SCHEDULE 1

Water Conservation Objective

Environmental Flow and Water Level Criteria

The Red Deer River tributaries have a *Temporary Diversion Licence* (TDL) maximum diversion rate, a Red Deer River mainstem *Water Conservation Objective* (WCO) and may have an *In-stream Objective* (IO) minimum flow requirement below which no abstractions are permitted. One lake in sub-basin 05CF has a withdrawal restriction.

Tributary Maximum Diversion Rate
The maximum rate of diversion from a tributary shall not exceed 10% of the current recorded flow measured either at the point of diversion or at a downstream *Water Survey Canada* (WSC) hydrometric station on the tributary, and applies to the cumulative sum total of all upstream concurrent TDL abstractions.

Tributary IO
There are currently no tributaries in sub-basin 05CF with a minimum IO flow.

Red Deer River Mainstem WCO
The Red Deer River WCO applies to the Red Deer River tributaries within sub-basin 05CD:

- from November to March inclusive: a rate of flow in the Red Deer River that is 45% of the natural rate of flow or 16 m^3/s whichever is greater at any point in time, or

- from April to October inclusive: a rate of flow in the Red Deer River that is 45% of the natural rate of flow or 10 m^3/s, whichever is greater at any point in time.

Sub-basin 05CF Lake
- Shooting Lake: minimum water level of 826.953 m geodetic below which no withdrawals are permitted.

Environmental Flow Monitoring

Summer (Open Water) Season Tributary IO

There are no tributaries in sub-basin 05CF with real-time hydrometric gauging stations. Ungauged tributaries in sub-basin 05CF require a manual flow measurement.

Summer (Open Water) Season Red Deer River WCO

The summer open water season typically runs from March 1 to October 31 however the dates may vary annually. During the summer season monitor the Red Deer River WCO using the *Red Deer River at Drumheller (05CF001)* Water Survey Canada hydrometric station.

Shooting Lake Water Levels

There is no Water Survey Canada hydrometric gauging station on Shooting Lake. If the cumulative concurrent abstraction volume exceeds 3,000 *cubic metres* a manual surveyed geodetic water level is required for Shooting Lake.

Winter (Ice Cover) Season

During the winter ice cover season near real-time recorded flows for the Red Deer River tributaries and natural flows for the Red Deer River mainstem are unavailable therefore the following criteria apply:

1. If the tributary has a near real-time 12-month active hydrometric station use the most recent manual WSC stream flow measurement (typically updated monthly).
2. If the cumulative TDL abstraction volume is equal to or greater than 1,000 cu.m on the tributary obtain a manual winter flow measurement
3. If the cumulative TDL allocation volume is less than 1,000 *cubic metres* (m^3) then:
    i) If the tributary has historic streamflow data, up to 10% of the historic mean monthly flow may be allocated otherwise,
    ii) If the tributary is ungauged the water may be withdrawal without monitoring provided the total abstraction volume does not exceed 1,000 m^3
4. The *Dickson Dam Tunnel Outlet* (05CB007) Water Survey Canada hydrometric station operates during the winter ice cover season. In order to meet the Red Deer River mainstem WCO requirement TDL abstractions require a minimum flow of 16 m^3/s to be met at the *Dickson Dam Tunnel Outlet* (05CB007).

Environmental Flow Monitoring Websites

Up-to-date water flow information is available most of the year at Alberta Environment's website:
https://rivers.alberta.ca

Source of Water: Red Deer River Tributary
Reach: All Watercourses in Sub-Basin 05CF
Updated: 2016-08-03

Sub-Basin 05CF General Location