BRITISH COLUMBIA

Oil and Gas
Appeal Tribunal

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DECISION NOS. 2017-OGA-005(b)–008(b); 2017-OGA-009(a)–022(a); 2017-OGA-028(b)–032(b); and 2017-OGA-034(a)–035(a) [Group File: 2017-OGA-G01]

In the matter of twenty-five appeals under section 72 of the *Oil and Gas Activities Act*, S.B.C. 2008, c. 36.

BETWEEN:	Penalty Ranch Ltd.	**APPELLANT**
AND:	Oil and Gas Commission	**RESPONDENT**
AND:	Crew Energy Inc.	**THIRD PARTY**

BEFORE: A Panel of the Oil and Gas Appeal Tribunal:
Brenda Edwards, Panel Chair

DATES: Conducted by way of written submissions concluding on March 6, 2019

APPEARING:	For the Appellant:	Johann (Hans) Kirschbaum Anja Hutgens
	For the Respondent:	Dorothy Foster, Counsel
	For the Third Party:	Rick Williams, Counsel Tim Pritchard, Counsel

APPEALS

[1] This decision relates to twenty-five appeals filed by Penalty Ranch Ltd. ("Penalty Ranch") against permits issued by the Oil and Gas Commission ("OGC") to Crew Energy Inc. ("Crew Energy") under the *Oil and Gas Activities Act,* S.B.C. 2008, c. 36 ("*OGAA*"). The permits authorize three natural gas well pads and twenty-two wells on an area of Crown-owned land approximately 20 kilometres southwest of Fort St. John, British Columbia ("BC"). Each well pad accommodates multiple natural gas wells.

[2] The appeals are against the following permits:

- Appeal Nos. 2017-OGA-005 to 008 are against a decision dated May 1, 2017 authorizing four permits (WA 30784, 30785, 30786, 30787) for a well pad ("Well Pad 12-09") and three natural gas wells at 12-09-082-20 (the "**Initial 12-09 Permits**").
- Appeal Nos. 2017-OGA-009 to 015 are against a decision dated May 10, 2017, authorizing seven permits (WA 30795, WA 30796, WA 30797, WA

30798, WA 30799, WA 30800, WA 30801) for a well pad ("Well Pad 09-05") and six natural gas wells at 09-05-082-20 (the "**09-05 Permits**");

- Appeal Nos 2017-OGA-016 to 022 are against a decision dated May 10, 2017, authorizing seven permits (WA 30835, WA 30836, WA 30837, WA 30838, WA 30839, WA 30840, WA 30841) for a well pad ("Well Pad 08-05") and six natural gas wells at 08-05-082-20 (the "**08-05 Permits**");
- Appeal Nos. 2017-OGA-028 to 032 are against a decision dated October 24, 2017, authorizing five permits (WA 34222, WA, 34223, WA 34224, WA 34225, WA 34226) for subsequent wells on Well Pad 12-09 (the "**Second Set of 12-09 Permits**"); and
- Appeal Nos. 2017-OGA-034 and 035 are against a decision dated December 13, 2017, authorizing two permits (WA 35271, WA 35272) for subsequent wells on Well Pad 12-09 (the "**Third Set of 12-09 Permits**"), and amendments to those permits dated December 21, 2017 (the "**Amendments**").

(Collectively, the "Permits")

[3] The Permits were issued by Dan Hanson, a delegated decision-maker with the OGC. Mr. Hanson wrote a Decision Rationale for the five separate decisions (bulleted above) authorizing the Permits.

[4] In summary, Penalty Ranch's appeals consist of the following: twenty-five appeals against five decisions authorizing 11 permits for Well Pad 12-09 (and the Amendments), seven permits for Well Pad 09-05, and seven permits for Well Pad 08-05. The appeals were commenced under section 72(2) of the *OGAA* and were joined by the Chair of the Tribunal under Group File 2017-OGA-G01 and heard together, in writing, by order of the Chair (collectively, "these Appeals").

[5] The Tribunal has the authority to hear these Appeals under sections 19 and 72 of the *OGAA*. The Tribunal's powers on an appeal are set out in section 72(6) of the *OGAA* which provides that, on an appeal, the Tribunal may "confirm, vary, or rescind" the Permits or send them back to the OGC with directions.

[6] Penalty Ranch asks the Tribunal to rescind the Permits. Penalty Ranch is generally concerned that establishing these wells could have an adverse impact on the flow, and could contaminate, the geological feature known as Worth Marsh. Worth Marsh is more or less adjacent to the northwest corner of Penalty Ranch's cattle ranch, and groundwater from the area feeds the springs on which Penalty Ranch depends for potable water (for consumption by humans and livestock). In addition, Penalty Ranch is concerned that hydraulic fracturing (a.k.a. "fracking") in the wells could increase the occurrence of induced seismicity (earthquakes) placing Penalty Ranch at risk. Finally, Penalty Ranch is concerned that Crew Energy is using the 12-09 permits to circumvent a verbal agreement between Crew Energy and Johann Kirschbaum, that Crew Energy would not drill under Worth Marsh.

[7] The OGC and Crew Energy ask the Tribunal to confirm the Permits, and dismiss the appeals.

BACKGROUND

[8] The Panel has provided a brief background to the appeals. A more detailed background was set out in the Tribunal's decision on Penalty Ranch's application for a stay of nine of the permits related to Well Pad 12-09*:* see Penalty *Ranch v. Oil and Gas Commission* (Decision Nos. 2017-OGA-005(a)-008(a) & 2017-OGA-028(a)-032(a) [Group File: 2017-OGA-G01], August 30, 2018 (the "Stay Decision").

[9] Penalty Ranch is a company duly incorporated and in apparent good standing in BC. Johann Kirschbaum is Penalty Ranch's president and secretary.

[10] The Permits authorize activities on Crown land that are subject to Agricultural Lease No. 344644 between Penalty Ranch and the Province of BC (the "Agricultural Lease"). As the leaseholder, Penalty Ranch is a "land owner" as that term is defined in the *OGAA.* Penalty Ranch also holds fee simple title to a parcel of land adjacent to the southeastern portion of the Agricultural Lease (the "Home Ranch").

[11] Penalty Ranch operates a cattle-ranching operation on the Agricultural Lease and the Home Ranch. Mr. Kirschbaum and Anja Hutgens reside in a house located on the Home Ranch.

[12] The OGC is a Crown Corporation with a mandate to assist in the regulation of exploration, drilling extraction, processing and transporting of natural gas in BC. Its role, as it pertains to these Appeals, is to receive applications and determine whether to issue permits for natural gas wells and related structures under the *OGAA.* The OGC has the authority to issue permits, to determine what conditions are included in the permits, and to monitor compliance with the permitted activities.

[13] Crew Energy is an Alberta company that is registered to do business in BC. Its head office is in Calgary.

[14] All of the Permits were issued by the OGC to Crew Energy under the regulatory scheme mandated by the *OGAA*. Collectively, the Permits authorize Crew Energy to drill for, and produce, "sweet natural gas" from subsurface reservoirs over which it holds mineral tenure rights from the Crown (in this case, the Province of BC). The Permits include terms and conditions, some of which will be discussed later in the Panel's decision.

[15] The Amendments add three conditions to the Third Set of 12-09 Permits aimed at addressing Penalty Ranch's concerns regarding induced seismicity and the potential adverse impact to water (the "Supplemental Conditions").

[16] These Appeals have been conducted in the manner of a hearing *de novo* (new hearing). The Parties provided the Panel with affidavit evidence, including evidence that was not before the OGC, supplemented by thorough written submissions.

[17] It should be noted that the Tribunal has heard and decided previous appeals by Penalty Ranch against permits issued to Crew Energy. Specifically, in 2016 Penalty Ranch appealed five permits issued to Crew Energy for natural gas wells at two other well pads, namely 15-09 and 15-10, located on, or in the general vicinity of, the Agricultural Lease (the "Prior Appeals"). The Prior Appeals were heard

together over five days in 2017. The Tribunal dismissed those appeals in *Penalty Ranch v. Oil and Gas Commission*, (Decision Nos. 2016-OGA-001(b), 002(b), 003(b), 006(b) and 2017-OGA-004(a), June 22, 2018).

RELEVANT LEGISLATION

[18] The scope of these Appeals is limited by section 72(2) of the *OGAA,* i.e., that a land owner, as defined in the Act, may appeal the OGC's decision to issue a permit on the basis that the decision was made "without having due regard" to a prior submission made to the OGC by the land owner. The relevant sections of the *OGAA* are set out below.

Definitions

1(2) In this Act:

...

"land owner" means

...

(b) a person to whom a disposition of Crown land has been issued under the *Land Act*,

...

"oil and gas activity" means

...

(b) the exploration for and development of petroleum, natural gas or both,

(c) the production, gathering, processing, storage or disposal of petroleum, natural gas or both,

...

(g) the activities prescribed by regulation;

...

"operating area" means an area, identified in a permit, within which a permit holder is permitted to carry out an oil and gas activity;

...

Consultation and notification

22(1) In subsection (3), "prescribed applicant" means a person who intends to submit an application under section 24 and who is in a prescribed class of persons.

(2) Before submitting an application under section 24, a person must notify the land owner of the land on which the person intends to carry out an oil and gas activity of the person's intention to submit the application, and the

notice must advise the land owner that he or she may make a submission to the commission under subsection (5) of this section with respect to the application or proposed application.

(3) Subject to subsection (4), before submitting an application under section 24, a prescribed applicant must carry out the prescribed consultations or provide the prescribed notices, or both, as applicable, with respect to the oil and gas activities and related activities, if any, that will be the subject of the prescribed applicant's application.

...

(5) A person, other than the applicant, may make a written submission to the commission with respect to an application or a proposed application under section 24.

(6) If a person makes a submission under subsection (5), the commission must send a copy of the submission to the applicant or to the person intending to apply for a permit, as the case may be.

[Underlining added]

...

Permits and authorizations issued by commission

25(1) Subject to subsection (1.1), on application by a person under section 24 and after considering

(a) written submissions made under section 22 (5), if any, and

(b) the government's environmental objectives, if any have been prescribed for the purposes of this section,

the commission may issue a permit to the person if the person meets the requirements prescribed for the purposes of this section.

...

(2) In issuing a permit under subsection (1), the commission

(a) must specify the oil and gas activities the person is permitted to carry out, and

(b) may impose any conditions on the permit that the commission considers necessary.

(3) A permit and any authorizations granted to the applicant for the permit may be issued as a single document.

(4) If the commission issues a permit under subsection (1), the commission must provide notice, in accordance with subsection (5), to the land owner of the land on which an operating area is located.

(5) A notice under subsection (4) must

(a) advise the land owner of the issuance of the permit and of the location of the proposed site of an oil and gas activity on the land owner's land, and

(b) state that the land owner may appeal under section 72 the decision to issue the permit, and include an address to which an appeal may be sent.

(6) A permit holder must not begin an oil and gas activity on a land owner's land before the expiry of 15 days from the day the permit was issued, unless the land owner consents in writing to the activity beginning before the expiry of that period.

[Underlining added]

Part 6 – Reviews and Appeals

Definitions and application

69(1) In this Part:

...

"eligible person" means

(a) an applicant for a permit,

(b) a permit holder or former permit holder,

(c) a land owner of land on which an operating area is located,

(d) a person to whom an order under section 49 (1) has been issued, and

(e) a person with respect to whom the commission has made a finding of a contravention under section 62;

...

Appeal

72(1) ...

(2) A land owner of land on which an operating area is located may appeal a determination under this section only on the basis that the determination was made without due regard to

(a) a submission previously made by the land owner under section 22 (5) or 31 (2) of this Act, or

(b) a written report submitted under section 24 (1)(c) or 31 (6).

[Underlining added]

[19] To clarify, section 24 of the *OGAA* sets out the application process for permits; section 22 sets out the process for notifying land owners of an application and for land owners to make a written submission to the OGC regarding the

application; the OGC is the "commission" referenced; Crew Energy is the "prescribed applicant" as that term relates to these Appeals; the areas where Well Pads 12-09, 08-05 and 09-05 are located is the "operating area"; and the Permits were issued, and Penalty Ranch was provided with notice of the Permits, under section 25.

ISSUES

[20] There is no issue in these Appeals as to whether the notification and consultation process was followed. Penalty Ranch was provided with notice, and made written submissions to the OGC on the permit applications. Further, there is no dispute that Penalty Ranch received timely notice of Mr. Hanson's decision to issue each of the Permits. The sole issue in these Appeals is:

> Whether the OGC gave due regard to submissions made by Penalty Ranch under section 22(5) of the *OGAA* before issuing the Permits (or any of them).

DISCUSSION AND ANALYSIS

Whether the OGC gave due regard to submissions made under section 22(5) of the *OGAA* by Penalty Ranch before issuing the Permits (or any of them).

[21] Penalty Ranch maintains that the OGC made the determinations to issue the Permits without adequately considering its written submissions. The OGC and Crew Energy assert the contrary. The submissions that were made by Penalty Ranch to the OGC pursuant to section 22(5) were reiterated and expanded on in the written submissions and affidavit evidence in the written hearing of these Appeals. While not identical, the written submissions, and the details provided in them, were consistent over time. For simplicity, these Appeals have been heard and considered on the premise that Penalty Ranch has fundamentally the same concerns in respect of each of the Permits, unless stated otherwise.

The Appellant's Case

[22] Mr. Kirschbaum made submissions on behalf of Penalty Ranch and provided a brief affidavit and documentary evidence in support of his submissions. His evidence was more detailed than the brief written submissions made to the OGC under section 22(5) of the *OGAA.*

[23] Mr. Kirschbaum describes having lived in the area, raised a family and (as President) operated Penalty Ranch for 40 years. The Kirschbaum family and Penalty Ranch's livestock are dependent on a natural spring (fed by the Worth Marsh) for their drinking water. He submits that the permitted activities pose an "unacceptable risk to the Kirschbaum's drinking water, their health and their livelihood".

[24] Mr. Kirschbaum submits that Penalty Ranch has a leasehold interest in the area of the Agricultural Lease and a freehold interest in the adjoining Home Ranch, on which the Kirschbaum family home is situated. As he did in the Prior Appeals, Mr. Kirschbaum submits that the Panel ought to consider the impact of the permitted activities on Penalty Ranch's interests in both the Agricultural Lease area (the lands where the permitted activities will occur) *and* the Home Ranch, as the value of the Home Ranch is enhanced by the Agricultural Lease. He submits that the *OGAA* ought not to be interpreted in a manner that "fractures the economic viability of an operating ranch".

[25] The Panel notes that, in the Prior Appeals (but not in these Appeals), Mr. Kirschbaum acknowledged that Penalty Ranch receives a financial benefit from the oil and gas activities in the area.

[26] As in the Prior Appeals, Mr. Kirschbaum describes the observable and potential impacts that exploration for, and extraction of, natural gas is having on the local environment, and stresses the potential harm to groundwater in the vicinity of Worth Marsh and to local aquifers. He is concerned about leaking wells, gas and fluid migration and induced seismicity; all of which he fears could result in contamination of the groundwater on which Penalty Ranch relies. He is also concerned for his and his family's safety in the event of an induced seismic event.

[27] Penalty Ranch's evidence and submissions on these specific concerns are set out under the relevant headings below.

Groundwater Contamination

[28] It is apparent that Mr. Kirschbaum's principal fear is that the riparian area associated with Worth Marsh, and the aquifer(s) that supply their potable water, could be adversely affected by the permitted activities. He references Crew Energy's previously permitted wells at well pad 15-09 and 15-10 in the area of Worth Marsh. He also references a 2017 study regarding methane emissions in northeastern BC conducted by the Department of Earth Sciences, St. Francis Xavier University and the Suzuki Foundation, that purportedly found that 47% of active wells are leaking. The report was not provided to the Panel.

[29] Mr. Kirschbaum asserts that the OGC has been aware of the issue of gas migration in the "North zone", at least since 2013. He also notes that the OGC is currently involved in studying the matter further (e.g., the "Gas Migration Preliminary Investigation Report"), but has not given adequate consideration to the issue when issuing the Permits under appeal.

Impacts from induced seismicity, earthquakes and fracking

[30] Mr. Kirschbaum also expresses concern for the safety of his family and his livestock in the event of induced seismicity leading to an earthquake in the area. He submits that the connection between induced seismicity and earthquakes is known to the OGC and references the OGC's December 2014 report, "Investigation of Observed Seismicity in the Montney Trend", which found a higher occurrence of induced seismicity in certain areas due to the presence of pre-existing stressed

faults that are susceptible to re-activation. He submits that Penalty Ranch is in such an area (Montney is the geological formation targeted by the wells at issue).

[31] In support of his submission, Mr. Kirschbaum reports experiencing "numerous earthquakes induced by gas industry related activities" in the area. He provided the Panel with maps of the area on which he has overlaid symbols depicting the approximate location of his house, Worth Marsh, a spring, and the latitude and longitude of recorded earthquakes in the area of the permitted activities. He reports feeling seismic events that were documented at as little as 1.16 local magnitude ("ML"), which he understands means that there is an "extreme amplification" in the area. He suspects that there is a fault line within a five-kilometer radius of his residence, and fears that Crew Energy plans to intentionally drill and carry out hydraulic fracturing toward the fault line.

[32] Mr. Kirschbaum alleges that Crew Energy triggered "a cluster of earthquakes in 2015" and "15 more earthquakes during completions on April 9 and June 28, 2017" while carrying out OGC-permitted oil and gas activities. He submits that, in 2015, the OGC identified public safety, property damage, wellbore integrity and aquifer contamination as genuine hazards from industry quakes, and acknowledged that areas of high risk for induced seismicity ought to be considered for exclusion from development.

[33] As in the Prior Appeals, Mr. Kirschbaum reiterates his suspicion that, in 2014, drilling activities in the vicinity of Penalty Ranch disrupted the groundwater flow supplying a spring which they historically used to water their livestock.

[34] Mr. Kirschbaum submits that longer horizontal fracked areas place aquifers at increased risk of "pollution" from toxic fracking fluids or methane gas that migrates via fault lines or from leaking wells. He references a 2016 report on water quality in the Peace River Regional District prepared by GW Solutions Inc., which noted an increasing presence of barium concentrations in groundwater that "could possibly be a result of the intense drilling activity in the region, through mobilization of deep groundwater containing higher concentration of Barium or the release of Barium into shallow aquifers during drilling via drilling fluids".[1]

[35] Mr. Kirschbaum submits that the current regulatory system, and the conditions in the Permits, do not adequately address the concerns raised by Penalty Ranch. He submits that the threshold set out in the legislation requiring the suspension of operations for induced seismic events of 4.0 ML is not appropriate. Further, while water sampling and ground motion monitors are beneficial, they will not prevent the "irreversible damage done by toxic frack fluids injected into the ground under extreme high pressures". He submits that, despite the current regulatory restrictions and the permitted requirement for ground motion monitors, seismic events of up to 4.5 ML were felt in the area on November 29, 2018. Mr. Kirschbaum believes that these events were triggered by hydraulic fracturing at

[1] "Peace River Regional District Water Quality Database and Analysis", prepared by GW Solutions Inc., September 2016, at page 3.

another company's well pad.[2] Mr. Kirschbaum quotes Ron Stefik, OGC's Reservoir Engineering Supervisor, as saying that "(i)nduced seismicity has the potential of surface expression and affect wellbore integrity".[3] Mr. Kirschbaum further notes that the OGC's statement that "induced seismicity was likely to occur, but events larger than magnitude 3 were not expected" is "disturbing", and is one of the reasons why he does not trust the OGC's pre-assessments and the conditions placed on the Permits to safeguard Penalty Ranch's drinking water.

[36] Mr. Kirschbaum submits that while hydraulic fracturing is unpredictable, man-made earthquakes could be reduced if fracking were not permitted within a certain distance of known faults. He cites a study in support of prohibiting fracking within 895 meters of known geological faults.[4]

Past Incidents of Concern

[37] Mr. Kirschbaum expressed concern with Crew Energy's past practices citing:

- A January 23, 2017 well head failure at 05-24-82-20 that resulted "in an uncontrolled spill for 12 hours";
- A December 17, 2016 fire at well 04-34-81-20 that resulted in a "major liquid spill of 200 cubic meters", an explosion that shook the windows in Mr. Kirschbaum's house, and a black smoke plume that remained for "many hours";
- A November 25, 2016 loss of circulation while drilling well D15-10-82-20 resulting in a 1280 cubic metre loss of oil-based drilling fluid and the subsequent abandonment of five wells;
- A September 20, 2016 leak at well A9-17-82-20, just north of Worth Marsh, due to communication "with an offset frac"; and
- A summer 2014 inter wellbore communication between wells 04-24-82-20 and C14-7-82-19 involving 400,000 litres of fracking fluids.

Impacts on Agricultural Land

[38] Mr. Kirschbaum is also concerned that oil and gas development is having a negative impact on agricultural land in BC. He cites the exponential growth in the number of wells, the increase in permanent industrial infrastructure on agricultural lands, and the increasing number of well pads that are not being reclaimed and are put back into agricultural production due to prolonged periods of inactivity or abandonment of wells.

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[2] OGC's Industry Bulletin 2018-31, "November 29, 2018 Seismic Event Determination" referencing unexpected seismic events occurring approximately 20 kilometres south of Fort St. John.

[3] December 22, 2017 letter from Ron Stefik to David Holt, VP, Canadian Natural Resources Ltd. Penalty Ranch's Statement of Points at Tab "K".

[4] "Man-made earthquake risk reduced if fracking is 895m from faults", Durham University. Public Release, February 27, 2018.

Reliability and Sufficiency of Evidence Relied on by the OGC

[39] Mr. Kirschbaum expresses concern with the December 2015 Hydrogeologic Risk Assessment Report prepared for Crew Energy by Matrix Solutions Inc. ("Matrix"). He alleges that the report's author, Mr. William Wilmot, Senior Hydrogeologist at Matrix, became aware of "mistakes" in the report but has failed to "fix and review the risk assessment". He submits that Mr. Wilmot's assessment that the risk to the springs and Worth Marsh is "low to negligible" ought not to be given any weight by this Panel due to the uncorrected errors in the report.

[40] Mr. Kirschbaum submits that the hydrogeologist advising the OGC at the time of the Prior Appeals and regarding these Appeals, "knows today's regulations and best practices do not provide sufficient protection to fresh drinking water sources from the leaking oil and gas wells and migrating toxins".

[41] Mr. Kirschbaum believes that he has valid concerns about adverse impacts from drilling, the introduction of fracking fluids, and the fracking process generally. He states that there is overwhelming scientific research and opinions to validate his concerns, and provided a variety of articles in support. Mr. Kirschbaum submits that best practices and the existing regulatory scheme cannot prevent groundwater contamination and random, accidental, subsurface impacts. As in the Prior Appeals, Mr. Kirschbaum still believes that more should be done to protect the water sources, such as mapping the aquifers, charting the location of seismic events in the area, and undertaking more local studies.

Cumulative Impacts of Oil and Gas Activity on Agricultural Lease Lands

[42] Mr. Kirschbaum submits that the area of the Agricultural Lease is already subject to a gas plant, a water storage site, more than 10 pipelines, and at least 50 gas wells and 12 C-rings.[5] He submits that Crew Energy has the option to drill on more than 5,000 locations in the Montney Trend, and that no further wells ought to be permitted so as to "spare our water source and close surroundings from gas industry development".

Specific Concerns regarding Well Pads

Well Pad 12-09

[43] Mr. Kirschbaum submits that, in the spring of 2015, he entered into a verbal agreement with Harry Davis (a consultant on behalf of Crew Energy), whereby Penalty Ranch would not oppose drilling at what is now the 15-10 well pad and, in return, Crew Energy would not drill under Worth Marsh. Mr. Kirschbaum submits that Crew Energy is now attempting to circumvent that agreement by drilling horizontally from Well Pad 12-09, ending at well pad 15-10. Mr. Kirschbaum fears that fracking those wells may put pressure on the lost drill fluid from the November 25, 2016 incident (referred to under "Past Incidents of Concern), forcing it into the

[5] C-rings are above ground containers that store produced water from natural gas wells.

freshwater zone. Further, the 12-09 drilling paths are in close proximity to a 2.4 ML earthquake location recorded by National Resources Canada, an event that Mr. Kirschbaum believes was triggered by Crew Energy's drilling at well pad 15-09.

Well Pad 09-05

[44] Mr. Kirschbaum is concerned that drilling and fracking at this well site, in close proximity to the spring that provides his drinking water, could lead to contamination of the ground water. He is also concerned about harmful emissions from "flaring" and from the "frack-water holding tanks" (C-rings). Further, he believes that the bottom holes of the 09-05 wells will be too close to, if not directly in, a fault line. Finally, he suggests that Crew Energy should not be permitted to build a new road to access Well Pads 08-05 and 09-05 in close proximity to a Ducks Unlimited/Nature Trust wetland conservation project in the area, as there is an existing road that could be upgraded and extended, if necessary, and that does not cross the wetlands ("Worth Lake Road").

Well Pad 08-05

[45] Mr. Kirschbaum repeats his concerns regarding emissions and road access that he expressed with regard to well pad 09-05. He adds that the permitted road to Well Pad 08-05 will block a public road that he and his family have used for 40 years. Further, Mr. Kirschbaum submits that Crew Energy should be required to empty any sour gas pockets encountered in drilling at this well site to prevent harmful emissions from escaping and causing a risk to public health. Finally, Mr. Kirschbaum is concerned that some of the 08-05 wells will be drilled and fracked directly under the Kirschbaum home and will intersect with a known fault line, thus increasing the risk that groundwater - and the atmosphere - may be contaminated by gases and fluids that escape under seismic pressure.

The OGC's submissions

Standing to appeal

[46] The OGC submits that, while Penalty Ranch has standing in this appeal, Mr. Kirschbaum and Ms. Hutgens do not: the permitted activities only occur on the lands subject to the Agricultural Lease held by Penalty Ranch. In support, it relies upon the Stay Decision, in which the Tribunal confirmed that Mr. Kirschbaum and Ms. Hutgens do not have standing to appeal as the residents of nearby land owned in fee simple:

> 65. The Panel agrees with Crew's assertion that the only harm to be assessed in this case is harm to Penalty Ranch in its capacity as a land owner in respect of the Agricultural Lease over Crown land on which the permitted activities have been authorized. The *OGAA* does not provide a right of appeal to the owner or occupants of the neighbouring property. This means that the Kirschbaum family does

> not have standing, nor is the home ranch (regardless of who owns it) part of the Panel's consideration. ….

Consultation regarding the Initial 12-09 Permits, the 08-05 Permits and the 09-05 Permits

[47] Based upon the documents provided to it, the OGC states that Crew Energy commenced consultation with Penalty Ranch regarding the Initial 12-09 Permits, the 08-05 Permits and the 09-05 Permits by hand-delivering an invitation to consult on September 15, 2014.

[48] In an affidavit sworn on February 22, 2019, James O'Hanley, Vice President, Applications, explained the OGC's role in the consultation process. He stated that the OGC received a written submission from Penalty Ranch about the above-mentioned permits. On October 21, 2014, representatives of the OGC and Crew Energy met with Mr. Kirschbaum and Ms. Hutgens, on behalf of Penalty Ranch. Penalty Ranch requested that the wells be deferred for five years to obtain baseline water data. Penalty Ranch made a further written submission to the OGC on October 23, 2014.

[49] On November 21, 2014, Crew Energy requested that the application be placed on pending status. The OGC consented to the request and suspended its review. On September 27, 2016, at Crew Energy's request, the applications were re-activated.

[50] Penalty Ranch provided additional written submissions to the OGC regarding these applications on October 27, 2016, November 14, 2016, November 25, 2016, December 3, 2016, January 13, 2017 and February 7, 2017.

Consultation regarding the Second Set of 12-09 Permits

[51] On June 18, 2017, Crew Energy wrote to Penalty Ranch and extended an invitation to consult regarding the Second Set of 12-09 Permits. On June 24, 2017, the OGC received a written submission from Penalty Ranch about the applications.

Consultation regarding the Third Set of 12-09 Permits

[52] On September 29, 2017, Crew Energy hand-delivered an invitation to consult to Penalty Ranch regarding the Third Set of 12-09 Permits. The OGC did not receive any written submissions from Penalty Ranch about the Third Set of 12-09 Permits.

[53] The OGC submits that, despite not receiving any written submissions from Penalty Ranch about the Third Set of 12-09 Permits, in recognition of Penalty Ranch's historical concerns, it initiated the Amendment to the Permits that had been issued to ensure consistency on all permits related to Well Pad 12-09.

[54] The OGC submits that it is not required to demonstrate that a land owner's concerns have been addressed to their complete satisfaction.[6] The person assigned as the "decision maker" for each of the applications, in this case Mr. Hanson, considered Penalty Ranch's written submissions specific to the application(s).

[55] The OGC submits that there was significant overlap among Penalty Ranch's concerns and written submissions regarding the permit applications. It typically raised the same concerns regardless of the locations or specifics of the well pad under review. Penalty Ranch's concerns included:

- Groundwater contamination
- Hydraulic fracturing/seismicity
- Impacts to wetlands (Worth Marsh)
- Flaring
- Emergency management
- Previous incidents
- Miscellaneous

[56] [The Panel notes that some of these concerns were not specifically addressed by the Appellant in its submissions on the appeals; however, the OGC and Crew Energy addressed them in their appeal submissions.]

[57] The OGC submits that it gave due consideration to each of Penalty Ranch's concerns prior to issuing the Permits, as follows.

Groundwater Contamination

[58] As in the Prior Appeals, Penalty Ranch's primary concern was in relation to the quantity and quality of groundwater available in the vicinity of the Home Ranch. Penalty Ranch identified four springs that it uses for livestock watering and for the Kirschbaum family's domestic water use: Springs 1, 2, 3 and 4 (the "Springs"). Dr. Laurie Welch, an OGC hydrogeologist, completed a desktop review of each of the subject well pads in April 2017. [The review was later updated following subsequent applications for wells at Well Pad 12-09.] In her desktop hydrogeological reviews related to Well Pads 12-09, 08-05 and 09-05, she noted the location of the Springs:

- Spring 1 is located 2.2 kilometres southeast of Well Pad 12-09, 1.4 kilometres east-southeast of Well Pad 08-05, and 1.4 kilometres southeast of Well Pad 09-05;
- Spring 2 is located 3.5 kilometres southeast of Well Pad 12-09, 2.3 kilometres southeast of Well Pad 08-05, and 2.5 kilometres southeast of Well Pad 09-05;

[6] See for example, *Bell v. Oil and Gas Commission,* (2012-OGA-003(b), December 12, 2013) [*Bell*] at para. 41.

- Spring 3 is located 7 kilometres east-northeast of Well Pad 12-09, 7.9 kilometres east-northeast of Well Pad 08-05, and 7.6 kilometres east-northeast of Well Pad 09-05; and
- Spring 4 is located 4 kilometres southwest of Well Pad 12-09, 2.7 kilometres west-southwest of Well Pad 08-05, 3 kilometres west-southwest of Well Pad 09-05.

[59] Dr. Welch provided affidavit evidence to the Panel. She attested that, in her review, she considered Penalty Ranch's concerns regarding the possibility of: Crew Energy drilling through the aquifers that supplied the Springs; the migration of sour gas from other formations to the aquifers; and hydraulic fracturing causing wellbore integrity issues and allowing the migration of dangerous substances into the aquifers.

[60] As part of her review, Dr. Welch also considered data provided during the application process, geospatial data, information about the Springs from Penalty Ranch, a study by Simon Fraser University that included data on Springs 1, 2 and 3, satellite imagery, and an array of groundwater data.[7]

[61] Dr. Welch concluded that the risk for material adverse effects on water quality at the Springs as a result of the proposed activities by Crew Energy was "low", based on the distance between the Springs and the well pads, the potential for contaminant transport across those distances, and given the current regulations intended to prevent and mitigate potential impacts to groundwater.

[62] Despite her conclusions, Dr. Welch recommended, and Mr. Hanson agreed, that the following conditions be included in the Permits[8]:

- Include the Springs and Worth Marsh in Crew Energy's spill response plan;
- Conduct annual flow measurements and water chemistry analysis for Springs 1 and 2 (Springs 3 and 4 were deemed too remote from the well pads to warrant further testing); and
- Sample and measure the flow at the four Springs following an induced seismicity event of magnitude 4.0 or greater.

[63] Dr. Welch did not recommend mapping the aquifers in the vicinity of Penalty Ranch. In her view, it is inevitable that oil and gas wells will drill through aquifers

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[7] The groundwater data included: the results of water sampling from the Springs from May 2014 to June 2015; the Hydrogeologic Risk Assessment completed by Matrix in December 2015 (revised March 2016); an August 2016 baseline data report regarding water quality and flow for the Springs; the November 2016 Annual Report regarding water sampling and flow measurements for Springs 1 and 2; and Water Quality and Hydrology Assessments for Springs 1 and 2 in February and March 2017.

[8] Mr. Hanson included the conditions in the Initial 12-09 Permits, the Second Set of 12-09 Permits, and in the 08-05 and 09-05 Permits. The Third Set of 12-09 Permits was not the subject of written submissions, but the OGC initiated the Amendment to add the same set of conditions that had been included in previous 12-09 permits.

and there are specific regulations in place to prevent impacts to usable groundwater. The OGC submits that these regulations include:

- Section 18 of the *Drilling and Production Regulation,* B.C. Reg. 282/2010 (the "*DPR*") requiring casing and cementing wells to prevent impacts to usable groundwater, and requiring the use of non-toxic fluids during drilling until all usable groundwater has been isolated;
- Section 4 of the *Environmental Protection and Management Regulation,* B.C. Reg. 200/2010 (the "*EPMR*") setting out the government's environmental objectives with respect to water and stipulating set back requirements; and
- Section 20 of the *EPMR* prohibiting persons carrying out oil and gas activities from causing material adverse effects to the quality, quantity or flow of water supply wells but, if such adverse effects occur, requiring the person to provide an alternate water supply.

[64] In addition, the OGC submits that Dr. Welch deemed that the regulatory framework[9], and the Permits' requirement to reference the Springs and Worth Marsh in Crew Energy's spill response plan, adequately address Penalty Ranch's concerns regarding contamination of ground water via ground storage of liquids (in C-rings) and/or contamination of surface water leading to groundwater contamination.

[65] As to Penalty Ranch's concerns regarding the possibility of gas migration in groundwater, the OGC submits that the "Gas Migration Preliminary Investigation Report" cited by Penalty Ranch, targeted gas wells in the Jean Marie Formation in the northeast corner of the Province. The permitted wells are in the Montney Formation where, in 2018, the OGC completed testing for gas migration and learned that, of the 345 wells tested, 344 were negative and one was inconclusive for gas migration. Further, six wells were tested in the vicinity of Penalty Ranch and none exhibited any evidence of gas migration.

[66] The OGC notes that it is currently supporting several academic research projects to further inform the scientific basis for regulatory requirements for wells exhibiting gas migration.

[67] The OGC submits that, in the Prior Appeals, the Tribunal found that gas wells are routinely established without adverse impacts to surface water or groundwater. The Tribunal noted that where, as here, there are concerns regarding groundwater contamination as a result of hydraulic fracturing, a condition requiring baseline testing ought to be sufficient to address the land owner's concerns. In these Appeals, a Baseline Report has already been completed.

[68] In her affidavit, Dr. Welch states that she reviewed all of the groundwater data, as well as the results of the 2017 and 2018 sampling reports required under the Permits, and concludes that the results demonstrate general consistency since 2014 when sampling first began.

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[9] For example, section 51 of the *DPR* contains requirements regarding the storage and disposal of waste.

[69] The OGC submits that the existing regulatory framework, combined with the additional conditions in the Permits, adequately address Penalty Ranch's concerns regarding groundwater contamination. Further, the data to date establishes that Penalty Ranch's concerns have not been borne out in reality.

Hydraulic Fracturing/Seismicity

[70] In the Prior Appeals, Kevin Parsonage, a professional engineer employed by the OGC as a Field Engineering supervisor, provided evidence regarding hydraulic fracturing, describing it as a process used to improve the flow of fluids from a formation into a well. It involves pumping a fluid such as water, oil, carbon dioxide or a nitrogen foam with a proppant (such as sand) to open up fractures or fissures in the rock.

[71] In his affidavit, Mr. O'Hanley, the OGC's Vice President, Applications, attested that the OGC has investigated the connection between hydraulic fracturing and induced seismicity and has confirmed that there is a relationship. The OGC, recognizing the public interest and concern with respect to the issue, has conducted two studies into induced seismicity and published the results. None of the recognized induced seismic events that have occurred in BC have resulted in injury, structural damage, or impacts to the environment.

[72] As the OGC's knowledge of induced seismicity has increased, it has revised its processes and requirements including:

- In June 2015, section 21.1 of the *DPR* was added requiring the suspension of wellbore operations if an operator triggers a seismic event of magnitude 4.0 or greater;[10]
- In June 2016, a new permit condition was introduced requiring that operators in certain areas conduct ground motion monitoring during hydraulic fracturing activities and report their findings to the OGC. The Permits contain this condition; and
- On December 20, 2017, the OGC revised its Guidance for Ground Motion Monitoring and Submission, significantly lowering the threshold for events triggering the reporting requirement.[11]

[73] The OGC submits that Mr. Hanson consulted with an OGC geologist who advised that hydraulic fracturing was unlikely to connect with even the strata directly overlying the Montney Formation. Further, any hydraulic fracturing would certainly be unable to connect with much less shallow, unconsolidated potable water-bearing sediments: the proposed true vertical depths of the horizontal drill paths of the proposed wells is approximately 1,800 to 1,850 metres below the well

[10] On May 14, 2018, the OGC issued a Special Project Order under section 75 of the *OGAA* designating the Kiskatinaw Seismic Monitoring and Mitigation Area and lowering the threshold under section 21.1 of the *DPR* requiring suspension of activities if seismic events with a magnitude of 3.0 or greater are triggered.
[11] The threshold was lowered to 0.008g from 0.02g.

pad ground surface elevations, and the base of the usable groundwater in the area is between 300 and 415 metres. Dr. Welch supported this conclusion.

[74] Further, the OGC states that it has seen no evidence of wellbore deterioration in the vertical portion of production wells as a result of induced seismicity. In the Decision Rationales for the Permits, Mr. Hanson concluded that the regulatory provisions respecting casing and cementing were sufficient to protect groundwater.

[75] The OGC submits that Mr. Stefik's letter of December 22, 2017 to Canadian Natural Resources Ltd. regarding produced water wells in the Cadomin and Nikanassin Formations and discussing fluid migration, in general, ought not to be read as speculating on the potential for fluid migrating to shallow groundwater zones – these pathways are not reasonably possible in the permitted area.

[76] The OGC submits that induced seismicity is a recognized consequence of oil and gas development in northeast BC. The ground motion monitoring condition has proven to be an effective tool to address issues when they arise, and the regulations provide the necessary means for the OGC to take any action required to address any risk to public safety, the environment, property, and wellbore integrity.

Impact to Wetlands

[77] In response to Penalty Ranch's assertion that the permitted road for oil and gas activity is unnecessary and poses a risk to the wetland (Worth Marsh), the OGC submits that Worth Marsh is subject to a conservation interest held by Ducks Unlimited, and overseen by The Nature Trust of British Columbia (the "Nature Trust"). The OGC submits that Crew Energy sent the Nature Trust a notification of all of the applications for the Permits. The Nature Trust did not express any concerns with any of the applications. [12]

[78] The OGC further submits that there are regulations designed to protect wetlands such as section 5 of the *EMPR*, which requires the OGC to consider impacts to riparian values, including wetlands. Mr. Hanson considered those values and was satisfied that they were achieved.

[79] Further, Mr. Hanson noted in his Decision Rationale for Well Pad 08-05 that the existing roads are unsuitable, that the permitted road would result in the least disturbance to the wetlands, and that the permitted road is the best choice from a safety and emergency perspective. Further, Mr. Hanson confirmed that there is no public road being impeded by the permitted well pad. The OGC notes that there are extensive regulations that apply to the construction and maintenance of oil and gas roads.[13]

Flaring

[80] As to Penalty Ranch's concerns regarding flaring, Mr. Hanson noted in his Decision Rationale for the Initial 12-09 Permits, the 08-05 Permits, the 09-05

[12] Records of Decisions for all of these Appeals.
[13] See *Oil and Gas Road Regulation,* B.C. Reg. 56/2013

Permits, and the Second Set of 12-09 Permits, that Crew was not proposing to flare as part of its normal operations, but flaring may be required occasionally. Produced gas would be routinely directed to a pipeline. The Permits specifically identify the limited flaring authorized.[14]

Emergency Management

[81] The OGC notes that Mr. Kirschbaum expressed concern in his October 27, 2016 written submissions about the proximity of two of the proposed wells to the Kirschbaum family home. He asked if there were emergency devices to shut down the wells if needed.

[82] The OGC submits that Mr. Kirschbaum lacks standing to raise issues in this appeal as an owner in fee simple of land on which the family home is located. That said, the OGC submits that Mr. Hanson considered the concern raised by Mr. Kirschbaum and noted that the home lies 1.5 kilometres outside of the Emergency Planning Zone (the "EPZ") for all of the subject well pads. Mr. Hanson also noted that, once the drilling is complete, the EPZ radius will be zero metres because the wells will be "sweet", i.e., not producing hydrogen sulfide. Further, Crew Energy is required to adhere to the *Emergency Management Regulation,* B.C. Reg. 217/2017, which is designed to prevent harm to the public or the environment.

Previous Incidents

[83] Mr. Hanson spoke with the OGC's compliance and enforcement team regarding the incidents identified by Penalty Ranch. He was satisfied that the OGC was managing each of the incidents effectively, and addressing any potential impacts. While the OGC would prefer to have no incidents, the reality is that there is risk associated with industrial activity.

[84] The OGC notes that Part 5 of the *OGAA* provides comprehensive compliance and enforcement capabilities to ensure that any impacts are mitigated and effectively addressed. Each of the incidents identified by Penalty Ranch were confined to site and had no effect on groundwater.

Miscellaneous

[85] Penalty Ranch raised several miscellaneous issues in its written submissions to the OGC that were not specifically raised in these Appeals. Nevertheless, the OGC submits that each of these issues was considered prior to issuing the Permits. For example, Penalty Ranch raised a concern regarding the use of sump pumps in 2014. Crew Energy advised Penalty Ranch that no sumps would be required for the well pads, so there was no need to address this issue further. In 2016, Penalty

[14] See Initial 12-09 Permits, Permission 21 for Well 30784 and Permission 5 for other permits; 08-05 Permits, Permission 25 for Well 30835 and Permission 5 for other permits; 09-05 Permits, Permission 19 for Well 30795 and Permission 5 for other permits; Second and Third Sets of 12-09 Permits, Permission 5.

Ranch expressed concern regarding the safety of its livestock. Mr. Hanson noted that section 15(3) of the *DPR* stipulates that permit holders must ensure that well sites are maintained in order to minimize hazards; hazards to livestock falls under this stipulation Further, section 51 of the *DPR* includes requirements relating to storage and disposal of wastes that are intended to prevent harm to other things, including livestock.

[86] As to Penalty Ranch's concerns regarding sour gas extraction, the OGC submits that it would not require any permit holder to extract any sour gas that it encounters during drilling. None of the wells are permitted to sour gas standards and are not equipped to handle that product. Different equipment and flaring would be required (an activity that Penalty Ranch opposes and that the OGC considers would be wasteful and would not adhere to its flaring requirements). Further the Permits have casing and cementing requirements that work to seal off other formations and prevent sour gas from migrating into groundwater zones.

[87] In conclusion, the OGC submits that Penalty Ranch has, since 2014, repeatedly raised the same concerns with respect to oil and gas activity on its lease. Each time, the OGC has endeavored to address its concerns, including by adding conditions to the Permits. It maintains that there is ample evidence to demonstrate that the OGC gave due regard to Penalty Ranch's concerns and, in fact, the negative consequences that Penalty Ranch has feared have not materialized.

[88] The OGC submits that the Permits' conditions adequately acknowledge and address Penalty Ranch's concerns. Moreover, it emphasizes that neither the consultation process, nor these Appeals, are about satisfying or appeasing Penalty Ranch; rather, the issue is whether the land owner's concerns were given appropriate consideration - given "due regard" - as part of the process of determining whether to issue a given permit, and whether to include specific conditions. The OGC argues that it fulfilled its obligations and gave due regard to the points raised in Penalty Ranch's submissions both before, and after, the Permits were issued.

Crew Energy's case

[89] Paul Dever, Vice President, Government and Stakeholder Relations for Crew Energy, provided affidavit evidence in response to these Appeals. He attested that the Agricultural Lease contains restrictions on Penalty Ranch's use of the Agricultural Lease lands that are relevant to these Appeals, including:

- Penalty Ranch's rights under the Agricultural Lease are limited to grazing and agricultural purposes;
- The Agricultural Lease expires in approximately eight years and there is no guarantee that it will be renewed;
- Penalty Ranch pays only $4,067 per year in rent under the Agricultural Lease for rights over 6, 848 hectares of Crown Land;
- Penalty Ranch is not entitled to use the Agricultural Lease for residential purposes;

- Penalty Ranch may not assign its rights under the Agricultural Lease;
- The Province may take back 5% of the Agricultural Lease, without paying compensation, at any time; and
- Penalty Ranch is not entitled to remove timber from the Agricultural Lease lands without Crown authorization.

[90] Mr. Dever explained that the Agricultural Lease lands have a history of oil and gas history going back decades; the first wells were drilled in 1959. Approximately 102 wells have been drilled on the Agricultural Lease lands at the time of these Appeals; most were drilled and completed using hydraulic fracturing. He states that there is no evidence of any harm to groundwater as a result of the drilling of any of these wells.

[91] Mr. Dever attested that Penalty Ranch has historically either consented, or declined to object, to the oil and gas activity on the Agricultural Lease lands until 2014. Penalty Ranch then began to raise concerns about the potential impact to several water sources located near, but not on, the Agricultural Lease lands.

[92] Crew Energy advised of its efforts to address Penalty Ranch's concerns, including obtaining baseline and monthly water testing and commissioning a hydrogeological risk assessment. The water testing produced results within acceptable parameters, and the risk assessment concluded that there was a "low to negligible" risk to nearby water sources as a result of Crew Energy's proposed activities. Crew Energy provided the results of the water testing and the risk assessment to Penalty Ranch.

[93] Crew Energy notes that the OGC considered the concerns raised by Penalty Ranch and included the Supplemental Conditions in the Permits to address those concerns, including requirements that Crew Energy:

- Maintain an Emergency Response Program regarding Worth Marsh and the Springs;
- Conduct annual testing of water quality and flow at Springs 1 and 2;
- Immediately test the water quality and flow at the Springs following an induced-seismicity event of magnitude 4.0 or greater; and
- Establish ground motion monitoring during all hydraulic fracturing activities and provide a ground monitoring report to the OGC after completing those activities.

[94] Crew Energy notes that these Supplemental Conditions were also included in the 15-09 and 15-10 permits that were the subject of the Prior Appeals. It notes that the majority of the 15-09 and 15-10 wells have since been drilled and completed.

[95] Mr. Wilmot, the Senior Hydrogeologist at Matrix and author of the 2015 Hydrogeologic Risk Assessment Report referred to earlier in this decision, provided affidavit evidence to the Panel on behalf of Crew Energy. Mr. Wilmot attested that Matrix conducted water testing after the Tribunal released its decision on the Prior Appeals, and that the results of this testing demonstrates that the water flows recorded at the Springs are within the range of historical assessments, and that the

water quality parameters for the Springs are within the expected range for springs in northeastern British Columbia. As a result, it remains Mr. Wilmot's opinion that the risk to the Springs and Worth Marsh as a result of the permitted activities is "low to negligible".

[96] Ian Mills, Drilling and Completions Manager for Crew Energy also provided affidavit evidence to the Panel. Mr. Mills attested that Crew Energy has adopted policies and practices, in addition to the regulatory requirements, designed to further ensure the safety of drilling and completing natural gas wells, including:

- Surface casings are to be set at least 50 metres below the lowest area of potable groundwater;
- There is a zero-tolerance stop-loss policy when loss of circulation occurs while drilling to the surface casing depth (if drilling fluids are lost, drilling ceases and mitigation measures are taken to cure the loss before drilling may recommence);
- Non-toxic fluids must be circulated at least twice after drilling the surface casing portion of the well hole to ensure that it is free of cuttings and other materials that could compromise well integrity;
- A fracture planning zone is to be used to determine potential interaction with other wells prior to beginning completions, i.e., prior to commencing hydraulic fracturing;
- A pre-completion meeting is to be held with all contractors and staff engaged in completions activities;
- A pressure relief valve and sensor that will automatically shut-in the well if the pressure exceeds a certain threshold is to be used;
- Pressure in offset wells must be monitored; and
- Constant communication must be maintained with Crew Energy's head office during completions.

[97] Mr. Mills attested that Crew Energy also has policies and practices designed to minimize the risks associated with surface spills, including:

- Developing a spill response plan that is reviewed and audited periodically;
- Extensive training of staff and contractors regarding the spill response plan;
- Removing top soil so that drilling occurs on a non-porous clay surface;
- Monitoring berm heights to ensure sufficient containment volumes;
- Monitoring locations that store produced water for any loss of containment; and
- Double lining pits and storage tanks.

[98] Mr. Dever attested that Crew Energy engaged with Penalty Ranch on approximately 32 occasions in efforts to address Penalty Ranch's concerns relating

to water, induced seismicity, fencing of well pads, noise and light, the use of C-Rings, and road access. The two most prevalent concerns being water and induced seismicity.

Legal Test

[99] Crew Energy submits that the legal test applicable to these Appeals is whether Penalty Ranch has established, on a balance of probabilities, that it has "reasonable and legitimate" concerns that ought to have been taken into account by the OGC, and that the OGC failed to give due regard to such concerns.[15]

[100] Crew Energy further submits that the extent to which the OGC should accommodate a land owner's concerns must be assessed in light of the available scientific evidence. Where such evidence is lacking, the OGC is not required to accommodate those concerns.[16]

Standing

[101] Crew Energy submits that, in the Prior Appeals, the Tribunal determined that Penalty Ranch only has standing in its capacity as a lessee of the Agricultural Lease lands – not as an owner of the Penalty Ranch lands or as a user of the Springs or Worth Marsh (which are not located on the Agricultural Lease lands).[17]

[102] Crew Energy references a discussion noted in the Hansard of April 2, 2014 respecting the amendments to the *OGAA*, which clarifies that the Legislature intended that an appellant only have standing with respect to their use of land within the operating area of the oil and gas activity in question. The "operating area" relates to the surface area where the activity will take place - and not the subsurface area - such as would be at issue when a horizontal natural gas well is being drilled. The discussion in Hansard is as follows:

> **A. Weaver**: Is there an appeal process, then, for landowners, under these changes, who may not have surface drilling on their land but will have subsurface drilling under their land based on surface drilling on adjacent land?
>
> **Hon. R. Coleman**: They have the right to consultation. But no, because it's not located on their land, they don't have any appeal.[18]

[103] Crew Energy submits that Penalty Ranch's submissions to the OGC, and to the Panel, relate primarily to its interests as land owners of adjacent land, not as lessee of the Agricultural Lease lands: as such, the OGC was not required to give any regard to these submissions, and they are not relevant considerations in these

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[15] *Bell, supra* note 6 at paras. 41, 44-45.
[16] *Mattson v. Oil and Gas Commission*, (2015-OGA-007(a), November 23, 2016), at para. 86.
[17] The Prior Appeals Decision at paras, 53-54; See also Stay Decision at para. 54
[18] *Hansard* (Legislative Assembly of British Columbia), Wednesday, April 2, 2014 (afternoon sitting) Vol 9, No. 8, pp. 2717-2720.

Appeals. Nevertheless, Crew Energy submits that the OGC gave due consideration to Penalty Ranch's concerns even though it was not required to do so.

[104] In Crew Energy's view, Penalty Ranch has failed to explain how its permitted uses of the Agricultural Lease lands would be impaired by Crew Energy's permitted activities.

[105] Crew Energy submits that Penalty Ranch's submissions consist of "unsubstantiated opinions in the category of hearsay evidence"[19] in subject matters of hydrogeology and seismology. It submits that the Panel ought to follow the decision of the Tribunal in the Prior Appeals, which refused to give any weight to such evidence or to submissions based on such evidence when, as here, Penalty Ranch had been previously cautioned against such an approach.

[106] Crew Energy further submits that, in the Prior Appeals, the Tribunal found that the OGC gave due regard to the concerns set out in Penalty Ranch's written submissions as follows:

- Concerns regarding water were addressed by including the Supplemental Conditions;[20]
- Concerns regarding induced seismology were addressed by the Supplemental Conditions and the applicable regulations;[21]
- Concerns regarding hydraulic fracturing, in general, were not supported by admissible opinion evidence;[22] and
- Other concerns relating to noise, light and safety were addressed by the regulatory scheme governing oil and gas activities, which is "designed to minimize risk to the public and the environment".[23]

[107] Crew Energy submits that these Appeals are a "collateral attack" on the findings of the Tribunal in the Prior Appeals. The wells under appeal are located in close proximity to the wells that were under appeal in the Prior Appeals, will target the same subsurface formation, and will produce the same resource. Further, the Permits are subject to the same conditions as the wells in the Prior Appeals. As a result, Crew Energy submits that the Tribunal's findings in the Prior Appeals are inextricably linked to these Appeals, and ought to be binding on the Parties.

[108] Crew Energy notes that the only differentiating factor between the Prior Appeals and these Appeals is that Penalty Ranch provided evidence from an expert witness in the Prior Appeals and offered no such evidence in these Appeals.

[109] As to Penalty Ranch's specific concerns identified in these Appeals before this Panel, Crew Energy submits the following responses.

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[19] See the Prior Appeals Decision at para. 143.
[20] *Ibid* at paras. 151-152 and 154.
[21] *Ibid* at para. 155.
[22] *Ibid* at para. 156.
[23] *Ibid* at paras. 161-162 and 164-166.

Groundwater Contamination

[110] Crew Energy reminds the Panel that Mr. Kirschbaum lacks standing to argue about potential impacts from the permitted activities to his "drinking water" at his residence on lands adjacent to the Agricultural Lease lands; this is a domestic concern that is unrelated to Penalty Ranch's agricultural use of the Agricultural Lease. Further, the Springs and Worth Marsh are not located on the Agricultural Lease lands, and concerns about such water sources are beyond the scope of these Appeals.

[111] That said, Crew Energy submits that the OGC gave due regard to Penalty Ranch's submissions. Crew Energy points to the evidence of Mr. Wilmot, Dr. Welch, and to findings of water sampling since the Prior Appeals, all confirming that the risk to the Springs and Worth Marsh is "low to negligible".[24]

[112] As to Penalty Ranch's concerns regarding the location of the drill paths from the wells, Crew Energy submits that the drill paths will be located over 1,800 metres below the surface, and will be separated from potable ground or surface water by layers of impermeable rock.

[113] Crew denies the existence of any "verbal agreement" between itself and Penalty Ranch not to drill under Worth Marsh. Rather, it merely confirmed that the wells under appeal in the Prior Appeals were not permitted to be drilled under Worth Marsh. Regardless, the depth of the paths at issue renders the issue irrelevant as any concerns regarding these drill paths are not "reasonable and legitimate" within the meaning of the *OGAA*.

[114] Crew Energy submits that it meets or exceeds the regulatory standards for protection of potable groundwater.

Induced Seismicity

[115] Crew Energy submits that the Tribunal in the Prior Appeals found that the Supplemental Conditions and the applicable regulatory requirements were sufficient to address concerns relating to induced seismicity, including the permitted requirement to stop activities and report any seismic event with a magnitude greater than 4.0.[25] It submits that Penalty Ranch has not tendered any admissible expert evidence in this complex area but has, instead, submitted unsubstantiated opinion based on third-party sources purporting to have discovered a fault line that could impact the permitted activities. Crew Energy submits that the evidence before the Panel is that there is no such fault line and, if there were, Crew Energy would avoid it as performing completions in fault zones would not produce the desired results.[26] Further, despite seismic events during the time of water

[24] Wilmot affidavit at paras. 6, 7; Welch affidavit at paras. 14-15, 19 and 23
[25] Prior Appeals at para. 155.
[26] See Mr. Mills' affidavit at paras. 25-26.

sampling, Dr. Welch confirmed that there have been no apparent impacts on groundwater in the area.[27]

Other Concerns

a. Fencing

[116] Crew Energy submits that it is willing to fence the well pads if requested by Penalty Ranch (as it has done in the past when requested), and there was no need for the OGC to address this concern further.

b. Noise and Light

[117] Crew Energy submits that the well pads at issue in these Appeals are located at least 1.6 kilometres from the Kirschbaum home on the Penalty Ranch lands. If that is not sufficient to address any concerns over noise and light, the provisions of the *DPR* prohibit "excessive noise or emanation of light".[28] The Tribunal in the Prior Appeals found that these provisions were sufficient, and Crew Energy submits that this Panel ought to make the same finding.

c. Access Road

[118] Crew Energy submits that Penalty Ranch's concerns regarding the permitted access road were given due consideration by the OGC. Crew Energy submits that the evidence before the Panel is that the "road" described by Penalty Ranch as "Worth Lake Road" is a non-maintained, winter access only forestry road/path built by Chetwynd-Mechanical Pulp Inc. (the "Forestry Road"). It is not a public road, is not maintained and is incapable of supporting Crew Energy's operations. Further, Crew Energy has already constructed an access road to well pad 15-09, which need only be extended a further 800 meters (as permitted) to access Well Pad 08-05, whereas the Forestry Road ends prior to the western side of the 08-05 Well Pad. After the Forestry Road ends, there is a large open cut-block. There is a "path" through the cut-block, but it is not maintained. Crew Energy states that, as Well Pad 08-05 is located within the cut-block, it minimizes disturbance to the environment that would be caused by constructing in a new location.[29]

[119] Crew Energy submits that it is unclear whether Penalty Ranch references the Forestry Road or the cut-block path when it describes a road that it has used for 40 years. If it is the latter, Crew Energy is willing to discuss Penalty Ranch's ongoing use of the path.

d. C-rings

[120] Mr. Dever attested that Crew Energy uses C-rings so that the water can be re-used in the drilling process, lessening the need to use fresh water.[30] The C-rings are removed after the well is completed and tested.[31] The Kirschbaum's home is

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[27] See Dr. Welch's affidavit at paras. 18-19.
[28] See section 40.
[29] See Mr. Dever's affidavit at paras. 47-49.
[30] See Mr. Dever's affidavit at para. 46.
[31] *Ibid*.

located 2.6 kilometres from Well Pad 12-09, 1.7 kilometres from Well Pad 09-05, and 1.6 kilometres from Well Pad 08-05. Crew Energy submits that odours from the C-rings would not be detectable over these distances[32].

e. *Other Incidents*

[121] Crew Energy submits that none of the listed events on other Crew Energy well pads on the Agricultural Lease lands resulted in any spills or leaks that escaped the well pad. Mr. Mills attested that Crew Energy implemented changes to its operations in response to these incidents to minimize the risk of future occurrences.[33] These incidents illustrate that, while no oil and gas activity is risk-free, such risks can be mitigated through appropriate measures.[34]

[122] Crew Energy submits that the previous incidents are irrelevant to the issue of whether the OGC had due regard to Penalty Ranch's concerns in relation to the well pads in these Appeals.

The Panel's findings

Standing

[123] As was the case in the Prior Appeals brought by Penalty Ranch, the Panel is satisfied that Penalty Ranch has standing to appeal pursuant to section 72(2) of the *OGAA.* Penalty Ranch meets the definition of "land owner"; namely, "a person to whom a disposition of Crown land has been issued under the *Land Act*". More particularly, the Agricultural Lease is a deemed disposition of Crown land under the *Land Act*, and the Permits are for wells located on the land covered by the Agricultural Lease.

[124] Penalty Ranch does not, however, have standing with respect to the Home Ranch because that property is located outside of the area that needs to be considered under the *Consultation and Notification Regulation*, B.C. Reg. 279/2010. Nor does Penalty Ranch have standing with respect to other lands adjacent to the Agricultural Lease – for example, Worth Marsh.

[125] Further, although Mr. Kirschbaum has provided affidavit evidence and provided the Panel with capable written submissions for this hearing, Mr. Kirschbaum does not have standing to appeal in his personal capacity as a land owner. As was the case in the Prior Appeals, he does not meet the definition of either "eligible person" or "land owner of land on which an operating area is located". Penalty Ranch has standing as a legal entity unto itself, and then only because it has "land ownership" rights under the Agricultural Lease on which an operating area is located.

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[32] *Ibid*.
[33] See Mr. Mills' affidavit at paras. 28-34.
[34] *Ibid* at para. 35.

The legal test

[126] The legal test to be applied when deciding appeals under section 72(2) of the *OGAA* was described by the Panel in the Prior Appeals at paragraphs 132 to 136, and this Panel adopts the wording:

> 132. The question to be decided by the Panel is not whether the land owner's concerns are legitimate, or whether they were addressed to the land owner's satisfaction. Nor is the question whether this Panel would have made a different decision than the OGC.
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> 133. As noted earlier, the legal issue here is limited by section 72(2) of the *OGAA* to whether "the determination was made without due regard to" the written submissions that Penalty Ranch made to the OGC under section 22(5) of the *OGAA*.
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> 134. In deciding these Appeals, the Panel has considered prior decisions of this Tribunal; in particular, see *James Bell v. Oil and Gas Commission*, (Decision No. 2012-OGA-003(b), December 12, 2013) [*Bell*], and *Ken Boon and Arlene Boon v. Oil and Gas Commission*, (Decision Nos. 2011-OGA-010(a) and 2012-OGA-001(b), September 27, 2012). Both of these decisions have been previously referred to, and followed, by the Tribunal.
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> 135. Of note, at paragraphs 41 to 45 of *Bell* the Tribunal reasoned that, to be successful, an appellant must establish that the OGC did not give "due regard" to its submissions. To be successful, the appellant land owner needs to convince the Panel, on a balance of probabilities, that the OGC should have given its submissions more weight, and then ought to have decided the matter differently.
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> 136. Also of consequence, an appeal under section 72(2) of the *OGAA* is treated as a hearing *de novo* in which the Panel is able to consider new evidence in support of, or related to, the land owner's submissions. This was expressed in *Bell* as follows:
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> > 45. … the Legislature has limited a land owner's grounds for filing an appeal which, by implication, narrows the types of issues that may be relevant in land owner appeals. Those issues must relate to the decision-maker's failure to have "due regard" to the appellant's written submissions (see *Kerr v. Oil and Gas Commission*, Decision No. 2011-OGA-005(b), December 12, 2011). However, in that decision, the Tribunal also found that it could hear new evidence. This Panel finds that both the submissions in relation to the original submissions, and any new evidence provided in support of those submissions, must meet the burden and standard identified above. In particular, an appellant must be able to establish that the concerns expressed are reasonable and legitimate and that the OGC, and now the Tribunal, should give them greater weight and should make a different decision.
> >
> > 46. For example, if an appellant raises a concern about impact to drinking water, there should be some evidence that there is a

> source of water that could reasonably be impacted, and there should be some evidence of link between the risk and the water in order to establish that it should be protected, but that the decision under appeal did not/does not do so. As stated by the [Tribunal] in the decision quoted above, there must be some evidence "that the process which lead to the decision was flawed in some way" and should now be changed.
>
> [Emphasis in original]

[127] The Panel has applied this test to Penalty Ranch's concerns as voiced first to the OGC, and now to the Panel.

[128] The Panel finds that, in general, Penalty Ranch's concerns are the same as those raised in the Prior Appeals.

[129] Nevertheless, the Panel has considered and addressed Penalty Ranch's concerns regarding the location of the well pads and the direction of the drill paths, potential impacts to water, induced seismicity, hydraulic fracturing (in general), flaring and other concerns, below.

Whether the OGC gave "due regard" to Penalty Ranch's submissions

[130] The concerns raised by Penalty Ranch in its written submissions to the OGC, as reiterated and expanded upon in these Appeals, can be summarized as follows:

- Potential for contamination of Worth Marsh and the surrounding riparian area, both at surface and subsurface, from the right-of-way and construction activities related to the well pads, from drilling the wells, from processes used to extract natural gas, and from related activities associated with the well pads;
- Potential adverse effects that drilling and fracking could have on the aquifer(s) that supplies water to a number of springs which Penalty Ranch alleges are on the Agricultural Lease which it relies on for potable water, due to upward seepage of contaminants along the wellbore;
- Potential impacts of induced seismic activity associated with hydraulic fracturing processes;
- The potential for air pollution from water stored in the C-rings and from flaring related to the production of natural gas, and
- Past incidents involving Crew Energy and others that demonstrate that the permitted activities are unsafe.

Location of the Well Pads and Direction of the Drill Paths

[131] In its written submissions to the OGC, and in its case before the Panel, Penalty Ranch objected to the well pads, in particular 12-09 and 09-05, being located in close proximity to a riparian zone. It argues that Crew Energy agreed not to drill beneath the Worth Marsh and is now trying to circumvent that agreement by using a horizontal drill path from 15-09 to go under the marsh.

[132] Further, Penalty Ranch is concerned that drilling paths from Well Pad 09-05 are in close proximity to the spring that provides domestic water for the Home Ranch. Mr. Kirschbaum is concerned that there may be a fault in the area, which may be intersected by the horizontal drilling path planned for under the marsh, and that fluid (previously "lost" into that fault), or sour gas, may be encountered and brought into contact with the riparian area.

[133] Penalty Ranch is also concerned that the permitted road to access Well Pads 09-05 and 08-05 is unnecessary, and that a previously constructed "public road" will be obstructed.

[134] The Panel finds that while Penalty Ranch has standing as a "landowner" under the *OGAA* to appeal the Permits in so far as they authorize activities which may impact Penalty Ranch's interests under the Agricultural Lease, Worth Marsh is not situated on the Agricultural Lease lands, nor is the Home Ranch.

[135] The Panel appreciates that Mr. Kirschbaum may have personal concerns regarding the potential impact of the permitted activities on Worth Marsh and on his domestic water supply; however, he has no standing to argue those matters in these Appeals which relate only to Penalty Ranch's interest under the Agricultural Lease. The Panel notes that Crew Energy sent an invitation to consult to the Nature Trust as a landowner of private property[35] including the south end of Worth Marsh regarding potential impacts on the marsh. The Nature Trust did not raise concerns regarding the impact of the permitted activities on its property or, more generally, on what Mr. Kirschbaum references as the "Ducks Unlimited Worth Marsh Conservation Project" with the OGC.

[136] It is not for the Panel to determine whether there was a verbal agreement between Penalty Ranch and Crew Energy to refrain from drilling "under the Marsh". Crew Energy denies the existence of such an agreement. That said, the Panel is satisfied that the OGC took Penalty Ranch's objections regarding the location of the well pads into consideration. In his Decision Rationales, Mr. Hanson considered the proposed location of Well Pad 12-09 and the potential impact to riparian areas as required by section 5 of the *EPMR*. Dr. Welch's advice to Mr. Hanson was that, given the subsurface depth of the proposed drill paths (in excess of 1,800 metres and separated from potable ground water or surface water by layers of impermeable rock), the risk to groundwater due to the propagation of hydraulic fractures from these horizontal drill paths is "negligible". Mr. Hanson further noted that Worth Marsh is approximately one kilometre southeast of the well pad. Nevertheless, because of Penalty Ranch's expressed and historic concerns, Mr. Hanson included a wetland protection condition in each of the 12-09 permits with a view to alleviating those concerns. Further, each of the 12-09 permits requires that Crew Energy specifically include Worth Marsh in its mandated Emergency Response Program.

[137] With respect to the location of Well Pad 09-05 and its associated drill paths, the Panel finds that Mr. Hanson incorporated conditions requiring annual water

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[35] The Nature Trust of B.C. property is referenced by Mr. Kirschbaum as the "Ducks Unlimited" conservation project.

sampling and flow measurements on the Springs, with results to be shared with Penalty Ranch. Further, all of the Permits require that Crew Energy specifically include the Springs in its mandated Emergency Response Program. Section 21.1 of the *DPR* mandates further sampling and measurements in the event of a magnitude 4.0 or greater seismic event.

[138] Finally, there is no evidence before the Panel that any drilling path from Well Pad 09-05 is intentionally directed toward, or will intersect, a known fault line. The best available evidence is that Crew Energy avoids any known fault lines as drilling into a fault line would be counterproductive.

[139] As to the location of Well Pad 08-05 and its associated drill paths, there is no evidence that any of the drill paths are intentionally directed toward, or will intersect, a known fault line. As previously noted, any impacts on the Home Ranch or its domestic water supply is outside of the scope of these Appeals.

[140] Finally, the Panel finds that the best available evidence is that the permitted road is necessary to support the oil and gas activities, and that there is no public road that will be obstructed.

[141] The Panel is satisfied that the OGC acknowledged, and gave due regard to, Penalty Ranch's objections and concerns regarding the location of the well pads and the direction of the drill paths.

Water

[142] It is clear from its submissions that Penalty Ranch continues to be worried about Worth Marsh and the aquifer(s) that supply the Springs on which the Kirschbaum family – and Penalty Ranch's livestock – depends for potable water. As it argued in the Prior Appeals, Penalty Ranch submits that the regulatory safeguards and Supplemental Conditions are only helpful if something goes wrong: they are not designed to prevent pollution or to prevent accidents from happening.

[143] Despite being cautioned in the Prior Appeals about the limited use to which such information could be put by the Tribunal, Penalty Ranch referred the Panel to a myriad of online articles, scientific papers, and self-generated mapping materials that were topical to Penalty Ranch's concerns, but not directly relevant to these Appeals. The Panel reiterates that those writings are unsubstantiated opinions in the category of hearsay evidence and – although they may be helpful to the Panel's understanding of the concerns expressed by Penalty Ranch – they are not evidence. As such, the Panel has not given those materials any weight.

[144] Penalty Ranch provided no expert evidence, and indeed very little evidence at all, to support its submissions. Mr. Kirschbaum's February 28, 2019 affidavit is the sole piece of sworn evidence introduced by Penalty Ranch, and its content is restricted to the alleged March 2015 verbal agreement between Mr. Kirschbaum and a consultant on behalf of Crew Energy, regarding drilling under Worth Marsh.

[145] Penalty Ranch also asks the Panel to find that the permitted activities are not adequately regulated. The most compelling evidence before the Panel, however, is that natural gas wells in northeastern BC are routinely established without apparent adverse impacts to surface water and groundwater. Nevertheless, when evaluating

the potential impact to Worth Marsh and the Springs, the OGC required Crew Energy to include the marsh and the Springs in Crew Energy's mandated Emergency Response Program, as required by section 4 of the *Emergency Management Regulation*.

[146] The Panel also notes that, among other things, the *DPR* anticipates that a natural gas well may bisect an aquifer. To prevent contamination of potable water sources from substances in deeper formations, the regulation requires that wells be constructed with surface casing and production casing. The surface casing must be cemented into place. The evidence before the Panel supports a finding that the surface casings used by Crew Energy meet or exceed the regulatory standard.

[147] The evidence also establishes that the legislation is designed to protect against groundwater contamination. According to Dr. Welch, the risk of contamination from the wells is "low". She concluded that there is no reason to believe that hydraulic fracturing in the Montney level (the formation targeted by the wells) would somehow interact or connect with the strata above it, let alone with the "potable water bearing sediments", which is the focus of Penalty Ranch's concerns. Her conclusion was echoed by other affiants on behalf of the OGC and Crew Energy.

[148] Notwithstanding this conclusion, Dr. Welch acknowledged that the permitted activities are not without risk. As such, she recommended including the Supplemental Conditions in the Permits to address Penalty Ranch's concerns.

[149] Further, the Panel notes that Crew Energy commissioned a hydrogeological risk assessment of potential impacts from fracking on water resources, such as the springs identified by Penalty Ranch. The results are contained in the December 2015 Matrix Risk Assessment Report, a copy of which was made available to Penalty Ranch. The hydrogeological risk assessment went so far as to consider water sources that are technically beyond the scope of these Appeals. The assessment concluded that Crew Energy's operations would have a low to negligible impact on the water sources identified. That opinion was corroborated by Dr. Welch's hydrogeological review (which was part of the OGC's determination process). The OGC included the Supplemental Conditions in the Permits to ensure water sampling, on an ongoing basis, in follow-up to the baseline testing provided for under the permits in the Prior Appeals.

[150] Further, the Panel notes that water used for fracking is to be stored in "C-rings" for fracking operations which, according to the evidence before the Panel, keeps it from mixing with ambient water. The evidence before the Panel is that these are temporary holding areas which will be removed following completion of the wells.

[151] The Panel finds that the baseline testing requirement, along with the other conditions in the Permits, were designed and included with a view to protecting water resources, and were appropriately responsive to Penalty Ranch's concerns.

[152] This Tribunal has previously determined that a condition requiring baseline testing is sufficient to address a land owner's concerns in respect of groundwater contamination from hydraulic fracturing: see *Bell*, *supra*, at paragraph 58. In this case, the OGC went even further and clearly had due regard for, and responded

proactively to, Penalty Ranch's concerns: it required ongoing testing notwithstanding what was seen as a "low risk" of there being any adverse environmental impact.

[153] In conclusion, the Panel is satisfied that the OGC gave due regard to Penalty Ranch's concerns about the potential impact of the permitted activities on surface water and groundwater.

Induced Seismicity

[154] The Panel finds that the OGC had due regard to Penalty Ranch's concerns about induced seismicity. This is evident from the regulatory framework, bolstered by the seismic event condition and the ground motion monitoring condition contained in each of the Permits. More particularly, seismic activity is anticipated, but must be monitored and reported. Further, operations must be suspended if fracking causes a seismic event of magnitude 4.0 or greater within a three kilometre radius of the drilling pad (section 21.1 of the *DPR*).

Hydraulic Fracturing (Generally)

[155] It is clear that Penalty Ranch's concerns with hydraulic fracturing have continued unabated since the Prior Appeals. However, the Panel must consider whether the evidence supports - or provides a basis for - these concerns, and whether the OGC gave them adequate consideration. As discussed earlier, the Panel finds that the majority of Penalty Ranch's assertions are not supported by admissible opinion or other evidence that can be considered by the Panel. Based on the admissible evidence, the Panel finds that the OGC made its determinations after giving due regard to Penalty Ranch's concerns about the environmental impacts associated with hydraulic fracturing.

Flaring and C-rings

[156] The Panel similarly finds that the OGC gave due regard to Penalty Ranch's concerns with flaring when deciding whether to issue the Permits and what conditions to include. Although flaring is not anticipated as a part of Crew Energy's regular operations, the Permits deal extensively with flaring, and the Decision Rationales for the Permits considered flaring and the potential impacts on air quality.

[157] By way of example, the Permits are subject to stringent regulatory provisions that deal with flaring. As with seismicity, flaring is an anticipated byproduct of the process involved in bringing natural gas wells into production. The *DPR* deals with the storage and disposal of wastes, and is intended to prevent any hazard to public health or safety: it limits when a permittee is allowed to conduct flaring activities, and requires the permit holder to give the OGC and area residents 24-hours advance notice in specified circumstances, such as before a planned flaring event if the quantity of gas to be flared exceeds 10,000 cubic metres. In addition, section 40 of the *DPR* requires a permit holder to ensure that its operations at a well or

facility "do not cause excessive noise or excessive emanation of light". The OGC's noise guidelines also apply.

[158] The Panel also notes that the wells are to extract sweet gas, not sour gas (which is typically what gets flared). The evidence before the Panel is that the wells are, or will be, linked directly to a pipeline. Once linked, the evidence is that flaring should be minimal and will not occur during normal operating conditions.

[159] Finally, the Panel understands that Penalty Ranch's principal concerns with flaring (namely, the odor and noise associated with flaring) arise from anecdotal observations made by Mr. Kirschbaum and Ms. Hutgens at the house on the Home Ranch. Notwithstanding the Panel's finding that flaring was given due consideration by the OGC and is collectively addressed within the Permits and the regulatory framework, the Panel notes that there is no evidence that flaring interferes with, or otherwise affects, Penalty Ranch's ranching operations on the Agricultural Lease.

Safety and Past Incidents

[160] Finally, the Panel notes that the Decision Rationales for the Permits took into account Penalty Ranch's concerns regarding risks to humans, livestock, and the environment generally. The Panel finds that those topics were adequately addressed by reference to the existing regulatory requirements regarding emergency response protocols, and containment at the well pads in the event of an accident or pollution-causing event. For example, these topics are addressed within the *DPR* and the Permits' condition requiring that a qualified professional be on site.

[161] The Panel also notes that, when asked by Penalty Ranch, Crew Energy has previously agreed to fence areas of concern to prevent livestock from wandering too close to the permitted activities. Crew Energy had indicated its willingness to erect further fencing on request.

[162] The Panel finds that the OGC was aware of the past incidents involving Crew Energy and other operators, and was satisfied that appropriate steps were taken to address the incidents when they occurred, and to prevent further occurrences to the extent possible.

[163] The Panel notes that operators must be in compliance with the *Emergency Management Regulation*. The evidence before the Panel is that there are other safeguards in place to ensure "the safe exploration, production and transportation of natural gas within the province", and that the protection of public health is paramount.

[164] On the evidence before the Panel, the Panel is satisfied that the permitted activities can be conducted safely within the existing legislative and regulatory framework, and that the OGC and Crew Energy employ personnel who are qualified to understand, prevent, or otherwise deal with the types of concerns that have been raised by Penalty Ranch.

[165] In *Dilworth and Jorgensen v. Oil and Gas Commission*, (Decision Nos. 2015-OGA-001(a) and 002(b), June 7, 2016), the Tribunal held that relevant permit conditions, coupled with the regulatory scheme, ought to be sufficient to address pipeline safety considerations (paragraph 177). Although these Appeals are not

about the sufficiency of, or compliance with, pipeline safety standards, the Panel adopts that premise: without evidence to the contrary that satisfies the balance of probabilities test, the existing regulatory framework, and any additional conditions in the Permits, adequately address concerns related to water contamination, hydraulic fracturing and induced seismicity, flaring and noise.

[166] The regulatory scheme is devised to minimize risk to the public and the environment, while at the same time being responsive to incidents or situations that are considered undesirable or unacceptable, or that requires an emergency response to mitigate potentially adverse consequences.

Conclusion

[167] The Panel has considered Penalty Ranch's written submissions, the OGC's Decision Rationales for the issuance of the Permits, and all of the evidence and arguments presented in these Appeals. The Panel finds that Penalty Ranch's concerns almost entirely echo its concerns raised in the Prior Appeals.

[168] The Panel is satisfied, on a balance of probabilities, that the OGC had due regard to Penalty Ranch's concerns, as set out in its written submissions prior to the Permits being issued, and as expanded in these Appeals. The Panel finds that, in addition to adding specific conditions designed to deal with Penalty Ranch's concerns, the Permits either specifically incorporate the requisite regulatory requirements and safeguards, or Penalty Ranch's concerns are addressed via the general legislative requirements that pertain to permit holders.

[169] The Panel also finds that the evidence supports a conclusion that, in addition to being in compliance with the Permits, Crew Energy strives to meet or exceed industry standards where that is a consideration – and the OGC is satisfied with that.

[170] The Panel finds that the evidence overwhelmingly supports a conclusion that the OGC gave due regard to the concerns set out in Penalty Ranch's written submissions.

DECISIONS

[171] In making the decision on the appeals, the Panel has carefully considered all the evidence before it and the submissions and arguments made by each of the parties, but has referenced only that which is necessary for these decisions.

[172] For the reasons set out above, the OGC's decisions to issue the Permits to Crew Energy are confirmed.

[173] The appeals are dismissed.

"Brenda Edwards"

Brenda Edwards, Panel Chair
Oil and Gas Appeal Tribunal

June 4, 2019