

# **BC HYDRO OPERATIONS - ICE OBSERVATION REPORT #18**

**Flight: Wednesday February 5, 2014**

**Report: February 6, 2014**

**Report by Kerry Paslawski and Martin Jasek**

The responsibility for ice observations on the Peace River passes to BC Hydro from Alberta Environment and Sustainable Resource Development when the ice front is upstream of Dunvegan. That responsibility was transferred on January 15, 2014. The numbering of reports is a continuation of the Alberta Environment reports.

## **Flight Observations**      **by Kerry Paslawski**

A flight observation was conducted out of the Beaverlodge Airport on Wednesday Feb 5, 2014. Air temperature at the Clayhurst Bridge near the BC-AB Border was -13 °C and at Dunvegan it was -17 °C. It did reach -31 °C at Dunvegan in the early the same morning. The skies were overcast.

## **Ice Observations**

Location of the Ice Front: The ice front had advanced 18.8 km since the last AERSD Radarsat image on February 3 and was located at **km 260.2 on Feb 5, 2014 13:49 MST**. This was approximately 36 km upstream of Dunvegan and about 96 km downstream of the Clayhurst Bridge near the BC/AB border. The average rate of advance since the last flight observation on February 3 was 8.2 km/day. However, it appeared that the ice cover could consolidate very soon and therefore the average daily advance rate may not be this high.

Ice Gap downstream of Dunvegan: From the air and from ground photos on Jan 31 it was determined that the ice gap that formed on Jan 30 was 3.5 km long and not 4 km as noted in the previous report (the downstream end was at km 299.2). By Feb 5, the 3.5 km long gap that formed at Dunvegan on January 30 was still present but filled in at the downstream end due to slush being transported from under the ice cover upstream of the Dunvegan Bridge and skim ice accumulation. The gap has shortened to 1.3 km long with the downstream end at km 299. The ice cover upstream of the bridge has remained solid since the formation of the gap while there has been some minor movement of the ice cover downstream of the gap. The downstream movements have caused water levels in the Dunvegan area to drop by about 1 m. According to the Dunvegan gauge, movements occurred on January 31 and February 3.

## Detailed Observations:

- km 229                    - frazil ice pan concentration of about 25%
- km 234                    - frazil ice pan concentration of about 30%
- km 237                    - frazil ice pan extruding through channel narrow creating frazil rafts
- km 244.3                 - extent of backwater from ice front
- km 247                    - frazil ice pan concentration of about 50%
- km 251                    - frazil ice pan concentration of about 60%
- km 252.5                 - frazil ice pan concentration of about 80%
- km 254.5                 - frazil ice pan extruding through channel narrow creating frazil rafts
- km 258                    - frazil ice pan concentration of about 80%
- km 259.5                 - frazil ice pan concentration close to 100%
- km 260.2                 - ice front at 13:49 MST
- km 260.2 to 263          - juxtaposed to slightly consolidated ice cover

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|--------------------|---|
| km 263 to 267      | - slightly consolidated ice cover.  |
| km 267.0 to 268.5  | - small toes of consolidation.  |
| km 268.5 to 274    | - juxtaposed ice cover  |
| km 274             | - small leads   |
| km 274 to 276.2    | - consolidated ice cover  |
| km 276.2 to 281.5  | - juxtaposed ice cover  |
| km 281.5           | - tension tear in the ice cover   |
| km 282             | - small open leads  |
| km 282.9 to 283.3  | - 400 m by 50 m wide long open lead   |
| km 283.3 to 285.0  | - consolidated ice cover  |
| km 285.0           | - narrow open lead along right bank   |
| km 285.3 to 290.0  | - medium consolidated ice cover   |
| km 291 to km 293.5 | - heavy consolidated ice cover  |
| km 293.5           | - toe of a consolidation  |
| km 293.5 to 295.7  | - consolidated ice cover to the Dunvegan Bridge   |
| km 295.7 to 297.0  | - river is open   |
| km 297.0 to 299.0  | - ice cover is very smooth and made up of accumulated slush and skim ice (no frazil ice pans). Some of this ice cover had broken and shifted near km 298. |
| km 299.0 to 293.2  | - heavily consolidated ice cover with toe of a consolidation at the downstream end.   |
| km 293.2 to d/s    | - ice cover has not changed downstream of this location.  |



Looking upstream at km 254.5 where ice pans are extruding through a narrow channel into rafts.



Looking upstream at the ice front at km 260.2.



Looking downstream at the ice front at km 260.2.



Looking downstream from km 295.7 at Dunvegan.



Looking S at km 296 – 298. Flow direction is R to L. Ice gap has filled in since the last report.



Looking downstream from km 300 shows consolidation that formed downstream of ice gap.



Looking downstream from km 301 at the toe of the consolidation that formed DS of ice gap.



Looking upstream at remaining ice gap at Dunvegan and consolidated ice upstream of bridge.

Environment Canada Temperatures ( °C )			
		Fort St. John	Town of Peace River
Observed:		Max/Min	Max/Min
Tue	28-Jan-14	-0.1 / -14.1	-7 / -17.7
Wed	29-Jan-14	-5.9 / -18.2	-11.9 / -21.1
Thr	30-Jan-14	-13.5 / -20.1	-14.8 / -24.8
Fri	31-Jan-14	-6.1 / -14.7	-6.9 / -15
Sat	01-Feb-14	-6.2 / -15.1	-5.8 / -15.9
Sun	02-Feb-14	-6.4 / -13.6	-8.3 / -17.8
Mon	03-Feb-14	-13.6 / -18	-15.6 / -19
Tue	04-Feb-14	-17.1 / -18.7	-18.5 / -27.5
Wed	05-Feb-14	-13.9 / -20.3	-18.9 / -30.5

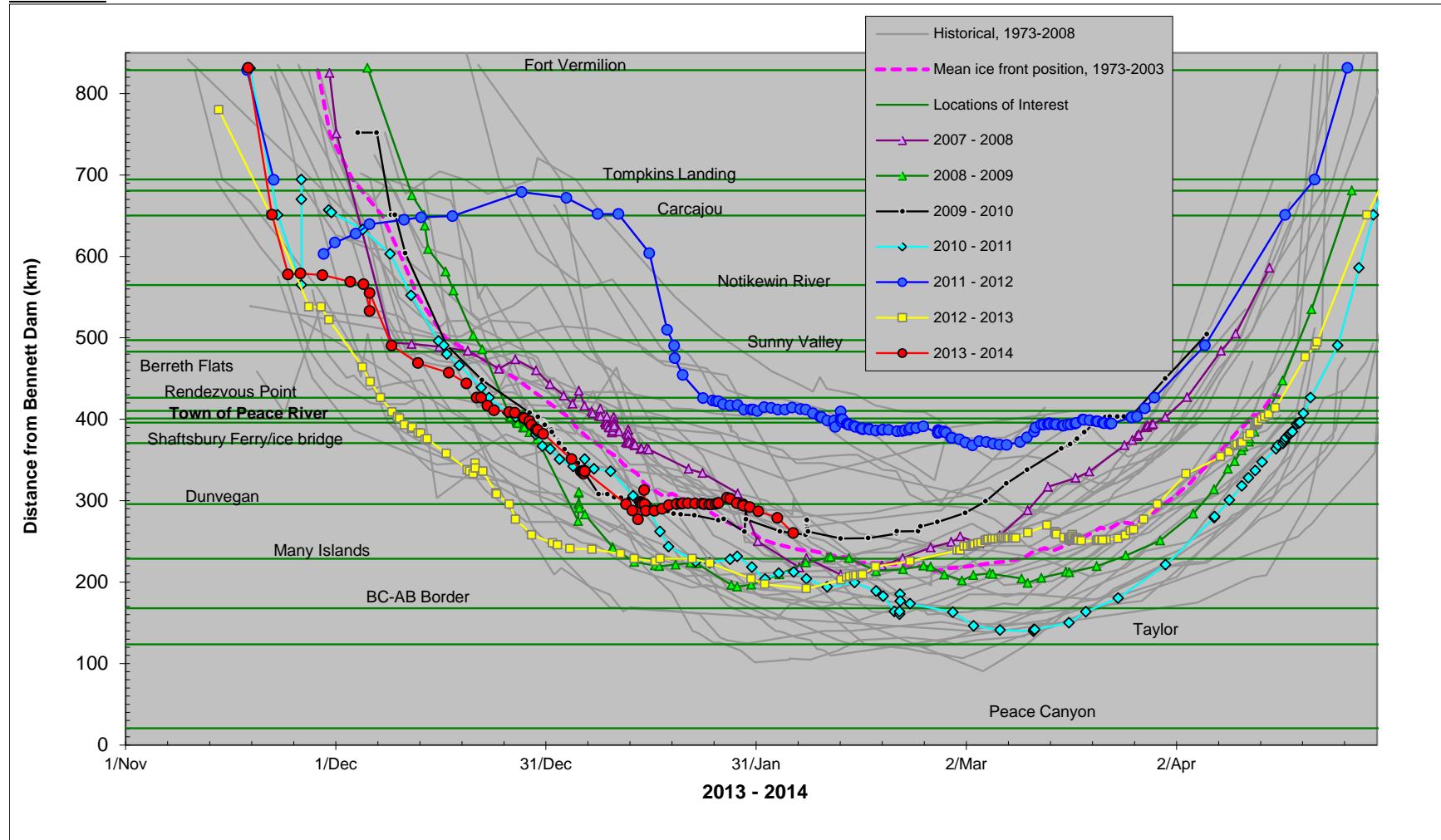
Environment Canada Temperatures ( °C )			
Forecast:			
Thr	06-Feb-14	-17 / -23	-16 / -27
Fri	07-Feb-14	-15 / -23	-15 / -20
Sat	08-Feb-14	-19 / -21	-19 / -24
Sun	09-Feb-14	-23 / -34	-19 / -25
Mon	10-Feb-14	-23 / -32	-20 / -27
Tue	11-Feb-14	-24 / -28	-21 / -27
Wed	12-Feb-14	-22 / -27	-19 / -26

Normal Max/Min	-7 / -16	-8 / -19
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## Ice Front



**The next ice observation will be issued next week.**