

WATER BULLETIN

May 2016

Despite the rain, drought conditions persist over much of western Canada with long term drought conditions developing in northern Alberta and British Columbia (i.e. Peace and Athabasca). With below average snowpack, significant snow melt having already occurred, and above average temperatures, many river basins have passed the peak of the freshet season with sustained low flows. The advanced freshet is expected to put pressure on summer low flows in the snow-melt dominated rivers across Alberta and BC.

Water Restrictions

AB The AER has current restrictions on:
Peace basin: Cutbank, Kakwa, Latornell, Muskeg, Simonette, Smoky, and Little Smoky.
Athabasca basin: Upper Athabasca, Berland, Sulphur, Wildhay, Edson, Erith, Embarras, and Mcleod.

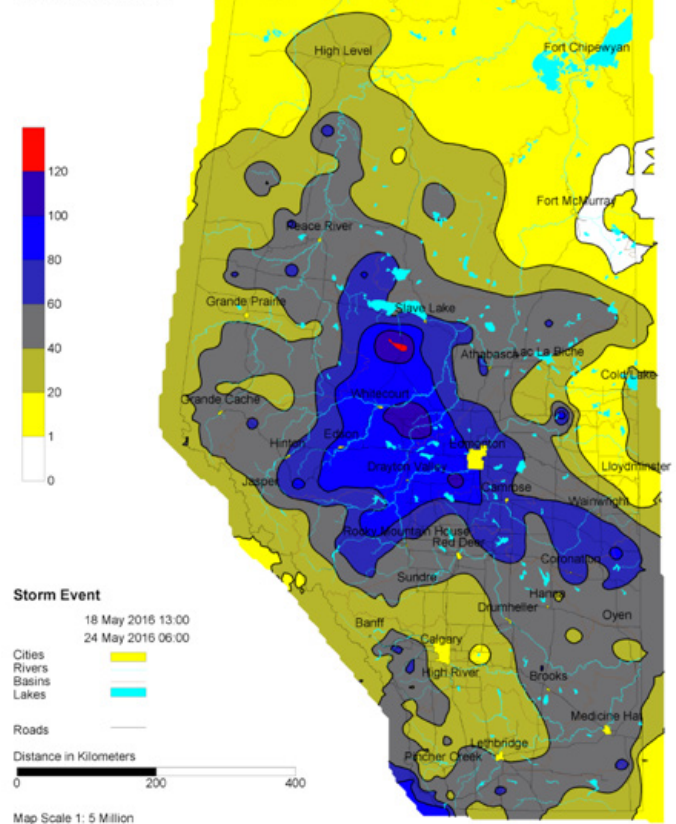
BC The BC Oil and Gas Commission has indicated they could potentially suspend short-term water withdrawals due to drought conditions. Lower than normal flows are expected in some rivers (i.e. Kiskatinaw, Pouce Coupe, Beatton, Blueberry, Fontas, etc.).

► **Water withdrawals are encouraged while available, for storage and later use (under valid authorization/licence).**

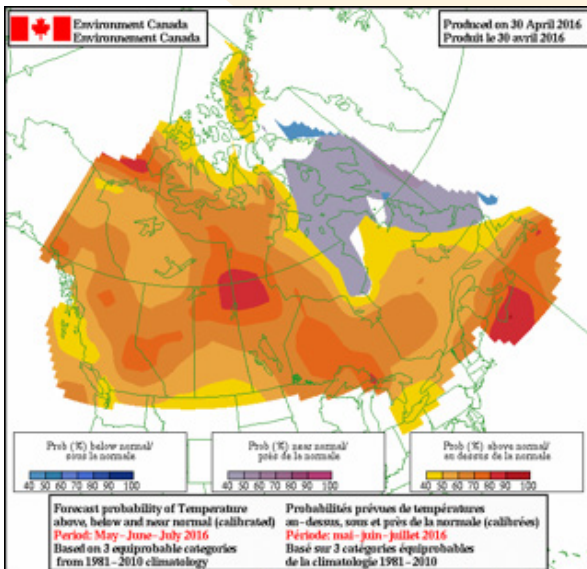
Six days of rain over the May long weekend delivered more precipitation than the previous six months.

Alberta Environment and Parks

Precipitation Map
Contour Interval 20 mm



Source: Alberta Environment and Parks



Source: Environment Canada

Environment Canada is forecasting above normal temperatures across Alberta and BC over the May to July period.

The persistence of a strong El Niño condition (i.e. warm and dry) since early 2015 has negatively affected water balances in western Canada. A transition to a La Niña condition (i.e. cool and wet) is expected later this year with a return to more normal moisture conditions.

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Water Use Reporting System (WURS)

What's new? Check your Temporary Diversion Licences regulated under the Alberta Energy Regulator (AER) for changing conditions. Most new licences from the AER have a requirement for monthly WURS reporting.

Are you manually tracking water use? Integrated Sustainability is looking for partners to help pilot our new Water Tracker system - it's a web based tool to remotely monitor water withdrawals, manage low volumes and track water use for submission to WURS.

Strategies to Manage Water

Water is an integral element of energy resource development and an important natural resource. We understand that unconventional oil and gas production requires a reliable source of water throughout the year and that having a strategy in place for periods of water scarcity is critical to business success. Integrated Sustainability has been helping clients mitigate water risks by:

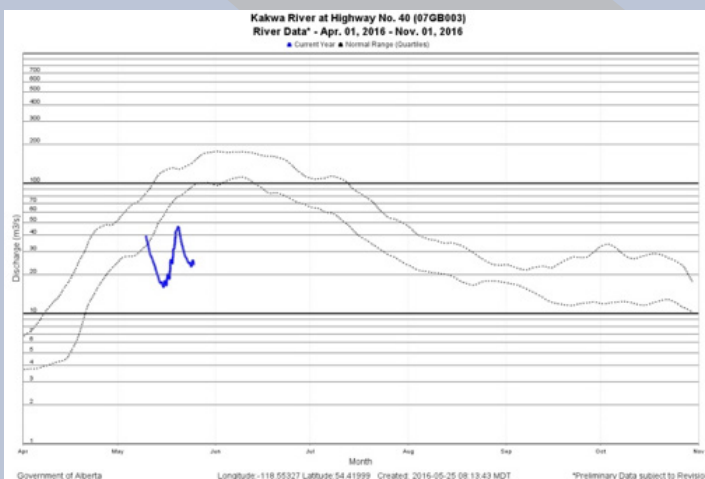
- Assessing operational water needs
- Evaluating water sources, or combination of sources (considering availability, reliability, costs, environmental impact and stakeholder acceptance)
- Planning, designing, and constructing water storage infrastructure (i.e. produced water and freshwater ponds/tanks)
- Designing treatment systems for produced water re-use
- Advancing alternative water supply opportunities (i.e. groundwater or water sharing)

Top Contraventions of the Water Act (issued by the AER):

1. Failure to report a contravention
2. Exceedance of licenced withdrawal limits
3. Diversion of water without a licence
4. Disturbance to a waterbody without approval
5. Proximity of infrastructure to a waterbody without appropriate protective measures

Administrative penalties that may be imposed for the purposes the Water Act, range from \$1000 to \$5000 for each contravention, for each day the contravention took place. Operations can also be suspended.

A RIVER IN FOCUS: KAKWA RIVER



The Kakwa River is a tributary of the Smoky River in northwest Alberta. The Kakwa River originates in BC surrounded by the Kakwa Provincial Park and Protected Area. It flows east into Alberta through Kakwa Wildlands Park, and northeast through foothills where it joins the Smoky River.

Flows typically range from less than 5 m³/s in the winter to over 100 m³/s in spring. This spring, the Kakwa River is flowing well below normal at less than 30 m³/s.

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