

**SANDFIRE RESOURCES AMERICA, INC.
BLACK BUTTE COPPER PROJECT
METEOROLOGICAL
MONITORING PROGRAM
Quarterly Data Report
First Quarter 2022**

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CERTIFICATION OF DATA INTEGRITY

Bison Engineering, Inc., certifies the data in this report is an accurate summary of the meteorological conditions measured at the Black Butte Copper Project monitoring site. Every effort was made to obtain accurate and representative data and to comply with the procedures set forth in the project-specific *Quality Assurance Project Plan*, the *State of Montana Ambient Air Monitoring Program Quality Assurance Project Plan (April 2013)*, and the Environmental Protection Agency's *Quality Assurance Handbook for Air Pollution Measurement Systems: Volume I, A Field Guide to Environmental Quality Assurance (April 1994)*, *Volume II, Ambient Air Quality Program (May 2013)*, and *Volume IV, Meteorological Measurements (March 2008)*.

Preparer: Don Milmine.

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Date: April 26, 2022

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Title: Meteorologist

Date: June 17, 2022

TABLE OF CONTENTS

CERTIFICATION OF DATA INTEGRITY	ii
1.0 INTRODUCTION	1
2.0 MONITORING SYSTEM OPERATIONS	3
3.0 PERFORMANCE AUDIT DATA	4
4.0 CALIBRATION DATA	5
5.0 DATA COMPLETENESS	6
6.0 MONITORING DATA	10

LIST OF TABLES

Table 1. Monthly Data Completeness	6
Table 2. Quarterly Data Completeness	9
Table 3. Missing Data Codes	11
Table 4. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	12
Table 5. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	13
Table 6. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower	14
Table 7. Quarterly Wind Rose Summary, Black Butte Copper Project Met Tower	15

LIST OF FIGURES

Figure 1. Monitoring Site Location	2
Figure 2. Monthly Wind Rose, Black Butte Copper Project Met Tower.....	16
Figure 3. Monthly Wind Rose, Black Butte Copper Project Met Tower.....	17
Figure 4. Monthly Wind Rose, Black Butte Copper Project Met Tower.....	18
Figure 5. Quarterly Wind Rose, Black Butte Copper Project Met Tower.....	19

APPENDICES

- Appendix A: Meteorological Data
Appendix B: Performance Audit Reports

1.0 INTRODUCTION

Sandfire Resources America, Inc. established an ambient air monitoring site to measure wind speed, wind direction, standard deviation of wind direction, temperature at 9 meters and 2 meters, delta temperature, solar radiation, barometric pressure, and precipitation. The station was established to accurately characterize the local meteorology and collect baseline data in support of an operating permit application and various environmental studies.

The meteorological monitoring system was installed in April 2012. The site is operated by Bison Engineering, Inc., of Helena and Billings. Figure 1 shows the current location of the monitoring site, depicted by a red star. It is located to the west-southwest of the core shed buildings. On February 6, 2018, the tower was shut down and moved to a new location approximately 300 feet southwest of the original location, where monitoring resumed on March 7, 2018. Relocation activities were documented in the monitoring report for the first quarter of 2018.

This report presents the data collected during the first quarter (January through March) of 2022. In addition, a description of the monitoring system operations is presented, together with summaries of quality assurance activities, including calibrations and performance audits. Tabular summaries of the data completeness achieved, and the periods of missing data also are presented. Appendix A presents hourly meteorological data collected.

On June 23, 2015, an evaporation pan and manual precipitation gauge were installed adjacent to the existing meteorological system. The evaporation data will be used for hydrological / water balance studies. The manual rain gauge was installed to provide a backup data source for the existing automatic rain gauge, which has experienced occasional mechanical problems. Also, the automatic rain gauge is sometimes unreliable for measuring frozen precipitation. Neither the evaporation pan nor the manual rain gauge was operated during the first quarter of 2022. The automatic precipitation gauge generally operated well throughout first quarter of 2022.

Figure 1. Monitoring Site Location

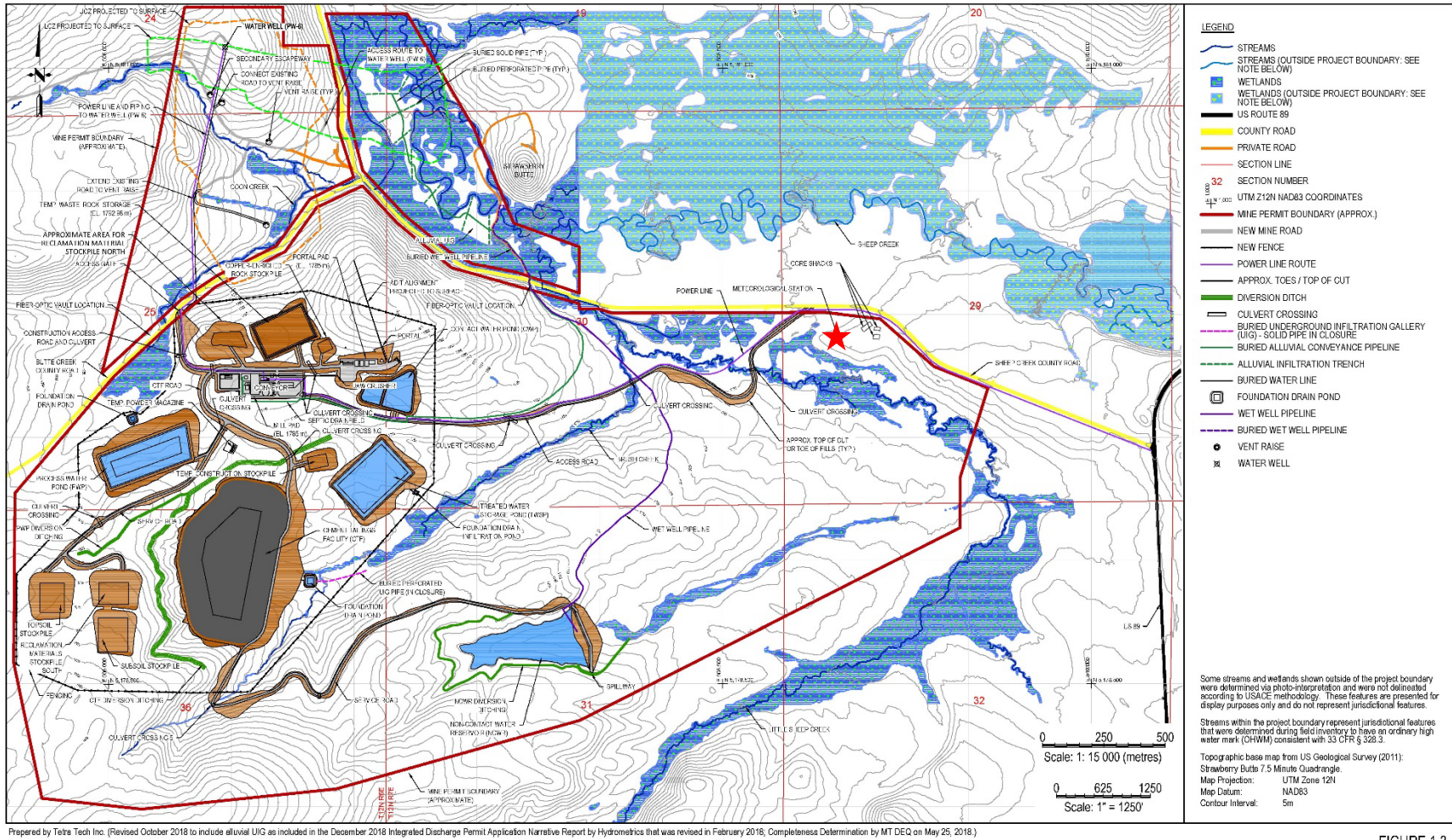


FIGURE 1.3
Facilities Site Plan
Black Butte Copper Project
Mine Operating Permit Application
Meagher County, Montana



2.0 MONITORING SYSTEM OPERATIONS

Monitoring activities continued in the normal manner during the first quarter of 2022. Data were downloaded and reviewed by Bison at least once a week and examined for suspect behavior. All instruments were operational throughout the quarter. However, the station battery power failed in March, which resulted in the loss of 19 hours of data between March 28 and March 29.

Steve Heck of Bison conducted performance audits of the meteorological system on April 8, 2022. No calibration adjustments were made to any of the instrumentation. That audit is reported in this first quarter report, as it was originally scheduled to be performed at the end of the first quarter. The normal second quarter audit was subsequently performed during June 2022.

3.0 PERFORMANCE AUDIT DATA

Steve Heck of Bison conducted performance audits of the meteorological system on April 8, 2022. No calibration adjustments were made to any of the instrumentation.

4.0 CALIBRATION DATA

Steve Heck of Bison conducted performance audits of the meteorological system on April 8, 2022, as discussed in Section 3.0. All of the as-found audit results were satisfactory, and no calibration adjustments were needed.

5.0 DATA COMPLETENESS

The meteorological percentages of data recovery achieved during the first quarter of 2022 are given in Tables 1 and 2. In these tables, the number of possible data values during each month of the quarter is given, together with the number of valid readings and the number of hours spent on quality assurance activities (such as calibrations, performance audits, and maintenance on the sensors). The quality assurance hours are added to the number of hours of valid data to compute the net percentage data recovery, which was 99.1 percent for each parameter for the quarter overall.

All instruments were operational throughout the quarter. However, the station battery power failed in March, which resulted in the loss of 19 hours of data between March 28 and March 29.

Table 1. Monthly Data Completeness

January 2022					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	744	744	100.0	0	100.0
Wind Direction	744	744	100.0	0	100.0
Standard Deviation	744	744	100.0	0	100.0
9-Meter Temperature	744	744	100.0	0	100.0
2-Meter Temperature	744	744	100.0	0	100.0
9-2 M Delta Temperature	744	744	100.0	0	100.0
Solar Radiation	744	744	100.0	0	100.0
Barometric Pressure	744	744	100.0	0	100.0
Relative Humidity	744	744	100.0	0	100.0
Precipitation	744	744	100.0	0	100.0
Total	7,440	7,440	100.0	0	100.0

Table 1. Monthly Data Completeness (Continued)

February 2022					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	672	672	100.0	0	100.0
Wind Direction	672	672	100.0	0	100.0
Standard Deviation	672	672	100.0	0	100.0
9-Meter Temperature	672	672	100.0	0	100.0
2-Meter Temperature	672	672	100.0	0	100.0
9-2 M Delta Temperature	672	672	100.0	0	100.0
Solar Radiation	672	672	100.0	0	100.0
Barometric Pressure	672	672	100.0	0	100.0
Relative Humidity	672	672	100.0	0	100.0
Precipitation	672	672	100.0	0	100.0
Total	6,720	6,720	100.0	0	100.0

Table 1. Monthly Data Completeness (Continued)

March 2022					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	744	725	97.4	0	97.4
Wind Direction	744	725	97.4	0	97.4
Standard Deviation	744	725	97.4	0	97.4
9-Meter Temperature	744	725	97.4	0	97.4
2-Meter Temperature	744	725	97.4	0	97.4
9-2 M Delta Temperature	744	725	97.4	0	97.4
Solar Radiation	744	725	97.4	0	97.4
Barometric Pressure	744	725	97.4	0	97.4
Relative Humidity	744	725	97.4	0	97.4
Precipitation	744	725	97.4	0	97.4
Total	7,440	7,250	97.4	0	97.4

Table 2. Quarterly Data Completeness

First Quarter 2022					
Parameter	Readings Possible	Valid Readings	Percentage Recovery	Quality Assurance Hours	Net Percentage Recovery
Black Butte Copper Project Met Tower					
Wind Speed	2,160	2,141	99.1	0	99.1
Wind Direction	2,160	2,141	99.1	0	99.1
Standard Deviation	2,160	2,141	99.1	0	99.1
9-Meter Temperature	2,160	2,141	99.1	0	99.1
2-Meter Temperature	2,160	2,141	99.1	0	99.1
9-2 M Delta Temperature	2,160	2,141	99.1	0	99.1
Solar Radiation	2,160	2,141	99.1	0	99.1
Barometric Pressure	2,160	2,141	99.1	0	99.1
Relative Humidity	2,160	2,141	99.1	0	99.1
Precipitation	2,160	2,141	99.1	0	99.1
Total	21,600	21,410	99.1	0	99.1

6.0 MONITORING DATA

The hourly data values collected at the monitoring site are given in the data tables in Appendix A. Each of these tables presents one month's data for one parameter in the monitoring system. In addition, the average, maximum, and minimum values for each parameter for each day are listed (for wind direction, the prevailing wind direction for the day is given). For those hours with missing data, a code is given that explains the reason the data were missing. These codes are given in Table 3.

Monthly and quarterly wind rose distributions from the monitoring site are presented in Tables 4 through 7. These tables give the percentage frequency of occurrence of winds from 16 cardinal directions and from 22 wind speed ranges. These same data are presented graphically in Figures 2 through 5. In the wind rose figures, the length of each "petal" of the rose is proportional to the percentage of time the wind blew from that direction. On the bottom of each figure is a histogram showing the average wind speed from each of the cardinal wind directions.

Table 3. Missing Data Codes

Mnemonic Code	Description	Equivalent AIRS Null Value Reason Code
Sc	Scheduled but not collected	9972
Ti	Sample time out of limits	9973
Fi	Filter damage	9976
Op	Voided by operator	9978
Mi	Miscellaneous void	9979
ND	Machine malfunction	9980
Wx	Bad weather	9981
Co	Collection error	9983
Lb	Lab error	9984
QA	Poor quality assurance results	9985
ZS	Manual zero/span check	9986
Wa	Monitoring waived	9987
Pw	Power failure	9988
Wi	Wildlife damage	9989
AZ	Automatic zero/span check	9991
Au	Performance audit	9992
Ma	Routine maintenance/repairs	9993
Ca	Multipoint calibration	9995
PZ	Precision/zero/span	9998

Table 4. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

January 2022																		
Direction>>>		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	0.4	0.8	0.9	0.9	1.9	1.7	4.0	3.9	1.3	0.8	1.1	0.7	0.7	0.9	0.8	0.5	21.5
	1.1 - 2.0	0.7	0.4	0.8	2.3	3.5	5.0	4.2	3.1	0.1	1.1	0.4	0.3	1.1	2.0	2.2	1.2	28.2
	2.1 - 3.0	0.3	0.1	0.7	1.5	2.0	1.2	0.9	0.3	0.0	0.1	0.0	0.7	1.1	1.6	3.6	0.9	15.1
	3.1 - 4.0	0.0	0.0	0.0	1.1	0.4	0.8	0.3	0.5	0.0	0.1	0.1	0.5	3.2	2.7	1.1	0.5	11.4
	4.1 - 5.0	0.1	0.0	0.1	0.0	0.4	0.7	0.0	0.0	0.3	0.1	0.1	0.9	2.6	2.0	0.7	0.1	8.2
	5.1 - 6.0	0.1	0.0	0.0	0.0	0.1	0.0	0.1	0.3	0.4	0.0	0.3	0.0	0.9	1.1	0.4	0.0	3.8
	6.1 - 7.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.1	0.7	0.0	1.9	0.8	0.4	0.0	4.6
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.3	0.7	0.3	0.5	0.7	0.1	0.0	2.8
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.9	0.4	0.0	0.0	1.7
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.0	0.0	1.5
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.0	0.5
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3	0.0	0.0	0.4
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm																		0.0
Total		1.7	1.3	2.6	5.8	8.3	9.4	9.5	8.2	2.8	3.0	3.5	3.4	14.0	13.8	9.3	3.4	100.0
Average Speed		2.4	1.2	1.5	2.1	1.9	1.9	1.4	1.5	3.2	3.0	4.2	3.2	4.9	4.6	2.8	2.1	2.9

Table 5. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

February 2022																		
Direction>>>		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	0.6	1.2	1.6	0.4	1.5	2.2	5.5	4.5	1.5	0.6	0.6	0.7	0.1	0.6	0.6	0.1	22.5
	1.1 - 2.0	1.3	1.0	2.1	2.4	3.3	3.3	4.0	1.0	0.6	0.1	0.0	0.0	1.0	1.3	1.5	1.3	24.4
	2.1 - 3.0	0.1	0.1	0.0	0.6	0.4	0.3	0.7	0.4	0.1	0.0	0.3	0.6	2.1	2.2	1.6	1.0	10.9
	3.1 - 4.0	0.6	0.3	0.1	0.1	0.1	0.0	0.1	0.3	0.0	0.0	0.6	1.2	2.8	3.1	2.7	0.1	12.4
	4.1 - 5.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.3	1.3	3.1	3.0	0.7	0.1	9.5
	5.1 - 6.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.9	2.8	2.4	0.7	0.0	7.4
	6.1 - 7.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	2.4	1.3	0.9	0.1	5.5
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.1	1.6	0.1	0.0	0.0	2.4
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.2	0.6	0.0	0.1	1.9
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.6	0.1	0.0	1.6
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.6
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.0	0.0	0.4
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.3
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.1
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm																		0.0
Total		3.1	2.8	4.0	3.6	5.4	5.8	10.4	6.4	2.4	1.2	2.7	5.5	18.6	16.1	8.9	3.1	100.0
Average Speed		2.2	1.7	1.4	1.6	1.4	1.2	1.0	1.1	1.3	3.1	4.0	4.2	5.3	4.7	3.5	2.5	3.1

Table 6. Monthly Wind Rose Summary, Black Butte Copper Project Met Tower

March 2022																		
Direction>>>		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	0.4	0.7	0.6	0.7	2.3	2.5	2.8	2.6	1.1	0.4	0.4	0.6	0.6	0.7	0.3	0.3	16.8
	1.1 - 2.0	0.4	1.0	2.1	1.8	3.0	4.7	3.4	2.6	0.6	0.0	0.1	0.8	1.2	0.6	0.3	0.3	22.9
	2.1 - 3.0	0.0	0.3	0.0	0.6	1.4	1.8	0.6	0.7	0.4	0.3	0.8	1.2	1.8	1.4	1.0	0.4	12.6
	3.1 - 4.0	0.0	0.0	0.0	0.1	0.3	0.3	0.3	0.0	0.0	0.1	0.3	1.0	2.5	1.8	1.5	1.0	9.1
	4.1 - 5.0	0.6	0.1	0.0	0.0	0.1	0.0	0.0	0.4	0.0	0.7	0.3	0.4	3.4	2.2	1.4	1.2	10.9
	5.1 - 6.0	0.6	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.6	3.6	2.8	0.4	1.2	9.9
	6.1 - 7.0	0.4	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.0	0.7	2.8	2.6	1.1	1.0	9.4
	7.1 - 8.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	2.9	1.0	0.6	1.0	5.8
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	1.1	0.0	0.1	0.3	1.8
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4	0.1	0.1	0.0	0.8
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm																		0.0
Total		2.5	2.6	2.6	3.2	7.2	9.2	7.0	6.3	2.5	2.3	2.1	5.7	20.3	13.1	6.8	6.6	100.0
Average Speed		4.2	2.5	1.3	1.6	1.6	1.6	1.3	1.5	2.1	4.1	2.8	3.8	5.2	4.8	4.6	5.1	3.4

Table 7. Quarterly Wind Rose Summary, Black Butte Copper Project Met Tower

First Quarter 2022																		
Direction>>>		N	NNE	NE	ENE	E	ESE	SE	SSE	S	SSW	SW	WSW	W	WNW	NW	NNW	Total
Wind Speed (meters per second)	0.1 - 1.0	0.5	0.9	1.0	0.7	1.9	2.1	4.1	3.6	1.3	0.6	0.7	0.7	0.5	0.7	0.6	0.3	20.2
	1.1 - 2.0	0.8	0.8	1.6	2.1	3.3	4.3	3.9	2.3	0.4	0.4	0.2	0.4	1.1	1.3	1.3	0.9	25.2
	2.1 - 3.0	0.1	0.2	0.2	0.9	1.3	1.1	0.7	0.5	0.2	0.1	0.4	0.8	1.6	1.7	2.1	0.8	12.9
	3.1 - 4.0	0.2	0.1	0.0	0.5	0.3	0.4	0.2	0.3	0.0	0.1	0.3	0.9	2.8	2.5	1.7	0.6	10.9
	4.1 - 5.0	0.4	0.0	0.1	0.0	0.2	0.2	0.0	0.2	0.1	0.3	0.2	0.9	3.0	2.4	0.9	0.5	9.5
	5.1 - 6.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.1	0.2	0.5	2.4	2.1	0.5	0.4	7.0
	6.1 - 7.0	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.2	0.3	0.3	2.3	1.6	0.8	0.4	6.5
	7.1 - 8.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.3	0.1	1.7	0.6	0.2	0.3	3.7
	8.1 - 9.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.1	1.1	0.3	0.0	0.1	1.8
	9.1 - 10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.7	0.5	0.1	0.0	1.3
	10.1 - 11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.2	0.0	0.0	0.4
	11.1 - 12.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.2
	12.1 - 13.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.2
	13.1 - 14.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	14.1 - 15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	15.1 - 16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	16.1 - 17.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	17.1 - 18.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	18.1 - 19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	19.1 - 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	> 20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Calm																		0.0
Total		2.4	2.2	3.0	4.2	7.0	8.2	9.0	7.0	2.6	2.2	2.8	4.8	17.6	14.3	8.3	4.4	100.0
Average Speed		2.9	1.9	1.4	1.8	1.7	1.6	1.2	1.4	2.3	3.4	3.8	3.8	5.1	4.7	3.5	3.7	3.1

Figure 2. Monthly Wind Rose, Black Butte Copper Project Met Tower

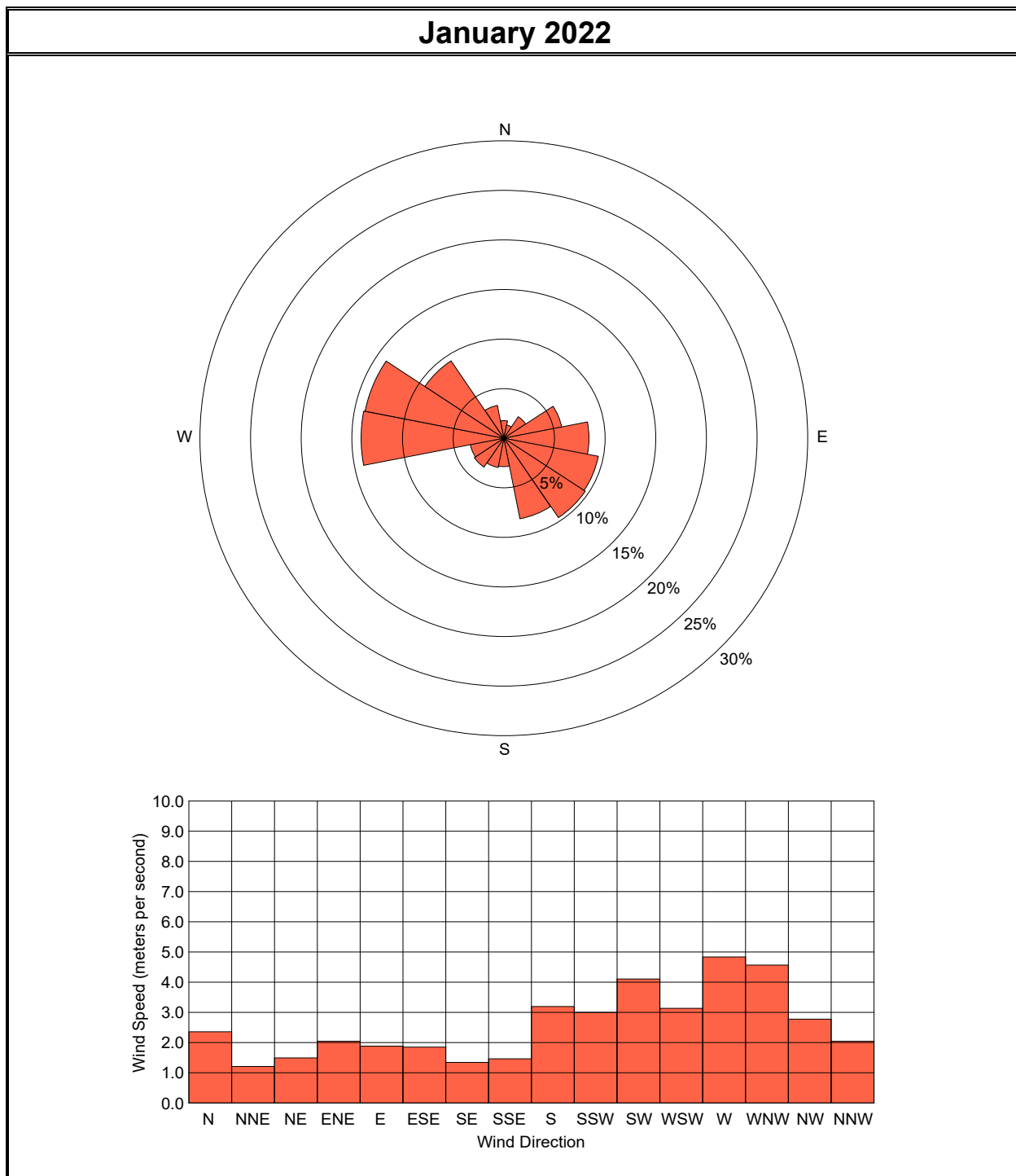


Figure 3. Monthly Wind Rose, Black Butte Copper Project Met Tower

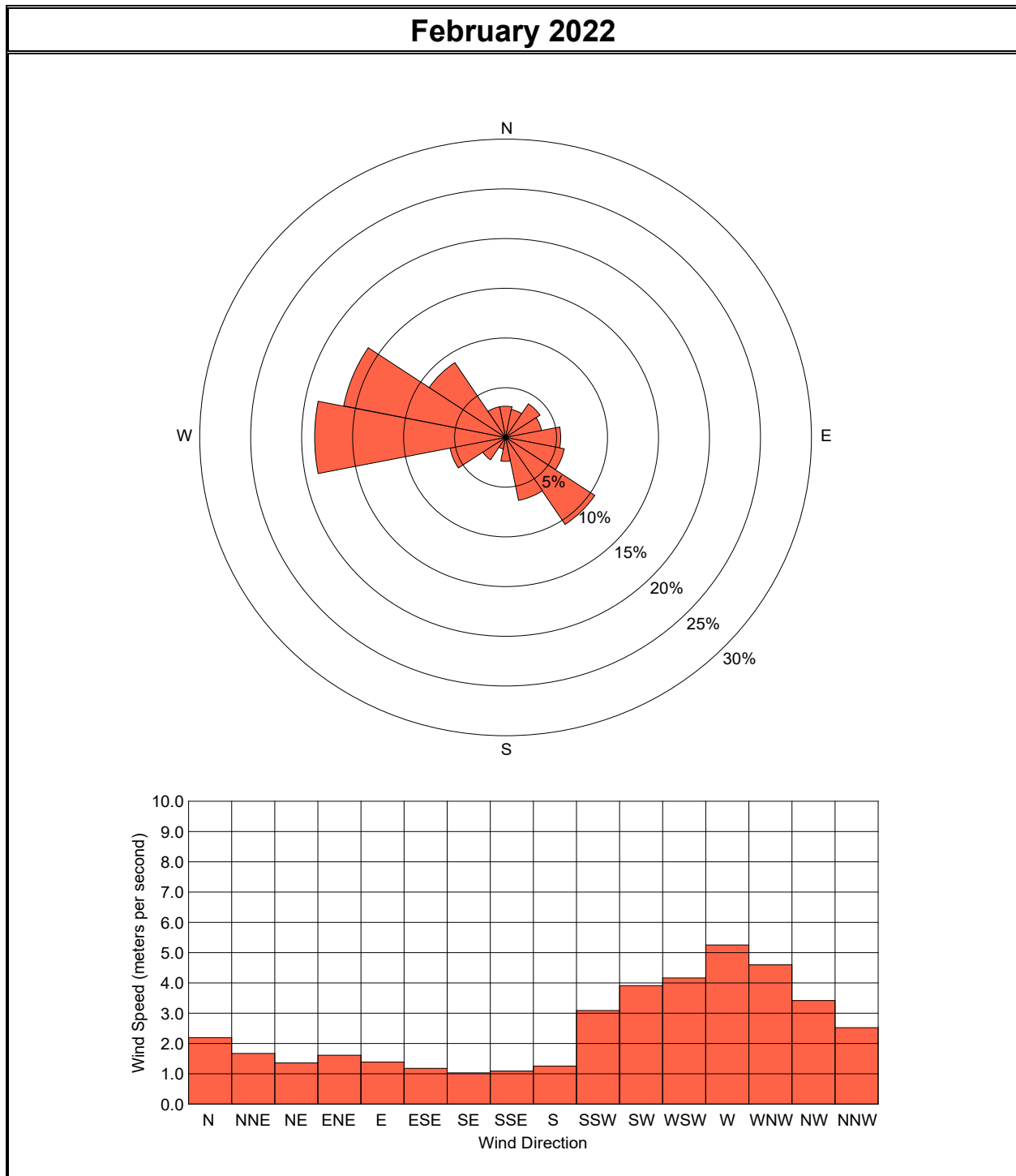


Figure 4. Monthly Wind Rose, Black Butte Copper Project Met Tower

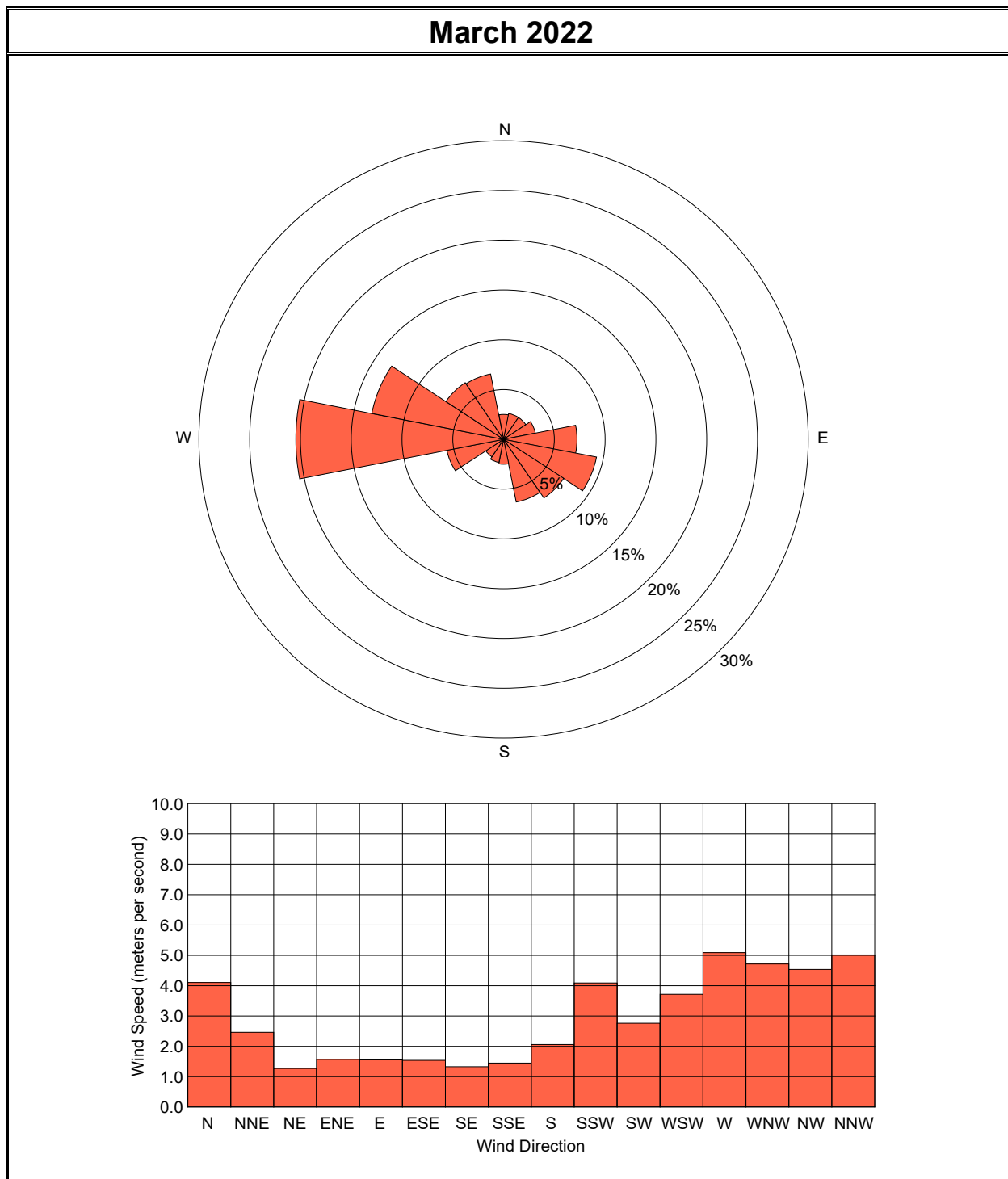
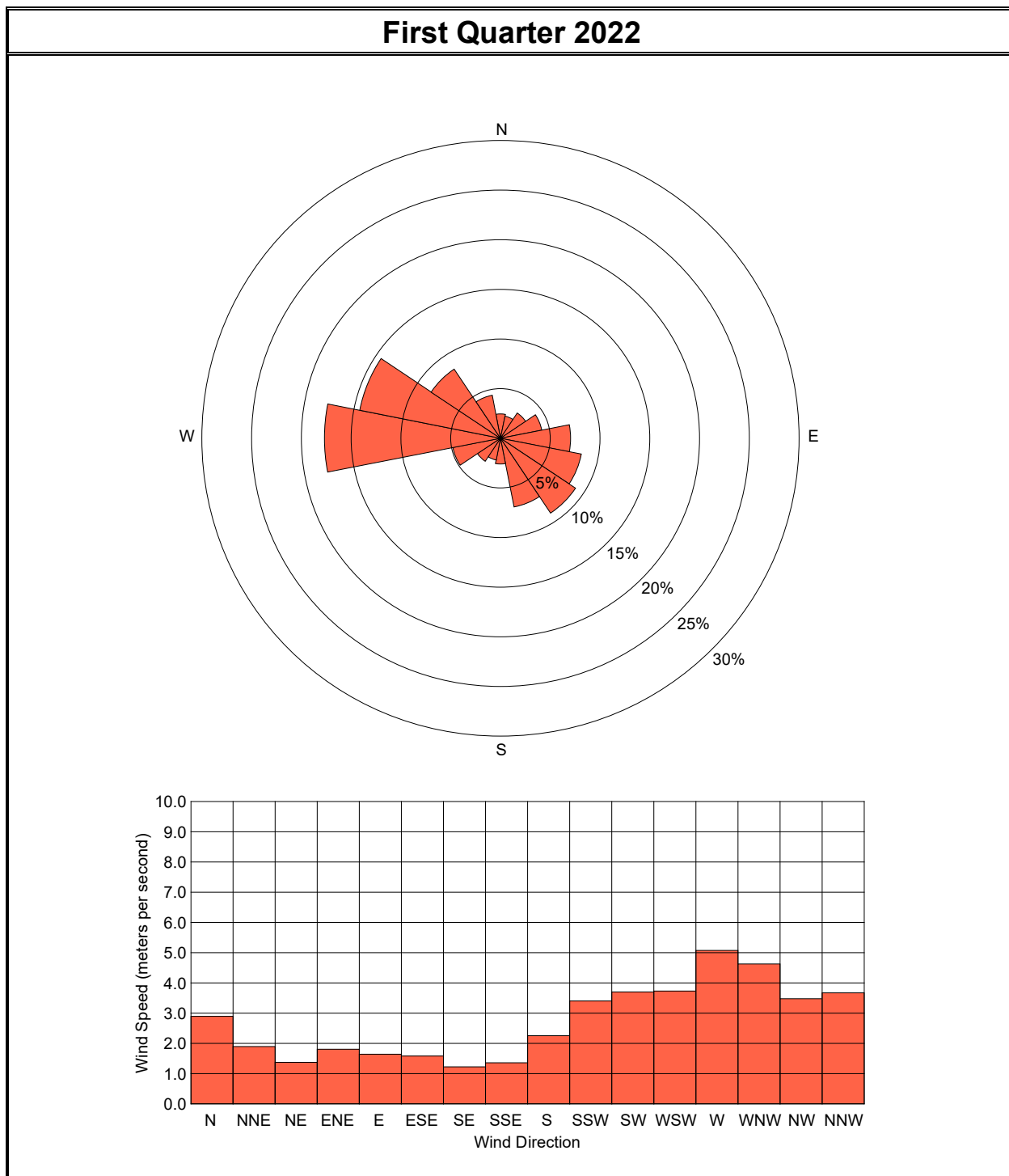


Figure 5. Quarterly Wind Rose, Black Butte Copper Project Met Tower



APPENDIX A: HOURLY AIR QUALITY AND METEOROLOGICAL DATA, FIRST QUARTER 2022

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
January 2022

A-1

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0.9	0.6	0.5	0.5	0.6	0.7	0.8	0.6	0.8	0.6	0.8	1.5	1.4	2.9	3.0	1.8	4.9	2.7	1.6	1.4	1.7	1.8	2.4	3.3	1.6	4.9	0.5
2	3.3	3.0	4.0	1.9	1.7	2.3	2.7	4.8	3.5	3.3	3.2	5.1	4.3	4.1	4.3	3.1	3.0	4.0	3.7	5.0	2.4	2.3	5.2	4.3	3.5	5.2	1.7
3	0.9	1.3	2.3	1.8	2.0	1.7	2.5	5.0	4.9	7.4	7.4	6.5	8.9	7.0	6.7	6.1	5.9	5.3	5.8	5.7	5.0	4.7	6.6	6.0	4.9	8.9	0.9
4	4.6	1.2	1.4	3.4	4.1	3.4	3.1	3.3	1.4	1.1	1.4	1.3	1.0	2.3	1.0	1.8	1.3	1.4	0.9	1.8	1.9	2.2	1.8	1.1	2.0	4.6	0.9
5	2.6	2.4	2.1	1.7	1.5	2.8	1.7	2.5	2.3	2.2	1.6	2.9	2.9	3.9	3.3	2.8	2.6	2.2	0.6	0.8	0.7	0.7	1.3	0.9	2.0	3.9	0.6
6	1.0	0.8	0.5	0.5	0.7	1.0	0.5	0.7	0.8	1.0	1.3	1.1	1.0	0.6	0.7	0.6	0.9	0.5	1.0	1.3	0.9	1.1	0.9	1.0	0.8	1.3	0.5
7	0.7	0.9	0.8	1.1	4.9	6.9	7.3	5.1	4.2	7.2	5.5	7.5	8.4	6.5	7.5	7.7	6.1	7.3	6.6	5.0	7.0	6.9	8.7	9.4	5.8	9.4	0.7
8	9.2	7.9	8.2	11.1	9.7	8.7	8.2	9.5	12.5	12.7	7.3	7.8	7.7	9.1	8.5	6.1	6.6	7.2	9.3	6.1	3.1	3.1	2.0	1.6	7.6	12.7	1.6
9	2.0	2.1	3.2	2.7	4.1	2.0	3.7	2.8	1.8	2.2	1.3	2.4	5.2	4.5	4.3	2.2	1.2	1.8	1.8	1.9	1.6	1.8	1.7	1.4	2.5	5.2	1.2
10	1.8	1.8	1.8	1.9	1.4	1.6	1.3	1.5	1.0	1.1	1.0	0.7	0.9	3.2	1.4	1.0	1.1	2.2	3.7	4.9	4.4	6.1	7.0	3.3	2.3	7.0	0.7
11	2.1	2.1	3.4	2.0	1.4	2.4	2.7	2.2	1.6	3.2	3.1	2.6	1.2	1.1	1.7	1.8	3.6	1.1	2.6	1.7	3.7	3.7	2.6	3.4	2.4	3.7	1.1
12	3.6	2.0	2.2	2.1	1.9	4.2	1.6	2.7	2.3	2.6	1.8	2.2	1.7	1.1	0.8	0.9	1.2	1.5	2.5	0.9	1.5	1.4	0.9	1.4	1.9	4.2	0.8
13	1.2	1.4	0.9	1.0	0.8	0.9	1.1	1.0	1.1	1.3	1.3	1.2	1.0	1.1	1.3	1.2	3.1	1.8	1.6	2.0	1.4	1.4	2.4	4.3	1.5	4.3	0.8
14	3.7	5.2	4.6	2.0	2.5	2.7	3.3	3.6	1.2	0.9	0.9	1.6	3.1	3.1	1.9	2.0	1.1	1.4	1.9	1.4	1.4	1.2	1.1	1.2	2.2	5.2	0.9
15	1.2	0.9	0.7	0.8	0.6	0.6	0.7	0.5	0.7	0.6	0.6	0.5	1.0	4.6	3.4	4.4	4.0	4.1	1.9	6.7	10.9	8.2	4.5	2.1	2.7	10.9	0.5
16	2.0	3.0	2.6	3.5	1.6	1.8	1.5	1.0	1.7	0.7	0.7	1.2	2.5	4.2	4.4	3.4	3.8	2.7	2.8	6.0	5.1	4.0	3.9	2.5	2.8	6.0	0.7
17	3.3	2.6	2.8	1.4	1.7	2.0	2.0	1.8	1.5	1.3	1.9	3.4	3.1	2.0	6.4	4.9	4.0	2.0	1.9	1.7	4.7	5.4	4.0	7.2	3.0	7.2	1.3
18	7.9	5.0	6.5	8.5	7.9	6.2	6.6	4.6	6.7	3.6	3.4	3.5	5.7	4.8	5.5	4.7	4.0	3.0	2.7	2.6	2.5	2.3	2.2	1.9	4.7	8.5	1.9
19	1.2	1.6	2.0	0.9	0.8	0.7	0.9	0.7	0.8	0.7	1.1	0.5	0.9	0.4	0.6	0.5	0.7	1.1	1.2	1.2	0.7	0.6	0.7	0.7	0.9	2.0	0.4
20	0.6	0.4	0.8	0.6	0.7	0.8	0.9	0.8	0.8	0.6	0.6	0.8	1.0	2.8	2.1	2.3	0.9	2.2	5.5	4.3	4.0	8.5	7.4	6.3	2.3	8.5	0.4
21	4.6	5.5	6.8	4.6	4.6	3.8	2.9	2.0	0.7	1.1	1.7	0.9	5.0	6.7	4.8	4.7	5.0	5.0	2.9	3.6	2.0	1.9	1.2	0.8	3.5	6.8	0.7
22	0.8	0.9	0.8	1.0	1.0	0.8	0.7	0.8	0.7	0.5	0.4	0.8	3.1	2.5	3.3	3.0	2.0	1.1	1.5	1.6	1.5	1.3	1.1	1.2	1.4	3.3	0.4
23	1.1	0.7	0.9	0.8	0.8	0.9	0.6	0.7	0.7	0.5	0.4	0.7	2.4	4.6	4.4	6.3	6.5	6.8	4.8	0.7	2.5	2.5	2.3	2.6	2.3	6.8	0.4
24	1.1	1.5	1.2	0.6	0.9	0.6	0.6	0.7	0.5	0.7	0.5	0.5	0.6	1.0	1.9	3.8	2.6	2.2	2.8	2.5	6.1	4.9	5.0	2.3	1.9	6.1	0.5
25	2.8	2.0	2.5	2.8	2.0	3.3	3.0	2.6	1.5	0.8	1.0	2.7	4.2	4.1	4.0	3.6	2.4	1.1	1.4	2.2	2.1	1.7	2.3	2.0	2.4	4.2	0.8
26	2.2	2.3	2.6	3.3	3.4	4.0	2.5	2.0	1.6	1.3	0.9	0.8	4.4	4.7	4.0	3.6	2.1	1.3	1.6	5.1	4.0	3.2	6.2	6.2	3.1	6.2	0.8
27	5.6	5.1	7.1	5.4	3.2	1.3	1.2	1.0	1.0	0.9	1.1	2.2	3.5	2.3	3.7	4.4	3.6	1.1	2.5	2.8	2.4	2.0	1.6	1.9	2.8	7.1	0.9
28	1.6	1.4	1.7	1.6	1.2	1.1	0.7	0.7	1.0	0.7	0.5	0.6	0.7	1.1	1.1	0.9	1.4	1.3	1.8	1.9	2.0	1.6	1.0	1.2	1.2	2.0	0.5
29	1.3	1.8	1.2	1.4	1.3	1.1	2.3	1.7	1.6	1.3	1.3	1.9	2.6	2.7	5.0	4.9	3.6	1.6	2.2	2.2	2.2	1.6	1.5	1.4	2.1	5.0	1.1
30	1.3	2.1	3.1	7.5	5.4	3.6	4.8	5.5	9.6	9.2	7.8	9.3	11.7	6.9	3.6	3.5	2.0	4.2	5.5	1.6	1.8	3.7	3.1	1.1	4.9	11.7	1.1
31	2.6	3.5	6.4	8.8	7.5	4.2	3.7	6.9	9.4	10.5	10.5	12.2	8.1	10.7	9.9	8.6	5.1	5.7	4.6	3.6	3.2	5.1	3.6	3.7	6.6	12.2	2.6
Avg	2.5	2.4	2.8	2.8	2.6	2.5	2.5	2.6	2.6	2.6	2.3	2.8	3.5	3.8	3.7	3.4	3.1	2.8	2.9	2.9	3.0	3.1	3.1	2.8	2.9	6.3	0.9
Max	9.2	7.9	8.2	11.1	9.7	8.7	8.2	9.5	12.5	12.7	10.5	12.2	11.7	10.7	9.9	8.6	6.6	7.3	9.3	6.7	10.9	8.5	8.7	9.4	7.6	12.7	2.6
Min	0.6	0.4	0.5	0.5	0.6	0.6	0.5	0.5	0.5	0.5	0.4	0.5	0.6	0.4	0.6	0.5	0.7	0.5	0.6	0.7	0.7	0.6	0.7	0.7	0.8	1.3	0.4

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
February 2022

A-2

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	4.7	2.1	1.5	1.8	1.3	1.6	1.1	1.0	0.9	0.6	0.5	0.5	0.6	3.0	3.8	4.6	4.7	6.0	5.1	3.6	3.0	3.2	3.5	2.3	2.5	6.0	0.5
2	2.2	3.7	2.5	2.2	1.2	1.1	1.5	0.8	0.7	0.8	0.4	2.6	2.8	2.0	1.1	1.6	1.6	0.7	0.8	0.6	0.3	0.3	0.7	0.4	1.4	3.7	0.3
3	0.4	0.4	1.2	1.5	1.0	1.0	1.1	0.8	0.9	0.6	1.1	2.5	4.5	5.3	5.4	3.7	2.1	2.4	4.6	4.2	4.5	2.9	2.1	3.6	2.4	5.4	0.4
4	3.7	3.2	3.6	3.0	4.6	8.1	5.8	3.6	3.1	4.9	5.3	3.9	6.6	6.2	5.3	5.7	3.7	3.3	4.6	6.2	5.8	10.4	7.4	7.5	5.2	10.4	3.0
5	6.6	7.0	7.7	9.2	6.7	6.8	7.7	6.8	6.2	6.6	7.8	8.1	9.1	8.1	9.2	6.9	4.0	2.8	1.3	1.5	1.8	1.5	0.8	1.3	5.6	9.2	0.8
6	0.5	0.8	0.6	0.8	0.5	0.4	0.4	0.4	0.3	0.2	0.4	0.6	4.1	4.3	4.4	3.0	1.0	2.5	2.6	1.9	1.0	1.7	1.2	1.2	1.4	4.4	0.2
7	1.5	1.6	1.5	1.4	1.1	1.2	1.1	1.6	1.1	0.8	1.0	2.9	1.4	1.8	2.9	3.0	4.2	5.9	6.3	11.2	11.7	9.5	7.8	4.6	3.6	11.7	0.8
8	4.2	2.6	1.0	1.8	3.6	1.8	1.5	1.0	1.4	2.1	7.1	6.5	5.2	6.0	7.0	6.8	5.9	4.6	3.4	2.3	1.4	1.6	1.3	1.1	3.4	7.1	1.0
9	1.3	1.4	2.3	1.9	4.5	2.8	1.6	1.2	0.9	1.0	1.3	3.4	5.5	8.2	9.2	8.1	6.9	6.1	4.7	4.1	1.3	1.4	1.2	1.4	3.4	9.2	0.9
10	1.0	1.3	1.3	1.9	2.2	1.9	2.2	2.5	6.9	8.1	8.3	9.5	9.5	7.9	8.3	7.9	8.4	7.5	8.3	8.0	5.4	4.4	4.7	6.7	5.6	9.5	1.0
11	4.9	4.4	3.7	1.4	3.5	1.7	1.3	2.7	2.2	2.1	4.0	5.1	6.2	6.9	8.6	6.3	7.0	5.1	3.3	1.8	1.3	3.1	1.4	1.7	3.7	8.6	1.3
12	1.1	0.6	0.7	0.3	0.2	0.2	0.2	0.3	0.5	0.8	0.7	0.5	0.7	1.5	1.1	1.9	1.1	1.2	1.9	2.2	1.3	1.7	1.5	1.6	1.0	2.2	0.2
13	1.3	1.1	0.9	1.2	1.1	1.1	1.2	1.2	1.1	0.9	0.8	0.6	1.3	4.4	4.4	4.1	2.2	0.9	3.1	2.4	1.3	1.3	1.2	0.9	1.7	4.4	0.6
14	0.9	0.7	0.7	1.0	1.1	1.3	1.1	1.5	1.1	1.2	0.9	1.0	1.2	1.1	2.6	5.5	2.4	0.7	0.8	1.9	1.9	1.5	1.7	1.0	1.5	5.5	0.7
15	1.4	1.8	2.2	2.0	2.1	2.2	3.4	3.1	3.7	3.6	5.4	6.5	5.7	5.2	5.0	4.7	4.0	0.9	1.1	1.0	0.6	0.6	0.8	0.8	2.8	6.5	0.6
16	1.9	3.2	3.1	2.5	3.0	3.5	2.4	4.6	2.3	3.2	4.0	1.4	3.5	4.3	4.0	4.2	4.6	1.5	0.6	1.0	0.9	1.2	0.6	0.9	2.6	4.6	0.6
17	1.0	1.0	1.0	0.7	0.9	0.7	1.0	3.5	3.8	5.8	7.6	9.1	10.5	12.1	9.7	8.3	6.3	10.2	5.6	3.1	3.4	4.9	5.5	6.7	5.1	12.1	0.7
18	6.1	5.5	5.9	6.2	5.3	4.0	4.3	3.0	3.5	4.3	6.5	5.2	4.9	4.0	4.4	4.1	2.8	2.6	4.2	4.0	3.8	3.9	3.9	4.1	4.4	6.5	2.6
19	4.2	3.8	4.4	4.5	3.6	3.9	3.1	1.9	2.7	3.5	4.3	4.8	2.4	5.8	8.0	11.9	9.8	8.5	14.1	12.6	10.1	9.7	6.3	5.3	6.2	14.1	1.9
20	4.5	5.4	3.2	4.4	3.9	4.5	2.2	2.1	3.1	2.3	3.9	5.3	5.1	6.2	4.6	4.2	4.9	4.4	2.8	3.1	2.9	4.4	3.4	2.6	3.9	6.2	2.1
21	4.7	5.3	5.2	3.6	3.2	3.7	1.9	2.4	2.4	2.0	1.2	4.7	6.2	5.8	6.8	5.0	3.3	4.6	4.7	2.9	1.7	0.9	0.6	0.5	3.5	6.8	0.5
22	0.6	0.8	0.9	0.9	0.9	0.9	0.5	0.8	0.7	0.7	1.1	1.3	3.5	3.7	3.3	4.1	3.7	3.9	4.0	1.4	1.0	1.4	1.5	1.3	1.8	4.1	0.5
23	1.0	0.8	0.5	0.6	0.5	0.5	0.9	0.4	0.7	1.2	0.6	0.5	1.0	1.5	1.1	0.6	1.0	0.9	1.4	2.0	1.6	1.5	1.2	0.7	0.9	2.0	0.4
24	0.9	0.9	0.8	0.7	0.4	0.8	0.5	1.1	0.6	0.7	3.0	5.2	5.6	5.7	5.8	6.0	6.5	6.0	5.8	3.8	2.3	1.9	1.0	1.4	2.8	6.5	0.4
25	1.2	0.8	0.6	0.4	0.3	0.4	0.2	0.2	0.2	0.2	0.5	2.6	5.4	4.8	4.5	5.1	3.4	2.1	1.6	2.0	1.2	0.8	0.6	0.2	1.6	5.4	0.2
26	0.3	1.2	1.5	1.6	1.9	1.3	1.0	0.8	0.7	0.6	1.0	1.4	1.6	1.9	2.1	1.1	1.5	2.2	1.5	2.1	1.7	1.4	2.1	1.6	1.4	2.2	0.3
27	1.8	2.1	1.7	1.4	1.8	1.3	1.6	1.5	1.5	1.1	1.1	1.3	3.2	1.6	1.9	2.3	2.8	3.0	3.5	3.9	3.1	2.0	1.9	4.1	2.1	4.1	1.1
28	3.8	5.8	6.5	3.0	5.9	6.1	3.7	1.8	2.0	5.2	5.9	7.3	7.6	6.4	7.5	3.1	3.4	2.4	3.2	3.6	3.4	5.3	3.5	4.9	4.6	7.6	1.8
Avg	2.4	2.5	2.4	2.2	2.4	2.3	1.9	1.9	2.0	2.3	3.1	3.7	4.3	4.8	5.1	4.8	4.1	3.6	3.7	3.5	2.9	3.0	2.5	2.5	3.1	6.6	0.9
Max	6.6	7.0	7.7	9.2	6.7	8.1	7.7	6.8	6.9	8.1	8.3	9.5	10.5	12.1	9.7	11.9	9.8	10.2	14.1	12.6	11.7	10.4	7.8	7.5	6.2	14.1	3.0
Min	0.3	0.4	0.5	0.3	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.4	0.6	1.1	1.1	0.6	1.0	0.7	0.6	0.6	0.3	0.3	0.6	0.2	0.9	2.0	0.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Speed (meters per second)
March 2022

A-3

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	3.3	3.1	2.1	2.6	3.4	2.9	3.4	3.9	4.5	2.1	4.5	2.4	6.4	6.7	8.4	9.4	7.6	9.8	8.0	5.6	3.9	3.9	1.9	1.3	4.6	9.8	1.3
2	1.4	2.3	1.6	1.2	1.0	1.2	1.5	1.3	1.2	0.8	1.0	1.0	0.7	1.8	1.2	1.8	0.9	1.2	1.7	1.2	2.4	2.1	1.3	1.2	1.4	2.4	0.7
3	0.9	1.3	1.1	0.8	1.5	1.3	1.6	1.6	1.1	0.7	0.5	0.8	2.4	2.8	1.4	0.8	0.6	1.0	1.5	1.3	2.0	1.3	1.9	1.5	1.3	2.8	0.5
4	1.6	1.2	1.0	0.7	1.0	1.3	2.2	1.6	1.7	3.0	2.6	3.7	4.4	4.2	4.9	3.8	6.7	8.7	7.3	5.4	6.8	7.9	7.1	4.9	3.9	8.7	0.7
5	4.2	3.7	5.4	4.9	4.3	4.4	4.3	4.7	4.7	4.6	5.5	6.3	6.3	6.4	7.0	6.2	6.6	5.6	4.3	3.0	2.7	2.5	1.5	3.0	4.7	7.0	1.5
6	1.5	2.6	3.9	2.9	3.4	4.5	5.1	4.0	6.4	7.7	7.8	6.7	5.6	5.1	5.2	5.8	5.1	3.7	3.5	1.7	1.7	2.3	2.9	2.9	4.3	7.8	1.5
7	2.1	1.8	1.1	1.1	0.9	0.7	0.8	0.6	0.7	0.5	1.1	2.4	4.2	5.0	5.5	5.5	5.2	6.0	3.2	5.5	7.8	5.8	4.3	3.1	3.1	7.8	0.5
8	5.0	6.6	5.3	4.5	5.0	2.5	2.5	2.5	4.0	5.4	5.9	5.3	6.3	5.6	6.1	6.5	4.9	6.1	5.7	4.8	3.8	3.9	2.7	1.4	4.7	6.6	1.4
9	1.5	1.1	2.2	1.9	1.6	1.3	1.0	0.6	0.7	0.7	4.2	6.0	4.4	6.1	8.2	8.0	6.6	3.7	2.5	1.6	1.7	2.3	1.2	1.3	2.9	8.2	0.6
10	1.0	0.7	0.9	0.8	0.8	0.8	0.9	0.6	0.5	0.9	3.7	5.4	6.8	7.1	6.0	6.6	5.3	3.4	2.6	0.9	2.1	2.3	2.2	1.0	2.6	7.1	0.5
11	1.0	0.8	0.6	0.7	0.8	1.0	0.7	0.7	0.5	0.7	3.4	7.5	7.2	8.0	8.3	7.8	8.3	7.2	5.9	6.0	6.3	4.6	5.7	5.5	4.1	8.3	0.5
12	6.7	9.6	9.2	8.1	7.5	5.0	6.1	6.5	8.0	8.3	5.7	7.5	5.9	4.0	3.0	4.1	6.9	6.0	2.4	2.2	4.8	2.2	1.1	1.1	5.5	9.6	1.1
13	1.4	2.3	2.8	3.7	3.3	1.7	1.2	1.3	0.9	1.7	5.4	6.6	7.2	5.4	6.1	3.9	3.9	4.6	6.1	4.5	2.7	2.5	2.3	1.5	3.5	7.2	0.9
14	1.9	1.7	1.7	1.4	1.7	1.0	1.9	2.9	3.0	5.7	8.0	8.1	7.7	6.7	6.1	5.3	4.3	2.8	1.6	2.4	2.8	2.5	1.9	4.5	3.7	8.1	1.0
15	2.5	2.8	4.2	4.0	5.0	3.0	5.8	4.1	5.2	7.6	6.1	6.1	5.2	5.1	4.9	4.2	5.9	1.8	1.0	3.8	5.7	5.1	5.4	5.7	4.6	7.6	1.0
16	6.2	6.3	3.7	3.7	1.9	4.3	5.1	5.7	5.9	5.8	6.2	6.4	5.9	6.1	1.9	1.6	4.8	6.9	3.6	1.6	0.9	1.0	0.9	1.0	4.1	6.9	0.9
17	1.0	0.7	0.6	0.6	0.5	1.4	0.8	0.4	0.3	0.6	1.6	3.1	3.2	2.9	3.5	4.7	3.6	3.3	2.1	2.2	2.0	1.7	1.5	1.3	1.8	4.7	0.3
18	1.8	1.2	1.1	1.1	0.9	1.4	0.6	0.9	4.1	5.9	6.7	7.2	7.9	7.2	5.9	6.8	4.8	4.7	2.1	1.8	2.3	1.8	1.6	1.6	3.4	7.9	0.6
19	1.3	1.0	0.6	1.7	1.3	1.6	1.5	1.3	0.8	0.9	4.1	6.2	5.6	7.3	5.7	6.3	6.5	6.2	2.2	2.6	3.3	3.8	2.9	1.2	3.2	7.3	0.6
20	1.3	1.3	2.0	3.2	1.0	0.2	0.2	0.2	0.2	4.4	7.0	6.6	7.0	6.7	6.7	6.4	6.0	6.0	5.4	4.8	4.4	4.6	3.6	3.1	3.8	7.0	0.2
21	1.6	1.9	2.3	2.0	1.2	0.9	0.6	1.7	4.3	8.0	8.8	8.9	8.5	7.4	7.4	6.7	6.7	5.4	5.8	5.3	4.9	2.2	1.7	1.2	4.4	8.9	0.6
22	1.1	0.8	0.5	0.7	0.5	0.9	1.9	1.8	2.1	3.4	4.2	4.3	3.2	3.4	3.7	3.9	3.6	3.4	2.4	1.7	2.5	1.4	1.1	1.4	2.2	4.3	0.5
23	1.1	1.0	1.1	1.4	1.4	1.3	1.0	0.7	0.6	0.8	1.7	1.9	4.0	3.8	4.6	4.1	4.9	3.3	1.9	2.6	2.4	2.5	1.6	1.5	2.1	4.9	0.6
24	1.2	1.4	2.9	4.6	7.1	6.3	6.1	7.1	9.7	7.9	7.0	7.6	9.4	8.3	7.2	7.1	5.3	3.5	3.6	3.4	2.0	0.8	1.5	0.9	5.1	9.7	0.8
25	1.0	1.0	0.9	1.5	1.1	1.2	1.6	1.0	2.0	4.6	4.4	3.0	3.0	2.3	2.1	1.5	1.1	0.5	1.2	1.9	2.5	1.7	1.0	1.1	1.8	4.6	0.5
26	1.0	1.5	1.1	0.9	1.5	1.1	0.8	0.5	0.5	0.7	2.5	4.5	5.1	4.6	5.1	4.0	3.5	4.1	2.3	3.7	3.3	1.0	1.0	1.1	2.3	5.1	0.5
27	1.0	1.4	1.5	1.6	1.2	1.2	0.8	0.6	0.8	0.9	1.0	2.9	2.8	2.2	2.4	2.4	1.8	2.1	3.2	2.8	2.6	1.3	1.3	1.2	1.7	3.2	0.6
28	1.8	3.5	2.3	1.6	1.8	1.2	1.6	1.0	0.8	0.9	2.8	2.8	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	1.8	3.5	0.8
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	4.1	4.4	6.1	5.0	5.6	7.3	8.7	6.7	7.2	6.5	6.3	3.8	1.5	1.1	1.5	2.1	1.2	4.7	8.7	1.1
30	1.5	1.3	1.0	0.5	0.7	0.6	0.9	0.7	0.8	2.0	5.1	4.8	4.8	6.3	6.4	5.6	6.5	3.4	6.2	4.3	4.1	4.3	5.0	5.0	3.4	6.5	0.5
31	4.3	5.0	4.7	5.3	4.8	4.0	2.1	2.9	5.4	6.0	6.4	6.6	7.2	7.1	7.2	7.9	6.7	6.9	7.3	5.8	5.0	4.7	1.6	0.8	5.2	7.9	0.8
Avg	2.1	2.4	2.3	2.3	2.3	2.0	2.2	2.2	2.8	3.5	4.5	5.1	5.5	5.5	5.3	5.2	5.0	4.6	3.7	3.2	3.4	2.9	2.4	2.1	3.4	6.8	0.8
Max	6.7	9.6	9.2	8.1	7.5	6.3	6.1	7.1	9.7	8.3	8.8	8.9	9.4	8.7	8.4	9.4	8.3	9.8	8.0	6.0	7.8	7.9	7.1	5.7	5.5	9.8	1.5
Min	0.9	0.7	0.5	0.5	0.5	0.2	0.2	0.2	0.2	0.5	0.5	0.8	0.7	1.8	1.2	0.8	0.6	0.5	1.0	0.9	0.9	0.8	0.9	0.8	1.3	2.4	0.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
January 2022

A-4

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	146	264	205	64	150	302	147	131	163	161	137	62	309	280	304	333	278	309	54	125	103	90	83	68	118
2	67	55	71	110	126	129	132	106	110	107	107	128	121	113	97	128	127	102	115	86	122	122	88	114	108
3	211	154	122	117	132	161	139	93	106	174	155	188	197	171	169	172	161	158	177	187	206	185	196	235	166
4	257	308	154	261	289	277	260	273	354	313	346	352	25	332	9	350	344	329	138	321	323	325	288	309	316
5	324	295	306	285	310	300	301	308	313	317	324	330	328	330	327	316	320	327	237	125	74	149	126	298	313
6	128	138	245	152	143	273	141	309	162	151	154	155	150	50	356	157	225	140	119	90	165	147	190	98	150
7	163	22	74	94	222	218	222	189	178	211	217	201	208	219	217	216	219	227	228	249	263	263	273	277	219
8	271	287	271	283	283	278	284	279	285	288	283	278	256	269	279	274	276	280	288	280	265	267	266	197	275
9	93	80	100	124	36	1	74	73	109	103	120	327	278	292	303	344	108	111	109	105	119	154	153	147	94
10	136	145	135	142	153	149	159	152	157	130	116	282	2	136	121	311	143	100	338	254	243	268	281	289	162
11	339	98	97	102	38	97	95	71	101	82	103	119	89	165	338	306	271	315	319	196	219	273	249	162	94
12	167	156	205	56	275	278	65	69	271	310	288	295	264	129	63	137	310	25	90	310	81	118	92	105	73
13	115	141	272	178	180	92	147	168	144	138	147	212	238	328	193	299	279	22	76	79	63	109	28	306	143
14	311	296	313	288	325	326	286	308	236	135	125	196	272	285	293	278	223	117	103	122	134	138	151	131	246
15	145	134	105	220	140	137	161	128	46	121	32	283	77	282	274	294	287	273	209	286	288	286	305	54	227
16	63	75	60	78	113	102	81	77	93	12	232	105	319	278	283	291	299	307	293	276	282	280	298	146	354
17	318	57	320	143	114	66	97	75	104	48	160	267	246	282	279	267	275	267	89	321	295	276	277	248	293
18	265	289	283	275	290	264	262	272	262	292	315	302	259	261	260	253	257	281	273	275	257	279	256	291	274
19	270	289	299	299	346	292	185	189	166	153	327	257	15	226	333	264	230	77	72	108	126	151	156	141	228
20	147	180	126	111	143	134	337	194	82	43	169	160	151	166	156	120	133	321	281	306	295	272	269	278	167
21	276	281	291	293	300	304	316	306	199	162	330	241	271	259	259	278	268	264	270	260	310	295	138	194	272
22	135	114	171	297	320	163	150	198	151	156	109	145	297	300	291	312	310	150	135	114	82	112	84	122	144
23	133	80	96	337	93	44	14	96	82	50	157	113	351	289	285	300	304	303	316	260	77	51	79	70	42
24	49	111	126	123	91	69	88	115	214	107	184	49	37	309	296	279	285	315	317	306	356	350	335	318	17
25	303	291	301	309	305	281	301	285	291	95	225	253	257	265	269	276	279	262	135	128	119	90	107	112	271
26	100	83	72	71	69	76	73	101	69	358	101	85	271	268	274	256	254	252	97	5	322	298	319	323	29
27	321	315	326	307	297	173	137	228	323	122	336	307	274	283	282	279	265	218	100	89	79	82	54	61	311
28	79	72	84	82	74	141	110	128	131	143	156	166	184	155	279	140	109	132	78	124	67	59	129	115	116
29	126	103	42	116	163	81	51	81	119	80	96	17	312	289	268	285	286	205	90	76	80	109	131	102	91
30	66	9	336	291	301	296	293	302	297	297	288	277	295	292	294	313	192	268	292	131	82	150	155	250	292
31	106	195	229	215	222	249	238	265	280	282	269	268	275	288	288	287	282	286	291	300	274	290	305	285	268
Prev	123	93	96	132	150	211	132	145	145	113	159	242	281	269	285	281	262	277	104	179	83	183	178	162	232

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
February 2022

A-5

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	261	248	135	108	331	100	167	34	165	151	130	147	63	272	292	285	257	285	313	299	298	304	309	300	272
2	259	22	342	305	158	136	104	52	54	181	131	146	152	149	37	97	147	230	163	142	147	131	136	101	129
3	139	128	209	35	80	45	170	49	125	171	110	328	267	266	268	276	266	277	284	306	308	317	304	302	284
4	281	278	283	261	266	266	264	272	301	308	277	275	299	288	286	266	272	247	249	245	239	263	266	272	272
5	276	274	276	268	271	265	267	262	265	273	280	272	280	292	309	319	318	315	308	303	311	303	282	73	288
6	171	139	163	138	257	134	149	133	105	239	100	152	144	297	271	266	261	282	70	94	91	84	43	69	140
7	120	124	90	58	89	107	97	39	87	46	218	70	40	24	288	284	276	261	300	293	283	284	279	278	9
8	284	301	198	273	77	45	347	5	92	301	281	284	285	280	279	278	284	283	314	340	72	66	107	108	315
9	124	136	108	94	288	292	351	6	53	36	344	335	288	264	264	269	275	277	277	294	350	34	22	23	333
10	20	88	114	86	81	102	70	16	306	298	282	284	287	274	273	281	278	276	277	285	289	318	358	16	320
11	8	354	358	10	1	330	308	303	332	331	311	317	344	323	331	313	314	322	311	337	105	53	5	90	341
12	126	137	146	150	133	153	150	104	143	152	139	128	254	4	116	272	270	122	95	97	48	83	81	92	124
13	93	65	99	111	30	358	58	76	50	110	192	108	260	273	289	288	337	82	81	57	52	123	129	142	76
14	150	135	134	148	105	164	60	129	142	290	32	14	67	130	159	206	158	201	21	83	68	96	303	260	121
15	305	293	287	305	310	313	315	307	299	304	290	291	304	289	292	283	282	173	170	146	176	148	165	148	277
16	270	291	309	304	307	306	304	335	329	353	3	182	18	34	214	272	264	273	140	180	171	129	323	149	293
17	310	122	114	156	172	136	117	279	283	283	277	275	283	288	291	282	287	291	303	307	285	272	268	288	274
18	259	255	268	269	278	314	307	310	311	297	294	307	286	298	297	298	277	285	282	288	278	273	281	263	286
19	274	289	277	288	320	322	317	129	350	313	294	232	297	232	240	251	249	261	271	269	280	276	286	283	280
20	258	277	258	286	267	258	278	258	263	264	292	290	258	261	261	261	256	288	272	272	269	272	266	268	269
21	250	252	263	292	292	287	329	308	301	304	293	257	260	265	263	262	250	175	151	250	177	192	150	146	256
22	183	169	310	139	244	149	147	140	155	98	128	296	267	287	272	254	256	216	166	91	103	88	55	29	170
23	69	62	51	108	112	112	118	143	127	138	137	252	320	308	329	349	286	225	111	73	55	41	71	351	76
24	44	16	30	32	24	295	106	126	151	149	290	275	273	278	282	287	305	299	286	285	302	325	328	309	314
25	312	232	96	162	101	157	112	140	127	159	127	280	271	273	275	277	287	269	137	122	139	120	154	143	168
26	136	125	98	66	67	41	357	88	136	165	42	28	359	300	294	337	122	136	130	125	143	159	137	147	99
27	140	130	125	141	108	142	121	142	137	15	356	120	295	293	344	252	188	217	236	261	228	58	126	250	163
28	253	239	239	236	225	226	259	264	123	242	218	201	212	236	232	159	129	108	239	247	256	263	271	232	228
Prev	241	194	165	132	353	154	63	44	104	270	283	272	290	285	281	277	267	255	256	284	261	32	321	269	275

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Wind Direction (degrees)
March 2022

A-6

Day	<< Hour >>																								Prev
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
1	214	244	269	254	233	222	249	244	243	297	301	230	246	254	254	248	262	264	266	262	242	87	77	119	248
2	147	103	110	89	30	62	68	60	99	139	164	230	151	139	113	64	114	139	148	118	107	139	151	123	116
3	105	150	147	170	138	141	143	149	155	163	175	113	151	139	90	116	191	148	11	81	280	339	110	129	137
4	148	22	92	131	277	272	273	247	290	331	318	318	303	300	288	325	345	328	328	325	339	338	345	340	317
5	332	313	272	280	324	318	311	320	331	312	304	302	307	312	308	304	318	334	331	305	288	299	302	286	309
6	168	280	309	320	310	323	329	329	333	346	342	340	345	340	343	338	329	310	332	270	110	68	75	79	337
7	103	123	145	163	165	152	76	121	104	92	45	328	269	264	258	261	275	270	283	311	350	337	335	336	296
8	3	21	4	5	335	301	310	314	330	354	352	10	349	13	351	340	2	26	30	14	334	327	17	13	354
9	39	55	99	80	80	93	113	12	138	141	269	270	307	280	263	265	268	300	252	119	55	84	86	121	75
10	107	145	131	122	119	132	139	181	93	292	313	290	267	275	284	291	270	268	261	252	116	98	63	79	184
11	96	86	119	81	72	94	145	128	174	107	298	274	277	281	272	271	272	276	268	282	294	278	279	278	262
12	281	269	273	265	270	273	268	270	271	267	269	264	286	286	288	293	281	293	256	96	100	97	143	178	268
13	120	118	107	97	116	112	274	25	319	283	269	276	264	294	296	295	277	272	278	276	275	274	258	137	274
14	109	112	99	112	130	88	184	193	246	264	271	276	270	265	270	278	278	273	245	222	191	125	135	204	212
15	183	184	196	204	201	204	210	205	212	230	243	255	252	247	229	213	280	79	214	276	281	268	280	285	231
16	257	259	275	292	255	275	299	298	288	289	282	261	270	283	28	138	239	298	315	16	169	152	99	86	277
17	120	131	17	9	13	114	140	168	202	71	280	256	274	266	274	273	285	281	229	119	110	119	123	150	180
18	127	144	149	97	167	168	257	346	232	262	290	283	282	284	283	276	287	278	257	128	108	73	46	60	242
19	55	120	135	102	99	35	84	131	171	142	160	202	184	198	186	187	197	210	216	259	273	282	299	243	176
20	173	152	253	310	301	274	289	284	319	304	290	290	278	286	290	296	292	293	293	273	268	264	277	264	281
21	69	87	88	83	101	140	163	235	263	261	261	256	261	259	262	266	259	276	279	273	279	269	263	99	250
22	120	140	212	157	209	239	287	277	278	281	283	268	263	253	291	286	257	259	238	152	116	135	79	132	232
23	81	118	64	65	94	34	49	106	37	62	323	10	274	277	265	270	257	263	188	115	82	82	56	93	60
24	107	108	287	285	283	284	282	294	296	299	323	321	326	321	311	320	300	296	303	296	326	222	168	175	295
25	93	156	139	129	120	127	122	147	154	162	147	160	149	160	155	36	333	243	48	119	101	113	86	113	128
26	119	105	74	98	127	14	81	167	292	54	333	322	302	302	299	311	328	337	20	144	146	139	147	88	53
27	143	129	136	121	103	149	269	132	267	356	20	254	256	233	279	268	247	124	105	110	104	146	146	13	155
28	78	59	107	105	56	67	119	166	44	11	315	320	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	65
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	335	10	7	346	329	327	330	332	347	348	324	313	266	157	121	67	43	347
30	48	36	68	89	157	123	96	158	346	4	263	280	269	268	268	256	262	277	295	286	295	309	300	297	296
31	286	278	264	272	285	281	293	294	284	275	290	282	269	272	307	279	301	318	292	289	290	275	272	149	283
Prev	111	119	127	107	129	136	220	221	277	313	294	283	275	275	284	286	283	286	282	262	238	109	76	109	274

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
January 2022

A-7

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	34	60	92	82	46	85	80	91	65	87	93	48	62	21	25	54	22	77	56	61	77	61	67	51	62	93	21
2	25	20	19	48	48	37	22	31	40	30	17	16	11	13	7	14	15	9	19	29	37	64	20	25	26	64	7
3	76	74	75	67	43	23	29	20	24	14	7	15	12	14	11	12	10	10	13	13	23	12	12	14	26	76	7
4	23	86	55	59	29	21	21	30	53	40	27	26	89	14	76	32	39	60	78	49	29	70	58	49	46	89	14
5	16	26	25	30	27	30	35	15	15	15	11	8	8	4	4	12	7	7	83	53	76	57	65	58	29	83	4
6	37	88	74	83	36	88	50	71	76	58	12	11	20	84	30	76	80	94	37	94	75	46	88	94	63	94	11
7	48	96	82	89	38	9	10	27	30	13	22	22	10	15	15	11	12	11	10	16	16	13	15	16	27	96	9
8	18	12	12	12	11	10	12	10	9	9	11	11	14	16	11	11	11	10	8	10	14	11	27	38	13	38	8
9	87	53	24	86	87	64	16	27	52	38	56	79	13	12	12	94	52	23	24	27	28	52	42	27	45	94	12
10	17	33	29	19	25	60	22	28	42	48	63	81	59	18	24	79	69	44	86	12	26	18	19	29	40	86	12
11	72	61	38	59	46	49	51	90	80	23	50	28	69	73	66	65	19	82	43	76	46	15	19	31	52	90	15
12	11	70	73	84	37	18	92	38	43	79	29	29	57	63	79	74	72	52	49	53	56	43	86	63	56	92	11
13	69	53	92	81	73	79	45	48	28	55	98	97	84	56	72	65	32	84	79	38	37	55	65	15	63	98	15
14	13	6	9	55	28	20	17	7	67	35	36	52	26	21	22	15	61	58	45	58	63	63	40	61	37	67	6
15	73	80	94	96	68	56	91	94	74	96	92	99	67	21	16	11	20	14	53	21	8	10	22	73	56	99	8
16	65	29	39	49	33	29	28	102	67	82	78	64	34	15	14	16	16	43	60	13	18	17	25	85	43	102	13
17	88	30	64	53	75	70	40	47	40	91	65	23	24	30	16	11	16	51	49	91	45	22	25	10	45	91	10
18	13	11	9	9	11	22	8	21	11	29	17	9	10	14	7	6	7	22	21	26	9	17	12	29	15	29	6
19	32	32	16	63	65	45	88	95	81	56	88	74	29	46	32	63	88	57	30	18	40	64	78	81	57	95	16
20	51	65	83	80	75	79	97	97	83	103	88	93	28	14	24	30	90	42	15	46	60	11	12	11	57	103	11
21	12	10	12	12	12	8	12	27	73	45	49	69	9	8	12	13	11	10	14	7	41	31	19	69	24	73	7
22	43	90	72	99	95	96	95	95	88	97	94	49	31	21	14	13	14	69	28	53	51	53	50	58	61	99	13
23	61	65	66	90	87	81	66	64	74	69	83	69	58	16	14	12	10	13	10	101	27	12	25	17	50	101	10
24	46	39	57	66	40	46	84	64	90	43	89	96	64	30	28	13	13	34	12	31	18	17	8	18	44	96	8
25	19	14	11	13	25	10	13	19	51	66	89	12	11	11	14	14	18	78	37	38	36	46	51	77	32	89	10
26	51	48	46	31	52	21	52	38	53	63	54	96	16	9	16	8	15	53	38	18	32	21	8	7	35	96	7
27	5	9	10	35	33	29	57	72	86	64	80	21	13	35	14	14	13	96	29	49	31	37	59	75	40	96	5
28	71	54	66	59	43	49	71	58	41	74	67	40	65	81	90	97	67	83	63	79	64	43	68	39	64	97	39
29	35	40	62	33	64	70	48	76	65	69	63	37	24	38	8	9	33	76	47	66	61	67	71	46	50	76	8
30	71	53	63	14	10	13	19	13	10	10	11	11	9	13	24	24	93	14	17	40	46	19	56	78	30	93	9
31	47	81	11	14	21	13	34	21	10	11	13	9	12	11	10	10	8	7	11	13	28	20	13	25	19	81	7
Avg	43	48	48	54	45	43	45	50	52	52	53	45	33	27	26	32	33	45	38	42	39	35	40	44	42	86	11
Max	88	96	94	99	95	96	97	102	90	103	98	99	89	84	90	97	93	96	86	101	77	70	88	94	64	103	39
Min	5	6	9	9	10	8	8	7	9	9	7	8	8	4	4	6	7	7	8	7	8	10	8	7	13	29	4

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
February 2022

A-8

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	12	90	84	53	97	33	73	85	80	49	66	86	36	13	22	21	10	23	7	16	13	14	8	26	42	97	7
2	70	59	74	11	41	19	24	53	73	61	65	22	6	18	65	55	12	74	42	54	65	52	68	89	49	89	6
3	80	96	95	86	66	70	85	86	66	95	60	71	19	10	9	14	43	21	13	17	13	14	33	39	50	96	9
4	12	13	16	16	11	9	10	12	20	19	19	15	14	18	18	25	44	21	26	8	10	10	12	14	16	44	8
5	15	12	12	10	11	9	9	8	9	11	9	10	14	10	13	11	14	16	27	17	14	27	54	95	18	95	8
6	67	38	88	54	97	84	65	72	83	84	80	64	59	56	11	13	13	101	87	51	51	70	30	59	62	101	11
7	57	76	73	68	68	68	92	67	80	94	97	49	59	73	24	22	12	15	16	10	10	9	11	15	49	97	9
8	14	46	66	96	12	56	57	71	55	60	13	12	12	14	12	13	13	13	18	56	73	61	76	74	41	96	12
9	53	48	26	77	22	29	48	79	58	74	21	16	21	7	8	7	8	9	12	17	87	67	55	43	37	87	7
10	49	51	53	70	39	64	57	65	15	12	11	10	13	11	12	11	9	10	9	8	13	20	24	10	27	70	8
11	14	18	22	72	19	19	25	13	27	21	16	15	23	21	19	16	13	24	64	64	87	31	44	39	30	87	13
12	43	56	73	74	84	49	81	48	53	42	70	92	65	59	41	29	28	52	33	53	64	50	39	37	55	92	28
13	46	42	55	59	67	72	63	56	65	38	95	77	78	12	10	16	79	54	24	32	53	49	42	44	51	95	10
14	54	63	36	49	68	39	96	54	71	82	62	78	43	70	56	12	17	76	54	45	47	53	42	95	57	96	12
15	56	22	42	33	16	22	10	11	16	13	21	21	13	8	10	13	9	74	58	49	74	35	72	68	32	74	8
16	39	10	11	18	10	10	13	26	39	42	28	80	26	75	48	18	10	54	87	46	76	54	79	74	41	87	10
17	87	89	76	57	64	96	95	16	18	17	13	12	11	8	8	12	11	8	23	12	32	12	11	11	33	96	8
18	11	10	9	8	14	13	11	8	11	14	9	16	12	21	12	18	22	13	9	11	11	10	12	13	12	22	8
19	11	21	30	15	21	15	70	50	57	20	20	35	48	15	11	7	9	15	12	15	12	10	13	14	23	70	7
20	11	11	13	13	15	15	35	21	13	27	22	29	8	7	15	18	8	20	19	26	18	17	15	18	17	35	7
21	17	6	10	16	21	16	20	9	8	9	34	6	4	7	4	6	24	8	17	40	43	44	47	48	19	48	4
22	73	62	58	56	59	32	67	36	33	69	80	37	10	19	18	3	5	36	28	33	36	37	25	38	40	80	3
23	39	47	57	48	84	66	57	73	55	75	55	79	24	29	62	67	45	72	41	34	61	51	66	73	57	84	24
24	82	37	72	64	98	71	90	56	69	76	71	11	11	12	9	9	9	8	6	8	12	46	77	19	43	98	6
25	46	53	75	76	88	42	86	25	58	58	69	63	12	14	17	13	14	52	24	27	67	74	58	63	49	88	12
26	50	39	65	62	41	31	33	85	55	72	78	31	46	41	36	41	47	10	61	19	34	36	35	36	45	85	10
27	24	21	30	40	47	36	43	75	55	81	91	80	30	48	74	45	43	45	27	15	60	65	90	15	49	91	15
28	19	15	16	24	9	11	16	54	68	12	18	10	12	13	10	44	15	32	70	26	12	14	16	40	24	70	9
Avg	41	41	48	47	46	39	51	47	47	47	46	40	26	25	23	21	21	34	33	29	41	37	41	43	38	81	10
Max	87	96	95	96	98	96	96	86	83	95	97	92	78	75	74	67	79	101	87	64	87	74	90	95	62	101	28
Min	11	6	9	8	9	9	9	8	8	9	9	6	4	7	4	3	5	8	6	8	10	9	8	10	12	22	3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Standard Deviation of Wind Direction (degrees)
March 2022

A-9

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	26	17	27	35	18	39	30	17	24	33	21	85	13	9	9	8	12	8	9	7	79	22	56	57	28	85	7
2	51	32	29	48	69	64	77	74	95	63	62	72	64	21	22	26	51	44	71	29	21	45	56	70	52	95	21
3	78	45	32	51	25	32	19	15	46	68	95	41	13	13	37	68	64	48	85	95	61	62	23	66	49	95	13
4	26	95	42	45	77	78	24	48	23	8	30	17	7	11	15	20	19	7	7	11	10	9	10	13	27	95	7
5	9	14	6	16	8	10	10	10	12	11	13	11	13	10	7	11	9	14	16	21	11	15	31	13	13	31	6
6	75	40	12	10	11	13	16	13	13	12	14	15	20	16	13	13	11	28	10	94	31	19	13	24	22	94	10
7	24	19	22	40	44	65	80	74	74	80	75	59	20	16	10	11	18	11	12	27	17	13	11	9	35	80	9
8	18	8	17	18	19	15	19	12	9	18	22	16	21	17	23	14	32	8	6	14	16	12	50	37	18	50	6
9	51	84	30	14	21	20	39	97	45	64	16	16	27	18	6	5	10	12	66	68	28	20	63	25	35	97	5
10	58	84	29	55	73	68	57	75	89	78	24	10	14	18	16	13	15	16	11	65	19	27	21	40	41	89	10
11	34	47	50	64	38	49	43	65	47	68	40	13	13	13	12	11	10	12	10	14	13	12	14	12	29	68	10
12	14	9	10	10	11	10	13	16	14	10	13	9	12	16	24	14	13	7	25	80	43	33	80	93	24	93	7
13	70	41	31	21	27	41	89	64	84	49	10	14	8	13	8	11	13	11	10	8	14	24	41	48	31	89	8
14	42	45	62	65	50	78	48	28	20	13	14	15	14	16	16	14	15	23	82	52	27	41	59	57	37	82	13
15	44	33	21	21	10	15	11	16	14	11	11	8	11	20	33	29	18	40	95	20	7	11	9	13	22	95	7
16	12	15	27	16	65	11	13	13	9	12	14	10	13	37	53	34	61	27	23	82	64	62	73	70	34	82	9
17	71	64	70	86	67	35	28	81	82	99	75	28	21	45	34	14	15	12	76	23	28	29	41	52	49	99	12
18	33	49	51	79	50	73	63	104	60	11	14	11	10	16	16	17	17	9	33	29	17	36	36	43	37	104	9
19	38	27	59	27	61	53	54	43	32	68	39	12	13	11	13	16	11	8	22	24	14	18	19	67	31	68	8
20	98	20	67	25	16	11	14	11	24	29	9	12	14	14	12	9	14	17	13	8	7	7	8	9	20	98	7
21	82	30	64	37	44	35	45	52	13	11	12	9	10	11	9	16	11	11	9	11	8	30	28	68	27	82	8
22	79	38	85	66	68	99	12	51	75	16	16	16	21	20	22	22	13	11	22	20	21	39	48	44	39	99	11
23	67	49	60	60	57	52	55	66	94	53	64	60	13	36	16	17	11	15	72	25	22	30	39	33	44	94	11
24	40	51	37	13	9	9	19	12	12	11	16	15	8	9	12	9	13	8	18	7	54	79	50	44	23	79	7
25	31	74	40	23	47	26	17	25	23	14	11	14	11	10	15	50	42	46	84	43	22	25	43	35	32	84	10
26	32	30	50	77	49	95	54	57	61	74	47	31	14	18	18	21	19	14	56	50	19	38	25	54	42	95	14
27	47	18	17	28	50	16	61	89	76	40	39	34	27	50	41	31	17	63	13	17	23	37	55	45	39	89	13
28	76	44	48	45	27	43	47	75	89	41	55	37	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	52	89	27
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	29	17	19	15	14	12	9	16	21	19	13	9	45	43	54	25	31	23	54	9
30	34	35	47	56	50	77	53	85	39	54	12	22	21	17	18	13	12	16	11	9	8	8	9	10	30	85	8
31	15	11	11	10	15	16	32	10	16	20	22	19	18	17	34	25	20	13	21	11	9	8	92	59	22	92	8
Avg	46	39	38	39	39	42	38	46	43	37	30	24	17	18	19	19	20	19	33	34	25	29	38	41	32	85	10
Max	98	95	85	86	77	99	89	104	95	99	95	85	64	50	53	68	64	63	95	95	79	79	92	93	52	104	27
Min	9	8	6	10	8	9	10	10	9	8	9	8	7	9	6	5	9	7	6	7	7	7	8	9	13	31	5

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
January 2022

A-10

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-26.1	-26.3	-27.8	-29.6	-31.2	-32.1	-32.2	-32.6	-32.4	-31.1	-27.8	-21.5	-17.3	-14.7	-13.6	-13.3	-13.0	-13.3	-13.9	-15.3	-16.0	-15.6	-17.2	-15.5	-22.1	-13.0	-32.6
2	-11.6	-10.5	-10.6	-11.1	-12.0	-11.5	-10.5	-8.8	-9.2	-8.2	-7.4	-5.7	-5.5	-4.8	-4.5	-4.3	-4.8	-5.8	-7.3	-8.1	-9.6	-11.0	-10.3	-13.1	-8.6	-4.3	-13.1
3	-13.7	-14.8	-13.2	-13.4	-13.2	-13.1	-13.1	-10.8	-10.2	-2.2	-1.1	0.5	0.7	0.4	0.1	-0.2	-0.6	-0.8	-0.8	-0.5	-0.1	-0.5	-0.4	-1.2	-5.1	0.7	-14.8
4	-3.3	-3.7	-4.5	-4.6	-9.4	-13.1	-17.2	-20.2	-21.8	-21.8	-20.9	-19.2	-17.0	-16.9	-16.5	-17.6	-19.4	-22.1	-23.2	-23.6	-24.1	-24.6	-24.3	-23.6	-17.2	-3.3	-24.6
5	-24.5	-25.4	-25.2	-25.2	-25.4	-25.7	-25.8	-26.2	-26.1	-25.9	-25.1	-24.5	-24.0	-24.2	-23.6	-23.4	-23.8	-24.2	-25.2	-26.2	-27.0	-26.6	-25.7	-25.3	-25.2	-23.4	-27.0
6	-24.7	-24.1	-23.9	-23.7	-23.1	-22.2	-21.4	-20.5	-19.2	-17.7	-15.3	-13.5	-11.8	-11.1	-10.1	-9.1	-8.7	-8.2	-7.7	-6.7	-6.2	-5.6	-5.5	-5.2	-14.4	-5.2	-24.7
7	-4.6	-4.4	-3.1	-1.7	0.5	2.2	2.3	0.8	1.0	2.6	3.1	3.0	2.1	2.6	2.9	2.9	2.5	2.7	2.3	2.0	1.5	0.8	0.3	0.1	1.0	3.1	-4.6
8	-0.6	-1.8	-2.9	-3.3	-3.7	-4.2	-5.3	-6.0	-6.1	-6.1	-5.6	-5.3	-5.3	-5.3	-5.3	-5.4	-5.6	-5.7	-5.6	-6.1	-7.2	-7.9	-8.5	-9.8	-5.4	-0.6	-9.8
9	-9.8	-10.9	-12.4	-16.0	-9.8	-7.8	-9.9	-8.9	-13.1	-14.1	-12.8	-6.1	-2.7	-2.1	-1.5	-1.6	-3.1	-7.5	-10.2	-11.7	-13.0	-13.7	-14.7	-14.9	-9.5	-1.5	-16.0
10	-15.3	-14.2	-13.7	-13.7	-12.6	-13.3	-13.9	-14.2	-13.6	-13.0	-11.2	-7.6	-3.8	1.6	2.2	-0.3	-2.5	-2.8	-0.1	0.0	0.0	0.5	0.1	-1.1	-6.8	2.2	-15.3
11	-2.1	-6.0	-8.1	-11.3	-11.4	-9.7	-7.3	-6.2	-6.1	-4.9	-2.3	-1.4	-1.1	-0.7	0.3	2.0	1.8	1.5	1.4	1.8	2.0	2.1	2.2	1.2	-2.6	2.2	-11.4
12	1.0	1.1	1.6	2.0	2.1	3.3	3.5	3.5	3.6	3.8	3.7	3.3	3.0	2.9	3.0	2.8	3.2	3.4	2.4	2.1	1.7	1.1	-0.1	-0.6	2.4	3.8	-0.6
13	-0.6	-0.8	-0.9	-1.9	-2.2	-2.6	-2.9	-2.8	-3.3	-2.3	-1.2	0.1	1.6	2.4	3.9	5.0	4.5	2.2	-0.6	-1.9	-4.5	-5.7	-2.2	0.8	-0.7	5.0	-5.7
14	0.3	-0.8	-1.3	-1.9	-2.0	-1.9	-2.2	-2.6	-3.7	-3.8	-2.5	-1.4	-0.3	0.3	0.4	0.7	0.0	-2.4	-4.5	-6.8	-8.0	-9.0	-10.0	-11.3	-3.1	0.7	-11.3
15	-12.0	-13.2	-13.3	-13.3	-13.6	-14.2	-13.7	-12.5	-12.0	-10.2	-9.2	-7.9	-4.6	1.5	3.2	3.4	3.0	3.0	1.5	2.7	3.8	3.1	2.1	0.6	-5.1	3.8	-14.2
16	-0.6	-1.9	-2.6	-3.6	-6.6	-9.5	-10.2	-11.3	-11.6	-11.2	-9.1	-5.6	1.1	2.8	3.2	3.2	2.3	1.6	2.3	3.7	3.6	3.9	3.3	2.8	-2.1	3.9	-11.6
17	1.7	0.5	2.3	0.9	-2.5	-4.0	-5.6	-1.7	-2.0	-3.4	-1.6	4.1	4.4	3.9	4.8	5.1	5.8	4.7	2.8	1.2	3.1	4.1	3.9	3.0	1.5	5.8	-5.6
18	3.0	2.7	2.6	2.3	2.1	-2.4	-6.9	-6.9	-9.1	-10.5	-11.2	-11.4	-12.6	-12.6	-13.8	-14.4	-14.7	-14.6	-15.1	-15.3	-15.5	-15.8	-16.1	-16.0	-9.3	3.0	-16.1
19	-16.0	-15.9	-16.1	-15.9	-15.7	-15.6	-15.5	-15.4	-15.5	-15.3	-14.0	-12.8	-11.2	-9.5	-8.3	-8.1	-9.4	-13.0	-15.8	-17.5	-18.4	-19.9	-20.8	-20.9	-14.9	-8.1	-20.9
20	-20.5	-19.4	-18.9	-19.6	-19.2	-19.3	-18.3	-17.2	-15.2	-12.8	-10.6	-7.7	-4.4	-2.5	-2.2	-1.8	-1.3	-1.0	0.6	0.7	0.8	1.1	1.2	0.8	-8.6	1.2	-20.5
21	0.6	0.4	-0.5	-1.7	-1.7	-1.9	-2.2	-3.0	-3.9	-4.1	-3.1	-2.2	-1.2	-1.1	-1.3	-1.2	-1.3	-1.7	-2.3	-3.3	-4.1	-5.3	-8.1	-10.4	-2.7	0.6	-10.4
22	-11.6	-12.9	-13.8	-13.7	-13.9	-12.8	-11.0	-10.5	-9.0	-8.2	-6.6	-4.6	-1.3	-0.6	-0.2	0.1	-1.0	-3.2	-6.2	-8.4	-9.5	-10.1	-10.8	-11.7	-8.0	0.1	-13.9
23	-11.6	-12.0	-13.7	-13.2	-12.9	-13.0	-13.2	-14.0	-14.2	-13.5	-11.2	-8.5	-4.0	2.3	2.6	2.9	3.1	2.4	1.1	-2.1	-3.9	-5.5	-7.2	-8.5	-7.0	3.1	-14.2
24	-10.3	-11.0	-11.1	-12.3	-13.2	-14.7	-15.1	-14.5	-13.8	-11.9	-10.4	-9.0	-6.9	-4.8	-3.6	-3.3	-3.4	-3.6	-3.8	-3.9	-3.8	-4.4	-4.4	-4.6	-8.2	-3.3	-15.1
25	-4.7	-4.9	-4.9	-4.7	-4.8	-4.9	-5.1	-5.4	-5.6	-5.7	-4.9	-4.5	-3.7	-3.4	-2.8	-2.7	-3.2	-5.3	-7.4	-10.1	-9.0	-8.5	-10.7	-11.8	-5.8	-2.7	-11.8
26	-13.1	-12.6	-9.7	-7.1	-8.5	-9.4	-9.9	-11.7	-13.5	-12.8	-11.6	-7.1	-2.3	-1.6	-1.3	-1.5	-3.1	-3.9	-3.7	-3.5	-4.2	-4.7	-5.0	-5.7	-7.0	-1.3	-13.5
27	-5.9	-5.6	-5.3	-6.0	-7.4	-8.4	-8.7	-8.0	-9.3	-9.9	-8.6	-5.9	-4.4	-3.9	-3.2	-3.0	-3.3	-4.1	-7.3	-10.7	-12.7	-14.2	-15.8	-15.7	-7.8	-3.0	-15.8
28	-16.3	-16.6	-17.1	-17.7	-18.8	-19.1	-19.9	-20.5	-20.1	-18.6	-16.4	-14.3	-12.0	-8.5	-6.5	-5.5	-4.9	-5.7	-6.3	-6.5	-7.5	-8.8	-9.4	-10.0	-12.8	-4.9	-20.5
29	-9.5	-8.7	-9.4	-9.8	-10.3	-11.6	-11.1	-10.3	-10.8	-9.1	-7.7	-1.4	1.0	2.2	3.2	4.0	3.4	0.7	-3.9	-6.3	-7.0	-7.5	-7.8	-4.4	-5.5	4.0	-11.6
30	-3.2	-1.2	-0.4	2.1	1.9	1.1	1.9	2.0	2.8	2.8	2.7	2.5	2.8	3.0	3.2	3.1	2.7	3.1	3.2	1.9	0.8	1.2	1.3	0.4	1.7	3.2	-3.2
31	0.1	1.4	3.6	3.1	1.7	0.0	-2.1	-2.2	-2.7	-3.3	-3.7	-4.3	-4.1	-4.5	-5.1	-5.6	-6.5	-7.2	-8.1	-9.1	-10.5	-11.7	-12.6	-14.3	-4.5	3.6	-14.3
Avg	-8.6	-8.8	-8.8	-9.2	-9.6	-10.0	-10.4	-10.3	-10.5	-9.8	-8.5	-6.4	-4.7	-3.4	-2.9	-2.8	-3.3	-4.2	-5.2	-6.0	-6.6	-7.1	-7.5	-7.9	-7.2	-0.8	-14.3
Max	3.0	2.7	3.6	3.1	2.1	3.3	3.5	3.5	3.6	3.8	3.7	4.1	4.4	3.9	4.8	5.1	5.8	4.7	3.2	3.7	3.8	4.1	3.9	3.0	2.4	5.8	-0.6
Min	-26.1	-26.3	-27.8	-29.6	-31.2	-32.1	-32.2	-32.6	-32.4	-31.1	-27.8	-24.5	-24.0	-24.2	-23.6	-23.4	-23.8	-24.2	-25.2	-26.2	-27.0	-26.6	-25.7	-25.3	-25.2	-23.4	-32.6

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
February 2022

A-11

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-16.2	-17.1	-18.5	-18.9	-19.0	-18.3	-17.8	-17.6	-17.4	-16.9	-16.4	-14.5	-11.4	-10.2	-12.0	-15.3	-17.0	-17.4	-18.8	-19.2	-19.7	-20.3	-20.9	-21.7	-17.2	-10.2	-21.7
2	-22.2	-22.7	-23.2	-24.7	-27.4	-28.3	-30.1	-31.4	-31.9	-31.4	-29.3	-24.0	-20.9	-20.3	-19.9	-19.4	-19.8	-22.1	-24.4	-26.8	-27.6	-28.0	-28.7	-28.9	-25.6	-19.4	-31.9
3	-28.5	-27.6	-25.7	-24.9	-24.8	-24.4	-24.3	-24.7	-25.0	-23.9	-19.8	-11.3	-8.3	-7.1	-6.7	-6.5	-6.4	-6.6	-6.1	-6.0	-5.8	-6.0	-6.0	-5.5	-15.1	-5.5	-28.5
4	-5.0	-4.9	-4.7	-4.7	-4.3	-3.6	-3.4	-3.1	-2.4	-1.6	-0.9	-0.4	0.0	0.8	1.2	1.0	0.2	0.1	0.2	0.7	0.3	-0.2	-0.4	-0.3	-1.5	1.2	-5.0
5	-0.2	-0.3	-0.7	-1.0	-1.0	-0.9	-1.0	-1.1	-1.1	-0.8	-0.3	-0.3	0.2	0.1	-0.3	-1.4	-2.4	-2.6	-2.8	-2.9	-3.4	-4.4	-5.2	-6.2	-1.7	0.2	-6.2
6	-7.3	-9.3	-10.8	-13.3	-15.1	-16.0	-17.0	-17.7	-16.5	-15.0	-12.2	-8.9	-6.0	-2.5	0.0	1.1	0.9	-0.3	-3.2	-5.7	-8.8	-11.0	-11.9	-12.8	-9.1	1.1	-17.7
7	-13.8	-13.5	-14.2	-13.8	-13.9	-14.3	-14.8	-13.0	-12.4	-11.3	-9.8	-3.3	-0.2	3.0	6.1	7.0	6.4	5.9	5.0	4.0	3.0	1.9	1.3	0.3	-4.4	7.0	-14.8
8	-0.3	-1.3	-3.9	-4.3	-5.0	-4.5	-8.6	-8.5	-7.2	-3.7	-0.3	0.6	0.9	1.1	1.4	1.5	1.2	1.0	0.4	-0.3	-1.9	-5.1	-6.5	-7.6	-2.5	1.5	-8.6
9	-8.4	-9.1	-6.7	-3.6	-1.4	-1.5	-2.7	-3.1	-3.6	-2.5	-0.6	0.8	3.2	3.5	3.1	3.2	2.9	2.2	1.4	1.0	-0.1	-0.7	-0.6	-0.1	-1.0	3.5	-9.1
10	0.0	-2.2	-4.0	-5.2	-4.2	-4.1	-4.0	-2.1	4.1	4.9	5.0	4.9	5.3	5.5	5.9	6.0	6.0	5.9	5.8	5.1	3.9	2.5	0.5	-0.9	1.9	6.0	-5.2
11	-1.3	-2.1	-2.5	-2.8	-3.5	-4.2	-4.7	-4.6	-4.8	-4.7	-4.6	-4.8	-5.8	-6.3	-6.4	-6.4	-6.6	-7.2	-8.5	-10.6	-13.8	-16.6	-17.1	-18.4	-7.0	-1.3	-18.4
12	-19.1	-19.6	-20.3	-20.0	-19.0	-19.2	-19.6	-19.2	-19.2	-16.6	-13.5	-9.2	-2.6	-0.1	0.8	1.6	1.2	-1.4	-5.9	-7.1	-9.0	-10.3	-11.4	-12.1	-11.3	1.6	-20.3
13	-12.6	-13.0	-13.7	-14.1	-13.9	-13.5	-12.4	-13.1	-12.7	-10.5	-7.6	-3.7	2.6	5.4	5.9	5.8	5.0	3.9	-1.1	-3.6	-5.4	-7.5	-9.2	-9.8	-6.2	5.9	-14.1
14	-10.7	-11.5	-12.6	-12.0	-12.0	-11.0	-9.8	-7.7	-6.3	-6.0	-2.9	1.5	4.8	4.9	5.5	6.9	5.5	3.6	2.0	1.2	0.4	-0.4	-0.3	-0.5	-2.8	6.9	-12.6
15	-0.5	-0.9	-1.8	-1.9	-2.0	-2.0	-1.8	-1.6	-1.9	-2.2	-2.2	-2.5	-2.7	-3.6	-4.0	-4.2	-4.9	-4.9	-5.4	-6.6	-6.5	-6.7	-6.7	-6.2	-3.5	-0.5	-6.7
16	-4.8	-4.6	-4.8	-4.9	-4.8	-4.8	-4.8	-5.2	-7.3	-7.2	-6.8	-5.8	-4.9	-5.6	-6.5	-7.5	-9.5	-10.3	-11.2	-12.8	-13.0	-12.8	-13.0	-12.9	-7.7	-4.6	-13.0
17	-12.5	-13.0	-13.5	-13.3	-12.8	-11.7	-8.8	-6.8	-5.8	-4.3	-3.4	-2.4	-1.4	-1.1	-1.9	-1.9	-1.5	-0.7	-0.8	-1.2	-1.5	-1.6	-1.5	-1.4	-5.2	-0.7	-13.5
18	-1.2	-0.9	-0.6	-0.3	-0.1	-0.3	-0.2	0.0	0.0	0.6	1.1	0.9	0.5	0.4	0.2	0.0	0.4	0.9	1.2	0.6	0.6	0.8	0.5	0.1	0.2	1.2	-1.2
19	0.3	0.6	0.6	0.7	0.2	-0.1	0.0	-1.1	0.0	2.3	3.3	3.5	3.2	4.6	5.8	6.3	6.8	6.1	4.3	2.7	2.7	2.3	1.7	1.2	2.4	6.8	-1.1
20	0.5	0.8	0.1	0.0	-0.6	-0.8	-1.4	-1.6	-1.4	-1.5	-2.3	-4.5	-8.4	-10.2	-11.2	-12.3	-13.6	-14.3	-15.1	-15.5	-15.7	-16.2	-16.2	-16.2	-7.4	0.8	-16.2
21	-17.8	-19.4	-19.8	-19.6	-20.2	-21.2	-21.4	-21.7	-21.5	-21.3	-20.6	-20.5	-21.0	-20.7	-21.2	-21.7	-21.2	-21.5	-22.7	-23.7	-26.1	-27.7	-27.3	-27.1	-22.0	-17.8	-27.7
22	-27.2	-27.2	-27.3	-27.7	-28.2	-28.8	-29.8	-31.7	-31.7	-30.0	-27.8	-24.3	-23.1	-22.6	-22.5	-23.1	-23.6	-24.5	-26.2	-27.8	-29.3	-31.2	-32.1	-32.9	-27.5	-22.5	-32.9
23	-33.5	-34.1	-34.8	-35.2	-35.5	-36.0	-36.2	-36.7	-35.8	-33.8	-30.0	-25.8	-21.5	-19.2	-17.8	-16.6	-16.2	-17.8	-21.3	-23.8	-26.0	-25.7	-27.1	-26.1	-27.8	-16.2	-36.7
24	-26.1	-25.2	-24.8	-24.2	-22.9	-21.8	-21.2	-20.5	-20.1	-18.8	-15.8	-14.3	-13.5	-12.9	-12.3	-12.3	-12.3	-12.8	-12.9	-13.1	-13.5	-13.4	-13.3	-13.3	-17.1	-12.3	-26.1
25	-13.7	-14.5	-16.7	-20.1	-22.2	-23.9	-25.2	-26.0	-25.8	-23.7	-19.2	-13.4	-10.8	-9.9	-9.1	-8.5	-8.4	-9.5	-13.4	-17.3	-19.3	-20.9	-22.2	-23.0	-17.4	-8.4	-26.0
26	-23.3	-20.9	-21.2	-21.2	-20.9	-22.1	-21.3	-21.7	-21.5	-19.4	-15.5	-8.4	-5.8	-4.4	-3.4	-3.1	-3.4	-5.0	-7.5	-10.8	-13.3	-15.0	-16.4	-16.2	-14.2	-3.1	-23.3
27	-16.5	-16.7	-16.3	-17.5	-17.4	-17.0	-17.4	-16.0	-15.9	-14.0	-8.2	-3.5	0.2	0.9	2.0	3.0	2.3	1.5	1.8	1.8	1.0	0.8	0.1	2.4	-6.6	3.0	-17.5
28	2.9	2.9	2.6	1.9	2.6	2.6	2.2	1.9	2.2	3.7	3.4	3.7	5.1	5.7	4.6	3.0	3.1	3.2	3.4	4.8	5.8	6.2	6.0	5.7	3.7	6.2	1.9
Avg	-11.4	-11.7	-12.1	-12.4	-12.5	-12.6	-12.8	-12.7	-12.2	-11.1	-9.2	-6.8	-5.1	-4.3	-4.0	-4.1	-4.5	-5.2	-6.5	-7.6	-8.6	-9.5	-10.1	-10.4	-9.1	-2.5	-16.2
Max	2.9	2.9	2.6	1.9	2.6	2.6	2.2	1.9	4.1	4.9	5.0	4.9	5.3	5.7	6.1	7.0	6.8	6.1	5.8	5.1	5.8	6.2	6.0	5.7	3.7	7.0	1.9
Min	-33.5	-34.1	-34.8	-35.2	-35.5	-36.0	-36.2	-36.7	-35.8	-33.8	-30.0	-25.8	-23.1	-22.6	-22.5	-23.1	-23.6	-24.5	-26.2	-27.8	-29.3	-31.2	-32.1	-32.9	-27.8	-22.5	-36.7

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-Meter Temperature (Degrees Celsius)
March 2022

A-12

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	6.0	5.9	5.5	5.6	5.6	5.1	5.8	6.3	6.4	6.1	5.9	4.8	7.5	7.3	7.9	8.1	8.1	7.7	6.9	6.0	5.3	3.4	2.6	1.4	5.9	8.1	1.4
2	-0.1	0.8	-0.5	-1.9	-2.2	-1.7	-2.0	-1.0	-0.5	0.1	0.7	2.7	3.4	2.9	3.1	3.7	3.5	3.4	2.7	3.1	2.8	2.9	2.8	2.4	1.3	3.7	-2.2
3	2.3	2.0	1.8	1.3	0.9	0.4	-0.2	-0.9	-0.4	0.4	2.1	5.3	8.2	9.0	10.0	9.4	8.0	6.2	4.7	3.7	2.5	1.1	0.5	-0.8	3.2	10.0	-0.9
4	-1.0	-2.3	-1.7	-1.4	-1.3	-1.0	-2.0	-2.6	-2.6	-3.1	-2.5	-3.5	-4.3	-4.1	-4.2	-3.8	-4.5	-5.4	-6.0	-6.3	-6.4	-6.9	-7.4	-7.8	-3.8	-1.0	-7.8
5	-8.0	-8.2	-9.7	-9.9	-9.7	-10.0	-10.0	-10.2	-10.0	-9.6	-9.0	-8.6	-8.1	-7.7	-7.7	-7.8	-8.0	-8.0	-7.8	-7.8	-8.0	-8.4	-8.3	-8.2	-8.7	-7.7	-10.2
6	-8.6	-8.9	-9.0	-9.2	-9.7	-10.1	-10.0	-9.8	-9.1	-8.9	-8.5	-7.7	-7.4	-7.4	-7.7	-7.7	-7.9	-8.2	-8.8	-10.7	-13.6	-15.0	-16.3	-17.5	-9.9	-7.4	-17.5
7	-19.1	-20.4	-20.8	-21.4	-21.9	-22.4	-22.8	-22.4	-20.3	-17.2	-11.4	-6.2	-4.3	-3.9	-3.3	-2.9	-2.8	-3.3	-4.4	-4.0	-5.4	-6.3	-6.8	-7.5	-11.7	-2.8	-22.8
8	-8.4	-9.5	-10.8	-11.4	-11.8	-12.6	-12.8	-13.0	-12.1	-11.6	-12.4	-12.9	-13.3	-13.5	-13.5	-13.4	-13.8	-15.0	-16.1	-16.9	-17.7	-17.9	-18.7	-20.6	-13.7	-8.4	-20.6
9	-21.9	-22.5	-22.7	-23.1	-24.4	-25.7	-27.2	-27.5	-26.2	-23.1	-17.8	-16.7	-16.1	-15.8	-16.1	-16.3	-16.4	-16.4	-18.7	-21.3	-23.7	-24.8	-26.6	-27.5	-21.6	-15.8	-27.5
10	-28.4	-28.7	-29.4	-30.0	-30.2	-29.9	-29.9	-29.3	-27.2	-23.5	-15.1	-11.9	-10.6	-9.6	-9.5	-9.4	-9.4	-9.4	-10.1	-11.9	-14.3	-17.9	-19.1	-21.0	-19.4	-9.4	-30.2
11	-21.3	-22.0	-22.0	-22.5	-22.7	-22.8	-22.6	-22.1	-19.6	-16.0	-7.5	-4.5	-3.5	-2.6	-1.7	-1.5	-1.5	-1.4	-1.8	-1.8	-1.7	-0.6	-0.2	0.3	-10.1	0.3	-22.8
12	0.8	1.1	1.4	1.7	2.0	2.1	2.4	2.4	2.6	2.9	3.5	4.1	4.7	5.7	6.4	6.7	6.8	6.8	5.3	1.8	-0.7	-1.7	-3.1	-4.5	2.5	6.8	-4.5
13	-4.6	-2.7	-1.1	-1.1	-0.9	-1.9	-2.0	-0.7	-0.3	2.1	3.4	2.9	1.7	0.9	0.5	0.6	1.2	1.5	1.2	0.2	-0.4	-0.9	-1.2	-2.8	-0.2	3.4	-4.6
14	-5.5	-7.2	-8.6	-8.2	-6.5	-6.0	-5.2	-2.8	-1.2	0.9	1.9	2.3	3.2	4.0	4.9	5.5	5.7	5.3	4.3	3.4	2.5	2.9	2.5	3.5	0.1	5.7	-8.6
15	3.7	3.5	3.3	3.4	3.7	3.7	3.9	4.3	4.8	5.5	5.5	4.9	4.7	5.1	5.1	5.1	1.8	0.5	0.6	1.3	1.1	0.3	0.1	0.0	3.2	5.5	0.0
16	-0.5	-1.0	-1.6	-1.7	-1.6	-1.5	-2.0	-1.8	-1.3	-0.6	-0.4	-0.3	0.4	-0.3	-1.4	-0.7	-0.5	-1.9	-2.8	-3.0	-4.5	-6.7	-8.6	-10.1	-2.3	0.4	-10.1
17	-10.9	-11.5	-11.3	-11.2	-11.6	-11.9	-13.1	-12.0	-10.0	-7.4	-2.8	0.1	1.0	2.2	3.3	4.1	4.4	4.2	2.0	-1.4	-3.4	-4.4	-5.1	-6.5	-4.7	4.4	-13.1
18	-6.6	-6.2	-6.3	-6.0	-6.3	-6.1	-5.7	-4.9	-1.1	1.2	2.1	2.6	3.0	3.5	3.8	4.3	4.3	4.0	2.9	0.1	-1.6	-2.5	-2.2	-2.4	-1.1	4.3	-6.6
19	-2.5	-3.1	-3.2	-3.3	-4.0	-4.1	-4.2	-3.9	-2.8	-0.1	5.2	6.3	6.6	7.3	8.0	8.5	8.3	8.3	6.7	6.0	4.8	3.6	2.8	2.2	2.2	8.5	-4.2
20	0.8	0.7	0.8	0.6	0.2	-0.7	-2.0	-2.6	-2.7	-1.8	-1.6	-1.4	-1.5	-1.2	-0.7	-0.6	-0.3	-0.5	-0.9	-2.2	-3.1	-3.9	-4.6	-5.3	-1.4	0.8	-5.3
21	-7.1	-8.0	-11.3	-12.1	-12.8	-13.6	-13.0	-8.4	-4.3	-3.1	-1.9	-1.5	-0.8	-0.3	0.5	1.5	1.5	1.6	1.4	0.5	-0.5	-1.7	-3.2	-5.1	-4.2	1.6	-13.6
22	-6.1	-6.3	-6.0	-5.8	-5.6	-5.1	-3.5	-2.7	-1.1	0.1	1.1	2.0	3.1	3.8	4.8	5.6	6.0	6.2	4.7	1.7	-0.9	-2.1	-3.1	-4.1	-0.6	6.2	-6.3
23	-4.6	-4.9	-5.4	-5.4	-5.7	-5.6	-6.3	-5.6	-2.7	3.1	5.9	7.2	8.9	9.8	10.3	11.0	11.5	11.7	8.5	4.3	2.8	1.9	1.4	0.7	2.2	11.7	-6.3
24	-1.1	-0.6	5.1	6.0	5.6	5.4	4.5	4.8	5.1	4.1	3.6	3.9	2.6	2.3	2.5	2.3	2.3	1.8	0.7	-0.4	-1.2	-1.7	-3.2	-4.4	2.1	6.0	-4.4
25	-4.5	-4.8	-4.3	-3.6	-4.6	-4.7	-3.9	-2.2	-0.7	1.3	2.4	3.1	3.5	4.0	4.8	5.9	6.9	7.2	5.3	3.4	3.2	2.0	1.0	0.0	0.9	7.2	-4.8
26	-0.6	-0.9	-1.3	-1.3	-1.6	-1.4	-1.5	-1.2	0.6	3.4	7.3	8.6	9.6	10.0	10.5	10.4	10.2	9.5	8.8	5.9	4.9	4.6	4.3	2.6	4.2	10.5	-1.6
27	1.6	1.2	0.1	-0.8	-1.1	-1.7	-1.7	-0.8	2.5	6.7	10.1	11.7	12.4	13.3	14.1	14.3	14.3	12.4	8.3	5.4	4.2	2.3	2.6	3.5	5.6	14.3	-1.7
28	5.2	5.8	4.1	3.2	2.6	1.8	1.2	1.7	3.7	8.1	12.3	13.4	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	5.3	13.4	1.2
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	-3.1	-3.0	-2.8	-2.4	-0.9	0.5	0.7	0.7	0.2	-0.2	-0.6	-1.5	-2.7	-4.8	-6.2	-7.0	-8.0	-2.4	0.7	-8.0
30	-8.6	-9.6	-10.1	-10.8	-11.0	-11.5	-11.0	-8.2	-3.4	1.4	3.6	4.9	6.8	8.0	8.8	9.2	9.3	8.6	7.4	5.1	4.0	3.3	2.4	2.0	0.0	9.3	-11.5
31	1.8	1.2	0.4	-0.1	-0.3	-0.8	-1.5	-1.6	-0.1	0.7	1.3	1.4	1.9	2.0	1.6	2.0	1.3	0.5	0.2	-0.7	-1.7	-2.6	-3.9	-4.9	-0.1	2.0	-4.9
Avg	-5.3	-5.6	-5.8	-6.0	-6.2	-6.5	-6.6	-5.9	-4.4	-2.6	-0.5	0.5	0.8	1.2	1.5	1.8	1.7	1.2	0.1	-1.3	-2.5	-3.5	-4.2	-5.0	-2.6	3.0	-9.0
Max	6.0	5.9	5.5	6.0	5.6	5.4	5.8	6.3	6.4	8.1	12.3	13.4	12.4	13.3	14.1	14.3	14.3	12.4	8.8	6.0	5.3	4.6	4.3	3.5	5.9	14.3	1.4
Min	-28.4	-28.7	-29.4	-30.0	-30.2	-29.9	-29.9	-29.3	-27.2	-23.5	-17.8	-16.7	-16.1	-15.8	-16.1	-16.3	-16.4	-16.4	-18.7	-21.3	-23.7	-24.8	-26.6	-27.5	-21.6	-15.8	-30.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
January 2022

A-13

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-26.2	-26.9	-29.9	-31.6	-32.7	-33.8	-34.3	-34.7	-34.4	-32.7	-29.2	-24.8	-17.8	-14.7	-13.5	-13.3	-13.2	-13.7	-14.9	-17.1	-17.7	-17.7	-18.3	-16.0	-23.3	-13.2	-34.7
2	-13.1	-11.5	-11.0	-11.7	-12.5	-12.3	-11.1	-9.3	-9.6	-8.7	-7.9	-6.1	-5.8	-5.1	-4.8	-4.9	-5.8	-6.8	-8.5	-8.8	-11.3	-12.9	-11.2	-14.6	-9.4	-4.8	-14.6
3	-15.6	-16.5	-15.4	-15.0	-15.3	-15.7	-15.9	-12.6	-11.3	-3.0	-1.6	0.1	0.4	0.0	-0.2	-0.8	-1.1	-1.2	-1.2	-0.8	-0.4	-0.8	-0.6	-1.4	-6.1	0.4	-16.5
4	-3.3	-3.9	-4.8	-4.8	-9.5	-13.1	-17.4	-20.9	-22.0	-21.7	-20.5	-19.0	-16.6	-17.1	-16.2	-17.8	-20.2	-22.7	-23.7	-23.9	-24.1	-24.6	-24.2	-23.5	-17.3	-3.3	-24.6
5	-24.6	-25.3	-25.0	-25.1	-25.3	-25.5	-25.7	-26.0	-25.8	-25.6	-24.7	-24.2	-23.7	-23.9	-23.3	-23.2	-23.6	-24.2	-25.7	-27.3	-27.9	-26.6	-25.7	-25.3	-25.1	-23.2	-27.9
6	-24.7	-24.0	-23.8	-23.7	-22.9	-22.1	-21.2	-20.4	-19.2	-17.7	-15.3	-13.5	-11.8	-11.1	-10.2	-9.2	-8.6	-8.2	-7.6	-6.8	-6.3	-5.8	-5.9	-5.5	-14.4	-5.5	-24.7
7	-4.9	-4.6	-3.7	-2.8	0.0	1.9	2.1	0.4	0.3	2.3	2.9	2.8	2.0	2.5	2.7	2.7	2.3	2.5	2.0	1.7	1.3	0.6	0.0	-0.1	0.7	2.9	-4.9
8	-0.9	-2.1	-3.1	-3.7	-4.0	-4.3	-5.4	-6.2	-6.4	-6.4	-5.8	-5.5	-5.4	-5.4	-5.4	-5.5	-5.7	-5.8	-5.8	-6.3	-7.6	-9.0	-9.8	-11.9	-5.7	-0.9	-11.9
9	-12.0	-13.0	-13.9	-17.4	-10.9	-10.0	-12.9	-12.2	-14.6	-14.8	-13.5	-6.7	-3.0	-2.3	-1.8	-1.9	-4.3	-9.5	-12.1	-14.0	-15.2	-16.2	-16.8	-17.3	-11.1	-1.8	-17.4
10	-17.5	-16.1	-15.6	-15.6	-15.6	-15.5	-16.3	-16.7	-16.3	-14.8	-12.5	-9.3	-4.4	0.7	1.6	-2.0	-4.3	-5.0	-1.7	-0.9	-0.4	0.0	-0.2	-1.7	-8.3	1.6	-17.5
11	-3.1	-7.5	-9.0	-12.9	-12.7	-11.2	-8.1	-7.3	-7.1	-5.7	-2.9	-2.2	-1.7	-1.5	-0.4	1.8	1.5	1.0	0.9	1.5	1.3	1.6	1.9	0.8	-3.4	1.9	-12.9
12	0.6	0.7	1.4	1.7	1.7	3.0	3.3	3.0	3.1	3.3	3.5	3.1	2.7	2.5	2.5	2.2	2.8	2.9	2.1	1.8	1.3	0.6	-0.6	-1.2	2.0	3.5	-1.2
13	-1.4	-1.7	-2.0	-3.1	-3.4	-3.9	-3.8	-4.1	-4.3	-3.4	-2.1	-0.7	0.8	1.5	2.7	4.7	3.1	0.8	-1.5	-3.2	-5.7	-8.2	-4.5	-0.4	-1.8	4.7	-8.2
14	0.0	-1.0	-1.4	-2.2	-2.2	-2.2	-2.3	-2.9	-4.3	-4.8	-2.8	-1.4	-0.3	0.6	0.5	0.6	-0.3	-4.0	-6.0	-8.3	-9.7	-10.3	-11.9	-12.8	-3.7	0.6	-12.8
15	-14.0	-15.1	-15.3	-14.8	-15.5	-16.3	-15.4	-13.6	-12.8	-11.0	-9.7	-8.4	-5.8	-0.5	2.7	2.7	2.2	2.1	0.4	1.9	3.3	2.6	1.6	-0.3	-6.2	3.3	-16.3
16	-2.0	-3.6	-4.9	-5.1	-7.9	-10.5	-11.8	-12.7	-13.2	-12.4	-9.5	-6.1	1.2	2.5	2.8	2.9	1.4	0.6	1.5	3.1	3.1	3.4	2.2	1.2	-3.1	3.4	-13.2
17	0.0	-0.4	1.5	-1.6	-4.5	-5.2	-6.4	-4.5	-4.6	-5.2	-3.0	3.3	3.8	3.3	4.5	4.6	5.4	4.1	1.0	-0.2	2.4	3.7	3.5	2.5	0.3	5.4	-6.4
18	2.7	2.3	2.1	2.0	1.8	-2.4	-6.8	-6.9	-9.0	-10.5	-11.0	-11.2	-12.4	-12.3	-13.6	-14.2	-14.5	-14.5	-14.9	-15.1	-15.4	-15.6	-16.0	-15.8	-9.2	2.7	-16.0
19	-15.8	-15.8	-16.1	-15.8	-15.6	-15.5	-15.4	-15.3	-15.8	-15.5	-13.7	-12.4	-10.6	-9.2	-7.2	-8.4	-10.0	-15.0	-17.5	-19.3	-20.7	-22.1	-22.9	-23.1	-15.4	-7.2	-23.1
20	-22.3	-20.4	-20.8	-21.2	-21.3	-20.7	-20.4	-18.6	-16.2	-13.0	-10.8	-8.2	-4.7	-2.5	-2.2	-1.8	-1.5	-1.3	0.5	0.6	0.6	1.0	1.1	0.6	-9.3	1.1	-22.3
21	0.5	0.3	-0.6	-1.7	-1.7	-2.0	-2.7	-3.4	-4.5	-4.7	-3.0	-2.1	-1.2	-1.2	-1.5	-1.4	-1.4	-1.9	-2.4	-3.8	-4.6	-6.8	-9.5	-12.0	-3.1	0.5	-12.0
22	-13.5	-14.5	-15.5	-15.5	-15.3	-13.3	-11.6	-11.1	-9.5	-8.3	-6.7	-4.8	-1.3	-0.6	-0.3	0.1	-1.3	-5.1	-8.6	-10.5	-11.3	-11.7	-12.5	-13.1	-9.0	0.1	-15.5
23	-13.8	-14.5	-15.6	-15.3	-14.8	-15.0	-15.2	-15.6	-15.8	-14.9	-12.1	-9.3	-4.6	2.0	2.4	2.7	2.5	1.8	-0.4	-3.5	-6.0	-6.3	-8.9	-9.7	-8.3	2.7	-15.8
24	-12.0	-12.4	-13.2	-13.5	-14.6	-16.0	-16.9	-16.0	-15.1	-12.7	-10.4	-8.8	-7.1	-4.8	-3.8	-3.4	-3.4	-3.9	-4.3	-4.2	-3.9	-4.4	-4.5	-4.8	-8.9	-3.4	-16.9
25	-4.8	-5.0	-4.9	-4.8	-5.0	-5.0	-5.2	-5.5	-5.5	-5.9	-4.8	-4.6	-3.8	-3.5	-2.9	-3.0	-3.8	-7.1	-10.2	-11.6	-10.8	-10.7	-12.3	-13.2	-6.4	-2.9	-13.2
26	-14.3	-13.4	-10.8	-8.4	-9.4	-9.5	-10.4	-12.6	-14.3	-13.4	-12.3	-8.0	-2.7	-2.1	-1.9	-2.3	-3.7	-4.3	-4.4	-3.8	-4.3	-4.8	-5.1	-5.7	-7.6	-1.9	-14.3
27	-6.0	-5.7	-5.5	-6.5	-8.8	-9.3	-10.0	-8.8	-10.5	-11.0	-9.0	-5.8	-4.7	-3.9	-3.4	-3.5	-4.2	-4.9	-8.5	-11.4	-13.5	-15.6	-17.2	-16.8	-8.5	-3.4	-17.2
28	-17.9	-18.7	-18.8	-19.9	-20.8	-21.8	-22.1	-23.2	-21.9	-20.3	-17.3	-15.3	-12.8	-10.5	-8.6	-6.9	-6.5	-6.9	-7.8	-7.9	-8.4	-10.0	-10.9	-11.6	-14.4	-6.5	-23.2
29	-11.4	-10.3	-10.7	-11.5	-12.5	-13.8	-13.1	-12.5	-12.8	-10.5	-9.4	-3.3	0.1	1.7	2.5	3.1	2.7	-0.3	-5.2	-7.6	-8.5	-9.0	-9.6	-7.6	-7.1	3.1	-13.8
30	-5.3	-2.1	-1.1	1.6	1.3	0.4	1.3	1.6	2.3	2.3	2.3	2.0	2.2	2.7	2.9	2.6	2.1	2.5	2.7	0.9	-0.2	-0.2	-0.2	-0.6	1.0	2.9	-5.3
31	-1.8	-0.2	3.1	2.7	1.4	-0.1	-2.1	-2.3	-2.9	-3.5	-4.0	-4.5	-4.2	-4.7	-5.2	-5.7	-6.4	-7.2	-8.2	-9.1	-10.5	-11.7	-12.7	-14.8	-4.8	3.1	-14.8
Avg	-9.6	-9.8	-9.8	-10.2	-10.6	-11.0	-11.4	-11.3	-11.4	-10.5	-8.9	-6.9	-4.9	-3.8	-3.2	-3.2	-3.8	-5.0	-6.1	-6.9	-7.5	-8.0	-8.4	-8.9	-8.0	-1.1	-15.8
Max	2.7	2.3	3.1	2.7	1.8	3.0	3.3	3.0	3.1	3.3	3.5	3.3	3.8	3.3	4.5	4.7	5.4	4.1	2.7	3.1	3.3	3.7	3.5	2.5	2.0	5.4	-1.2
Min	-26.2	-26.9	-29.9	-31.6	-32.7	-33.8	-34.3	-34.7	-34.4	-32.7	-29.2	-24.8	-23.7	-23.9	-23.3	-23.2	-23.6	-24.2	-25.7	-27.3	-27.9	-26.6	-25.7	-25.3	-25.1	-23.2	-34.7

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
February 2022

A-14

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	-16.6	-17.6	-19.3	-19.5	-19.3	-18.3	-17.9	-17.6	-17.3	-16.6	-16.4	-15.0	-11.6	-10.1	-11.8	-15.2	-16.8	-17.3	-18.7	-19.2	-19.7	-20.2	-20.9	-21.8	-17.3	-10.1	-21.8
2	-22.2	-22.5	-23.2	-25.1	-28.3	-29.6	-31.6	-32.2	-32.9	-31.8	-29.9	-24.5	-20.9	-20.2	-19.9	-19.3	-20.8	-23.2	-26.4	-28.2	-29.2	-29.5	-30.0	-30.4	-26.3	-19.3	-32.9
3	-29.7	-28.4	-27.0	-26.4	-26.3	-26.1	-26.1	-26.6	-26.9	-25.3	-21.3	-11.4	-8.5	-7.3	-6.9	-6.6	-6.6	-7.0	-6.1	-6.1	-6.0	-6.2	-6.2	-5.6	-15.9	-5.6	-29.7
4	-5.1	-4.9	-4.9	-4.9	-4.5	-3.7	-3.5	-3.3	-2.5	-1.6	-1.0	-0.5	0.0	0.7	1.1	0.9	0.0	0.0	0.0	0.5	0.1	-0.5	-0.5	-0.4	-1.6	1.1	-5.1
5	-0.3	-0.4	-0.8	-1.2	-1.1	-1.0	-1.1	-1.2	-1.2	-0.9	-0.5	-0.4	0.0	0.0	-0.5	-1.5	-2.4	-2.6	-2.9	-3.0	-4.1	-5.5	-5.8	-7.4	-1.9	0.0	-7.4
6	-8.7	-10.6	-12.3	-15.1	-17.2	-18.1	-19.2	-19.9	-18.7	-16.6	-13.6	-10.1	-6.9	-3.0	-0.3	0.8	0.3	-1.6	-4.6	-6.6	-10.5	-12.2	-13.2	-14.8	-10.5	0.8	-19.9
7	-15.9	-15.2	-15.8	-15.5	-15.8	-16.2	-16.6	-14.3	-13.6	-12.1	-11.1	-5.4	-1.3	2.0	5.1	6.4	5.5	5.2	4.1	3.3	2.4	1.4	0.9	-0.3	-5.5	6.4	-16.6
8	-1.2	-2.2	-5.4	-5.7	-8.1	-7.1	-10.5	-10.0	-9.1	-4.6	-0.5	0.4	0.7	0.9	1.2	1.3	1.0	0.7	-0.4	-0.9	-3.4	-6.2	-7.8	-9.7	-3.6	1.3	-10.5
9	-10.6	-11.0	-8.7	-5.0	-1.8	-2.0	-3.7	-3.9	-4.2	-3.1	-0.9	0.8	3.1	3.3	2.9	3.0	2.8	2.0	1.1	0.6	-0.7	-1.3	-1.5	-0.8	-1.7	3.3	-11.0
10	-1.0	-3.7	-5.4	-6.7	-5.9	-5.1	-4.9	-3.1	3.8	4.6	4.7	4.6	5.0	5.1	5.6	5.7	5.6	5.4	5.3	4.6	3.3	1.7	-0.1	-1.1	1.2	5.7	-6.7
11	-1.5	-2.1	-2.6	-3.0	-3.5	-4.2	-4.8	-4.7	-4.8	-4.6	-4.5	-4.6	-5.7	-6.3	-6.6	-6.5	-6.7	-7.8	-10.1	-11.5	-14.9	-16.9	-17.9	-20.3	-7.3	-1.5	-20.3
12	-20.4	-21.1	-21.5	-20.8	-19.9	-20.6	-21.1	-21.1	-20.6	-17.7	-14.2	-10.0	-3.4	0.2	0.8	1.4	1.0	-2.7	-7.4	-9.1	-10.3	-11.9	-13.3	-13.5	-12.4	1.4	-21.5
13	-14.0	-14.6	-15.1	-15.6	-15.8	-15.4	-14.4	-15.2	-14.2	-11.5	-8.2	-4.4	1.6	5.0	5.3	5.1	4.4	2.3	-2.1	-4.3	-7.1	-9.5	-11.1	-12.2	-7.5	5.3	-15.8
14	-13.1	-13.3	-14.0	-14.1	-13.5	-12.8	-11.2	-8.7	-7.5	-7.0	-3.2	1.2	4.6	4.5	5.2	6.1	4.1	2.7	0.9	0.7	0.0	-1.2	-1.1	-1.6	-3.8	6.1	-14.1
15	-0.9	-1.2	-2.1	-2.1	-2.1	-2.1	-1.9	-1.7	-2.0	-2.1	-2.2	-2.5	-2.6	-3.5	-3.8	-4.0	-4.8	-5.0	-5.9	-7.1	-6.8	-7.1	-7.0	-6.4	-3.6	-0.9	-7.1
16	-4.9	-4.6	-4.9	-4.9	-4.8	-4.8	-4.8	-5.5	-7.9	-7.5	-6.8	-5.7	-4.7	-5.5	-6.2	-7.4	-9.7	-10.6	-12.1	-13.6	-13.6	-13.3	-13.6	-13.3	-7.9	-4.6	-13.6
17	-12.9	-13.6	-13.9	-13.3	-12.8	-12.1	-10.0	-7.1	-6.0	-4.5	-3.6	-2.5	-1.6	-1.4	-2.0	-2.0	-1.6	-1.0	-0.9	-1.5	-1.7	-1.7	-1.6	-1.5	-5.4	-0.9	-13.9
18	-1.3	-1.0	-0.7	-0.4	-0.1	-0.6	-0.4	-0.2	0.0	0.5	1.0	0.9	0.5	0.5	0.3	0.0	0.3	0.7	0.9	0.2	0.2	0.6	0.1	-0.4	0.1	1.0	-1.3
19	-0.3	0.3	0.2	0.3	-0.5	-1.1	-1.0	-2.5	-0.5	1.9	3.1	3.1	2.8	4.2	5.4	5.8	6.4	5.7	3.9	2.2	2.4	2.0	1.5	0.8	1.9	6.4	-2.5
20	0.0	0.3	-0.5	-0.5	-1.4	-1.4	-2.0	-2.1	-1.8	-1.6	-2.1	-4.4	-8.2	-10.1	-11.1	-12.1	-13.4	-14.1	-15.0	-15.4	-15.5	-16.1	-16.2	-16.0	-7.5	0.3	-16.2
21	-17.7	-19.3	-19.7	-19.5	-20.1	-21.0	-21.3	-21.6	-21.3	-20.8	-19.8	-20.4	-20.7	-20.6	-21.0	-21.5	-21.0	-21.2	-22.5	-24.2	-27.1	-28.1	-27.6	-27.3	-21.9	-17.7	-28.1
22	-27.6	-27.4	-27.6	-28.1	-28.9	-29.5	-31.1	-32.7	-32.5	-30.1	-27.7	-23.3	-22.9	-22.2	-22.2	-23.0	-23.8	-24.8	-26.5	-28.5	-30.2	-31.7	-32.5	-33.5	-27.8	-22.2	-33.5
23	-34.2	-35.1	-35.9	-36.4	-36.7	-37.0	-37.5	-37.5	-36.8	-33.9	-30.2	-25.7	-20.1	-18.2	-17.2	-15.6	-15.9	-18.8	-23.3	-25.3	-27.3	-27.3	-28.2	-26.9	-28.4	-15.6	-37.5
24	-27.5	-26.3	-25.8	-24.5	-23.0	-22.0	-21.3	-21.0	-20.4	-19.2	-15.7	-14.3	-13.5	-12.8	-12.2	-12.2	-12.3	-12.8	-12.9	-13.1	-13.7	-13.5	-13.3	-13.4	-17.4	-12.2	-27.5
25	-13.8	-14.9	-18.5	-21.7	-24.4	-25.8	-26.9	-27.7	-27.0	-24.2	-20.4	-14.2	-11.0	-9.8	-9.1	-8.6	-8.6	-10.5	-15.7	-19.1	-21.4	-22.7	-23.9	-24.6	-18.5	-8.6	-27.7
26	-25.2	-23.5	-23.0	-23.2	-22.6	-23.6	-22.8	-23.4	-22.8	-20.4	-16.3	-9.4	-5.3	-3.9	-3.3	-2.9	-4.1	-6.9	-9.2	-13.1	-15.3	-17.2	-18.6	-18.6	-15.6	-2.9	-25.2
27	-18.2	-18.8	-18.7	-19.7	-18.9	-18.8	-19.2	-17.7	-17.7	-14.9	-10.2	-4.7	0.0	1.0	2.0	2.9	1.9	0.7	1.4	1.4	-0.3	0.0	-0.8	1.9	-7.7	2.9	-19.7
28	2.5	2.6	2.2	1.5	2.3	2.3	1.8	1.6	1.8	3.6	3.1	3.5	4.8	5.4	4.3	2.7	2.5	2.9	2.8	3.8	5.0	5.6	5.4	5.1	3.3	5.6	1.5
Avg	-12.2	-12.5	-13.0	-13.3	-13.4	-13.5	-13.8	-13.6	-13.0	-11.5	-9.6	-7.1	-5.2	-4.4	-4.1	-4.2	-4.7	-5.7	-7.2	-8.3	-9.5	-10.3	-10.9	-11.2	-9.7	-2.7	-17.3
Max	2.5	2.6	2.2	1.5	2.3	2.3	1.8	1.6	3.8	4.6	4.7	4.6	5.0	5.4	5.6	6.4	6.4	5.7	5.3	4.6	5.0	5.6	5.4	5.1	3.3	6.4	1.5
Min	-34.2	-35.1	-35.9	-36.4	-36.7	-37.0	-37.5	-37.5	-36.8	-33.9	-30.2	-25.7	-22.9	-22.2	-22.2	-23.0	-23.8	-24.8	-26.5	-28.5	-30.2	-31.7	-32.5	-33.5	-28.4	-22.2	-37.5

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
2-Meter Temperature (Degrees Celsius)
March 2022

A-15

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	5.1	5.3	4.9	4.9	4.5	3.9	5.1	5.8	5.8	5.6	5.1	3.9	6.9	6.6	7.3	7.6	7.4	7.0	6.2	5.1	4.6	2.7	1.9	0.6	5.2	7.6	0.6
2	-1.1	-0.4	-1.2	-2.7	-2.9	-2.5	-2.7	-1.6	-1.0	-0.2	0.5	2.5	3.2	2.7	2.9	3.6	3.3	3.0	1.9	2.6	2.4	2.5	2.3	1.9	0.8	3.6	-2.9
3	1.9	1.6	1.3	0.9	0.5	-0.1	-0.8	-1.6	-1.4	0.0	1.7	4.6	7.0	7.7	9.5	8.5	7.0	5.2	3.8	2.9	2.0	0.4	-0.1	-1.5	2.5	9.5	-1.6
4	-1.8	-2.9	-2.2	-1.7	-1.5	-1.1	-2.0	-2.5	-2.5	-2.9	-2.4	-3.3	-4.0	-3.8	-4.0	-3.7	-4.4	-5.4	-5.9	-6.3	-6.5	-7.0	-7.4	-7.8	-3.9	-1.1	-7.8
5	-7.9	-8.2	-9.6	-9.8	-9.6	-9.9	-10.0	-10.2	-9.8	-9.4	-8.8	-8.5	-7.7	-7.4	-7.5	-7.5	-7.8	-7.9	-7.8	-7.8	-8.0	-8.3	-8.3	-8.3	-8.6	-7.4	-10.2
6	-8.8	-9.1	-9.1	-9.6	-10.2	-10.7	-10.1	-9.7	-9.0	-8.8	-8.3	-7.5	-7.1	-7.1	-7.4	-7.5	-7.9	-8.1	-9.0	-11.5	-13.9	-15.5	-16.4	-18.0	-10.0	-7.1	-18.0
7	-20.8	-21.5	-22.4	-22.4	-23.2	-23.6	-24.1	-23.5	-20.5	-17.2	-11.3	-5.7	-4.0	-3.7	-3.2	-2.8	-2.7	-3.3	-4.3	-4.0	-5.5	-6.4	-7.0	-7.7	-12.1	-2.7	-24.1
8	-8.5	-9.6	-10.8	-11.6	-11.9	-13.4	-13.3	-13.5	-12.0	-11.5	-12.2	-12.6	-13.0	-13.2	-13.2	-13.2	-13.6	-15.0	-16.2	-17.2	-17.8	-18.2	-18.9	-21.4	-13.8	-8.5	-21.4
9	-22.3	-22.7	-22.7	-23.1	-25.0	-26.9	-28.3	-28.2	-26.2	-22.6	-17.8	-16.5	-15.7	-15.6	-15.9	-16.2	-16.3	-16.5	-19.6	-22.1	-24.3	-25.7	-27.7	-28.7	-21.9	-15.6	-28.7
10	-29.3	-29.8	-30.5	-31.3	-31.3	-31.3	-31.1	-30.3	-27.3	-23.5	-15.3	-11.6	-10.5	-9.5	-9.5	-9.4	-9.4	-9.6	-11.1	-12.7	-15.6	-18.7	-20.1	-22.4	-20.0	-9.4	-31.3
11	-22.8	-23.4	-23.2	-23.7	-23.8	-23.9	-23.7	-22.7	-19.4	-16.2	-7.4	-4.5	-3.5	-2.6	-1.7	-1.6	-1.7	-1.6	-2.1	-2.0	-1.8	-0.7	-0.3	0.2	-10.6	0.2	-23.9
12	0.7	1.0	1.3	1.5	1.8	1.8	2.2	2.1	2.4	2.5	3.2	3.7	4.4	5.4	6.2	6.1	6.3	6.1	4.3	0.7	-1.1	-2.1	-4.4	-5.9	2.1	6.3	-5.9
13	-5.6	-3.6	-1.6	-1.5	-1.6	-2.8	-2.9	-1.7	-1.1	1.4	3.2	2.8	1.6	0.9	0.5	0.6	1.2	1.4	1.0	0.0	-0.5	-1.0	-1.6	-3.7	-0.6	3.2	-5.6
14	-6.3	-8.0	-9.4	-9.3	-7.2	-6.5	-5.6	-3.3	-1.7	0.6	1.8	2.2	3.1	3.9	4.7	5.4	5.4	4.7	3.2	2.1	0.8	2.1	1.7	3.2	-0.5	5.4	-9.4
15	3.6	3.2	2.9	3.0	3.4	3.4	3.6	3.9	4.4	5.2	5.2	4.6	4.5	4.9	4.8	4.8	1.7	0.5	0.4	1.1	0.8	0.0	-0.3	-0.4	2.9	5.2	-0.4
16	-0.9	-1.4	-1.9	-2.2	-2.0	-1.7	-2.5	-2.1	-1.5	-0.6	-0.5	-0.4	0.4	-0.2	-1.1	-0.6	-0.6	-2.0	-2.7	-3.5	-5.1	-8.2	-10.0	-11.6	-2.6	0.4	-11.6
17	-12.0	-12.5	-12.0	-12.2	-13.1	-13.1	-14.5	-12.1	-9.9	-7.2	-3.1	0.2	1.3	2.3	3.4	4.0	4.3	3.5	1.0	-2.4	-4.1	-5.3	-6.2	-7.5	-5.3	4.3	-14.5
18	-7.2	-6.8	-6.8	-6.6	-7.1	-6.8	-6.0	-5.3	-1.4	1.1	2.1	2.6	3.1	3.5	3.6	4.1	4.2	3.6	2.1	-0.6	-1.9	-2.9	-2.3	-2.6	-1.4	4.2	-7.2
19	-2.8	-3.3	-3.6	-3.8	-4.6	-4.6	-4.6	-4.3	-2.8	-0.1	5.2	6.0	6.2	7.0	7.6	7.9	7.6	7.4	5.6	5.2	3.9	3.1	2.7	2.0	1.8	7.9	-4.6
20	0.7	0.5	0.7	0.6	0.1	-0.8	-2.0	-2.5	-2.6	-1.7	-1.6	-1.4	-1.4	-1.0	-0.7	-0.7	-0.2	-0.6	-1.1	-2.5	-3.4	-4.3	-5.0	-5.8	-1.5	0.7	-5.8
21	-8.1	-10.0	-11.4	-12.1	-13.3	-14.3	-13.1	-9.0	-4.3	-3.0	-1.8	-1.5	-0.8	-0.3	0.5	1.5	1.4	1.5	1.2	0.3	-0.8	-2.2	-4.5	-6.1	-4.6	1.5	-14.3
22	-6.9	-6.7	-6.1	-5.9	-5.7	-5.5	-4.6	-3.3	-0.8	0.5	1.5	2.4	3.5	4.2	5.2	5.9	5.9	5.8	3.5	0.6	-1.5	-3.0	-3.8	-5.2	-0.8	5.9	-6.9
23	-5.5	-6.0	-6.1	-6.4	-6.5	-6.5	-7.3	-5.9	-2.1	3.6	6.3	7.7	9.1	9.9	10.2	10.8	10.9	11.0	6.8	3.5	2.3	1.5	0.9	-0.1	1.8	11.0	-7.3
24	-2.0	-2.6	4.3	5.1	5.1	4.8	4.0	4.5	4.9	4.2	3.8	4.1	2.8	2.5	2.9	2.6	2.6	1.7	0.3	-0.8	-1.6	-2.0	-3.9	-5.3	1.8	5.1	-5.3
25	-5.3	-5.7	-5.3	-5.0	-6.3	-6.2	-5.1	-2.6	-0.5	1.7	3.1	3.4	3.9	4.2	5.1	6.2	7.2	7.3	4.4	2.7	2.8	0.9	0.2	-0.8	0.4	7.3	-6.3
26	-1.3	-1.5	-1.9	-1.8	-2.3	-1.9	-2.0	-1.2	0.8	3.7	7.8	9.0	10.1	10.3	10.5	10.3	9.8	8.6	8.0	5.2	4.5	3.9	3.7	1.9	3.9	10.5	-2.3
27	0.9	0.5	-0.4	-1.6	-1.8	-2.3	-2.3	-0.6	3.1	7.4	11.0	12.3	13.1	13.9	14.8	14.4	14.1	11.7	7.7	4.4	3.6	1.2	1.6	2.4	5.4	14.8	-2.3
28	3.9	5.2	3.2	2.4	2.0	0.7	0.1	1.4	4.0	8.9	13.0	14.1	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	4.9	14.1	0.1
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	-2.8	-2.7	-2.4	-1.8	0.0	1.4	1.7	1.5	1.0	0.4	-0.3	-1.8	-3.8	-6.2	-7.3	-7.5	-8.7	-2.3	1.7	-8.7
30	-9.0	-10.3	-10.9	-11.5	-11.9	-12.2	-11.7	-7.7	-2.5	2.2	4.4	5.9	7.8	9.0	9.8	10.0	9.9	8.7	7.1	4.4	3.3	2.7	1.9	1.7	0.0	10.0	-12.2
31	1.7	1.0	0.2	-0.2	-0.4	-0.9	-1.8	-1.7	0.3	1.3	2.1	2.1	2.5	2.8	2.1	2.6	1.7	0.6	0.2	-0.8	-2.0	-3.1	-4.5	-6.0	-0.0	2.8	-6.0
Avg	-5.9	-6.3	-6.3	-6.6	-6.9	-7.2	-7.2	-6.2	-4.4	-2.5	-0.4	0.7	0.9	1.3	1.6	1.8	1.6	1.0	-0.4	-1.9	-3.0	-4.0	-4.8	-5.7	-2.9	2.9	-9.9
Max	5.1	5.3	4.9	5.1	5.1	4.8	5.1	5.8	5.8	8.9	13.0	14.1	13.1	13.9	14.8	14.4	14.1	11.7	8.0	5.2	4.6	3.9	3.7	3.2	5.4	14.8	0.6
Min	-29.3	-29.8	-30.5	-31.3	-31.3	-31.3	-31.1	-30.3	-27.3	-23.5	-17.8	-16.5	-15.7	-15.6	-15.9	-16.2	-16.3	-16.5	-19.6	-22.1	-24.3	-25.7	-27.7	-28.7	-21.9	-15.6	-31.3

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
January 2022

A-16

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0.08	0.62	2.12	1.97	1.58	1.78	2.09	2.04	2.07	1.62	1.31	3.27	0.58	-0.03	-0.10	0.07	0.21	0.39	0.99	1.74	1.75	2.14	1.09	0.50	1.24	3.27	-0.10
2	1.55	0.91	0.40	0.61	0.64	0.74	0.67	0.46	0.41	0.52	0.48	0.39	0.30	0.28	0.30	0.60	1.00	1.00	1.19	0.70	1.66	1.90	0.89	1.59	0.80	1.90	0.28
3	1.97	1.73	2.21	1.68	2.16	2.60	2.82	1.83	1.02	0.80	0.55	0.37	0.33	0.42	0.42	0.56	0.48	0.43	0.40	0.32	0.24	0.29	0.20	0.17	1.00	2.82	0.17
4	-0.01	0.13	0.34	0.19	0.08	0.09	0.27	0.72	0.17	-0.12	-0.41	-0.22	-0.33	0.21	-0.29	0.27	0.77	0.65	0.57	0.28	0.01	-0.01	-0.15	-0.15	0.13	0.77	-0.41
5	0.08	-0.11	-0.17	-0.06	-0.09	-0.22	-0.20	-0.21	-0.19	-0.26	-0.41	-0.33	-0.32	-0.29	-0.28	-0.25	-0.20	0.02	0.51	1.06	0.88	-0.02	0.05	-0.02	-0.04	1.06	-0.41
6	-0.04	-0.10	-0.05	-0.05	-0.14	-0.13	-0.13	-0.10	-0.03	0.10	0.04	0.02	0.02	-0.04	0.10	0.03	0.00	0.01	0.00	0.13	0.14	0.19	0.31	0.33	0.03	0.33	-0.14
7	0.32	0.29	0.62	1.10	0.54	0.24	0.22	0.48	0.67	0.27	0.26	0.18	0.13	0.11	0.18	0.18	0.27	0.19	0.29	0.23	0.19	0.21	0.30	0.29	0.32	1.10	0.11
8	0.28	0.31	0.29	0.36	0.25	0.16	0.09	0.13	0.26	0.32	0.21	0.17	0.10	0.13	0.13	0.10	0.14	0.15	0.18	0.16	0.41	1.13	1.29	2.14	0.37	2.14	0.09
9	2.18	1.99	1.43	1.41	1.09	2.13	3.02	3.27	1.53	0.75	0.68	0.52	0.30	0.22	0.26	0.32	1.15	2.05	1.93	2.22	2.15	2.42	2.17	2.49	1.57	3.27	0.22
10	2.12	1.95	1.88	1.90	2.93	2.17	2.42	2.47	2.74	1.84	1.27	1.64	0.60	0.87	0.67	1.64	1.81	2.29	1.60	0.92	0.48	0.48	0.39	0.56	1.57	2.93	0.39
11	1.02	1.49	0.90	1.59	1.26	1.63	0.86	1.12	1.04	0.83	0.66	0.79	0.63	0.88	0.76	0.15	0.30	0.55	0.47	0.36	0.75	0.49	0.34	0.37	0.80	1.63	0.15
12	0.39	0.44	0.25	0.25	0.44	0.32	0.21	0.51	0.50	0.41	0.18	0.22	0.32	0.44	0.49	0.59	0.40	0.56	0.31	0.37	0.35	0.52	0.54	0.67	0.40	0.67	0.18
13	0.81	0.93	1.07	1.18	1.18	1.29	0.89	1.31	1.05	1.10	0.98	0.80	0.71	0.82	1.13	0.36	1.42	1.39	0.92	1.28	1.21	2.54	2.30	1.18	1.16	2.54	0.36
14	0.35	0.12	0.13	0.35	0.24	0.28	0.11	0.27	0.56	0.99	0.28	0.00	-0.05	-0.22	-0.14	0.13	0.33	1.54	1.42	1.50	1.66	1.34	1.86	1.42	0.60	1.86	-0.22
15	1.99	2.05	1.98	1.46	1.85	2.15	1.68	1.03	0.80	0.80	0.46	0.45	1.18	2.03	0.47	0.69	0.79	0.88	1.08	0.82	0.49	0.52	0.58	0.99	1.13	2.15	0.45
16	1.37	1.74	2.31	1.51	1.30	1.03	1.61	1.37	1.59	1.21	0.39	0.48	-0.08	0.27	0.31	0.33	0.93	0.96	0.83	0.59	0.50	0.49	1.11	1.59	0.99	2.31	-0.08
17	1.67	1.01	0.78	2.46	1.95	1.18	0.81	2.80	2.68	1.84	1.43	0.74	0.58	0.61	0.39	0.48	0.47	0.59	1.79	1.42	0.72	0.39	0.41	0.47	1.15	2.80	0.39
18	0.30	0.42	0.47	0.28	0.28	0.04	-0.10	-0.04	-0.09	-0.13	-0.20	-0.23	-0.20	-0.23	-0.19	-0.20	-0.19	-0.16	-0.15	-0.15	-0.12	-0.12	-0.11	-0.11	-0.04	0.47	-0.23
19	-0.11	-0.09	-0.09	-0.09	-0.04	-0.08	-0.09	-0.02	0.31	0.18	-0.33	-0.45	-0.62	-0.23	-1.05	0.32	0.61	2.00	1.76	1.72	2.26	2.22	2.11	2.20	0.52	2.26	-1.05
20	1.74	0.93	1.84	1.66	2.11	1.44	2.11	1.44	0.98	0.23	0.25	0.52	0.30	0.03	0.00	0.02	0.23	0.32	0.12	0.12	0.26	0.11	0.09	0.14	0.71	2.11	0.00
21	0.09	0.13	0.08	0.00	0.04	0.09	0.49	0.44	0.59	0.60	-0.05	-0.14	0.03	0.09	0.25	0.19	0.14	0.13	0.15	0.51	0.49	1.49	1.46	1.68	0.37	1.68	-0.14
22	1.93	1.60	1.57	1.81	1.41	0.51	0.62	0.57	0.41	0.12	0.05	0.21	0.05	-0.07	0.07	0.01	0.27	1.89	2.42	2.07	1.75	1.58	1.70	1.43	1.00	2.42	-0.07
23	2.10	2.44	1.91	2.02	1.94	2.00	1.90	1.59	1.63	1.38	0.94	0.79	0.65	0.36	0.23	0.28	0.61	0.62	1.56	1.37	2.08	0.84	1.78	1.19	1.34	2.44	0.23
24	1.69	1.35	2.04	1.29	1.40	1.41	1.77	1.52	1.27	0.79	-0.01	-0.21	0.21	0.00	0.19	0.13	0.03	0.32	0.48	0.29	0.15	0.08	0.08	0.23	0.69	2.04	-0.21
25	0.11	0.03	0.01	0.07	0.15	0.05	0.11	0.07	-0.02	0.18	-0.06	0.20	0.05	0.05	0.10	0.34	0.57	1.78	2.81	1.56	1.82	2.09	1.68	1.32	0.63	2.81	-0.06
26	1.23	0.80	1.04	1.28	0.92	0.13	0.52	0.89	0.87	0.68	0.76	0.88	0.36	0.50	0.56	0.83	0.67	0.40	0.67	0.25	0.06	0.13	0.08	0.00	0.60	1.28	0.00
27	0.03	0.13	0.19	0.49	1.41	0.91	1.32	0.79	1.15	1.06	0.48	-0.11	0.26	0.06	0.25	0.49	0.83	0.79	1.27	0.82	0.76	1.47	1.40	1.12	0.72	1.47	-0.11
28	1.54	1.95	1.73	2.14	2.01	2.69	2.27	2.75	1.84	1.65	0.93	1.06	0.87	2.01	2.09	1.47	1.59	1.23	1.43	1.33	0.98	1.27	1.49	1.62	1.66	2.75	0.87
29	1.92	1.61	1.30	1.70	2.22	2.13	2.02	2.14	2.03	1.41	1.67	1.96	0.95	0.56	0.76	0.89	0.63	1.08	1.27	1.31	1.53	1.49	1.74	3.19	1.56	3.19	0.56
30	2.10	0.98	0.73	0.55	0.52	0.76	0.58	0.44	0.46	0.45	0.40	0.47	0.58	0.34	0.31	0.56	0.62	0.56	0.49	0.96	1.11	1.47	1.61	1.02	0.75	2.10	0.31
31	1.96	1.67	0.48	0.43	0.30	0.20	0.04	0.03	0.16	0.28	0.28	0.19	0.10	0.16	0.09	0.03	-0.04	0.01	0.03	0.00	0.06	-0.02	0.13	0.53	0.30	1.96	-0.04
Avg	1.06	0.95	0.96	1.02	1.03	0.96	1.00	1.04	0.92	0.71	0.43	0.47	0.28	0.33	0.27	0.37	0.54	0.79	0.93	0.85	0.86	0.94	0.93	0.97	0.78	2.02	0.05
Max	2.18	2.44	2.31	2.46	2.93	2.69	3.02	3.27	2.74	1.84	1.67	3.27	1.18	2.03	2.09	1.64	1.81	2.29	2.81	2.22	2.26	2.54	2.30	3.19	1.66	3.27	0.87
Min	-0.11	-0.11	-0.17	-0.09	-0.14	-0.22	-0.20	-0.21	-0.19	-0.26	-0.41	-0.45	-0.62	-0.29	-1.05	-0.25	-0.20	-0.16	-0.15	-0.15	-0.12	-0.12	-0.15	-0.15	-0.04	0.33	-1.05

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
February 2022

A-17

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0.35	0.43	0.78	0.62	0.34	0.01	0.10	-0.08	-0.07	-0.36	-0.01	0.54	0.24	-0.02	-0.14	-0.11	-0.12	-0.10	-0.09	-0.02	-0.08	-0.10	-0.03	0.11	0.09	0.78	-0.36
2	0.02	-0.15	-0.07	0.32	0.85	1.28	1.50	0.83	0.99	0.38	0.59	0.51	0.05	-0.11	0.02	-0.03	1.09	1.10	1.97	1.41	1.54	1.50	1.43	1.52	0.77	1.97	-0.15
3	1.26	0.76	1.39	1.52	1.53	1.65	1.73	1.79	1.96	1.46	1.42	0.08	0.11	0.15	0.14	0.11	0.19	0.41	0.06	0.10	0.14	0.25	0.20	0.10	0.77	1.96	0.06
4	0.07	0.05	0.14	0.20	0.19	0.14	0.19	0.24	0.13	0.07	0.15	0.13	0.12	0.07	0.07	0.13	0.19	0.19	0.22	0.18	0.23	0.31	0.11	0.10	0.15	0.31	0.05
5	0.11	0.11	0.08	0.14	0.10	0.10	0.09	0.11	0.11	0.12	0.14	0.14	0.20	0.11	0.15	0.04	-0.02	-0.01	0.01	0.07	0.71	1.15	0.66	1.17	0.23	1.17	-0.02
6	1.42	1.37	1.50	1.80	2.01	2.04	2.14	2.24	2.17	1.65	1.39	1.22	0.96	0.47	0.41	0.35	0.66	1.25	1.38	0.88	1.73	1.20	1.32	2.02	1.40	2.24	0.35
7	2.12	1.73	1.60	1.69	1.90	1.91	1.88	1.32	1.11	0.86	1.29	2.08	1.09	0.99	0.95	0.59	0.92	0.75	0.85	0.70	0.58	0.46	0.39	0.71	1.19	2.12	0.39
8	0.90	0.93	1.58	1.39	3.16	2.53	1.89	1.51	1.85	0.96	0.22	0.18	0.20	0.19	0.18	0.16	0.22	0.29	0.79	0.68	1.50	1.04	1.30	2.07	1.07	3.16	0.16
9	2.12	1.90	2.08	1.38	0.37	0.43	0.95	0.87	0.62	0.60	0.27	-0.02	0.06	0.23	0.20	0.19	0.18	0.19	0.22	0.44	0.59	0.66	0.83	0.72	0.67	2.12	-0.02
10	0.99	1.48	1.46	1.48	1.74	0.96	0.97	0.98	0.29	0.28	0.29	0.29	0.32	0.37	0.37	0.39	0.44	0.44	0.46	0.50	0.61	0.80	0.62	0.22	0.70	1.74	0.22
11	0.16	0.07	0.12	0.15	0.06	0.05	0.14	0.04	-0.03	-0.11	-0.08	-0.11	-0.04	-0.04	0.14	0.13	0.14	0.62	1.54	0.90	1.04	0.36	0.81	1.82	0.33	1.82	-0.11
12	1.30	1.44	1.20	0.83	0.86	1.40	1.44	1.86	1.41	1.06	0.71	0.66	0.77	-0.39	-0.01	0.22	0.12	1.27	1.50	2.03	1.36	1.66	1.88	1.34	1.08	2.03	-0.39
13	1.42	1.60	1.36	1.48	1.86	1.88	2.01	2.10	1.57	1.01	0.63	0.74	0.94	0.39	0.52	0.69	0.67	1.62	0.96	0.68	1.70	1.93	1.84	2.41	1.33	2.41	0.39
14	2.36	1.85	1.45	2.17	1.49	1.76	1.49	1.00	1.21	1.08	0.29	0.32	0.13	0.45	0.30	0.74	1.36	0.94	1.10	0.52	0.41	0.75	0.87	1.03	1.04	2.36	0.13
15	0.43	0.31	0.31	0.16	0.12	0.07	0.15	0.08	0.09	-0.10	-0.02	-0.03	-0.07	-0.10	-0.11	-0.12	-0.10	0.11	0.49	0.58	0.31	0.43	0.26	0.17	0.14	0.58	-0.12
16	0.13	-0.01	0.00	0.00	0.01	0.00	0.05	0.27	0.55	0.27	-0.03	-0.10	-0.27	-0.07	-0.37	-0.03	0.24	0.27	0.82	0.87	0.61	0.53	0.52	0.42	0.19	0.87	-0.37
17	0.35	0.65	0.35	0.03	-0.05	0.44	1.15	0.31	0.27	0.14	0.17	0.14	0.20	0.27	0.15	0.10	0.10	0.29	0.15	0.32	0.18	0.13	0.08	0.09	0.25	1.15	-0.05
18	0.12	0.13	0.11	0.10	0.09	0.25	0.22	0.22	0.08	0.05	0.03	-0.05	0.01	-0.10	-0.01	0.02	0.14	0.17	0.26	0.44	0.39	0.20	0.44	0.51	0.16	0.51	-0.10
19	0.56	0.35	0.46	0.42	0.81	0.99	1.02	1.36	0.57	0.32	0.27	0.43	0.37	0.45	0.43	0.54	0.45	0.40	0.46	0.43	0.27	0.29	0.28	0.38	0.51	1.36	0.27
20	0.58	0.50	0.60	0.57	0.79	0.65	0.53	0.50	0.40	0.15	-0.19	-0.16	-0.13	-0.12	-0.17	-0.18	-0.21	-0.17	-0.16	-0.15	-0.17	-0.14	-0.11	-0.09	0.13	0.79	-0.21
21	-0.07	-0.15	-0.10	-0.11	-0.10	-0.06	-0.10	-0.11	-0.18	-0.43	-0.69	-0.15	-0.19	-0.21	-0.15	-0.13	-0.15	-0.28	-0.06	0.45	1.02	0.43	0.37	0.16	-0.04	1.02	-0.69
22	0.39	0.23	0.33	0.51	0.63	0.70	1.34	1.10	0.78	0.14	0.00	-1.01	-0.23	-0.40	-0.27	-0.04	0.26	0.40	0.37	0.74	0.75	0.45	0.39	0.72	0.35	1.34	-1.01
23	0.66	1.00	1.07	1.06	1.17	0.90	1.34	0.79	0.99	0.07	0.26	-0.12	-1.38	-1.04	-0.62	-1.02	-0.29	0.98	1.99	1.50	1.39	1.53	1.18	0.78	0.59	1.99	-1.38
24	1.46	1.17	1.08	0.44	0.14	0.23	0.17	0.46	0.29	0.44	-0.06	-0.03	-0.08	-0.09	-0.08	-0.08	-0.05	0.00	0.03	0.05	0.20	0.07	0.04	0.11	0.25	1.46	-0.09
25	0.24	0.37	1.78	1.58	2.25	1.89	1.74	1.69	1.25	0.59	1.24	0.78	0.16	-0.01	0.01	0.11	0.14	1.07	2.30	1.79	2.04	1.77	1.67	1.58	1.17	2.30	-0.01
26	1.88	2.59	1.86	2.03	1.63	1.53	1.45	1.67	1.26	0.93	0.75	0.96	-0.45	-0.43	-0.15	-0.12	0.76	1.91	1.72	2.23	2.06	2.18	2.06	2.42	1.36	2.59	-0.45
27	1.71	2.07	2.39	2.26	1.51	1.86	1.84	1.65	1.82	0.88	2.11	1.21	0.19	-0.09	0.03	0.13	0.45	0.72	0.32	0.38	1.30	0.79	0.97	0.51	1.13	2.39	-0.09
28	0.39	0.31	0.34	0.37	0.30	0.32	0.38	0.27	0.36	0.19	0.24	0.22	0.30	0.31	0.22	0.30	0.61	0.33	0.63	1.02	0.78	0.56	0.57	0.57	0.41	1.02	0.19
Avg	0.84	0.82	0.90	0.88	0.92	0.93	0.99	0.90	0.78	0.45	0.41	0.32	0.13	0.04	0.08	0.11	0.30	0.54	0.72	0.70	0.83	0.76	0.75	0.85	0.62	1.63	-0.12
Max	2.36	2.59	2.39	2.26	3.16	2.53	2.14	2.24	2.17	1.65	2.11	2.08	1.09	0.99	0.95	0.74	1.36	1.91	2.30	2.23	2.06	2.18	2.06	2.42	1.40	3.16	0.39
Min	-0.07	-0.15	-0.10	-0.11	-0.10	-0.06	-0.10	-0.11	-0.18	-0.43	-0.69	-1.01	-1.38	-1.04	-0.62	-1.02	-0.29	-0.28	-0.16	-0.15	-0.17	-0.14	-0.11	-0.09	-0.04	0.31	-1.38

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
9-2 M Delta Temperature (Degrees Celsius)
March 2022

A-18

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0.87	0.60	0.54	0.69	1.14	1.21	0.64	0.50	0.59	0.46	0.71	0.96	0.59	0.67	0.63	0.58	0.69	0.70	0.72	0.86	0.78	0.71	0.63	0.78	0.72	1.21	0.46
2	0.99	1.20	0.68	0.81	0.67	0.87	0.77	0.62	0.52	0.43	0.18	0.24	0.11	0.28	0.25	0.07	0.21	0.42	0.73	0.49	0.36	0.45	0.43	0.51	0.51	1.20	0.07
3	0.41	0.43	0.55	0.38	0.43	0.54	0.58	0.70	0.98	0.44	0.40	0.68	1.17	1.33	0.45	0.94	1.03	1.02	0.96	0.82	0.51	0.67	0.64	0.64	0.70	1.33	0.38
4	0.86	0.64	0.49	0.25	0.11	0.07	-0.03	-0.02	-0.11	-0.14	-0.15	-0.21	-0.23	-0.24	-0.16	-0.14	-0.04	-0.01	-0.02	-0.01	0.04	0.09	0.00	-0.02	0.04	0.86	-0.24
5	-0.02	-0.04	-0.07	-0.11	-0.06	-0.05	-0.05	-0.05	-0.12	-0.16	-0.20	-0.19	-0.34	-0.32	-0.23	-0.21	-0.11	-0.09	-0.01	-0.02	-0.02	-0.01	0.00	0.01	-0.10	0.01	-0.34
6	0.21	0.17	0.11	0.40	0.48	0.48	0.08	-0.02	-0.11	-0.09	-0.15	-0.26	-0.26	-0.26	-0.26	-0.21	0.00	-0.05	0.21	0.71	0.29	0.46	0.04	0.51	0.10	0.71	-0.26
7	1.66	1.16	1.65	1.03	1.28	1.18	1.20	1.07	0.21	-0.05	-0.10	-0.43	-0.33	-0.20	-0.17	-0.11	-0.10	-0.04	-0.05	0.00	0.10	0.13	0.27	0.20	0.40	1.66	-0.43
8	0.14	0.07	0.05	0.16	0.16	0.80	0.48	0.51	-0.16	-0.19	-0.18	-0.25	-0.33	-0.29	-0.29	-0.27	-0.18	0.01	0.15	0.25	0.09	0.30	0.34	0.84	0.09	0.84	-0.33
9	0.47	0.20	0.00	0.02	0.59	1.27	1.09	0.63	0.08	-0.51	0.01	-0.22	-0.39	-0.28	-0.17	-0.15	-0.11	0.10	0.90	0.75	0.57	0.79	1.10	1.23	0.33	1.27	-0.51
10	0.86	1.15	1.10	1.31	1.09	1.42	1.20	1.03	0.06	0.08	0.12	-0.20	-0.12	-0.13	-0.07	0.00	0.00	0.18	0.98	0.80	1.28	0.82	0.97	1.45	0.64	1.45	-0.20
11	1.51	1.43	1.16	1.29	1.25	1.16	1.11	0.67	-0.14	0.23	-0.15	0.07	0.00	0.01	0.05	0.08	0.13	0.14	0.24	0.13	0.09	0.12	0.10	0.10	0.45	1.51	-0.15
12	0.10	0.13	0.12	0.14	0.17	0.30	0.27	0.29	0.26	0.38	0.32	0.40	0.33	0.28	0.25	0.52	0.49	0.68	1.00	1.06	0.40	0.39	1.25	1.42	0.46	1.42	0.10
13	1.05	0.91	0.48	0.49	0.70	0.90	0.89	0.98	0.84	0.69	0.20	0.10	0.07	-0.07	-0.05	-0.04	0.00	0.10	0.13	0.13	0.05	0.10	0.46	0.96	0.42	1.05	-0.07
14	0.89	0.76	0.82	1.18	0.65	0.50	0.45	0.48	0.51	0.24	0.11	0.07	0.12	0.12	0.17	0.14	0.28	0.61	1.10	1.34	1.74	0.76	0.75	0.24	0.58	1.74	0.07
15	0.18	0.33	0.46	0.40	0.31	0.37	0.35	0.38	0.38	0.30	0.32	0.32	0.23	0.20	0.30	0.27	0.12	0.06	0.17	0.20	0.34	0.26	0.35	0.40	0.29	0.46	0.06
16	0.41	0.38	0.43	0.49	0.39	0.21	0.50	0.28	0.19	0.03	0.08	0.06	0.00	-0.07	-0.25	-0.07	0.05	0.04	-0.02	0.47	0.63	1.53	1.38	1.47	0.36	1.53	-0.25
17	1.12	1.13	0.70	0.87	1.55	1.17	1.43	0.14	-0.08	-0.15	0.27	-0.11	-0.23	-0.13	-0.14	0.05	0.09	0.69	0.97	0.94	0.63	0.89	1.06	0.98	0.58	1.55	-0.23
18	0.59	0.57	0.53	0.62	0.80	0.71	0.27	0.36	0.23	0.07	0.00	0.04	-0.02	0.03	0.14	0.12	0.15	0.45	0.83	0.82	0.31	0.33	0.12	0.20	0.34	0.83	-0.02
19	0.33	0.28	0.46	0.53	0.67	0.49	0.45	0.36	0.05	-0.07	0.04	0.33	0.34	0.37	0.43	0.64	0.73	0.91	1.15	0.84	0.83	0.48	0.19	0.19	0.46	1.15	-0.07
20	0.13	0.12	0.08	0.06	0.08	0.02	0.00	-0.04	-0.10	-0.07	0.05	0.00	-0.03	-0.14	-0.04	0.04	-0.04	0.14	0.22	0.32	0.28	0.36	0.42	0.56	0.10	0.56	-0.14
21	1.01	1.96	0.11	0.02	0.55	0.74	0.04	0.61	-0.03	-0.04	-0.14	-0.05	-0.08	-0.06	-0.02	-0.03	0.08	0.14	0.21	0.15	0.28	0.44	1.28	0.97	0.34	1.96	-0.14
22	0.85	0.32	0.16	0.11	0.17	0.46	1.11	0.66	-0.28	-0.37	-0.40	-0.33	-0.39	-0.33	-0.41	-0.29	0.09	0.33	1.25	1.12	0.64	0.93	0.72	1.06	0.30	1.25	-0.41
23	0.93	1.12	0.74	0.96	0.82	0.87	0.98	0.25	-0.57	-0.46	-0.44	-0.52	-0.20	-0.07	0.14	0.25	0.55	0.67	1.65	0.76	0.46	0.37	0.49	0.84	0.44	1.65	-0.57
24	0.92	1.99	0.79	0.86	0.60	0.56	0.51	0.30	0.15	-0.12	-0.15	-0.18	-0.17	-0.26	-0.43	-0.30	-0.30	0.07	0.39	0.46	0.40	0.27	0.74	0.96	0.34	1.99	-0.43
25	0.79	0.88	1.00	1.34	1.69	1.45	1.28	0.36	-0.19	-0.36	-0.62	-0.33	-0.42	-0.21	-0.24	-0.36	-0.29	-0.07	0.96	0.71	0.36	1.01	0.80	0.87	0.43	1.69	-0.62
26	0.71	0.67	0.55	0.49	0.68	0.43	0.46	0.00	-0.26	-0.32	-0.47	-0.35	-0.58	-0.21	0.05	0.13	0.42	0.91	0.79	0.69	0.42	0.64	0.52	0.66	0.29	0.91	-0.58
27	0.64	0.70	0.53	0.80	0.62	0.63	0.56	-0.14	-0.58	-0.68	-0.87	-0.55	-0.62	-0.61	-0.68	-0.12	0.20	0.73	0.59	1.01	0.63	1.10	1.00	1.03	0.25	1.10	-0.87
28	1.25	0.67	0.93	0.77	0.62	1.10	1.09	0.26	-0.23	-0.81	-0.75	-0.68	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	0.35	1.25	-0.81
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	-0.26	-0.25	-0.41	-0.60	-0.80	-0.91	-0.94	-0.80	-0.76	-0.63	-0.38	0.26	1.04	1.37	1.04	0.49	0.66	-0.11	1.37	-0.94
30	0.40	0.61	0.81	0.63	0.84	0.79	0.72	-0.49	-0.91	-0.81	-0.80	-0.93	-1.00	-0.99	-1.02	-0.79	-0.57	-0.11	0.31	0.73	0.72	0.56	0.49	0.32	-0.02	0.84	-1.02
31	0.15	0.16	0.15	0.12	0.10	0.18	0.39	0.16	-0.47	-0.61	-0.78	-0.68	-0.66	-0.78	-0.49	-0.54	-0.37	-0.09	0.05	0.16	0.37	0.49	0.57	1.08	-0.06	1.08	-0.78
Avg	0.68	0.69	0.54	0.57	0.64	0.69	0.63	0.34	0.01	-0.10	-0.13	-0.13	-0.15	-0.11	-0.10	-0.02	0.09	0.28	0.56	0.59	0.50	0.55	0.59	0.70	0.33	1.21	-0.30
Max	1.66	1.99	1.65	1.34	1.69	1.45	1.43	1.07	0.98	0.69	0.71	0.96	1.17	1.33	0.63	0.94	1.03	1.02	1.65	1.34	1.74	1.53	1.38	1.47	0.72	1.99	0.46
Min	-0.02	-0.04	-0.07	-0.11	-0.06	-0.05	-0.05	-0.49	-0.91	-0.81	-0.87	-0.93	-1.00	-0.99	-1.02	-0.79	-0.63	-0.38	-0.05	-0.02	-0.02	-0.01	0.00	-0.02	-0.11	0.01	-1.02

Sandfire Resources America Inc.

Black Butte Copper Project Met Tower Air Monitoring Summary

Solar Radiation (Watts per Square Meter)

January 2022

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0	0	0	0	0	0	0	0	24	82	138	197	247	309	284	143	10	0	0	0	0	0	0	0	60	309	0
2	0	0	0	0	0	0	0	0	20	80	140	130	179	164	100	67	12	0	0	0	0	0	0	0	37	179	0
3	0	0	0	0	0	0	0	0	0	22	113	255	342	350	389	268	60	0	0	0	0	0	0	0	76	389	0
4	0	0	0	0	0	0	0	0	0	39	132	275	359	399	288	294	197	36	0	0	0	0	0	0	84	399	0
5	0	0	0	0	0	0	0	0	0	16	70	155	174	170	195	135	63	9	0	0	0	0	0	0	41	195	0
6	0	0	0	0	0	0	0	0	0	4	17	26	30	40	33	24	16	2	0	0	0	0	0	0	8	40	0
7	0	0	0	0	0	0	0	0	0	7	60	114	94	77	117	257	125	16	0	0	0	0	0	0	36	257	0
8	0	0	0	0	0	0	0	0	0	12	119	295	386	316	284	147	65	19	0	0	0	0	0	0	68	386	0
9	0	0	0	0	0	0	0	0	1	34	158	277	347	303	328	303	203	38	1	0	0	0	0	0	83	347	0
10	0	0	0	0	0	0	0	0	0	21	83	278	376	405	300	160	90	48	0	0	0	0	0	0	73	405	0
11	0	0	0	0	0	0	0	1	13	69	121	116	127	81	110	70	13	0	0	0	0	0	0	0	30	127	0
12	0	0	0	0	0	0	0	0	0	12	43	63	52	70	76	46	49	15	0	0	0	0	0	0	18	76	0
13	0	0	0	0	0	0	0	0	0	16	70	80	121	169	156	110	228	57	0	0	0	0	0	0	42	228	0
14	0	0	0	0	0	0	0	0	0	20	125	168	210	374	477	248	222	79	1	0	0	0	0	0	80	477	0
15	0	0	0	0	0	0	0	0	0	7	20	42	72	85	62	80	82	38	0	0	0	0	0	0	20	85	0
16	0	0	0	0	0	0	0	0	0	37	125	264	375	419	379	298	209	68	1	0	0	0	0	0	91	419	0
17	0	0	0	0	0	0	0	2	16	65	164	160	110	72	101	94	98	1	0	0	0	0	0	0	37	164	0
18	0	0	0	0	0	0	0	0	0	9	48	88	100	203	204	125	66	11	0	0	0	0	0	0	36	204	0
19	0	0	0	0	0	0	0	0	0	22	68	132	264	431	428	358	243	89	1	0	0	0	0	0	85	431	0
20	0	0	0	0	0	0	0	1	32	86	189	197	127	55	34	23	9	0	0	0	0	0	0	0	31	197	0
21	0	0	0	0	0	0	0	0	0	30	89	161	330	429	372	173	173	50	1	0	0	0	0	0	75	429	0
22	0	0	0	0	0	0	0	0	0	22	80	148	214	192	174	248	285	114	3	0	0	0	0	0	62	285	0
23	0	0	0	0	0	0	0	0	0	22	173	234	300	466	448	313	216	29	2	0	0	0	0	0	92	466	0
24	0	0	0	0	0	0	0	0	0	20	56	108	96	107	60	60	44	18	1	0	0	0	0	0	24	108	0
25	0	0	0	0	0	0	0	0	0	21	90	210	364	477	435	454	267	119	3	0	0	0	0	0	102	477	0
26	0	0	0	0	0	0	0	1	68	212	335	429	474	458	389	274	129	5	0	0	0	0	0	0	116	474	0
27	0	0	0	0	0	0	0	1	14	129	277	404	473	453	390	272	130	3	0	0	0	0	0	0	106	473	0
28	0	0	0	0	0	0	0	2	53	122	230	235	230	255	144	80	30	6	0	0	0	0	0	0	58	255	0
29	0	0	0	0	0	0	0	1	42	140	233	311	302	506	400	298	153	6	0	0	0	0	0	0	100	506	0
30	0	0	0	0	0	0	0	0	0	9	31	37	47	62	98	107	98	39	2	0	0	0	0	0	22	107	0
31	0	0	0	0	0	0	0	1	33	76	339	359	177	209	186	139	53	4	0	0	0	0	0	0	66	359	0
Avg	0	0	0	0	0	0	0	0	23	91	180	232	258	254	205	144	50	1	0	0	0	0	0	0	60	298	0
Max	0	0	0	0	0	0	0	2	68	212	339	429	477	506	454	298	153	6	0	0	0	0	0	0	116	506	0
Min	0	0	0	0	0	0	0	0	0	4	17	26	30	40	33	24	16	2	0	0	0	0	0	0	8	40	0

A-19

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Solar Radiation (Watts per Square Meter)
February 2022

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	0	0	0	0	0	0	0	1	34	114	250	409	381	247	192	98	42	3	0	0	0	0	0	0	74	409	0
2	0	0	0	0	0	0	0	3	78	240	375	472	528	396	334	265	93	6	0	0	0	0	0	0	116	528	0
3	0	0	0	0	0	0	0	2	35	152	346	356	613	497	427	312	175	18	0	0	0	0	0	0	122	613	0
4	0	0	0	0	0	0	0	3	61	138	248	301	273	471	231	64	28	3	0	0	0	0	0	0	76	471	0
5	0	0	0	0	0	0	0	2	26	51	122	220	247	222	154	90	52	4	0	0	0	0	0	0	50	247	0
6	0	0	0	0	0	0	0	3	40	97	166	223	329	453	397	325	161	8	0	0	0	0	0	0	92	453	0
7	0	0	0	0	0	0	0	6	69	87	157	287	320	375	436	362	149	14	0	0	0	0	0	0	94	436	0
8	0	0	0	0	0	0	0	9	62	122	332	348	323	305	276	320	130	15	0	0	0	0	0	0	93	348	0
9	0	0	0	0	0	0	0	3	54	124	169	437	578	642	467	341	182	26	0	0	0	0	0	0	126	642	0
10	0	0	0	0	0	0	0	3	33	70	93	144	267	344	300	166	56	16	0	0	0	0	0	0	62	344	0
11	0	0	0	0	0	0	0	3	39	101	185	252	268	403	280	189	199	38	0	0	0	0	0	0	82	403	0
12	0	0	0	0	0	0	0	7	121	290	414	509	558	543	476	359	205	38	0	0	0	0	0	0	147	558	0
13	0	0	0	0	0	0	0	6	134	276	420	522	570	557	499	342	139	43	0	0	0	0	0	0	146	570	0
14	0	0	0	0	0	0	0	3	37	142	437	423	364	164	444	152	47	8	0	0	0	0	0	0	93	444	0
15	0	0	0	0	0	0	0	5	34	199	245	260	229	171	176	183	66	19	0	0	0	0	0	0	66	260	0
16	0	0	0	0	0	0	0	8	76	243	420	568	533	212	273	345	216	28	0	0	0	0	0	0	122	568	0
17	0	0	0	0	0	0	0	8	134	302	356	546	559	383	174	90	38	27	0	0	0	0	0	0	109	559	0
18	0	0	0	0	0	0	0	8	70	191	278	204	178	254	155	104	62	17	0	0	0	0	0	0	63	278	0
19	0	0	0	0	0	0	0	18	139	279	178	174	147	195	223	165	119	26	0	0	0	0	0	0	69	279	0
20	0	0	0	0	0	0	0	6	40	222	394	434	342	384	234	131	66	13	0	0	0	0	0	0	94	434	0
21	0	0	0	0	0	0	0	14	99	239	428	579	626	520	540	301	163	47	0	0	0	0	0	0	148	626	0
22	0	0	0	0	0	0	0	20	160	308	430	548	573	593	529	386	234	76	1	0	0	0	0	0	161	593	0
23	0	0	0	0	0	0	0	24	187	341	485	591	639	625	556	437	272	83	1	0	0	0	0	0	177	639	0
24	0	0	0	0	0	0	0	10	45	123	208	281	410	444	361	262	103	23	0	0	0	0	0	0	95	444	0
25	0	0	0	0	0	0	0	21	113	212	273	461	648	634	563	441	279	92	1	0	0	0	0	0	156	648	0
26	0	0	0	0	0	0	0	25	198	365	498	603	650	631	542	321	141	67	1	0	0	0	0	0	168	650	0
27	0	0	0	0	0	0	0	26	135	357	414	363	394	416	409	388	284	52	0	0	0	0	0	0	135	416	0
28	0	0	0	0	0	0	0	36	82	111	132	265	261	128	93	42	28	10	0	0	0	0	0	0	50	265	0
Avg	0	0	0	0	0	0	0	10	83	196	302	385	422	400	348	249	133	29	0	0	0	0	0	0	107	469	0
Max	0	0	0	0	0	0	0	36	198	365	498	603	650	642	563	441	284	92	1	0	0	0	0	0	177	650	0
Min	0	0	0	0	0	0	0	1	26	51	93	144	147	128	93	42	28	3	0	0	0	0	0	0	50	247	0

A-20

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Solar Radiation (Watts per Square Meter)
March 2022

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	0	0	0	0	0	0	0	16	43	59	62	203	304	150	407	252	169	119	2	0	0	0	0	0	74	407	0
2	0	0	0	0	0	0	1	8	33	85	96	141	160	179	163	164	90	31	0	0	0	0	0	0	48	179	0
3	0	0	0	0	0	0	0	27	89	220	292	373	368	389	338	193	94	36	1	0	0	0	0	0	101	389	0
4	0	0	0	0	0	0	0	17	77	124	167	195	216	236	181	176	85	23	1	0	0	0	0	0	62	236	0
5	0	0	0	0	0	0	0	29	130	184	265	335	511	417	357	247	103	37	1	0	0	0	0	0	109	511	0
6	0	0	0	0	0	0	0	35	175	224	379	446	360	274	338	318	199	42	3	0	0	0	0	0	116	446	0
7	0	0	0	0	0	0	2	71	227	245	478	579	717	481	523	333	160	55	2	0	0	0	0	0	161	717	0
8	0	0	0	0	0	0	1	57	249	349	408	401	572	412	439	381	156	72	5	0	0	0	0	0	146	572	0
9	0	0	0	0	0	0	2	69	265	412	522	528	502	608	525	408	296	157	8	0	0	0	0	0	179	608	0
10	0	0	0	0	0	0	3	84	164	266	468	636	718	633	384	244	269	106	9	0	0	0	0	0	166	718	0
11	0	0	0	0	0	0	6	101	255	426	557	678	714	699	601	333	151	58	4	0	0	0	0	0	191	714	0
12	0	0	0	0	0	0	1	26	61	95	142	237	287	382	323	186	213	180	12	0	0	0	0	0	89	382	0
13	0	0	0	0	0	0	1	26	65	211	271	264	186	292	259	179	217	87	14	0	0	0	0	0	86	292	0
14	0	0	0	0	0	0	9	56	119	303	582	677	690	720	657	517	321	122	6	0	0	0	0	0	199	720	0
15	0	0	0	0	0	0	4	55	97	183	183	243	350	330	256	100	30	23	4	0	0	0	0	0	77	350	0
16	0	0	0	0	0	0	6	147	223	421	362	437	722	512	223	209	162	50	10	0	0	0	0	0	145	722	0
17	0	0	0	0	0	0	11	113	197	445	648	711	754	714	654	533	353	129	13	0	0	0	0	0	220	754	0
18	0	0	0	0	0	0	4	44	170	287	352	359	549	510	233	406	243	44	7	0	0	0	0	0	134	549	0
19	0	0	0	0	0	0	5	80	192	354	412	429	416	465	459	263	113	92	8	0	0	0	0	0	137	465	0
20	0	0	0	0	0	0	6	53	145	310	366	452	468	564	361	230	328	84	19	0	0	0	0	0	141	564	0
21	0	0	0	0	0	0	9	61	152	334	482	355	384	322	321	318	176	68	9	0	0	0	0	0	125	482	0
22	0	0	0	0	0	0	15	125	335	511	652	744	783	763	689	565	401	208	19	0	0	0	0	0	242	783	0
23	0	0	0	0	0	0	15	168	337	503	646	757	652	676	551	439	370	199	12	0	0	0	0	0	222	757	0
24	0	0	0	0	0	0	11	137	346	517	651	748	782	760	686	560	298	91	13	0	0	0	0	0	233	782	0
25	0	0	0	0	0	0	25	105	224	429	433	319	300	213	266	410	218	114	12	0	0	0	0	0	128	433	0
26	0	0	0	0	0	0	13	68	155	286	569	655	776	452	274	237	166	57	11	0	0	0	0	0	155	776	0
27	0	0	0	0	0	0	24	177	350	514	662	714	718	734	625	226	156	66	27	0	0	0	0	0	208	734	0
28	0	0	0	0	0	0	20	98	193	471	635	735	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	179	735	0
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	95	87	239	389	670	808	818	636	580	416	229	43	0	0	0	0	0	295	818	0
30	0	0	0	0	0	0	34	211	374	542	679	773	809	787	710	559	359	127	24	0	0	0	0	0	250	809	0
31	0	0	0	0	0	0	18	85	333	433	481	383	384	447	239	334	188	71	17	0	0	0	0	0	142	481	0
Avg	0	0	0	0	0	0	8	79	189	322	429	490	532	498	423	330	217	93	11	0	0	0	0	0	152	577	0
Max	0	0	0	0	0	0	34	211	374	542	679	773	809	818	710	580	416	229	43	0	0	0	0	0	295	818	0
Min	0	0	0	0	0	0	0	8	33	59	62	141	160	150	163	100	30	23	0	0	0	0	0	0	48	179	0

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
January 2022

	<< Hour >>																											
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min	
1	24.14	24.14	24.14	24.15	24.15	24.15	24.16	24.18	24.18	24.22	24.25	24.26	24.24	24.23	24.23	24.24	24.26	24.26	24.28	24.29	24.31	24.33	24.34	24.34	24.23	24.34	24.14	
2	24.35	24.36	24.37	24.39	24.39	24.40	24.40	24.39	24.39	24.40	24.40	24.38	24.36	24.34	24.33	24.32	24.32	24.32	24.31	24.31	24.32	24.32	24.31	24.30	24.35	24.40	24.30	
3	24.29	24.28	24.28	24.27	24.26	24.24	24.23	24.20	24.18	24.16	24.15	24.13	24.11	24.09	24.07	24.05	24.03	24.01	23.97	23.96	23.96	23.93	23.91	23.92	24.11	24.29	23.91	
4	23.93	23.95	23.95	23.97	24.01	24.05	24.09	24.13	24.17	24.21	24.24	24.25	24.25	24.25	24.26	24.29	24.30	24.31	24.30	24.30	24.29	24.28	24.28	24.27	24.18	24.31	23.93	
5	24.26	24.25	24.25	24.25	24.25	24.24	24.24	24.25	24.27	24.28	24.32	24.34	24.35	24.36	24.35	24.35	24.36	24.37	24.38	24.39	24.38	24.39	24.38	24.37	24.36	24.32	24.39	24.24
6	24.35	24.34	24.32	24.31	24.29	24.26	24.22	24.17	24.16	24.15	24.13	24.10	24.07	24.05	24.05	24.05	24.05	24.04	24.03	24.02	24.01	24.01	24.00	23.98	24.13	24.35	23.98	
7	23.95	23.92	23.90	23.88	23.86	23.84	23.83	23.82	23.81	23.81	23.80	23.79	23.79	23.77	23.75	23.74	23.74	23.74	23.74	23.76	23.79	23.82	23.84	23.87	23.82	23.95	23.74	
8	23.89	23.92	23.94	23.96	23.98	24.02	24.07	24.12	24.14	24.17	24.21	24.24	24.27	24.29	24.33	24.36	24.39	24.42	24.45	24.48	24.50	24.51	24.52	24.52	24.24	24.52	23.89	
9	24.53	24.53	24.55	24.55	24.55	24.57	24.60	24.62	24.65	24.68	24.70	24.71	24.71	24.71	24.72	24.73	24.74	24.76	24.78	24.80	24.80	24.81	24.81	24.80	24.68	24.81	24.53	
10	24.79	24.77	24.76	24.75	24.74	24.73	24.72	24.71	24.70	24.70	24.69	24.66	24.64	24.62	24.60	24.59	24.58	24.59	24.58	24.60	24.59	24.61	24.62	24.62	24.67	24.79	24.58	
11	24.61	24.63	24.64	24.66	24.66	24.66	24.63	24.61	24.61	24.60	24.60	24.56	24.55	24.54	24.53	24.53	24.53	24.54	24.54	24.54	24.54	24.54	24.52	24.58	24.66	24.52		
12	24.52	24.50	24.50	24.50	24.50	24.51	24.53	24.54	24.55	24.57	24.58	24.58	24.56	24.56	24.54	24.55	24.56	24.57	24.55	24.56	24.58	24.58	24.57	24.56	24.55	24.58	24.50	
13	24.56	24.55	24.55	24.54	24.53	24.52	24.51	24.49	24.47	24.45	24.44	24.42	24.39	24.37	24.38	24.38	24.39	24.40	24.41	24.43	24.45	24.48	24.49	24.51	24.46	24.56	24.37	
14	24.54	24.56	24.59	24.60	24.63	24.65	24.67	24.69	24.70	24.72	24.73	24.74	24.73	24.72	24.72	24.73	24.73	24.72	24.72	24.72	24.71	24.70	24.69	24.68	24.68	24.74	24.54	
15	24.67	24.67	24.66	24.64	24.63	24.62	24.61	24.59	24.58	24.56	24.56	24.54	24.51	24.49	24.48	24.46	24.46	24.46	24.45	24.45	24.45	24.45	24.45	24.45	24.54	24.67	24.45	
16	24.44	24.44	24.45	24.46	24.48	24.49	24.50	24.51	24.51	24.50	24.49	24.47	24.46	24.44	24.42	24.41	24.39	24.37	24.37	24.37	24.35	24.34	24.33	24.32	24.43	24.51	24.32	
17	24.31	24.30	24.30	24.30	24.28	24.28	24.28	24.27	24.27	24.26	24.27	24.27	24.27	24.26	24.25	24.24	24.23	24.21	24.20	24.18	24.18	24.18	24.19	24.17	24.25	24.31	24.17	
18	24.17	24.18	24.18	24.17	24.18	24.19	24.21	24.24	24.26	24.29	24.31	24.32	24.32	24.32	24.34	24.35	24.37	24.39	24.40	24.42	24.43	24.45	24.47	24.49	24.31	24.49	24.17	
19	24.49	24.50	24.51	24.52	24.52	24.52	24.53	24.54	24.55	24.56	24.56	24.55	24.53	24.54	24.54	24.54	24.54	24.56	24.56	24.56	24.56	24.56	24.55	24.55	24.54	24.56	24.49	
20	24.54	24.54	24.53	24.52	24.50	24.49	24.48	24.47	24.46	24.44	24.42	24.39	24.36	24.34	24.31	24.29	24.27	24.26	24.26	24.26	24.26	24.26	24.27	24.28	24.38	24.54	24.26	
21	24.30	24.31	24.34	24.37	24.40	24.42	24.45	24.50	24.52	24.54	24.57	24.59	24.57	24.56	24.55	24.56	24.55	24.55	24.56	24.56	24.57	24.57	24.57	24.59	24.50	24.59	24.30	
22	24.58	24.57	24.58	24.58	24.59	24.58	24.59	24.59	24.61	24.62	24.62	24.63	24.62	24.61	24.60	24.61	24.61	24.60	24.61	24.62	24.62	24.62	24.61	24.61	24.60	24.63	24.57	
23	24.60	24.58	24.58	24.58	24.56	24.55	24.53	24.52	24.51	24.50	24.48	24.45	24.42	24.40	24.38	24.37	24.36	24.36	24.36	24.36	24.37	24.37	24.38	24.38	24.46	24.60	24.36	
24	24.39	24.38	24.38	24.38	24.38	24.37	24.37	24.36	24.35	24.36	24.36	24.35	24.34	24.34	24.34	24.35	24.36	24.37	24.39	24.40	24.42	24.44	24.45	24.46	24.38	24.46	24.34	
25	24.47	24.47	24.48	24.48	24.49	24.50	24.51	24.52	24.52	24.52	24.53	24.52	24.49	24.47	24.46	24.44	24.43	24.42	24.42	24.40	24.39	24.38	24.37	24.37	24.46	24.53	24.37	
26	24.36	24.36	24.36	24.35	24.35	24.36	24.37	24.38	24.39	24.40	24.41	24.40	24.39	24.38	24.38	24.39	24.39	24.40	24.41	24.45	24.49	24.52	24.53	24.57	24.41	24.57	24.35	
27	24.60	24.62	24.63	24.64	24.66	24.67	24.69	24.70	24.72	24.73	24.72	24.71	24.68	24.67	24.66	24.66	24.66	24.66	24.67	24.69	24.69	24.70	24.71	24.72	24.68	24.73	24.60	
28	24.72	24.72	24.72	24.71	24.71	24.70	24.70	24.69	24.69	24.69	24.69	24.68	24.65	24.63	24.62	24.62	24.61	24.61	24.60	24.60	24.59	24.58	24.57	24.56	24.65	24.72	24.56	
29	24.54	24.52	24.52	24.52	24.52	24.53	24.52	24.53	24.53	24.54	24.53	24.52	24.51	24.50	24.48	24.48	24.48	24.46	24.45	24.45	24.44	24.44	24.44	24.43	24.50	24.54	24.43	
30	24.41	24.38	24.38	24.37	24.38	24.37	24.37	24.36	24.36	24.37	24.37	24.35	24.34	24.33	24.33	24.31	24.31	24.31	24.30	24.28	24.23	24.19	24.17	24.13	24.32	24.41	24.13	
31	24.11	24.08	24.07	24.04	24.03	24.02	24.00	24.00	24.02	24.03	24.03	24.05	24.07	24.09	24.11	24.14	24.17	24.21	24.23	24.25	24.27	24.28	24.30	24.31	24.12	24.31	24.00	
Avg	24.40	24.40	24.40	24.40	24.40	24.40	24.41	24.41	24.41	24.42	24.43	24.42	24.41	24.40	24.39	24.39	24.39	24.40	24.40	24.40	24.40	24.41	24.41	24.41	24.40	24.51	24.29	
Max	24.79	24.77	24.76	24.75	24.74	24.73	24.72	24.71	24.72	24.73	24.73	24.74	24.73	24.72	24.72	24.73	24.74	24.76	24.78	24.80	24.80	24.81	24.81	24.80	24.68	24.81	24.60	
Min	23.89	23.92	23.90	23.88	23.86	23.84	23.83	23.82	23.81	23.81	23.80	23.79	23.79	23.77	23.75	23.74	23.74	23.74	23.74	23.76	23.79	23.82	23.84	23.87	23.82	23.95	23.74	

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
February 2022

A-23

	<< Hour >>																										
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	24.31	24.31	24.32	24.32	24.32	24.33	24.33	24.33	24.34	24.33	24.31	24.28	24.26	24.26	24.28	24.29	24.30	24.33	24.35	24.36	24.38	24.40	24.42	24.32	24.42	24.26	
2	24.44	24.45	24.47	24.46	24.46	24.47	24.47	24.46	24.47	24.47	24.49	24.48	24.45	24.43	24.41	24.39	24.37	24.35	24.33	24.32	24.31	24.30	24.30	24.29	24.41	24.49	24.29
3	24.30	24.31	24.32	24.31	24.32	24.33	24.34	24.34	24.37	24.40	24.43	24.44	24.43	24.43	24.44	24.45	24.47	24.49	24.50	24.52	24.54	24.55	24.56	24.56	24.42	24.56	24.30
4	24.57	24.56	24.57	24.56	24.56	24.56	24.55	24.55	24.55	24.54	24.53	24.52	24.50	24.49	24.48	24.46	24.45	24.44	24.42	24.41	24.39	24.37	24.38	24.38	24.49	24.57	24.37
5	24.37	24.35	24.34	24.32	24.32	24.32	24.32	24.32	24.34	24.36	24.38	24.38	24.38	24.40	24.41	24.43	24.46	24.49	24.52	24.55	24.56	24.59	24.60	24.61	24.42	24.61	24.32
6	24.62	24.63	24.64	24.63	24.63	24.62	24.62	24.62	24.64	24.64	24.64	24.62	24.60	24.58	24.57	24.57	24.57	24.57	24.57	24.59	24.60	24.61	24.62	24.61	24.61	24.64	24.57
7	24.61	24.61	24.61	24.60	24.59	24.58	24.57	24.56	24.55	24.54	24.53	24.49	24.47	24.43	24.42	24.40	24.39	24.37	24.37	24.40	24.41	24.43	24.46	24.47	24.49	24.61	24.37
8	24.48	24.49	24.52	24.52	24.54	24.54	24.55	24.57	24.56	24.56	24.57	24.57	24.55	24.54	24.53	24.53	24.53	24.52	24.52	24.52	24.53	24.53	24.54	24.54	24.54	24.57	24.48
9	24.54	24.53	24.53	24.51	24.49	24.49	24.49	24.49	24.51	24.53	24.56	24.56	24.55	24.54	24.53	24.54	24.54	24.54	24.52	24.54	24.53	24.52	24.51	24.51	24.53	24.56	24.49
10	24.50	24.49	24.48	24.45	24.44	24.42	24.40	24.39	24.39	24.40	24.40	24.39	24.39	24.36	24.32	24.30	24.29	24.28	24.29	24.29	24.30	24.34	24.38	24.40	24.38	24.50	24.28
11	24.43	24.45	24.46	24.48	24.49	24.50	24.51	24.53	24.56	24.60	24.61	24.63	24.66	24.68	24.69	24.71	24.71	24.71	24.72	24.73	24.72	24.72	24.71	24.70	24.61	24.73	24.43
12	24.68	24.66	24.64	24.62	24.61	24.60	24.59	24.60	24.61	24.63	24.63	24.62	24.62	24.62	24.61	24.60	24.60	24.58	24.59	24.58	24.59	24.59	24.59	24.58	24.61	24.68	24.58
13	24.57	24.56	24.56	24.55	24.54	24.53	24.52	24.52	24.53	24.54	24.53	24.53	24.53	24.51	24.49	24.49	24.48	24.47	24.46	24.46	24.47	24.47	24.47	24.46	24.51	24.57	24.46
14	24.45	24.43	24.42	24.39	24.37	24.35	24.32	24.29	24.28	24.26	24.25	24.23	24.20	24.17	24.14	24.12	24.10	24.08	24.07	24.07	24.07	24.06	24.06	24.07	24.22	24.45	24.06
15	24.08	24.08	24.08	24.08	24.09	24.10	24.12	24.14	24.16	24.18	24.20	24.21	24.21	24.20	24.20	24.20	24.20	24.20	24.19	24.18	24.17	24.16	24.14	24.12	24.15	24.21	24.08
16	24.10	24.09	24.09	24.09	24.10	24.11	24.13	24.16	24.21	24.26	24.29	24.32	24.33	24.33	24.35	24.37	24.39	24.42	24.44	24.46	24.47	24.48	24.48	24.48	24.29	24.48	24.09
17	24.47	24.46	24.44	24.42	24.40	24.38	24.37	24.34	24.33	24.32	24.32	24.31	24.30	24.29	24.29	24.29	24.29	24.29	24.32	24.33	24.34	24.34	24.34	24.34	24.35	24.47	24.29
18	24.35	24.34	24.34	24.35	24.37	24.37	24.38	24.41	24.42	24.44	24.45	24.45	24.46	24.46	24.46	24.46	24.46	24.44	24.44	24.45	24.45	24.43	24.42	24.41	24.42	24.46	24.34
19	24.40	24.39	24.38	24.36	24.33	24.30	24.28	24.27	24.26	24.25	24.22	24.21	24.18	24.14	24.09	24.06	24.04	24.03	24.05	24.05	24.08	24.08	24.09	24.08	24.19	24.40	24.03
20	24.07	24.06	24.05	24.04	24.03	24.03	24.03	24.03	24.04	24.04	24.03	24.03	24.04	24.04	24.04	24.06	24.07	24.08	24.10	24.12	24.13	24.12	24.13	24.15	24.07	24.15	24.03
21	24.16	24.16	24.17	24.18	24.19	24.21	24.22	24.23	24.26	24.28	24.29	24.28	24.28	24.28	24.29	24.31	24.33	24.33	24.35	24.36	24.36	24.37	24.38	24.38	24.28	24.38	24.16
22	24.38	24.39	24.40	24.39	24.39	24.40	24.40	24.41	24.44	24.46	24.47	24.49	24.47	24.46	24.47	24.47	24.47	24.48	24.47	24.48	24.47	24.47	24.46	24.44	24.44	24.49	24.38
23	24.43	24.41	24.40	24.38	24.37	24.36	24.36	24.34	24.35	24.34	24.35	24.34	24.32	24.30	24.27	24.26	24.25	24.26	24.25	24.25	24.23	24.24	24.24	24.24	24.31	24.43	24.23
24	24.23	24.24	24.23	24.24	24.26	24.27	24.29	24.29	24.32	24.33	24.33	24.33	24.33	24.33	24.33	24.35	24.36	24.38	24.39	24.41	24.42	24.43	24.44	24.44	24.33	24.44	24.23
25	24.44	24.46	24.46	24.45	24.44	24.45	24.45	24.46	24.48	24.49	24.49	24.48	24.46	24.43	24.42	24.42	24.42	24.43	24.45	24.45	24.46	24.46	24.46	24.46	24.45	24.49	24.42
26	24.47	24.48	24.48	24.49	24.51	24.52	24.53	24.55	24.58	24.59	24.60	24.58	24.56	24.55	24.55	24.54	24.53	24.53	24.54	24.55	24.56	24.56	24.55	24.55	24.54	24.60	24.47
27	24.55	24.55	24.55	24.54	24.54	24.54	24.53	24.54	24.55	24.55	24.54	24.53	24.53	24.53	24.53	24.52	24.51	24.49	24.50	24.50	24.48	24.47	24.46	24.46	24.52	24.55	24.46
28	24.47	24.46	24.45	24.44	24.43	24.43	24.42	24.41	24.41	24.40	24.39	24.37	24.34	24.33	24.32	24.32	24.32	24.32	24.33	24.34	24.34	24.35	24.36	24.36	24.38	24.47	24.32
Avg	24.41	24.41	24.41	24.40	24.40	24.40	24.40	24.40	24.41	24.42	24.42	24.42	24.41	24.40	24.39	24.39	24.39	24.39	24.39	24.40	24.40	24.41	24.41	24.41	24.40	24.50	24.31
Max	24.68	24.66	24.64	24.63	24.63	24.62	24.62	24.62	24.64	24.64	24.64	24.63	24.66	24.68	24.69	24.71	24.71	24.71	24.72	24.73	24.72	24.72	24.71	24.70	24.61	24.73	24.58
Min	24.07	24.06	24.05	24.04	24.03	24.03	24.03	24.03	24.04	24.04	24.04	24.03	24.04	24.04	24.04	24.06	24.04	24.03	24.05	24.05	24.07	24.06	24.06	24.07	24.07	24.15	24.03

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Barometric Pressure (inches of mercury)
March 2022

A-24

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	24.37	24.39	24.39	24.40	24.39	24.39	24.39	24.39	24.40	24.41	24.42	24.43	24.42	24.42	24.42	24.43	24.44	24.44	24.45	24.46	24.46	24.46	24.48	24.47	24.42	24.48	24.37
2	24.45	24.45	24.45	24.44	24.43	24.44	24.44	24.43	24.44	24.44	24.45	24.46	24.46	24.44	24.43	24.42	24.41	24.40	24.39	24.39	24.38	24.38	24.39	24.38	24.42	24.46	24.38
3	24.38	24.37	24.36	24.35	24.35	24.33	24.31	24.30	24.30	24.30	24.29	24.28	24.26	24.24	24.22	24.20	24.19	24.17	24.17	24.17	24.17	24.18	24.18	24.17	24.26	24.38	24.17
4	24.17	24.18	24.18	24.18	24.18	24.19	24.20	24.20	24.21	24.21	24.21	24.21	24.21	24.20	24.21	24.22	24.22	24.23	24.26	24.27	24.27	24.28	24.29	24.30	24.22	24.30	24.17
5	24.30	24.31	24.31	24.31	24.32	24.32	24.32	24.33	24.35	24.35	24.35	24.35	24.34	24.34	24.35	24.35	24.36	24.37	24.37	24.37	24.38	24.38	24.39	24.38	24.35	24.39	24.30
6	24.38	24.39	24.39	24.39	24.40	24.41	24.43	24.44	24.45	24.46	24.47	24.48	24.48	24.49	24.51	24.51	24.52	24.54	24.54	24.55	24.55	24.55	24.55	24.53	24.48	24.55	24.38
7	24.52	24.51	24.49	24.48	24.47	24.46	24.46	24.46	24.47	24.46	24.44	24.42	24.42	24.40	24.39	24.37	24.38	24.36	24.36	24.36	24.39	24.40	24.42	24.42	24.43	24.52	24.36
8	24.42	24.43	24.43	24.42	24.42	24.42	24.43	24.43	24.42	24.42	24.42	24.42	24.42	24.40	24.39	24.38	24.38	24.38	24.38	24.39	24.40	24.40	24.41	24.40	24.41	24.43	24.38
9	24.39	24.40	24.39	24.38	24.37	24.36	24.35	24.36	24.38	24.38	24.38	24.37	24.36	24.35	24.34	24.34	24.33	24.33	24.32	24.31	24.31	24.30	24.29	24.28	24.35	24.40	24.28
10	24.27	24.26	24.25	24.24	24.23	24.23	24.24	24.27	24.30	24.33	24.34	24.34	24.33	24.32	24.34	24.35	24.36	24.37	24.37	24.38	24.39	24.40	24.40	24.40	24.32	24.40	24.23
11	24.39	24.39	24.39	24.39	24.40	24.40	24.40	24.42	24.43	24.42	24.40	24.39	24.39	24.38	24.37	24.36	24.36	24.35	24.35	24.35	24.35	24.34	24.34	24.33	24.38	24.43	24.33
12	24.32	24.31	24.32	24.32	24.32	24.31	24.30	24.29	24.29	24.30	24.32	24.31	24.30	24.28	24.26	24.24	24.22	24.20	24.19	24.18	24.17	24.17	24.16	24.14	24.26	24.32	24.14
13	24.13	24.12	24.10	24.08	24.07	24.06	24.04	24.04	24.05	24.07	24.07	24.08	24.10	24.12	24.14	24.17	24.20	24.22	24.26	24.30	24.33	24.35	24.37	24.38	24.16	24.38	24.04
14	24.39	24.41	24.42	24.41	24.42	24.42	24.43	24.42	24.42	24.43	24.45	24.45	24.46	24.45	24.45	24.45	24.46	24.45	24.44	24.44	24.44	24.43	24.42	24.40	24.43	24.46	24.39
15	24.38	24.37	24.35	24.32	24.31	24.30	24.29	24.30	24.31	24.31	24.33	24.33	24.32	24.30	24.29	24.27	24.28	24.28	24.29	24.31	24.31	24.31	24.32	24.34	24.31	24.38	24.27
16	24.33	24.33	24.32	24.32	24.33	24.34	24.34	24.35	24.36	24.37	24.37	24.37	24.36	24.36	24.36	24.36	24.37	24.39	24.41	24.42	24.43	24.44	24.45	24.47	24.37	24.47	24.32
17	24.47	24.48	24.48	24.47	24.48	24.48	24.49	24.49	24.48	24.47	24.46	24.44	24.43	24.41	24.39	24.38	24.38	24.38	24.37	24.37	24.36	24.36	24.37	24.36	24.43	24.49	24.36
18	24.36	24.36	24.34	24.33	24.33	24.34	24.34	24.34	24.35	24.36	24.36	24.36	24.36	24.35	24.35	24.35	24.35	24.34	24.33	24.32	24.33	24.33	24.33	24.33	24.34	24.36	24.32
19	24.32	24.32	24.30	24.29	24.28	24.28	24.27	24.27	24.27	24.26	24.25	24.23	24.21	24.19	24.16	24.14	24.13	24.12	24.12	24.13	24.13	24.14	24.13	24.13	24.21	24.32	24.12
20	24.12	24.12	24.12	24.13	24.14	24.15	24.17	24.19	24.20	24.22	24.24	24.24	24.25	24.25	24.26	24.28	24.30	24.32	24.34	24.36	24.38	24.39	24.40	24.41	24.25	24.41	24.12
21	24.42	24.43	24.44	24.44	24.45	24.45	24.45	24.45	24.44	24.45	24.45	24.45	24.45	24.45	24.44	24.45	24.45	24.46	24.48	24.49	24.50	24.52	24.53	24.54	24.46	24.54	24.42
22	24.54	24.56	24.56	24.57	24.58	24.60	24.61	24.62	24.64	24.65	24.65	24.65	24.64	24.63	24.63	24.62	24.61	24.60	24.59	24.58	24.57	24.57	24.57	24.58	24.60	24.65	24.54
23	24.58	24.57	24.56	24.56	24.56	24.56	24.55	24.54	24.54	24.54	24.54	24.52	24.50	24.48	24.46	24.45	24.43	24.42	24.40	24.39	24.38	24.37	24.36	24.36	24.48	24.58	24.36
24	24.35	24.36	24.37	24.38	24.39	24.40	24.39	24.41	24.41	24.43	24.44	24.44	24.45	24.46	24.47	24.46	24.47	24.47	24.48	24.49	24.50	24.51	24.51	24.53	24.44	24.53	24.35
25	24.53	24.53	24.52	24.50	24.50	24.50	24.48	24.47	24.47	24.46	24.45	24.45	24.44	24.42	24.40	24.40	24.38	24.37	24.36	24.35	24.36	24.35	24.36	24.35	24.43	24.53	24.35
26	24.35	24.35	24.34	24.33	24.33	24.33	24.34	24.34	24.35	24.36	24.35	24.34	24.34	24.33	24.32	24.32	24.32	24.32	24.32	24.31	24.32	24.32	24.32	24.31	24.33	24.36	24.31
27	24.30	24.30	24.29	24.28	24.28	24.28	24.28	24.29	24.28	24.28	24.27	24.26	24.24	24.22	24.21	24.20	24.19	24.18	24.17	24.16	24.15	24.13	24.13	24.13	24.23	24.30	24.13
28	24.14	24.12	24.11	24.10	24.10	24.10	24.10	24.10	24.09	24.09	24.09	24.07	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	24.10	24.14	24.07
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	24.26	24.27	24.28	24.30	24.31	24.31	24.32	24.32	24.33	24.34	24.35	24.35	24.35	24.37	24.36	24.36	24.37	24.33	24.37	24.26
30	24.36	24.36	24.36	24.35	24.34	24.34	24.34	24.32	24.32	24.31	24.31	24.30	24.28	24.27	24.25	24.23	24.23	24.23	24.23	24.24	24.25	24.25	24.24	24.25	24.29	24.36	24.23
31	24.25	24.25	24.25	24.24	24.24	24.24	24.25	24.25	24.26	24.24	24.23	24.22	24.21	24.21	24.21	24.21	24.21	24.22	24.22	24.24	24.26	24.26	24.27	24.28	24.24	24.28	24.21
Avg	24.36	24.36	24.35	24.35	24.35	24.35	24.35	24.35	24.35	24.36	24.36	24.35	24.36	24.35	24.34	24.34	24.34	24.34	24.34	24.35	24.35	24.35	24.35	24.36	24.35	24.42	24.28
Max	24.58	24.57	24.56	24.57	24.58	24.60	24.61	24.62	24.64	24.65	24.65	24.65	24.64	24.63	24.63	24.62	24.61	24.60	24.59	24.58	24.57	24.57	24.57	24.58	24.60	24.65	24.54
Min	24.12	24.12	24.10	24.08	24.07	24.06	24.04	24.04	24.05	24.07	24.07	24.07	24.10	24.12	24.14	24.14	24.13	24.12	24.12	24.13	24.13	24.13	24.13	24.13	24.10	24.14	24.04

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
January 2022

A-25

Day	<< Hour >>																										
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Avg	Max	Min
1	69.2	68.6	68.2	67.7	66.1	64.9	65.0	63.7	63.6	62.7	64.2	64.7	62.1	56.0	50.0	46.3	48.1	50.3	54.6	61.5	66.7	67.5	70.1	69.6	62.1	70.1	46.3
2	68.4	68.6	71.5	74.3	76.9	77.8	75.7	70.6	72.5	69.0	67.2	58.7	56.3	56.0	59.0	55.0	56.6	65.6	63.2	67.9	68.0	71.3	70.0	76.0	67.3	77.8	55.0
3	78.0	78.5	76.9	76.4	77.8	79.7	79.7	74.1	71.9	43.5	39.6	34.8	33.4	37.3	39.4	40.8	42.3	43.4	41.9	40.2	38.9	42.1	42.4	55.3	54.5	79.7	33.4
4	81.9	81.8	84.0	83.3	82.9	80.0	75.9	74.3	72.7	66.9	58.4	58.3	52.9	58.8	53.6	56.5	61.0	65.5	68.7	68.5	69.3	69.7	70.0	70.6	69.4	84.0	52.9
5	70.0	70.0	69.1	68.4	69.0	69.5	71.1	70.7	70.0	67.9	65.0	65.2	64.7	66.9	67.6	68.3	69.4	70.0	70.0	69.7	69.0	69.1	69.5	69.8	68.7	71.1	64.7
6	70.1	70.2	70.4	70.4	70.3	71.6	72.7	73.7	74.8	75.7	77.6	78.7	79.7	79.1	79.8	81.1	82.4	82.7	83.7	84.4	84.7	84.6	85.1	85.3	77.9	85.3	70.1
7	85.8	86.3	86.6	85.2	77.0	64.3	61.2	70.8	71.3	56.8	54.3	57.1	65.5	63.9	60.7	58.9	57.6	55.9	56.1	58.7	59.9	59.6	56.6	55.3	65.2	86.6	54.3
8	58.0	57.7	56.3	56.8	57.1	58.4	67.1	65.1	57.4	55.4	51.7	51.9	52.1	53.1	54.6	55.8	57.7	55.5	55.4	57.9	58.2	59.6	61.8	66.5	57.5	67.1	51.7
9	68.7	68.5	72.3	76.2	65.2	57.4	67.5	66.7	68.2	66.6	58.4	51.1	46.5	44.2	44.2	43.5	49.2	67.3	74.7	77.5	79.6	80.9	80.2	79.2	64.7	80.9	43.5
10	78.5	79.8	79.6	79.7	79.2	79.0	78.7	78.5	78.7	79.0	77.9	66.1	49.5	37.9	33.1	45.1	51.2	55.5	39.7	37.9	37.1	38.0	40.9	44.6	60.2	79.8	33.1
11	51.4	61.3	65.9	73.3	74.5	73.4	68.2	67.6	68.2	66.8	53.0	49.5	47.0	49.8	50.3	50.6	56.1	59.3	60.0	59.4	61.7	62.6	61.5	65.7	60.7	74.5	47.0
12	65.9	64.2	61.5	60.3	62.8	62.6	62.9	65.1	64.5	62.7	61.9	69.0	72.6	73.8	73.9	75.7	74.8	72.8	79.5	82.3	84.4	86.3	86.6	88.0	71.4	88.0	60.3
13	88.5	88.4	88.9	88.6	88.9	88.4	87.6	86.6	86.5	83.0	77.1	72.0	64.6	61.2	54.5	39.6	42.0	51.3	62.3	66.9	71.4	78.2	68.5	65.9	73.0	88.9	39.6
14	75.0	82.3	83.8	82.7	82.2	81.3	81.8	83.3	85.5	83.1	77.5	71.6	69.4	65.0	64.1	60.1	62.5	76.6	80.5	85.1	85.3	84.5	83.6	82.3	77.9	85.5	60.1
15	81.0	79.7	79.6	79.7	79.0	78.3	79.1	80.7	81.2	82.6	83.6	84.4	86.2	56.2	39.6	38.6	39.6	40.5	45.0	42.6	40.4	46.1	49.9	56.0	64.6	86.2	38.6
16	61.8	66.6	69.4	70.3	75.2	79.8	81.7	82.8	81.2	77.4	64.8	59.2	46.4	44.7	44.0	42.8	48.0	52.8	52.8	49.5	49.8	51.1	55.5	58.5	61.1	82.8	42.8
17	62.2	64.0	58.6	65.8	72.1	75.4	78.6	74.3	73.1	74.8	70.3	52.6	53.1	54.7	50.7	50.7	47.3	52.4	62.7	68.3	61.6	59.7	64.6	67.6	63.1	78.6	47.3
18	65.8	66.4	63.7	62.9	64.2	80.5	86.3	83.2	80.7	78.4	75.7	73.4	75.7	75.5	76.6	75.8	76.5	76.6	76.5	77.3	77.3	76.9	76.6	76.3	74.9	86.3	62.9
19	76.9	77.0	77.4	76.5	76.5	76.6	76.8	76.9	76.3	74.5	72.3	63.5	58.2	47.8	49.4	45.1	63.1	79.1	79.1	77.4	75.9	74.8	74.0	73.5	70.8	79.1	45.1
20	73.9	74.7	74.5	74.0	74.2	74.7	74.8	76.7	78.5	80.6	81.4	82.6	84.8	87.5	87.9	86.2	85.3	84.7	78.4	78.2	77.2	75.4	71.6	71.7	78.7	87.9	71.6
21	72.0	69.0	72.1	86.5	85.6	85.3	84.6	85.4	85.2	83.6	81.5	67.4	72.0	70.4	68.1	68.1	65.5	66.3	67.2	69.4	71.6	75.6	81.9	83.3	75.7	86.5	65.5
22	82.6	80.9	79.4	79.7	79.7	80.7	82.1	82.3	83.8	84.4	85.1	83.8	67.0	63.8	61.2	57.4	57.3	74.4	82.7	84.4	83.8	82.9	82.1	81.5	77.6	85.1	57.3
23	80.9	80.1	79.0	79.3	79.3	79.1	79.2	78.7	78.7	80.8	82.4	81.5	63.9	41.1	40.2	38.2	37.4	38.2	44.9	54.7	67.1	68.9	75.1	75.6	66.8	82.4	37.4
24	79.5	80.0	79.2	80.9	82.0	81.0	80.2	79.9	79.3	81.1	81.7	80.7	76.9	78.6	82.7	83.6	85.4	85.1	82.9	80.3	74.0	78.7	77.3	79.9	80.5	85.4	74.0
25	81.0	84.3	85.2	84.7	85.4	84.2	84.1	84.5	84.5	82.8	74.6	72.0	70.1	67.6	63.3	59.5	57.9	69.0	78.9	79.2	79.1	75.8	79.5	79.1	76.9	85.4	57.9
26	81.0	80.2	75.4	70.7	72.8	75.1	75.8	79.2	76.5	69.2	63.3	54.5	44.5	44.4	43.0	43.8	44.3	52.8	59.1	68.4	73.9	79.3	75.7	83.6	66.1	83.6	43.0
27	82.9	75.8	69.9	70.8	78.5	83.0	83.3	83.2	82.9	79.5	62.1	59.7	56.8	51.4	47.3	46.7	47.1	50.4	61.1	71.9	75.2	78.2	80.1	79.1	69.0	83.3	46.7
28	78.8	77.7	77.8	76.8	75.9	74.8	74.3	73.5	74.1	75.0	77.5	78.1	79.0	73.6	60.9	55.0	55.8	56.6	63.7	63.2	66.4	68.1	71.3	72.7	70.9	79.0	55.0
29	72.2	69.1	70.9	70.6	70.9	73.2	70.5	68.3	67.3	58.3	54.2	36.6	28.0	25.9	26.8	23.3	23.0	30.0	42.8	51.0	54.6	58.5	60.1	52.6	52.4	73.2	23.0
30	49.4	39.5	40.8	33.3	34.8	38.0	35.4	34.7	32.3	32.5	33.2	34.2	35.1	33.1	32.8	32.4	36.2	43.0	44.9	54.6	59.9	50.3	49.1	49.6	40.0	59.9	32.3
31	50.5	46.1	37.6	42.2	51.8	63.6	79.2	78.6	61.3	51.0	50.6	61.2	53.9	61.8	68.4	73.1	79.3	76.9	77.9	77.3	76.2	73.7	70.4	72.1	63.9	79.3	37.6
Avg	72.3	72.2	71.8	72.5	73.2	73.9	74.9	74.6	73.6	70.5	67.0	63.7	60.3	57.5	55.7	54.8	56.8	61.3	64.2	66.6	67.7	68.6	69.1	70.5	67.2	80.8	50.0
Max	88.5	88.4	88.9	88.6	88.9	88.4	87.6	86.6	86.5	84.4	85.1	84.4	86.2	87.5	87.9	86.2	85.4	85.1	83.7	85.1	85.3	86.3	86.6	88.0	80.5	88.9	74.0
Min	49.4	39.5	37.6	33.3	34.8	38.0	35.4	34.7	32.3	32.5	33.2	34.2	28.0	25.9	26.8	23.3	23.0	30.0	39.7	37.9	37.1	38.0	40.9	44.6	40.0	59.9	23.0

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
February 2022

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	75.9	75.9	76.0	75.4	75.0	74.6	75.3	75.8	75.3	71.5	60.4	52.5	52.7	62.6	71.8	73.0	73.9	73.4	71.4	64.9	67.0	70.2	67.4	65.7	69.9	76.0	52.5
2	63.0	63.2	64.8	66.2	67.3	67.8	65.7	65.3	63.7	61.3	53.9	55.3	57.2	57.3	56.3	56.1	61.0	68.3	72.2	70.9	69.7	68.5	68.2	67.4	63.8	72.2	53.9
3	67.5	67.8	68.6	70.2	69.9	70.2	69.8	69.5	69.4	70.9	71.9	71.8	64.2	63.1	63.4	61.5	60.0	66.1	71.1	72.1	72.8	73.8	74.1	73.9	68.9	74.1	60.0
4	73.8	74.1	73.6	73.3	72.1	71.7	70.1	68.4	66.0	63.1	61.1	58.9	58.7	55.4	55.8	56.6	58.2	59.4	59.8	57.6	59.3	64.3	68.1	66.4	64.4	74.1	55.4
5	64.8	64.3	66.9	68.7	66.9	65.6	64.8	64.3	63.2	62.3	61.1	64.8	61.4	61.6	64.6	75.0	85.2	86.6	88.0	88.1	87.5	87.8	87.2	86.3	72.4	88.1	61.1
6	84.8	83.7	81.6	79.2	77.6	76.7	75.8	75.0	76.9	78.9	82.5	82.6	78.8	67.2	54.9	49.4	46.7	52.2	66.8	74.5	80.5	84.0	83.0	80.9	73.9	84.8	46.7
7	80.6	80.3	79.9	79.6	79.0	78.6	78.2	80.5	80.3	81.3	81.6	69.0	49.5	37.0	27.9	25.2	29.5	30.7	33.3	42.6	46.5	49.4	50.5	53.1	59.3	81.6	25.2
8	53.4	55.9	63.8	64.4	70.7	66.0	73.2	73.6	69.1	60.3	50.7	46.9	46.1	46.2	47.7	49.9	51.5	55.3	58.7	61.1	65.6	73.6	75.8	79.3	60.8	79.3	46.1
9	80.9	81.7	79.8	75.2	71.0	73.2	77.2	77.1	78.0	73.5	66.0	68.0	57.4	62.0	66.3	65.5	65.5	68.2	70.4	71.4	75.6	76.9	77.9	78.8	72.4	81.7	57.4
10	79.3	83.8	85.4	86.9	88.2	86.6	86.4	86.5	68.6	62.1	59.6	61.1	59.1	58.2	53.6	50.3	46.2	42.3	42.8	45.2	49.8	53.8	63.5	72.6	65.5	88.2	42.3
11	70.1	65.6	66.8	69.6	71.0	77.3	84.5	81.7	84.7	85.0	77.4	76.6	68.6	55.1	50.5	49.3	47.7	48.9	52.6	63.1	69.4	71.9	74.8	76.1	68.3	85.0	47.7
12	76.3	76.6	76.0	75.4	75.5	75.3	74.9	75.3	74.4	71.5	61.1	48.3	38.8	36.0	34.6	31.1	29.9	45.3	60.7	64.5	67.7	72.2	74.0	75.4	62.1	76.6	29.9
13	76.7	77.6	78.8	78.6	78.7	78.3	76.8	77.2	69.7	62.4	53.9	45.6	33.2	29.1	27.6	29.1	31.6	37.1	53.0	57.0	63.5	70.1	73.0	75.7	59.8	78.8	27.6
14	77.3	78.5	79.4	79.7	79.3	79.4	77.3	74.5	72.0	67.7	50.9	39.5	32.0	36.8	35.9	35.4	48.7	55.5	59.9	58.6	61.6	69.7	68.1	68.3	61.9	79.7	32.0
15	71.2	81.0	85.6	88.3	89.0	88.8	88.8	86.5	84.9	81.8	77.6	78.1	75.0	80.7	80.7	79.1	85.7	82.7	83.9	85.4	85.4	85.1	85.6	85.9	83.2	89.0	71.2
16	85.5	84.5	84.9	85.4	84.7	85.0	85.7	78.8	72.5	63.4	64.0	48.9	51.3	61.8	71.8	72.9	77.1	79.0	82.2	81.7	80.9	81.0	80.7	80.9	76.0	85.7	48.9
17	81.0	80.8	80.7	80.6	80.8	80.9	82.1	74.7	67.7	62.8	61.5	60.1	59.3	59.1	62.5	63.1	60.9	57.9	59.3	63.5	67.4	69.8	70.2	70.8	69.1	82.1	57.9
18	70.4	70.3	70.1	70.0	69.1	69.1	68.6	69.5	72.8	70.4	68.2	72.2	73.8	70.9	70.1	70.9	68.9	65.5	62.9	64.4	64.7	64.6	65.0	66.2	68.7	73.8	62.9
19	65.5	63.5	62.1	60.8	62.0	62.7	59.9	64.3	56.1	49.4	46.9	47.1	47.2	44.9	42.4	41.1	38.4	40.4	50.5	56.1	53.0	53.2	53.8	54.9	53.2	65.5	38.4
20	57.7	54.5	55.5	55.4	58.6	59.3	60.4	63.5	64.0	62.5	66.0	69.8	75.6	76.4	75.9	76.6	76.9	77.7	78.1	77.8	76.8	75.3	74.7	76.9	68.6	78.1	54.5
21	75.0	73.1	71.7	72.2	71.2	68.6	70.1	68.4	68.4	64.7	59.3	64.0	66.6	66.7	67.1	66.6	67.3	66.4	67.6	66.2	66.6	68.3	67.9	67.7	68.0	75.0	59.3
22	67.7	68.2	68.1	67.8	67.1	67.0	66.0	64.9	62.9	59.2	54.4	48.7	59.0	57.8	57.9	60.6	61.2	61.8	65.0	67.9	67.2	65.1	64.4	63.7	63.1	68.2	48.7
23	62.9	61.7	61.1	60.7	60.0	59.7	58.8	59.0	58.5	58.6	53.3	43.9	37.1	45.8	46.9	38.4	37.8	50.3	66.7	71.9	70.9	70.4	68.7	69.3	57.2	71.9	37.1
24	68.2	69.6	69.4	70.4	71.8	72.6	73.1	73.6	74.1	74.1	69.3	67.4	68.4	69.0	68.6	70.6	67.4	71.4	73.4	74.4	77.4	77.9	78.6	78.5	72.1	78.6	67.4
25	78.6	77.0	76.7	76.8	73.1	72.3	70.5	70.0	69.0	69.3	69.4	60.1	55.1	52.5	50.0	49.0	46.8	49.4	67.0	75.8	76.3	74.9	73.1	72.1	66.9	78.6	46.8
26	71.8	73.1	73.0	72.6	73.6	72.1	73.0	72.4	73.1	73.4	74.3	50.4	37.9	34.3	34.1	33.8	39.4	50.3	57.3	67.9	74.1	77.2	78.9	78.7	63.2	78.9	33.8
27	78.3	77.7	77.5	76.6	76.7	76.6	76.2	77.1	77.0	77.9	74.0	50.3	33.8	34.4	37.6	37.1	39.5	47.2	52.0	54.8	59.6	58.6	63.0	54.5	61.2	78.3	33.8
28	53.8	53.6	54.5	56.2	56.4	56.7	58.9	59.0	61.0	59.0	62.2	59.9	53.0	54.3	67.2	78.9	80.7	79.3	80.3	73.6	66.6	62.2	62.9	64.2	63.1	80.7	53.0
Avg	71.9	72.1	72.6	72.7	72.7	72.6	72.9	72.4	70.5	67.8	64.0	59.4	55.4	54.9	55.1	55.2	56.6	59.6	64.5	66.9	68.7	70.3	71.2	71.6	66.3	78.7	48.3
Max	85.5	84.5	85.6	88.3	89.0	88.8	88.8	86.5	84.9	85.0	82.5	82.6	78.8	80.7	80.7	79.1	85.7	86.6	88.0	88.1	87.5	87.8	87.2	86.3	83.2	89.0	71.2
Min	53.4	53.6	54.5	55.4	56.4	56.7	58.8	59.0	56.1	49.4	46.9	39.5	32.0	29.1	27.6	25.2	29.5	30.7	33.3	42.6	46.5	49.4	50.5	53.1	53.2	65.5	25.2

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Relative Humidity (Percent)
March 2022

Day	<< Hour >>																								Avg	Max	Min
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24			
1	65.2	64.9	67.2	68.2	69.9	73.1	67.4	64.2	63.9	64.4	70.7	80.2	60.2	59.3	54.8	51.9	49.8	48.9	53.5	60.3	61.9	69.1	71.5	76.3	64.0	80.2	48.9
2	80.8	78.8	79.4	82.3	83.8	83.8	83.7	83.0	81.7	80.6	79.7	78.4	77.2	81.8	82.8	78.7	79.7	82.1	86.0	86.4	86.1	85.5	85.9	86.9	82.3	86.9	77.2
3	86.5	87.7	87.9	88.6	88.9	89.8	89.3	89.4	88.8	83.9	69.9	64.3	51.3	48.5	39.9	46.0	54.2	62.5	68.6	72.6	76.5	81.1	81.3	84.8	74.3	89.8	39.9
4	86.4	86.8	86.7	85.6	86.1	87.0	87.4	86.8	85.7	85.8	82.7	81.5	79.9	77.9	77.9	71.7	66.7	68.0	68.8	71.3	67.9	63.9	64.0	65.7	78.0	87.4	63.9
5	68.9	72.8	80.9	80.2	75.5	76.4	75.5	73.7	70.8	69.0	67.0	65.5	63.0	64.1	65.2	66.0	67.1	66.3	66.0	68.2	72.6	76.2	76.9	76.7	71.0	80.9	63.0
6	78.2	79.2	77.0	76.3	74.6	74.4	69.8	71.2	64.7	61.0	58.0	54.7	54.1	57.5	62.9	60.2	56.3	64.7	64.1	68.5	73.5	74.0	74.1	73.9	67.6	79.2	54.1
7	75.6	75.8	74.6	74.4	73.7	73.1	72.5	72.7	71.2	70.2	58.4	57.1	58.5	60.0	59.7	59.9	62.9	69.9	83.7	83.1	71.3	75.4	72.8	69.8	69.8	83.7	57.1
8	67.0	64.3	62.8	62.1	64.1	69.0	69.9	71.9	67.5	59.9	57.0	57.4	56.2	57.0	56.3	51.8	56.8	56.8	59.6	61.6	62.5	62.4	63.7	66.3	61.8	71.9	51.8
9	69.8	69.2	67.7	68.4	69.7	69.3	68.6	68.2	57.0	49.4	60.2	64.6	58.2	61.4	63.4	60.0	55.2	48.3	55.9	64.2	66.4	67.1	68.5	69.2	63.3	69.8	48.3
10	67.8	67.3	66.9	65.9	65.6	65.6	65.5	65.9	67.9	70.1	56.2	50.1	51.5	48.1	46.9	49.6	52.3	51.8	53.3	57.7	63.1	68.8	71.4	73.7	61.0	73.7	46.9
11	74.0	73.7	73.4	72.5	72.8	72.4	72.4	71.9	68.0	49.8	53.4	46.5	44.6	48.4	50.8	55.4	57.5	57.9	62.3	69.8	75.8	66.5	68.3	67.6	63.6	75.8	44.6
12	67.6	69.0	67.6	67.0	60.6	55.1	49.1	47.8	45.3	43.7	41.3	42.2	40.6	38.3	35.8	37.1	34.4	33.5	38.7	51.7	58.4	63.2	70.1	74.7	51.4	74.7	33.5
13	73.2	71.2	67.4	68.2	67.6	71.6	73.5	70.4	69.5	61.2	57.8	61.2	72.3	81.6	84.2	85.6	81.1	73.0	65.2	63.8	62.6	62.2	63.6	71.2	70.0	85.6	57.8
14	77.7	80.8	81.8	81.9	79.3	78.9	78.5	70.4	63.7	54.0	52.1	52.0	49.6	47.7	46.0	43.3	43.6	46.6	53.1	57.5	62.5	58.4	62.6	54.8	61.6	81.9	43.3
15	52.5	56.2	58.8	59.4	58.7	58.6	57.8	56.7	54.9	54.5	56.6	62.1	63.5	62.1	62.2	62.7	83.2	89.8	89.2	82.6	70.4	72.9	69.6	66.2	65.1	89.8	52.5
16	65.8	65.7	67.0	65.9	65.0	64.9	63.7	59.9	60.1	56.3	56.4	58.0	54.3	64.2	71.3	64.1	62.2	71.1	82.7	85.3	86.4	86.1	84.6	83.0	68.5	86.4	54.3
17	82.3	82.0	82.0	81.8	80.9	81.4	79.9	82.5	83.5	80.3	61.5	47.8	44.2	40.4	36.6	35.2	34.6	36.5	46.8	61.0	67.1	70.9	74.1	76.7	64.6	83.5	34.6
18	77.4	77.5	78.3	77.5	79.3	79.0	77.2	75.7	66.7	60.6	55.8	52.4	49.2	47.1	42.8	41.5	40.8	45.2	51.4	63.7	68.2	72.6	71.6	72.9	63.5	79.3	40.8
19	74.8	77.9	79.7	79.0	80.0	79.2	77.2	76.1	70.9	61.1	43.0	38.9	40.9	39.5	39.4	37.9	38.1	37.1	46.0	49.4	62.2	73.7	79.0	83.0	61.0	83.0	37.1
20	87.8	89.6	88.3	83.9	84.5	79.8	81.2	80.4	77.2	61.8	56.0	52.2	52.6	49.5	46.0	44.2	41.6	42.3	42.7	48.2	54.2	56.0	56.8	58.9	63.2	89.6	41.6
21	66.8	72.5	75.5	76.9	78.8	80.4	80.7	77.0	64.1	60.5	59.1	58.5	57.5	56.6	54.5	51.2	51.7	51.7	52.4	56.7	59.6	63.9	70.7	75.3	64.7	80.7	51.2
22	79.4	80.7	80.5	81.1	81.6	81.3	80.4	72.1	56.4	54.6	50.2	48.4	44.9	43.9	38.9	36.3	36.5	37.7	47.2	59.1	66.9	72.8	76.3	80.6	62.0	81.6	36.3
23	81.5	83.1	84.2	84.5	85.4	85.3	86.0	75.7	67.6	57.4	55.5	53.0	49.8	47.7	46.5	43.6	42.3	40.5	53.0	65.5	70.9	74.1	76.1	79.1	66.2	86.0	40.5
24	83.3	84.8	68.3	61.7	60.6	59.2	60.4	53.8	44.7	51.3	55.5	54.6	60.0	60.7	58.6	58.6	55.8	58.2	64.5	69.0	70.8	70.9	77.6	79.5	63.4	84.8	44.7
25	80.1	81.4	79.6	75.8	76.9	76.8	72.4	64.4	55.7	50.8	45.9	44.6	43.8	44.1	42.4	38.4	37.8	35.7	53.0	60.1	56.8	65.9	70.0	74.8	59.5	81.4	35.7
26	77.8	77.6	79.1	79.6	81.0	78.8	79.9	77.7	68.1	57.4	44.2	40.9	39.5	37.9	36.3	37.5	40.4	45.2	46.5	53.5	52.1	55.5	56.4	66.2	58.7	81.0	36.3
27	72.1	72.8	74.9	79.3	80.2	82.8	82.1	69.3	58.4	45.9	34.2	30.7	29.0	26.7	25.8	26.6	25.8	32.8	46.1	56.6	56.5	67.6	67.2	65.3	54.5	82.8	25.8
28	60.0	54.1	62.9	67.1	69.9	75.4	78.4	76.6	67.4	48.4	37.1	33.4	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	60.9	78.4	33.4
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	77.3	74.5	72.3	68.1	58.4	45.4	39.5	40.8	40.2	42.9	44.8	51.6	59.8	69.6	73.1	74.5	77.5	59.4	77.5	39.5
30	78.4	80.0	80.9	81.7	82.1	81.8	80.3	71.2	66.5	59.4	54.2	48.6	42.7	37.8	35.3	33.7	35.1	38.2	43.8	51.8	54.7	54.2	52.8	50.4	58.2	82.1	33.7
31	51.0	50.8	52.3	53.3	51.2	53.7	56.7	57.1	48.3	40.6	36.5	36.1	35.5	35.4	37.5	36.0	40.8	44.9	46.8	50.6	58.1	62.1	66.5	70.5	48.8	70.5	35.4
Avg	73.7	74.3	74.5	74.3	74.3	74.6	73.9	71.4	66.2	60.5	55.9	54.0	52.3	52.2	51.4	50.2	50.9	52.7	58.1	63.7	66.2	68.9	70.6	72.4	64.0	81.3	45.3
Max	87.8	89.6	88.3	88.6	88.9	89.8	89.3	89.4	88.8	85.8	82.7	81.5	79.9	81.8	84.2	85.6	83.2	89.8	89.2	86.4	86.4	86.1	85.9	86.9	82.3	89.8	77.2
Min	51.0	50.8	52.3	53.3	51.2	53.7	49.1	47.8	44.7	40.6	34.2	30.7	29.0	26.7	25.8	26.6	25.8	32.8	38.7	48.2	52.1	54.2	52.8	50.4	48.8	69.8	25.8

A-27

**Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
January 2022**

[illegible]

A-28

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
February 2022

	<< Hour >>																									
Day	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	Tot	Max
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.03	0.01
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.02	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.04	0.02
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.02	0.01
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
Tot	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.02	0.02	0.07	0.04	0.03	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.22	0.00
Max	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.01	0.01	0.01	0.02	0.01	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.04	0.02

Sandfire Resources America Inc.
Black Butte Copper Project Met Tower Air Monitoring Summary
Precipitation (Inches)
March 2022

A-30

Day	<< Hour >>																								Tot	Max
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
2	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.03	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.03
3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.01	0.01
8	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
12	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
14	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.05	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.06
16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.01
17	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
18	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01	0.01
20	0.05	0.02	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.05
21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
23	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
24	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
28	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	Pw	0.00	0.00
29	Pw	Pw	Pw	Pw	Pw	Pw	Pw	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
31	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Tot	0.05	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.02	0.03	0.00	0.01	0.01	0.02	0.05	0.06	0.00	0.01	0.00	0.00	0.00	0.01	0.31	0.00
Max	0.05	0.02	0.00	0.00	0.01	0.00	0.00	0.00	0.01	0.00	0.01	0.03	0.00	0.01	0.01	0.01	0.05	0.06	0.00	0.01	0.00	0.00	0.00	0.01	0.11	0.06

APPENDIX B: PERFORMANCE AUDIT REPORTS
FIRST QUARTER 2022



BISON

ENGINEERING, INC.

Bison Engineering

Preliminary Meteorological Parameters Audit Form

Audit Dates: 04/08/2022 Tower Lowered : 09:30 MST Tower Back Up : 11:30 MST
 Client: Tintina Resources
 Site: Black Butte
 AUDITOR: Steve Heck PRECEDING CALIBRATION BY: Don Milmine
 Adam Bender
 Daniel Bitz

Temperature

Audit Device: Control Company - digital thermometer Model 4000
 Meter S/N: 130236679 Temperature Sensor: Climatronics 100093
 Last certified: Feb 2022 S/N X17929 (Upper), S/N X17927 (Lower) - Matched Set

Temperature bath results

	9m	9m	2m	2m	9m - 2m
Audit	DAS	DAS	DAS	DAS	DAS
Value	Value	Diff.	Value	Diff.	Diff.
°C	°C	°C	°C	°C	°C
0.21	0.31	0.10	0.31	0.10	0.00
16.69	16.63	-0.06	16.62	-0.07	0.01
37.30	37.46	0.16	37.43	0.13	0.03

Wind Direction

		Linearity Check from DAS				
Sensor height:	9 Meter	Setpoint	Clockwise	Counter-CW	Diff CW	Diff CCW
Sensor (Make/model number):	Climatronics/ 102083	0	1.1	0.5	1.1	0.5
Serial Number :	P1336C	30	30.8	30.0	0.8	0.0
Crossarm orientation (from Garmin GPS):	0.0 / 180.0	60	61.1	60.3	1.1	0.3
GPS location at sensor:		90	91.1	91.2	1.1	1.2
N 46 deg 46.351 min, W 110 deg 52.9485 min		120	120.9	120.2	0.9	0.2
GPS location at sighting point:		150	150.7	150.1	0.7	0.1
N 46 deg 46.308 min, W 110 deg 52.9485 min		180	180.7	180.0	0.7	0.0
Sensor response aligned with crossarm (as found):	181.5	210	210.4	209.6	0.4	-0.4
Sensor response aligned with crossarm (as left):	179.5	240	240.3	239.5	0.3	-0.5
		270	270.2	269.4	0.2	-0.6
Linearity Audit Device: Climatronics 101966, SN 70		300	300.3	299.7	0.3	-0.3
		330	330.5	329.8	0.5	-0.2
Threshold Torque: 0.09 oz.-in.				Max Diff	1.1	1.2
(Waters Model 366-1 torque watch)						

Wind Speed

Sensor height:: 9 Meter
 Sensor (Make/model number): Climatronics/ 102083
 Serial Number : No S/N
 Calibration device: Weathertronics 300 rpm synchronous motor
 Weathertronics 600 rpm synchronous motor

Synchronous motor checks

Known	Known	DAS	DAS
Value	Value	Value	Diff.
RPM	m/s	m/s	m/s
0	0.22	0.22	0.00
300	6.66	6.65	-0.01
600	13.09	13.09	0.00

Threshold Torque: 0.004 oz.-in.
 (Waters Model 366-3 torque watch)

Solar Radiation

Audit Device: Eppley Pyranometer, SN 16166F3 (certified by Eppley January 2022)

Time (MST)	CTS Value (W/m2)	Site Value (W/m2)	Diff. (%)	Diff. (% FS)
1225	755	731	-3.2	-1.8
1238	425	410	-3.5	-1.2
1248	521	504	-3.3	-1.3

Relative Humidity

Site Sensor: Met One 083E-0-35
Sensor Height: 2 meters
Reference Std: Assmann Psychrometer, thermometer calibrations checked June 2021

Ref Dry-Bulb:	16.5	deg C	BP = 24.31 in. Hg
Ref Wet-Bulb	5.6	deg C	
Ref RH:	17.4	%RH	
Station RH:	18.3	%RH	
Diff:	0.9	%RH	

Barometric Pressure

Audit Device: Wallace & Tiernan Model FA185260, S/N LL03297.
Checked against Bison Mercury barometer (Butte) March 2022

Audit Value:	24.31	in Hg
Station Value:	24.38	in Hg
Diff:	0.07	in Hg

Precipitation

Rain Gauge = Met One Model 375D, Serial No. X15682
Level checked OK
Wind Screen in place
8" opening
520 ml water added
Calibration is 8.24 ml per tip
Known audit value is $520 / 8.24 = 63.1$ tips (so 63 full tips expected)
Unit registered 65 tips
% difference from expected = +3.2%
Precip audit conducted during hours ending at 1200 & 1300 MST. No natural precipitation during audit.

Signature Site Operator : _____

Signature Auditor : Steven R. Reed