



SRC CLIMATE REFERENCE STATION DAILY DATA REPORT

SASKATOON STATION 4057180

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

Preliminary **NOVEMBER 2018**

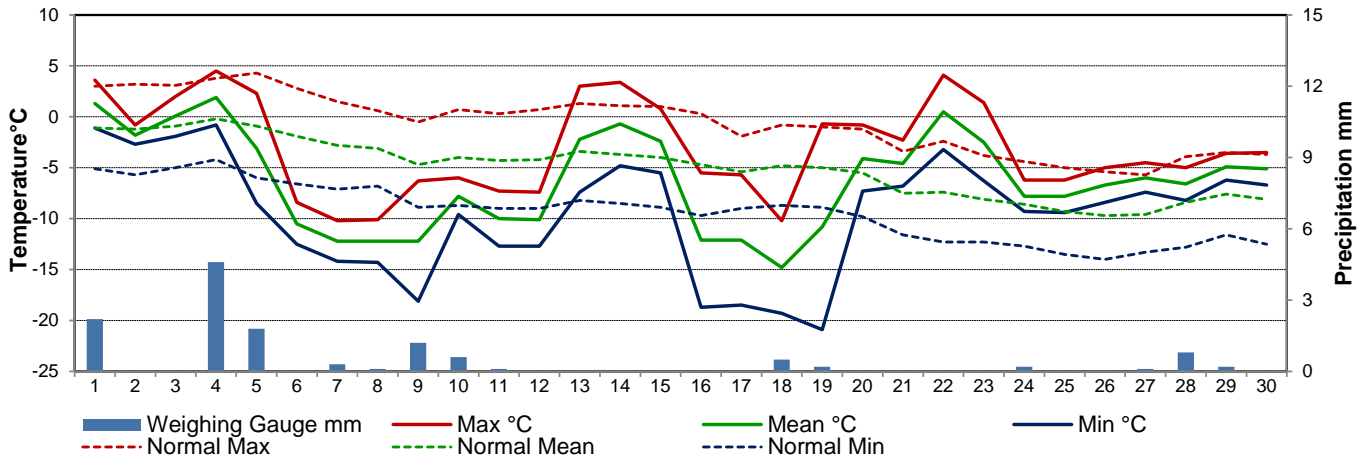
| Day | Temperature | | | | | | Degree-days | | | Precipitation | | | Relative Humidity | | Station Pressure (sea level) | |
|--------------|-------------|------------|-------|------------|-------|-------------|------------------|-----------|-----------|----------------|---------------------|----------------------|-------------------|----------------|------------------------------|----------------|
| | Max | Normal Max | Min | Normal Min | Mean | Normal Mean | Growing | Heating | Cooling | Weighing Gauge | Notes | 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 | 3.6 | 3.0 | -1.1 | -5.1 | 1.3 | -1.1 | 0.0 | 16.7 | 0.0 | 2.2 | light rain / snow | 0 | 94 | 78 | 1017 | 1005 |
| 2 | -0.8 | 3.2 | -2.7 | -5.7 | -1.8 | -1.2 | 0.0 | 19.8 | 0.0 | 0.0 | | 0 | 90 | 79 | 1016 | 1010 |
| 3 | 2.0 | 3.1 | -1.9 | -5.0 | 0.1 | -0.9 | 0.0 | 17.9 | 0.0 | 0.0 | | 0 | 90 | 72 | 1019 | 1010 |
| 4 | 4.5 | 3.8 | -0.8 | -4.2 | 1.9 | -0.2 | 0.0 | 16.1 | 0.0 | 4.6 | light rain / snow | 0 | 95 | 83 | 1009 | 994 |
| 5 | 2.3 | 4.3 | -8.5 | -6.0 | -3.1 | -0.9 | 0.0 | 21.1 | 0.0 | 1.8 | light snow | 1 | 95 | 80 | 1016 | 996 |
| 6 | -8.4 | 2.8 | -12.5 | -6.6 | -10.5 | -1.9 | 0.0 | 28.5 | 0.0 | 0.0 | light snow | 9 | 84 | 69 | 1026 | 1016 |
| 7 | -10.2 | 1.5 | -14.2 | -7.1 | -12.2 | -2.8 | 0.0 | 30.2 | 0.0 | 0.3 | light snow | 7 | 88 | 61 | 1026 | 1025 |
| 8 | -10.1 | 0.6 | -14.3 | -6.8 | -12.2 | -3.1 | 0.0 | 30.2 | 0.0 | 0.1 | light snow | 7 | 88 | 68 | 1033 | 1024 |
| 9 | -6.3 | -0.5 | -18.1 | -8.9 | -12.2 | -4.7 | 0.0 | 30.2 | 0.0 | 1.2 | light snow | 8 | 91 | 68 | 1033 | 1007 |
| 10 | -6.0 | 0.7 | -9.6 | -8.7 | -7.8 | -4.0 | 0.0 | 25.8 | 0.0 | 0.6 | light snow | 11 | 93 | 74 | 1020 | 1007 |
| 11 | -7.3 | 0.3 | -12.7 | -9.0 | -10.0 | -4.3 | 0.0 | 28.0 | 0.0 | 0.1 | light snow | 10 | 90 | 66 | 1034 | 1021 |
| 12 | -7.4 | 0.7 | -12.7 | -9.0 | -10.1 | -4.2 | 0.0 | 28.1 | 0.0 | 0.0 | | 9 | 80 | 69 | 1034 | 1023 |
| 13 | 3.0 | 1.3 | -7.4 | -8.2 | -2.2 | -3.4 | 0.0 | 20.2 | 0.0 | 0.0 | | 8 | 90 | 65 | 1023 | 1012 |
| 14 | 3.4 | 1.1 | -4.8 | -8.5 | -0.7 | -3.7 | 0.0 | 18.7 | 0.0 | 0.0 | | 6 | 94 | 66 | 1012 | 1007 |
| 15 | 0.8 | 1.0 | -5.5 | -8.9 | -2.4 | -4.0 | 0.0 | 20.4 | 0.0 | 0.0 | | 6 | 91 | 79 | 1017 | 1010 |
| 16 | -5.5 | 0.3 | -18.7 | -9.7 | -12.1 | -4.7 | 0.0 | 30.1 | 0.0 | 0.0 | | 6 | 89 | 72 | 1034 | 1017 |
| 17 | -5.7 | -1.9 | -18.5 | -9.0 | -12.1 | -5.4 | 0.0 | 30.1 | 0.0 | 0.0 | | 6 | 86 | 67 | 1034 | 1016 |
| 18 | -10.2 | -0.8 | -19.3 | -8.7 | -14.8 | -4.8 | 0.0 | 32.8 | 0.0 | 0.5 | light snow | 6 | 88 | 77 | 1021 | 1014 |
| 19 | -0.7 | -1.0 | -20.9 | -8.9 | -10.8 | -5.0 | 0.0 | 28.8 | 0.0 | 0.2 | light rain / snow | 6 | 91 | 82 | 1023 | 1011 |
| 20 | -0.8 | -1.2 | -7.3 | -9.8 | -4.1 | -5.5 | 0.0 | 22.1 | 0.0 | 0.0 | light rain / snow | 7 | 97 | 86 | 1015 | 1012 |
| 21 | -2.3 | -3.4 | -6.8 | -11.6 | -4.6 | -7.5 | 0.0 | 22.6 | 0.0 | 0.0 | | 7 | 97 | 94 | 1014 | 1003 |
| 22 | 4.1 | -2.4 | -3.2 | -12.3 | 0.5 | -7.4 | 0.0 | 17.5 | 0.0 | 0.0 | | 7 | 96 | 65 | 1003 | 997 |
| 23 | 1.4 | -3.8 | -6.3 | -12.3 | -2.5 | -8.1 | 0.0 | 20.5 | 0.0 | 0.0 | | 6 | 93 | 73 | 1007 | 998 |
| 24 | -6.2 | -4.4 | -9.3 | -12.7 | -7.8 | -8.6 | 0.0 | 25.8 | 0.0 | 0.2 | light snow | 6 | 91 | 78 | 1021 | 1007 |
| 25 | -6.2 | -5.0 | -9.4 | -13.5 | -7.8 | -9.3 | 0.0 | 25.8 | 0.0 | 0.0 | | 6 | 87 | 78 | 1025 | 1021 |
| 26 | -5.0 | -5.4 | -8.4 | -14.0 | -6.7 | -9.7 | 0.0 | 24.7 | 0.0 | 0.0 | | 6 | 90 | 85 | 1024 | 1013 |
| 27 | -4.5 | -5.7 | -7.4 | -13.3 | -6.0 | -9.6 | 0.0 | 24.0 | 0.0 | 0.1 | light freezing rain | 6 | 89 | 83 | 1013 | 1000 |
| 28 | -5.0 | -3.9 | -8.2 | -12.8 | -6.6 | -8.4 | 0.0 | 24.6 | 0.0 | 0.8 | light snow | 6 | 93 | 80 | 1004 | 1000 |
| 29 | -3.6 | -3.5 | -6.2 | -11.6 | -4.9 | -7.6 | 0.0 | 22.9 | 0.0 | 0.2 | fog | 6 | 96 | 94 | 1005 | 1003 |
| 30 | -3.5 | -3.7 | -6.7 | -12.5 | -5.1 | -8.1 | 0.0 | 23.1 | 0.0 | 0.0 | fog | 6 | 96 | 94 | 1012 | 1005 |
| Total | | | | | | | 0.0 | 727.3 | 0.0 | 12.9 | | | Extreme / Date | Extreme / Date | Extreme / Date | Extreme / Date |
| Avg | -3.0 | -0.6 | -9.4 | -9.4 | -6.2 | -5.0 | 1981-2010 Normal | | | 13.4 | Normal | | | | | |
| Extreme Date | 4.5 | | -20.9 | | | | 2.9 | 690.1 | 0.0 | 213.1 | Cumulative | | 97 | 61 | 1034 | 994 |
| Date | 4 | | 19 | | | | | | | 342.6 | Cumulative Norm | | 20 | 7 | 11 | 4 |

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

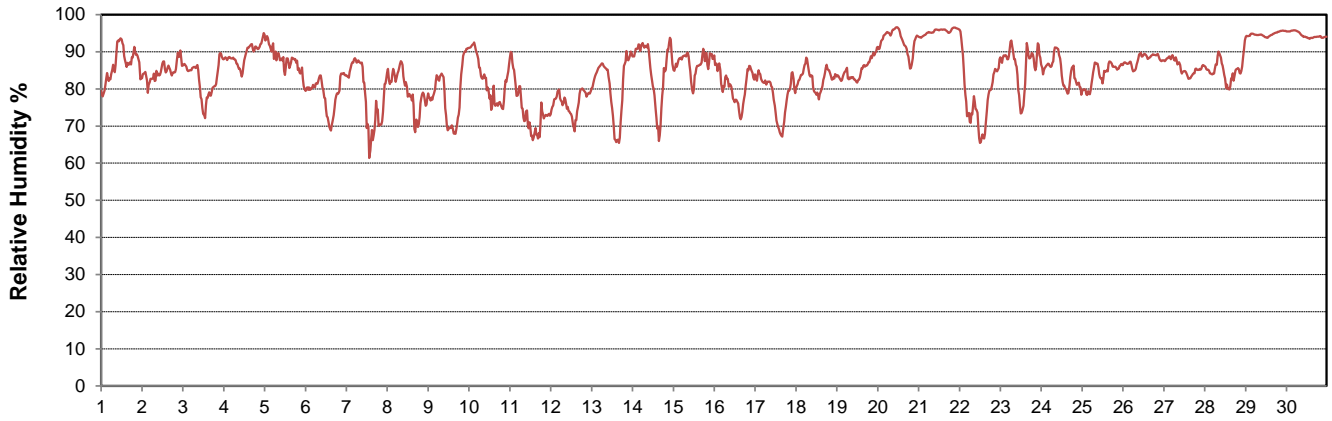
SRC proudly recognizes the following CRS supporters:



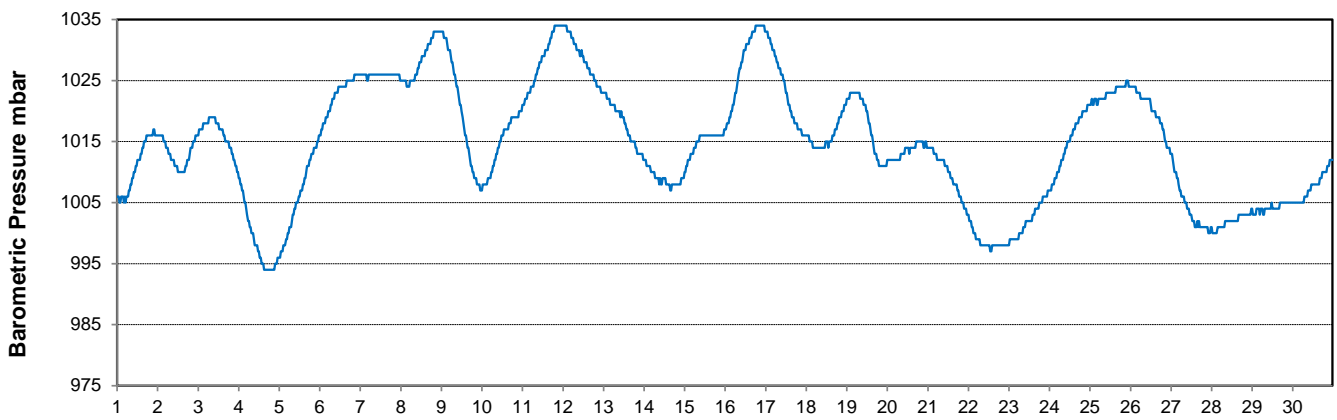
Temperature and Precipitation for November 2018



Relative Humidity for November 2018



Barometric Pressure Corrected to Sea Level for November 2018





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SASKATOON STATION 4057180

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

Preliminary **NOVEMBER 2018**

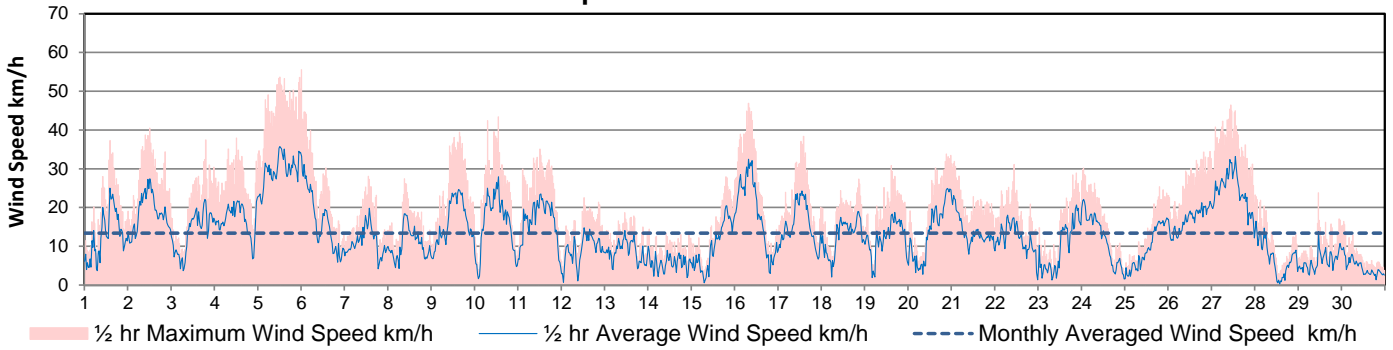
| Day | Wind Gust | | | Soil Temperatures at 0900hrs | | | | | | | | Radiation | | | | |
|---------|-----------|-----------|-------|---|------|-------|-------|-------|--------|--------|----------------------------------|--------------------------------|----------|------------|-------------------|-------------------|
| | 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 ² | MJ/m ² |
| 1 | 37.3 | N | 14:14 | 2.5 | 3.0 | 3.5 | 4.0 | 6.0 | 7.0 | 8.0 | 9.0 | 0.0 | 9.6 | 0.0 | 1.1 | 0.9 |
| 2 | 40.5 | ESE | 12:07 | -2.5 | 1.5 | 2.5 | 3.5 | 5.5 | 7.0 | 8.0 | 9.0 | 0.0 | 9.5 | 0.0 | 1.5 | 1.2 |
| 3 | 37.4 | SW | 19:10 | -1.5 | 1.0 | 1.5 | 2.5 | 5.5 | 7.0 | 7.5 | 8.5 | 4.3 | 9.5 | 45.4 | 5.2 | 2.4 |
| 4 | 37.9 | SSE | 12:00 | 1.0 | 1.0 | 1.5 | 2.0 | 5.0 | 7.0 | 7.5 | 8.5 | 0.0 | 9.4 | 0.0 | 1.6 | 1.4 |
| 5 | 53.6 | ESE | 12:04 | -4.0 | 1.5 | 2.0 | 2.5 | 5.0 | 7.0 | 7.5 | 8.5 | 0.0 | 9.4 | 0.0 | 1.9 | 1.6 |
| 6 | 55.6 | N | 0:05 | -12.5 | 1.0 | 1.5 | 2.0 | 4.5 | 7.0 | 7.5 | 8.5 | 5.5 | 9.3 | 59.2 | 5.7 | 2.6 |
| 7 | 28.1 | NW | 13:25 | -14.0 | 0.5 | 1.0 | 1.5 | 4.5 | 6.5 | 7.5 | 8.5 | 0.1 | 9.2 | 1.1 | 2.8 | 2.3 |
| 8 | 27.4 | NNE | 9:28 | -12.5 | 0.5 | 1.0 | 1.5 | 4.0 | 6.5 | 7.5 | 8.5 | 4.8 | 9.2 | 52.3 | 5.4 | 2.8 |
| 9 | 39.5 | SSE | 15:41 | -17.5 | 0.0 | 0.5 | 1.0 | 4.0 | 6.5 | 7.5 | 8.5 | 1.9 | 9.1 | 20.8 | 4.3 | 3.2 |
| 10 | 43.4 | NNW | 13:04 | -9.5 | 0.0 | 0.5 | 1.0 | 4.0 | 6.5 | 7.5 | 8.5 | 1.8 | 9.1 | 19.9 | 4.2 | 3.0 |
| 11 | 35.1 | NNW | 12:26 | -9.5 | 0.0 | 0.5 | 1.0 | 3.5 | 6.0 | 7.0 | 8.5 | 0.2 | 9.0 | 2.2 | 3.6 | 2.8 |
| 12 | 22.5 | SSE | 11:20 | -11.5 | 0.0 | 0.5 | 1.0 | 3.5 | 6.0 | 7.0 | 8.5 | 3.9 | 9.0 | 43.6 | 5.1 | 2.8 |
| 13 | 18.7 | SSW | 12:38 | -4.5 | 0.0 | 0.0 | 0.5 | 3.5 | 6.0 | 7.0 | 8.5 | 6.2 | 8.9 | 69.7 | 5.1 | 2.6 |
| 14 | 14.4 | S | 0:36 | -4.5 | 0.0 | 0.5 | 0.5 | 3.5 | 6.0 | 7.0 | 8.5 | 3.8 | 8.8 | 43.0 | 4.0 | 2.3 |
| 15 | 27.9 | NE | 19:04 | -1.5 | 0.0 | 0.0 | 0.5 | 3.5 | 6.0 | 7.0 | 8.0 | 0.0 | 8.8 | 0.0 | 1.8 | 1.5 |
| 16 | 46.9 | NNE | 7:43 | -15.5 | 0.0 | 0.5 | 0.5 | 3.0 | 5.5 | 7.0 | 8.0 | 4.0 | 8.7 | 45.8 | 4.3 | 2.6 |
| 17 | 38.4 | WSW | 14:03 | -18.0 | -1.0 | 0.0 | 0.5 | 3.0 | 5.5 | 6.5 | 8.0 | 7.7 | 8.7 | 88.6 | 6.9 | 1.4 |
| 18 | 27.4 | NE | 20:37 | -11.5 | -1.0 | -0.5 | 0.5 | 3.0 | 5.5 | 6.5 | 8.0 | 0.3 | 8.6 | 3.5 | 3.1 | 2.5 |
| 19 | 30.9 | S | 14:42 | -14.0 | -1.0 | -0.5 | 0.0 | 3.0 | 5.5 | 6.5 | 8.0 | 0.0 | 8.6 | 0.0 | 2.0 | 1.7 |
| 20 | 33.8 | ESE | 21:04 | -1.5 | -0.5 | -0.5 | 0.0 | 2.5 | 5.5 | 6.5 | 8.0 | 0.0 | 8.5 | 0.0 | 1.7 | 1.4 |
| 21 | 31.9 | SE | 1:52 | -4.5 | -0.5 | -0.5 | 0.0 | 2.5 | 5.5 | 6.5 | 8.0 | 0.0 | 8.5 | 0.0 | 2.2 | 1.8 |
| 22 | 31.1 | SW | 10:31 | -1.0 | -0.5 | 0.0 | 0.0 | 2.5 | 5.0 | 6.5 | 8.0 | 5.7 | 8.5 | 67.5 | 4.2 | 1.9 |
| 23 | 28.9 | NNE | 21:10 | -2.5 | -0.5 | 0.0 | 0.0 | 2.5 | 5.0 | 6.5 | 8.0 | 4.5 | 8.4 | 53.6 | 3.7 | 1.4 |
| 24 | 30.2 | NNE | 1:28 | -8.0 | -0.5 | 0.0 | 0.0 | 2.5 | 5.0 | 6.0 | 8.0 | 0.0 | 8.4 | 0.0 | 2.2 | 1.8 |
| 25 | 25.3 | SE | 19:01 | -8.5 | -1.0 | -0.5 | 0.0 | 2.5 | 5.0 | 6.0 | 8.0 | 0.0 | 8.3 | 0.0 | 1.8 | 1.5 |
| 26 | 34.5 | SSE | 23:02 | -7.5 | -1.0 | -0.5 | 0.0 | 2.5 | 5.0 | 6.0 | 7.5 | 0.0 | 8.3 | 0.0 | 1.8 | 1.5 |
| 27 | 46.4 | ESE | 10:48 | -5.0 | -1.0 | -0.5 | 0.0 | 2.5 | 5.0 | 6.0 | 7.5 | 0.0 | 8.2 | 0.0 | 2.0 | 1.7 |
| 28 | 23.2 | ENE | 0:27 | -8.0 | -1.0 | -0.5 | 0.0 | 2.5 | 5.0 | 6.0 | 7.5 | 0.0 | 8.2 | 0.0 | 2.0 | 1.7 |
| 29 | 23.8 | SSE | 11:11 | -5.0 | -1.0 | -0.5 | 0.0 | 2.5 | 5.0 | 6.0 | 7.5 | 0.0 | 8.2 | 0.0 | 1.7 | 1.5 |
| 30 | 16.4 | S | 1:14 | -5.0 | -0.5 | -0.5 | 0.0 | 2.5 | 4.5 | 6.0 | 7.5 | 0.0 | 8.1 | 0.0 | 1.8 | 1.5 |
| Total | | | | | | | | | | | | 54.7 | 263.9 | 20.7 | 94.7 | 59.3 |
| Mean | | | | -7.3 | 0.0 | 0.4 | 0.9 | 3.5 | 5.9 | 6.9 | 8.2 | 1981-2010 Normal for Radiation | | | | |
| Extreme | 55.6 | N | 0:05 | 1971- 2000 Normal for Soil Temperatures | | | | | | | | 97.0 | 270.3 | 35.9 | 127.2 | 63.8 |
| Date | 6 | | | -2.2 | -1.7 | -0.5 | 3.0 | 5.6 | 6.8 | 8.1 | No. of Bright Sunshine days = 15 | | | | | |

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

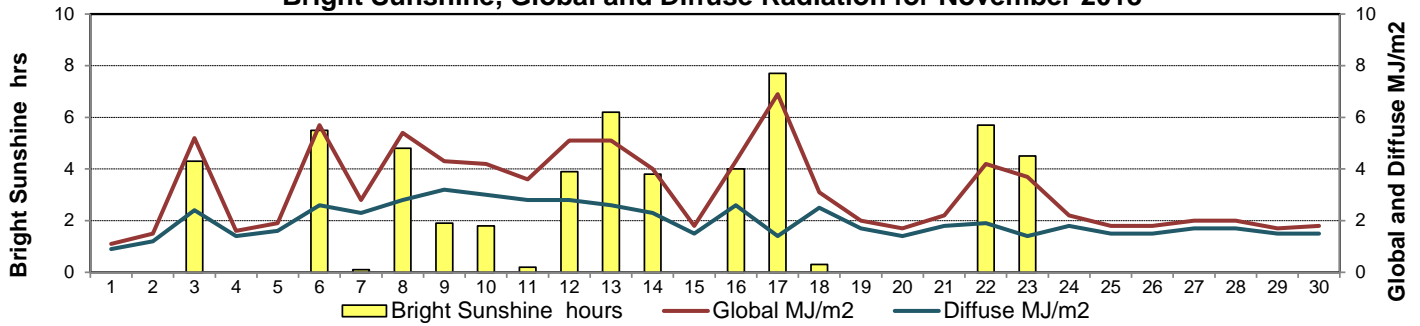
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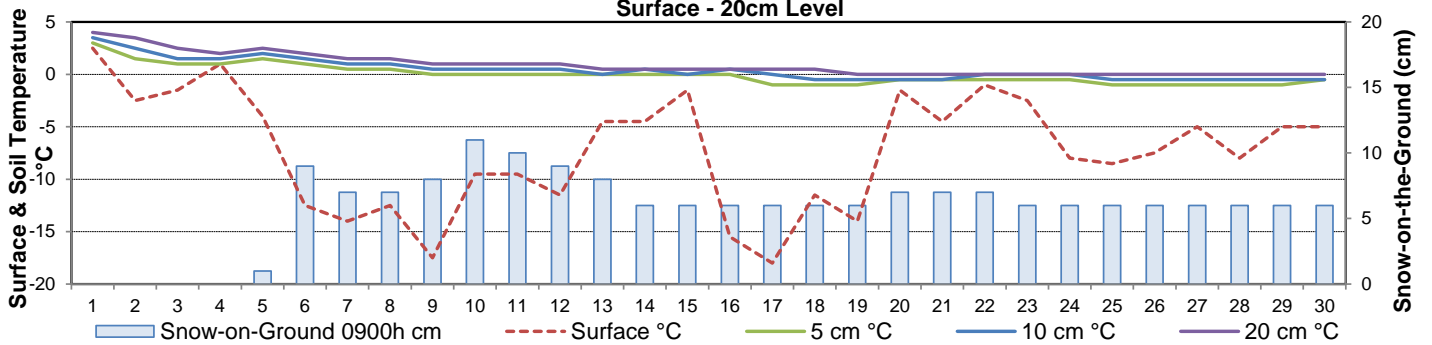
Wind Speed for November 2018



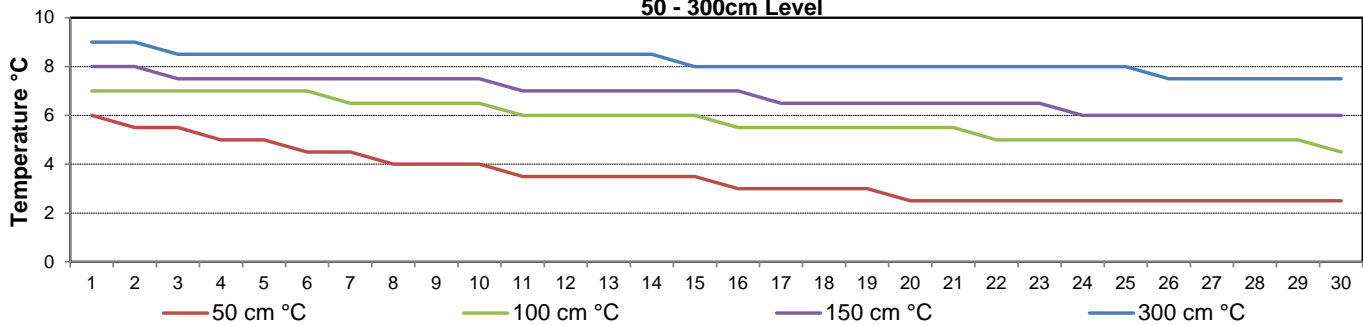
Bright Sunshine, Global and Diffuse Radiation for November 2018



**Soil Temperatures for November 2018
Surface - 20cm Level**



**Soil Temperatures for November 2018
50 - 300cm Level**





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

Preliminary **NOVEMBER 2018**

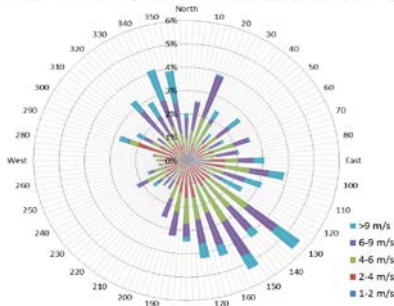
Extreme Records for November

| 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 |
| 21.7 | 03/1903 | SE | 20.0 | 06/2016 | 57.3 | 1940 | SE | 48.2 | 1973 | 100 ^W | 17/1976 | 101 | 1976 | 188.5 | 1976 | 30 | 1976 |
| -39.4 | 30/1893 | SM | -33.5 | 24/1985 | 0.0 | 2002* | SWT* | 0.4 | 2009 | | | | | 37.2 | 1972 | 10 | 1972 |

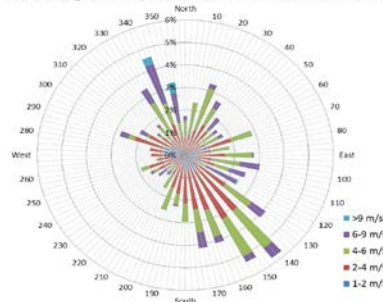
**1975 forward * more than one year

| Notable Events for CRS Saskatoon - November | | | | | | Saskatoon Area Stations | | | Glossary | | |
|---|------|-----|------------|------------|------------|-------------------------|------------------------------|--------------|---------------------------|--|--|
| Element | Type | Day | New Record | Old Record | Year (day) | Station | Location | Period | Term | Definition | |
| We didn't break any records but we did have some interesting items | | | | | | SM | NWMP | c. 1892-1901 | T | Trace of precipitation | |
| CRS Saskatoon officially turned 55 this month | | | | | | SE | Eby | 1901-1941 | Normal | 30 year average beginning with the decade | |
| - fall 2018 had the fourth lowest number of days that recorded any bright sunshine | | | | | | US | Univ. of Sask. | 1915-1964 | SOG | Depth of snow-on-the-ground in cm | |
| - fall 2018 had the fourth lowest seasonal maximum average temperature mainly due to September being one of the coolest on record | | | | | | S | Saskatoon | 1941-1942 | na | not available | |
| - fall 2018 precipitation amounts is pretty close to average, mainly due to all the precipitation received in September | | | | | | SA | Saskatoon A | 1942 - | Degree-days | | |
| | | | | | | 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 | |
| | | | | | | SC | S'toon Central Ave | 1974-1989 | Cooling | (Tm-18°C); if Tm ≥ 18°C then CDD = 0 | |
| | | | | | | S1 | Saskatoon 1 | 1976-1978 | Extreme Cooling | (Tm-24°C); if Tm ≥ 24°C then CDD = 0 | |
| | | | | | | S2 | Saskatoon 2 | 1977-1990 | Manual snow depth: | | |
| | | | | | | K | S'toon Kernen Farm | 1993-2004 | 8th = 8 cm | | |
| | | | | | | KCS | S'toon Kernen Farm CS | 1996- | 14th = 6.5 cm | | |
| | | | | | | RCS | Environment Canada | 2008- | 22nd = 6 cm | | |
| | | | | | | SF | Sutherland Forestry | 1943-1970 | 30th = 6 cm | | |
| | | | | | | | | | | manual snow depth is average of three meter sticks inside the site | |

1/2 hr Maximum Wind Speed and Direction Saskatoon Nov 2018



10 minute Average Wind Speed and Direction Saskatoon Nov 2018



SRC proudly recognizes the following CRS supporters:



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