



AREVA Resources Canada Inc.

Kiggavik Project, Nunavut

Monthly Wildlife Report

July 1 – July 31, 2015

1 Introduction

During the 2015 Kiggavik exploration program, wildlife monitoring has been carried out in accordance with the Kiggavik Project Wildlife Mitigation and Monitoring Plan (WMMP). One of the requirements within this plan is monthly reporting. This report covers the month of July and is the second report for the 2015 field season.

2 Local Wildlife Monitors

Throughout July, AREVA employed Wildlife Monitors from Baker Lake; Timothy Evviuk, Floyd Aksawnee, and Patrick Perkinson. Wildlife Monitors are responsible for notifying the Project Geologist and/or Safety, Health, Environment, and Quality (SHEQ) Supervisor of approaching caribou herds and determining their distance from activities. The monitors also determine when the herds are a sufficient distance for activities to resume in the event that caribou proximities dictate a shutdown of operations. Consistent monitoring occurred throughout July, which involves the Wildlife Monitor travelling to the five height-of-land (HOL) stations around camp and occasional visits outside of camp when required. The Wildlife Monitor records sighting information that includes species, number of individuals, location, activity observed, direction of travel, date, and time. Sighting information is incorporated into the monthly Wildlife Report which is distributed monthly to various regulatory organizations and non-governmental organizations, such as local Hunter and Trapper Organizations (HTOs). The HOL locations around camp are shown in Figure 1 below. While on site, the Wildlife Monitors liaise with the SHEQ Supervisor to determine if monitoring is warranted at specific locations besides the HOL locations.



Figure 1 - Wildlife Monitoring Height of Land (HOL) Locations

3 Wildlife Sightings

Observation methods vary with sightings provided from personnel in camp, the field, aerial flights, and the Wildlife Monitors. Sightings are recorded at various locations and transcribed into an environmental data spreadsheet (Table A.1 in Appendix A). Table 1 provides a summary of the wildlife observations for July. Sighting details vary with the observer, but typically include information regarding the species observed, the number present, behaviour, location, and whether a disturbance occurred. No animals were disturbed during the month of July.

Table 1 - July Kiggavik Wildlife Summary

Species	Wildlife Sightings	Total Number Observed
Arctic Hare*	0	0
Caribou	15	13,100 ¹
Muskox	26	275
Ptarmigan*	1	1
Sandhill Cranes	1	3
Savannah Sparrow	1	5
Eagle	2	2
Siksik (Ground Squirrel)*	0	0
Wolf	6	10
Total	52	13,396

*Species were observed, but not reported.

¹Refer to Table A.1 in Appendix A for observation estimates. This total discounts repeat sightings. The maximum estimate of individuals observed is included here.

3.1 Observation Methods

In addition to regular observations from local Wildlife Monitors, AREVA personnel, contractors, and site visitors record wildlife sightings as well. Wildlife observation logs are placed in the camp kitchen, camp office, and in each helicopter for ease of recording wildlife sightings. During site orientation, Kiggavik personnel are informed of the wildlife observation log locations and are encouraged to report all wildlife sightings. Table A.1 in Appendix A provides all wildlife observations for the month of July and indicates the method of observation.

The Kiggavik camp uses two helicopters throughout the field season for transport of personnel and to provide drill support. Long range flights are occasionally made between Baker Lake and Kiggavik, while short range flights are commonly made between the Kiggavik camp and drilling rigs. Pilots and passengers record aerial wildlife observations from the helicopter during these flights.

The Government of Northwest Territories (GNWT) provide collaring data showing collar movements. The issuance of collar data enables proper implementation of the WMMP as a source of caribou movements. All helicopter flights are monitored for compliance with altitude constraints when caribou are observed in the area.

3.2 Wildlife Observations

On July 2, during a return flight from Baker Lake, helicopter pilots observed a herd of about 500 to 2,000 caribou located approximately 40 km east of Kiggavik camp, or about midway between camp and Baker Lake. No caribou were disturbed and flight altitudes were maintained above 610 m (refer to Section 4).

Another herd of caribou was observed south of Kiggavik camp during the morning of July 12. Initially, fog concealed the herd and as it lifted it was observed that caribou had migrated to within the 10 km buffer zone from the drill rig at 85W (Drill 1 located approximately 7 km southwest of camp). Drilling operations were immediately suspended at both drill locations in the area and the Wildlife Monitor and SHEQ Supervisor flew out to observe the proximity of the herd to the drills. Helicopter altitude was maintained above 300 m in accordance with caribou protection measures outlined in the WMMP. The herd was loosely spaced across a large area and the Wildlife Monitor (Timothy Evviuk) estimated the size of the herd at approximately 5,000 to 10,000 individuals (Figure 2). They appeared to be grazing prior to moving in a southwesterly direction over the course of the day. Further details regarding the mitigation actions employed are discussed in Section 3.3.



Figure 1 – Caribou Herd Observed Approximately 6 km South of Kiggavik Camp (July 12, 2015)

In addition to the caribou herd observations, there were a total of 50 separate wildlife sightings summarized in Table 1 above. Muskox were consistently observed (26 sightings) in the Kiggavik area in July. Wolves were spotted on six occasions and eagles were observed twice in July. Many species of animals were observed but may not have been fully reported due to their common nature around the camp.

One active bird nesting site with four Savannah sparrow chicks was discovered in the camp area (Figure 3). Precaution was taken to avoid the area or cause disturbance to the nest until nesting was complete. The young left the nest at some point near the end of July. The nest itself remains in place and undisturbed.



Figure 3 – Nest of Four Savannah Sparrow Chicks in Camp

3.3 Mitigation Action Taken

As required by the Nunavut Impact Review Board (NIRB) 2007 screening decision and the WMMP, activity will be suspended when concentrations of caribou are within 2 km of drill rigs during the months of June and July, and aircraft will not take off or land within 1 km of a herd. From May 15 to July 15, operations will be suspended within 10 km of areas occupied by cows and calves.

As described above, upon initial observation of the caribou herd at 9:15 am on July 12, drilling operations were suspended at both drill sites. Throughout the day, the Wildlife Monitor conducted regular monitoring of herd movement and estimated proximity to operations. Helicopter altitudes were maintained above 300 m during observations with the Wildlife Monitor and care was taken to not fly directly over the herd (further information on flight altitudes is provided in Section 4).

By the afternoon, the herd was beginning to travel southwest and by 6:00 pm were observed to be approximately 15 km southwest of Drill 1 travelling in a southwesterly direction towards Drill 2. Upon the advice of the Wildlife Monitor, drilling recommenced at Drill 1 at approximately 6:15

pm. Drill 2 remained shut down until the morning of July 13 when it was confirmed that the herd was approximately 11.3 km from Drill 2 and travelling southwest away from operations. Drilling operations resumed at 9:30 am on July 13.

With the mitigation measures employed, no disturbance to caribou herds occurred for the month of July.

4 Flight Altitudes

The Kiggavik WMMP requires that long range flights be flown a minimum of 610 m (2000 ft) above ground, and short range flights be flown 300 m (1000 ft) above ground with exceptions for low-level ceiling conditions, slinging activity, or risks to flight safety. The pilots have been compliant with altitude restrictions required for both long range and short range flights.

Through the internet based WebSentinel program, helicopter altitudes are tracked and periodically checked by the SHEQ Supervisor. The WebSentinel program allows the SHEQ Supervisor to cross reference with flight reports to ensure pilots are compliant with altitude constraints. Figure B.1 in Appendix B provides the altitude verification for the flight from Kiggavik Camp to Baker Lake for July 2 when a caribou herd was spotted approximately 40 km east of the camp. Note that for this long range flight, altitude was maintained above 2,000 ft (610 m), in accordance with the WMMP. Figure B.2 of Appendix B provides an example of an altitude verification check for one of the wildlife monitoring flights conducted on July 12 when a caribou herd was spotted near drilling operations south of the Kiggavik camp. Figure B.2 indicates maintenance of altitude higher than 1,000 ft (300 m) during the short range flight, and also shows deviations in course to further minimize potential disturbance. Baker Lake residents wishing to view helicopter altitudes are welcome to inquire at AREVA's office in Baker Lake.

APPENDIX A –Wildlife Observation Log

Table A.1 – July Wildlife Observation Log

Date	Time	Observation method	Species	Number	Physical Location	Disturbance	Cause of Disturbance	Behaviour Before Disturbance	Behaviour After Disturbance	Actions Taken to Avoid Disturbance	Behaviour	Observer	Comments
1-Jul-2015	-	Aerial Observation	Muskox	4	8 mi SW of Camp	No	-	-	-	-			
2-Jul-2015	7:30 AM	Field Observation	Muskox	4	Grid 5 Kiggavik	No	-	-	-	-	Grazing	Thomas	
2-Jul-2015	9:00 AM	Aerial Observation	Caribou	1,000-2,000	40 km E of Camp	No	-	-	-	-	Walking	Dani	
2-Jul-2015	11:15 AM	Aerial Observation	Caribou	500-1,000	40 km E of Camp	No	-	-	-	-	Walking	Mike	
3-Jul-2015	1:30 PM	Camp Observation	Caribou	2	W of Camp	No	-	-	-	-	Running	Brad, Floyd, Viara, Hilliard	
3-Jul-2015	2:00 PM	Field Observation	Wolf	1	St. Tropez	No	-	-	-	-	Running	Regis	
4-Jul-2015	5:30 PM	Field Observation	Muskox	20	2 km North of Camp	No	-	-	-	-	Grazing	Thomas	
4-Jul-2015	7:15 AM	Field Observation	Wolf	1	St. Tropez	No	-	-	-	-	Moving South	Thomas	
4-Jul-2015	6:50 AM	Aerial Observation	Wolf	1	St. Tropez	No	-	-	-	-	Running	Dani	
5-Jul-2015	12:15 PM	Field Observation	Muskox	6	St. Tropez	No	-	-	-	-	Moving south	Graham	
6-Jul-2015	-	Aerial Observation	Muskox	4	2.5 mi W of Camp	No	-	-	-	-			
6-Jul-2015	-	Aerial Observation	Muskox	40	Thom	No	-	-	-	-			

Date	Time	Observation method	Species	Number	Physical Location	Disturbance	Cause of Disturbance	Behaviour Before Disturbance	Behaviour After Disturbance	Actions Taken to Avoid Disturbance	Behaviour	Observer	Comments
7-Jul-2015	-	Aerial Observation	Wolf	2	8km S of Camp	No	-	-	-	-			
7-Jul-2015	-	Aerial Observation	Muskox	4	8km S of Camp	No	-	-	-	-			
7-Jul-2015	5:00 AM	Field Observation	Muskox	1	Drill #1 85W-13	No	-	-	-	-	Walking	Clayton	
7-Jul-2015	9:00 AM	Field Observation	Wolves and Pup	2&1	Grid #5	No	-	-	-	-	Watchful	Kaolin	Watching us from den
7-Jul-2015	9:00 AM	Field Observation	Muskox	4	Grid #5	No	-	-	-	-	Grazing	Kaolin	
8-Jul-2015	-	Aerial Observation	Muskox	5	Drill #1 85W-13	No	-	-	-	-			
8-Jul-2015	8:30 AM	Camp Observation	Muskox	2	200 m from coreland	No	-	-	-	-	Walking	Hilliard	
8-Jul-2015	10:00 AM	Aerial Observation	Muskox	3	500 m W of Sleek Lake	No	-	-	-	-	Chatting	Dani	
8-Jul-2015	1:30 PM	Aerial Observation	Muskox	6	Sleek Lake	No	-	-	-	-	Walking	Hilliard	4 male, 2 female
9-Jul-2015	-	Aerial Observation	Muskox	3	6 km SW of Camp	No	-	-	-	-			
9-Jul-2015	5:00 PM	Camp Observation	Muskox	26	1 km S of Camp	No	-	-	-	-	Grazing	Nathan	
10-Jul-2015	10:00 AM	Camp Observation	Muskox	12	1.5 km W of Camp	No	-	-	-	-	Grazing	Nathan	
10-Jul-2015	12:45 PM	Aerial Observation	Muskox	7	W of Sleek Lake	No	-	-	-	-	Grazing	Mario	5 to 7 muskox
10-Jul-2015	12:52 PM	Aerial Observation	Eagle	1	S of Sleek Lake	No	-	-	-	-	Flying North	Mario	
11-Jul-2015	-	Aerial Observation	Muskox	5	500 m W of Camp	No	-	-	-	-		Nate	

Date	Time	Observation method	Species	Number	Physical Location	Disturbance	Cause of Disturbance	Behaviour Before Disturbance	Behaviour After Disturbance	Actions Taken to Avoid Disturbance	Behaviour	Observer	Comments
12-Jul-2015	9:00 AM	Aerial Observation	Caribou	40	3 km N of Camp	No	-	-	-	-	Grazing	Timothy	
12-Jul-2015	7:00 AM	Aerial Observation	Caribou	5,000 – 10,000	Between Contact and 85W drills	No	-	-	-	-	Grazing	Timothy	Both drill rigs shutdown
12-Jul-2015	9:15 AM	Aerial Observation	Muskox	22	NW of Fuel Cache	No	-	-	-	-	Grazing	Nate	
12-Jul-2015	10:30 AM	Aerial Observation	Caribou	5,000 – 10,000	1.5 km from Drill 1 (85W-14), 5 km from Drill 2 (CONT-21)	No	-	-	-	-	Grazing	Timothy	
12-Jul-2015	3:45 PM	Aerial Observation	Caribou	5,000 – 10,000	6 km from Drill 1, 3.5 km from Drill 2	No	-	-	-	-	Grazing	Dave	
12-Jul-2015	6:00 PM	Aerial Observation	Caribou	5,000 – 10,000	15 km from Drill 1, herd moving towards Drill 2	No	-	-	-	-	Walking	Dani	Drill #1 approved to resume drilling
12-Jul-2015	9:45 AM	Camp Observation	Caribou	40-50	North of Camp	No	-	-	-	-	Moving NE	Floyd	
13-Jul-2015	6:50 AM	Field Observation	Caribou	1000	8.2 km SW of RIG2 (CONT 21)	No	-	-	-	-	Grazing	Nate	
13-Jul-2015	9:00 AM	Aerial Observation	Caribou	1000	11.3 km SW of RIG 2	No	-	-	-	-	Travelling SW	Nate	Drill #2 approved to resume drilling
13-Jul-2015	-	Aerial Observation	Muskox	20	NE of Camp	No	-	-	-	-		Brad	
15-Jul-2015	3:00 PM	Height of Land Survey	Muskox	8-9	NW of Camp	No	-	-	-	-	Grazing	Timothy	

Date	Time	Observation method	Species	Number	Physical Location	Disturbance	Cause of Disturbance	Behaviour Before Disturbance	Behaviour After Disturbance	Actions Taken to Avoid Disturbance	Behaviour	Observer	Comments
15-Jul-2015	4:00 PM	Height of Land Survey	Baby Ptarmigan	1	Near Camp	No	-	-	-	-		Timothy	
16-Jul-2015	7:00 AM	Aerial Observation	Muskox	40	W of Camp	No	-	-	-	-	Eating	Mario	
16-Jul-2015	-	Aerial Observation	Eagle	1	2 mi N of Camp	No	-	-	-	-	Flying	Dani	
17-Jul-2015	-	Aerial Observation	Caribou	1	6.5 mi SW of Camp	No	-	-	-	-		Dani	
18-Jul-2015	2:40 PM	Height of Land Survey	Muskox	2		No	-	-	-	-	Eating	Timothy	
18-Jul-2015	2:00 PM	Height of Land Survey	Caribou	1	Near Camp	No	-	-	-	-	Running	Timothy	
19-Jul-2015	8:30 AM	Camp Observation	Muskox	8	North East of the Camp	No	-	-	-	-	Grazing	Timothy	On the hill behind camp.
20-Jul-2015	-	Aerial Observation	Wolf	2	5 mi from Camp	No	-	-	-	-		Hilliard	
20-Jul-2015	2:00 PM	Camp Observation	Sandhill Crane	3	North of Camp	No	-	-	-	-	Walking	Brad	
24-Jul-2015	3:00 PM	Field Observation	Caribou	1	BS Grid	No	-	-	-	-	Walking	Philippe	
24-Jul-2015	8:00 PM	Camp Observation	Caribou	4	Camp	No	-	-	-	-	Walking and Grazing	Odile	
25-Jul-2015	9:00 AM	Camp Observation	Caribou	1	Near Camp	No	-	-	-	-	Grazing	Odile	
28-Jul-2015	10:15 AM	Camp Observation	Muskox	4	5 km East of Camp	No	-	-	-	-	Sitting	Floyd	Spotted with binoculars
31-Jul-2015	2:49 PM	Height of Land Survey	Muskox	14	N 64°23'33" W 98°27'59"	No	-	-	-	-	Walking	Timothy	

APPENDIX B – Flight Altitude Check

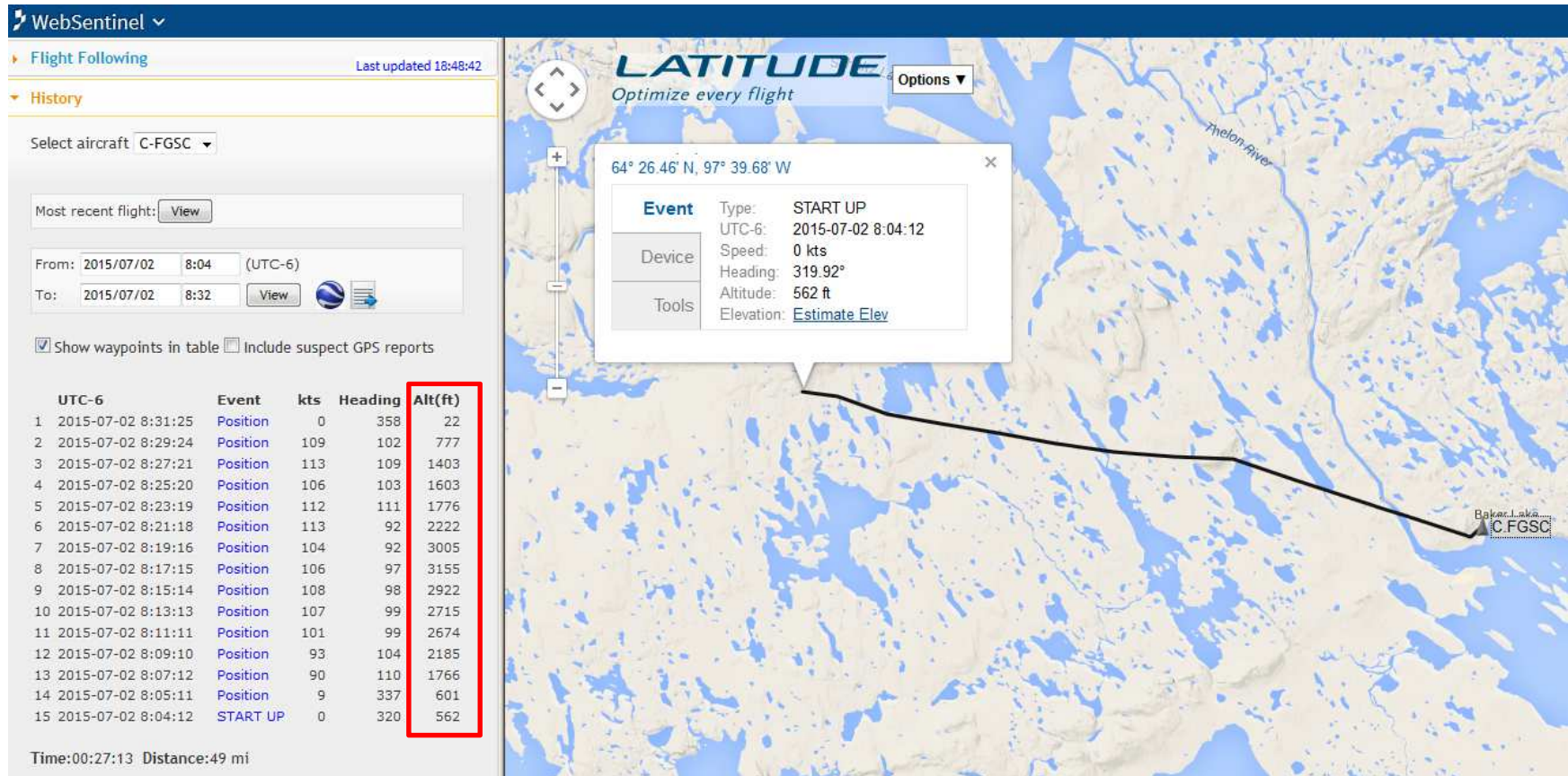


Figure B.1 – Flight Altitude Verification for July 2, 2015

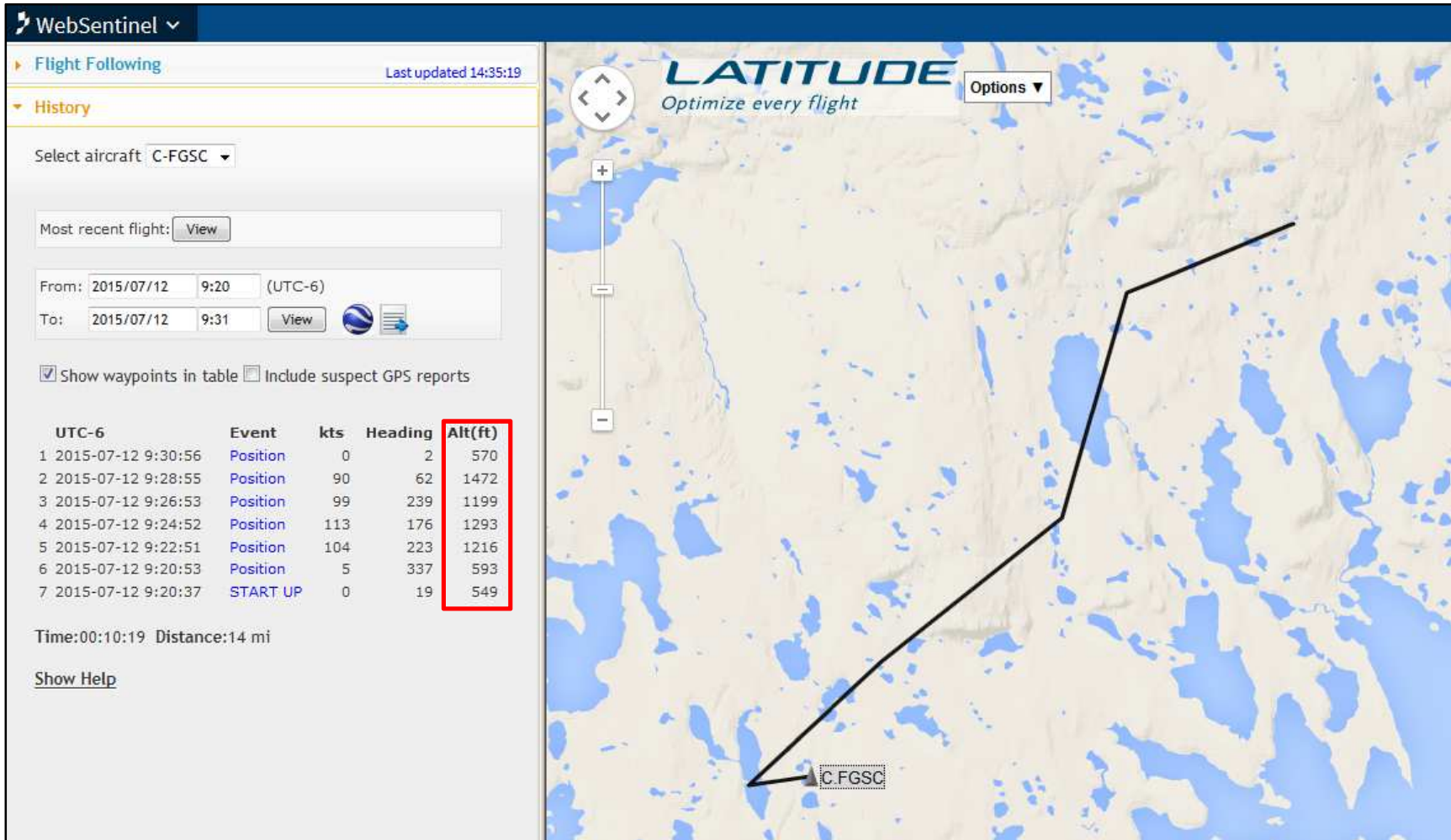


Figure B.2 – Flight Altitude Verification for July 12, 2015