11 Project -- which I'll refer to as the project -- and
12 conduct an assessment of the environmental effects of
13 the Project. The project includes the construction,
14 operation and reclamation of an oil sands surface mine
15 with a production capacity of about 41,300 cubic metres
16 a day, which is approximately 260,000 barrels per day,
17 of bitumen. The project is located in northeastern
18 Alberta, approximately 110 kilometres north of Fort
19 McMurray. The project is a truck and shovel mine which
20 includes two open pits, an ore preparation plant, a
21 bitumen processing plant, tailings preparation and
22 management facilities, cogeneration facilities, support
23 utilities, disposal and storage areas, river water
24 intake, a fish habitat compensation lake, bridge, roads,
25 airfield and camp. The estimated project area is

1 approximately 29,200 hectares. If the project is
2 approved, it would operate for 41 years.

3 A Public Notice of Hearing was issued
4 on June 6, 2018 and invited Indigenous groups,
5 interested parties and government authorities to request
6 the opportunity to participate in the assessment.

7 The Panel determined that the following
8 groups had previously demonstrated that they may be
9 affected by the project or have relevant information or
10 expertise about the project and were invited to
11 participate in the hearings. Those groups include the
12 Athabasca Chipewyan First Nation, Fort Chipewyan Métis
13 Local 125, Fort McKay First Nation, Fort McKay Métis
14 Community Association, Métis Nation of Alberta
15 Association Fort McMurray Local Council 1935, Métis
16 Nation of Alberta Association Lakeland Local Council
17 1909, Mikisew Cree First Nation, Oil Sands Environmental
18 Coalition (OSEC), Canadian Parks and Wilderness Society
19 Northern Alberta Chapter (CPAWS), Keepers of the
20 Athabasca, and the Aboriginal Consultation Office of
21 Alberta Indigenous Relations, whose participation is
22 provided for by Ministerial Order.

23 Teck Resources Limited, Environment and
24 Climate Change Canada, Parks Canada Agency, Health
25 Canada, Transport Canada, Department of Fisheries and

1 Oceans, Natural Resources Canada and the Canadian
2 Environmental Assessment Agency were required to
3 participate in the hearing.

4 For purposes of the Hearing Record, Mr.
5 Chairman, the Notice of Hearing can be found on the CEAA
6 Registry, Document No. 398.

7 Letters granting participant status
8 were also sent to the following parties who requested
9 participation: Fond-du-Lac First Nation, Deninu Kue
10 First Nation, Katl'odeeche First Nation, Original Fort
11 McMurray First Nation and Clearwater River Band No.175,
12 Wilderness Committee, Smith's Landing First Nation,
13 Council of Canadians, Stand.earth, Sierra Club of
14 British Columbia, Northwest Territory Métis Nation,
15 Glasswaters Foundation, and the International
16 Brotherhood of Electrical Workers Local 424.

17 On July 12, 2018, the Panel issues a
18 Revised Notice of Hearing announcing the hearing would
19 commence at 9 a.m. on September 25th in Fort McMurray.
20 The Notice provided a preliminary schedule of filing
21 submission dates for the hearing.

22 For purposes of the Hearing Record, Mr.
23 Chairman, the Revised Notice of Hearing can be found on
24 the CEAA Registry, Document No. 464.

25 Mr. Chairman, I would like to remind

1 participants that the materials filed respecting the
2 proceeding can be found on the CEAA Registry.

3 That's it.

4 THE CHAIRPERSON: Thank you, Mr.
5 Haddon.

6 If a party would like to submit a
7 document into evidence during this hearing, you are
8 requested to submit an electronic copy to Mr. Haddon or
9 Ms Wheaton so that it can be shown on the monitors and
10 added to the CEAA Registry. Paper copies should be
11 distributed to the Hearing Panel, counsel and all
12 parties participating in the hearing.

13 I would now like to register the
14 participants in the hearing. Please note that we have a
15 Court Reporter here to obtain a transcript of these
16 proceedings. I would ask that you speak clearly so that
17 an accurate transcript is obtained and, as I mentioned,
18 please move to a microphone to speak.

19 The AER received submissions from Teck
20 Resources Limited, the Canadian Parks and Wilderness
21 Society Northern Alberta, the Oil Sands Environmental
22 Coalition, Fort McKay First Nation, Stand.earth, Sierra
23 Club BC, the Council of Canadians, Original Fort
24 McMurray First Nation and Clearwater River Band No.175,
25 the Wilderness Committee, Smith's Landing First Nation,

1 Deninu Kue First Nation, Northwest Territory Métis
2 Nation, Keepers of the Athabasca, Athabasca Chipewyan
3 First Nation, Mikisew Cree First Nation, Environment and
4 Climate Change Canada, Health Canada, Transport Canada,
5 Natural Resources Canada, Parks Canada, and whole of
6 Government of Canada submission from CEAA. Also the
7 Department of Fisheries and Oceans, from the
8 Katl-odeeche First Nation, and Glasswater Foundation.

9 So who's representing Teck Resources?

10 MR. IGNASIAK: Good morning, Mr. Chair,
11 Panel Members. My name is Martin Ignasiak. I'm with
12 the law firm Osler, Hoskin, and Harcourt. With me are
13 associates from our firm, Justin Fontaine and Danielle
14 Chu, as well as Scott McKenzie from Teck Resources.

15 THE CHAIRPERSON: Thank you, Mr.
16 Ignasiak.

17 Who's representing the Canadian Parks
18 and Wilderness Society, Northern Alberta?

19 MR. YEWCHUK: Drew Yewchuk of the
20 University of Calgary Public Interest Law Clinic. My
21 co-counsel, who are not here yet, are Shaun Fluker and
22 Christine Laing.

23 MS ALLISANDRINI: And I'm Adean
24 Allisandrini. I'm the Boreal Program Manager at CPAWS
25 Northern Alberta.

1 THE CHAIRPERSON: Okay, thank you.
2 Who is representing the Oil Sands
3 Environmental Coalition?

4 MR. ROBINSON: Good morning, Mr.
5 Chairman and Panel Members. My name is Barry Robinson.
6 I am counsel for the Oil Sands Environmental Coalition
7 along with co-counsel Kurt Stilwell, who is with me
8 today as well.

9 We will have a preliminary matter about
10 a document that was filed but it's not showing on the
11 registry yet. And I wondered if you wanted us to deal
12 with that now or later?

13 THE CHAIRPERSON: We'll deal with that
14 after we've registered the participants.

15 MR. ROBINSON: Very good.

16 THE CHAIRPERSON: Thank you.

17 MR. ROBINSON: Thank you.

18 THE CHAIRPERSON: Who is representing
19 Fort McKay First Nation?

20 MR. ARROBO: Good morning Panel Members
21 and Panel Chair. My name is Bori Arrobo and I'm
22 representing for McKay First Nation. Tarlan Razzaghi
23 from Boughton Law is representing for McKay First Nation
24 for these proceedings. Thank you.

25 THE CHAIRPERSON: Thank you.

1 Who is representing Stand.earth? No
2 one here from Stand.earth? Okay.

3 Who's representing Sierra Club B.C.?
4 No one here from Sierra Club B.C.?

5 Who's representing the Council of
6 Canadians?

7 MR. HADDON: So, Mr. Chairman, I
8 received an email two days ago informing me that Ms.
9 Tucker will be representing Council of Canadians, but
10 she was unable to be here today, as she is out of town
11 on another matter.

12 THE CHAIRPERSON: Okay, thank you, Mr.
13 Haddon.

14 Who is representing the Original Fort
15 McMurray First Nation and Clearwater River Band 175?

16 MS GLADIEU-QUINN: Good morning. I'm
17 Darlene Gladieu-Quinn, representing the Original Fort
18 McMurray First Nation and Clearwater River Band. I am
19 legal counsel, Triune Law. I have interim acting chief
20 John Malcolm present and Raymond Richards for both
21 bands. John Malcolm is the acting manager of the
22 Clearwater River Band and acting chief of the Original
23 Fort McMurray First Nation.

24 THE CHAIRPERSON: Thank you.

25 Who is representing the Wilderness

1 Committee? No one from the Wilderness Committee here?

2 Who is representing Smith's Landing
3 First Nation?

4 MR. EVANS: Good morning, Panel. My
5 name is Morris (phonetic) Evans, spelled Maurice Evans,
6 the CEO of Smith's Landing First Nation. And I'm here
7 just today to listen and other folks will show up when
8 they're scheduled.

9 THE CHAIRPERSON: Okay.

10 MR. EVANS: Thanks.

11 THE CHAIRPERSON: Thank you.

12 Who is representing the Deninu Kue
13 First Nation? No one here from the Deninu Kue First
14 Nation?

15 Who is representing the Northwest
16 Territory Métis Nation?

17 MR. GUSTAFSON: Good morning, Panel
18 Members. My name is Mark Gustafson. I'm legal counsel
19 with the Mikisew Cree First Nation, but I've been asked
20 to register two representatives from the Northwest
21 Territory Métis Nation. They are Dr. Ronald Yaworsky
22 and Mr. Earl Evans. Thank you.

23 THE CHAIRPERSON: Thank you.

24 Who is representing Keepers of the
25 Athabasca?

1 MS ASTERISK: Good morning to the
2 Panel. I'm Jule Asterisk. I'm the executive director
3 for Keepers of the Athabasca. Thanks for having us.

4 THE CHAIRPERSON: Thank you.

5 Who is representing the Athabasca
6 Chipewyan First Nation?

7 MR. MURPHY: Mr. Chair, Panel Members.
8 My name is Eamon Murphy. I'm legal counsel for the
9 Athabasca Chipewyan First Nation. With me is my
10 colleague Matt Hulse. He is also legal counsel for
11 ACFN. Thank you.

12 THE CHAIRPERSON: Thank you.

13 Who is representing the Mikisew Cree
14 First Nation?

15 MS BROOKS: Good morning, Mr. Chair and
16 Panel Members. My name is Karey Brooks, legal counsel
17 for Mikisew Cree First Nation. And also with me is my
18 co-counsel, Mark Gustafson. And today we also have with
19 us from Mikisew Cree First Nation Chief Archie Waquan,
20 as well as Councillor Calvin Waquan. And also sitting
21 at participant table are members of the Government and
22 Industry Relations office, Melody Lepine, Dan Stuckless,
23 and Margaret Luker. Thank you.

24 THE CHAIRPERSON: Thank you.

25 Who is representing the departments and

1 agencies of the Government of Canada?

2 MR. DRUMMOND: Good morning, Mr. Chair,
3 Panel Members. My name's Robert Drummond along with my
4 co-counsel James Elford for the Attorney General of
5 Canada, representing the federal departments and
6 agencies. Thank you.

7 THE CHAIRPERSON: Thank you.

8 Are there any representatives from the
9 Katl'odeeche First Nation?

10 MR. T'SELEIE: Good morning, Panel. My
11 name is Daniel T'seleie, and I'll be representing
12 Katl'odeeche First Nation. Thank you.

13 THE CHAIRPERSON: Thank you.

14 Are there any representatives here from
15 Fond du Lac First Nation? No representatives from Fond
16 du Lac First Nation?

17 Are there any representatives from the
18 Glasswaters Foundation?

19 And are there any representatives from
20 the International Brotherhood of Electrical Workers
21 Local 424?

22 MR. CRICHTON: Good morning, Mr. Chair.
23 My name is Scott Crichton. I am an assistant business
24 manager with IBEW Local 424. Thank you.

25 THE CHAIRPERSON: Thank you.

1 I believe that is all of the parties.
2 Is there anyone I missed? If so, please come forward.
3 Okay -- oh.

4 MR. STUCKLESS: Good morning, Panel and
5 Chair. My name is Dan Stuckless, and I also wear
6 another hat for the Cumulative Environmental Management
7 Association. We're not providing any evidence to this
8 hearing for consideration, but we wanted to let the
9 Panel know that we are in the room monitoring the
10 proceedings. And if there's any questions, we would be
11 here on site to -- any questions that come up with any
12 of the evidence. CEMA has been referenced heavily in
13 many of the industry documents in past panels going back
14 in oil sands at least 10 years.

15 THE CHAIRPERSON: Okay, thank you,
16 Mr. Stuckless.

17 Okay, I'd now like to briefly explain
18 the procedures we'll use for the hearing.

19 In accordance with section 21 of the
20 Alberta Energy Regulators Rules of Practices, all
21 witnesses must give evidence under oath or affirmation.
22 The court reporter will provide for this at the time
23 that the witnesses come forward to give their evidence.

24 Please note that we will not be
25 qualifying expert witnesses in this hearing.

1 We will first ask Teck Resources to
2 come forward and present its direct evidence. Witnesses
3 for Teck will then be available for cross-examination by
4 participants in the order that you were registered,
5 unless the Panel agrees otherwise, followed by questions
6 from AER and CEAA staff and then the Panel.

7 Following that, counsel for Teck
8 Resources will have an opportunity to conduct re-direct
9 examination of the witnesses on matters arising from the
10 cross-examination from their witnesses.

11 Next, the participants will present
12 evidence in turn according to the hearing schedule,
13 which was circulated late last week, and be subject to
14 cross-examination or questions from Teck Resources, any
15 other parties that may be adverse in interest, AER and
16 CEAA staff, and finally from the Panel.

17 Following that, counsel for
18 participants will have an opportunity to conduct
19 re-direct examination of their witnesses on matters
20 arising from the cross-examination.

21 The Panel will call on participants to
22 give their evidence in the same order that the party is
23 registered in the hearing, which is consistent with the
24 schedule, unless some alternate agreement is approved by
25 the Panel.

1 Once we have heard from all the
2 participants, we will then provide an opportunity for
3 Teck Resources to present any rebuttal evidence if it
4 wishes to do so. If rebuttal evidence is presented, it
5 will be subject to cross-examination from the
6 participants, AER, and CEAA staff and the Panel.

7 Once the evidentiary portion of the
8 hearing is concluded, there will be an opportunity for
9 closing argument from Teck Resources and the
10 participants in the order of registration. Teck will
11 also have an opportunity to respond to the closing
12 statements presented by participants.

13 The Panel intends to seek input from
14 the participants before scheduling final argument.

15 As for today's schedule, the Panel
16 proposes to break for lunch at approximately 12 o'clock
17 and reconvene at approximately 1 o'clock. We will look
18 for a convenient spot in the proceedings to make that
19 break, to try not to disrupt people's evidence or
20 cross-examination.

21 We will also take breaks mid-morning
22 and mid-afternoon, and all of this of course depends on
23 the various developments that can alter the schedule.

24 We will try to be flexible if possible
25 to accommodate people's needs. And just a reminder that

1 if you do happen to engage in a conversation with a
2 Panel member, you need to refrain from bringing up any
3 substantive matters that are under scrutiny as part of
4 this hearing.

5 Are there any questions about the
6 procedures that we intend to follow today?

7 Okay, seeing none, I will note that at
8 this time there are three outstanding motions that the
9 Panel is yet to rule on: one from Keepers of the
10 Athabasca, one from the Athabasca Chipewyan First Nation
11 and one from the Mikisew Cree First Nation. Decisions
12 on those motions will be forthcoming once the submission
13 process has concluded.

14 With that, are there any other
15 preliminary matters that parties wish to raise at this
16 time?

17 MR. ROBINSON: Mr. Chairman, Barry
18 Robinson representing OSEC.

19 On Friday we filed a document which was
20 aids to questioning. I spoke to Ms Wheaton on Friday,
21 or had an e-mail exchange with Ms Wheaton on Friday,
22 about whether we needed to bring paper copies, and I was
23 advised that I didn't need to; that they would be on the
24 Registry. But I notice that that document is not
25 showing on the Registry.

1 Out of an abundance of caution, I do
2 have some paper copies with me but they are probably not
3 sufficient to meet the rules. So what I propose is
4 maybe at the first break I will provide some copies to
5 Ms Wheaton to be distributed to you, if that works for
6 you.

7 Mr. Ignasiak advised me that he
8 received the copies and he has no difficulty.

9 THE CHAIRPERSON: Mr. Haddon?

10 MR. HADDON: Mr. Chairman, I thought I
11 would just add some more information.

12 So we did receive the document you
13 speak of and it will be available on the CEAA Registry
14 either right now or in the very near future. It will be
15 Document No. 557.

16 THE CHAIRPERSON: 557? Thank you.

17 MR. ROBINSON: Thank you, Mr. Chairman.

18 THE CHAIRPERSON: Are there any other
19 preliminary matters?

20 Okay, seeing none, I will ask counsel
21 for Teck Resources to seat the witness panel, which
22 looks like it is seated, and swear their witnesses and
23 then introduce the panel.

24 MR. IGNASIAK: Thank you, Mr. Chairman.
25 Yes, the witnesses are seated.

1 To comply with the rules regarding the
2 room and the set-up, some of our witnesses are actually
3 seated back behind my right shoulder. What I propose,
4 though, is that despite the fact they are not seated
5 right here, they all be sworn in. We have 26 witnesses.

6 I will go through the list of their
7 names perhaps after they have been sworn or affirmed, if
8 that fits with how you would like to proceed.

9 THE CHAIRPERSON: Yes, I think it does.
10 I think the challenge of course will be for the Court
11 Reporter to know who is speaking. So when you have
12 witnesses speak, if they could again for the record just
13 say their name, particularly those in the back which
14 will be more difficult to see.

15 MR. IGNASIAK: Yes, I've discussed that
16 with the Court Reporter. So we will work with her to
17 make sure that her job is no harder than it already is.

18 THE CHAIRPERSON: Okay, thank you.

19 --- Pause

20 MS LaCASSE: Mr. Chair, could we just
21 have two minutes. We've had a slight glitch in this
22 usual process.

23 THE CHAIRPERSON: Yes, let's take a
24 short break to work out the logistics here.

25 --- Upon recessing at 0929 / Suspension à 0929

1 --- Upon resuming at 0930 / Reprise à 0930

2 MS LaCASSE: Mr. Chair, we are ready to
3 resume.

4 THE CHAIRPERSON: Okay. Please proceed
5 with the affirmation.

6 --- Pause

7 THE CHAIRPERSON: Mr. Ignasiak.

8 MR. IGNASIAK: Despite the glitch, I've
9 never seen that process go that quickly. That's
10 excellent.

11 Let me start then, Mr. Chair. I will
12 introduce the witnesses. Mr. McFadyen will then deliver
13 an opening statement. I imagine that first part will
14 take about an hour, give or take ten minutes. I suspect
15 we will then be in a good position for a break and we
16 then have some direct evidence to go through that will
17 likely take us close to the noon hour or thereabouts.

18 So that's how we see the morning
19 unfolding.

20 And just so you know, Mr. Chair, before
21 we release the panel over for cross-examination, I will
22 want to have a break with the panel for a few moments
23 just to check a few things, if that is okay and works
24 with the schedule, and then we will turn them over for
25 cross-examination.

1 THE CHAIRPERSON: Yes, that's fine, Mr.
2 Ignasiak.

3 MR. IGNASIAK: Thank you.

4 All right. I will start with Mr.
5 Kieron McFadyen, who is sitting here closest to me.

6 He is a Senior Vice-President of Teck's
7 Energy Business Unit and will be the lead company
8 witness for this hearing.

9 Mr. Lyndon Chiasson is sitting next to
10 Mr. McFadyen. He is a Director of Engineering with
11 Teck's Energy Business Unit. Mr. Chiasson has primary
12 responsibility for all technical aspects of Teck's
13 Frontier Project.

14 Seated to Mr. Chiasson is Mr. Wayne
15 Speller. He has appeared before numerous joint review
16 panels previously. He is the Project Director at Golder
17 Associates. Mr. Speller has primary responsibility for
18 the preparation of the Environmental Impact Assessment
19 for the project.

20 Seated next to Mr. Speller is Dr. Robin
21 Johnstone. He is the General Manager of Community and
22 Indigenous Affairs with Teck's Energy Business Unit.
23 Dr. Johnstone will address indigenous and community
24 consultation matters for the Frontier Project.

25 Seated next to Dr. Johnstone is Mr.

1 Reid Person. He is a Senior Air Quality Engineer and
2 Technical Leader for Atmospheric Sciences at Stantec
3 Consulting. Mr. Person conducted the Air Quality
4 Assessment for the Teck Frontier Project. He will be
5 able to speak to any air quality issues that arise.

6 Seated next to Mr. Person is Mr. Bart
7 Koppe. He is a Senior Environmental Health Scientist
8 with Intrinsik Corp. Mr. Koppe was the lead on Teck's
9 Human Health Risk Assessment and Wildlife Health Risk
10 Assessment. Mr. Koppe will be able to speak to issues
11 related to human health and wildlife health.

12 Seated next to Mr. Koppe is Mr. Pearce
13 Shewchuk. He is a Principal with Nichols Applied
14 Management Inc. Mr. Shewchuk prepared a report
15 regarding the issue of cost/benefit analysis that was
16 submitted with Teck's September 12 Reply Submission and
17 marked as Exhibit 504, Attachment 2, beginning at page
18 234. He can also speak to any socio-economic issues
19 that arise.

20 Going to the second row, behind Mr.
21 Shewchuk at the end, is Mr. Ian Gray. Mr. Gray is a
22 Principal with Nichols Applied Management. He was
23 involved in Teck's Socio-economic Assessment and is able
24 to speak to socio-economic issues that may arise.

25 Seated next to Mr. Gray is Ms Anna

1 Brace. She is a Traditional Study specialist with
2 Golder Associates. Ms Brace was involved with leading
3 the Traditional Land Use Assessment and is available to
4 speak to TLU issues that may arise.

5 Seated next to Ms Brace is Mr. Jerry
6 Vandenberg. He is a Senior Environmental Chemist with
7 Golder Associates. He directs monitoring, modelling and
8 research for assessing environmental impacts. Mr.
9 Vandenberg will be able to speak to water quality issues
10 such as those involving rivers, lakes and pit lakes.

11 Seated next to Mr. Vandenberg is Dr.
12 Getu Biftu. He is a Senior Water Resources Engineer
13 with Golder Associates. Dr. Biftu specializes in
14 surface water hydrology and environmental impact
15 assessments. Dr. Biftu will be able to speak on any
16 surface water hydrology issues that arise.

17 Seated to Dr. Biftu is Mr. Derek Ebner.
18 He is a Senior Wildlife Biologist at Stantec Consulting.
19 Mr. Ebner was involved with the preparation of Teck's
20 Wildlife Assessment, including project-specific wildlife
21 monitoring and mitigation plans. Mr. Ebner will be
22 speaking to any wildlife issues that arise.

23 Seated next to Mr. Ebner is Mr. Martin
24 Jalkotzy. He is a Senior Wildlife Ecologist with Golder
25 Associates. Mr. Jalkotzy is a practising wildlife

1 biologist with more than 40 years' experience in the
2 profession, including several years working with bison
3 in the Northwest Territories. Mr. Jalkotzy is lead for
4 Teck's updated Wood Bison Assessment and is also a
5 technical advisor on the Ronald Lake Bison Herd
6 Technical Team, which the Panel will be hearing more
7 about. Mr. Jalkotzy will be able to speak to issues
8 regarding bison.

9 Seated next to Mr. Jalkotzy is Mr. Dave
10 Brescia. He is a Senior Regulatory and Environmental
11 Advisor with Stantec Consulting. Mr. Brescia prepared
12 Teck's Vegetation and Wetlands Assessment Update and
13 Teck's Closure Conservation and Reclamation Plan. Mr.
14 Brescia will be able to speak to issues involving
15 environmental impact assessment issues, particularly
16 related to wetlands and reclamation.

17 Seated next to Mr. Brescia is Mr.
18 Steven Hilts, he's a Director of Environmental Legacies
19 with Teck. Mr. Hilts is responsible for the assessment
20 and management of legacy environmental facilities and
21 the creation of new positive legacies in biodiversity.
22 Mr. Hilts will be speaking to the environmental legacy
23 issues that may arise.

24 Seated next to Mr. Hilts is Mr. Neil
25 Sandstrom, he is a Manager of Environment with Teck.

1 Mr. Sandstrom is a registered professional engineer and
2 will be speaking to environmental issues.

3 Seated next to Mr. Sandstrom is Ms
4 Kristen Sibbel. She is a Process Engineering Supervisor
5 with Teck. Ms Sibbel will speak to any process
6 engineering requirements, including project development
7 and process plant studies.

8 Sitting next to Ms Sibbel is Mr.
9 Michael Di Marco, he is a Manager of Mine Engineering
10 with Teck's Energy Business Unit. Mr. Di Marco is
11 responsible for and will speak to issues regarding mine
12 planning, tailings planning, and geotechnical design of
13 Teck's oil sands project.

14 Seated at the end of the second row
15 next to Mr. Di Marco is Dr. Dejiang Long. Dr. Long is a
16 Senior Water Resources Engineer with Golder Associates.
17 He specializes in mine water management, hydrology,
18 hydraulic engineering, water supply, environmental
19 hydraulics, river engineering, flood management, and
20 other water resource-related engineering. Dr. Long will
21 be able to speak to issues arising regarding water
22 resources and water management for the park.

23 All right, going over my right
24 shoulder, Mr. Chairman, Ms Janais Turuk, she is a
25 Manager of Teck's Community Relations Group. Ms Turuk

1 is a Community Relations Practitioner and will be
2 speaking to Indigenous and community consultation
3 issues.

4 Next to Ms Turuk is Ms Yvonne Walsh,
5 she is a Director of Teck's Community and Indigenous
6 Affairs. She'll be speaking to Indigenous and community
7 consultation issues.

8 Mr. Chris Bjornson, behind the wall of
9 binders, is a Senior Fisheries Biologist with Golder
10 Associates. Mr. Bjornson specializes in aquatic biology
11 and will be able to speak to issues regarding aquatic
12 life impact, mitigation design, and fish habitat
13 compensation.

14 Mr. Ivan Whitson -- my apologies, it's
15 Dr. Ivan Whitson, he is a Director of Whitson
16 Innovations Inc. and is a subcontractor with Stantec
17 Consulting. Dr. Whitson specializes in soil quality
18 measurements and analysis in pipeline reclamation
19 planning. Dr. Whitson will be able to speak to any
20 issues relating to soil that arise.

21 Mr. Jonathan Chui is sitting next to
22 him, he is a Senior Noise Specialist with Stantec
23 Consulting. He specializes in noise impact assessment
24 and noise control. He'll be addressing arising that
25 relate to noise.

1 Two more, sir.

2 Mr. Scott Donald is a Principal and
3 Senior Hydrogeologist with Golder Associates, he
4 specializes in numerical, analytical, and statistical
5 analysis of hydrogeological processes. Mr. Donald will
6 speak to any hydrogeological or groundwater modelling
7 issues that may arise.

8 Sir, I believe our last witness, Dr.
9 Richard Sisson, he is a Principal Geotechnical
10 Engineering with Sisson Geoconsulting LLC. He
11 specializes in geotechnical engineering, including
12 independent review of tailings facilities, dam safety,
13 and slope stability assessment and analysis. Dr. Sisson
14 will be able to speak to any issues regarding
15 geotechnical aspects of tailings behaviour and storage
16 facilities.

17 I believe that's 26, sir. The CVs for
18 these witnesses are on the record at CEAA Registry 504,
19 Appendix B, beginning at PDF page 63.

20 Mr. McFadyen --

21 MS LaCASSE: Sorry to interrupt. I
22 think we have to take a short break again. There's been
23 another glitch with regard to the swearing in of the
24 witnesses. So if we could have 10 minutes please. I'm
25 sorry to interrupt.

1 THE CHAIRPERSON: Okay. Sorry, let's
2 take a 10-minute break.

3 --- Upon recessing at 0941 / suspension à 0941

4 --- Upon resuming at 0956 / reprise à 0956

5 THE CHAIRPERSON: Sorry about the
6 interruption, Mr. Ignasiak.

7 Ms Lacasse.

8 MS LACASSE: Mr. Chair, it appears we
9 have to have the witnesses reaffirm. There was a
10 complication the first time around. So I'm going to ask
11 Ms Doebele.

12 MS DOEBELE: In my role as Notary
13 Public and for the Province of Alberta, I'm going to
14 administer an affirmation.

15 Can anyone indicate if they're not
16 prepared to make an affirmation today?

17 Seeing nobody objecting, can you please
18 raise your right hand. Do you promise the contents of
19 your evidence contains the truth, the whole truth, and
20 nothing but the truth, and solemnly affirm that this
21 promise is binding on your conscience?

22 MULTIPLE SPEAKERS: I do.

23 AFFIRMED: KIERON McFADYEN

24 AFFIRMED: LYNDON CHIASSON

25 AFFIRMED: WAYNE SPELLER

1 AFFIRMED: ROBIN JOHNSTONE
2 AFFIRMED: REID PERSON
3 AFFIRMED: BART KOPPE
4 AFFIRMED: PEARCE SHEWCHUK
5 AFFIRMED: IAN GRAY
6 AFFIRMED: ANNA BRACE
7 AFFIRMED: JERRY VANDENBERG
8 AFFIRMED: GETU BIFTU
9 AFFIRMED: DEREK EBNER
10 AFFIRMED: MARTIN JALKOTZY
11 AFFIRMED: DAVE BRESCIA
12 AFFIRMED: STEVEN HILTS
13 AFFIRMED: NEIL SANDSTROM
14 AFFIRMED: KRISTEN SIBBEL
15 AFFIRMED: MICHAEL DI MARCO
16 AFFIRMED: DEJIANG LONG
17 AFFIRMED: JANAIS TURUK
18 AFFIRMED: YVONNE WALSH
19 AFFIRMED: CHRIS BJORNSON
20 AFFIRMED: IVAN WHITSON
21 AFFIRMED: JONATHAN CHUI
22 AFFIRMED: SCOTT DONALD
23 AFFIRMED: RICHARD SISSON

24 MS DOEBELE: Thank you.

25 THE CHAIRPERSON: Please proceed, Mr.

1 Ignasiak.

2 MR. IGNASIAK: Thank you, Mr. Chair.

3 Mr. McFadyen, on July 13, 2018 Teck
4 filed its hearing submissions, which are marked as CEEA
5 Registry Document No. 465. In that hearing submissions
6 the materials Teck is relying on in support of its
7 application is listed on PDF 6 through PDF 14,
8 inclusive.

9 This includes: the Integrated Project
10 Application filed in November 2011; a number of
11 information request responses to the Agency and the
12 Alberta Energy Regulator; the project update filed in
13 June 2015; information request responses to the Joint
14 Review Panel; Teck's responses to a number of different
15 stakeholders; and, other documents.

16 Mr. McFadyen, can you confirm that the
17 hearing submission, Document No. 465, all the documents
18 listed in PDF 6 through 14 of the hearing submission,
19 and Teck's reply submission filed September 12, 2018 and
20 marked as Registry Document No. 504, were all prepared
21 by Teck and under its direction or control?

22 MR. McFADYEN: Yes, they were.

23 MR. IGNASIAK: Are there any
24 corrections you wish to make to the evidence?

25 MR. McFADYEN: No.

1 MR. IGNASIAK: Is the evidence accurate
2 to the best of your knowledge or belief?

3 MR. McFADYEN: Yes.

4 MR. IGNASIAK: Do you adopt the
5 contents of this evidence as Teck's evidence in this
6 proceeding?

7 MR. McFADYEN: I do.

8 MR. IGNASIAK: Thank you, Mr. McFadyen.
9 I believe you have an opening statement
10 you'd like to deliver?

11 MR. McFADYEN: I do, thank you.

12 So, Mr. Chair, Joint Review Panel
13 members, Elders, Chiefs, Métis Leaders, Government
14 representatives, Panel Staff, ladies and gentlemen, good
15 morning and thank you for being here today.

16 Firstly, I would like to take the
17 opportunity to recognize your coming here today on the
18 lands of the Treaty 8, First Nations, and on the lands
19 of the Dene, Cree and Métis people. Thanks for having
20 us there today.

21 My name is Kieron McFadyen and I'm
22 Senior Vice-President, Energy, for Teck Resources
23 Limited. In that role I'm accountable for leading
24 Teck's energy business. This includes the responsible
25 development of oil sands assets.

1 By background and by education I'm an
2 engineer. I have more than 30 years of technical,
3 operational, and commercial experience within the global
4 oil and gas business.

5 Prior to Teck, I held numerous
6 positions within the energy industry, including
7 Executive Vice-President and President, Upstream Oil &
8 Gas with Cenovus Energy based in Calgary.

9 Prior to Cenovus, I was Group
10 Vice-President, Non-Operated Joint Ventures with Royal
11 Shell PLC.

12 I've worked in many countries,
13 including Holland, Oman, UK, Malaysia and, of course,
14 Canada.

15 I've been involved in various roles,
16 including major project development and major project
17 execution.

18 Mr. Chair and Panel, I'm the executive
19 in Teck accountable for the development and execution of
20 the Frontier project. I will be in attendance every day
21 through these proceedings and, as a result, I will chair
22 Teck's panel.

23 I do have a very capable and
24 experienced leadership team, and my team and I look
25 forward to applying our know-how and experience to

1 Frontier and building on the strong relationships we
2 already have with indigenous communities.

3 I would also like to say that, in line
4 with our company values, we will continue to play a role
5 in this process in an open, respectful and professional
6 way.

7 I would now like to briefly introduce
8 my colleagues here on the front row.

9 Mr. Lyndon Chiasson. Mr. Chiasson is a
10 mining engineer with about 30 years oil sands mining
11 experience, mainly in senior operational, senior
12 technical and major project roles.

13 Dr. Robin Johnstone. Dr. Johnston has
14 a PhD in wildlife ecology and has about 30 years
15 experience working in environmental monitoring and
16 indigenous consultation in Alberta, British Columbia and
17 the Northwest Territories.

18 And finally, Mr. Wayne Speller. Mr.
19 Speller is an environmental engineer with Golder
20 Associates. He has 19 years experience in environmental
21 consulting.

22 And Panel, as you can see, we also have
23 a group of highly-dedicated experts who are looking
24 forward to bringing significant value and insight to our
25 project application.

1 As you know, in support of our
2 Application we've filed extensive information and
3 assessment. In this opening statement, we will be
4 focused on providing the Panel with the information on
5 the following.

6 Firstly, an overview of Teck, our
7 values and our commitment to responsible development.
8 Secondly, a summary of Frontier and its benefits for the
9 region, the province and, indeed, the nation.

10 And thirdly, I will provide an overview
11 of our extensive indigenous consultations and
12 consultations with government and other stakeholders.

13 And lastly, I will speak to a number of
14 environmental and social issues that have been raised in
15 relation to the project.

16 Panel, I estimate that this opening
17 statement will take about 45 minutes.

18 Now for a few comments on Teck.

19 Teck is a proud Canadian company, with
20 roots stretching back more than one century. Our
21 history and, indeed, the history of our industry is well
22 covered in a fascinating book published by our Chairman,
23 Dr. Norman Keevil. This book is entitled "Never Rest on
24 your Ores - Building a Mining Company - One Stone at a
25 Time".

1 Today, Teck is now Canada's largest
2 diversified resource company. It's headquartered in
3 Vancouver, with offices around the world, including our
4 energy business unit, which is based in Calgary.

5 Our major business units are focused on
6 providing materials that are foundational to modern
7 society. Our business units include our copper
8 business, our steel-making coal business, our zinc
9 business and, of course, energy.

10 Teck employs more than 10,000 people
11 worldwide. This includes over 8,000 staff in western
12 Canada alone. And today, we are traded on the Toronto
13 and New York stock exchanges.

14 We own or we have interested in 14
15 producing operations in North and South America. And
16 significantly, this includes a 21.3 percent ownership of
17 the new Fort Hills facility and 100 percent ownership of
18 the Frontier Project is that is subject to these
19 proceedings.

20 So over 100 years in business, Teck has
21 established a strong set of core values that define who
22 we are as a company and help guide every decision that
23 we take. These six values establish the standard for
24 how we interact with indigenous people, our business
25 partners and, indeed, each other.

1 Firstly, safety. Safety is the top
2 consideration and, put simply, our vision is that
3 everybody goes home safe and well every day.

4 Next we have integrity. We are honest,
5 we're ethical, and we're fair in all our dealings.

6 We're also respectful. We value
7 diversity and treat everyone with respect.

8 We strive for excellence. In fact, we
9 crave for continuous improvement in all that we do.

10 We are courageous. We are true to our
11 convictions and have the courage to speak up to ensure
12 that our values are upheld.

13 And finally, Panel, we act sustainably.
14 We ensure that our activities are socially and
15 environmentally responsible.

16 Panel, each of these values is core to
17 Teck, but for now I want to focus on sustainability and
18 our approach to responsible development.

19 Sustainability is embedded in Teck's
20 operational practices, and we are proud to be at the
21 forefront of responsible and sustainable resource
22 development. This includes being one of the first
23 mining companies to set long-term quantifiable targets
24 in areas such as greenhouse gas reduction, pioneering
25 best practices in mining, and making significant

1 contributions to the communities where we actually work.

2 In 2011, we launched a sustainability
3 strategy that established ambitious long-term goals for
4 our social and environmental performance out to 2030.

5 We have established goals in six focus
6 areas; namely community, water, our people,
7 biodiversity, energy and climate change, and air
8 quality. Achieving these goals is central to all the
9 work that we do.

10 We report our progress against these
11 goals in our Annual Sustainability Report.

12 And Panel, Teck's commitment to
13 sustainability has led to significant benefits for our
14 employees, for our communities and, indeed, for the
15 environment.

16 I would now like to list a few
17 examples, if I may.

18 At our Cardinal River mine here in
19 Alberta, the bighorn sheep population on reclaimed land
20 is so robust that sheep have now been relocated to
21 re-establish herds in other parts of North America.

22 Next, Teck has signed the Paris Pledge
23 for Action that supports reducing emissions and
24 achieving objectives of the Paris Agreement. In line
25 with this pledge, we have worked hard to reduce

1 greenhouse gas emissions across our operations by over
2 280,000 tonnes since 2011. Roughly, this is equivalent
3 to taking some 60,000 cars off the road.

4 And finally, in Teck's operations
5 today, 80 percent of our electrical power needs come
6 from renewable sources.

7 And our progress has been recognized
8 nationally and also internationally. Very recently,
9 Teck was named to the Dow Jones Sustainability Index for
10 the ninth consecutive year.

11 This index recognizes that Teck's
12 sustainability practices are in the top 10 percent of
13 the largest 2,500 companies in the S&P Global Broad
14 Market Index. In fact, we scored the highest in several
15 categories, including environmental policy and
16 management systems.

17 Teck was also recently named one of
18 Canada's Top 50 Corporate Citizens for the 12th
19 consecutive year, and this award came from Corporate
20 Knights based on our -- again our social and
21 environmental performance.

22 And our achievements in reclaiming mine
23 sites have garnered us over 70 separate awards in
24 Canada, the United States and Chile.

25 I think this is a clear demonstration

1 of our leadership in mining, but that's not to say that
2 we are perfect, Chair. We are not, and we have had some
3 challenges over our long history.

4 When things don't go to plan, we
5 consistently have shown that we've committed to doing
6 the right thing by being open, by being transparent and
7 remaining responsible. We don't walk away. And Chair,
8 I just want to stress that we are committed to the long
9 term.

10 Now, in addition to our sustainable
11 approach to development, technology and innovation are
12 key to how we operate and, in fact, central to our DNA.

13 Teck has a long industry of innovation
14 in the mining industry that stretches back decades.
15 Many technologies are now standard -- many of the
16 technologies that are now standard in global mining were
17 actually pioneered by Teck. And again, if I may, a few
18 examples.

19 Example 1, airborne magnetic surveys
20 used to model the sub-surface and understand the geology
21 of the resource.

22 Second example, differential froth
23 flotation used to recover different elements from the
24 same production stream. And more recently, very
25 recently, the use of smart shovel-mounted sensors to

1 help us tell valuable ore from waste rock, all directly
2 done at the mine site -- actually, at the mine face.

3 And Panel, you may be surprised to know
4 that the walkie-talkie was in fact invented in 1937 by a
5 Teck employee, a trial operation. And, of course, now
6 that enables safe remote working. And that spirit of
7 innovation holds true today; we remain absolutely
8 focussed on developing and implementing new methods and
9 technologies to make our work safer, more efficient and,
10 hence, more sustainable. We will bring this passion for
11 innovation and technology to the frontier project.

12 On that point, Teck is a founding
13 member of Canada's Oil Sands Innovation Alliance, namely
14 COSIA. COSIA is focussed on accelerating the pace of
15 environmental performance improvements in oil sands
16 through innovation and collaboration. And, since its
17 launch in 2012 COSIA has shared over 1,000 distinct
18 technologies across our industry. These technologies
19 are aimed to improve tailings management which impacts
20 on air, land and water.

21 I want to stress again, Panel, Teck is
22 a very active participant in COSIA. In fact, we're
23 leading work on mine recognition, bison research, fluid
24 tailings treatment, and the use of heat recovery
25 technology to reduce greenhouse gas emissions, to name

1 but a few.

2 Mr. Chair and Panel, as I mentioned, we
3 are a valued partner in Fort Hills alongside Total and
4 Operator Suncor. From the start, we have been a very
5 proactive partner in Fort Hills bringing our experience
6 in large-scale mining to bear. And, as you may know,
7 construction at Fort Hills began in October 2013 and
8 first oil was achieved at the beginning of this year.
9 In our view, Fort Hills is a world-class operation that
10 has exceeded expectation for ramp-up to full production
11 later this year.

12 Like Frontier, Fort Hills uses a
13 paraffinic froth treated process, we call it PFT, and I
14 guess you can understand why. The process lowers the
15 intensity of greenhouse gas emissions compared to
16 traditional oil sands extraction. Reducing emissions is
17 critical to ensure that the production of Canadian oil
18 sands remains globally sustainable. And, Panel, Teck is
19 proud of our participation in Fort Hills and we commend
20 Operator Suncor for their excellent performance in
21 bringing this world-class environmentally responsible
22 development online.

23 If Frontier is approved, we look
24 forward to incorporating that practice and the learning
25 gained through our involvement in Fort Hills.

1 And now, Panel, I want to provide a
2 very brief overview of Frontier. Firstly, the Project
3 is located 110 kilometres north of where we are today,
4 60 kilometres north of Fort McKay and some 110
5 kilometres south of Fort Chipewyan. The leases are
6 within the mineable oil sands area, the area that the
7 Government of Alberta has identified for long-term
8 resource development.

9 The Project was originally applied for
10 in 2011. At the time the overall design consisted of
11 two distinct development areas separated by leases owned
12 by Shell. In 2013 Teck and Shell agreed to exchange
13 leases and this resulted in a more workable set of
14 leases for both companies. This consolidated lease
15 required us to update the Project design and as a result
16 we filed a Project update in 2015.

17 Major improvements as described in the
18 update resulted in, and I'll list a few:

19 Reduced overall footprint of the
20 project area;

21 Lower greenhouse gas emissions;

22 Lower water use intensities;

23 Enhanced tailings management that

24 supports progressive sight

25 reclamations; and, finally,

1 Increased resource recovery, thereby
2 improving project economics overall.

3 And, I think it is worth stressing,
4 Panel, that in order to be fully transparent with all
5 parties we applied for the recovery of the entire
6 resource base with no future expansions contemplated for
7 Frontier. The Project there aims to recover some 3.2
8 billion barrels of bitumen over 41 years. And, once
9 fully constructed, we aim to operate at a production
10 rate of 260,000 barrels per day.

11 The plan is to use truck and shovel
12 mining to excavate and transport overburden,
13 interburden, and ore. Ore will be transported to an
14 extraction facility consisting of an ore preparation
15 plant for ore crushing, slurry preparation and hydro
16 transport to the extraction plant. The extraction plant
17 will use primary separation cells. It will also use
18 primary and secondary floatation to produce bitumen
19 froth.

20 Similar to Fort Hills, the PFT process
21 will be used to produce a marketable product. As a
22 result, the Frontier Project will be amongst the lowest
23 greenhouse gas intensity of any Canadian oil sands
24 production.

25 Moreover, production will have a lower

1 greenhouse gas intensity than half of all the oil
2 currently refined in the US.

3 As part of our tailings management
4 plan, fluid tailings will be de-watered using centrifuge
5 technology. Following de-watering the treated tailings
6 will be deposited in pit and below ground level. This
7 approach will improve the efficiency of water use, allow
8 for progressive reclamation and result in no active
9 tailings dam in the post-closure structure.

10 And, finally, Panel, as set out in our
11 application, supporting infrastructure will include
12 (7:12) transmission, another water intake system, access
13 roads and bridge over the Athabasca River, a worker's
14 lodge, an air strip, and pipelines for water, natural
15 gas, condensate and oil.

16 Now, Panel, I want to briefly cover the
17 benefits of the Frontier Project. And we do recognize
18 that resource development is based on balancing three
19 factors: social, environmental and economic impact.

20 I will speak in more detail to the
21 social and environmental factors later, but for now I
22 would like to speak to the economics of Frontier. And,
23 our focus has been to responsibly advance Frontier in
24 order to meet three basic economic objectives. And,
25 again, let me cover them:

1 Objective One, is to maximize the value
2 of the product essential to everyday
3 life.

4 Objective Two, generate significant
5 economic benefits and opportunities for
6 Indigenous peoples, local communities,
7 for the province and indeed Canada.

8 Objective Three, responsibly create
9 value for Teck shareholders.

10 I want to briefly touch on how we aim
11 to achieve these objectives. Firstly, product demands.
12 Global population will continue to grow. By 2040 it is
13 estimated that 9 billion will live on this planet. In
14 particular, developing parts of the world will see very
15 significant population growth. And, again, by 2040 it
16 is estimated that 2.5 billion people will be listed of
17 low incomes and poverty. 2.5 billion, that's almost two
18 current day China's.

19 It is only reasonable to assume that
20 those increasing populations will in turn build their
21 economies and improve their standard of living. As a
22 result, global energy demand will increase. In fact,
23 the International Energy Agency forecasts that oil
24 demand will grow from 95 to 110 million barrels per day
25 by 2040. This means that oil will remain a significant

1 part of the energy mix for the foreseeable future. And,
2 Panel, as I mentioned, we believe that Frontier can play
3 a key role in meeting that demand responsibly.

4 Frontier is also an economic engine for
5 the region, the province and the nation. This project
6 will create 7,000 direct jobs during the construction
7 phase and a further two and a half thousand jobs during
8 mine life. That's 41 years.

9 Also, we estimated the project will
10 stimulate new business development opportunities through
11 local procurement, contacting, and service provision.
12 And as part of this, we will work with Indigenous
13 communities to develop employment and training programs.

14 And, in addition to jobs and economic
15 growth, Frontier will contribute directly to government
16 revenues at all levels in the amount of over \$70 billion
17 over mine life. This includes an estimated \$12 billion
18 in taxes to the federal government, some \$55 billion to
19 the province through royalties and taxes, and a further
20 \$3.5 billion to the region through property taxes.

21 Panel, these are significant public
22 revenues that can be used to fund critical services such
23 as healthcare and education. And, to help me put it
24 into context, the taxes paid by Frontier would be enough
25 to, for example, fund 10 million hospital stays.

1 Secondly, and again by example, 260,000 new family
2 doctors.

3 It will also put 6 million children
4 through school for a year, or completely fund all of
5 Canada's national parks for 50 years. I think it is
6 important that we recognize that this is a very
7 significant contribution.

8 Regarding Teck and our shareholders, I
9 want to be very clear, we view Frontier as a very strong
10 fit with our strategy, our core capability and our core
11 competence. It is a long-life, high-quality asset.
12 It's in a stable and progressive jurisdiction with
13 access to a world-class supply chain and workforce.
14 Frontier is not only an energy project, it's a mining
15 project, and Teck is a leading mining company. So, in
16 summary, Panel, Frontier is a project that will help
17 responsibly meet energy demand whilst generating
18 significant value for the region, for the province and
19 for Canada.

20 Now, I want to speak to the extensive
21 consultation that Teck has undertaken with Indigenous
22 communities most affected by the project.

23 And, Panel, I must emphasize how
24 important this engagement has been for Teck, in keeping
25 with our values and building upon a strong history of

1 forging relationships in areas where we actually work.

2 Teck has an Indigenous Peoples Policy.

3 This policy sets out a commitment to Indigenous peoples

4 which, in addition to meeting the consultation

5 requirements of Alberta and Canada, commits us to do the

6 following:

7 (1) build respectful relationships;

8 (2) engage in early and meaningful

9 dialogue;

10 (3) integrate Indigenous people's

11 perspectives and traditional knowledge into

12 decision-making;

13 (4) identify ways to support Indigenous

14 people in achieving their own self-defined community

15 goals; and finally,

16 (5) working to achieve the free, prior

17 and informed consent of Indigenous communities.

18 The Indigenous communities which Teck

19 is fortunate to work with are passionate about their

20 rights, their interests, their land and their people.

21 As you are aware, Teck has been engaging the local

22 communities on Frontier since 2008 and during that time

23 we've engaged with Indigenous groups on a scale ranging

24 from basic notification to comprehensive consultation,

25 accommodation and indeed agreement negotiation. Our

1 team has spent extensive time with Indigenous community
2 members on the land, with technical experts and
3 community leadership engaging in a dialogue about the
4 project.

5 Today, to give you a flavour, we have
6 held over 350 meetings with Indigenous community
7 representatives; we have held over 20 mitigation
8 planning workshops; we have conducted 20 project site
9 tours and flyovers; we have supported 35 detailed
10 technical reviews and submissions.

11 And, Panel, to help facilitate
12 engagement, Teck has provided over \$10 million in
13 capacity funding to Indigenous communities. This
14 funding has supported communities in hiring their own
15 technical experts to, for example, help review the
16 project and advise their communities, to help undertake
17 their own assessments of the impacts on traditional land
18 use and culture, using their own methodologies and
19 approaches, and finally, to help facilitate their
20 participation in project-specific mitigation planning.

21 Panel, through our consultations we
22 have had extensive and meaningful dialogue, resulting in
23 valuable feedback from Indigenous communities affected
24 by the project. A number of aspects of our
25 environmental assessment and project application were

1 changed in response to the input received.

2 Again, some examples. We changed the
3 study area used to assess the potential impacts of the
4 project on the Ronald Lake Bison Herd. Road options
5 were selected to avoid sensitive areas such as the Birch
6 Mountains. We made an early and very significant
7 commitment not to place tailings in our pit lakes. We
8 committed to implementing a fly-in/fly-out program for
9 Fort Chipewyan to support Indigenous communities with
10 employment opportunities whilst allowing traditional
11 lifestyles to be maintained. And final example, we
12 modified the project's water use plan to avoid
13 withdrawals from local streams that flow into the
14 Athabasca River.

15 In response to community feedback, as I
16 mentioned, we have also committed to a contracting and
17 hiring practice that focuses on qualified local
18 Indigenous businesses, and I should note that we have a
19 corporate policy that requires our contractors to do the
20 very same.

21 Such benefits have already started to
22 happen in relation to Frontier. For example, to date
23 we've spent about \$24 million on contracted goods and
24 services with Indigenous companies. Our work to date
25 serves as the basis of the establishment of

1 participation agreements with Indigenous communities
2 most affected by the project and we see these kinds of
3 formal agreements as creating a framework for even
4 greater ongoing cooperation and clarify on important
5 issues, including environmental stewardship and economic
6 benefits.

7 Through our extensive engagement we
8 have identified 14 Indigenous groups, both First Nation
9 and Métis, that are affected by Frontier through
10 proximity of traditional territory land use and other
11 potential effects. Teck is delighted to inform the
12 Joint Review Panel that we have now successfully
13 concluded agreements with each of these Indigenous
14 groups. Specifically, Chair, we now have agreements --
15 and if I may, I intend to list the following Indigenous
16 groups where we have reached agreement, so bear with me:

- 17 - Athabasca Chipewyan First Nation
- 18 - Mikisew Cree First Nation
- 19 - Fort McKay First Nation
- 20 - Fort Chipewyan Métis
- 21 - Fort McKay Métis
- 22 - Fort McKay [sic] Métis 1935
- 23 - Fort McKay [sic] First Nation No. 468
- 24 - Métis Nation of Alberta Region 1 and
25 its members Locals

- 1 - Athabasca Landing Local No. 2010
- 2 - Buffalo Lake Local No. 2002
- 3 - Conklin Local No. 193
- 4 - Lac La Biche Local No. 1909
- 5 - Owl River Local No. 1949
- 6 - Willow Lake Local No. 780

7 These agreements demonstrate that we
8 have fully addressed all Indigenous community concerns
9 associated with the project and concerns within our
10 control. Chair, these agreements are comprehensive and
11 are intended to last the project life. They capture
12 vital commitments from Teck regarding mitigation of
13 project effects on traditional land use and the
14 environment. They also include provision of benefits
15 through training, employment, contracting opportunities
16 as well as financial payments.

17 Mr. Chair, we are pleased with the
18 outcomes of our consultations efforts to date, but at
19 the same time we recognize that this is only the
20 beginning. We know that we must continue to implement
21 our Indigenous Peoples Policy and maintain excellent
22 relationships with our neighbours to provide further
23 lasting benefit. And finally, we have committed to do
24 just that. This includes supporting Indigenous,
25 provincial and federal governments, working on

1 outstanding matters as part of issuing final approvals.
2 Tech has and will continue to be a constructive and
3 valued regional contributor to the implementation of
4 government-to-government resolutions.

5 Panel, I now want to turn to some
6 environmental aspects of the project.

7 When I began working in Canadian oil
8 sands it was very apparent to me that government plays a
9 very active role in the governance and oversight of this
10 industry. Today, mine operators must comply with
11 important directives, frameworks and regulations from
12 the Alberta Energy Regulator and the governments of
13 Alberta and Canada. These include the Tailings
14 Management Framework, the Carbon Competiveness Incentive
15 Regulation, and the frameworks of the Lower Athabasca
16 Regional Plan. As a responsible developer, we will
17 comply with these government requirements and we will
18 continue to do our part in supporting regional
19 monitoring initiatives.

20 With respect to Indigenous communities,
21 one of the key reasons we have been able to reach
22 agreements is because we are committed to developing
23 Frontier in a responsible manner. This is evident, I
24 believe, in our comprehensive and robust Environmental
25 Impact Assessment for Frontier that considers the

1 extensive measures to mitigate environmental effects
2 that we have proposed as part of the project submission.

3 That said, Panel, there are five
4 important topics that have been raised during the review
5 of Frontier that I want to speak to in this opening
6 statement. They are the Ronald Lake Bison Herd, Wood
7 Buffalo National Park, greenhouse gas emissions, water
8 use, and finally, closure and mine reclamation.

9 Let me start with the Ronald Lake Bison
10 Herd.

11 Let me say, Panel, we fully recognize
12 and respect the importance of the Ronald Lake Bison Herd
13 to Indigenous communities. We have listened and have
14 carefully considered the concerns raised by Indigenous
15 communities with respect to the herd. The main concerns
16 centre on ensuring that the herd is viable for the long
17 term and that Indigenous communities are able to hunt
18 the herd in a sustainable way. That is why we have
19 worked hard alongside Indigenous communities and
20 government agencies for many years.

21 In fact, recognizing how important this
22 herd is, we have gone well beyond just mitigating
23 potential project impacts to the herd and our additional
24 efforts have included -- and again, I will provide some
25 examples:

1 - funding and support for additional
2 studies of the Ronald Lake Bison Herd;

3 - support to the province towards the
4 overall development of a Wood Bison Management Plan;

5 - advocating alongside First Nations
6 for the listing of the herd under the *Wildlife Act*,
7 which has prohibited non-Indigenous hunting; and
8 finally,

9 - supporting efforts led by Mikisew
10 Cree First Nation to establish a Conservation
11 Stewardship Area south of Wood Buffalo National Park.

12 Panel, Teck is uniquely positioned to
13 partner in ongoing efforts related to the herd as an
14 operator in the region. To date we have provided over
15 \$2.5 million towards an improved understanding of the
16 herd. We are also committed to the continuing
17 participation in, and funding of, the Ronald Lake Bison
18 Herd Technical Team. This group is mandated to draw
19 expertise from its multi-stakeholder membership to
20 identify and gather knowledge that will contribute to
21 the sound management of the herd and its range.

22 In addition, Teck has developed a
23 project-specific mitigation, monitoring and adaptive
24 management plan specific to the Ronald Lake Bison Herd.
25 This plan includes very explicit mitigation measures

1 that we will undertake, for example, limit the size of
2 disturbances, implement ongoing reclamation to create
3 high-quality bison habitat, and also create safe
4 wildlife movement corridors.

5 Panel, it is also important to note
6 that one of the most significant risks to the herd is
7 disease transmission from bison in Wood Buffalo National
8 Park. This risk is not new; it has existed since
9 diseased bison were introduced into the Park nearly a
10 century ago. Our extensive work and assessment has
11 shown that the Frontier Project will not increase the
12 risk of disease transmission.

13 To reiterate, Panel, we are very keen
14 to continue to play our part to promote the long-term
15 sustainability of the herd.

16 I would like to now speak to Wood
17 Buffalo National Park World Heritage Site and the
18 Frontier Project.

19 Let me begin by saying that we fully
20 respect the ecological and cultural significance of the
21 Park. As part of our environmental assessment we
22 conducted a comprehensive review specifically on
23 potential impacts to the Park, the first proposed oil
24 sands development to do so. This assessment concluded
25 that potential effects of Frontier on the "outstanding

1 universal value" of the park would be negligible and
2 would not impact the integrity of the Park.

3 As I mentioned, we fully support the
4 MCFN lead initiative to create a Major Conservation
5 Stewardship area at the Park's southern boundary. Also,
6 the Government of Canada is developing an Action Plan to
7 ensure the Park's outstanding universal value is
8 protected for generations to come. This was one of the
9 recommendations of the World Heritage Committee. And,
10 Panel, again, Teck is very keen and very supportive to
11 continue to play our part.

12 I now very briefly want to cover
13 greenhouse gas emissions. And again, let me duly
14 recognize that climate change is a major global
15 challenge.

16 As I mentioned earlier, our focus is on
17 helping meet energy demand by developing Canada's oil
18 resources in the most responsible way. This includes
19 incorporating industry-leading practices for responsible
20 development, including the latest technologies and
21 methods to reduce greenhouse gas emissions. These
22 include the use of cogeneration for heat and power
23 needs, and the PFT process that I mentioned earlier.

24 Reiterating -- and I think it is worth
25 reiterating -- this process reduces the carbon content

1 of our oil at the mine site, producing a better quality
2 product that can be transported efficiently to market.
3 As a result of these measures, Frontier's production is
4 amongst the lowest greenhouse gas intensity of any
5 Canadian oil sands production.

6 Again, bear with me but I do think it
7 is also worth re-stressing that Frontier will have a
8 lower greenhouse gas intensity than half of all the oil
9 currently refined in the U.S.

10 Finally, I do want to say that Teck
11 supports action at all levels to combat climate change
12 and we advocate strongly for efficient and effective
13 climate action policies.

14 As the Province and Canada advance
15 details of their own climate action plans, including the
16 100-megatonne annual limit on emissions from oil sands,
17 we remain very confident that Frontier will fit within
18 the annual limit and compete from a greenhouse gas
19 intensity point of view in Canada and globally.

20 Panel, I would now like to highlight a
21 few aspects of Frontier's water use.

22 Firstly, Frontier will be amongst the
23 lowest river water use intensities in the oil sands,
24 with an average of 1.9 barrels of river water per barrel
25 of bitumen produced. This compares to an industry

1 average of 2.5.

2 Also, the Frontier Project's Water
3 Management Plan aligns with the Surface Water Quantity
4 Management Framework for the Lower Athabasca River.

5 Added to this, Frontier has been
6 designed to allow storage of water to support operations
7 for four months or more. This allows us to stop water
8 withdrawals during periods of low river flow.

9 Our overall water management plan is
10 described in detail in the Hydrology and Water Quality
11 Mitigation, Monitoring and Adaptive Management Plan for
12 the Frontier Project.

13 Mr. Chair, turning to closure and
14 reclamation.

15 In the past, reclamation planning was
16 done only towards the end of the mine's life. Today, we
17 begin reclamation planning at the start, before mining
18 begins. We also carry out progressive reclamation,
19 which means that we reclaim portions of the site while
20 mining continues in other parts of the site. This
21 allows for shorter timeframes to return land back for
22 traditional and other uses.

23 To ensure that reclamation goes as
24 planned we have developed a Reclamation Monitoring Plan.
25 This plan will be routinely updated in cooperation and

1 collaboration with Indigenous communities and
2 regulators. Monitoring will include vegetation,
3 landform stability, as well as the quantity and quality
4 of surface and groundwater draining through the system.
5 Collected information will be integrated and analyzed to
6 ensure success of reclamation.

7 Panel, our overarching goal is to
8 support the development of a diverse, self-sustaining,
9 locally common boreal forest landscape.

10 Mr. Chair and Joint Review Panel
11 Members, I will conclude.

12 The Frontier Application before you is
13 one of the most comprehensive in the history of oil
14 sands development in Canada. It's a culmination of 10
15 years of in-depth consultation and detailed assessment.
16 Together with Indigenous communities affected by the
17 project, we have executed agreements that provide a
18 framework for even greater cooperation going forward.

19 Crucially, if approved, the Frontier
20 Project will deliver over \$70 billion to Canada in the
21 form of tax revenues and royalties over the project's
22 life. These are significant funds that can support
23 investment in education, healthcare and more.

24 Panel, we believe in Frontier. It's a
25 world-class project that Teck can develop responsibly

1 and competitively. We are therefore seeking your
2 considered recommendation to proceed with the project.

3 I would now like to thank our
4 Indigenous partners, the Joint Review Panel, Panel
5 staff, government representatives, other stakeholders,
6 and of course my team. Without the hard work, extensive
7 participation and feedback from such a diverse group,
8 this project would not be where it is today.

9 Chair, this concludes our opening
10 statement.

11

12 MR. IGNASIAK: Thank you.

13 Mr. Chair, I think it might be a good
14 time for a break but I did have one question I just
15 wanted to ask the witness before we break.

16 Mr. McFadyen, you listed off 14
17 Indigenous groups during your opening statement. You
18 referred to the Fort McKay Métis 1935 and the Fort McKay
19 First Nation No. 468. I understand those were meant to
20 be references to Fort McMurray Métis 1935 and Fort
21 McMurray First Nation No. 468; is that correct.

22 MR. McFADYEN: So, Chair, if I made a
23 mistake there, I apologize. I think I made a mistake.

24 MR. IGNASIAK: Thank you.

25 THE CHAIRPERSON: Thank you. So we'll

1 take a break now. We'll break for 20 minutes. It looks
2 like it's just a little after a quarter to, so around
3 five after 11:00 we will resume. Thank you.

4 --- Upon recessing at 1047 / Suspension à 1047

5 --- Upon resuming at 1109 / Reprise à 1109

6 THE CHAIRPERSON: Please be seated.
7 Mr. Ignasiak, before you get started, there's a few
8 matters I'd like to deal with, if that's okay.

9 So I understand there's some parties
10 who arrived a bit late. I understand that there's
11 somebody here who may be wanting to just make sure
12 Council of Canadians, Stand.earth, and Sierra Club are
13 registered. Is that part in the room right now, and if
14 so, could you come forward.

15 MR. HUDEMA: Yeah, I just wanted to
16 register. My name is Mike Hudema. I'm here to register
17 on behalf of the Council of Canadians, Stand.earth, the
18 Western Canadian Wilderness Committee, and the Sierra
19 Club.

20 THE CHAIRPERSON: Okay, thank you, Mr.
21 Hudema.

22 And I also understand there's a group I
23 think of trappers here, Peter Hoffman and others.
24 Peter, do you want to step forward?

25 MR. HOFFMAN: Okay. Yeah, thank you.

1 My name is Peter Hoffman and I and a few trapping
2 partners would like to have the opportunity to address
3 this hearing. And that's why we're here registering
4 late, because we were ill-informed of the schedule.

5 THE CHAIRPERSON: Okay, thank you.
6 We'll look for an opportunity to schedule you in and
7 we'll let you know. Does Secretariat staff have a way
8 to get a hold of you?

9 MR. HOFFMAN: Yes, I provided them with
10 a phone number and email address.

11 THE CHAIRPERSON: Okay.

12 MR. HOFFMAN: And they can notify me --

13 THE CHAIRPERSON: Okay, thank you.

14 MR. HOFFMAN: -- of the schedule.

15 Thank you.

16 THE CHAIRPERSON: Thank you, Mr.
17 Hoffman.

18 And I understand George Clark also
19 wanted to speak to the Panel.

20 MR. CLARK: Mr. Chairman, George Clark,
21 Trapline 2939. I'd like to register as well.

22 THE CHAIRPERSON: Okay, thank you, Mr.
23 Clark. We'll look for an opportunity for you as well.
24 And do we have a way to get a hold of you as well?

25 MR. CLARK: Pete has my information.

1 THE CHAIRPERSON: Okay.

2 MR. CLARK: Thank you.

3 THE CHAIRPERSON: Thank you.

4 Sorry, you gentlemen ...

5 MR. D. SHEVOLUP: My name is Darryl
6 Paul Shevolup I am the senior holder of Trapline 2346,
7 and yeah, I'd like to testify at these hearings.

8 THE CHAIRPERSON: Okay, so we'll look
9 for an opportunity for you.

10 MR. D. SHEVOLUP: Thank you.

11 THE CHAIRPERSON: And do we have a way
12 to get a hold of you?

13 MR. D. SHEVOLUP: Just by phone only or
14 by mail -- by box. I don't believe in technology that
15 way. I'm old school.

16 THE CHAIRPERSON: Okay, that could
17 raise a bit of a challenge for us, but make sure you
18 have our phone number --

19 MR. D. SHEVOLUP: However, Peter
20 Hoffman is --

21 THE CHAIRPERSON: He's going to --

22 MR. D. SHEVOLUP: He's going to take
23 care of the correspondence if it has to be done that
24 way.

25 THE CHAIRPERSON: Okay.

1 MR. D. SHEVOLUP: Thank you.

2 THE CHAIRPERSON: Thank you.

3 Sir?

4 MR. C. SHEVOLUP: Hello, my name's
5 Chuck Shevolup. I'm junior partner with my brother, and
6 I want to testify at these hearings.

7 THE CHAIRPERSON: Okay, and will we get
8 a hold of you through Mr. Hoffman as well?

9 MR. C. SHEVOLUP: It would be the same
10 way as -- and the Chip Band have my number too if they
11 need to get a hold of me, but -- okay.

12 THE CHAIRPERSON: Okay, so we'll look
13 for an opportunity to schedule you in as well. Thank
14 you.

15 Any other matters before we get to
16 carrying on with direct?

17 Seeing none, Mr. Ignasiak.

18 MR. IGNASIAK: Thank you Mr. Chair.

19 EXAMINATION IN-CHIEF

20 MR. IGNASIAK: Mr. McFadyen, I'd like
21 to start with the Government of Canada submissions,
22 which are marked as Registry Document -- or I'll say
23 Exhibit 489. The Parks Canada Agency portion of these
24 submission is located from PDF 380 to PDF 485. Parks
25 Canada has made a number of recommendations and has also

1 reached conclusions on several specific issues.

2 Mr. McFadyen, can you provide the JRP
3 with Teck's views on Parks Canada's recommendations to
4 the Panel.

5 MR. McFADYEN: Yes, I would be happy to
6 provide our overall assessment on the recommendations
7 made by Parks Canada.

8 Teck's detailed position on these
9 recommendations is set out in writing in Teck's Reply
10 Submission, which was filed September 12th, which is
11 CEAA Registry Document 504.

12 Our specific responses to Parks
13 Canada's recommendations are at PDF 41 through to 52 of
14 that submission.

15 Mr. Chairman, you will note in our
16 written response to Parks Canada's recommendations that
17 Teck agrees, or agrees in part, with many of these
18 recommendations. We generally agree with those
19 recommendations that seek to have Teck monitor potential
20 project effects on bison, waterfowl, and migratory
21 birds. Teck also agrees that if the project proceeds,
22 it should continue to participate with the Ronald Lake
23 Bison Technical Committee and the Oil Sands Bird
24 Technical Committee.

25 However, there are several

1 recommendations that we do not agree with. In our view,
2 Parks Canada is seeking to have Teck undertake
3 activities that are not connected to the project and
4 that are the responsibility of Parks Canada as managers
5 of Wood Buffalo National Park. For example, Parks
6 Canada recommends that Teck fund a study to assess the
7 range, movements, and habitat use of diseased delta
8 bison in Wood Buffalo National Park to inform mitigation
9 planning.

10 Mr. Chairman, we predict that the
11 Frontier Project will have no effect on diseased bison
12 in the park and that the management of the park is
13 squarely the responsibility of Parks Canada. As a
14 matter of fact, Parks Canada has acknowledged for years
15 that it needs to take steps to manage diseased bison in
16 Wood Buffalo National Park. This is not an initiative
17 that should be undertaken by Teck.

18 This recommendation regarding delta
19 bison in the park is just one example of where we think
20 Parks Canada's recommendations are not appropriate.

21 In addition, Mr. Chairman, we note that
22 many of the issues raised by Parks Canada have also been
23 advanced by Indigenous communities. In this regard,
24 Teck has reached agreements with Indigenous communities,
25 including ACFN and MCFN, regarding Teck's environmental

1 mitigation and management obligations regarding Wood
2 Buffalo National Park and related issues including
3 bison, water, and migratory birds. However, what really
4 concerns us with Parks Canada's submissions are not the
5 recommendations, but the conclusions that they have
6 reached regarding the project's effects on Wood Buffalo
7 National Park, the PAD, and other environmental
8 components.

9 MR. IGNASIAK: One of those conclusions
10 relegates to bison. Parks Canada states there are
11 likely to be significant adverse effects to bison if the
12 project is approved. Does Teck agree with this?

13 MR. McFADYEN: No, Chairman, we do not.
14 And I will ask Mr. Speller to elaborate on why we think
15 Parks Canada's conclusion is wrong.

16 MR. SPELLER: Mr. Chairman, for
17 context, the Ronald Lake herd is disease-free, meaning
18 they are free from bovine tuberculosis and brucellosis,
19 unlike the Wood Buffalo National Park bison to the
20 north, which carry both diseases.

21 I will be referring to Wood Buffalo
22 National Park simply as "the park."

23 The risk of disease transmission from
24 park bison to any disease-free bison heard is the
25 greatest threat to wood bison recovery in Canada, as

1 identified in the Government of Canada's recovery
2 strategy for the wood bison.

3 With respect to mitigation and
4 management actions to reduce the risk of disease
5 transmission, Teck has put forward a number of options
6 that could be considered as part of overall cooperative
7 management plan. Parks Canada has stated that "there
8 are no proven additional mitigations to reduce the
9 effects," in part because those put forward have
10 questionable effectiveness.

11 Mr. Chairman, we respectfully disagree.
12 As described in the federal wood bison recovery
13 strategy, bison control zones are currently being used
14 to keep disease-free herds separate from diseased park
15 bison.

16 For example, the Hay-Zama bison herd
17 has a bison control zone along the east side of the
18 range in Alberta, and the Mackenzie Bison Sanctuary and
19 the Nahanni herd range is separated from the park by a
20 control zone administered by the Northwest Territories
21 and supported by Parks Canada themselves. Fencing has
22 been effectively used to keep bison within Elk Island
23 National Park for decades. Fire management is
24 considered a useful tool for bison habitat management in
25 British Columbia and the Northwest Territories.

1 In short, there are effective
2 mitigations available. However, the responsibility to
3 deal with the risk of disease transmission from the
4 diseased park bison lies with Parks Canada, Environment
5 and Climate Change Canada (or ECCC, as I will refer to
6 them), and other provincial and territorial governments.

7 Teck has stated their commitment to
8 working with the responsible authorities to explore
9 possible mitigation measures for which Teck has stated
10 they are supportive but does not have the authority to
11 implement independently.

12 Mr. Chairman, Parks Canada and ECCC
13 agree with our assessment conclusion that there is a
14 high risk of disease transmission from the diseased park
15 bison to Ronald Lake herd today, with or without
16 Frontier. Parks Canada, ECCC, and the Province of
17 Alberta should be implementing mitigation measures to
18 reduce this risk now.

19 Where we do not agree is what may
20 happen if Frontier were to be constructed. Parks
21 Canada, ECCC, and others have stated that the project
22 will increase that risk of disease transmission because
23 they believe Frontier will push the Ronald Lake bison
24 herd north, farther into the park and into closer
25 contact with diseased park bison.

1 Mr. Chairman, based on our extensive
2 analysis, we do not predict this to happen. We predict
3 that, although the project will displace bison from the
4 project disturbance area, the project will not increase
5 the risk of disease transmission.

6 Before I explain why we do not agree,
7 let me describe the team that has done the analysis
8 that has brought us to this conclusion.

9 Our analysis has been led by
10 Martin Jalkotzy, sitting here behind me. Mr. Jalkotzy
11 is a wildlife biologist with over 40 years' experience,
12 including several years working with bison in the
13 Northwest Territories. He is a member of the Ronald
14 Lake Bison Herd Technical Team, sitting alongside
15 representatives from ECCC, Parks Canada, Alberta
16 Environment and Parks, Indigenous groups, and industry.

17 Mr. Jalkotzy has led a highly competent
18 team to develop the analysis in front of the Panel
19 today, including in-house experts on habitat
20 suitability, connectivity, and population viability
21 analysis modelling; bison researchers from the
22 University of Alberta that work with the Ronald Lake
23 Bison Herd Technical Team; as well as third-party
24 biologists like John Nishi, a recognized expert in wood
25 bison who recently updated the Alberta government's

1 Bison Status Report for Alberta in 2017.

2 Mr. Chairman, there are two reasons why
3 the risk of disease transmission could increase, both
4 associated with the herd moving farther north into the
5 park. First, if the herd is food-limited in its range,
6 then they may move to find additional food resources,
7 and they could move north, although north is not their
8 only option. Second, the herd could be displaced
9 further north as a result of trying to avoid disturbance
10 associated with the project, such as noise, light, or
11 human presence. This includes increased predator risks.
12 Or at its simplest, the herd may move farther north into
13 the park if they run out of food or if they're scared
14 north.

15 Mr. Chairman, our analysis concludes
16 that neither of these should happen.

17 Let's start with food availability.
18 ECCC and our analysis agree that the herd is not
19 currently food-limited. Our analysis shows that if you
20 look at how much forage is in the herd's current range,
21 and then you remove forage potentially lost due to the
22 direct and indirect effects of Frontier, there remains
23 sufficient forage for the herd to not only maintain
24 itself but to grow.

25 ECCC's analysis does not agree with

1 this conclusion. However, our review of ECCC's carrying
2 capacity methods indicate that they made a number of
3 mistakes, as we describe in Attachment 5 to the
4 September 12 Teck Reply Submission, which is marked as
5 Exhibit 504, and begins on PDF page 330. Once
6 corrected, ECCC's carrying capacity estimates should
7 align with ours and demonstrate that the herd will not
8 be food-limited if the project were to be constructed.

9 With respect to the second reason,
10 disturbance, the notion that the herd will move farther
11 north into the park to escape project disturbance is not
12 in any way supported by existing evidence. First,
13 during Teck's drilling program, monitoring indicated the
14 herd did not abandon their core range immediately
15 adjacent to the drilling program. We know that across
16 their range in northern Canada, healthy wood bison herds
17 live in areas alongside human disturbance.

18 ECCC and Parks Canada suggest that
19 increased linear disturbance in the herd's range will
20 result in increased numbers of wolves and increased wolf
21 predation. Mr. Chairman, linear disturbances are few
22 north of the project area, and the project development
23 does not create a bunch of linear disturbance because it
24 is a mine, not a linear project. Our experts believe it
25 is highly unlikely that wolf densities will increase.

1 Therefore, Mr. Chairman, based on this
2 our conclusion is that the Ronald Lake bison herd is
3 unlikely to shift their range north and the risk of
4 disease transmission will not increase as a result of
5 the project.

6 Our conclusions regarding the herd's
7 abundance and range, habitat suitability and
8 connectivity, carrying capacity, direct and indirect
9 effects on mortality and supporting work is well
10 grounded in science, is transparent and defensible and
11 can be relied on by the Panel.

12 MR. IGNASIAK: Thank you, Mr. Speller.

13 Parks Canada also concludes that the
14 effects of the project on the outstanding universal
15 value, or OUV for short, of Wood Buffalo National Park
16 are likely to be adverse and reduce Canada's ability to
17 restore the desired outcomes related to migratory
18 waterfowl.

19 What is your view on this conclusion?

20 MR. SPELLER: Mr. Chairman, we do not
21 agree with this conclusion. Our assessment of the
22 Frontier Project focused on changes in migratory
23 waterfowl habitat and mortality risk, as well as changes
24 in stopover habitat for migratory birds in the regional
25 study area.

1 Our assessment concluded that the
2 predicted effects on waterfowl would be of low
3 environmental consequence in the regional study area.

4 The predicted loss of habitat in this
5 regional study area, which is on the flyway for
6 migratory waterfowl on their way to the park, is not
7 expected to affect migratory waterfowl populations in
8 the park.

9 It is important to note that the
10 project is not being built within the park and the
11 project is not predicted to directly or indirectly
12 affect migratory waterfowl stopover or breeding habitat
13 within the park.

14 Mortality risk from project
15 infrastructure, including tailings areas, is also
16 expected to have negligible effects on migratory
17 waterfowl populations that breed, moult or stop over in
18 the park. Our assessment included cumulative effects
19 from all oil sands developments might have measureable
20 effects. However, they are not expected to threaten
21 sustainability of bird populations in the park.

22 Also, as supported by ECCC in their
23 submission to the Joint Review Panel from August 31st --
24 and this is page ECCC 138 of their filing -- there is no
25 research to support the idea that development in

1 mineable oil sands area is altering or shifting
2 migratory bird migration pathways to the park,
3 recognizing longer flight paths could affect the fitness
4 of these birds.

5 We recognize indigenous knowledge has
6 indicated a shift has been occurring for decades.

7 MR. IGNASIAK: Parks Canada also
8 states, at pdf 419 of the Government of Canada's
9 submission, that with respect to migratory waterfowl --
10 and I quote:

11 "The predicted contributions from
12 the Project, including the
13 implementation of Teck's proposed
14 mitigations, the effects associated
15 with contamination from tailing
16 ponds in the oil sands region,
17 including the project, will
18 adversely affect Wood Buffalo
19 National Park OUV and reduce
20 Canada's ability to achieve/restore
21 the desired outcomes. While there
22 is uncertainty about the degree to
23 which contacts with tailing ponds
24 is causing mortality, it has
25 potentially significant effect to

1 the ecological integrity of Wood
2 Buffalo National Park and the Wood
3 Buffalo National Park outstanding
4 universal values." (As read)

5 Does Teck have a response to this?

6 MR. SPELLER: Mr. Chairman, our
7 assessment acknowledges that there is a risk of
8 mortality for birds that come in direct contact with
9 tailings ponds. However, regional monitoring programs
10 indicate that the number of birds killed per year due to
11 interactions with tailings areas is small compared to
12 other sources of mortality.

13 Based on data recently collected by the
14 Oil Sands Bird Contact Monitoring Program, of the
15 thousands of birds observed landing in tailings areas
16 bird fatalities have averaged approximately 163 birds
17 annually between 2013 and 2015, for multiple oil sands
18 projects combined.

19 Bird fatalities associated with the
20 project, although regrettable, are not predicted to have
21 a measurable effect on sustainability of waterfowl
22 populations in north eastern Alberta, including the
23 park.

24 Mr. Chairman, Attachment 13 of our
25 September 12th submission helps provide some perspective

1 on the term "small".

2 Ducks Unlimited estimate a North
3 American waterfowl population at approximately 48
4 million. Ducks Unlimited also indicate duck harvest
5 levels, meaning the number of ducks killed by hunters,
6 at approximately 11 million. Understanding that
7 approximately 23 per cent of waterfowl are allowed to be
8 harvested as part of conservation efforts gives us the
9 perspective that migratory bird mortalities due to the
10 tailings ponds is small.

11 In addition, Attachment 29 of our
12 September 12th submission contains a synthesis of
13 human-related avian mortality in Canada from 2013, which
14 indicates activities such as hunting and transmission
15 lines are responsible for millions of shore bird and
16 waterfowl kills annually.

17 This does not mean that bird
18 mortalities in oil sands mines are not regrettable, but
19 it highlights our conclusion that these numbers are
20 small.

21 Based on this, our assessment concludes
22 that the project mortality risk would have negligible
23 effects on waterfowl populations using the park during
24 migration or for breeding or moulting.

25 MR. CHIASSON: Mr. Chairman, I would

1 like to also add to Mr. Speller's comments and point out
2 that Teck is committed to implementing a bird deterrent
3 system based on the best available technology. These
4 systems are also recognized as a key component of
5 waterfowl protection plans throughout the Mineable Oil
6 Sands Area.

7 MR. IGNASIAK: With respect to whooping
8 crane, Parks Canada has identified two issues. These
9 are the loss of stopover habitat and the potential for
10 whooping crane to be exposed to contaminants during
11 migration.

12 Parks Canada states that the project
13 and cumulative stopover habitat loss will have
14 significant effects in ensuring that that the whooping
15 crane population reaches the recovery strategy goal and
16 the eventual recovery and down-listing from an
17 endangered species.

18 Parks Canada states that if the project
19 is approved, even with the implantation of its
20 recommendations, Parks Canada expects significant
21 adverse environmental effects to remain due to the
22 uncertainty in the effectiveness of the mitigations.

23 Could you please respond to this?

24 MR. McFADYEN: I will ask Mr. Speller
25 to respond.

1 MR. SPELLER: Mr. Chairman, we do not
2 agree with their conclusion, for several reasons.

3 First, our assessment has different
4 conclusions. We concluded mortality risk due to the
5 project and cumulative oil sands development is not
6 expected to result in a change in abundance of the
7 whooping crane population, although 2016 data from
8 Bidwell et al suggests mortality risks could be higher
9 than originally predicted in the Project Update. But
10 this does not change our conclusion.

11 It is important to note that whooping
12 crane breeding sites are 240 kilometres north of the
13 project, and we did not identify a valid linkage between
14 those breeding sites and the project.

15 Our assessment also concluded changes
16 to stopover habitat might alter whooping crane
17 distribution during migration. However, even with the
18 consideration of the new whooping crane data, project
19 effects are not expected to threaten the sustainability
20 of the regional whooping crane population, nor affect
21 the breeding populations in the park.

22 Second, Attachment 15 of our September
23 12th submission presents ECCC information on whooping
24 crane from 2016 presented to the UNESCO Reactive
25 Mission. ECCC concludes that all cranes migrate over

1 the oil sands region but a small percentage stop over
2 and most stopovers are short in duration.

3 They also conclude survival during
4 migration seems high and identify more data is needed.
5 This is consistent with our assessment.

6 Finally, Parks Canada's conclusions
7 appear contradictory to their Strategic Environmental
8 Assessment for Wood Buffalo National Park. The
9 Strategic Environmental Assessment concluded a positive
10 future trend for whooping crane populations, reaching
11 the recovery strategy goal and also down-listing from
12 their current endangered status.

13 Our understanding is these conclusions
14 take into consideration future cumulative effects from
15 oil sands development, including the Frontier Project.

16 As Mr. Chiasson mentioned a few minutes
17 ago, Teck has stated their commitment to implement best
18 available bird deterrent technology for the project and
19 has drafted a Waterfowl Protection Plan to mitigate and
20 monitor potential effects of the project.

21 In addition, as part of the September
22 12th submission to the Joint Review Panel, Teck did
23 commit to investigate and implement, if possible,
24 additional systems for deterring whooping cranes.

25 MR. IGNASIAK: Thank you.

1 ECCC has also made submissions
2 regarding caribou. Specifically, ECCC recommended that
3 Teck -- and again I quote:

4 "Develop and implement a
5 compensation plan within the Red
6 Earth caribou range prior to
7 project construction to mitigate
8 for permanent and long-term loss of
9 caribou habitat. The compensation
10 plan should target the restoration
11 of linear disturbance features in
12 the Red Earth range and be based on
13 a minimum four-to-one reclaimed
14 disturbed compensation ratio." (As
15 read)

16 Mr. Chiasson, can you please provide
17 Teck's view on this?

18 MR. CHIASSON: Mr. Chairman, we do not
19 agree with ECCC's recommendation.

20 First, we must reiterate that the
21 project does not fall within the Woodland caribou ranges
22 as defined by the Government of Alberta and the
23 Government of Canada. Considering this, the project
24 will not remove any habitat or displace any caribou from
25 the Red Earth or the Richardson Herd Ranges.

1 However, we acknowledge that recent GPS
2 collar data has shown that caribou from the Red Earth
3 range moved through the project development area. This
4 has been confirmed by indigenous knowledge provided by
5 indigenous communities.

6 As part of their submission ECCC also
7 asserted that a recent defined important area for the
8 Red Earth herd in the Draft Provincial Woodland Caribou
9 Range Plan, Government of Alberta 2017, which overlaps
10 the northern portion of the terrestrial LSA, was
11 evidence that the project directly impacted the Red
12 Earth herd.

13 However, the regulatory significance of
14 important areas for the caribou and how they will be
15 incorporated into range plans is unclear.

16 As of right now these important areas
17 are not part of the formal designated ranges and
18 therefore should not be held to the same restrictions or
19 expectations.

20 Lastly Teck is aware that the
21 designated ranges for the Red Earth and Richardson herds
22 might be updated as new information becomes available
23 and, once finalized, Teck will assess the plans,
24 recommendations and determine whether or to what extent
25 they are appropriate to include in the project's Draft

1 Wildlife Mitigation and Monitoring Plan and their
2 relevance to the project's Draft Biodiversity Management
3 Plan.

4 Similarly when final arranged plans for
5 the Red Earth, Richardson and west side of the Athabasca
6 ranges become available, Teck, in collaboration with
7 regulators and indigenous communities, will assess their
8 recommendations and determine whether or to what extent
9 they are appropriate to include in the project's
10 mitigation and monitoring plans and as part of Teck's
11 adaptive management process.

12 MR. IGNASIAK: Thank you.

13 Finally Parks Canada, at pdf 428
14 through 463 of the Government of Canada's submission,
15 discusses water quality and quantity in the Athabasca
16 River and the pad and concludes that the project will
17 likely significantly affect each of these in Wood
18 Buffalo National Park.

19 Mr. Speller, can you comment on this?

20 MR. SPELLER: Yes, Mr. Chairman.

21 I will discuss our specific inclusions
22 regarding water, including hydrology and water quality
23 in a moment.

24 However, first I would like to identify
25 an issue we have noted throughout Parks Canada's

1 submission and conclusions.

2 Parks Canada appears to take the view
3 that any change is deemed to be significant. However,
4 without situating these findings and relevant thresholds
5 or guidelines or ecological context, it inflates the
6 effects of the project, in our view, exaggerates in the
7 layperson's mind what the project's actual effects will
8 be.

9 Our assessment looks at the changes
10 predicted to occur due to the project and from
11 cumulative development and assesses those changes
12 through effects analysis and risk assessment to see if
13 there is a potential adverse effect or risk to the
14 outstanding universal value of the park.

15 Not every predicted change causes a
16 significant effect or an adverse risk. So in many cases
17 we predict a change, but that change is small and may
18 not actually be perceptible. We have tried to put our
19 predictions in a proper assessment context so reviewers
20 can understand our perspective on which predicted
21 changes matter and which ones are considered negligible.

22 Mr. Chairman, our approach is
23 consistent with assessments Parks Canada has conducted
24 for projects in World Heritage site parks, again noting
25 that Frontier is not proposed to be built within the

1 park.

2 Now with respect to the issue of
3 hydrologic changes, the project is predicted to result
4 in negligible changes in the Athabasca River flow and
5 water level. We predict mean seasonal flow changes in
6 the Athabasca River due to the project's maximum water
7 withdrawals will range from 0.3 per cent in summer to
8 1.56 per cent in winter. We predict the maximum flow
9 depth change to be one centimetre at the most critical
10 navigation point or Pinch Point on the Athabasca River,
11 which is located adjacent to Poplar Point.

12 To put this one centimetre in context,
13 we predict water level in the Athabasca River can
14 decrease by 90 centimetres or increase by 28
15 centimetres, depending on predicted potential climate
16 change scenarios.

17 These negligible changes in the
18 Athabasca River flow are predicted to result in
19 negligible changes to the hydrologic and water level
20 conditions in the Peace Athabasca Delta.

21 We predict the change in Lake Athabasca
22 water level due to the project is also approximately one
23 centimetre. Under the influence of climate change only
24 we predict the average increase in the Lake Athabasca
25 water level could be 33 centimetres and the average

1 decrease could be 13 centimetres on an annual basis.

2 Mr. Chairman, it's important to note
3 that our predictions assume the project is taking water
4 at its maximum water withdrawal rate of 4.2 metres cubed
5 per second all year long and throughout the mine life.
6 The actual project water withdrawal rates will be
7 required to be less than this most of the time during
8 the mine life to comply with the Surface Water Quantity
9 Management Framework.

10 Therefore, the predicted changes in
11 flow in water levels I have just described, even though
12 they are small, are still considered conservative.

13 With respect to the issue of water
14 quality, Parks Canada has noted changes to water quality
15 that are predicted to occur within Frontier's local
16 study area and has concluded that similar changes will
17 occur within the Peace Athabasca Delta and the park.

18 Mr. Chairman, this is not correct.

19 Multiple lines of evidence indicate
20 that the project will have negligible effects on water
21 quality within the Peace Athabasca Delta and the park.

22 Water quality models that simulate all
23 relevant project effects within the local and regional
24 watercourses and water bodies were used to support an
25 effects assessment on aquatic, wildlife and human health

1 risk. The assessment shows that effects on all of these
2 receptors will be negligible before any water has
3 reached the park.

4 These conclusions are supported by
5 monitoring programs, by industry, ECCC, Alberta
6 Environment and Parks and community-based monitoring.
7 Specifically ECCC has documented that water quality
8 signals return to background levels well before entering
9 the park, as shown in ECCC slides in Attachment 18 of
10 Teck's September 12th submission.

11 Community-based monitoring submitted by
12 the Mikisew Cree First Nation has confirmed that all
13 polycyclic aromatic hydrocarbons, which I will refer to
14 as PAHs, are below relevant guidelines in the Athabasca
15 River near the Delta.

16 And long-term monitoring by Alberta
17 Environment and Parks confirms that although some water
18 quality concentrations are above guidelines in the Lower
19 Athabasca River, the same trends are observed upstream
20 of oil sands development.

21 Similarly Parks Canada has expressed
22 concern that aerial emissions of metals and PAHs could
23 affect water quality in the Peace Athabasca Delta.

24 Several studies by researchers at the
25 University of Alberta, Alberta Environment and Parks and

1 ECCC have consistently shown that the majority of aerial
2 emitted metals and PAHs are deposited within 20 to 30
3 kilometres of the centre of oil sands mines and nearly
4 all constituent concentrations declined to near
5 background levels by about 50 kilometres, with no
6 samples collected within the Peace Athabasca Delta
7 measured at background levels.

8 While the project is located closer
9 than other developments to the park and the Peace
10 Athabasca Delta, it does not include the two major
11 contributors to aerial PAH emissions, namely an upgrader
12 or a coke piler, which have been estimated to contribute
13 approximately 50 per cent or more to the deposition of
14 PAHs associated with oil sands facilities.

15 Based on these lines of evidence and
16 consistent with the air modelling of transport and
17 deposition of metals and PAHs in the Project Update, the
18 deposition of PAHs and metals in the park and the Peace
19 Athabasca Delta are predicted to remain at levels that
20 are consistent with background conditions.

21 The Project Update demonstrates that
22 PAH and metal deposition in the park and the Peace
23 Athabasca Delta result in no adverse human health,
24 wildlife health or ecosystem effects.

25 MR. IGNASIAK: Thank you, Mr. Speller.

1 Next, there have been concerns raised
2 regarding elevated cancer rates in the area due to oil
3 sands development.

4 Can you please comment on whether Teck
5 has done anything to address this issue?

6 MR. McFADYEN: I will ask Mr. Koppe to
7 address this.

8 MR. KOPPE: Teck completed a
9 comprehensive human health risk assessment of its
10 Frontier Project. The HHRA followed an approach that's
11 consistent with guidance provided by regulatory agencies
12 like Health Canada and the United States Environmental
13 Protection Agency.

14 The HHRA included a detailed assessment
15 of cancer risks in the region, including the community
16 of Fort Chipewyan. The findings of the HHRA indicate
17 that the cancer risks associated with the project are
18 negligible.

19 We recognize that the risk of cancer is
20 an ongoing concern in Fort Chipewyan and that the issue
21 has been and continues to be studied by Alberta Health
22 Services.

23 I was recently informed by Alberta
24 Health Services that their follow-up report on cancer
25 incidents in Fort Chipewyan was updated, as scheduled,

1 which includes data for the period between 1997 and
2 2016. Currently, the report is in the process of being
3 shared with the community consistent with First Nations'
4 principles of ownership, control, access, and
5 possession.

6 In keeping with these principles,
7 Alberta Health Services informed me that it will be
8 leaving it up to the community to decide whether the
9 report will be shared more broadly.

10 MR. IGNASIAK: Thank you, Mr. Koppe.

11 Mr. Person, I understand your team was
12 responsible for the Frontier air quality assessment.
13 Could you please comment on what is required to conduct
14 an accurate air quality assessment?

15 MR. PERSON: Air quality assessment of
16 pollutants is an important input to evaluating human
17 health risk and wildlife health risk. The accuracy of
18 the predictions depend upon the accuracy and
19 completeness of the source and emission inventory, the
20 representativeness of the meteorological data, and the
21 model algorithms that represent the atmospheric physics
22 and chemistry processes.

23 It is important that the air quality
24 modelling comply with accepted regulatory requirements
25 and best practices. The Alberta air quality model

1 guideline is the standard assessment and modelling
2 protocol that describes both the accepted methods for
3 modelling and the required technical competencies of air
4 quality modelling practitioners.

5 The skills and technical competencies
6 required to complete proper air quality modelling
7 include education and specialized training in chemical
8 and physical meteorology and air pollution science,
9 experience in estimating and characterizing pollutant
10 emissions from a wide variety of emission sources, and
11 experience with the application of meteorological models
12 and dispersion models.

13 Those who conduct air modelling should
14 have the skill and knowledge to select the most
15 appropriate model for the task, review, interpret,
16 process and apply meteorological data in the models,
17 understand the difference between good and bad data,
18 understand and consider baseline concentrations,
19 implement quality assurance, quality control practices,
20 and appropriately interpret the model predictions.

21 MR. IGNASIAK: Thank you. Turning to
22 another topic. Parties like OSEC have claimed that
23 Teck's assessment of the benefits of the project are
24 incorrect or incomplete because it used an input/output
25 model rather than a cost-benefit analysis. Can you

1 respond to this?

2 MR. McFADYEN: Yes. I'll ask Mr.
3 Shewchuk to respond to this.

4 MR. SHEWCHUK: Mr. Chair, the
5 socioeconomic impact assessment included in the filed
6 materials is consistent with the assessment methodology
7 employed in the evaluation of all previous oil sands
8 applications in Alberta.

9 The socioeconomic impact assessment is
10 a comprehensive examination of the social and economic
11 impacts of the project on affected local communities and
12 the province overall. It also contains the detail
13 necessary to understand the magnitude of project effects
14 and how these effects will manifest in space and time.

15 The cost-benefit study submitted by
16 OSEC is extremely sensitive to the underlying
17 assumptions of the author. We are of the view that the
18 study does not adhere to best practices for cost-benefit
19 analysis, and note that a minor adjustment to a single
20 key assumption can completely reverse the outcome of the
21 analysis.

22 For example, a reduction of
23 approximately 2.5 per cent in the discount rate used for
24 project benefits results in a positive net present
25 value. In brief, findings of the study are not robust

1 and should not be relied upon by the Panel.

2 MR. IGNASIAK: It has been suggested
3 that the project's economic viability has not been
4 completely assessed because Teck has failed to take into
5 account greenhouse gas emission costs.

6 Additionally, it has further been
7 raised that greenhouse gas emissions from the project
8 will render Alberta and Canada's emissions goals
9 unreachable.

10 Can you respond to these two issues?

11 MR. McFADYEN: Yes. I'll ask Mr.
12 Chiasson to speak to greenhouse gas emission costs
13 specifically, and Mr. Speller to deal with the project's
14 greenhouse gas emissions generally.

15 MR. CHIASSON: Mr. Chairman, the Oil
16 Sands Environmental Coalition, OSEC, has stated that
17 Teck has underestimated the cost of compliance with the
18 carbon competitiveness incentive regulation. Teck
19 doesn't agree with the analysis conducted by OSEC and
20 doesn't view the assumptions used in their analysis as
21 realistic.

22 Teck's design greenhouse gas, or GHG,
23 emissions estimate for the project was calculated on a
24 conservative basis, which is appropriate for the
25 environmental impact assessment for the project.

1 However, OSEC used this conservative
2 design estimate of the GHG emissions and for its cost of
3 carbon analysis for the project assume that there
4 wouldn't be any emissions improvements or reductions
5 whatsoever for the 41-year operating life of the
6 project. We don't think this is a realistic assumption.

7 Teck is a founding member of Canada's
8 Oil Sands Innovation Alliance and actively participates
9 in the greenhouse gas environmental priority area. CEAA
10 member companies have spent over \$200 million to date to
11 evaluate and develop GHG reduction technologies. As
12 shown in IHS Markit's September 2018 report, the GHG
13 intensity of mine oil sands decreased by more than 25
14 per cent from 2009 to 2017, during a period of time when
15 less aggressive carbon regulation existed. We expect
16 this trend to continue.

17 Importantly, IHS Markit predicts that
18 an additional 15 to 24 per cent intensity reduction is
19 possible for the Paraffinic Froth Treatment mine
20 operations like Frontier by 2030. This estimated
21 reduction is based on conservative assumptions and does
22 not assume that transformational technologies will be
23 developed.

24 Teck supports the vision that the
25 Governments of Canada and Alberta have for carbon

1 pricing to increase over time in concert with
2 coordinated global action. We agree that this is needed
3 to make the change to a low-carbon economy.

4 Mr. Chairman, we note that OSEC assumed
5 that the output-based allocation will continue to become
6 more stringent every year for the next 50 years.
7 However, it is important to recognize that other
8 oil-producing jurisdictions have been slow to implement
9 carbon legislation.

10 Canada and Alberta recognize that the
11 practical need to maintain the competitiveness of
12 Canada's trade-exposed sectors to prevent carbon leakage
13 to less progressive jurisdictions.

14 This is critical for three reasons.
15 First, industry has to be able to afford to invest in
16 the development and deployment of less carbon-intensive
17 technology. Second, if industry is not competitive
18 there will be less carbon tax revenue generated to
19 support research and development of low carbon
20 technology.

21 Third, to survive, companies may be
22 driven to move production of trade-exposed commodities
23 to less progressive jurisdictions. Therefore, we don't
24 agree with OSEC's assumption. We are confident that our
25 estimated cost of carbon is reasonable.

1 MR. SPELLER: Mr. Chairman, regarding
2 greenhouse gas emissions, the Oil Sands Environmental
3 Coalition, or OSEC, states that our analysis
4 underestimated the greenhouse gas emissions for the
5 project. This is not correct.

6 OSEC states that upstream greenhouse
7 gas emissions from the production of natural gas and
8 diesel that Frontier would consume should be included in
9 the project emission totals. Mr. Chairman, in July 2016
10 the Federal Minister of Environment wrote to you
11 stating, and I quote:

12 "I expect your analysis of the
13 effects of greenhouse gas emissions
14 to focus on the direct emissions
15 attributable to the project.
16 Potential upstream greenhouse gas
17 emissions linked to the project are
18 not clearly identifiable, because
19 there are no industrial activities
20 upstream of the project." (As Read)

21 This letter is Document No. 205 on the
22 Project Registry.

23 Mr. Chairman, we believe our greenhouse
24 gas emission inventory for the project is appropriate
25 for an environmental impact assessment.

1 MR. IGNASIAK: Mr. Chairman, before we
2 continue, I see it's noon. I think we have 15-20
3 minutes left, so I'm in your hands as to how the Panel
4 would like to proceed.

5 THE CHAIRPERSON: If it's 15 or 20
6 minutes, we might as well do it before lunch. If it's
7 going to go longer, then we should take a break.

8 MR. IGNASIAK: Now I'm worried how
9 accurate that was.

10 THE CHAIRPERSON: Okay. Well, let's
11 take a break then.

12 MR. IGNASIAK: All right.

13 THE CHAIRPERSON: So let's break for
14 lunch. It's 12:00, so we'll resume at 1:00.

15 MR. IGNASIAK: Thank you.

16 THE CHAIRPERSON: Okay. Thank you.

17 --- Upon recessing at 1200 / suspension à 1200

18 --- Upon resuming at 1300 / reprise at 1300

19 THE CHAIRPERSON: Thank you. Please be
20 seated. Whenever you're ready, Mr. Ignasiak.

21 MR. IGNASIAK: Thank you, Mr. Chair.

22 Mr. Chiasson, some of the submissions
23 filed by intervenors raised concerns that the approval,
24 construction, and operation of the project is
25 inconsistent with Alberta's 100-megatonne oil sands

1 emissions cap and other provincial and federal
2 commitments.

3 Can you respond to this please?

4 MR. CHIASSON: Mr. Chair, yes I can.

5 The Pan-Canadian Framework identifies
6 that each province has a role to play in reducing
7 Canada's carbon emissions. That Alberta's key actions
8 to date for managing carbon include: phasing out
9 thermal coal; placing a levy on carbon emissions; and, a
10 limit on oil sands greenhouse gas emissions.

11 An overarching goal of the oil sands
12 advisory groups advice to the Government of Alberta
13 Ministers includes: maximizing the development
14 potential of Alberta's oil sands resource within the
15 100-megatonne cap. The regulations for the Oil Sands
16 Emissions Act Limit, or the *Oil Sands Emissions Limit*
17 *Act*, has not been completed.

18 So there's uncertainty about how the
19 Alberta Government will define the project inclusion
20 list that defines the approach to the limit and the
21 intensities that will be used to determine cumulative
22 emissions.

23 However, it is clear that the forecast
24 rate of oil sands development has decreased since the
25 emission limit regulations were developed and that the

1 approach to the limit has slowed. The changes reflected
2 in IHS Markit's 2017 update that indicates, "the
3 100-megatonne cap emission limit for Canadian oil sands
4 is not likely to be exceeded."

5 The outcome is predicted without
6 consideration of the deployment of new technology
7 incented in response to the regulation. Teck believes
8 that abundant room exists within the established limit
9 for Frontier and that the project is a preferred
10 development because it has low greenhouse gas intensity
11 in relation to other methods of oil sands production.

12 It is for these reasons that Teck feels
13 the project is consistent with Canada's and Alberta's
14 climate change goals.

15 MR. IGNASIAK: Thank you. The
16 submissions of the Keepers of the Athabasca include a
17 paper from Regan Boychuk entitled "Alberta Over a
18 Barrel, Environmental Liabilities and Royalties in the
19 Oil Sands." This report calls into question Teck's
20 environmental liability accounting practices and states
21 that, and again I quote, "Teck Management has used its
22 discretion to manipulate accounting estimates to suit
23 the financial needs of the moment," and insinuates that
24 the company has acted inappropriately.

25 I understand Teck would like to respond

1 to this.

2 MR. McFADYEN: Yes, we would, Chair.

3 Firstly, Teck does not manipulate
4 accounting estimates and has not acted in an
5 inappropriate way. As a Canadian public company we are
6 required to follow international financial reporting
7 standards for financial reporting purposes. As with all
8 public companies, our financial statements are audited
9 by independent auditors, our case
10 PricewaterhouseCoopers, PwC.

11 Any estimates or judgment made by Teck
12 as part of its financial statements is audited and it is
13 confirmed that these are reasonable and applied on a
14 consistent basis. Any new estimates or judgment or
15 change in methodology are assessed and scrutinized by
16 Teck Management, Teck's Audit Committee and PwC. This
17 applies to reporting and disclosure around reclamation
18 liabilities, including discount rates and other inputs.

19 With respect to the Project, Mr.
20 Boychuk asserts, and I quote, "Any change in projected
21 operations over the coming decades leaves the company at
22 real risk of bankruptcy and the public at real risk of
23 ultimately enduring a net loss on a project." Chair,
24 this statement is speculative and it misrepresents the
25 facts.

1 If the Project were to be approved and
2 a decision to proceed with the Project made by Teck's
3 Board of Directors, Teck will construct, operate,
4 reclaim, and close the project in a responsible manner.
5 Teck will not walk away from its reclamation and close
6 their responsibilities for the Project.

7 In our 100-year history we have always
8 had sufficient liquidity through our cash balances and
9 lines of credit to honour our liabilities as they become
10 due. That will continue to be the case.

11 MR. IGNASIAK: Thank you. Some of
12 Teck's Indigenous partners are here speaking to
13 outstanding issues they have with respect to the
14 provincial and federal crowns, and have specific
15 requests for further crown action. What is Teck's
16 position on these communities' requests?

17 DR. JOHNSTONE: Dr. Robin Johnstone.
18 Teck is fully supportive of governments working with
19 Indigenous communities, including Fort Mackay First
20 Nation, Athabasca-Chipewyan First Nation, and Mikisew
21 Cree First Nation on their respective recommendations
22 which they've included in their written submissions, and
23 which we understand they will be speaking to in greater
24 detail during this hearing.

25 Teck agrees with the issues raised by

1 the communities, which all pertain to government action
2 rather than actions by Teck, warrant serious
3 consideration by governments during the phase of
4 consultation that will take place following this panel
5 process.

6 Teck is supportive of governments
7 working with Indigenous Communities on resolution of
8 those issues and Teck is committed to be a valued
9 regional contributor to implementation of these
10 resolutions.

11 We hope that this provides further
12 clarification to the opening statement on the concerns
13 raised by communities.

14 MR. McFADYEN: Thank you, Dr.
15 Johnstone.

16 Dr. Johnstone, the Joint Review Panel
17 has received submissions from Katl'odeeche First Nation,
18 Deninu Kue First Nation, the Northwest Territory Métis
19 Nation, and Smith's Landing First Nation. These
20 communities are concerned about the Frontier Project's
21 potential effects on the outstanding universal value, or
22 OUV, of Wood Buffalo National Park and the
23 Peace-Athabasca Delta, or PAD.

24 They're concerned that if the Project
25 has effects on the park or the PAD that they in turn

1 will be affected. These groups have also indicated they
2 were not consulted regarding the Project.

3 Can you please, for the benefit of the
4 JRP, advise the Panel of the consultation undertaken by
5 Teck with these four communities?

6 MR. JOHNSTONE: Yes. With respect to
7 the particular Indigenous groups just referred to:
8 Deninu Kue First Nation; Katl'odeeche First Nation;
9 Smith's Landing First Nation; and, the Northwest
10 Territory Métis Nation, we also began engaging with
11 these communities approximately 10 years ago, in 2008 or
12 2009.

13 As you can see in Attachments 21 and 23
14 through 26 of our September 12, 2018 reply submission,
15 marked as Exhibit 504, Teck provided each off these
16 communities with letters and substantive packages
17 providing information regarding the proposed Project,
18 including proposed terms of reference.

19 Teck sent out additional information
20 packages, letters and, in some cases, emails to these
21 communities in 2010 and 2014, aligning with work on the
22 Project update.

23 Mr. Chairman, with the exception of
24 Deninu Kue First Nation and NWT Métis Nation, Teck never
25 received any correspondence, questions or queries from

1 any of these communities until after the terms of
2 reference for the Frontier Joint Review Panel were
3 amended to include consideration of the effects of the
4 Project on the outstanding universal values of Wood
5 Buffalo National Park, including the Peace-Athabasca
6 Delta. This amendment to the terms of reference was
7 issued relatively recently, on August 16, 2017.

8 Regarding Deninu Kue First Nation, the
9 Nation did not request a meeting with -- sorry, the
10 Nation did request a meeting with Teck in 2009.
11 However, Teck did not feel that the budget submitted by
12 the Nation was appropriate for the scope of an
13 introductory meeting.

14 Deninu Kue First Nation had at that
15 point committed to providing an amended budget.
16 However, that did not happen and Teck did not hear back
17 from Deninu Kue First Nation regarding a potential
18 meeting.

19 Regarding the Northwest Territories
20 Métis Nation, conversations were held regarding business
21 opportunities in 2014, but these did not advance at that
22 time. Following the NWT Métis Nation's most recent
23 correspondence, we were pleased to hold a meeting to
24 discuss their concerns and interest with the Project in
25 August, and to convey Teck's perspective on a reasonable

1 scope for ongoing information sharing and engagement
2 between the parties.

3 While we acknowledge each of the four
4 communities has expressed concern regarding the scope of
5 the consultation work carried out between themselves and
6 Teck, we respectfully submit that the level of
7 consultation has been appropriate given their connection
8 to the project and surrounding area, and entirely
9 consistent with Teck's indigenous peoples policy.

10 Mr. Chairman, to explain Teck's
11 perspective on an appropriate scope of consultation with
12 each of these communities, I wish to point out that none
13 of the communities have provided us with evidence that
14 the project is located within the traditional
15 territories. As a matter of fact, none of the
16 submissions filed by these four communities claim that
17 the project is located within their traditional
18 territories.

19 Mr. Chairman, we feel that it's
20 important to point out that in addition to not
21 identifying the Frontier project as falling in within
22 their traditional territories, the primarily -- the
23 primary locations of each community are a significant
24 distance from the project.

25 Deninu Kue First Nation is primarily

1 located in Fort Resolution, which is located 385
2 kilometres from the Frontier project.

3 Katl'odeeche First Nation is primarily
4 located at the Hay River Dene Reserve, which is located
5 approximately 405 kilometres from the Frontier project.

6 Smith's Landing First Nation and the
7 NWT Métis Nation are both based in Fort Smith, which is
8 located approximately 240 kilometres from the Frontier
9 project.

10 However, Mr. Chairman, all of these
11 four -- all four of these communities expressed concern
12 regarding Wood Buffalo National Park and the
13 Peace-Athabasca Delta. Teck does not dispute these
14 areas are important to these communities. However, as
15 Mr. Speller has already explained, the Frontier project
16 is predicted to have a negligible effect on the park,
17 including the PAD.

18 These communities' traditional use of
19 the park and the PAD will not be affected by the
20 Frontier project.

21 Mr. Chairman, it is significant that
22 all four of these communities were provided with notice
23 of the project approximately 10 years ago, and none have
24 raised any substantive concerns with Teck regarding the
25 project until recently after they were notified by the

1 Government of Canada that a strategic environmental
2 assessment of the park was being carried out.

3 Our understanding is that Canada has
4 consulted with these four communities with respect to
5 the initiatives being undertaken in connection with Wood
6 Buffalo National Park and the PAD by government.

7 Therefore, Teck is not prepared to
8 enter into impact benefit agreement or participation
9 agreements with these four communities because they are
10 not affected by the project. However, Teck is prepared
11 to share with these communities information regarding
12 the project, including potential employment and
13 contracting opportunities.

14 This commitment is confirmed by our
15 recent activities. In late August of this year, Teck
16 met with the NWT Métis Nation in Vancouver.

17 In addition, earlier this year, on May
18 1st, Teck met with the Chief and Council, CEO and Lands
19 Department of Smith's Landing First Nation to discuss
20 the project.

21 In conclusion, Mr. Chairman, while Teck
22 is prepared to continue providing information to each of
23 these indigenous communities, including ways -- looking
24 at ways we can facilitate employment and contracting
25 opportunities for these communities, we believe this

1 level of ongoing consultation and engagement is
2 appropriate given the communities are located a
3 significant distance from the project and are not
4 affected by the project.

5 MR. IGNASIAK: Mr. McFadyen, the
6 Government of Canada has submitted a Whole of Government
7 of Canada Preliminary Assessment of Potential Impacts on
8 Aboriginal or Treaty Rights. This preliminary
9 assessment sets out certain mitigation measures the
10 Government of Canada is considering.

11 This submission, Exhibit 489 at PDF 622
12 and 623, states that Canada is considering a
13 project-specific Teck Frontier Monitoring and Oversight
14 Committee.

15 The submission states that this
16 committee should include governments, MCFN and
17 potentially other indigenous groups to achieve (1)
18 indigenous involvement monitoring related to the
19 project, (2) adaptive management, and (3) input into
20 regional based monitoring through the existing Oil Sands
21 Monitoring initiative.

22 Can you please provide the Panel with
23 Teck's view on this proposed mitigation measure?

24 MR. McFADYEN: Mr. Chairman, the
25 Government of Canada's submission provide -- provides

1 few details regarding this structure of this Oversight
2 Committee. Teck is not aware, at this time, of the
3 status of discussions between Canada, Alberta and
4 indigenous groups regarding this proposed measure.

5 However, we do want to be helpful to
6 this Panel and provide some meaningful feedback on this
7 proposal.

8 Assuming that Canada is proposing a
9 vehicle by which indigenous groups can become more
10 involved in monitoring, we are generally supportive of
11 this concept. As a matter of fact, many of the
12 commitments that we have made to indigenous groups in
13 our participation agreements can likely be facilitated
14 through such a proposed committee.

15 However, Mr. Chair, as everyone in this
16 room knows, this is a highly competitive business. So
17 while Teck is supportive of robust and transparent
18 oversight, it is important to make sure that duplication
19 and inefficiency is avoided.

20 We ask that Teck be provided with the
21 opportunity to work with Canada, Alberta, MCFN and other
22 indigenous communities to make sure that a
23 project-specific committee is established and is,
24 indeed, efficient and effective.

25 So we're committed to working with

1 stakeholders to accomplish this, and we look forward to
2 receiving more information regarding this initiative.

3 MR. IGNASIAK: Thank you.

4 Finally, Mr. McFadyen, several groups,
5 including OSEC, have stated that the Frontier project is
6 simply not in the public interest. Can you respond to
7 this?

8 MR. MCFADYEN: Mr. Chairman we do not
9 agree with this and we are of the view that the project
10 is very much in the public interest.

11 Some of the intervenors are of the view
12 that oil sands development should cease and that Canada
13 should leave oil in the ground. Frankly, this ignores
14 the fact that Canada and the rest of -- and the rest of
15 the world will continue to demand oil, as I mentioned
16 before.

17 I would submit it's not in the public
18 interest for Canada to acquire its oil from foreign
19 sources instead of developing reserves. In addition,
20 it's not in the public interest for Canada to stop
21 developing and exploring -- and exporting oil and to
22 simply allow other jurisdictions to supply global
23 demand.

24 MR. IGNASIAK: Thank you, Mr. McFadyen.

25 Mr. Chair, if I could just have a

1 moment and determine if there's anything further.

2 THE CHAIRPERSON: Yes, you may.

3 Thanks.

4 MR. IGNASIAK: All right, Mr. Chairman.

5 I think that concludes our direct evidence and the Panel
6 is now available for cross-examination and questioning.

7 Thank you.

8 THE CHAIRPERSON: Thank you, Mr.

9 Ignasiak.

10 So according to the schedule and the
11 order of registration, the first party with the
12 opportunity to cross would be Canadian Parks and
13 Wilderness Society.

14 MR. HO: The Canadian Parks and
15 Wilderness Society is not prepared to cross-examine at
16 this time. To ensure that this doesn't cause a delay,
17 we've ensured that the Oil Sands Environmental Coalition
18 is able to cross-examine now if no one else wants the
19 spot.

20 We will be prepared to cross-examine by
21 tomorrow.

22 THE CHAIRPERSON: Okay. Well, let's
23 start with Oil Sands Environmental Coalition.

24 MR. ROBINSON: Mr. Chair, Barry
25 Robinson representing Oil Sands Environmental Coalition.

1 We are prepared to start now, and we
2 might be a couple minutes to set up to do that, although
3 I would make the offer if there's -- with your approval,
4 of course, if there's somebody who needs to cross and
5 get out today, that we would stand down and let them do
6 it.

7 We're in your hands on that.

8 THE CHAIRPERSON: Okay. Well, as
9 explained earlier, we're planning to go in the order of
10 registration, so I don't want to deviate too much from
11 that.

12 If there clearly is somebody who is
13 pressed for time and would really like to cross this
14 afternoon, we can entertain that. But otherwise, Mr.
15 Robinson, I'll suggest you probably go.

16 MR. ROBINSON: Seeing no one rushing
17 forward, if we could have a couple minutes to bring our
18 materials up.

19 MR. IGNASIAK: Mr. Chairman, during
20 that time, because OSEC was kind enough to provide us
21 with about 1,200 pages of aids to cross, we have an idea
22 of where they're going.

23 So if we could just move some of our
24 panel members around so we think we can be more
25 responsive --

1 THE CHAIRPERSON: Okay.

2 MR. IGNASIAK: -- that would be
3 appreciated while they set up.

4 THE CHAIRPERSON: Yeah. Why don't we
5 take 15 minutes so everybody can get organized.

6 --- Upon recessing at 1323 / Suspension à 1323

7 --- Upon resuming at 1334 / Reprise à 1334

8 THE CHAIRPERSON: Thank you. Please be
9 seated.

10 Sorry. That was a quick 15 minutes.

11 Just a reminder for the benefit of the
12 court reporter, when we have different people coming up
13 to the microphone, again remember to kind of say who you
14 are so the court reporter can be clear on who's
15 speaking.

16 Thank you.

17 Mr. Stilwell.

18 CROSS-EXAMINATION

19 MR. STILWELL: Thank you, Mr. Chairman.

20 And good afternoon, Chairman, Members, staff, counsel
21 and Teck representatives.

22 There's Mr. McFadyen.

23 And when I was sitting back there, I
24 couldn't see Mr. Shewchuk and Mr. Pearce.

25 MR. SHEWCHUK: It's Pearce Shewchuk.

1 MR. STILWELL: Okay. Oh, Mr. Gray and
2 Mr. Shewchuk.

3 Thank you. Okay.

4 And most of my questions will be aimed
5 at the two of you. However, I think some of them may
6 call for a response by Teck personnel, and I invite you
7 to interject at any time, Mr. McFadyen, if you think
8 there's a witness better equipped to answer the question
9 or add to the answer.

10 MR. McFADYEN: Thank you. I appreciate
11 that.

12 MR. STILWELL: Okay. Now, in your
13 September 12 submission, appended to it, were Attachment
14 1 and Attachment 2, which were documents prepared by
15 Nichols Applied Management.

16 And Mr. Shewchuk and Mr. Gray, did one
17 of you prepare number 1 and then the other prepare
18 number 2, or did you work together on both of those?

19 MR. SPELLER: Mr. Chairman, for
20 clarity, Attachment 1 was prepared by Teck and
21 Attachment 2 was prepared by Nicholas, with Mr. Shewchuk
22 as the primary author.

23 MR. STILWELL: Okay. All right.

24 I'd like to start with making sure I
25 understand the reasons why the differential in price

1 between Western Canada Select -- between Western Canada
2 Select and West Texas Intermediate exists. Why is there
3 a price differential?

4 MR. CHIASSON: Could you please repeat
5 the question?

6 MR. STILWELL: Sure.

7 Why is there a price differential
8 between Western Canada Select and West Texas
9 Intermediate?

10 MR. CHIASSON: So Mr. Chairman, there's
11 a couple of reasons for the differential.

12 The Western Canada Select product is --
13 it's a heavier product in general compared to West Texas
14 Intermediate, so the lighter product carries with it a
15 higher value in the market. That's one reason.

16 There's a number of other reasons that
17 have an impact on differentials between those
18 commodities.

19 One of the other reasons today is
20 the -- the primary market for WCS product from Canada is
21 the United States, currently. It's primarily the
22 market. And there is a deficiency in pipelines
23 currently, which is reflecting higher differentials than
24 historic today.

25 MR. STILWELL: And we've seen -- you

1 will have seen references in articles about, first of
2 all, Shell walking away from its Carmen Creek project in
3 the Peace River oil sands and taking a \$2 billion
4 restructuring charge and offering, as a result, the lack
5 of take-away capacity. Did you see that?

6 MR. CHIASSON: Mr. Chairman, I am aware
7 of Shell's decision to -- I don't know if walk away is
8 the right way to say it, but to the article that counsel
9 has referred to.

10 MR. STILWELL: Okay. And you saw that
11 they offered the lack of take-away capacity as a reason.

12 MR. CHIASSON: Mr. Chairman, I'm not
13 aware of that part of their decision, but I am aware of
14 the article.

15 MR. STILWELL: Okay.

16 MR. CHIASSON: -- of the fact that they
17 have walked away from that project.

18 MR. STILWELL: And more recently,
19 Suncor said it was shelving expansion plans until a
20 pipeline is under construction to get to different
21 markets.

22 MR. CHIASSON: Are you asking me am I
23 aware?

24 MR. STILWELL: Yes.

25 MR. CHIASSON: I'm aware that Suncor

1 made that statement, Mr. Chairman.

2 MR. STILWELL: Okay. And you often see
3 statements like -- and I'll get to the statement in a
4 moment. And it's a statement that Teck has made in its
5 materials as well. That if it were possible to ship our
6 bitumen to international markets, particularly Asia, a
7 world price would be obtained.

8 That, of course, would be the world
9 price for bitumen, wouldn't it?

10 MR. CHIASSON: Could you please repeat
11 that?

12 MR. STILWELL: Well, it's stated by
13 many, including Teck in its materials, that if it were
14 possible to ship our bitumen to foreign markets like
15 Asia, Canada could obtain -- or Alberta could obtain a
16 world price for its bitumen.

17 MR. CHIASSON: I would generally agree
18 with that statement. If Canada could get its bitumen to
19 Tidewater or other markets, it would receive a much
20 higher price for its product.

21 MR. STILWELL: And why do people think
22 it would be a much higher price?

23 MR. CHIASSON: Mr. Chairman, I can't
24 speak for people, but I can speak for Teck.

25 Our view is the market right now is

1 constrained within northwestern United States. It's
2 land-lock. And because of lack of competition for
3 product from western Canadian, I wouldn't say we're held
4 hostage, but it's a one market area for product from
5 western Canada.

6 So refineries in the United States who
7 take product from western Canada are able to discount
8 significantly the price that they're willing to pay for
9 the bitumen from Canada because there's not a lot of
10 options available currently for producers from western
11 Canada to market their product elsewhere.

12 MR. STILWELL: But because it is a
13 lower grade of petroleum, it is not likely to approach
14 prices received for the lighter, superior grades like
15 WTI or Brent, is it?

16 MR. CHIASSON: Mr. Chairman, I don't
17 know if I would agree with that statement exactly or
18 characterize it that way.

19 The reason for the wide differentials
20 today is mainly driven by access, not driven by
21 difference in quality. I believe counsel said "would
22 not approach the prices of WTI and WCS". That
23 differential, in Teck's view, would narrow significantly
24 should we have more access opportunities for our
25 product.

1 MR. STILWELL: Now, in its materials
2 Teck states that it is confident pipelines will be built
3 to give us that greater access.

4 MR. CHIASSON: That's correct, Mr.
5 Chairman.

6 MR. STILWELL: And which pipelines is
7 it confident will be built?

8 --- Pause

9 MR. CHIASSON: So Mr. Chairman, I have
10 a longer-term answer and a shorter-term answer.

11 So the longer-term answer is,
12 historically, energy -- oil and gas companies have
13 supported pipeline companies if there's additional
14 capacity that's required to get product to market.
15 Pipeline companies have done that with the support of
16 oil and gas companies.

17 That's what's happened over history.
18 We believe that that principle still applies going
19 forward, so that's the longer-term answer.

20 In the shorter-term answer, we see
21 three pipeline options in front of us, or currently that
22 have been approved or are in the approval process.
23 Those lines -- and this is also published in the
24 Canadian Association of Petroleum Producers 2018 report,
25 that Enbridge Line 3 replacement would be one of the

1 lines.

2 Trans Mountain Expansion Pipeline,
3 which has been in the news a little bit recently, would
4 be another.

5 And TransCanada's Keystone XL Pipeline
6 through the States would be the third.

7 So those projects have been approved or
8 are in their approval process, but if I could elaborate
9 a little bit on each of those, that would complete my
10 response to that.

11 So starting with the Keystone XL, it's
12 received all federal and state approvals for the
13 construction in the United States. There was a delay
14 because of judicial challenge in the State of Nebraska,
15 and there was a re-route option that was required. But
16 filing ruling on this challenge is expected early in the
17 first quarter of 2019.

18 And ultimately, we're confident that
19 that approval will come, the line will be built, and
20 it'll be in place because it's in the best interests of
21 Canada and there's a market for it.

22 Next I'd comment a little further on
23 the Trans Mountain Expansion Pipeline. People may have
24 seen in the news that the Canadian government actually
25 bought that pipeline.

1 Teck does acknowledge that Canada's
2 Federal Court of Appeal overturned Ottawa's approval of
3 the Trans Mountain Pipeline, and that happened in
4 August. And that was reported in a number of papers,
5 and Canadian Press was one.

6 However, the federal government, since
7 that -- since that ruling was overturned, the federal
8 government has been very vocal and has vowed to build
9 and see that -- to build that pipeline and see it
10 through.

11 So for Teck, that commitment by Canada,
12 that -- the advocating for it from the Government of
13 Alberta, there's more regulatory requirements for
14 that -- for that pipeline, but ultimately, we think it's
15 going to get built. We feel it's going to get built.

16 The Canadian government has stated that
17 they want to get it built. We think that that will be
18 built.

19 And then the other line was Enbridge
20 Line 3. So, construction is commenced on that line
21 throughout the proposed right-of-way within Canada and
22 the United States with the exception of the State of
23 Minnesota. And, there was a re-routing or an issue in
24 the State of Minnesota that, however, Enbridge has
25 received approvals for project construction in Minnesota

1 late June and we expect that that construction is going
2 to proceed.

3 So, those are the three lines. And,
4 you know - or, those are the three lines in the short
5 term. The first part of my remarks was about principles
6 in the long-term. And, as we have stated in our filed
7 materials, first oil for Frontier it is expected, should
8 the Project be approved, in 2026. So, there is time in
9 between now and then for construction of three pipelines
10 in the short term.

11 MR. McFADYEN: Chair, if I could add.
12 Chair, if I could add. So, indeed the current price
13 just is a reality. I don't know what it is today, but
14 it is about \$30 today. And Teck doesn't believe that's
15 sustainable. I don't believe that's sustainable. I
16 don't know any jurisdiction on this planet that can live
17 with that level of discount, frankly. So, I think it is
18 pretty clear that the country needs access to markets.

19 Now, as an operator, the most efficient
20 and safest way to get product to market is via
21 pipelines, so we strongly support the federal
22 government's initiative to expand these pipelines.

23 The other thing I would add here is we
24 are not wedded -- we are not wedded to any individual
25 pipeline. In fact, we're a commercial entity, we like

1 choice; and, choice is important to us but it is also
2 important to the end user.

3 MR. STILWELL: Mr. McFadyen, you were
4 mentioning the high differential these days and for the
5 last number of days, and you said \$30.

6 MR. McFADYEN: So, forgive me, I
7 haven't check today, so it may have moved today, I don't
8 know, I just haven't checked today.

9 MR. STILWELL: Oh, I just wondered if
10 you were - - if that was US dollars because on Friday it
11 was 44.11.

12 MR. McFADYEN: Yeah.

13 MR. STILWELL: And it has hit 46, but
14 the last number of days it has been between 40 and 45.

15 MR. McFADYEN: So I'll be open with you,
16 Chair, I've been busy and I haven't been looking at it.
17 I really haven't, so thanks.

18 MR. STILWELL: And so it is basically
19 50 percent - it is 50 percent of the price of a barrel
20 of WTI when you convert WTI to Canadian dollars; do you
21 accept that?

22 MR. CHIASSON: Currently today it could
23 be 50 percent, I haven't checked as Mr. McFadyen noted.
24 I haven't checked it today; it could be in the range of
25 50 percent today.

1 MR. STILWELL: And one of the documents
2 we've submitted to CCEA and the Panel and to Mr.
3 Ignasiak is a tabulation of historical WCS/WTI discounts
4 prepared by Baytex Energy that I obtained. I am sure
5 there are other ones, but I just happened across the
6 Baytex Energy one.

7 Have you gentlemen had the opportunity
8 to look at that document? And it covers from 2005 to
9 2018?

10 MR. CHIASSON: Mr. Chairman, we have
11 had the opportunity to review that document.

12 MR. STILWELL: All right. And do you
13 have any issues about its accuracy?

14 MR. CHIASSON: Mr. Chairman, we do not.

15 MR. STILWELL: All right. Now, what
16 I'm going to use from the columns they prepared is
17 they've got a column "The Percentage of WTI". I'm going
18 to use that as opposed to dollar figures because I don't
19 want to stand here converting American dollars to
20 Canadian dollars, all right. And, between 2005 and June
21 of 2018 the highest percentage was 36.3 percent and
22 we're at 50 percent as of Friday. Why is it so high
23 today and these last few days?

24 MR. CHIASSON: Mr. Chairman, there's
25 sometimes short-term things that happen such as there's

1 a number of refineries that are taking outages in the
2 northwest so there's pipeline apportionment that's
3 higher, and apportionment means there's not enough take
4 away capacity for producers at this time. So, the
5 reason in the recent week for the spike in percentage of
6 differential or high percentage of differential relative
7 to price is due to a number of those short-term factors
8 such as refinery outages, so the customers -- all of a
9 sudden there's a smaller group of customers looking for
10 oil in these past few weeks, and that is a factor that
11 can contribute to -- and that is a factor that is
12 contributing to the short-term increase in WTI to WCS
13 differentials.

14 MR. STILWELL: Mr. McFadyen, before I
15 forget, in your introduction this morning you referred
16 to some statistics when you were talking about
17 population growth 9 billion humans on the planet in
18 2040; do you recall that?

19 MR. McFADYEN: I do, Chair.

20 MR. STILWELL: And the prospect of
21 250 -- you had a number for the number of people that
22 would be lifted out of poverty?

23 MR. McFADYEN: Yes. So, Chair, that
24 was 2.5 billion.

25 MR. STILWELL: Okay.

1 MR. McFADYEN: I think I went on to say
2 that's equivalent to roughly two current day China's,
3 2.5 billion.

4 MR. STILWELL: And I didn't catch it
5 all but you spoke about, I take it, royalties being able
6 in the future to fund more hospital visits; did I get
7 that right?

8 MR. McFADYEN: Yes. I used, I think,
9 "for example". I was trying to put \$70 billion into
10 context; nothing more than that.

11 MR. STILWELL: Okay. Do you have your
12 sources for those at this time?

13 MR. McFADYEN: Yes, in detail, which I
14 am happy to submit these references which provide the
15 source.

16 MR. IGNASIAK: Mr. Chair, why don't we
17 undertake to provide that, and we'll make the necessary
18 copies and get an electronic copy and submit it sometime
19 today?

20 THE CHAIRPERSON: Okay, thank you, Mr.
21 Ignasiak.

22 MR. STILWELL: Gentlemen, what is meant
23 by the marginal barrel of oil?

24 MR. CHIASSON: Can you provide a
25 reference for that?

1 MR. STILWELL: Well, what I'm thinking
2 is I believe I've seen reference to bitumen being the
3 marginal barrel of oil, meaning, as I understand it, and
4 I'm hoping you can help me understand it better, because
5 of the cost to produce it if worldwide demand for oil
6 drops it will be the marginal barrel that ceases to
7 produce or has its production slowed because the value
8 of oil goes down, so it will be the less costly blends
9 or types of oil that continue, but the marginal one is
10 at risk -- at the most risk, because it is the most
11 expensive. Is that -- have I got that correct?

12 MR. CHIASSON: Mr. Chairman, I wouldn't
13 concur with counsel's statement. Do you have a specific
14 reference that you can point me to where you've seen
15 this?

16 MR. STILWELL: I don't. Okay, I just
17 thought it was common parlance in particular in Calgary
18 to hear people refer to oil sands oil as the marginal
19 barrel, so okay.

20 Now shipping crude by rail, in your
21 materials you mention that even if there's a continued
22 constraint on pipeline capacity shipping the product
23 from the Frontier Project by rail is a possibility?

24 MR. CHIASSON: Is that a question?

25 MR. STILWELL: Yes.

1 MR. CHIASSON: Okay. Mr. Chairman,
2 yes, shipping bitumen by rail is a possibility. In
3 fact, you know there's volume being transported today by
4 rail.

5 MR. STILWELL: And can you give me a
6 rough picture of the cost of shipping by rail compared
7 to cost by shipping by pipeline? Might it be in the
8 range of \$7 a barrel by pipe and upwards of \$15 or \$16
9 per barrel by rail?

10 MR. CHIASSON: Mr. Chair, just one
11 moment to confer with colleagues.

12 --- Pause

13 MR. CHIASSON: So, Mr. Chairman, to get
14 very specific, I believe that would be commercially
15 sensitive. That said, I would acknowledge and agree
16 that currently today shipping oil by rail is generally
17 more expensive than by pipe.

18 MR. STILWELL: And I understand that
19 railways, if not seeking long-term shipping contracts
20 now, they do want to into the future; do you understand
21 that to be the case?

22 MR. CHIASSON: I'm not sure I
23 understand your question. Could you rephrase, please?

24 MR. STILWELL: Well, as opposed to
25 intermittently using the services of a railway company

1 to ship your bitumen, they want long-term contracts,
2 perhaps even take-or-pay, in order to increase the
3 number of rail cars and devote more resources to the
4 shipping of crude. Have you heard of that?

5 MR. McFADYEN: Again, Chair, if I may.
6 So we started this conversation talking about price
7 differentials. I made the comment -- I want to come
8 back to that comment that Canada needs access to
9 markets. I also made the comment that the best way to
10 ship crude, so the safest, most efficient, most
11 responsible way, and cost effectively to ship crude is
12 via pipelines. Now, rail has got a role to play in
13 Canada, but I don't currently view rail as the baseload
14 way of exporting or transporting oil, frankly. I do
15 think it's got a role in the load distribution curve.
16 For example, in the event of pipeline constraints or in
17 the event of operational constraints upstream, then
18 operators may decide to enter into limited contracts, I
19 would imagine, although I don't know, in order to keep
20 the product flowing, but I wouldn't want this Panel to
21 think that rail is the baseload solution for oil sands
22 production.

23 MR. STILWELL: I guess here is another
24 way of approaching it. Are you aware of the recent news
25 that railways want shippers to commit to long-term

1 shipping contracts?

2 MR. CHIASSON: Mr. Chair, yes, we're
3 aware of that.

4 MR. STILWELL: And can you tell me what
5 the reaction to that is by oil sands industry
6 participants? Are they in favour of it, are they
7 resisting it?

8 MR. CHIASSON: Mr. Chair, just one
9 moment.

10 --- Pause

11 MR. CHIASSON: So, Mr. Chairman, it
12 wouldn't be appropriate for me to comment on what other
13 companies are thinking with respect to bitumen by rail,
14 but I can speak for Teck. As Mr. McFadyen pointed out,
15 we do see this as -- that the rail does have a role to
16 play. We see pipelines as the predominant
17 transportation method for our product, but we do see
18 rail having a role to play. So for Teck, we do discuss
19 transportation by rail with rail companies and we are
20 having those discussions.

21 MR. STILWELL: Does Teck follow and/or
22 study growing commentary along the lines of "With the
23 increased adoption and use of alternative renewable
24 energy sources and electric vehicles there arises the
25 possibility that the oil sands industry is a sunset

1 industry and may cease activities a lot sooner than at
2 the time of end of life as predicted by oil sands
3 companies"? Do you keep abreast of those arguments?
4 So, for example, the Governor of the Bank of England,
5 Mark Carney, saying, "Those assets will be stranded
6 assets and a lot quicker than people think", is that
7 something that at Teck you follow, study, talk about?

8 MR. McFADYEN: It sure is.

9 MR. CHIASSON: Mr. Chairman, if I could
10 add to Mr. McFadyen's comment.

11 There are a number of opinions about
12 what future oil price might be or what future demand may
13 be for oil. Teck uses third-party oil price forecasters
14 that do this for a living. With all due respect to Mr.
15 Carney, Teck uses the IEA, the International Energy
16 Association. We look at a number of forecasts,
17 including the U.S. Energy Information Administration,
18 and we look at what the leading companies that forecast
19 oil, and that's their business, what they say about the
20 demand and what they say about price. So when we did
21 our socioeconomic analysis we looked at a number of
22 those and we included the International Energy
23 Administration's base case forecast for the time period,
24 if the project was approved, that the project would be
25 operating, from 2026 to 2066. We used those forecasts

1 to assess what the potential demand for the product was.

2 So using what we have submitted and
3 getting back to counsel's question about electric
4 vehicles, those forecasts consider that. Those
5 forecasts take into account that renewables will grow
6 over time. But that said, those forecasts also include
7 from a demand perspective that there will be a strong
8 market for oil well into the future. The demand
9 fundamentals are strong even with renewables coming and
10 that's what gives Teck -- and Mr. McFadyen spoke to some
11 of the reasons earlier, that the International Energy
12 Agency has come to that assessment as well as the U.S.
13 EIA, is that while renewables are going to be on the
14 increase, there's still by far a strong demand for oil
15 into the foreseeable future. So there are a number of
16 different opinions, but Teck feels confident in the
17 forecast from those companies that do this for a living
18 and we think that using that as the basis for the
19 Frontier socioeconomic analysis and application is
20 reasonable.

21 MR. STILWELL: Last week I sent over to
22 Mr. Ignasiak, and it is now part of the record -- it's
23 not up on the Registry yet but I understand it to have
24 been given document number 557 -- and contained within
25 that is what appears to be an abstract of the -- it's

1 either an abstract of a study or it's a very, very short
2 study entitled "Macroeconomic Impact of Stranded Fossil
3 Fuel Assets" based on a study and modelling done by
4 academics at a university in the Netherlands and at
5 Cambridge in the United Kingdom. Did anyone review that
6 item?

7 MR. CHIASSON: Mr. Chairman, I reviewed
8 the item.

9 MR. STILWELL: All right. And I'm just
10 going to make very, very quick references to it and in
11 particular the opening paragraph, which seems to be a
12 summary of what the balance of the study says. It says:

13 "We use an integrated global
14 economy environment simulation
15 model to study the macroeconomic
16 impact of stranded fossil fuel
17 assets. Our analysis suggests that
18 part of the SFFA (stranded fossil
19 fuel assets) would occur as a
20 result of an already ongoing
21 technological trajectory.
22 Irrespective of whether or not new
23 climate policies are adopted, the
24 loss would be amplified if new
25 climate policies to reach the 2

1 percent target of the Paris
2 Agreement are adopted and/or if
3 low-cost producers, some OPEC
4 countries, maintain their level of
5 production and sell out despite
6 declining demand. Winners, for
7 example net importers such as China
8 or the EU, and losers, for example
9 Russia, the United States or
10 Canada, which could see their
11 fossil fuel industries nearly shut
12 down..." (As read)

13 And so he's saying just what is
14 occurring organically with respect to different forms of
15 energy and ignoring government policy, GHG policy, to
16 try and meet international commitments like the Paris
17 Accord could cause very, very significant difficulties
18 to your industry. Do you accept some or all of what is
19 said in this paper, do you reject it, do you have
20 critiques of it?

21 MR. CHIASSON: Mr. Chairman, I
22 understand that that's what the article states. That
23 conflicts with what -- so this is a study and there was
24 a model, but I would note that organizations like the
25 International Energy Administration have been doing this

1 for forecasting oil prices for decades. They have over
2 500 analysts. They have taken into account the
3 emergence of renewable sources of energy and their
4 forecast shows demand increasing from 95 million barrels
5 a day today for oil to 110 million barrels a day by
6 2040, and the price that goes along with that is \$95 or
7 more for the vast majority of the operating period of
8 the Frontier Project should it be approved. And that is
9 concurred -- that forecast and demand projection is also
10 reflected in the U.S. EIA analysis as well.

11 So, did I read the report and was that
12 the hypothesis that was made? That's what I understand.
13 Does Teck subscribe to that or oil price forecast
14 organizations such as IEA, is that their base case
15 profile or forecast? My answer to that would be no.

16 MR. STILWELL: Mr. Shewchuk, I just
17 have one question about your curriculum vitae and it's
18 down on the bottom where you're describing some of the
19 previous work you did and it's in relation to the
20 cost-benefit analysis of the Mackenzie Valley Highway in
21 the Northwest Territories. What was your role on that
22 cost-benefit analysis?

23 MR. SHEWCHUK: I was part of a team at
24 our firm that completed the analysis. I participated in
25 a portion of the analysis and report-writing.

1 MR. STILWELL: Okay. The reason I ask
2 is I looked at that document or at least I thought I
3 found that document and it didn't attribute any -- or
4 credit any authorship or authors, not just you but
5 nobody. So I was just curious if you played a role in
6 writing up the analysis, and you did, did you?

7 MR. SHEWCHUK: As I recall, that
8 document went through several iterations and I played a
9 role in writing some of them.

10 MR. STILWELL: Okay.

11 --- Pause

12 MR. STILWELL: Now, I am looking at
13 page 5-6 of the responses of Teck to Information Request
14 Package No. 5 on socioeconomics of May 2017, Document
15 294 on the Registry. And, Mr. McFadyen, I'll let you
16 direct my questions to the appropriate -- I suppose I
17 should stay by the microphone -- person.

18 Halfway down in the first full
19 paragraph there's a sentence that begins, "As a result
20 of completing", and I'll read it:

21 "As a result of completing some
22 additional drilling in 2014 and
23 updating the project geology model
24 in 2015, the independent resource
25 assessor has increased its unrisksed

1 resource estimate for the project
2 to be 3,184 million barrels of
3 recovered bitumen." (As read)

4 First of all, what does "unrisked"
5 mean? What should I take from the use of the word
6 "unrisked"?

7 MR. McFADYEN: Mr. Chair, Mr. Chiasson
8 will take this one.

9 MR. CHIASSON: Mr. Chairman, for
10 contingent resources such as those for the Frontier
11 Project, it speaks to the stage of development for a
12 project. So this is a bit of an involved answer, but
13 independent resource assessors, when they evaluate a
14 project like Frontier that does not yet have project
15 approval, the determination of the category of the
16 resources is a contingent resource versus, say, a
17 reserve. For an approved project that's built and
18 operating, the estimated bitumen in the ground, because
19 it's an advanced project and it's in operation and a
20 number of the contingencies -- and contingencies include
21 project approval, project sanction, those type of
22 things -- the independent resource assessor for an
23 operating project will refer to those of the estimated
24 bitumen as reserves, whereas for a project that still
25 has contingencies such as the Frontier Project it's

1 contingent resources.

2 With the contingent resources the
3 methodology is to have an amount of barrels difference
4 between what's determined to be unrisks barrels and
5 risks barrels. It's a methodology that's used by
6 independent resourcers to reflect the fact that these
7 projects are not as advanced. So it's more of a -- it's
8 intended for investors. It's financial governance, you
9 know, a message for potential investors that this
10 project still has some contingencies associated with it.
11 So there's unrisks and there's risks barrels and
12 there's usually a delta between the two that the
13 independent resource assessor places on those barrels.
14 This is common practice for any project.

15 So, by stating the unrisks barrels of
16 approximately 3.2 billion barrels, what the independent
17 resource assessor is essentially stating is that their
18 model agrees with Teck's Frontier model that there's 3.2
19 billion barrels of resource there. What unrisks means
20 is oh, but the project hasn't been approved yet, the
21 project hasn't been sanctioned yet, the project is in
22 middle stages of development, not late. So by National
23 Instrument 51-101, in the way that independent resource
24 assessors speak to it, they remove some -- they have a
25 delta, they have an unrisks number, and then they

1 subtract some barrels and call that a risked number, and
2 that's to account for the fact that there's still some
3 contingencies associated with the project.

4 MR. STILWELL: Okay. But the
5 approximate 3.2 billion barrels is the bitumen that you
6 hope to recover?

7 MR. CHIASSON: 3.2?

8 MR. STILWELL: Yes.

9 MR. CHIASSON: Yes, 3.22 billion
10 barrels is our estimate of the bitumen resource at
11 Frontier.

12 MR. STILWELL: And in the next
13 paragraph, you state:

14 "As indicated by the updated
15 socio-economic results provided in
16 Tables 5.1a-1 to 5.1a-3, the
17 Project will be economically
18 robust, financially viable and a
19 strong contributor to the Albertan
20 and Canadian economies under all
21 scenarios."

22 And that suggests to me that you have
23 high confidence in the financial and economic viability
24 of the project. Is that accurate?

25 MR. CHIASSON: Mr. Chairman, I don't

1 know if I'd use those exact words. I believe the words
2 that we've used in the paragraph reflect Teck's feeling
3 that this is an economically robust project. It's

4 "financially viable and a strong
5 contributor to Albertan and
6 Canadian economies under all
7 scenarios."

8 So I'm not exactly sure I agree with
9 the way it was characterized by -- that's Teck's view,
10 apparently.

11 MR. STILWELL: Sure. Sure.

12 We also provided to your counsel the
13 February 14, 2018, Management's Discussion and Analysis.
14 And I'm going to refer you to a portion of that in a
15 moment.

16 But before I do, a document like this
17 Management's Discussion and Analysis, is it written
18 in-house at Teck, or is it sent out for writing by a
19 consultant or people who prepare these sorts of things?

20 MR. CHIASSON: One moment, Mr. Chair.

21 Mr. Chairman, that document is
22 developed by Teck. Whether some aspects of some
23 information there's consultant help, you know, to bring
24 that together -- in a small way, maybe. But that's a
25 Teck management-developed document.

1 MR. STILWELL: Okay. And I want to go
2 over to page 23 of that document. And you'll see the
3 heading "Frontier Project."

4 MR. CHIASSON: I do, Mr. Chair.

5 MR. STILWELL: And will you look at the
6 second paragraph under that heading.

7 MR. CHIASSON: I'm there. I have that.

8 MR. STILWELL: And I'll read it. It's
9 short.

10 "As of December 31, 2017, our best
11 estimate of unrisksed contingent
12 bitumen resources for the Frontier
13 project is approximately 3.2
14 billion barrels. The project has
15 been designed for a total nominal
16 production of approximately 260,000
17 barrels per day of bitumen. The
18 Frontier contingent resources have
19 been subcategorized as "development
20 pending" and "economically viable."
21 There is uncertainty that it will
22 be commercially viable to produce
23 any portion of the resources."

24 That strikes me as being a bit
25 different from the previous statement that it's robust

1 and economically viable. Here, management is talking
2 about uncertainty exists that commercial viability will
3 in fact be in place for production of those resources.

4 What facts was management thinking when
5 it made that statement? Why was there uncertainty? To
6 what can you attribute that uncertainty?

7 MR. CHIASSON: I can answer this
8 question, Mr. Chairman.

9 The language used in the second
10 paragraph of the Frontier Project section on page 23 of
11 the document that counsel referred to essentially is
12 language -- recommended language from our independent
13 resource assessor for use in documents published by
14 Teck, including our annual information forum or a
15 management discussion report.

16 And this links back to the comments I
17 made earlier. The reason that independent resource
18 assessors recommend this language is because there's
19 still contingencies that apply to Frontier. We don't
20 have regulatory approval for the project yet. The
21 project hasn't been sanctioned yet.

22 So the appropriate language to use for
23 market -- for information of materials that goes to the
24 market is to use language like that to make sure that
25 they're aware that there's contingencies in place as per

1 National Instrument 51-101. This appropriate language
2 for communicating contingent resources to the public and
3 in forums like annual information forum and management
4 discussion.

5 So Teck management simply, for that
6 paragraph, used the language recommended by our
7 independent resource assessor to be appropriate for that
8 document.

9 MR. STILWELL: So the two documents I
10 just referred to, well, the responses to the information
11 request and this document, the Management's Discussion
12 and Analysis, are written for two different audiences.

13 MR. CHIASSON: Is that a question?

14 MR. STILWELL: Yes.

15 MR. CHIASSON: That's correct,
16 Mr. Chairman. As part of the Frontier project
17 application, it's understood that the company is
18 applying for approval in that document. It's a
19 different type of document, that, than information to
20 shareholders, investors to the market, which is a total
21 different type of document. And it's in that second
22 that the language of the independent resource assessor
23 is recommended for use.

24 MR. STILWELL: Now, Mr. Shewchuk, I
25 want to turn to your work in response to Dr. Joseph's

1 cost-benefit analysis. And Mr. Shewchuk, did you write
2 that document?

3 MR. SHEWCHUK: Pearce Shewchuk.

4 Mr. Chair, if Mr. Stilwell is referring
5 to the document dated September 6th, then labelled as
6 attachment 2, then the answer is yes.

7 MR. STILWELL: I'll just deal with one
8 thing quickly to get it out of the way. You point out
9 that Dr. Joseph made some arithmetical or numerical
10 errors when dealing with air pollution damage
11 calculations, and on page 5 those are set out. Is that
12 correct?

13 MR. SHEWCHUK: Yes.

14 MR. STILWELL: And you highlight the
15 numbers which were in error in red.

16 MR. SHEWCHUK: Mr. Chair, the numbers
17 highlighted in red are those that we could not reproduce
18 following the calculation steps laid out in the report
19 of Dr. Joseph.

20 MR. STILWELL: Oh, I see. I thought
21 you were stating that those are in error. You can't
22 reproduce them.

23 MR. SHEWCHUK: Mr. Chair, we can
24 reproduce the numbers in black following Dr. Joseph's
25 calculation steps. The numbers in red do not appear to

1 follow the set of calculations he describes in the
2 document. In one such instance, I believe there's a
3 spreadsheet error. He simply applied the damage value
4 for one pollutant in substitution for the other.

5 MR. STILWELL: Okay. In any event, I
6 want to go to your conclusion about all of that. And
7 you say, "This difference has a negligible impact on the
8 result of the CBA." (As read in) Right?

9 MR. SHEWCHUK: Mr. Chair, that's
10 correct.

11 MR. STILWELL: And the result, when you
12 say "the result of the CBA," you're referring to
13 Dr. Joseph's CBA?

14 MR. SHEWCHUK: That's correct.

15 MR. STILWELL: Okay. Now you level a
16 criticism against Dr. Joseph's report and the use of two
17 discount rates. Correct?

18 MR. SHEWCHUK: Mr. Chair, that's
19 correct. Specifically, I critique the application of
20 differential discount rates, one being applied to costs,
21 and a separate and different rate being applied to
22 benefits.

23 MR. STILWELL: Right. And when we hear
24 from Dr. Joseph the 22nd of October, we'll hear from him
25 that he used eight per cent for benefits as a discount

1 rate for things like revenue which will flow to
2 government; correct?

3 MR. SHEWCHUK: I don't know that it's
4 my place to presuppose what Dr. Joseph will say, but
5 that appears to be what he's done.

6 MR. STILWELL: That's in his report,
7 isn't it?

8 MR. SHEWCHUK: Yes.

9 MR. STILWELL: And in his report he
10 used a three per cent discount rate for environmental
11 costs, air pollution, water pollution, GHG pollution, et
12 cetera. Correct?

13 MR. SHEWCHUK: Yes, that's correct.

14 MR. STILWELL: And you thought that
15 that was deserving of criticism based largely on a
16 document produced 11 years ago by the Treasury Board of
17 Canada Secretariat, entitled Canadian Cost-Benefit
18 Analysis Guide. Is that correct?

19 MR. SHEWCHUK: That's correct. It's
20 also curious, given Dr. Joseph's previous work.

21 Mr. Chair, in preparing for today, I
22 had the opportunity to review Dr. Joseph's Ph.D.
23 dissertation as well as a paper he delivered at the
24 United States Association for Energy Economics. And in
25 both documents, he provides a cost-benefit analysis of

1 the Karl bitumen mine. And in both those cases, he uses
2 a single discount rate for costs and benefits.

3 MR. STILWELL: Okay. And at the bottom
4 of page 5 of this guide from the Treasury Board -- oh
5 no, at the bottom of page 5 in your report,
6 Mr. Shewchuk, you say,

7 "The guidelines also recommend a
8 real discount rate of eight per
9 cent for regulatory interventions
10 in Canada or a rate of three per
11 cent for certain human health and
12 environmental goods and services."

13 (As read)

14 So, so far, so good. Well, am I
15 correct in this? When they say eight per cent for the
16 regulatory interventions, do they mean a discount rate
17 of eight per cent for the benefits?

18 MR. SHEWCHUK: If you looked --
19 Mr. Chair, if we look to the next bullet point in my
20 memo, there's a quotation from the Treasury Board of
21 Canada guidelines that specifically states that
22 "whatever rate is used" -- I'm quoting, now -- "the
23 costs and benefits should be discounted using the same
24 rate."

25 MR. STILWELL: Right.

1 MR. SHEWCHUK: So I believe the
2 Treasury Board is suggesting eight or three.

3 MR. STILWELL: Eight or three, but use
4 the same ones for the two types of discounting you're
5 doing.

6 MR. SHEWCHUK: Uniformly applied, yes.

7 MR. STILWELL: Okay. And can you go to
8 page 37 of the guide of the Treasury Board branch of
9 Canada?

10 MR. SHEWCHUK: Yes, I'm looking at page
11 37.

12 MR. STILWELL: Okay. The very last
13 paragraph, and it spills onto page 38, it offers a
14 rationale for using a three per cent rate for social
15 costs. Do you see that there?

16 MR. SHEWCHUK: Yes, I do.

17 MR. STILWELL: But it concludes by
18 saying,
19 "Whatever rate is used, the costs and benefits should be
20 discounted using the same rate."

21 I can't find a rationale for that
22 guidance in this document from the Treasury Board of
23 Canada. Is there a rationale set out in this document
24 supporting the insistence on using the same discount
25 rate and don't use differential ones? Do you know?

1 MR. SHEWCHUK: Mr. Chair, the document
2 doesn't provide explicit argument with respect to the
3 application of a single discount rate; however, within
4 the document it's quite clear that the discount rate is
5 intended to reflect the rate of time preference for
6 consumption. And I would argue that a different rate of
7 time preference for one stream of benefits or costs as
8 compared to another is incompatible with the basic
9 premise of cost-benefit analysis.

10 MR. STILWELL: But I'm correct, they do
11 not set out a rationale for that stipulated approach, do
12 they?

13 MR. SHEWCHUK: Mr. Chair, I believe the
14 guidelines are quite clear in that a single, uniformly
15 applied discount rate is to be used. The argument is
16 not elaborated on.

17 I'd like to note that in my work with
18 other federal departments, namely Environment and
19 Climate Change Canada, this topic has come up. And that
20 department in particular is very clear that a single and
21 uniformly applied discount rate is appropriate.

22 MR. STILWELL: But would you agree,
23 that sounds to me more like a dictate than a principle
24 supported by a foundation of reasons and logic? It's
25 just a -- it's just a statement to use the same numbers,

1 isn't it?

2 MR. SHEWCHUK: The logic for applying a
3 single discount rate, I believe, I can lay out in short
4 order for the Chair.

5 Cost-benefit analysis is, in concept,
6 the following. An analyst seeks to monetize costs and
7 benefits so that when contemplating the net benefit of a
8 project or policy or so forth, we're dealing with a
9 single unit of measure, namely dollars. That sort of
10 gets us past the difficulty of comparing, say,
11 biophysical impacts with financial flows, which are
12 measured in two different units.

13 Now, costs and benefits often occur
14 over time. When costs and benefits do occur over time,
15 we need to contemplate the rate of preference that
16 individuals might have to, say, have a dollar today as
17 opposed to have a dollar 10 years from now. The dollar
18 today is worth -- has more value to me than one that I
19 might receive 10 years from now.

20 In order to overcome that challenge, we
21 apply a discount rate, as we've been discussing, which
22 typically reflects society's rate of time preference.
23 Different folks have different views. It could be three
24 per cent or eight per cent, which is why the Treasury
25 Board guidelines suggests a possibility of either.

1 Now, once we discount costs and
2 benefits over time, we would then compare the present
3 value of benefits to the present value of costs to
4 determine if one outweighs the other. And if so,
5 whether or not the project or policy being contemplated
6 provides net benefit to society.

7 The application of differential
8 discount rates suggests that we have a different rate of
9 preference for certain dollars as compared to other
10 dollars. So if we discount costs, as an example, using
11 a discount rate of, say, 10 per cent, as I believe
12 Dr. Joseph did, and -- or pardon me, I've got that
13 backwards -- a discount rate of 10 per cent for benefits
14 and three per cent for costs, what that does is it
15 creates -- the larger the discount rate, the -- when you
16 use a large discount rate, it reduces the present value
17 of the stream of flows that you're contemplating.

18 So in using a large discount rate for
19 project benefits and a comparatively smaller one for
20 project costs, you end up in a situation where the
21 present value of your benefits is less than the present
22 value of your costs, or relatively speaking, than if
23 they had been discounted using the same discount rate.

24 Now that's curious to me because the
25 very first step in cost-benefit analysis is we turn

1 everything into dollars so that we don't have to worry
2 about where the streams of costs and benefits come from.
3 We are no longer contemplating biophysical impacts as
4 compared to financial because we have monetized
5 everything. We are simply contemplating dollars. We've
6 got our costs reflected in prices.

7 Now to subsequently go and manipulate
8 the discount rate for one stream of benefits suggests
9 that we weren't confident in the conversion of say
10 biophysical costs into dollar values initially.

11 The argument that's typically made -- I
12 wouldn't say typically; I misspoke.

13 The argument that's made when folks
14 advocate for differential discounting is that
15 environmental costs should be treated differently
16 because of their scarcity in the environmental resource
17 and cannot be replenished and therefore we should be
18 putting comparatively more emphasis on the cost by using
19 a smaller discount rate.

20 I would argue that fundamentally
21 misunderstands cost-benefit analysis. If a resource is
22 becoming more scarce, it's the price that should
23 escalate, not the number that demonstrates society's
24 preference for when it receives dollars.

25 So the correct way to demonstrate that

1 an environmental good is becoming scarce in an analysis
2 like the one conducted by Dr. Joseph would be to
3 escalate the price of the environmental goods, not
4 manipulate the discount rate.

5 MR. STILWELL: Mr. Shewchuk, I'm back
6 on page 1 of this guide and I'm looking at the third
7 paragraph. It starts "Other countries" and it says:

8 "Other countries and international
9 communities, such as the United
10 States, Australia, the European
11 Commission, etc., have also come to
12 recommend that a cost-benefit
13 analysis be the centre of
14 regulatory analysis." (As read)

15 That matches what Dr. Joseph says early
16 on in his report about the adoption of cost-benefit
17 analysis in other countries, doesn't it?

18 MR. SHEWCHUK: Mr. Chair, that
19 statement is consistent with one made by Dr. Joseph.

20 MR. CHIASSON: Mr. Chairman, I would
21 like to add to my colleague Mr. Shewchuk's comments.

22 The input-output model has been relied
23 on in the regulatory context for all oil sands project
24 approvals to date. It's Teck's view that using the
25 input-output model accompanied with the environmental

1 impact assessment is a much better approach than the
2 cost-benefit analysis.

3 So Teck has followed the standard that
4 all oil sands project applications and approvals have
5 followed, using the input-output model accompanied with
6 an environmental impact assessment, and that we believe
7 is a more appropriate method to assess a project like
8 the Frontier Project versus a cost-benefit analysis
9 methodology that is much more sensitive, as Mr. Shewchuk
10 has pointed out, to the assumptions used for conducting
11 that analysis.

12 MR. STILWELL: Now, Mr. Shewchuk,
13 should a guideline or directive like this one we've been
14 discussing displace the exercise of professional
15 judgment in members of your profession?

16 MR. SHEWCHUK: Mr. Chair, these
17 guidelines have evolved over time and part of that
18 evolution has likely arisen from professional judgment,
19 the experience of folks undertaking this work.

20 MR. STILWELL: But if an economist
21 studies these subjects and forms a judgment that differs
22 from the guideline, he should ignore the guidelines,
23 shouldn't he?

24 In other words, he's saying the
25 guidelines is wrong in his judgment.

1 MR. CHIASSON: Mr. Chair, I would just
2 like a moment to confer with my colleague.

3 MR. IGNASIAK: Mr. Chair, I am going to
4 object. It is very hypothetical. There is nothing on
5 the record that says anyone said that. I think Mr.
6 Stilwell would acknowledge that nowhere does Mr. Gorski
7 say he thinks that document is wrong.

8 There is nothing on the record showing
9 that.

10 If Mr. Gorski wants to get on the
11 stand, I look forward to him saying that. But I'm not
12 sure it's fair to ask a hypothetical to Mr. Shewchuk
13 about not following guidelines when it's not Mr.
14 Shewchuk who hasn't followed the guidelines.

15 MR. STILWELL: It's perfectly
16 appropriate to ask an expert witness giving opinion
17 evidence hypothetical questions. It's done all the
18 time.

19 Then what you do, and in particular if
20 you go after that, if your evidence comes in after that
21 expert, you try to establish in evidence the facts that
22 make out the hypothetical. It's done all the time. I'm
23 entitled to ask this expert opinion evidence a
24 hypothetical question.

25 And I did not say Dr. Joseph came to

1 the opinion that the guideline is wrong. I'm saying if
2 someone in your profession, after exercising judgment,
3 concluded that guideline is wrong, he should reject it
4 and not follow it.

5 THE CHAIRPERSON: Yes, carry on Mr.
6 Stilwell.

7 MR. STILWELL: Okay. So I wasn't
8 suggesting Dr. Joseph has arrived at the conclusion. It
9 is a hypothetical question.

10 If a member of your profession in
11 considering these issues arrives at a conclusion, upon
12 the exercise of his or her judgment, that something
13 stipulated in this guideline should not be followed,
14 then he or she should not follow it. Right?

15 MR. SHEWCHUK: Mr. Chair, it's
16 difficult to respond hypothetically. Ideally I would
17 like to be able to review the argument for a deviation
18 from the guidelines and make an informed decision at
19 that point.

20 Presuming the argument was sound,
21 perhaps exploration of deviation from the guidelines
22 could be informative.

23 MR. STILWELL: I'm not sure what you
24 are suggesting, Mr. Shewchuk.

25 What are you saying you want to do and

1 how do we do it?

2 MR. SHEWCHUK: Mr. Chair, I'm
3 suggesting that simply arriving at a different
4 conclusion isn't sufficient to deviate from the
5 guidelines. Arriving at a theoretically sound and
6 defensible argument for deviating from the guidelines
7 could be grounds for deviating from them.

8 MR. STILWELL: Okay, now I understand.
9 Now it's 11 years old, this document.

10 MS LaCASSE: Mr. Stilwell, I'm sorry to
11 interrupt you when you are really clicking along here,
12 but just make sure you stay close enough to the mic,
13 please.

14 MR. STILWELL: Yes, I walk around a
15 bit. Sorry.

16 The document is 11 years old. Is there
17 an ongoing revisiting of discount rates from time to
18 time to accommodate changes in returns on investment
19 over different periods?

20 MR. SHEWCHUK: Mr. Chair, I understand
21 that the guidelines have evolved to the version we see
22 before us from an earlier iteration where the discount
23 rates were previously, I believe, 10 per cent.

24 MR. STILWELL: All right. Would it
25 make sense to say we're going to revisit this every ten

1 years as opposed to say we haven't seen any changes in
2 the investment cycle, in the investment returns and
3 value of money for ten years, we're going to leave it
4 alone?

5 Or do these kinds of changes occur more
6 likely on a 30-year span where investment return on
7 monies is lower and the value of monies is lower?

8 Does my question make sense?

9 In other words, maybe I should just try
10 and make it shorter.

11 What should drive revisiting discount
12 rates set out in a guide like this?

13 MR. SHEWCHUK: Mr. Chair, if I look at
14 page 37 -- pardon me, 38 of the guidelines, I see that
15 the government has established a Centre of Regulatory
16 Expertise that for a period of five years will assist
17 departments and agencies in the undertaking of
18 cost-benefit studies.

19 That suggests to me a timeframe that
20 the government may have had in mind.

21 MR. STILWELL: And at page 35 of the
22 guideline it states:

23 "Choosing a discount rate has
24 become one of the most contentious
25 and controversial aspects of the

1 cost-benefit analysis of regulatory
2 policies." (As read)

3 Do you agree with that?

4 MR. SHEWCHUK: Mr. Chair, choosing a
5 discount rate can have a large impact on a cost-benefit
6 study, as we've been discussing. And for that reason it
7 has become contentious.

8 More to the point, a discount rate --
9 in this particular case a small change in the discount
10 rate can reverse the outcome of a study. This is
11 perhaps why cost-benefit studies ought not to be relied
12 on in their entirety in situations such as this. A
13 small adjustment to a key assumption can fundamentally
14 undermine the analysis.

15 MR. STILWELL: Mr. Shewchuk, could you
16 explain in language that I'll be able to understand, or
17 at least you think I'll be able to understand, what a
18 Monte Carlo exercise is?

19 Actually, let me back up. I want to
20 ask one more question.

21 Determining an appropriate discount
22 rate to be applied is very much a subjective exercise,
23 isn't it?

24 MR. SHEWCHUK: Could you please repeat
25 the question?

1 MR. STILWELL: When an economist sits
2 down and decides upon an appropriate discount rate to be
3 used, he's engaging in a subjective exercise.

4 MR. SHEWCHUK: Mr. Chair, I would argue
5 that the guidelines provide guidance with respect to
6 selecting a discount rate.

7 MR. STILWELL: Let's ignore the
8 guidelines for a minute. Let's think about an economist
9 retained in civil litigation.

10 The question is: Somebody is going to
11 get a pot of money today which will cover years down the
12 road, like a loss of future income claim. This guide
13 wouldn't apply to that economist at all. He's not in
14 the regulatory setting. But he will nonetheless
15 determine an appropriate discount rate to determine net
16 present value of the money the fellow should receive.
17 And when he does so, he's making a subjective
18 determination.

19 Yes, in the guideline it's objective.
20 It's fixed so that people in the federal government will
21 know what to use and avoid debate. But when you are not
22 using a document like this that stipulates what rate to
23 be used, an economist is arriving at a subjective
24 number, isn't he, that calls for judgment?

25 MR. SHEWCHUK: Mr. Chair, I would

1 disagree slightly with that. I would say an economist
2 undertakes an analysis in order to determine what an
3 appropriate discount rate is, and that analysis needs to
4 be thorough and defensible.

5 I wouldn't characterize that as
6 subjective.

7 MR. STILWELL: Okay.

8 THE CHAIRPERSON: Mr. Stilwell, not
9 again wanting to interrupt, but we're at about the point
10 where I would be looking for a break. So I will let you
11 pick the spot based on where you feel it would be
12 appropriate to take a break.

13 MR. STILWELL: This is a good time
14 right now, Mr. Chairman.

15 THE CHAIRPERSON: Okay, thank you.

16 Then we will take a 20-minute break
17 right now. I have about 3:05 so we will return around
18 3:25.

19 --- Upon recessing at 1505 / Suspension à 1505

20 --- Upon resuming at 1527 / Reprise à 1527

21 THE CHAIRPERSON: Please be seated.

22 Before we get going again, just a
23 reminder to the Teck witness panel to try and speak into
24 your mics.

25 Mr. McFadyen, I think you in particular

1 have a habit of kind of sitting back and it's a little
2 hard for the Court Reporter to hear. Okay?

3 Thanks for that.

4 Mr. Stilwell.

5 MR. STILWELL: Yes. I would like just a
6 simple explanation that I might be able to understand of
7 the Monte Carlo exercise or analysis.

8 What is done?

9 MR. SHEWCHUK: Mr. Chair, a Monte Carlo
10 analysis is -- and I will explain this at a fairly high
11 level.

12 It's basically an exercise where an
13 analyst would use the historic distribution of an
14 unknown parameter in the analysis, say price, to
15 estimate future possible values.

16 So again taking the example of price,
17 let's say we knew what the price of a particular good
18 was every day for the last year and we were able to
19 build a probability curve so we could understand by
20 using that data, the historical data, so we could
21 understand the probability of a certain price occurring
22 at a point in time.

23 Let's assume that prices aren't linked
24 period to period, that they are randomly occurring, just
25 for the simplicity of the example.

1 The basic idea is we tell a computer to
2 go and grab a price out of that historic distribution
3 and plug it in the analysis, solve it, store the result
4 and then go grab another price from the distribution,
5 stick it in the analysis, solve the result, store it,
6 and do that over and over and over again.

7 The idea is that you use this process
8 to generate a distribution of outcomes so that you can
9 understand on a probabilistic basis what the final
10 parameter might be that it is you are interested in.

11 MR. STILWELL: Thank you.

12 Now in Dr. Joseph's report he itemizes
13 a number of things which he says gives rise to costs.
14 Some can be he thinks monetized, turned into a money
15 amount and some he doesn't.

16 So some of the things he tries to
17 ascribe a cost to, or at least identify as a cost, were
18 incremental government costs. Governments build roads,
19 provide health services. And he says sometimes major
20 projects. We look at the revenues and say that's
21 wonderful; we're getting the royalties and taxes. But
22 sometimes there's additional costs because of that
23 project.

24 I'm going to summarize these and then
25 basically I've got one or two questions after I

1 summarize them.

2 For example, regulatory costs. A big
3 project will increase regulatory costs on the part of
4 the government.

5 Air pollution creates costs, he says,
6 health related.

7 Greenhouse gas emissions creates costs,
8 damage costs to Albertans and other Canadians and
9 citizens of the world.

10 Water resources. He concludes that
11 impacts on water resources, both in terms of quantity
12 and quality, that was one that he couldn't arrive at a
13 monetary damage.

14 Ecosystem services. Affect land's
15 ability to provide eco services, systems.

16 User costs. The potential for foreign
17 investment and leakage, and that is profit leaving the
18 country.

19 Subsidies to the fossil fuel industry.

20 Social costs.

21 So those are some of the costs he
22 discusses in his report. Not all of them can he feel
23 comfortable ascribing a monetary value to.

24 Now in your rebuttal report, you do not
25 refute the contention that those are costs and they

1 exist. Correct?

2 MR. SHEWCHUK: Mr. Chair, I don't
3 refute that those items are potentially costs.

4 I would like to point out that the
5 difficulty of pricing things like this is precisely why
6 in the case of a large project like the Teck Frontier
7 one before us today is evaluated using an EIA. It's a
8 far more nuanced and detailed instrument when it comes
9 to understanding the impacts of development.

10 MR. STILWELL: And the final one is a
11 very minor point. It's not a big number when we talk
12 about the money and that is in your materials it is said
13 that municipal taxes which will be paid to the Regional
14 Municipality of Wood Buffalo over the life of the mine
15 would be \$3.5 billion. And you arrive at a net present
16 value of \$372 million.

17 Did Teck rework those numbers at all in
18 light of the changes made to the Municipal Government
19 Act in Taxation and Property Taxes within the last
20 couple of years? And would you like to know about what
21 those changes are?

22 MR. CHIASSON: I'll confer with my
23 colleagues, Mr. Chair.

24 --- Pause

25 MR. CHIASSON: Mr. Chairman, in

1 response to counsel's question, Teck is aware of the
2 change. I believe there was a reference to a response
3 we provided to Package 5, where we...

4 --- Off microphone

5 Are we good? I'll start again. So,
6 Mr. Chairman, we are aware of the taxes or the new
7 change proposed for the taxes in the municipality. When
8 we did our work to respond to Joint Review Panel 5.1 in
9 early 2017 we used the rates of the day. We do
10 understand that the difference between the municipal
11 rate and the industrial rate, the gap is too large, and
12 that there is a move to try to reduce that gap.

13 That said, you know, the \$3.5 billion
14 estimate we used was using the rate at the time.

15 MR. STILWELL: That difference between
16 the taxes of rural non-residential property or, in other
17 words, industrial property and oil sands development,
18 the ratio of the assessment of that type of property to
19 the assessment of residential property, so a home in
20 Fort McMurray, was 18:1.

21 You know that the oil sands industry
22 approached first the municipality and then the
23 provincial government, they didn't like that and they
24 wanted it reduced. The provincial government agreed to
25 reduce that ratio from 18:1 to 5:1 You're aware of

1 those details, correct?

2 MR. CHAISSON: That's correct.

3 MR. STILWELL: Was Teck working on that
4 initiative with the other oil sands companies?

5 MR. CHIASSON: Mr. Chairman, just a
6 moment.

7 Mr. Chairman, we were aware. We
8 weren't directly involved in those discussions, but we
9 were aware of the initiative from industry to have
10 discussions of that nature.

11 MR. STILWELL: So if you use 18 to 5
12 you've got something that looks like a two-thirds
13 reduction is necessary, to get it from 18 down to 5.
14 But, of course, they can increase residential taxes in
15 Fort McMurray, but you wonder how far they can get with
16 that and still remain an elected official in the
17 municipality.

18 But if we use that two-thirds number,
19 don't we reduce that MPV value from \$372 million to --
20 well, take off two thirds of that. My math is not
21 strong right now. So, again, it's not a big number, but
22 the municipality with the new provincial legislation
23 should not count on receiving \$372 million is the net
24 effect, right?

25 MR. CHIASSON: So, Mr. Chairman, I

1 don't agree with that assertion. The gap needs to be
2 narrowed, we understand that. A decision on how that
3 gap is going to be narrowed with is industry's rates
4 going to be reduced or is municipal taxes going to be
5 increased, or to what degree, has not yet been
6 determined. So it's speculative to assume that
7 industry's rates are going to be reduced. They
8 currently are what they are. They are what we've used
9 in our assessment. We understand the gap is to be
10 narrowed, but there's been no determination about how
11 that is going to happen as of yet.

12 MR. STILWELL: Well, I thank all of
13 you. Those are my questions. My friend, Mr. Robinson,
14 has a couple more sets of questions.

15 Thank you very much.

16 CROSS-EXAMINATION

17 MR. ROBINSON: Good afternoon, Mr.
18 Chairman, Panel Members, participants of all types and
19 witnesses. For the record, once again, my name is Barry
20 Robinson, I am co-counsel to the Oil Sands Environmental
21 Coalition along with Mr. Stilwell. I'll be asking
22 questions primarily in three areas: greenhouse gas
23 emissions; tailings reclamation enclosure; and,
24 biodiversity. So that may mean some of you can relax
25 for a while.

1 At times I'll be referring to
2 information that's coming from the Teck project update,
3 from the information requests, and from the reply
4 submission. I expect that most of the information will
5 be very familiar to you and uncontroversial. But
6 certainly, if the Review Panel or any of the witnesses
7 want, you know, me to take you to the exact document
8 where that number or quote is, just let me know and I'll
9 take you to that document.

10 Also, certainly if any of my questions
11 are unclear, please ask me to clarify or try rewording
12 it to make sure we're all on the same page in our
13 questions and answers.

14 Before I ask some questions about
15 greenhouse gas emissions I want to just confirm my
16 understanding of some numbers that come from the project
17 update. So this will really just be initially in the
18 way of confirmation.

19 So, first of all, am I correct that
20 direct emissions intensity for the project is estimated
21 at 38.4 kilograms of CO₂ equivalent per tonne of bitumen
22 production?

23 MR. SPELLER: Mr. Chair, I'm just going
24 to repeat the units to make sure we're on the same page.
25 But we have 38.4 kilograms of equivalent CO₂ per barrel.

1 MR. ROBINSON: Per barrel? Pardon me,
2 that's my error.

3 MR. SPELLER: No worries.

4 MR. ROBINSON: Direct and indirect
5 emissions when you combine the two is 40.4 kilograms of
6 CO2 equivalent per barrel, isn't that correct?

7 MR. SPELLER: Mr. Chairman, that's
8 correct.

9 MR. ROBINSON: At full production, the
10 direct emissions would be 3,879 kilotonnes per year?

11 MR. SPELLER: Sorry, could you repeat
12 that number again?

13 MR. ROBINSON: 3,879 kilotonnes per
14 year.

15 MR. SPELLER: Mr. Chairman, that's what
16 our estimate is, yes.

17 MR. ROBINSON: Again, with direct and
18 indirect emissions the number would be 4,082 kilotonnes
19 per year, is that correct?

20 MR. SPELLER: Mr. Chairman, that's what
21 our estimate is, yes.

22 MR. ROBINSON: So I take it then that
23 there's been no revision to those estimates since the
24 project update? Have there been any subsequent
25 engineering changes or engineering design work that

1 would alter those numbers?

2 MR. CHIASSON: Mr. Chairman, I can
3 confirm there's been no additional work since those
4 estimates were developed.

5 MR. ROBINSON: Thank you. Am I correct
6 that the only difference between the direct and indirect
7 emissions is that the indirect adds in greenhouse gasses
8 related to imported electricity, is that correct?

9 MR. SPELLER: Mr. Chairman, that's
10 correct.

11 MR. ROBINSON: So that's electricity
12 that's generated off site and then brought in and used
13 on site, is that correct?

14 MR. SPELLER: Mr. Chairman, that's
15 correct.

16 MR. ROBINSON: So it's produced
17 external to the project, but used on site?

18 MR. SPELLER: Mr. Chairman, again,
19 that's correct.

20 MR. ROBINSON: Would you agree,
21 electricity that is produced externally and brought on
22 site is electricity that is produced upstream of the
23 project?

24 MR. SPELLER: Mr. Chair, I've never
25 referred to those sort of indirect emissions as upstream

1 before.

2 MR. ROBINSON: But you would agree that
3 the electricity is produced external to the project and
4 then used on the project site?

5 MR. SPELLER: Mr. Chairman, yes.

6 MR. ROBINSON: Thank you. Am I
7 correct, and I believe this was alluded to in -- and I'm
8 sorry, sitting back there I couldn't tell whether it was
9 Mr. Chiasson or Mr. Speller who was answering certain
10 questions, but it was alluded to in one of your direct
11 that the emissions that I've discussed so far did not
12 include any allowance for greenhouse gasses associated
13 with the production of natural gas that would be brought
14 onto the site, is that correct?

15 MR. SPELLER: Mr. Chairman, that's
16 correct. The standard approach to looking at greenhouse
17 gas inventories in the oil sands region for EIAs, or the
18 ones that we've worked on the last 10 or 15 years, tends
19 to include the direct emissions from the site, and then
20 a request to include the electricity that's also used at
21 the site as an indirect. That's typically the limit of
22 what we include.

23 MR. ROBINSON: Would you agree that the
24 natural gas that is produced and brought on the site is
25 produce external to the project?

1 MR. SPELLER: Yes, Mr. Chair, I'd
2 agree.

3 MR. ROBINSON: Similarly, the estimates
4 of greenhouse gas emissions that we've run through did
5 not include any allowance for greenhouse gas emissions
6 associated with the production of gasoline or diesel or
7 other fuels that are brought onto site, is that correct?

8 MR. SPELLER: Mr. Chair, that's
9 correct. As I mentioned, the standard approach to these
10 sort of inventories and for oil sands projects is to
11 include the direct emissions, and then the electricity
12 that's imported to the site.

13 MR. ROBINSON: Would you agree that
14 those fuels though are produced external to the project
15 and then planned to be used in the project?

16 MR. SPELLER: Yes, Mr. Chair, I'd
17 agree.

18 MR. ROBINSON: The project update
19 reflected a decision to increase the operating
20 temperature for the project by 5 degrees Celsius. What
21 was the impact of that change on the greenhouse gas
22 emissions from the Project?

23 MR. CHIASSON: Mr. Chairman, I can
24 answer that question. When we compare decisions for the
25 design of the project we look at the project system as a

1 whole as opposed to the various components. So
2 increasing the temperature by 5 degrees for better
3 recovery of bitumen was part of the changes from the
4 project application that was submitted in 2011 to the
5 updated project in 2015.

6 But when I say we look at the systems,
7 it's because it's inputs and outputs that have you
8 arrive at the ultimate intensity for the project. So
9 the changes that were made from the original project
10 application in 2011 to the project update submitted in
11 2015 reduced greenhouse gas emissions on the whole from
12 I believe it was 40.4 kilograms per tonne equivalent of
13 greenhouse gas emissions to 38.4.

14 There's a number of inputs and outputs
15 that contribute to that. So it's a bit of a long
16 answer, but improving the recovery of the barrels was
17 one input with raising the temperature. Another input
18 was the change to the tailings plan which had us build
19 more of the tailings facility with processed sand versus
20 innerburden material that would need to be hauled long
21 distances with trucks.

22 So when a design or a plan is changed
23 there's a number of elements that change. The net
24 result of the process temperature change, along with all
25 other changes, resulted in a lower intensity design than

1 what we had in 2011, and that includes the increase in
2 temperature.

3 MR. ROBINSON: Would you agree that if
4 you looked at the temperature increase alone that the
5 tendency would be that that would increase greenhouse
6 gas emissions?

7 MR. CHIASSON: Mr. Chairman, I would
8 agree the temperature increase in that component would
9 contribute more to greenhouse gas emissions.

10 MR. ROBINSON: Did you make any
11 estimate or any calculation of what that would be, the
12 change due to the temperature increase?

13 MR. CHIASSON: Mr. Chairman, as I
14 stated earlier, we didn't look at the individual
15 component, we looked at the system changed, and the
16 overall design and the overall plan from what we had in
17 2011 to 2015, as opposed to looking at the various
18 components we evaluated the system.

19 MR. ROBINSON: You alluded to this,
20 that with the change from thin lift drying to centrifuge
21 fine tailings that there was an increase in overall
22 electric power load. I have it from your project update
23 that that increased the overall electric power load from
24 289 megawatts to 319 megawatts. Can I assume that this
25 is similar to the temperature increase, that you didn't

1 calculate the exact impact of that change alone?

2 MR. CHIASSON: Mr. Chairman, that's
3 correct. This was part of the system change that was
4 that as the design changed the various components we
5 didn't evaluate, we evaluated the plan on its entirety.
6 So that's correct.

7 MR. ROBINSON: You've put out a number.
8 The number I have here is that direct and indirect
9 emissions from the integrated application were 46
10 kilograms C02 equivalent per barrel, and then it
11 dropped, when you include direct and indirect, to 40.4
12 kilograms C02 equivalent per barrel in the project
13 update. That's, you know, despite there being some
14 increase due to operating temperature and to electric
15 power load.

16 So, obviously, there were other
17 offsetting changes that brought that down. Can you tell
18 us what some of those were?

19 MR. CHIASSON: Mr. Chairman, an example
20 would be on the system when changed from the integrated
21 application to the project update, is with the change in
22 the tailings plan and using more -- taking into account
23 better, I would say, the project site-specific
24 conditions, and using the tailing sand, that is waste
25 from the extraction process, mainly as the containment

1 material for the tailings. So that long distances with
2 haul trucks were no longer required to build more of the
3 containment.

4 That haul distance reduction was one
5 example of a system change that resulted in a reduction
6 to greenhouse gas emissions, as an example.

7 MR. ROBINSON: Do you have any idea of
8 the percentage or the total quantity of GHG emissions
9 that were reduced by that haul distance change?

10 MR. SPELLER: Mr. Chairman, we've
11 actually provided a response that has some of the
12 information that's been requested. I'm going to try to
13 make sure I get the right numbers. It's Registry Doc
14 268, it's Package 3 of the Joint Review Panel
15 information requests, it's Request 3.15, and it's on PDF
16 page 96 of 121.

17 Then you'll see there's a list of
18 bullets about some of the changes, large and small,
19 related to the changes that were shown in the project
20 update. It talks about the more efficient mine plan
21 without the utility corridor, reduced average haul
22 distances, and other items related to the reduction in
23 greenhouse gasses from the project design.

24 MR. ROBINSON: Thank you. I believe
25 right below the table or close to the table you referred

1 to there's a table 3.15(b)(1), which runs from page 3-92
2 to 3-94 of that IR response. It lists a number of
3 technologies that Teck, I believe, was labelled as might
4 consider to reduce greenhouse gas intensity.

5 Base on further engineering work and
6 design work since the project update, or since that IR,
7 has Teck decided to incorporate any of these
8 technologies into the project?

9 MR. CHIASSON: Mr. Chairman, the answer
10 to the question from counsel is no. These are emerging
11 technologies. We are committed to look, continue to
12 look for ways to continuously improve and adapt as
13 technologies emerge. There are ways and means to reduce
14 emissions intensity.

15 This is a list from our participation
16 in Canada's Oil Sands Innovation Alliance. As a
17 founding member, even though we're not yet an operating
18 in the oil sands, we are working with a number of the
19 other oil sands companies to look at technologies to
20 reduce emissions intensity. This is an evaluation of
21 emerging technologies with a comment on do we think that
22 some are more promising, et cetera.

23 That said, none of these have yet been
24 adopted by Frontier. We would look in the future for
25 technologies that we thought could help reduce emissions

1 intensity. These are ones that are emerging that we'll
2 be keeping a close eye on to see if there's an
3 opportunity to improve our project and improve our
4 emissions intensity.

5 MR. ROBINSON: At this point Teck is
6 not committed to implementing any of the technologies
7 that are listed in Table 3.15(b)(1)?

8 MR. CHIASSON: So, Mr. Chairman, that
9 is correct. We have not yet committed to adopting these
10 technologies; as I mentioned, they're emerging. From
11 our participation in COSIA, as an example, we're keeping
12 a close eye on them and if we believe there's an
13 opportunity from the emergence of these technologies to
14 improve the greenhouse gas emissions intensity and
15 improve the Project, we will look to adapt the Project
16 at that time. It's premature for these at this stage
17 for Frontier.

18 MR. ROBINSON: Mr. Chiasson, in your
19 direct testimony this morning, if I recorded this
20 correctly, you referred to an IHS report and said a 24
21 percent reduction in GHG intensity is possible without
22 transformational technology. What are those
23 technologies that are not transformational that could be
24 used?

25 MR. CHIASSON: So, an example of

1 technologies that are not transformational that could be
2 used, one example would be the paraffinic froth
3 treatment technology. So, a number of current operators
4 have adopted that technology in the past decade, and
5 those projects utilizing that technology have a lower
6 emissions intensity comparatively to other oil sands
7 producers. So, that is a technology that has been
8 developed, adopted, and is now in commercial use. When
9 Teck designed the Frontier Project, that was the
10 technology that we implemented into the design and
11 that's the basis for the part of the extraction process,
12 is using that technology and that approach.
13 And that is one of the technologies that mining bitumen
14 companies have been able to include to help reduce their
15 intensities.

16 MR. ROBINSON: And as you say, the PFT
17 technology has already been incorporated into the
18 Project update?

19 MR. CHIASSON: That is correct, MR.
20 Chairman.

21 MR. ROBINSON: And the emission numbers
22 that we started out confirming were based on that
23 technology?

24 MR. CHIASSON: That is correct.

25 MR. ROBINSON: So some of that 24

1 percent reduction that you quote from IHS is already
2 built in, already been achieved? Well, achieved in the
3 sense that it is built into the design?

4 MR. CHIASSON: The reference to the IHS
5 market report of September 2018 stated -- in that report
6 it stated mining companies have been able to reduce
7 their emissions from 2009 to 2017 by 25 percent. And my
8 remarks to the previous question was part of the reason
9 for that is utilization of the paraffinic froth
10 treatment process, and Teck has that process
11 incorporated into its design for Frontier.

12 MR. ROBINSON: So this isn't a
13 reference to 24 percent improvement, but that might be
14 made on greenhouse gas emissions in the future; is that
15 right? I'm confused because I thought the answer when
16 you gave it, or when you stated this morning there
17 was -- as evidence of how future technology will reduce
18 greenhouse gas emissions. But, it sounds now like
19 you're referring to something that's already built in?

20 MR. CHIASSON: Mr. Chairman, there's
21 two references I made earlier. One, was -- well, sorry,
22 apologies. The reference I made earlier was in the
23 past. I believe counsel is referring to the same report
24 which suggest IHS market suggests that mining companies,
25 their estimation is that there is potentially as much as

1 24 percent more improvement by 2030 with mining
2 companies. That statement is also in that report.

3 MR. ROBINSON: And that was without
4 transformational technology, if I heard you right this
5 morning?

6 MR. CHIASSON: That is correct.

7 MR. ROBINSON: And, so I'll ask my
8 question, beyond the paraffinic froth treatment are
9 there any other transformation technologies that you
10 foresee being used on Frontier Project to reduce
11 greenhouse gas emissions?

12 MR. CHIASSON: I want to make sure that
13 I heard your questions correctly. Are you asking me for
14 what the transformational changes are, or what
15 technologies is there that are not transformational?

16 MR. ROBINSON: Let me try and clarify
17 that for you. So, in your statement this morning if I
18 recorded it properly, you said that IHS said that they
19 have 24 percent reduction in GHG intensity, and I take
20 that meaning going forward, is possible without
21 transformational technology. And you've referred to
22 PFT, but I'm wondering is that it, or are there other
23 transformational technologies that would get that 24
24 percent reduction?

25 MR. CHIASSON: Mr. Chairman, an

1 example -- I can't speak for IHS market and their
2 assessment that there's another 24 percent or up to 24
3 percent improvement they feel that mining companies can
4 make, so I can't speak for them. But, I would point to
5 Table -- I would point to the table that counsel has
6 referenced, Table 3.15 B-1 on PDF page 97 as a list of
7 the emerging technologies, some of which could prove
8 commercially viable that mining companies could use to
9 improve their emissions intensity.

10 MR. ROBINSON: In Joint-Review Panel
11 Information Request 5.1 A(2), Teck calculates the cost
12 of compliance under the *Specified Gas Emitters*
13 *Regulation* using a \$30 per tonne value for greenhouse
14 gas emissions as \$635 million over the project life.
15 Now, as, again, someone said this morning that was a
16 conservative calculation because it does not assume any
17 improvements, but it was the calculation put in, I take
18 it, as kind of a worst case scenario; is that right?

19 MR. CHIASSON: The response to
20 Joint-Review Panel question in Package 5, which asks for
21 the estimated cost of carbon, the request was using the
22 regulation of the day what is Teck's estimate of the
23 cost of carbon for the Project. So, Teck -- the
24 regulation of that day which was early 2017 was the
25 *Specified Gas Emitters Regulation* which had a cost of

1 carbon of \$30 which required up to a 20 percent
2 improvement over time from a specific project.

3 So, Teck was aware at that time that
4 there was emerging regulation which was not yet in
5 place, which was intended to be -- we were aware that
6 there was newer emerging regulation, so our approach to
7 estimating the cost of carbon was we wanted to be very
8 conservative with the old regulation, understanding that
9 a more stringent regulation was going to be coming into
10 effect.

11 So, our estimate of \$636 million using
12 the *Specified Gas Emitters Regulation* was developed on
13 that basis, to try to be as ultra conservative as we
14 could be using that regulation understanding that there
15 was a new regulation that was pending that was intended
16 to be more stringent.

17 MR. ROBINSON: So, the \$635 million
18 price was the cost was calculated under the *Specified*
19 *Gas Emitters Regulation* at \$30 a tonne. As you say,
20 that was the regulation of the day. We have a new
21 regulation of the day which is the *Carbon Competitive*
22 *Incentives Regulation* and we know that the base price
23 will be at least \$50 a tonne when the project commences.
24 Has Teck calculated on the same comparable basis what
25 the cost of compliance would be under the new regulation

1 and at \$50 a tonne?

2 MR. CHIASSON: Yes, we have, Mr.
3 Chairman.

4 MR. ROBINSON: Can you share that
5 value?

6 MR. CHIASSON: Absolutely. Mr.
7 Chairman, utilizing the new regulation which I will
8 refer to as the CCIR, it's the *Carbon Competitive*
9 *Incentive Regulation*, Teck's assessment of carbon costs
10 for the project is not materially different than that
11 assessed using the *Specified Gas Emitters Regulation*.
12 So, our estimate in response to Joint-Review Panel
13 Package 5.1 or Package 5, Question 5.1 of \$635 million,
14 our updated estimate using the new regulation CCIR is
15 not materially different.

16 MR. ROBINSON: Could you tell us what
17 that value is?

18 MR. CHIASSON: Mr. Chairman, we looked
19 at a number of scenarios. When looking at the new CCIR
20 regulation there's a couple of elements, or there's
21 elements that reflect the carbon costs for the project.
22 Two of those elements are relative to the output based
23 allocation of a reference facility what is Teck's
24 estimated intensity relative to that? And, compared to
25 that, the cost of carbon that we used was \$50 a tonne

1 for the amount of emissions that would be over the
2 reference amount.

3 MR. ROBINSON: And what was that value?
4 What was the cost? I still didn't hear the cost in the
5 response, there.

6 MR. CHIASSON: Oh.

7 MR. ROBINSON: It's \$635 million under
8 the old. What's the cost -- the potential cost under
9 the new?

10 MR. CHIASSON: Okay. MR. Chairman,
11 I thought I answered that question. It's not materially
12 different. We did a scenario that resulted in \$600
13 million of costs. We did a scenario that resulted in
14 \$700 million worth of costs. And we did a scenario that
15 resulted in \$750 million worth of costs with the various
16 aspect of output based allocation and a \$50 carbon tax.

17 MR. ROBINSON: Was the \$750 million
18 cost the highest of the scenarios that you ran?

19 MR. CHIASSON: Mr. Chairman, that's
20 correct.

21 MR. ROBINSON: And did that use the
22 CCIR regulation exemption of, I have it as 0.1894 tonnes
23 of CO2 per meter cubed started at 2022 and then
24 declining by 2 percent -- the output based allocation
25 declining by 2 percent per year? Did your scenarios use

1 that number?

2 MR. CHIASSON: Mr. Chairman, that's
3 correct.

4 MR. ROBINSON: And did it decline by 2
5 percent year out for the life of the project?

6 MR. CHIASSON: Mr. Chairman, it did
7 not. So there's a number of reasons for that.

8 We look at the likelihood or the
9 non-likelihood of, for the next 50 years, the next five
10 decades, that output-based allocation continually
11 becoming more stringent every year regardless of what
12 the rest of the world, the other oil-producing
13 jurisdictions, are doing.

14 And the fact that other jurisdictions
15 have been slow to implement carbon legislation informs
16 our assessment that it's not likely -- while it's
17 possible, it's not likely for the output-based
18 allocation to become more stringent every year for the
19 next 50 years.

20 And also what informs that is the fact
21 that both the Government of Canada and the Government of
22 Alberta have stated that they will protect trade exposed
23 sectors to carbon leakage. And carbon leakage is if
24 Canada's or Alberta's laws become so stringent and other
25 jurisdictions have not kept pace with countries like

1 Canada, what could actually be happening on a global
2 basis is a more carbon intensive barrel with less
3 stringent regulation in some other jurisdiction could
4 actually be produced in place of a lower intensity
5 barrel in Canada.

6 And we don't think that that's -- we
7 think because of the commitment by the Government of
8 Alberta and the Government of Canada to not -- or to
9 protect trade-exposed sectors that at some point, when
10 the rest of the world doesn't keep pace with Canada,
11 that they won't continue to make the output-based
12 allocation more stringent year after year after year for
13 the next 50 years.

14 We think that's a more likely scenario,
15 that they will not continue to do that for the next five
16 decades.

17 MR. ROBINSON: Do you agree that the
18 current carbon competitive CCIR regulation has the
19 output-based allocation declining by 0.2 percent per
20 year from 2022?

21 MR. CHIASSON: Mr. Chairman, as per my
22 comments previously, I understand that that is what the
23 *Carbon Competitiveness Incentive Regulation* includes.

24 It also will consider, it also will
25 take into account, according to the Government of Canada

1 and the Alberta government, whether the stringency is
2 outpacing other jurisdictions and if the government
3 needs to protect trade-exposed sectors from carbon
4 leakage.

5 So in consideration of that, we don't
6 think that the regulation is going to get more stringent
7 every year on year if other jurisdictions are not
8 keeping pace.

9 That's not the intent of the
10 regulation, and we don't think it's likely to occur.

11 MR. ROBINSON: Have you had any
12 communication from the Government of Alberta indicating
13 they intend to amend the CCIR?

14 MR. CHIASSON: Could you please repeat
15 that question?

16 MR. ROBINSON: Have you had any
17 communication from the Government of Alberta indicating
18 that they intend to amend the CCIR?

19 MR. CHIASSON: One moment to confer
20 with colleagues, Mr. Chair.

21 --- Pause

22 MR. CHIASSON: To answer counsel's
23 question, yes, we are aware that the government plans to
24 amend or change or revisit the CCIR regulation. In
25 fact, they're going to do that every five years. The

1 next time is in 2022.

2 MR. SPELLER: Mr. Chairman, the CCIR
3 discussion we're having reminded me I was remiss earlier
4 in our discussion about direct and indirect emissions.

5 The emissions inventory approach that
6 we've done with direct emissions and the imported
7 electricity is consistent with CCIR reporting where
8 operators look at direct emissions plus imported
9 electricity, imported thermal energy and imported
10 hydrogen.

11 I should have said that earlier.

12 MR. ROBINSON: Thank you.

13 The response to JRP IR-3.15(e) provides
14 estimates of GHG intensities for other operating and
15 planned oil sands projects. And these are summarized
16 from page 3-99 through about 3-103.

17 There's estimates for various projects
18 and estimates from various sources in those pages.

19 I would characterize them as kind of
20 all over the map. Is that a fair characterization?

21 MR. SPELLER: Just to confirm, this is
22 a long response.

23 Are you looking at the bullets on the
24 bottom of page 3-102?

25 MR. ROBINSON: We could look there, but

1 I was looking at, you know, the actual text that's -- it
2 starts on 3-98. GHG emissions and intensities for other
3 oil sand facilities are presented and discussed, and it
4 goes on for the next three pages.

5 Yeah, and then they're kind of
6 summarized at the bottom.

7 MR. SPELLER: Yeah. Maybe if we look
8 at the summaries from the bullets. But in general, what
9 we see in the text and then there's tables below are
10 what we tend to see for operating facilities as when
11 they report their greenhouse gas emission inventories.
12 Different years, different fuel uses, different
13 activities at the site, you do get a range of emission
14 intensities.

15 And since we are talking about
16 intensities, they're driven by the production rate in
17 that year of the operation which, as projects approach
18 maximum capacity, can vary year to year.

19 MR. ROBINSON: Do you have any updated
20 estimates from any of the projects that are listed in
21 there, for example, Fort Hills now up and running,
22 obviously, in early stages. But have any of the other
23 projects provided more up-to-date comparables?

24 MR. SPELLER: So Mr. Chairman, the
25 different operation report numbers every year. We

1 haven't summarized something that's on the filed record
2 at the moment.

3 MR. ROBINSON: Okay, thank you.

4 I have a question about oil sands
5 production forecasts just because it came up earlier.

6 But in Project Update Volume 1, Section
7 1.3.7.3, page 1-14 -- this is CEAA doc 163 -- it states
8 that the:

9 "Canadian blended bitumen supply is
10 expected to increase from 2.0
11 million barrels per day in 2013 to
12 4.7 million barrels per day by
13 2025."

14 Is that correct?

15 MR. CHIASSON: I'm still looking for
16 the reference.

17 MR. ROBINSON: I'll give you time to
18 find it.

19 MR. CHIASSON: Sorry.

20 MR. ROBINSON: It was your Project
21 Update Volume 1, page 1-14, if that helps.

22 I'll just make sure that I have that
23 reference correct. It's under "Market Analysis", the
24 second bullet.

25 So I'll just repeat the question.

1 You do have it now? Okay.

2 So am I correct that the market
3 analysis in the project update states that:

4 "Canadian blended bitumen supply is
5 expected to increase from 2.0
6 million barrels per day in 2013 to
7 4.7 million barrels per day by
8 2025."

9 Is that correct?

10 MR. CHIASSON: Mr. Chairman, that's
11 what that bullet states.

12 The analysis that we would have done
13 that would have been conducted in 2014 when -- when the
14 price of oil in August of 2014 was more than \$100 a
15 barrel, our analysis that informed the project update
16 described in this bullet was that oil production from
17 Canada or Canadian blended bitumen supply would increase
18 to 4.7 million barrels by 2025.

19 Of course, our view on that, like what
20 CAPP suggests, like what IHS Market suggests, after the
21 decrease in oil price and increased -- or the
22 introduction of the carbon legislation, that has slowed
23 production since that implementation.

24 But this is the -- this is the bullet
25 and the analysis of the day from late 2014/early 2015

1 that was included into the project update.

2 MR. ROBINSON: So in the project
3 update, Teck's analysis of potential supply and demand
4 for oil sands bitumen was based on that 4.7 million
5 barrels by 2025. Is that correct?

6 MR. CHIASSON: Mr. Chairman, that's
7 part of the market analysis that was conducted at that
8 time. That's correct.

9 MR. ROBINSON: And was Teck's analysis
10 of the economic benefits of the project in the project
11 update based on that market analysis?

12 MR. CHIASSON: Mr. Chairman, I wouldn't
13 agree with that, actually.

14 The analysis that influenced Teck's
15 assessment for the price, the revenue, the royalties was
16 based on -- as described in our response to Joint Review
17 Panel Question 5.1, it was based on the -- a more global
18 assessment of the demand for oil.

19 So the International Energy Agency at
20 that time, I believe it would have been the 2015 or the
21 2016 report that they provided, that showed the demand
22 for oil increasing up to 2040 and the price increasing
23 to above \$95 and above after 2026, that was the analysis
24 that more so informed Teck's assessment of the economic
25 setting during the time that -- if the project was

1 approved during that -- the project operation.

2 MR. ROBINSON: So there was -- there
3 has been, though, you're saying, a change in the market
4 outlook for bitumen from the time the Project Update was
5 produced until today.

6 MR. CHIASSON: That is correct, Mr.
7 Chair.

8 MR. ROBINSON: And did you adjust your
9 economic forecast based on that in terms of benefits?

10 MR. CHIASSON: That is correct, Mr.
11 Chairman, but our analysis remained consistent with what
12 we provided in the Project Update. And from what we've
13 provided in our response to 5.1, Joint Review Panel
14 Question 5.1, to -- until today, the oil sands -- or not
15 the oil sands. The oil forecast organizations such as
16 International Energy Agency and the U.S. Energy
17 Information Administration, to name two, their forecasts
18 for global demand remain consistent with what was used
19 in 2015 for the project update to what was used to
20 respond to Joint Review Panel Question 5.1 up to the
21 last report that was issued by the International Energy
22 Agency in November of 2017, that still remains
23 consistent with our assumptions.

24 MR. ROBINSON: Thank you.

25 I've reviewed Attachments 34, 35 and 36

1 to the Teck reply submission which are, just for your
2 information -- one's called "Horizons 2017
3 Sustainability Report". The second one's called "Our
4 Strategy for Climate Change", and the third one "Climate
5 Action Portfolio Resilience".

6 These are all documents prepared by
7 Teck. Is that correct?

8 And if I'm correct based on those
9 documents, Teck, has been mentioned earlier, set a
10 target to reduce greenhouse gas emissions from existing
11 operations by 450,000 tonnes by 2030 from a 2011
12 baseline. Is that correct?

13 MR. CHIASSON: Mr. Chairman, that is
14 correct.

15 MR. ROBINSON: And that Teck is ahead
16 of their expected progression to that target, having
17 reduced emissions, I understand, by 281,000 tonnes by
18 2017, for which you are to be congratulated. Is that
19 correct?

20 MR. CHIASSON: That -- well, that is
21 correct.

22 I was trying to be humble there, but.

23 MR. ROBINSON: Thank you.

24 And I -- and Teck's total greenhouse
25 gas emissions from all operations globally in 2017 was

1 3,010 kilo tonnes. Is that correct?

2 MR. CHIASSON: That is correct, Mr.
3 Chairman.

4 MR. ROBINSON: Now, earlier, I believe
5 it was Mr. Gray -- and you've made some reference, too,
6 Mr. Chiasson, just now, to the International Energy
7 Agency forecasts.

8 And I believe Mr. Gray said that Teck
9 relied on the International Energy Agency forecasts and
10 that your position was that those forecasts are, you
11 know, sort of viewed as fairly reliable. Is that
12 correct?

13 MR. CHIASSON: Mr. Chairman, I believe
14 it was myself that made that comment earlier, and we
15 chose -- as a reference, we chose the International
16 Agency's forecast to conduct the socioeconomic analysis
17 from.

18 We did look -- we did look at a number
19 of oil price forecasts. We also considered the U.S.
20 Energy Information Administration as an example as well.

21 And from our look at several forecasts
22 or a number of forecasts, that informed our view of what
23 the oil price and the world oil demand would be.

24 Two of the pre-eminent forecasts that
25 we used were the IEA and the EIA, as I mentioned

1 earlier.

2 MR. ROBINSON: Thank you.

3 And if I'm correct, the number I heard
4 earlier today was that forecast would be 110 million
5 barrels per day by 2040. Is that correct?

6 MR. CHIASSON: Mr. Chairman, there --
7 the world energy outlook evaluation conducted by the
8 International Energy Agency, their base case forecast
9 indicates -- shows that world demand for oil will
10 increase from 95 million barrels a day today to 110
11 million barrels, or about 110 million barrels, by 2040.

12 MR. ROBINSON: Thank you.

13 I just want to turn to page 17 of your
14 Climate Action and Portfolio Resistance. That's
15 Attachment 36 to your Teck reply submission.

16 MR. CHIASSON: I have it.

17 Hard copy page 17?

18 MR. ROBINSON: Hard copy page 17.

19 So this -- if I read the opening
20 paragraph correct, this is an IEA, so International
21 Energy Association -- Agency, two degree scenario
22 describes a world transformed on track to limit global
23 warming to two degrees C by the end of the century. Is
24 that correct? Is that what that says?

25 MR. CHIASSON: That's correct.

1 MR. ROBINSON: And then under Scenario
2 Highlights, it says:

3 "Under this IEA scenario, oil
4 demand peaks before 2020. By 2040,
5 oil demand is more than 20
6 megabytes lower than today, at 72
7 point -- million barrels, sorry,
8 per day at 72.9 million barrels."

9 (As read)

10 Is that correct?

11 MR. CHIASSON: Mr. Chairman, that is
12 what this paragraph says, and it's what the IEA's low
13 case or low oil price case scenario reflects.

14 It is, however -- as I mentioned
15 earlier, it's not their base case forecast. This is a
16 scenario forecast, which they provided, that reflects
17 what's written in the first paragraph on page 17.

18 MR. ROBINSON: Would you agree, then,
19 that the 110 million barrel per day scenario would be
20 inconsistent with the two degree scenario under the
21 Paris Accord?

22 MR. CHIASSON: Mr. Chairman, in fact,
23 the International Energy Agency forecasts suggest that
24 the base case forecast that they have developed more so
25 reflects a 2.7 degree scenario and that they -- the

1 scenario described as counsel has pointed to that's in
2 Teck's report, the two degree scenario is a different
3 scenario.

4 MR. ROBINSON: And would you agree that
5 the 2.7 degree scenario would not be consistent with the
6 Paris Accord?

7 MR. CHIASSON: Mr. Chairman, I don't
8 know if I would agree with the way that counsel has
9 characterized that.

10 I know that the goals of the Paris
11 Climate Change Accord was to achieve two degrees
12 increase in temperature from pre-industrial levels.
13 That said, for example, not every country that has
14 signed up to the Climate Change Accord, such as the
15 United States as an example, who have since backed out
16 of that Accord -- not every country or signatory of that
17 Accord is living up to their obligations. I guess
18 that's the first point I'd make.

19 And the second point I'd make is, based
20 on the commitments of the signatories of the Accord, the
21 IEA's assessment of the results of those commitments
22 reflect the 2.7 degree scenario versus the two degree
23 scenario.

24 MR. ROBINSON: And just to be
25 absolutely clear, the scenario presented on page 17 of

1 Teck's Climate Action and Portfolio Resilience would
2 indicate that to meet a two degree -- limit to a two
3 degree climate change by the end of the century that,
4 under that scenario, oil demand would fall to 72.9
5 million barrels per day. Is that correct?

6 MR. CHIASSON: The drop in demand for
7 oil that counsel has suggested is consistent with the
8 scenario of two degrees that the International Agency
9 developed. That's correct.

10 MR. ROBINSON: Thank you.

11 Is Teck familiar with Canada's
12 mid-century long-term low greenhouse gas development
13 strategy?

14 And just if it helps, that's a document
15 that was in OSEC Submission Tab 18.

16 It's Canada's mid-century long-term low
17 greenhouse gas development -- greenhouse gas emission
18 development strategy.

19 MR. CHIASSON: Just looking for the
20 reference.

21 --- Pause

22 MR. CHIASSON: Sorry. I wasn't clear
23 whether this was part of the materials that was
24 submitted on Friday or previously.

25 MR. ROBINSON: No, it was not part of

1 the -- this was in 06, original submission on August
2 31st. And it was Tab 18 of that submission.

3 MR. CHIASSON: Okay, I have it.

4 MR. ROBINSON: Okay, I'll take you
5 to -- so prior to this, no one at Teck was familiar with
6 this document?

7 MR. CHIASSON: Mr. Chairman, Teck was
8 aware.

9 MR. ROBINSON: And then was Teck aware
10 that this document indicated that to meet the Paris
11 Agreement that Canada would have to go through an 80 per
12 cent reduction in national GHG emissions by 2050 from
13 2005?

14 MR. CHIASSON: Just one moment to
15 confer with colleagues, Mr. Chairman.

16 Mr. Chairman, yes, it's our
17 understanding that that's correct.

18 MR. ROBINSON: And so you would
19 understand, then, that Canada's target for total GHG
20 emissions, if they're going to be consistent with the
21 Paris Agreement by 2050, the total national GHG
22 emissions would be 149 megatonnes. Would you agree with
23 that number? And it's found in the annex to the
24 document we're talking about on page 83.

25 MR. CHIASSON: Could you please repeat

1 the number.

2 MR. ROBINSON: It's page 83, it's Annex
3 1, Table A1. And we really just need to look at the top
4 line, which shows -- of that table, which shows
5 emissions going from 613 megatonnes in 1990 to 748 in
6 2005 to 149 in 2050.

7 MR. CHIASSON: Mr. Chairman that is
8 what the table says.

9 MR. ROBINSON: Thank you.

10 So that would be an 80 per cent
11 reduction in Canada's greenhouse gas emissions.
12 Assuming those were distributed evenly across various
13 industrial sectors and operators, has Teck analyzed any
14 scenario in which the Frontier project emissions would
15 have to be reduced by 80 per cent by 2050? And that
16 would be down to something probably less than a thousand
17 kilotonnes per year. Has Teck costed that out or looked
18 at that at all?

19 MR. CHIASSON: So, Mr. Chairman, in
20 response to counsel's question, the way that Teck viewed
21 this was -- and I guess if I understand the rationale
22 for the question is how is the Frontier project
23 consistent with Canada's goals and Alberta's goals, is
24 what I understand the question to be.

25 And has Teck assessed that? The answer

1 would be yes. And the way that I would respond to that
2 question is the pan-Canadian framework has recognized
3 that Alberta's contribution to managing climate change
4 has been to phase out thermal coal production, to place
5 a levy on carbon emissions and a limit on oil sands
6 emissions, so to enact those elements.

7 The fact that the Frontier project is
8 amongst the lowest GHG emissions intensity compared to
9 other oil sands production, and that's on a local
10 emissions basis, so a direct emissions comparison. But
11 some might argue that's not apples to apples; you should
12 look at the full cycle, so wells to tank or wells to
13 wheels.

14 In all three comparisons, paraffinic
15 froth treatment bitumen products such as Teck's Frontier
16 project is amongst the lowest GHG intensities compared
17 to all other oil sands production. And that's on a
18 direct emissions comparison basis, on a wells-to-tank,
19 or on a wells-to-wheels.

20 In fact, in addition to that, so in
21 addition to Frontier being amongst the lowest of all oil
22 sands production on an intensity basis, it is also lower
23 than about half of all of the oil refined in the United
24 States.

25 So Teck looks at how it fits with the

1 pan-Canadian framework and the Alberta climate
2 leadership plan and climate action, and it also looks
3 within North America and compares how it stacks up
4 against other sources.

5 So the reason that -- so Teck feels
6 that Frontier project is consistent with Alberta's and
7 Canada's climate action goals because it offers a
8 lower-intensity GHG production compared to other sources
9 of oil production from the oil sands. In fact, it's in
10 the top 25 per cent, or it would be in the top 25 per
11 cent of all oil sands production sources on an
12 apples-to-apples, wells-to-wheels basis.

13 So the world needs oil. Oil forecasts
14 have suggested that the demand is going to increase.
15 And how Teck feels it's contributing to climate action
16 and moving towards a low-carbon economy is that the
17 production from Frontier is going to be a lower
18 emissions intensity than other oil sands sources or most
19 other oil sands sources -- 75 per cent of other oil
20 sands sources.

21 So with that in mind, Teck feels the
22 Frontier project is consistent with Alberta's goals and
23 Canada's goals for climate action.

24 MR. ROBINSON: Let me try again.

25 Has Teck costed out the cost of what it

1 would cost Frontier project to have emissions less than
2 a thousand kilotonnes per year by 2050?

3 MR. CHIASSON: Mr. Chairman, the answer
4 to counsel's question is no, we have not.

5 MR. ROBINSON: Does Teck feel that it's
6 reasonable, then, in a 2050 scenario in which Canada's
7 emissions are targeted at 149 megatonnes per year, that
8 the oil sands would account for 100 megatonnes of that?

9 MR. SPELLER: Mr. Chairman, I was
10 hoping to make just an observation on this topic.

11 Fundamental to counsel's question is
12 the assumption that the rest of Canada adopts
13 technologies that allows us to hit the 2050 targets, but
14 the oil sands does not innovate at all and stays at the
15 hundred. And it is one thing I've always found curious
16 when I look at these comparisons, the assumption that
17 the technologies that are going to help Canada hit their
18 2050 targets don't seem to apply to the math that's used
19 to look at the emissions limit for oil sands.

20 I think if you look at the IHS Markit
21 2018 report that -- we've included a link in our
22 September 12th, I think you'll see a better projection
23 or a concept that the innovation of technologies that
24 could help Canada hit those targets will have some
25 applicability to oil sands. And in the future, it

1 doesn't mean that oil sands will be at the hundred when
2 Canada is trying to hit its goals.

3 MR. ROBINSON: Would you agree that if
4 moving from 2005 to 2050 and 80 per cent reduction was
5 distributed across all industries and proportionately,
6 that then the oil sands would be look at total oil sands
7 emissions of something in the order of 20 megatonnes
8 instead of a hundred megatonnes by 2050?

9 MR. SPELLER: Mr. Chairman,
10 hypothetically, if it was done linearly, yes. This
11 mid-century report that we're discussing at the moment
12 has visions for oil sands technology dropping their
13 emissions by 50 per cent and Canada being able to hit
14 that mid-century goal. But hypothetically, if it was
15 linear across all sectors, all sources, that would be
16 the number.

17 MR. ROBINSON: As I mentioned, I
18 actually enjoyed reading these three documents, the
19 Sustainability Report, Our Strategy for Climate Change,
20 and the Climate Action Portfolio Resilience.

21 And if I can put it in small business
22 kind of terms, when I read those, I kind of viewed it as
23 a small business that had a dozen pickup trucks. And
24 they seemed to be moving in the right direction; they
25 were doing some good things. As those pickup trucks

1 came up for renewal, they switched them over to propane
2 or natural gas. They had targets to reduce their
3 emissions.

4 Maybe they decided even that their
5 sales staff didn't need a pickup truck, so they bought
6 then a Prius.

7 So I see -- you know, when I read your
8 reports, I see a company moving in a right direction,
9 except for then suddenly the small company buys two
10 Hummers, and it just doesn't make sense. And that's
11 kind of where -- how I look at the Fort Hills and
12 Frontier projects.

13 And it just -- now to come to the
14 question. Am I correct, then, that the GHG emissions
15 from all Teck operations in 2017 were 3,010 kilotonnes,
16 and the Frontier project would add 3,879 kilotonnes per
17 year in direct emissions, more than doubling all of
18 Teck's corporate emissions right now?

19 MR. CHIASSON: Was that a question?

20 MR. ROBINSON: That was a question.

21 MR. CHIASSON: Mr. Chairman, that is
22 correct. The addition of the Frontier project would
23 increase Teck's overall emissions by -- approximately by
24 the amount stated by counsel.

25 That said, it's consistent with Teck's

1 goals of moving to a lower carbon economy in this
2 respect, and it's the same comments I made earlier:
3 Teck prides itself in providing commodities that's going
4 to help the world move to a lower carbon economy, and it
5 also provides commodities that people need. So the
6 consistency for Teck diversifying into oil sands, it's
7 into mining oil sands. We're a mining company.

8 The consistency with Teck's strategy is
9 that the operations we've invested in in the oil
10 sands -- we're part owners of Fort Hills and the
11 Frontier project -- employs among the lowest
12 GHG-intensity technologies. And the Frontier project
13 will have, and Frontier, should it be approved and
14 built, it will have amongst the lowest intensities of
15 GHG emissions amongst all other oil sands production,
16 and lower than half of all of the oil refined in the
17 United States.

18 So by doing so, Teck is helping to
19 displace more GHG-intensive barrels that would otherwise
20 be produced from somewhere else to meet the demand. So
21 by providing a product that is amongst the lowest GHG
22 intensities of any oil sands, Teck is helping to fill
23 the need or would be helping to fill the need or the
24 demand for oil in a GHG-intensity-low manner relative to
25 other sources in the oil sands.

1 MR. ROBINSON: Mr. McFadyen, in your
2 direct testimony this morning, said that the reduction
3 of 281,000 tonnes of CO₂ from Teck's current operations
4 was equivalent to taking 60,000 cars off the road.

5 Over the break I did a little
6 calculation, and I'll give you some time if you want to
7 make the calculation, would you agree that the direct
8 emissions from Frontier would be equivalent to putting
9 830,000 cars on the road?

10 MR. CHIASSON: Mr. Chairman, we have
11 not done that calculation.

12 MR. ROBINSON: Mr. Chairman, this is a
13 good point at which for me to break, and I'll pick up in
14 the morning, if that works for you.

15 THE CHAIRPERSON: I think it does,
16 Mr. Robinson. I was thinking the same thing myself, if
17 you're about to move on to a new topic.

18 MR. ROBINSON: I am.

19 THE CHAIRPERSON: Okay.

20 Before we break, I would like to talk
21 just a little bit about tomorrow with the participants.

22 So OSEC will start the morning. It
23 will start at 9 a.m. tomorrow to finish your
24 cross-examination.

25 And I just wanted to confirm what to

1 expect from the other parties.

2 So CPAWS, you would be ready to cross
3 tomorrow? Okay?

4 I'm assuming that Fort McKay, ACFN, and
5 Mikisew don't intend to cross Teck, but I just wanted to
6 kind of check that with the parties.

7 MS BROOKS: I can confirm on behalf of
8 Mikisew that's correct.

9 THE CHAIRPERSON: Okay.

10 MS LaCASSE: Mr. Chair --

11 THE CHAIRPERSON: Sorry --

12 MS LaCASSE: -- we need to get that on
13 the record.

14 THE CHAIRPERSON: Yes.

15 MS LaCASSE: So she's going to have to
16 come to the podium.

17 THE CHAIRPERSON: Yeah.

18 MR. MURPHY: Mr. Chair, I can confirm
19 on behalf of ACFN that they will not be asking Teck any
20 questions.

21 THE CHAIRPERSON: Okay. Thank you.

22 MS BROOKS: Mr. Chair, it's Karey
23 Brooks for Mikisew, and I can confirm that we don't have
24 any questions for Teck.

25 THE CHAIRPERSON: Okay, thank you.

1 Is there anybody from Fort McKay? I
2 don't see Ms Razzaghi. So I guess unless I hear
3 otherwise, I'll assume they don't plan to cross, and
4 they can advise if that's not correct.

5 Original Fort McMurray First Nation and
6 Cree [sic] River Band, you'll be ready to cross tomorrow
7 and plan to? Yeah. Can you just come to the mic, yeah.

8 MS GLADIEU-QUINN: Yes, we do intend to
9 cross-examine tomorrow.

10 THE CHAIRPERSON: Okay, thank you.

11 MS GLADIEU-QUINN: Thank you.

12 THE CHAIRPERSON: Smith's Landing First
13 Nation?

14 MS LaCASSE: Mr. Chair, if the speakers
15 could identify themselves for --

16 THE CHAIRPERSON: Okay.

17 MS LaCASSE: -- Madam Court Reporter.

18 THE CHAIRPERSON: Yeah. Thank you,
19 yeah. State your name and ...

20 MR. EVANS: Yes, thank you. Maurice
21 Evans with Smith's Landing First Nation. We do not plan
22 to cross-examine.

23 But I also have a note from the Deninu
24 Kue First Nation from Fort Resolution, downstream from
25 here. And they are requesting that I register them on

1 their behalf. And they will have a Mr. Marc d'Entremont
2 as a consultant giving evidence next week, Mr. Patrick
3 Simon, counsellor for the Deninu Kue First Nation, and
4 Elder Henry McKay.

5 So just wanted to register them, if
6 that could be done, sir.

7 THE CHAIRPERSON: Yes, that can be
8 done.

9 Do you know, they don't plan to be here
10 tomorrow and they don't plan to cross --

11 MR. EVANS: No, that's correct.

12 THE CHAIRPERSON: -- as far as you
13 know?

14 MR. EVANS: They'll be giving their
15 presentation on October 3rd, I believe it is.

16 THE CHAIRPERSON: Okay.

17 MR. EVANS: Thank you.

18 THE CHAIRPERSON: Thank you.

19 Northwest Territory Métis Nation? Is
20 there anybody here? Okay, I guess there's nobody there.
21 I thought somebody was coming up.

22 The Katl'odeeche First Nation. Anybody
23 from that First Nation?

24 MR. T'SELEIE: Yes, it's Daniel
25 T'seleie, counsel for Katl'odeeche First Nation, and we

1 intend to cross-examine Teck.

2 THE CHAIRPERSON: Okay.

3 MR. T'SELEIE: Thank you.

4 THE CHAIRPERSON: Thank you.

5 Keepers of the Athabasca?

6 MS ASTERISK: Hello, yes, it's Jule

7 Asterisk for Keepers of the Athabasca, and we also

8 intend to cross-examine.

9 THE CHAIRPERSON: Okay. Thank you.

10 MS ASTERISK: Thank you.

11 THE CHAIRPERSON: Government of Canada?

12 MR. ELFORD: Thank you. Good day, yes,
13 we will also be cross-examining Teck.

14 THE CHAIRPERSON: Okay, and just your
15 name for the record.

16 MR. ELFORD: My name is Elford, first
17 initial J.

18 THE CHAIRPERSON: Okay, thank you.

19 I believe that's all the parties that
20 had rights to cross-examination. Have I missed anybody?

21 Okay. Thank you. That was helpful for
22 me.

23 So we will start at 9:00 tomorrow
24 morning. And we're adjourned for this evening, so have
25 a good evening.

1 --- Whereupon the hearing adjourned at 1656, to resume
2 on Wednesday, September 26, 2018 at 0900 /
3 L'audience est ajournée à 1656, pour reprendre
4 le mercredi 26 septembre 2018 à 0900
5

6 CERTIFICATION
7

8 WE HEREBY CERTIFY that the foregoing has been reported
9 and transcribed to the best of our skill and ability
10
11
12

13 _____
14 Kristin Johansson

Heidi Petersen

15
16
17
18 _____
19 Monique Mahoney

Jackie Clark

20
21
22
23 _____
24 Jennifer Cheslock

Fiona Potvin