

Pembina Pipeline Corporation
Applications for Two Pipelines
Fox Creek to Namao Pipeline
Expansion Project

March 23, 2016

Alberta Energy Regulator

Decision 2016 ABAER 004: Pembina Pipeline Corporation, Applications for Two Pipelines,
Fox Creek to Namao Pipeline Expansion Project

March 23, 2016

Published by

Alberta Energy Regulator

Suite 1000, 250 – 5 Street SW

Calgary, Alberta

T2P 0R4

Telephone: 403-297-8311

Inquiries (toll free): 1-855-297-8311

E-mail: inquiries@aer.ca

Website: www.aer.ca

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2016 ABAER 004

Pembina Pipeline Corporation Applications for Two Pipelines Fox Creek to Namao Pipeline Expansion Project Applications No. 1806873, etc.

Decision

[1] The Alberta Energy Regulator (AER) approves Pembina Pipeline Corporation's (Pembina's) Application No. 1806873; Applications No. PLA141460, PLA141465, PLA141468 to PLA141473, PLA141475 to PLA141480, and PLA141487; and EPEA Application No. 001-00356633, subject to the conditions as written in appendix 2.

[2] In reaching its decision, the AER considered all relevant materials constituting the record of this proceeding, including the evidence and argument provided by each party. Accordingly, references in this decision to specific parts of the record are intended to assist the reader in understanding the AER's reasoning on a particular matter and do not mean that the AER did not consider all relevant portions of the record with respect to that matter.

Introduction

Applications

[3] Pembina filed Application No. 1806873 under the *Pipeline Act* for approval to construct and operate two pipelines. Pembina proposed to construct a 609.6 millimetre (24-inch) pipeline and a 406.4 millimetre (16-inch) diameter pipeline that would run parallel to one other in a common ditch for approximately 268 kilometres (km). The pipelines are designed to transport high-vapour-pressure (HVP) liquid hydrocarbons, low-vapour-pressure (LVP) liquid hydrocarbons, and crude oil from Pembina's Fox Creek pump station at Legal Subdivision (LSD) 8, Section 36, Township 62, Range 20, West of the Fifth Meridian, to its Namao Junction pump station at LSD 04-35-054-24W4M (see figure 1). The hydrogen sulphide concentration of the hydrocarbons would be zero moles per kilomole. The pipelines would cross both White and Green Areas of the province.

[4] Pembina also filed Applications No. PLA141460, PLA141465, PLA141468 to PLA141473, PLA141475 to PLA141480, and PLA141487 under the *Public Lands Act (PLA)* for 15 pipeline agreements in the Green Area. The agreements would grant access to a permanent right-of-way (ROW) with a width of 35 metres (m) and, during construction, an additional 10 m wide temporary workspace.

[5] Finally, Pembina filed EPEA Application No. 001-00356633 under the *Environmental Protection and Enhancement Act (EPEA)* for approval of a conservation and reclamation plan, which includes construction and post-construction reclamation of the portion of the project that is located within the White Area.

Participants

[6] Seventeen statements of concern were filed in response to the notice of application issued by the AER. Eleven of the statement-of-concern filers were advised that they were eligible to participate in the hearing pursuant to section 34(3) of the *Responsible Energy Development Act (REDA)*. Eleven requests to participate were filed and all eleven were granted. The following ultimately participated in the hearing: Grassroots Alberta Landowners Association (Grassroots), representing 38 landowners, D. Nielsen; Alexander First Nation (Alexander); Driftpile First Nation (Driftpile); and Gunn Métis Local 55 (Gunn Métis).

Procedural Background

Prehearing

[7] The AER issued an initial notice of hearing on April 17, 2015, setting a hearing date of July 13, 2015. The hearing panel held a prehearing meeting in Spruce Grove on May 14, 2015, to hear a motion to postpone the hearing. The following issues were also discussed at the meeting:

- preliminary estimates of timing and duration of the hearing, including estimates of witness numbers;
- advance cost requests;
- need for and timing of a formal information request process;
- opportunities for collective participation;
- the effect of signed statements of nonobjection by some individual Grassroots members;
- hearing structure, including the potential to hear traditional-knowledge evidence in the First Nations communities; and
- the hearing process schedule.

[8] The panel sent a letter with its decisions from the prehearing meeting to the participants on May 25, 2015, and publicly released this information on May 29, 2015, in *Decision 2015 ABAER 002*. On May 28, 2015, a notice of adjournment of hearing was issued, and on June 3, 2015, the panel issued its direction regarding the scope of hearing participation and the issues that the AER would and would not consider at the hearing.

[9] On September 23, 2015, the AER issued a notice of rescheduling of hearing setting out details of the public hearing scheduled to start in Edmonton on October 26, 2015. The notice also included details on the time and place for hearing traditional-knowledge evidence in the Driftpile and Alexander communities, as well as for hearing Gunn Métis traditional knowledge in Edmonton at the main hearing venue.

[10] After the prehearing meeting and before the oral hearing started, the panel sought feedback from Pembina and the aboriginal participants to develop a procedural direction and process outline for the traditional-knowledge evidence sessions. On October 19, 2015, Alexander advised that it would no longer host a traditional knowledge session in its community. On October 20, 2015, the panel issued its procedural direction, which applied to both the session to be held on the Driftpile reserve and to the presentation of traditional-knowledge evidence by Gunn Métis at the Edmonton hearing venue.

[11] Also before the hearing, the panel dealt with a number of motions, including applications for permission to file evidence late, applications to exclude certain evidence that had been filed, a request for confidentiality for certain evidence, a request for a direction to require certain members of Grassroots to attend and appear as witnesses at the hearing; and a notice of questions of constitutional law.

[12] The Aboriginal Consultation Office (ACO) was provided with all relevant notices and materials relating to the hearing of Pembina's applications by the AER. This was done in accordance with the ministerial order on aboriginal consultation *Energy 105/2014* and *Environment and Sustainable Resource Development 53/2014* (collectively referred to as ministerial order) and the *Joint Operating Procedures for First Nations Consultation on Energy Resource Activities (Procedures)*.

Hearing

[13] The oral hearing started on October 26, 2015, before hearing commissioners R. C. McManus (presiding), C. Low, and B. McNeil. Those who appeared at the hearing are listed in appendix 1.

[14] The oral hearing took place over the course of fourteen days. Many individuals who were members of the participant groups took the opportunity to attend and observe the oral hearing. ACO representatives also attended the hearing at various times.

[15] During the hearing, the panel heard numerous motions. Five of the motions dealt with issues of jurisdiction. In the course of the hearing, the panel also ruled on or provided clarification in regards to several undertaking requests. In addition, because both the Grassroots landowners and Pembina repeatedly expressed a genuine interest in working to resolve site-specific concerns, the panel took some time in the course of the hearing to explore publicly with those parties the potential for some form of issue resolution outside of the hearing room.

[16] As required by section 19.1 of the *Alberta Energy Regulator Rules of Practice (Rules of Practice)*, the panel had established time limits for evidence, cross-examination, and argument after requesting time estimates from the parties. Throughout the hearing process as various matters arose and schedules changed, the panel continually worked with input from and cooperation of the parties to adjust and revise the schedule with the goal of ensuring efficiency while maintaining fairness for all.

[17] The evidentiary portion of the hearing was completed on November 13, 2015. As required by the ministerial order, the AER had requested the ACO to provide its hearing report. The hearing was adjourned until December 7, 2015, to give the ACO time to complete that report and parties time to consider it before final argument. On November 27, 2015, the ACO advised that it needed more time. The panel confirmed the requested extension. The hearing resumed for final argument on December 17, 2015. The hearing panel closed the hearing on December 18, 2015.

Issues

[18] Paragraphs 19 to 23 set out the legislative framework used to identify and assess the issues.

[19] The AER's mandate is to provide for the efficient, safe, orderly and environmentally responsible development of energy resources in Alberta. We, the panel, must therefore decide whether approving this project is consistent with the AER's mandate.

[20] In making this decision, we are directed to consider the following factors set out in section 3 of the *REDA General Regulation* and in section 15 of *REDA*:

- the social and economic effects of the proposed pipeline project,
- the effects of the proposed pipeline project on the environment,
- the interests of landowners, and
- the impacts on landowners as a result of the use of land for the proposed pipeline project.

[21] In addition, our decision needs to be consistent with the purposes and provisions of *REDA*, the *Pipeline Act*, and *EPEA*. Those provisions set out additional considerations and provide more detail on the factors set out above. Specifically, our decision should be consistent with

- the economic, orderly and efficient development in the public interest of pipeline facilities in Alberta;
- the observance of safe and efficient practices in the construction and operation of pipelines;
- the control of pollution and conservation of the environment in the development and operation of pipeline facilities;
- the protection of the environment in particular with an emphasis on the integrity of ecosystem and human health and to the wellbeing of society;

- the need for Alberta’s economic growth and prosperity in an environmentally responsible manner; and
- the principle of sustainable development ensuring the use of the environment today does not impair the prospects for their use by future generations.

[22] In addition, although not explicitly set out in *REDA* or any of the other legislation administered by the AER, as a statutory decision-maker the AER is required to consider adverse impacts of energy resource activity on aboriginal rights that may fall outside of the factors listed above.

[23] Finally, the ministerial order states that the AER is to consider the advice of the ACO on “whether actions may be required to address potential adverse impacts on existing rights of aboriginal peoples as recognized and affirmed ...” or on traditional uses. The ministerial order applies only to applications to the AER in respect of energy resource activity under the specified enactments. Decisions of hearing panels are decisions of the AER, and so the ministerial order is relevant to the panel’s decisions on Pembina’s applications under the *PLA* and *EPEA*.

[24] Based on the legislative framework above and the evidence provided by Pembina and the other parties, the panel has determined that the following are the key issues/questions:

- Does the project provide for efficient and orderly development of Alberta’s energy resources?
- Did the applicant meet the requirements for stakeholder engagement for the project?
- Are the overall social and economic impacts of the proposed project in the interest of Albertans?
- Is the panel satisfied that the overall applied-for route is suitable?
- Can the proposed project be constructed and operated safely?
- What are the potential environmental effects of the proposed project?
- What landowner impacts were identified during this proceeding and how should they be addressed?
- What are the potential adverse effects on aboriginal participants?
- Are there potential risks to or impacts on historical resources?

Does the project provide for efficient and orderly development of Alberta’s energy resources?

[25] To satisfy the AER’s test for efficient and orderly development, the panel must determine if the proposed pipelines are needed. It must also determine that there are no proliferation issues (e.g., that there are no other existing facilities with sufficient capacity or other preferable options to transport the products that would use the proposed pipelines). The panel is satisfied that Pembina has met the test for efficient and orderly development and that the proposed project is in the public interest, as described in *Directive 056: Energy Development Applications and Schedules (Directive 056)*.

Is the project needed?

[26] The purpose of the project is to receive products from existing Pembina pipeline systems located west of Fox Creek and deliver these to the Namao Junction pump station, facilitating delivery to fractionation plants in the Fort Saskatchewan or Redwater areas. Pembina proposes to operate the 16-inch pipeline carrying HVP hydrocarbon products containing C2+ and C3+ (ethane and propane respectively) and the 24-inch pipeline carrying LVP hydrocarbon products containing C5+ (pentane plus).

[27] Pembina stated that liquids-rich production has grown in the area west of its existing Peace and northern HVP pipeline systems, resulting in those systems operating at or near full capacity through the last year. Additional fractionation capacity is being planned by Pembina and other companies, which might further support delivery of hydrocarbon liquids to the Namao Junction.

[28] Pembina's application states that the project is supported by executed transportation agreements with shippers. Pembina's application materials included letters of support from ten oil and gas producers supporting the need for additional pipeline capacity from Pembina's service area. Several specifically noted that they have contracted with Pembina for capacity to transport rapidly growing liquids volumes associated with natural gas production from the area. One producer stated that if Pembina's system were unable to handle their volumes, they would have to truck their product to other pipeline systems near Swan Hills or Drayton Valley.

[29] The panel notes that Pembina provided little information in its application materials relating to need for the project. Alexander submitted an information request asking Pembina to provide further details regarding the need for the project and evaluation of proliferation that may occur due to the construction of the proposed pipelines. Pembina declined to provide responses to the questions posed by Alexander. However, additional information was subsequently identified through the oral hearing process.

[30] In the oral hearing, Pembina submitted that there is significant growth in oil and gas production in Pembina's Fox Creek service area, which encompasses gathering production from the Montney, Duvernay, and Wilrich Formations that extend into the Gordondale area and into British Columbia. The proposed pipelines would have a combined capacity to transport 420 000 bbl/d of hydrocarbon products. Pembina stated that it has ten-year transportation contracts in place with 38 separate shippers. These existing contracts constitute an average of 360 000 bbl/day. Therefore, approximately 86 per cent of the 420 000 bbl/day capacity of the proposed pipeline project capacity is currently contracted for.

[31] Pembina noted that there is no firm in-service date for the project. Letters of support from area producers suggest that additional pipeline capacity in the area is required as soon as possible. In the hearing, Pembina stated that it has not received any requests from shippers to slow down or defer its plans, notwithstanding the current low hydrocarbon price environment.

[32] No parties presented sufficient evidence to refute the need for the proposed pipeline project.

[33] The panel finds that based on the current shipping commitments, as well as the demands for these products by facilities in the Edmonton area, the need for the project has been established.

Are there other facilities or options available to transport the products from Fox Creek to Namao Junction?

[34] As set out in *Directive 056*, the AER accepts that there is a need to avoid facility proliferation when possible and practical. As noted above, Pembina has two existing pipeline systems transporting HVP products from the project area that are currently at or near full capacity and cannot be expanded further. Pembina testified that there are no other existing pipelines or other viable transportation options available to producers to transport these products to delivery points. Pembina maintained that the pipelines could assist in the orderly development of the province's oil and gas resources.

[35] No parties presented evidence that there are other viable transportation options (trucking, rail, etc.) for moving additional volumes of HVP and LVP hydrocarbon products from the Fox Creek area to Namao Junction.

[36] The panel finds that the construction of the proposed pipelines will not result in unnecessary proliferation of facilities as there are no existing facilities that could meet the needs identified by this project. Therefore, the panel finds that the project will contribute to the orderly and efficient development of Alberta's oil and gas resources.

Did the applicant meet the requirements for stakeholder engagement for the project?

Pembina's Participant Involvement Program

[37] *Directive 056* requires companies to develop an effective participant involvement program that includes parties whose rights may be directly and adversely affected by the nature and extent of the company's proposed project. This program must be developed and carried out before the company files an application with the AER.

[38] *Directive 056* provides specific direction on what must be included in a participant involvement program. *Directive 056* applies to *all* potentially directly and adversely affected parties who have known concerns with the project. This is important to this hearing because as discussed later in this decision, the requirements for the AER's participant involvement program are separate from and additional to any requirements for Crown consultation that may arise as a result of potential impacts on aboriginal stakeholders.

[39] A goal of *Directive 056* is that companies and stakeholders engage effectively so that issues may be identified early and problems solved or mitigation plans made on the basis of meaningful collaboration between the parties. The onus is on all involved to use reasonable efforts to participate in a manner that enables an effective and informative process.

[40] Pembina filed extensive documentation substantiating its *Directive 056* participant involvement program for the project. Pembina started this program in mid-2013 when it began contacting landowners to request consent for surveys and various other field access permissions to better define the potential route. By the time it filed the applications under consideration, Pembina had met with approximately 250 landowners and occupants. In addition, it had notified potentially affected entities such as Alliance Pipeline Ltd. Pembina had also conducted open houses in Morinville, Fox Creek, Whitecourt, Sangudo, Mayerthorpe, and Morinville.

[41] Through ongoing participant involvement efforts after it filed its applications, Pembina successfully addressed the concerns of a large number of landowners, occupants, and aboriginal communities who either withdrew their statements of concern or otherwise indicated that they had no objection to the project.

[42] One exception was Mr. Nielsen whose counsel stated that he was not consulted with regard to a potential rerouting of the proposed project to the north of an existing Pembina pipeline ROW on his land. Pembina submitted evidence that after Mr. Nielsen indicated to the company that he was opposed to its original route through his lands, it responded by investigating and suggesting two alternative routes, one of which would also cross Mr. Nielsen's lands. Mr. Nielsen's response led Pembina to believe that he was opposed to any route that crossed his lands. Pembina also submitted uncontradicted evidence that Mr. Nielsen refused its requests for access to his lands. The evidence was not sufficiently clear for the panel to draw a conclusion regarding the extent to which Pembina actually consulted Mr. Nielsen on the proposed alternative route that would cross Mr. Nielsen's lands on the north side of the existing ROW. However, the panel finds that Pembina was attempting to be responsive to Mr. Nielsen's concerns within the context of practicable routing alternatives.

[43] In the panel's view, *Directive 056* engagement is intended to be a two-way street. It requires stakeholders as well as applicants to engage in meaningful discussions with each other about concerns, alternatives, and mitigation measures. As noted by Pembina in final argument, the AER's predecessor, the Energy Resources Conservation Board, said in *Decision 2009-072*,¹ page 14, the following with respect to the obligation of stakeholders in the public participation process:

The Board emphasizes the responsibility of stakeholders in the consultation process. The Board is of the view that for meaningful communication to occur, landowners must also make efforts to contact and meet with companies, to continue to exchange information, and to develop a collaborative approach to dealing with their concerns.

¹ *Decision 2009-072: Trilogy Blue Mountain Ltd., Applications for a Well and a Pipeline Licence, Pembina Field* (December 15, 2009).

[44] There was no evidence before us to suggest that Mr. Nielsen made efforts to meet with Pembina to resolve his concerns. The panel finds that Pembina's efforts to address Mr. Nielsen's concerns were reasonable in the circumstances.

[45] Another exception were landowners who participated in the hearing through Grassroots. Some of its members said they were not adequately informed about the proposed project and others complained about the behaviour of land agents who first approached them. Pembina responded that it had investigated all of the Grassroots allegations of inappropriate behaviour with land agents. Based on the results of those investigations, Pembina strongly disagreed with the characterizations of the land agents and their conduct.

[46] Early in the consultation process, Grassroots established a negotiating committee to represent its landowner members. Grassroots argued that individual landowners chose to have their interests represented by the negotiating committee because it provided members with the means to ensure transparency, and therefore fair, equitable, and informed agreements. After hearing oral evidence from individual Grassroots witnesses, the panel was left with the impression that at least some of the Grassroots witnesses were concerned or convinced that if they engaged one-on-one with Pembina, some landowners might be able to reach a better deal with Pembina than others might.

[47] In addition, at the hearing the panel heard many Grassroots witnesses recount negative experiences with a different pipeline company on a previous project through their lands. For some, the effects were clearly lasting and emotional. The panel finds that previous experience likely affected their approach to engaging with Pembina about its project.

[48] Pembina's evidence, which was not challenged, showed that it had participated in over 20 meetings with the Grassroots negotiating committee since May 2014. From Pembina's perspective, many of the issues raised by Grassroots were site-specific matters that it could only address appropriately after meeting with each landowner on their land. Pembina and Grassroots were not able to agree on a way for Pembina to get "boots on the ground" that was mutually acceptable.

[49] The panel notes that Pembina and the Grassroots members were unable to establish a level of communication that would have allowed Pembina to fully address their concerns. As noted above, it is not only the company that has an obligation under *Directive 056*. While *Directive 056* does not prevent stakeholders from working as a group to have their various concerns heard and addressed—indeed it specifically encourages models such as synergy groups—the responsibility of stakeholders under *Directive 056* is the same regardless of whether stakeholders engage with companies individually or through a group.

[50] Considering all of the evidence before us, the panel finds that, in regards to Grassroots, Pembina used reasonable efforts to comply with the consultation and notification requirements in *Directive 056*.

[51] Alexander was the third and final exception of a participant raising concerns about Pembina's participant involvement process. Alexander argued that it was not consulted appropriately by Pembina when it was developing its project.

[52] The evidence establishes that Pembina employees with responsibility for engaging with aboriginal communities had previously established working relationships and contacts with a number of individual members of Alexander. At various times prior to and after a change in band leadership, Pembina's witness J. Young, a manager of aboriginal relations and land, had contacted or been contacted by the previous chief and different individuals who were members of Alexander to discuss the project. Meetings had taken place at a variety of locations suggested by either Mr. Young or his Alexander contact. There is evidence, which the panel accepts, that a change in the route to move it within the northern boundary of Alexander Indian Reserve 134 (Alexander reserve) was suggested by the previous band chief, and that in response, Pembina took steps to investigate such a reroute.

[53] With respect to *Directive 056* participation involvement, the evidence demonstrates that Pembina and Alexander were able to hold discussions about the project, its potential impacts and possible mitigation up until a point in time when the relationship changed. After that, the evidence shows that Pembina's approach to discussing the project with Alexander as it had previously become problematic.

[54] On a number of occasions, Pembina's efforts to engage with the community were rejected and Pembina was told it was not to contact members of the community directly or through community information sessions. Pembina was told that any and all communication had to be through Alexander's senior regulatory coordinator and that appropriate engagement meant meetings between Pembina's president and chief executive officer and Chief Burnstick. The evidence before us suggests that this was a change from previous practice where representatives of Pembina had met with various members of Alexander regarding this and other projects. The evidence also shows that Pembina was not immediately responsive to Alexander's request for chief to CEO discussions.

[55] Where a potentially affected party is a First Nation, parties must recognize that *Directive 056* engagement on an energy resource project is a separate and distinct requirement from any Crown consultation process that may also be required. Regardless of participation in any Crown consultation process, aboriginal communities in Alberta that may be adversely affected by an energy resource project are expected to engage in a meaningful way in an applicant's *Directive 056* participant involvement program.

[56] That did not happen in this case. The evidence demonstrates to the panel's satisfaction that Pembina's efforts to engage Alexander in accordance with the *Directive 056* participant involvement requirements were reasonable. Pembina stated that it will attempt further engagement with Alexander. The panel hopes that the parties will be able to engage in a meaningful way.

Public Involvement in Pembina's Emergency Response Plan

[57] *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry (Directive 071)* sets out AER requirements and expectations in regards to public and local authority involvement in emergency response planning and response. *Directive 071* is about protecting the public and the environment from harm. In the event an application requires a public hearing, the applicant is expected to develop and file an emergency response plan (ERP) that has been deemed technically complete by the AER. Pembina did develop an ERP for the proposed project that was deemed technically complete by the AER on January 26, 2015.

[58] Alexander argued that it had not been included in Pembina's ERP or consulted sufficiently for the purposes of *Directive 071*. A First Nation is considered to be a local authority under *Directive 071* so Alexander must be consulted. The directive requires *licensees* to notify and consult the public and local authorities when developing an ERP for an HVP pipeline. This is because the licensing process can result in route and other changes that may affect the ERP for the project that is ultimately licensed. As a result, Pembina is not yet required to have finalized public and local authority consultation.

[59] Pursuant to *Directive 071*, as a licensee of an HVP pipeline, Pembina will be required to update and finalize its ERP and to identify all residents and local authorities within and adjacent to the emergency planning zone (EPZ), including members of the public that would require egress through the EPZ. Alexander will be one of a number of local authorities that Pembina will have to notify and consult in preparing its ERP for approval before starting pipeline operations.

[60] Regarding Alexander's submission that Pembina is required to take into account Alexander's future-land-use aspirations, the panel notes that Pembina is not required to base its ERP or its EPZ calculations on future plans related to potential land use. The AER requires companies to update ERPs annually (and information from residents that reside within the EPZs every two years) so that the plans accommodate the growth in communities close to facilities such as the proposed pipelines.

[61] Pembina gave uncontradicted evidence that in preparing its preliminary ERP for consideration, it attempted to notify and meet with individuals living on the Alexander reserve who would be within the EPZ for the project. The individuals had been told, however, not to speak to Pembina. In the course of the hearing, Pembina was directed by Alexander to contact the Alexander Industrial Relations Corporation. The evidence with respect to whether and to what extent Alexander was consulted as a local authority is not clear.

[62] To obtain approval of its finalized ERP before operations can start, Pembina will have to show that it used reasonable efforts to identify and notify individuals who reside, work in, or otherwise occupy an area within the EPZ. It will also have to show that it used reasonable efforts to consult with local authorities, including Alexander.

[63] In the panel's view, *Directive 071* is as much of a two-way street as *Directive 056*. It is intended to protect all Albertans. Albertans must take some responsibility for their own safety by cooperating with companies knocking on their door to meet and discuss *Directive 071* matters. The AER also expects local authorities and members of the public to cooperate with Pembina as it works to finalize its ERP.

Are the overall social and economic impacts of the proposed project in the interest of Albertans?

[64] Like any major industrial development activity, Pembina's proposed project will have both social and economic impacts. Impacts will be both short and long term. Some may be positive and some negative.

[65] The AER is required to consider the social and economic effects of energy resource activities. There are no regulatory requirements that must be met or standards by which to assess social and economic impacts. The panel believes that we must weigh the negative social and economic effects at a local or regional scale against the potential positive macro-economic effects that can be expected at a provincial level. We must also determine if any negative local or regional effects that cannot be mitigated would be so significant that the project should be denied.

[66] Pembina provided limited evidence on the economic and social effects of the project. Most of the evidence that the panel found to be of assistance was elicited through written information requests and the oral portion of the hearing process. This evidence included estimates on employment, estimates on community investment and capital costs, and a description of specific programs to create opportunities for First Nations.

[67] The panel considered the social and economic effects of the project during and after construction (discussed below). The panel finds that any negative social and economic effects of the project are expected to be short term and would be offset by short- and long-term positive regional and provincial economic effects.

During Construction

[68] Pembina estimated the overall capital cost of infrastructure development for its service area development program, which includes this project, to be \$2.4 billion. Expenditures from oil and gas producers, who will use this area development infrastructure, were not provided but these will be incremental to Pembina's estimated capital expenditures. Pembina also referred to potential new development that would handle the products being transported by the proposed pipelines. The panel finds that in a period of higher provincial unemployment in the oil and gas sector and reduced revenue from lower oil and gas prices and activity levels generally, this development and the associated employment and investment are expected to be beneficial to the provincial economy.

[69] Pembina provided letters of support from the mayors of Woodlands County and Whitecourt. These two municipalities will be directly affected by the project. Each indicated that their municipalities expected to benefit economically from the construction and operation of the pipeline through local procurement, jobs and community investment. Pembina presented evidence at the hearing that it expects to purchase goods and services locally when possible. It also expects to employ around 1000 people for each of the three planned construction seasons, resulting in an estimated 240 000 to 300 000 person days of employment.

[70] Pembina stated that through its aboriginal procurement strategy, it has spent \$15 000 000 to date to support local aboriginal businesses. Pembina did not provide an estimate of what it expects to spend as part of its aboriginal procurement strategy for this specific project.

[71] Aboriginal parties provided evidence to show that the project may cause them to have to alter the timing of harvesting activities, avoid certain traditional-use areas for a period of time, or buy or substitute other food for food traditionally harvested.

[72] The panel finds that a significant impact on the aboriginal participants during construction would be the result of limited access to the portions of the ROW under active construction. Such limits on access are temporary, are imposed for safety reasons, and are reasonable. In addition, Pembina has committed to mitigating these impacts, which are discussed further in the aboriginal participants section below.

[73] Pembina cited new opportunities for aboriginal communities through its environmental technician program as an economic benefit that would result from the construction of the proposed project. Under that program, Pembina will hire and train as environmental technicians some members of aboriginal communities whose traditional territory may be affected by the pipeline project. Some of those individuals may be hired permanently. The panel finds that even if they are not hired permanently, the training and experience would provide a lasting benefit to these individuals and their communities through the sharing and use of the individuals' newly acquired knowledge.

[74] Pembina stated that it has plans for workforce accommodation and transportation during construction that are intended to minimize any negative impact on local community infrastructure or local policing, health, or other community social services. The panel finds that implementation of these plans should ensure that any negative impacts on local social services or on local housing availability will be minimized.

Post Construction

[75] Benefits identified by Pembina included royalties from production that would otherwise be shut in due to pipeline constraints and the general economic benefits of continuing oil and gas exploration and production activity. Pembina did not provide any specific amounts or the magnitude of such benefits flowing to Alberta.

[76] Pembina expects the project would result in the creation of 12–15 full-time jobs, about a 10 per cent increase in Pembina’s workforce in the area. In addition, on completion of the project, Pembina expects to increase its investment in charitable and other not-for-profit organizations in local communities by approximately \$150 000 to \$200 000 per year.

[77] Pembina recently started an aboriginal operator program. It has hired eleven aboriginal operators to date and is in the process of training them. Pembina’s project is expected to provide work to support the program.

[78] Driftpile and Gunn Métis gave traditional-knowledge evidence that has led the panel to conclude that Pembina’s project may have negative impacts on their community and culture that may be described as social impacts. These impacts are discussed in more detail in the aboriginal participants section. If traditional harvesting locations are permanently altered or otherwise affected by the project, one or more of the aboriginal participants may experience longer term affects.

[79] Evidence of potential economic effects was provided by Driftpile elder P. Freeman. He said that trappers are required to pay fees to maintain their trap lines and in disturbed areas they are often unable to trap enough animals to cover their costs. Mr. Freeman did not provide any specific estimates of such impacts associated with Pembina’s proposed route or construction and operations footprint. Pembina stated that it would continue to engaging with the aboriginal participants to finalize mitigation measures.

[80] Alexander raised the issue of social and economic effects in its final argument but did not provide any supporting evidence regarding such effects.

[81] The panel finds that the expected social and economic benefits of Pembina’s proposed project are in the interests of Albertans. This is particularly the case for the local communities that will see short-term direct benefits, including employment opportunities during the construction phase. Aboriginal communities should also receive some limited benefit from the aboriginal procurement strategy and the environmental technician and aboriginal operator programs.

[82] The panel expects that any negative effects will be temporary and localized. Consequently, the panel finds that any negative local social and economic effects of the project are outweighed by the positive local, regional, and provincial effects.

Is the panel satisfied that the overall applied-for route is suitable?

What routing criteria are most relevant to this application?

[83] The *Pipeline Act*, the *Pipeline Rules*, and other legislation administered by the AER do not offer specific requirements for pipeline route evaluation and selection. Previous decisions of the AER and its predecessor (the Energy Resources Conservation Board [ERCB]) have dealt with the issue, but each pipeline route is unique. While it is possible to identify some common criteria, each proposed route

should be evaluated against criteria that are most appropriate for that route. Pipeline route criteria will typically include using or paralleling existing linear disturbances where possible, minimizing wetland and water crossings, avoiding residences, constructability, and using the shortest or most direct route practicable. In some areas of the province, designated utility corridors or land-use plans have been developed that establish preferred pipeline route locations, but that is not the case here.

[84] Applicants for a licence to construct a pipeline should consider providing the AER, before the oral hearing, a clear written summary of the analysis used to determine the overall route. The summary should include, at a minimum, the alternatives considered and how it assessed those against the applied-for route. Where, as here, statement-of-concern filers or hearing participants raise concerns about specific route segments, the applicant should provide more detailed information about the alternatives it considered, if any, to address the routing concerns raised.

[85] In this case, written evidence supplemented by oral evidence at the hearing showed that Pembina considered various criteria when developing the applied-for route. The Fox Creek pump station and Namao Junction pump station were the defining start and end points for the project. Other criteria Pembina took into consideration included

- avoiding residences and other developments of various use;
- crossing roads, highways, and railway lines at a right angle;
- minimizing the number of crossings;
- avoiding significantly wet, rocky, or forested areas;
- crossing rivers where banks appear to be stable and the rivers are not likely to migrate over time;
- using or following existing disturbances;
- reducing the construction footprint by using temporary workspace on existing linear disturbances where practicable; and
- ensuring that the route is as short and direct as reasonably possible.

[86] Pembina has tried to reduce the project footprint (area affected by the project). The proposed route uses or parallels existing and approved linear disturbances (i.e., pipelines, transmission lines, all-season roads, and railways) for 74 per cent of its length.

[87] The panel finds that Pembina's selection criteria were appropriate.

Did the applicant consider alternative routes?

[88] Pembina was questioned as to why its proposed route would parallel the Alliance Pipeline Ltd. (Alliance) pipeline for a significant portion of the route rather than parallel its existing Peace system pipeline ROW for the entire route. Pembina responded that its desktop review and aerial reconnaissance

of potential routes for the proposed pipelines convinced it that the applied-for route was the most appropriate option.

[89] In particular, the Peace pipeline system ROW is located close to Highway 37 and Highway 43 between Fox Creek and Whitecourt. Pembina said that running its proposed project parallel to this route was problematic for two main reasons. First, proximity to Highway 43 would cause construction issues as it is a four-lane highway with numerous residential access roads and driveways that now cross the Peace system ROW. Second, along Highway 43 there is now significant country residential development in the area next to the existing Peace system ROW. The Peace system ROW runs close to many residences and communities, and the addition of the proposed project would result in many communities becoming incorporated in the EPZ for the project such as Castle Island, Lucerne Beach, Ross Haven, and Lakeside Estates as well as half of the town of Whitecourt, the town of Mayerthorpe, and the hamlets of Sangudo and Onoway. Proximity to all of these communities would result in an additional 1200 more structures in the EPZ if the proposed pipelines followed the Peace system ROW instead of the proposed route (see figure 1).

[90] According to its oral evidence, Pembina's review revealed that while the Alliance and Peace system routes were about the same length, the Peace system pipeline ROW would result in five more crossings of Highway 43 and the proposed route would affect fewer stakeholders. No other route options were suggested by hearing participants.

[91] In light of the foregoing, the panel is satisfied that Pembina considered appropriate alternative routes.

Are there alternatives for the route at a local or site-specific level that are more suitable?

[92] Mr. Nielsen and Alexander objected strenuously to Pembina's proposed route in relation to lands in which they either own or assert an interest. Both parties raised concerns about the future use of their lands if Pembina's proposed project is approved, in particular their future ability to deal with certain lands in a way they see fit. In addition, Alexander raised a concern during the consultation process that was acknowledged by the ACO about the potential impacts of the proposed route on certain lands near Deadman Lake—lands that the ACO has identified as surrendered lands forming the “bed and shores of Deadman Lake.”

[93] Finally, some Grassroots landowners raised concerns about the project's impact on property value and future subdivision opportunities. Pembina submitted that the pipelines would not restrict future subdivision of lands nor impact land value. The panel notes that none of these Grassroots landowners provided any evidence to substantiate their concerns. As a result, the panel does not require Pembina to alter its applied-for route across Grassroots lands.

Mr. Nielsen

[94] Mr. Nielsen owns lands in the hamlet of Carbondale in Sturgeon County. These lands were purchased by the Nielsen family in the mid-1900s. Mr. Nielsen submitted that there are already three pipelines on his property creating a 15 m wide zone that cannot be developed. He argued that because of the presence of the hamlet and the potential for future development of his lands, it would not be appropriate or good planning to permit any further pipelines to cross his lands.

[95] Mr. Nielsen also argued that a hamlet can be characterized as an urban area and encouraged the panel to adopt the principle that pipelines should not be permitted to cross an urban area. Mr. Nielsen submitted that Pembina did not look at appropriate alternatives in considering where the pipelines should be in relation to his lands and that the pipelines should be routed around, rather than through, his lands.

[96] Mr. Nielsen's lands are zoned as "hamlet residential" under the *Sturgeon County Land Use Bylaw*. K. Mackenzie, one of Mr. Nielsen's expert witnesses, testified that such zoning would entitle Mr. Nielsen to subdivide his property into one hectare parcels and to create an extension of the existing hamlet to the north within the boundaries of his property. Another of Mr. Nielsen's experts, R. Berrien, testified that there is a range of possibilities for developing Mr. Nielsen's lands, depending on the services available. Mr. Nielsen's experts testified that additional disturbance from the Pembina pipelines would exacerbate the current "triangulation problems," where a corner of Mr. Nielsen's property is isolated by existing pipelines, and reduce the amount of developable land available.

[97] Mr. Berrien proposed an alternative route that would push the pipeline to the perimeter of Mr. Nielsen's land parcel (see figure 2). The alternative route would add three bends to the pipeline, approximately 45°, 90°, and 45°. Mr. Berrien's proposal was not made based on ease of construction. Mr. Berrien is a professional land-use planner, not an engineer. Mr. Berrien acknowledged that he had not taken a lot of time to consider a route alternative. In his oral evidence, Mr. Berrien also acknowledged that Pembina's preferred route follows an existing Pembina pipeline and that for land-use planning, following an existing linear disturbance is usually a highly desirable routing criteria because the impacts are typically incremental rather than new.

[98] Pembina gave evidence that Mr. Berrien's alternative would create construction challenges because of the three significant bends close to each other and to a road. Pembina's witnesses said Mr. Berrien's alternative would also result in approximately 91 additional residences in the project's EPZ. For these reasons, the panel finds that Mr. Berrien's alternative route is less suitable than the applied-for route.

[99] Mr. Mackenzie, also a professional land-use planner, gave his opinion that the Government of Alberta should take leadership in creating a planned regional system or network of linear facilities forming multipurpose corridors. He asserted that Pembina could alter its route to go north from Morinville to a point where he identified a potential corridor that the pipeline could then follow south to

Namao Junction. Mr. Mackenzie's proposal would add significantly to the length of the pipeline and no evidence was provided to show to what extent other pipeline route criteria would be met. As a result, the panel did not consider Mr. Mackenzie's suggestion as a real alternative to Pembina's proposed route. In any event, the creation of utility corridors and policy development with respect to pipeline routing are outside of the AER's jurisdiction.

[100] Finally, Mr. Nielsen made much of the potential for development of his lands; however, he did not present any evidence of specific development plans he has for his property. Under *Directive 056*, the setback requirements for the proposed pipelines would be the boundary of the ROW, so there would be a narrow strip of land in addition to the existing ROWs on which no development could take place. However, the panel heard evidence that the ROW land could be incorporated into a residential development as a form of reserve crossing the back of residential lots. In addition, Pembina provided evidence, which the panel accepts, that the addition of the two proposed pipelines on Mr. Nielsen's lands would not change currently permitted land use or the current zoning. The evidence was also clear that the proposed pipelines would not restrict future subdivision of those lands if Mr. Nielsen chose to do so.

[101] Pembina submitted that it considered three different routes for the Nielsen lands in order to address Mr. Nielsen's concerns, but was unsuccessful. Ultimately, Pembina chose not to alter the route through Mr. Nielsen's lands because it follows existing pipeline ROWs across Mr. Nielsen's property. Pembina submitted that any incremental impact caused by its proposed pipelines would not be significant, and there is no evidence that Mr. Nielsen would encounter any additional difficulty or incur any additional expense in securing or constructing road crossings over the proposed pipelines should he ever take steps to develop his lands.

[102] The panel finds that Pembina did make reasonable efforts to address Mr. Nielsen's concern. Mr. Nielsen did not appear as a witness. He did not provide evidence in writing or through Messrs. Berrien and McKenzie to show that he had taken any concrete steps towards developing his lands. Mr. Nielsen also did not provide any compelling evidence that the proposed project would cause undue interference with future development. While the panel accepts that Mr. Nielsen's lands may be desirable and developable lands, the evidence before us establishes nothing more than that. As a result, the panel finds that the applied-for route is suitable. However, during cross-examination, Pembina agreed there is a possibility of reducing the permanent ROW from 35 m to 25 m in areas where the project parallels existing Pembina ROWs. Pembina has already agreed to do so with some other landowners in the area. Therefore, as a condition to the project approval, Pembina must reduce the permanent ROW across Mr. Nielsen's property from a width of 35 m to a maximum width of 25 m.

Alexander

[103] In the area north of the Alexander reserve and southwest of Deadman Lake, the route as applied for crosses lands owned in fee simple by landowners other than Alexander and lands owned by the

Alexander TLE Land Corp. that are held in trust by that entity for Alexander (TLE lands); those lands being SW 20-056-27W4M, NE 20-056-27W4M, SE 20-056-27W4M, SW 21-056-27W4M, and SE 21-056-27W4M (see figure 3).

[104] Other parcels of land on the applied-for route fall within an area of lands specifically identified in agreements between Alexander and the federal and provincial Crowns as being lands that Alexander may choose to purchase on a willing-seller, willing-buyer basis and, if certain criteria are met, incorporate into its reserve at some future date (future purchase lands). There is no guarantee that Alexander will acquire a certain amount of the future purchase lands, and the evidence is clear that there is no certainty that the TLE lands or any future purchase lands that Alexander may acquire would be incorporated into its reserve lands. The agreements between the Crowns and Alexander explicitly contemplate third-party interests in future purchase lands at such time as they may be incorporated into Alexander's reserve lands.

[105] Alexander's witness, C. Arcand, gave evidence in response to questioning by this panel that she had been taught by elders that Alexander people had a strong attachment to their ancestral lands, including the TLE lands and future purchase lands. She said that "major development in those areas now impact on that history." However, in response to questioning by AER counsel, the witness stated that Alexander was concerned about the project's impacts on its ability to develop the TLE lands and future purchase lands for housing, economic development (they have a number of businesses operating on the reserve), and community infrastructure. In response to questions about materials appended to her affidavit, Ms. Arcand said that Alexander was concerned about its ability to expand and facilitate long-term community growth and development.

[106] Included in Alexander's written evidence was a land-use plan dated June 2000. It is the most recent evidence of any plans Alexander may have regarding development of the TLE lands and future purchase lands if they were ever incorporated into the reserve. It is marked as "Draft" and we do not know if it was ever implemented. On page 108 of that plan is a line that says that there have been no traditional uses on the TLE lands (which in that document included future purchase lands). It also says that residential and other uses of those lands would be permitted under the plan.

[107] Alexander's written evidence also included eleven exhibits of various documents and excerpts from federal regulatory processes, specifically the National Energy Board's hearings on Alliance and Northern Gateway pipeline applications. When asked what Alexander wanted this panel to take from those documents, Ms. Arcand indicated the intention was to demonstrate that Alexander's concern about the TLE and future purchase lands did not arise recently or only as a result of Pembina's proposed project.

[108] Additionally, Alexander's written evidence included various municipal development plans, such as Morinville's. Ms. Arcand said those plans were offered as examples of "what is normally incorporated" in a land development plan. But there was no evidence from Alexander as to what it would

incorporate into a present-day development plan with respect to the TLE and future purchase lands. The draft plan referred to above was to be a twenty-year plan.

[109] Pembina argued that Alexander’s vision of the TLE and future purchase lands providing integral opportunities for development and growth was not supported by a current development plan and was contingent on many factors beyond Alexander’s control.

[110] After considering Alexander’s evidence, we are left to conclude that the primary concern with regards to routing and planning for the TLE and future purchase lands is to prevent “major” development by third parties on the TLE lands. There is no legal or policy basis for the AER to prohibit or otherwise prevent energy resource development on those lands. Indeed, it was Ms. Arcand’s evidence that indicated that there is nothing preventing the current owners from dealing with those lands as they see fit. It would seem that Alexander is asking the AER to, in effect, create a moratorium on energy resource activity on the lands at issue between Alexander and the federal and provincial Crowns. There is nothing giving the AER the jurisdiction to do so.

[111] In response to Alexander’s concerns about the TLE and future purchase lands, Pembina submitted alternative routes 1 and 2 that would run north of the Alexander reserve (see figure 3) on the last working day before the hearing. The alternatives were not supported by a formal application. Alexander argued that the timing of the filing was such that the alternatives could not be considered serious options. Alexander also noted that the two alternative routes, as filed, had not undergone the level of assessment that they should have.

[112] The panel agrees that the two alternative routes were clearly last minute efforts by Pembina to respond to Alexander’s objections to the applied-for route. The evidence before us is insufficient to assess the alternative routes for the purposes of this decision. However, if Pembina and Alexander hold routing discussions that lead Pembina to select one of the two alternatives or a separate option, Pembina may file a route amendment application.

[113] For the above reasons, the panel is satisfied that Pembina followed relevant and appropriate routing criteria for its applied-for route.

Can the proposed project be constructed and operated safely?

[114] The panel reviewed a number of pipeline design factors associated with safety and risk reduction, including engineering design, leak detection, block valve placement, seismicity, integrity management, emergency response planning, and spill contingency capability.

Engineering Design

[115] Under the *Pipeline Act* and associated *Pipeline Rules*, oil and gas pipelines must be designed, constructed, and operated in compliance with the relevant Canadian Standards Association (CSA)

standards. Pipelines must also comply with the administrative and technical requirements contained in the *Pipeline Act* and *Pipeline Rules*.

[116] During the application process, the applicant must confirm that the pipeline meets these requirements. The AER required Pembina to submit information on key pipeline design factors (audit package). The audit package was reviewed by AER Authorizations staff and determined to be in compliance with the relevant requirements.

[117] Hearing participants did not raise specific issues with most of the parameters used in the pipeline engineering design other than (1) the depth of cover in specific locations, which landowners stated would inhibit use of their property, and (2) the location of block valves and their influence on potential spill volumes. Both issues are addressed below.

[118] The panel has considered the engineering design of the pipeline and finds that it meets or exceeds the regulatory requirements and applicable standards for HVP pipelines.

Leak Detection

[119] The *Pipeline Rules* requires that pipelines carrying liquid hydrocarbon products have an instrumented leak detection system that meets the parameters in *CSA Z662: Oil and Gas Pipeline Systems*, Annex E, “Recommended practice for liquid hydrocarbon pipeline leak detection.”

[120] Pembina stated that its leak detection system measures flow of product into and out of the pipeline system and complies with *CSA Z662*, Annex E. The system scans variables of pressure, temperature, pump status, valve status, tank levels, etc. at intervals not exceeding 60 seconds. Pembina stated that the leak detection system can detect an 8 per cent imbalance of flow in a five-minute window, a 2 per cent imbalance over one hour, and a 0.5 per cent imbalance over 24 hours. Pembina additionally commented that its various operations control room personnel continuously monitor for any signs of leakage. Pembina also conducts aerial patrols of its pipelines ROWs at a minimum of once per week.

[121] Pembina stated that if an operator saw data trends that might suggest that a leak was occurring; the operator has the responsibility and authority to shut down the pipeline. Telemetry and mechanical facilities and communication and SCADA (supervisory control and data acquisition) equipment would then be checked, the ROW patrolled, and all information reviewed by control centre supervisory staff. The final decision to restart the pipeline requires vice-president (VP) approval.

[122] Pembina stated that every employee at Pembina had the right, and indeed obligation, to shut down the pipeline if they thought something was wrong. Pembina was asked whether an operator might be dissuaded from shutting down the pipeline given that VP approval was required to restart the pipeline. Pembina stated that this would not be the case as operators were trained to shut down the pipeline in the event of a possible leak and that VPs were supportive of such actions. Pembina further stated that no

punitive actions would be taken against employees following a pipeline shutdown in the case of a false alarm.

[123] The panel notes that Pembina has detailed procedures for control centre operators who operate and monitor its various pipeline and leak detection systems. The panel also notes that Pembina conducts a number of various training programs, including unannounced removal of product from the line into a truck to simulate leak conditions and ensure that its monitoring systems and operations personnel identify the issue and respond accordingly.

[124] The panel finds that Pembina's leak detection system meets the applicable standards and in conjunction with its training and testing protocols and other pipeline integrity measures should minimize the risks of leaks.

Block Valve Placement

[125] *CSA Z662* addresses block valve placement. For HVP pipelines in class 1 locations (rural), there is no specified maximum valve spacing. Class 2 locations (in or near urban or industrial areas) require valves at a maximum of 15 km intervals. There are, however, additional factors that must be considered. For example, additional valves are to be placed at transitions between class 1 and class 2 areas when located outside urbanized areas and also on both sides of major water crossings. *CSA Z662* provides latitude in determining where external factors may affect the placement of block valves. It is intended that an engineering assessment be conducted to consider the potential effects of a spill on sensitive areas and determine when additional valves would be prudent to limit damage from a spill.

[126] Pembina stated that *CSA Z662* does not specify spacing distances for block valves on HVP pipelines in class 1 locations. Pembina had initially considered valves located at 40 km intervals as would be typical industry practice. To establish the impact and risks of this valve configuration, Pembina commissioned an outflow analysis to determine potential pipeline release volumes that could occur in the event of pipeline rupture. CH2M Hill Engineering provided a baseline set of parameters. The *Hill Valve Location Report* prepared by CH2M Hill states that the U.S. Department of Transportation, Office of Pipeline Safety, considers a total leak volume of 20 000 bbl for determining block valve spacing.

[127] In establishing its recommended block valve spacing, CH2M Hill halved this threshold to 10 000 bbl for all major water crossings on the 24-inch line and retained the 20 000 bbl criteria for the remainder of the pipeline routing. For the 16-inch pipeline, the water crossing spill threshold was reduced to 7000 bbl at major water crossings and 12 000 bbl for the remainder of the pipeline. The proposed pipeline routing did not pass near enough to any urbanized areas to require class 2 design restrictions. The proposed volume thresholds were used in considering where block valves should be placed in order to ensure any released volumes were below these limits.

[128] CH2M Hill subcontracted Dynamic Risk Assessment Systems Inc. (Dynamic Risk) to assist with an outflow analysis based on the selected valve locations. The objective of the Dynamic Risk study (*Fox Creek to Namao Expansion Project Block Valve Configuration Study*) was to first determine the baseline outflow with no valves in place, thus outflow would be determined solely by topography of the route. A second analysis was completed to determine the potential reduction of outflow using the valve siting proposed by CH2M. Further analysis was done to compare the potential reduction in outflow that might be achieved following revision to the proposed CH2M Hill valve siting when adding topography as a design factor.

[129] Pembina confirmed through questioning that *CSA Z662* required installation of valves upstream and downstream of major water crossings. Pembina stated that when considering outflow based on the initial CH2M Hill valve locations, it did not consider the pipelines to cross any major rivers. The Dynamic Risk study stated that the Athabasca River was the only major waterway considered to be a high consequence area due to being defined as a navigable waterway by Transport Canada.

[130] Pembina's submissions identified 20 watercourses to be crossed, including the Paddle River, Pembina River, Sturgeon River, Sakwatamau River, and Athabasca River. When questioned why these rivers were not considered as major water crossings, Pembina stated that they could not identify criteria or legal designations for what should be considered a major river. Pembina settled on the designation of Canadian Heritage River, which in Alberta applies to the Athabasca, Peace, and Clearwater Rivers.

[131] Pembina acknowledged that *CSA Z662* requires block valves on both sides of major water crossings and at other locations appropriate for the terrain in order to limit damage from a spill. *CSA Z662* states that a major water crossing means one that, in the event of an uncontrolled product release, poses a significant risk to the public or environment.

[132] In the absence of clear legislative or policy guidelines, we have to consider what is responsible in the circumstances. Pembina stated that the proposed location of valves was largely dictated by the elevation point of the break as this would determine the "drain down" volume of liquid from a pipeline break. Appropriate block valve locations could potentially be several kilometres away from a water body and yet meet the criteria for limiting outflow volumes. Since HVP products would be expected to vapourize upon release to the atmosphere, the calculations were performed using oil, which would be considered an LVP product. Pembina explained that it used an outflow volume that it accepted as reasonable to determine valve placement. Based on the Dynamic Risk analysis, twelve valve sites were selected as being adequate to limit outflow volumes to below the volume criteria proposed by CH2M Hill and limit damage from a potential release.

[133] Pembina committed during the hearing to add an additional pair of valves to further reduce outflows in the vicinity of Paddle River, subject to being able to acquire surface access.

[134] The panel accepts that the proposed number and location of block valves is in compliance with CSA standards, as required by the AER. The panel acknowledges that the AER does not specify what constitutes a major river crossing or what a regulated maximum acceptable spill volume would be.

[135] The panel also acknowledges that, while no volume of oil being released into a water crossing is acceptable, the reality is that the risk of a spill exists on any pipeline system and that operators must locate valves to minimize the damages should a leak occur. The panel also notes that block valves are only one of the measures used to reduce the impacts of a potential pipeline release. Operating practices, leak detection systems, and pipeline integrity management systems play an equally important role in reducing the risk of a pipeline release.

[136] For the panel, the challenge is to determine whether or not Pembina's proposed block valve configuration, including the number and locations of block valves, adequately addresses the risk of a spill.

[137] The panel appreciated the clarity of the modelling information provided by Pembina in its application. The panel understands that terrain plays a major role in determining the volume of LVP product that would be released in the event of a full-scale rupture at any point on the pipeline system, including at water crossings. The panel notes that the predicted volumes are well below the total leak volume design standard set by the U.S. Department of Transportation, Office of Pipeline Safety. The panel also notes Pembina's commitment to add additional valves at the Paddle River crossing. This will result in a further reduction in the potential release volumes at this location. In keeping with its commitment made at the hearing, Pembina must install an additional block valve on each pipeline at a location chosen with the goal of further reducing potential release volumes into the Paddle River.

[138] The panel has reviewed the number, spacing, and location of the block valves proposed by Pembina and finds that they are in compliance with the applicable CSA standards and should limit the damage in the event of an accidental leak.

Natural Seismicity

[139] *CSA Z662* requires that pipeline designers consider loadings from occasional events such as earthquakes. Pembina commissioned a seismic hazard assessment that concluded natural seismicity was unlikely and not a threat to the pipelines. The assessment further concluded that a threat due to induced seismicity was potentially conceivable, depending on the presence of a number of external factors. Pembina stated that it planned to implement all the recommendations included in the seismic hazard assessment.

[140] The panel considers Pembina's pipeline design and its plan to implement the recommendations in the seismic hazard assessment to be acceptable in addressing the risks of failure from potential seismic events.

Assessing Risk

[141] Alexander expressed concern about risks to public safety from a rupture of the proposed pipelines near its reserve lands. The panel has reviewed risk materials submitted on behalf of Alexander (the *Pipeline QRA* by Atkins Consulting Canada Ltd. [Atkins report]) and a subsequent review of the Atkins report (*Review of Pipeline QRA Report Prepared by Atkins Consulting Canada Ltd.* by Dynamic Risk [Dynamics Risk review]) submitted by Pembina.

[142] The panel notes that there are currently no explicit regulatory requirements for quantitative risk assessments (QRAs) and, at the time of the application, *CSA Z662* (2011 edition) did not include standards to conduct a formal QRA. Consequently, Pembina did not conduct a formal QRA of the potential impacts from the proposed pipelines as part of its application. Pembina reminded the panel in final argument that none was required. Pembina stated that while it had not conducted a formal QRA, it had taken a number of steps, including hazard and operability studies and a threat assessment conducted by an independent third party, to identify potential risks and threats to the pipelines.

[143] The 2015 edition of *CSA Z662* contains clearer guidance regarding QRAs, and Pembina stated that the pipelines would be constructed, operated, and maintained in accordance with *CSA Z662-15*. Though Pembina did not conduct its own QRA, based on the Atkins report and Dynamic Risk review, as well as on evidence obtained during the oral portion of the hearing, the panel finds that it has sufficient information to make a determination on the level of acceptable risk.

[144] The Atkins report contained a QRA of cumulative impacts of simultaneous failures of the Pembina pipelines and the adjacent Alliance pipeline. It calculated a location-specific individual risk for the project. The Atkins risk estimates for the proposed Pembina pipelines exceeded normally accepted levels of location-specific individual risk for low-density residential land use as set out by the Major Industrial Accidents Council of Canada (MIACC).

[145] The Dynamic Risk review concluded that the Atkins report overstated the risk values for the proposed project due to variations in the methodology used to interpret and analyze published pipeline performance data, and the selection of physical properties for the anticipated product streams that were used in the analysis. The Dynamic Risk review provided detailed explanation of its arguments.

[146] The process of risk assessment requires the adoption of many assumptions in generating probable scenarios. These assumptions can significantly influence the outcome of the assessment. The panel agrees with the Dynamic Risk review that the Atkins report misinterpreted certain statistical information, and therefore overstated the location-specific individual risks.

[147] The Atkins report included the simultaneous failures of both Pembina pipelines and the Alliance pipeline leading to a potentially large unignited gas cloud. The cumulative effects as calculated contributed to the reported high location-specific risk estimates.

[148] The Dynamic Risk review considered the potential for a pipeline rupture to mechanically affect the adjacent Pembina pipeline, either from the nearby Alliance pipeline or the closely spaced dual pipelines in the common Pembina ditch.

[149] Regarding the potential hazard posed by a failure of the Alliance pipeline on the proposed pipelines, the Dynamic Risk review did not differ substantially from the Atkins report other than concluding that a safe separation distance of 7 m should be used rather than the 11 m as suggested by the Atkins report. The Dynamic Risk review noted that the Alliance pipeline is 12 m at its closest to the Pembina pipelines. Thus both reports support the conclusion that the distance between the Pembina pipelines and the Alliance pipeline is satisfactory.

[150] The Dynamic Risk review also examined the conclusion made by the Atkins report that a rupture occurring on one of the two proposed pipelines might cause a mechanical rupture of the second pipeline. Pembina had previously commissioned an assessment report by Engineering Mechanics Corporation entitled *Report on Structural Integrity Assessment of Failure of One Pipeline on an Adjacent Pipeline for Application to the Pembina Design* (the EMC report.) The Dynamic Risk review included a summary of the findings of the EMC report, which had considered pressure transients created by a rupture of HVP product, Pembina's pipe material toughness, and varying potential crater size.

[151] The panel agrees with the conclusions of the Dynamic Risk review that mechanical failure of one of the proposed pipelines would not lead to the simultaneous failure of the second pipeline. This reduces the hazard and location-specific risk estimates as stated in the Atkins report because an unignited gas cloud would only be produced from a single pipeline and not both at the same time.

[152] Pembina conceded that a failure and subsequent ignition of one pipeline could lead to the thermal failure of the adjacent Pembina pipeline. However, the thermal hazard would not be as large as both pipelines failing at the same time because depressurization of the first pipeline would be decreasing the hazard at the time the second pipeline contributes to the thermal impacts.

[153] The panel accepts the conclusion of the Dynamic Risk review that the Atkins report overstates the location-specific risks for the project. The Dynamic Risk review further concluded that by applying appropriate correction factors, the risk levels in the Atkins report would be lowered to levels deemed acceptable for low-density residential land-use by the MIACC. Regardless of whether a QRA is required, the evidence submitted by Pembina and Alexander taken together address the issues that would be dealt with in a QRA. The panel is also satisfied that the identified risks are consistent with those determined acceptable by the MIACC.

Pipeline Integrity Management

[154] CSA Z662 requires that pipeline operators develop and implement a safety and loss management system that provides for the protection of people, the environment, and property. Pipeline integrity management is one element of a safety and loss management system.

[155] Pembina submitted a document containing an overview of its pipeline integrity management system that sets out a comprehensive set of procedures and requirements to maintain the integrity and safe operation of Pembina's pipeline systems. The overview document indicated a clear commitment by management to maintaining integrity, set out goals and objectives, and identified responsible personnel and recordkeeping requirements. It also provided specific procedures and directions for hazard identification and risk control, training, implementing tasks related to integrity, and management review of the program.

[156] In support of its integrity management activities, Pembina contracted Dynamic Risk to do a threat-based assessment of the project pipelines. Dynamic Risk compiled a list of industry-known threats to pipeline integrity (e.g., corrosion, manufacturing defects, operational errors, third-party damage) and then considered the relevance of each threat to the Pembina project and the controls that Pembina had in place through its integrity management program.

[157] The Dynamic Risk assessment confirmed that, in general, Pembina had properly recognized the potential threats to the pipeline and had implemented appropriate controls within its integrity management program to either prevent or mitigate those threats.

[158] As an example, Pembina stated that the pipelines would be designed and equipped for maintenance and inspection pigging. It stated that external and internal metal loss and mechanical damage would be periodically monitored using high-resolution internal magnetic flux leakage inspection tools in combination with high-resolution geometry tools, and that an initial in-line inspection would be done on the completed pipelines to establish baseline data for comparison against future inspection data. These actions are an appropriate response for managing the risk of internal and external corrosion.

[159] In regards to the susceptibility of the pipelines to internal corrosion, Pembina stated that the products shipped would have to meet certain specifications, including a maximum basic sediment and water content of 0.5 per cent, and that flow velocities in the pipelines would be sufficient to maintain the fluids in turbulent flow. These actions would be expected to minimize the chance of internal corrosion.

[160] Pembina stated that the external fusion-bonded epoxy coating in combination with cathodic protection (CP) would prevent external corrosion. Pembina also stated that it would conduct an initial close interval survey of the CP system once commissioned.

[161] Pembina also discussed ongoing efforts to improve its pipeline integrity management systems through internal and external audits and incident reviews to incorporate lessons learned into programs and

processes. These activities include collecting information daily and analyzing it for trends on safety, security, integrity, and the environment. This information is used internally to track performance against goals and objectives, which are established annually as part of measuring the effectiveness of the pipeline integrity management systems.

[162] The panel notes Pembina's programs for improving the pipeline integrity management system through tracking progress towards goals and objectives. Pembina's pipeline integrity management system was assessed against the components for such a system set out in *CSA Z662*. The panel is satisfied that it meets the CSA standard.

Emergency Response Planning

[163] *Directive 071* and *CSA Z731-03: Emergency Preparedness and Management* set out the requirements for project-specific ERPs. The AER's regulatory system ensures that appropriate ERPs are in place in the event an incident occurs that presents significant hazards to the public and the environment. Pursuant to *Directive 071*, should an application for a licence require a public hearing, the licensee is expected to develop and provide an ERP to the AER that has been deemed technically complete before the AER issues a notice of hearing. This allows the AER to identify specific areas of the ERP to explore during the hearing to help address the concerns that the affected parties may have.

[164] The participants involved in this hearing had concerns regarding emergency notification of hunters, harvesters, trappers, and recreational users in the area of the pipeline project. Pembina was questioned on how it would be able to alert or locate these area users during an emergency. Some participants voiced concerns regarding Pembina's ERP possibly conflicting with the ERPs of other companies operating in that area.

[165] Alexander had specific concerns that there had not been discussions with Pembina about the ERP, as per *Directive 071*. Pembina submitted that it received direction from Alexander to not discuss the project with its members. During the hearing, Alexander clarified that it would like *Directive 071* discussions to be coordinated through the Alexander Industry Relations Corporation.

[166] Pembina stated that the ERP addressed the concerns that were brought forward in a number of ways. Pembina has committed to including in the ERP a protocol on how to contact First Nation communities and aboriginal groups in the event of an emergency if each community provides a single point of contact. That contact in turn could inform Pembina if any of their members might be in the vicinity. Further, Pembina identified that it could use helicopters equipped with loud speakers, rovers, and the Alberta Emergency Management Agency alert system to notify and locate people in the vicinity of an incident. Pembina also indicated that it has a formal mutual-aid agreement with other companies through the Canadian Energy Pipeline Association. Moreover, Pembina's field offices have ongoing relationships

with other operating facilities in the area. In the event of an emergency, Pembina could call on those companies and activate its mutual-aid agreement if required.

[167] The panel finds that Pembina's ERP meets the requirements of *Directive 071* and *CSA Z731-03* for this phase of the review. The panel confirms that a final ERP must be submitted to the AER for approval prior to the start of pipeline operations.

Emergency Planning Zone Calculation

[168] There is no specific AER model for calculating the EPZ for HVP product release. Operators are strongly encouraged to use the table in appendix 10 of the Canadian Association of Petroleum Producers (CAPP) *Companion Planning Guide to ERCB Directive 071* or an appropriate dispersion model to determine the EPZ size for a pipeline release of HVP product.

[169] The CAPP guide includes recommended distances for EPZs for pipelines up to 16 inches. Pembina used typical industry hazard assessment calculations to determine an EPZ distance for the worst-case scenario. Pembina chose to be conservative by using the same methodology as in the ERCBH2S EPZ calculations for a sour gas hazard. Pembina's assessment of the EPZ included calculations for the proposed C2⁺ and C3⁺ pipeline products.

[170] The panel finds Pembina's determination of the EPZ is in accordance with *Directive 071*. We have determined that based on Pembina's proposed design and construction and operating plans, the proposed pipelines can be constructed and operated safely within accepted regulations, standards, and industry pipeline safety practices.

What are the potential environmental effects of the proposed project?

[171] Pembina's proposed pipeline route traverses both Green and White Areas of Alberta. The Green Area is the forested portion of the province and includes most of northern Alberta, as well as the mountains and foothills along the province's western boundary. The White Area is the settled portion of the province and encompasses the populated southern, central, and Peace River areas in Alberta.

[172] This project required the submission of a conservation and reclamation (C&R) plan for the White Area and environmental field reports (EFRs) for the Green Area. At the hearing, Alexander argued that an environmental impact assessment (EIA) should have been required. An EIA was not required for this project because, as recognized by Alexander, this project is a discretionary activity under *EPEA* (not listed as exempt from an EIA nor listed as requiring an EIA). The C&R plan and EFRs provided sufficiently thorough information for the panel to evaluate the environmental impacts of the proposed project.

[173] During the hearing, Pembina committed to updating its EFRs associated with the applied-for *PLA* pipeline agreements. The panel has made these updates conditions of the *PLA* pipeline agreement Notice of Decision documents (see appendix 2). Pembina, therefore, does not need to submit updated EFRs to the AER.

Potential Environmental Effects

[174] The proposed pipelines have the potential to affect a number of components of the physical environment, such as vegetation and terrestrial and aquatic species, either directly or indirectly. As pipelines such as these have been constructed in Alberta for many years, a robust regulatory oversight process has been established to mitigate many of the risks to the environment.

[175] Determining the risks from the proposed project requires assessing the extent to which the existing regulatory requirements, conditions imposed by the panel, and Pembina's proposed mitigation measures will minimize these environmental risks.

[176] The panel then needs to determine if any of the residual (remaining) risks are such that the project should be denied.

[177] In assessing the residual risks, the panel considered evidence presented by the parties on a number of factors or areas of concern, which are discussed below along with the panel's reasons for its decision.

Width of ROW

[178] Pembina has proposed to construct two pipelines within one ditch in the ROW. The ROW would have a permanent width of 35 m wide with an additional 10 m of temporary workspace, for a total of 45 m during construction. Pembina indicated that the additional temporary workspace may be required at various locations such as at sidebends and tie-ins, where there is sloping terrain or deep topsoils, and at road, railway, watercourse, and third-party crossings. Pembina stated that, where feasible, it would use existing and approved linear disturbances for temporary workspace. At the end of construction, Pembina would return all temporary workspace back to the landowner and maintain a permanent 35 m wide ROW.

[179] The width of the ROW was an issue raised in this proceeding. Some of the participants argued that the permanent ROW was unnecessarily wide. They requested that Pembina narrow the ROW to 25 m or less in some instances. They argued that a wider-than-necessary ROW increases habitat loss and fragmentation, removes land from potential future development, and creates additional issues for agricultural operators. Participants also argued that a construction ROW narrower than 45 m would be preferred in sensitive areas such as, riparian areas and where sensitive features such as salt licks occur on or close to the pipeline route. A narrower permanent ROW or variable-width ROW that takes sensitive areas into consideration would reduce habitat and vegetation impacts.

[180] Pembina maintained that the 35 m permanent ROW would be necessary for long-term operations and pipeline integrity excavations throughout the life of the project. Specifically, the 35 m permanent ROW would ensure that Pembina had enough space for soil handling when completing integrity digs and that there was enough room between the pipelines for a technician to be able to access the pipelines in the ditch.

[181] Pembina noted that at some locations where the proposed pipelines would parallel another Pembina ROW, it had narrowed the project's ROW to 25 m. This situation enables Pembina to use the existing ROW for additional workspace during future maintenance activities on the proposed pipelines.

[182] The AER does not have specific regulatory requirements or standards that specify or give guidance on the appropriate width of ROWs for pipelines. However, the AER can request companies to reduce ROW width when necessary or warranted. The AER expects companies to diligently plan their ROW to minimize unnecessary environmental disturbances and impacts on landowners.

[183] The panel notes that Pembina planned the width of its permanent ROW to ensure that pipeline integrity activities could be done safely. Pembina has also attempted to be flexible in reducing ROW width in response to landowners' requests.

[184] The panel accepts Pembina's proposed ROW widths for construction. However, the panel is concerned about the impact of ongoing brush control over the full 35 m, especially in the Green Area for the life of the project. The panel finds that, through a revised operational vegetation management plan, the long-term footprint of the project can be reduced. We speak to this in the discussion on ROW clearing/maintenance.

Revegetation of the ROW Following Construction

[185] Pembina described its plan to allow the ROW to naturally revegetate following construction. Pembina maintained that vegetation would re-establish naturally from seed and root stock of woody material contained within the topsoil. This would be accomplished by ensuring that the topsoil or the top layer of woody materials removed from the ROW in forested areas is protected and put back in a manner such that regrowth of materials will occur naturally. Pembina noted that this natural revegetation approach, which it has used before, is recommended by the Government of Alberta's *Integrated Standards and Guidelines – Enhanced Approval Process (2013) (IS&G)*. Pembina submitted that this is the most effective way to ensure that the ROW is revegetated with species that are consistent with the adjacent vegetation types. Pembina also stated that it would not do any tree planting on the ROW except at specific sites where it may be necessary (e.g., to stabilize riverbanks with willows at crossings).

[186] Gunn Métis and Driftpile raised concerns about Pembina's plan to revegetate the ROW in this manner. They expressed concern that a passive approach to vegetation may not be successful in re-establishing the original plant communities. They felt that ensuring the re-establishment of species of

importance to First Nation and Métis harvesters may require an active replanting approach. This is addressed further below.

[187] The panel finds that Pembina’s proposed plan for revegetation in forested areas is consistent with currently accepted industry practice and regulatory guidance in the *IS&G*. The success of Pembina’s proposed natural revegetation approach will be reflected in the post-construction monitoring reports submitted to the AER for review.

ROW Clearing/Maintenance During Operations

[188] Pembina’s plan for vegetation maintenance of the ROW was an issue. Pembina explained that other than specific areas in environmentally significant areas or key wildlife zones, it would maintain “line of sight” on the ROW by mowing, mulching, or brushing the vegetation in the 35 m wide permanent ROW on an annual basis, where vegetation will be cut down to approximately 30 centimetres in height. Where weed infestations occur, pesticides may be used as part of a weed control program or weeds may be picked by hand.

[189] Gunn Métis raised concerns about Pembina’s plan to maintain the ROW in this manner. Gunn Métis were worried about the use of pesticides and how this might affect plants traditionally harvested and the individuals who consume these plants. Gun Métis also expressed concern that this approach may reduce the likelihood that species of importance to Métis harvesters may successfully re-establish on the ROW.

What are the regulatory requirements or applicable standards?

[190] The AER and CSA standards require management of vegetation on a ROW to ensure that the pipeline can be visually monitored for evidence of a possible leak or rupture. *CSA Z662* specifies that pipeline operators periodically inspect the pipeline ROW visually as part of its pipeline integrity management program. *CSA Z662* specifies that where the terms of the easement permit, vegetation is to be controlled to maintain clear visibility from the air and provide ready access for maintenance crews. Operators are required to observe conditions on the ROW to identify any potential construction activity or encroachment, soil or slope movement, impingement by water body changes, loss of cover or settlement, and any other changes in the local environment that might suggest a leak. Neither *CSA Z662* nor the *Pipeline Rules* specifies a minimum ROW width that must be maintained to provide for surveillance and maintenance access. Applicants propose to the AER what they consider to be reasonable.

[191] Pembina has committed not to, and must not, undertake ongoing vegetation management or brush control for tree species in key wildlife and biodiversity zones (KWBZs) following construction.

[192] The panel has concerns about Pembina’s long-term vegetation management plan over the full 35 m ROW in the Green Area to maintain line of sight. In the panel’s view, brushing the majority of the

35 m ROW appears unnecessary to ensure that line-of-sight monitoring of the pipelines can be achieved. This approach unnecessarily maximizes the overall project footprint for the operating lifetime of the project. Allowing a portion of the permanent ROW to naturally revegetate and forest cover to re-establish would address a number of concerns about habitat loss and fragmentation and associated effects on wildlife, and would reduce the overall environmental long-term footprint of the project.

[193] The panel is of a view that sufficient line of sight could be maintained through vegetation control on a smaller portion of the permanent ROW. Pembina must submit an updated Green Area vegetation management control plan to the panel for review within 120 days of this decision. In this plan, Pembina must assess opportunities to minimize the extent of post-construction, ongoing vegetation control to maintain line of sight for monitoring in the Green Area (see figure 4). Such opportunities might include use of drones or other evolving technologies, where appropriate, with a goal of allowing as much of the ROW as is practicable to revegetate given the requirement to be able to visually monitor the line. Following receipt and review of this plan, the panel will either accept it as filed as a condition of the authorization or provide Pembina with further direction.

Environmentally Significant Areas

Potential impacts on environmentally significant areas

[194] Environmentally significant areas (ESAs) are areas that are important to the long-term maintenance of biological diversity, features of the physical landscape, or other natural processes both locally and within a larger spatial context. Representativeness, diversity, naturalness, and ecological integrity are delineating factors. The proposed project has the potential to impact ESAs through habitat loss, habitat fragmentation and alteration, invasion of non-native/weed species, and reduction in naturalness, diversity, and integrity.

[195] Pembina used two reports by Fiera Biological Consulting when determining how the project would affect ESAs: *Environmentally Significant Areas of Alberta* (Fiera 2009 report) and *Environmentally Significant Areas of Alberta: 2014 Update* (Fiera 2014 report). Pembina noted that, based on the Fiera 2014 report, the proposed route would traverse 2.9 km of ESAs in the White Area and 22.4 km in the Green Area.

[196] C. Wallis, an expert for Grassroots, identified other local ESAs on properties owned by Grassroots landowners based on additional reports, including the *Lac Ste. Anne County Environmental Inventory* and *Environmentally Significant Areas Inventory of the Boreal Dry Mixedwood Subregion of Alberta*. These local ESAs included the Pembina River and four woodland areas, two with drainages. Mr. Wallis stated that special consideration should also be given to protecting these small ESAs.

[197] Pembina noted that none of these Grassroots properties areas identified by Mr. Wallis are included in the Fiera 2014 report prepared for the Government of Alberta. Pembina argued that only the ESAs listed in the Fiera 2014 report are valid ESAs for planning purposes.

Mitigation

[198] Pembina's proposed pipeline route was selected with the goal of using existing disturbances, corridors, or ROWs and avoiding water bodies to the extent practical. The majority of the route parallels existing pipelines or powerline corridors that pass through the ESAs.

[199] Mr. Wallis recommended narrowing the ROW and applying the guidance on vegetation handling and revegetation in sensitive areas in the Green Area to the White Area to reduce impacts on the ESAs.

[200] Pembina indicated that it does not plan to alter current routing or narrow the ROW while traversing through ESAs, including those identified by Mr. Wallis on lands owned by Grassroots members. The panel understands that there may be instances where Pembina's plans change based on further negotiations with individual landowners.

[201] The panel finds Pembina's overall mitigation efforts are reasonable. For example, efforts were made to parallel or use existing disturbances while crossing ESAs and, subject to geotechnical assessment, plans to use horizontal directional drilling (HDD) at the Pembina River crossing would minimize risks to this area. Pembina data gathering and discussions with individual Grassroots landowners on site-specific concerns may result in decisions to narrow the ROW construction footprint or revegetate specific areas identified by Mr. Wallis as having higher environmental values in the White Area. Within ESAs, the panel encourages Pembina to examine opportunities to narrow or not clear the entire ROW, revegetate the ROW and temporary workspace areas within ESAs, or use HDD to cross local ESAs. These measures would further reduce the environmental effects of the proposed pipelines and potential impacts on traditional-use activities by aboriginal harvesters.

Key Wildlife and Biodiversity Zones

[202] KWBZs include key winter ungulate habitat or areas of high biodiversity resulting from complex riparian structure and processes. KWBZs typically occur along major river valleys, which are characterized by topographic variation and site productivity conditions that support good winter browsing and increased levels of biodiversity. Forest cover associated with KWBZs is essential for providing food and protection for ungulates, and protecting the slopes from erosion and other degradation.

[203] The Government of Alberta document *Recommended Land Use Guidelines: Key Wildlife and Biodiversity Zones* sets out the provincial guidelines and primary strategies for KWBZs.

[204] Potential impacts on KWBZs from industrial activity include fragmentation of habitat, degradation of landform, disturbance of wildlife during critical winter periods, barriers to wildlife movement, and increased mortality risk as a result of increased access and human-wildlife interactions.

[205] According to Pembina's application, the proposed project route would transect 14.2 km of KWBZs along the Athabasca, Iosegun, and Sakwatamau Rivers in the Green Area and approximately 2.5 km along the Athabasca River in the White Area. The total area of disturbance inside the KWBZs along the proposed route is 41.9 hectares (ha), including 31.4 ha of permanent and 10.5 ha of temporary disturbances in the Iosegun, Sakwatamau, and Athabasca River valleys.

[206] Pembina plans to use HDD for pipeline crossings of the three river valleys, which constitute the majority of the KWBZs. Assuming that Pembina is able to successfully execute these HDD crossings, no core habitat in these three KWBZs should be disturbed as no surface clearing of forest canopy in the river valleys will be required. Pembina has also committed to reforesting the HDD entry and exit points locations such that forest cover is consistent with the surrounding vegetation. The panel considers this an important factor in making its decision and as such makes this commitment a condition of the approval. If Pembina clears tree species within HDD entry and exit points in KWBZs, it must undertake a revegetation program to re-establish these tree species.

[207] Pembina indicated within its *PLA* applications that should the directional drills fail at these crossings, it would consult with the AER about alternative construction methods, which would require approval prior to proceeding. Pembina has also committed to complying with, and must comply with, Alberta Environment and Parks (AEP) timing constraints and setbacks when working in KWBZs.

[208] The panel finds that subject to the condition relating to forest cover being met, Pembina's proposed mitigation plans to use HDD for KWBZs are sufficient to minimize any long-term effects on KWBZs from the construction and normal operation of the pipelines. If any of the directional drills fail, the *IS&G* provides useful standards and best management practices for the KWBZs in both the White and Green Areas. The panel is satisfied that Pembina's plans to use HDD at these river valley crossings will minimize the risk of surface disturbance within the associated KWBZs. As noted, any changes to HDD plans if required will be reviewed by the AER prior to implementation. The panel recommends that natural revegetation be allowed to fully recover with no further disruption during normal operations within the KWBZs.

Species of Concern

[209] Projects such as the proposed Pembina pipelines can potentially impact threatened or endangered plants, animals, or aquatic species through direct removal (plants), sensory disturbance, inadvertent interactions with humans leading to animal deaths, or temporary or permanent alteration or loss of habitat.

[210] The Government of Alberta’s commitment to management or conservation of species at risk has resulted in the development of a provincial recovery program. Specific recovery plans are published as government recovery plans. These plans provide goals, objectives, strategies, and actions to address the threats to and maintain or restore the threatened or endangered species. These guidance documents provide the panel with criteria to assess the proposed pipeline impacts and mitigation plans to determine if the mitigation measures are consistent with those set out by the Government of Alberta.

[211] Participants, Pembina, and the panel identified a number of species that may be impacted by the proposed project. These are dealt with below.

Potential Effects on Grizzly Bears

[212] Pembina identified the grizzly bear as a species that is “threatened” and “at risk” in Alberta. The proposed pipeline route traverses 81.4 km within an area identified as a grizzly bear zone (26.7 km in “core area” and 54.7 km in “secondary area”²). In its submissions, Driftpile raised concerns about the project’s effects on grizzly bear habitat.

[213] The Government of Alberta *Alberta Grizzly Bear Recovery Plan 2008 – 2013* provides guidance on assessing the risks to grizzly bear populations in the area transected by the proposed pipeline. In addition, the *IS&G* identifies mitigation measures to reduce impacts within the grizzly bear zone.

[214] Pembina stated that it planned to use existing disturbances or parallel existing linear features to the extent practical to minimize the creation of new linear disturbances and human access to the core and secondary conservation areas for grizzly bear.

[215] Pembina’s environmental protection plan (EPP) outlines various measures to minimize creating new access routes and to manage existing access routes to reduce human–bear interactions. For example,

- existing access routes will be used where possible,
- and barriers will be placed at existing access points to restrict access to the ROW.

[216] No evidence was filed challenging the adequacy of Pembina’s proposed mitigation plans to minimize risks to grizzly bear populations from the proposed project. The panel finds that Pembina’s proposed mitigation plans are consistent with those in the *Alberta Grizzly Bear Recovery Plan 2008 – 2013* and that their implementation should minimize the risk to grizzly bear populations from the project.

² According to the Government of Alberta, “core areas are areas with high habitat value... and generally low mortality risk.... Secondary areas are areas of good habitat, reflecting the broader grizzly bear range.” (“Grizzly Bear Zone,” *Alberta Open Data*, last modified May 28, 2013, <http://data.alberta.ca/data/grizzly-bear-zone-0>.)

Potential Effects on Boreal Toads

[217] Boreal toads are listed as a “sensitive” species provincially. The project has the potential to impact breeding boreal toads along the route as the result of direct disturbance to breeding ponds, fragmentation of habitat resulting in the disruption of migration and dispersal corridors, and environmental contamination. The *IS&G* recommends year-round setbacks of 100 m from boreal toad breeding ponds.

[218] Pembina conducted surveys of amphibian breeding activity in 2014 and 2015, focusing on Canadian toads and boreal toads. No Canadian toads were detected during the surveys.

[219] In the White Area, Pembina observed boreal toad breeding activity at four locations on the ROW in 2015 and eight wetlands or other habitats within 100 m of the ROW in both 2014 and 2015, including a site near the Athabasca River. The pipeline route would also intersect a pond with breeding activity and pass within 100 m of two others within the Green Area. Due to lack of access along portions of the proposed pipeline route, not all breeding sites may have been identified.

[220] Pembina stated that it selected the proposed route to avoid permanent water bodies and wetlands to the greatest extent practical.

[221] Pembina proposed to use HDD to cross underneath the boreal toad breeding pond on the ROW in the Green Area. As construction would occur in winter, the ponds within 100 m of the ROW in the Green Area should not be affected. HDD is also planned for the Athabasca River, thus mitigating impacts on boreal toad breeding areas near the river.

[222] Breeding sites directly affected by the pipeline within the White Area will be further evaluated for mitigation, which may include HDD. Pembina said it would consult the AER on Pembina’s preferred mitigation for boreal toad breeding ponds.

[223] Mitigation options identified by Pembina for breeding sites within 100 m of the ROW include a pre-construction survey to confirm breeding activity, use of silt fencing to prevent toads from migrating across the ROW, and spring and summer construction monitoring.

[224] Pembina indicated that it would undertake a post-construction reclamation assessment to evaluate post-construction use of wetlands by breeding boreal toads.

[225] Pembina has also identified mitigation measures for wetlands that have breeding activity and are within the recommended 100 m setback but not directly affected by the project during breeding season.

[226] The panel is satisfied that Pembina’s mitigation measures will minimize risks to wetlands used by boreal toads for breeding.

Potential Effects on Sharp-tailed Grouse

[227] Sharp-tailed grouse, which breed communally on areas called leks, is a species that is listed as sensitive in Alberta. The pipeline project has the potential to impact this species through direct loss of habitat, particularly leks, as well as through disturbance of breeding and nesting birds. Loss of suitable lek habitat can be a limiting factor for sharp-tailed grouse in Alberta.

[228] The proposed pipeline route intersects 43.9 km of the range of the sharp-tailed grouse northwest of the Namao Junction.

[229] Proponents are recommended to survey for leks in the range of the sharp-tailed grouse and adopt the buffers set out in the *IS&G* for areas with leks. The *IS&G* includes specific provisions restricting the nature and timing of activities within certain distances of leks.

[230] Pembina reported that based on a search of the Fisheries & Wildlife Management Information System, there are no provincial records of sharp-tailed grouse leks occurring within 2 km of the proposed route. Satellite and aerial imagery was reviewed to identify potential grouse lek habitat along or close to the proposed pipeline. Pembina conducted ground surveys using methodology outlined in the *Sensitive Species Inventory Guidelines*. The surveys focused on habitat within the range of the sharp-tailed grouse. Pembina also did additional surveys extending north and west to the Athabasca River based on discussions with AEP (then Alberta Environment and Sustainable Resource Development).

[231] Pembina reported no active leks in 2014 and one active lek 400 m off the ROW in 2015. Pembina will undertake subsequent surveys in 2016 prior to construction to identify possible leks in areas not previously surveyed due to land access constraints.

[232] To mitigate impacts on the active lek close to the ROW, Pembina will modify the construction schedule at that site in order to adhere to the provincially recommended setbacks and timing constraints identified in the *IS&G*.

[233] If additional leks are identified during the 2016 survey, they are to be afforded similar mitigation. If any of those leks are found directly on the ROW, impacts would be mitigated through HDD.

[234] The panel is satisfied that Pembina's plans as proposed are consistent with Government of Alberta guidelines and are sufficient to minimize risks to sharp-tailed grouse leks. If construction must occur outside of the timing constraint/setback, Pembina is required to consult the AER to determine other appropriate mitigations.

Potential Effects on Sensitive Raptors and Their Range

[235] The proposed pipeline route intersects the range of sensitive raptors for approximately 43.9 km in the southern section of the project.

[236] Pembina notes several sensitive raptor species have the potential to be present in the project area, including bald eagle, osprey, golden eagle, northern goshawk, peregrine falcon, and Swainson's hawk. Its desktop search of the Fisheries & Wildlife Management Information System identified a previously reported Swainson's hawk nest approximately 560 m from the proposed route.

[237] Pembina conducted aerial and ground-based surveys along the entire pipeline route in 2014 and 2015. No nests of sensitive raptors were identified along the proposed pipeline route in 2014. In 2015, an active bald eagle nest was located approximately 190 m from the ROW. A timing restriction to avoid the summer breeding season and post-construction monitoring were recommended in Pembina's wildlife report for the active bald eagle nest occurring within 1000 m of the ROW.

[238] Pembina stated that its mitigation for raptors would comply with the Alberta *Wildlife Act* and address species-specific setback recommendations.

[239] The panel is satisfied that Pembina's plan as proposed is consistent with the *IS&G*. If timing constraints or setbacks cannot be met at specific sites, Pembina must consult the AER to determine other appropriate mitigations.

Potential Effects on Other Species of Interest

[240] Gunn Métis stated that project construction will cause habitat fragmentation and destroy or alter habitat quality, which will affect important game species, including moose, deer, elk, and grouse, that are harvested by its members.

[241] Driftpile described increasing difficulty in harvesting sufficient quantities of moose to support important cultural activities. No quantitative evidence was presented of the direct or indirect effects that the proposed pipeline project would have on moose habitat or regional moose populations.

[242] Driftpile identified two salt lick locations in the Green Area near the proposed pipeline ROW that are important for hunting moose and passing on traditional knowledge. Pembina indicated that it had been able to mitigate effects on salt licks on previous projects by installing subdrains or using other measures to allow water that supplies salt licks to continue to move across the ROW. Pembina will verify the location of the salt licks and has committed to ensure that any effects from the project are mitigated.

[243] The historical ranges of approximately 50 migratory species of concern overlap the project route. Several of these species were observed during field surveys.

[244] For the White Area, Pembina developed the *Migratory Breeding Bird Beneficial Management Practices*, which outlines approaches and procedures for evaluating risk and mitigation options for migratory birds. Pembina stated that in largely forested areas it will respect a timing constraint of May 1–August 10, with an extension to August 31 in wetland areas. In the event that clearing cannot be

completed within the winter season, and in habitats with some degree of disturbance, Pembina will adopt the appropriate mitigation identified in the beneficial management practices document.

[245] In the Green Area, project clearing and construction will occur during winter. In the event that clearing cannot be completed in the winter season, Pembina will use the *Migratory Breeding Bird Beneficial Management Practices* to evaluate risk and determine appropriate mitigation options.

[246] The panel finds that Pembina's mitigation plans should minimize the effects on migratory birds. In the event that Pembina is not able to adhere to the timing constraints of May 1—August 10, with an extension to August 31 in wetland areas, Pembina is to consult with the AER to determine appropriate mitigation measures.

[247] An active red-sided garter snake hibernaculum was identified near the Athabasca River, about 320 m from the ROW. The recommended setback from construction disturbance is 500 m, in accordance with the *IS&G*. Pembina will restrict project personnel from accessing this site and reduce vehicle speeds along the adjacent access road during anticipated fall and winter clearing and construction and during the planned HDD under the Athabasca River. Pembina's environmental inspector will address concerns and questions regarding the hibernacula to a wildlife biologist.

[248] In addition to the above, Pembina has developed a wildlife species of concern contingency plan, found in the EPP, that will be implemented if any species of concern are identified during clearing or construction. Specific mitigation measures will be developed for these species and may include creating protective buffers, narrowing the construction ROW, or adjusting the timing of localized construction activities.

[249] Pembina is expected to make every effort to follow sensitive species/features setbacks and timing constraints and to mitigate potential effects. Where disturbance activities must occur within a restricted activity period or setback distance, Pembina must ensure a thorough search along the ROW and within an appropriate buffer on either side of the ROW for wildlife and unique habitat prior to clearing and construction by qualified personnel using the Sensitive Species Inventory Guidelines. If species of concern, breeding birds / denning wildlife, or sensitive features are found, appropriate mitigation should be identified following direction in the Integrated Standards and Guidelines and this information should be provided to the AER. Where Pembina is not able to adhere to AEP or Environment Canada recommended spatial setbacks or construction timing constraints for species of concern or sensitive habitat zones or features, it must consult with the AER to determine appropriate mitigation measures.

Potential Effects on Rare Vegetation

[250] Construction of the proposed pipeline has the potential to affect rare vegetation communities on or near the ROW in both the White and Green Areas. Impacts on rare plants and rare plant communities

may occur as a result of direct disturbance on the ROW resulting in rare plant loss or indirect disturbance, such as by erosion, sedimentation, contamination, or changes in hydrology.

[251] Pembina conducted a desktop review of the Alberta Conservation Information Management System (ACIMS) and other existing information sources to identify rare plant species and rare ecological communities (elements) of conservation concern on the ACIMS tracking or watch lists in the vicinity of the project. Within 2 km of the proposed route in the Green Area, fifteen element occurrences representing 12 plant species were identified.

[252] Two rare plant species tracked in ACIMS, golden saxifrage and goldthread, were observed along the proposed route during vegetation surveys in the Green Area. In the White Area, three rare vegetation elements, a balsam poplar / high-bush cranberry / ostrich fern community, lakeshore sedge, and poverty oat grass, were identified during vegetation surveys.

[253] None of the rare plant species identified during desktop studies or field surveys are listed as endangered or threatened by the Committee on the Status of Endangered Wildlife in Canada or under Canada's *Species at Risk Act* or Alberta *Wildlife Act*. No specific mitigation measures are required under these acts.

Rare Vegetation Mitigation Plan

[254] While there are no regulatory standards for mitigating impacts on rare plants or rare plant communities tracked in ACIMS, Pembina outlined a number of species-specific mitigations in its rare vegetation element management plan for the White Area and the Green Area. This plan outlines mitigation measures to avoid or reduce potential impacts on rare vegetation elements. The plan is to be implemented as set out in the EPP and environmental protection sheets.

[255] Pembina's proposed mitigation measures included narrowing or realigning the ROW to minimize or avoid impacts on rare species. Pembina stated that it expects rare plant communities will be able to recolonize the ROW, but was not able to provide evidence in support of this assertion.

[256] In the Green Area, Pembina identified mitigation measures for golden saxifrage, such as restoring pre-construction contours to ensure site microtopography and hydrology are maintained following construction. Pembina indicated that no mitigation measures for goldthread were recommended in its vegetation survey report as direct impacts are not expected and the viability of this species will not be affected.

[257] Pembina states that the balsam poplar / high-bush cranberry / ostrich fern community is common in the area and capable of recolonization on the ROW following construction. Pembina expects disturbance to the balsam poplar / high-bush cranberry / ostrich fern community to be minimal. Site-specific mitigation measures identified by Pembina for this community include reducing stripping width

where feasible and using alternative access routes in the vicinity, as well as monitoring the location during post-construction reclamation assessments.

[258] Pembina indicated that lakeshore sedge and poverty oat grass have been downgraded recently in the ACIMS. As a result site-specific mitigation is no longer recommended.

[259] Pembina developed a plant-species-of-concern contingency plan for the mitigation of impacts on rare plants and communities discovered during construction on the project.

[260] In the event that plant species of concern are discovered, Pembina will develop a mitigation plan through consultation with the AER. Mitigation measures may include protecting the area by staking, flagging, or fencing; narrowing or realigning the ROW or work area; acquiring assistance from a qualified vegetation specialist; temporarily covering the site with geotextile pads or swamp mats; and implementing access restrictions in the vicinity of the area. Pembina stated that it will conduct post-construction inspections of rare plant locations to document the effectiveness of mitigation measures and evaluate the extent of any impacts.

[261] Having reviewed Pembina's mitigation measures, the panel finds that they are reasonable to minimize the risks to rare plant communities from the proposed pipeline project.

Creek and River Crossings and Impacts on Fish and Fish Habitat

[262] The Government of Alberta's *Code of Practice for Pipelines and Telecommunication Lines Crossing a Waterbody* and the *Code of Practice for Watercourse Crossings (COP for Crossings)* establish requirements for construction at pipeline water crossings. They provide specific direction where fish habitat or populations may be present.

[263] The proposed pipeline project could impact fish or fish habitat primarily through pipeline construction activities at watercourse crossings. Construction activities can present a risk to aquatic species through sedimentation of creeks and rivers, direct disturbance or destruction of habitat during instream construction activities, effects on riparian vegetation and streambank stability, and breakthrough or release of drilling fluids during HDD. Spills from pipeline failures during operations also represent a threat to fish populations in affected creeks or rivers.

[264] In the Green Area, the proposed route crosses 66 watercourses with defined bed and banks, including the Iosegun River, Heavysound Creek, Two Creek, Chickadee Creek, Carson Creek, and the Sakwatamau River over a distance of 106 km. Of the 66 watercourses, 56 contain low-quality fish habitat through the zone-of-influence of construction and have either no documented fish presence or do not provide habitat that support a commercial, recreational, or aboriginal fishery. The remaining crossings contain moderate- to high-quality habitat for fish (see table 1). Athabasca rainbow trout, which is a

species at risk within Alberta, was documented or likely present at six crossing sites. The route would also cross 193 ephemeral draws in the Green Area, which are not considered fish habitat.

[265] In the White Area, the proposed route crosses 67 watercourses with defined bed and banks, including the Athabasca, Little Paddle, Paddle, Pembina, and Sturgeon Rivers, and Bull, Deep, Coyote, and Little Egg Creeks over a distance of 162 km. Of the 67 watercourses, 55 have low-quality habitat and have either no documented fish presence or do not provide habitat for fishes that are part of or support a commercial, recreational, or aboriginal fishery. The remaining 12 watercourses have documented fish presence or have the potential to provide moderate- to high-quality habitat for fishes. Arctic grayling and bull trout, which are deemed sensitive species within Alberta, were documented by Pembina as being present within the Athabasca and Pembina Rivers.

[266] Pembina used the Wildlife Management Information System and open-water assessments to help identify fish species at crossing locations.

[267] Watercourses in Alberta that appear on maps in the *Code of Practice for Crossings* have classifications reflecting their sensitivity to instream works and may have a restricted activity period (RAP) to protect sensitive life stages of fishes. Class B watercourses are highly sensitive to disturbance and contain habitat that is critical to the viability of local fish populations. Class C watercourses are moderately sensitive to disturbance from instream activity. The *Code of Practice for Crossings* explains the process for determining the classification for watercourses that are not mapped and flow into a mapped waterbody. Appendix 3 shows the *Code of Practice for Crossings* classification for the crossings with documented fish presence and moderate- to high-quality habitat.

[268] A “trenchless method,” such as HDD, is the least invasive pipeline crossing method. For all crossings where HDD is to be used, backup or contingency methods will be identified should HDD not be feasible.

Proposed Mitigation Plans

[269] Pembina stated that it would implement accepted practices for erosion and sediment control and streambank protection (including revegetation), and post-construction monitoring will be done to ensure that the practices were effective. Water quality monitoring will be done where required, including during HDD activities.

[270] Specific measures to mitigate impacts at water crossings include

- using HDD to minimize impacts on aquatic habitat where species of concern are documented (e.g. arctic grayling and bull trout at the Pembina River crossing),
- using trenching with isolation or partial isolation (depending on site conditions) as the preferred contingency, and

- ensuring 50 m setbacks for watercourses less than 5 m in width and 100 m setbacks for watercourses greater than 5 m in width.

[271] Pembina's water crossing plans are consistent with Alberta's *Code of Practice for Pipelines and Telecommunication Lines Crossing a Waterbody* and the COP for *Watercourse Crossings* and it is reviewing some specific crossings to ensure consistency with the Alberta Rainbow Trout Recovery Plan.

[272] The panel finds that the mitigations proposed by Pembina should be sufficient to minimize the risks to aquatic species from the project construction and operations.

Potential Effects on Wetlands

[273] Wetlands cover approximately 20 per cent of Alberta, with peatlands (bogs and fens) comprising more than 90 per cent of the wetlands present. Wetlands represent highly diverse and productive ecosystems that provide a variety of ecological services, including protecting water quality, providing water storage and infiltration, and providing habitat for wildlife and plants. Wetlands may provide habitat for species of concern and be more sensitive to disturbance than other terrestrial habitats.

[274] The proposed project presents potential risks to wetlands by direct loss or fragmentation of wetland habitat, alteration of water quality from sedimentation and erosion, introduction of contaminants, disruption of hydrological pathways, and the introduction of weed species.

[275] Pembina completed a desktop review of wetlands. In addition, a 360° helicopter video of the proposed route, LiDAR imagery, satellite imagery, and existing hydrology base layers were reviewed to identify wetland locations and extents along the proposed route and to assign preliminary classifications to the wetlands. Wetlands were classified following the *Canadian Wetland Classification System*. Pembina identified 30 natural wetlands and 2 dugouts in the White Area and 18 wetlands in the Green Area along the proposed route. Eight (27.6 per cent) and 4 (23.5 per cent) wetlands in the White and Green Areas, respectively, were subject to ground-based field inspections conducted by qualified wetland specialists to confirm desktop delineation and classification of all wetlands intersected by the pipeline route.

[276] Pembina has indicated that the majority of wetlands directly on the route will be crossed using open-cut methods. Trenchless crossing (HDD/boring) is identified for two wetlands in the White Area and four wetlands in the Green Area of particular environmental importance (e.g., habitat for species of concern, boreal toad breeding pond). Pembina stated that it may use trenchless crossing methods at additional wetlands depending on the site conditions encountered at the time of construction.

Mitigation

[277] Pembina identified a number of mitigation measures for crossing wetlands affected by the proposed project. These include

- cutting, mowing, or walking down shrubs and small-diameter trees (where present) and minimizing grubbing;
- restricting grading as much as practical and segregating wet soils from upland soils;
- minimizing periods of open-trench and slope-trench walls to maintain stability;
- ensuring that where water is pumped from a trench, discharge occurs without causing erosion and filtering through vegetation and stable soils occurs;
- re-contouring the wetlands similar to reconstruction profiles; and
- using trenchless methods to cross some wetlands of higher environmental importance.

Are the applicant's plans for crossing wetlands in the White Area consistent with provincial policy?

[278] Open-cut methods represented accepted industry practice at the time the wetland surveys were completed (2014). This practice was supported by the AER's (interim) use of the *COP for Pipelines and Telecommunications Lines Crossing a Water Body* to authorize wetland crossings. The code, however, does not describe preferred or required methods for crossing the various wetlands types.

[279] The new *Alberta Wetland Policy* went into effect in the White Area as of June 1, 2015, replacing both the *Wetland Management in the Settled Area of Alberta: an Interim Policy* and the *Provincial Wetland Restoration and Compensation Guide*. The policy will be implemented in the Green Area of the province as of June 1, 2016. The Alberta Government *Alberta Wetland Mitigation Directive* states that project applications submitted and under review prior to June 1, 2015, in the White Area and June 1, 2016, in the Green Area are not subject to wetland replacement requirements under the *Alberta Wetland Policy*. Where wetland field assessments are completed by May 31, 2015, applications for development in wetlands are to be assessed under the interim policy.

[280] Pembina has largely completed its wetland surveys and expects to start construction of the project in the near future if the project is approved. As a result, the project applications will not be subject to the requirements of the *Alberta Wetland Policy*. If Pembina applies for any route changes related to this project in the future that will require the assessment of new wetlands, the new *Alberta Wetland Policy* will apply to those assessments.

[281] Pembina stated that in the spirit of the new policy, trenchless pipeline crossing methods will be used for some wetlands of higher environmental importance (wetlands containing species of special conservation concern, wetlands with high biodiversity value).

[282] The panel finds that Pembina's approach to crossing wetlands meets regulatory standards and requirements in effect at the time its applications were submitted. The panel notes that Pembina has acknowledged the changing policy framework for wetlands in Alberta and indicated that trenchless crossing methods may be used for some wetlands of higher environmental importance.

Soil Conservation and Reclamation

[283] Pembina was required to submit a C&R plan for the White Area setting out, among other things, the EPP. While a C&R plan is not required for the Green Area, in response to an information request, Pembina provided an EPP for the Green Area.

[284] An EPP includes mitigation measures for soils and addresses construction practices and post-construction monitoring.

Potential Effects on Soils and Soil Productivity

[285] Construction activities can present risks to soil productivity of both agricultural and non-agricultural lands. These risks could arise from soil handling during initial construction and maintenance digs. Potential adverse effects on soils include admixing of topsoils with poorer quality subsoils, soil loss or degradation through wind or water erosion, and damage to soil structure from operating on wet soils, resulting in excessive rutting and long-term trench subsidence.

[286] Topsoil preservation is part of the soil handling plan. Pembina's topsoil handling plan, as outlined in its EPP, meets AER's requirements. However, site-specific information will need to be gathered on lands owned by Grassroots landowners to develop a specific topsoil preservation plan.

[287] Pembina was unable to gain access to some lands owned by Grassroots landowners. As a result, Pembina could not complete field studies to gather site-specific information in order to establish appropriate site-specific soil handling protocols for construction. The panel acknowledges Pembina's commitment to undertake pre-construction soil surveys on those lands not accessed previously. This is an important factor to the panel, and as such, the panel is making this a condition of the approval of the project.

[288] In the course of the hearing Pembina committed to also stripping topsoil in the Green Area and to correcting its EPP in this regard. Pembina has committed to, and must comply with, the topsoil salvage standards in the *IS&G*.

[289] Pembina stated that it will have a contingency plan for adverse weather conditions that will include the requirement to shut down when construction activities may result in adverse effects on soils. Construction during excessively wet conditions may result in soil rutting, erosion, or compaction. Alternately, construction during excessively dry and windy conditions may result in wind erosion.

Pembina said its environmental inspectors have the authority and obligation to shut down construction during such adverse conditions.

Monitoring

[290] Pembina stated that it will have environmental inspectors to support the implementation of the EPP during all phases of the pipeline construction (e.g., soil salvage, grading, clean up). This meets the AER's requirements. In addition, AER inspectors may periodically inspect C&R activities during pipeline construction and respond to specific complaints from landowners.

[291] The AER requires proponents to submit a post-construction reclamation assessment (PCRA) report after one full growing season starting from the end of pipeline construction. The PCRA report will indicate whether Pembina has fulfilled its commitment to complete post-construction cleanup and reclamation as outlined in the EPP. Pembina's post-construction reclamation plan meets the AER's regulatory requirement.

[292] Pembina stated it will address in a timely manner all landowners' post-construction complaints and issues as they arise for the life of the project. Post-construction issues are best addressed between landowners and Pembina directly.

[293] The panel finds that subject to completion of the soil surveys discussed above, Pembina's proposed soil handling procedures and reclamation plans outlined in the C&R plan meet all requirements under *EPEA* and currently accepted industry standards and best management practices for soil conservation and reclamation during pipeline construction. The panel finds that Pembina's plans will minimize the risk of adverse effects on soils and soil productivity during construction and reclamation activities.

[294] Subject to the conditions and commitments identified throughout this section on environment, the panel has determined that the risks to the environment can be sufficiently mitigated.

What landowner impacts were identified during this proceeding and how should they be addressed?

What landowner impacts should be addressed by this panel?

[295] Pembina's proposed pipeline project crosses 270 tracts of privately owned lands. Thirty-eight landowners representing approximately 70 tracts of land filed statements of concern and chose to participate collectively as members of Grassroots. The remaining landowners had reached ROW agreements with Pembina.

[296] Grassroots landowners did not ask that the project be refused. They had the following concerns with pipeline construction and mitigation of post-construction impacts:

- impacts on their ability to conduct business,
- ROW width generally and in specific locations,
- biosecurity measures for weeds and clubroot,
- microrouting issues, including proximity to dwellings and impacts on farming operations,
- appropriate fencing requirements,
- effects of construction on shelter belts,
- restrictions to crossing the ROW with farming and other equipment on their lands,
- construction crossings of water bodies on their lands,
- fencing design and location during construction,
- rocks left after construction,
- protection of natural features on their individual lands,
- drainage maintenance on individual lands,
- depth of cover generally and on specific lands,
- cattle crossings during construction,
- reclamation of water sources for cattle,
- temperature effects of the pipeline,
- access during construction, and
- vegetation re-establishment.

[297] Section 15 of *REDA* directs that when the regulator is to consider an application it shall “consider any factor prescribed by the regulations, including the interests of landowners.” Section 3 of the *REDA General Regulation* states that the AER shall consider the impacts on landowners as the result of the use of the land on which an energy resource activity is or will be located. There is no description in either of the nature of the interests or impacts that must be considered. *REDA* also explicitly requires the AER to consider environmental, social, and economic effects. In addition the panel must also ensure that its decision is consistent with the purpose of *EPEA*, which is to support and promote the protection, enhancement, and wise use of the environment.

[298] Because of the nature of this application and the concerns raised, the panel has to answer the question of what effects should be considered and addressed by the panel. Is it reasonable within the

scheme established by *REDA* to interpret the requirement to consider the effects on landowners as meaning that any and all concerns identified by landowners must be taken into account and addressed?

[299] Grassroots landowners expressed a wide range of concerns. Some were issues of broad concern such as ROW width and biosecurity issues. Many other issues were specific to individual landowners and their particular circumstances, such as construction timing in relation to calving or the number and location of gates in fencing to be installed. Grassroots landowners argued that construction impacts should be mitigated by detailed design and construction standards set and enforced by the AER and monitored by a third-party construction monitor.

[300] Pembina stated that it enters into private agreements with landowners to develop appropriate strategies, including mitigation, to ensure that their concerns are addressed in a mutually acceptable way. Pembina's White Area EPP, which must be approved by the AER, addresses concerns of broader construction impacts on landowners such as biosecurity protocols, construction practices, and reclamation.

[301] Pembina indicated that it had been prevented from contacting or meeting one-on-one with most Grassroots members to view their lands and address site-specific concerns.

[302] While the panel has considered all of the various effects on and interests of Grassroots that were raised in this proceeding, the panel finds that site-specific concerns are matters to be addressed in agreements between Pembina and individual landowners. Moreover, the AER, and therefore the panel, has no jurisdiction to decide on matters of compensation.

[303] The many individual concerns cited by Grassroots landowners are ones for which the AER has no specific requirements. The panel acknowledges the importance of an appropriate resolution to the individuals involved. After hearing from individual Grassroots witnesses and their counsel and considering the nature of the issues raised, the panel concludes that appropriate mitigations for the individual landowners' sites are most effectively determined through on-site evaluation and direct discussion between the parties. Landowners and Pembina have detailed and intimate knowledge of their own business needs, which puts them in the best position to make decisions about site-specific concerns. Indeed, during the hearing, Pembina stated many times that it needed an on-site evaluation to determine appropriate mitigations, and Grassroots also indicated that it wanted another opportunity to resolve its issues with Pembina.

[304] The site-specific issues that the panel will not decide on include fencing, drainage, individual requirements for specific depth of cover, particularly in relation to tile drainage, access during construction, cattle crossings during construction, pipeline ROW crossing locations on individual lands, reclamation of water sources for cattle, protection of natural features on individual lands, and unique microrouting issues.

[305] During the hearing Pembina provided an undertaking response for a proposed action plan to resolve site-specific landowner concerns. An updated version was presented during final argument identifying the commitments Pembina is prepared to offer to individual landowners to resolve site-specific concerns (see appendix 4, “Table of Commitments Made by Pembina”).

[306] In final argument, Grassroots’ counsel indicated that its client’s negotiating team had an initial level of satisfaction with the commitments after partially reviewing them and would need more time to review them completely.

[307] The panel finds that Pembina’s commitments are reasonably responsive to landowners’ site-specific concerns and consistent with minimizing environmental impacts. If landowners do not deem these commitments to be adequate, they have the opportunity to directly negotiate different mitigations with Pembina. Their individual agreements would override the commitments.

[308] Grassroots raised both broad and site-specific environmental concerns, including water crossings, drainage, vegetation re-establishment, and environmentally sensitive areas. These matters are addressed in the environmental section of this report.

[309] Because they are issues that more broadly affect the Grassroots landowners and for which they had common goals, the panel will provide decisions on

- biosecurity measures for clubroot and weeds,
- construction monitoring,
- depth of cover for the ROW on Grassroots lands,
- pipeline ROW crossings in general on Grassroots lands,
- temperature effects of the pipeline on crops,
- rock handling, and
- shelterbelts.

[310] Many of the Grassroots landowners stated that they had experienced adverse impacts from the 1997 Alliance pipeline construction on their lands. At times, the efforts to remedy these impacts were time consuming, stressful, costly, and uncertain. These negative experiences clearly affected Grassroots landowners’ views of the proposed Pembina project. It is important to note that the Alliance pipeline carries natural gas, which is a different product than the product for the proposed Pembina pipeline, and it is regulated by a different regulator, the National Energy Board.

[311] Grassroots was concerned about compliance with and enforcement of Pembina’s commitments in the individual ROW agreements. The AER has a private surface agreements registry (PSAR). The PSAR exists so that private surface agreements between landowners and energy companies operating on their

property can be registered with the AER. If a landowner or occupant feels a company is not meeting a term or condition of the registered agreement, they may ask the AER to intervene and determine whether the company has met the term or condition. Following investigation, if the AER determines that a company is not complying with the registered agreement, it can issue an order directing the company to comply. Information about private surface agreements and how to register them is found on the AER's website under Applications & Notices > How Do I Get Involved?

Biosecurity Measures for Clubroot

[312] Grassroots landowners are concerned that pipeline construction activities could increase the risk for introducing clubroot to their operations. Clubroot is a serious soil-borne disease that affects canola and other related crops and is considered a pest under the *Agricultural Pests Act* in Alberta. Clubroot spores can be transferred between fields by equipment and vehicles that are in contact with infected plant residue or soil. Once introduced to a field, clubroot spores are very difficult to eradicate. The consequences can have serious financial impact on an agricultural operation.

[313] Pembina's clubroot management plan incorporates the best management practices outlined in the Alberta Clubroot Management Committee's *Alberta Clubroot Management Plan* and CAPP's *Clubroot Disease Best Management Practices*. Cultivated fields that are or could be planted with canola are considered to be at risk of clubroot infection. Hay lands and native or tame pasture lands are considered as unlikely to be affected by clubroot.

[314] Pembina claims that the majority of resting clubroot spores are found in topsoil. Therefore, its plan for mitigating the risk of introducing clubroot focuses on managing topsoil. The plan includes pretesting all fields for clubroot, removal and storage of topsoil along the ROW, and one of three levels of cleaning for any equipment working with topsoil. The strategy is to ensure that topsoil or crop debris from a contaminated field is not transferred to another cultivated field. This plan would be in place during the entire construction process.

[315] Pembina intends to sample all lands in the agricultural area. Fields in which clubroot is detected will be designated as "red" parcels. Clubroot-undetected fields will be designated as "green" parcels. Although lands belonging to Grassroots landowners have not yet been sampled, Pembina would collect pre-construction information on clubroot before entry on those lands.

[316] Pembina indicated that all equipment would arrive on site clean of soil and plant material and all topsoil handling equipment will be disinfected. Topsoil along the full ROW width will be stripped and stockpiled at the start of construction.

[317] Pembina proposes to use one of three levels of equipment cleaning between fields along the area of construction depending on the detection of clubroot:

- level 1—mechanical cleaning with brushes, small shovels, and hand tools to remove 95 per cent of organic matter on the equipment
- level 2—pressure washing of equipment
- level 3—pressure washing and disinfection of equipment with a 1–2 per cent bleach solution

[318] Equipment wash stations would be positioned prior to the equipment leaving a clubroot-detected parcel to enter a clubroot-undetected parcel. Level 1 cleaning would take place when equipment travels between red parcels. Level 3 cleaning would be used between red and green parcels.

[319] To add to these protection measures, Pembina stated that it intends to undertake a level 1 cleaning process between all fields, regardless of whether clubroot has been detected or not. Equipment cleaning will be documented.

[320] Pembina's traffic management plan states that its use is intended to minimize equipment and vehicle travel on potentially clubroot-infested fields prior to topsoil stripping and after topsoil respreading. Protocols and signage for cleaning vehicles between parcels will be in place. Footwear and small vehicles, such as quads, will also be cleaned in accordance with the protocols.

[321] Pembina's expert, Mr. Kerr, a senior environmental scientist, stated that scientific evidence suggests that the largest proportion of clubroot spores occur within the top 5–10 centimetres of topsoil and that spores are unlikely to extend to depth in concentrations that would be a risk of causing a clubroot infestation. Pembina indicated that therefore once topsoil is stripped, it does not intend to require cleaning for equipment moving between fields.

Grassroots' Concerns with Pembina's Clubroot Management Plan

[322] According to G. Doll, Grassroots' expert witness, clubroot spreads quickly and yield losses can be up to 80 per cent of a field. Pre-construction topsoil stripping is significant in reducing the risk of contamination but does not eliminate the risk. A key factor is ensuring that vehicles on the ROW are clean.

[323] Mr. Doll questioned Pembina's protocol for protecting lands where clubroot may be present in the field but not on the ROW. The Pembina protocol is that such a field would be declared as a red parcel and that equipment entering this field from another red parcel would not have a level 3 cleaning with disinfection. He suggests that Pembina use a third "yellow" designation of middle risk in this case and use a more stringent cleaning protocol.

[324] In its written submission, Grassroots presented evidence of a 2015 signed agreement between Enbridge Pipelines Inc. and an association representing landowners along the Enbridge line 3 replacement program ROW. Enbridge's clubroot mitigation protocol identifies quarter sections as low, moderate, or high risk.

[325] The Enbridge protocol has three levels of cleaning: rough, mechanical, and fine. This approach differs from Pembina's by including disinfection at the two higher levels of cleaning rather than only at the highest level of cleaning.

[326] Mr. Doll pointed out that the Enbridge protocol requires vehicles and equipment moving between high-risk quarters to be mechanically cleaned and disinfected unless the quarters are owned by the same landowner and a different agreement is in place. Fine cleaning with disinfection takes place between high-risk and medium- or low-risk quarters.

[327] Mr. Doll believes that although more complicated, the Enbridge protocol protects landowners who may have clubroot on their property but not on the ROW. It also provides additional protection between adjacent landowners.

What is an appropriate clubroot management plan?

[328] The panel notes that the proposed pipelines would be constructed through an agricultural area in the province with a known clubroot infestation.

[329] Many of the Grassroots landowners derive a portion of their livelihood from their agricultural operations. When faced with accommodating the construction of proposed pipelines across their lands, landowners look for assurance that rigorously applied biosecurity protocols are in place to protect that livelihood. Grassroots landowners presented their concerns about possible risk to their operations. They were not confident that Pembina's plan would provide adequate protection.

[330] Pembina indicated that it follows the *Alberta Clubroot Management Plan*. In the most current version of this plan, all land users are encouraged to be diligent in removing potentially contaminated soil from vehicles, machines, and equipment prior to leaving fields. The recommended best management practice is good sanitation (cleaning and disinfection) of machinery and equipment to restrict the movement of potentially contaminated soil, particularly in areas with moderate to high infestations. The plan notes that in situations where the producer is risk averse or in areas with heavy infestations, additional cleaning steps of pressure washing and disinfecting equipment slightly decreases the risk of clubroot spread but does involve considerably more work and expense.

[331] The panel finds that Pembina provided a basic approach to clubroot management. However, Grassroots presented the need for more protection through an enhanced sampling program that would include the identification of a moderate-risk category. Grassroots also advocated for more detailed and

comprehensive cleaning standards and suggested the Enbridge clubroot mitigation protocol as an example. The panel agrees with Grassroots that a more comprehensive sampling and cleaning protocol is required. Therefore, the panel requires that Pembina submit within 120 days of this decision an updated clubroot management plan to the *EPEA* director for review, in accordance with the *EPEA* approval for this project. Following receipt of this plan, the director will either accept it as filed as a condition of the approval or provide Pembina with further direction. Pembina's updated plan must include the following:

- A sampling method that identifies three levels for designating clubroot presence in fields: low, moderate, or high.
- Level 3 disinfecting cleaning when topsoil stripping equipment is moving from high- to moderate- or low-risk fields.
- Equipment moving between high-risk or moderate-risk fields have
 - level 3 cleaning when equipment is being moved between different landowners, and
 - level 2 or 1 cleaning when equipment is being moved between fields owned by the same landowner and the landowner agrees.
- The use of high-risk mitigation measures when there is uncertainty regarding the presence of clubroot.
- Level 1 cleaning of all equipment moving between clubroot-detected fields, regardless of the direction of travel.
- Sampling for clubroot and cleaning of equipment between fields rather than only between quarter sections.

How will impacts to landowners during the construction phase be monitored and resolved?

[332] Grassroots landowners described site-specific concerns for their individual properties and expressed fear that Pembina would not take the necessary care during construction or would not follow through with appropriate mitigation measures. They related problems they had experienced with a previous pipeline construction project, such as topsoil mixing with bentonite, ROW deviations, sinkholes and subsidence, riverbank erosion, weed contamination, and unacceptable rock management.

[333] Grassroots expressed a lack of confidence in Pembina's EPP as a reliable compliance standard to evaluate Pembina's construction work on their lands. Construction decisions would affect landowners in matters such as topsoil stripping, operations during wet or thawed soil conditions, and soil erosion prevention. Grassroots wants to avoid past negative pipeline construction experiences by getting clarity on how construction decisions will be made and how landowner interests will be met. It viewed the EPP as unclear about the responsibilities and decision-making authority between the contractor and Pembina's environmental inspector and chief inspector.

[334] Grassroots proposed that Pembina hire an independent third-party construction monitor to be chosen by and accountable to landowners. The monitor would ensure that construction and reclamation standards are met and that negotiated agreements on the ROW are maintained. Grassroots referred to the 2015 Enbridge agreement submitted in its evidence as effectively describing Grassroots' view of the construction monitor role.

[335] Pembina stated that it has the sole accountability and responsibility for construction decisions, argued that a construction monitor is not necessary, and further stated that it is not prepared to fund the role. In its EPP, Pembina described the construction responsibilities of its chief inspector and its environmental inspectors. The chief inspector would work with the environmental inspectors to make decisions to alter or suspend construction where activities may have a potential adverse environmental impact. Environmental inspectors would be accountable for inspection and monitoring to ensure compliance with the EPP and all approval conditions. Any incidences of noncompliance would be reported to one of Pembina's environmental inspectors who would rectify the situation.

[336] Pembina stated that it is committed to communicating with landowners and is prepared to work with landowners' representatives. In the construction phase, landowners and occupants would be notified of construction schedules and contractors would be provided with the construction line list describing the specific landowner requirements.

[337] Pembina would ensure ongoing consultation and mitigation of concerns throughout the duration of the project. Its PCRA process would determine the efficiency of mitigation and reclamation measures on soils, vegetation, and the watercourses disturbed during construction. During the first full growing season following construction and final reclamation, the ROW would be assessed for weed infestations, poor vegetation re-establishment, or reduced crop growth. The PCRA would include locations identified through landowner consultation. Details of unresolved reclamation issues along with proposed remediation actions would be provided to the AER.

[338] Pembina would monitor the ROW on a routine basis for the life of the project. Issues relating to landowner concerns would be reported to Pembina's environmental inspector and Pembina would implement the appropriate remedial measures as soon as possible.

[339] The panel finds that Pembina's EPP clearly states the responsibility and authority of various Pembina personnel to make construction decisions and describes how Pembina will ensure compliance with the EPP during construction and post construction. Since Pembina is responsible for construction, operations and any consequences, Pembina must retain final authority. However, Pembina does not specifically indicate how unresolved construction and post-construction issues with landowners would be addressed and resolved.

[340] The panel’s view is that landowners’ interests need to be actively addressed during project construction. Landowners should not be expected to be knowledgeable of current construction practices and possible construction mitigation methods. They should be able to count on reliable advice, oversight of practices, and assistance in resolving “on-the-spot” construction issues with Pembina.

[341] The panel strongly recommends that Pembina establish specific landowner liaison responsibilities for one or more of its employees who would be responsible to ensure that all commitments, measures identified in the C&R plan, and biosecurity protocols are properly adhered to during construction of the pipeline on their lands. The role could include the duties of

- meeting with each individual landowner in advance of construction on their respective lands to review all commitments and requirements and ensure clarity of communication about any related matters,
- ensuring that landowners have a contact person that they can call with any questions or issues that may arise who is familiar with their property and concerns and the commitments made by Pembina, and
- ensuring that any pertinent information from each landowner is communicated effectively to the construction personnel of both Pembina and its contractors.

[342] Pembina has committed to address all landowner complaints for the life of the project. If landowners are concerned that post-reclamation effects have not been addressed satisfactorily, they can contact an AER regional office for an on-site assessment by an AER field inspector. Under *EPEA*, companies are required to restore land to an “equivalent land capability.”

ROW Width

[343] The issue of ROW width along the full ROW is dealt with elsewhere in this decision. This section addresses the concerns raised by Grassroots landowners.

[344] Grassroots questioned the need for a permanent 35 m ROW. Drone video evidence showed particular locations where specific landowners wanted a reduced ROW through naturally treed and other areas of individual importance. Grassroots indicated that Pembina had reduced the ROW width on at least two occasions for other landowners along the project ROW.

[345] Pembina agreed that it had accommodated landowners in individual situations to reduce the ROW width over short segments. Pembina indicated that it can work with Grassroots landowners to consider specific requirements for reductions on ROW width (as discussed later).

[346] The panel finds that individual Grassroots landowners and Pembina can together address the need for any changes to ROW width to mitigate site-specific concerns through their third-party agreements.

Temperature Effects

[347] Grassroots landowners contended that elevated temperatures in the pipeline could have negative effects on crop yields by increasing weed growth or changing crop maturity time. They described previous experiences of negative impacts on crop growth due to soil heating from pipelines and suggested that a greater depth of cover would prevent similar problems.

[348] Pembina stated that the proposed pipeline products were being drawn from storage facilities and would enter the pipelines at about 10 degrees Celsius, and that temperature would not be expected to vary significantly as pumping did not add compression heat to the products. Pembina explained that this situation differs from gas transmission pipelines (such as the Alliance pipeline), which operate at elevated temperatures due to the heat of compressing the natural gas. Pembina stated that its modelling had indicated that at surface the temperature could increase 0.5 degrees Celsius, which Pembina considered was minor. In the event that a weed or vegetation issue arose as the result of soil heating associated with operating the pipelines, Pembina was prepared to address the issue with landowners as part of its PCRA process. If there were impacts on crops or crop loss, Pembina stated that it was prepared to compensate landowners for damages.

[349] The panel accepts that some landowners are concerned about the effects that the proposed pipelines may have on soil temperatures and the associated reduction in soil productivity. Clearly this has been an issue for some landowners with previous natural gas infrastructure on their lands. The panel also accepts Pembina's evidence regarding operating temperatures on its proposed pipelines and that these are significantly different than a natural gas pipeline. Based on Pembina's modelling evidence that soil heating associated with its operations would be minimal and its offer to compensate landowners for any damages if soil productivity issues do arise, the panel is satisfied that Pembina's plans reasonably address the concerns expressed by landowners regarding the impacts of soil heating from the proposed pipelines on their agricultural operations.

Depth of Cover

[350] Grassroots requested a 2 m depth of cover along the proposed project ROW within its members' lands to accommodate existing and potential tile drainage and to allow unlimited ROW crossings for any equipment. Grassroots stated that some landowners own and operate excavation equipment, which would not be considered farming equipment for the purpose of pipeline crossings.

[351] Grassroots is also concerned that the trend of increasing size and weight of farming equipment combined with the need to cross the pipelines may potentially impede its future agricultural operations. It is also concerned that the requirement to notify Pembina prior to crossing the pipelines with non-farm equipment would hinder timely farm operations.

[352] Pembina noted that the minimum depth of cover for a cross-country pipeline in Alberta is 0.9 m, but that Pembina had adopted a greater minimum depth of cover of 1.2 m. In addition, the pipelines would be buried at greater depth at roadway and railway crossings as required by regulations. Pembina stated that at road crossings, where depth of cover would be 2.0 m, it would use heavy wall pipe in anticipation of heavy loads.

[353] Pembina stated that adding to its planned depth of cover in fields may actually add more stress to buried pipe based on the Canadian Energy Pipeline Association calculation chart.

[354] In regards to the movement of heavy equipment over the ROW, Pembina stated that it did not require landowners to obtain permission to move agricultural or farm equipment over the ROW. For non-agricultural equipment, Pembina would do a no-cost site visit to evaluate the equipment and determine what measures might be necessary to allow for the passage of the equipment. These permissions were not considered to be granted in perpetuity and landowners would have to recontact Pembina for evaluation of new non-farm equipment at later dates.

[355] Pembina provided a chart during the hearing that listed the various pieces of equipment that landowners had provided as potentially requiring access over the pipeline. The chart showed that in general farm or agricultural equipment could cross without restriction and non-agricultural equipment could not cross without an evaluation of potential loadings. Pembina's position was that additional depth of cover did not create a safer environment to cross due to additional stress on the pipelines caused by the additional cover. Pembina stated that it was willing to install a permanent crossing area on each landowner's property that could be used for long-term access of heavier non-agricultural equipment.

[356] Some landowners were concerned about safety and interference with agricultural operations by the proposed pipelines.

[357] Other than at railway and road crossings and a few other limited locations, Pembina proposed to provide 1.2 m depth of cover along the ROW, which exceeds the *CSA Z662* standard of 0.9 m of cover and satisfies CSA conditions allowing unlimited crossings by farm equipment. No evidence was provided by Grassroots that this depth of cover is unsafe for standard farming operations.

[358] The *Pipeline Rules*, section 66, sets out restrictions on vehicles crossing pipelines. The rules do not allow unlimited, unannounced (no notice) ROW crossings except for agricultural equipment. The AER cannot amend these restrictions, which are intended to protect the public as well as the pipelines.

[359] Pembina stated that for Grassroots landowners it would

- install an unrestricted crossing for Grassroots' non-farming equipment at selected road or headlands for 50 m measured from the centre of the road allowance,
- work with each landowner to install a mutually agreeable crossing location per titled unit,

- meet, both before pipeline installation and during pipeline operation, with any landowner to discuss crossing methods and locations for non-agricultural equipment, and
- to accommodate tile drainage, install the proposed pipelines at least 0.3 m below any existing tile drainage and to either restore the tile drainage to its pre-construction condition or bore beneath it.

[360] Having considered the concerns expressed by Grassroots and the mitigations proposed by Pembina, the panel finds that Pembina's plans reasonably address Grassroots' concerns.

Pre-construction Weed Control Surveys and Weed Control

[361] Pre-construction weed surveys have not yet been done on Grassroots landowners' lands. Grassroots argues that these surveys are important to establish baseline data and to reduce risk to landowners and that they should be included as a condition to the approval. Some landowners, in particular those who are certified seed growers, are concerned about the possible introduction of weeds to their lands through Pembina construction practices.

[362] Pre-construction weed surveys allow Pembina to work with landowners to identify pre-existing weed situations and develop a mutual understanding of weed mitigation. Although in its applications, Pembina stated that it would undertake pre-construction weed surveys, during the hearing Pembina indicated that it would do pre-construction weed surveys if timing allowed access to lands prior to construction. If Pembina is not able to undertake a pre-construction weed survey, it said it would accept the risk that weeds may have been present on the property prior to the project. Pembina believes that pre-construction weed surveys of all lands would be unreasonable and unnecessary and should not be an approval condition.

[363] Pembina's weed control management program provides details of mitigations, including that all equipment would arrive at the project clean of soil and plant material, travel in areas of known infestations would be limited, and all track-mounted equipment used in or passing through known weed locations would be cleaned with compressed air and track shovels prior to moving to neighbouring land tracts. Pembina also indicated that it will set up and use weed clean-off stations at locations identified by the environmental inspector for cleaning equipment with steam or high-pressure water during non-frozen conditions.

[364] Pembina's PCRA process includes visual inspection for weeds and consultation with landowners. Pembina would work with landowners to resolve any weed issues that may arise.

[365] Due to landowner objections, Pembina was unable to access certain lands and therefore unable to complete all pre-construction weed surveys. As a condition of approval, Pembina must conduct any outstanding pre-construction weed surveys in the White Area. Where Pembina is unable to complete a pre-construction survey (e.g., due to a timing restriction), it must assume that weed infestation is present and mitigation measures must be applied accordingly.

[366] The panel finds that to reduce risk to certified seed grower lands, Pembina must pressure wash all equipment before entering those lands regardless of whether Pembina's equipment is coming from another weed-free site. Footwear and vehicles must also be cleaned in accordance with this protocol.

Shelterbelts

[367] Grassroots presented evidence on the aesthetic and protective nature of shelterbelts and argued that shelterbelts on all lands should be preserved by boring beneath them during construction of the proposed pipelines.

[368] For clarity, Pembina considered shelterbelts to be ornamental planted trees. On-site meetings between landowners and Pembina offer the opportunity to discuss and determine options for preserving shelterbelts. Pembina pointed out that its ability to bore beneath shelterbelts can be restricted by proximity to roads.

[369] Typically, Pembina only bores under ornamental planted trees. It does not bore beneath stands of non-ornamental trees. However, in some situations with other landowners along the ROW, it has agreed to leave a 15 m buffer of trees along roads and other areas that would be considered a shelterbelt or windbreak, regardless of whether they were ornamental planted trees.

[370] The AER does not have a specific requirement for boring under shelterbelts. Pembina has agreed to accommodate reasonable shelterbelt protection by reducing the ROW or boring beneath shelterbelts when it is able to do so depending on the site-specific situation. The panel finds Pembina's mitigations reasonable and responsible under the circumstances.

Rock Handling

[371] Some Grassroots landowners were concerned that the proposed construction activities could result in rocks of an unacceptable number or size left on their lands.

[372] In its EPP, Pembina indicated that on agricultural land, rocks would be picked up so that the ROW surface would be similar to that of adjacent lands. Extra rocks would be disposed of at locations approved by the landowner. In addition, Pembina stated that it would work with landowners to make sure that rocks are picked up and removed from the ROW to their satisfaction. Pembina provided evidence showing that it had made additional site-specific commitments to mitigate individual landowner concerns about rocks.

[373] The panel finds Pembina's EPP, which addresses rock picking, is reasonable.

What are the potential adverse effects on aboriginal participants?

[374] Three aboriginal communities participated in the hearing: Driftpile, Gunn Métis, and Alexander. The Alexis Nakota Sioux filed a request to participate and appeared at the prehearing meeting but withdrew its request to participate prior to the hearing.

[375] Driftpile is a signatory to Treaty 8. Its reserve is located on the south shore of Lesser Slave Lake and its traditional territory extends throughout the Swan Hills and south to the Athabasca River.

[376] Alexander is a signatory to Treaty 6. It has several reserves. The main reserve is located just west of Morinville and southeast of Deadman Lake. Alexander's traditional territory overlaps with that of Driftpile in the area of Pembina's proposed project.

[377] Gunn Métis is an association representing individuals who self-identify as members of the Lac Ste. Anne Métis community. Their traditional territory encompasses the project area and in that area overlaps the traditional territory of both Driftpile and Alexander.

[378] Driftpile, Gunn Métis, and Alexander will be dealt with individually below. However, before addressing the concerns of each aboriginal participant, the panel will set the context by discussing the following:

- traditional-knowledge evidence – process and role in this hearing
- the roles and responsibilities of the Crown, the AER, and the ACO with respect to Pembina's applications
- the role of the ACO in this hearing
- the legal force and effect to be given to the ACO advice to the hearing panel

Traditional-Knowledge Evidence – Process and Role in this Hearing

Process

[379] At the prehearing meeting, the panel offered to hold part of the oral hearing in each aboriginal community to hear traditional-knowledge evidence. Alexander initially responded favourably, but subsequently chose not to provide any traditional-knowledge evidence. Gunn Métis chose to present its traditional-knowledge evidence at the main hearing venue.

[380] Driftpile accepted the offer. On November 9, 2015, at the community hall on the Driftpile reserve, this panel, core AER hearing-support staff, and representatives from Pembina heard traditional-knowledge evidence. There were members of the Driftpile community in attendance, as well as members of the general public. The ACO also had representatives in attendance.

Role of Traditional-Knowledge Evidence

[381] Traditional knowledge is central to aboriginal communities and culture; it is developed over generations and shared orally by elders or traditional knowledge keepers.

[382] Oral traditional-knowledge evidence is not easily accommodated by the formal rules of evidence. The Supreme Court of Canada, in *Tsilhqot'in Nation v. British Columbia*, [2014] 2 S.C.R. 256, cautioned that decision-makers must take care not to “lose or distort the Aboriginal perspective” by forcing ancestral practices into the square boxes of common law concepts.

[383] In this proceeding, the traditional-knowledge evidence assisted the panel in gaining an understanding and assessing the nature of the potential impacts of Pembina’s proposed project on the culture, community, and traditional way of life of Driftpile and on the traditional practices of the Gunn Métis witnesses. The panel’s view is that the traditional-knowledge evidence was not offered to establish specific quantifiable impacts, as defined by western science, of Pembina’s proposed project.

[384] The traditional-knowledge evidence of Driftpile leads us to conclude that changes to the landscape within the community’s traditional territory resulting from the taking up of land through forestry, industrial development, and energy resource activities may negatively affect Driftpile’s relationship with the land. The panel finds that any such negative impacts resulting from the construction and operation of Pembina’s project may be described as cultural and spiritual. As noted above, we have taken these social impacts into account in arriving at our decision.

What are the roles and responsibilities of the Crown, the AER, and the ACO with respect to Pembina’s applications?

[385] Where aboriginal rights, including Treaty rights, may be affected by a decision of the Crown, the Crown has a legal duty to consult that has been and continues to be defined by the courts (in this section of the decision “consult” and “consultation” are used to refer to Crown consultation arising from the legal duty to consult). According to the Supreme Court of Canada decision in *Mikisew Cree First Nation v. Canada*, [2005] 3 S.C.R. 388, the consultation process is how the Crown is to discharge its obligation to First Nations to honourably manage changes in the landscape of Treaty territory that result from the taking up of lands.

[386] The Crown may delegate the process of consultation. In Alberta, for proposed energy resource activities, the Crown delegates that responsibility to project proponents who are required to coordinate with and work under the direction of the ACO. Pursuant to section 21 of *REDA*, the AER is prohibited from assessing the adequacy of Crown consultation.

[387] As a statutory decision-maker, the AER is confined to the powers and responsibilities conferred on it by its constituent legislation and is required to take into account impacts on aboriginal rights when making its decisions; however, the AER does not share the Crown’s duty to consult.

[388] The *Joint Operating Procedures for First Nations Consultation on Energy Resource Activities (Procedures)* sets out how the AER and the ACO are to cooperate to “support informed consideration” of applications by the AER and to “ensure that the AER’s approval of energy applications is consistent with Alberta’s consultation and engagement...” The *Procedures* enables the ACO to use the *Directive 056* engagement efforts by the applicant as part of the ACO’s consultation effort. As we discussed in the stakeholder engagement section of this decision, *Directive 056* draws no distinction between aboriginal peoples or communities and other parties except to note that consultation with First Nations carried out to satisfy Government of Alberta requirements for consultation is a process separate from *Directive 056* participant involvement requirements and meeting the requirements of one may not fully satisfy the requirements of the other.

What is the role of the ACO in this hearing?

[389] Pursuant to the *Procedures*, the AER requires applicants to provide the ACO report, which contains the ACO’s finding on consultation adequacy, for an application to be considered complete. Pembina provided the ACO reports in support of its applications.

[390] The *Procedures* also requires the AER to notify the ACO when an application will proceed to a hearing or alternative dispute resolution and to provide the ACO with certain information. The ministerial order also requires that the AER panel request advice from the ACO respecting whether the ACO has found consultation to have been adequate and request advice on mitigation measures that may be required to address potential impacts on aboriginal rights. Pursuant to the *Procedures*, the panel made the request for advice from the ACO before closing the evidentiary portion of the hearing so that parties could have an opportunity to comment on the ACO advice in the course of final argument. The ACO provided its advice by way of three separate hearing reports, each addressing one of the three aboriginal participants.

What legal force is to be given to the ACO advice to this panel?

[391] The panel specifically asked the parties to address the ACO’s advice in final argument. Driftpile and Alexander did so.

[392] In addressing specific questions posed by the panel, Driftpile characterized the functional roles of the ACO and AER in respect of the duty to consult. The ACO is the holder of the legal obligation to consult and to ensure consultation is carried out. The AER has the jurisdiction to ensure that mitigation of impacts takes place.

[393] Driftpile went on to argue that if the ACO has determined that there will be or may be adverse impacts, it is not open to the AER to arrive at a different conclusion or to decide that such impacts do not need to be addressed if the ACO recommends mitigation measures.

[394] The ministerial order was issued to the AER pursuant to section 67(1)(b) of *REDA*. That section empowers the ministers of energy and the environment to give direction to the AER, in the form of an

order, for the purposes of “ensuring the work of the Regulator is consistent with the programs, policies and work of the Government in respect of energy resource development...” Section 67(2) of *REDA* requires the AER to comply with any directions given “within the time period set out in the order.”

[395] The ministerial order directs the AER to follow certain specific steps in dealing with notice and the exchange of information. The part of the ministerial order dealing with decisions of the AER requires the AER to request advice from the ACO prior to making a decision on an energy application “on whether actions may be required to address potential adverse impacts.” While there is no explicit direction to the AER to accept or adopt the ACO advice, the panel interprets the intent of the ministerial order to be that the AER will impose conditions on an approval or take other action within its jurisdiction that is consistent with the ACO advice.

[396] Having said that and in response to Driftpile’s submission, it is important to note that the ministerial order expressly contemplates the possibility that the AER may arrive at a different conclusion than the ACO on an energy resource project’s potential adverse effects. This makes sense given the different responsibilities of the ACO and the AER. In addition, the AER may arrive at a different conclusion than the ACO when there is different information in the hands of the ACO than the AER. Under the terms of the *Procedures*, the ACO should have all of the information that the AER has. But the reverse is not true. For example, in this case, after the close of the evidentiary part of the hearing, the ACO hearing reports referred to further submissions made to the ACO by the aboriginal parties. These materials, which did not form part of the hearing record and were not seen by the panel, could result in the ACO’s conclusions differing from the panel’s, as noted.

[397] For Pembina’s project, the ACO hearing reports focused on site-specific uses and effects. The ACO concluded with respect to Driftpile that potential adverse effects on the community’s ability to pass on traditional knowledge or to conduct cultural or spiritual practices in a meaningful way were “not site specific concerns about continued exercise of Treaty rights and traditional uses...” For the purpose of these applications, this panel has concluded that those effects are to be taken into account as adverse social impacts even if they are not considered adverse effects on Treaty or aboriginal rights.

[398] Alexander argued that we may not make a decision until Crown consultation is complete. The ACO hearing report of December 11, 2015, concerning Alexander explicitly states that the ACO has determined that consultation is adequate. Since we are prohibited by section 21 of *REDA* from assessing the adequacy of Crown consultation, we are bound to accept the ACO’s conclusion.

[399] The ACO issued an ACO report and ACO hearing report in respect of each of Alexander, Driftpile and Gunn Métis in the course of the application and hearing process. The reports specific to each aboriginal participant will be discussed in the portion of these reasons dealing with that participant.

Aboriginal Participants

[400] The panel finds that there may be adverse effects on Driftpile, Gunn Métis, and Alexander or individuals within those communities. After assessing commitments by Pembina, advice of the ACO and evidence of the aboriginal participants, the panel concludes that those effects can be mitigated appropriately.

Driftpile

[401] Driftpile asserted both Treaty rights and aboriginal rights. Although Driftpile submitted that the project should not be approved, it focused its efforts, including final argument, on conditions that it said should form part of a project approval to mitigate impacts on its rights.

[402] Driftpile witnesses expressed a range of views about resource development activity in Driftpile's traditional territory, from none should be allowed to resource development activity is important for economic opportunities but steps have to be taken to minimize the impacts. A particular concern of Driftpile was what it viewed as significant impacts from forestry and the cumulative effects of other resource and industrial development within their traditional territory. With regard to Pembina's proposed project, Driftpile expressed concern about environmental impacts, including the impacts of a spill, and about reclamation being inadequate to restore the ROW to traditional-use capability.

[403] Driftpile provided oral evidence in two parts. As described above, Driftpile provided traditional-knowledge evidence at a community-based session. Driftpile also provided evidence through two witnesses in the course of the main hearing. The focus of that panel's evidence was largely on potential effects of Pembina's proposed project on specific traditional land use and practices.

[404] Finally, Driftpile provided written evidence, including interim and supplemental traditional-land-use studies.

ACO Reports

[405] In its March 26, 2015, ACO report regarding Driftpile, the ACO focused on a lack of identification of site-specific concerns. It concluded, however, that Driftpile's concerns had been heard, considered, and addressed by Pembina. The ACO also identified an extensive list of concerns as being environmental or otherwise not specifically arising from the exercise of Driftpile Treaty rights or from traditional uses. It made no recommendations for mitigation.

[406] In its December 11, 2015, ACO hearing report regarding Driftpile, the ACO advised that Driftpile had identified potential adverse effects of the proposed project on the exercise of its Treaty rights and traditional uses. The ACO hearing report set out a "representative overview" of impacts and found that Pembina's proposed measures to avoid or mitigate adverse effects were reasonable and responsive. The ACO recommended that if the applications were approved, conditions be imposed that would be consistent with those measures.

[407] Part 3 of the ACO hearing report from December 11 included a table summarizing Driftpile concerns that have been found by the ACO to be “general... non-site-specific...” or are substantially environmental concerns. As noted above, and for our purposes, non-site-specific concerns about impacts on traditional practices, such as the teaching of traditional knowledge or the harvesting of sufficient resources for culturally significant ceremonies, are social concerns to be taken into consideration in weighing the overall benefits and adverse effects of the proposed project.

[408] Other “general... non-site specific...” concerns, including concerns about potential environmental impacts on boreal toad breeding activity and on water bodies resulting from a spill, are dealt with elsewhere in this decision.

Treaty Rights and Traditional Practices

[409] Driftpile submitted that the AER must take steps to ensure that the project does not take up land in its traditional territory in a manner that will impair the quality or nature of those lands and the ability of those lands to support the meaningful exercise of Treaty rights. They cite *Mikisew Cree First Nation v. Canada* in support. Driftpile argued that as a provincial regulatory body, the AER is required to take positive action to manage the landscape to ensure that Driftpile’s Treaty and aboriginal rights can be exercised in perpetuity.

[410] Pembina did not address this point except to say that Pembina should not be made to compensate or answer for the fact that existing industrial development, including forestry, has negatively affected Driftpile’s ability to exercise its rights closer to its reserve lands. Pembina went on to say that there is no evidence before the panel to suggest that any potential impacts on Driftpile’s ability to harvest and gather cannot be mitigated. Finally, Pembina pointed out that Driftpile’s evidence contains many suggestions for mitigation and does not characterize any potential project-specific impact as being immitigable.

[411] With respect to managing the landscape, the AER can only do that which it is authorized or directed to do by or pursuant to the relevant legislation. Thus, the panel can only manage impacts that fall within the AER’s jurisdiction.

[412] Regarding traditional practices, hearing the Driftpile traditional-knowledge evidence in the community was a good reminder that we must take care not to try to assess it against non-aboriginal concepts of science and evidence. The submissions of Driftpile, including the traditional-knowledge evidence, demonstrate to our satisfaction that even if Pembina had provided evidence that traditional-use plants and locations along the project ROW would regenerate exactly as before, Driftpile may still perceive a negative impact in terms of its traditional uses of those plants. For example, Driftpile’s traditional-knowledge evidence leads the panel to conclude that a traditional-use plant that is found on and off the ROW has a value to the community. That value derives not just from access to that particular species of plant but from the purity of both the plant and the site in which it is found. A plant or location may lose its purity if it has been disturbed by industrial or resource development activity.

[413] Evidence of impacts on traditional land use by Driftpile that may result from Pembina's proposed project was not contradicted. The traditional-land-use studies show that Driftpile actively use lands on and next to the project ROW for traditional uses, including camping, hunting big game (moose is particularly important for ceremonial purposes), and harvesting plants for sustenance and ceremonial and medicinal purposes (diamond willow fungus is of particular importance because of its significance to and use in smudging ceremonies; willow is used for drying racks; and Labrador tea, yarrow, and mountain ash are important to traditional medicine). Some sites are significant because of their role in the sharing of traditional knowledge. These studies also identified sites on the project ROW where there are rare, unique, or highly significant local ecosystems or plants that are central to Driftpile's traditional practices.

[414] The ACO advised that measures are required to mitigate impacts on Driftpile Treaty rights and traditional uses. In its December hearing report, the ACO identified the following categories of impacts requiring mitigation: harvesting, occupancy, camping, and travel; plant gathering and harvesting; and hunting. The ACO further advised that the mitigation measures proposed or committed to by Pembina would be "reasonably responsive" to Driftpile's concerns.

[415] The panel's understanding of Driftpile's submissions, in particular the repeated references to the impacts from land uses other than pipelines, forestry in particular, is that impacts from Pembina's project would be incremental to more significant impacts that it has experienced as a result of other activities in its traditional territory. The panel accepts that Driftpile has had to adapt to changes in the landscape within their traditional territory as a result of lands used for forestry, industrial development, and transportation and other infrastructure. It is equally clear that Driftpile's attachment to the land and resources, especially for cultural purposes, remains strong despite these changes. However, Driftpile's evidence and argument also suggests that the community recognizes the need to balance the possible negative impacts of development with the opportunities that may bring.

[416] The panel concludes from the evidence provided by Driftpile and Pembina that there may be short-term localized impacts caused by Pembina's project on Driftpile's Treaty rights to hunt and trap and its ability to carry out traditional practices, including harvesting medicinal and ceremonial plants on or next to the ROW.

[417] Counsel for Pembina argued that Driftpile and Pembina were aligned more often than not on mitigation measures. Pembina said the differences were in the details. However, Driftpile raised the issue of the lack of any evidence on the effectiveness of post-construction revegetation of the ROW. This topic is a matter of concern to the panel as well and is dealt with further below.

[418] While the *IS&G* provides guidance on reclamation efforts, there is no evidence to show whether impacts on traditional uses by aboriginal communities were taken into account during their development. Driftpile suggested in its final argument that the AER strike a working group to consider how to include aboriginal traditional values in post-construction monitoring and reclamation guidelines in Alberta. The condition below on post-construction monitoring of the effectiveness of reclamation methods in the recovery of traditional plant ecosystems is intended to address this concern.

Conditions Requested by Driftpile

[419] Driftpile argued that if Pembina's project is approved, it must be subject to conditions to minimize the impact on Driftpile's Treaty and aboriginal rights. Driftpile also argued that such conditions must be enforceable, particularly in light of the ministerial order.

[420] In its final argument, Pembina argued that no conditions were necessary to enforce the commitments that it has made. It also argued that if a requested condition depended on actions by third parties, parties beyond Pembina's control, it should not be imposed. Finally, Pembina submitted that conditions must be both necessary and reasonable.

[421] The panel agrees with Driftpile that conditions should be enforceable. For that reason, the AER can only impose conditions that fall within its jurisdiction. In addition, compliance with conditions should be within Pembina's control since Pembina is the party that will ultimately be held responsible. Finally, the conditions imposed should be considered both necessary and reasonable by the panel.

[422] Driftpile described eight conditions to mitigate or avoid impacts on Driftpile's constitutional rights. In summary, the requested conditions and the panel's conclusions are as follows.

Requested condition 1

[423] Pembina contract from Driftpile one environmental technician per construction spread in the Green Area. The technician will be trained jointly by Pembina and Driftpile.

- Pembina's commitment to hire and train environmental technicians from each of the affected First Nation communities, including Driftpile, is reasonable. In the panel's view, it is not practical to make this a condition for a variety of reasons, not the least of which is that the AER could not enforce that Driftpile environmental technicians be trained jointly. If Driftpile wants to ensure that environmental technicians who are members of its community have certain knowledge of traditional uses and practices, it will be up to Driftpile to share that knowledge with the relevant individuals.

Requested condition 2

[424] Pembina consult with Driftpile further when developing site-specific mitigation plans to address impacts identified in the traditional-land-use studies or as may be identified by a Driftpile environmental technician within a reasonable time before construction.

- Pembina has committed to this. In addition, the panel concludes that where there are rare, unique, or highly significant localized plant communities that are central to Driftpile's traditional practices located on or immediately next to the ROW, Pembina should take reasonable steps to ensure that those sites are avoided or otherwise protected or replaced.
- Driftpile proposes that a further term of this condition be that if the parties are unable to agree, they will return to the AER for a decision on mitigation based on a summary Pembina would provide of the parties' discussions. The ACO has found that Pembina's commitment satisfies the Crown consultation requirement. The panel is satisfied that Pembina's commitment to consult and its other commitments regarding environmental impacts will mitigate any adverse impacts. As a result, the panel will not grant this part of the request.

Requested condition 3

[425] Pembina provide Driftpile 30 days' notice prior to starting clearing or construction.

- Pembina committed to two weeks' notice. The panel accepts Pembina's evidence that 30 days may not be practicable in all circumstances.
- Pembina is to make reasonable efforts to give sufficient notice to Driftpile to enable the collection and harvesting of medicinal and other traditionally important plants prior to construction.
- The panel recommends that Pembina and Driftpile discuss further how this commitment can best be met.

Requested condition 4

[426] Pembina develop with Driftpile a post-construction monitoring program to monitor the effectiveness of mitigation strategies relating to Driftpile traditional land use.

- Pembina committed to capacity funding to develop such a monitoring program.
- Driftpile proposed that the AER have the final say in the event that the parties are unable to agree. The panel declines to impose this part of the condition.
- The panel notes that Pembina has committed to conducting post-construction inspection of rare plant locations to document the effectiveness of mitigation measures as part of its rare vegetation mitigation plans. To demonstrate the effectiveness of its natural revegetation approach, Pembina is

required to assess one or more reclaimed sites on the ROW that are significant to Driftpile for traditional use. Specifically, Pembina must do the following:

- With the assistance of Driftpile, identify at least one site on the ROW in the Green Area containing plant species of importance to traditional use. If Driftpile does not wish to participate in the identification of a site, then Pembina will select a site based on the presence of plants it understands are important for traditional use.
- Assess and document the effectiveness of its ROW reclamation measures in the first growing season after completing construction and the following four growing seasons. Documentation should include a photographic record of natural vegetation recovery on the ROW at each selected site.
- Share each assessment with Driftpile (and Gunn Métis and Alexander if interested) and the AER for information purposes.

The panel recommends that the information also be disseminated in a manner that contributes to a broader understanding among aboriginal parties and the scientific community about these issues.

Requested condition 5

[427] Pembina implement a buffer zone around moose licks that is a minimum of 200 m.

- Pembina committed to a 100 m buffer and to monitor groundwater flow at moose licks and to remediate as necessary.
- Pembina’s commitment is consistent with the *IS&G*. No evidence was provided to support a 200 m buffer instead of the 100 m standard. The panel finds that of equal or greater importance is Pembina’s commitment to remediate any interruption of groundwater flow to maintain the viability of moose licks post construction.

Requested condition 6

[428] Pembina consult Driftpile further on reclamation and “demonstrably incorporate Driftpile traditional knowledge” in its reclamation plan. If the parties are unable to agree, Pembina will summarize communications and seek AER approval of the plan prior to construction.

- Pembina committed to further consultation with Driftpile in order to incorporate Driftpile traditional knowledge in its reclamation plan.
- The panel finds that this commitment is appropriate and sufficient for several reasons. Pembina is not required under the regulatory framework to file a reclamation plan for the Green Area. Since Pembina is responsible to the AER for meeting the requirements relating to reclamation and implementation of

EPPs, Pembina is in the best position to decide how to incorporate traditional knowledge of Driftpile or any other aboriginal community in its plans.

- Driftpile should provide Pembina with examples of how traditional knowledge can be incorporated into reclamation activities.

Requested condition 7

[429] Pembina further consult with Driftpile on a community-specific ERP to be submitted to the AER for approval.

- Driftpile shares the same concerns as other transient and traditional land users regarding notification of individuals who are out on the land and who may be in the EPZ at the time of an emergency.
- Pursuant to *Directive 071*, Pembina is required to file an updated ERP for approval before starting pipeline operations. The panel finds that the portion of Pembina’s ERP dealing with transient land users is reasonable and practicable. Pembina is free to agree with Driftpile on a community-specific response plan if it so chooses but is not required to do so.

Requested condition 8

[430] Pembina further engage in consultation with Driftpile to develop an access management plan to be submitted to the AER for approval.

- Pembina’s evidence established to the panel’s satisfaction that it has an appropriate access management plan. The outcome is no new access to the ROW.
- The panel finds Pembina’s plan reasonably addresses Driftpile’s concerns.
- The panel does recommend that Pembina consider establishing a 1-800 hotline or perhaps an on-line hub providing project information to inform Driftpile and others of construction activity, emergency work, pesticide application, or other matters of concern such as access restrictions both during and post construction.

Gunn Métis

[431] Gunn Métis assert Métis rights based on the genealogy and history of individuals who self-identify as members of the Lac Ste. Anne Métis community. Gunn Métis stated that Pembina’s project should not be approved because of potential direct and adverse impacts on its aboriginal rights. However, the bulk of Gunn Métis’ final argument and its participation in the hearing focused on conditions they say should be imposed on Pembina’s project to mitigate potential adverse environmental impacts and potential impacts on traditional practices.

ACO Reports

[432] In December 2014, the ACO wrote in a letter to Pembina about its consultation plan for Gunn Métis that the Government of Alberta had not been provided with sufficient information to find that Gunn Métis represents an historic, rights-bearing community. As a consequence, the ACO said that no consultation was required. The December 2015 ACO hearing report to the AER regarding Gunn Métis indicated the same thing.

[433] Gunn Métis was silent with respect to the ACO hearing report. In the hearing, we heard that the Gunn Métis witnesses had only recently applied for or been granted Métis harvester licences. In addition, the witnesses were unable to provide any evidence of how many members of the present-day community they identify with hold such licences. Finally, the Gunn Métis witnesses were unable or unwilling to provide evidence of how many individuals currently self-identify as members of the community they represent. The panel will not express any view on whether Gunn Métis has established that it is an historic, rights-bearing community because it is not necessary for our decision.

Issues

Traditional Land Use

[434] In final argument, Gunn Métis said the project should not be approved because of the potential direct and adverse impacts on Métis rights, traditional use, and culture. Gunn Métis argued that it has constitutionally protected rights to hunt, trap, and gather for subsistence purposes. It also argued that the community requires sufficient resources to meet its cultural and spiritual needs.

[435] Pembina argued that there was no evidence that any potential impacts on harvesting and gathering could not be adequately mitigated. Pembina pointed to the fact that it had funded a traditional-land-use study. The scoping report was provided in evidence. However, Gunn Métis did not provide site-specific, traditional-land-use evidence that its witness, T. Friedel, acknowledged is available to Gunn Métis. Gunn Métis acknowledged that a supplemental traditional-land-use study, also funded by Pembina, was complete. Gunn Métis' responses to questions as to why this report was not available were unsatisfactory.

[436] For the above reasons, this panel cannot draw any conclusion as to whether Gunn Métis has constitutionally protected rights. In any event, regardless of whether the community represented by Gunn Métis does have constitutionally protected rights, without the site-specific information in the supplemental traditional-land-use study, we cannot fully assess the potential impacts of the proposed project on Gunn Métis traditional practices.

[437] The Gunn Métis traditional knowledge witnesses gave evidence on the importance of certain harvesting activities, such as berry picking and medicinal plant identification and use, and teaching opportunities to the rediscovery of the community's Métis culture. Two Gunn Métis witnesses provided evidence of traditional practices, specifically camping, fishing and hunting, including evidence of timing

and location in relation to Pembina's project. The location evidence was provided in confidence under confidentiality orders granted by the AER. That evidence established to the panel's satisfaction that the two individuals that provided the location-specific evidence may be directly and adversely affected by Pembina's project. Pembina has committed to working with those individuals to mitigate potential impacts caused by the project on their harvesting activities.

[438] The panel finds that the commitments made by Pembina and conditions imposed below will mitigate impacts on traditional practices of individual members of Gunn Métis.

Traditional Knowledge

[439] Gunn Métis witnesses were concerned about protecting the ability to pass on traditional knowledge so that individuals who choose to do so can rediscover or maintain their Métis culture. Regardless of whether such an impact would amount to an adverse effect on aboriginal rights, the panel finds it would be an adverse social effect.

[440] Pembina committed to meeting with Gunn Métis to obtain site-specific information on traditional use so it can finalize any site-specific mitigation that may be required. The panel finds Pembina's commitment to be a reasonable way to address the potentially adverse impact on the ability to pass on traditional knowledge.

Risk of the Proposed Project to Watercourses

[441] Gunn Métis was concerned about the potential impacts of a spill into a watercourse of C5+ product from either of the proposed pipelines. Through cross-examination, Gunn Métis tested the reasonableness of Pembina's proposed block valve locations in the vicinity of water bodies. This issue is dealt with in the section of this decision on block valve placement.

Pesticide Use

[442] Gunn Métis was concerned about the use of pesticides. The evidence on pesticide use was less than clear, but the panel concludes that Pembina intends to use pesticides only in specific, limited circumstances—at aboveground facilities that form part of the project infrastructure or at specific locations along the ROW where controlling non-native species would be necessary to encourage timely revegetation. This targeted and limited use of pesticides may be the most effective method to deal with invasive weeds along the ROW.

[443] Gunn Métis expressed concerns about potential exposure of land users to pesticides. Pembina submitted that when it uses pesticides, it hires licensed contractors who are required to comply with regulations, including those regarding notice, administered by AEP. In the panel's view, Pembina's plan for limited and targeted pesticide use by licensed contractors who would be subject to AEP's regulations is reasonable and appropriate mitigation.

[444] Pembina is of course free to choose to provide notice of planned pesticide use to each of the participating aboriginal communities.

Post-Reclamation Traditional Plant Recovery

[445] Gunn Métis witnesses gave evidence about traditional plant harvesting and use. They raised concerns about whether Pembina's reclamation plan would result in the recovery of traditional plants within their traditional harvesting areas traversed by the proposed ROW. Pembina argued that its planned reclamation method—relying on the regeneration of native seed and plant material conserved in the topsoil stripped from the ROW—will result in revegetation by any traditional plants that were present at the time the topsoil was stripped. However, Pembina was not able to provide any evidence of post-reclamation studies specifically examining the extent to which traditional-use plants and plant ecosystems recover post reclamation.

[446] A similar concern was raised by Driftpile and the panel's discussion and a condition addressing the issue are set out above.

Access to Traditional Harvesting Areas

[447] Like Driftpile, Gunn Métis argued that Pembina's project will add to the adverse effects it already experiences as a result of agriculture and other land use within its traditional territory. Gunn Métis indicated that it was becoming increasingly difficult for individuals who engage in traditional harvesting to do so because they are being forced to look farther and farther afield.

[448] This is a particular issue for the Gunn Métis because the Government of Alberta recognizes a Lac Ste. Anne Métis traditional territory falling within a circle centred on the community of Lac Ste. Anne with a radius of 160 km. However, Gunn Métis provided no evidence to show that Pembina's proposed project or any cumulative effects from the project would cause individuals to have to go farther afield for traditional harvesting than they currently do.

[449] Finally, Gunn Métis raised the issue of loss of access to traditional harvesting areas during construction. Pembina committed to working with Gunn Métis to ensure safe access during construction. As noted above, the panel is satisfied that Pembina has a satisfactory access management plan. The outcome is no new access to the ROW. The panel finds Pembina's plan reasonably addresses Gunn Métis' concerns.

Conditions Requested

[450] In final argument, Gunn Métis requested a number of conditions be imposed by the AER should the project be approved. The following is a summary of the conditions and the panel's conclusions.

Requested condition 1

[451] Gunn Métis be included in the ERP as a community to be contacted.

- Pembina committed to this. To meet this commitment, Pembina will require Gunn Métis to provide a single point of contact.

Requested condition 2

[452] Pembina provide results of water quality testing done during construction of crossings of the Athabasca, Sturgeon, Paddle, and Pembina Rivers along with a plain language explanation of the results.

- Pembina has committed to do this. The panel recommends that Pembina offer those results to Alexander and Driftpile as well.

Requested condition 3

[453] Pembina add emergency shut-off valves on both pipelines on the west side of the Paddle River.

- The panel finds that Pembina’s commitment to add a valve to each pipeline to reduce the volume of a spill into the Paddle River adequately addresses the risks from a spill.

Requested condition 4

[454] Pembina add block valves to protect Two Creek, Chickadee Creek, and the Sakwatamau River.

- As indicated in the construction and operation section, with the addition of the block valves to mitigate the risk of a spill into the Paddle River, the panel is satisfied with Pembina’s proposed location for block valves. The panel declines to add this as a condition.

Requested condition 5

[455] Pembina and the AER commit to work with Gunn Métis in respect of any “significant spill” in Lac Ste. Anne Métis traditional lands – including water – to establish standards for environmental monitoring.

- The AER has requirements that companies must follow in the event of a reportable spill. The primary objective in spill response is to ensure the safety of the public and the environment. In the event of a spill, Pembina’s efforts must be directed to spill response and clean up. Therefore, the requested condition is not granted. However, Pembina may work with any potentially affected community, First Nation, or Métis community in the event of a spill as long as it is able to meet applicable regulatory requirements.

Requested condition 6

[456] Pembina work with Gunn Métis to develop an access management plan before starting clearing or construction for the project.

- As noted above, Pembina has a detailed access management plan for the project. The panel finds Pembina’s plan reasonably addresses Gunn Métis’ concerns.

Requested condition 7

[457] Pembina work with Gunn Métis prior to clearing or construction to conduct field verification surveys for sites of cultural and historical significance.

- Pembina committed to working with Gunn Métis in this regard.
- The panel finds that Pembina’s commitment is responsive to Gunn Métis’ concern and is sufficient.

Requested condition 8

[458] If Gunn Métis and Pembina are not able to agree on site-specific mitigation measures, the AER must be consulted on the appropriate mitigation measure to be applied.

- The panel finds Pembina’s commitment to work with Gunn Métis in this regard to be satisfactory. Without site-specific traditional-use information, the AER is not in a position to assess the appropriateness of any mitigation measures.

Requested condition 9

[459] Pembina inform Gunn Métis if it discovers historically or culturally significant sites during construction that are covered by the *Historical Resources Act*.

- The *Historical Resources Act* sets out specific obligations regarding notice that do not fall within the AER’s jurisdiction. For that reason, the panel is unable to impose this condition.

Requested condition 10

[460] Pembina work with Gunn Métis and a mutually agreed on ethnobotanist to manage an appropriate area of the permanent ROW in the Green Area for plant species traditionally used by Gunn Métis for food, medicine, or cultural purposes.

- The panel declines to make this a condition. See discussion on Driftpile requested condition 4 with regards to post-construction monitoring.

Requested condition 11

[461] Pembina not clear in the Green Area until fall 2016.

- Pembina has committed to completing, conducting, or updating all required surveys and other information-gathering activities prior to construction and to conferring with Gunn Métis to mitigate impacts on traditional land use.
- In light of the evidence before us and given Pembina’s commitments, the panel finds that there is no need for this requested condition.

Requested condition 12

[462] Pembina not use chemicals, pesticides, and herbicides in the permanent ROW in the Green Area.

- For the reasons given above, the panel is not prepared to make this a condition.

Alexander

[463] Alexander’s initial focus was on matters outside of our jurisdiction, specifically the adequacy of Crown consultation and whether the proper legal characterization of its rights in certain lands north of the Alexander reserve means that a federal agency should be involved in assessing Pembina’s applications.

[464] After filing a number of motions directed to the scope of the hearing and the AER’s jurisdiction, Alexander focused on the issues of the adequacy of *Directives 056* and *071* engagement of the community by Pembina and the extent to which the land-use plans of Alexander should be taken into account in the routing of Pembina’s project. Alexander also provided expert evidence on the issue of cumulative risk.

[465] In addition to its expert witnesses, Alexander sat a panel of one: C. Arcand, who is Alexander’s senior regulatory coordinator. Ms. Arcand said she was not authorized to speak to any matters other than the material in her affidavit. The bulk of that affidavit was on the issue of the adequacy of Crown consultation. That material was excluded from evidence in the hearing on motion by Pembina, although the material was found to be relevant to and remains on the record solely for the purpose of dealing with Alexander’s notice of questions of constitutional law.

[466] Ms. Arcand said in response to questioning by Pembina’s counsel that she was not authorized to say whether Alexander supports or opposes Pembina’s project. On a number of occasions, Ms. Arcand was asked questions intended to draw out evidence that would help the panel better understand whether Alexander had concerns about impacts on the exercise of Treaty rights or traditional practices. Ms. Arcand’s response was that she did not think she was authorized to give evidence on that point.

[467] As noted above, Alexander chose not to present traditional-knowledge evidence. In addition, Alexander did not file or provide any evidence of traditional use.

ACO Reports

[468] The ACO's report regarding Alexander was issued on March 26, 2015. The ACO concluded that Alexander had identified archaeological sites near Deadman Lake and a cultural site near the Alexander reserve and that action was recommended to avoid potential adverse effects on those sites.

[469] Alexander had also indicated that Pembina should avoid certain sites around Fox Creek, but according to the ACO had not provided any evidence to support that assertion. Alexander also did not provide any such evidence in the course of the hearing.

[470] In its December 11, 2015, hearing report, the ACO description of the concerns relating to Deadman Lake is different than in its March report: now the potential for adverse effects is described as being to the bed and shores of Deadman Lake. The ACO also advised that the area around Deadman Lake is considered culturally significant and so avoidance or mitigation measures were recommended.

[471] The panel has reviewed the evidence filed by Pembina and Alexander on the proposed pipeline route in the vicinity of Deadman Lake and has been unable to arrive at an independent assessment of the risk of impacts to the area around Deadman Lake posed by the applied-for route. In light of the ACO's advice, Pembina must review and amend, if necessary, its planned route or construction technique in the area south of Deadman Lake so that it avoids any adverse impacts on the bed and shores of Deadman Lake, as defined by the ACO. Pembina must provide prior to construction written confirmation from the ACO that the route addresses the concern that it identified.

Issues

Fairness

[472] Counsel for Alexander suggested in final argument that Alexander may not have had a reasonable opportunity to participate in this hearing. Time limits for evidence and argument and the opportunity to make submissions were cited.

[473] The panel notes that Alexander was represented by counsel. Alexander was provided with all notices and correspondence relating to this proceeding and participated in the prehearing meeting. Alexander filed information requests to which Pembina responded, and it had the same opportunity and access to information and procedures as all the other parties for filing submissions, including evidence. Alexander sought and was granted an extension of time to file material late in this proceeding. Alexander cross-examined Pembina's witness panel and sat a panel of its own witnesses. In addition, the hearing panel and parties accommodated the late arrival at the hearing of Alexander's expert witnesses. As argued by Pembina's counsel, Alexander was afforded every reasonable opportunity to fully participate in this hearing process.

Treaty Rights and Traditional Use

[474] Pembina had provided funding to Alexander for a traditional-land-use study. While Ms. Arcand gave evidence that the traditional-land-use study had recently been concluded and Alexander had brought it to show Pembina, Alexander did not file the study or results of it in this proceeding. Nor did Alexander provide a witness to speak to the results of the study.

[475] Although Alexander referred to potential adverse effects on Treaty rights and traditional use in its request to participate, it did not provide any evidence of potential impacts of Pembina's project on Treaty rights or traditional use. The panel can only assess Pembina's applications against the evidence that forms the record of this proceeding. The panel is left to assume that Alexander chose not to pursue potential impacts of the project on Alexander's Treaty rights and traditional use. As a result, the panel makes no finding in this regard.

[476] Alexander did not request any conditions if the project is approved. In closing argument, Alexander submitted that its purpose in participating in this proceeding was to protect the community so it had a viable future. The proposed project would be adjacent to and parallel the Alliance ROW in the vicinity of the Alexander reserve. There is no evidence before us to suggest that if approved, the construction and operation of Pembina's project on the applied-for route will impair Alexander's aspirations for its community.

Are there potential risks to or impacts on historical resources?

[477] Pembina states in its C&R plan that if paleontological or historical sites are discovered during construction, Pembina's environmental inspector or designate would be contacted immediately and Pembina's historical or paleontological resources discovery contingency plan would be implemented. The contingency plan calls for immediately halting construction in the area of discovery. The environmental inspector or Pembina's designate would then contact an archeologist or paleontologist as required. Alberta Culture and Tourism would be notified and a mitigation plan would be developed to address the situation.

[478] Pembina noted that it will not have experts on site during all phases of construction; however, it will have an archeologist on call. Pembina also noted that staff working on site during construction will not have training in identifying culturally or historically significant sites. When asked about its experience with historical or culturally significant sites, Pembina noted that in the past it has worked extensively with aboriginal groups on identifying these sites prior to construction and jointly determining the appropriate mitigations.

[479] Gunn Métis requested a condition that Pembina work with it in advance of any on-site construction to conduct an appropriate field verification survey for sites of cultural or historical importance to the Lac Ste. Anne Métis community. The surveys would ensure the identification of sites of cultural or historical importance, such as burial grounds, and appropriate mitigation of any impacts on

them. Gunn Métis also requested that it be informed directly if Pembina discovers any historically or culturally significant sites during construction that are covered by the *Historical Resources Act*.

[480] Pembina reiterated its plan to report any previously unreported historical or potentially culturally sensitive sites found during construction to Alberta Culture and Tourism. Pembina stated that it would also take mitigation measures to reduce or eliminate impacts on such sites from project construction and would inform Gunn Métis appropriately.

[481] The panel is satisfied that Pembina's proposed mitigation measures regarding not-yet identified historical or archaeological resources are appropriate for the project. The requirement to comply with the *Historical Resources Act*, along with input from on-the-ground environmental technicians, ensures adequate protection of these resources.

Conclusion

[482] Based on the submissions, evidence, and relevant legislation, the panel has determined that the project is needed, that it can be constructed and operated safely, and that it is environmentally responsible. The panel has also determined that impacts on landowners and aboriginal peoples can be mitigated to a level consistent with responsible development. The panel therefore approves with conditions Pembina's pipeline project.

Dated in Calgary, Alberta, on March 23, 2016.

Alberta Energy Regulator

<original signed by>

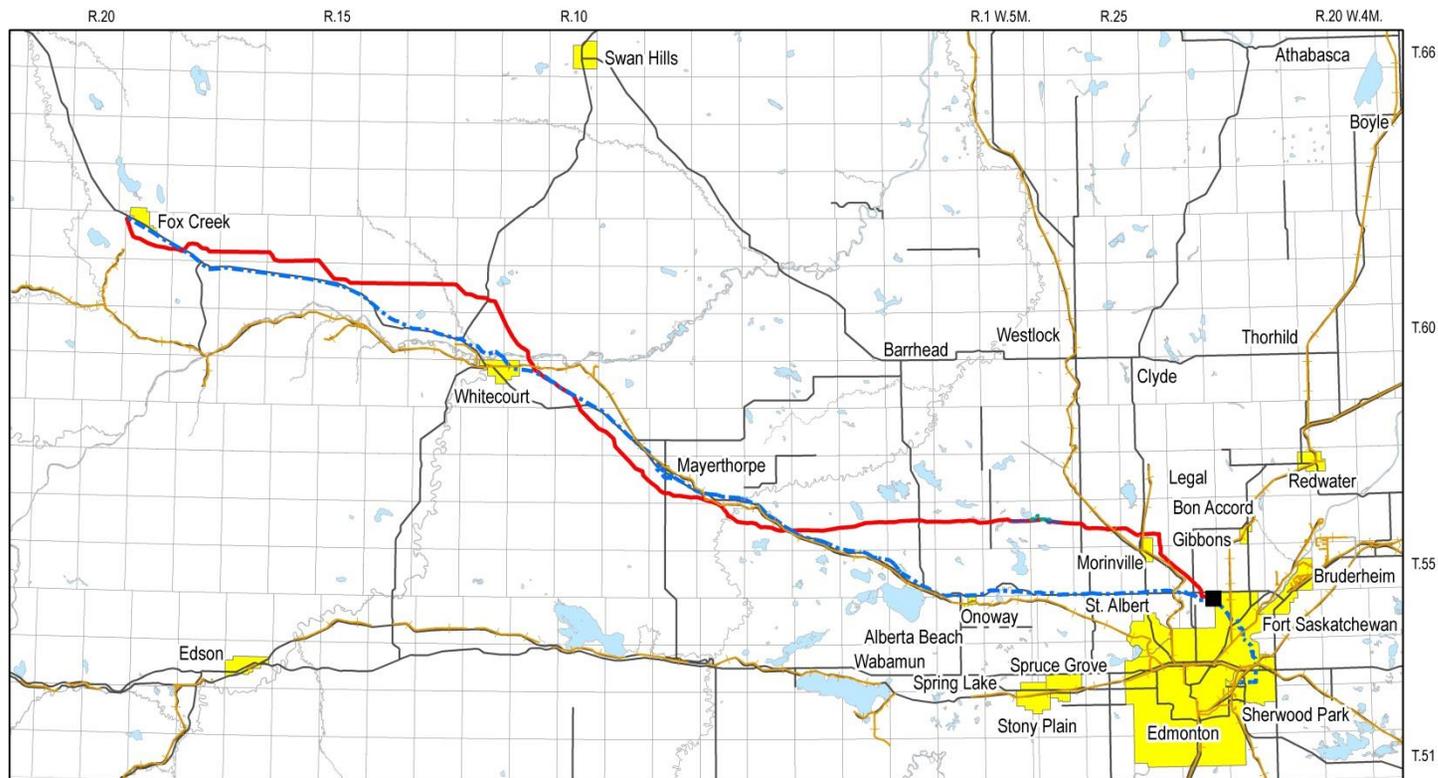
R. C. McManus
Presiding Hearing Commissioner

<original signed by>

C. Low
Hearing Commissioner

<original signed by>

B. McNeil
Hearing Commissioner

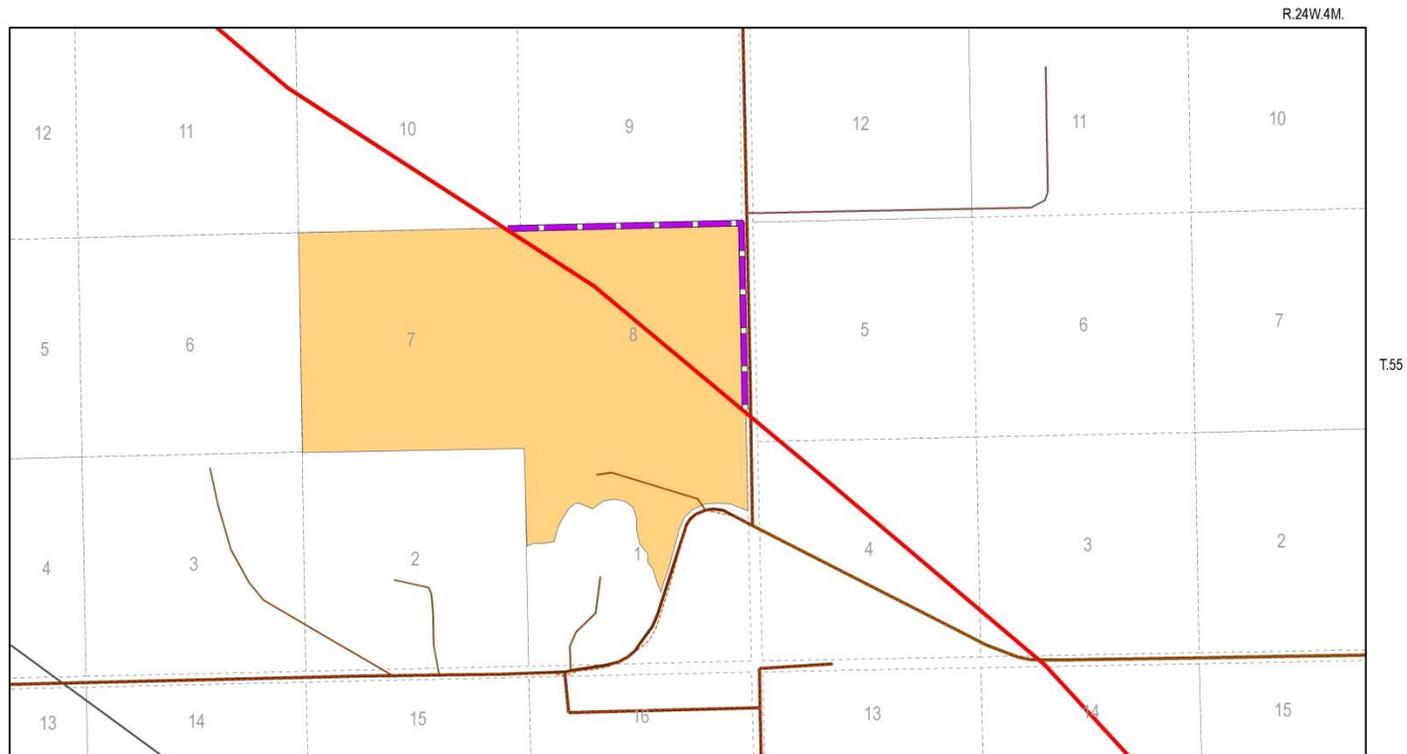


Legend

- Proposed pipelines
- - - Pembina Peace pipeline system
- Namao Junction pump station

- Cities and towns
- Major lakes and rivers
- Major roads
- Railways

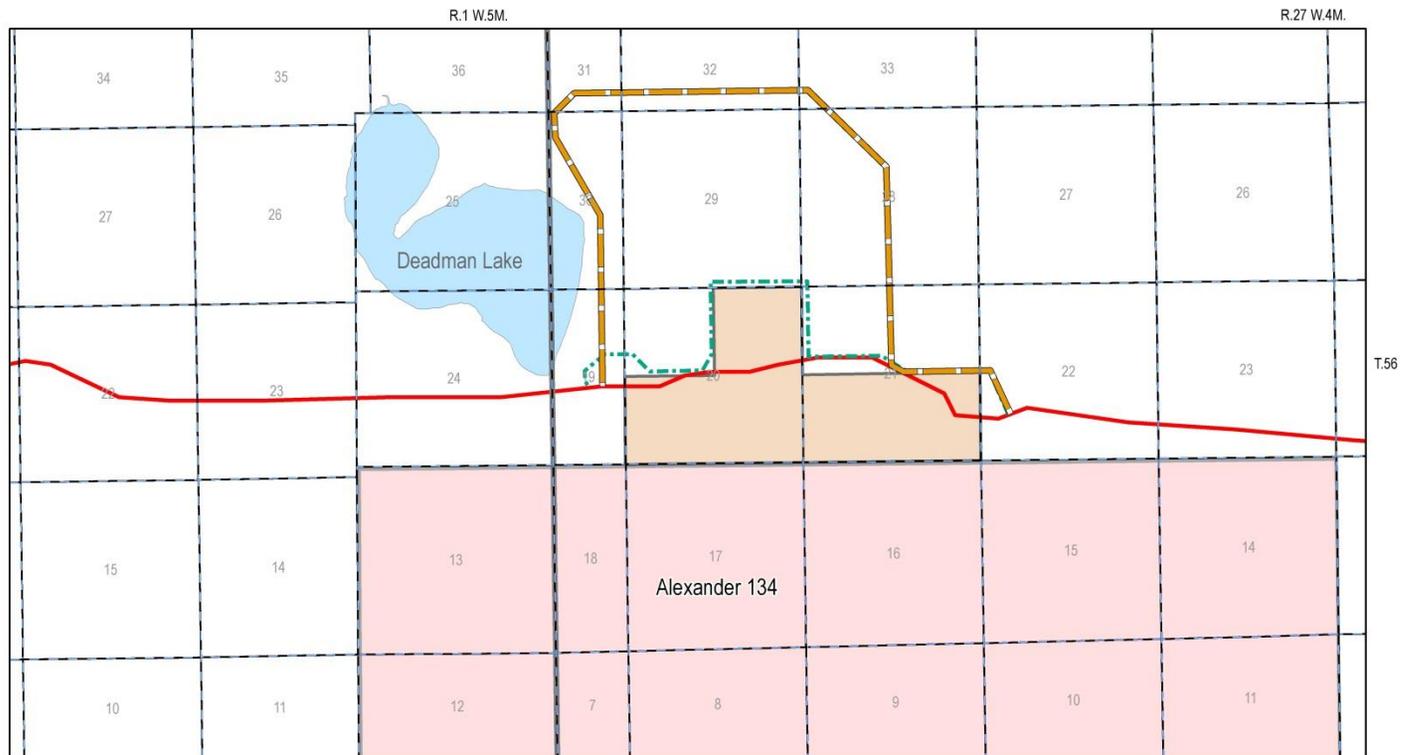
Figure 1. Project area



Legend

- | | |
|--|--|
|  Mr. Nielsen's proposed route |  Mr. Nielsen's land |
|  Proposed pipelines |  Roads |

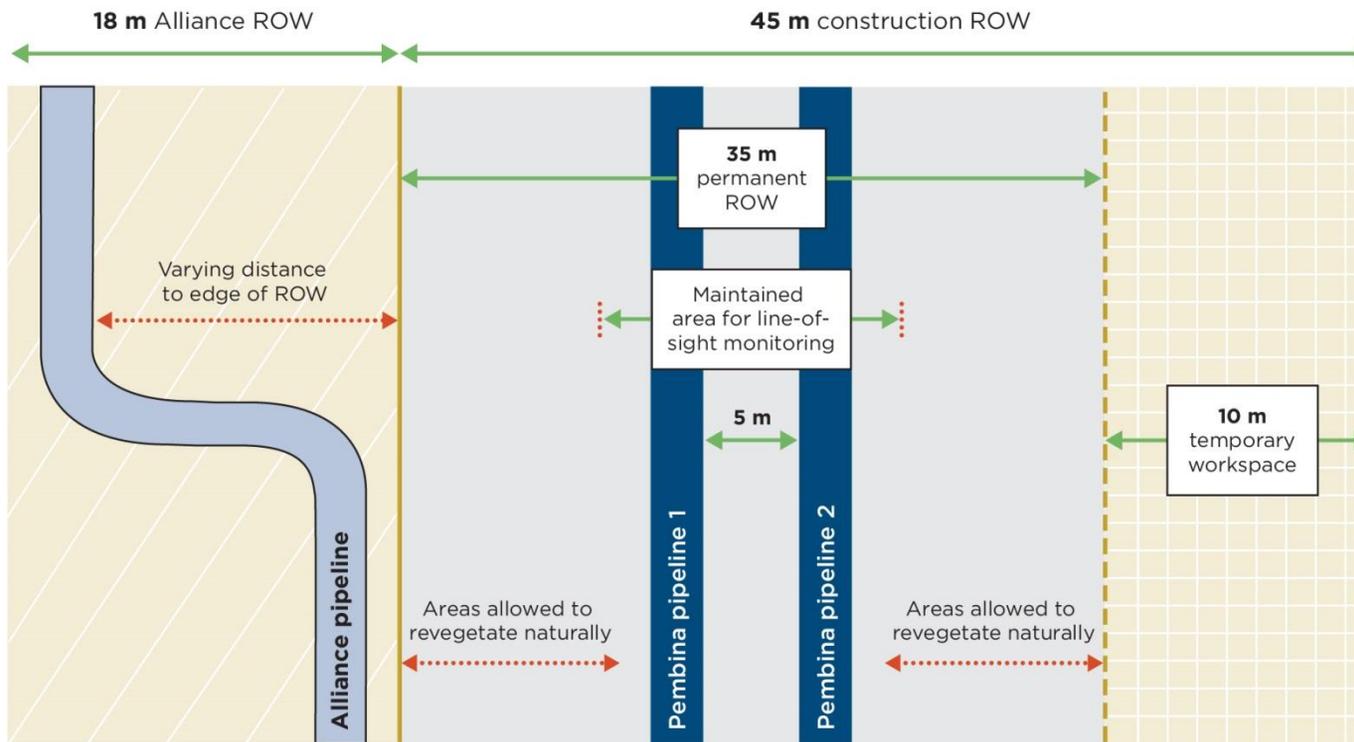
Figure 2. Mr. Nielsen's land and proposed alternative route



Legend

- Alexander TLE Land Corp. lands
- Indian reserve
- Major lake
- Alternative route 1
- Alternative route 2
- Applied-for route

Figure 3. Alexander First Nation lands and Pembina's proposed alternative routes



This diagram is for illustration only and is not to scale.

Figure 4. Illustration of width of ROW for post-construction vegetation monitoring

Appendix 1 Hearing Participants

Principals and Representatives

(Abbreviations used in report)

Witnesses

Pembina Pipeline Corporation (Pembina)

D. Crowther

D. Langen

K. Evans

D. Palin

G. Pullishy

P. Murphy

W. Schroeder

D. Kerr

I. Dowsett

B. Grey

J. Mihell

J. Stevenson

G. McKenzie

J. Young

Grassroots Alberta Landowners Association

(Grassroots)

D. Bishop

P. Barrette

S. Cust

W. Taylor

G. Selzler

L. Klause

K. Saunders

R. Hagman

J. Ness

G. Doll

C. Wallis

V. Stenberg

G. Pearson

L. Shulhan

S. Thoveson

Derek Nielsen (Mr. Nielsen)

J. Agrios

K. Mackenzie

R. Berrien

Gunn Métis Local 55 (Gunn Métis)
M. Couling

T. Friedel
M. Crossen
D. Friedel
P. LaRocque
G. Staveley

Driftpile First Nation (Driftpile)
K. Lambert

R. Giroux Sr.
M. Laboucan
T. Campiou
A. Isadore
P. Freeman
R. Chalifoux

Alexander First Nation (Alexander)
C. O'Driscoll

C. Arcand
N. Tehrany
S. Sanati

Alberta Energy Regulator staff

R. Mueller, AER Counsel
A. Karg, AER Counsel
G. McLean
R. Ruddell
A. Shukalkina
D. Campbell
R. Drummond
N. Harkes
D. Grzyb
M. Nietfeld
M. Lemon
J. St. Louis
S. Cook
F. Debela
C. Rosa
R. Bender
D. Slavik
W. LaFountain
B. Zelt

Appendix 2 Summary of Conditions and Commitments

Conditions generally are requirements in addition to or otherwise expanding upon existing regulations and guidelines. An applicant must comply with conditions or it is in breach of its approval and subject to enforcement action by the Alberta Energy Regulator (AER). Enforcement of an approval includes enforcement of the conditions attached to that approval. Sanctions imposed for the breach of such conditions may include the suspension of the approval, resulting in the shut-in of a facility. The conditions imposed on the licences and approvals are summarized below. In the event of any inconsistency, the conditions as set out in this appendix take precedence over the wording of the conditions in the body of the decision report, and the conditions as set out in the relevant *Environmental Protection and Enhancement Act (EPEA)* or *Public Lands Act (PLA)* approval take precedence over the wording of the conditions in the body of the decision report and this appendix.

The AER notes that Pembina Pipeline Corporation (Pembina) has made certain undertakings, promises, and commitments (collectively referred to as commitments) to parties involving activities or operations that are not strictly required under AER requirements. These commitments are separate arrangements between the parties and do not constitute conditions of the AER's approval of the applications. The commitments that have been given some weight by the AER in arriving at its decision are summarized below.

The AER expects the applicant to comply with commitments made to all parties. However, while the AER has considered these commitments in arriving at its decision, the AER cannot necessarily enforce them. If the applicant does not comply with commitments made, affected parties may alert the AER of such noncompliance. At that time, the AER will assess whether the circumstances regarding any failed commitment warrant a reconsideration of the original approvals.

Conditions

- 1) Pembina must reduce the permanent right-of-way (ROW) across Mr. Nielsen's property from a width of 35 m to a maximum width of 25 m.
- 2) Pembina must install an additional block valve on each pipeline at a location chosen with the goal of further reducing potential release volumes into the Paddle River.
- 3) Pembina must submit an updated Green Area vegetation management control plan to the panel for review within 120 days of this decision. In this plan, Pembina must assess opportunities to minimize the extent of post-construction, ongoing vegetation control to maintain line of sight for monitoring in the Green Area (see figure 4). Such opportunities might include use of drones or other evolving technologies, where appropriate, with a goal of allowing as much of the ROW as is practicable to revegetate given the requirement to be able to visually monitor the line. Following receipt and review of this plan, the panel will either accept it as filed as a condition of the authorization or provide Pembina with further direction.
- 4) Pembina must comply with the following conditions as they are set out in the *PLA* pipeline agreement Notice of Decision documents:
 - a) Pembina must comply with Alberta Environment and Parks (AEP) timing constraints and setbacks when working in key wildlife and biodiversity zones (KWBZs).
 - b) Pembina must not undertake ongoing vegetation management or brush control for tree species in KWBZs following construction.
 - c) If Pembina clears tree species within horizontal directional drilling entry and exit points in KWBZs, it must undertake a revegetation program to re-establish these tree species.
 - d) Pembina must comply with the topsoil salvage standards in the *Integrated Standards and Guidelines – Enhanced Approval Process*.
- 5) Where Pembina is not able to adhere to AEP or Environment Canada recommended spatial setbacks or construction timing constraints for species of concern or sensitive habitat zones or features, it must consult with the AER to determine appropriate mitigation measures.
- 6) Pembina must undertake pre-construction soil surveys on Grassroots lands not accessed previously.

- 7) Pembina must submit within 120 days of this decision an updated clubroot management plan to the *EPEA* director for review, in accordance with the *EPEA* approval for this project. Following receipt of this plan, the director will either accept it as filed as a condition of the approval or provide Pembina with further direction. Pembina’s updated plan must include the following:
- A sampling method that identifies three levels for designating clubroot presence in fields: low, moderate, or high.
 - Level 3 disinfecting cleaning when topsoil stripping equipment is moving from high- to moderate- or low-risk fields.
 - Equipment moving between high-risk or moderate-risk fields have
 - level 3 cleaning when equipment is being moved between different landowners, and
 - level 2 or 1 cleaning when equipment is being moved between fields owned by the same landowner and the landowner agrees.
 - The use of high-risk mitigation measures when there is uncertainty regarding the presence of clubroot.
 - Level 1 cleaning of all equipment moving between clubroot-detected fields, regardless of the direction of travel.
 - Sampling for clubroot and cleaning of equipment between fields rather than only between quarter sections.
- 8) Pembina must conduct any outstanding pre-construction weed surveys in the White Area. Where Pembina is unable to complete a pre-construction survey (e.g., due to a timing restriction), it must assume that weed infestation is present and mitigation measures must be applied accordingly.
- 9) To reduce risk to certified seed grower lands, Pembina must pressure wash all equipment before entering those lands regardless of whether Pembina’s equipment is coming from another weed-free site. Footwear and vehicles must also be cleaned in accordance with this protocol.

- 10) To demonstrate the effectiveness of its natural revegetation approach, Pembina is required to assess one or more reclaimed sites on the ROW that are significant to Driftpile First Nation (Driftpile) for traditional use. Specifically, Pembina must do the following:
- With the assistance of Driftpile, identify at least one site on the ROW in the Green Area containing plant species of importance to traditional use. If Driftpile does not wish to participate in the identification of a site, then Pembina will select a site based on the presence of plants it understands are important for traditional use.
 - Assess and document the effectiveness of its ROW reclamation measures in the first growing season after completing construction and the following four growing seasons. Documentation should include a photographic record of natural vegetation recovery on the ROW at each selected site.
 - Share each assessment with Driftpile (and Gunn Métis Local 55 [Gunn Métis] and Alexander First Nation if interested) and the AER for information purposes.
- 11) Pembina must review and amend, if necessary, its planned route or construction technique in the area south of Deadman Lake so that it avoids any adverse impacts on the bed and shores of Deadman Lake, as defined by the Aboriginal Consultation Office (ACO). Pembina must provide prior to construction written confirmation from the ACO that the route addresses the concern that it identified.

Commitments by Pembina

- 1) Pembina will work with Grassroots landowners to meet its commitments as set out in appendix 4, or such other commitments as may be agreed upon by Pembina and individual landowners.
- 2) Pembina will hire and train environmental technicians from each affected First Nation community.
- 3) Pembina will further engage in consultation with Driftpile when developing site-specific mitigation plans to address impacts identified in the traditional-land-use studies or as may be identified by a Driftpile environmental technician within a reasonable time before construction.
- 4) Pembina will provide Driftpile at least two weeks' notice prior to commencement of clearing or construction in the Green Area.
- 5) Pembina will maintain a 100 m buffer and monitor groundwater flow at moose licks and remediate as necessary.
- 6) Pembina will further consult with Driftpile in order to incorporate Driftpile traditional knowledge in its reclamation plan.
- 7) Pembina will provide results of water quality testing done during construction of crossings of the Athabasca, Sturgeon, Paddle, and Pembina Rivers, along with a plain language explanation of the results.
- 8) Pembina will work with Gunn Métis prior to clearing or construction to conduct field verification surveys for sites of cultural and historical significance.
- 9) Pembina will complete, conduct, or update all required surveys and other information-gathering activities prior to construction and confer with Gunn Métis to mitigate impacts on traditional land use.

Appendix 3 Table of Pipeline Crossings in the White and Green Areas with Documented Fish Presence or Moderate- to High-Quality Habitat

Name and location	Area	Code of Practice ³ classification	Fish species (sensitive or at risk species in bold)	Restricted activity period (RAP)	Proposed crossing method
Athabasca 06-03-060-11W5M	White	Class C watercourse	Longnose sucker, mountain whitefish, burbot, white sucker within 1 km of crossing. Also pearl dace, brook stickleback, lake chub, walleye, northern pike, trout-perch, and spottail shiner. Arctic grayling documented with 5 km radius.	Sept. 1 – July 15	Trenchless using HDD with partial isolation as a contingency.
Unnamed tributary to Athabasca River 02-34-059-11W5M	White	Class C watercourse	Northern pike	April 16 – June 30	Isolate if flowing outside of RAP, open cut if dry. Further review (AER, DFO) if isolated during RAP.
Bull Creek 13-34-058-10W5M	White	Class C watercourse	Brook stickleback, lake chub, longnose sucker, white sucker	April 16 – June 30	Trenchless using HDD. Contingency is isolated crossing outside of the RAP. Open cut if channel is dry or frozen to bottom.
Paddle River 10-06-057-07W5M	White	Class C watercourse	Brook stickleback, burbot, fathead minnow, lake chub, longnose sucker, northern pike, pearl dace, trout-perch, walleye, white sucker, yellow perch	April 16 – June 30	Trenchless using HDD with isolation as a contingency.
Little Paddle River 15-18-058-09W5M	White	Class C watercourse	Brook stickleback, lake chub, longnose dace, longnose sucker, white sucker	April 16 – June 30	Trenchless using HDD with isolation as a contingency.
Tributary to Little Paddle River 13-04-058-09W5M	White	Class C watercourse	Brook stickleback	April 16 – June 30	Isolate if flowing outside of RAP, open cut if Dry.

³ Code of Practice for Watercourse Crossings.

Name and location	Area	Code of Practice ³ classification	Fish species (sensitive or at risk species in bold)	Restricted activity period (RAP)	Proposed crossing method
Pembina River 09-27-056-07W5M	White	Class C watercourse	Arctic grayling , brook trout, bull trout , burbot, emerald shiner, flathead chub, finescale dace, fathead minnow, gold, lake chub, longnose dace, longnose sucker, mountain whitefish, northern pike, pearl dace, rainbow trout, spottail shiner, trout-perch, walleye, white sucker, yellow perch	Sept. 1 – June 30	Trenchless using HDD with isolation as a contingency.
Deep Creek 10-19-056-06W5M	White	Class C watercourse	Fathead minnow, lake chub at crossing. Burbot, fathead minnow, lake chub, northern pike, trout-perch, walleye 10 km downstream.	April 16 – June 30	Isolate if flowing outside of RAP, open cut if dry.
Rivière Qui Barre 08-21-056-27W4M	White	Class C watercourse	Brook stickleback, lake chub, white sucker	April 16 – June 30	Isolated crossing outside of the RAP. Open cut if channel is dry or frozen to bottom.
Little Egg Creek 08-02-056-25W4M	White	Class C watercourse	Brook stickleback, fathead minnow, lake chub	April 16 – June 30	Isolate if flowing outside of RAP, open cut if dry.
Sturgeon River 04-10-055-24W4M	White	Class C watercourse	Brook stickleback, white sucker within 3 km of crossing. Brook stickleback, emerald shiner, fathead minnow, Iowa darter, lake chub, longnose dace, longnose sucker, northern pike, river shiner, shorthead redhorse, spottail shiner, threespine stickleback, trout-perch elsewhere in system.	April 16 – June 30	Trenchless using HDD with isolation as a contingency.
Unnamed Tributary to Two Creek 07-04-062-16W5M	Green	Class C watercourse	Rainbow trout (likely Athabasca rainbow trout) downstream near confluence with Two Creek.	Sept. 1 – July 15	Isolate if flowing, open cut if dry or frozen to bottom.

Name and location	Area	Code of Practice ³ classification	Fish species (sensitive or at risk species in bold)	Restricted activity period (RAP)	Proposed crossing method
Mink Creek 14-24-059-11W5M	Green	Class C watercourse	Rainbow trout (likely Athabasca rainbow trout)	April 16 – June 30	Isolate if flowing, open cut if dry or frozen to bottom. (Pembina indicated during hearing that it would likely be changed to HDD due to presence of Athabasca rainbow trout).
Fox Creek 16-10-062-19W5M	Green	Class B watercourse	Burbot, lake chub, white sucker	April 16 – June 30	Isolate if flowing, open cut if dry or frozen to bottom.
Iosegun River 14-09-062-18W5M	Green	Class B watercourse	Arctic grayling , burbot, brook stickleback, finescale dace, lake chub, longnose sucker, pearl dace, spottail shiner, trout-perch, white sucker	April 16 – June 30	Trenchless using HDD with isolation as a contingency.
Two Creek 05-04-062-16W5M	Green	Class B watercourse	Arctic grayling , burbot, lake chub, longnose dace, longnose sucker, mountain whitefish, rainbow trout (likely Athabasca rainbow trout) , spottail shiner, trout-perch, white sucker	Sept. 1 – July 15	Trenchless using HDD with isolation as a contingency.
Chickadee Creek 07-19-061-14W5M	Green	Class B watercourse	Arctic grayling , burbot, lake chub, longnose sucker, pearl dace, rainbow trout (likely Athabasca rainbow trout) , white sucker	Sept. 1 – July 15	Trenchless using HDD with isolation as a contingency.
Unnamed Tributary to Chickadee Creek 05-21-061-14W5M	Green	Class B watercourse	Rainbow trout (likely Athabasca rainbow trout)	Sept. 1 – July 15	Trenchless using HDD with isolation or open cut if dry or frozen to bottom as a contingency.
Sakwatamau River 12-23-061-13W5M	Green	Class B watercourse	Arctic grayling , lake chub, longnose dace, longnose sucker, mountain whitefish, spottail shiner, trout-perch, walleye, white sucker	Sept. 1 – July 15	Trenchless using HDD with isolation as a contingency.

Name and location	Area	Code of Practice ³ classification	Fish species (sensitive or at risk species in bold)	Restricted activity period (RAP)	Proposed crossing method
Carson Creek 04-16-061-12W5M	Green	Class B watercourse	Arctic grayling , burbot, lake chub, longnose sucker, mountain whitefish, pearl dace, longnose dace, rainbow trout (likely Athabasca rainbow trout) , spoonhead sculpin, spottail shiner, trout-perch, white sucker	Sept. 1 – July 15	Trenchless using HDD with isolation as a contingency.

Appendix 4 Table of Commitments Made by Pembina (December 17, 2015)

Exhibit 274.01

Name	Location	Concern	Info/Response	Commitments
Jack De Grandis	SE 18-57-8-W5	Mature spruce forest, request limited disturbance. The De Grandis' biggest concern are the large spruce forest that will be disturbed by the Pipeline.	The referenced treed area will not be bored.	Fencing to be site specific, but will be similar or better than existing fencing. Pembina to identify on a map the area requiring fencing to keep cattle off of ROW and provide to Landowner prior to construction. Pembina will provide 14 days of notice prior to accessing ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, H2O access and cattle movement. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will conduct effective weed management to manage infestations along the ROW to a level equivalent to those observed in lands adjacent to the ROW with similar land use and management. Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil put back, and topsoil gets picked. Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles. Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.
		They believe that the pipeline should be bored under the treed area on their land and they have a ravine as well that should be protected.	The referenced treed area will not be bored. If the presence of a ravine is confirmed through site visits, then appropriate mitigation will be applied.	
		They believe that 2 meters should be the minimum from the top of the pipe to the bottom of the topsoil.	See Exhibit 193.01.	
		They are going to need fencing to keep the cattle in during construction and need to be informed about construction.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations including livestock management. Pembina will provide notice and updates regarding construction status.	
		A cattle crossing is going to be required during construction and reclamation as the water source for cattle will be on the other side of the construction area away from the pasture.	Pembina will work with the de Grandis' to put in place the most appropriate mitigation measures that will reduce potential impacts to their livestock operations.	
Richard & Marion Friedrich	NW 24-56-7-W4 NE 24-56-27-W4 SE 24-56-27-W4 SW 24-56-27-W4	Concerned about spread of weeds such as Clubroot. They are also concerned about property devaluation/loss of opportunity to subdivide.	Pembina's EPP includes a Weed Management Plan (Section 15.3).	Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed in lands adjacent to the ROW with similar land use and management.
			Pembina's EPP includes a Clubroot Management Plan (Section 15.1).	
			The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands. Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056. Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.	
				Pembina will provide 14 days of notice prior to accessing ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, H2O access and cattle management. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil put back, and topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p> <p>Fencing to be site specific, but will be similar or better than existing fencing. Pembina to identify on a map the area requiring fencing to keep cattle off of ROW and provide to Landowner prior to construction.</p> <p>Pembina will maintain a separation between topsoil and subsoil.</p> <p>Pembina commits to contouring the ROW to maintain drainage through all low areas.</p>
Erwin Gaal	NE 23-56-7-W5 SE 26-56-7-W5 SW 26-56-7-W5 SE 27-56-7-W5	<p>All 4 quarters crossed, front the Pembina River with a low bank. Scenic property in an area where recreation properties are being established.</p> <p>Wants Pembina River, and its associated natural habitats, directionally drilled.</p> <p>Edwin Gaal has a complex mixed farm with cattle, grains and complex pasture rotations and fencing. Conditions on how construction will take place are necessary.</p> <p>Replacement of fences to same or higher standard; Fencing off of ROW with fencing to Grassroots' standard; Segregation of cattle during construction;</p> <p>Line must be deep enough to support his work in the bale yard on the SW 26, which will be over the line;</p> <p>No rocks currently interfere with his operations. ROW will need to be rock-picked.</p> <p>Aggregate from directional drilling under the Pembina River cannot get onto his property.</p>	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands.</p> <p>Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056.</p> <p>Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.</p> <p>Pembina intends to HDD the Pembina River, subject to geotechnical investigation to confirm constructability.</p> <p>Pembina will work with Mr. Gaal to put in place the most appropriate mitigation measures that will reduce potential impacts to his farming operation.</p> <p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p> <p>See Exhibit 193.01.</p> <p>Pembina will do the following when rocks/stones are brought to the surface during construction:</p> <ul style="list-style-type: none"> o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by the landowner/occupant. Rock burial pits will not be used. <p>All drilling waste will be disposed of in accordance with regulatory Directive 050.</p>	<p>Fencing to be site specific, but will be similar or better than existing fencing. Pembina to identify on a map the area requiring fencing to keep cattle off of ROW and provide to Landowner prior to construction.</p>

Name	Location	Concern	Info/Response	Commitments
		<p>Concerns about drainage. The spring runoff comes from the NW of 24, enters into the NE 23 and drains into the SE 26. It is very sensitive and he is particularly concerned about pooling.</p>	<p>Before construction Pembina will meet with Mr. Gaal to discuss mitigation associated with the drainage.</p> <p>Reclamation following construction will be completed to ensure that any disturbed land is reclaimed to its equivalent land capability – this includes restoring graded areas and drainages along the ROW to pre-construction grades and conditions.</p> <p>The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p>	<p>Pembina will maintain contouring, and final grade elevation for drainage and spring run-off throughout all quarters.</p>
		<p>Concerned for loss of dugout on the NE-23, on the fence line of the SE 26.</p>	<p>If the dugout is on the ROW then Pembina will replace it at a location in close proximity that is acceptable to Mr. Gaal.</p>	
		<p>Requires gates on ROW fence on the SW 26 and the NE 23 to allow cattle crossing for pasture and water.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations including livestock management.</p>	<p>Pembina commits to fencing both sides of the ROW. Move permanent fencing on NE 23-056-07 W5M to the North where Alliance and Pembina’s ROW’s meet. 4 wire fence, with 24 foot wire gates (no bigger than 30 feet) including gate closer hardware and “S” hooks. Keep permanent fence between NE 23-056-07 W5M and SE 26-056-07 W5M. Keep gate in current location for cattle access. Fence markers on quarter lines (with fences) only.</p> <p>Fencing to be site specific, but will be similar or better than existing fencing. Pembina to identify on a map the area requiring fencing to keep cattle off of ROW and provide to Landowner prior to construction.</p>
		<p>2m minimum depth of cover.</p>	<p>See Exhibit 193.01.</p>	
		<p>There needs to be a construction monitor.</p>	<p>Compliance and Accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured through the use of inspectors that will take a pro-active approach.</p> <p>Environmental protection is a responsibility of everyone working for Pembina on site.</p> <p>The AER has regulatory authority to view and inspect construction activities and compliance for the life of the pipeline.</p>	
		<p>Pembina needs to consider that there’s always erosion on the corner abutting into the river on the SW 27. The high waters in 1986 caused erosion of about 15 to 20 feet.</p>	<p>Appropriate mitigation measures will be implemented.</p>	<p>Pembina is not on the SW 27.</p>
				<p>Pembina will provide 14 days of notice prior to accessing ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, H2O access, and cattle movement.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along the ROW to a level equivalent to those observed in adjacent lands with similar land use and management.</p> <p>Pembina will do re-seeding, but discuss seed mixture with Mr. Gaal beforehand.</p> <p>Pembina commits to boring under bale yard, wind break, and road on SW 26-056-07 W5M. Pembina will leave the spruce trees, but clear the poplars for access. Boardwalk to be put down in windbreak for vehicle and equipment access.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p>

Name	Location	Concern	Info/Response	Commitments
				<p>Drill pad to be moved entirely from the NE 27-56-07 W5M to SE 27-056-07 W5M. Temporary workspace and revised routing alignment required.</p> <p>Cathodic protection post – test lead post to be located along bush line in NE 27-056-07 W5M, with wire trench at depth of 4 feet.</p> <p>Access for HDD drill to be entirely on Pembina’s ROW.</p>
Allan & Helen Gibson Gibsons Ponderosa Farms Ltd.	NE 27-56-7-W5	<p>The Gibson Lands also front the Pembina River across from the Gaal Lands.</p> <p>The Gibsons still have visible damage from the Alliance pipeline crossing the Pembina River including erosion of the riverbanks.</p>	Pembina intends to HDD the Pembina River, subject to geotechnical investigation to confirm constructability.	
Donald Allan Gibson	NE 33-56-7-W5 SE 34-56-7-W5 NE 34-56-7-W5	<p>The NE 33 is crop and hay land – Pembina would need to fill in some low spots on the hay field as they go through to maintain drainage.</p>	<p>Pembina will construct a pipeline right-of-way that does not affect drainage adversely.</p> <p>Before construction, Pembina will meet with Mr. and Mrs. Gibson to discuss mitigation.</p> <p>During construction, drainages identified will be monitored for erosion and blockage. Gaps in topsoil and spoil piles will be left where surface drainage crosses the ROW.</p> <p>Reclamation following construction will be completed to ensure that any disturbed land is reclaimed to its equivalent land capability – this includes restoring graded areas and drainages along the ROW to pre-construction grades and conditions.</p> <p>The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p>	<p>Pembina will investigate contouring alternatives on existing main channel to provide drainage to the South of the Pipeline on the NE 33-056-07 W5M. Pembina to review elevations and profile of drainage of ditch to determine if Pembina can backfill the ditch.</p> <p>Pembina to investigate contouring alternatives on existing ditch line in the NE 33-056-07 W5M with clay provided by Gibsons from hill on SW side of the ditch.</p>
		The trees along the fence line and Pembina’s access will sever a portion of the field.	<p>Pembina will endeavor to conserve the trees along the fence line along the road allowance in NE-33.</p> <p>Pembina will ensure continuous access across the ROW during construction.</p>	Temporary access required on county access road. Pembina to boardwalk to ROW to bring rig in for HDD river crossing on NE 27-056-07 W5M. Pembina to maintain county access road on NE 27-056-07 W5M.

Name	Location	Concern	Info/Response	Commitments
		<p>On the SE 34, drainage is an issue and access to the rest of the field during construction will also be an issue. This field is in cereal crop, a canola, wheat rotation.</p>	<p>Before construction, Pembina will meet with Mr. and Mrs. Gibson to discuss mitigation.</p> <p>During construction, drainages identified will be monitored for erosion and blockage. Gaps in topsoil and spoil piles will be left where surface drainage crosses the ROW.</p> <p>Reclamation following construction will be completed to ensure that any disturbed land is reclaimed to its equivalent land capability – this includes restoring graded areas and drainages along the ROW to pre-construction grades and conditions.</p> <p>The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p> <p>Pembina will ensure continuous access across the ROW during construction.</p>	<p>Pembina commits to contouring the ROW to maintain drainage through all low areas.</p>
		<p>On the SE 34, one of the biggest concerns is the canola. The Gibsons grow pedigree seed, they are inspected annually. It is very important that no weeds are introduced as this could impact their certification.</p>	<p>Pembina's EPP includes a Weed Management Plan (Section 15.3)</p> <p>Pembina's EPP includes a Clubroot Management Plan (Section 15.1)</p>	<p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p>
		<p>The River crossing—they would like to see some improvements over Alliance's River crossing as they still have problems of drainage and water pooling in that area.</p>	<p>Pembina intends to HDD the Pembina River, subject to geotechnical investigation to confirm constructability.</p>	
		<p>It needs to be clear that the Gibsons can farm over the line whenever and wherever required as the line bisects the fields.</p>	<p>See Exhibit 193.01.</p>	
		<p>They also believe that Pembina will need access on the south side of the NE 27 and this access will need to be identified well in advance of construction.</p>	<p>Permanent access road not required. The ROW will be used for construction access to the Pembina River. Pembina will discuss temporary workspace with Mr. and Mrs. Gibson.</p>	<p>Temporary access required on county access road. Pembina to boardwalk to ROW to bring rig in for HDD river crossing on NE 27-056-07 W5M. Pembina to maintain county access road on NE 27-056-07 W5M.</p>
		<p>They don't want a permanent access road, they do not know how Pembina plans to access the property. Access requirements are not identified in the Application.</p>	<p>Permanent access road not required. Pembina will discuss temporary workspace with Mr. and Mrs. Gibson.</p>	
				<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p> <p>Pembina commits to moving the ROW South of the drainage on the NE 33-056-07 W5M.</p> <p>Pembina to explore mitigating water management and wildlife habitat on SE 34-056-07 W5M.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p>

Name	Location	Concern	Info/Response	Commitments
Larry Garfield Greene	NE 22-56-1-W5	Weeds and club root, and depth of cover deep enough to continue farming practices undisturbed by pipeline, fencing as per the Grassroots specification.	Pembina's EPP includes a Weed Management Plan (Section 15.3)	Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
			Pembina's EPP includes a Clubroot Management Plan (Section 15.1).	
			Pembina commits to providing fencing to the same or better quality than existing fencing.	
			Pembina will install temporary fencing and gates during construction as required for safe agricultural operations. See Exhibit 193.01.	
			Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.	
			Pembina's prepared to take severed area as Permanent ROW. Compensation to be discussed at a later date.	
			Fencing will be site specific, but will be similar or better than existing fencing. Mr. Greene would like only one fence on the North side of the ROW to keep horses out.	
			Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.	
			Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.	
			Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.	
Randy & Joyce Hagman Herman Hagman	SW 24-57-09 W5M	Weeds, club root and depth of cover, construction practices and remediation. Fencing as per Landowners' specification.	Pembina's EPP includes a Weed Management Plan (Section 15.3)	
			Pembina's EPP includes a Clubroot Management Plan (Section 15.1)	
			Pembina commits to providing fencing to the same or better quality than existing fencing.	
			Pembina will install temporary fencing and gates during construction as required for safe agricultural operations. See Exhibit 193.01.	
				Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.
				Fencing will be site specific, but will be similar or better than existing fencing.
				Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.
				Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
				Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.

Name	Location	Concern	Info/Response	Commitments
Estate of Dieter Hoefels	NW 21-56-1-W5 NE 21-56-1-W5	Shelter belt, cattle grazing, water supply for cattle, and cattle management during construction and reclamation.	Pembina does not bore under stands of trees not considered ornamental, wind breaks or shelter belts.	Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.
			Pembina commits to providing fencing to the same or better quality than existing fencing.	
			Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	
			Pembina will maintain water flow across ROW during construction.	
			Pembina will work with the landowner (Estate of Dieter Hoefels) put in place the most appropriate mitigation measures that will reduce potential impacts to livestock operations.	Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement. Pembina commits to provide same day notice prior to accessing the ROW.
		Mr. Hoefel was provided a letter that he received from Alliance Pipeline stating that he was not to enter the Right-of-Way without permission (attached). This is problematic as this is farmland and the pipelines cross through the center of the property.	See Exhibit 193.01.	
		On the NW 21-56-1-W5, there is a bank of trees and the Hoefels request that these trees be saved. He requested that Pembina consider boring under these trees as other members of Grassroots had been advised Pembina is able to bore under shelter belts.	Pembina does not bore under stands of trees not considered ornamental, wind breaks or shelter belts.	
		There is a main dugout in the pasture quarter, (the NW quarter). This is the only water source cattle and a large part of the ¼ section would be segregated from the water source during construction.	Pembina will maintain access to the dugout, or alternate water source, during construction for livestock watering.	Pembina will maintain drainage on both quarters. Pembina will maintain catch basin on wet area on NE 21-56-01 W5M, temporary workspace North of ROW dugout required.
		The Hoefels require that the Right-of-Way be fenced with pathways provided for cattle. Crossing a pipeline on his cropped ¼ is a very big issue, the grain trucks moving through are heavy when loaded and it is not possible for the Hoefels to have any restrictions of movement on their land during farming operations.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations. See Exhibit 193.01.	
		Pembina will encounter large rocks during construction and it is necessary that these rocks be carried out and not left behind.	Pembina will do the following when rocks/stones are brought to the surface during construction: o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by the landowner/occupant. Rock burial pits will not be used.	Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.
		The Hoefels are concerned about weeds on the Right-of-Way and requests that Pembina spray the weeds and keep them under control with cattle friendly sprays.	Pembina's EPP includes a Weed Management Plan (Section 15.3). Cattle friendly weed control will be utilized to control weeds.	Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
				Pembina will commit to providing crossings for farm equipment. NE 21-56-01 W5M will require an additional grade assessment to determine the ability to open cut through wooded hilly area. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Robert Bruens	NE 20-56-1 W5	Bank of Trees, Ravine area request Pembina bore under to maintain the aesthetics of the Lands.	Pembina does not bore under stands of trees not considered ornamental, wind breaks, or shelter belts.	
		Survey stakes suggest that the routing is not adjacent to the Alliance line. Landowner requests routing adjustment.	Current alignment abuts Alliance pipeline, as shown in Tab 2 (page 67, Exhibit 156.01)	
		Crosshatched fencing, including electric fencing, must be replaced to same or higher quality.	Pembina commits to providing fencing to the same or better quality than existing fencing.	Fencing will be site specific, but will be similar or better. No interruptions in electric fencing. 6 wire buffalo fencing on West quarter line. Both sides of ROW will be fenced during construction, and access will be discussed with Mr. Bruens prior to construction to ensure cattle can cross the ROW.
		ROW must be fenced off with fencing as specified by Grassroots.	Pembina will install temporary fencing and gates during construction as required for safe agricultural operations. Pembina will not use the Grassroots-specified fencing as all landowners and properties are unique and have different requirements. Pembina has standards and specifications for fencing, and will determine site specific fencing needs in consult with the Bruens.	
		Wants pipeline HDD under the edge of the mature mixed woods on West side of NE 20-56-1-W5.	Pembina will make efforts, to the extent possible, to save ornamental trees, wind breaks, and shelterbelts at road bores in accordance with individual landowner requests and agreements.	Pembina will explore the possibility of reducing the temporary workspace through the fenced-off bush area located on the South West corner of the quarter to 3 meters but would require two temporary workspace blocks of approximately 20m x 30m and 30m x 50m to put timber, burn timber salvage and for soil storage.
		Pipe depth to be sufficient for crossings.	See Ex. 193.01.	Pembina will commit to providing crossings for farm equipment.
		Concerned about biosecurity	Pembina's Environmental Protection Plan (EPP) includes a Clubroot Management Plan (Section 15.1).	
			Pembina's EPP includes a Weed Management Plan (Section 15.3)	
				<p>Timber salvage 6 inches and bigger will be cut to a length specified by Mr. Bruens. The remaining timber salvage will be burned on the ROW.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Joseph & Lillian Bokenfohr	SE 13-56-26-W4 & SW 13-56-26-W4 (6 separate	Bokenfohrs are opposed to the proposed Pembina Pipeline.	n/a	

Name	Location	Concern	Info/Response	Commitments
	titles)	<p>The Bokenfohrs desire a construction monitor. Their most recent experience with Alliance Pipeline leads them to believe:</p> <ul style="list-style-type: none"> * That pipeline construction will cause permanent damage to the Lands; * The construction impacts will not be mitigated; and * The pipeline will decrease their property value and they will not be compensated fairly. 	<p>Compliance and accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured through the use of inspectors that will take a pro-active approach. Environmental protection is a responsibility of everyone working for Pembina on site. The AER has regulatory authority to view and inspect construction activities and compliance for the life of the pipeline.</p> <p>The objectives of environmental protection measures associated with clean-up and reclamation are to control erosion, restore soil capability and reclaim disturbed surfaces to pre-construction equivalency and regulatory compliance.</p> <p>Proper soil handling procedures are a key mitigation measure for the Project. By following the proper topsoil stripping procedures outlined in the Conservation & Reclamation Application and EPP, Pembina will ensure soil layers along the ROW for the Project are NOT mixed.</p> <p>A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored.</p>	
		<p>Alliance Pipeline caused damage to the lands and selected a diagonal routing with no input from the Landowner. There is now no other feasible routing except adjacent to the Alliance line.</p>	<p>The proposed route follows the Alliance Pipeline ROW.</p>	
		<p>Bokenfohrs have specific concerns with the SW 13-56-26-W4. There is an artesian well and a creek bed that will be crossed.</p>	<p>Pembina proposes to bore the creek and the road. However, Pembina will need site specific to assess.</p>	
		<p>There is a building site that is subdivided (15 Acres) that will be impacted by the pipeline.</p> <p>Additionally, the proposed Pembina Pipeline crosses a subdivided 17 acre parcel on SE 13-56-26-W4 and will devalue the parcel.</p> <p>Bokenfohrs have plans to build in the treed area to the North of this subdivision.</p>	<p>The subdivision in SW-13 will not be impacted by the proposed pipeline. Pembina does not agree that the land value will change. Any restrictions on the land development as a result of the project will be limited to the area of the permanent project ROW.</p> <p>Pembina requires more information as a result of the proposed building site.</p>	

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Gene & Jeannette Brown	SW 21-56-6-W5	Pembina changed the Route and moved the Pipeline across the fence line away from the Alliance line and away from the Browns.	Pembina does not cross the Brown's land since Pembina routed off this land at the Brown's request.	
Richard & Myrna Christman Calvin Christman	NE 15-56-6-W5 NW 20-56-6-W5 NE 14-56-6-W5 NW 15-56-6-W5	<p>The Christmans farm together. The lands that will be crossed are mostly in pasture or hay land. Cattle are pastured rotationally on these lands so fencing during construction is going to be very important.</p> <p>There is a water spring on the NW 14-56-6-W5M (NW-14).</p> <p>Rocks are a big concern, Pembina should take them away and not leave them in the field as Alliance did.</p> <p>There is a cross gate on the north side of the ROW. Cattle graze in the area so the north side of the ROW should be fenced.</p> <p>On the NW 20, the depth of the top soil should be measured to make sure that during construction Pembina maintains that level of top soil.</p> <p>There should be a gate onto and through the ROW from the road onto the NW 20.</p>	<p>Pembina intends to work with the Christmans to put in place the most appropriate mitigation measures including fencing that will reduce potential impacts to their livestock operations, however Pembina will required further information from the Christmans in order to determine the appropriate mitigation measures.</p> <p>Pembina will assess the spring and implement watercourse crossing mitigation as per the EPP if the spring is on the ROW and flowing at the time of construction.</p> <p>• Pembina will do the following when rocks/stones are brought to the surface during construction: o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by Christmans.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p> <p>Topsoil stripping depth is usually determined in the field by colour change between the topsoil and subsoil.</p> <p>Pembina commits to providing fencing to the same or better quality than existing fencing</p>	<p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>

Name	Location	Concern	Info/Response	Commitments
Rose Crum Serena Primrose Crum Devan Crum Neil D. Crum	SE 23-56-4-W5 SE 21-56-4-W5 NW 18-56-4-W5	Routing Concern: Cabin located on the proposed ROW. A Pembina landman had promised to have the cabin moved.	Pembina will work with the Crums to determine the best course of action for either moving or replacing the cabin.	Pembina's preferred option will be to move the ROW to the South side of the Alliance ROW on the SE 21-056-04 W5M to maintain landowner's preferred bush area and cabin. At the trail, Pembina will cross back to the north side of the Alliance ROW.
		ROW crosses an area of mature spruce forest and heritage site. This area should be directionally drilled.	Pembina is not prepared to directionally drill the specified area, but we are willing to leave a 15 metre buffer of trees at the road.	Pembina commits to provide a map of preferred option to landowner for review and approval.
		Fencing on the ROW to Grassroots standards with crossing for cattle.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will not use the Grassroots-specified fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	
		Along RR50 there is a 6 wire high tensile fence which needs to be handled carefully – if cut without splicers it is like piano wire which will go all over the field and tangle.	Pembina commits to providing fencing to the same or better quality than existing fencing. Proper equipment will be used	
		They want Pembina to be forced to pressure wash all equipment in order to ensure no weeds are brought in.	Pembina will follow the Weed Management Plan (EPP Section 15.3)	
		They have a D6 Cat that they use in their farming operations and cannot accept any limitations to crossings.	See Exhibit 193.01.	
				Pembina commits to maintain access to cabin on SE 21-056-04 W5M throughout construction.
				Pembina will salvage timber taken down through the NW 18-056-04 W5M and SE 21-056-04 W5M, and cut to size as specified by Landowner. This will require additional temp workspace for log decks.
				Pembina commits to providing fencing to the same or better quality than existing fencing.
				Pembina will use plugs to maintain access for cattle on the NW 18-056-04 W5M and SE 21-056-04 W5M.
				Pembina will provide 14 days notice prior to accessing the ROW.
		Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.		
		Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.		
		Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.		
		Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.		
		Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.		
		Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.		
Stan & Lana Cust	SE 24-56-2-W5	Proposed 35m ROW is not required, sterilizes more land than is required.	Pembina disagrees.	
		The Custs' land has a natural Ravine and a low meadow on the west end.	Pembina will need to assess the ravine and implement the appropriate crossing method.	Pembina commits to maintain drainage that comes out of the East-West tree line South of ROW and drains North through field to the lake.

Name	Location	Concern	Info/Response	Commitments
		<p>It is very important to the Custs that the drainage be maintained, there is some concern about flooding in some areas.</p>	<p>Pembina will construct a pipeline right-of-way that does not affect drainage adversely. Before construction, Pembina will meet with the Custs to discuss mitigation. During construction, drainages identified will be monitored for erosion and blockage. Gaps in topsoil and spoil piles will be left where surface drainage crosses the ROW.</p> <p>Reclamation following construction will be completed to ensure that any disturbed land is reclaimed to its equivalent land capability – this includes restoring graded areas and drainages along the ROW to pre-construction grades and conditions.</p> <p>The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p>	
		<p>Alliance had maintained a swale and it is very important the Pembina tie in to this swale as well during construction.</p>	<p>Before construction Pembina will meet with the Custs to discuss the swale issue.</p>	
		<p>While most of the quarter is used for recreational purposes there is a hay field on the north end of the quarter.</p>	<p>Pembina requires more information from the Cust about this concern.</p>	
		<p>There are other pipelines planned on the north side of the Alliance pipeline.</p>	<p>Pembina can't comment on this concern.</p>	
		<p>The land agent for Pembina sat with Stan Cust and could not answer any questions about the pipeline.</p>	<p>See Exhibit 157.02.</p>	
		<p>The Custs are concerned about dust control in the area and requests that Pembina use calcium to control the dust.</p>	<p>Pembina commits to provide calcium to control the dust.</p>	
		<p>The Custs request that Pembina build up one crossing closest to the road on his land for equipment crossing. He suggests a 2-3 meter cover and would like a ramp in that area allowing a 2.5 meter cover so that any piece of equipment could cross the pipeline in that area.</p>	<p>See Exhibit 193.01.</p>	
		<p>He requests that Pembina bore under the trees on the east and the west side of the quarter, there is a narrow strip of trees that creates a windbreak.</p>	<p>Pembina is committed to boring the trees on the West boundary of the quarter and the far West boundary at the road crossing.</p>	<p>Pembina commits to move the temporary workspace for the road bore on East side of quarter to the West side of bush line to maintain trees.</p>
		<p>There are fence lines that will need to be replaced.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing</p>	
		<p>Construction monitor should be present that can shut down construction in wet conditions.</p>	<p>Compliance and Accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured through the use of inspectors that will take a pro-active approach.</p> <p>Environmental protection is a responsibility of everyone working for Pembina on site.</p> <p>The AER has regulatory authority to view and inspect construction activities and compliance for the life of the pipeline.</p>	
		<p>Equipment must be cleaned before coming on property with compressed air and possibly bleach and water;</p>	<p>Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3)</p>	

Name	Location	Concern	Info/Response	Commitments
		The ROW needs to be kept weed free by Pembina;	Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3)	Pembina commits to conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
		No geotech drilling on his property;	Geotech drilling is not required on this property.	
		Pipe must be buried deep to allow for heavy equipment construction and at least one location of his choosing;	Please see exhibit 193.01	Pembina commits to install permanent crossing at the tree line.
		Both drains will be re-established across Pembina's ROW;	Pembina will construct a pipeline right-of-way that does not affect drainage adversely. Before construction, Pembina will meet with the Custs who have identified drainage issues to discuss mitigation.	
		Pembina should move existing rock pile to the east of tree line and rocks picked off of this quarter to be added to this pile;	If there is an existing rock pile, Pembina will move the rock pile.	Pembina commits to move the existing rock pile to the east of tree line and rocks picked off of this quarter to be added to this pile. Pembina will require additional temporary workspace to access the Cust's rock pile.
		Keep rock pile free of dirt;	If an existing rock pile is found on or in proximity to the ROW, Pembina will work with landowner to move rocks to an agreed upon location.	Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.
		Pembina's easement will run next to Alliance's easement with no gap in the middle;	Pembina confirms the proposed pipeline is adjacent to the Alliance ROW.	
		10 meters of permanent easement only with temporary work space as required;	35 metres permanent ROW and 10 metres of temporary ROW was applied for	
		They believe that 2 meters should be the minimum from the top of the pipe to the bottom of the topsoil.	The minimum depth of cover for the pipelines will meet or exceed all applicable engineering standards and legislation. Minimum design depth of cover for the pipelines is: 1.2 m on the general ROW. Pembina will speak to the Custs to discuss site specific depth of cover with respect to headlands and crossings of the pipeline.	
		They are going to need fencing to keep the cattle in during construction and need to be informed about construction.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will not use the Grassroots-specified fencing as all landowners and properties are unique and have different requirements. Pembina has standards and specifications for fencing, and will determine site specific fencing needs in consult with the Custs. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	
			Pembina will have dedicated staff to work directly with the landowners to provide communication between landowners and subject matter experts (e.g. EI, Soil Specialist, Aquatic Specialist), and ROW visits. Pembina will notify the Custs prior to the start of construction.	
		A cattle crossing is going to be required during construction and reclamation as the water source for cattle will be on the other side of the construction area away from the pasture.	Pembina recognizes that during construction and reclamation there may be an impact on livestock operations. Pembina intends to work with the Custs to put in place the most appropriate mitigation measures that will reduce potential impacts to livestock operations. Prior to commencing construction, the Custs will be consulted	

Name	Location	Concern	Info/Response	Commitments
		<p>The Gibsons still have visible damage from the Alliance pipeline crossing the Pembina River including erosion of the riverbanks.</p>	<p>for the appropriate options for safe handling and management of livestock, including maintaining necessary access and fencing. Where requested, breaks will be left in strung pipe, trench, topsoil and spoil piles to allow farming equipment and livestock to cross the ROW.</p> <p>The Custs will be notified prior to the commencement of construction, including notification as to the construction schedule, to reduce any potential interference between construction activities and landowner/occupants.</p> <p>Examples of mitigation measures for livestock management that could be employed include gates, fencing, and ditch plugs.</p>	
				<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
<p>Bradley M Javorsky and Brittany Lynn Guenette</p>	<p>NE 21-56-2-W5</p>	<p>The Javorskys have recently purchased the land at the NE 21-56-2-W5. They believe that the pipeline will impact the use of their property. They own one ¼ section that they farm.</p>	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands.</p> <p>As this is a D530 pipeline setbacks are limited to edge of ROW.</p>	
		<p>They are also concerned that it is such a large Right-of-Way. The introduction of 2 future pipelines following the same route will cause a serious impact, along with the Pembina line, on their land that is available for their farming operation.</p>	<p>35 metres permanent ROW and 10 metres of temporary was applied for</p>	
		<p>The Javorskys were not pleased with the manner that they were approached by Pembina’s Land Agent. In fact, Bruce, the Land Agent, showed up at Brittany’s work and began to talk to her about this pipeline which she feels is a private thing, in front of clients at the Law Firm where she works. They did not have a positive experience in consultation.</p>	<p>Please see Exhibit 157.02.</p>	
		<p>The view that was presented to them was that Pembina was going to route the pipeline across their property no matter what the Javorskys did and that there would be no future offers of compensation if they did not accept what the land agent offered.</p>	<p>Please see Exhibit 157.02.</p>	
		<p>A construction monitor is required to ensure that the dirt is put back correctly. They feel strongly about this as after Alliance’s pipeline construction the reclamation efforts did not produce good results.</p>	<p>Compliance and accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured with use of inspectors that will take a proactive approach. Environmental protection is the responsibility of everyone working for Pembina onsite.</p>	
				<p>Pembina commits to advise landowner where west quarter section line is when legal survey is completed during construction.</p>

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing. Pembina will install fencing and gates during construction as required for safe agricultural operations on all pasture lands. Fence posts are to be no greater than 10 feet apart.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Pembina to relocate picked rock to designated rock pile on North end of quarter, or other location within the quarter as designated by the Landowner,</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Iddon Glyn Jeffreys	NE 19-56-6-W5	<p>The quarter is grazed by cattle. Fencing would be required on the north side of the ROW.</p> <p>The last line through, Alliance, caused erosion and the Jeffreys would like Pembina to bore under the creek.</p> <p>They do not want to lose trees because of the pipeline, they would like Pembina to bore under the trees.</p>	<p>Pembina requires clarification related to the concern.</p> <p>Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will not use the Grassroots-specified fencing as all landowners and properties are unique and have different requirements. Pembina has standards and specifications for fencing, and will determine site specific fencing needs in consult with landowners. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p> <p>This particular small creek will require a site visit to determine the best crossing method.</p> <p>Pembina does not bore under stands of trees not considered ornamental, wind breaks, or shelter belts</p>	<p>Fencing will be site specific, but will be similar or better than existing fencing. Pembina will install a fence on the North side of the ROW to keep the rodeo livestock off of the ROW (4 strands).</p> <p>Pembina will make effort to bore underneath the creek, keeping the drill to a reduced distance, if given the opportunity. If the bore is unsuccessful, Pembina will do an open cut, which will require a wider ditch and may involve a slight increase in clearing. To allow for the creek bore the existing dugout on the west side of the creek will be reclaimed and a new dugout will be established north of the existing location. The landowner will be consulted on the new location of the new dugout; all efforts will be made to minimize disturbance on existing shrubs and trees. Pembina will install a Clear Span (bridge) crossing or a culvert grade with swamp mats with geotextile fabric to cross the creek with construction equipment.</p> <p>Pembina commits to reducing the amount of disturbance to the trees in the riparian zone where practical.</p>

Name	Location	Concern	Info/Response	Commitments
		<p>Because of cattle they will require that Pembina fence the ROW on the north side of the ROW.</p>	<p>Pembina recognizes that during construction and reclamation there may be an impact on livestock operations. Pembina intends to work with Mr. Jeffreys to put in place the most appropriate mitigation measures that will reduce potential impacts to livestock operations.</p> <p>Prior to commencing construction, the Mr. Jeffreys will be consulted for the appropriate options for safe handling and management of livestock, including maintaining necessary access and fencing. Where requested, breaks will be left in strung pipe, trench, topsoil and spoil piles to allow farming equipment and livestock to cross the ROW.</p> <p>Mr. Jeffreys will be notified prior to the commencement of construction, including notification as to the construction schedule, to reduce any potential interference between construction activities and landowner/occupants.</p> <p>Examples of mitigation measures for livestock management that could be employed include gates, fencing, and ditch plugs.</p>	<p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
<p>Harold & Lena Klause</p>	<p>NW 24-56-2-W5 NE 23-56-2-W5 SW 24-56-2-W5 NW 22-56-2-W5</p>	<p>Water and dirt from the ROW runoff is going to come into their dugout on the NW22, which dugout is not shown on the Pembina maps. It would be acceptable if this dugout is filled and a new one constructed further away.</p> <p>Existing fencing removed for the ROW must be replaced with fencing of same or higher standard.</p> <p>Permanent fencing of the ROW to Grassroots' standards.</p> <p>* Will need 2 gated passages through the ROW per quarter section, one on either end of the ROW.</p> <p>There will need to be a water source provided for the cattle on the South side of the pipeline.</p> <p>Wooded area on the SW24 must be HDD. It is a shelterbelt for the cattle and a habitat to many animals.</p> <p>Loss of shelter belt and cattle management is very important.</p> <p>Pembina must manage weeds on the ROW for the life of the line and when it sprays for weeds must use a cattle friendly spray.</p>	<p>The dugout is not in proximity to the ROW and Pembina disagrees that it will be impacted by sediment and run off.</p> <p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p> <p>Examples of mitigation measures for livestock management that could be employed include gates, fencing, and ditch plugs.</p> <p>Pembina will make efforts, to the extent possible, to save ornamental trees, wind breaks, and shelterbelts at road bores in accordance with individual landowner requests and agreements.</p> <p>Pembina does not bore under stands of trees not considered ornamental, wind breaks, or shelter belts.</p> <p>Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3), and Yes Pembina will use cattle friendly weed control</p>	<p>Pembina commits to maintain clean flow to dugout for cattle in the NW 22-56-2 W5M.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing. Pembina will install fencing and gates during construction as required for safe agricultural operations on all pasture lands. Fences are 5 strand barbed wire.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p>

Name	Location	Concern	Info/Response	Commitments
		On the NW 24, the 20 acre parcel with the ephemeral draw, matting should be laid to minimize the cut of the trench and the soil erosion.	Pembina will construct a pipeline right-of-way that does not affect drainage adversely.	Pembina commits, if necessary, to install a culvert and grade crossing on the NW 22-56-2 W5M for the longer ephemeral draw to maintain clear water flow. To be assessed at time of construction.
		Sensitive drainage patterns must be preserved.	Pembina will construct a pipeline right-of-way that does not affect drainage adversely.	Pembina commits to contouring the ROW to maintain drainage through all low areas.
				Pembina commits to doing a timber salvage assessment in SW 24. Pembina commits to compensating for timber salvage.
				At the NE 23 road crossing, west side, Pembina will reduce the width of the temporary workspace to reduce potential impact on gate. Extra temporary workspace length required for topsoil storage.
				Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.
				Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.
				Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Pembina to relocate picked rock to designated rock pile.
				Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.
				Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed. Seed mixes will be approved by Landowner for both pasture and hay.
Denise & Mario Kulbacki	SW 22-56-4-W5	Acreage Impacts and Environmentally Significant Area. The Kulbacki's own a 50 acre parcel that will be significantly impacted by the ROW, they believe it could impact 30% of the parcel. They are concerned that the setbacks associated with the pipeline and the size of the parcel could cause them difficulties with obtaining development permits for building their planned recreational business.	Pembina will follow the Alliance pipeline ROW The presence of pipelines on area lands will not change the current land use of those lands or the currently zoning of the lands.	
		The Kulbacki's land includes a mature spruce forest and they are concerned about the loss of trees.	Pembina will make efforts, to the extent possible, to save ornamental trees, wind breaks, and shelterbelts at road bores in accordance with Kulbacki requests and agreements. Pembina will commit to boring the road allowance and leaving a 15 metre buffer adjacent to the road allowance.	
				Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.
				Fencing will be site specific, but will be similar or better than existing fencing.
				Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.
				Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
				Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.
				Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.

Name	Location	Concern	Info/Response	Commitments
Walter Lewchuk	SW 4-57-7-W5	Drainage must be maintained. Mr. Lewchuk is not in a position to take care of weeds that are introduced during the reseeding process and requires that Pembina control the weeds.	Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3)	Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.
		These are low lands, a hay field, and drainage must be maintained.	Pembina will construct a pipeline right-of-way that does not affect drainage adversely.	Pembina commits to maintain a depth of 2 metres through wetland area on SW 04-057-07 W5M. Pembina commits to using sandbags for buoyancy control on SW 04-057-07 W5M.
				Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.
				Fencing will be site specific, but will be similar or better than existing fencing. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.
				Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.
				Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles. Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.
Nelles & Jean Anne Madsen	SW 8-57-8-W5 SE 8-57-8-W5	There is a waterway that will be crossed on the land and he needs to ensure that the drainage is maintained. Additionally there is a wetland that needs to be identified.	In constructing across watercourses and wetlands, Pembina's crossing activities (including vehicle crossings) will be in full compliance with the requirements of the <i>Water Act</i> and associated pipeline watercourse Codes of Practice. Site visit of the Madsen land is required to identify the wetland.	Pembina commits to boring the waterway if feasible.
		He has trees along the fence line that should be maintained if possible.	Due the constructability the trees are not able to be maintained	
		He has an area north of the pipeline that will be severed (30 acres). Mr. Madsen will need a new approach built to access this 30 acre isolated parcel.	Pembina will agree to acquire the NE corner of the SW-8 as permanent ROW	Pembina will provide a crossing at a location of Mr. Madsen's preference. Pembina will also commit to acquiring the severed area of SW 8-57-08 W5M as permanent ROW.
		He has other wetlands that need to be identified on the east side of the SE 8-57-8-W5.	Site visit of the Madsen land is required to identify the wetlands	
				Pembina will bore underneath existing operators (Keyera and Atco) and the highway. The depth at the crossings will be determined by the operator and outlined in the crossing agreement they issue. Pembina will re-establish drainage across the 45m ROW construction corridor. Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement. Fencing will be site specific, but will be similar or better than existing fencing. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Evangeline McCaw	NW 23-56-2-W5	<p>The pipeline needs to be deep enough to avoid problems with farm equipment crossing the pipeline. The pipeline must be deep enough that it won't be affected by loaded grain trucks.</p>	Please exhibit 193.01	
		<p>There are fences that will need to be removed/replaced during construction.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	
		<p>They want to ensure that Pembina does not bring Clubroot, tansy, or any other noxious weeds.</p>	<p>Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3)</p> <p>Pembina's EPP includes a Clubroot Management Plan (Section 15.1).</p>	
		<p>The McCaw's would prefer to work up the disturbed area and seed it if this is an option.</p>	<p>Pembina will consult with the landowner regarding re-seeding following construction.</p>	<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p>
				<p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Greg Morton	SW 25-57-9-W5 NE 30-57-8-W5	Loss of Development Potential	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands and it also does not restrict subdivision of the lands Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056.</p> <p>Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.</p>	
				<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p>

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Rick & Lorette Nadon	NE 22-56-1-W5 Plan 0824094, Block 1, Lot 1	Acreage owner concerned about impacts to their property value from the pipeline adjacent to their lands	The proposed project does not cross the Nadon lands, and Pembina disagrees it will impact their property value.	
Earl & Barbara Olsen	NW 6-57-7-W5 SE 6-57-7-W5 NE 1-57-8-W5 NE 6-57-7-W5	The Olsens are concerned with the close proximity of the pipeline to their home.	Pembina has placed the ROW on the south side of the Alliance pipeline, as per Mr. Olsen's request to move the proposed pipeline further away from the Alliance pipeline.	
		The Paddle River crossing is also a concern and the Olsens would like to see a trenchless crossing with minimal disturbance. They want it directionally drilled.	Pembina plans to HDD the Paddle River, access required for geotechnical investigation and confirmation of constructability.	
		Their main road to granaries, equipment, shop, fuel and cows may be rendered inaccessible and they have no other access for moving equipment/grain/fuel/livestock. They dealt with this when the Alliance Pipeline came through and it was a huge problem. Depending on the season, the issues can vary as well. The pipeline route runs through calving grounds and winter feed grounds.	<p>Pembina thinks this a site specific visit is required to address Mr. Olsen's concerns.</p> <p>Pembina will bore under their access road</p>	
		Olsens request that Pembina bore under their calving sheds and their access road. Otherwise Pembina will have to move and rebuild their calving area and fences that will be cut for the work.	Pembina will need a site specific visit to address the cattle sheds.	
		It also appears that construction will go through the center of their bale yard – there is a limited amount of space where bales can be put on their property. If the access road is affected this will be an even larger problem.	Pembina will need a site specific visit to address the bale yard.	
		Proximity to their well is also a concern.	Pembina will perform pre-construction water quality at the Olsen's water wells within 200 metres of ROW	Pembina commits to perform pre construction water well testing for the Olsen's.
		They may wish to build structures in the future and are unsure of the restrictions on building near the pipeline or on the ROW.	As this is a D530 pipeline any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.	
		They are concerned that their property value will be substantially diminished.	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands.</p> <p>Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056.</p> <p>Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.</p>	
There are 10 fences and one main gate that will be need to be removed/replaced during construction.	<p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p> <p>Pembina can review mitigation with the Olsen's during site visit.</p>	Pembina commits to 4 wire fencing with 25-30 foot wire gates and gate closer hardware with "S" hooks. All fencing will be reviewed with landowner prior to construction to confirm the site specific needs, but will be similar or better than existing fencing.		

Name	Location	Concern	Info/Response	Commitments
		The Olsens believe that the pipeline is too close to their home. Pembina originally has located it closer to the house but they agreed to reroute it. The Olsens still feel that it is too close to the house so long as moving it still further is a possibility	Please see above related to house proximity to the pipeline.	Pembina commits to bore from across the road on section NE 01-57-08 W5M to far side of bale yard in NW 06-56-07 W5M.
		The Olsens had an issue with oxeye daisies with the Alliance Pipeline.	Pembina's Environmental Protection Plan (EPP) includes a Weed Management Plan (Section 15.3)	
		The Olsens would prefer to work up the disturbed area and seed it if this is an option.	Pembina will consult with the landowner regarding re-seeding following construction.	Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.
		The Olsens need to be able to haul grain over the ROW. They have no other option for hauling grain out of their field. A 55 tonne load would not be unusual.	Please see Exhibit 193.01	
		The Olsens have 150 cows which graze in the area. The ROW needs to be fenced, but he cattle will need to cross the right of way for water/feed during and after construction. The biggest concern will be trying to feed them in the spring – if the surface of the right of way is soft (the last right of way from Alliance Pipeline 14 years ago is still soft and problematic in spring), then it will not be possible to cross it with a tractor which makes it difficult to feed the cows. Depending on where the cows are they will not be able to access their water supply without crossing the right of way.	Prior to commencing construction, Pembina will work with the Olsens to assess the options for safe handling and management of livestock, including maintaining necessary access and fencing. Where requested, breaks will be left in strung pipe, trench, topsoil and spoil piles to allow farming equipment and livestock to cross the ROW.	
				<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p>
Gordon Pearson (formerly, Larry Hickie on the SW 20)	NE 22-56-2-W5 SW 20-56-2-W5	Routing – the Pembina line deviates from the Alliance line at the North of the SW 20. This severs a portion of Mr. Pearson's property between the two lands. He would like the Pembina line to stick to the Northern property line.	Pembina would like to meet with Mr. Pearson to review routing options.	On the SW 20-56-02 W5M, Pembina will, upon completing bore underneath Range Road 25, deflect the ROW back to North quarter line and follow quarter line east to the east property boundary.
		The whole fence line at the north of the SW 20 should be brushed out and cleaned up.	Pembina's will discuss the fencing concerns when we speak to him about the routing options.	Pembina will eliminate widow strip of trees on South boundary of the SW 20-56-02 W5M on the ROW during clearing.
		On the NE 22, the line severs their lands. Cattle will need to be able to cross and so will their equipment. The line should be deep enough for this.	Please see Exhibit 193.01	On the NE 22-56-02 W5M, Pembina will install a cattle crossing during construction and two permanent road crossings.

Name	Location	Concern	Info/Response	Commitments
		Rocks need to be removed.	Pembina will do the following when rocks/stones are brought to the surface during construction: <ul style="list-style-type: none"> o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by the landowner/occupant. Rock burial pits will not be used. 	
		There are fences that need to be replaced.	Pembina needs more information on the fencing that needs replacing as a result of the project.	Pembina commits to providing fencing that is similar or better than existing fencing.
				In the SW 20-56-02 W5M, Pembina will consult with Lac Ste. Anne County on setback requirements east off of Range Road 25 and to discuss setback relaxation opportunities to be able to reduce length of ROW deflection away from existing pipeline corridor and quarter line. Pembina commits to contouring the ROW to maintain drainage through all low areas. Pembina will consult with Landowner to re-establish drainage across ROW after construction. In the SW 20-56-02 W5M, Pembina will reclaim existing dugout on proposed ROW at landowner's request. Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management. Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed. Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Rocks can be put in sand pit located in the SW 34-057-09 W5M, not piled up in field.
Edward & Margaret Petrie	NW 20-56-2-W5	Depth of pipe cover, they would like pipe depth deep enough so no permission required to cross; Weed management, Scentless chamomile, Canada Thistle; Dust control Loss of Trees-They have land leased to Alberta Pacific, 10 years remaining till harvest the planted trees.	Pembina's no longer requires temporary work space from the Petries.	
Ken & Karen Saunders	SE 25-55-25-W4 SW 25-55-25-W4 NW 24-55-25-W4 NE 24-55-25-W4	Statement provided by Ken Saunders: 1; On December 16, 2014 I met with Pembina regarding the routing of the proposed pipeline across the NW 1/4 24 55 25 W4 and SE 25 55 25 W4. We agreed on a revised route that at the time was acceptable to Pembina and to myself. I want Pembina to confirm that they intend to route the pipeline on the agreed revised route.	Yes Pembina confirms	

Name	Location	Concern	Info/Response	Commitments
		2; I do not trust Pembina for the reasons described in this statement. Therefore it is imperative that Pembina provide funding for a construction monitor to observe all aspects of the construction of this pipeline and report back to the landowners. This monitor is to be chosen by the landowners and will be fully qualified to do this job.	Compliance and Accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured through the use of inspectors that will take a pro-active approach. Inspectors will have expertise.	
		3; Last fall I allowed Pembina to survey for the proposed pipeline. They did the survey on all 3 pieces of land that will be affected by the pipeline but failed to return to remove over 70 survey stakes in my fields.	See Exhibit 157.02	
		4; Last fall Pembina did an integrity dig on one of the 3 existing pipelines on the SE 1/4 25 55 25 W4. They left all of the debris from where they had to build a bridge to cross another pipeline in my field and did a poor job of reclamation of the construction site. The fellow that farms my land is going to have to come back with equipment to properly level this area.	See Exhibit 157.02	
		I only realized all of this debris was in my field when the seeding crew arrived to start seeding. My wife and I spent 4 hours cleaning up the survey stakes and taking the debris to the dump. I am submitting pictures of the debris, survey stakes and the construction site as evidence.	See Exhibit 157.02	
		When I met with Pembina on December 16, 2014 we also discussed the noise issue coming from their pump station that is about 500 meters from our home and our son's home. We were assured that they had a plan in place to reduce the noise. So far nothing has been done to reduce the noise which is another reason Pembina has lost more credibility as a company that prides itself in a 'trusting' relationship with the landowners.	See Exhibit 157.02	
		For myself the trust ended when we were first approached by the landman. He misled us on two issues. He said that all of the land between Namao and Morinville had been appraised between \$4000 and \$8000 per acre and he wasn't about to mess around with individual landowners so he was offering everyone along the route \$8000 per acre. Two nights later I found out he had offered my neighbour \$10,500 per acre. He also told me that both of my neighbors adjoining my land had signed up for this original offer. I found out a few months later that this was also false. One of my neighbors did not sign up until several months later.	See Exhibit 157.02.	
				<p>Pembina commits to providing access for farm equipment to the North East corner of NE 24-55-25 W4M during construction. Pembina will require additional workspace in this quarter. Pembina commits to providing access to SE 25-55-25 W4M during construction. Pembina to provide a 35 foot gate with gate closer hardware and "S" hooks.</p> <p>Pembina commits to contouring the ROW to maintain drainage through all low areas.</p> <p>Pembina commits that if construction encroaches on the dugout on SE 25-55-25 W4M, Pembina will return it to a deeper and smaller dugout upon completion.</p> <p>Pembina commits to discussing land spraying with Mr. Saunders during construction. Pembina commits to providing Mr. Saunders with additional information regarding spraying mud.</p> <p>Pembina commits to remove the row of trees to the West of wetlands along SE and SW quarter boundary matching up to the East-West tree line if practical.</p> <p>Pembina commits to remove approximately 60 metres of trees west of quarter line, located in the SW 25-55-25 W4M.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Fencing will be site specific, but will be similar or better than existing fencing.</p> <p>35 foot gates are required for farm equipment access.</p>

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Mr. Saunders will keep the rocks picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, rock piles and timber burns.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Ryan & Christine Scarlett	NE 20-56-2-W5	Additional Workspace Required, no survey provided	Pembina's no longer requires temporary work space from the Scarlett's.	
Michael Schulte	SW 19-56-1-W5	Requires 10 days' notice before entry and construction;	Yes	Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.
		Reduce the ROW to 10 meters;	35 metres of permanent ROW and 10 metres of temporary workspace was applied for	
		Do not disturb trees or alter the landscape;	Pembina will make efforts, to the extent possible, to save ornamental trees, wind breaks, and shelterbelts at road bores in accordance with individual discussions with Schulte.	<p>Pembina will commit to accommodating landowner's shelterbelt concerns with one of two options. Landowner to review options and advise Pembina which option is the preferred.</p> <p>Option 1 will be to clear existing shelter belt on the ROW and grade the area to become farmable by the landowner. Pembina will contact and discuss with Alliance whether their ROW could also be graded and Pembina will review soil reports to ensure there are no soil conditions that could prevent the proposal for grading.</p> <p>Option 2 would be to reduce the ROW through the shelterbelt to reduce the number of trees removed.</p> <p>Pembina will provide a map of options to landowner for review and approval.</p>
		Horizontal bore under the trees and bank;	Pembina needs to meet with Mr. Schulte to clarify this concern.	
Greg & Paulette Selzler Edge Hill Farms	SE 34-57-9-W5 SW 34-57-9-W5 NE 27-57-9-W5 NW 27-59-9-W5	Yard Sites (x2), proximity to house, there is a concern for their safety with this proximity to the pipeline.	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands.</p> <p>Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056.</p> <p>Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.</p>	To avoid disturbance to the dugout, Pembina will commit to reduce the ROW along the south side of the dugout. Pembina will also commit to taking additional workspace on both ends of the dugout to the north of the ROW.
		There is a dugout on the proposed ROW that will need to be pumped out and filled. It will have to be replaced with a dugout further off the ROW.	Pembina will work with Mr. and Mrs. Selzler to identify the location of dugouts on or in proximity to the ROW.	<p>Pembina commits to decreasing ROW width to 20 metres through dugout on the SW 34-57-09 W5M.</p> <p>Pembina commits to dam and pump the ephemeral draw/ water spring on the SW 34-057-09 W5M during construction.</p>

Name	Location	Concern	Info/Response	Commitments
		Has grave concerns about the temperature of the pipeline. The crop over the ROW cannot be different from the rest of the field. Temperature of the Pembina Pipeline needs to be continuously monitored by Pembina.	If operation of the proposed pipelines were to cause adverse impacts to crops growing on the ROW, then Pembina would identify and apply the appropriate measures to mitigate the impacts. Pembina will not conduct temperature monitoring.	<p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Mr. Saunders will keep the rocks picked.</p> <p>Pembina commits to following up with Lac Ste Anne County to determine if a subdivision application has been submitted.</p>
Jim & Joyce Sheehan	SW 15-56-26-W4	The Sheehan's main concern is the location of the proposed Pembina Pipeline through their quarter section.	The proposed route is the result of a careful, detailed and thorough planning and selection process. Before selecting the current route, Pembina explored several other routes for feasibility and suitability, and in each case, the alternative routes examined were not found to be optimal.	
		They are concerned that it will devalue their land and impact the way that they can subdivide the remaining quarter. They have 3 sons and plan to subdivide the land in order to give their sons a place to live. The 3 sons farm with their father.	The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands. Since the pipelines are not transporting sour gas, there are no setback requirements beyond the boundary of the permanent Project ROW as per AER Directive 056. Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.	
		The Sheehan's are concerned that the addition of this Pipeline will create a de facto Pipeline Corridor.	The proposed route is the result of a careful, detailed and thorough planning and selection process. Before selecting the current route, Pembina explored several other routes for feasibility and suitability, and in each case, the alternative routes examined were not found to be optimal.	
		They have been contacted by Enbridge as well as Keyera and are concerned that the width of the ROWs is overly large.	Pembina disagrees.	
		They are concerned about weeds, especially Clubroot as they grow Canola on their land and will be growing Canola in 2015.	<p>Pembina's EPP includes a Weed Management Plan (Section 15.3)</p> <p>Pembina's EPP includes a Clubroot Management Plan (Section 15.1)</p>	Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.

Name	Location	Concern	Info/Response	Commitments
		<p>Drainage is important as there are changes in elevation on the Land.</p>	<p>Pembina will construct the pipeline so as to not affect drainage adversely. Before construction, Pembina will meet with the Sheehan's to discuss mitigation. During construction, drainages identified will be monitored for erosion and blockage. Gaps in topsoil and spoil piles will be left where surface drainage crosses the ROW. The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p>	<p>Pembina commits to maintain contouring through all low areas. Pembina will ensure that there is enough coverage through ditch to maintain flow and to enable Mr. Sheehan to maintain the ditch itself (run farm equipment within drainage to keep it mowed and keep contour).</p>
				<p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement. Fencing will be site specific, but will be similar or better than existing fencing. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles. Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
<p>Carlor Ranches Inc. (Lorne Shulhan)</p>	<p>NW 16-56-5-W5 NW 13-56-6-W5</p>	<p>The Shulhan's have the Alliance Pipeline on their lands. The Pipeline sunk 2 years after installation and there was some repair work done. It sunk again and 4 years later there was some more repair work done.</p>	<p>Proper soil handling procedures are a key mitigation measure for the Project. By following the proper topsoil stripping procedures outlined in the Conservation & Reclamation Application and EPP, Pembina will ensure soil layers along the ROW for the Project are NOT mixed. A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored. Inspection will occur over the life of the pipeline.</p>	<p>Pembina commits to work collectively with Alliance to alleviate slumpage issues on the NW 13-56-06 W5M.</p>
		<p>There currently is a sink hole in one area that again needs to be repaired.</p>	<p>Pembina will repair the sink hole if it is located on the ROW.</p>	<p>Pembina commits to work collectively with Alliance to alleviate sink hole issues on the NW 13-56-06 W5M.</p>
		<p>The Shulhan's practice no till farming. Weeds are a big issue.</p>	<p>Pembina's EPP includes a Weed Management Plan (Section 15.3) Effective weed management will manage weed infestations along the ROW to a level equivalent to those observed in adjacent lands with similar land use and management A pre-construction weed survey was conducted in the White Area in August 2015, to identify baseline weed presence, location and abundance along the ROW.</p>	<p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p>

Name	Location	Concern	Info/Response	Commitments
		The Shulhan's have had a temperature problem with Alliance Pipeline so now they have to farm the ROW separately from the other crops.	If operation of the proposed pipelines were to cause adverse impacts to crops growing on the ROW, then Pembina would identify and apply the appropriate measures to mitigate the impacts. Pembina will not conduct temperature monitoring.	
		They currently use tile drainage which means that pipes are installed 18" to 3' below the surface.	Pembina is prepared to install the proposed pipelines under currently existing tile drainage installations on the ROW.	
		They require depth of cover of 9' – 10' which is about 2.5 meters.		
		The Pasture Quarter The Shulhan's require a permanent fence to fence the Right-of-Way with gates.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	Pembina commits to fence both sides of ROW and use plugs so cattle have access to alleyway. Pembina commits to installing a 4 wire fence with 6 inch by 7 foot posts and 10 inch by 8 foot posts on corners with single brace on NW 13-56-06 W5M. Pembina commits to providing a 30 foot wire gate with gate closer hardware and "S" hooks. All fencing will be reviewed with Landowner prior to any construction to confirm the site specific needs, but will be similar or better to existing fencing.
		They need access at both ends of the ROW.	Pembina will ensure continuous access during construction.	Pembina commits to installing gates and fencing, and access at both ends of the ROW in consultation with the Landowner.
		There is a small corridor between the two pasture Land parcels as a result of a land sale/expropriation for the widening of Highway 43. The ROW construction will block this small corridor.	Pembina will ensure continuous access during construction.	Pembina commits to build temporary access off secondary road to the North West of existing approach.
		The Shulhan's require at least 5 years to allow the Right-of-Way to regenerate.	Pembina is required to pay compensation for crop loss. Crop loss will be assessed at the end of the fourth growing season post-construction.	
		The Shulhan's have experienced some serious sloughing in the creek area after Alliance's construction and damage to the creek from construction is still visible.	Pembina will assess the highway and creek crossing for HDD feasibility assessment.	
		Alliance dug out the creek bed, put in the Pipeline and put the creek bed back however their reclamation job was poor.	Pembina will assess the highway and creek crossing for HDD feasibility assessment. A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored. Inspection will occur over the life of the pipeline.	
		The Shulhans request that Pembina bore under the creek. There is a large elevation change. Pembina's engineers need to meet with the Shulhans on site to view the water crossing and discuss this matter.	Pembina will assess the highway and creek crossing for HDD feasibility assessment.	Pembina commits to bore underneath creek on NW 13-56-06 W5M and maintain depth of approximately 15-20 metres under the creek. Extra temporary workspace will be required on each side of bore. Pembina commits to bore underneath creek on NW 16-56-05 W5M and will maintain depth of approximately 3 metres under creek.
		There is also bank of trees that could be preserved if the pipeline is bored under the creek. Additionally, there is also a highway crossing in this same area so it might make sense to bore under the Highway and the creek and trees together.	Pembina will assess the highway and creek crossing for feasibility assessment of two separate HDDs. A single HDD is not feasible to cross the highway and the creek.	Pembina commits to boring trees & Ravine on NW 13-56-06 W5M, subject to geotechnical investigation to confirm constructability.
		The creek bed has been fenced for 5 – 6 years and is still not reclaimed.	Pembina will assess the highway and creek crossing for HDD feasibility assessment. A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored. Inspection will occur over the life of the pipeline.	
		During construction, if there isn't access for the cattle to cross the Shulhan's will have to bring in hay to feed the cattle.	Pembina will ensure continuous access across the ROW during construction.	Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Shawn Smith	NW 26-57-9-W5	<p>Routing Issues, IOP not correct Routing (should parallel Alliance), Construction Concerns</p>	<p>The IOP has been corrected. The route abuts the Alliance Pipeline ROW.</p>	<p>Pembina commits to a 4 wire fencing with 25-30 foot wire gates and gate closer hardware with “S” hooks. All fencing will be reviewed with landowner prior to any construction to confirm the site-specific needs but will be similar or better than existing fencing.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW.</p> <p>Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina commits to bore under Range Road 92 and maintain depth of 2 metres for 100 metres from road allowance (Head Lands) in the NW 26-57-09 W5M tapering up to a depth of 1.2 metres.</p>
R. Verne & Donna Stenberg (R. Verne Stenberg Trucking Ltd.)	NW 19-56-2-W5 SW 19-56-2-W5 SE 19-56-2-W5	<p>The Stenberg’s paced out the location of the Right-of-Way and its proximity to the Alliance pipeline and note that there is a significant gap between the Alliance and the proposed Pembina pipeline.</p> <p>The Stenberg’s have pasture and hay fields in the north and the cattle need to access the both the SE and SW 19-56-2- W5.</p> <p>The pipeline will block their ability to move through those ¼ s; therefore, during construction the Stenberg’s will need a means to cross the disturbed area in order to be able to pasture the cattle and also to be able to move their equipment through to the home and yard sites.</p> <p>The Stenberg’s believe that it will be necessary to fence off the Right-of-Way during construction and leave it fenced until it has managed regrowth.</p>	<p>It is necessary to locate the ROW within NW 19. A ROW that abuts the Alliance Pipeline ROW would straddle the quarter line – which is unacceptable.</p> <p>Pembina will ensure continuous access across the ROW during construction.</p> <p>Pembina will ensure continuous access across the ROW during construction.</p> <p>Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will not use the Grassroots-specified fencing as all landowners and properties are unique and have different requirements. Pembina has standards and specifications for fencing, and will determine site specific fencing needs in consult with landowners. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	<p>Pembina commits to working with the Stenberg’s to determine feasibility of micro-reroutes.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina commits to consulting with the Stenbergs prior to any construction to confirm the site-specific needs (maintain water access for cattle). Pembina commits to no interruptions in electric fencing.</p>

Name	Location	Concern	Info/Response	Commitments
		<p>The Stenberg's would like to bring to Pembina's attention that there is an area near the Right-of-Way that contains bentonite that when dug up it will cause regrowth issues. The Stenberg's know by experience from the Alliance construction, Alliance is still trying to establish growth in some disturbed areas.</p>	<p>The objectives of environmental protection measures associated with clean-up and reclamation are to control erosion, restore soil capability and reclaim disturbed surfaces to pre-construction equivalency and regulatory compliance. Proper soil handling procedures are a key mitigation measure for the Project. By following the proper topsoil stripping procedures outlined in the Conservation & Reclamation Application and EPP, Pembina will ensure soil layers along the ROW for the Project are NOT mixed.</p> <p>A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored. Inspection will occur over the life of the pipeline.</p> <p>Pembina will have dedicated staff to work directly with the landowners to provide communication between landowners and subject matter experts (e.g. EI, Soil Specialist, Aquatics Specialist), and ROW visits.</p>	<p>Pembina will commit to separating the bentonite, then replacing the subsoil, then replacing the topsoil.</p>
		<p>The Stenberg's rely on an electric fence in the location of the Right-of-Way therefore they would request a new power supply be routed to the NW 19- 56-2-W5.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	
		<p>The Stenberg's believe there must be a construction monitor.</p>	<p>Compliance and Accountability with construction plans, procedures and specifications lies with Pembina. Compliance will be ensured through the use of inspectors that will take a pro-active approach. Environmental protection is a responsibility of everyone working for Pembina on site. The AER has regulatory authority to view and inspect construction activities and compliance for the life of the pipeline.</p>	
				<p>Fencing will be site specific, but will be similar or better than existing fencing. (No fencing on quarter).</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective organic farm weed management to manage infestations along ROW to a level equivalent to those observed in adjacent lands with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
<p>Wayne & Fiona Taylor</p>	<p>NW 18-58-9-W5 NE 18-58-9-W5 SE 18-58-9-W5</p>	<p>Vegetation needs to be re-established.</p>	<p>A post construction reclamation assessment will be conducted, which will include: visual aerial inspection of ROW; inspection of areas with surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are restored. Inspection will occur over the life of the pipeline.</p>	<p>Pembina commits to working with Mr. Taylor to ensure the re-establishment of vegetation.</p>

Name	Location	Concern	Info/Response	Commitments
		Drainage is sensitive and needs to be precisely preserved.	<p>Before construction, Pembina will meet with Mr. and Mrs. Taylor to discuss mitigation.</p> <p>During construction, drainages identified will be monitored for erosion and blockage.</p> <p>Reclamation following construction will be completed to ensure that any disturbed land is reclaimed to its equivalent land capability – this includes restoring graded areas and drainages along the ROW to pre-construction grades and conditions.</p> <p>The post-construction reclamation assessment will include aerial inspection of the ROW and water bodies to ensure natural drainage patterns are maintained. Where restoration of natural drainage has been identified as not brought back to preconstruction equivalency, Pembina will undertake remedial measures.</p>	Pembina commits to contouring the ROW to maintain drainage through all low areas.
		Fencing wires, where crossed through, must not be spliced, but the entire wire must be replaced.	<p>Pembina commits to providing fencing to the same or better quality than existing fencing.</p> <p>Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	Pembina commits to providing fencing that is similar or better than existing fencing. Pembina commits to providing 25-30 foot wire gates where necessary and gate closer hardware with “S” hooks. Any fencing that is removed must be put back. All fencing will be reviewed with landowner prior to any construction to confirm the sire-specific needs.
		There must be isolation stations along the line, two ESV on either side of water crossings.	Valve placement was determined by Pembina based on spill analysis and corresponds to placing a valve station approximately every 40 kilometers.	
		Two areas need to be HDD, the shelterbelt by the county road and the Little Paddle River crossing.	<p>Pembina intends to HDD the Little Paddle River pending geotechnical investigation for constructability.</p> <p>Following construction, all banks will be restored to pre-construction grade and profile. In general, wetlands will be allowed to revegetate naturally. The banks of watercourses will be stabilized as necessary for site-specific conditions, and may include seeding with a seed mix appropriate for the area, coconut matting and willow staking, or soil wraps and brush layering, etc. If farmed through, sites will be re-seeded as per landowner/occupant direction. All sediment control measures will be maintained until revegetation is complete.</p> <p>A post construction reclamation assessment will be conducted, and will include: visual aerial inspection of right-of-way; inspection of areas with extensive surface disturbance and that are prone to erosion (moderate and steep slopes, watercourse crossings and terrain instability); inspection of water bodies to ensure natural drainage patterns are not disrupted.</p> <p>The shelter belt along the East-West county road will be bored.</p>	<p>Pembina commits to boring the shelter belt on North side of NW 18-58-09 W5M with the road. Rig will be set up on North side of the road. Temporary access required from Alliance and Lac Ste Anne county.</p> <p>Pembina commits to HDD the Little Paddle River, subject to geotechnical investigation.</p>
		ROW width should be 10 meters, no more than 15 meters. Workspace must be sufficient to accommodate excess material for boring operation under Paddle River.	Pembina disagrees.	
		Temperature of the Pembina Pipeline needs to be continuously monitored by Pembina.	<p>If operation of the proposed pipelines were to cause adverse impacts to crops growing on the ROW, then Pembina would identify and apply the appropriate measures to mitigate the impacts.</p> <p>Pembina will not conduct temperature monitoring.</p>	
				Pembina commits to working with Mr. Taylor once he has provided more information on the gridding paddock plan for North Half 18-58-09 W5M.

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina commits to return soil profile and compaction to pre-construction condition on the North West 18-58-09 W5M.</p> <p>Pembina commits to move the exit point of the HDD up on knoll about 50 metres further from the Little Paddle River to avoid it exiting at a low point.</p> <p>Regarding the access crossing for the Little Paddle River on the NE 18-59-09 W5M, Pembina commits to walk equipment down the fence line. Matting to be put down on the temporary access (shoofly). Alleyway to be acquired as temporary access to provide access to both sides of the Little Paddle River.</p> <p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p>
Margaret Thoveson Sherri Thoveson	NW 20-56-3-W5 NE 20-56-3-W5	<p>The location of the Pembina pipeline is of great concern to the Thoveson's because it passes between the two homes, Peggy Thoveson's home and Sherry's new home built in 2008.</p> <p>Sherry has grave concerns about the way that Pembina had consulted with her Mother, Peggy. Both Peggy and Sherry are now on title. The transfer had already been signed before Pembina had approached Peggy however the transfer occurred sometime later (after Pembina registered the ROW signed by only Peggy). Pembina's agent was advised of the pending transfer of the Lands into joint ownership.</p> <p>Sherry is also concerned because her Mother, Peggy, was on medication and also dealing with a son with a serious illness during the time that Pembina's land agent contacted her. Since then her son has passed away.</p> <p>Peggy states the reason she signed the paperwork was essentially to have the matter dealt with because she felt as though she did not want to deal with Pembina's agent any longer.</p> <p>However, Sherry living on the Land and farming the land, had no idea that there was a pipeline planned, had not been consulted, had no opportunity to speak with Pembina before her mother was pressured to sign papers that she did not even read.</p> <p>The Thovesons believe that there is no valid agreement.</p>	<p>The proposed route is the result of a careful, detailed and thorough planning and selection process. Before selecting the current route, Pembina explored several other routes for feasibility and suitability, and in each case, the alternative routes examined were not found to be optimal.</p> <p>See Exhibit 157.02.</p> <p>Pembina disagrees.</p>	<p>Pembina commits to work with the Thoveson's to provide re-route options subject to execution of a ROW Agreement amendment.</p>

Name	Location	Concern	Info/Response	Commitments
		<p>The Thovesons are very concerned about the Creek and the Ravine on the NW 20-56-3-W5 and they request that Pembina bore under the Creek and the Ravine in order to protect the trees in that area. It is a shelter for cattle in the spring.</p>	<p>Pembina will visit the ROW with the Thovesons to assess the appropriate mitigation measures.</p>	<p>On the NW 20-056-03 W5M, Pembina will commit to drill underneath of the ravine, exiting on the east side of the ravine in the pasture lands to maintain the tree/bog area. This procedure would require additional workspace on the east side of the ravine with boardwalk mats. Pembina will also commit to installing a portable bridge across ravine to accommodate the construction equipment. Pembina will continue ROW around north side of the treed area until reaching the Alliance ROW.</p>
		<p>The Thovesons also point out that they are on a dead end road and there is no way for them to leave the area except for going past the pipeline, Range Road 33 & 34 dead end.</p>	<p>Pembina will ensure continuous access during construction.</p>	<p>Pembina commits to having ERP personnel from Pembina contact the Thoveson's to discuss concerns.</p>
		<p>The Thovesons have a complicated fencing arrangement in the pasture and they are going to have to decide where they will calf and where they are going to pasture the animals.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	<p>4 wire fencing with 25 – 30 foot wire gates and gate closer hardware with “S” hooks. All fencing will be reviewed with landowner prior to any construction to confirm the site-specific needs, but will be similar or better than existing fencing.</p>
		<p>The dugout will be blocked off by the pipeline so the cattle will have to move through the ROW.</p>	<p>Pembina will maintain access to the dugout during construction for livestock watering.</p>	<p>Pembina will provide 14 days of notice prior to accessing ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p>
				<p>Re-seed with certified weed free seed on N/2 of 20-056-03 W5M. Contact Thoveson's prior to determine mixture and use of certified weed free seed.</p> <p>Pembina will use plugs to maintain access to water sources for cattle on N/2 of 20-056-03 W5M.</p> <p>Pembina will pick rocks mechanically twice – Subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p> <p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016.</p> <p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management.</p> <p>Pembina will commit to adding a berm to address the water containment in the duck pond area within the NE 20-56-03 W5M on the south side of the Alliance ROW, after obtaining a crossing agreement from Alliance. The berm would be up to a height specified by the landowners and would be armored with rocks from the landowner's property to prevent washout.</p>
<p>Kim Trithart</p>	<p>SE 20-56-2-W5</p>	<p>She is concerned that the construction of Pembina's pipeline could interrupt her cattle operation.</p>	<p>Prior to commencing construction, Pembina will consult Ms. Trithart regarding options for safe handling and management of livestock, including maintaining necessary access and fencing. Where requested, breaks will be left in strung pipe, trench, topsoil and spoil piles to allow farming equipment and livestock to cross the ROW. Ms. Trithart will be notified prior to the commencement of construction, including notification as to the construction schedule, to reduce any potential interference between construction activities and her livestock operations.</p>	<p>Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement.</p>

Name	Location	Concern	Info/Response	Commitments
		She is concerned about the trees that would be cleared out and the fencing that would need to be cut.	Pembina will make efforts, to the extent possible, to save ornamental trees, wind breaks, and shelterbelts at road bores in accordance with individual landowner requests and agreements. Pembina does not bore under stands of trees not considered ornamental, wind breaks or shelter belts.	In the event that the existing fence not being on the property line on these lands, Pembina will commit to re-establishing the property line with a fence to equal or better quality than the existing one.
			Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	Pembina commits to providing a new fence along the North boundary of the property line after clearing and establishment of property line.
		There appears to be a gap on the north end of her property between the proposed Pembina pipeline and the Alliance pipeline on the other side of the fence line.	The current alignment abuts the Alliance Pipeline ROW.	
		She has a large cattle herd which varies in size and has, within the past year, seen as many as 400 head of cattle.	Prior to commencing construction, Pembina will consult Ms. Trithart regarding options for safe handling and management of livestock, including maintaining necessary access and fencing. Where requested, breaks will be left in strung pipe, trench, topsoil and spoil piles to allow farming equipment and livestock to cross the ROW. Ms. Trithart will be notified prior to the commencement of construction, including notification as to the construction schedule, to reduce any potential interference between construction activities and her livestock operations.	
		Her cross fences are very important and construction could impact her operation.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	
		Mrs. Trithart requests that Pembina fences off the entire Right-of-Way during construction and during remediation, and ensure the cross fences are not impacted. In this manner she will be able to continue with her cattle operation with the least amount of disruption.	Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.	
		She is concerned that Pembina will attempt to bury the exposed rocks as Alliance did. Alliance left the rocks in the Right-of-Way with only a small skiff of dirt on top which causes many headaches for landowners.	Pembina will do the following when rocks/stones are brought to the surface during construction: o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by Ms. Trithart. Rock burial pits will not be used.	
		She requests that the rocks that are uncovered be brought to her rock pile which is in one area of her ¼ section.	• Pembina will do the following when rocks/stones are brought to the surface during construction: o Prior to topsoil replacement on agricultural lands, rocks will be picked from the surface of the subsoil; o Pick rocks and debris equivalent to the surrounding topsoil; and o Ensure stone and rock content of disturbed soils on agricultural land is equivalent to that of undisturbed soils. o Dispose of extra stones and rocks at above ground locations approved by Ms. Trithart.	

Name	Location	Concern	Info/Response	Commitments
		<p>She has electric fences going through the ¼ section for her cattle. These fences will need to be maintained.</p>	<p>Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	<p>Pembina will commit to maintaining electric fencing.</p>
		<p>She questions how she will access her fence line after this pipeline is in. She would like some explanation from Pembina on whether or not she is allowed to run her fence within the ROW and where she would be unable to use construction equipment – she would like to understand how Pembina proposes to clear the fence line and keep it clear of both regrowth and weeds.</p>	<p>Pembina will install a replacement fence. Depending on the weed management method employed by Ms. Trithart, there should be no restrictions on clearing the fence of weeds.</p>	<p>Pembina commits to re-building a fence along the property line that abuts Alliance and confirms no gap will be left.</p>
				<p>Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management. Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles. Pembina will pick rocks mechanically twice – Subsoil gets picked, topsoil gets put back, and then topsoil gets picked. Fencing will be site specific, but will be similar or better than existing fencing Contact Landowners prior to re-seeding to determine whether Pembina or the Landowner will re-seed, mixture and use of certified weed free seed. Pembina commits to survey North quarter line to determine location of fence. Pembina commits to abut edge of ROW to north quarter line.</p>
<p>Clint & Jill Weir</p>	<p>NE 19-56-2-W5</p>	<p>The Weirs are concerned about the creek crossing including the approach to the creek. They also want to understand how Pembina will address the impact to their dugout and to their fences.</p>	<p>Pembina will visit the ROW with the Weirs to assess the appropriate mitigation measures. If there is a dugout located on the ROW, then Pembina will replace it. Pembina commits to providing fencing to the same or better quality than existing fencing. Pembina will install temporary fencing and gates during construction as required for safe agricultural operations.</p>	
		<p>They are concerned about the impact to market value and marketability of their acreage so close to three pipelines.</p>	<p>The presence of pipelines on area lands will not change the current land use of those lands or the current zoning of those lands, and it also does not restrict future subdivision of those lands. Any restrictions on land development as a result of the Project will be limited to the area of the permanent Project ROW.</p>	
<p>Wayne Lutz, Michael Lutz, Danny Lutz</p>	<p>NE 27-56-27-W4 NW 17-56-26-W4</p>	<p>On the NW 17-56-26-4, organic farming is occurring and Mr. Lutz would like no spraying or introduction of chemicals that would interfere with organic crops.</p>	<p>Pembina's EPP includes a Weed Management Plan (Section 15.3) Pembina will meet with the Lutz's to discuss weed mitigation measures.</p>	<p>Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management. Pembina commits to contouring the ROW to maintain drainage through all low areas. Pembina will provide 14 days notice prior to accessing the ROW. Pembina will provide 30 days of notice for cattle management, fencing requirements, crossings, and H2O access and cattle movement. Fencing will be site specific, but will be similar or better than existing fencing. Pembina will provide notice of the proposed construction schedule in addition to a project newsletter to be issued Q1/Q2 2016. Pembina will conduct effective weed management to manage infestations along ROW to a level equivalent to those observed on lands adjacent to the ROW with similar land use and management. Pembina commits to pick rocks mechanically twice – subsoil gets picked, topsoil gets put back, and then topsoil gets picked.</p>

Name	Location	Concern	Info/Response	Commitments
				<p>Pembina will conduct a walkthrough with the Landowner to identify site specific issues in Q2 2016 to identify the concerns related to de watering, drainage, and rock piles.</p> <p>Pembina commits to contact the landowners prior to re-seeding to determine who will re-seed, what mixture is to be used, and further commits to using certified weed free seed.</p> <p>Pembina commits to contouring the ROW to maintain drainage through all low areas. Isolation open cut at tributary will meet EPP requirements for construction and reclamation on the SW 16-056-26 W4M.</p> <p>Pembina commits to acquire additional temporary workspace on North side of the ROW on the SW 16-056-26 W4M and require less temporary workspace on the South side of the ROW to avoid disturbing wet area.</p>