



SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

**SASKATOON STATION 4057180**

52°09' N 106°36' W 497 m asl Estab. 1963

Preliminary **DECEMBER 2019**

Day	Temperature						Degree-days			Precipitation			Relative Humidity		Station Pressure (sea level)	
	Max	Normal Max	Min	Normal Min	Mean	Normal Mean	Growing	Heating	Cooling	Weighing Gauge	Comments	Snow-on-Ground 0900h	Max ½ hr Avg	Min ½ hr Avg	Max ½ hr Avg	Min ½ hr Avg
	°C	1981-2010	°C	1981-2010	°C	1981-2010	5°C base	18°C base	18°C base	mm		cm	%	%	mbar	mbar
1	-6.4	-5.3	-13.7	-14.0	-10.1	-9.6	0.0	28.1	0.0	0.0		6	92	73	1019	1007
2	-1.5	-6.3	-13.2	-14.4	-7.4	-10.3	0.0	25.4	0.0	0.2		5	88	62	1007	1002
3	4.5	-6.9	-6.1	-15.8	-0.8	-11.3	0.0	18.8	0.0	0.0		5	76	60	1006	1001
4	0.3	-6.6	-7.8	-16.8	-3.8	-11.7	0.0	21.8	0.0	0.0		4	83	69	1013	1006
5	-5.4	-6.8	-15.4	-16.1	-10.4	-11.5	0.0	28.4	0.0	0.0		3	91	74	1020	1013
6	-5.5	-6.7	-9.7	-15.7	-7.6	-11.2	0.0	25.6	0.0	0.0		3	93	86	1018	1009
7	-6.3	-7.2	-14.7	-16.2	-10.5	-11.7	0.0	28.5	0.0	0.0		2	92	77	1016	1003
8	-13.9	-7.9	-23.4	-17.6	-18.7	-12.8	0.0	36.7	0.0	0.1		3	79	61	1020	1012
9	-10.1	-7.9	-23.4	-17.4	-16.8	-12.6	0.0	34.8	0.0	0.0		4	82	63	1023	1010
10	-18.4	-7.3	-27.1	-16.7	-22.8	-12.0	0.0	40.8	0.0	0.0		3	79	64	1024	1017
11	-18.1	-7.1	-27.4	-16.2	-22.8	-11.7	0.0	40.8	0.0	0.2	light snow	3	75	55	1024	1018
12	-12.8	-7.8	-19.0	-17.4	-15.9	-12.6	0.0	33.9	0.0	1.1	light snow	3	83	69	1018	1009
13	-15.5	-7.9	-27.6	-16.4	-21.6	-12.2	0.0	39.6	0.0	0.0	light snow	5	81	71	1022	1012
14	-12.2	-8.1	-29.1	-16.3	-20.7	-12.2	0.0	38.7	0.0	0.3	light snow	5	82	73	1020	1005
15	-10.8	-7.1	-17.2	-17.7	-14.0	-12.4	0.0	32.0	0.0	0.0		5	84	68	1011	1005
16	-4.2	-8.1	-16.1	-17.2	-10.2	-12.6	0.0	28.2	0.0	0.0		6	84	65	1018	1009
17	-6.4	-8.6	-17.7	-17.2	-12.1	-12.9	0.0	30.1	0.0	0.1	very light snow	6	85	65	1019	1003
18	1.4	-9.3	-12.4	-18.0	-5.5	-13.7	0.0	23.5	0.0	0.0		5	87	63	1013	1002
19	-3.7	-8.3	-11.8	-16.9	-7.8	-12.6	0.0	25.8	0.0	0.0		5	86	72	1013	1008
20	4.0	-9.0	-10.1	-18.0	-3.1	-13.5	0.0	21.1	0.0	0.0		5	92	65	1009	1002
21	-5.1	-9.6	-12.7	-19.0	-8.9	-14.3	0.0	26.9	0.0	0.0	fog	5	92	84	1010	999
22	-3.3	-10.3	-10.9	-18.1	-7.1	-14.2	0.0	25.1	0.0	0.0	fog	5	93	76	1015	999
23	-5.2	-9.1	-8.5	-18.9	-6.9	-14.0	0.0	24.9	0.0	0.0	fog	5	94	92	1015	1009
24	-5.5	-8.3	-7.0	-18.4	-6.3	-13.3	0.0	24.3	0.0	0.1	fog	5	94	93	1013	1010
25	-2.6	-8.2	-7.2	-18.0	-4.9	-13.1	0.0	22.9	0.0	3.8	snow	10	95	89	1012	1008
26	-7.2	-7.0	-14.4	-17.3	-10.8	-12.2	0.0	28.8	0.0	0.0		10	90	75	1013	1008
27	-9.0	-8.3	-14.7	-17.6	-11.9	-13.0	0.0	29.9	0.0	0.0		9	88	68	1011	1005
28	-8.6	-10.2	-15.9	-18.5	-12.3	-14.4	0.0	30.3	0.0	0.0		9	89	77	1020	1011
29	-6.8	-11.5	-18.6	-20.2	-12.7	-15.9	0.0	30.7	0.0	0.2	light snow	8	86	73	1020	1017
30	-8.2	-12.2	-15.3	-20.3	-11.8	-16.3	0.0	29.8	0.0	0.0		8	89	81	1019	1009
31	-0.1	-13.2	-13.1	-21.7	-6.6	-17.5	0.0	24.6	0.0	0.0		8	88	69	1008	990
Total							0.0	900.8	0.0	6.1			Extreme / Date	Extreme / Date	Extreme / Date	Extreme / Date
Avg	-6.5	-8.3	-15.5	-17.4	-11.1	-12.9	1981-2010 Normal			12.7	Normal					
Extreme	4.5		-29.1				0.1	957.5	0.0	295.9	Cumulative		95	55	1024	990
Date	3		14							355.3	Cumulative No		25	11	10	31

Note: Red numbers indicate manual calculation; Red cell indicate data not available

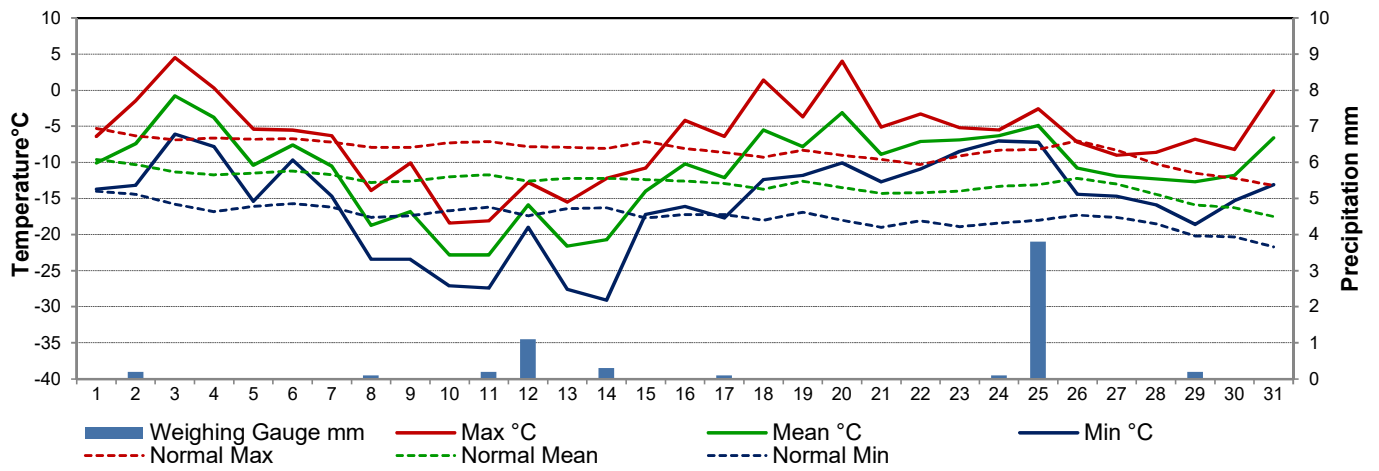
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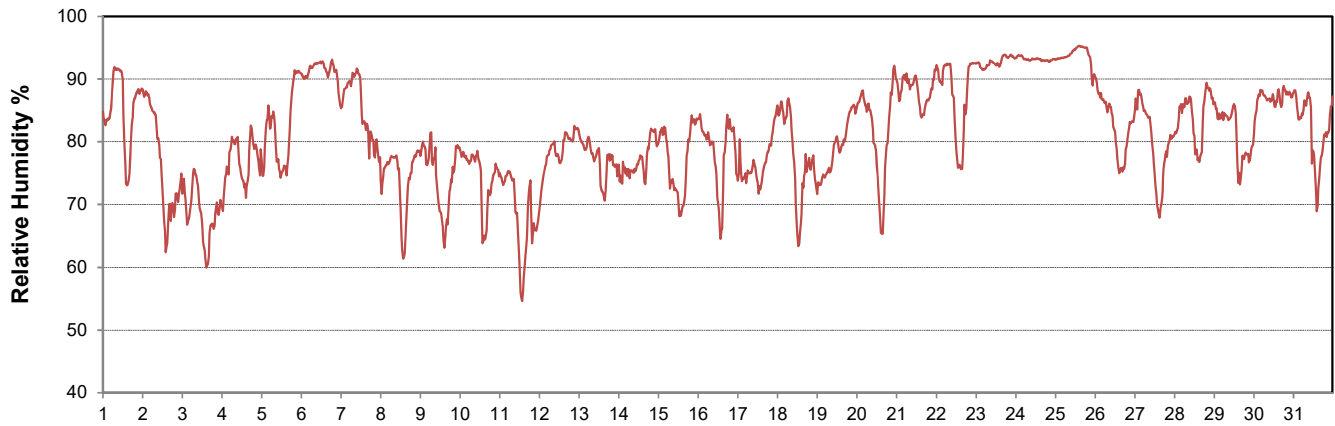
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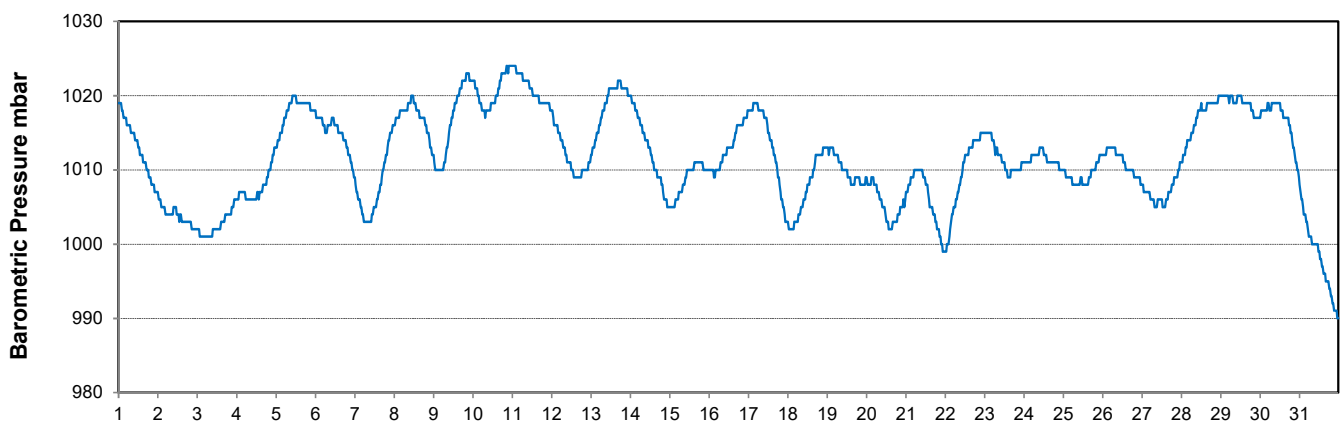
### Temperature and Precipitation for December 2019



### Relative Humidity for December 2019



### Barometric Pressure Corrected to Sea Level for December 2019





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52°09' N 106°36' W 497 m asl Estab. 1963

Preliminary **DECEMBER 2019**

Day	Wind Gust			Soil Temperatures at 0900hrs								Radiation				
	Max	Direction	Time	Surface	5 cm	10 cm	20 cm	50 cm	100 cm	150 cm	300 cm	Bright Sunshine	Possible	% Possible	Global	Diffuse
	km/h			°C	°C	°C	°C	°C	°C	°C	°C	hours	hours		MJ/m <sup>2</sup>	MJ/m <sup>2</sup>
1	27.8	S	6:37	-9.0	-1.5	-1.0	-0.5	2.0	4.5	5.5	7.5	4.6	8.1	56.9	3.8	1.3
2	28.7	WSW	17:57	-9.0	-2.0	-1.5	-1.0	2.0	4.5	5.5	7.5	1.5	8.1	18.6	2.8	1.7
3	40.1	WSW	19:30	-4.5	-2.0	-1.5	-1.0	1.5	4.5	5.5	7.5	7.0	8.0	87.2	4.1	1.1
4	27.6	NNE	20:13	-4.0	-1.5	-1.0	-0.5	1.5	4.5	5.5	7.5	0.3	8.0	3.8	2.2	1.8
5	21.2	N	0:10	-12.0	-2.5	-2.0	-1.0	1.5	4.0	5.5	7.5	2.0	8.0	25.1	2.2	1.5
6	18.1	SSW	0:52	-7.5	-3.0	-2.5	-1.5	1.5	4.0	5.5	7.0	0.4	7.9	5.0	2.3	1.5
7	42.1	NNE	12:44	-9.5	-3.5	-2.5	-2.0	1.5	4.0	5.5	7.0	0.0	7.9	0.0	1.2	0.9
8	31.5	NE	0:33	-22.5	-5.0	-4.0	-2.5	1.0	4.0	5.0	7.0	6.2	7.9	78.6	4.8	1.0
9	51.2	N	10:42	-11.5	-5.5	-5.0	-3.5	1.0	4.0	5.0	7.0	6.4	7.9	81.4	3.8	1.0
10	25.6	N	16:10	-26.0	-8.0	-7.0	-5.0	0.5	4.0	5.0	7.0	7.1	7.8	90.6	4.9	1.0
11	20.7	ESE	13:58	-22.5	-9.5	-8.5	-6.5	0.0	3.5	5.0	7.0	2.6	7.8	33.2	3.4	2.1
12	31.4	SE	1:13	-15.5	-8.5	-8.0	-6.5	-1.0	3.5	5.0	7.0	0.0	7.8	0.0	1.5	1.3
13	27.9	N	9:44	-25.5	-8.0	-7.0	-6.0	-1.5	3.0	5.0	7.0	3.8	7.8	48.8	3.8	1.5
14	24.7	SW	21:40	-27.0	-9.0	-8.5	-6.5	-1.5	3.0	4.5	7.0	5.8	7.8	74.6	4.6	1.1
15	32.3	NW	7:07	-12.5	-8.0	-7.5	-6.5	-2.0	3.0	4.5	7.0	4.6	7.8	59.3	3.3	1.1
16	42.4	WNW	12:50	-7.0	-7.5	-7.0	-6.0	-2.0	2.5	4.5	6.5	1.9	7.8	24.5	2.5	1.6
17	28.7	S	14:11	-14.5	-7.5	-7.0	-6.0	-2.0	2.5	4.5	6.5	0.4	7.7	5.2	2.3	1.8
18	33.2	NE	20:04	-5.5	-6.5	-6.0	-5.5	-2.0	2.5	4.0	6.5	4.8	7.7	62.1	2.9	0.8
19	53.4	SE	11:51	-10.0	-6.5	-6.0	-5.0	-2.0	2.0	4.0	6.5	0.3	7.7	3.9	2.1	1.7
20	27.3	SE	8:36	-7.5	-6.0	-5.5	-5.0	-2.0	2.0	4.0	6.5	5.1	7.7	66.1	3.2	1.2
21	24.3	ESE	18:39	-12.5	-5.5	-5.0	-4.5	-2.0	2.0	4.0	6.5	0.0	7.7	0.0	1.2	1.0
22	30.2	WNW	10:29	-6.0	-5.5	-5.0	-4.5	-2.0	2.0	3.5	6.5	5.7	7.7	73.8	3.9	1.2
23	20.3	NW	21:19	-7.0	-5.0	-4.5	-4.5	-2.0	2.0	3.5	6.5	0.0	7.7	0.0	1.3	1.0
24	15.7	SE	19:24	-6.5	-4.5	-4.0	-4.0	-1.5	2.0	3.5	6.0	0.0	7.7	0.0	1.0	0.8
25	33.6	WNW	22:14	-5.5	-4.0	-4.0	-3.5	-1.5	2.0	3.5	6.0	0.0	7.7	0.0	1.3	1.1
26	27.0	SW	11:27	-15.0	-4.0	-3.5	-3.5	-1.5	2.0	3.5	6.0	7.1	7.7	91.7	4.2	1.0
27	26.2	SW	9:42	-15.5	-4.5	-4.0	-3.5	-1.5	2.0	3.5	6.0	7.2	7.8	92.9	5.6	1.0
28	20.6	WNW	8:34	-13.5	-5.0	-4.5	-4.0	-1.5	2.0	3.5	6.0	6.7	7.8	86.3	5.0	1.1
29	16.6	SW	21:16	-20.5	-5.5	-5.0	-4.0	-1.5	2.0	3.5	6.0	5.6	7.8	72.0	4.7	1.2
30	20.8	SE	23:51	-17.5	-5.5	-5.0	-4.5	-1.5	1.5	3.0	6.0	2.0	7.8	25.7	3.3	1.9
31	29.7	SSE	4:33	-10.5	-5.5	-5.0	-4.5	-1.5	1.5	3.0	6.0	4.0	7.8	51.2	4.3	1.3
Total												103.1	242.4	42.5	97.5	39.6
Mean				-12.7	-5.4	-4.8	-4.0	-0.6	2.9	4.4	6.7	1981-2010 Normal for Radiation				
Extreme	53.4	SE	11:51	1971- 2000 Normal for Soil Temperatures								85.7	242.3	35.4	100.0	50.0
Date	19				-7.1	-6.6	-5.6	-1.7	2.0	3.8	6.4	No. of Bright Sunshine days = 25				

Note: Red numbers indicate manual calculation; Red cell indicate data not available

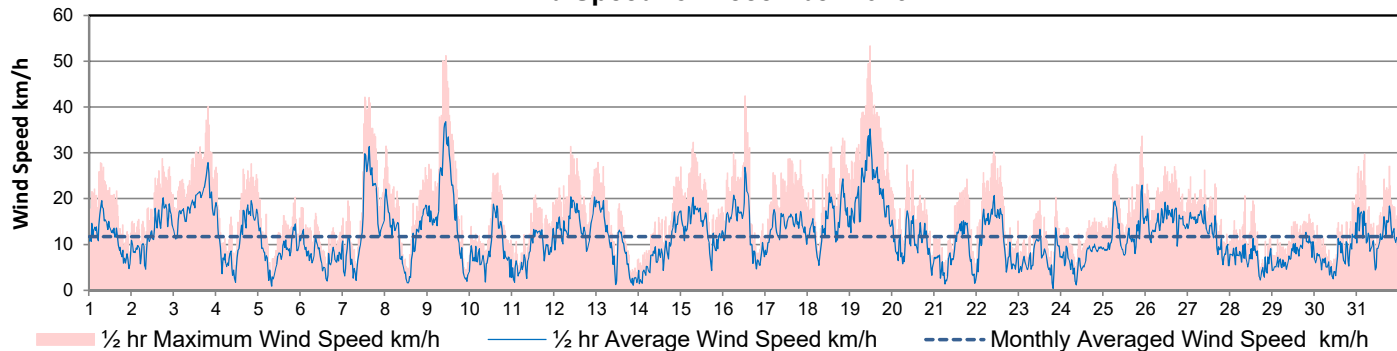
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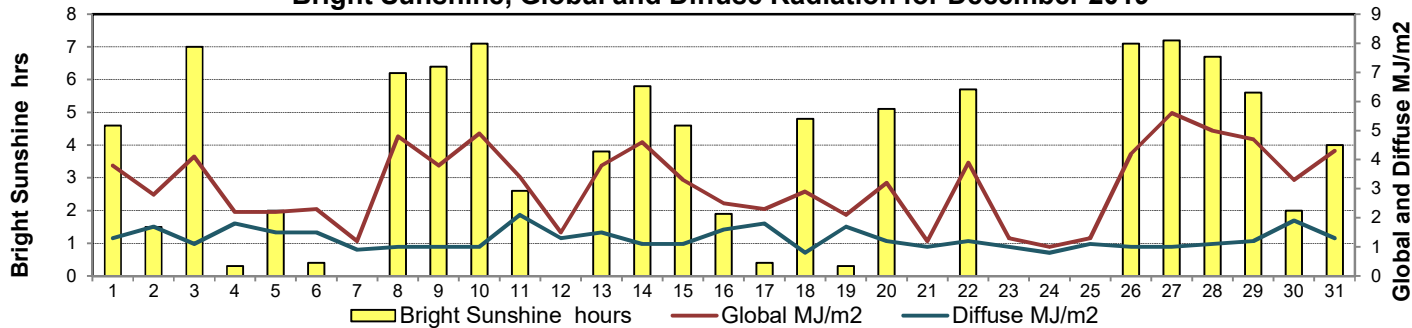
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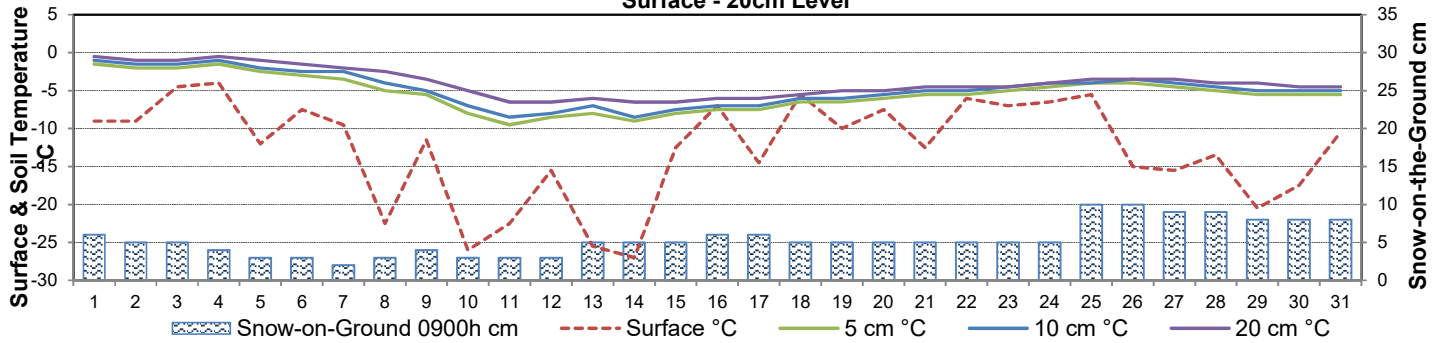
**Wind Speed for December 2019**



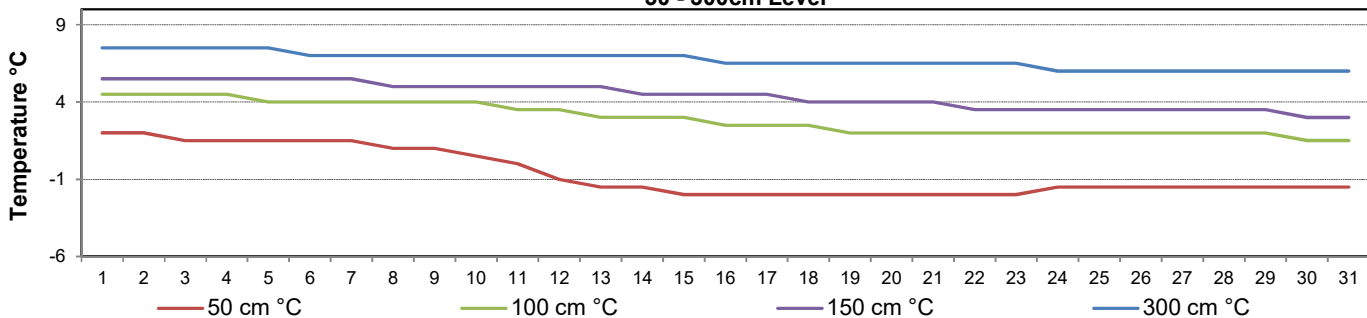
**Bright Sunshine, Global and Diffuse Radiation for December 2019**



**Soil Temperatures for December 2019**  
Surface - 20cm Level



**Soil Temperatures for December 2019**  
50 - 300cm Level





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Preliminary **DECEMBER 2019**

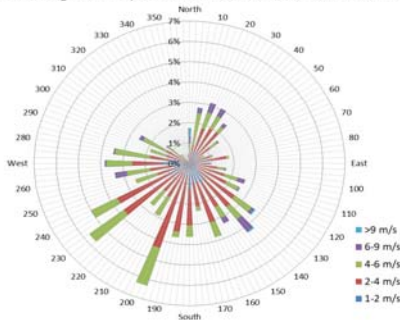
### Extreme Records for December

Max/Min Temperature °C			Precipitation - Monthly mm				Wind Monthly km/h				CRS Bright Sunshine - Monthly						
S'toon Area	Date	Site	S'toon CRS	Date	S'toon Area	Date	Site	S'toon CRS	Date	S'toon Airport	Date	S'toon CRS**	Date	Hours	Year	No. of Days	Year
14.4	05/1939	SE	11.2	14/1997	59.2	1956	SA	48.2	1973	121 <sup>W</sup>	12/1955	89.4	1992	123.3	2006	27	1994*
-43.9	22/1892	SM	-42.2	31/1973	0.0	1906,'30	SE	0.4	2009					49.1	1973	17	1966*

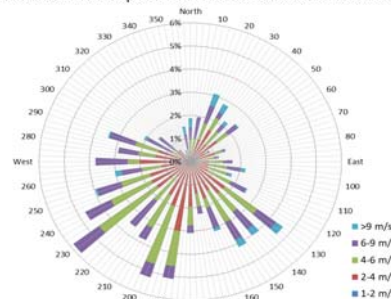
\*\*1975 forward \* more than one year

Notable Events for CRS Saskatoon - December					Saskatoon Area Stations			Glossary		
Element	Type	Day	New Record	Old Record	Year					
						SM	NWMP	c. 1892-1901	T	Trace of precipitation
						SE	Eby	1901-1941	Normal	30 year average beginning with the decade
						US	Univ. of Sask.	1915-1964	SOG	Depth of snow-on-the-ground in cm
						S	Saskatoon	1941-1942	na	not available
						SA	Saskatoon A	1942 -	<b>Degree-days</b>	
						NRC	Nat. Res. Council	1952-1966	Tm	Mean Temperature
						SRC	Sask. Res. Council	1963-	Growing	(Tm-5°C); if Tm ≤ 5°C then GDD = 0
						SWT	S'toon Water Treatment Plant	1974 -	Heating	(18°C-Tm); if Tm ≤ 18°C then HDD = 0
									Cooling	(Tm-18°C); if Tm ≥ 18°C then CDD = 0
						SC	S'toon Central Ave	1974-1989	Extreme Cooling	(Tm-24°C); if Tm ≥ 24°C then CDD = 0
						S1	Saskatoon 1	1976-1978	Manual Snow Depths (average of 3 meter sticks located inside climate station compound)  Dec 18 = 6 cm	
					S2	Saskatoon 2	1977-1990			
					K	S'toon Kernen Farm	1993-2004			
					KCS	S'toon Kernen Farm CS	1996-			
					RCS	Environment Canada	2008-			
						SF	Sutherland Forestry	1943-1970		

10 minute Average Wind Speed and Direction Saskatoon December 2019



1/2 hr Maximum Wind Speed and Direction Saskatoon December 2019



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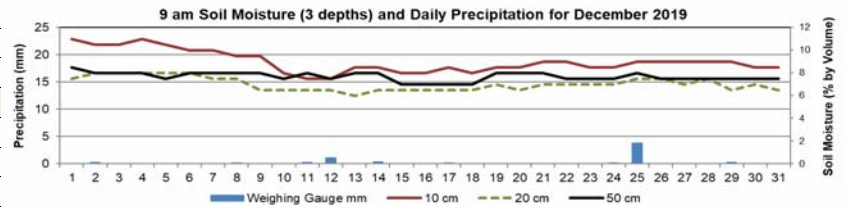
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Preliminary December 2019

Day	2 meter Wind Speed			Soil Moisture at 0900 hrs (rounded to the 0.5%)		
	Daily Average	Max ½ hr Avg	½ hr Extreme Max	10 cm	20 cm	50 cm
	km/h	km/h	km/h	% by volume (soil type is Loam (45.5% Sand, 41.1% Silt, 13.3% Clay))		
1	8.0	14.5	24.7	11.0	7.5	8.5
2	10.0	15.7	24.7	10.5	8.0	8.0
3	14.0	21.1	33.3	10.5	8.0	8.0
4	9.0	14.2	22.4	11.0	8.0	8.0
5	6.0	11.0	16.6	10.5	8.0	7.5
6	5.0	9.9	16.0	10.0	8.0	8.0
7	10.0	22.2	35.0	10.0	7.5	8.0
8	9.0	17.1	26.4	9.5	7.5	8.0
9	13.0	27.8	40.8	9.5	6.5	8.0
10	6.0	14.5	21.8	8.0	6.5	7.5
11	7.0	11.2	18.3	7.5	6.5	8.0
12	12.0	15.8	26.4	7.5	6.5	7.5
13	7.0	15.3	22.4	8.5	6.0	8.0
14	6.0	13.9	21.2	8.5	6.5	8.0
15	11.0	16.0	26.4	8.0	6.5	7.0
16	11.0	20.7	34.4	8.0	6.5	7.0
17	9.0	13.4	22.9	8.5	6.5	7.0
18	11.0	18.6	27.0	8.0	6.5	7.0
19	16.0	26.4	39.1	8.5	7.0	8.0
20	8.0	13.0	21.2	8.5	6.5	8.0
21	6.0	12.5	20.6	9.0	7.0	8.0
22	9.0	15.1	24.1	9.0	7.0	7.5
23	6.0	10.2	17.7	8.5	7.0	7.5
24	6.0	8.7	13.7	8.5	7.0	7.5
25	9.0	17.6	26.4	9.0	7.5	8.0
26	12.0	15.7	22.4	9.0	7.5	7.5
27	10.0	14.8	21.8	9.0	7.0	7.5
28	5.0	9.3	17.2	9.0	7.5	7.5
29	6.0	9.9	13.7	9.0	6.5	7.5
30	5.0	10.0	17.2	8.5	7.0	7.5
31	9.0	22.0	22.0	8.5	6.5	7.5
Total						
Mean				9	7	7.7
Extreme	16.0	27.8	40.8	11	8	8.5
Date	19	9	9	1	2	1



Note: Red numbers indicate manual calculation; Red cell indicate data not available

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