

BC HYDRO OPERATIONS - ICE OBSERVATION REPORT #23

Flight: Wednesday March 5, 2014

Report: March 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 Dawson Creek Airport on Wednesday March 5, 2014. Air temperature at the Clayhurst Bridge near the BC-AB Border was -17 °C and at Dunvegan it was -19 °C. It did reach -30 °C and -37 °C earlier the same morning at the two stations respectively. The skies were clear and sunny.

Ice Observations

Location of the Ice Front: The ice front had advanced 16.0 km since the last observation by web camera on February 28 and was located at **km 181.0 on Mar 5, 2014 13:19 MST**. This was approximately 115 km upstream of Dunvegan and about 17 km downstream of the Clayhurst Bridge near the BC/AB border (about 13 km downstream of the border). The average rate of advance since the observation on February 28 was 3.3 km/day.

Detailed Observations:

km 149	- frazil ice pan concentration of about 10%
km 157	- frazil ice pan concentration of about 15%
km 169	- frazil ice pan concentration of about 25%
km 177	- frazil ice pan concentration of about 50%
km 179.5	- frazil ice pan concentration of about 80%
km 181.0	- ice front at 13:19 MST
km 181 to 184	- juxtaposed ice cover with numerous open leads
km 182.2	- tension tear
km 184 to 185	- heavily consolidated ice cover
km 185	- toe of a consolidation
km 185 to 186.5	- slightly consolidated ice cover
km 186.5	- toe of a small consolidation
km 186.5 to 189	- juxtaposed ice cover
km 189 to 192	- slightly consolidated ice cover
km 192	- toe of a small consolidation
km 192 to 200	- numerous open leads, juxtaposed frazil rafts, slightly consolidated
km 200 to 203	- heavily consolidated ice cover
km 204	- medium consolidated ice cover
km 204.2 to 205.0	- narrow open lead
km 205.5	- toe of a consolidation
km 205.5 to 209.4	- juxtaposed ice cover
km 209.4 to 214.3	- slightly consolidated ice cover
km 214.3	- toe of a consolidation in the left channel
km 214.3 to 219.5	- heavily consolidated ice cover

km 219.5 - toe of a heavy consolidation that formed on Feb 26, 18:00 – 1830 MST
 km 219.5 to 220 - ice cover is juxtaposed

Unusual Consolidation on Feb 26

All 4 web cameras recorded a consolidation between 18:00 and 18:30 MST on Feb 26. Normally a consolidation moves slowly and is recorded in multiple 30 minute interval images by one camera. However, this event was unusual; the ice cover was stationary in all 4 web camera images at 18:00 MST and was moving at 18:30 MST. The web cameras cover km 195 through to km 213.6. The flight on March 5 indicated that this consolidation had run to km 219.5. Some images suggest that the consolidation may have started in mid ice cover in the km 200 to km 205 range. Still, this represents an unusually high consolidation velocity of 30 to 40 km/hr (8 to 11 m/s) if one assumes that the consolidation started immediately after the 18:00 MST images.

Ice Fronts Documented by Web Cameras

Additional ice front locations were documented by the web cameras after the previous report. However, most of the time the ice fronts recorded were the result of brief consolidations and most of the time the ice front was beyond the most upstream range of the web cameras. Therefore, the ice fronts below are not indicative of the average ice front positions on those dates and are not well suited for comparison with computer modelling.

Date/Time	km	Comment
28-Feb-2014 13:30	197.6	Web Cam 3
28-Feb-2014 14:00	197.2	Web Cam 3
28-Feb-2014 14:30	196.4	Web Cam 3
28-Feb-2014 15:00		poor lighting (into sun)
28-Feb-2014 15:30		poor lighting (into sun)
28-Feb-2014 16:00		poor lighting (into sun)
28-Feb-2014 16:30	196.3	Web Cam 3 (corrected from previous report)
28-Feb-2014 17:00	197.0	Web Cam 3 (corrected from previous report)
28-Feb-2014 17:30	196.8	Web Cam 3
28-Feb-2014 18:00	196.8	Web Cam 3
28-Feb-2014 18:30	196.5	Web Cam 3
28-Feb-2014 19:00	196.8	Web Cam 3
		darkness
1-Mar-2014 12:00		Out of Cam 3 Range
1-Mar-2014 12:30	196.4	Web Cam 3
1-Mar-2014 13:00	197.2	Web Cam 3
1-Mar-2014 13:30	197.5	Web Cam 3
1-Mar-2014 14:00	198.2	Web Cam 3
1-Mar-2014 14:30	199.1	Web Cam 3
1-Mar-2014 15:00	199.6	Web Cam 3
1-Mar-2014 15:30	200.4	Web Cam 1
1-Mar-2014 16:00	195.0	Web Cam 3
1-Mar-2014 16:30		Out of Cam 3 Range
Mar 2, 2014 all day		out of Cam 3 Range
3-Mar-2014 09:30		Out of Cam 3 Range, poor visibility upstream of km 199 ice at km 200 stationary
3-Mar-2014 10:00	202.4	Ice moving at Cam 3 (km 200), Position from Cam1

3-Mar-2014 10:30	203.7	Web Cam 1
3-Mar-2014 11:00	204.3	Web Cam 1
3-Mar-2014 11:30	205.0	Web Cam 1
3-Mar-2014 12:00	197.5	Web Cam 3
3-Mar-2014 12:30		Out of Cam 3 Range (upstream of km 195)



Looking upstream towards Clayhurst Bridge.



Looking upstream at the ice front at km 181 on Mar 5, 2014 13:23 MST.



Looking downstream at the ice front at km 181 on Mar 5, 2014 13:21 MST.



Open lead through a toe of a consolidation t at km 205. Flow direction is left to right.



Looking upstream at open lead at km 205 on March 5, 13:00 MST. Web camera images indicated that the lead formed slowly between March 3rd to 5th.



Looking upstream from km 217 at heavily consolidated ice cover.

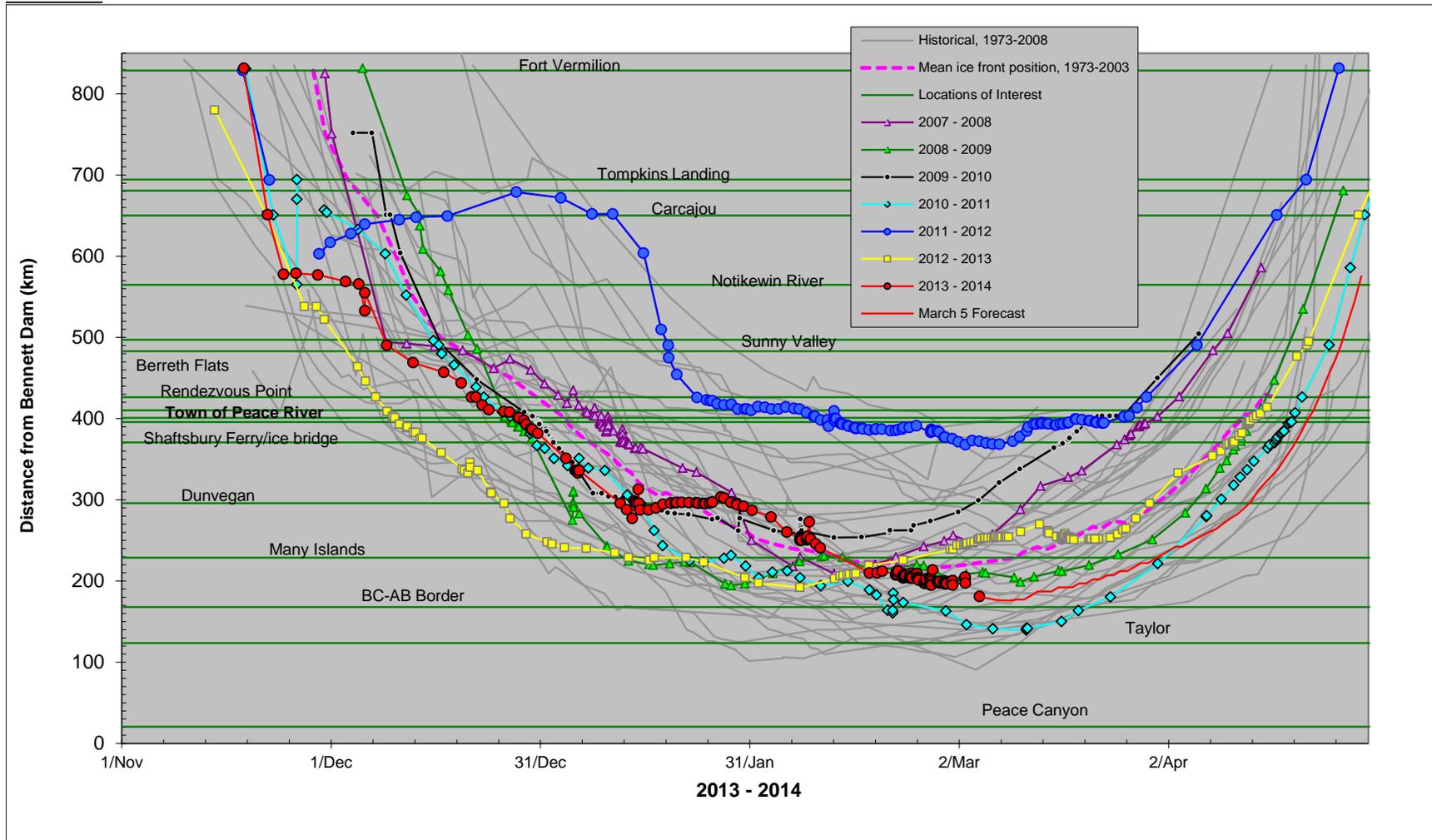


Looking upstream at a toe of a heavy consolidation at km 319.5 that formed on Feb 26 ~18:30.

Environment Canada Temperatures (°C)			
		Fort St. John	Town of Peace River
Observed:		Max/Min	Max/Min
Tue	25-Feb-14	-11.8 / -25.6	-16.3 / -30.3
Wed	26-Feb-14	-7 / -20.9	-4.4 / -25.4
Thr	27-Feb-14	-10.3 / -18.8	-12.4 / -22.7
Fri	28-Feb-14	-18 / -27.2	-21.8 / -32.7
Sat	01-Mar-14	-21.2 / -33.1	-18.7 / -37
Sun	02-Mar-14	-19.5 / -32.5	-15.7 / -32.1
Mon	03-Mar-14	-18.9 / -23.7	-16.5 / -21.9
Tue	04-Mar-14	-16.7 / -26	-13.7 / -23.6
Wed	05-Mar-14	-16.5 / -27.9	-15.1 / -28.9
Environment Canada Temperatures (°C)			
Forecast:			
Thr	06-Mar-14	-17 / -29	-15 / -33
Fri	07-Mar-14	-13 / -22	-11 / -24
Sat	08-Mar-14	-1 / -15	0 / -15
Sun	09-Mar-14	3 / -4	2 / -6
Mon	10-Mar-14	1 / -8	-1 / -4
Tue	11-Mar-14	4 / -4	5 / -6
Wed	12-Mar-14	6 / -2	8 / -3
Normal Max/Min		-2 / -11	-2 / -14

Continued Next Page.

Ice Front



A flight observation has been scheduled for Monday March 10, 2014.