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ALBERTA
ENVIRONMENT AND PROTECTED AREAS

Office of the Minister

July 31, 2024

Mr. Paul McLauchlin
Reeve
Ponoka County
4205 Highway 2A
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Dear Reeve McLauchlin:

Thank you for your email and sharing Ponoka County residents' questions about water use by the oil and gas industry.

I have attached a document with answers to the questions, as well as input from the Alberta Energy Regulator, for your use. The Alberta Energy Regulator collects a substantial amount of industry water data and publishes an annual Water Use Performance report (found at aer.ca). This includes water use data for hydraulic fracturing operations in the province, with the latest report showing that only 13 per cent of non-saline water allocated to all industries in the province was allocated for oil and gas extraction, while the energy industry used only 21 per cent of its allocation in 2022.

Should you have further questions, please continue working with Environment and Protected Areas staff.

Thank you again for writing.

Sincerely,

A handwritten signature in black ink that reads "Rebecca Schulz".

Rebecca Schulz
Minister of Environment and Protected Areas

Attachment

cc: Honourable Jason Nixon

MLA, Rimbey-Rocky Mountain House-Sundre

Questions for the Ministry of Environment and Protected Areas

1. **Why is there very little communication around temporary diversion licence (TDL) applications? Or the development of a water reservoir (Baytex)?**
 - **Shouldn't water licence applications follow the same requirements for communication as in the *Municipal Government Act* for municipality subdivisions/development? Not everyone is online and the website is difficult to find. In the future, communication should include information in the newspaper, letters to landowners, and online.**

See information below from the Alberta Energy Regulator (AER).

2. **Could the landowners and local public please be notified with the following about hydraulic fracturing water licence applications:**
 - **TDL total number,**
 - **diversion start date,**
 - **diversion end date, and**
 - **points of diversion.**

See information below from the AER.

3. **Why are landowners able to sell river “access” to hydraulic fracturing companies when they are effectively selling water that affects other water users? Why is there not a difference between surface runoff-filled dugouts and dugouts that are being recharged with groundwater? Selling “access” is especially egregious if the water being accessed is publicly shared water (connected to groundwater or lakes, rivers/creeks).**

All water is owned by the province, and charging for water use is not allowed under the *Water Act*. To avoid the perception of being in conflict with the act, landowners present it as a charge for “accessing land,” which is not expressly prohibited.

From a water allocation perspective, there is no real difference between a dugout that fills naturally from surface water runoff or fills naturally by intercepting groundwater. The most important factor for a dugout to qualify for the exemption of 6,250 cubic metres of annual diversion is that water has been captured naturally. For any dugout where water was pumped into it, all water use from that dugout requires a licence.

Dugouts and any associated exemptions from licensing are limited to agricultural or statutory household purposes. If someone sells access to water in their dugout for non-agricultural purposes, such as for oil and gas, a TDL is required. If the sum of agricultural and non-agricultural diversions from a dugout exceeds 6,250 cubic metres in a year, the landowner also requires a licence for any agricultural use of water during that year.

4. If several hydraulic fracturing companies have been authorized to pull water from one location, why isn't there a break to allow the water to replenish?

See information below from the AER.

5. Are "in-stream flow needs" as listed in water licenses true water conservation objectives (WCOs) or not? How can the minimum in-stream flow needs for rivers be increased? Is it a political decision?

They are essentially the same thing and achieve the same outcome but are implemented in two different ways. An in-stream flow need on a licence is determined by the director as part of their decision to allocate water and provides a cut-off where a licensee is required to reduce or cease diversion. A WCO also sets the amount of water quantity or water level established as necessary for a water body, but a WCO has gone through a public consultation process and must be published by the director. In-stream flow needs are science based measures developed by our department and do not require a government decision.

To date, WCOs have only been established where a basin water management plan is completed, for example, in the South Saskatchewan River basin and the Battle River basin. When a WCO is formally established, the director uses that as the "in-stream flow need" that appears as a condition of the licence.

6. Is there a timeline for establishing water management plans for all basins in the province?

No.

7. The Water for Life Strategy aim is "balancing environmental protection with economic development" yet how do we ensure that the cumulative effects of TDLs in a sub-region that is experiencing water scarcity are not weighted more in favour of industry over the ability for the aquatic ecosystem to function, and allow people to fish, paddle, swim? Environment and Protected Areas (EPA) and the AER coordinate their management and regulatory actions when low flows are expected and escalate their interventions when low flows are observed. As a routine allocation tool, TDLs are issued when water is determined to be available and adverse impacts are unlikely. They are relatively low risk for managing water because they are a short-term use (one year or less), carry no priority number, and can be cancelled at any time.

When significant low flows happen, one of the first management actions is the cancellation of any existing TDLs. For critical water users during water shortage, TDLs can be an effective tool to provide an alternative source of water. For example, users could be directed to larger, more sustainable sources as opposed to smaller, sensitive streams.

To balance water uses, TDL applications are reviewed against the Surface Water Allocation Directive (SWAD) for areas with no water management plan in place or where there are no water conservation objectives or no requirements for instream objectives to be met. SWAD incorporates principles to manage cumulative water allocation, availability of water, and sustainability of allocations at a water body and watershed scale. This minimizes impacts to downstream aquatic ecosystems and habitats; and provides limits for rates of diversion from lakes/wetlands. SWAD can be found at open.alberta.ca/publications by searching for “surface water allocation directive.”

8. **Why does the government seem to favour industrial uses of water over aquatic health and other water users when issuing licences, counter to the priorities and goals outlined in the Water for Life Action Plan?**
- **In the Water for Life Action Plan, under the goal “Albertans will be assured that water is managed effectively to support sustainable economic development,” key actions include to develop and implement a viable governance system that supports the sustainable management of water. Particularly to reduce the amount of high-quality non-saline water used in hydraulic fracturing operations.**

Industrial uses are not favoured; the *Water Act* intentionally did not create a hierarchy of purposes that are preferred or deemed better than others. Alberta views water as a resource for people, communities, environment, recreation, and social benefit as well as for generating economic opportunity and sustaining livelihoods. Any proposed use of water that does not cause an adverse impact to the aquatic environment, or to other existing water users, can be allocated for a beneficial purpose. Water for Life includes goals and actions for all uses (not preferential use for any activity).

Water use in licence applications is justified to regulators, and proposals are scrutinized for the quantity requested, impact to the source, feasibility, and demonstrated need, and that water will not be used wastefully. Policies and practices evolve in time along with considerations informing our management approaches on the supply side and environmental protection. Specific policies, such as the Water Conservation Policy for Upstream Oil and Gas Operations (WCP) (also available at open.alberta.ca/publications), target the water demand management and set expectations for minimizing oil and gas reliance on high quality non-saline water sources.

9. Prioritizing the reduction of high-quality, non-saline water for hydraulic fracturing has been listed in Water for Life plans and action reports, and government correspondence, since 2006. Yet total water use and water use intensity by multi-stage hydraulic fracturing operations are sharply increasing. Why have there not been targets for efficiency gains or reductions implemented?

The WCP was released in December 2020. It applies to oil sands mining operations, oil sands in-situ operations, enhanced oil recovery and cold bitumen enhanced oil recovery operations, and multi-stage hydraulic fracturing operations in horizontal wells. This policy serves to minimize the use of freshwater in upstream oil as operations using saline groundwater, alternative non-saline water sources such as recycled wastewater, and/or non-water technologies. It builds on the 2006 Water Conservation and Allocation policy, which saw significant freshwater use productivity improvements.

The WCP includes quantitative performance measures to assess attainment of policy objectives. The performance measures include trend lines of:

- allocation volumes and actual use of non-saline water;
- the ratio of non-saline water use to hydrocarbon production;
- allocation of non-saline water to upstream oil and gas operations as a percentage of all water allocation by basin; and
- applications for operations that use alternative sources and non-saline water.

10. How do we incentivize hydraulic fracturing water users to reduce their use? Is it possible to set a price or hard targets on reductions?

The *Water Act* does not allow charging for water, so pricing is not currently an available mechanism for government to incent behaviour change. In the last two decades, increasing water conservation, efficiency, and productivity (CEP) of Alberta's major water users has largely been achieved voluntarily. For example, Water for Life set a goal of a 30 per cent increase in CEP between 2005-15, and the Alberta Water Council reported in 2017 that provincial target was met and exceeded, by measuring progress across seven major water-using sectors. Since 2006, the upstream oil and gas sector has been directed by various policies that provide specific guidance to industry on demonstrating level of effort and alternatives evaluation toward minimizing their use of high-quality, non-saline water. The degree to which any major water users, including irrigation, municipalities, power generators, petrochemical, and pulp and paper, could have specific policies, standards, or incentives considered is one of the options being evaluated by EPA under the Premier's mandate letter to increase water availability and water licences for water users.

11. Can TDLs with no flow-back into the system be dealt with differently than other TDLs?

The degree to which a licence is consumptive is considered as part of licence decision. For example, irrigation licences are similar to oil and gas or hydraulic fracturing because either of these uses generally result in no-return flow. It makes little sense to try to single out one industry when others have the same or similar net effect.

12. Why is the AER not funded by general tax revenue and instead by industry levy? The AER is being funded by the industry they are monitoring and policing which is a clear conflict of interest.

See information below from the AER.

13. How do we protect our home and backyard to ensure we have water for our households, agriculture, small businesses, and recreation? How is it determined there is “sufficient water” for the ecosystem and other water users, landowners, etc? Is it a political decision?

Alberta recognizes the importance of having access to assured water quantities for rural residents, agricultural producers, businesses, and communities. Individual landowners or occupants that do not have water provided by a water licence have ability to access and store water under specific exemptions (such as household use, exempted agricultural use, and dugouts) provided in the *Water Act*. Diverting water whether it is under an exemption or if it is from a licence or an agricultural registration, cannot provide a full assurance or guarantee of water supply, but describes which entities would have priority to access water, if it is available from a source. Household use is the highest recognized priority.

The director, when determining whether to issue a licence, must consider the impacts to other water users and the aquatic environment. The department applies administrative practices and policies, informed by environmental flow needs science, to apply licence conditions that protect against adverse impacts. The Surface Water Allocation Directive provides current policy guidance for directors and is based on providing a high level of protecting aquatic environment needs in areas that do not already have specific objectives established.

If a purpose for water use is intended to be prioritized or restricted – or would have quantities or sources set aside proactively for a specific user, sector, or purpose – it generally requires at least a level of political endorsement (for example, confirmation of Minister support) or requires a Minister decision (such as a Ministerial Order).

14. When water licence users are required to cut back on water, why is industry not required to? For example, in southern Alberta, farmers are supposed to cut back irrigation by 50 per cent but industry can stay status quo?

Alberta's 130-year-old management system directs that under standard circumstances, water use is cut back based on conditions of an individual licence (such as an in-stream objective condition) and based on licence priority. TDLs are generally the first to be suspended or cancelled because they have no priority. If there is a priority call, senior licences (based on licence priority date) are entitled to divert water ahead of junior users, regardless of purpose.

The recent water sharing agreements established in southern Alberta reflect basin-specific context for each of the sub-basins. The largest users with most of the allocated water are signatories to agreements. Water sharing agreements are designed to be proactive, risk-based, and agile enough to be adjusted in real time. In broad terms, the agreements call for the following:

- Participating municipalities will reduce water consumption by between five and 10 per cent.
- Participating industry will use only the minimum volume of water practical to maintain safe, reliable operations.
- Participating irrigation districts will use less water and allow other users to get their water first, before using the remaining water available for licensed use.

To ensure the water conservation efforts of southern Alberta's largest water users have maximum effect, smaller water licensees have been asked to take the same water conservation actions. This request was outlined in a letter from the Minister to more than 2,000 small water licence holders in the South Saskatchewan River Basin.

Industry are water licence users and large industrial licence holders are participating in Water Sharing Agreement Memoranda of Understanding (MOUs). In some areas of southern Alberta, there are no large industrial license holders in the area, like the Oldman and Southern Tributaries. Irrigation districts and municipalities have roughly 90 per cent of the water allocation in this region. As of May 9, 2024, the MOUs for the Oldman and Southern Tributaries have been activated. The Red Deer and Bow River MOUs remain deactivated with favorable short-term water availability and water supply outlooks.

It is important to note that the smaller license holders, including smaller industries, private irrigators, and other users, are being asked to align their water conservation measures with the MOU signatories. Even though these small licence holders do not have a substantive effect on water outcomes, the actions taken by large licence holders should be reflected in the collective efforts of everyone to manage water usage during times when MOUs have been activated.

For example, if the Red Deer or Bow River MOUs are activated, then industry signatories to these agreements would be required to use only the minimum volume of water practical to maintain safe, reliable operations while continuing to pursue conservation opportunities that meet operational needs and business needs. Following MOU activation, EPA would send letters to all non-signatories (including industrial licence holders) specifying industry is to limit water withdrawals to the minimum volume of water needed to maintain safe, reliable operations while continuing to pursue conservation opportunities that meet operational needs and business needs. EPA intends to conduct spot checks of small licence holders to ensure alignment of actions to those committed to by the MOU signatories.

15. Why are there not stronger incentives for hydraulic fracturing companies to minimize freshwater use, when there are alternatives, such as effluent water, natural gas? Why are there not hard efficiency targets or a cost per cubic metre of water used?

Please refer to Question 10. Interim water reuse opportunities are encouraged and are occurring, but to support enabling water reuse and remove current barriers to alternative water sourcing options across all sectors (including oil and gas), EPA must consider regulatory and legislative changes to the *Water Act*. This is another action being evaluated under the Premier's mandate letter to increase water availability and water licences for water users.

Questions for the AER

No direct responses provided by the AER; general info provided as follows:

- Mitigation measures in response to drought conditions may vary depending on location and based on how much snow and rain the province receives. In some instances, if water flow remains low, low-flow advisories issued by EPA would go as far as restricting the issuance of new TDLs – mainly from flowing water bodies. EPA could issue direction or guidance not to issue any further TDLs in restricted water basins, and the AER would adhere to that direction. Such action would have a direct impact to all sectors that rely on TDLs, including the energy sector and more specifically hydraulic fracturing operators.
- During a temporary restriction, companies in the energy industry would need to rely on other water sources such as borrow pits, dugouts, reservoirs, and lakes. Limited access to water sources would potentially cause companies to go further to get water, meaning an increase in operations cost.
- The severity of drought and low flows may also result in a reduction of the number of projects planned and executed during the year. During a temporary restriction, companies would need to rely on other water sources such as borrow pits, dugouts, reservoirs, and lakes. Limited access to water sources would potentially cause companies to go further to get water, meaning an increase in operations cost.
- The AER continues to meet with licensees in the energy sector to review their mitigation plans and the potential use of tools available under the *Water Act*, which are also outlined at alberta.ca/drought.

Additional background

- The AER regulates non-saline (for example, fresh) water use for the oil and gas sector. The use of non-saline water must be licensed under Alberta's *Water Act*. An application for a *Water Act* licence is guided by the Water Conservation Policy for Upstream Oil and Gas Operations and must identify the proposed location of water diversion, along with the maximum volume, rate, and purpose, among other things.
- To discourage the use of freshwater, the policy also requires applicants to demonstrate that they have considered and documented alternatives to fresh water as part of the application process. If a licence is issued, it will contain various enforceable conditions, including the maximum rate at which water may be withdrawn and the water level at which all pumping must stop. This is to ensure that sufficient water remains at all times to support other existing users and the environment.
- Last year, the AER also made additional regulatory changes to encourage the use of alternatives to non-saline water by enabling the storage of large volumes of poor-quality water to be used for fracturing operations, along with providing options for conveying that water between sites using temporary surface pipelines. These regulatory tools will help offset the use of freshwater by encouraging recycling/reuse of already used water and/or the use of poor-quality water.
- The AER also collects a substantial amount of industry water data and publishes an annual Water Use Performance report (found at aer.ca) – which includes water use data for hydraulic fracturing operations in the province. The latest report, which includes water use data from 2022 shows that only 13 per cent of non-saline water allocated to all industries in the province was allocated for oil and gas extraction, while the energy industry used only 21 per cent of its allocation in 2022.
- The AER provides dedicated information on hydraulic fracturing online (found at [Hydraulic Fracturing | Alberta Energy Regulator \(aer.ca\)](http://Hydraulic Fracturing | Alberta Energy Regulator (aer.ca))). The below information is provided from that site:
 - Because hydraulic fracturing operations do not use water after a well is fractured, opportunities to recycle fracturing fluid (flowback water) within the well are limited, so make-up water accounts for most of the water used. However, flowback water can be reused to fracture a different well, thus contributing to the make-up water used in another hydraulic fracturing operation. Of the total water used in 2022, just over 1% was recycled water, and the remaining 99% was make-up water.
 - The most common source of water for hydraulic fracturing operations is nonsaline water. Hydraulic fracturing operators only used about 20% of their nonsaline water allocation in 2022.
 - In 2022, about 26 million m³ of make-up water was used for hydraulic fracturing.
 - Nonsaline water accounted for almost 97% of the make-up water used.
 - While alternative make-up water volumes remain relatively small, their use increased by 854% between 2013 and 2022, demonstrating that operators are looking at alternative water sources to meet their needs.

1. Why does the AER consider shallow groundwater, rivers, lakes, ponds, etc, as “surface runoff?” Why are surface runoff-filled reservoirs not a distinct

- category of water inventory, defined by a reservoir only being filled by overland flow from precipitation and snowmelt, with no groundwater recharge?
2. Why aren't hydraulic fracturing companies required to monitor surrounding wells, or shallow aquifer depletion while water is being diverted?
 3. Who sets the minimum flow rate? Why are they set so low? How are the minimum flow rates established? Why not increase the minimum flow rate, especially during drought years?
 4. How does the AER differentiate water from rivers/creeks versus man-made structures, such as dugouts or pits adjacent to rivers/creeks?
 5. How does the AER ensure water from rivers/creeks is not being diverted to pits/dugouts?
 6. Why are TDL holders not required to measure flow at the point of diversion?
 - At this time, Lloyd Creek monitoring station is downstream from where the water is being diverted out of Jones Trucking and Backhoe, as well as the gravel pits on Highway 611. There could be tributaries in between where Jones pit is and the Lloyd Creek monitoring station, which can affect the level of the body of water and the flow rate.
 - In 2023, Baytex was using the Blackfalds flow station to determine Blindman River flow for diversion just south of Bluffton. These two locations are more than 50 km apart as the crow flies.
 7. When the AER reports a certain percentage of Alberta's non-saline water used/allocated by certain users each year, how is that determined? Is it done on a watershed level or a provincially aggregated level? If the latter, how is it meaningful since you could use a large portion of an allocated volume in one basin where there is water scarcity and have it look like there are no issues on a provincial level? How is the yearly fluctuation in supply determined?
 8. What are the standard conditions" that allow for TDL applications to be automatically approved by the *Water Act* Temporary Diversion Licence Electronic Review System (WATERS)?
 9. How does the AER determine if there is sufficient water before issuing TDL approvals? How are landowner needs and ecological needs determined?
 10. Were Baytex Energy, Spartan, Bonavista and Resourceful required to do an "investigation of alternatives to non-saline water" before applying for a TDL? If so, can we see it?
 11. Many water licenses issued have return flow, whereas hydraulic fracturing does not. How is this accounted for in issuing licences? Many other TDLs would have return flow available for downstream users, other licence holders and the aquatic environment.
 12. How is the cumulative effect of multiple hydraulic fracturing TDLs in a watershed measured and does it affect the availability of water (in available TDLs) more than other TDLs? Have any of the companies operating in our watershed had to complete a cumulative effects evaluation?
 13. How is shallow groundwater usage determined if the TDL is from a dugout or pond with groundwater recharge and how is this figured into available

TDLs?

- 14. How does the AER ensure companies applying for TDLs in sub-regional areas “engage and collaborate with all water users...in order to minimize overall impacts on the water source?” (Community engagement and collaboration between oil companies to ensure water use is sustainable in that area. These are in the Water Conservation Policy for Upstream Oil and Gas Operations).**
- 15. Since we are located in a “potentially water-short area,” what have the energy companies done to show they have “maximized efforts to reduce high quality, non-saline water?”**
- 16. With the AER directives 55,58,77, as the website states non-saline water use intensity is expected to start decreasing in 2024. Is this expected in our area, given the number of enormous holding ponds being constructed in our sub-basin for non-saline water storage?**
- 17. What is the current CEP sector plan for the hydraulic fracturing industry?**
- 18. What are the in-stream flow needs for the Blindman River and its tributaries? How are they determined? Are they actual “Protected Water” through WCOs, or are they set by the AER during licensing?**

19. Why is hydraulic fracturing not listed as a possible reasons for a TDL on the AER' website? Please see the link below:

<https://www.aer.ca/regulating-development/project-application/application-processes/water-act-temporary-diversion-licence>

20. Do hydraulic fracturing companies have the right to replace water when it evaporates? For example, with the Baytex Energy reservoir in Ponoka County.